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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
MB26 / KC-135
IMAGE GENERATION SYSTEM
SYSTEM / CARD DATA

901181-785

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.

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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INSERT LATEST CHANGED PAGES, DESTROY SUPERSEDED PAGES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:

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

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*Zero in this column indicates an original page

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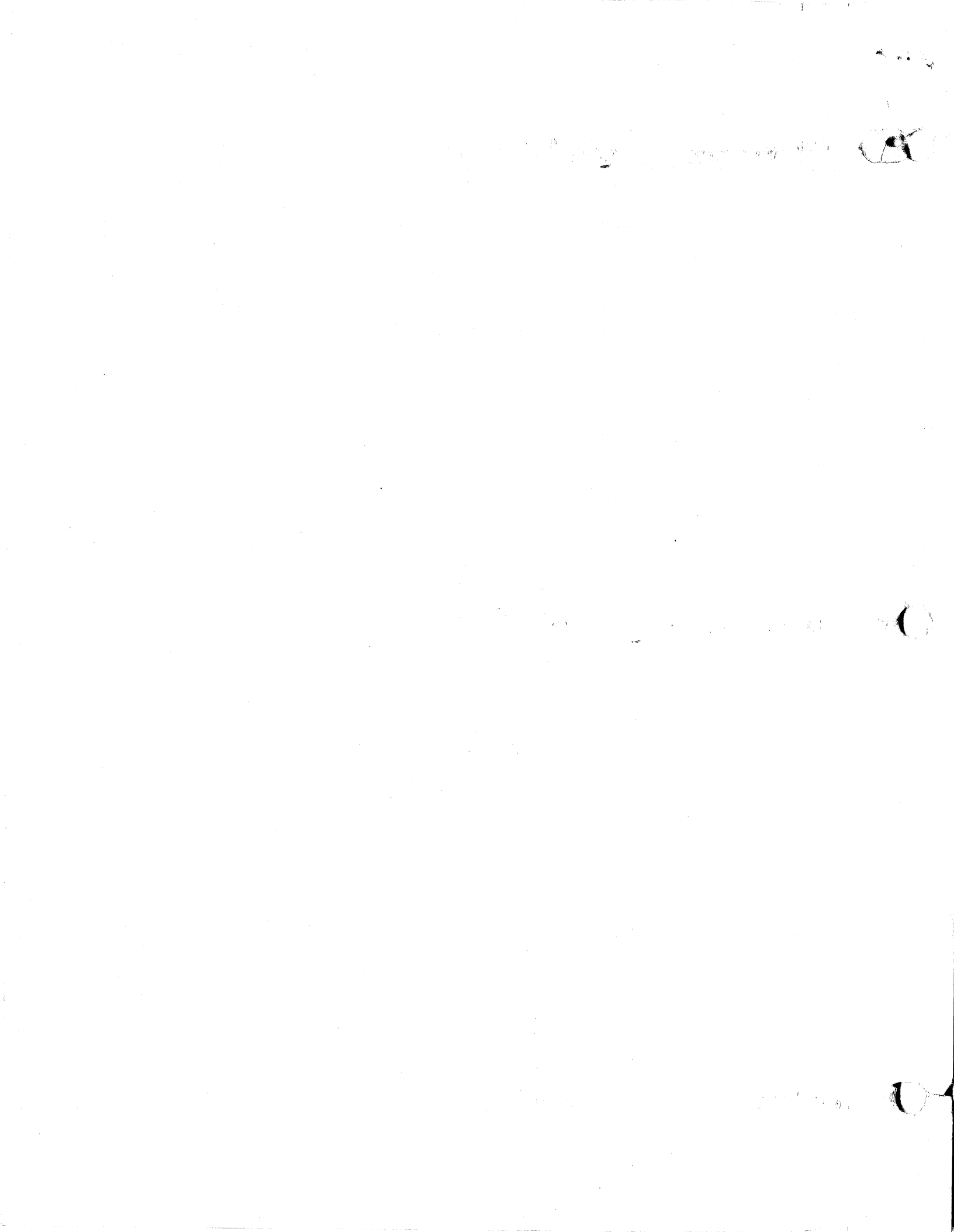
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2-1. Related Publications.

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



SIGNAL TRACING GUIDE

**MB26/KC135
IMAGE
GENERATION
SYSTEM**

SYSTEM/CARD DATA

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.

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Original	29 May	87						
Changes	30 March	88	12 April	88	1 July	88	15 August 88	26 June 89
Changes	19 July	89	18 August	89	1 September	89	1 October 89	16 November 89
Changes	8 December	89	14 December	89	19 December	89		

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 528
CONSISTING OF THE FOLLOWING:

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Salt Lake City, Utah

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1.1 Introduction

SECTION 2: CAGE CODE

2.1 Introduction

SECTION 3: SYSTEM DATA

3.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
101065-900		System Interconnection Diagram SP1/T

SECTION 4: CABINET DATA

4.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200329-100	A1	Floppy Disk, Storage
200401-3XX	A6	Left Hand Cabinet
200402-3XX	A3	Right Hand Cabinet
200426-200	A0	Option, Coax Cable Strain Relief

SECTION 5: BACKPANEL DATA

5.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200115-100	C1	GP Backpanel
200116-100	A0	DP Backpanel

SECTION 6: SYSTEM POWER/COOLING DATA

6.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200285-100	A1	Power Supply, 5V 200A
200286-100	A2	Power Supply, +-15v, 2.8A
200287-100	A1	Power Supply, 12VDC 14AMP
200288-100	A2	Blower, 500 CFM 230 VAC
200290-103	A4	Power Control
200290-603	A4	Logics
200297-060	NC	Elapsed Time Meter
200382-101	AC	Smoke Detector
200425-101	A0	Smoke And Overheat Detector
200425-201	A0	Smoke And Overheat Detector, Option
202250-101	A4	Backpanel Thermal Switch

SECTION 7: CABLE DATA

7.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
101328-TAB	A4	Cable, Flat Ribbon
101329-002	A3	Cable, Flat Ribbon
101372-001	A1	Cable, Power, + 15V
200292-002	NC	Plug
200292-003	A0	Plug
200294-101	A3	Power Control Harness A
200295-100	B0	Power Control Harness B
200296-103	A3	Power Control Harness C
200339-024	A3	Cable, Power Extender
200340-002	A2	Cable, Power, 230 VAC
200341-006	A1	Cable, Power, + 15V
200343-004	NC	Cable, +12V
200343-006	A1	Cable, +12V
200344-001	NC	Cable, +12V
200345-001	NC	Cable, Power, 230 VAC

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200346-TAB	A1	Cable, Power, 5V 00 Gage
200347-005	A1	Cable, Thermal Sensor
200378-005	A1	Cable, Thermal/Airflow Sensor
200379-002	NC	Cable, Airflow Sensor
200442-100	A1	Cable, EMI Clamp
200455-150	A0	Cable, Signal
200459-075	A1	Cable, Power EMI
202134-TAB	A1	Cable, Ground

SECTION 8: CARD DATA

8.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200105-101	A3	Card, DMA Interface, Cable
200105-601	A3	Logics
200105-901	A3	Block Diagram
200106-100	A4	Card, Input Control, Cable
200106-600	A4	Logics
200106-900	A4	Block Diagram
200107-103	A2	Card, Clock/Maintenance, Cable
200107-603	A2	Logics
200107-903	A2	Block Diagram
200108-100	A9	Card, Disk Interface, Cable
200108-600	A9	Logics
200108-900	A9	Block Diagrams
200110-100	NC	Card, Adder
200110-600	NC	Logics
200110-900	NC	Block Diagram
200111-101	NC	Card, Directionality
200111-601	NC	Logics
200111-901	NC	Block Diagram
200112-101	A3	Card, Brightness
200112-601	A3	Logics
200112-901	A3	Block Diagram
200113-101	NC	Card, GP Control 1
200113-601	NC	Logics
200114-103	A1	Card, GP Control 2
200114-603	A1	Logics

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200120-100	NC	Card, Multiplier
200120-600	NC	Logics
200120-900	NC	Block Diagram
200121-100	NC	Card, Divider
200121-600	NC	Logics
200121-900	NC	Block Diagram
200122-100	A2	Card, Display Buffer Control
200122-600	A2	Logics
200122-900	A2	Block Diagram
200123-101	A2	Card, Display Buffer Memory, Cable
200123-601	A2	Logics
200123-901	A2	Block Diagram
200149-100	A1	Card, Extender Multilayer
200155-101	B1	Card, Display Data
200155-601	B1	Logics
200155-901	B1	Block Diagram
200156-109	A2	Card, Analog Control
200156-609	A2	Logics
200158-103	B3	Card, Scope Driver
200158-603	B3	Logics
200159-100	B6	Card, X-Y, D/A
200159-600	B6	Logics
200159-900	B6	Block Diagram
200160-102	A0	Card, Face Generator
200160-602	A0	Logics
200160-902	A0	Block Diagram
200161-101	A0	Card, Priority Sorter
200161-601	A0	Logics
200161-901	A0	Block Diagram
200162-101	A3	Card, Line Assembler
200162-601	A3	Logics
200162-901	A3	Block Diagram
200163-101	A0	Card, E/F Control
200163-601	A0	Logics
200164-102	A0	Card, S/L Control
200164-602	A0	Logics
200165-100	NC	Card, Edge Generator
200165-600	NC	Logics
200165-900	NC	Block Diagram

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200169-101	A1	Card, Analog Intensity
200169-601	A1	Logics
200170-100	NC	Card, Light Occultation, Transform
200170-600	NC	Logics
200170-900	NC	Block Diagram
200171-102	A0	Card, Light Occultation, Control
200171-602	A0	Logics
200171-902	A0	Block Diagram
200172-101	B0	Card, Light Occultation, Map
200172-601	B0	Logics
200173-100	A2	Card, Light Occultation, Support
200173-600	A2	Logics
200173-900	A2	Block Diagram
200361-100	A3	Card, Line Rate Reciprocator
200361-600	A3	Logics
200362-100	A1	Card, Line Rate Band Width Limiter
200362-600	A1	Logics
200363-100	A2	Card, Line Rate Scanner
200363-600	A2	Logics
200364-101	D0	Card, Element Rate Scanner
200364-601	D0	Logics
200367-102	A0	Card, Texture Scanner Controller
200367-602	A0	Logics
200374-100	A0	Card, Texture Generator
200374-600	A0	Logics
200390-100	A0	Card, Position DAC
200390-600	A0	Logics

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 SP1/T Image Generation 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 Vender 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 SP1/T 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 Image Generation 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. Manufacturers 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

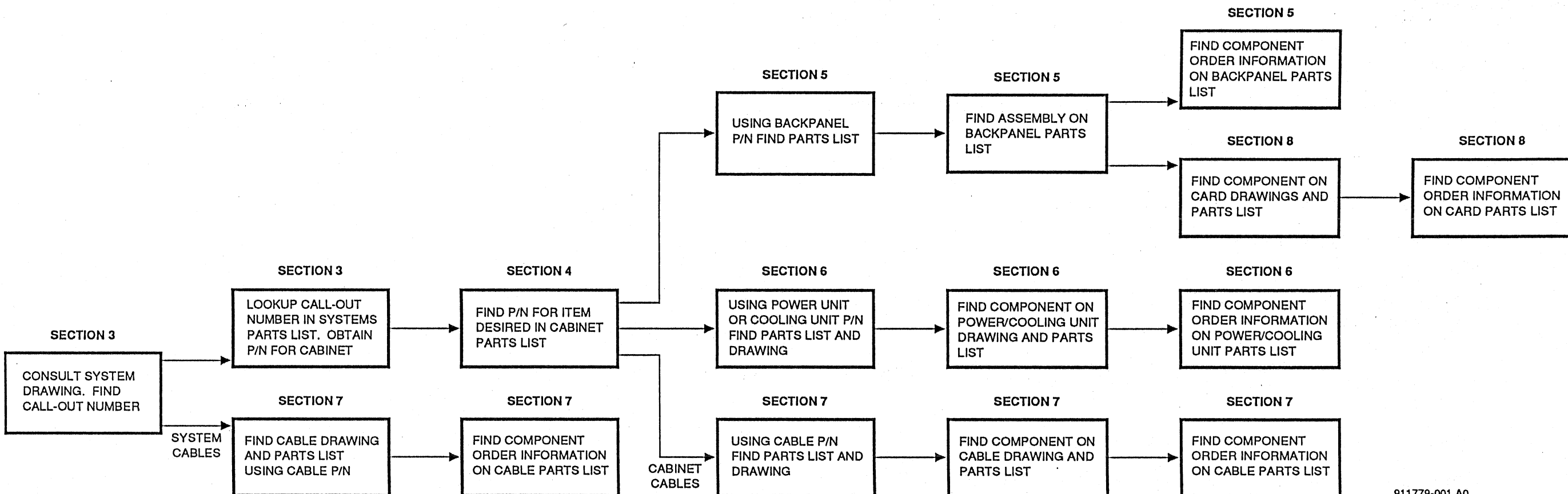
-900, 901, 902, etc. are supporting documents and may be block diagrams or allocation charts (shows placement and part number of cards in backpanels).
Example: 200110-900

-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

LIST OF MANUFACTURERS BY CAGE CODE

2.1 INTRODUCTION

Cage Code is the Vendor I.D. to Manufacturers Name including address. To fully identify a given part, follow this procedure:

- 1) Obtain the part's name, physical characteristics, part number, and Cage Code number from the appropriate parts list.
- 2) Look up the Cage Code number in this list to determine the name and address of the manufacturer.

2.2 CAGE CODE LIST

The following is a cross reference of the Cage/Vendor ID to Manufacturer Name including address.

CROSS REFERENCE CAGE/VENDOR ID TO MANUFACTURER'S NAME
LIST BY CAGE CODE

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
00159	ACME	Amce Electric Corp. 20 Water St. Cuba NY 14727 Phone 716-968-2400
00222	ESC	ESC Elec. Corp. 534 Bergen Blvd. Palisades Park NJ 07650 Phone 201-947-0400
00287	CEM	CEM Co. Inc. Rt 112 and Rock Ave. Dayville CT 06241 Phone 203-774-8571
00417	DELTRON	Deltron Inc. Wissahickon Ave. P.O.Box 1369 North Wales PA 19454 Phone 215-699-9261
00615	QUANTA	Quanta Systems Corp. Washington Tech Assoc. 1455 Research Blvd. Rockville MD 20852 Phone 301-279-8700
00656	AEROVOX	Aerovox Inc. 740 Belleville Ave. New Bedford MA 02745 Phone 617-994-9661
00768	WESTERNFIL	Western Filament Inc. 4680 San Fernando Rd Glendale, CA 91204 Phone 213-247-5880
00779	AMP (CONN)	Amp Inc. P.O. Box 3608, Harrisburg, PA 17105 Phone 717-986-7764
00815	MIDLAND-ROS	Midland-Ross Corp. Northern Engineering Lab Div. 357 Beloit St. Burlington WI 53105-2053
00853	SANGAMO	Sangamo Weston Inc. P.O. Box 128 Pickens SC 29671 Phone 803-878-6311
01002	GE (CAP)	General Electric Co. Capacitor Products Dept., John St., Hudson Falls, NY 21839 Phone 518-761-7405
01121	ABRANDLEY	Allen-Bradley Co. 1201 South 2nd St., Milwaukee, WI 53204
01139	GE-4	General Electric Co. Silicome Prod. Dept Waterford NY EJ 1139 Phone 518-266-2641
01281	TRW	TRW Inc. TRW Semiconductor Div., 14520 Aviation Blvd., Lawndale, CA 90260 Phone 213-536-0888
01295	TI (SEMI)	Texas Instruments Inc. U.S. Semiconductor Group, P.O. Box 5012, 13500 N. Central Expressway, Dallas, TX 75222 Phone 214-995-2011
01378	DEL EL	Del Electronics Corp. 250 E Sanford Blvd. Mt Vernon NY 10550 Phone 914-699-2000
01537	MOTO*	Motorola Communications and Elec. Inc. 2553 N Edgington St. Franklin Park IL 60131
01599	REID TOOL	Reid Tool Supply Co. 2265 Black Creek Rd. Muskegon MI 49444 Phone 800-253-0421
01686	RCL or AMF	RCL Electronics Div. of AMF Inc. 195 McGregor St., Manchester, NH 03120 Phone 603-627-3831
01852	THOMAS-ELEC	Thomas Electronic Inc. 100 Riverview Dr. Wayne, NJ 07470 Phone 201-696-5200
01961	PULSEENG	Pulse Engineering Inc. 7250 Convoy Court, San Diego, CA 92112
02105	AMELECT	American Electric & Htg., Detroit, MI 48202 Phone 313-875-2505
02111	SPECTROL	Spectrol Electronics Corp. 17070 E. Gale Ave., P.O.Box 1220 City of Industry, CA 91745
02114	FERROCUBE	Ferrocube Corp. 5083 King HWY Saugerties NY 1277 P.O. Box 359, Mt. Marion Rd.,
02185	AMFORG	American Forging and Socket Co. Pontiac, MI
02289	HI-G	HI-G Co. Inc. Spring St. & Rt 75 Windsor Locks Ct 06096 Phone 203-522-8600
02371	CORNISH-RUT	Cornish-Rutland Co. Rutland, VT

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
02660	AMPHENOL	Bunker Ramo Corp. Amphenol Connector Div., 2801 S. 25th Ave., Broadview, IL 60153 Phone 312-983-3500
02735	RCA	RCA Corp. Solid State Division, Route 202, Somerville, NJ 08876
02768	FASTEX	Illinois Tool Works Inc. Fastex Div., 195 Algonquin Rd Des Plaines Il. 60016 Phone 312-299-2222
03040	FREQCONPRO	Frequency Control Products. Inc. 61-20 Woodside Ave. Woodside NY 11377 Phone 718-458-5811
03296	NYLONMOL	Nylon Modeling Corp. 1617 S California Monrovia, CA 91016 Phone 818-358-2305
03363	ANACONDOA	Anaconda Co. the Wire and Cable Div., Greenwich Office Pk. 3, Greenwich, CT 06830
03481	BFGOODRICH	Goodrich B F Co. Eng.Prod. Group 500 S Main St. Akron OH 44318
03508	GE (SEMI)	General Electric Co. Semi-conductor Products Dept. W, Genesee St., Auburn, NY 13021
03512	GE-2	General Electrics. Co. Specialty Transformer Dept 1701 College St. P.O.Box 1701 Fort Wayne IN 46801 Phone 219-426-7431
03522	MCLEAN	McLean Engineering Laboratories, 70 Washington Rd., Princeton Junction, NJ 08550
03550	VANGUARD	Vanguard Elec. Co. Inc. 1480 W 178th St. Gardena DA 90248 Phone 213-323-4100
03888	PYROFILM	Pyrofilm Div. Of KDI Elec.Inc. 60 S Jefferson Rd. Whippany NJ 07981 Phone 210-887-8100
04213	CADDELLBUR	Caddell-Burns Mfg. Co. Inc. 40E 2nd St. Mineola NY 11501 Phone 516-746-2310
04221	MIDTEX	Midland-Ross Corp. Midtex Div. 1650 Tower Blvd. N Mankato MN 56001
04222	AVXCERAMIC	AVX Ceramics Div. Of Avx Corp. 19Th Ave. South P.O.Box 867 Myrtle Beach SC 29577
04232	STAVER	Staver Co. Inc. The 41-51 Saxon Ave. Bay Shore NY 11707 Phone 516-666-8000
04319	AP PRODUCT	Advanced Prod. Co. 33 Depco Park Rd. North Haven CT 06473 Phone 203-239-3341
04347	HYSOL	Hysol Div. Dexter Corp. The 211 Franklin St., Olean, NY 14760 Phone 716-372-6300
04426	ITW-SWITCH	Licon Div. of Illinois Tool Works Inc. 6615 W Irving Park Rd. Chicago IL 60634 Phone 312-282-9440
04569	NATWIRE	National Wire & Cable Co. Inc. 136 Fernando Rd Los Angeles Ca 90031 Phone 213-225-5611
04597	PROJ-UNLIM	Projects Umlimited Inc. 3680 Wyse Rd. P.O.Box 14538 Dauton OH 45414 Phone 513-890-1981
04618	AMP SPECIAL	AMP Special Industries, Div. of Amp Products Corp. P.O. Box 1776, Paoli PA 19301 Phone 215-647-1000
04673	DAKOTA	Dakota Engineering Inc. 4315 Sepulveda Blvd., Culver City, CA 90230
04713	MOTO	Motorola Inc. Semiconductor Products Group, 5005 E. McDowell Rd, Phoenix, AZ 85008 Phone 602-244-7357
04729	UNICORP	Unicorp 291 Cleveland St, Orange, NJ 07050 Phone 201-674-1700
04866	NYLOK	ND Industries Inc. 1893 Barrett Rd., Troy, MI 48084 Phone 313-362-1200

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
04866	OAKLANDCOR	N-D Industries Inc. 1893 Barrett Rd P.O. Box 1019 Troy MI 48099 Phone 313-362-1200
04946	STDWIRCO	Standard Wire & Cable Co. 2345 Alaska Ave. El Segundo Ca 90245 Phone 213-536-0006
05041	MASTERITE	Masterite Industries Inc. 2841 Lomita Blvd., Torrance, CA 90505
05079	TANSITOR	Transistor Elec. Div. Aerotrol, West Rd., Bennington, VT 05201 Phone 802-442-5473
05212	ITT/COMPON	W and F Machine Work Inc. Norfolk VA
05236	JONATHAN	Jonathan Mfg. Corp. 1101 S Acacia Ave. Fullerton, CA 92631 Phone 714-526-4651
05245	CORCOM	Corcom Inc. 1600 Wincheste Rd Liberty IL 60048
05276	POMONA ELEC	ITT Pomona Electronics Div., 1500 E. 9th St., P.O. Box 2767, Pomona, CA 91766
05277	POWEREXINC	Westinghouse Electric Corp. Semiconductor Div. Hills St. Youngwood Pa 15697
05277	WESTING	Westinghouse Electronics Corp. Semiconductor Div. Youngwood Pa. 15697
05347	ULTRONIX	Ultromix Inc. 461 N 22nd st. P.O.Box 1090 Grand Junction, Co. 81502 Phone 303-243-2153
05464	IDUSTR ELEC	Industrial Electronic Engineers Inc. 7720 Lemona Ave. Van Nuys, CA 91405 Phone 213-787-0311
05464	IEE	Industrial Elec. Eng Inc. 7720 Lemona Ave. Van Nuys, CA 91405 Phone 213-787-0311
05574	VIKING	Viking Connectors Inc, 21001 Nerdhoff St. Chatsworth, CA 91311
05693	CHERRY-ELEC	Townsend Div. of Textron Inc. Cherry Fasteners Unit Commercial Products, 1224 E. Warner Ave., Santa Ana, CA 92707 Phone 714-545-5511
05791	LYN-TRONIC	Lyn-Tron Inc. 3150 Damon Way Burbank Ca 91505 Phone 213-849-6211
05820	WAKEFIELD	Wakefield Engineering Inc. Audubon Rd., Wakefield, MA 01880 Phone 617-245-5900
05972	LOCTITE	Loctite Comp 705 N Mountain Rd. Newington Ct 06111
06090	RAYCHEM	Raychem Corp. 300 Constitution Dr. Menlo Park, CA 94025 Phone 415-361-3485
06223	KOOLTRONICS	Kooltronics Inc. Hamilton Ave., Hopewell, NY Phone 609-466-3400
06324	GLENAIR	Glenair Inc. 1211 Air Way Glendale Ca 91201 Phone 818-247-6000
06383	PANDUIT	Panduit Corp. 17101 Ridgeland, Tinley Park, IL 60477 Phone 312-532-1800
06402	ETA	E-T-A Circuit Breakers, 7400 N Crononame Rd, Chicago, IL Phone 312-647-8303
06416	PACIFIC	Pacific Resistor Co. 18300 Oxnard St. Tarzana, CA 91356 Phone 213-345-7811
06476	PLASTICRAFT	Plasticrafts Inc. 600 W Bayaud Denver Co. 80223 Phone 303-744-3701
06514	STANTRON	WYCO Metal Products, Stantron Div., P.O. Box 9158 VC North Hollywood Ca 91609 Phone 213-875-0800
06540	AMATON	Mite Corp. Amatom Electronic Hardware Div., 446 Blake St., New Haven, CT 06515 Phone 203-387-2572
06665	PMI	Precision Monolithics Inc. 1500 Space Park Dr., Santa Clara, CA 95050 Phone 408-246-9222

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
06666	CHASSIS	General Devices Co. Inc. 1410 S Post Rd. P.O.Box 39100 Indianapolis IN 46239 Phone 317-897-7000
06668	TI-1	Texas Instruments Inc. Digital Systems Div., P.O. Box 14444, 12203 Southwest Freeway, Houston, TX 77001
06669	BELL FAB	Bell-Fab Oshkosh, A Div. of Medalist Industries 123 Jackson St. Oshkosh WI 54901,
06682	MAGNETIC	Perfection Mica Co, Magnetic Shield Div. 740 N Thomas Dr Bensenville Il 60106 Phone 312-766-7800
06763	WANG	Wang Laboratories Inc. 1 Industrial Ave. Lowell MA 01851 Phone 617-472-4361
06776	ROB-NUGENT	Robinson Nugent Inc. 800 E 8TH St. P.O.Box 1208 New Albany Ind 47150
06915	RICHCO	Richco Plastic Co. 5825 No. Tripp Ave., Chicago, IL 60646 Phone 312-539-4060
06980	EIMAC	EIMAC, Div. Varian Associates, 301 Industrial Way, San Carlos, CA 94070
07065	GEN ELECTRO	General Eletro Inc. Div. 122 Maubuc Ave. Glastonbury CT 06033 Phone 203-659-3573
07126	DIGITRAN	Digitran Co. The Div. Of Bexton Dickinson and CO. 3100 New York Dr Pasadema, CA 91107 Phone 818-791-5600
07240	ZIPPERTUBI	Zippertubing Co, 13000 S Broadway, Los Angles, CA 90061 Phone 213-321-3901
07263	FAIRCHILD	Fairchild Camera and Instrument Corp. Semiconductor Div., 10400 Ridgeview CT Cupertino, CA 95014
07393	COLSON	Colson Co., 3700 Airport Rd, Jonesboro Az 72407
07418	SUNBANKELE	Sunbank Electronics Corp. Div. 1740 Commerce Way Paso Robles, CA 93446 Phone 805-238-2840
07421	INTERELEC	Interstate Electronics Corp. Div. Figgie International Corp. P.O.Box 3117 Anahim Ca 92803 Phone 714-758-0500
07479	MINELCO	Minelco Inc. Sub of Tally Industries Inc. 135 S Main St. Thomaston CT 3825 Phone 602-957-7711
07700	TECKNIT	Technical Wire Products Inc, 129 Dermody St., Cranford NJ 07016 Phone 201-272-5500
07829	BODINE	Bodine Electric Co. 2500 W Bradley Place Chlicage Il 60618
07933	RATHEON	Raytheon Semiconductor, 350 Ellis St., Mountain View, CA 94042
08105	DIANOL	Diano1 Div. of Mills-Pearson Corp. St. Petersburg, FL
08171	LUBRIPLATE	Lubrication Eng. Inc. 3851 Airport Freeway P.O.Box Fort Worth TX 76111
08226	RELIABLE	Reliable Industries Inc. 10724 Garwick Place, South Gate Ca. 90280 Phone 213-862-1681
08261	SPECTRA	Spectra-Strip, Electro Co. 7100 Lampson Ave. Garden Grove Ca 92642
08505	E-Z	EZ Hook, 114 E St., St. Joseph St., P.O. Box 450, Arcadia, CA 91006 Phone 213-446-6175
08547	WALLACE	Wallace, R. G. Co. P.O. Box 4646, Carson, CA 97049 Phone 213-537-1381
08666	OK MACH	O K Machine & Tool Corp. 3455 Corner St. Bronc NY 10701 Phone 914-969-6800
08676	PIONEER-MA	Pioneer Magnetics Inc. 1745 Berkeley St. Santa Monica, CA 90404 Phone 213-829-6751
08730	OSTBY	Ostby & Barton Co. Vermaline Products Div., 487 Jefferson Blvd. Warwick RI 02940 Phone 401-739-7600

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
08742	ACDCELECT	Emerson Electric Co. ACDC Electronics Div., 401 Jones Rd, Oceanside Ca. 92054 Phone 619-757-1880
08779	SIGNAL	Signal Transformer Co. Inc. 500 Bayview Ave. Inwood NY 11696
08806	GE-1	General Electric Co. Miniature Lamp Products Dept., Nela Pk., Cleveland, OH 44112
09004	TRASDEV	Transistor Devices Inc. 85 Horsehill Rd, Cedar Knolls NJ 07927 Phone 201-267-1900
09021	AIRCO	Airco Electronics Foster Brook Rd., P.O. Box 334, Brandford, PA 16701
09021	KOA	Airco Inc. Airco Electronics Bradford PA
09087	INFODEX	Infodex Inc. 395 W Main St. Waterbury CT 06702 Phone 203-757-9291
09332	AEROFAS	Aerofast Inc. PO Box 324 Wheaton IL 60187
09353	C&K Compon	C and K Components Inc. 15 Riverdale Ave. Newton MA 02158
09555	BRENDEL	Brendell Mfg. Inc. 1661 Beck St, Salt Lake City UT 84116 Phone 801-359-0154
09639	CONTROLDAT	Control Data Corp. 304 N Dale St., St. Paul MN 55103 Phone 612-253-4684
09922	BURNDY	Burndy Corp. Richards Ave., Norwalk, CT 06852
10389	CHICSWTCH	Chicago Switch Inc. Sub Illinois Tool Works Inc. 1714 N Damer Ave. Chicago IL 60647 Phone 312-489-5500
10392	AUTOSPLICE	General Staple Co. Inc. 59-12 37TH Ave. Woodside NY 11377 Phone 212-429-0500
10610	SPELLMAN	Spellman Hig Voltage Cop 7 Fairchild Ave. Plainview NY 11803 Phone 516-349-8686.
11139	DEUTSCHI	Deutsch Co. The Deutsch Relays Inc. Dib 65 Daly Rd East North NY 11731 Phone 516-499-6000
11236	CTS	CTS of Berne Inc. 406 Parr Rd., Berne, IN 46711 Phone 219-589-3111
11502	TRW/IRC	TRW Electronic Components, IRC Fixed Resistors Boone Division, Greenway Rd., Boone, NC 28607 Phone 704-264-8861
11532	TELEDYNE	Teledyne Relays, 3155 W., El Segundo Blvd. Hawthorne, CA 90250
11534	DUNCAN	Duncan Elec. Inc. Sub Of Systron-Donner Corp. 2865 Fairview Rd. Costa Mesa, CA 92626 Phone 714-545-8261
11769	ELCOINDUS1	Elco Corp. A Gulf and Western Mfg. Co. Interconnect Systems Div., 2250 Park Place, El Segundo, CA 90245
11815	CHERRY-RIV	Cherry Aerospace Fasteners Inc. 1224 E Warner St. P.O.Box 2157 Santa Ana CA 3728 Phone 714-545-5511
11897	PLASTIGLID	Plastiglide Mfg. Corp. 2701 W EL Segundo Blvd. Hawthore, CA 90250 Phone 213-777-8180
11988	FLOTRON	Flotron Industries Inc. 6241 Yarrow Dr Carlsbad Ca 92008 Phone 619-438-2100
12014	CHICRIV	Chicago Rivit & Machine Co. 5.S.731 Frontenac Rd, Naperville Il 60540
12324	STAKEFSTNR	Dupree Inc.. Stake Fastener Co. Div. 14395 Ramona P.O.Box 1797 Chino, CA 91708 Phone 714-597-4889
12363	CORDIN	Cordin Co. 2230 S 3270 W Salt Lake City, Ut 84199
12406	ELPAC	Elpac Electronics Inc. 3131 Standard Ave. Santa Anna Ca 92705
12454	BARRY-CONT	Barry Blower Div. Of The Marley-Wylain Co. 99 77TH Way NE Pridley, MM 55432 Phone 612-571-5200

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
12509	INSULTITE	Insul-Tab Inc. Wosurn Industrial Park P.O.Box 526 Wosurn MA 01801 Phone 617-935-0800
12517	COMPONENT	Component Reseach Co. Inc. 1655-26th Santa Monica Ca 90404
12644	RIA CORP	Pelco Sales Inc. 4790 W Jacquelyn Fresno, CA 93711 Phone 516-435-0885
12703	JUDD	Judd Wire, Div. Electronized Chemicals Corp. P.O. Box 390, 250 Turnpike Rd., Turners Falls, MA 01276 Phone 413-863-4357
12728	ELMAR	Elmar Filter Corp. 72 Blatchley Ave. P.O.Box 9485 New Haven CT 06511)
12856	MICROMETAL	Micrometals Inc. 1190 M Hawk Circle Anaheim, CA 92807 Phone 714-630-7420
12954	MCS,INC	Microsemi Corp-Scottsdale 8700 E Thomas Rd. P.O.Box 1390 Scottsdale AZ Phone 602-941-6474
12969	UNITRODE	Unitrode Corp. 5 Forses Rd. Lexington MA 027173 Phone 617-861-6540
13103	THERMALLORY	Thermalloy Co. Inc. 2021 W Valley View Lane P.O.Box 810839 Dallas TX 75381 Phone 214-243-4321
13113	SHEPHERD	Shepherd Products Inc. 203 Kerth St, St. Joseph MI 49085 Phone 800-253-0868
13150	BEAU	Vernitron Corp. Beau Prod, Div. 117 Union Ave. P.O.Box 10 Laconia NH Phone 603-524-5101
13207	KNOLL	Knoll International Inc. 1053 3rd St. NW Wash,DC 20007
13327	SOLITRON	Solitron Devices Inc. 256 Oak Tree Rd, Tappan NY 10986
13555	GENL-TIME	General Time Instruments Inc. 404 Armour ST.P.O.Box 338 Dividson NC 28036 Phone 602-957-7711
13619	RFI	RFI Corp. Sub KDI Corp. 100 Pind Aire Dr Bay Shore LI NY 11706
13688	GE	General Electric Co. Electronics Laboratory, Electronics Park, Syracuse, NY 13201
13919	BURRBROWN	Burr-Brown Research Corp. P.O.Box 11400, Tucson Az 85734
14193	CAL-R	Cal-R Inc. 1601 Olympic Blvd., Santa Monica, CA 3676
14283	MATRIS-SCI	Matrix Science Corp. 455 Maple Ave. Torrance Ca 90503 Phone 213-328-0271
14329	WELLSELECT	Wells Elec. Inc. 1701 South Main St. South Bend IN 46613 Phone 219-287-5941
14433	ITT SEMI	ITT Semiconductors, P.O.Box 3049, West Palm Beach, FL 33402
14506	DATA-TECH	Penril Corp. Data Tech Div. 3110 W Segerstrom Ave. Santa Ana, CA 92704 PHONE 714-546-7160
14551	WESCO	Wesco Electronics 5650 Jilison St., Los Angeles, Ca 90022
14552	MICROSEMI	Microsemi Corp. 2830 S Fairview St: Santa Ana, CA 92704
14590	SYSRESLAB	System Research Lab Inc. Indian Ripple Rd, Dayton Ohio 45440 Phone 513-426-6000
14604	ELMWOOD	Elmwood Sensors Inc. 1655 Elmwood Ave. Cranston, RI 02907 Phone 401-728-1300
14655	CORNELLDUB	Cornell-Dubilier Electronics, Div. of Federal Pacific Electric Co. Govt. Contracts Dept., 150 Ave. L., Newark, NJ 07101
14674	CORNING	Corning Glass Works, Houghton Pk., Corning, NY 14830 Phone 607-974-7584
14726	HOLWTH	Hollingsworth Solderless Terminal Co. Nutt and French Creek Rd., Phoenixville, PA 19460 Phone 305-979-2050
14749	ACOPIAN	Acopian Corp. P.O.Box 638 Easton Pa 18042 Phone 215-5441
14752	ELECTROCUB	Electro Cube Inc. 1710 S. Del Mar Ave., San Gabriel, CA 91776 Phone 213-573-3300

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
14907	CONRAC	Conrac Corp. Cramer Div. Mill Rock Rd, Saybrook CT 06475 Phone 203-388-3574
14936	GENINST4	General Instrument Corp. 600 W John St. Hicksville NY 11002 Phone 516-733-3000
14949	TROMPETER	Trompeter Electronics, 8936 Comanche Ave. Chatsworth Ca 91311 Phone 818-707-2020
15003	VALOR	Valor Electronics Inc. 6750 Nancy Ridge DR San Diego, CA 92121 Phone 619-458-1471
15124	PHIL FORD	Philph-Ford Corp. Microelectronics Div., Blue Bell Pa.
15253	LASELCO	Laselco Pacific, Palo Alto, CA
15454	AMETEK	Ametek Inc. Rodan Div. 2905 Blue Star St. Anaheim, CA 92806
15476	DEC	Digital Equipment Corp. 146 Main St., Maynard Ma 01754 Phone 617-897-5111
15513	DTA DISPLY	Data Display Products, 303 N Oak St, Los Angles Ca 90302 P.O.Box 91072 Phone 213-640-0442
15514	DATADISPRO	Acme Lighting and Mfg. Co. 18401 E Arenth Ave. City Of Industry, CA 91748
15653	KAYNAR	Kaynar Microdot Fastening Systems, P.O.Box 3001 Fullerton Ca 92634 Phone 714-871-1550
15686	DISC-INST	Disc Instruments Inc. E Baker St, Costa Mesa Ca 92626
15751	PPP	PPP Inc. 333 W Andrew Ave., Salt Lake City UT 84115
15755	ABBOTT-TRA	Abbott Transistor Lab. Inc. Power Supply Div. 2727 S Cienaga Blvd. Los Angeles, CA 90036 Phone 213-936-8185
15806	ABBEON CAL	Abbeon Cal Inc. 123 Gray Ave. Santa Barbara Ca 93101 Phone 805-966-0810
15841	MEMOREX	Memorex Corp. St. Thomas & Central Expressway, Santa Clara Ca 95052 Phone 408-987-1000
15912	T&B/ANSLEY	T & B Ansley Corp. 4371 Valley Blvd Los Angles, CA 90031 Phone 213-222-8151
15915	TEPRO	Tepro Of Florida Inc. 2608 Enterprise Rd. P.O.Box 1260 Clearwater FL 33517 Phone 813-796-1044
16059	DEVCON	Devcon Corp. 61 Endicott St. Danvers MA 01923 Phone 617-777-1100
16067	CAL-INST	California Instrument, 5150 Convoy St. San Diego Ca 92111 Phone 714-279-8620
16179	OMNI	Omni, Spectra Inc. 21 Corp. Continental Blvd, Merrimack NH 03054 Phone 603-420-4111
16249	CORNING	Corning Glass Works, Electronic Components Div., 3900 Electronic Dr., Raleigh, NC 27604 Phone 919-876-1100
16428	BELDEN	Belden Corp. P.O. Box 1331, Richmond, IN 47374 Phone 317-983-5200
16499	ACCURIDE	Standard Precision Inc. Accuride Div. 12311 S Shoemaker Ave. Santa Fe Springs, CA
16546	CENTRALAB	U.S. Capacitor Corp. Centralab, 4561 Colorado, Los Angeles, Ca 90039
16714	RHOMBUS-IN	Rhombus Ind. Inc. 15801 Chemical Lane Huntiogtin Beach, CA 92649 Phone 714-898-0960
16956	DENNISON	Dennison Mfg. Co. Howard St, Farminghan Ma 01701 Phone 617-879-0511
17117	ELECT-MOLD	Elec-Molding Corp. 96 Mill St. Woonsocket RI 02895 Phone 401-769-3800
17217	GORE W.L.	Gore W. L. and Associates Inc. 555 Paper Mill Rd., Newark, De 19711 Phone 302-738-4880
17272	INTEGSYS	Integrated Systems Technology Inc. Garland TX

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17474	TRANEX	Tranex Inc. 1599 Stierling Rd., Mtn View, CA 94043 Phone 408-732-0441
17554	COMPONIN	Components Inc. Sub of Corning Glass Works, Smith St. Biddeford, Me 04005 Phone 207-282-5111
17559	COLBUK INC	Colbuk Inc. Independence Ave., Chatsworth, CA 91311
17657	DICTAPHONE	Dictaphone Corp. P.O.Box 3802 Milford, CT 06460 Phone 203-367-8411
17794	PACE	Pace Inc. 9893 Brewers Court, Laurel, MD 20707 Phone 301-490-9860
17850	ZELTEK	Zeltek Inc. 940 Detroit Ave. Concord, CA 94518 Phone 415-686-6660
17856	SILICONIX	Siliconix Inc. 2201 Laurelwood Rd, Santa Clara, CA 95054 Phone 408-988-8000
18110	DYNASCAN	Dynascan Corp. 6468 Cortland Ave. Chicago IL 60635
18178	VACTEC	Vactec Inc. 10900 Page Blvd, St. Louis, MO 61132 Phone 314-423-4900
18310	CONCORD	Concord Electronics Corp. 30 Gt Jones St, NY NY 10012 Phone 212-777-6571
18324	SIG	Signetics Corp. 811 E. Arques, Sunnyvale, CA 94086
18565	CHOMERICS	Chomerics Inc. 77 Dragon Court Woburn MA 01801 Phone 617-935-4850
18583	CURTIS INST	Curtis Instruments Inc. 200 Kisco Ave. Kisco NY 10549 Phone 914-666-2971
18583	CURTISINST	Curtis Instruments Inc. 200 Kisco Ave. Mount Kisco NY 10549 Phone 914-666-2971
18612	VISHAY	Vishay Products Group 63 Lincoln HWY Malvern PA 19353 Phone 215-644-1300
18632	CHEMPLAST	Chemplast Inc. 150 Dey Rd, Wayne NJ 07470 Phone 201-696-4700
18662	KELTRON	Keltron Corp. 225 Crescent St. Malthan MA 02154
18677	SCANBE	Scanbe Mfg. Co. 3445 Fletcher Ave., El Monte, CA 91731 Phone 213-979-2300
18778	THOMSON	THOMSON-CSF Components, Div 550 MT Pleasant Ave. P.O.Box 6500 Dover NJ 07801 Phone 201-328-1400
18796	ERIE	Erie Technological Products Inc. State College Div., 1900 W. College Ave., PA 16801
18835	STRUTH-DUN	Struthers Dunn Inc. Philadelphia PA Pitman NJ 08071
18915	BIRTCHEER	Birtcher Corp. The Industrial Div., 4505 N. Arden Dr., El Monte, CA 91734 Phone 818-442-1572
19112	GARRY	Garry Elec, 9 Queen Anne Court Langhorne PA 19047
19130	RTRON	Rtron Corp. 7324 Lawdale Ave. P.O.Box 743 Skokie IL 60076 Phone 312-679-7180
19151	LYNWIRE	Lynn Elec. Corp. 915 Pennsylvania Blvd. Feasterville PA 19047 Phone 215-355-8200
19420	MERRIMACKM	Merrimack Magnetics Corp. 121 Hale St. Lowell MA 01851
19449	BERK-TEK	Berk-Tek Inc. Box 60 Rd. 1 Reading, PA 19607 Phone 717-354-6200
19541	BIMBA	Bimba Mfg. Co. 101 Main St. Monee IL 60449
19613	3M/TEXTTOOL	Minnesota Mining And Mfg. Co. Texttool Prod. Div. 1410 E Pioneer Dr Irving TX 75061
19647	CADDOCK	Caddock Electronics Inc. 1717 Chicago Ave. Riverside, CA 92507 Phone 741-788-1700
19648	ELDRE	Eldre Components Inc. 1500 Jefferson Rd, Rochester NY 14623 Phone 716-244-2570

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19701	MEPCO	Mepco/Electra Inc. P.O. Box 760 Mineral Wells, TX 76067
19728	PRESTOLITE	Prestolite Div. Of Bunker Ramo-Eltra Corp. 511 Hamilton St. P.O.Box 931 Toledo OH 43601 Phone 419-255-4068
19738	AVDEL	Avdel Corp. Lackamanna Ave. Parsippany NJ 07054 Phone 212-263-8100
19911	DESCO	Desco Mfg. Co. Inc. 1445 W Cowles St, Long Beach, CA 90813 Phone 213-437-0456
1ES66	MAXIN	Maxin Integrated Prod. 510 N Pastoria Ave. Sunnyvale Ca 94086 Phone 408-737-7600
1N120	FREEMAN	Freeman Mfg. and Supply Co. 43 Montgomery St. P.O.Box 629 Belleville NJ 07109 Phone 201-759-5700
1P965	VISUALCOMM	Visual Communications Co. El Segundo CA 8118 W 83RD St. Playa Del Rey, CA 90291
20310	DATA DOC	Data Documents Inc. 9503 F st., Omaha, NE 68127 Phone 402-339-0900
20933	KAPPA-NETW	Kappa Networks Inc. 165 Roosevelt Ave. Carteret NJ 07008 Phone 201-541-1600
20940	MICRO-OHM	Micro-Ohm Corp. 1088 Hamilton Rd. Duarte, CA 91010 Phone 818-357-5377
21022	CONNOR	Connor-Winfield Corp. P.O.Box L, West Chicago IL 60185 Phone 312-231-5270
21267	CHEM INC	Chemtronic Inc. 681 Old Willets Path Hauppauge NY 11787 Phone 800-645-5244
21325	EDSYN	Edsyn Inc. 15954 Arminta St., Van Nuys, CA 91406
21542	FABRI TEK	Fabri-Tek Inc. 6900 Shady Oak Rd, Eden Prairie MN 55344
21672	FAUTLESS	Faultless Caster Corp. 1421 N Garvin St. Evansville IN 47711 Phone 812-425-1011
21687	PRECTIMER	Precision Timer Co Inc. Westbrook Industrial Park, Westbrook CT 06498 Phone 203-399-6253
21845	SOLITRON1	Solitron Devices Inc. Semiconductor Group, 1177 Blue Heron Blvd., Riviera Beach FL 33404
21994	TEXWIPE	Texwipe Co. 650 E Crescent Ave. P.O.Box 575 Upper Saddle River NJ 07458 Phone 201-327-5577
22119	FERRANTI	Ferranti Electronics. Inc. 87 Modular Ave. Commack NY 11725 Phone 516-543-0200
22123	SOUTHWIRE	Southwire Co. Strickland And Fertilla St. Carrollton GA 30119 Phone 404-832-5282
22519	DATA DELAY	Delay Devices, 385 Lakeview Ave. Clifton NJ 07011
22519	DDDEVICES	Data Delay Device Inc. 385 Lakeview Ave. Clifton NJ 07011
22526	BERG	Berg Electronics Inc. Youk Expressway, New Cumberland, PA 17070 Phone 717-780-2000
22670	GM NAMPL	Namplate Inc. 2040 15TH Ave. West Seattle WA 98119
22978	MEASUR-SYS	Measurment Systems Inc. 121 Water St. Norwalk CT 06854 Phone 203-838-3561
23050	PRODCOMP	Product Components Corp. 30 Lorraine Ave. Mt Vernon NY 10553
23118	SAC	SAC Industry, Warwick RI
23172	ALPHA	Alpha Wire Corp. Torrance, CA ,711 Lidgerwood Ave. Elizabeth NJ 07207
23280	CUSTOMELEC	Custom Electronics Inc. Brown St., Omonta, NY 13820. Phone 607-432-3880
23366	ALVIN	Alvin & Co. P.O.Box 188 Windsor CT 06095 Phone 203-243-8891
23426	VENUSSCI	Venus Scientific Inc. 399 Smith St. Farmingdale NY 11735 Phone 516-293-4100

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23607	INTREYELET	International Screw & Bolt Co. 6512 N Clark St. Chicago IL 60626
23740	AMUNEAL	Amuneal Mfg. Corp. 4737 Darram Philadelphia PA 19124 Phone 215-535-3000
23875	M-TRON	M-Tron Industries Inc. 100 Douglas St. Yankton SD 57078
23880	SAE	SAE, 340 Martin Ave., Santa Clara, CA 95050
23934	POWERMATE	Power/Mate Corp. 514 S River St. Hackensack NJ 07601 Phone 201-440-3100
23936	PAMOTOR	Pamotor, Div. of Willaim J Purdy Co. 770 Airport Blvd., Burlingame, CA 94010 Phone 415-347-1203
24011	ELEC-CHEM	Electronized Chemicals Corp. So. Bedford St., Burlington, MA 01803 Phone 617-272-8761
24202	COMPUTERPR	Computer Products Inc. Braintree MA
24226	GOWANDA	Gowanda Elec. Corp. NO 1 Ind, PL Gowanda NY 14070 Phone 716-532-2234
24230	RO	RO Associates Inc. 246 Caspian Dr., Sunnyvale, CA 94088
24355	ANALGDEV1	Analog Devices Inc. P.O. Box 280, Norwood, MA 02062
24429	POWERTEC	Powertec Inc. 9168 Desota Ave., Chatsworth, CA 91311 Phone 818-882-0004
24444	GENSEMI	General Semiconductor Industries Inc. 2001 W 10TH PL Temple AZ 85281 Phone 602-968-3101
24446	GE	General Electric Co. 1260 Boston Ave. Bridgeport CT 06601 Phone 800-626-2000
24805	ELECTRO SO	ESC Inc. 14115 Chadron Ave. Hawthorne, CA 90250 Phone 213-973-8833
24885	GOULD-COMP	Lowndes Eng Co. Inc. 125 Blanchard St. P.O.Box 488 Valdosta GA 31601
24931	SPECCONN	Specilty Connector Co. Inc. P.O.Box D Greenwood IN 46142 Phone 327-738-2800
24972	AEG	Aeg-Telefunken Corp. RT 22 Orr Dr P.O.Box 3800 Somerville NJ 08876
25088	DICKSON	Siemens Corp. 186 Wood Ave. S Iselin NJ 08830
25088	SIEMENS	Siemens Corp. 186 Wood Ave., S. Iselin, NJ 08830
25472	GOODRICH	B F Goodrich Co. 500 S Main, Akron Ohio 44318 Phone 216-374-2123
25484	AERO CORP	Areoscience Inc. Santa Anna, CA Phone 714-991-9000
25706	DABURN	Daburn Electronics and Cable Corp. 70 Oak St. Norwood NJ 07648 Phone 201-768-5400
25795	WWGRAINGER	Grainger WW Inc. 5959 W Howard St. Chicago IL 60648 Phone 312-647-8900
25965	ELGAR	Elgar Corp. 9250 Brown Deer Rd. San Diego Ca. 92121 Phone 619-450-0085
26066	3M-2	Minnesota Mining and Mfg. Co. Industrial Tape Div., 3M Center, St. Paul, MN 55101 Phone 612-733-1110
26287	OPTIC-ELEC	Optical Electronics Inc. 3150 E 46th St. Tucson Az. 85734 Phone 602-624-8358
26365	GRC	Gries Reproducer Co. 125 Beechwood Ave. New Rochelle NY 10802
26483	MONSANTO	Monsanto Co. Elec. Test And Measurement Dept West Caldwell NJ
26654	VARADYNE	Varadyne Industries Inc. 1520 Cloverfield Blvd., Santa Monica, CA 90404
26667	TRIAD	Triad-Utrad Div., Litton Systems Inc. 305 N. Bryant St., Huntington, IN 46750

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26742	METHODE	Methode Elec. Inc. 7447 W Wilson Ave. Chicago IL 60656 Phone 312-867-9600
26784	NOBIS	Nobis Co. Inc. 132 W 3440 S Salt Lake City Ut 84115 Phone 801-466-4281
26806	AMERICANZE	American Zettler Inc. 16881 Hales Ave. Irvine, CA 92714
26863	ALLSTATESP	All State Inc. 1801 W Foster Ave. Chicago IL 60640 Phone 312-728-0525
26921	XEROX	Xerox Corp. P.O. Box 1540, Rochester, NY 14603
27014	NATSEMI	National Semiconductor Corp. 2900 Semiconductor Dr., Santa Clara, CA
27264	MOLEX-ITT	Molex Products Co. 5224 Katrine Ave., Downers Grove, IL 60515
27268	WOODLETS	Woodlets Inc. 90 Chemango St., Buffalo, NY 14213 Phone 800-231-1020
27802	VECTRON	Vectron Lab. Inc. 166 Glover Ave. Norwalk CT 06850 Phone 203-853-4433
28017	FLUORAMICS	Fluoramics Inc. 103 Pleasant Ave. Upper Saddle River NJ 07458 Phone 800-922-0075
28105	DEARBORN	Dearborn Wire and Cable Corp. 9299 Evenhouse Ave. Rosemont IL 60018
28198	POSITRONIC	Positronic Ind.Inc. 423 N Campbell St. P.O.Box 8247 Springfield MO 65801 Phone 800-641-4054
28432	GE-3	Generl Elec. Co. Dist, Equip. Plainville AT 06062
28478	DELTROL	Deltrol Control Div. Deltrol Corp. 2745 S 19TH St. Milwaukee WI 53215
28488	RACO	Raco Inc. 3902 W Sample St. P.O.Box 4002 South Bend IN 46634 Phone 219-234-7151
28520	HEYCO	Heyman Manufacturing Co. 147 Michigan Ave., Kenilworth, NJ 07033 Phone 800-526-4184
28564	REFAC	Refac Elec Corp. West Hill Rd. P.O.Box 809 Winsted CT 06098 Phone 203-379-2731
28803	POLUOPTICA	Poly-Optical Prod. Inc. 1815 E Carnegie Ave. Santa Ana, CA 92705
28891	ESSEX	United Technologies-Essex/IwI Div. 1510 Wall St. P.O.Box Fort Wayne IN 46801 Phone 219-461-4000
29005	STORM	Storm Prod. Co. 112 S Glasgow Ave. Inglewood, CA 90301 Phone 213-776-8141
29090	MECH/ENTER	Mechanical Enterprises Inc. 461 Carlisle Dr Werndow VA
29246	ARLON	Arlon Prod. Inc. 2811 S Harbor Blvd. P.O.Box 5260 Santa Ana, CA 92714 Phone 714-540-2811
29440	WINDRED	Windred M. Berg Inc. 499 Ocean Ave., East Rockaway, L.I., NY 11518 Phone 516-599-5010
29587	AMPHENOL2	Bunker Ramo-Eltra Corp. Amphenol Div. Industrial Chicago IL
29593	BUSSCO	Bussco Eng Inc. 119 Standard St. P.O.Box 707 EL Segundo CA Phone 213-322-6580
29700	EXXON	Exxon Co. U.S.A., P.O. Box 2180, Houston, TX 77252 Phone 713-656-6449
29988	CALEX	Calex Mfg. Co. Inc. 3355 Vincent Rd, Pleasant Hill, CA 94523 Phone 415-932-3911
2L642	SONY	Sony Corp. Of America 356 University Ave. Westwood MA 02090
2M146	KELVIN	Kelvin Asso. 14724 Ventura Blvd. Suite 1003 Sherman Oaks, CA 91403 Phone 818-990-1192
2M734	PANASONIC	Matsushita Electric Corp. One Panasonic Way, P.O.Box 1502 Secaucus, N.J. 07094

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
30010	VERO	Vero Elec Inc. Mauppage NY Phone 203-372-0038
30119	IDEAL	Ideal Industries Inc. Becker Place, Sycamore, IL 60178 Phone 815-895-5181
30149	STANDARD	Standard Crystal corp, 9940 E Baldwin PL EL Monte Ca 91731 Phone 800-423-4578
30161	AAVID-ENG	AAvid Eng. Inc. One Kool Path P.O.Box 400 Laconia NH 03247 Phone 603-524-4443
30331	INTERDATA	Concurrent Computer Corp. 2 Cresent PL Oceanport NJ Phone 201-870-5756
30635	INTRONICS	Intronics Inc. 57 Chapel st Newton MA 02158 Phone 617-694-4000
31218	AMI	Ami Ind.Inc. 3200 N Nevada Ave. P.O.Box 370 Colo. Spring Co. 80901 Phone 303-471-0020
31223	MICROPLAST	Micro Plastics Inc. 20821 Dearborn St. Chatworth, CA 91311 Phone 818-882-0244
31384	ENSCO	Engineering Service Co. DBA Ensco 17816 N 25TH Ave. Phoenix AZ Phone 602-863-0133
31413	TERADYNE	Teradyne Conn. Sys. Inc. 44 Simon St. Mashua NH 03060
31433	KEMET	Union Carbide Corp. Materials Systems Div., Components Dept., Highway 276 S. E. Greenville, SC 29606
31461	ELECTRO	Electro Adapter Inc. 20640 Nordhoff St. P.O.Box 2560 Chatsworht, CA 91311 Phone 818-998-1198
31640	CPS	CPS Prod. 110 Wolfe Rd Sunnyvale, CA 94086 Phone 408-738-0530
31669	PICO-ELECT	Pico Elec. Inc. 453 North Macquesten PKWY Mount Vernon NY 10552 Phone 800-431-1064
31722	LAMARTCORP	Lamar Inc. 71 Indel Ave.P.O.Box 251 Rancocas NJ 0873 Phone 609-267-6710
31757	MICROPAC	Micropac Ind. Inc. 905 E Walnut St. Garland TX 75040 Phone 214-272-3571
31781	EDAC	Edac Inc. 20 RAILSIDE Rd Don Mills Ont Canada M3A 1A4 Phone 416-445-2292
32077	PARAGON	Paragon Plastic Products Inc. 15521 Vermont Ave., Paramount, CA Phone 213-531-8340
32097	PERTEC-COM	Pertec Peripherals Corp. 9600 Irondale Ave. P.O.Box 2198 Chatsworht, CA 91311 Phone 818-882-0030
32293	INTERSIL	Intersil Inc. Sub of General Electirc Co. 10600 Ridgeview Court Cupertino, CA 95014 Phone 408-996-5526
32388	SPECTRONICS	Spectronics, 820 E. Arapho Rd., Richardson, TX 75081 Phone 214-234-4271
32440	ENGCOMP	Engineered Components Co. 3580 Sacramento Dr.San Luis Obispo, CA 93406
32559	BIVAR	Bivar Inc. Thomas St. Irvine, CA 92718 Phone 714-951-8808
32694	IRC/TRW	TRW Inc. TRW Optoelectonics Div. 1225 Tappan Circle Carrollton TX 75006 Phone 214-323-2200
32760	GRASSVALLE	Grass Valley Group Inc. 13024 Bitney Springs Rd. P.O.Box 1114 Grass Valley CA Phone 916-273-8421
32791	BOSCH	Bosch Robert Corp. Video Equipment Div. 2300 S 2300 West P.O.Box 31816 Salt Lake City UT 84131
32945	GARDNER	Gardner-Denver, 1333 Fulton St., Grand Haven, MI 49417
32997	BOURNS	Bourns Inc. Trimpot Prods. Div., 1200 Columbia Ave., Riverside, CA 92507
33095	SPECTRUMCO	Spectrum Control Inc. 2185 W Eight St. Erie PA 16505 Phone 8814-455-0966

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
33246	EPOXY-TECH	Epoxy Tech Inc. 14 Fortune Dr P.O.Box 567 Billerica MA 01821 Phone 617-667-3805
33256	HYBRID-SYS	Hybid Systems Corp. Suburban Ind. Park 22 Linnell Circle Billerica MA 01821 Phone 617-667-8700
33281	MATRIX-SYS	Matrix Systems Corp. 5177 N Douglas Fir Rd Calabasas, CA 91302 Phone 213-922-6776
33335	LOGICDYNAM	Logic dynamics Inc. 16709 S Gramercy Pl Gardena, CA 90247
33669	PRECTECH	Precision Tech Inc. 2970 S Richards St. P.O.Box 15454 Salt Lake City UT 84115
34031	COMPLAB	Analog Devices Inc. Computer Labs Div., 505 Edwardia Dr. Greensboro NC 27409
34148	FAIRCHILD	Fairchild Camera and Instrument Corp. 464 Ellis St., Mountain View, CA 94042
34333	SILICONGEN	Silicon General Inc. 11651 Monarch St., Garden Grove, CA 92641
34335	AMD	AMD 901 Thompson Pl. Sunnyvale, CA 94086
34371	HARRIS	Harris Semiconductor, Div., of Harris Corp. P.O. Box 883, Melbourne, FL 32901
34384	NORTON	Norton Co. Specialty Plastics Div. 960 Melan St. canal Fulton Oh 44614 Phone 617-795-5622
34641	INST.SPC	Instrument Specialties Co. Inc. 1111 Stanley Dr P.O.Box 365 Euless TX 76039
34649	INTEL	INTEL Corp. 3065 Bowers Ave., Santa Clara, CA 95051 Phone 408-970-1691
34718	EAGLEMAG	Eagle Magnetic Co. Incl, P.O. Box 24283, 7417 Crawfordsville Rd., Indianapolis, IN 46224
34730	CIRSTIK	Bishop Graphics Inc. 5388 Sterling Center Dr P.O.Box 5007 Westlake Village, CA 91359 Phone 818-991-2600
34785	DEK	DEK Inc. 1555 Hawthorne Ln., W. Chicago, IL 60185 Phone 312-377-2575
34899	FAIR-RITE	Fair-rite Prod.Corp. 1 Commercial Row Wallkell NY 12589 Phone 914-895-2055
35894	TOPPING-ELE	Topping Electronics Ltd., 1320 Ellesmere Rd., Scarborough, Ont, CAN M5C 1L6
37942	PRMALLORY	Mallory P. R. and Co. Inc. 3029 East Washington St., Indianapolis, IN 46206
37964	LINTECH	Linear Tech Inc. 970 Fraser Dr P.O.Box 489 Stn A Burlington Ont
38151	MARATHRON	Marathon Electric Mfg. Corp. 100 E Randolph St. Wausu WI 54401 Phone 715-675-3371
39428	MCMMASTER	McMaster-Carr Supply Co. P.O.Box 4355 Chicago IL 60680 Phone 312-834-9600
3D536	AIMSCO	AimSCO Inc. 4024 22nd Ave. W P.O.Box 99056 Seattle WA 98199 Phone 206-284-5563
40636	HERMMILLER	Miller Herman Inc. 8500 Byron Rd. Zeeland MI 49464 Phone 616-772-3300
44655	OHMITE	Ohmite Mfg. Co. 3601 W. Howard St., Skokie, IL 60076
45912	BROOKTREE	Brooktree Corp. 9950 Barnes Canyon Rd San Diego, CA 92121
46135	SYLVANIA	Roy Alan Sheet Metal Corp. 30 Vandam St. Brooklyn NY 11222
46384	PENN	Penn Engineering and Mfg. Corp. P.O. Box 311 Dylestown, PA 18901
49101	PRODUCTO	Producto Machine Co. 990 Housatohic Ave. P.O.Box 780 Bridgeport CT 06601 Phone 203-367-8675

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
49956	RAY	Raytheon Co. Executive Offices, 141 Spring St., Lexington Ma 02173
4A721	APPLETON	Appleton Elec Co. Los Angeles CA
4Y520	ROSE ENCLC	Rose Enclosures Sys Inc. 12140 Parklawn Dr Rockville MD 20852 Phone 301-984-3770
50088	MOSTEK	Mostek Corp. 1400 Upfield Dr., Carrollton, TX 75006 Phone 214-466-6000
50101	FREQ-SOURC	Frequency Sources Inc. Semi. Div. 16 Maple Rd Chelmsford MA 01824 Phone 617-256-4113
50185	POWER-PROD	Power Products Corp, Harold St. P.O.Box 467 West Haven CT. 06516
50347	OPCOA	Opcoa, Div. of IDS, 330 Talmadge Rd., Edison NJ 08817
50356	TEAC	Teac Corp. Of Amerixa Industrial Prod, Div. 7733 Telegraph Rd Montebello, CA 90640
50364	MONOMEN	Monolithic Memories Inc. 1165 E. Arques Ave., Sunnyvale, CA 94086 Phone 408-970-9700
50369	ACTIVE COM	Active and Passive Components Inc. 148 Sweet Hollow Rd Old Bethpage NY 11804
50516	CLAROSTAT	Clarostat-Richmond Inc. Mfg. Co. South Front St. Richmond ME 04357 Phone 603-742-1120
50522	MONSANTA	Monsanta Co. Electronic Special Products, 3400 Hillview Ave., Palo Alto, CA 94304
50579	LITRONIX	Litronix Inc. 19000 Homestead Rd Cupertino Ca 95014
50638	NORTHLAKE	NorthLake Engineering Inc. 999 Antia Ave. Antioch IL 60002
50664	SI	System Ind. 1855 Barber Lane Milpitas, CA 95035 Phone 408-942-1212
50721	DATEL	Datel Systems Inc. 1020 Turnpike St., Canton, MA 02021 Phone 617-339-9341
50804	VERSATEC	Versatec Inc. A Xerox Co. 2805 Bower Ave. Santa Clara, CA 95051 Phone 800-538-6468
50829	SEMI-CIRCU	Semiconductor Circuits Inc, 49 Range Rd. Windham NH 03087
50841	AMS	Advance Memory Systems Inc. 1276 Hammerwood Ave. Sunnyvale Ca 94086
50934	TRAN-TEC	Tran-Tec Corp. West Side Industrial Park, P.O.Box 1044 Columbus NE 68601
51054	SORENSEN	Sorenson Lighted Controls Inc. 530 Oakwood Ave. West Hartford CT 06110 Phone 203-527-3092
51089	TESTLINE	Fairchild Camera & Instruments Corp. PCB-Test Testline Div., 1400 White Dr., Titusville FL 32780
51106	STAND POWER	Standard Power Inc. 1400 S Village Way Santa Ana, CA 92705 Phone 801-539-0227
51167	ARIES	Aries Eletronics Inc. 62 Trenton Ave. P.O. Box 130 Frenchtown NY 08825 Phone 201-996-6841
51202	CONTACT SY	Contact Systems Inc. Miry Brook Rd Danbury CT 06310
51312	CAMBEX/Corp	Cambex Corp. 360 Secound Ave. Waltham MA 02154
51334	EXCEL	Excel Products Co. Inc. 700 Joyce Kilmer Ave. P.O.Box 168 New Brunswick NJ 08903
51372	VERBATIM	Verbaton Corp. 323 Soquel Way Sunnyvale, CA 94086
51406	MURATA	Murata Erie North America 3002 A Kingston Court Marietta GA 30067
51420	COMPU-LITE	Compu-lite Corp. 711-F12 W 17th st Costa Mesa, CA 92627
51506	ASM	Accurate Screw Machine Co. 19 Baltimore St. Natley NJ 07110
51628	TEC	TEC Inc. 2727 No. Fairview Ave., Tucson, AZ 85705

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
51640	ANALGDEV	Analog Devices Inc. Micro. Div. 829 Woburn St. Wilmington MA 01887
51642	CENTRE	Centre Engineering Inc. 2820 E College Ave. State College PA 16801 Phone 814-237-0321
51651	KMS	Kennedy M S Corp. 8170 Thompson Rd Clay NY 13041
51705	ICO-RAL	ICO/Rally 2575 Bayshore Rd P.O. Box 10104 Palo Alto, CA 94303
52063	EXAR	Exar Integrated Systems 750 Palomar Ave. P.O.Box 62229 Sunnyvale, CA 94088
52072	CIRCUIT-A	Circuit Assembly Corp. 18 Thomas St. Irvine, CA 92714
52094	CALMARK	Calmark Corp. 4915 Walnut Grove Ave. San Gabriel, CA 91776
52152	3M-4	Minnesota Mining and Mfg. Co. Div. 3m CTR St. Paul MN 55144
52251	DICEON	Diceon Electronics Inc. Irvine CA
52297	DELTEC	Gould Inc. Electronics Power Conversion 2727 Kurtz St. San Diego, CA 92110 Phone 619-291-4211
52327	3M-1	Minnesota Mining and Mfg. Co. St. Paul, MINN 55144
52346	JENSEN	Jensen Tools and Alloys, 1230 S. Priest Dr., P.O. Box 22030, Tempe, Arizona 85282 Phone 602-968-6241
52451	INTL-POWER	International Power Machines Corp. 3328 Executive Blvd. P.O. Box 746 Mesquite TX
52458	MAGNUM	Magnum Electric Corp. 6385 Dixie Hwy Erie MI 48133
52519	KEPRO	Kepron Circuit Systems Inc. 630 Axminster Dr Fenton MO 63026
52531	HITACHI	Hitachi Metals International LDT Neff Rd. Emore MI 48829 Phone 517-427-5151
52541	BEEHIVE	Beehive International 4910 Amelia Earhart Dr Salt Lake City UT 84115 Phone 355-6000
52680	COMPTRWRAP	Computerwrap Corp. Burlington MA
52763	ROEDERSTEN	Roedersten, 67 Albany St., Cazenovia, NY 13035 Phone 615-892-0291
52763	STETTRNER	Stettner Electronics Inc. 6135 Airways Blvd. P.O.Box 21947 Chattanooga TN 37421 Phone 615-892-0291
52763	STETTRUSH	Stettner Elec. Inc. 6135 Airway Blvd. P.O.Box 21947 Chattanooga TN 37421 Phone 615-892-0291
52769	GOODMAN	Goodman Electronic Inc. 134 Fulton Ave. Garden City Park NY 11040
52785	ELECC-SYS	Electronic Sys. And Prog. Inc. 741 Flynn Rd Camarillo, CA 93010 Phone 805-967-0909
52814	TECH-ETCH	Tech-etch Inc. 45 Aldrin Rd Plymouth MA 02360 Phone 617-747-0300
52840	WEATERNDIG	Western Digital Corp. 3128 Red Hill Ave. Costa Mesa, CA 92626
52895	GOULD DATA	Gould Inc. Data Systems Div., Newton MA
53279	XENTEK	Xentek Inc. 760 Shadowridge Dr P.O. Box 1987 Vista, CA 92083 Phone 619-727-0940
53332	SEACOR	Seacor Inc. 123 Woodland Ave. P.O.Box 541 Westwood NJ 07675 Phone 201-666-5600
53387	3-M	Minnesota Mining and Mfg. Co. Electronic Products Div., 3M Center, St. Paul, MN 55101
53421	TYTON	Tyton Corp. 7930 N Paulkner Rd. P.O.Box 23055 Milwaukee WI 53223
53628	AMER PLAST	American Plasticraft Co, 814 N Sacramento Blvd. Chicago IL 60622
53649	SPEC TANT	Special Tantalum Components Corp. El Paso TX

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
53669	HUGHS	Hughs Aircraft Co. Connecting Device Div., 17150 Von Karmen Ave. Irvine, CA 92714
53673	NPC	Nucleonic Products Co. Inc. 6660 Variel Ave., P.O. Box 1454, Conoga Park, CA 91304
53719	LHRESEARCH	L.H. Research Inc. 14402 Franklin Ave., Tustin, CA 92680
53774	MISCOE	Misco Inc. 2500 Ludelle St. P.O.Box 50667 Fort Worth TX Phone 817-536-5606
53839	CAMPBELL	Campbell Scientific Co. P.O. Box 551, Logan, UT 84321
53848	SMC	Standard Micro. Corp. 35 Marcus Blvd. Hauppauge NY 11787 Phone 516-273-3100
53909	COLUMBIA	Avnet Inc. Columbia Electronic Cables Div., 11 Cove St. New Bedford MA 02744
53919	PASTERNAK	Pasternack Enterprises 22017 Bushard St. Huntington Beach, CA 92646
53938	E&S	Evans & Sutherland, 580 Arapeen Dr. Salt Lake City, UT 84108 Phone 801-582-5847
53984	AHAMTOR	Chemscope Corp. 3200 E Randol Mill Rd. Arlington TX 76011
53988	REDIFFUSION	Rediffusion Simulation Inc. 2200 Arlington Downs Rd Arlington TX 76011 Phone 817-496-8411
53998	POWERPAC	Power Pac Inc. 32 Meadow street so Morwalk, CT 06854
54098	RELIABILITY	Reliability Inc. 5325 Glenmont St. Houston TX 77036 Phone 415-964-7200
54138	ROCKWOOD	Rockwood Mfg. Corp. State Rd 26 West Rossville IN 46065
54186	MICROPOWER	Micro Power Systems Inc. 3100 Alfred St., Santa Clara Ca. 95050
54187	D COMP CNTL	Digital Computer Control Inc. 12 Gloria Land Caldwell NJ 07006
54193	DATA I/O	Data I/O Corp. 10525 Willows Rd NE/C-46 Redmond WA 98052
54331	MRPRO	Monitor Products Co. Inc. 502 Del Monte Oceanside, CA 92054 Phone 800-426-1045
54407	POWERONE	Power-One Inc. 740 Calle Plano Dr., Camarillo, CA. 08810
54453	SULLINS	Sullins Elec. Corp. 801 E Mission Rd. P.O.Box 757 San Marcos, CA
54473	MATSUSHITA	Matsushita Electric Corp. One Panasonic Way, Secaucus, N.J. 07094
54487	MICRONETIC	Micrometics Inc. 36 Oak St. Morwood NJ 07648 Phone 201-767-1320
54527	SHELL	Shell Oil Co. P.O. Box 2463, 1 Shell Plaza, Houston, TX 77001 Phone 713-241-420
54659	AMERICANIN	American Switch Corp. 134 Water St. Wakefield MA 01880
54724	DISPLAYCOM	Display Components Inc. 550 Newton Rd Littleton MA 01460 Phone 617-692-6000
54724	DISPLAYCOM	Discom Display Components 334 Littleton Rd Westfork MA 01886 Phone 617-692-6000
54804	DATATEX	Datatex Corp. 10935 S Wilcrest Dr Houston TX 77099 Phone 713-495-3100
54869	PIHER	Piher Inter.corp 565 W Golf Rd Arlington Height IL 60005
54893	HEWLETPACK	Hewlett-Packard Co. Microwave Semi.Div 350 W Trimble Rd San Jose, CA 95131 Phone 408-263-7500
55051	PROLOG	PRO-LOG Corp. 2411 Garden Rd., Monterey, CA 93940
55114	AMIDON	Amidon Associates 12033 Otsego St. North Hollywood, CA 91607
55170	SUMMAGRAPH	Summagraphics Corp. 777 State St. EXT P.O.Box 781 Fairfield CT 06430 Phone 203-348-1344

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55175	SAVA-INDUS	Sava Ind Inc. 70 Riverdale Rd P.O.Box 30 Riverdale NJ 07457 Phone 201-835-0882
55322	SAMTEC	Samtec Inc. 810 Progress Blvd, New Albany IN 47150
55335	JKL	JKL Components Corp. 2226 Barry Ave. Los Angeles, CA 90064 Phone 213-896-0019
55414	AMISTAR	Amistar Corp. 2675 Skypark Dr Unit 203 Torrance, CA 90305
55420	DYSAN	Dysan Corp. 5100 Patrick Henry Dr Santa Clara, CA 9505 Phone 408-988-3472
55442	OPTO 22	Opto 22, 15461 Springdale St., Huntington Beach, CA 92649
55494	BELDENI	Copper Belden Elec.wire and Cable Inc. Saxon Hill Industrial PK Thompson Dr Essex Junction VT 05452 Phone 802-878-3500
55566	RAF	RAF Electronics Hardware Inc. 95 Silvermine RD, Seymour CT 06483
55576	SYNERTEK	Synertek 3001 Stender Way Santa Clara, CA 95051
55616	ELFAB	Elfab Corp. 4200 Wiley Post Rd., Dallas TX 75234
55680	NICHICON	Nichicon America Corp. 927 E State PKY Schaumburg IL 60195
55714	ADVELEDS	Advanced Electronics Design Inc. P.O. Box 61779, 440 Potrero Ave., Sunnyvale, CA 94086
55847	FIDELITY	Fidelity Products Co. 5601 International Parkway, New Hope NM 55284
55878	KRAFT-SYS	Kraft Systems Inc. 450 W California Ave. P.O.Box 1268 Vista CA
55900	UNITEDFOAM	United Foam Plastics Corp. 172 E Main St. Georgetown MA 01833 Phone 617-352-2200
55916	REICH ASSO	Reick Associates Inc, 902 Ave. K Suite 106 Plano TX 75074
55944	FALMAT	Falmat Inc. 24003 Frampton Ave., Harbor City, CA 90710
55951	INTERLOK	Interlock, Div. of William J Purdy Co. 770 Airport Blvd. Burlington, CA 94010
56252	ENM COMPANY	ENM Co. Chicago IL
56262	NORDEX	Nordex Inc. 226 White St. Danbury CT 06810 Phone 203-792-9050
56269	XKD	XKD Corp. Systems 101 Cooper Court Los Gatos, CA 95030 Phone 408-395-3700
56289	SPRAGUE	Sprague Electronic Co. North Adams, MA 01247
56352	COLE-FLEX	Cole-Flex Corp. 91 Cabot St. West Babylon NY 11704
56368	TALOSSYS	Talos Systems Inc. 7419 E Helm Dr., Scottsdale AZ 85260
56481	SHUGART	Shugart Asso. Sub Of Xerox Corp. 475 Oakmead PKY Sunnyvale, CA 94086 Phone 408-733-0100
56504	FLPTSYS	Floating Point Systems Inc. P.O.Box 23489 Portland OR. 91605 Phone 503-641-3151
56560	QUME	Qume Corp. 2350 Qume Dr., P.O. Box 50039, San Jose, CA 95150
56563	ALATEC	Alatec Products 12747 Saticoy St. North Hollywood, CA 91605
56637	RCD	RCD Components Inc. 330 Bedford St. Manchester NH 03101
56652	MICROELECT	Micro Elec. Corp. 3370 Montgemery Dr Santa Clara, CA 95051 Phone 408-988-1101
56708	ZILOG	Zilog Inc. 1315 Dell Ave. Campbell, CA 95008 Phone 408-370-5210
56878	UNBRAKO	SPS Technologies Inc. Aerospace and Industrial Products Div. Highland Ave. Jenkintown PA 19046 Phone 215-860-3000
56901	XYRONIC	Xytron Inc. 13010 San Fernando Rd. Sylmar, CA 91342
56962	GTE	GTE Sylvania Inc. Miniature Lighting Products Group, West Main St., Hillsboro, NH 03244

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56987	CAPTIVFAST	Captive Fasteners Corp. 115 Bauer Dr Oakland NJ 07436
57003	LASTOMERIC	Chomerics Inc. 23839 S Banning Blvd. Carson, CA 90745 Phone 213-532-3990
57026	ENDICOTT	Endicott Coil Co. Inc. 24 Charlotte St. Binghamton P.O.Box 67 NY 13905 Phone 607-797-1263
57171	VALTEC-1	Valtec Corp. Fiber Optics Div., 99 Wartwell St. West Boylston Ma. 01583
57177	PROMPTUSEL	Promptus Elec Hardware Inc. 520 Homestand Ave. MT. Vernon NY 10550 Phone 914-699-47000
57668	R-OHM	R-Ohm Corp. 16931 Milliken Ave. Irvine, CA 92715
57672	ANIXTER	Anixter Brother Inc. 4711 Golf Rd Skokie IL 60076.
57693	OSCILLATER	Oscillater, Corp. 620 N Lindenwood DR Olathe KS 60622 Phone 913-829-1777
57856	KEL-AM	Kel-Am Inc. Hwy 54 South PO Box 313 Eldon MO 65026
57885	INTERNATEYE	International Eyelet Inc. 210 E Ortega St, P.O.Box 4428 Santa Barbara, CA 93103
58361	GENINST3	General Instrument Corp. OptoElectronics Div. 3400 Hillview Ave. Palo Alto, CA 94304 Phone 415-493-0400
58422	BENSON	Benson Inc. 385 Ravendale Dr., Mountain View, CA 94043 Phone 408-945-1000
58451	PREC LAMP	Precision Lamp Inc. 480 Aaron Dr Cotati, CA 94928 Phone 707-792-0333
58839	APPLE	Apple Computer Inc. 10260 Bandley Dr. Cuption, CA 95016
59414	DIBBLE	Dibble Electronics Inc. 3670 Ruffin Rd., San Diego, CA 92123
59474	JEFFERS	Jeffers Elec. Inc. 945 Grand Ave. Grand Plaza P.O. Box 1692 Nogales AZ 85621
59610	SOURIAU	Souriau Inc. 25158 Stanford Ave. Valencia, CA 91355
59621	TRW/LSI	TRW/LSI Inc. P.O.Box 2472 LA Jolla, CA 92038
59625	QSI	Qualidyne Systems Inc. 3055 Del Sol Blvd. San Diego, CA 92154 Phone 714-575-4400
59640	SUPERTEX	Supertex Inc. 1225 Bordeaux Dr Sunnyvale, CA 94086 Phone 408-744-0100
59659	REMTEK	Remtek Corp. 46107 Landing PKY Fremont Ca 94538 Phone 415-490-3999
59730	T&B	T and B/Thomas and Betts, Div. Thomas and Betts Corp. Hwy 218 S Iowa City, IA 52240
59942	U S MICRO	US Microtek Components 11144 Penrose st. Unit 7 Sun Valley, CA 91352 Phone 213-767-6770
59951	BLACK BOX	Black Box Corp. Maybiew Td AT Park Dr P.O.Box 12800 Pittsburgh PA 3662 Phone 412-746-5500
59964	TELEVIDOE	Televideo Systems Inc. 1170 Morse Ave. Sunnyvale CA Phone 408-745-7760
59993	INTL-RECT	International Rectifier, Semiconductor Div. 233 Kanas St. El Segundo Ca 90245 Phone 213-322-3331
5A626	DELCO-WIRE	Delco Elec. Corp. Keystone Ind Park 257 Rittenhouse Circle Bristol PA 19007 Phone 215-785-0511
5F520	PANEL-COMP	Panel Components Corp. 1360 N Button Ave. P.O. Box 6626 Santa Rosa, CA 95406 Phone 707-523-0600
60024	APAX MICRO	Apax Microtechnology Corp. 5980 N Shannon Rd. Tucson AZ 85741 Phone 602-742-8600
60046	POWERMAT	Power Dynamics Inc. 59 Lakesine Ave. P.O. Box 539 West Orange NJ 07052 Phone 201-736-5722

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
60069	CARTCHTEC	Carroll Touch Technology Corp. 2902, Farber Dr., Champaign IL 61812 Phone 512-244-3500
60245	GLOB-BAT	Johnson Controls Inc. Globle Battery Div. Milwaukee WI 5757 N Green Bay Ave. P.O.Box 591 Mukwaykee WI 53201
60262	HOBART	Coil-Tran Corp. Habart Electronic. Div. 160 S Illinois St. Hobart IN 46342 Phone 219-947-1555
60380	TORRINGTON	Torrington Co. The Bearings Div. 59 Field St. P.O. Box 1008 Torrington CT Phone 203-482-9511
60381	NATELECT	National Elec, Cable Div. Co. 16566 SW 72nd Ave. Portland OR 97213 Phone 503-620-9400
60393	PRCN-RES	Precision Resistive Prod. Inc. 655 Main St. P.O. Box 154 Mediapolis IA 52637 Phone 319-194-9131
60395	XICOR	Xicor Inc. 851 Buckeye CT Milpitas, CA 95035 Phone 408-946-6920
60399	TORIN	Torin Corp. Kennedy Dr., Torrington CT 06790 Phone 203-753-6000
60430	ADI-ELECTR	ADI Elec. Inc. 160 Wilbur PL Bohemia NY Phone 516-567-3555
60856	ETRI	Etri Inc. 608 Broome ST.P.O.Box 568 Monroe NC
60911	INMOS	Immos Corp. 1110 Bayfield Dr P o Box Colo Spring Co. 80935 Phone 303-630-4590
60943	CRIMSON	Crimson Semi.Inc. 460 West 34Th St. 12Th floor NY NY Phone 800-431-5018
61078	PERMABOND	Permabond International Corp. 480 S Dean St. Englewood NJ 07631
61271	FUJITSU	Fujitsu Microelectronics Inc. 2985 Kifer Rd Snata Clara, CA 95051
61298	CIPHER-DAT	Cipher Data Prod. Inc. 9715 Business Park Ave. San Diego, CA 92131 Phone 619-693-7200
61394	SEEQ	Seeq Tech. Inc, 1849 Fortune Dr San Jose, CA 95131 Phone 408-262-5041
61403	MICONICS	Miconics Ind Inc. Div. Of Bell Ind. 335 Oser Ave. Hauppauge Ny 11788
61441	SARONIX	Saronix 4010 Transport St. Palo Alto, CA 94303
61638	ADVANCEDIN	Advance Interconnections Corp. 5 Div. St. Warwick RI 02818
61685	INMAC	Inmac 130 S Wolfe Rd Sunnyvale ca 94086
61706	EAO-SWITH	EAO Switch Corp. 198 Pepes Farm Rd. P.O.Box 552 M O Milford CT
61772	IDT	Integrated Device Technology 3236 Scott Blvd. Santa Clara, CA 95051
61802	TOSHIBA	Toshiba Inter, Industrial Div. 13131 W Little York Rd P.O.Box 40906 Houston TX 77041
61837	TOPAZ	Semi Processes Inc. 1971 N Capitol Ave. San Jose, CA 95132 Phone 408-945-1500
61840	ARTEL-COMM	Artel Comm. Corp. 93 Grand St. P.O.Box 100 Worester MA 01602
61852	BOSCHERT	Boschert Inc. 384 Santa Trinia Ave. Sunnyvale, CA 94086
61857	SAN-O	San-o Industrial Corp. 85 Orville Dr P.O.Box 511 Bohemia Long Island NY 11716 Phone 516-567-5556
61892	NEC	Nec Electronics USA Inc. Micr. Div. Adv. Circuits Eng, 1 Natick MA 01760
61935	SCHURTER	Schurter Inc. 1016 Clegg Court Petallma, CA 94952
62132	MANHATTAN	Manhattan elec. Cable Corp. 400 Willow St. P.O.Box 756 Bridgeton NJ 08302 Phone 609-455-6900

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
62292	EBM	EBM Industries Inc. 537 New Britain Ave. Unionville CT 06085
62305	TELMOS INC	Telmos Inc. 740 Kifer Rd. Sunnyvale, CA 94086 Phone 408-732-4882
62367	PRIAM CORP	Priam Corp3096 Orchard Dr San Jose, CA 95134
62462	CAPAR	Capar Components Corp. 25 Dubon Court Farmingdale NY 11735
62703	VARO-SEMI	Varo Quality Semic Inc. 1000 W Shilon Rd P.O. Box 469013 Garland TX 75046 Phone 214-487-4300
62712	SEIKO	Seiko Instruments USA 2990 Lomita Blvd. Torrance, CA 90505 Phone 213-530-8777
62978	GTCO	GTCO Corp. 1055 First St. Rockville MD 20850 Phone 301-219-9550
62994	WEITEK	Weitek Corp. 1060 E Arques Sunnyvale, CA 94086 Santa Clara, CA 93674 Phone 408-738-8400
63000	ARCHIVECOR	Archive Corp. 3540 Cadillac Ave. Costa Mesa, CA 92626 Phone 714-641-0279
63060	SHELL-GLB	Sheller - Globe Corp. Victoreen Instrument Div., 10101 Woodland Ave., Cleveland, OH 44104
63060	VICTOREEN	Victoreen Instrument Div. 10101 Woodland Ave. Cleveland OH 44104
63219	AMCC	Applied Micro Circuits Corp. 5502 Oberlin Dr San Diego, CA 92121 Phone 619-450-9333
63281	LSI	LSI Logic Corp. 1601 MCCarthy Blvd. Milpitas CA Phone 408-263-9494
64762	ELANTEC	Elantec Inc. 1996 Tarob Court Milpitas, CA 95035 Phone 408-945-1323
64959	AT&T	AT&T Technologies Inc. Gov.Sys, Guilford Center P.O.Box 20046 Greensoro NC 27420 Phone 919-279-7000
65155	JOULEPOWER	Joule Power Inc. Jouce Industrial PK Summer Rd. Boxborough MA 01719 Phone 617-263-9712
65338	COMPUYROL	Computrol Div. of Kidde Automated Systems Inc. Ridgefields CT Phone 203-544-9371
65786	CYPRESS	Cypress Sem.3901 N 1 St. San Jose, CA 95134 Phone 408-943-2600
65832	AMERICANRE	American Research and Engineering 1500 Executive Dr Elgin IL 60120 Phone 312-888-7200
65896	LOGIC-DEV	Logic Devices Inc. 628 E Evelyn Ave. Sunnyvale, CA 94086 Phone 408-720-8630
65992	APOLLO-COM	Apollo Computer Inc. 330 Billerica Rd. Chelmsford MA 01824 Phone 617-256-6600
66095	MICRONTECH	Micron Technology Inc. Sys. Group 2805 E Coulumbia Rd Boise ID 83706
66302	VTI	VLSI Technology Inc. 1109 McKay Dr San Jose, CA 95131 Phone 409-943-3047
66579	WAFER-SCAL	Wafer scale Integration Inc. 47280 Kato Rd. Fremont, CA 94533
66675	LATTICE	Lattice Semiconductor Corp. 15400 NW Greenbriar PKY Beaverton 97006
66958	SGS-ATES	SGS Semiconductor Corp. 1000 E Bell Rd. Phoenix AZ 85022 Phone 602-867-6100
67283	DECO	Digital Electronics Corp. 26142 Eden Landing Rd. Hayward, CA 94545
6S699	DESIGN-TECH	Design Technology 7760 Vickers St. Suite B San Diego, CA 92111

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
70079	ACCO	Acheson Colloids Co. Div. of Acheson Industries Inc. 1600 Wash Ave. P.O.Box 288 Port Huron MI 48060 Phone 313-948-5581
70318	ALLMETAL	Allmetal Screw Products Co. Inc. 821 Stewart Ave. Garden City NY 11530
70472	BARNES	Barnes Group Inc. 18 Main St., Bristol, CT 06010
70485	ATL INDIA	Atlantic India Rubber Works Inc. 571 W Polk St. Chicago IL 60607
70563	AMPERITE	Amperite Co. 600 Palisades Ave. Union City NJ 07087
70611	ARKLES	Ark-Les Corp. 51 Water Watertown MA 02172
70655	AUTO	Auto Vehicle Parts Co. 1032 Saratoga, Newport, KY 41071 Phone 606-341-6450
70661	ATLASSOUND	Atlas Sound Div. Of American Trading and Prod. Corp. Pomeroy Rd Parsippany NJ 07054
70903	BELDEN3	Belden Corp. 2000 S. Batavia Ave., Geneva, IL 60134
71002	BIRNBACH	Birnback Co. Inc. 177 Hanse Ave., Freeport Long Island, NY 11520 Phone 516-420-0400
71034	BLILEY	Bliley Elec. Co. 2545 W Grandview Blvd. Erie PA16508
71041	BOSTONGEAR	Bostom Gear Inc. A Incom International Inc. B J 3714
71124	BRAND-REX	Brand-Rex Co. P.O. Box 498, Rt. 32, Williamantic, CT 06226 Phone 203-456-800
71183	BRYANT	Bryant Elec Co. Los Angeles CA
71218	BUD INDS	Bud Industries Inc. 4605 E 355Th St. Willoughby OH 44094 Phone 216-946-3200
71279	CAMBION	Cambridge Thermionic Corp. 445 Concord Ave., Combridge, MA 02138 Phone 617-491-5400
71286	REXNORD	Rexnord Inc. Specialtu Fastener Div. 601 RT 46 West P.O. Box 601 Hasbrouck Heights NJ 07604 Phone 201-288-8300
71400	BUSSMAN	Bussman Mfg., Div. McGraw-Edison Co. P.O.Box 14460, 502 Earth City Plaza, St. Louis, MO 63178 Phone 314-394-2877
71450	CTS*	CTS Corp. 905N West Blvd., Elkhart, IN 46514
71468	ITT CANNON	ITT Cannon Electric, 666 E. Dyer Rd, Santa Ana, CA 92705 Phone 714-754-2140
71482	GENINST5	General Instrument Corp. 3101 W Pratt Blvd. Chicago IL 60645 Phone 312-262-7700
71590	CENTRALAB1	Centralab Electronics, Div. of Globe-Union Inc. P.O. Box 858, Hwy. 20 W., Fort Dodge, IA 50501
71676	CONT-FELT	Continental Felt Co. 22-26 West 15TH st.NY,NY 10011
71700	GENCABLE	Carol Cable Co. Inc. 160 Water St. Williamstowm MA 01267
71744	GENINST	General Instrument Corp. Rectifier Div. Auchsmith NY
71785	TRW CINCH	TRW Cinch Connectors, 1501 Morse Ave., Elk Grove Phone312-439-8800 Village, IL 60007
71823	DARNELL	Darnell Corp. LTD 12000 Woodruff Ave.P.O.Box 649 Downey, CA 90241
71984	DOWCORNING	Dow Corning Corp. S. Saginaw Rd., Midland, MI 48640
72228	CONT-SCREW	Continental Screw Co. Div. of Amtel Inc. 459 Mt. Pleasant, New Bedford, MA 02742
72259	NYTRONICS	Nytronics Inc. 475 Park Ave. S New York NY 10016
72619	DIALIGHT	Dialight Div. Ampere Electronic Corp. 203 Harrison Pl., Brooklyn, NY 11237 Phone 718-497-7600
72656	GEN-ELEC	Indiana General Electronic Products, A Div. of Electronic Memories and Magnetics Corp. Crows Mill Rd., Keasoy, NJ 08832

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
72699	GENINST1	General Instrument Corp. 225 Allwood Rd. P.O. Box 1201 Clifton NJ 07012 Phone 201-779-3000
72794	DZUS	DZus Fastener Co. Inc. 425 Union Blvd. West Islip NY 11795 Phone 516-669-0494
72954	CAROL	Carolina Steel and Wire Corp. I-20 and SC 6, Lexington, SC 29072
72962	ESNA	Esna, Div. of Amerace Corp. 2330 Vauxhill Rd., Union, NJ 07083 Phone 201-686-6000
72982	ERIE	Erie Technological Products Inc. 644 W. 12th St., Erie, PA 16512
73138	BECKMAN	Beckman Instruments Inc. Helipot Div., 2500 Harbor Blvd, Fullerton, CA 92634 Phone 716-825-7900
73168	FENWALELEC	Fenwal Inc. Dive of Kidde Inc. 400 Main St. Ashland MA 01721
73559	CARLING	Carlingswitch Inc. 505 New Park Ave., West Hartford, CT 06110
73612	CONSOLWIRE	Consolidated Elec. Wire and Cable Corp. 1104 King st Franklin Park IL 60131 Phone 312-455-8830
73631	CURTIS-IND	Curtis Industries Inc. 8000 W. Tower Ave., Milwaukee, WI 53223 Phone 414-535-1500
73674	DURAKOOL	Durakool Inc. 1010 N Main St. P.O.Box Elkhart IN 46515
73734	FEDSCRPROD	Federal Screw Products. Inc. 3917 N Kedzie Ave. Chicago IL 60618
73831	HAMMOND	Hammond Mfg. Co. LTD 394 Edimburg Rd N Guelph Ont Phone 716-894-5710
73949	GIARDIAN	Guardian Electroic Mfg. Co. 1550 W Carroll Ave. Chicago IL 60607
73957	GROOV-PIN	Groov-Pin Corp. 1125 Hendriks Causeway, Ridgefield, NJ 07657 Phone 201-945-6780
74193	HEINEMAN	Heinemann Electric Co. P.O. Box 8428, 2600 Brunswick Pike, Trenton, NJ 08650 Phone 609-882-4800
74240	ROME CABLE	Rome Cable Corp. 421 Ridge St. Rome NY 13440 Phone 315-337-3000
74400	STEWART-WA	Stewart Warner Corp. Yale Blvd. and Ash St. SpringFied IL 62705 Phone 217-753-7799
74545	HUBBELL H	Hubbell Harvey Inc. 584 Derby Milford Rd., Orange, CT 06477
74840	ILL/CAP	ILLinois Capaitor Inc. 3757 W Touhy Ave. Lincolnwood IL 60645 Phone 312-675-1760
74861	MIDWEC	Industrial Condenser Corp. 4902 Tollview Dr. Roofing Meadows IL 60008 Phone 312-398-6600
74868	AMPHENOL1	Allied Corp. Amphenol Products Div. 33 E Franklin St. Danbury CT 06810 Phone 203-743-9272
74868	BUNKERRAMO	Bunker Ramo Corp. Amphenol RF. Div., 33 E. Franklin St., Danbury, CT 06810 Phone 203-743-9272
74970	EFJOHNSON	Johnson E. F. Co. 299 10th Ave., S.W. Waseco, MN 56093
75037	3M-3	Minnesota Mining and Mfg. Co. Electro Products Div., 3M Center, St. Paul, MN 55101 Phone 312-893-9000
75042	TRW (RES)	TRW Electronic Components, IRC Fixed Resistors, Philadelphia Div., 401 N. Broad St., Philadelphia, PA 19108
75263	KEYSTONECA	Keystone Carbon Co. 1935 State St. Marys PA 15857
75272	KMC-STAMP	KMC Stampings Div. Of Kickhaefer Mfg. Co. 1221 S Park St. Port Washington WI 53074
75279	GEORGIA-HI	Georgia Hi-Tech Fab Inc. 2001 Commerce Dr P.O.Box 548 Vidalia GA 30474 Phone 912-537-1698

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
75381	KULKA	Kulka Electric Corp. 633-643 S. Fulton Ave., Mt. Vernon, NY 10550
75582	LEVITON	Leviton Mfg. Co. 59-25 Little Neck PKWY Little Neck NY 11362
75596	PRFM-SEMI	Patterson Lee Co. 1022 Robinson St. Orlando FL 32805
75915	LITTLEFUSE	Little Fuse Inc. 800 E. Northwest Hwy., Des Plaines, IL 60016 Phone 312-824-1188
76005	KINEMATICS	Lord Kinematics Lord Corp. 1635 W. 12th Street, Erie, PA 16512 Phone 814-456-8511
76385	MINORRUBB	Minor Rubber Co. Inc. 49 Ackerman St. Bloomfield NJ 07003 Phone 201-338-6800
76493	J.W.MILLER	Bell Industries Inc. Miller J. W. DW., P.O. Box 5825, 19070 Reyes Ave., Compton, CA 90224 Phone 213-537-5200
77342	POTTBR	AMF Inc. Potter and Bumfield Div., 200 Richland Creek Dr., Princeton, IN 47670 Phone 812-386-2096
78189	ILLTOOL	Illinois Tool Works Inc. Shakeproof Division, St. Charles Rd., Elgin, IL 60120 Phone 312-741-7900
78277	SIGMA	Sigma Instruments Inc. 170 Pearl St., Braintree, MA 01284 Phone 617-843-5000
78553	EATONENFAS	Eaton Corp. Engineered Fasteners Operations Cleveland Div., P.O. Box 6688, 8700 Brookpark Rd., Clevelenad, OHIO 44101
79130	NASHUA	Nashua Corp. Ind Tape Div. 7800 S Woodlawn Ave. Chicago IL 60619
79136	WALDES-KOH	Waldes Kohinoor Inc. 47-16 Ausel Place, Long Island, NY 11101
79405	WOODELECT	Wood Electric Operations, Potter and Brumfield Div., AMF Inc. Drawer C, 961 Chestnut Street, Gainesville, GA 30501
79963	ZIERICK	Zierick Mfg. Co. Radio Circle MT. Kisco NY 10549
7L371	PLASTDESGN	Plastic Design and Fab Inc. 2534 W Directors Row Salt Lake City UT 84104
7X430	SUNMICROSY	Sun Microsystems Inc. 2550 Garica Ave. Mountain View CA Phone 415-960-4036
80009	TEKTRONIX	Tektronix Inc. 14150 S.W. Karl Braun Dr., P.O. Box 500, Beaverton, OR 97077 Phone 503-642-8873
80031	MEPCO	Mepco/Electra Inc. Controls Div., 131 Godfrey St., Logansport, IN 46947
80089	ESSEX/STAN	Essex Group Inc. Controls Div. 131 Godfrey Street Logansport In 46947 Phone 219-753-7521
80103	LAMBDA	Lambda Electronics Corp. Div. Veeco Instr., 515 Broad Hollow Rd., Melville, NY 11746 Phone 516-694-4200
80205	NAT STAND	National Aerospace Standards Committee Aerospace Industries Association of America Inc. 1725 De Sales N.W., Washington, DC 20036
80223	UNITEDTRAN	TRW Elec. And Defense Sector Inductive Prod. Div. Military 150 varick St. NY NY 10013 Phone 212-255-3500
80249	HAZELTINE	Hazeltine Corp. Cuba Hill Rd Greenlawn NY 11740 Phone 516-261-7000
80294	BOURNS2	Bourns Inc. Instrument Div., 6135 Magnolia Ave., Riverside, CA 92506 Phone 714-781-5430
80495	ANDERSONPO	Anderson Power Prod. Inc. Div. 145 Newton St. Brighton MA 02135 Phone 617-787-5880
80740	BECKMAN	Beckman Instrument Inc. 2500 Harbor Blvd., Fullerton, CA 92634 Phone 714-871-4848

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
81041	HOWARD	Howard Ind Div. OF MSL Ind.Inc. 1 North Dixie HWY P.O.Box 287 Milford IL 60953
81073	GRAYHILL	Grayhill Inc. P.O. Box 373, 561 Hillgrove Ave., LA Grange, IL 60525 Phone 312-354-1040
81091	SIERA-ELE	Pass And Seymour Inc. 50 Boyd Ave. P.O.Box 4822 Syracuse NY 13221 Phone 315-468-6211
81095	TRIAD-1	Triad-Utrad Div. Litton Systems Inc. National City,CA
81312	WINCHESTER	Winchester Elec Div. of Litton Sys Inc. 400 Park Rd Watertown CT 06795 Phone 203-755-5000
81348	FED SPEC	Federal Specification: Promulgated by General Ser Administration Wash. DC
81349	MIL SPEC	Military Specification: Defense Manual 4120 3M
81541	AIRPAX	Airpax Electronics Inc. Woods Rd. Cambridge, MD 21613 Phone 301-228-4600
81640	JBT	Eaton Corp. Aerospace And Commercial Controls Div. JBT Prod. 2074 Whitfield Ave. E Sarasota FL 34243 Phone 813-758-7726
81851	BENTLEYHAR	Bentley-Harris Mfg. Co. Raychem Corp. 241 Welsh Pool Rd. Lionville PA 19353 Phone 215-363-2600
82227	NOAMERPHIL	North American Philips Controls Corp. P.O. Box 768 Chesire Industrial Park, Cheshire, CT 06410 Phone 203-271-0320
82240	SIMMONS	Simmons Fastener Corp. An Amfast Corp. 1765 N Broasway St. P.O. Box 1985 Albany NY 12201
82389	SWITCHCRAF	Switchcradt Inc. Sub of Raytheon Co. 5555 N Elstron Ave. Chicago IL 60630 Phone 312-775-0843
82465	MAC LEAN	Mac Lean Fogg Lock Nut Co. 1000 Allanson Rd., Mundelein, IL 60060
82877	ROTRON	Rotron Inc. 7-9 Hasbrouk Lane, Woodstock, NY 12498 Phone 914-679-2401
82893	VECTOR	Vector Electronics Co. Inc. 12460 Gladstone Ave., Sylamar, CA 91342
83003	VARO-SEMI	Varo Inc. P.O. Box 401426, 2203 Walnut St., Garland, TX 75040
83014	HARTWELL	Hartwell Corp. 900 S Richdiel Rd. Placentia, CA 92670 Phone 714-99-4200
83315	HUBBEL	Hubbell Corp. 407 E. Hawly, Mundelein, IL 60060
83330	H-H SMITH	Smith Herman H. Inc. 1913 Atlantic Ave. Manawquann, NJ 08736 Phone 201-223-9400
83407	DBY.S.E	Dby S. E. Co. Philadelphia, PA
83508	GRANT	Grant Hareware Co. 7 Hoover Ave. Haverstraw NY 10927 Phone 914-358-4400
83584	DRIV-LOCK	Driv-Lock Inc. 1140 Park Ave. Sucamonre IL 60178
83701	ELEC-DEVIC	Electronic Devices Inc. 21 Gray Oaks Ave. Yonkers NY 10710-3205 Formerly Electronic Devices Inc. Brooklyn NY Phone 914-965-4400
83812	PRELECTRIC	Premier Electric Mfg. Co. Jersey City, NJ
84048	VRN	Vernitron Corp. Vrn International Div. 2801 72nd St. North P.O. Box 44000 St. Petersburg, FL 33743 Phone 813-347-2181
84171	ARCO	Arco Electronics Community Dr., Great Neck, L.I., NY 11022
84411	TRW	TRW Electronic Components, TWR Capacitors, 301 West St., Orgalla, NE 69153 Phone 308-284-3611
84613	FIC CORP	Fic Corp. 12216 Parklawn Dr P.O.Box 2046 Rockville MD 20852

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
84830	LEE SPRING	Lee Spring Co. Inc. 300 Main Street, Brooklyn, NY 11201 Phone 212-236-2222
84971	TA Mfg.	TA Mfg. Inc. Criton Tech, 375 W Arden Ave. P.O.2500 Glendale, CA 91203 Phone 818-240-4600
85274	DWYER-INST	Dwyer F.W.Mfg. Co. Michigan City IN 46360 Phone 219-872-9141
85446	BOKERS-INC	Bokers Inc. 3104 Snelling Ave. Minneapolis MN 55406
85480	BRADY	Brady,W. H. Co. 727 W. Glendale Ave., Milwaukee, WI 53209 Phone 414-351-6630
85604	KEPCO	Kepeco Inc. 131-38 Samford Ave. Flushing NY 11352
86577	PREC-METAL	Precision Metal Proud Co. Centennial Dr P.O. Box 6026 Peabody MA 01960 Phone 617-532-5500
86797	ROGAN	Rogan Corp. 3455 Woodhead Dr Northbrook IL 60062
86928	SEASTROM	Seastrom Mfg. Co. Inc. 701 Sonora Ave., Glendale, CA 91201 Phone 213-245-9121
88044	AND	Aeronautical Standards Group, Dept. of Navy and Air Force
88245	USECO	Litton Systems Inc. USECO Div., 13536 Saticoy Street, Van Nuys, CA 91409 Phone 818-786-9381
88486	TRIANGLE	Triangle PWC Inc. Sub of Triangle Ind Inc. 100 E Main St. Jewett City CT 06351 Phone 203-376-4411
88752	PARANITE	Essex Group Inc. Power Conductor Div. 2601 Adams St. Marion IN 46952
8B772	MILSPECWIR	Mil Spec Supply Inc. Encino CA
8S941	GENINST2	General Instrument Corp. MicroElectronics Taiwan LTD 82-11 Kepz P.O.Box 26-2 Kaohsiung Taiwan 800
8W765	BELDEN2	Coopwe Belden Elec. Wire and Cable/Govt Contracts Administrator/2200 US HWY 27 S P.O.Box 1980 Richmond IN 47373
90201	MALLORY	Mallory Capacitor Co. Div. of P.R. Mallory and Co. Inc. P.O. Box 372, 3029 E. Washington Street, Indianapolis, IN 46206
90484	ITT/SURPRE	Surprenant Wire And Cable Div. of FL Industries Inc. 172 Sterling st Clinton MA 01561 Phone 617-365-6331
90526	CLIPPARD	Clippard Instrument Lab Inc. 7390 Colerain Rd Cincinnati OH 45239
90816	PHALO-CORP	Phalo Computer Cable 530 Boston Turnpike Shrewsbury MA A J 3357 Phone 617-845-5000
91367	NOWETOOL	Northwestern Tool and Die Mfg. Corp. 3443 W. Howard St., Skokie, IL 60076
91418	RADIOMATER	Radio Materials Corp. East Park Ave. P.O.Box 339 Attica IN 47918
91506	AUGAT	Augat Inc. P.O. Box 779, 633 Perry Ave., Attleboro, MA 02703 Phone 617-222-2202
91627	CONSPAPER	Consolidated Papers Inc. P.O. Box 50, Wisconsin Rapids, WI 54494
91637	DALE	Dale Electronics Inc. P.O. Box 609, Columbus, NE 68601 Phone 402-563-6301
91662	ELCO	Elco Corp. A Gulf and Western Mfg. Co. Connector Div., Huntington Industrial Park, Huntington, PA 16652 Phone 814-643-0700
91833	KEYSTONE	Keystone, 49 Bleeker St., New York, NY 10012 Phone 914-793-5000
91836	KINGS	Kings Electronic Co. Inc. 40 Marbledale Rd Tuckahoe NY 10707 Phone 914-793-5000

CAGE	VENDOR ID	VENDOR NAME AND ADDRESS
91929	MICROSW	Honeywell Inc. Micro Switch Div., Chicago and Spring Sts., Freeport, IL 61032 Phone 815-235-5500
92194	ALPHAWIRE	Alpha Wire Corp. 711 Ungerwood Ave., Elizabeth, NJ 07207
92219	WALDON	Waldom Electronics Inc. 4301 W. 69th St., Chicago, IL 60629
92504	CITIES SVC	Cities Service Co. Chester Cable Operations Chester NY
92702	IMC	IMC Magnetics Corp. Eastern Div. 570 Main St. WestBury Long Island NY 11591 Phone 516-334-7070
92912	BEL	Bel Fuse Inc. 198 Van Vorst St. Jersey City NJ 07302
93651	ARROW HART	Arrow Hart Inc. Distribution Apparatus Div. 7200 Ind.Rd Florence Ky.41042
93907	TEXTRON	Textron Inc. Camcar Div. 600 18TH Ave. Rockford IL 61101 Phone 815-226-7721
93958	REPUBLICEL	Republic Elec. Corp. 176 E 7Th St. Paterson NJ 07524
94222	SOUTHCO	Southco Inc. Lester, PA 19113 Phone 215-459-4000
94271	WESTON	Fiarchild Weston System Inc. Sub of Schlumberger LTD, John F Kenndy Blvd. Archbald Pa. 18403 (Old FSCM = 65092) Phone 717-876-1500
94638	HATFELD	Hatfield Wire and Cable Div. Continental Copper and Steel Ind. Inc. 12 Commerce Dr Cranford NJ 07016
94696	MAGNECRAFT	Magnecraft, 5576 No. Lynch Ave., Chicago, ILL 60630 Phones 312-564-8800
95146	ALCO-SWITCH	Alco Electronic Products Inc. P.O. Box 1348, Lawrence, MA 80142
95238	CONTCONN	Continental Connector Corp. 34-63 56TH St. Woodside NY 11377 Phone 212-889-4422
95263	LEECRAFT	Lee Craft Mfg. Co. Inc. 21-16 44th Rd., Long Island City, NY 11101

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.

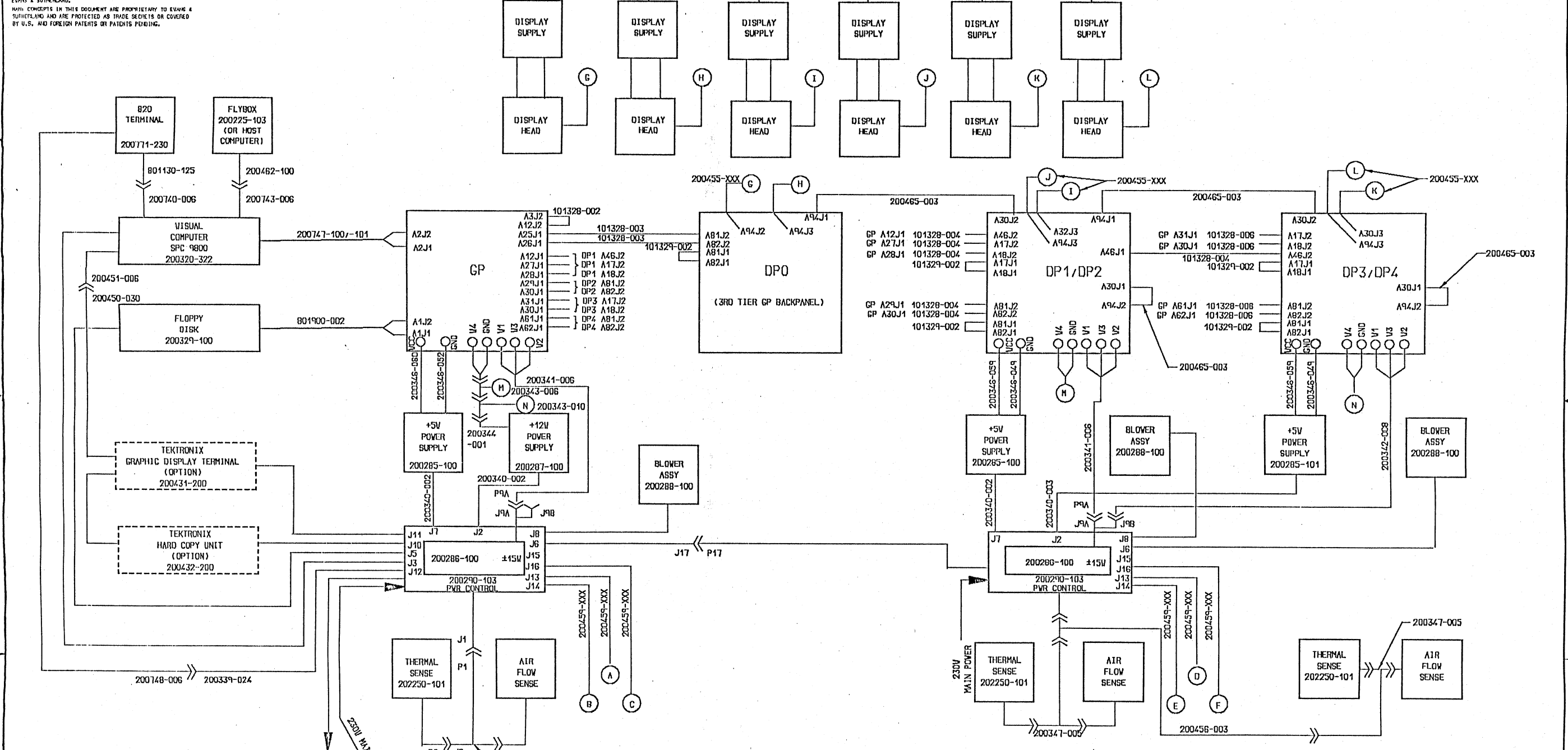


NOTE:

This drawing is to be considered a "generic" drawing showing a full capacity, 5-channel SP1/T system. Keeping the specific customer requirements in mind, connections for a 1 through 5 channel SP1/T EMI system can be determined.

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REVISION				
ZONE	LTN	DESCRIPTION	DATE	APPROVED
AO		RELEASED TO AD	04-07-88	SRK



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± --- .XXX ± --- ANGLES ± --- ✓ HOLES PER AND 10387	CONTRACT NO. DRAWN GHOLI 02-12-88 CHECKED PRP/EDERSEN 2-19-88 MECH ELEC PROJ. ENG P BOYCE APPROVED	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108 INTERCONNECTION DIAGRAM, SP1/T
	MATERIAL FINISH	

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.



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

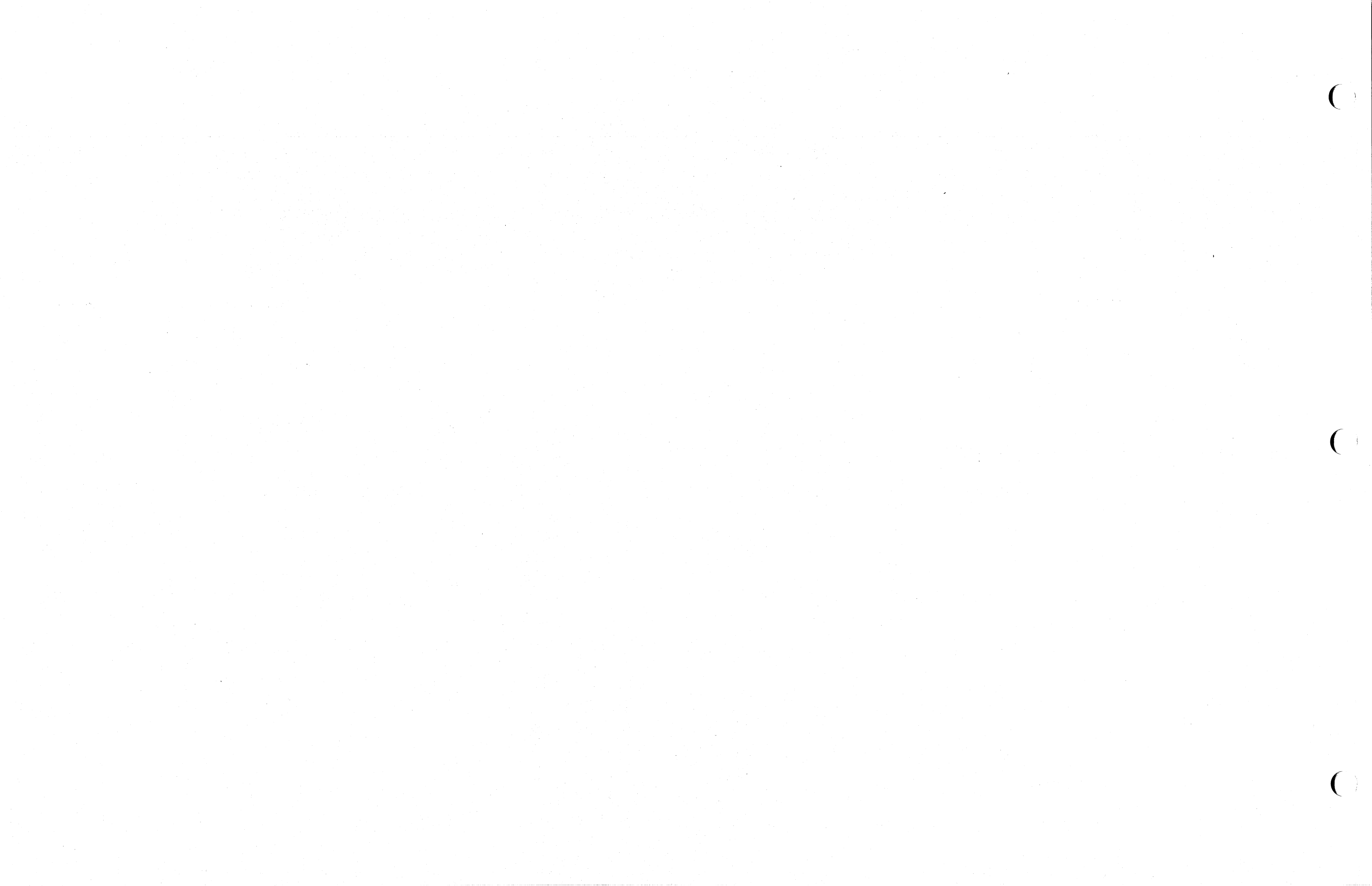
RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200329-100 REV: A1 = AB DESC: ASSY, FLOPPY DISK, STORAGE, 6200LD, QUAD HEAD, 60HZ NSP2

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	LBL, IDENT SCOPE AND L	53938	EVANS & SUTHERLAND.	504350-500	504350-500	1
003	*SCD*, DRIVE ASY, QUAD	53938	EVANS & SUTHERLAND	*SCD*801807-006	801807-006	1
004	CONT, CRMP, PIN, 14AWG, T	00779	AMP INC.	66361 (-1; -3; -4) PIN	801815-205	3
005	CLAMP, CBL, CIRC/PLSTC,	00779	AMP INC.	206358-1 (CLAMP #11)	801815-506	1
006	CONN, PLUG, CIRC/PLSTC,	00779	AMP INC.	206429-1 (4POS/PLUGE	801815-703	1
007	TIE, CBL-MARKING, PAD=.	59730	THOMAS AND BETTS CORP.	TY-46M (PAD=1/2X7/8)	802140-002	1

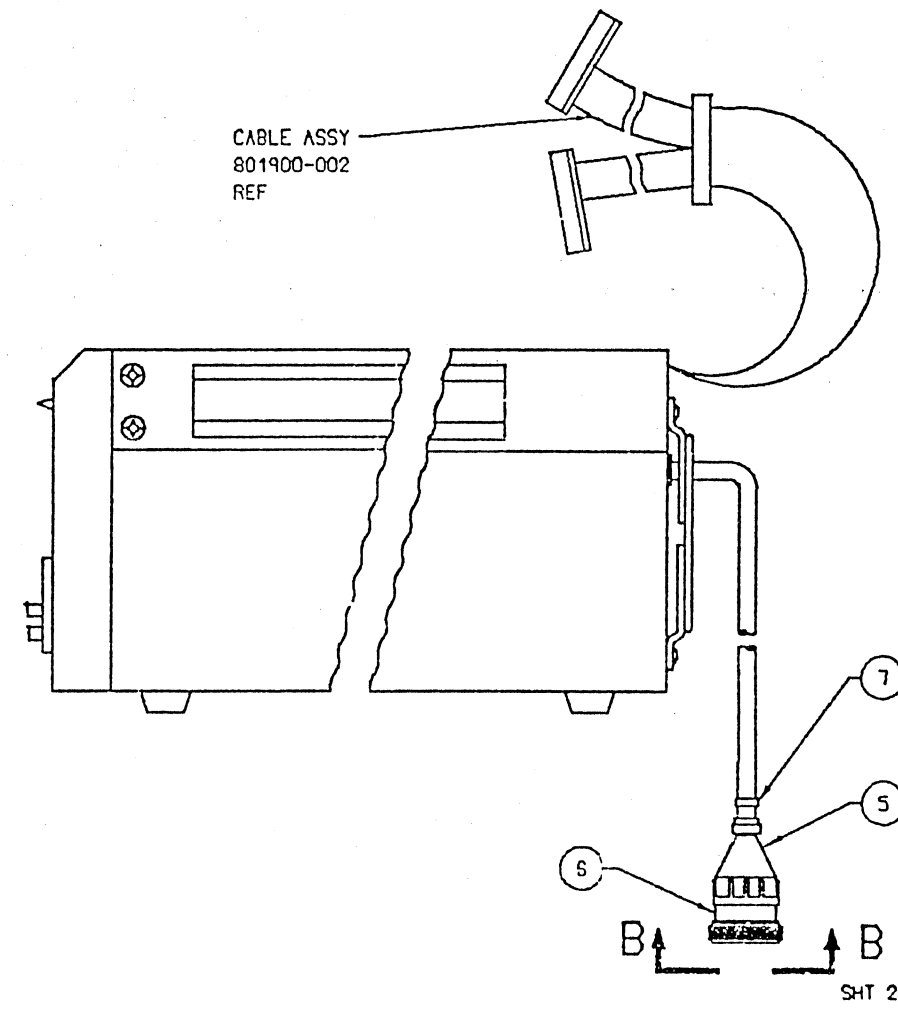
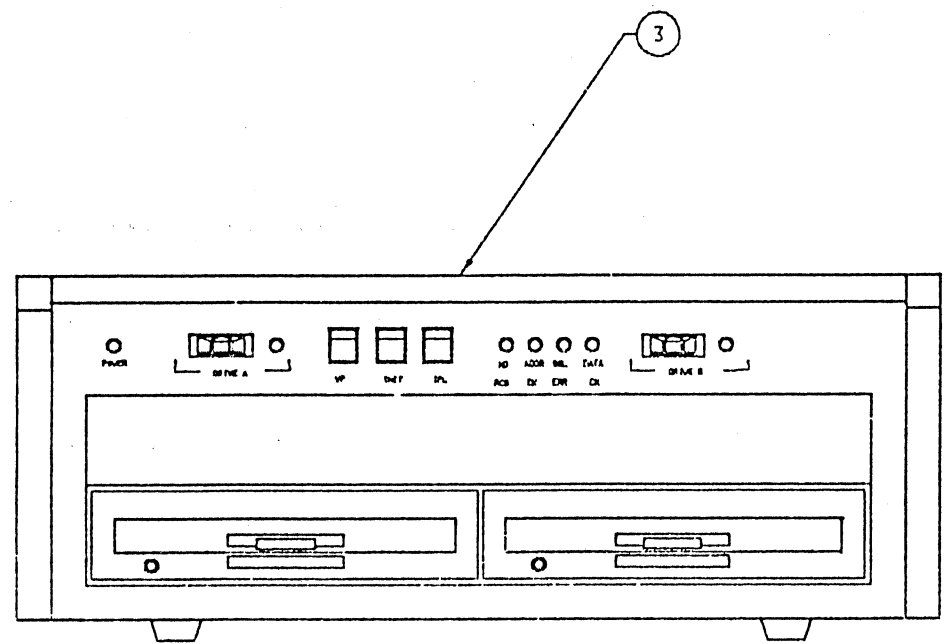
6 ITEMS LISTED



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PART/ASSEMBLY REVISION LEVEL FOR DASH NUMBER		REVISIONS				
		ZONE	LTR	DESCRIPTION	DATE	APPROVED
-101	-100					
A1	A1		-	REVISED AND REDRAWN	BH 6-14-80	<i>[Signature]</i>



NOTES:

- 1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E&S PRODUCTION PROCESSES SECTION E-9, D. LOCATE APPROXIMATELY AS SHOWN.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± - .XXX ± - ANGLES ± - ✓ HOLES PER ANS 10397	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
	DRAWN K JORDAN 6-2-80	ASSY, FLOPPY DISK, STORAGE, QUAD HEAD 50/60 HZ	
	CHECKED ART COWGUR 6-4-80	SIZE	CODE IDENT NO
	MECH	C	53938
ELEC	200329-TAB		ENG REV TA
PRJ. ENG P SPRAGLE 6-5-80	SCALE	SHEET 1 OF 2	
APPROVED C BALL 6-5-80	NONE	DO NOT SCALE DIM	
MATERIAL SEE PARTS LIST			
FINISH			

200329-TAB

4

3

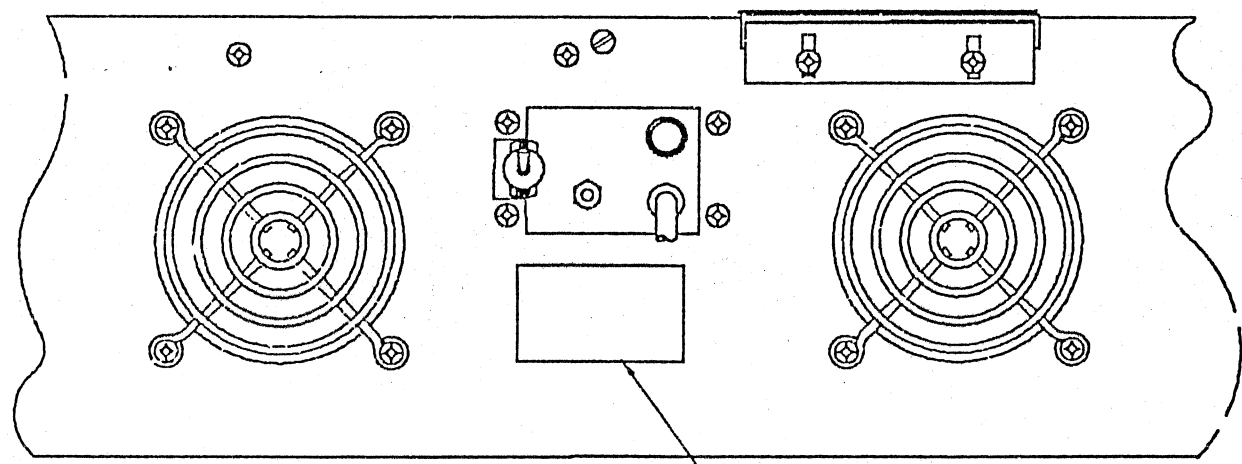
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1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D

D

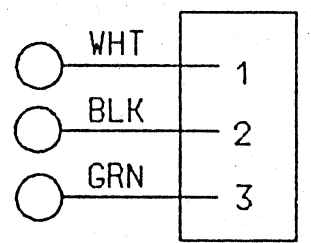
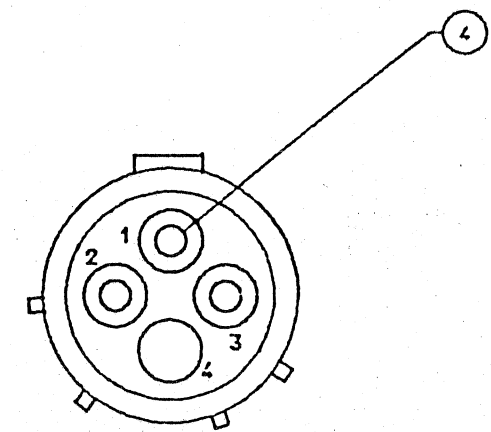


C

C

① △ DETAIL A

VIEW C-C



VIEW B-B

B

200329-TAB

EVANS & SUTHERLAND			
<small>500 WASHINGTON DRIVE, SALT LAKE CITY, UTAH 84108</small>			
MODEL	QUAD HEAD	UNIT	DISK DRIVE
ASSEM #		SER #	
REV #			
DESCRIPTION	FLOPPY DISK STORAGE ASSY		
VOLTAGE	230V	POWER	230 W
CURRENT	1A	FREQ	50/60 HZ

DETAIL A

A

A

4

3

2

1

SIZE	CODE IDENT NO	200329-TAB	REV	TA
C	53938			
SCALE	NONE	DO NOT SCALE DIM	SHEET	2 OF 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200401-3XX

REV: A6 = AG

DESC: CAB,ASY,LH,NSP

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	OPT, BP	53938	EVANS & SUTHERLAND.	200410-XXX	200410-XXX	1
002	OPT, CMPTR	53938	EVANS & SUTHERLAND.	200320-XXX	200320-XXX	1
003	OPT, DISK	53938	EVANS & SUTHERLAND.	200409-XXX	200409-XXX	1
005	ASY, BLOWER, 500 CFM, 23	53938	EVANS & SUTHERLAND.	200288-100	200288-100	1
006	PWR CONT ASY, NV SP2 (D	53938	EVANS & SUTHERLAND.	200290-103	200290-103	1
007	ASY, PLUG, PRGMMING, MAS	53938	EVANS & SUTHERLAND.	200292-003	200292-003	1
008	CBL, PWR, +-15V	53938	EVANS & SUTHERLAND.	200341-006	200341-006	1
009	CBL, +12 VOLT, NV	53938	EVANS & SUTHERLAND.	200343-004	200343-004	1
010	CBL, PWR, 5V 00 GAGE, 52	53938	EVANS & SUTHERLAND.	200346-052	200346-052	1
011	CBL, PWR, 5V 00 GAGE	53938	EVANS & SUTHERLAND.	200346-060	200346-060	1
012	CBL, THERMAL AND AIRFL	53938	EVANS & SUTHERLAND.	200378-005	200378-005	1
013	THERMAL SW ASY, EXTERN	53938	EVANS & SUTHERLAND.	202250-101	202250-101	1
014	ASY, PWR SPLY, 5V, 200A,	53938	EVANS & SUTHERLAND.	200285-100	200285-100	1
015	ASY, PWR SPLY, 12VDC, 14	53938	EVANS & SUTHERLAND.	200287-100	200287-100	1
017	PNL, BLANK, EMI, 19 X 1.	53938	EVANS & SUTHERLAND.	500356-001	500356-001	1
019	PNL, BLANK, EMI, 19 X 6.	53938	EVANS & SUTHERLAND.	500356-003	500356-003	1
020	BASE PLATE, CAB, EMI (SP	53938	EVANS & SUTHERLAND.	500343-001	500343-001	1
021	RAILS, FRONT VERT, RT H	53938	EVANS & SUTHERLAND.	500268-001	500268-001	1
022	RAILS, FRONT VERT, LFT	53938	EVANS & SUTHERLAND.	500268-002	500268-002	1
023	RAIL, RT MTG, REAR, MAST	53938	EVANS & SUTHERLAND.	500273-001	500273-001	1
024	RAIL, LFT, MTG, REAR, MAS	53938	EVANS & SUTHERLAND.	500273-002	500273-002	1
025	ASY, BLOWER SHROUD, PLS	53938	EVANS & SUTHERLAND.	500285-002	500285-002	1
026	PLUG, 125V, 15A, 2P, 3WIR	74545	HUBBELL (HARVY) INC, LIGHTI	5965-VBLK (-VY), 5-15P	801194-016	1
027	OPT, CAB, LH	53938	EVANS & SUTHERLAND.	200869-XXX	200869-XXX	1
028	OUTLET, 3WIRE, 15A, 125V	8F937	SYLVANIA MINIATURE LIGHTI	1538-1 (NEMA5-15R) BLK	801873-001	2
029	SCR, FLT-HD, PHIL, 8-32X	N/A	DISTRIBUTORS	8-32X5/8 (M-F-PH-SS)	802004-305	2
030	HW, WSHR #8INTLOK	N/A	DISTRIBUTORS	SAE#8, LK INTL, SS	802005-008	4
031	HW, WSHR #10INTLK	N/A	DISTRIBUTORS	SAE#10, LK INTL, SS	802005-010	8
032	HW, WSHR #8, FLAT	N/A	DISTRIBUTORS	SAE#8FLAT, SS, .040THK	802007-008	2
033	HW, WSHR #10, FLAT	N/A	DISTRIBUTORS	AN960C10L, #10FLAT, SS	802007-010	12
034	HW, NUT 8-32NUT	N/A	DISTRIBUTORS	NUT-HEX (8-32) SS	802014-008	2
035	HW, NUT 10-32NUT	N/A	DISTRIBUTORS	NUT-HEX (10-32) SS	802014-010	8
036	SCR, PAN-HD, PHIL, 10-32	N/A	DISTRIBUTORS	10-32X1/2 (M-P-PH-SS)	802053-104	34
038	HW, TIE TY-25M	59730	THOMAS AND BETTS CORP.	TY-25M	802061-001	17
039	HW, TIE TY-232M	59730	THOMAS AND BETTS CORP.	TY-232M	802061-002	10
040	HW, TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	12
041	CBL, PWR, 3COND, 16AWG (2	28105	DEARBORN WIRE & CABLE COR	4163 (16/3-SO)	802083-016	43
043	HW, CLMP MB-3A	16956	DENNISON MFG CO	08461 (3/4-SQ)	802125-006	8
044	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	2
045	TIE, CBL-MARKING, PAD=.	59730	THOMAS AND BETTS CORP.	TY-46M (PAD=1/2X7/8)	802140-002	1
047	TERM, QDISC, FML, 16-14A	27264	MOLEX INC.	BB-2206T	802235-001	6
048	SCR, ORNAMENTAL-HD, PHI	98587	AMCO ENGINEERING CO	H09-8	802236-001	36
049	TERM, QDISC, MAL, 16-14A	06383	PANDUIT CORP	DNF14-250FIM	802238-016	6
050	NUT, SPEED-CLIP, 12-24T	98587	AMCO ENGINEERING CO	H-19-1	802252-001	20
051	CLAMP, CBL	04673	DAKOTA ENGINEERING INC	2C1-75	802253-001	2
053	NUT, SPEED, FOR ENCL, 10	98587	AMCO ENGINEERING CO	H306	802281-001	4
054	PLATE, FLAT-CBL-MOUNT	06383	PANDUIT CORP	FCPI3	802294-002	2
055	BASE, FLT-CABL-MTG, F/#	06383	PANDUIT CORP	FCBI3-S10	802295-002	2

TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200401-3XX

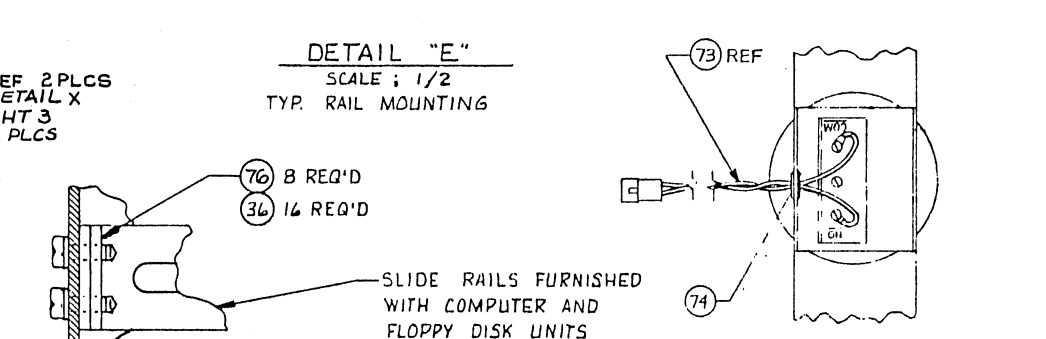
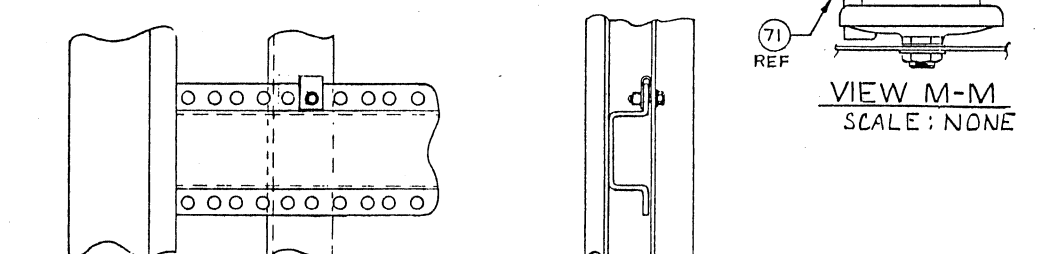
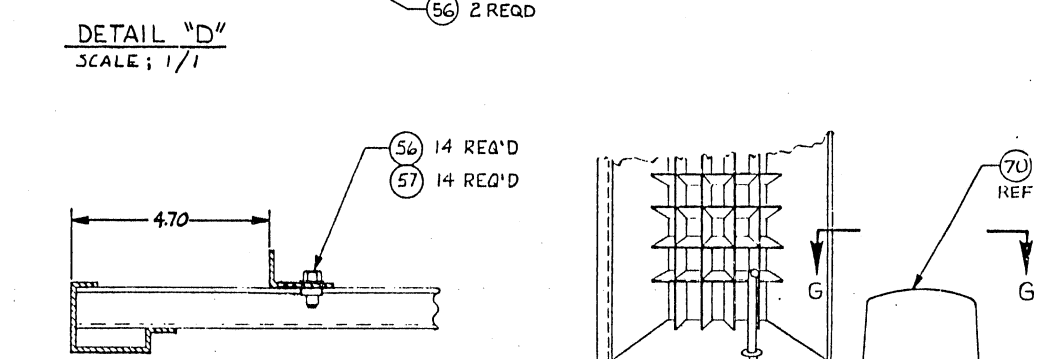
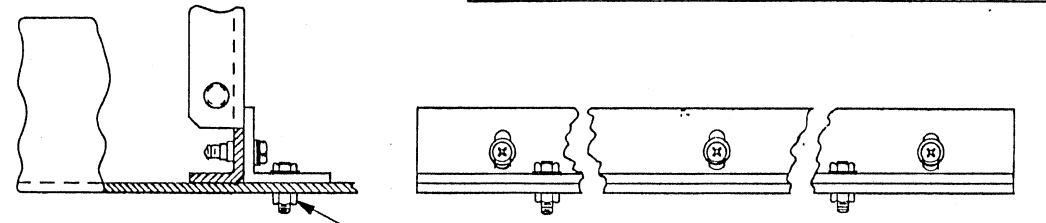
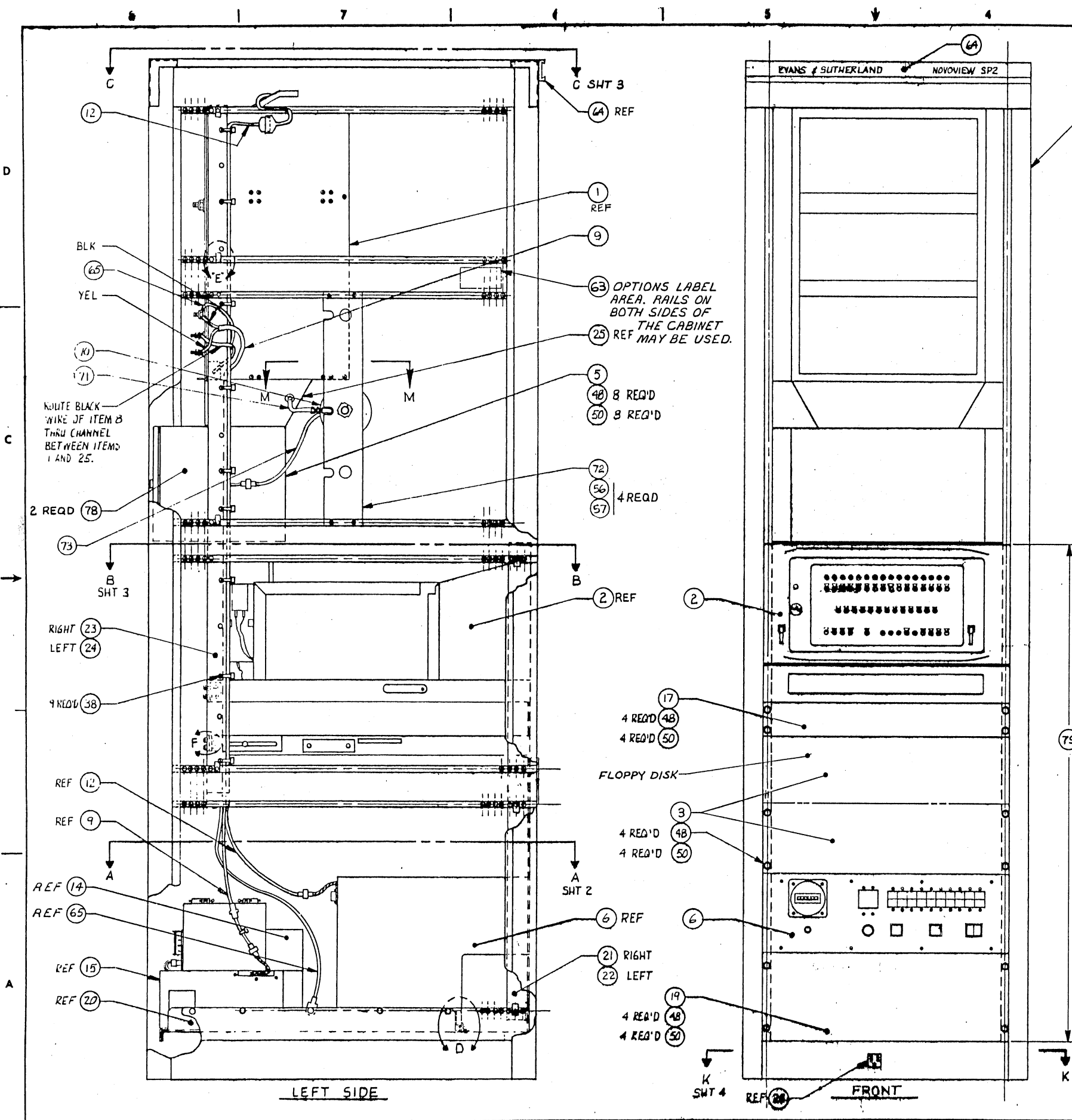
REV: A6 = AG

DESC: CAB,ASY,LH,NSP

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
056	BOLT, HEX-HD+LOCK-WSHR	83486	ELCO INDUSTRIES INC	1/4-20X5/8 (SEMS-HEX)	802304-004	34
057	NUT, SPEED, 1/4-20	98587	AMCO ENGINEERING CO	H45-1	802305-001	18
058	NUT, KEPS, HEX .438 MAX	N/A	DISTRIBUTORS	NUT-KEPS (1/4-20)	802306-001	10
059	*OBS*NOT F/NEW DESIGN	53938	EVANS & SUTHERLAND	802383-004	802383-004	1
060	WIRE, 16AWG (19/29; 26/3	73612	CONSOLATED ELEC, W/C CORP	9404 (16AWG)BLACK	802508-000	4
061	WIRE, 16AWG (19/29; 26/3	73612	CONSOLATED ELEC, W/C CORP	9404 (16AWG)GREEN	802508-555	4
062	WIRE, 16AWG (STRANDED),	92194	ALPHA WIRE CORP.	3057	802508-999	4
063	*SCD*LBL, BAR-CODE, PRE	53938	EVANS & SUTHERLAND	*SCD*802178-008	802178-008	1
064	PLATE, E&S LOGO	53938	EVANS & SUTHERLAND.	500296-001	500296-001	1
065	CBL ASY, GND, 7 FT, NSP	53938	EVANS & SUTHERLAND.	202134-007	202134-007	1
067	NUT, NYLON, #14, HEX, PNL	70655	AUTO VEHICLE PARTS CO.	8418 (#14NUT, PNL-MNT)	802143-514	20
068	BOLT, HEX-HD, 1/4-20X1-	N/A	DISTRIBUTORS	1/4-20X1-1/4 (M-HX-SS)	802031-410	1
070	PRESSURE-SW, DIFF, W.C.	85274	DWYER INSTRUMENTS INC.	1823-0 (W.C.=.15-.5)	801722-001	1
071	TUBING AIR SENSING	53938	EVANS & SUTHERLAND.	500312-001	500312-001	1
072	PLATE, MTG, SW, SENSING,	53938	EVANS & SUTHERLAND.	500311-001	500311-001	1
073	CBL, AIRFLOW SENSOR FO	53938	EVANS & SUTHERLAND.	200379-002	200379-002	1
074	GROMMET, CATAPILLAR, NY	3D536	AIMSCO INC	WG101	802047-001	1
076	PLATE, SPCR (NV SP)	53938	EVANS & SUTHERLAND.	500105-001	500105-001	8
078	STDF, BLOWER, NV	53938	EVANS & SUTHERLAND.	500255-001	500255-001	2
079	GASKET, STRIP, SHIELD, R	57003	CHOMERICS INC EMI/RFI	55-MSP00065 (1/4DIA)	802229-001	7
080	GROMMET, CATAPILLAR, NY	11897	PLASTIGLIDE MFG. CORP.	122-NN-2500	802047-002	2
081	HW, GLUE #430	05972	LOCTITE CORP	SUPERBONDER-43050	802288-003	1
082	BULKHEAD BOX, EMI	53938	EVANS & SUTHERLAND.	500336-001	500336-001	1
083	FRONT COVER, EMI BULKH	53938	EVANS & SUTHERLAND.	500337-001	500337-001	1
084	REAR COVER, EMI BULKHE	53938	EVANS & SUTHERLAND.	500338-001	500338-001	1
085	PLATE, MTG, BULKHEAD, EM	53938	EVANS & SUTHERLAND.	500339-001	500339-001	1
086	HW, SCR 6-32X3/8	N/A	DISTRIBUTORS	6-32X3/8 (M-P-PH-SS)	802003-103	20
087	CONN, ROMEX, FOR HANDY	9N565	ELECTRICAL WHOLESALE SPLY	6625 REGAL	802207-004	4
088	HW, WSHR #6INTLOK	N/A	DISTRIBUTORS	SAE#6, LK INTL, SS	802005-006	20
089	SPLICE, PRL, SELF-STRIP	53387	MINN. MINING & MFG.EP DIV	560 (BLUE) SCOTCHLOK	802172-002	3
090	HW, TBNG 3/4TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/4"	802033-750	1

79 ITEMS LISTED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A0		RELEASE TO A0	12-13-83	J. Blak
A1		CORRECTED VIEW M-M	3-13-84	J. Blak
A2		P/L CHANGE ONLY	1-23-85	E. J. ...
A3		CHANGED ITEM NO. 4 TO 15	8-28-85	MRS. ...
A4		TITLE CHANGE	7-8-86	DM 7-21-86
A5		P/L CHANGE ONLY	7-8-86	DM 7-21-86
A6		CHG. TERM, QUICK	1-21-88	



NOTES ON SHEET 2

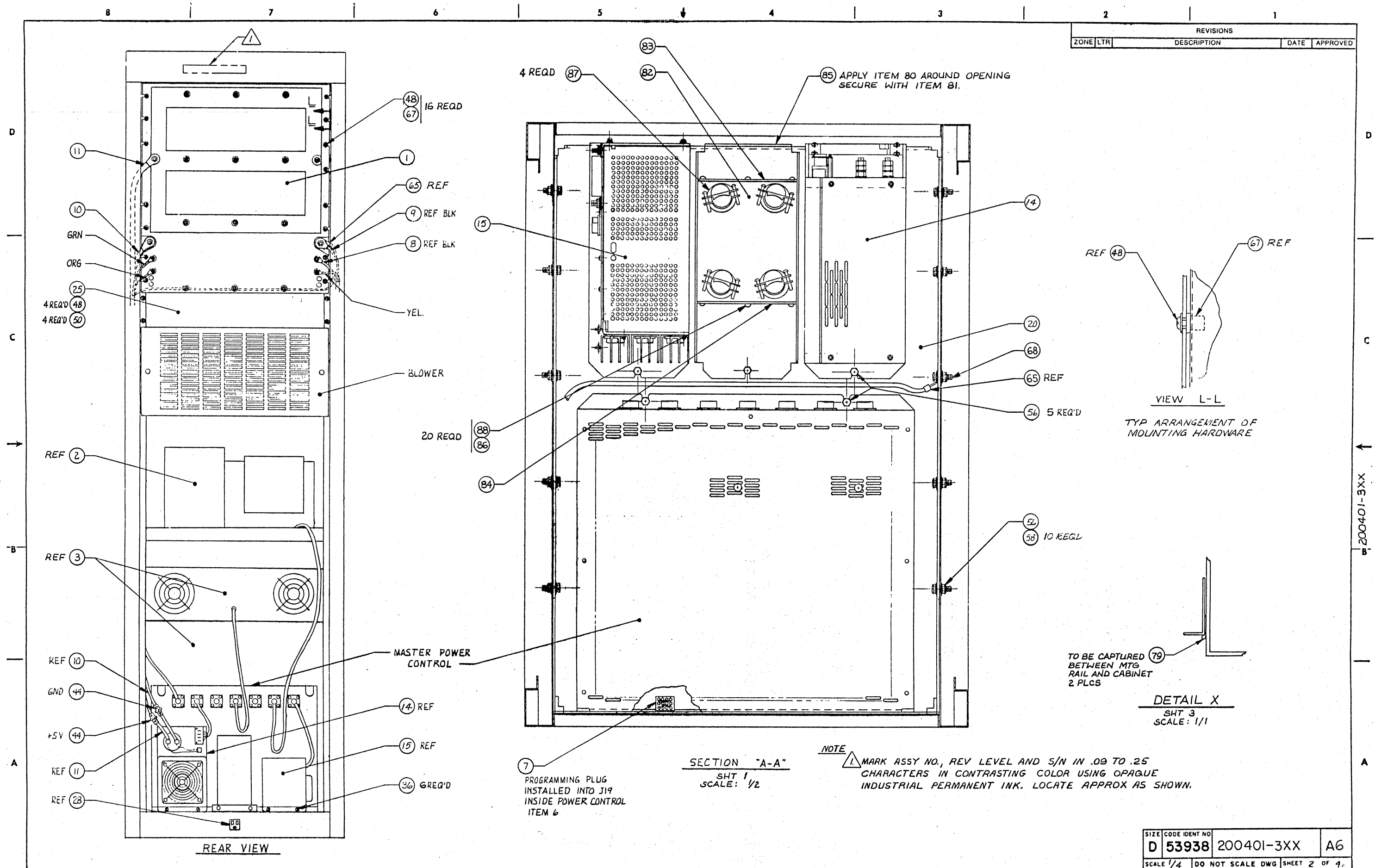
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±

CONTRACT NO. DRAWN S. BROWN 10-11-83 CHECKED 10/19/83 MECH ELEC PROJ. ENG. APPROVED

EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		CAB ASSY, LH, NSP	
MATERIAL SEE PARTS LIST	FINISH	SIZE D 53938	CODE IDENT NO. 200401-3XX
		SCALE 1/4	DO NOT SCALE DWG
		SHEET 1 OF 4	REV A6

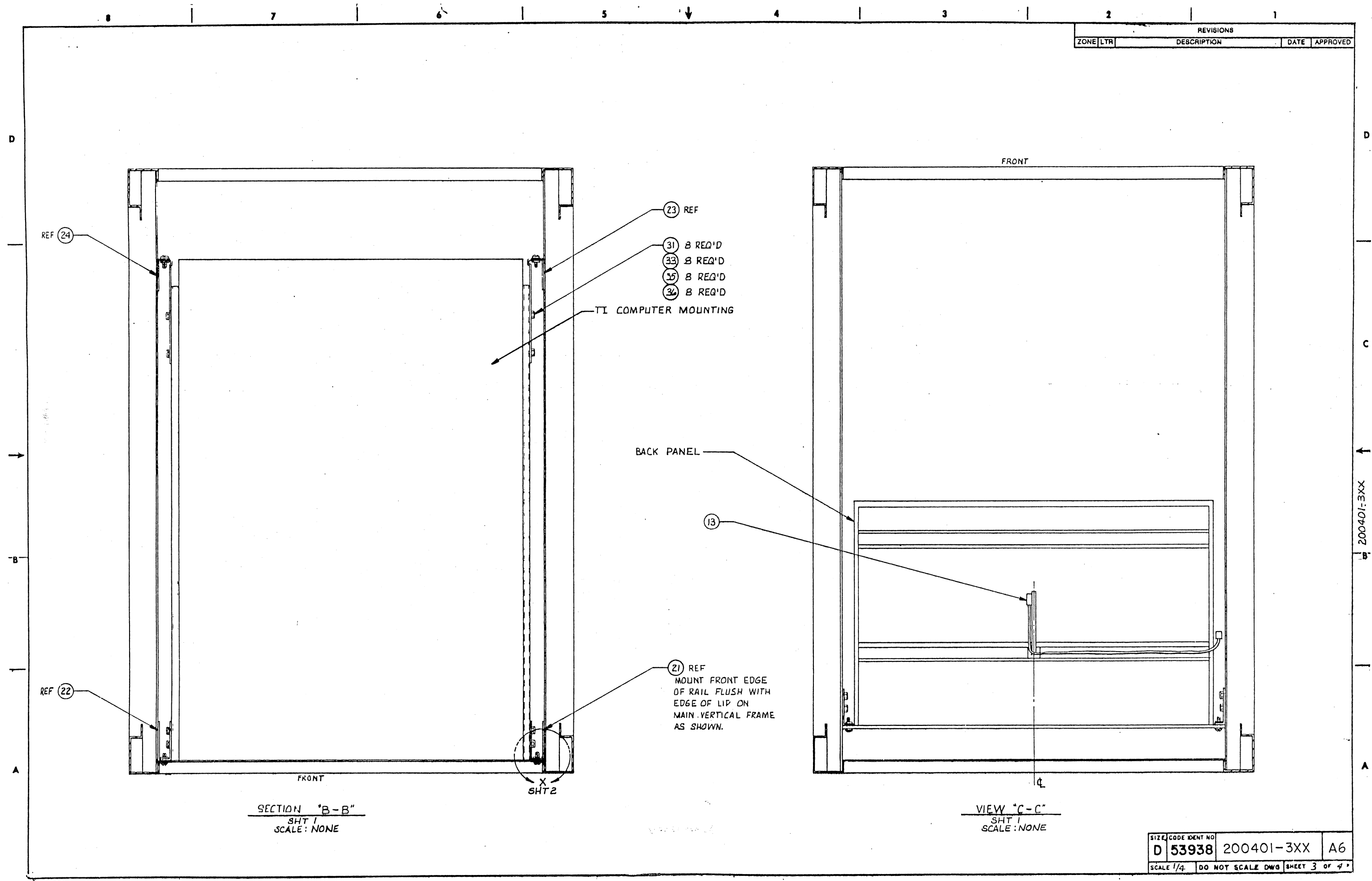
200401-3XX

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



SIZE	CODE IDENT NO	200401-3XX	A6
SCALE 1/4	DO NOT SCALE DWG	SHEET 2 OF 4	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

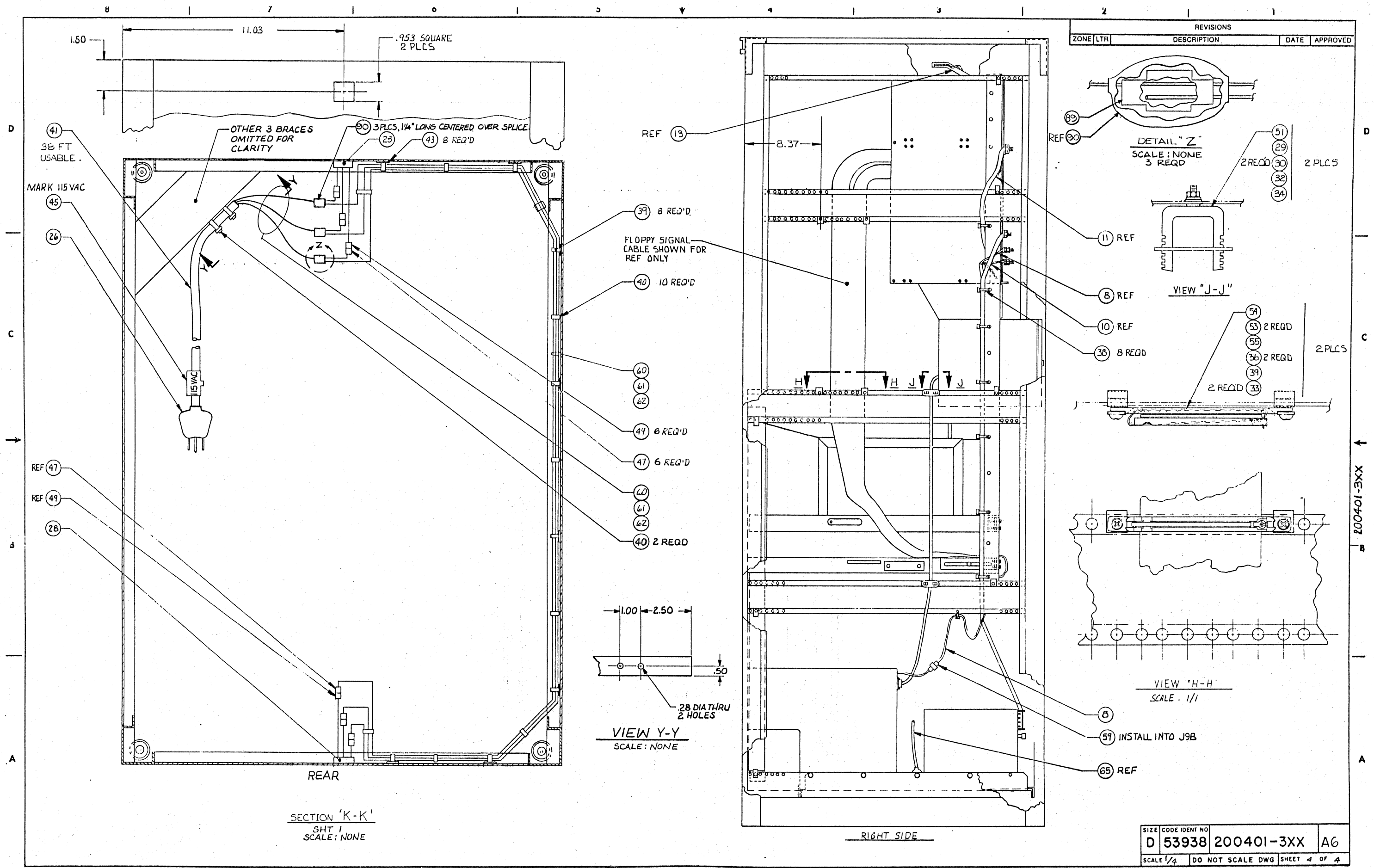


SECTION "B-B"
SHT 1
SCALE: NONE

VIEW "C-C"
SHT 1
SCALE: NONE

SIZE	CODE	IDENT NO	
D	53938	200401-3XX	A6
SCALE 1/4		DO NOT SCALE DWG SHEET 3 OF 4	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



SIZE	CODE	IDENT NO	
D	53938	200401-3XX	A6
SCALE 1/4		DO NOT SCALE DWG	SHEET 4 OF 4

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200402-3XX

REV: A3 = AD

DESC: CAB ASY,RH, NSP

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	OPT,PWR SUP	53938	EVANS & SUTHERLAND.	200285-XXX	200285-XXX	1
002	PLATE,E&S LOGO	53938	EVANS & SUTHERLAND.	500296-001	500296-001	1
003	OPT,BP	53938	EVANS & SUTHERLAND.	200410-XXX	200410-XXX	1
004	ASY,PWR SPLY,5V,200A,	53938	EVANS & SUTHERLAND.	200285-100	200285-100	1
005	ASY,BLOWER,500 CFM,23	53938	EVANS & SUTHERLAND.	200288-100	200288-100	1
006	PWR CONT ASY,NV SP2(D	53938	EVANS & SUTHERLAND.	200290-103	200290-103	1
007	ASY,PLUG,PRGMMING,SLA	53938	EVANS & SUTHERLAND.	200292-002	200292-002	1
008	CBL,PWR,+15V	53938	EVANS & SUTHERLAND.	200341-006	200341-006	1
009	CBL,PWR,5V 00 GAGE,49	53938	EVANS & SUTHERLAND.	200346-049	200346-049	1
010	CBL,THERMAL SENSOR W/	53938	EVANS & SUTHERLAND.	200347-005	200347-005	1
011	THERMAL SW ASY,EXTERN	53938	EVANS & SUTHERLAND.	202250-101	202250-101	1
012	OPT,ET MTR	53938	EVANS & SUTHERLAND.	200297-XXX	200297-XXX	3
013	OPT,CSM PS (-34X)	53938	EVANS & SUTHERLAND.	201100-XXX	201100-XXX	2
014	RAIL,MTG,VERT,PWR SPL	53938	EVANS & SUTHERLAND.	500315-001	500315-001	2
015	RAIL,MTG,VERT,PWR SPL	53938	EVANS & SUTHERLAND.	500315-002	500315-002	2
016	ASY,BLOWER SHROUD,PLS	53938	EVANS & SUTHERLAND.	500285-002	500285-002	1
017	OPT,CAB,RH	53938	EVANS & SUTHERLAND.	200884-XXX	200884-XXX	1
018	HW,WSHR #10INTLK	N/A	DISTRIBUTORS	SAE#10,LK INTL,SS	802005-010	9
019	HW,WSHR #10,FLAT	N/A	DISTRIBUTORS	AN960C10L,#10FLAT,SS	802007-010	6
020	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
021	SCR,PAN-HD,PHIL,10-32	N/A	DISTRIBUTORS	10-32X1/2 (M-P-PH-SS)	802053-104	5
022	SCR,FLT-HD,PHIL,10-32	N/A	DISTRIBUTORS	10-32X5/8 (M-F-PH-SS)	802053-305	3
023	HW,TIE TY-25M	59730	THOMAS AND BETTS CORP.	TY-25M	802061-001	4
025	SCR,ORNAMENTAL-HD,PHI	98587	AMCO ENGINEERING CO	H09-8	802236-001	28
027	NUT,SPEED-CLIP,12-24T	98587	AMCO ENGINEERING CO	H-19-1	802252-001	4
028	BOLT,HEX-HD+LOCK-WSHR	83486	ELCO INDUSTRIES INC	1/4-20X5/8 (SEMS-HEX)	802304-004	48
029	NUT,SPEED,1/4-20	98587	AMCO ENGINEERING CO	H45-1	802305-001	28
030	NUT,KEPS,HEX .438 MAX	N/A	DISTRIBUTORS	NUT-KEPS (1/4-20)	802306-001	14
031	*OBS*NOT F/NEW DESIGN	53938	EVANS & SUTHERLAND	802383-004	802383-004	1
032	CBL,PWR,5V 00 GAGE,59	53938	EVANS & SUTHERLAND.	200346-059	200346-059	1
033	NUT,NYLON,#14,HEX,PNL	70655	AUTO VEHICLE PARTS CO.	8418 (#14NUT,PNL-MNT)	802143-514	24
034	CBL,GND,1 FT	53938	EVANS & SUTHERLAND.	202134-001	202134-001	1
037	PLSTC,CHAN,9/16 X 9/6	06915	RICHCO PLASTIC CO	CAT.NO. CH20-141	802285-001	30
038	GROMMET,CATAPILLAR,NY	11897	PLASTIGLIDE MFG. CORP.	122-NN-2500	802047-002	1
039	ASY,CBL CLAMP,EMI FOR	53938	EVANS & SUTHERLAND.	200442-100	200442-100	1
040	CLAMP,CBL	04673	DAKOTA ENGINEERING INC	2C1-75	802253-001	2
041	SCR,FLT-HD,PHIL,8-32X	N/A	DISTRIBUTORS	8-32X5/8 (M-F-PH-SS)	802004-305	2
042	HW,WSHR #8INTLOK	N/A	DISTRIBUTORS	SAE#8,LK INTL,SS	802005-008	4
043	HW,WSHR #8,FLAT	N/A	DISTRIBUTORS	SAE#8FLAT,SS,.040THK	802007-008	2
044	HW,NUT 8-32NUT	N/A	DISTRIBUTORS	NUT-HEX (8-32) SS	802014-008	2
045	HW,GLUE #430	05972	LOCTITE CORP	SUPERBONDER-43050	802288-003	1
046	HW,TIE TY-232M	59730	THOMAS AND BETTS CORP.	TY-232M	802061-002	6
047	MOUNT,CBL-TIE,1-1/16S	06383	PANDUIT CORP	ABM2S-A	802125-009	6
048	CLAMP,CBL,U-SHAPE,W/B	04673	DAKOTA ENGINEERING INC	2C1-100	802253-002	3
049	HW,NUT 10-32NUT	N/A	DISTRIBUTORS	NUT-HEX (10-32) SS	802014-010	3
050	CBL,AIRFLOW SENSOR FO	53938	EVANS & SUTHERLAND.	200379-002	200379-002	1
051	PRESSURE-SW,DIFF,W.C.	85274	DWYER INSTRUMENTS INC.	1823-0 (W.C.=.15-.5)	801722-001	1
052	TUBING AIR SENSING	53938	EVANS & SUTHERLAND.	500312-001	500312-001	1

TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200402-3XX

REV: A3 = AD

DESC: CAB ASY,RH, NSP

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
053	PLATE, MTG, SW, SENSING,	53938	EVANS & SUTHERLAND.	500311-001	500311-001	1
054	GROMMET, CATAPILLAR, NY	3D536	AIMSCO INC	WG101	802047-001	1
055	BASE PLATE, CAB, EMI (SP	53938	EVANS & SUTHERLAND.	500343-001	500343-001	1
056	CBL, +12 VOLT, NV SP2	53938	EVANS & SUTHERLAND.	200343-006	200343-006	1

52 ITEMS LISTED

8

7

6

5

4

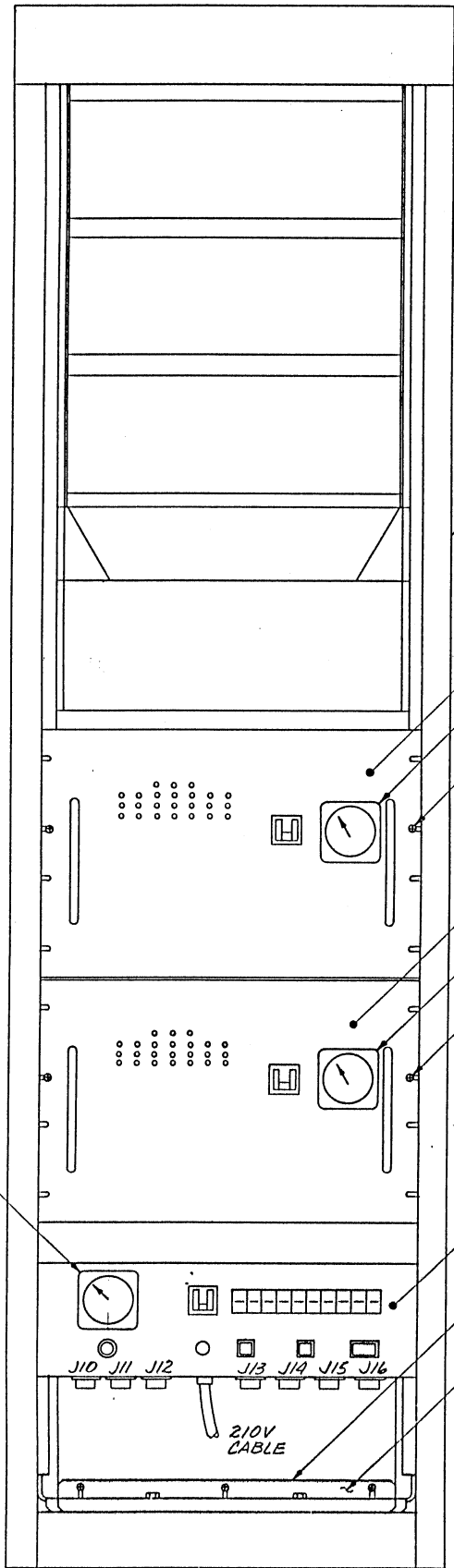
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2

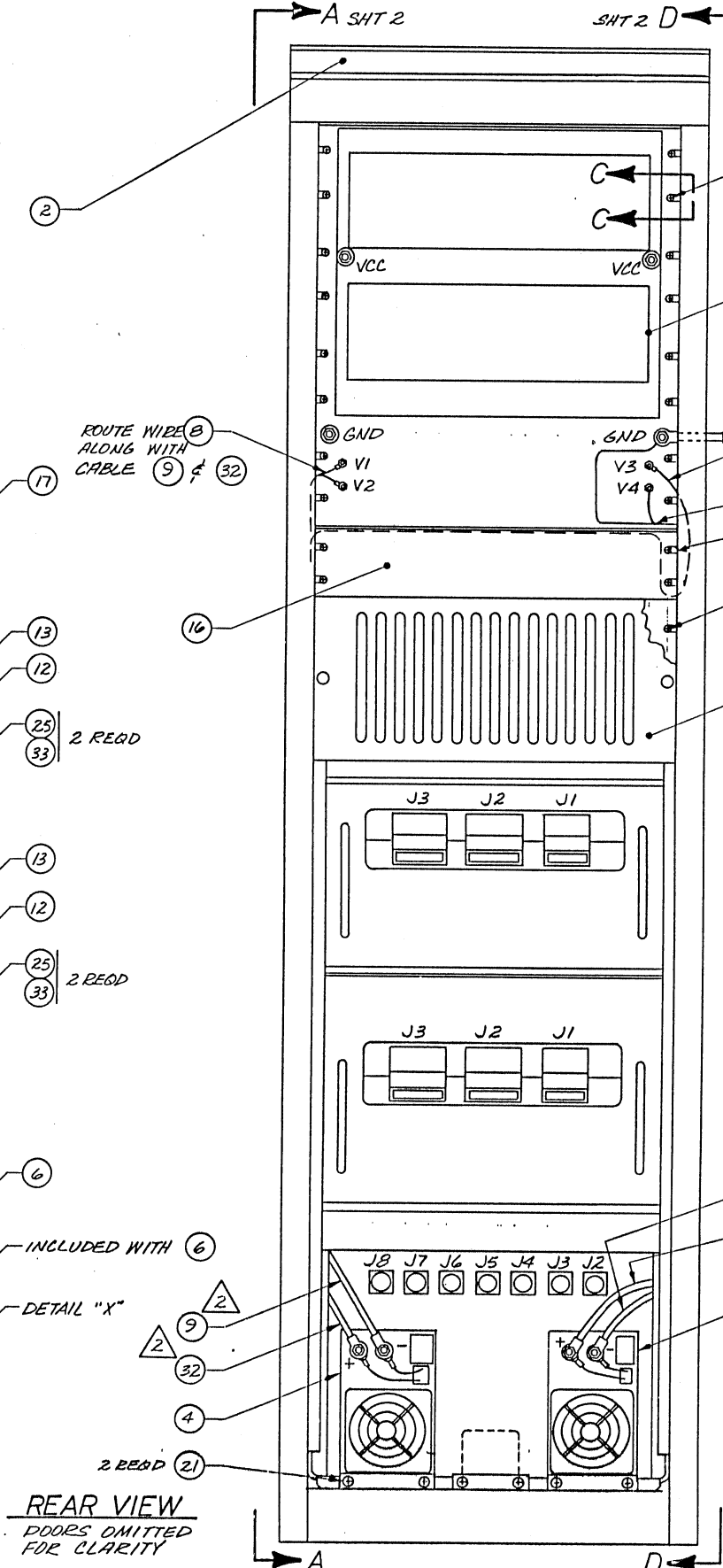
1

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0	REH 2-5-84	R Spain
	A1	PARTS LIST CHNG ONLY	RMH 7-21-84	DMackay
	A2	PARTS LIST CHNG ONLY	RMH 7-21-84	DMackay
	A3	ADD POWER CONT. +12 VOLT	KMDT 1-20-88	PKB 7/88



FRONT VIEW
 DOORS OMITTED
 FOR CLARITY

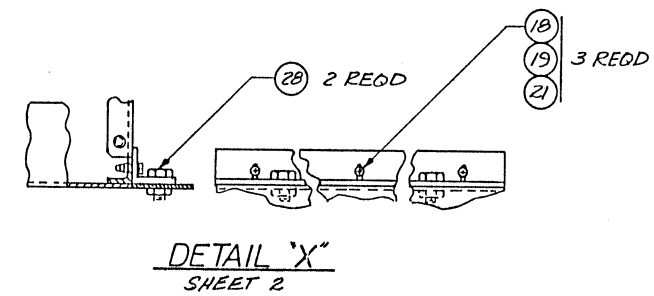
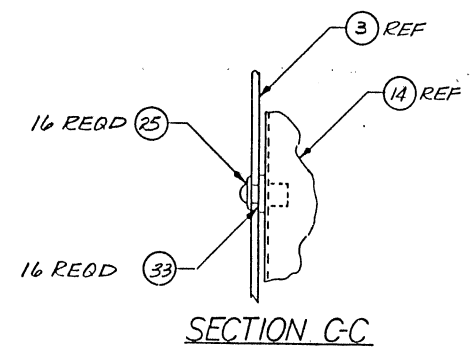


REAR VIEW
 DOORS OMITTED
 FOR CLARITY

- NOTES:
1. MARK ASSY NO., REV LEVEL AND SN PER EFS PRODUCTION PROCESSES P.B. LOCATE APPROX AS SHOWN.
 2. FOR CABLE CONNECTIONS REFER TO WIRE DIAGRAM SHEET 3 FOR ONE CHANNEL ASSY INSERT ITEM 31 INTO CONNECTOR J9B.

ROUTE WIRE 8 ALONG WITH CABLE 9 & 32

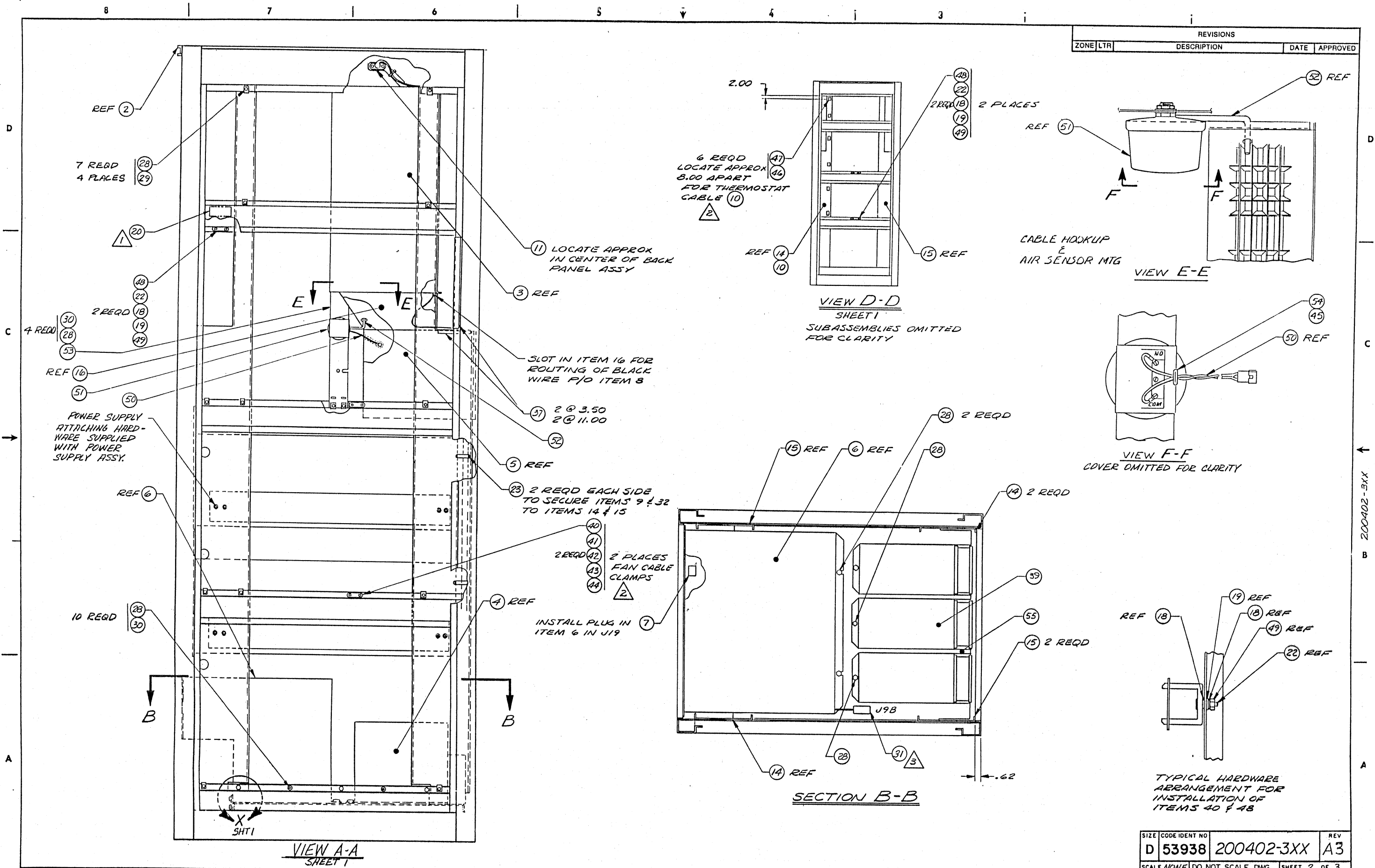
BLACK WIRE P/D ITEM 8 ROUTE BEHIND FRONT PANEL OF 16 THRU SLOTS



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± ✓	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
	DRAWN L. WILLARDSON 7/83 CHECKED P. [unclear] 10/24/83	CABINET ASSY, RH, NSP	
MATERIAL SEE PARTS LIST	APPROVED	SIZE CODE IDENT NO D 53938 200402-3XX	REV A3
FINISH		SCALE NONE DO NOT SCALE DWG	SHEET 1 OF 3

200402-3XX

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



200402-3XX

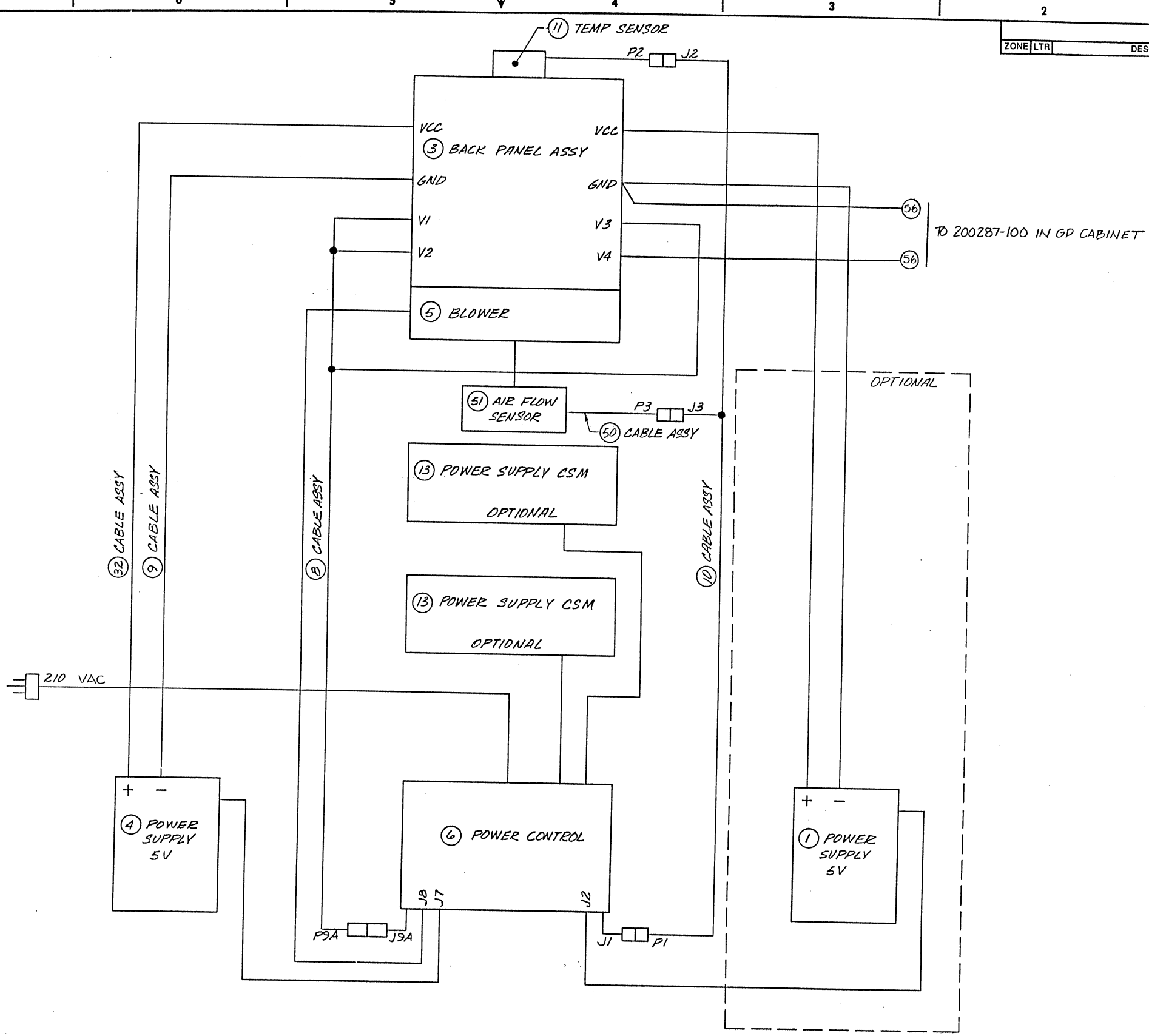
SIZE	CODE IDENT NO	REV
D	53938 200402-3XX	A3
SCALE NONE DO NOT SCALE DWG		SHEET 2 OF 3

8 7 6 5 4 3 2 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D
C
A

D
C
B
A



SIZE	CODE IDENT NO	REV
D	53938 200402-3XX	A3
SCALE NONE DO NOT SCALE DWG		SHEET 3 OF 3

200402-3XX



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200426-200

REV: A0 = AA

DESC: OPT, COAX CBL, STRAIN RELIEF, SP

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	MTG PLATE, COAX STRAIN	53938	EVANS & SUTHERLAND.	500393-001	500393-001	1
002	CLAMP, COAX STRAIN REL	53938	EVANS & SUTHERLAND.	500391-001	500391-001	1
003	BOLT, HEX-HD+LOCK-WSHR	83486	ELCO INDUSTRIES INC	1/4-20X5/8 (SEMS-HEX)	802304-004	4
004	NUT, KEPS, HEX .438 MAX	N/A	DISTRIBUTORS	NUT-KEPS (1/4-20)	802306-001	4

4 ITEMS LISTED



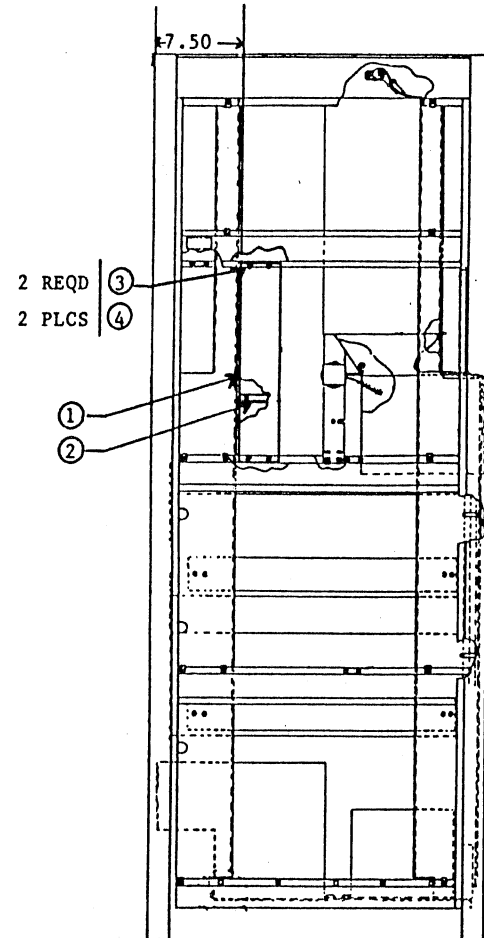
ORIGINAL

REV SEPT. 1986

DWG
NO.

200426-200

LTR	REV DESCRIPTION	DATE	APPROVED
PO	CREATE	10-DEC-87	<i>[Signature]</i>
AO	RELEASE	11-DEC-87	<i>[Signature]</i> 12-18-87



This option, consisting of a plate and clamp, can be added to GP and DP cabinets on the left side between the first and second struts to secure coax cables.

The clamp is positioned on the plate in such a way that by turning the plate the clamp is located closer to the 1st or 3rd row of the backpanel thus satisfying requirements of strain relief for video cables in either location.

Installation of this option for the DSEU option, 200413-202, requires placement in approximately the same location but on the right side of the GP cabinet.

REQUESTED BY E.C.Scherzer	EVANS & SUTHERLAND Salt Lake City, Utah 84108				
DRAWN E.C.Scherzer					
CHECKED <i>G. Rogers 12/15/87</i>	TITLE Option, Coax Cable Strain Relief				
APPROVED					SHEET 1 OF 1
APPROVED	SCALE	CODE ID 53938	SIZE A	NO. 200426-200	AO REV

10

C

C

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=18:35

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200115-100

REV: C1 = CB

DESC: BACKPANEL,ASY,SP1/T GP

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	ASY,BP,3 ROW TERADYNE	53938	EVANS & SUTHERLAND.	101400-103	101400-103	1
002	CONN,BNC,BULKHEAD-RCP	74868	ALLIED CORP.AMPH PROD DIV	31-102	801051-001	2
003	HW,WIRE 30AWG TW/PR	19449	BERK-TEC INC	BTK-30-3B-D(B-W/TW)	802071-001	2
004	BUSHING,1/8X5/16,SNAP	28520	HEYCO MOLDED PRODUCTS	2000-BLK (SB-250-2)	802102-002	2
006	*SCD*LBL,BAR-CODE,PRE	53938	EVANS & SUTHERLAND	*SCD*802178-008	802178-008	1
008	W/W FILE,SP1/T GP BP	53938	EVANS & SUTHERLAND.	200115-800	200115-800	1
009	R,,AXL 180 1/8W	50139	ALLEN-BRADLEY CO. ELECTRO	BB1815	803300-181	2
010	R,,AXL 220 1/8W	50139	ALLEN-BRADLEY CO. ELECTRO	BB2215	803300-221	1
011	R,,AXL 100 1/8W	50139	ALLEN-BRADLEY CO. ELECTRO	BB1015	803300-101	1

9 ITEMS LISTED



8 7 6 5 4 3 2 1

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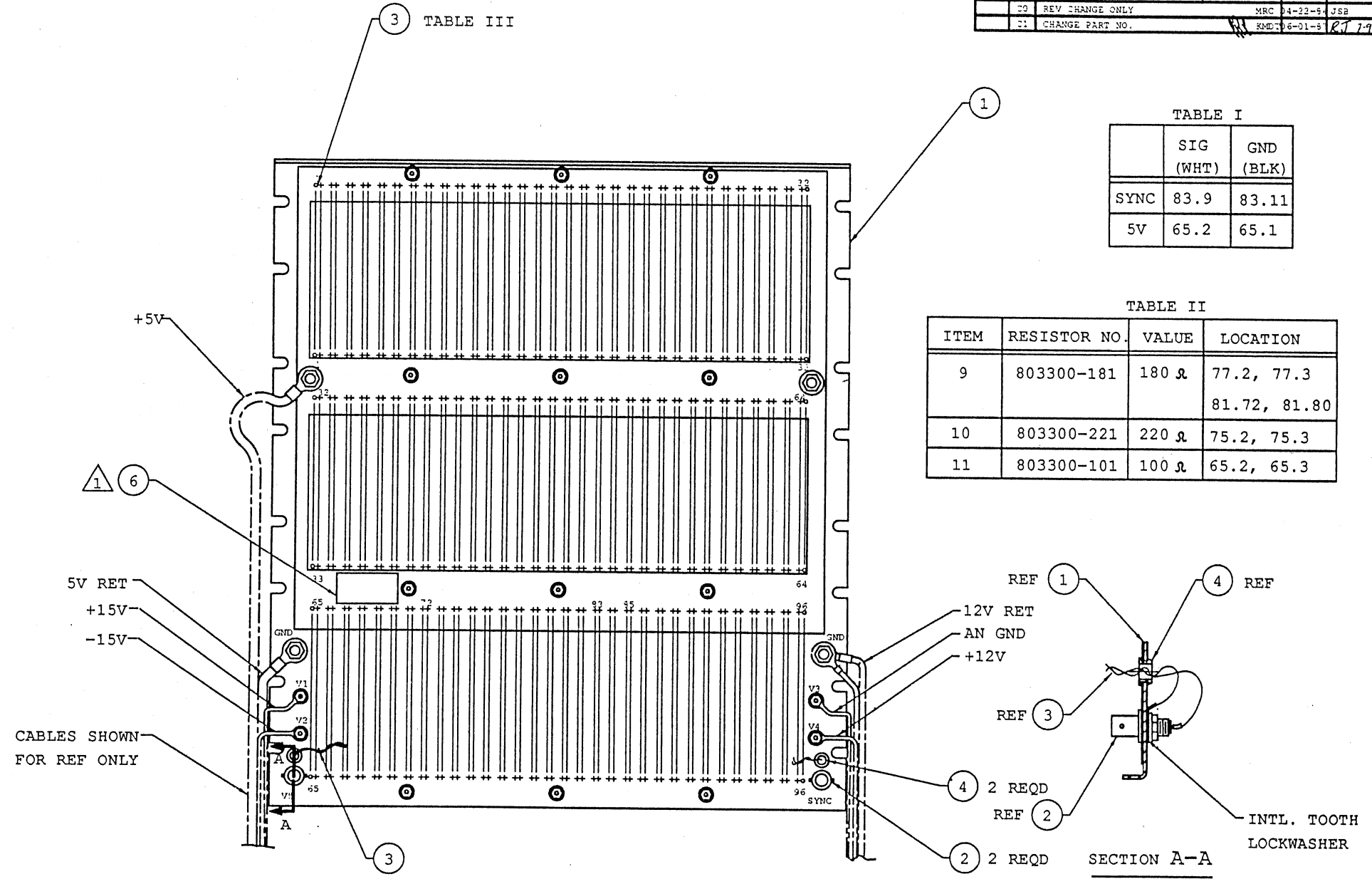
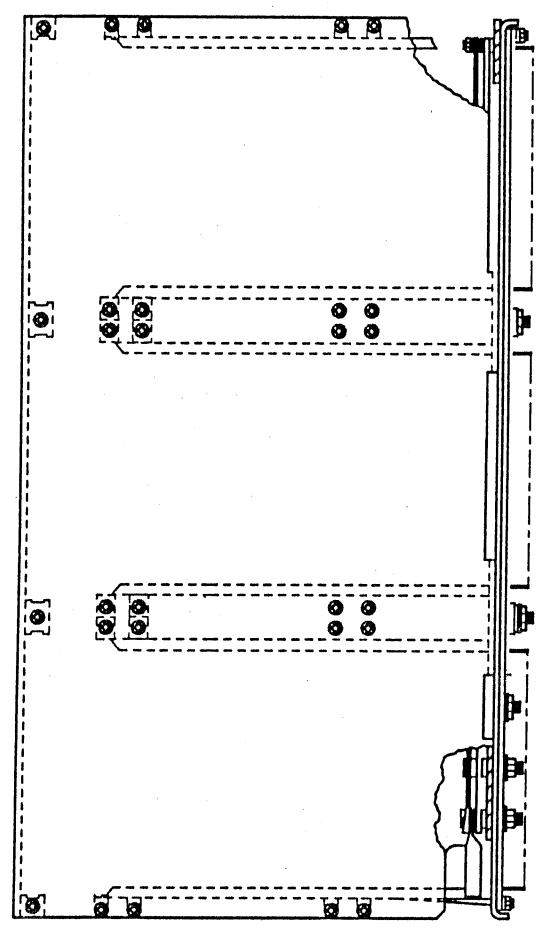
DATE	REV	DESCRIPTION	DATE	APPROVED
	B0	AD,AL,B0 CHANGED TABLES II,III	GR 03-04-85	JSS
	C0	REV CHANGE ONLY	MRC 04-22-85	JSS
	D1	CHANGE PART NO.	KMD 06-01-85	RT 1-9-87

TABLE I

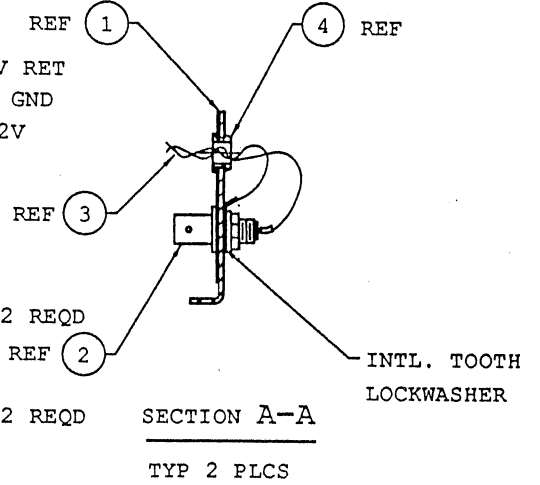
	SIG (WHT)	GND (BLK)
SYNC	83.9	83.11
5V	65.2	65.1

TABLE II

ITEM	RESISTOR NO.	VALUE	LOCATION
9	803300-181	180 Ω	77.2, 77.3 81.72, 81.80
10	803300-221	220 Ω	75.2, 75.3
11	803300-101	100 Ω	65.2, 65.3



CABLES SHOWN FOR REF ONLY



NOTES:

- 1. MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
- 2. INSTALL ITEM 6 AFTER WIREWRAPPING.

TABLE III

WIRE	LOCATION
802071-001	12.17, 60.68 [12.21] [60.71]

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± - .XXX ± - ANGLES ± - ✓ HOLES PER AIN 40387	CONTRACT NO. DRAWN GAT 18-09-85 CHECKED PRP 9-24-85 MECH ELEC JNB 2-15-85 PROJ. ENG TMB 2-25-85 APPROVED	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108 BACKPANEL ASSY., SP1/T GP
MATERIAL SEE PARTS LIST	FINISH	REV D 53938 200115-100 C1

200115-100

9 7 6 5 4 3 2 1



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200116-100

REV: A0 = AA

DESC: BACKPANEL,ASY,SP1/T DP

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY	
001	ASY,BP,3 ROW TERADYNE	53938	EVANS & SUTHERLAND.	101400-103	101400-103	1	
002	CONN,BNC,BULKHEAD-RCP	74868	ALLIED CORP.AMPH PROD DIV	31-102	801051-001	2	
004	BUSHING,1/8X5/16,SNAP	28520	HEYCO MOLDED PRODUCTS	2000-BLK (SB-250-2)	802102-002	2	
006	ASY,NAME PLATE (FOIL)	53938	EVANS & SUTHERLAND.	101341-100	101341-100	1	
	W/W,SP1/TDP BP	53938	EVANS & SUTHERLAND.	200116-800	200116-800	1	
003	2 AT 6 IN, 6.79 75.3 6.71	19449	BERK-TEC INC	BTK-30-3B-D (B-W/TW)	802071-001	2	
	75.1 76.3 8.79 76.1 8.71						
	65.3 1.3 65.1 1.1						
	65.2 65.3	R,,AXL	100 1/8W	50139 ALLEN-BRADLEY CO. ELECTRO	BB1015	803300-101	1
	75.2 75.3	R,,AXL	220 1/8W	50139 ALLEN-BRADLEY CO. ELECTRO	BB2215	803300-221	1
	81.72 81.80 76.2 76.3	R,,AXL	180 1/8W	50139 ALLEN-BRADLEY CO. ELECTRO	BB1815	803300-181	2

9 ITEMS LISTED



8 7 6 5 4 3 2 1

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ZONE	LTR	DESCRIPTION	DATE	APPROVED
P1	REV. UPDATE		DB 12-02-85	JB 12-5-85
AO	RELEASED TO AD		BA/BH 12-20-86	SS 3/10/86

TABLE I

	SIG (WHT)	GND (BLK)
SYNC	83.9	83.11
5V	65.2	65.1

TABLE II

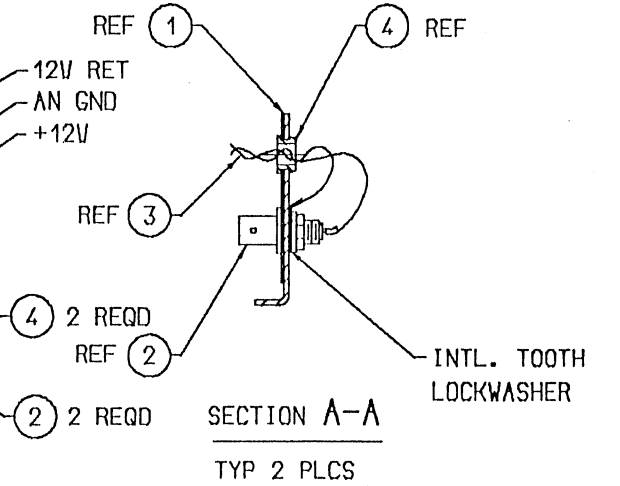
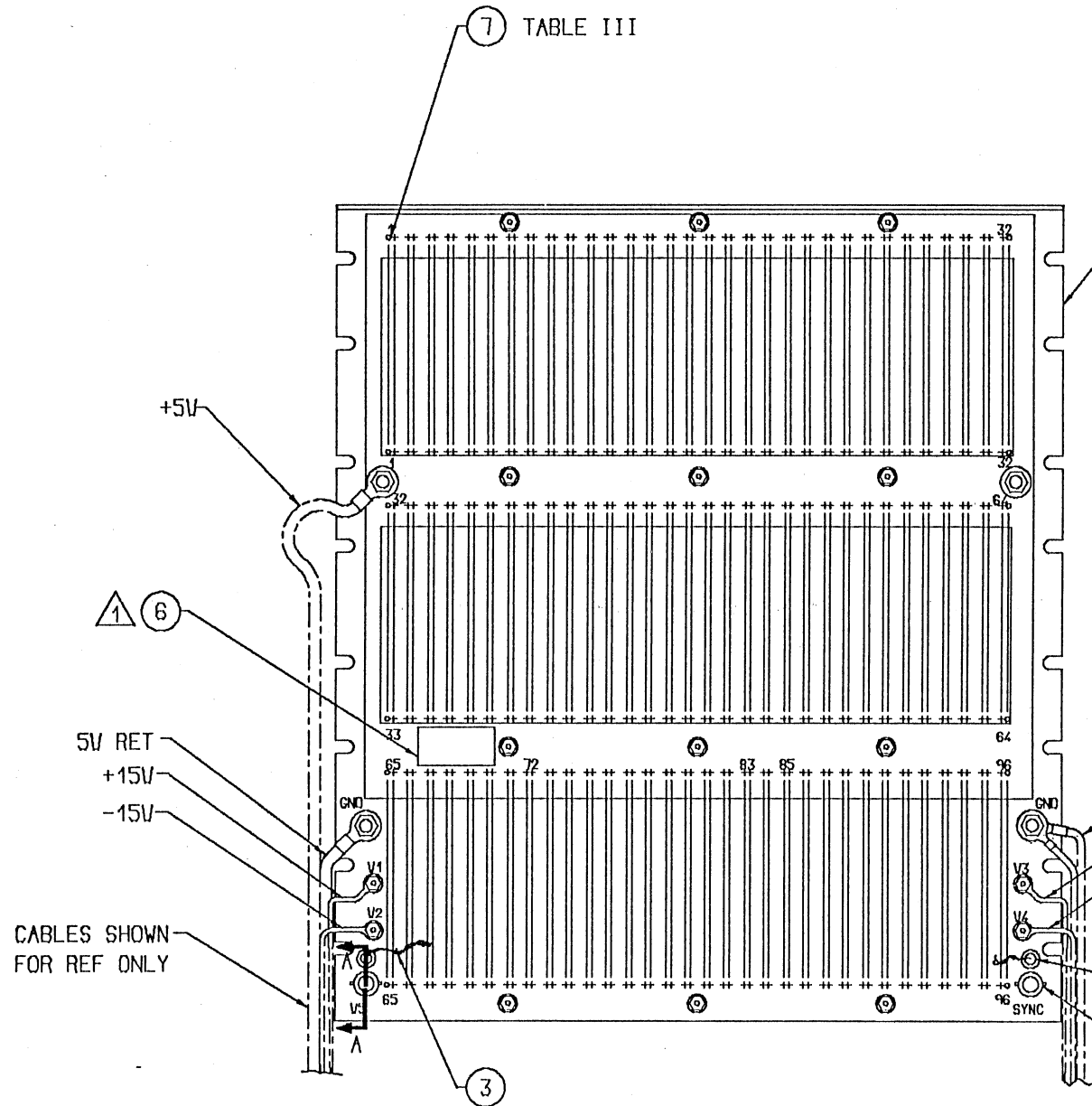
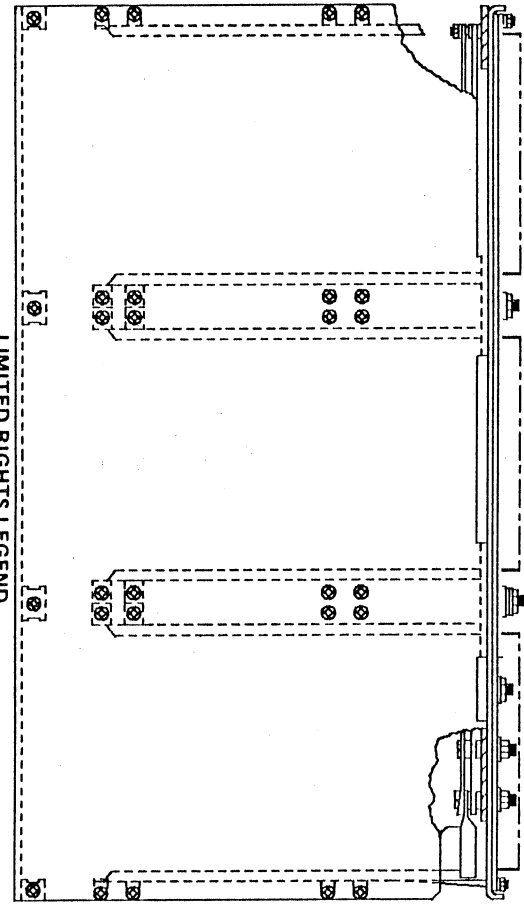
RESISTOR NO.	VALUE	LOCATION
803300-181	180 Ω	81.72 81.80
	180 Ω	76.2 76.3
803300-221	220 Ω	75.2 75.3
803300-101	100 Ω	65.2 65.3

TABLE III

WIRE	LOCATION
802071-001	6.79 75.3 [6.71] [75.1]
	76.3 8.79 [76.1] [8.71]
	65.3 1.3 [65.1] [1.1]

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NOTES:

- MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
- INSTALL ITEM 6 AFTER WIREWRAPPING.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± - .XX ± - ANGLES ± - ✓ HOLES PER AND 10387	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
	DRAWN PRP 10-30-85	BACKPANEL ASSY., SP1/T DP	
	CHECKED GL MECHAN 11-5-85	SIZE CODE TOOTH NO D 53938 200116-100	
	MECH ELEC JEB 3/10/86 PROJ. ENG J. BLEAK 11-8-85	SCALE NONE DO NOT SCALE DWG SHEET 1 OF 1	
MATERIAL SEE PARTS LIST	APPROVED		
FINISH			

8 7 6 5 4 3 2 1

200116-100



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.



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200285-100

REV: A1 = AB

DESC: ASSY, POWER SUPPLY, 5V, 200A, NOVVIEW

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	ASY, NAME PLATE (FOIL)	53938	EVANS & SUTHERLAND.	101341-100	101341-100	1
002	CBL, PWR, 230 VAC, 5 VOL	53938	EVANS & SUTHERLAND.	200340-002	200340-002	1
003	PLATE, MTG, PWR SPLY, NV	53938	EVANS & SUTHERLAND.	500263-001	500263-001	1
004	PWR SPLY, 5V, 200A, 1000	98380	NJE CORP.	MK-1000-5-200-DU3B	801841-002	1
005	TIE, CBL, NYLON, #10-MNT	06383	PANDUIT CORP	SSC2S-S10	802054-002	1
006	HW, HW-S 8-32X3/8	N/A	DISTRIBUTORS	8-32X3/8 (M-P-PH-SS)	802004-103	1
007	SCR, FLT-HD, PHIL, 8-32X	N/A	DISTRIBUTORS	8-32X3/8 (M-F-PH-SS)	802004-303	4
008	HW, WSHR #8 INTLOK	N/A	DISTRIBUTORS	SAE#8, LK INTL, SS	802005-008	1
009	*SCD*DECAL, HIGH-VOLT,	53938	EVANS & SUTHERLAND	*SCD*802258-003	802258-003	1

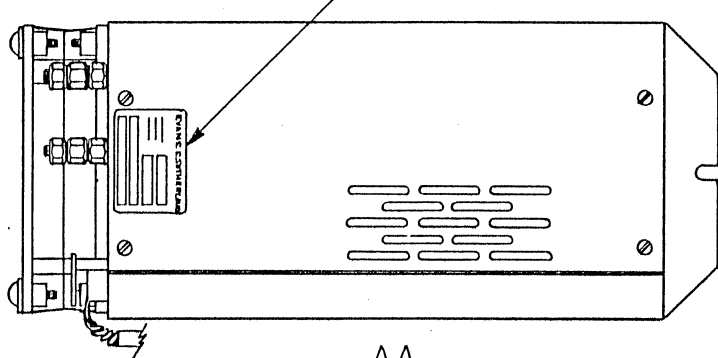
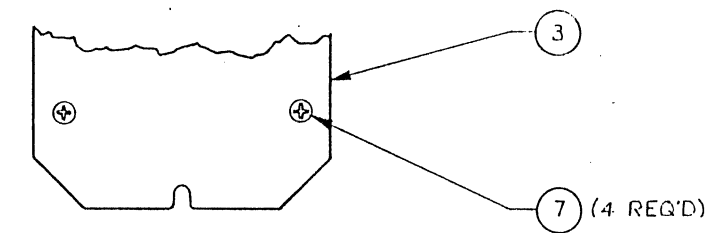
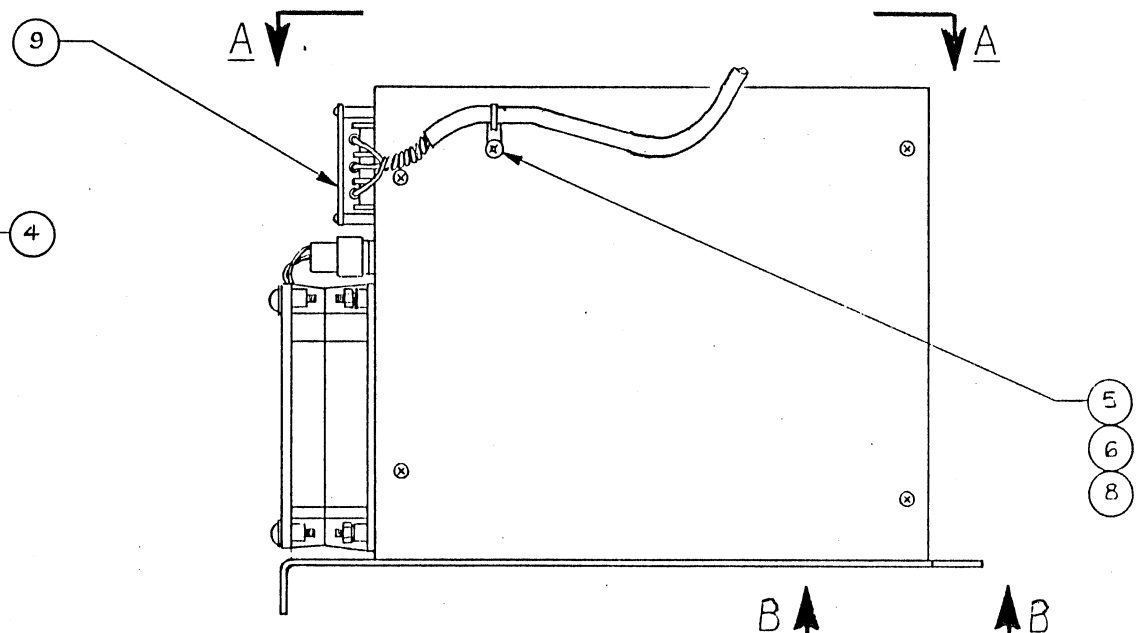
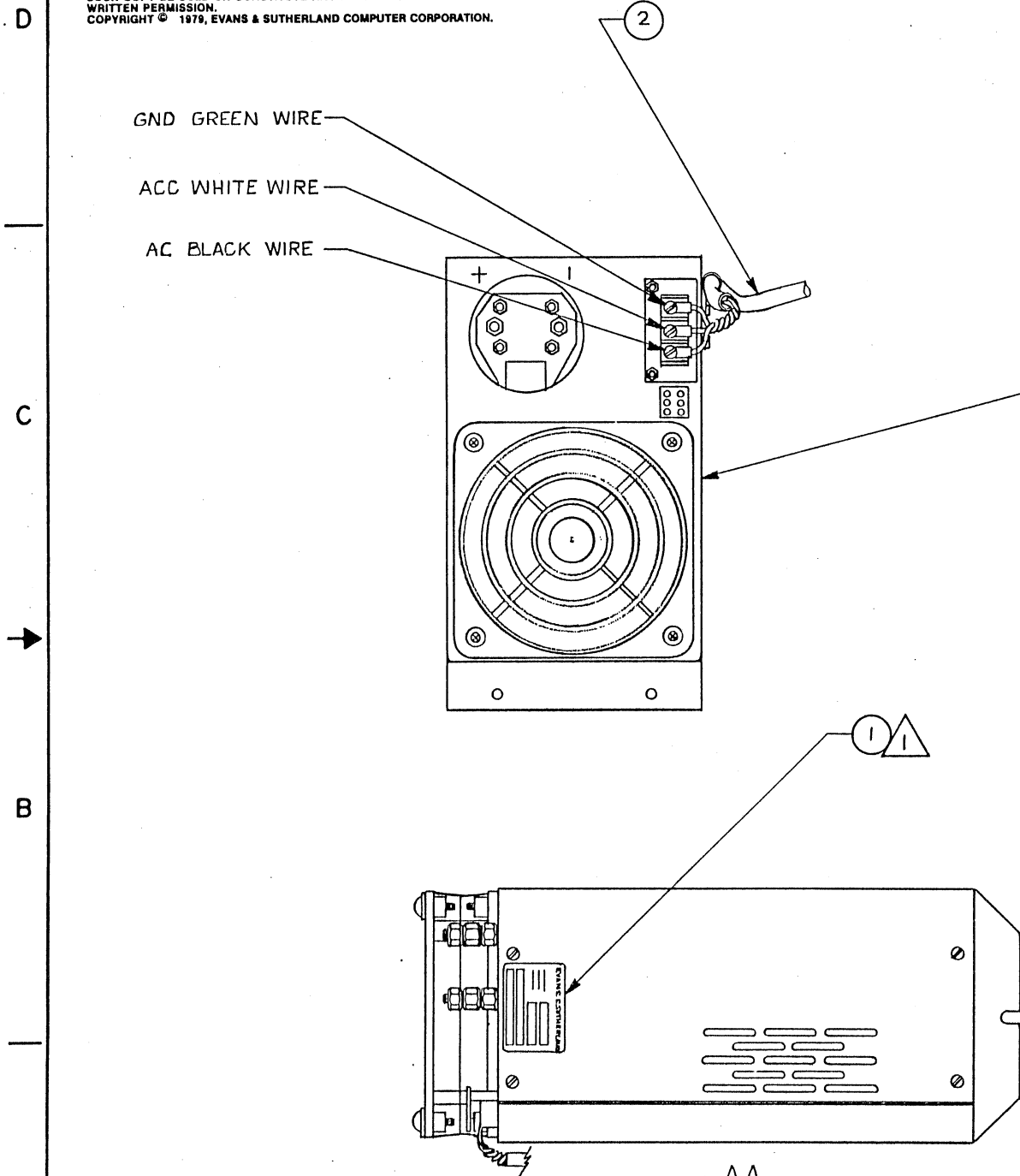
9 ITEMS LISTED



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REV LEVEL FOR DASH NO.			REVISIONS				
-102	-101	-100	ZONE	LTR	DESCRIPTION	DATE	APPROVED
—	—	NC	—	—	REDRAWN W/ MINOR CHNGS	17DEC79	K. Wilson
—	AO	—	—	—	RELEASED TO AO	12-28-83	P. Spier
—	A1	A1	—	—	ENLARGED CIRCULAR MOUNTING	10-18-81	P. Spier
PO	—	—	—	—		03-24-81	P. Spier
AO	—	—	—	—	RELEASED TO AO	5-27-82	KMDT



NOTES:
 1. MARK ASSY NO., REV LEVEL AND S/N PER E & S
 PRODUCTION PROCESSES R-8. LOCATE APPROX AS SHOWN.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓	DRAWN AS SHOWN 17DEC79 CHECKED K. Wilson 12-18-79 MECH. ELEC. K. Wilson 12-18-79 PROJ. ENG. K. Wilson 12-18-79 APPROVED
MATERIAL SEE PARTS LIST	SIZE CODE IDENT NO C 53938
FINISH	SCALE 1/2

EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108	
ASSY, POWER SUPPLY, 5V, 200A	
200285-TAB	REV SEE REV BLOCK
DO NOT SCALE	SHEET 1 OF 1

200285-100



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200286-100

REV: A2 = AC

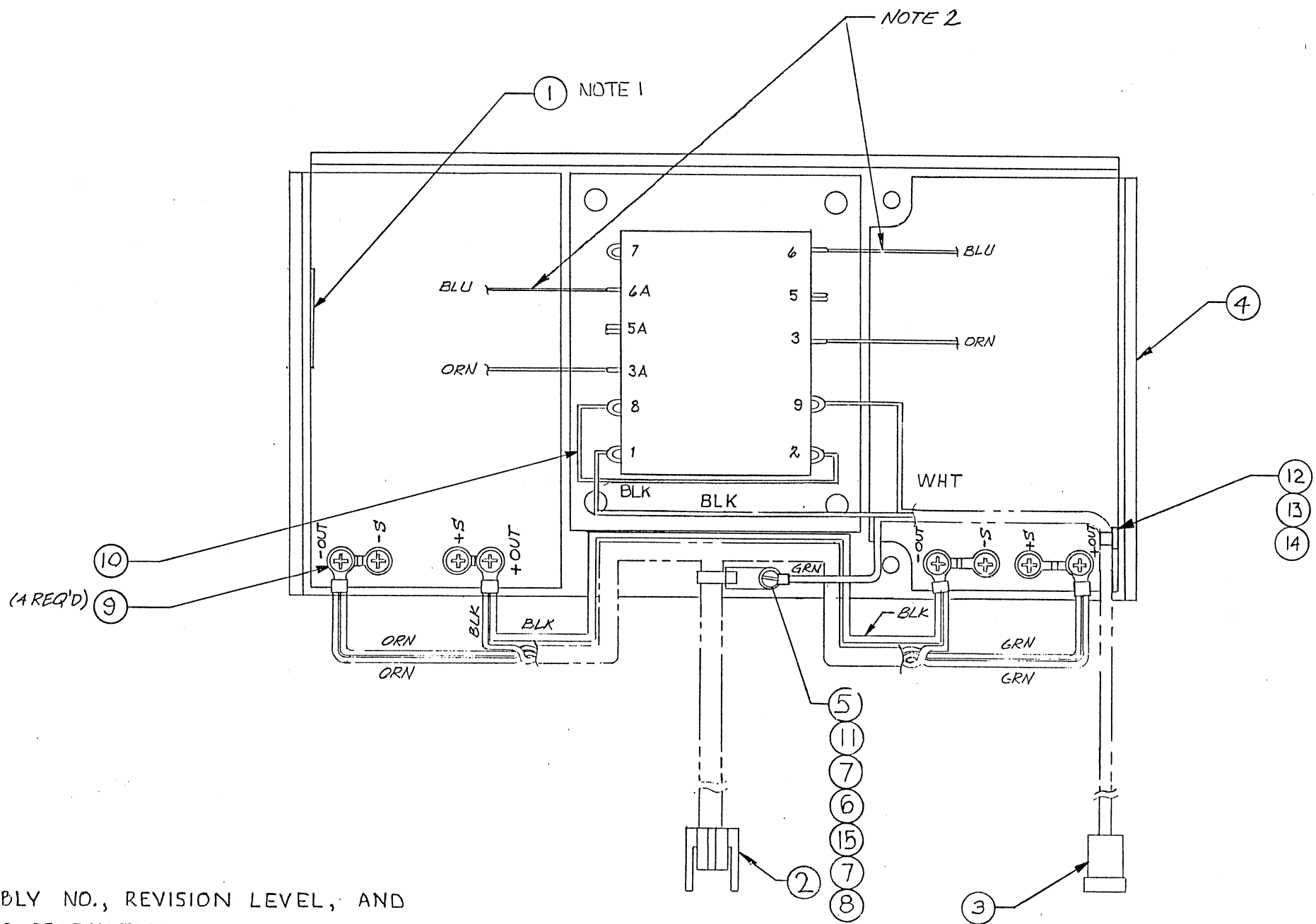
DESC: ASSY, POWER SUPPLY, +-15V, 2.8A

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	ASY, NAME PLATE (FOIL)	53938	EVANS & SUTHERLAND.	101341-100	101341-100	1
002	CBL, PWR, +-15V	53938	EVANS & SUTHERLAND.	101372-001	101372-001	1
003	CBL, PWR, 230 VAC, FOR +	53938	EVANS & SUTHERLAND.	200345-001	200345-001	1
004	PWR SPLY, DUAL, +-15V, 2	24429	POWERTEC INC.	(OEM II) 2L15D-2.8B	801856-001	1
005	HW, SCR 6-32X1/2	N/A	DISTRIBUTORS	6-32X1/2 (M-P-PH-SS)	802003-104	1
006	HW, WSHR #6EXTLOK	N/A	DISTRIBUTORS	SAE#6, LK EXT, SS	802006-006	1
007	HW, WSHR #6, FLAT	N/A	DISTRIBUTORS	SAE#6FLAT, SS, .032THK	802007-006	2
008	HW, NUT 6-32NUT	N/A	DISTRIBUTORS	NUT-HEX(6-32) SS	802014-006	1
009	JUMPER, TERM-BLK	71785	LABINAL COMPONENTS (TRW)	95B	802030-095	4
011	HW, TIE SSC2S-S6	06383	PANDUIT CORP	SSC2S-S6	802054-001	1
012	HW, TIE TY-232M	59730	THOMAS AND BETTS CORP.	TY-232M	802061-002	1
013	MOUNT, CBL-TIE, 7/16X7/	59730	THOMAS AND BETTS CORP.	TC817 (7/16X7/16)	802125-817	1
014	HW, GLUE #495	61751	KRAZY GLUE INC.	TYPE 202 (BLUE-CAP)	802288-001	1
015	HW, WSHR #6SPLOK	N/A	DISTRIBUTORS	WSHR#6, LOCK/HELIC, SS	802300-006	1
010	BLK WIRE, 16AWG (19/29; 26/3	73612	CONSOLATED ELEC, W/C CORP	9404 (16AWG) BLACK	802508-000	1

15 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	NC	MOVE ITEM 12,13 ADDED ITEM 14	KJ 12-19-79	R. Moon
	AI	RELOCATE ASSY NAME PLATE	KJ 1-4-80	<i>[Signature]</i>
	RCI	MAKE I.D. TAG VISABLE	KMDT 3-31-87	Ron James
	AZ	CHNGD. HDW. STAG KUP	KJLB 8-8-88	Kyle [Signature]



NOTES:

1. MARK ASSEMBLY NO., REVISION LEVEL, AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.1. LOCATE APPROX AS SHOWN.
2. CONNECT EXISTING BLUE WIRES (2) AS SHOWN.
3. REMOVE JUMPER WIRES INSTALLED BY VENDOR BETWEEN TERMINALS 8-1 AND 9-2.

200154-100	NOVVIEW
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
.xx ± ———
.xxx ± ———
ANGLES ± ———
✓
MATERIAL
SEE PARTS LIST
FINISH

CONTRACT NO.
DRAWN *[Signature]* 24 OCT. 79
CHECKED *[Signature]* 12-19-79
MECH
ELEC *[Signature]* 19 Dec 79
PROJ. ENG *[Signature]* 19 Dec 79
APPROVED

SEE SEPARATE PARTS LIST

EVANS & SUTHERLAND
COMPUTER CORPORATION
SALT LAKE CITY, UTAH 84112

ASSY, POWER SUPPLY,
± 15 V, 2.8 A

SIZE	CODE IDENT NO	REV
C	53938 200286-100	A2

SCALE 1/2 SHEET 1 OF 1

200286-100



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200287-100

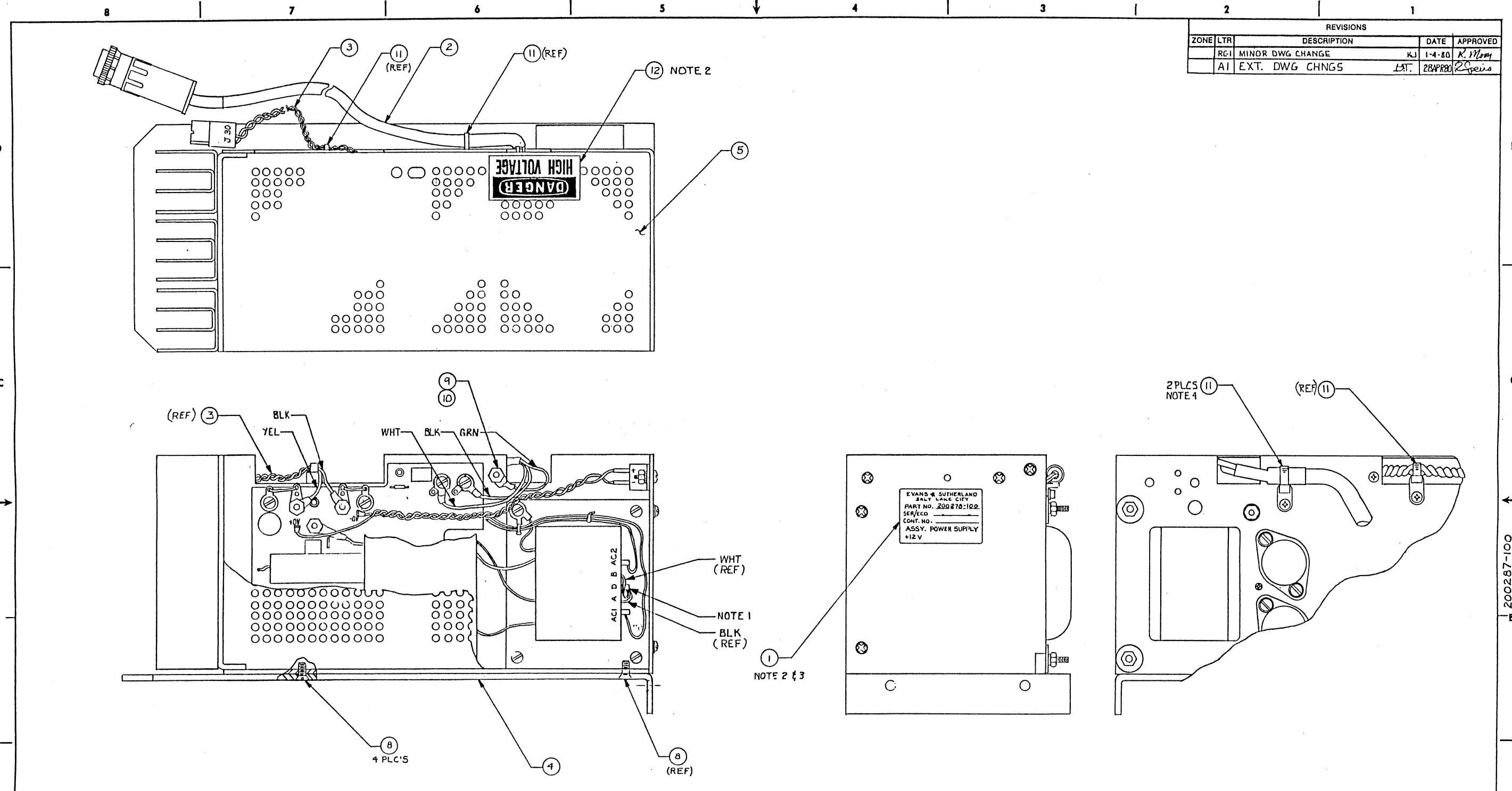
REV: A1 = AB

DESC: ASSY, POWER SUPPLY, 12VDC, 14AMP, NOVOVIEW

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	ASY, NAME PLATE (FOIL)	53938	EVANS & SUTHERLAND	101341-100	101341-100	1
002	CBL, PWR, 230 VAC, 5 VOL	53938	EVANS & SUTHERLAND	200340-002	200340-002	1
003	CBL, +12 VOLT, PIGTAIL,	53938	EVANS & SUTHERLAND	200344-001	200344-001	1
004	PLATE, MTG, PWR SPLY, NV	53938	EVANS & SUTHERLAND	500263-001	500263-001	1
005	*SCD*PWR SPLY, 12VDC, 1	53938	EVANS & SUTHERLAND	*SCD*801659-202	801659-202	1
008	SCR, FLT-HD, PHIL, 8-32X	N/A	DISTRIBUTORS	8-32X3/8 (M-F-PH-SS)	802004-303	4
009	HW, WSHR #6INTLOK	N/A	DISTRIBUTORS	SAE#6, LK INTL, SS	802005-006	1
010	HW, NUT 6-32NUT	N/A	DISTRIBUTORS	NUT-HEX (6-32) SS	802014-006	1
011	HW, TIE SSC2S-S6	06383	PANDUIT CORP	SSC2S-S6	802054-001	2
012	*SCD*DECAL, HIGH-VOLT,	53938	EVANS & SUTHERLAND	*SCD*802258-002	802258-002	1

10 ITEMS LISTED





REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
REI		MINOR DWG CHANGE	KJ 1-4-80	K. Mon
AI		EXT. DWG CHNGS	LAT. 28 APR 80	R. Speis

- NOTES:
1. WIRED BY VENDOR FOR 230 VAC OPERATION.
 2. LOCATE ITEMS 12 | 1 APPROXIMATELY AS SHOWN.
 3. MARK PART NO. SERIAL NO. AND REV LEVEL ON ITEM 1.
 4. INSTALL ITEM 11 USING EXISTING SCREWS AND LOCK WASHERS.

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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) (b) 2II

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± ✓	CONTRACT NO.	EVANS & SUTHERLAND BALT LAKE CITY, UTAH 84108	
	DRAWN J. WHEELER 12-3-79	ASSY, POWER SUPPLY	
	CHECKED <i>[Signature]</i> 12-14-79	12 VDC, 14 AMP	
	MECH	230 V W/OVERVOLTAGE PROTECTOR NSP2	
ELEC R. Mon 20 Dec 79	PROJECT	SIZE	CODE IDENT NO
PROJ. ENG. <i>[Signature]</i> 20 Dec 79		D	53938
APPROVED <i>[Signature]</i> 20 DEC 79			200287-100
MATERIAL			REV
FINISH			AI
SCALE 1/1		DO NOT SCALE DWG	
		SHEET 1 OF 1	



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200288-100

REV: A2 = AC

DESC: ASSY, BLOWER, 500 CFM, 230 VAC, 50-60 HZ

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	ASY, NAME PLATE (FOIL)	53938	EVANS & SUTHERLAND.	101341-100	101341-100	1
002	BLOWER, 525CFM, 220VAC,	06223	KOOLTRONIC INC	K2P877C-101/GR/B-FIL	801757-201	1
003	CONT, PIN, 18-14AWG, TYP	00779	AMP INC.	66602-1 (PIN/18-14GA)	801815-215	3
004	CLAMP, CBL, CIRC/PLSTC,	00779	AMP INC.	206358-1 (CLAMP #11)	801815-506	1
005	CONN, PLUG, CIRC/PLSTC,	00779	AMP INC.	206429-1 (4POS/PLUGE	801815-703	1
007	TIE, CBL-MARKING, PAD=.	59730	THOMAS AND BETTS CORP.	TY-46M (PAD=1/2X7/8)	802140-002	1
008	CLAMP, RND-CBL, U-CLIP,	51705	ICO-RALLY CORP.	ABU-3/8 (U-CLIP)	802254-003	2
006	1 AT 1.5 IN.	92194	ALPHA WIRE CORP.	FIT-221M-3/8"	802033-375	1

8 ITEMS LISTED

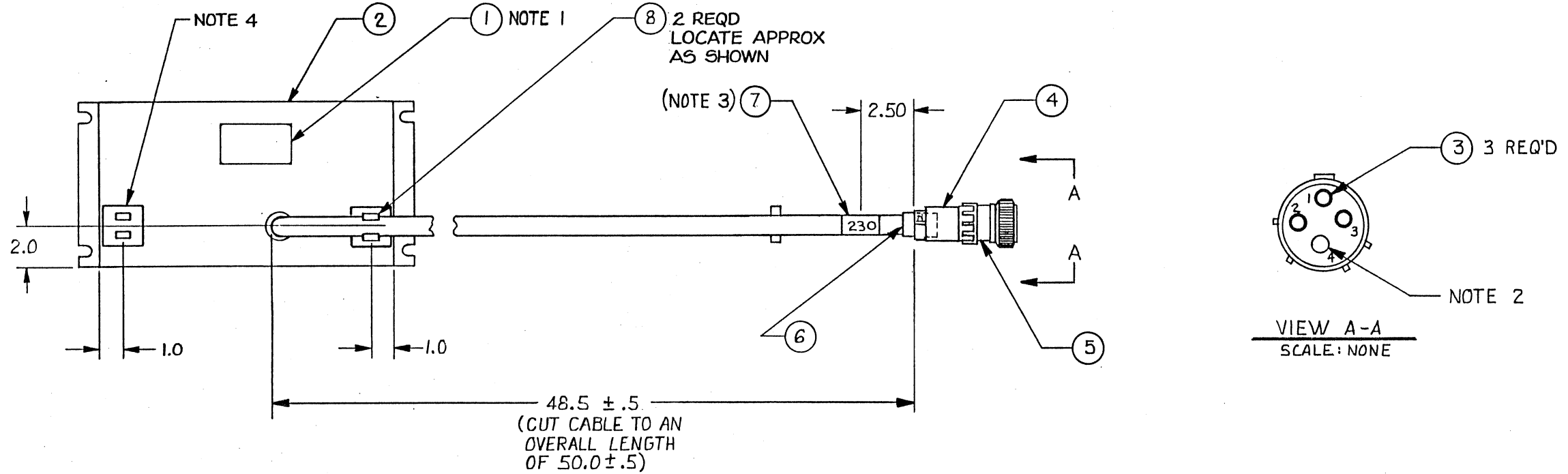


LIMITED RIGHTS LEGEND

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	NC	EXTENSIVE DWG CHNGS	28DEC79	<i>[Signature]</i>
	A1	REV UPDATE W/NO DWG CHNGS	4-14-80	<i>[Signature]</i>
	A2	ADD ALTERNATE CABLE CLAMP @ MB	12-7-83	<i>[Signature]</i>



WHITE	1
BLACK	2
GREEN	3
	4

SCHMATIC

4. ALTERNATE POSITION: CABLE MAY BE TIED HERE IF NECESSARY AT NEXT HIGHER ASSEMBLY INSTALLATION.
3. MARK CABLE ID TAG WITH "230 VAC" USING OPAQUE INDUSTRIAL INK PHILLIPS PROCESS CO. NO. 35A OR EQUIV.
2. DO NOT INSTALL ITEM 3 INTO ITEM 5 AT LOCATION 4.
1. TYPE PART NO. REVISION LEVEL AND SERIAL NO. ON NAME PLATE.

UNLESS OTHERWISE SPECIFIED:
NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± — .xxx ± — ANGLES ± — ✓	DRAWN <i>Howard L. Venter</i> 10-27-77	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108	
	CHECKED <i>K.M.</i> 8-JAN-80	ASSY, BLOWER, 500 CFM, 230 VAC., 50-60 HZ	
MATERIAL SEE PARTS LIST	MECH.	SIZE	CODE IDENT NO
FINISH	ELEC. <i>R. Moon & J. J. J.</i>	C	53938
	PROJ. ENG. <i>R. Moon</i> 8-JAN-80		200288-100
	APPROVED <i>[Signature]</i> 1-16-80		REV A2
		SCALE NONE	DO NOT SCALE SHEET 1 OF 1

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Contract No. F196284-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (2)



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200290-103

REV: A4 = AE

DESC: POWER CONTROL ASSY,NOVOVIEW SP2 (DC) 50/60 HZ

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
002	ASY,PWR SPLY,+15V,2.	53938	EVANS & SUTHERLAND.	200286-100	200286-100	1
003	ASY,W/H A,PWR CONT,NS	53938	EVANS & SUTHERLAND.	200294-101	200294-101	1
004	ASY,W/H B,PWR CONT,NS	53938	EVANS & SUTHERLAND.	200295-100	200295-100	1
005	ASY,W/H C,PWR CONT,NS	53938	EVANS & SUTHERLAND.	200296-103	200296-103	1
006	COVER,PWR CONT	53938	EVANS & SUTHERLAND.	500250-001	500250-001	1
007	PNL,FRONT,PWR CONT,NV	53938	EVANS & SUTHERLAND.	500251-001	500251-001	1
008	PNL,SIDES & BACK,PWR	53938	EVANS & SUTHERLAND.	500252-001	500252-001	1
009	PLATE,BOT,PWR CONT,NS	53938	EVANS & SUTHERLAND.	500253-001	500253-001	1
010	BRKT,MTG,PWR CONT,EMI	53938	EVANS & SUTHERLAND.	500342-001	500342-001	1
012	LAMP,NEON,105-125V,NE	71744	GENERAL INST CORP,LAMPS	NE51H (B2A)	801079-002	1
016	CR,RECT 1N4004	04713	MOTOROLA INC. SEMI PRODUC	1N4004	814004-001	3
019	EL,SUPR V275LA40B	03508	GENERAL ELECTIC CO. SEMI.	V275LA40B	801554-001	3
035	HW,SCR 4-40X3/8	N/A	DISTRIBUTORS	4-40X3/8 (M-P-PH-SS)	802002-103	40
036	HW,SCR 6-32X1/4	N/A	DISTRIBUTORS	6-32X1/4 (M-P-PH-SS)	802003-102	4
037	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-32X3/8 (M-P-PH-SS)	802003-103	43
038	HW,SCR 6-32X1/2	N/A	DISTRIBUTORS	6-32X1/2 (M-P-PH-SS)	802003-104	5
039	HW,SCR 6-32X5/8	N/A	DISTRIBUTORS	6-32X5/8 (M-P-PH-SS)	802003-105	3
040	HW,HW-S 8-32X3/8	N/A	DISTRIBUTORS	8-32X3/8 (M-P-PH-SS)	802004-103	6
041	HW,HW-S 8-32X1/2	N/A	DISTRIBUTORS	8-32X1/2 (M-P-PH-SS)	802004-104	27
042	HW,HW-S 8-32X5/8	N/A	DISTRIBUTORS	8-32X5/8 (M-P-PH-SS)	802004-105	4
043	SCR,FLT-HD,PHIL,8-32X	N/A	DISTRIBUTORS	8-32X1/2 (M-F-PH-SS)	802004-304	4
044	HW,WSHR #4INTLOK	N/A	DISTRIBUTORS	SAE#4,LK INTL,SS	802005-004	40
045	HW,WSHR #6INTLOK	N/A	DISTRIBUTORS	SAE#6,LK INTL,SS	802005-006	26
046	HW,WSHR #8INTLOK	N/A	DISTRIBUTORS	SAE#8,LK INTL,SS	802005-008	33
047	HW,WSHR #10INTLK	N/A	DISTRIBUTORS	SAE#10,LK INTL,SS	802005-010	18
048	HW,WSHR #6,FLAT	N/A	DISTRIBUTORS	SAE#6FLAT,SS,.032THK	802007-006	3
049	HW,WSHR #8,FLAT	N/A	DISTRIBUTORS	SAE#8FLAT,SS,.040THK	802007-008	10
050	HW,WSHR #10,FLAT	N/A	DISTRIBUTORS	AN960C10L,#10FLAT,SS	802007-010	15
051	HW,NUT 8-32NUT	N/A	DISTRIBUTORS	NUT-HEX (8-32) SS	802014-008	2
052	HW,NUT 10-32NUT	N/A	DISTRIBUTORS	NUT-HEX (10-32) SS	802014-010	7
053	JUMPER,TERM-BLK	71785	LABINAL COMPONENTS (TRW)	95B	802030-095	12
055	GROMMET,CATAPILLAR,NY	53421	TYTON CORP.	FPC	802047-003	1
056	SCR,PAN-HD,PHIL,10-32	N/A	DISTRIBUTORS	10-32X1/2 (M-P-PH-SS)	802053-104	7
057	SCR,PAN-HD,PHIL,10-32	N/A	DISTRIBUTORS	10-32X2-1/2 (M-P-P-SS)	802053-120	2
058	SCR,FLT-HD,PHIL,10-32	N/A	DISTRIBUTORS	10-32X1/2 (M-F-PH-SS)	802053-304	3
059	HW,TIE TY-25M	59730	THOMAS AND BETTS CORP.	TY-25M	802061-001	55
060	HW,TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	33
062	HW,TBNG 18G-TBNG	51705	ICO-RALLY CORP.	STT-18 (TFE-18AWG)	802093-018	1
063	MOUNT,CBL-TIE,7/16X7/	59730	THOMAS AND BETTS CORP.	TC817 (7/16X7/16)	802125-817	29
064	TERM,RING,NO.10 STUD,	98410	ETC-MOLEX INC.	A-821-10T	802131-010	2
065	SPLICE,PARALLEL,16-14	98410	ETC-MOLEX INC.	BS-304 (16-14AWG)	802169-016	4
066	CONN,ROMEX,FOR HANDY	9N565	ELECTRICAL WHOLESALE SPLY	6625 REGAL	802207-004	1
067	TERM,QDISC,FML,22-18A	75037	MINN. MINING & MFG.	MNG18-250DFI	802235-022	4
068	HW,LBL DANGER,HV	53938	EVANS & SUTHERLAND	*SCD*802258-001	802258-001	3
069	TERM,RING,NO.10 STUD,	83330	DIALIGHT CORP.	E-660-10X	802265-110	1
070	SCR,FLT-HD,PHIL,10-32	N/A	DISTRIBUTORS	10-32X7/8 (M-F-PH-SS)	802053-307	4
071	RECTIFIER,BRIDGE,EPOX	62703	VARO QUALITY SEMI INC.	VK248	810280-301	1
072	RELAY,DLY,5SEC,ENCLOS	77342	AMF INC. POTTER & BRUMFIE	CUC-41-30005 (5SEC)	801053-205	1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200290-103

REV: A4 = AE

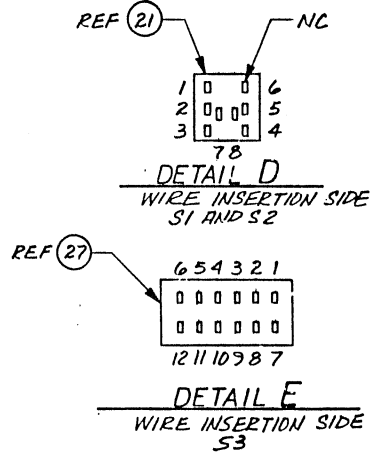
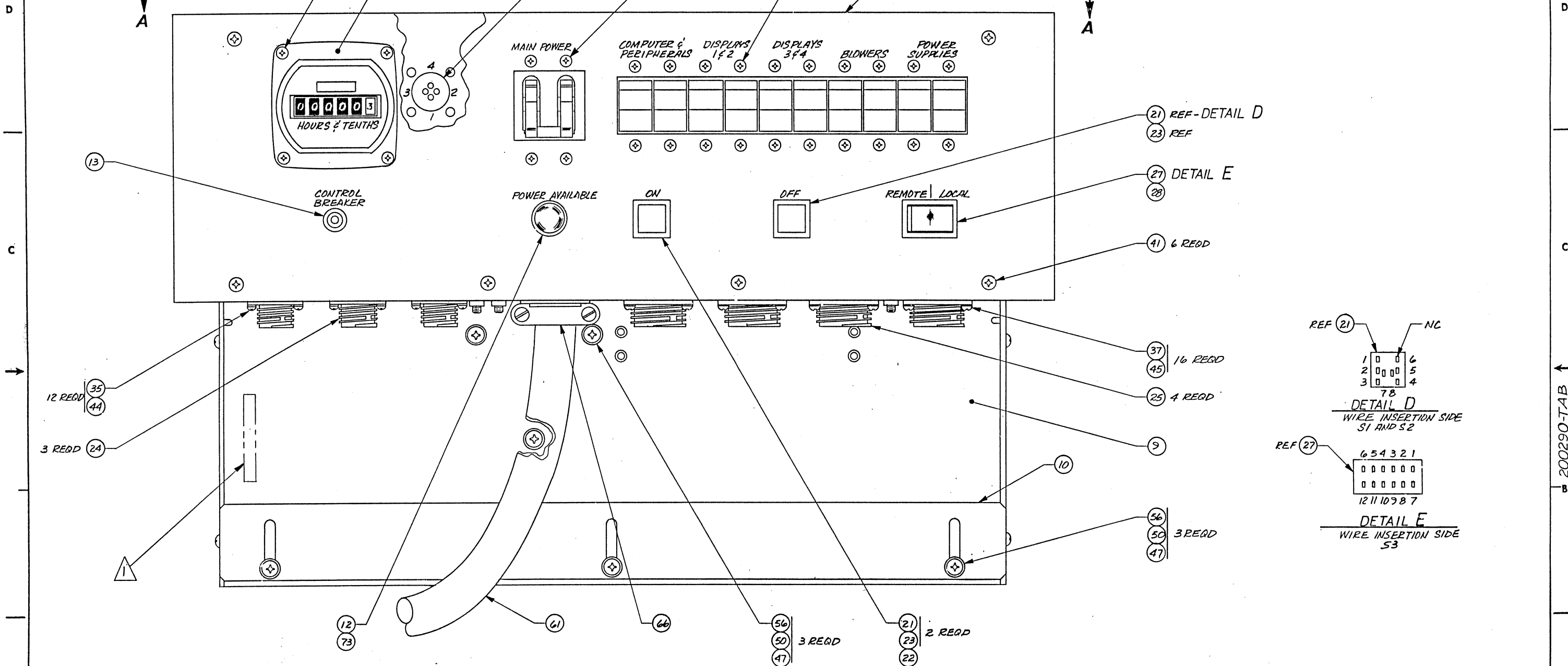
DESC: POWER CONTROL ASSY,NOVOVIEW SP2 (DC) 50/60 HZ

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
076	HW, GLUE #495	61751	KRAZY GLUE INC.	TYPE 202 (BLUE-CAP)	802288-001	1
077	GROMMET, CATAPILLAR, NY	3D536	AIMSCO INC	WG101	802047-001	1
079	OPT, ET MTR	53938	EVANS & SUTHERLAND.	200297-XXX	200297-XXX	1
080	BUSHING, 1/4X15/32, SNA	28520	HEYCO MOLDED PRODUCTS	2030-BLK (SB-375-4)	802102-004	4
086	HW, TERM 6SPD, 22G	98410	ETC-MOLEX INC.	A-838-06T	802135-006	6
087	FLTR, LINE, RFI/EMI, 250	19130	RTRON CORP.	RNU-8 (STYLE-2)	804902-101	2
088	FLTR, LINE, 10A, RFI/EMI	19130	RTRON CORP.	RNF-10L3	804912-001	1
089	BRKT, FLTR EMI	53938	EVANS & SUTHERLAND.	500334-001	500334-001	1
093	TERM, RING, NO.8 STUD, 1	98410	ETC-MOLEX INC.	B-823-08T	802132-008	1
094	CONN, HOUSING, 2-CKT CA	00779	AMP INC.	1-480699-0	802383-102	1
095	CONN, HOUSING, 2-CKT PL	00779	AMP INC.	1-480698-0	802382-102	1
096	CONT, PIN, 20-14AWG, TIN	00779	AMP INC.	350218-3 (PIN)	802387-101	2
097	CONT, SOC, 20-14AWG, PHO	00779	AMP INC.	350536-3 (SCKT)	802386-101	2
098	TERM, RING, NO.1/4 STU	98410	ETC-MOLEX INC.	E-660-14X	802265-225	2
025	J13-16	00779	AMP INC.	206425-1 (3POS/RCPT)	801815-702	4
061	1 AT 43FT USEABLE 38FT	72954	CAROL CABLE CO INC	01825-35 (6/3-SO)	802083-006	43
075	2 @ 1 IN	12624	NORTON CO. SEALANTS	V1301	802264-001	1
054	4 @ 3 IN	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG)BLACK	802509-000	2
074	4 @ 3/4"	92194	ALPHA WIRE CORP.	FIT-221M-1/8"	802033-125	1
078	6 @ 1 INCH	92194	ALPHA WIRE CORP.	FIT-221M-1/4"	802033-250	1
014	CB1	77342	AMF INC. POTTER & BRUMFIE	W92X11-3-50 (50AMP)	801163-050	1
030	CB2	81541	AIRPAX CO DIV OF NORTH AM	UPGHX11-9287-10	801854-010	1
032	CB3 CB4	74193	HEINEMANN ELECTRIC CO	JC2-A3-C-A-30-2	801854-030	2
029	CB5	74193	HEINEMANN ELECTRIC CO	JC2-A3-C-A-5-2	801854-005	1
031	CB6	81541	AIRPAX CO DIV OF NORTH AM	UPGHX11-9287-115	801854-115	1
013	CB7	06402	E-T-A CIRCUIT BREAKERS	41-06-P30-0.5	801162-0R5	1
073	DS1	72619	DIALIGHT CORP. BROOKLYN	95-5863-0933-271	802332-304	1
024	J2-8 J10-12	00779	AMP INC.	206430-1 (4POS/RCPT)	801815-701	10
020	K1	77342	AMF INC. POTTER & BRUMFIE	KUP11D15-24V (24VDC)	801640-006	1
018	K2	80089	HAMILTON STD CONTROLS INC	154-915	801505-002	1
021	S1 S2	91929	HONEYWELL INC, MICRO SWITC	AML21CBA2AC	801712-101	2
022	S1	91929	HONEYWELL INC, MICRO SWITC	AML91LA85 (24-28V)	801715-002	1
023	S1 S2	91929	HONEYWELL INC, MICRO SWITC	AML51C10W	801716-005	2
027	S3	91929	HONEYWELL INC, MICRO SWITC	AML24EBA2CC01	801853-101	1
028	S3	91929	HONEYWELL INC, MICRO SWITC	AML54F10W (ROCKER)	801853-102	1
033	T1	53938	EVANS & SUTHERLAND	*SCD*801871-002	801871-002	1
017	T2	60262	COIL-TRAN CORP HOBART DIV	P-1355	801412-401	1
015	TB1	83330	KULKA SMITH INC	604-4 (70AMP)	801057-004	1
011	TB2	83330	KULKA SMITH INC	602-8	801058-008	1
034	U1	29988	CALEX MFG INC	829-R230	801872-001	1
026	XK1	01002	GENERAL ELECTRIC CO. CAP	CR220HX17	801824-011	2

89 ITEMS LISTED

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REV LEVEL FOR DASH NO.		REVISIONS				
-104	-103	ZONE	LTR	DESCRIPTION	DATE	APPROVED
—	A0	—	—	RELEASED TO AD	12-9-83	MJL
—	A1	—	—	PARTS LIST CHNG	5/3/84	KLW
P0	—	—	—	ADDED -104	8-4-86	KLW
A0	—	—	—	RELEASED TO A0	8-21-86	KLW
A1	A2	—	—	CHNGD. TRANS ON DWG.	8-17-87	MJL
A2	A3	—	—	PARTS LIST CHANGE	10-17-88	KLW
A3	A4	—	—	DELETE FOIL TAG	07-14-89	KLW



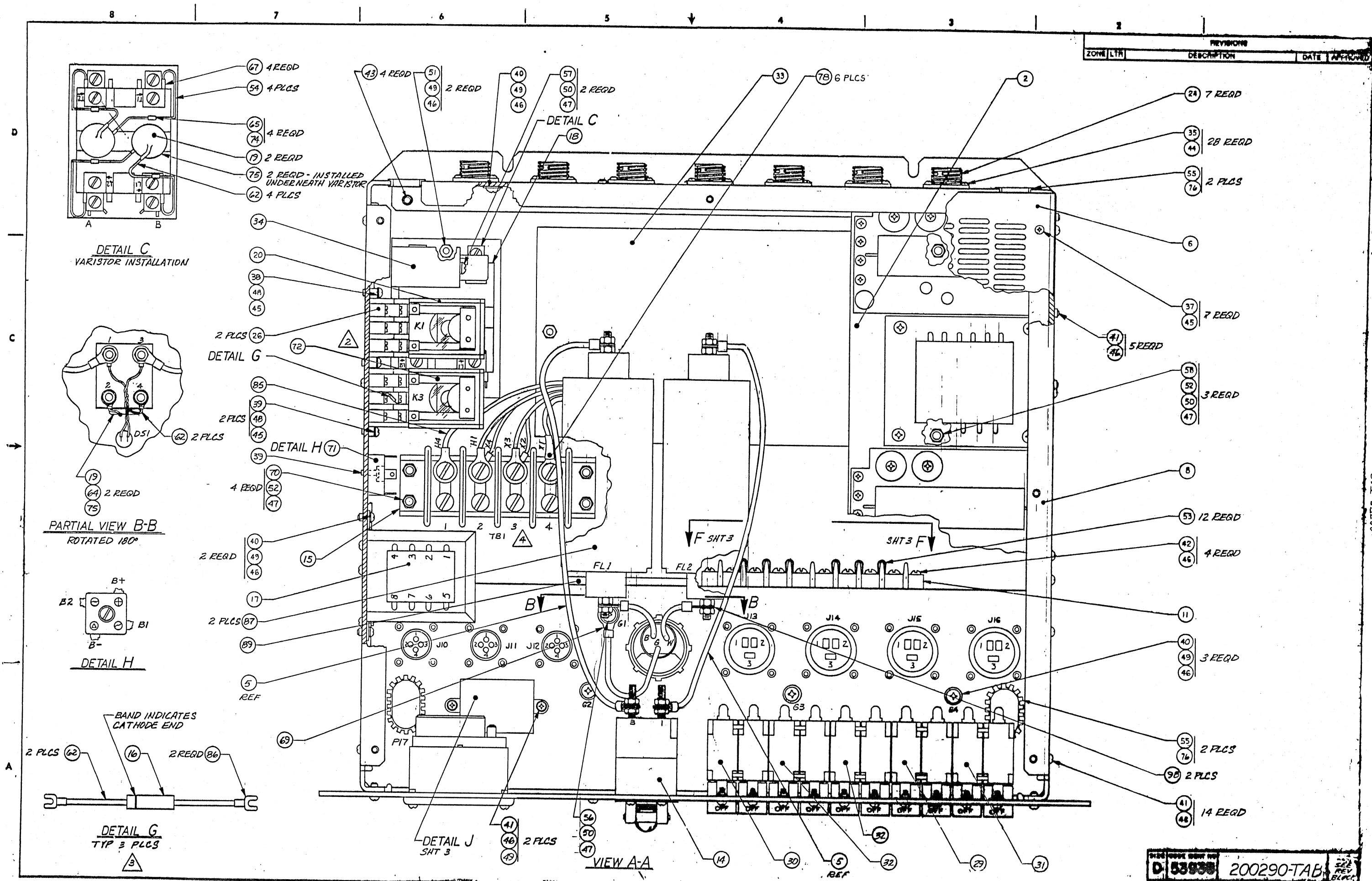
NOTES:

- 1. MARK ASSY NO., REV LEVEL AND S/M PER EDS PRODUCTION PROCESSE. SECTION E-9.0. LOCATE APPROX AS SHOWN.
- 2. INSTALL HARNESSSES (ITEM 3, 4 & 5) AS PER HARNESS WIRING LIST.
- 3. ON K1, ITEM 16 (D1) IS ORIENTED CATHODE TOWARDS 'B', ANODE TOWARD 'A'; ON K3, ITEM 16 (D3) IS ORIENTED CATHODE TOWARD 'A', ANODE TOWARD 'B'. ALSO ON K3, ITEM 16 (D2) IS ORIENTED CATHODE TOWARDS '5', ANODE TOWARD '2'.

4. TBI SHOWS A TYPICAL WIRING CONFIGURATION. REFER TO THE TABLE ON PAGE 3 FOR SPECIFIC APPLICATIONS.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓	CONTRACT NO.	EVANS & SUTHERLAND BALT LAKE CITY, UTAH 84108
	DRAWN L. WILLARDSON 10/17/83	
MATERIAL SEE PARTS LIST FINISH	CHECKED R. WILSON 10/28/83	POWER CONTROL ASSY, NOVOVIEW, EMI
	MECH	
APPROVED	ELEC	SIZE CODE IDENT NO
	PROJ. ENG. J. S. SPAIN 10/28/83	D 53938 200290-TAB
SCALE NONE DO NOT SCALE DWG		REV SEE REV BLOCK
SHEET 1 OF 3		

REVISIONS		
ZONE	LTN	DESCRIPTION



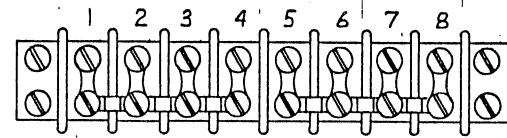
200290-TAB

D 53838 200290-TAB
 SEE REV BLOCK
 DATE REV BY

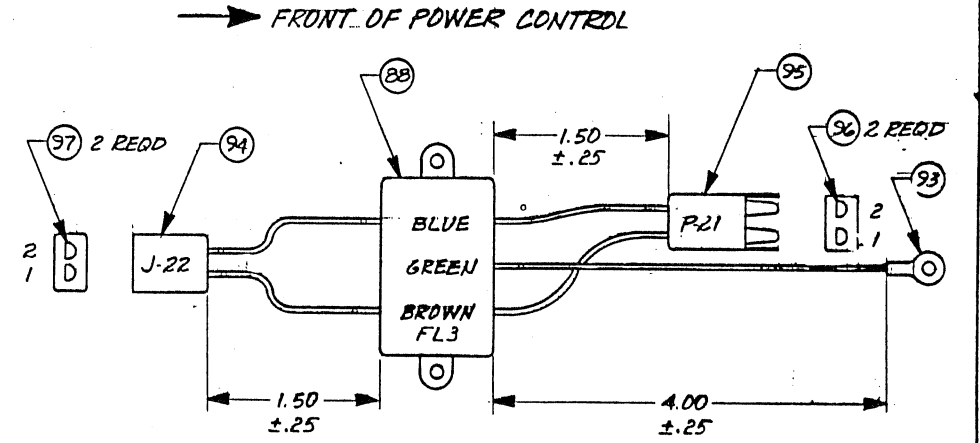
SP-2 BOOST-BUCK TRANSFORMER CONNECTIONS

VOLTAGE RANGE	BOOST 2	BOOST 1	-0-	BUCK 1	BUCK 2
WIRE	206-214	215-227	228-243	244-259	260-273
LINE BLU	2	2	2	3	4
LINE WHT	1	1	1	1	1
LOAD BLU	4	3	2	2	2
LOAD WHT	1	1	1	1	1
H4	1	1	3	1	1
H1	2	2	4	2	2
X4	2	2	3	2	2
X3	3	3	4	3	3
X2	3	2	3	2	3
X1	4	3	4	3	4

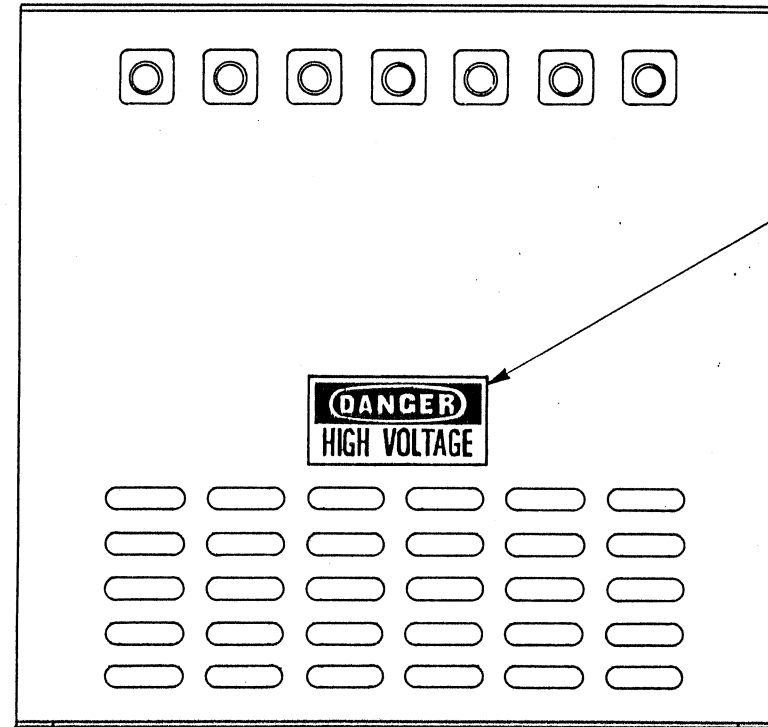
NOTE: THE NOMINAL INPUT VOLTAGE MUST FALL WITHIN ONE OF THE FIVE SPECIFIED RANGES SHOWN ABOVE. LINE VARIATIONS MUST NOT EXCEED ±5% OF THAT NOMINAL VALUE.



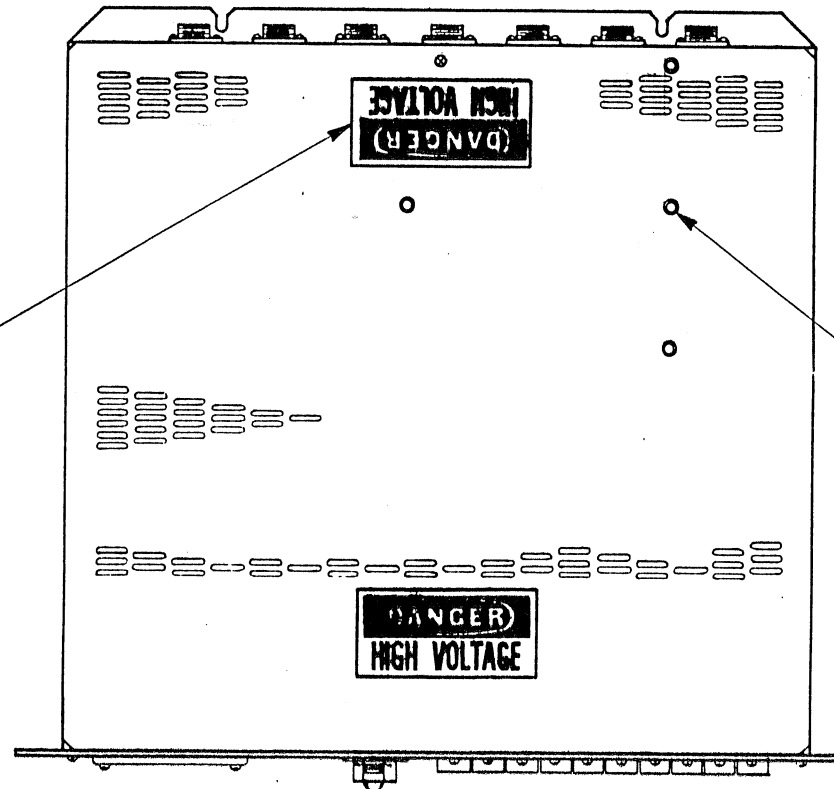
VIEW F-F
SHEET 2



DETAIL J
SHEET 2



REAR VIEW

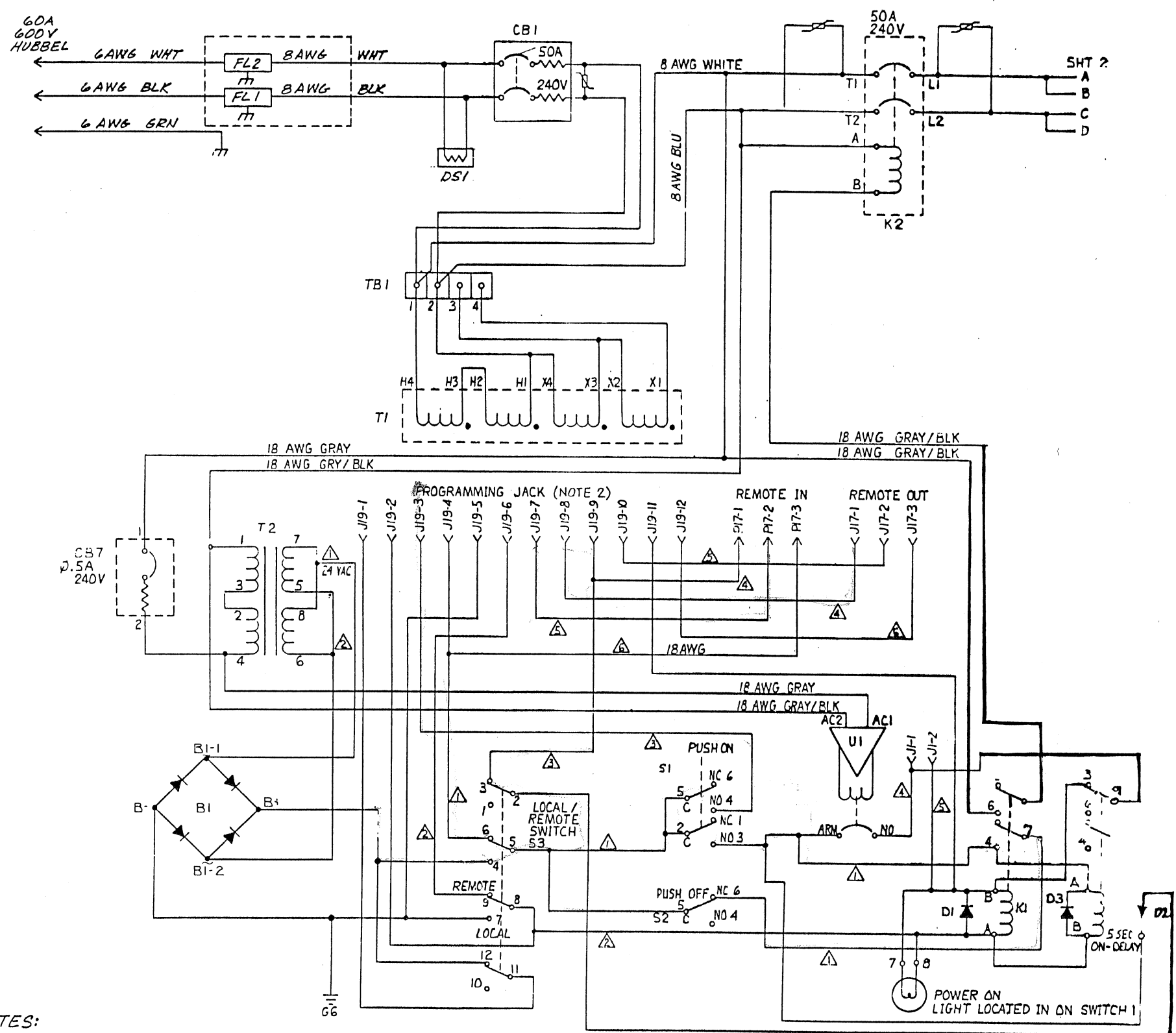


TOP VIEW

200290-TAB



REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
AD		CREATED AT 20	4-18-89
A1		PARTS LIST CHNG	4-18-89
A2		REV UPDATE	4-18-89
A3		REV UPDATE	4-18-89
A4		REV UPDATE	4-18-89



VOLTAGE RANGE	MOODY 2	MOODY 1	-0-	RUCK 1	RUCK 2
WIRE	208-214	215-227	228-243	244-255	260-278
LINE BLU	2	2	2	3	4
LINE WHT	3	1	1	1	1
LOAD BLU	4	3	2	2	2
LOAD WHT	1	1	1	1	1
H4	1	1	3	1	1
H1	2	2	4	2	2
X4	2	2	3	2	2
X3	3	3	4	3	3
X2	3	2	3	2	3
X1	4	3	4	1	4

NOTE: THE NOMINAL INPUT VOLTAGE MUST FALL WITHIN ONE OF THE FIVE SPECIFIED RANGES SHOWN ABOVE. LINE VARIATIONS MUST NOT EXCEED ±5% OF THE NOMINAL VALUE.

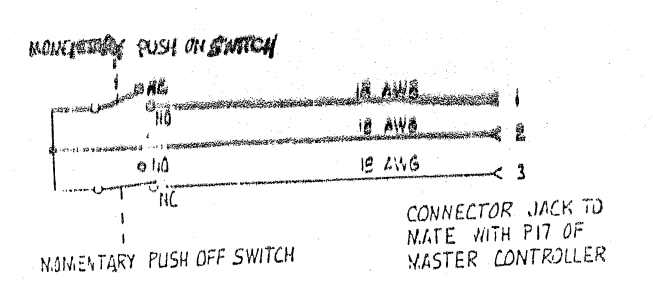
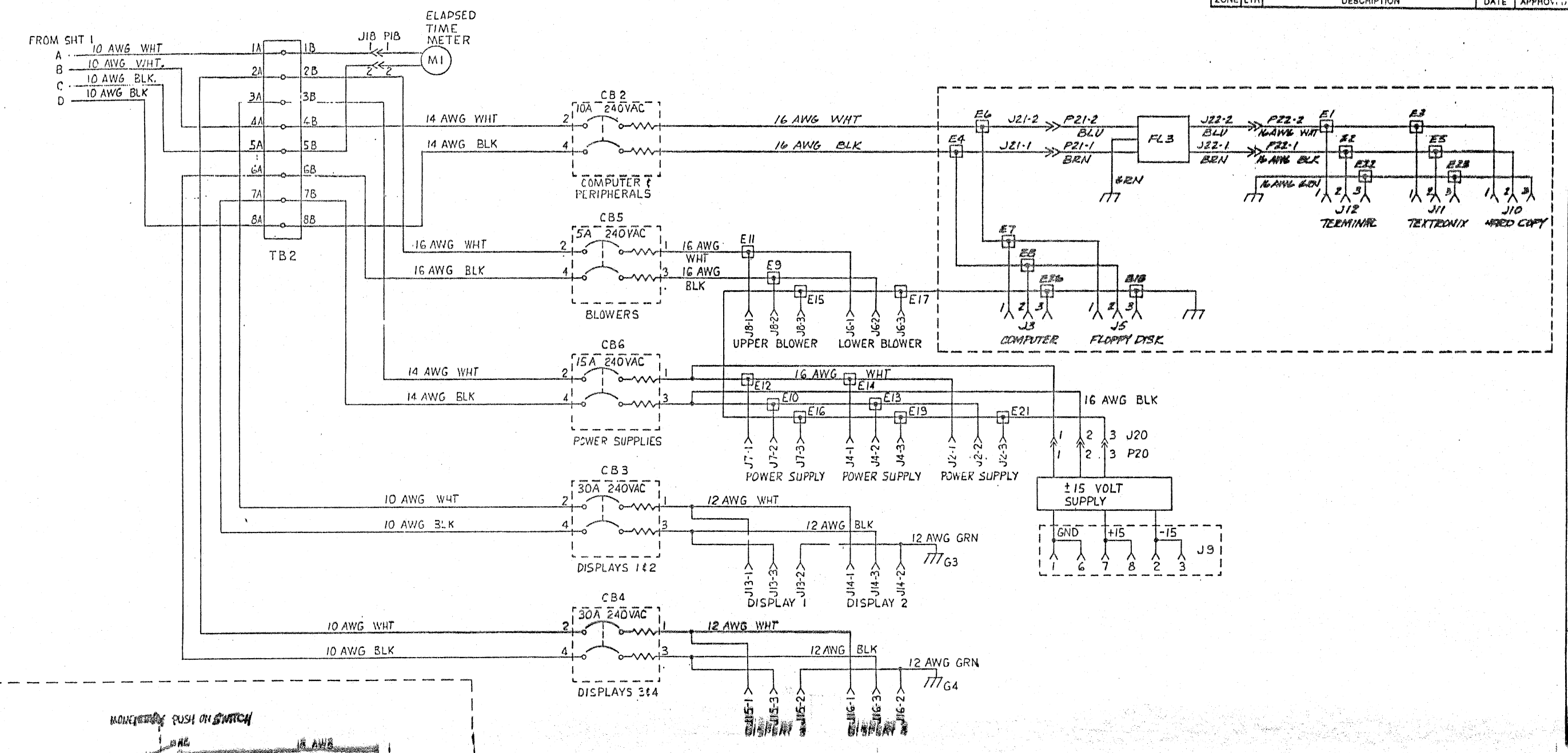
WIRE TAG	COLOR
△	WHT/BLU
△	WHT/BLU/BLK
△	WHT/RED
△	RED
△	BLK
△	BLU

- NOTES:
- △ INDICATES EF'S PART NO. 802172-002 (SHT 2 OF 2).
 - FOR MASTER OPERATION, PROGRAMMING PLUG (P19) SHOULD STRAP 1 & 7, 2 & 10, 3 & 8 & 9, 5 & 6 AND 11 & 12. FOR SLAVE OPERATION, P19 SHOULD STRAP 4 & 12, 6 & 7 & 10 AND 8 & 9.

SCHMATIC DIAGRAM

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: XXX ± XXX ± ANGLES ±	CONTRACT NO.	EVANS & SUTHERLAND	
	DRAWN: KULLARSON 4/18/89	SALT LAKE CITY, UTAH 84108	
	CHECKED: [Signature] 4/20/89	CONTROL ASSY, POWER	
	MECH	SCHEMATIC	
✓	PROJ ENG: [Signature] 1/11/89	NOVVIEW SP2 (DC)	
MATERIAL	APPROVED	SIZE	CODE IDENT NO
FINISH		D 53938	200290-603
		SCALE: NONE	DO NOT SCALE DWG
		SHEET 1	OF 2

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROV.



THIS CIRCUIT MAY BE PROVIDED BY THE USER FOR OPTIONAL REMOTE ON/OFF CONTROL TO THE SYSTEM. WHEN SUCH A REMOTE CONTROL IS USED, THE REMOTE/LOCAL SWITCH MUST BE IN THE REMOTE POSITION.

SCHEMATIC DIAGRAM

200290-603

SIZE	CODE IDENT NO	REV
D	53938 200290-603	A4
SCALE	NONE	DO NOT SCALE DWG
SHEET 2 OF 2		

TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200297-060

REV: NC = AA

DESC: ASSY, ELAPSED TIME METER, 60 HZ, 230V

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	INDICATOR, TIME ELAPSE	82227	AIRPAX CO. CHESIRE DIV	K42203-P5	801275-003	1
002	HW, TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	2
003	HW, LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
004	CONN, PLUG, (2PIN), FEM-	27264	MOLEX INC.	03-09-2022 (1545-2P)	802324-002	1
005	HW, TERM 02-09-2218	27264	MOLEX INC.	02-09-2118 (1390-M)	802326-002	2

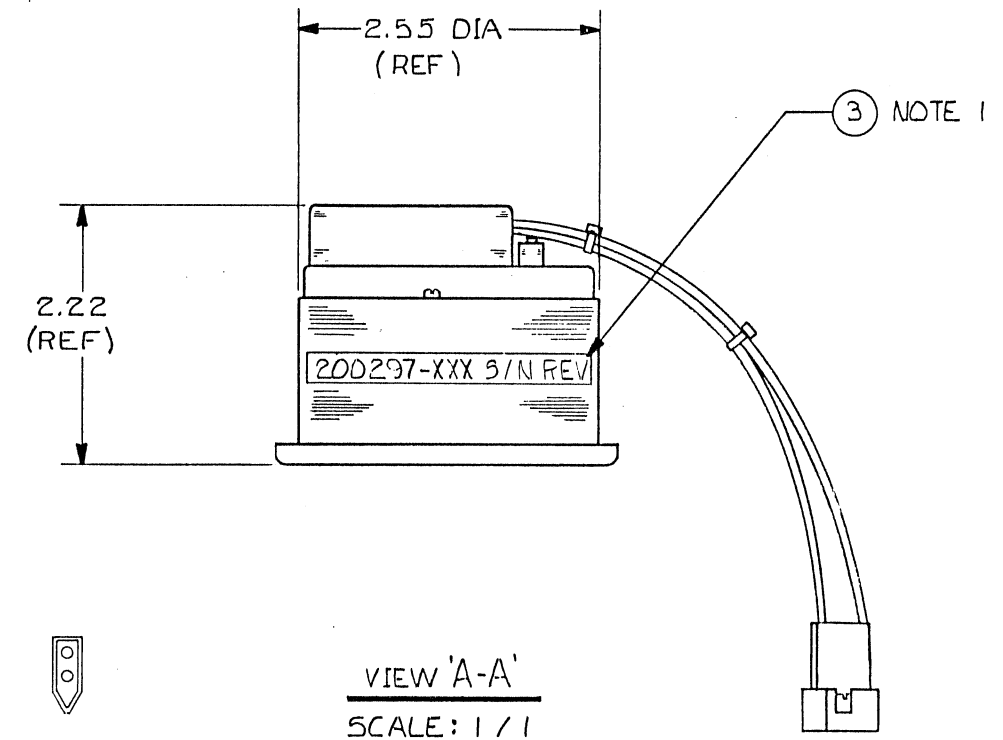
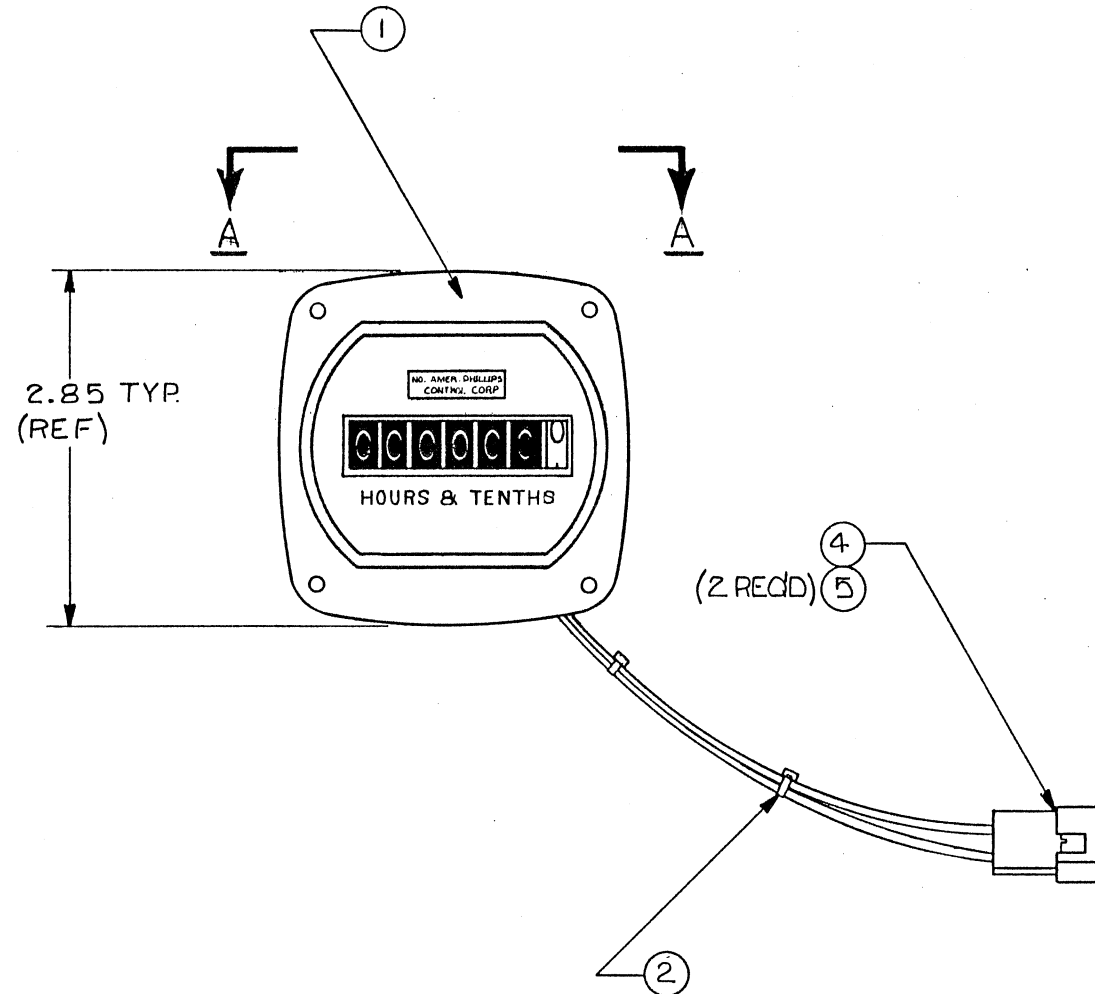
5 ITEMS LISTED



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 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORP. EXPLANATION
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DASH NO.	METER	
	VOLTAGE	FREQ
-050	230V	50HZ
-060	230V	60HZ
-160	24V	60HZ

DASH NO			REVISIONS				
160	050	060	ZONE	LTR	DESCRIPTION	DATE	APPROVED
NC	NC	NC	—	—		19JUN80	RS [Signature]



NOTES:

- MARK ASSY., S/N AND REV LEVEL USING ITEM 3. LOCATE APPROX AS SHOWN.

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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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓	DRAWN T.A. JOHNSON 22 APR 80	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108	
	CHECKED [Signature] 29 APR 80	ASSY, ELAPSED TIME METER	
MATERIAL SEE PARTS LIST	MECH.	SIZE C	CODE IDENT NO 53938
FINISH	ELEC.	200297-TAB	
	PROJ. ENG. [Signature] 29 APR 80	SCALE 1/1	DO NOT SCALE
	APPROVED [Signature] 29 APR 80	SHEET 1	OF 1

200297-TAB



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200382-101

REV: AC

DESC: BASE ASSY, SMOKE DETECTOR, PHOTOELECTRONIC

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BASE, F/SMOKE DETECTOR	62690	FIRE CONTROL INSTRUMENT	70-201000-003	802427-001	1
002	CONN, D-PLUG, STRAIGHT,	71468	ITT CANNON DIV. OF ITT	DB-25P (25PIN/SLDR)	801496-025	1
004	HW, LOCK FMLASMY	71468	ITT CANNON DIV. OF ITT	D20418-2	801414-003	2
005	HW, TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	1
006	HW, WIRE 22G, BLK	73612	CONSOLATED ELEC, W/C CORP	9002 (22AWG) BLACK	802511-000	1
007	HW, WIRE 22G, RED	73612	CONSOLATED ELEC, W/C CORP	9002 (22AWG) RED	802511-222	1
008	HW, WIRE 22G, ORN	73612	CONSOLATED ELEC, W/C CORP	9002 (22AWG) ORANGE	802511-333	1
009	HW, WIRE 22G, BLU	73612	CONSOLATED ELEC, W/C CORP	9002 (22AWG) BLUE	802511-666	1
010	HW, WIRE 22G, YEL	73612	CONSOLATED ELEC, W/C CORP	9002 (22AWG) YELLOW	802511-444	1
011	HW, TBNG 1/16TBNG	06090	RAYCHEM CORP/BENTLET HARR	RNF-100-1/16 (TUBING)	802033-062	1
013	R,, AXL 5.6K, 1/2W	81349	MILITARY SPECIFICATIONS	RC20GF562J (1/2W)	803202-562	1

11 ITEMS LISTED



8

7

6

5

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1

REVISIONS				
ICM#	IC#	DESCRIPTION	DATE	APPROVED
	A0	DRWG CHNG AND RELEASE TO A0	TAB 05-16-88	RDK5-19-89
	A1	DRAWING CORRECTIONS	JLB 08-03-88	GA
	AC	PER ECO	LPV 09-10-24	

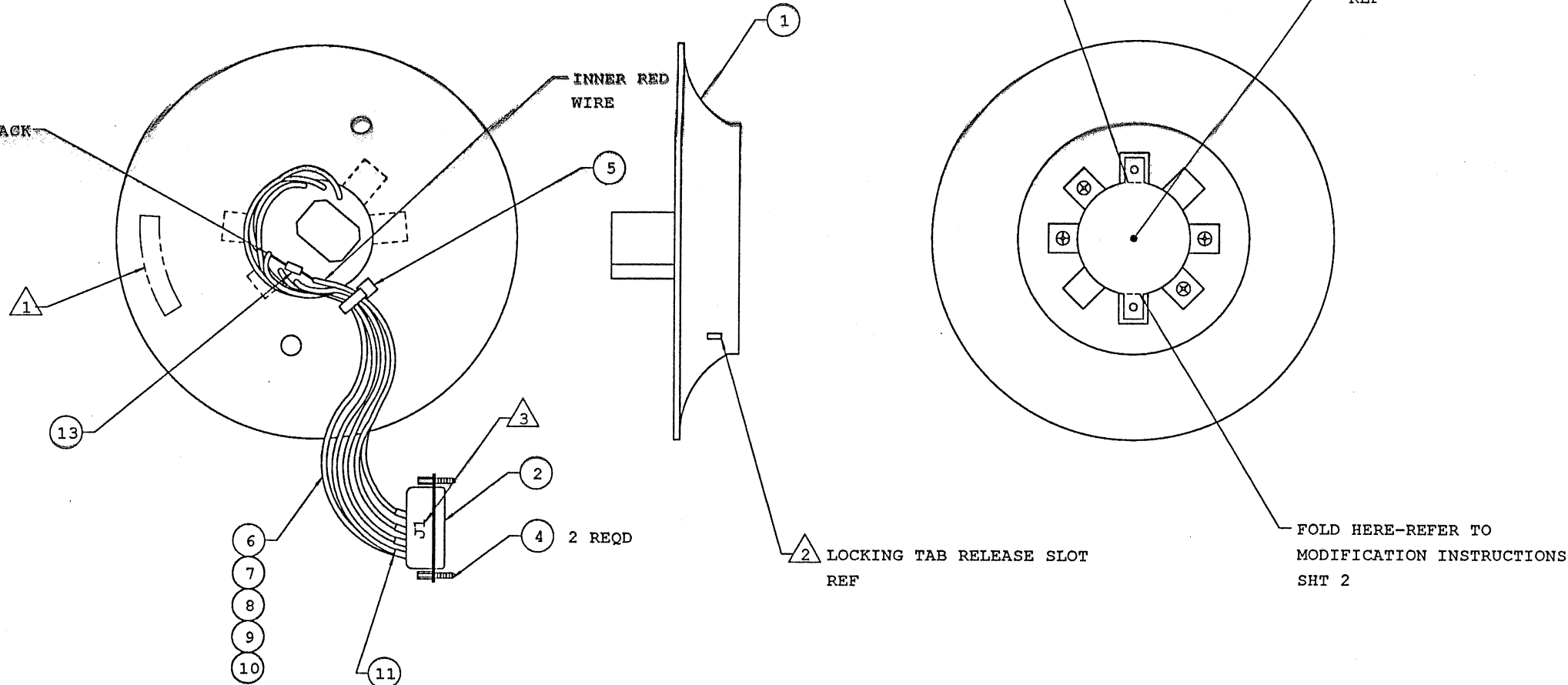
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INNER BLACK WIRE

INNER RED WIRE

CUT HERE-REFER TO MODIFICATION INSTRUCTIONS SHT 2

PAPER COVER REF



NOTES ON SHEET 2

ALTERED ITEM DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .X ± --- .XX ± .03 .XXX ± .010 ANGLES ± --- ✓ PER ANSI Y14.5M 1982	CONTRACT NO.	EVANS & SUTHERLAND	
	DRAWN MHANSEN 11-18-88	SALT LAKE CITY, UTAH 84108	
	CHECKED GROBINS 11-28-88	BASE ASSY,	
	MECH	SMOKE DETECTOR	
ELEC ROKENT 12-05-88	ITEM	PKCN	REV
PROJ. ENG ROKENT 12-05-88	B	53938	200382-101
APPROVED GANDERSON	SCALE	NONE	DO NOT SCALE DRG
MATERIAL SEE PARTS LIST			SHEET 1 OF 2
FINISH			

REVISIONS			
REV	DATE	DESCRIPTION	APPROVE

MODIFICATION INSTRUCTIONS

1. THE SMALL ROUND CIRCUIT BOARD AT THE CENTER OF THE BASE MUST BE REMOVED FOR MODIFICATION. TO DO THIS, CUT ONLY ONE OF THE TWO TABS OF THE PAPER COVER WHERE IT GOES UNDER THE BRASS COLORED CLIP. PULL THE COVER UP FOLDING IT AT THE OTHER TAB. DO NOT CUT OFF THE COVER.
2. WITH THE COVER OUT OF THE WAY, MARK A TERMINAL LOCATION ON THE BASE AND THE BOARD TO INSURE CORRECT ORIENTATION WHEN REASSEMBLED. REMOVE THE 4 TERMINAL SCREWS AND CAREFULLY LIFT THE CIRCUIT BOARD OUT.
3. CAREFULLY REMOVE THE EXISTING (18 AWG) WIRES FROM THE CIRCUIT BOARD ASSEMBLY AS FOLLOWS: THE YELLOW, ORANGE, BLUE, OUTER RED AND OUTER BLACK WIRES ARE TO BE REMOVED AND REPLACED WITH 802511-XXX (22 AWG) WIRES OF MATCHING COLORS AND WITH LENGTHS AS SPECIFIED IN THE WIRING TABLE. THE INNER RED AND INNER BLACK WIRES ARE TO BE REMOVED BUT NOT REPLACED. INSTALL RESISTOR (ITEM 13) IN THE HOLES WHERE THE INNER RED AND BLACK WIRES WERE, AS INDICATED.
4. REINSTALL THE CIRCUIT BOARD IN THE CORRECT POSITION AND FOLD THE PAPER COVER DOWN INTO PLACE. ATTACH THE TIE WRAP TO HOLD WIRES TOGETHER AS SHOWN.
5. THREAD ALL THE WIRES THROUGH THE BASE PLATE THAT COMES WITH ITEM 1 AND SNAP THE PLATE IN PLACE.
6. **CAUTION:**
ALL SOLDERING IS TO USE ROSIN CORE SOLDER. DO NOT USE ADDITIONAL FLUX. DO NOT CLEAN.

WIRING TABLE

ITEM NO.	AWG	COLOR	USEABLE CABLE LENGTH	TERMINAL LUG		COMPONENT		SIGNAL NAME
				START	FINISH	START	FINISH	
7	22	RED	9.00 +1.00 -0.00	ITEM 1	ITEM 2	ITEM 1	J1-1	24V
6	22	BLACK	8.00 +1.00 -0.00	ITEM 1	ITEM 2	ITEM 1	J1-2	24V REF
8	22	ORANGE	7.00 +1.00 -0.00	ITEM 1	ITEM 2	ITEM 1	J1-3	ALARM
9	22	BLUE	7.00 +1.00 -0.00	ITEM 1	ITEM 2	ITEM 1	J1-5	TTL GND
10	22	YELLOW	7.00 +1.00 -0.00	ITEM 1	ITEM 2	ITEM 1	J1-4	24V

NOTES:

1. MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE ON THE BASE PLATE APPROX AS SHOWN. DO NOT COVER VENDOR LABEL.
2. IF THE ALARM IS ATTACHED TO THE BASE, REMOVE THE ALARM BY INSERTING A SMALL SCREWDRIVER OR OTHER TOOL INTO THE SLOT IN THE BASE TO DEPRESS THE LOCKING TAB. TURN THE ALARM COUNTER-CLOCKWISE WHILE DEPRESSING THE TAB.
3. MARK ALL CONNECTORS AS SHOWN PER E&S PRODUCTION PROCESSES SECTION E-9.0.

200382-101

ITEM	REV	REV	REV
B	53938	200382-101	AC
SCALE	NONE	DO NOT SCALE ING	SHEET 2 OF 2

TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200425-101

REV: A0 = AA

DESC: ASSY, SMOKE & OVERHEAT DETECTOR, PHOTOELECTRONIC

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BRKT, SMOKE ALARM, UPT	53938	EVANS & SUTHERLAND.	500403-001	500403-001	1
002	SMOKE DETECTOR, PHOTOE	62690	FIRE CONTROL INSTRUMENT	PSD-7135	802426-002	1
008	BASE ASY, SMOKE DETECT	53938	EVANS & SUTHERLAND.	200382-101	200382-101	1
012	HW, HW-S 8-32X1/2	N/A	DISTRIBUTORS	8-32X1/2 (M-P-PH-SS)	802004-104	2
013	HW, WSHR #8INTLOK	N/A	DISTRIBUTORS	SAE#8, LK INTL, SS	802005-008	2
016	HW, TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	1

6 ITEMS LISTED



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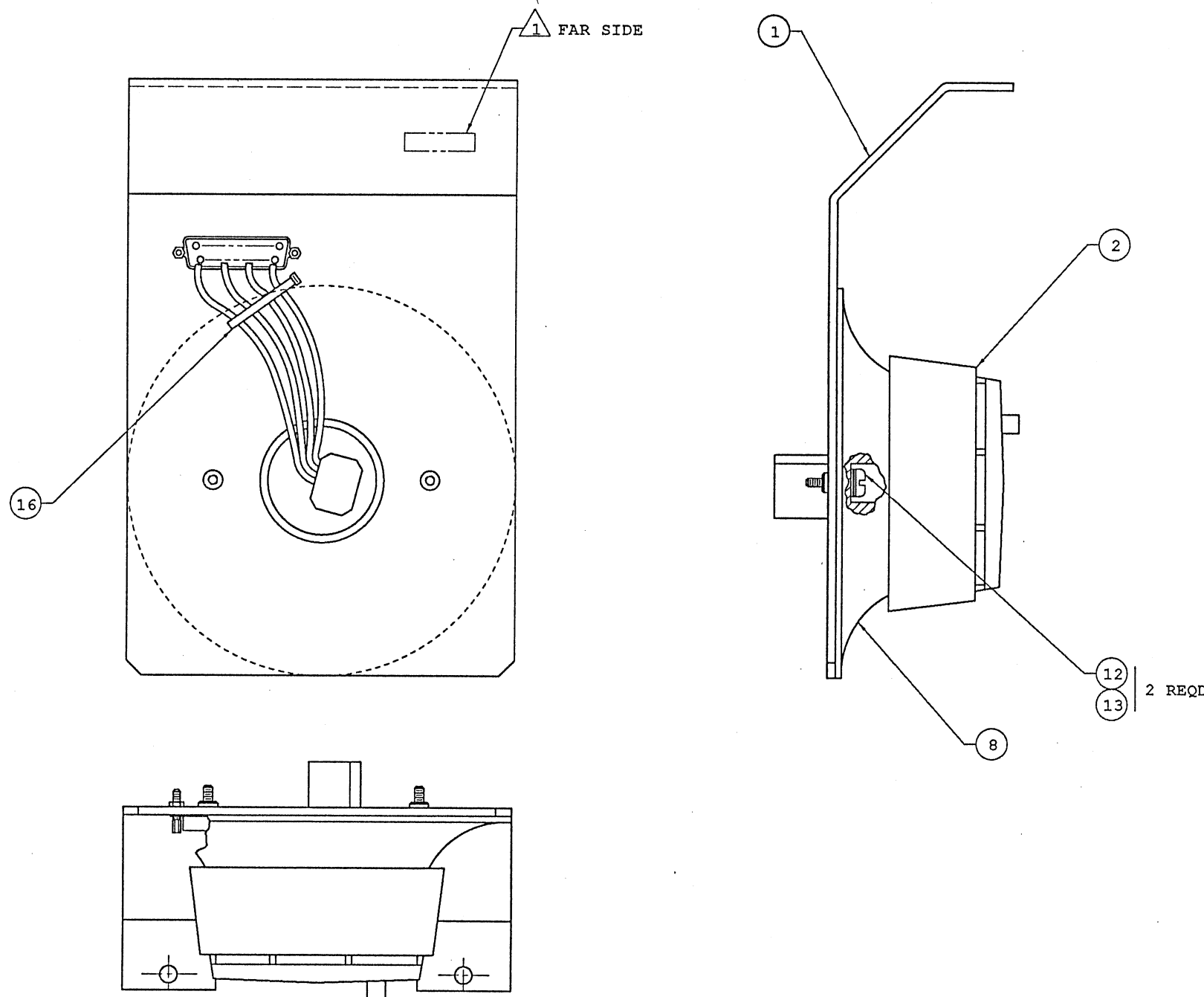
3

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1

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REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED
A0	05-18-88	RELEASE TO A0	TAB
RC1	08-09-88	CORRECT TITLE	JLB



NOTES:

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

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .X ± --- .XX ± --- .XXX ± --- ANGLES ± --- ✓ PER ANSI Y14.5M 1982	CONTRACT NO.	EVANS & SUTHERLAND			
	DRAWN MHANSEN 11-18-88	SALT LAKE CITY, UTAH 84108			
	CHECKED GROBINS 11-28-88	DETECTOR ASSY, SMOKE			
	MECH	& OVERHEAT, OPTION			
ELEC ROKENT 12-05-88	APPROVED	SIZE	FORM	REV	
PROJ. ENG ROKENT 12-05-88		B	53938	200425-101	A0
MATERIAL SEE PARTS LIST		SCALE	NONE	DO NOT SCALE DPG	SHEET 1 OF 1
FINISH					

200425-101

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1



TIME=11:29

RUN DATE=08/14/89

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200425-201

REV: A0

DESC: DETECTOR ASSY, SMOKE & OVERHEAT, OPTION

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
	ASY, SMOKE & OVERHEAT	53938	EVANS & SUTHERLAND.	200425-101	200425-101	1
	*SCD*LBL, BAR-CODE, PRE	53938	EVANS & SUTHERLAND	*SCD*802178-008	802178-008	1
	BOLT, 1/4-20X5/8, SEMS,	83486	ELCO INDUSTRIES INC	1/4-20X5/8 (SEMS-HEX)	802304-004	2
	NUT, KEPS, HEX .438 MAX	N/A	DISTRIBUTORS	NUT-KEPS (1/4-20)	802306-001	2

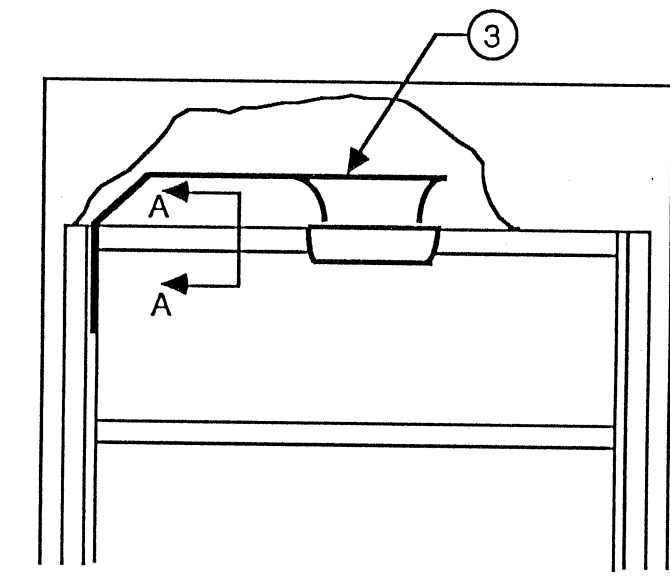
4 ITEMS LISTED



LTR	REV. DESCRIPTION	DATE	APPROVED
A0	RELEASE TO PRODUCTION	JJ 05-15-89	
RC-1	CREATE INSTL. DWGS.	JJ 08-09-89	<i>JL Jensen</i> 8/14/89

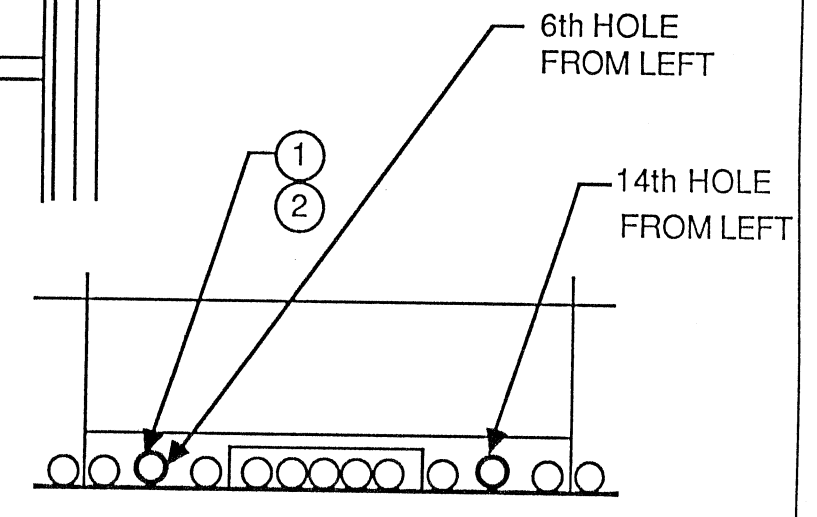
NOTES:

1. DETERMINE 6th AND 14th HOLE ON TOP LEFT HORIZONTAL BRACKET.
2. MOUNT SMOKE DETECTOR ASSEMBLY USING BOLTS AND NUTS (ITEMS 1 & 2)
3. PLACE OPTIONAL LABEL IN CABINET OPTION LABEL AREA.



TYPICAL PARTIAL FRONT VIEW OF CABINET

LEFT



VIEW A-A

REQUESTED BY ESCHERZER 07-28-89	EDVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108					SHEET 1 OF 1
DRAWN JLJENSEN 08-09-89						
CHECKED <i>JL Jensen</i>	TITLE DETECTOR ASSEMBLY, SMOKE AND OVERHEAT, OPTION				NO. 200425-201	REV. A0
APPROVED	SCALE	CODE ID 53938	SIZE A			
APPROVED						



MAINTENANCE PARTS LIST

ASSEMBLY: PL 202250-101

REV: A4 = AE

DESC: THERMAL SWITCH ASSY,EXTERNAL BP

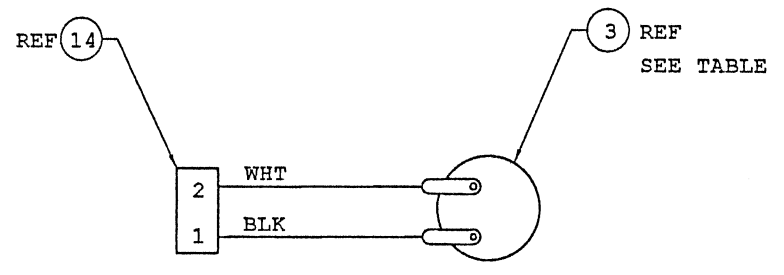
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BRKT, THERMAL SENSOR, L	53938	EVANS & SUTHERLAND.	500264-001	500264-001	1
002	BRKT, THERMAL SENSOR, B	53938	EVANS & SUTHERLAND.	500265-001	500265-001	1
003	THERMO, OP/RIS (115DF+-	14604	ELMWOOD SENSORS INC.	3001U-011-033 (115DF)	801529-004	1
004	HW, SCR 4-40X3/8	N/A	DISTRIBUTORS	4-40X3/8 (M-P-PH-SS)	802002-103	2
005	HW, SCR 6-32X3/8	N/A	DISTRIBUTORS	6-32X3/8 (M-P-PH-SS)	802003-103	2
006	HW, WSHR #4INTLOK	N/A	DISTRIBUTORS	SAE#4, LK INTL, SS	802005-004	2
007	HW, WSHR #6INTLOK	N/A	DISTRIBUTORS	SAE#6, LK INTL, SS	802005-006	2
008	HW, WSHR #4, FLAT	N/A	DISTRIBUTORS	AN960C4, #4FL, SS, .032	802007-004	2
009	HW, NUT 4-40NUT	N/A	DISTRIBUTORS	NUT-HEX (4-40) SS	802014-004	2
010	HW, TBNG 3/16TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/16"	802033-187	1
011	HW, TBNG 1/2TBNG	92194	ALPHA WIRE CORP.	FIT-221M-1/2"	802033-500	1
012	CBL, PWR, 2COND, 18AWG (1	28105	DEARBORN WIRE & CABLE COR	1182 (18/2-SJ)	802080-018	3
013	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	1
014	CONN, PLUG, (2PIN), FEM-	27264	MOLEX INC.	03-09-2022 (1545-2P)	802324-002	1
015	TERM, CRMP, MAL, 20-14AW	27264	MOLEX INC.	02-09-2103 (1190-M)	802326-001	2
016	HW, TIE TY-232M	59730	THOMAS AND BETTS CORP.	TY-232M	802061-002	1
017	HW, WSHR 2151, #4WSHR	06540	AMATOM ELECTRONIC HARDWAR	2634-2165	802040-004	4

17 ITEMS LISTED

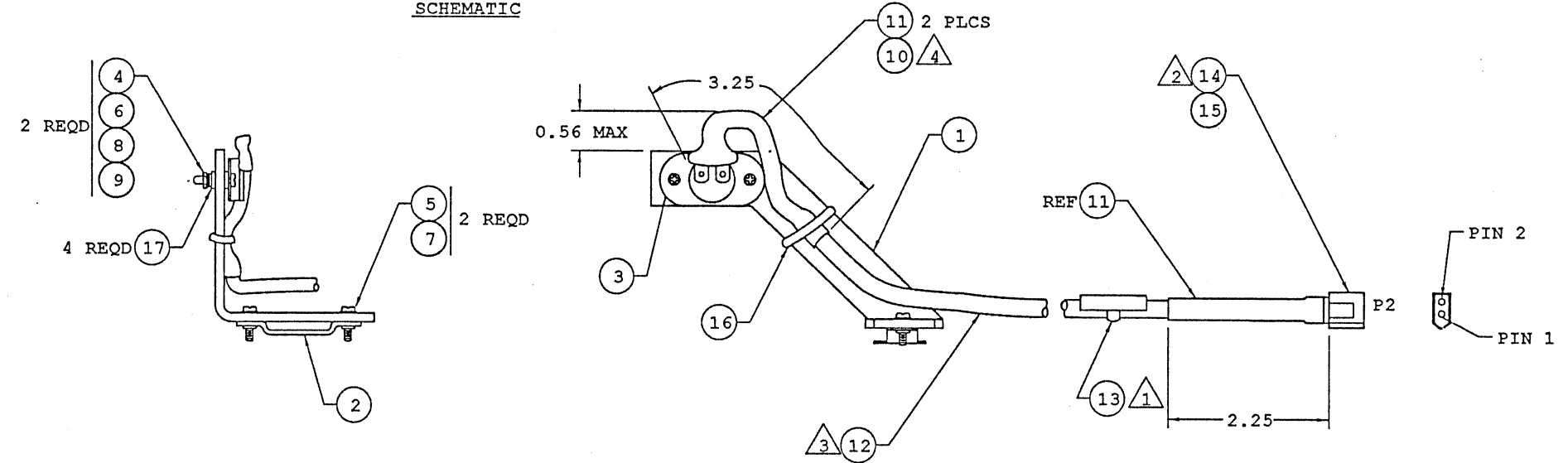


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PART/ASSEMBLY REVISION LEVEL FOR DATE CHANGE		REVISIONS				
-101	-100	HOWE	ISR	DESCRIPTION	DATE	APPROVAL
-	A1			ADDED NOTE 3	TJ	3-19-80 SRB9-4-80
NC	-			ADDED -101 TO DWG	JLP	5-15-81 MDA6-1-81
A1	A2			ADDED ITEM 17 TO DWG	GR	1-29-81 RMOON
A2	A3			LENGTHEN ITEM 4	GLM	10-25-84 RMOON
A2	A3			RC1 CHANGED TITLE	GR	1-24-85 PG2-1-85
A2	A3			RC2 CHANGED TITLE	GT	2-13-85 PG2-1-85
A3	A4			CORRECTED SCH	KMDT	6-16-87 RJ6-19-87
A3	A4			INCCORP RC3/REDRAWN ON DOGS	MH	10-06-88
A4	A5			PARTS LIST CHANGE ONLY	CS	13-10-88



SCHEMATIC



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 CONNECTOR AS SHOWN PER E&S PRODUCTION PROCESSES SECTION E-9.0.
- 3 CALBE LENGTH (ITEM 12) IS 24.0 ± .5 MEASURED FROM THERMAL SENSOR (ITEM 3) TERMINALS TO EDGE OF CONNECTOR (ITEM 14).
- 4 COVER SEPARATE WIRES WITH ITEM 10 BEFORE COVERING THE PAIR WITH ITEM 11.

TAB TABLE

DASH NO.	ITEM NO.	PART NO.
-100	3	801529-003
-101	3	801529-004

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .X ± .XX ± .50 .XXX ± ANGLES ± ✓ PER ANST Y14.5M 1982	CONTRACT NO.	EVANS & SUTHERLAND	
	DRAWN TJOHNSON 11-21-79	SALT LAKE CITY, UTAH 84108	
	CHECKED KMAHON 1-2-80	THERMAL SWITCH ASSY,	
	MECH	EXTERNAL BP	
ELEC RMOON 1-3-80	ITEM	REV	DWG NO.
PROJ. ENG RMOON 1-3-87	B	53938	202250-TAB
APPROVED GPINO 1-3-80	SCALE	NONE	DO NOT SCALE DWG
MATERIAL SEE PARTS LIST	SHEET		1 OF 1
FINISH	SHEET		1 OF 1

202250-TAB



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=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 101328-002

REV: A4 = AE

DESC: CABLE ASSY, FLAT RIBBON, 40 COND.

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	*OBS*(USE 801614-240)		THOMAS & BETTS CORP.	609-4001M	801614-040	2
002	HW,CBL 40FLTCBL	16428	COOPER BELDEN ELEC WIRE	9L28040	802163-040	4
003	HW,TAPE 2750	12624	NORTON CO. SEALANTS	V1301	802264-001	1
004	JACKETING,CBL,IW=2.0,		SPECTRA STRIP AN ELTRA CO	843-161-2001-0200	802062-020	1
005	PULL-TAB,F/40-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-4 (40COND)	802313-040	2

5 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 101328-003

REV: A4 = AE

DESC: CABLE ASSY, FLAT RIBBON, 40 COND.

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	*OBS*(USE 801614-240)		THOMAS & BETTS CORP.	609-4001M	801614-040	2
002	HW,CBL 40FLTCBL	16428	COOPER BELDEN ELEC WIRE	9L28040	802163-040	4
003	HW,TAPE 2750	12624	NORTON CO. SEALANTS	V1301	802264-001	1
004	JACKETING,CBL,IW=2.0,		SPECTRA STRIP AN ELTRA CO	843-161-2001-0200	802062-020	1
005	PULL-TAB,F/40-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-4 (40COND)	802313-040	2

5 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 101328-004

REV: A4 = AE

DESC: CABLE ASSY,FLAT RIBBON,40 COND.

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	*OBS*(USE 801614-240)		THOMAS & BETTS CORP.	609-4001M	801614-040	2
002	HW,CBL 40FLTCBL	16428	COOPER BELDEN ELEC WIRE	9L28040	802163-040	4
003	HW,TAPE 2750	12624	NORTON CO. SEALANTS	V1301	802264-001	1
004	JACKETING,CBL,IW=2.0,		SPECTRA STRIP AN ELTRA CO	843-161-2001-0200	802062-020	1
005	PULL-TAB,F/40-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-4 (40COND)	802313-040	2

5 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 101328-006

REV: A4 = AE

DESC: CABLE ASSY, FLAT RIBBON, 40 COND.

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	*OBS*(USE 801614-240)		THOMAS & BETTS CORP.	609-4001M	801614-040	2
002	HW,CBL 40FLTCBL	16428	COOPER BELDEN ELEC WIRE	9L28040	802163-040	4
003	HW,TAPE 2750	12624	NORTON CO. SEALANTS	V1301	802264-001	1
004	JACKETING,CBL,IW=2.0,		SPECTRA STRIP AN ELTRA CO	843-161-2001-0200	802062-020	1
005	PULL-TAB,F/40-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-4 (40COND)	802313-040	2

5 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 101328-008

REV: A4 = AE

DESC: CABLE ASSY,FLAT RIBBON 40 COND.

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	*OBS*(USE 801614-240)		THOMAS & BETTS CORP.	609-4001M	801614-040	2
002	HW,CBL 40FLTCBL	16428	COOPER BELDEN ELEC WIRE	9L28040	802163-040	4
003	HW,TAPE 2750	12624	NORTON CO. SEALANTS	V1301	802264-001	1
004	JACKETING,CBL,IW=2.0,		SPECTRA STRIP AN ELTRA CO	843-161-2001-0200	802062-020	1
005	PULL-TAB,F/40-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-4 (40COND)	802313-040	2

5 ITEMS LISTED



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PART / ASSEMBLY REVISION LEVEL FOR DATA NUMBER									REVISIONS			
-012	-010	-008	-007	-006	-005	-004	-003	-002	DATE	DESCRIPTION	DATE	APPROVED
A1	A1	A4	A4	A4	A4	A4	A4	A4	TA	REV. & REDRAWN - SEE PREV. DRWG. INFO, JJ	02-06-84	

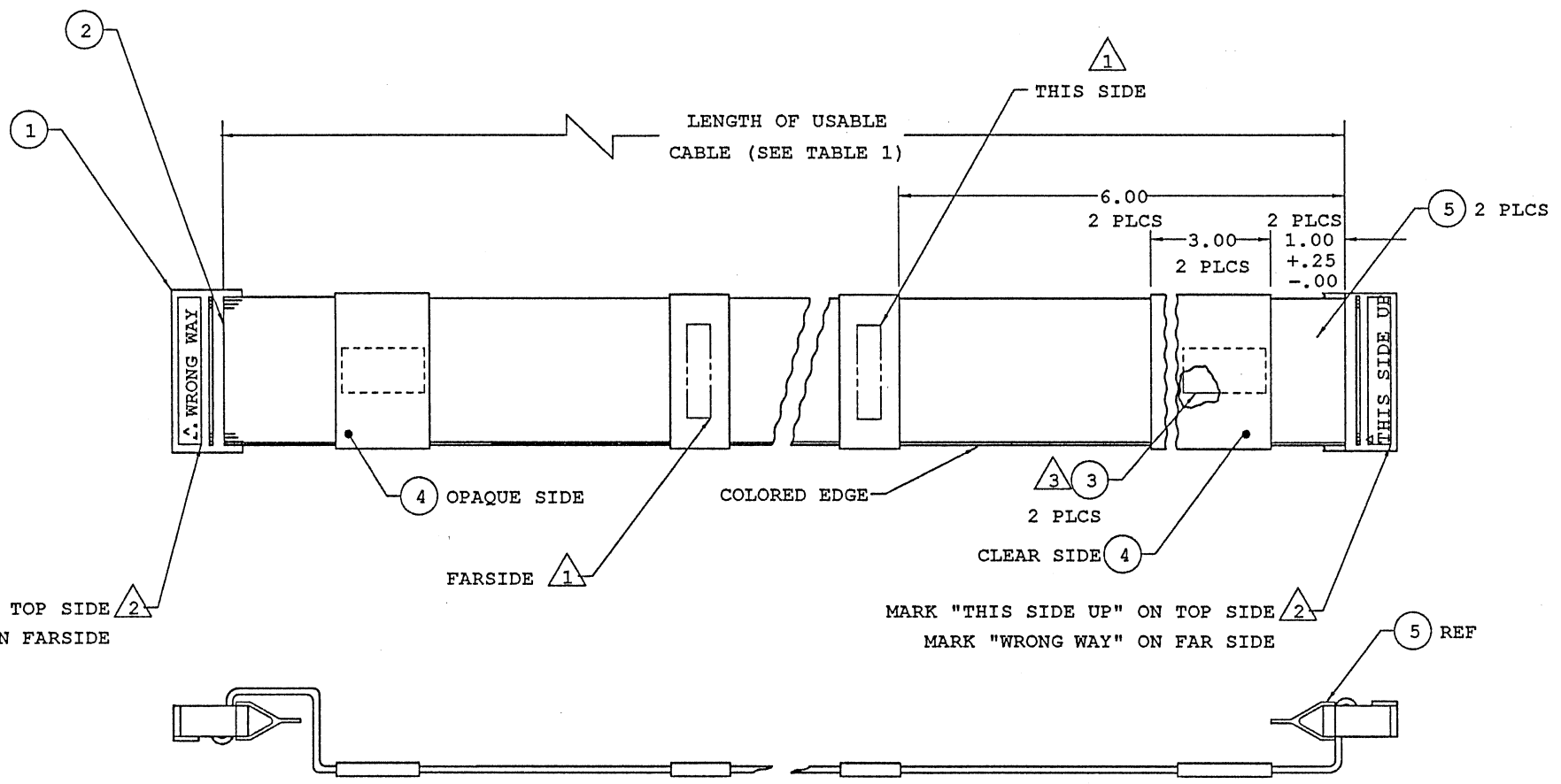


TABLE 1

PART NO.	CABLE LENGTH
-002	24.00 +2.00 -0.00
-003	36.00 +2.00 -0.00
-004	48.00 +3.00 -0.00
-005	60.00 +3.00 -0.00
-006	72.00 +3.00 -0.00
-007	84.00 +6.00 -0.00
-008	96.00 +6.00 -0.00
-010	120.00 +12.00 -0.00
-012	144.00 +12.00 -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.
 - 3 APPLY DOUBLE-SIDED TAPE BETWEEN CABLE AND JACKETING, ON CLEAR SIDE OF JACKETING. LOCATE APPROX AS SHOWN.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .X ± - .XX ± .25 .XXX ± - ANGLES ± - ✓ PER ANSI Y14.5M 1982	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
	DRAWN JMWHEELER 04-16-80	CABLE ASSEMBLY FLAT RIBBON, 40 COND.			
	CHECKED KMAHON 04-21-82				
	MECH				
MATERIAL SEE PARTS LIST	ELEC MS 12-04-80	SIZE	QCS IDENT NO	DWG REV	
FINISH	PROJ. ENG RMOON 04-29-80	B	53938	101328-TAB	
	APPROVED	SCALE	NONE	DO NOT SCALE DRG	SHEET 1 OF 1

101328-TAB



MAINTENANCE PARTS LIST

ASSEMBLY: PL 101329-002

REV: A3 = AD

DESC: CABLE ASSY, FLAT RIBBON, 40 COND., REVERSE

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	*OBS*(USE 801614-240)		THOMAS & BETTS CORP.	609-4001M	801614-040	2
002	HW,CBL 40FLTCBL	16428	COOPER BELDEN ELEC WIRE	9L28040	802163-040	3
003	HW, LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	2
004	JACKETING,CBL,IW=2.0,		SPECTRA STRIP AN ELTRA CO	843-161-2001-0200	802062-020	1
005	CBL-MKR,BLANK,1X6,WRI	85480	BRADY W.H. CO	PWC-PK-6	802335-006	4

5 ITEMS LISTED



8

7

6

5

4

3

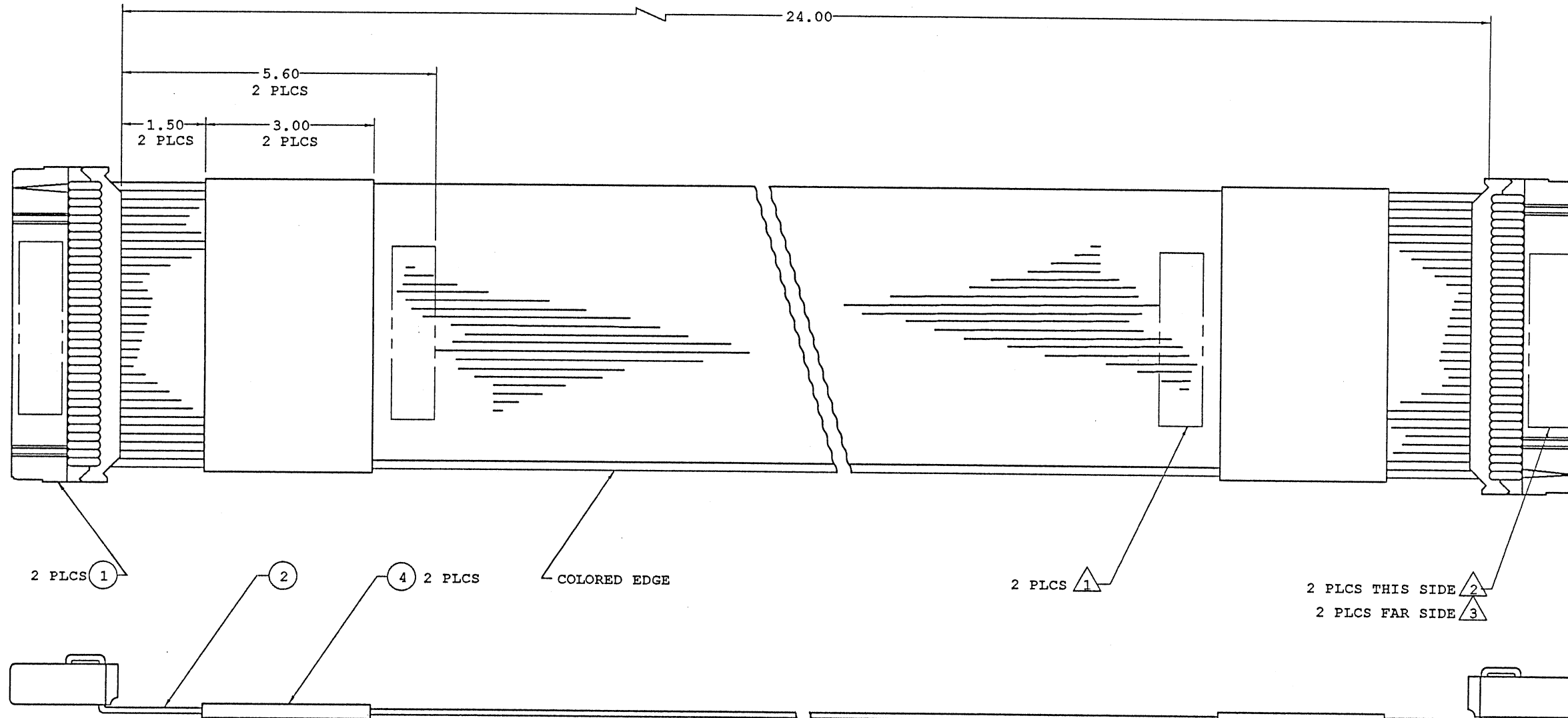
2

1

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REVISIONS				
NO.	DATE	DESCRIPTION	DATE	APPROVED
A2		DELETE NOTE 1	HES 12-09-88	RS 10-5-78
A3		MINOR CHANGES	KJ 12-09-88	RS
RC1		PER ECO	JD 12-09-88	RS 1-21-81
RC2		REDRAW ON DOGS	RAP 12-09-88	



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 "THIS SIDE UP" ON CONNECTOR. LOCATE APPROX AS SHOWN.
- 3. MARK "WRONG SIDE" ON CONNECTOR. LOCATE APPROX AS SHOWN.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .X ± --- .XX ± .25 .XXX ± --- ANGLES ± --- ✓ PER ANSI Y14.5M 1982	CONTRACT NO.	EVANS & SUTHERLAND	
	DRAWN LWHITLOCK 3-23-77	SALT LAKE CITY, UTAH 84108	
	CHECKED ACONGUR 4-12-77	CABLE ASSEMBLY, FLAT RIBBON, 40 COND., REVERSE	
	MECH ELEC RSEIERS 2-12-77 PROJ. ENG	APPROVED	
MATERIAL SEE PARTS LIST	SIZE	CODE IDENT NO	REV
FINISH	B	53938 101329-002	A3
	SCALE NONE	DO NOT SCALE DIM	SHEET 1 OF 1

101329-002



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 101372-001

REV: A1 = AB

DESC: ASSY,CABLE,POWER,+ -15V

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
002	HW,TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	7
003	HW,TERM 6RNG,12G	83330	DIALIGHT CORP.	C836-06	802133-006	2
004	TIE,CBL-MARKING,PAD=1	53421	TYTON CORP.	IT18R	802140-001	1
005	*OBS*NOT F/NEW DESIGN	53938	EVANS & SUTHERLAND	802384-008	802384-008	1
006	CONT,SOC,14-10AWG,TIN	00779	AMP INC.	350390-1	802386-001	6
007	TERM,RING,NO.6 STUD,1	98410	ETC-MOLEX INC.	B-823-06T	802132-006	4
001 6AT 1FT	WIRE,*USE 802508-???*	16428	COOPER BELDEN ELEC WIRE	8521	802046-016	7

7 ITEMS LISTED

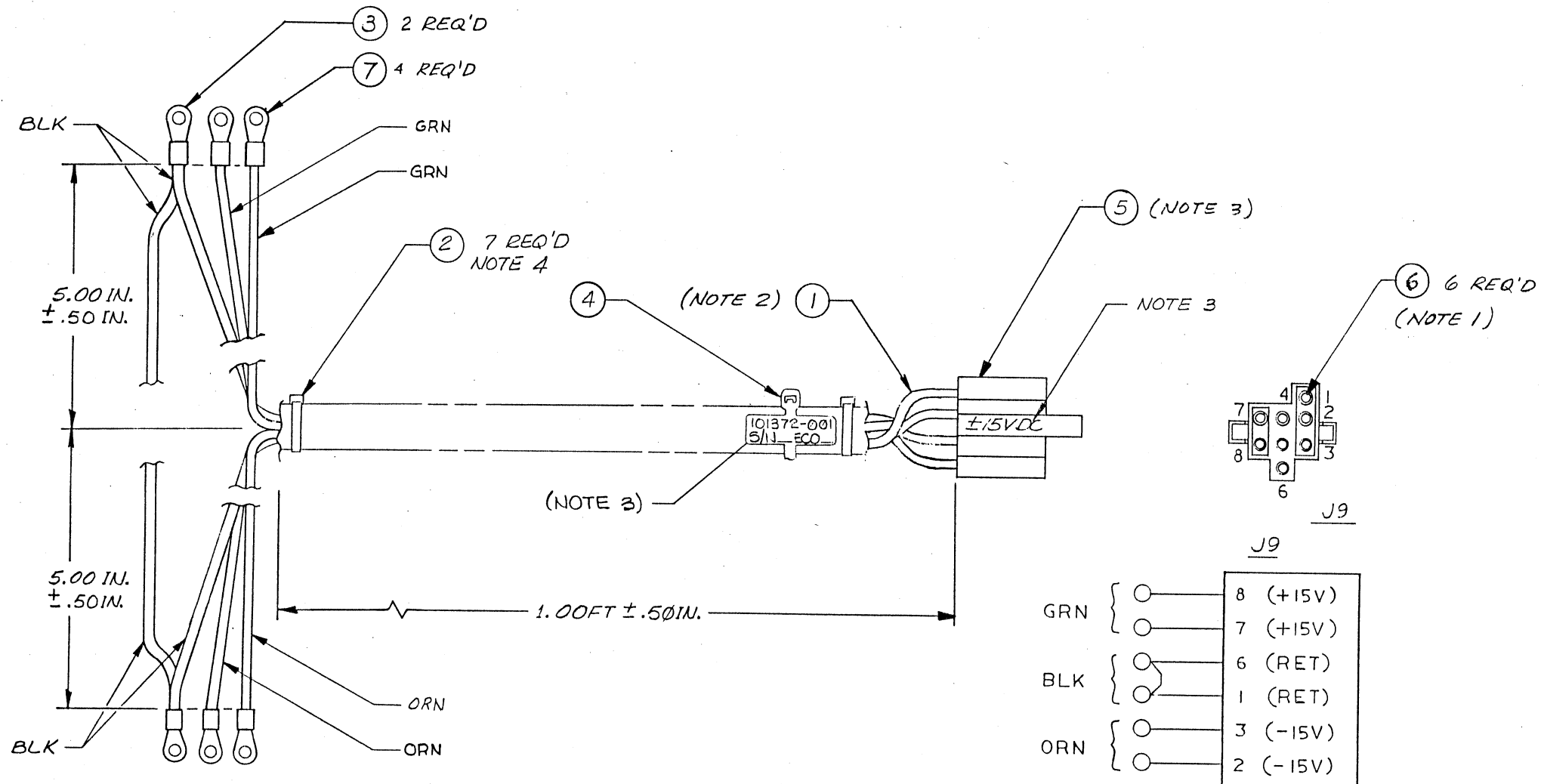


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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	NC	ADDED ITEMS 2 & 4. ADDED WIRE COLORS. ADDED MARKING INFO. THIS DWG FORMALLY RELEASED TO NC REV STATUS.	8-14-77	J. Pino
	AI	ADDED ITEM 7. DC	8-31-77	J. Pino 9/1/77

D
C
B
A



SCHEMATIC

4. PLACE ITEM (2) APPROX EVERY 3 INCHES.
 3. MARK ±15VDC ON CONN APPROX AS SHOWN. MARK ASSY NO., S/N, ECO NO., CONNECTOR "J9" USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIVALENT.
 2. LOOSELY TWIST ALL WIRES TOGETHER.
 1. DO NOT INSTALL ITEM (6) INTO ITEM (5) AT POSITIONS 4 & 5.
 UNLESS OTHERWISE SPECIFIED:
 NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± ✓		CONTRACT NO. DRAWN <i>R. Parley</i> 8-3-77 CHECKED <i>at Pino</i> 5 AUG 77 MECH <i>J. Pino</i> 8-15-77 ELEC <i>J. Pino</i> 15 AUG 77 PROJ. ENG APPROVED <i>J. Pino</i> 8-15-77		SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
200153-100	NOVOVIEW	MATERIAL SEE PARTS LIST		ASSY, CABLE, POWER, ±15V	
NEXT ASSY	USED ON	FINISH	SIZE C	CODE IDENT NO 53938	REV AI
APPLICATION			SCALE NONE	SHEET 1 OF 1	

101372-001



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200292-002

REV: NC = AA

DESC: ASSY, PLUG, PROGRAMMING, SLAVE, NOVOVIEW SP2 POWER CONTROL

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
002	CONN, PLUG, (12PIN), FEM	27264	MOLEX INC.	03-09-2121 (1360-12P)	802324-012	1
003	TERM, CRMP, MAL, 20-14AW	27264	MOLEX INC.	02-09-2103 (1190-M)	802326-001	7
001 BLK	WIRE, *USE 802509-???	92194	ALPHA WIRE CORP.	1555	802046-018	1

3 ITEMS LISTED



4

3

2

1

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REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED

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(NOTE 3)

(NOTE 2)
(FAR SIDE)

③ 7 RECD
(NOTE 1)

SCHEMATIC

NOTES:

- DO NOT INSTALL CONTACT PINS IN PLUG SHELL LOCATIONS 1,2,3,5 & 11.
- MARK ASSY NO., ECO, S/N & 'SLAVE' USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV.
- FOUR EACH, 18 AWG WIRES, CUT EACH 3.5 IN. LONG. STRIP BOTH ENDS 3/16 IN.

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

DRAWN T JOHNSON 10-9-79
 CHECKED *[Signature]* 10-10-79
 MECH.
 ELEC. *[Signature]* 10-20-79
 PROJ. ENG. *[Signature]* 10-20-79
 APPROVED *[Signature]* 12-2-79

EVANS & SUTHERLAND
 SALT LAKE CITY, UTAH, 84108

ASSY, PLUG, PROGRAMMING,
 SLAVE, NOVVIEW POWER CONTROL
 NSP2

MATERIAL
 FINISH

SIZE	CODE IDENT NO	REV
C	53938	NC

SCALE 2/1 DO NOT SCALE SHEET 1 OF 1

B 200292-002



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200292-003

REV: A0 = AA

DESC: ASSY, PLUG, PROGRAMMING, MASTER, NOVOVIEW POWER CONTROL (DC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW, WIRE 18G, WHT	92194	ALPHA WIRE CORP.	3055	802509-999	2
002	CONN, PLUG, (12PIN), FEM	27264	MOLEX INC.	03-09-2121 (1360-12P)	802324-012	1
003	TERM, CRMP, MAL, 20-14AW	27264	MOLEX INC.	02-09-2103 (1190-M)	802326-001	11

3 ITEMS LISTED

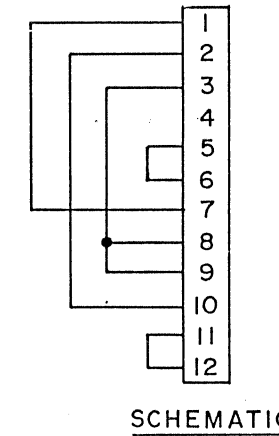
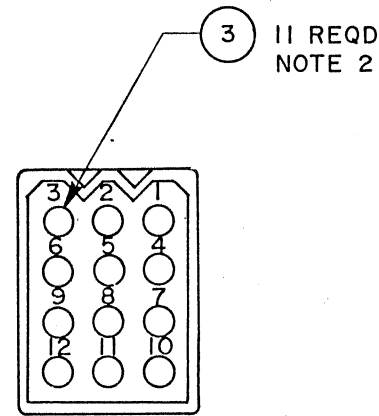
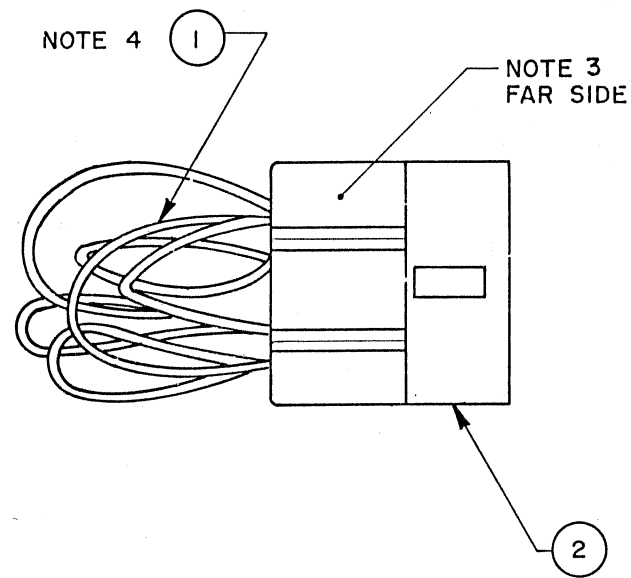


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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AO	RELEASED TO AO	GR 1-22-85	<i>Spears</i>



NOTES:

1. ASSEMBLE PER E & S STANDARDS.
2. DO NOT INSTALL CONTACT PIN IN PLUG SHELL LOCATION 4.
3. MARK PART NO., S/N AND REV LEVEL IN .09 TO .25 CHARACTERS IN CONTRASTING COLOR USING OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO NO. 35A OR EQUIV. LOCATE APPROX AS SHOWN.
4. SIX EACH, 18 AWG WIRES, CUT EACH 3.5 IN. LONG. STRIP BOTH ENDS 3/16 IN.

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

Those portions of this technical data indicated as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or, in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± — .xxx ± — ANGLES ± — ✓	DRAWN B. HOLT 7 JUL 82	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108		
	CHECKED <i>K. MAHON 7/20/82</i>	ASSY, PLUG, PROGRAMMING MASTER, NOVONVIEW POWER CONTROL (D.C.)		
	MECH.	SIZE	CODE IDENT NO	REV
	ELEC. <i>RJA 7-21-82</i>	C	53938	200292-003
PROJ. ENG. <i>Pe Spears 21 JULY</i>	APPROVED	SCALE 2/1 DO NOT SCALE SHEET 1 OF 1		
MATERIAL SEE PARTS LIST				
FINISH				



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200294-101

REV: A3 = AD

DESC: ASSY,WIRING HARNESS A,POWER CONTROL,NSP2(DC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	CONN,RCPT,(12PIN),MAL	27264	MOLEX INC.	03-09-1125 (1360-12R)	802323-012	1
002	CONN,RCPT,(3PIN),MAL-	27264	MOLEX INC.	03-09-1032 (1396-3R)	802323-103	1
003	CONN,PLUG,(3PIN),FEM-	27264	MOLEX INC.	03-09-2032 (1396-3P)	802324-003	1
004	CONN,RCPT,(2PIN),MAL-	27264	MOLEX INC.	03-09-1022 (1545-2R)	802323-102	1
005	TERM,QDISC,FML,16-14A	83330	DIALIGHT CORP.	BB-8132 (AVIKRIMP)	802293-202	8
006	HW,TERM 6SPD,22G	98410	ETC-MOLEX INC.	A-838-06T	802135-006	14
007	HW,RCPT CRMPTERM	27264	MOLEX INC.	02-09-1118 (1381-F)	802325-002	17
008	HW,TERM 02-09-2218	27264	MOLEX INC.	02-09-2118 (1390-M)	802326-002	3
009	HW,LUG DNF18-111	83330	DIALIGHT CORP.	AA-8131 (AVIKRIMP)	802293-201	10
010	TERM,QDISC,FML,22-18A	75037	MINN. MINING & MFG.	MNG18-250DFI	802235-022	5
011	TERM,QDISC,FML,16-14A	27264	MOLEX INC.	BB-2206T	802235-001	3
012	HW,TERM 6SPD,14G	98410	ETC-MOLEX INC.	B-824-06T	802136-006	5
013	TERM,QDISC,FML,16-14A	92219	WALDOM ELECTRONICS INC.	SN-5620 (BLU) -.110TAB	802293-100	2
014	TERM,QDISC,FML,16-14A	75037	MINN. MINING & MFG.	C-29-503 (.187X.02)	802293-002	4
015	TERM,QDISC,FML,22-18A	75037	MINN. MINING & MFG.	B-29-502 (.187X.02)	802293-001	4
016	HW,TERM 8SPD,22G	98410	ETC-MOLEX INC.	A-834-08T	802135-008	1
017	TIE,CBL-MARKING,PAD=1	53421	TYTON CORP.	IT18R	802140-001	1
018	HW,TBNG 3/16TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/16"	802033-187	1
019	HW,TBNG 1/4TBNG	92194	ALPHA WIRE CORP.	FIT-221M-1/4"	802033-250	2
020	HW,TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	60
	HW,WIRE 18G,BLK	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG) BLACK	802509-000	5
	HW,WIRE 18G,RED	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG) RED	802509-222	5
	HW,WIRE 18G,GRN	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG) GREEN	802509-555	1
	HW,WIRE 18G,BLU	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG) BLUE	802509-666	4
	WIRE,18AWG(7/26;16/30	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG) GRY,BLK	802509-808	8
	HW,WIRE 18G,GRY	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG) GRAY	802509-888	6
	WIRE,18AWG(7/26;16/30	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG) WHT,RED	802509-929	3
	WIRE,18AWG(7/26;16/30	73612	CONSOLATED ELEC, W/C CORP	9403-WHT,BLU,BLK	802509-960	11
	WIRE,18AWG(7/26;16/30	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG) WHT,BLU	802509-969	31

29 ITEMS LISTED



WIRE NUM	PART NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	START	FINISH	VIA	VIA
1	802509-969	18	WHT, BLU		33 3/4	5/16	5/16	802293-201	802135-006	S3-2	K3-2		
2	802509-929	18	WHT, RED		16 3/4	5/16	3/16	SWS 3	802325-002	S3-3	J19-9		
3	802509-222	18	RED		24	5/16	3/16	802293-202	802326-002	S3-3	P17-1		
4	802509-969	18	WHT, BLU		7	5/16	5/16	SWS 5	802293-201	S3-4	S3-12		
5	802509-969	18	WHT, BLU		29 1/2	5/16	3/8	802293-202	802235-022	S3-4	B+		
6	802509-969	18	WHT, BLU		10 1/2	5/16	5/16	802293-201	FWS 7	S3-5	S2-5		
7	802509-969	18	WHT, BLU		10 3/4	5/16	5/16	802293-202	FWS 8	S2-5	S1-5		
8	802509-969	18	WHT, BLU		2 1/4	5/16	5/16	802293-202	802293-201	S1-5	S1-2		
9	802509-969	18	WHT, BLU		16 1/2	5/16	3/16	SWS 10	802325-002	S3-6	J19-4		
10	802509-666	18	BLU		24	5/16	3/16	802293-202	802326-002	S3-6	P17-3		
11	802509-960	18	WHT, BLU, BLK		17	5/16	3/16	SWS 12	802325-002	S3-7	J19-5		
12	802509-969	18	WHT, BLU		28 1/4	5/16	5/16	802293-202	FWS 13	S3-7	B-		
13	802509-555	18	GRN		11 3/4	5/16	5/16	802235-001	802135-008	B-	G6		
14	802509-960	18	WHT, BLU, BLK		16 1/2	5/16	3/16	SWS 15	802325-002	S3-8	J19-2		
15	802509-960	18	WHT, BLU, BLK		31 1/2	5/16	5/16	802293-202	FWS 16	S3-8	K1-A		
16	802509-969	18	WHT, BLU		6 3/4	5/16	5/16	802136-006	802135-006	K1-A	K3-B		
17	802509-960	18	WHT, BLU, BLK		16 1/2	5/16	3/16	802293-201	802325-002	S3-9	J19-6		
18	802509-969	18	WHT, BLU		16 3/4	5/16	3/16	802293-201	802325-002	S3-11	J19-1		
19	802509-222	18	RED		20 1/4	3/16	3/16	802325-002	802325-002	J17-1	J19-8		
20	802509-000	18	BLK		20 1/4	3/16	3/16	802325-002	802325-002	J17-2	J19-10		
21	802509-666	18	BLU		20 1/4	3/16	3/16	802325-002	802325-002	J17-3	J19-12		
22	802509-969	18	WHT, BLU		28 1/2	5/16	5/16	802293-201	802135-006	S2-6	K1-7		
23	802509-969	18	WHT, BLU		26 3/4	5/16	5/16	802293-201	FWS 24	S1-7	K1-B		
24	802509-000	18	BLK		21 1/4	5/16	3/16	802136-006	802325-002	K1-B	J1-2		
25	802509-960	18	WHT, BLU, BLK		26 1/2	5/16	5/16	802293-201	802135-006	S1-8	K1-A		
26	802509-969	18	WHT, BLU		30 3/4	5/16	5/16	SWS 27	802135-006	S1-3	K1-4		
27	802509-969	18	WHT, BLU		27 1/4	5/16	5/16	802293-202	802135-006	S1-3	K3-5		

WIRE PART NUM NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	START	FINISH	VIA	VIA
28 802509-929	18	WHT,RED		11 1/4	5/16	3/16	802293-201	802325-002	S1-4	J19-3		
29 802509-000	18	BLK		13 1/2	3/16	3/16	802325-002	802326-002	J19-7	P17-2		
30 802509-969	18	WHT,BLU		20	3/16	5/16	802325-002	FWS 31	J19-11	K1-B		
31 802509-969	18	WHT,BLU		12 1/2	5/16	5/16	802136-006	802135-006	K1-B	K3-3		
32 802509-888	18	GRY		25 3/4	5/16	5/16	802293-100	FWS 33	CB7-1	K2-T1		
33 802509-808	18	GRY,BLK		18 3/4	5/16	5/16	802235-001	802135-006	K2-T1	K1-6		
34 802509-888	18	GRY		14 1/4	5/16	5/16	802293-100	FWS 35	CB7-2	T2-4		
35 802509-888	18	GRY		24	5/16	5/16	802293-002	802135-006	T2-4	U1-AC1		
36 802509-969	18	WHT,BLU		11 3/4	5/16	3/8	SWS 37	802235-022	T2-8	B1		
37 802509-969	18	WHT,BLU		1 3/4	5/16	5/16	802293-002	802293-001	T2-8	T2-7		
38 802509-960	18	WHT,BLU,BLK		14	5/16	3/8	SWS 39	802235-022	T2-6	B2		
39 802509-960	18	WHT,BLU,BLK		1 3/4	5/16	5/16	802293-002	802293-001	T2-6	T2-5		
40 802509-808	18	GRY,BLK		1 3/4	5/16	5/16	802293-001	802293-001	T2-3	T2-2		
41 802509-808	18	GRY,BLK		22 1/4	5/16	5/16	SWS 42	FWS 43	T2-1	K2-T2		
42 802509-808	18	GRY,BLK		25	5/16	5/16	802293-002	802135-006	T2-1	U1-AC2		
43 802509-808	18	GRY,BLK		13 3/4	5/16	3/8	802235-001	802235-022	K2-T2	K2-A		
44 802509-808	18	GRY,BLK		11	3/8	5/16	802235-022	802135-006	K2-B	K1-9		
45 802509-969	18	WHT,BLU		16 1/4	5/16	5/16	802135-006	FWS 46	K3-9	U1-N0		
46 802509-222	18	RED		15 1/2	5/16	3/16	802136-006	802325-002	U1-N0	J1-1		
47 802509-969	18	WHT,BLU		11 1/2	5/16	5/16	802135-006	FWF 48	K3-A	K1-4		
48 802509-969	18	WHT,BLU		22 1/4	5/16	5/16	802135-006	802136-006	U1-ARM	K1-4		

COMMENT FWF = FINISH WITH FINISH WIRE NO.
 COMMENT FWS = FINISH WITH START WIRE NO.
 COMMENT SWF = START WITH FINISH WIRE NO.
 COMMENT SWS = START WITH START WIRE NO.
 COMMENT J1,J17,J19,P17 WIRES ARE TWISTED AFTER HARNESS ASSEMBLY IS COMPLETED



C O M P O N E N T S

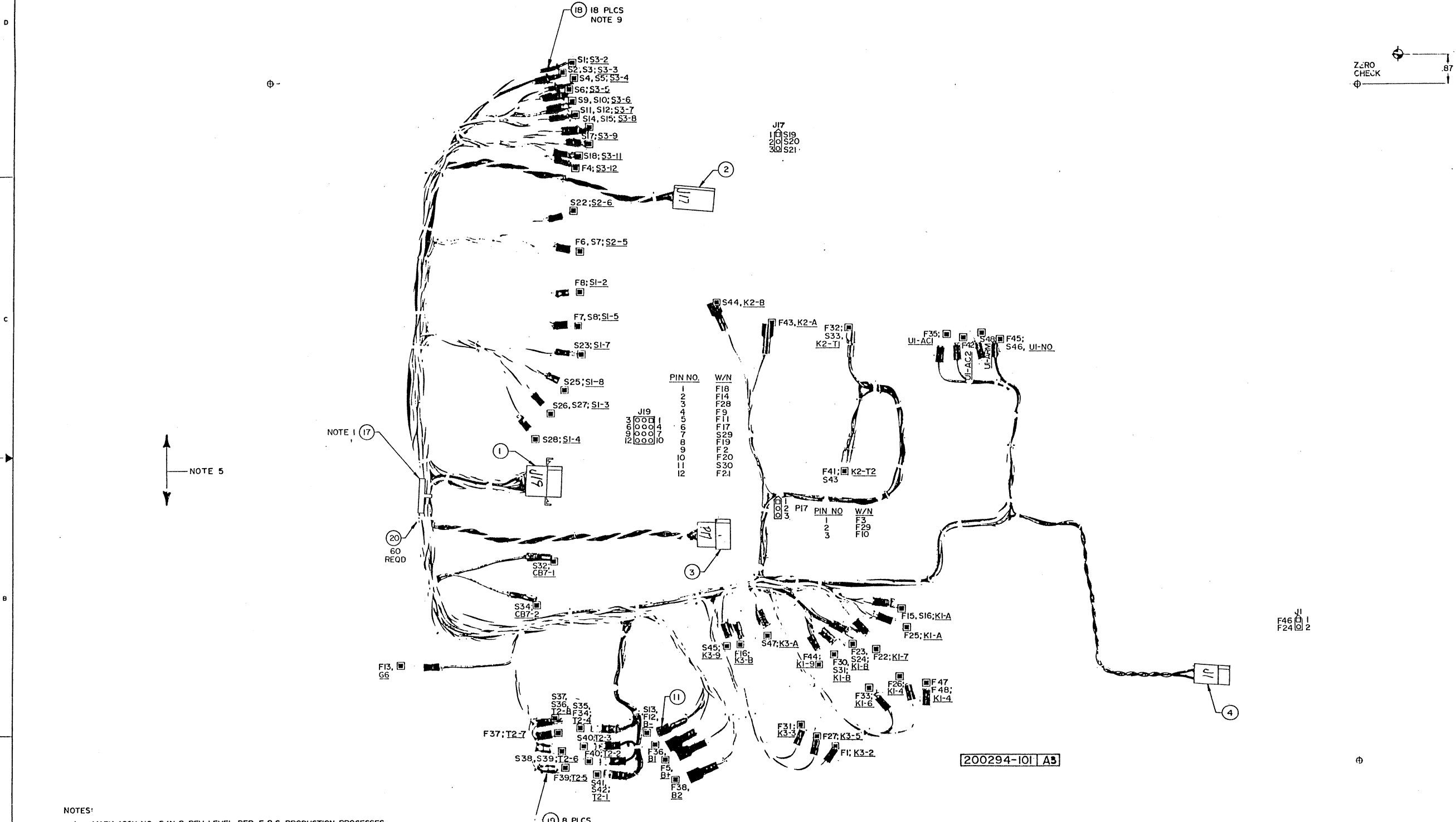
WIRE NUM	PART NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	WIRE NUM	START	FINISH
24	802509-000	18	BLK		21 1/4	5/16	3/16	802136-006	802325-002	24	K1-B	J1-2
20	802509-000	18	BLK		20 1/4	3/16	3/16	802325-002	802325-002	20	J17-2	J19-10
29	802509-000	18	BLK		13 1/2	3/16	3/16	802325-002	802326-002	29	J19-7	P17-2
3	802509-222	18	RED		24	5/16	3/16	802293-202	802326-002	3	S3-3	P17-1
19	802509-222	18	RED		20 1/4	3/16	3/16	802325-002	802325-002	19	J17-1	J19-8
46	802509-222	18	RED		15 1/2	5/16	3/16	802136-006	802325-002	46	U1-N0	J1-1
13	802509-555	18	GRN		11 3/4	5/16	5/16	802235-001	802135-008	13	B-	G6
10	802509-666	18	BLU		24	5/16	3/16	802293-202	802326-002	10	S3-6	P17-3
21	802509-666	18	BLU		20 1/4	3/16	3/16	802325-002	802325-002	21	J17-3	J19-12
42	802509-808	18	GRY, BLK		25	5/16	5/16	802293-002	802135-006	42	T2-1	U1-AC2
41	802509-808	18	GRY, BLK		22 1/4	5/16	5/16	SWS 42	FWS 43	41	T2-1	K2-T2
33	802509-808	18	GRY, BLK		18 3/4	5/16	5/16	802235-001	802135-006	33	K2-T1	K1-6
43	802509-808	18	GRY, BLK		13 3/4	5/16	3/8	802235-001	802235-022	43	K2-T2	K2-A
44	802509-808	18	GRY, BLK		11	3/8	5/16	802235-022	802135-006	44	K2-B	K1-9
40	802509-808	18	GRY, BLK		1 3/4	5/16	5/16	802293-001	802293-001	40	T2-3	T2-2
32	802509-888	18	GRY		25 3/4	5/16	5/16	802293-100	FWS 33	32	CB7-1	K2-T1
35	802509-888	18	GRY		24	5/16	5/16	802293-002	802135-006	35	T2-4	U1-AC1
34	802509-888	18	GRY		14 1/4	5/16	5/16	802293-100	FWS 35	34	CB7-2	T2-4
2	802509-929	18	WHT, RED		16 3/4	5/16	3/16	SWS 3	802325-002	2	S3-3	J19-9
28	802509-929	18	WHT, RED		11 1/4	5/16	3/16	802293-201	802325-002	28	S1-4	J19-3
15	802509-960	18	WHT, BLU, BLK		31 1/2	5/16	5/16	802293-202	FWS 16	15	S3-8	K1-A
25	802509-960	18	WHT, BLU, BLK		26 1/2	5/16	5/16	802293-201	802135-006	25	S1-8	K1-A
11	802509-960	18	WHT, BLU, BLK		17	5/16	3/16	SWS 12	802325-002	11	S3-7	J19-5
14	802509-960	18	WHT, BLU, BLK		16 1/2	5/16	3/16	SWS 15	802325-002	14	S3-8	J19-2
17	802509-960	18	WHT, BLU, BLK		16 1/2	5/16	3/16	802293-201	802325-002	17	S3-9	J19-6
38	802509-960	18	WHT, BLU, BLK		14	5/16	3/8	SWS 39	802235-022	38	T2-6	B2
39	802509-960	18	WHT, BLU, BLK		1 3/4	5/16	5/16	802293-002	802293-001	39	T2-6	T2-5

WIRE PART NUM NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	WIRE NUM	START	FINISH
1 802509-969	18	WHT, BLU		33 3/4	5/16	5/16	802293-201	802135-006	1	S3-2	K3-2
26 802509-969	18	WHT, BLU		30 3/4	5/16	5/16	SWS 27	802135-006	26	S1-3	K1-4
5 802509-969	18	WHT, BLU		29 1/2	5/16	3/8	802293-202	802235-022	5	S3-4	B+
22 802509-969	18	WHT, BLU		28 1/2	5/16	5/16	802293-201	802135-006	22	S2-6	K1-7
12 802509-969	18	WHT, BLU		28 1/4	5/16	5/16	802293-202	FWS 13	12	S3-7	B-
27 802509-969	18	WHT, BLU		27 1/4	5/16	5/16	802293-202	802135-006	27	S1-3	K3-5
23 802509-969	18	WHT, BLU		26 3/4	5/16	5/16	802293-201	FWS 24	23	S1-7	K1-B
48 802509-969	18	WHT, BLU		22 1/4	5/16	5/16	802135-006	802136-006	48	U1-ARM	K1-4
30 802509-969	18	WHT, BLU		20	3/16	5/16	802325-002	FWS 31	30	J19-11	K1-B
18 802509-969	18	WHT, BLU		16 3/4	5/16	3/16	802293-201	802325-002	18	S3-11	J19-1
9 802509-969	18	WHT, BLU		16 1/2	5/16	3/16	SWS 10	802325-002	9	S3-6	J19-4
45 802509-969	18	WHT, BLU		16 1/4	5/16	5/16	802135-006	FWS 46	45	K3-9	U1-N0
31 802509-969	18	WHT, BLU		12 1/2	5/16	5/16	802136-006	802135-006	31	K1-B	K3-3
36 802509-969	18	WHT, BLU		11 3/4	5/16	3/8	SWS 37	802235-022	36	T2-8	B1
47 802509-969	18	WHT, BLU		11 1/2	5/16	5/16	802135-006	FWF 48	47	K3-A	K1-4
7 802509-969	18	WHT, BLU		10 3/4	5/16	5/16	802293-202	FWS 8	7	S2-5	S1-5
6 802509-969	18	WHT, BLU		10 1/2	5/16	5/16	802293-201	FWS 7	6	S3-5	S2-5
4 802509-969	18	WHT, BLU		7	5/16	5/16	SWS 5	802293-201	4	S3-4	S3-12
16 802509-969	18	WHT, BLU		6 3/4	5/16	5/16	802136-006	802135-006	16	K1-A	K3-B
8 802509-969	18	WHT, BLU		2 1/4	5/16	5/16	802293-202	802293-201	8	S1-5	S1-2
37 802509-969	18	WHT, BLU		1 3/4	5/16	5/16	802293-002	802293-001	37	T2-8	T2-7

COMMENT FWF = FINISH WITH FINISH WIRE NO.
 COMMENT FWS = FINISH WITH START WIRE NO.
 COMMENT SWF = START WITH FINISH WIRE NO.
 COMMENT SWS = START WITH START WIRE NO.
 COMMENT J1, J17, J19, P17 WIRES ARE TWISTED AFTER HARNESS ASSEMBLY IS COMPLETED



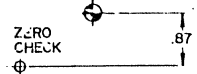
ZONE	LTR	DESCRIPTION	DATE	APPROVED
P1		CHANGED F31, F47	7-14-83	
NC		RELEASED TO NC	BH 8-27-84	
A1		RELOCATE MARKER	PRP 10-28-84	
A2		CHNGD NOTE 1, ADDED NOTE 9	MA 10-16-84	
A3		REVISION UPDATE	KGO 8-08-85	



- NOTES:
- MARK ASSY NO., S/N & REV. LEVEL PER E & S PRODUCTION PROCESSES E-9.1. LOCATE APPROX. AS SHOWN.
 - ALL CONNECTOR PIN ARRANGEMENTS ARE VIEWED FROM WIRING SIDE.
 - MARK ALL CONNECTORS AS SHOWN IN CONTRASTING COLOR AND USING OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV.
 - SLACK OF WIRES SHOULD BE DISTRIBUTED, NOT FORMED AT CONNECTORS.
 - RUN DRAWING THRU BLUE PRINT MACHINE IN DIRECTION SHOWN.
 - TIE CABLE 802140-001 TO BE INSTALLED AS SHOWN.
 - S-START OF WIRE; F-FINISH OF WIRE
 - SEE WIRE LIST FOR: AWG/COLOR/LENGTH/TERMINATION/MARKING OF INDIVIDUAL WIRES.
 - COVER EXPOSED QUICK-DISCONNECT TERMINALS WITH HEAT SHRINK TUBING APPROX. 1.00 LONG

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		DRAWN B. HOLT 5/5/82		EVANS & SUTHERLAND	
.XX ±		CHECKED PAUL K. G. 8/2		SALT LAKE CITY, UTAH, 84108	
.XXX ±		MECH. R. P. HOLT 6-1-82		CABLE ASSEMBLY	
ANGLES ±		ELEC. R. P. HOLT 6-1-82		WIRING HARNESS A	
✓		PROJ. ENG. R. P. HOLT 6-1-82		POWER CONTROL NSP-2	
APPROVED		APPROVED		SCALE 1/1	
MATERIAL SEE PARTS LIST		SIZE CODE IDENT NO		DO NOT SCALE SHEET 1 OF 1	
FINISH		E 53938 200294-101		REV A3	

200294-101 A3





MAINTENANCE PARTS LIST

ASSEMBLY: PL 200295-100

REV: B0 = BA

DESC: ASSY, WIRING HARNESS B, POWER CONTROL, NSP2

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
	CONT, SOC, 18-16AWG, TYP	00779	AMP INC.	66100-9	801815-204	10
	CONT, FEM, 14-12AWG, TYP	00779	AMP INC.	66258-1 (TYPE XII-F)	801815-212	6
	HW, TIE TY-903	59730	THOMAS AND BETTS CORP.	TY-903	802061-005	31
	HW, TERM 8SPD, 22G	98410	ETC-MOLEX INC.	A-834-08T	802135-008	2
	TERM, SPADE, NO.8 STUD,	98410	ETC-MOLEX INC.	B-824-08T	802136-008	6
	TERM, RING, NO.10 STUD,	06383	PANDUIT CORP	PV8-10R	802137-110	1
	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	1
	SPLICE, PRL, SELF-STRIP	53387	MINN. MINING & MFG.EP DIV	560 (BLUE) SCOTCHLOK	802172-002	8
	TERM, QDISC, FML, 16-14A	27264	MOLEX INC.	BB-2206T	802235-001	8
	TERM, QDISC, FML, 12-10A	98410	ETC-MOLEX INC.	C-2251T	802235-012	2
	HW, RCPT CRMPTERM	27264	MOLEX INC.	02-09-1118 (1381-F)	802325-002	2
	WIRE, 12AWG (19/25; 65/3	73612	CONSOLATED ELEC, W/C CORP	9007 (12AWG) BLACK	802506-000	3
	WIRE, 12AWG (19/25; 65/3	73612	CONSOLATED ELEC, W/C CORP	9007 (12AWG) GREEN	802506-555	2
	CTL, WIRE, 12AWG (19 S	92194	ALPHA WIRE CORP.	7036	802506-999	3
	HW, WIRE 14G, BLK	73612	CONSOLATED ELEC, W/C CORP	9405 (14AWG) BLACK	802507-000	3
	HW, WIRE 14G, WHT	53938	EVANS & SUTHERLAND	*CTL*802507-999	802507-999	4
	WIRE, 16AWG (19/29; 26/3	73612	CONSOLATED ELEC, W/C CORP	9404 (16AWG) BLACK	802508-000	7
	WIRE, 16AWG (STRANDED),	92194	ALPHA WIRE CORP.	3057	802508-999	7
	HW, WIRE 18G, BLK	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG) BLACK	802509-000	3
J18	CONN, RCPT, (2PIN), MAL-	27264	MOLEX INC.	03-09-1022 (1545-2R)	802323-102	1
J21	EL, HW 350536-3	00779	AMP INC.	350536-3 (SCKT)	802386-101	2
J21	CONN, HOUSING, 2-CKT CA	00779	AMP INC.	1-480699-0	802383-102	1
P22	CONT, PIN, 20-14AWG, TIN	00779	AMP INC.	350218-3 (PIN)	802387-101	2
P22	CONN, HOUSING, 2-CKT PL	00779	AMP INC.	1-480698-0	802382-102	1

24 ITEMS LISTED



WIRE PART NUM NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	START	FINISH	VIA	VIA
41 802506-999	12	WHT		12 3/4	1/4	9/32	SWS 42	801815-212	CB3-1	J13-1		
42 802506-999	12	WHT		15	1/4	9/32	802235-012	801815-212	CB3-1	J14-1		
43 802506-000	12	BLK		14	1/4	9/32	SWS 44	801815-212	CB3-3	J14-3		
44 802506-000	12	BLK		11 3/4	1/4	9/32	802235-012	801815-212	CB3-3	J13-3		
45 802508-999	16	WHT		45 1/4	1/4	5/32	802235-001	801815-204	CB2-1	J5-1		
46 802508-000	16	BLK		45	1/4	5/32	802235-001	801815-204	CB2-3	J5-2		
47 802507-999	14	WHT		20 1/4	1/4	1/4	802235-001	802136-008	CB6-2	TB2-3		
48 802507-000	14	BLK		17	1/4	1/4	802235-001	802136-008	CB6-4	TB2-7		
49 802508-999	16	WHT		19	1/4	1/4	802235-001	802136-008	CB5-2	TB2-2		
50 802508-000	16	BLK		16 1/4	1/4	1/4	802235-001	802136-008	CB5-4	TB2-6		
51 802507-999	14	WHT		13 1/2	1/4	1/4	802235-001	802136-008	CB2-2	TB2-4		
52 802507-000	14	BLK		10 1/2	1/4	1/4	802235-001	802136-008	CB2-4	TB2-8		
53 802506-555	12	GRN		4 1/2	9/32	3/8	801815-212	FWS 54	J14-2	G3		
54 802506-555	12	GRN		4 1/2	3/8	9/32	802137-110	801815-212	G3	J13-2		
55 802509-000	18	BLK		16 1/2	5/32	1/4	802325-002	802135-008	J18-1	TB2-1		
56 802509-000	18	BLK		14 1/4	5/32	1/4	802325-002	802135-008	J18-2	TB2-5		
57 802508-000	16	BLK		2 1/2	0	5/32	802172-002	802386-101	E4	J21-1		
58 802508-999	16	WHT		2 1/2	0	5/32	802172-002	802386-101	E6	J21-2		
59 802508-999	16	WHT		8	5/32	5/32	802387-101	801815-204	P22 2	J10-1		
60 802508-999	16	WHT		1 3/4	0	5/32	802172-002	801815-204	E1	J12-1		
61 802508-999	16	WHT		1 3/4	0	5/32	802172-002	801815-204	E3	J11-1		
62 802508-000	16	BLK		8	5/32	5/32	802387-101	801815-204	P22-1	J10-2		
63 802508-000	16	BLK		1 3/4	0	5/32	802172-002	801815-204	E2	J12-2		
64 802508-000	16	BLK		1 3/4	0	5/32	802172-002	801815-204	E5	J11-2		
65 802508-999	16	WHT		3	0	5/32	802172-002	801815-204	E7	J3-1		
66 802508-000	16	BLK		3	0	5/32	802172-002	801815-204	E8	J3-2		

WIRE PART NUM NUMBER	AWG	COLOR	TWD OVERALL PR WIRE LN	START	FINISH	START	FINISH	START	FINISH	VIA	VIA
COMMENT	FWF = FINISH WITH FINISH										
COMMENT	FWS = FINISH WITH START										
COMMENT	SWF = START WITH FINISH										
COMMENT	SWS = START WITH START										
COMMENT											
COMMENT											
COMMENT											

C O M P O N E N T S

WIRE NUM	PART NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	WIRE NUM	START	FINISH
43	802506-000	12	BLK		14	1/4	9/32	SWS 44	801815-212	43	CB3-3	J14-3
44	802506-000	12	BLK		11 3/4	1/4	9/32	802235-012	801815-212	44	CB3-3	J13-3
53	802506-555	12	GRN		4 1/2	9/32	3/8	801815-212	FWS 54	53	J14-2	G3
54	802506-555	12	GRN		4 1/2	3/8	9/32	802137-110	801815-212	54	G3	J13-2
42	802506-999	12	WHT		15	1/4	9/32	802235-012	801815-212	42	CB3-1	J14-1
41	802506-999	12	WHT		12 3/4	1/4	9/32	SWS 42	801815-212	41	CB3-1	J13-1

C O M P O N E N T S

WIRE PART NUM NUMBER	AWG	COLOR	TWD OVERALL PR WIRE LN	START	FINISH	START	FINISH	WIRE NUM	START	FINISH
48 802507-000	14	BLK	17	1/4	1/4	802235-001	802136-008	48	CB6-4	TB2-7
52 802507-000	14	BLK	10 1/2	1/4	1/4	802235-001	802136-008	52	CB2-4	TB2-8
47 802507-999	14	WHT	20 1/4	1/4	1/4	802235-001	802136-008	47	CB6-2	TB2-3
51 802507-999	14	WHT	13 1/2	1/4	1/4	802235-001	802136-008	51	CB2-2	TB2-4

WIRE PART NUM NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	WIRE NUM	START	FINISH
46 802508-000	16	BLK		45	1/4	5/32	802235-001	801815-204	46	CB2-3	J5-2
50 802508-000	16	BLK		16 1/4	1/4	1/4	802235-001	802136-008	50	CB5-4	TB2-6
62 802508-000	16	BLK		8	5/32	5/32	802387-101	801815-204	62	P22-1	J10-2
66 802508-000	16	BLK		3	0	5/32	802172-002	801815-204	66	E8	J3-2
57 802508-000	16	BLK		2 1/2	0	5/32	802172-002	802386-101	57	E4	J21-1
63 802508-000	16	BLK		1 3/4	0	5/32	802172-002	801815-204	63	E2	J12-2
64 802508-000	16	BLK		1 3/4	0	5/32	802172-002	801815-204	64	E5	J11-2
45 802508-999	16	WHT		45 1/4	1/4	5/32	802235-001	801815-204	45	CB2-1	J5-1
49 802508-999	16	WHT		19	1/4	1/4	802235-001	802136-008	49	CB5-2	TB2-2
59 802508-999	16	WHT		8	5/32	5/32	802387-101	801815-204	59	P22 2	J10-1
65 802508-999	16	WHT		3	0	5/32	802172-002	801815-204	65	E7	J3-1
58 802508-999	16	WHT		2 1/2	0	5/32	802172-002	802386-101	58	E6	J21-2
60 802508-999	16	WHT		1 3/4	0	5/32	802172-002	801815-204	60	E1	J12-1
61 802508-999	16	WHT		1 3/4	0	5/32	802172-002	801815-204	61	E3	J11-1

C O M P O N E N T S

WIRE PART NUM NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	WIRE NUM	START	FINISH
55 802509-000	18	BLK		16 1/2	5/32	1/4	802325-002	802135-008	55	J18-1	TB2-1
56 802509-000	18	BLK		14 1/4	5/32	1/4	802325-002	802135-008	56	J18-2	TB2-5

COMMENT FWF = FINISH WITH FINISH

COMMENT FWS = FINISH WITH START

COMMENT SWF = START WITH FINISH

COMMENT SWS = START WITH START

COMMENT

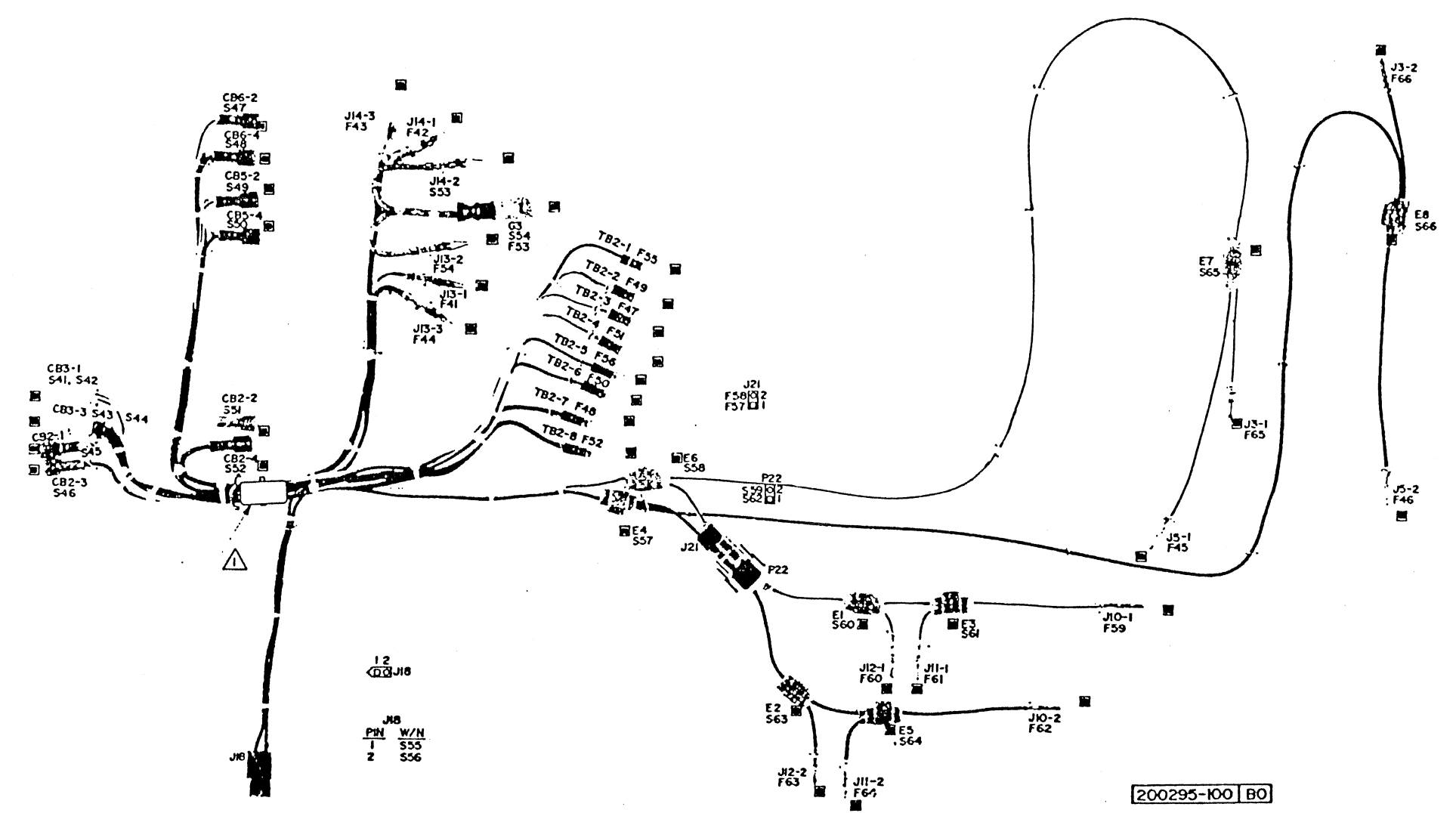
COMMENT

COMMENT

FORM 100-100 (REV. 1-64)
 THIS IS A CONTROL DRAWING. IT IS THE PROPERTY OF EVANS & SUTHERLAND. IT IS TO BE USED ONLY FOR THE MANUFACTURE OF THE PARTS SPECIFIED THEREON. IT IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF EVANS & SUTHERLAND.

REVISED		DESCRIPTION		DATE	APPROVED
BO	REVISED & REDRAWN	BO		10-84	[Signature]

⊕ ZERO CHECK



12
 J18

J18	
PIN	W/N
1	S55
2	S56

200295-100 BO

NOTES:

1. MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES R-B. LOCATE APPROX AS SHOWN.
2. MARK ALL CONNECTORS AS SHOWN PER E&S PRODUCTION PROCESSES R-B.
3. ALL CONNECTOR PIN ARRANGEMENTS ARE VIEWED FROM WIRING SIDE.
4. SLACK OF WIRES SHOULD BE DISTRIBUTED, NOT FORMED AT CONNECTOR.
5. S-START OF WIRE, F-FINISH OF WIRE.
6. SEE WIRE LIST FOR: AWG/COLOR/LENGTH/TERMINATION/MARKING OF INDIVIDUAL WIRES.
7. CONNECTOR J21 MATES TO P21, P22 MATES TO J22 TO INCORPORATE THE FILTER IN THE 200290-103 ASSEMBLY. CONNECTOR J21 MATES TO P22 BYPASSING THE FILTER IN THE 200290-100, -101, -102 ASSEMBLIES.

LESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES UNLESS INDICATED: ANGLES ± HOLES PER ANSI B92.1	DRAWN: K. JORDON 1-17-60 CHECKED: M. MAHON 11-7-60 MECH. ELEC. R. MOON 1-18-60 PROJ. ENG. R. MOON 11-8-60 APPROVED: C. BALL 11-8-60	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108 ASSY, WIRING HARNESS B, POWER CONTROL, NSP
MATERIAL: SEE PARTS LIST	PART CODE OR PART NO. E 53938	REV. BO
SCALE 1/1 DO NOT SCALE		SHEET 1 OF 1



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200296-103

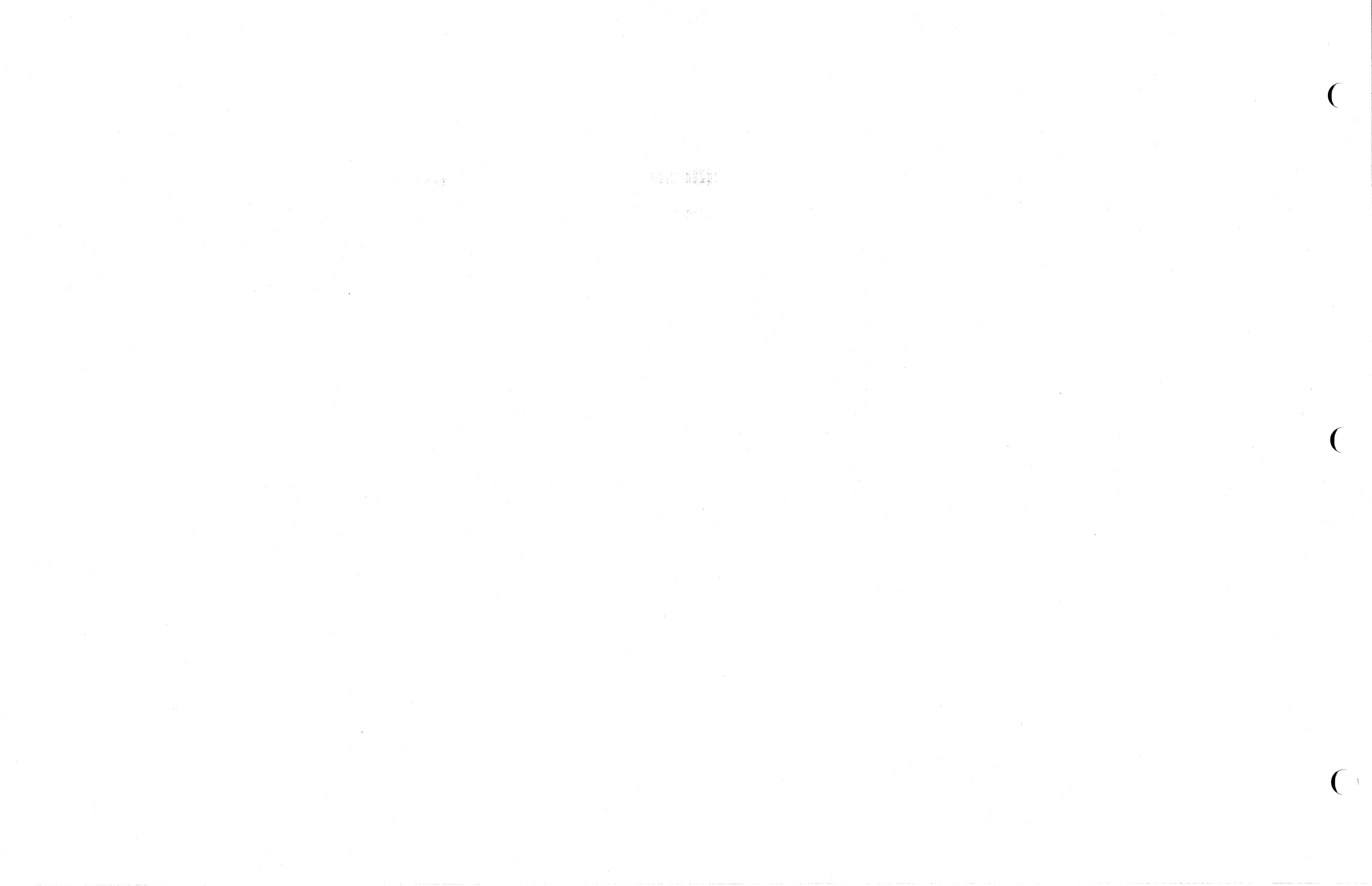
REV: A3 - AD

DESC: ASSY, WIRING HARNESS C, POWER CONTROL, NSP2

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
	CONT, SOC, 18-16AWG, TYP	00779	AMP INC.	66100-9	801815-204	20
	CONT, FEM, 14-12AWG, TYP	00779	AMP INC.	66258-1 (TYPE XII-F)	801815-212	6
	HW, TIE TY-903	59730	THOMAS AND BETTS CORP.	TY-903	802061-005	25
	WIRE, 8AWG (7/16), THW, P	53938	EVANS & SUTHERLAND	802504-666	802084-608	5
	WIRE, 8AWG (7/16), THW, P	53938	EVANS & SUTHERLAND	802504-999	802084-908	4
	TERM, RING, NO.10 STUD,	98410	ETC-MOLEX INC.	A-821-10T	802131-010	2
	TERM, RING, NO.8 STUD, 1	98410	ETC-MOLEX INC.	B-823-08T	802132-008	2
	HW, TERM 10RNG, 14G	98410	ETC-MOLEX INC.	B-837-10T	802132-010	1
	TERM, RING, NO.8 STUD, 1	00779	AMP INC.	2-320568-1	802133-008	8
	TERM, RING, NO.10 STUD,	06383	PANDUIT CORP	PV8-10R	802137-110	5
	TERM, RING, NO.1/4 STUD	83330	DIALIGHT CORP.	D-650-14X	802137-125	6
	SPLICE, PRL, SELF-STRIP	53387	MINN. MINING & MFG.EP DIV	560 (BLUE) SCOTCHLOK	802172-002	15
	TERM, QDISC, FML, 16-14A	27264	MOLEX INC.	BB-2206T	802235-001	2
	TERM, QDISC, FML, 12-10A	98410	ETC-MOLEX INC.	C-2251T	802235-012	6
	TERM, QDISC, FML, 22-18A	75037	MINN. MINING & MFG.	MNG18-250DFI	802235-022	2
	CONT, CRMP, FEM, 20-14AW	27264	MOLEX INC.	02-09-1103 (1189-F)	802325-001	3
	WIRE, 10AWG (37/26), 300	73612	CONSOLATED ELEC, W/C CORP	9507 (10AWG)BLACK	802505-000	7
	WIRE, 10AWG (STRANDED),	92194	ALPHA WIRE CORP.	1653 (UL-1015)	802505-999	8
	WIRE, 12AWG (19/25; 65/3	73612	CONSOLATED ELEC, W/C CORP	9007 (12AWG)BLACK	802506-000	3
	WIRE, 12AWG (19/25; 65/3	73612	CONSOLATED ELEC, W/C CORP	9007 (12AWG)GREEN	802506-555	2
	CTL, WIRE, 12AWG (19 S	92194	ALPHA WIRE CORP.	7036	802506-999	3
	WIRE, 16AWG (19/29; 26/3	73612	CONSOLATED ELEC, W/C CORP	9404 (16AWG)BLACK	802508-000	7
	WIRE, 16AWG (19/29; 26/3	73612	CONSOLATED ELEC, W/C CORP	9404 (16AWG)GREEN	802508-555	4
	WIRE, 16AWG (STRANDED),	92194	ALPHA WIRE CORP.	3057	802508-999	7
	HW, WIRE 18G, BLK	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG)BLACK	802509-000	2
	WIRE, 8AWG (7/16; 19/.02	28105	DEARBORN WIRE & CABLE COR	530819 (8AWG)BLUE	802504-666	1
	WIRE, 8AWG (7/16; 19/.02	28105	DEARBORN WIRE & CABLE COR	530819 (8AWG)WHITE	802504-999	1
	TERM, QDISC, FEM, 16-14A	70611	ART-LES CORP	3000P2A-1	802293-314	2
	W/L	53938	EVANS & SUTHERLAND.	200296-803	200296-803	1
	CONN, RCPT, (3PIN), MAL-	27264	MOLEX INC.	03-09-1032 (1396-3R)	802323-103	1

J20

30 ITEMS LISTED



WIRE PART NUM NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	START	FINISH	VIA	VIA
65 802506-000	12	BLK		10 1/4	3/8	9/32	SWS 66	801815-212	CB4-3	J16-3		
66 802506-000	12	BLK		12	3/8	9/32	802235-012	801815-212	CB4-3	J15-3		
67 802506-999	12	WHT		9 3/4	3/8	9/32	SWS 68	801815-212	CB4-1	J16-1		
68 802506-999	12	WHT		12	3/8	9/32	802235-012	801815-212	CB4-1	J15-1		
69 802508-000	16	BLK		23 1/4	5/16	5/32	802235-001	801815-204	CB5-3	J6-2		
70 802508-999	16	WHT		22 1/4	5/16	5/32	802235-001	801815-204	CB5-1	J6-1		
71 802508-000	16	BLK		14 1/4	5/16	3/16	SWS 72	802325-001	CB6-3	J20-2		
72 802508-000	16	BLK		28 3/4	5/16	5/32	802293-314	801815-204	CB6-3	J2-2		
73 802508-999	16	WHT		14	5/16	3/16	SWS 74	802325-001	CB6-1	J20-1		
74 802508-999	16	WHT		28	5/16	5/32	802293-314	801815-204	CB6-1	J2-1		
75 802506-555	12	GRN		6	9/32	3/8	801815-212	FWS 76	J15-2	G4		
76 802506-555	12	GRN		6	3/8	9/32	802137-110	801815-212	G4	J16-2		
77 802508-555	16	GRN		23 1/2	3/16	5/16	802325-001	802132-008	J20-3	G5		
78 802508-000	16	BLK		3	0	5/32	802172-002	801815-204	E9	J8-2		
79 802508-999	16	WHT		3	0	5/32	802172-002	801815-204	E11	J8-1		
80 802508-000	16	BLK		3	0	5/32	802172-002	801815-204	E13	J4-2		
81 802508-000	16	BLK		3	0	5/32	802172-002	801815-204	E10	J7-2		
82 802508-999	16	WHT		3	0	5/32	802172-002	801815-204	E12	J7-1		
83 802508-999	16	WHT		3	0	5/32	802172-002	801815-204	E14	J4-1		
84 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	E15	J8-3		
85 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	E16	J7-3		
86 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	E17	J6-3		
87 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	E18	J5-3		
88 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	E19	J4-3		
89 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	E20	J3-3		
90 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	E21	J2-3		
91 802508-555	16	GRN		6	5/16	5/32	802132-008	801815-204	G2	J10-3		

WIRE PART NUM NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	START	FINISH	VIA	VIA
92 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	E22	J12-3		
93 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	E23	J11-3		
94 802509-000	18	BLK	T1	5	5/16	3/8	802131-010	802235-022	CB1-1	DS-1		
95 802509-000	18	BLK	T1	5	5/16	3/8	802131-010	802235-022	CB1-3	DS-2		*1 *2
NOTE WIRES #96 - #107 ARE NOT PART OF HARNESS BUT SHOULD BE CUT & TERMINATED												
NOTE WITH THE HARNESS, THEN BAGGED AND ATTACHED TO THE HARNESS												
96 802505-999	10	WHT		14	3/8	3/8	802235-012	802133-008	CB4-2	TB2-2		
97 802505-999	10	WHT		17	3/8	3/8	802235-012	802133-008	CB3-2	TB2-3		
98 802505-000	10	BLK		19 1/2	3/8	3/8	802235-012	802133-008	CB3-4	TB2-7		
99 802505-000	10	BLK		17 3/4	3/8	3/8	802235-012	802133-008	CB4-4	TB2-6		
100 802084-908	8	WHT		17 3/4	3/8	1/2	802137-125	TINNED	TB1-1	K2-T1		
101 802084-608	8	BLU		22	3/8	1/2	802137-125	TINNED	*3 *4	K2-T2		
NOTE START COMPONENT TB1-3 FOR ASSEMBLING HARNESS. IT SHOULD BE INSTALLED IN												
NOTE 200296-100 BY BUCK BOOST CONNECTION TABLE.												
102 802084-908	8	WHT		22	3/8	3/8	802137-110	802137-125	CB1-2	TB1-1		
103 802084-608	8	BLU		26 1/4	3/8	3/8	802137-110	802137-125	CB1-4	TB1-2		
104 802505-000	10	BLK		19 1/4	1/2	3/8	TINNED	802133-008	K2-L2	TB2-8		
105 802505-000	10	BLK		21 1/4	1/2	3/8	TINNED	802133-008	K2-L2	TB2-5		
106 802505-999	10	WHT		24	1/2	3/8	TINNED	802133-008	K2-L1	TB2-4		
107 802505-999	10	WHT		26	1/2	3/8	TINNED	802133-008	K2-L1	TB2-1		
108 802504-666	8	BLU		12	3/8	3/8	802137-110	802137-125	CB1-3	FL1-2		
109 802504-999	8	WHT		12	3/8	3/8	802137-110	802137-125	CB1-1	FL2-2		

COMMENT FWF = FINISH WITH FINISH
 COMMENT FWS = FINISH WITH START
 COMMENT SWF = START WITH FINISH
 COMMENT SWS = START WITH START

REPORT DATE: 13-MAR-90 10:04:33
DRAWING NUMBER - 200296-803 REV LEVEL - A3=AD

EVANS & SUTHERLAND

PAGE 3

TITLE - ASSY,WIRE HARNESS C,POWER CONTROL, NSP,EMI
STRIP LENGTH T E R M I N A L L U G S C O M P O N E N T S

WIRE PART				TWD OVERALL	-----		-----		-----			
NUM	NUMBER	AWG	COLOR	PR WIRE LN	START	FINISH	START	FINISH	START	FINISH	VIA	VIA
COMMENT												
COMMENT												



REPORT DATE: 13-MAR-90 10:05:18
 DRAWING NUMBER - 200296-803 REV LEVEL - A3=AD

EVANS & SUTHERLAND
 TITLE - ASSY,WIRE HARNESS C,POWER CONTROL, NSP,EMI
 STRIP LENGTH TERMINAL LUGS

PAGE 1
 C O M P O N E N T S

WIRE PART NUM NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	WIRE NUM	START	FINISH
103 802084-608	8	BLU		26 1/4	3/8	3/8	802137-110	802137-125	103	CB1-4	TB1-2
101 802084-608	8	BLU		22	3/8	1/2	802137-125	TINNED	101	*3 *4	K2-T2
NOTE START COMPONENT TB1-3 FOR ASSEMBLING HARNESS. IT SHOULD BE INSTALLED IN											
NOTE 200296-100 BY BUCK BOOST CONNECTION TABLE.											
108 802504-666	8	BLU		12	3/8	3/8	802137-110	802137-125	108	CB1-3	FL1-2
102 802084-908	8	WHT		22	3/8	3/8	802137-110	802137-125	102	CB1-2	TB1-1
100 802084-908	8	WHT		17 3/4	3/8	1/2	802137-125	TINNED	100	TB1-1	K2-T1
109 802504-999	8	WHT		12	3/8	3/8	802137-110	802137-125	109	CB1-1	FL2-2

REPORT DATE: 13-MAR-90 10:05:18
 DRAWING NUMBER - 200296-803 REV LEVEL - A3=AD

EVANS & SUTHERLAND
 TITLE - ASSY,WIRE HARNESS C,POWER CONTROL, NSP,EMI
 STRIP LENGTH T E R M I N A L L U G S

PAGE 2

C O M P O N E N T S

WIRE PART NUM NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	WIRE NUM	START	FINISH
105 802505-000	10	BLK		21 1/4	1/2	3/8	TINNED	802133-008	105	K2-L2	TB2-5
98 802505-000	10	BLK		19 1/2	3/8	3/8	802235-012	802133-008	98	CB3-4	TB2-7
104 802505-000	10	BLK		19 1/4	1/2	3/8	TINNED	802133-008	104	K2-L2	TB2-8
99 802505-000	10	BLK		17 3/4	3/8	3/8	802235-012	802133-008	99	CB4-4	TB2-6
107 802505-999	10	WHT		26	1/2	3/8	TINNED	802133-008	107	K2-L1	TB2-1
106 802505-999	10	WHT		24	1/2	3/8	TINNED	802133-008	106	K2-L1	TB2-4
97 802505-999	10	WHT		17	3/8	3/8	802235-012	802133-008	97	CB3-2	TB2-3
96 802505-999	10	WHT		14	3/8	3/8	802235-012	802133-008	96	CB4-2	TB2-2

REPORT DATE: 13-MAR-90 10:05:18
 DRAWING NUMBER - 200296-803 REV LEVEL - A3=AD

EVANS & SUTHERLAND
 TITLE - ASSY,WIRE HARNESS C,POWER CONTROL, NSP,EMI
 STRIP LENGTH T E R M I N A L L U G S

PAGE 3
 C O M P O N E N T S

WIRE PART NUM NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	WIRE NUM	START	FINISH
66 802506-000	12	BLK		12	3/8	9/32	802235-012	801815-212	66	CB4-3	J15-3
65 802506-000	12	BLK		10 1/4	3/8	9/32	SWS 66	801815-212	65	CB4-3	J16-3
75 802506-555	12	GRN		6	9/32	3/8	801815-212	FWS 76	75	J15-2	G4
76 802506-555	12	GRN		6	3/8	9/32	802137-110	801815-212	76	G4	J16-2
68 802506-999	12	WHT		12	3/8	9/32	802235-012	801815-212	68	CB4-1	J15-1
67 802506-999	12	WHT		9 3/4	3/8	9/32	SWS 68	801815-212	67	CB4-1	J16-1

REPORT DATE: 13-MAR-90 10:05:18
 DRAWING NUMBER - 200296-803 REV LEVEL - A3=AD

EVANS & SUTHERLAND
 TITLE - ASSY, WIRE HARNESS C, POWER CONTROL, NSP, EMI
 STRIP LENGTH TERMINAL LUGS

PAGE 4
 C O M P O N E N T S

WIRE PART NUM NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	WIRE NUM	START	FINISH
72 802508-000	16	BLK		28 3/4	5/16	5/32	802293-314	801815-204	72	CB6-3	J2-2
69 802508-000	16	BLK		23 1/4	5/16	5/32	802235-001	801815-204	69	CB5-3	J6-2
71 802508-000	16	BLK		14 1/4	5/16	3/16	SWS 72	802325-001	71	CB6-3	J20-2
78 802508-000	16	BLK		3	0	5/32	802172-002	801815-204	78	E9	J8-2
80 802508-000	16	BLK		3	0	5/32	802172-002	801815-204	80	E13	J4-2
81 802508-000	16	BLK		3	0	5/32	802172-002	801815-204	81	E10	J7-2
77 802508-555	16	GRN		23 1/2	3/16	5/16	802325-001	802132-008	77	J20-3	G5
91 802508-555	16	GRN		6	5/16	5/32	802132-008	801815-204	91	G2	J10-3
84 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	84	E15	J8-3
85 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	85	E16	J7-3
86 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	86	E17	J6-3
87 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	87	E18	J5-3
88 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	88	E19	J4-3
89 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	89	E20	J3-3
90 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	90	E21	J2-3
92 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	92	E22	J12-3
93 802508-555	16	GRN		3	0	5/32	802172-002	801815-204	93	E23	J11-3
74 802508-999	16	WHT		28	5/16	5/32	802293-314	801815-204	74	CB6-1	J2-1
70 802508-999	16	WHT		22 1/4	5/16	5/32	802235-001	801815-204	70	CB5-1	J6-1
73 802508-999	16	WHT		14	5/16	3/16	SWS 74	802325-001	73	CB6-1	J20-1
79 802508-999	16	WHT		3	0	5/32	802172-002	801815-204	79	E11	J8-1
82 802508-999	16	WHT		3	0	5/32	802172-002	801815-204	82	E12	J7-1
83 802508-999	16	WHT		3	0	5/32	802172-002	801815-204	83	E14	J4-1

WIRE PART NUM	NUMBER	AWG	COLOR	TWD PR	OVERALL WIRE LN	START	FINISH	START	FINISH	WIRE NUM	START	FINISH
94	802509-000	18	BLK	T1	5	5/16	3/8	802131-010	802235-022	94	CB1-1	DS-1
95	802509-000	18	BLK	T1	5	5/16	3/8	802131-010	802235-022	95	CB1-3	DS-2

NOTE WIRES #96 - #107 ARE NOT PART OF HARNESS BUT SHOULD BE CUT & TERMINATED

NOTE WITH THE HARNESS, THEN BAGGED AND ATTACHED TO THE HARNESS

COMMENT FWF = FINISH WITH FINISH

COMMENT FWS = FINISH WITH START

COMMENT SWF = START WITH FINISH

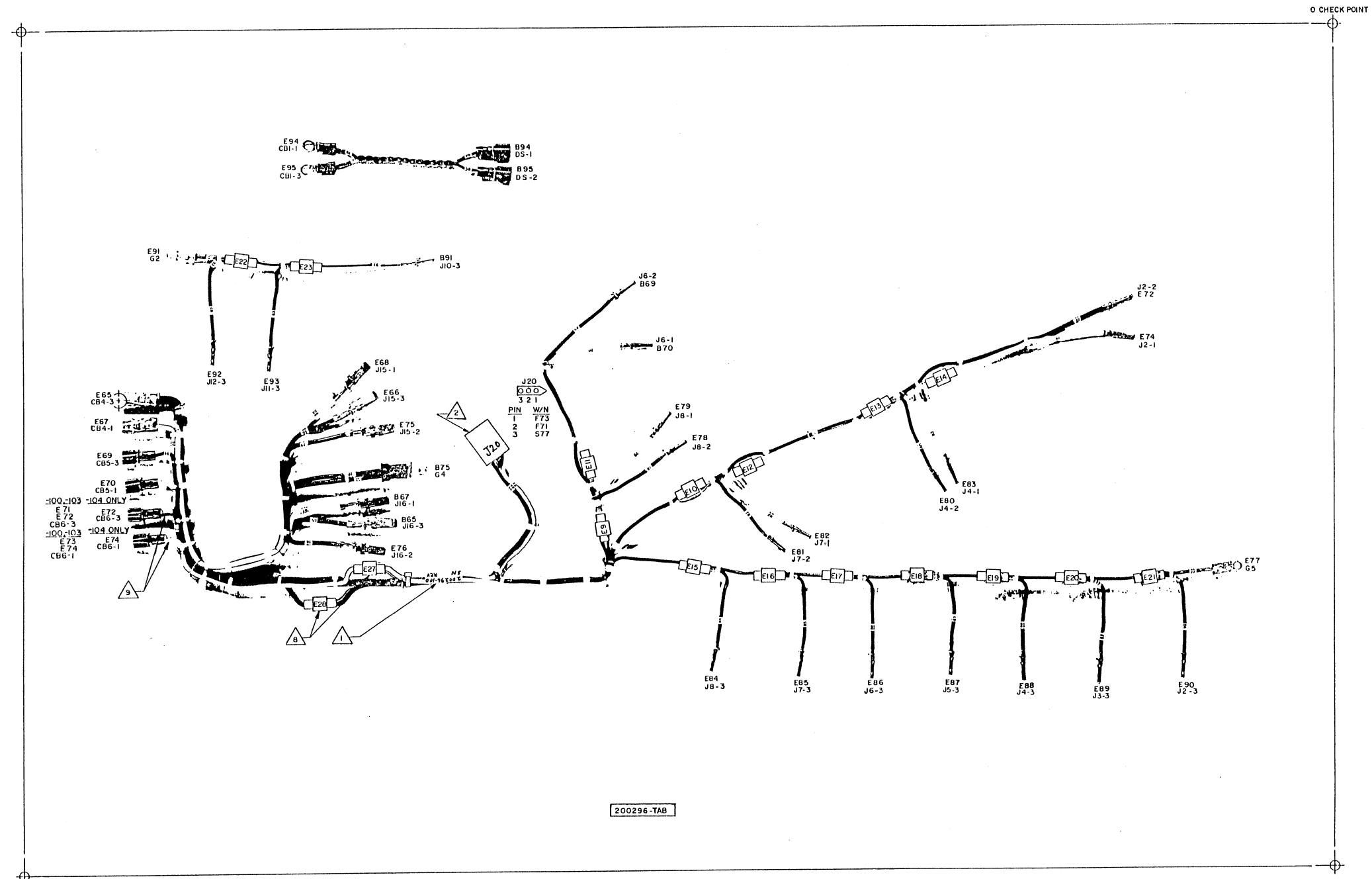
COMMENT SWS = START WITH START

COMMENT

COMMENT



REV	LEV	FOR DASH NOS	ZONE	LTR	DESCRIPTION	DATE	APPROVED
-	-	-104	-103	-100	REV UPDATE W/NO DWG CHG	310 80	
-	-	-	-	NC	REV UPDATE W/NO DWG CHG	BH6-1-82	
-	-	-	-	A1	ADDED NOTE 4	BH6-1-82	
-	-	-	-	RC1	ADDED NOTE 4	BH216 83	
-	-	-	-	AO	RELEASED TO AO	SB225 86	
-	-	-	-	A1	PARTS LIST CHG	MB2-21-86	
AO	RC	RC			RELEASE -104 TO AO	MA5-5-89	
A1	A2	A3			CHNGD WIRE LIST -103 ONLY	STAB 5-20-89	
A2	A3	A4			CHNGD WIRE LIST -100 B -104		



- ▲ MARK ASSY NO., REV LEVEL AND S/N PER EAS PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
- ▲ MARK ALL CONNECTORS AS SHOWN PER EAS PRODUCTION PROCESSES SECTION E-9.0.
- 3. ALL CONNECTOR PIN ARRANGEMENTS ARE VIEWED FROM WIRING SIDE.
- 4. SLACK OR WIRES SHOULD BE DISTRIBUTED, NOT FORMED AT CONNECTOR.
- 5. S-START OR WIRE, F-FINISH OF WIRE.
- 6. SEE WIRELIST FOR: AWG/COLOR/LENGTH/TERMINATION/MARKING OR INDIVIDUAL WIRES.

- 7. WIRE NO.'S 96-107 ARE NOT PART OF THE HARNESS, BUT SHOULD BE CUT AND TERMINATED WITH THE HARNESS, THEN BAGGED AND ATTACHED TO THE HARNESS.
- ▲ ON 200296-104 ADD SPLICE POINTS E27 AND E28 AS SHOWN. ON 200296-101 ADD 202296-103 LEAVE SPLICES E27 AND E28 OUT AND LET WIRE NO.'S 71,72,73 AND 74 RUN STRAIGHT THROUGH.
- ▲ ON 200296-104 CB6-3 CONNECTS WITH WIRE 72 ONLY AND CB6-1 CONNECTS WITH WIRE 71 ONLY. WIRES 71 AND 72 START AT SPLICE POINTS E28 AND E27. SEE WIRE LIST 200296-804. ON 202296-101 AND 200296-103 CB6-3 CONNECTS WITH WIRES 71 AND 72, CB6-1 CONNECTS WITH WIRES 73 AND 74.

200296-TAB

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON XX ± ANGLES ± ✓	DRAWN K JORDAN 1-14-80	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108
	CHECKED <i>[Signature]</i>	
MATERIAL SEE PARTS LIST	MECH. ELEC. <i>[Signature]</i> 17 JAN 81 PROJ. ENG. <i>[Signature]</i> 15 JAN 81 APPROVED <i>[Signature]</i> 19 JAN 81	WIRE HARNESS C POWER CONTROL, NSP2
FINISH	SIZE (CODE IDENT NO) E 53938	200296-TAB
	SCALE NONE	DO NOT SCALE SHEET 1 OF 1



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200339-024

REV: A3 = AD

DESC: CABLE ASSY, POWER EXTENSION, 230 VAC, NSP2

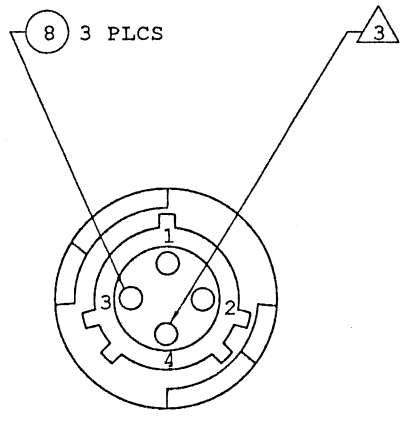
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	CONT, PIN, 18-14AWG, TYP	00779	AMP INC.	66602-1 (PIN/18-14GA)	801815-215	3
002	CLAMP, CBL, CIRC/PLSTC,	00779	AMP INC.	206358-1 (CLAMP #11)	801815-506	2
003	CONN, PLUG, CIRC/PLSTC,	00779	AMP INC.	206429-1 (4POS/PLUGE	801815-703	1
004	CBL, PWR, 3COND, 16AWG (2	28105	DEARBORN WIRE & CABLE COR	4163 (16/3-SO)	802083-016	25
006	CONN, RCPT, CIRC/PLSTC,	00779	AMP INC.	206430-2 (4POS/RCPT	801815-705	1
008	CONT, SOC, 18-14AWG, TYP	00779	AMP INC.	66601-1 (SOC/18-14GA)	801815-216	3
007	2 AT 1.5 IN.	92194	ALPHA WIRE CORP.	FIT-221M-1/2"	802033-500	1

7 ITEMS LISTED



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 CONTRACT NO. 1
 CONTRACTOR: EVANS AND SUTHERLAND COMPUTER CORP.
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PART/ASSEMBLY REVISION LEVEL FOR FILE NUMBER						REVISIONS		
-200	-094	-054	-024	FORM	LEN	DESCRIPTION	DATE	APPROVED
-	-	-	A1			REV UPDATE W/NO DWG CHNG	TJ	14-14-86
-	P0	P0	-			CREATED -054 & -094	MH	19-04-86 NB 9-18-87
-	A0	A0	A2			CORRECTED NOTES	MH	10-08-87 SW
P0	-	-	-			ADDED -200	GR	16-05-88 LH6-8-89
A0	A1	A1	A3			RELEASE -200 TO A0 AND DEL ITEM 5	MH	16-16-88



VIEW A-A

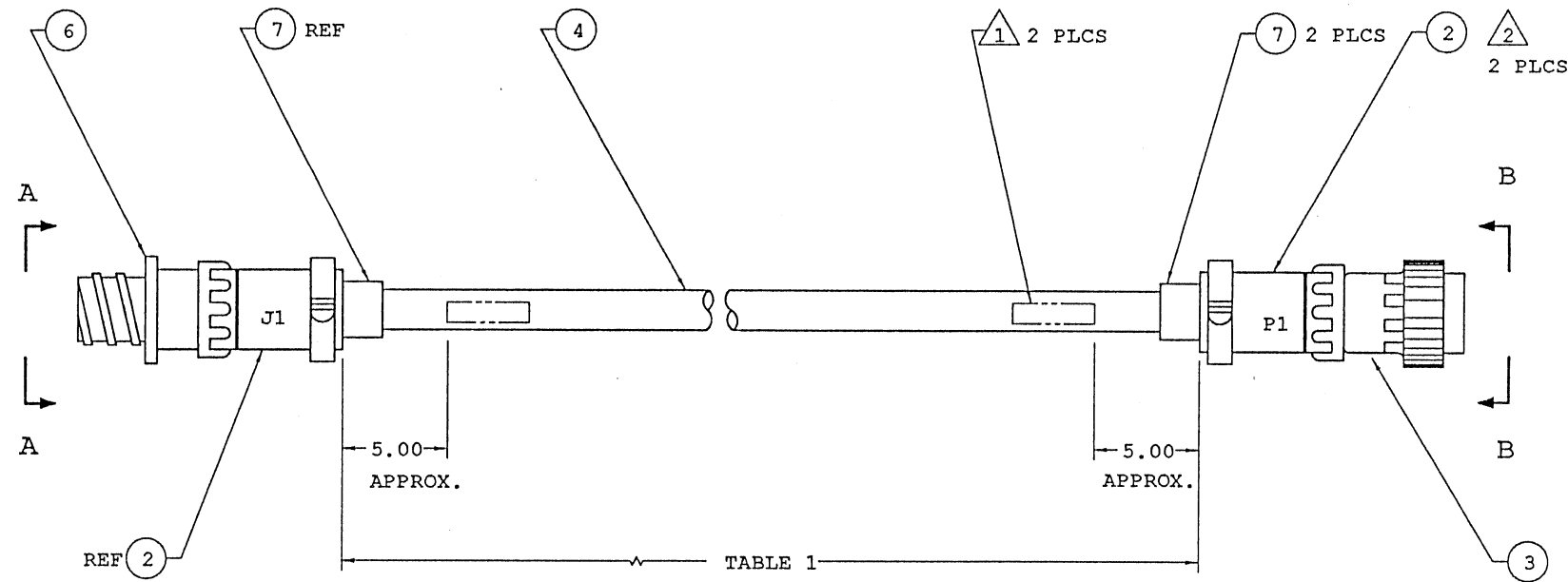
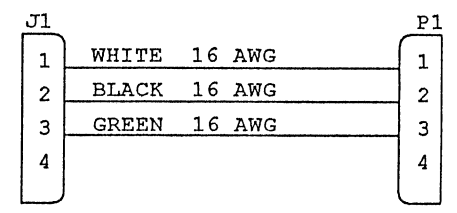


TABLE 1
 USABLE LENGTH

DASH NO.	USEABLE LENGTH
-024	24.00 +1.00 -0.00 FT
-054	54.00 +2.00 -0.00 FT
-094	94.00 +4.00 -0.00 FT
-200	200.00 +5.00 -0.00 FT



SCHEMATIC

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. DO NOT INSTALL CONTACT PIN IN CONNECTOR HOUSING AT LOCATION 4.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .X ± - .XX ± .50 .XXX ± - ANGLES ± - ✓ PER ANSI Y14.5M 1982	CONTRACT NO.	EVANS & SUTHERLAND	
	DRAWN GROBINS 06-05-89	SALT LAKE CITY, UTAH 84108	
	CHECKED KTRUSCOTT 6-5-89	CABLE ASSY, POWER	
	MECH	EXTENSION, 230VAC	
MATERIAL SEE PARTS LIST	PROJ. ENG	SIZE	COB ISSMT NO
FINISH	APPROVED	B	53938
		200339-TAB	
		SCALE	DO NOT SCALE DWG
		SHEET 1 OF 1	

200339-TAB



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200340-002

REV: A2 = AC

DESC: CABLE ASSY, POWER, 230 VAC, 5 VOLT SUPPLY

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	CONT, PIN, 18-14AWG, TYP	00779	AMP INC.	66602-1 (PIN/18-14GA)	801815-215	3
002	CLAMP, CBL, CIRC/PLSTC,	00779	AMP INC.	206358-1 (CLAMP #11)	801815-506	1
003	CONN, PLUG, CIRC/PLSTC,	00779	AMP INC.	206429-1 (4POS/PLUGE	801815-703	1
004	CBL, PWR, 3COND, 16AWG (2	28105	DEARBORN WIRE & CABLE COR	4163 (16/3-SO)	802083-016	2
005	HW, TERM 6SPD, 14G	98410	ETC-MOLEX INC.	B-824-06T	802136-006	3
007	HW, TBNG 1/2TBNG	92194	ALPHA WIRE CORP.	FIT-221M-1/2"	802033-500	1

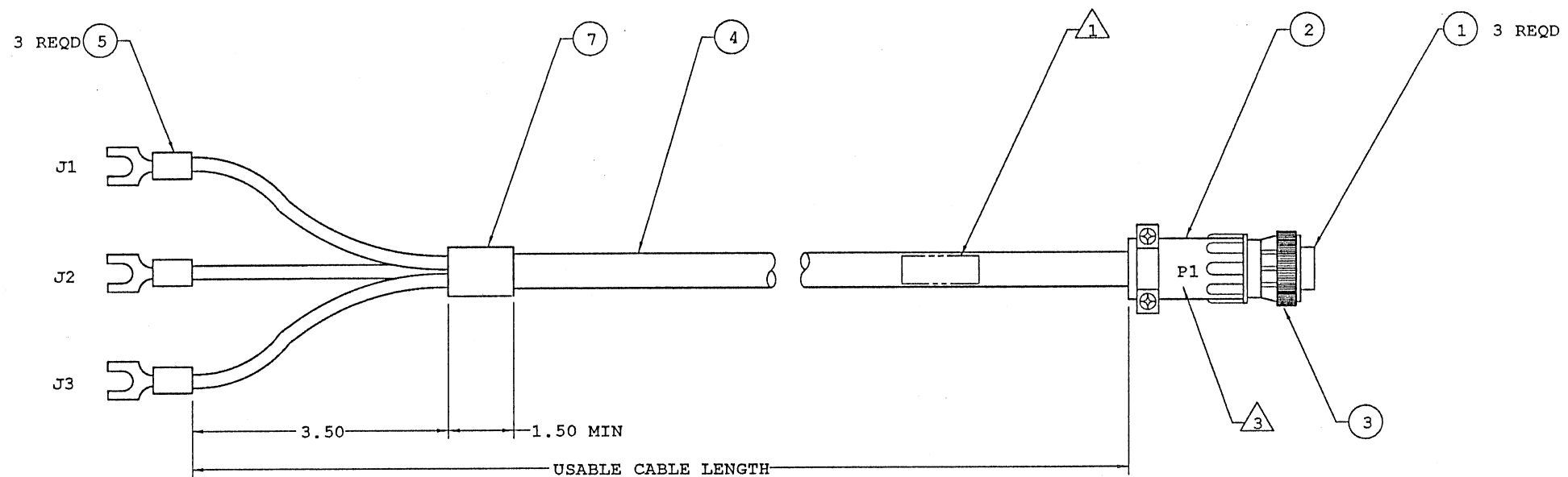
6 ITEMS LISTED



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PART/ASSEMBLY REVISION LEVEL FOR DASH NUMBER				REVISIONS				
-005	-004	-003	-002	DATE	BY	DESCRIPTION	DATE	APPROVE
-	-	-	NC	12-19-79	R MOON	REV UPDATE W/NO DWG CHG		
-	-	-	A1	4-14-80	MS	REV UPDATE W/NO DWG CHG	4-20-80	
-	-	A0	-		SM	-003 RELEASED TO A0	12-01-81	R SPEIRS
-	A0	-	-		MH	-004 RELEASED TO A0	12-16-81	J BLEAK
P0	-	-	-		BH	ADDED -005 TO DWG, REDRAWN	10-29-81	RSPEIRS
A0	-	-	-		GR	CORRECT TITLE BLOCK	13-29-81	RS
A1	A1	A1	A2		TC	DELETED END VIEW	01-18-84	



USABLE CABLE LENGTH
TABLE I

TABLE I

DASH NO.	USABLE CABLE LENGTH
-002	14.50 +1.50 -0.00
-003	40.00 +2.00 -0.00
-004	30.00 +1.50 -0.00
-005	96.00 +5.00 -0.00

WIRING TABLE

AWG	COLOR	TW PR	TERMINAL LUG		COMPONENT		SIGNAL NAME
			START	FINISH	START	FINISH	
16	WHT	-	ITEM 5	ITEM 1	J1	P1-1	COMMON
16	BLK	-			J2	P1-2	POWER
16	GRN	-			J3	P1-3	GROUND

NOTES:

- 1. MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
- 2. DO NOT INSTALL CONTACT PIN IN CONNECTOR HOUSING AT LOCATION 4.
- 3. MARK ALL CONNECTORS AS SHOWN PER E&S PRODUCTION PROCESSES SECTION E-9.0.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .X ± .50 .XX ± .--- .XXX ± .--- ANGLES ± .---	CONTRACT NO.	EVANS & SUTHERLAND	
	DRAWN THOM JOHNSON 10-29-79	SALT LAKE CITY, UTAH 84108	
	CHECKED K. MAHON 11-07-79	CABLE ASSY, POWER, 230 VAC, 5 VOLT SUPPLY	
	MECH		
ELEC	PROJ. ENG R. MOON 11-29-79		
✓ PER ANSI Y14.5M 1982	APPROVED J. PINO 11-30-79		
MATERIAL SEE PARTS LIST		SIZE	CODE IDENT NO
FINISH		B	53938
		200340-TAB	
		SCALE	DO NOT SCALE DWG
		SHEET 1 OF 1	

200340-TAB



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200341-006 REV: A1 = AB DESC: CABLE ASSY, POWER, +-15V

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
002	HW, TIE TY-232M	59730	THOMAS AND BETTS CORP.	TY-232M	802061-002	2
003	TERM, RING, NO.8 STUD, 1	98410	ETC-MOLEX INC.	B-823-08T	802132-008	3
004	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	5
006	*OBS*NOT F/NEW DESIGN	53938	EVANS & SUTHERLAND	802383-004	802383-004	1
007	CONT, PIN, 20-14AWG, TIN	00779	AMP INC.	350389-1 (PIN)	802387-002	3
008 1 AT 76 IN.	WIRE, 16AWG (19/29; 26/3	73612	CONSOLATED ELEC, W/C CORP	9404 (16AWG) BLACK	802508-000	7
005 1 AT 5 FT	TUBING, ID=.13, OD=.250	51705	ICO-RALLY CORP.	SWP-1/4 (OD=.250) NAT	802230-250	6
001 ORG 1 AT 5 FT. GRN 1 AT 5 FT.	WIRE, *USE 802508-???	16428	COOPER BELDEN ELEC WIRE	8521	802046-016	10

8 ITEMS LISTED



4

3

2

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	REV UPDATE W/NO DWG CHNG	KJ 5-28-80	

D

D

C

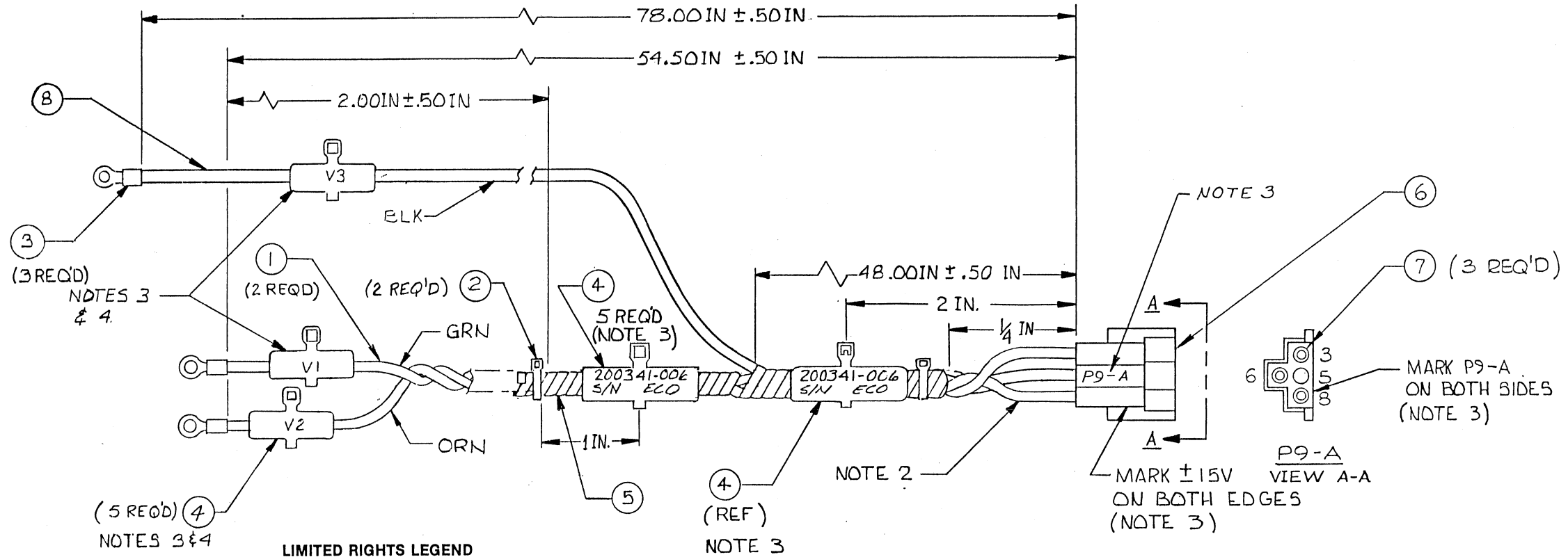
C

B

B 200341-006

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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		P9-A
ORN	-15V	3
BLK	±15V RET.	6
GRN	+15V	8

SCHEMATIC

- 4. GRN. WIRE MARKED V1, DRN. WIRE V2, & BLK. WIRE V3 AS SHOWN
- 3. MARK ASSY NO., S/N, REV LEVEL AND WIRE NUMBERS IN .12 IN HIGH CHARACTERS IN CONTRASTING COLOR AND OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV. LOCATE APPROX AS SHOWN.
- 2. LOOSELY TWIST BLK, GRN, & ORN, WIRES AS SHOWN
- 1. DO NOT INSTALL ITEM (7) INTO ITEM (6) AT POSITION 5.

NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
TOLERANCES ON		DRAWN <i>Sherry Johnson</i> 10-25-79		ASSY. CABLE, POWER, ±15V	
.xx ± .50		CHECKED <i>R. Moran</i> 11-5-79			
.xxx ± —		MECH			
ANGLES ± —		ELEC <i>R. Moran</i> 6 Nov 79			
✓		PROJ. ENG <i>R. Moran</i> 6 Nov 79		SIZE CODE IDENT NO	
MATERIAL SEE PARTS LIST		APPROVED <i>J. Moran</i> 6 Nov 79		C 53938 200341-006	
NEXT ASSY	USED ON	FINISH		REV A1	
APPLICATION		SCALE NONE		SHEET 1 OF 1	



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200343-004

REV: NC = AA

DESC: CABLE ASSY, +12 VOLT, NOVOVIEW

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW, TIE TY-232M	59730	THOMAS AND BETTS CORP.	TY-232M	802061-002	2
002	TERM, RING, NO.8 STUD, 1	98410	ETC-MOLEX INC.	B-823-08T	802132-008	1
003	TERM, RING, .312 STUD, 1	00779	AMP INC.	31905	802132-015	1
004	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	4
005	TUBING, ID=.13, OD=.250	51705	ICO-RALLY CORP.	SWP-1/4 (OD=.250)NAT	802230-250	4
006	CONN, PLUG, (2PIN), FEM-	27264	MOLEX INC.	03-09-2022 (1545-2P)	802324-002	1
007	TERM, CRMP, MAL, 20-14AW	27264	MOLEX INC.	02-09-2103 (1190-M)	802326-001	2
008 1 AT 49 IN.	WIRE, 14AWG (19/27; 41/3	73612	CONSOLATED ELEC, W/C CORP	9405 (14AWG)YELLOW	802507-444	5
009 1 AT 49 IN.	HW, WIRE 14G, BLK	73612	CONSOLATED ELEC, W/C CORP	9405 (14AWG)BLACK	802507-000	5

9 ITEMS LISTED

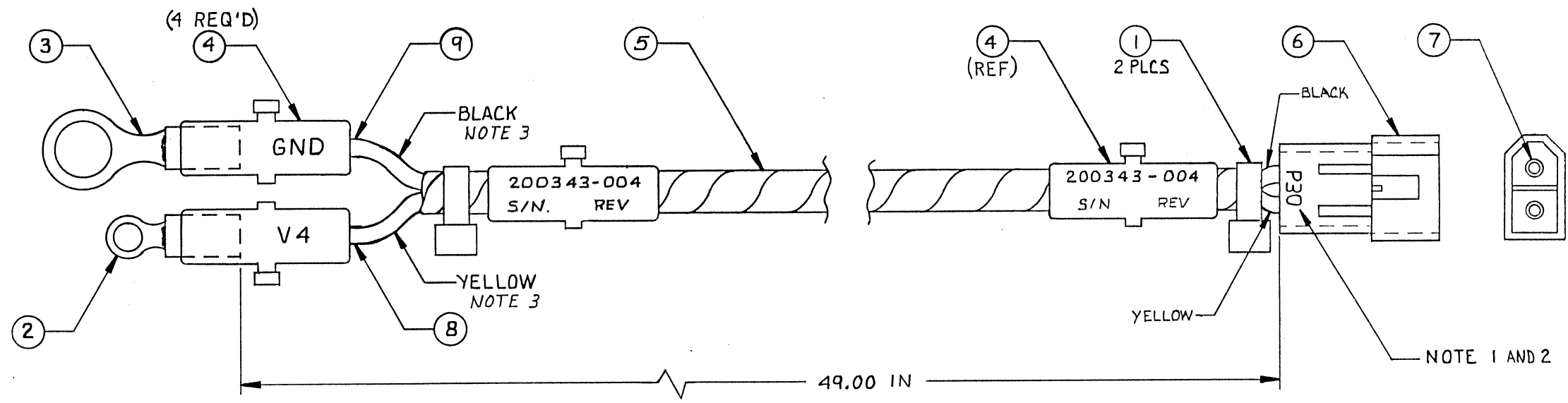


LIMITED RIGHTS LEGEND

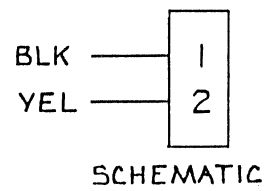
CONTRACT NO. _____
 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORP. EXPLANATION
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



- NOTES:**
- MARK ASSY NO., S/N, REV LEVEL & P30 USING BLACK INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV. LOCATE APPROX. AS SHOWN.
 - MARK P30 ON BOTH SIDES OF CONNECTOR.
 - BLK WIRE MARKED GND, YELLOW WIRE MARKED V4.



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± .50 .xxx ± — ANGLES ± — ✓	DRAWN <i>Howard L. Veater 11-30-79</i>	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108			
	CHECKED <i>K. M. Moon 12-7-79</i>				
	MECH.	ASSY, CABLE, +12 VOLT, NSP2			
	ELEC. <i>R. Moon 7 Dec 79</i>				
	PROJ. ENG. <i>R. Moon 7 Dec 79</i>	APPROVED <i>R. Moon 12-11-79</i>	SIZE	CODE IDENT NO	REV
MATERIAL SEE PARTS LIST		C	53938	200343-004	NC
FINISH		SCALE	NONE	DO NOT SCALE	SHEET 1 OF 1

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LIMITED RIGHTS LEGEND
 Contract No. F19628-94-C-0055
 Contractor: EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2II



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200343-006

REV: A1 = AB

DESC: CABLE ASSY, +12 VOLT, NOVVIEW SP2

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW, TIE TY-232M	59730	THOMAS AND BETTS CORP.	TY-232M	802061-002	2
002	TERM, RING, NO.8 STUD, 1	98410	ETC-MOLEX INC.	B-823-08T	802132-008	1
003	TERM, RING, .312 STUD, 1	00779	AMP INC.	31905	802132-015	1
004	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	4
005	TUBING, ID=.13, OD=.250	51705	ICO-RALLY CORP.	SWP-1/4 (OD=.250) NAT	802230-250	4
006	CONN, PLUG, (2PIN), FEM-	27264	MOLEX INC.	03-09-2022 (1545-2P)	802324-002	1
007	TERM, CRMP, MAL, 20-14AW	27264	MOLEX INC.	02-09-2103 (1190-M)	802326-001	2
008	WIRE, 14AWG (19/27; 41/3	73612	CONSOLATED ELEC, W/C CORP	9405 (14AWG) YELLOW	802507-444	8
009	HW, WIRE 14G, BLK	73612	CONSOLATED ELEC, W/C CORP	9405 (14AWG) BLACK	802507-000	8
010	CONN, RCPT, (2PIN), MAL-	27264	MOLEX INC.	03-09-1022 (1545-2R)	802323-102	1
011	CONT, CRMP, FEM, 20-14AW	27264	MOLEX INC.	02-09-1103 (1189-F)	802325-001	2
012	SPLICE, PRL, SELF-STRIP	53387	MINN. MINING & MFG.EP DIV	560 (BLUE) SCOTCHLOK	802172-002	2

12 ITEMS LISTED



LIMITED RIGHTS LEGEND

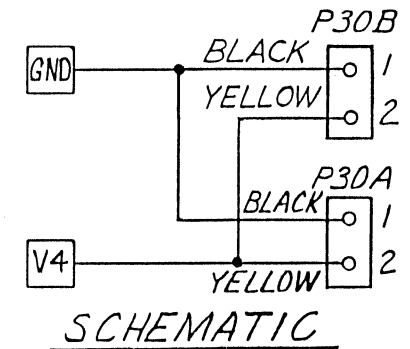
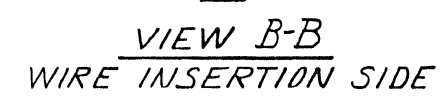
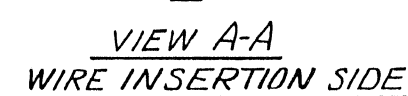
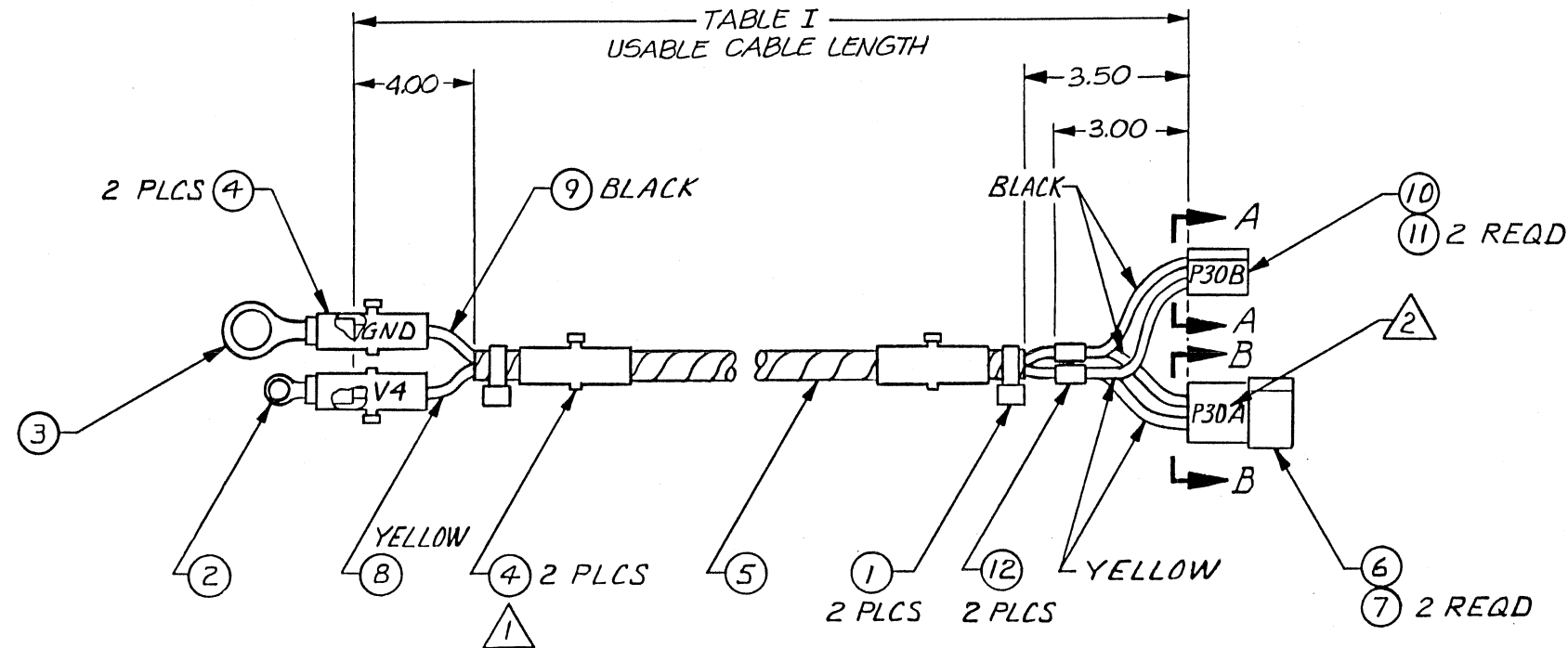
CONTRACT NO. F19828-84-C-0055
 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORP. EXPLANATION OF LIMITED RIGHTS DATA IDENTIFICATION METHOD USED PER ASPR 7-104.9(a)(3) 21 AND COVERS ALL INFORMATION ON THIS DRAWING.

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REV LEVEL FOR DASH NO		REVISIONS				
		ZONE	LTR	DESCRIPTION	DATE	APPROVED
-	-010			RELEASED TO AO	BH 11-29-83	R Spain
-	-006			CORRECTED SCHEMATIC	GR 6-19-84	R Spain
	AO			RELEASED TO AO	BH 2-21-86	R Spain
	A1			ADDED DIMENSIONS	BH 6-25-88	R Spain

TABLE I

DASH NO.	CABLE LENGTH
-006	67.00 + 3.00 - 0.00
-010	120.00 + 4.00 - 0.00



NOTES:

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

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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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .50 .XXX ± — ANGLES ± — ✓ HOLES PER AND 10387	DRAWN	B 9-28-83		EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108	
	CHECKED	R Spain 10/11/83			
	MECH.				
	ELEC.				
	PROJ. ENG.	R Spain 11/01/83		CABLE ASSY, +12 VOLT, NSP2	
	APPROVED				
MATERIAL	SEE PARTS LIST	SIZE	CODE IDENT NO	REV	
FINISH		C	53938	200343-TAB	
		SCALE	NONE	DO NOT SCALE	SHEET 1 OF 1

200343-TAB



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200344-001		REV: NC = AA	DESC: CABLE ASSY, +12 VOLT, PIGTAIL, NSP2				QTY/
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	ASSY	
001	HW, TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	2	
002	TERM, RING, NO.8 STUD, 1	98410	ETC-MOLEX INC.	B-823-08T	802132-008	2	
003	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	1	
004	CONN, RCPT, (2PIN), MAL-	27264	MOLEX INC.	03-09-1022 (1545-2R)	802323-102	1	
005	CONT, CRMP, FEM, 20-14AW	27264	MOLEX INC.	02-09-1103 (1189-F)	802325-001	2	
006 1 AT 6 IN	HW, WIRE 14G, BLK	73612	CONSOLATED ELEC, W/C CORP	9405 (14AWG)BLACK	802507-000	1	
007 1 AT 6 IN	WIRE, 14AWG (19/27; 41/3	73612	CONSOLATED ELEC, W/C CORP	9405 (14AWG)YELLOW	802507-444	1	

7 ITEMS LISTED



4

3

2

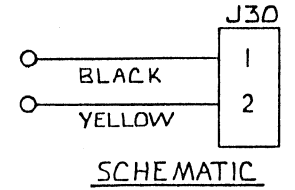
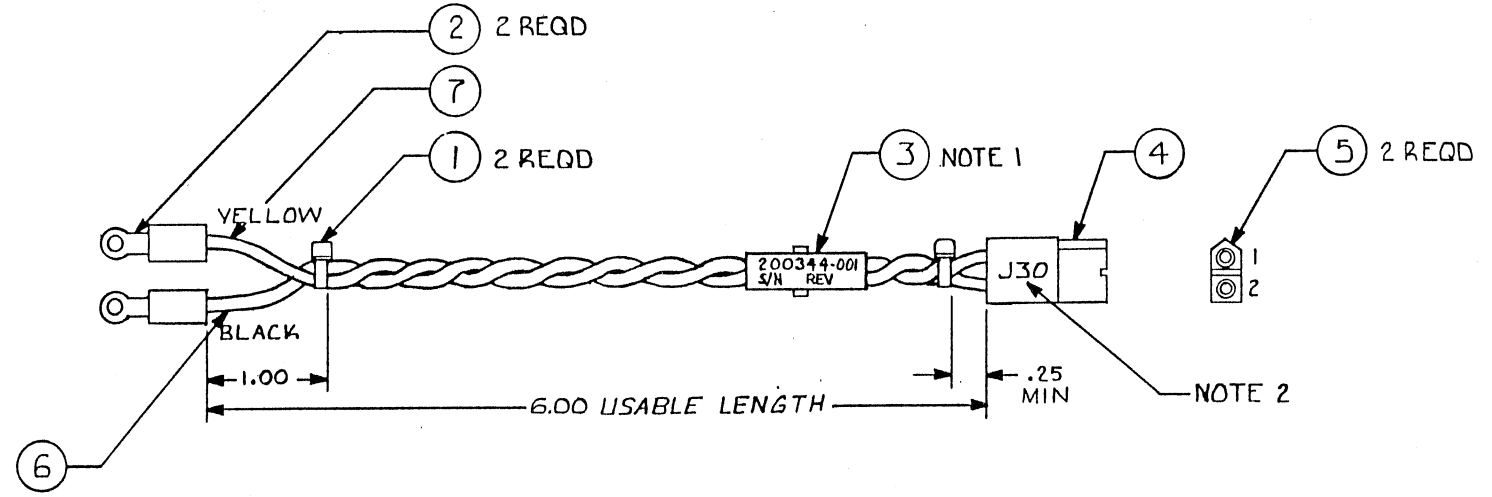
1

LIMITED RIGHTS LEGEND

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Table with 5 columns: ZONE, LTR, DESCRIPTION, DATE, APPROVED. Header: REVISIONS



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

- NOTES:
1. MARK ASSY, REVISION LEVEL AND S/N USING OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIVALENT.
2. MARK J30 ON ITEM 4, SEE NOTE 1.

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Technical drawing header block containing: UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES, TOLERANCES ON, DRAWN K. JORDAN 11-19-79, CHECKED AT Canyon 28 NOV 79, MECH., ELEC. R Moon 28 Nov 79, PROJ. ENG. R Moon 28 Nov 79, APPROVED J. Lind 27 DEC 79, EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108, ASSY, CABLE, +12V PIGTAIL NSP2, MATERIAL SEE PARTS LIST, FINISH, SIZE C, CODE IDENT NO 53938, 200344-001, REV NC, SCALE NONE, DO NOT SCALE, SHEET 1 OF 1

D
C
B
A

D
C
B
A

200344-001





TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200345-001		REV: NC = AA	DESC: CABLE ASSY, POWER, 230 VAC, FOR +-15VDC SUPPLY			
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
002	HW, TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	4
003	TERM, RING, NO.6 STUD, 1	98410	ETC-MOLEX INC.	B-823-06T	802132-006	1
004	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	1
005	CONN, PLUG, (3PIN), FEM-	27264	MOLEX INC.	03-09-2032 (1396-3P)	802324-003	1
006	TERM, CRMP, MAL, 20-14AW	27264	MOLEX INC.	02-09-2103 (1190-M)	802326-001	3
001 1 AT 15 IN.	WIRE, 16AWG (19/29; 26/3	73612	CONSOLATED ELEC, W/C CORP	9404 (16AWG) GREEN	802508-555	2
007 1 AT 15 IN.	WIRE, 16AWG (19/29; 26/3	73612	CONSOLATED ELEC, W/C CORP	9404 (16AWG) BLACK	802508-000	2
008 1 AT 15 IN.	WIRE, 16AWG (STRANDED),	92194	ALPHA WIRE CORP.	3057	802508-999	2

8 ITEMS LISTED

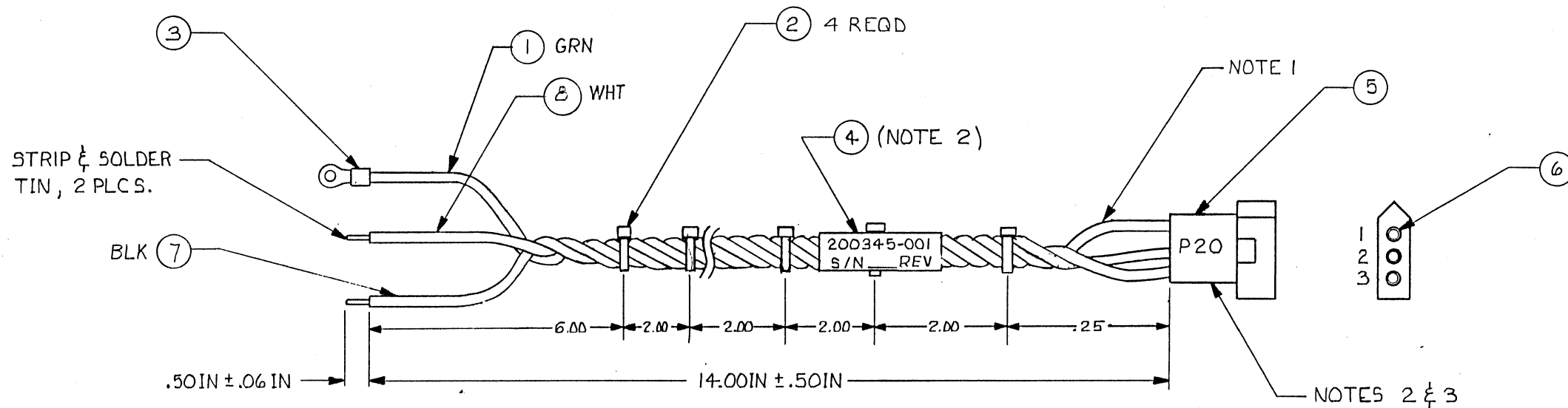


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 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORP. EXPLANATION
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
---	NC	WIRE COLOR CHNGS	20DEC79	R.M. Moon

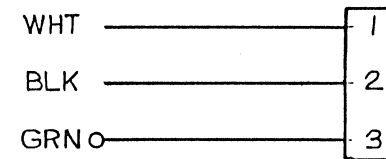


LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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NOTES:

1. LOOSELY TWIST ALL WIRES TOGETHER.
2. MARK ASSY NO., S/N, REV LEVEL & CONNECTOR "P20" USING BLACK INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35 A OR EQUIV. LOCATE APPROX. AS SHOWN.
3. MARK "P20" ON BOTH SIDES OF CONNECTOR.



SCHMATIC

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± — .xxx ± — ANGLES ± — ✓	DRAWN <i>J.M. Johnson</i> 10-25-79	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108	
	CHECKED <i>R. Moon</i> 11-28-79	ASSY, CABLE, POWER, 230VAC FOR ±15V SUPPLY	
MATERIAL	MECH.	SIZE	CODE IDENT NO
FINISH	ELEC. <i>R. Moon</i> 3 Dec 79	C	53938
	PROJ. ENG. <i>R. Moon</i> 2 Dec 79	200345-001	REV
	APPROVED <i>R.M. Moon</i> 12-3-79	SCALE NONE	DO NOT SCALE SHEET 1 OF 1
			NC



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200346-030

REV: A1 = AB

DESC: CABLE ASSY, POWER, 5V 00 GAGE

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
003	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	2
004	TERM, RING, NO.5/16 STU	00779	AMP INC.	321870	802301-002	2
001 1 AT 30 IN.	CBL, 00AWG/1(1330/30-S	92194	ALPHA WIRE CORP.	1389/00	801842-001	3
002 4 AT 2.5 IN.	HW, TBNG 3/4TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/4"	802033-750	1

4 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200346-036

REV: A1 = AB

DESC: CABLE ASSY, POWER, 5V 00 GAGE

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
003	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	2
004	TERM, RING, NO.5/16 STU	00779	AMP INC.	321870	802301-002	2
001 1 AT 36 IN.	CBL, 00AWG/1(1330/30-S	92194	ALPHA WIRE CORP.	1389/00	801842-001	3
002 4 AT 2.5IN.	HW, TBNG 3/4TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/4"	802033-750	1

4 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200346-044 REV: A1 = AB DESC: CABLE ASSY, POWER, 5V 00 GAGE, 44IN.

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
003	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	2
004	TERM, RING, NO.5/16 STU	00779	AMP INC.	321870	802301-002	2
001 1 AT 44 IN.	CBL, 00AWG/1(1330/30-S	92194	ALPHA WIRE CORP.	1389/00	801842-001	4
002 4 AT 2.5 IN.	HW, TBNG 3/4TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/4"	802033-750	1

4 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200346-049

REV: A1 = AB

DESC: CABLE ASSY, POWER, 5V 00 GAGE, 49IN.

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
003	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	2
004	TERM, RING, NO.5/16 STU	00779	AMP INC.	321870	802301-002	2
001 1 AT 49 IN.	CBL, 00AWG/1(1330/30-S	92194	ALPHA WIRE CORP.	1389/00	801842-001	4
002 4 AT 2.5 IN.	HW, TBNG 3/4TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/4"	802033-750	1

4 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200346-052

REV: A1 = AB

DESC: CABLE ASSY, POWER, 5V 00 GAGE, 52IN.

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
003	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	2
004	TERM, RING, NO.5/16 STU	00779	AMP INC.	321870	802301-002	2
001 1 AT 52 IN.	CBL, 00AWG/1 (1330/30-S	92194	ALPHA WIRE CORP.	1389/00	801842-001	5
002 4 AT 2.5 IN.	HW, TBNG 3/4TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/4"	802033-750	1

4 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200346-059

REV: A1 = AB

DESC: CABLE ASSY, POWER, 5V 00 GAGE, 59IN.

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
003	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	2
004	TERM, RING, NO.5/16 STU	00779	AMP INC.	321870	802301-002	2
001 1 AT 59 IN.	CBL, 00AWG/1(1330/30-S	92194	ALPHA WIRE CORP.	1389/00	801842-001	5
002 4 AT 2.5 IN.	HW, TBNG 3/4TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/4"	802033-750	1

4 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200346-060

REV: A1 = AB

DESC: CABLE ASSY, POWER, 5V 00 GAGE

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
003	TIE,CBL-MARKING,PAD=1	53421	TYTON CORP.	IT18R	802140-001	2
004	TERM,RING,NO.5/16 STU	00779	AMP INC.	321870	802301-002	2
001 1 AT 60 IN.	CBL,00AWG/1(1330/30-S	92194	ALPHA WIRE CORP.	1389/00	801842-001	5
002 4 AT 2.5 IN.	HW,TBNG 3/4TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/4"	802033-750	1

4 ITEMS LISTED



LIMITED RIGHTS LEGEND

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

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REV LEVEL FOR DASH NO.								REVISIONS				
-060	-059	-052	-049	-044	-040	-036	-030	ZONE	LEA	DESCRIPTION	DATE	APPROVED
NC	—	NC	—	NC	—	NC	NC				12-28-79	R. MOON
—	NC	—	NC	—	—	—	—			REDRAWN AND ADDED -049, -059	12-28-81	<i>[Signature]</i>
—	—	—	—	—	PO	—	—			ADDED -040	11-9-83	Phyllis
AI	AI	AI	AI	AI	—	AI	AI			PARTS LIST CHANGE	1-24-84	<i>[Signature]</i>

LIMITED RIGHTS LEGEND
 Contract No. N61339-79-C-0169
 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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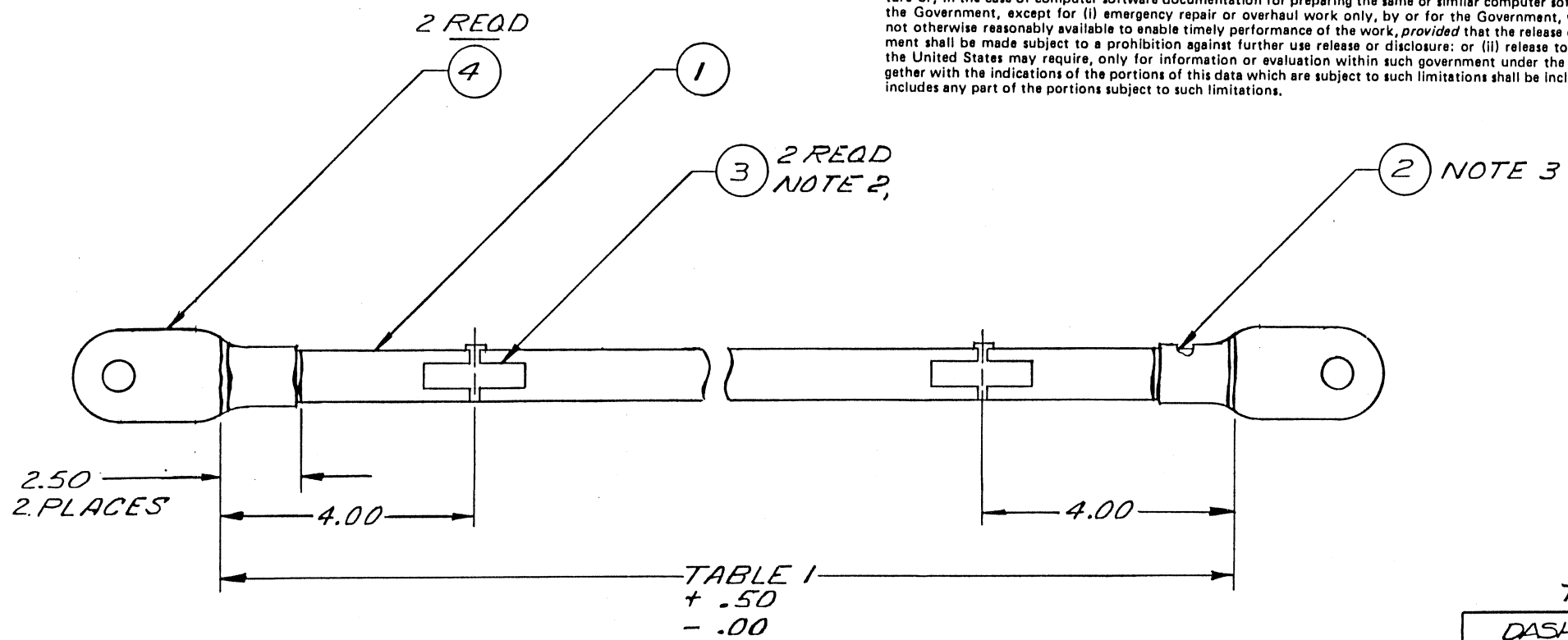


TABLE 1

DASH NO.	CABLE LENGTH
-030	30.00
-036	36.00
-040	40.00
-044	44.00
-049	49.00 ± .25
-052	52.00
-059	59.00
-060	60.00

- NOTES:
- ASSEMBLE PER E & S STANDARDS.
 - MARK ASSY NO. S/N AND REV LEVEL ON ITEM 3 IN .09 TO .25 CHARACTERS IN CONTRASTING COLOR USING OPAQUE INDUSTRIAL INK PHILLIPS PROCESS CO. NO. 35A OR EQUIV. LOCATE APPROX AS SHOWN.
 - 2 REQUIRED EACH END.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± .75 .xxx ± — ANGLES ± — ✓ —	DRAWN PAUL K. 12-16-81	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108	
	CHECKED K. MAHON 12-30	ASSEMBLY, CABLE POWER, 5V 00 GAGE	
MATERIAL SEE PARTS LIST	MECH.	SIZE C	CODE IDENT NO 53938 200346-TAB
FINISH	ELEC. MCNDD SERIA 26 DEC	SCALE NONE	DO NOT SCALE
	PROJ. ENG. R. MOON 28 DEC 79	SHEET 1 OF 1	
	APPROVED <i>[Signature]</i> 12-25-81	REV SEE REV TABLE	

200346-TAB B



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200347-005		REV: A1 = AB	DESC: CABLE ASSY, THERMAL SENSOR W/BYPASS, NOVVIEW				
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY	
003	HW, TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	2	
005	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	3	
006	TERM, QDISC, FML, 22-18A	75037	MINN. MINING & MFG.	MNG18-250DFI	802235-022	1	
007	TERM, QDISC, MAL, 22-18A	98410	ETC-MOLEX INC.	AMCT-850	802238-022	1	
008	CONN, RCPT, (2PIN), MAL-	27264	MOLEX INC.	03-09-1022 (1545-2R)	802323-102	2	
009	CONN, PLUG, (2PIN), FEM-	27264	MOLEX INC.	03-09-2022 (1545-2P)	802324-002	2	
010	CONT, CRMP, FEM, 20-14AW	27264	MOLEX INC.	02-09-1103 (1189-F)	802325-001	4	
011	TERM, CRMP, MAL, 20-14AW	27264	MOLEX INC.	02-09-2103 (1190-M)	802326-001	2	
012	HW, TERM 02-09-2218	27264	MOLEX INC.	02-09-2118 (1390-M)	802326-002	2	
004	1 AT 65.5 IN.	28105	DEARBORN WIRE & CABLE COR	1182 (18/2-SJ)	802080-018	6	
013	1 AT 14 3/8 IN	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG) BLACK	802509-000	2	
001	2 AT 2 IN.	92194	ALPHA WIRE CORP.	FIT-221M-3/8"	802033-375	1	
002	3 AT 2.5 IN.	92194	ALPHA WIRE CORP.	FIT-221M-1/2"	802033-500	1	

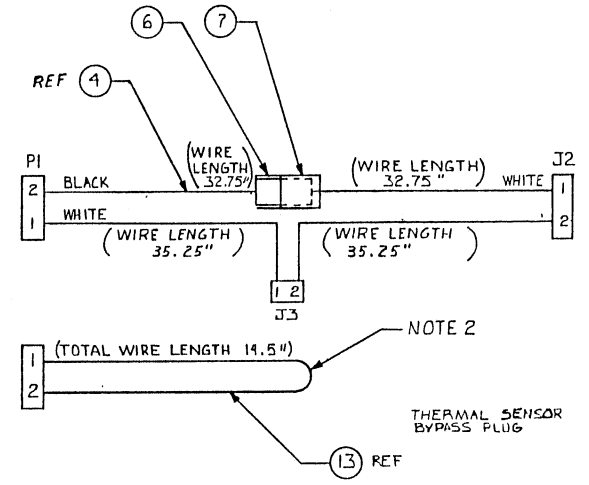
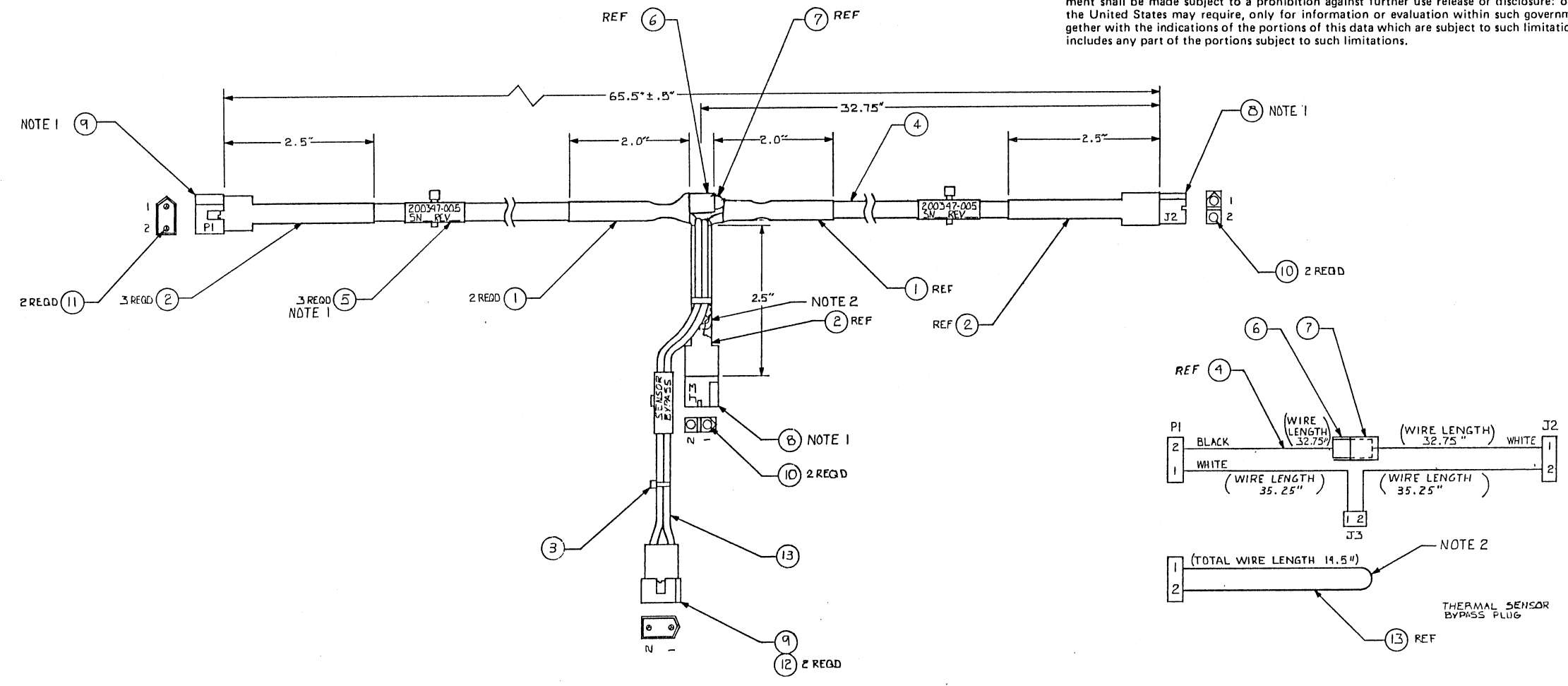
13 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AI	ADDED VARIOUS WIRE LENGTHS	KJ 1-28-80	<i>KJ</i>

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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SCHMATIC

- NOTES:
1. MARK ASSY NO, S/N, & REV LEVEL & CONNECTOR DESIGNATIONS USING BLACK OPAQUE INDUSTRIAL INK. PHILLIPS PROCESS CO. NO. 35A OR EQUIV.
 2. INSTALL THERMAL SENSOR BYPASS WIRE IN SHRINK TUBING FOR CONNECTOR J3.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± ✓	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH B4108		
	DRAWN K. JORDAN 12-17-79	ASSY, CABLE,		
	CHECKED <i>K. Jordan</i> 2 JAN 80	THERMAL SENSOR, NOVONVIEW SP2		
	MECH	REV		
ELEC <i>T. Brown</i> 3 JAN 80	SIZE	CODE IDENT NO	REV	
PROJ. ENG <i>R. Miller</i> 3 JAN 80	D	53938	200347-005	AI
APPROVED <i>J. Miller</i> 3 JAN 80	SCALE NONE		DO NOT SCALE DWG	SHEET 1 OF 1

200347-005



MAINTENANCE PARTS LIST

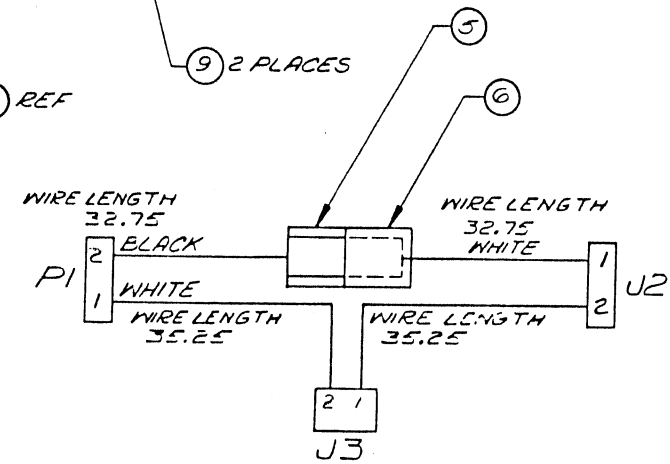
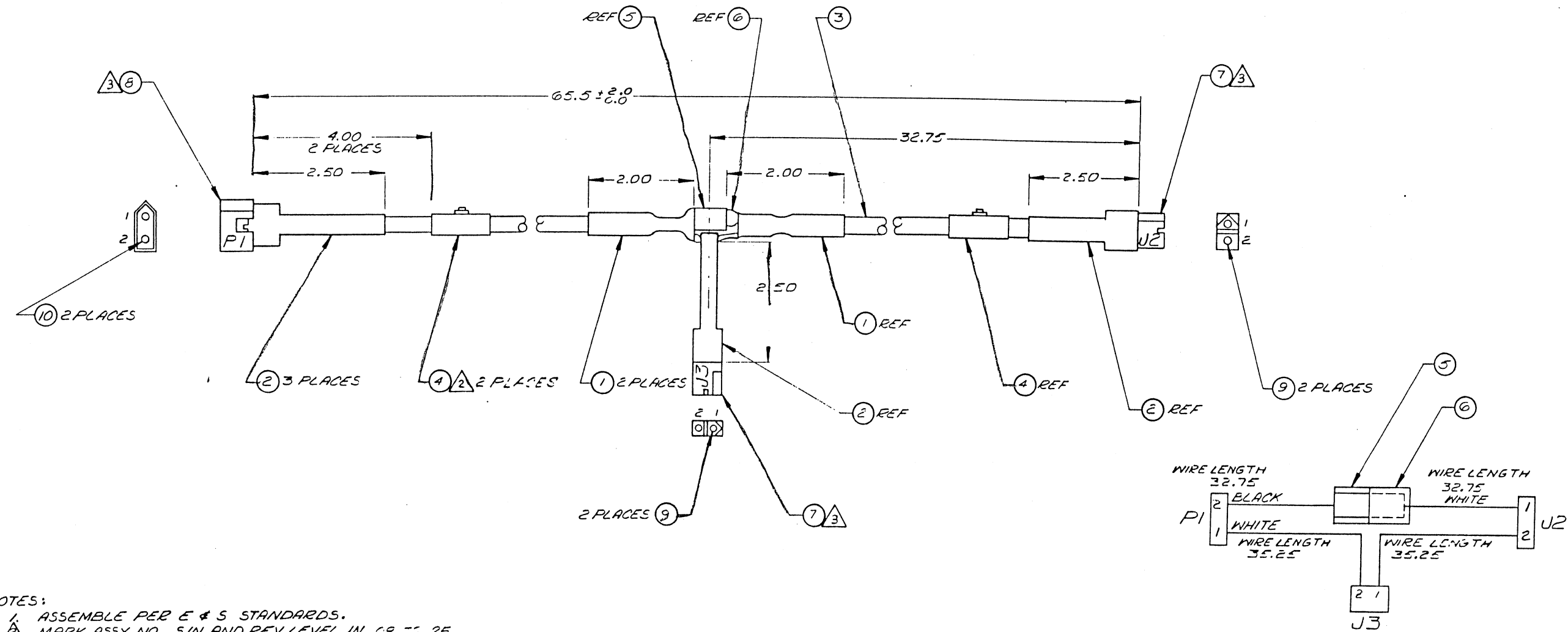
ASSEMBLY: PL 200378-005		REV: A1 = AB	DESC: ASSY,CABLE,THERMAL AND AIRFLOW SENSORS,NOVOVIEW			
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
004	TIE,CBL-MARKING,PAD=1	53421	TYTON CORP.	IT18R	802140-001	2
005	TERM,QDISC,FML,22-18A	75037	MINN. MINING & MFG.	MNG18-250DFI	802235-022	1
006	TERM,QDISC,MAL,22-18A	98410	ETC-MOLEX INC.	AMCT-850	802238-022	1
007	CONN,RCPT,(2PIN),MAL-	27264	MOLEX INC.	03-09-1022 (1545-2R)	802323-102	2
008	CONN,PLUG,(2PIN),FEM-	27264	MOLEX INC.	03-09-2022 (1545-2P)	802324-002	1
009	CONT,CRMP,FEM,20-14AW	27264	MOLEX INC.	02-09-1103 (1189-F)	802325-001	4
010	TERM,CRMP,MAL,20-14AW	27264	MOLEX INC.	02-09-2103 (1190-M)	802326-001	2
003	1 AT 65.5 IN.	28105	DEARBORN WIRE & CABLE COR	1182 (18/2-SJ)	802080-018	7
001	2 AT 2 IN.	92194	ALPHA WIRE CORP.	FIT-221M-3/8"	802033-375	1
002	3 AT 2.5 IN.	92194	ALPHA WIRE CORP.	FIT-221M-1/2"	802033-500	1

10 ITEMS LISTED



LIMITED RIGHTS LEGEND
 CONTRACT NO. 4-5-82
 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORP. EXPLANATION OF LIMITED RIGHTS DATA IDENTIFICATION METHOD USED PER ASPM 7-134 (8/82) 2) AND COVERS ALL INFORMATION ON THIS DRAWING.
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
NC		RELEASED TO NC	EH 10/21/82	R. Mann
AI		PARTS LIST CHNG ONLY	RB MH 6-16-81	R. Jones



WIRING DIAGRAM

- NOTES:**
- 1. ASSEMBLE PER E & S STANDARDS.
 - 2. MARK ASSY NO., S/N AND REV LEVEL IN .09 TO .25 CHARACTERS IN CONTRASTING COLOR USING OPAQUE INDUSTRIAL PERMANENT INK.
 - 3. MARK CONNECTOR DESIGNATIONS ON ITEMS 7 AND 8 IN .09 TO .25 CHARACTERS IN CONTRASTING COLOR USING OPAQUE INDUSTRIAL PERMANENT INK.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON XX ± .50 XXX ± — ANGLES ± — ✓	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
	DRAWN FARRELL 4-5-82	ASSY, CABLE, THERMAL & AIRFLOW SENSORS NOVOVIEW		
MATERIAL SEE PARTS LIST	CHECKED PAUL K. ELLER	SIZE	CODE IDENT NO	REV
FINISH	MECH ELEC PROJ ENG I. S. FAK 6-20-82 APPROVED	D	53938 200378-005	AI
		SCALE	DO NOT SCALE DWG SHEET 1 OF 1	



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200379-002

REV: NC = AA

DESC: CABLE ASSY, AIRFLOW SENSOR FOR SP3T

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW, TBNG 1/2TBNG	92194	ALPHA WIRE CORP.	FIT-221M-1/2"	802033-500	1
002	HW, TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	1
003	HW, TERM 6SPD, 22G	98410	ETC-MOLEX INC.	A-838-06T	802135-006	2
004	TIE, CBL-MARKING, PAD=1	53421	TYTON CORP.	IT18R	802140-001	1
005	CONN, PLUG, (2PIN), FEM-	27264	MOLEX INC.	03-09-2022 (1545-2P)	802324-002	1
006	HW, TERM 02-09-2218	27264	MOLEX INC.	02-09-2118 (1390-M)	802326-002	2
007	2 AT 15.50 IN HW, WIRE 18G, BLK	73612	CONSOLATED ELEC, W/C CORP	9403 (18AWG)BLACK	802509-000	3

7 ITEMS LISTED





TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200442-100

REV: A1 = AB

DESC: ASY, CABLE CLAMP, EMI FOR CSM

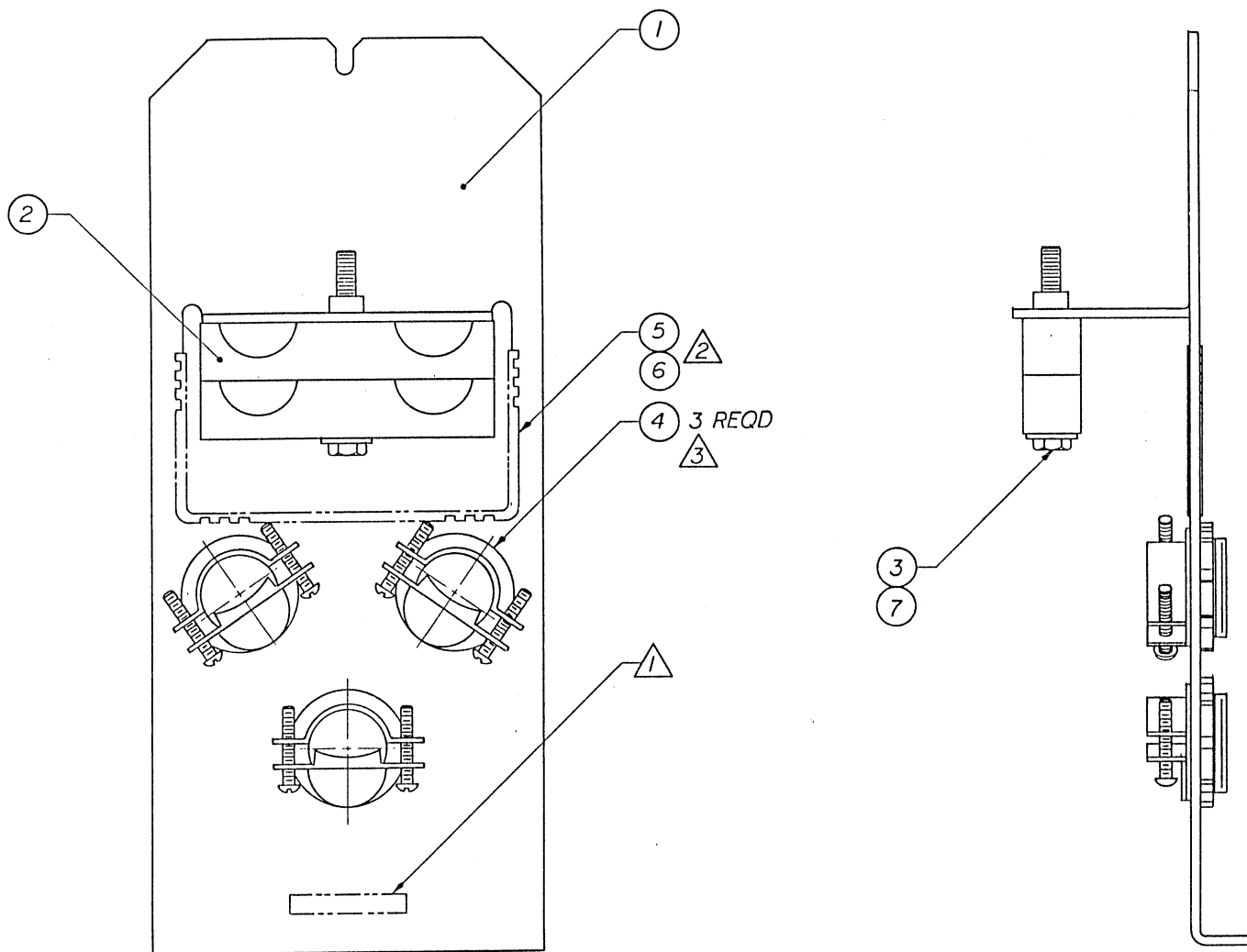
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	PLATE, CBL CLAMP, EMI, F	53938	EVANS & SUTHERLAND.	500340-001	500340-001	1
002	BAR, CLAMP, CBL, EMI	53938	EVANS & SUTHERLAND.	500341-001	500341-001	2
003	BOLT, HEX-HD, 1/4-20X2-	N/A	DISTRIBUTORS	1/4-20X2.5 (M-HEX-SST	802031-420	1
004	CONN, ROMEX, FOR HANDY	9N565	ELECTRICAL WHOLESALE SPLY	6625 REGAL	802207-004	3
005	GROMMET, CATAPILLAR, NY	53421	TYTON CORP.	FPC	802047-003	9
007	HW, WSHR 1/4FLAT	N/A	DISTRIBUTORS	WSHR 1/4FLAT-SS	802351-001	1
006 AS REQD	HW, GLUE #430	05972	LOCTITE CORP	SUPERBONDER-43050	802288-003	1

7 ITEMS LISTED



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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
AO		RELEASED TO AO	1-31-84	R. Spain
AI		PARTS LIST CHANGE ONLY	10-11-88	KTJ/abr



NOTES:

- 1. MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
- 2. GLUE AS REQUIRED
- 3. ORIENT CONNECTORS APPROX AS SHOWN TO MAXIMIZE SCREW DRIVER ACCESS.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓	CONTRACT NO.	EVANS & SUTHERLAND	
	DRAWN L. WILLARDSON 9/27/83	SALT LAKE CITY, UTAH 84108	
	CHECKED [Signature] 10/14/83	CABLE CLAMP ASSY, EMI FOR CSM	
	MECH (A) [Signature] 10/24/83		
	ELEC		
	PROJ. ENG [Signature] 11/1/83		
	APPROVED		
MATERIAL SEE PARTS LIST	SIZE	CODE IDENT NO	REV
FINISH	D	53938 200442-100	AI
SCALE NONE		DO NOT SCALE DWG	SHEET 1 OF 1

D
C
B
A

200442-100



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200455-150

REV: A0 = AA

DESC: CABLE ASSY, SP1 SIGNAL 1910

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	CONN, 2X10 (20POS), MINI	22526	DU PONT E I NEMOURS (CONN)	65043-027 (2X10)	801291-020	1
002	CBL, 5COAX, 5-TP (26AWG)	19449	BERK-TEC INC	CLM-412-16	801311-205	152
003	CONN, BLOCK	00779	AMP INC.	201359-1	801815-001	1
004	SCREW, JACK, MALE	00779	AMP INC.	200871-2	801815-002	1
005	SCREW, JACK, FEM	00779	AMP INC.	200867-1	801815-003	1
006	SHIELD, 2 PC, LONG	00779	AMP INC.	201576-2	801815-004	1
007	CONT, PIN, 30-26AWG, TIN	00779	AMP INC.	66406-2/66406-4	801815-005	10
008	CONT, CRMP, COAX, SUB-MI	00779	AMP INC.	226537-1	801815-006	5
009	FERRULE, COAX, (AMP#696	00779	AMP INC.	1-332056-0	801815-007	5
010	HW, TBNG 1/2TBNG	92194	ALPHA WIRE CORP.	FIT-221M-1/2"	802033-500	1
011	HW, SCR 6-32X3/8	N/A	DISTRIBUTORS	6-32X3/8 (M-P-PH-SS)	802003-103	1
012	HW, WSHR #6INTLOK	N/A	DISTRIBUTORS	SAE#6, LK INTL, SS	802005-006	1
013	HW, WSHR #6, FLAT	N/A	DISTRIBUTORS	SAE#6FLAT, SS, .032THK	802007-006	1
014	HW, NUT 6-32NUT	N/A	DISTRIBUTORS	NUT-HEX (6-32) SS	802014-006	1
015	HW, TBNG 1/16TBNG	06090	RAYCHEM CORP/BENTLET HARR	RNF-100-1/16 (TUBING)	802033-062	10
016	HW, TBNG 3/16TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/16"	802033-187	5
017	WIRE, *USE 802507-???*	16428	COOPER BELDEN ELEC WIRE	8520	802046-014	8
018	HW, TIE SSC2S-S6	06383	PANDUIT CORP	SSC2S-S6	802054-001	1
019	HW, TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	7
020	TERM, RING, NO.8 STUD, 1	98410	ETC-MOLEX INC.	B-823-08T	802132-008	2
021	CN, CRMP SOC, 26-22	22526	DU PONT E I NEMOURS (CONN)	48049 (30" GOLD)	802165-002	20
022	SPLICE, BUTT, 16-14AWG,	83330	DIALIGHT CORP.	BS-331	802167-016	1
023	HW, LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
024	CBL-MKR, BLANK, 1X3, WRI	85480	BRADY W.H. CO	PWC-PK-3	802335-003	2
025	BUSHING, ID=.562, OD=.6	02660	AMPHENOL CORP.	9779-513-10	802124-010	1
026	INK, MARKING, EPOXY, WHI	53938	EVANS & SUTHERLAND.	060008-395	060008-395	1
027	FERRULE, CRIMP-INNER, .	00779	AMP INC.	3-745129-0	801815-013	1
028	FERRULE, CRIMP-OUTER, .	00779	AMP INC.	1-745130-2	801815-014	1
029	WIRE, FLAT-BRAID, 1/2W,	92194	ALPHA WIRE CORP.	2174 (.500DIA-BRAID)	802076-108	72
030	TERMINATER, COAX, SLDR-	06090	RAYCHEM CORP/BENTLET HARR	D-131-C222-90/9	802239-001	5

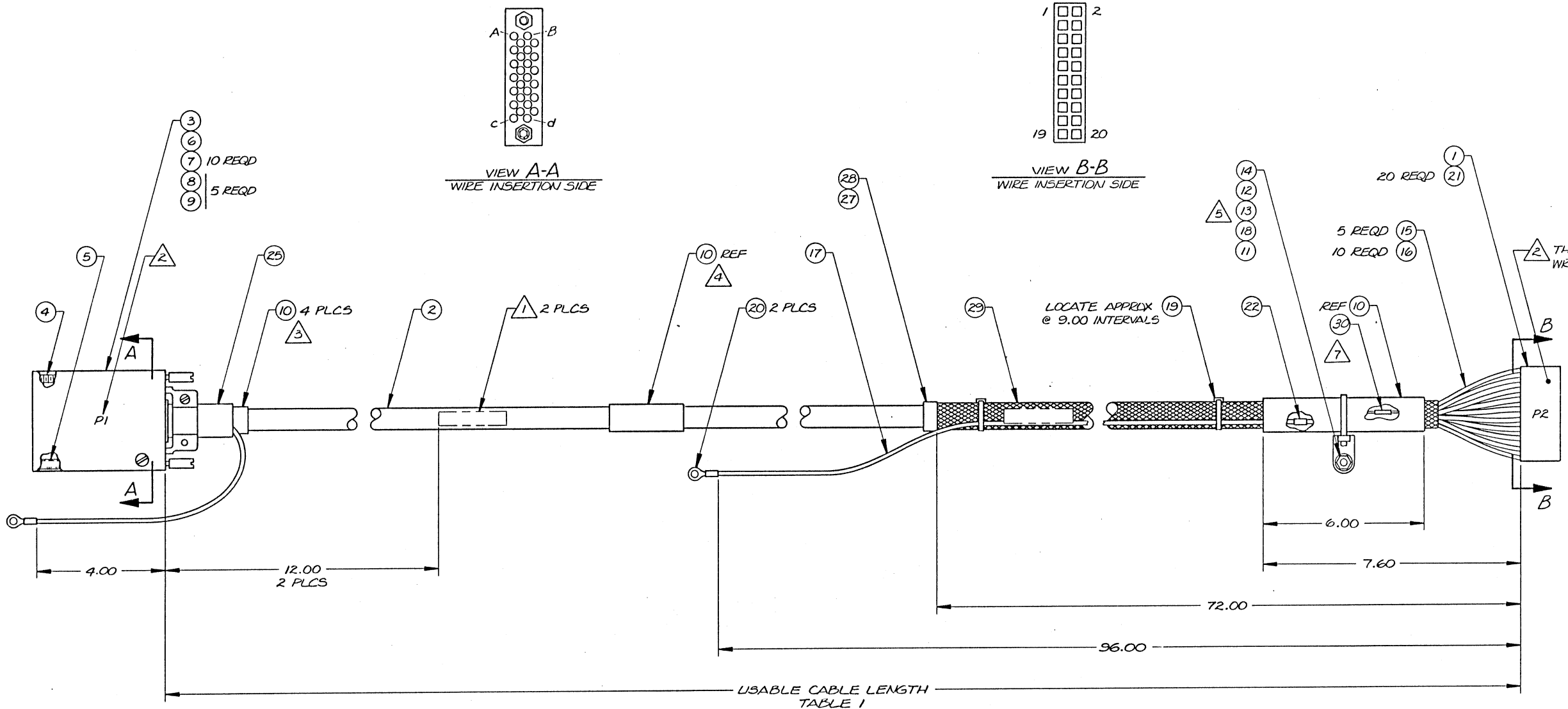
30 ITEMS LISTED

100.0000

100.0000

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REV LEVEL FOR DASH NO.					REVISIONS				
-150	-125	-100	-075	-050	ZONE	LTR	DESCRIPTION	DATE	APPROVED
AO	AO	AO	AO	AO			RELEASED TO AO	7/26/84	[Signature]



- NOTES:
- MARK ASSY NO., REV LEVEL AND S/N PER E & S PRODUCTION PROCESSES E-9.1. LOCATE APPROX AS SHOWN.
 - MARK ALL CONNECTORS AS SHOWN PER E & S PRODUCTION PROCESSES E-9.1.
 - BEFORE INSTALLING HEAT SHRINK TUBING (ITEM 10) REMOVE FOIL SHIELD AT END OF CABLE JACKET, P1 END ONLY.
 - INSTALL TWO PIECES OF HEAT SHRINK TUBING (ITEM 10) 1.00 LONG ON CABLE, BUT DO NOT SHRINK AT TIME OF ASSEMBLY.
 - INSTALL HARDWARE AND ATTACH CLAMP LOOSELY AT TIME OF ASSEMBLY. HARDWARE AND CLAMP SHALL BE FIRMLY SECURED AT TIME OF INSTALLATION OF CABLE INTO SYSTEM.
 - SEE SHEET 2 FOR WIRING TABLE.
 - INSTALL PER E & S PRODUCTION PROCESSES.

DASH NO.	CUT LENGTH	USABLE CABLE LENGTH
-050		50.00 +3.00 -0.00 FT
-075		75.00 +4.00 -0.00 FT
-100		100.00 +5.00 -0.00 FT
-125		125.00 +3.00 -0.00 FT
-150		150.00 +3.00 -0.00 FT

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .50 .XXX ± — ANGLES ± — ✓	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108
	DRAWN [Signature] 1/28/83	
MATERIAL SEE PARTS LIST	CHECKED [Signature] 11/21/83	CABLE ASSY, SPI SIGNAL 1910
	MECH	
FINISH	ELEC	SIZE CODE IDENT NO D 53938 200455-TAB
	PROJ. ENG [Signature] 27NOV83	SCALE: NONE DO NOT SCALE DWG SHEET 1 OF 2
	APPROVED	REV SEE KEY BLOCK

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) (2)

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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	
2	—	FOIL	—	TABLE 1	TABLE 1	—	—	—	ITEM 21	△3	P2-10	SHIELD
↑	26	BLK	T1	↑	↑	5/32	5/32	ITEM 7	↑	PI-b	P2-10	DIG DEFOCUS GND
	↑	RED	T1			↑	↑	↑		PI-a	P2-9	DIG DEFOCUS
		BLK	T2							PI-D	P2-14	ORANGE GND
		ORN	T2							PI-C	P2-13	ORANGE
		BLK	T3							PI-F	P2-16	YELLOW GND
		YEL	T3							PI-E	P2-15	YELLOW
		BLK	T4							PI-Z	P2-18	GREEN GND
		GRN	T4							PI-Y	P2-17	GREEN
	↓	BLK	T5			↓		↓		PI-W	P2-20	HORIZON GND
	26	BLU	T5			5/32		ITEM 7		PI-X	P2-19	HORIZON
		OUTER	—			3/8		ITEM 8		PI-S	P2-12	UNBLANK GND
		INNER	—			3/16		↑		PI-S	P2-11	UNBLANK
		OUTER	—			3/8				PI-N	P2-7	VIDEO GND
		INNER	—			3/16				PI-N	P2-8	VIDEO
		OUTER	—			3/8				PI-T	P2-6	ANA DEFOCUS GND
		INNER	—			3/16				PI-T	P2-5	ANA DEFOCUS
		OUTER	—			3/8				PI-P	P2-3	X DEFL GND
		INNER	—			3/16				PI-P	P2-4	X DEFL
		OUTER	—			3/8	↓	↓	↓	PI-R	P2-1	Y DEFL GND
↓		INNER	—	↓	↓	3/16	5/32	ITEM 8	ITEM 21	PI-R	P2-2	Y DEFL
2	14	GRN	—	TABLE 1	TABLE 1	1/4	3/8	ITEM 20	ITEM 22	—	—	GND
17	14	GRN	—			3/8	1/4	ITEM 22	ITEM 20	—	—	GND

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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SIZE	CODE IDENT NO	REV
D	53938	200455-TAB
SCALE	DO NOT SCALE	DWG SHEET 2 OF 2

TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200459-075

REV: A1 = AB

DESC: CABLE ASSY, DISPLAY POWER, EMI, 76 FT.

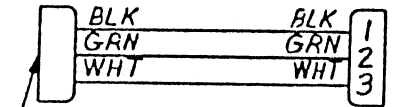
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	CONT, MAL, 14-12AWG, TYP	00779	AMP INC.	66261 (-2; -3) MALE	801815-101	3
002	CLAMP, CBL, CIRC/PLSTC,	00779	AMP INC.	206322-1 (CLAMP #17)	801815-507	1
003	CONN, PLUG, CIRC/PLST, 3	00779	AMP INC.	206426-1 (3POS/PLUG)	801815-704	1
004	RCPT, TW-LOCK, 15A, 250V	74545	HUBBELL (HARVY) INC, LIGHTI	4579-C (NEMA L6-15R)	801816-001	1
005	CBL, PWR, 3COND, 14AWG (4	28105	DEARBORN WIRE & CABLE COR	4143 (14/3-SO)	802083-014	76

5 ITEMS LISTED



LIMITED RIGHTS LEGEND
 CONTRACT NO. _____
 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORP. EXPLANATION
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REV LEVEL FOR DASH NO.						REVISIONS				
-150	-125	-100	-075	-050	-025	ZONE	LTR	DESCRIPTION	DATE	APPROVED
A0	A0	A0	A0	A0	A0	-	-	RELEASED TO A0	RBH 7-25-84	122 pens
A1	A1	A1	A1	A1	A1			RELEASED TO A1	SKMDT 6-9-87	CNW



④ REF WIRING DIAGRAM

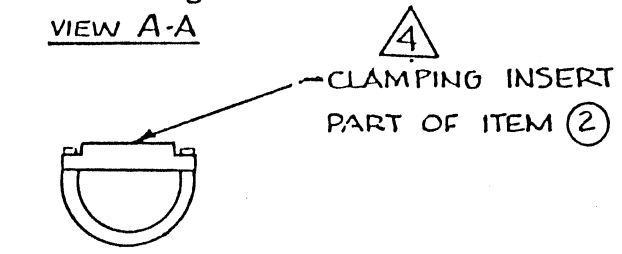
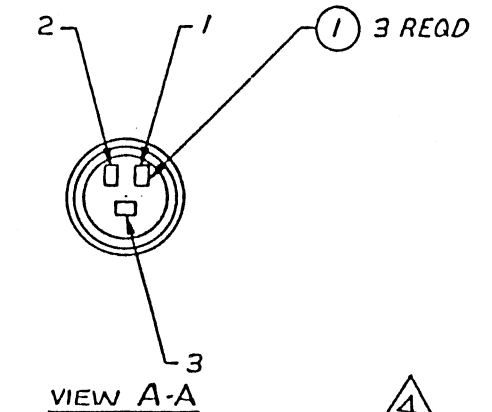
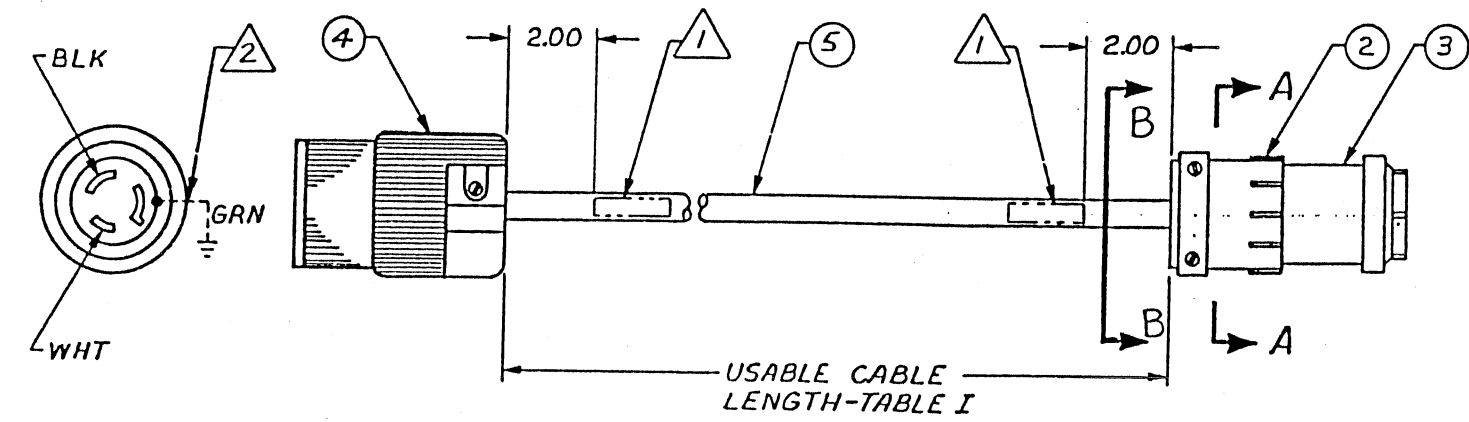


TABLE I

DASH NO.	USABLE CABLE LENGTH
-025	25.00 +1.00 FT. - 0.0 FT.
-050	50.00 +1.00 FT. - 0.0 FT.
-075	75.00 +1.00 FT. - 0.0 FT.
-100	100.00 +2.00 FT. - 0.0 FT.
-125	125.00 +2.00 FT. - 0.0 FT.
-150	150.00 +2.00 FT. - 0.0 FT.

NOTES:

- ①. MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES NO. E-3.1. LOCATE APPROX AS SHOWN.
- ②. GREEN WIRE TERMINATES TO GREEN COLORED SCREW.
- ③. CABLE ASSY MUST BE TESTED ON CABLE TESTER.
- ④. USE CLAMPING INSERT NUMBERED 2 & 3, INSTALL WITH SIDE 2 FACING UP.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .25 .XXX ± — ANGLES ± — ✓ HOLES PER AND 10387	DRAWN <i>M.D. BALDWIN</i> 11-84	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108	
	CHECKED <i>PK</i> 7/12/84	CABLE ASSEMBLY DISPLAY POWER, EM I	
MATERIAL SEE PARTS LIST	MECH.	SIZE C	CODE IDENT NO 53938
FINISH	ELEC.	200459-TAB	
	PROJ. ENG. <i>J. Robinson</i> 1/13/84	REV SEE REV BLOCK	
	APPROVED	SCALE NONE	DO NOT SCALE SHEET 1 OF 1

200459-TAB



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 202134-001

REV: A1 = AB

DESC: CABLE ASSY,GROUND,1 FT

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW, TBNG 3/8TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/8"	802033-375	1
002	CBL, WELDING, 1COND, 6AW	53909	CAROL CABLE CO. INC.	17483	802083-106	2
004	TERM, RING, NO.5/16 STU	00779	AMP INC.	33466	802265-015	2

3 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

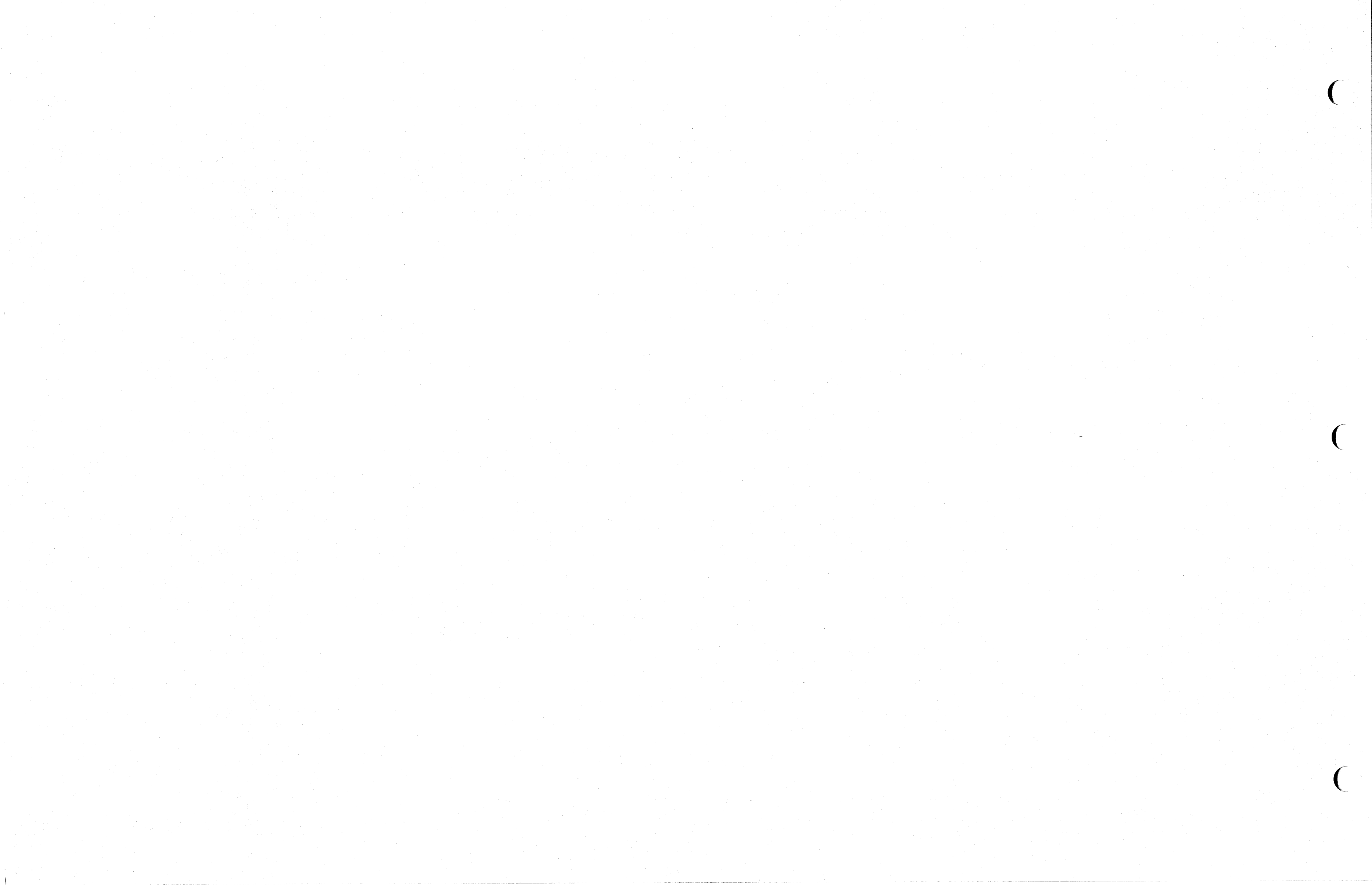
ASSEMBLY: PL 202134-002

REV: A1 = AB

DESC: CABLE ASSY,GROUND,2 FT

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW, TBNG 3/8TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/8"	802033-375	1
002	CBL, WELDING, 1COND, 6AW	53909	CAROL CABLE CO. INC.	17483	802083-106	3
004	TERM, RING, NO.10 STUD,	00779	AMP INC.	321298	802265-001	1
005	TERM, RING, NO.5/16 STU	00779	AMP INC.	33466	802265-015	1

4 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 202134-003

REV: A1 = AB

DESC: CABLE ASSY,GROUND,3 FT

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW, TBNG 3/8TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/8"	802033-375	1
002	CBL, WELDING, 1COND, 6AW	53909	CAROL CABLE CO. INC.	17483	802083-106	4
004	TERM, RING, NO.5/16 STU	00779	AMP INC.	33466	802265-015	2

3 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 202134-007

REV: A1 = AB

DESC: CABLE ASY,GROUND,7 FT,NSP

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW,TBNG 3/8TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/8"	802033-375	1
002	CBL,WELDING,1COND,6AW	53909	CAROL CABLE CO. INC.	17483	802083-106	8
004	TERM,RING,NO.5/16 STU	00779	AMP INC.	33466	802265-015	2

3 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 202134-017

REV: A1 = AB

DESC: CABLE ASSY, GROUND, 17 FT., CT5

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW, TBNG 3/8TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/8"	802033-375	1
002	CBL, WELDING, 1COND, 6AW	53909	CAROL CABLE CO. INC.	17483	802083-106	18
004	TERM, RING, NO. 5/16 STU	00779	AMP INC.	33466	802265-015	2

3 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 202134-030

REV: A1 = AB

DESC: CABLE ASSY,GROUND,30 FT

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW, TBNG 3/8TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/8"	802033-375	1
002	CBL, WELDING, 1COND, 6AW	53909	CAROL CABLE CO. INC.	17483	802083-106	31
004	TERM, RING, NO.10 STUD,	00779	AMP INC.	321298	802265-001	2

3 ITEMS LISTED



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 202134-050

REV: A1 = AB

DESC: CABLE ASSY,GROUND, 50 FT. CT5

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW, TBNG 3/8TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/8"	802033-375	1
002	CBL, WELDING, 1COND, 6AW	53909	CAROL CABLE CO. INC.	17483	802083-106	51
004	TERM, RING, NO.10 STUD,	00779	AMP INC.	321298	802265-001	2
3 ITEMS LISTED						



8

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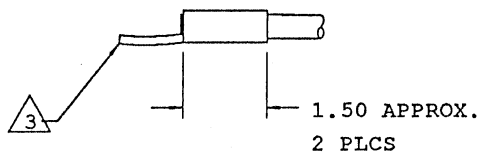
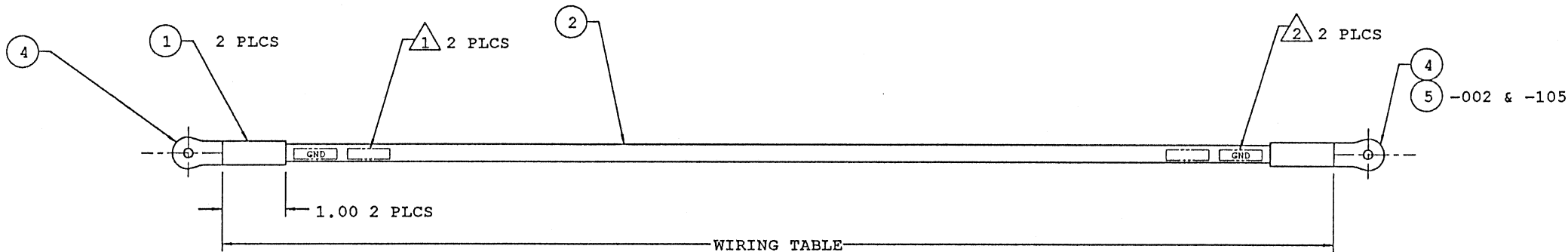
1

LIMITED RIGHTS LEGEND

CONTRACT NO. 1
CONTRACTOR: EVANS AND SUTHERLAND COMPUTER CORP.
REGISTRATION OF LIMITED RIGHTS DATA IDENTIFICATION METHOD USED. ALL DATA ON THIS DOCUMENT ARE LIMITED IN ACCORDANCE WITH DOD FAR CLAUSE 25.127-7012.

PART/ASSEMBLY REVISION LEVEL

Table with columns: REVISION LEVEL, REVISIONS, DATE, APPROVED. Includes rows for revisions -105, -050, -030, -017, -013, -011, -009, -007, -005, -003, -002, -001, and descriptions like REL. -030,-017,-003,-002,-001 TO NC TOJ.



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 CABLE TIE MARKERS, AS SHOWN, PER E&S PRODUCTION PROCESSES SECTION E-9.0.
3 INSTALL SHRINK TUBING SO THAT THE FLAT PART OF THE LUG IS NOT COVERED BY THE SHRINK TUBING.

Technical drawing header block containing: UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES, TOLERANCES ON, CONTRACT NO., EVANS & SUTHERLAND, SALT LAKE CITY, UTAH 84108, CABLE ASSY, GROUND, CT5, MATERIAL, SEE PARTS LIST, FINISH, and drawing identification B 53938 202134-TAB TC.

8

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202134-TAB

8

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1

APPROVED			
DATE	APPROVED	DESCRIPTION	

D

D

C

C

B

A

TABLE				
DASH NO.	CABLE LENGTH		TERMINAL LUG	
			START	FINISH
-001	12.00	+2.00 -0.00	ITEM 4	ITEM 4
-002	24.00	+3.00 -0.00	ITEM 4	ITEM 5
-003	38.00	+4.00 -0.00	ITEM 4	ITEM 4
-005	60.00	+6.00 -0.00	ITEM 4	ITEM 4
-007	84.00	+6.00 -0.00	ITEM 4	ITEM 4
-009	108.00	+6.00 -0.00	ITEM 4	ITEM 4
-011	132.00	+6.00 -0.00	ITEM 4	ITEM 4
-013	156.00	+6.00 -0.00	ITEM 4	ITEM 4
-017	204.00	+6.00 -0.00	ITEM 4	ITEM 4
-030	360.00	+12.00 -0.00	ITEM 4	ITEM 4
-050	600.00	+12.00 -0.00	ITEM 4	ITEM 4
-105	60.00	+6.00 -0.00	ITEM 4	ITEM 5

202134-TAB

SIZE	PKG	REV	DATE
B	53938	202134-TAB	TC
SCALE	NONE	DO NOT SCALE DIM	SHEET 2 OF 2

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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 200105-101

REV: A3 = AD

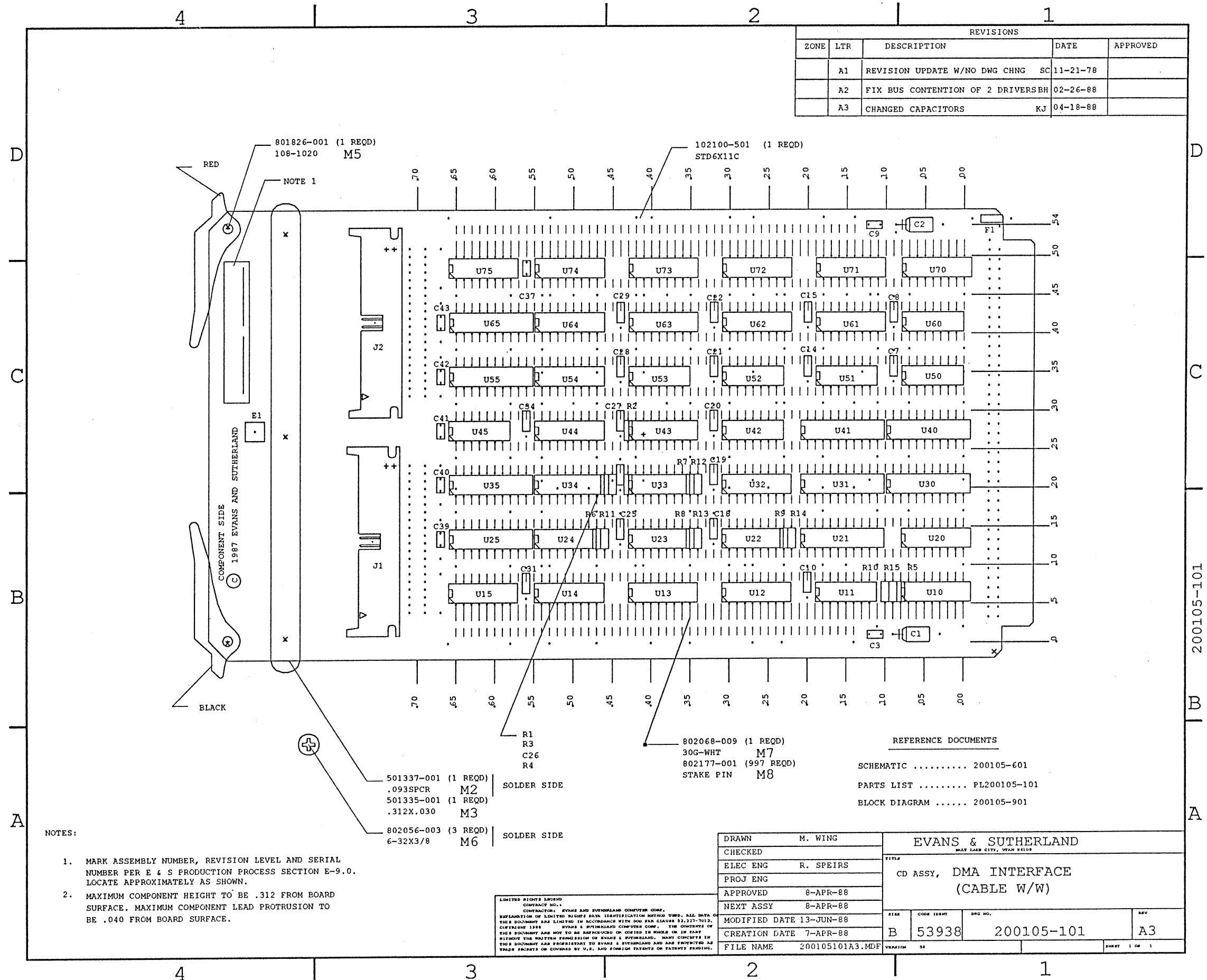
DESC: CARD ASSY, DMA INTERFACE (CABLE W/W)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD,WWCN STD6X11C	53938	EVANS & SUTHERLAND.	102100-501	102100-501	1
C3 C9 C37 C39 C40 C41 C42	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C43	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	8
C7 C8 C10 C14 C15 C18 C19	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	17
C20 C21 C22 C25 C26 C27 C28						
C29 C31 C34						
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
J1 J2	CN,HOUS 40P,RTA	53387	MINN. MINING & MFG.EP DIV	3495-1002	801860-040	2
M2	HW,SPCR .312X.030	53938	EVANS & SUTHERLAND.	501335-001	501335-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M5	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M6	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
M7	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
M8	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	997
R1 R2 R3 R4 R5	R,,AXL 1K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	5
R11 R12 R13 R14 R15	R,,AXL 270 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF271J	803201-271	5
R6 R7 R8 R9 R10	R,,AXL 180 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF181J	803201-181	5
U10 U20	IC,TTL 74175	01295	TEXAS INSTR, SEMICON DIV.	SN74175N	807617-646	2
U11	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
U12 U13 U14 U15	IC,TTL 74S257	01295	TEXAS INSTR, SEMICON DIV.	SN74S257N	807625-055	4
U21	IC,TTL 81LS98	27014	NATIONAL SEMICONDUCTOR	DM81LS98 (A)N/J	807809-016	1
U22 U23 U33 U60	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	4
U24	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U25 U30 U31 U35 U40 U41 U55	IC,TTL 81LS95	27014	NATIONAL SEMICONDUCTOR	DM81LS95 (A)N/J	807794-055	8
U65						
U32 U34 U70 U71 U72 U73 U74	IC,TTL 74161	07263	FAIRCHILD IC'S & SEMICOND	74161PC/DC	807661-246	8
U75						
U42 U51	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	2
U43 U44 U54 U64	IC,TTL 74173	01295	TEXAS INSTR, SEMICON DIV.	SN74173N	807701-646	4
U45	IC,TTL 7438	01295	TEXAS INSTR, SEMICON DIV.	SN7438N	807403-642	1
U50 U52	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	2
U53	IC,TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	1
U61	IC,TTL 74S175	01295	TEXAS INSTR, SEMICON DIV.	SN74S175N	807617-055	1
U62 U63	IC,TTL 74S112	18324	SIGNETICS CORP. MILITARY	N74S112N	807612-055	2

31 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	REVISION UPDATE W/NO DWG CHNG	SC 11-21-78	
	A2	FIX BUS CONTENTION OF 2 DRIVERSBH	02-26-88	
	A3	CHANGED CAPACITORS	KJ 04-18-88	



801826-001 (1 REQD)
108-1020 M5

102100-501 (1 REQD)
STD6X11C

COMPONENT SIDE
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501337-001 (1 REQD) M2
.093SPCR M2
501335-001 (1 REQD) M3
.312X.030 M3

802056-003 (3 REQD) M6
6-32X3/8 M6

SOLDER SIDE

SOLDER SIDE

802068-009 (1 REQD) M7
30G-WHT M7
802177-001 (997 REQD) M8
STAKE PIN M8

REFERENCE DOCUMENTS

SCHEMATIC 200105-601
PARTS LIST PL200105-101
BLOCK DIAGRAM 200105-901

NOTES:

- MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESS 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.

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DRAWN	M. WING
CHECKED	
ELEC ENG	R. SPEIRS
PROJ ENG	
APPROVED	8-APR-88
NEXT ASSY	8-APR-88
MODIFIED DATE	13-JUN-88
CREATION DATE	7-APR-88
FILE NAME	200105101A3.MDF

EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84143			
TITLE CD ASSY, DMA INTERFACE (CABLE W/W)			
FILE	CODE IDENT	DWG NO.	REV
B	53938	200105-101	A3
VERSION	58	SHEET 1 OF 1	

200105-101

10/11/16

111

4

3

2

1

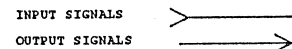
NOTES: UNLESS OTHERWISE SPECIFIED:

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:



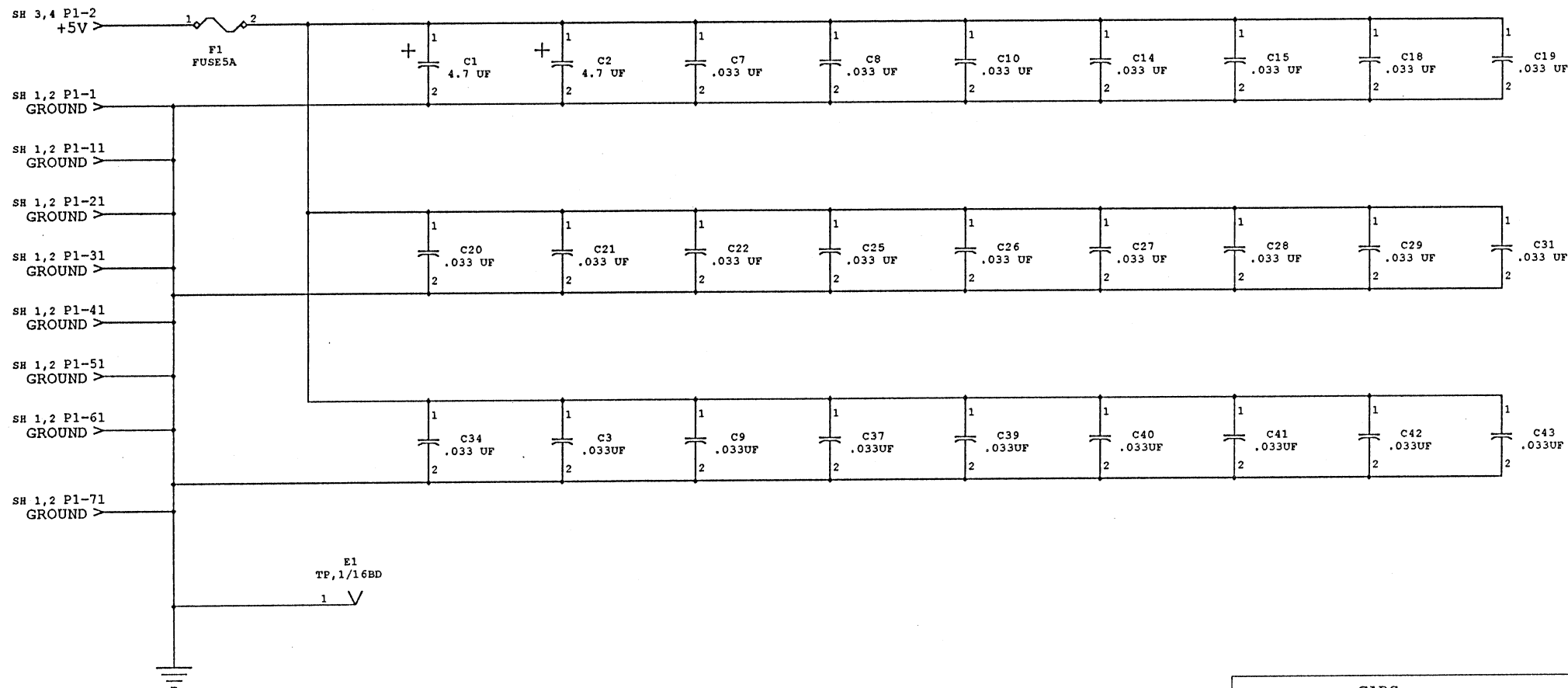
4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	REVISION UPDATE W/NO DWG CHG.	SC 11-21-78	
	A2	FIX BUS CONTENTION OF TWO DRIVERS	BH 02-26-88	
	A3	CHANGED CAPACITORS	KJ 04-18-88	

D
C
B
A

D
C
B
A



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DRAWN	MWING 5-5-78
CHECKED	ART COMGUR
ELEC ENG	R. SPEIRS
PROJ ENG	
APPROVED	HESS MANNING
NEXT ASSY	
MODIFIED DATE	13-JUN-88
CREATION DATE	7-APR-88
FILE NAME	200105101A3.MDF

CAPS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE DMA INTERFACE (CABLE W/W)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200105-601	A3
VERSION	58	PC	SHEET 1 OF 7

4

3

2

1

200105-601

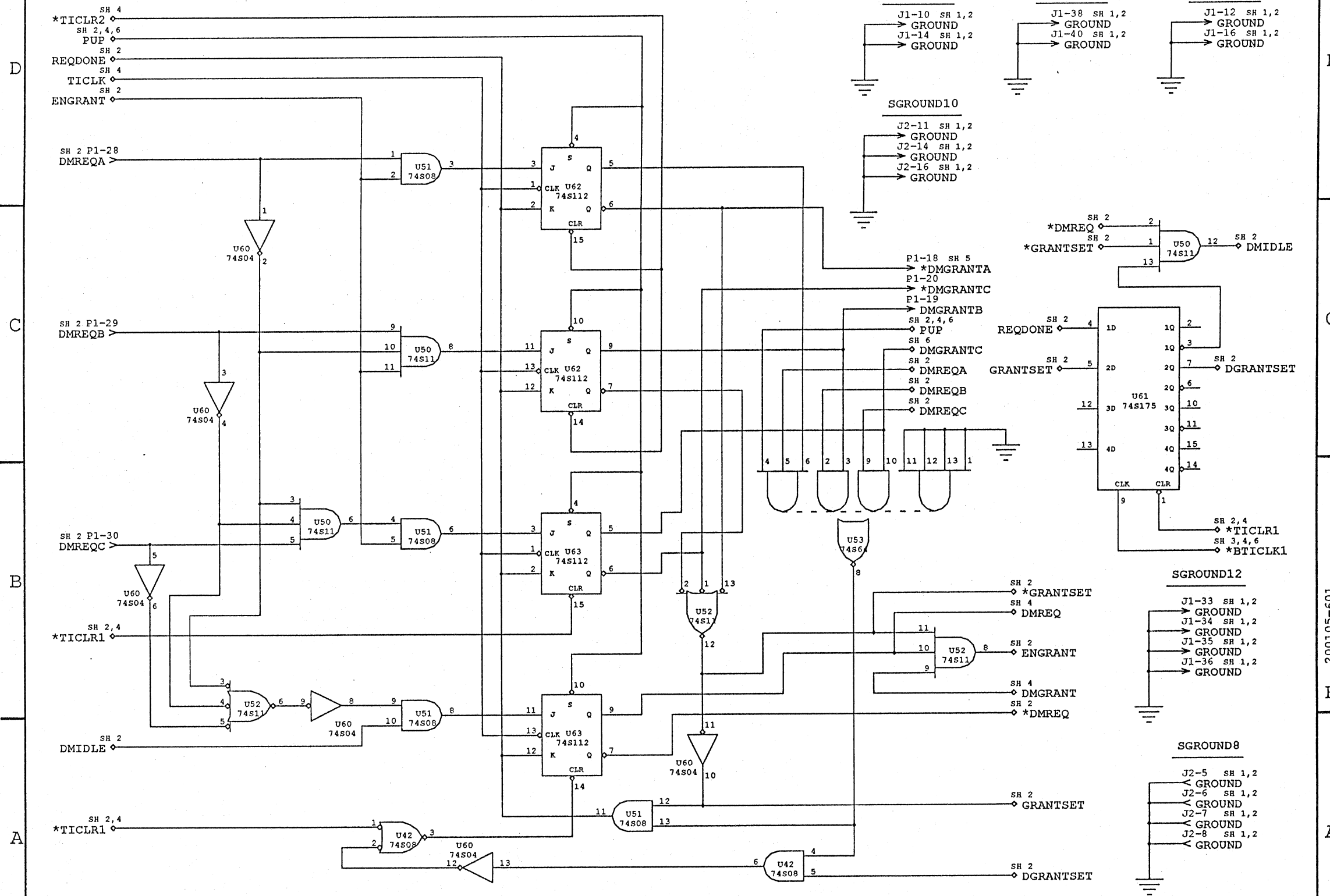
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3

2

1

MULTI-PORT ACCESS CONTROLLER



SIZE	CODE IDENT	DWG NO.	REV
B	53938	200105-601	A3
VERSION	58	NW	SHEET 2 OF 7

4

3

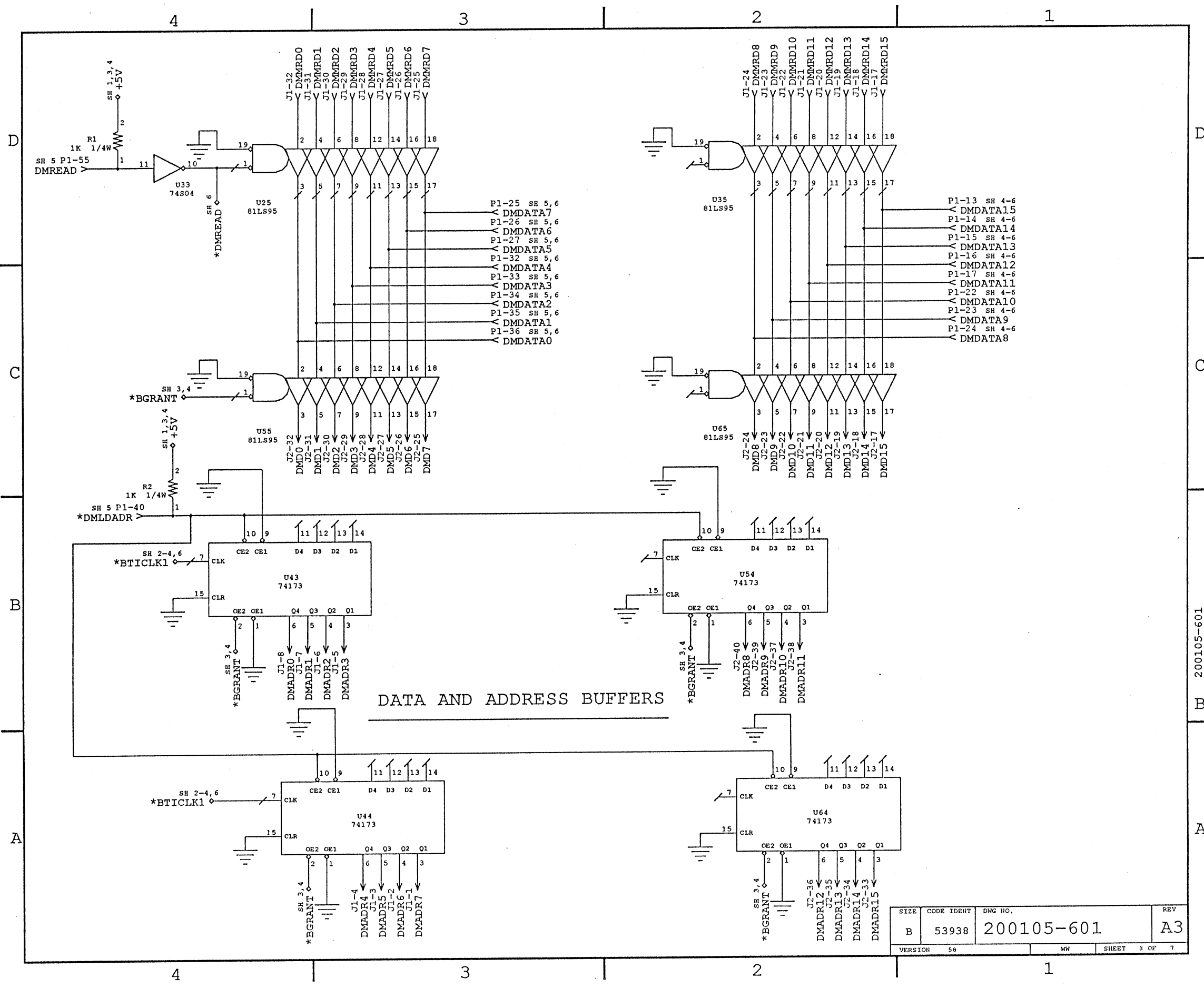
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1

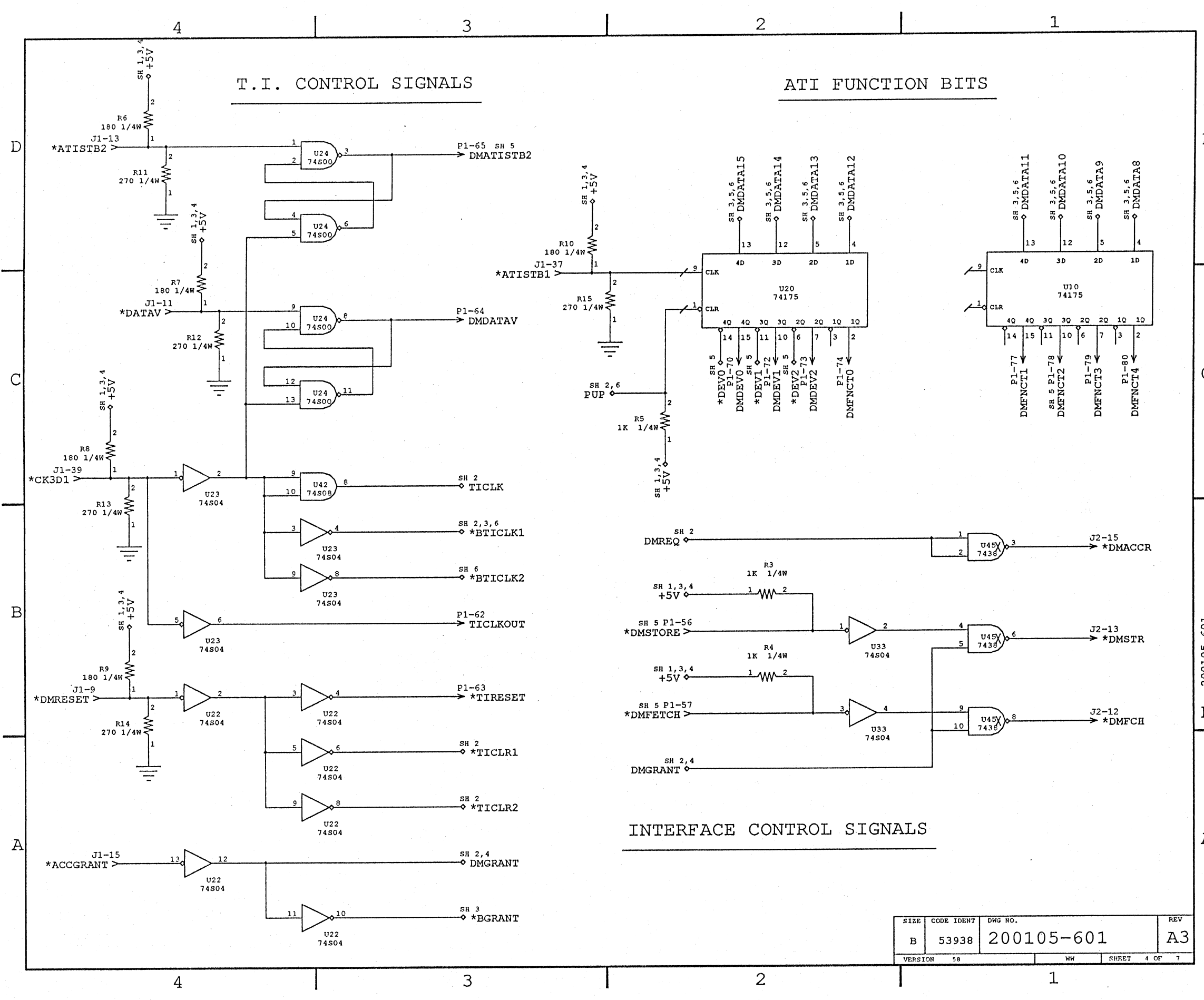
200105-601

B

A



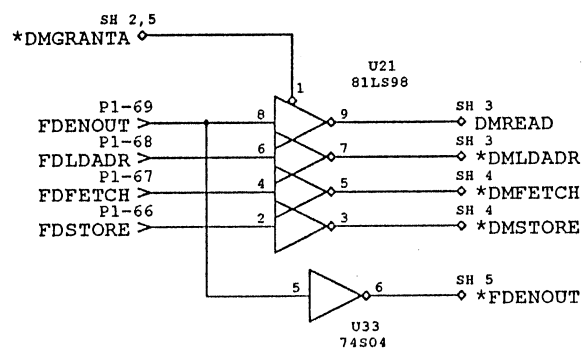
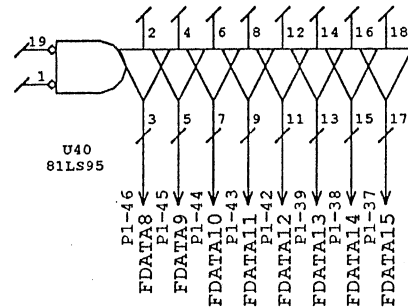
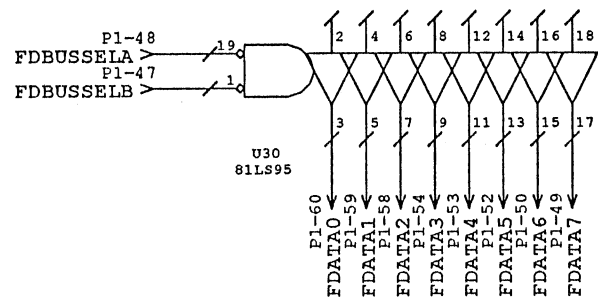
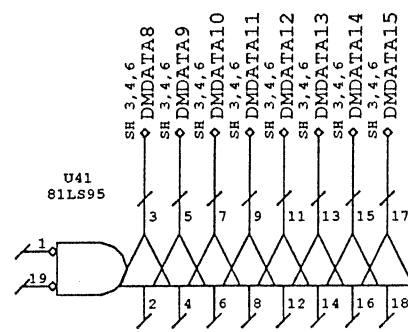
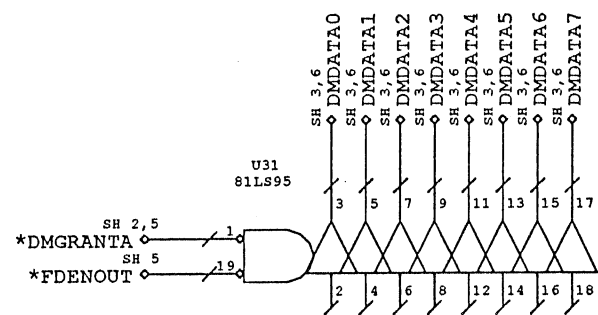
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VERSION	56	WW	SHEET 3 OF 7



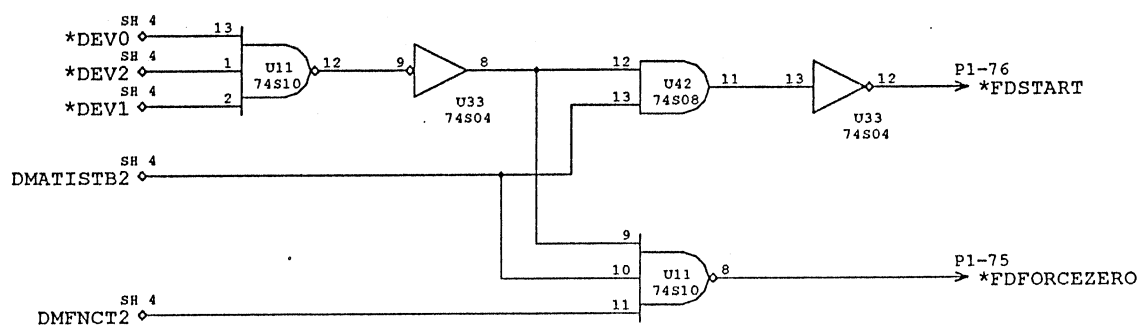
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200105-601	A3
VERSION	58	WW	SHEET 4 OF 7

D
C
B
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TI BUS BUFFER



FLOPPY CONTROL BITS



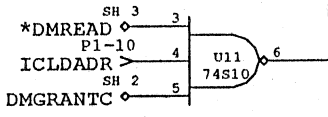
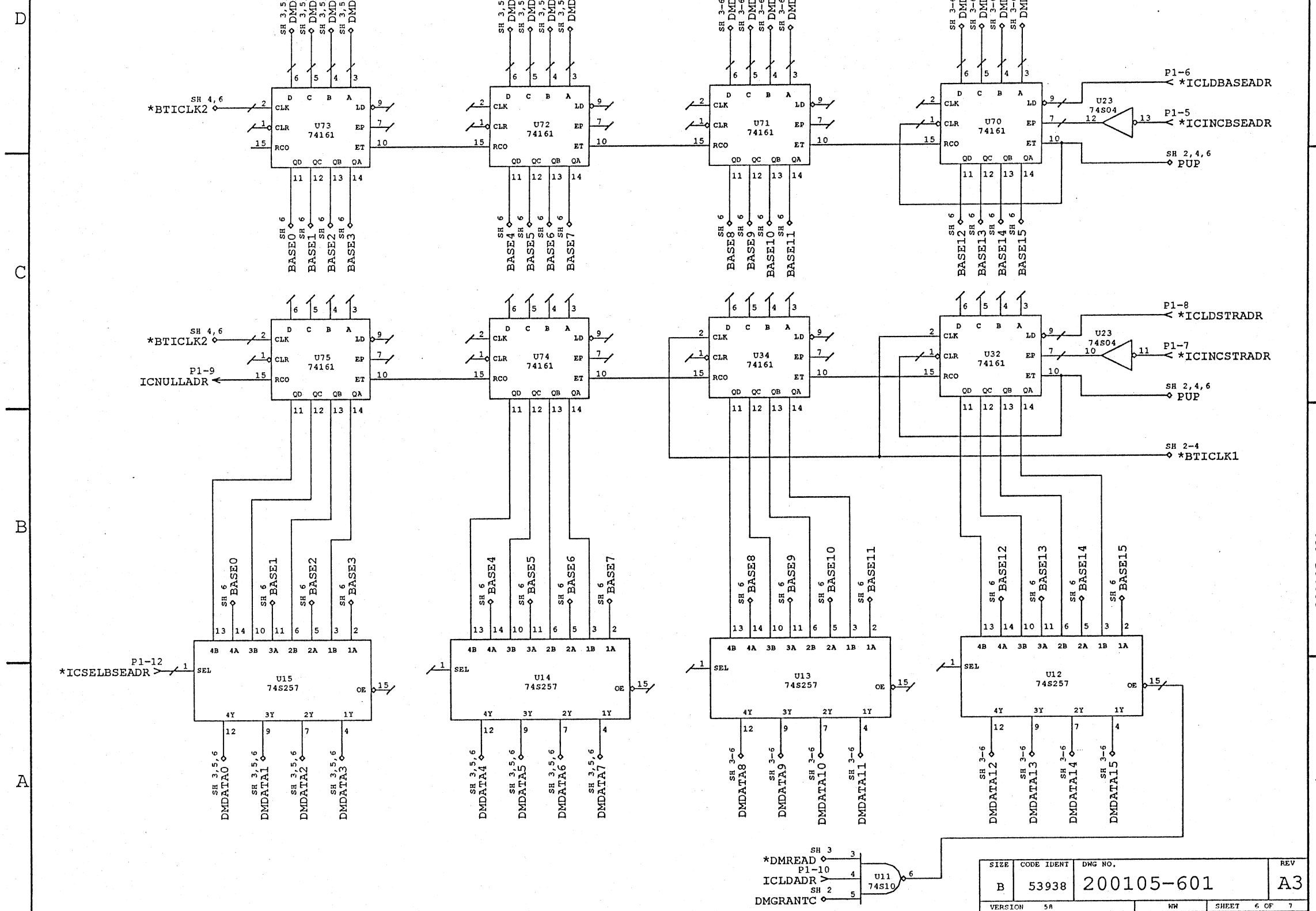
DISK INTERFACE SUPPORT

200105-601
B
A

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200105-601	A3
VERSION	58	WW	SHEET 5 OF 7

DATA BASE MANAGEMENT

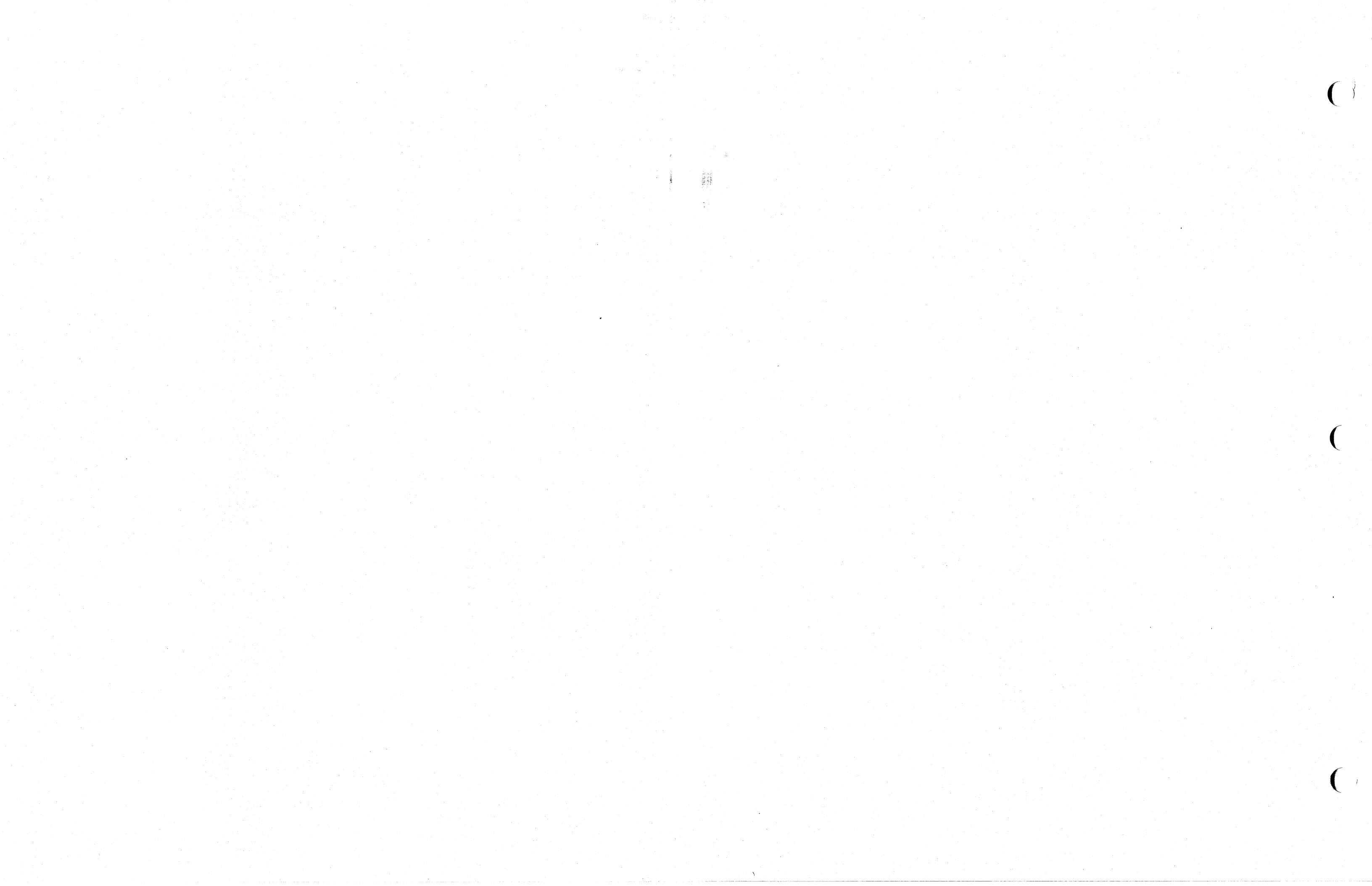
ADDRESS SUPPORT



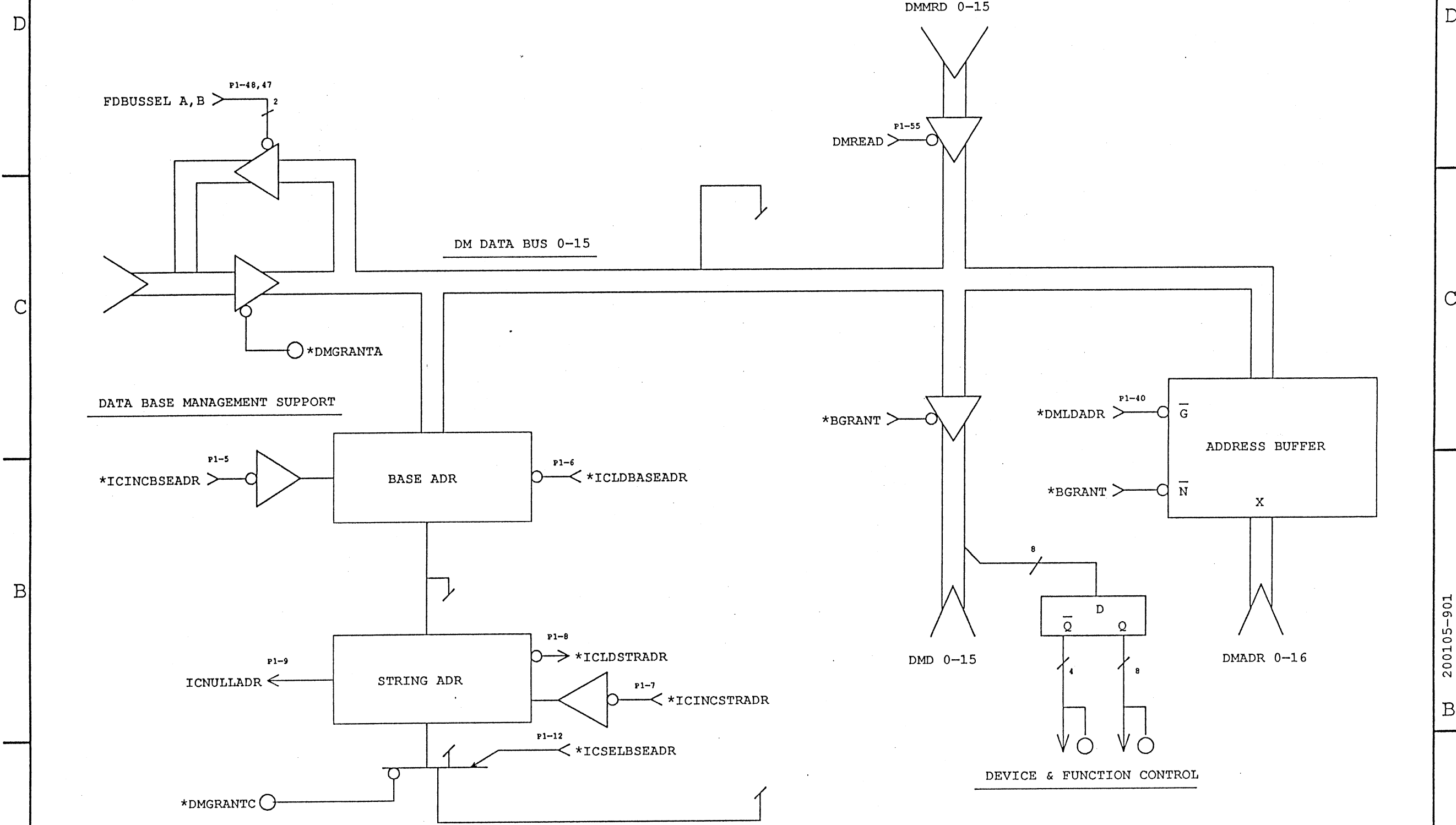
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200105-601	A3
VERSION	5A	WN	SHEET 6 OF 7

200105-601 B

Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet	String	Unit	Pin	Type	Sheet	String	Unit	Pin	Type	Sheet
J1	1	Out	DMADR7	3 A3	P1	21	In	GROUND	1 C4	*ACCGRANT	J1	15	In	4 A4	DMMRD4	J1	28	In	3 D3
J1	2	Out	DMADR6	3 A3	P1	22	In	DMDATA10	3 C1	*ATISTB1	J1	37	In	4 C3	DMMRD5	J1	27	In	3 D3
J1	3	Out	DMADR5	3 A3	P1	23	In	DMDATA9	3 C1	*ATISTB2	J1	13	In	4 D4	DMMRD6	J1	26	In	3 D3
J1	4	Out	DMADR4	3 A3	P1	24	In	DMDATA8	3 C1	*CK3D1	J1	39	In	4 C4	DMMRD7	J1	25	In	3 D3
J1	5	Out	DMADR3	3 B3	P1	25	In	DMDATA7	3 D3	*DATAV	J1	11	In	4 C4	DMMRD8	J1	24	In	3 D2
J1	6	Out	DMADR2	3 B3	P1	26	In	DMDATA6	3 D3	*DMACCR	J2	15	Out	4 B1	DMMRD9	J1	23	In	3 D2
J1	7	Out	DMADR1	3 B4	P1	27	In	DMDATA5	3 D3	*DMFCH	J2	12	Out	4 B1	DMREAD	P1	32	In	3 D2
J1	8	Out	DMADRO	3 B4	P1	28	In	DMDATA4	3 D4	*DMFETCH	P1	57	In	4 B2	DMREQA	P1	31	In	3 D4
J1	9	In	*DMRESET	4 B4	P1	29	In	DMREQB	4 C4	*DMGRANTA	P1	18	Out	2 C2	DMREQB	P1	30	In	3 B4
J1	10	Out	GROUND	2 D2	P1	30	In	DMREQC	2 B4	*DMGRANTC	P1	20	Out	2 C2	DMREQC	P1	29	In	3 B4
J1	11	In	*DATAV	4 C4	P1	31	In	GROUND	1 B4	*DMLDADR	P1	40	In	3 B4	FDATA0	P1	60	Out	3 B4
J1	12	Out	GROUND	2 D1	P1	32	In	DMDATA4	3 C3	*DMRESET	J1	9	In	4 B4	FDATA1	P1	59	Out	3 B3
J1	13	In	*ATISTB2	4 D4	P1	33	In	DMDATA3	3 C3	*DMSTORE	P1	56	In	4 B2	FDATA10	P1	44	Out	3 B3
J1	14	Out	GROUND	2 D2	P1	34	In	DMDATA2	3 C3	*DMSTR	J2	13	Out	4 B1	FDATA11	P1	43	Out	3 B3
J1	15	In	*ACCGRANT	4 A4	P1	35	In	DMDATA1	3 C3	*DFFORCEZERO	P1	75	Out	4 A1	FDATA12	P1	42	Out	3 B2
J1	16	Out	GROUND	2 D1	P1	36	In	DMDATA0	3 C3	*FDSTART	P1	76	Out	5 B1	FDATA13	P1	39	Out	3 B1
J1	17	In	DMMRD15	3 D2	P1	37	Out	FDATA15	5 B1	*ICINCBSEADR	P1	5	In	6 D1	FDATA14	P1	38	Out	3 B1
J1	18	In	DMMRD14	3 D2	P1	38	Out	FDATA14	5 B1	*ICINCSTRADR	P1	7	In	6 C1	FDATA15	P1	37	Out	3 B1
J1	19	In	DMMRD13	3 D2	P1	39	Out	FDATA13	5 B1	*ICLDBASEADR	P1	6	In	6 D1	FDATA2	P1	58	Out	3 B3
J1	20	In	DMMRD12	3 D2	P1	40	In	*DMLDADR	5 B4	*ICLDSTRADR	P1	8	In	6 C1	FDATA3	P1	54	Out	3 B3
J1	21	In	DMMRD11	3 D2	P1	41	In	GROUND	1 B4	*ICSELBSEADR	P1	12	In	6 A4	FDATA4	P1	53	Out	3 B3
J1	22	In	DMMRD10	3 D2	P1	42	Out	FDATA12	5 B2	*TIRESET	P1	63	Out	4 B3	FDATA5	P1	52	Out	3 B3
J1	23	In	DMMRD9	3 D2	P1	43	Out	FDATA11	5 B2	+5V	P1	2	In	1 C4	FDATA6	P1	50	Out	3 B3
J1	24	In	DMMRD8	3 D2	P1	44	Out	FDATA10	5 B2	DMADR0	J1	8	Out	3 B4	FDATA7	P1	49	Out	3 B3
J1	25	In	DMMRD7	3 D3	P1	45	Out	FDATA9	5 B2	DMADR1	J1	7	Out	3 B4	FDATA8	P1	46	Out	3 B2
J1	26	In	DMMRD6	3 D3	P1	46	Out	FDATA8	5 B2	DMADR10	J2	37	Out	3 B2	FDATA9	P1	45	Out	3 B2
J1	27	In	DMMRD5	3 D3	P1	47	In	FDBUSSELB	5 C4	DMADR11	J2	38	Out	3 B2	FDBUSSELA	P1	48	In	3 C4
J1	28	In	DMMRD4	3 D3	P1	48	In	FDBUSSELA	5 C4	DMADR12	J2	36	Out	3 A2	FDBUSSELB	P1	47	In	3 C4
J1	29	In	DMMRD3	3 D3	P1	49	Out	FDATA7	5 B3	DMADR13	J2	35	Out	3 A2	FDENOUT	P1	69	In	3 B4
J1	30	In	DMMRD2	3 D3	P1	50	Out	FDATA6	5 B3	DMADR14	J2	34	Out	3 A2	FDNFETCH	P1	67	In	3 A4
J1	31	In	DMMRD1	3 D3	P1	51	In	GROUND	1 B4	DMADR15	J2	33	Out	3 A2	FDLADR	P1	68	In	3 B4
J1	32	In	DMMRD0	3 D4	P1	52	Out	FDATA5	5 B3	DMADR2	J1	6	Out	3 B3	FDSTORE	P1	66	In	3 A4
J1	33	Out	GROUND	1 B1	P1	53	Out	FDATA4	5 B3	DMADR3	J1	5	Out	3 B3	GROUND	J1	10	Out	3 D2
J1	34	Out	GROUND	1 B1	P1	54	Out	FDATA3	5 B3	DMADR4	J1	4	Out	3 A3	GROUND	J1	12	Out	3 D1
J1	35	Out	GROUND	1 B1	P1	55	In	DMREAD	4 D4	DMADR5	J1	3	Out	3 A3	GROUND	J1	14	Out	3 D2
J1	36	Out	GROUND	1 B1	P1	56	In	*DMSTORE	4 B2	DMADR6	J1	2	Out	3 A3	GROUND	J1	16	Out	3 D1
J1	37	In	*ATISTB1	4 C3	P1	57	In	*DMFETCH	4 B2	DMADR7	J1	1	Out	3 A3	GROUND	J1	33	Out	3 B1
J1	38	Out	GROUND	2 D1	P1	58	Out	FDATA2	5 B3	DMADR8	J2	40	Out	3 B2	GROUND	J1	34	Out	3 B1
J1	39	In	*CK3D1	4 C4	P1	59	Out	FDATA1	5 B3	DMADR9	J2	39	Out	3 B2	GROUND	J1	35	Out	3 B1
J1	40	Out	GROUND	1 D1	P1	60	Out	FDATA0	5 B4	DMAATISTB2	P1	65	Out	4 D3	GROUND	J1	36	Out	3 B1
J2	5	In	GROUND	1 A1	P1	61	In	GROUND	1 B4	DMD0	J2	32	Out	3 C4	GROUND	J1	38	Out	3 D1
J2	6	In	GROUND	1 A1	P1	62	Out	TICLKOUT	1 B3	DMD1	J2	31	Out	3 C3	GROUND	J1	40	Out	3 D1
J2	7	In	GROUND	1 A1	P1	63	Out	*TIRESET	4 B3	DMD10	J2	22	Out	3 C2	GROUND	J2	5	In	3 A1
J2	8	In	GROUND	1 A1	P1	64	Out	DMDATAV	4 C3	DMD11	J2	21	Out	3 C2	GROUND	J2	6	In	3 A1
J2	11	Out	GROUND	2 D2	P1	65	Out	DMATISTB2	4 D3	DMD12	J2	20	Out	3 C2	GROUND	J2	7	In	3 A1
J2	12	Out	*DMFCH	4 B1	P1	66	In	FDSTORE	4 A4	DMD13	J2	19	Out	3 C2	GROUND	J2	8	In	3 A1
J2	13	Out	*DMSTR	4 B1	P1	67	In	FDNFETCH	4 A4	DMD14	J2	18	Out	3 C2	GROUND	J2	11	Out	3 D2
J2	14	Out	GROUND	2 D2	P1	68	In	FDLADR	4 B4	DMD15	J2	17	Out	3 C2	GROUND	J2	14	Out	3 D2
J2	15	Out	*DMACCR	4 B1	P1	69	In	FDENOUT	4 B4	DMD2	J2	30	Out	3 C3	GROUND	J2	16	Out	3 D2
J2	16	Out	GROUND	2 D2	P1	70	Out	DMDEV0	4 C2	DMD3	J2	29	Out	3 C3	GROUND	P1	1	In	3 C4
J2	17	Out	DMD15	3 C2	P1	71	In	GROUND	1 B4	DMD4	J2	28	Out	3 C3	GROUND	P1	11	In	3 C4
J2	18	Out	DMD14	3 C2	P1	72	Out	DMDEV1	4 C2	DMD5	J2	27	Out	3 C3	GROUND	P1	21	In	3 C4
J2	19	Out	DMD13	3 C2	P1	73	Out	DMDEV2	4 C2	DMD6	J2	26	Out	3 C3	GROUND	P1	31	In	3 B4
J2	20	Out	DMD12	3 C2	P1	74	Out	DMFNCT0	4 C2	DMD7	J2	25	Out	3 C3	GROUND	P1	41	In	3 B4
J2	21	Out	DMD11	3 C2	P1	75	Out	*DFFORCEZERO	4 A1	DMD8	J2	24	Out	3 C2	GROUND	P1	51	In	3 B4
J2	22	Out	DMD10	3 C2	P1	76	Out	*FDSTART	5 B1	DMD9	J2	23	Out	3 C2	GROUND	P1	61	In	3 B4
J2	23	Out	DMD9	3 C2	P1	77	Out	*DMSTR	4 C1	DMDATA0	J2	26	In	3 C3	GROUND	P1	71	In	3 B4
J2	24	Out	DMD8	3 C2	P1	78	Out	DMFNCT1	4 C1	DMDATA1	P1	25	In	3 C3	ICLADR	P1	10	In	6 A2
J2	25	Out	DMD7	3 C3	P1	79	Out	DMFNCT2	4 C1	DMDATA10	P1	22	In	3 C1	ICNULLADR	P1	9	Out	6 C4
J2	26	Out	DMD6	3 C3	P1	80	Out	DMFNCT3	4 C1	DMDATA11	P1	17	In	3 C1	TICLKOUT	P1	62	Out	4 B3
J2	27	Out	DMD5	3 C3	P1		Out	DMFNCT4	4 C1	DMDATA12	P1	16	In	3 C1					
J2	28	Out	DMD4	3 C3	P1		Out			DMDATA13	P1	15	In	3 C1					
J2	29	Out	DMD3	3 C3	P1		Out			DMDATA14	P1	14	In	3 C1					
J2	30	Out	DMD2	3 C3	P1		Out			DMDATA15	P1	13	In	3 C1					
J2	31	Out	DMD1	3 C3	P1		Out			DMDATA2	P1	34	In	3 C3					
J2	32	Out	DMD0	3 C4	P1		Out			DMDATA3	P1	33	In	3 C3					
J2	33	Out	DMADR15	3 A2	P1		Out			DMDATA4	P1	32	In	3 C3					
J2	34	Out	DMADR14	3 A2	P1		Out			DMDATA5	P1	27	In	3 C3					
J2	35	Out	DMADR13	3 A2	P1		Out			DMDATA6	P1	26	In	3 C3					
J2	36	Out	DMADR12	3 A2	P1		Out			DMDATA7	P1	25	In	3 C3					
J2	37	Out	DMADR10	3 B2	P1		Out			DMDATA8	P1	24	In	3 C3					
J2	38	Out	DMADR11	3 B2	P1		Out			DMDATA9	P1	23	In	3 C1					
J2	39	Out	DMADR9	3 B2	P1		Out			DMDATAV	P1	64	Out	4 C3					
J2	40	Out	DMADR8	3 B2	P1		Out			DMDEV0	P1	70	Out	4 C2					
P1	1	In	GROUND	1 C4	P1	1	In	DMDEV1	4 C2	DMDEV1	P1	72	Out	4 C2					
P1	2	In	+5V	1 C4	P1	1	In	DMDEV2	4 C2	DMDEV2	P1	73	Out	4 C2					
P1	5	In	*ICINCBSEADR	6 D1	P1	1	In	DMFNCT0	4 C2	DMFNCT0	P1	74	Out	4 C2					
P1	6	In	*ICLDBASEADR	6 D1	P1	1	In	DMFNCT1	4 C1	DMFNCT1	P1	77	Out	4 C1					
P1	7	In	*ICINCSTRADR	6 C1	P1	1	In	DMFNCT2	4 C1	DMFNCT2	P1	78	Out	4 C1					
P1	8	In	*ICLDSTRADR	6 C1	P1	1	In	DMFNCT3	4 C1	DMFNCT3	P1	79	Out	4 C1					
P1	9	Out	ICNULLADR	6 C4	P1	1	Out	DMFNCT4	4 C1	DMFNCT4	P1	80	Out	4 C1					
P1	10	In	ICLADR	6 A2	P1	1	In	DMGRANTB	4 C2	DMGRANTB	P1	19	Out	3 C2					
P1	11	In	GROUND	1 C4	P1	1	In	DMMRD0	3 D4	DMMRD0	J1	32	In	3 D3					
P1	12	In	*ICSELBSEADR	6 A4	P1	1	In	DMMRD10	3 D2	DMMRD10	J1	31	In	3 D3					
P1	13	In	DMDATA15	5 D1	P1	1	In	DMMRD11	3 D2	DMMRD11	J1	22	In	3 D2					
P1	14	In	DMDATA14	5 D1	P1	1	In	DMMRD12	3 D2	DMMRD12	J1	21	In	3 D2					
P1	15	In	DMDATA13	5 D1	P1	1	In	DMMRD13	3 D2	DMMRD13	J1	20	In	3 D2					
P1	16	In	DMDATA12	5 C1	P1	1	In	DMMRD14	3 D2	DMMRD14	J1	19	In	3 D2					
P1	17	In	DMDATA11	5 C1	P1	1	In	DMMRD15	3 D2	DMMRD15	J1	18	In	3 D2					
P1	18	Out	*DMGRANTA	3 C2	P1	1	Out	DMMRD2	3 D3	DMMRD2	J1	17	In	3 D2					



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	REVISION UPDATE W/NO DWG CHNG	SC	11-27-86
	A2	FIX BUS CONTENTION OF TWO DRIVERS	BH	02-26-88
	A3	CHANGED CAPACITORS	KJ	04-18-88



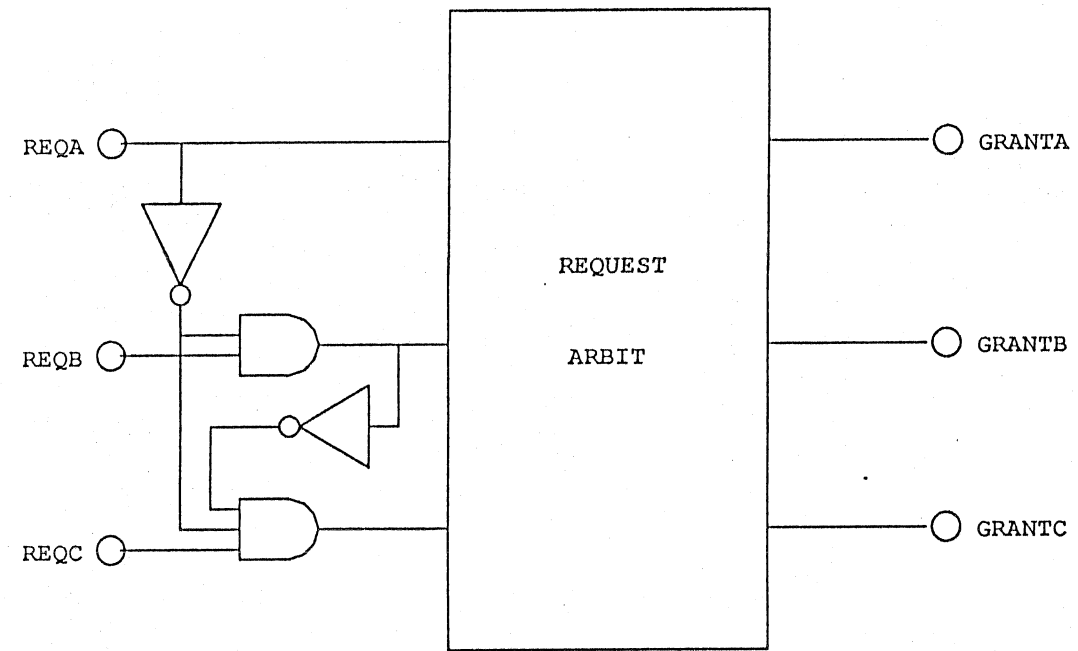
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 CONTRACT NO. 1
 CONTRACTOR: EVANS AND SUTHERLAND COMPUTER CORP.
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DRAWN	M WING
CHECKED	<i>R. Hill - 6-13-88</i>
ELEC ENG	R SPEIRS
PROJ ENG	
APPROVED	HESS MAHNING
NEXT ASSY	
MODIFIED DATE	13-JUN-88
CREATION DATE	12-APR-88
FILE NAME	200105101A3.BLO

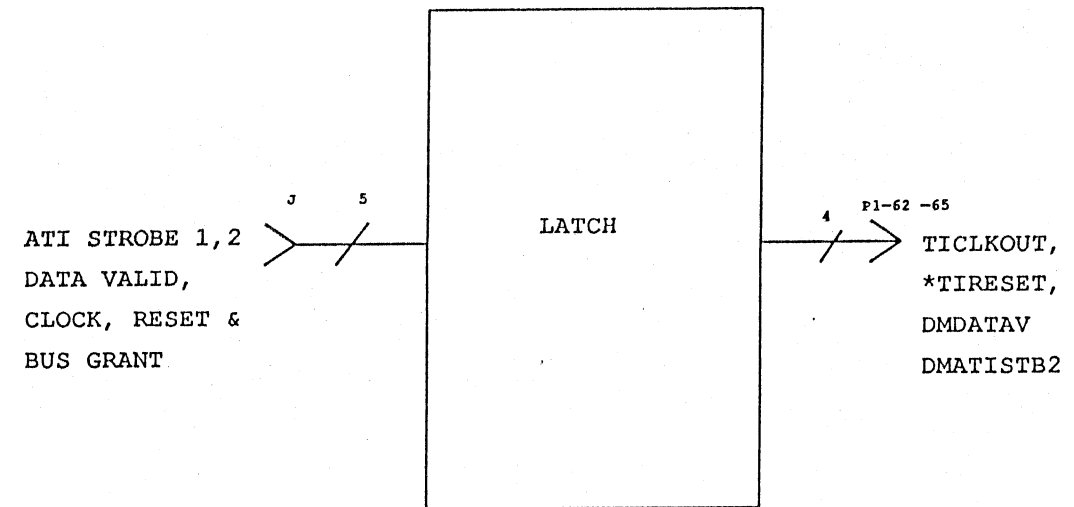
BLOCK DIAGRAM			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE DMA INTERFACE (BLOCK DIAGRAM)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200105-901	A3
VERSION	12	BL	SHEET 1 OF 2

200105-901 B

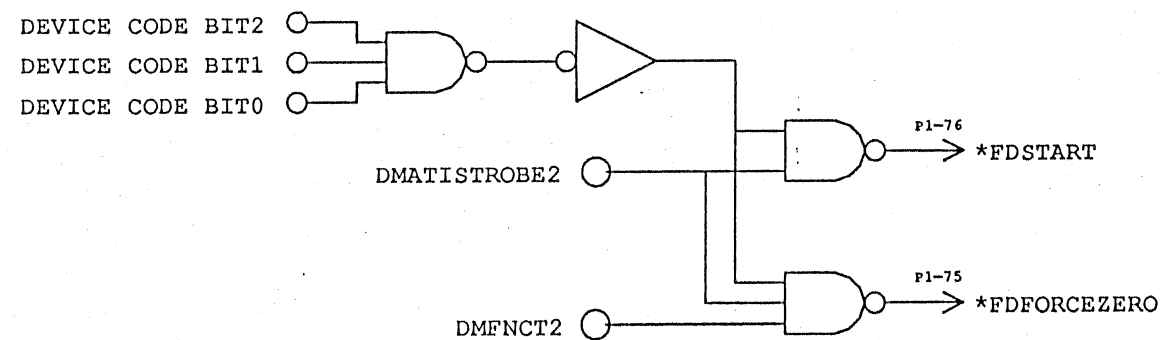
MULTI-PORT ACCESS CONTROLLER



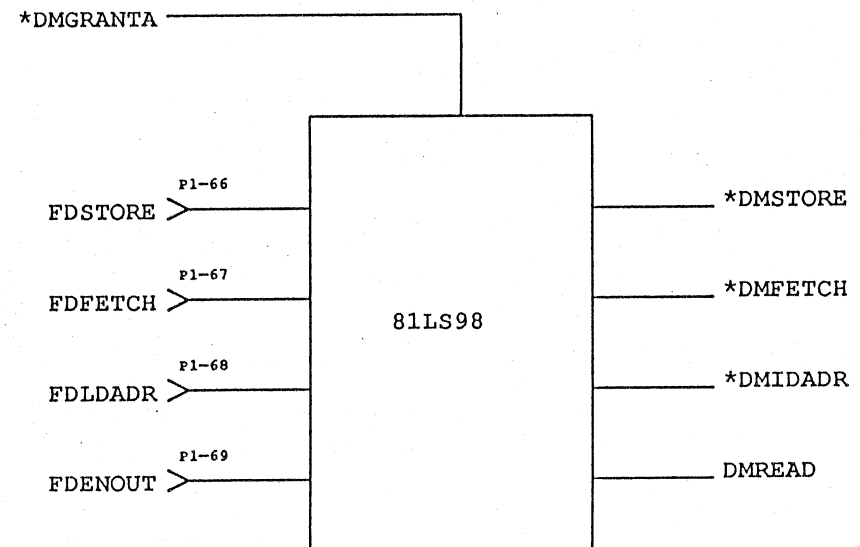
INTERFACE CONTROL SIGNAL BUFFERING



DISK INTERFACE SUPPORT



DIO TO DMA BUFFERED SIGNALS



BLOCK DIAGRAM CONT.

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200105-901	A3
VERSION	12	BL	SHEET 2 OF 2

200105-901

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200106-100					REV: A4 = AE	DESC: CARD ASSY, INPUT CONTROL, CABLE, W/W			
ITEM/REFERENCE	DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	ASSY	QTY/	
001		BD,WWCN STD6X11C	53938	EVANS & SUTHERLAND.	102100-501	102100-501		1	
002		HW,SPCR .312X.030	53938	EVANS & SUTHERLAND.	501335-001	501335-001		1	
003		HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001		1	
004		*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001		1	
006		HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003		3	
007		HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009		1	
009		HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002		1	
008	23.69 39.67 21.69 44.67 32.67 46.67 51.67 WHT J2.3 32.58 BLK SGND .12 37.57	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001		973	
	C1 C2	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475		2	
	C20 C22 C27 C28 C3 C4 C6 C8 C23 C33 C35 C38 C40 C41 C43 C44 C46 C50 C9 C10 C11 C16 C5 21.74GND 23.74(+) C51 33.57 36.57	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333		22	
		C,,RDL 100UF	04222	A V X CERAMICS DIV.OF AVX	TMMJ-107-M-010-R	804128-107		1	
		C,,RDL 680PF	59821	MEPCO/CENTRALAB	DD-681	804103-681		1	
010	E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001		1	
011	F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050		1	
005	J2	CN,HOUS 40P,RTA	53387	MINN. MINING & MFG.EP DIV	3495-1002	801860-040		1	
	R1 40.22 43.22 R3 5.22 8.22 R4 33.45 36.45 R5 33.58 R2 33.47 36.47	R,,AXL 1K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102		4	
	U10 U60	R,,AXL 3.3K1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF332J	803201-332		1	
	U11	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055		2	
	U14 5.48 U23 12.39 U24 12.48 U12 U13 5.39 U16 5.65 U53 U71	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055		1	
	U21 U62	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055		5	
	U25 12.57 U55 U26 12.65	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055		3	
	U32 19.32 U33 19.43 U34 19.54 U41 26.20 U22 12.30 U31 19.20	IC,TTL 74161	07263	FAIRCHILD IC'S & SEMICON	74161PC/DC	807661-246		2	
	U35	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055		2	
	U40 U20 U30	IC,TTL 74H102	01295	TEXAS INSTR, SEMICON DIV.	SN74H102N-3	807503-255		1	
	U42	*OBSOLETE*IC,OCTAL D-	53938	EVANS & SUTHERLAND	807791-055	807811-015		6	
	U43 U15 5.57	IC,TTL 74S112	18324	SIGNETICS CORP. MILITARY	N74S112N	807612-055		1	
	U44	IC,TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055		3	
	U45	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-B54	807739-055-B54		1	
	U50	IC,TTL 74S175	01295	TEXAS INSTR, SEMICON DIV.	SN74S175N	807617-055		2	
	U51 33.20	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055		1	
	U52	IC,TTL 81LS97	27014	NATIONAL SEMICONDUCTOR	DM81LS97 (A)N/J	807795-055		1	
	U54	IC,TTL 74S151	01295	TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055		1	
	U61 40.20	IC,TTL 2911	27014	NATIONAL SEMICONDUCTOR	AM2911ANC/DC	807806-727		1	
	U65 40.65 U73 47.43 U74 47.54 U75 47.65 U63 40.43 U64 40.54	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-B55	807739-055-B55		1	
		IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055		1	
		IC,TTL 81LS98	27014	NATIONAL SEMICONDUCTOR	DM81LS98 (A)N/J	807809-016		1	
		IC,TTL 81LS95	27014	NATIONAL SEMICONDUCTOR	DM81LS95 (A)N/J	807794-055		6	

TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200106-100

REV: A4 = AE

DESC: CARD ASSY, INPUT CONTROL, CABLE, W/W

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
U70 47.9	IC,PROM,BIP,256X8,TS,	53938	EVANS & SUTHERLAND.	807808-016-A14	807808-016-A14	1
U72	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-A77	807739-055-A77	1

40 ITEMS LISTED

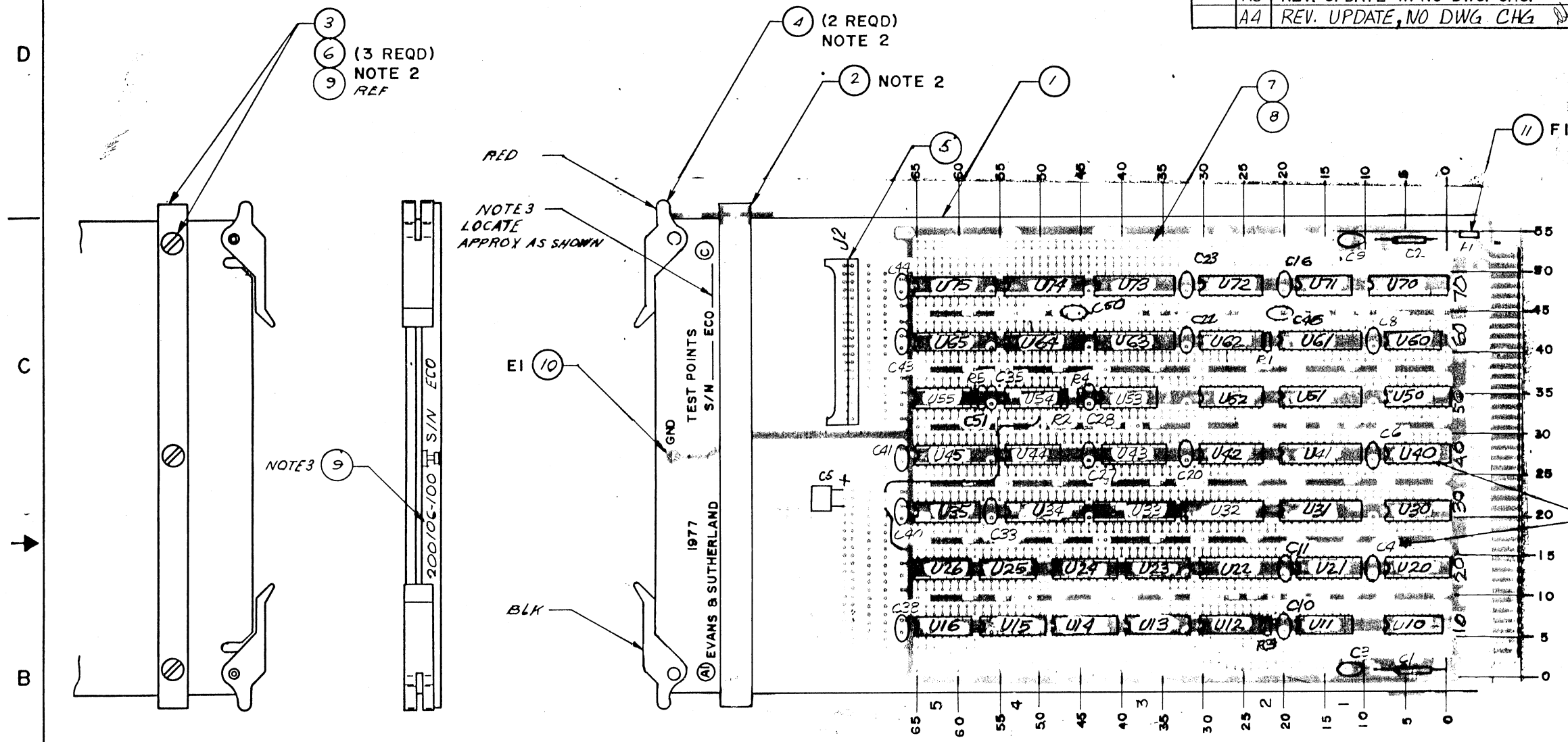
4

3

2

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	ADDED C51	MW 4-20-78	GL
	A2	REV UPDATE ONLY, NO DWG CHG.	8-16-78	R Spain
	A3	REV. UPDATE W/NO DWG. CHG.	B.H. 10/20/81	R Spain
	A4	REV. UPDATE, NO DWG CHG	JLP 12/15/86	R Spain



- NOTES:
1. ASSEMBLE PER E&S STANDARD.
 2. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
 3. MARK ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
 4. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.

REFERENCE DOCUMENTS
 LOGIC DIAGRAM --- 200106-600
 PARTS LIST --- PL 200106-100

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓	CONTRACT NO.	SEE SEPARATE PARTS LIST	
			DRAWN M. WING 6-23-78	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
			CHECKED <i>[Signature]</i> 6-23-78	CARD ASSEMBLY INPUT CONTROL, CABLE, w/w	
			MECH		
			ELEC		
			PROJ. ENG. R.S.		
			APPROVED <i>[Signature]</i> 6-23-78		
200130-100	NOVOVIEW	MATERIAL	SEE PARTS LIST	SIZE	CODE IDENT NO
NEXT ASSY	USED CN	FINISH		C	53938 200106-100
APPLICATION				REV	A4
				SCALE FULL	SHEET 1 OF 1



SEE PG.2 FOR REV A3

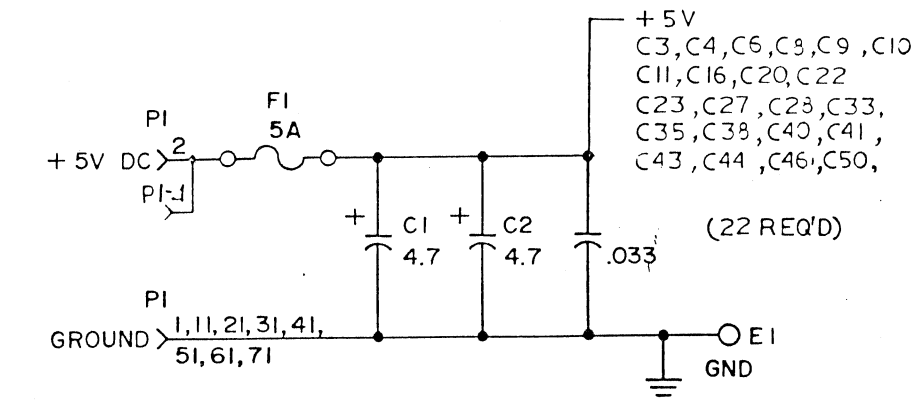
REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
-	A1	ADDED C51, SHT 8	10-14-77	JB
S48 C4	A2	ADD SGND.12, TO J2-1	8-16-78	ES

REF DESIG	E+S PART NO	VENDOR PART NUMBER	REF DESIG	E+S PART NO	VENDOR PART NUMBER
5	807663-055	SN74S163N	U 31	807811-015	SN74S374N
5	807400-055	SN74S00N	U 32	807811-015	SN74S374N
12	807503-255	SN74H102	U 33	807811-015	SN74S374N
12	807410-055	SN74S10N	U 34	807811-015	SN74S374N
12	807663-055	SN74S163N	U 35	807612-055	SN74S112N
12	807811-015	SN74S374N	U 40	807638-055	SN74S138N
			U 41	807811-015	SN74S374N
			U 42	807739-055	N82S123B
			U 43	807617-055	SN74S175N
			U 44	807451-055	SN74S51N
			U 45	807795-055	DM81LS97N
			U 50	807651-055	SN74S151N
			U 51	807806-727	AM2911 PC & DC
			U 52	807739-055	N82S123B
			U 53	807400-055	SN74S00N
			U 54	807411-055	SN74S11N
			U 55	807410-055	SN74S10N
			U 60	807416-055	SN74S04N
			U 61	807809-016	DM81LS98N
			U 62	807661-246	SN74L61N
			U 63	807794-055	DM81LS95N
			U 64	807794-055	DM81LS95N
			U 65	807794-055	DM81LS95N
			U 70	807808-016	DM74S471N
			U 71	807400-055	SN74S00N
			U 72	807739-055	N82S123B
			U 73	807794-055	DM81LS95N
			U 74	807794-055	DM81LS95N
			U 75	807794-055	DM81LS95N
C 1	804102-475	CS138F475K			
C 2	804102-475	CS138F475K			
C 3	804115-333	CY15C333M			
C 4	804115-333	CY15C333M			
C 5	804128-107	183DR107X0010F			
C 6	804115-333	CY15C333M			
C 8	804115-333	CY15C333M			
C 9	804115-333	CY15C333M			
C 10	804115-333	CY15C333M			
C 11	804115-333	CY15C333M			
C 16	804115-333	CY15C333M			
C 20	804115-333	CY15C333M			
C 22	804115-333	CY15C333M			
C 23	804115-333	CY15C333M			
C 27	804115-333	CY15C333M			
C 28	804115-333	CY15C333M			
C 33	804115-333	CY15C333M			
C 35	804115-333	CY15C333M			
C 38	804115-333	CY15C333M			
C 40	804115-333	CY15C333M			
C 41	804115-333	CY15C333M			
C 43	804115-333	CY15C333M			
C 44	804115-333	CY15C333M			
C 46	804115-333	CY15C333M			
C 50	804115-333	CY15C333M			
C 51	804103-681	DD-681			
R 1	803201-102	.			
R 2	803201-332	.			
R 3	803201-102	.			
R 4	803201-102	.			
R 5	803201-102	.			
U 10	807416-055	SN74S04N			
U 11	807408-055	SN74S08N			
U 12	807663-055	SN74S163N			
U 13	807663-055	SN74S163N			
U 14	807663-055	SN74S163N			
U 15	807617-055	SN74S175N			
U 16	807400-055	SN74S00N			
U 20	807638-055	SN74S138N			
U 21	807661-246	SN74L61N			
U 22	807811-015	SN74S374N			
U 23	807663-055	SN74S163N			
U 24	807663-055	SN74S163N			
U 25	807410-055	SN74S10N			
U 26	807503-255	SN74H102			
U 30	807638-055	SN74S138N			

PIN #	WIRENAME
J2 2	*G0
J2 4	SGROUND11
J2 5	ZU75-3
J2 6	ZU75-5
J2 7	SGROUND11
J2 8	ZU75-7
J2 9	ZU75-9
J2 10	SGROUND11
J2 11	ZU75-11
J2 12	ZU75-13
J2 13	SGROUND10
J2 14	ZU75-15
J2 15	ZU75-17
J2 16	SGROUND10
J2 17	ZU65-3
J2 18	ZU65-5
J2 19	SGROUND10
J2 20	ZU65-7
J2 21	ZU65-9
J2 22	SGROUND9
J2 23	ZU65-11
J2 24	ZJ2-24
J2 25	SGROUND9
J2 26	ZU65-15
J2 27	ZU65-17
J2 28	SGROUND9
J2 30	SGROUND9
J2 31	ZU45-17
J2 32	ZU45-15
J2 33	SGROUND7
J2 34	ZU11-6
J2 35	*CMWRTSTD
J2 36	SGROUND7
J2 37	ZU45-13
J2 38	ZU45-11
J2 39	SGROUND7
J2 40	ZU60-6
J2 3	DONE
J2 1	SGROUND12

PIN #	WIRENAME	PIN #	WIRENAME
P1 3	DMDEV2	P1 46	ICNULLADR
P1 5	DMDEV1	P1 47	GC1SKIP
P1 6	DMDEV0	P1 48	ICSTRINGSDONE
P1 7	UMFNCT4	P1 49	GC1WAIT
P1 8	UMFNCT3	P1 50	ICLADR
P1 9	UMFNCT2	P1 52	*ICLDBASEADR
P1 10	UMFNCT1	P1 53	*ICSELBASEADR
P1 12	UMFNCT0	P1 54	*ICINCBASEADR
P1 13	UMFNCT02	P1 55	*ICLUSTRINGADR
P1 14	UMDATA0	P1 56	*ICINCSTRINGADR
P1 15	UMDATA1	P1 57	ICDMREQ
P1 16	UMDATA2	P1 58	ICAVAIL
P1 17	UMDATA3	P1 59	*ICLD6
P1 18	UMDATA4	P1 60	*ICLD7
P1 19	UMDATA5	P1 62	*ICLD8
P1 20	UMDATA6	P1 63	*ICLD9
P1 22	UMDATA7	P1 64	*ICLD10
P1 23	UMDATA8	P1 65	*ICLD11
P1 24	UMDATA9	P1 66	*ICLD12
P1 25	UMDATA10	P1 67	*ICLD13
P1 26	UMDATA11	P1 68	*ICLD14
P1 27	UMDATA12	P1 69	*ICLD0
P1 28	UMDATA13	P1 70	*CLK10
P1 29	UMDATA14	P1 71	CLKRTH
P1 30	UMDATA15	P1 72	*ICLD1
P1 32	*BDMREQ	P1 73	*ICLD2
P1 33	*DMLDADR	P1 74	*ICLD3
P1 34	*DMSTORL	P1 75	*ICLD4
P1 35	DMREAD	P1 76	*ICLD5
P1 36	*DMFETCH	P1 77	UMDATAV
P1 37	*BDMGRANT	P1 78	*TIRLSET
P1 38	*ICDMGRANT		
P1 40	TICLK		
P1 41	TIRETURN		
P1 42	GC1CODE3		
P1 43	GC1CODE2		
P1 44	GC1CODE1		
P1 45	GC1CODE0		



3. ON I.C AM2911, LOCATION U51, PIN 8 IS GROUND
PIN 2 IS POWER (+5V).

2. NUMBERS SHOWN REFER TO CONNECTOR PI.
ALL CAPACITANCE VALUES ARE EXPRESSED
IN MICROFARADS.
RESISTANCE VALUES ARE EXPRESSED IN OHMS,
K DENOTES 1000.
RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND
PIN 20 IS POWER (+5V).
ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND
PIN 16 IS POWER (+5V).
ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND
PIN 14 IS POWER (+5V).

1. UNLESS OTHERWISE SPECIFIED;

NOTES:

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓	CONTRACT NO.
			DRAWN <i>M. WING</i> 6-2-77
			CHECKED <i>J. A. P.</i> 20 JUL 77
			MECH
			ELEC
			PROJ. ENG <i>J. A. P.</i> 23 JUL 77
			APPROVED
200150-100	NOVO VIEW	MATERIAL	
		FINISH	
		APPLICATION	

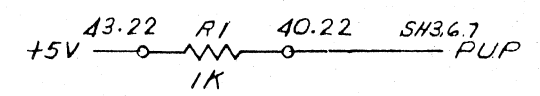
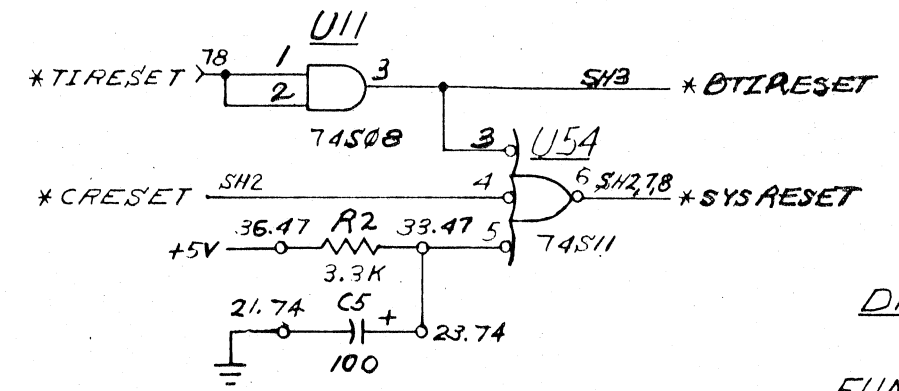
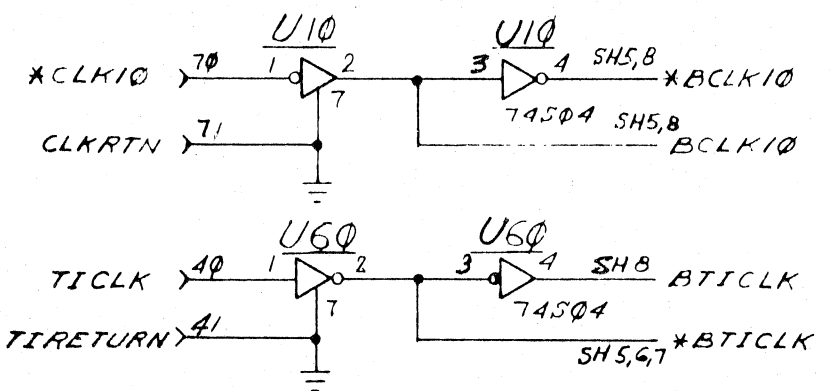
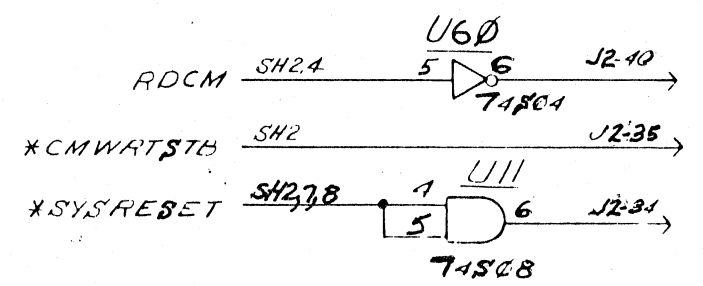
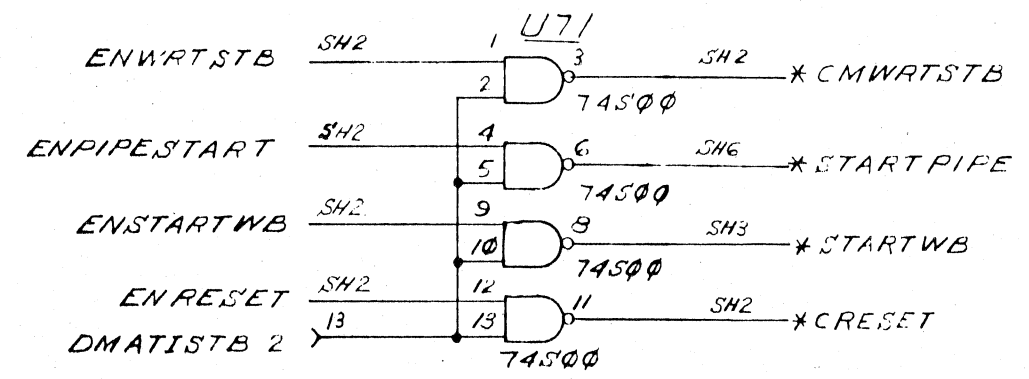
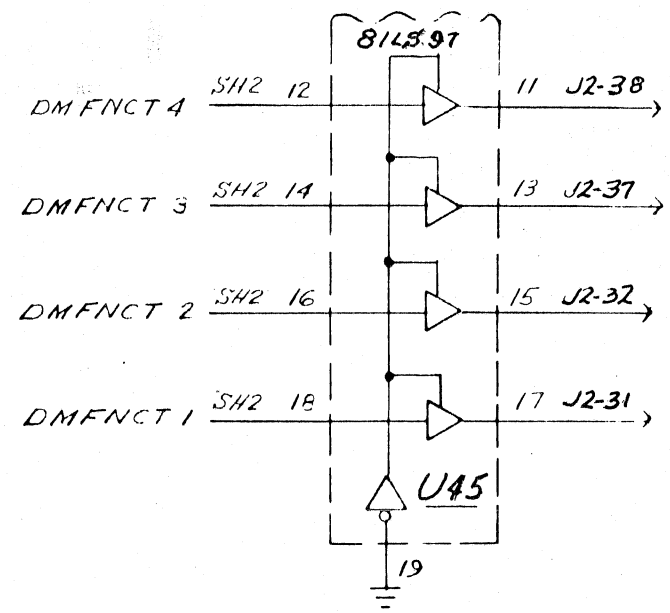
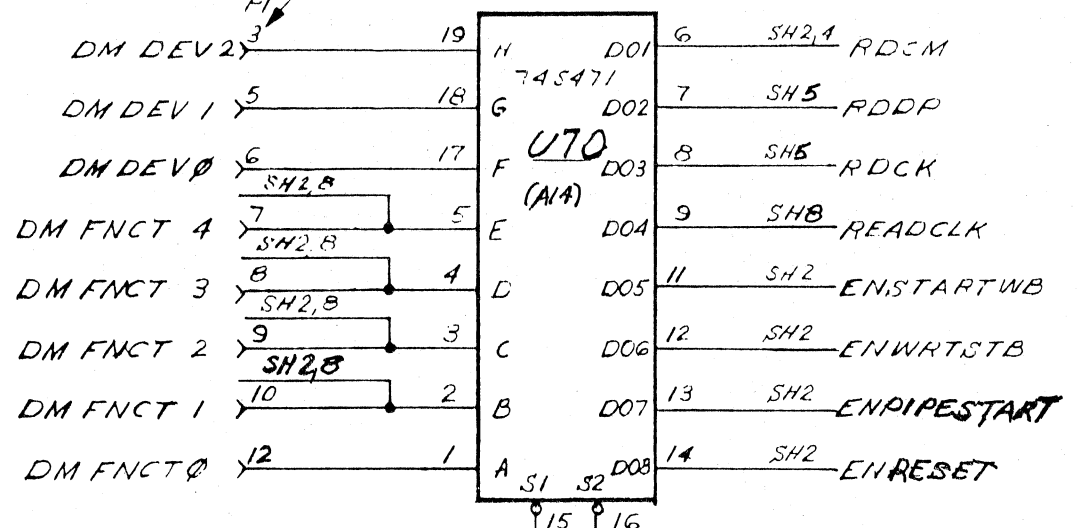
SEE SEPARATE PARTS LIST	
ES EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
INPUT CONTROL CABLE W/W	
SIZE	CODE IDENT NO
C	53938
SCALE NONE	SHEET 1 OF 8

REV	A4
REV	A4

B200106-600A

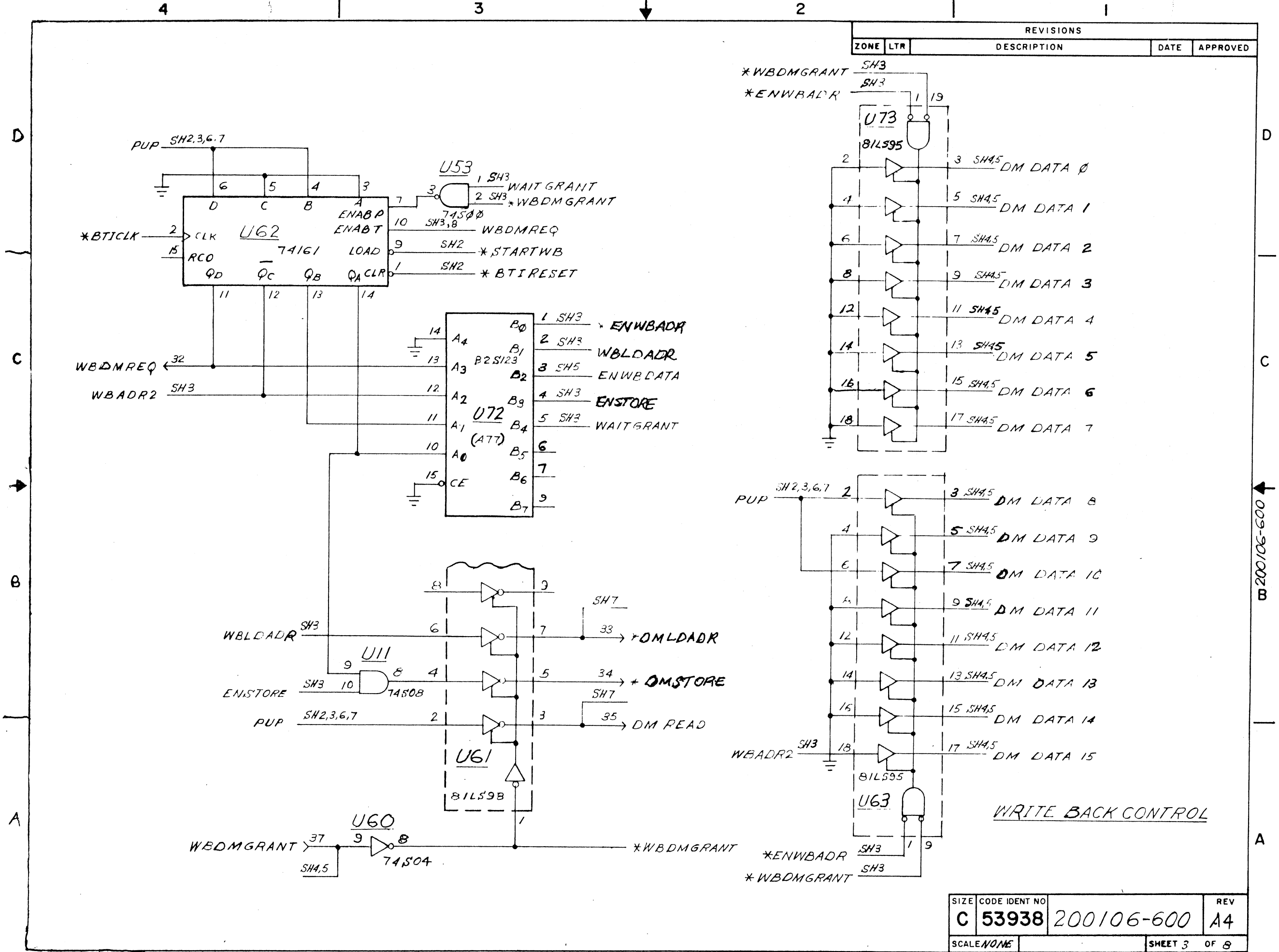
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A3		CHANGED SLITS 6 & 7	PH 10-20-81	R Spain
RC1		CORRECT SCHEMATIC ERRORS	MM 7-30-84	R Spain
A4		ADDED WRITEBACK TO DM DATA φ	JLP 12-15-86	R Spain

SEE NOTE 2



DMA INTERFACE AND FUNCTION DECODE

SIZE	CODE IDENT NO	REV
C	53938	200106-600
SCALE NONE	SHEET 2 OF 8	

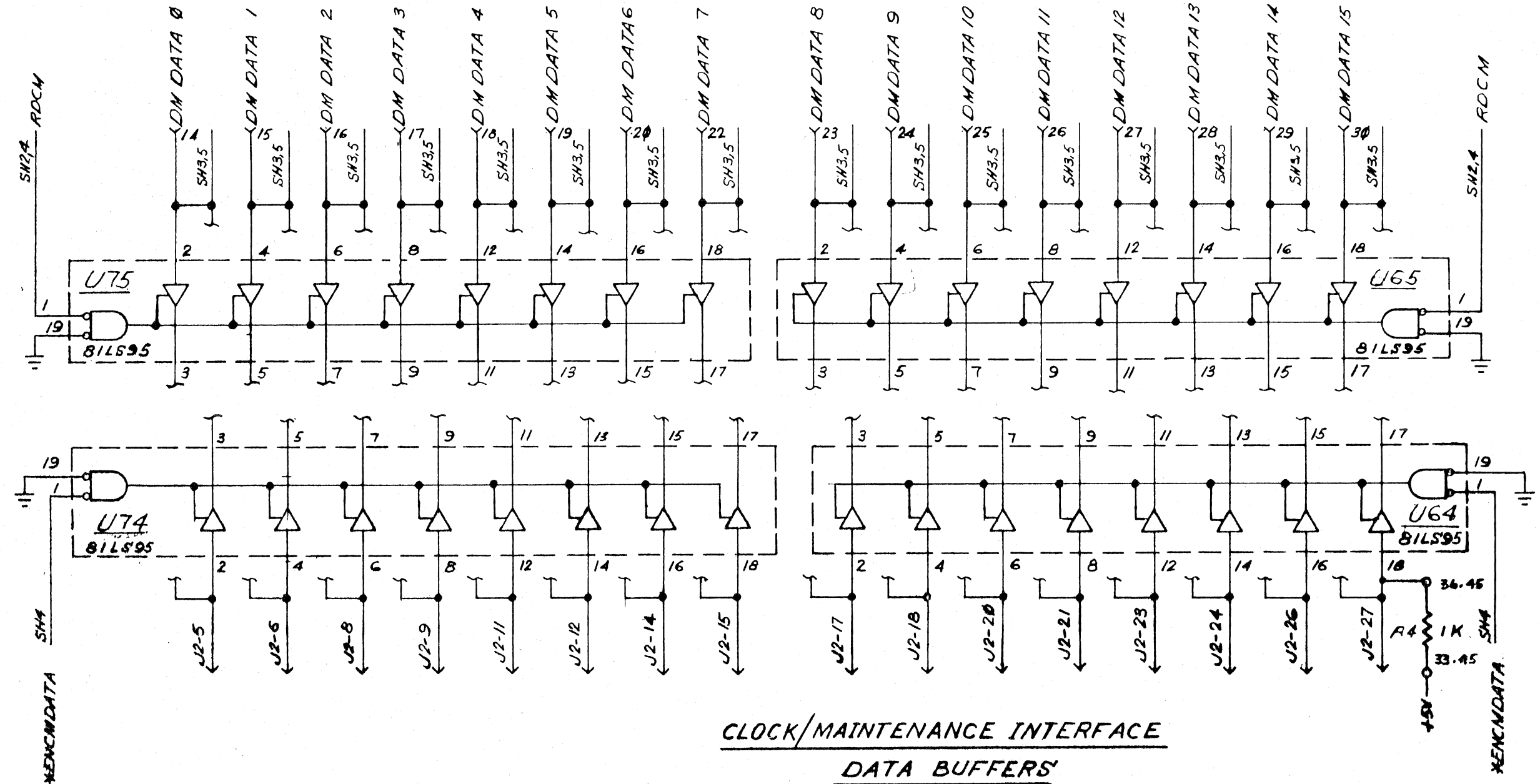


REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

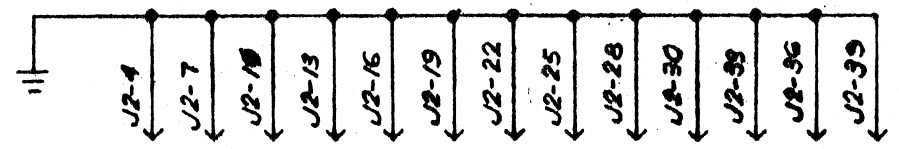
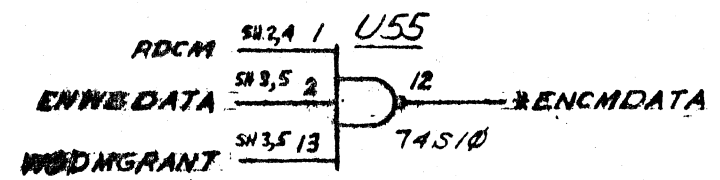
SIZE	CODE IDENT NO	REV
C	53938	A4
SCALE NONE		SHEET 3 OF 8

B 200106-600

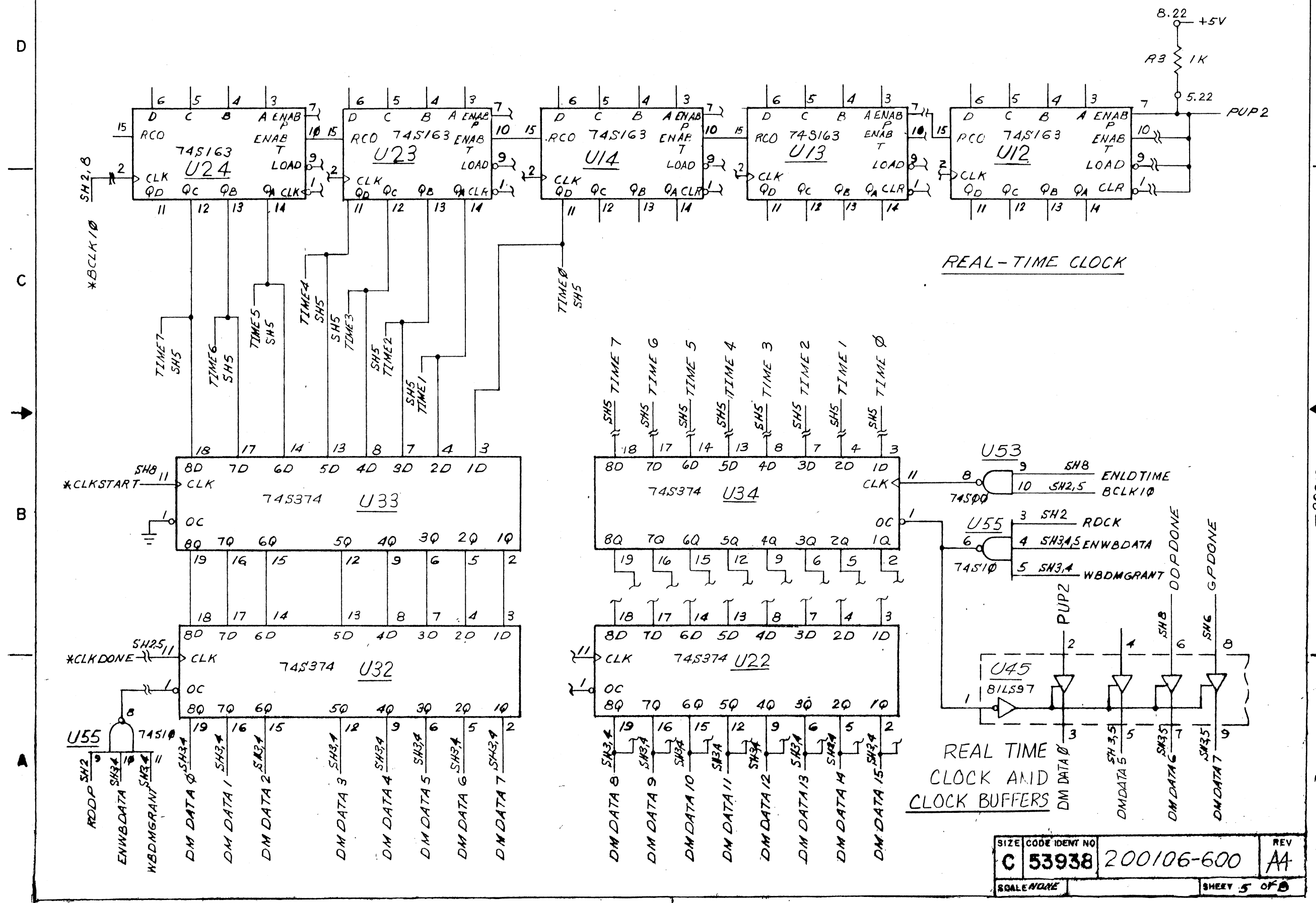
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



CLOCK/MAINTENANCE INTERFACE
DATA BUFFERS



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



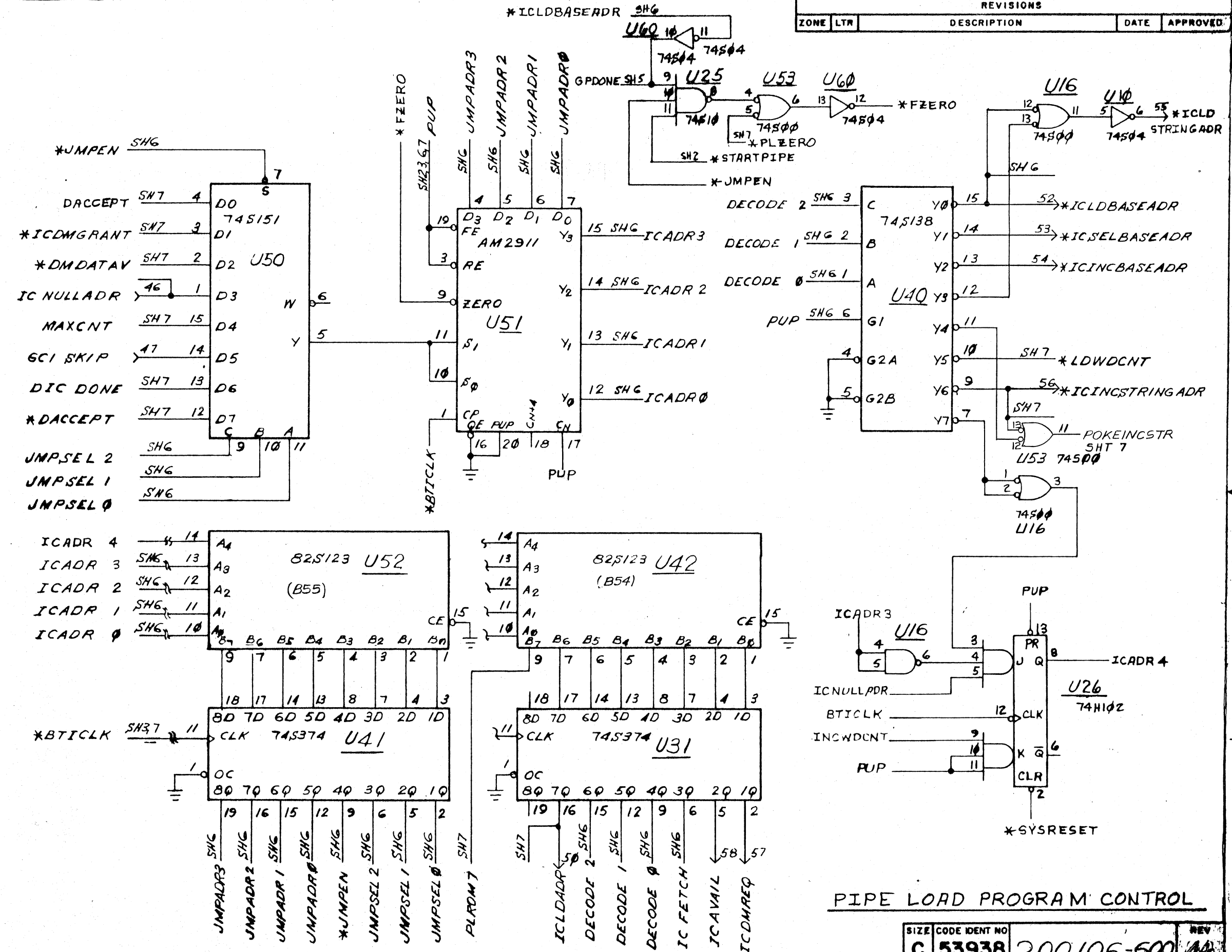
REAL-TIME CLOCK

REAL TIME
CLOCK AND
CLOCK BUFFERS

SIZE	CODE IDENT NO	REV
C	53938	AA
200106-600		SHEET 5 OF 8

200106-600

ZONE		REVISIONS		DATE	APPROVED
LTR	DESCRIPTION				



PIPE LOAD PROGRAM CONTROL

SIZE	CODE IDENT NO	REV
C	53938	200106-500
SCALE NONE	SHEET 6	

4

3

2

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D

D

C

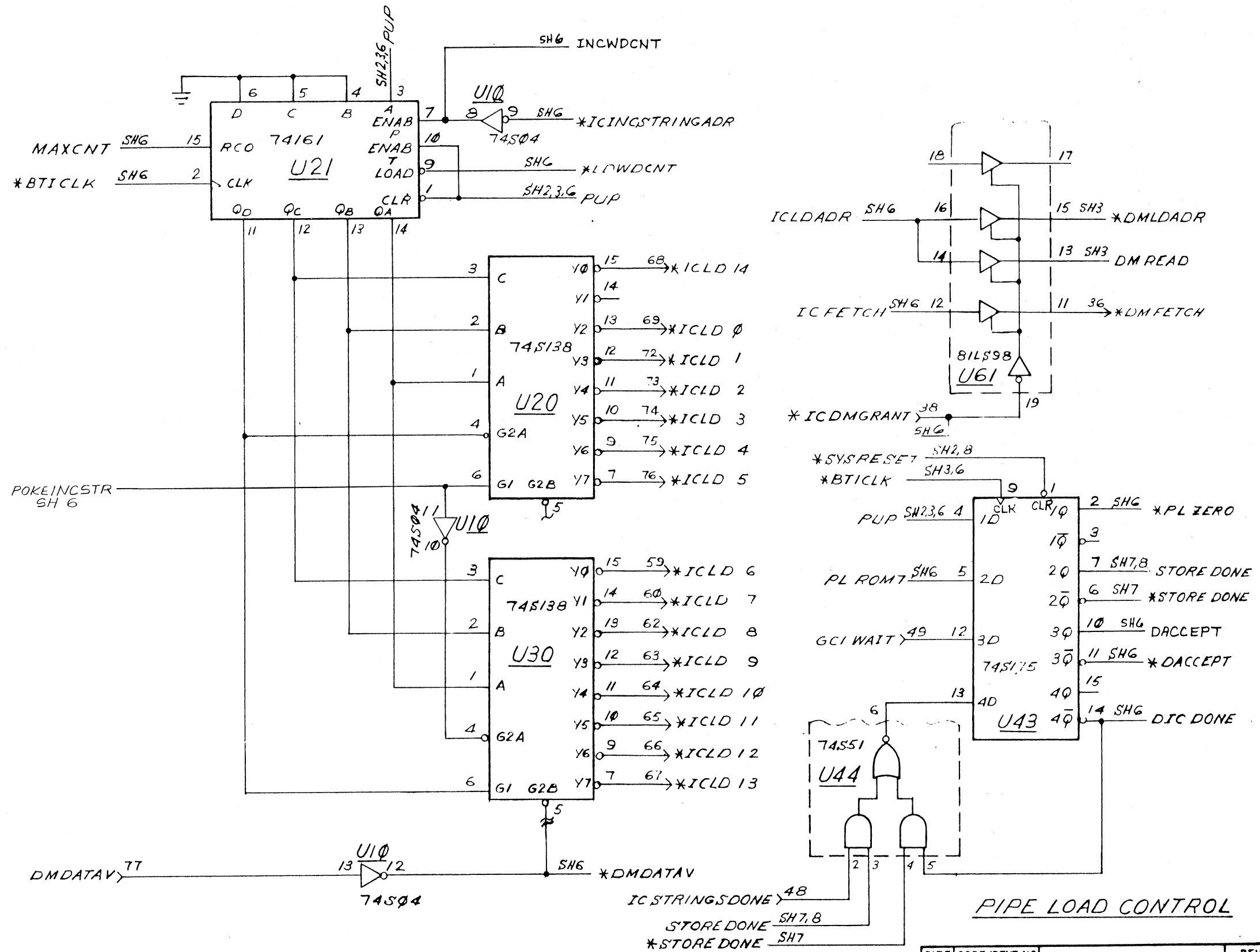
C

B

B

A

A



SIZE	CODE IDENT NO	REV
C	53938	A4
200106-600		
SCALE NONE	SHEET 7 OF 8	

B 200106-600

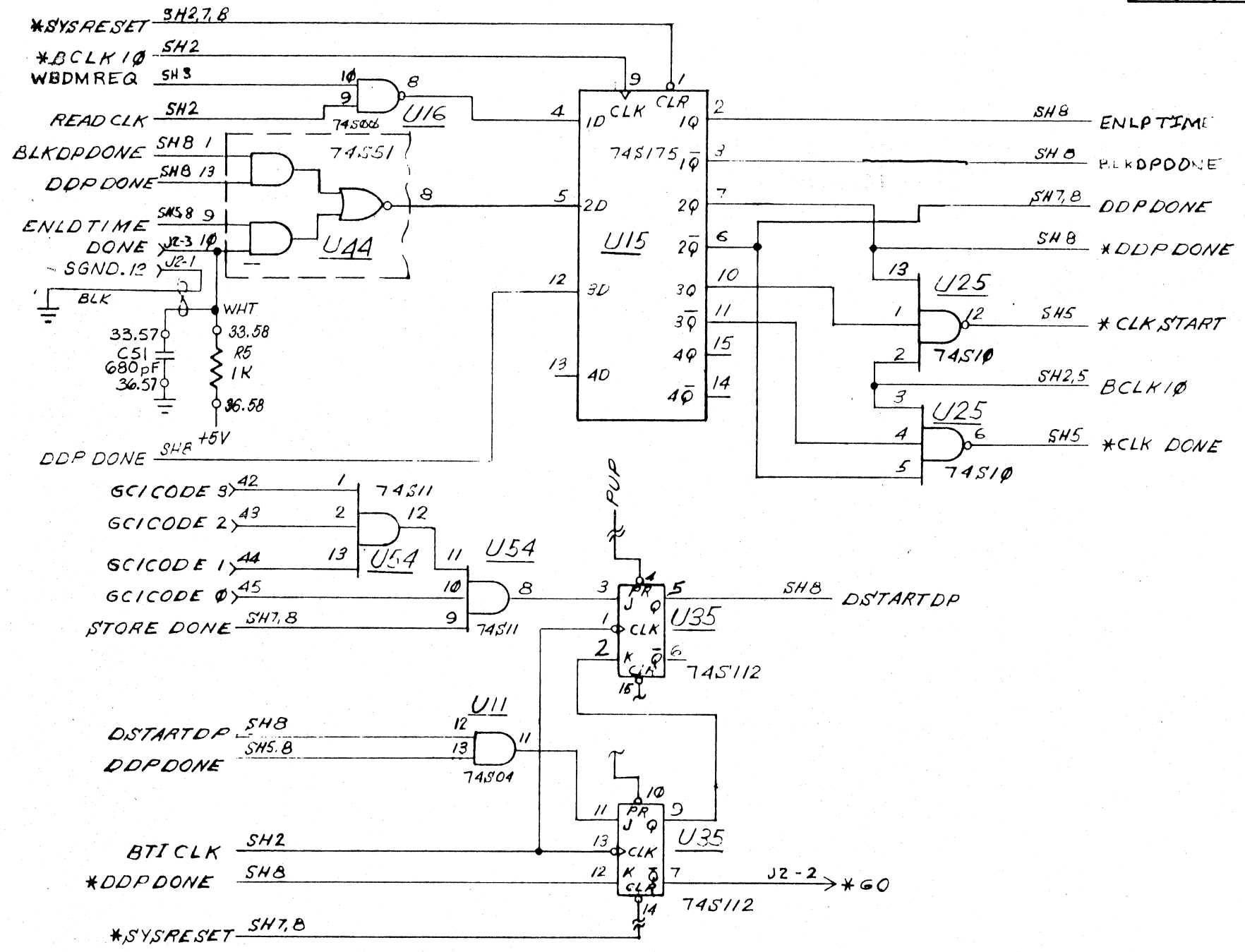
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2

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



DP FRAME TIMING
CONTROL

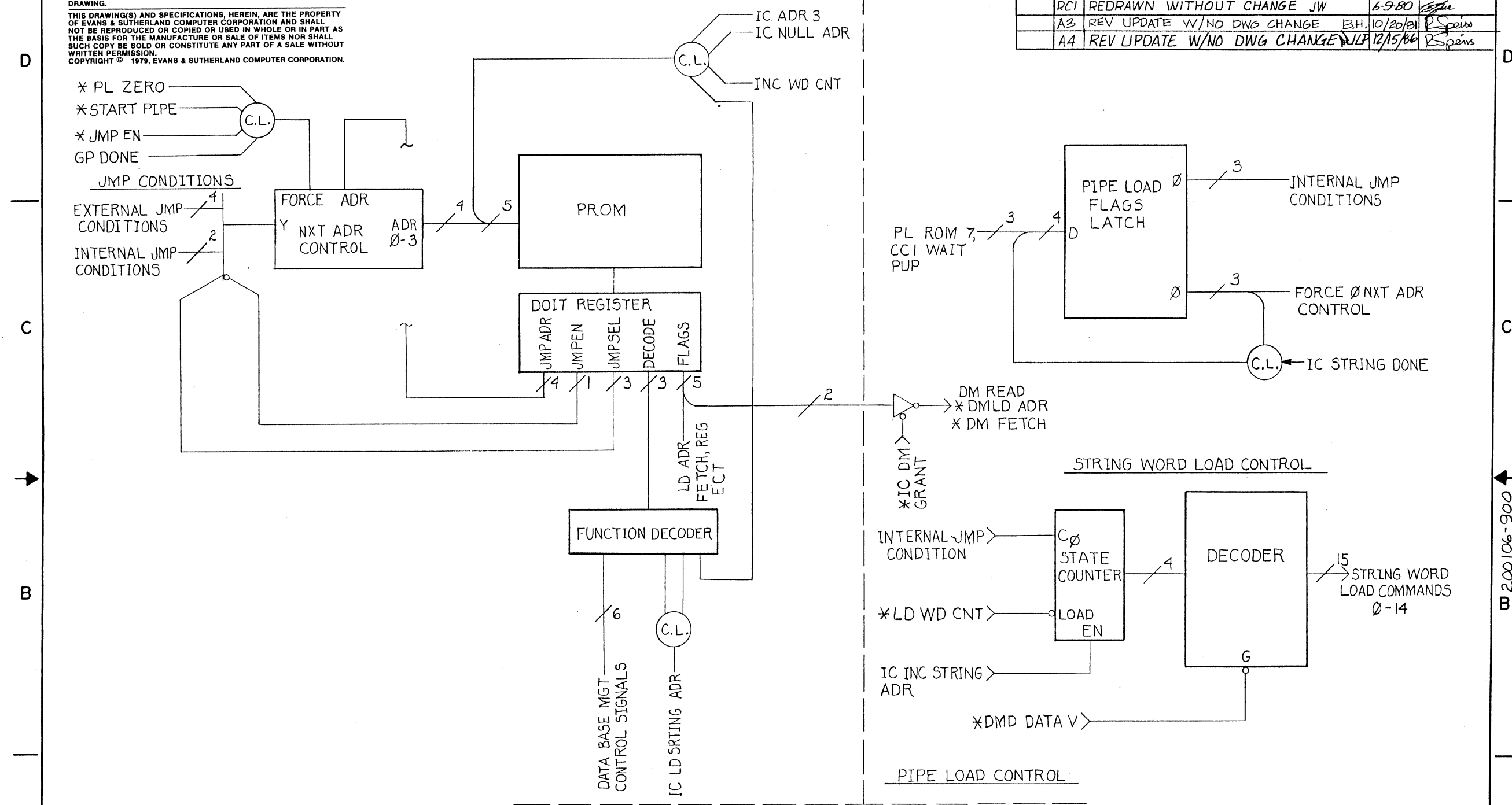
SIZE	CODE IDENT NO	REV
C	53938	200106-600
SCALE NONE	SHEET 3 OF 8	

200/06-600

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	UPDATE REV. LEVEL, NO. DWG. CHANGE JB	10-19-77	G.L. 10-20-77
	A2	REV. UPDATE ONLY, NO. DWG. CHANGE A.P.S.	8-16-78	R.S.
	RC1	REDRAWN WITHOUT CHANGE JW	6-9-80	<i>[Signature]</i>
	A3	REV UPDATE W/NO DWG CHANGE B.H.	10/20/81	<i>[Signature]</i>
	A4	REV UPDATE W/NO DWG CHANGE WLP	12/15/86	<i>[Signature]</i>



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
 .xx ± _____
 .xxx ± _____
 ANGLES ± _____
 ✓

DRAWN D.C.	8-9-77
CHECKED A.C.	8-13-77
MECH.	
ELEC.	
PROJ. ENG. G.L.	8-31-77
APPROVED	

EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108			
INPUT CONTROL, CABLE W/W (BLOCK DIAGRAM)			
SIZE	CODE IDENT NO	REV	
C	53938	200106-900	A4
SCALE NONE	DO NOT SCALE	SHEET 1	OF 3

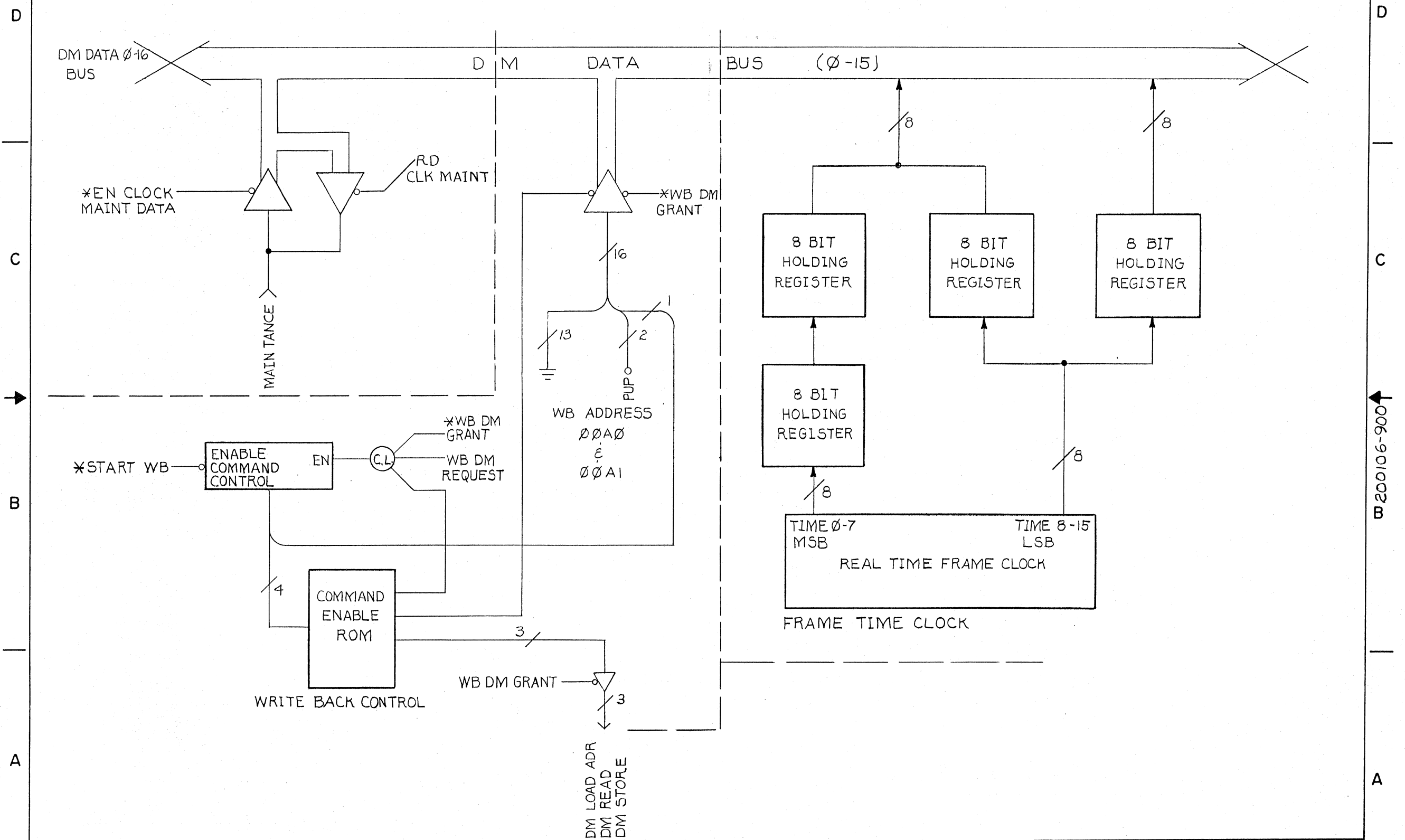
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3

2

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



1006-901002 B

SIZE	CODE IDENT NO	REV
C	53938	A4
200106-900		
SCALE NONE	SHEET 2 OF 3	

4

3

2

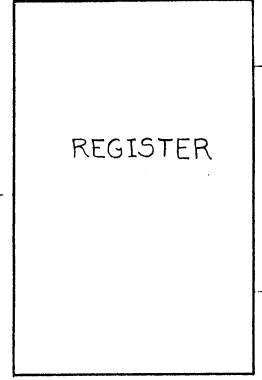
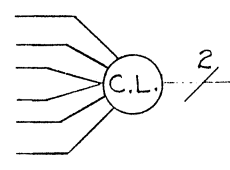
1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D
C
B
A

D
C
B
A

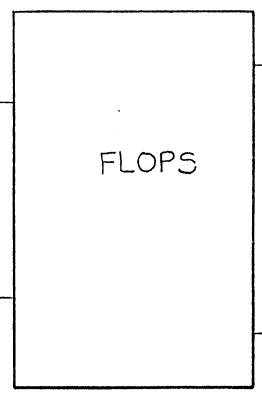
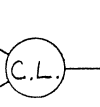
READ CLK
WB DM REQ
BLK DP DONE
D DP DONE
EN LD TIME
DONE



3 DP FRAME
TIMING CONTROL

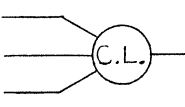
3 * CLK START & DONE

GCI CODES (0-3) 4
STORE DONE



D START DP

D START DONE
D DP DONE
* D DP DONE

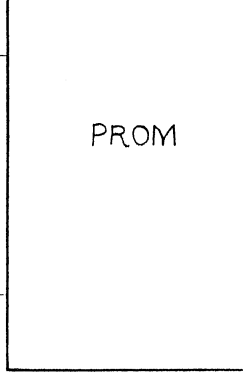


* GO

DP FRAME TIMING CONTROL

FUCTION DECODE

DEVICE 0-2 3

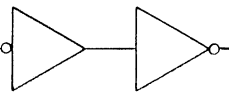


ATI STB2
ATI COMMAND

FUNCTION ENABLES

FUNCTION 0-4 5

10 MHZ CLOCK
4 MHZ CLOCK
RESETS



CLOCKS
SYSTEM RESET

DMA I/F & FUCTION DECODE

SIZE	CODE IDENT NO	REV
C	53938	A4
200106-900		
SCALE NONE	SHEET 3 OF 3	

200106-900



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200107-103

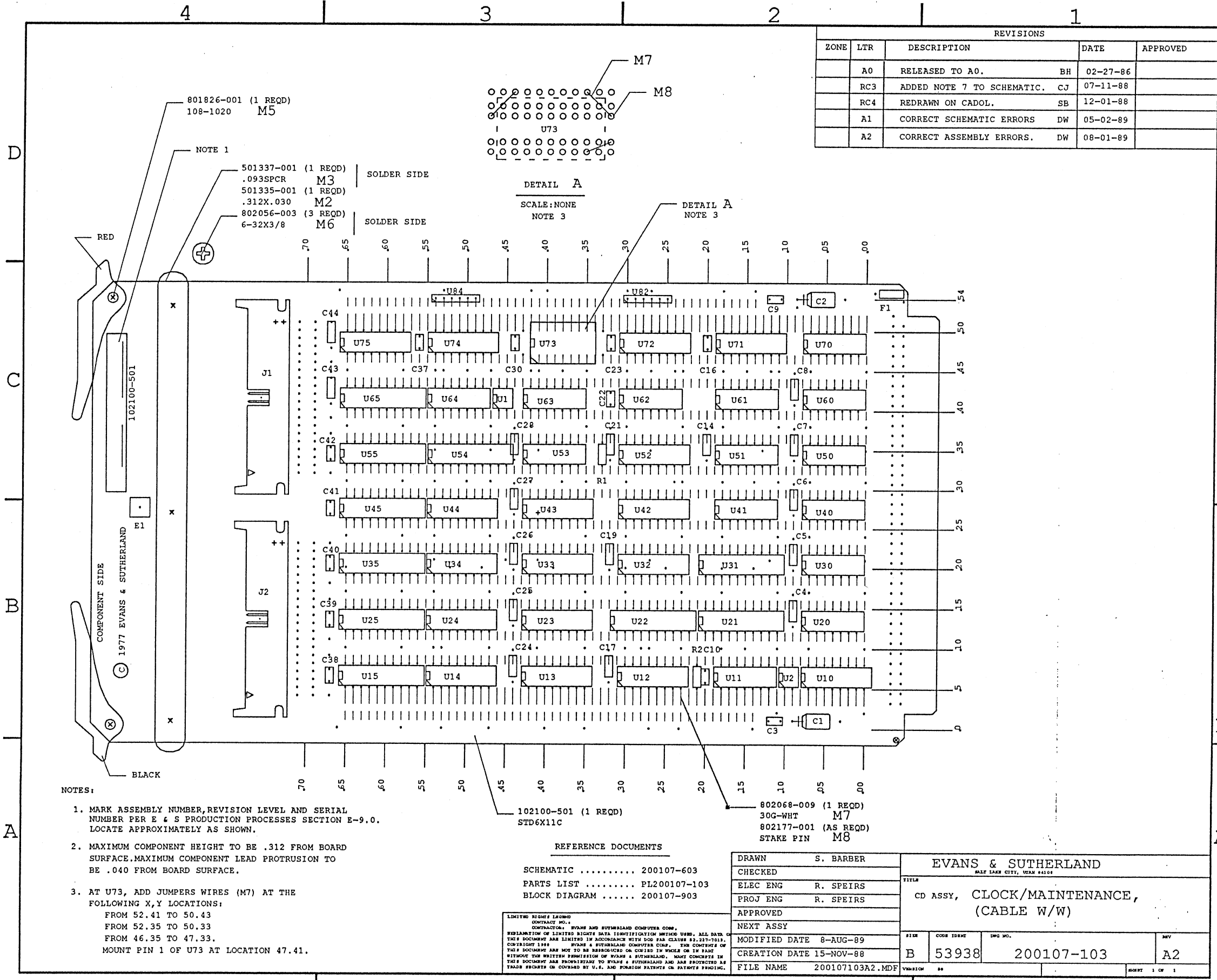
REV: A2 = AC

DESC: CARD ASY,CLOCK MAINTENANCE CARD (CABLE W/W)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD,WWCN STD6X11C	53938	EVANS & SUTHERLAND.	102100-501	102100-501	1
C3 C9 C10 C16 C22 C23 C30	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C37 C38 C39 C40 C41 C42	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	13
C4 C5 C6 C7 C8 C14 C17 C19	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	16
C21 C24 C25 C26 C27 C28 C43						
C44						
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
J1 J2	CN,HOUS 40P,RTA	53387	MINN. MINING & MFG.EP DIV	3495-1002	801860-040	2
M2	HW,SPCR .312X.030	53938	EVANS & SUTHERLAND.	501335-001	501335-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M5	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M6	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8(SM-P-PH-Z)	802056-003	3
M7	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
M8 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	1000
M9	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
R1	R,,AXL 330 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF331J	803201-331	1
R2	R,,AXL 1K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	1
U1 U2	SW,DIP 2 SWITCH	00779	AMP INC.	2-435668-6(435668-1)	801780-001	2
U10 U13	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-A58	807739-055-A58	2
U11	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
U12	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-A59	807739-055-A59	1
U14 U23 U32 U33 U42 U43	IC,TTL DM8542N	27014	NATIONAL SEMICONDUCTOR	DM8542N (DSCONTD)	807724-646	6
U15 U21 U31 U35 U45 U55 U65	IC,TTL 81LS97	27014	NATIONAL SEMICONDUCTOR	DM81LS97 (A)N/J	807795-055	7
U20 U64	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	2
U22	IC,PROM,BIP,256X8,TS,	53938	EVANS & SUTHERLAND.	807808-016-B18	807808-016-B18	1
U24 U34 U44	IC,TTL 93S16	34335	ADVANCED MICRO DEVICES IN	93S16PC	807616-055	3
U25 U54	IC,TTL 74S299	27014	NATIONAL SEMICONDUCTOR	DM74S299N-A+	807737-055	2
U30 U40 U50 U60	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	4
U41 U61	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	2
U51 U53 U70	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	3
U52	IC,TTL 74S175	01295	TEXAS INSTR, SEMICON DIV.	SN74S175N	807617-055	1
U62	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U63	IC,TTL #74S05	01295	TEXAS INSTR, SEMICON DIV.	SN74S05N/J	807405-055	1
U71	DL,TTL 21216-50	01961	VARIAN ASSOCIATES INC.	PE-21216	806330-055	1
U72	IC,TTL 74S112	18324	SIGNETICS CORP. MILITARY	N74S112N	807612-055	1
U73	IC,OSC XO43A20M	91637	DALE ELECTRONICS INC	XO-43A-20.0MHZ	801754-001	1
U74	IC,TTL 74155	01295	TEXAS INSTR, SEMICON DIV.	SN74155N	807655-446	1
U75	IC,TTL 74S85	01295	TEXAS INSTR, SEMICON DIV.	SN74S85N	807685-055	1
U82 U84	R,,SIP 1K(R5)	1U696	STACKPOLE COMPONENTS CO	6-5-5-102G (SIP)	807517-102	2

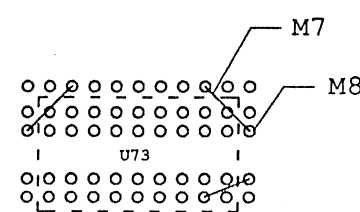
38 ITEMS LISTED

1990 1111



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0.	BH 02-27-86	
	RC3	ADDED NOTE 7 TO SCHEMATIC.	CJ 07-11-88	
	RC4	REDRAWN ON CADOL.	SB 12-01-88	
	A1	CORRECT SCHEMATIC ERRORS	DW 05-02-89	
	A2	CORRECT ASSEMBLY ERRORS.	DW 08-01-89	

- 801826-001 (1 REQD)
108-1020 M5
- NOTE 1
- 501337-001 (1 REQD)
.093SPCR M3 | SOLDER SIDE
- 501335-001 (1 REQD)
.312X.030 M2
- 802056-003 (3 REQD)
6-32X3/8 M6 | SOLDER SIDE



- 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.
 - AT U73, ADD JUMPERS WIRES (M7) AT THE FOLLOWING X,Y LOCATIONS:
FROM 52.41 TO 50.43
FROM 52.35 TO 50.33
FROM 46.35 TO 47.33.
MOUNT PIN 1 OF U73 AT LOCATION 47.41.

- REFERENCE DOCUMENTS
- SCHEMATIC 200107-603
 - PARTS LIST PL200107-103
 - BLOCK DIAGRAM 200107-903

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DRAWN	S. BARBER	EVANS & SUTHERLAND	
CHECKED		TITLE	
ELEC ENG	R. SPEIRS	CD ASSY, CLOCK/MAINTENANCE,	
PROJ ENG	R. SPEIRS	(CABLE W/W)	
APPROVED		FILE	REV
NEXT ASSY		B	A2
MODIFIED DATE	8-AUG-89	CODE IDENT	
CREATION DATE	15-NOV-88	200107-103	
FILE NAME	200107103A2.MDF	VERSION	00

200107-103

1997
1998

4

3

2

1

NOTES: UNLESS OTHERWISE SPECIFIED:

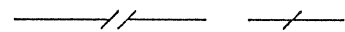
- 1. RESISTANCE VALUES ARE IN OHMS + - 1%, K DENOTES 1000.
- 2. ON ALL IC'S, GROUND AND +5V (VCC) ARE AS FOLLOWS:
 14 PIN IC, 7 AND 14
 16 PIN IC, 8 AND 16
 18 PIN IC, 9 AND 18
 20 PIN IC, 10 AND 20
 22 PIN IC, 11 AND 22
 24 PIN IC, 12 AND 24
 28 PIN IC, 14 AND 28

- 5. U73 PIN 7 IS (GROUND) PIN 1 IS POWER (+5V).
- 6. THE FOLLOWING STRING NAMES HAVE BEEN SHORTEDED FOR USE WITH CADOL:

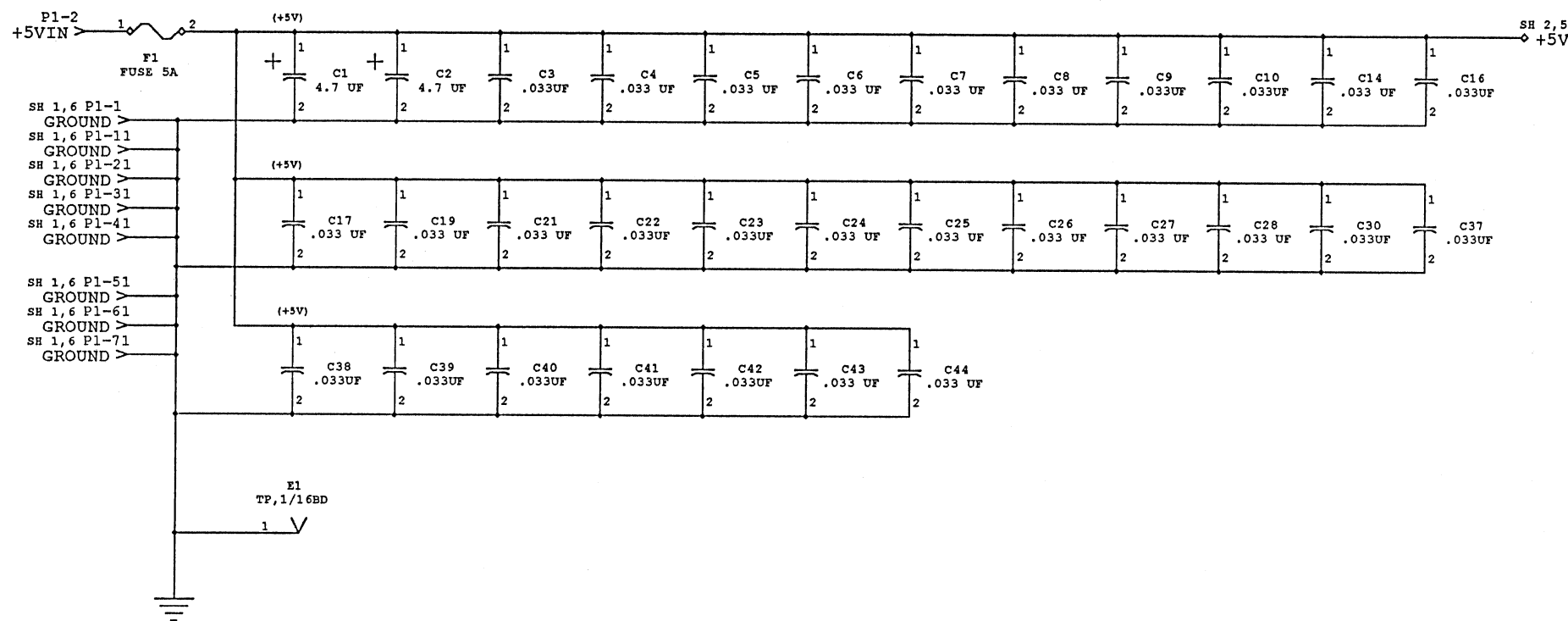
FROM	TO
*CMFORCEBLANK	*CMFORCEBLKN
*CMWRITEPULSE1	CMWRTPULSE1
*CMWRITEPULSE2	CMWRTPULSE2

- 3. CARD CONNECTOR SYMBOL "P1-" DESIGNATES:
 INPUT SIGNALS >
 OUTPUT SIGNALS <

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



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0.	BH	02-27-86
	RC3	ADDED NOTE 7	CJ	07-11-88
	RC4	REDRAWN ON CADOL.	SB	11-15-88
	A1	CORRECT SCHEMATIC ERRORS	DW	05-02-89
	A2	CORRECT SCHEMATIC ERRORS.	DW	08-01-89



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DRAWN	S. BARBER	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
CHECKED		TITLE		
ELEC ENG	R. SPEIRS	CLOCK/MAINTENANCE, (CABLE W/W)		
PROJ ENG	R. SPEIRS	APPROVED		
NEXT ASSY		SIZE	CODE IDENT	DWG NO.
MODIFIED DATE	8-AUG-89	B	53938	200107-603
CREATION DATE	15-NOV-88	VERSION	58	FC
FILE NAME	200107103A2.MDF	SHEET		1 OF 7
		REV	A2	

4

3

2

1

D

D

C

C

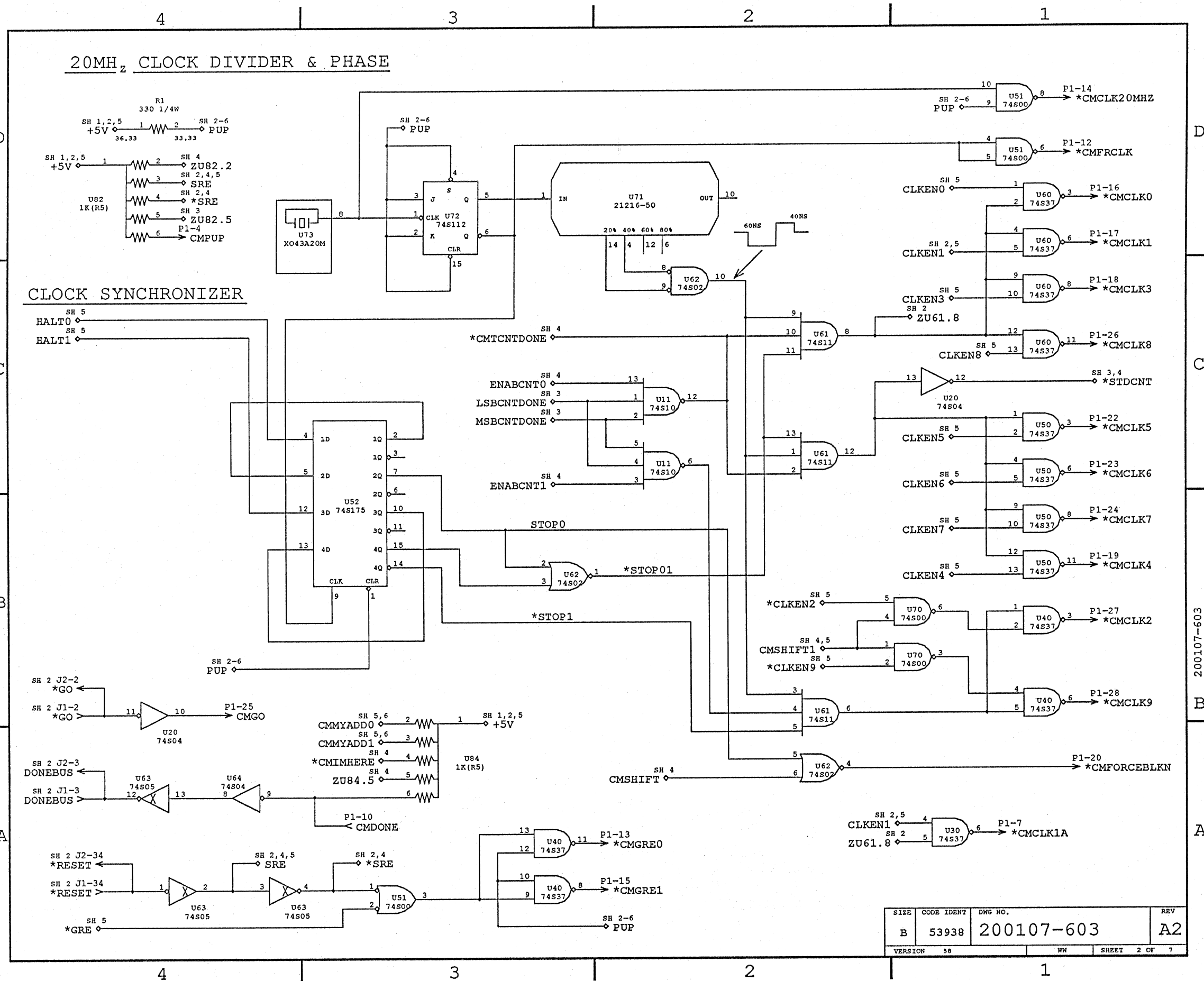
B

B

A

A

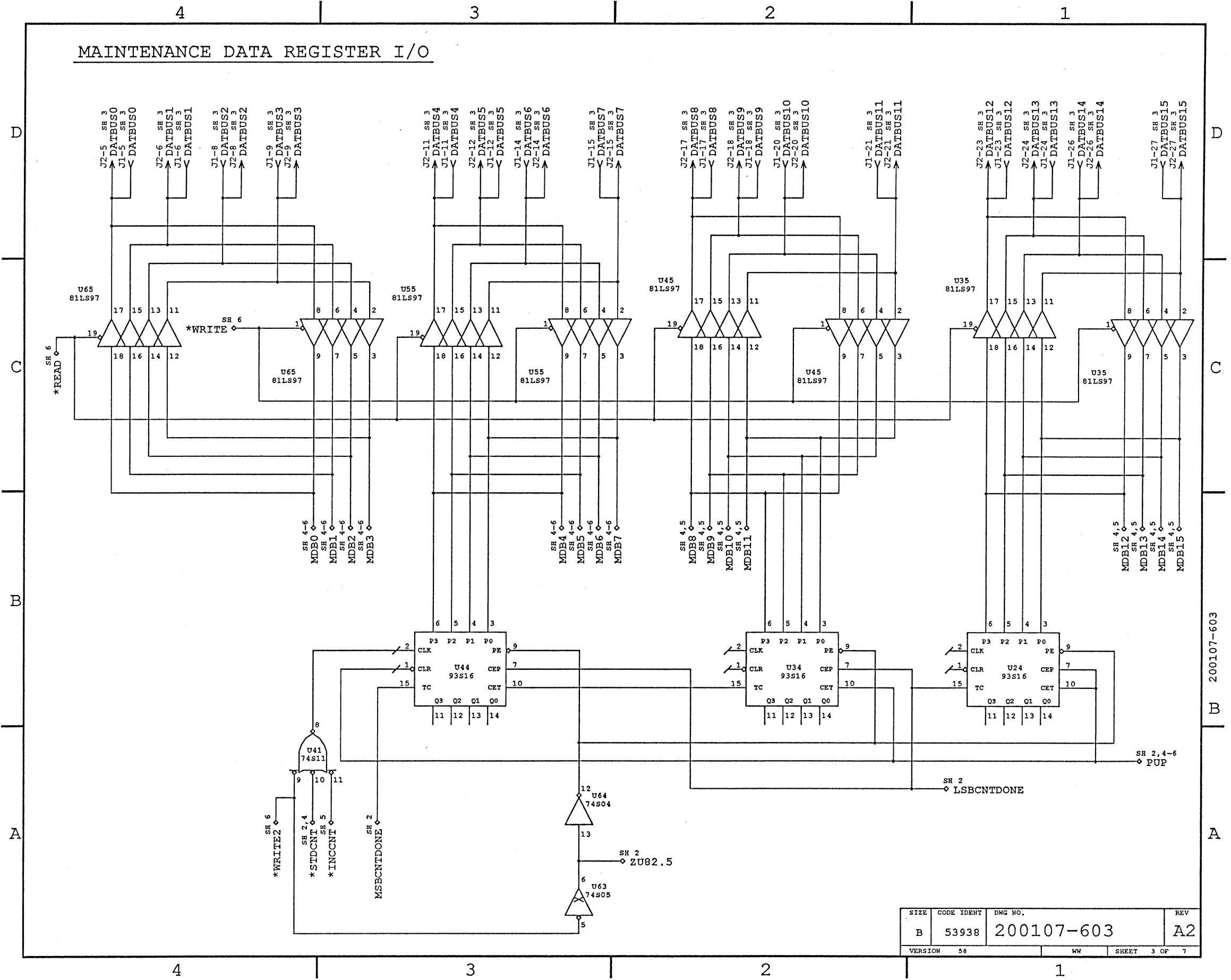
200107-603



SIZE	CODE IDENT	DWG NO.	REV
B	53938	200107-603	A2
VERSION	58	NW	SHEET 2 OF 7

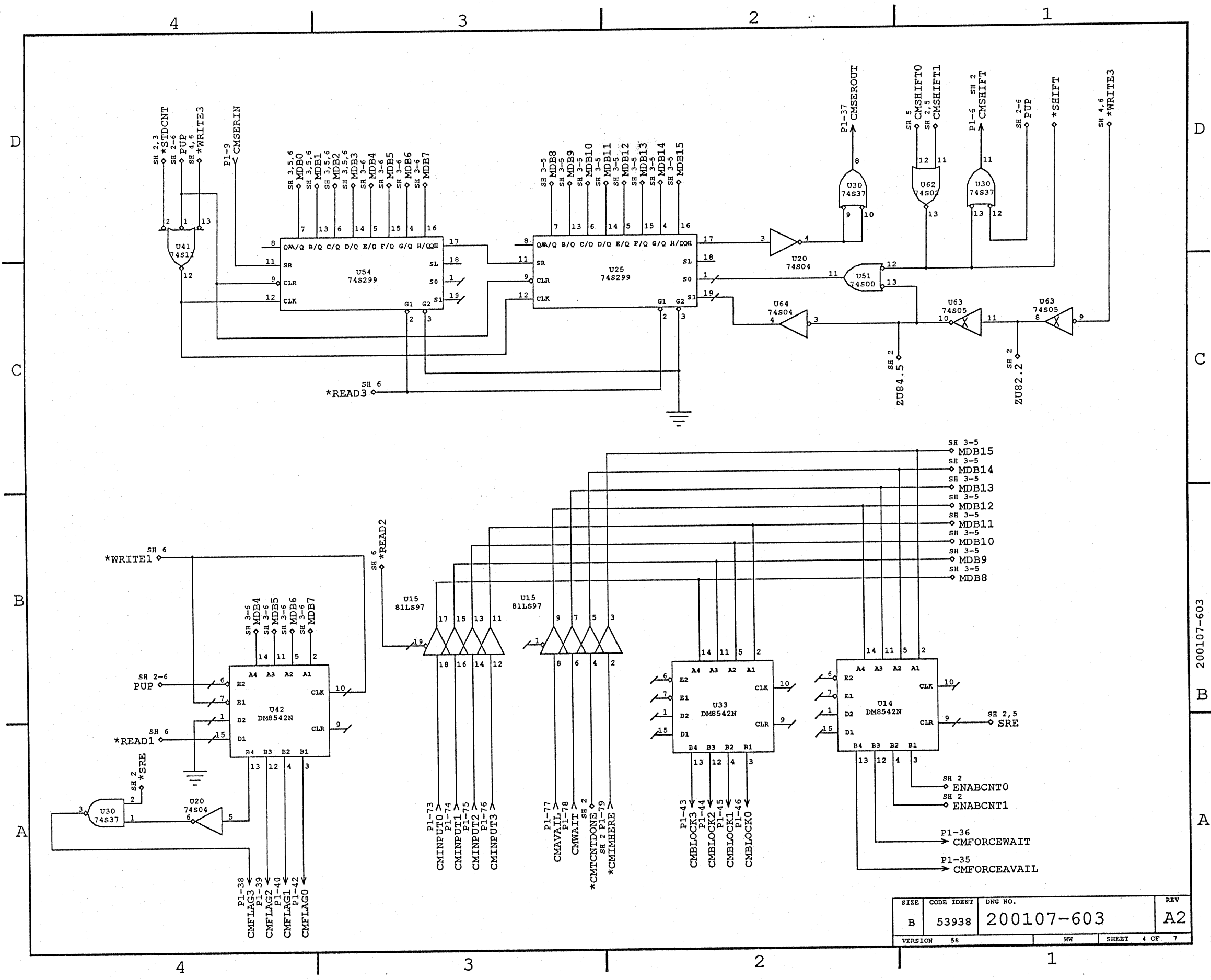
200107-603

MAINTENANCE DATA REGISTER I/O

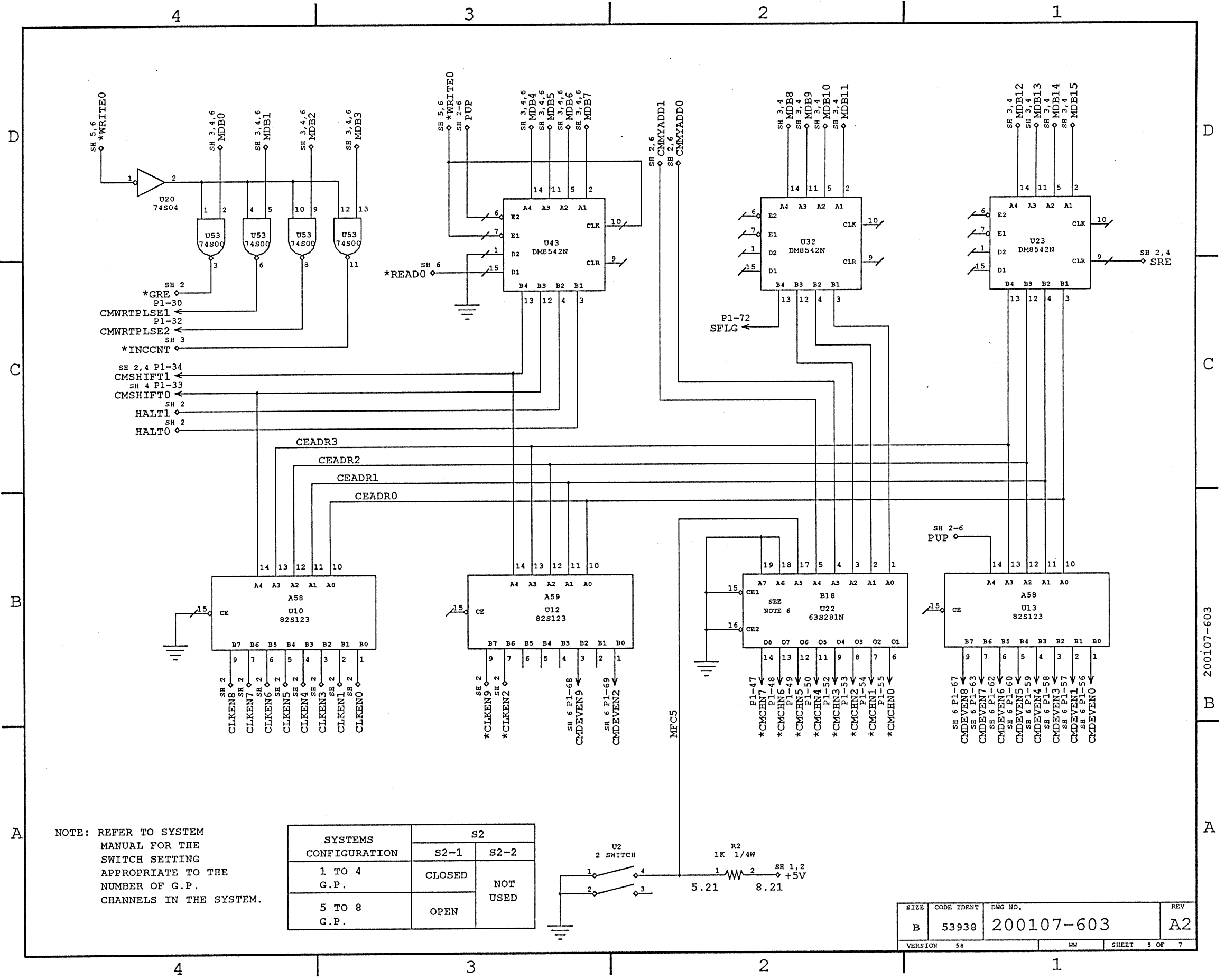


SIZE	CODE IDENT	DWG NO.	REV
B	53938	200107-603	A2
VERSION	58	WM	SHEET 3 OF 7

200107-603

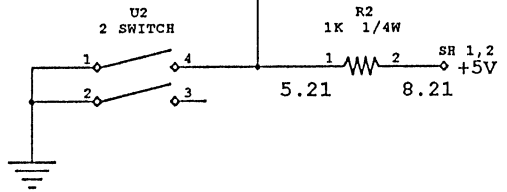


SIZE	CODE IDENT	DWG NO.	REV
B	53938	200107-603	A2
VERSION	58	HW	SHEET 4 OF 7



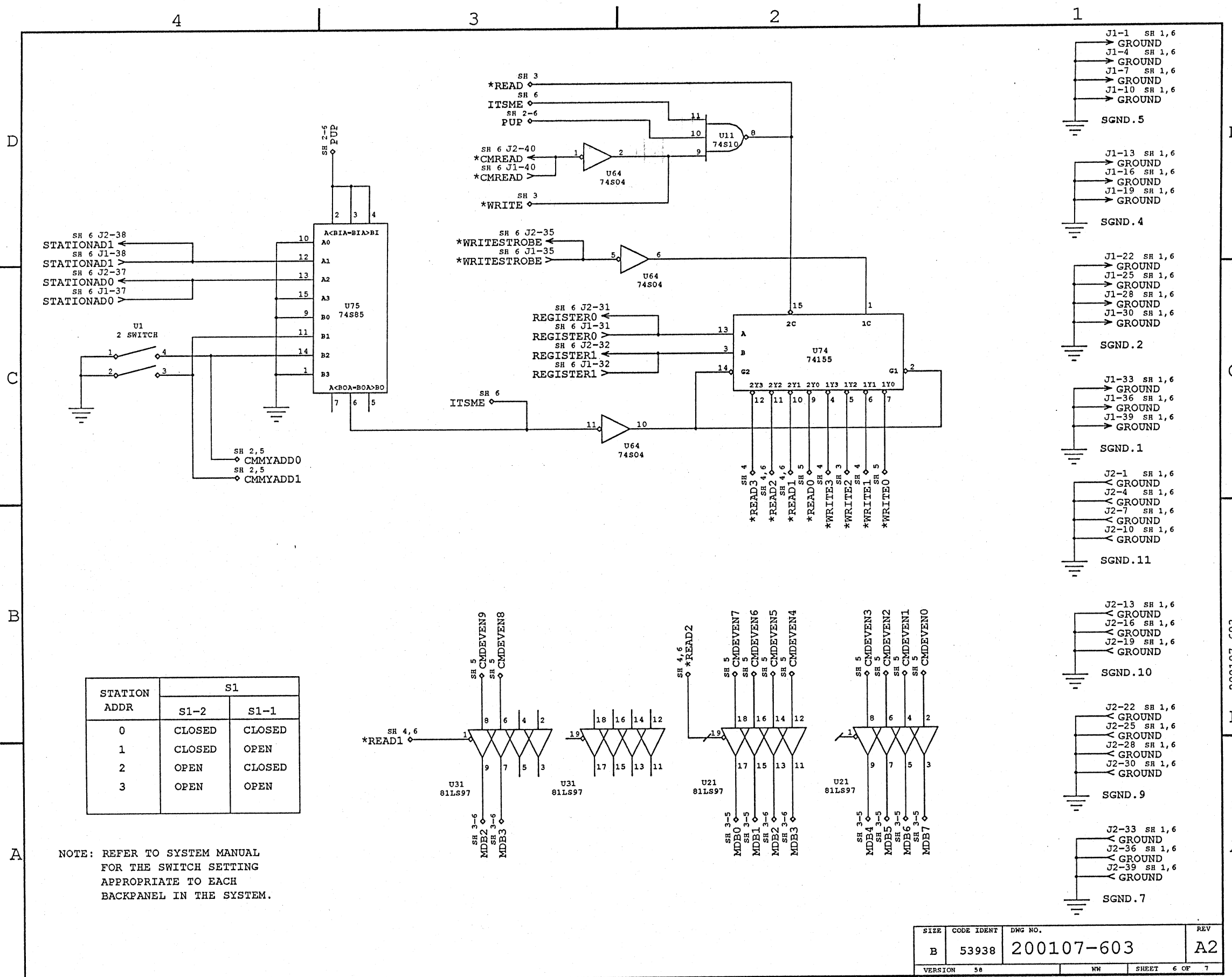
NOTE: REFER TO SYSTEM MANUAL FOR THE SWITCH SETTING APPROPRIATE TO THE NUMBER OF G.P. CHANNELS IN THE SYSTEM.

SYSTEMS CONFIGURATION	S2	
	S2-1	S2-2
1 TO 4 G.P.	CLOSED	NOT USED
5 TO 8 G.P.	OPEN	NOT USED



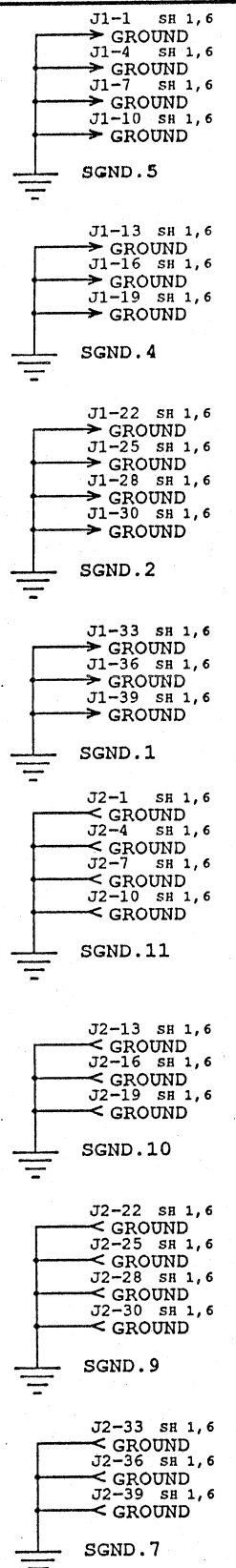
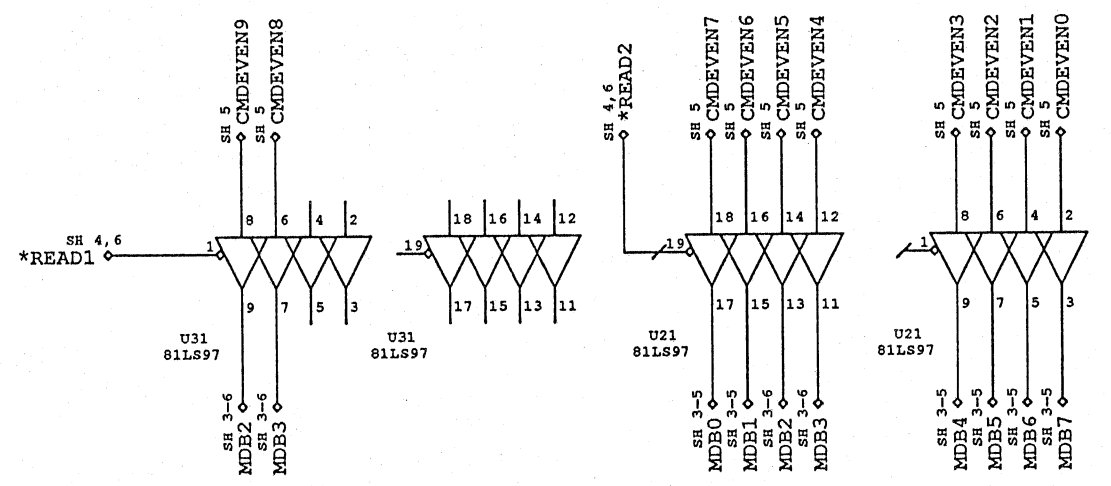
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200107-603	A2
VERSION	58	WN	SHEET 5 OF 7

200107-603



STATION ADDR	S1	
	S1-2	S1-1
0	CLOSED	CLOSED
1	CLOSED	OPEN
2	OPEN	CLOSED
3	OPEN	OPEN

NOTE: REFER TO SYSTEM MANUAL FOR THE SWITCH SETTING APPROPRIATE TO EACH BACKPANEL IN THE SYSTEM.

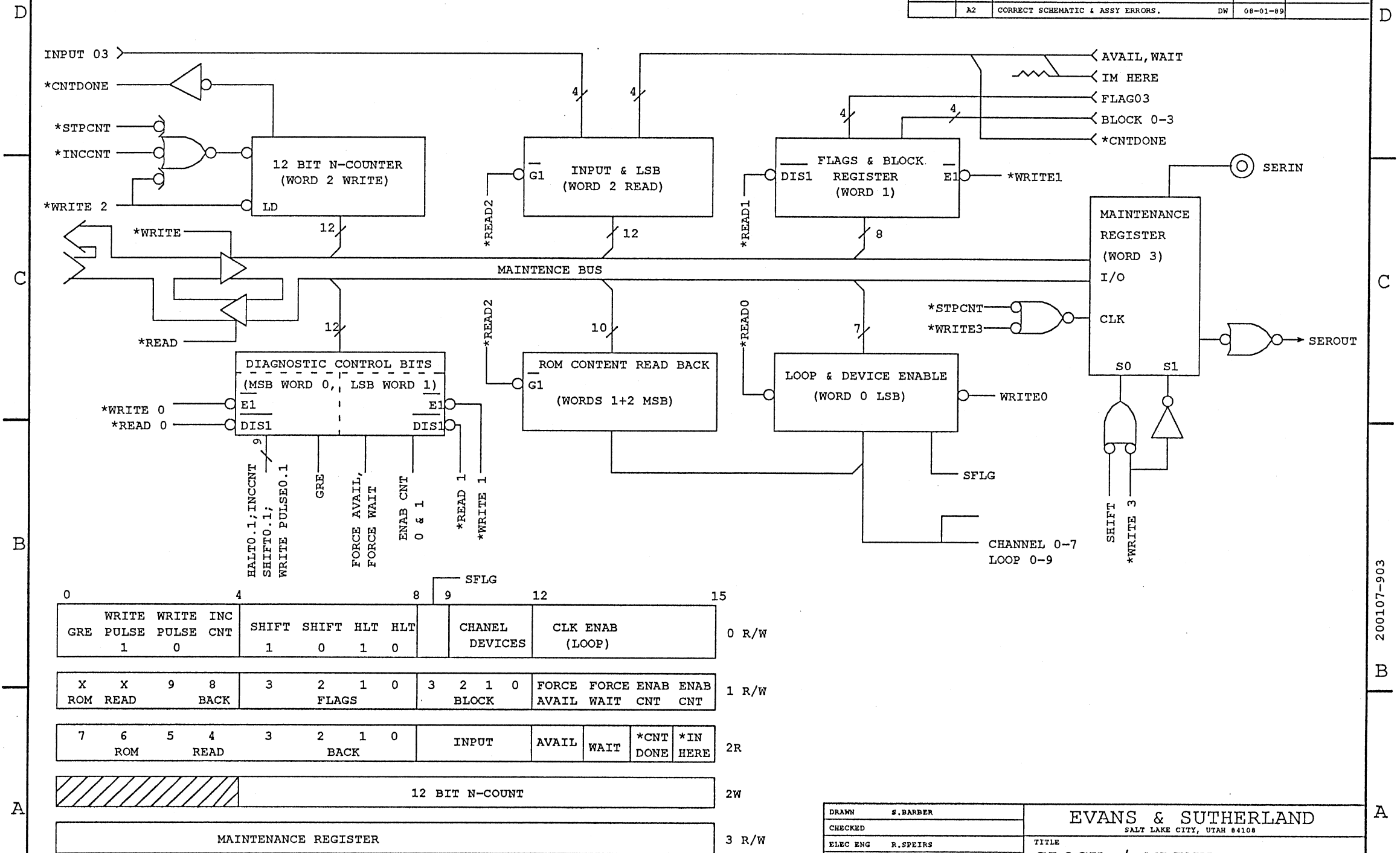


SIZE	CODE IDENT	DWG NO.	REV
B	53938	200107-603	A2
VERSION	58	WN	SHEET 6 OF 7

200107-603 B A



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	P0	ADDED -903	DS 01-04-86	
	F1		GR 01-27-86	
	A0	RELEASED TO A0	BH 02-27-86	
	RC4	REDRAWN ON CADOL.	SB 10-24-88	
	A1	CORRECT SCHEMATIC ERRORS	DW 05-02-89	
	A2	CORRECT SCHEMATIC & ASSY ERRORS.	DW 08-01-89	

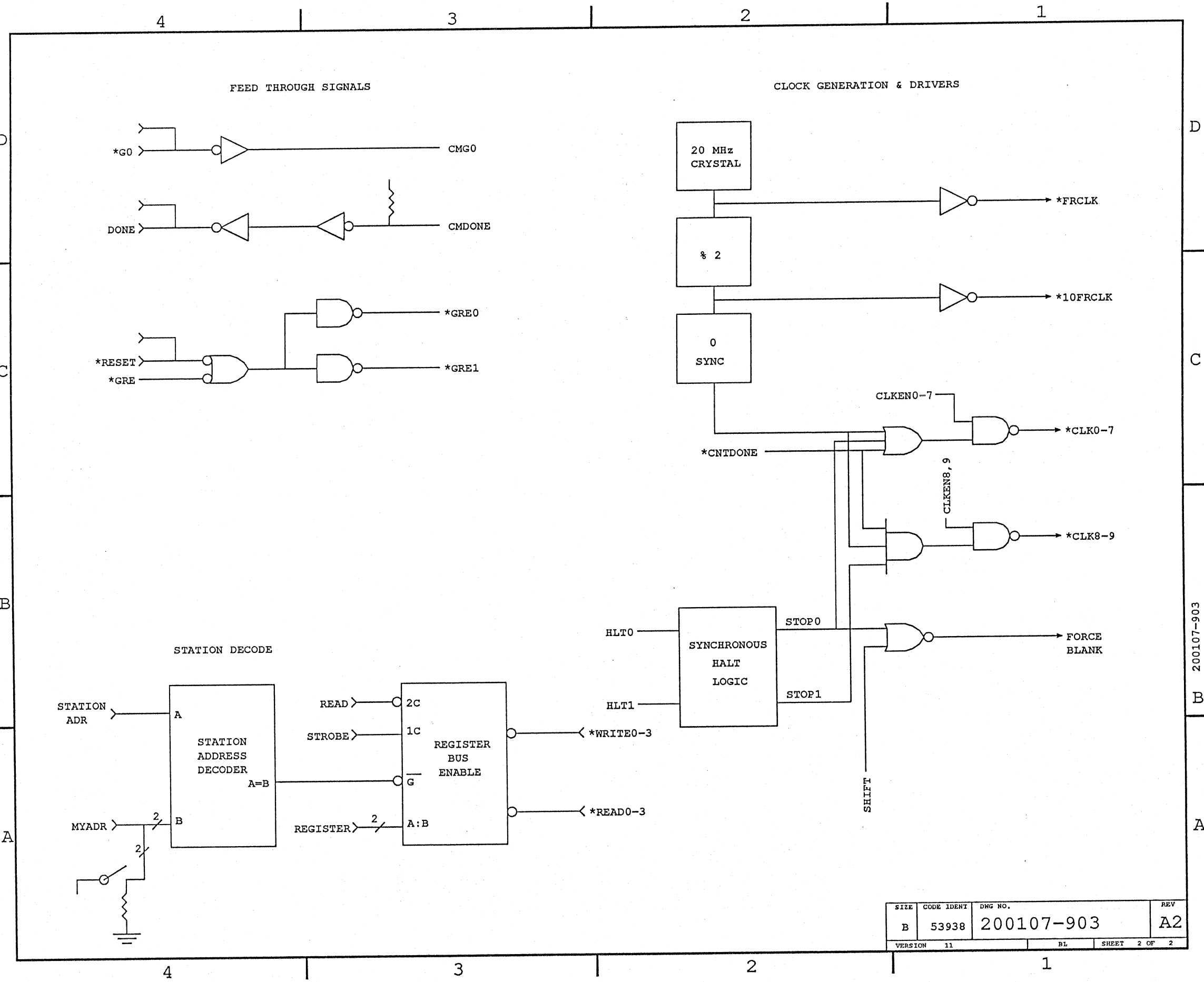


0	4	8	9	12	15								
WRITE	WRITE	INC				0 R/W							
GRE	PULSE	PULSE	CNT	SHIFT	SHIFT								
1	0			1	0								
				3	2	1	0					0 R/W	
X	X												
ROM	READ		BACK		FLAGS		BLOCK	FORCE	FORCE	ENAB	ENAB		
								AVAIL	WAIT	CNT	CNT		
7	6	5	4	3	2	1	0					2R	
	ROM		READ				BACK	INPUT	AVAIL	WAIT	*CNT	*IN	
											DONE	HERE	
12 BIT N-COUNT												2W	
MAINTENANCE REGISTER												3 R/W	

LIMITED RIGHTS LEGEND
 CONTRACT NO. 1
 CONTRACTOR: EVANS AND SUTHERLAND COMPUTER CORP.
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DRAWN S. BARBER		EVANS & SUTHERLAND	
CHECKED		SALT LAKE CITY, UTAH 84108	
ELEC ENG R. SPEIRS	TITLE		
PROJ ENG R. SPEIRS	CLOCK / MAINT		
APPROVED	(BLOCK DIAGRAM)		
NEXT ASSY 200102-100	SIZE B	CODE IDENT 53938	DWG NO. 200107-903
MODIFIED DATE 4-AUG-89	REV		A2
CREATION DATE 20-OCT-88	VERSION 11	BL	SHEET 1 OF 2
FILE NAME 200107103A2.BLO			

200107-903



SIZE	CODE IDENT	DWG NO.	REV
B	53938	200107-903	A2

VERSION 11 BL SHEET 2 OF 2

200107-903

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200108-100

REV: A9 = AK

DESC: CARD ASSY, DISK INTERFACE FLOPPY, AED, CABLE, W/W

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY	
001	BD, WWCN STD6X11C	53938	EVANS & SUTHERLAND.	102100-501	102100-501	1	
002	HW, SPCR .312X.030	53938	EVANS & SUTHERLAND.	501335-001	501335-001	1	
003	HW, SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1	
005	*SCD*EJECTOR, CRD, SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1	
006	HW, SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3	
007	HW, WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1	
009	HW, LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1	
012	HW, WIRE 30AWG TW/PR	19449	BERK-TEC INC	BTK-30-3B-D (B-W/TW)	802071-001	2	
013	HW, GLUE #495	61751	KRAZY GLUE INC.	TYPE 202 (BLUE-CAP)	802288-001	1	
	C1 C2	C,, AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
	C10 C18 C19 C20 C21 C22 C24	C,, RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	31
	C25 C26 C28 C29 C3 C4 C9 C30						
	C32 C33 C34 C35 C38 C39 C40						
	C41 C42 C43 C44 C45 C46 C49						
	C50 C36						
	C51 2.20(+) 5.20	C,, RDL 100UF	04222	A V X CERAMICS DIV.OF AVX	TMMJ-107-M-010-R	804128-107	1
	CR1 12.57(C) CR2 19.57(C)	CR, RECT 1N4148	01002	GENERAL ELECTRIC CO. CAP	1N4148	814148-001	2
010	E1	HW, TERM TP, 1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1 (.090, TURRET)	802329-001	1
011	F1	FU, PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A, AXIAL)	802375-050	1
004	J1 J2	CN, HOUS 40P, RTA	53387	MINN. MINING & MFG.EP DIV	3495-1002	801860-040	2
	R1 36.33 33.33 R2 19.9 22.9	R,, AXL 1K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	2
	R3 2.15 2.19	R,, AXL 3.3K1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF332J	803201-332	1
	R4 53.16 53.20	R,, AXL 4.7K1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF472J	803201-472	1
	SGND .3 11.67 SGND .4 16.67	HW, STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	1023
	SGND .5 18.67 SGND .6 23.67						
	SGND .7 32.67 SGND .8 37.67						
	SGND .9 39.67 SGND .10 44.67						
	45.35 45.53 45.27 0.53 0.27						
	3.09 4.09 5.09 35.09 1.15						
	1.20 1.19 4.20 54.16 54.20						
U10		IC, TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1
U20		IC, TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U21		IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-A03	807808-016-A03	1
U23 U32 U42 U52 U62 U63 U11		IC, TTL 74S174	01295	TEXAS INSTR, SEMICON DIV.	SN74S174N	807674-055	8
U22							
U24		IC, TTL 7414	18324	SIGNETICS CORP. MILITARY	N7414N	807434-636	1
U25 U35 U45 U55 U65		IC, TTL 7438	01295	TEXAS INSTR, SEMICON DIV.	SN7438N	807403-642	5
U30		IC, TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	1
U31		IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-A93	807808-016-A93	1
U33		IC, PROM, BIP, 32X8, TS, 5	53938	EVANS & SUTHERLAND.	807739-055-B72	807739-055-B72	1
U34 U54		R,, DIP 330/390R	73138	BECKMAN INDUSTRIES CORP.	898-5-R330/390	807720-391	2
U40		IC, TTL 74S151	01295	TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055	1
U41		IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-A94	807808-016-A94	1
U43 U64		IC, TTL 81LS96	27014	NATIONAL SEMICONDUCTOR	DM81LS96 (A)N/J	807810-016	2
U44		IC, TTL 74S175	01295	TEXAS INSTR, SEMICON DIV.	SN74S175N	807617-055	1
U50		IC, PROM 82S123	53938	EVANS & SUTHERLAND.	807739-017-A00	807739-017-A00	1
U51		IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-A95	807808-016-A95	1
U53		IC, PROM, BIP, 32X8, TS, 5	53938	EVANS & SUTHERLAND.	807739-055-B73	807739-055-B73	1

TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200108-100

REV: A9 = AK

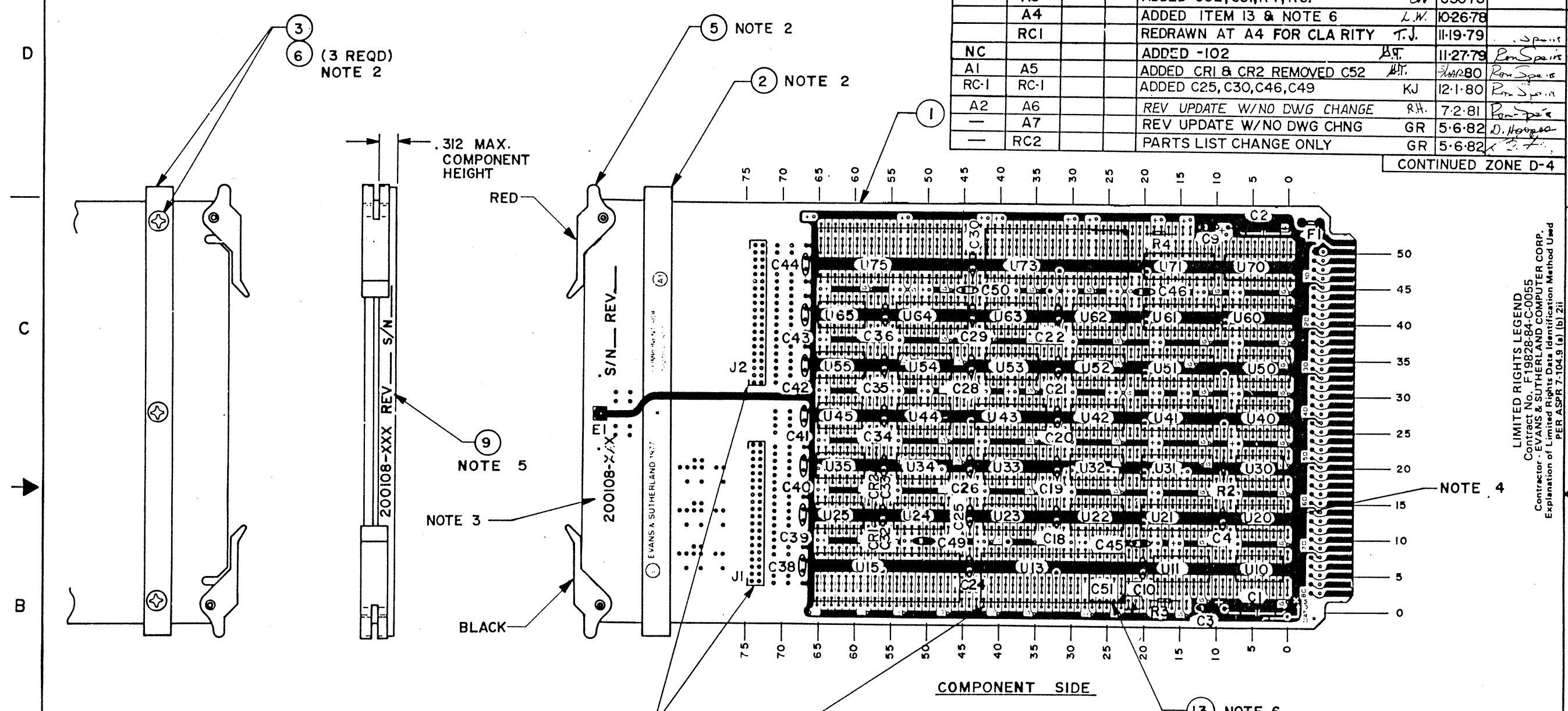
DESC: CARD ASSY, DISK INTERFACE FLOPPY, AED, CABLE, W/W

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
U60 U70	IC, TTL 2911	27014	NATIONAL SEMICONDUCTOR	AM2911ANC/DC	807806-727	2
U61	IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-A96	807808-016-A96	1
U71	IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-A97	807808-016-A97	1
U73 47.42 U75 47.65 U13 2.42	IC, MOS 2901A	27014	NATIONAL SEMICONDUCTOR	IDM2901AN/JC/DC	807301-625	4
U15 2.65						

41 ITEMS LISTED

	-102	-100	ZONE	DESCRIPTION	DATE	APPROVED
		A8		REV UPDATE W/NO DWG CHNG G.T.	11-23-82	<i>R. Spain</i>
		A9		REV UPDATE W/NO DWG CHNG S.T.	9-3-85	<i>M. Highland</i> 1/13/85

REV LEVEL FOR DASH NO.				REVISIONS		
	-102	-100	ZONE LTR	DESCRIPTION	DATE	APPROVED
		A1		REV. UPDATE W/NO DWG. CHNG.	9-8-77	<i>R. Spain</i>
		A2		" " " " " "	12-7-77	<i>85</i>
		A3		ADDED C52, C51, R4, R3.	6-30-78	<i>CW</i>
		A4		ADDED ITEM 13 & NOTE 6	10-26-78	<i>L.W.</i>
		RC1		REDRAWN AT A4 FOR CLARITY	11-19-79	<i>T.J.</i>
		NC		ADDED -102	11-27-79	<i>R. Spain</i>
	A1	A5		ADDED CRI & CR2 REMOVED C52	11-27-80	<i>R. Spain</i>
	RC-1	RC-1		ADDED C25, C30, C46, C49	12-1-80	<i>R. Spain</i>
	A2	A6		REV UPDATE W/NO DWG CHANGE	7-2-81	<i>R. Spain</i>
		A7		REV UPDATE W/NO DWG CHNG	5-6-82	<i>D. Horgan</i>
		RC2		PARTS LIST CHANGE ONLY	5-6-82	<i>T.J.</i>



- NOTES**
- ASSEMBLE PER E&S STANDARDS.
 - INSTALL CARD EJECTORS (ITEM 5) & SPACERS (ITEM 2 & 3) AFTER FLOW SOLDERING.
 - MARK REV LEVEL AND SERIAL NO. AND ASSY NO. APPROX AS SHOWN USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV.
 - ITEM NUMBERS ON THE DWG CORRESPOND WITH THE LOCATION DESIGNATION ON THE PARTS LIST.
 - MARK REV LEVEL AND SERIAL NO. AND ASSY NO. ON ITEM 9.

6. APPLY ITEM 13 BETWEEN C51, & U13
U73 & C52.

- REFERENCE DOCUMENTS**
- LOGIC DIAGRAM --- 200108-600/602
 - PARTS LIST----- PL 200108-100/102
 - CARD BASIC ----- 102100-501 REV A2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± ✓	DRAWN <i>M. Johnson</i> NOV. 1979		EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
	CHECKED <i>R. Spain</i> 26 NOV 79		CARD ASSEMBLY, DISK INTERFACE, FLOPPY AED, CABLE, W/W	
	MECH			
	PROJ. ENG <i>E. J. ...</i> 28 NOV 79		SIZE CODE IDENT NO.	REV SEE REV TABLE
APPROVED		C 53938	200108-TAB	
MATERIAL SEE PARTS LIST		SCALE FULL		SHEET 1 OF 1
FINISH				

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) (2)

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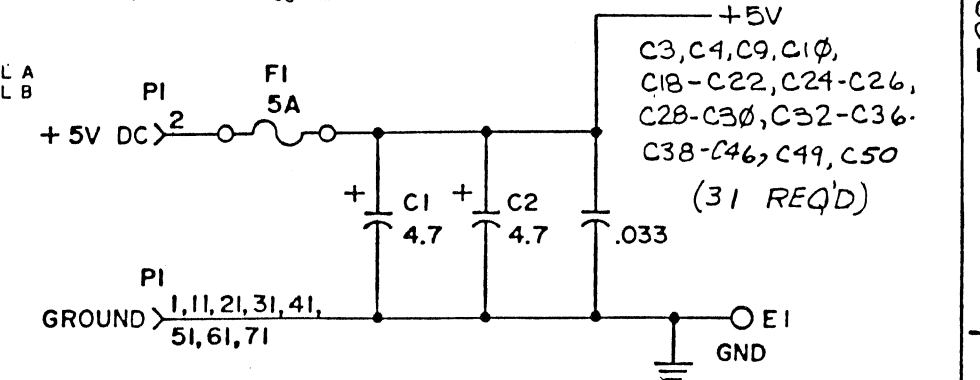


REF DESIG	E+S PART NO	VENDOR PART NUMBER	PIN #	WIRENAME	PIN #	WIRENAME	
J1			1	SGROUND6	J2	17	SGROUND10
J1			2	ZU45-3	J2	18	ZU55-6
J1			3	SGROUND6	J2	19	SGROUND10
J1			4	ZU35-3	J2	20	ZU25-11
J1			5	SGROUND6	J2	21	SGROUND10
J1			6	ZU25-6	J2	22	ZU25-8
J1			7	SGROUND5	J2	23	SGROUND9
J1			8	ZU1-8	J2	25	SGROUND9
J1			9	SGROUND5	J2	26	ZU65-11
J1			10	ZU25-3	J2	27	SGROUND9
J1			11	SGROUND5	J2	28	ZU45-8
J1			12	ZU55-11	J2	29	SGROUND6
J1			13	SGROUND4	J2	30	ZU35-11
J1			14	ZU1-14	J2	31	SGROUND6
J1			15	SGROUND4	J2	33	SGROUND6
J1			16	ZU65-3	J2	34	ZU35-8
J1			17	SGROUND4	J2	35	SGROUND7
J1			18	ZU55-8	J2	36	ZU35-6
J1			19	SGROUND3	J2	37	SGROUND7
J1			20	ZU34-13	J2	38	ZU45-11
J1			21	SGROUND3	J2	39	SGROUND7
J1			22	ZU65-6	J2	40	ZU65-8
J1			23	SGROUND3	P1	3	PADR0
J1			24	ZU45-6	P1	4	PADR1
J1			27	DATOUT	P1	5	PADR2
J1			28	SGROUND2	P1	6	PADR3
J1			29	DATIN	P1	7	PADR4
J1			30	STATHI	P1	8	PADR5
J1			31	CONSOLE0	P1	9	PADR6
J1			32	SGROUND2	P1	10	PADR7
J1			33	CONSOLE1	P1	12	PUSHPOP
J1			34	CONSOLE2	P1	13	*FILEENAB
J1			35	ADKCON3	P1	14	S1
J1			36	SGROUND1	P1	15	S0
J1			37	ADKCON2	P1	16	FDATA15
J1			38	ADKCON1	P1	17	FDATA14
J1			39	ADKCON0	P1	13	FDATA13
J1			40	SGROUND1	P1	19	FDATA12
J2			1	SGROUND12	P1	20	CAUR3
J2			2	CIN	P1	22	CAUR2
J2			3	INST8	P1	23	CAUR1
J2			4	INST7	P1	24	CAUR0
J2			5	SGROUND12	P1	26	FDATA11
J2			6	INST6	P1	27	FDATA10
J2			7	INST5	P1	28	FDATA9
J2			8	INST4	P1	29	FDATA8
J2			9	SGROUND11	P1	32	KAMB3
J2			10	INST3	P1	33	KAMB2
J2			11	INST2	P1	34	KAMB1
J2			12	INST1	P1	35	KAMB0
J2			13	INST0	P1	36	KAMA3
J2			15	SGROUND10	P1	37	KAMA2
J2			16	ZU55-3	P1	38	KAMA1
					P1	39	KAMA0
					P1	40	BUSSEL A
					P1	42	BUSSEL B
					P1	43	TEST

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A 1	ADDED SGND STAKING PIN TERMINALS & LOCATION POINTS.	9-14-77	20 OCT 77
	A 2	U50 WAS 807807-716. EXTENSIVE DWG CHNGS.	12-7-77	16 JAN 78
SHT7	A-4	ADDED R3, R4, C51, C52 SEE ECO.	6-30-78	RSpears
SHT4	A-4	CHANGED PIN NO'S ON U42	10-26-78	RSpears
SHT7	A-3	ADDED CRI & CR2, REMOVED C52	18 MAR 80	RSpears
	A6	CHANGED PER ECO	R.H.	7-8-81
	A7	REVISED PER ECO	GR	5-6-82
	A8	EXTENSIVE CHNGS SHT 8	D.V.	11-23-82

CONTINUED ON SHEET 2

PIN #	WIRENAME	
P1	44	DATAV
P1	45	*ACCGRANT
P1	46	*STARTD10
P1	47	AT1STAT
P1	50	FDENOUT
P1	52	*FORCEZERO
P1	53	JMPADR7
P1	54	JMPADR6
P1	55	JMPADR5
P1	56	FDATA7
P1	57	FDATA6
P1	58	FDATA5
P1	59	FDATA4
P1	60	JMPADR4
P1	62	JMPADR3
P1	63	JMPADR2
P1	64	JMPADR1
P1	65	JMPALR0
P1	66	FDATA3
P1	67	FDATA2
P1	68	FDATA1
P1	69	FDATA0
P1	72	DMREG
P1	73	LDAUR
P1	74	FETCH
P1	75	STORE
P1	77	*RESET
P1	78	COMOUT
P1	79	TICKL
P1	80	UND-U10
K1	1	FZLRO
R1	1	VCC-U52
R2	1	PUP
R2	1	VCC-U11



4. I.C. AM2901 LOCATION U13, U15, U73 & U75, PIN 30 IS GND, PIN 10 IS POWER (+5V).
3. I.C. AM2911 LOCATION U60 & U70, PIN 8 IS GND, PIN 2 IS POWER (+5V).
2. NUMBERS SHOWN REFER TO CONNECTOR P1. ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS. RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000. RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE. ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V). ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V). ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V). UNLESS OTHERWISE SPECIFIED;
- NOTES:

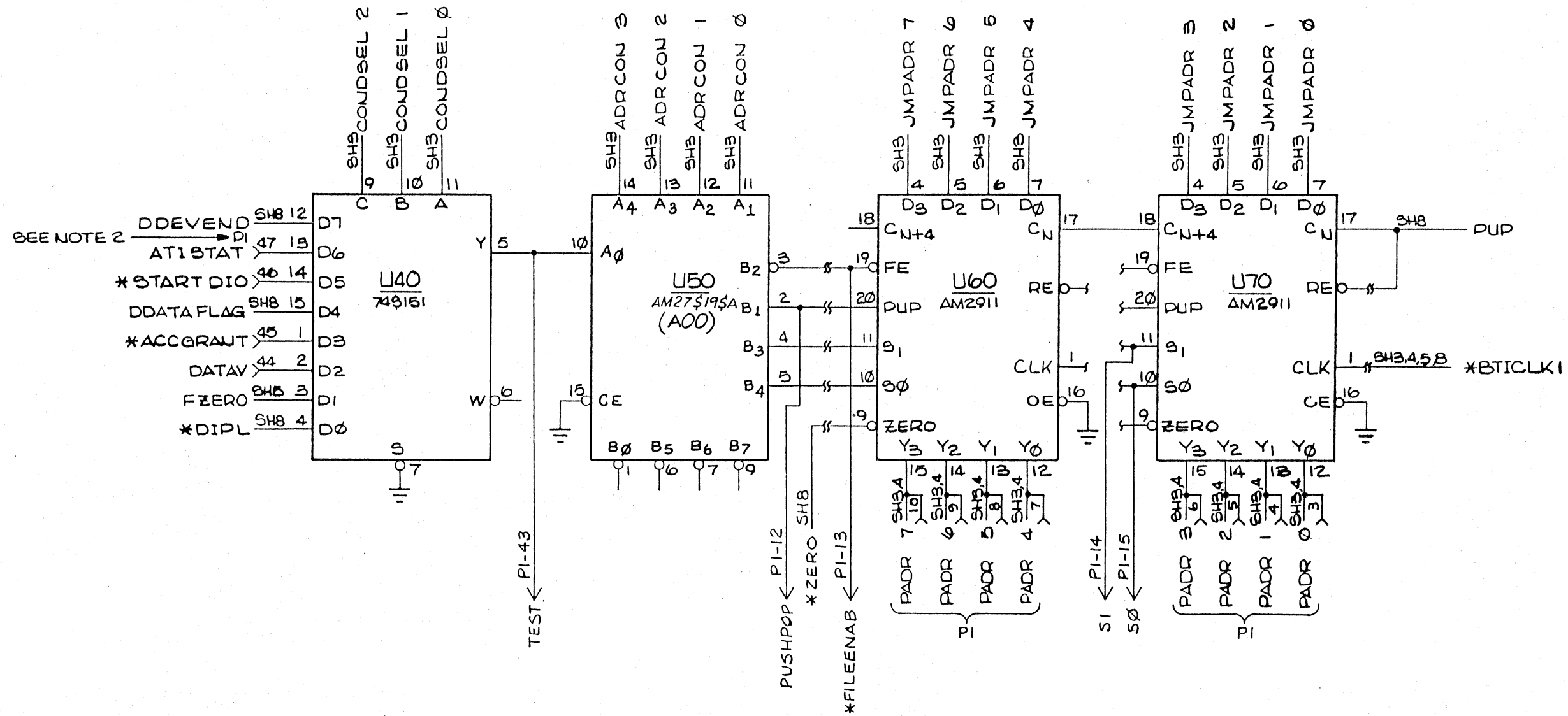
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 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± _____ .xxx ± _____ ANGLES ± _____ ✓		CONTRACT NO.		SEE SEPARATE PARTS LIST	
		DRAWN R MELLUS 7/18/77		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
		CHECKED <i>at Long</i> 15 JAN 79		DISK INTERFACE FLOPPY, AED, CABLE (w/w)	
		MECH			
		ELEC			
		PROJ. ENG <i>Lisa Leppia</i> 26/10/77		SIZE CODE IDENT NO	
		APPROVED		C 53938 200108-600	
200130-10C NCVOVIEW		MATERIAL		REV	
NEXT ASSY USED ON		FINISH		A9	
APPLICATION				SCALE NONE SHEET 1 OF 3	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	RC1	CORRECT LOGICS ON SHT 6	7-8-83	[Signature]
	RC2	CORRECT LOGICS ON SHT 3, 7	4-30-84	[Signature]
	A9	PROM CHANGE, U50	9-3-85	[Signature]

PROGRAM ADDRESS CONTROL



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

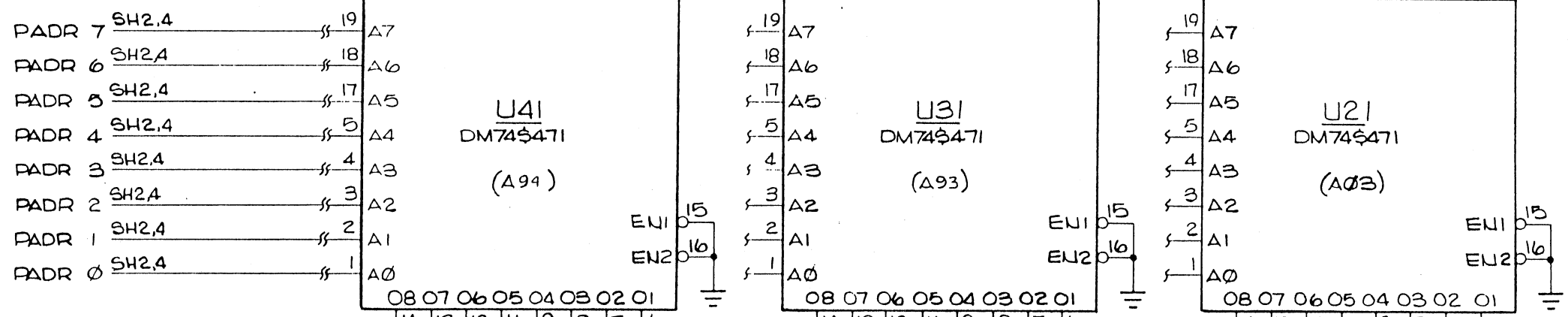
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SIZE	CODE IDENT NO	REV
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SCALE NONE	SHEET 2 OF 8	

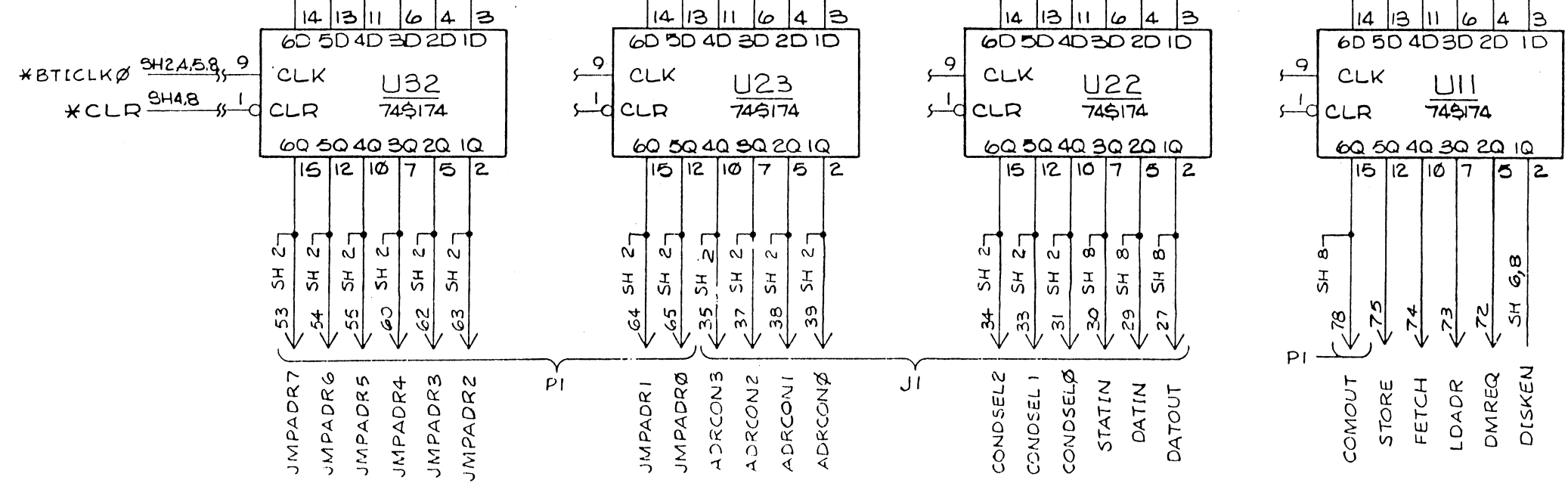
200108-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

PROM



DOIT REGISTER



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

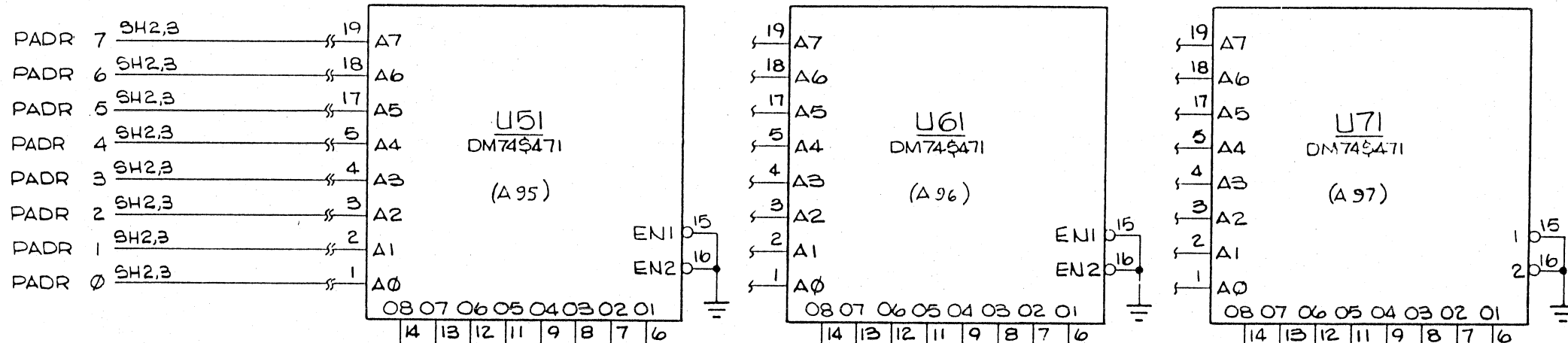
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SIZE	CODE IDENT NO	REV
C	53938 200108-600	A9
SCALE NONE	SHEET 8 OF 8	

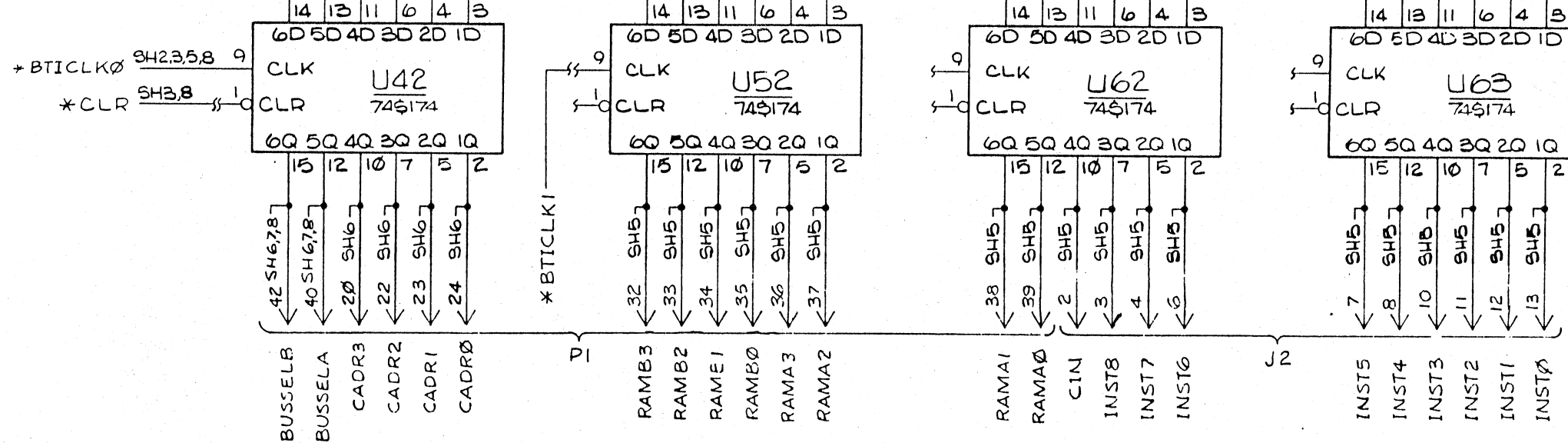
200108-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

PROM



DOIT REGISTER



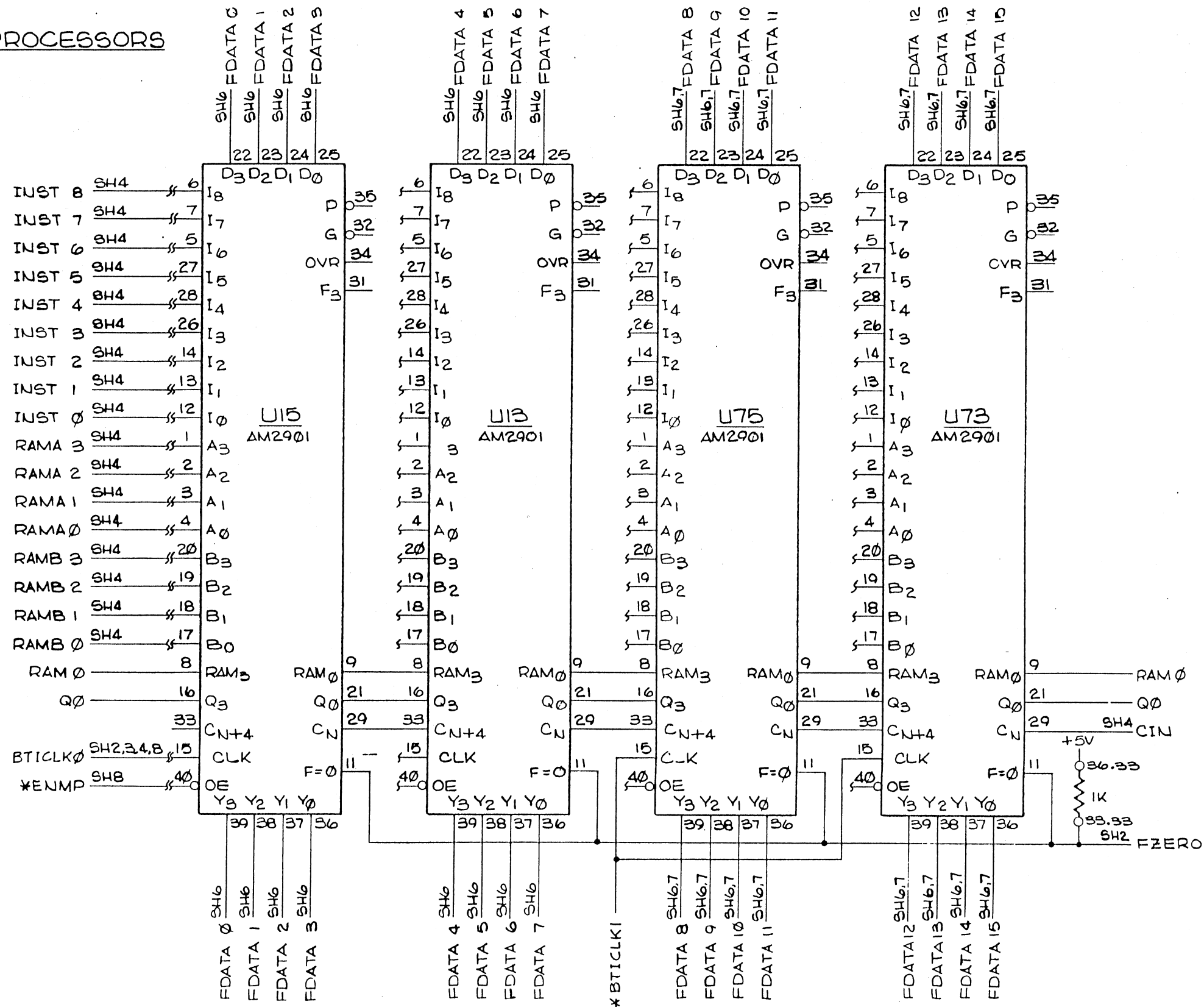
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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SIZE	CODE IDENT NO	REV
C	53938	A9
200108-600		
SCALE NONE	SHEET 4 OF 8	

200108-600

MICRO PROCESSORS



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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) (2)(i)

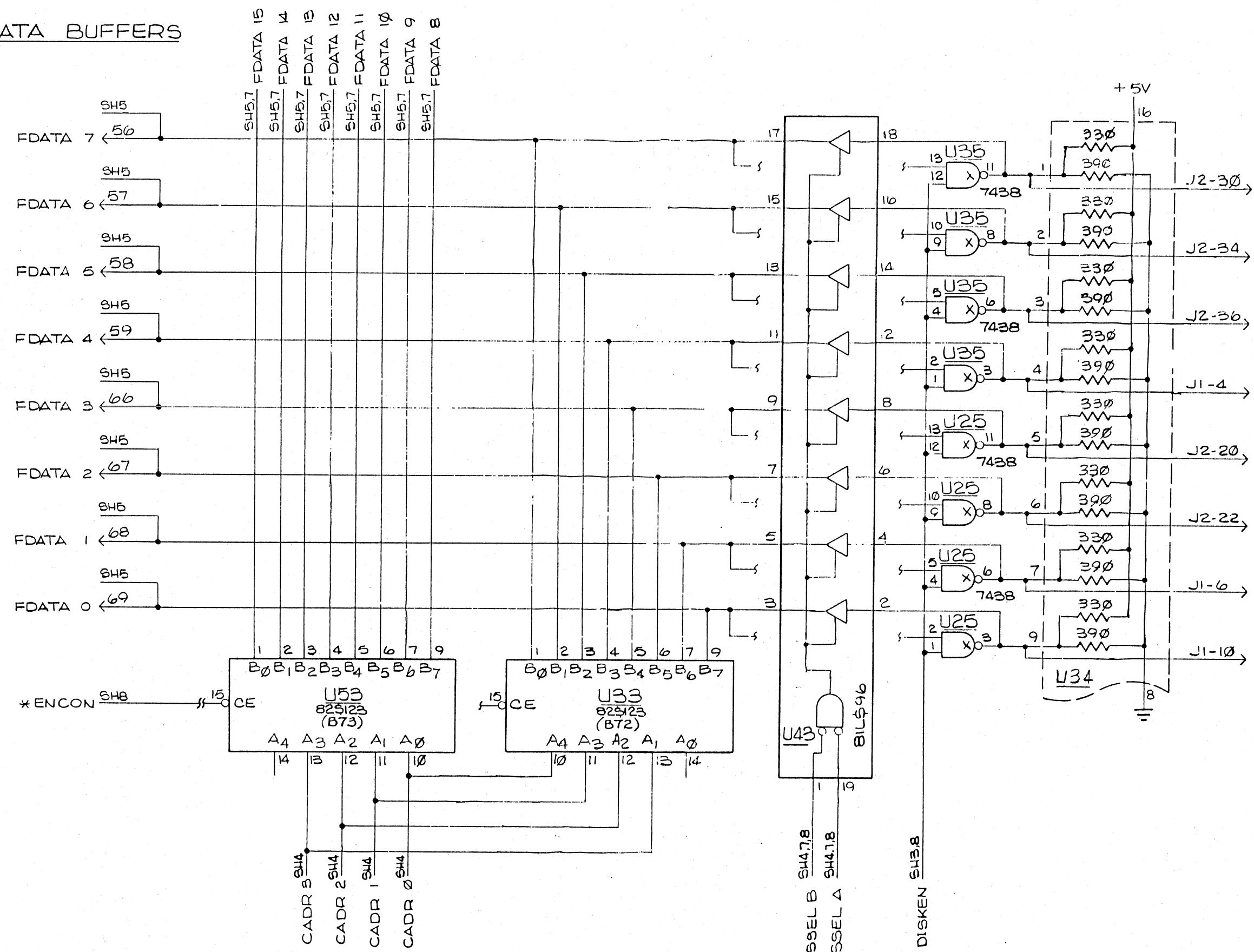
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SIZE	CODE IDENT NO	REV
C	53938	A9
SCALE NONE		SHEET 5 OF 8

200108-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

DATA BUFFERS



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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) (2)

SIZE	CODE IDENT NO	REV
C	53938	200108-600
SCALE NONE	SHEET 6 OF 8	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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

DATA BUFFERS

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D

D

C

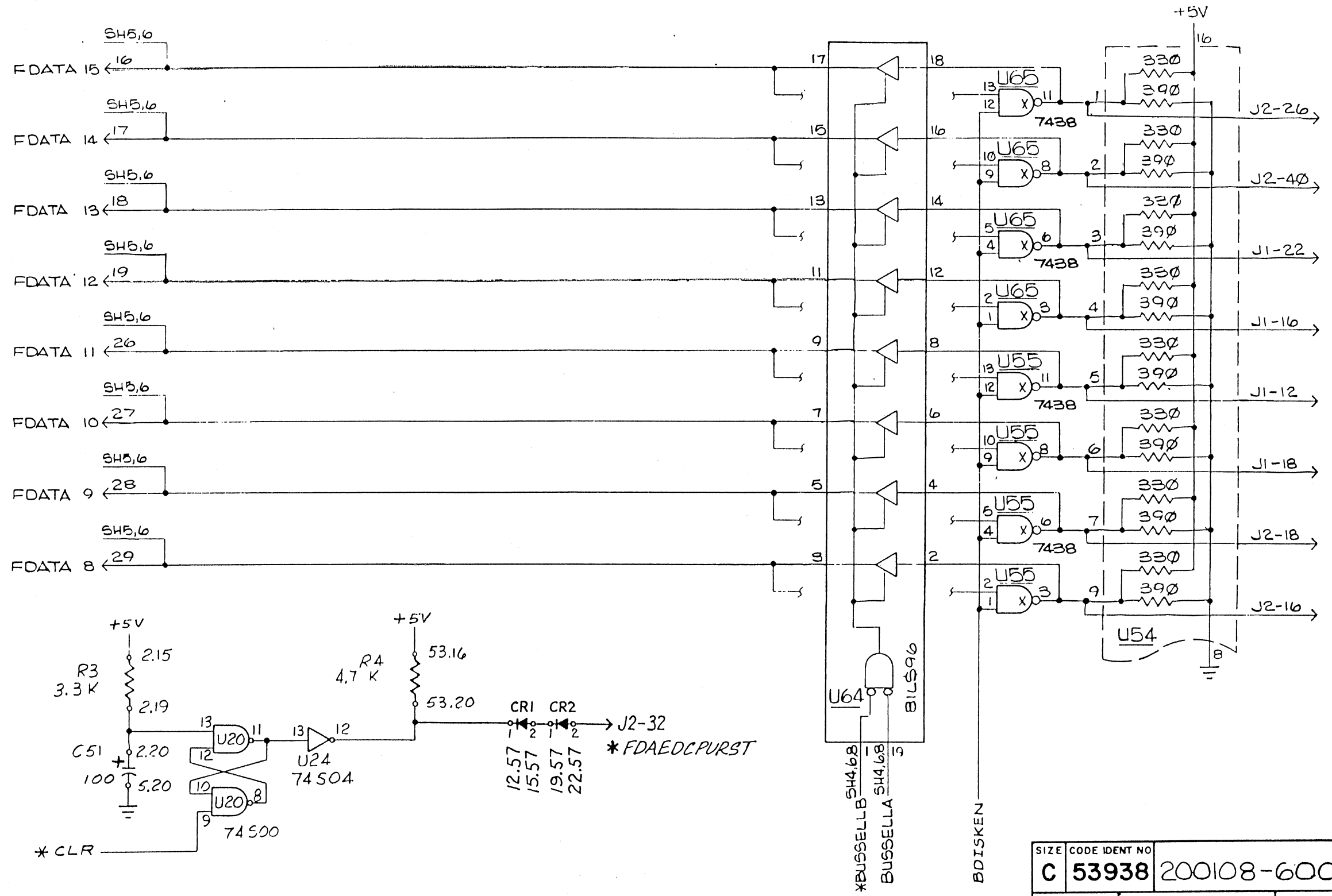
C

B

B

A

A



SIZE	CODE IDENT NO	REV
C	53938	A9
SCALE NONE		SHEET 7 OF 8

200108-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D

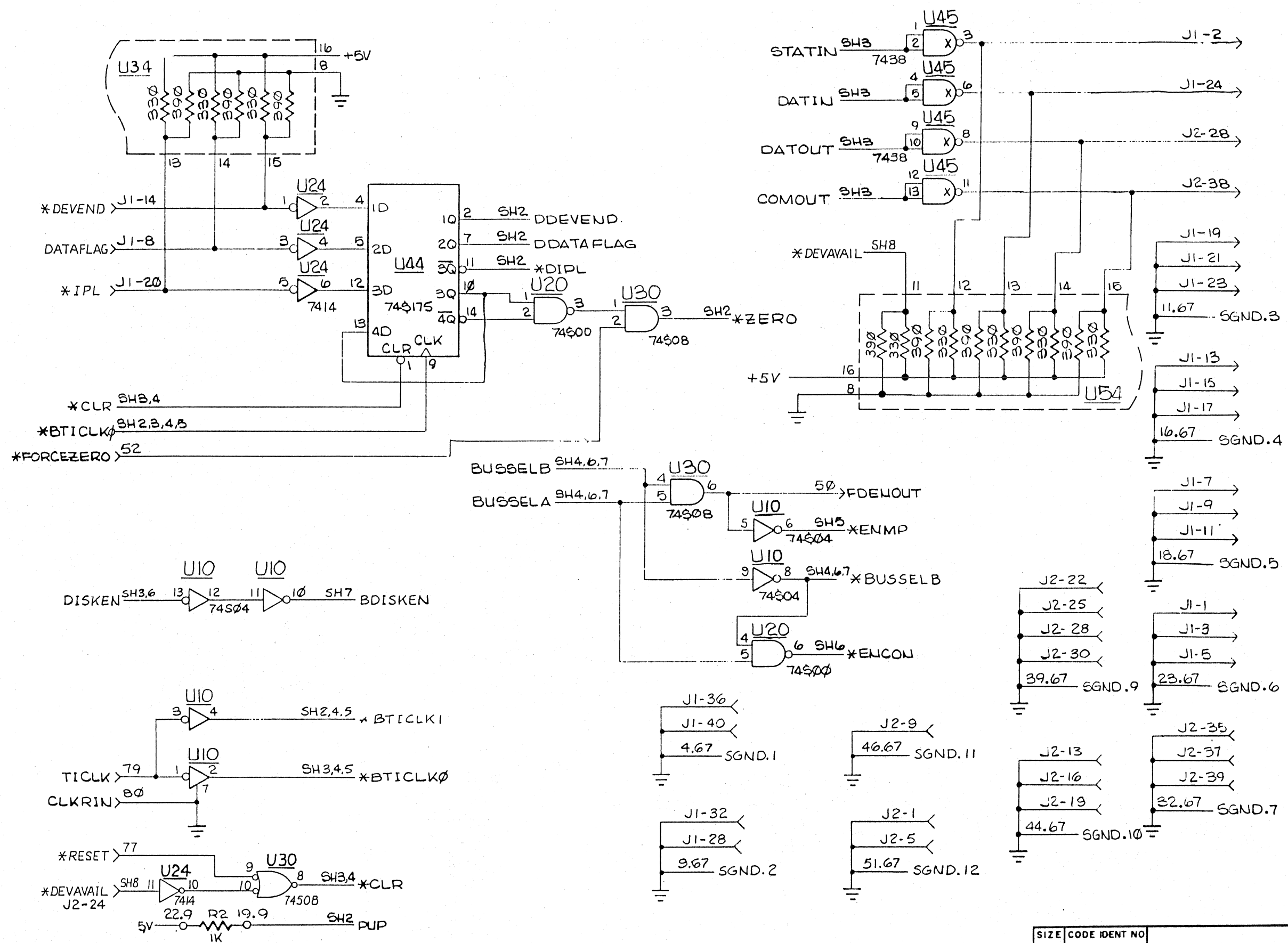
C

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A

D

A



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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) (2)

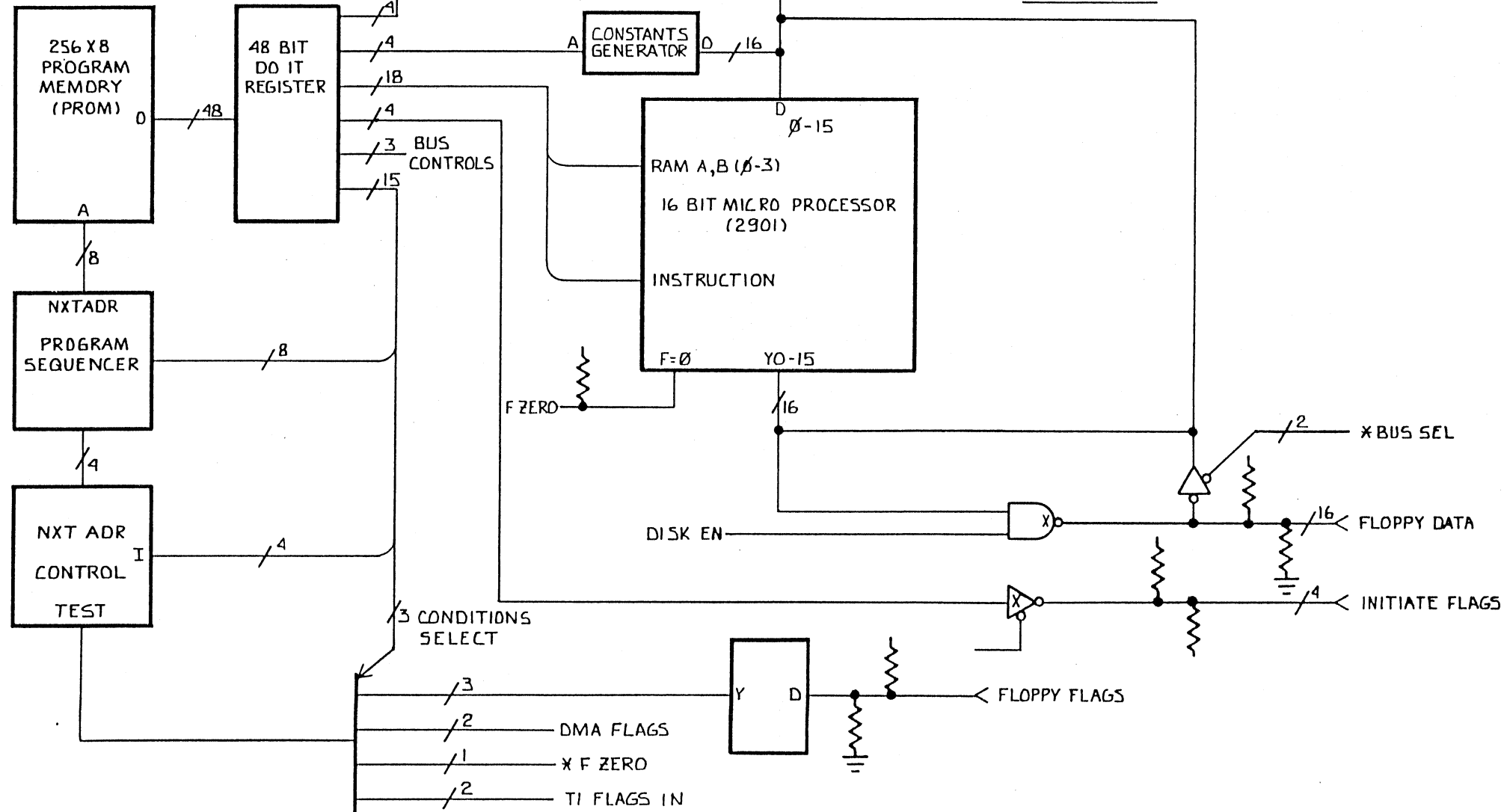
SIZE	CODE IDENT NO	REV
C	53938	200108-600
SCALE NONE	SHEET 8 OF 8	

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 AND COVERS ALL INFORMATION ON THIS DRAWING.
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	REV UPDATE W/NO DWG CHG	RGM 9-28-77	G.L. 10-20-77
	A2	REV UPDATE W/NO DWG CHG	JB 12-7-77	R.S.
	A3	REV UPDATE W/NO DWG CHG	CW 6-30-78	R.S.
	A4	REV UPDATE W/NO DWG CHG	AW 10-26-78	R.S.
	A5	REV UPDATE W/NO DWG CHG	G.T. 3-18-80	R.S.
	RC1	REDRAWN WITHOUT CHANGE	K.J. 6-11-80	
	A6	REV UPDATE W/NO DWG CHG R.H.	7-22-81	R.S.
	A7	REV UPDATE W/NO DWG CHNG GR	5-6-82	R.S.
	A8	REV UPDATE W/NO DWG CHNG	EST. 11-23-82	R.S.
	A9	REV UPDATE W/NO DWG CHNG	ST 9-3-85	in hand 1/2/86

PROGRAM CONTROL



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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 .XXX ± —
 ANGLES ± —
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DRAWN D.C., K.J. 7-27-77
 CHECKED *ant* JUNE 12-80
 MECH.
 ELEC.
 PROJ. ENG. G.L. 10-18-77
 APPROVED

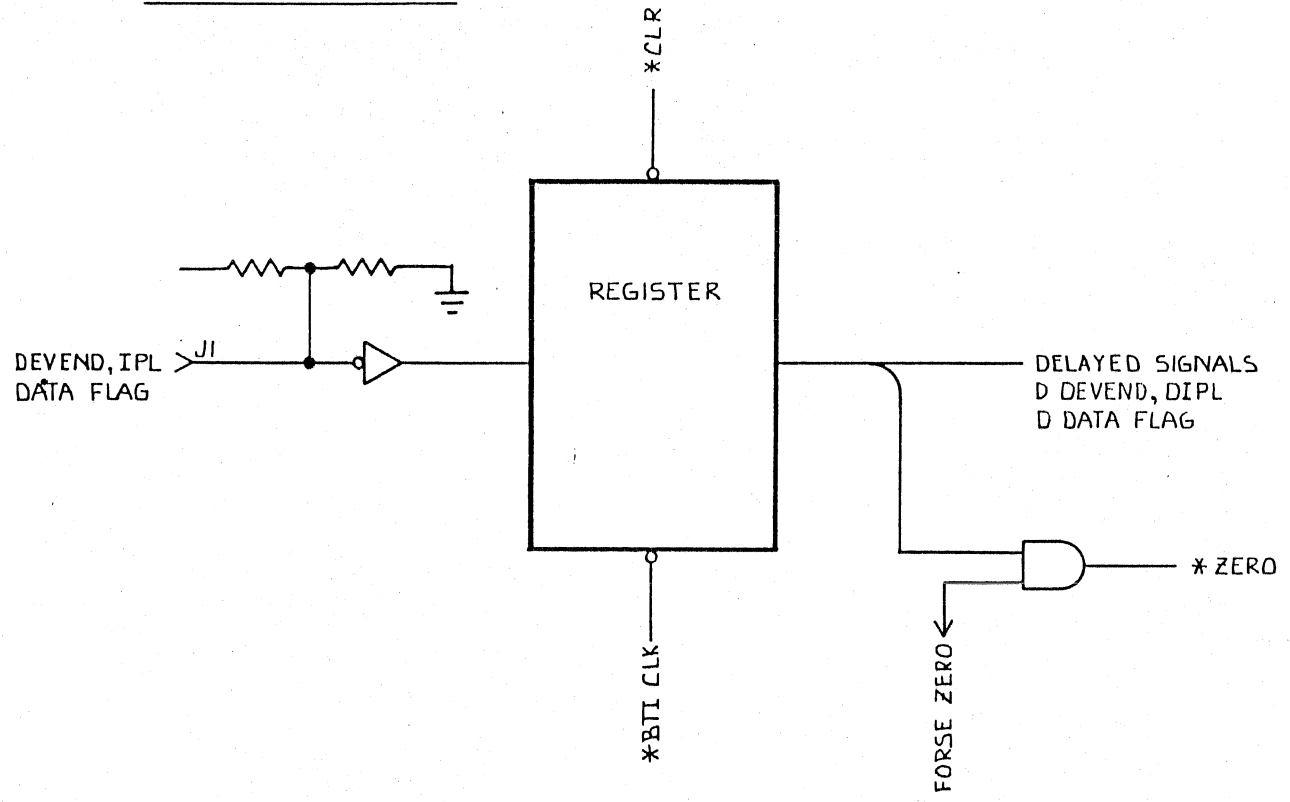
EVANS & SUTHERLAND
 SALT LAKE CITY, UTAH, 84108

BLOCK DIAGRAM,
 DISK INTERFACE,
 FLOPPY

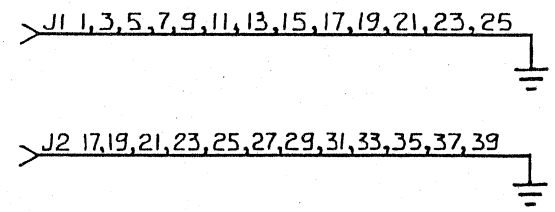
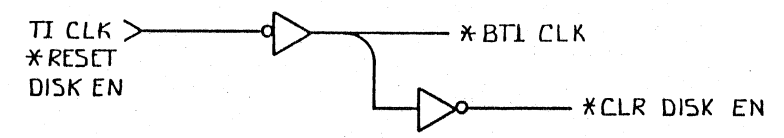
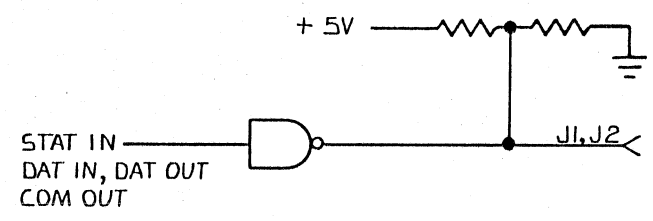
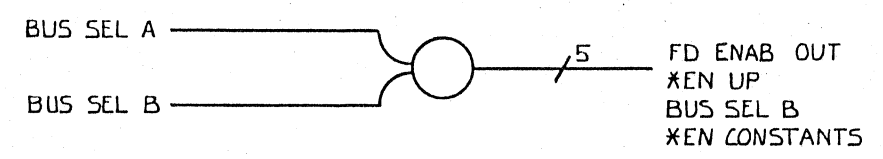
MATERIAL	SIZE	CODE IDENT NO	REV
FINISH	C	53938 200108-900	A9
SCALE NONE		DO NOT SCALE	SHEET 1 OF 2

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

FLOPPY DISK FLAGS



BUS BUFFERING & CONTROL



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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SIZE	CODE IDENT NO	REV
C	53938 200108-900	A9
SCALE NONE	SHEET 2 OF 2	

D 200108-900

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200110-100

REV: NC = AA

DESC: CARD ASSY, ADDER, PC

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	PC, ADDER	53938	EVANS & SUTHERLAND.	200110-500	200110-500	1
002	HW, SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW, SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR, CRD, SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW, SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
006	HW, LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
	C1 C2					
	C3 THRU C28					
	C, ,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
	C, ,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	26
007	E1	88245	WINCHESTER ELEC USECO DIV	1282B-1 (.090, TURRET)	802329-001	1
008	F1	75915	LITTELFUSE TRACOR INC.	251 005 (5A, AXIAL)	802375-050	1
	R1	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	1
	U100	01295	TEXAS INSTR, SEMICON DIV.	SN74S158N	807658-055	1
	U11 U10	27014	NATIONAL SEMICONDUCTOR	DM81LS95 (A)N/J	807794-055	2
	U22	01295	TEXAS INSTR, SEMICON DIV.	SN74S86N	807486-055	1
	U33 U34 U52 U53 U54 U61 U72	01295	TEXAS INSTR, SEMICON DIV.	SN74164N/J	807413-646	14
	U81 U84 U12 U13 U14 U23 U24					
	U41 U50 U51 U20 U21 U30 U31	IC, TTL 74165	01295 TEXAS INSTR, SEMICON DIV.	SN74165N	807692-646	8
	U40					
	U42	IC, TTL 74S151	01295 TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055	1
	U44 U63 U64 U43	IC, TTL 74166	01295 TEXAS INSTR, SEMICON DIV.	SN74166N	807665-646	4
	U60	IC, TTL 74S04	01295 TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1
	U71 U82 U91 U62	IC, TTL 25LS14	34335 ADVANCED MICRO DEVICES IN	AM25LS14APC/DC	807798-055	4
	U74	IC, TTL 74S194	01295 TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	1
	U80 U70 U73	IC, TTL 74S153	01295 TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	3
	U83	IC, TTL 25LS15	34335 ADVANCED MICRO DEVICES IN	AM25LS15PC/74LS385	807799-055	1
	U90 U101 U32	IC, TTL 74S157	01295 TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	3
	U92	IC, TTL 74S37	01295 TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
	U93	IC, TTL 74S08	01295 TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	1
	U94	IC, TTL S32	01295 TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	1

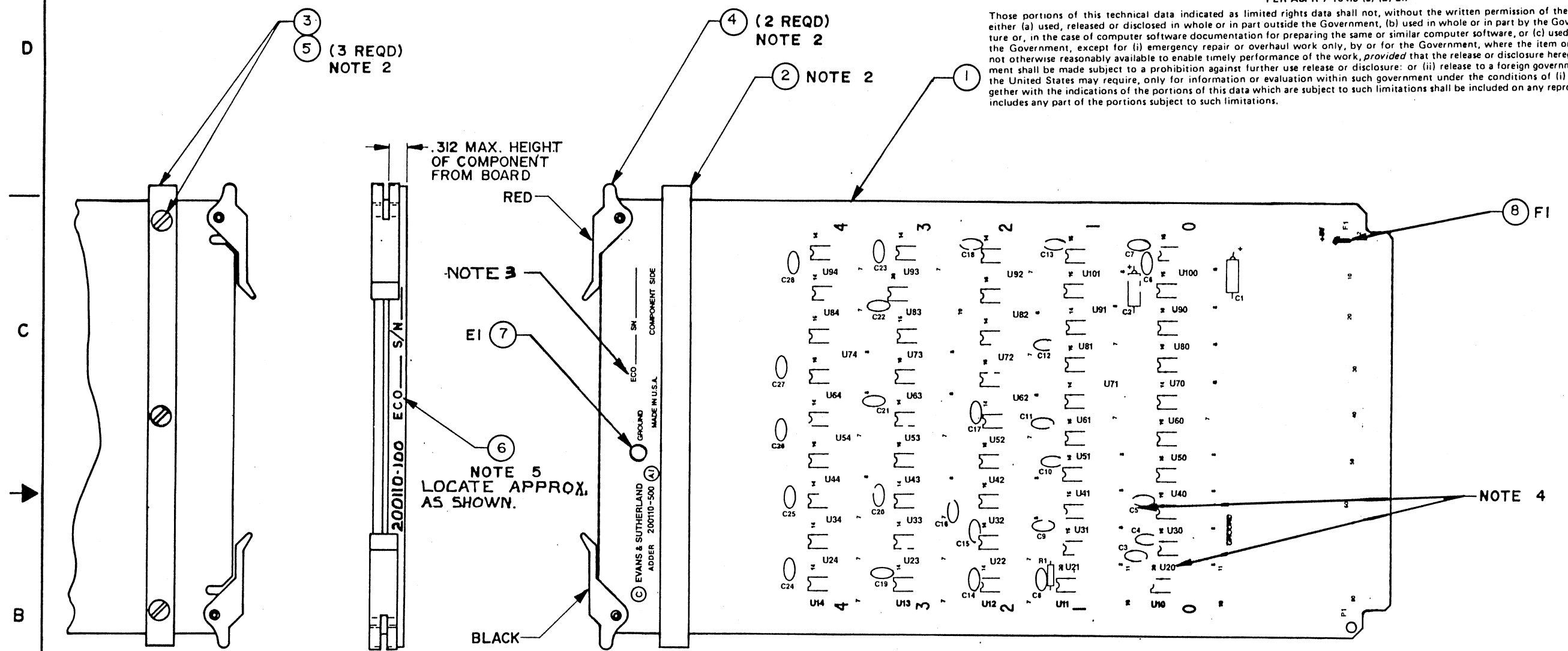
27 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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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COMPONENT SIDE

REFERENCE DOCUMENTS

- LOGIC DIAGRAM --- 200110-600
- PARTS LIST----- PL 200110-100
- ARTWORK----- 200110-500 REV. A1

- NOTES
- ASSEMBLE PER E&S STANDARDS.
 - INSTALL CARD EJECTORS (ITEM 4) & SPACERS (ITEM 2 & 3) AFTER FLOW SOLDERING.
 - MARK ECO NO. AND SERIAL NO. AND ASSY NO. APPROX AS SHOWN USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUV.
 - ITEM NUMBERS ON THE DWG CORRESPOND WITH THE LOCATION DESIGNATION ON THE PARTS LIST.
 - MARK ECO NO. AND SERIAL NO. AND ASSY NO. ON ITEM 6.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	
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ANGLES ±	---
✓	
MATERIAL	SEE PARTS LIST
200130-100	NOVOVIEW
NEXT ASSY	USED ON
APPLICATION	

CONTRACT NO.	
DRAWN R. EARLEY 2-18-77	
CHECKED ART. COWGUR 22-FEB-77	
MECH	
ELEC	
PROJ. ENG W. L. ALLEN 3/1/77	
APPROVED J. PIND 1/MAR 77	

SEE SEPARATE PARTS LIST			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
CARD ASSEMBLY ADDER (P. C.)			
SIZE	CODE IDENT NO.	REV	
C	53938	200110-100	NC
SCALE FULL		SHEET 1 OF 1	



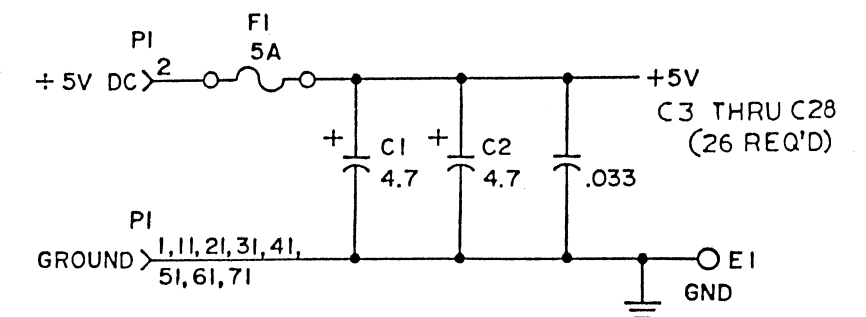
REF DESIG	E+S PART NO	VENDOR PART NUMBER
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C 2	804102-475	CS138F475K
C 3	804115-333	CY15C333M
C 28	804115-333	CY15C333M
R 1	803201-102	.
U 10	807794-055	DM81LS95N
U 11	807794-055	DM81LS95N
U 12	807413-646	SM74164N
U 13	807413-646	SM74164N
U 14	807413-646	SM74164N
U 20	807692-646	SM74165N
U 21	807692-646	SM74165N
U 22	807486-055	SM74S86N
U 23	807413-646	SM74164N
U 24	807413-646	SM74164N
U 30	807692-646	SM74165N
U 31	807692-646	SM74165N
U 32	807657-055	SM74S157N
U 33	807413-646	SM74164N
U 34	807413-646	SM74164N
U 40	807692-646	SM74165N
U 41	807692-646	SM74165N
U 42	807651-055	SM74S151N
U 43	807665-646	SM74166N
U 44	807665-646	SM74166N
U 50	807692-646	SM74165N
U 51	807692-646	SM74165N
U 52	807413-646	SM74164N
U 53	807413-646	SM74164N
U 54	807413-646	SM74164N
U 60	807416-055	SM74S04N
U 61	807413-646	SM74164N
U 62	807798-055	AM25LS14DC
U 63	807665-646	SM74166N
U 64	807665-646	SM74166N
U 70	807653-055	SM74S153N
U 71	807798-055	AM25LS14DC
U 72	807413-646	SM74164N
U 73	807653-055	SM74S153N
U 74	807694-055	SM74S174N
U 80	807653-055	SM74S153N
U 81	807413-646	SM74164N
U 82	807798-055	AM25LS14DC
U 83	807799-055	AM25LS15PC
U 84	807413-646	SM74164N
U 90	807657-055	SM74S157N
U 91	807798-055	AM25LS14DC
U 92	807400-09C	SM74S37N
U 93	807408-055	SM74S08N
U 94	807431-055	SM74S32N
U 100	807658-055	SM74S158N
U 101	807657-055	SM74S157N

PIN #	WIRENAME
F1 3	GC1LCT
P1 4	GC2INITA
P1 5	GC1SHIFTDU
P1 6	GC1SHIFTDU
P1 7	ADDU36
P1 8	GC2SUB4
F1 9	GC1ASEL1
P1 10	ADSM
P1 12	ADNDU
P1 13	GC1ASEL0
P1 14	GC2SHIFTDUP
F1 15	GC1CELU
P1 16	GC1CELU
P1 17	ADFRUCT2
F1 18	GC2ADDDU
P1 19	ADNDW
P1 20	ADNDV
F1 22	GC2UPDTE
P1 23	ADSMEAR
P1 24	DRSINE
P1 25	ADWSMEAR
F1 26	ADLSMEAR
F1 27	GC2BSEL0
F1 28	GC2RA2
F1 29	GC2BSEL1
F1 30	GC2RA1
P1 32	ADVSMEAR
F1 33	ADDJIN
F1 34	ADAIN
F1 35	ADBIN
P1 36	DRADCT
P1 37	ADJ11
F1 38	ADJ10
F1 39	ADJ12
F1 40	*GC1STOP
F1 41	*CMCLARET
F1 42	*CMCLAB
P1 43	ALNDU
P1 44	ADJ13
F1 45	GC2DSEL1
P1 46	GC2DSEL0
F1 47	*ICLDNUL
F1 48	GC2DSEL2
F1 49	ADJ14
F1 50	ADJ15
P1 52	SERIN
F1 53	ADLSMEAR
P1 54	ADUSMEAR
P1 55	*ICLDNUU
F1 56	*ADJUVFL
P1 57	ADJ16
P1 58	ADDATEVEN
P1 59	*BRMAIN1
F1 60	GC2ESEL
F1 62	DAT7
F1 63	DAT12
F1 64	*ICLDNUL
F1 65	DAT14
F1 66	DAT13
F1 67	*ICLDNUU
F1 68	DAT15
F1 69	DAT4
F1 70	DAT5
F1 72	DAT6
F1 73	DAT9
F1 74	DAT8
P1 75	DAT11
P1 76	DAT10
F1 77	DAT2
F1 78	DAT3
P1 79	DAT0
P1 80	DAT1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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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3. SERIAL SHIFT LOOP SEQUENCE
 P1.52 40.9, 41.9, 50.9, 51.9, 20.9, 21.9, 30.9, 31.9, 33.13, 34.13, 53.13, 54.13, 84.12 (7 BITS), 61.13, 52.13, 81.13, 72.13, 43.13, 44.13, 63.13, 64.13, 74.14 (2 BITS), 23.13, 24.13, 14.13, 13.13, 12.12 (7 BITS), P1.7.

2. NUMBERS SHOWN REFER TO CONNECTOR P1.
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.

RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.

RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.

ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).

ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V).

ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).

UNLESS OTHERWISE SPECIFIED;

NOTES:

	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓
200130-100 NOV0VJEW	MATERIAL
NEXT ASSY	USED ON
APPLICATION	FINISH

CONTRACT NO.	
DRAWN	DESIGNED 4-5-77
CHECKED	24/10/77 1 SEP 77
MEC-	
ELEC	4/1/77
PRC. ENG	W/T 9-1-77
APPROVED	

SEE SEPARATE PARTS LIST			
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112			
CARD ASSY, ADDER, PC			
SIZE	CODE IDENT NO	REV	
C	53938	200110-600	NC
SCALE NONE	SHEET 1 OF 5		

200110-600

4

3

2

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED

D

C

B

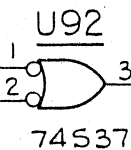
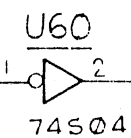
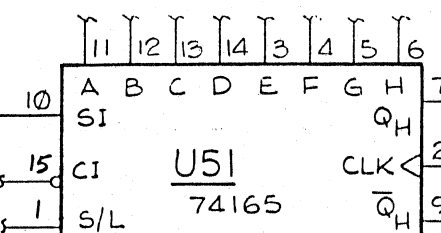
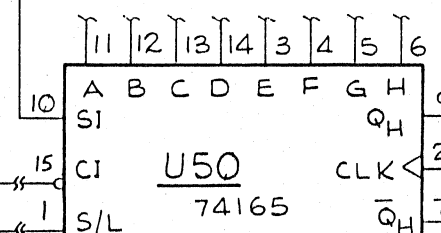
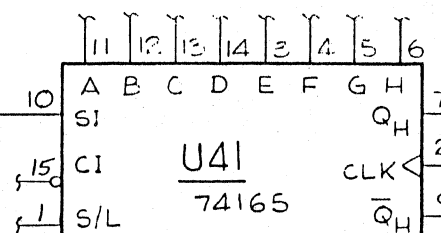
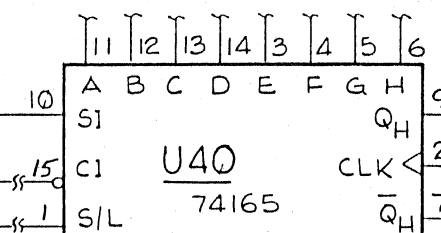
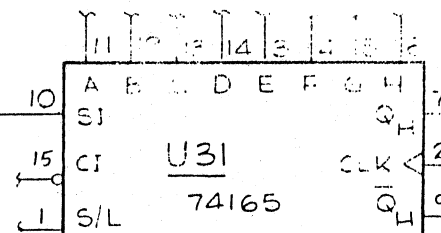
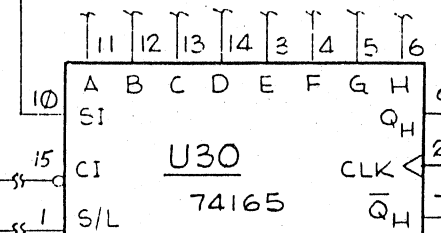
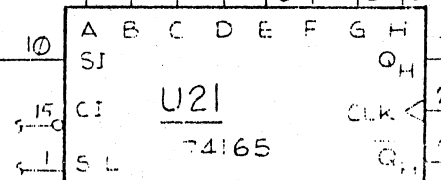
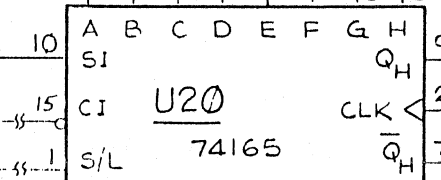
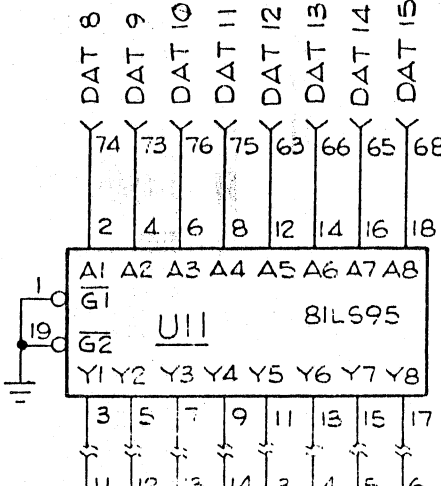
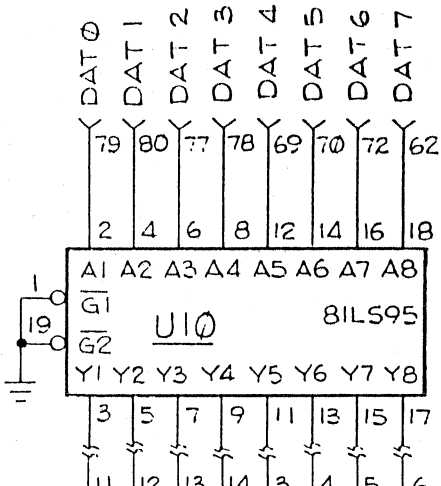
A

D

C

B 200112-600

A



LIMITED RIGHTS LEGEND
 Contract No. F196284-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

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NDUL SH3,4

*ICLDNUU 67

*SHIFTNUENAB SH3,5

*ICLDNUL 64

SERIN 52

*ICLDNDUU 55

*SHIFTNDUENAB SH5

*ICLDNDUL 47

NX, Y, Z

NX, Y, Z

NDX, Y, Z

NDX, Y, Z

ADNU

SH3 NUL

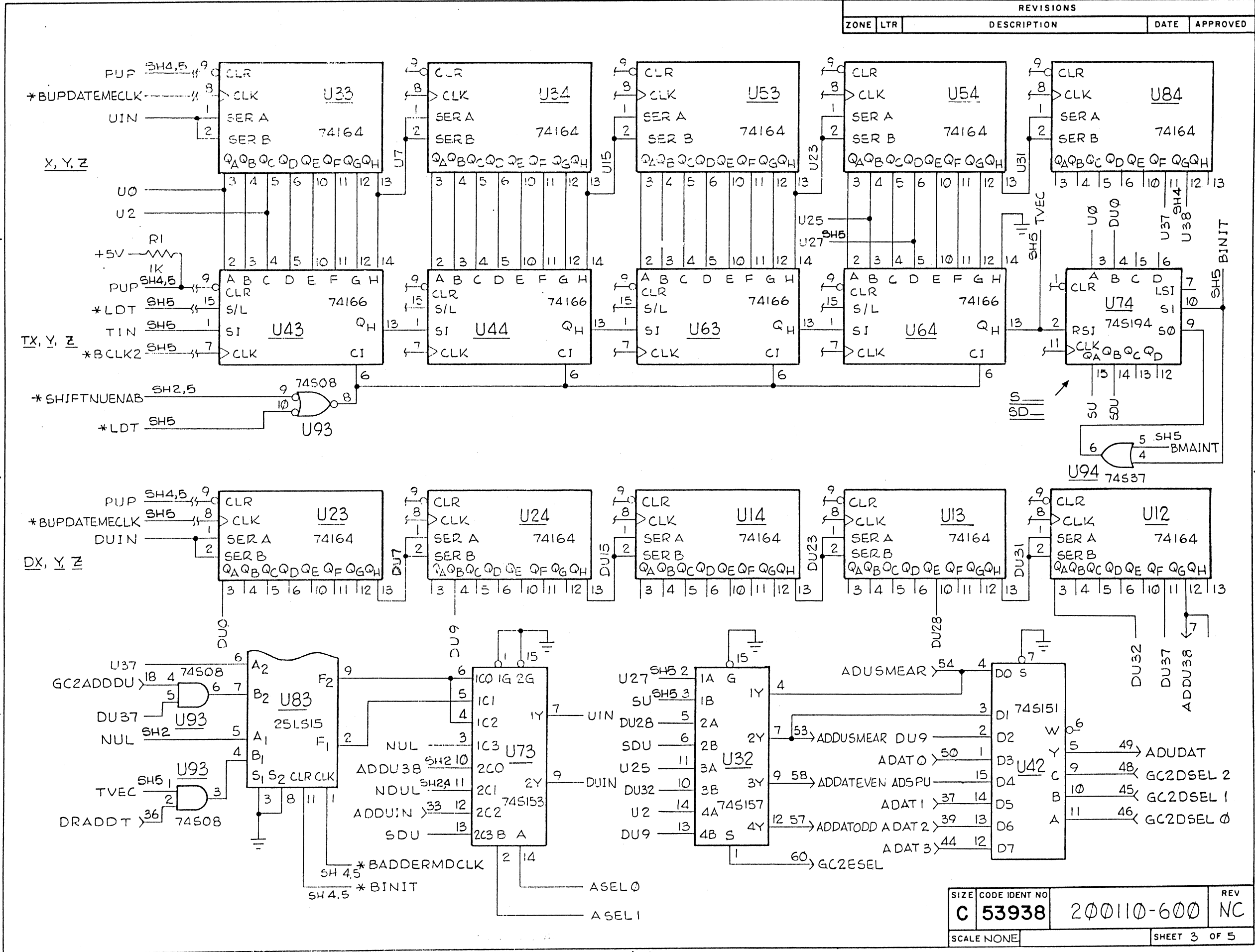
ADNDU

SH5 *BCLK I

SH3,4 NDUL

SIZE	CODE IDENT NO	REV
C	53938 200110-600	NC
SCALE NONE	SHEET 2 OF 5	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

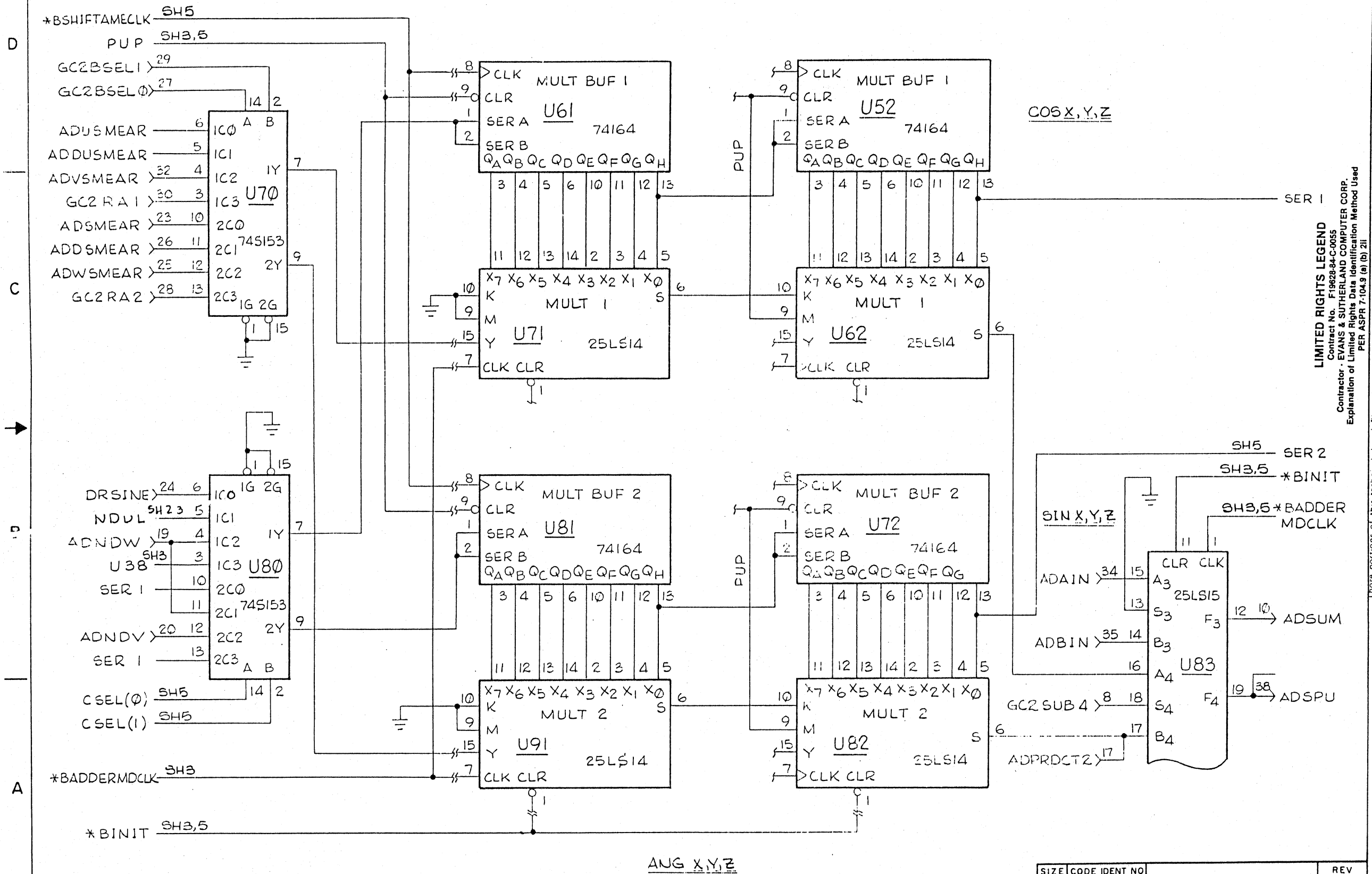


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LIMITED RIGHTS LEGEND
 Contract No. F19624-60-005
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

SIZE	CODE IDENT NO	REV
C	53938	NC
SCALE NONE		SHEET 3 OF 5

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



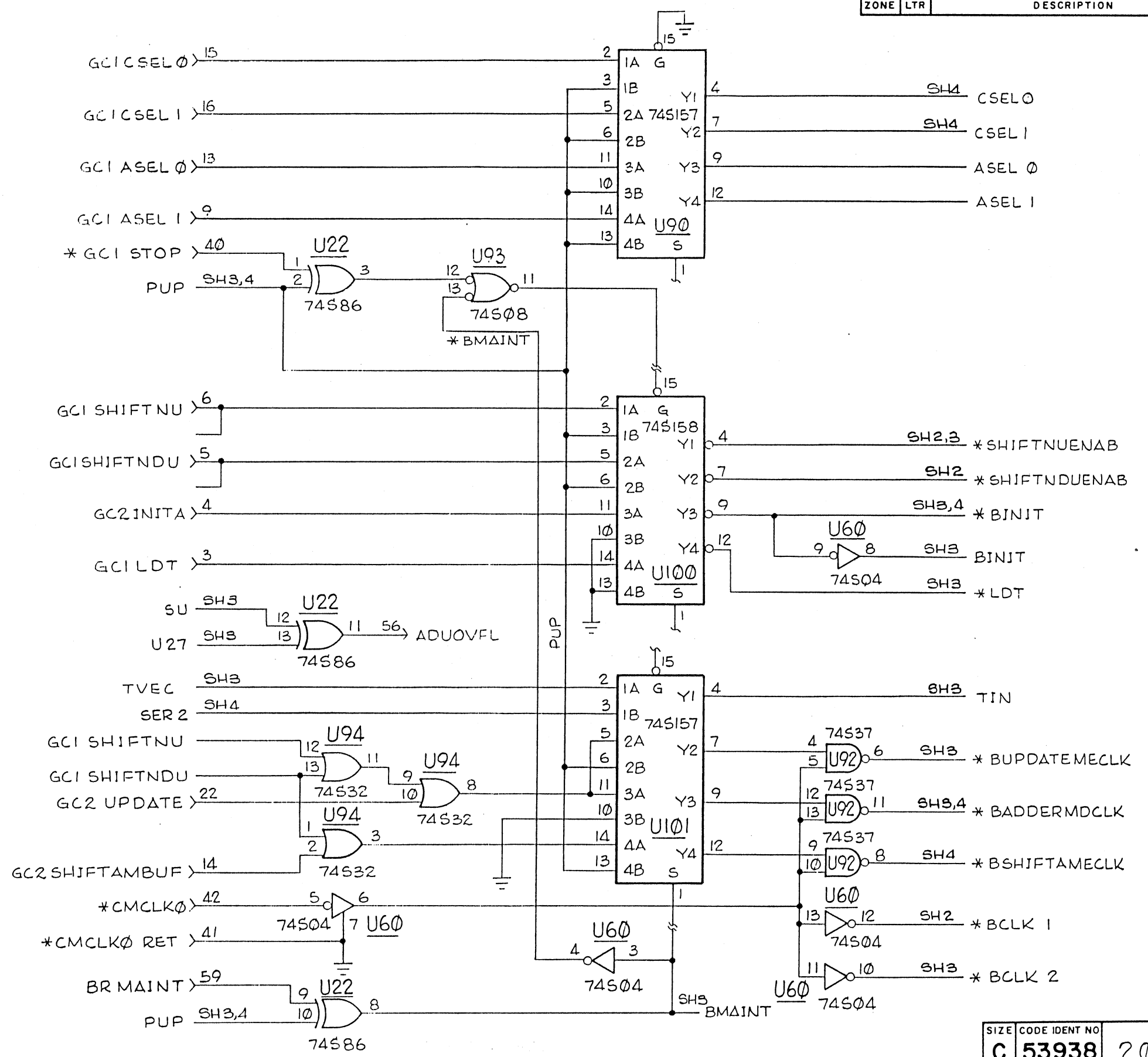
LIMITED RIGHTS LEGEND
 Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (b) (2)

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SIZE	CODE IDENT NO	REV
C	53938	200110-600 NC
SCALE/NCNE	SHEET 4 OF 5	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D
C
B
A

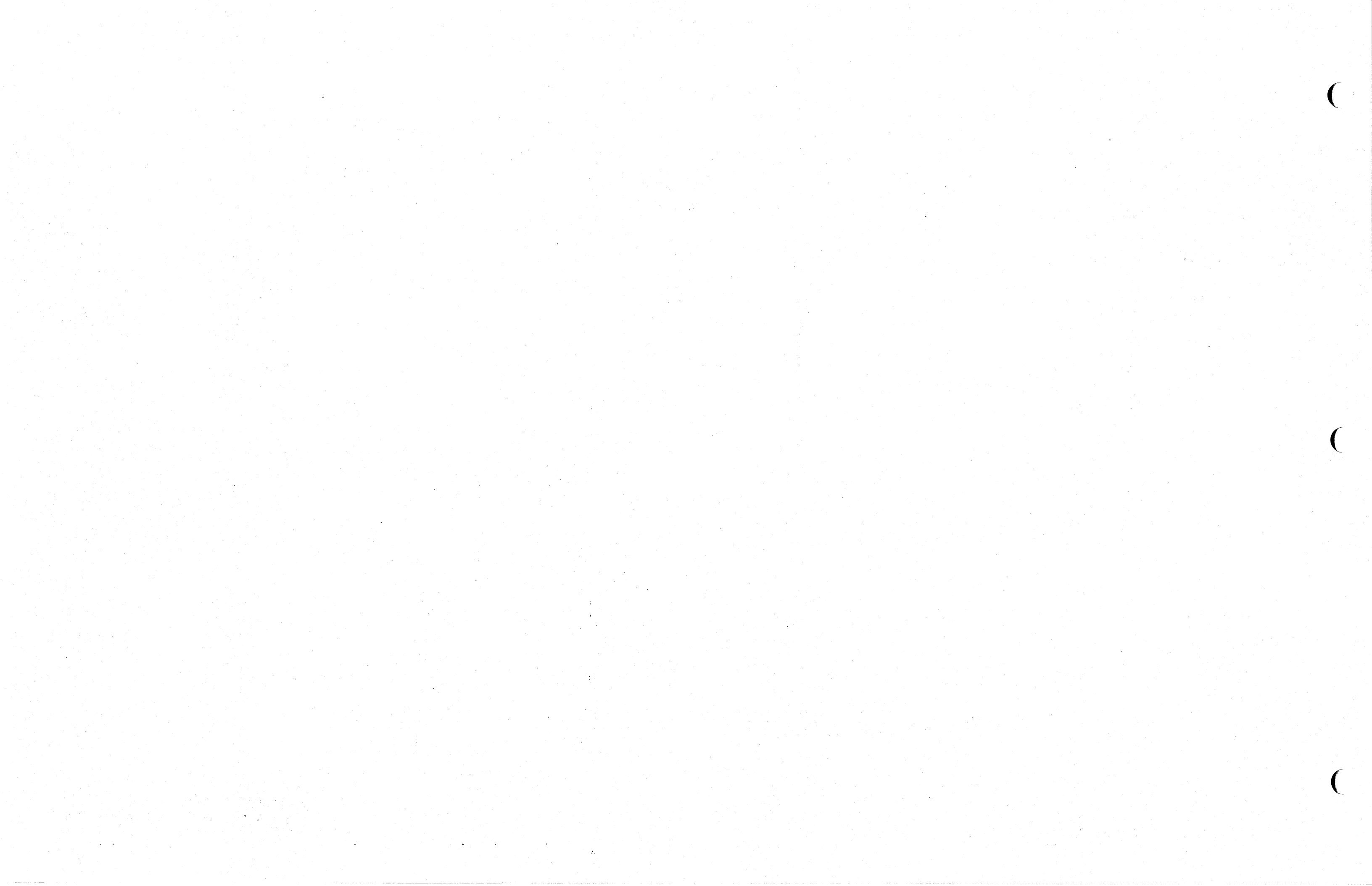


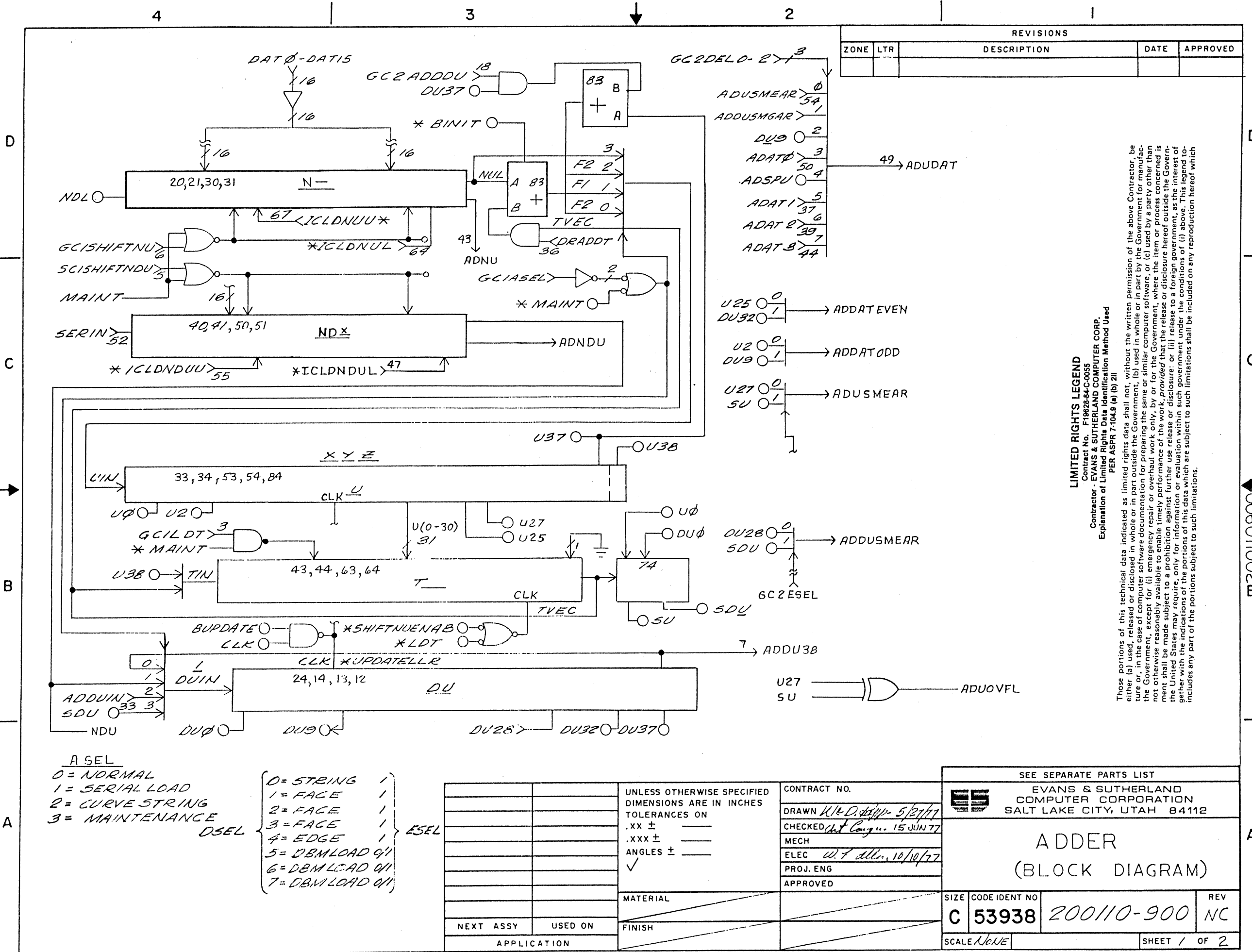
LIMITED RIGHTS LEGEND
 Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

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SIZE	CODE IDENT NO	REV
C	53938	200110-600 NC
SCALE NONE	SHEET 5 OF 5	

200110-600





REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

LIMITED RIGHTS LEGEND
 Contract No. F19628-84-C0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

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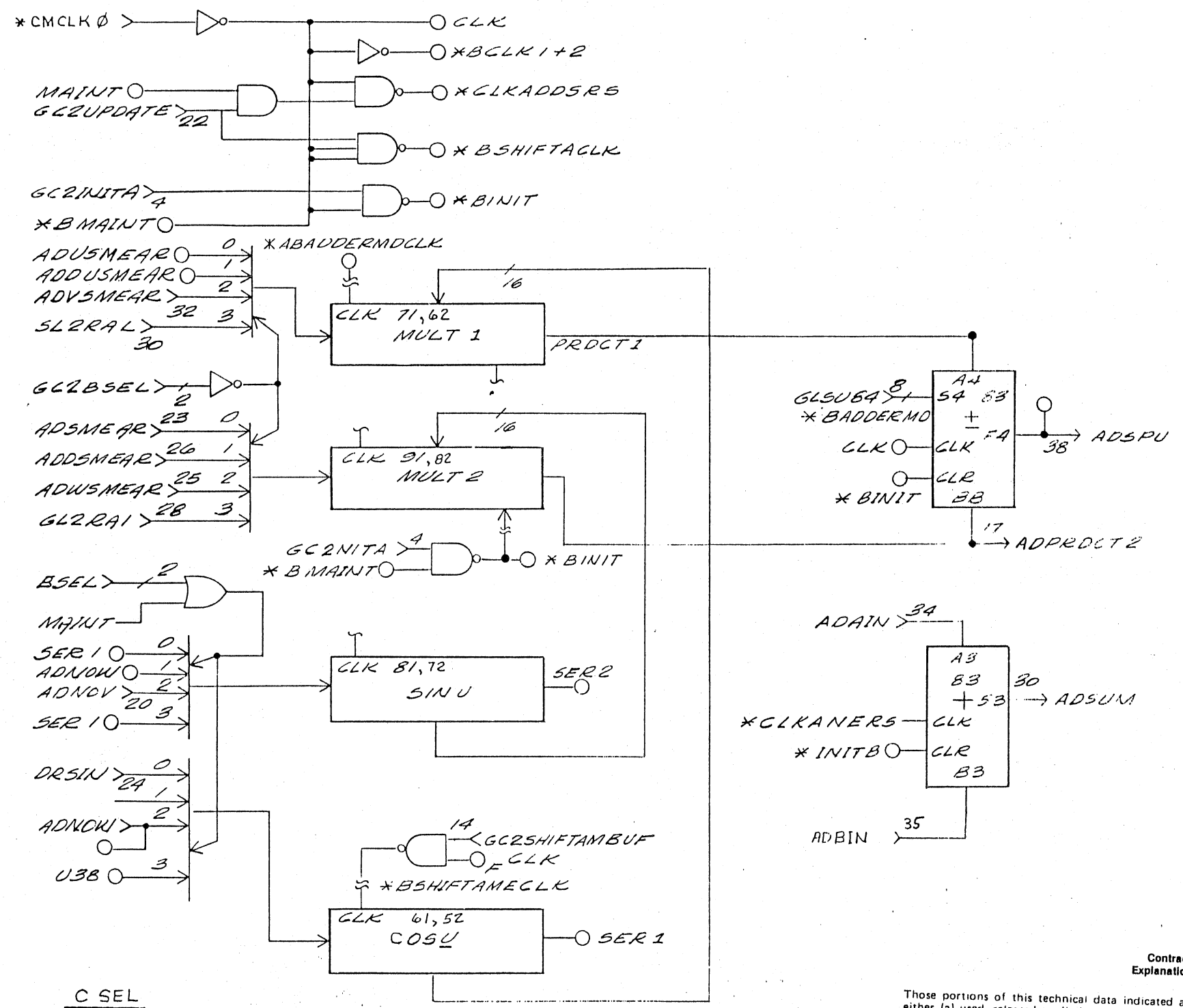
- A SEL**
 0 = NORMAL
 1 = SERIAL LOAD
 2 = CURVE STRING
 3 = MAINTENANCE
- D SEL**
 0 = STRING 1
 1 = FACE 1
 2 = FACE 1
 3 = FACE 1
 4 = EDGE 1
 5 = DBM LOAD 9/1
 6 = DBM LOAD 9/1
 7 = DBM LOAD 9/1

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓	CONTRACT NO. DRAWN <i>W.D. [unclear]</i> 5/21/77 CHECKED <i>[unclear]</i> 15 JUN 77 MECH ELEC <i>W.F. [unclear]</i> 10/10/77 PROJ. ENG APPROVED
		MATERIAL	
		FINISH	
NEXT ASSY	USED ON		
APPLICATION			

SEE SEPARATE PARTS LIST		
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		
ADDER (BLOCK DIAGRAM)		
SIZE	CODE IDENT NO	REV
C	53938 200110-900	NC
SCALE <i>None</i>	SHEET 1 OF 2	

D
C
B
A
200110900

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



C SEL
 0 = DIR + CURVE
 1 = FACES OR XFM1
 2 = EDGES
 3 = MAINT OR XFM2

B SEL
 0 -- DIR
 1 -- CURVE
 2 -- EDGES OR FACE
 3 -- XFM

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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SIZE	CODE IDENT NO	REV
C	53938 200110-900	NC
SCALE	SHEET 2 OF 2	

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200111-101

REV: NC = AA

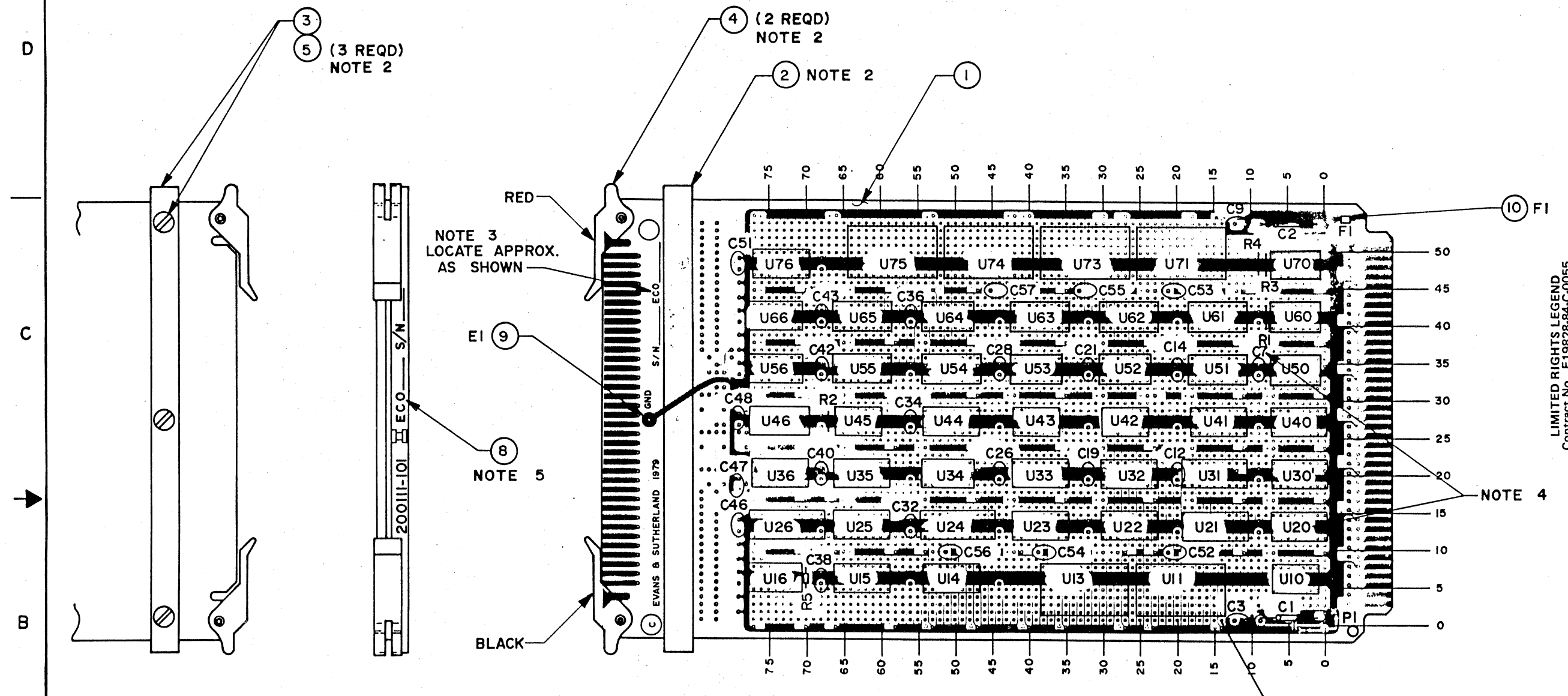
DESC: CARD ASSY, DIRECTIONALITY, W/W

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY	
001	BD,WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1	
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1	
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1	
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1	
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3	
006	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1	
007	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	949	
008	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1	
	C1 C2	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
	C12 C14 C19 C21 C26 C28 C32	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	26
	C3 C7 C9 C34 C36 C38 C40 C42						
	C46 C47 C48 C51 C52 C53 C54						
	C55 C56 C57 C43						
009	E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
010	F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
	R1 40.8 43.8 R2 26. 67 29.67	R,,AXL 1K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	5
	R3 47.8 50.8 R4 47.9 50.9 R5						
	5.70 8.70						
	U10	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
	U14	IC,TTL 74166	01295	TEXAS INSTR, SEMICON DIV.	SN74166N	807665-646	1
	U15	IC,TTL 74S158	01295	TEXAS INSTR, SEMICON DIV.	SN74S158N	807658-055	1
	U21 12.19	IC,PROM,BIP,1024X4,TS	53938	EVANS & SUTHERLAND.	807802-055-A01	807802-055-A01	1
	U22 12.30	IC,PROM,BIP,1024X4,TS	53938	EVANS & SUTHERLAND.	807802-055-A05	807802-055-A05	1
	U23 U25 U44 U46 U51 U61 U65	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	8
	U76						
	U24 U26	IC,TTL 74S381	01295	TEXAS INSTR, SEMICON DIV.	SN74S381N	807784-055	2
	U30 U20 U32 U40	IC,TTL 74165	01295	TEXAS INSTR, SEMICON DIV.	SN74165N	807692-646	4
	U31 19.19	IC,PROM,BIP,1024X4,TS	53938	EVANS & SUTHERLAND.	807802-055-A00	807802-055-A00	1
	U33 U35 U55 U63	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	4
	U36	IC,TTL 93S47	07263	FAIRCHILD IC'S & SEMICON	93S47PC/DC	807703-055	1
	U41	IC,TTL 74109	07263	FAIRCHILD IC'S & SEMICON	74109PC/DC	807730-646	1
	U42 U52 U64 U16	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	4
	U43	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
	U45 U66 U34	IC,TTL 74164	01295	TEXAS INSTR, SEMICON DIV.	SN74164N/J	807413-646	3
	U50 U60	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	2
	U53	IC,TTL 74H74	01295	TEXAS INSTR, SEMICON DIV.	SN74H74N/J	807474-255	1
	U54	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	1
	U56	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
	U62	IC,TTL 74S135	01295	TEXAS INSTR, SEMICON DIV.	SN74S135N	807741-055	1
	U70	IC,TTL 74S03	01295	TEXAS INSTR, SEMICON DIV.	SN74S03N/J	807403-055	1
	U74 47.51 U75 47.64 U11 2.25	IC,TTL 74198	01295	TEXAS INSTR, SEMICON DIV.	SN74198N/J	807805-646	6
	U13 2.38 U71 47.25 U73 47.38						

35 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



- NOTES**
- ASSEMBLE PER E&S STANDARDS.
 - INSTALL CARD EJECTORS (ITEM 4) & SPACERS (ITEM 2 & 3) AFTER FLOW SOLDERING.
 - MARK ECO NO. AND SERIAL NO. AND ASSY NO. APPROX AS SHOWN USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV.
 - ITEM NUMBERS ON THE DWG CORRESPOND WITH THE LOCATION DESIGNATION ON THE PARTS LIST.
 - MARK ECO NO. AND SERIAL NO. AND ASSY NO. ON ITEM 8. USE WHITE OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV.

REFERENCE DOCUMENTS
 LOGIC DIAGRAM ---- 200111-601
 PARTS LIST----- PL200111-101

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓	DRAWN <i>Howard L. Venter</i> SEP 23	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
	CHECKED <i>Art Coogan</i> 4 OCT 79		
MATERIAL SEE PARTS LIST	MECH	CARD ASSEMBLY, DIRECTIONALITY (W.W.)	
FINISH	ELEC <i>Bl. 24561</i> PROJ. ENG <i>Phillips</i> 8 OCT 79 APPROVED <i>Phillips</i> 11 OCT 79		
	SIZE	CODE IDENT NO.	REV
	C	53938	200111-101 NC
	SCALE FULL	SHEET 1 OF 1	

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) (2)

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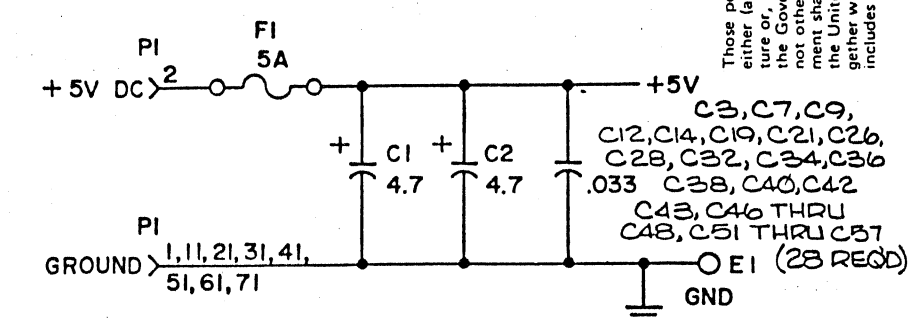


REF DESIG	E+S PART NO	VENDOR PART NUMBER	REF DESIG	E+S PART NO	VENDOR PART NUMBER	PIN #	WIRENAME
C 1	804102-475	CS138F475K	U 40	807692-646	SN74165N	P1 3	DAT0
C 2	804102-475	CS138F475K	U 41	807730-646	SN74109N	P1 4	DAT1
C 3	804115-333	CY15C333M	U 42	807400-055	SN74500N	P1 5	DAT2
C 7	804115-333	CY15C333M	U 43	807451-055	SN74551N	P1 6	DAT3
C 9	804115-333	CY15C333M	U 44	807694-055	SN745194N	P1 7	DAT4
C 12	804115-333	CY15C333M	U 45	807413-646	SN74164N	P1 8	DAT5
C 14	804115-333	CY15C333M	U 46	807694-055	SN745194N	P1 9	DAT6
C 19	804115-333	CY15C333M	U 50	807416-055	SN74504N	P1 10	DAT7
C 21	804115-333	CY15C333M	U 51	807694-055	SN745194N	P1 12	MDIN
C 26	804115-333	CY15C333M	U 52	807400-055	SN74500N	P1 13	ADZOVFL
C 28	804115-333	CY15C333M	U 53	807474-255	SN74H74N	P1 14	ADYOVFL
C 32	804115-333	CY15C333M	U 54	807653-055	SN745153N	P1 15	ADZOVFL
C 34	804115-333	CY15C333M	U 55	807657-055	SN745157N	P1 16	DROVFL
C 36	804115-333	CY15C333M	U 56	807410-055	SN74510N	P1 17	DRFRONTFACE
C 38	804115-333	CY15C333M	U 60	807416-055	SN74504N	P1 18	*DRSP
C 40	804115-333	CY15C333M	U 61	807694-055	SN745194N	P1 20	DRSLWIDTH0
C 42	804115-333	CY15C333M	U 62	807741-055	SN745135N	P1 22	DRSLWIDTH1
C 43	804115-333	CY15C333M	U 63	807657-055	SN745157N	P1 23	GC1FRONTFACE
C 46	804115-333	CY15C333M	U 64	807400-055	SN74500N	P1 24	GC2ENABOVFL
C 47	804115-333	CY15C333M	U 65	807694-055	SN745194N	P1 25	*GC2ENABLEDIRNORM
C 51	804115-333	CY15C333M	U 66	807413-646	SN74164N	P1 26	GC2FORCEDIRNORM
C 52	804115-333	CY15C333M	U 70	807403-055	SN74503N	P1 27	GC1ADDCODE0
C 55	804115-333	CY15C333M	U 71	807805-646	SN74198N	P1 28	GC1ADDCODE1
C 56	804115-333	CY15C333M	U 73	807805-646	SN74198N	P1 29	GC1ADDCODE2
C 57	804115-333	CY15C333M	U 74	807805-646	SN74198N	P1 30	*ICLD6
R 1	803201-102	.	U 75	807805-646	SN74198N	P1 32	DRSINE
R 2	803201-102	.	U 76	807694-055	SN745194N	P1 33	DRADDT
R 3	803201-102	.	P1 34			P1 34	*ICLD3
R 4	803201-102	.	P1 35			P1 35	ADSPY
P 5	803201-102	.	P1 36			P1 36	ADSPX
U 10	807402-055	SN74502N	P1 37			P1 37	DRX0
U 11	807805-646	SN74198N	P1 38			P1 38	DRBSTOP
U 13	807805-646	SN74198N	P1 39			P1 39	DRBMANT
U 14	807665-646	SN74166N	P1 40			P1 40	*ICLD4
U 15	807658-055	SN745158N	P1 42			P1 42	*ICLD5
U 16	807400-055	SN74500N	P1 43			P1 43	*ICLD2
U 20	807692-646	SN74165N	P1 44			P1 44	GC2DIRDIVIDE
U 21	807802-055	N825137F	P1 45			P1 45	DRSLTYPE0
U 22	807802-055	N825137F	P1 46			P1 46	DRSLTYPE1
U 23	807694-055	SN745194N	P1 47			P1 47	DRBTYPE
U 24	807784-055	SN745381N	P1 48			P1 48	DRTYPE1
U 25	807694-055	SN745194N	P1 49			P1 49	*DRSER0
U 26	807784-055	SN745381N	P1 50			P1 50	JRCOLPRIOR4
U 30	807692-646	SN74165N	P1 52			P1 52	JRCOLPRIOR3
U 31	807802-055	N825137F	P1 53			P1 53	JRCOLPRIOR2
U 32	807692-646	SN74165N	P1 54			P1 54	JRCOLPRIOR1
U 33	807657-055	SN745157N	P1 55			P1 55	JRCOLPRIOR0
U 34	807413-646	SN74164N	P1 56			P1 56	*BRMAINT
U 35	807657-055	SN745157N	P1 57			P1 57	GC1JADDERACTIVE
U 36	807703-055	935470C	P1 58			P1 58	GC2JDIVACTIVE
			P1 59			P1 59	*GC1STOP
			P1 60			P1 60	DRFACEOUT-TYPE0
			P1 62			P1 62	GC2LATCH
			P1 63			P1 63	GC1SHIFTNDU
			P1 64			P1 64	GC2SHIFTFACE
			P1 65			P1 65	DRDBC0DE0
			P1 66			P1 66	JRDGC0DE1
			P1 67			P1 67	JRDGC0DE2
			P1 68			P1 68	GC2UBMLVAD
			P1 69			P1 69	*ICLD1
			P1 70			P1 70	UAT8
			P1 72			P1 72	JAT9
			P1 73			P1 73	DAT10
			P1 74			P1 74	DAT11
			P1 75			P1 75	DAT12
			P1 76			P1 76	DAT13
			P1 77			P1 77	DAT14
			P1 78			P1 78	DAT15
			P1 79			P1 79	*CMCLK0
			P1 80			P1 80	*DCZEROCODE
			P1 19			P1 19	*DRDFENABLE

3. SERIAL SHIFT LOOP SEQUENCE
 PI.12 11.20, 73.20, 30.9, 32.9, 40.9, 20.9, 34.13,
 45.6, 23.12, 16.12, 46.12, 66.13, 65.12, 76.12, 44.12,
 13.20, 74.20, 14.13, 75.20, 71.20, 51.12, 61.12, PI.20

2. NUMBERS SHOWN REFER TO CONNECTOR PI.
 ALL CAPACITANCE VALUES ARE EXPRESSED
 IN MICROFARADS.
 RESISTANCE VALUES ARE EXPRESSED IN OHMS,
 K DENOTES 1000.
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND
 PIN 20 IS POWER (+5V).
 ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND
 PIN 16 IS POWER (+5V).
 ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND
 I. PIN 14 IS POWER (+5V).
 UNLESS OTHERWISE SPECIFIED;

NOTES:



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓		CONTRACT NO. DRAWN <i>Howard L. Veater 9-21-79</i> CHECKED <i>at Cowgum 3 OCT 79</i> MECH ELEG <i>J. Blawie 10 Oct 79</i> PROJ. ENG <i>R. Morn 10 Oct 79</i> APPROVED <i>[Signature] 10-12-79</i>		SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
MATERIAL 200130-100 NOVODVIEW	FINISH	DIRECTIONALITY (w/w)		SIZE C	CODE IDENT NO 53938
NEXT ASSY.	USED ON	200111-601		REV NC	
APPLICATION		SCALE NONE		SHEET 1 OF 6	

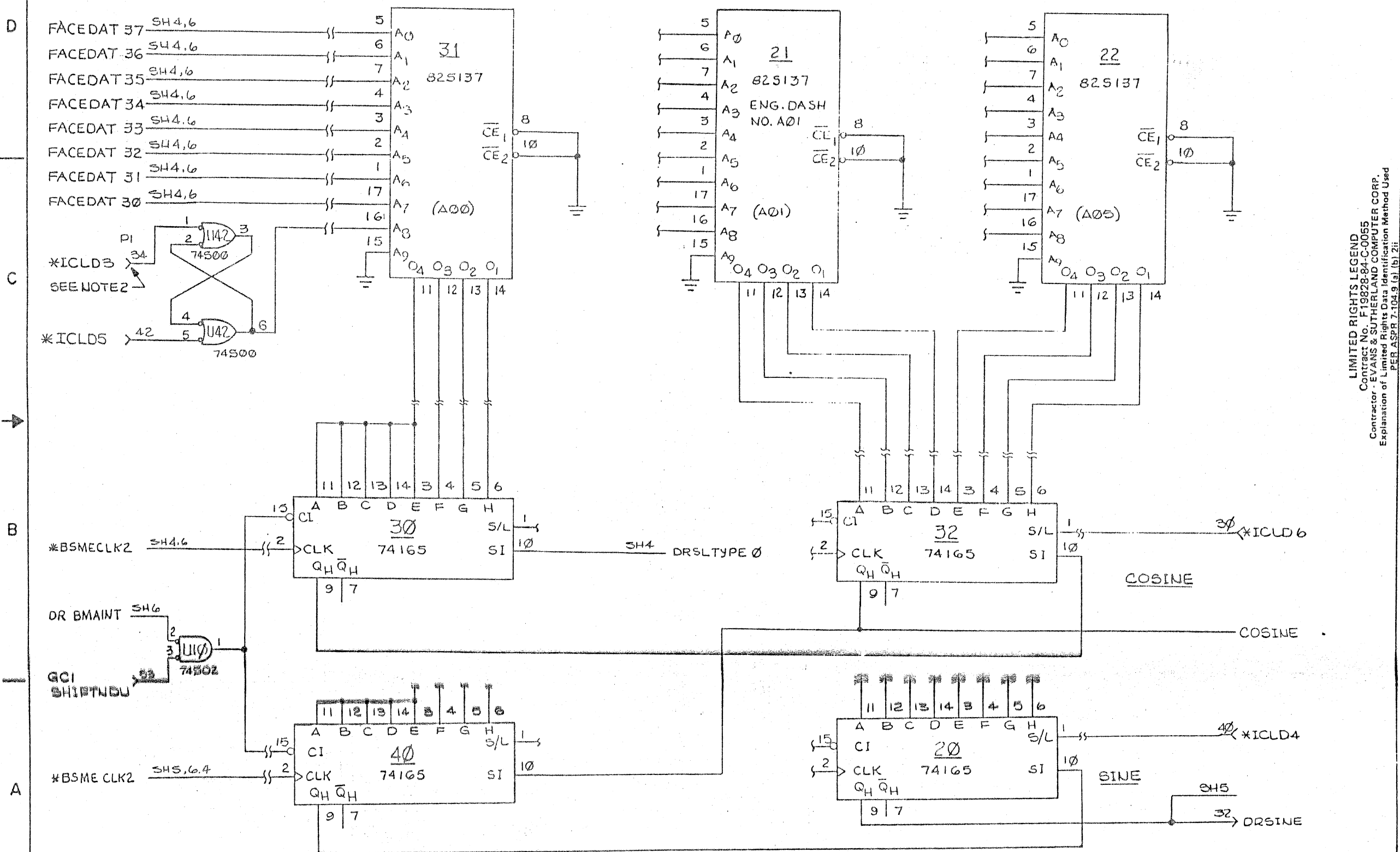
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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) (2)

These portions of this technical data indicated as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or, in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

109-11002B

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

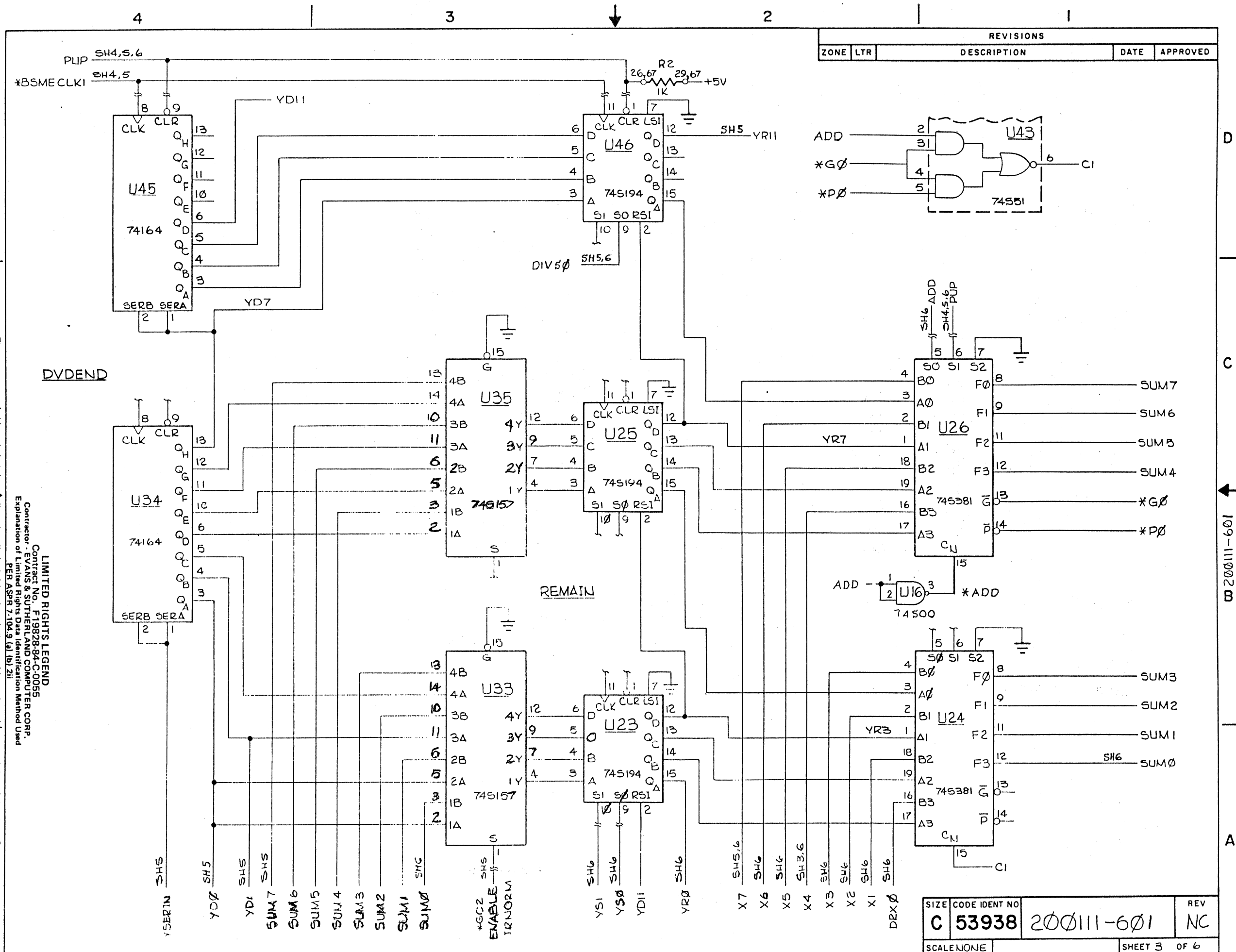


LIMITED RIGHTS LEGEND
 Contract No. F-19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a), (b) 2ii

Those portions of this technical data which are identified as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use, release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

SIZE	CODE IDENT NO	REV
C	53938 200111-601	NC
SCALE NONE	SHEET 2 OF 6	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

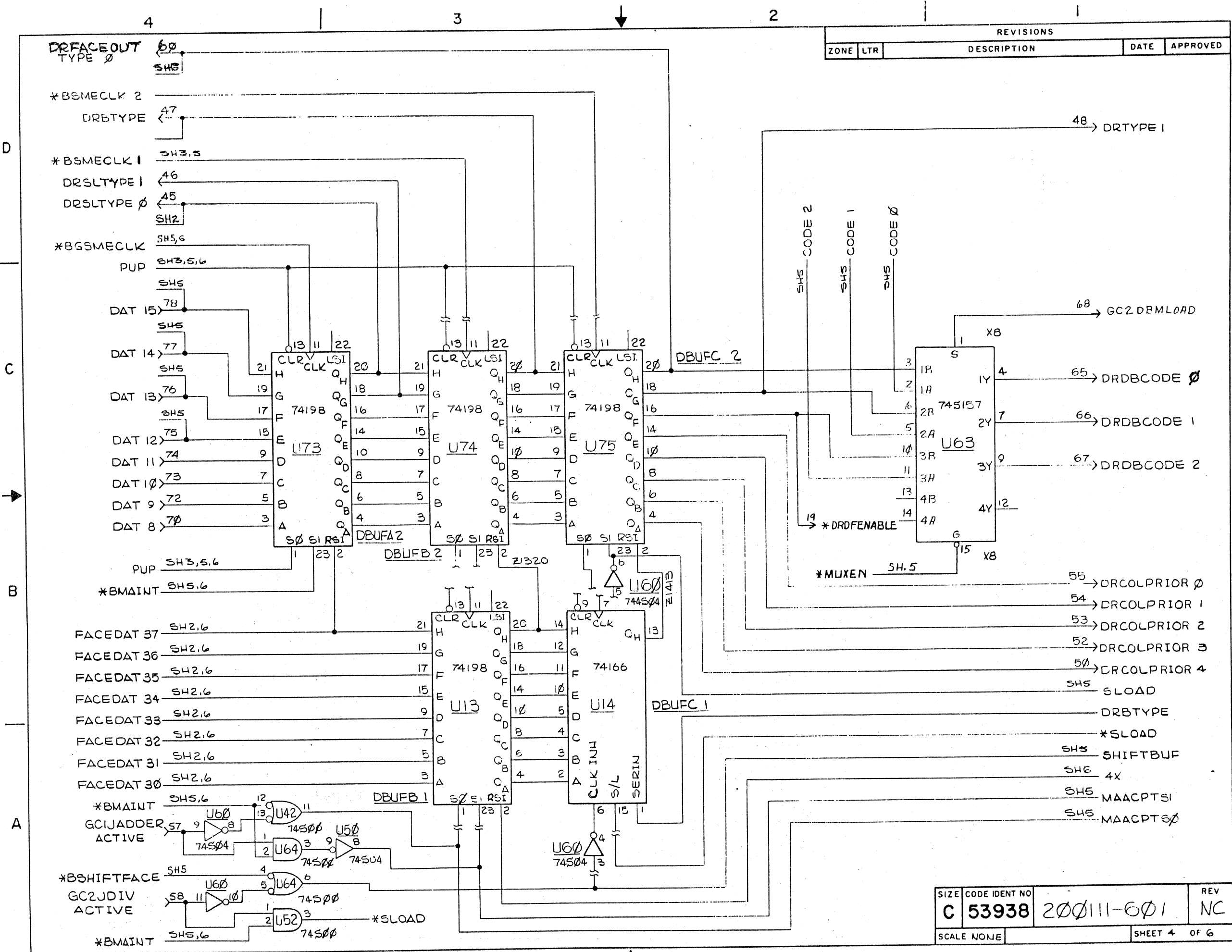


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LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7.104.9 (a) (b) (2)

SIZE	CODE IDENT NO	REV
C	53938	NC
200111-601		
SCALE NONE	SHEET 3 OF 6	

109-111002 B



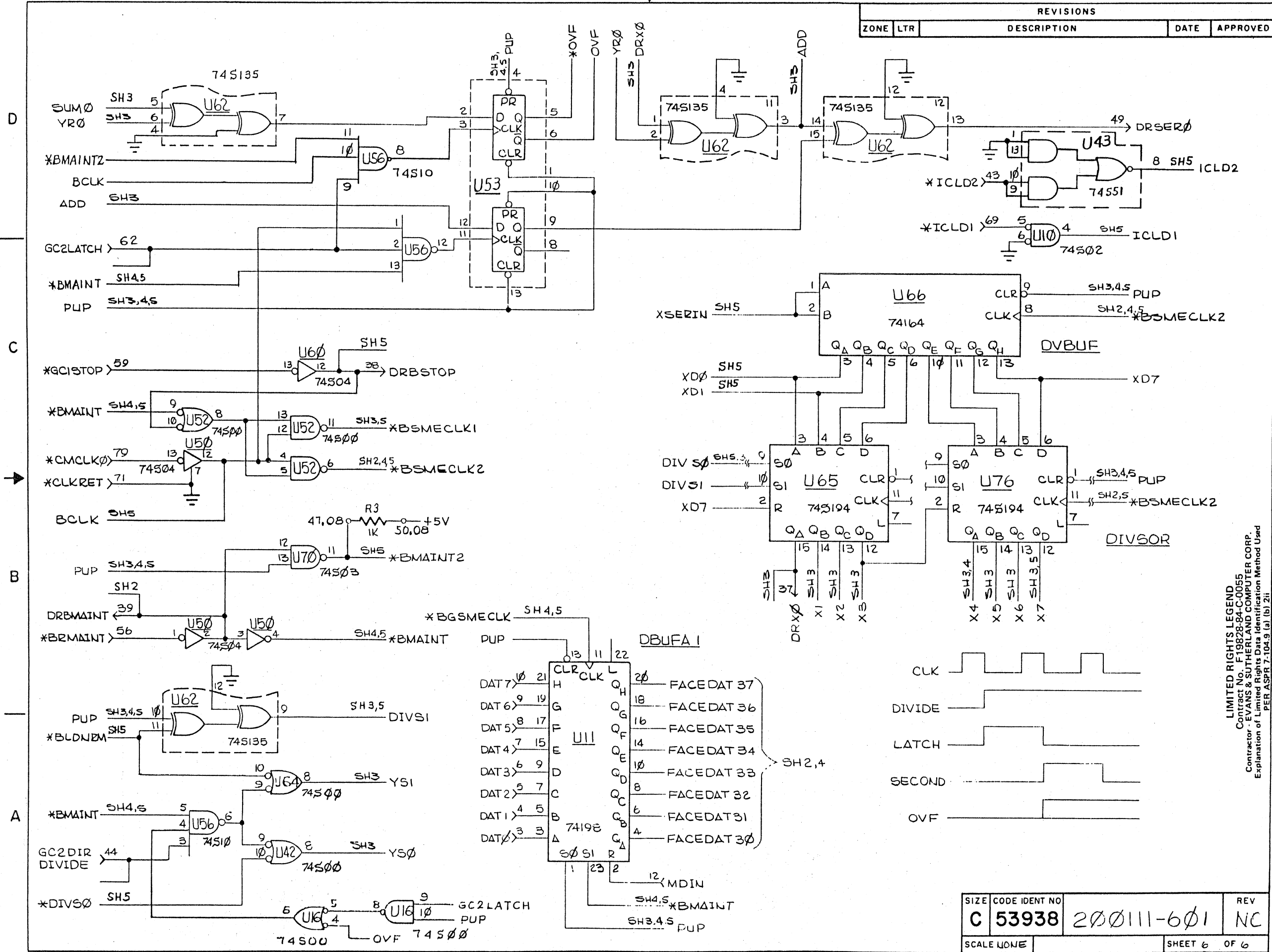
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

2000 LIMITED RIGHTS LEGEND
 CONTRACT NO. W828-84-C-0055
 CONTRACTOR - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

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SIZE	CODE IDENT NO	REV
C	53938 200111-601	NC
SCALE NONE	SHEET 4 OF 6	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



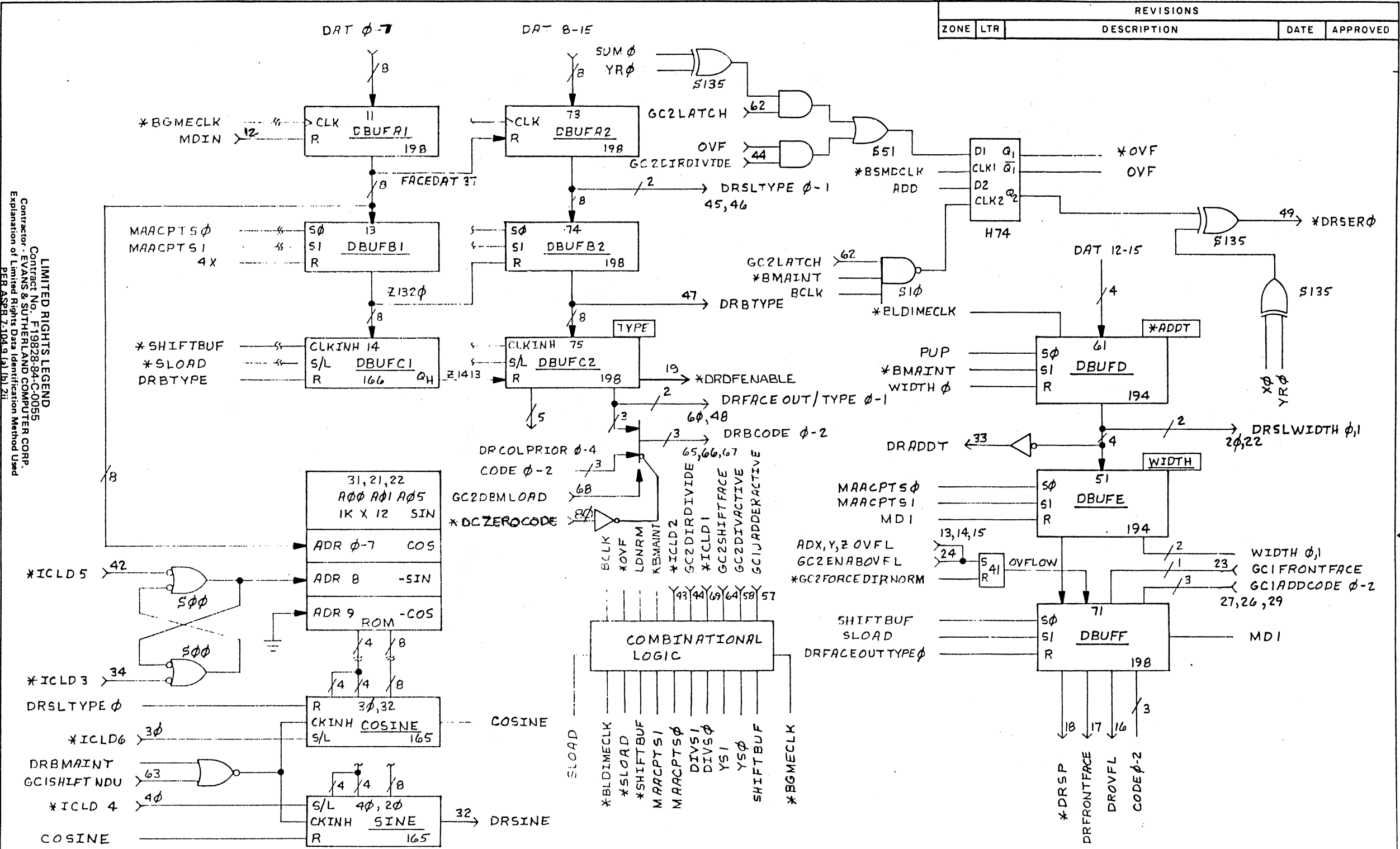
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

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SIZE	CODE IDENT NO	REV
C	53938 200111-601	NC
SCALE NONE	SHEET 6 OF 6	

Those portions of this technical data indicated as limited rights data shall not, without the written permission of the Contractor, be disclosed in whole or in part outside the Government, nor used in whole or in part by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use, release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor: EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASBZ 7-104.9 (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z)



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓
		MATERIAL
		FINISH
NEXT ASSY	USED ON	
		APPLICATION

CONTRACT NO.	
DRAWN	R. Carley 5-2-77
CHECKED	Ad. Larson 27 MAY 77
MECH	
ELEC	W. Mason 6 Jun 77
PROJ. ENG	W. J. Allen 6/9/77
APPROVED	J. J. J. 24 Sept 79

SEE SEPARATE PARTS LIST		
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		
DIRECTIONALITY BLOCK DIAGRAM		
SIZE	CODE IDENT NO	REV
C	53938	200111-901 NC
SCALE	NONE	SHEET 1 OF 2

A

A

106-11002 B

4

3

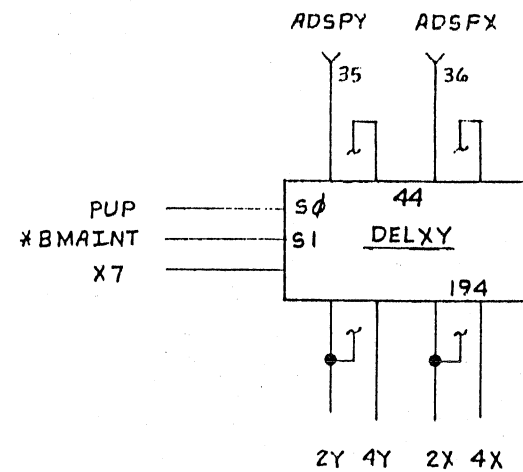
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REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED

D

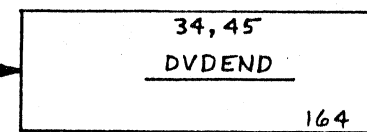
D



4Y
2Y
ADSPY

DRSINE

YSERIN



YDφ

YD1

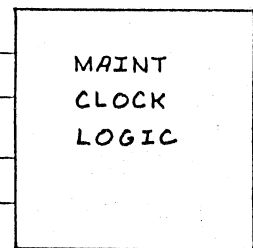
YDII

*GC2ENABLEDIRNORM 25

DIV5φ

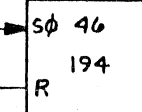
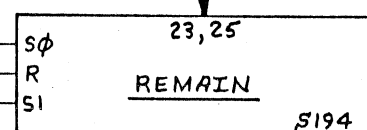
4

*CMCLK φ 79
*GC1STOP 59
*BRMAINT 56
GC2 LATCH 62



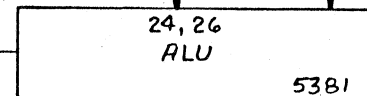
38 DRBSTOP
*BSMECLK1
*BSMECLK2
*BMAINT
39 DRBMAINT
*BSMDCLK
BCLK

YSφ
YDII
YS1
YRφ



YR11

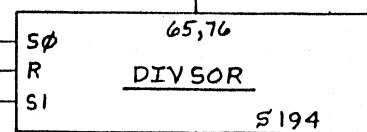
SUM φ-7



DRX φ 37

Xφ-7

DIV5φ
XD7
DIVS1



X7

XD1

XDφ

XDφ-7

φ

ADSPX 4X

1
2
3

φ

2

φ

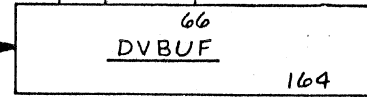
YR11

*BMAINT

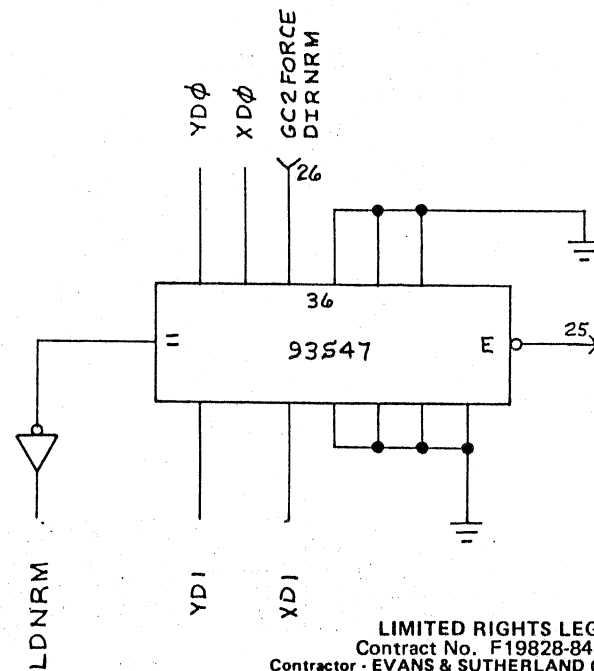
WIDTH φ, 1

φ

XSERIN



XD7



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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WIDTH 1	WIDTH φ	FUNC
0	0	4Y/X = 14°
0	1	2Y/X = 27°
1	0	Y/X = 45°
1	1	Y/4X = 76°

100-111-901
B2φφ2

A

A

SIZE	CODE IDENT NO	REV
C	53938	NC
SCALE NONE	200111-901	SHEET 2 OF 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200112-101

REV: A3 = AD

DESC: CARD ASSY, BRIGHTNESS, W/W

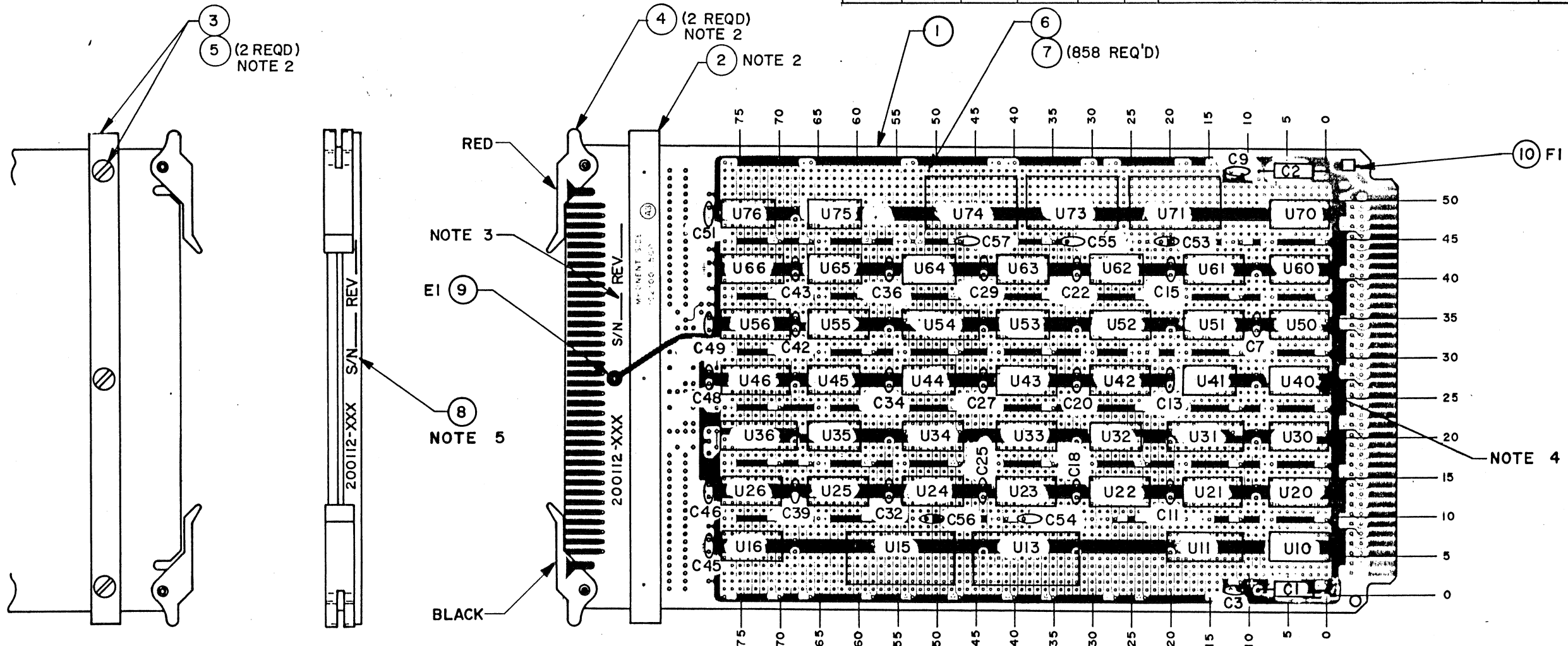
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BD,WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
006	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
007	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	858
008	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
	W/L,CD,BRTNESS (-101,	53938	EVANS & SUTHERLAND.	200112-801	200112-801	1
	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	28
	C1 C2					
	C11 C13 C15 C25 C18 C20 C22					
	C54 C27 C29 C39 C42 C43 C46					
	C48 C49 C3 C7 C9 C32 C34 C36					
	C57 C53 C56 C51 C45 C55					
009	E1	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
010	F1	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
	U10 U34	4J937	BOURNS NETWORKS	4116R-002-102	807699-102	2
	U11 U31 U36	27014	NATIONAL SEMICONDUCTOR	DM74S299N-A+	807737-055	3
	U15 U13 NC	18324	SIGNETICS CORP. MILITARY	N82S09AN	807209-018	2
	U22 U30 U21	01295	TEXAS INSTR, SEMICON DIV.	SN74166N	807665-646	3
	U24 U26 U16 U20	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	4
	U25	01295	TEXAS INSTR, SEMICON DIV.	SN74S158N	807658-055	1
	U32 U50	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	2
	U33	18324	SIGNETICS CORP. MILITARY	N74163N	807663-246	1
	U35 U64 U41	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	3
	U40 U45	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	2
	U42	18324	SIGNETICS CORP. MILITARY	N8T97N/F	807714-412	1
	U43 U44	34335	ADVANCED MICRO DEVICES IN	AM25LS14APC/DC	807798-055	2
	U46	53938	EVANS & SUTHERLAND.	807802-055-B19	807802-055-B19	1
	U54	34335	ADVANCED MICRO DEVICES IN	AM25LS15PC/74LS385	807799-055	1
	U56	53938	EVANS & SUTHERLAND.	807802-055-B20	807802-055-B20	1
	U60 U61	01295	TEXAS INSTR, SEMICON DIV.	SN74174N	807674-646	2
	U62 U53	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	2
	U63 U75	01295	TEXAS INSTR, SEMICON DIV.	SN7437N	807400-642	2
	U65	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
	U70 U66 U23 U51 U52 U55	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	6
	U71 U73	01295	TEXAS INSTR, SEMICON DIV.	SN74198N/J	807805-646	2
	U74	53938	EVANS & SUTHERLAND.	807204-708-A41	807204-708-A41	1
	U76	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1

36 ITEMS LISTED



REV	LEVEL	DESCRIPTION	DATE	APPROVED
-103	NC	REV UPDATE W/NO DWG CHNG	BH 5-19-81	
NC		REV. UPDATE W/NO DWG CHG	J/P 7/2/81	
RC2	RC2	P/L CHANGE & ADDED NOTE 6		
A1		REV UPDATE W/NO DWG CHNG	GR 3-22-82	HDG
A2		REV UPDATE W/NO DWG CHNG	GR 3-22-82	
RC3	RC3	CHANGED NOTE 6	BH 4-23-82	K Moon

REV LEVEL FOR DWG NO				REVISIONS			
REV	LEVEL	DESCRIPTION	DATE	APPROVED	ZONE	LTR	
-103	-102	-101	-100				
			A1				REV UPDATE W/NO DWG CHG
							REV UPDATE W/NO DWG CHNG
			A1				REV UPDATE W/NO DWG CHNG
			A2				REV UPDATE W/NO DWG CHNG
			RC1				155 WAS LABELED 365
PO	PO						ADDED -102 & -103 TO DWG



NOTES

- ASSEMBLE PER E&S STANDARDS.
- INSTALL CARD EJECTORS (ITEM 4) & SPACERS (ITEM 2 & 3) AFTER FLOW SOLDERING.
- MARK REV LEVEL AND SERIAL NO. AND ASSY NO. APPROX AS SHOWN USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV.
- ITEM NUMBERS ON THE DWG CORRESPOND WITH THE LOCATION DESIGNATION ON THE PARTS LIST.
- MARK REV LEVEL AND SERIAL NO. AND ASSY NO. ON ITEM 8. USE WHITE OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV.

- USE 200112-800 WIRELIST FOR 20012-100 USE 200112-801 WIRELIST FOR 20012-101 20012-102 20012-103

REFERENCE DOCUMENTS

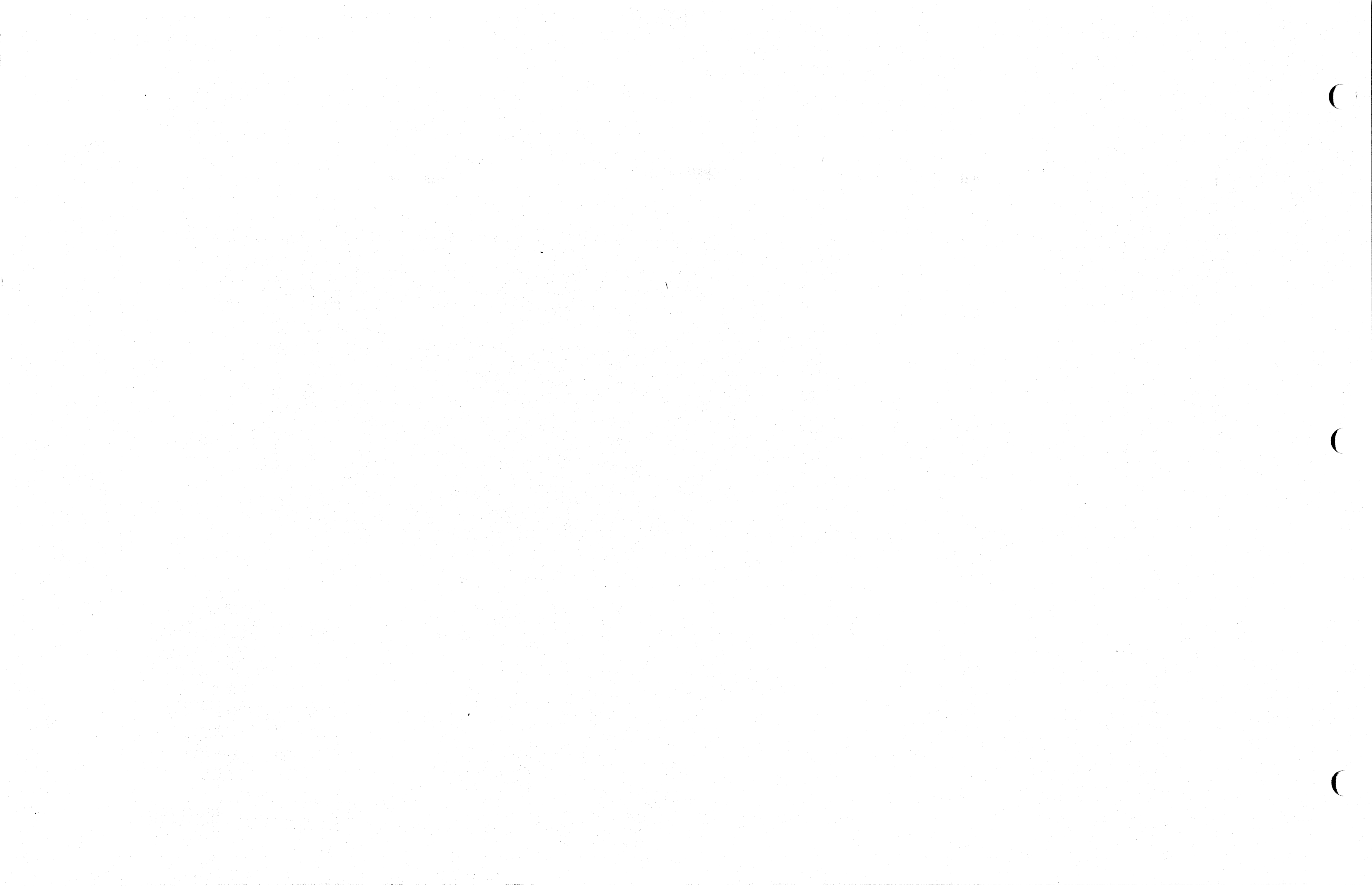
- LOGIC DIAGRAM _200112-600/601/602/603
- PARTS LIST _ PL200112-100/101/102/103

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)(2) AND COVERS ALL INFORMATION ON THIS DRAWING.
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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± ✓		DRAWN GREG TROM 14SEP79 CHECKED [Signature] 17SEP 79 MECH ELEC [Signature] 24SEP 79 PROJ. ENG [Signature] APPROVED [Signature]		EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
MATERIAL SEE PARTS LIST		SIZE CODE IDENT NO. C 53938 200112-100/101		REV SEE REV TABLE	
FINISH		SCALE FULL DO NOT SCALE		SHEET 1 OF 1	

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 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) (2) (b) (2)



REF DESIG	E+S PART NO	VENDOR PART NUMBER	REF DESIG	E+S PART NO	VENDOR PART NUMBER	PIN #	WIRENAME
C 1	804102-475	CS138F475K	U 44	807798-055	AM25LS14DC	P1 3	DATO
C 2	804102-475	CS138F475K	U 45	807416-055	SN74S04N	P1 4	DAT1
C 3	804115-333	CY15C333M	U 46	807802-055	N82S137F	P1 5	DAT2
C 7	804115-333	CY15C333M	U 50	807402-055	SN74S02N	P1 6	DAT3
C 9	804115-333	CY15C333M	U 51	807694-055	SN74S194N	P1 7	DAT4
C 11	804115-333	CY15C333M	U 52	807694-055	SN74S194N	P1 8	DAT5
C 13	804115-333	CY15C333M	U 53	807410-055	SN74S10N	P1 9	DAT6
C 15	804115-333	CY15C333M	U 54	807799-055	AM25LS15PC	P1 10	DAT7
C 18	804115-333	CY15C333M	U 55	807694-055	SN74S194N	P1 12	DAT8
C 20	804115-333	CY15C333M	U 56	807802-055	N82S137F	P1 13	DAT9
C 22	804115-333	CY15C333M	U 60	807674-646	SN74174N	P1 14	DAT10
C 25	804115-333	CY15C333M	U 61	807674-646	SN74174N	P1 15	DAT11
C 27	804115-333	CY15C333M	U 62	807410-055	SN74S10N	P1 16	BROUT0
C 29	804115-333	CY15C333M	U 63	807400-642	SN7437N	P1 17	BROUT1
C 32	804115-333	CY15C333M	U 64	807400-055	SN74S00N	P1 18	BROUT2
C 34	804115-333	CY15C333M	U 65	807411-055	SN74S11N	P1 19	BROUT3
C 36	804115-333	CY15C333M	U 66	807694-055	SN74S194N	P1 20	BROUT4
C 39	804115-333	CY15C333M	U 70	807694-055	SN74S194N	P1 22	BROUT5
C 42	804115-333	CY15C333M	U 71	807805-646	SN74198N	P1 23	BROUT6
C 43	804115-333	CY15C333M	U 73	807805-646	SN74198N	P1 24	BROUT7
C 45	804115-333	CY15C333M	U 74	807204-708	N82S181N	P1 25	*ICLD1
C 46	804115-333	CY15C333M	U 75	807400-642	SN7437N	P1 26	GC1JADDERACTIVE
C 48	804115-333	CY15C333M	U 76	807451-055	SN74S51N	P1 27	INI
C 49	804115-333	CY15C333M				P1 28	BROT1
C 51	804115-333	CY15C333M				P1 29	GC2WRITEB
C 53	804115-333	CY15C333M				P1 30	*GC1STOP
C 54	804115-333	CY15C333M				P1 32	GC2JDIVACTIVE
C 55	804115-333	CY15C333M				P1 33	GC2SHIFTF
C 56	804115-333	CY15C333M				P1 34	BRENDBLK
C 57	804115-333	CY15C333M				P1 35	BRSIGNB
U 10	807699-102	898-1-R1K				P1 36	DRX0
U 11	807737-055	SN74S299N				P1 37	*GC2ZEROIT
U 13	807209-018	N82S091				P1 38	*DRSER0
U 15	807209-018	N82S091				P1 39	URBSTOP
U 16	807657-055	SN74S157N				P1 40	MUZMF2
U 20	807657-055	SN74S157N				P1 42	MUZMF3
U 21	807665-646	SN74166N				P1 43	MUZMF4
U 22	807665-646	SN74166N				P1 44	MUZMF5
U 23	807694-055	SN74S194N				P1 45	MUZMF6
U 24	807657-055	SN74S157N				P1 46	MUZMF7
U 25	807658-055	SN74S158N				P1 47	MUZMF8
U 26	807657-055	SN74S157N				P1 48	MUZMF9
U 30	807665-646	SN74166N				P1 49	GC2CLRNCNT
U 31	807737-055	SN74S299N				P1 50	*GC2LDNCNT
U 32	807402-055	SN74S02N				P1 52	DVNCNT3
U 33	807663-246	SN74163N				P1 53	DVNCNT2
U 34	807699-102	898-1-R1K				P1 54	DVNCNT1
U 35	807400-055	SN74S00N				P1 55	DVNCNT0
U 36	807737-055	SN74S299N				P1 56	GC2LDFB
U 40	807416-055	SN74S04N				P1 57	GC2L DFA
U 41	807400-055	SN74S00N				P1 58	URTYPE0
U 42	807714-412	N8T97B				P1 59	URTYPE1
U 43	807798-055	AM25LS14DC				P1 60	*BRMAINT
						P1 62	BRDEFOCUS3
						P1 63	BRDEFOCUS2
						P1 64	BRDEFOCUS1
						P1 65	BRDEFOCUS0
						P1 66	GC2LXPOWENTIATE
						P1 67	DVXSER
						P1 68	DVYSER
						P1 69	GC2DIRDIVIDE
						P1 70	MUS-N
						F1 72	*GC2FACE
						P1 73	CMSHIFTO
						P1 74	*CMCHANO
						P1 75	CMDEVENO
						P1 76	*ITSNE
						P1 77	MAINTOAT
						P1 78	*BRMAINTM
						P1 79	*CMCLKO
						P1 80	*DRDFENABLE

REV LEVEL FOR DASH NO.				REVISIONS				
-603	-602	-601	-600	ZONE	LTR	DESCRIPTION	DATE	APPROVED
			A1			LOGIC NAME CHANGE 25.03 WAS *GCZFACE. IS NOW GC2DIRDIVIDE	8-30-77	
			A2			REV UPDATE W/NO DWG CHNG	1-11-78	JB
		A1				MINOR DWG CHANGES	2-19-80	
		A2	A3	B3		ADDED 825181 (A41) TO U74 SMT 3	5-6-80	Per Specs
PO	PO					ADDED -602, -603 TO DWG	1-15-81	JLP
	NC					REV UPDATE W/NO DWG CHNG BX	5-19-81	R. Moon
NC						REV UPDATE W/NO DWG CHNG KV	7-15-81	R. Moon
RC1	RC1	RC1	RC1			ADDED -603 FROM SPEC TO SHT 4	7-30-81	G.R.
A1		A3	A4			CHANGED DESCR. ON U46 & U56	3-22-82	GR
A2						REV UPDATE W/NO DWG CHNG GR	3-22-82	GR
RC2	RC2	RC2	RC2	2-A2		REVISED PER ECO	7-15-82	GR
RC3	RC3	RC3	RC3			CHSD NOTE 3	1-29-84	Per Specs

U 10	807699-102	898-1-R1K				P1 38	*DRSER0
U 11	807737-055	SN74S299N				P1 39	URBSTOP
U 13	807209-018	N82S091				P1 40	MUZMF2
U 15	807209-018	N82S091				P1 42	MUZMF3
U 16	807657-055	SN74S157N				P1 43	MUZMF4
U 20	807657-055	SN74S157N				P1 44	MUZMF5
U 21	807665-646	SN74166N				P1 45	MUZMF6
U 22	807665-646	SN74166N				P1 46	MUZMF7
U 23	807694-055	SN74S194N				P1 47	MUZMF8
U 24	807657-055	SN74S157N				P1 48	MUZMF9
U 25	807658-055	SN74S158N				P1 49	GC2CLRNCNT
U 26	807657-055	SN74S157N				P1 50	*GC2LDNCNT
U 30	807665-646	SN74166N				P1 52	DVNCNT3
U 31	807737-055	SN74S299N				P1 53	DVNCNT2
U 32	807402-055	SN74S02N				P1 54	DVNCNT1
U 33	807663-246	SN74163N				P1 55	DVNCNT0
U 34	807699-102	898-1-R1K				P1 56	GC2LDFB
U 35	807400-055	SN74S00N				P1 57	GC2L DFA
U 36	807737-055	SN74S299N				P1 58	URTYPE0
U 40	807416-055	SN74S04N				P1 59	URTYPE1
U 41	807400-055	SN74S00N				P1 60	*BRMAINT
U 42	807714-412	N8T97B				P1 62	BRDEFOCUS3
U 43	807798-055	AM25LS14DC				P1 63	BRDEFOCUS2
						P1 64	BRDEFOCUS1
						P1 65	BRDEFOCUS0
						P1 66	GC2LXPOWENTIATE
						P1 67	DVXSER
						P1 68	DVYSER
						P1 69	GC2DIRDIVIDE
						P1 70	MUS-N
						F1 72	*GC2FACE
						P1 73	CMSHIFTO
						P1 74	*CMCHANO
						P1 75	CMDEVENO
						P1 76	*ITSNE
						P1 77	MAINTOAT
						P1 78	*BRMAINTM
						P1 79	*CMCLKO
						P1 80	*DRDFENABLE

4. FOR VARIATION BETWEEN -600, -601, -602, -603 SEE SHT 2, ZONE 2-A; SHT 3, ZONE 2-A; SHT 4, ZONE 4-C; SHT 4, ZONE 2-B.

3. SERIAL SHIFT LOOP SEQUENCE
 PL.66, 11.17, 31.17, 26.7, 22.13, 20.7, 21.13, 30.13, 55.12, 26.9, 36.17, 71.20, 70.12, 55.12, 20.4, 73.20, 51.12, 66.12, 23.12, PL.65, 42.13, PL.77

2. NUMBERS SHOWN REFER TO CONNECTOR P1.
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.

RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.

RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).

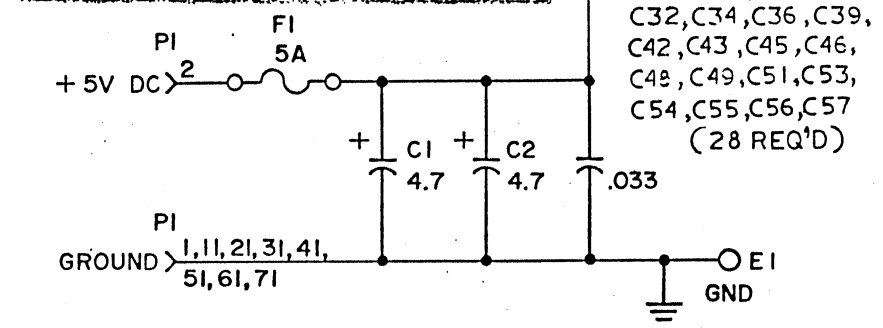
ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V).

ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).

UNLESS OTHERWISE SPECIFIED;

NOTES:

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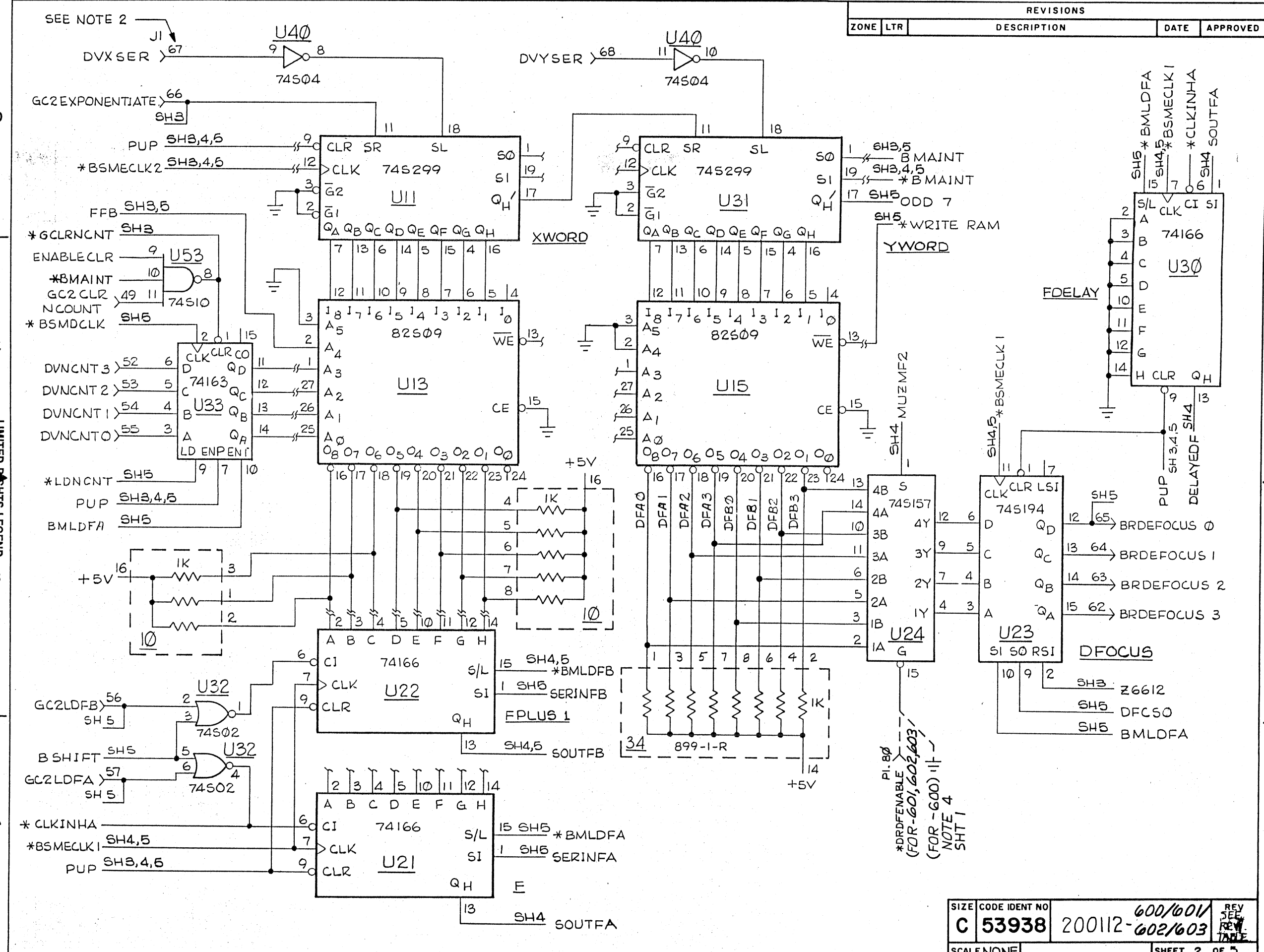


UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±		CONTRACT NO.	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
200130-100	NOVO SP	DRAWN G.TROM 9-14-79	BRIGHTNESS CONTROL W/W
NEXT ASSY	USED ON	CHECKED [Signature] 17 SEP 79	
APPLICATION		MECH	REV. TABLE
		ELEC [Signature] 10 Oct 79	SIZE CODE IDENT NO
		PROJ. ENG [Signature] 10 Oct 79	C 53938 200112-600/601/603
		APPROVED [Signature] 10-4-79	SCALE NONE SHEET 1 OF 5

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Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASH 7-184.4 (a) (1) (2) 21

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

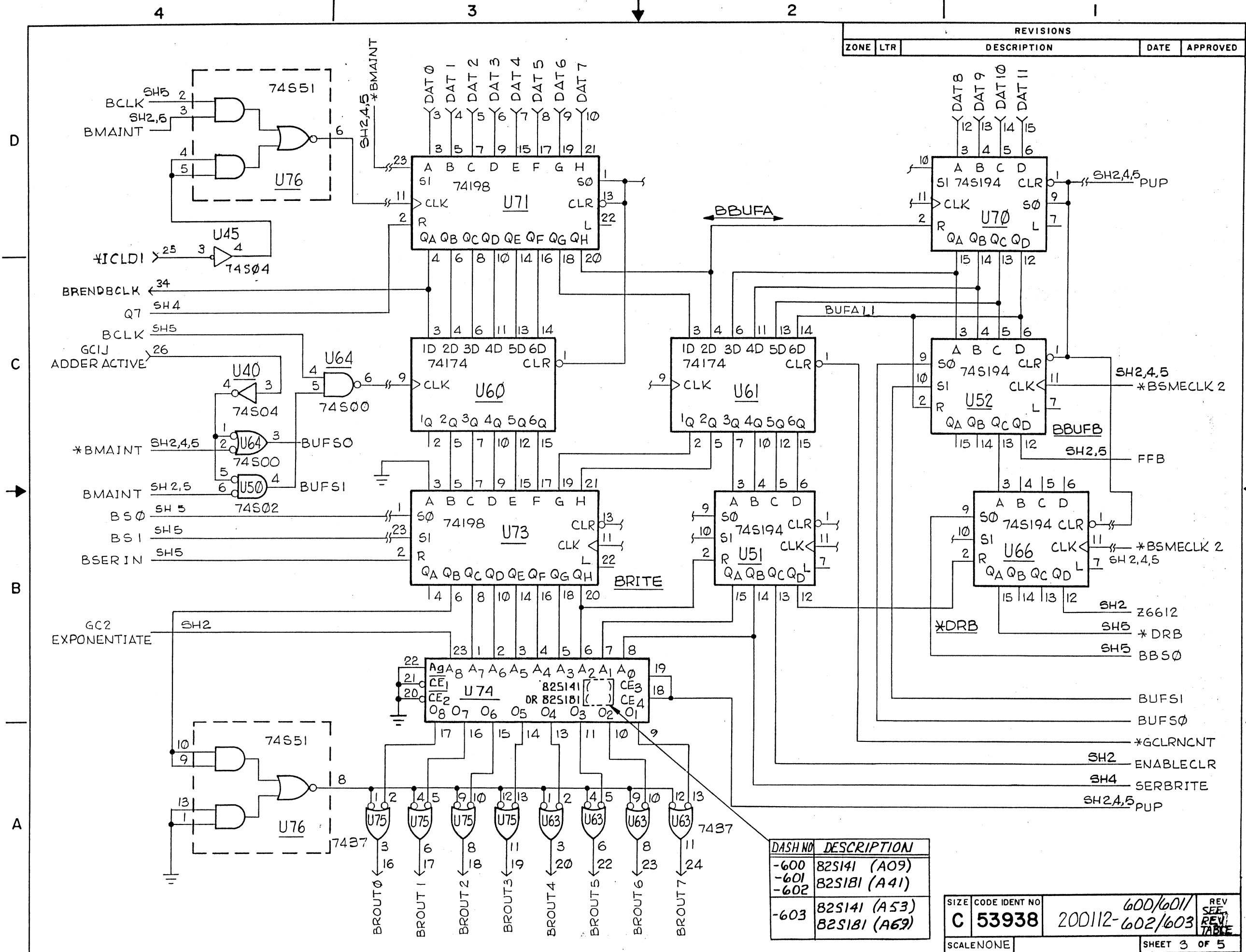


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 Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

SIZE	CODE IDENT NO	REV
C	53938	200112-600/601
SCALE NONE		SHEET 2 OF 5

200112-600/601 109/002-21002 600/209/1602/603



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

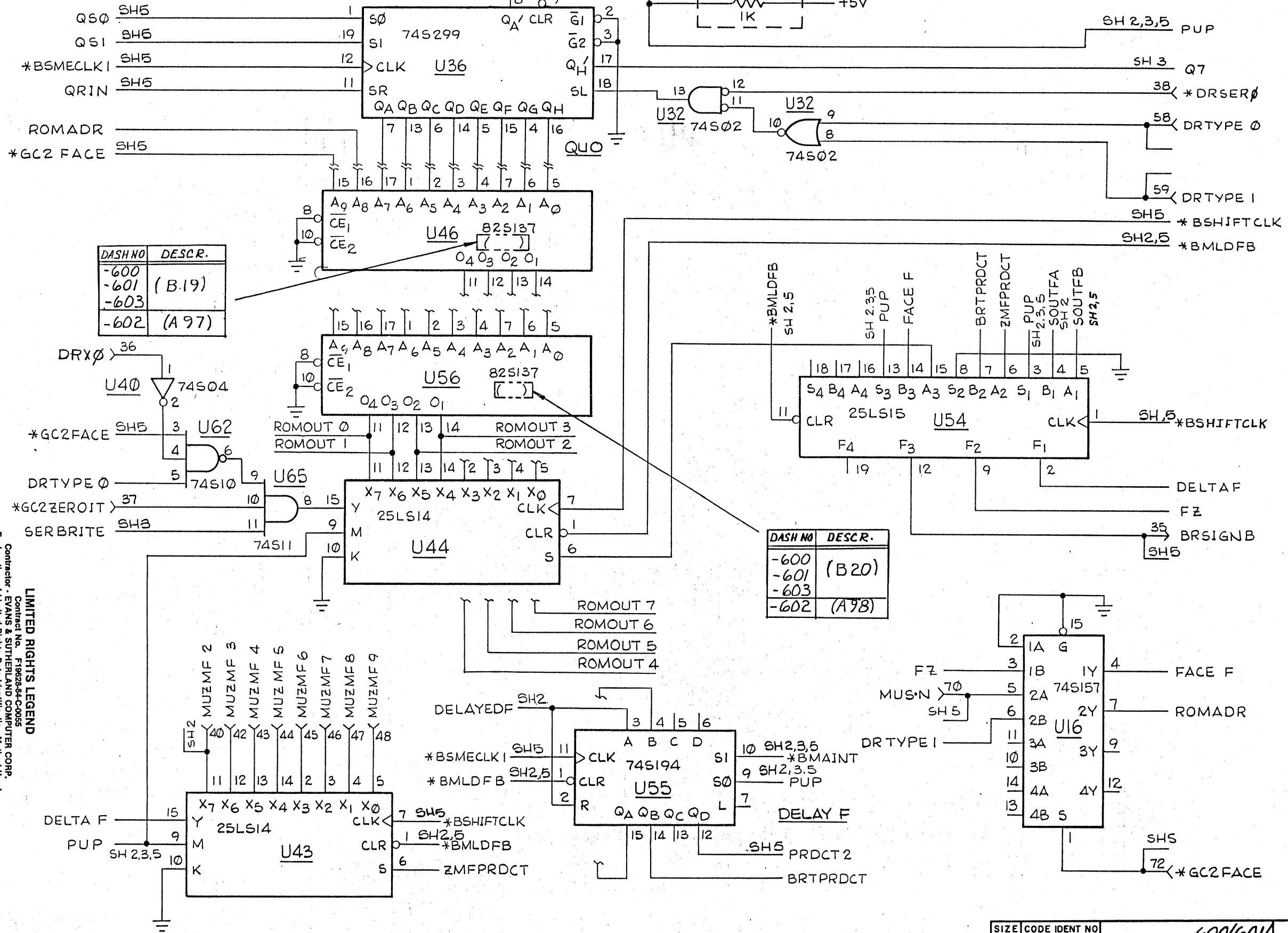
DASH NO	DESCRIPTION
-600	82S141 (A09)
-601	82S181 (A41)
-602	
-603	82S141 (A53) 82S181 (A69)

SIZE	CODE IDENT NO	200112-602/603	REV	SEE
C	53938	600/601/	TABLE	
SCALE NONE		SHEET 3 OF 5		

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Contract No. F19628-84-C-0065
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SH 2,3,5 PUP		
		SH 3 Q7		
		*DRSERØ		
		DRTYPE Ø		
		DRTYPE I		
		*BSHIFTCLK		
		*BMLDFB		



DASH NO	DESCR.
-600	
-601	(B.19)
-603	
-602	(A97)

DASH NO	DESCR.
-600	(B20)
-601	
-603	
-602	(A98)

LIMITED RIGHTS LEGEND
 Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASFR 7-04.9 (b) (7) (D) (2)

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D
 C
 B 200112-602/601
 A

SIZE	CODE IDENT NO	REV
C	53938	600/601
SCALE NONE		200112-602/603
		SHEET 4 OF 5

4

3

2

1

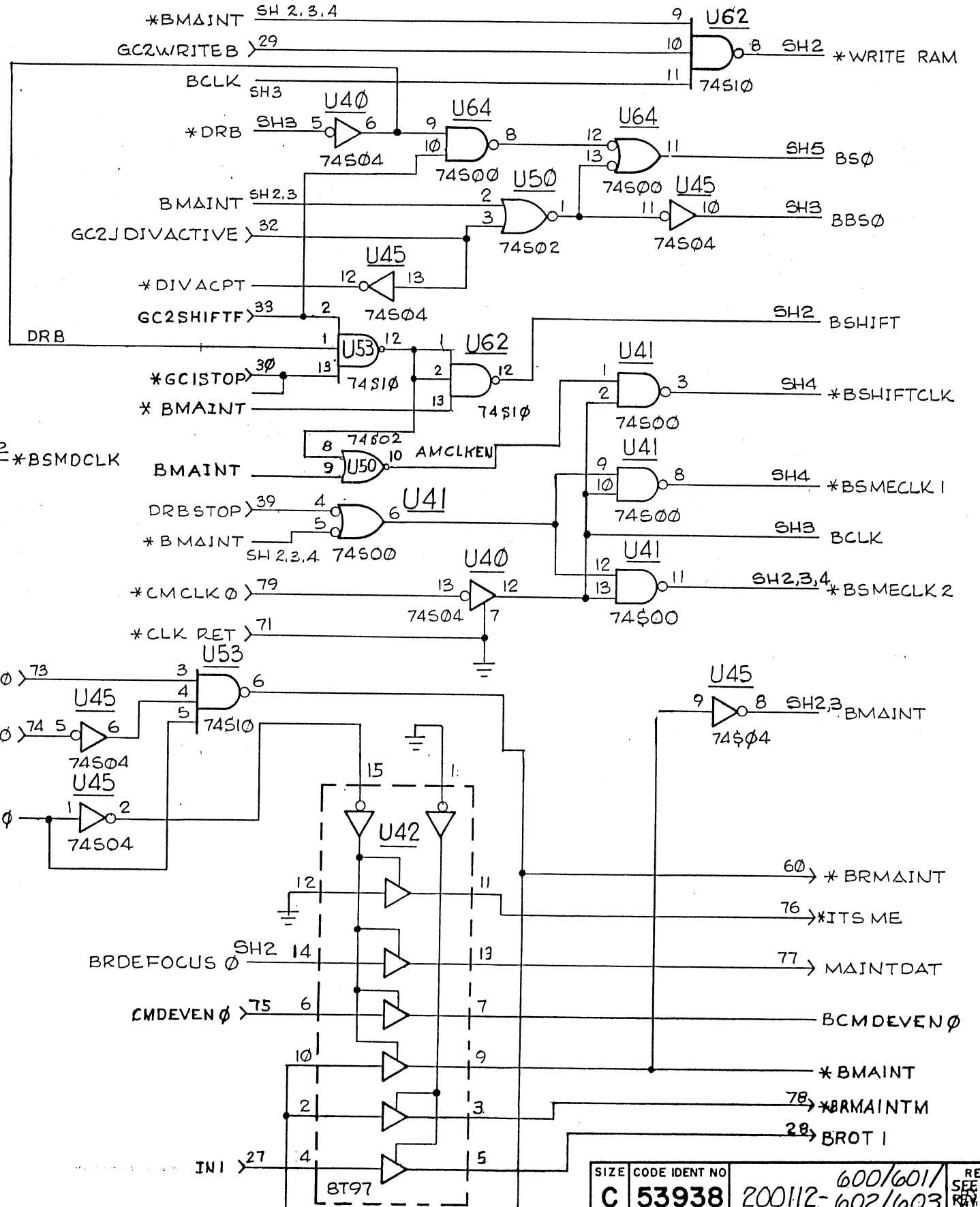
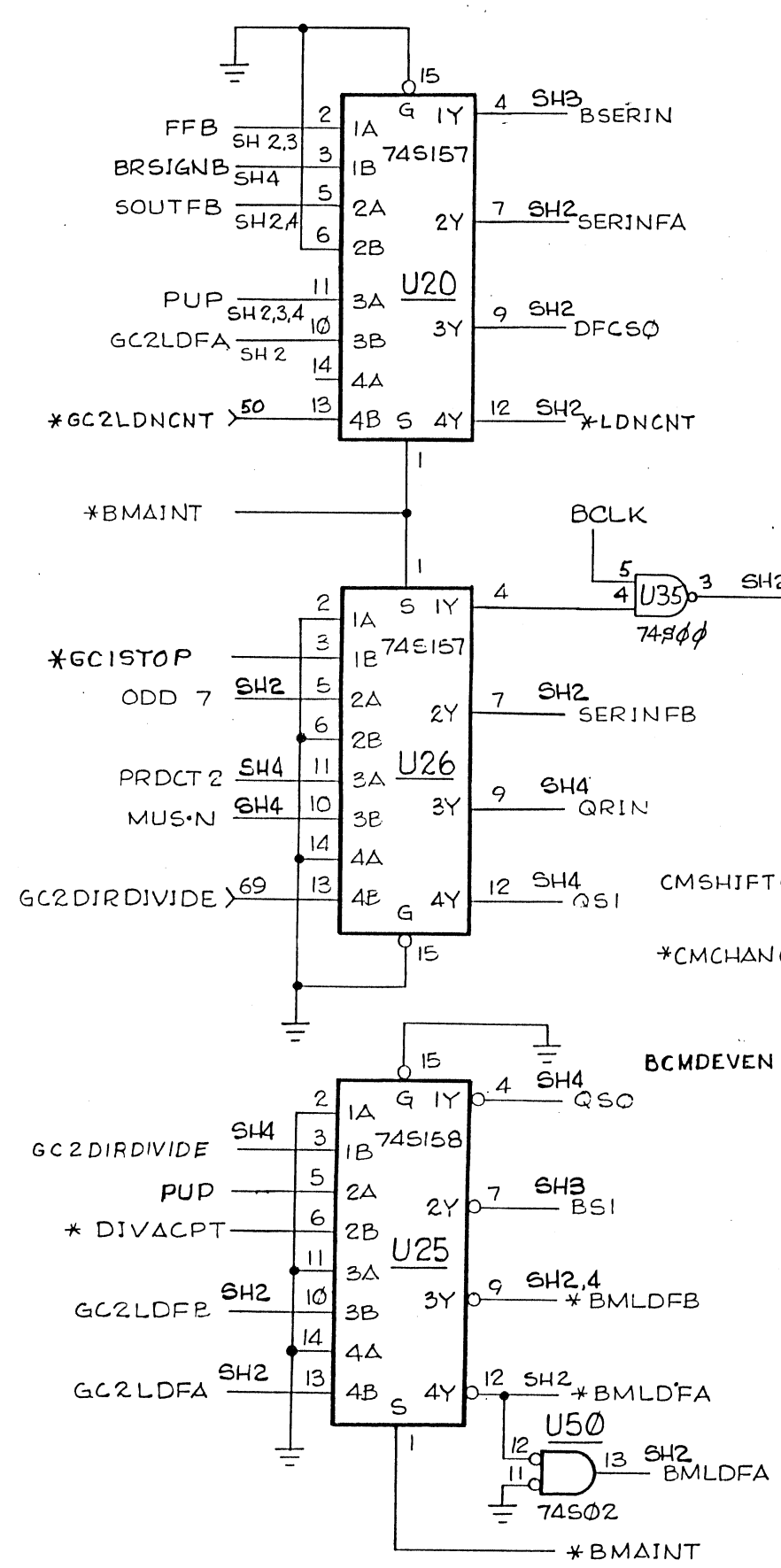
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D

C

B

A



D

C

B

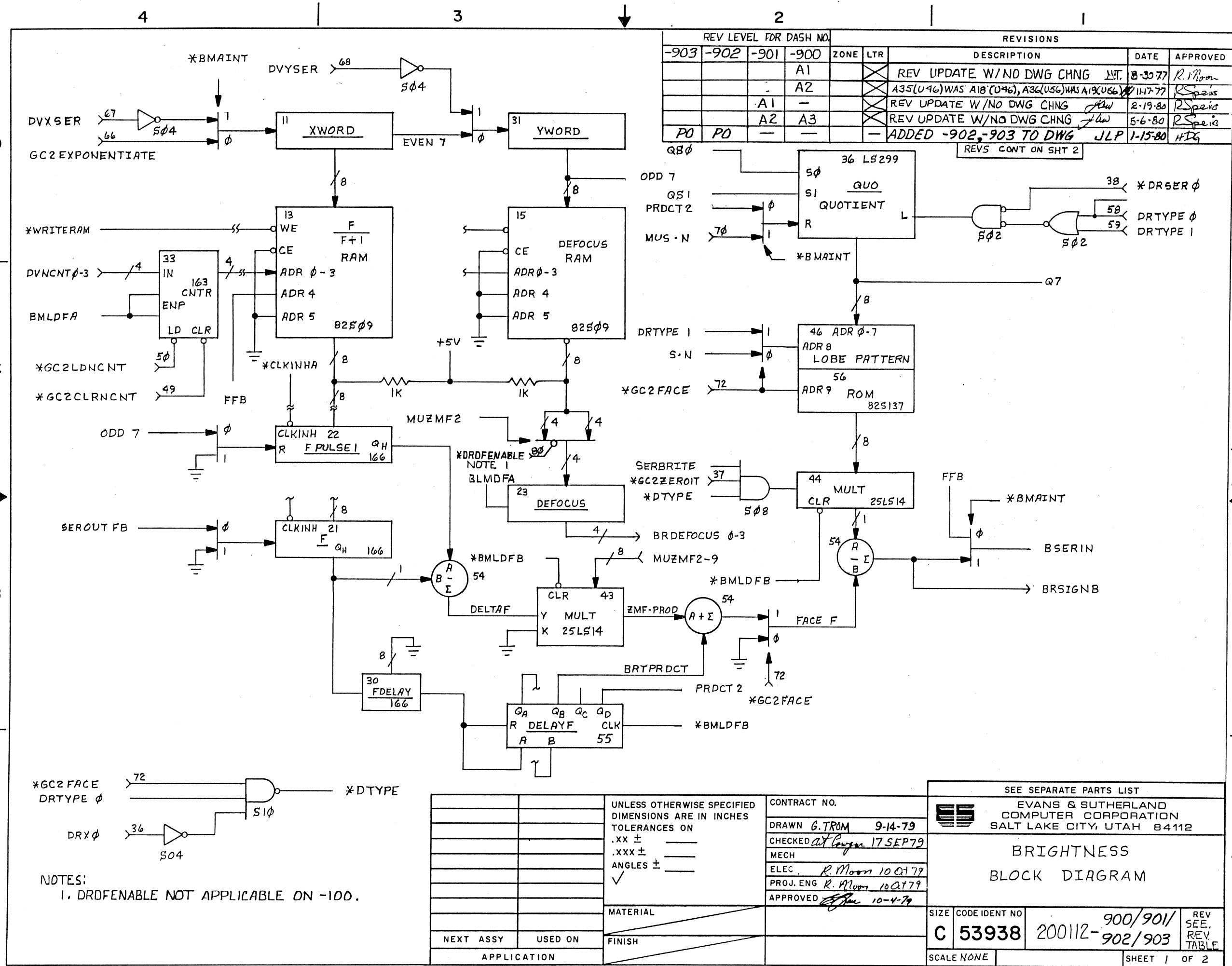
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LIMITED RIGHTS LEGEND
 Contract No. F196284-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

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SIZE	CODE IDENT NO	REV
C	53938	SEE REV TABLE
SCALE NONE	200112-600/601/602/603	SHEET 5 OF 5

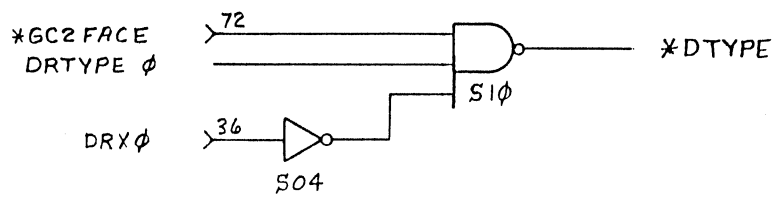




REV LEVEL FOR DASH NO.				REVISIONS			
REV	LEVEL	FOR DASH NO.	ZONE	LTR	DESCRIPTION	DATE	APPROVED
-903	-902	-901	-900	A1	REV UPDATE W/NO DWG CHNG	8-30-77	R. Moon
				A2	A35(U96) WAS A18(U96), A36(U56) WAS A19(U86)	11-7-77	R. Speis
				A1	REV UPDATE W/NO DWG CHNG	2-19-80	R. Speis
				A2	REV UPDATE W/NO DWG CHNG	5-6-80	R. Speis
PO	PO	-	-	-	ADDED -902, -903 TO DWG	1-15-80	JLP

D
C
B
A

D
C
B
A



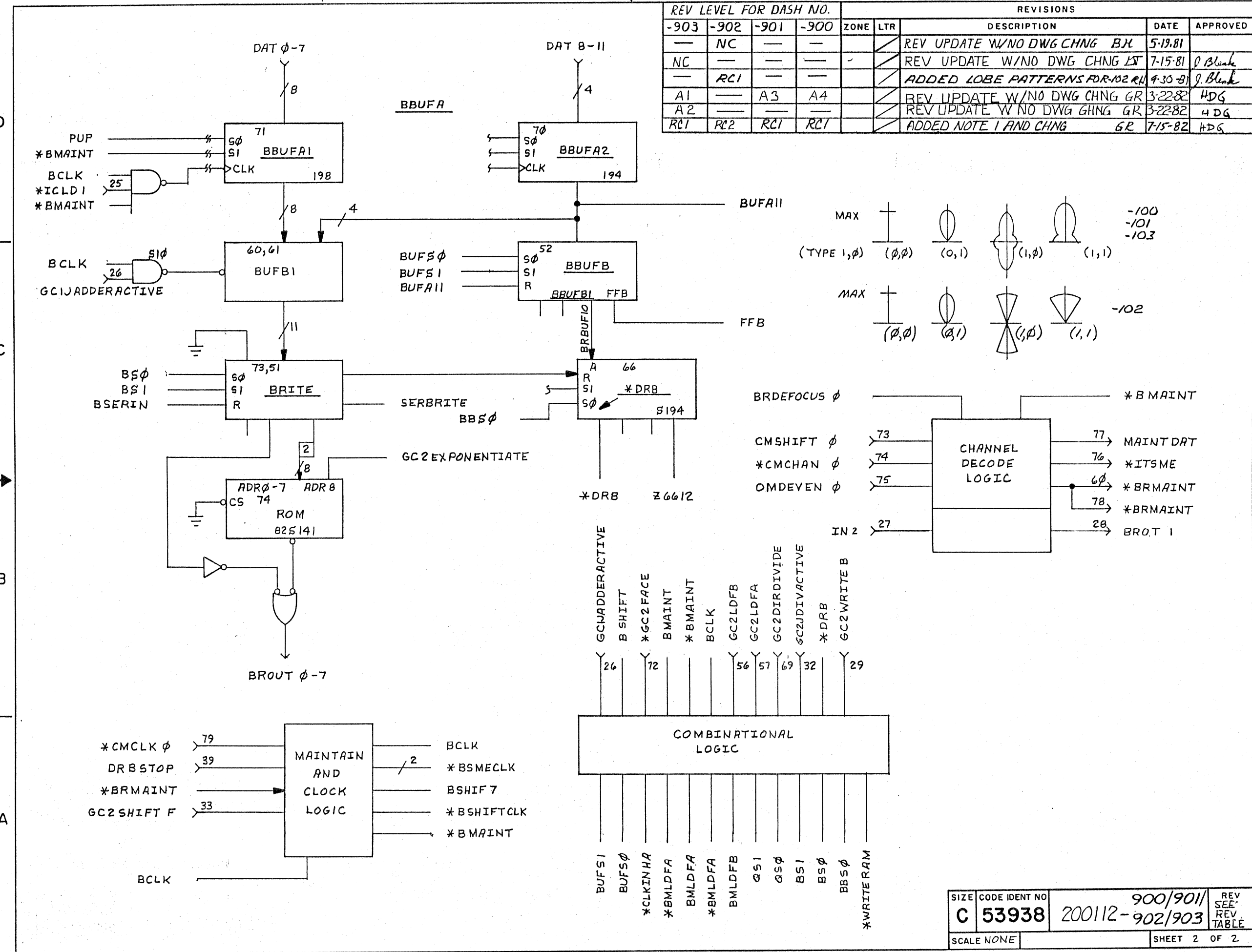
NOTES:
1. DRDFENABLE NOT APPLICABLE ON -100.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		CONTRACT NO.	SEE SEPARATE PARTS LIST	
.xx ±	—	DRAWN G. TROM 9-14-79	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
.xxx ±	—	CHECKED at Canyon 17 SEP 79	BRIGHTNESS BLOCK DIAGRAM	
ANGLES ±	—	MECH		
✓	—	ELEC. R. Moon 10 Q179		
MATERIAL		PROJ. ENG. R. Moon 10 Q179	SIZE	CODE IDENT NO
FINISH		APPROVED [Signature] 10-4-79	C	53938
NEXT ASSY	USED ON		200112-900/901/902/903	
APPLICATION			SCALE NONE	REV. SEE REV. TABLE

SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
BRIGHTNESS BLOCK DIAGRAM	
SIZE	CODE IDENT NO
C	53938
200112-900/901/902/903	
SCALE NONE	SHEET 1 OF 2

20112-900/901/902/903

REV LEVEL FOR DASH NO.				REVISIONS				
-903	-902	-901	-900	ZONE	LTR	DESCRIPTION	DATE	APPROVED
—	NC	—	—			REV UPDATE W/NO DWG CHNG BH	5-19-81	
NC	—	—	—			REV UPDATE W/NO DWG CHNG LT	7-15-81	J. Blank
—	RC1	—	—			ADDED LOBE PATTERNS FOR -102 RL	9-30-81	J. Blank
A1	—	A3	A4			REV UPDATE W/NO DWG CHNG GR	3-22-82	HDG
A2	—	—	—			REV UPDATE W/NO DWG CHNG GR	3-22-82	HDG
RC1	RC2	RC1	RC1			ADDED NOTE 1 AND CHNG	7-15-82	HDG



SIZE	CODE IDENT NO	REV
C	53938	900/901
SCALE NONE	200112-902/903	REV SEE REV TABLE
		SHEET 2 OF 2

200112-902/903

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200113-101

REV: NC = AA

DESC: CARD ASSY, GP CONTROL 1, W/W, T-OPTION

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BD, WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
002	HW, SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW, SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR, CRD, SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW, SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
006	HW, WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
007	HW, STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	946
008	HW, LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
	W/L, CD, GP CONT (FOR 2	53938	EVANS & SUTHERLAND.	200113-800	200113-800	1
	C, , AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
	C, , RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	31
	C1 C2					
	C3 C4 C5 C6 C7 C8 C9 C10 C11					
	C12 C13 C14 C15 C18 C19 C20					
	C21 C22 C25 C26 C27 C28 C29					
	C32 C33 C34 C35 C36 C42 C43					
	C44					
009	E1	88245	WINCHESTER ELEC USECO DIV	1282B-1 (.090, TURRET)	802329-001	1
010	F1	75915	LITTELFUSE TRACOR INC.	251 005 (5A, AXIAL)	802375-050	1
	U01 1.21	1U696	STACKPOLE COMPONENTS CO	6-5-5-102G (SIP)	807517-102	1
	U13	53938	EVANS & SUTHERLAND.	807204-708-A33	807204-708-A33	1
	U14	53938	EVANS & SUTHERLAND.	807204-708-A34	807204-708-A34	1
	U20	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
	U32 U61 U62 U43 U10	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	5
	U34	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
	U42	01295	TEXAS INSTR, SEMICON DIV.	SN74174N	807674-646	1
	U44	18324	SIGNETICS CORP. MILITARY	N74S112N	807612-055	1
	U50 U11 U21 U23 U24 U40	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	6
	U51	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	1
	U52	01295	TEXAS INSTR, SEMICON DIV.	SN74H108N/J	807497-255	1
	U53 U30	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	2
	U54 U22 U31 U33	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	4
	U60	53938	EVANS & SUTHERLAND.	807739-055-A73	807739-055-A73	1
	U64 U41 U63	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	3
	U65 U55	01295	TEXAS INSTR, SEMICON DIV.	SN7483AN	807683-646	2
	U70	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
	U74	53938	EVANS & SUTHERLAND.	807204-708-A59	807204-708-A59	1
	U75 U71 U73	01295	TEXAS INSTR, SEMICON DIV.	SN74198N/J	807805-646	3

32 ITEMS LISTED

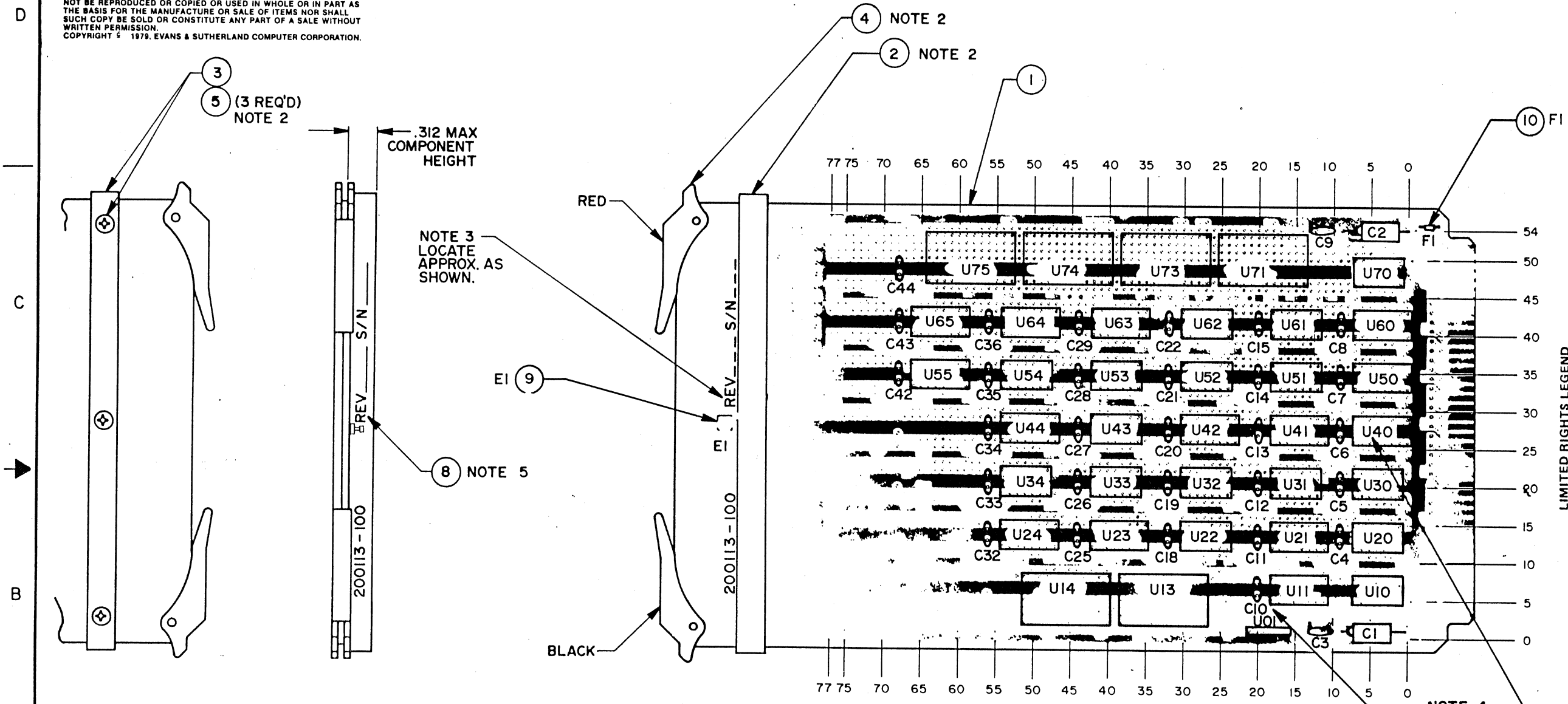


LIMITED RIGHTS LEGEND

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

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REV LEVEL PER DASH NO				REVISIONS			
REV	LEVEL	PER DASH NO	ZONE	LTR	DESCRIPTION	DATE	APPROVED
—	—	—	A1		REV. UPDATE W/NO DWG. CHNG	J.W.	2-27-78
—	—	—	A2		REV UPDATE W/NO DWG. CHNG.	HLV	5-2-80
—	—	—	11C				1-1-80
—	—	—	RC1	RC1	ADDED NOTE 6	GR	2-1-82



- NOTES
1. ASSEMBLE PER E & S STANDARDS.
 2. INSTALL CARD EJECTORS (ITEM 4) & SPACERS (ITEM 2 & 3) AFTER FLOW SOLDERING.
 3. MARK REV LEVEL AND SERIAL NO. AND ASSY. NO. APPROX. AS SHOWN USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV.
 4. ITEM NUMBERS ON THE DWG. CORRESPOND WITH THE LOCATION DESIGNATION ON THE PARTS LIST.
 5. MARK REV. LEVEL AND SERIAL NO. AND ASSY. NO. ON ITEM 8, ORIENT LETTERING AS SHOWN.
 6. 200113-100 AND 101 USE WIRELIST 200113-800.

REFERENCE DOCUMENTS

- LOGIC DIAGRAM ---- 200113-600
- PARTS LIST ----- PL200113-100
- CARD BASIC ----- 102100-500

APPLICATION: NEXT ASSY-200130-100; USED ON-NOVOVIEW

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± — .xxx ± — ANGLES ± — ✓	DRAWN M.W. HLVEATER 5-2-80	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108 CARD ASSEMBLY, GP CONTROL I, (W/W)		REV SEE REV TABLE
	CHECKED A.C. 1 MAY 78			
	MECH J.P. 1 MAY 78			
	ELEC			
MATERIAL	PROJ. ENG J.P. 17 MAY 80	SIZE	CODE IDENT NO	
SEE PARTS LIST	APPROVED J.P. 1 MAY 78	C	53938	200113-TAB
FINISH		SCALE FULL DO NOT SCALE		SHEET 1 OF 1

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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REF DESIG	E+S PART NO	VENDOR PART NUMBER	REF DESIG	E+S PART NO	VENDOR PART NUMBER	PIN #	WIRENAME
C 1	804102-475	CS138F475K	J 50	807694-055	SN74S194N	P1 3	DAT0
C 2	804102-475	CS138F475K	U 51	807420-055	SN74S20N	P1 4	DAT1
C 3	804115-333	CY15C333M	J 52	807497-255	SN74H108N	P1 5	DAT2
C 4	804115-333	CY15C333M	J 53	807400-055	SN74S00N	P1 6	DAT3
C 5	804115-333	CY15C333M	U 54	807408-055	SN74S08N	P1 7	DAT4
C 6	804115-333	CY15C333M	J 55	807683-646	SN7483A	P1 8	DAT5
C 7	804115-333	CY15C333M	U 60	807739-055	N82S123B A73	P1 9	DAT6
C 8	804115-333	CY15C333M	J 61	807416-055	SN74S04N	P1 10	DAT7
C 9	804115-333	CY15C333M	U 62	807416-055	SN74S04N	F1 12	DAT8
C 10	804115-333	CY15C333M	J 63	807657-055	SN74S157N	P1 13	DAT9
C 11	804115-333	CY15C333M	J 64	807657-055	SN74S157N	P1 14	DAT10
C 12	804115-333	CY15C333M	J 65	807683-646	SN7483A	P1 15	DAT11
C 13	804115-333	CY15C333M	U 70	807451-055	SN74S51N	P1 16	DAT12
C 14	804115-333	CY15C333M	J 71	807805-646	SN74198N	P1 17	DAT13
C 15	804115-333	CY15C333M	U 73	807805-646	SN74198N	P1 18	DAT14
C 18	804115-333	CY15C333M	J 74	807204-708	N82S181N	P1 19	DAT15
C 19	804115-333	CY15C333M	J 75	807805-646	SN74198N	P1 20	DRSLTYPE0
C 20	804115-333	CY15C333M				P1 22	DRSLTYPE1
C 21	804115-333	CY15C333M				P1 23	DRSLWID10
C 22	804115-333	CY15C333M				P1 24	DRSLWID11
C 25	804115-333	CY15C333M				P1 25	GC1SLMYVIEW0
C 26	804115-333	CY15C333M				P1 26	GC1SLMYVIEW1
C 27	804115-333	CY15C333M				F1 27	GC1SLMYVIEW2
C 28	804115-333	CY15C333M				F1 28	GC1SLMYVIEW3
C 29	804115-333	CY15C333M				F1 29	GC1SLMYVIEW4
C 32	804115-333	CY15C333M				P1 30	GC1SLMYVIEW5
C 33	804115-333	CY15C333M				P1 32	GC1SLMYVIEW6
C 34	804115-333	CY15C333M				F1 33	GC1SLMYVIEW7
C 35	804115-333	CY15C333M				F1 34	GC1CODE2
C 36	804115-333	CY15C333M				F1 35	GC1CODE1
C 42	804115-333	CY15C333M				F1 36	GC1CODE0
C 43	804115-333	CY15C333M				F1 37	GC1ADDCODE0
C 44	804115-333	CY15C333M				F1 38	GC1ADDCODE1
U 01	807517-102	750-61-R1K				F1 39	GC1ADDCODE2
U 10	807416-055	SN74S04N				F1 40	ADA5UM
U 11	807694-055	SN74S194N				F1 42	GC2CLKFRONTFACE
U 13	807204-708	N82S181N A33				F1 43	GC1FRONTFACE
U 14	807204-708	N82S181N A34				F1 44	*CMGRE
U 20	807400-090	SN74S37N				F1 45	GC1SKIP
U 21	807694-055	SN74S194N				F1 46	GC1WAIT
U 22	807408-055	SN74S08N				F1 47	ICAVAIL
U 23	807694-055	SN74S194N				P1 48	CMBLOCK0
U 24	807694-055	SN74S194N				P1 49	CMPORCEAVAIL
U 30	807400-055	SN74S00N				F1 50	CMPORCEWAIT
U 31	807408-055	SN74S08N				F1 52	GC2AVAIL
U 32	807416-055	SN74S04N				F1 53	*DCCANTWRITE
U 33	807408-055	SN74S08N				F1 54	*GC1STOP
U 34	807410-055	SN74S10N				F1 55	GC1WRITEAVAIL
U 40	807694-055	SN74S194N				P1 56	CMBLOCK1
U 41	807657-055	SN74S157N				F1 57	*GC150
U 42	807674-646	SN74174N				P1 58	*GC151
U 43	807416-055	SN74S04N				F1 59	*GC1ADPSTATES
U 44	807612-055	SN74S112N				F1 60	GC16AIFTNU

4. SERIAL SHIFT LOOP SEQUENCE
PI.23, 71, 20, 73, 20, 75, 20, 52, 12, 24, 12, 23, 12, 11, 12
21, 12, 40, 12, PI.70

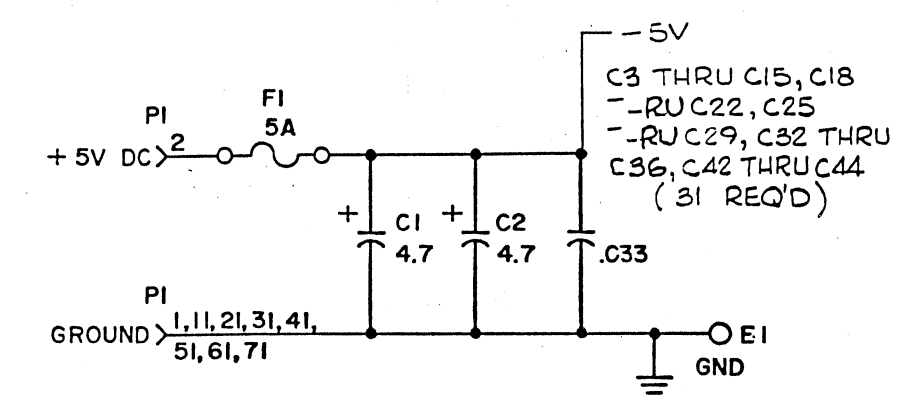
3. ON I.C. 7483A LOC 55, 65
 PIN 12 = GND
 PIN 5 = PWR (+5V).

2. NUMBERS SHOWN REFER TO CONNECTOR P1.
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).
 ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V).
 ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).

1. UNLESS OTHERWISE SPECIFIED;
NOTES:

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
		.XX ± —
		.XXX ± —
		ANGLES ± —
		✓
200130-100	NOVOVIEW	MATERIAL
		FINISH
		APPLICATION

DASH NO	DESIGNATION	PROM PROGRAM
- 600	U 74	B2S1B1 (A35) OR B2S141 (A30)
- 601	U 74	B2S1B1 (A59)



SEE SEPARATE PARTS LIST			
CONTRACT NO. EVANS & SUTHERLAND COMPUTEER CORPORATION SALT LAKE CITY, UTAH 84112			
DRAWN R MELLIS 3-21-77			
CHECKED <i>Ant Long</i> 9 JUN 77			
MECH			
ELEC <i>W. J. Brown</i> 6 JUN 77			
PROJ. ENG <i>W. J. Brown</i> 6/9/77			
APPROVED <i>g/mo</i> 6/9/77			
SIZE	CODE IDENT NO	REV SEE TABLE	
C	53938	200113-TAB	
SCALE NONE	SHEET 1 OF 4		

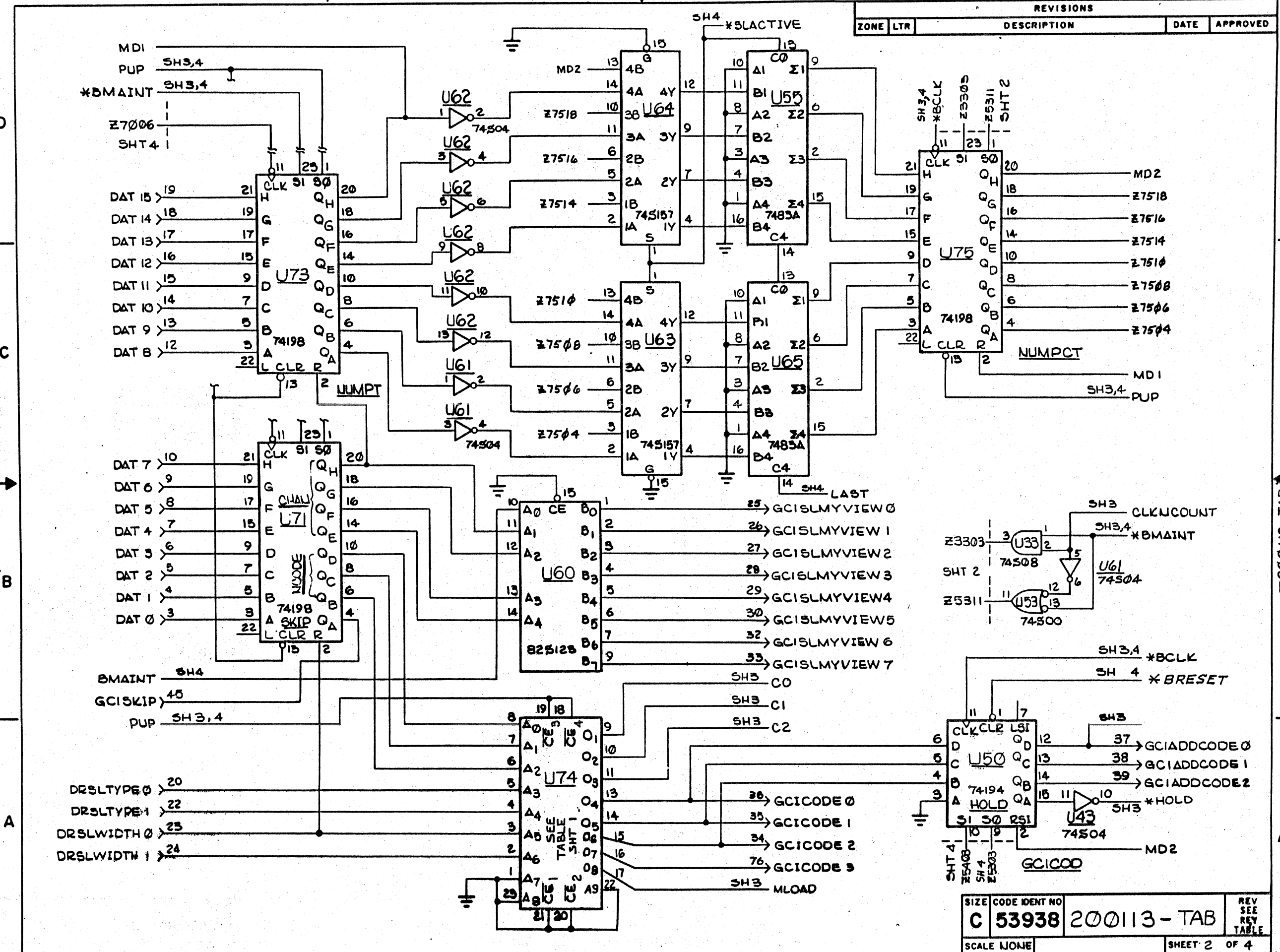
LIMITED RIGHTS LEGEND
 Contract No. F19628-84-C-0065
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.8 (a) (b) (2)

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

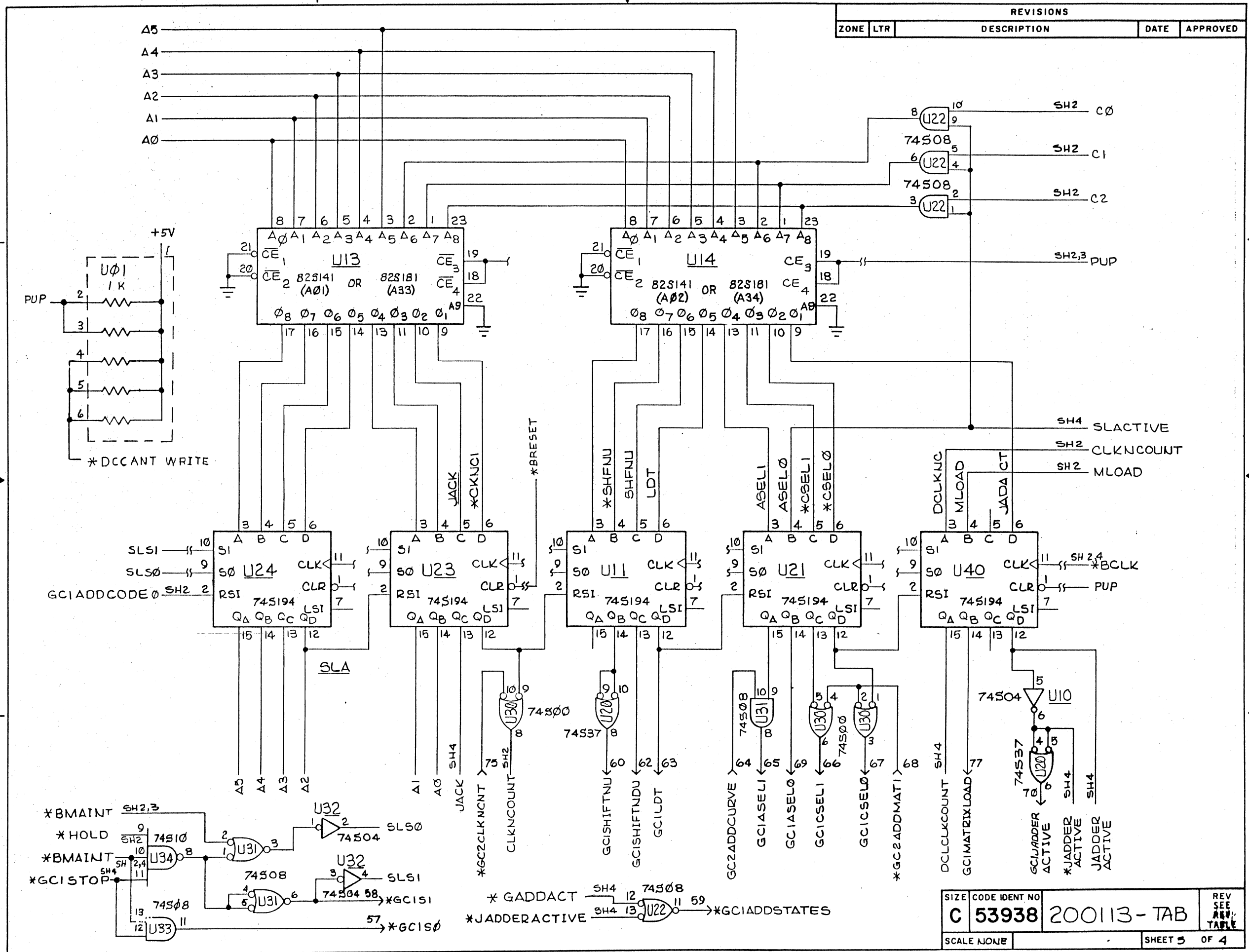
LIMITED RIGHTS LEGEND
 Contract No. F19628-64-C-0058
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPM 7-104.3 (a) (2) (i)

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SIZE	CODE	IDENT NO	REV
C	53938	200113-TAB	SEE REV TABLE
SCALE	NONE	SHEET 2 OF 4	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



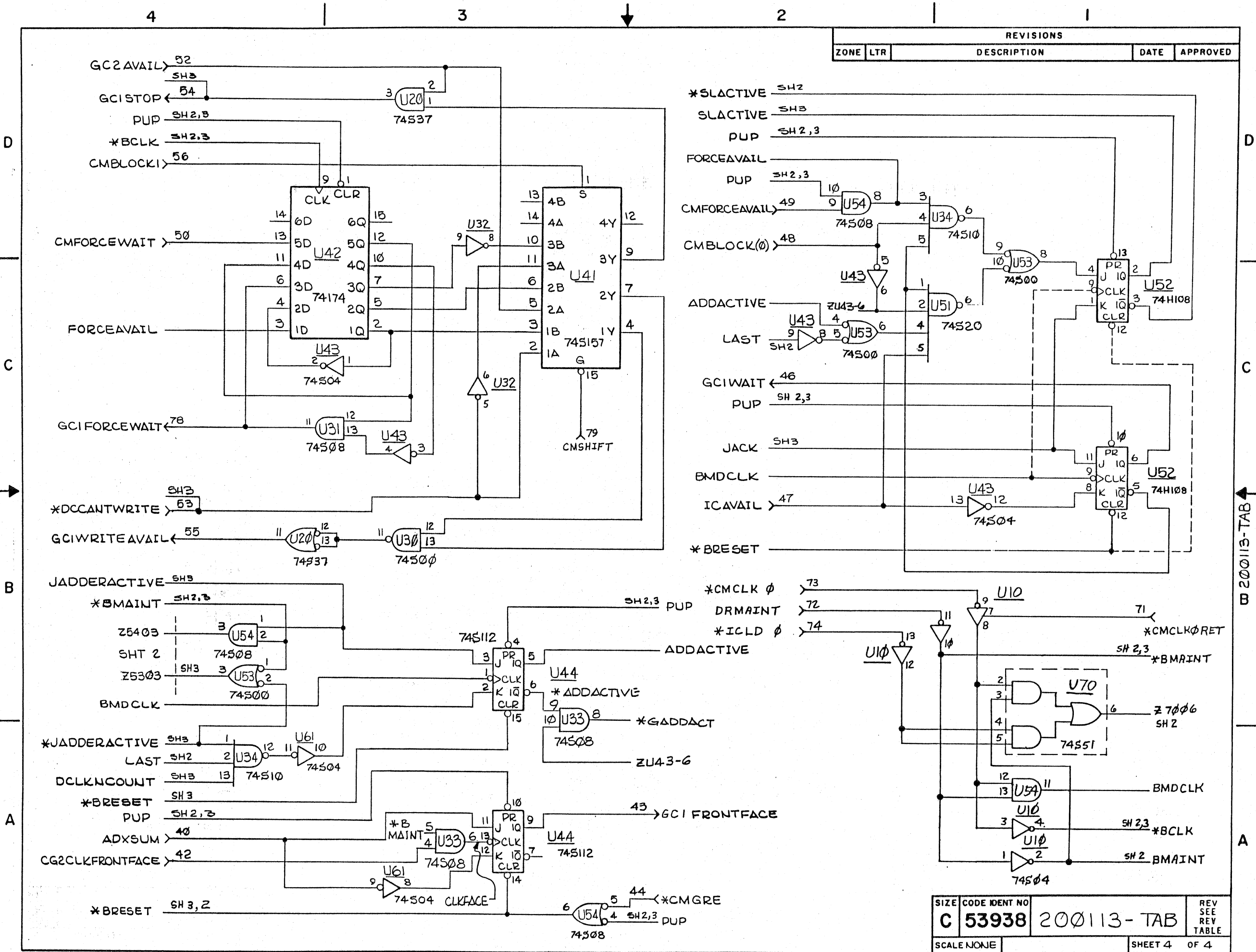
UNITED RIGHTS LEGEND
 Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

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SIZE	CODE IDENT NO	REV
C	53938	SEE REV. TABLE
SCALE NONE	200113-TAB	SHEET 5 OF 4

LIMITED RIGHTS LEGEND
 Contract No. F19629-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.3 (a) (b) (2)

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

SIZE	CODE IDENT NO	REV SEE REV TABLE
C	53938	200113-TAB
SCALE NONE	SHEET 4 OF 4	

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200114-103

REV: A1 = AB

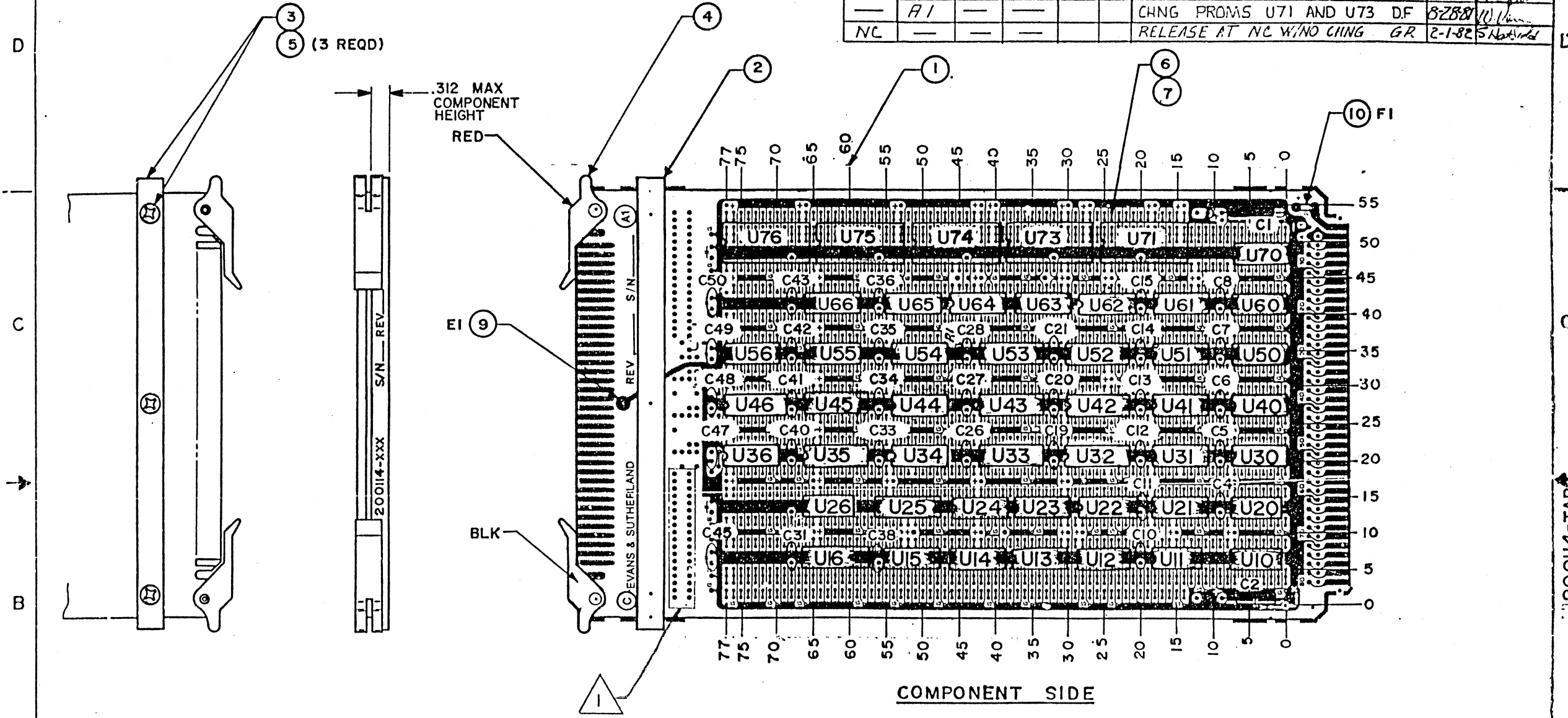
DESC: CARD ASSY, GP CONTROL 2, W/W, T-OPTION

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BD,WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
006	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
007	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	1268
	W/L,CD,GP CONT (FOR 2	53938	EVANS & SUTHERLAND.	200114-801	200114-801	1
	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	34
	C1 C2					
	C3 C4 C5 C6 C7 C8 C9 C10 C12					
	C13 C14 C15 C19 C20 C21 C26					
	C27 C28 C31 C33 C34 C35 C36					
	C38 C40 C41 C42 C43 C45 C47					
	C48 C49 C50 C11					
009	E1	88245	WINCHESTER ELEC USECO DIV	1282B-1 (.090,TURRET)	802329-001	1
010	F1	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
	R1 33.45 R1 36.45	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	1
	U10	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1
	U12 5.28 U20 U11	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	3
	U14 5.46	34335	ADVANCED MICRO DEVICES IN	93S16PC	807616-055	1
	U16 5.66	53938	EVANS & SUTHERLAND.	807802-055-A06	807802-055-A06	1
	U22 12.28	18324	SIGNETICS CORP. MILITARY	N8T97N/F	807714-412	1
	U23 12.37 U66 40.66	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	2
	U25 12.56	53938	EVANS & SUTHERLAND.	807802-055-A07	807802-055-A07	1
	U26 12.66	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
	U32	53938	EVANS & SUTHERLAND.	807802-055-B15	807802-055-B15	1
	U33	53938	EVANS & SUTHERLAND.	807802-055-A09	807802-055-A09	1
	U35	53938	EVANS & SUTHERLAND.	807802-055-A10	807802-055-A10	1
	U42	53938	EVANS & SUTHERLAND.	807802-055-B16	807802-055-B16	1
	U43	53938	EVANS & SUTHERLAND.	807802-055-A12	807802-055-A12	1
	U45	53938	EVANS & SUTHERLAND.	807802-055-B18	807802-055-B18	1
	U46	53938	EVANS & SUTHERLAND.	807802-055-A14	807802-055-A14	1
	U52	53938	EVANS & SUTHERLAND.	807802-055-B17	807802-055-B17	1
	U53	53938	EVANS & SUTHERLAND.	807802-055-A16	807802-055-A16	1
	U61 U62 40.28 U63 40.37 U64	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	23
	40.46 U65 40.55 U70 U21 U13					
	5.37 U15 5.55 U24 12.46 U30					
	U31 U34 U36 U40 U41 U44 U50					
	U51 U54 U55 U56 U60					
	U71	53938	EVANS & SUTHERLAND.	807204-708-A60	807204-708-A60	1
	U73	53938	EVANS & SUTHERLAND.	807204-708-A61	807204-708-A61	1
	U74	53938	EVANS & SUTHERLAND.	807204-708-A62	807204-708-A62	1
	U75	53938	EVANS & SUTHERLAND.	807204-708-A63	807204-708-A63	1
	U76	53938	EVANS & SUTHERLAND.	807204-708-A64	807204-708-A64	1

36 ITEMS LISTED



REV LEVEL PER DASH NO.				REVISIONS				REV LEVEL PER DASH NO.				REVISIONS					
-103	-102	-101	-100	ZONE	LTR	DESCRIPTION	DATE	APPROVED	-103	-102	-101	-100	ZONE	LTR	DESCRIPTION	DATE	APPROVED
RC1	RC1	RC1	---			ADDED NOTE 6	GR	2-1-82	---	---	A1	A1			REV UPDATE W/NO DWG CHNG	1MAY80	<i>R.S.</i>
A1	A2	A2	A2			UPDATED NOTES	EH	2-24-85	---	PO	---	---			ADDED -102 & TABBED DWG	3-31-81	<i>R.S.</i>
										NC	---	---			DWG RELEASE	7-20-81	<i>R.S.</i>
										A1	---	---			CHNG PROMS U71 AND U73 DF	8-28-81	<i>R.S.</i>
									NC	---	---	---			RELEASE AT NC W/NO CHNG	2-1-82	<i>R.S.</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.

REFERENCE DOCUMENTS
 LOGIC DIAGRAM --- 200114-100/101/102/103
 PARTS LIST --- PL200114-100/101/102/103

200130-100		NOVOVIEW		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± --- .XXX ± --- ANGLES ± --- ✓		CONTRACT NO.		SEE SEPARATE PARTS LIST	
NEXT ASSY		USED ON		MATERIAL SEE PARTS LIST		DRAWN J DAVIES 6-20-78		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
APPLICATION				FINISH		CHECKED M WING 6-26-78		CARD ASSEMBLY GP CONTROL 2 (W/W)	
						MECH G Davis 6-26-78			
						ELEC		SIZE CODE IDENT NO	
						PROJ. ENG R.S.		C 53938	
						APPROVED G Davis 6-26-78		200114-TAB	
								REV SEE TAB TABLE	
								SCALE FULL	
								SHEET 1 OF 1	

-1XX



REF DESIG	E+S PART NO	VENDOR PART NUMBER	REF DESIG	E+S PART NO	VENDOR PART NUMBER
C 1	804102-475	CS138F475K	U 14	807616-055	93S16PC
C 2	804102-475	CS138F475K	U 15	807694-055	SN74S194N
C 3	804115-333	CY15C333M	U 16	807802-055	N82S137F
C 4	804115-333	CY15C333M	U 20	807400-090	SN74S37N
C 5	804115-333	CY15C333M	U 21	807694-055	SN74S194N
C 6	804115-333	CY15C333M	U 22	807714-412	N8T97B
C 7	804115-333	CY15C333M	U 23	807657-055	SN74S157N
C 8	804115-333	CY15C333M	U 24	807694-055	SN74S194N
C 9	804115-333	CY15C333M	U 25	807802-055	N82S137F
C 10	804115-333	CY15C333M	U 26	807400-055	SN74S00N
C 11	804115-333	CY15C333M	U 30	807694-055	SN74S194N
C 12	804115-333	CY15C333M	U 31	807694-055	SN74S194N
C 13	804115-333	CY15C333M	U 32	807802-055	N82S137F
C 14	804115-333	CY15C333M	U 33	807802-055	N82S137F
C 15	804115-333	CY15C333M	U 34	807694-055	SN74S194N
C 19	804115-333	CY15C333M	U 35	807802-055	N82S137F
C 20	804115-333	CY15C333M	U 36	807694-055	SN74S194N
C 21	804115-333	CY15C333M	U 40	807694-055	SN74S194N
C 26	804115-333	CY15C333M	U 41	807694-055	SN74S194N
C 27	804115-333	CY15C333M	U 42	807802-055	N82S137F
C 28	804115-333	CY15C333M	U 43	807802-055	N82S137F
C 31	804115-333	CY15C333M	U 44	807694-055	SN74S194N
C 33	804115-333	CY15C333M	U 45	807802-055	N82S137F
C 34	804115-333	CY15C333M	U 46	807802-055	N82S137F
C 35	804115-333	CY15C333M	U 50	807694-055	SN74S194N
C 36	804115-333	CY15C333M	U 51	807694-055	SN74S194N
C 38	804115-333	CY15C333M	U 52	807802-055	N82S137F
C 40	804115-333	CY15C333M	U 53	807802-055	N82S137F
C 41	804115-333	CY15C333M	U 54	807694-055	SN74S194N
C 42	804115-333	CY15C333M	U 55	807694-055	SN74S194N
C 43	804115-333	CY15C333M	U 56	807694-055	SN74S194N
C 45	804115-333	CY15C333M	U 60	807694-055	SN74S194N
C 47	804115-333	CY15C333M	U 61	807694-055	SN74S194N
C 48	804115-333	CY15C333M	U 62	807694-055	SN74S194N
C 49	804115-333	CY15C333M	U 63	807694-055	SN74S194N
C 50	804115-333	CY15C333M	U 64	807694-055	SN74S194N
R 1	803201-102		U 65	807694-055	SN74S194N
U 10	807416-055	SN74S04N	U 66	807657-055	SN74S157N
U 11	807400-090	SN74S37N	U 70	807694-055	SN74S194N
U 12	807400-090	SN74S37N	U 71	807204-708	N82S181N PREF USAGE
U 13	807694-055	SN74S194N	U 73	807204-708	N82S181N PREF USAGE
			U 74	807204-708	N82S181N PREF USAGE
			U 75	807204-708	N82S181N PREF USAGE
			U 76	807204-708	N82S181N PREF USAGE
			U 71	807220-018	N82S141N ALT USAGE
			U 73	807220-018	N82S141N ALT USAGE
			U 74	807220-018	N82S141N ALT USAGE
			U 75	807220-018	N82S141N ALT USAGE
			U 76	807220-018	N82S141N ALT USAGE

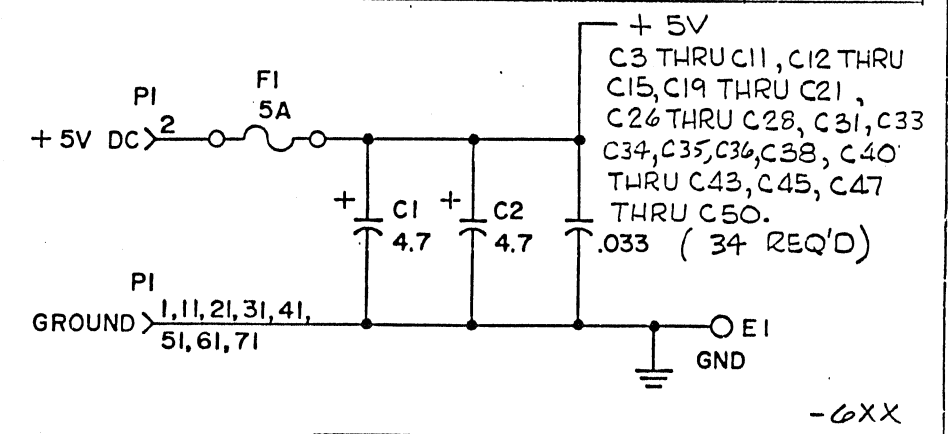
DASH NO.				REVISIONS			
-603	-602	-601	-600	LTR	DESCRIPTION	DATE	APPROVED
-	-	A1	A1	-	ADDED PREF USAGE TO U71,73,74,75,76	1MAY80	DM Spain
-	PO	-	-	-	ADDED -602 TO DWG.	1-15-81	R Spain
-	NC	-	-	-	DWG RELEASE	7-20-81	
-	A1	-	-	-	CHNG PROMS U71 AND U73 D.F.	9-9-81	W J...
NC	-	-	-	-	RELEASED TO NC	2-1-82	S Hadfield
A1	A2	A2	A2	-	REV UPDATE W/NO DWG CHNG	2-26-88	BH

TABLE I COND.

DASH NO.	DESIGNATION	PROM
-600	U45	82S137(A13)
-601/-602	U45	82S137(A41)
-603	U45	82S137(B12)
-600/-601/-602	U32	82S137(A08)
-603	U32	82S137(B15)
-600/-601/-602	U42	82S137(A11)
-603	U42	82S137(B16)
-600/-601/-602	U52	82S137(A15)
-603	U52	82S137(B17)
-600/-601	U71	82S181(A36)
-602	U71	82S181(A54)
-603	U71	82S181(A60)
-600/-601	U73	82S181(A37)
-602	U73	82S181(A55)
-603	U73	82S181(A61)
-600/-601/-602	U74	82S181(A38)
-603	U74	82S181(A62)

4. FOR VARIATION BETWEEN -600, -601, 602 AND 603, SEE TABLE #1
3. SERIAL SHIFT LOOP SEQUENCE
 P1.59, 24.12, 34.12, 44.12, 21.12, 30.12, 15.12, 40.12, 50.12
 31.12, 41.12, 51.12, 13.12, 55.12, 65.12, 54.12, 64.12
 56.12, 60.12, 70.12, 61.12, 62.12, 63.12, 36.12, P1.16
2. NUMBERS SHOWN REFER TO CONNECTOR P1.
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).
 ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V).
 ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).

DASH NO	DESIGNATION	PROM
-600/-601/-602	U75	82S181(A39)
-603	U75	82S181(A63)
-600 -601 -602	U716	82S181(A08)
-603	U76	82S181(A64)



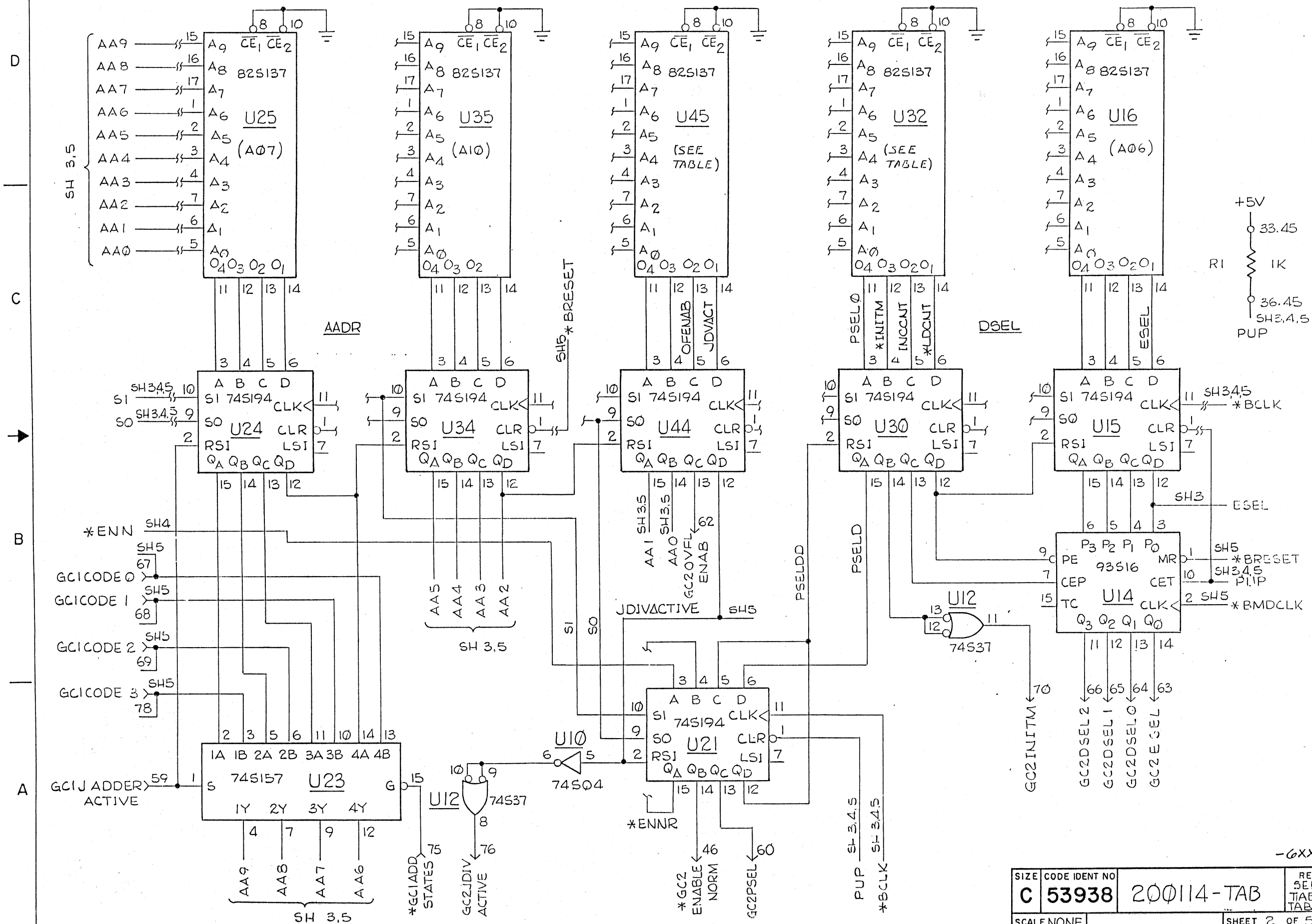
1. UNLESS OTHERWISE SPECIFIED;
 NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± _____ .xxx ± _____ ANGLES ± _____ ✓		CONTRACT NO.		SEE SEPARATE PARTS LIST	
MATERIAL		DRAWN <i>W. J. ...</i> 3-17-77		ES EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
FINISH		CHECKED <i>W. J. ...</i> 9 JUN 77		GP CONTROL 2	
APPLICATION		MECH		(w/w)	
200130-100 NOVODVIEW		ELEC <i>Dennis ...</i> 6/11/77		SIZE CODE IDENT NO	
NEXT ASSY USED ON		PROJ. ENG <i>W. J. ...</i> 6/11/77		C 53938 200114-TAB	
		APPROVED		REV SEE TAB TABLE	
				SCALE NONE SHEET 1 OF 5	

200114-TAB

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED



D

C

B

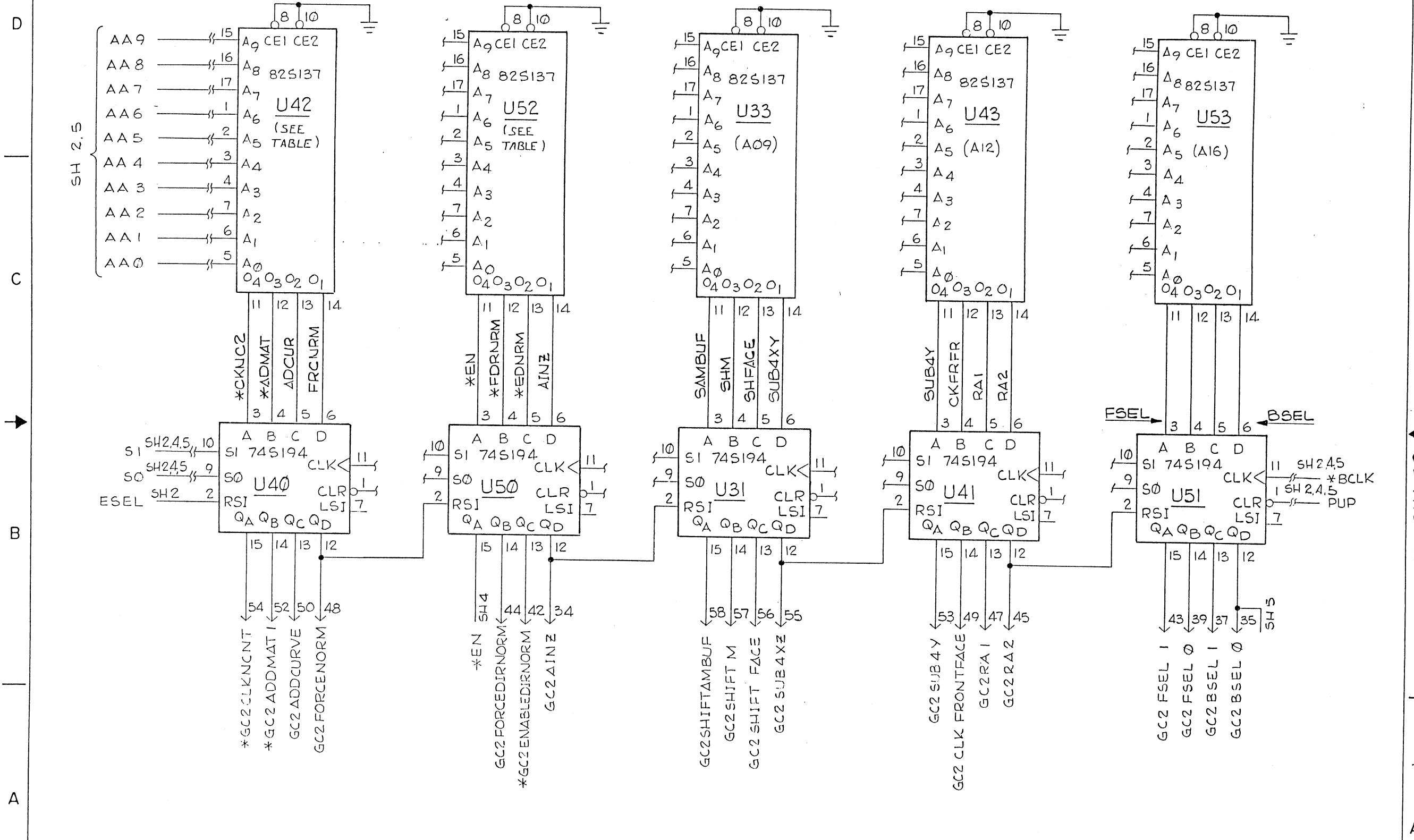
A

B 200114-TAB

SIZE	CODE IDENT NO	REV
C	53938	SEE TAB. TABLE
SCALE NONE	200114-TAB	SHEET 2 OF 5

-6XX

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



D
C
B
A
200114-TAB

-6XX

SIZE	CODE IDENT NO	REV
C	53938	200114-TAB
SCALE NONE	SHEET 3 OF 5	

4

1

3

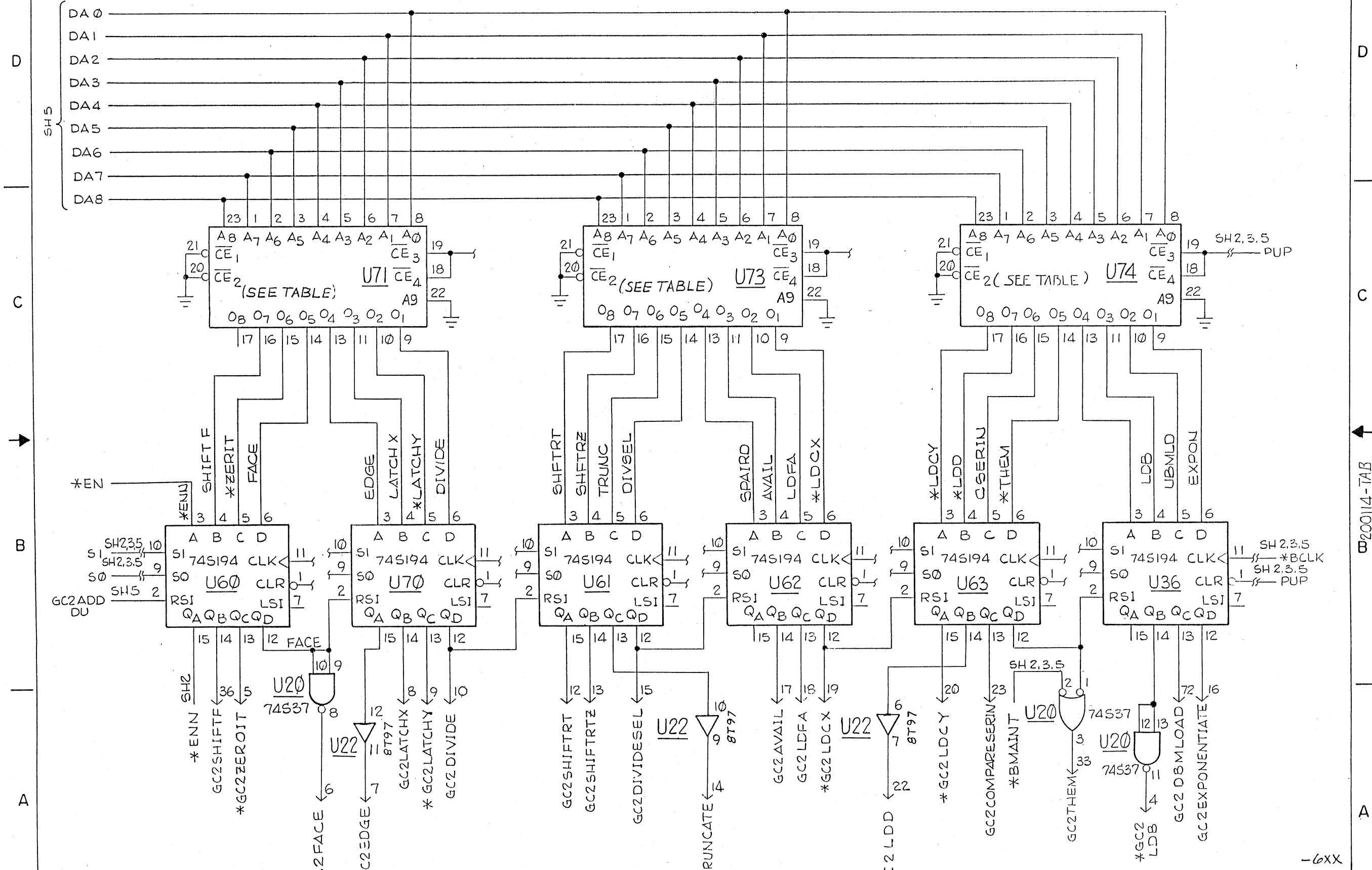


2

1

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



D

D

C

C

B

B

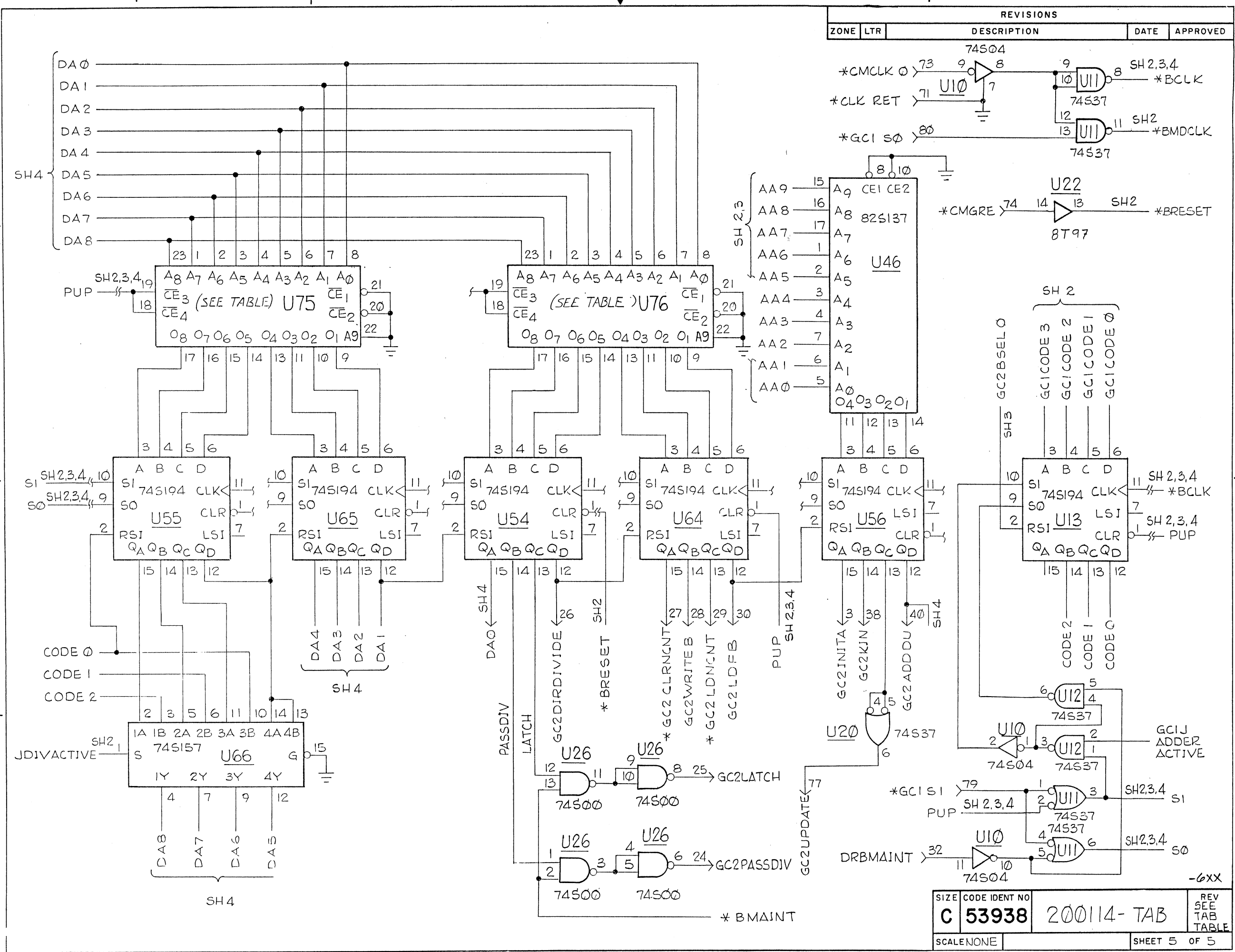
A

A

200114-TAB

-6XX

SIZE	CODE IDENT NO	REV
C	53938	SEE TAB
200114-TAB		TABLE
SCALE NONE		SHEET 4 OF 5



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

SIZE	CODE IDENT NO	REV	SEE	TAB	TABLE
C	53938				
SCALE NONE		SHEET 5 OF 5			

D
C
B
A
B 200114-TAB

D
C
B
A

-6XX



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200120-100

REV: NC = AA

DESC: CARD ASSY, MULTIPLIER, PC

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	PC,MULT	53938	EVANS & SUTHERLAND.	200120-500	200120-500	1
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8(SM-P-PH-Z)	802056-003	3
006	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
	C1 C2					
	C3 THRU C33					
	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	31
007	E1	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
008	F1	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
	R1	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	1
	U10	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1
	U11 U21 U31	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	3
	U12 U15	34335	ADVANCED MICRO DEVICES IN	AM25LS15PC/74LS385	807799-055	2
	U14	01295	TEXAS INSTR, SEMICON DIV.	SN74S175N	807617-055	1
	U20 U41	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	2
	U23 U33 U73 U83 U34 U44 U84	34335	ADVANCED MICRO DEVICES IN	AM25LS14APC/DC	807798-055	18
	U94 U45 U55 U85 U95 U81 U91					
	U32 U42 U82 U92					
	U30	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
	U51	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
	U61	01295	TEXAS INSTR, SEMICON DIV.	SN74H74N/J	807474-255	1
	U62 U53 U25	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	3
	U64	01295	TEXAS INSTR, SEMICON DIV.	SN74157N	807657-646	1
	U70	27014	NATIONAL SEMICONDUCTOR	DM81LS95(A)N/J	807794-055	1
	U72 U102 U13 U43 U63 U93 U24	01295	TEXAS INSTR, SEMICON DIV.	SN74164N/J	807413-646	20
	U54 U74 U103 U35 U65 U75					
	U105 U40 U90 U71 U101 U22					
	U80 U100 U50 U60	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	4

25 ITEMS LISTED

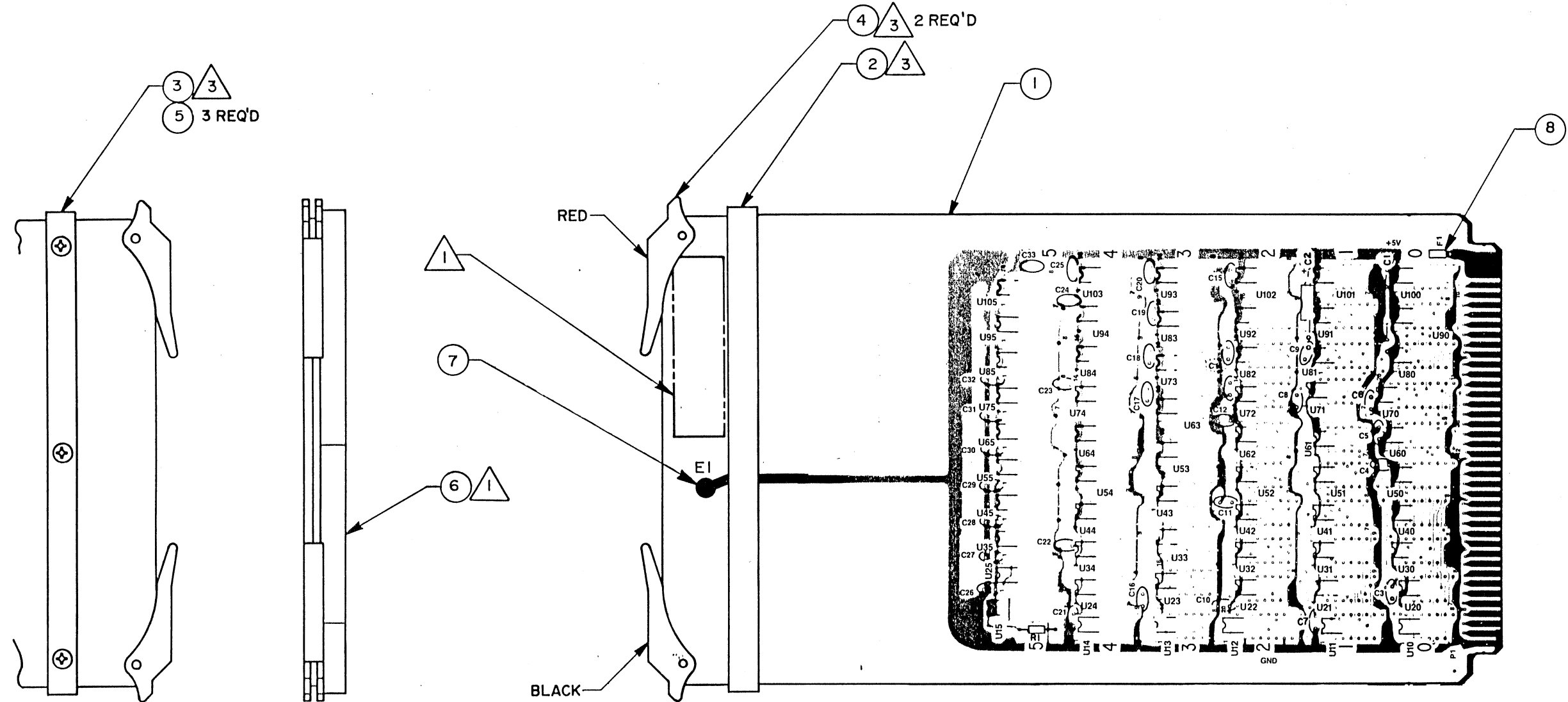


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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	NC	REDRAWN & ADDED RI (RC1)	9-20-85	

D
C
B
A



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) & SPACERS (2 & 3) AFTER WAVE SOLDERING.

COMPONENT SIDE

REFERENCE DOCUMENTS

- SCHEMATIC ----- 200120-600
- PARTS LIST ----- PL200120-100

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) (2)

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓	DRAWN R. MELLUS 2-18-77		EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
	CHECKED A. COWGUR 2-19-77				
	MECH				
	ELEC W. ALLEN				
MATERIAL SEE PARTS LIST		PROJ. ENG W. ALLEN 3-1-77		CARD ASSEMBLY, MULTIPLIER (P/C)	
FINISH		APPROVED J. PINO 3-1-77			
SIZE 5.88 X 10.62		SIZE	CODE IDENT NO		REV
		C	53938	200120-100	NC
		SCALE FULL		DO NOT SCALE	SHEET 1 OF 1



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

REF DESIG	E+S PART NO	VENDOR PART NUMBER	REF DESIG	E+S PART NO	VENDOR PART NUMBER		
C	1	804102-475	CS13BF475K	U	82	807798-055	AM25LS14DC
C	2	804102-475	CS13BF475K	U	83	807798-055	AM25LS14DC
C	3	804115-333	CY15C333M	U	84	807798-055	AM25LS14DC
C	33	804115-333	CY15C333M	U	85	807798-055	AM25LS14DC
R	1	803201-102	.	U	90	807413-646	SN74164N
U	10	807416-055	SN74S04N	U	91	807798-055	AM25LS14DC
U	11	807657-055	SN74S157N	U	92	807798-055	AM25LS14DC
U	12	807799-055	AM25LS15PC	U	93	807413-646	SN74164N
U	13	807413-646	SN74164N	U	94	807798-055	AM25LS14DC
U	14	807617-055	SN74S175N	U	95	807798-055	AM25LS14DC
U	15	807799-055	AM25LS15PC	U	100	807694-055	SN74S194N
U	20	807400-055	SN74S00N	U	101	807413-646	SN74164N
U	21	807657-055	SN74S157N	U	102	807413-646	SN74164N
U	22	807413-646	SN74164N	U	103	807413-646	SN74164N
U	23	807798-055	AM25LS14DC	U	105	807413-646	SN74164N
U	24	807413-646	SN74164N				
U	25	807653-055	SN74S153N				
U	30	807400-090	SN74S37N				
U	31	807657-055	SN74S157N				
U	32	807798-055	AM25LS14DC				
U	33	807798-055	AM25LS14DC				
U	34	807798-055	AM25LS14DC				
U	35	807413-646	SN74164N				
U	40	807413-646	SN74164N				
U	41	807400-055	SN74S00N				
U	42	807798-055	AM25LS14DC				
U	43	807413-646	SN74164N				
U	44	807798-055	AM25LS14DC				
U	45	807798-055	AM25LS14DC				
U	50	807694-055	SN74S194N				
U	51	807410-055	SN74S10N				
U	52	807413-646	SN74164N				
U	53	807653-055	SN74S153N				
U	54	807413-646	SN74164N				
U	55	807798-055	AM25LS14DC				
U	60	807694-055	SN74S194N				
U	61	807474-255	SN74H74N				
U	62	807653-055	SN74S153N				
U	63	807413-646	SN74164N				
U	64	807657-646	SN74157N				
U	65	807413-646	SN74164N				
U	70	807794-055	DM81LS95N				
U	71	807413-646	SN74164N				
U	72	807413-646	SN74164N				
U	73	807798-055	AM25LS14DC				
U	74	807413-646	SN74164N				
U	75	807413-646	SN74164N				
U	80	807694-055	SN74S194N				
U	81	807798-055	AM25LS14DC				

PIN #	WIRENAME
P1	3 MUZ15
P1	5 MUZ14
P1	7 MUZ13
P1	8 MUZ12
P1	9 DVZ50
P1	10 MUDBL5B
P1	12 DVZ51
P1	13 MUZ22
P1	14 ADNDY
P1	15 MUZ11
P1	16 MUZ6
P1	17 MUZ9
P1	18 MUZ10
P1	20 MUZ7
P1	22 MUZMF2
P1	23 MUZMF4
P1	24 MUZMF3
P1	25 MUZ5
P1	26 MUZMF5
P1	27 *DVZMFENABLE
P1	28 MUZ4
P1	29 MUZMF8
P1	30 MUZMF9
P1	32 MUZMF7
P1	33 ADNUZ
P1	34 MUZMF6
P1	35 *CMGRE
P1	36 MUZ6
P1	37 MUDIVMYVIEW
P1	38 ADNZ
P1	39 MUZ3
P1	40 *MUDIVMYVIEW
P1	42 MUZ1
P1	43 GC1JADDERACTIVE
P1	44 MUZ0
P1	45 GC1SHIFTN0
P1	46 ADNY
P1	47 DVYR27
P1	48 GC1MATRIXLOAD
P1	49 GC2JDI VACTIVE
P1	50 GC1SLHYVIEW
P1	52 GC2SHIFTM
P1	53 MUZD0
P1	54 MUDIVIZORIN
P1	55 ADNDX
P1	56 MUZD1
P1	57 *BRMAINT
P1	58 GC2INITM
P1	59 DBXPASS
P1	60 GC2FSEL0
P1	62 GC2FSEL1
P1	63 GC2KIN
P1	64 GC2UPDATE
P1	65 MD1
P1	66 MUZ
P1	67 *GC1STOP
P1	68 ADNX
P1	69 MUXS-N
P1	70 MUY
P1	72 ADZUDAT
P1	73 ADXUDAT
P1	74 GC2PSEL
P1	75 MD2
P1	76 ADYUDAT
P1	77 DVXR31
P1	78 *DBXMAINTSHIFT
P1	79 *CMCLK1
P1	80 GROUND

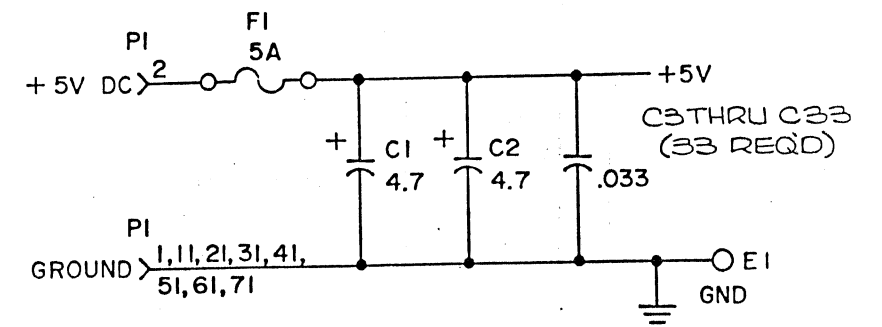
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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3. SERIAL SHIFT LOOP SEQUENCE
 P1.65, 35.13, 65.13, 75.13, 105.13, 24.13, 54.13,
 13.13, 43.13, 74.13, 103.13, 63.13, 93.13, 22.13,
 52.13, 72.13, 102.13, 71.13, 101.13, P1.66, P1.54,
 40.13, 90.13, P1.10, P1.75, P1.69,
 ← P1.77, P1.70
 ← P1.47, 50.12, 60.12, 80.12, 100.12, P1.3

2. NUMBERS SHOWN REFER TO CONNECTOR P1.
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).
 ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V).
 ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).
 UNLESS OTHERWISE SPECIFIED;

NOTES:



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓		CONTRACT NO.		SEE SEPARATE PARTS LIST	
		DRAWN <i>LS</i> 3-12-77		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
		CHECKED <i>DT</i> 9 JUN 77		MULTIPLIER (W/W)	
		MECH			
		ELEC <i>W</i> 6 June 77		SIZE CODE IDENT NO REV	
		PROJ. ENG <i>RT</i> 4/1/77		C 53938 200120-600 NC	
		APPROVED		SCALE NONE SHEET 1 OF 6	
MATERIAL		FINISH			
200.30-100 NOVOVIEW					
NEXT ASSY USED ON					
APPLICATION					

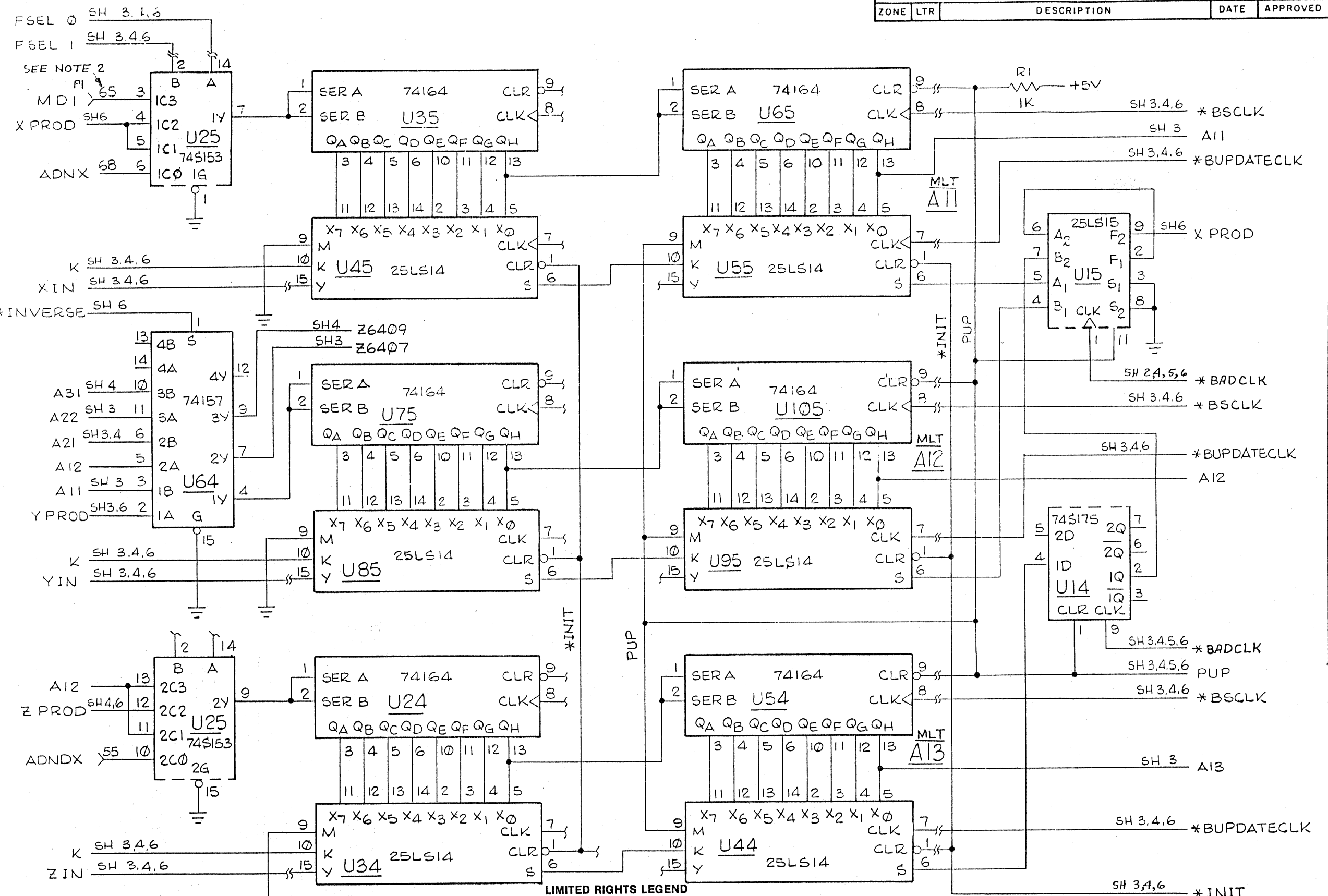
4

3

2

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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

- 0 = LOAD
- 1 = CONCAT
- 2 = INVERSE
- 3 = MAJNT

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SIZE	CODE IDENT NO	REV
C	53938	NC
200120-600		
SCALE NONE	SHEET 2 OF 6	

D

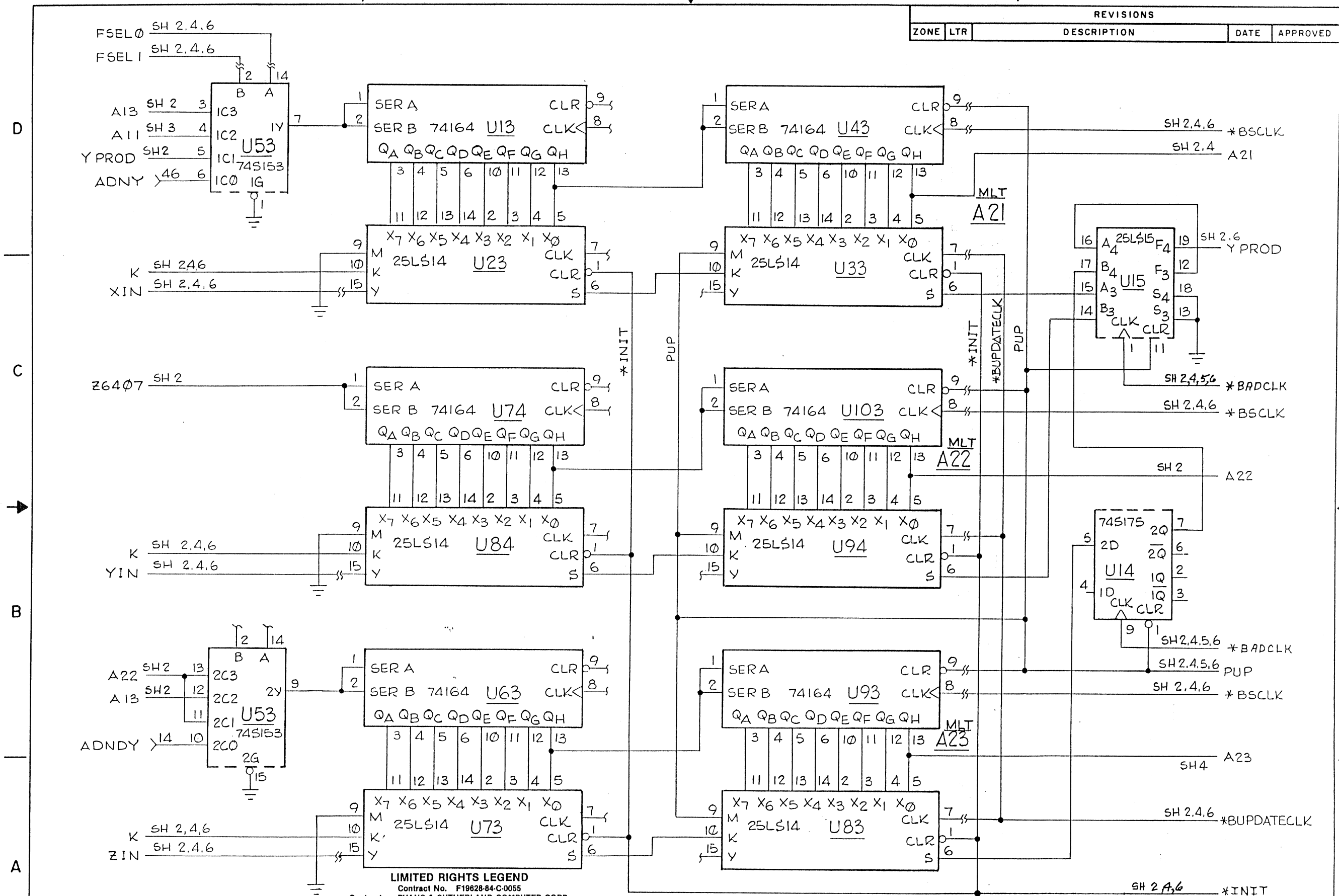
C

B

A

B 200120-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



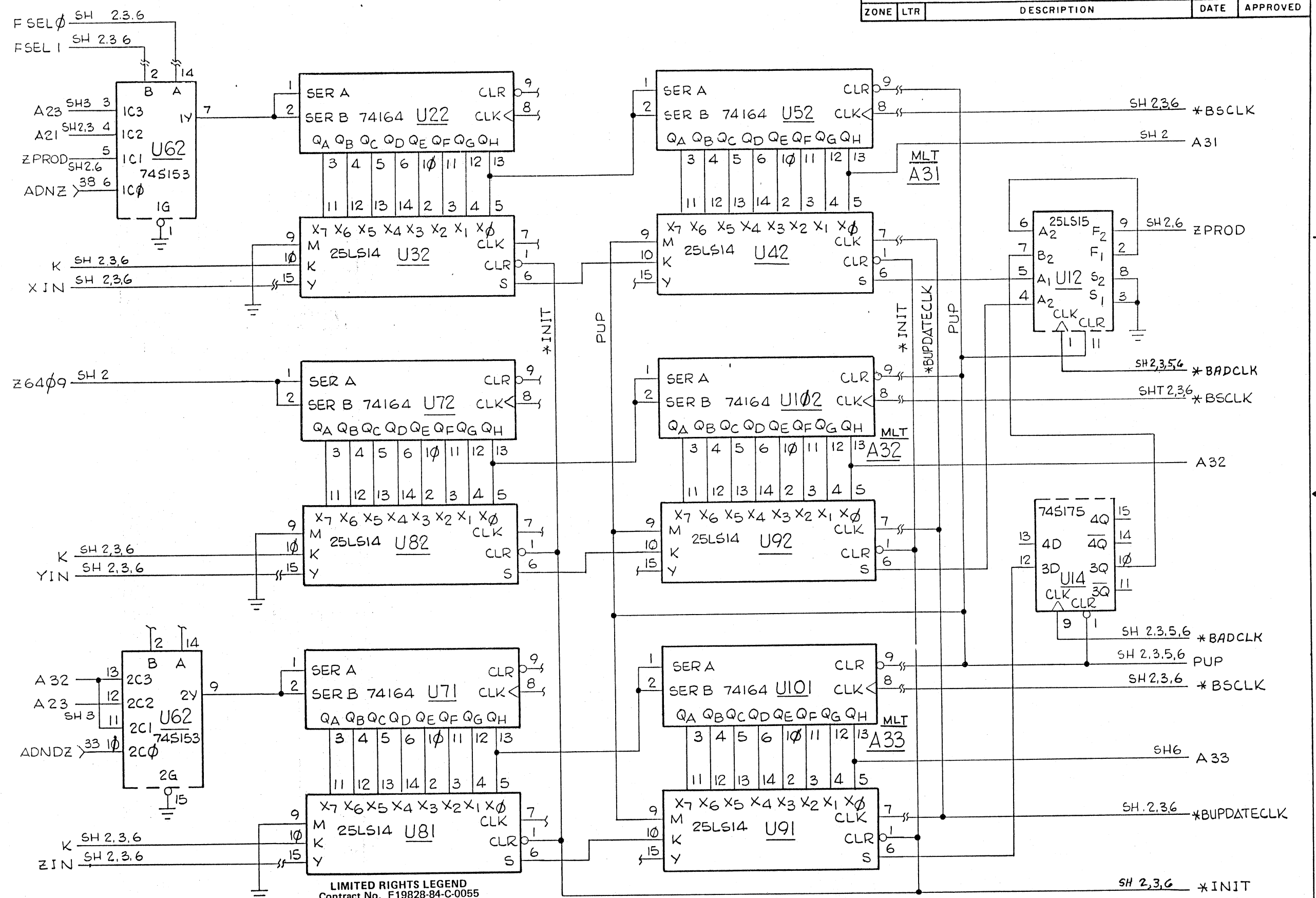
LIMITED RIGHTS LEGEND
 Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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SIZE	CODE IDENT NO	REV
C	53938	NC
SCALE NONE		SHEET 3 OF 6

B 200120-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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

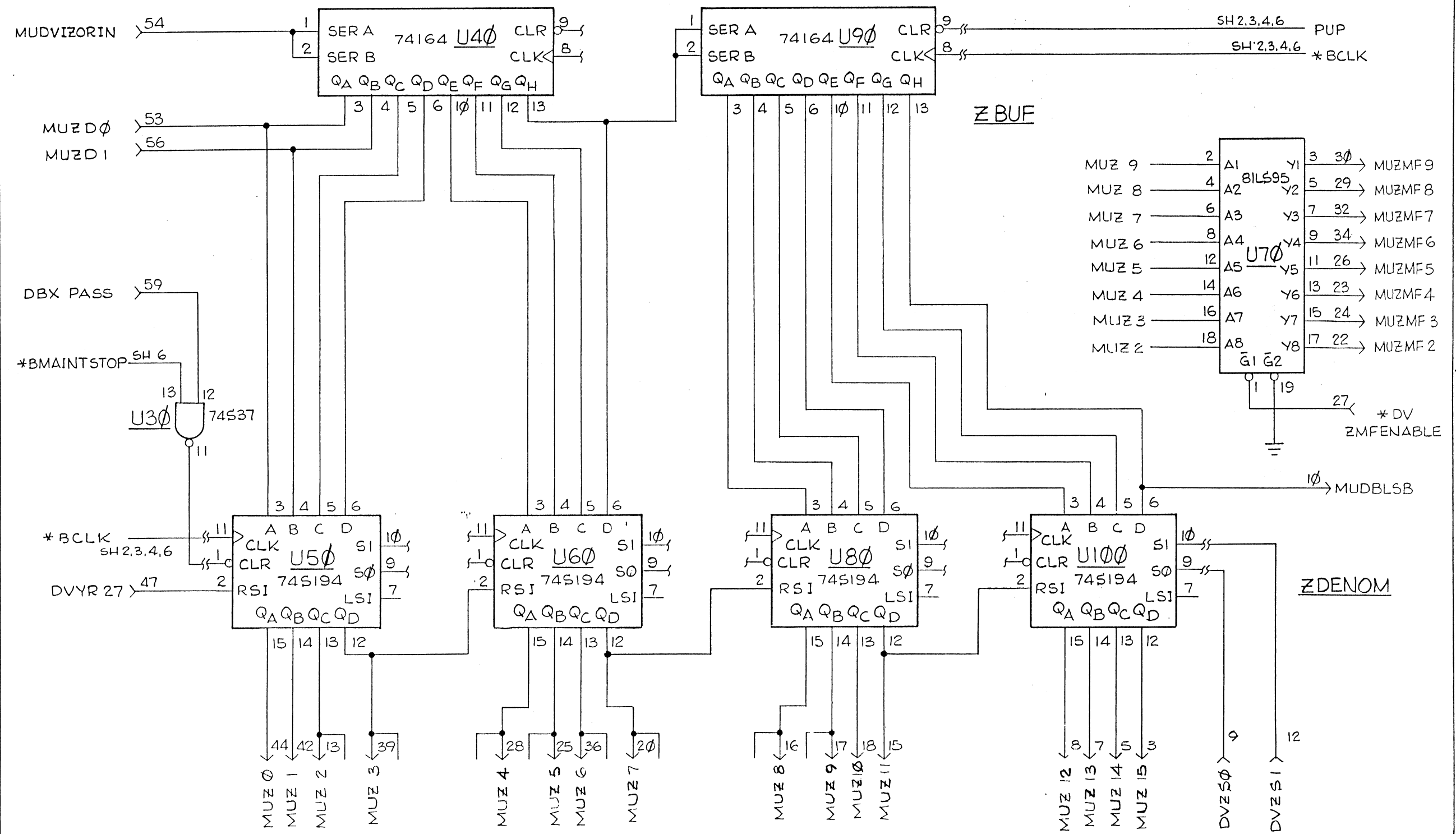
Those portions of this technical data indicated as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or, in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

SIZE	CODE IDENT NO	REV
C	53938	NC
200120-600		
SCALE NONE	SHEET 4 OF 6	

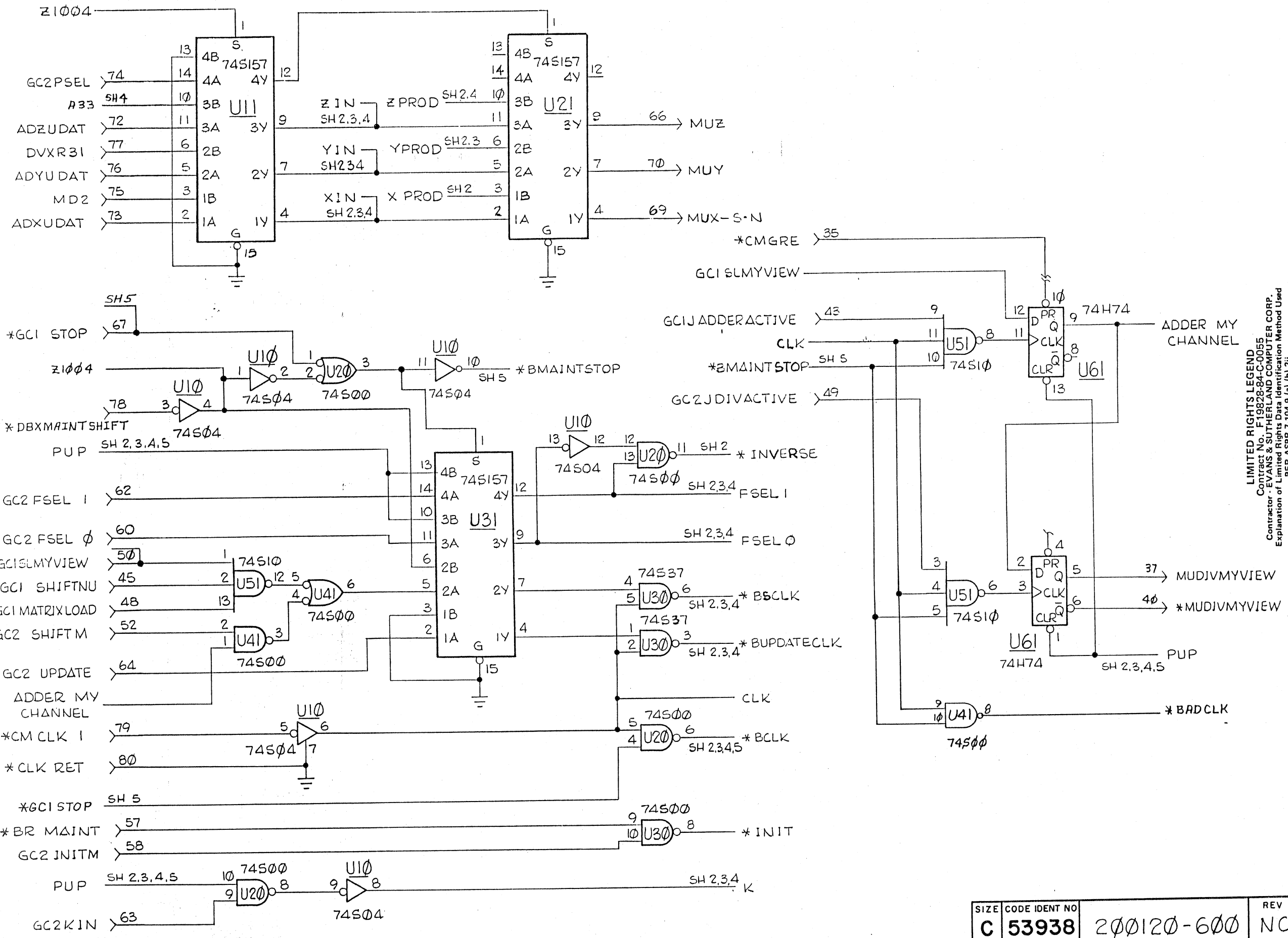
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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D
C
B
A



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

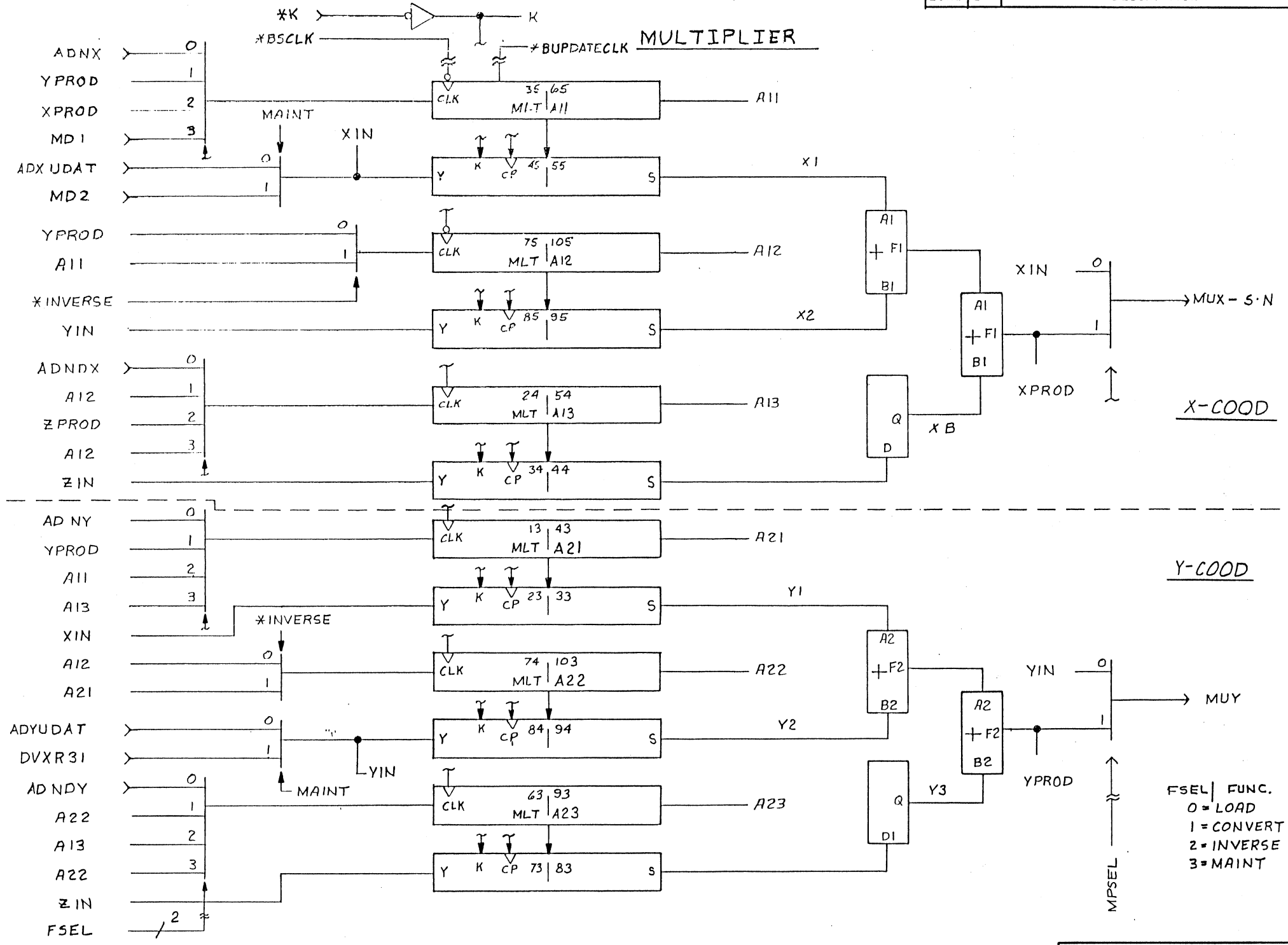


LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a), (b) (2)

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SIZE	CODE IDENT NO	REV
C	53938	200120-600 NC
SCALE NONE	SHEET 6 OF 6	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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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) (2)

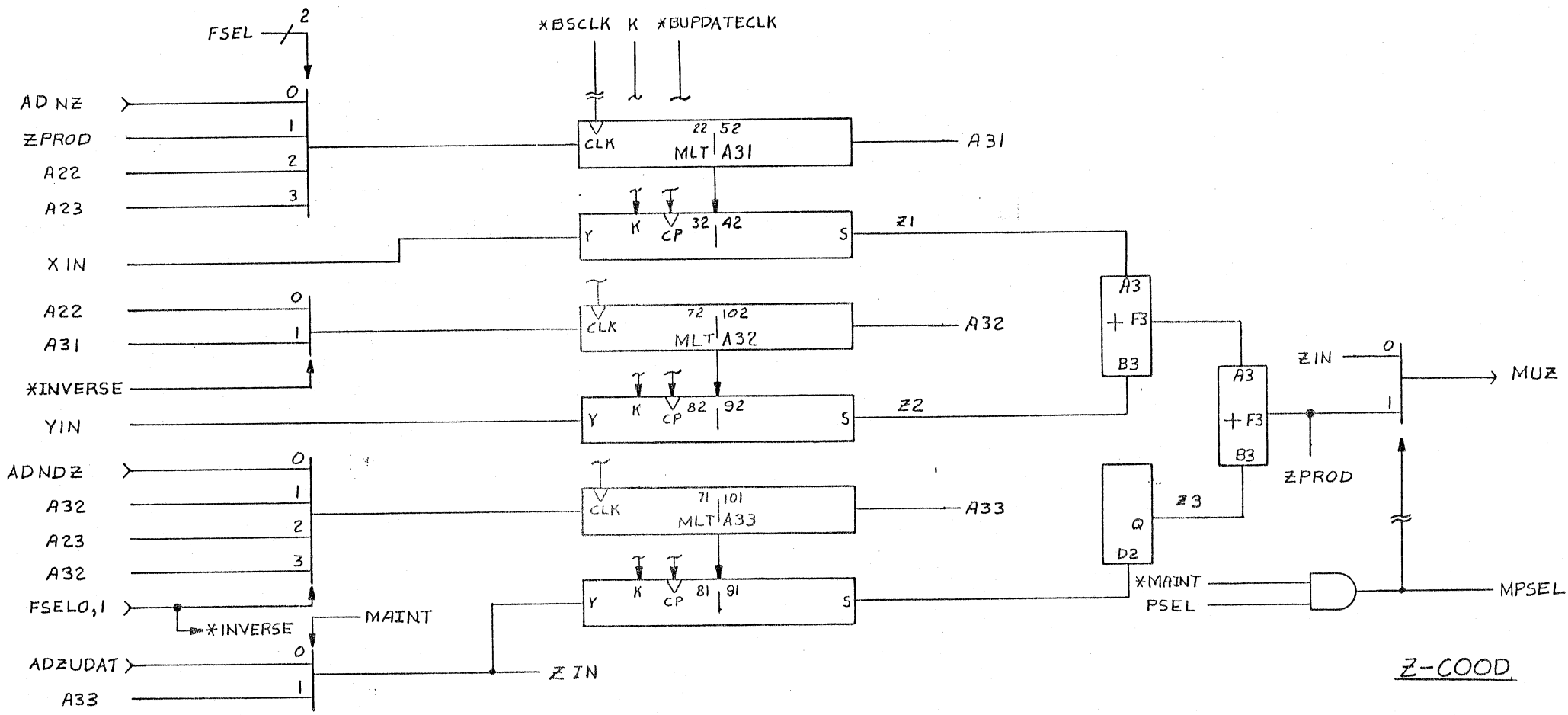
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓
		MATERIAL
		FINISH
NEXT ASSY	USED ON	
APPLICATION		

CONTRACT NO.	
DRAWN	R. Early 2-3-77
CHECKED	at Conroy 12 MAR 77
MECH	
ELEC	W.L. Allen 9/27/77
PROJ. ENG	W.L.A.
APPROVED	

SEE SEPARATE PARTS LIST		
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		
MULTIPLIER CARD (BLOCK DIAGRAM)		
SIZE	CODE IDENT NO	REV
C	53938 200120-900	NC
SCALE NONE	SHEET 1 OF 2	

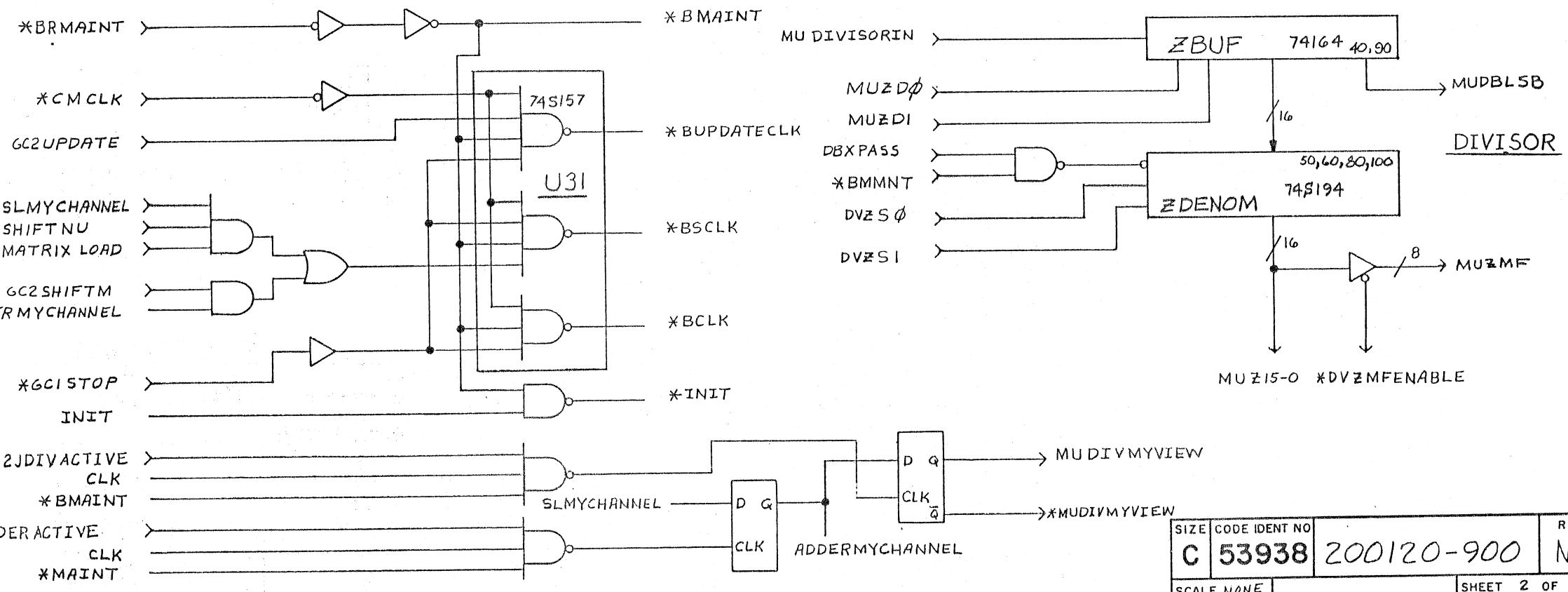
D
C
A
006-021002 B

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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) (2)

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SIZE	CODE IDENT NO	REV
C	53938 200120-900	NC
SCALE NONE		SHEET 2 OF 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200121-100

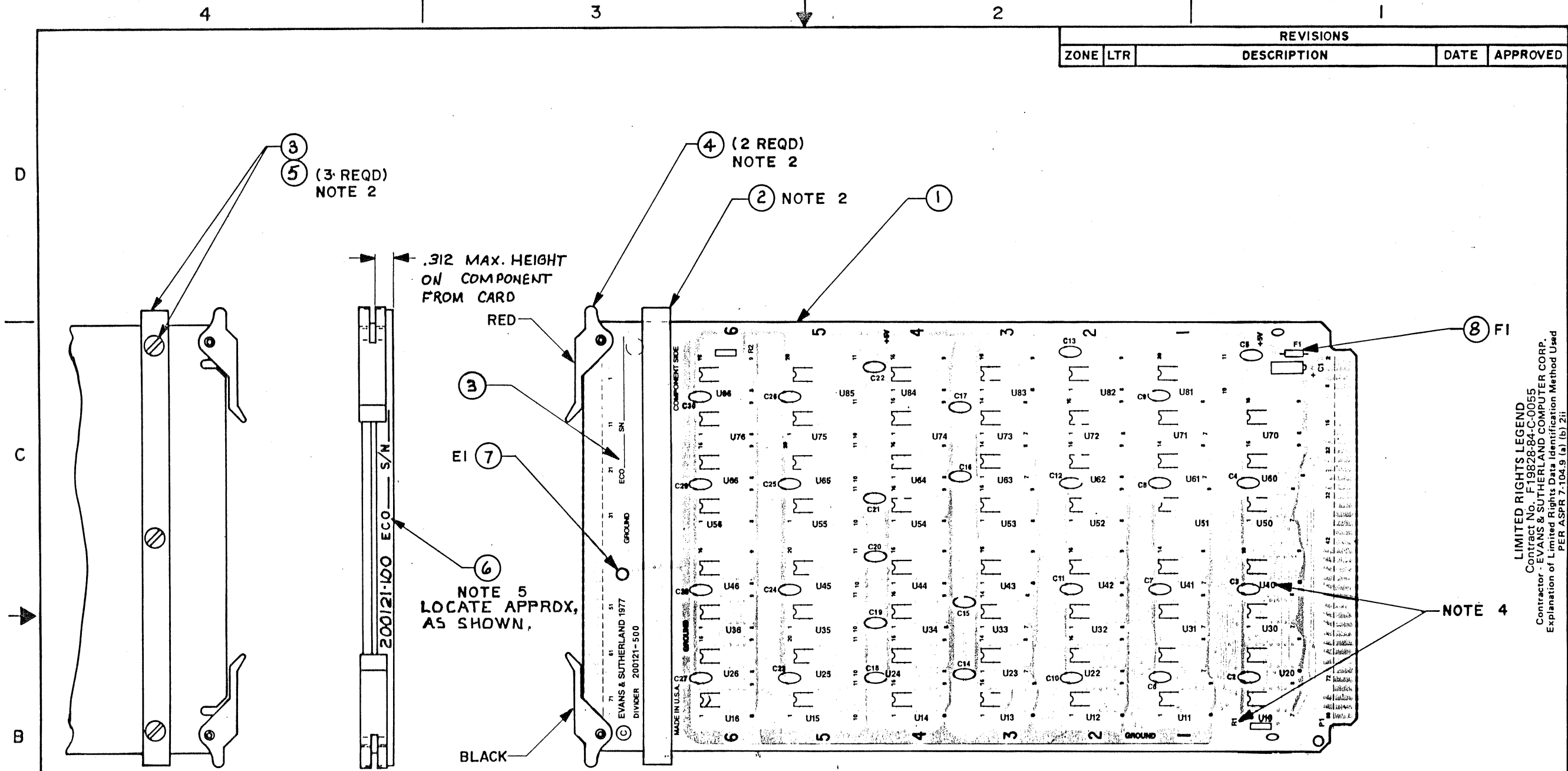
REV: NC = AA

DESC: CARD ASSY, DIVIDER, PC

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BD,P02R PCBD 6X11	53938	EVANS & SUTHERLAND.	200121-500	200121-500	1
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
006	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
	C1	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475
	C2 THRU C30	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333
007	E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001
008	F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050
	R1 R2	R,,AXL 470 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF471J	803201-471
	U10	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055
	U13 U83	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055
	U20	IC,TTL 93S47	07263	FAIRCHILD IC'S & SEMICOND	93S47PC/DC	807703-055
	U21	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055
	U23 U33 U63 U73	IC,TTL 74164	01295	TEXAS INSTR, SEMICON DIV.	SN74164N/J	807413-646
	U30	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055
	U31 U50	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055
	U40	IC,TTL 8T98	04713	MOTOROLA INC. SEMI PRODUC	MC8T98P/L (16-PIN)	807743-412
	U41	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090
	U43 U53	IC,TTL 74S182	01295	TEXAS INSTR, SEMICON DIV.	SN74S182N	807682-055
	U51	IC,TTL 74161	07263	FAIRCHILD IC'S & SEMICOND	74161PC/DC	807661-246
	U60	IC,PROM,BIP,256X4,TS,	53938	EVANS & SUTHERLAND.	807629-055-B02	807629-055-B02
	U61 U71	IC,TTL 74S86	01295	TEXAS INSTR, SEMICON DIV.	SN74S86N	807486-055
	U70	IC,PROM,BIP,256X4,TS,	53938	EVANS & SUTHERLAND.	807629-055-B03	807629-055-B03
	U74 U84 U14 U24 U34 U44 U54	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055
	U64					
	U75 U85 U15 U25 U35 U45 U65	IC,TTL 74S381	01295	TEXAS INSTR, SEMICON DIV.	SN74S381N	807784-055
	U55					
	U76 U86 U11 U12 U22 U32 U42	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055
	U52 U62 U72 U82 U16 U26 U36					
	U46 U56 U66					
	U81	IC,TTL 25LS15	34335	ADVANCED MICRO DEVICES IN	AM25LS15PC/74LS385	807799-055

29 ITEMS LISTED





REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

- NOTES**
- ASSEMBLE PER E&S STANDARDS.
 - INSTALL CARD EJECTORS (ITEM 4) & SPACERS (ITEM 2 & 3) AFTER FLOW SOLDERING.
 - MARK ECO NO. AND SERIAL NO. AND ASSY NO. APPROX AS SHOWN USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUV.
 - ITEM NUMBERS ON THE DWG CORRESPOND WITH THE LOCATION DESIGNATION ON THE PARTS LIST.
 - MARK ECO NO. AND SERIAL NO. AND ASSY NO. ON ITEM 6.

COMPONENT SIDE

REFERENCE DOCUMENTS

- LOGIC DIAGRAM --- 200121-600
- PARTS LIST----- PL 200121-100
- ARTWORK ----- 200121-500

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	
TOLERANCES ON		DRAWN R. MELLUS 11-FEB-77	
.XX ±	---	CHECKED ART CONNER 12-FEB-77	
.XXX ±	---	MECH	
ANGLES ±	---	ELEC	
✓	---	PROJ. ENG W. ALLEN 3/1/77	
MATERIAL	SEE PARTS LIST	APPROVED J. PINO 1 MAR. 77	
200130-100	NOVOVIEW		
NEXT ASSY	USED ON		
APPLICATION			

SEE SEPARATE PARTS LIST			
EVANS & SUTHERLAND			
SALT LAKE CITY, UTAH 84108			
CARD ASSEMBLY			
DIVIDER			
P.C.			
SIZE	CODE IDENT NO.	REV	
C	53938	200121-100	NC
SCALE FULL	SHEET 1 OF 1		

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) (2)(i)

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REF DESIG	E+S PART NO	VENDOR PART NUMBER
C 1	804102-475	CS13BF475K
C 2	804115-333	CY15C333M
C 30	804115-333	CY15C333M
R 1	803201-471	.
R 2	803201-471	.
U 10	807408-055	SN74508N
U 11	807694-055	SN74S194N
U 12	807694-055	SN74S194N
U 13	807653-055	SN74S153N
U 14	807657-055	SN74S157N
U 15	807784-055	SN74S381N
U 16	807694-055	SN74S194N
U 20	807703-055	93S470C
U 21	807410-055	SN74S10N
U 22	807694-055	SN74S194N
U 23	807413-646	SN74164N
U 24	807657-055	SN74S157N
U 25	807784-055	SN74S381N
U 26	807694-055	SN74S194N
U 30	807431-055	SN74S32N
U 31	807416-055	SN74S04N
U 32	807694-055	SN74S194N
U 33	807413-646	SN74164N
U 34	807657-055	SN74S157N
U 35	807784-055	SN74S381N
U 36	807694-055	SN74S194N
U 40	807743-412	N8T988
U 41	807400-090	SN74S37N
U 42	807694-055	SN74S194N
U 43	807682-055	SN74S182N
U 44	807657-055	SN74S157N
U 45	807784-055	SN74S381N
U 46	807694-055	SN74S194N
U 50	807416-055	SN74S04N
U 51	807661-246	SN74161N
U 52	807694-055	SN74S194N
U 53	807682-055	SN74S182N
U 54	807657-055	SN74S157N
U 55	807784-055	SN74S381N
U 56	807694-055	SN74S194N
U 60	807629-055	N82S1298
U 61	807486-055	SN74S86N
U 62	807694-055	SN74S194N
U 63	807413-646	SN74164N
U 64	807657-055	SN74S157N
U 65	807784-055	SN74S381N
U 66	807694-055	SN74S194N
U 70	807629-055	N82S1298
U 71	807486-055	SN74S86N
U 72	807694-055	SN74S194N
U 73	807413-646	SN74164N
U 74	807657-055	SN74S157N

REF DESIG	E+S PART NO	VENDOR PART NUMBER
U 75	807784-055	SN74S381N
U 76	807694-055	SN74S194N
U 81	807799-055	AM25LS15PC
U 82	807694-055	SN74S194N
U 83	807653-055	SN74S153N
U 84	807657-055	SN74S157N
U 85	807784-055	SN74S381N
U 86	807694-055	SN74S194N

PIN #	WIRENAME
P1 5	YCIN
P1 6	MUZ12
P1 7	MUZ13
P1 9	GC2DIVIDESEL
P1 10	XCIN
P1 13	MUZ14
P1 15	MUZ15
P1 17	DBBDIVIDE
P1 19	DVZS1
P1 20	DVZS0
P1 22	DVXADD
P1 23	MUZ9
P1 24	MUZ8
P1 25	DBBPASS-DIV
P1 26	GC2SHIFTRIZ
P1 27	DVYSER
P1 28	DVYADD
P1 29	*DBXMAINTSHIFT
P1 30	GC2THEM
P1 31	GROUND
P1 33	*CNCLK1
P1 35	*GC1STOP
P1 37	MUZ10
P1 39	MUZ11
P1 43	DVNCNT3
P1 44	*DVZMFENABLE
P1 45	MUZ4
P1 46	GC2SHIFTRT
P1 47	GC2TRUNCATE
P1 48	MUZ5
P1 49	DVNCNT2
P1 50	DVNCNT1
P1 52	DVHCNT0
P1 53	DVUS
P1 54	*GC2ENABLENORM
P1 55	GC2LATCHX
P1 56	DVXR31
P1 57	MUZ6
P1 58	MUZ7
P1 59	MUYSER
P1 60	*MUDIVMYVIEW
P1 62	*GC2LATCHY
P1 63	*DVMZ0
P1 64	*DVINFOV
P1 65	MUZ0
P1 66	GC2FORCENORM
P1 67	MUZ1
P1 68	MUXSER
P1 69	MUZD0
P1 70	MUZD1
P1 73	DVYR27
P1 75	MUZ3
P1 76	MUZ2
P1 77	GC2LATCH
P1 78	DVXSER
F1 79	GC2EDGE

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D

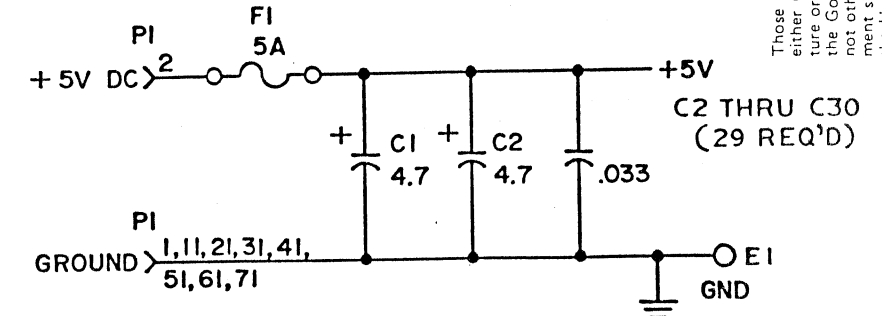
C

B

A

3. SERIAL SHIFT LOOP SEQUENCE
 P1.68, 23.13, 63.13, 72.12, 82.12, 16.12, 36.12, 56.12, 76.12, 62.12, 52.12, 42.12, 32.12, P1.56
 ← P1.59, 33.13, 73.13, 26.12, 46.12, 66.12, 86.12, 22.12, 12.12, 11.12, P1.73.
2. NUMBERS SHOWN REFER TO CONNECTOR P1.
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).
 ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V).
 ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).
 UNLESS OTHERWISE SPECIFIED;
- NOTES:

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
		.XX ± _____
		.XXX ± _____
		ANGLES ± _____
		✓
200130-100	NOVO SP	MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		



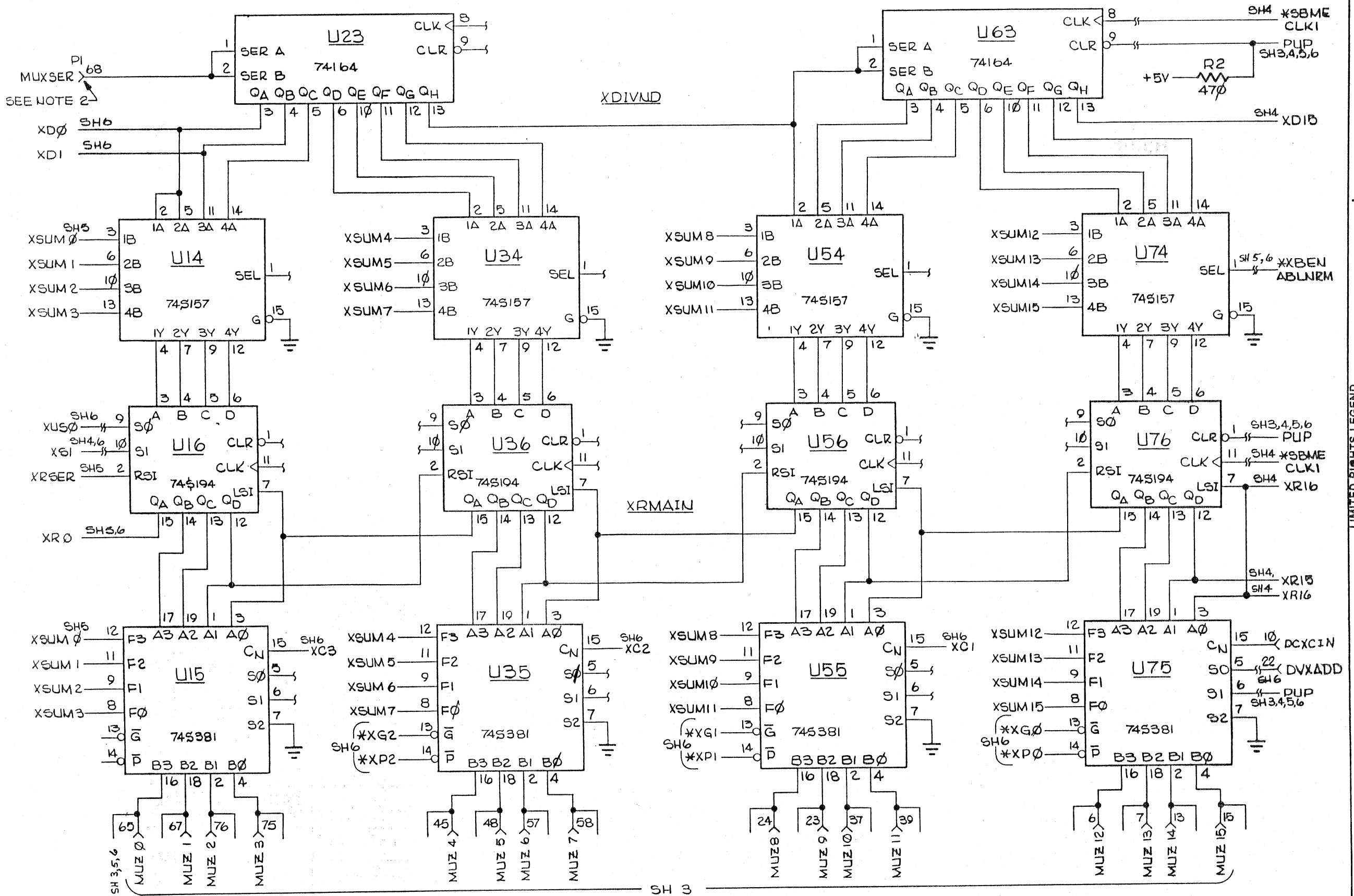
SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
DIVIDER PC	
CONTRACT NO.	
DRAWN R MELLUS 4-12-77	
CHECKED <i>Ad Congen</i> 9-14-77	
MECH	
ELEC <i>W.T. Allen</i>	
PROJ. ENG <i>W.T. Allen</i> 2/18/77	
APPROVED	
SIZE	CODE IDENT NO
C	53938
SCALE NONE	200121-600
	REV
	NC
SHEET 1 OF 6	

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 (e) (b) (2)

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200121-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



D

C

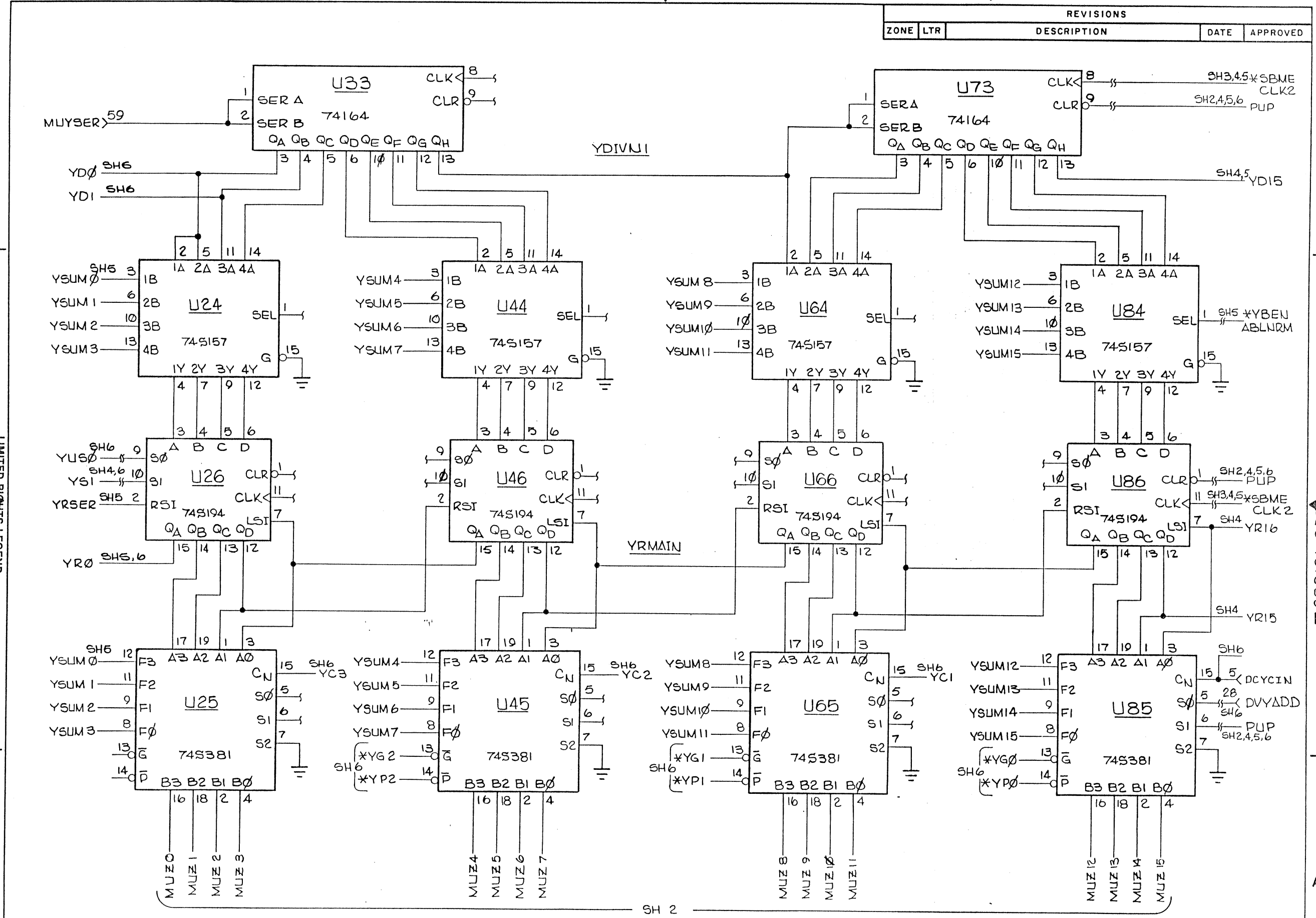
A

20012 LIMITED RIGHTS LEGEND
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 21

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SIZE	CODE IDENT NO	REV
C	53938 200121-600	NC
SCALE NONE	SHEET 2 OF 6	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

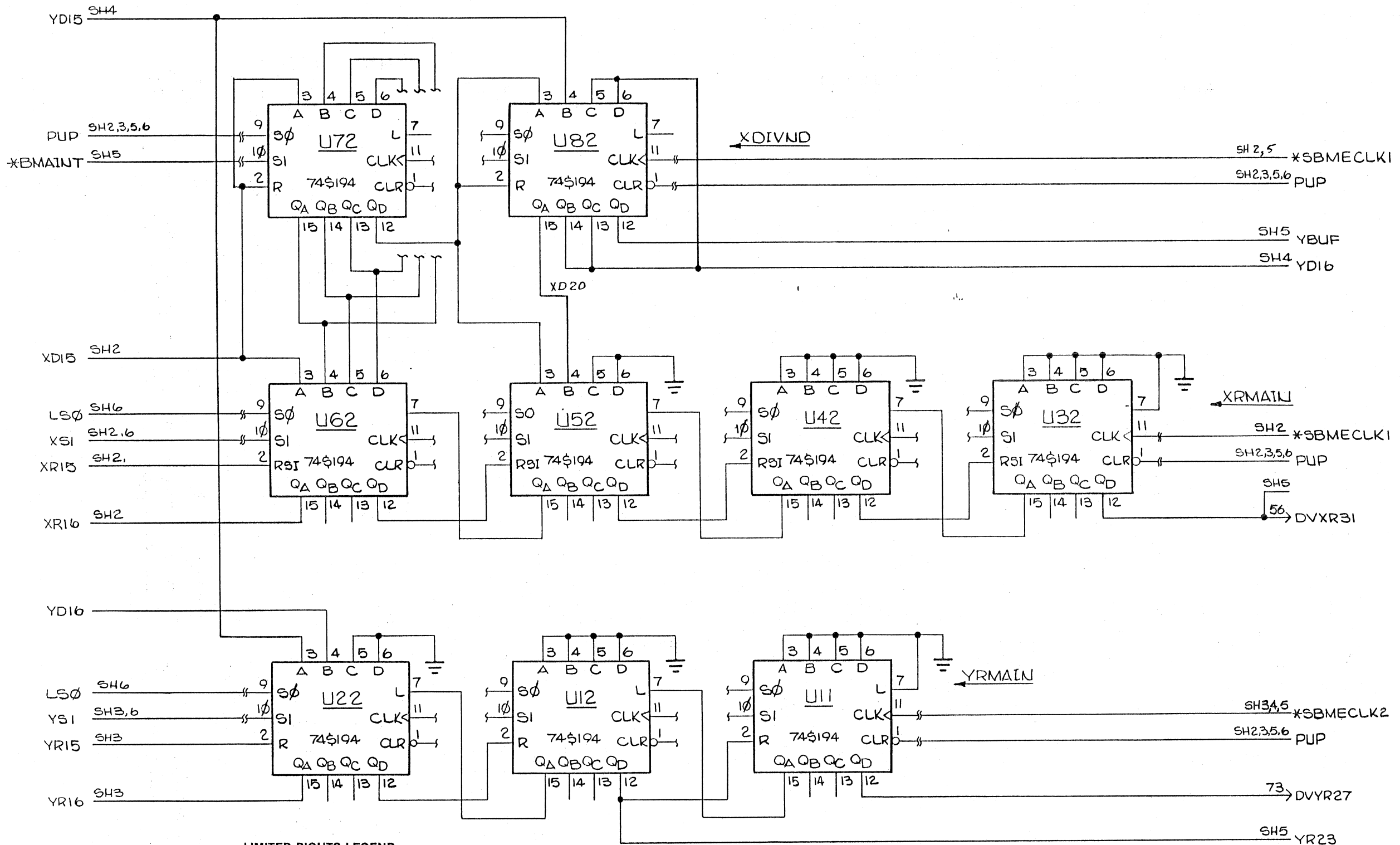


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LIMITED RIGHTS LEGEND
 Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7104.3 (a) (b) (2)

SIZE	CODE IDENT NO	REV
C	53938 200121-600	NC
SCALE	NOUE	SHEET 3 OF 6

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



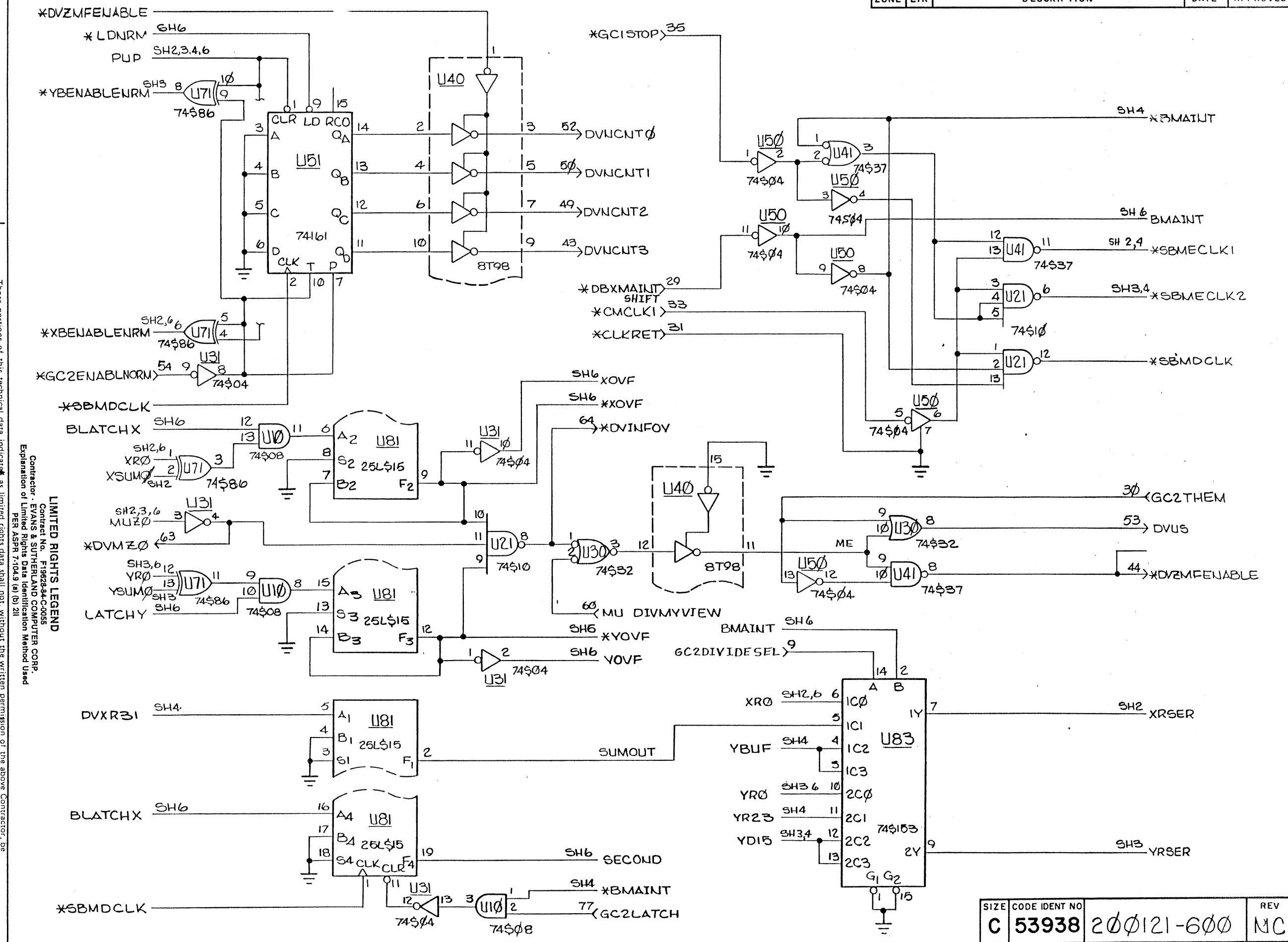
LIMITED RIGHTS LEGEND
 Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2II

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SIZE	CODE IDENT NO	REV
C	53938 200121-600	NC
SCALE NONE	SHEET 4 OF 6	

0009-121002 B 200121-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

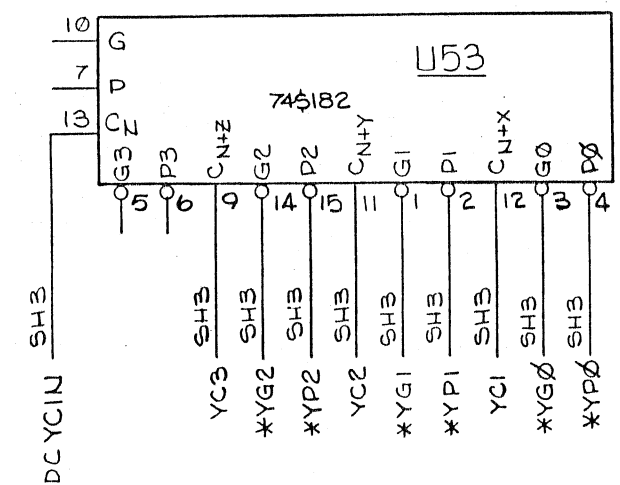
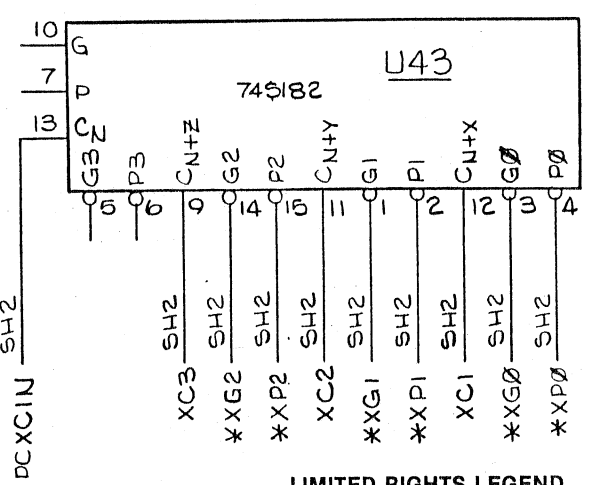
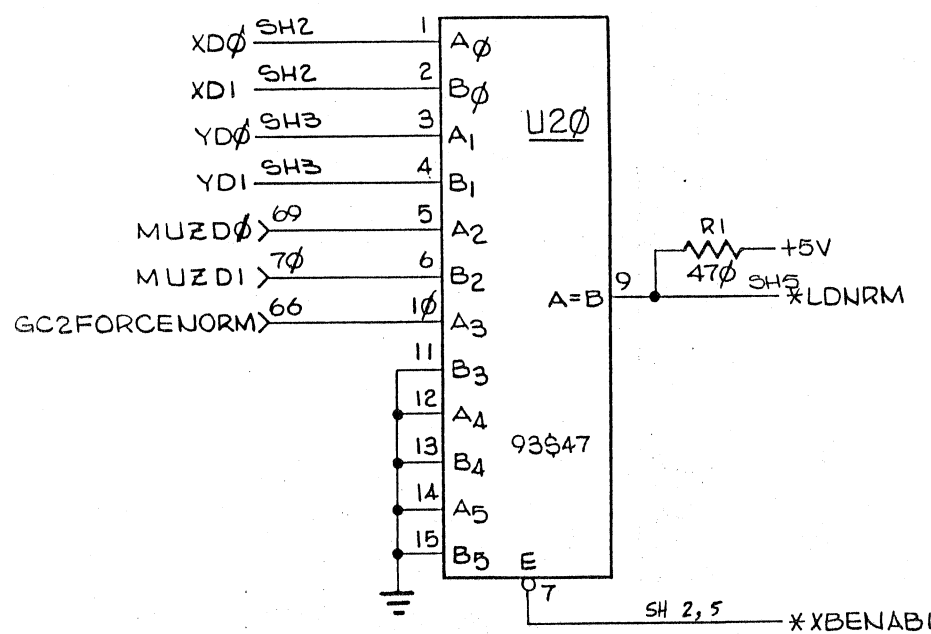
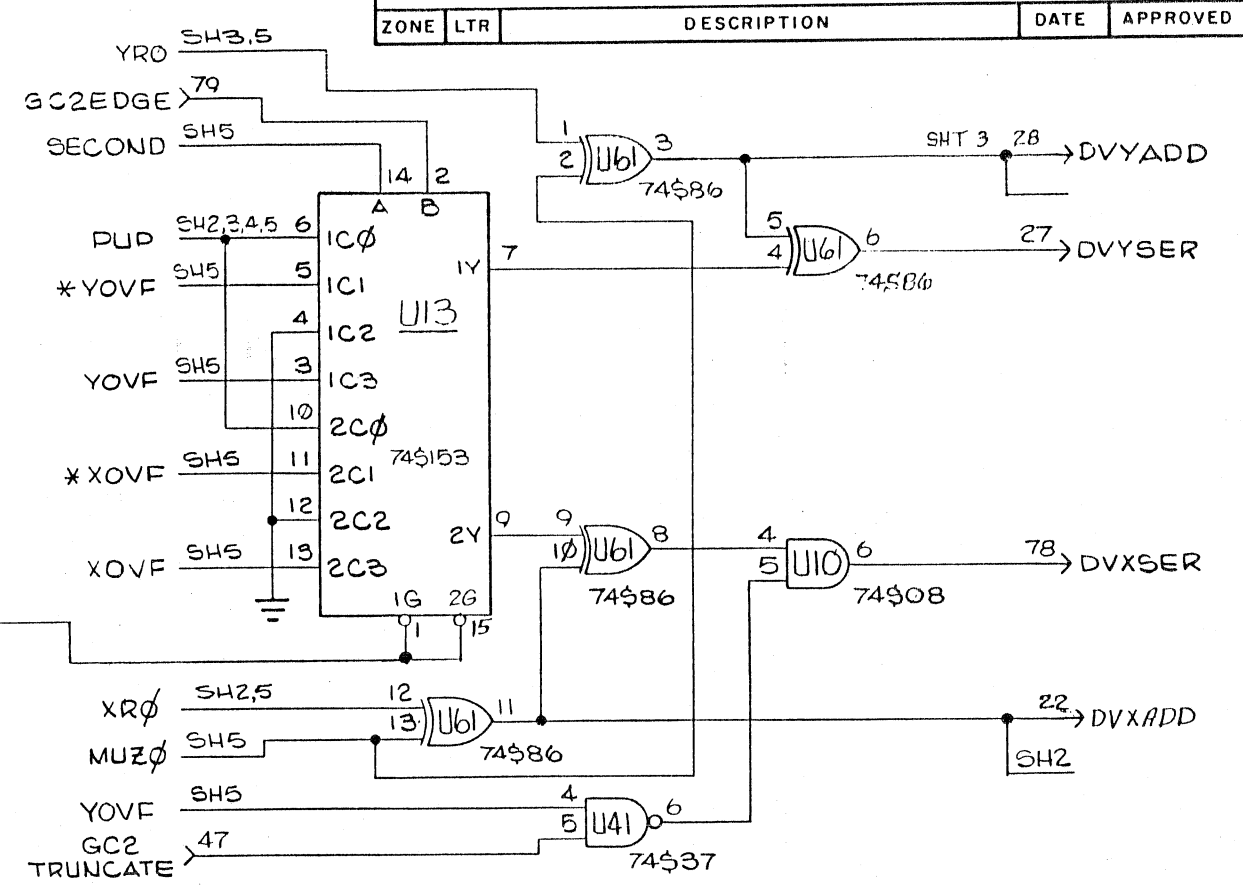
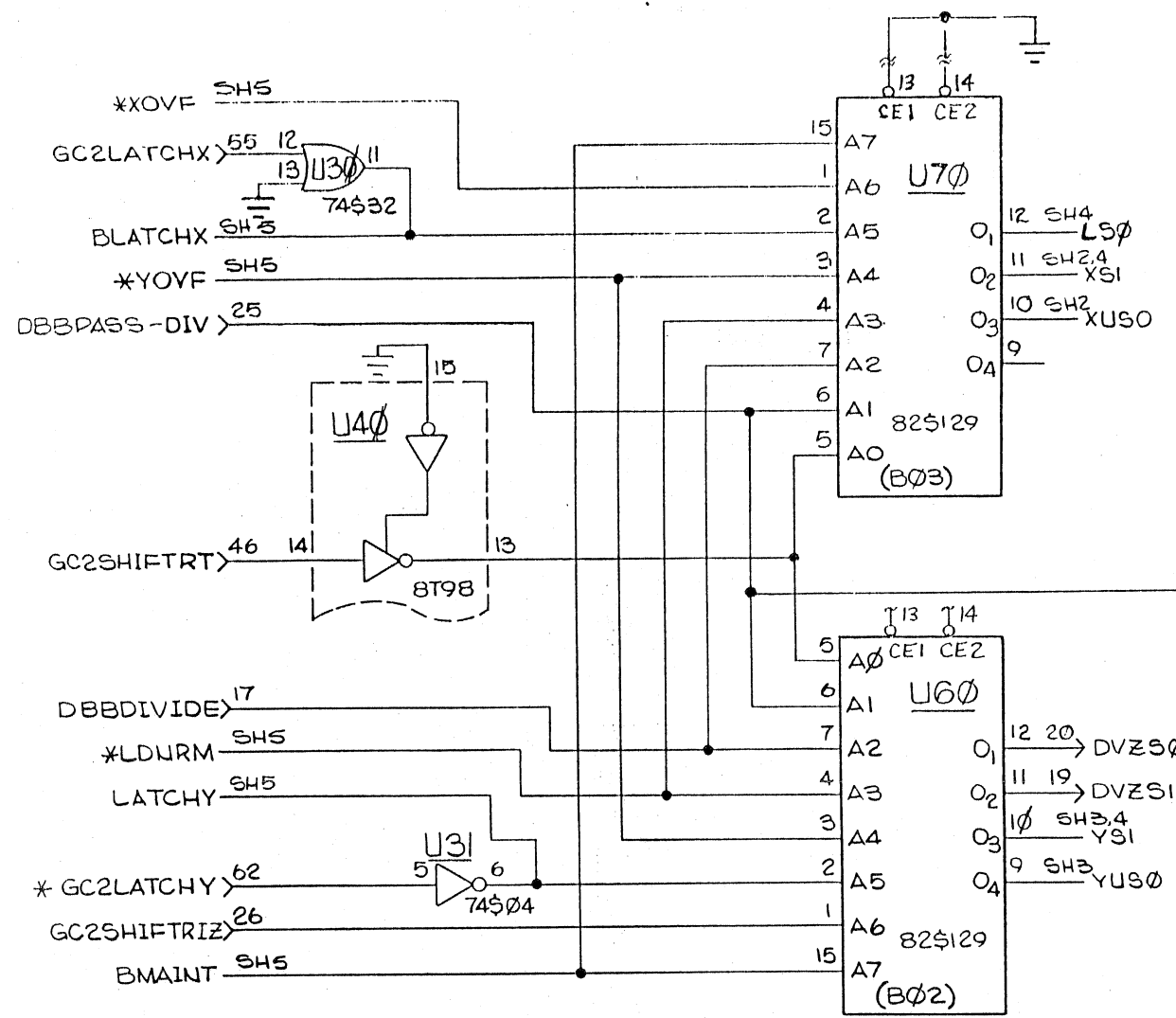


Those portions of this technical data indicated as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by a party other than the Contractor, or (c) used in whole or in part for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use, release or disclosure, or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

LIMITED RIGHTS LEGEND
 Contract No. F198294-0005
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

SIZE	CODE	IDENT NO	REV
C	53938	200121-600	MC
SCALE NONE			SHEET 5 OF 6

ZONE	LTR	DESCRIPTION	DATE	APPROVED



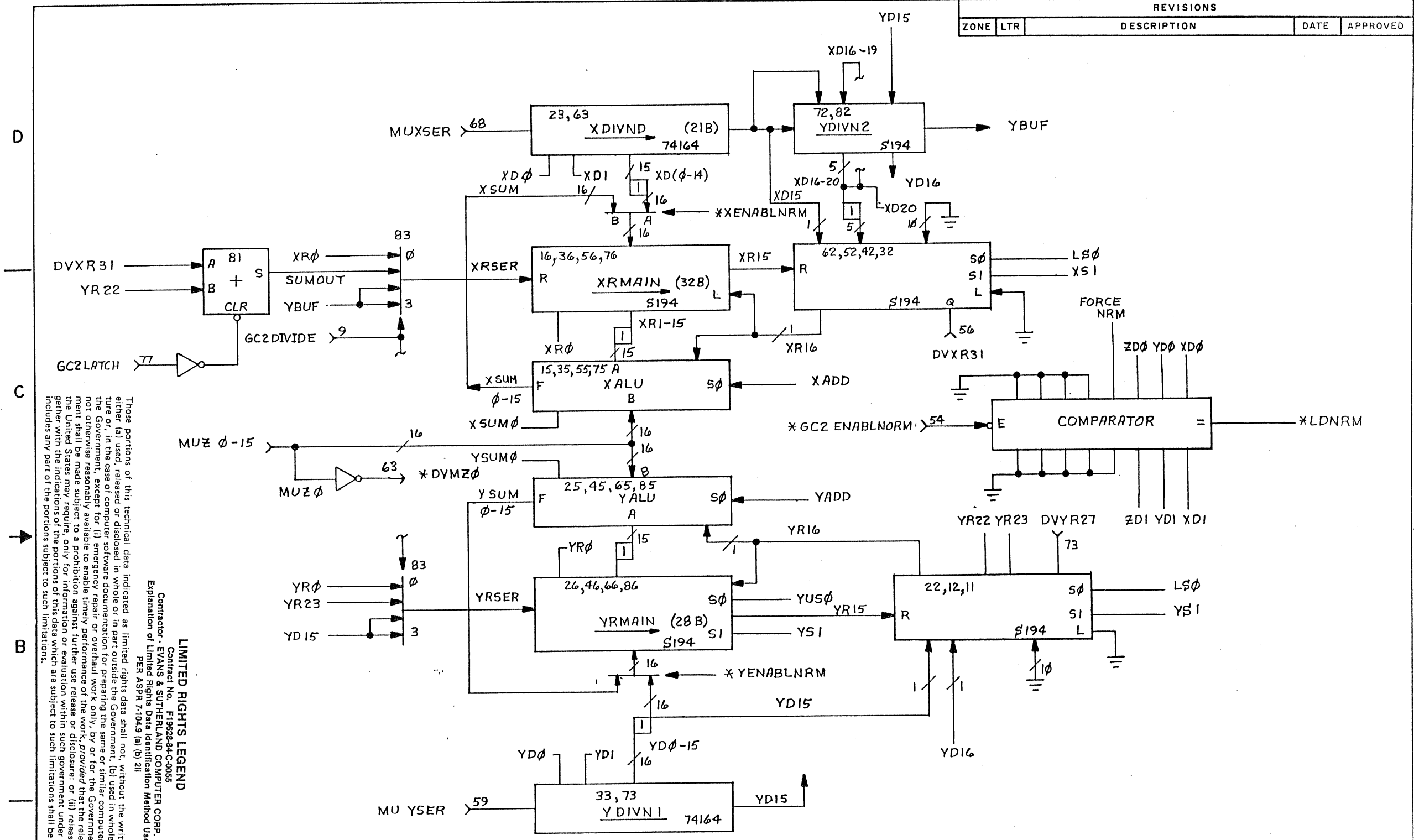
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

Those portions of this technical data indicated as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or, in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use release or disclosure: or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

SIZE	CODE IDENT NO	REV
C	53938 200121-600	NC
SCALE NONE	SHEET 6 OF 6	

B 200121-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



Those portions of this technical data indicated as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or, in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

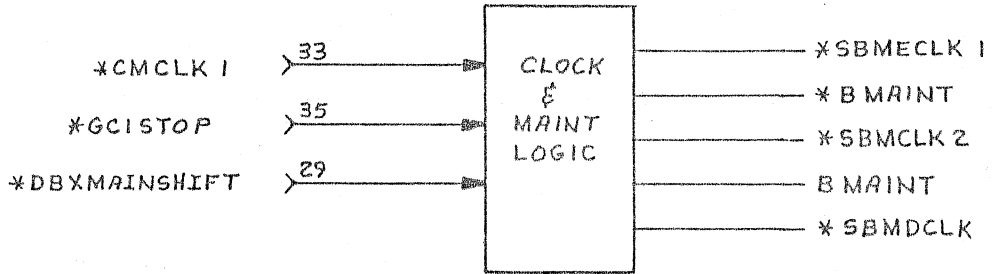
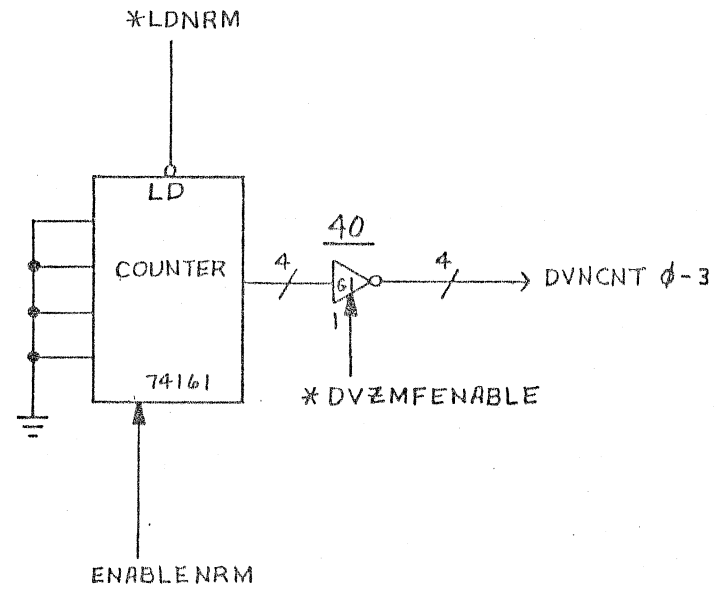
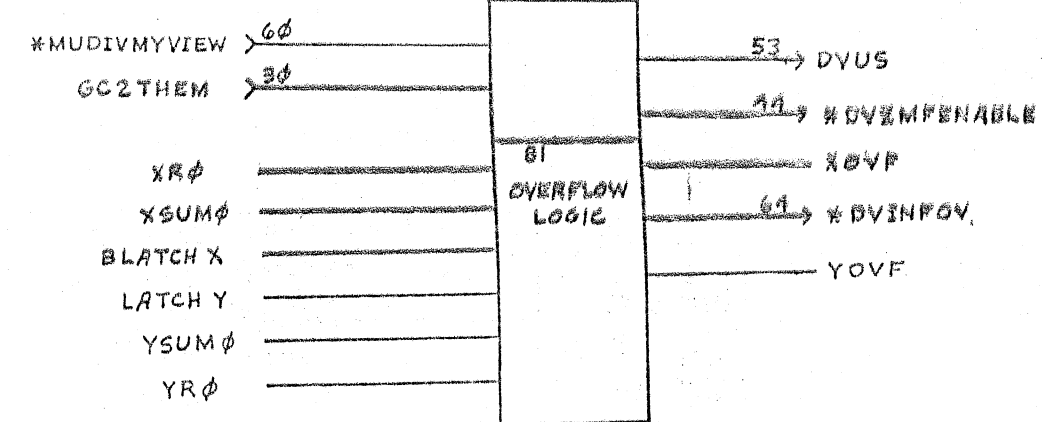
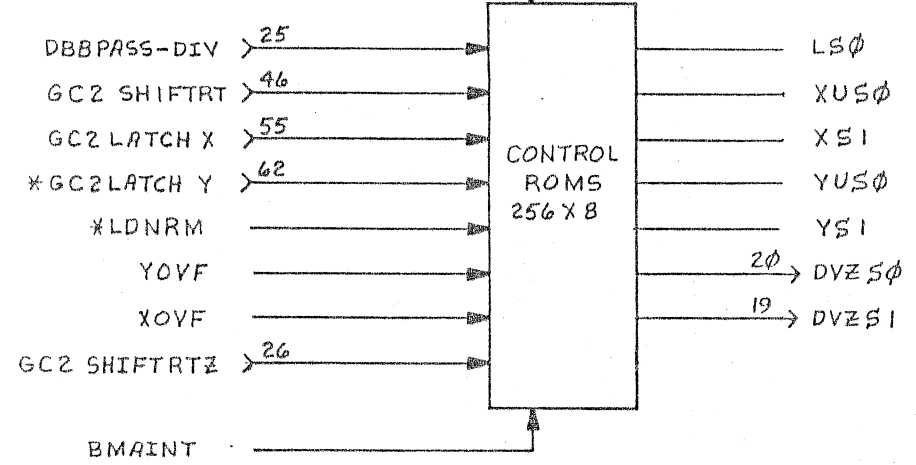
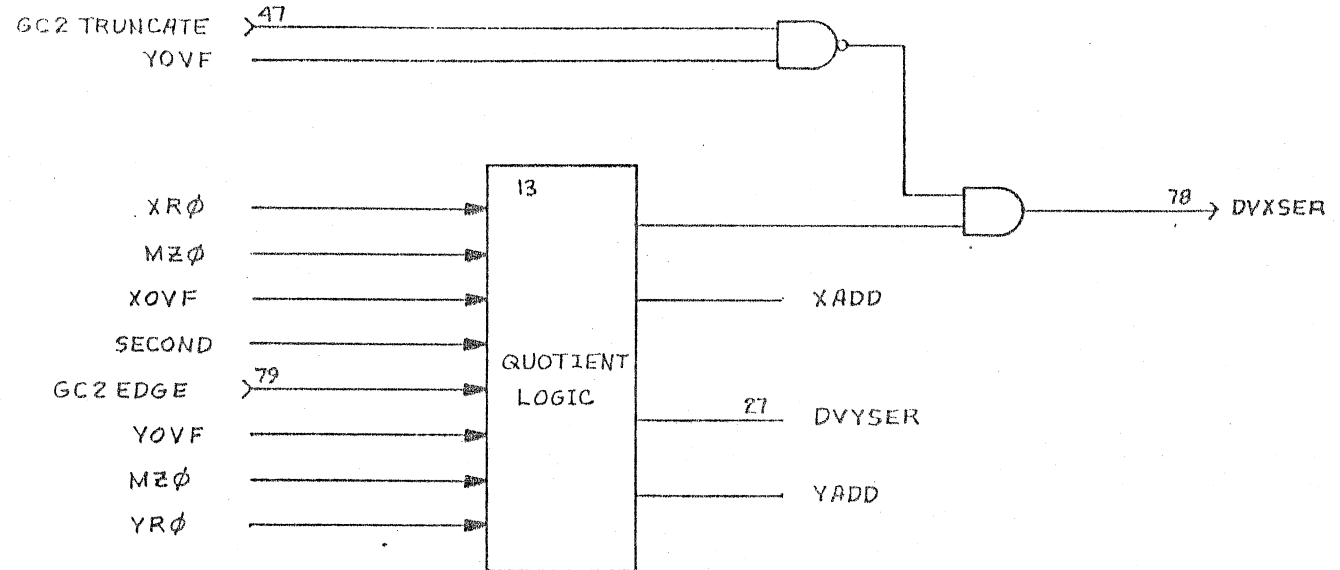
LIMITED RIGHTS LEGEND
 Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
		.XX ± _____
		.XXX ± _____
		ANGLES ± _____
		✓
		MATERIAL
200130-100	NOVOVIEW	FINISH
NEXT ASSY	USED ON	
APPLICATION		

CONTRACT NO.	
DRAWN	R. Early 4-21-77
CHECKED	at [Signature] 16 MAY 77
MECH	
ELECT	[Signature] 6 June 77
PROJ. ENG	W. F. Allen 6/9/77
APPROVED	

SEE SEPARATE PARTS LIST			
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112			
DIVIDER BLOCK DIAGRAM			
SIZE	CODE IDENT NO	REV	
C	53938	200121-900	NC
SCALE	NONE	SHEET	1 OF 2

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



LIMITED RIGHTS LEGEND
 CONTRACT NO. 2000121-900
 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.6 (c) (2) 211

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SIZE	CODE IDENT NO	REV
C	53938	200121-900
SCALE NONE	SHEET 2 OF 2	

200121-900

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200122-100

REV: A2 = AC

DESC: CARD ASSY, DISPLAY BUFFER CONTROL, W/W

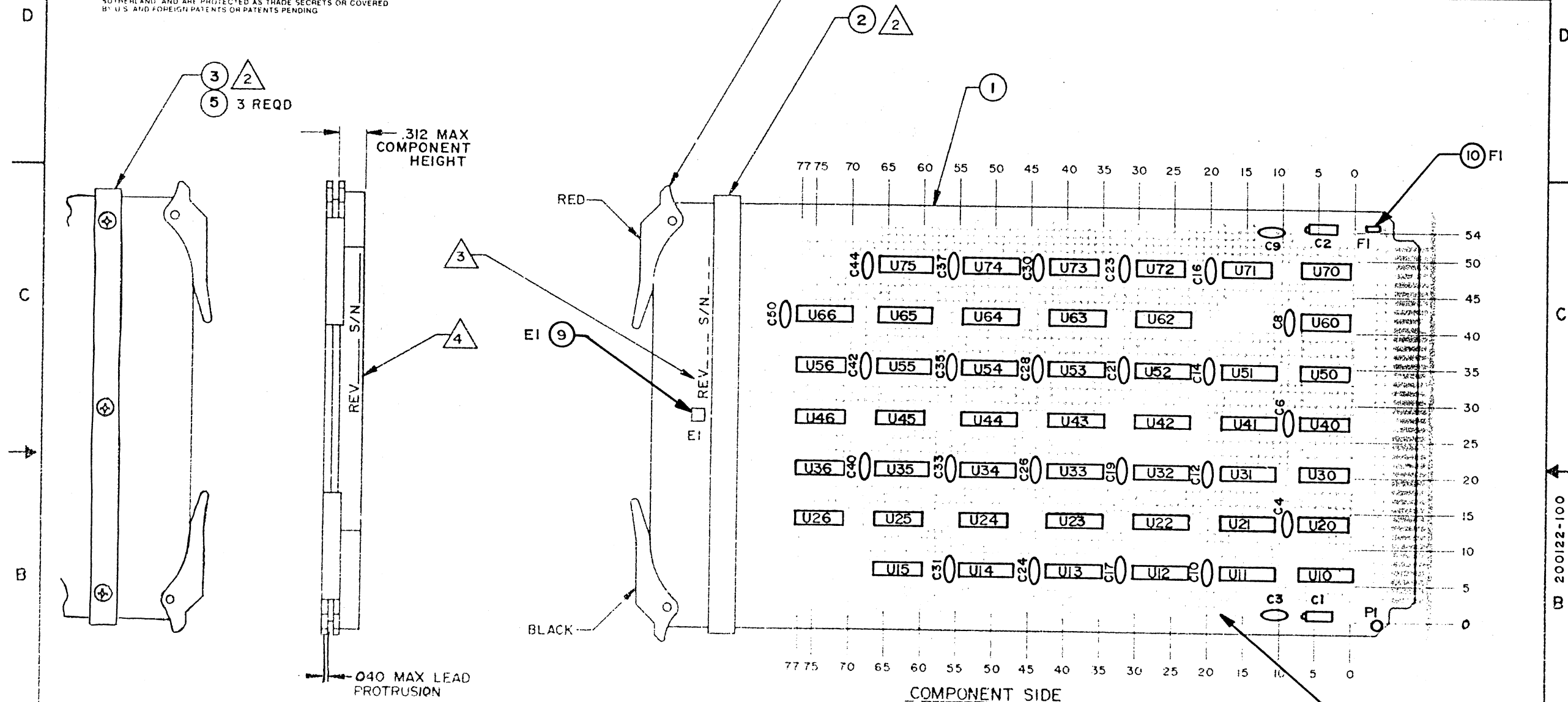
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BD,WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
006	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
007	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	872
008	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
C1 C2	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C16 C17 C19 C21 C23 C24 C26	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	25
C28 C3 C4 C6 C8 C30 C31 C33						
C35 C37 C40 C42 C44 C50 C9						
C10 C12 C14						
009 E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
010 F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
U10 U55	IC,TTL 74109	07263	FAIRCHILD IC'S & SEMICON	74109PC/DC	807730-646	2
U12 U13 U14 U31 U32 U33 U51	IC,TTL 74161	07263	FAIRCHILD IC'S & SEMICON	74161PC/DC	807661-246	10
U52 U53 U11						
U15 U56 U40 U45	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	4
U20	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
U21 U23 U63 U64 U65 U66	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	6
U22	IC,TTL 8T96	18324	SIGNETICS CORP. MILITARY	N8T96N	807732-412	1
U24	R,,DIP 1K(R13)	73138	BECKMAN INDUSTRIES CORP.	899-1-R1K/641-1-R1K	807499-102	1
U26 U46 U30 U72	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	4
U34 U54	IC,TTL 93S47	07263	FAIRCHILD IC'S & SEMICON	93S47PC/DC	807703-055	2
U35	IC,TTL 74S135	01295	TEXAS INSTR, SEMICON DIV.	SN74S135N	807741-055	1
U42 U43 U41	IC,TTL 74S253	01295	TEXAS INSTR, SEMICON DIV.	SN74S253N	807761-055	3
U44	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	1
U60 U36 U73	IC,TTL 74H108	01295	TEXAS INSTR, SEMICON DIV.	SN74H108N/J	807497-255	3
U62	IC,PROM,BIP,256X4,TS,	53938	EVANS & SUTHERLAND.	807629-055-A96	807629-055-A96	1
U70	IC,TTL 74S03	01295	TEXAS INSTR, SEMICON DIV.	SN74S03N/J	807403-055	1
U71 U25 U50	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	3
U74	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-A61	807739-055-A61	1
U75	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-A62	807739-055-A62	1

30 ITEMS LISTED



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 BY U.S. AND FOREIGN PATENTS OR PATENTS PENDING

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
---	A1	REVISION UPDATED NO DWG. CHNG. M.W.	12-13-77	R.SPEARS
---	A2	REVISION UPDATED NO DWG. CHNG. G.S.	6-18-81	G.WILSON
---	RC1	REDRAW, NO CHANGES	LT 5-15-87	<i>J. Holt</i>



- NOTES:
- 1 ASSEMBLE PER E & S STANDARDS.
 - 2 INSTALL CARD EJECTORS (ITEM 4) & SPACERS (ITEM 2 & 3) AFTER FLOW SOLDERING
 - 3 MARK ASSY NO, S/N AND REV LEVEL IN 09 TO 25 CHARACTERS IN CONTRASTING COLORS USING OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO 35A, OR EQUIV. LOCATE APPROX AS SHOWN.
 - 4 MARK ASSY NO, S/N AND REV LEVEL PER E & S PRODUCTION PROCESSES

COMPONENT SIDE

REFERENCE DOCUMENTS

LOGIC DIAGRAM ---- 200122-600
 PARTS LIST ----- PL 200122-100
 CARD BASIC..... 102100-500

7 AS REQD
 6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON XX ± XXX ± ANGLES ± ✓ HOLES PER AND 10397	DRAWN AD SHUMWAY 2-22-77	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108			
	CHECKED ART COWGUR 2-77			MECH.	
MATERIAL SEE PARTS LIST	ELEC.	CARD ASSEMBLY, DISPLAY BUFFER CONTROL (W/W)			
FINISH	PROJ. ENG W. ALLEN				
	APPROVED J.E. PINO 12-12-77	SIZE C	CODE IDENT NO 53938	200122-100	REV A2
		SCALE FULL	DO NOT SCALE	SHEET 1 OF 1	



REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	ADDED 2 RESISTORS AT U24 JB	1-12-78	RS [Signature]
B3,4	A2	SCHEMATIC CHNGS SHT 4 GS.	18 JUN 81	[Signature]
	R01	ADDED PL 31 *CLKRET	12 LW 4-30-84	RS [Signature]

REF DESIG	E+S PART NO	VENDOR PART NUMBER	REF DESIG	E+S PART NO	VENDOR PART NUMBER	PIN #	WIRENAME
C 1	804102-475	CS13BF475K	U 46	807408-055	SN74S08N	P1 3	*DBXREADWAIT
C 2	804102-475	CS13BF475K	U 50	807416-055	SN74S04N	P1 4	CMBLOCK2
C 3	804115-333	CY15C333M	U 51	807661-246	SN74161N	P1 5	CMFORCEWAIT
C 4	804115-333	CY15C333M	U 52	807661-246	SN74161N	P1 6	*DCCANTWRITE
C 6	804115-333	CY15C333M	U 53	807661-246	SN74161N	P1 7	GC1WRITEAVAIL
C 8	804115-333	CY15C333M	U 54	807703-055	93S470C	P1 8	MUZO
C 9	804115-333	CY15C333M	U 55	807730-646	SN74109N	P1 9	*MUZO
C 10	804115-333	CY15C333M	U 56	807400-055	SN74S00N	P1 10	DCRAS
C 12	804115-333	CY15C333M	U 60	807497-255	SN74H108N	P1 12	UCCAS
C 14	804115-333	CY15C333M	U 62	807629-055	N82S129B	P1 13	UCWRITE
C 16	804115-333	CY15C333M	U 63	807694-055	SN74S194N	P1 14	UCCS
C 17	804115-333	CY15C333M	U 64	807694-055	SN74S194N	P1 15	MDIN
C 19	804115-333	CY15C333M	U 65	807694-055	SN74S194N	P1 16	UCREADAVAIL
C 21	804115-333	CY15C333M	U 66	807694-055	SN74S194N	P1 17	*DCLOADOUT
C 23	804115-333	CY15C333M	U 70	807403-055	SN74S03N	P1 19	*MUDIVMYVIEW
C 24	804115-333	CY15C333M	U 71	807416-055	SN74S04N	P1 20	DROVFL
C 26	804115-333	CY15C333M	U 72	807408-055	SN74S08N	P1 22	DRDBC0DE0
C 28	804115-333	CY15C333M	U 73	807497-255	SN74H108N	P1 23	DRDBC0DE1
C 30	804115-333	CY15C333M	U 74	807739-055	N82S123B	P1 24	DRDBC0DE2
C 31	804115-333	CY15C333M	U 75	807739-055	N82S123B	P1 25	BRSIGNB
C 33	804115-333	CY15C333M				P1 26	*DVINFOV
C 35	804115-333	CY15C333M				P1 27	UBXPASS
C 37	804115-333	CY15C333M				P1 28	CMFLAG1
C 40	804115-333	CY15C333M				P1 29	*CMCLK2
C 42	804115-333	CY15C333M				P1 32	DVXSER
C 44	804115-333	CY15C333M				P1 33	DBXINBUFO
C 50	804115-333	CY15C333M				F1 34	DVYSER
U 10	807730-646	SN74109N				P1 35	LBVINBUFO
U 11	807661-246	SN74161N				F1 36	*DRSP
U 12	807661-246	SN74161N				F1 37	GC2LDFA
U 13	807661-246	SN74161N				F1 38	*DBYMAINTSHIFT
U 14	807661-246	SN74161N				P1 39	*CMGRE
U 15	807400-055	SN74S00N				P1 40	DCADR0
U 20	807410-055	SN74S10N				P1 42	DCADR1
U 21	807694-055	SN74S194N				P1 43	DCADR2
U 22	807732-412	N8T96B				P1 44	DCADR3
U 23	807694-055	SN74S194N				F1 45	DCADR4
U 24	807499-102	899-1-R1K				P1 46	DCADR5
U 25	807416-055	SN74S04N				F1 47	GC2COMPARESERIN
U 26	807408-055	SN74S08N				P1 48	CMFLAG0
U 30	807408-055	SN74S08N				P1 49	CMG0
U 31	807661-246	SN74161N				F1 50	MDIN1
U 32	807661-246	SN74161N				P1 52	DCMOUT1
U 33	807661-246	SN74161N				F1 53	CMFLAG2
U 34	807703-055	93S470C				P1 54	DCPOP
U 35	807741-055	SN74S135N				P1 55	CMFLAG3
U 36	807497-255	SN74H108N				P1 56	DBBDIVIDE
U 40	807400-055	SN74S00N				P1 67	*DBXMAINTSHIFT
U 41	807761-055	SN74S253N				F1 68	*CMCLK1
U 42	807761-055	SN74S253N				P1 70	DCMOUT
U 43	807761-055	SN74S253N				F1 77	DCYCIN
U 44	807657-055	SN74S157N				F1 78	DVYMOD
U 45	807400-055	SN74S00N				F1 79	DCXCIN
						P1 80	DVXADD
						P1 31	*CLKRET

3. SERIAL SHIFT LOOP SEQUENCE
 PI.50, 23.12, 21.12, PI.52
 PI.15, 16.12, 65.12, 64.12, 63.12, PI.70

2. NUMBERS SHOWN REFER TO CONNECTOR PI.
 ALL CAPACITANCE VALUES ARE EXPRESSED
 IN MICROFARADS.

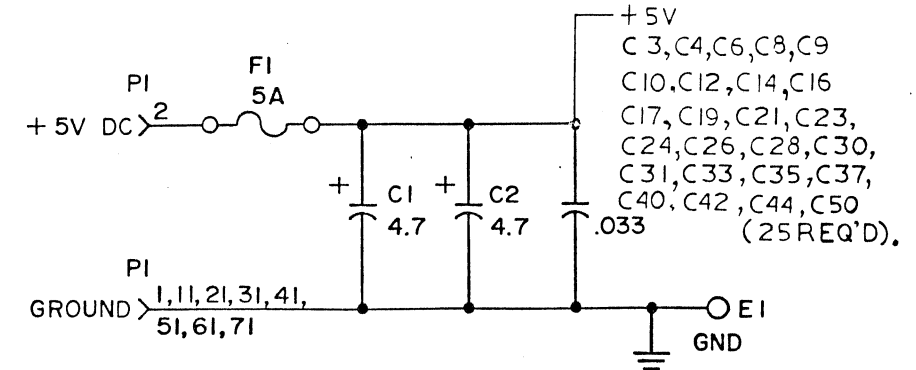
RESISTANCE VALUES ARE EXPRESSED IN OHMS,
 K DENOTES 1000.

RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND
 PIN 20 IS POWER (+5V).

ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND
 PIN 16 IS POWER (+5V).

ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND
 PIN 14 IS POWER (+5V).

UNLESS OTHERWISE SPECIFIED;
 NOTES:

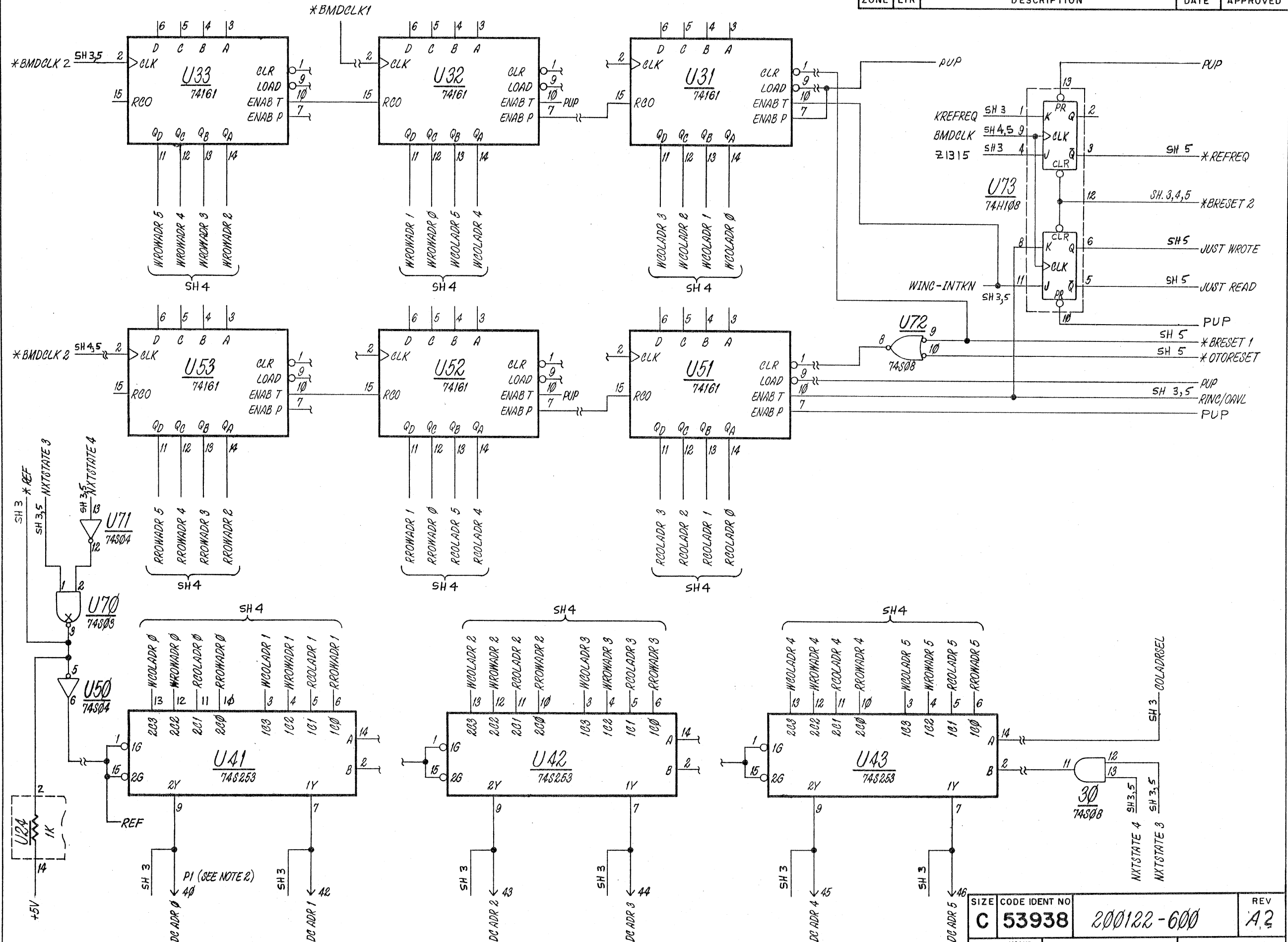


UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓		CONTRACT NO. DRAWN R. HOLLEY 6-6-77 CHECKED D. P. [Signature] 23 JUL 77 MECH ELEC [Signature] 23 JUL 77 PROJ. ENG APPROVED		SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
MATERIAL 200122-100 NOVO SP		SIZE CODE IDENT NO C 53938 200122-600		REV A2	
FINISH NEXT ASSY USED ON		SCALE NONE		SHEET 1 OF 5	
APPLICATION					

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) (2)

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

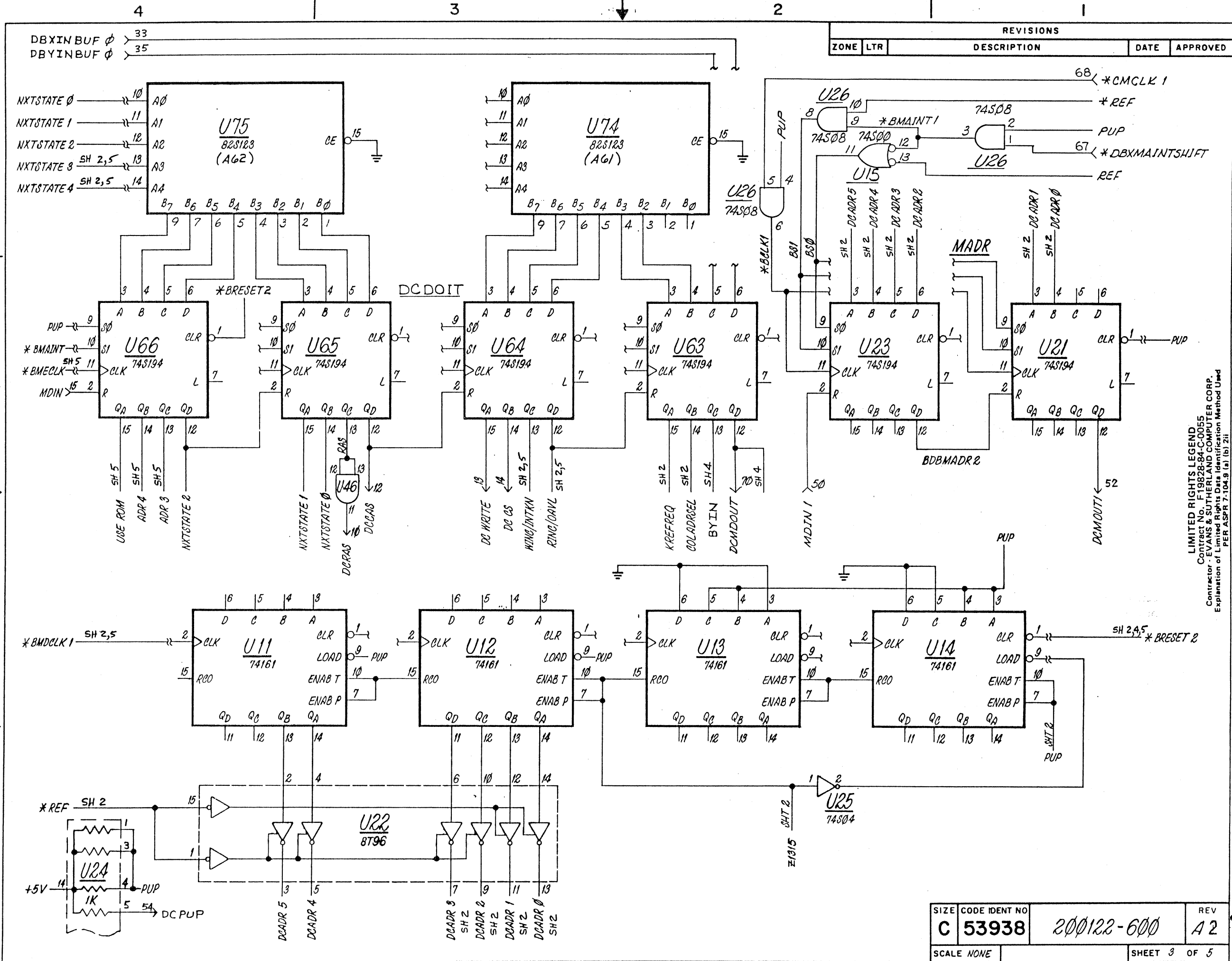


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LIMITED RIGHTS LEGEND
 Contract No. H19828-84-C-0055
 Contractor: EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPH 7.104.9 (a) (b) (2)

SIZE	CODE IDENT NO	REV
C	53938	A2
SCALE NONE		SHEET 2 OF 5

009-200122-600



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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) (2)

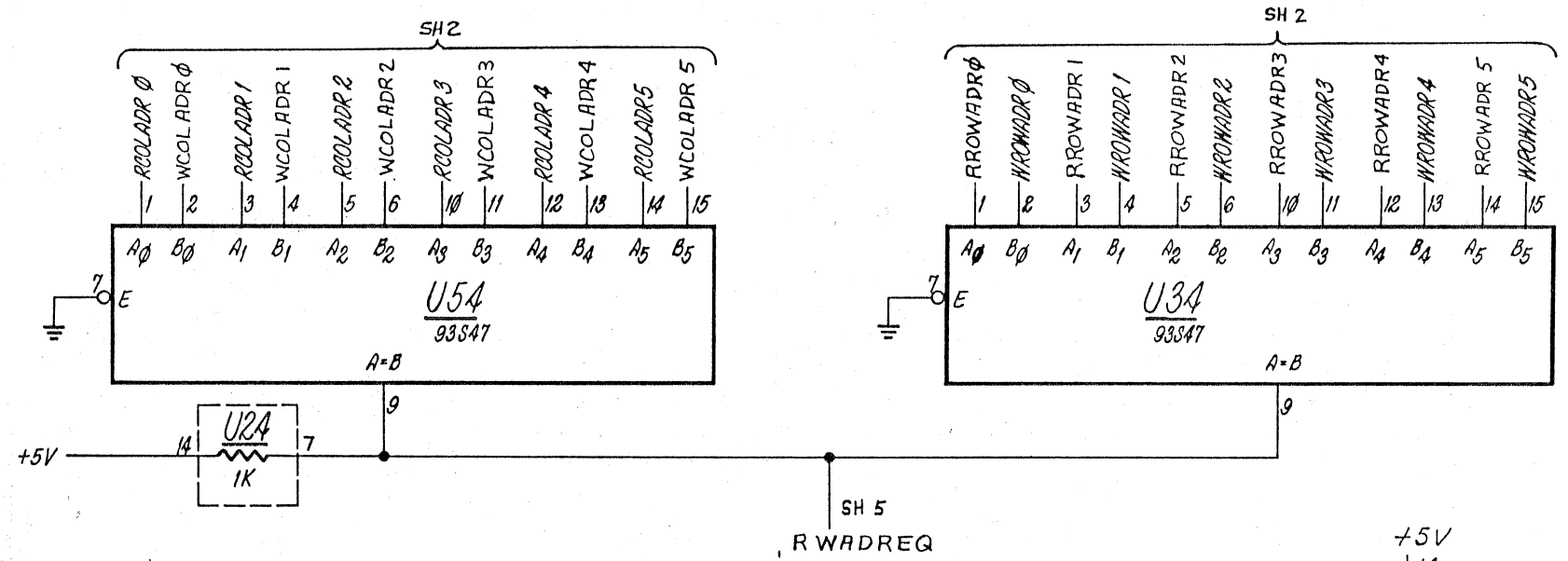
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SIZE	CODE IDENT NO	REV
C	53938	A 2
SCALE NONE	200122-600	SHEET 3 OF 5

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

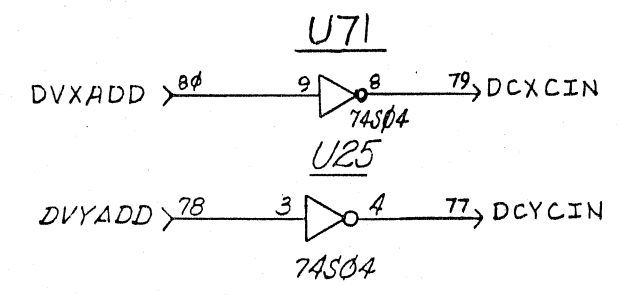
D

D



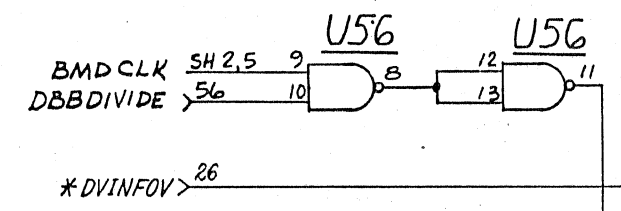
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C



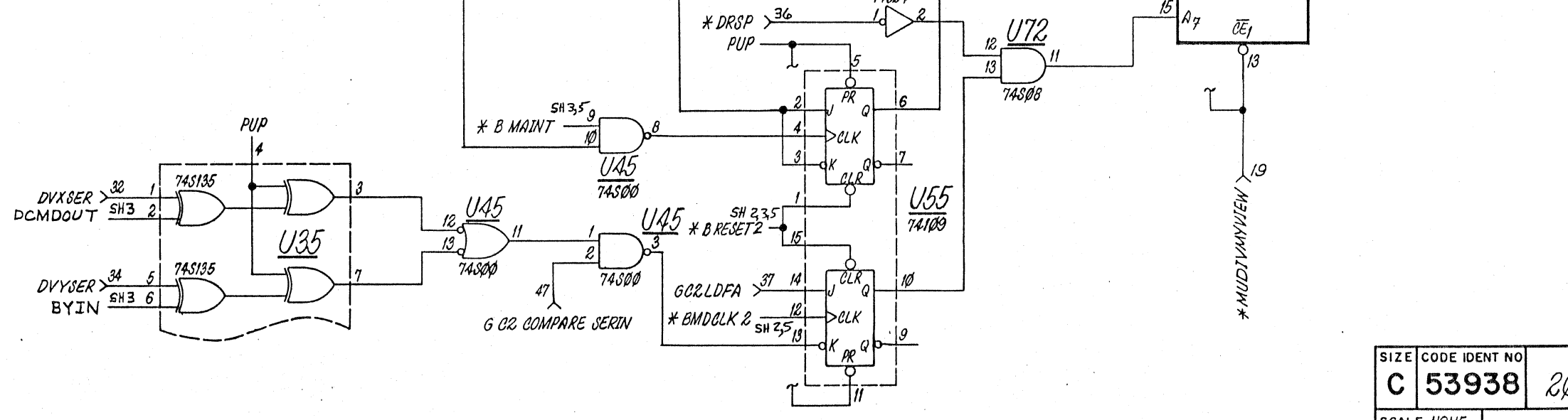
B

B



A

A

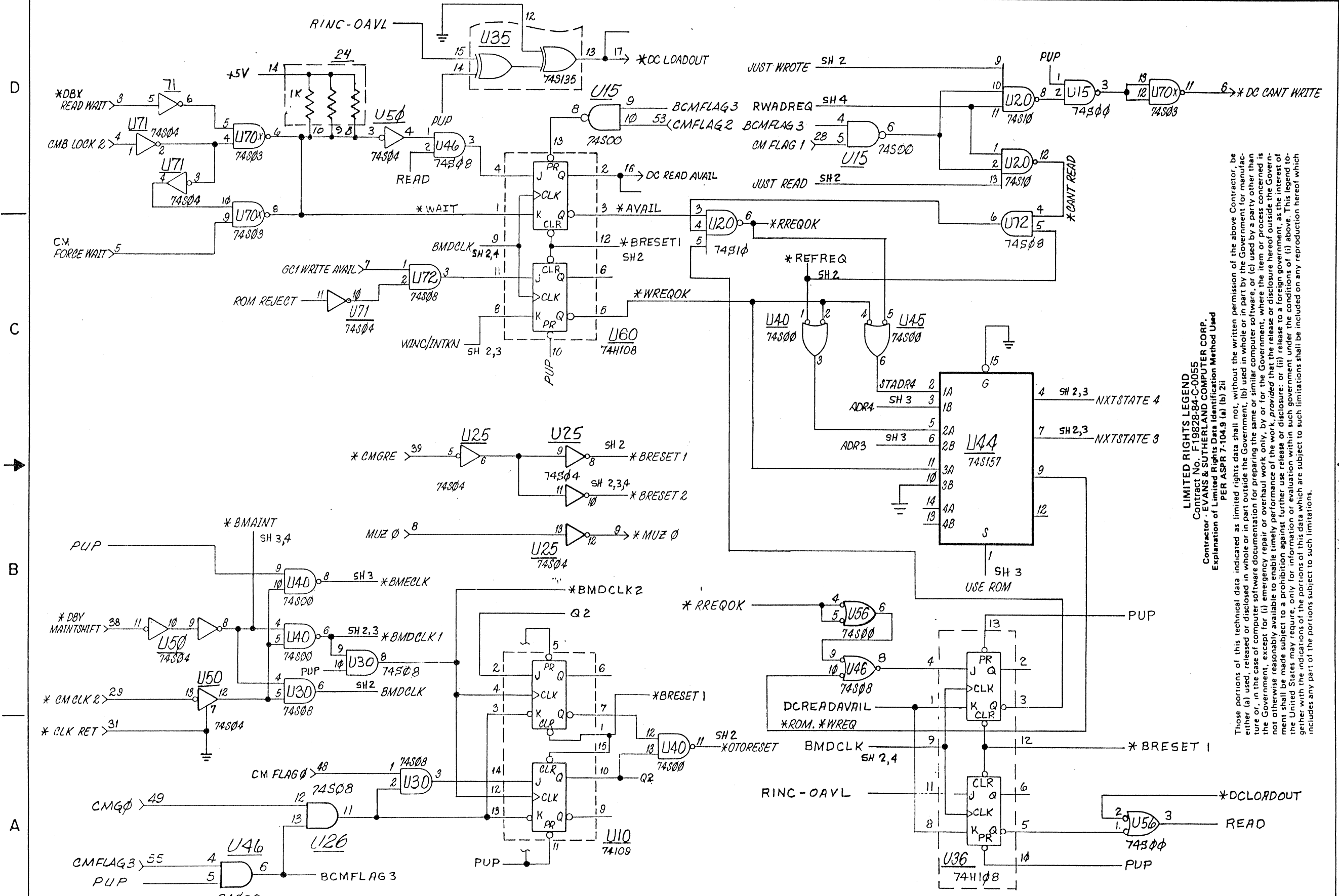


LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)ii

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SIZE	CODE IDENT NO	REV
C	53938	A2
SCALE NONE	200122-600	SHEET 4 OF 5

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



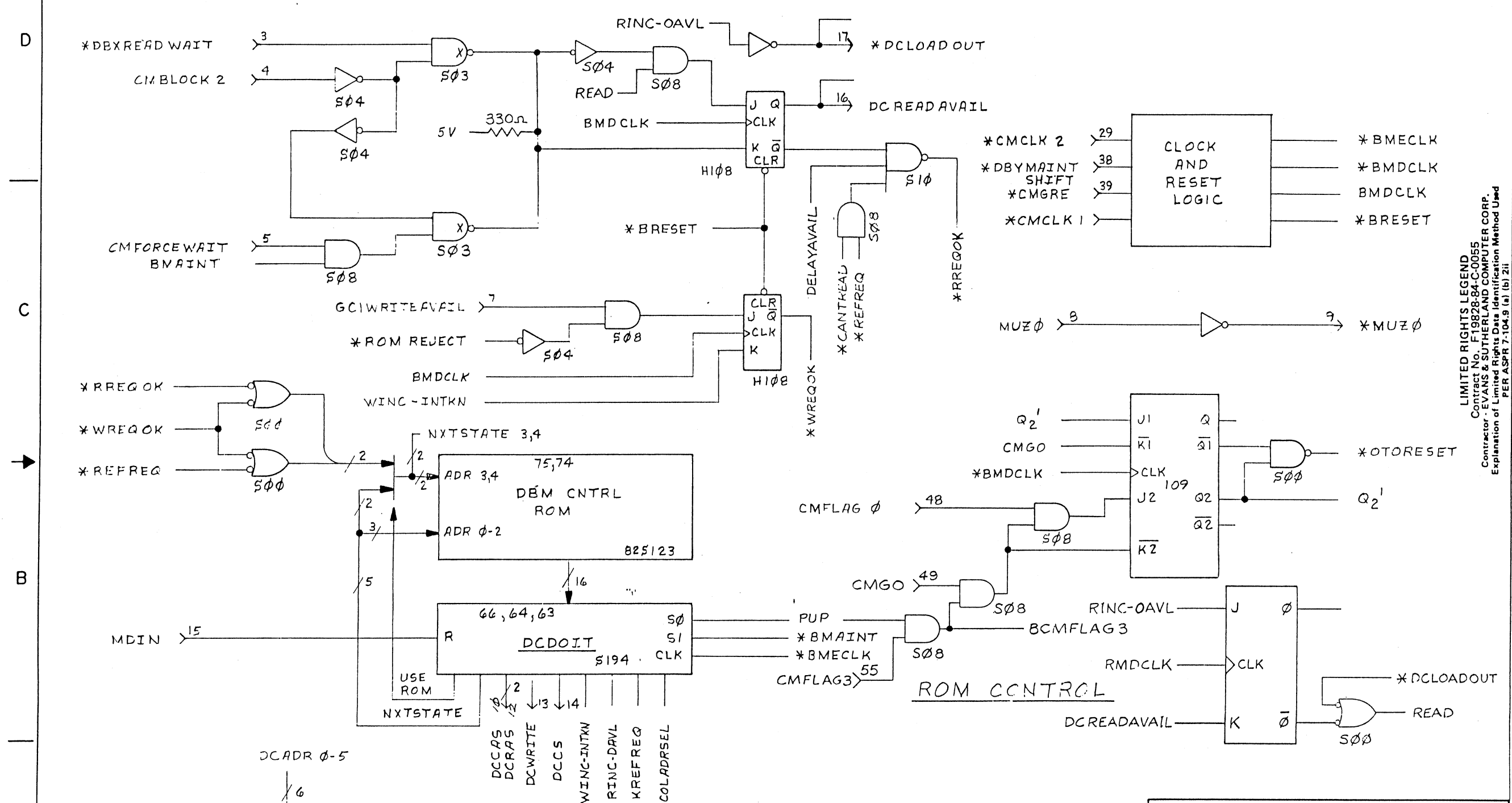
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2(i)

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SIZE	CODE IDENT NO	REV
C	53938	A2
SCALE NONE	200122-600	SHEET 5 OF 5

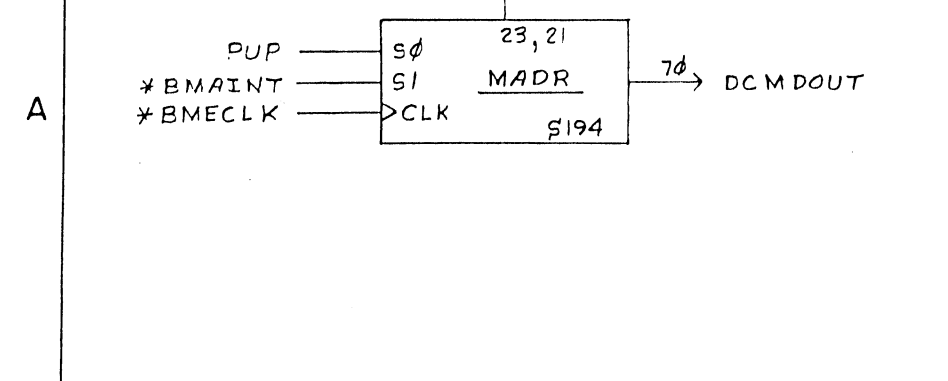


REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	REV UPDATE W/NO DWG CHNG JB	1-12-77	RSpears
	A2	REV UPDATE W/NO DWG CHNG GS	18 JUN 77	



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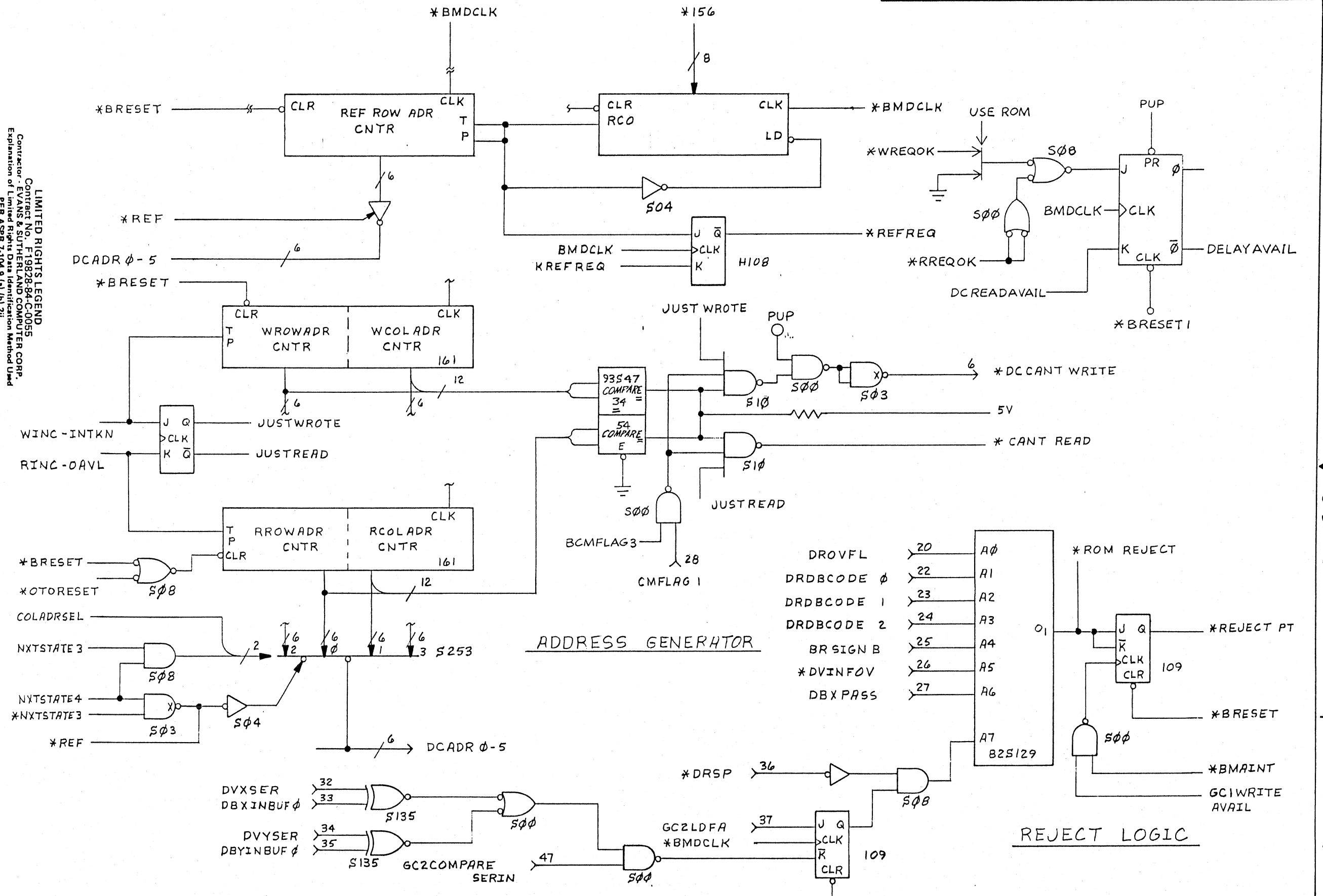
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		CONTRACT NO.	
.xx ±	_____	DRAWN R. Early 4-26-77	
.xxx ±	_____	CHECKED At Con. 27 MAY 77	
ANGLES ±	_____	MECH	
✓		ELEC Dennis Massey 6/9/77	
		PROJ. ENG W. J. Allen 6/9/77	
		APPROVED	
MATERIAL		SEE SEPARATE PARTS LIST	
NEXT ASSY	USED ON	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
APPLICATION	FINISH	DBM CONTROL BLOCK DIAGRAM	

SIZE	CODE IDENT NO	REV
C	53938	200122-900
SCALE	NONE	SHEET 1 OF 2

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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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) 2(i)

B

A

D

C

A

006-221002 B 200122-900

SIZE	CODE IDENT NO	REV
C	53938 200122-900	A2
SCALE NONE	SHEET 2 OF 2	

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200123-101

REV: A2 = AC

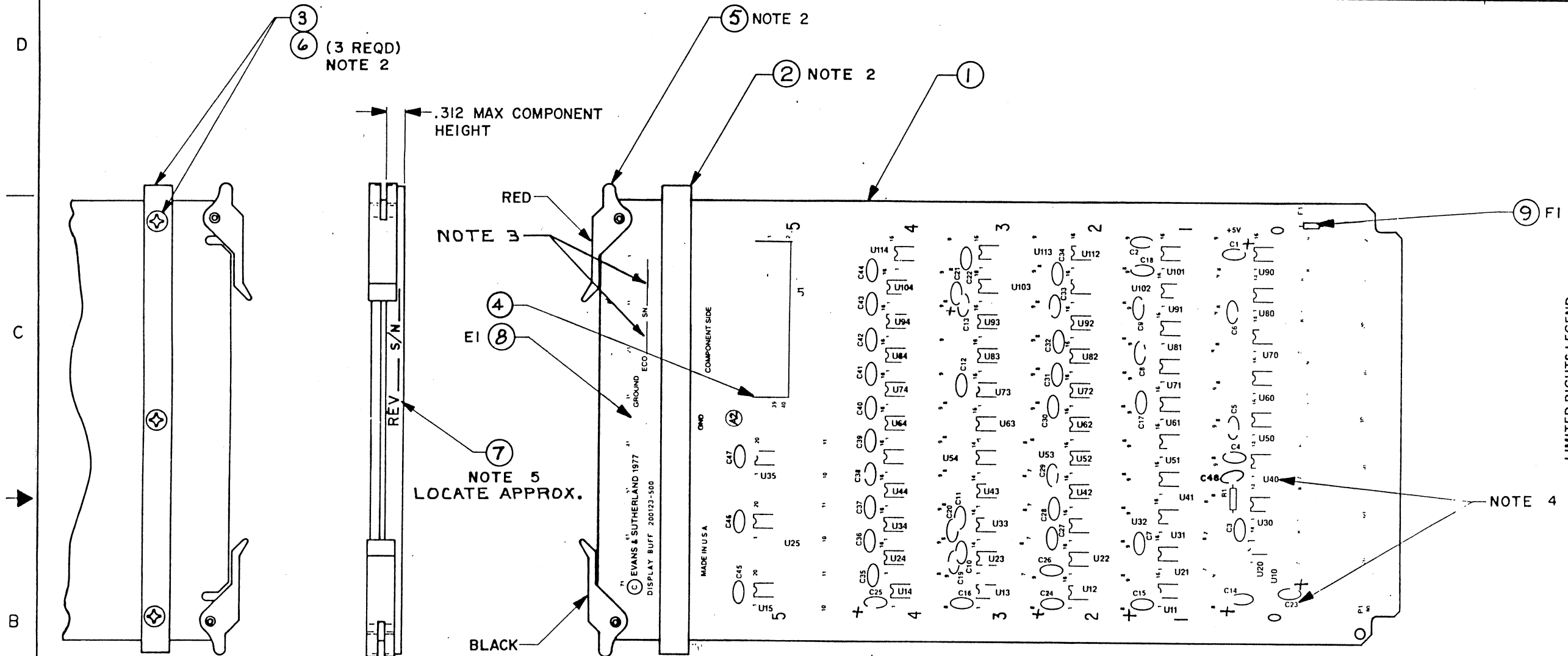
DESC: CARD ASSY, DISPLAY BUFFER MEMORY, CABLE, PC

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY	
001	BD,P02R PCBD 6X11	53938	EVANS & SUTHERLAND.	200123-501	200123-501	1	
002	HW,SPCR .312X.030	53938	EVANS & SUTHERLAND.	501335-001	501335-001	1	
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1	
005	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1	
006	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3	
007	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1	
	C1 C2	C,,RDL 4.7UF	31433	KEMET ELECTRONICS CORP.	T370D475M035AS	804128-475	2
	C23 C24 C25 C21 C14 C15	C,,RDL 12UF	51642	CENTRE ENGINEERING	CDT12UF35V	804123-126	6
	C3 THRU C13 C26 THRU C47 C16	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	39
	THRU C20 C22						
	C48	C,,RDL 100PF	02799	ARCO ELECTRONICS (CAPS)	CCD-101	804103-101	1
008	E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
009	F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
004	J1	CN,HOUS 40P,RTA	53387	MINN. MINING & MFG.EP DIV	3495-1002	801860-040	1
	R1	R,,AXL 1K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	1
	U10	RG,VOLT LM320H-5	27014	NATIONAL SEMICONDUCTOR	LM320H-5.0	806321-888	1
	U20 U70 U40	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	3
	U23 U21 U31 U43	IC,TTL 74128	01295	TEXAS INSTR, SEMICON DIV.	SN74128N	807506-646	4
	U30	IC,TTL 74367	01295	TEXAS INSTR, SEMICON DIV.	SN74367AN/J	807714-646	1
	U33 U53	R,,DIP 220/330R	73138	BECKMAN INDUSTRIES CORP.	899-5-R220/330	807520-221	2
	U34 U52 U114 U62 U64 U72 U13	IC,TTL MK4027-3	04713	MOTOROLA INC. SEMI PRODUC	MCM4027-C3	807824-819	24
	U82 U24 U92 U74 U102 U44						
	U112 U84 U11 U14 U12 U94 U22						
	U54 U32 U104 U42						
	U35 U25 U15	IC,TTL 81LS95	27014	NATIONAL SEMICONDUCTOR	DM81LS95(A)N/J	807794-055	3
	U41 U61 U51 U71 U81 U103	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	13
	U113 U91 U101 U63 U83 U73						
	U60 U90 U50	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	3
	U80	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	1

24 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	REV UPDATE W/NO DWG CHANG.	3-1-80	
	RC1	ADDED C48 & UPDATED NOTES	3-6-80	
	A2	REV. UPDATE	7/6/81	JAP



LIMITED RIGHTS LEGEND
 Contract No. F19826-84-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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- NOTES:**
1. ASSEMBLE PER E&S STANDARDS.
 2. INSTALL CARD EJECTORS (ITEM 5) & SPACERS (ITEM 2 & 3) AFTER FLOW SOLDERING.
 3. MARK REV LEVEL AND SERIAL NO. AND ASSY NO. APPROX AS SHOWN USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV.
 4. ITEM NUMBERS ON THE DWG CORRESPOND WITH THE LOCATION DESIGNATION ON THE PARTS LIST.
 5. MARK REV LEVEL AND SERIAL NO. AND ASSY NO. ON ITEM 7.

COMPONENT SIDE

REFERENCE DOCUMENTS

- LOGIC DIAGRAM --- 200123-601
- PARTS LIST----- PL 200123-101
- CARD BASIC ----- 200123-501

LIMITED RIGHTS LEGEND
 CONTRACT NO. F19826-84-C-0055
 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORP. EXPLANATION OF LIMITED RIGHTS DATA IDENTIFICATION METHOD USED PER ASPR 7-104.9(a)(b) 2ii AND COVERS ALL INFORMATION ON THIS DRAWING.
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~~SEE SEPARATE PARTS LIST~~
EVANS & SUTHERLAND
 SALT LAKE CITY, UTAH 84108

CARD ASSEMBLY, DISPLAY BUFFER MEMORY (P.C.)

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓		CONTRACT NO. _____	
MATERIAL SEE PARTS LIST		DRAWN G.TROM 9-10-79	
FINISH		CHECKED AT [Signature] 17 SEP 79	
NEXT ASSY	USED ON	MECH _____	
APPLICATION		ELEC J.N. Black 24 SEPT 79	
		PROJ/ENG R. Moon 24 Sept 79	
		APPROVED [Signature] 24 Sept 79	
		SIZE	CODE IDENT NO.
		C	53938 200123-101
		REV A2	
		SCALE FULL	SHEET OF



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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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	LOGIC NAME CHNGS SH 1 & SH 5 DB	2-19-80	R Moon
	A2	DELETE C, R & U LISTINGS JEP	7/6/81	R Speer

PIN #	WIRENAME
P1 3	DAT61
P1 4	DAT62
P1 5	DAT63
P1 6	GC2EDGE
P1 7	DATC0
P1 8	DATC0
P1 9	DATC1
P1 10	DATC1
P1 12	DVSER
P1 13	DATC3
P1 14	DATC2
P1 15	*DBMAINTSHIFT
P1 16	CMSHIFT
P1 17	DATB0
P1 18	DATB4
P1 19	DATD5
P1 20	DATB7
P1 22	CMDEVENABLE
P1 23	DATB6
P1 24	*DBMAINTOUT
P1 25	*CMCHN
P1 26	DATA4
P1 27	DATA7
P1 28	DATA6
P1 29	DATA5
P1 30	*DCLOADOUT
P1 32	*DBMAINTIN
P1 33	DATA1
P1 34	DATA2
P1 35	DATA3
P1 36	DATD7
P1 37	DATD6
P1 38	DATD5
P1 39	DATD4
P1 40	DBSEROUT
P1 42	SERIN
P1 43	GC2PASSDIVIDE
P1 44	DBD1VIDE
P1 45	*DCCAS
P1 46	*DCCS
P1 47	*DBREADWAIT
P1 48	DCREADAVAIL
P1 49	DATD3
P1 50	DATD2
P1 52	*GC2LDC
P1 53	*GC2LDB
P1 54	*GC2LDD
P1 55	*DCLDA
P1 56	DATD1
P1 57	*IMHERE
P1 58	DATD0
P1 59	DBI+BUFG
P1 60	DCADR1
P1 62	AVAILOUT
P1 63	AVAILIN
P1 64	WAITOUT
P1 65	MDOUT
P1 66	WAITIN
P1 67	*DBMAINTSHIFT
P1 68	MDIN
P1 69	DCADR3
P1 70	DCADR4
P1 71	GROUND
P1 72	*CMCLK1
P1 73	DCADR0
P1 74	DCADR5
P1 75	DBPASS-IV
P1 76	DCADR2
P1 77	DCRAS
P1 78	DCWRITE
P1 79	-15VDC
P1 80	+12VDC

PIN #	WIRENAME
P2 5	DBMU10
P2 6	DBMU9
P2 7	DBMU11
P2 8	DBMU6
P2 9	DBMU13
P2 10	DBMU14
P2 11	DBMU12
P2 12	DBMU15
P2 13	DBMU5
P2 14	DBMU6
P2 15	DBMU4
P2 16	DBMU7
P2 17	DBMU2
P2 18	DBMU1
P2 19	DBMU0
P2 20	DBMU3
P2 22	DBMU23
P2 23	DBMU19
P2 24	DBMU17
P2 25	DBMU21
P2 26	DBMU20
P2 27	DBMU16
P2 28	WAIT
P2 29	DBMU18
P2 30	*DBREADAVAIL
P2 31	DBMU22

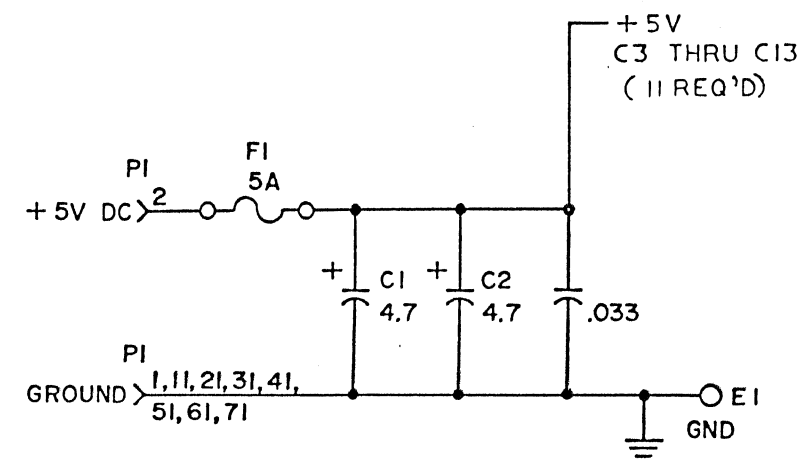
LIMITED RIGHTS LEGEND

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 AND COVERS ALL INFORMATION ON THIS DRAWING.
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 COPYRIGHT © 1979, EVANS & SUTHERLAND COMPUTER CORPORATION.

4. SERIAL SHIFT LOOP SEQUENCE
 Pl. 42, 73.12, 93.12, 113.12, 91.12, 101.12, 51.12, 71.12, 63.12, 83.12, 103.12, 81.12, 41.12, 61.12, Pl. 40, Pl. 68, Pl. 65
3. ON IC'S 4096:
 PIN 1, VBB = -5V, PIN 8, VDD = +12V,
 PIN 9, VCC = +5V, PIN 16, VSS = GND.

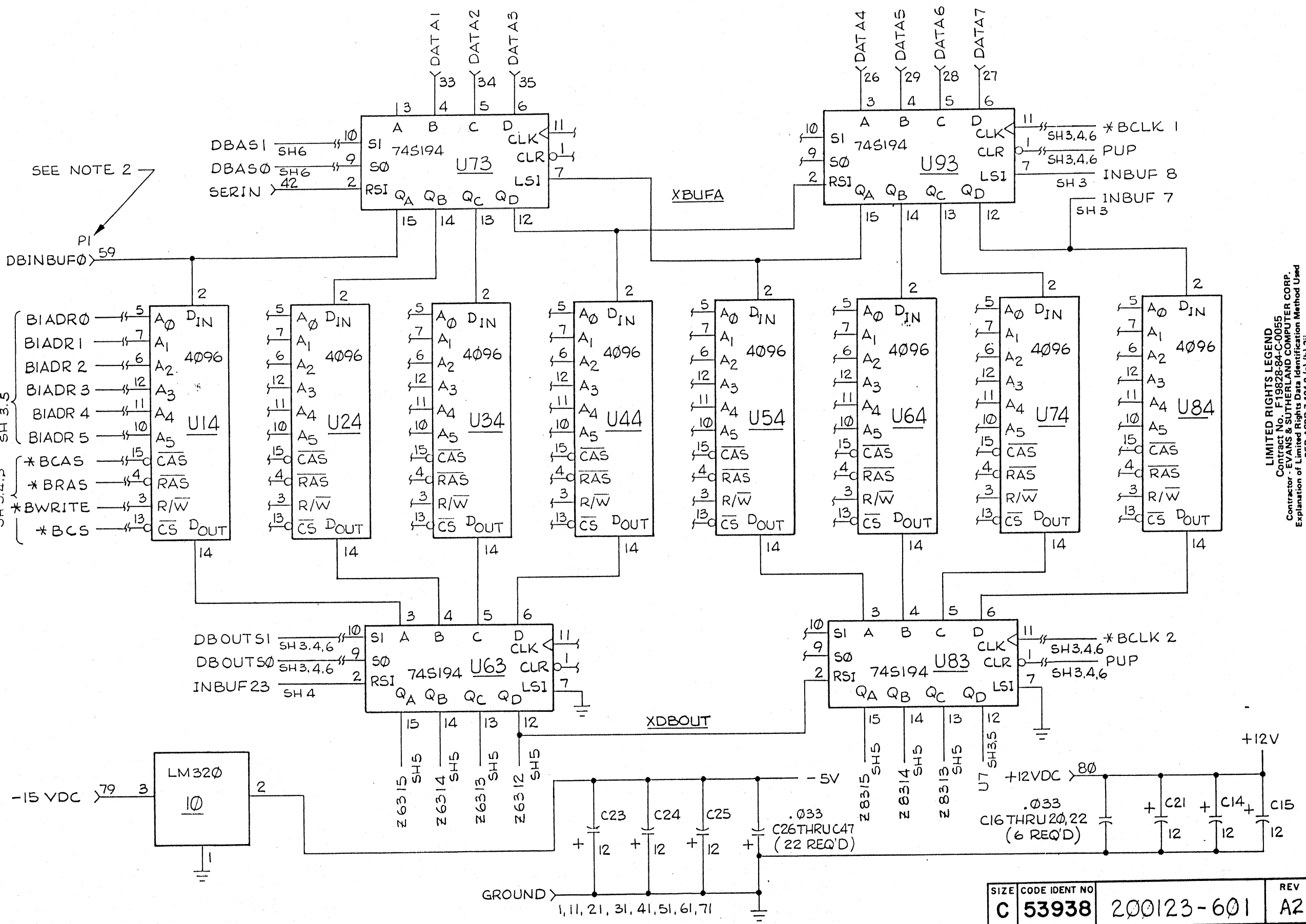
2. NUMBERS SHOWN REFER TO CONNECTOR P1.
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).
 ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V).
 ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).
 UNLESS OTHERWISE SPECIFIED;

NOTES:



200130-100		NOVO SP	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± _____ .xxx ± _____ ANGLES ± _____ ✓		CONTRACT NO.	SEE SEPARATE PARTS LIST	
NEXT ASSY		USED ON	MATERIAL		DRAWN G. Trom	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
APPLICATION		FINISH	MATERIAL		CHECKED <i>Logan</i> 17 SEP 79	DISPLAY BUFFER CABLE P.C.	
			MATERIAL		MECH	SIZE CODE IDENT NO REV	
			MATERIAL		ELEC <i>J. N. Black</i> 24 SEP 79	C 53938 200123-601 AZ	
			MATERIAL		PROJ. ENG <i>R. Moon</i> 24 sept 79	SCALE NONE SHEET 1 OF 6	
			MATERIAL		APPROVED <i>g. mo</i> 24 Sept 79		

ZONE		LTR		DESCRIPTION	DATE	APPROVED



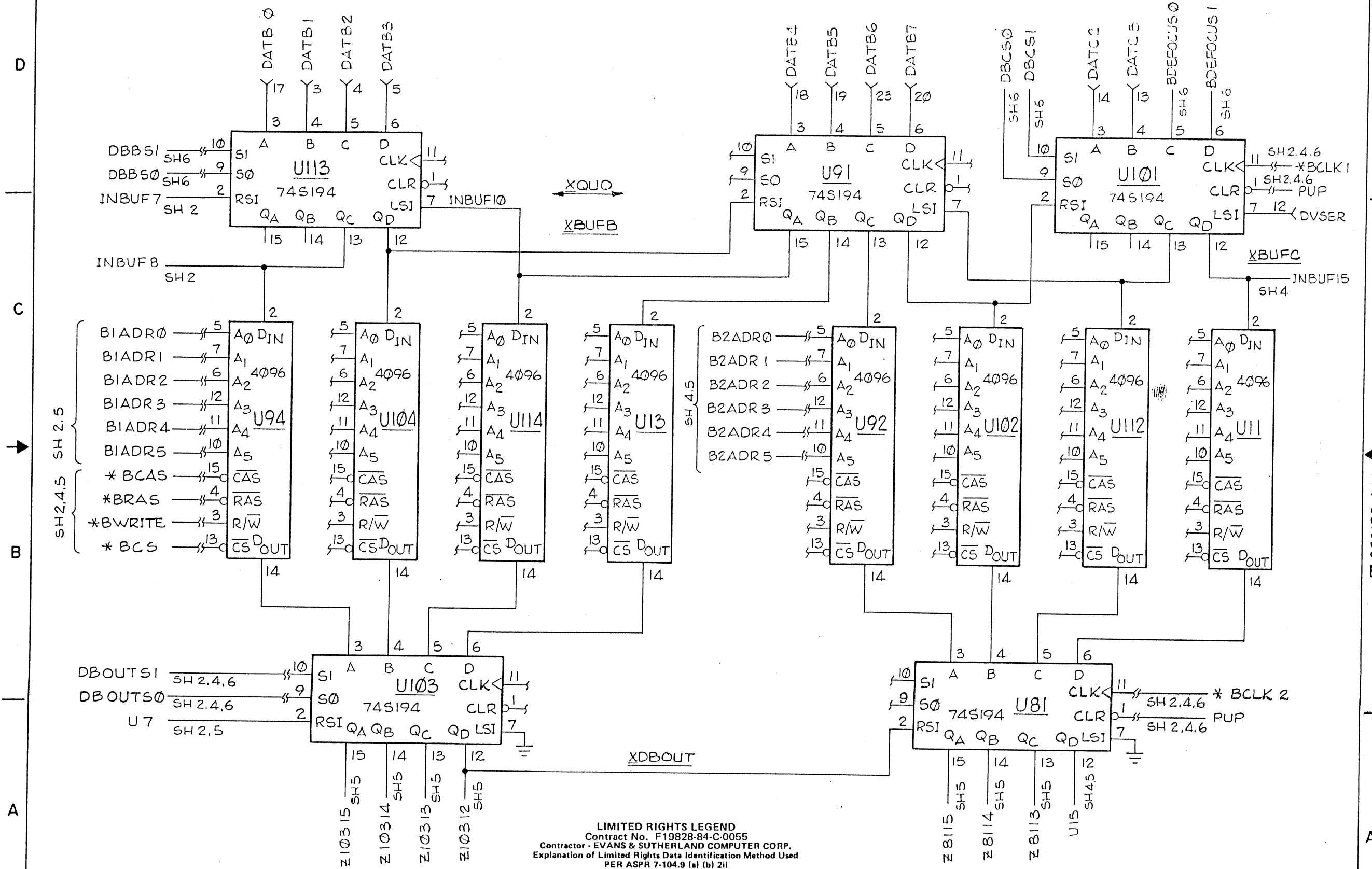
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LIMITED RIGHTS LEGEND
 Contract No. F19828-94-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPP 7-104.9 (a), (b), (2)

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SIZE	CODE IDENT NO	REV
C	53938	200123-601
SCALE NONE	SHEET 2 OF 6	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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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SIZE	CODE IDENT NO	REV
C	53938	A2
SCALE NONE		SHEET 3 OF 6

B 200123-601

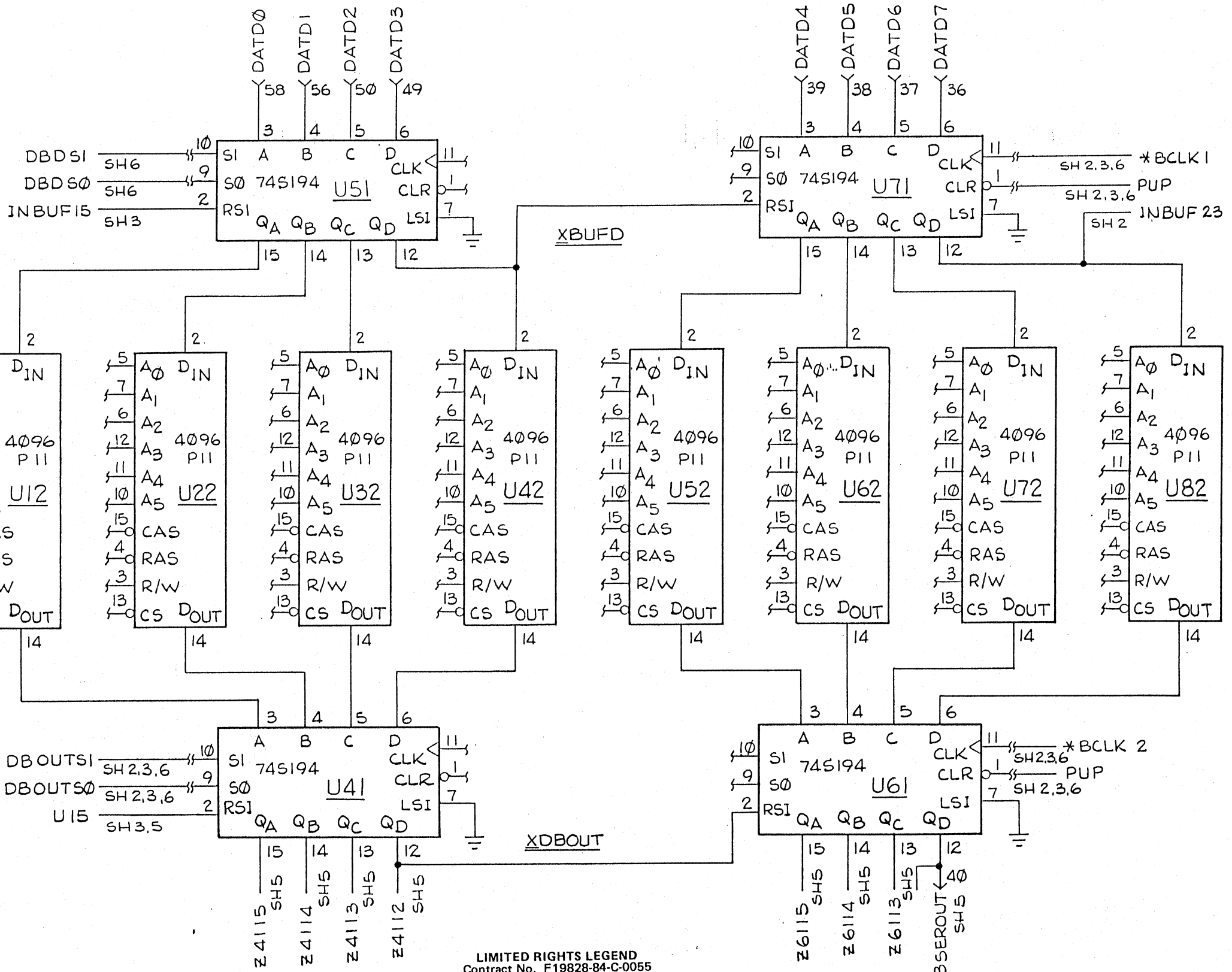
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3

2

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



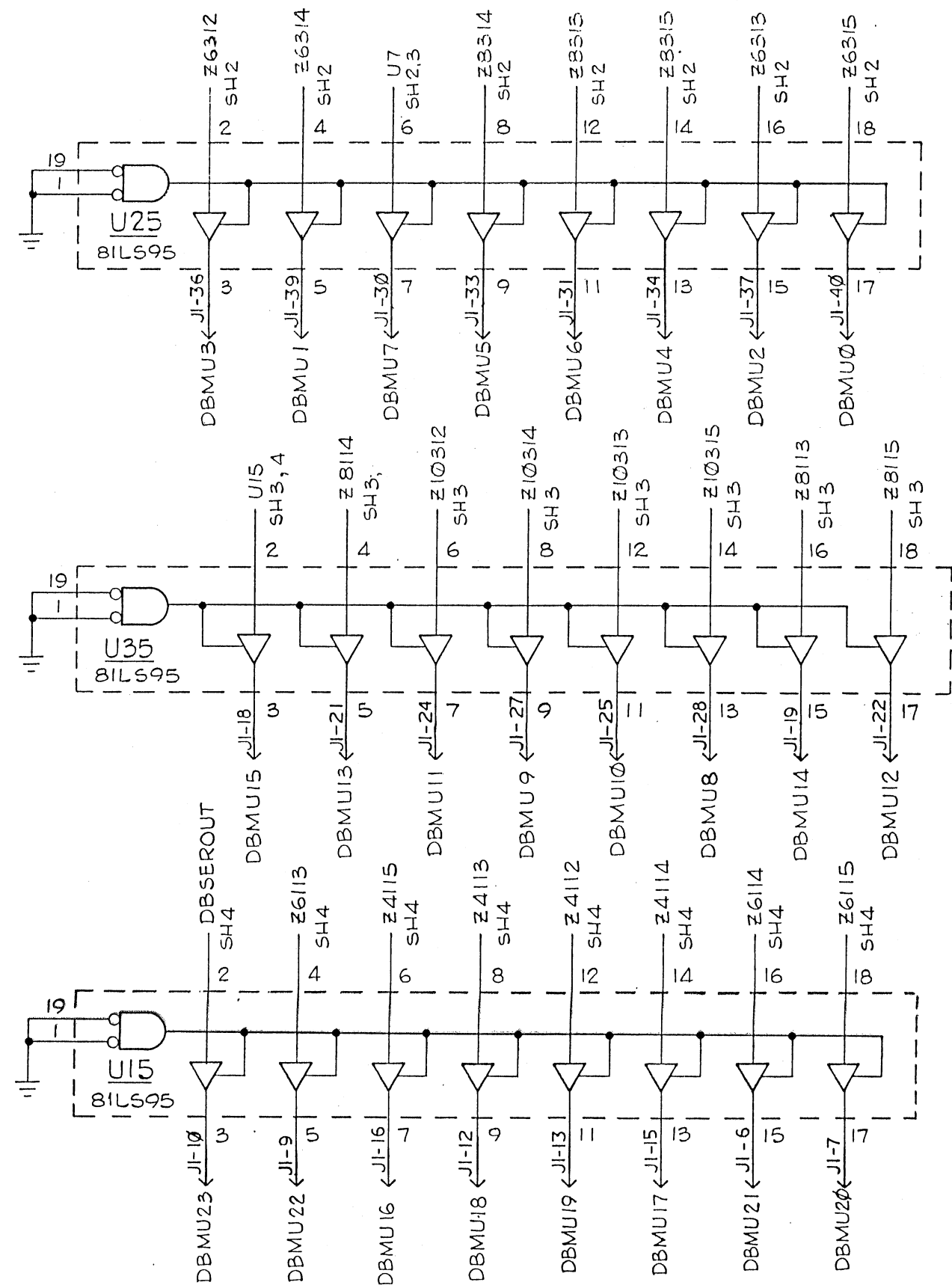
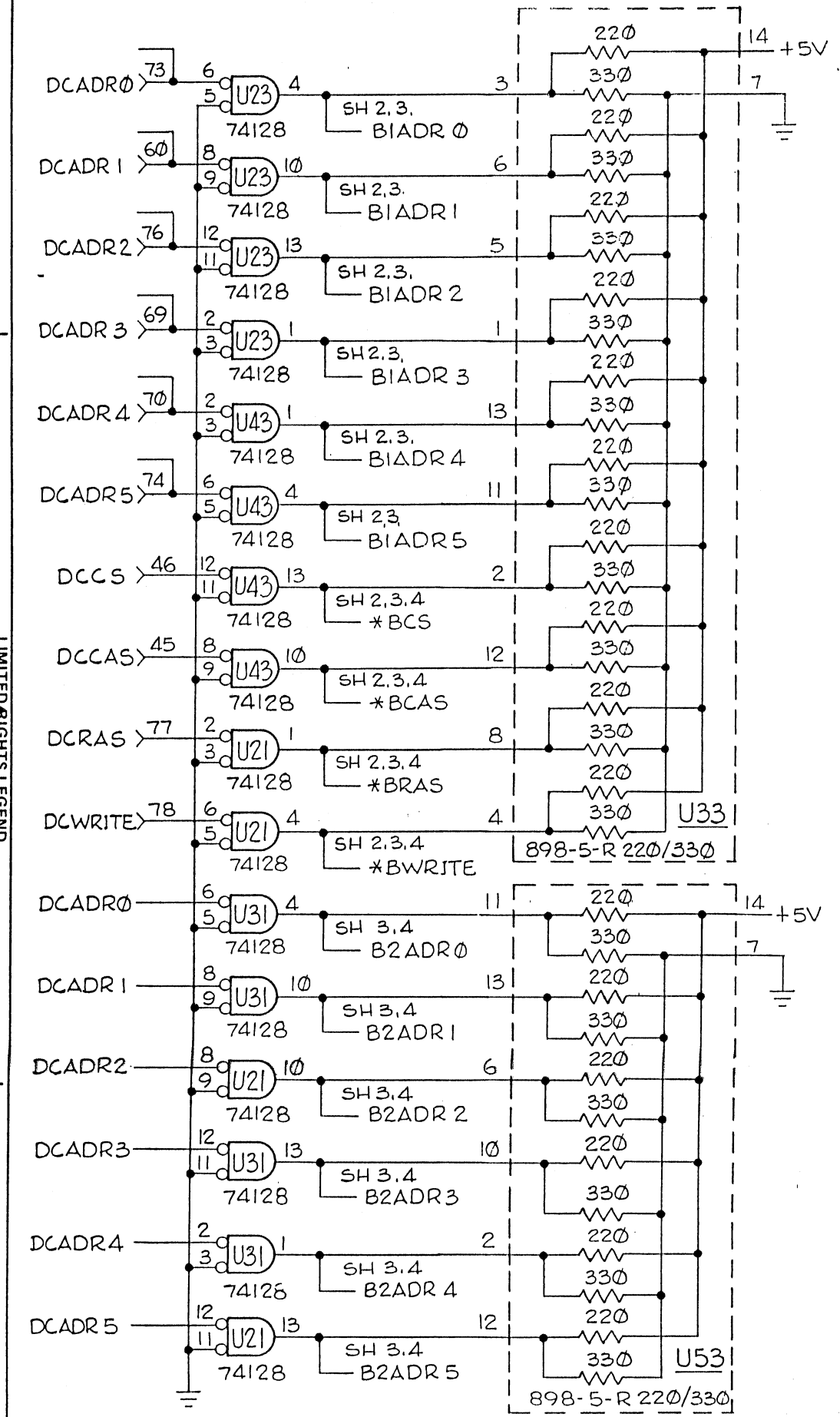
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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SIZE	CODE IDENT NO	REV
C	53938	200123-601
SCALE NONE	SHEET 4 OF 6	

B 200123-601 ↑

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



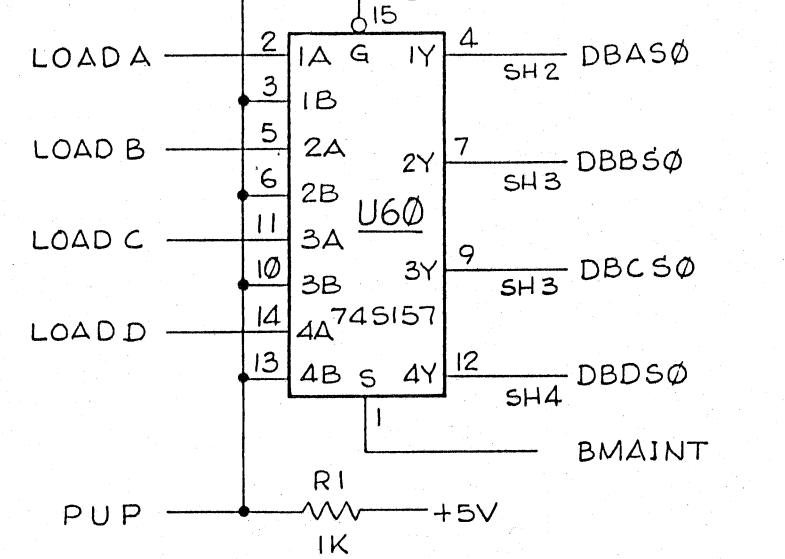
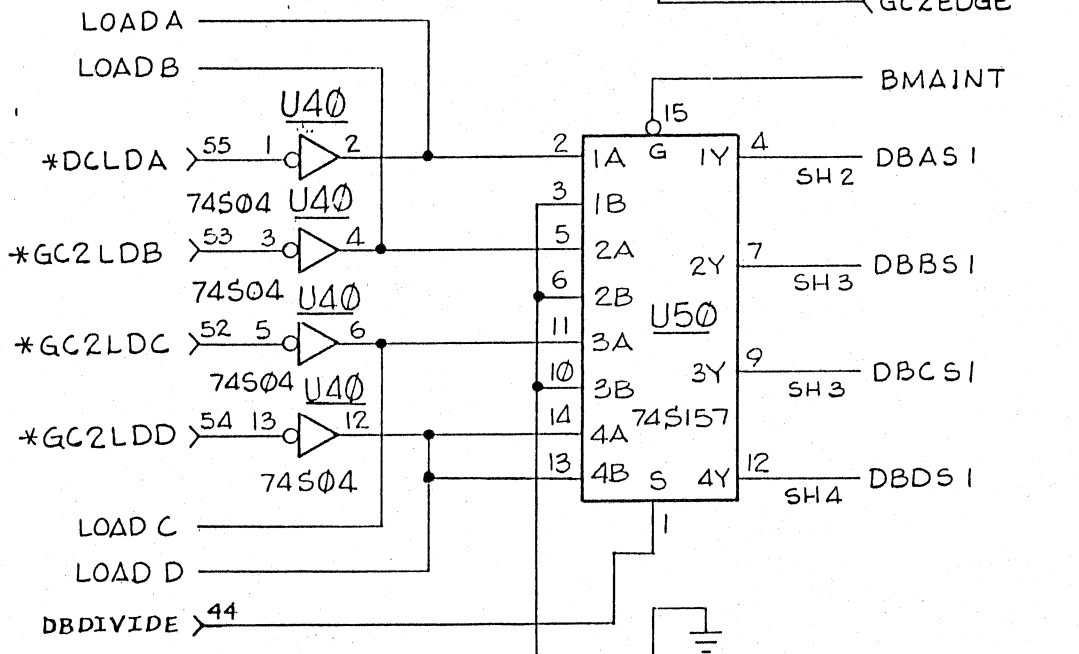
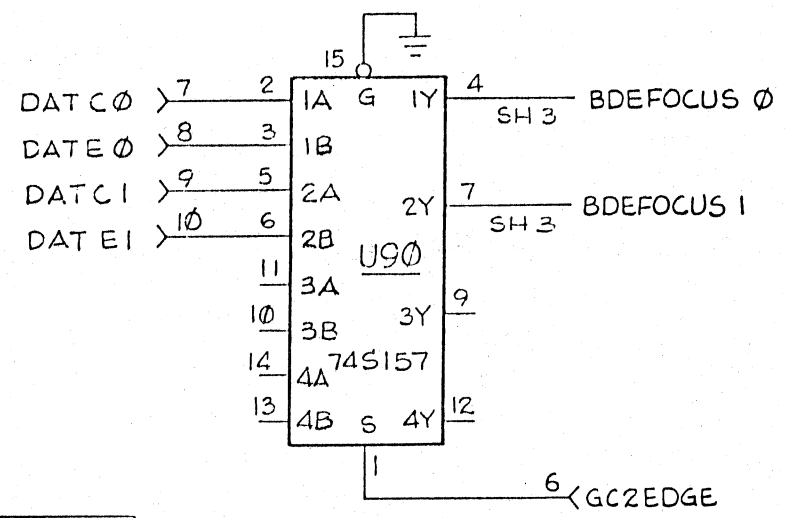
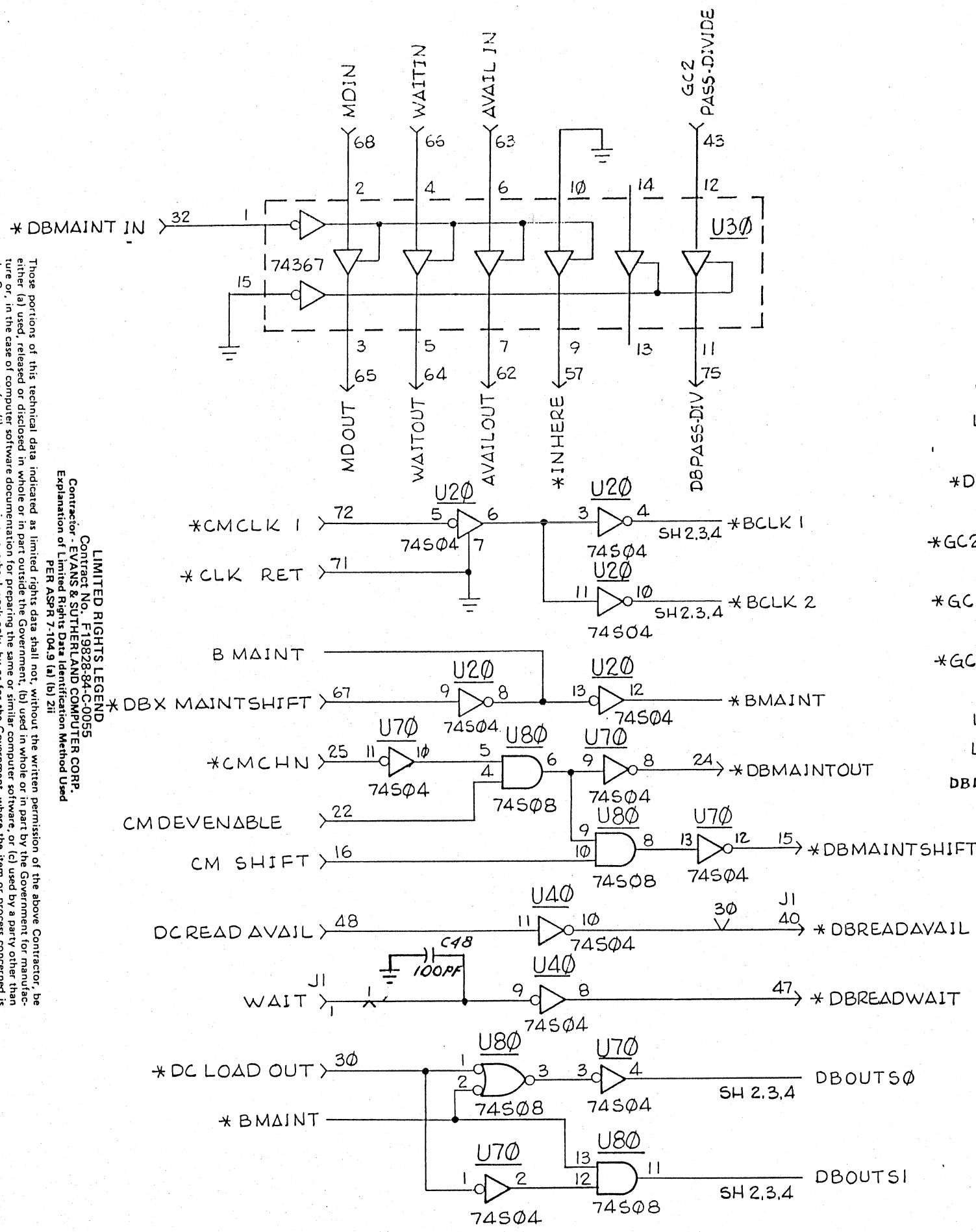
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0058D
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

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SIZE	CODE IDENT NO	REV
C	53938	A2
SCALE NONE		SHEET 5 OF 6

D
 C
 A
 B 200123-601

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



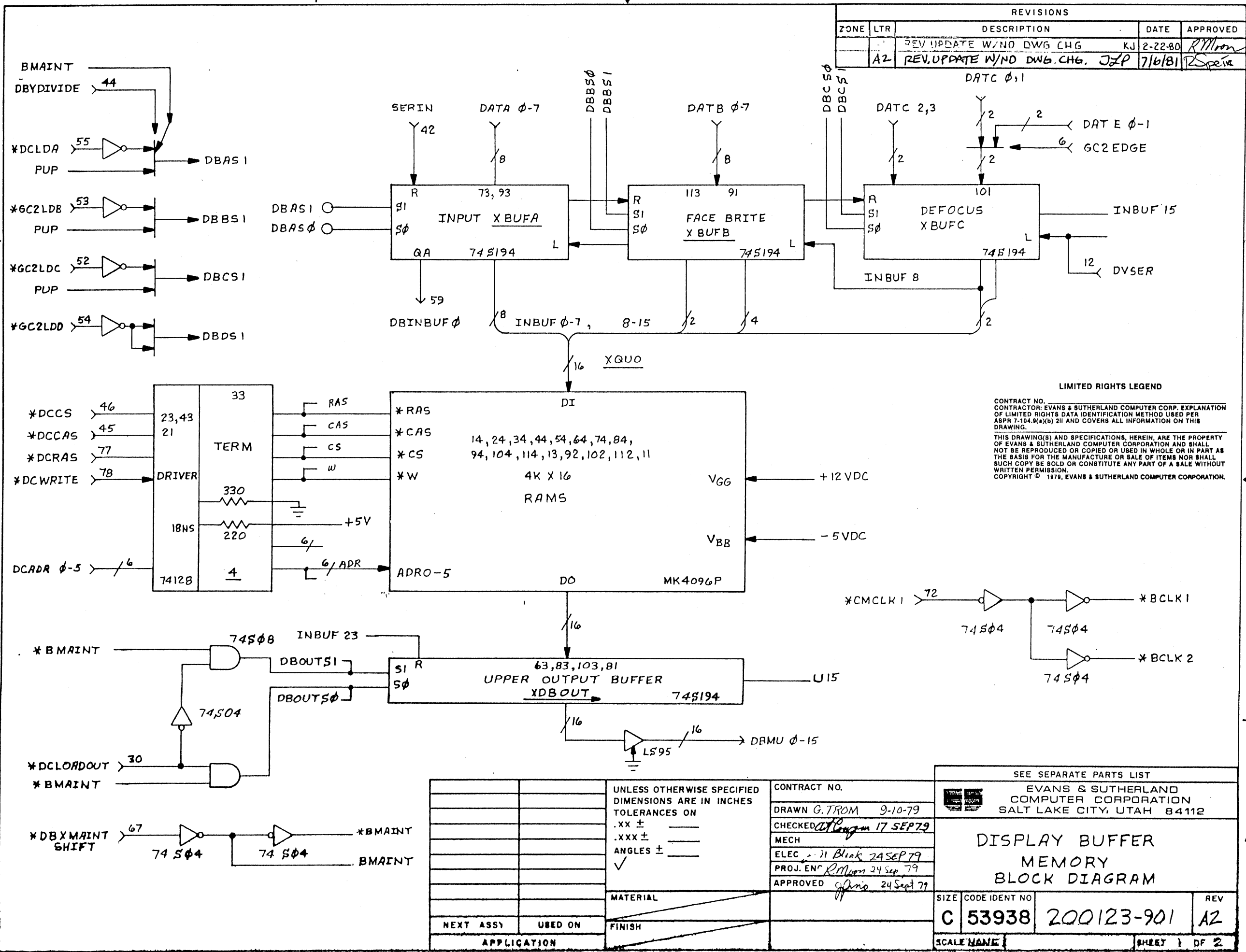
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LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

SIZE	CODE IDENT NO	REV
C	53938	A2
200123-601		SHEET 6 OF 6
SCALE NONE		

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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) (2)



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		REV UPDATE W/NO DWG CHG	KJ 2-22-80	R.Moon
A2		REV.UPDATE W/NO DWG.CHG.	JJP 7/6/81	J.Speira

LIMITED RIGHTS LEGEND
 CONTRACT NO. F19828-84-C-0055
 CONTRACTOR - EVANS & SUTHERLAND COMPUTER CORP.
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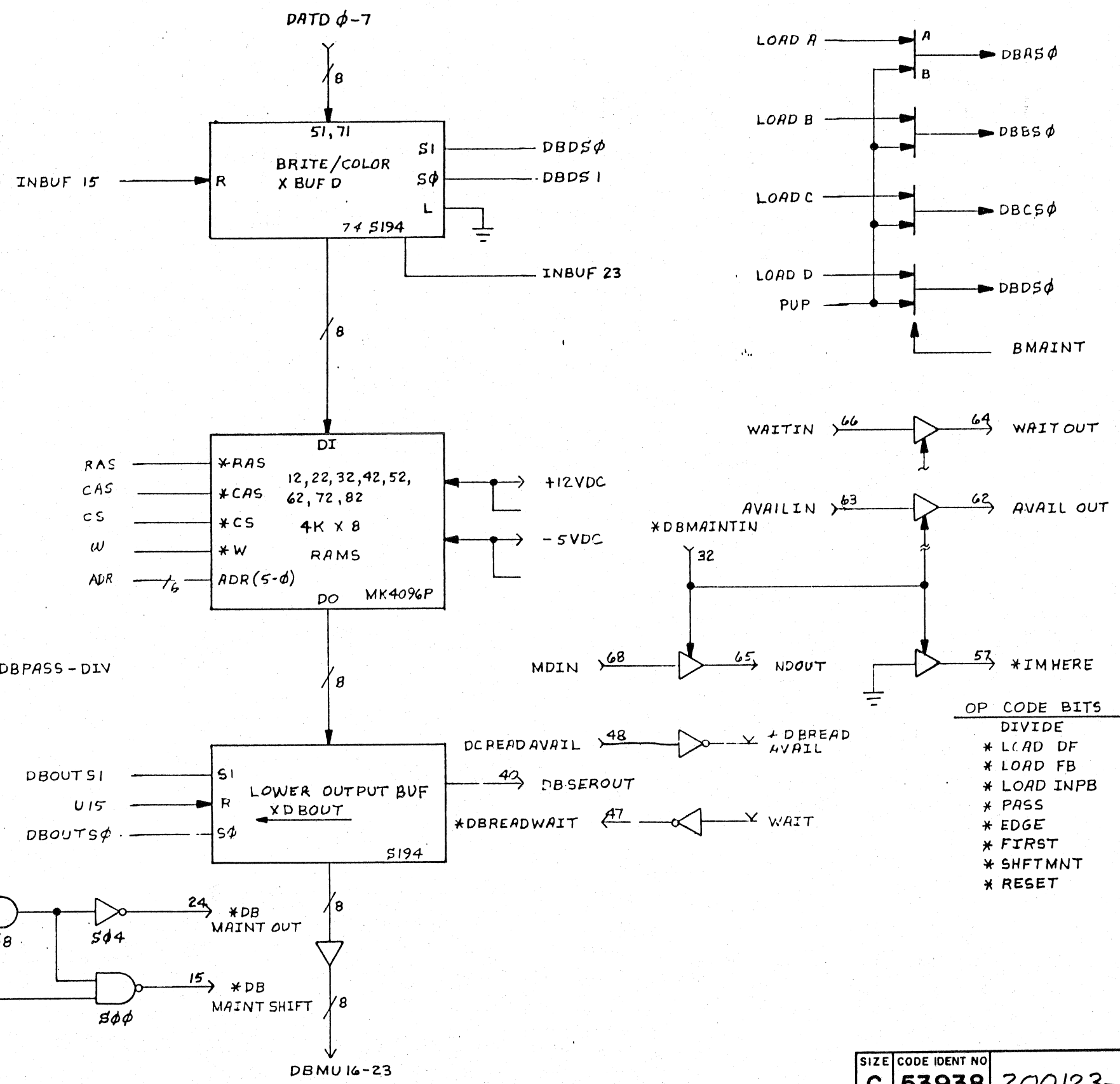
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	
.XX ±	—
.XXX ±	—
ANGLES ±	—
✓	
MATERIAL	
FINISH	
NEXT ASSY	USED ON
APPLICATION	

CONTRACT NO.	
DRAWN	G.TROM 9-10-79
CHECKED	at Long 17 SEP 79
MECH	
ELEC	11 Blank 24 SEP 79
PROJ. ENR	R.Moon 24 Sep 79
APPROVED	off 24 Sep 79

SEE SEPARATE PARTS LIST		
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		
DISPLAY BUFFER MEMORY BLOCK DIAGRAM		
SIZE	CODE IDENT NO	REV
C	53938 200123-901	A2
SCALE NAME	SHEET 1 OF 2	

106-521002B

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



- OP CODE BITS
- DIVIDE
 - * LOAD DF
 - * LOAD FB
 - * LOAD INPB
 - * PASS
 - * EDGE
 - * FIRST
 - * SHFTMNT
 - * RESET

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) (2)

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SIZE	CODE IDENT NO	REV
C	53938 200123-901	A2
SCALE NONE	SHEET 2 OF 2	

200123-901

TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200149-100

REV: A1 = AB

DESC: CARD ASSY, EXTENDER MULTILAYER, 11.30X5.88

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
	PC,EXT ML,10.62 X 5.8	53938	EVANS & SUTHERLAND.	200149-500	200149-500	1
	HW,GUID EX:CARD,GUID	53938	EVANS & SUTHERLAND.	521108-001	521108-001	1
	HW,GUID EX:CARD,GUID	53938	EVANS & SUTHERLAND.	521108-002	521108-002	1
	CN,CARD 80P,BPNL	0AAS0	BEVMAR INDUSTRIES INC.	1402500040	801875-001	1
	HW,SCR 6-32X1/4	N/A	DISTRIBUTORS	6-32X1/4 (M-P-PH-SS)	802003-102	4
	HW,GLUE LIQUID	3S905	OAKLAND CORP	VIBRA-TITE	802185-001	1
	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2

7 ITEMS LISTED



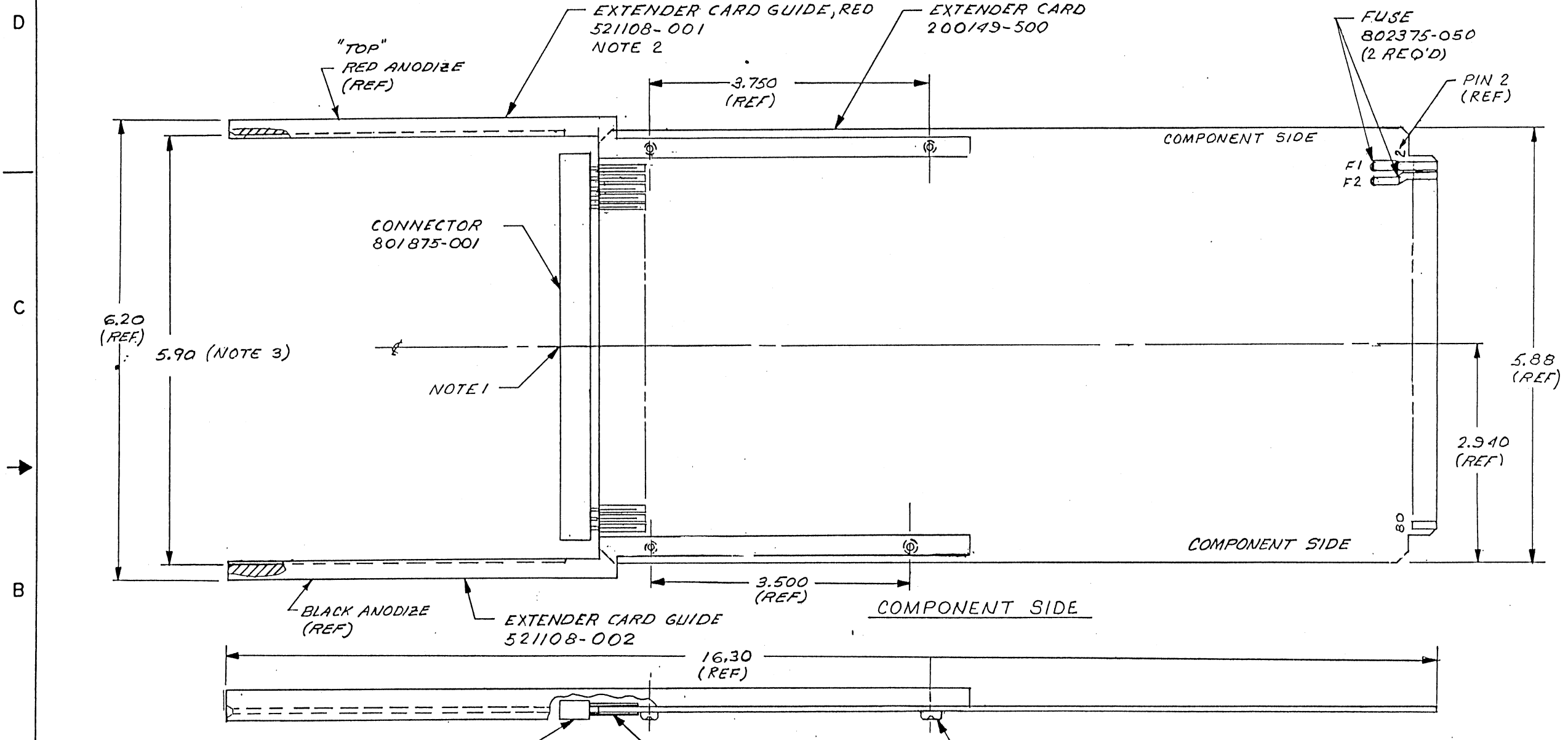
4

3

2

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	REVISED DWG. PER ECO. A1	L.W. 12-15-77	J.Pino 1/6/78
DI	RC1	PIN WAS 802375-002	AR. 1-16-81	R.S. 1-16-81



- NOTES:
- CONNECTOR TO BE SYMMETRICALLY LOCATED ABOUT CENTER LINE WITHIN $\pm .010$
 - ORIENT CARD GUIDE 521108-001 (RED ANODIZE) ON TOP OF EXTENDER CARD.
 - DISTANCE TO INSIDE EDGES OF CARD GUIDES TO BE HELD TO $5.90 \pm .02$.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
		.XX \pm —
		.XXX \pm —
		ANGLES \pm —
		✓
		MATERIAL
	MULTI-USE	SEE PARTS LIST
	NEXT ASSY USED ON	FINISH
	APPLICATION	

CONTRACT NO.	SEE SEPARATE PARTS LIST
DRAWN M.WING 4-22-77	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
CHECKED <i>[Signature]</i> 28 APR 77	CARD ASSY, EXTENDER MULTILAYER
MECH <i>[Signature]</i> 28 APR 77	
ELEC <i>[Signature]</i> 28 APR 77	
PROJ. ENG. <i>[Signature]</i> 17 MAY 77	
APPROVED <i>[Signature]</i> 17 MAY 77	

SIZE	CODE IDENT NO	REV
C	53938	A.1
SCALE FULL DO NOT SCALE		SHEET 1 OF 1

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) (2)

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MAINTENANCE PARTS LIST

ASSEMBLY: PL 200155-101

REV: B1 = BB

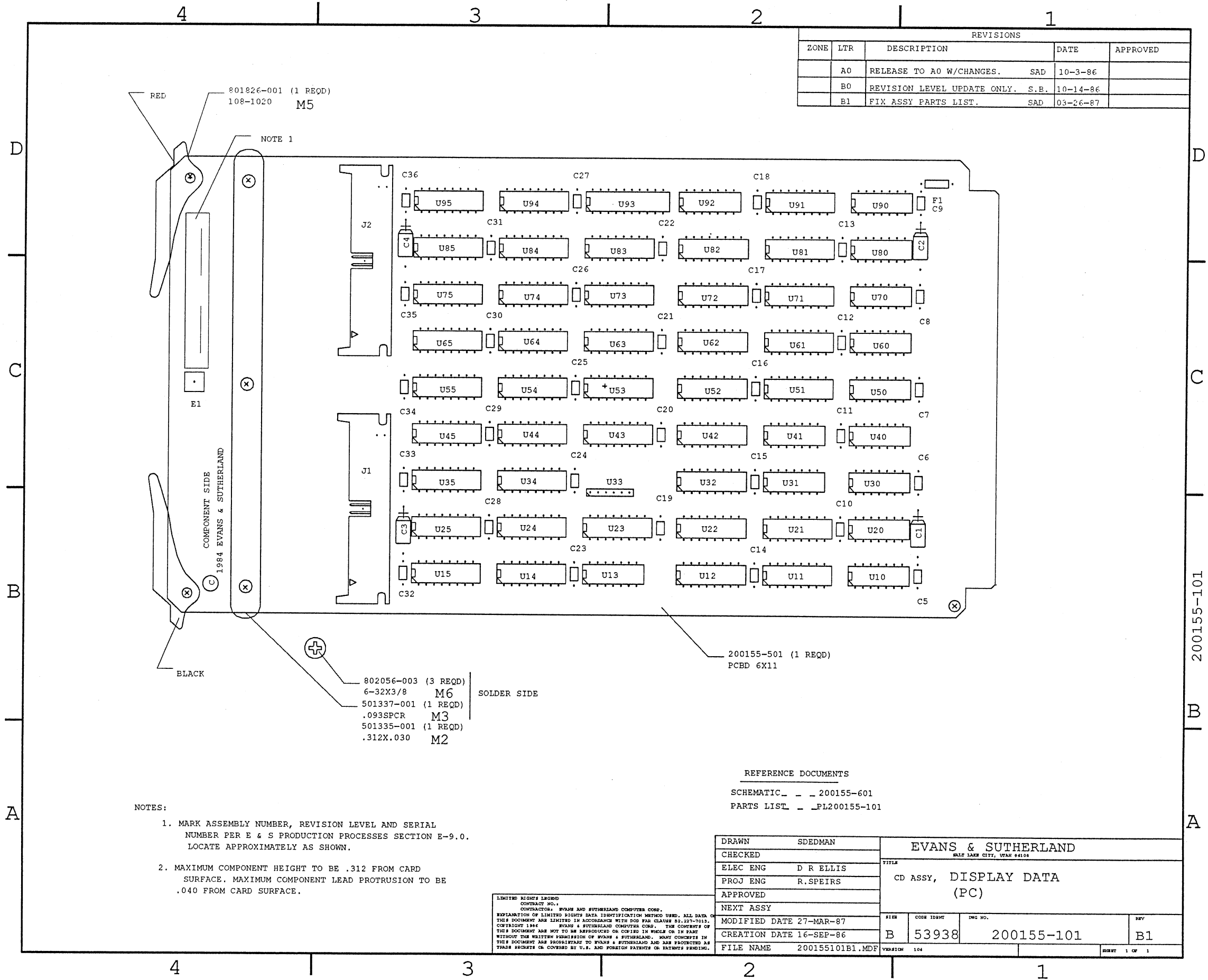
DESC: CARD ASSY, DISPLAY DATA (CABLE PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2 C3 C4	BD,P02R PCBD 6X11	53938	EVANS & SUTHERLAND.	200155-501	200155-501	1
C5 C6 C7 C8 C9 C10 C11 C12	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	4
C13 C14 C15 C16 C17 C18 C19	C,,AXL .100 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U104Z050B	804169-104	32
C20 C21 C22 C23 C24 C25 C26						
C27 C28 C29 C30 C31 C32 C33						
C34 C35 C36						
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
J2 J1	CN,HOUS 40P,RTA	53387	MINN. MINING & MFG.EP DIV	3495-1002	801860-040	2
M2	HW,SPCR .312X.030	53938	EVANS & SUTHERLAND.	501335-001	501335-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M5	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M6	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8(SM-P-PH-Z)	802056-003	3
U10 U13	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	2
U11 U21	IC,TTL 93S16	34335	ADVANCED MICRO DEVICES IN	93S16PC	807616-055	2
U12 U32	IC,RAM AM27S02	34649	INTEL CORP. SALES OFFICE	MP3101A (DSCONTD)	807601-246	2
U14 U15 U24 U25 U34 U35 U44	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	9
U45 U82						
U20 U40	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	2
U22 U42	IC,TTL 74S158	01295	TEXAS INSTR, SEMICON DIV.	SN74S158N	807658-055	2
U23 U64 U74 U84	IC,TTL 74195	01295	TEXAS INSTR, SEMICON DIV.	SN74195N	807695-446	4
U30	IC,TTL 74S86	01295	TEXAS INSTR, SEMICON DIV.	SN74S86N	807486-055	1
U31	IC,TTL 74164	01295	TEXAS INSTR, SEMICON DIV.	SN74164N/J	807413-646	1
U33	R,,SIP 1K(R5)	1U696	STACKPOLE COMPONENTS CO	6-5-5-102G (SIP)	807517-102	1
U41	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	1
U43	IC,TTL 74157	01295	TEXAS INSTR, SEMICON DIV.	SN74157N	807657-646	1
U50 U60 U70	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	3
U51 U54 U81 U91	IC,TTL 74S195	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	4
U52 U62 U72	IC,TTL 74367	01295	TEXAS INSTR, SEMICON DIV.	SN74367AN/J	807714-646	3
U53 U63 U73 U83	IC,TTL 74166	01295	TEXAS INSTR, SEMICON DIV.	SN74166N	807665-646	4
U55 U65 U75 U85 U94 U95	IC,TTL 74F194	07263	FAIRCHILD IC'S & SEMICON	74F194PC/DC	807994-035	6
U61	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-A47	807739-055-A47	1
U71	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-A69	807739-055-A69	1
U80	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U90	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
U92	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
U93	IC,TTL 25LS15	34335	ADVANCED MICRO DEVICES IN	AM25LS15PC/74LS385	807799-055	1

33 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A0		RELEASE TO A0 W/CHANGES.	SAD 10-3-86	
B0		REVISION LEVEL UPDATE ONLY.	S.B. 10-14-86	
B1		FIX ASSY PARTS LIST.	SAD 03-26-87	



801826-001 (1 REQD)
108-1020 M5

NOTE 1

COMPONENT SIDE
1984 EVANS & SUTHERLAND

802056-003 (3 REQD)
6-32X3/8 M6
501337-001 (1 REQD)
.093SPCR M3
501335-001 (1 REQD)
.312X.030 M2

200155-501 (1 REQD)
PCBD 6X11

- 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 CARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM CARD SURFACE.

REFERENCE DOCUMENTS
SCHEMATIC_ _ _ 200155-601
PARTS LIST_ _ _ PL200155-101

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DRAWN	SDEDMAN	EVANS & SUTHERLAND <small>SALT LAKE CITY, UTAH 84106</small>		
CHECKED		TITLE		
ELEC ENG	D R ELLIS	CD ASSY, DISPLAY DATA		
PROJ ENG	R.SPEIRS	(PC)		
APPROVED				
NEXT ASSY				
MODIFIED DATE	27-MAR-87	SIZE	CODE IDENT	ING NO.
CREATION DATE	16-SEP-86	B	53938	200155-101
FILE NAME	200155101B1.MDF	VERSION	104	REV B1
				SHEET 1 OF 1



4 | 3 | 2 | 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0	SAD 10-03-86	
	B0	MADED WIRE CHANGE.	S.B. 10-14-86	
	B1	CORRECT ASSY PARTS LIST.	SAD 03-26-87	

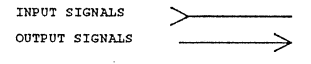
NOTES: UNLESS OTHERWISE SPECIFIED:

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

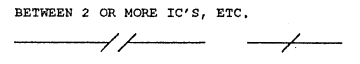
2. ON ALL IC'S, GROUND AND +5V (VCC) ARE AS FOLLOWS:

- 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

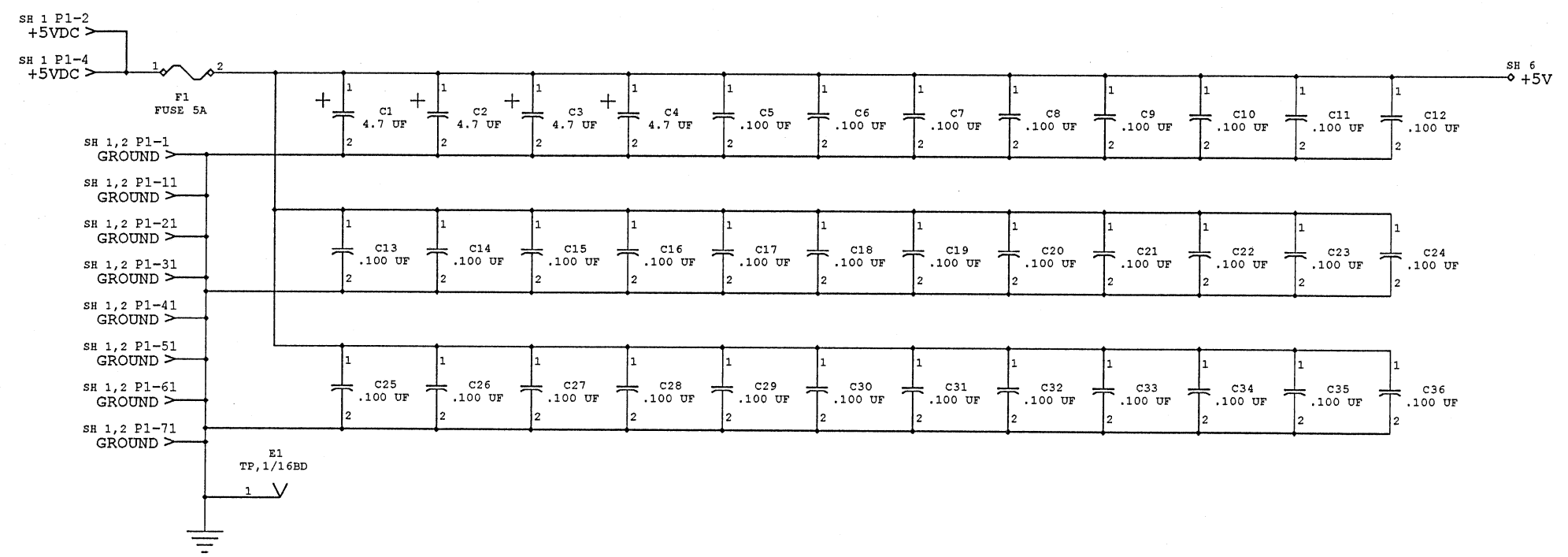
3. CARD CONNECTOR SYMBOL "P1-" DESIGNATES:



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



D
C
B
A



D
C
B
A

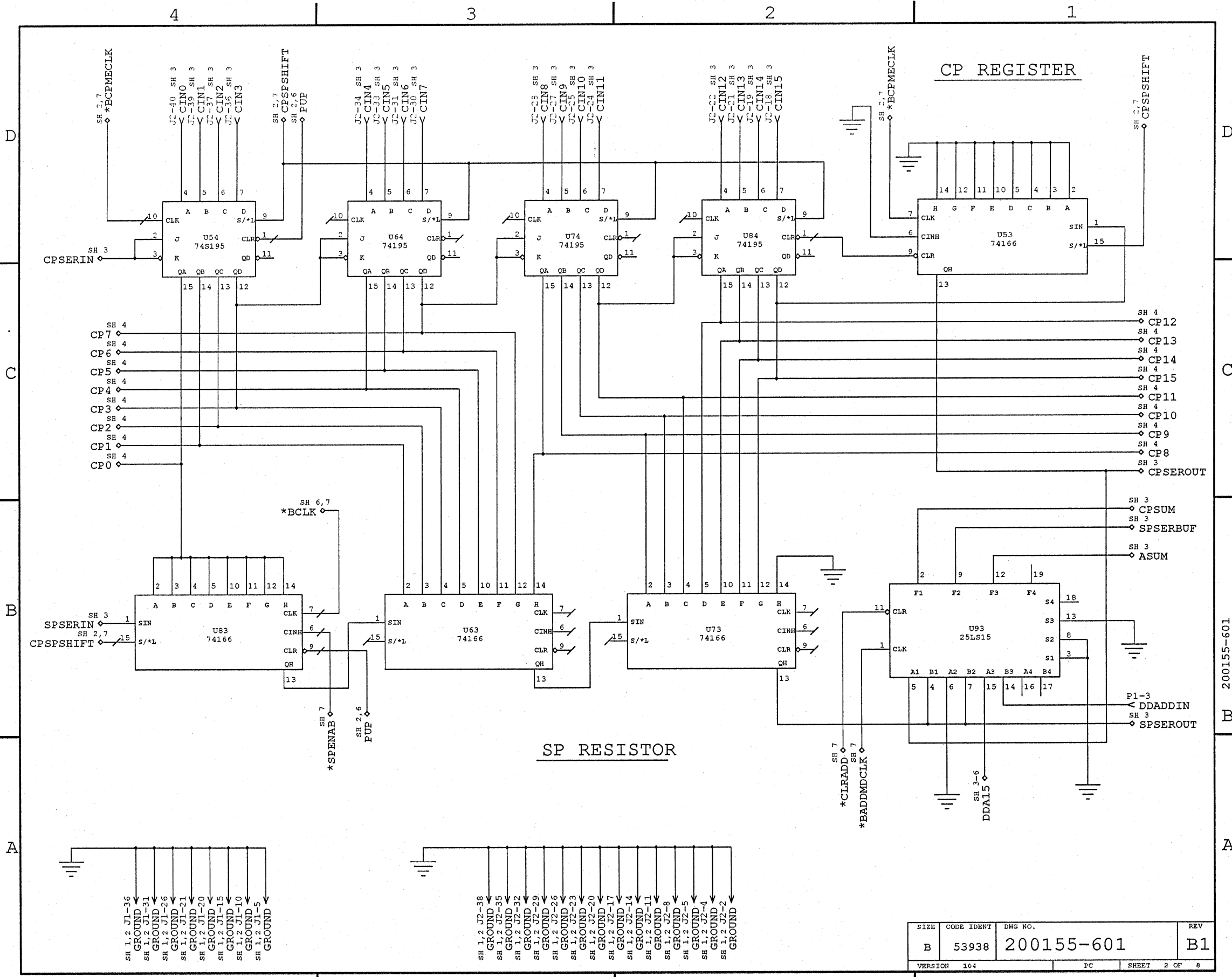
200155-601

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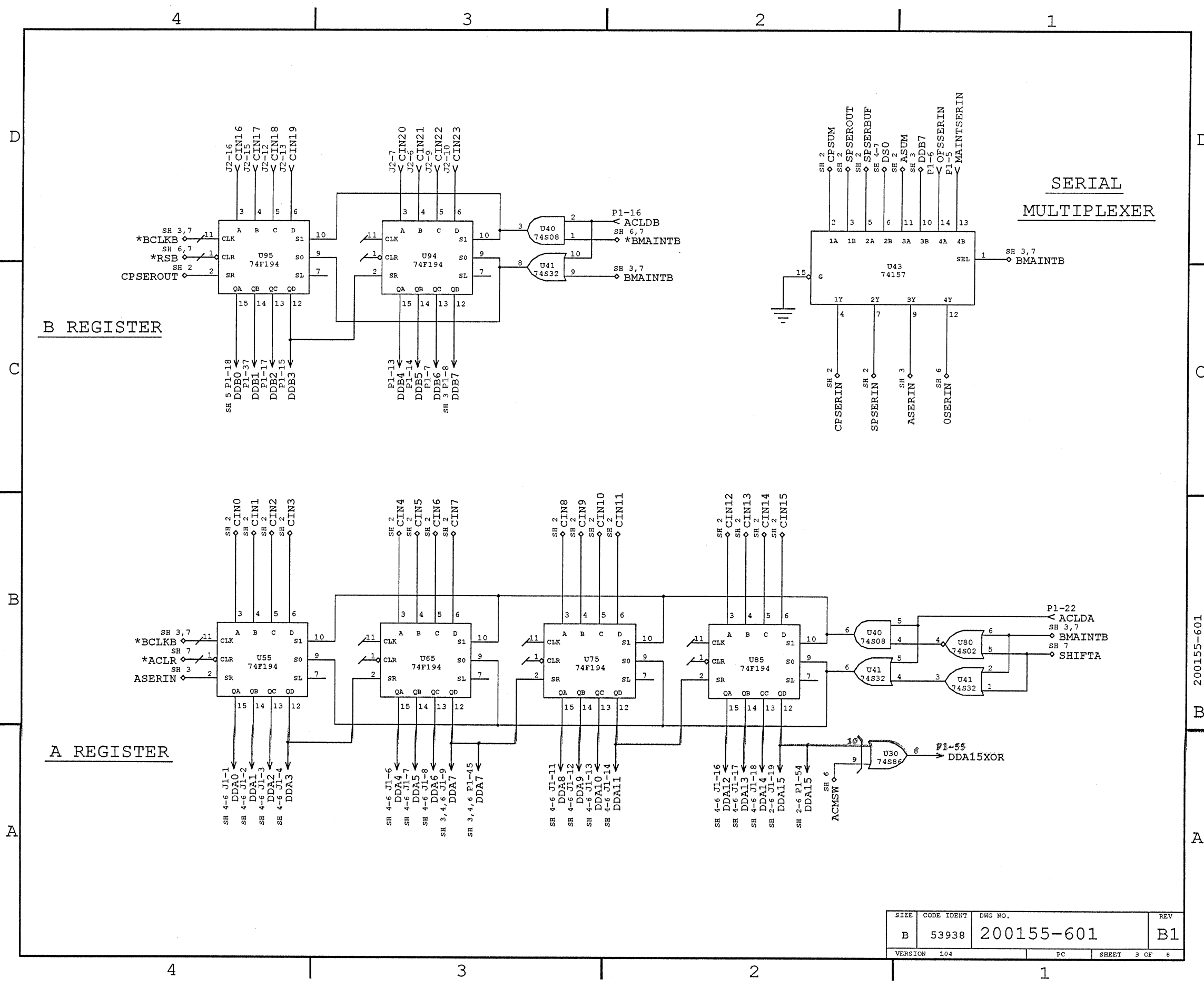
DRAWN	KTRUSCOTT
CHECKED	
ELEC ENG	D R ELLIS
PROJ ENG	R.SPEIRS
APPROVED	
NEXT ASSY	
MODIFIED DATE	27-MAR-87
CREATION DATE	16-SEP-86
FILE NAME	200155101B1.MDF

CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE DISPLAY DATA (PC)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200155-601	B1
VERSION	104	PC	SHEET 1 OF 8

4 | 3 | 2 | 1



SIZE	CODE IDENT	DWG NO.	REV
B	53938	200155-601	B1
VERSION 104		PC	SHEET 2 OF 8

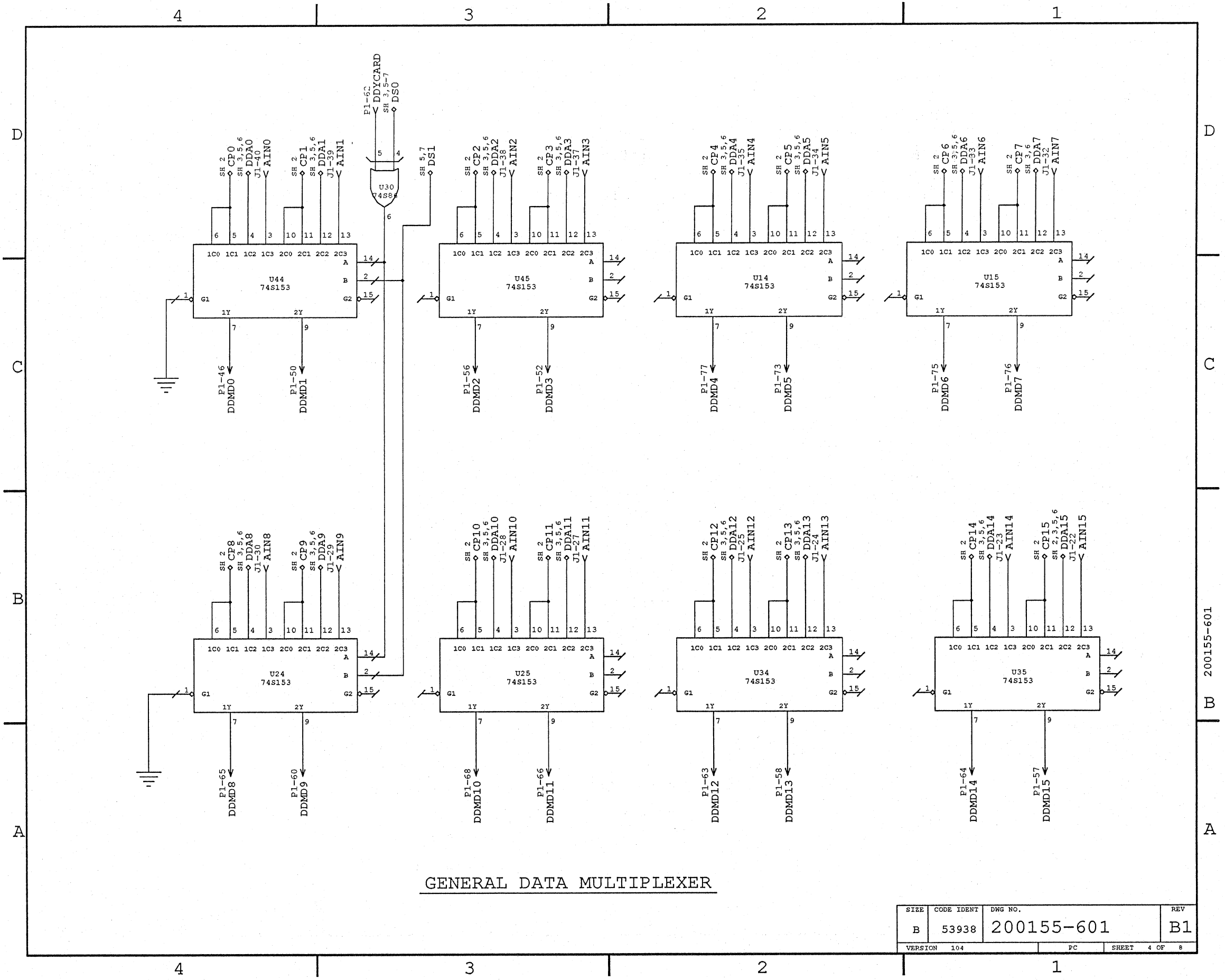


B REGISTER

A REGISTER

SERIAL
MULTIPLEXER

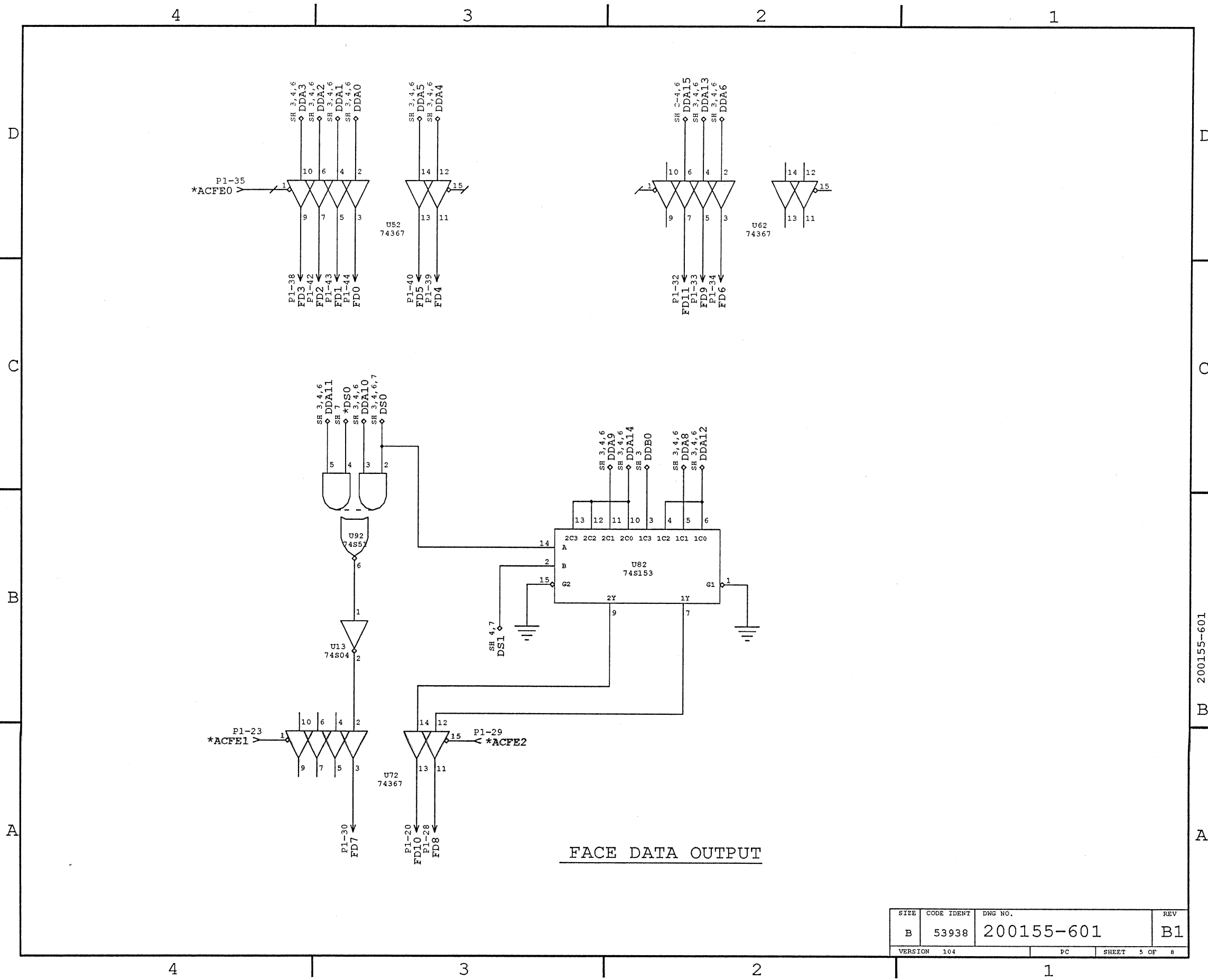
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200155-601	B1
VERSION	104	PC	SHEET 3 OF 8



GENERAL DATA MULTIPLEXER

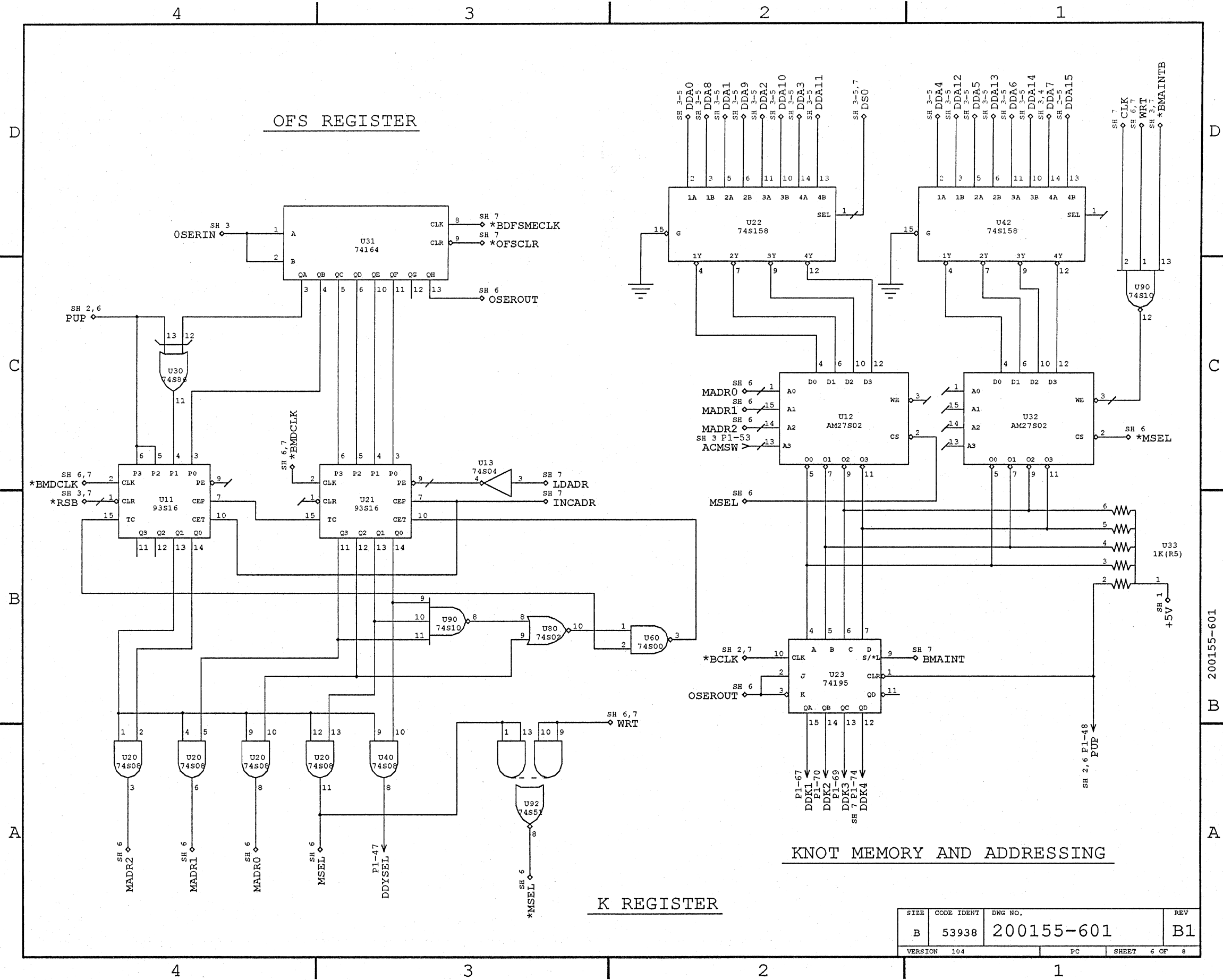
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200155-601	B1
VERSION	104	PC	SHEET 4 OF 8

200155-601

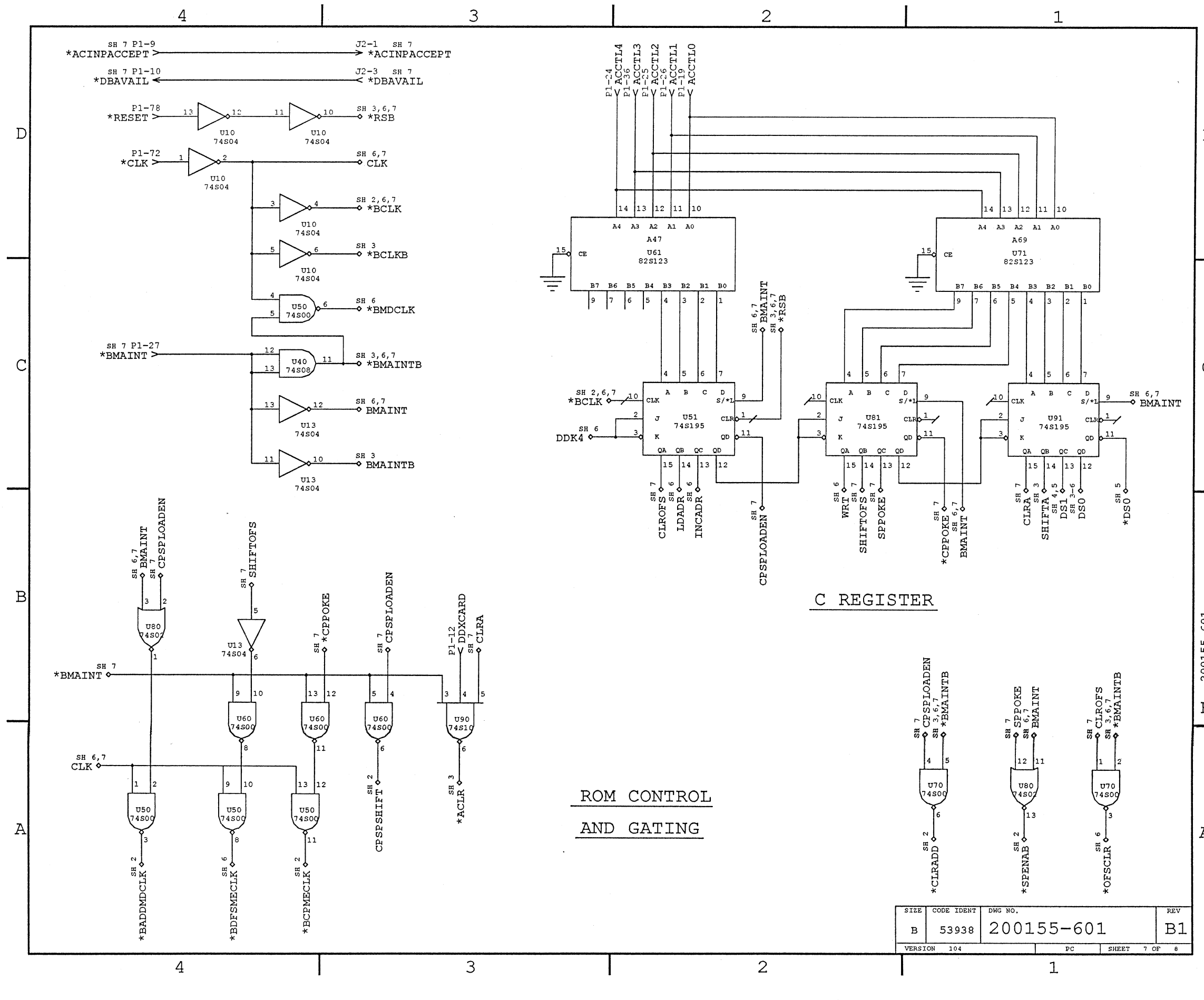


FACE DATA OUTPUT

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200155-601	B1
VERSION	104	PC	SHEET 5 OF 8



SIZE	CODE IDENT	DWG NO.	REV
B	53938	200155-601	B1
VERSION	104	PC	SHEET 6 OF 8



ROM CONTROL
AND GATING

C REGISTER

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200155-601	B1
VERSION 104		PC	SHEET 7 OF 8

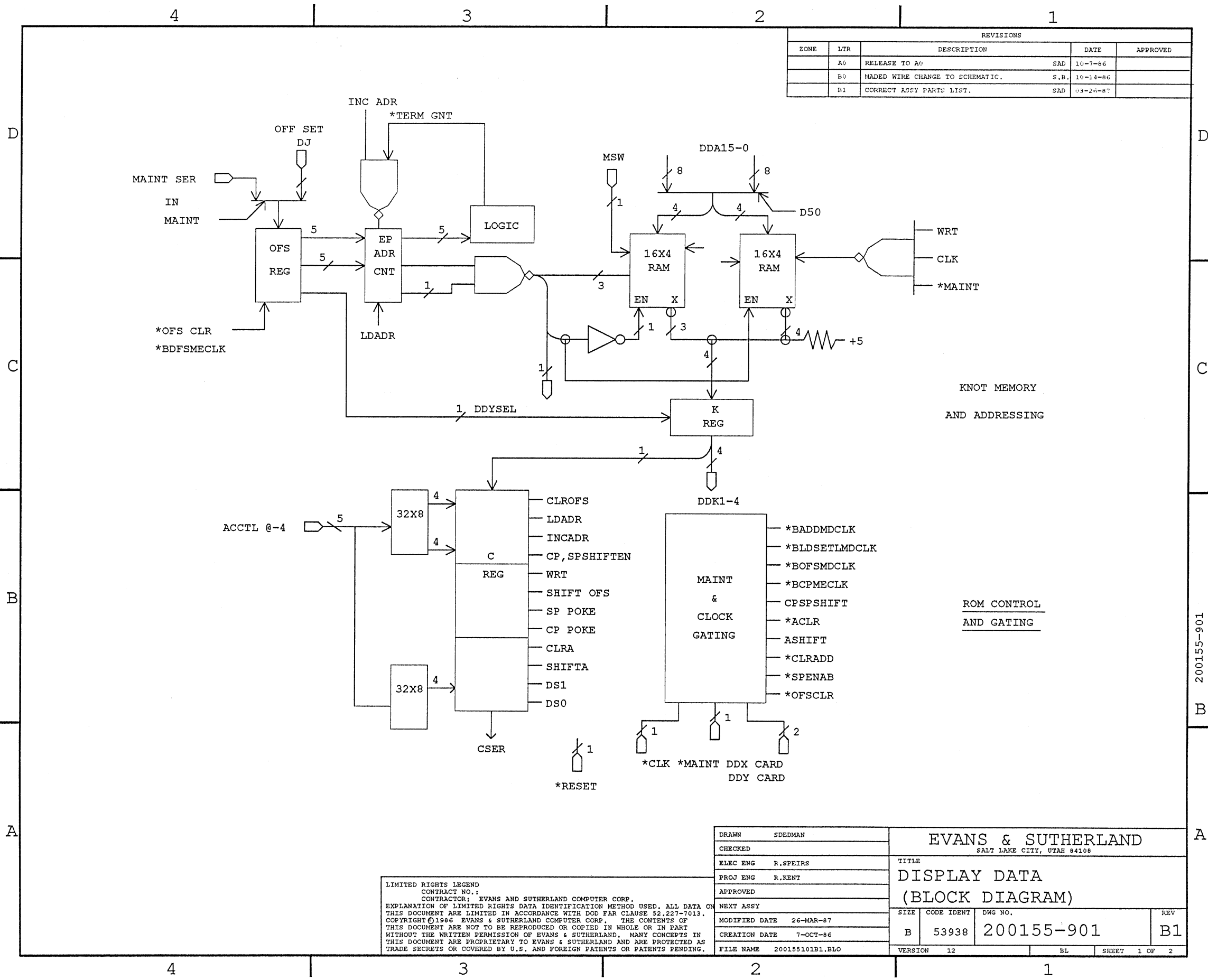
200155-601

B1

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	Out	DDA0	3	A4	P1	13	Out	DDA0	3	ACFE0	P1	35	In	DDMD0	P1	46	Out	4	C4
J1	2	Out	DDA1	3	A4	P1	14	Out	DDA1	3	ACFE1	P1	33	In	DDMD1	P1	50	Out	4	C4
J1	3	Out	DDA2	3	A4	P1	15	Out	DDA2	3	ACFE2	P1	29	In	DDMD10	P1	68	Out	4	A3
J1	4	Out	DDA3	3	A4	P1	16	In	ACLDB	3	ACINPACCEPT	J2	1	Out	DDMD11	P1	66	Out	4	A3
J1	5	Out	GROUND	3	A4	P1	17	Out	DDA4	3	ACINPACCEPT	P1	9	In	DDMD12	P1	63	Out	4	A2
J1	6	Out	DDA4	3	A3	P1	18	Out	DDA5	3	*BMAINT	P1	27	In	DDMD13	P1	58	Out	4	A2
J1	7	Out	DDA5	3	A3	P1	19	In	ACCTL0	3	*CLK	P1	72	In	DDMD14	P1	64	Out	4	A1
J1	8	Out	DDA6	3	A3	P1	20	Out	FD10	3	*DBAVAIL	J2	10	In	DDMD15	P1	57	Out	4	A1
J1	9	Out	DDA7	3	A3	P1	21	In	GROUND	3	*DBAVAIL	P1	78	Out	DDMD2	P1	56	Out	4	C3
J1	10	Out	GROUND	3	A4	P1	22	In	ACLDA	3	*RESET	P1	10	In	DDMD3	P1	52	Out	4	C3
J1	11	Out	DDA8	3	A3	P1	23	In	*ACFE1	3	+5VDC	P1	7	In	DDMD4	P1	77	Out	4	C2
J1	12	Out	DDA9	3	A3	P1	24	In	ACCTL4	3	+5VDC	P1	2	In	DDMD5	P1	73	Out	4	C2
J1	13	Out	DDA10	3	A3	P1	25	In	ACCTL2	3	ACCTL0	P1	19	In	DDMD6	P1	75	Out	4	C1
J1	14	Out	DDA11	3	A2	P1	26	In	ACCTL1	3	ACCTL1	P1	26	In	DDMD7	P1	76	Out	4	C1
J1	15	Out	GROUND	3	A4	P1	27	In	*BMAINT	3	ACCTL2	P1	25	In	DDMD8	P1	65	Out	4	A4
J1	16	Out	DDA12	3	A2	P1	28	Out	FD8	3	ACCTL3	P1	36	In	DDMD9	P1	60	Out	4	A4
J1	17	Out	DDA13	3	A2	P1	29	In	*ACFE2	3	ACCTL4	P1	24	In	DDXCARD	P1	12	In	4	B3
J1	18	Out	DDA14	3	A2	P1	30	Out	FD7	3	ACLDA	P1	22	In	DDYCARD	P1	62	In	4	D3
J1	19	Out	DDA15	3	A2	P1	31	In	GROUND	3	ACLDB	P1	16	In	DDYSEL	P1	47	Out	4	A3
J1	20	Out	GROUND	3	A4	P1	32	Out	FD11	3	ACMSW	P1	53	In	FD0	P1	44	Out	4	C3
J1	21	Out	GROUND	3	A4	P1	33	Out	FD9	3	AIN0	J1	40	In	FD1	P1	43	Out	4	C3
J1	22	In	AIN15	4	B1	P1	34	Out	FD6	4	AIN1	J1	39	In	FD10	P1	20	Out	4	A3
J1	23	In	AIN14	4	B1	P1	35	In	*ACFE0	4	AIN10	J1	28	In	FD11	P1	32	Out	4	C3
J1	24	In	AIN13	4	B2	P1	36	In	ACCTL3	4	AIN11	J1	27	In	FD2	P1	42	Out	4	C2
J1	25	In	AIN12	4	B2	P1	37	Out	DDA1	4	AIN12	J1	25	In	FD3	P1	38	Out	4	C4
J1	26	Out	GROUND	4	A4	P1	38	Out	FD3	4	AIN13	J1	24	In	FD4	P1	39	Out	4	C3
J1	27	In	AIN11	4	B3	P1	39	Out	FD4	4	AIN14	J1	23	In	FD5	P1	40	Out	4	C3
J1	28	In	AIN10	4	B3	P1	40	Out	FD5	4	AIN15	J1	22	In	FD6	P1	34	Out	4	C2
J1	29	In	AIN9	4	B3	P1	41	In	GROUND	4	AIN2	J1	38	In	FD7	P1	30	Out	4	A3
J1	30	In	AIN8	4	B4	P1	42	Out	FD2	4	AIN3	J1	37	In	FD8	P1	28	Out	4	A3
J1	31	Out	GROUND	4	A4	P1	43	Out	FD1	4	AIN4	J1	35	In	FD9	P1	33	Out	4	C2
J1	32	In	AIN7	4	D1	P1	44	Out	FD0	4	AIN5	J1	34	In	GROUND	J1	5	Out	4	A4
J1	33	In	AIN6	4	D1	P1	45	Out	DDA7	4	AIN6	J1	33	In	GROUND	J1	10	Out	4	A4
J1	34	In	AIN5	4	D2	P1	46	Out	DDMD0	4	AIN7	J1	32	In	GROUND	J1	15	Out	4	A4
J1	35	In	AIN4	4	D2	P1	47	Out	DDYSEL	4	AIN8	J1	30	In	GROUND	J1	20	Out	4	A4
J1	36	Out	GROUND	4	A4	P1	48	Out	PUP	4	AIN9	J1	29	In	GROUND	J1	21	Out	4	A4
J1	37	In	AIN3	4	D3	P1	50	Out	DDMD1	4	CIN0	J2	40	In	GROUND	J1	26	Out	4	A4
J1	38	In	AIN2	4	D3	P1	51	In	GROUND	4	CIN1	J2	39	In	GROUND	J1	31	Out	4	A4
J1	39	In	AIN1	4	D3	P1	52	Out	DDMD3	4	CIN10	J2	25	In	GROUND	J1	36	Out	4	A4
J1	40	In	AIN0	4	D4	P1	53	In	ACMSW	4	CIN11	J2	24	In	GROUND	J2	2	Out	4	A2
J1	1	Out	*ACINPACCEPT	7	D3	P1	54	Out	DDA15	3	CIN12	J2	22	In	GROUND	J2	4	Out	2	A2
J1	2	Out	GROUND	7	A2	P1	55	Out	DDA15XOR	3	CIN13	J2	21	In	GROUND	J2	5	Out	2	A2
J1	3	In	*DBAVAIL	7	D3	P1	56	Out	DDMD2	4	CIN14	J2	19	In	GROUND	J2	8	Out	2	A2
J1	4	Out	GROUND	7	A2	P1	57	Out	DDMD15	4	CIN15	J2	18	In	GROUND	J2	11	Out	2	A2
J1	5	Out	GROUND	7	A2	P1	58	Out	DDMD13	4	CIN16	J2	16	In	GROUND	J2	14	Out	2	A2
J1	6	In	CIN21	3	D3	P1	60	Out	DDMD9	4	CIN17	J2	15	In	GROUND	J2	17	Out	2	A2
J1	7	In	CIN20	3	D3	P1	61	In	GROUND	4	CIN18	J2	12	In	GROUND	J2	20	Out	2	A3
J1	8	Out	GROUND	3	A2	P1	62	In	DDYCARD	4	CIN19	J2	13	In	GROUND	J2	23	Out	2	A3
J1	9	In	CIN22	3	D3	P1	63	Out	DDMD12	4	CIN2	J2	37	In	GROUND	J2	26	Out	2	A3
J1	10	In	CIN23	3	D3	P1	64	Out	DDMD14	4	CIN20	J2	7	In	GROUND	J2	29	Out	2	A3
J1	11	Out	GROUND	3	A2	P1	65	Out	DDMD8	4	CIN21	J2	6	In	GROUND	J2	32	Out	2	A3
J1	12	In	CIN18	3	D4	P1	66	Out	DDMD11	4	CIN22	J2	9	In	GROUND	J2	35	Out	2	A3
J1	13	In	CIN19	3	D4	P1	67	Out	DDK1	4	CIN23	J2	10	In	GROUND	J2	38	Out	2	A3
J1	14	Out	GROUND	3	A2	P1	68	Out	DDMD10	4	CIN3	J2	36	In	GROUND	P1	1	In	1	C4
J1	15	In	CIN17	3	D4	P1	69	Out	DDK3	4	CIN4	J2	34	In	GROUND	P1	11	In	1	B4
J1	16	In	CIN16	3	D4	P1	70	Out	DDK2	4	CIN5	J2	33	In	GROUND	P1	21	In	1	B4
J1	17	Out	GROUND	3	A2	P1	71	In	GROUND	4	CIN6	J2	31	In	GROUND	P1	31	In	1	B4
J1	18	In	CIN15	3	D2	P1	72	In	*CLK	4	CIN7	J2	30	In	GROUND	P1	41	In	1	B4
J1	19	In	CIN14	3	D2	P1	73	Out	DDMD5	4	CIN8	J2	28	In	GROUND	P1	51	In	1	B4
J1	20	Out	GROUND	3	A3	P1	74	Out	DDK4	4	CIN9	J2	27	In	GROUND	P1	61	In	1	B4
J1	21	In	CIN13	3	D2	P1	75	Out	DDMD6	4	DDA0	J1	2	Out	GROUND	P1	71	In	1	B4
J1	22	In	CIN12	3	D2	P1	76	Out	DDMD7	4	DDA1	J1	1	Out	MAINTSERIN	P1	5	In	3	D1
J1	23	Out	GROUND	3	A3	P1	77	Out	DDMD4	4	DDA10	J1	13	Out	OFFSERIN	P1	6	In	3	D1
J1	24	In	CIN11	3	D3	P1	78	In	*RESET	4	DDA11	J1	14	Out	PUP	P1	48	Out	6	B1
J1	25	In	CIN10	3	D3						DDA12	J1	16	Out						
J1	26	Out	GROUND	3	A3						DDA13	J1	17	Out						
J1	27	In	CIN9	3	D3						DDA14	J1	18	Out						
J1	28	In	CIN8	3	D3						DDA15	J1	19	Out						
J1	29	Out	GROUND	3	A3						DDA15	P1	54	Out						
J1	30	In	CIN7	3	D3						DDA15XOR	P1	55	Out						
J1	31	In	CIN6	3	D3						DDA2	J1	3	Out						
J1	32	Out	GROUND	3	A3						DDA3	J1	4	Out						
J1	33	In	CIN5	3	D3						DDA4	J1	6	Out						
J1	34	In	CIN4	3	D3						DDA5	J1	7	Out						
J1	35	Out	GROUND	3	A3						DDA6	J1	8	Out						
J1	36	In	CIN3	3	D4						DDA7	J1	9	Out						
J1	37	In	CIN2	3	D4						DDA8	J1	45	Out						
J1	38	Out	GROUND	3	A3						DDA9	J1	11	Out						
J1	39	In	CIN1	3	D4						DDA0	J1	12	Out						
J1	40	In	CIN0	3	D4						DDADDIN	P1	3	In						
J1	1	In	GROUND	3	C4						DDB0	P1	18	Out						
J1	2	In	+5VDC	3	B4						DDB1	P1	17	Out						
J1	3	In	DDADDIN	3	B1						DDB2	P1	15	Out						
J1	4	In	+5VDC	3	C4						DDB3	P1	13	Out						
J1	5	In	MAINTSERIN	3	D1						DDB4	P1	13	Out						
J1	6	In	OFFSERIN	3	D1						DDB5	P1	14	Out						
J1	7	Out	DDB6	3	C3						DDB6	P1	7	Out						
J1	8	Out	DDB7	3	C3						DDB7	P1	8	Out						
J1	9	In	*ACINPACCEPT	7	D4						DDK1	P1	67	Out						
J1	10	Out	*DBAVAIL	7	D4						DDK2	P1	70	Out						
J1	11	In	GROUND	7	B4						DDK3	P1	69	Out						
J1	12	In	DDXCARD	7	B3						DDK4	P1	74	Out						

Connector summary			
SIZE	CODE IDENT	DWG NO.	REV
B			

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0	SAD 10-7-86	
	B0	MADED WIRE CHANGE TO SCHEMATIC.	S.B. 10-14-86	
	B1	CORRECT ASSY PARTS LIST.	SAD 03-26-87	

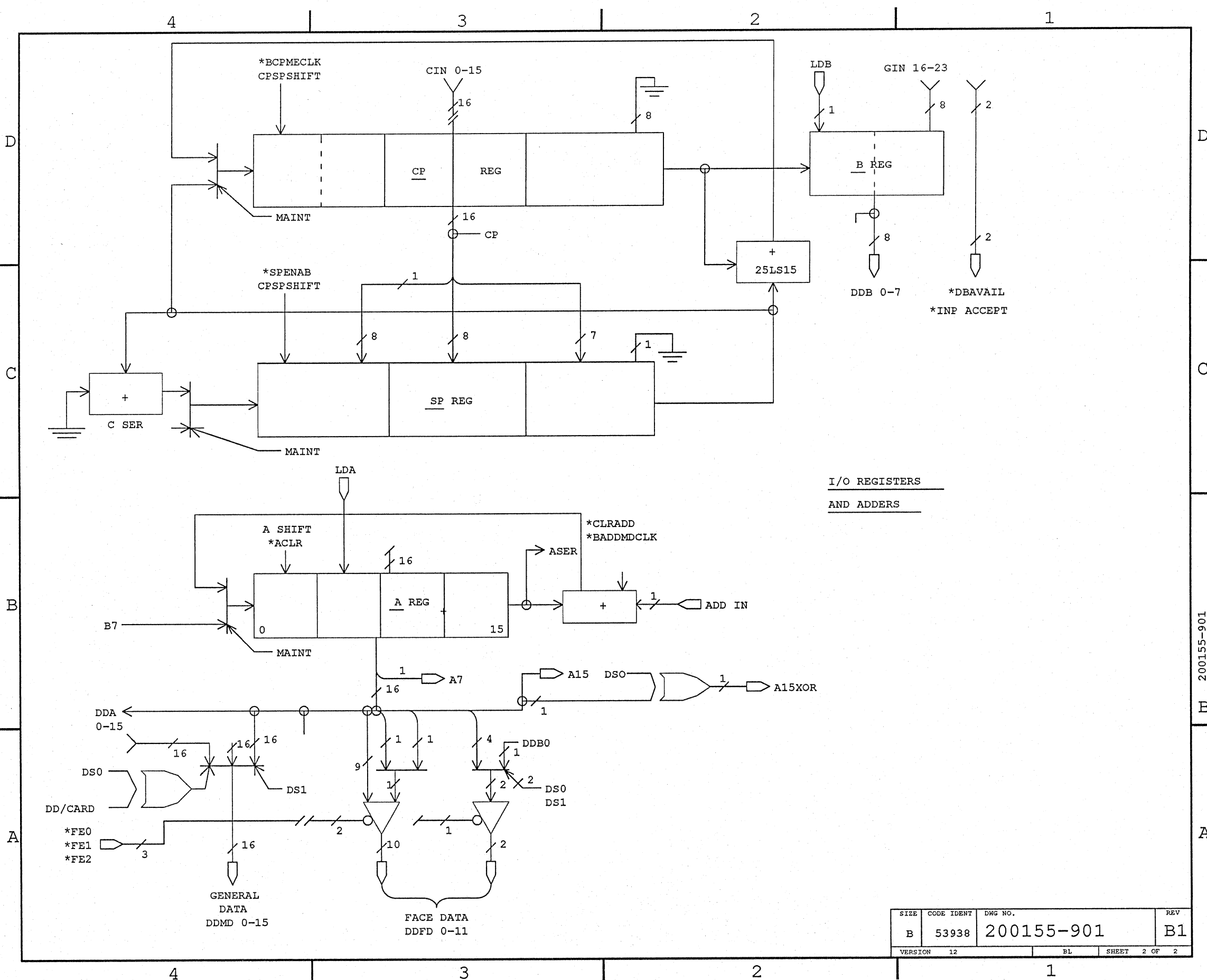


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DRAWN	SPEDMAN
CHECKED	
ELEC ENG	R.SPEIRS
PROJ ENG	R.KENT
APPROVED	
NEXT ASSY	
MODIFIED DATE	26-MAR-87
CREATION DATE	7-OCT-86
FILE NAME	200155101B1.BLO

EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE DISPLAY DATA (BLOCK DIAGRAM)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200155-901	B1
VERSION	12	BL	SHEET 1 OF 2

200155-901



I/O REGISTERS
AND ADDERS

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200155-901	B1
VERSION	12	BL	SHEET 2 OF 2

200155-901 B

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200156-109

REV: A2 = AC

DESC: CARD ASSY, ANALOG CONTROL W/OBJECT FOG, 8 COLOR (WW)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD, WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
C3 C9 C16 C23 C30 C37 C44	C,, AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C4 C5 C6 C7 C8 C10 C11 C12	C,, RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	7
C14 C15 C18 C19 C20 C21 C22	C,, AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	37
C24 C27 C28 C29 C31 C32 C34						
C35 C36 C38 C39 C40 C41 C42						
C43 C45 C46 C47 C48 C49 C50						
C51						
C52	C,, RDL 100PF	02799	ARCO ELECTRONICS (CAPS)	CCD-101	804103-101	1
E1	HW, TERM TP, 1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1 (.090, TURRET)	802329-001	1
F1	FU, PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A, AXIAL)	802375-050	1
M2	HW, SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW, SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR, CRD, SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW, SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
M6 AS REQ'D	HW, WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
M7 AS REQ'D	HW, STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	1135
M8	HW, JMPR JUMPLUG	22526	DU PONT E I NEMOURS (CONN)	76264-101	801743-201	1
R1	R,, AXL 681 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-681-1%	803452-681	1
R2 R3 R4 R6 R7 R8 R9 R10	R,, AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	8
R5	R,, AXL 332 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-332-1%	803452-332	1
U1	HW, JMPR W/W PINS	53938	EVANS & SUTHERLAND	*SCD*802177-206	802177-206	1
U10 U20 U26 U32 U53	IC, TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	5
U11	IC, TTL 74S112	18324	SIGNETICS CORP. MILITARY	N74S112N	807612-055	1
U12 U60 U61	IC, TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	3
U13 U21 U43	IC, TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	3
U14 U41 U62 U63	IC, TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	4
U15 U24 U35 U44 U54 U64 U74	IC, TTL 74S195	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	7
U16 U23	IC, TTL 74S151	01295	TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055	2
U17 U22 U33 U37	IC, TTL 74F194	07263	FAIRCHILD IC'S & SEMICON	74F194PC/DC	807994-035	4
U25 U56	IC, TTL 93S16	34335	ADVANCED MICRO DEVICES IN	93S16PC	807616-055	2
U30	IC, TTL 74367	01295	TEXAS INSTR, SEMICON DIV.	SN74367AN/J	807714-646	1
U31 U71	IC, TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	2
U34 U40 U46 U73	IC, TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	4
U36	IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-B04	807808-016-B04	1
U42	IC, TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
U45	IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-B05	807808-016-B05	1
U50	IC, TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
U51	IC, TTL 74F112	07263	FAIRCHILD IC'S & SEMICON	74F112PC/DC	807915-035	1
U52	IC, TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	1
U55	IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-B06	807808-016-B06	1
U65	IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-B07	807808-016-B07	1
U66 U76	IC, TTL 74161	07263	FAIRCHILD IC'S & SEMICON	74161PC/DC	807661-246	2
U70	IC, TTL #74S05	01295	TEXAS INSTR, SEMICON DIV.	SN74S05N/J	807405-055	1
U72	IC, TTL 74H108	01295	TEXAS INSTR, SEMICON DIV.	SN74H108N/J	807497-255	1
U75	IC, PROM, BIP, 256X8, TS	53938	EVANS & SUTHERLAND.	807808-016-A99	807808-016-A99	1
U82	DL, TTL ST08CB-250	20933	KAPPA NETWORKS INC.	ST08CB-250 (25NS)	808500-025	1

TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200156-109

REV: A2 = AC

DESC: CARD ASSY, ANALOG CONTROL W/OBJECT FOG, 8 COLOR (WW)

ITEM/REFERENCE DESIGNATORS

SHORT DESCRIPTION

CAGE
CODE

MANUFACTURER NAME

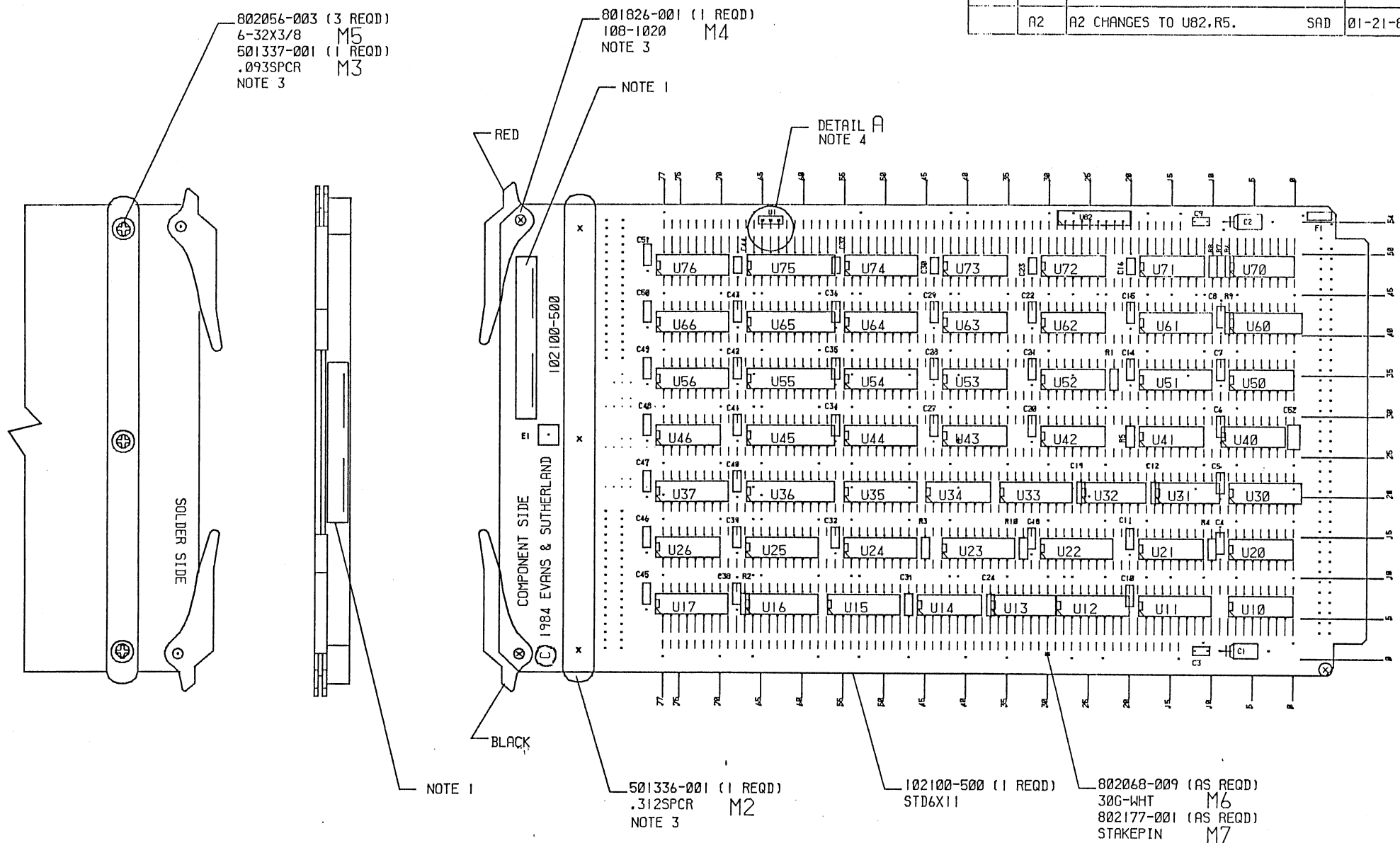
MFG PART NUMBER

E/S PART NUMBER

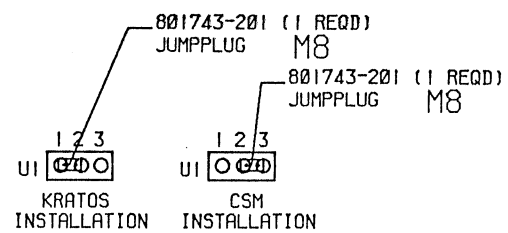
QTY/
ASSY

43 ITEMS LISTED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0	SAD	10-01-86
	A1	A1 CHANGES TO R5, U82	SAD	01-20-87
	A2	A2 CHANGES TO U82, R5.	SAD	01-21-87 AJA 2 Feb 87



- 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 (M4) AND SPACERS (M2 & M3) AFTER WIRE WRAPPING.
 - INSTALL BERG JUMPER 801743-201 (M8) IN DETAIL A AS SHOWN. INSTALL JUMPER BETWEEN PINS 1 & 2 FOR KRATOS. INSTALL JUMPER BETWEEN PINS 2 & 3 FOR CSM.



DETAIL A
SCALE: NONE
NOTE 4

REFERENCE DOCUMENTS
SCHEMATIC... 200156-609
PARTS LIST... PL200155-109

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DRAWN KTRUSCOTT	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
CHECKED D. HILL 2-2-87	TITLE ASSY. ANALOG CONTROL W/OBJECT FOG, 8 COLOR, W/W		
ELEC ENG D. ROBINSON 2/6/87	SIZE C	CODE IDENT 53938	DWG NO. 200156-109
PROJ ENG B. KENT	REV A2	SHEET 1 OF 1	
APPROVED	VERSION 1A1		
NEXT ASSY	MODIFIED DATE 29-JAN-87		
CREATION DATE 12-SEP-86	FILE NAME 200156109A2.MDF		

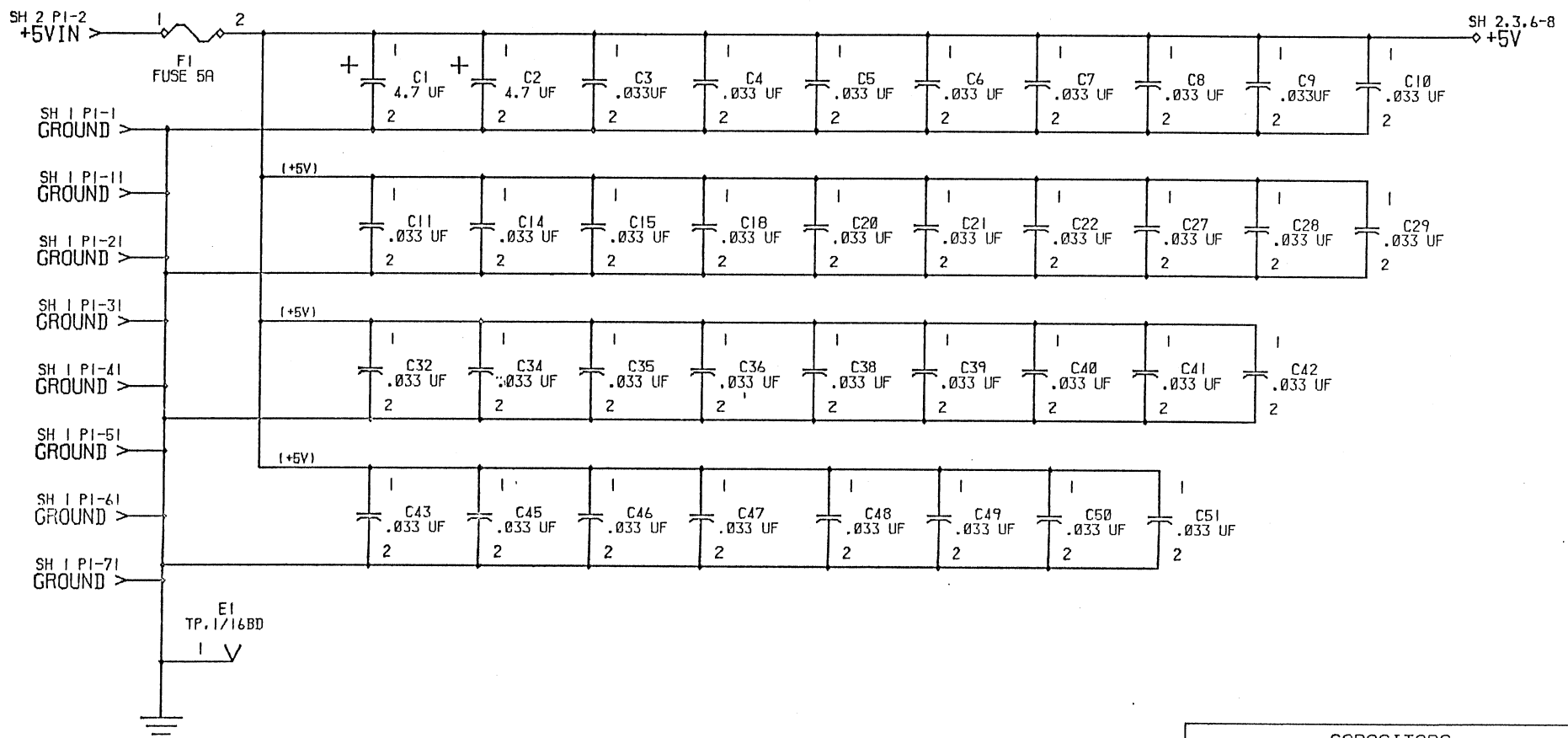
200156-109



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 14
 - 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.
 - $\text{---} // \text{---}$

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0	SAD	10-01-86
	A1	UPDATE TO A1 CHANGES TO U82, R5.	SAD	01-19-87
	A2	UPDATE TO A2 CHANGES TO R5, U82.	SAD	01-21-87

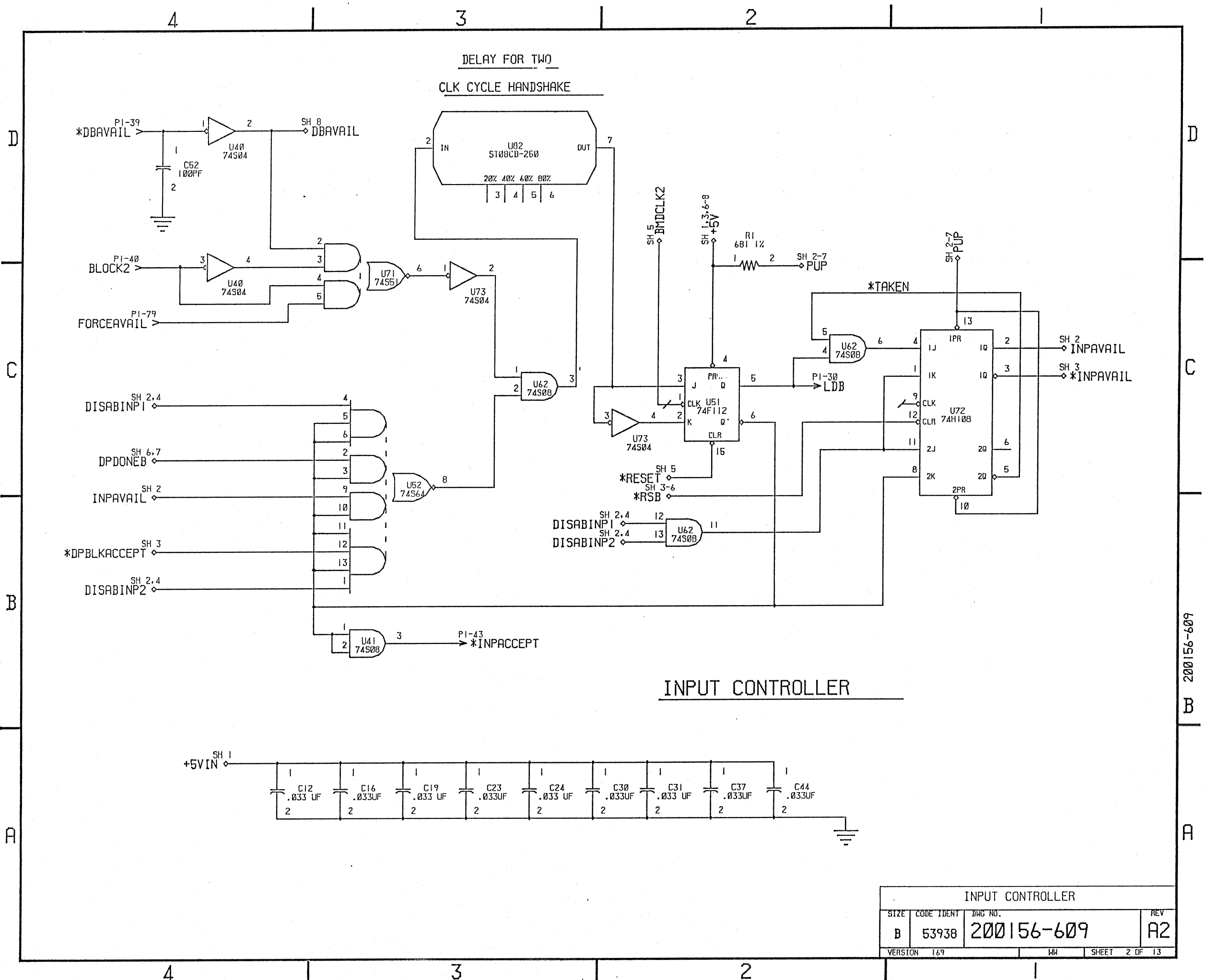


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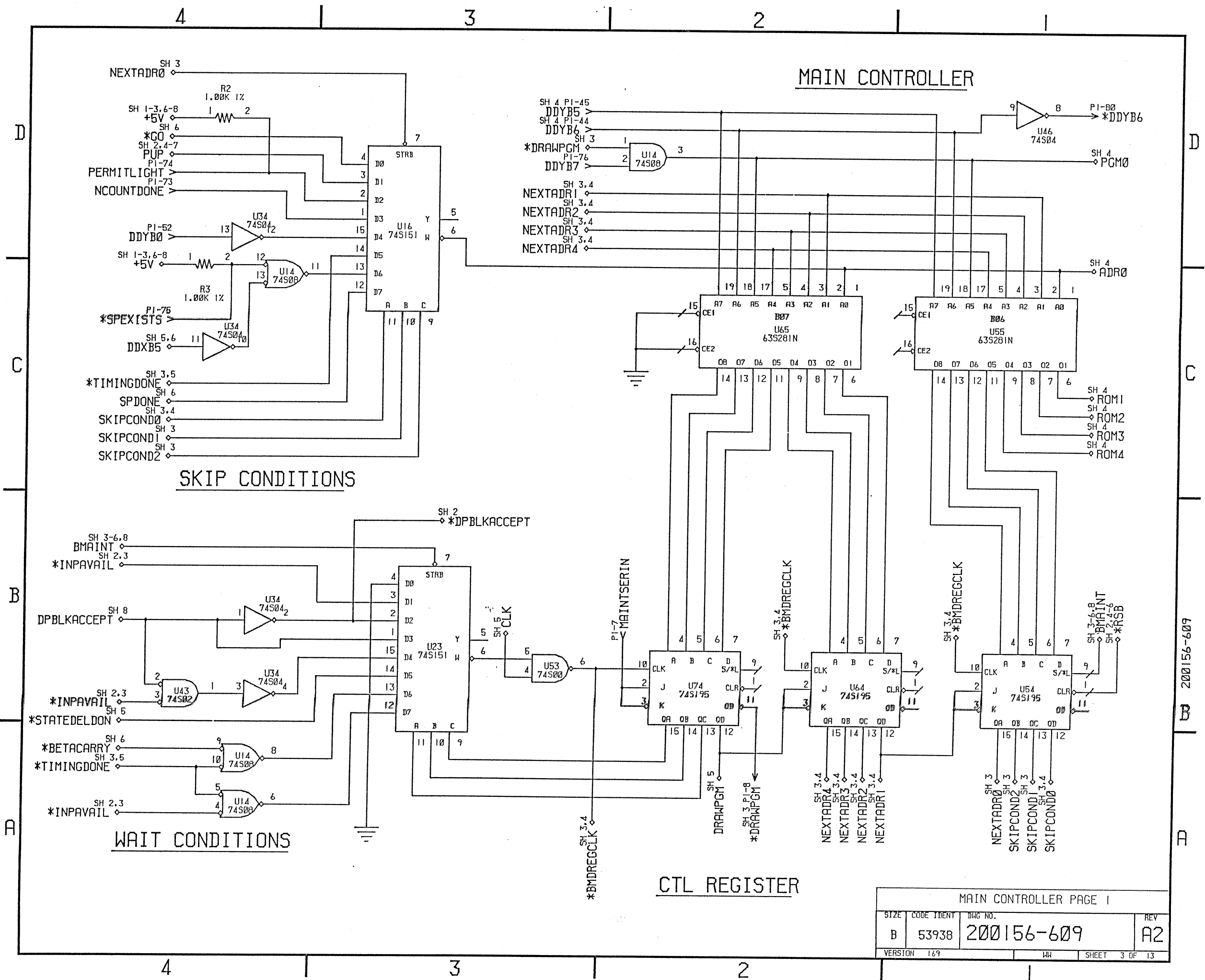
DRNIN	D. ROBINSON
CHECKED	<i>D. Robinson</i> 2-2-87
ELEC ENG	D. ROBINSON <i>DIR 2/2/87</i>
PROJ ENG	B. KENT
APPROVED	
NEXT ASSY	
MODIFIED DATE	29-JAN-87
CREATION DATE	12-SEP-86
FILE NAME	20015610902.MDF

CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE ANALOG CONTROL W/OBJECT FOG, 8 COLOR, W/W			
SIZE	CONTRACT	AWC NO.	REV
B	53938	200156-609	A2
VERSION	169	PC	SHEET 1 OF 13

200156-609



INPUT CONTROLLER			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200156-609	A2
VERSION	169	WH	SHEET 2 OF 13



MAIN CONTROLLER

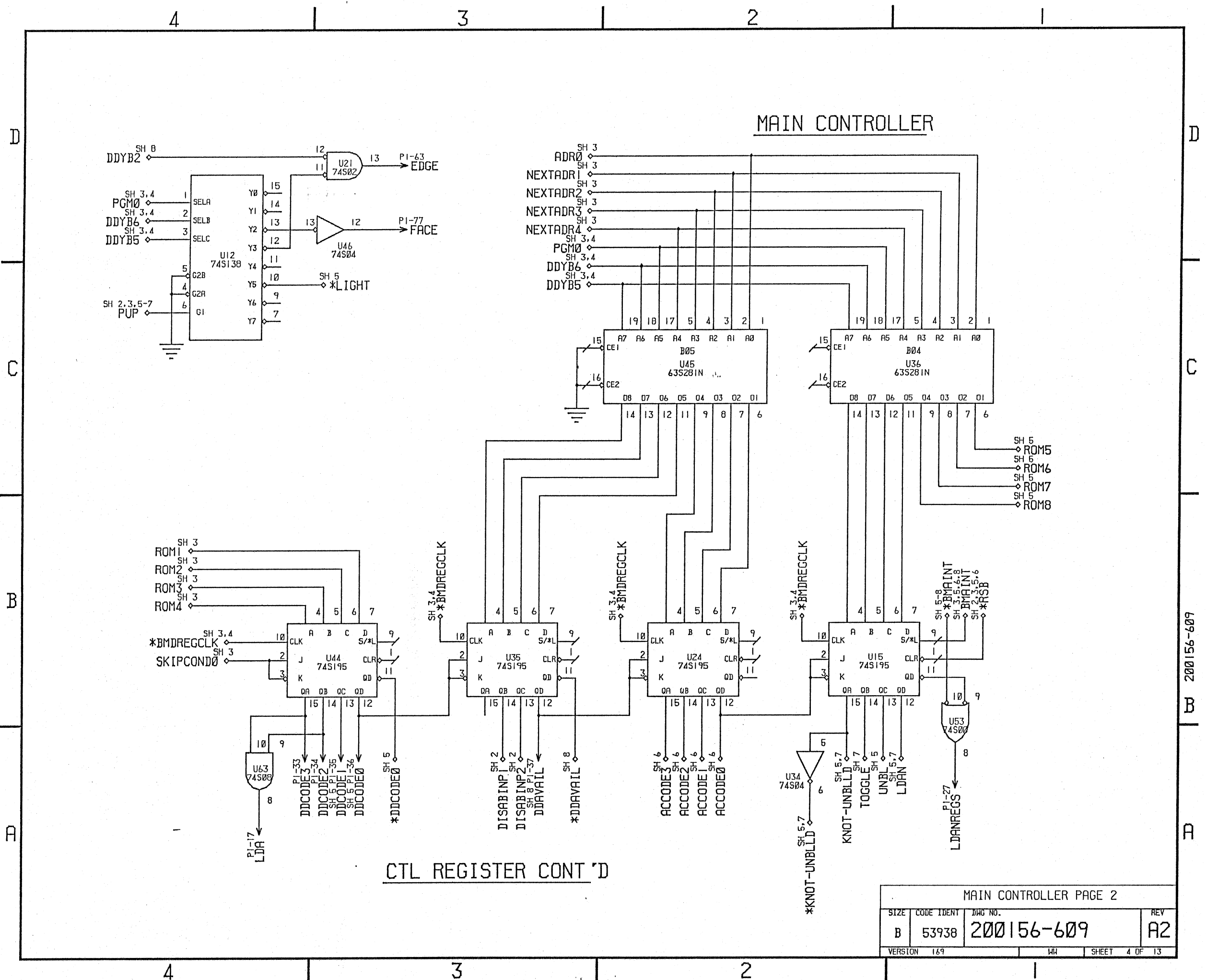
SKIP CONDITIONS

WAIT CONDITIONS

CTL REGISTER

MAIN CONTROLLER PAGE 1			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200156-609	A2
VERSION	169	WH	SHEET 3 OF 13

200156-609



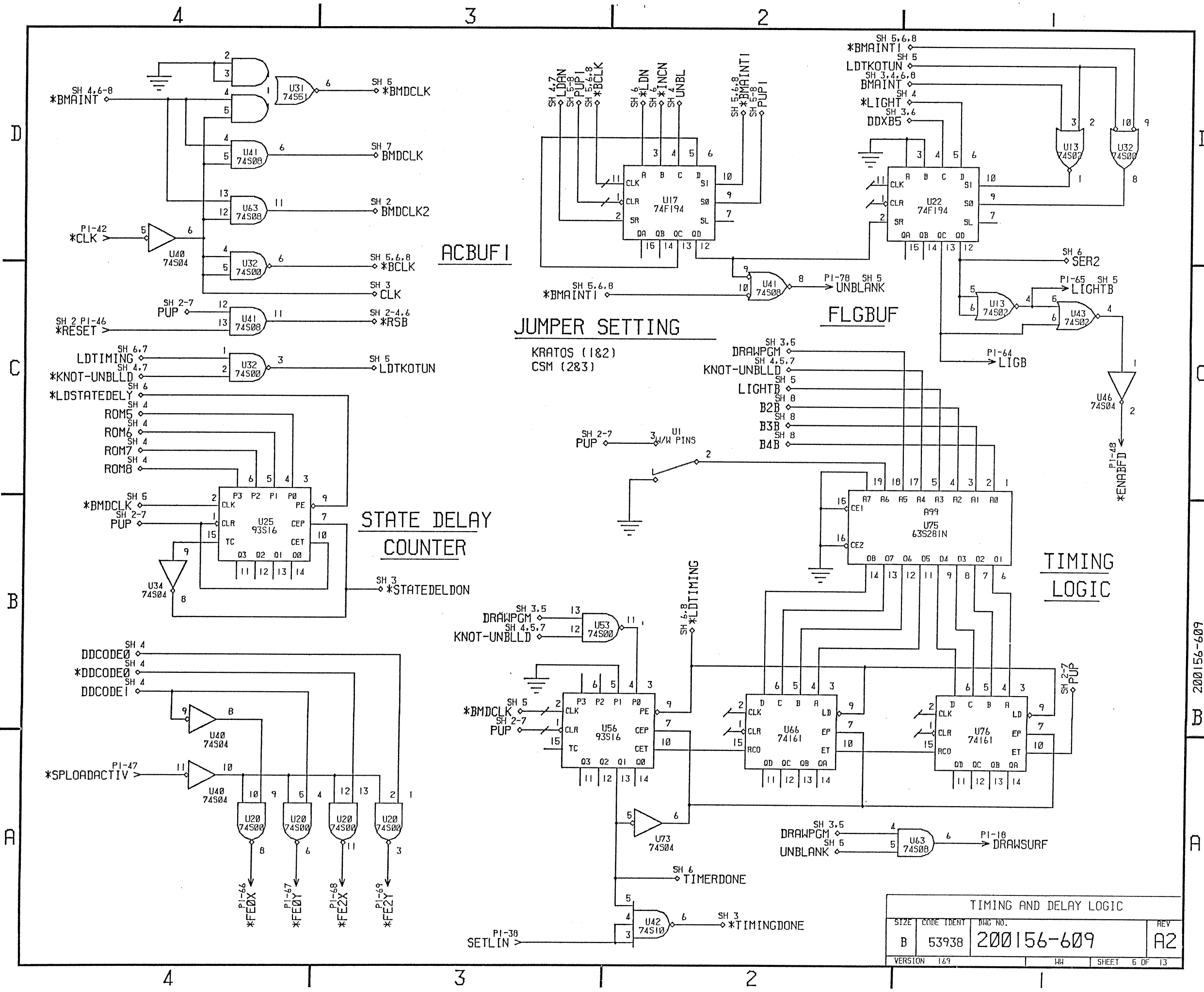
MAIN CONTROLLER

CTL REGISTER CONT 'D

MAIN CONTROLLER PAGE 2

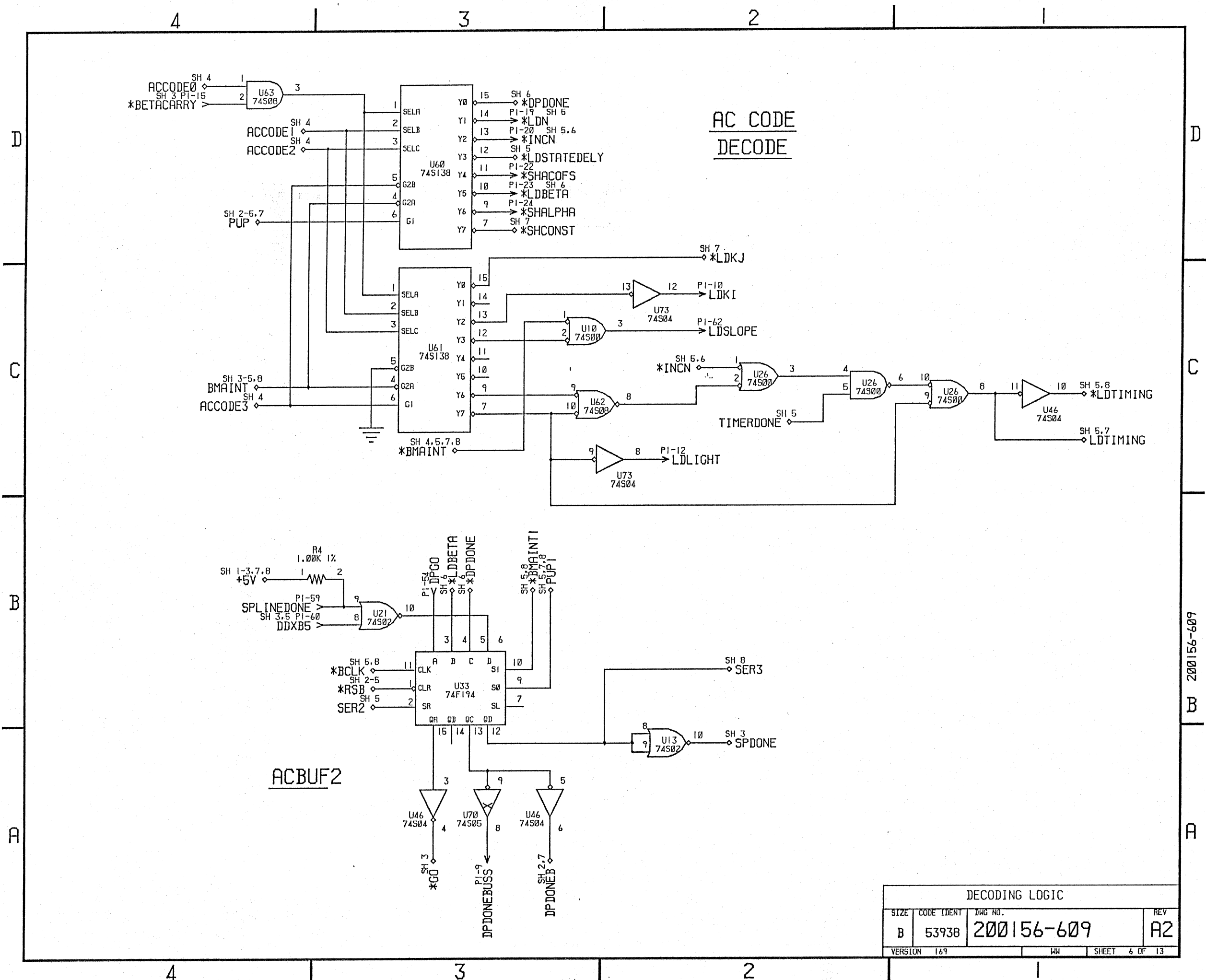
SIZE	CODE IDENT	DRWG NO.	REV
B	53938	200156-609	A2
VERSION	169	WH	SHEET 4 OF 13

B 200156-609



TIMING AND DELAY LOGIC			
SIZE	CODE IDENT	DOC NO.	REV
B	53938	200156-609	A2
VERSION 1.69		DATE	SHEET 5 OF 13

200156-609

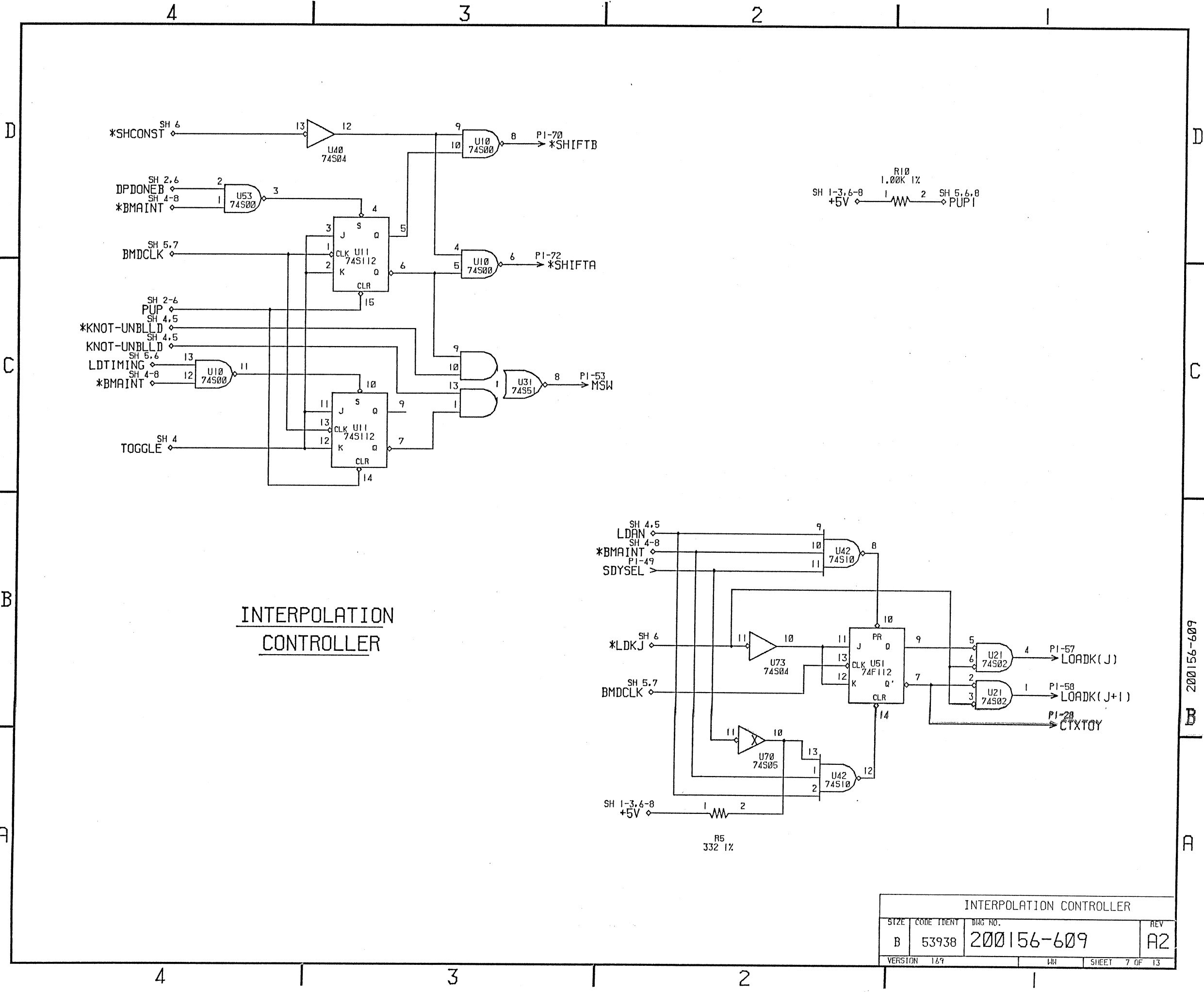


**AC CODE
DECODE**

ACBUF2

DECODING LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200156-609	A2
VERSION 169		MM	SHEET 6 OF 13

200156-609 B B A

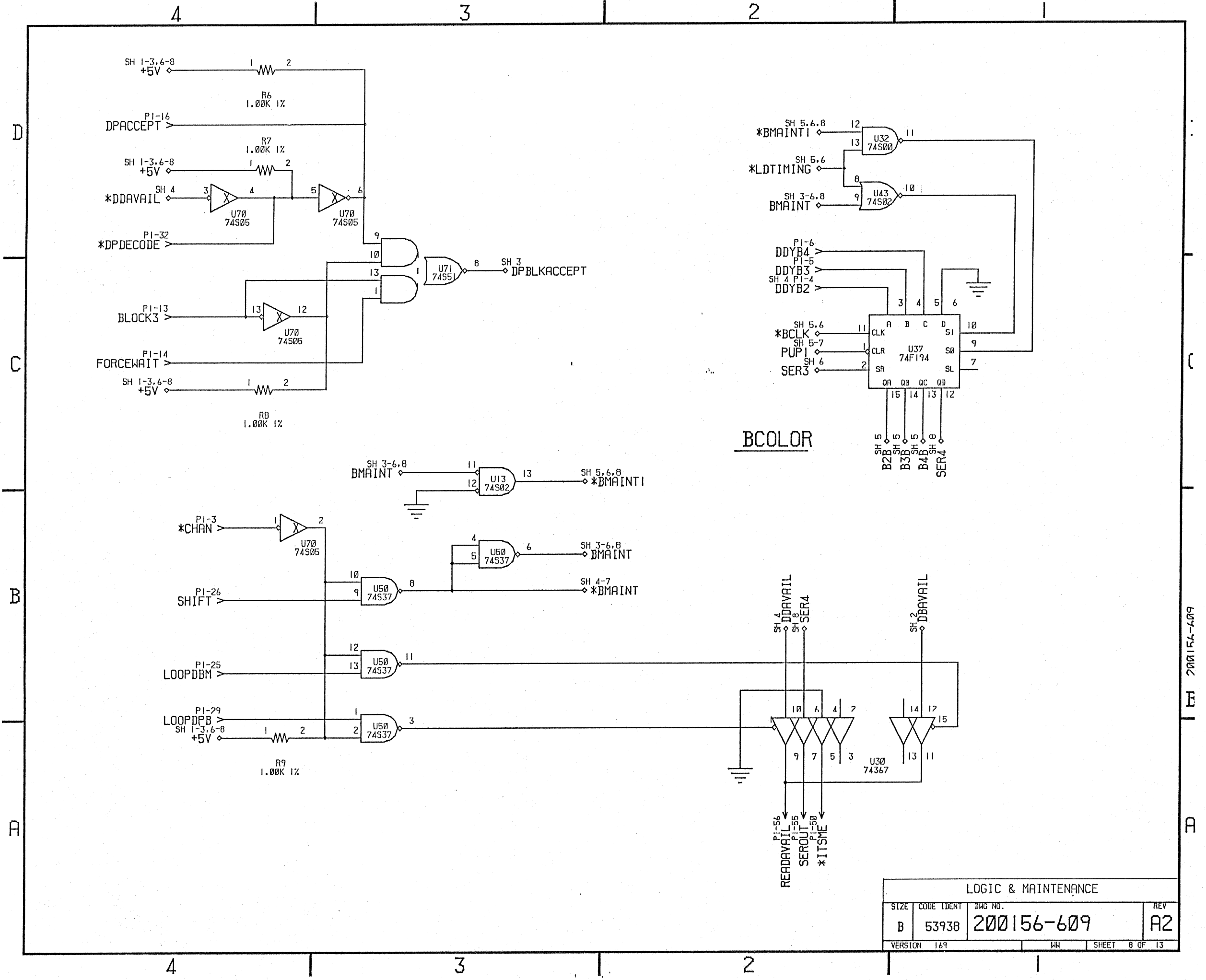


INTERPOLATION
CONTROLLER

INTERPOLATION CONTROLLER			
SIZE	CODE IDENTY	DWG NO.	REV
B	53938	200156-609	A2
VERSION	1.69	WH	SHEET 7 OF 13

200156-609

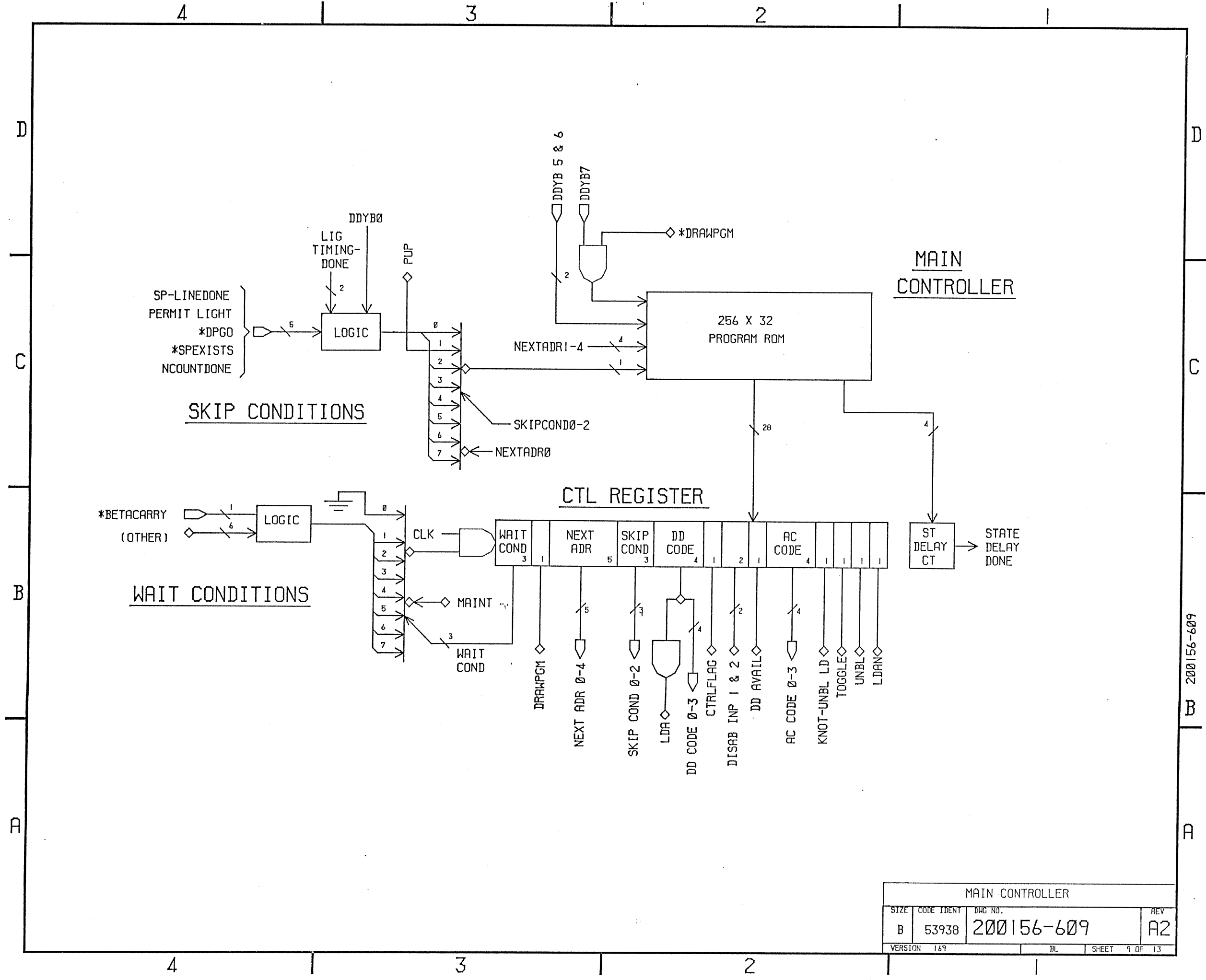
A



BCOLOR

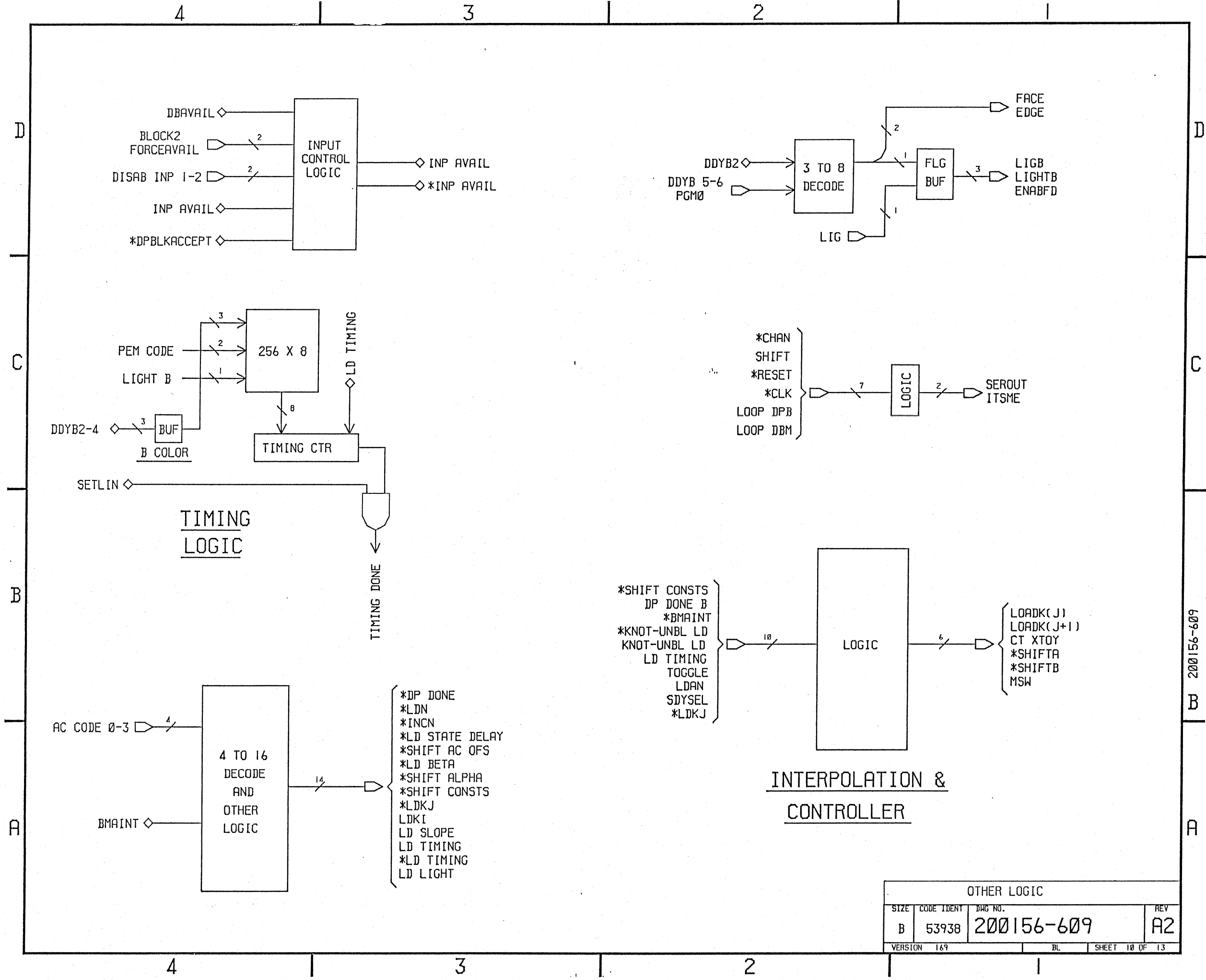
LOGIC & MAINTENANCE			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200156-609	A2
VERSION	169	WH	SHEET 8 OF 13

200156-609



MAIN CONTROLLER			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200156-609	A2
VERSION	169	DL	SHEET 9 OF 13

B 200156-609



OTHER LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200156-609	A2
VERSION	169	BL	SHEET 10 OF 13

200156-609

4						3						2						1									
UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	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	44	FEMALE	DDYB6	3	D3															
PI	2	FEMALE	+5VIN	1	C4		PI	45	FEMALE	DDYB5	3	D3															
PI	3	FEMALE	*CHAN	8	B4		PI	46	FEMALE	*RESET	5	C4															
PI	4	FEMALE	DDYB2	8	C2		PI	47	FEMALE	*SPLOADACTIV	5	A4															
PI	5	FEMALE	DDYB3	8	C2		PI	48	MALE	*ENABFD	5	C1															
PI	6	FEMALE	DDYB4	8	D2		PI	49	FEMALE	SDYSEL	7	B2															
PI	7	FEMALE	MAINTSERIN	3	B2		PI	50	MALE	*ITSME	8	A2															
PI	8	MALE	*DRAWPGM	3	A2		PI	51	FEMALE	GROUND	1	B4															
PI	9	MALE	DPDONEBUSS	6	A3		PI	52	FEMALE	DDYB0	3	D4															
PI	10	MALE	LDKI	6	C2		PI	53	MALE	MSW	7	C3															
PI	11	FEMALE	GROUND	1	B4		PI	54	FEMALE	DPGO	6	B3															
PI	12	MALE	LDLIGHT	6	C2		PI	55	MALE	SEROUT	8	A2															
PI	13	FEMALE	BLOCK3	8	C4		PI	56	MALE	READAVAIL	8	A2															
PI	14	FEMALE	FORCEWAIT	8	C4		PI	57	MALE	LOADK(J)	7	B1															
PI	15	FEMALE	*BETACARRY	6	D4		PI	58	MALE	LOADK(J+1)	7	B1															
PI	16	FEMALE	DPACCEPT	8	D4		PI	59	FEMALE	SPLINEDONE	6	B3															
PI	17	MALE	LDA	4	A4		PI	60	FEMALE	DDXB5	6	B3															
PI	18	MALE	DRAWSURF	5	A1		PI	61	FEMALE	GROUND	1	B4															
PI	19	MALE	*LDN	6	D3		PI	62	MALE	LDSLOPE	6	C2															
PI	20	MALE	*INCN	6	D3		PI	63	MALE	EDGE	4	D3															
PI	21	FEMALE	GROUND	1	B4		PI	64	MALE	LIGB	5	C1															
PI	22	MALE	*SHACOFS	6	D3		PI	65	MALE	LIGHTB	5	C1															
PI	23	MALE	*LDBETA	6	D3		PI	66	MALE	*FE0X	5	A4															
PI	24	MALE	*SHALPHA	6	D3		PI	67	MALE	*FE0Y	5	A4															
PI	25	FEMALE	LOOPDBM	8	B4		PI	68	MALE	*FE2X	5	A3															
PI	26	FEMALE	SHIFT	8	B4		PI	69	MALE	*FE2Y	5	A3															
PI	27	MALE	LDANREGS	4	A1		PI	70	MALE	*SHIFTB	7	D3															
PI	28	MALE	CTXTOY	7	B1		PI	71	FEMALE	GROUND	1	B4															
PI	29	FEMALE	LOOPDPB	8	B4		PI	72	MALE	*SHIFTA	7	C3															
PI	30	MALE	LDB	2	C2		PI	73	FEMALE	NCCOUNTDONE	3	D4															
PI	31	FEMALE	GROUND	1	B4		PI	74	FEMALE	PERMITLIGHT	3	D4															
PI	32	FEMALE	*DPDECODE	8	D4		PI	75	FEMALE	*SPEXISTS	3	C4															
PI	33	MALE	DDCODE3	4	A4		PI	76	FEMALE	DDYB7	3	D3															
PI	34	MALE	DDCODE2	4	A3		PI	77	MALE	FACE	4	D3															
PI	35	MALE	DDCODE1	4	A3		PI	78	MALE	UNBLANK	5	C2															
PI	36	MALE	DDCODE0	4	A3		PI	79	FEMALE	FORCEAVAIL	2	C4															
PI	37	MALE	DDAVAIL	4	A3		PI	80	MALE	*DDYB6	3	D1															
PI	38	FEMALE	SETLIN	5	A3																						
PI	39	FEMALE	*DBAVAIL	2	D4																						
PI	40	FEMALE	BLOCK2	2	C4																						
PI	41	FEMALE	GROUND	1	B4																						
PI	42	FEMALE	*CLK	5	D4																						
PI	43	MALE	*INPACCEPT	2	B3																						

D
C
B
A

D
C
B
A

200156-609

CONNECTORS BY UNIT/PIN			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200156-609	A2
VERSION	169	C5	SHEET 11 OF 13

4 3 2 1

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	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN		
*BETACARRY	PI	15	FEMALE	6	D4		DPGO	PI	54	FEMALE	6	B3																	
*CHAN	PI	3	FEMALE	8	B4		DRAWSURF	PI	18	MALE	5	A1																	
*CLK	PI	42	FEMALE	5	D4		EDGE	PI	63	MALE	4	D3																	
*DBAVAIL	PI	39	FEMALE	2	D4		FACE	PI	77	MALE	4	D3																	
*DDYB6	PI	80	MALE	3	D1		FORCEAVAIL	PI	79	FEMALE	2	C4																	
*DPDECODE	PI	32	FEMALE	8	D4		FORCEWAIT	PI	14	FEMALE	8	C4																	
*DRAWPGM	PI	8	MALE	3	A2		GROUND	PI	1	FEMALE	1	C4																	
*ENABFD	PI	48	MALE	5	C1		GROUND	PI	11	FEMALE	1	B4																	
*FE0X	PI	66	MALE	5	A4		GROUND	PI	21	FEMALE	1	B4																	
*FE0Y	PI	67	MALE	5	A4		GROUND	PI	31	FEMALE	1	B4																	
*FE2X	PI	68	MALE	5	A3		GROUND	PI	41	FEMALE	1	B4																	
*FE2Y	PI	69	MALE	5	A3		GROUND	PI	51	FEMALE	1	B4																	
*INCN	PI	20	MALE	6	D3		GROUND	PI	61	FEMALE	1	B4																	
*INPACCEPT	PI	43	MALE	2	B3		GROUND	PI	71	FEMALE	1	B4																	
*ITSME	PI	50	MALE	8	A2		LDA	PI	17	MALE	4	A4																	
*LDBETA	PI	23	MALE	6	D3		LDANREGS	PI	27	MALE	4	A1																	
*LDN	PI	19	MALE	6	D3		LDB	PI	30	MALE	2	C2																	
*RESET	PI	46	FEMALE	5	C4		LDKI	PI	10	MALE	6	C2																	
*SHACOF5	PI	22	MALE	6	D3		LDLIGHT	PI	12	MALE	6	C2																	
*SHALPHA	PI	24	MALE	6	D3		LDSLOPE	PI	62	MALE	6	C2																	
*SHIFTA	PI	72	MALE	7	C3		LIGB	PI	64	MALE	5	C1																	
*SHIFTB	PI	70	MALE	7	D3		LIGHTB	PI	65	MALE	5	C1																	
*SPEXISTS	PI	75	FEMALE	3	C4		LOADK(J)	PI	57	MALE	7	B1																	
*SPLLOADACTIV	PI	47	FEMALE	5	A4		LOADK(J+1)	PI	58	MALE	7	B1																	
+5VIN	PI	2	FEMALE	1	C4		LOOPDBM	PI	25	FEMALE	8	B4																	
BLOCK2	PI	40	FEMALE	2	C4		LOOPDPB	PI	29	FEMALE	8	B4																	
BLOCK3	PI	13	FEMALE	8	C4		MAINTSERIN	PI	7	FEMALE	3	B2																	
CTXTOY	PI	28	MALE	7	B1		MSW	PI	53	MALE	7	C3																	
DDAVAIL	PI	37	MALE	4	A3		NCOUNTDONE	PI	73	FEMALE	3	D4																	
DDCODE0	PI	36	MALE	4	A3		PERMITLIGHT	PI	74	FEMALE	3	D4																	
DDCODE1	PI	35	MALE	4	A3		READAVAIL	PI	56	MALE	8	A2																	
DDCODE2	PI	34	MALE	4	A3		SDYSEL	PI	49	FEMALE	7	B2																	
DDCODE3	PI	33	MALE	4	A4		SEROUT	PI	55	MALE	8	A2																	
DDXB5	PI	60	FEMALE	6	B3		SETLIN	PI	38	FEMALE	5	A3																	
DDYB0	PI	52	FEMALE	3	D4		SHIFT	PI	26	FEMALE	8	B4																	
DDYB2	PI	4	FEMALE	8	C2		SPLINEDONE	PI	59	FEMALE	6	B3																	
DDYB3	PI	5	FEMALE	8	C2		UNBLANK	PI	78	MALE	5	C2																	
DDYB4	PI	6	FEMALE	8	D2																								
DDYB5	PI	45	FEMALE	3	D3																								
DDYB6	PI	44	FEMALE	3	D3																								
DDYB7	PI	76	FEMALE	3	D3																								
DPACCEPT	PI	16	FEMALE	8	D4																								
DPDONEBUSS	PI	9	MALE	6	A3																								

D

C

B

A

200156-609

CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200156-609	A2
VERSION	169	C5	SHEET 12 OF 13

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1

PAGE	TYPE	PAGE NAME
1	PC	CAPACITORS
2	WW	INPUT CONTROLLER
3	WW	MAIN CONTROLLER PAGE 1
4	WW	MAIN CONTROLLER PAGE 2
5	WW	TIMING AND DELAY LOGIC
6	WW	DECODING LOGIC
7	WW	INTERPOLATION CONTROLLER
8	WW	LOGIC & MAINTENANCE
9	BL	MAIN CONTROLLER
10	BL	OTHER LOGIC

D

D

C

C

B

200156-609

B

A

A

TABLE OF CONTENTS			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200156-609	A2
VERSION 149		TC	SHEET 13 OF 13

4

3

2

1



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200158-103

REV: B3 = BD

DESC: CARD ASSY, SCOPE DRIVER (CABLE PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2 C3 C4 C5 C6	BD,P02R PCBD 6X11	53938	EVANS & SUTHERLAND.	200158-503	200158-503	1
C10 C12 C20 C29 C35 C40 C41	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	6
C14 C15 C19 C53	C,,RDL 10PF	59821	MEPCO/CENTRALAB	DD-100	804103-100	7
C16	C,,RDL SEL-AT-TEST	53938	EVANS & SUTHERLAND	804103-000 VALUES	804103-000	4
C17 C18 C22 C23 C24 C25 C26	C,,RDL 5PF	02799	ARCO ELECTRONICS (CAPS)	CCD-050	804103-050	1
C27 C30 C31 C32 C33 C37 C38 C39	C,,RDL .1UF	04222	A V X CERAMICS DIV.OF AVX	SR205E104MAA	804115-104	15
C21 C36	C,,RDL 100PF	02799	ARCO ELECTRONICS (CAPS)	CCD-101	804103-101	2
C28 C34	C,,RDL 10PF	31433	KEMET ELECTRONICS CORP.	C052C100J2X5CA	804147-100	2
C7 C9	C,,RDL .1UF	31433	KEMET ELECTRONICS CORP.	C052K104K5X5CA	804119-104	2
C8	C,,RDL .01UF	31433	KEMET ELECTRONICS CORP.	C052K103K1X5CA	804119-103	1
E1 E2	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	2
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
J3 J1 J2	CN,HDR 20P,RTA	22526	DU PONT E I NEMOURS(CONN)	65625-120 (2X10)	801293-020	3
K1 K2 K3 K4	HW,RLY 712D-5	11532	TELEDYNE RELAYS TELEDYNE	712D-5/412D-5	801052-001	4
M11	HW,WSHR #6NYLON	N/A	DISTRIBUTORS	WSHR(#6).032THK-NYLN	802144-006	2
M12 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
M2	HW,SPCR SPCR,6.04L	53938	EVANS & SUTHERLAND.	501348-001	501348-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
M6	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-32X3/8 (M-P-PH-SS)	802003-103	2
M7	HW,WSHR #6INTLOK	N/A	DISTRIBUTORS	SAE#6,LK INTL,SS	802005-006	2
M8	HW,WSHR #6,FLAT	N/A	DISTRIBUTORS	SAE#6FLAT,SS,.032THK	802007-006	2
M9	HW,NUT 6-32NUT	N/A	DISTRIBUTORS	NUT-HEX(6-32)SS	802014-006	2
Q1 Q2 Q3	TR,NPN 2N2219	04713	MOTOROLA INC. SEMI PRODUC	2N2219 (NPN,TO-39)	822219-001	3
Q4	TR,NPN 2N2222	04713	MOTOROLA INC. SEMI PRODUC	2N2222 (NPN,TO-18)	822222-001	1
R1	R,,AXL 2K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF202J	803201-202	1
R10 R14	R,,AXL 887 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-887-1%	803452-887	2
R11 R30 R33 R38 R41	R,,AXL 4.99K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-4.99K-1%-50PPM	803453-499	5
R13	R,,AXL 475 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-475-1%	803452-475	1
R15 R17 R28 R29 R36 R37 R44	R,,AXL 75 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF750J	803201-750	8
R45						
R16 R18	R,,AXL SEL-AT-TEST	53938	EVANS & SUTHERLAND	1/4W-SELECTABLE	803000-100	2
R19 R49 R52	R,,AXL 330 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF331J	803201-331	3
R2 R4	R,,AXL 7.50K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-7.50K-1%-50PPM	803453-750	2
R21	R,,AXL 51.1 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-51.1-1%	803451-511	1
R22	R,,AXL 511 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-511-1%	803452-511	1
R24 R26	R,,AXL 499 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-499-1%	803452-499	2
R25	R,,AXL 2.49K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-2.49K-1%	803453-249	1
R27	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	1
R31 R32 R39 R40	R,,AXL 3.57K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-3.57K-1%-50PPM	803453-357	4
R34 R35 R42 R43	R,,AXL 100 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF101J	803201-101	4
R46	R,,AXL 180 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF181J	803201-181	1
R47 R60	R,,AXL 5.1K1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF512J	803201-512	2
R48 R51	R,,AXL 10K 1/8W	50139	ALLEN-BRADLEY CO. ELECTRO	BB1035	803300-103	2
R5 R6 R7 R20	R,,AXL 100 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-100-1%	803452-100	4

MAINTENANCE PARTS LIST

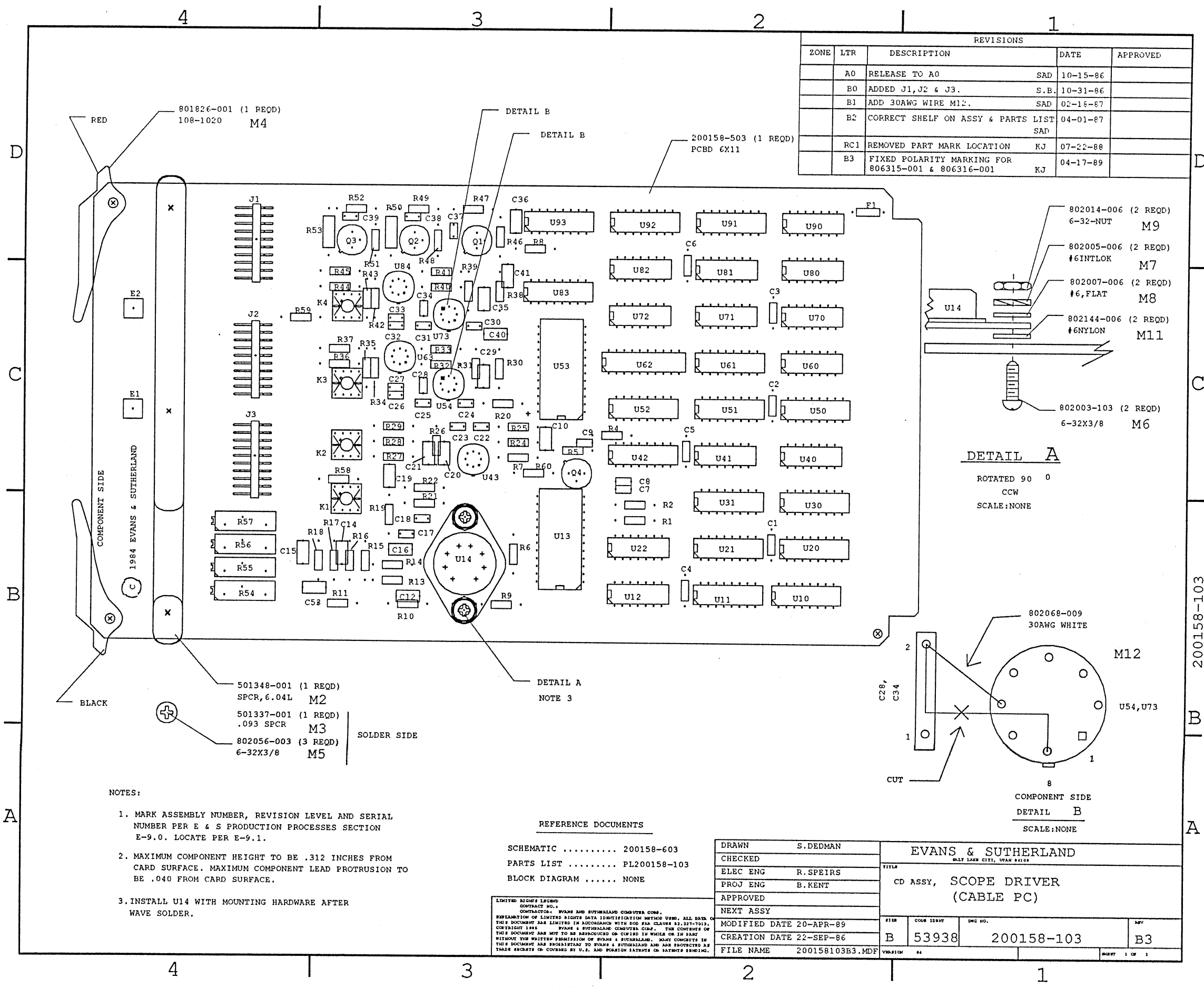
ASSEMBLY: PL 200158-103

REV: B3 = BD

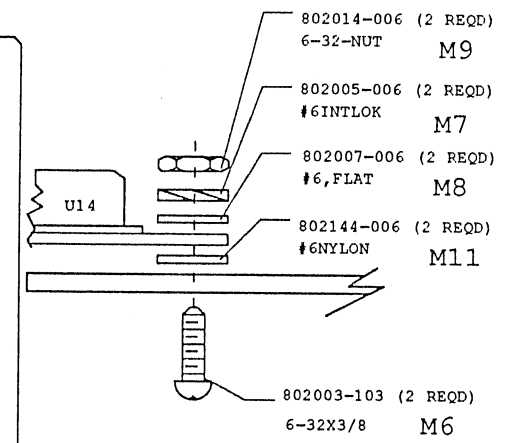
DESC: CARD ASSY, SCOPE DRIVER (CABLE PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
R50 R53	R,,AXL 10 1/2W	1U696	STACKPOLE COMPONENTS CO	RC-1/2-100,1/2W,5%	803302-100	2
R54	R,,POT 10K-20T	50139	ALLEN-BRADLEY CO. ELECTRO	94P103 (10K)	803510-103	1
R55	R,,POT 200-20T	50139	ALLEN-BRADLEY CO. ELECTRO	94P201 (200 OHM)	803510-201	1
R56	R,,POT 1K-20T	50139	ALLEN-BRADLEY CO. ELECTRO	94P102 (1K)	803510-102	1
R57	R,,POT 50K-20T	50139	ALLEN-BRADLEY CO. ELECTRO	94P503 (50K)	803510-503	1
R58 R59	R,,AXL 220 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF221J	803201-221	2
R8	R,,AXL 1K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	1
R9	R,,AXL 681 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-681-1%	803452-681	1
U10 U20 U30 U52 U61	IC,TTL 93S16	34335	ADVANCED MICRO DEVICES IN	93S16PC	807616-055	5
U11 U21 U51	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	3
U12 U22	IC,TTL 7417	01295	TEXAS INSTR, SEMICON DIV.	SN7417N/J	807417-642	2
U13 U53	DL,ANLG 2211-400B	22519	DATA DELAY DEVICES INC.	2211-400B	806214-400	2
U14	IC,AMP MSK860	51651	KENNEDY (M S) CORP	MSK860	806317-001	1
U31	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-A95	807739-055-A95	1
U40 U82	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	2
U41 U81	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	2
U42	IC,ANLG DAC-08EQ	34335	ADVANCED MICRO DEVICES IN	AMDAC-08EQ (.19%)	806008-002	1
U43 U54 U73	IC,AMP HA2-2525	64762	ELANTEC INC	EHA2-2525-5	806315-001	3
U50	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	1
U60	IC,TTL 74164	01295	TEXAS INSTR, SEMICON DIV.	SN74164N/J	807413-646	1
U62	IC,PROM,BIP,256X8,TS,	53938	EVANS & SUTHERLAND.	807808-016-A23	807808-016-A23	1
U63 U84	IC,AMP LH0002CH	64762	ELANTEC INC	LH0002CH(TO-5,8LEAD)	806316-001	2
U70	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U71	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
U72	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
U80	IC,TTL 74S86	01295	TEXAS INSTR, SEMICON DIV.	SN74S86N	807486-055	1
U83	DL,TTL PE21220	01961	VARIAN ASSOCIATES INC.	PE21220 (250NS)	806335-250	1
U90	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	1
U91	IC,TTL 74166	01295	TEXAS INSTR, SEMICON DIV.	SN74166N	807665-646	1
U92	IC,TTL 74S195	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	1
U93	IC,TTL #74123	01295	TEXAS INSTR, SEMICON DIV.	SN74123N	807622-647	1

76 ITEMS LISTED

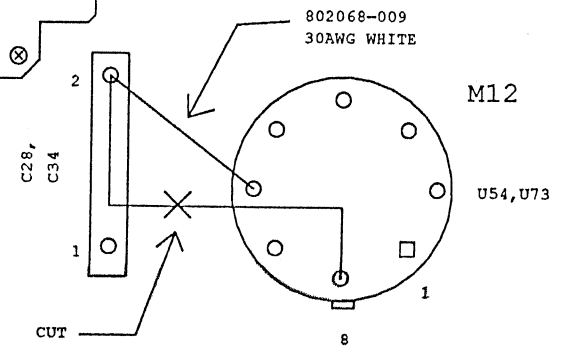


REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0	SAD 10-15-86	
	B0	ADDED J1, J2 & J3.	S.B. 10-31-86	
	B1	ADD 30AWG WIRE M12.	SAD 02-16-87	
	B2	CORRECT SHELF ON ASSY & PARTS LIST	SAD 04-01-87	
	RC1	REMOVED PART MARK LOCATION	KJ 07-22-88	
	B3	FIXED POLARITY MARKING FOR 806315-001 & 806316-001	KJ 04-17-89	



DETAIL A

ROTATED 90 0
CCW
SCALE:NONE



DETAIL B

SCALE:NONE

NOTES:

1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE PER E-9.1.
2. MAXIMUM COMPONENT HEIGHT TO BE .312 INCHES FROM CARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM CARD SURFACE.
3. INSTALL U14 WITH MOUNTING HARDWARE AFTER WAVE SOLDER.

REFERENCE DOCUMENTS

- SCHMATIC 200158-603
- PARTS LIST PL200158-103
- BLOCK DIAGRAM NONE

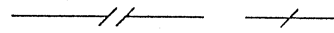
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DRAWN	S.DEDMAN	EVANS & SUTHERLAND <small>WALK LAKE CITY, UTAH 84108</small>		
CHECKED				
ELEC ENG	R.SPEIRS	TITLE		
PROJ ENG	B.KENT	CD ASSY, SCOPE DRIVER (CABLE PC)		
APPROVED		ITEM	COUN IDBWT	DWG NO.
NEXT ASSY		B	53938	200158-103
MODIFIED DATE	20-APR-89	VERSION	04	SHEET 1 OF 1
CREATION DATE	22-SEP-86	FILE NAME	200158103B3.MDF	

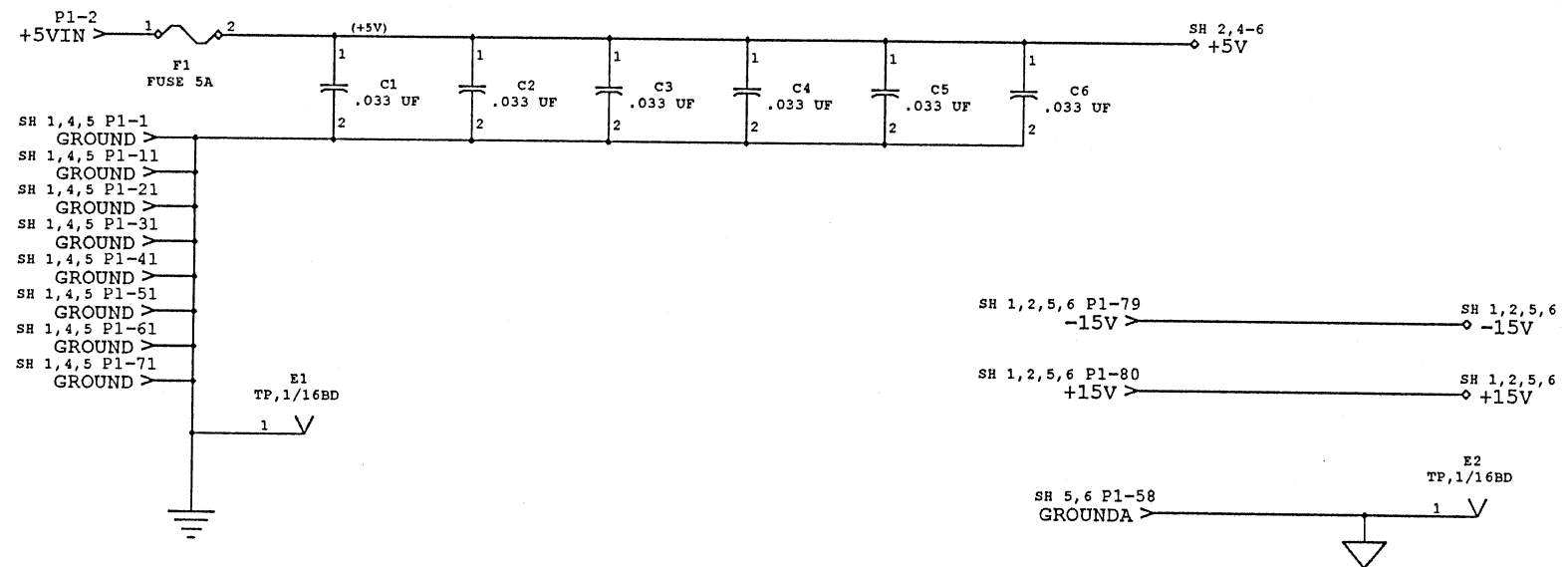
200158-103



NOTES: UNLESS OTHERWISE SPECIFIED:

1. RESISTANCE VALUES ARE IN OHMS + - 14.,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 (EXCEPT U42, DAC-08EQ; SEE SCHEMATIC)
 20 PIN IC, 10 AND 20
 24 PIN IC, 12 AND 24
3. CARD CONNECTOR SYMBOL "P1-" DESIGNATES:
 INPUT SIGNALS \triangleright
 OUTPUT SIGNALS \longleftarrow
4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.


REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0.	SAD	10-15-86
	B0	CHANGED STRING NAMES.	S.B.	10-31-86
	B1	CHANGE CAPACITOR C28,C34.	SAD	01-17-87
	B2	CORRECT SHELF ON ASSY & PARTS LIST.	SAD	04-02-87
	B3	REV. UPDATE ONLY	KJ	04-17-89

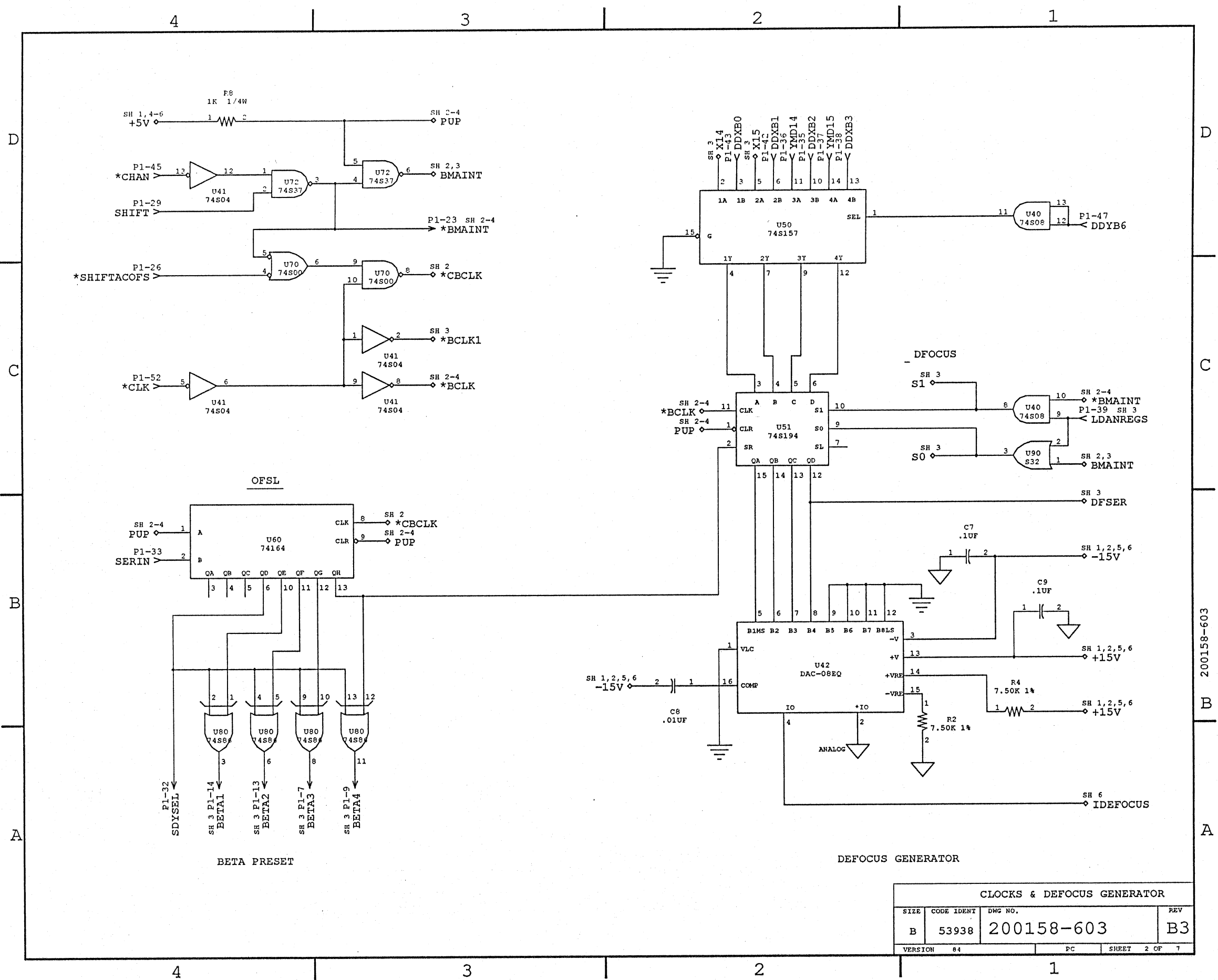


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DRAWN	R.SPEIRS
CHECKED	
ELEC ENG	R.SPEIRS
PROJ ENG	B.KENT
APPROVED	
NEXT ASSY	
MODIFIED DATE	20-APR-89
CREATION DATE	22-SEP-86
FILE NAME	200158103B3.MDF

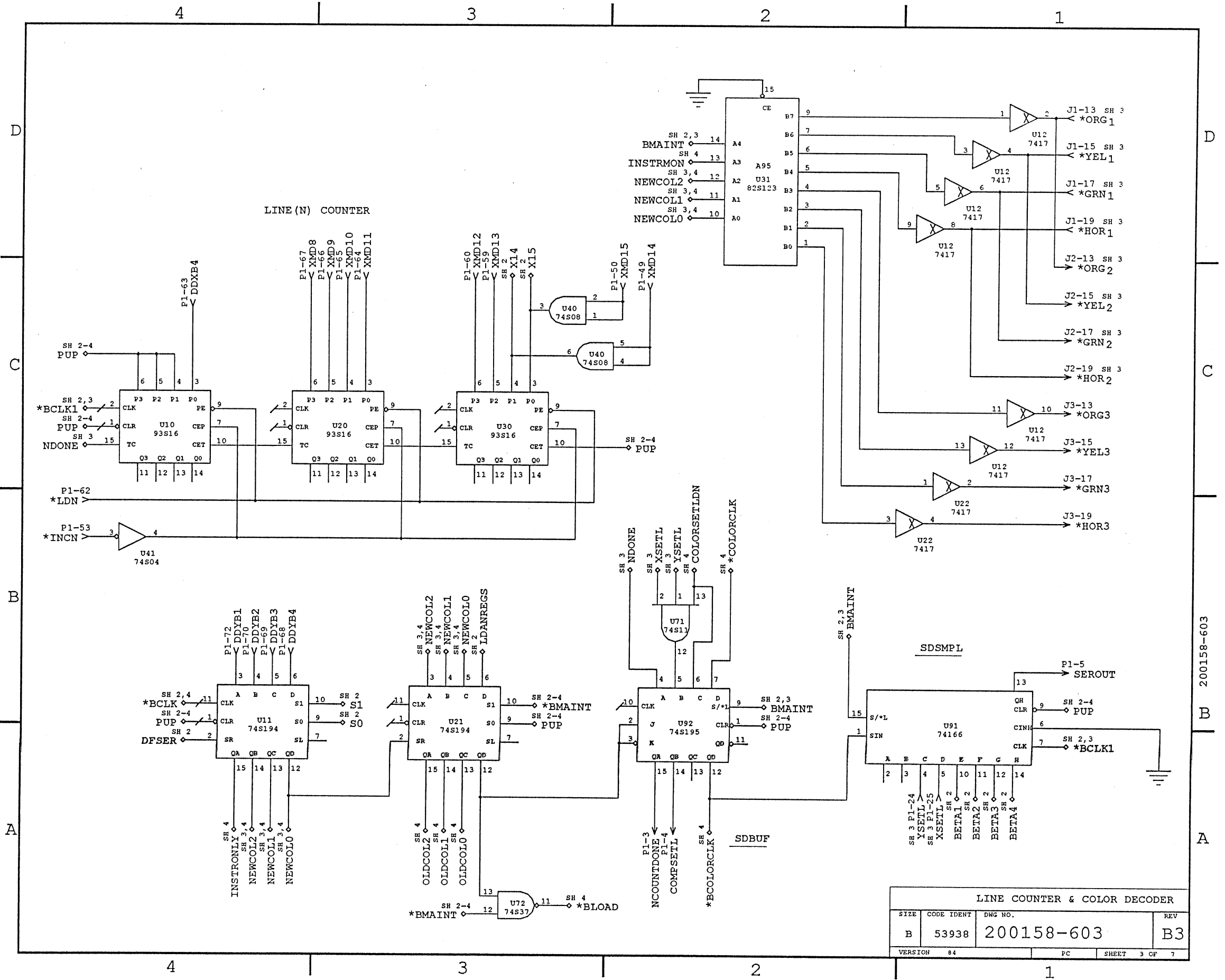
CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE SCOPE DRIVER (CABLE PC)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200158-603	B3
VERSION	84	PC	SHEET 1 OF 7

200158-603

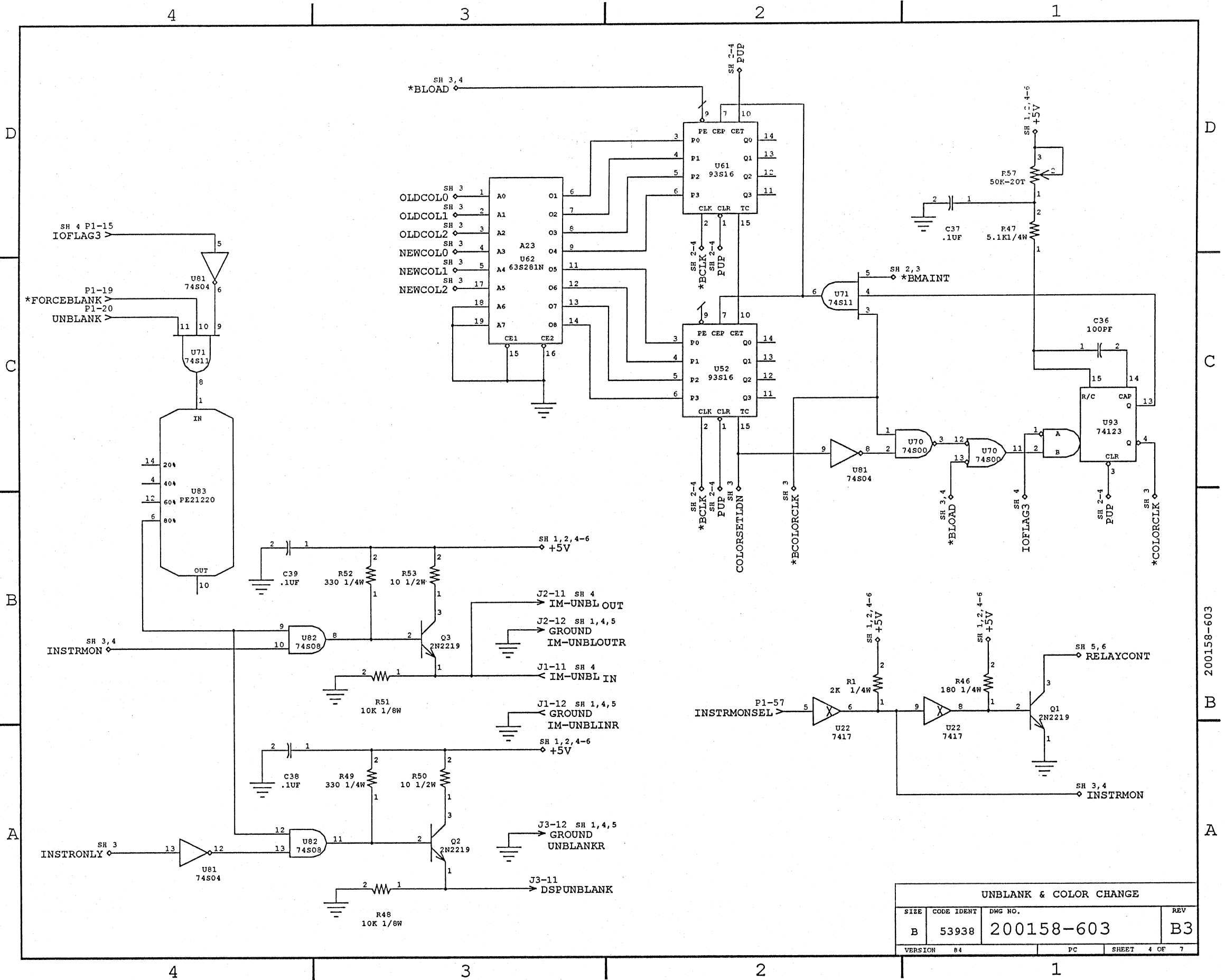


CLOCKS & DEFOCUS GENERATOR			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200158-603	B3
VERSION	84	PC	SHEET 2 OF 7

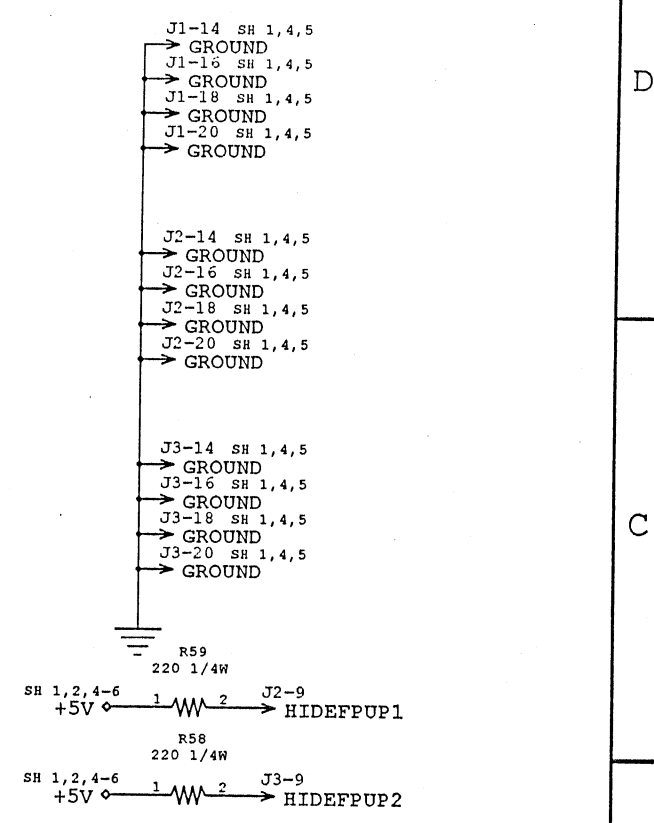
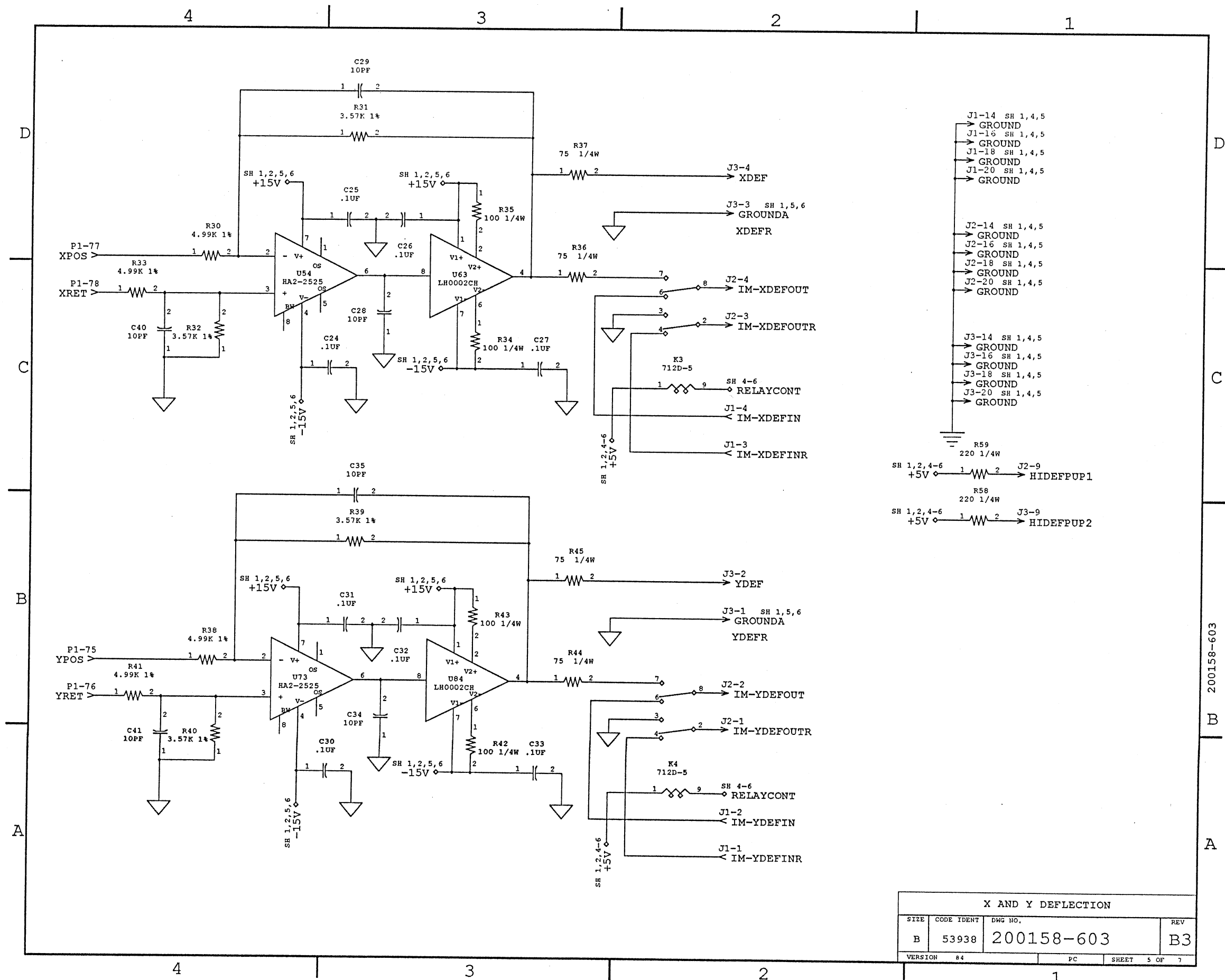
200158-603



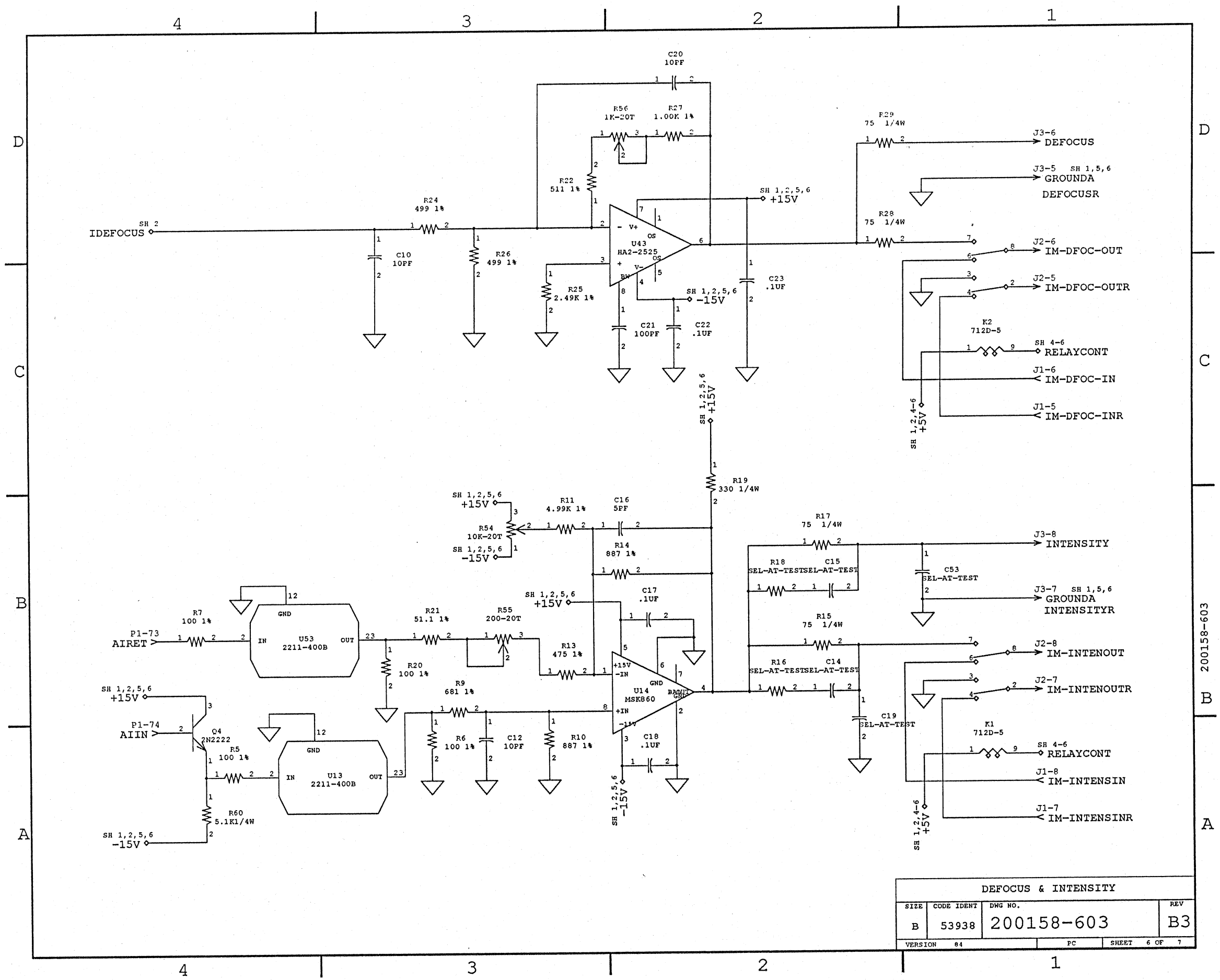
LINE COUNTER & COLOR DECODER			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200158-603	B3
VERSION	84	PC	SHEET 3 OF 7



UNBLANK & COLOR CHANGE			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200158-603	B3
VERSION 84		PC	SHEET 4 OF 7



X AND Y DEFLECTION			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200158-603	B3
VERSION	84	PC	SHEET 5 OF 7



DEFOCUS & INTENSITY			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200158-603	B3
VERSION	84	PC	SHEET 6 OF 7

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	IM-YDEFINR	5 A2	P1	53	In	*INCN	3 B4	*BMAINT	P1	23	Out	2 D3	LDANREGS	P1	39	In	2 C1	
J1	2	In	IM-YDEFIN	5 A2	P1	57	In	INSTRMONSEL	4 B2	*CHAN	P1	45	In	2 D4	NCOUNTDONE	P1	3	Out	3 A2	
J1	3	In	IM-XDEFINR	5 C2	P1	58	In	GROUND	1 B2	*CLK	P1	52	In	2 C4	SDYSEL	P1	32	Out	2 A4	
J1	4	In	IM-XDEFIN	5 C2	P1	59	In	GROUND	1 B2	*FORCEBLANK	P1	19	In	2 C4	SERIN	P1	33	In	2 B4	
J1	5	In	IM-DFOC-INR	6 C1	P1	60	In	XMD12	3 C3	*GRN	J1	17	In	3 C4	SEROUT	P1	5	Out	3 B1	
J1	6	In	IM-DFOC-IN	6 C1	P1	61	In	GROUND	3 C3	*GRN	J2	17	Out	3 C1	SHIFT	P1	29	In	2 D4	
J1	7	In	IM-INTENSINR	6 A1	P1	62	In	*LDN	4 B4	*GRN3	J3	17	Out	3 C1	UNBLANK	P1	20	In	4 C4	
J1	8	In	IM-INTENSIN	6 A1	P1	63	In	DDXB4	4 B4	*HOR	J1	19	In	3 D1	XDEF	J3	4	Out	5 D2	
J1	11	In	IM-UNBL	4 B3	P1	64	In	XMD11	3 C3	*HOR	J2	19	In	3 C1	XMD10	P1	65	In	3 C3	
J1	12	In	GROUND	4 B3	P1	65	In	XMD10	3 C3	*HOR3	J3	19	Out	3 B1	XMD11	P1	64	In	3 C3	
J1	13	In	*ORG	3 D1	P1	66	In	XMD9	3 C3	*INCN	P1	53	In	3 B4	XMD12	P1	60	In	3 C3	
J1	14	Out	GROUND	3 D1	P1	67	In	XMD8	3 C3	*LDN	P1	62	In	3 B4	XMD13	P1	59	In	3 C3	
J1	15	In	*YEL	3 D1	P1	68	In	DDYB4	4 B4	*ORG	J1	13	In	3 D1	XMD14	P1	49	In	3 C2	
J1	16	Out	GROUND	3 D1	P1	69	In	DDYB3	4 B4	*ORG3	J2	13	Out	3 C1	XMD15	P1	50	In	3 C2	
J1	17	In	*GRN	3 D1	P1	70	In	DDYB2	4 B4	*SHIF TACOF S	P1	26	In	3 C4	XMD8	P1	67	In	3 C4	
J1	18	Out	GROUND	3 D1	P1	71	In	GROUND	4 B4	*YEL	J1	15	In	3 D1	XMD9	P1	66	In	3 C3	
J1	19	In	*HOR	3 D1	P1	72	In	DDYB1	4 B4	*YEL3	J2	15	Out	3 C1	XRET	P1	77	In	3 D4	
J1	20	Out	GROUND	3 D1	P1	73	In	AIRET	4 B4	+15V	P1	80	In	2 B2	YDEF	J3	2	Out	5 B2	
J2	2	Out	IM-YDEFOUTR	5 B2	P1	74	In	AIIN	4 A4	+5VIN	P1	2	In	1 C4	YMD14	P1	36	In	5 D2	
J2	3	Out	IM-YDEFOUT	5 B2	P1	75	In	YPOS	4 B4	-15V	P1	79	In	1 B2	YMD15	P1	37	In	5 D2	
J2	4	Out	IM-XDEFOUTR	5 C2	P1	76	In	YRET	4 B4	AIIN	P1	74	In	6 A4	YPOS	P1	75	In	5 B4	
J2	5	Out	IM-XDEFOUT	5 C2	P1	77	In	XPOS	4 D4	AIRET	P1	73	In	6 B4	YRET	P1	76	In	5 B4	
J2	6	Out	IM-DFOC-OUTR	6 C1	P1	78	In	XRET	4 C4	BETA1	P1	14	Out	2 A4	YSETL	P1	24	In	5 A1	
J2	7	Out	IM-DFOC-OUT	6 D1	P1	79	In	-15V	2 B2	BETA2	P1	13	Out	2 A4						
J2	8	Out	IM-INTENOUTR	6 B1	P1	80	In	+15V	1 B2	BETA3	P1	7	Out	2 A4						
J2	9	Out	IM-INTENOUT	6 B1	P1					BETA4	P1	9	Out	2 A3						
J2	11	Out	HIDEFPUP1	5 C1	P1					COMPSETL	P1	4	Out	3 A2						
J2	12	Out	IM-UNBL	4 B3	P1					DDXB0	P1	43	In	3 D2						
J2	13	Out	GROUND	4 B3	P1					DDXB1	P1	42	In	3 D2						
J2	14	Out	*ORG	3 C1	P1					DDXB2	P1	35	In	3 D2						
J2	15	Out	GROUND	3 C1	P1					DDXB3	P1	38	In	3 D2						
J2	16	Out	*YEL	3 C1	P1					DDXB4	P1	63	In	3 C4						
J2	17	Out	GROUND	3 C1	P1					DDYB1	P1	72	In	3 B4						
J2	18	Out	*GRN	3 C1	P1					DDYB2	P1	70	In	3 B4						
J2	19	Out	GROUND	3 C1	P1					DDYB3	P1	69	In	3 B4						
J2	20	Out	GROUND	3 C1	P1					DDYB4	P1	68	In	3 B4						
J3	1	Out	GROUND	5 B2	P1					DDYB6	P1	47	In	3 D1						
J3	2	Out	YDEF	5 B2	P1					DEFOCUS	J3	6	Out	6 D1						
J3	3	Out	GROUND	5 D2	P1					DSPUNBLANK	J3	11	Out	6 A3						
J3	4	Out	XDEF	5 D2	P1					GROUND	J1	12	In	6 B3						
J3	5	Out	GROUND	5 D1	P1					GROUND	J1	14	Out	6 D1						
J3	6	Out	DEFOCUS	6 D1	P1					GROUND	J1	16	Out	6 D1						
J3	7	Out	GROUND	6 B1	P1					GROUND	J1	18	Out	6 D1						
J3	8	Out	INTENSITY	6 B1	P1					GROUND	J1	20	Out	6 D1						
J3	9	Out	HIDEFPUP2	5 B1	P1					GROUND	J2	12	Out	6 B3						
J3	11	Out	DSPUNBLANK	4 A3	P1					GROUND	J2	14	Out	6 B3						
J3	12	Out	GROUND	4 A3	P1					GROUND	J2	16	Out	6 C1						
J3	13	Out	*ORG3	3 C1	P1					GROUND	J2	18	Out	6 C1						
J3	14	Out	GROUND	3 C1	P1					GROUND	J2	20	Out	6 C1						
J3	15	Out	*YEL3	3 C1	P1					GROUND	J3	12	Out	6 A3						
J3	16	Out	GROUND	3 C1	P1					GROUND	J3	14	Out	6 C1						
J3	17	Out	*GRN3	3 C1	P1					GROUND	J3	16	Out	6 C1						
J3	18	Out	GROUND	3 C1	P1					GROUND	J3	18	Out	6 C1						
J3	19	Out	*HOR3	3 B1	P1					GROUND	J3	20	Out	6 C1						
J3	20	Out	GROUND	3 C1	P1					GROUND	P1	1	In	1 C4						
P1	1	In	GROUND	5 C4	P1					GROUND	P1	11	In	1 C4						
P1	2	In	+5VIN	5 C4	P1					GROUND	P1	21	In	1 C4						
P1	3	Out	NCOUNTDONE	5 A2	P1					GROUND	P1	31	In	1 B4						
P1	4	Out	COMPSETL	5 A2	P1					GROUND	P1	41	In	1 B4						
P1	5	Out	SEROUT	5 B1	P1					GROUND	P1	51	In	1 B4						
P1	7	Out	BETA3	4 A4	P1					GROUND	P1	61	In	1 B4						
P1	9	Out	BETA4	4 A3	P1					GROUND	P1	71	In	1 B4						
P1	11	In	GROUND	4 C4	P1					GROUND	J3	1	Out	5 B2						
P1	13	Out	BETA2	4 A4	P1					GROUND	J3	3	Out	5 D2						
P1	14	Out	BETA1	4 A4	P1					GROUND	J3	5	Out	6 D1						
P1	15	In	IOFLAG3	4 D4	P1					GROUND	J3	7	Out	6 B1						
P1	19	In	*FORCEBLANK	4 C4	P1					HIDEFPUP1	P1	58	In	1 B2						
P1	21	In	UNBLANK	4 C4	P1					HIDEFPUP2	J2	9	Out	5 C1						
P1	23	Out	GROUND	4 C4	P1					IM-DFOC-IN	J1	6	In	6 C1						
P1	24	Out	*BMAINT	4 D3	P1					IM-DFOC-INR	J1	5	In	6 C1						
P1	25	In	YSETL	4 A1	P1					IM-DFOC-OUT	J2	6	Out	6 D1						
P1	26	In	XSETL	4 A1	P1					IM-DFOC-OUTR	J2	5	Out	6 C1						
P1	29	In	*SHIF TACOF S	4 C4	P1					IM-INTENOUT	J2	8	Out	6 B1						
P1	31	In	SHIFT	4 D4	P1					IM-INTENOUTR	J2	7	Out	6 B1						
P1	32	Out	GROUND	4 B4	P1					IM-INTENSIN	J1	8	In	6 A1						
P1	33	Out	SDYSEL	4 B4	P1					IM-INTENSINR	J1	7	In	6 A1						
P1	35	In	SERIN	4 B4	P1					IM-UNBL	J1	11	In	4 B3						
P1	36	In	DDXB2	4 B4	P1					IM-UNBL	J2	11	Out	4 B3						
P1	37	In	YMD14	5 D2	P1					IM-XDEFIN	J1	4	In	5 C2						
P1	38	In	YMD15	5 D2	P1					IM-XDEFINR	J1	3	In	5 C2						
P1	39	In	DDXB3	4 B4	P1					IM-XDEFOUT	J2	4	Out	5 C2						
P1	41	In	LDANREGS	4 C1	P1					IM-XDEFOUTR	J2	3	Out	5 C2						
P1	42	In	GROUND	4 B4	P1					IM-YDEFIN	J1	2	In	5 A2						
P1	43	In	DDXB1	4 B4	P1					IM-YDEFINR	J1	1	In	5 A2						
P1	45	In	*CHAN	4 D4	P1					IM-YDEFOUT	J2	2	Out	5 B2						
P1	47	In	DDYB6	4 D1	P1					IM-YDEFOUTR	J2	1	Out	5 B2						
P1	49	In	XMD14	3 C2	P1					INSTRMONSEL	P1	57	In	4 B2						
P1	50	In	XMD15	3 C2	P1					INTENSITY	J3	8	Out	6 B1						
P1	51	In	GROUND	3 B4	P1					IOFLAG3	P1	15	In	4 D4						
P1	52	In	*CLK	2 C4	P1															

D

C

B

A

D

C

B

A

200158-603

Connector summary			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200158-603	B3
VERSION	84	CS	SHEET 7 OF 7

4

3

2

1

4

3

2

1



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200159-100

REV: B6 = BG

DESC: CARD ASSY, X-Y D/A CONVERTER, PC

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BD,P02R·PCBD6X11	53938	EVANS & SUTHERLAND.	200159-500	200159-500	1
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
007	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
011	HW,SCKT SCKT,20P	91506	AUGAT INC.	510-AG-91-D-20	801612-304	2
012	HW,SCKT SCKT,20P	91506	AUGAT INC.	510-AG-91-D-20	801612-308	2
	AS R EQ'D	71124	BRAND-REX CO	28-128-1422-WHITE	802067-009	1
	C1	59821	MEPCO/CENTRALAB	DD-100	804103-100	1
	C11	56289	SPRAGUE ELECTRONIC CO.	M83421/01-5089	804165-103	1
	C3 C2 C9 C10	56289	SPRAGUE ELECTRONIC CO.	137D826X0050F2 (82UF)	804142-826	4
	C4 C5 C8	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	3
	C6 C7 C12 THRU C19	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	10
	CR5 CR6	01002	GENERAL ELECTRIC CO. CAP	1N4148	814148-001	2
008	E1	88245	WINCHESTER ELEC USECO DIV	1282B-1 (.090,TURRET)	802329-001	1
009	F1	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
	Q1 Q2	17856	SILICONIX INC	2N4861 (FET,TO-18)	820075-001	2
	R1	24546	BRADFORD ELECTRONIC (RES)	NA60-8.87K-1%	803413-887	1
	R11	24546	BRADFORD ELECTRONIC (RES)	NA60-2.15K-1%	803413-215	1
	R12 R13 R19	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF103J	803201-103	3
	R14	4G187	BOURNS INC. (TRIMPOTS)	3352P-1-501	803506-501	1
	R15	4G187	BOURNS INC. (TRIMPOTS)	3352P-1-102	803506-102	1
	R16	4G187	BOURNS INC. (TRIMPOTS)	3352P-1-203	803506-203	1
	R17	24546	BRADFORD ELECTRONIC (RES)	NA60-20.0K-1%	803414-200	1
	R18 IN SERT AT TEST	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF156J	803201-156	1
	R5 R9	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF511J	803201-511	2
	R6	24546	BRADFORD ELECTRONIC (RES)	NA60-3.40K-1%	803413-340	1
	R7	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	1
	R8,R10	24546	BRADFORD ELECTRONIC (RES)	NA60-2.00K-1%	803413-200	2
	U 41	53938	EVANS & SUTHERLAND.	200390-100	200390-100	1
	U22 U21 U20 U13 U40 U30 U23	01295	TEXAS INSTR, SEMICON DIV.	SN74195N	807695-446	7
	U43	51640	ANALOG DEVICES INC. MICRO	DAC12QZ-CB	801254-002	1
	U44	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1
	U54 U45	01295	TEXAS INSTR, SEMICON DIV.	SN74283N	807715-246	2
	U64	53938	EVANS & SUTHERLAND.	807820-016-A76	807820-016-A76	1
	U65 U55	07263	FAIRCHILD IC'S & SEMICON	74161PC/DC	807661-246	2
	U70 U72	51640	ANALOG DEVICES INC. MICRO	44K	806044-888	2
	U73	27014	NATIONAL SEMICONDUCTOR	DS8800H (DSCONTD)	806880-888	1
	U74 U10	07263	FAIRCHILD IC'S & SEMICON	74H00PC	807400-255	2
	U75 U34 U35	01295	TEXAS INSTR, SEMICON DIV.	SN74194N	807694-646	3

41 ITEMS LISTED

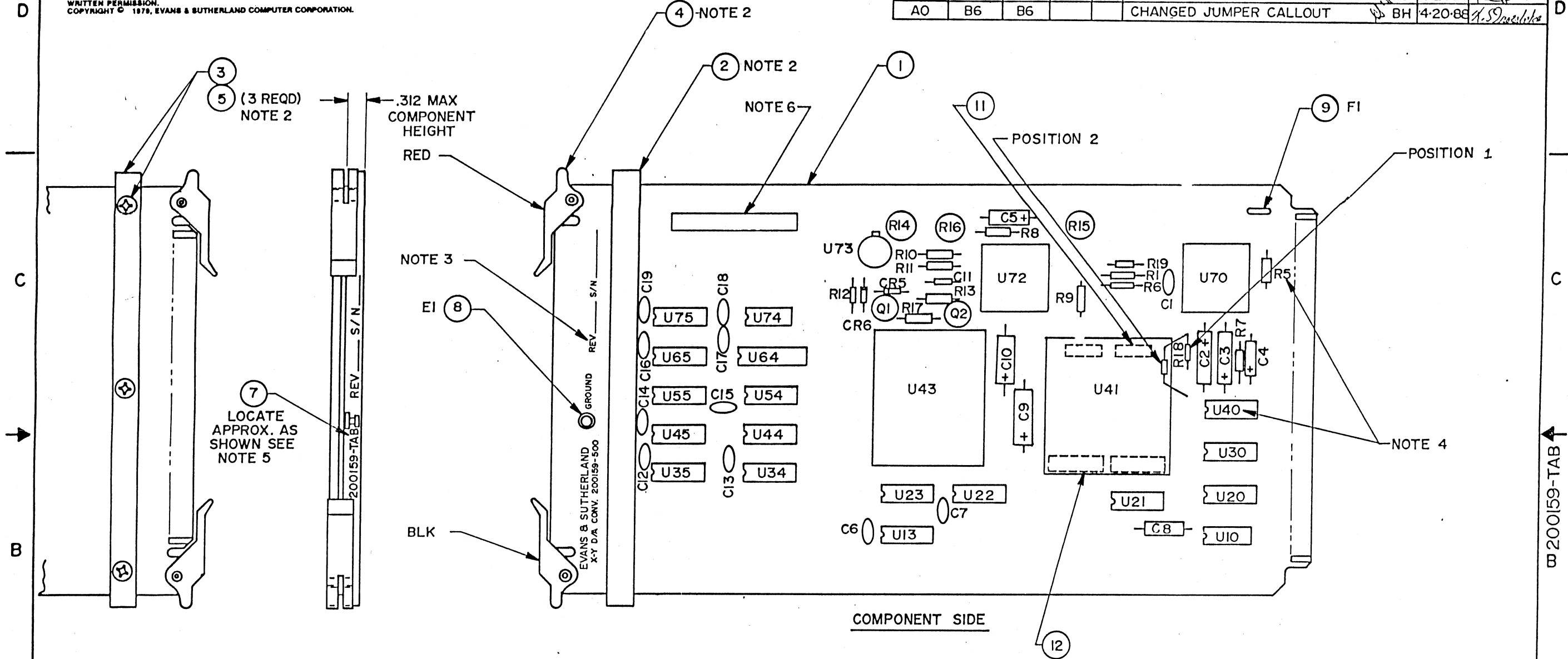


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REV	DESCRIPTION	DATE	APPROVED
-102	B1 B1	11-20-80	J.L.P.
-	B2 B2	5-20-82	GR
-	B3 B3	8-11-83	SM
-	B4 B4	7-5-84	BH
-	B5 B5	10-24-84	MB
A0	B6 B6	4-20-85	BH



NOTES:

- ASSEMBLE PER E & S STANDARD.
- INSTALL CARD EJECTORS (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
- MARK REV. LEVEL AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
- ITEM NUMBERS ON THE DRAWING CORRESPONDS WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
- MARK E & S ASSY. NO., S/N & REV. LEVEL ON ITEM 7.
- MAKE LABEL, "VERT. OFFSET R102", USING THE BAR CODE PRINTER. INSTALL LABEL ON CARD.

REFERENCE DOCUMENTS

- LOGIC DIAGRAM 200159-TAB
- PARTS LIST PL200159-TAB
- ARTWORK 200159-500

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± — .xxx ± — ANGLES ± — ✓	DRAWN J PETERSON 11-20-80	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108		
	CHECKED K. MAHON 11-21-80			
	MECH.	CARD ASSEMBLY X-Y D/A CONVERTER (P.C.)		
	ELEC.			
	PROJ. ENG. Ron Speitz 25 Nov 80	SCALE 1/1 DO NOT SCALE SHEET 1 OF 2		
	APPROVED			
MATERIAL SEE PARTS LIST		SIZE C	CODE IDENT NO 53938	REV SEE TAB TABLE
FINISH		200159-TAB		

-1XX

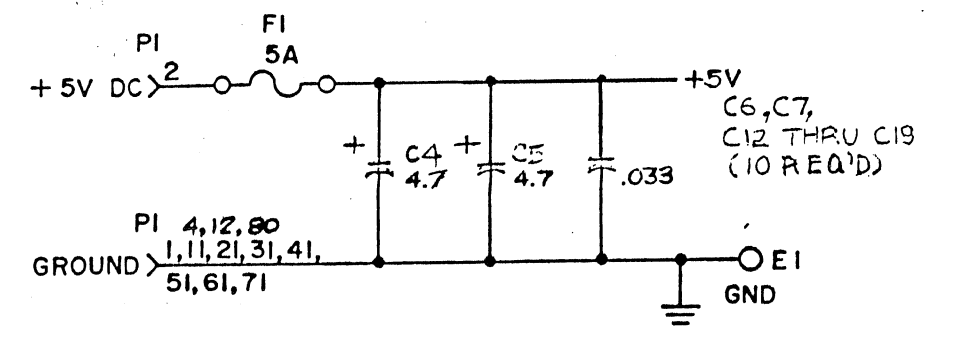
REVISIONS							
-602	-601	-600	ZONE	LTR	DESCRIPTION	DATE	APPROVED
-	-	A1			R14 R15 R16 CHNGD ON DWG	1-10-78	RS
-	A1	-			SHT 2 R6 WAS 3.40K	5-6-80	RM
-	-	A2			R2 WAS 150K ω	1-10-78	RS
-	-	A3			C3 C4 C9 E C10 CHNGD 4.7UF TO 82UF	6-28-78	RS
-	B0	B0			ADDED NOTE 4	5-6-80	RS
-	B1	B1			TAB DWG 5 -100 & -101	11-4-80	RS
-	B2	B2			REMOVED C,CR,R AND U LISTINGS SHT 1 GR	5-20-82	D. Hooper
-	B3	B3			REWORKED U41	8-12-83	D. Hooper
-	B4	B4			CHANGED P/N OF C11	7-5-84	RS
-	B5	B5			ADD R19 + PIN P1-8	10-24-84	RS
A0	B6	B6			CHANGED JUMPER CALLOUT	04-20-88	RS

3. SERIAL SHIFT LOOP SEQUENCE
 P1.68, 20.12, 21.12, 30.12, 40.12, P1.47
 P1.45, 13.12, 22.12, 23.12, P1.42.
2. NUMBERS SHOWN REFER TO CONNECTOR P1.
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.
 RESISTORS ARE 1/4 WATT, $\pm 5\%$ TOLERANCE.
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).
 ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V).
 ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).
 UNLESS OTHERWISE SPECIFIED;

NOTES:

NOTES CONT:

4. R18 IS TO BE INSTALLED AT SYSTEM TEST TO COMPENSATE U41, D/A CONVERTER. INSTALL AT POSITION 1 IF THERE IS A GAP IN THE DOT ARRAY PATTERN. INSTALL IN POSITION 2 IF THERE IS AN OVERLAP IN THE DOT ARRAY PATTERN. NOMINAL VALUE FOR R18 IS 15 MEGOHMS, BUT VALUES BETWEEN 10 AND 22 MEGOHMS MAY BE USED. R18 MAY ALSO BE OMITTED.



		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx \pm _____ .xxx \pm _____ ANGLES \pm _____ ✓	CONTRACT NO.	SEE SEPARATE PARTS LIST	
			DRAWN <i>R. Speirs</i> 5-18-77	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
			CHECKED <i>R. Speirs</i> 3 JUN 77	X-Y D/A CONVERTER P.C.	
			MECH		
			ELEC <i>R. Speirs</i> 24 OCT 77		
			PROJ. ENG		
			APPROVED <i>R. Speirs</i> 24 OCT 77		
200159-100	NOVO SP	MATERIAL	SIZE	CODE IDENT NO	REV. 5/78
NEXT ASSY	USED ON	FINISH	C	53938	200159-TAB
APPLICATION			SCALE NONE	SHEET 1 OF 4	

200159 TAB

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

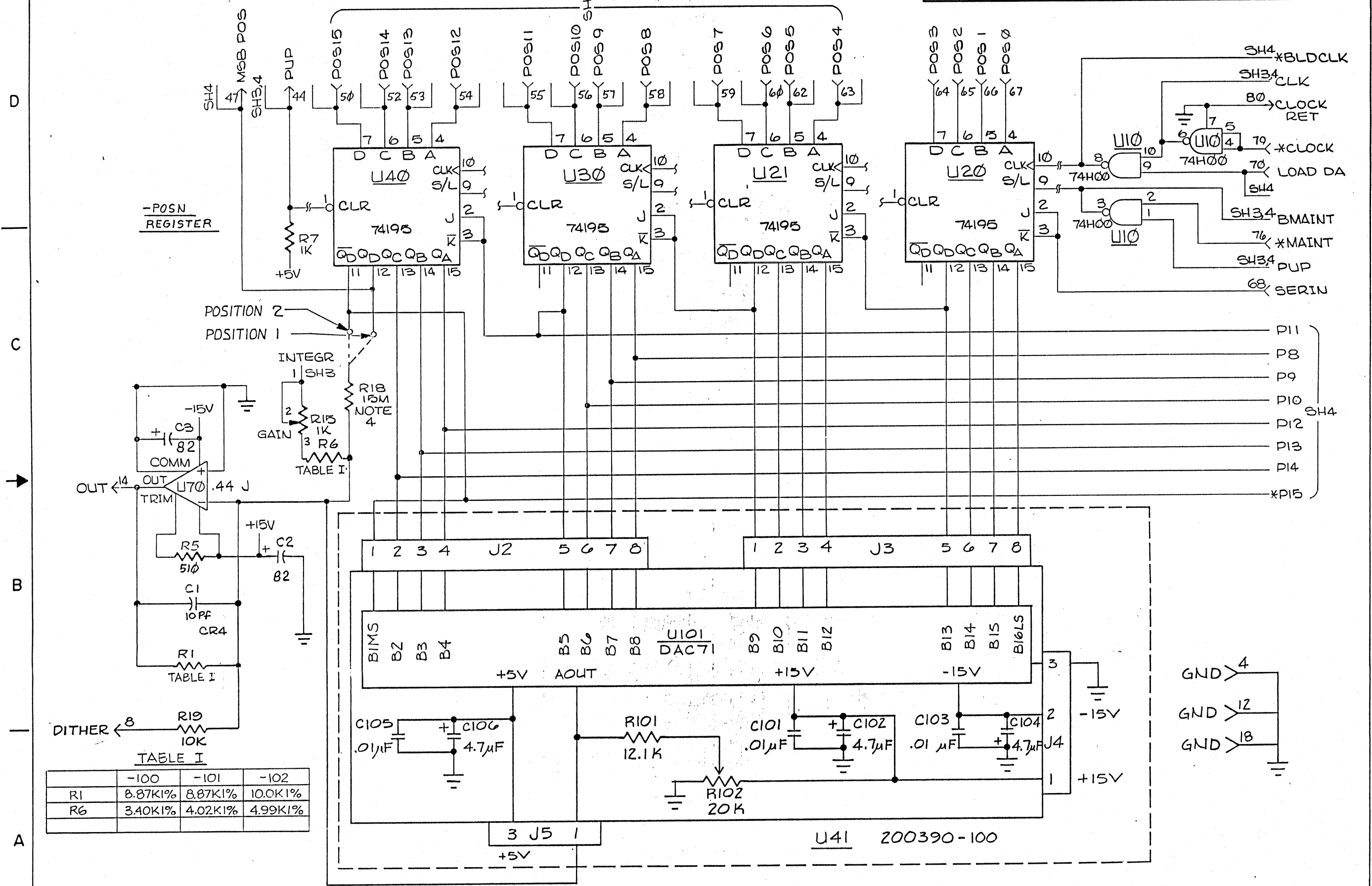


TABLE I

	-100	-101	-102
R1	8.87K1%	8.87K1%	10.0K1%
R6	3.40K1%	4.02K1%	4.99K1%

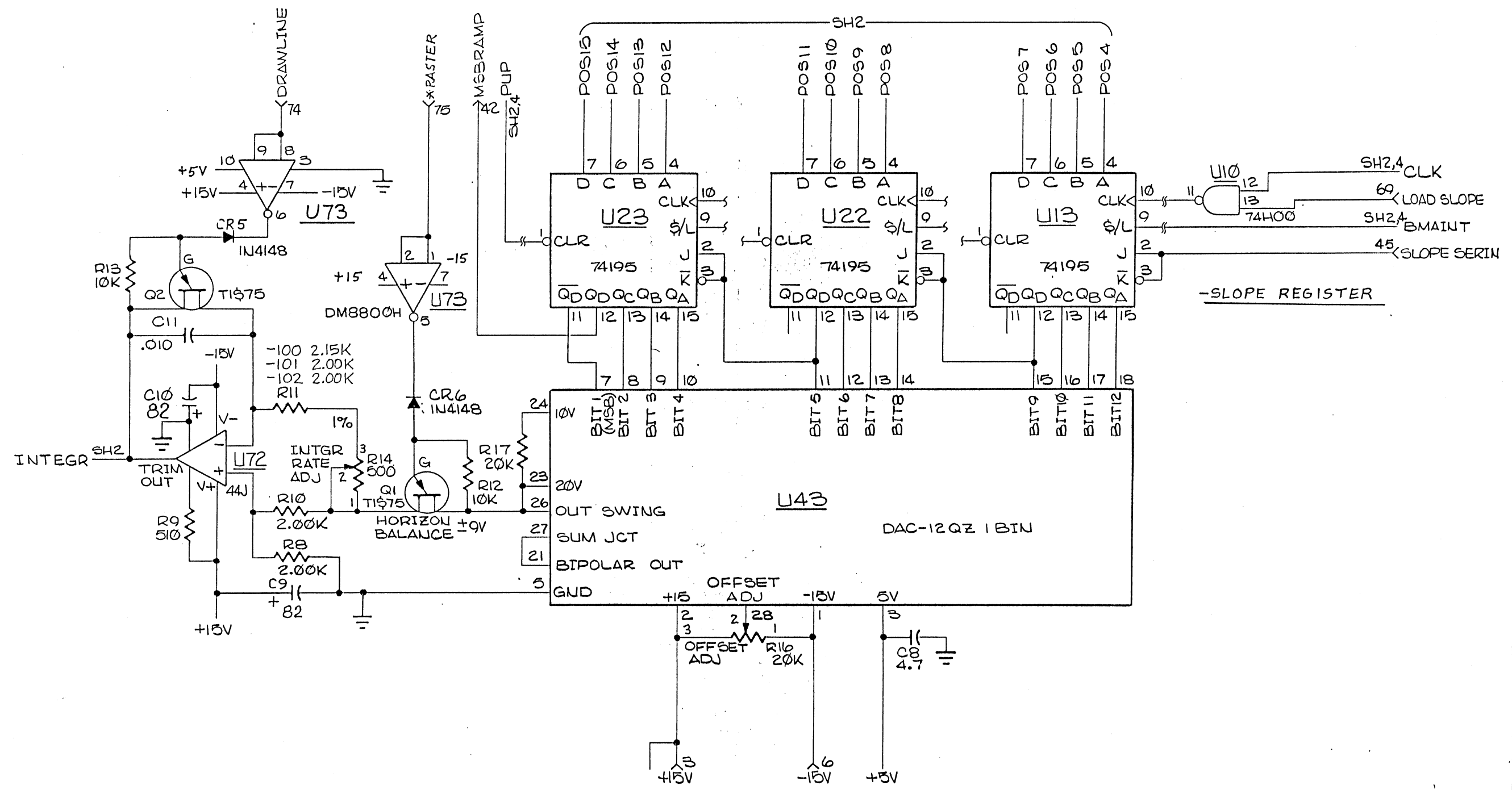
POSITION GENERATOR

-60X

SIZE	CODE IDENT NO	REV
C	53938	SEE TAB TABLE
SCALE NONE		SHEET 2 OF 4

D
C
B
A

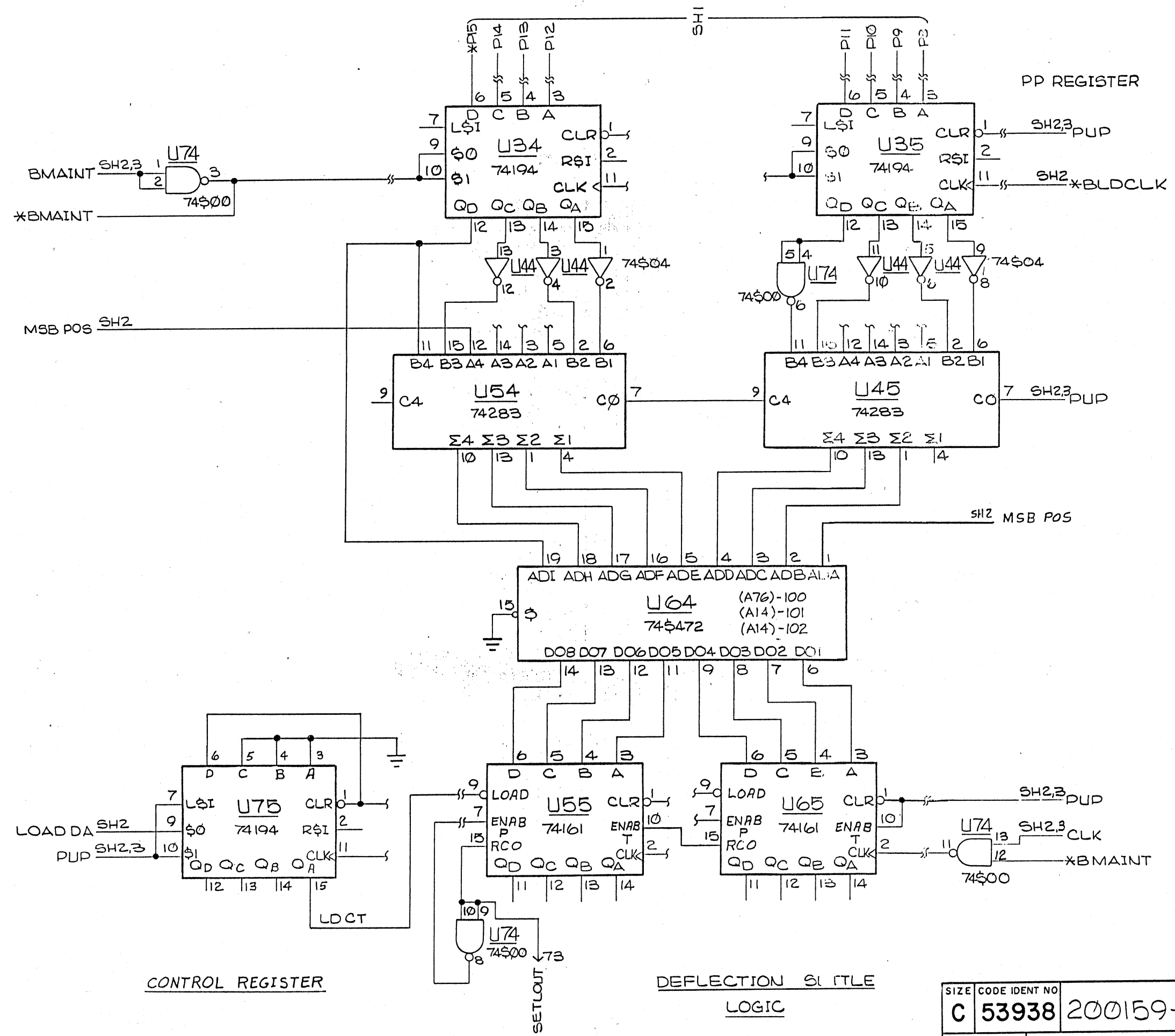
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



SWEEP GENERATOR -60X

SIZE	CODE IDENT NO	REV	REV
C	53938	200159-TAB	SEE TAB TABLE
SCALE NONE	SHEET 3		OF 4

REVISED		DESCRIPTION	DATE	APPROVED
ZONE	LTR			



CONTROL REGISTER

DEFLECTION SPLIT LOGIC

SIZE	CODE IDENT NO	REV
C	53938	SEE TAB TABLE
200159-TAB		
SCALE NONE	SHEET 4 OF 4	

B 200159 - TAB

-60X



MAINTENANCE PARTS LIST

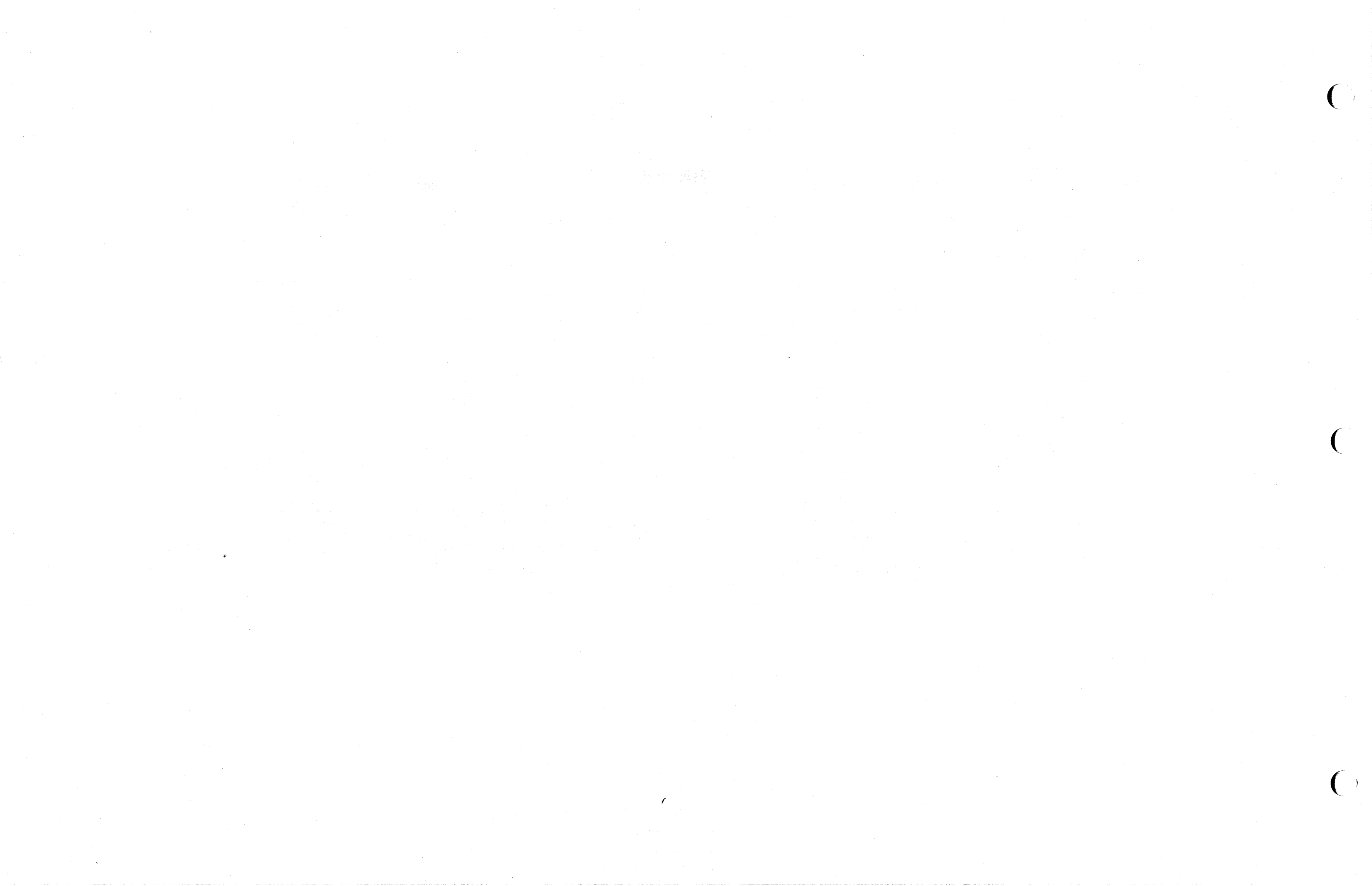
ASSEMBLY: PL 200160-102

REV: A0 = AA

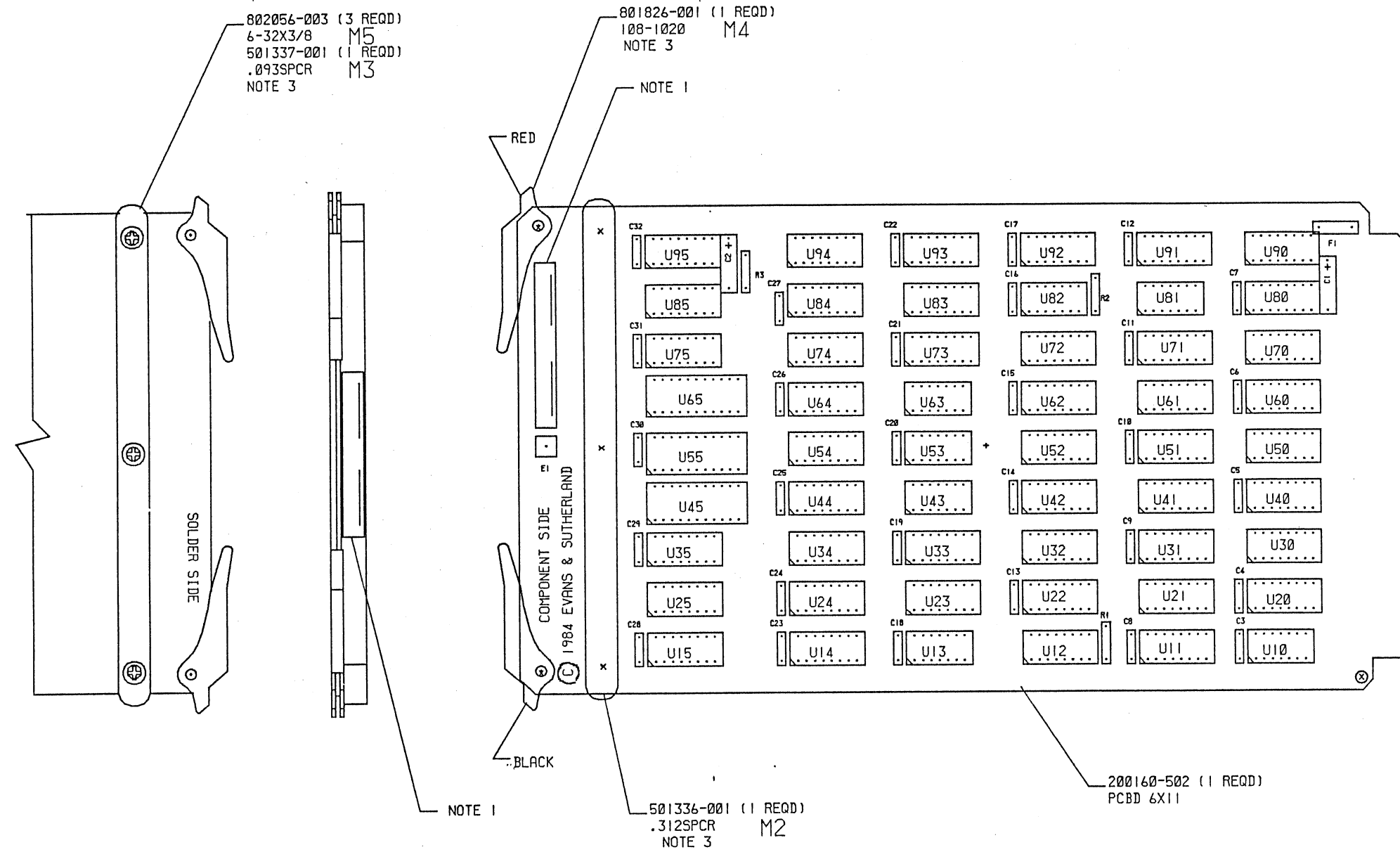
DESC: CARD ASSY, FACE GENERATOR (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD,P02R PCBD 6X11	53938	EVANS & SUTHERLAND.	200160-502	200160-502	1
C3 C4 C5 C6 C7 C8 C9 C10	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C11 C12 C13 C14 C15 C16 C17	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804169-333	30
C18 C19 C20 C21 C22 C23 C24						
C25 C26 C27 C28 C29 C30 C31						
C32						
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
M2	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8(SM-P-PH-Z)	802056-003	3
R1 R2 R3	R,,AXL 1K 1/8W	50139	ALLEN-BRADLEY CO. ELECTRO	BB1025	803300-102	3
U10 U53	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	2
U11 U12 U20 U51 U52 U60 U90	IC,TTL 74S158	01295	TEXAS INSTR, SEMICON DIV.	SN74S158N	807658-055	9
U91 U92						
U13 U81	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	2
U14 U24 U33 U44 U64 U75 U83	IC,TTL 74S195	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	9
U84 U85						
U15 U25	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	2
U21 U22 U30 U71 U72 U80	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	6
U23 U34 U54 U73 U74	IC,TTL 74173	01295	TEXAS INSTR, SEMICON DIV.	SN74173N	807701-646	5
U31 U32 U40 U61 U62 U70	IC,TTL 74S85	01295	TEXAS INSTR, SEMICON DIV.	SN74S85N	807685-055	6
U35 U95	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	2
U41 U42 U50	IC,TTL 74S258	01295	TEXAS INSTR, SEMICON DIV.	SN74S258N	807725-055	3
U43 U82	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	2
U45 U55 U65	IC,RAM 93L422	07263	FAIRCHILD IC'S & SEMICOND	93L422PC/DC (60NS)	807797-818	3
U63	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
U93	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-A56	807739-055-A56	1
U94	IC,TTL 74S134	01295	TEXAS INSTR, SEMICON DIV.	SN74S134N	807800-055	1

25 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0	SAD	10-3-86
				<i>Expens</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 INCHES FROM CARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM CARD SURFACE.
3. INSTALL CARD EJECTORS (M4) AND SPACERS (M2 & M3) AFTER WAVE SOLDERING.

REFERENCE DOCUMENTS

- SCHEMATIC _ 200160-602
- PARTS LIST _ PL200160-102

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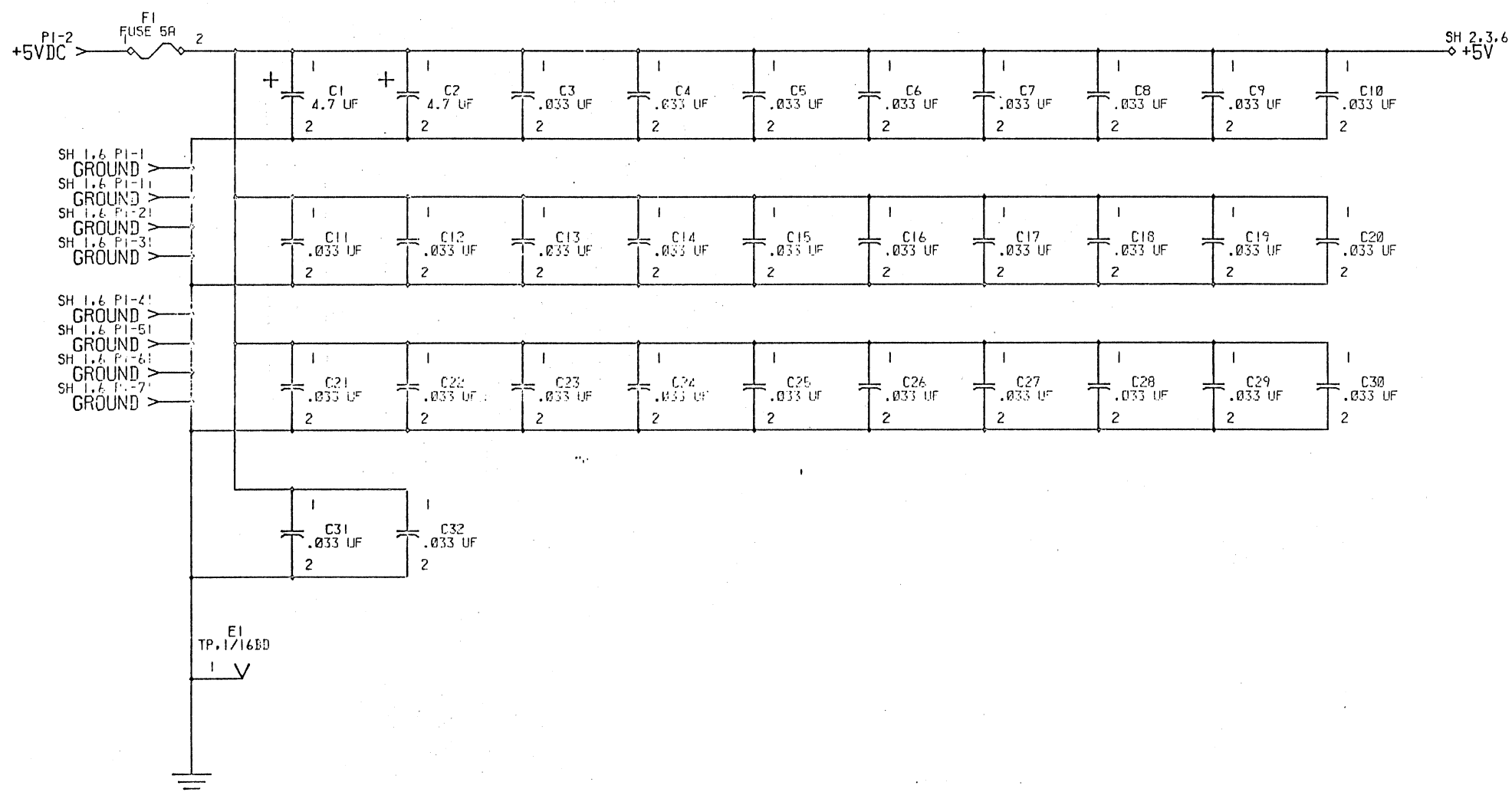
DRAWN	SUEDMAN	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
CHECKED	<i>R. Speirs</i> 10-15-86	TITLE ASSY. FACE GENERATOR (P.C.)		
ELEC ENG	R. SPEIRS <i>Expens</i>	SIZE	CODE IDENT	DWG NO.
PROJ ENG	B. KENT	C	53938	200160-102
APPROVED		REV	A0	
NEXT ASSY		VERSION	01	
MODIFIED DATE	15-OCT-86	SHEET 1 OF 1		
CREATION DATE	8-SEP-86			
FILE NAME	200160102A0.MDF			



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
 22 PIN IC, 6 AND 22
- 3. CARD CONNECTOR SYMBOL "PI-" DESIGNATES:
 INPUT SIGNALS \rightrightarrows
 OUTPUT SIGNALS $\leftarrow\leftarrow\leftarrow$
- 4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.
 $\text{---} // \text{---}$

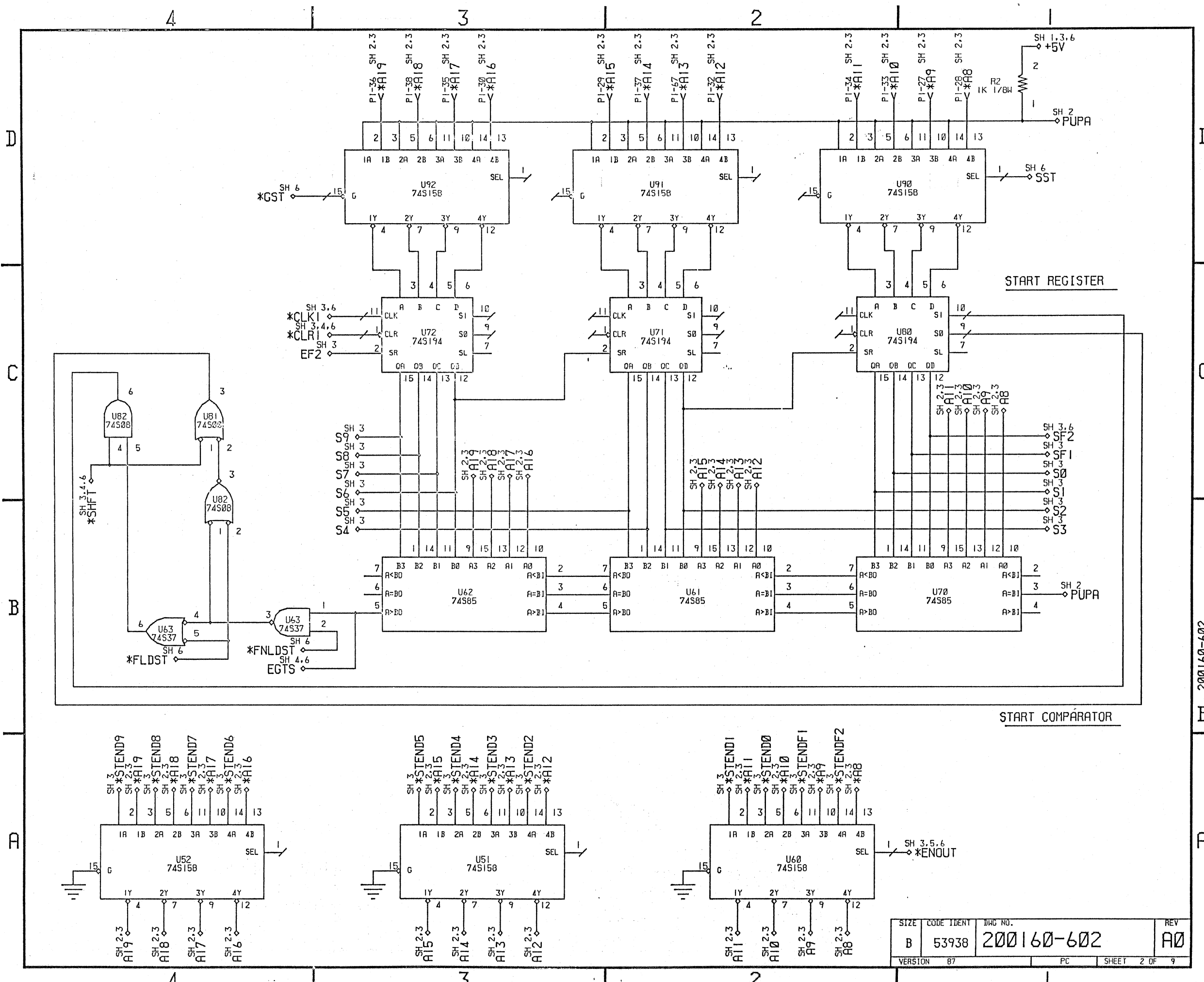
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AB	RELEASE TO AB	SAD	10-3-86



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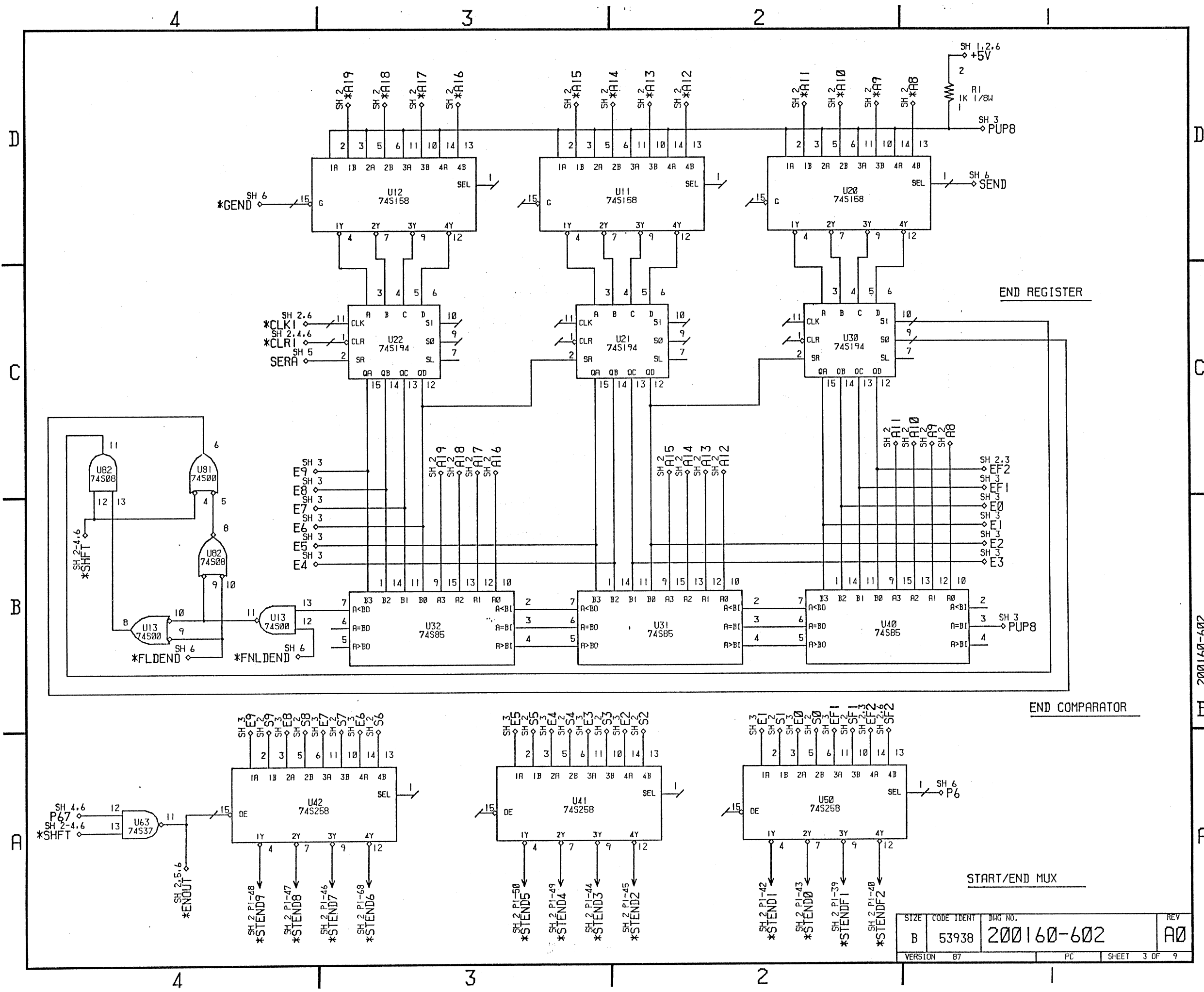
DRAWN	SUEDMAN	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
CHECKED	<i>R. Speirs</i> 10-11-86	TITLE FACE GENERATOR (P.C.)		
ELEC ENG	R. SPEIRS	SIZE	CODE IDENT	DWG NO.
PROJ ENG	B. KENT	B	53938	200160-602
APPROVED		VERSION	67	PC
NEXT ASSY		SHEET	1	OF 9
MODIFIED DATE	7-OCT-86	REV	A0	
CREATION DATE	8-SEP-86			
FILE NAME	200160100AD.HDF			

200160-602



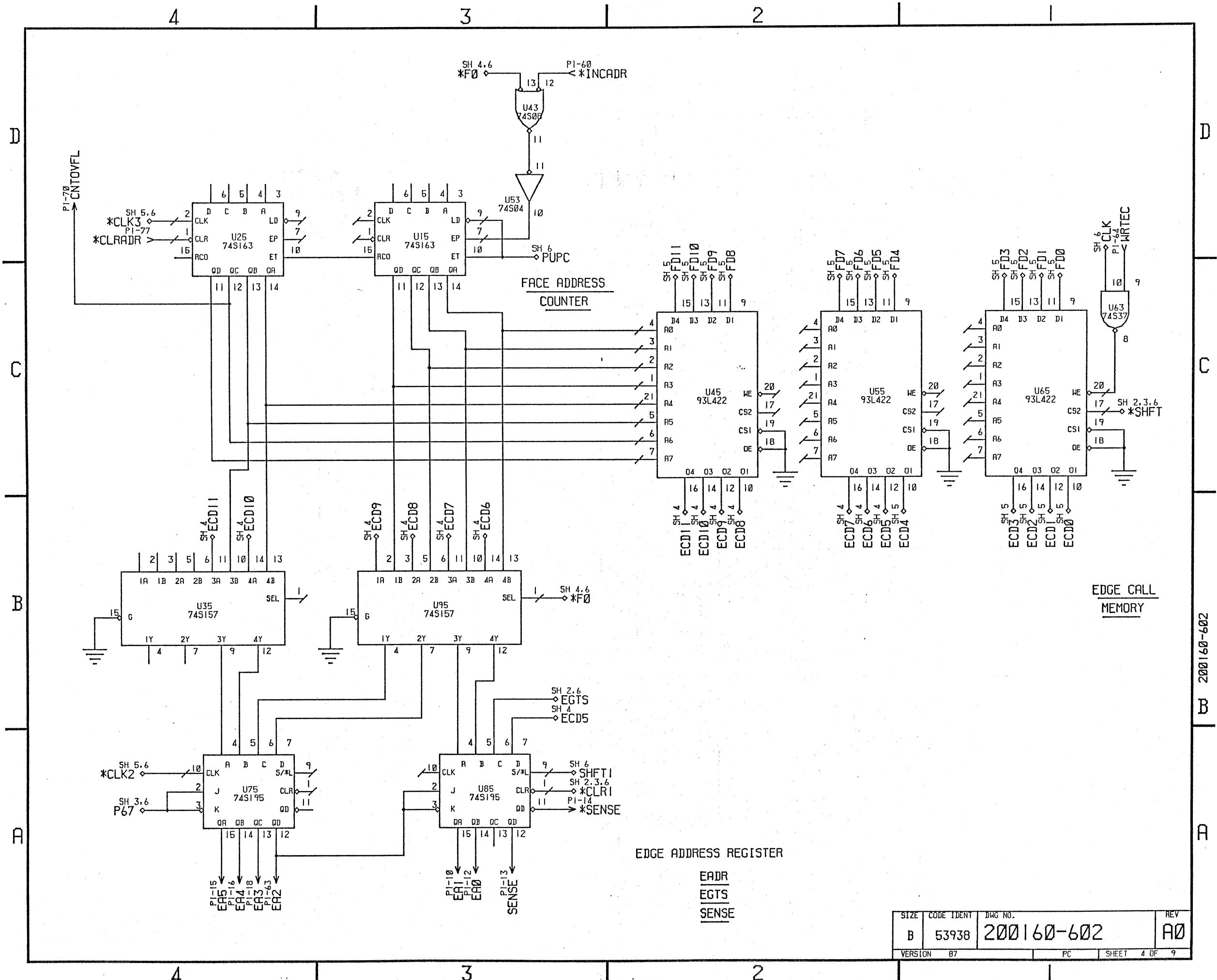
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200160-602	A0
VERSION	87	PC	SHEET 2 OF 9

200160-602



SIZE	CODE IDENT	DWG NO.	REV
B	53938	200160-602	A0
VERSION	B7	PC	SHEET 3 OF 9

200160-602

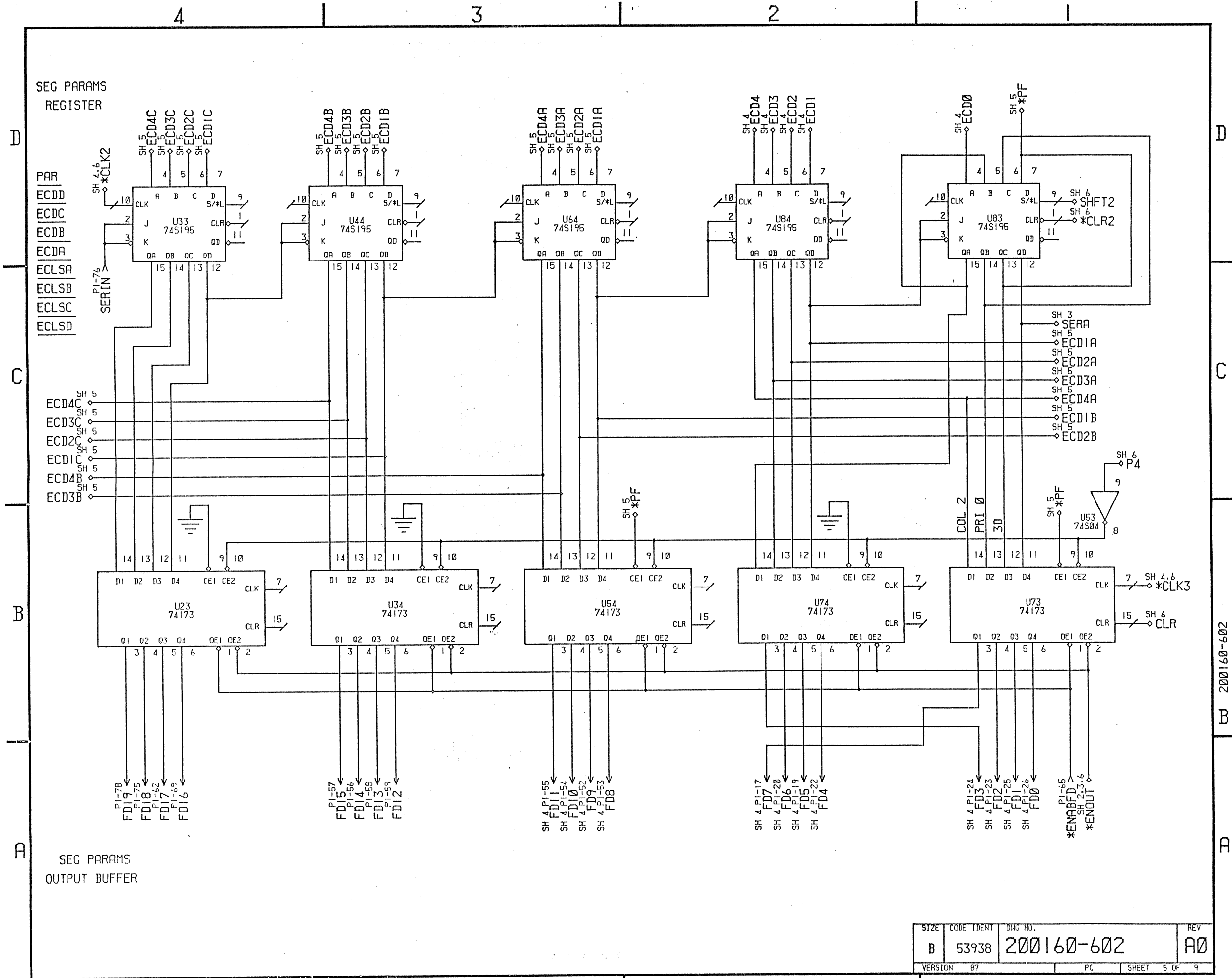


EDGE ADDRESS REGISTER

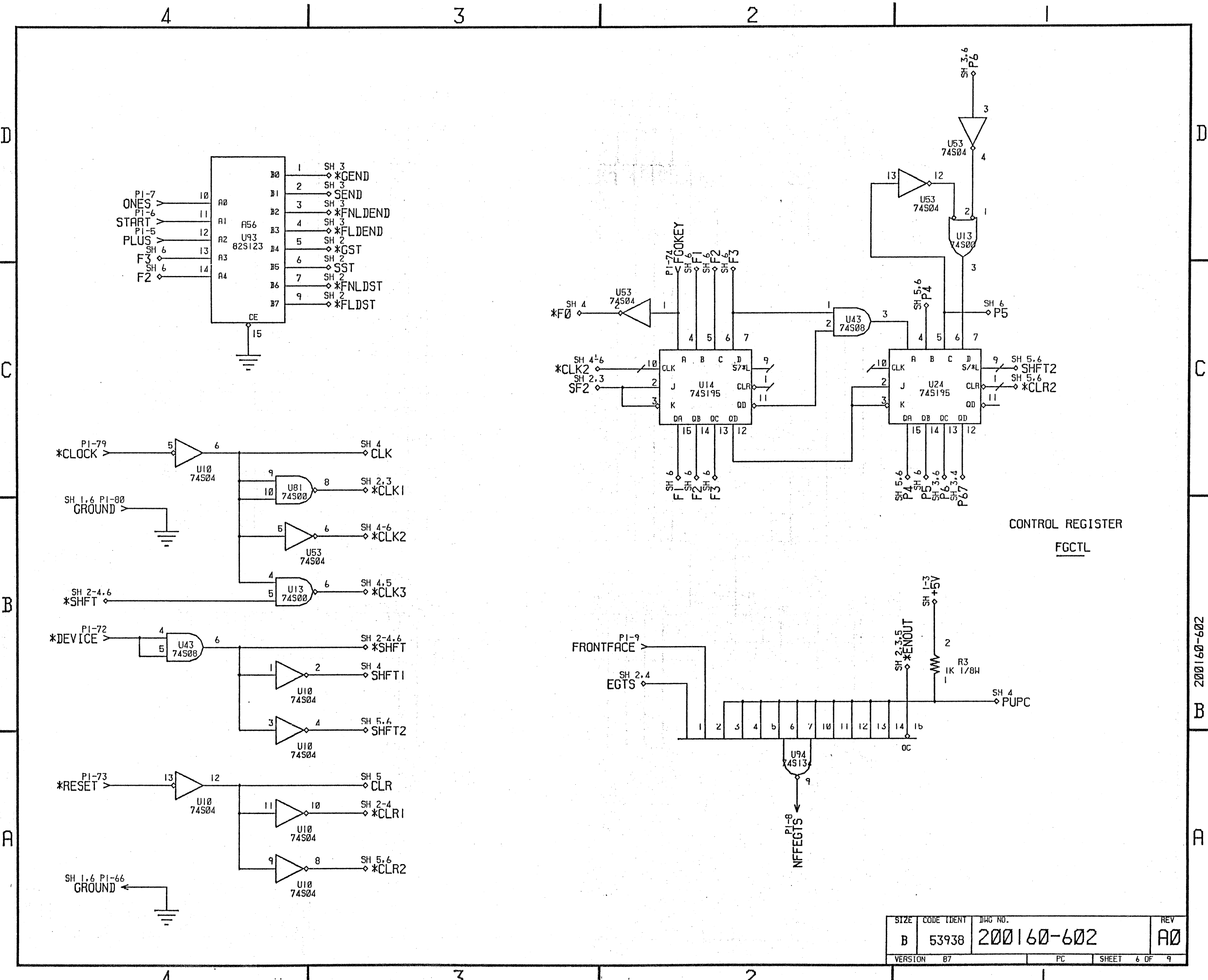
EADR
EGTS
SENSE

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200160-602	A0
VERSION	B7	PC	SHEET 4 OF 9

B 200160-602



SIZE	CODE IDENT	DWG NO.	REV
B	53938	200160-602	A0
VERSION	B7	PC	SHEET 5 OF 9



CONTROL REGISTER
FGCTL

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200160-602	A0
VERSION	B7	PC	SHEET 6 OF 9

4				3				2				1								
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	46	MALE	*STEND7	3	A3								
PI	2	FEMALE	+5VDC	1	C4		PI	47	MALE	*STEND8	3	A4								
PI	5	FEMALE	PLUS	6	D4		PI	48	MALE	*STEND9	3	A4								
PI	6	FEMALE	START	6	D4		PI	49	MALE	*STEND4	3	A3								
PI	7	FEMALE	ONES	6	D4		PI	50	MALE	*STEND5	3	A3								
PI	8	MALE	NFFEGTS	6	A2		PI	51	FEMALE	GROUND	1	B4								
PI	9	FEMALE	FRONTFACE	6	B2		PI	52	MALE	FD9	5	A3								
PI	10	MALE	EA1	4	A3		PI	53	MALE	FD8	5	A3								
PI	11	FEMALE	GROUND	1	C4		PI	54	MALE	FD10	5	A3								
PI	12	MALE	EA0	4	A3		PI	55	MALE	FD11	5	A3								
PI	13	MALE	SENSE	4	A3		PI	56	MALE	FD14	5	A3								
PI	14	MALE	*SENSE	4	A3		PI	57	MALE	FD15	5	A3								
PI	15	MALE	EA5	4	A4		PI	58	MALE	FD13	5	A3								
PI	16	MALE	EA4	4	A4		PI	59	MALE	FD12	5	A3								
PI	17	MALE	FD7	5	A2		PI	60	FEMALE	*INCADR	4	D3								
PI	18	MALE	EA3	4	A4		PI	61	FEMALE	GROUND	1	B4								
PI	19	MALE	FD5	5	A2		PI	62	MALE	FD17	5	A4								
PI	20	MALE	FD6	5	A2		PI	63	MALE	EA2	4	A4								
PI	21	FEMALE	GROUND	1	C4		PI	64	FEMALE	WRTEC	4	C1								
PI	22	MALE	FD4	5	A2		PI	65	FEMALE	*ENABFD	5	A1								
PI	23	MALE	FD2	5	A1		PI	66	MALE	GROUND	6	A4								
PI	24	MALE	FD3	5	A1		PI	67	FEMALE	*A13	2	D2								
PI	25	MALE	FD1	5	A1		PI	68	MALE	*STEND6	3	A3								
PI	26	MALE	FD0	5	A1		PI	69	MALE	FD16	5	A4								
PI	27	FEMALE	*A9	2	D1		PI	70	MALE	CNTOVFL	4	D4								
PI	28	FEMALE	*A8	2	D1		PI	71	FEMALE	GROUND	1	B4								
PI	29	FEMALE	*A15	2	D2		PI	72	FEMALE	*DEVICE	6	B4								
PI	30	FEMALE	*A16	2	D3		PI	73	FEMALE	*RESET	6	A4								
PI	31	FEMALE	GROUND	1	C4		PI	74	FEMALE	FGOKEY	6	C2								
PI	32	FEMALE	*A12	2	D2		PI	75	MALE	FD18	5	A4								
PI	33	FEMALE	*A10	2	D2		PI	76	FEMALE	SERIN	5	D4								
PI	34	FEMALE	*A11	2	D2		PI	77	FEMALE	*CLRADR	4	D4								
PI	35	FEMALE	*A17	2	D3		PI	78	MALE	FD19	5	A4								
PI	36	FEMALE	*A19	2	D3		PI	79	FEMALE	*CLOCK	6	C4								
PI	37	FEMALE	*A14	2	D2		PI	80	FEMALE	GROUND	6	B4								
PI	38	FEMALE	*A18	2	D3															
PI	39	MALE	*STENDF1	3	A2															
PI	40	MALE	*STENDF2	3	A2															
PI	41	FEMALE	GROUND	1	B4															
PI	42	MALE	*STEND1	3	A2															
PI	43	MALE	*STEND0	3	A2															
PI	44	MALE	*STEND3	3	A3															
PI	45	MALE	*STEND2	3	A2															

D
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200160-602

CONNECTORS BY UNIT/PIN			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200160-602	A0
VERSION	B7	CS	SHEET 7 OF 9

4 3 2 1

4

3

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B

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A

200160-602

STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
*A10	PI	33	FEMALE	2	D2	
*A11	PI	34	FEMALE	2	D2	
*A12	PI	32	FEMALE	2	D2	
*A13	PI	67	FEMALE	2	D2	
*A14	PI	37	FEMALE	2	D2	
*A15	PI	29	FEMALE	2	D2	
*A16	PI	30	FEMALE	2	D3	
*A17	PI	35	FEMALE	2	D3	
*A18	PI	38	FEMALE	2	D3	
*A19	PI	36	FEMALE	2	D3	
*A8	PI	28	FEMALE	2	D1	
*A9	PI	27	FEMALE	2	D1	
*CLOCK	PI	79	FEMALE	6	C4	
*CLADDR	PI	77	FEMALE	4	D4	
*DEVICE	PI	72	FEMALE	6	B4	
*ENABFD	PI	65	FEMALE	5	A1	
*INCADR	PI	60	FEMALE	4	D3	
*RESET	PI	73	FEMALE	6	A4	
*SENSE	PI	14	MALE	4	A3	
*STEND0	PI	43	MALE	3	A2	
*STEND1	PI	42	MALE	3	A2	
*STEND2	PI	45	MALE	3	A2	
*STEND3	PI	44	MALE	3	A3	
*STEND4	PI	49	MALE	3	A3	
*STEND5	PI	50	MALE	3	A3	
*STEND6	PI	68	MALE	3	A3	
*STEND7	PI	46	MALE	3	A3	
*STEND8	PI	47	MALE	3	A4	
*STEND9	PI	48	MALE	3	A4	
*STENDF1	PI	39	MALE	3	A2	
*STENDF2	PI	40	MALE	3	A2	
+5VDC	PI	2	FEMALE	1	C4	
CNTOVFL	PI	70	MALE	4	D4	
EA0	PI	12	MALE	4	A3	
EA1	PI	10	MALE	4	A3	
EA2	PI	63	MALE	4	A4	
EA3	PI	18	MALE	4	A4	
EA4	PI	16	MALE	4	A4	
EA5	PI	15	MALE	4	A4	
FD0	PI	26	MALE	5	A1	
FD1	PI	25	MALE	5	A1	
FD10	PI	54	MALE	5	A3	
FD11	PI	55	MALE	5	A3	

STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
FD12	PI	59	MALE	5	A3	
FD13	PI	58	MALE	5	A3	
FD14	PI	56	MALE	5	A3	
FD15	PI	57	MALE	5	A3	
FD16	PI	69	MALE	5	A4	
FD17	PI	62	MALE	5	A4	
FD18	PI	75	MALE	5	A4	
FD19	PI	78	MALE	5	A4	
FD2	PI	23	MALE	5	A1	
FD3	PI	24	MALE	5	A1	
FD4	PI	22	MALE	5	A2	
FD5	PI	19	MALE	5	A2	
FD6	PI	20	MALE	5	A2	
FD7	PI	17	MALE	5	A2	
FD8	PI	53	MALE	5	A3	
FD9	PI	52	MALE	5	A3	
FGOKEY	PI	74	FEMALE	6	C2	
FRONTFACE	PI	9	FEMALE	6	B2	
GROUND	PI	1	FEMALE	1	C4	
GROUND	PI	11	FEMALE	1	C4	
GROUND	PI	21	FEMALE	1	C4	
GROUND	PI	31	FEMALE	1	C4	
GROUND	PI	41	FEMALE	1	B4	
GROUND	PI	51	FEMALE	1	B4	
GROUND	PI	61	FEMALE	1	B4	
GROUND	PI	66	MALE	6	A4	
GROUND	PI	71	FEMALE	1	B4	
GROUND	PI	80	FEMALE	6	B4	
NFFEGTS	PI	8	MALE	6	A2	
ONES	PI	7	FEMALE	6	D4	
PLUS	PI	5	FEMALE	6	D4	
SENSE	PI	13	MALE	4	A3	
SERIN	PI	76	FEMALE	5	D4	
START	PI	6	FEMALE	6	D4	
WRTEC	PI	64	FEMALE	4	C1	

CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200160-602	A0
VERSION	B7	CS	SHEET 8 OF 9

4

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D

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B

B

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200160-602

PAGE TYPE PAGE NAME

1 PC

2 PC

3 PC

4 PC

5 PC

6 PC

TABLE OF CONTENTS

SIZE	CODE IDENT	DRG NO.	REV
B	53938	200160-602	A0
VERSION	B7	TC	SHEET 9 OF 9

4

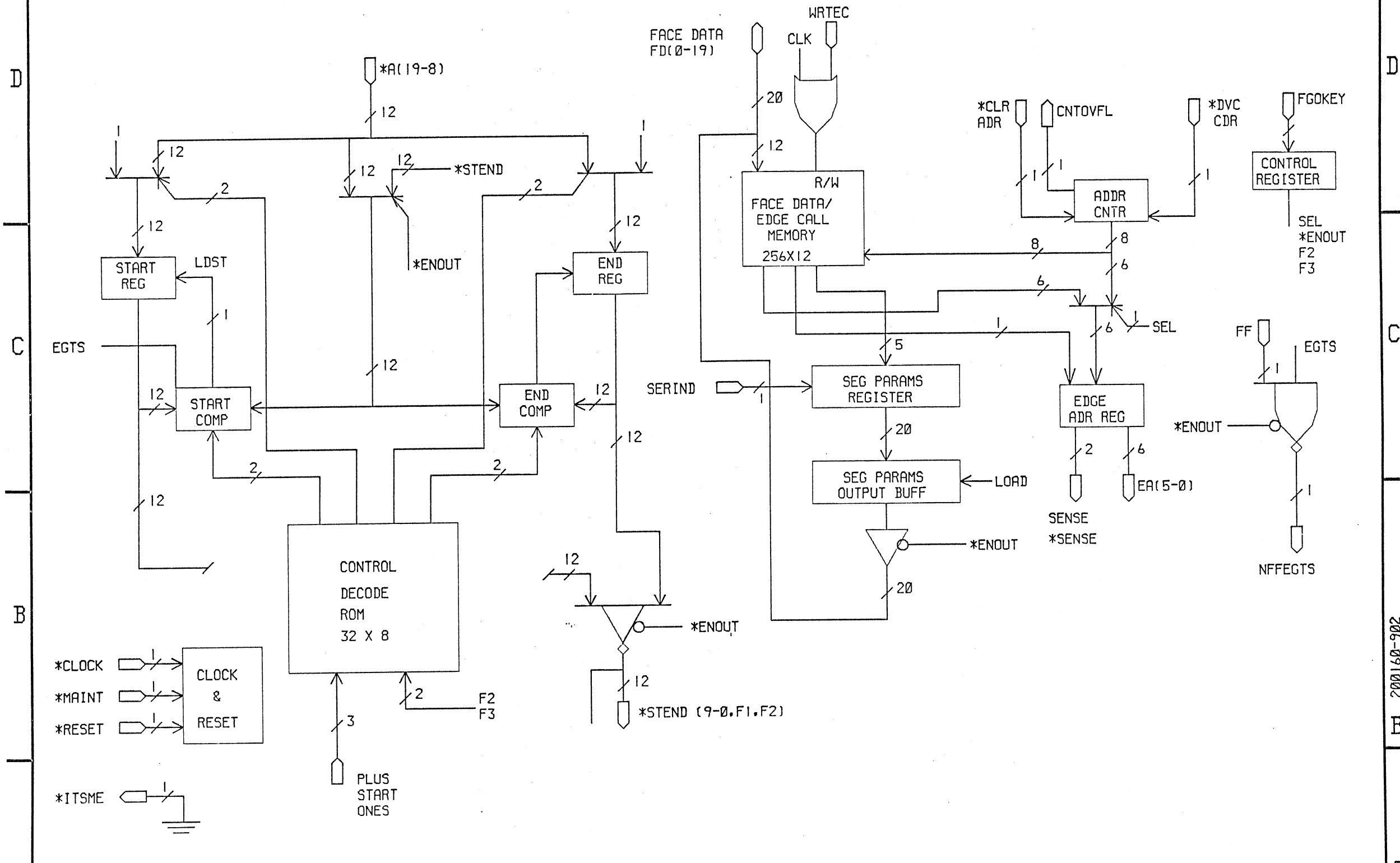
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2

1



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AD	RELEASE TO AD	SAD 18-14-86	RSpeirs

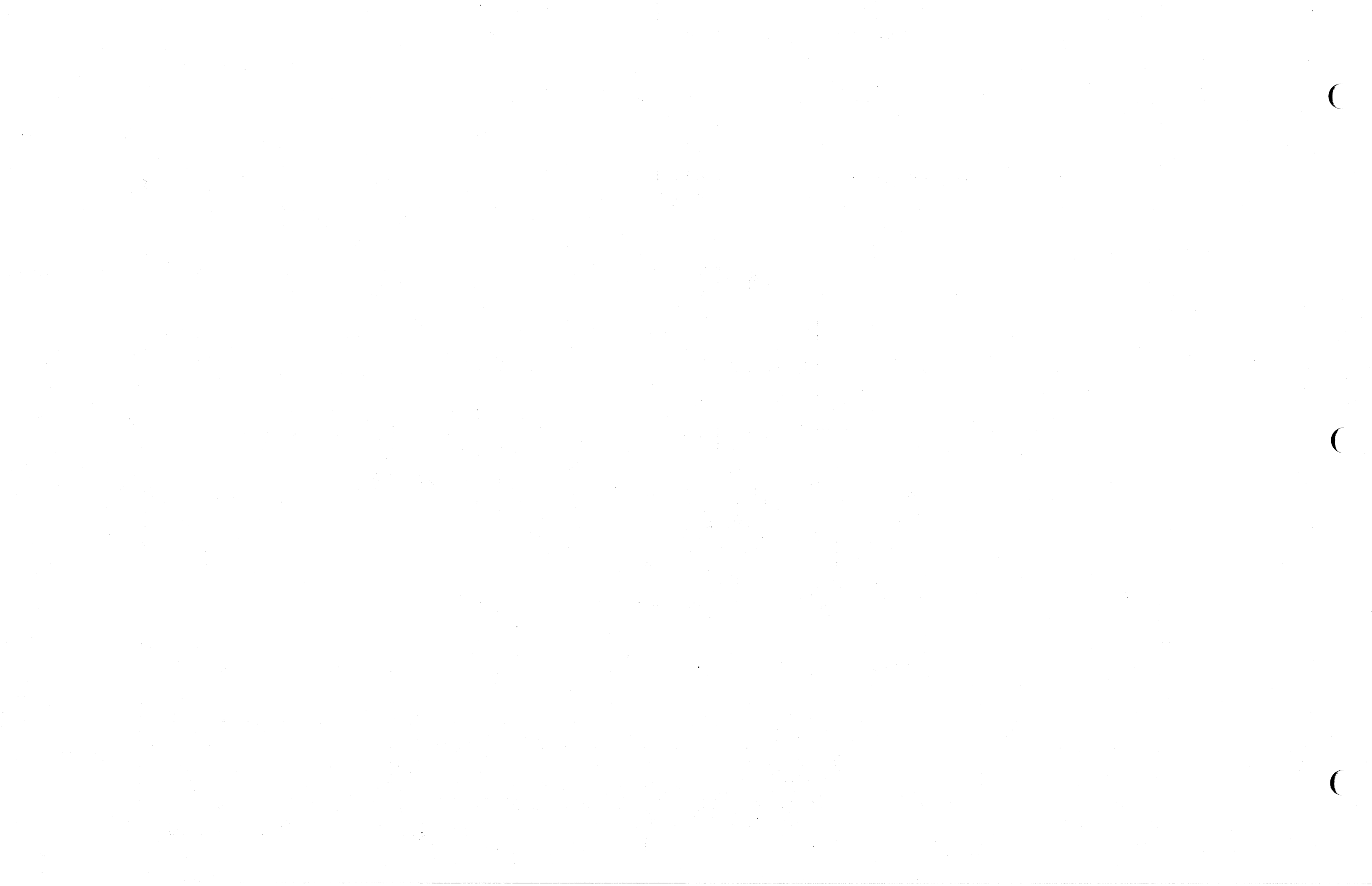


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DRAWN	SIEDMAN
CHECKED	<i>R. Speirs</i> 10-18-86
ELEC ENG	R. SPEIRS
PROJ ENG	R. KENT
APPROVED	
NEXT ASSY	
MODIFIED DATE	16-OCT-86
CREATION DATE	10-OCT-86
FILE NAME	200160102A0.BLO

EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE FACE GENERATOR (BLOCK DIAGRAM)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200160-902	A0
VERSION	4	BL	SHEET 1 OF 1

200160-902 B



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200161-101

REV: A0 = AA

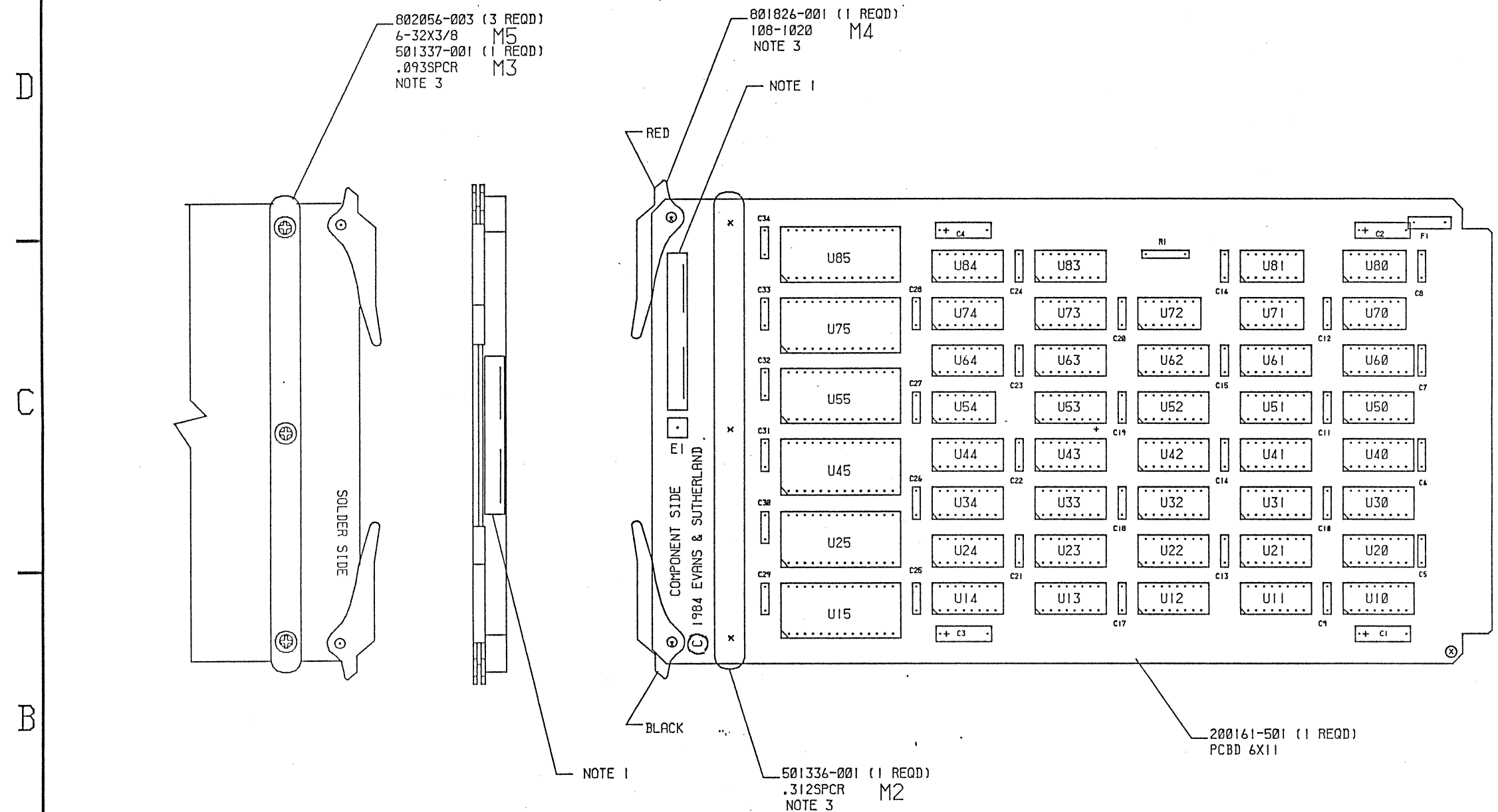
DESC: CARD ASSY, PRIORITY SORTER (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2 C3 C4	BD,P02R PCBD 6X11	53938	EVANS & SUTHERLAND.	200161-501	200161-501	1
C5 C6 C7 C8 C9 C10 C11 C12	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	4
C13 C14 C15 C16 C17 C18 C19	C,,AXL .100 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U104Z050B	804169-104	30
C20 C21 C22 C23 C24 C25 C26						
C27 C28 C29 C30 C31 C32 C33						
C34						
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
M2	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8(SM-P-PH-Z)	802056-003	3
R1	R,,AXL 2.7K1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF272J	803201-272	1
U10 U11 U20 U52 U61 U62	IC,TTL 74S195	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	6
U12 U21 U22	IC,TTL 74173	01295	TEXAS INSTR, SEMICON DIV.	SN74173N	807701-646	3
U13 U14 U43 U44	R,,DIP 1K(R15)	4J937	BOURNS NETWORKS	4116R-002-102	807699-102	4
U15 U25 U45 U55 U75 U85	IC,RAM 82S09	18324	SIGNETICS CORP. MILITARY	N82S09AN	807209-018	6
U23 U30 U31 U40 U41 U50 U51	IC,TTL 74F194	07263	FAIRCHILD IC'S & SEMICON	74F194PC/DC	807994-035	10
U60 U64 U74						
U24 U32 U34 U42 U83 U84	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	6
U33	IC,TTL 93S46	07263	FAIRCHILD IC'S & SEMICON	93S46DC/PC	807696-055	1
U53 U63 U73	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	3
U54 U70	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	2
U71	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U72	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	1
U80	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
U81	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1

23 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0	SAD 10-3-86	<i>Spere</i>



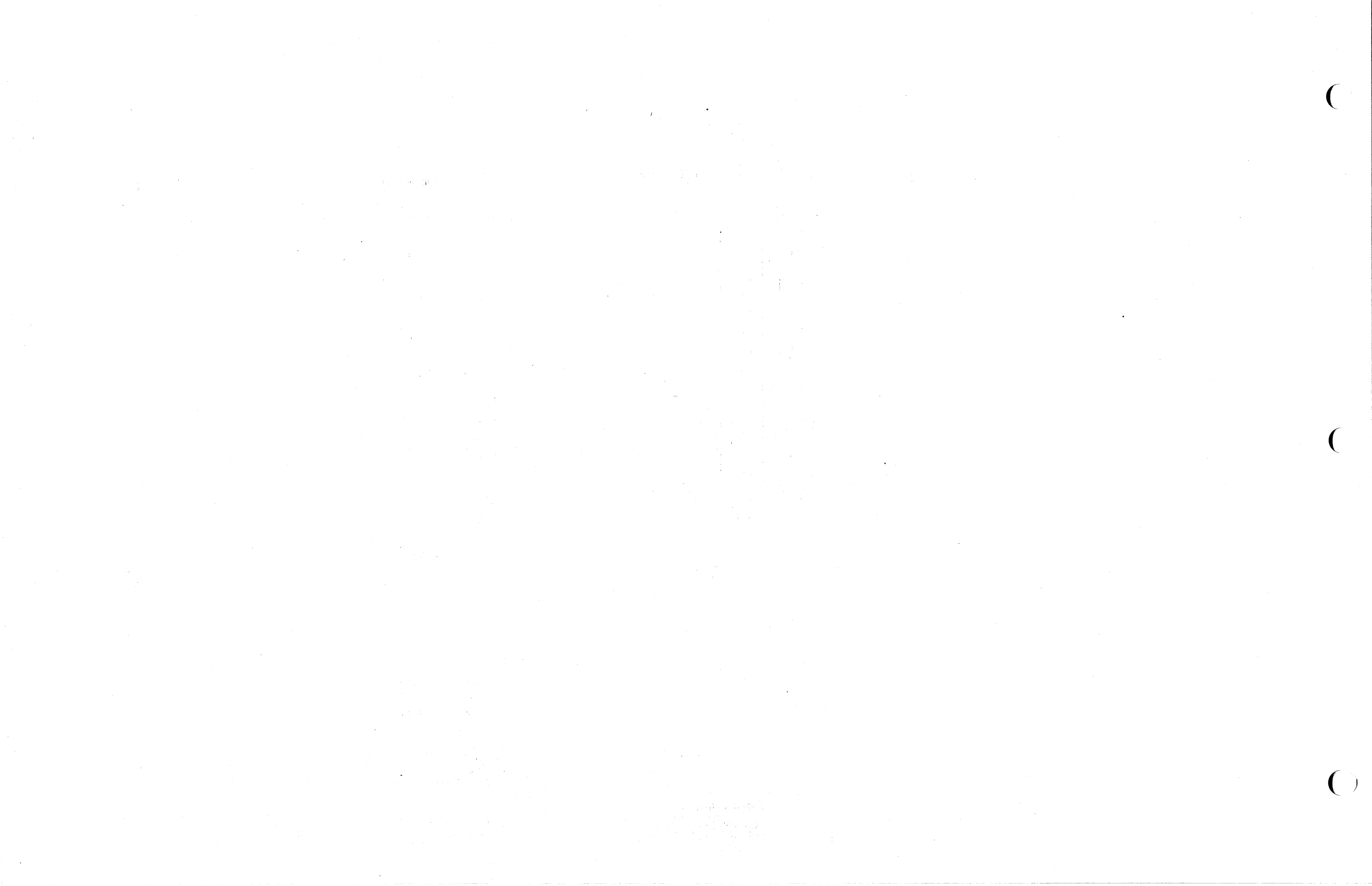
- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 2. MAXIMUM COMPONENT HEIGHT TO BE .312 INCHES FROM CARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM CARD SURFACE.
 3. INSTALL CARD EJECTORS (M4) AND SPACERS (M2 & M3) AFTER WAVE SOLDERING.

REFERENCE DOCUMENTS
 SCHEMATIC _ 200161-601
 PARTS LIST _ PL200161-101

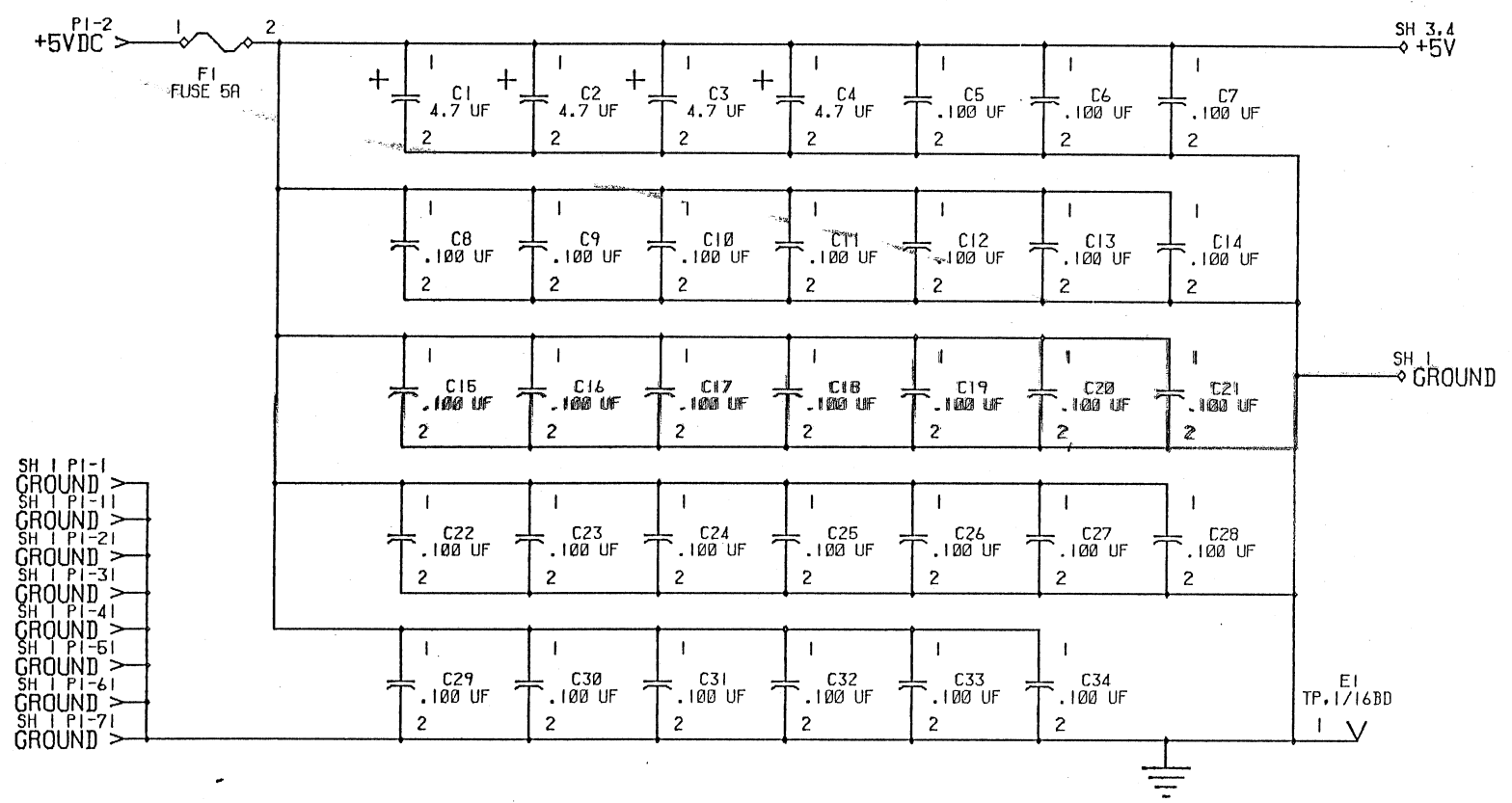
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DRAWN	KTRUSCOTT	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
CHECKED	<i>D. R. Ellis</i> 10-15-86	TITLE		
ELEC ENG	D.R. ELLIS	ASSY. PRIORITY SORTER, (PC)		
PROJ ENG		SIZE	CODE IDENT	DWG NO.
APPROVED		C	53938	200161-101
NEXT ASSY		REV	A0	
MODIFIED DATE	14-OCT-86	VERSION	44	
CREATION DATE	11-SEP-86	SHEET 1 OF 1		
FILE NAME	200161101A0.MDF			

200161-101



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0	SAD 10-3-86	<i>R Spain</i>

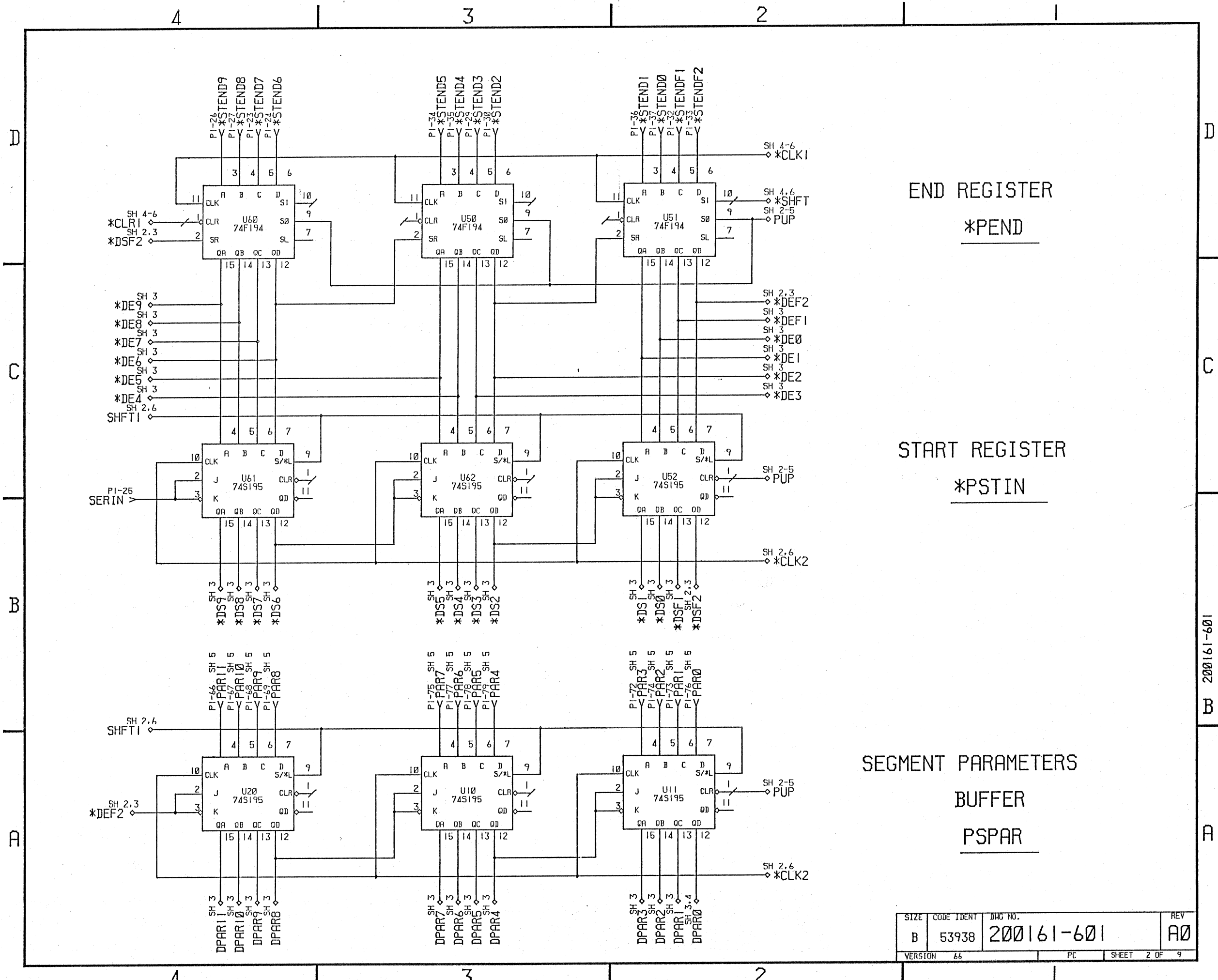


- NOTES:** UNLESS OTHERWISE SPECIFIED:
- RESISTANCE VALUES ARE IN OHMS + - 1Z.,K DENOTES 1000.
 - ON ALL IC'S, GROUND AND +5V (VCC) ARE AS FOLLOWS:
 - 14 PIN IC, 7 AND 14
 - 16 PIN IC, 8 AND 16
 - 18 PIN IC, 9 AND 18
 - 20 PIN IC, 10 AND 20
 - 22 PIN IC, 11 AND 22
 - 24 PIN IC, 12 AND 24
 - 28 PIN IC,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

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DRAWN	D.R.ELLIS	EVANS & SUTHERLAND	
CHECKED	<i>D. Hill 10-16-86</i>	SALT LAKE CITY, UTAH 84108	
ELEC ENG	D.R.ELLIS <i>R Spain</i>	TITLE	
PROJ ENG		PRIORITY SORTER,	
APPROVED		(PC)	
NEXT ASSY		SIZE	CODE IDENT
MODIFIED DATE	16-OCT-86	B	53938
CREATION DATE	11-SEP-86	MFG NO.	200161-601
FILE NAME	200161101A0.MDF	REV	A0
VERSION 66		PC	SHEET 1 OF 9

A B 200161-601



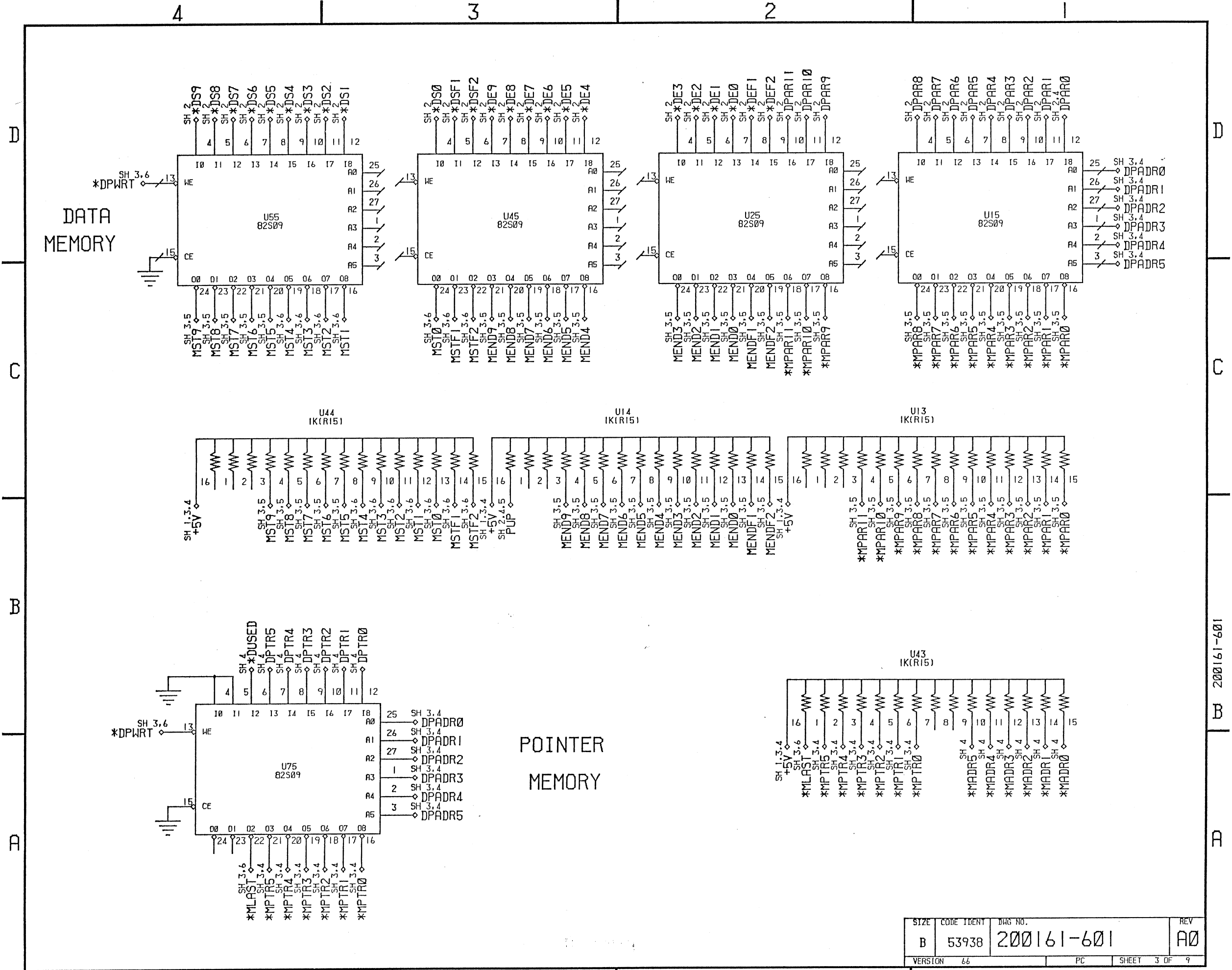
END REGISTER
*PEND

START REGISTER
*PSTIN

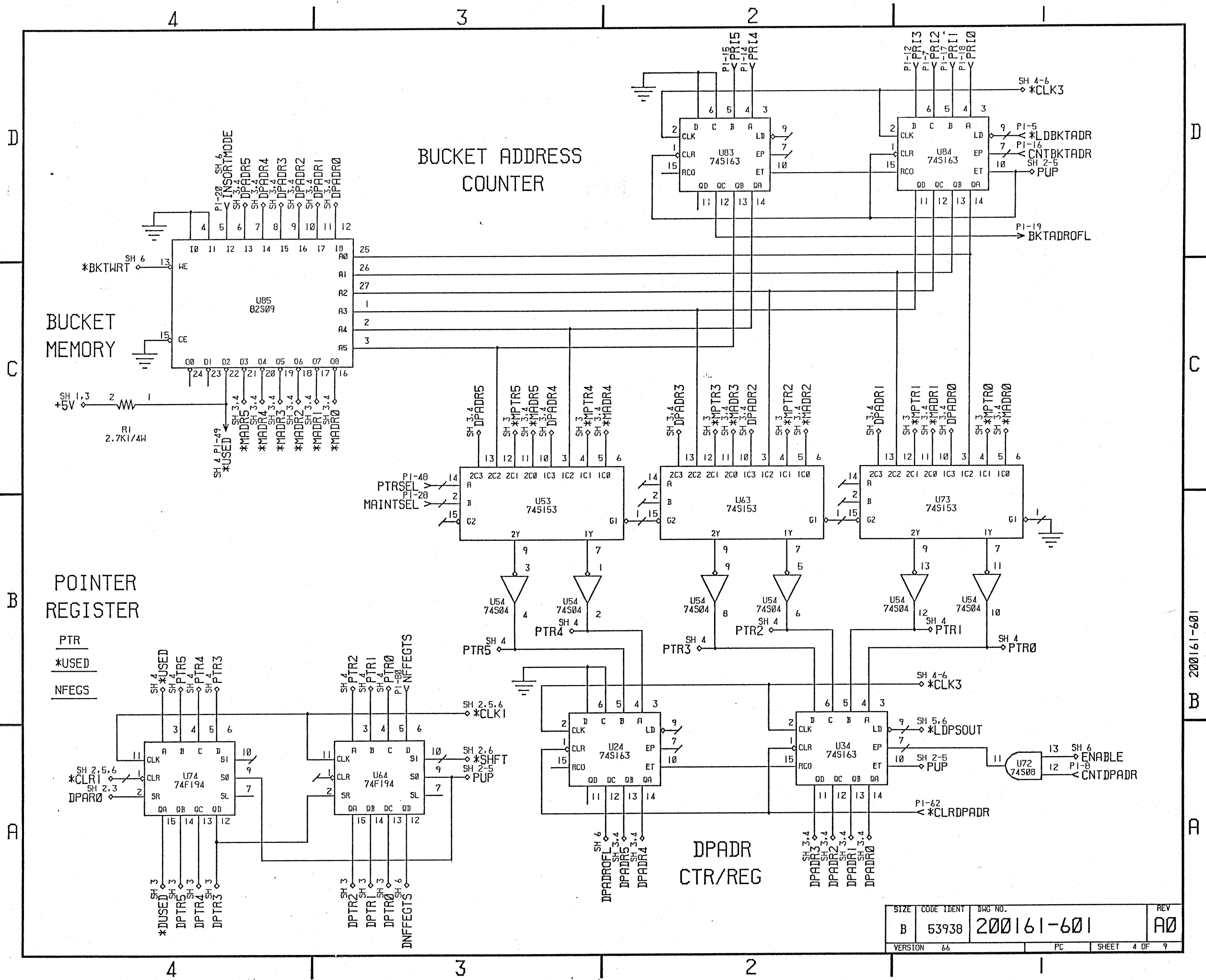
SEGMENT PARAMETERS
BUFFER
PSPAR

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200161-601	A0
VERSION	66	PC	SHEET 2 OF 9

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B	53938	200161-601	A0
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BUCKET ADDRESS
COUNTER

BUCKET
MEMORY

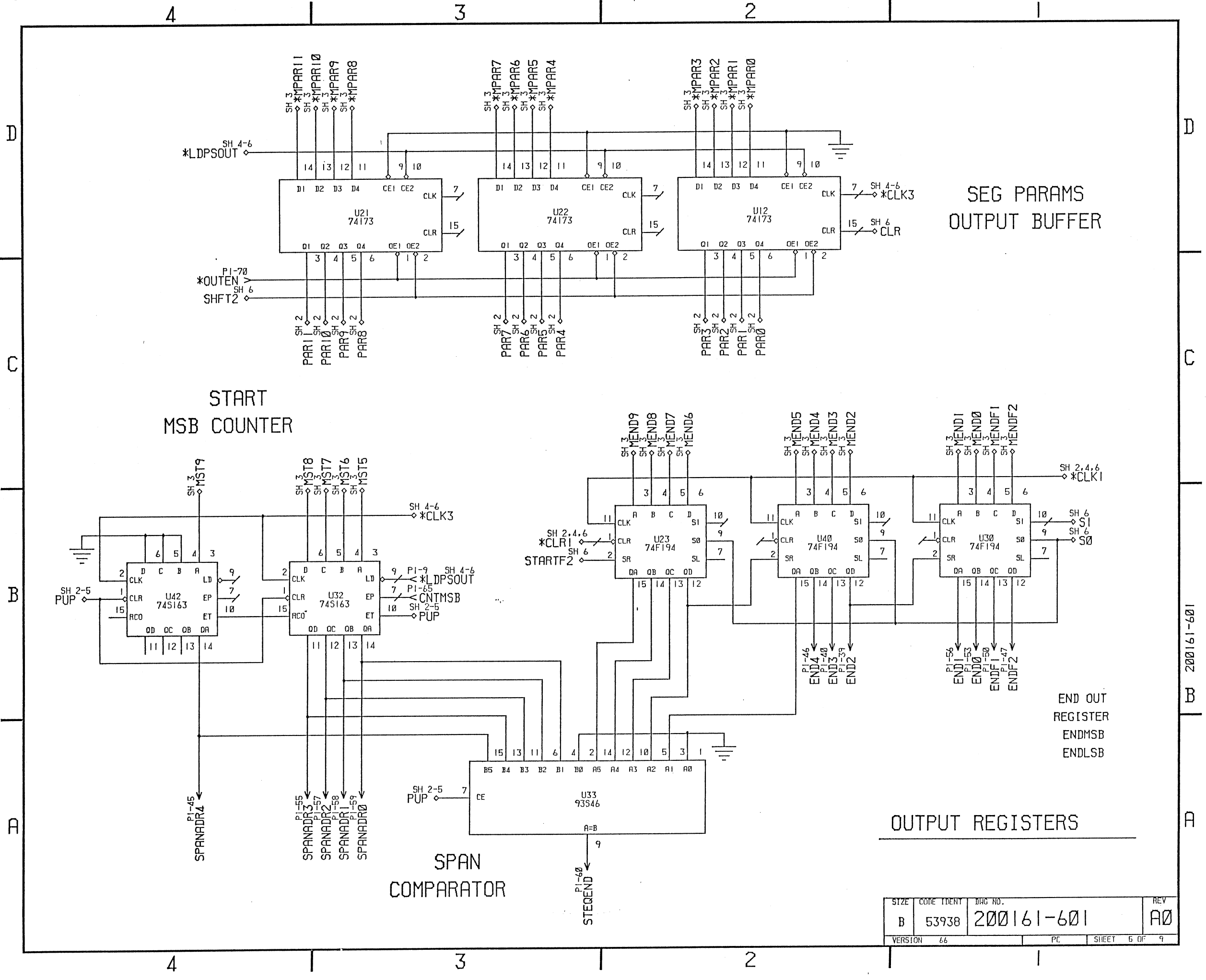
POINTER
REGISTER

DPADR
CTR/REG

- PTR
- *USED
- NFECS

SIZE	CODE IDENT	DWG NO.	REV
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SEG PARAMS
OUTPUT BUFFER

START
MSB COUNTER

STARTF2

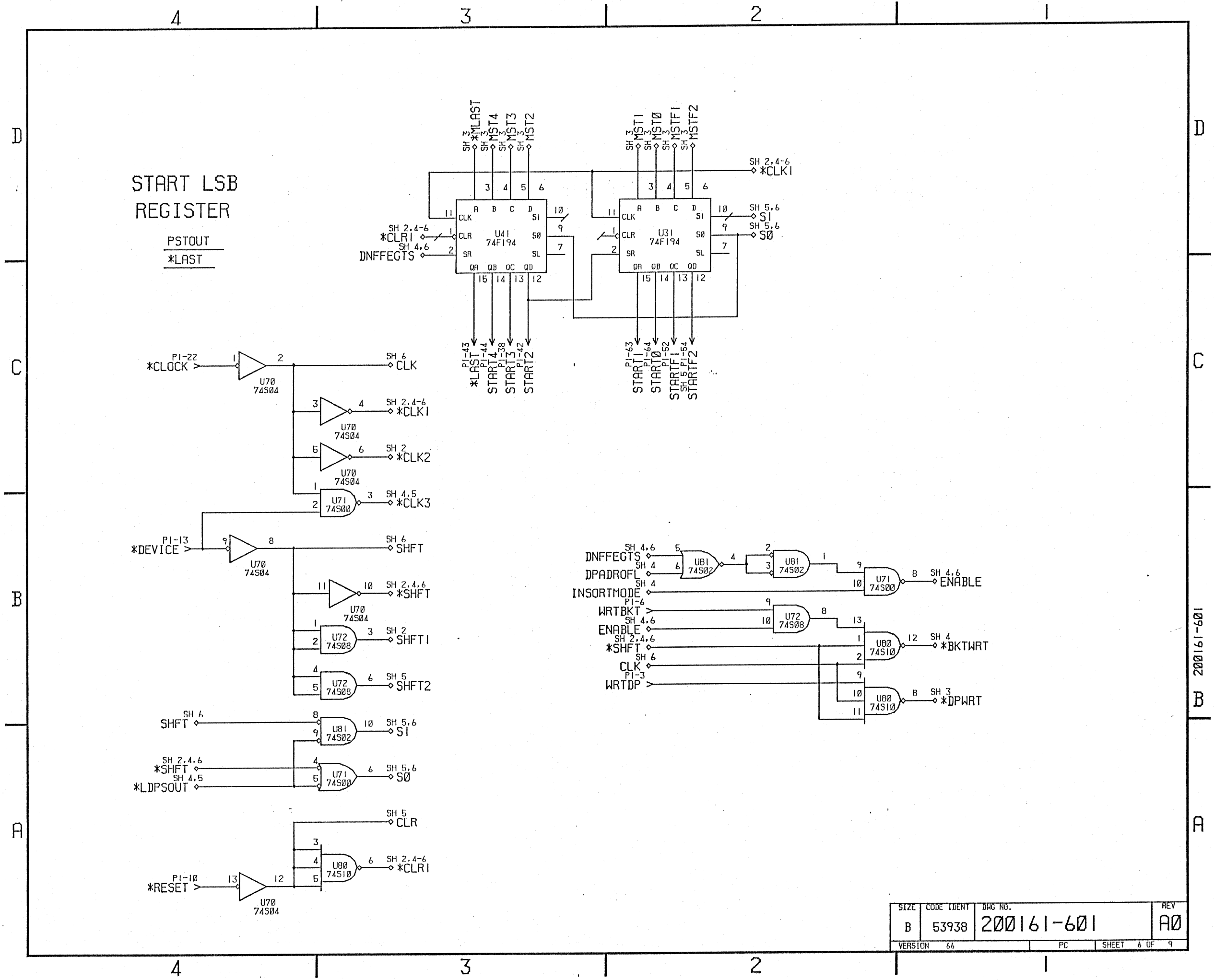
OUTPUT REGISTERS

SPAN
COMPARATOR

END OUT
REGISTER
ENDMSB
ENDLSB

SIZE	CODE IDENT	DRG NO.	REV
B	53938	200161-601	A0
VERSION	66	PC	SHEET 6 OF 9

100161-601 B



START LSB REGISTER

PSTOUT
*LAST

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200161-601	A0
VERSION	66	PC	SHEET 6 OF 9

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1

	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	
D	PI	1	FEMALE	GROUND	1	C3		PI	45	MALE	SPANADR4	5	A4		D
	PI	2	FEMALE	+5VDC	1	D3		PI	46	MALE	END4	5	B2		
	PI	3	FEMALE	WRTDP	6	B2		PI	47	MALE	ENDF2	5	B1		
	PI	5	FEMALE	*LDBKTADR	4	D1		PI	48	FEMALE	PTRSEL	4	C3		
	PI	6	FEMALE	WRTBKT	6	B2		PI	49	MALE	*USED	4	C4		
	PI	7	FEMALE	PRI2	4	D1		PI	50	MALE	ENDF1	5	B1		
	PI	8	FEMALE	CNTDPADR	4	A1		PI	51	FEMALE	GROUND	1	C3		
	PI	9	FEMALE	*LDPSOUT	5	B3		PI	52	MALE	STARTF1	6	C2		
	PI	10	FEMALE	*RESET	6	A4		PI	53	MALE	END0	5	B1		
	PI	11	FEMALE	GROUND	1	C3		PI	54	MALE	STARTF2	6	C2		
	PI	12	FEMALE	PRI3	4	D1		PI	55	MALE	SPANADR3	5	A4		
	C	PI	13	FEMALE	*DEVICE	6	B4		PI	56	MALE	END1	5	B1	
PI		14	FEMALE	PRI4	4	D2		PI	57	MALE	SPANADR2	5	A3		
PI		15	FEMALE	PRI5	4	D2		PI	58	MALE	SPANADR1	5	A3		
PI		16	FEMALE	CNTBKTADR	4	D1		PI	59	MALE	SPANADR0	5	A3		
PI		17	FEMALE	PRI1	4	D1		PI	60	MALE	STEQEND	5	A3		
PI		18	FEMALE	PRI0	4	D1		PI	61	FEMALE	GROUND	1	C3		
PI		19	MALE	BKTADROFL	4	D1		PI	62	FEMALE	*CLRDPADR	4	A1		
PI		20	FEMALE	INSORTMODE	4	D4		PI	63	MALE	START1	6	C2		
PI		21	FEMALE	GROUND	1	C3		PI	64	MALE	START0	6	C2		
PI		22	FEMALE	*CLOCK	6	C4		PI	65	FEMALE	CNTMSB	5	B3		
PI		23	FEMALE	*STEND7	2	D4		PI	66	FEMALE	PAR11	2	B4		
B		PI	24	FEMALE	*STEND6	2	D4		PI	67	FEMALE	PAR10	2	B4	
	PI	25	FEMALE	SERIN	2	B4		PI	68	FEMALE	PAR9	2	B4		
	PI	26	FEMALE	*STEND9	2	D4		PI	69	FEMALE	PAR8	2	B4		
	PI	27	FEMALE	*STEND8	2	D4		PI	70	FEMALE	*OUTEN	5	C4		
	PI	28	FEMALE	MAINTSEL	4	B3		PI	71	FEMALE	GROUND	1	C3		
	PI	29	FEMALE	*STEND3	2	D3		PI	72	FEMALE	PAR3	2	B2		
	PI	30	FEMALE	*STEND2	2	D3		PI	73	FEMALE	PAR1	2	B2		
	PI	31	FEMALE	GROUND	1	C3		PI	74	FEMALE	PAR2	2	B2		
	PI	32	FEMALE	*STENDF1	2	D2		PI	75	FEMALE	PAR7	2	B3		
	PI	33	FEMALE	*STENDF2	2	D2		PI	76	FEMALE	PAR0	2	B2		
	PI	34	FEMALE	*STEND5	2	D3		PI	77	FEMALE	PAR6	2	B3		
	PI	35	FEMALE	*STEND4	2	D3		PI	78	FEMALE	PAR5	2	B3		
A	PI	36	FEMALE	*STEND1	2	D2		PI	79	FEMALE	PAR4	2	B3		A
	PI	37	FEMALE	*STEND0	2	D2		PI	80	FEMALE	NFFEGTS	4	B3		
	PI	38	MALE	START3	6	C3									
	PI	39	MALE	END2	5	B2									
	PI	40	MALE	END3	5	B2									
	PI	41	FEMALE	GROUND	1	C3									
	PI	42	MALE	START2	6	C3									
	PI	43	MALE	*LAST	6	C3									
PI	44	MALE	START4	6	C3										

200161-601

B

A

CONNECTORS BY UNIT/PIN

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200161-601	A0
VERSION	66	CS	SHEET 7 OF 9

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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	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
*CLOCK	PI	22	FEMALE	6	C4		NFFEGTS	PI	80	FEMALE	4	B3															
*CLRDPADR	PI	62	FEMALE	4	A1		PAR0	PI	76	FEMALE	2	B2															
*DEVICE	PI	13	FEMALE	6	B4		PAR1	PI	73	FEMALE	2	B2															
*LAST	PI	43	MALE	6	C3		PAR10	PI	67	FEMALE	2	B4															
*LDBKTADR	PI	5	FEMALE	4	D1		PAR11	PI	66	FEMALE	2	B4															
*LDPSOUT	PI	9	FEMALE	5	B3		PAR2	PI	74	FEMALE	2	B2															
*OUTEN	PI	70	FEMALE	5	C4		PAR3	PI	72	FEMALE	2	B2															
*RESET	PI	10	FEMALE	6	A4		PAR4	PI	79	FEMALE	2	B3															
*STEND0	PI	37	FEMALE	2	D2		PAR5	PI	78	FEMALE	2	B3															
*STEND1	PI	36	FEMALE	2	D2		PAR6	PI	77	FEMALE	2	B3															
*STEND2	PI	30	FEMALE	2	D3		PAR7	PI	75	FEMALE	2	B3															
*STEND3	PI	29	FEMALE	2	D3		PAR8	PI	69	FEMALE	2	B4															
*STEND4	PI	35	FEMALE	2	D3		PAR9	PI	68	FEMALE	2	B4															
*STEND5	PI	34	FEMALE	2	D3		PRI0	PI	18	FEMALE	4	D1															
*STEND6	PI	24	FEMALE	2	D4		PRI1	PI	17	FEMALE	4	D1															
*STEND7	PI	23	FEMALE	2	D4		PRI2	PI	7	FEMALE	4	D1															
*STEND8	PI	27	FEMALE	2	D4		PRI3	PI	12	FEMALE	4	D1															
*STEND9	PI	26	FEMALE	2	D4		PRI4	PI	14	FEMALE	4	D2															
*STENDF1	PI	32	FEMALE	2	D2		PRI5	PI	15	FEMALE	4	D2															
*STENDF2	PI	33	FEMALE	2	D2		PTSEL	PI	48	FEMALE	4	C3															
*USED	PI	49	MALE	4	C4		SERIN	PI	25	FEMALE	2	B4															
+5VDC	PI	2	FEMALE	1	D3		SPANADR0	PI	59	MALE	5	A3															
BKTADROFL	PI	19	MALE	4	D1		SPANADR1	PI	58	MALE	5	A3															
CNTBKTADR	PI	16	FEMALE	4	D1		SPANADR2	PI	57	MALE	5	A3															
CNTDPADR	PI	8	FEMALE	4	A1		SPANADR3	PI	55	MALE	5	A4															
CNTMSB	PI	65	FEMALE	5	B3		SPANADR4	PI	45	MALE	5	A4															
END0	PI	53	MALE	5	B1		START0	PI	64	MALE	6	C2															
END1	PI	56	MALE	5	B1		START1	PI	63	MALE	6	C2															
END2	PI	39	MALE	5	B2		START2	PI	42	MALE	6	C3															
END3	PI	40	MALE	5	B2		START3	PI	38	MALE	6	C3															
END4	PI	46	MALE	5	B2		START4	PI	44	MALE	6	C3															
ENDF1	PI	50	MALE	5	B1		STARTF1	PI	52	MALE	6	C2															
ENDF2	PI	47	MALE	5	B1		STARTF2	PI	54	MALE	6	C2															
GROUND	PI	1	FEMALE	1	C3		STEQEND	PI	60	MALE	5	A3															
GROUND	PI	11	FEMALE	1	C3		WRTBKT	PI	6	FEMALE	6	B2															
GROUND	PI	21	FEMALE	1	C3		WRTDP	PI	3	FEMALE	6	B2															
GROUND	PI	31	FEMALE	1	C3																						
GROUND	PI	41	FEMALE	1	C3																						
GROUND	PI	51	FEMALE	1	C3																						
GROUND	PI	61	FEMALE	1	C3																						
GROUND	PI	71	FEMALE	1	C3																						
INSORTMODE	PI	20	FEMALE	4	D4																						
MAINTSEL	PI	28	FEMALE	4	B3																						

D

C

B

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B

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CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DIAG NO.	REV
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PAGE	TYPE	PAGE NAME
1	PC	
2	PC	
3	PC	
4	PC	
5	PC	
6	PC	

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100-191001
B

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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200161-601	A0
VERSION	66	TC	SHEET 9 OF 9

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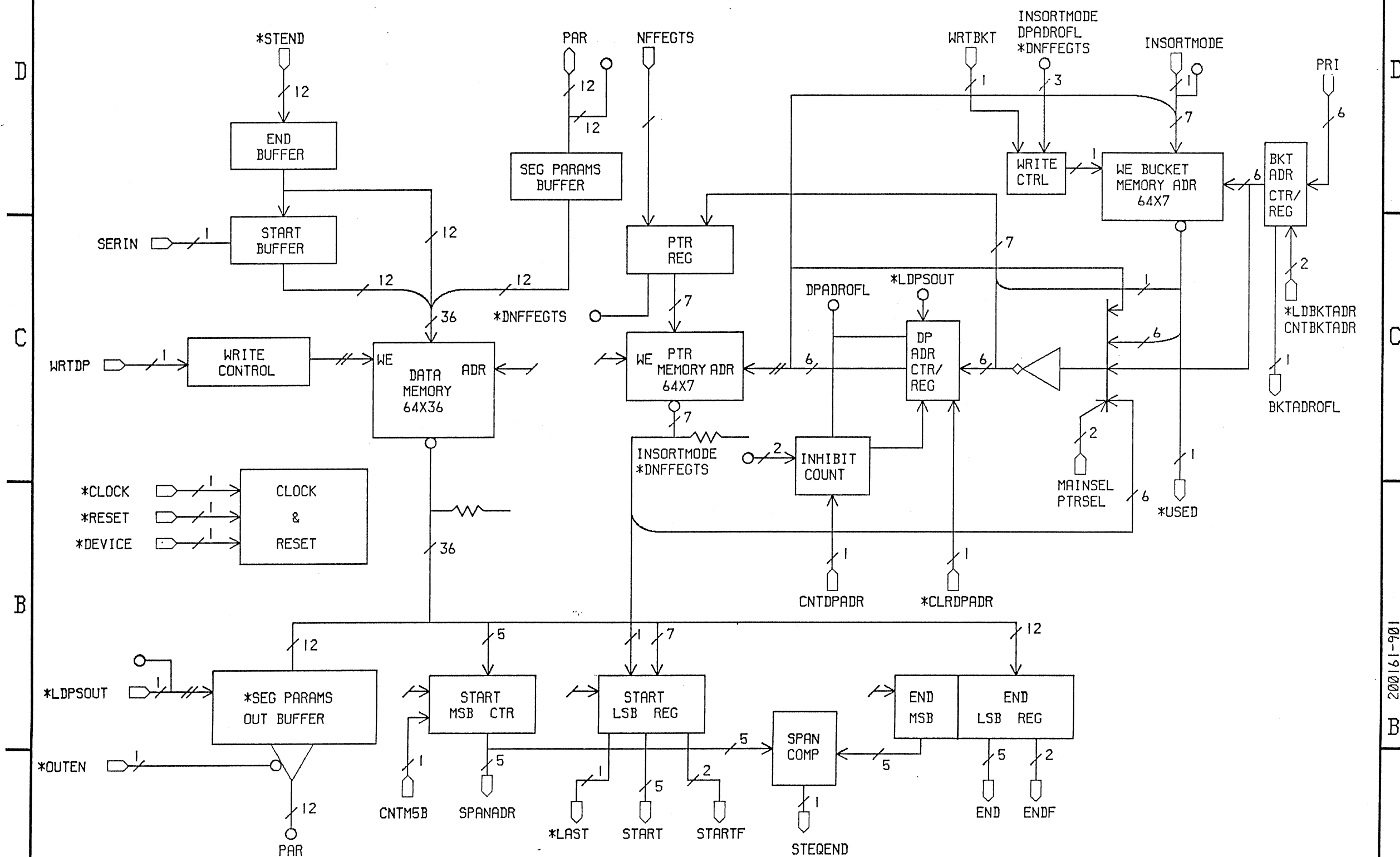
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1



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ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AB	RELEASE TO AB	SAD 10-14-86	P8



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DRAWN	SIEDMAN	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
CHECKED	<i>D. Matt 10-31-86</i>	TITLE		
ELEC ENG	D.R. ELLIS	PRIORITY SORTER		
PROJ ENG	R KENT	BLOCK DIAGRAM		
APPROVED		SIZE	CODE IDENT	DWG NO.
NEXT ASSY		B	53938	200161-901
MODIFIED DATE	24-OCT-86	REV	A0	
CREATION DATE	10-OCT-86	VERSION	8	SHEET 1 OF 1
FILE NAME	200161101A0.BLO	BL		

10161-901 B



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200162-101

REV: A3 = AD

DESC: CARD ASSY, LINE ASSEMBLER, PC

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BD,P02R PCBD6X11	53938	EVANS & SUTHERLAND.	200162-500	200162-500	1
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
006	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
010	HW,TBNG 22G-TBNG	51705	ICO-RALLY CORP.	STT-22 (TFE-22AWG)	802093-022	1
	C1 C2	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
	C19 THRU C22	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	4
	C3 THRU C18	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	16
007	E1	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
008	F1	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
	R1	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	1
	U10	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1
	U12 U18	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	2
	U13	53938	EVANS & SUTHERLAND.	807626-055-A77	807626-055-A77	1
	U16	53938	EVANS & SUTHERLAND.	807626-055-A82	807626-055-A82	1
	U17	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
	U19	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
	U20	53938	EVANS & SUTHERLAND.	807626-055-A78	807626-055-A78	1
	U21 U14	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	2
	U22 U15	73138	BECKMAN INDUSTRIES CORP.	899-1-R390	807499-391	2
	U23	53938	EVANS & SUTHERLAND.	807626-055-A80	807626-055-A80	1
	U33 U34 U35 U36 U37 U38 U39	01295	TEXAS INSTR, SEMICON DIV.	SN74166N	807665-646	9
	U40 U41					
	U46 U28	4J937	BOURNS NETWORKS	4608X-101-102 (SIP)	807519-102	2
	U48 U26 U30 U44	4J937	BOURNS NETWORKS	4116R-002-102	807699-102	4
	U49 U25 U27 U29 U31 U43 U45	18324	SIGNETICS CORP. MILITARY	N82S09AN	807209-018	8
	U47					
	U50 U11 U24 U32 U42	01295	TEXAS INSTR, SEMICON DIV.	SN74195N	807695-446	5

28 ITEMS LISTED



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LIMITED RIGHTS LEGEND

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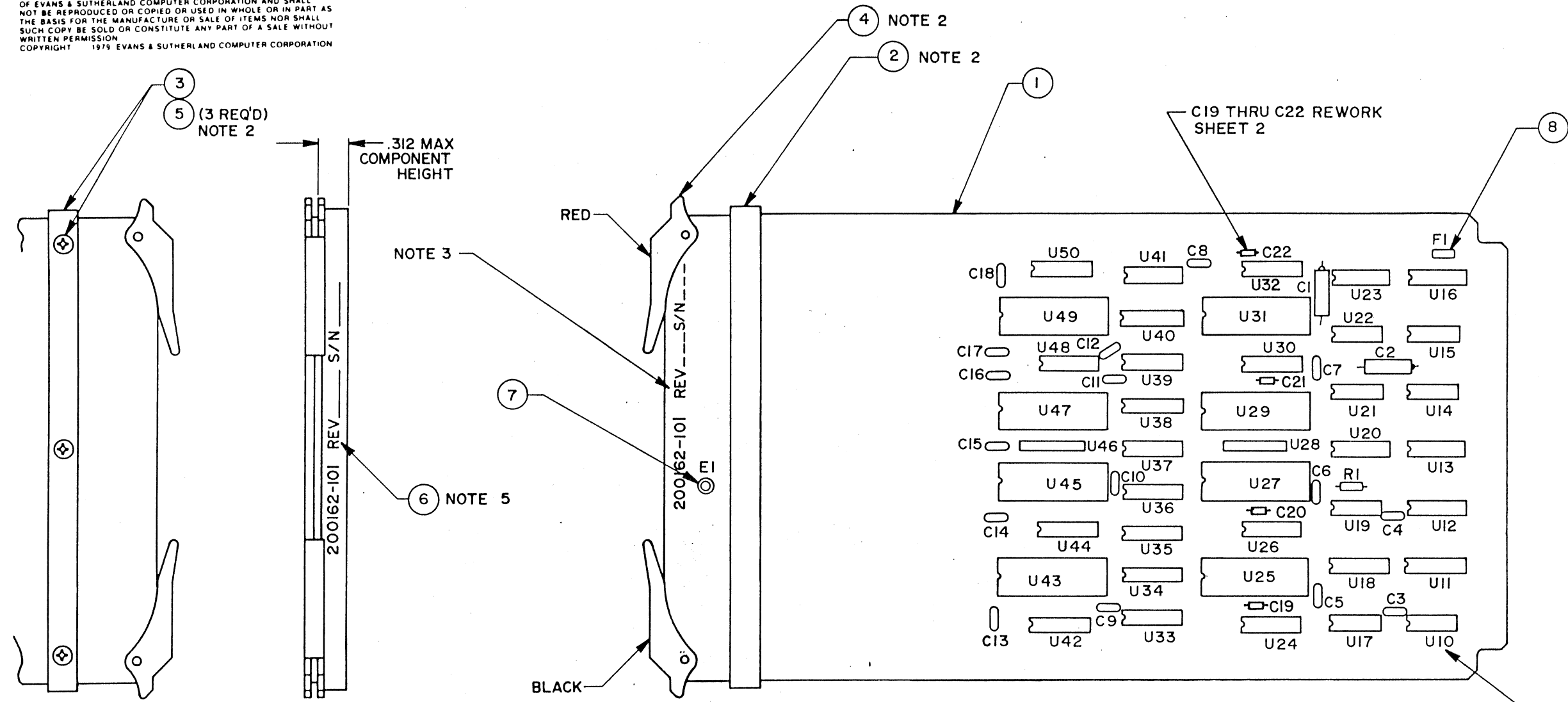
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A1		ADDED SHEET 2 & REDRAWN	BH 5-21-81	<i>BH</i>
A2		CAPACITOR CHANGES	MB 12-20-82	<i>MB</i>
A3		P/L CHNGS	MG 1-15-86	<i>MG</i>

D

C

B

A



NOTES

- ASSEMBLE PER E & S STANDARDS.
- INSTALL CARD EJECTORS (ITEM 4) & SPACERS (ITEM 2 & 3) AFTER FLOW SOLDERING.
- MARK REV LEVEL AND SERIAL NO. AND ASSY. NO. APPROX. AS SHOWN USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV.
- ITEM NUMBERS ON THE DWG. CORRESPOND WITH THE LOCATION DESIGNATION ON THE PARTS LIST.
- MARK REV. LEVEL AND SERIAL NO. AND ASSY. NO. ON ITEM 6.

COMPONENT SIDE

REFERENCE DOCUMENTS

- LOGIC DIAGRAM --- 200162-601
- PARTS LIST ----- PL200162-101

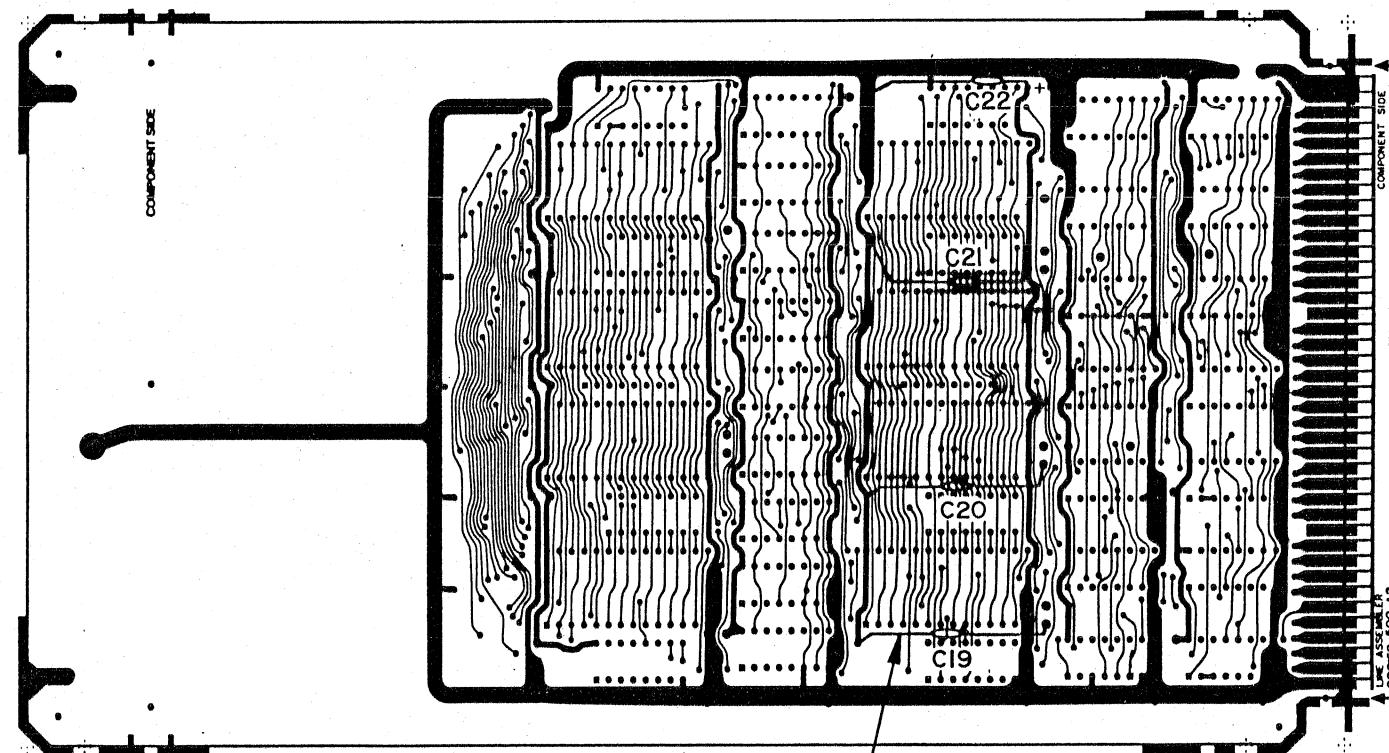
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓	DRAWN BRENT H. 5-21-81		EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
	CHECKED <i>BH</i> 5-21-81			
	MECH		CARD ASSEMBLY LINE ASSEMBLER (P/C)	
	ELEC <i>BH</i> 5-24-81			
PROJ. ENG <i>R. Mann</i> 29 May 81		SIZE CODE IDENT NO		REV
APPROVED		C 53938 200162-101		A3
MATERIAL SEE PARTS LIST		SCALE FULL DO NOT SCALE		SHEET 1 OF 2
FINISH				

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), (2)

These portions of this technical data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in any way outside the Government, (b) used in whole or in part by the Government for manufacture or, in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

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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SLEEVE CAPACITOR LEADS
 USING ITEM 10
 4 PLACES

REWORK

200162-101

SIZE	CODE IDENT NO	REV
C	53938	A3
200162-101		
SCALE 1/1	SHEET 2 OF 2	

REF DESIG	E+S PART NO	VENDOR PART NUMBER
C 1	804102-475	CS13BF475K
C 2	804102-475	CS13BF475K
C 3	804115-333	CY15C333M
C 18	804115-333	CY15C333M
R 1	803201-102	.
U 10	807416-055	SN74504N
U 11	807695-446	SN74195N
U 12	807695-055	SN745195N
U 13	807626-055	N825126B
U 14	807400-055	SN74500N
U 15	807499-391	899-1-R390
U 16	807626-055	N825126B
U 17	807451-055	SN74551N
U 18	807695-055	SN745155N
U 19	807410-055	SN74510N
U 20	807626-055	N825126B
U 21	807400-055	SN74500N
U 22	807499-391	899-1-R390
U 23	807626-055	N825126B
U 24	807695-446	SN74195N
U 25	807209-018	N82509I
U 26	807699-102	898-1-R1K
U 27	807209-018	N82509I
U 28	807519-102	750-81-R1K
U 29	807209-018	N82509I
U 30	807699-102	898-1-R1K
U 31	807209-018	N82509I
U 32	807695-446	SN74195N
U 33	807665-646	SN74166N
U 34	807665-646	SN74166N
U 35	807665-646	SN74166N
U 36	807665-646	SN74166N
U 37	807665-646	SN74166N
U 38	807665-646	SN74166N
U 39	807665-646	SN74166N
U 40	807665-646	SN74166N
U 41	807665-646	SN74166N
U 42	807695-446	SN74195N
U 43	807209-018	N82509I
U 44	807699-102	898-1-R1K
U 45	807209-018	N82509I
U 46	807519-102	750-81-R1K
U 47	807209-018	N82509I
U 48	807699-102	898-1-R1K
U 49	807209-018	N82509I
U 50	807695-446	SN74195N

PIN #	WIRENAME
P1 3	ELSEROUT0
P1 5	ADR1
P1 6	ENDF2
P1 7	ADR0
P1 8	*DIN4
P1 9	*DIN5
P1 10	*DIN7
P1 12	WRITE
P1 13	END2
P1 14	END1
P1 15	END0
P1 16	END3
P1 17	END4
P1 18	ENDF0
P1 19	ENDF1
P1 20	ELSEROUT1
P1 22	*DIN6
P1 23	SEROUT
P1 24	ELSERIN1
P1 25	*FIRSTSPAN
P1 26	ELSEROUT2
P1 28	ELSERIN0
P1 29	ELSERIN2
P1 30	*LASTSPAN
P1 34	ELSEROUT3
P1 35	ELSERIN3
F1 36	STF2
P1 37	ELSEROUT4
P1 38	ST2
P1 39	ST1
P1 40	ST0
P1 42	ST3
F1 43	ST4
F1 44	STF0
P1 45	STF1
P1 46	PUP
P1 47	ELSERIN4
P1 48	ELSEROUT5
P1 49	CLKINP
P1 50	SELWRT
P1 52	ELSERIN5
F1 53	ELSERIN6
F1 54	ELSEROUT6
F1 55	*DEV
F1 56	ELSEROUT7
F1 57	SERIN
F1 58	LOADOUT
F1 59	*DIN8
P1 62	*DIN0
F1 63	ELSERIN7
P1 64	ELSERIN8
F1 65	POKEOUT
F1 66	ELSEROUT8
F1 67	CLKOUT
F1 68	CLKINP
F1 69	*CLKOUT
P1 70	CLK
F1 71	GROUND
F1 72	*CLKINP
F1 73	*DIN2
F1 74	*DIN1
F1 75	ADR2
F1 76	*DIN3
F1 77	ADR4
P1 78	ADR3
F1 79	ADR5

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	ADDED 11 CAPACITORS	B.H. 5-7-81	<i>[Signature]</i>
	A2	CAPACITOR CHANGES	ME 12-20-81	<i>[Signature]</i>
	A3	REV UPDATE W/NO WNG CHNG	ME 1-15-82	<i>[Signature]</i>

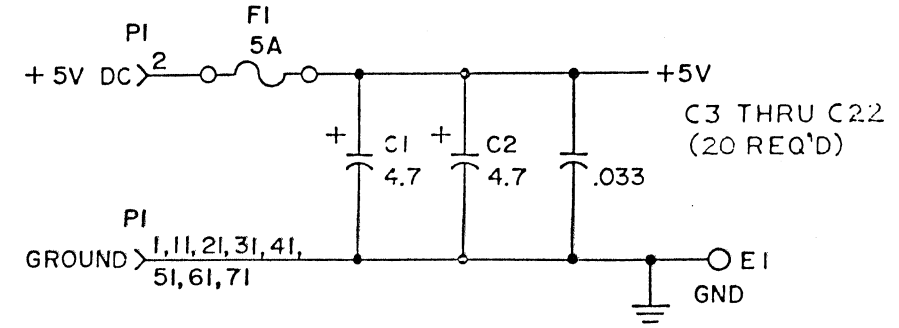
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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3. SERIAL SHIFT LOOP SEQUENCE
 PI. 28, 41.13, PI. 3
 PI. 24, 40.13, PI. 20
 PI. 29, 39.13, PI. 26
 PI. 35, 38.13, PI. 34
 PI. 47, 37.13, PI. 37
 PI. 52, 36.13, PI. 48
 PI. 53, 35.13, PI. 54
 PI. 63, 34.13, PI. 56
 PI. 64, 33.13, PI. 66
 PI. 57, 24.12, 32.12, 11.12, 12.12, 18.12, 42.12, 50.12, PI. 23

2. NUMBERS SHOWN REFER TO CONNECTOR P1.
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).
 ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V).
 ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).
 UNLESS OTHERWISE SPECIFIED;

NOTES:

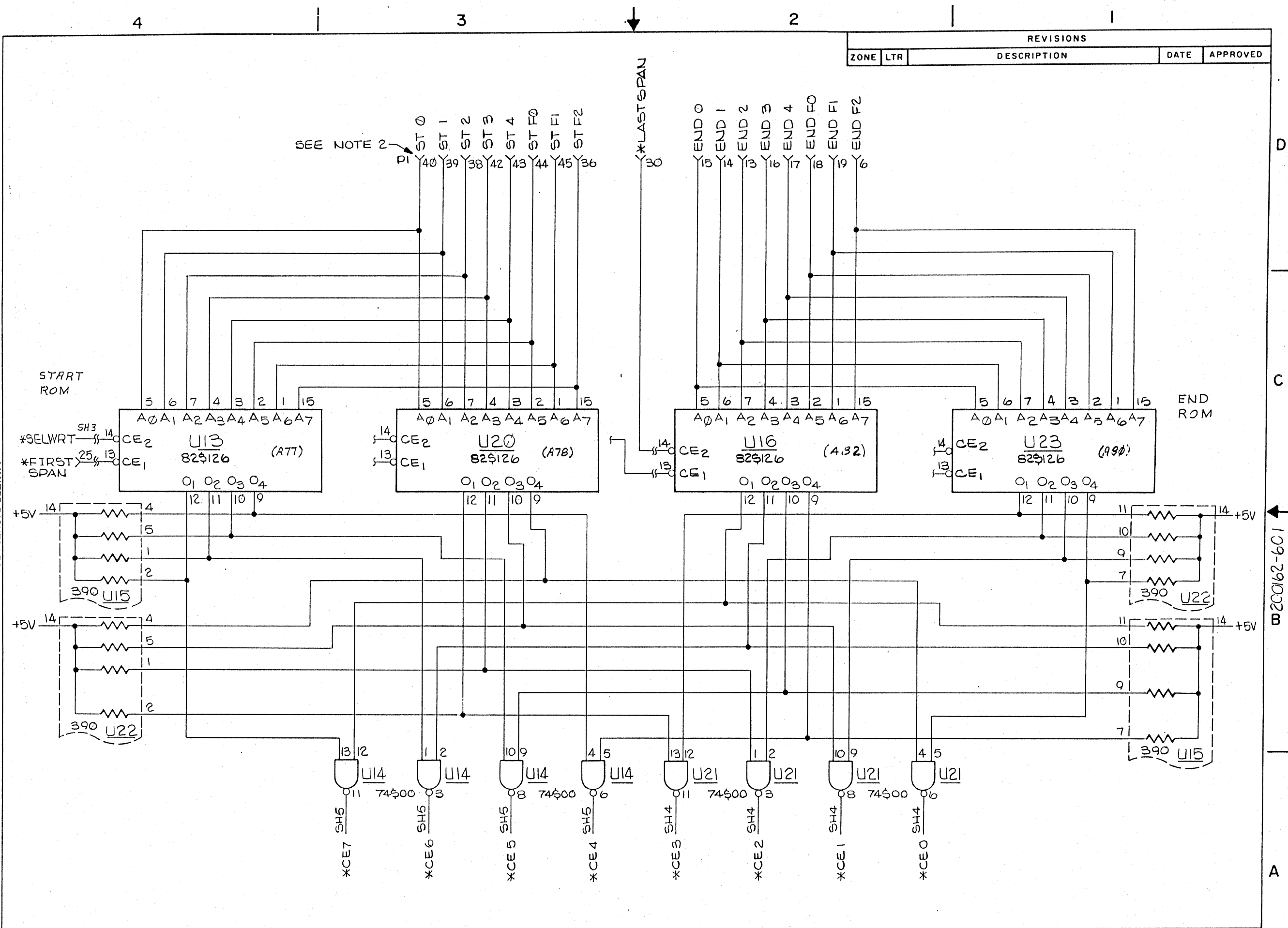


UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓	
MATERIAL	
FINISH	
NEXT ASSY	USED ON
APPLICATION	

CONTRACT NO.		SEE SEPARATE PARTS LIST	
DRAWN <i>Howard Veatec</i> 1-21-80		ES EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CHECKED <i>[Signature]</i> 1-21-80		LINE ASSEMBLER	
MECH		P.C.	
ELEC <i>[Signature]</i> 21 JAN 80			
PROJ. ENG <i>[Signature]</i> 21 JAN 80			
APPROVED <i>[Signature]</i> 21 JAN 80			
SIZE	CODE IDENT NO	REV	
C	53938	200162-601	A3
SCALE NONE		SHEET 1 OF 7	

200162-601

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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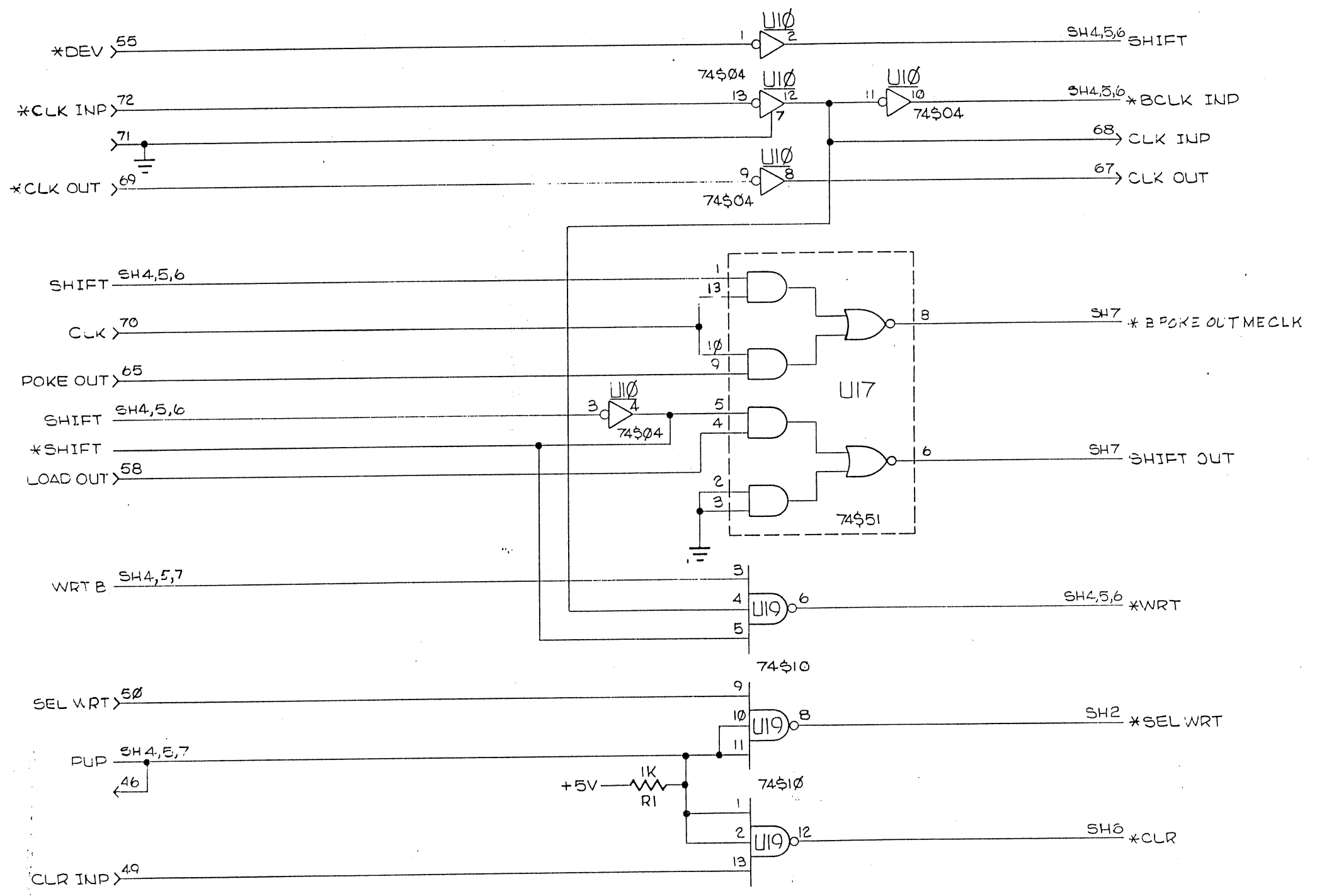
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor: EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

SIZE	CODE IDENT NO	REV
C	53938	200162-601
SCALE NONE		A3
SHEET 2		OF 7

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

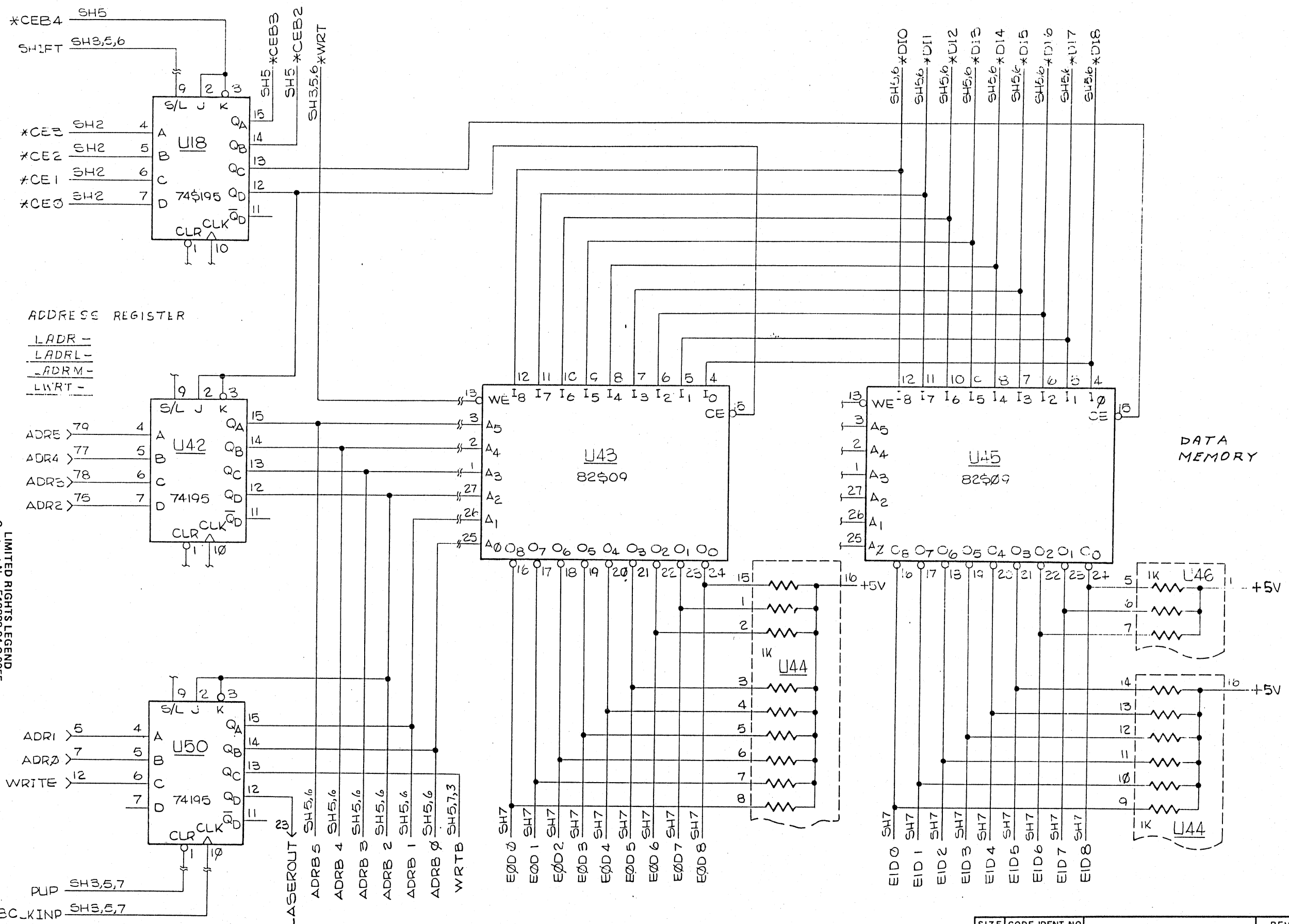
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor: EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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SIZE	CODE IDENT NO	REV
C	53938	A3
200162-601		
SCALE NONE	SHEET 3 OF 7	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



ADDRESS REGISTER
 LADR -
 LADRL -
 ADRM -
 LWRT -

ADRE > 79
 ADR4 > 77
 ADR3 > 78
 ADR2 > 75

ADR1 > 5
 ADR2 > 7
 WRITE > 12

PUP SH3,5,7
 *BC_KIND SH3,5,7

DATA MEMORY

109-291702 B

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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) (2)

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D

C

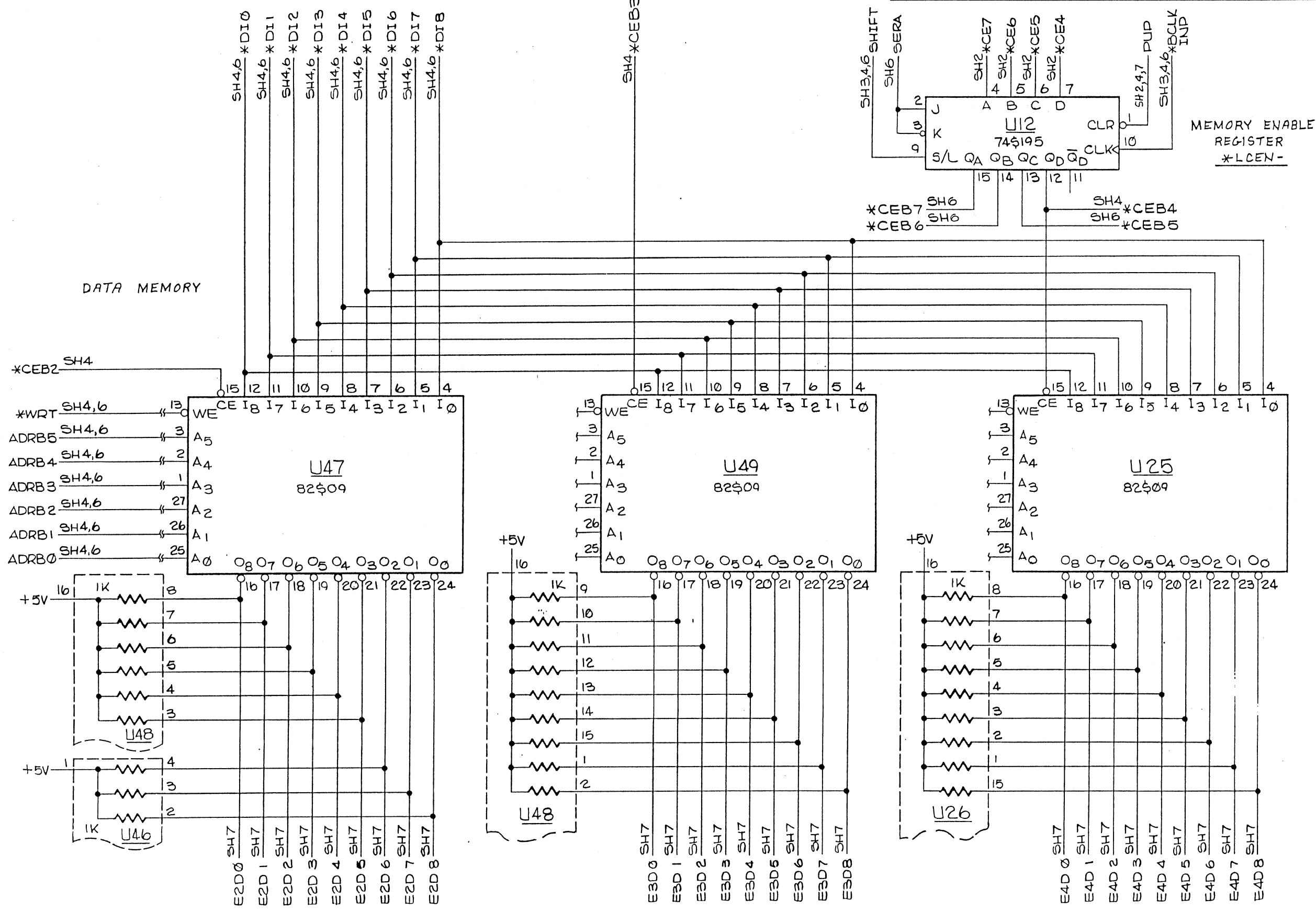
B

A

D

C

A



DATA MEMORY

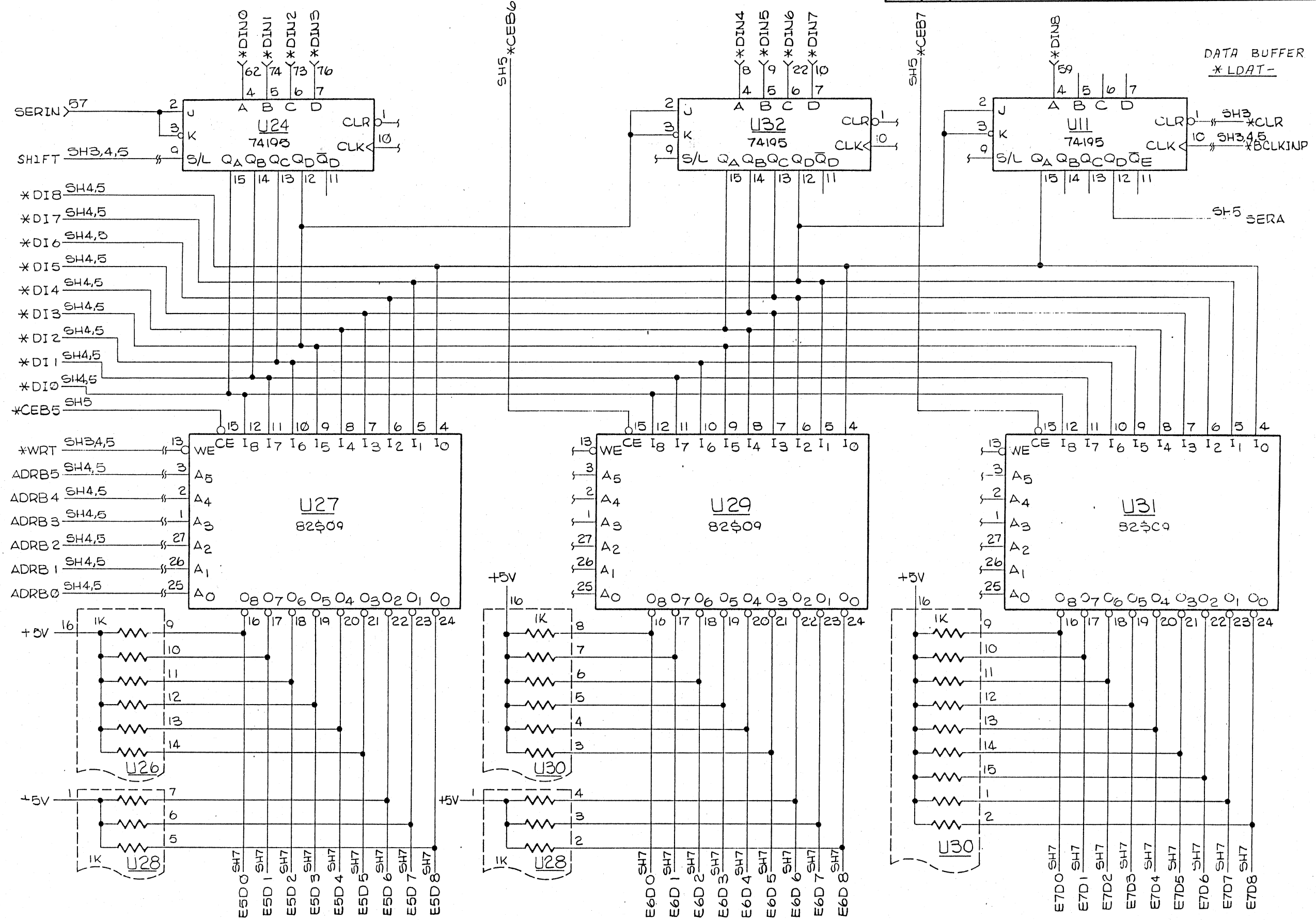
MEMORY ENABLE REGISTER *LCEN-

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LIMITED RIGHTS LEGEND
 200162-601
 Contractor - EVANS SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

SIZE	CODE IDENT NO	REV
C	53938 200162-601	A3
SCALE NONE	SHEET 5 OF 7	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



DATA BUFFER
*LDAT-

SH3 *CLR
SH3,4,5 *BCLKINP

SH5 SERA

- *DI8 SH4,5
- *DI7 SH4,5
- *DI6 SH4,5
- *DI5 SH4,5
- *DI4 SH4,5
- *DI3 SH4,5
- *DI2 SH4,5
- *DI1 SH4,5
- *DI0 SH4,5
- *CEB5 SH5
- *WRT SH3,4,5
- ADRB5 SH4,5
- ADRB4 SH4,5
- ADRB3 SH4,5
- ADRB2 SH4,5
- ADRB1 SH4,5
- ADRB0 SH4,5

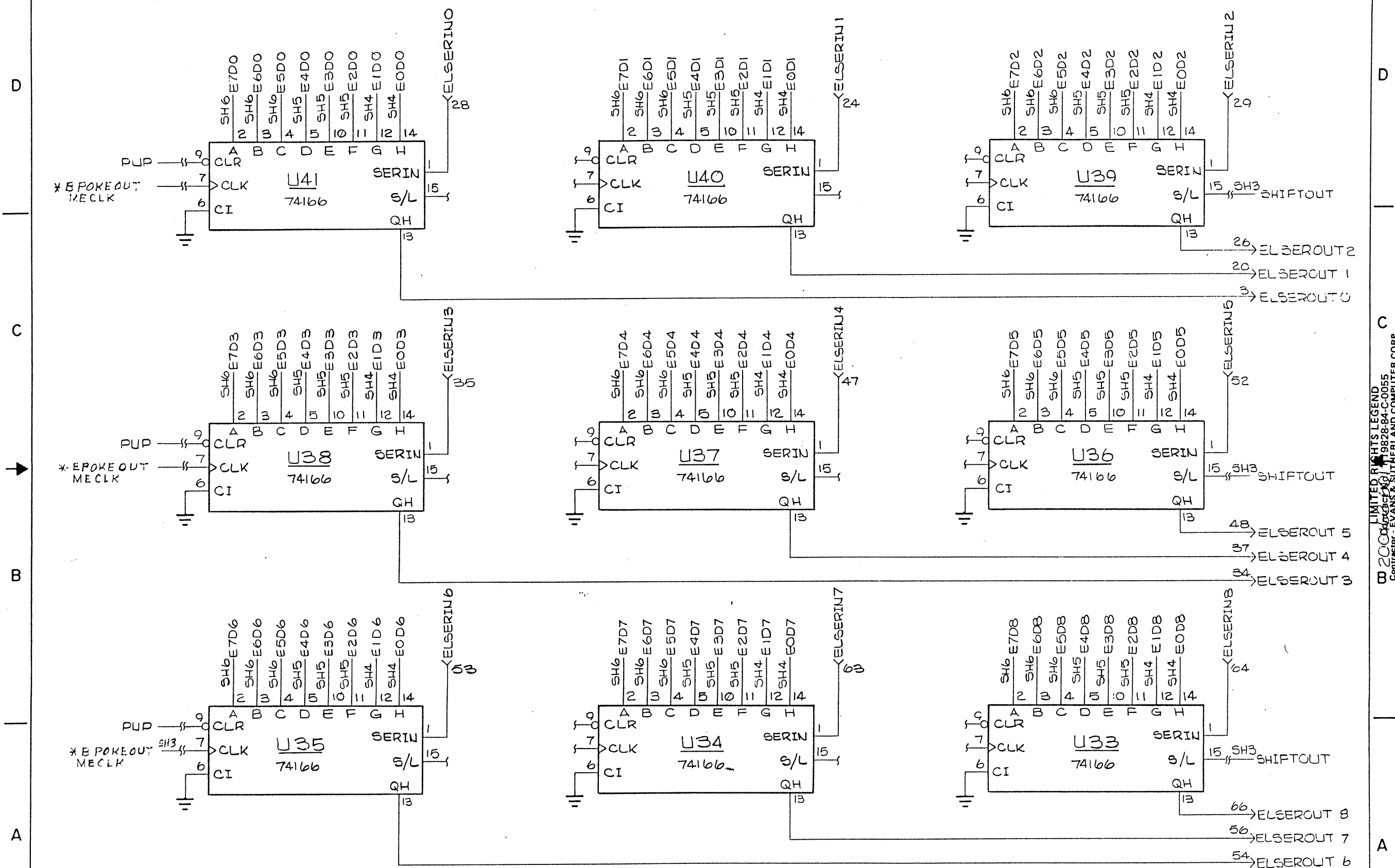
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LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

SIZE	CODE IDENT NO	REV
C	53938 200162-601	A3
SCALE NONE		SHEET 6 OF 7

109-291002 B

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



DATA OUTPUT
REGISTERS
LAOUT

SIZE	CODE IDENT NO	REV
C	53938 200162-601	A3
SCALE NONE	SHEET 7 OF 7	

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LIMITED RIGHTS LEGEND
 2000 RELEASE UNDER E.O. 11982-84-C-0055
 CONTRACTOR - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)



4

3

2

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	REV UPDATE W/NO DWG CHNG. BH	5-7-81	<i>[Signature]</i>
	A2	REV UPDATE W/NO DWG CHANGE MB	12-20-82	<i>[Signature]</i>
	A3	REV UPDATE W/NO DWG CHNG LIT	1-15-86	<i>[Signature]</i>

D

C

B

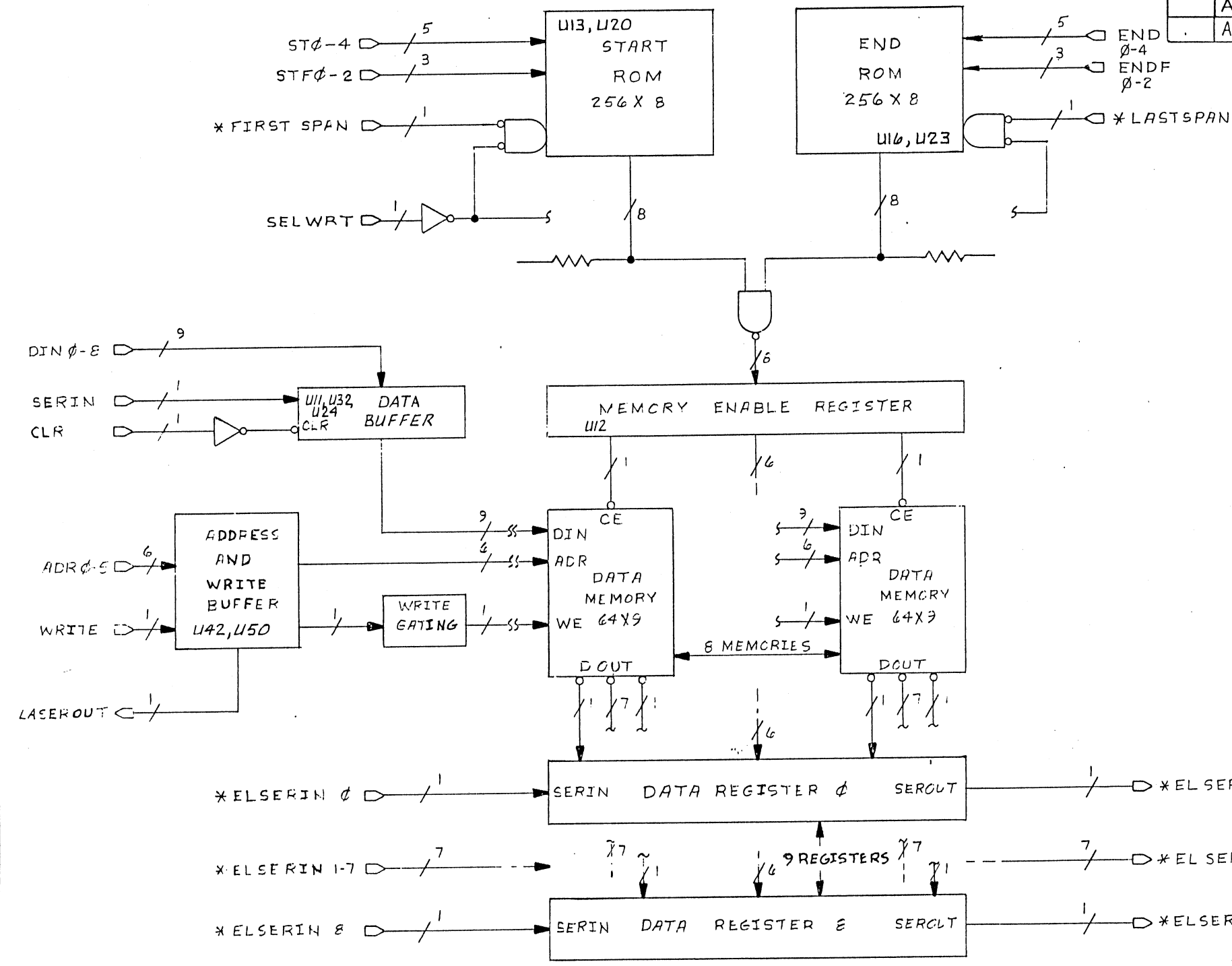
A

D

C

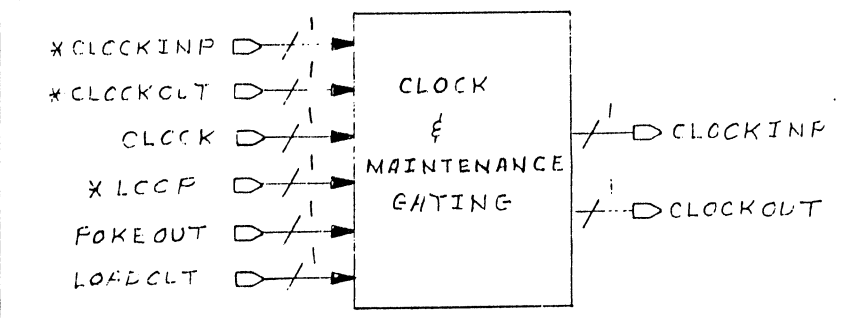
B

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) 21

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		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓
NEXT ASSY	USED ON	MATERIAL
APPLICATION		FINISH

CONTRACT NO.	
DRAWN	Howard L. Vestler 8-28-79
CHECKED	<i>[Signature]</i> 8-28-79
MECH	
ELEC	D. Hadfield 10/16/79
PROJ. ENG	R. Mon. 16 OCT 79
APPROVED	<i>[Signature]</i> 10-17-79

SEE SEPARATE PARTS LIST		
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		
LINE ASSEMBLER BLOCK DIAGRAM		
SIZE	CODE IDENT NO	RFV
C	53938 200162-901	A3
SCALE NONE		SHEET 1 OF 1

106 200162 901



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200163-101	REV: A0 = AA	DESC: CARD ASSY, EDGE/FRAME CONTROL (WW)				
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD,WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
C3 C9 C16 C23 C30 C37	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C5 C7 C10 C12 C14 C17 C19	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	6
C21 C24 C26 C28 C31 C33 C35 C38 C39 C41 C42	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	18
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
M2	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8(SM-P-PH-Z)	802056-003	3
M6 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
M7 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	912
U10 U11	IC,TTL 74125	27014	NATIONAL SEMICONDUCTOR	DM8093N/DM74125N	807494-646	2
U12 U30 U31 U63	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	4
U13 U14	IC,TTL 74161	07263	FAIRCHILD IC'S & SEMICOND	74161PC/DC	807661-246	2
U15	R,,DIP 1K(R13)	73138	BECKMAN INDUSTRIES CORP.	899-1-R1K/641-1-R1K	807499-102	1
U20 U25 U40 U42 U52 U70 U71 U72 U73	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	9
U21 U65	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	2
U22	IC,PROM,BIP,256X4,TS,	53938	EVANS & SUTHERLAND.	807629-055-A85	807629-055-A85	1
U23	IC,PROM,BIP,256X4,TS,	53938	EVANS & SUTHERLAND.	807629-055-A86	807629-055-A86	1
U24	IC,TTL 74148	01295	TEXAS INSTR, SEMICON DIV.	SN74148N	807648-446	1
U32	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
U33	IC,TTL 74S03	01295	TEXAS INSTR, SEMICON DIV.	SN74S03N/J	807403-055	1
U34	IC,TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	1
U35 U43 U50 U61	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	4
U41	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U44 U55	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	2
U45 U54	IC,TTL 74S195	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	2
U51	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
U53	IC,TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	1
U60 U74	IC,TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	2
U62	IC,TTL 74S139	01295	TEXAS INSTR, SEMICON DIV.	SN74S139N	807639-055	1
U64	IC,TTL 93S16	34335	ADVANCED MICRO DEVICES IN	93S16PC	807616-055	1
U75	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	1

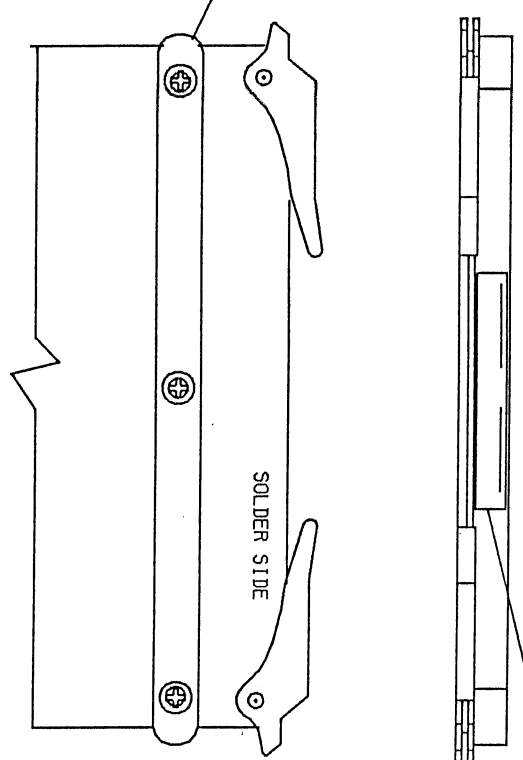
34 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0.	SAD 10-31-86	R. Spears

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C
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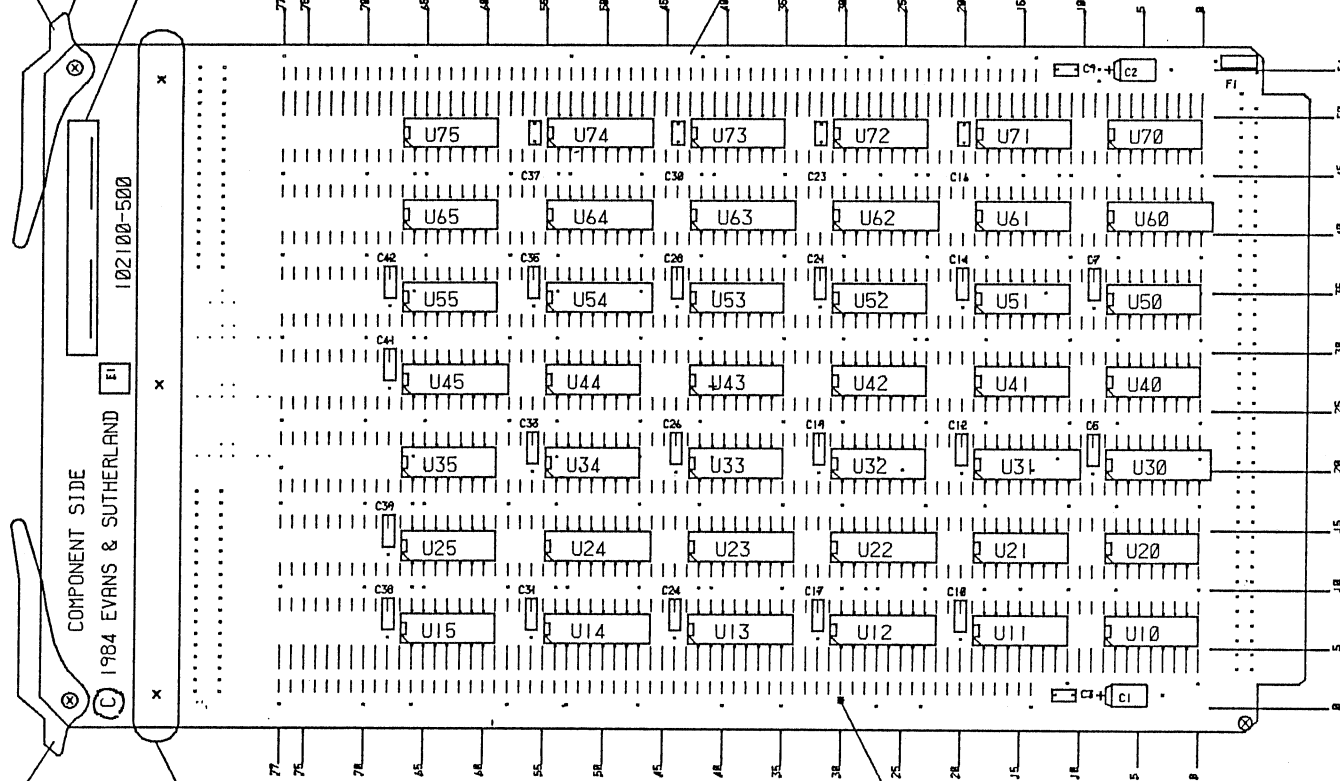
802056-003 (3 REQD)
6-32X3/8 M5
501337-001 (1 REQD)
.093SPCR M3
NOTE 3



801826-001 (1 REQD)
108-1020 M4
NOTE 3

NOTE 1
RED

102100-500 (1 REQD)
STD6X11



BLACK
501336-001 (1 REQD)
.312SPCR M2
NOTE 3

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

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 (M4) AND SPACERS (M2 & M3) AFTER WAVE SOLDERING.

REFERENCE DOCUMENTS

- SCHEMATIC... 200163-601
- PARTS LIST... PL200163-101

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DRAWN	KTRUSCOTT		EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
CHECKED	JL Michan 11-10-86		TITLE	
ELEC ENG	RON SPEARS		ASSY. CARD ASSY, EDGE/FACE CONTROL, WW	
PROJ ENG	BOB KENT			
APPROVED	R. Spears			
NEXT ASSY				
MODIFIED DATE	4-NOV-86		SIZE	CODE IDENT
CREATION DATE	17-SEP-86		C	53938
FILE NAME	200163101A0.MDF		DWG NO.	200163-101
	VERSION	31	REV	A0
			SHEET 1 OF 1	

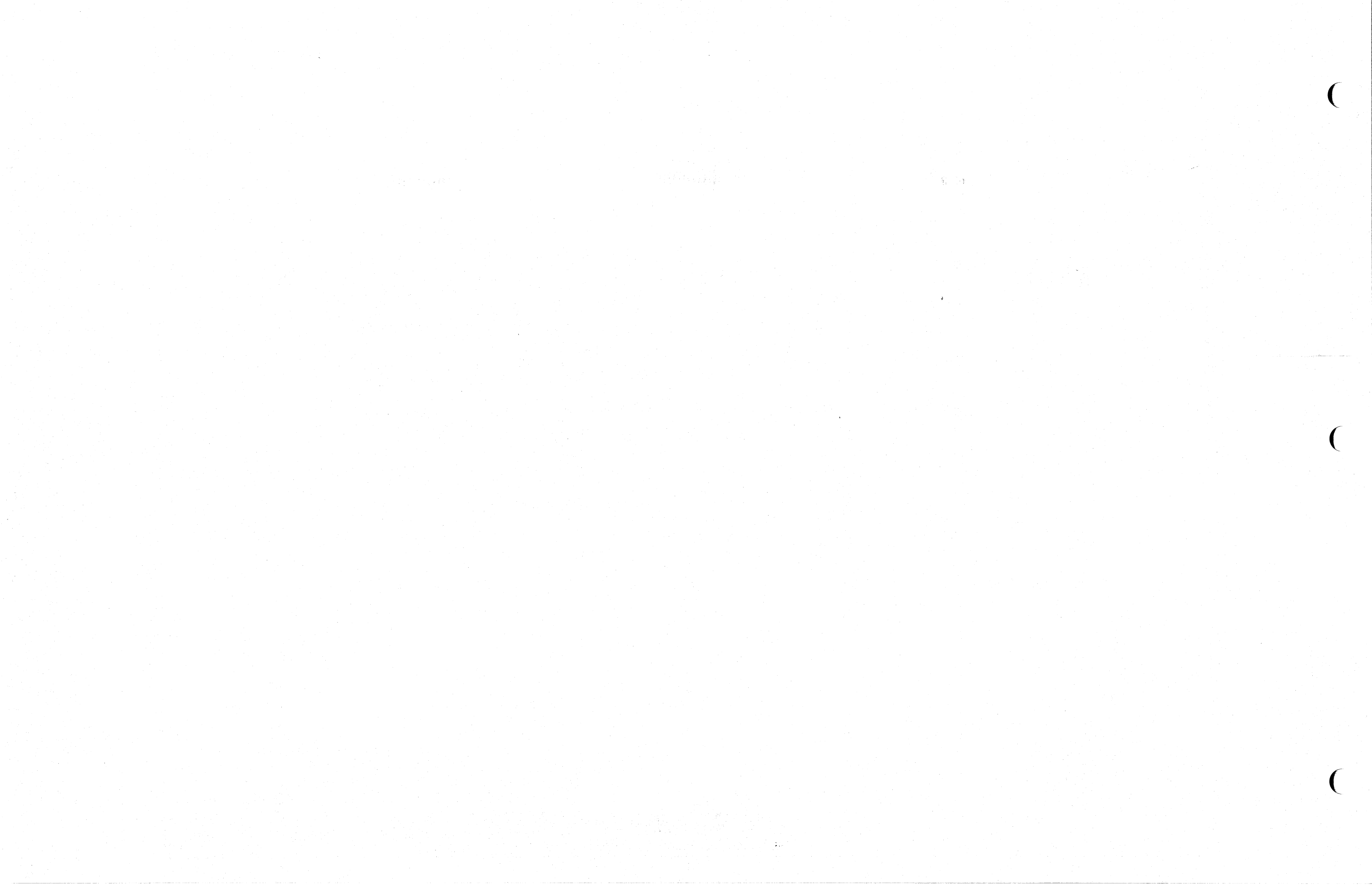
200163-101

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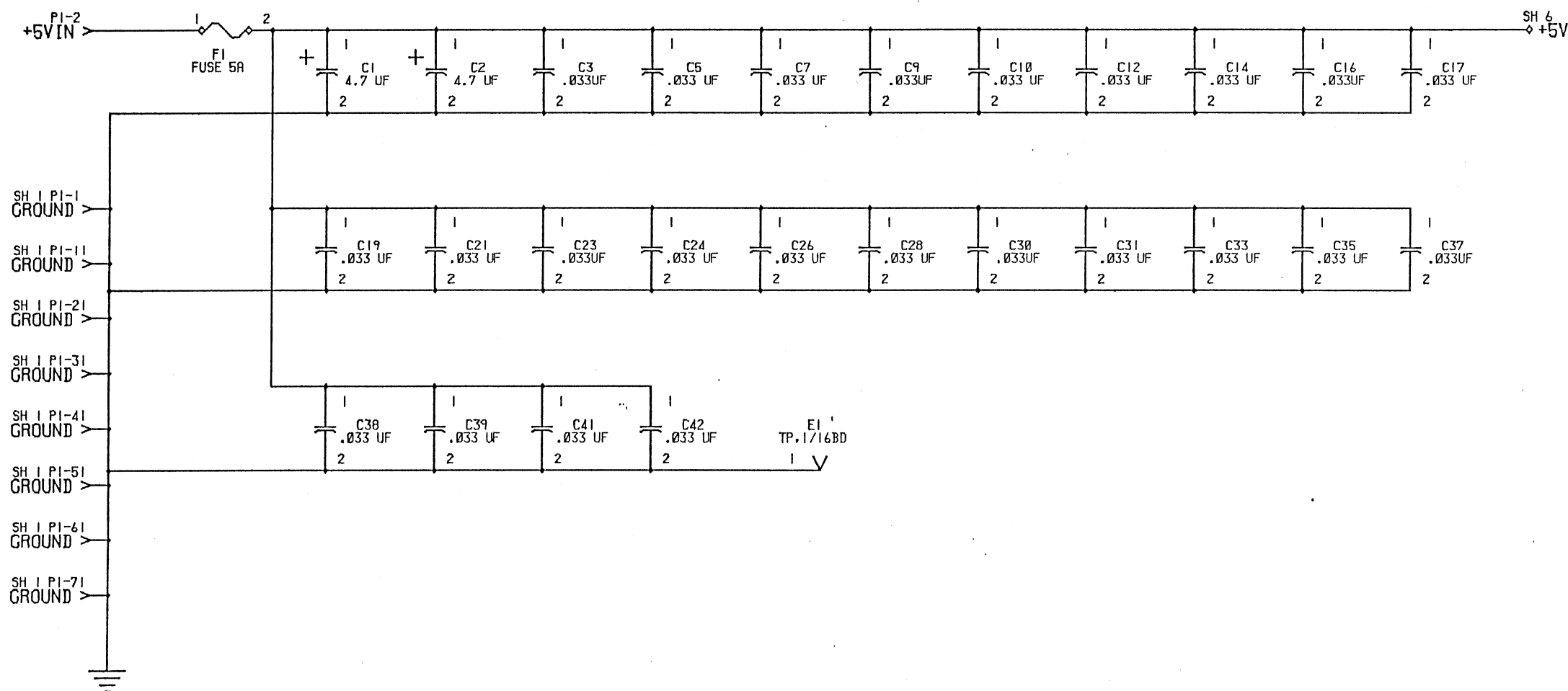
NOTES UNLESS OTHERWISE SPECIFIED:

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:
 - INPUT SIGNALS \rightarrow
 - OUTPUT SIGNALS \leftarrow

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

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0.	SAD 10-31-86	<i>R. Speirs</i>

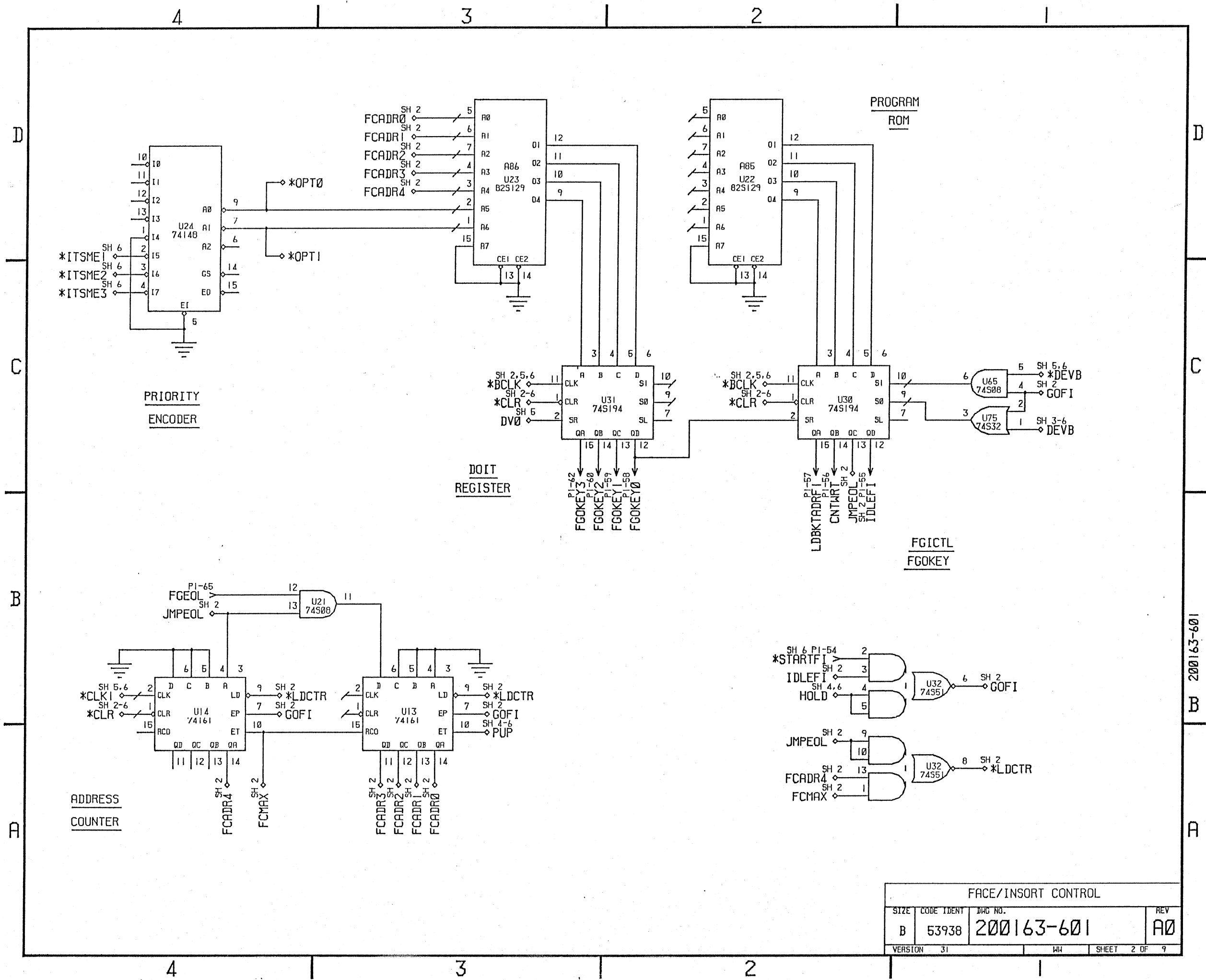


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DRAWN	RON SPEIRS
CHECKED	<i>Al Mechem 11-10-86</i>
ELEC ENG	RON SPEIRS
PROJ ENG	BOB KENT
APPROVED	
NEXT ASSY	
MODIFIED DATE	4-NOV-86
CREATION DATE	17-SEP-86
FILE NAME	200163101A0.MDF

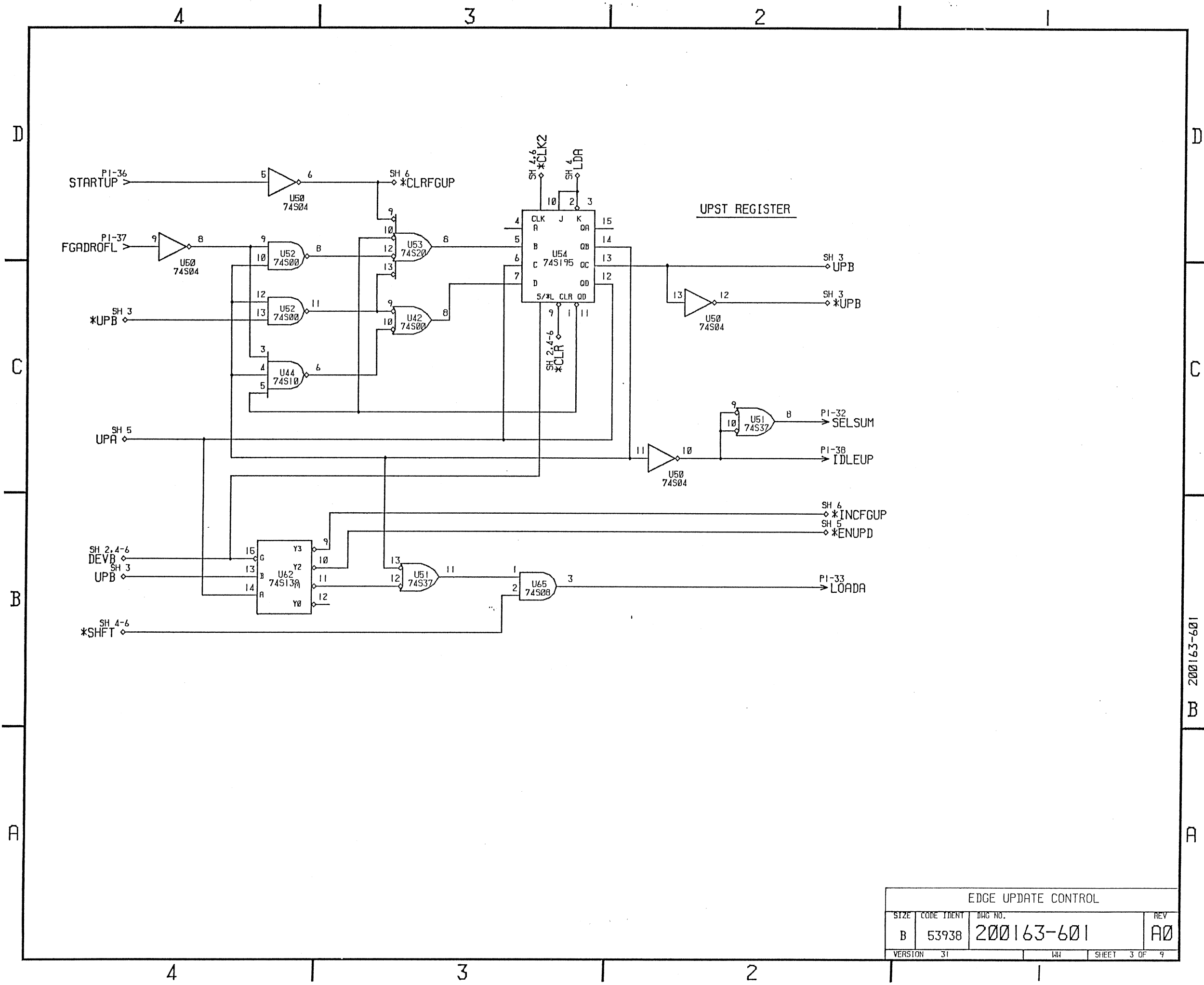
CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE CARD ASSY, EDGE/FACE CONTROL, WW			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200163-601	A0
VERSION	31	PC	SHEET 1 OF 9

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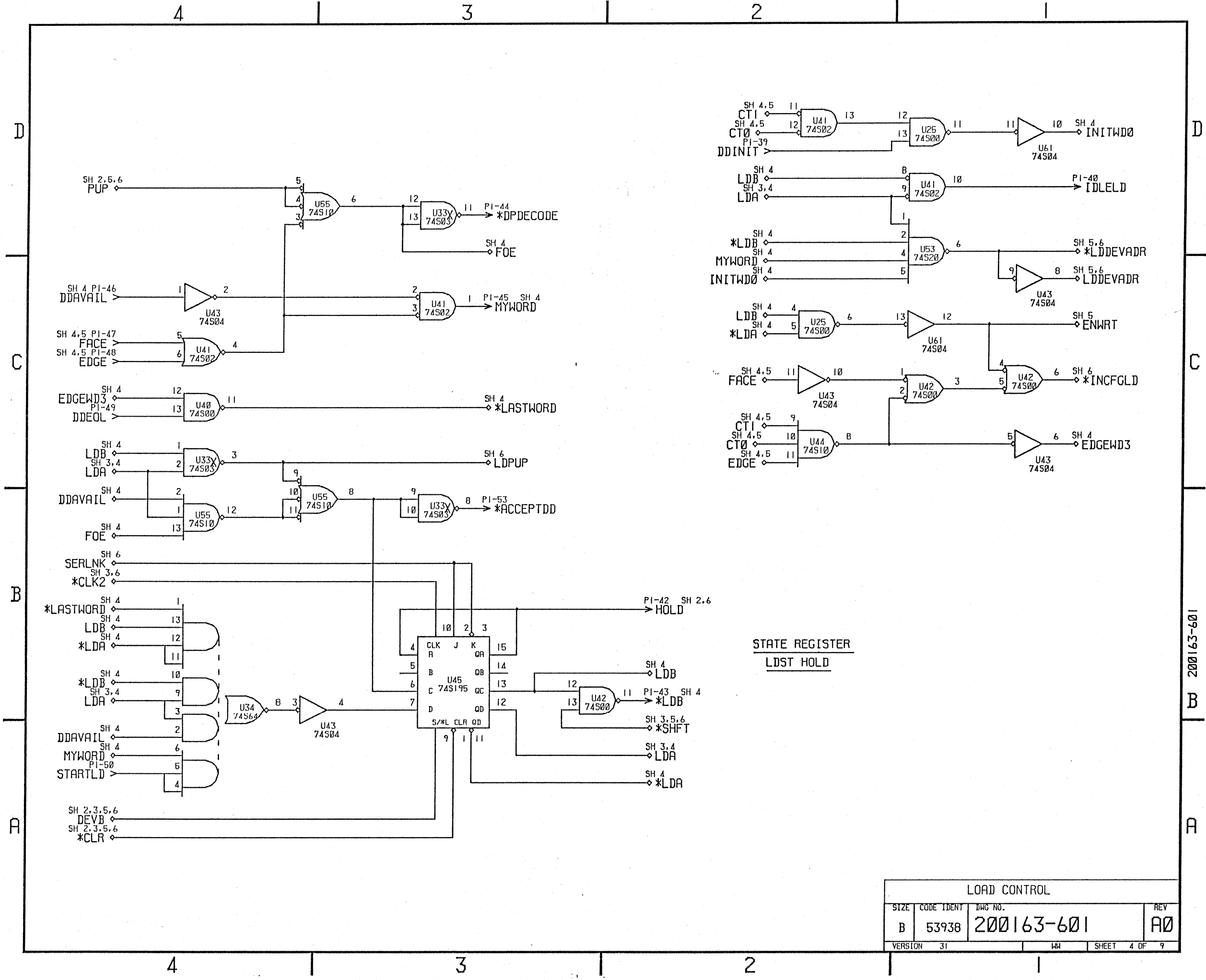


FACE/INSERT CONTROL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200163-601	A0
VERSION	31	WH	SHEET 2 OF 9

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EDGE UPDATE CONTROL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200163-601	A0
VERSION	31	INH	SHEET 3 OF 9



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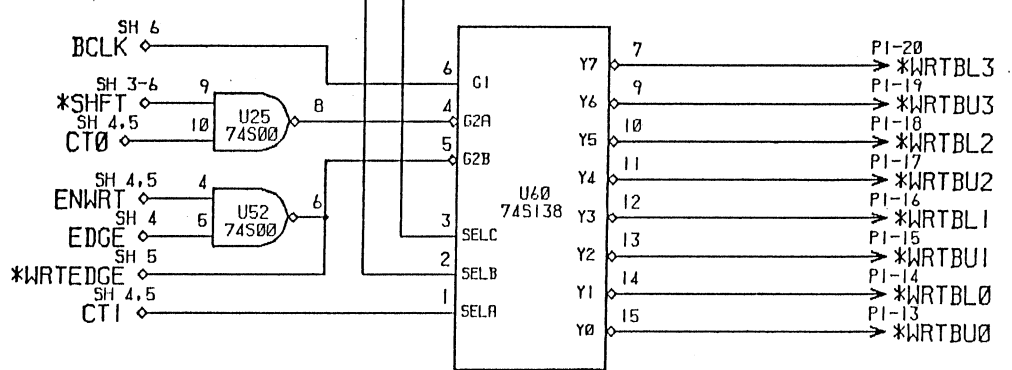
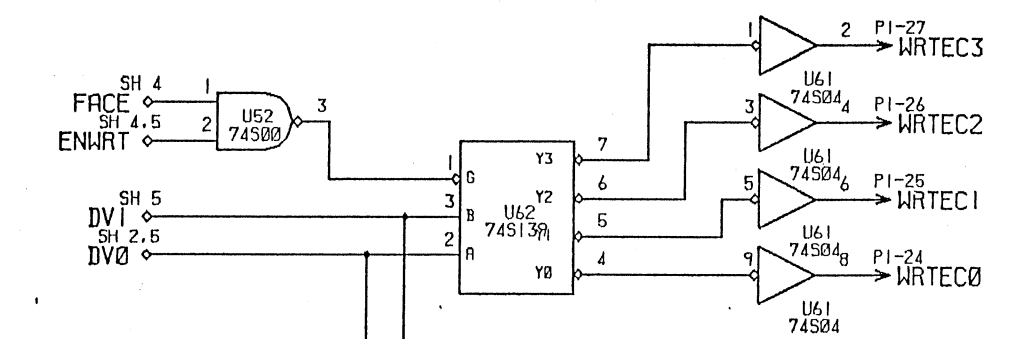
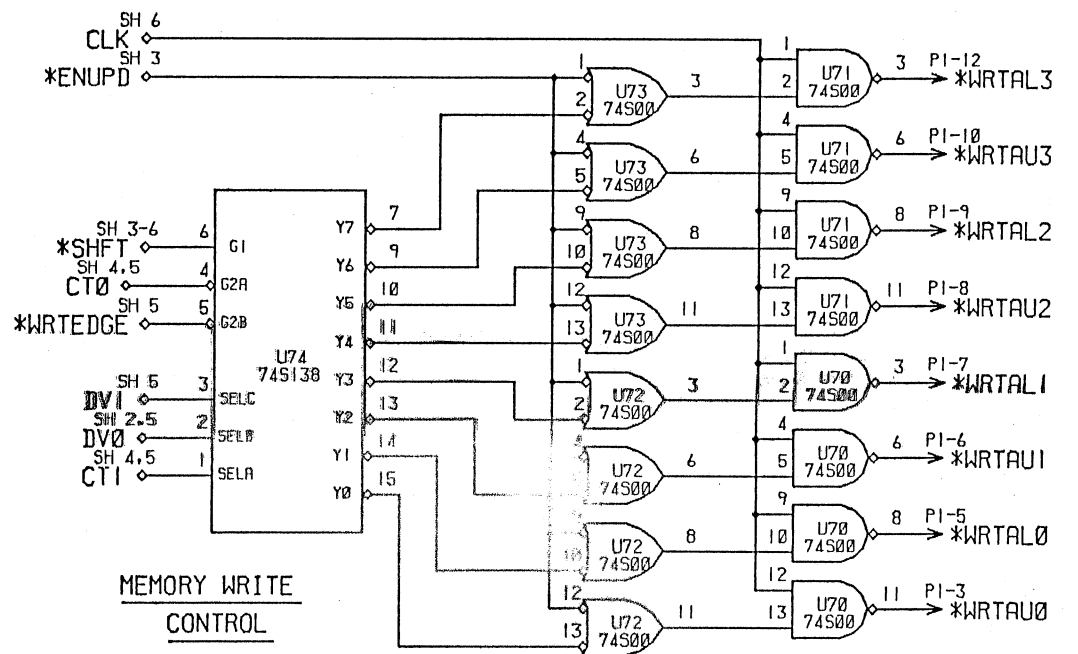
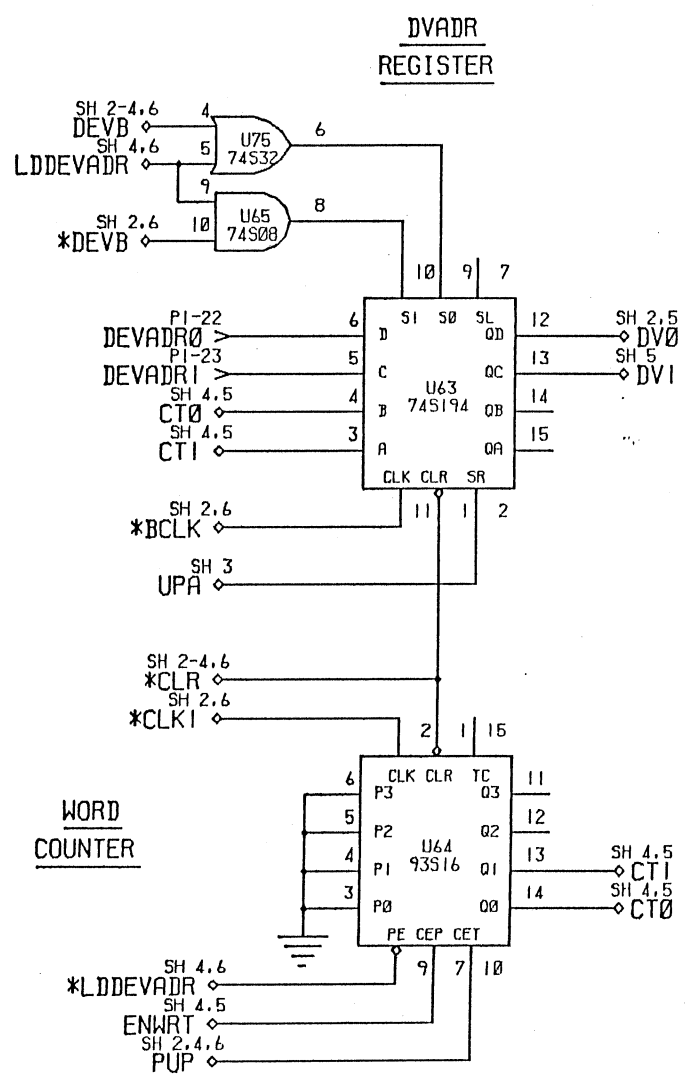
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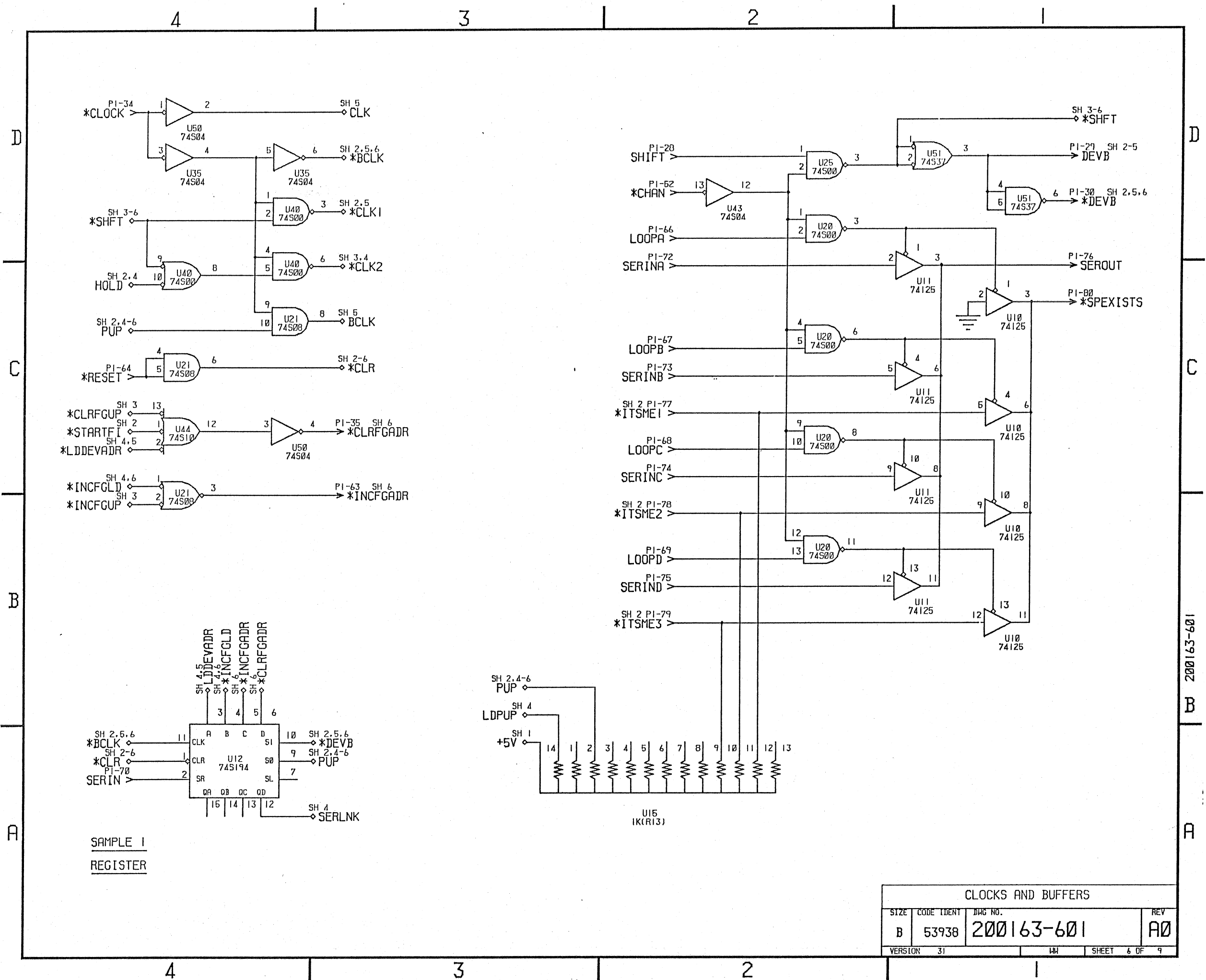
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200163-601



SIZE	CODE IDENT	DOC NO.	REV
B	53938	200163-601	A0
VERSION	31	WH	SHEET 5 OF 9



SAMPLE 1
REGISTER

CLOCKS AND BUFFERS			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200163-601	A0
VERSION	31	W	SHEET 6 OF 9

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4				3				2				1									
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	45	MALE	MYWORD	4	C3									
PI	2	FEMALE	+5VIN	1	C4		PI	46	FEMALE	DDAVAIL	4	C4									
PI	3	MALE	*WRTAU0	5	C1		PI	47	FEMALE	FACE	4	C4									
PI	5	MALE	*WRTAL0	5	C1		PI	48	FEMALE	EDGE	4	C4									
PI	6	MALE	*WRTAU1	5	C1		PI	49	FEMALE	DDEOL	4	C4									
PI	7	MALE	*WRTAL1	5	C1		PI	50	FEMALE	STARTLD	4	A4									
PI	8	MALE	*WRTAU2	5	C1		PI	51	FEMALE	GROUND	1	B4									
PI	9	MALE	*WRTAL2	5	D1		PI	52	FEMALE	*CHAN	6	D2									
PI	10	MALE	*WRTAU3	5	D1		PI	53	MALE	*ACCEPTDD	4	B3									
PI	11	FEMALE	GROUND	1	B4		PI	54	FEMALE	*STARTFI	2	B2									
PI	12	MALE	*WRTAL3	5	D1		PI	55	MALE	IDLEFI	2	C2									
PI	13	MALE	*WRTBU0	5	A1		PI	56	MALE	CNTWRT	2	C2									
PI	14	MALE	*WRTBL0	5	A1		PI	57	MALE	LDBKTADRFI	2	C2									
PI	15	MALE	*WRTBU1	5	A1		PI	58	MALE	FGOKEY0	2	C2									
PI	16	MALE	*WRTBL1	5	A1		PI	59	MALE	FGOKEY1	2	C2									
PI	17	MALE	*WRTBU2	5	A1		PI	60	MALE	FGOKEY2	2	C3									
PI	18	MALE	*WRTBL2	5	A1		PI	61	FEMALE	GROUND	1	B4									
PI	19	MALE	*WRTBU3	5	B1		PI	62	MALE	FGOKEY3	2	C3									
PI	20	MALE	*WRTBL3	5	B1		PI	63	MALE	*INCFGADR	6	B3									
PI	21	FEMALE	GROUND	1	B4		PI	64	FEMALE	*RESET	6	C4									
PI	22	FEMALE	DEVADR0	5	B4		PI	65	FEMALE	FGEOL	2	B4									
PI	23	FEMALE	DEVADR1	5	B4		PI	66	FEMALE	LOOPA	6	D2									
PI	24	MALE	WRTEC0	5	B1		PI	67	FEMALE	LOOPB	6	C2									
PI	25	MALE	WRTEC1	5	B1		PI	68	FEMALE	LOOPC	6	C2									
PI	26	MALE	WRTEC2	5	B1		PI	69	FEMALE	LOOPD	6	B2									
PI	27	MALE	WRTEC3	5	B1		PI	70	FEMALE	SERIN	6	A4									
PI	28	FEMALE	SHIFT	6	D2		PI	71	FEMALE	GROUND	1	A4									
PI	29	MALE	DEVB	6	D1		PI	72	FEMALE	SERINA	6	C2									
PI	30	MALE	*DEVB	6	D1		PI	73	FEMALE	SERINB	6	C2									
PI	31	FEMALE	GROUND	1	B4		PI	74	FEMALE	SERINC	6	C2									
PI	32	MALE	SELSUM	3	C2		PI	75	FEMALE	SERIND	6	B2									
PI	33	MALE	LOADA	3	B2		PI	76	MALE	SEROUT	6	C1									
PI	34	FEMALE	*CLOCK	6	D4		PI	77	FEMALE	*ITSME1	6	C2									
PI	35	MALE	*CLAFGADR	6	C3		PI	78	FEMALE	*ITSME2	6	B2									
PI	36	FEMALE	STARTUP	3	D4		PI	79	FEMALE	*ITSME3	6	B2									
PI	37	FEMALE	FGADROFL	3	D4		PI	80	MALE	*SPEXISTS	6	C1									
PI	38	MALE	IDLEUP	3	C2																
PI	39	FEMALE	DDINIT	4	D2																
PI	40	MALE	IDLELD	4	D1																
PI	41	FEMALE	GROUND	1	B4																
PI	42	MALE	HOLD	4	B2																
PI	43	MALE	*LDB	4	B2																
PI	44	MALE	*DPDECODE	4	D3																

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CONNECTORS BY UNIT/PIN			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200163-601	A0
VERSION	31	CS	SHEET 7 OF 9

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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	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
*ACCEPTDD	PI	53	MALE	4	B3		FGOKEY1	PI	59	MALE	2	C2															
*CHAN	PI	52	FEMALE	6	D2		FGOKEY2	PI	60	MALE	2	C3															
*CLOCK	PI	34	FEMALE	6	D4		FGOKEY3	PI	62	MALE	2	C3															
*CLRFGADR	PI	35	MALE	6	C3		GROUND	PI	1	FEMALE	1	C4															
*DEVB	PI	30	MALE	6	D1		GROUND	PI	11	FEMALE	1	B4															
*DPDECODE	PI	44	MALE	4	D3		GROUND	PI	21	FEMALE	1	B4															
*INCFGADR	PI	63	MALE	6	B3		GROUND	PI	31	FEMALE	1	B4															
*ITSME1	PI	77	FEMALE	6	C2		GROUND	PI	41	FEMALE	1	B4															
*ITSME2	PI	78	FEMALE	6	B2		GROUND	PI	51	FEMALE	1	B4															
*ITSME3	PI	79	FEMALE	6	B2		GROUND	PI	61	FEMALE	1	B4															
*LDB	PI	43	MALE	4	B2		GROUND	PI	71	FEMALE	1	A4															
*RESET	PI	64	FEMALE	6	C4		HOLD	PI	42	MALE	4	B2															
*SPEXISTS	PI	80	MALE	6	C1		IDLEFI	PI	55	MALE	2	C2															
*STARTFI	PI	54	FEMALE	2	B2		IDLELD	PI	40	MALE	4	D1															
*WRTAL0	PI	5	MALE	5	C1		IDLEUP	PI	38	MALE	3	C2															
*WRTAL1	PI	7	MALE	5	C1		LDBKTADRFI	PI	57	MALE	2	C2															
*WRTAL2	PI	9	MALE	5	D1		LOADA	PI	33	MALE	3	B2															
*WRTAL3	PI	12	MALE	5	D1		LOOPA	PI	66	FEMALE	6	D2															
*WRTAU0	PI	3	MALE	5	C1		LOOPB	PI	67	FEMALE	6	C2															
*WRTAU1	PI	6	MALE	5	C1		LOOPC	PI	68	FEMALE	6	C2															
*WRTAU2	PI	8	MALE	5	C1		LOOPD	PI	69	FEMALE	6	B2															
*WRTAU3	PI	10	MALE	5	D1		MYWORD	PI	45	MALE	4	C3															
*WRTBL0	PI	14	MALE	5	A1		SELSUM	PI	32	MALE	3	C2															
*WRTBL1	PI	16	MALE	5	A1		SERIN	PI	70	FEMALE	6	A4															
*WRTBL2	PI	18	MALE	5	A1		SERINA	PI	72	FEMALE	6	C2															
*WRTBL3	PI	20	MALE	5	B1		SERINB	PI	73	FEMALE	6	C2															
*WRTBU0	PI	13	MALE	5	A1		SERINC	PI	74	FEMALE	6	C2															
*WRTBU1	PI	15	MALE	5	A1		SERIND	PI	75	FEMALE	6	B2															
*WRTBU2	PI	17	MALE	5	A1		SEROUT	PI	76	MALE	6	C1															
*WRTBU3	PI	19	MALE	5	B1		SHIFT	PI	28	FEMALE	6	D2															
+5VIN	PI	2	FEMALE	1	C4		STARTLD	PI	50	FEMALE	4	A4															
CNTWRT	PI	56	MALE	2	C2		STARTUP	PI	36	FEMALE	3	D4															
DDAVAIL	PI	46	FEMALE	4	C4		WRTEC0	PI	24	MALE	5	B1															
DDEOL	PI	49	FEMALE	4	C4		WRTEC1	PI	25	MALE	5	B1															
DDINIT	PI	39	FEMALE	4	D2		WRTEC2	PI	26	MALE	5	B1															
DEVADR0	PI	22	FEMALE	5	B4		WRTEC3	PI	27	MALE	5	B1															
DEVADR1	PI	23	FEMALE	5	B4																						
DEVB	PI	29	MALE	6	D1																						
EDGE	PI	48	FEMALE	4	C4																						
FACE	PI	47	FEMALE	4	C4																						
FGADROFL	PI	37	FEMALE	3	D4																						
FGEOL	PI	65	FEMALE	2	B4																						
FGOKEY0	PI	58	MALE	2	C2																						

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CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DRG NO.	REV
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PAGE	TYPE	PAGE NAME
1	PC	CAPACITORS
2	WW	FACE/INSORT CONTROL
3	WW	EDGE UPDATE CONTROL
4	WW	LOAD CONTROL
5	WW	
6	WW	CLOCKS AND BUFFERS

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SIZE	CODE IDENT	DWG NO.	REV
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VERSION	31	TC	SHEET 9 OF 9

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MAINTENANCE PARTS LIST

ASSEMBLY: PL 200164-102

REV: A0 = AA

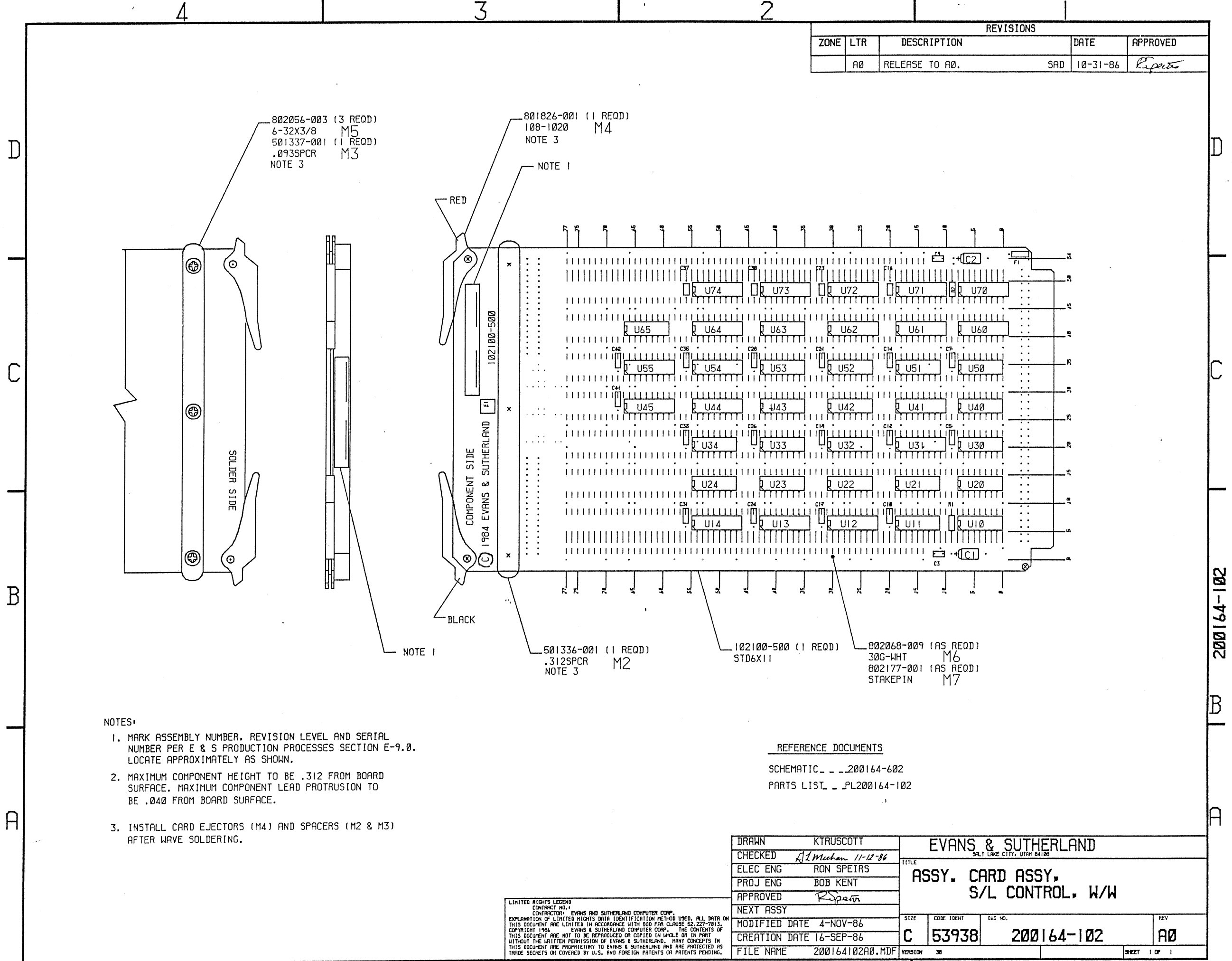
DESC: CARD ASSY, S/L CONTROL (WW)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD,WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
C3 C9 C16 C23 C30 C37	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C5 C7 C10 C12 C14 C17 C19	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	6
C21 C24 C26 C28 C31 C33 C35 C41 C42	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	16
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
M2	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8(SM-P-PH-Z)	802056-003	3
M6 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
M7 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	874
R1 R2	R,,AXL 1K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	2
U10 U30 U33 U51 U53	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	5
U11 U20 U21 U24 U43 U52	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	6
U12	IC,TTL 74365AN	01295	TEXAS INSTR, SEMICON DIV.	SN74365AN	807712-646	1
U13 U64	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	2
U14 U31 U41	IC,TTL 74S195	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	3
U22 U32	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	2
U23	IC,TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	1
U34	IC,TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	1
U40	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U42	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
U44	IC,TTL 7442N	01295	TEXAS INSTR, SEMICON DIV.	SN7442AN	807642-646	1
U45	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	1
U50	IC,TTL 74S86	01295	TEXAS INSTR, SEMICON DIV.	SN74S86N	807486-055	1
U54	IC,TTL 74S151	01295	TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055	1
U55	IC,PROM,BIP,32X8,TS,5	53938	EVANS & SUTHERLAND.	807739-055-A57	807739-055-A57	1
U60 U61 U62	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	3
U63	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	1
U65	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
U70 U71 U72	IC,TTL 93S16	34335	ADVANCED MICRO DEVICES IN	93S16PC	807616-055	3
U73 U74	IC,TTL 74161	07263	FAIRCHILD IC'S & SEMICONDC	74161PC/DC	807661-246	2

33 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0.	SAD 10-31-86	<i>R. Speirs</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 (M4) AND SPACERS (M2 & M3) AFTER WAVE SOLDERING.

REFERENCE DOCUMENTS
 SCHEMATIC _ _ _ 200164-602
 PARTS LIST _ _ PL200164-102

LIMITED RIGHTS LEGEND
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DRAWN	KTRUSCOTT	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84106		
CHECKED	<i>AL Mehan 11-12-86</i>	TITLE ASSY. CARD ASSY, S/L CONTROL, W/W		
ELEC ENG	RON SPEIRS	SIZE	CODE IDENT	DWG NO.
PROJ ENG	BOB KENT	C	53938	200164-102
APPROVED	<i>R. Speirs</i>	REV	A0	
NEXT ASSY		VERSION	30	
MODIFIED DATE	4-NOV-86	SHEET 1 OF 1		
CREATION DATE	16-SEP-86			
FILE NAME	200164102A0.MDF			

200164-102



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE TO A0.	SAD 10-31-86	<i>R Speirs</i>

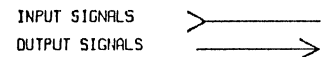
NOTES: UNLESS OTHERWISE SPECIFIED:

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

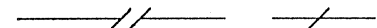
2. ON ALL IC'S, GROUND AND +5V (VCC) ARE AS FOLLOWS:

- 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:

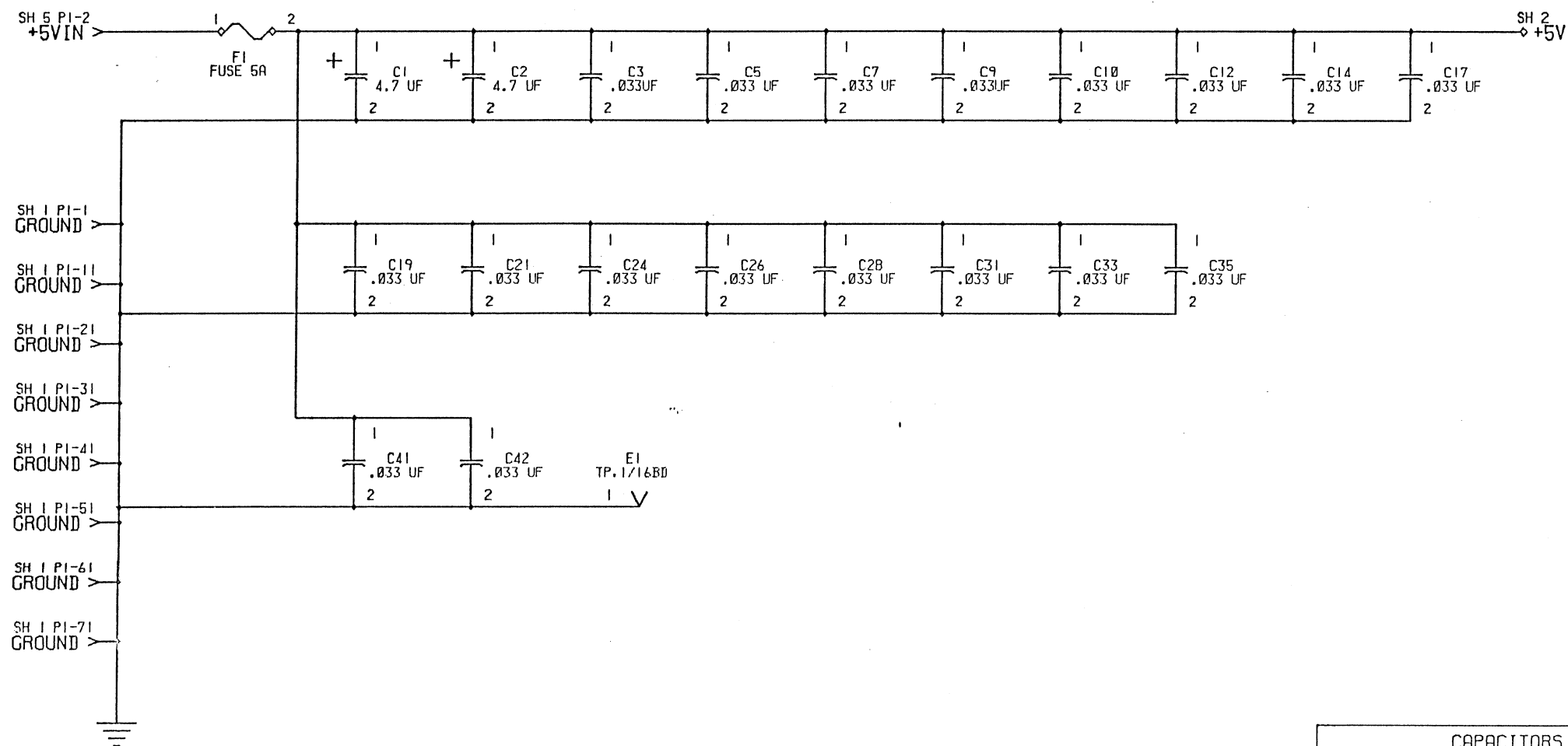


4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.



D
C
B
A

D
C
B
A

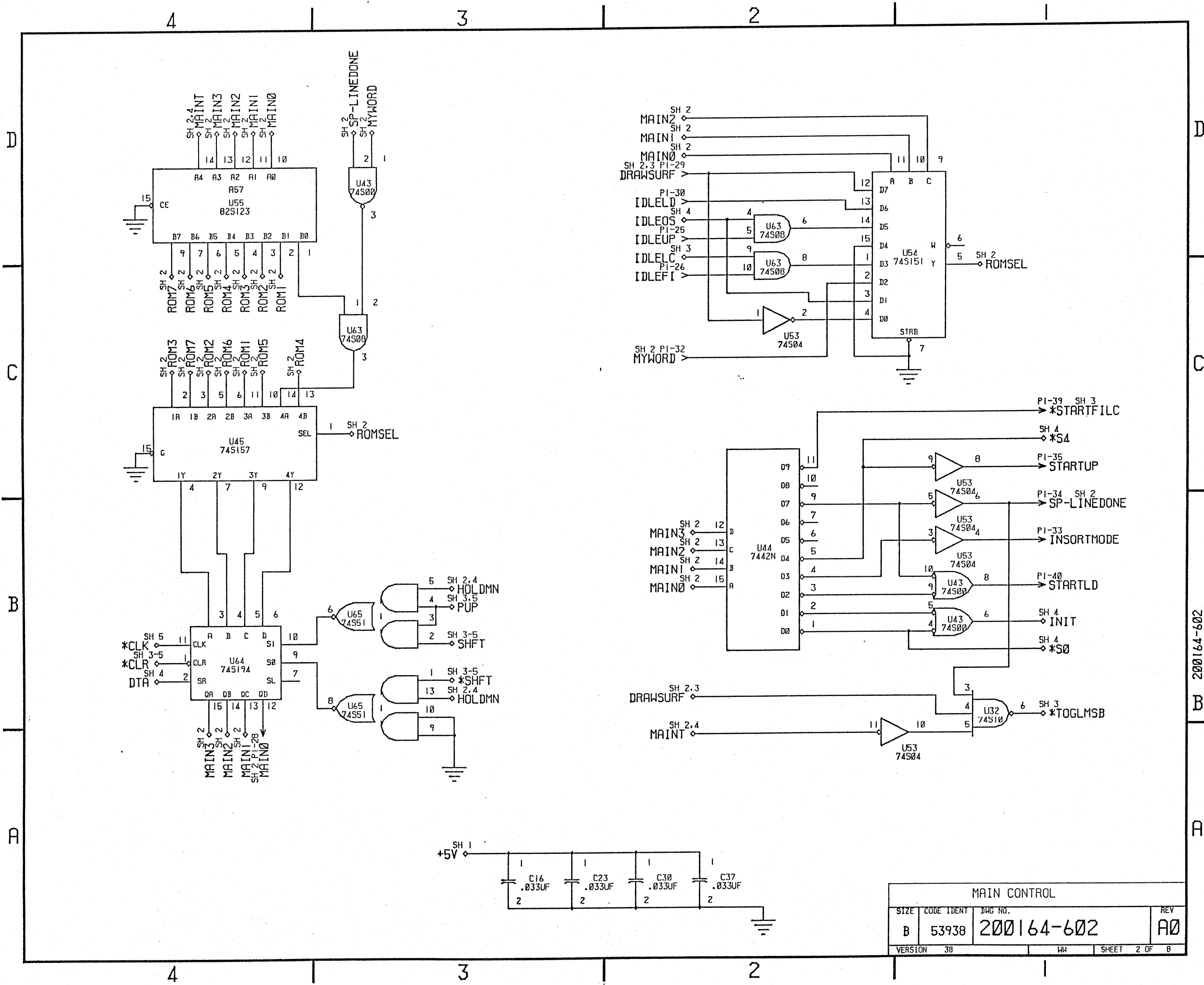


200164-602
B

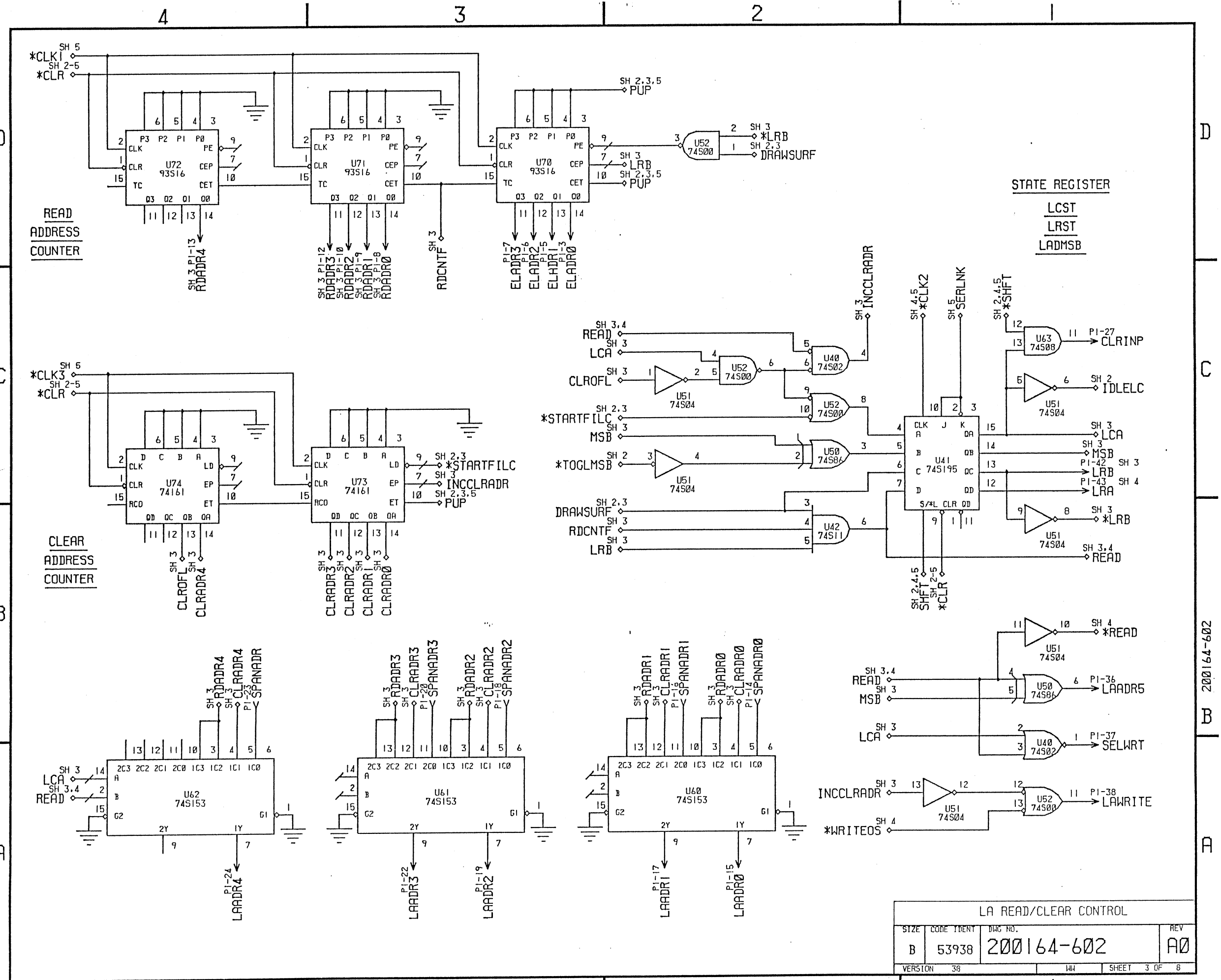
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DRAWN	RON SPEIRS
CHECKED	<i>AK Mechem 11-11-86</i>
ELEC ENG	RON SPEIRS <i>R Speirs</i>
PROJ ENG	BOB KENT
APPROVED	
NEXT ASSY	
MODIFIED DATE	4-NOV-86
CREATION DATE	16-SEP-86
FILE NAME	200164102A0.MDF

CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE CARD ASSY, S/L CONTROL, W/W			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200164-602	A0
VERSION	30	PC	SHEET 1 OF 8



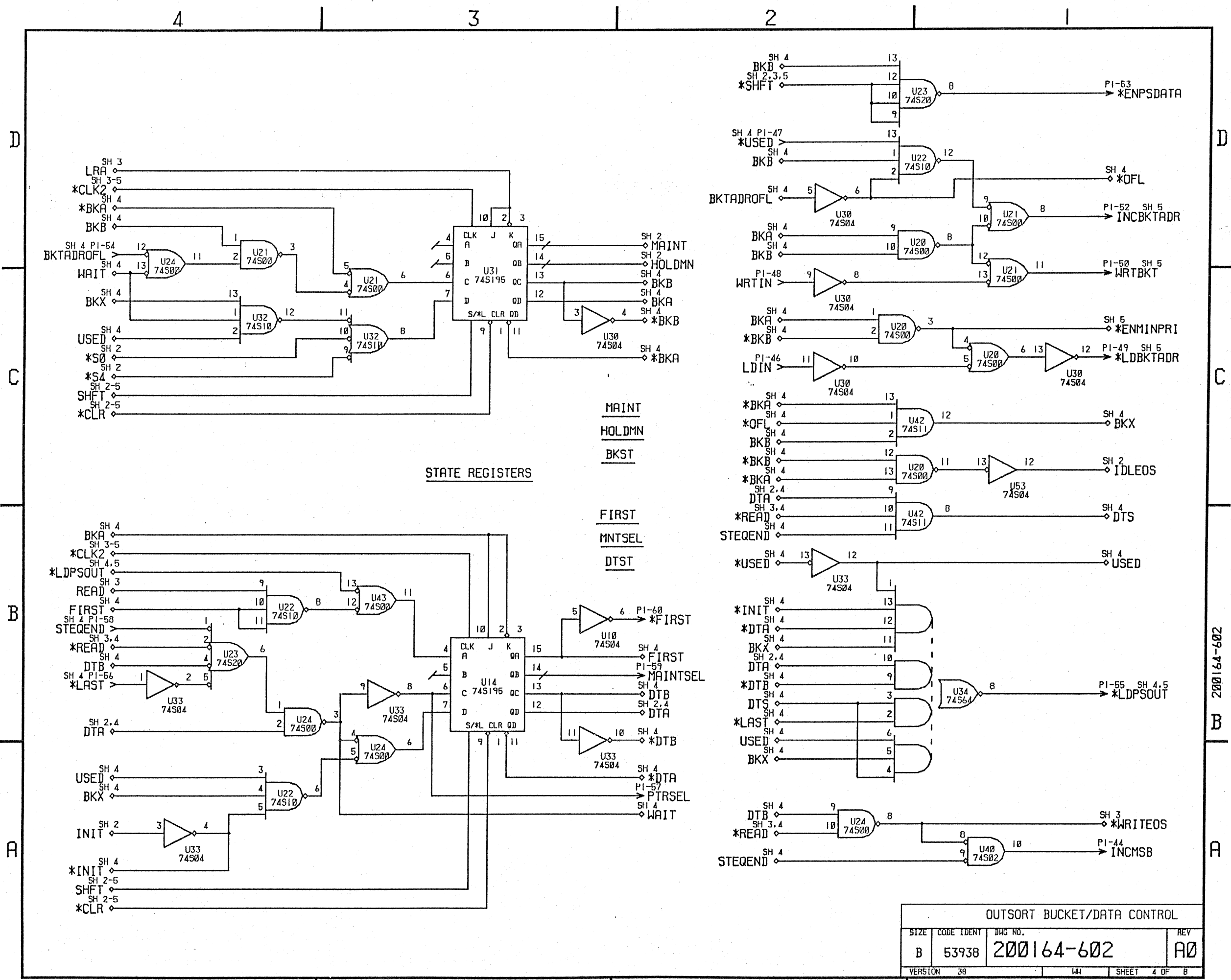
MAIN CONTROL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200164-602	A0
VERSION	38	WH	SHEET 2 OF 8



STATE REGISTER
 LCST
 LRST
 LADMSB

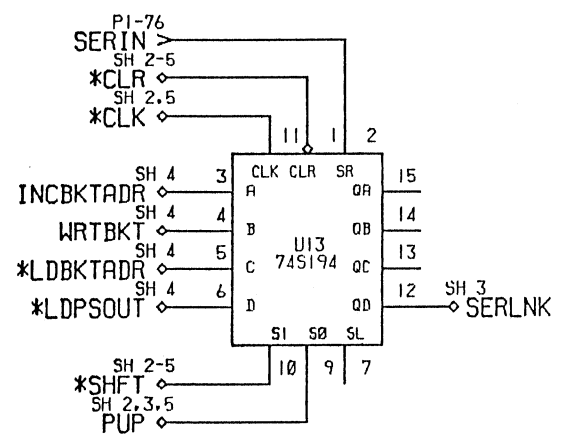
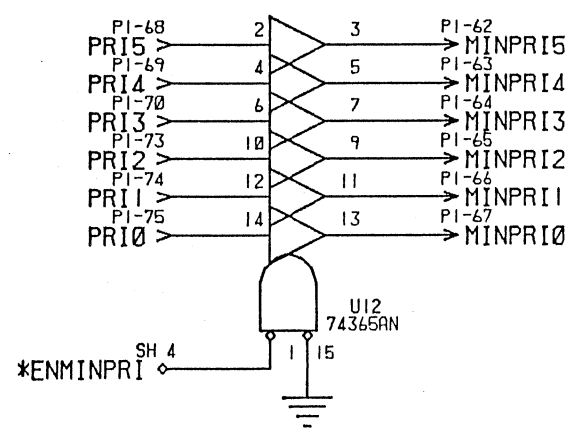
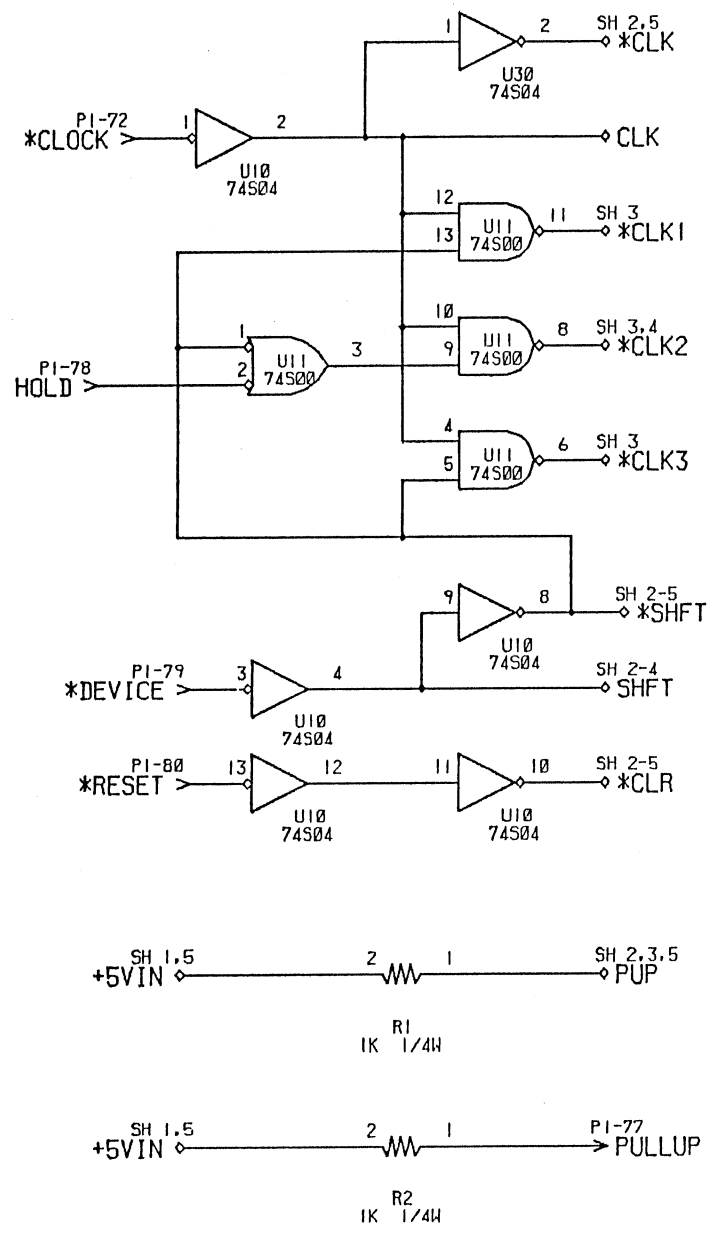
LA READ/CLEAR CONTROL			
SIZE	CODE IDENT	DIAG NO.	REV
B	53938	200164-602	A0
VERSION	38	HW	SHEET 3 OF 8

200164-602



STATE REGISTERS

OUTSORT BUCKET/DATA CONTROL			
SIZE	CODE IDENT	DOC NO.	REV
B	53938	200164-602	A0
VERSION	38	MM	SHEET 4 OF 8



SAMPL2 REGISTER

CLOCKS AND REGISTERS			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200164-602	A0
VERSION	36	WIN	SHEET 5 OF 6

200164-602

4						3						2						1									
UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	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	B4		PI	46	FEMALE	LDIN	4	C2															
PI	2	FEMALE	+5VIN	1	C4		PI	47	FEMALE	*USED	4	D2															
PI	3	MALE	ELADR0	3	D3		PI	48	FEMALE	WRTIN	4	C2															
PI	5	MALE	ELADR1	3	D3		PI	49	MALE	*LDBKTADR	4	C1															
PI	6	MALE	ELADR2	3	D3		PI	50	MALE	WRTBKT	4	C1															
PI	7	MALE	ELADR3	3	D3		PI	51	FEMALE	GROUND	1	B4															
PI	8	MALE	RDADR0	3	D3		PI	52	MALE	INCBKTADR	4	D1															
PI	9	MALE	RDADR1	3	D3		PI	53	MALE	*ENPSDATA	4	D1															
PI	10	MALE	RDADR2	3	D3		PI	54	FEMALE	BKTADROFL	4	D4															
PI	11	FEMALE	GROUND	1	B4		PI	55	MALE	*LDPSOUT	4	B1															
PI	12	MALE	RDADR3	3	D3		PI	56	FEMALE	*LAST	4	B4															
PI	13	MALE	RDADR4	3	D4		PI	57	MALE	PTRSEL	4	A2															
PI	14	FEMALE	SPANADR0	3	B2		PI	58	FEMALE	STEQEND	4	B4															
PI	15	MALE	LAADR0	3	A2		PI	59	MALE	MAINTSEL	4	B2															
PI	16	FEMALE	SPANADR1	3	B2		PI	60	MALE	*FIRST	4	B2															
PI	17	MALE	LAADR1	3	A2		PI	61	FEMALE	GROUND	1	B4															
PI	18	FEMALE	SPANADR2	3	B3		PI	62	MALE	MINPRI5	5	D2															
PI	19	MALE	LAADR2	3	A3		PI	63	MALE	MINPRI4	5	D2															
PI	20	FEMALE	SPANADR3	3	B3		PI	64	MALE	MINPRI3	5	D2															
PI	21	FEMALE	GROUND	1	B4		PI	65	MALE	MINPRI2	5	C2															
PI	22	MALE	LAADR3	3	A3		PI	66	MALE	MINPRI1	5	C2															
PI	23	FEMALE	SPANADR	3	B4		PI	67	MALE	MINPRI0	5	C2															
PI	24	MALE	LAADR4	3	A4		PI	68	FEMALE	PRI5	5	D2															
PI	25	FEMALE	IDLEUP	2	D2		PI	69	FEMALE	PRI4	5	D2															
PI	26	FEMALE	IDLEFI	2	C2		PI	70	FEMALE	PRI3	5	D2															
PI	27	MALE	CLRINP	3	C1		PI	71	FEMALE	GROUND	1	A4															
PI	28	MALE	MAIN0	2	B4		PI	72	FEMALE	*CLOCK	5	D4															
PI	29	FEMALE	DRAWSURF	2	D2		PI	73	FEMALE	PRI2	5	C2															
PI	30	FEMALE	IDLELD	2	D2		PI	74	FEMALE	PRI1	5	C2															
PI	31	FEMALE	GROUND	1	B4		PI	75	FEMALE	PRI0	5	C2															
PI	32	FEMALE	MYWORD	2	C2		PI	76	FEMALE	SERIN	5	C2															
PI	33	MALE	INSORTMODE	2	B1		PI	77	MALE	PULLUP	5	B3															
PI	34	MALE	SP-LINEDONE	2	B1		PI	78	FEMALE	HOLD	5	C4															
PI	35	MALE	STARTUP	2	C1		PI	79	FEMALE	*DEVICE	5	C4															
PI	36	MALE	LAADR5	3	B1		PI	80	FEMALE	*RESET	5	B4															
PI	37	MALE	SELWRT	3	A1																						
PI	38	MALE	LAWRITE	3	A1																						
PI	39	MALE	*STARTFILC	2	C1																						
PI	40	MALE	STARTLD	2	B1																						
PI	41	FEMALE	GROUND	1	B4																						
PI	42	MALE	LRB	3	C1																						
PI	43	MALE	LRA	3	C1																						
PI	44	MALE	INCMSB	4	A1																						

D

C

B

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B

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200164-602

CONNECTORS BY UNIT/PIN			
SIZE	CODE IDENT	DIAG NO.	REV
B	53938	200164-602	A0
VERSION	38	C5	SHEET 6 OF 8

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	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
*CLOCK	PI	72	FEMALE	5	D4		MAIN0	PI	28	MALE	2	B4															
*DEVICE	PI	79	FEMALE	5	C4		MAINTSEL	PI	59	MALE	4	B2															
*ENPSDATA	PI	53	MALE	4	D1		MINPRI0	PI	67	MALE	5	C2															
*FIRST	PI	60	MALE	4	B2		MINPRI1	PI	66	MALE	5	C2															
*LAST	PI	56	FEMALE	4	B4		MINPRI2	PI	65	MALE	5	C2															
*LDBKTADR	PI	49	MALE	4	C1		MINPRI3	PI	64	MALE	5	D2															
*LDPSOUT	PI	55	MALE	4	B1		MINPRI4	PI	63	MALE	5	D2															
*RESET	PI	80	FEMALE	5	B4		MINPRI5	PI	62	MALE	5	D2															
*STARTFILC	PI	39	MALE	2	C1		MYWORD	PI	32	FEMALE	2	C2															
*USED	PI	47	FEMALE	4	D2		PRI0	PI	75	FEMALE	5	C2															
+5VIN	PI	2	FEMALE	1	C4		PRI1	PI	74	FEMALE	5	C2															
BKTADROFL	PI	54	FEMALE	4	D4		PRI2	PI	73	FEMALE	5	C2															
CLRINP	PI	27	MALE	3	C1		PRI3	PI	70	FEMALE	5	D2															
DRAWSURF	PI	29	FEMALE	2	D2		PRI4	PI	69	FEMALE	5	D2															
ELADR0	PI	3	MALE	3	D3		PRI5	PI	68	FEMALE	5	D2															
ELADR1	PI	5	MALE	3	D3		PTRSEL	PI	57	MALE	4	A2															
ELADR2	PI	6	MALE	3	D3		PULLUP	PI	77	MALE	5	B3															
ELADR3	PI	7	MALE	3	D3		RDADR0	PI	8	MALE	3	D3															
GROUND	PI	1	FEMALE	1	B4		RDADR1	PI	9	MALE	3	D3															
GROUND	PI	11	FEMALE	1	B4		RDADR2	PI	10	MALE	3	D3															
GROUND	PI	21	FEMALE	1	B4		RDADR3	PI	12	MALE	3	D3															
GROUND	PI	31	FEMALE	1	B4		RDADR4	PI	13	MALE	3	D4															
GROUND	PI	41	FEMALE	1	B4		SELWRT	PI	37	MALE	3	A1															
GROUND	PI	51	FEMALE	1	B4		SERIN	PI	76	FEMALE	5	C2															
GROUND	PI	61	FEMALE	1	B4		SP-LINEDONE	PI	34	MALE	2	B1															
GROUND	PI	71	FEMALE	1	A4		SPANADR	PI	23	FEMALE	3	B4															
HOLD	PI	78	FEMALE	5	C4		SPANADR0	PI	14	FEMALE	3	B2															
IDLEFI	PI	26	FEMALE	2	C2		SPANADR1	PI	16	FEMALE	3	B2															
IDLELD	PI	30	FEMALE	2	D2		SPANADR2	PI	18	FEMALE	3	B3															
IDLEUP	PI	25	FEMALE	2	D2		SPANADR3	PI	20	FEMALE	3	B3															
INCBKTADR	PI	52	MALE	4	D1		STARTLD	PI	40	MALE	2	B1															
INCM5B	PI	44	MALE	4	A1		STARTUP	PI	35	MALE	2	C1															
INSORTMODE	PI	33	MALE	2	B1		STEQEND	PI	58	FEMALE	4	B4															
LAADR0	PI	15	MALE	3	A2		WRTBKT	PI	50	MALE	4	C1															
LAADR1	PI	17	MALE	3	A2		WRTIN	PI	48	FEMALE	4	C2															
LAADR2	PI	19	MALE	3	A3																						
LAADR3	PI	22	MALE	3	A3																						
LAADR4	PI	24	MALE	3	A4																						
LAADR5	PI	36	MALE	3	B1																						
LAWRITE	PI	38	MALE	3	A1																						
LDIN	PI	46	FEMALE	4	C2																						
LRA	PI	43	MALE	3	C1																						
LRB	PI	42	MALE	3	C1																						

D
C
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200164-602

CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200164-602	A0
VERSION	38	CS	SHEET 7 OF 6

4 3 2 1

PAGE	TYPE	PAGE NAME
1	PC	CAPACITORS
2	WW	MAIN CONTROL
3	WW	LA READ/CLEAR CONTROL
4	WW	OUTSORT BUCKET/DATA CONTROL
5	WW	CLOCKS AND REGISTERS

D
C
B
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D
C
B
A

B 200164-602

TABLE OF CONTENTS			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200164-602	A0
VERSION	38	TC	SHEET 8 OF 8

4 | 3 | 2 | 1

4 | 3 | 2 | 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200165-100

REV: NC = AA

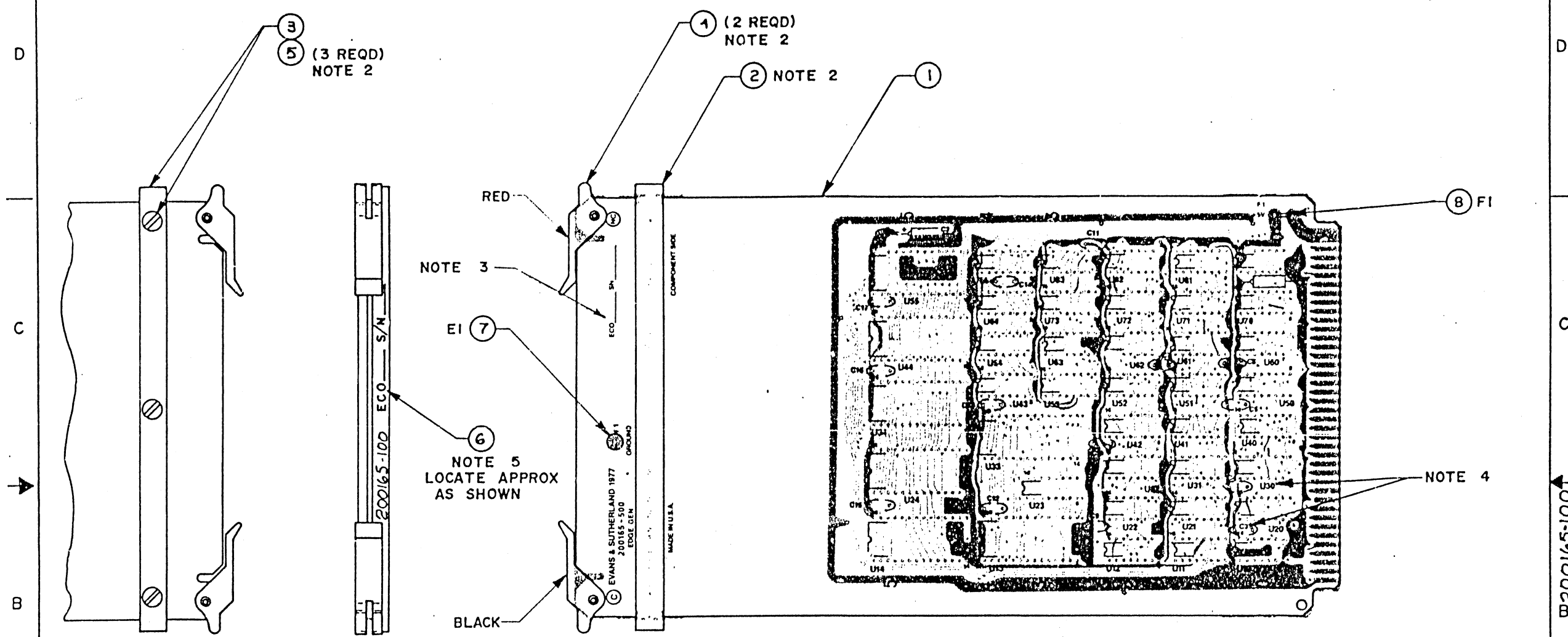
DESC: CARD ASSY, EDGE GENERATOR, PC

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BD,P02R PCBD6X11	53938	EVANS & SUTHERLAND.	200165-500	200165-500	1
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
006	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
	C1 C2			173D475X9035W	804102-475	2
	C3 C4 C5 C6 C7 C8 C9 C10 C11			RM20Z333M500	804115-333	15
	C12 C13 C14 C15 C16 C17					
007	E1	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
008	F1	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
	U10	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1
	U13 U33 U14 U24 U34 U44 U55	18324	SIGNETICS CORP. MILITARY	N82S09AN	807209-018	7
	U21 U22 U62 U82 U83 U50	01295	TEXAS INSTR, SEMICON DIV.	SN74195N	807695-446	6
	U54	01295	TEXAS INSTR, SEMICON DIV.	SN74S133N	807613-055	1
	U60	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
	U70 U63 U41	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	3
	U72 U20 U31 U51 U71 U12 U32	01295	TEXAS INSTR, SEMICON DIV.	SN74S158N	807658-055	8
	U52					
	U73 U30 U40 U11 U61 U81 U42	01295	TEXAS INSTR, SEMICON DIV.	SN7483AN	807683-646	8
	U53					
	U74 U23 U43 U64	4J937	BOURNS NETWORKS	4116R-002-102	807699-102	4
	U80	01295	TEXAS INSTR, SEMICON DIV.	SN74H04N	807416-255	1

20 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



COMPONENT SIDE

REFERENCE DOCUMENTS

- LOGIC DIAGRAM --- 200165-600
- PARTS LIST----- PL 200165-100
- ARTWORK----- 200165-500 REV NC

NOTES

- ASSEMBLE PER E&S STANDARDS.
- INSTALL CARD EJECTORS (ITEM 4) & SPACERS (ITEM 2 & 3) AFTER FLOW SOLDERING.
- MARK ECO NO. AND SERIAL NO. AND ASSY NO. APPROX AS SHOWN USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQLV.
- ITEM NUMBERS ON THE DWG CORRESPOND WITH THE LOCATION DESIGNATION ON THE PARTS LIST.
- MARK ECO NO. AND SERIAL NO. AND ASSY NO. ON ITEM 6.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓
200130-100	NOVOVIEW	MATERIAL SEE PARTS LIST
		FINISH
		APPLICATION

CONTRACT NO.	
DRAWN R. MELLUS 23 FEB. 77	
CHECKED ART. ZWINGER 21 FEB. 77	
MECH	
ELEC	
PROJ. ENGR. C. P. S. 21 FEB. 77	
APPROVED J. PINO 1 MAR. 77	

SEE SEPARATE PARTS LIST			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
CARD ASSEMBLY EDGE GENERATOR (P.C.)			
SIZE	CODE IDENT NO.	REV	
C	53938	200165-100	NC
SCALE FULL	SHEET 1 OF 1		



REF DESIG E+S PART NO VENDOR PART NUMBER

C 1 804102-475 CS138F475K
 C 2 804102-475 CS138F475K
 C 3 804115-333 CY15C333M
 C 4 804115-333 CY15C333M
 C 5 804115-333 CY15C333M
 C 6 804115-333 CY15C333M
 C 7 804115-333 CY15C333M
 C 8 804115-333 CY15C333M
 C 9 804115-333 CY15C333M
 C 10 804115-333 CY15C333M
 C 11 804115-333 CY15C333M
 C 12 804115-333 CY15C333M
 C 13 804115-333 CY15C333M
 C 14 804115-333 CY15C333M
 C 15 804115-333 CY15C333M
 C 16 804115-333 CY15C333M
 C 17 804115-333 CY15C333M

U 10 807416-055 SN74S04N
 U 11 807683-646 SN7483A
 U 12 807658-055 SN74S158N
 U 13 807209-018 N82S09I
 U 14 807209-018 N82S09I
 U 20 807658-055 SN74S158N
 U 21 807695-446 SN74195N
 U 22 807695-446 SN74195N
 U 23 807699-102 898-1-R1K
 U 24 807209-018 N82S09I
 U 30 807683-646 SN7483A
 U 31 807658-055 SN74S158N
 U 32 807658-055 SN74S158N
 U 33 807209-018 N82S09I
 U 34 807209-018 N82S09I
 U 40 807683-646 SN7483A
 U 41 807695-055 SN74S195N
 U 42 807683-646 SN7483A
 U 43 807699-102 898-1-R1K
 U 44 807209-018 N82S09I
 U 50 807695-446 SN74195N
 U 51 807658-055 SN74S158N
 U 52 807658-055 SN74S158N
 U 53 807683-646 SN7483A
 U 54 807613-055 SN74S133N
 U 55 807209-018 N82S09I
 U 60 807451-055 SN74S51N
 U 61 807683-646 SN7483A
 U 62 807695-446 SN74195N
 U 63 807695-055 SN74S195N
 U 64 807699-102 898-1-R1K
 U 70 807695-055 SN74S195N
 U 71 807658-055 SN74S158N
 U 72 807658-055 SN74S158N
 U 73 807683-646 SN7483A
 U 74 807699-102 898-1-R1K
 U 80 807416-255 SN74H04N
 U 81 807683-646 SN7483A
 U 82 807695-446 SN74195N
 U 83 807695-446 SN74195N

PIN # WIRENAME
 P1 3 *WAU
 P1 5 *MB20
 P1 6 *CEAU
 P1 7 ADR1
 P1 8 ADR2
 P1 9 *MB21
 P1 10 ADR0
 P1 12 *A16
 P1 13 *MB19
 P1 14 *A18
 P1 15 AUSIN
 P1 16 *A17
 P1 17 *A19
 P1 18 *DI7
 P1 19 START
 P1 20 ONES
 P1 22 *DI3
 P1 23 *START
 P1 24 *MB16
 P1 25 *MB18
 P1 26 *MB17
 P1 27 *DI2
 P1 28 *DI1
 P1 29 LOAD
 P1 30 *DI5
 P1 32 A31
 P1 33 *SENSE
 P1 34 *A31
 P1 35 SHIFT
 P1 36 SENSE
 P1 37 *DI12
 P1 38 CYIN
 P1 39 *DI14
 P1 40 *DI9
 P1 42 *DI10
 P1 43 *DI4
 P1 44 *DI15
 P1 45 ALSIN
 P1 46 *DI8
 P1 47 *MB11
 P1 48 *DI6
 P1 49 *MB9
 P1 50 *A8
 P1 52 *MB10
 P1 53 *A9
 P1 54 *A11
 P1 55 *DI11
 P1 56 *A10
 P1 57 SELSUM
 P1 58 *CEAL
 P1 59 *MB15
 P1 60 *A12
 P1 62 *DI0
 P1 63 *A15
 P1 64 *DI13
 P1 65 *A13
 P1 66 *A14
 P1 67 *CEBU
 P1 68 *WAL
 P1 69 *CEBL
 P1 70 *WBU
 P1 72 *WBL
 P1 73 ADR4
 P1 74 ADR5
 P1 75 *MB14
 P1 76 ADR3
 P1 77 *MB13
 P1 78 *MB12
 P1 79 *CLK

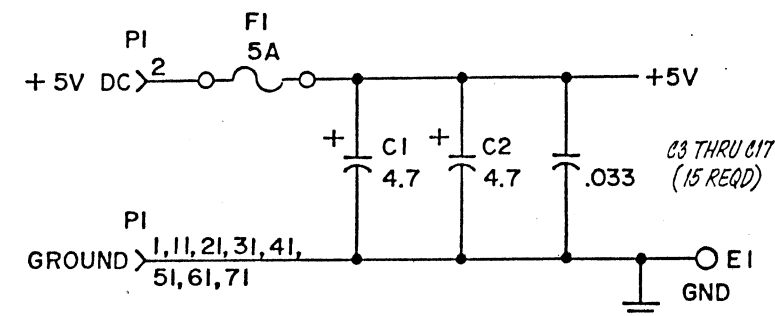
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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

Those portions of this technical data indicated as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or, in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

- SERIAL SHIFT LOOP SEQUENCE
 P1.45, 41.12, 50.12, 22.12, 21.12, 82.12, 83.12
 62.12, 63.12, 70.12, P1.23
- ON IC. 7483 LOCATION, U11, U30, U40, U42, U53, U61, U73, U81 PIN 12 IS GROUND, PIN 5 IS POWER (+5V).
- NUMBERS SHOWN REFER TO CONNECTOR P1.
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).
 ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V).
 ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).
 UNLESS OTHERWISE SPECIFIED;

NOTES:



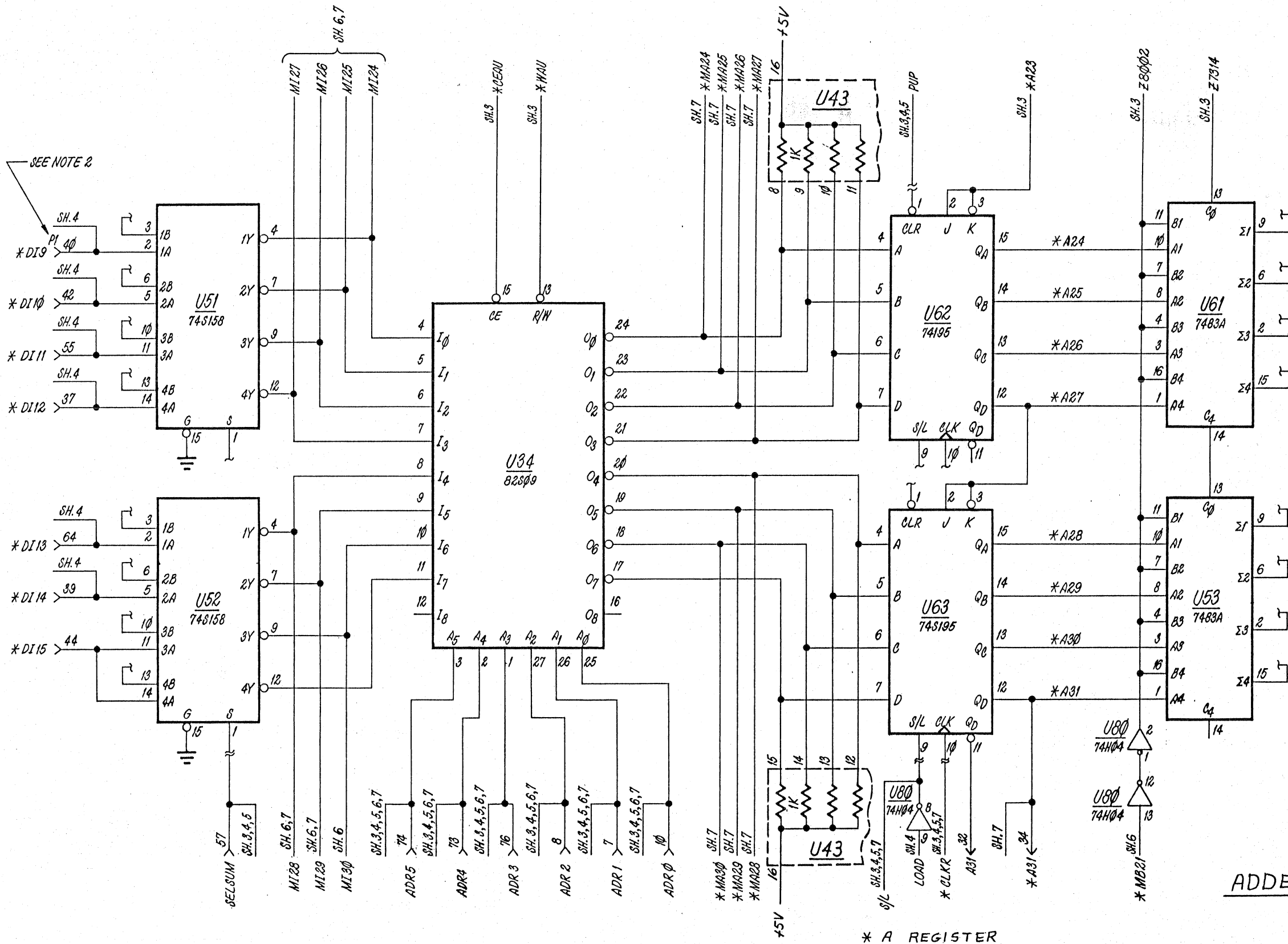
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	
.XX ±	—
.XXX ±	—
ANGLES ±	—
✓	
MATERIAL	200130-100 NOVOTIEN
FINISH	
APPLICATION	

CONTRACT NO.	
DRAWN	RON HOLLEY 6-3-77
CHECKED	ad Conroy 22 JUN 77
MECH	
ELEC	
PROJ. ENG	
APPROVED	

SEE SEPARATE PARTS LIST			
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112			
EDGE GENERATOR P.C.			
SIZE	CODE IDENT NO	REV	
C	53938	200165-600	NC
SCALE	NONE	SHEET	1 OF 7

B 200165-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



ADDER

* A REGISTER
 * AOUT
 PLUS

SIZE	CODE	IDENT NO	REV
C	53938	200165-600	NC
SCALE NONE		SHEET 2 OF 7	

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) (2)

Those portions of this technical data and drawings which are identified as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part by the Government for manufacturing, or (b) used in whole or in part by the Government for manufacturing, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use, release or disclosure; or (ii) release or disclosure to a foreign government, at the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

D

C

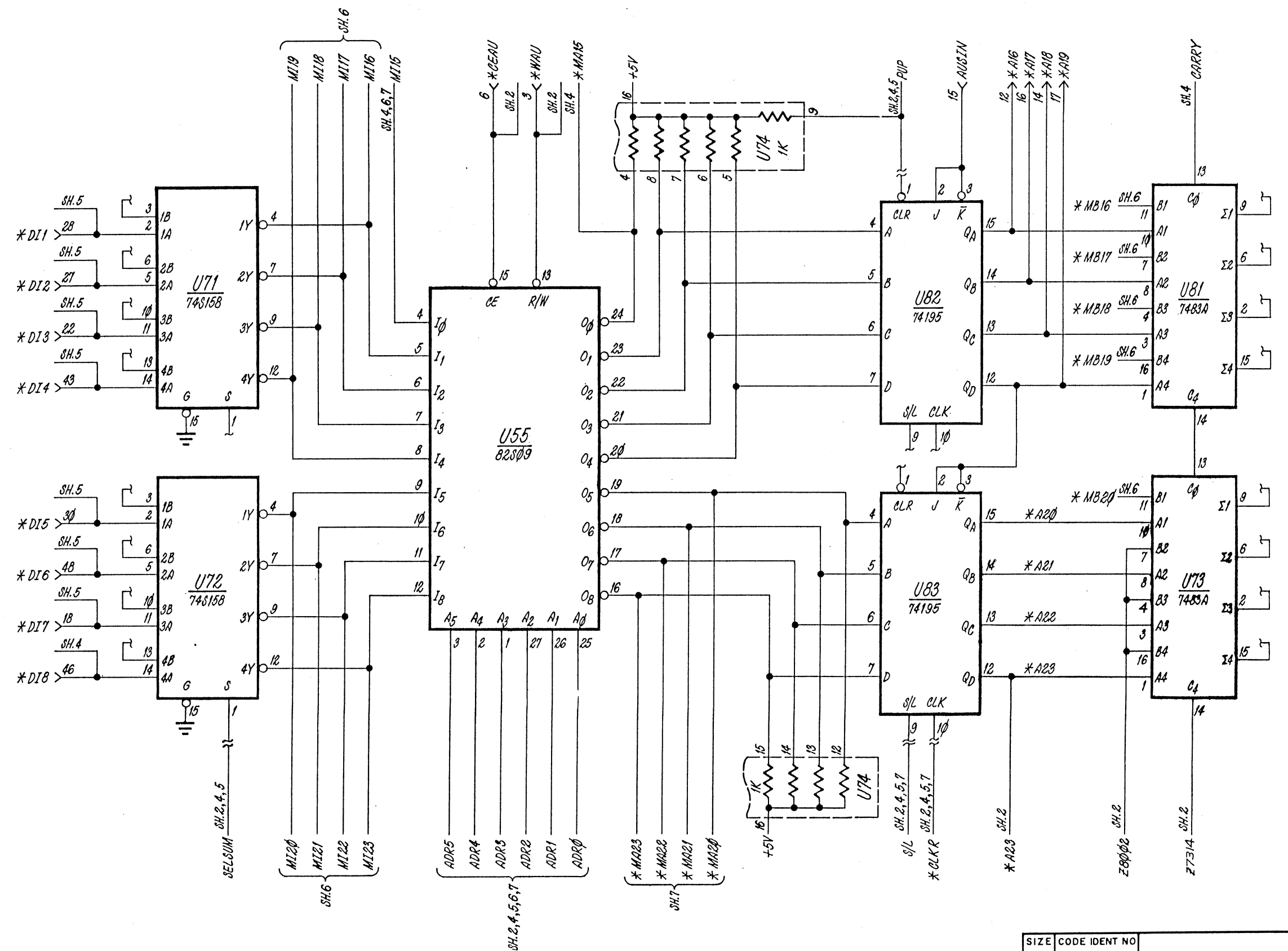
B

A

D

A

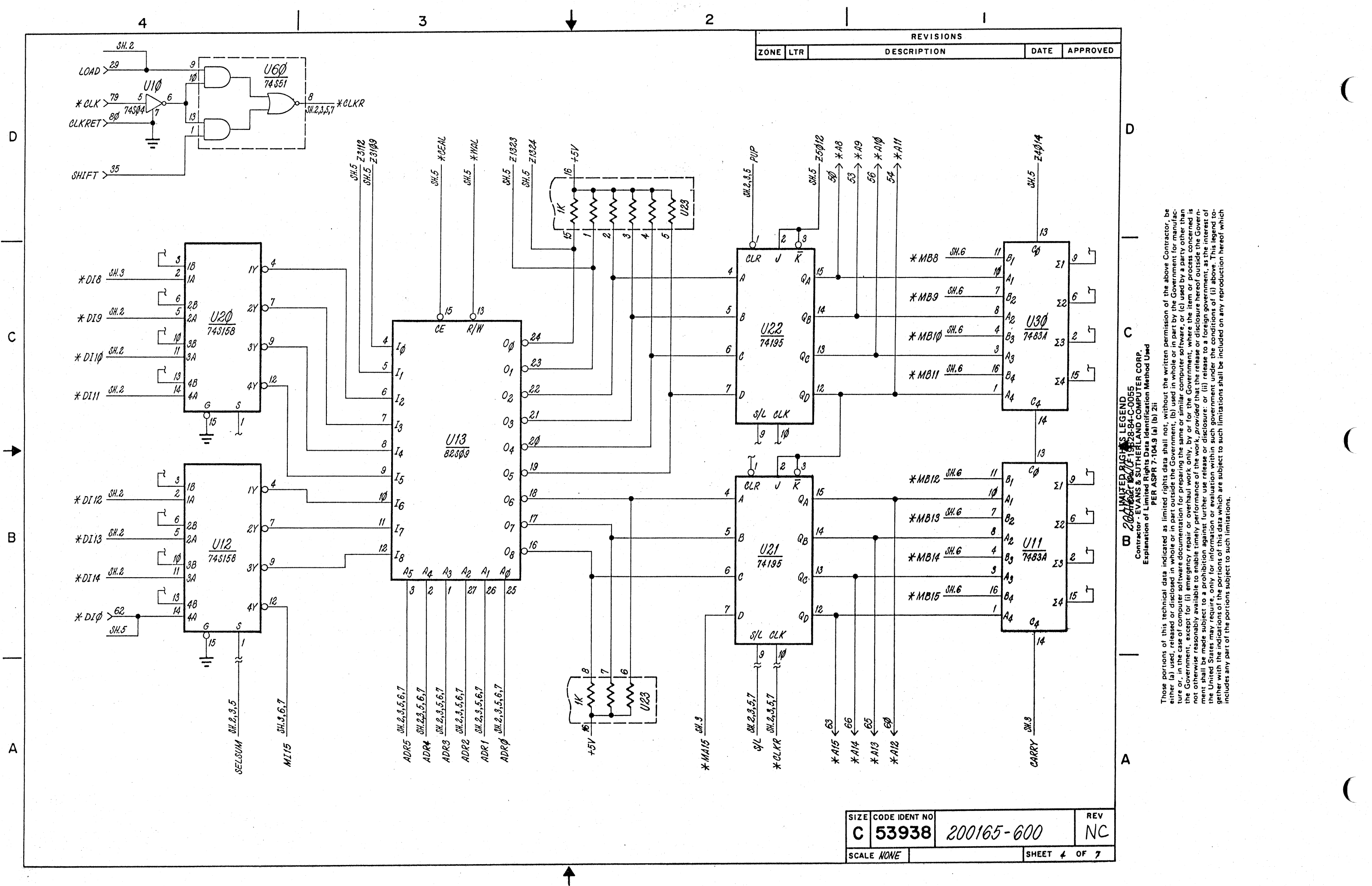
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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

Those portions of this technical data indicated as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or, in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

SIZE	CODE IDENT NO	REV
C	53938	NC
SCALE NONE	200165-600	SHEET 3 OF 7



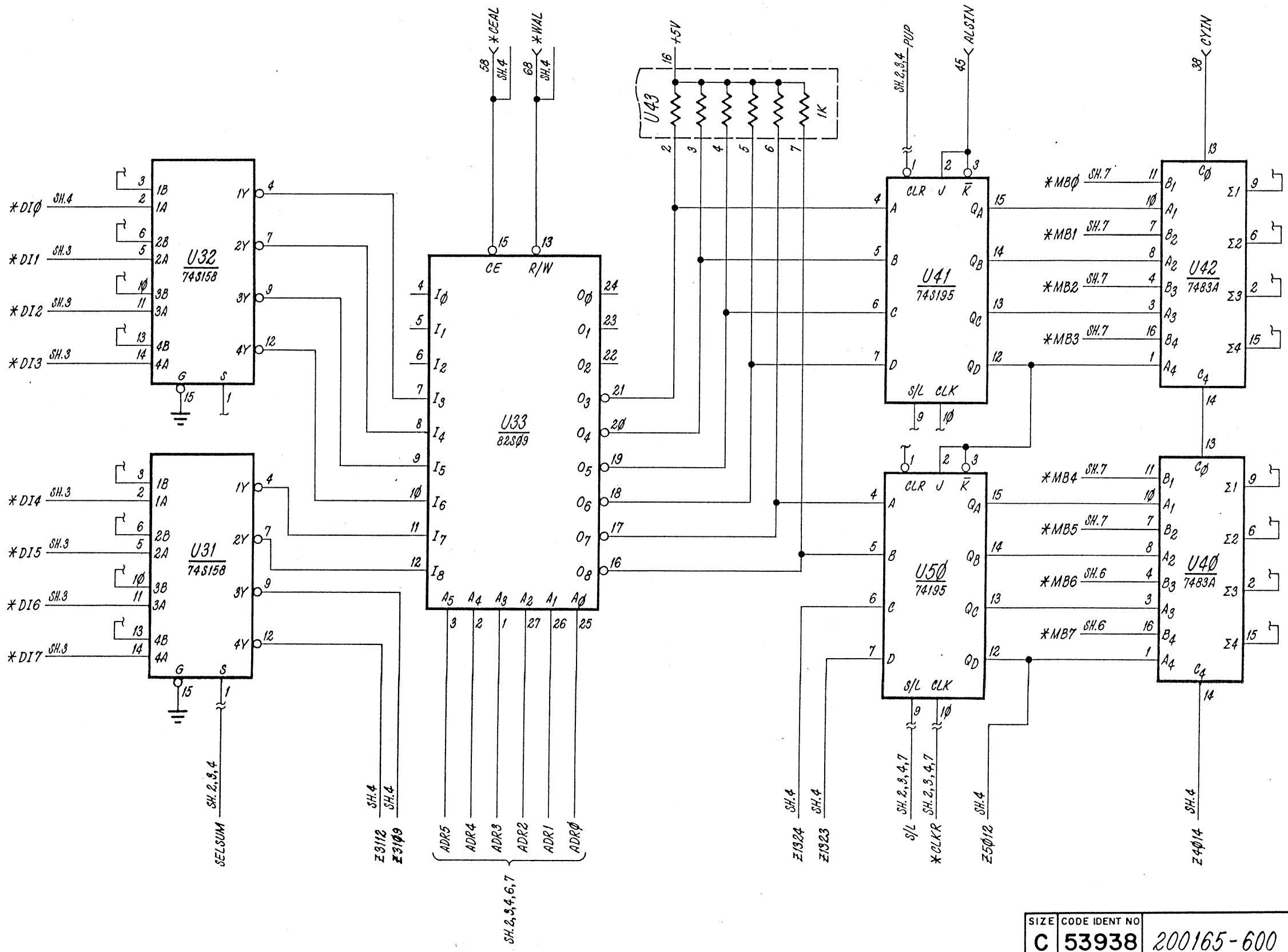
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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

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SIZE	CODE IDENT NO	REV
C	53938	NC
200165-600		
SCALE NONE	SHEET 4 OF 7	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



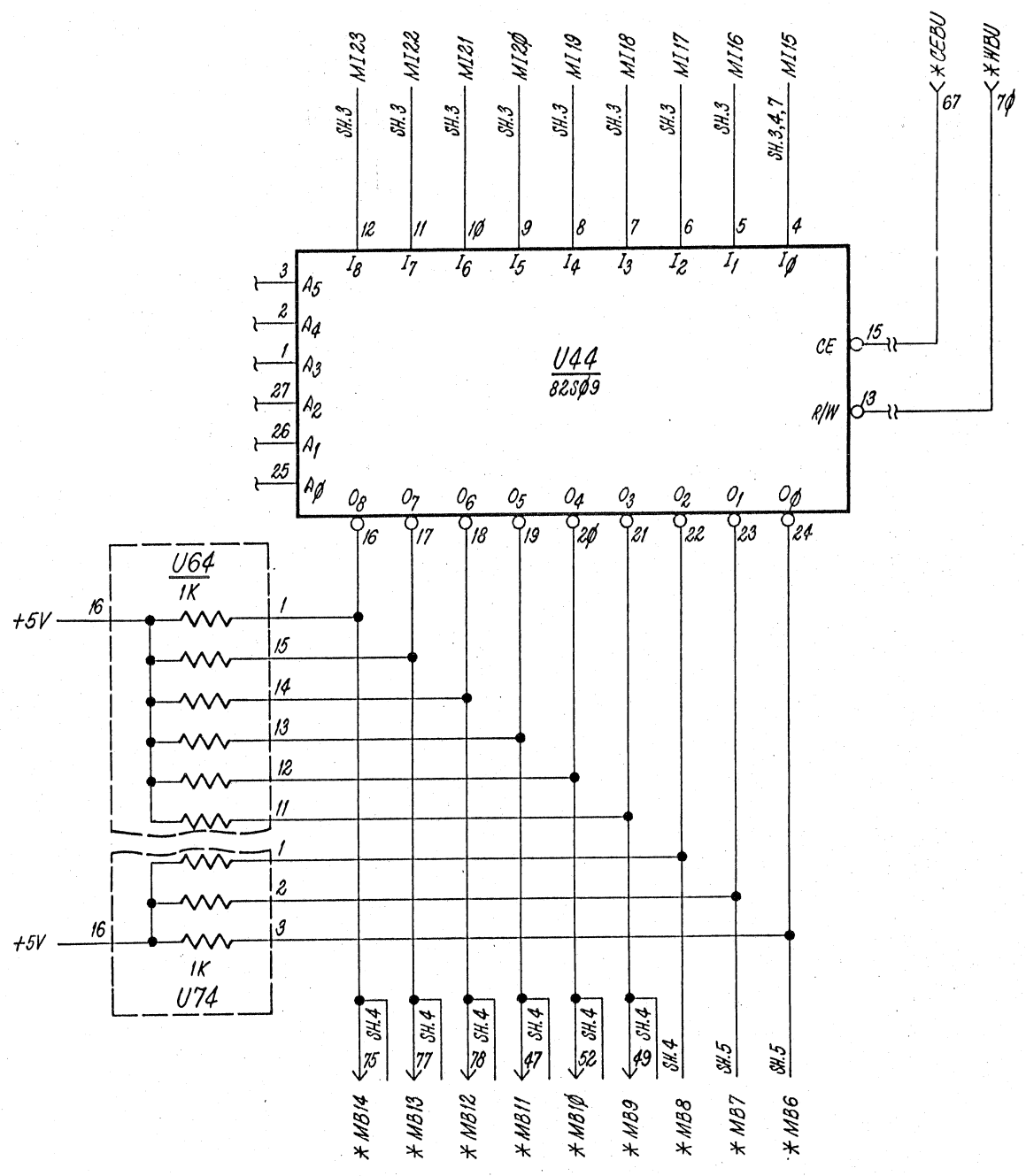
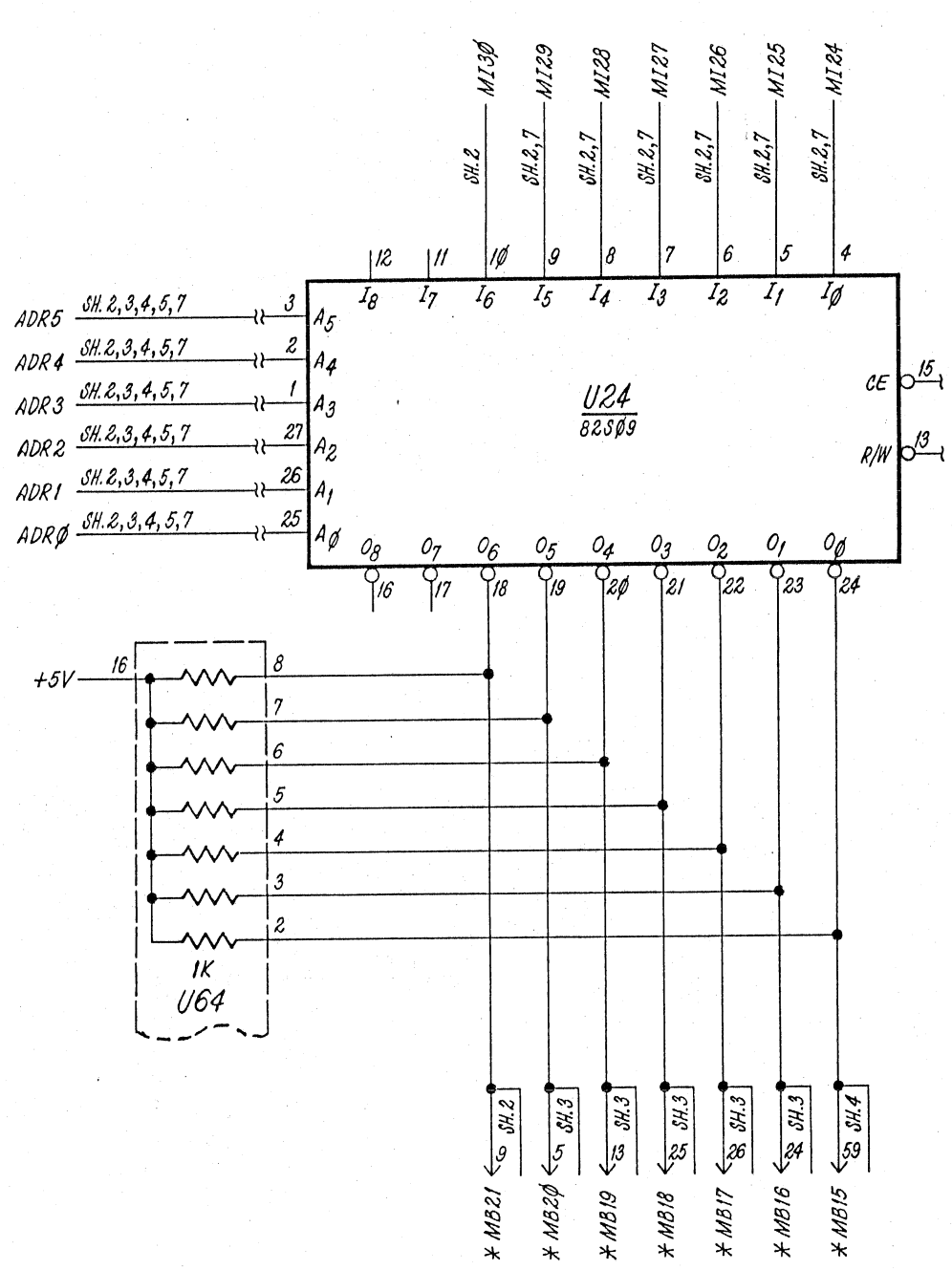
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASRR 7-104.9 (a) (b) (2)

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SIZE	CODE IDENT NO	REV
C	53938 200165-600	NC
SCALE NONE	SHEET 5 OF 7	

D
C
B
A
009-591002 B 200165-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



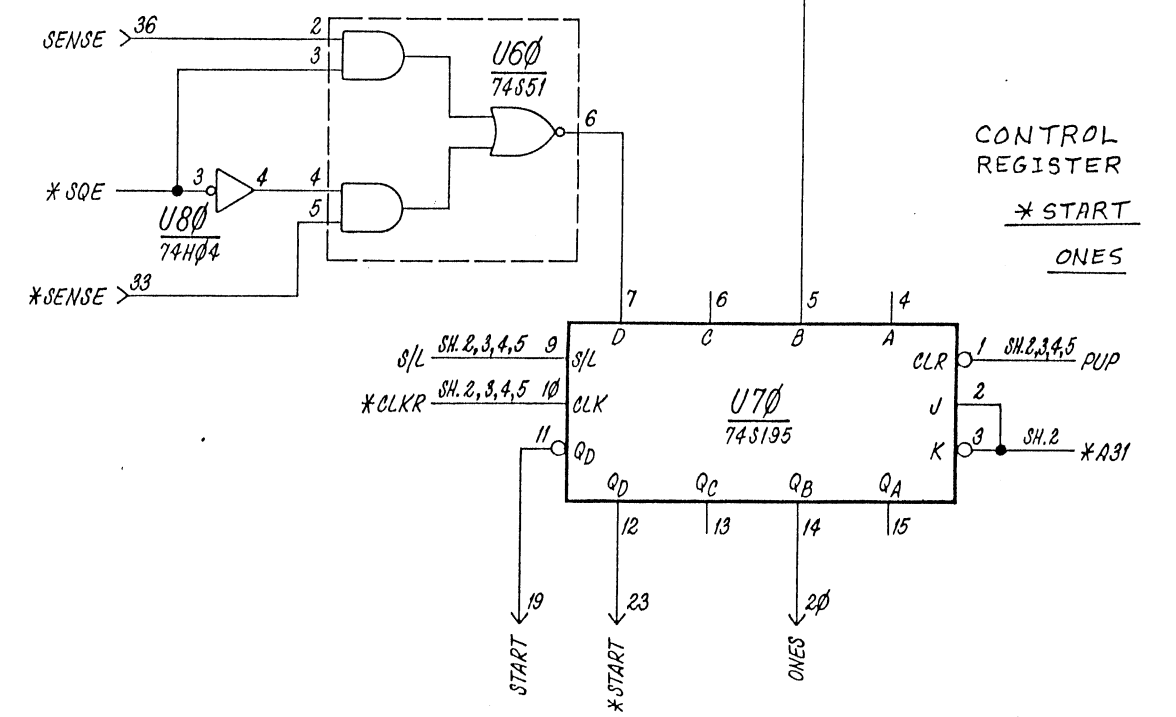
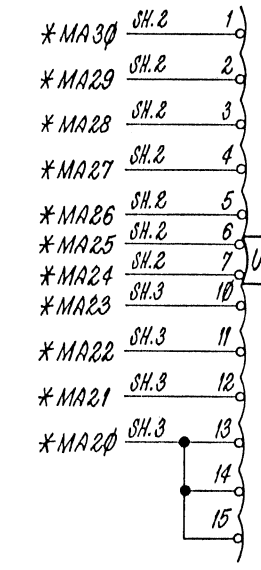
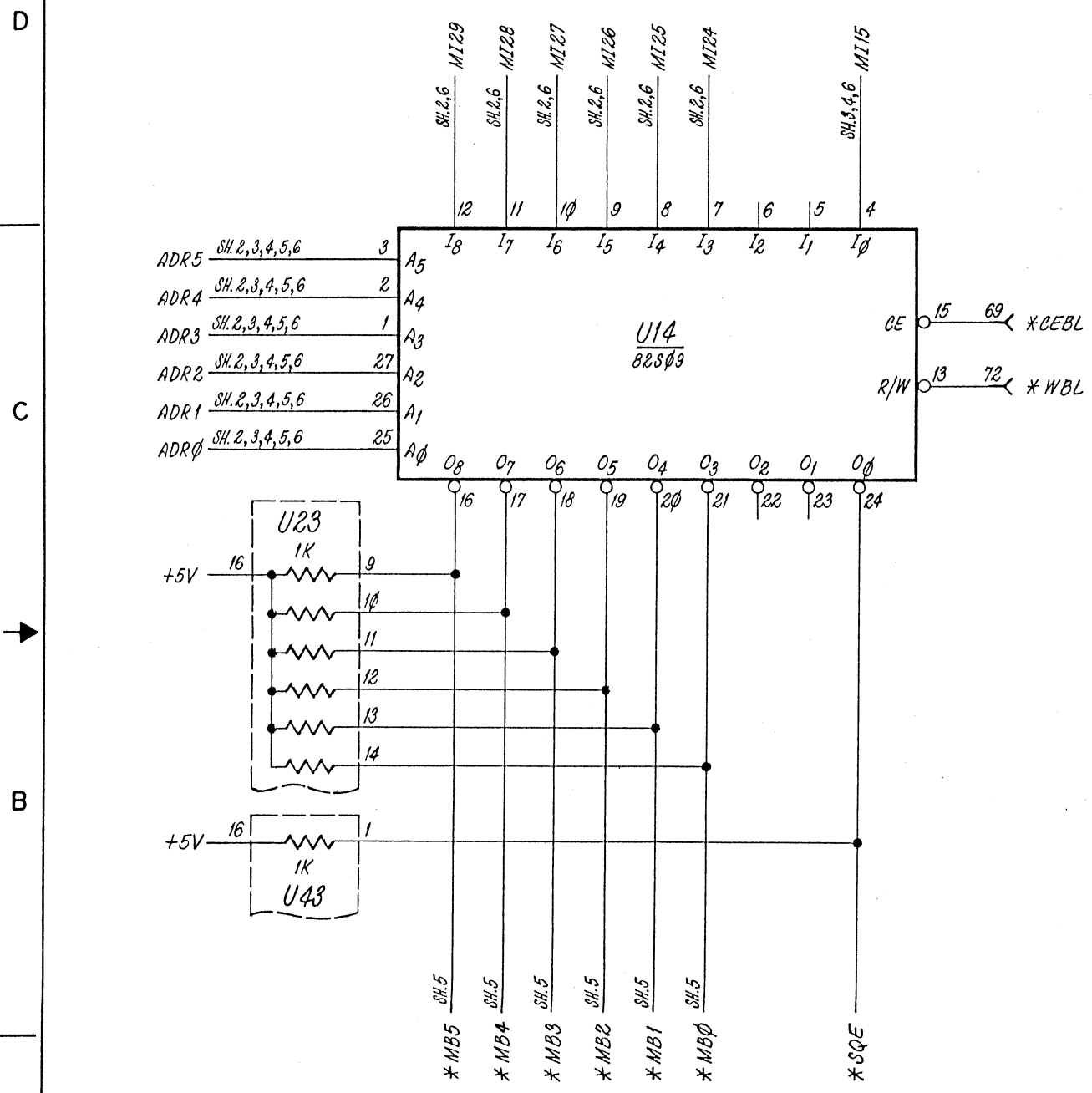
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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SIZE	CODE IDENT NO	REV
C	53938 200165-600	NC
SCALE NONE	SHEET 6 OF 7	

200165-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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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SIZE	CODE IDENT NO	REV
C	53938	NC
SCALE NONE		SHEET 7 OF 7

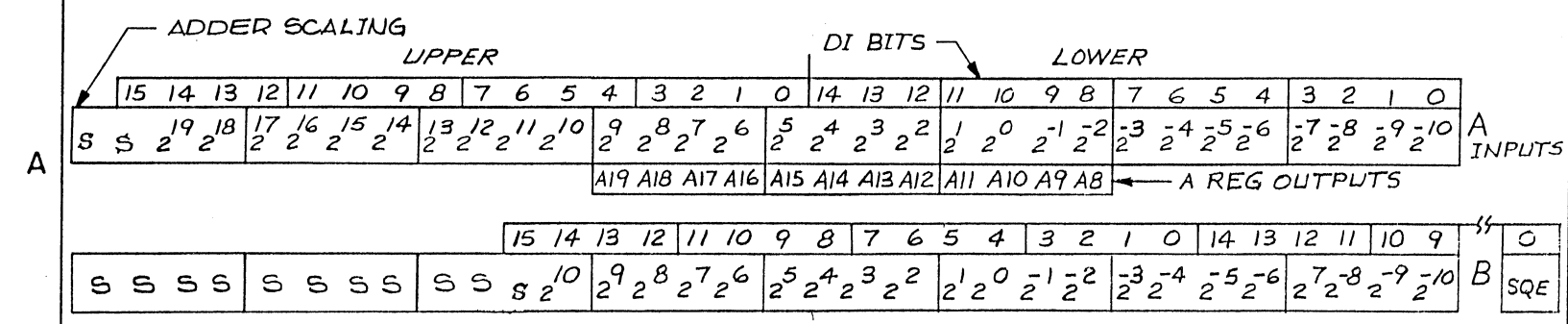
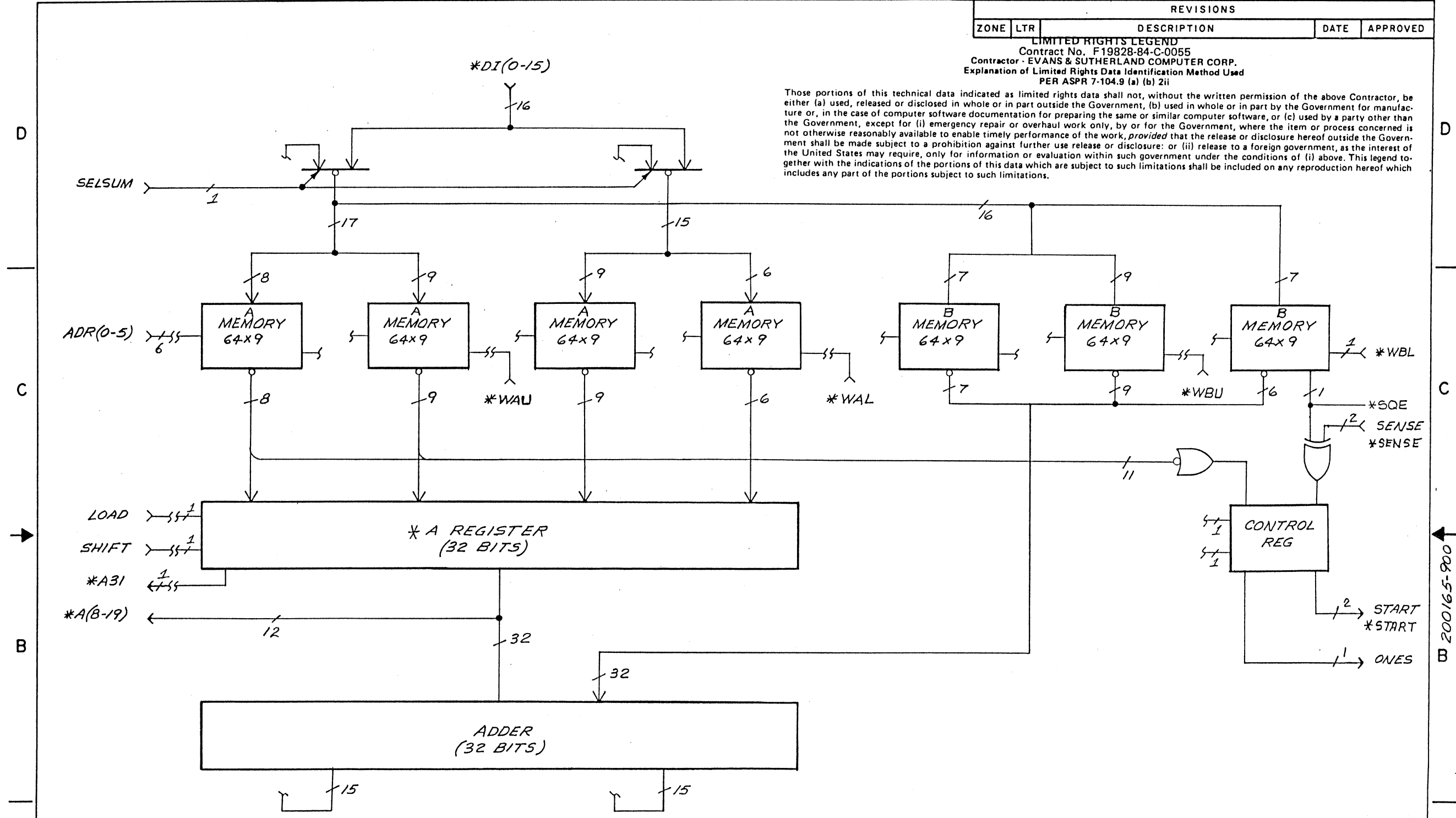
200165-600



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

LIMITED RIGHTS LEGEND
 Contract No. F 1982B-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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CONTRACT NO.		SEE SEPARATE PARTS LIST	
DRAWN <i>Lee Whitlock</i> 3-21-77		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CHECKED <i>at</i> <i>29 MAR 77</i>		EDGE GENERATOR BLOCK DIAGRAM	
MECH			
ELEC			
PROJ. ENG. <i>27 JUL 77</i>		REV	
APPROVED		NC	
SIZE	CODE IDENT NO	REV	
C	53938	200165-900	NC
SCALE NONE		SHEET 1 OF 1	

B 200165-900



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200169-101

REV: A1 = AB

DESC: CARD ASSY, ANALOG INTENSITY W/OBJECT FOG (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2 C3 C4 C5 C10 C11 C12	BD,P02R PCBD6X11	53938	EVANS & SUTHERLAND.	200169-501	200169-501	1
C13 C14 C15 C19 C20 C21 C22	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	33
C23 C24 C28 C29 C33 C34 C38						
C39 C40 C41 C45 C46 C47 C48						
C49 C53 C60 C61						
C107	C,,RDL 100PF	02799	ARCO ELECTRONICS (CAPS)	CCD-101	804103-101	1
C16 C25 C35 C42 C50 C62 C73	C,,RDL 30PF	59821	MEPCO/CENTRALAB	DD-300	804103-300	12
C76 C88 C91 C94 C97						
C30 C54 C57 C106	C,,RDL 250PF	59821	MEPCO/CENTRALAB	DD-251	804103-251	4
C31 C55 C59 C105	C,,RDL 500PF	59821	MEPCO/CENTRALAB	DD-501P	804103-501	4
C32 C56 C58 C104	C,,RDL .001UF	59821	MEPCO/CENTRALAB	DD-102	804103-102	4
C6 C67 C70	C,,RDL .01UF	31433	KEMET ELECTRONICS CORP.	C052K103K1X5CA	804119-103	3
C63 C71	C,,RDL .1UF	31433	KEMET ELECTRONICS CORP.	C052K104K5X5CA	804119-104	2
C64 C65 C66 C68 C72	C,,RDL 4.7UF	31433	KEMET ELECTRONICS CORP.	T370D475M035AS	804128-475	5
C69	C,,RDL 2PF	04222	A V X CERAMICS DIV.OF AVX	MR055A2R0DAA	804147-209	1
C7 C8 C9 C17 C18 C26 C27	C,,AXL .1 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U104Z050B	804122-104	37
C36 C37 C43 C44 C51 C52 C74						
C75 C77 C78 C80 C81 C83 C84						
C86 C87 C89 C90 C92 C93 C95						
C96 C98 C99 C101 C102 C108						
C109 C110 C111						
C79 C82 C85 C100 C103	C,,RDL 15PF	59821	MEPCO/CENTRALAB	DD-150	804103-150	5
E1 E2	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	2
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
F2 F3	FU,PICO FUSE 1A	75915	LITTELFUSE TRACOR INC.	251 001 (1A,AXIAL)	802375-010	2
M2	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
M6	HW,JMPR JUMPPPLUG	22526	DU PONT E I NEMOURS (CONN)	76264-101	801743-201	1
R1	R,,AXL 7.50K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-7.50K-1%-50PPM	803453-750	1
R13 R18	R,,AXL 681 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-681-1%	803452-681	2
R19 R25	R,,AXL 274 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-274-1%	803452-274	2
R2 R4	R,,AXL 3.74K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-3.74K-1%-50PPM	803453-374	2
R20	R,,AXL 100K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-100K-1%	803455-100	1
R21 R28	R,,AXL 10.0 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-10.0-1%	803451-100	2
R22 R23	R,,AXL 100 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-100-1%	803452-100	2
R24 R26	R,,AXL 332 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-332-1%	803452-332	2
R27	R,,AXL 4.02K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-4.02K-1%-50PPM	803453-402	1
R3	R,,AXL 1K 1/8W	50139	ALLEN-BRADLEY CO. ELECTRO	BB1025	803300-102	1
R30 R31	R,,AXL 499 .05%	91637	DALE ELECTRONICS INC	PTF56-T13-499OHM.05%	803603-499	2
R38	R,,AXL 887 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-887-1%	803452-887	1
R39 R44	R,,AXL 2.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-2.00K-1%	803453-200	2
R5 R6 R8 R9 R11 R14 R17 R34	R,,AXL 1.0K .05%	91637	DALE ELECTRONICS INC	PTF56-1K-.01%-T16	803603-102	14
R35 R40 R43 R45 R48 R55						
R50 R52	R,,AXL 1.1K .05%	91637	DALE ELECTRONICS INC	PTF56-1K1-.05%-T13	803603-112	2
R51	R,,AXL 3.09K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-3.09K-1%-50PPM	803453-309	1

TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200169-101

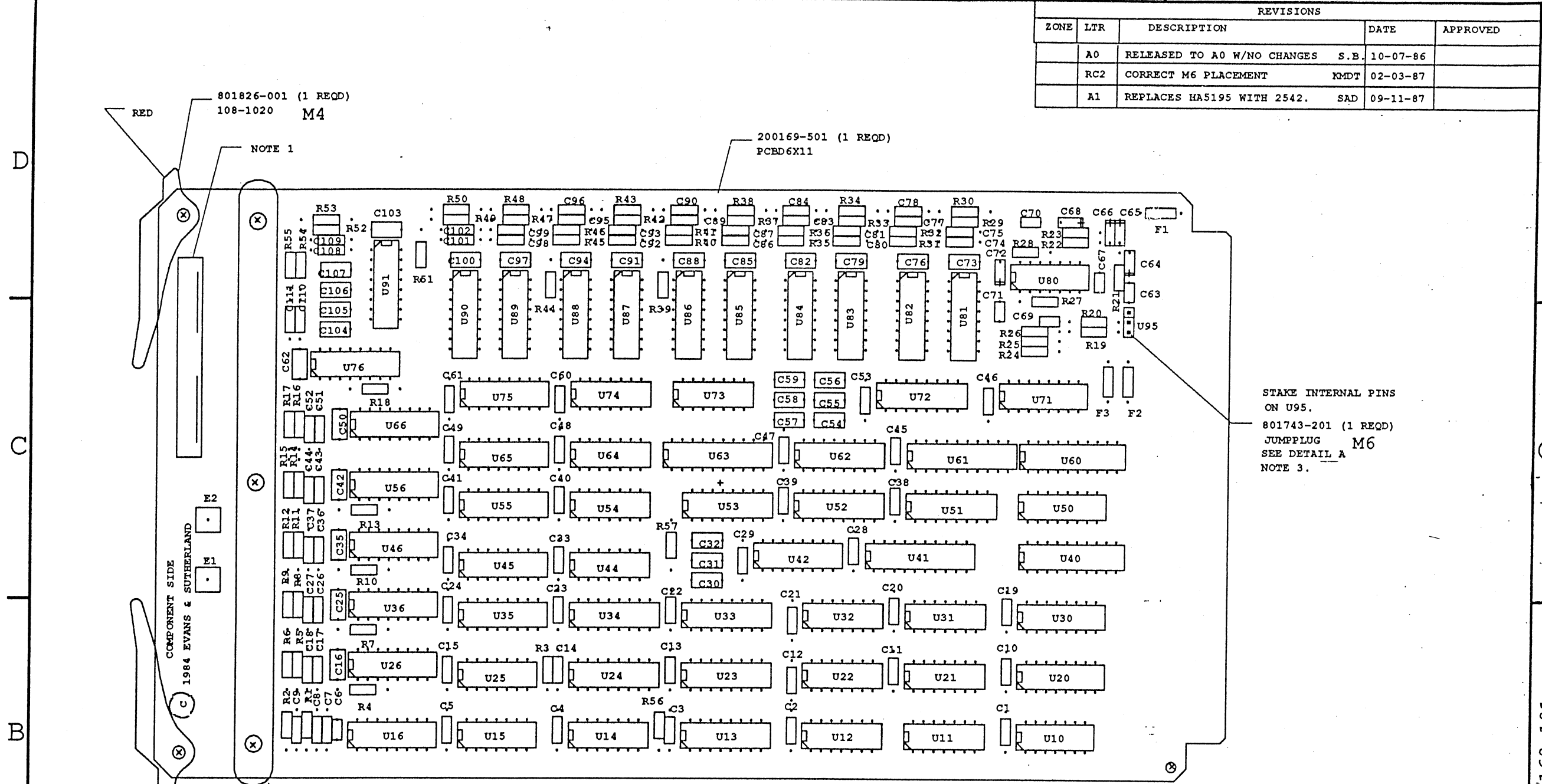
REV: A1 = AB

DESC: CARD ASSY, ANALOG INTENSITY W/OBJECT FOG (PC)

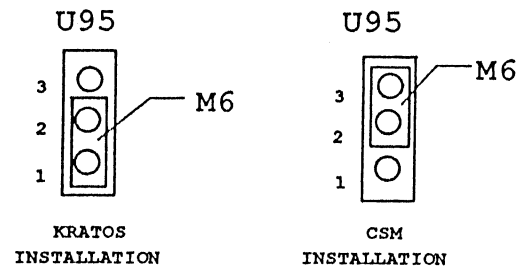
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
R7 R10 R12 R15 R16 R29 R32 R33 R36 R37 R41 R42 R46 R47 R49 R53 R54 R56 R57	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	19
U10 U74	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	2
U11	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	1
U12 U21 U22	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	3
U13 U23	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	2
U14 U15 U25 U44 U54 U64 U73	IC,TTL 74164	01295	TEXAS INSTR, SEMICON DIV.	SN74164N/J	807413-646	7
U16 U26 U36 U46 U56 U66 U76 U81 U82 U83 U84 U85 U86 U87 U88 U89 U90 U91	IC,ANLG DAC-08EQ	34335	ADVANCED MICRO DEVICES IN	AMDAC-08EQ (.19%)	806008-002	18
U20 U30 U33 U42 U50 U53 U62 U71 U72	IC,TTL 25S09	34335	ADVANCED MICRO DEVICES IN	AM25S09PC	807721-055	9
U24	IC,TTL 74157	01295	TEXAS INSTR, SEMICON DIV.	SN74157N	807657-646	1
U31	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	1
U32	IC,TTL 74S74	01295	TEXAS INSTR, SEMICON DIV.	SN74S74N/J	807474-055	1
U34 U35 U45 U51 U52 U55 U65	IC,TTL 74F194	07263	FAIRCHILD IC'S & SEMICON	74F194PC/DC	807994-035	7
U40 U41 U61	IC,TTL 74S299	27014	NATIONAL SEMICONDUCTOR	DM74S299N-A+	807737-055	3
U60	IC,TTL 74F244	07263	FAIRCHILD IC'S & SEMICON	74F244PC/DC	807954-035	1
U63	IC,PAL,16L8,OCTAL,16I	53938	EVANS & SUTHERLAND.	807838-015-A58	807838-015-A58	1
U75	IC,TTL 74S169	18324	SIGNETICS CORP. MILITARY	N74S169AN	807736-055	1
U80	IC,AMP HA2542	34371	HARRIS CORP. HARRIS SEMI	HA3-2542-5	806542-888	1
U95	HW,JMPR W/W PINS	53938	EVANS & SUTHERLAND	*SCD*802177-206	802177-206	1

55 ITEMS LISTED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0 W/NO CHANGES	S.B. 10-07-86	
	RC2	CORRECT M6 PLACEMENT	KMDT 02-03-87	
	A1	REPLACES HA5195 WITH 2542.	SAD 09-11-87	



- 501336-001 (1 REQD) .312SPCR M2
 - 501337-001 (1 REQD) .093SPCR M3
 - 802056-003 (3 REQD) 6-32X3/8 M5
- SOLDER SIDE



- REFERENCE DOCUMENTS
- SCHEMATIC - - - 200169-601
 - PARTS LIST - - - PL200169-101
 - BLOCK DIAGRAM - - IN SCHEMATIC

- 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 JUMPER (M6) AS SHOWN. FINAL LOCATION DETERMINED BY SYSTEM CONFIGURATION. SEE DETAIL A.

SCALE: NONE

NOTE 3.

DRAWN A. SNOW		EVANS & SUTHERLAND	
CHECKED <i>dkm</i> 9-18-87		SALT LAKE CITY, UTAH 84108	
ELEC ENG <i>dkm</i> D. ROBINSON 2/24/87		TITLE	
PROJ ENG BOB KENT		CD ASSY, CD, ANALOG INTENSITY	
APPROVED		W/OBJECT FOG (PC)	
NEXT ASSY		SIZE	REV
MODIFIED DATE 16-SEP-87		B	A1
CREATION DATE 25-APR-84		CODE IDENT	DWG NO.
FILE NAME 200169101A1.MDF		53938	200169-101
LIMITED RIGHTS LEGEND		VERSION	SHEET 1 OF 1
CONTRACT NO. 1		212	
CONTRACTOR: EVANS AND SUTHERLAND COMPUTER CORP.			
EXPLANATION OF LIMITED RIGHTS DATA IDENTIFICATION METHOD USED. ALL DATA IN THIS DOCUMENT ARE LIMITED IN ACCORDANCE WITH DOD FAR CLAUSE 25.227-7012, NOVEMBER 1984. 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.			

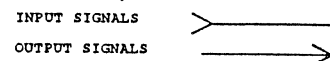
200169-101



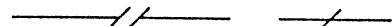
NOTES: UNLESS OTHERWISE SPECIFIED:

- RESISTANCE VALUES ARE IN OHMS + - 10., K 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

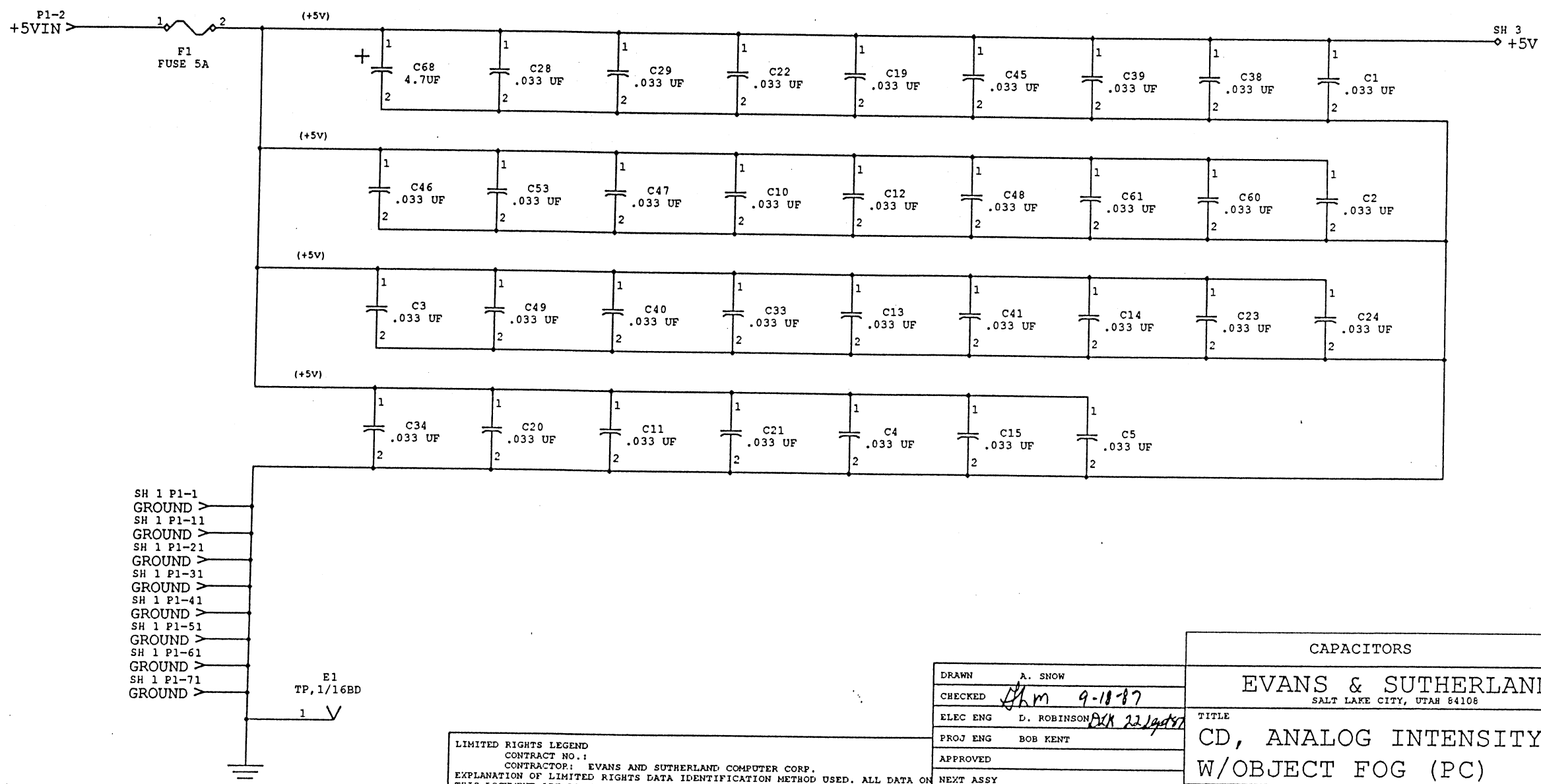
3. CARD CONNECTOR SYMBOL "P1-" DESIGNATES:



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



REVISIONS				
ZONE	LTP.	DESCRIPTION	DATE	APPROVED
A0		RELEASED TO AO W/NO CHANGES.	S.B. 10-07-66	
RC2		RECORD CHG ONLY	SAL 02-03-67	
A1		REPLACES HA5195 WITH 2542. (U80)	SAL 09-11-87	<i>DK 22 Apr 87</i>

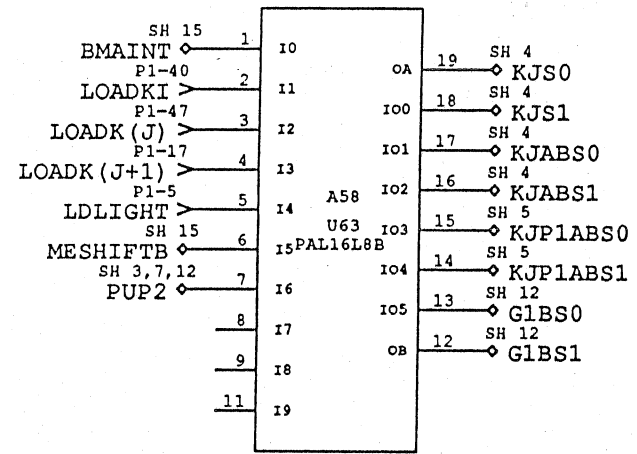


LIMITED RIGHTS LEGEND
 CONTRACT NO. 1
 CONTRACTOR: EVANS AND SUTHERLAND COMPUTER CORP.
 EXPLANATION OF LIMITED RIGHTS DATA IDENTIFICATION METHOD USED. ALL DATA ON THIS DOCUMENT ARE LIMITED IN ACCORDANCE WITH DOD FAR CLAUSE 52.227-7013. COPYRIGHT © 1984 EVANS & SUTHERLAND COMPUTER CORP. THE CONTENTS OF 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.

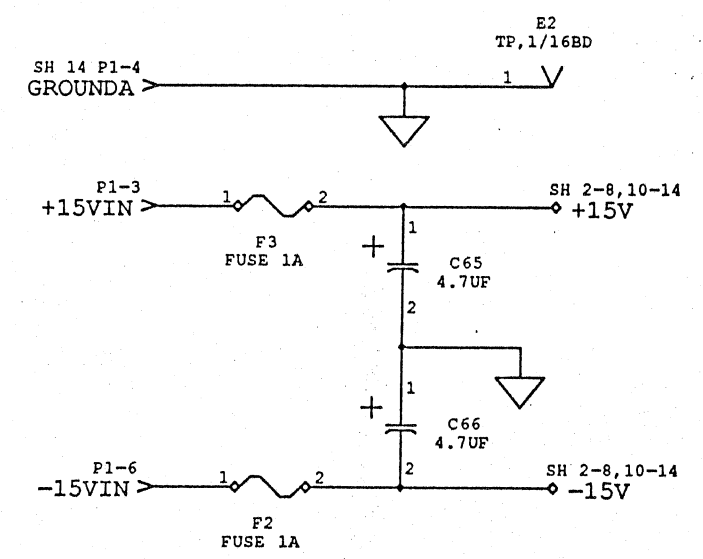
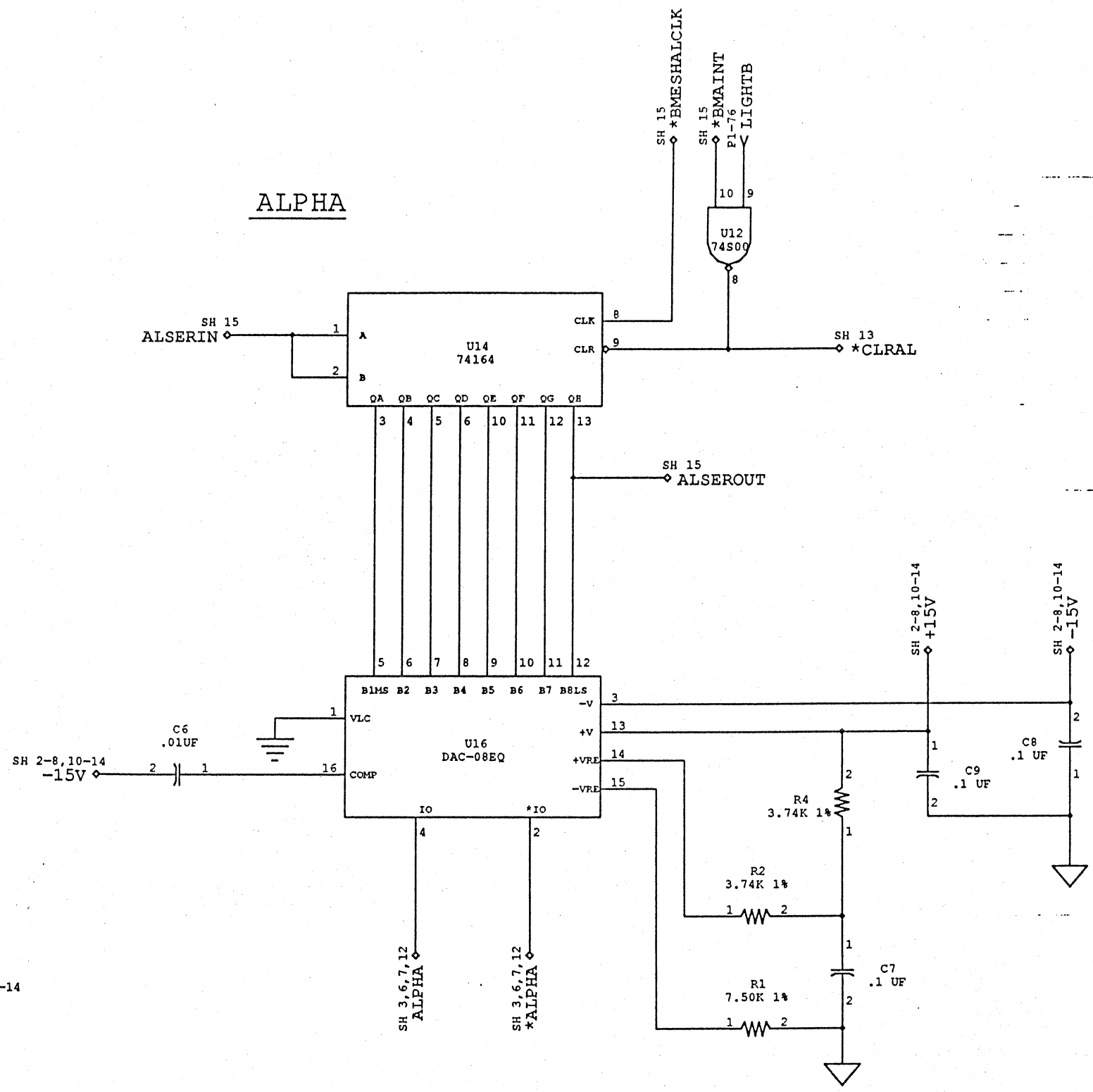
DRAWN	A. SNOW
CHECKED	<i>DKM</i> 9-18-87
ELEC ENG	D. ROBINSON <i>DKM 22 Apr 87</i>
PROJ ENG	BOB KENT
APPROVED	
NEXT ASSY	
MODIFIED DATE	11-SEP-87
CREATION DATE	25-APR-84
FILE NAME	200169101A1.MDF

CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE CD, ANALOG INTENSITY W/OBJECT FOG (PC)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 1 OF 19

200169-601



ALPHA



ALPHA REGISTER AND DAC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 2 OF 19

200169-601

D

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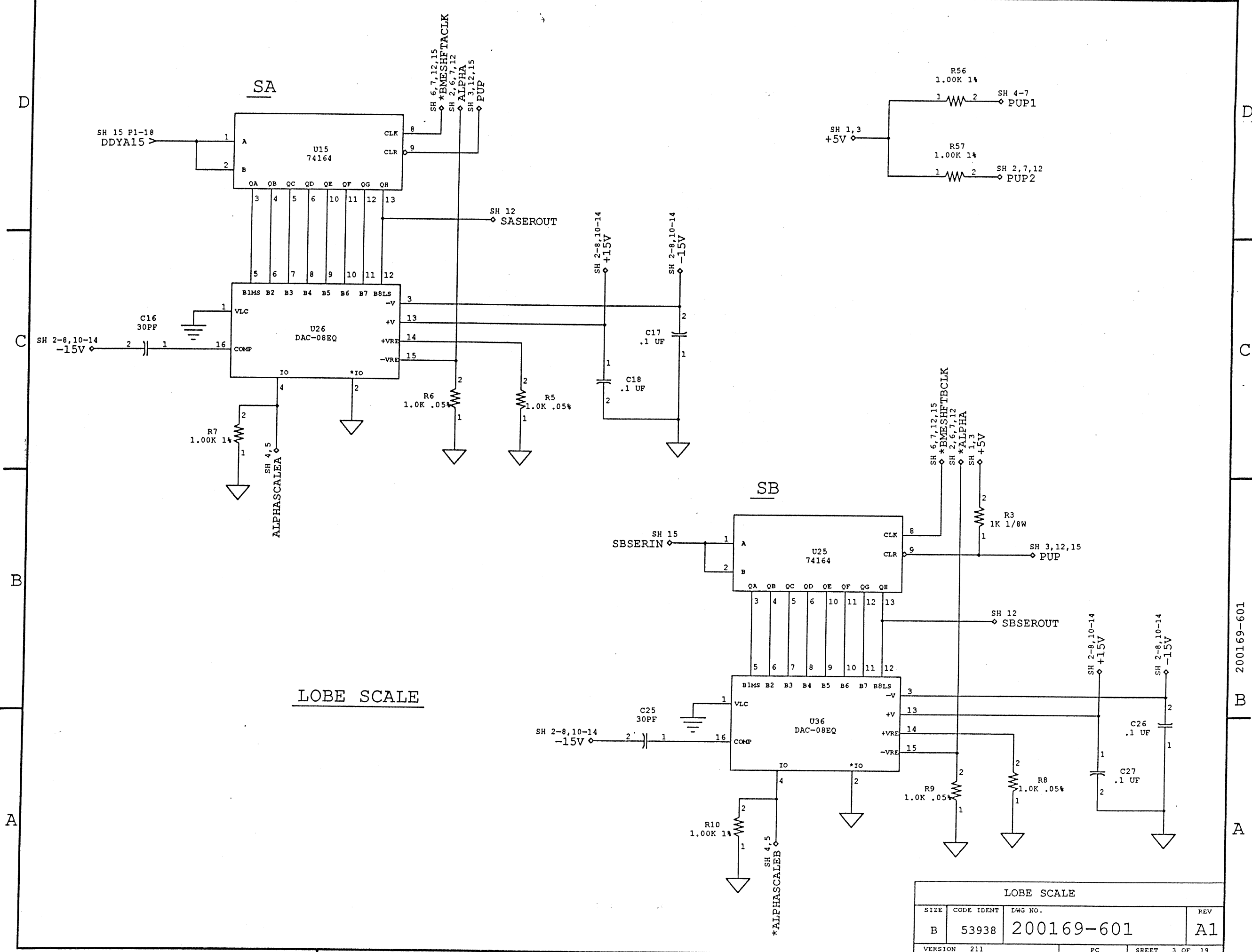
A

4

3

2

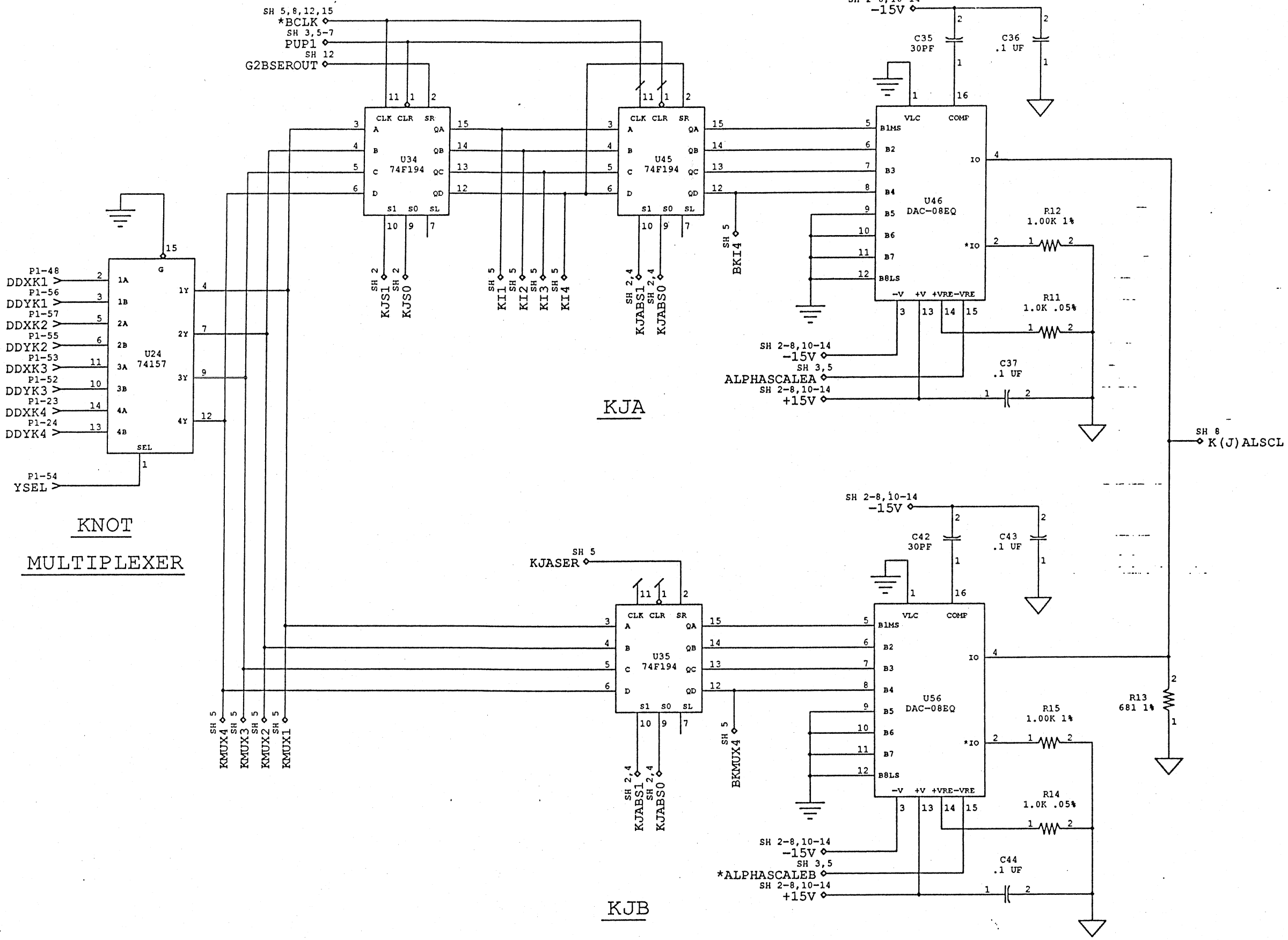
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LOBE SCALE

LOBE SCALE			
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B	53938	200169-601	A1
VERSION	211	PC	SHEET 3 OF 19

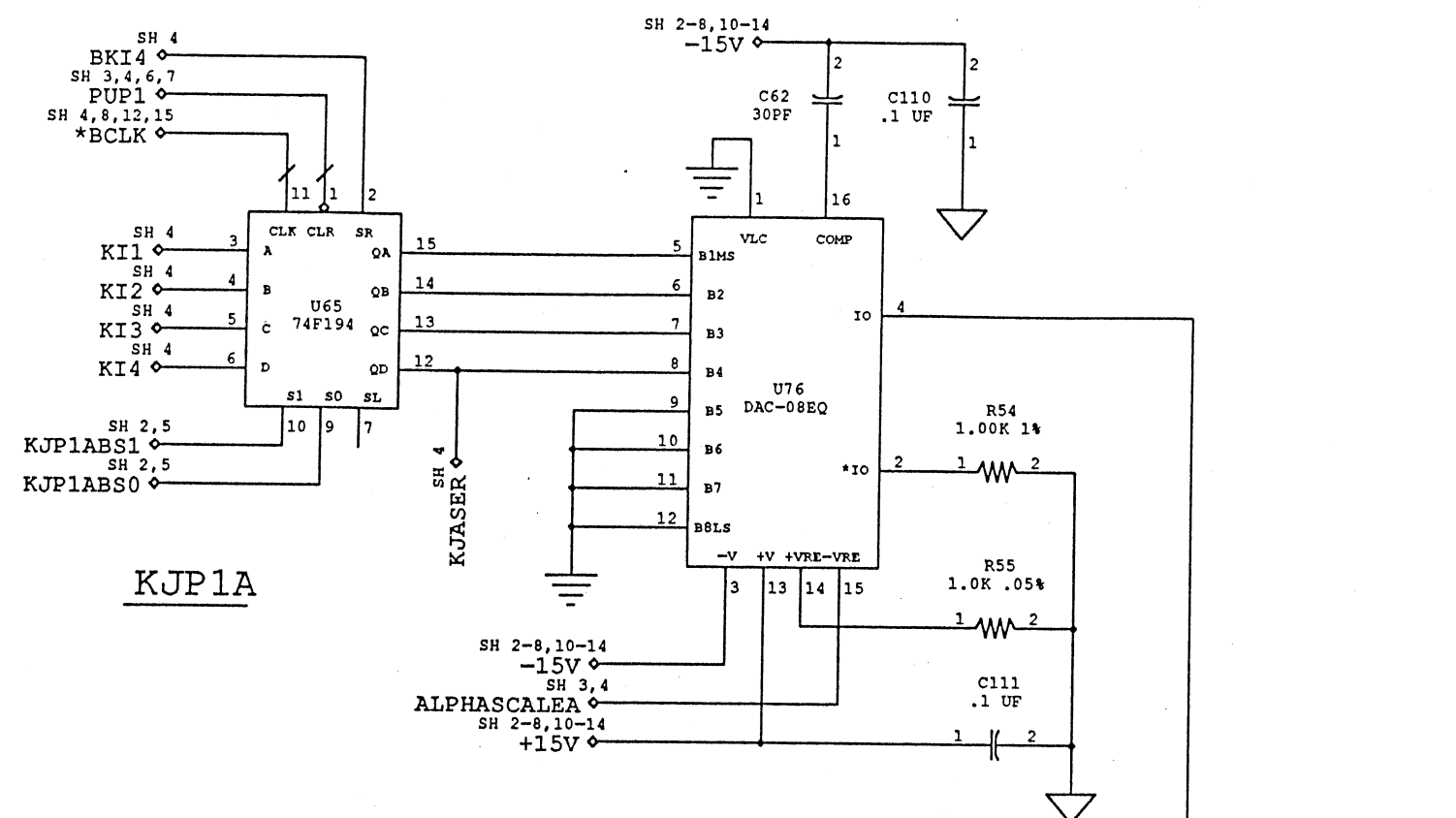
200169-601



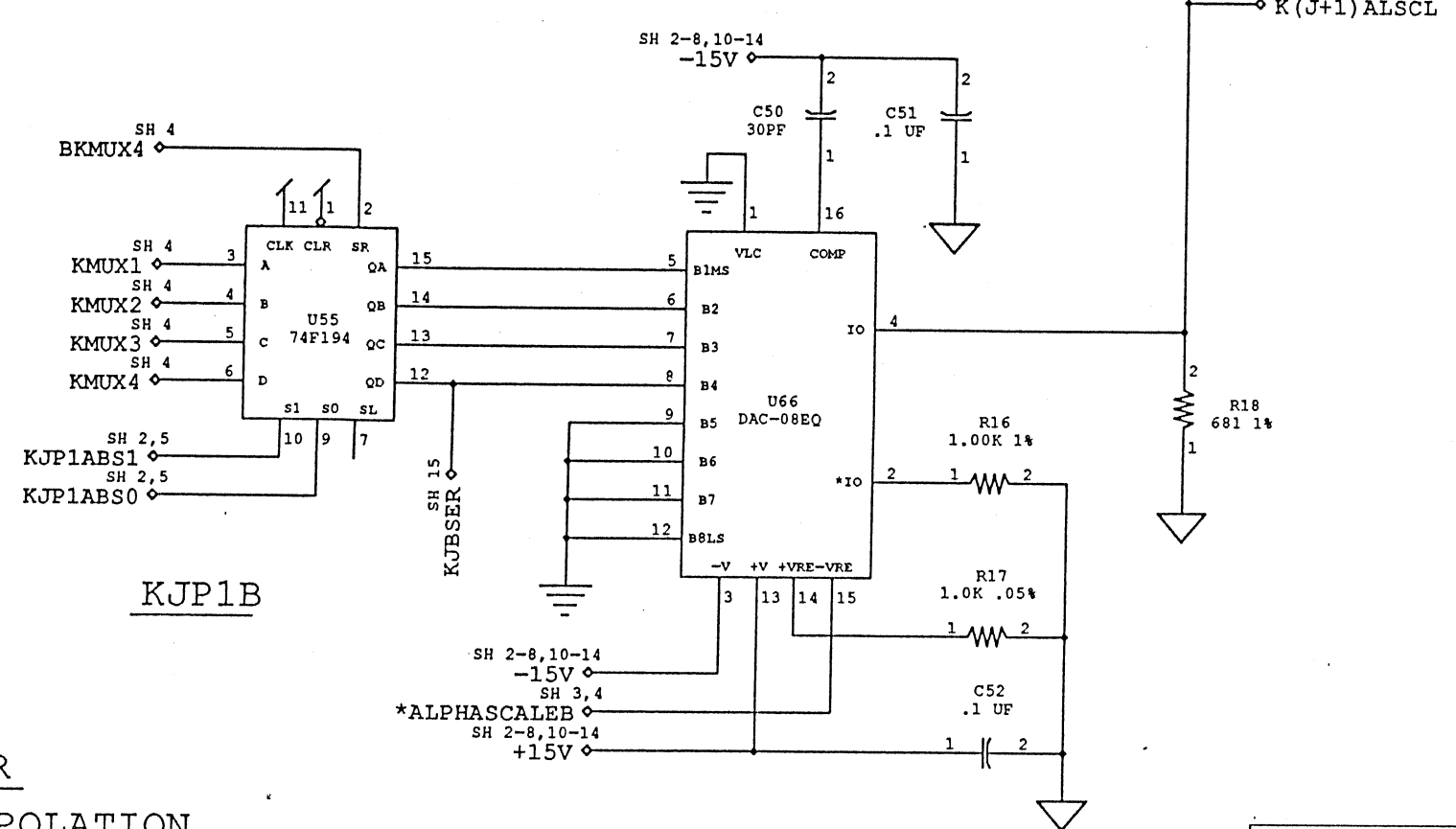
LOBE GENERATOR
SEGMENT ALPHA-INTERPOLATION

LOBE GENERATION 1			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 4 OF 19

200169-601 B A



KJP1A

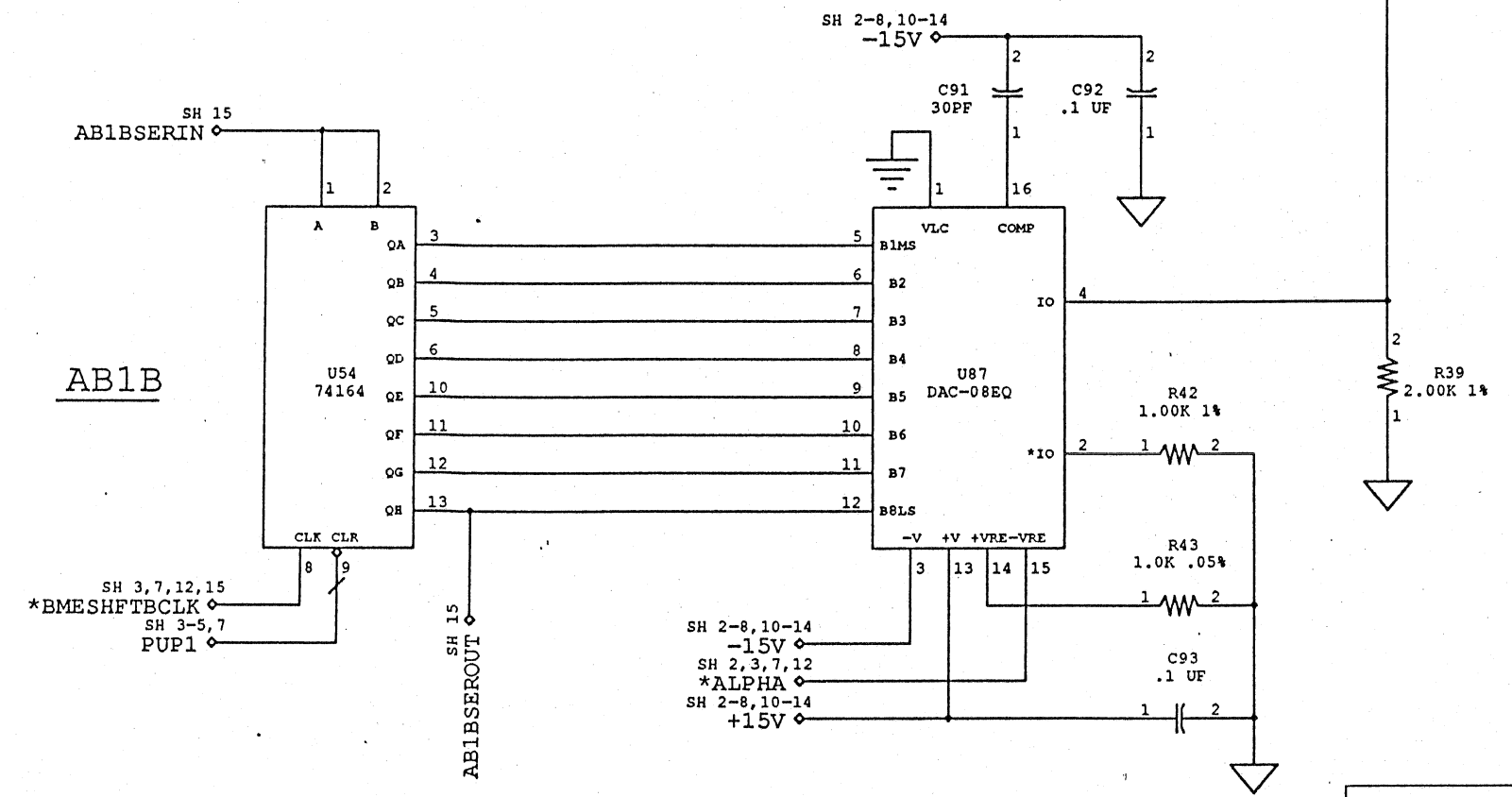
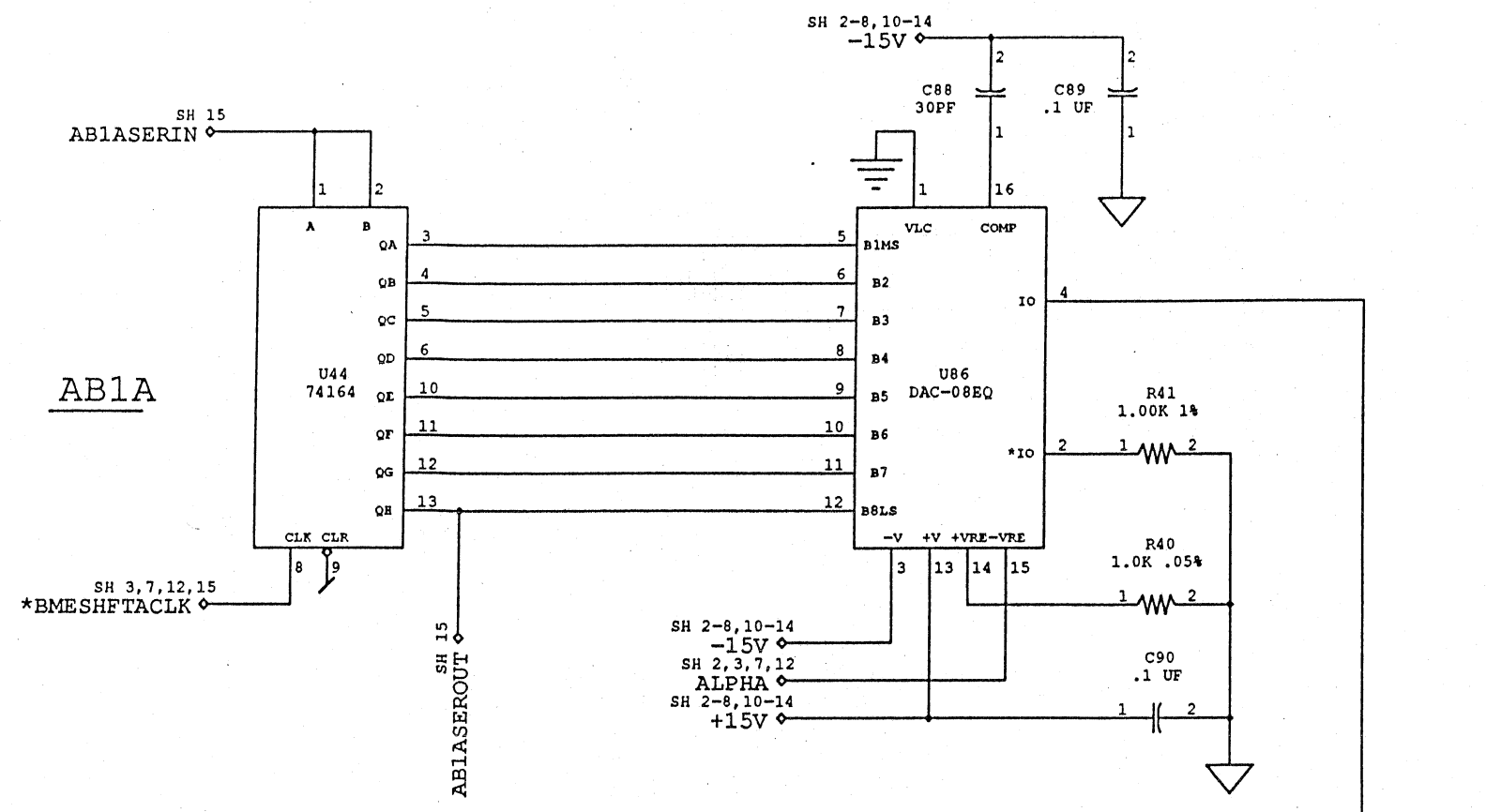


KJP1B

LOBE GENERATOR
SEGMENT ALPHA-INTERPOLATION

LOBE GENERATION 2			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 5 OF 19

200169-601



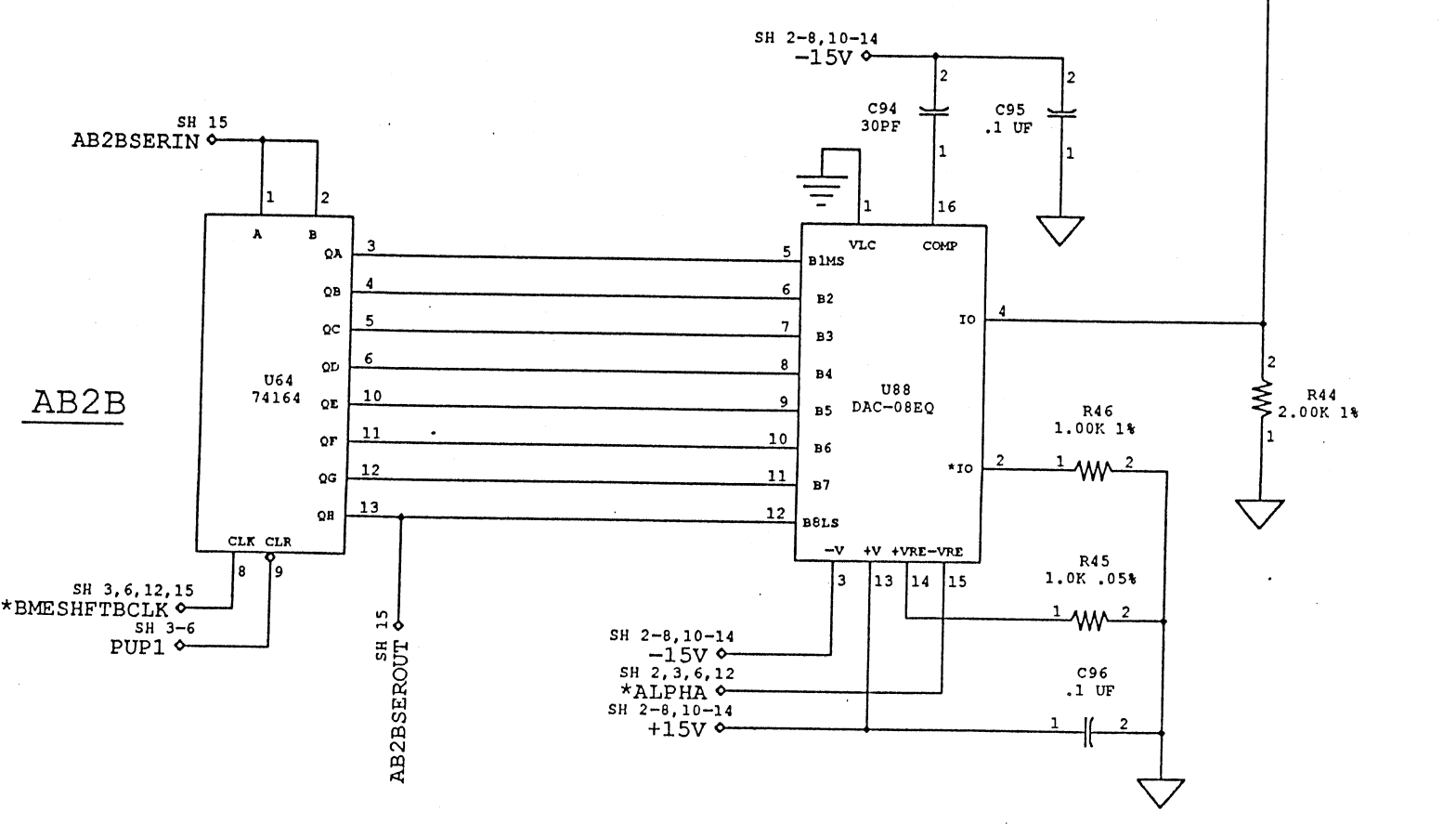
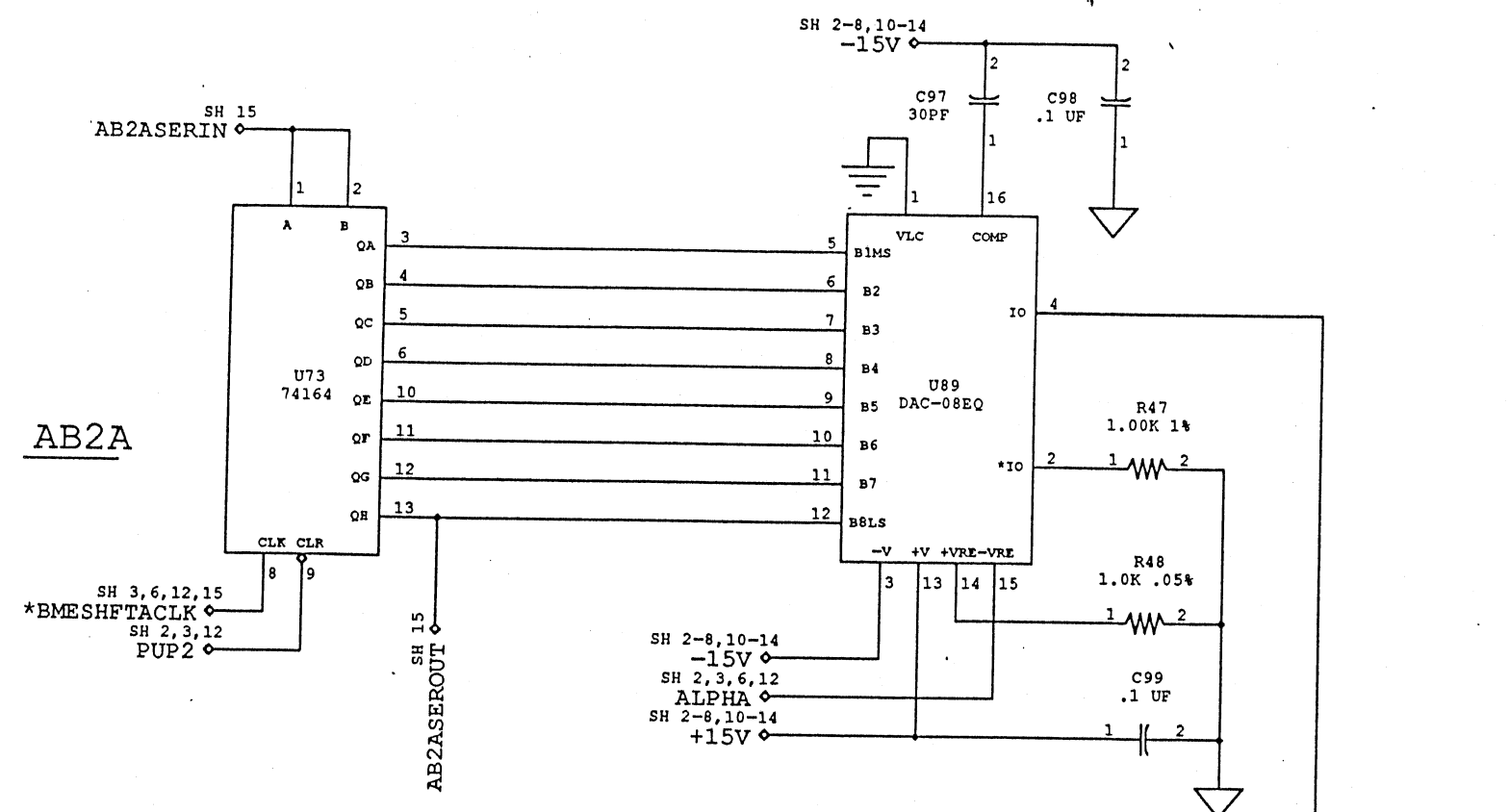
AB1
GENERATOR

AB1 GENERATOR			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 6 OF 19

200169-601 B A

D
C
B
A

D
C
B
A

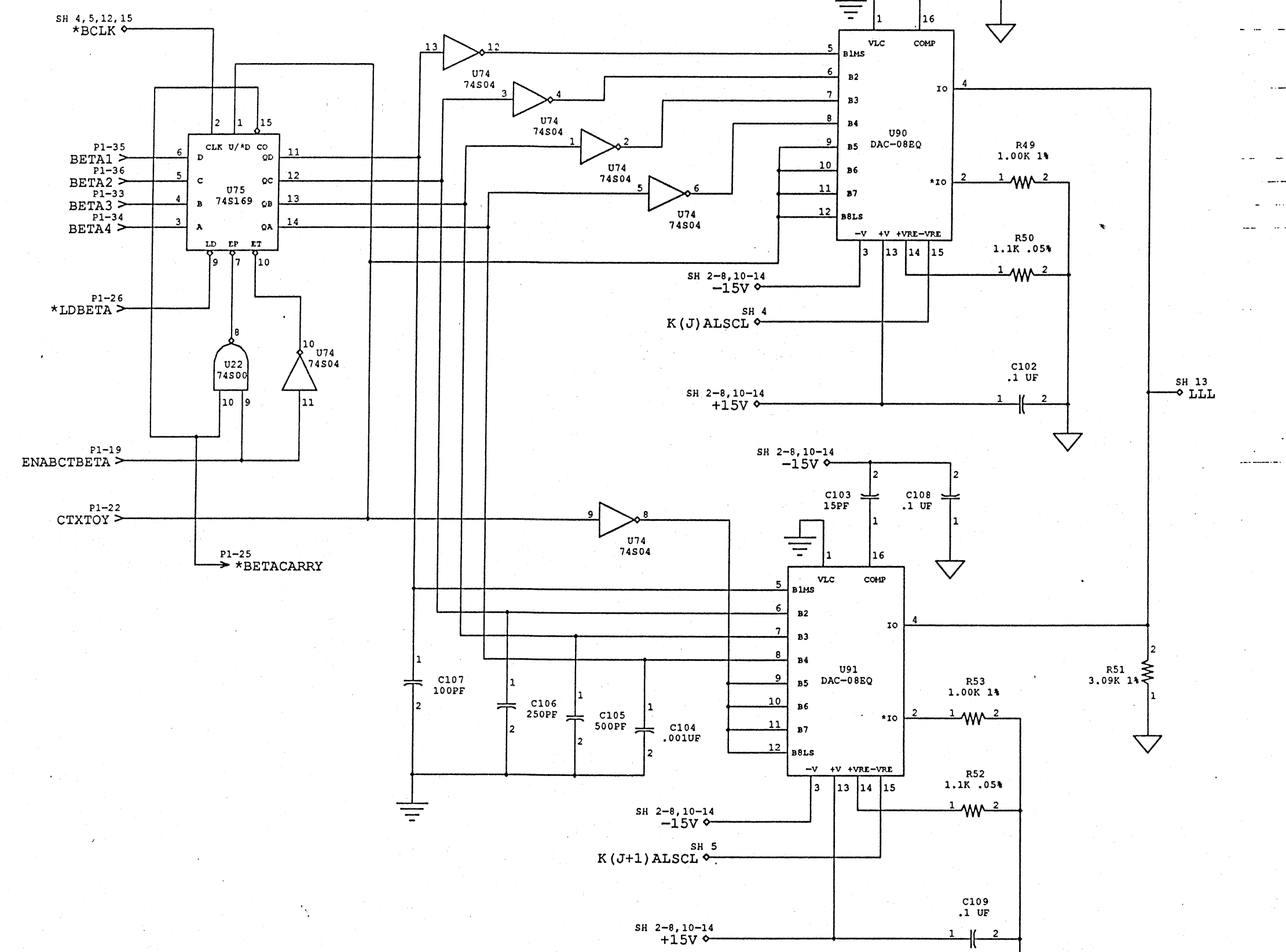


AB2
GENERATOR

AB2 GENERATOR			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 7 OF 19

200169-601

BETA COUNTER

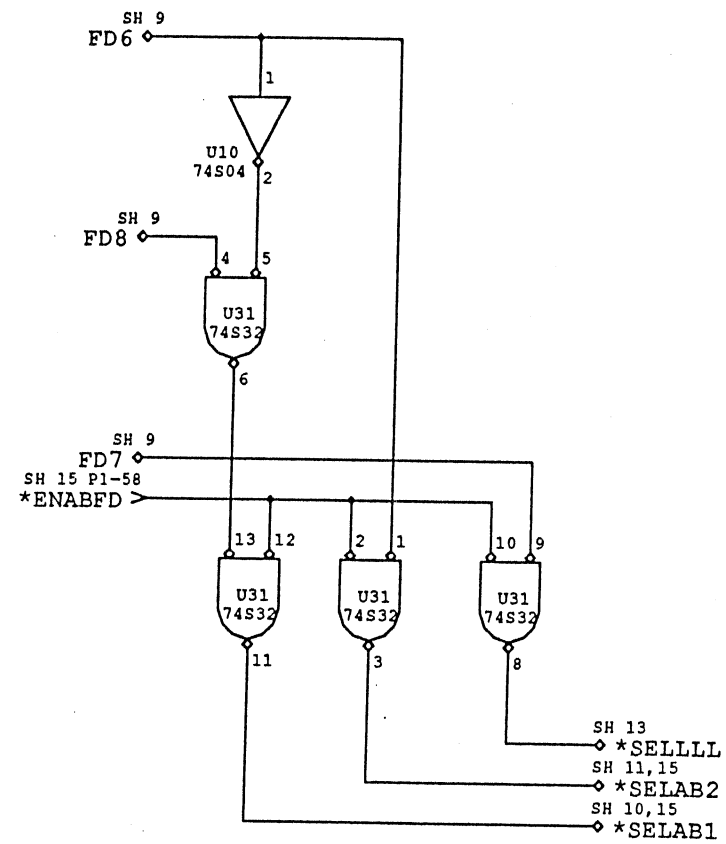


BETA INTERPOLATION

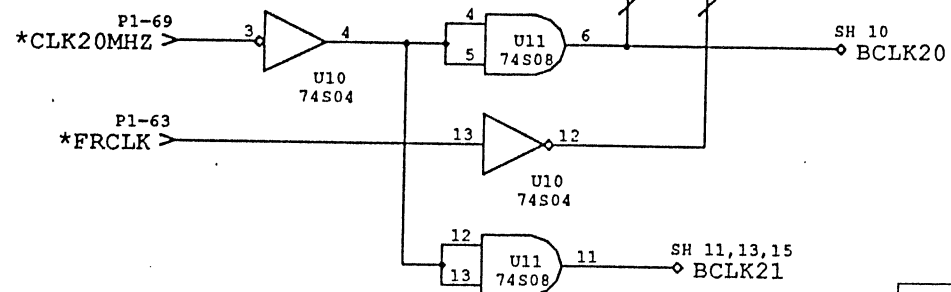
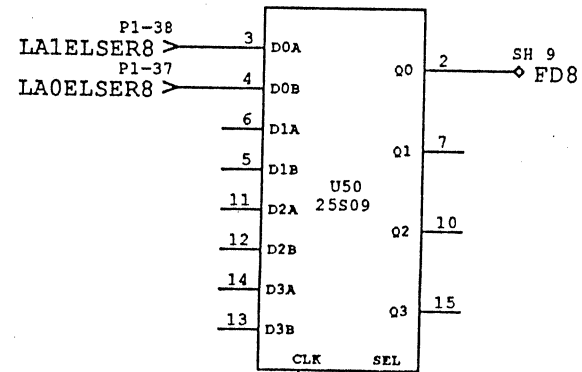
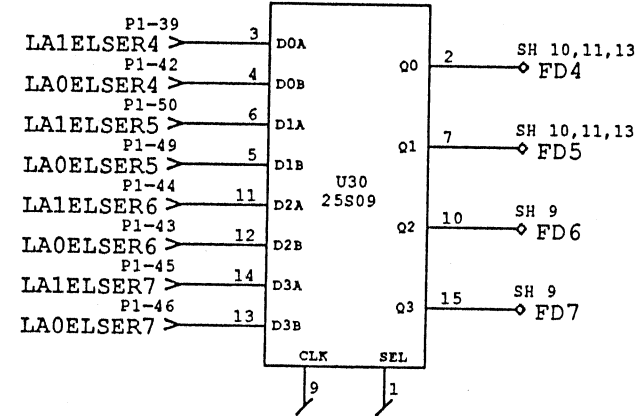
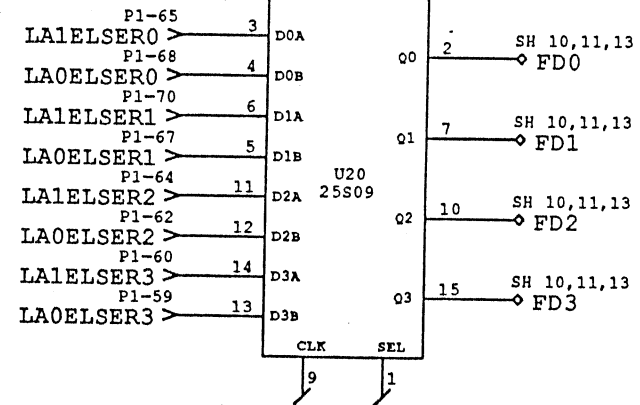
BETA INTERPOLATION			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 8 OF 19

200169-601

FACE DATA MULTIPLEXING



FD REGISTER

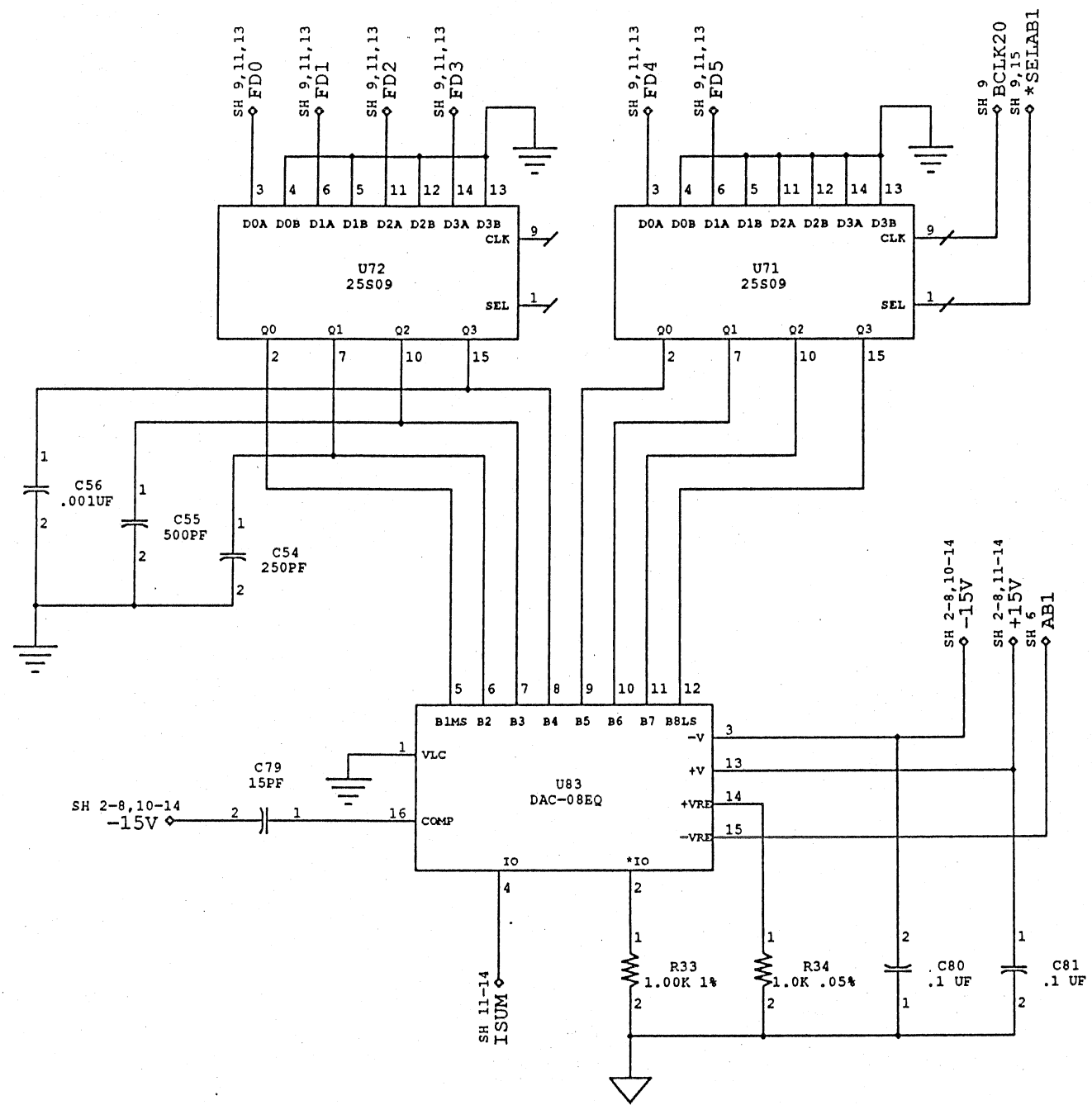


FACE DATA MULTIPLEXING			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 9 OF 19

200169-601

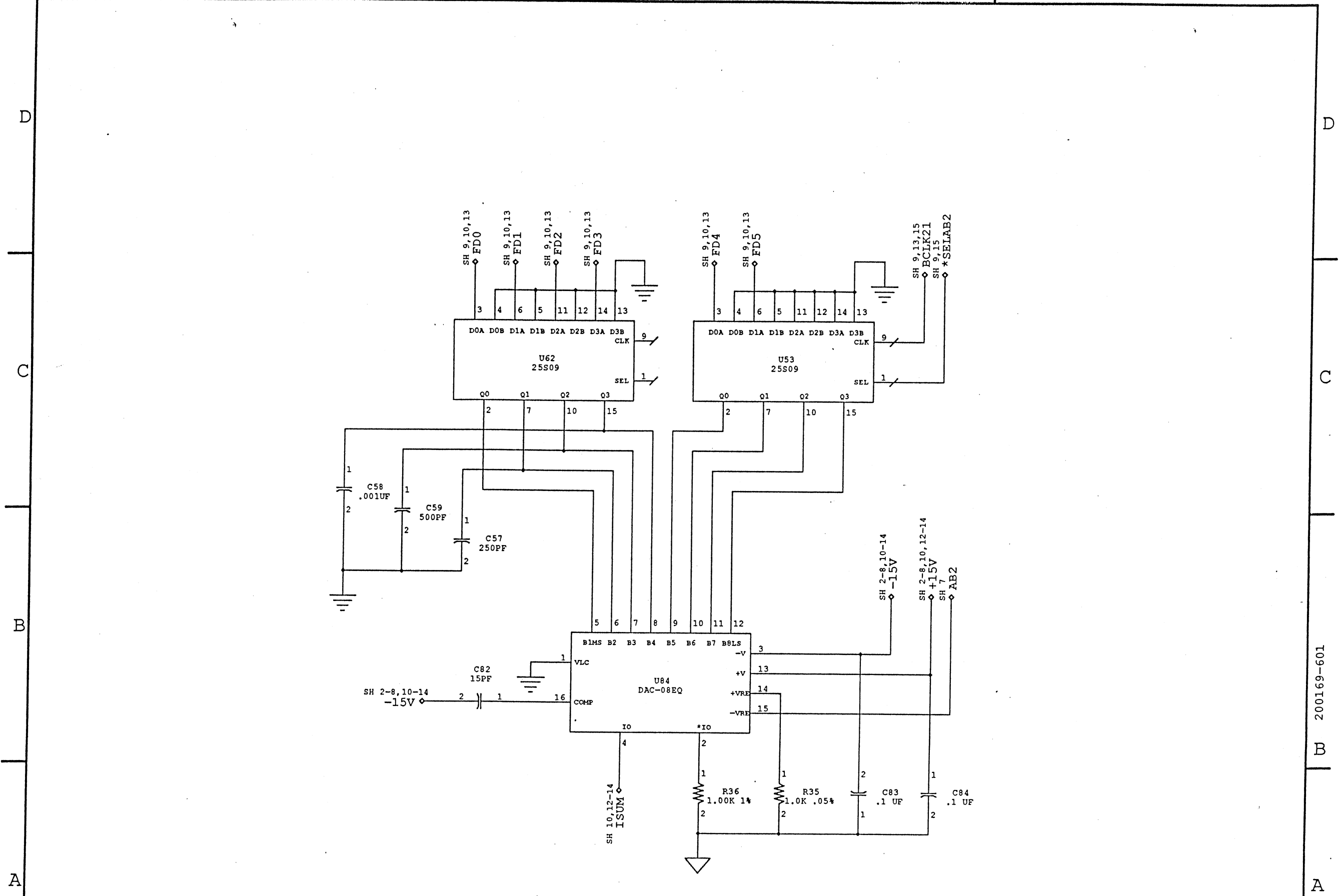
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D
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B
A



AMBIENCE
MULTIPLIERS

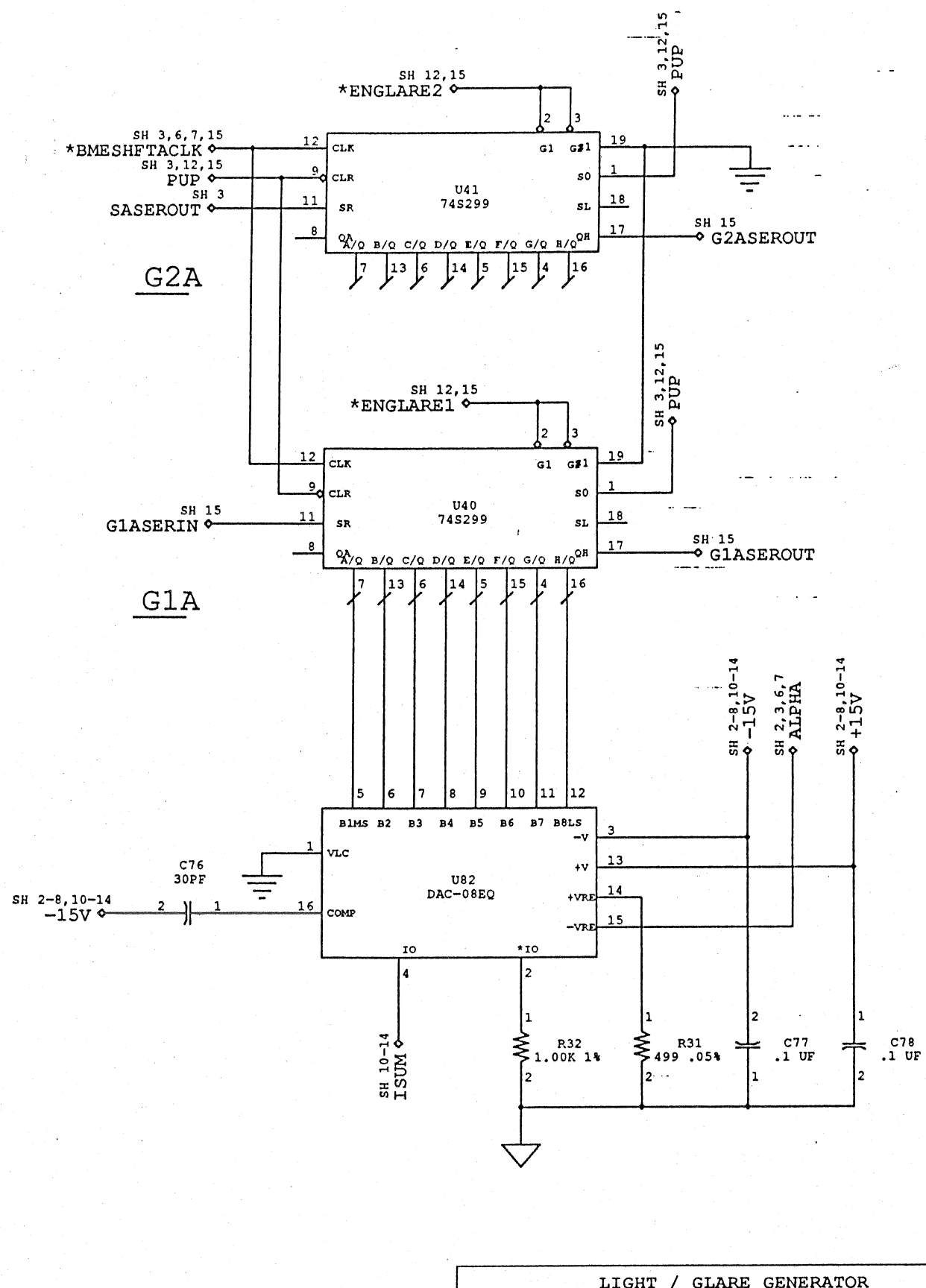
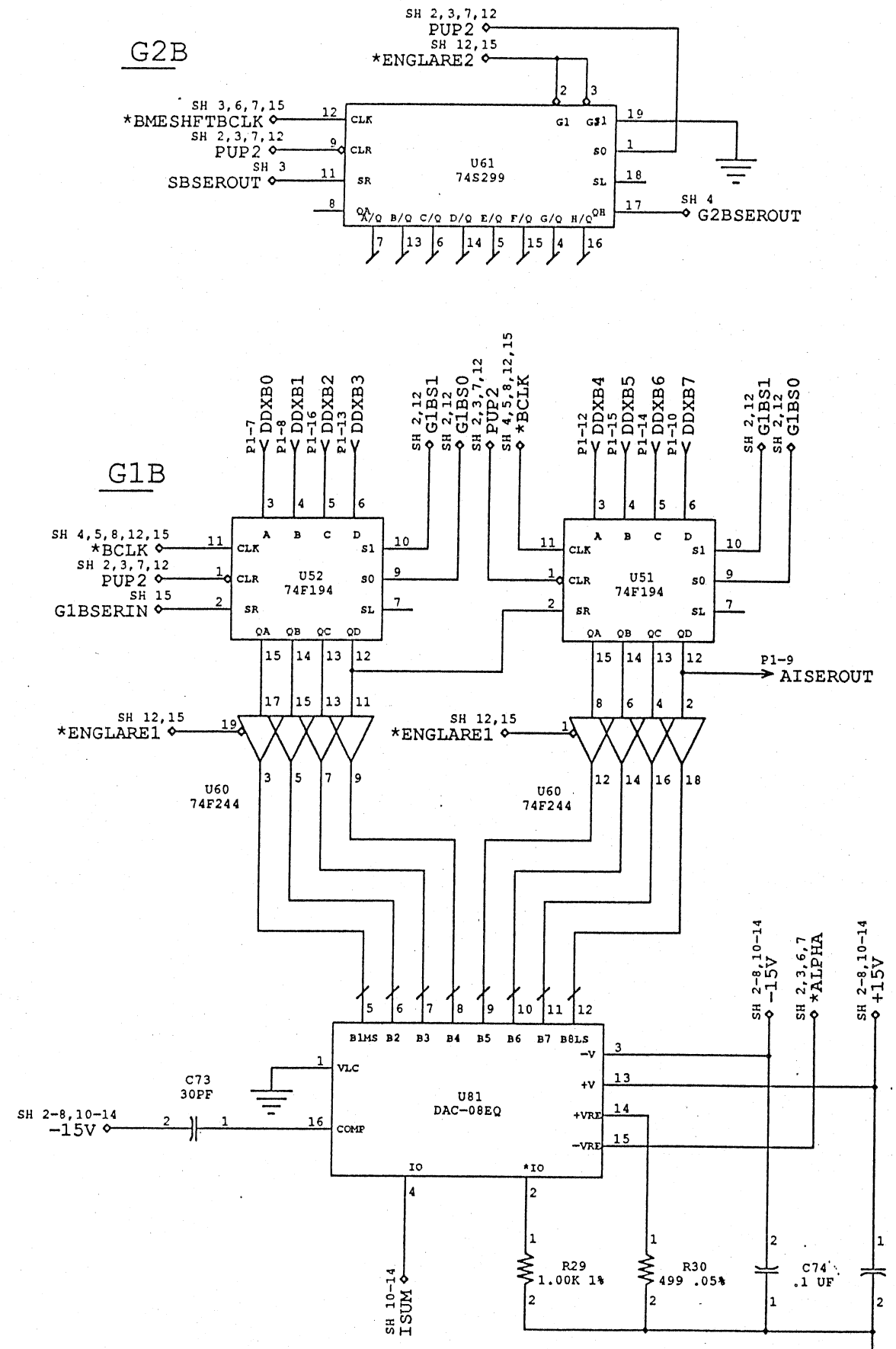
AMBIENCE MULTIPLIERS 1			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 10 OF 19



200169-601

AMBIENCE MULTIPLIERS

AMBIENCE MULTIPLIERS 2			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 11 OF 19

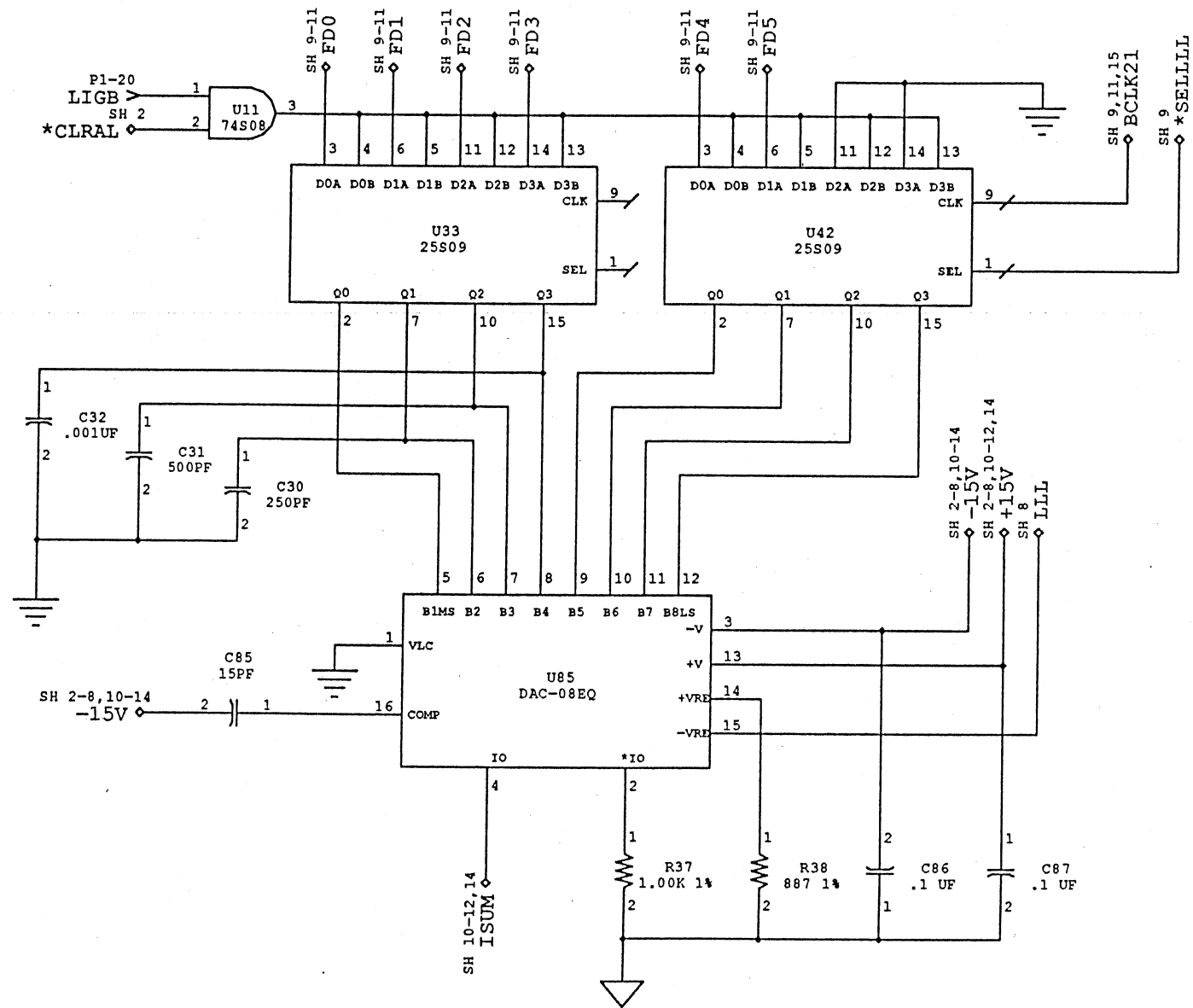


LIGHT/GLARE GENERATOR

LIGHT / GLARE GENERATOR			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 12 OF 19

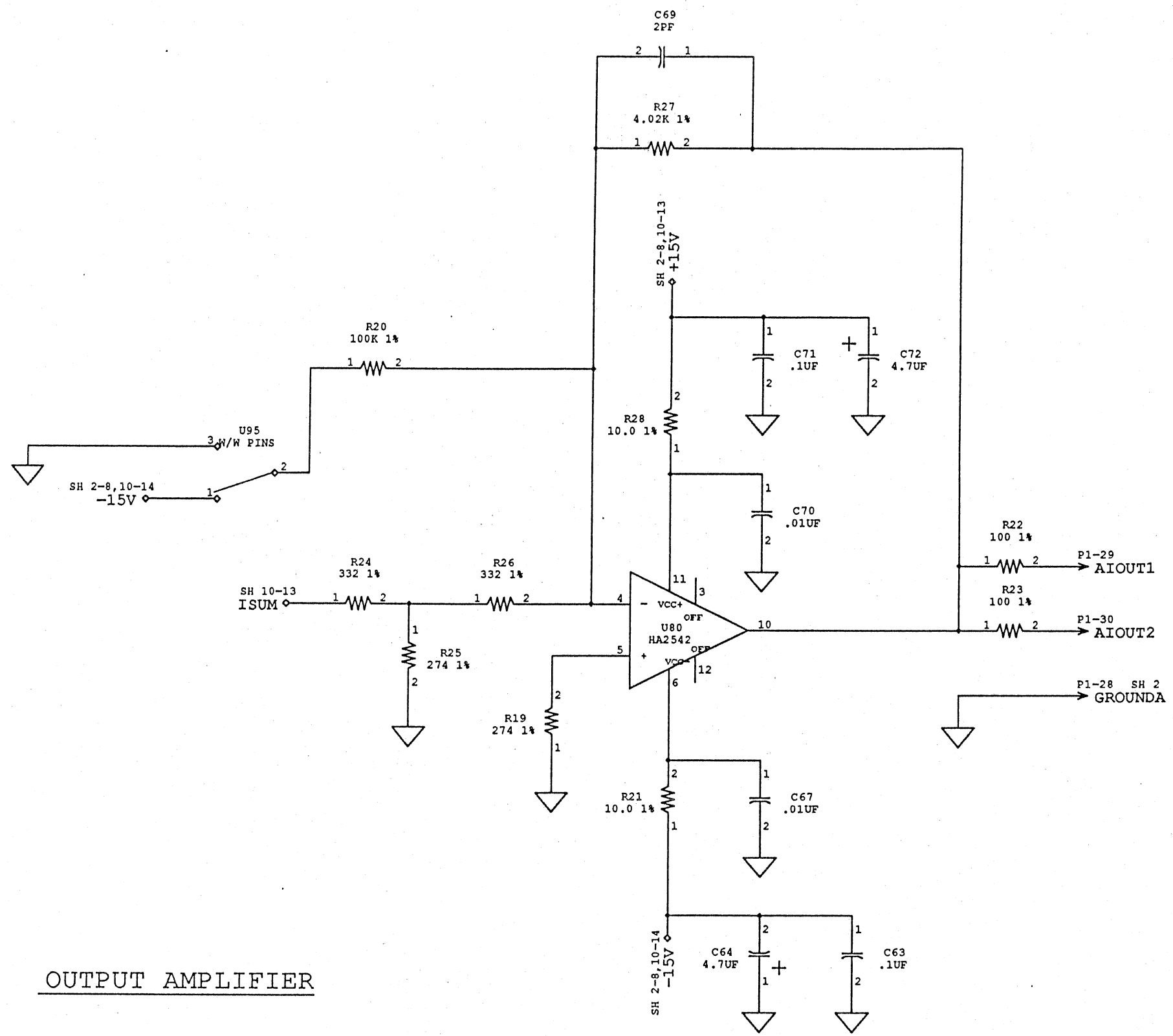
B 200169-601

LANDING LIGHT
LOBE GENERATOR



LANDING LIGHT LOBE GENERATOR			
SIZE	CODE IDENT	EWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 13 OF 19

200169-601



OUTPUT AMPLIFIER

OUTPUT AMPLIFIER			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 14 OF 19

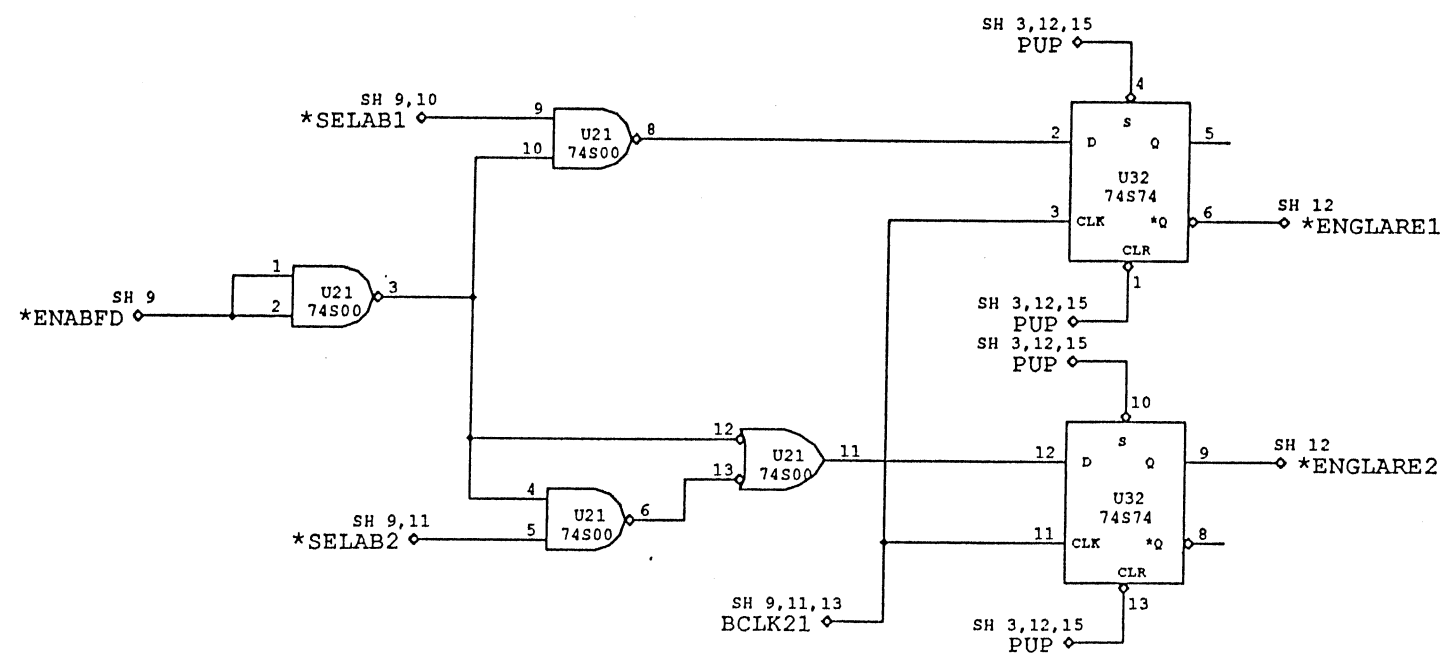
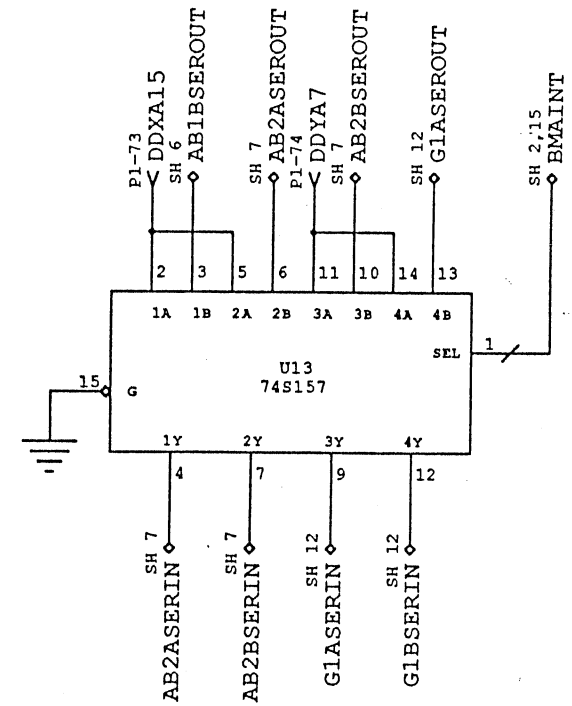
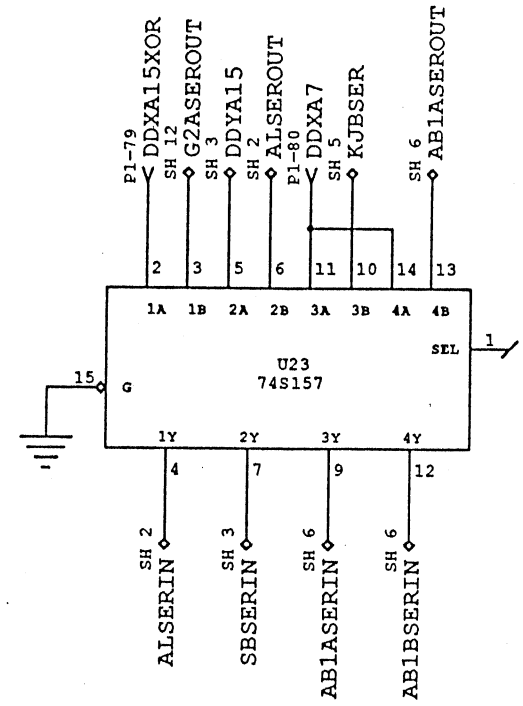
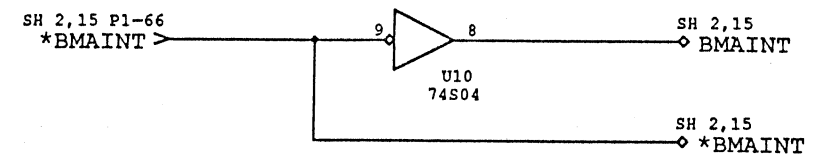
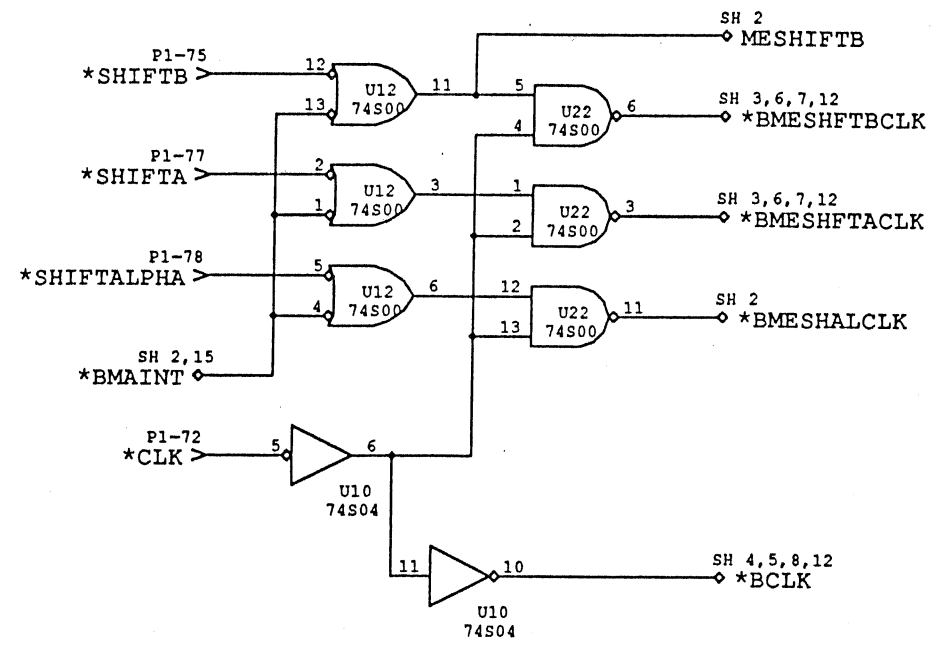
200169-601

4

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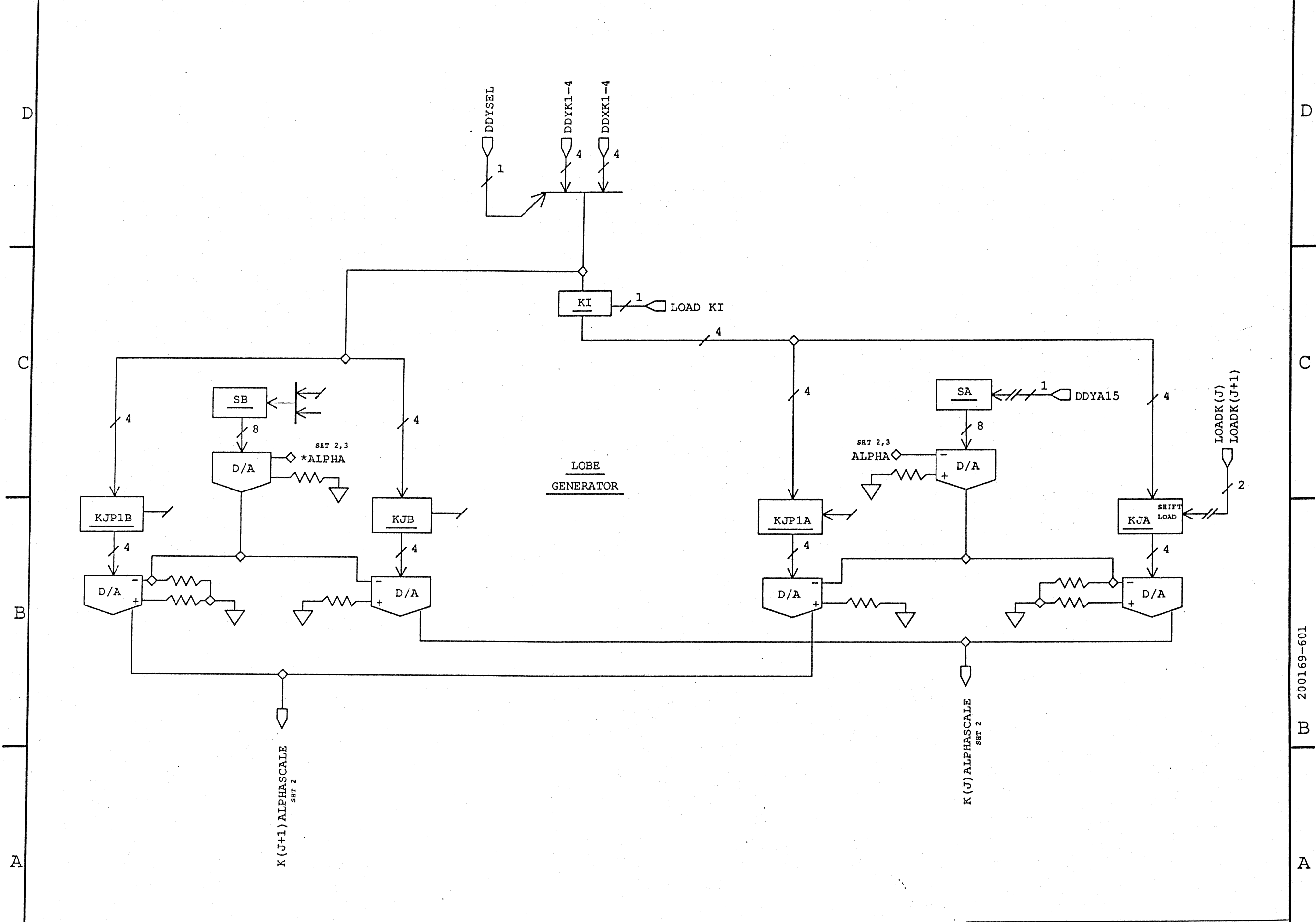
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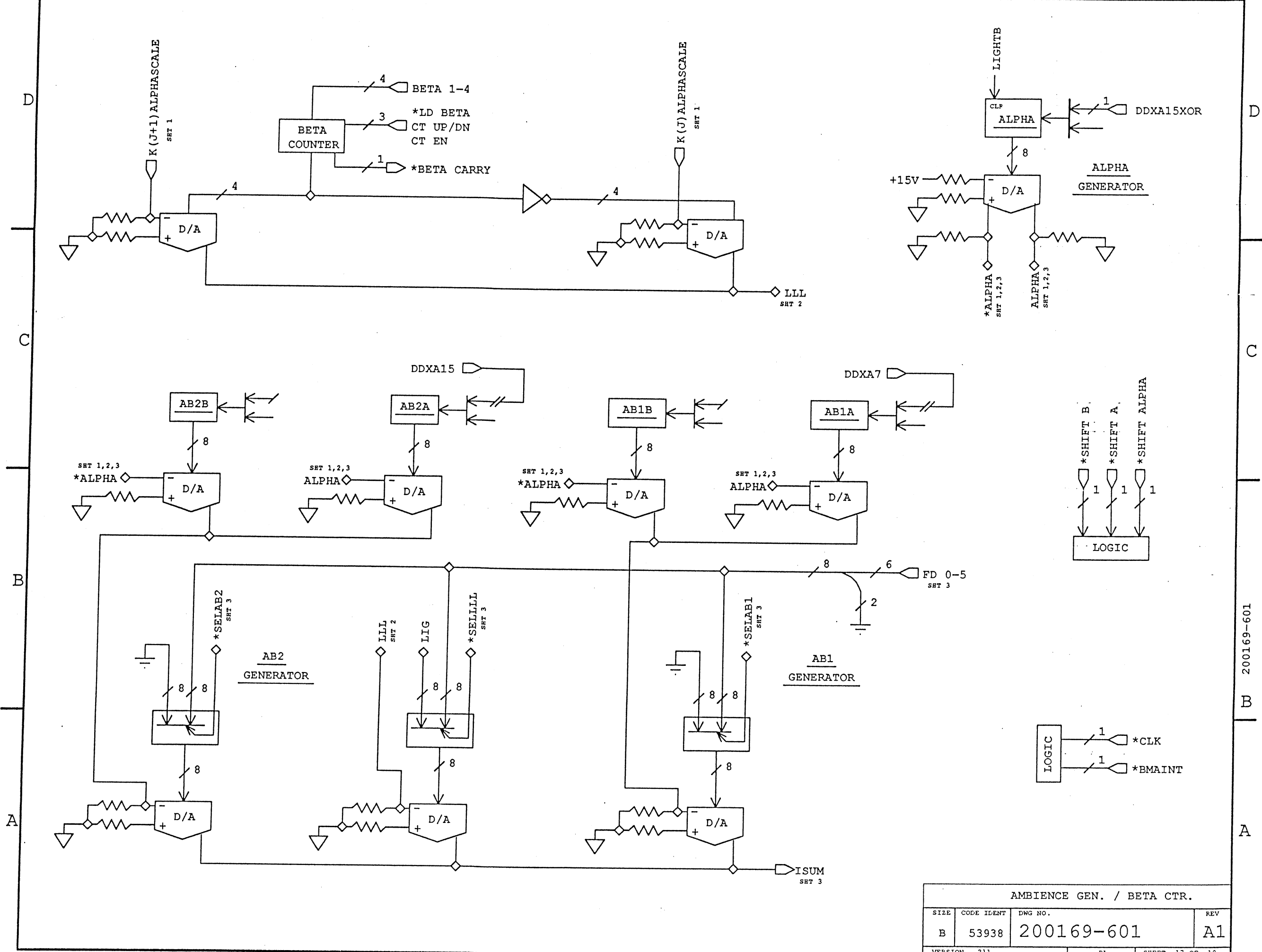


CLOCKS AND MAINTENANCE			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	PC	SHEET 15 OF 19

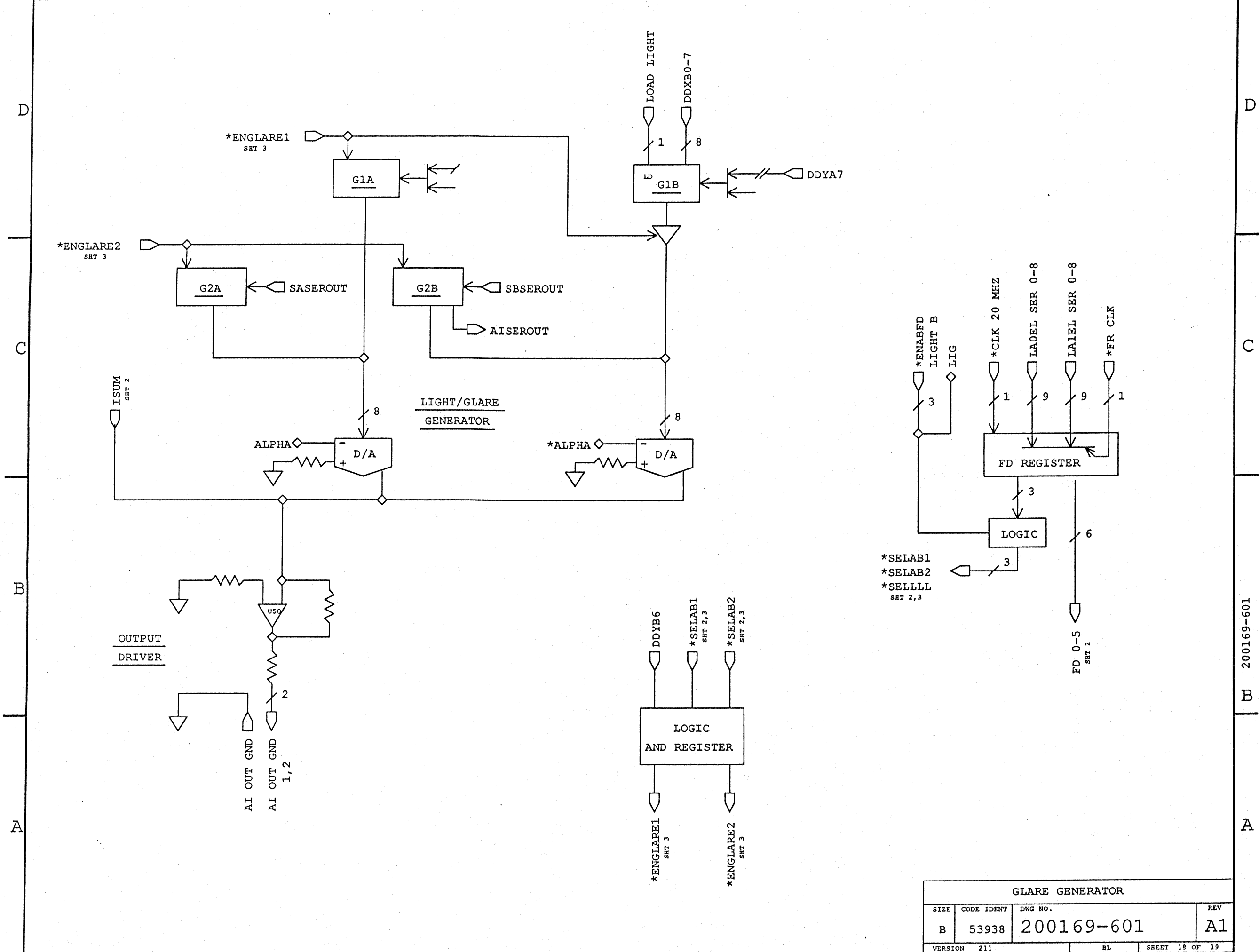
200169-601 B A



LOBE GENERATOR			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	BL	SHEET 16 OF 19



AMBIENCE GEN. / BETA CTR.			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	BL	SHEET 17 OF 19



GLARE GENERATOR			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	BL	SHEET 18 OF 19

D

C

B

A

200169-601

4

3

2

1

Unit	Pin	Type	String	Sheet
P1	1	In	GROUND	1 B4
P1	2	In	+5VIN	1 C4
P1	3	In	+15VIN	2 A4
P1	4	In	GROUND	2 B4
P1	5	In	LDLIGHT	2 C4
P1	6	In	-15VIN	2 A4
P1	7	In	DDXB0	12 C4
P1	8	In	DDXB1	12 C4
P1	9	Out	AISEROUT	12 B3
P1	10	In	DDXB7	12 C3
P1	11	In	GROUND	1 A4
P1	12	In	DDXB4	12 C3
P1	13	In	DDXB3	12 C4
P1	14	In	DDXB6	12 C3
P1	15	In	DDXB5	12 C3
P1	16	In	DDXB2	12 C4
P1	17	In	LOADK (J+1)	2 C4
P1	18	In	DDYA15	3 D4
P1	19	In	ENABCTBETA	8 B4
P1	20	In	LIGE	13 C3
P1	21	In	GROUND	1 A4
P1	22	In	CTXTOY	8 B4
P1	23	In	DDXK4	4 C4
P1	24	In	DDYK4	4 C4
P1	25	Out	*BETACARRY	8 B4
P1	26	In	*LDBETA	8 C4
P1	28	Out	GROUND	14 B1
P1	29	Out	AIOUT1	14 B1
P1	30	Out	AIOUT2	14 B1
P1	31	In	GROUND	1 A4
P1	33	In	BETA3	8 C4
P1	34	In	BETA4	8 C4
P1	35	In	BETA1	8 D4
P1	36	In	BETA2	8 C4
P1	37	In	LA0ELSER8	8 B2
P1	38	In	LA1ELSER8	9 B2
P1	39	In	LA1ELSER4	9 C2
P1	40	In	LOADKI	2 D4
P1	41	In	GROUND	1 A4
P1	42	In	LA0ELSER4	9 C2
P1	43	In	LA0ELSER6	9 C2
P1	44	In	LA1ELSER6	9 C2
P1	45	In	LA1ELSER7	9 C2
P1	46	In	LA0ELSER7	9 B2
P1	47	In	LOADK (J)	2 C4
P1	48	In	DDXK1	4 C4
P1	49	In	LA0ELSER5	9 C2
P1	50	In	LA1ELSER5	9 C2
P1	51	In	GROUND	1 A4
P1	52	In	DDYK3	4 C4
P1	53	In	DDXK3	4 C4
P1	54	In	YSEL	4 C4
P1	55	In	DDYK2	4 C4
P1	56	In	DDYK1	4 C4
P1	57	In	DDXK2	4 C4
P1	58	In	*ENABFD	9 B4
P1	59	In	LA0ELSER3	9 C2
P1	60	In	LA1ELSER3	9 C2
P1	61	In	GROUND	1 A4
P1	62	In	LA0ELSER2	9 D2
P1	63	In	*FRCLK	9 A3
P1	64	In	LA1ELSER2	9 D2
P1	65	In	LA1ELSER0	9 D2
P1	66	In	*BMAINT	15 B4
P1	67	In	LA0ELSER1	9 D2
P1	68	In	LA0ELSER0	9 D2
P1	69	In	*CLK20MHZ	9 A3
P1	70	In	LA1ELSER1	9 D2
P1	71	In	GROUND	1 A4
P1	72	In	*CLK	15 C4
P1	73	In	DDXA15	15 C1
P1	74	In	DDYA7	15 C1
P1	75	In	*SHIFTB	15 D4
P1	76	In	LIGHTB	2 D2
P1	77	In	*SHIFTA	15 D4
P1	78	In	*SHIFOTALPHA	15 D4
P1	79	In	DDXA15XOR	15 C2
P1	80	In	DDXA7	15 C2

String	Unit	Pin	Type	Sheet
*BETACARRY	P1	25	Out	8 B4
*BMAINT	P1	66	In	15 B4
*CLK	P1	72	In	15 C4
*CLK20MHZ	P1	69	In	9 A3
*ENABFD	P1	58	In	9 B4
*FRCLK	P1	63	In	9 A3
*LDBETA	P1	26	In	8 C4
*SHIFTA	P1	77	In	15 D4
*SHIFOTALPHA	P1	78	In	15 D4
*SHIFTB	P1	75	In	15 D4
+15VIN	P1	3	In	2 A4
+5VIN	P1	2	In	1 C4
-15VIN	P1	6	In	2 A4
AIOUT1	P1	29	Out	14 B1
AIOUT2	P1	30	Out	14 B1
AISEROUT	P1	9	Out	12 B3
BETA1	P1	35	In	8 D4
BETA2	P1	36	In	8 C4
BETA3	P1	33	In	8 C4
BETA4	P1	34	In	8 C4
CTXTOY	P1	22	In	8 B4
DDXA15	P1	73	In	15 C1
DDXA15XOR	P1	79	In	15 C2
DDXA7	P1	80	In	15 C2
DDXB0	P1	7	In	12 C4
DDXB1	P1	8	In	12 C4
DDXB2	P1	16	In	12 C4
DDXB3	P1	13	In	12 C4
DDXB4	P1	12	In	12 C3
DDXB5	P1	15	In	12 C3
DDXB6	P1	14	In	12 C3
DDXB7	P1	10	In	12 C3
DDXK1	P1	48	In	4 C4
DDXK2	P1	57	In	4 C4
DDXK3	P1	53	In	4 C4
DDXK4	P1	23	In	4 C4
DDYA15	P1	18	In	3 D4
DDYA7	P1	74	In	15 C1
DDYK1	P1	56	In	4 C4
DDYK2	P1	55	In	4 C4
DDYK3	P1	52	In	4 C4
DDYK4	P1	24	In	4 C4
ENABCTBETA	P1	19	In	8 B4
GROUND	P1	1	In	1 B4
GROUND	P1	11	In	1 A4
GROUND	P1	21	In	1 A4
GROUND	P1	31	In	1 A4
GROUND	P1	41	In	1 A4
GROUND	P1	51	In	1 A4
GROUND	P1	61	In	1 A4
GROUND	P1	71	In	1 A4
GROUND	P1	4	In	2 B4
GROUND	P1	28	Out	14 B1
LA0ELSER0	P1	68	In	9 D2
LA0ELSER1	P1	67	In	9 D2
LA0ELSER2	P1	62	In	9 D2
LA0ELSER3	P1	59	In	9 C2
LA0ELSER4	P1	42	In	9 C2
LA0ELSER5	P1	49	In	9 C2
LA0ELSER6	P1	43	In	9 C2
LA0ELSER7	P1	46	In	9 B2
LA0ELSER8	P1	37	In	9 B2
LA1ELSER0	P1	65	In	9 D2
LA1ELSER1	P1	70	In	9 D2
LA1ELSER2	P1	64	In	9 D2
LA1ELSER3	P1	60	In	9 C2
LA1ELSER4	P1	39	In	9 C2
LA1ELSER5	P1	50	In	9 C2
LA1ELSER6	P1	44	In	9 C2
LA1ELSER7	P1	45	In	9 C2
LA1ELSER8	P1	38	In	9 B2
LDLIGHT	P1	5	In	2 C4
LIGB	P1	20	In	13 C3
LIGHTB	P1	76	In	2 D2
LOADK (J)	P1	47	In	2 C4
LOADK (J+1)	P1	17	In	2 C4
LOADK1	P1	40	In	2 D4
YSEL	P1	54	In	4 C4

D

C

B

A

D

C

200169-601

B

A

Connector summary			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200169-601	A1
VERSION	211	CS	SHEET 19 OF 19



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200170-100

REV: NC = AA

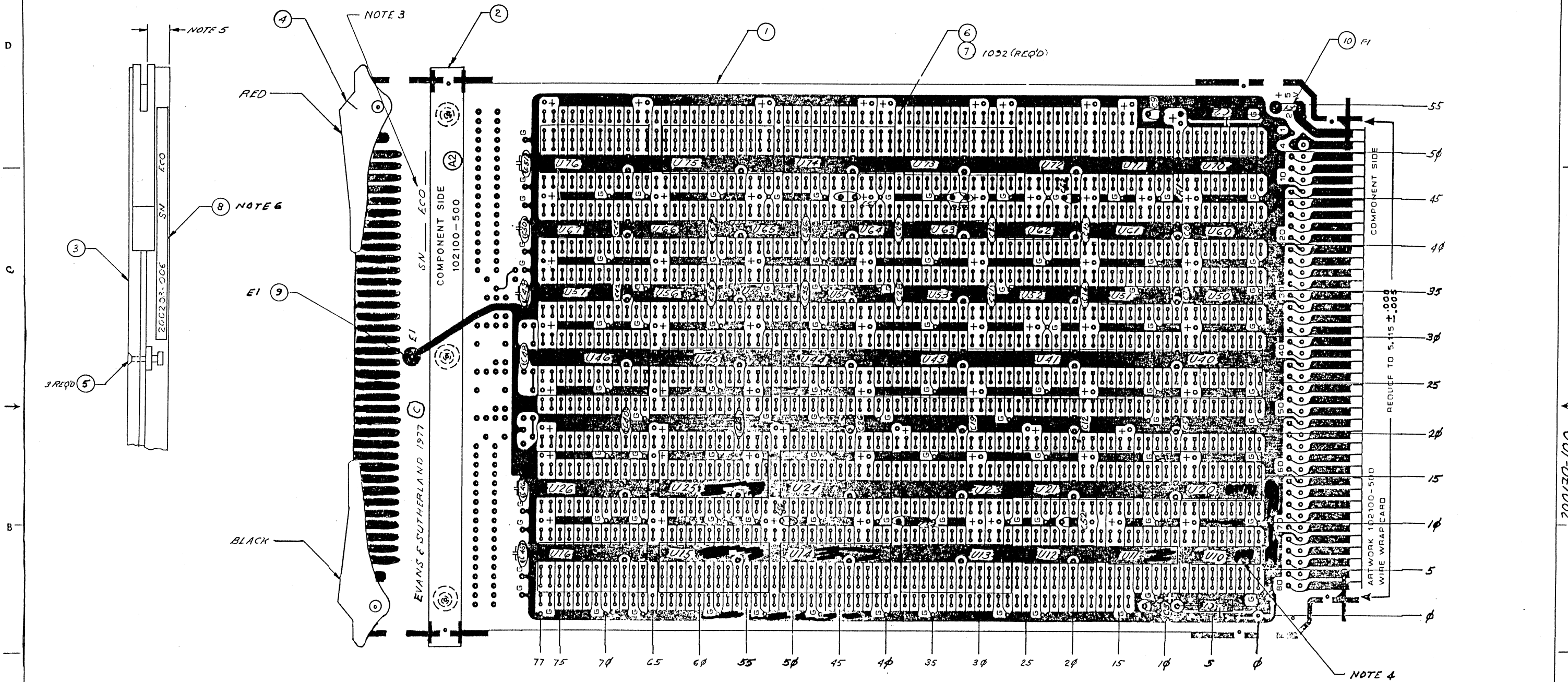
DESC: CARD ASSY, LIGHT OCCULTATION, TRANSFORM, WW

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY	
001	BD,WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1	
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1	
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1	
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1	
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3	
006	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1	
007	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	1092	
008	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1	
	C1 C2	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
	C14 33.19 C14 36.19 C15	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	34
	40.19 C15 43.19 C21 33.29						
	C21 36.29 C22 40.29 C22						
	43.29 C28 33.39 C28 36.39						
	C29 40.39 C29 43.39 C3 C5 C7						
	C8 C33 C40 C48 C49 C35 33.49						
	C35 36.49 C36 40.49 C36						
	43.49 C42 C43 C45 C46 C50						
	C55 C56 C57 C51 C52 C53 C54						
	C58 33.59 C58 36.59 C59						
	40.59 C59 43.59 C9 C12 C19						
	C26						
009	E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
010	F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
	R1 47.9 50.9	R,,AXL 270 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF271J	803201-271	1
	U10 U62 40.27 U65 40.57	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	3
	U15 U16 U20 U21 U23 U24 U25	IC,MULT,FOUR-BY-TWO-2	34335	ADVANCED MICRO DEVICES IN	AM25S05	807205-055	14
	U26 U43 U44 U45 U46 U13 U14						
	U40 U41 U73 U74 U75 U76	IC,TTL 74172	01295	TEXAS INSTR, SEMICON DIV.	SN74172N/J (50NS)	807272-646	6
	U53 33.37 U57 33.77 U63	IC,TTL 74S195	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	9
	40.37 U64 40.47 U66 40.67						
	U67 40.77 U11 5.16 U12 5.25						
	U50						
	U54 33.47 U55 33.57 U56	IC,TTL 74S283	27014	NATIONAL SEMICONDUCTOR	DM74S283N/J	807715-055	7
	33.67 U60 U61 40.17 U51						
	33.17 U52 33.27						
	U70	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1
	U71 47.16 U72 47.25	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	2

20 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



6. MARK EFS ASSY NO. SINFECD ON ITEM 8.
5. HEIGHT OF ALL COMPONENTS FROM COMPONENT SIDE OF CARD IS .312 MAX.
4. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBER ON THE PARTS LIST.
3. MARK ECO AND SERIAL NO. APPROXIMATELY AS SHOWN USING .12 HIGH CHARACTER IN CONTRASTING COLORS AND PERMANENT INK.
2. INSTALL CARD EJECTORS ITEM 4 AND SPACERS ITEM 4 AFTER FLOW SOLDER.
1. ASSEMBLE PER EFS WORKMANSHIP STANDARDS.
- NOTES:

COMPONENT SIDE

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	CONTRACT NO.	SEE SEPARATE PARTS LIST ES EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84108
		TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓	DRAWN <i>M WING</i> 2-26-77 CHECKED <i>ad Chapman</i> 5-7-56-77 MECH ELEC <i>W. S. Hill</i> 2-9-77 PROJ. ENG. <i>P. M. ...</i> 2-9-77 APPROVED	
200193-100	NOVOVIEW	MATERIAL		ASSY, CARD LIGHT ACCULTATION TRANSFORM W/W
NEXT ASSY	USED ON	FINISH		
APPLICATION				SIZE CODE IDENT NO D 53938
				200170-100
				REV NC
				SCALE 2/1 DO NOT SCALE DWG SHEET / OF 1

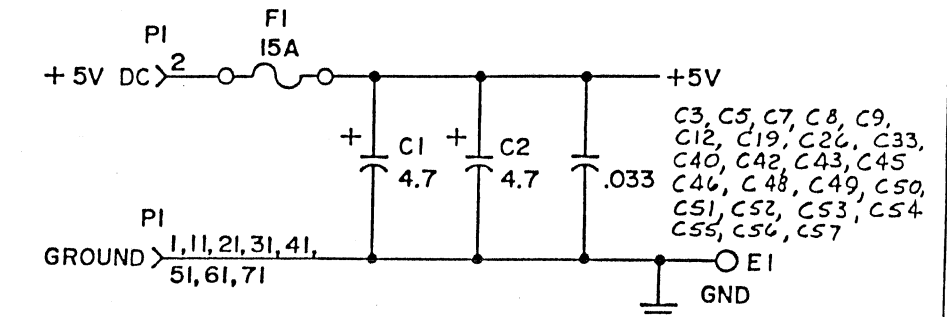


REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

REF DESIG	E+S PART NO	VENDOR PART NUMBER	REF DESIG	E+S PART NO	VENDOR PART NUMBER
C 1	804102-475	CS138F475K	U 21	807205-055	AM25S05
C 2	804102-475	CS138F475K	U 23	807205-055	AM25S05
C 3	804115-333	CY15C333M	U 24	807205-055	AM25S05
C 5	804115-333	CY15C333M	U 25	807205-055	AM25S05
C 7	804115-333	CY15C333M	U 26	807205-055	AM25S05
C 8	804115-333	CY15C333M	U 40	807272-646	SN74172
C 9	804115-333	CY15C333M	U 41	807272-646	SN74172
C 12	804115-333	CY15C333M	U 43	807205-055	AM25S05
C 14	804115-333	CY15C333M	U 44	807205-055	AM25S05
C 15	804115-333	CY15C333M	U 45	807205-055	AM25S05
C 19	804115-333	CY15C333M	U 46	807205-055	AM25S05
C 21	804115-333	CY15C333M	U 50	807695-055	SN74S195N
C 22	804115-333	CY15C333M	U 51	807715-055	SN74S283N
C 26	804115-333	CY15C333M	U 52	807715-055	SN74S283N
C 28	804115-333	CY15C333M	U 53	807695-055	SN74S195N
C 29	804115-333	CY15C333M	U 54	807715-055	SN74S283N
C 33	804115-333	CY15C333M	U 55	807715-055	SN74S283N
C 35	804115-333	CY15C333M	U 56	807715-055	SN74S283N
C 36	804115-333	CY15C333M	U 57	807695-055	SN74S195N
C 40	804115-333	CY15C333M	U 60	807715-055	SN74S283N
C 42	804115-333	CY15C333M	U 61	807715-055	SN74S283N
C 43	804115-333	CY15C333M	U 62	807657-055	SN74S157N
C 45	804115-333	CY15C333M	U 63	807695-055	SN74S195N
C 46	804115-333	CY15C333M	U 64	807695-055	SN74S195N
C 48	804115-333	CY15C333M	U 65	807657-055	SN74S157N
C 49	804115-333	CY15C333M	U 66	807695-055	SN74S195N
C 50	804115-333	CY15C333M	U 67	807695-055	SN74S195N
C 51	804115-333	CY15C333M	U 70	807416-055	SN74S04N
C 52	804115-333	CY15C333M	U 71	807451-055	SN74S51N
C 53	804115-333	CY15C333M	U 72	807451-055	SN74S51N
C 54	804115-333	CY15C333M	U 73	807272-646	SN74172
C 55	804115-333	CY15C333M	U 74	807272-646	SN74172
C 56	804115-333	CY15C333M	U 75	807272-646	SN74172
C 57	804115-333	CY15C333M	U 76	807272-646	SN74172
C 58	804115-333	CY15C333M			
C 59	804115-333	CY15C333M			
R 1	803201-271				
U 10	807657-055	SN74S157N			
U 11	807695-055	SN74S195N			
U 12	807695-055	SN74S195N			
U 13	807205-055	AM25S05			
U 14	807205-055	AM25S05			
U 15	807205-055	AM25S05			
U 16	807205-055	AM25S05			
U 20	807205-055	AM25S05			

PIN #	WIRENAME	PIN #	WIRENAME
P1 3	*CLOCK	P1 43	PROD3
P1 4	*BMAINT	P1 44	PROD4
P1 6	LOADMULT	P1 45	PROD5
P1 7	LOADPROU	P1 46	PROD6
P1 8	LOADINPUT	P1 47	PROD7
P1 9	Y7	P1 48	PROD8
P1 10	X7	P1 49	PROD9
P1 12	Y6	P1 50	PROD10
P1 13	X6	P1 52	PROD11
P1 14	Y5	P1 53	*PROD1
P1 15	X5	P1 54	I11
P1 16	Y4	P1 55	2GW
P1 17	X4	P1 56	2WR0
P1 19	M7	P1 57	2WR1
P1 20	M6	P1 58	2WR2
P1 22	M5	P1 59	1GW
P1 23	M4	P1 60	1W0
P1 24	Y11	P1 62	1W1
P1 25	X11	P1 63	1W2
P1 26	Y10	P1 64	1R0
P1 27	X10	P1 65	1R1
P1 28	Y9	P1 66	1R2
P1 29	X9	P1 67	M3
P1 30	Y8	P1 68	M2
P1 32	X8	P1 69	M1
P1 34	M11	P1 70	M0
P1 35	M10	P1 72	INPUTSELECT
P1 36	M9	P1 73	Y3
P1 37	M8	P1 74	X3
P1 38	SHIFTIN	P1 75	Y2
P1 39	PROD0	P1 76	X2
P1 40	PROD1	P1 77	Y1
P1 42	PROD2	P1 78	X1
		P1 79	Y0
		P1 80	X0

3. SERIAL SHIFT LOOP SEQUENCE
P1.38, 50.12, 53.12, 57.12, 12.12, 64.12
67.12, 11.12, 63.12, 66.12, P1.54
2. NUMBERS SHOWN REFER TO CONNECTOR P1.
ALL CAPACITANCE VALUES ARE EXPRESSED
IN MICROFARADS.
RESISTANCE VALUES ARE EXPRESSED IN OHMS,
K DENOTES 1000.
RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND
PIN 20 IS POWER (+5V).
ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND
PIN 16 IS POWER (+5V).
ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND
PIN 14 IS POWER (+5V).
1. UNLESS OTHERWISE SPECIFIED;
NOTES:

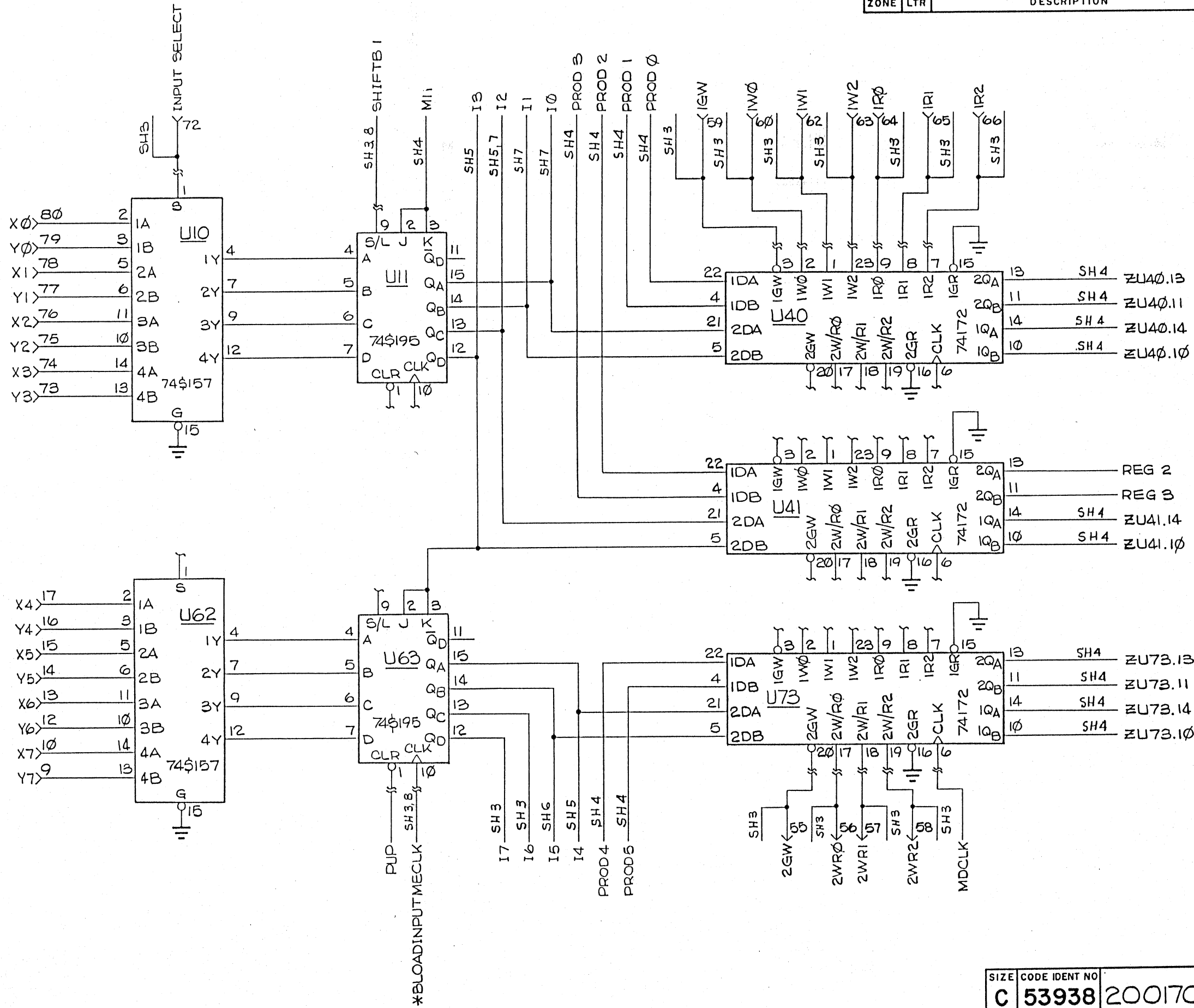


UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓		CONTRACT NO.	SEE SEPARATE PARTS LIST	
MATERIAL		DRAWN R MELLUIS 10-10-77	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
NEXT ASSY		CHECKED	LIGHT OCCULTATION TRANSFORM (w/w)	
USED ON		MECH		
APPLICATION		ELEC	SIZE	CODE IDENT NO
		PROJ. ENG. [Signature]	C	53938
		APPROVED	200170-600	
			SCALE NONE	SHEET 1 OF 8
				REV NC

200170-600

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED



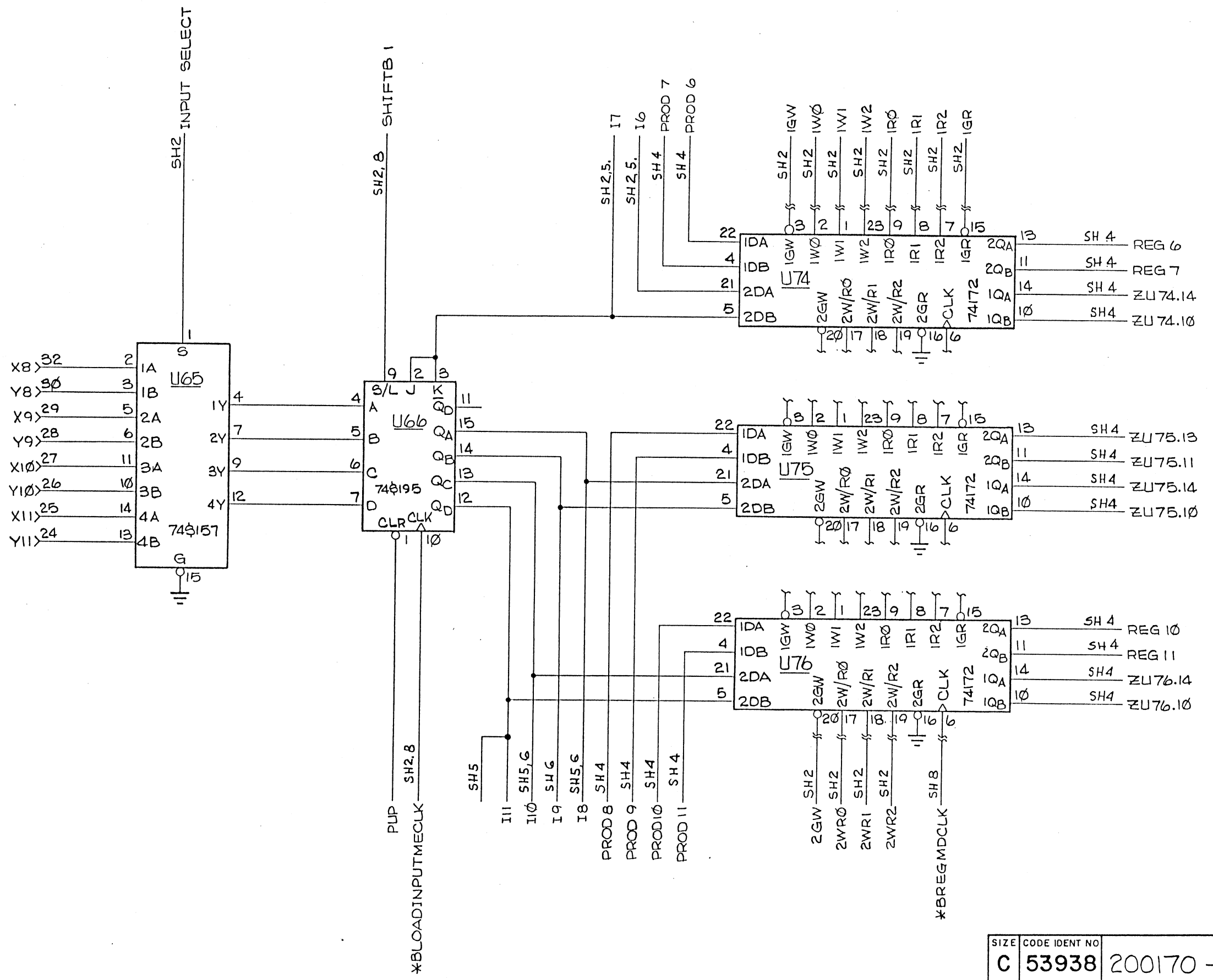
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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



SIZE	CODE IDENT NO	REV
C	53938	NC
SCALE NONE		SHEET 3 OF 8

D

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D

C

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B 200170-600

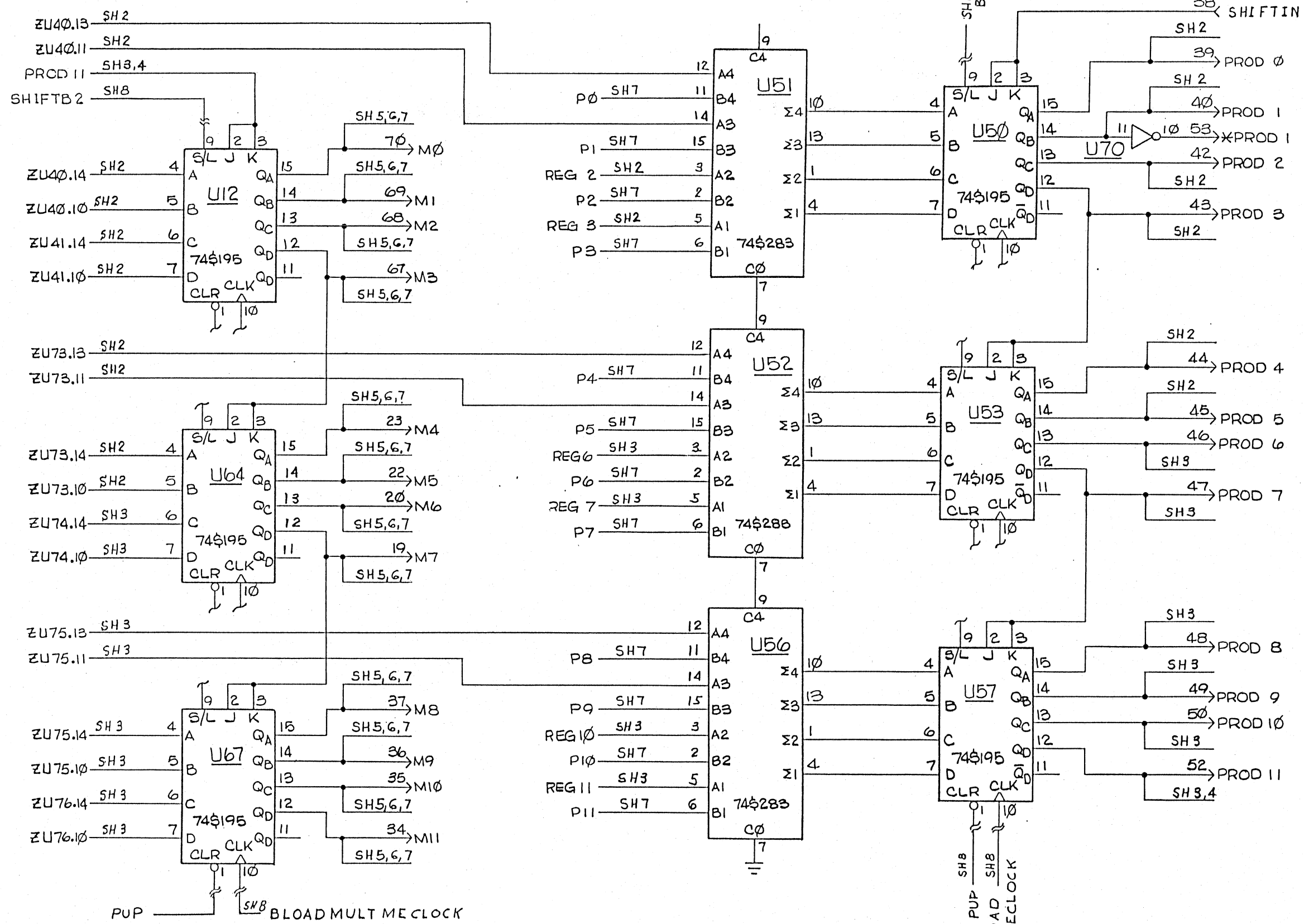
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3

2

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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) (2)

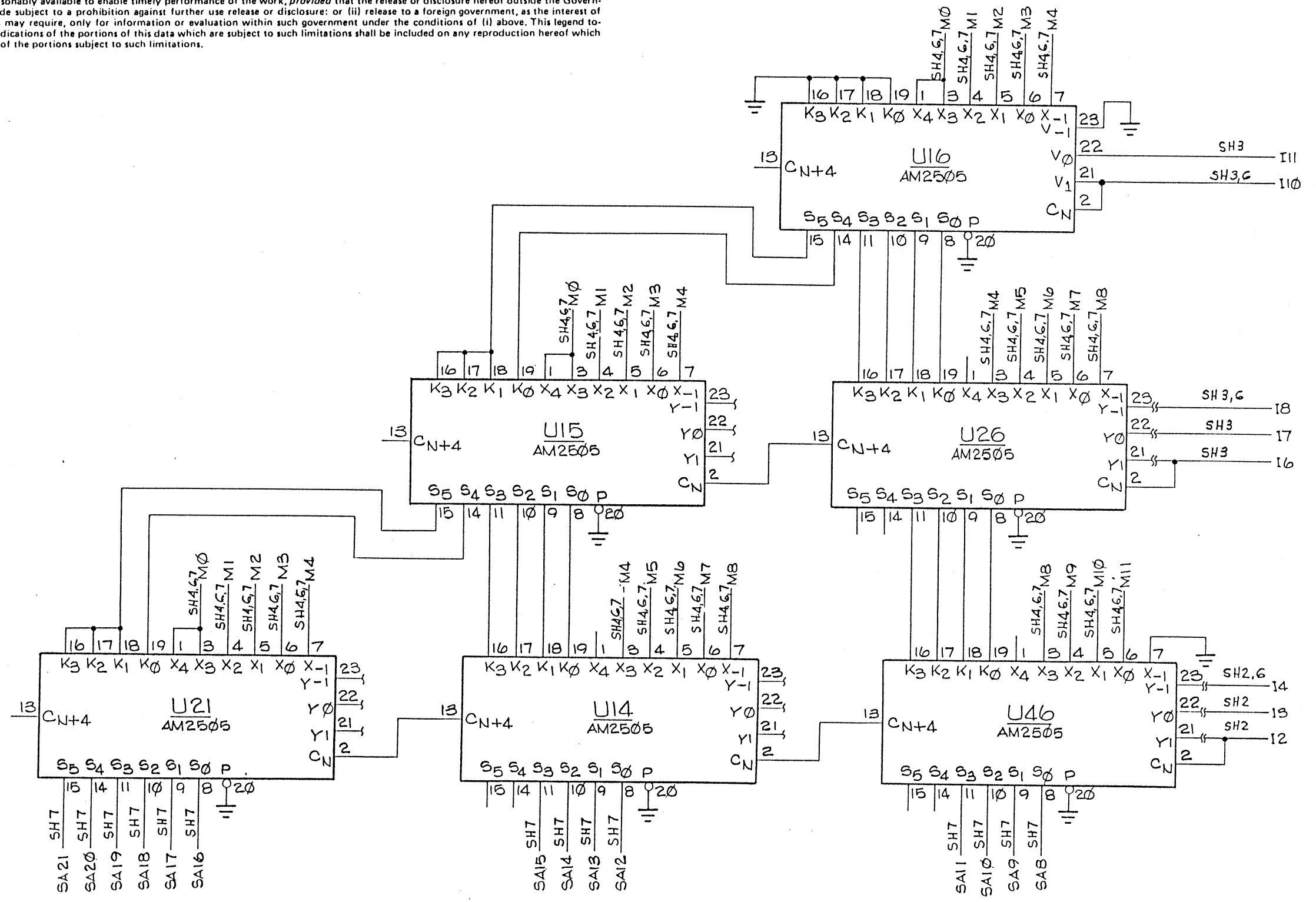
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SIZE	CODE IDENT NO	REV
C	53938 200170-600	NC
SCALE NONE	SHEET 4 OF 8	

LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



SIZE	CODE IDENT NO	REV
C	53938 200170-600	NC
SCALE NONE	SHEET 5 OF 8	

4

3

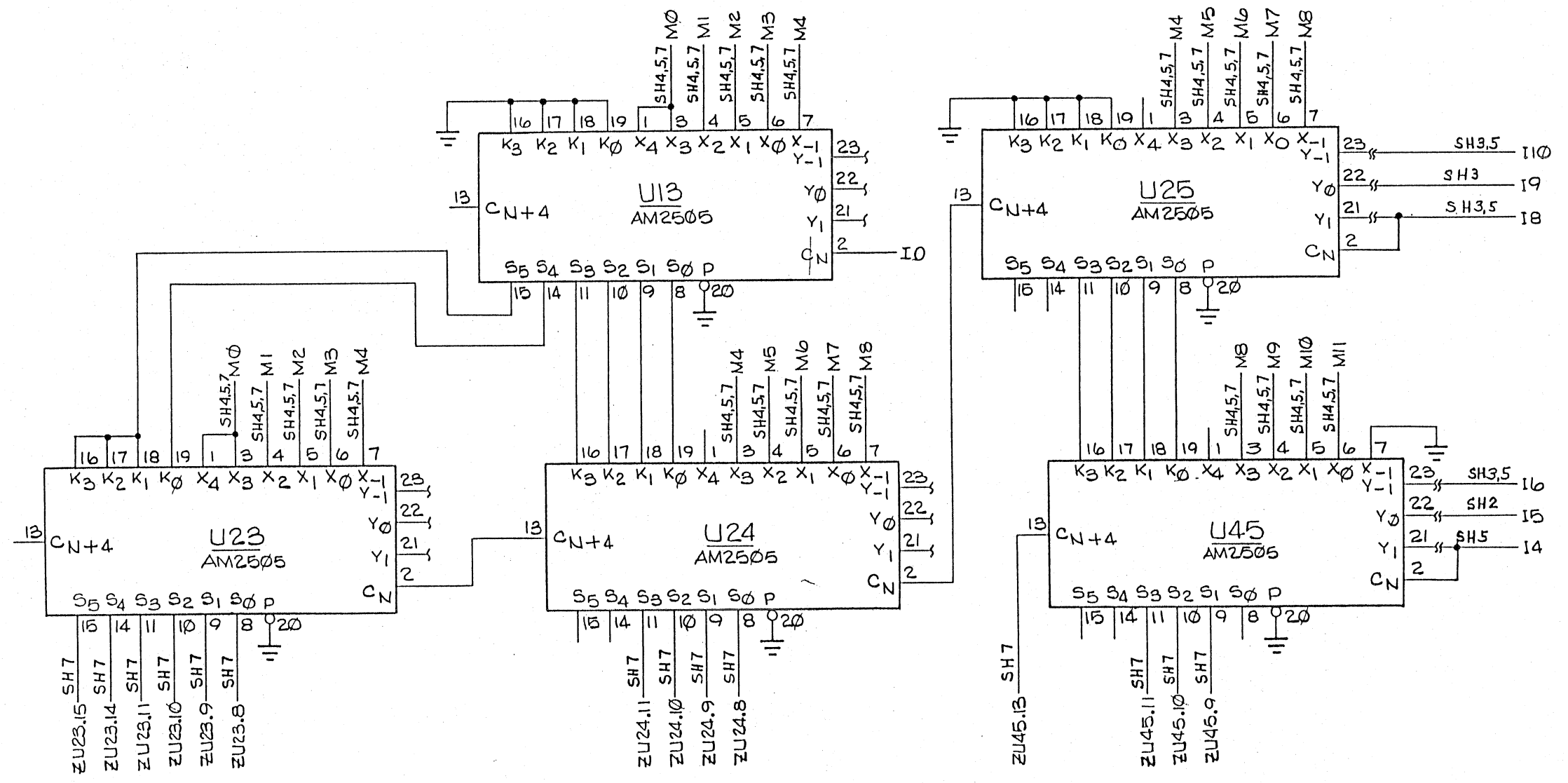
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1

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

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

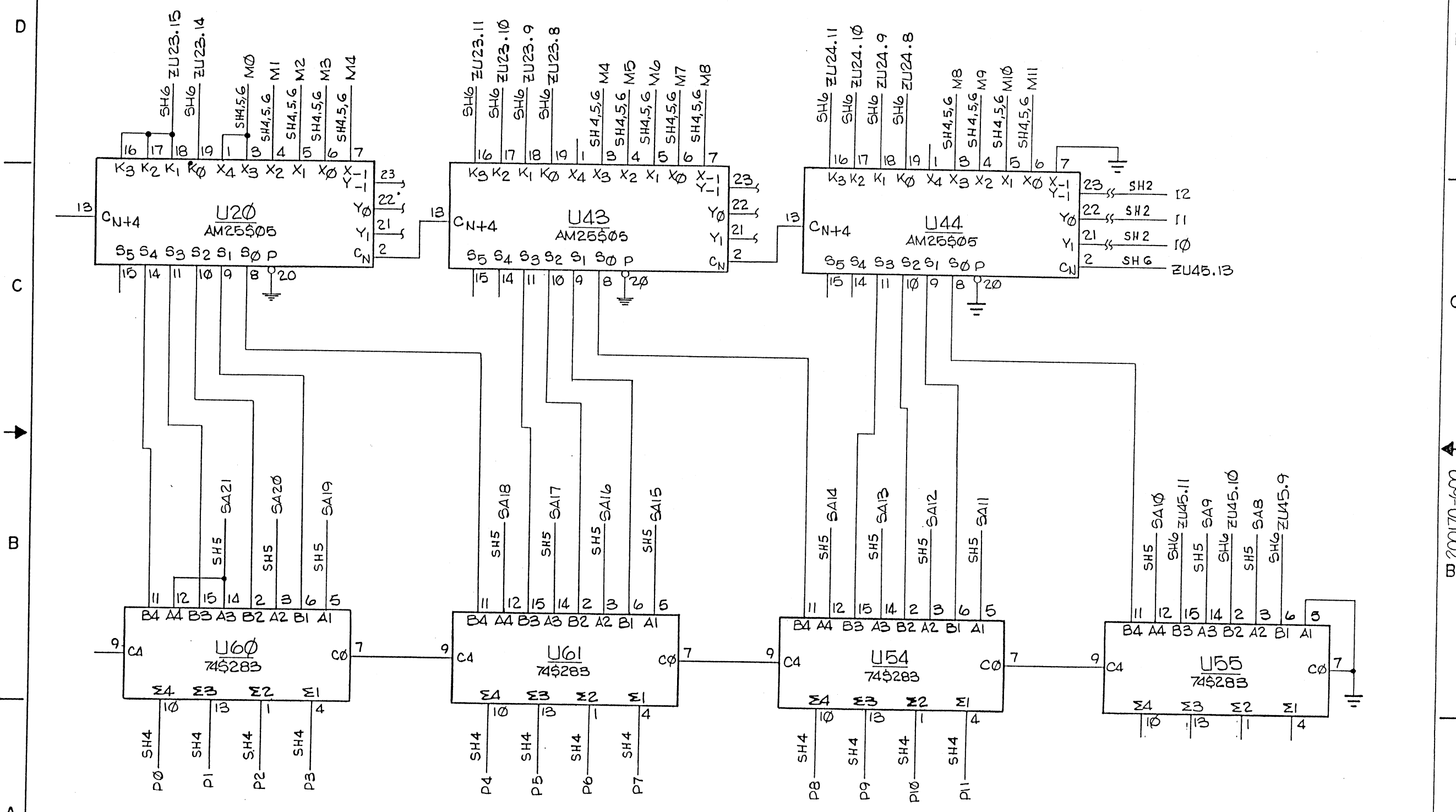
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200170-600

SIZE	CODE IDENT NO	REV
C	53938	200170-600 NC
SCALE NONE	SHEET 6 OF 8	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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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SIZE	CODE IDENT NO	REV
C	53938 200170-600	NC
SCALE NONE	SHEET 7 OF 8	

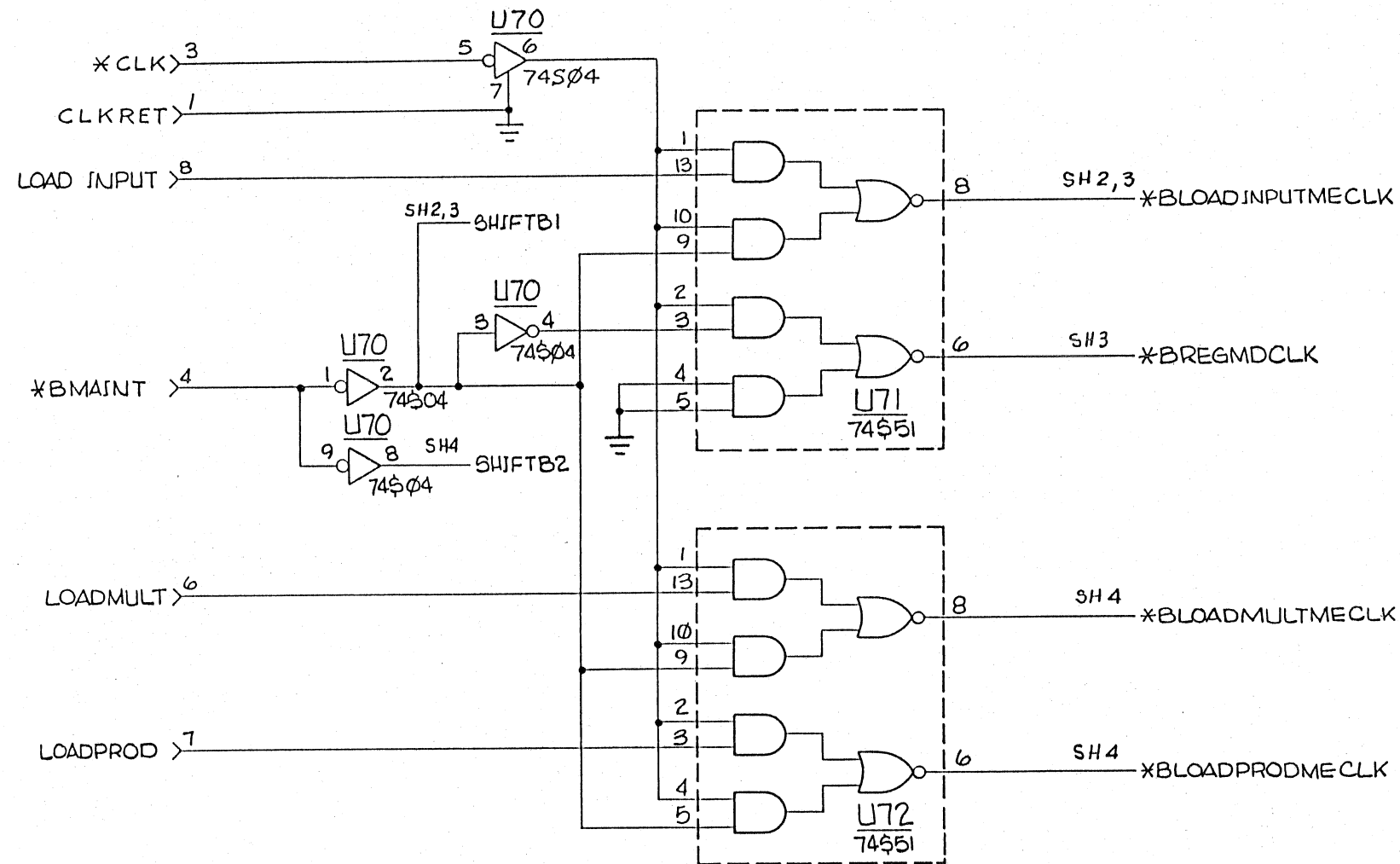
4

3

2

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



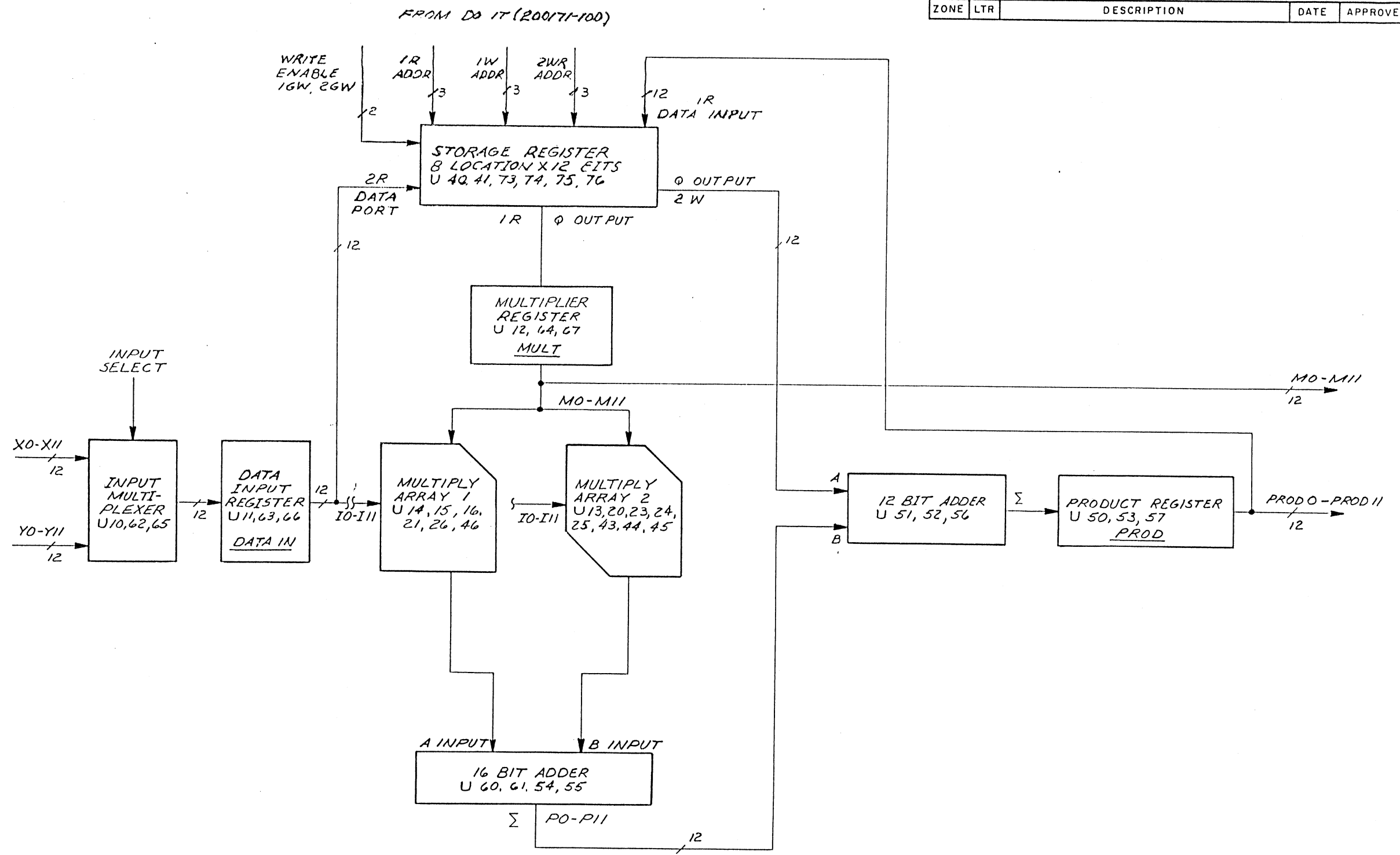
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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SIZE	CODE IDENT NO	REV
C	53938	200170-600
SCALE NONE	SHEET 8	OF 8

200170-600

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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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) 21

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
		.XX ± _____
		.XXX ± _____
		ANGLES ± _____
		✓
		MATERIAL
200193-100	NOVVIEW SP	
		FINISH
		APPLICATION

CONTRACT NO.	
DRAWN	WARDROP 10/25/77
CHECKED	W. R. [Signature] 11 NOV 77
MECH	
ELEC	[Signature] 11/22/77
PROJ. ENG.	[Signature] 1/16/78
APPROVED	

SEE SEPARATE PARTS LIST		
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		
LIGHT OCCULTATION TRANSFORM CARD BLOCK DIAGRAM		
SIZE	CODE IDENT NO	REV
C	53938	NC
200170-900		
SCALE	SHEET / OF /	
1/16"		

006-01002



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200171-102

REV: A0 = AA

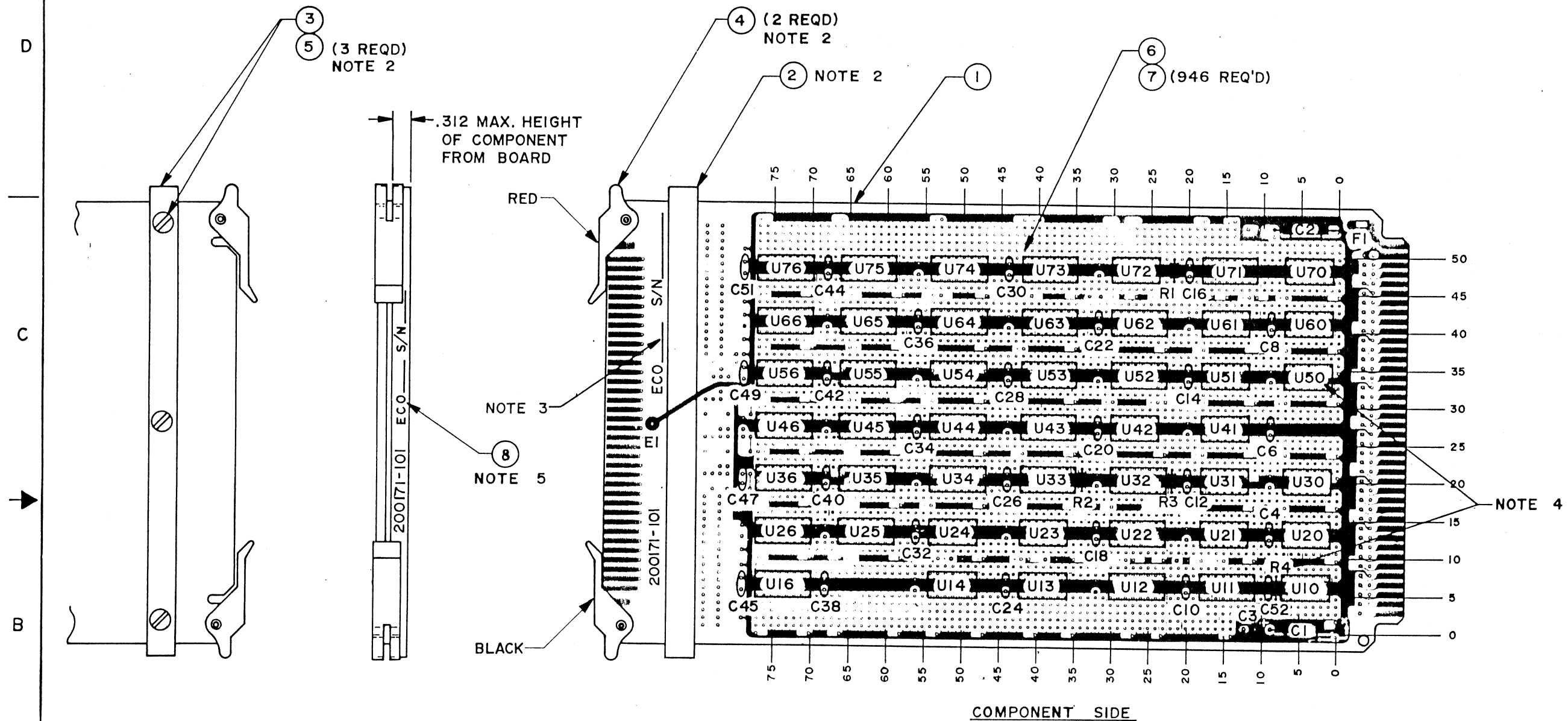
DESC: CARD ASY, LIGHT OCCULTATION, SP1/T

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BD, WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
002	HW, SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW, SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR, CRD, SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW, SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
006	HW, WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
007	HW, STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	946
008	HW, LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
	C1 C2					
	C10 C14 C16 C18 C20 C22 C24					
	C26 C28 C30 C32 C34 C3 C4 C6					
	C8 C36 C38 C42 C44 C45 C49					
	C51 C12 C40 C47					
	C52 5.9 8.9					
	C,, RDL 100PF	02799	ARCO ELECTRONICS (CAPS)	CCD-101	804103-101	1
009	E1 HW, TERM TP, 1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1 (.090, TURRET)	802329-001	1
010	F1 FU, PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A, AXIAL)	802375-050	1
	R1 47.22 50.22					
	R2 19.34 22.34 R3 19.22					
	22.22					
	R4 5.8.8.8					
	R,, AXL 15K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF153J	803201-153	1
	U10 IC, TTL 9601	34335	ADVANCED MICRO DEVICES IN	9601	807406-647	1
	U12 U22 U11					
	U13 IC, TTL 74109	07263	FAIRCHILD IC'S & SEMICON	74109PC/DC	807730-646	3
	U14 IC, TTL 74164	01295	TEXAS INSTR, SEMICON DIV.	SN74164N/J	807413-646	1
	U21 IC, TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
	U31 IC, TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
	U32 IC, TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	1
	U35 U43 U44 U45 U16 U25 U26					
	U33 U34					
	U41 IC, TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	1
	U42 U70 U20 U23 U30					
	U46 IC, TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	9
	U51 U24					
	U60 IC, TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
	U61 IC, TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	5
	U62 U63 U64 U65 U36 U52 U53					
	U54 U55					
	U56 IC, PROM, BIP, 32X8, TS, 5	53938	EVANS & SUTHERLAND.	807739-055-B03	807739-055-B03	1
	U66 U56					
	U71 IC, TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	2
	U72 U50					
	U73 IC, TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
	U74 IC, TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
	U75 IC, TTL 74S195	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	9
	U76 IC, TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	2
	IC, TTL 74365AN	01295	TEXAS INSTR, SEMICON DIV.	SN74365AN	807712-646	1
	IC, PROM, BIP, 32X8, TS, 5	53938	EVANS & SUTHERLAND.	807739-055-B05	807739-055-B05	1
	IC, PROM, BIP, 32X8, TS, 5	53938	EVANS & SUTHERLAND.	807739-055-A87	807739-055-A87	1
	IC, PROM, BIP, 32X8, TS, 5	53938	EVANS & SUTHERLAND.	807739-055-A88	807739-055-A88	1
	IC, PROM, BIP, 32X8, TS, 5	53938	EVANS & SUTHERLAND.	807739-055-A89	807739-055-A89	1

38 ITEMS LISTED



REV LEVEL FOR DASH NO.		REVISIONS				
		ZONE	LTR	DESCRIPTION	DATE	APPROVED
-102	-101			REDRAWN FOR CLARITY (RC1) <i>B.H.</i>	6-13-79	<i>R Moon</i>
A0				RELEASED TO A0	2-27-86	<i>BH</i> <i>SB</i> <i>S/SR</i>



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) (2)

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- NOTES**
- ASSEMBLE PER E&S STANDARDS.
 - INSTALL CARD EJECTORS (ITEM 4) & SPACERS (ITEM 2 & 3) AFTER FLOW SOLDERING.
 - MARK ECO NO. AND SERIAL NO. AND ASSY NO. APPROX AS SHOWN USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIV.
 - ITEM NUMBERS ON THE DWG CORRESPOND WITH THE LOCATION DESIGNATION ON THE PARTS LIST.
 - MARK ECO NO. AND SERIAL NO. AND ASSY NO. ON ITEM 8
 - USE W/W FILE 200171-801 TO WRAP -101 ASSY. USE W/W FILE 200171-802 TO WRAP -102 ASSY.

7. USE "P2" REVISION WIRE LIST FILES TO ASSEMBLE.

REFERENCE DOCUMENTS

- LOGIC DIAGRAM --- 200171-601, 200171-602
 PARTS LIST----- PL200171-101
 PL200171-103

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓	DRAWN <i>G. TROM</i> 6-13-79	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
	CHECKED <i>at Carson</i> 15 JUN 79		
MATERIAL SEE PARTS LIST	MECH	CARD ASSEMBLY LIGHT OCCULTATION CONTROL W.W.	
FINISH	ELEC		
	PROJ. ENG <i>R Moon</i> 27 JUN 79	SIZE CODE IDENT NO.	REV SEE REV BLOCK
	APPROVED	C 53938	200171-TAB
		SCALE FULL	SHEET 1 OF 1

D
C
B
A



REF DESIG E+S PART NO VENDOR PART NUMBER

C	1	804102-475	CS138F475K
C	2	804102-475	CS138F475K
C	3	804115-333	CY15C333M
C	4	804115-333	CY15C333M
C	6	804115-333	CY15C333M
C	8	804115-333	CY15C333M
C	10	804115-333	CY15C333M
C	12	804115-333	CY15C333M
C	14	804115-333	CY15C333M
C	16	804115-333	CY15C333M
C	18	804115-333	CY15C333M
C	20	804115-333	CY15C333M
C	22	804115-333	CY15C333M
C	24	804115-333	CY15C333M
C	26	804115-333	CY15C333M
C	28	804115-333	CY15C333M
C	30	804115-333	CY15C333M
C	32	804115-333	CY15C333M
C	34	804115-333	CY15C333M
C	36	804115-333	CY15C333M
C	38	804115-333	CY15C333M
C	40	804115-333	CY15C333M
C	42	804115-333	CY15C333M
C	44	804115-333	CY15C333M
C	45	804115-333	CY15C333M
C	47	804115-333	CY15C333M
C	49	804115-333	CY15C333M
C	51	804115-333	CY15C333M
C	52	804103-101	DD-101
R	1	803201-471	.
R	2	803201-271	.
R	3	803201-271	.
R	4	803201-153	.
U	10	807406-647	9301
U	11	807730-646	SN74109N
U	12	807730-646	SN74109N
U	13	807413-646	SN74164N
U	14	807400-055	SN74S00N
U	16	807663-055	SN74S163N
U	20	807416-055	SN74S04N
U	21	807411-055	SN74S11N
U	22	807730-646	SN74109N
U	23	807416-055	SN74S04N
U	24	807408-055	SN74S08N
U	25	807663-055	SN74S163N
U	26	807663-055	SN74S163N
U	30	807416-055	SN74S04N
U	31	807420-055	SN74S20N
U	32	807638-055	SN74S138N
U	33	807663-055	SN74S163N
U	34	807663-055	SN74S163N
U	35	807663-055	SN74S163N
U	41	807402-055	SN74S02N
U	42	807416-055	SN74S04N
U	36	807695-055	SN74S195N
U	46	807739-055	N82S123B B03

3. SERIAL SHIFT LOOP SEQUENCE
 P1.36, 55.12, 65.12, 54.12, 64.12, 53.12
 63.12, 52.12, 62.12, 71.5, P1.7

2. NUMBERS SHOWN REFER TO CONNECTOR P1.
 ALL CAPACITANCE VALUES ARE EXPRESSED
 IN MICROFARADS.
 RESISTANCE VALUES ARE EXPRESSED IN OHMS,
 K DENOTES 1000.
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND
 PIN 20 IS POWER (+5V).
 ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND
 PIN 16 IS POWER (+5V).
 ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND
 PIN 14 IS POWER (+5V).
 UNLESS OTHERWISE SPECIFIED;

NOTES:

REF DESIG E+S PART NO VENDOR PART NUMBER

U	43	807663-055	SN74S163N
U	44	807663-055	SN74S163N
U	45	807663-055	SN74S163N
U	50	807403-055	SN74S03N
U	51	807408-055	SN74S08N
U	52	807695-055	SN74S195N
U	53	807695-055	SN74S195N
U	54	807695-055	SN74S195N
U	55	807695-055	SN74S195N
U	56	807657-055	SN74S157N
U	60	807400-090	SN74S57N
U	61	807451-055	SN74S51N
U	62	807695-055	SN74S195N
U	63	807695-055	SN74S195N
U	64	807695-055	SN74S195N
U	65	807695-055	SN74S195N
U	66	807657-055	SN74S157N
U	70	807416-055	SN74S04N
U	71	807712-646	SN74S65N
U	72	807403-055	SN74S03N
U	73	807739-055	N82S123B B05
U	74	807739-055	N82S123B A87
U	75	807739-055	N82S123B A88
U	76	807739-055	N82S123B A89

PIN #	WIRENAME
P1 3	*CLOCK
P1 4	*MAINT
P1 5	*CHAN
P1 6	*ITSM
P1 7	SEROUT
P1 8	*ENABLEWRITE2
P1 9	*ENABLEWRITE1
P1 10	CTLYMOD
P1 12	SHIFT
P1 13	LOOP
P1 14	SHIFTPRDATA
P1 15	2WR1
P1 16	2WR2
P1 17	1W0
P1 18	1W1
P1 19	1W2
P1 20	LDDATA
P1 22	LDMULT
P1 23	*DUACCAPT
P1 24	*DPUCECODE
P1 25	*A1TSTCT
P1 26	DDAVAIL
P1 27	*RESET
P1 28	2WR0
P1 29	1R2
P1 30	1R1
P1 32	1R0
P1 33	SELINPUT
P1 34	LDHOLD
P1 35	LDPROD
P1 36	SHIFTIIN
P1 37	LIGHTPRIORITY
P1 38	PERMITLIGHT
P1 39	STCT1
P1 40	STCT0
P1 42	LOADYCN
P1 43	Y20
P1 44	XCNT6
P1 45	XCNT5
P1 46	XCNT4
P1 47	XCNT3
P1 48	XCNT2
P1 49	XCNT1
P1 50	DRAWSURF
P1 52	MEMPRIORITY
P1 53	AGTB
P1 54	YSIGN
P1 55	Y18
P1 56	Y21
P1 57	Y22
P1 58	Y23
P1 59	YCNT1
P1 60	*CNCLK20MHZ
P1 62	YCNT9
P1 63	YCNT8
P1 64	YCNT7
P1 65	YCNT6
P1 66	YCNT5
P1 67	YCNT4
P1 68	YCNT3
P1 69	YCNT2
P1 70	LOADMEMINPUT
P1 72	*MAINTCLOCK
P1 73	MEMREF
P1 74	CAS
P1 75	RC

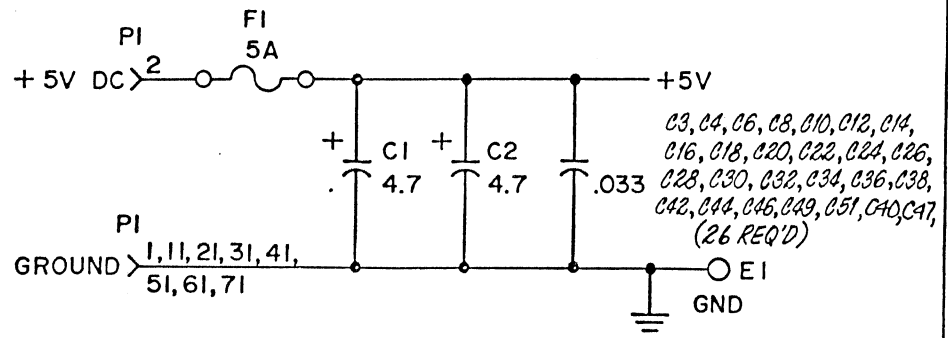
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		ZONE	LTR	DESCRIPTION	DATE	APPROVED
	-602	-601				
	PO	NC		ADDED -602 CONFIGURATION	12-20-85	J. Bentley
	AO	-		RELEASED TO AO	BH 2-27-86	J. Bentley

SEE SHT. 6 FOR -602 & -601 DIFFERENCES

P1 76	RAS
P1 77	WADDRSEL
P1 78	MEMREAD
P1 79	MEMWRITE
P1 80	Y19

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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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		CONTRACT NO.
.XX ±		DRAWN R.A. HOLLEY 9-6-77
.XXX ±		CHECKED ART COWGUR 9-6-77
ANGLES ±		MECH
✓		ELEC J. Bentley 12/20/85
		PROJ. ENG. Don Spain 4/20/77
		APPROVED J. Bentley 2 FEB 78
MATERIAL	200130-100 NOVONVIEW	
FINISH		
APPLICATION		

SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
LIGHT OCCULTATION CONTROL	
W/W	
SIZE	CODE IDENT NO
C	53938
200171-TAB	
SCALE NONE	SHEET 1 OF 7

D

C

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C

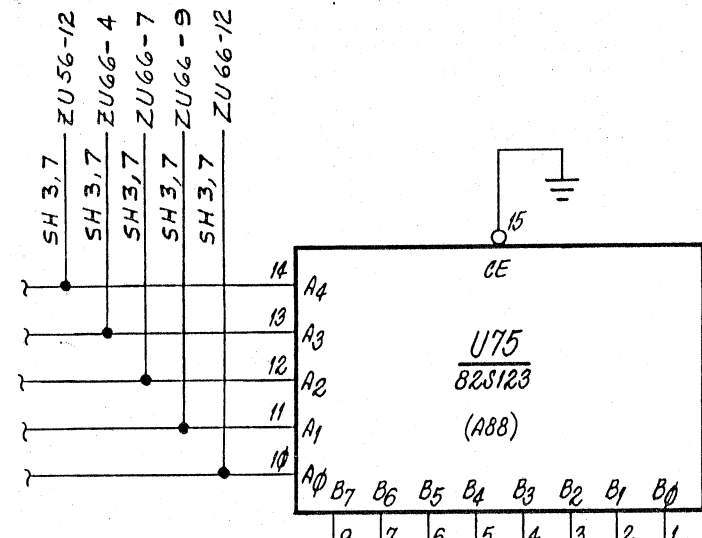
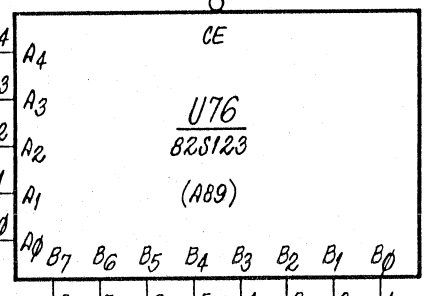
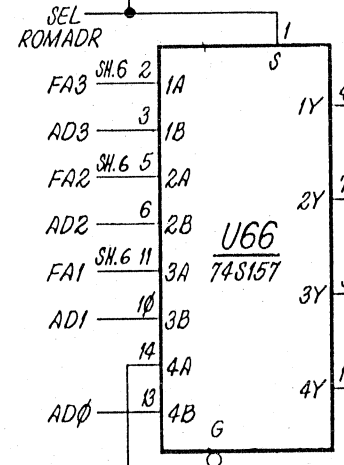
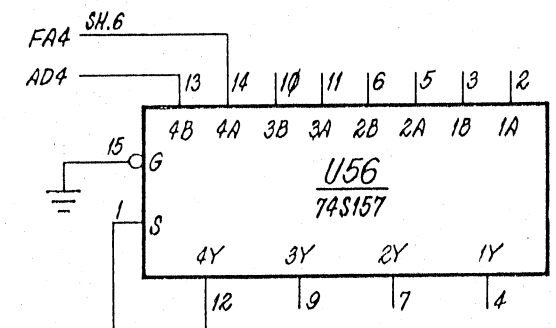
B 200171-602

A

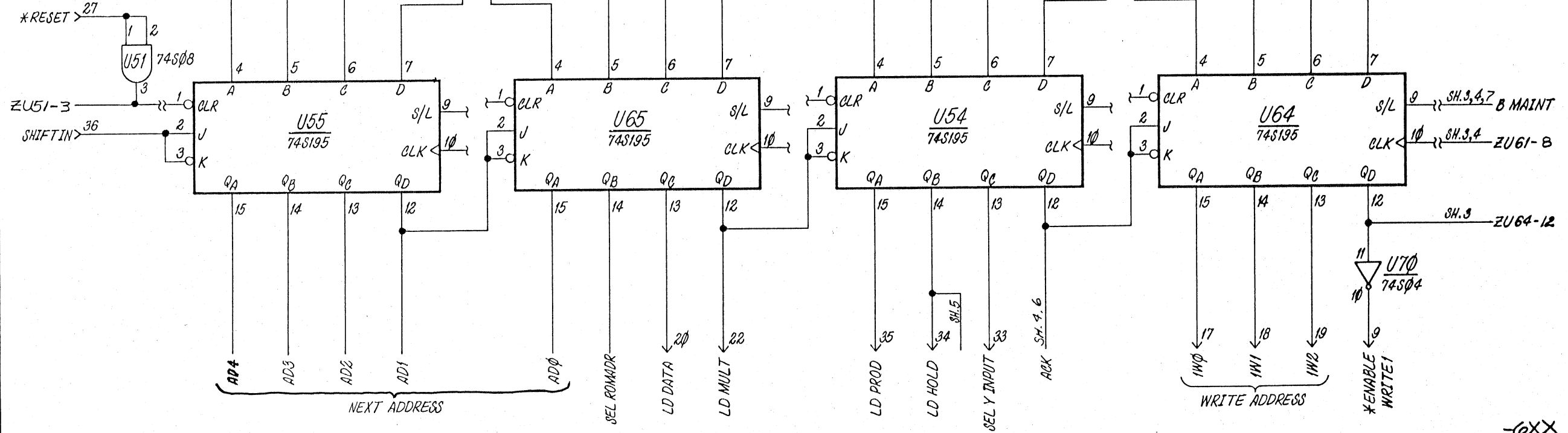
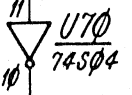
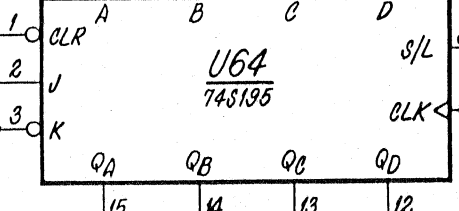
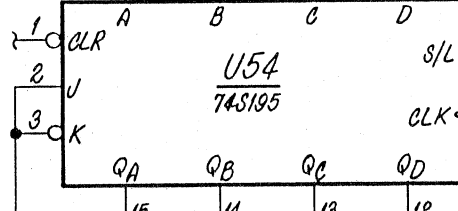
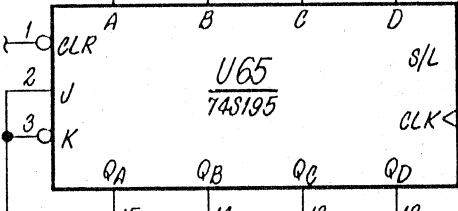
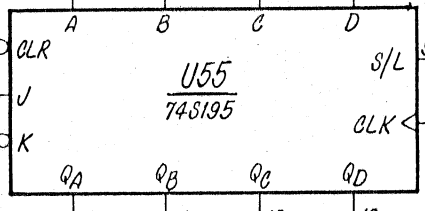
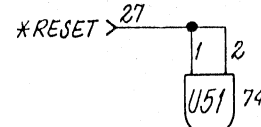
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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

Those portions of this technical data indicated as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or, in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.



ROMS



DO IT REGISTER

SIZE	CODE IDENT NO	REV
C	53938	SEE REV BLOCK
200171-TAB		
SCALE NONE.	SHEET 2 OF 7	

D
C
B
A
100171-601

-GXX

4

3

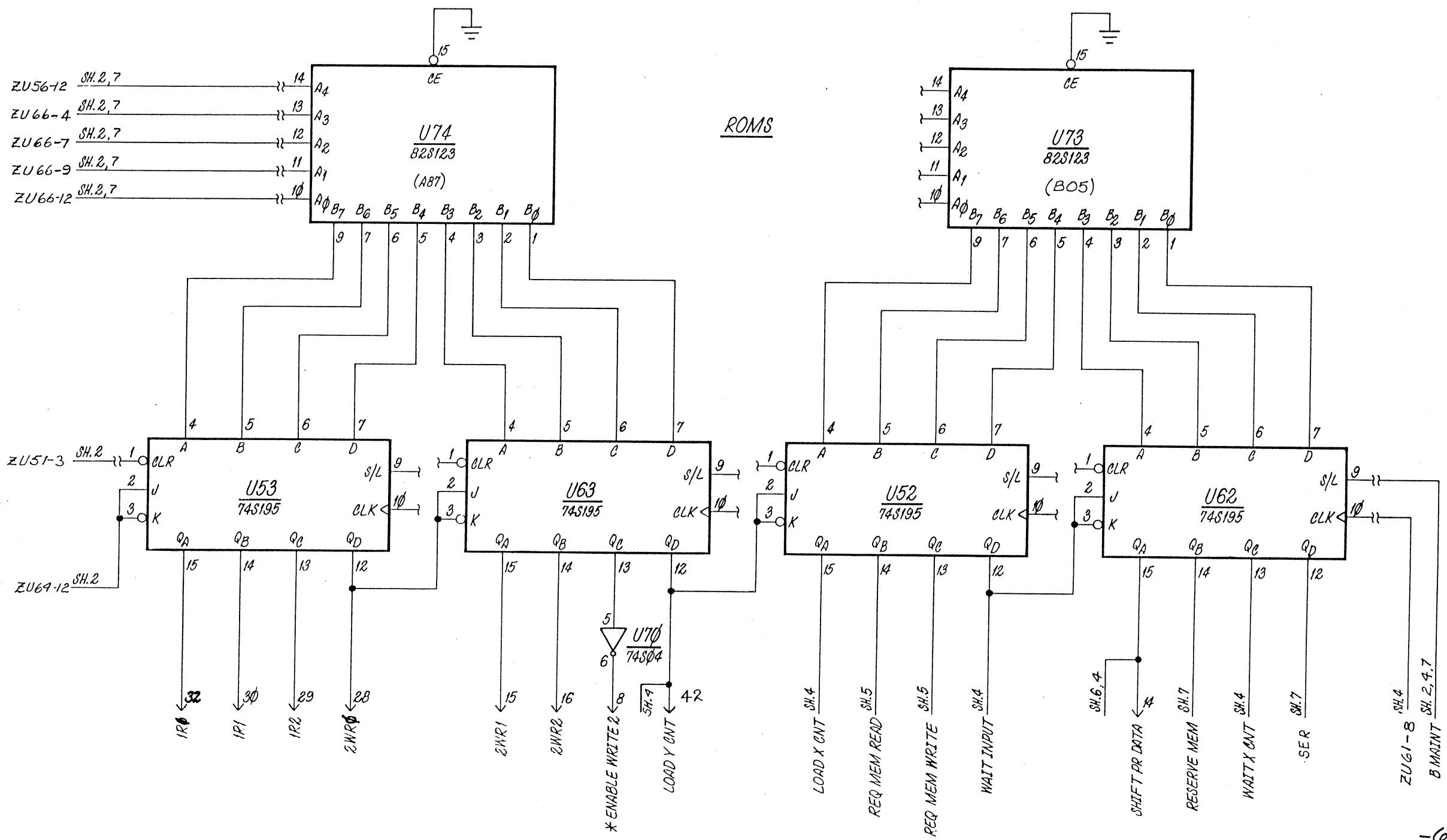
2

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED

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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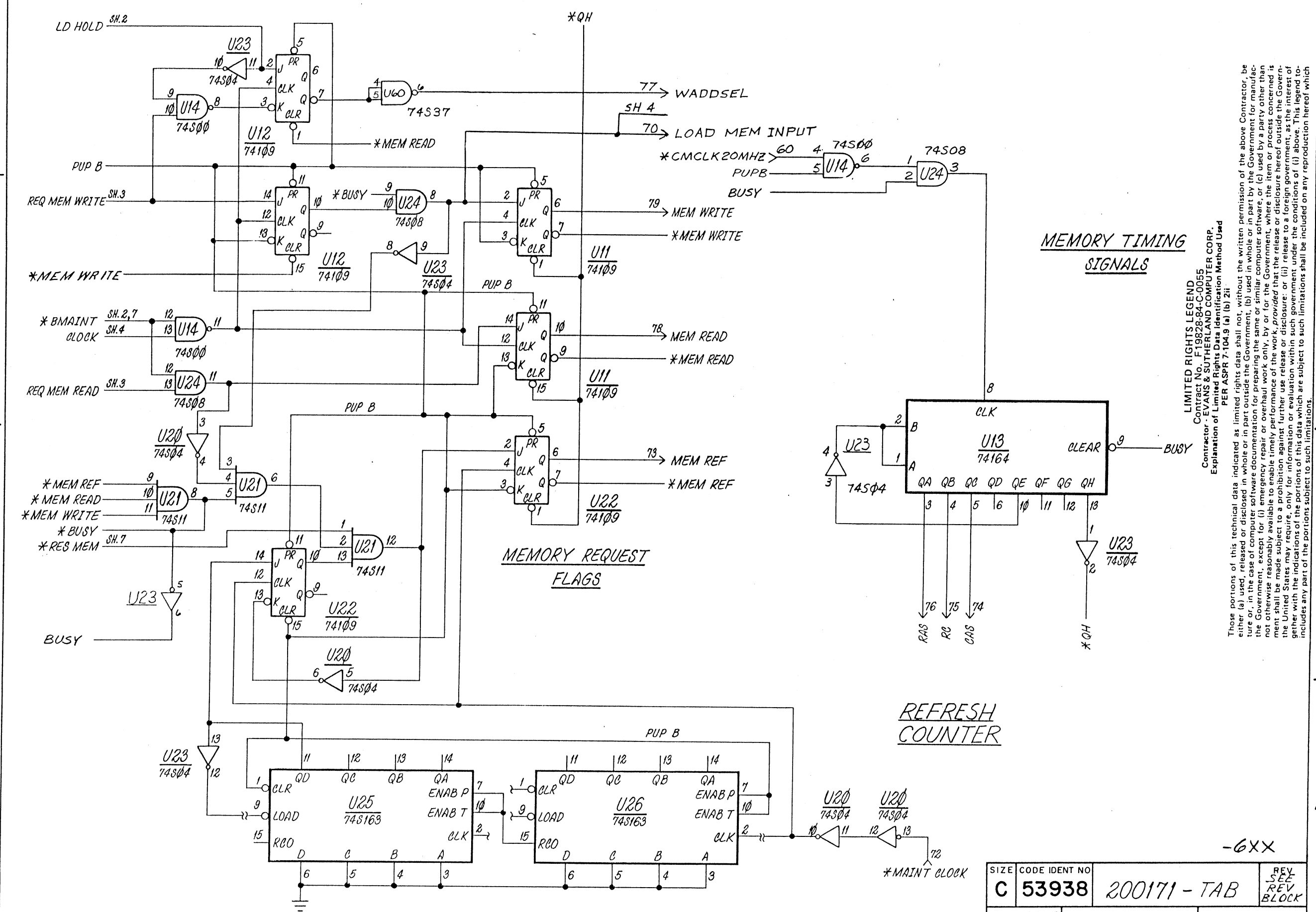
DO IT REGISTER

-6XX

SIZE	CODE IDENT NO	REV
C	53938	SEE REV BLOCK
200171-TAB		SHEET 3 OF 7
SCALE NONE		

200171-601

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



MEMORY TIMING SIGNALS

MEMORY REQUEST FLAGS

REFRESH COUNTER

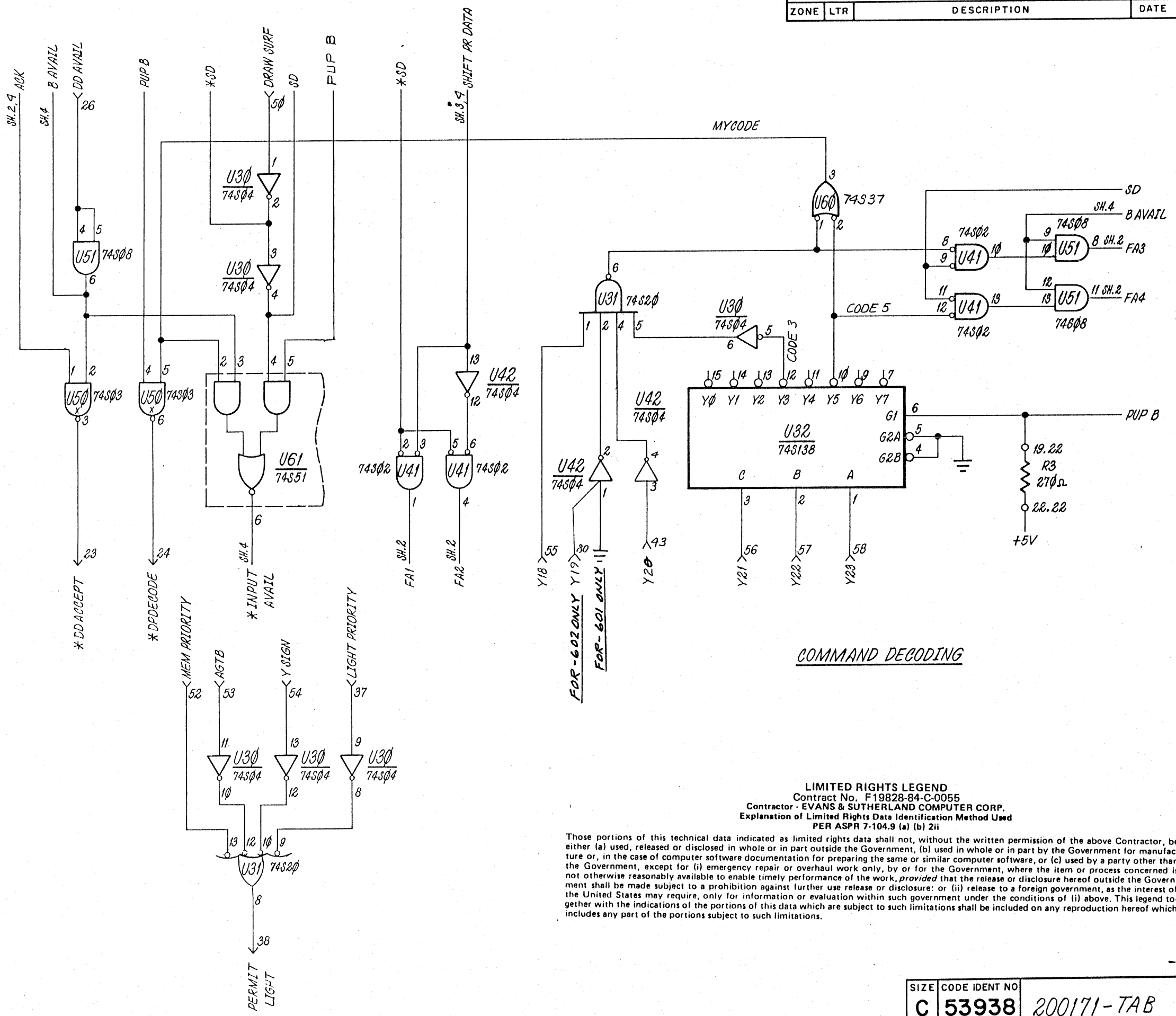
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

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-6XX

SIZE	CODE IDENT NO	REV
C	53938	SEE REV BLOCK
SCALE NONE		SHEET 5 OF 7

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



COMMAND DECODING

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

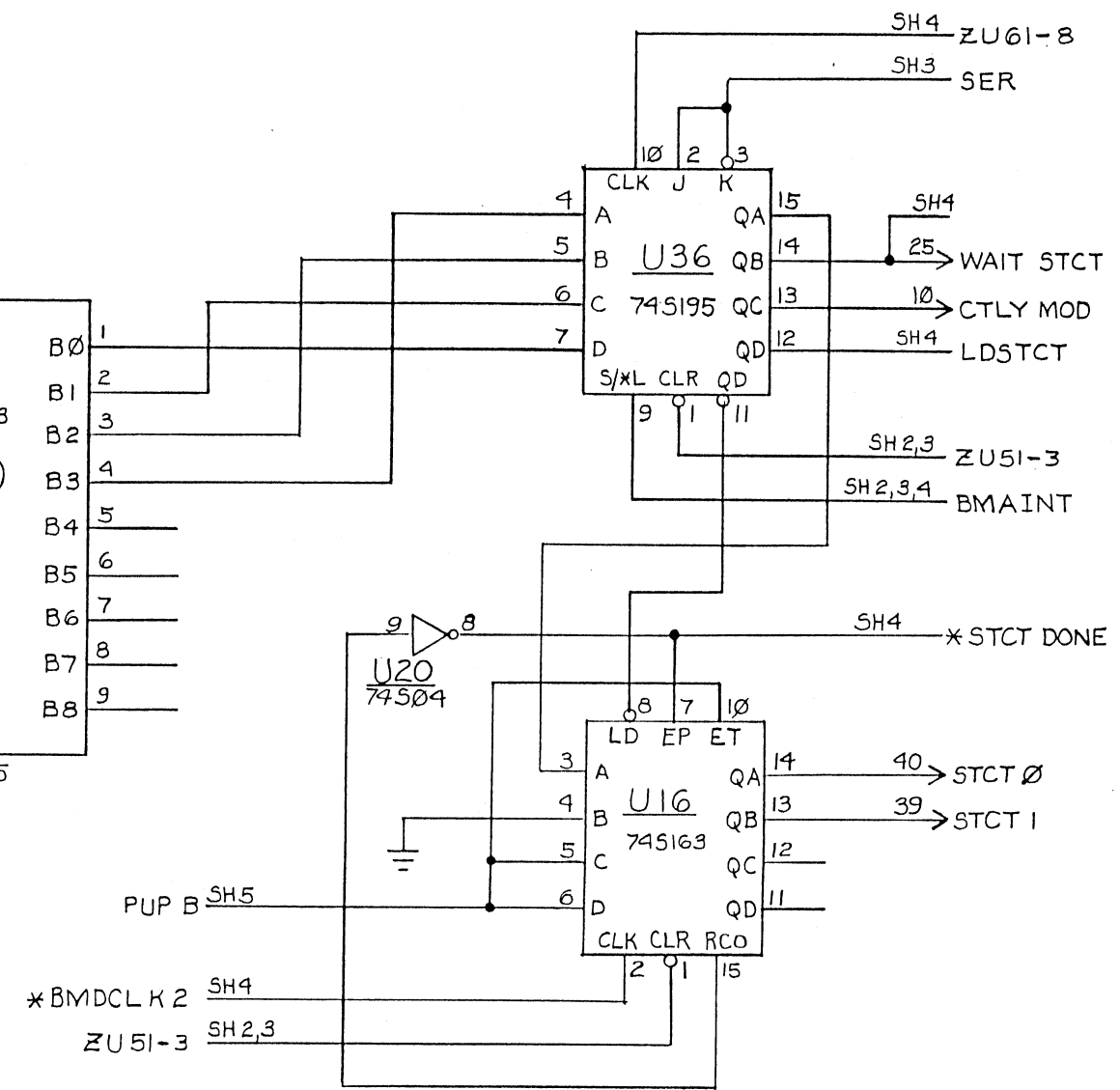
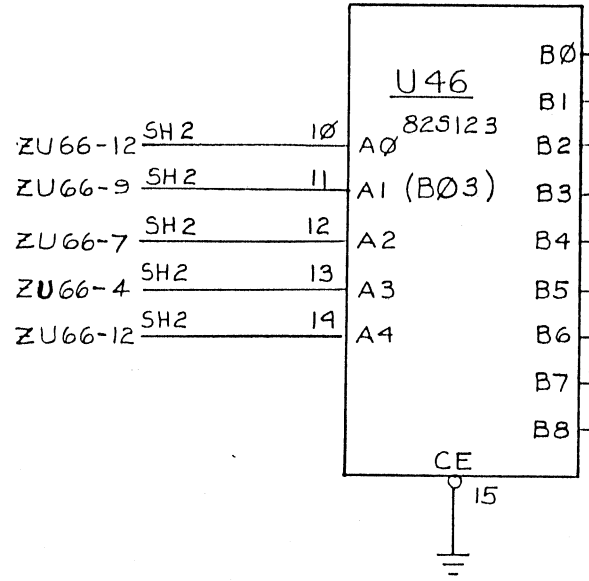
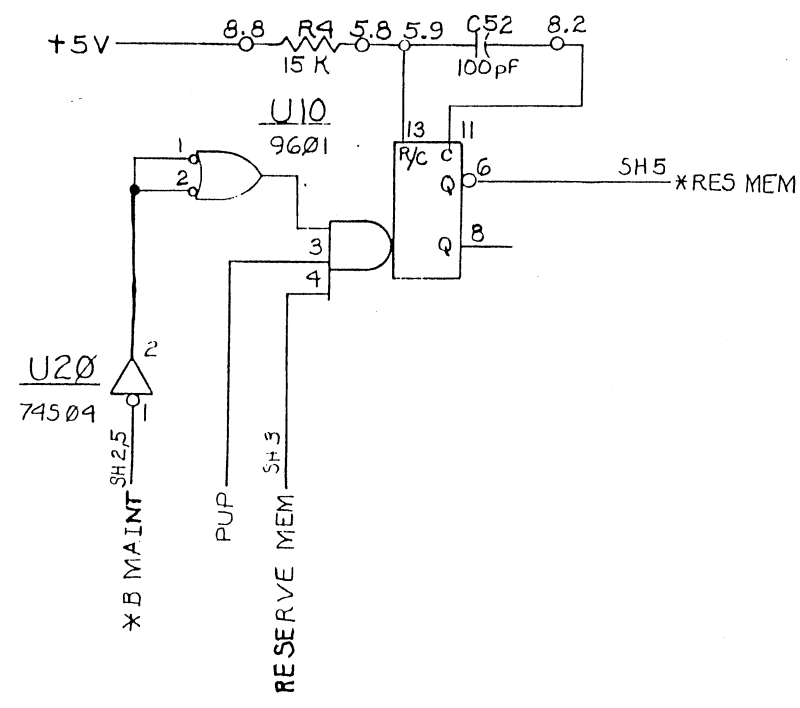
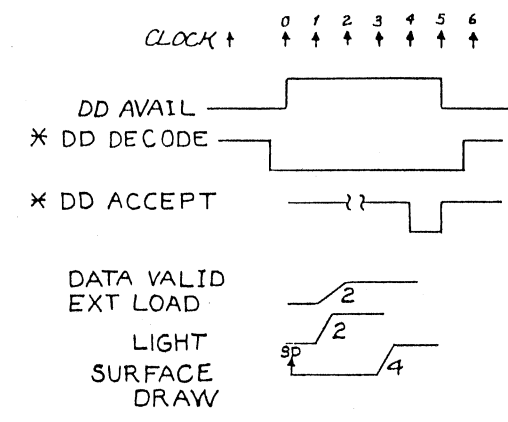
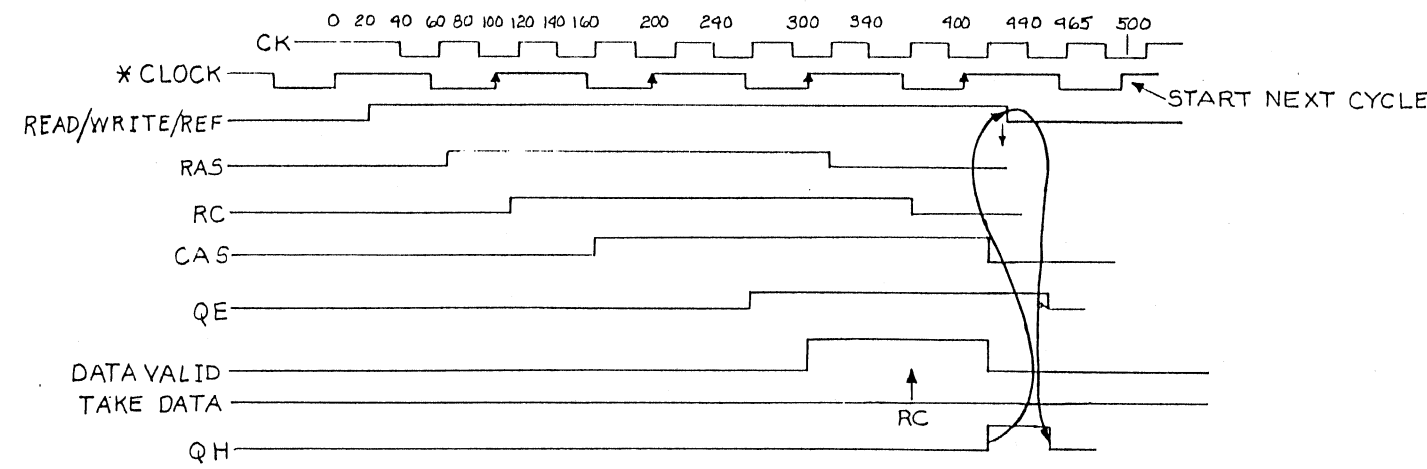
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-GXX

SIZE	CODE IDENT NO	REV
C	53938	SEE REV BLOCK
200171-TAB		
SCALE NONE	SHEET 6	OF 7

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

MEMORY TIMING (SHEET 5)



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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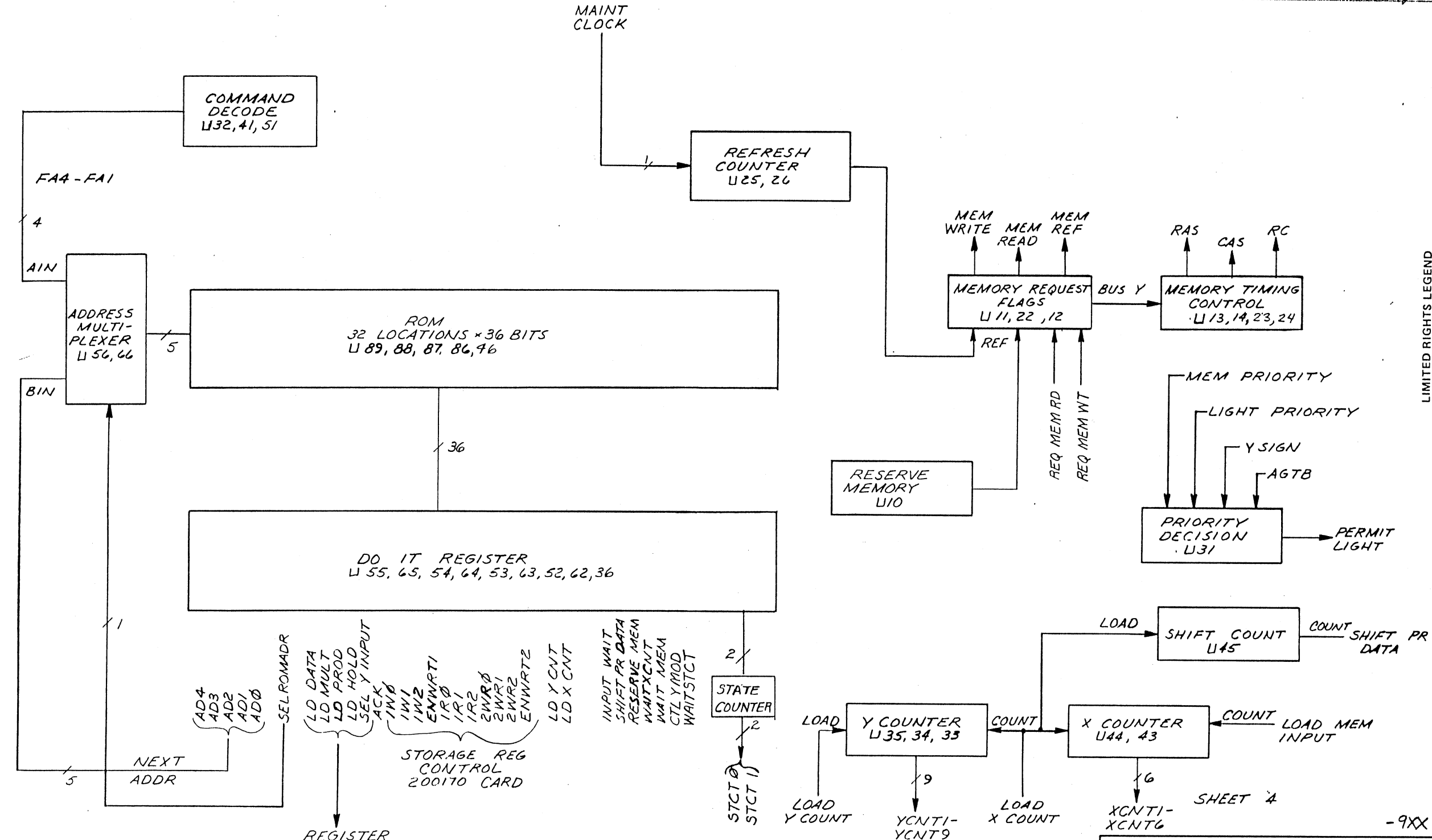
-6XX

SIZE	CODE IDENT NO	REV
C	53938 200171-TAB	SEE REV BLOCK
SCALE NONE	SHEET 7 OF 7	



REVISIONS						
-902	-901	ZONE	LTR	DESCRIPTION	DATE	APPROVED
PO	NC			ADDED -902	12-17-85	J. Bentley
AO	-			RELEASED TO AO	2-27-86	E.H. 3/5/86

D
C
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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) (2)

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		CONTRACT NO.
.xx ±	—	
.xxx ±	—	DRAWN T JOHNSON 3-15-79
ANGLES ±	—	CHECKED <i>[Signature]</i> 5 MAY 79
✓	—	MECH
		ELEC <i>[Signature]</i> 6-5-79
		PROJ. ENG <i>[Signature]</i> 6-5-79
		APPROVED <i>[Signature]</i> 6-5-79
200193-100	NOVOVIEW SP	MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		

EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
LIGHT OCCULTATION CONTROL BLOCK DIAGRAM	
SIZE	CODE IDENT NO
C	53938
200171-TAB	
SCALE NONE	SHEET 1 OF 1

REV	SEE REV BLOCK
-----	---------------

SHEET 4
-9XX



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200172-101

REV: B0 = BA

DESC: CARD ASSY, LIGHT OCCULTATION, MAP, PC

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BD,P02R PCBD6X11	53938	EVANS & SUTHERLAND.	200172-501	200172-501	1
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
009	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
	C,,RDL .1UF	04222	A V X CERAMICS DIV.OF AVX	SR205E104MAA	804115-104	25
	C1 C2					
	C13 C54 C17 C18 C20 C22 C23					
	C25 C26 C28 C30 C32 C33 C35					
	C37 C38 C39 C41 C42 C43 C45					
	C47 C48 C49 C50					
	C40 C44 C3 THRU C12 C14 C15					
	C19 C21 C24 C27 C34 C36					
	C51 C52 C53 C55 C56					
	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	20
	C,,RDL 4.7UF	31433	KEMET ELECTRONICS CORP.	T370D475M035AS	804128-475	5
010	E1	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
011	F1	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
	R1	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF271J	803201-271	1
	R2 R4 R6	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF221J	803201-221	3
	R3 R5 R7	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF331J	803201-331	3
	U10 U41 U50 U70	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	4
	U11	01295	TEXAS INSTR, SEMICON DIV.	SN74128N	807506-646	1
	U12 U13 U32 U33 U52 U53 U72	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	12
	U73 U14 U34 U54 U74					
	U17	27014	NATIONAL SEMICONDUCTOR	LM320H-5.0	806321-888	1
	U20	34649	INTEL CORP. SALES OFFICE	D3242	807306-618	1
	U22 U62	01295	TEXAS INSTR, SEMICON DIV.	SN74164N/J	807413-646	2
	U23 K1	78277	SIGMA INSTRUMENTS INC	191TE1C1-5S	801364-001	1
	U24 U64	18324	SIGNETICS CORP. MILITARY	N74S251N	807716-055	2
	U43 U71 U81	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	3
	U51 U60 U61	01295	TEXAS INSTR, SEMICON DIV.	SN74S85N	807685-055	3
	U55 U56 U65 U66 U75 U76 U85	04713	MOTOROLA INC. SEMI PRODUC	MCM4116BC-15 (150NS)	807823-849	16
	U86 U16 U26 U36 U46 U15 U25					
	U35 U45					
	U80 U42	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	2
	U82	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	1

28 ITEMS LISTED



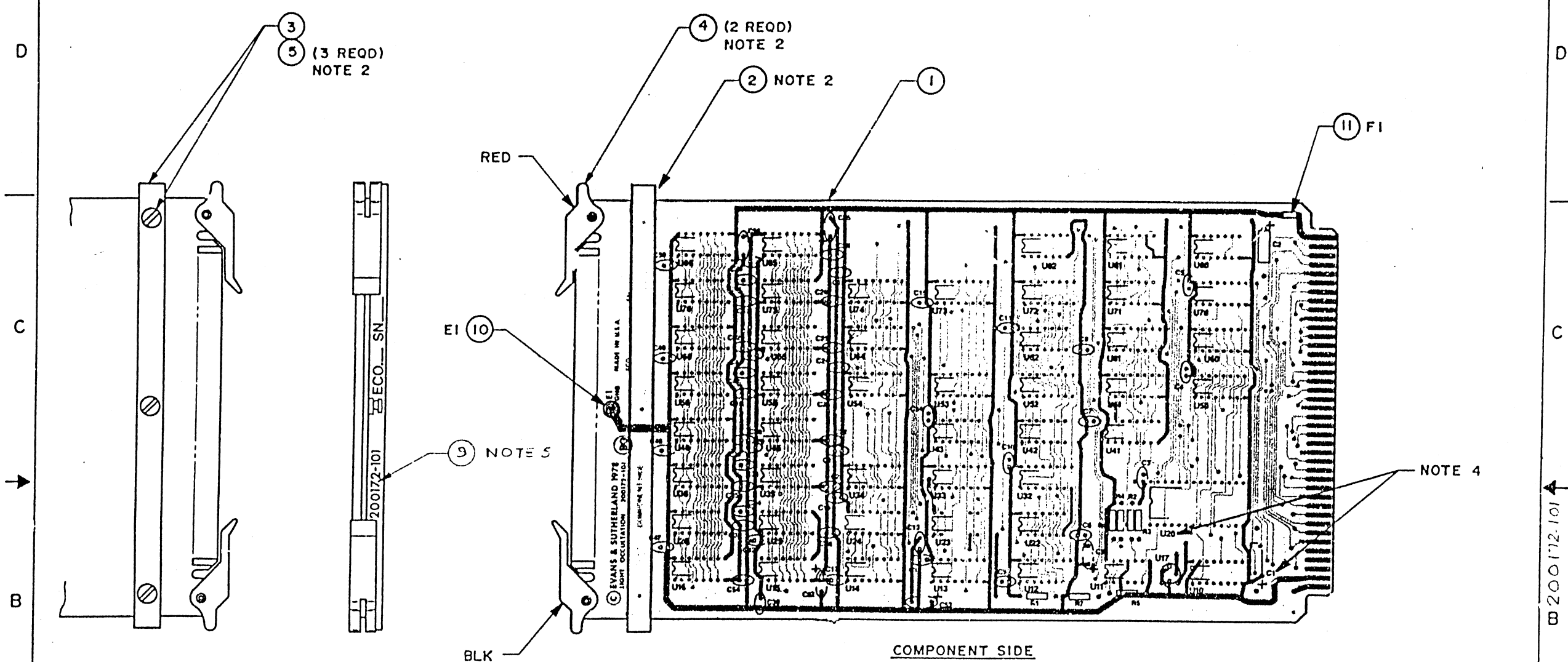
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
B0		REV UPDATE W/NO DWG CHG	DA 12-31-81	



NOTES:

1. ASSEMBLE PER E&S STANDARD.
2. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
3. MARK ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
4. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
5. MARK E & S ASSY NO., S/N, AND ECO LEVEL ON ITEM 9.

REFERENCE DOCUMENTS

- LOGIC DIAGRAM --- 200172-601
- PARTS LIST ---- PL200172-101

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	CONTRACT NO.
		.xx ±	DRAWN J.DAVIES 6-23-78
		.xxx ±	CHECKED <i>[Signature]</i> 1 AUG 78
		ANGLES ±	MECH
		✓	ELEC <i>[Signature]</i> 1 AUG 78
200133-101	NOVO SPI		PROJ. ENG
200130-101	NOVO SPI	MATERIAL	APPROVED <i>[Signature]</i> 1 AUG 78
NEXT ASSY	USED ON	SEE PARTS LIST	
APPLICATION		FINISH	

SEE SEPARATE PARTS LIST		
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		
CARD ASSEMBLY LIGHT OCCULTATION, MAP, PC		
SIZE	CODE IDENT NO	REV
C	53938 200172-101	B0
SCALE FULL	SHEET 1 OF 1	



REF DESIG	E&S PART NO.	VENDOR PART NO.
C 1	804102-475	CS13BF475K
C 2	804102-475	CS13BF475K
C 3	804115-333	CY15C333M
C 4	804115-333	CY15C333M
C 5	804115-333	CY15C333M
C 6	804115-333	CY15C333M
C 7	804115-333	CY15C333M
C 8	804115-333	CY15C333M
C 9	804115-333	CY15C333M
C 10	804115-333	CY15C333M
C 11	804115-333	CY15C333M
C 12	804115-333	CY15C333M
C 13	804115-104	CY20C104M
C 14	804115-333	CY15C333M
C 15	804115-333	CY15C333M
C 16	804115-104	CY20C104M
C 17	804115-104	CY20C104M
C 18	804115-104	CY20C104M
C 19	804115-333	CY15C333M
C 20	804115-104	CY20C104M
C 21	804115-333	CY15C333M
C 22	804115-104	CY20C104M
C 23	804115-104	CY20C104M
C 24	804115-333	CY15C333M
C 25	804115-104	CY20C104M
C 26	804115-104	CY20C104M
C 27	804115-333	CY15C333M
C 28	804115-104	CY20C104M
C 29	804115-104	CY20C104M
C 30	804115-104	CY20C104M
C 31	804115-104	CY20C104M
C 32	804115-104	CY20C104M
C 33	804115-104	CY20C104M
C 34	804115-333	CY15C333M
C 35	804115-104	CY20C104M
C 36	804115-333	CY15C333M
C 37	804115-104	CY20C104M
C 38	804115-104	CY20C104M
C 39	804115-104	CY20C104M

REF DESIG	E & S PART NO.	VENDOR PART NO.
C 40	804115-333	CY15C333M
C 41	804115-104	CY20C104M
C 42	804115-104	CY20C104M
C 43	804115-104	CY20C104M
C 44	804115-333	CY15C333M
C 45	804115-104	CY20C104M
C 46	804115-104	CY20C104M
C 47	804115-104	CY20C104M
C 48	804115-104	CY20C104M
C 49	804115-104	CY20C104M
C 50	804115-104	CY20C104M
C 52	804128-475	183DR475X0035D
C 53	804128-475	183DR475X0035D
C 54	804128-475	183DR475X0035D
C 55	804128-475	183DR475X0035D
R 1	803201-271	.
R 2	803201-221	.
R 3	803201-331	.
R 4	803201-221	.
R 5	803201-331	.
R 6	803201-221	.
R 7	803201-331	.
U 10	807657-055	SN74S157N
U 11	807506-646	SN74128N
U 12	807695-055	SN74S195N
U 13	807695-055	SN74S195N
U 14	807695-055	SN74S195N
U 15	807823-849	MK4116P3
U 16	807823-849	MK4116P3
U 17	806321-888	LM320H-5.0
U 20	807306-618	3242
U 22	807413-646	SN74164N
U 23	801364-001	191TEIC-5S
U 24	807716-055	SN74S251
U 25	807823-849	MK4116P3
U 26	807823-849	MK4116P3

U 53	807695-055	SN74S195N
U 54	807695-055	SN74S195N
U 55	807823-849	MK4116P3
U 56	807823-849	MK4116P3
U 60	807685-055	SN74S85
U 61	807685-055	SN74S85
U 62	807413-646	SN74164N
U 64	807716-055	SN74S251
U 65	807823-849	MK4116P3
U 66	807823-849	MK4116P3
U 70	807657-055	SN74S157N
U 71	807451-055	SN74S51N
U 72	807695-055	SN74S195N
U 73	807695-055	SN74S195N
U 74	807695-055	SN74S195N
U 75	807823-849	MK4116P3
U 76	807823-849	MK4116P3
U 80	807416-055	SN74S04N
U 81	807451-055	SN74S51N
U 82	807408-055	SN74S08N
U 85	807823-849	MK4116P3
U 86	807823-849	MK4116P3

U 32	807695-055	SN74S195N
U 33	807695-055	SN74S195N
U 34	807695-055	SN74S195N
U 35	807823-849	MK4116P3
U 36	807823-849	MK4116P3
U 41	807657-055	SN74S157N
U 42	807416-055	SN74S04N
U 43	807451-055	SN74S51N
U 45	807823-849	MK4116P3
U 46	807823-849	MK4116P3
U 50	807657-055	SN74S157N
U 51	807685-055	SN74S85
U 52	807695-055	SN74S195N

3. ON ALL MK4116P3 I.C.'S LOCATIONS U15, U16, U25, U26, U35, U36, U45, U46, U55, U56, U65, U66, U75, U76, U85, U86, PIN 1 = PWR (-5V), PIN 8 = PWR (+12V), PIN 9 = PWR (+5V), PIN 16 = GND.

2. NUMBERS SHOWN REFER TO CONNECTOR P1. ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.

RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.

RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.

ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).

ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND AND PIN 16 IS POWER (+5V).

ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).

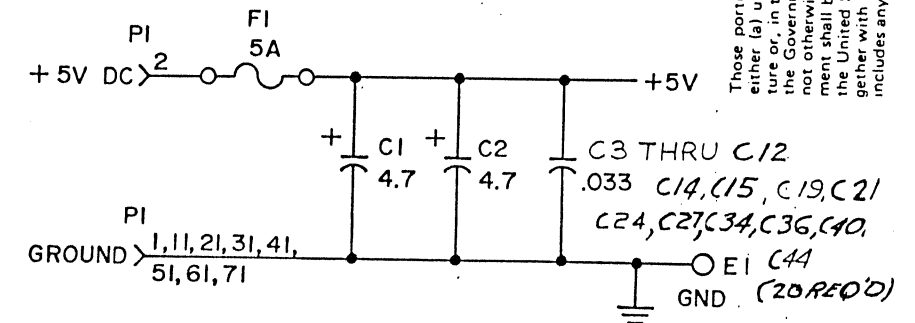
UNLESS OTHERWISE SPECIFIED;

NOTES:

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	REV UPDATE W/NO DWG CHG	D.F. 12-31-81	[Signature]

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) (2)

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± _____ ANGLES ± _____ ✓		CONTRACT NO. DRAWN D. CARROLL 11/8/77 CHECKED [Signature] 27 JAN 78 MECH ELEC [Signature] 1/27/78 PROJ. ENG [Signature] 1/27/78 APPROVED J. P. [Signature] 2 FEB 78		SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
MATERIAL 200172-101 NOVONVIEW		FINISH		LIGHT OCCULTATION MAP P.C.	
NEXT ASSY	USED ON	SIZE	CODE IDENT NO	REV	
	APPLICATION	C	53938	200172-601	B0
		SCALE NONE	SHEET 1 OF 8		

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D

D

<u>PIN NO.</u>	<u>WIRENAME</u>	<u>PIN NO.</u>	<u>WIRENAME</u>
PI 3	*CLOCK	PI 42	LAOIF2
PI 4	LOADHOLD	PI 43	LAOIFO
PI 5	LOADMEMINPUT	PI 44	LAIF2
PI 6	RC	PI 45	LAIFO
PI 7	*MAINT	PI 46	PIA
PI 8	FLAG2	PI 47	P3A
PI 9	FLAGIOUT	PI 49	FLAGIN2
PI 10	XAD7	PI 52	AGTB
PI 12	OUT15	PI 53	W7
PI 13	LOADMEMORYOUTPUT	PI 54	R7
PI 14	PRIORITY	PI 55	W6
PI 15	SERIN	PI 56	R6
PI 16	W15	PI 57	W5
PI 17	R15	PI 58	R5
PI 18	W14	PI 59	W4
PI 19	R14	PI 60	R4
PI 20	W13	PI 62	CAS
PI 22	R13	PI 63	MEMWRITE
PI 23	W12	PI 64	MEMREF
PI 24	R12	PI 65	RAS
PI 25	XADIO	PI 66	SHIFTPRDATA
PI 26	XAD9	PI 67	W3
PI 27	XAD8	PI 68	R3
PI 29	WADDRSEL	PI 69	W2
PI 32	W11	PI 70	R2
PI 33	R11	PI 72	W1
PI 34	W10	PI 73	R1
PI 35	R10	PI 77	GND-U11
PI 36	W9	PI 78	GND-U10
PI 37	R9	PI 79	VJUMP5
PI 38	W8	PI 80	VJUMPIO
PI 39	R8		

C

C

B

B 200172-601

B

A

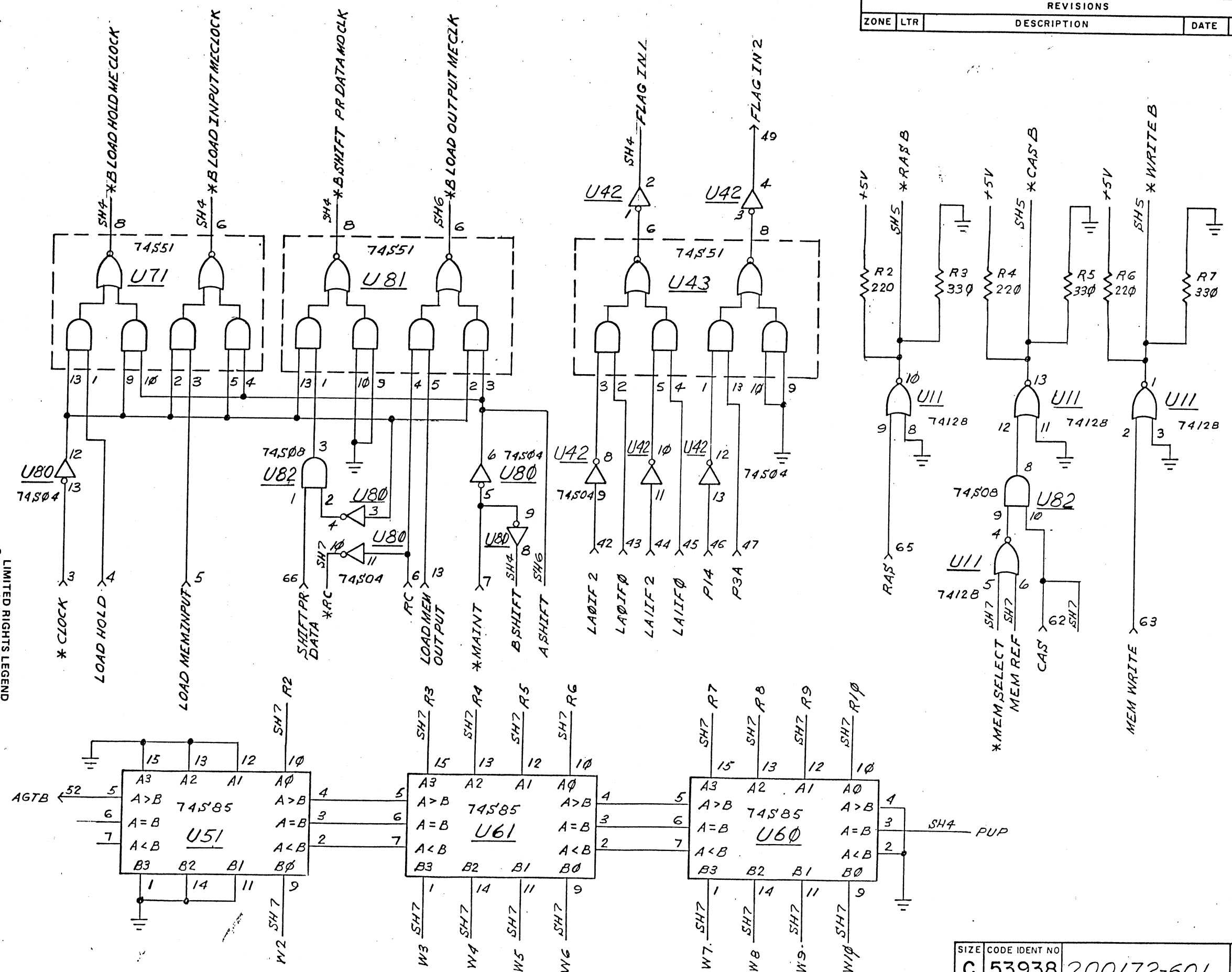
A

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

Those portions of this technical data indicated as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or, in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use release or disclosure: or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

SIZE	CODE IDENT NO	REV
C	53938	200172-601 B0
SCALE NONE	SHEET 2 OF 8	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

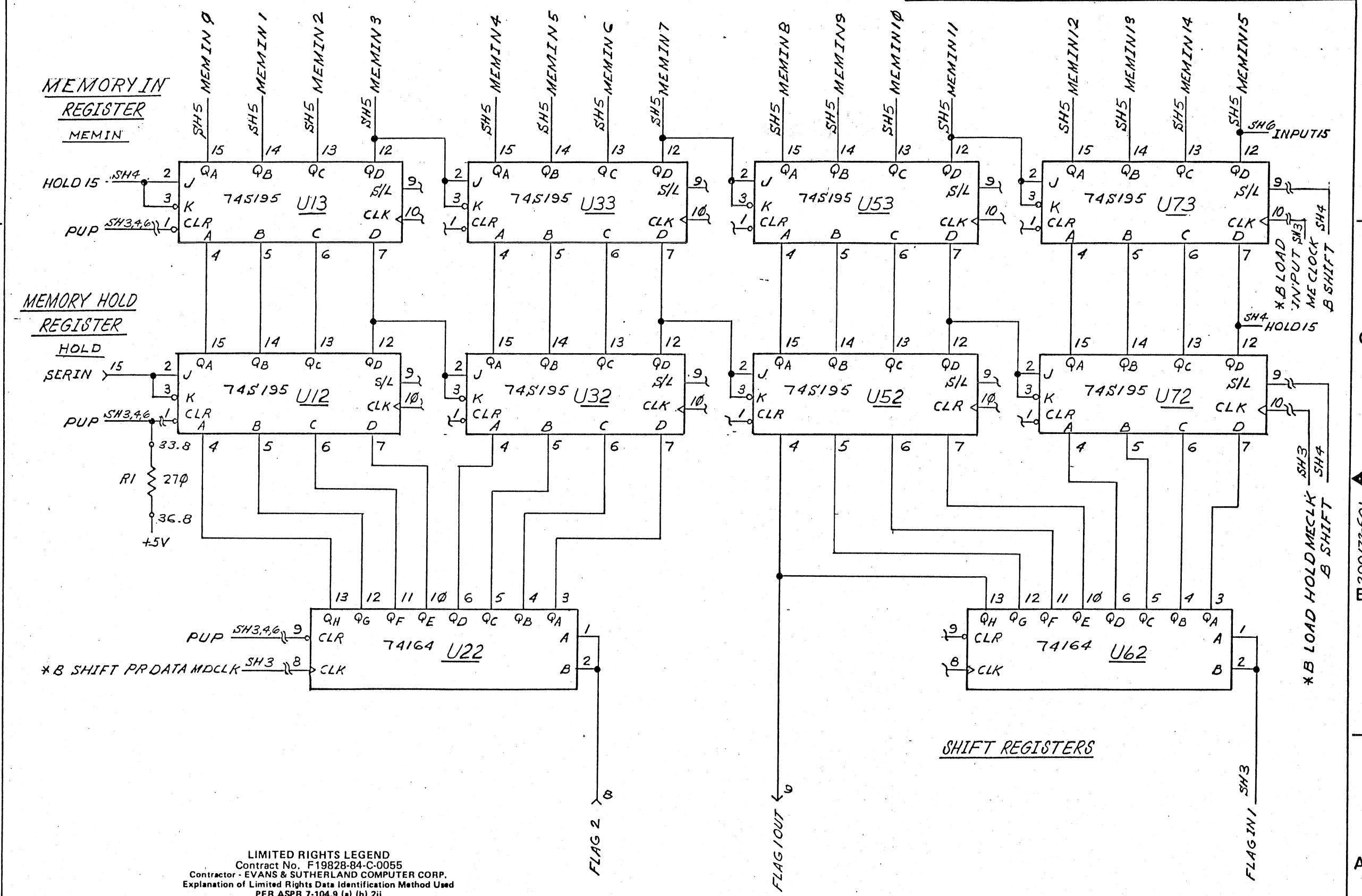


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LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR Z.104.9 (a), (b), (c), (d)

SIZE	CODE IDENT NO	REV
C	53938 200172-601	BD
SCALE NONE	SHEET 3 OF 8	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



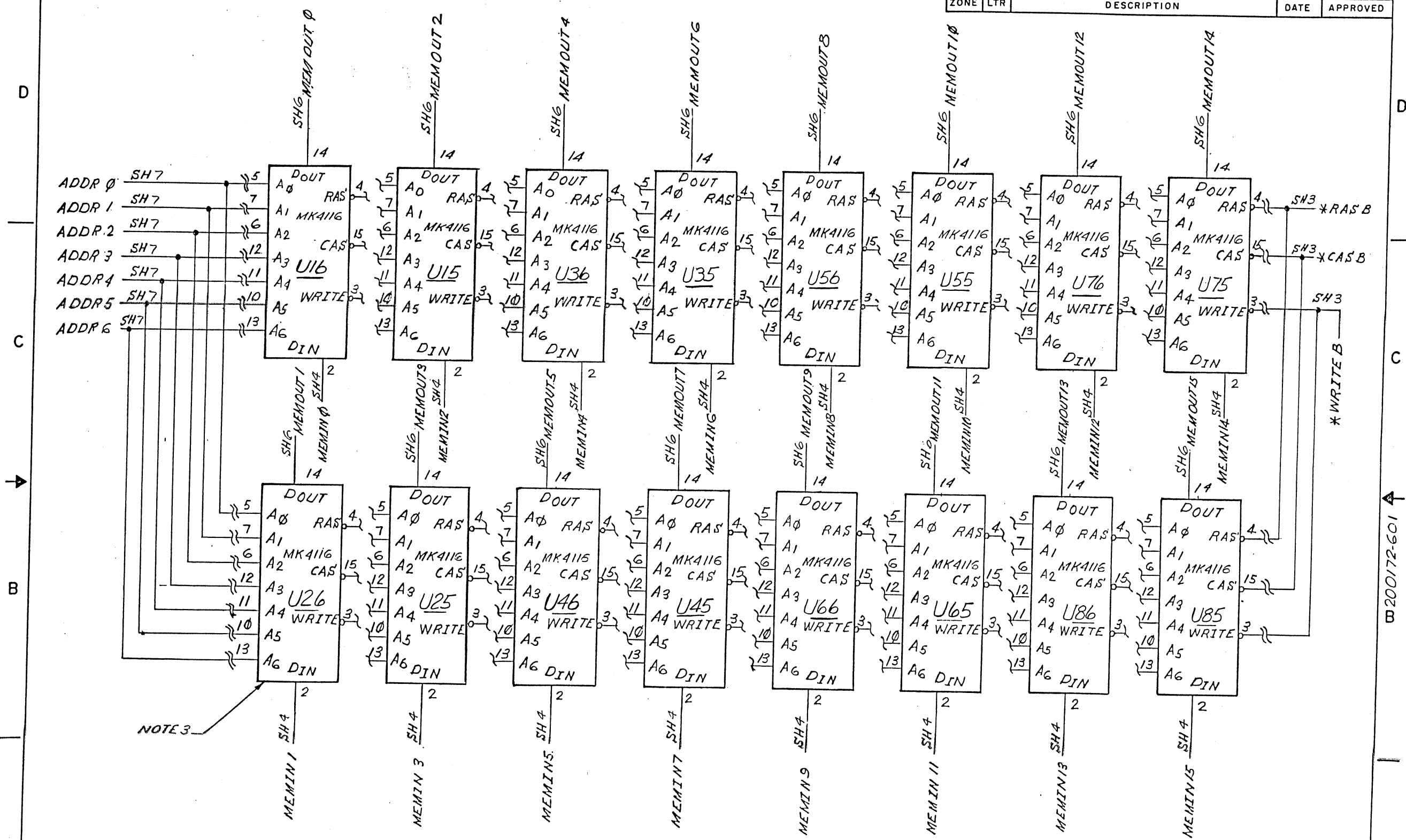
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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SIZE	CODE IDENT NO	REV
C	53938 200172-601	BO
SCALE NONE	SHEET 4 OF 8	

B 200172-601

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



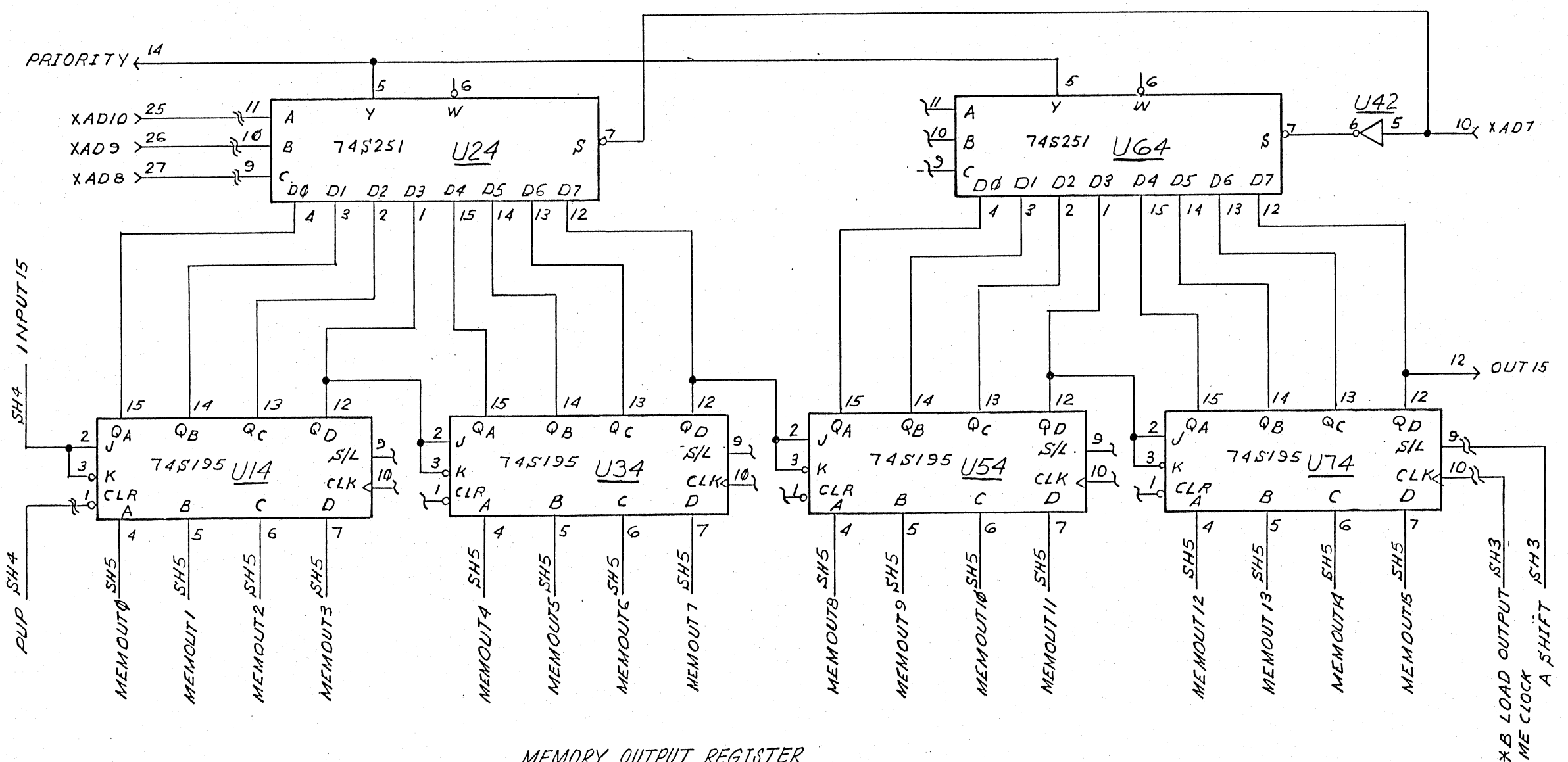
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

MEMORY

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SIZE	CODE IDENT NO	REV
C	53938 200172-601	BO
SCALE 1/1015	SHEET 5 OF 8	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



MEMORY OUTPUT REGISTER
MEMOUT

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

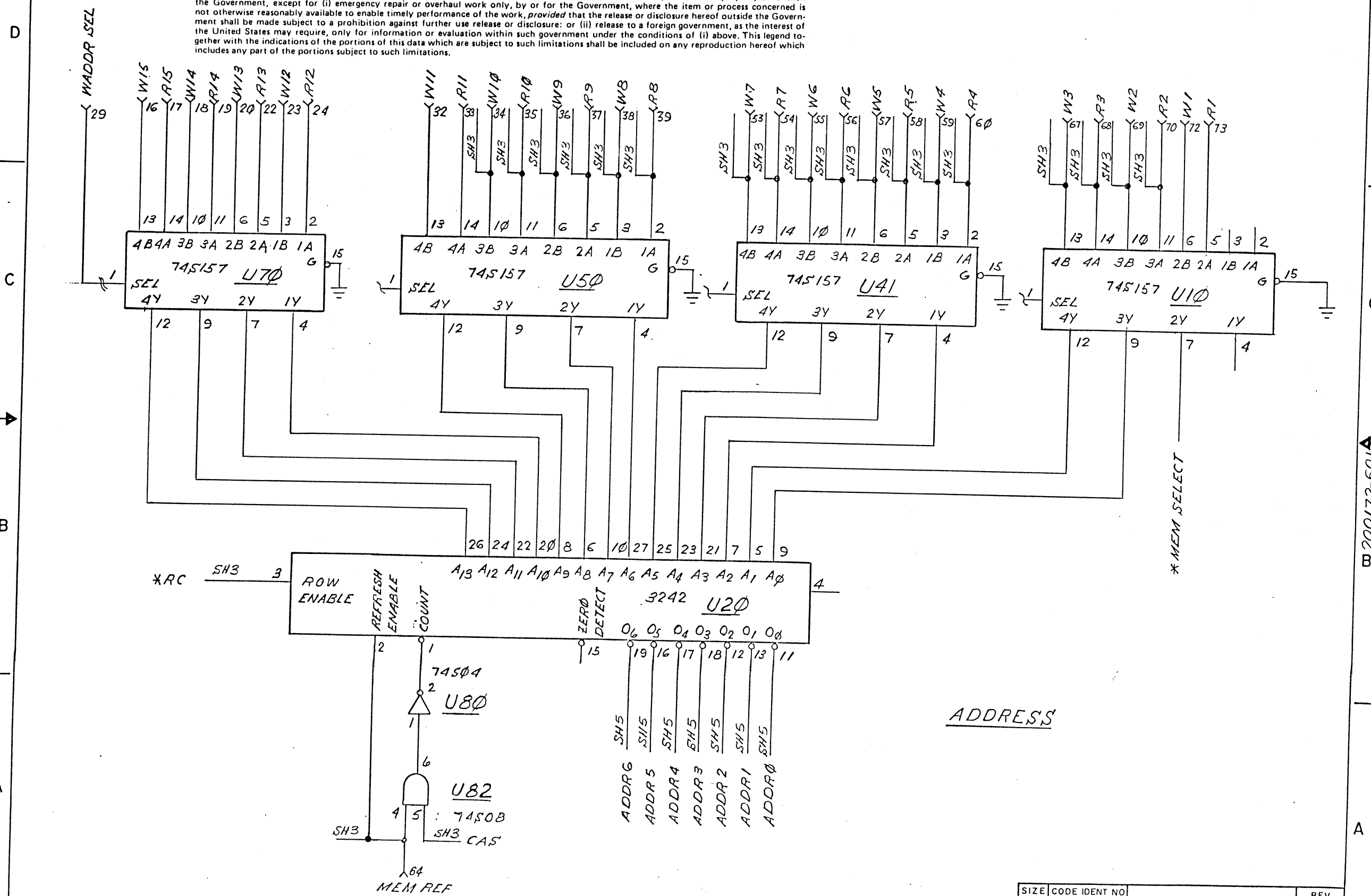
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SIZE	CODE IDENT NO	REV
C	53938	200172-601 B0
SCALE NONE	SHEET 6 OF 8	

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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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



ADDRESS

* MEM SELECT

SIZE	CODE IDENT NO	REV
C	53938 200172-601	B0
SCALE NONE	SHEET 7 OF 8	

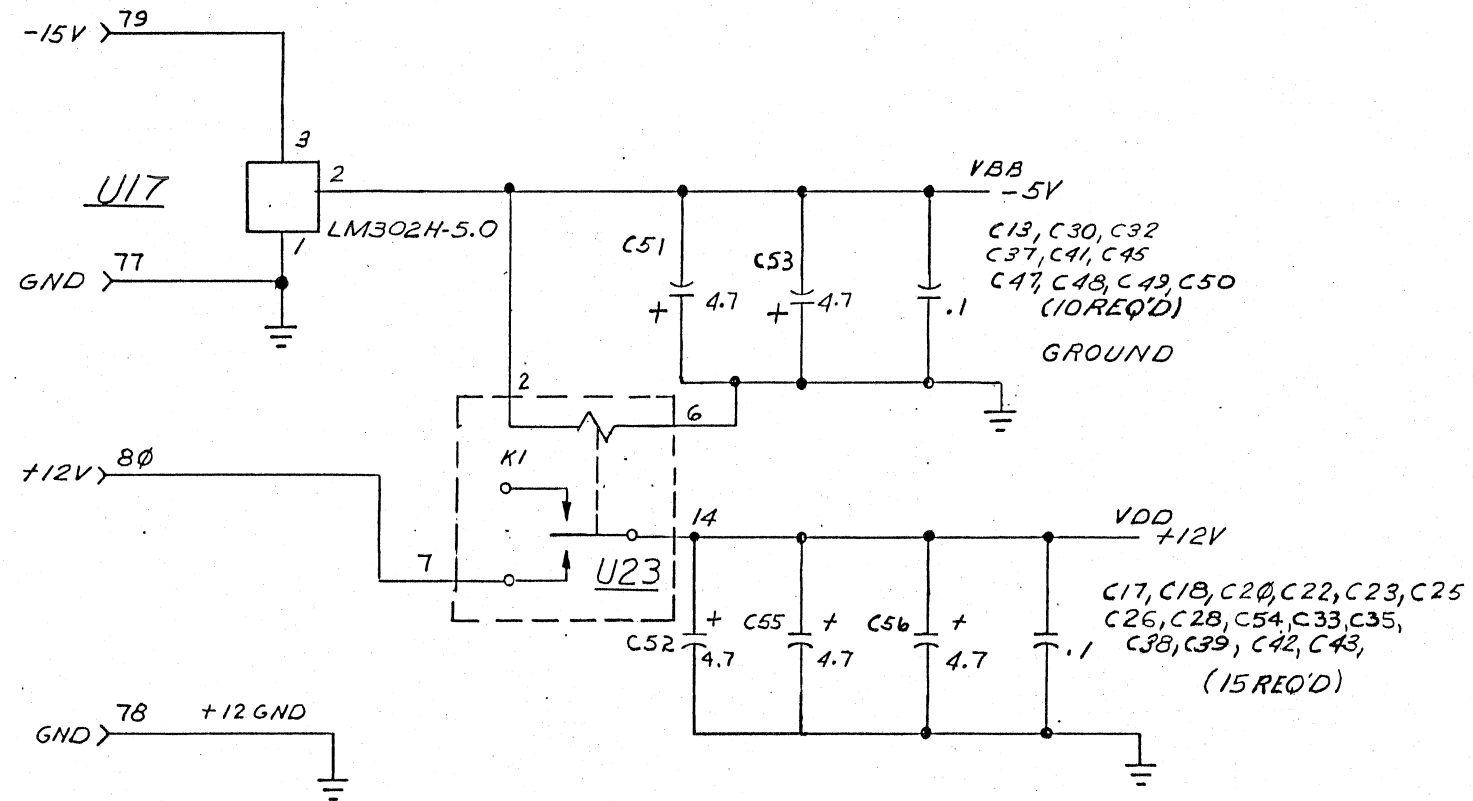
4

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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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SIZE	CODE IDENT NO	REV
C	53938	200172-601
SCALE NONE	SHEET 8	OF 8

B 200172-601A

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200173-100

REV: A2 = AC

DESC: CARD ASSY, LIGHT OCCULTATION, SUPPORT, W/W

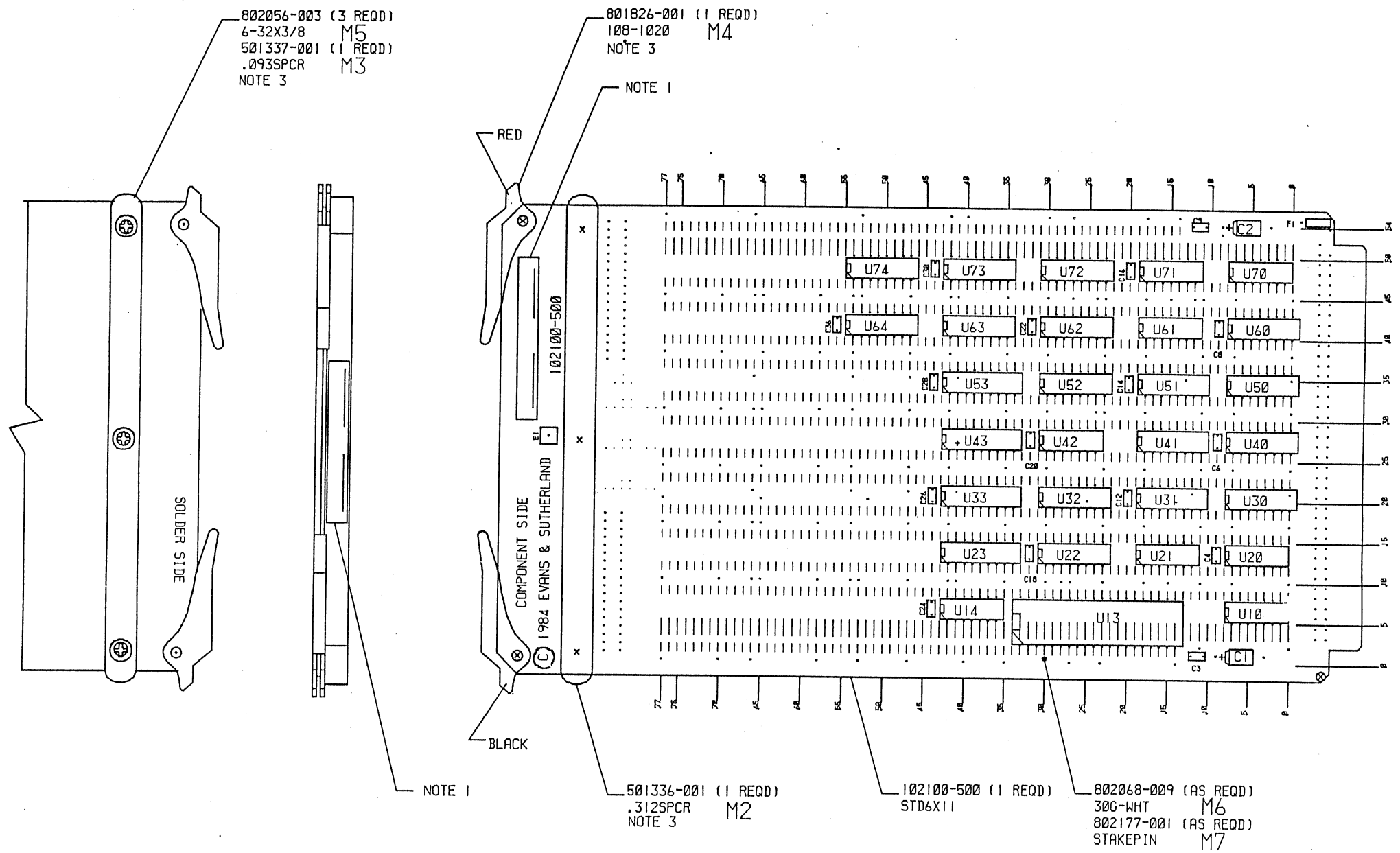
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BD,WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
002	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
003	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
004	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
005	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8(SM-P-PH-Z)	802056-003	3
006	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
007	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	700
008	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
C1 C2	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C3 C4 C6 C8 C9 C12 C14 C16	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	16
C18 C20 C22 C24 C26 C28 C30						
C36						
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
U10 U14 5.42 U70	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	3
U13 2.33	IC,TTL 74S558	50364	MONOLITHIC MEMORIES INC.	74S558N/J (60NS)	807776-838	1
U20	IC,TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	1
U21	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	1
U22	R,,DIP 1K(R15)	4J937	BOURNS NETWORKS	4116R-002-102	807699-102	1
U23	IC,PROM,BIP,1024X4,TS	53938	EVANS & SUTHERLAND.	807802-055-A37	807802-055-A37	1
U31	IC,TTL 74S139	01295	TEXAS INSTR, SEMICON DIV.	SN74S139N	807639-055	1
U32	IC,TTL 74S112	18324	SIGNETICS CORP. MILITARY	N74S112N	807612-055	1
U33	IC,PROM,BIP,1024X4,TS	53938	EVANS & SUTHERLAND.	807802-055-A38	807802-055-A38	1
U41 U51	IC,TTL 74166	01295	TEXAS INSTR, SEMICON DIV.	SN74166N	807665-646	2
U42	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	1
U43	IC,PROM,BIP,1024X4,TS	53938	EVANS & SUTHERLAND.	807802-055-A39	807802-055-A39	1
U50 U60 U30 U40	IC,TTL 74S283	27014	NATIONAL SEMICONDUCTOR	DM74S283N/J	807715-055	4
U52 U62 U72	IC,TTL 74S195	01295	TEXAS INSTR, SEMICON DIV.	SN74S195N	807695-055	3
U53	IC,PROM,BIP,1024X4,TS	53938	EVANS & SUTHERLAND.	807802-055-A40	807802-055-A40	1
U61	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U63 U64 U73	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	3
U71	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
U74	IC,TTL 74S133	01295	TEXAS INSTR, SEMICON DIV.	SN74S133N	807613-055	1

31 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	RC2	REDRAWN IN CADOL	S.R.T.	4-29-85

D
C
B
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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.
 2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
 3. INSTALL CARD EJECTORS (M4) AND SPACERS (M2 & M3) AFTER WAVE SOLDERING.

REFERENCE DOCUMENTS
 SCHEMATIC --- 200173-600
 PARTS LIST -- PL200173-100

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DRAWN J. DAVIES	EVANS & SUTHERLAND <small>SALT LAKE CITY, UTAH 84108</small>		
CHECKED <i>D. Holt</i> 5-6-85	TITLE ASSY. LIGHT OCCULTATION, SUPPORT (W/W)		
ELEC ENG D. JAMES	SIZE C	CODE IDENT 53938	DWG NO. 200173-100
PROJ ENG R. MOON	REV A2		
APPROVED	VERSION 07	SHEET 1 OF 1	
NEXT ASSY			
MODIFIED DATE 2-MAY-85			
CREATION DATE 29-DEC-78			
FILE NAME 2001730A2.MDF			

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) (2) ii
 Portions of this data which are indicated as limited rights data shall not, without the written permission of the above Contractor, be released, disclosed, or otherwise made available to the Government, in whole or in part by the Government for manufacture or use, in the case of computer software documentation for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work, only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use, release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government under the conditions of (i) above. This legend together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.



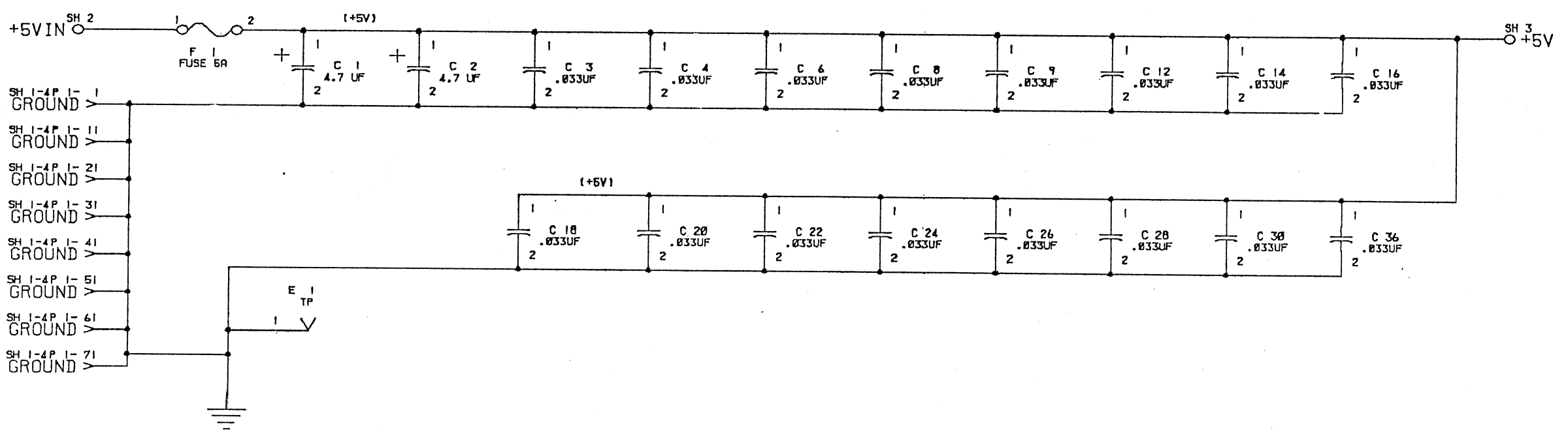
NOTES: UNLESS OTHERWISE SPECIFIED:

- 1. RESISTANCE VALUES ARE IN OHMS + - 5%. 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:
 - INPUT SIGNALS
 - OUTPUT SIGNALS
- 4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.
 -
- 5. ON I.C. 6755B LOC. 13 PIN 30 IS GROUND AND PIN 10 IS +5V (VCC).

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	VARIOUS WIRE CHANGES	J.S. 6-7-79	
	RC1	ADDED VER 2. (TRANLGN. CADASP & CADAPP) WITH NO DWG CHANGE.	HLV 10-14-80	
	A2	ECO CHANGES	J.S. 11-19-80	

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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DRAWN	J. DAVIES
CHECKED	A. CONGAR <i>11-25</i>
ELEC ENG	D. JAMES
PROJ ENG	A. MOON <i>12-4</i>
APPROVED	J. PIND
NEXT ASSY	
CREATION DATE	29-DEC-78

EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE LIGHT OCCULTATION, SUPPORT (W/W)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200173-600	A2
25-NOV-80 V 78		SHEET 1 OF 4	

D

C

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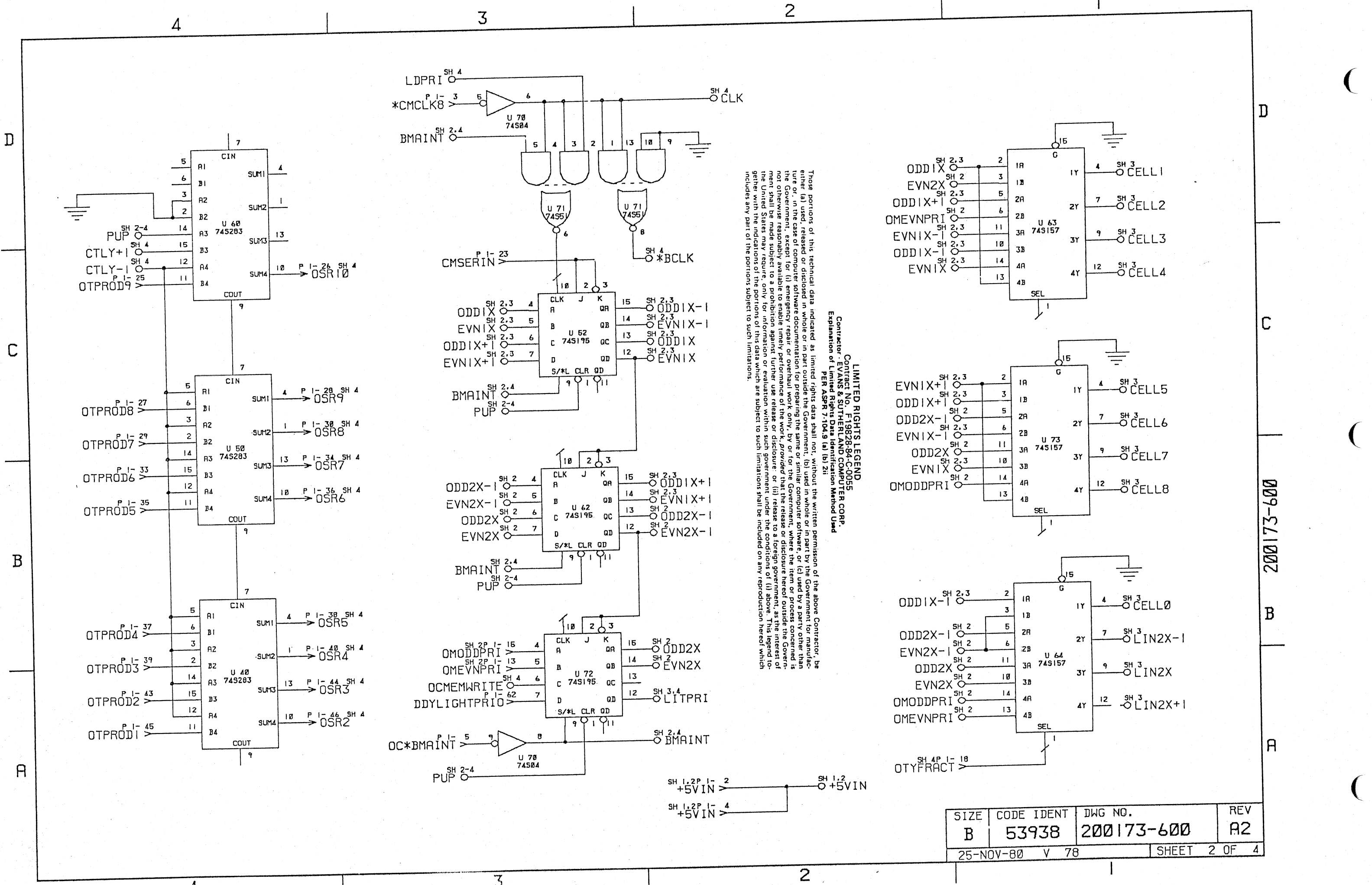
D

C

200173-600

B

A



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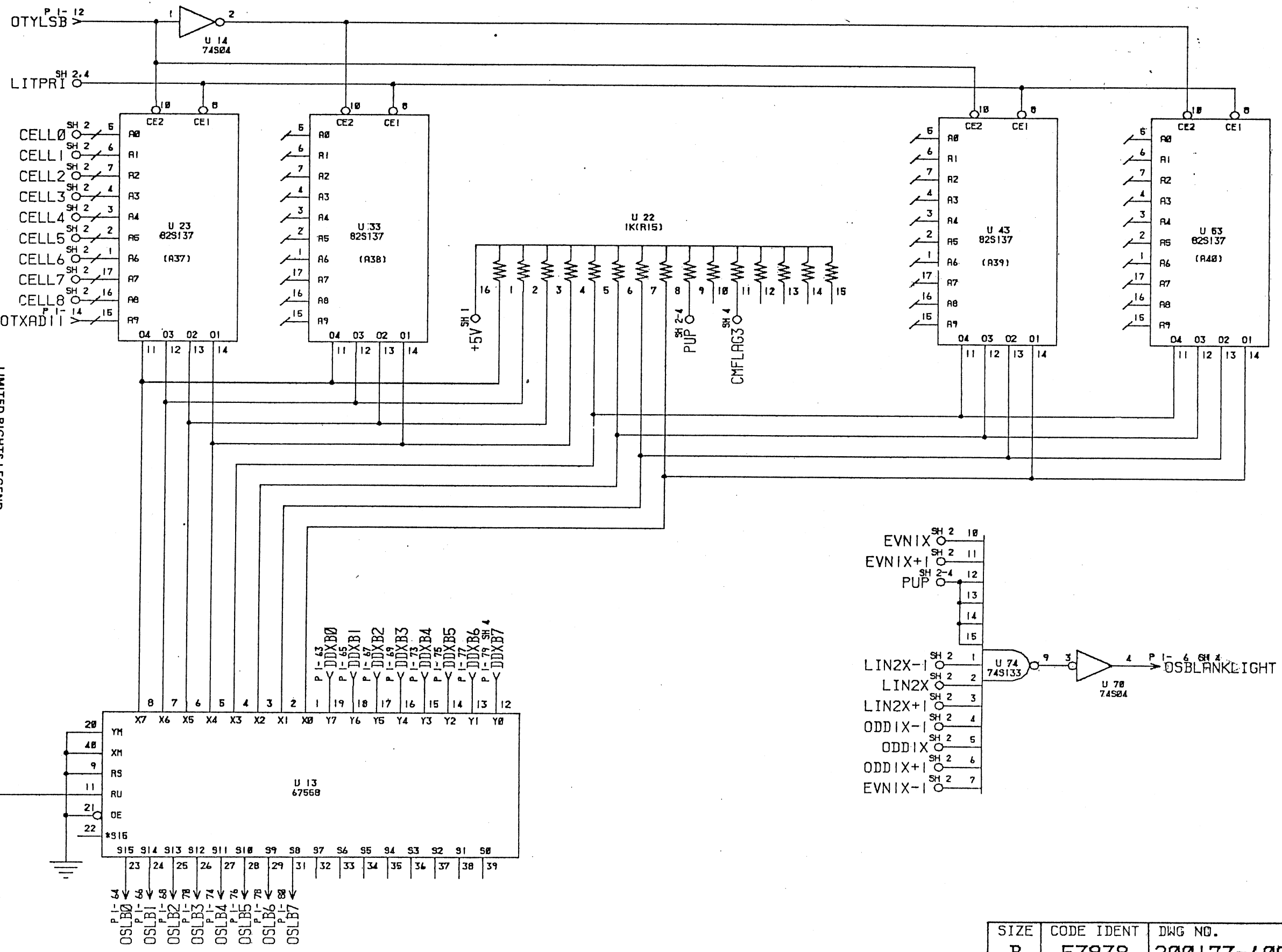
LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200173-600	A2
25-NOV-80 V 78		SHEET 2 OF 4	

D
C
B
A
200173-600

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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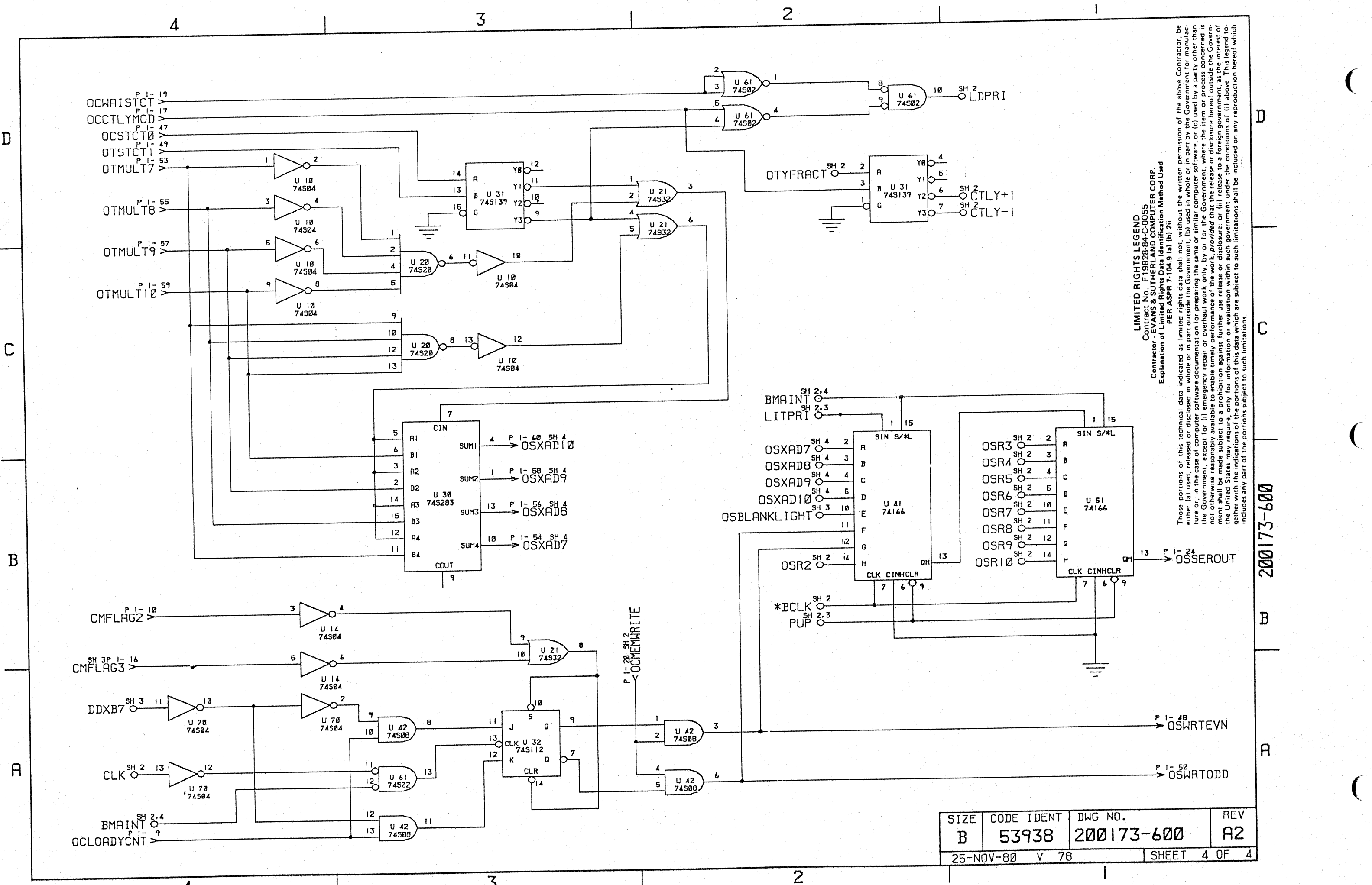


SIZE	CODE IDENT	DWG NO.	REV
B	53938	200173-600	A2
25-NOV-80 V 78		SHEET 3 OF 4	

200173-600

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) (2)

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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200173-600	A2
25-NOV-80 V 78		SHEET 4 OF 4	

200173-600

LIMITED RIGHTS LEGEND
 CONTRACT NO. F19628-84-C-0055
 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORP. EXPLANATION OF LIMITED RIGHTS DATA IDENTIFICATION METHOD USED PER ASPR 7-104.6(a)(b) 2H AND COVERS ALL INFORMATION ON THIS DRAWING.
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CELL 6	CELL 7	CELL 9
ODD 2X-1	ODD 2X	ODD 2X+1
CELL 3	CELL 4	CELL 5
EVN IX-1	EVN IX	EVN IX+1
CELL Ø	CELL 1	CELL 2
ODD IX-1	ODD IX	ODD IX+1

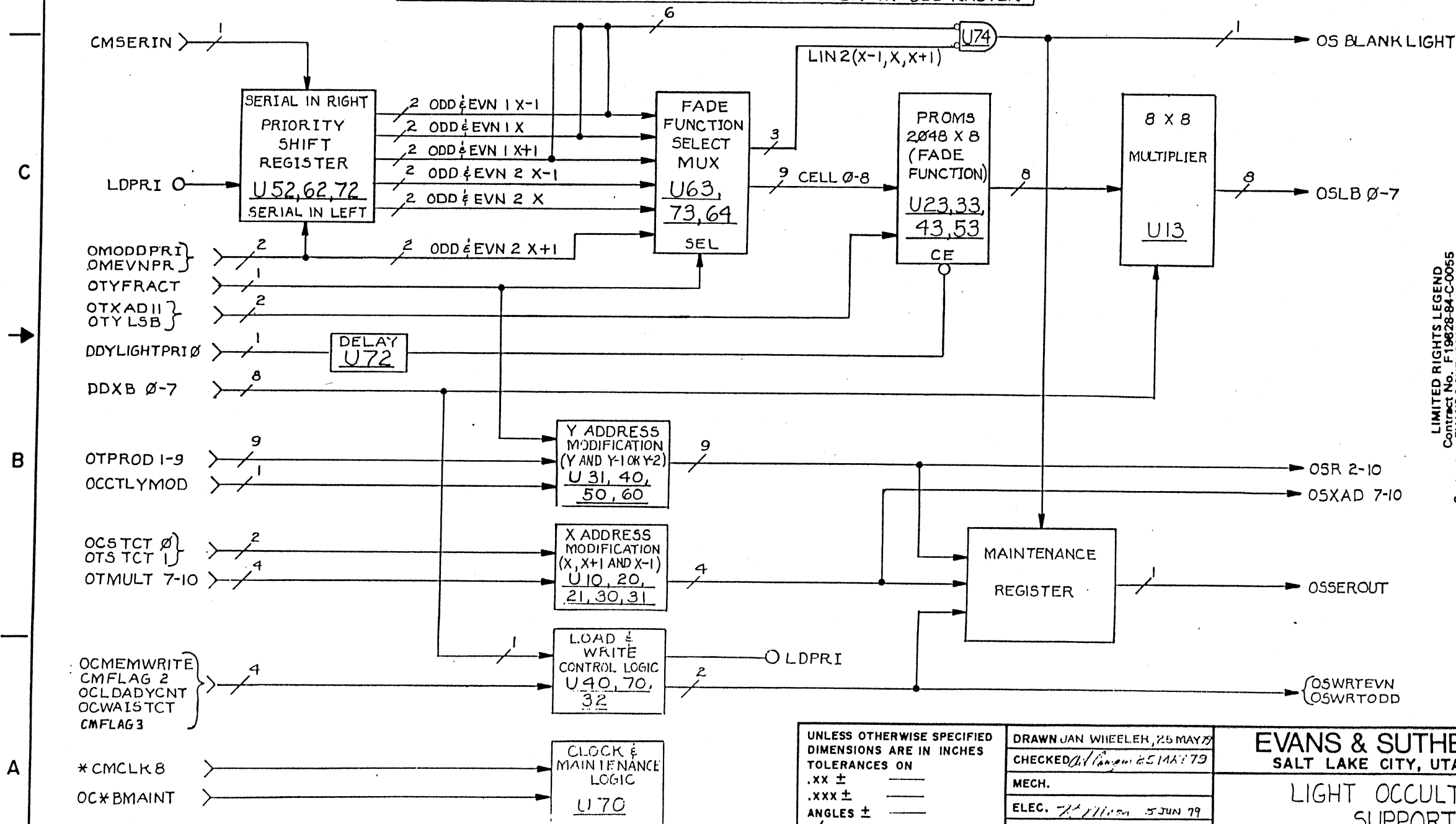
CFYFRACT = Ø

CELL 6	CELL 7	CELL 8
EVN IX-1	EVN IX	EVN IX+1
CELL 3	CELL 4	CELL 5
ODD IX-1	ODD IX	ODD IX+1
CELL Ø	CELL 1	CELL 2
EVN 2X-1	EVN 2X	EVN 2X+1

CFYFRACT = 1

9 CELL ARRANGEMENT FOR LIGHT POSITIONED IN EVEN OR ODD RASTER

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	REVISION UPDATE W/NO DWG CHGS	5-25-79	R Moon
	A2	REV UPDATE W/NO DWG CHNG	12-1-80	[Signature]



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) 2H

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UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ON
 .XX ± _____
 .XXX ± _____
 ANGLES ± _____
 ✓

DRAWN JAN WHEELER, 25 MAY 79
 CHECKED [Signature] 25 MAY 79
 MECH.
 ELEC. [Signature] 5 JUN 79
 PROJ. ENG. [Signature] 5 JUN 79
 APPROVED [Signature] 5 JUN 79

EVANS & SUTHERLAND
 SALT LAKE CITY, UTAH, 84108

LIGHT OCCULTATION
 SUPPORT
 BLOCK DIAGRAM

MATERIAL		SIZE	CODE IDENT NO	REV
FINISH		C	53938 200173-900	A2
		SCALE	NONE	DO NOT SCALE
		SHEET 1 OF 1		

200173-900



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200361-100

REV: A3 = AD

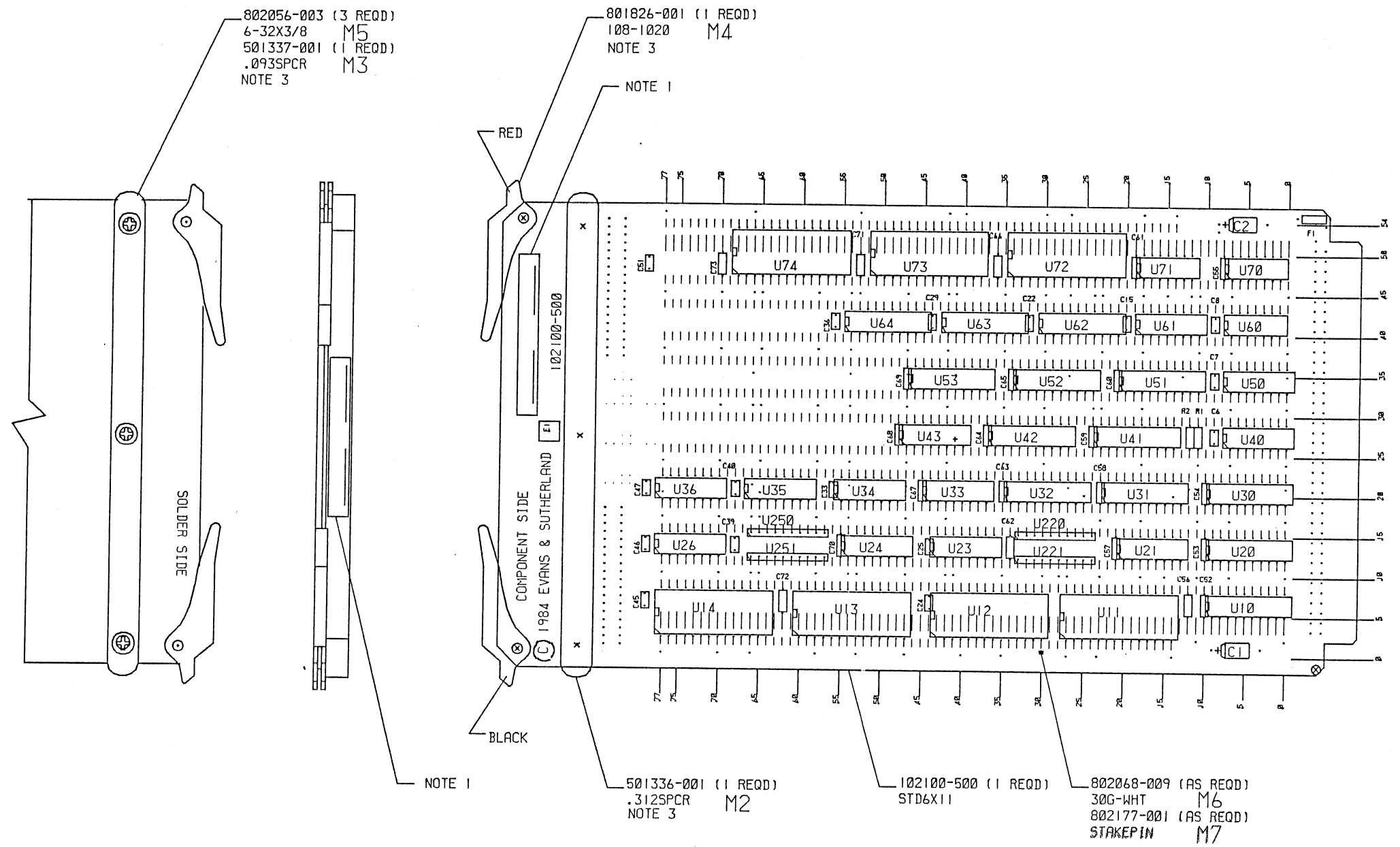
DESC: CARD ASSY, LRR-LINE RATE RECIPROCATOR (W/W)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD,WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
C52 C53 C54 C55 C56 C57 C58	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C59 C60 C61 C62 C63 C64 C65	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	22
C66 C67 C68 C69 C70 C71 C72 C73						
C6 C7 C8 C15 C22 C24 C25 C29 C33 C36 C39 C40 C45 C46 C47 C51	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	16
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 7A	75915	LITTELFUSE TRACOR INC.	251 007 (7A,AXIAL)	802375-070	1
M2	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
M6 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
M7 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	1072
R1 R2	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	2
U10 U20	IC,TTL 74S240	01295	TEXAS INSTR, SEMICON DIV.	SN74S240N/J	807792-020	2
U11 U12 U13 U14	IC,RAM 82S09	18324	SIGNETICS CORP. MILITARY	N82S09AN	807209-018	4
U21 U23 U24 U26 U33 U34 U35 U36	IC,TTL 25LS14	34335	ADVANCED MICRO DEVICES IN	AM25LS14APC/DC	807798-055	8
U220 U221 U250 U251	R,,SIP 1K(R9)	1U696	STACKPOLE COMPONENTS CO	10-9-5-102G (SIP)	807505-102	4
U30 U31	IC,TTL 74S241	27014	NATIONAL SEMICONDUCTOR	DM74S241N	807793-055	2
U32 U41 U42 U51 U52 U62 U63 U64	IC,TTL 74S299	27014	NATIONAL SEMICONDUCTOR	DM74S299N-A+	807737-055	8
U40	IC,PROM,35NS,32X8,BI	53938	EVANS & SUTHERLAND.	807739-035-A00	807739-035-A00	1
U43	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	1
U50	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	1
U53	IC,TTL 25LS15	34335	ADVANCED MICRO DEVICES IN	AM25LS15PC/74LS385	807799-055	1
U60	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U61	IC,PROM,35NS,32X8,BI	53938	EVANS & SUTHERLAND.	807739-035-A01	807739-035-A01	1
U70	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1
U71	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
U72	IC,EPROM,8192X8,TS,45	53938	EVANS & SUTHERLAND.	807218-450-A03	807218-450-A03	1
U73	IC,EPROM,8192X8,TS,45	53938	EVANS & SUTHERLAND.	807218-450-A04	807218-450-A04	1
U74	IC,EPROM,8192X8,TS,45	53938	EVANS & SUTHERLAND.	807218-450-A05	807218-450-A05	1

30 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A3	REDRAWN IN CADOL. CHANGED PROMS ON U40 & U61.	10-10-86	<i>K Sprin</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 (M4) AND SPACERS (M2 & M3) AFTER WAVE SOLDERING.

REFERENCE DOCUMENTS

SCHEMATIC --- 200361-600

PARTS LIST -- PL200361-100

LIMITED RIGHTS LEGEND
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CONTRACTOR: EVANS AND SUTHERLAND COMPUTER CORP.
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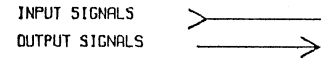
DRAWN	KTRUSCOTT	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
CHECKED	<i>S. Hadfield</i> 10-21-86	TITLE	
ELEC ENG	S. HADFIELD	ASSY. LRR-LINE RATE RECIPROCATOR (W/W)	
PROJ ENG	P. SKOLMOSKI	SIZE	CODE IDENT
APPROVED		C	53938
NEXT ASSY		DWG NO.	200361-100
MODIFIED DATE	17-OCT-86	REV	A3
CREATION DATE	3-MAR-81	VERSION	271
FILE NAME	200361100A3.MDF	SHEET 1 OF 1	



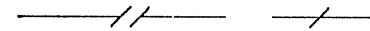
NOTES: UNLESS OTHERWISE SPECIFIED:

- RESISTANCE VALUES ARE IN OHMS + - 5%, K 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

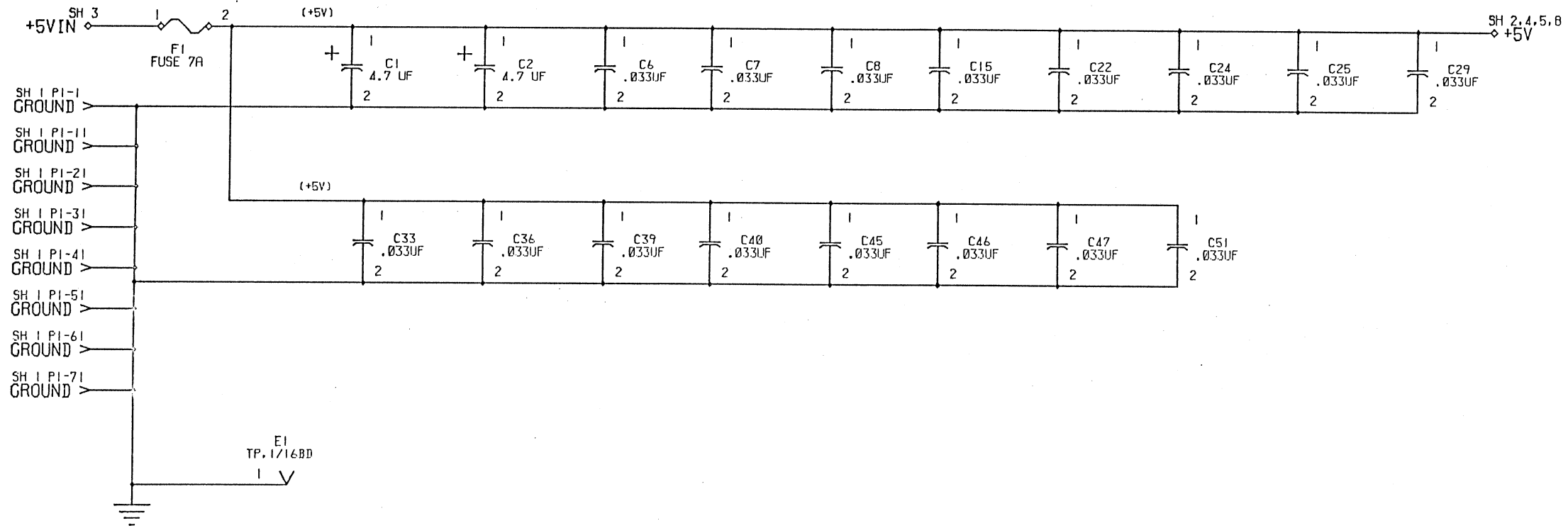
3. CARD CONNECTOR SYMBOL "PI-" DESIGNATES:



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



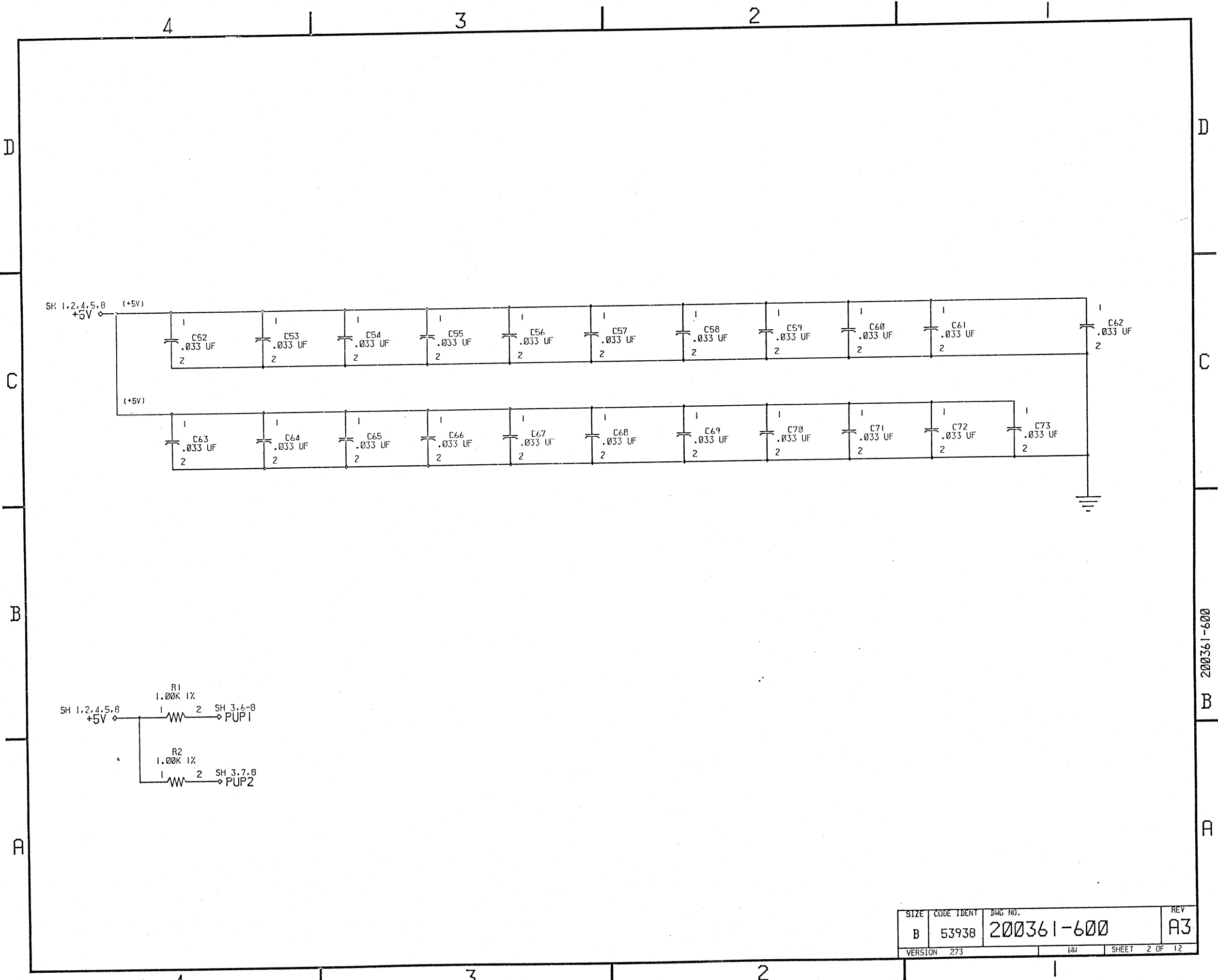
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	ECD CHANGES	J.S. 01-05-82	
	A2	ECD CHANGES	H.L.V. 01-08-82	
	RC1	CHANGE TEXT ON PAGES 4,5,6,7,9.	S.B. 5-11-82	
	RC2	MINOR CHANGE ON BLOCK ONLY	SB 9-23-82	
	A3	CHANGED PRDM U40 & U61	KMDT 10-09-86	<i>Expene</i>



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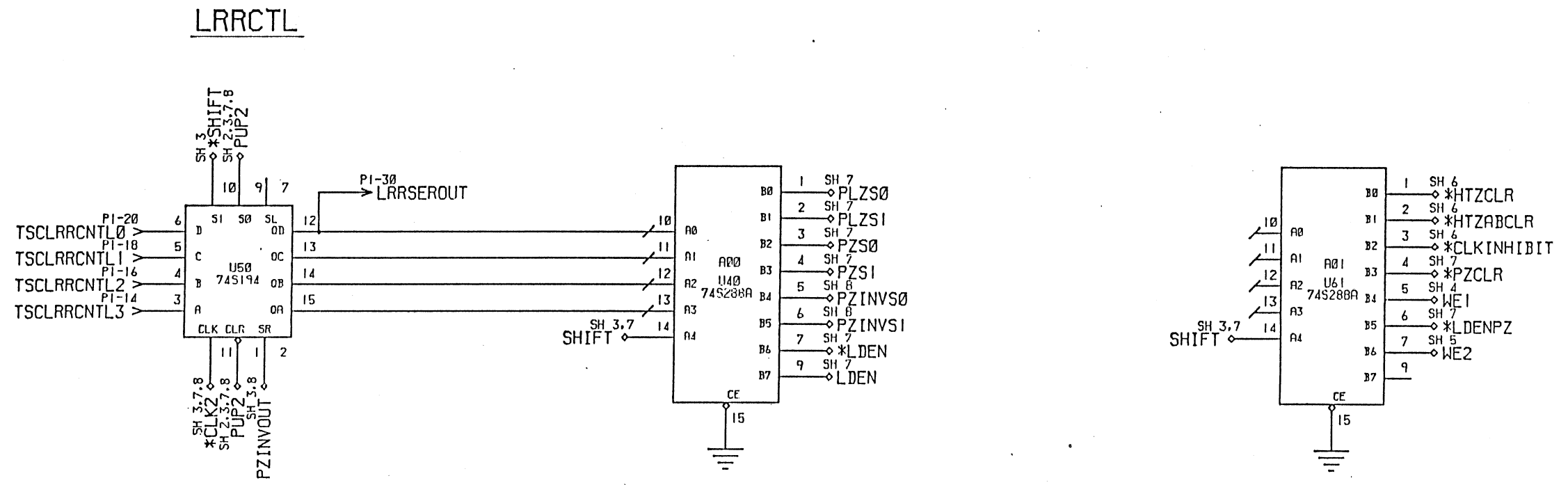
DRAWN	J. STERNER	EVANS & SUTHERLAND	
CHECKED	<i>C. Hill 11-10-86</i>	SALT LAKE CITY, UTAH 84108	
ELEC ENG	S. HADFIELD	TITLE	
PROJ ENG	P. SKOLMOSKI	LRR-LINE RATE	
APPROVED	<i>PS</i>	RECIPROCATOR (W/W)	
NEXT ASSY		SIZE	REV
MODIFIED DATE	27-OCT-86	B	A3
CREATION DATE	3-MAR-81	CODE IDENT	
FILE NAME	20036110003.MDF	200361-600	
VERSION 273		PC	SHEET 1 OF 12

200361-600
B

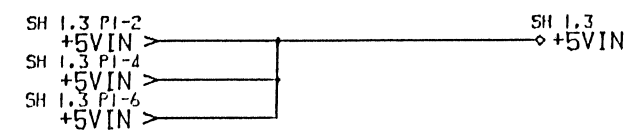
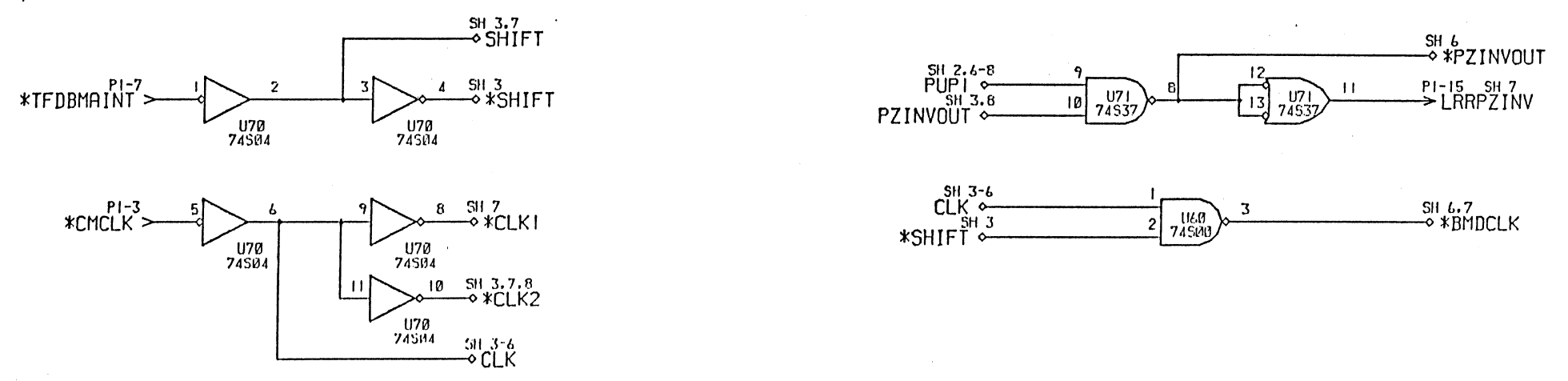


200361-600

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200361-600	A3
VERSION	273	44	SHEET 2 OF 12

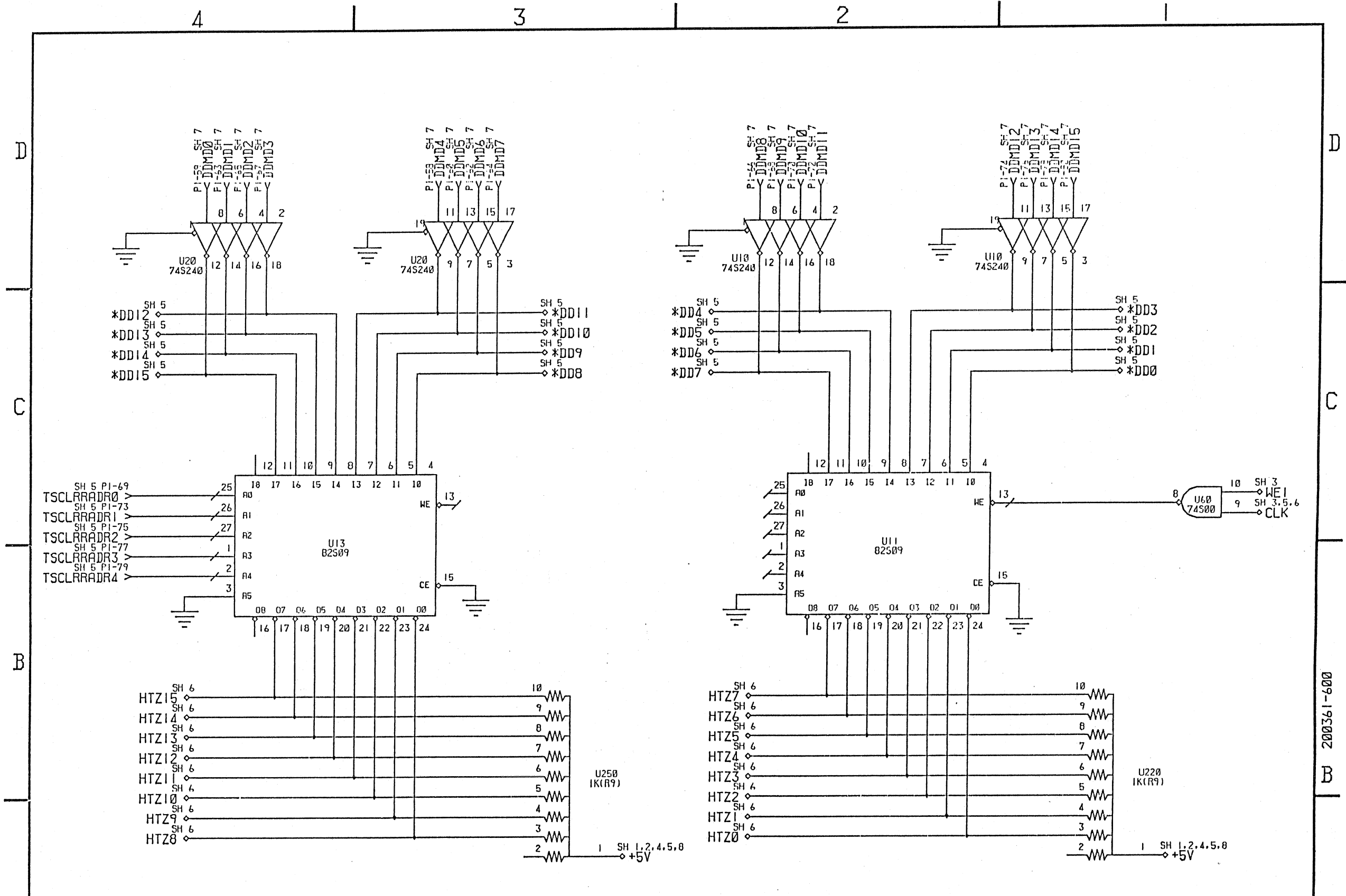


CONTROL DECODE



SIZE	CODE IDENT	DWG NO.	REV
B	53938	200361-600	A3
VERSION	273	144	SHEET 3 OF 12

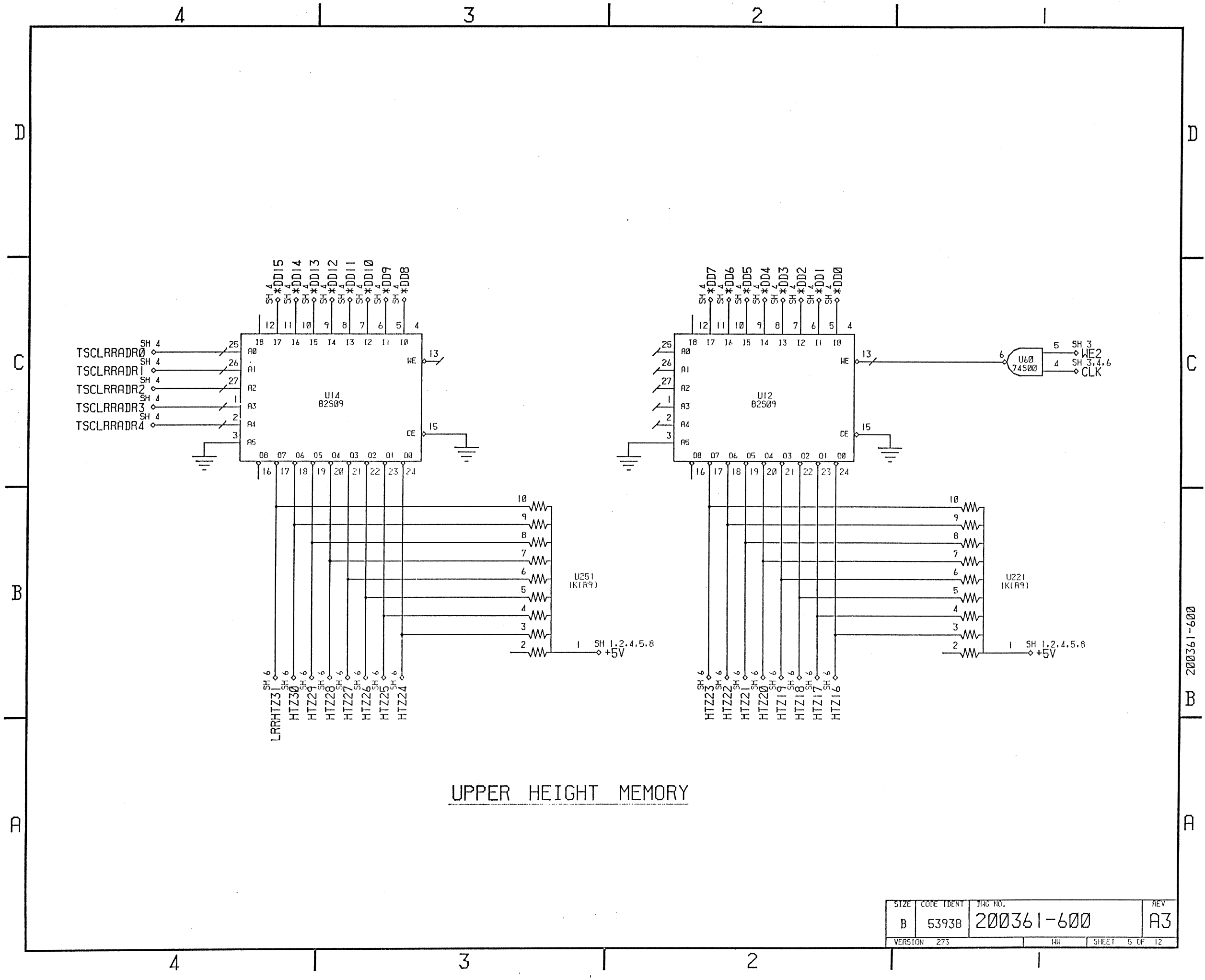
200361-600



LOWER HEIGHT MEMORY

SIZE	CODE IDENT	DRG NO.	REV
B	53938	200361-600	A3
VERSION	273	144	SHEET 4 OF 12

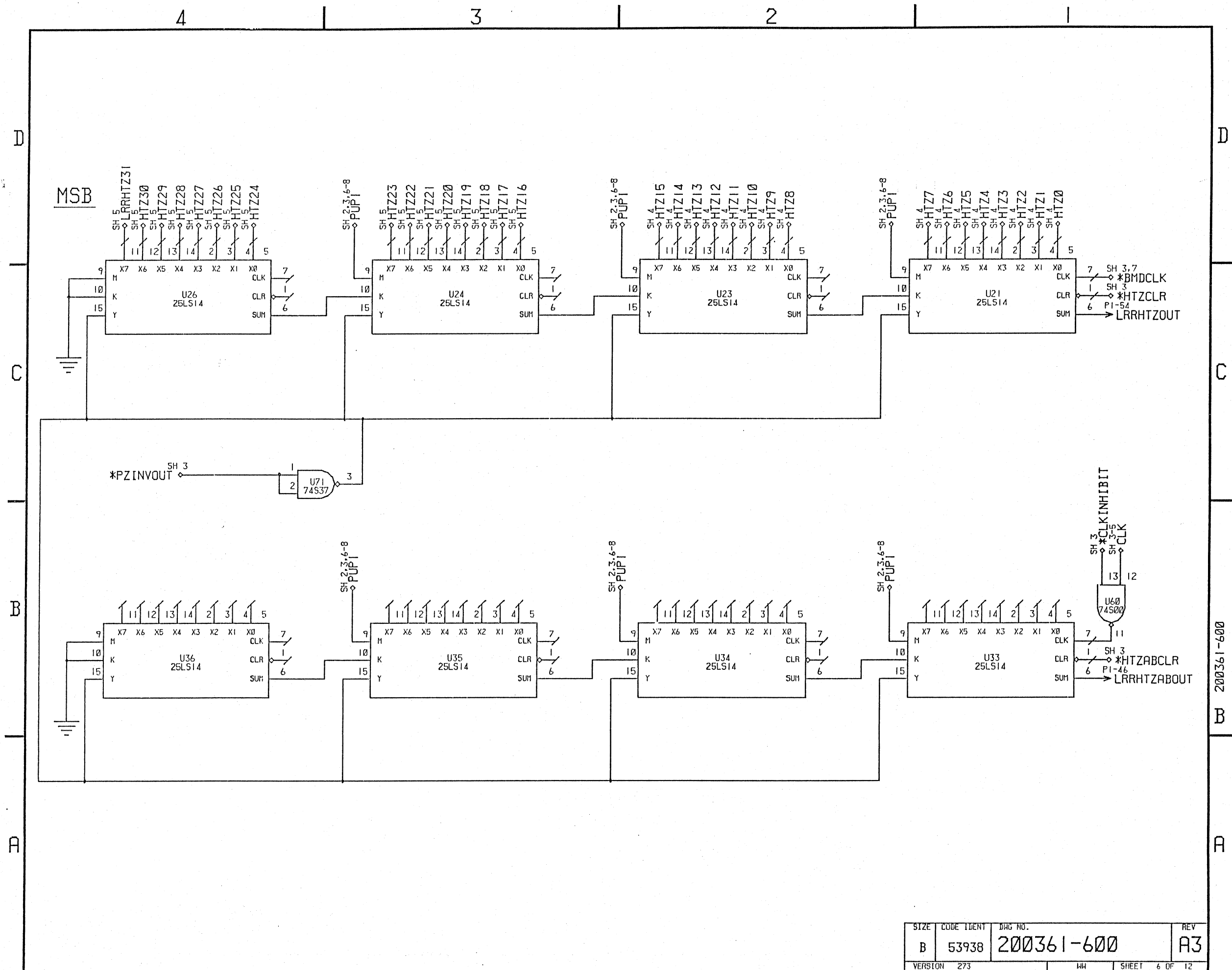
B 200361-600



UPPER HEIGHT MEMORY

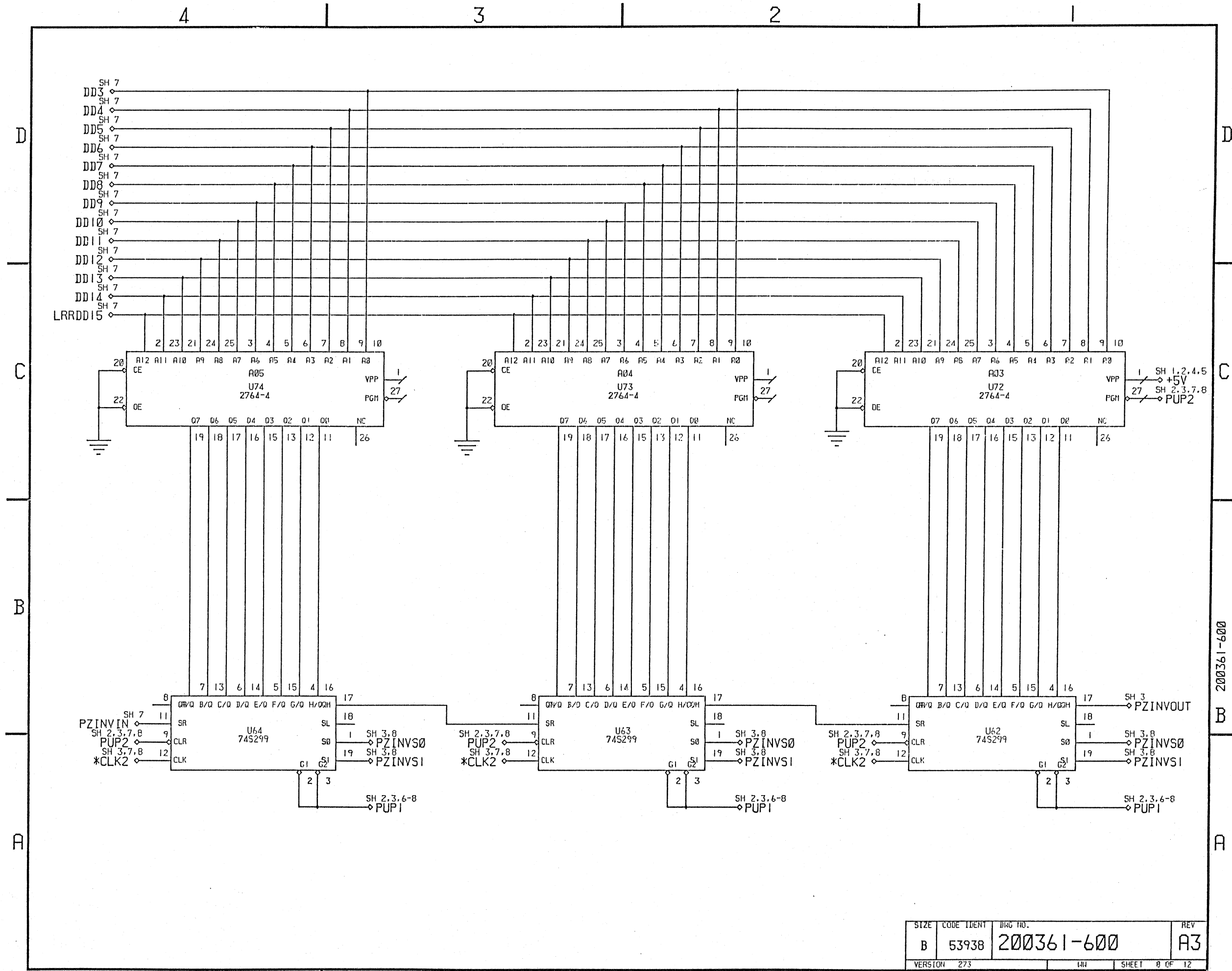
SIZE	CONF IDENT	DWG NO.	REV
B	53938	200361-600	A3
VERSION	273	HW	SHEET 5 OF 12

200361-600 B

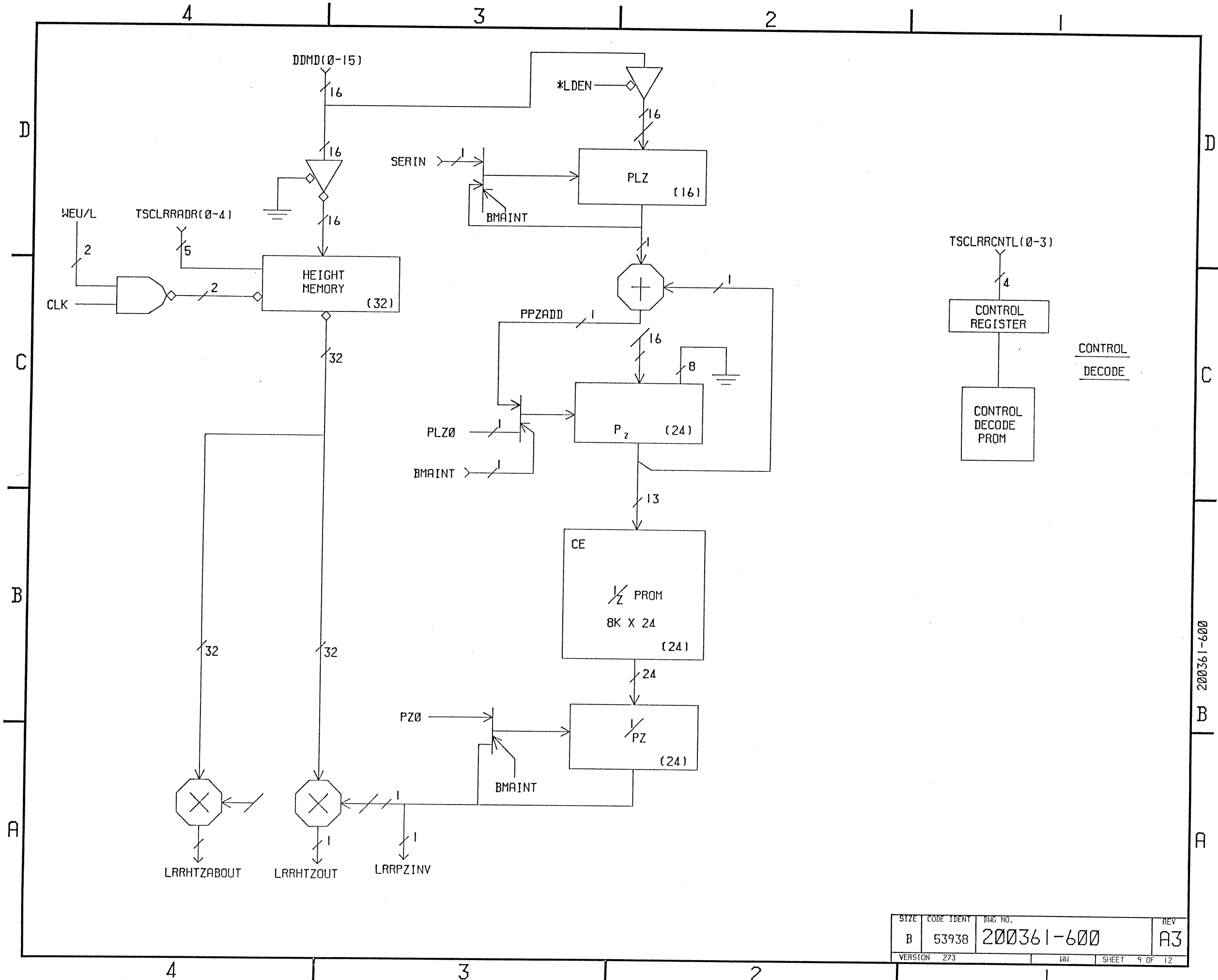


SIZE	CODE IDENT	DIAG NO.	REV
B	53938	200361-600	A3
VERSION	273	444	SHEET 6 OF 12

200361-600



SIZE	CODE IDENT	DRG NO.	REV
B	53938	200361-600	A3
VERSION	273	HW	SHEET 8 OF 12



200361-600

SIZE	CODE IDENT	DRG NO.	REV
B	53938	200361-600	A3
VERSION 273		HW	SHEET 9 OF 12

	4	3	2	1										
	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
	*CMCLK	PI	3	FEMALE	3	A4		TSLCRRCTL3	PI	14	FEMALE	3	C4	
	*TFDBMAINT	PI	7	FEMALE	3	B4								
D	+5VIN	PI	2	FEMALE	3	A4								
	+5VIN	PI	4	FEMALE	3	A4								
	+5VIN	PI	6	FEMALE	3	A4								
	DDMD0	PI	59	FEMALE	4	D4								
	DDMD1	PI	63	FEMALE	4	D4								
	DDMD10	PI	70	FEMALE	4	D2								
	DDMD11	PI	72	FEMALE	4	D2								
	DDMD12	PI	74	FEMALE	4	D1								
	DDMD13	PI	76	FEMALE	4	D1								
	DDMD14	PI	78	FEMALE	4	D1								
	DDMD15	PI	80	FEMALE	4	D1								
	DDMD2	PI	65	FEMALE	4	D4								
	DDMD3	PI	67	FEMALE	4	D4								
C	DDMD4	PI	58	FEMALE	4	D3								
	DDMD5	PI	60	FEMALE	4	D3								
	DDMD6	PI	62	FEMALE	4	D3								
	DDMD7	PI	64	FEMALE	4	D3								
	DDMD8	PI	66	FEMALE	4	D2								
	DDMD9	PI	68	FEMALE	4	D2								
	GROUND	PI	1	FEMALE	1	C4								
	GROUND	PI	11	FEMALE	1	C4								
	GROUND	PI	21	FEMALE	1	B4								
	GROUND	PI	31	FEMALE	1	B4								
	GROUND	PI	41	FEMALE	1	B4								
	GROUND	PI	51	FEMALE	1	B4								
	GROUND	PI	61	FEMALE	1	B4								
B	GROUND	PI	71	FEMALE	1	B4								
	LRRDD15	PI	8	MALE	7	B4								
	LRRHTZABOUT	PI	46	MALE	6	B1								
	LRRHTZOUT	PI	54	MALE	6	C1								
	LRRPZINV	PI	15	MALE	3	B1								
	LRRSEROUT	PI	30	MALE	3	C4								
	SERIN	PI	40	FEMALE	7	B3								
	TSLCRRADR0	PI	69	FEMALE	4	C4								
	TSLCRRADR1	PI	73	FEMALE	4	C4								
	TSLCRRADR2	PI	75	FEMALE	4	C4								
	TSLCRRADR3	PI	77	FEMALE	4	B4								
	TSLCRRADR4	PI	79	FEMALE	4	B4								
	TSLCRRCTL0	PI	20	FEMALE	3	C4								
A	TSLCRRCTL1	PI	18	FEMALE	3	C4								
	TSLCRRCTL2	PI	16	FEMALE	3	C4								

200361-600
B
A

CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200361-600	A3
VERSION 273		CS	SHEET 11 OF 12

PAGE TYPE PAGE NAME

1 PC
2 WW
3 WW
4 WW
5 WW
6 WW
7 WW
8 WW
9 WW

D

C

B

A

D

C

B 200361-600

A

TABLE OF CONTENTS

SIZE	CODE IDENT	DRG NO.	REV
B	53938	200361-600	A3
VERSION	273	TC	SHEET 12 OF 12

4

3

2

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200362-100

REV: A1 = AB

DESC: CARD ASSY, LRB-LINE RATE BAND WIDTH LIMITER (W/W)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD,WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
C4 C5 C7 C8 C10 C11 C15 C17	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C22 C24 C29 C31 C36 C39 C40	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	25
C42 C43 C44 C45 C46 C47 C48						
C49 C50 C51						
C52 C53 C54 C55 C56 C57 C58	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	26
C59 C60 C61 C62 C63 C64 C65						
C66 C67 C68 C69 C70 C71 C72						
C73 C74 C75 C76 C77						
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 7A	75915	LITTELFUSE TRACOR INC.	251 007 (7A,AXIAL)	802375-070	1
M2	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8(SM-P-PH-Z)	802056-003	3
M6 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
M7 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	1210
R1 R2 R3	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	3
U10 U22 U30 U31 U32 U33 U42	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	13
U43 U44 U50 U51 U52 U72						
U11	IC,PROM,35NS,32X8,BI	53938	EVANS & SUTHERLAND.	807739-035-A02	807739-035-A02	1
U12	IC,PROM,35NS,32X8,BI	53938	EVANS & SUTHERLAND.	807739-035-A03	807739-035-A03	1
U13	IC,PROM,35NS,32X8,BI	53938	EVANS & SUTHERLAND.	807739-035-A04	807739-035-A04	1
U14 U15 U34 U35 U36 U45 U46	IC,TTL 9328	04713	MOTOROLA INC. SEMI PRODUC	MC9328P/L	807628-646	16
U55 U56 U57 U64 U65 U66 U73						
U76 U77						
U16	IC,TTL 25LS15	34335	ADVANCED MICRO DEVICES IN	AM25LS15PC/74LS385	807799-055	1
U20 U21 U53 U54 U60 U61 U74	IC,TTL 25LS14	34335	ADVANCED MICRO DEVICES IN	AM25LS14APC/DC	807798-055	8
U75						
U23	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	1
U24	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	1
U25	IC,PROM,35NS,32X8,BI	53938	EVANS & SUTHERLAND.	807739-035-A05	807739-035-A05	1
U26 U27	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	2
U37	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U40 U41	IC,TTL 74S241	27014	NATIONAL SEMICONDUCTOR	DM74S241N	807793-055	2
U62 U63	IC,TTL 74S299	27014	NATIONAL SEMICONDUCTOR	DM74S299N-A+	807737-055	2
U70	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1
U71	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1

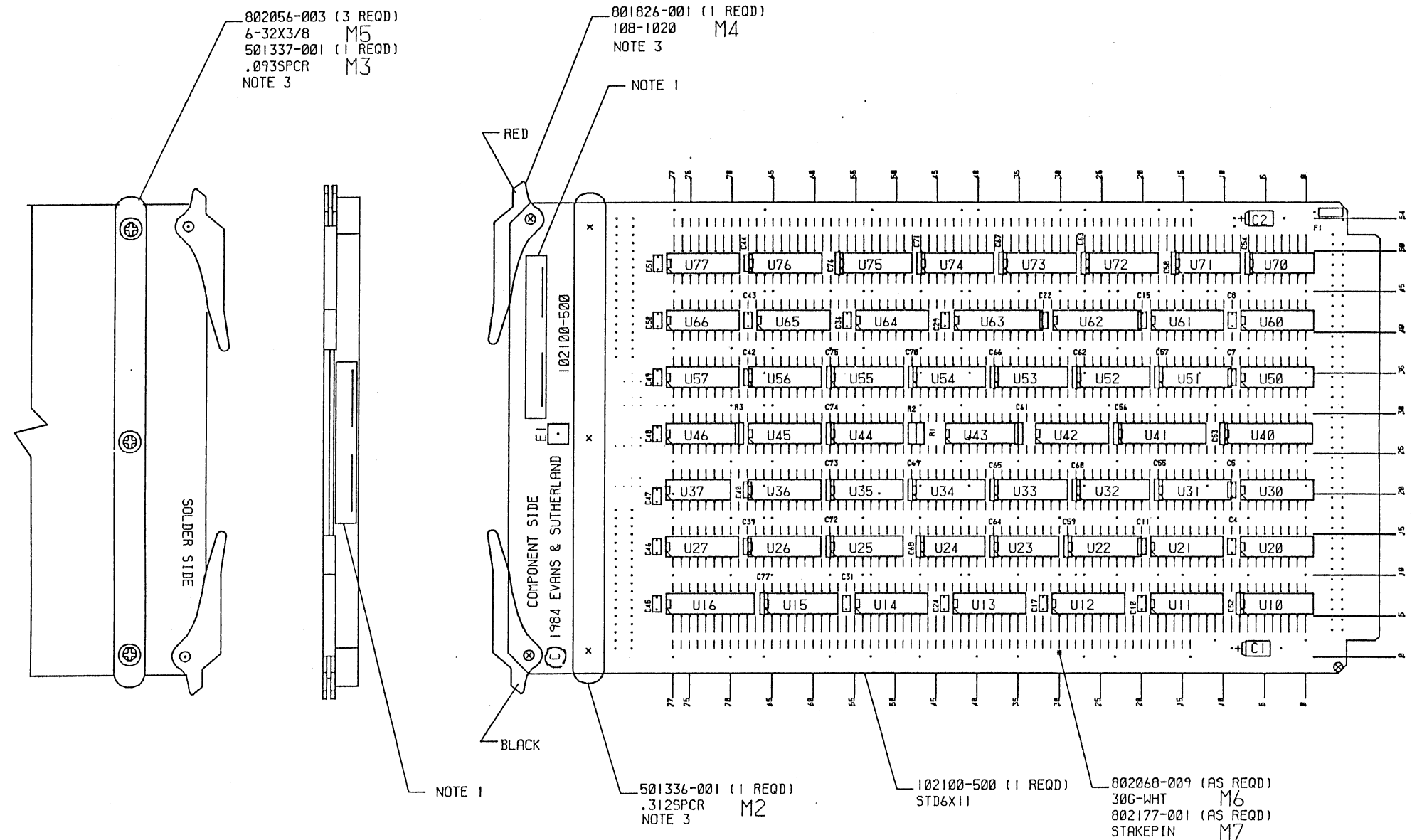
29 ITEMS LISTED



4 | 3 | 2 |

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A1	REDRAWN IN CADOL AND MOVED C47 DOWN ONE PIN.	10-08-86	<i>S. Barber</i>

D
C
B
A



- 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 (M4) AND SPACERS (M2 & M3) AFTER WAVE SOLDERING.

REFERENCE DOCUMENTS
 SCHEMATIC _ _ 200362-600
 PARTS LIST _ _ PL200362-100

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DRAWN	S. BARBER	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
CHECKED	<i>D. Gardiner</i> 10-16-86	TITLE		
ELEC ENG	D. GARDINER	ASSY. LRB - LINE RATE BAND WIDTH LIMITER (W/W)		
PROJ ENG	P. SKOLMOSKI	SIZE	CODE IDENT	DWG. NO.
APPROVED		C	53938	200362-100
NEXT ASSY		REV	A1	
MODIFIED DATE	8-OCT-86	VERSION	13W	SHEET 1 OF 1
CREATION DATE	16-MAR-81			
FILE NAME	200362100A1.MDF			

200362-100
B
A

4 | 3 | 2 |



4

3

2

NOTES: UNLESS OTHERWISE SPECIFIED:

- 1. RESISTANCE VALUES ARE IN OHMS + - 5% . 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 \rangle

OUTPUT SIGNALS \rangle

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

$\text{---} // \text{---}$

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	RC1	ONE CHANGE ON SHEET 9 ONLY	J.S.	01-15-82
	RC2	CHANGE TEXT ON PAGES 7,8,9.	S.B.	5-11-82
	RC3	MINOR CHANGE ON BLOCK ONLY	SB	9-23-82
	AI	CHANGED PROM FROM B07739-045 TO B07739-035, S.B.	10-08-86	<i>[Signature]</i>

D

C

B

A

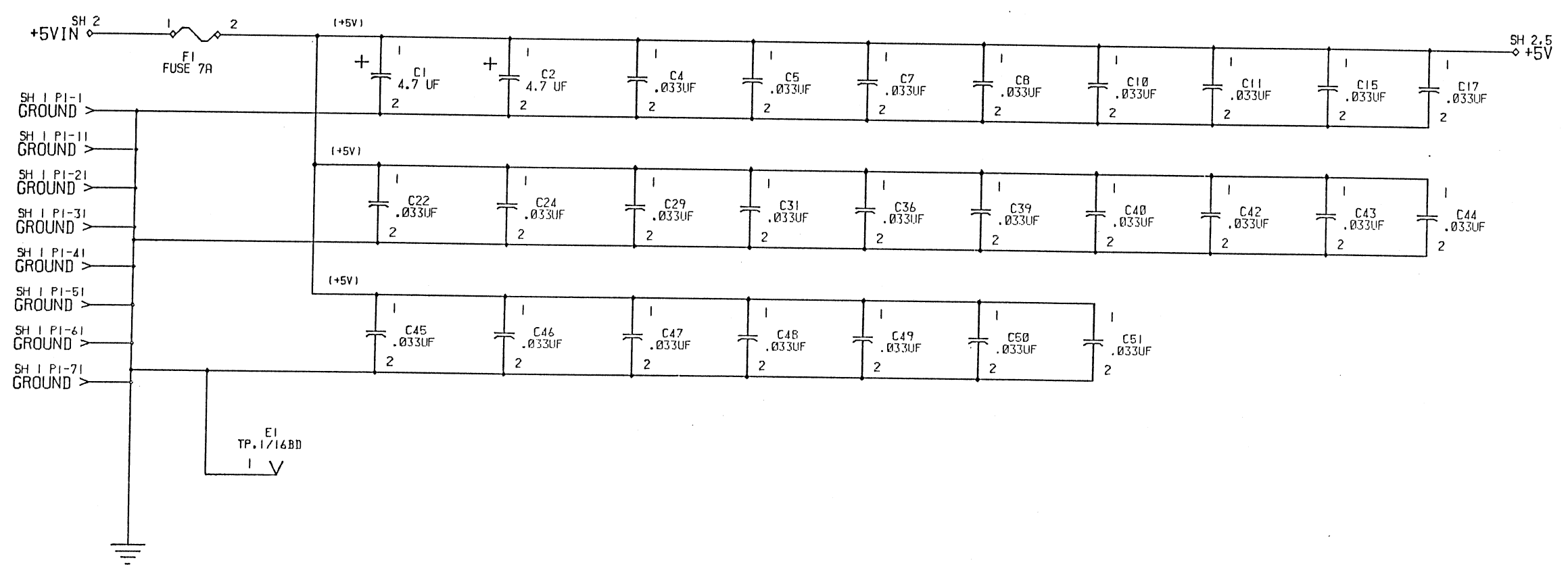
D

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200362-600



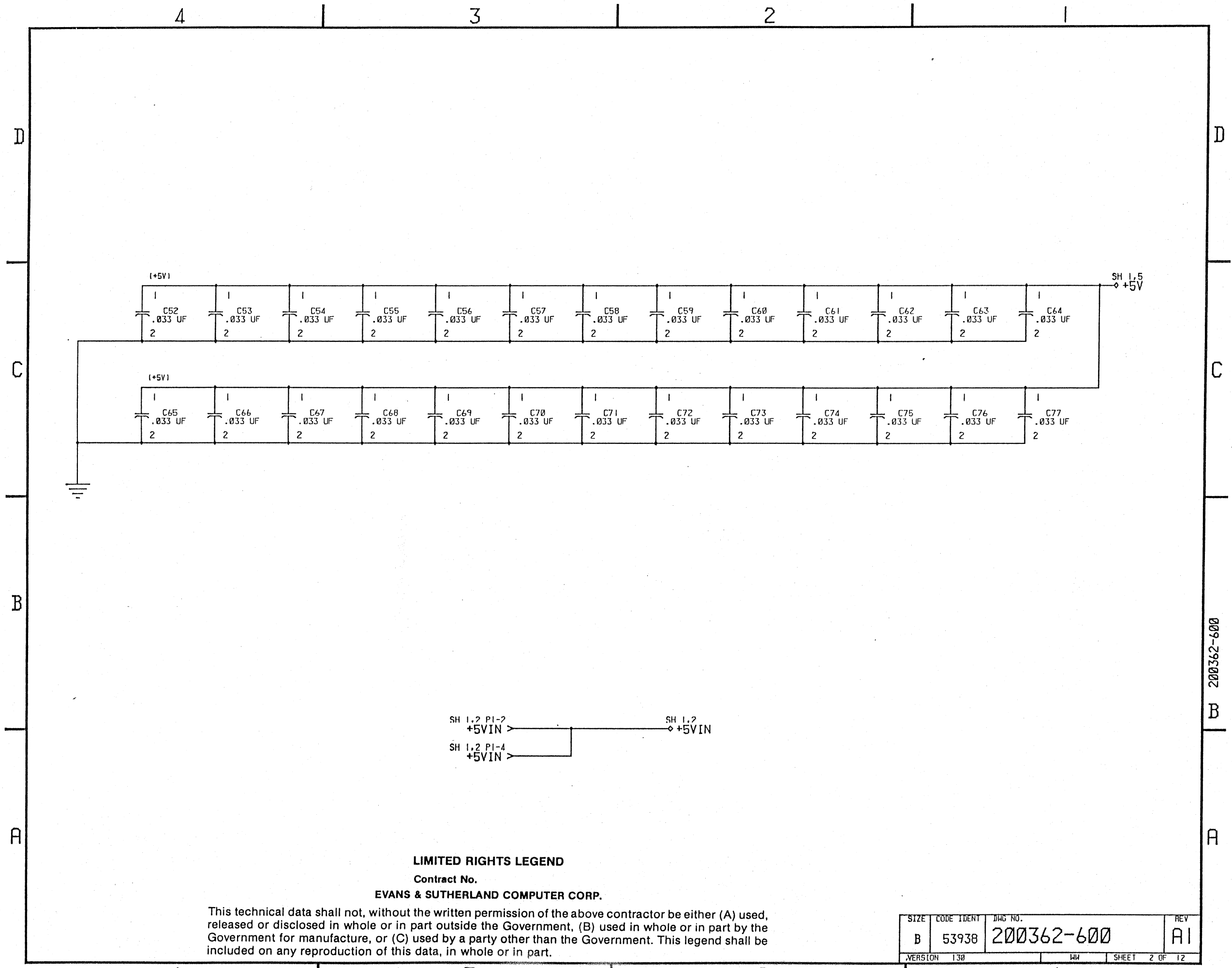
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DRAWN	S SASSO	EVANS & SUTHERLAND	
CHECKED	<i>[Signature]</i> 10-16-86	SALT LAKE CITY, UTAH 84108	
ELEC ENG	D. GARDINER	TITLE	
PROJ ENG	P SKOLMOSKI	LRB - LINE RATE BAND	
APPROVED		WIDTH LIMITER (W/W)	
NEXT ASSY		SIZE	CODE IDENT
MODIFIED DATE	8-OCT-86	B	53938
CREATION DATE	16-MAR-81	Dwg. No. 200362-600	
FILE NAME	200362100A1.MDF	REV	AI
VERSION 130		PC SHEET 1 OF 12	

4

3

2



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Contract No.

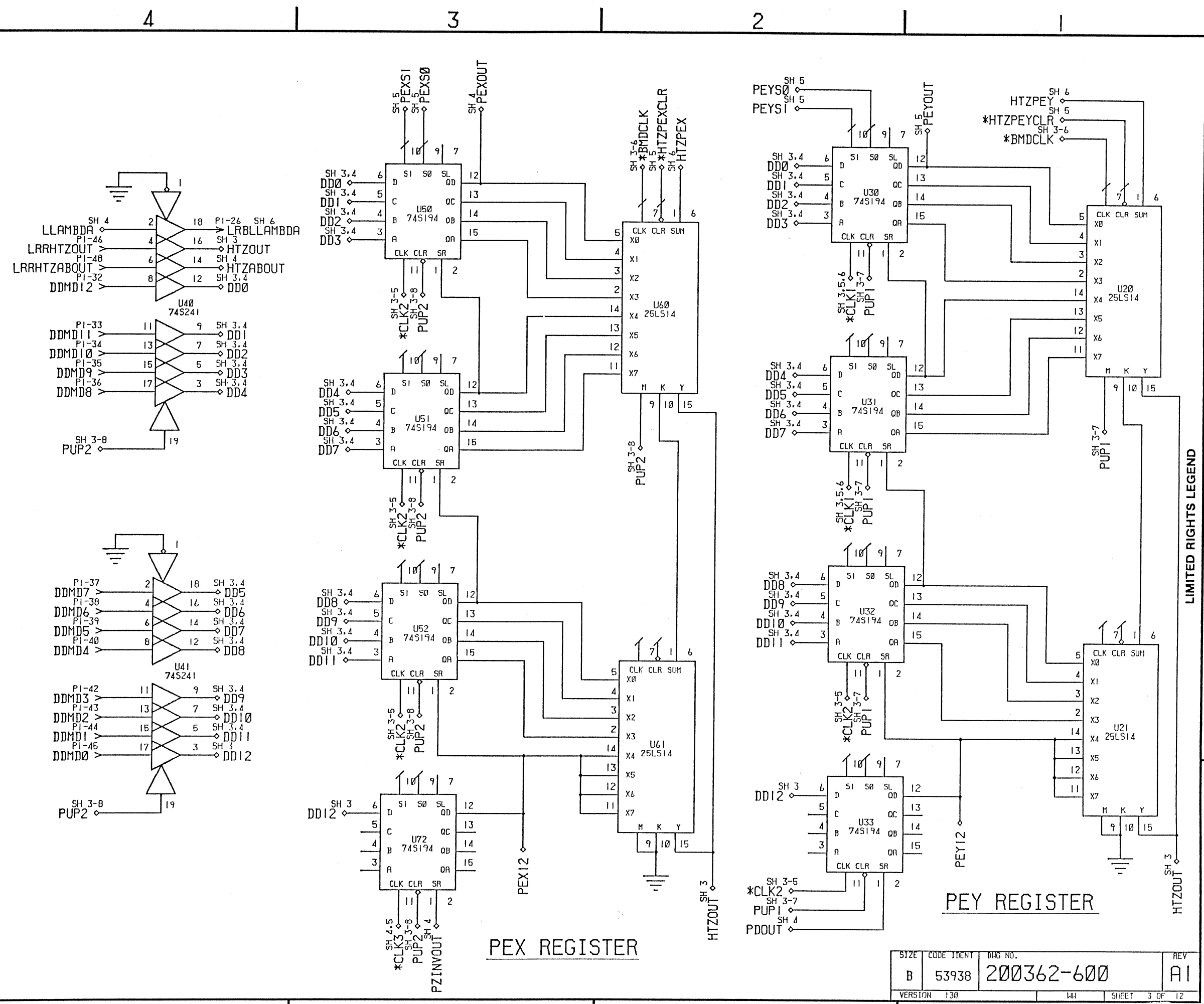
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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200362-600	A1
VERSION	130	WH	SHEET 2 OF 12

B 200362-600

D
 C
 B
 A



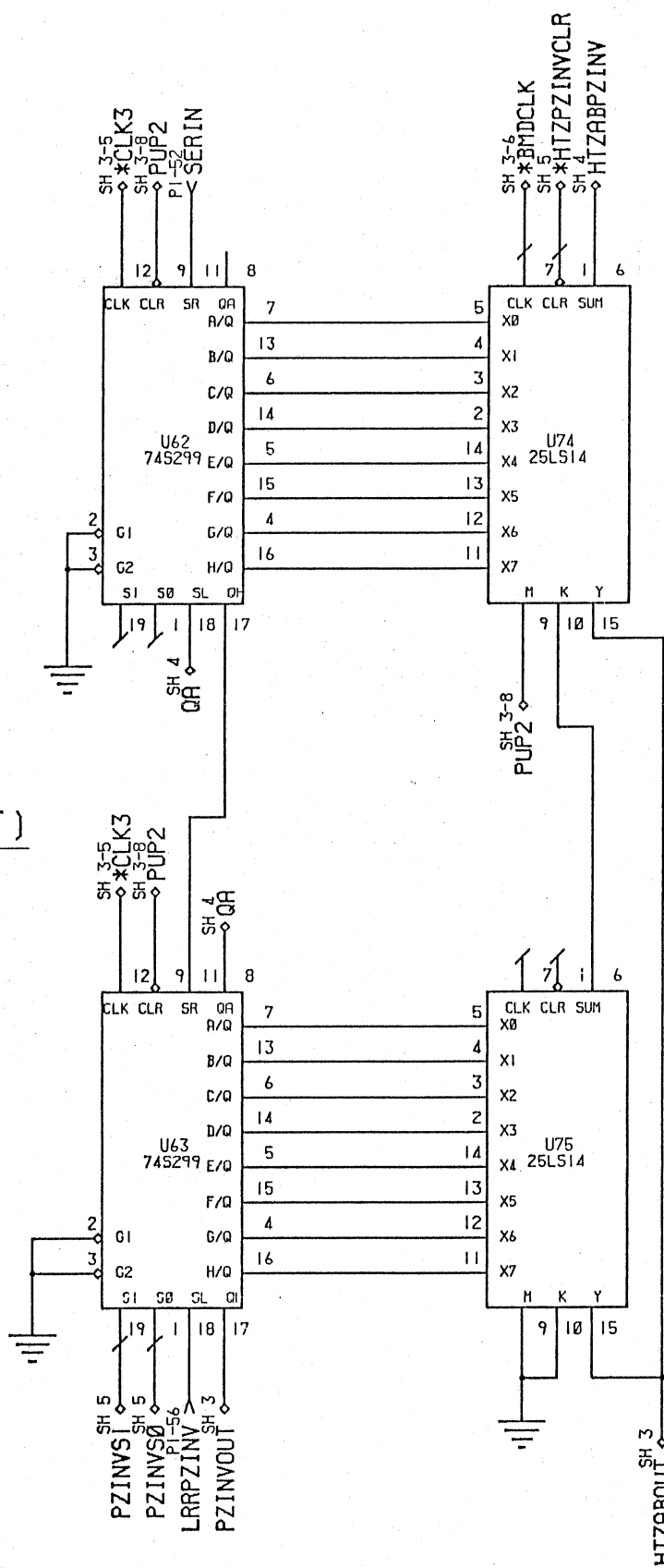
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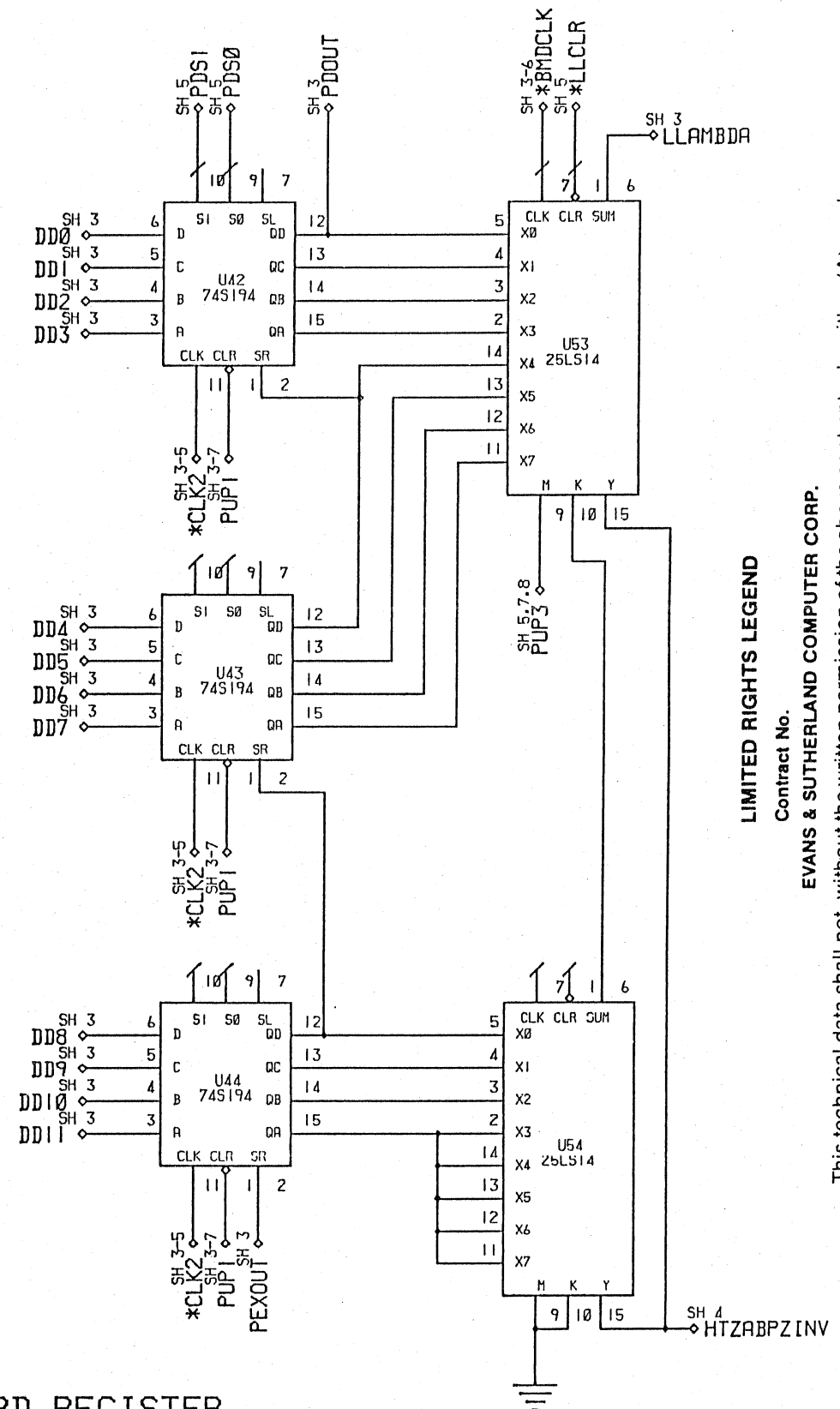
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200362-600	A1
VERSION	130	WH	SHEET 3 OF 12

INVPZ
(NDL - MSB FIRST)



I/PZ REGISTER

PD REGISTER



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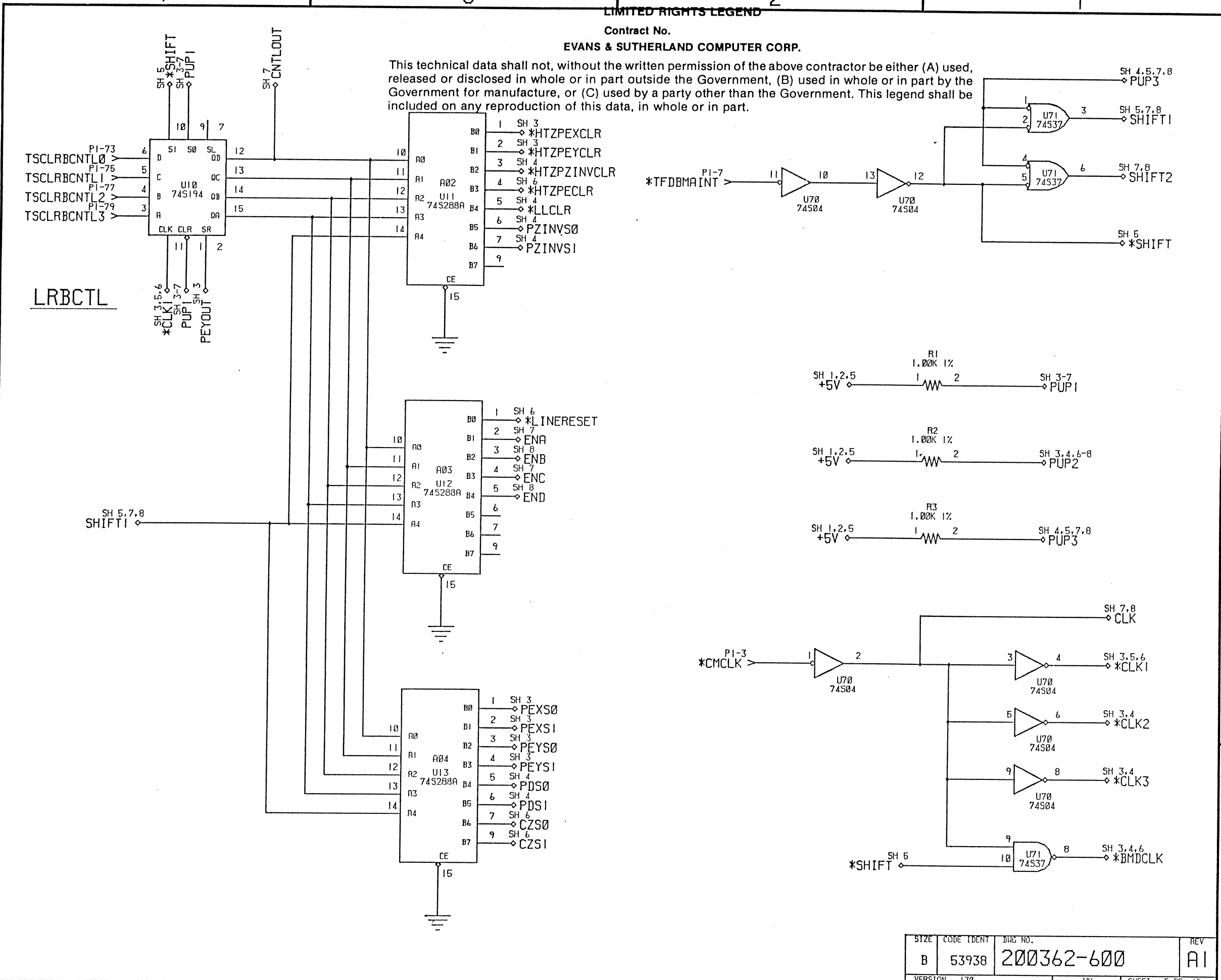
B 200362-600

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200362-600	A1
VERSION	130	LW	SHEET 4 OF 12

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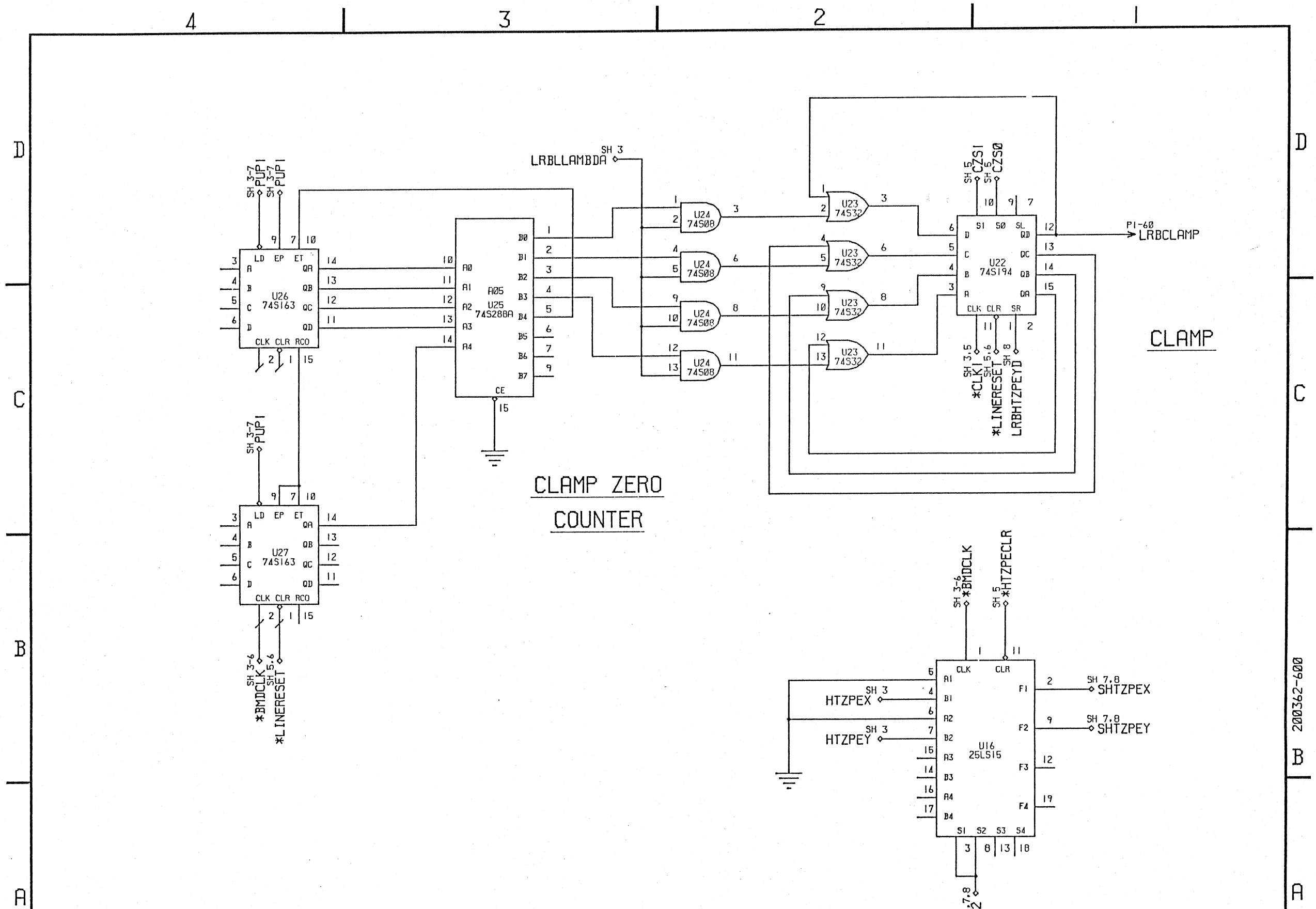
D
C
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D
C
B
A

200362-600

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200362-600	A1
VERSION	1.30	WH	SHEET 5 OF 12



CLAMP ZERO
COUNTER

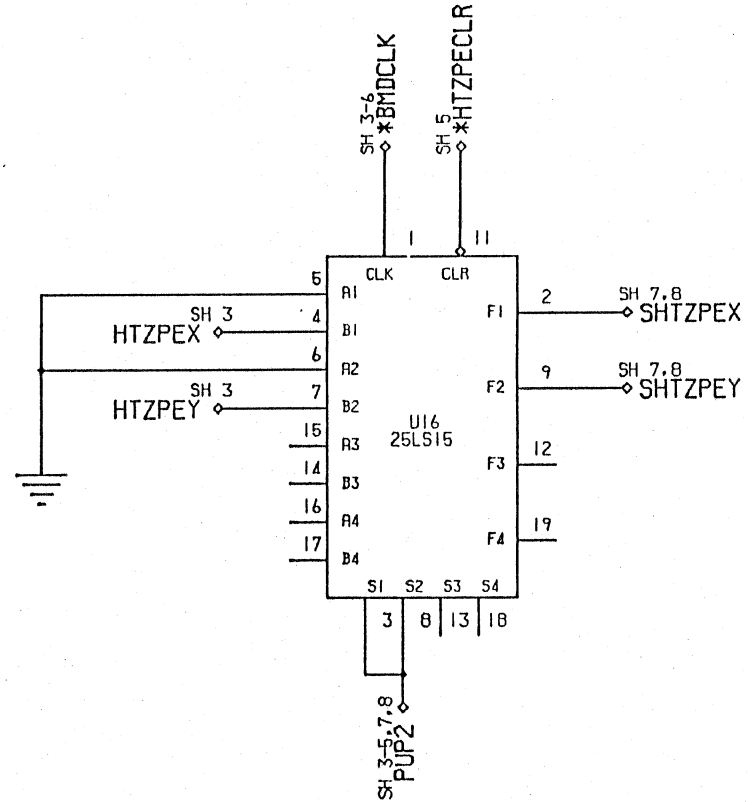
CLAMP

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Contract No.

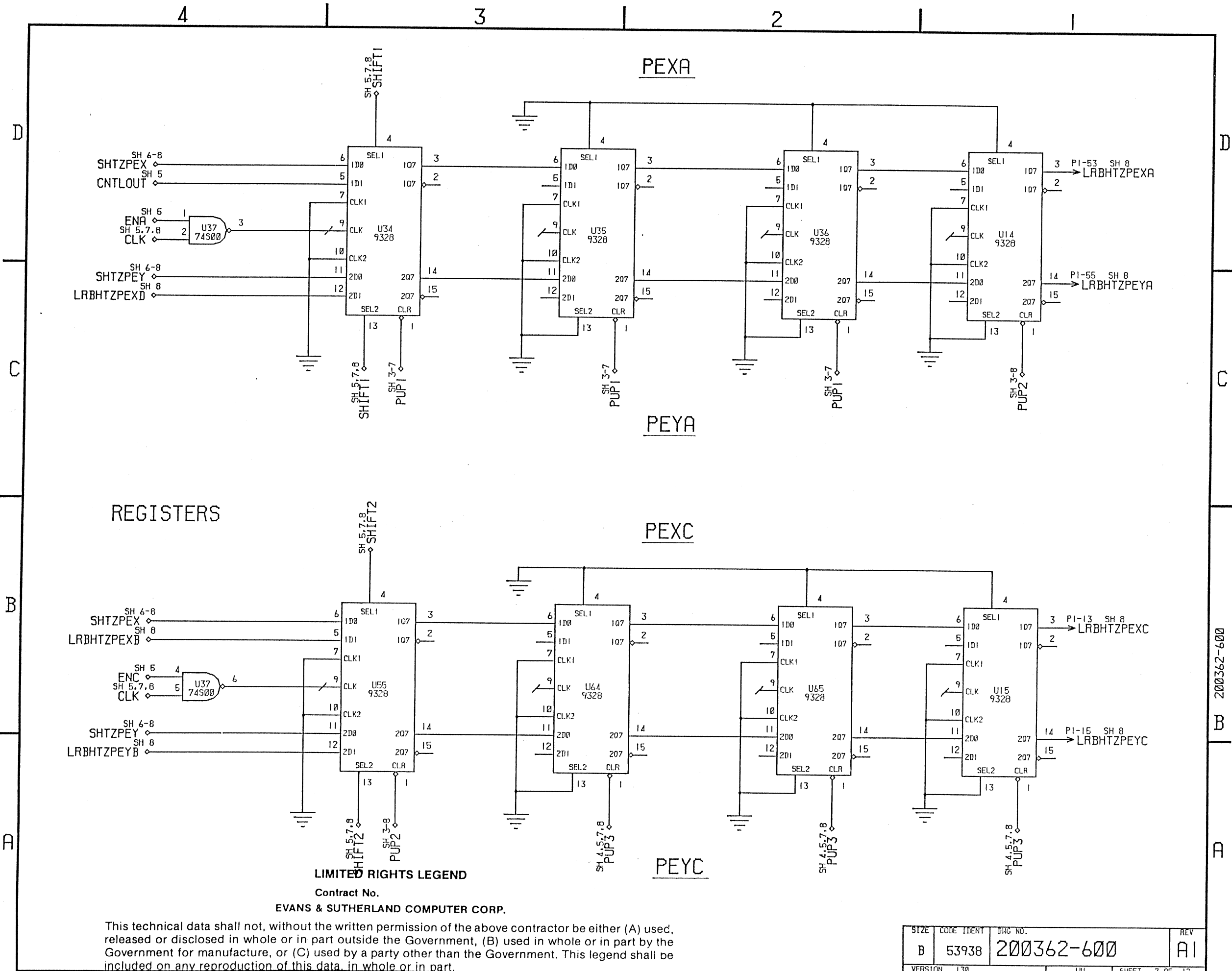
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SIZE	CODE IDENT	DIAG NO.	REV
B	53938	200362-600	A1
VERSION	130	WH	SHEET 6 OF 12

200362-600



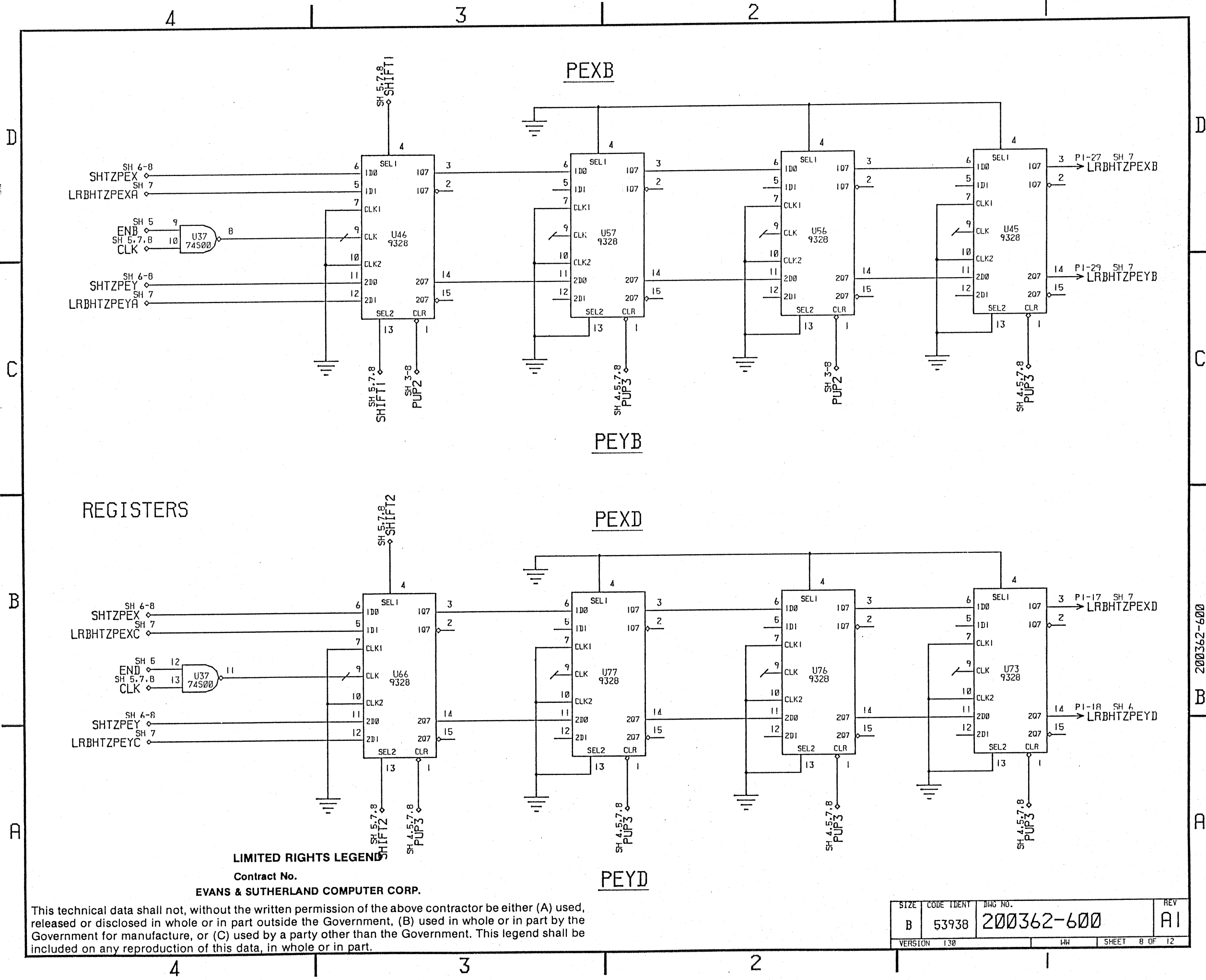
REGISTERS

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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200362-600	A1
VERSION	130	WH	SHEET 7 OF 12

200362-600



REGISTERS

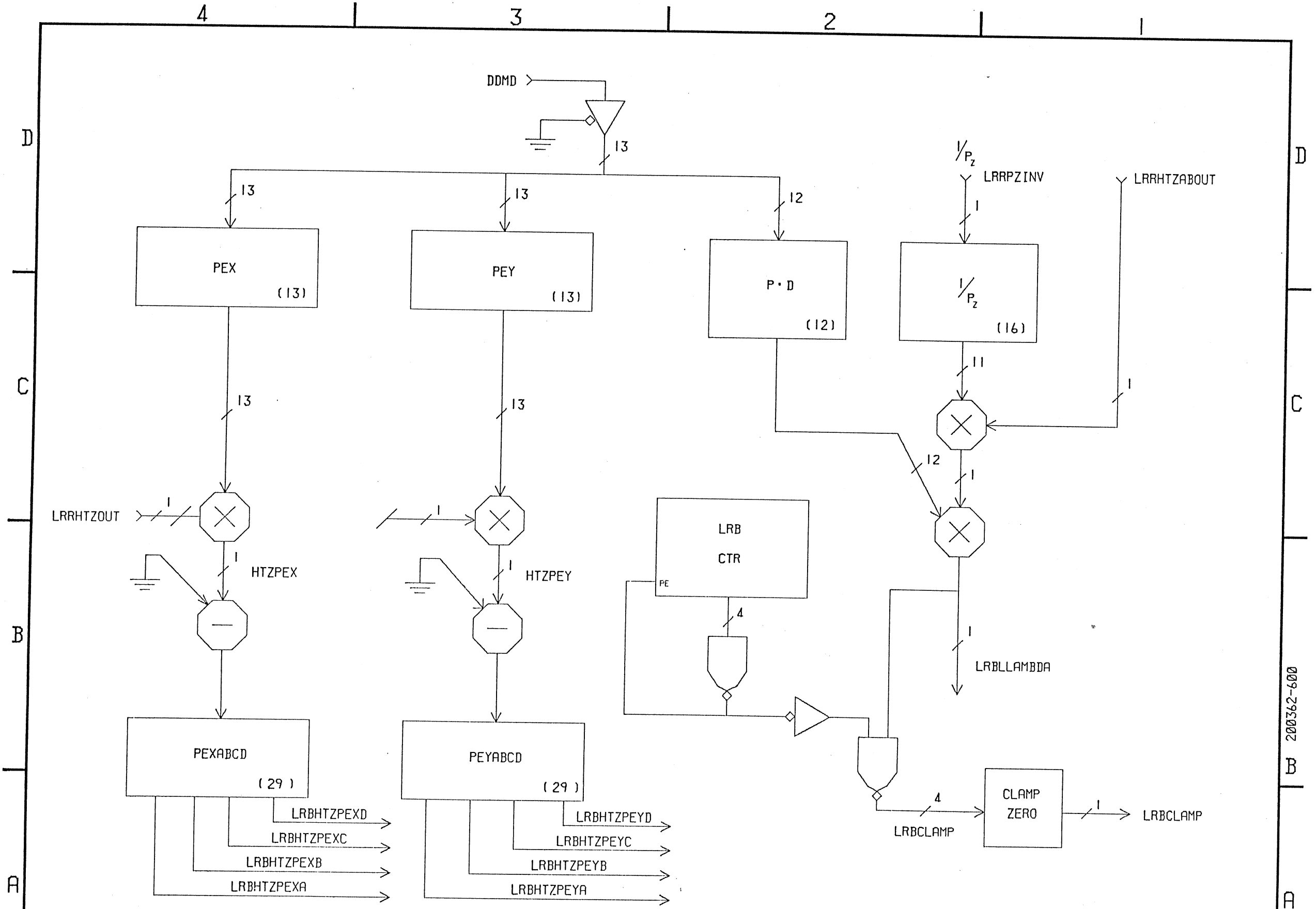
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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200362-600	A1
VERSION	130	WH	SHEET 8 OF 12

200362-600



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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200362-600	A1
VERSION	1.30	BL	SHEET 9 OF 12

200362-600

UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN
PI	1	FEMALE	GROUND	1	C4	
PI	2	FEMALE	+5VIN	2	B3	
PI	3	FEMALE	*CMCLK	5	B2	
PI	4	FEMALE	+5VIN	2	A3	
PI	7	FEMALE	*TFDBMAINT	5	D2	
PI	11	FEMALE	GROUND	1	C4	
PI	13	MALE	LRBHTZPEXC	7	B1	
PI	15	MALE	LRBHTZPEYC	7	B1	
PI	17	MALE	LRBHTZPEXD	8	B1	
PI	18	MALE	LRBHTZPEYD	8	B1	
PI	21	FEMALE	GROUND	1	C4	
PI	26	MALE	LRBLLAMBDA	3	D4	
PI	27	MALE	LRBHTZPEXB	8	D1	
PI	29	MALE	LRBHTZPEYB	8	C1	
PI	31	FEMALE	GROUND	1	B4	
PI	32	FEMALE	DDMD12	3	C4	
PI	33	FEMALE	DDMD11	3	C4	
PI	34	FEMALE	DDMD10	3	C4	
PI	35	FEMALE	DDMD9	3	C4	
PI	36	FEMALE	DDMD8	3	C4	
PI	37	FEMALE	DDMD7	3	B4	
PI	38	FEMALE	DDMD6	3	B4	
PI	39	FEMALE	DDMD5	3	B4	
PI	40	FEMALE	DDMD4	3	B4	
PI	41	FEMALE	GROUND	1	B4	
PI	42	FEMALE	DDMD3	3	B4	
PI	43	FEMALE	DDMD2	3	B4	
PI	44	FEMALE	DDMD1	3	B4	
PI	45	FEMALE	DDMD0	3	B4	
PI	46	FEMALE	LRRHTZOUT	3	D4	
PI	48	FEMALE	LRRHTZABOUT	3	D4	
PI	51	FEMALE	GROUND	1	B4	
PI	52	FEMALE	SERIN	4	D3	
PI	53	MALE	LRBHTZPEXA	7	D1	
PI	55	MALE	LRBHTZPEYA	7	C1	
PI	56	FEMALE	LRRPZINV	4	A3	
PI	60	MALE	LRBCLAMP	6	D1	
PI	61	FEMALE	GROUND	1	B4	
PI	71	FEMALE	GROUND	1	B4	
PI	73	FEMALE	TSCLRBCNTL0	5	D4	
PI	75	FEMALE	TSCLRBCNTL1	5	D4	
PI	77	FEMALE	TSCLRBCNTL2	5	D4	
PI	79	FEMALE	TSCLRBCNTL3	5	D4	

D
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D
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200362-600

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CONNECTORS BY UNIT/PIN

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200362-600	A1
VERSION	130	CS	SHEET 10 OF 12

4

3

2

1

4

3

2

1

4 3 2 1

STRING NAME UNIT PIN PIN-TYPE PAGE ZONE DOMAIN

*CMCLK	PI	3	FEMALE	5	B2
*TFDBMAINT	PI	7	FEMALE	5	D2
+5VIN	PI	2	FEMALE	2	B3
+5VIN	PI	4	FEMALE	2	A3
DDMD0	PI	45	FEMALE	3	B4
DDMD1	PI	44	FEMALE	3	B4
DDMD10	PI	34	FEMALE	3	C4
DDMD11	PI	33	FEMALE	3	C4
DDMD12	PI	32	FEMALE	3	C4
DDMD2	PI	43	FEMALE	3	B4
DDMD3	PI	42	FEMALE	3	B4
DDMD4	PI	40	FEMALE	3	B4
DDMD5	PI	39	FEMALE	3	B4
DDMD6	PI	38	FEMALE	3	B4
DDMD7	PI	37	FEMALE	3	B4
DDMD8	PI	36	FEMALE	3	C4
DDMD9	PI	35	FEMALE	3	C4
GROUND	PI	1	FEMALE	1	C4
GROUND	PI	11	FEMALE	1	C4
GROUND	PI	21	FEMALE	1	C4
GROUND	PI	31	FEMALE	1	B4
GROUND	PI	41	FEMALE	1	B4
GROUND	PI	51	FEMALE	1	B4
GROUND	PI	61	FEMALE	1	B4
GROUND	PI	71	FEMALE	1	B4
LRBCLAMP	PI	60	MALE	6	D1
LRBHTZPEXA	PI	53	MALE	7	D1
LRBHTZPEXB	PI	27	MALE	8	D1
LRBHTZPEXC	PI	13	MALE	7	B1
LRBHTZPEXD	PI	17	MALE	8	B1
LRBHTZPEYA	PI	55	MALE	7	C1
LRBHTZPEYB	PI	29	MALE	8	C1
LRBHTZPEYC	PI	15	MALE	7	B1
LRBHTZPEYD	PI	18	MALE	8	B1
LRBLLAMBDA	PI	26	MALE	3	D4
LRRHTZABOUT	PI	48	FEMALE	3	D4
LRRHTZOUT	PI	46	FEMALE	3	D4
LRRPZINV	PI	56	FEMALE	4	A3
SERIN	PI	52	FEMALE	4	D3
TSCLABCNTL0	PI	73	FEMALE	5	D4
TSCLABCNTL1	PI	75	FEMALE	5	D4
TSCLABCNTL2	PI	77	FEMALE	5	D4
TSCLABCNTL3	PI	79	FEMALE	5	D4

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CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200362-600	A1
VERSION	130	C5	SHEET 11 OF 12

200362-600

B

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4

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2

1

PAGE TYPE PAGE NAME

1 PC

2 WW

3 WW

4 WW

5 WW

6 WW

7 WW

8 WW

9 BL

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200362-600

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TABLE OF CONTENTS

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200362-600	A1
VERSION	130	TC	SHEET 12 OF 12

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1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200363-100

REV: A2 = AC

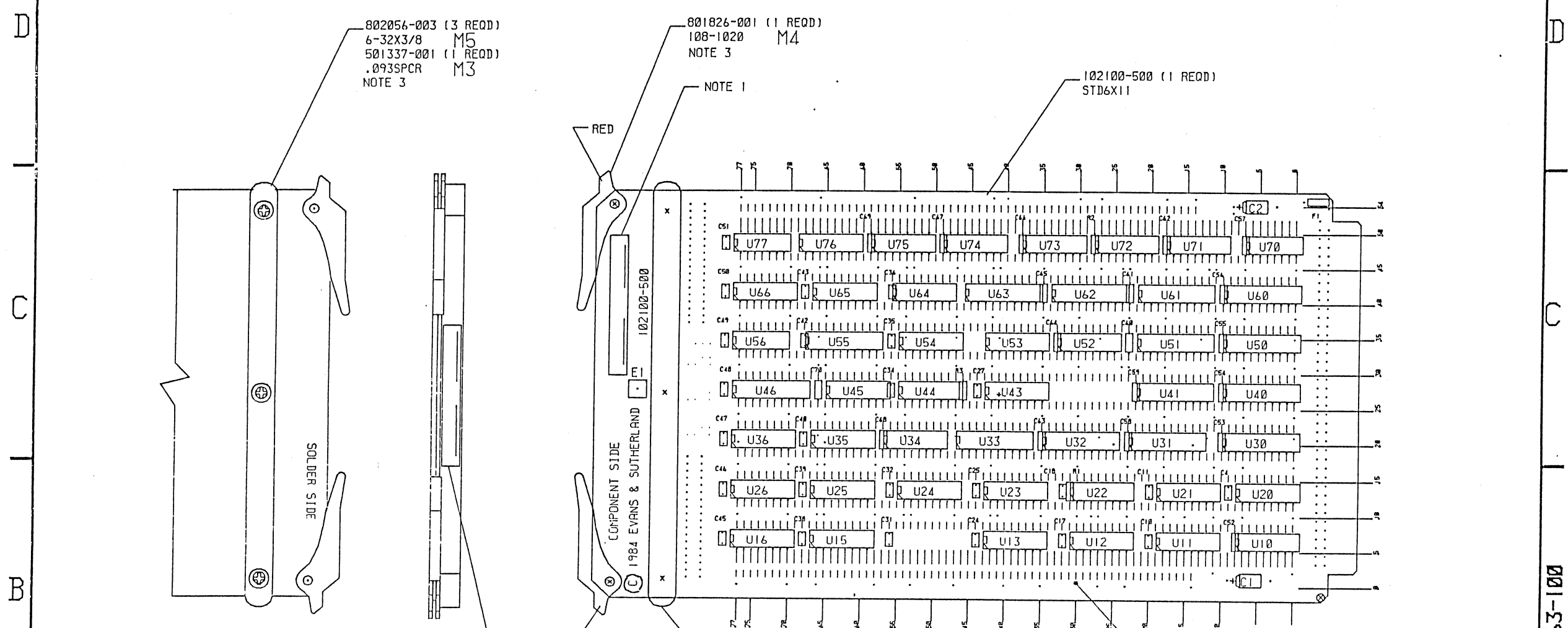
DESC: CARD ASSY, LRS-LINE RATE SCANNER (W/W)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD,WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
C4 C10 C11 C17 C18 C24 C25	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C27 C31 C32 C34 C35 C36 C38	C,,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	25
C39 C40 C42 C43 C45 C46 C47						
C48 C49 C50 C51						
C52 C53 C54 C55 C56 C57 C58	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	19
C59 C60 C61 C62 C63 C64 C65						
C66 C67 C68 C69 C70						
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 7A	75915	LITTELFUSE TRACOR INC.	251 007 (7A,AXIAL)	802375-070	1
M2	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
M6 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
M7 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	1156
R1 R2 R3	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	3
U10 U15 U16 U21 U22 U23 U24	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	15
U25 U26 U71 U72 U73 U74 U75						
U76						
U11	IC,PROM,35NS,32X8,BI	53938	EVANS & SUTHERLAND.	807739-035-A06	807739-035-A06	1
U12	IC,PROM,35NS,32X8,BI	53938	EVANS & SUTHERLAND.	807739-035-A07	807739-035-A07	1
U13	IC,PROM,35NS,32X8,BI	53938	EVANS & SUTHERLAND.	807739-035-A08	807739-035-A08	1
U20	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	1
U30 U31 U32 U33 U60 U61 U62	IC,TTL 74S299	27014	NATIONAL SEMICONDUCTOR	DM74S299N-A+	807737-055	8
U63						
U34 U35 U36 U64 U65 U66	IC,TTL 25LS14	34335	ADVANCED MICRO DEVICES IN	AM25LS14AP/DC	807798-055	6
U40 U50	IC,TTL 74S241	27014	NATIONAL SEMICONDUCTOR	DM74S241N	807793-055	2
U41 U51	IC,TTL 74S240	01295	TEXAS INSTR, SEMICON DIV.	SN74S240N/J	807792-020	2
U43 U44 U45 U52 U53 U54	IC,RAM 74S189	18324	SIGNETICS CORP. MILITARY	N74S189N	807734-036	6
U46 U55	IC,TTL 25LS15	34335	ADVANCED MICRO DEVICES IN	AM25LS15PC/74LS385	807799-055	2
U56 U77	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	2
U70	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1

26 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A2	CHANGED PROMS OF U11,U12,U13. SAD	10-17-86	<i>Spain</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 (M4) AND SPACERS (M2 & M3) AFTER WAVE SOLDERING.

REFERENCE DOCUMENTS
 SCHEMATIC _ _ 200363-600
 PARTS LIST _ PL200363-100

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DRAWN	KTRUSCOTT	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84140		
CHECKED	<i>C. Hall 10-21-86</i>	TITLE		
ELEC ENG	D. GARDINER	ASSY. LRS - LINE RATE SCANNER (W/W)		
PROJ ENG	P. SKOLMOSKI	REV		
APPROVED		SIZE	CODE IDENT	DWG NO.
NEXT ASSY		C	53938	200363-100
MODIFIED DATE	17-OCT-86	REV	A2	
CREATION DATE	6-MAR-81	VERSION	145	SHEET 1 OF 1
FILE NAME	200363100A2.MDF			

200363-100



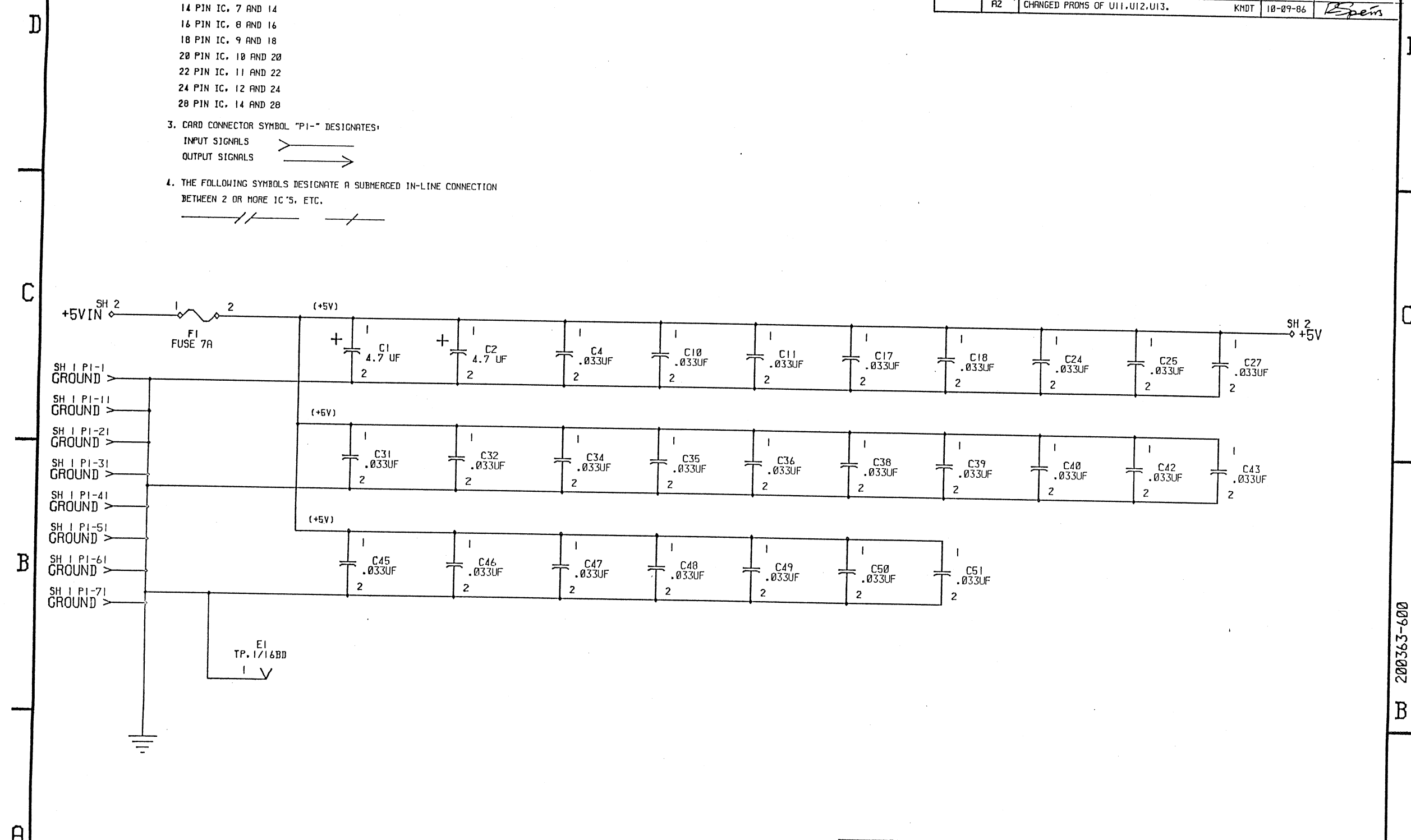
NOTES: UNLESS OTHERWISE SPECIFIED:

1. RESISTANCE VALUES ARE IN OHMS + - 5%, 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 \rightarrow
 - OUTPUT SIGNALS \leftarrow

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

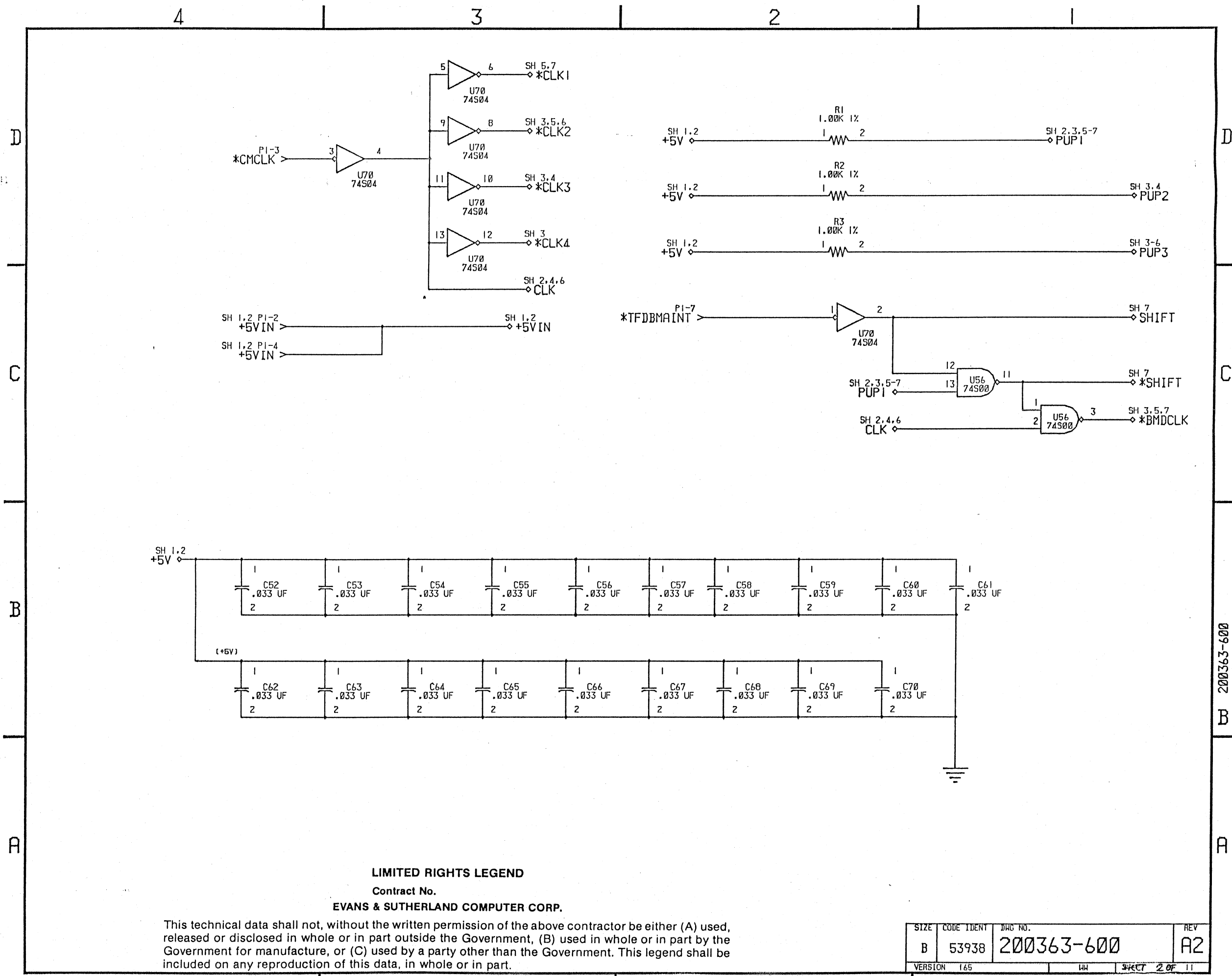
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	R1	ECO CHANGES	H.L.V. 01-08-82	
	RC1	CHANGE TEXT ON PAGES 3,4,5,6,8.	S.B. 5-11-82	
	RC2	MINOR CHANGES ON BLOCK ONLY	SB 9-23-82	
	R2	CHANGED PROMS OF U11,U12,U13.	KMDT 10-09-86	<i>B. Spens</i>



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DRAWN	S. SANSO	EVANS & SUTHERLAND	
CHECKED	K. MAHON <i>D. Hill 10-21-86</i>	SALT LAKE CITY, UTAH 84108	
ELEC ENG	D. GARDNER	TITLE	
PROJ ENG	P. SKOLMOSKI	LRS - LINE RATE SCANNER	
APPROVED	B. ALLEN	(W/W)	
NEXT ASSY		SIZE	REV
MODIFIED DATE	17-OCT-86	B	A2
CREATION DATE	6-MAR-81	CODE IDENT	
FILE NAME	2003631002.MDF	DWG NO.	
		B	53938
		200363-600	
		VERSION	165
		PC	SHEET 1 OF 11

200363-600



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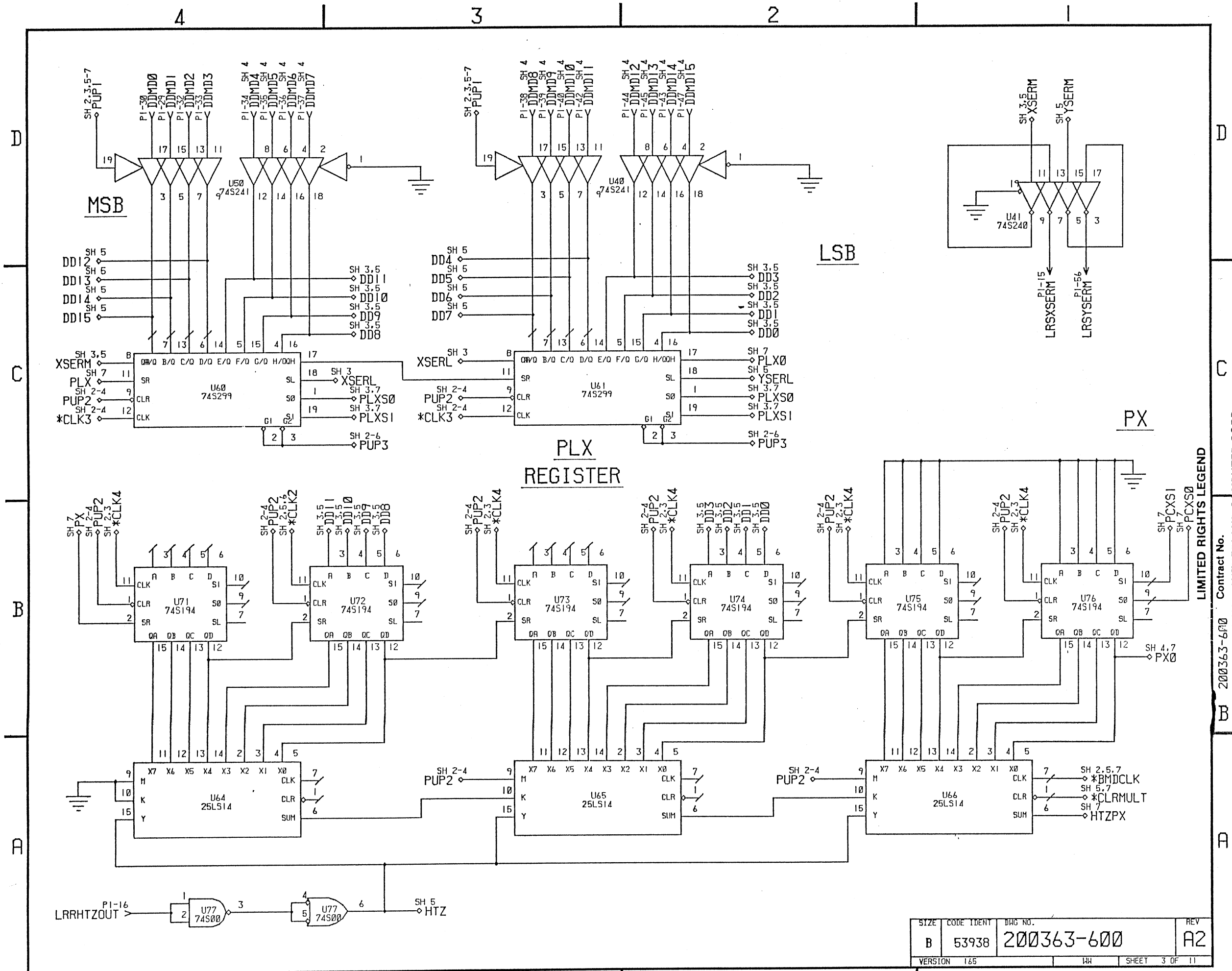
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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200363-600	A2
VERSION	165	DATE	SHEET 2 OF 11

200363-600

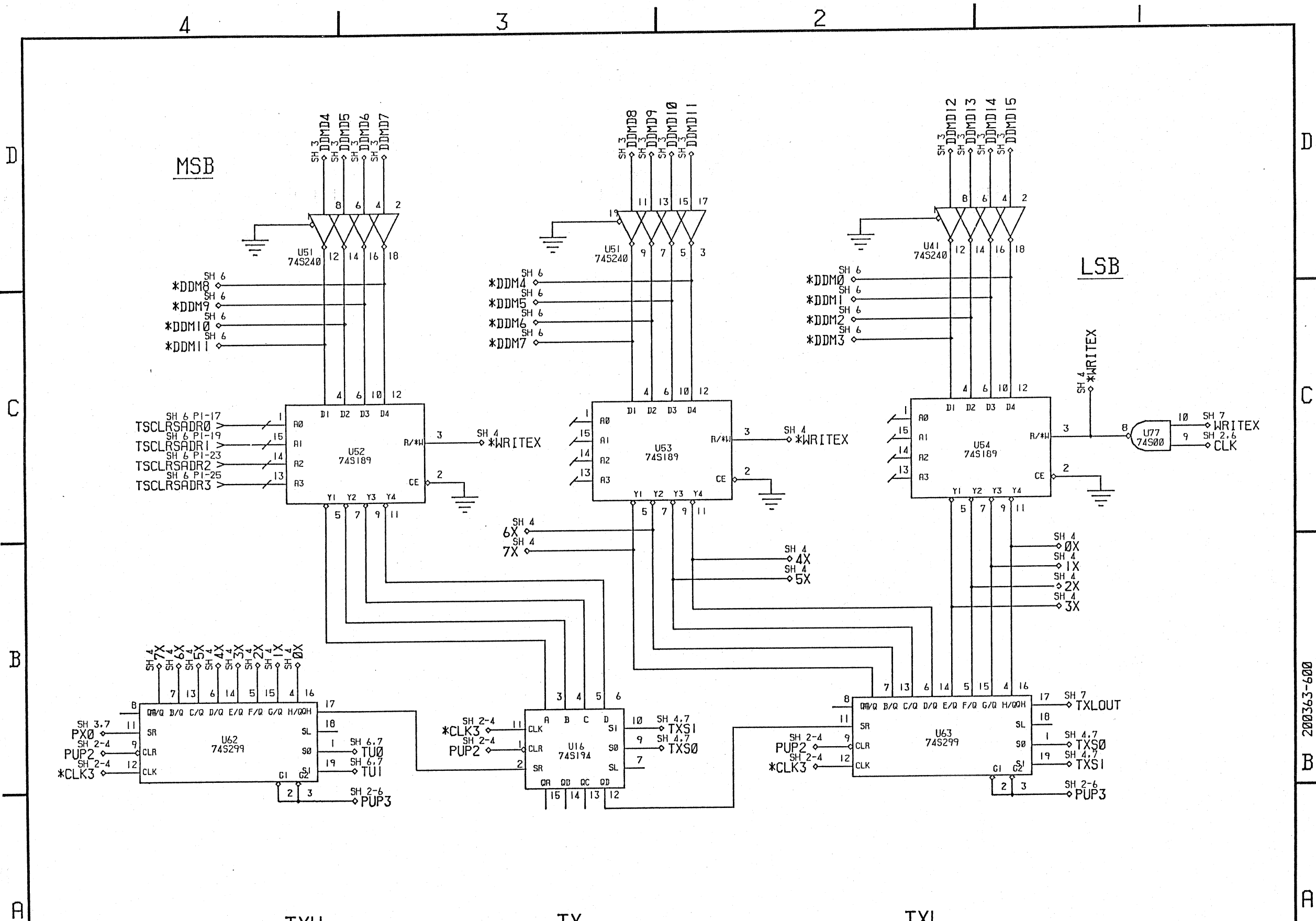


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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200363-600	A2
VERSION 1&5	WH	SHEET 3 OF 11	



TXU

TX

TXL

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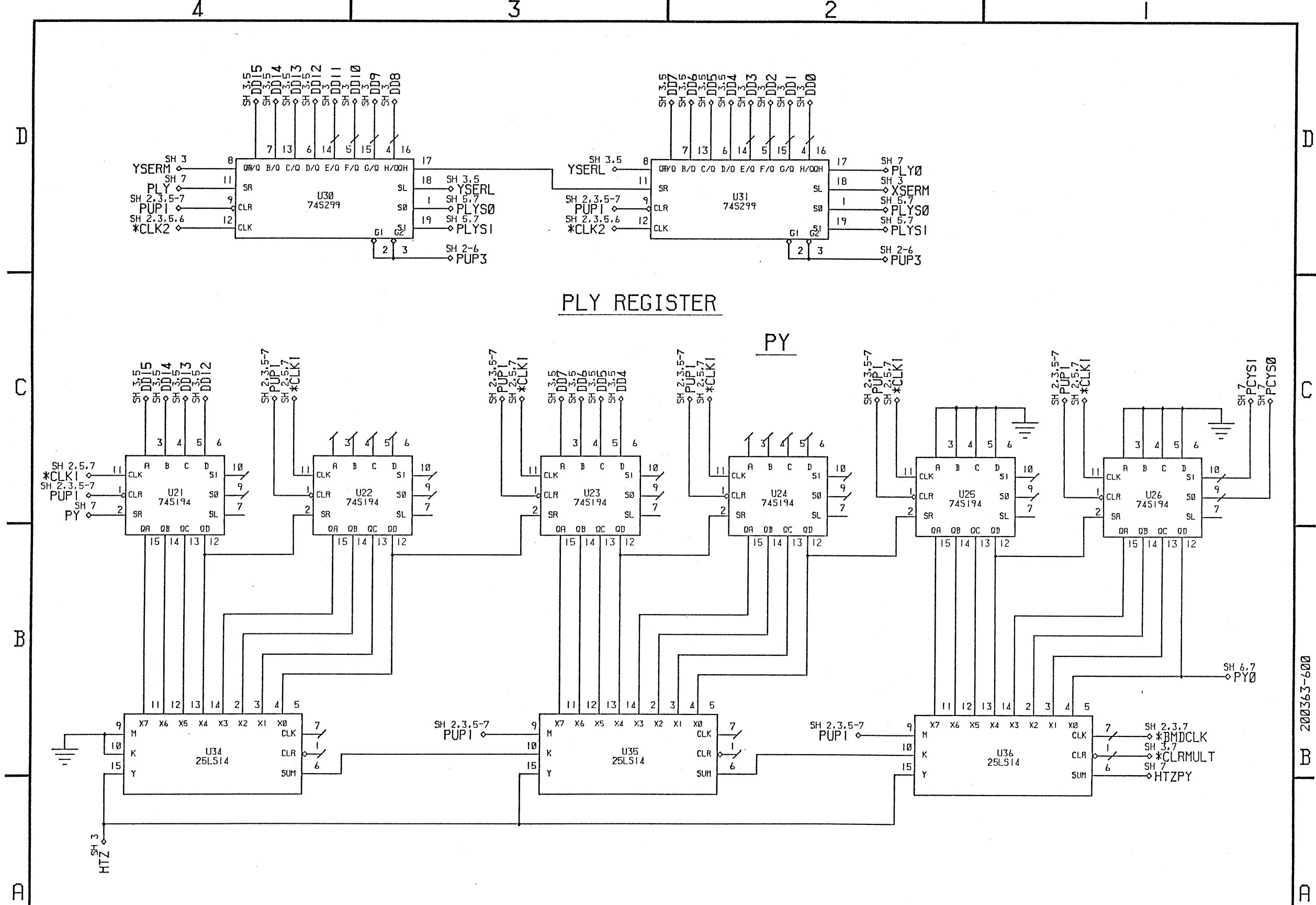
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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200363-600	A2
VERSION	165	WH	SHEET 4 OF 11

200363-600



PLY REGISTER

PY

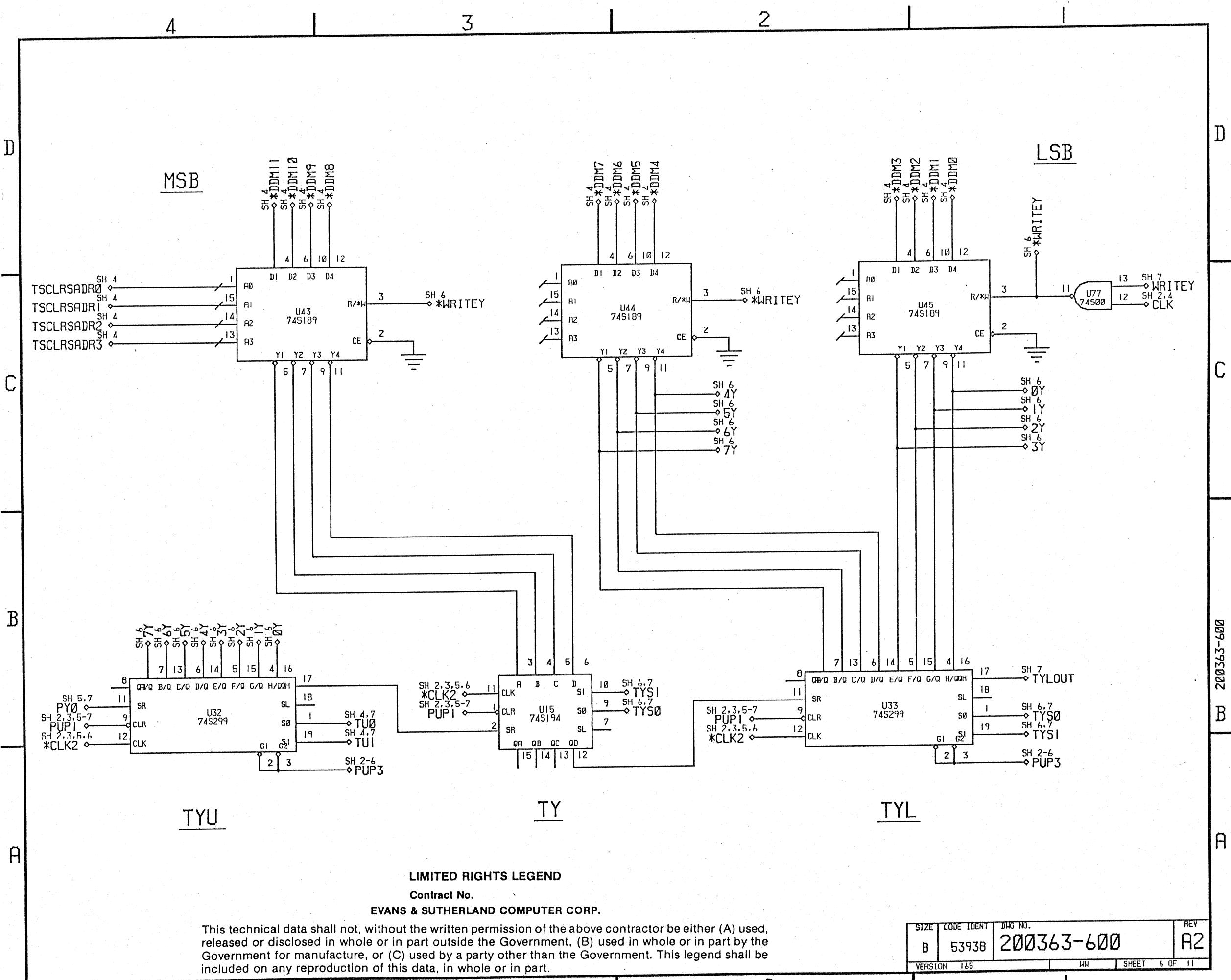
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SIZE	CODE IDENT	DRG NO.	REV
B	53938	200363-600	A2
VERSION	165	144	SHEET 5 OF 11

200363-600



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Contract No.

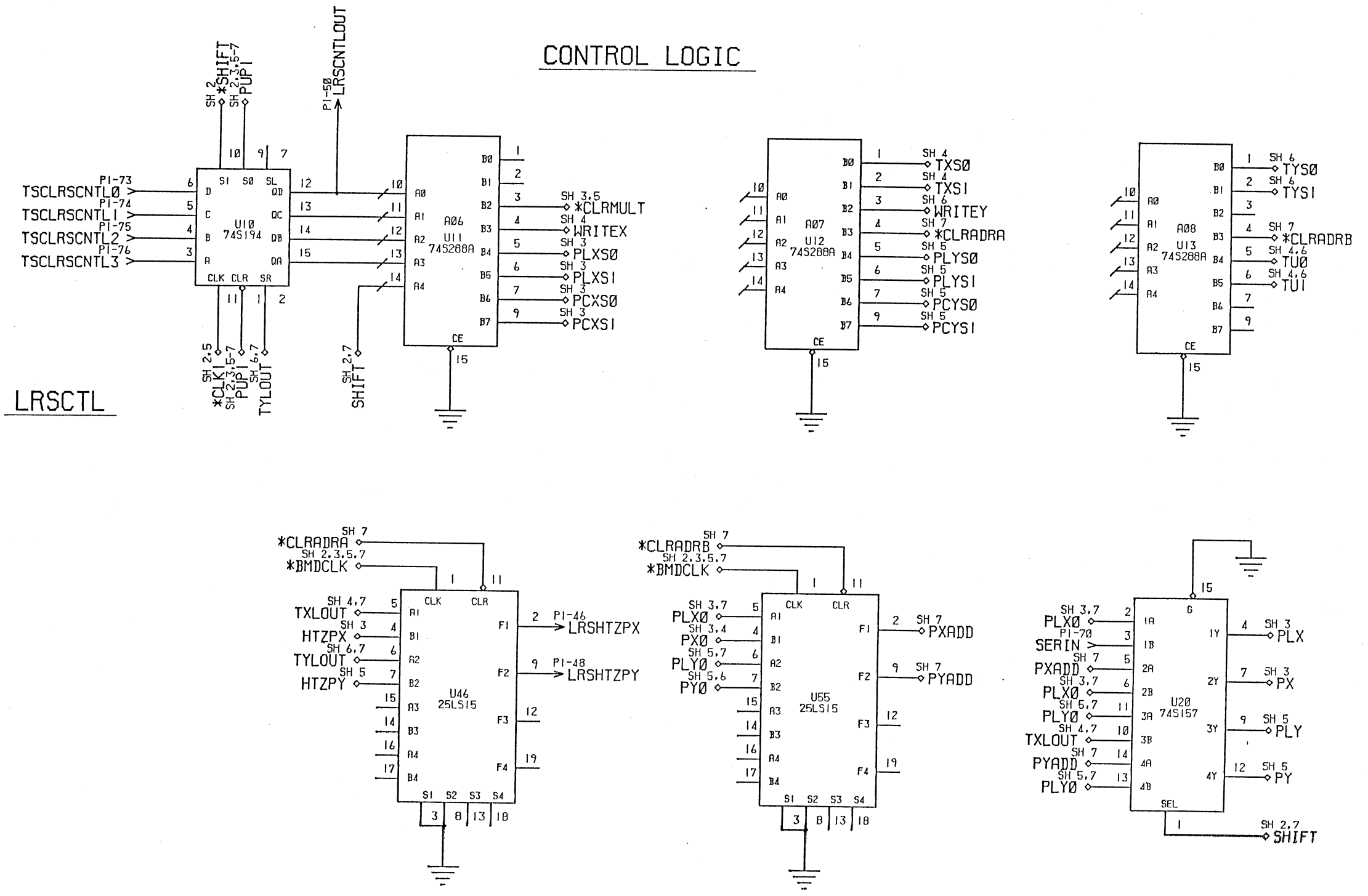
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SIZE	CODE IDENT	DIAG NO.	REV
B	53938	200363-600	A2
VERSION	165	WH	SHEET 6 OF 11

200363-600

CONTROL LOGIC



LRSCTL

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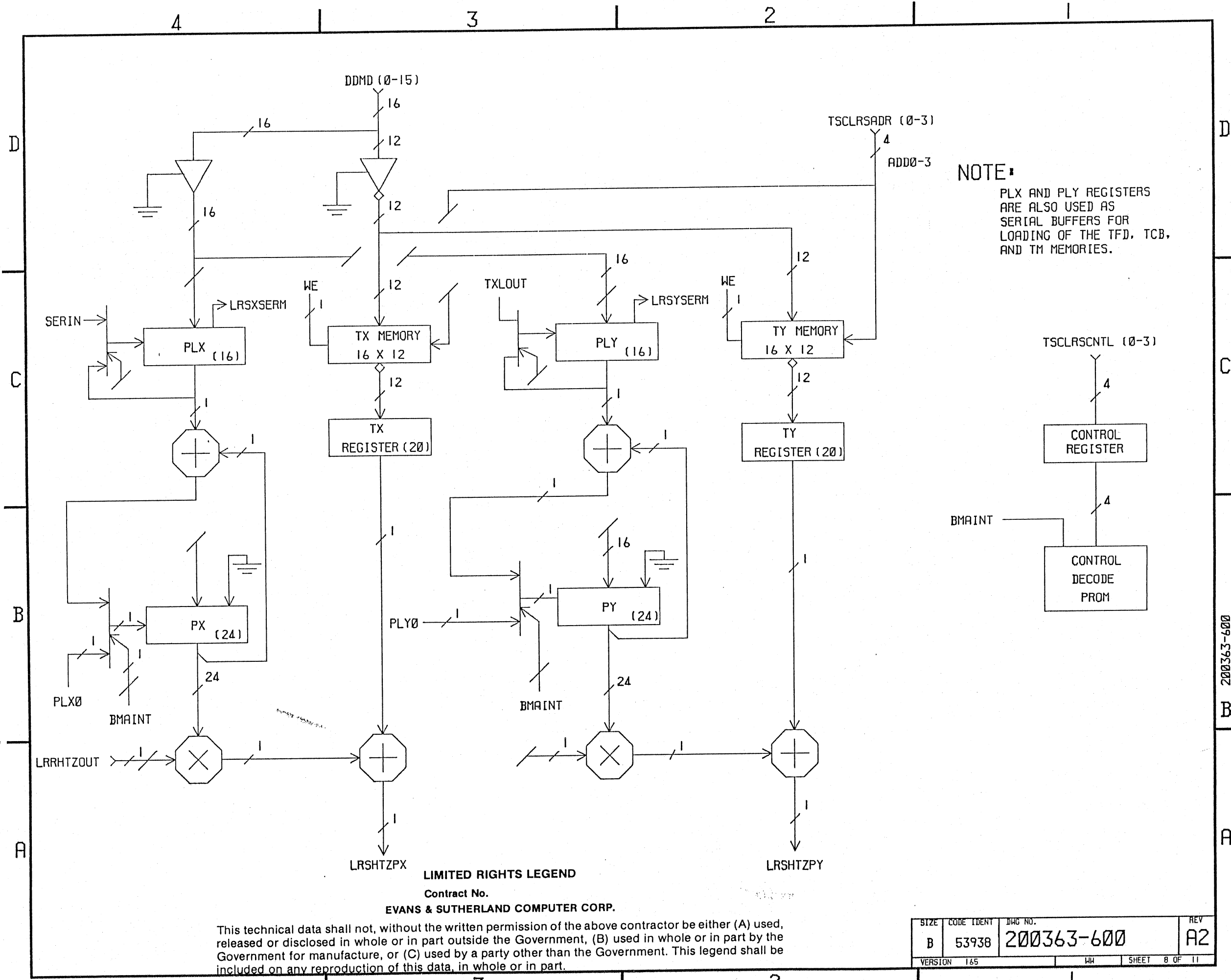
Contract No.

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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200363-600	A2
VERSION	165	WW	SHEET 7 OF 11

200363-600



NOTE:
 PLX AND PLY REGISTERS
 ARE ALSO USED AS
 SERIAL BUFFERS FOR
 LOADING OF THE TFD,
 TCB,
 AND TM MEMORIES.

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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200363-600	A2
VERSION	165	HW	SHEET 8 OF 11

200363-600 B A

D

D

C

C

B

B

A

A

200363-600

UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN
PI	1	FEMALE	GROUND	1	C4	
PI	2	FEMALE	+5VIN	2	C4	
PI	3	FEMALE	*CMCLK	2	D4	
PI	4	FEMALE	+5VIN	2	C4	
PI	7	FEMALE	*TFDBMAINT	2	C2	
PI	11	FEMALE	GROUND	1	C4	
PI	15	MALE	LRSXSERM	3	D1	
PI	16	FEMALE	LRRHTZOUT	3	A4	
PI	17	FEMALE	TSLRSADR0	4	C4	
PI	19	FEMALE	TSLRSADR1	4	C4	
PI	21	FEMALE	GROUND	1	B4	
PI	23	FEMALE	TSLRSADR2	4	C4	
PI	25	FEMALE	TSLRSADR3	4	C4	
PI	29	FEMALE	DDMD1	3	D4	
PI	30	FEMALE	DDMD0	3	D4	
PI	31	FEMALE	GROUND	1	B4	
PI	32	FEMALE	DDMD2	3	D4	
PI	33	FEMALE	DDMD3	3	D4	
PI	34	FEMALE	DDMD4	3	D4	
PI	35	FEMALE	DDMD5	3	D4	
PI	36	FEMALE	DDMD6	3	D4	
PI	37	FEMALE	DDMD7	3	D4	
PI	38	FEMALE	DDMD8	3	D3	
PI	39	FEMALE	DDMD9	3	D3	
PI	40	FEMALE	DDMD10	3	D3	
PI	41	FEMALE	GROUND	1	B4	
PI	42	FEMALE	DDMD11	3	D3	
PI	43	FEMALE	DDMD14	3	D2	
PI	44	FEMALE	DDMD12	3	D2	
PI	45	FEMALE	DDMD13	3	D2	
PI	46	MALE	LRSHTZPX	7	B3	
PI	47	FEMALE	DDMD15	3	D2	
PI	48	MALE	LRSHTZPY	7	B3	
PI	50	MALE	LRSNTLOUT	7	D3	
PI	51	FEMALE	GROUND	1	B4	
PI	56	MALE	LRSYSERM	3	D1	
PI	61	FEMALE	GROUND	1	B4	
PI	70	FEMALE	SERIN	7	B1	
PI	71	FEMALE	GROUND	1	B4	
PI	73	FEMALE	TSLRSCNTL0	7	D4	
PI	74	FEMALE	TSLRSCNTL1	7	D4	
PI	75	FEMALE	TSLRSCNTL2	7	D4	
PI	76	FEMALE	TSLRSCNTL3	7	C4	

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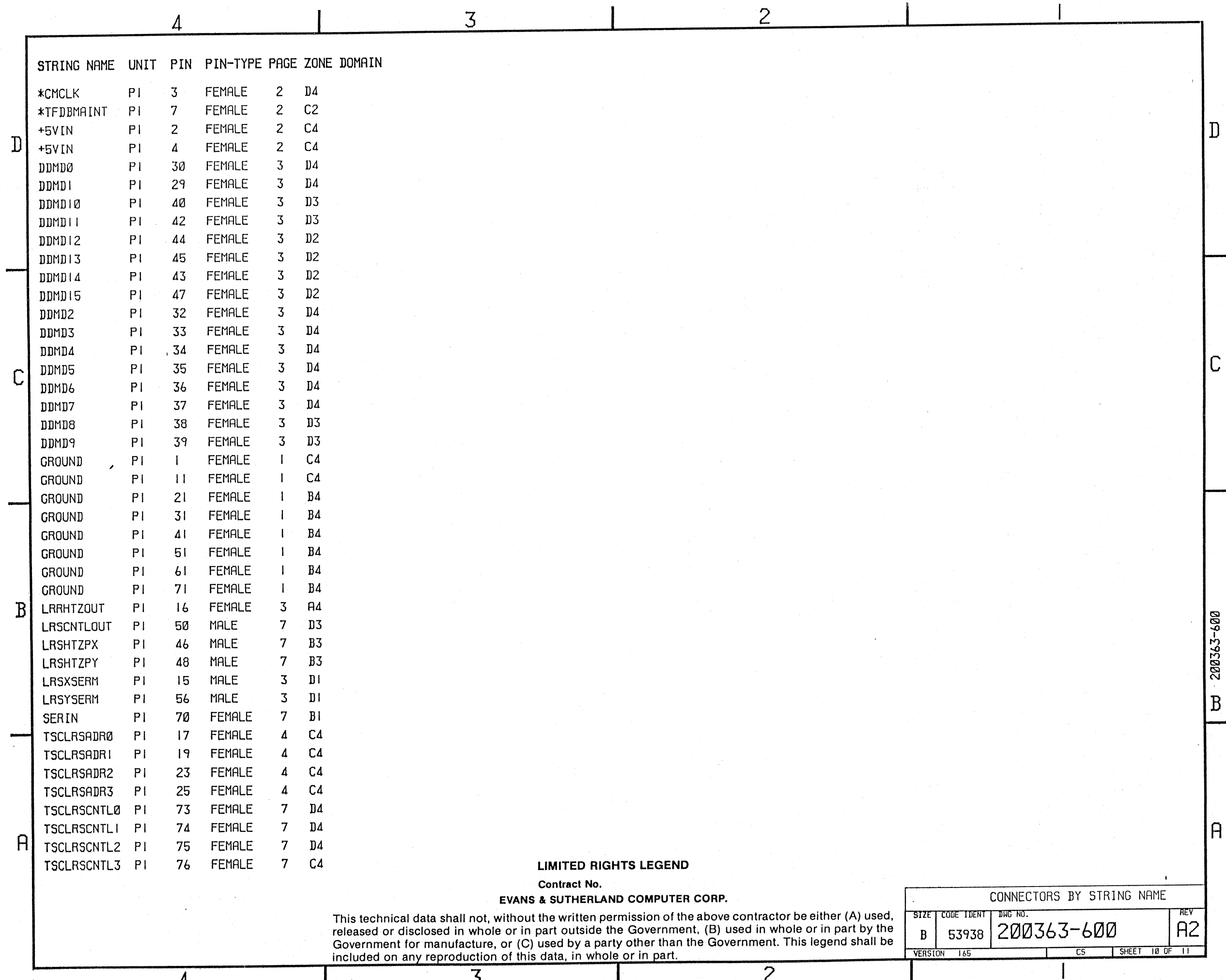
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CONNECTORS BY UNIT/PIN

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200363-600	A2
VERSION	165	CS	SHEET 9 OF 11



STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
*CMCLK	PI	3	FEMALE	2	D4	
*TFDBMAINT	PI	7	FEMALE	2	C2	
+5VIN	PI	2	FEMALE	2	C4	
+5VIN	PI	4	FEMALE	2	C4	
DDMD0	PI	30	FEMALE	3	D4	
DDMD1	PI	29	FEMALE	3	D4	
DDMD10	PI	40	FEMALE	3	D3	
DDMD11	PI	42	FEMALE	3	D3	
DDMD12	PI	44	FEMALE	3	D2	
DDMD13	PI	45	FEMALE	3	D2	
DDMD14	PI	43	FEMALE	3	D2	
DDMD15	PI	47	FEMALE	3	D2	
DDMD2	PI	32	FEMALE	3	D4	
DDMD3	PI	33	FEMALE	3	D4	
DDMD4	PI	34	FEMALE	3	D4	
DDMD5	PI	35	FEMALE	3	D4	
DDMD6	PI	36	FEMALE	3	D4	
DDMD7	PI	37	FEMALE	3	D4	
DDMD8	PI	38	FEMALE	3	D3	
DDMD9	PI	39	FEMALE	3	D3	
GROUND	PI	1	FEMALE	1	C4	
GROUND	PI	11	FEMALE	1	C4	
GROUND	PI	21	FEMALE	1	B4	
GROUND	PI	31	FEMALE	1	B4	
GROUND	PI	41	FEMALE	1	B4	
GROUND	PI	51	FEMALE	1	B4	
GROUND	PI	61	FEMALE	1	B4	
GROUND	PI	71	FEMALE	1	B4	
LRRHTZOUT	PI	16	FEMALE	3	A4	
LRSNTLOUT	PI	50	MALE	7	D3	
LRSHZPX	PI	46	MALE	7	B3	
LRSHZPY	PI	48	MALE	7	B3	
LRXSERM	PI	15	MALE	3	D1	
LRYSERM	PI	56	MALE	3	D1	
SERIN	PI	70	FEMALE	7	B1	
TSCRSADR0	PI	17	FEMALE	4	C4	
TSCRSADR1	PI	19	FEMALE	4	C4	
TSCRSADR2	PI	23	FEMALE	4	C4	
TSCRSADR3	PI	25	FEMALE	4	C4	
TSCRSNTL0	PI	73	FEMALE	7	D4	
TSCRSNTL1	PI	74	FEMALE	7	D4	
TSCRSNTL2	PI	75	FEMALE	7	D4	
TSCRSNTL3	PI	76	FEMALE	7	C4	

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CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200363-600	A2
VERSION	165	CS	SHEET 10 OF 11

200363-600

4

3

2

1

PAGE TYPE PAGE NAME

1 PC
 2 WW
 3 WW
 4 WW
 5 WW
 6 WW
 7 WW
 8 WW

D

D

C

C

B

B

A

A

200363-600

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TABLE OF CONTENTS

SIZE	CODE IDENT	DRG NO.	REV
B	53938	200363-600	A2

VERSION 165 TC SHEET 11 OF 11

4

3

2

1



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200364-101

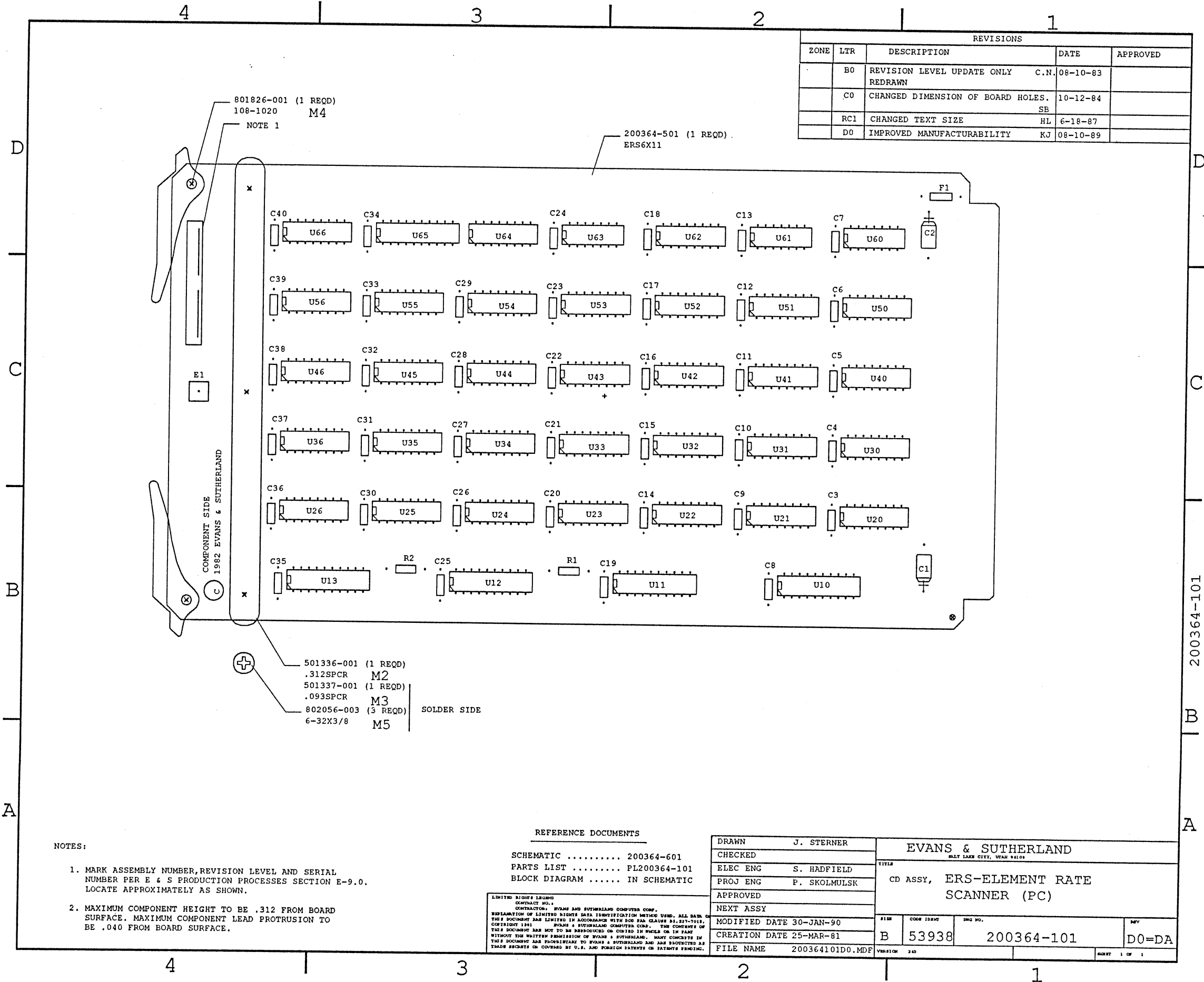
REV: D0 = DA

DESC: CARD ASSY,ERS-ELEMENT RATE SCANNER (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD,P02R ERS6X11	53938	EVANS & SUTHERLAND.	200364-501	200364-501	1
C3 C4 C5 C6 C7 C8 C9 C10	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C11 C12 C13 C14 C15 C16 C17	C,,AXL .1 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U104Z050B	804122-104	38
C18 C19 C20 C21 C22 C23 C24						
C25 C26 C27 C28 C29 C30 C31						
C32 C33 C34 C35 C36 C37 C38						
C39 C40						
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
M2	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8(SM-P-PH-Z)	802056-003	3
R1 R2	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	2
U10 U11 U12 U13	IC,TTL 74S299	27014	NATIONAL SEMICONDUCTOR	DM74S299N-A+	807737-055	4
U20 U21 U22 U23 U24 U25 U26	IC,TTL 74S283	27014	NATIONAL SEMICONDUCTOR	DM74S283N/J	807715-055	14
U40 U42 U43 U44 U45 U46 U51						
U30 U31 U32 U33 U34 U35 U36	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	14
U41 U50 U52 U53 U54 U55 U56						
U60	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	1
U61	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U62 U66	IC,TTL 9328	04713	MOTOROLA INC. SEMI PRODUC	MC9328P/L	807628-646	2
U63	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
U64	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	1
U65	IC,TTL 25LS15	34335	ADVANCED MICRO DEVICES IN	AM25LS15PC/74LS385	807799-055	1

19 ITEMS LISTED





REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	REVISION LEVEL UPDATE ONLY REDRAWN	C.N. 08-10-83	
	C0	CHANGED DIMENSION OF BOARD HOLES.	10-12-84	
	RC1	CHANGED TEXT SIZE	6-18-87	
	D0	IMPROVED MANUFACTURABILITY	08-10-89	

801826-001 (1 REQD)
108-1020 M4
NOTE 1

200364-501 (1 REQD)
ERS6X11

COMPONENT SIDE
1982 EVANS & SUTHERLAND

501336-001 (1 REQD) .312SPCR M2
501337-001 (1 REQD) .093SPCR M3
802056-003 (3 REQD) 6-32X3/8 M5
SOLDER SIDE

- 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.

REFERENCE DOCUMENTS

- SCHEMATIC 200364-601
PARTS LIST PL200364-101
BLOCK DIAGRAM IN SCHEMATIC

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DRAWN J. STERNER		EVANS & SUTHERLAND <small>5015 LARK CREEK, UTAH 84108</small>	
CHECKED		TITLE	
ELEC ENG S. HADFIELD		CD ASSY, ERS-ELEMENT RATE	
PROJ ENG P. SKOLMULSK		SCANNER (PC)	
APPROVED		REV	
NEXT ASSY		D0=DA	
MODIFIED DATE 30-JAN-90		QTY	REV
CREATION DATE 25-MAR-81		B 53938	200364-101
FILE NAME 200364101D0.MDF		VERSION 245	SHEET 1 OF 1

200364-101

B

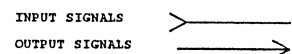
A



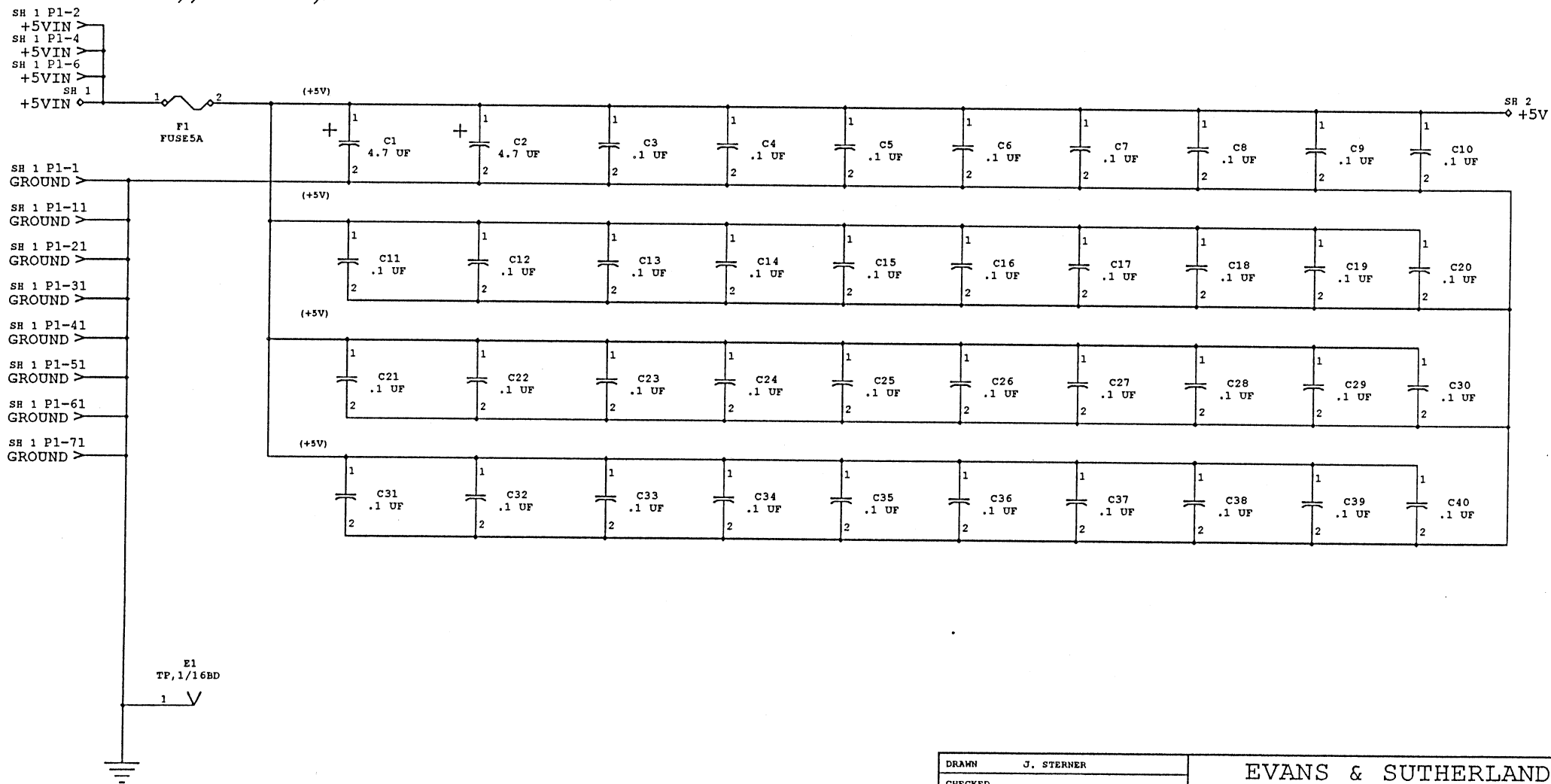
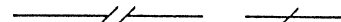
NOTES: UNLESS OTHERWISE SPECIFIED:

- RESISTANCE VALUES ARE IN OHMS + - 5%, K 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

3. CARD CONNECTOR SYMBOL "P1-" DESIGNATES:



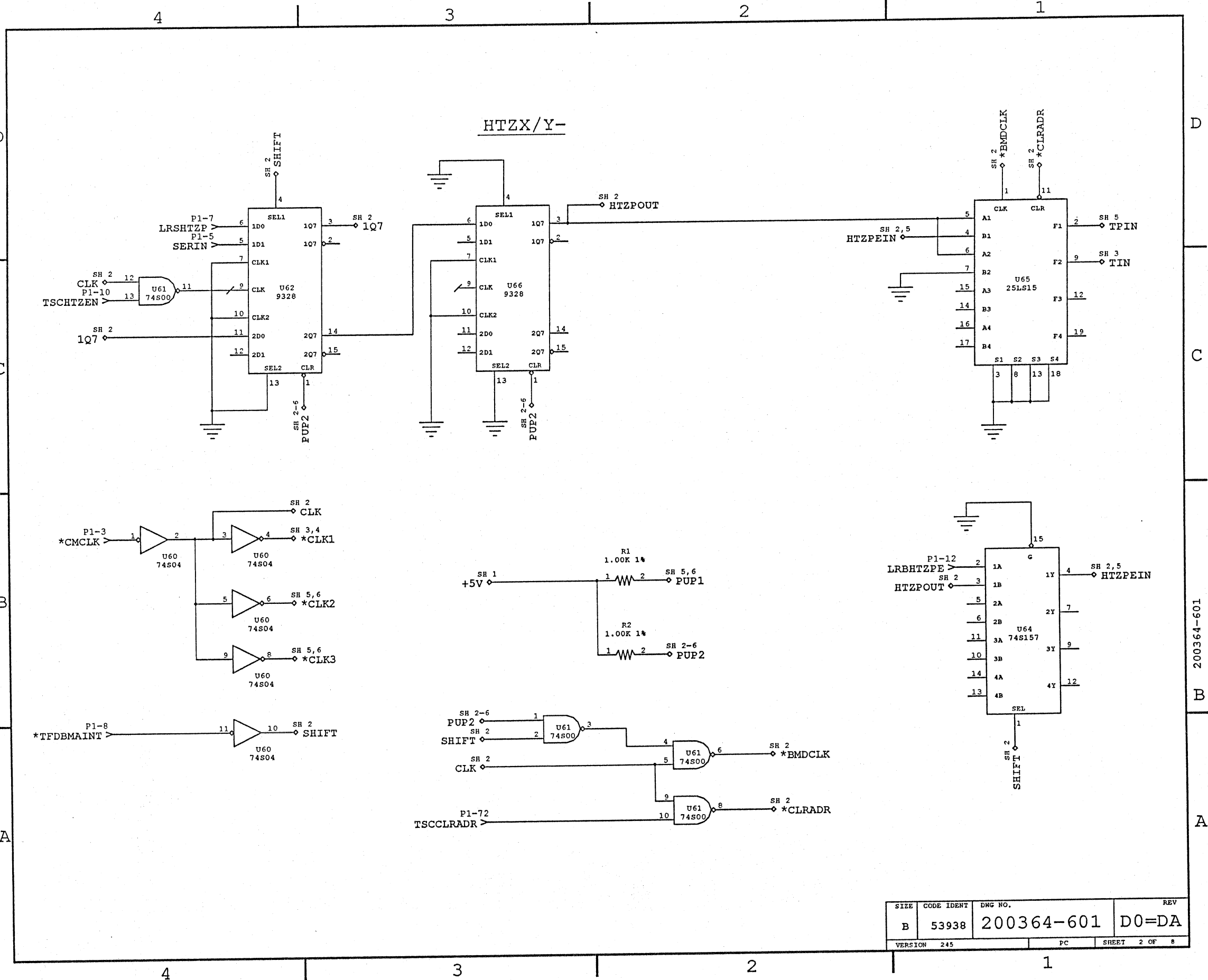
4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.



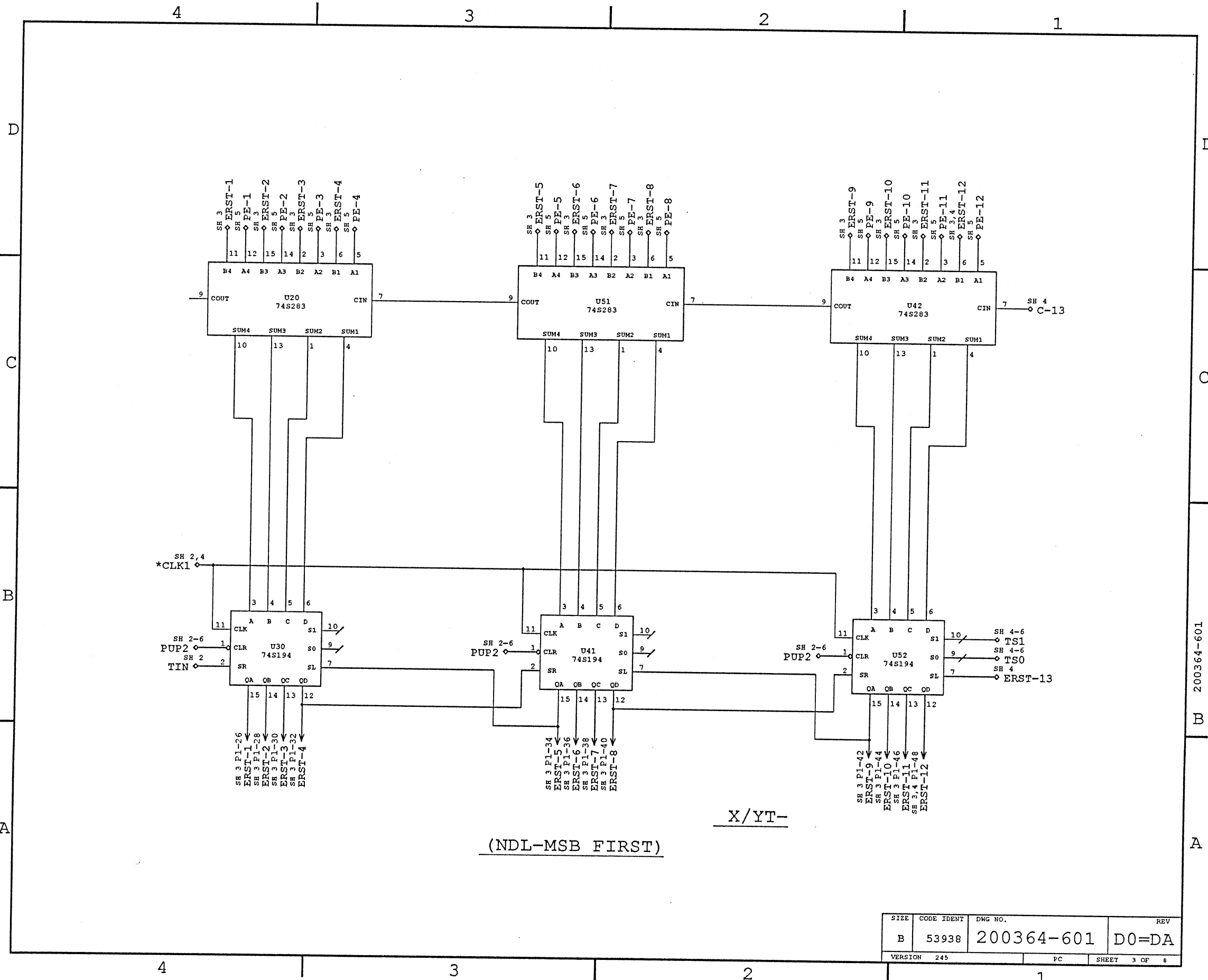
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	RC1	CHANGE TEXT ON PAGES 2,7.	S.B.	5-11-82
	RC2	MINOR CHANGES ON BLOCK ONLY	SB	9-23-82
	B0	REVISION LEVEL UPDATE ONLY	C.N.	08-10-89
	C0	REVISION LEVEL UPDATE ONLY.	SB	10-12-84
	D0	REVISION LEVEL UPDATE ONLY	KJ	08-10-89

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DRAWN	J. STERNER	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
CHECKED		TITLE		
ELEC ENG	S. MADFIELD	ERS-ELEMENT RATE		
PROJ ENG	P. SKOLMULSK	SCANNER (PC)		
APPROVED		SIZE	CODE IDENT	DWG NO.
NEXT ASSY		B	53938	200364-601
MODIFIED DATE	30-JAN-90			REV
CREATION DATE	25-MAR-81			D0=DA
FILE NAME	200364101D0.MDF	VERSION	245	PC SHEET 1 OF 8



SIZE	CODE IDENT	DWG NO.	REV
B	53938	200364-601	D0=DA
VERSION	245	PC	SHEET 2 OF 8

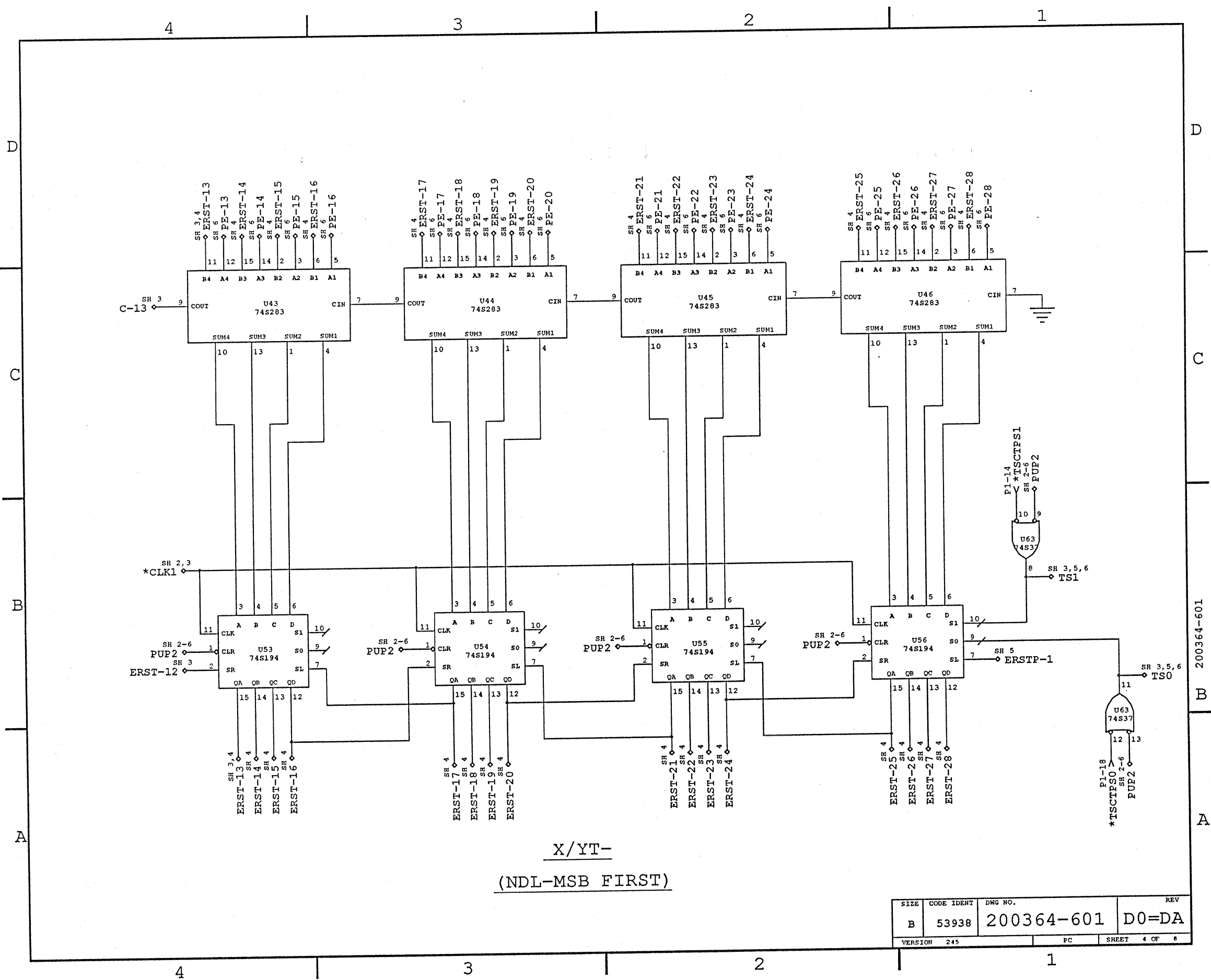


(NDL-MSB FIRST)

X/YT-

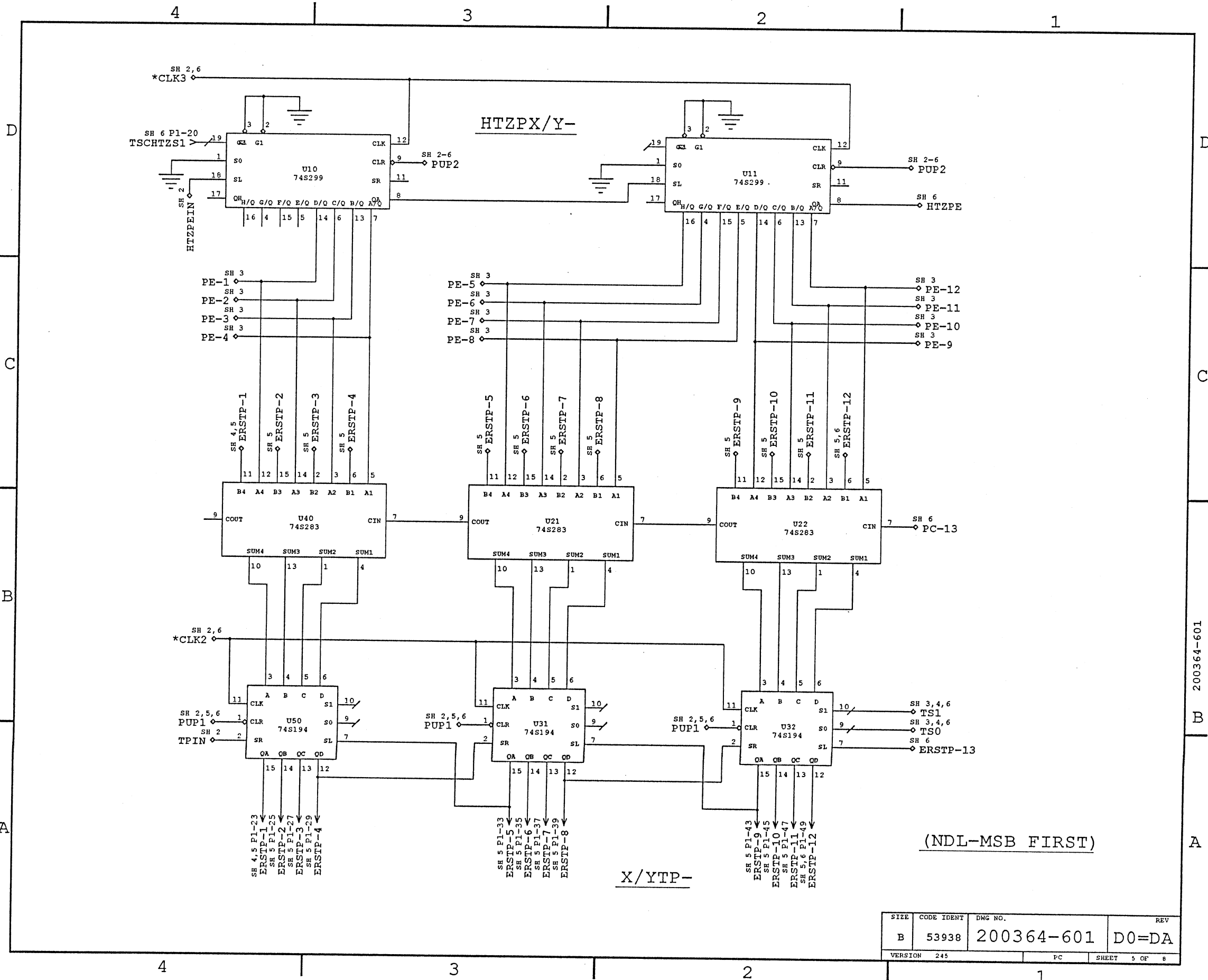
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200364-601	D0=DA
VERSION	245	PC	SHEET 3 OF 8

200364-601



SIZE	CODE IDENT	DWG NO.	REV
B	53938	200364-601	D0=DA
VERSION	245	PC	SHEET 4 OF 8

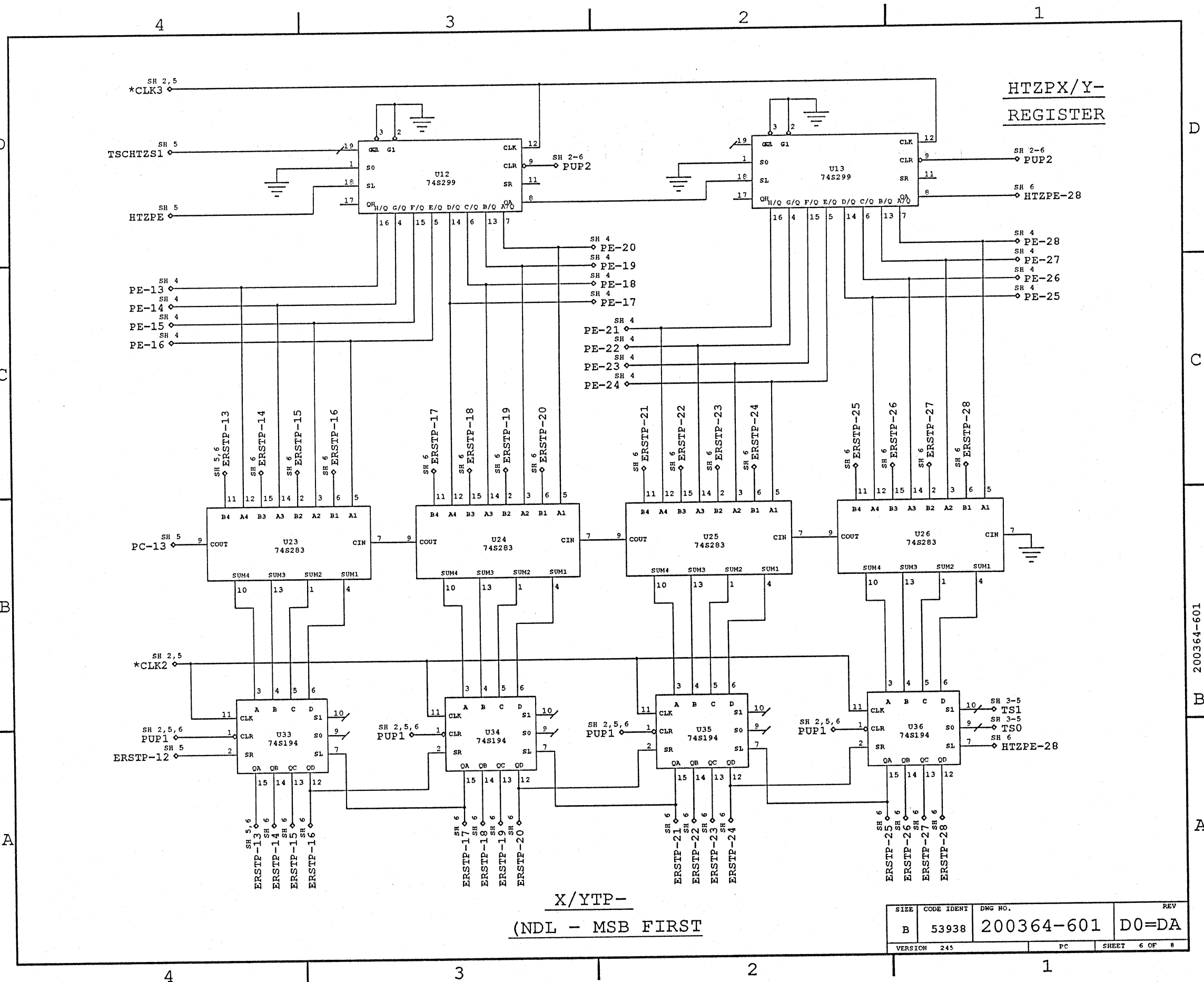
200364-601



(NDL-MSB FIRST)

X/YTP-

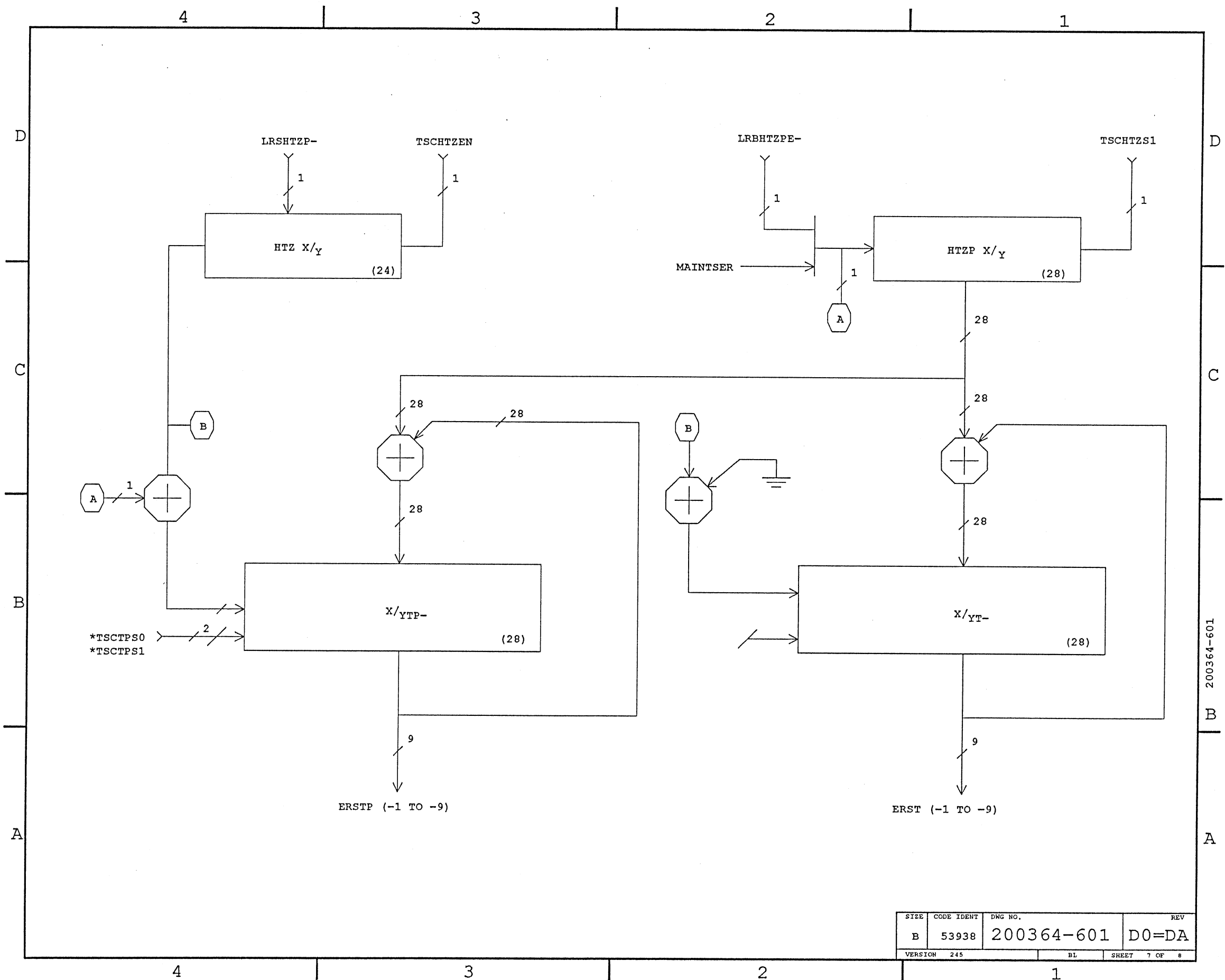
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200364-601	D0=DA
VERSION	245	PC	SHEET 5 OF 8



X/YTP-
(NDL - MSB FIRST)

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200364-601	D0=DA
VERSION	245	PC	SHEET 6 OF 8

200364-601



SIZE	CODE IDENT	DWG NO.	REV
B	53938	200364-601	D0=DA
VERSION	245	BL	SHEET 7 OF 8

200364-601

4				3				2				1				
Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet		
P1	1	In	GROUND	1	C4	P1	3	In	2	B4	*CMCLK	P1	3	In	2	B4
P1	2	In	+5VIN	1	C4	P1	8	In	2	A4	*TFDBMAINT	P1	8	In	2	A4
P1	3	In	*CMCLK	1	B4	P1	18	In	4	A1	*TSCTPS0	P1	18	In	4	A1
P1	4	In	+5VIN	1	C4	P1	14	In	4	B1	*TSCTPS1	P1	14	In	4	B1
P1	5	In	SERIN	1	D4	P1	2	In	1	C4	+5VIN	P1	2	In	1	C4
P1	6	In	+5VIN	1	C4	P1	4	In	1	C4	+5VIN	P1	4	In	1	C4
P1	7	In	LRSHZP	1	D4	P1	6	In	1	C4	+5VIN	P1	6	In	1	C4
P1	8	In	*TFDBMAINT	1	A4	P1	26	Out	3	B4	ERST-1	P1	26	Out	3	B4
P1	10	In	TSCHTZEN	1	C4	P1	44	Out	3	A2	ERST-10	P1	44	Out	3	A2
P1	11	In	GROUND	1	C4	P1	46	Out	3	A1	ERST-11	P1	46	Out	3	A1
P1	12	In	LRBHTZPE	1	B1	P1	48	Out	3	A1	ERST-12	P1	48	Out	3	A1
P1	14	In	*TSCFPS1	1	B1	P1	28	Out	3	B4	ERST-2	P1	28	Out	3	B4
P1	18	In	*TSCFPS0	1	A1	P1	30	Out	3	B4	ERST-3	P1	30	Out	3	B4
P1	20	In	TSCHTZS1	1	D4	P1	32	Out	3	B4	ERST-4	P1	32	Out	3	B4
P1	21	In	GROUND	1	C4	P1	34	Out	3	B3	ERST-5	P1	34	Out	3	B3
P1	23	Out	ERSTP-1	1	A4	P1	36	Out	3	B3	ERST-6	P1	36	Out	3	B3
P1	25	Out	ERSTP-2	1	A4	P1	38	Out	3	B3	ERST-7	P1	38	Out	3	B3
P1	26	Out	ERST-1	1	B4	P1	40	Out	3	B2	ERST-8	P1	40	Out	3	B2
P1	27	Out	ERSTP-3	1	A4	P1	42	Out	3	A2	ERST-9	P1	42	Out	3	A2
P1	28	Out	ERST-2	1	B4	P1	23	Out	5	A4	ERSTP-1	P1	23	Out	5	A4
P1	29	Out	ERSTP-4	1	A3	P1	45	Out	5	A2	ERSTP-10	P1	45	Out	5	A2
P1	30	Out	ERST-3	1	B4	P1	47	Out	5	A2	ERSTP-11	P1	47	Out	5	A2
P1	31	In	GROUND	1	B4	P1	49	Out	5	A2	ERSTP-12	P1	49	Out	5	A2
P1	32	Out	ERST-4	1	B4	P1	25	Out	5	A4	ERSTP-2	P1	25	Out	5	A4
P1	33	Out	ERSTP-5	1	A3	P1	27	Out	5	A4	ERSTP-3	P1	27	Out	5	A4
P1	34	Out	ERST-5	1	B3	P1	29	Out	5	A3	ERSTP-4	P1	29	Out	5	A3
P1	35	Out	ERSTP-6	1	A3	P1	33	Out	5	A3	ERSTP-5	P1	33	Out	5	A3
P1	36	Out	ERST-6	1	B3	P1	35	Out	5	A3	ERSTP-6	P1	35	Out	5	A3
P1	37	Out	ERSTP-7	1	A3	P1	37	Out	5	A3	ERSTP-7	P1	37	Out	5	A3
P1	38	Out	ERST-7	1	B3	P1	39	Out	5	A3	ERSTP-8	P1	39	Out	5	A3
P1	39	Out	ERSTP-8	1	A3	P1	43	Out	5	A2	ERSTP-9	P1	43	Out	5	A2
P1	40	Out	ERST-8	1	B2	P1	1	In	1	C4	GROUND	P1	1	In	1	C4
P1	41	In	GROUND	1	B4	P1	11	In	1	C4	GROUND	P1	11	In	1	C4
P1	42	Out	ERST-9	1	A2	P1	21	In	1	C4	GROUND	P1	21	In	1	C4
P1	43	Out	ERSTP-9	1	A2	P1	31	In	1	B4	GROUND	P1	31	In	1	B4
P1	44	Out	ERST-10	1	A2	P1	41	In	1	B4	GROUND	P1	41	In	1	B4
P1	45	Out	ERSTP-10	1	A2	P1	51	In	1	B4	GROUND	P1	51	In	1	B4
P1	46	Out	ERST-11	1	A1	P1	61	In	1	B4	GROUND	P1	61	In	1	B4
P1	47	Out	ERSTP-11	1	A2	P1	71	In	1	B4	GROUND	P1	71	In	1	B4
P1	48	Out	ERST-12	1	A1	P1	12	In	2	B1	LRBHTZPE	P1	12	In	2	B1
P1	49	Out	ERSTP-12	1	A2	P1	7	In	2	D4	LRSHZP	P1	7	In	2	D4
P1	51	In	GROUND	1	B4	P1	5	In	2	D4	SERIN	P1	5	In	2	D4
P1	61	In	GROUND	1	B4	P1	72	In	2	A3	TSCCLRADR	P1	72	In	2	A3
P1	71	In	GROUND	1	B4	P1	10	In	2	C4	TSCHTZEN	P1	10	In	2	C4
P1	72	In	TSCCLRADR	2	A3	P1	20	In	5	D4	TSCHTZS1	P1	20	In	5	D4

D

C

B

A

D

C

B

A

200364-601

Connector summary			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200364-601	D0=DA
VERSION 245		CS	SHEET 8 OF 8

4

3

2

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200367-102

REV: A0 = AA

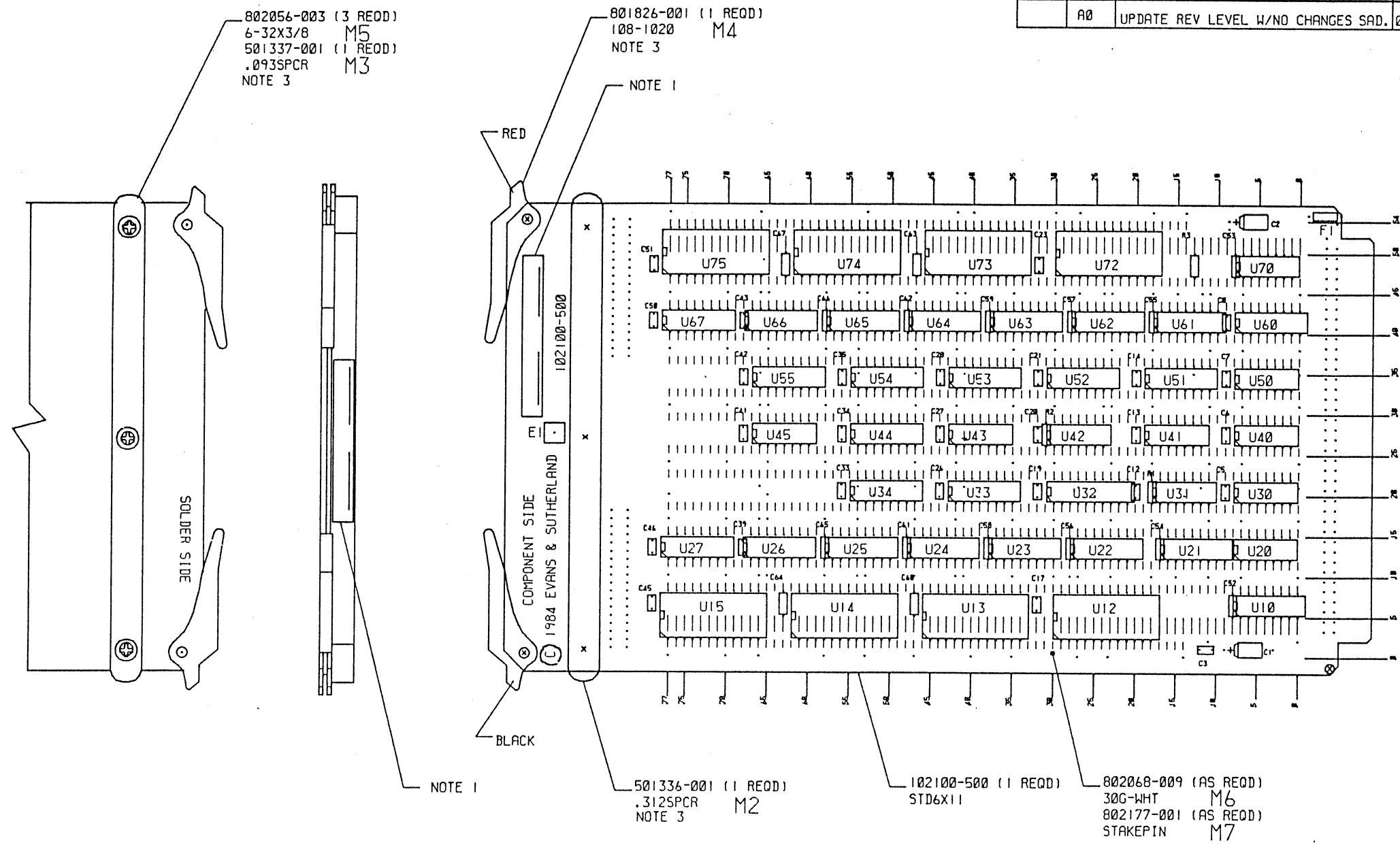
DESC: CARD ASSY, TEXTURE SCANNER CONTROLLER, SP1/T (WW)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD, WW STD6X11	53938	EVANS & SUTHERLAND.	102100-500	102100-500	1
C3 C5 C6 C7 C8 C12 C13 C14	C, ,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C17 C19 C20 C21 C23 C26 C27	C, ,RDL .033UF	02799	ARCO ELECTRONICS (CAPS)	RM20Z333M500	804115-333	27
C28 C33 C34 C35 C39 C41 C42						
C43 C45 C46 C50 C51						
C52 C53 C54 C55 C56 C57 C58	C, ,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	16
C59 C60 C61 C62 C63 C64 C65						
C66 C67						
E1	HW, TERM TP, 1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090, TURRET)	802329-001	1
F1	FU, PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A, AXIAL)	802375-050	1
M2	HW, SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW, SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR, CRD, SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW, SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8 (SM-P-PH-Z)	802056-003	3
M6 AS REQ'D	HW, WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
M7 AS REQ'D	HW, STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	1068
R1 R2 R3	R, ,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	3
U10	IC, TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	1
U12	IC, PROM, BIP, 1024X8, TS	53938	EVANS & SUTHERLAND.	807204-055-A00	807204-055-A00	1
U13	IC, PROM, BIP, 1024X8, TS	53938	EVANS & SUTHERLAND.	807204-055-A01	807204-055-A01	1
U14	IC, PROM, BIP, 1024X8, TS	53938	EVANS & SUTHERLAND.	807204-055-A02	807204-055-A02	1
U15	IC, PROM, BIP, 1024X8, TS	53938	EVANS & SUTHERLAND.	807204-055-A03	807204-055-A03	1
U20 U41 U50	IC, TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	3
U21 U22 U23 U24 U25 U26 U27	IC, TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	16
U44 U60 U61 U62 U63 U64 U65						
U66 U67						
U30	IC, TTL 74S03	01295	TEXAS INSTR, SEMICON DIV.	SN74S03N/J	807403-055	1
U31 U40 U70	IC, TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	3
U32	IC, TTL 74S240	01295	TEXAS INSTR, SEMICON DIV.	SN74S240N/J	807792-020	1
U33 U34	IC, TTL 74S158	01295	TEXAS INSTR, SEMICON DIV.	SN74S158N	807658-055	2
U42	IC, TTL 74S30	07263	FAIRCHILD IC'S & SEMICOND	74S30PC/DC	807430-055	1
U43	IC, TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U45	IC, TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	1
U51 U52	IC, TTL 74S151	01295	TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055	2
U53 U54 U55	IC, TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	3
U72	IC, PROM, BIP, 1024X8, TS	53938	EVANS & SUTHERLAND.	807204-055-A04	807204-055-A04	1
U73	IC, PROM, BIP, 1024X8, TS	53938	EVANS & SUTHERLAND.	807204-055-A05	807204-055-A05	1
U74	IC, PROM, BIP, 1024X8, TS	53938	EVANS & SUTHERLAND.	807204-055-A06	807204-055-A06	1
U75	IC, PROM, BIP, 1024X8, TS	53938	EVANS & SUTHERLAND.	807204-055-A07	807204-055-A07	1

33 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	UPDATE REV LEVEL W/NO CHANGES SAD.	02-20-86	JOB 2/1/86



- 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 (M4) AND SPACERS (M2 & M3) AFTER WAVE SOLDERING.

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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REFERENCE DOCUMENTS

SCHEMATIC _ _ _ 200367-602

PARTS LIST _ _ PL200367-102

DRAWN	S. DEDMAN	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
CHECKED	J. BENTLEY	TITLE	
ELEC ENG	J. N. BLEAK	ASSY. TEXTURE SCANNER CONTROL (W/W)	
PROJ ENG	J. N. BLEAK	REV	
APPROVED		SIZE	CODE IDENT
NEXT ASSY		C	53938
MODIFIED DATE	25-FEB-86	DWG NO.	200367-102
CREATION DATE	7-JAN-86	REV	A0
FILE NAME	200367102A0.MDF	VERSION	02
		SHEET 1 OF 1	

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200367-102



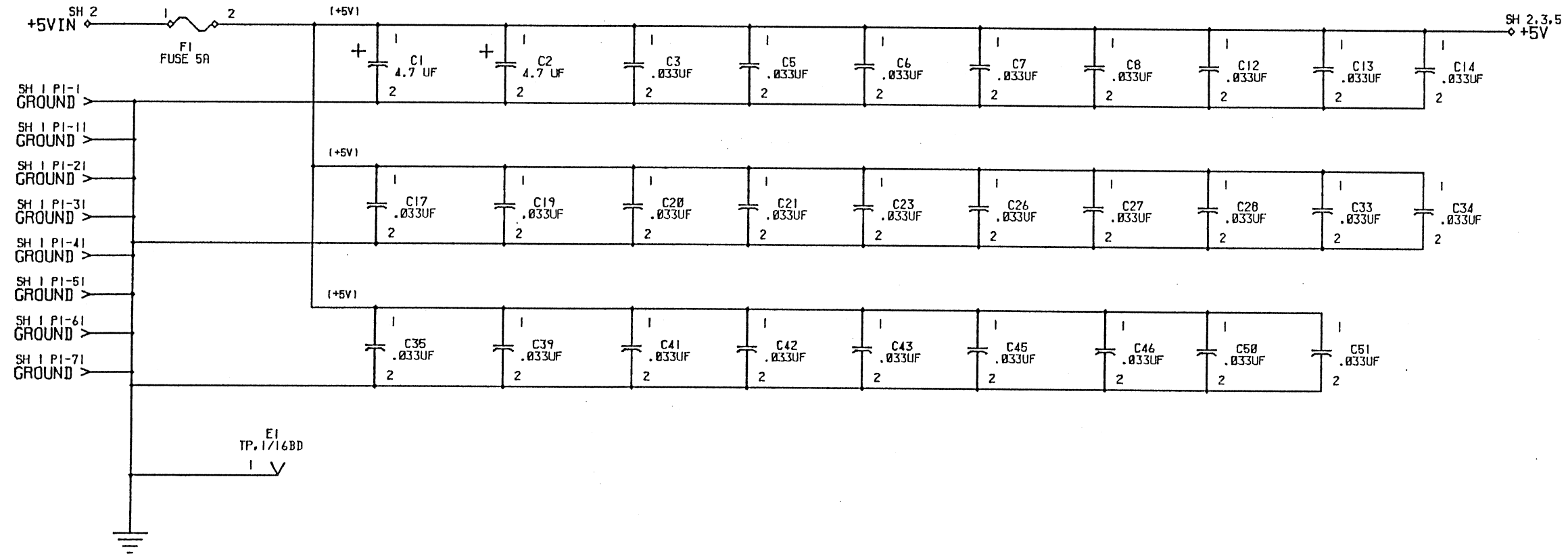
NOTES: UNLESS OTHERWISE SPECIFIED:

- RESISTANCE VALUES ARE IN OHMS + - 5%. K 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 "PI-" DESIGNATES:
 - INPUT SIGNALS \rightarrow
 - OUTPUT SIGNALS \leftarrow
- THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.
 - $\text{---} // \text{---}$

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	UPDATE REV LEVEL W/NO CHANGES	SAD 02-20-86	2/27/86

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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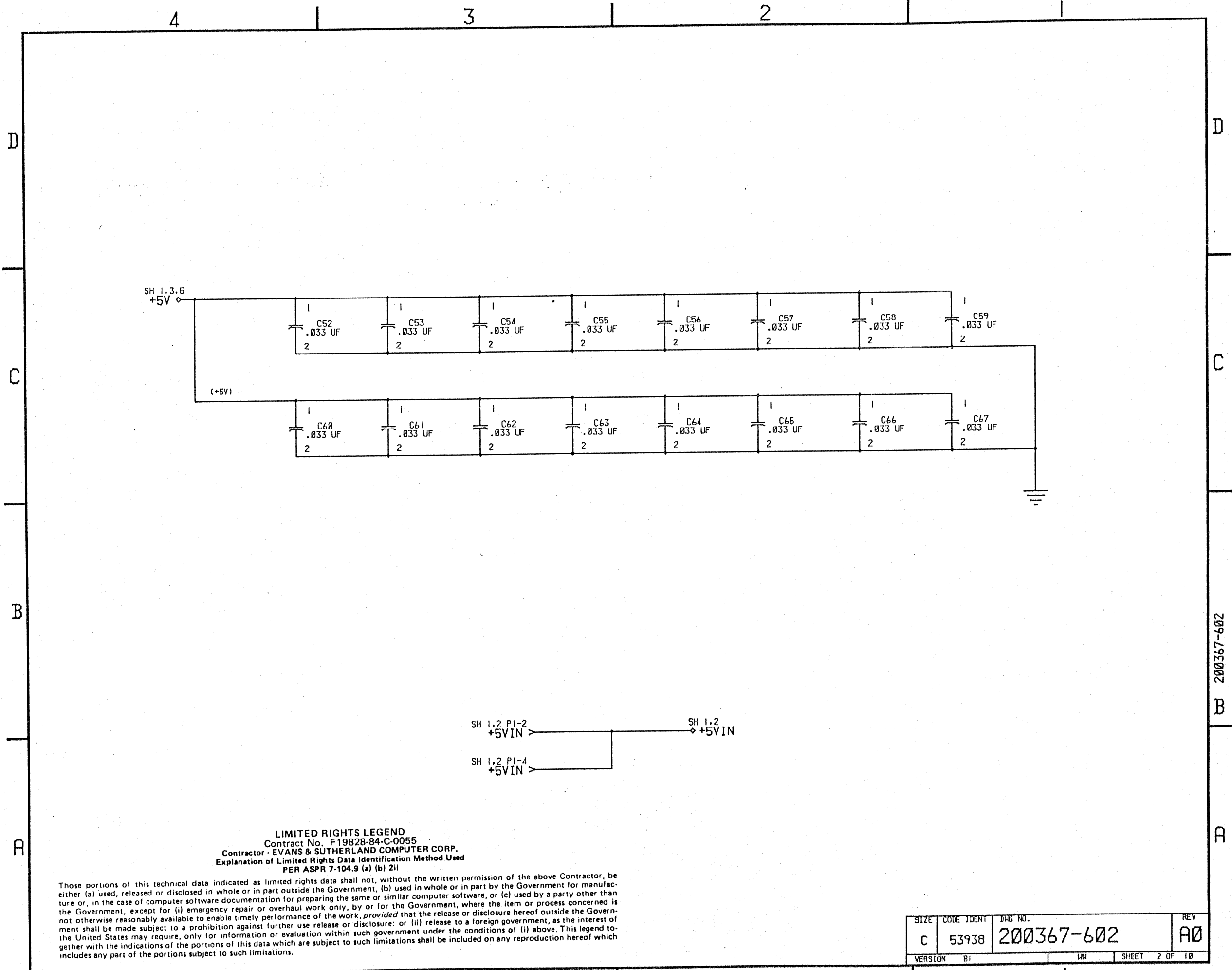
CONTRACT NO. F19828-84-C-0055
 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORPORATION.
 EXPLANATION OF LIMITED RIGHTS DATA IDENTIFICATION
 METHOD USED PER ASPR 7-104.9 (A)(B) 2II AND COVERS
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DRAWN	S. DEWMAN
CHECKED	J. Bentley 2-25-86
ELEC ENG	J. BENTLEY 2/27/86
PROJ ENG	J. N. BLEAK
APPROVED	
NEXT ASSY	
MODIFIED DATE	25-FEB-86
CREATION DATE	7-JAN-86
FILE NAME	200367102A0.MDF

EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE TEXTURE SCANNER CONTROL SPI/T (W/W)			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200367-602	A0
VERSION	BI	PC	SHEET 1 OF 10

200367-602

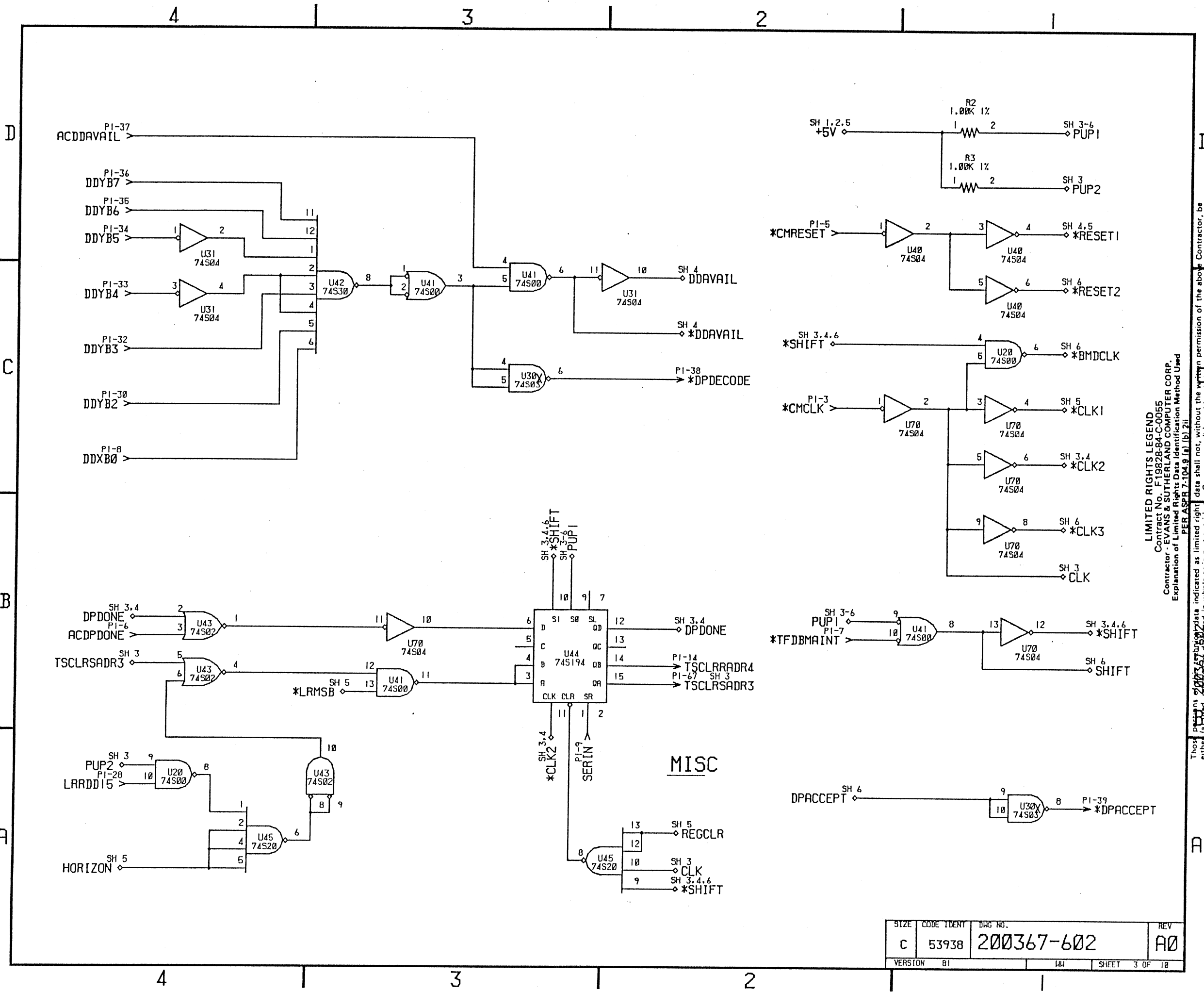


LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
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SIZE	CODE IDENT	DWG NO.	REV
C	53938	200367-602	A0
VERSION	B1	44	SHEET 2 OF 10

B 200367-602

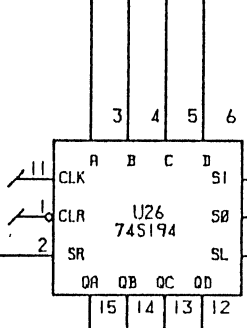
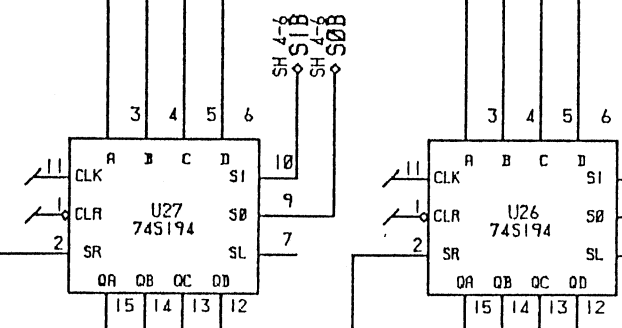
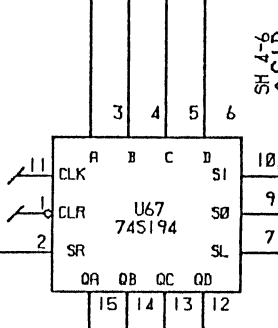
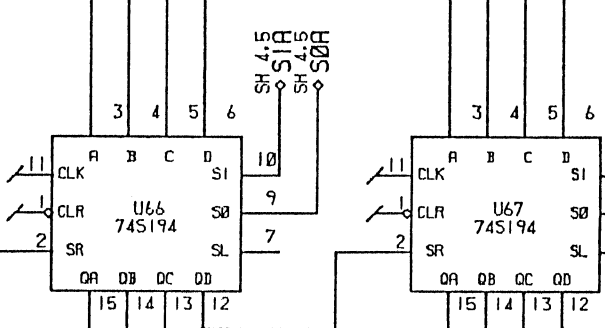
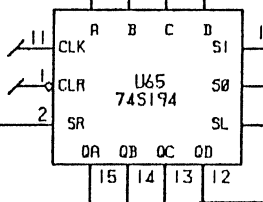
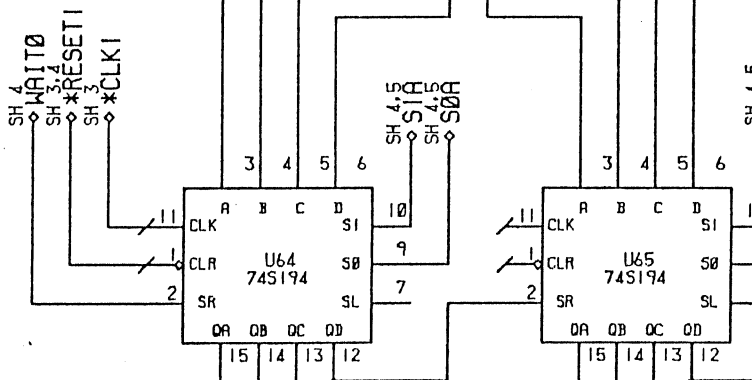
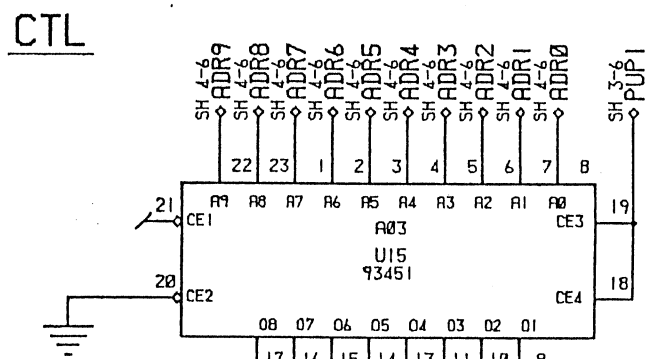
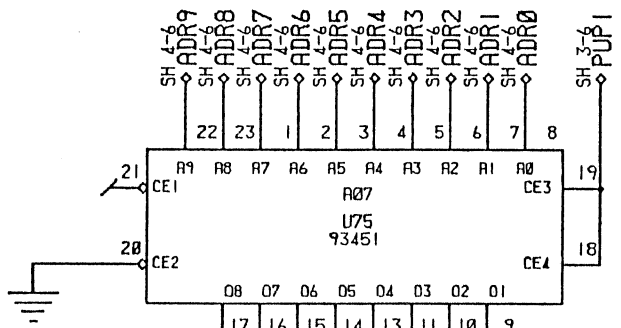
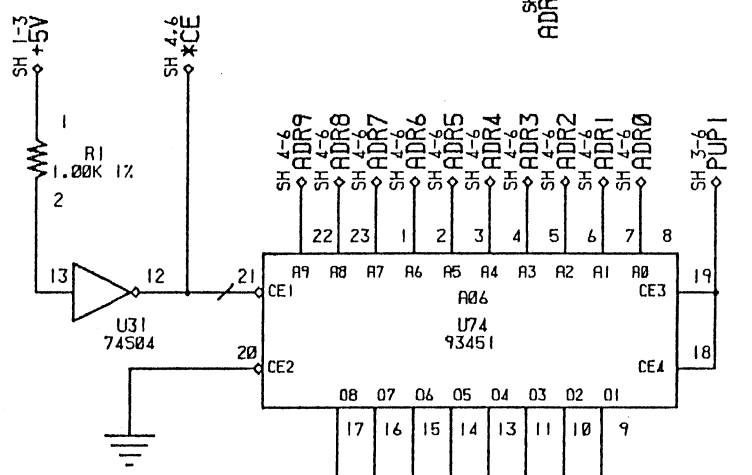
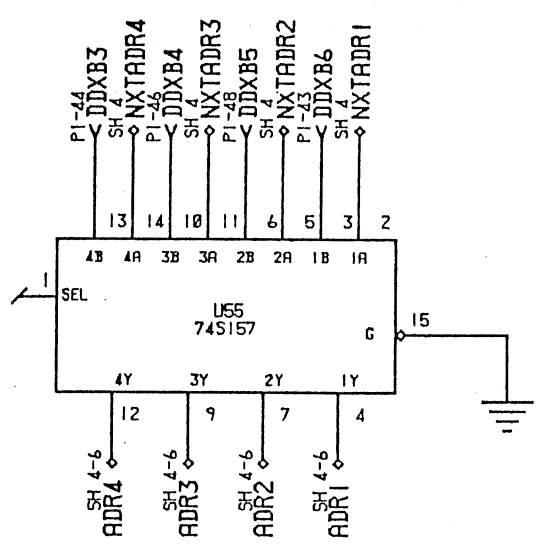
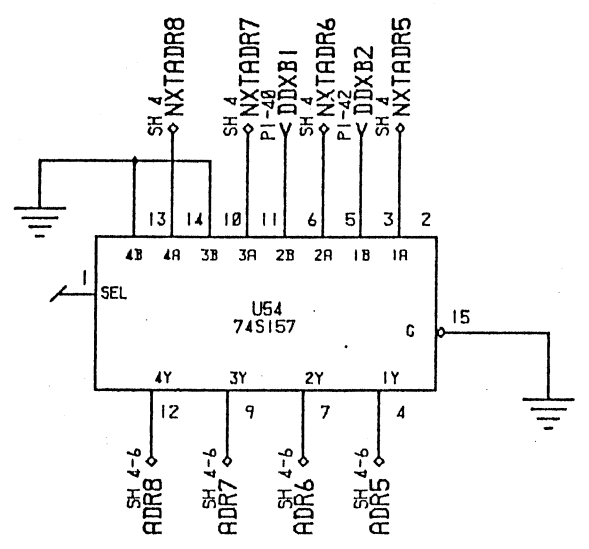
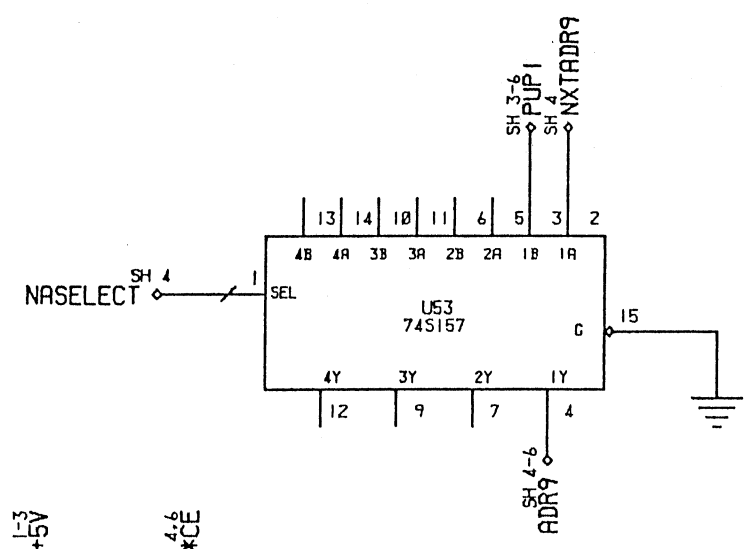


LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (b) (2)

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TCBCTL
REGCLR
HORIZ

LRCTL

LRADR

LSCTL

LSADR

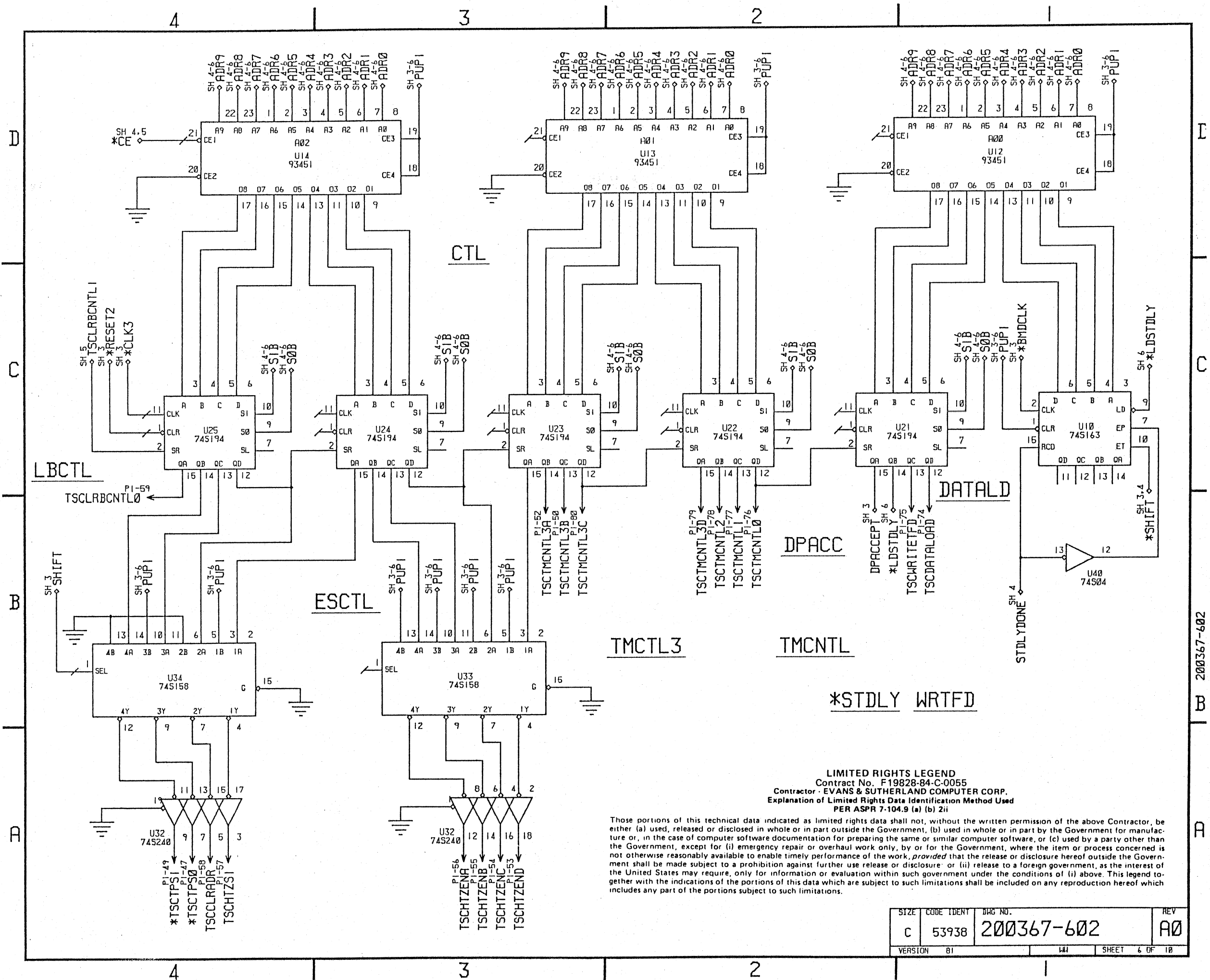
LBCTL

CTL

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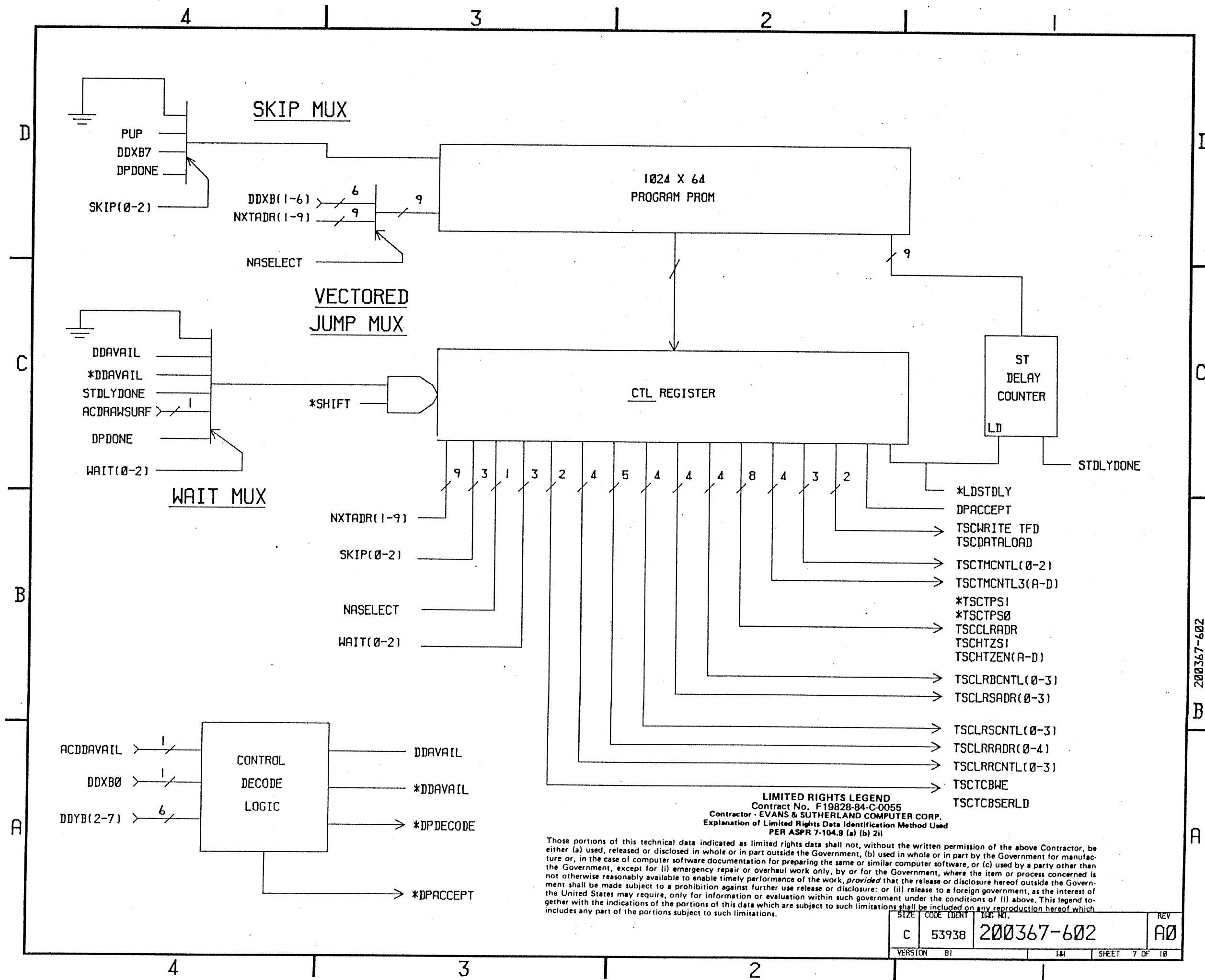
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 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
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LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of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

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C	53938	200367-602	A0
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UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN
PI	1	FEMALE	GROUND	1	C4		PI	50	MALE	TSCTMCNTL3B	6	B3	
PI	2	FEMALE	+5VIN	2	B3		PI	51	FEMALE	GROUND	1	B4	
PI	3	FEMALE	*CMCLK	3	C2		PI	52	MALE	TSCTMCNTL3A	6	B3	
PI	4	FEMALE	+5VIN	2	A3		PI	53	MALE	TSCHTZEND	6	A3	
PI	5	FEMALE	*CMRESET	3	D2		PI	54	MALE	TSCHTZENC	6	A3	
PI	6	FEMALE	ACDPDONE	3	B4		PI	55	MALE	TSCHTZENB	6	A3	
PI	7	FEMALE	*TFDBMAINT	3	B2		PI	56	MALE	TSCHTZENA	6	A3	
PI	8	FEMALE	DDXB0	3	C4		PI	57	MALE	TSCHTZSI	6	A4	
PI	9	FEMALE	SERIN	3	B3		PI	58	MALE	TSCCLRADR	6	A4	
PI	10	MALE	TSCLRRADR1	5	A3		PI	59	MALE	TSCLRBCNTL0	6	B4	
PI	11	FEMALE	GROUND	1	C4		PI	60	MALE	TSCLRBCNTL1	5	A1	
PI	12	MALE	TSCLRRADR2	5	A3		PI	61	FEMALE	GROUND	1	B4	
PI	13	MALE	TSCLRRADR3	5	A3		PI	62	MALE	TSCLRBCNTL2	5	A1	
PI	14	MALE	TSCLRRADR4	3	B2		PI	63	MALE	TSCLRBCNTL3	5	A1	
PI	16	MALE	TSCLRRCNTL0	5	A3		PI	64	MALE	TSCLRSADR0	5	A1	
PI	17	MALE	TSCLRRCNTL1	5	A3		PI	65	MALE	TSCLRSADR1	5	A1	
PI	18	MALE	TSCLRRCNTL2	5	A3		PI	66	MALE	TSCLRSADR2	5	A2	
PI	19	MALE	TSCLRRCNTL3	5	A3		PI	67	MALE	TSCLRSADR3	3	B2	
PI	21	FEMALE	GROUND	1	B4		PI	68	MALE	TSCLRSCNTL0	5	A2	
PI	23	MALE	TSCTCBWE	5	A4		PI	69	MALE	TSCLRSCNTL1	5	A2	
PI	24	MALE	TSCTCBSERLD	5	A4		PI	70	MALE	TSCLRSCNTL2	5	A2	
PI	28	FEMALE	LRRDDI5	3	A4		PI	71	FEMALE	GROUND	1	B4	
PI	29	FEMALE	ACDRAWSURF	4	A3		PI	72	MALE	TSCLRSCNTL3	5	A2	
PI	30	FEMALE	DDYB2	3	C4		PI	73	MALE	TSCLRRADR0	5	A2	
PI	31	FEMALE	GROUND	1	B4		PI	74	MALE	TSCDATALOAD	6	B1	
PI	32	FEMALE	DDYB3	3	C4		PI	75	MALE	TSCWRITETFD	6	B1	
PI	33	FEMALE	DDYB4	3	C4		PI	76	MALE	TSCTMCNTL0	6	B2	
PI	34	FEMALE	DDYB5	3	D4		PI	77	MALE	TSCTMCNTL1	6	B2	
PI	35	FEMALE	DDYB6	3	D4		PI	78	MALE	TSCTMCNTL2	6	B2	
PI	36	FEMALE	DDYB7	3	D4		PI	79	MALE	TSCTMCNTL3D	6	B2	
PI	37	FEMALE	ACDDAVAIL	3	D4		PI	80	MALE	TSCTMCNTL3C	6	B3	
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PI	39	MALE	*DPACCEPT	3	A1								
PI	40	FEMALE	DDXB1	5	D3								
PI	41	FEMALE	GROUND	1	B4								
PI	42	FEMALE	DDXB2	5	D2								
PI	43	FEMALE	DDXB6	5	D1								
PI	44	FEMALE	DDXB3	5	D2								
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PI	46	FEMALE	DDXB4	5	D2								
PI	47	MALE	*TSCTPS0	6	A4								
PI	48	FEMALE	DDXB5	5	D1								
PI	49	MALE	*TSCTPS1	6	A4								

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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CONNECTORS BY UNIT/PIN			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200367-602	A0
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STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
*CMCLK	PI	3	FEMALE	3	C2	
*CHRESET	PI	5	FEMALE	3	D2	
*DPACCEPT	PI	39	MALE	3	A1	
*DPDECODE	PI	38	MALE	3	C2	
*TFDBMAINT	PI	7	FEMALE	3	B2	
*TSCTPS0	PI	47	MALE	6	A4	
*TSCTPSI	PI	49	MALE	6	A4	
+5VIN	PI	2	FEMALE	2	B3	
+5VIN	PI	4	FEMALE	2	A3	
ACDDAVAIL	PI	37	FEMALE	3	D4	
ACDPDNE	PI	6	FEMALE	3	B4	
ACDRAWSURF	PI	29	FEMALE	4	A3	
DDXB0	PI	8	FEMALE	3	C4	
DDXB1	PI	40	FEMALE	5	D3	
DDXB2	PI	42	FEMALE	5	D2	
DDXB3	PI	44	FEMALE	5	D2	
DDXB4	PI	46	FEMALE	5	D2	
DDXB5	PI	48	FEMALE	5	D1	
DDXB6	PI	43	FEMALE	5	D1	
DDXB7	PI	45	FEMALE	4	B4	
DDYB2	PI	30	FEMALE	3	C4	
DDYB3	PI	32	FEMALE	3	C4	
DDYB4	PI	33	FEMALE	3	C4	
DDYB5	PI	34	FEMALE	3	D4	
DDYB6	PI	35	FEMALE	3	D4	
DDYB7	PI	36	FEMALE	3	D4	
GROUND	PI	1	FEMALE	1	C4	
GROUND	PI	11	FEMALE	1	C4	
GROUND	PI	21	FEMALE	1	B4	
GROUND	PI	31	FEMALE	1	B4	
GROUND	PI	41	FEMALE	1	B4	
GROUND	PI	51	FEMALE	1	B4	
GROUND	PI	61	FEMALE	1	B4	
GROUND	PI	71	FEMALE	1	B4	
LARDD15	PI	28	FEMALE	3	A4	
SERIN	PI	9	FEMALE	3	B3	
TSCCLADR	PI	58	MALE	6	A4	
TSCDATALOAD	PI	74	MALE	6	B1	
TSCHTZENA	PI	56	MALE	6	A3	
TSCHTZENB	PI	55	MALE	6	A3	
TSCHTZENC	PI	54	MALE	6	A3	
TSCHTZEND	PI	53	MALE	6	A3	
TSCHTZSI	PI	57	MALE	6	A4	

STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
TSCLRBCNTL0	PI	59	MALE	6	B4	
TSCLRBCNTL1	PI	60	MALE	5	A1	
TSCLRBCNTL2	PI	62	MALE	5	A1	
TSCLRBCNTL3	PI	63	MALE	5	A1	
TSCLRRADR0	PI	73	MALE	5	A2	
TSCLRRADR1	PI	10	MALE	5	A3	
TSCLRRADR2	PI	12	MALE	5	A3	
TSCLRRADR3	PI	13	MALE	5	A3	
TSCLRRADR4	PI	14	MALE	3	B2	
TSCLARCNTL0	PI	16	MALE	5	A3	
TSCLARCNTL1	PI	17	MALE	5	A3	
TSCLARCNTL2	PI	18	MALE	5	A3	
TSCLARCNTL3	PI	19	MALE	5	A3	
TSCLRSADR0	PI	64	MALE	5	A1	
TSCLRSADR1	PI	65	MALE	5	A1	
TSCLRSADR2	PI	66	MALE	5	A2	
TSCLRSADR3	PI	67	MALE	3	B2	
TSCLRSCNTL0	PI	68	MALE	5	A2	
TSCLRSCNTL1	PI	69	MALE	5	A2	
TSCLRSCNTL2	PI	70	MALE	5	A2	
TSCLRSCNTL3	PI	72	MALE	5	A2	
TSCTCBSERLD	PI	24	MALE	5	A4	
TSCTCBWE	PI	23	MALE	5	A4	
TSCTMCNTL0	PI	76	MALE	6	B2	
TSCTMCNTL1	PI	77	MALE	6	B2	
TSCTMCNTL2	PI	78	MALE	6	B2	
TSCTMCNTL3A	PI	52	MALE	6	B3	
TSCTMCNTL3B	PI	50	MALE	6	B3	
TSCTMCNTL3C	PI	80	MALE	6	B3	
TSCTMCNTL3D	PI	79	MALE	6	B2	
TSCHWRITETFD	PI	75	MALE	6	B1	

LIMITED RIGHTS LEGEND
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 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
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1	PC	
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3	WW	
4	WW	
5	WW	
6	WW	
7	WW	

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MAINTENANCE PARTS LIST

ASSEMBLY: PL 200374-100

REV: A0 = AA

DESC: CARD ASSY,SP1/T TG-TEXTURE GENERATOR (PC)

%CADOL%

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1 C2	BD,P02R TG 6X11	53938	EVANS & SUTHERLAND.	200374-500	200374-500	1
C3 C4 C5 C6 C7 C8 C9 C10	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C11 C12 C13 C14 C15 C16 C17	C,,AXL .001 UF	96733	S F E TECHNOLOGIES	N511BZ102Z	804122-102	54
C18 C19 C20 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						
E1	HW,TERM TP,1/16BD	88245	WINCHESTER ELEC USECO DIV	1282B-1(.090,TURRET)	802329-001	1
F1	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	1
M2	HW,SPCR .312SPCR	53938	EVANS & SUTHERLAND.	501336-001	501336-001	1
M3	HW,SPCR .093SPCR	53938	EVANS & SUTHERLAND.	501337-001	501337-001	1
M4	*SCD*EJECTOR,CRD,SPEC	53938	EVANS & SUTHERLAND	*SCD*801826-001	801826-001	1
M5	HW,SCR 6-32X3/8	N/A	DISTRIBUTORS	6-AB-3/8(SM-P-PH-Z)	802056-003	3
R1 R2	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	2
U10 U12 U20 U22 U23 U32 U33	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	20
U51 U52 U55 U60 U61 U62 U65						
U66 U70 U71 U72 U76 U81						
U11 U21	IC,RAM IDT7188S	60911	INMOS CORP	IMS1620P(S)-45	807188-045	2
U14 U46	IC,TTL TDC1008J	51640	ANALOG DEVICES INC. MICRO	ADSP1008AKD/N(45NS)	807831-888	2
U16 U24 U26	*OBS*,USE 809010-002	53938	EVANS & SUTHERLAND	809010-002	809010-001	3
U30 U40 U41 U50	IC,TTL 25S10	34335	ADVANCED MICRO DEVICES IN	AM25S10PC/DC(74S350)	807744-055	4
U31 U83 U86 U93 U96	IC,TTL 74S299	27014	NATIONAL SEMICONDUCTOR	DM74S299N-A+	807737-055	5
U42	IC,PROM,BIP,256X8,TS,	53938	EVANS & SUTHERLAND.	807808-016-B16	807808-016-B16	1
U43	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	1
U53 U54	IC,RAM 74S189	18324	SIGNETICS CORP. MILITARY	N74S189N	807734-036	2
U56	IC,PROM,2048X8,35NS,B	53938	EVANS & SUTHERLAND.	807199-035-A00	807199-035-A00	1
U63	R,,SIP 3.3K(R9)	1U696	STACKPOLE COMPONENTS CO	10-9-5-332G (SIP)	807505-332	1
U64	IC,PROM 74S288	53938	EVANS & SUTHERLAND.	807739-045-A63	807739-045-A63	1
U73	IC,PROM,BIP,256X8,TS	53938	EVANS & SUTHERLAND.	807808-016-B17	807808-016-B17	1
U74	IC,PROM 74S288	53938	EVANS & SUTHERLAND.	807739-045-A65	807739-045-A65	1
U75	IC,PROM 74S288	53938	EVANS & SUTHERLAND.	807739-045-A64	807739-045-A64	1
U80 U91	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	2
U82	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U84 U85 U94 U95	IC,RAM 2149H-2	65786	CYPRESS SEMICONDUCTOR	CY2149-45PC	807149-045	4
U90	IC,TTL 74125	27014	NATIONAL SEMICONDUCTOR	DM8093N/DM74125N	807494-646	1
U92	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1

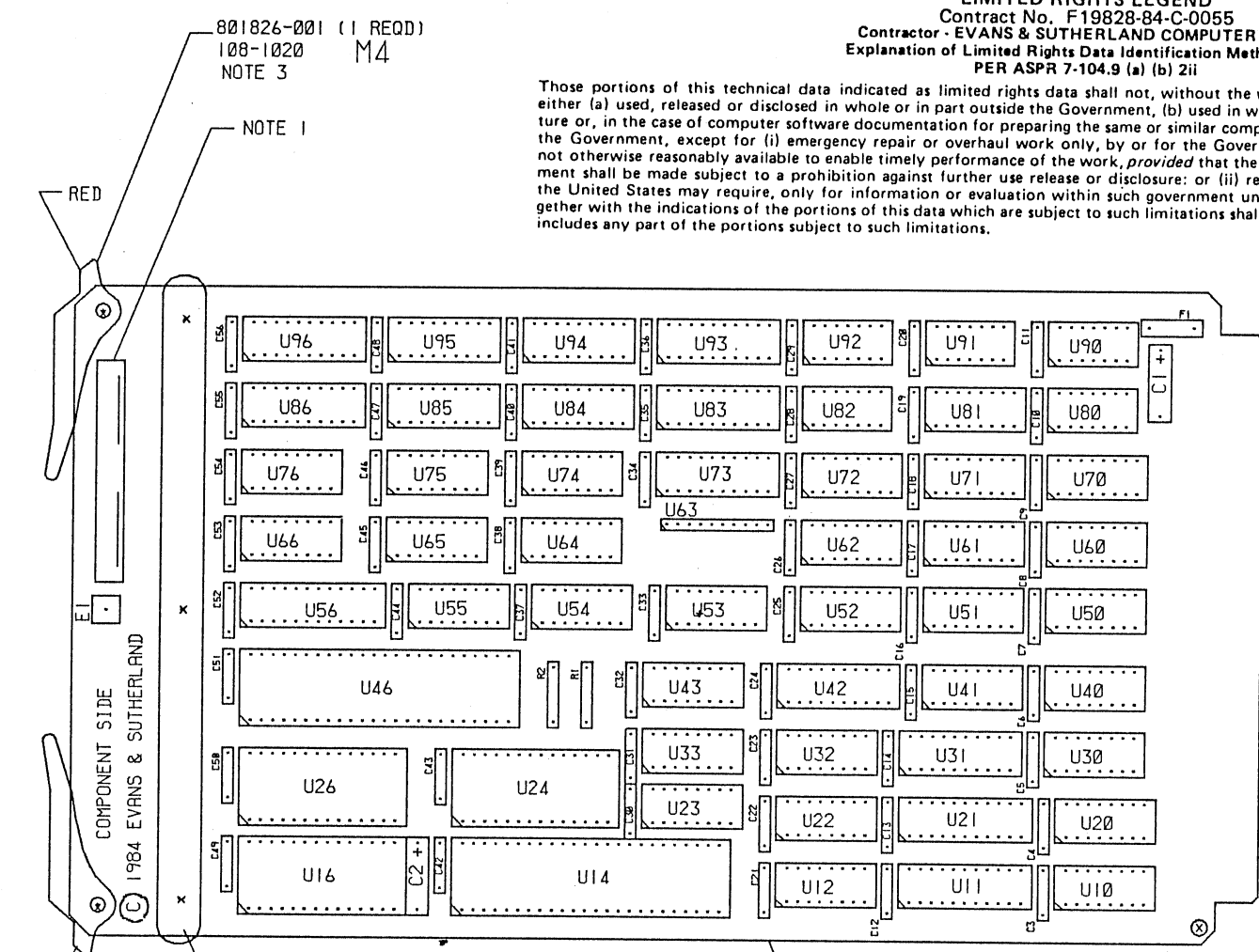
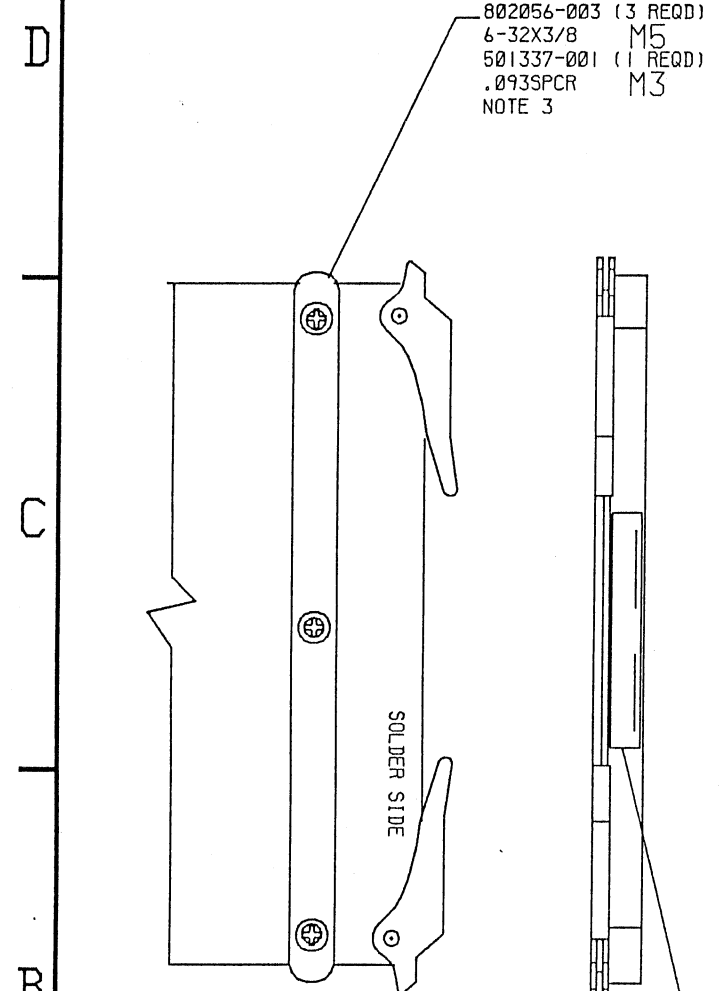
30 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASE REV LEVEL TO A0 W/NO CHANGES	SAD. 3-5-86	<i>[Signature]</i>

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

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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.
 2. MAXIMUM COMPONENT HEIGHT TO BE .312 INCHES FROM CARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM CARD SURFACE.
 3. INSTALL CARD EJECTORS (M4) AND SPACERS (M2 & M3) AFTER WAVE SOLDERING.

REFERENCE DOCUMENTS
 SCHEMATIC _ _ 200374-600
 PARTS LIST _ PL200374-100

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DRAWN S. BARBER	EVANS & SUTHERLAND <small>SALT LAKE CITY, UTAH 84108</small>		
CHECKED <i>[Signature]</i> 3-7-86	TITLE		
ELEC ENG J. BENTLEY <i>[Signature]</i>	ASSY. TG SPI/T TEXTURE GENERATOR (PC)		
PROJ ENG J. BLEAK	APPROVED		
NEXT ASSY	SIZE	CODE IDENT	BWG NO.
MODIFIED DATE 5-MAR-86	C	53938	200374-100
CREATION DATE 5-JUN-85	REV	A0	
FILE NAME 200374100A0.MDF	VERSION	SHEET 1 OF 1	

200374-100

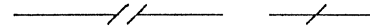


NOTES: UNLESS OTHERWISE SPECIFIED:

- RESISTANCE VALUES ARE IN OHMS + - 1%, K 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

3. CARD CONNECTOR SYMBOL "P1-" DESIGNATES:
 INPUT SIGNALS \rightarrow
 OUTPUT SIGNALS \leftarrow

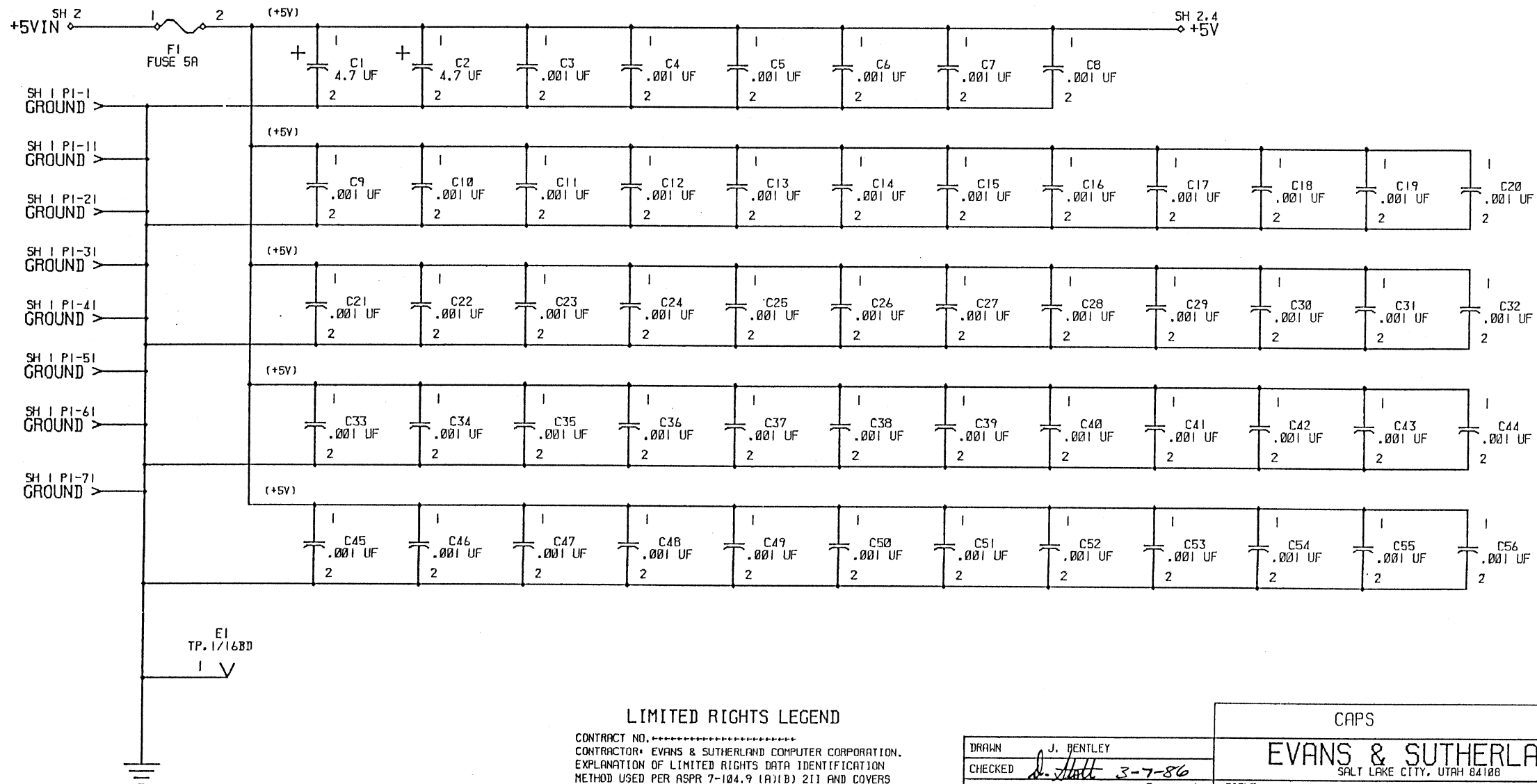
4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.



REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
	AB	RELEASE REV LEVEL TO AB W/NO CHANGES	SAD, 3-5-86
			APPROVED: <i>JSB 3/7/86</i>

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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LIMITED RIGHTS LEGEND

CONTRACT NO. *****
 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORPORATION.
 EXPLANATION OF LIMITED RIGHTS DATA IDENTIFICATION
 METHOD USED PER ASPR 7-104.9 (A)(B) 2II AND COVERS
 ALL INFORMATION ON THIS DRAWING.

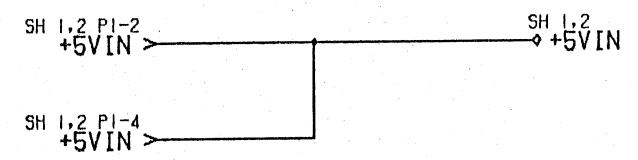
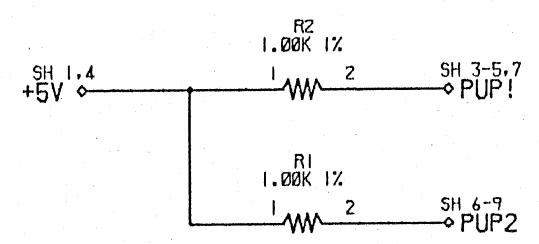
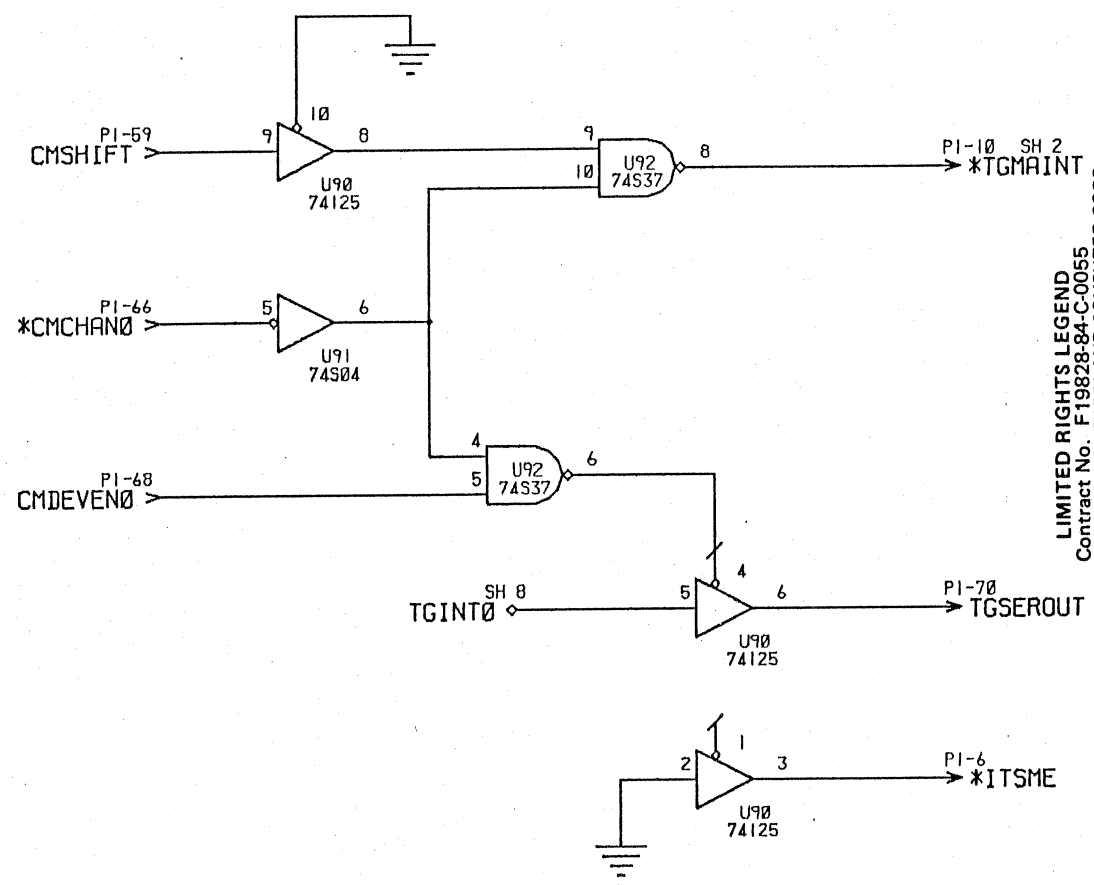
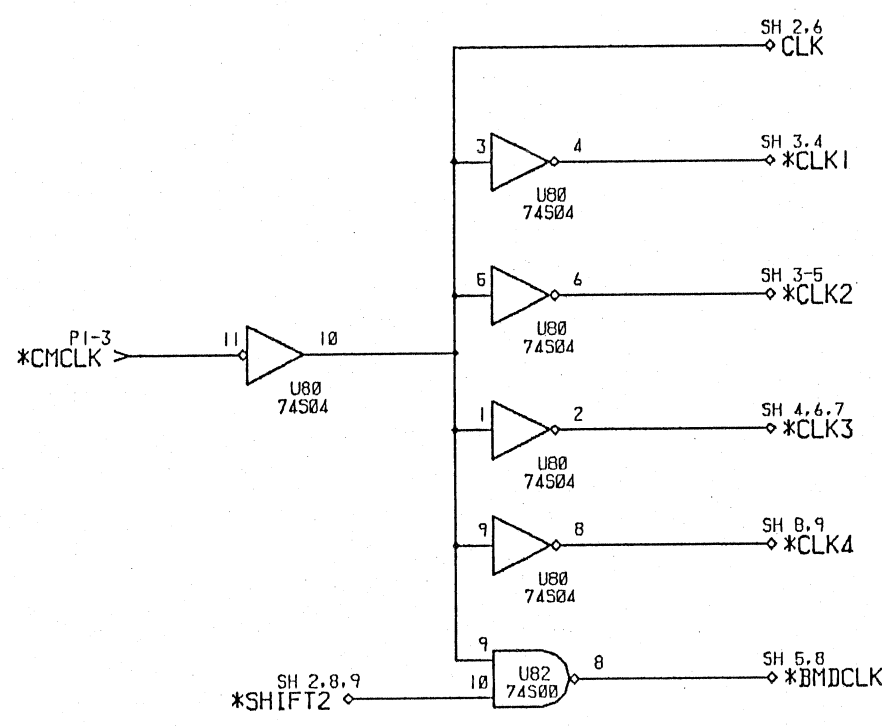
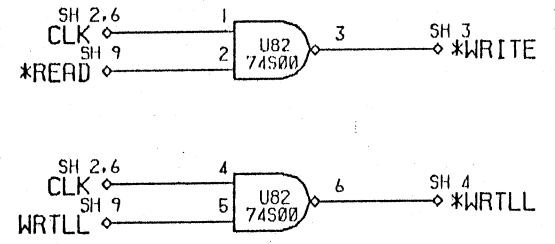
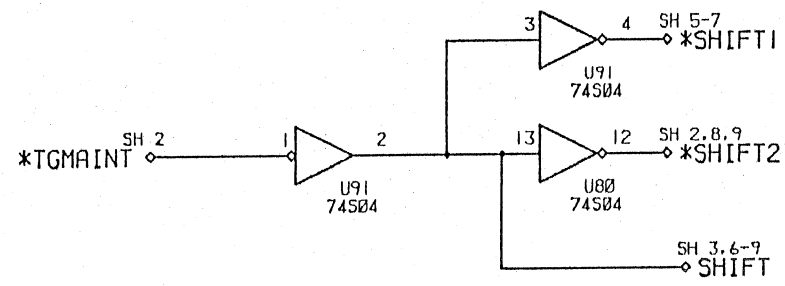
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DRAWN	J. BENTLEY
CHECKED	<i>J. Bentley</i> 3-7-86
ELEC ENG	J. BENTLEY <i>JSB 3/7/86</i>
PROJ ENG	J. BLEAK
APPROVED	
NEXT ASSY	
MODIFIED DATE	5-MAR-86
CREATION DATE	5-JUN-85
FILE NAME	20037410000.MDF

CAPS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE TG SPI/T TEXTURE GENERATOR (PC)			
SIZE	CODE IDENT	TRG NO.	REV
C	53938	200374-600	AB
VERSION	BA	PC	SHEET 1 OF 13

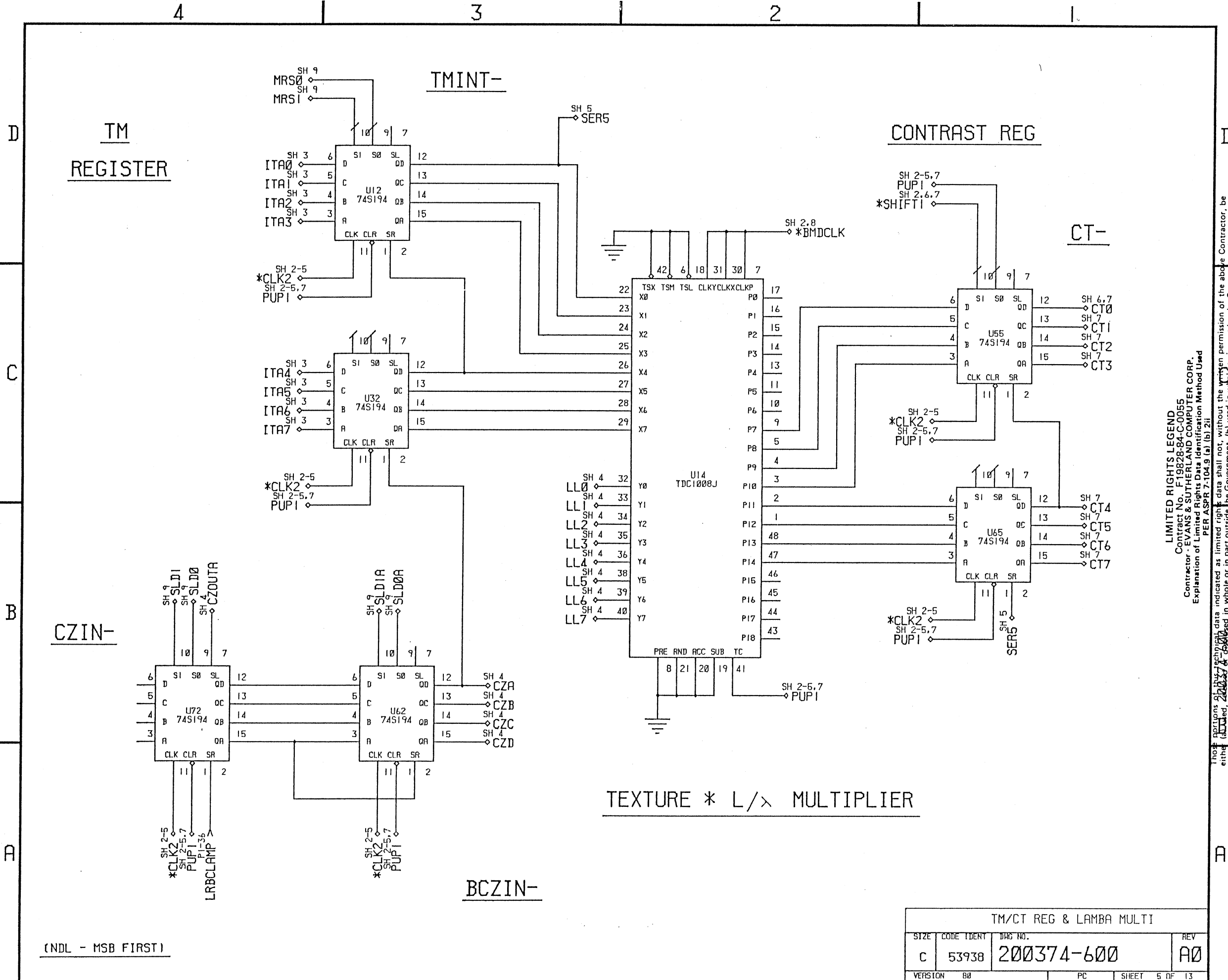
200374-600



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) (2)(i)

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CLK BUFFER & MAINT			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200374-600	A0
VERSION	80	PC	SHEET 2 OF 13



TM REGISTER

CZIN-

BCZIN-

TEXTURE * L/λ MULTIPLIER

CONTRAST REG

(NDL - MSB FIRST)

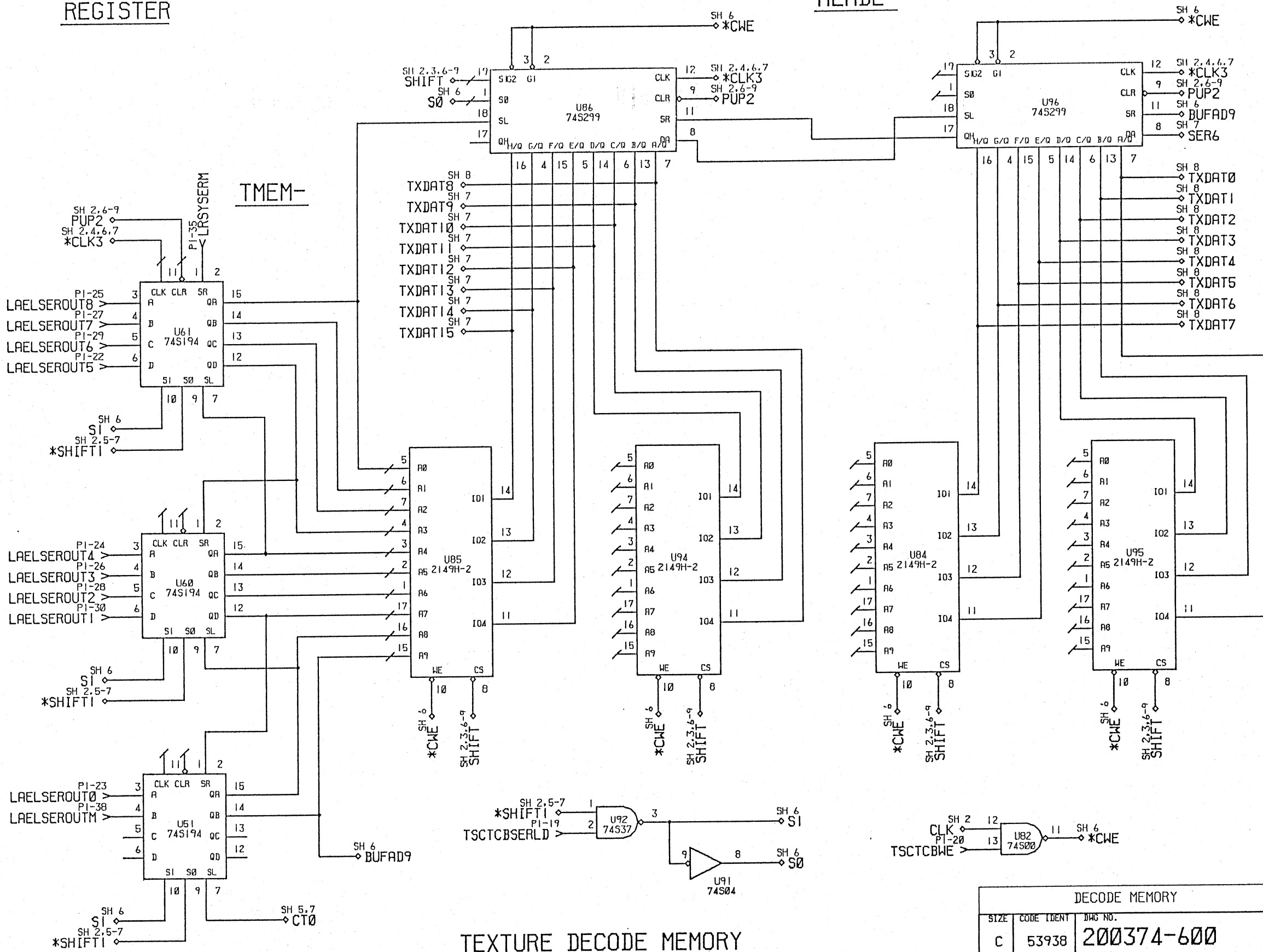
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LIMITED RIGHTS LEGEND
 Contract No. F 19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (1) (2)

TM/CT REG & LAMBA MULTI			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200374-600	A0
VERSION	B0	PC	SHEET 5 OF 13

MEMORY ADDRESS REGISTER

MEMDE-



TEXTURE DECODE MEMORY

DECODE MEMORY			
SIZE	CODE IDENT	HWG NO.	REV
C	53938	200374-600	A0
VERSION	B0	PC	SHEET 6 OF 13

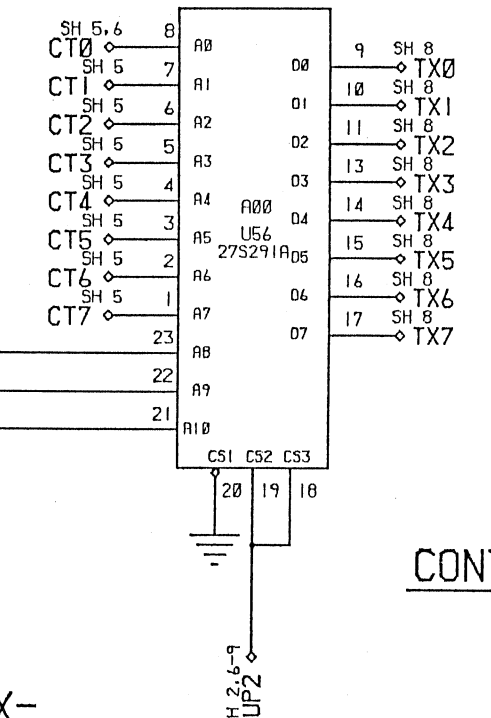
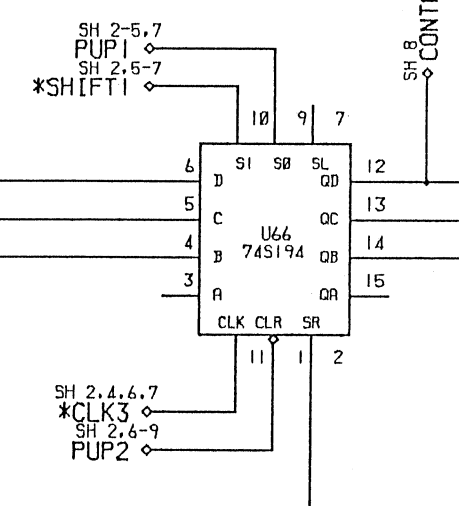
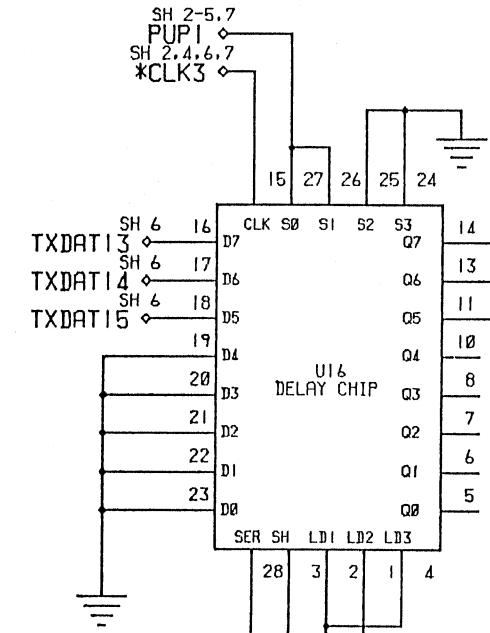
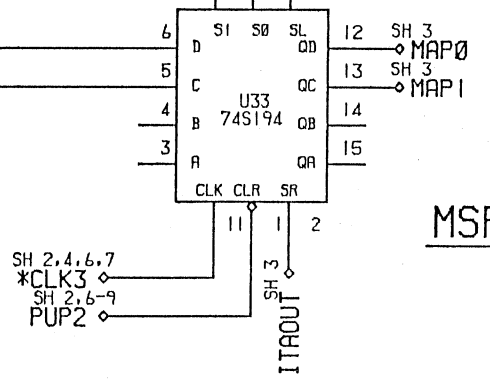
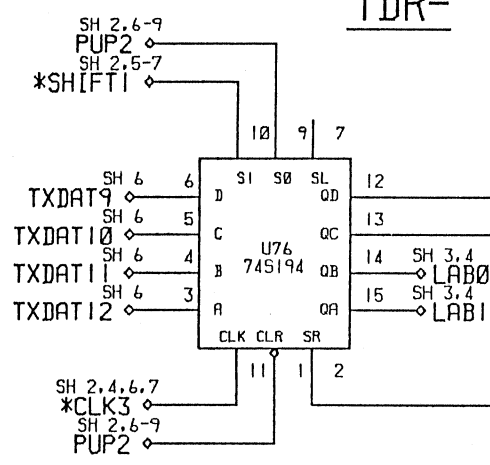
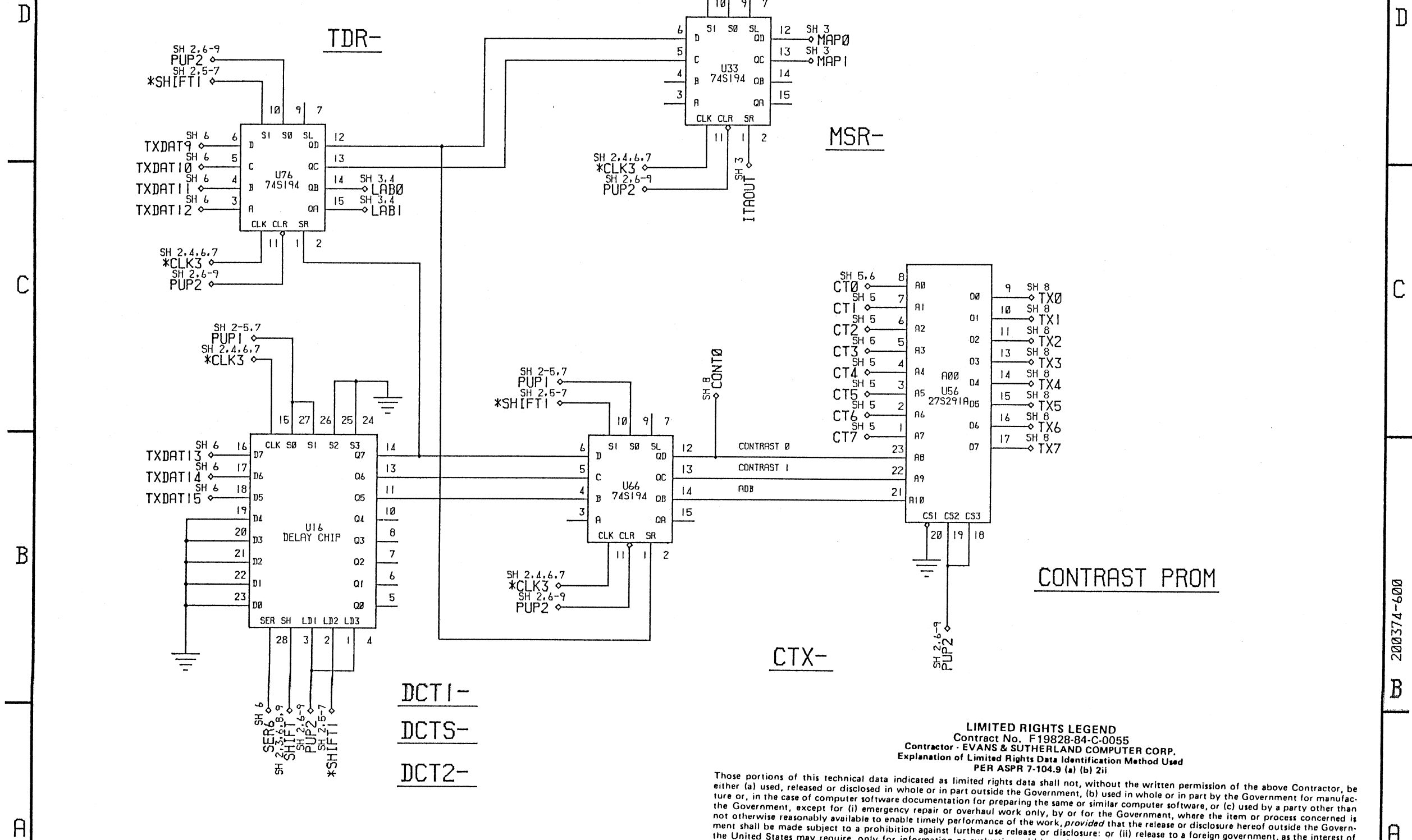
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LIMITED RIGHTS LEGEND
 CONTRACT NO. H19828-84-C-0055
 CONTRACTOR - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

200374-600

TEXTURE DECODE REG

MAP SELECT REG



DCT1-
 DCTS-
 DCT2-
 CONTRAST/ADB DELAY REG

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

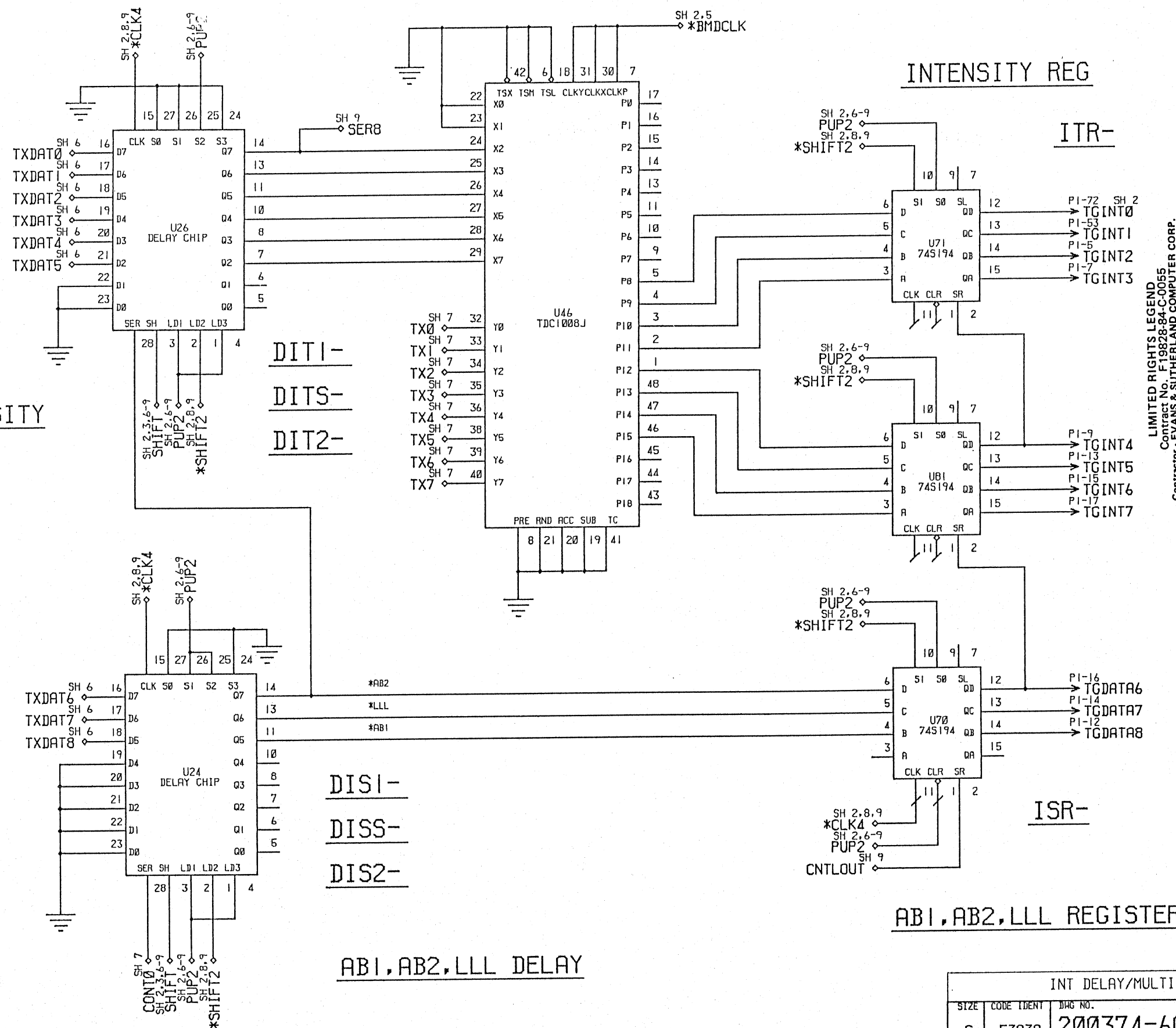
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DECODE/CONT DELAY/CON PROM			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200374-600	A0
VERSION	00	PC	SHEET 7 OF 13

200374-600

INTENSITY * TEXTURE MULTIPLIER

D
C
B
A



D
C
B
A

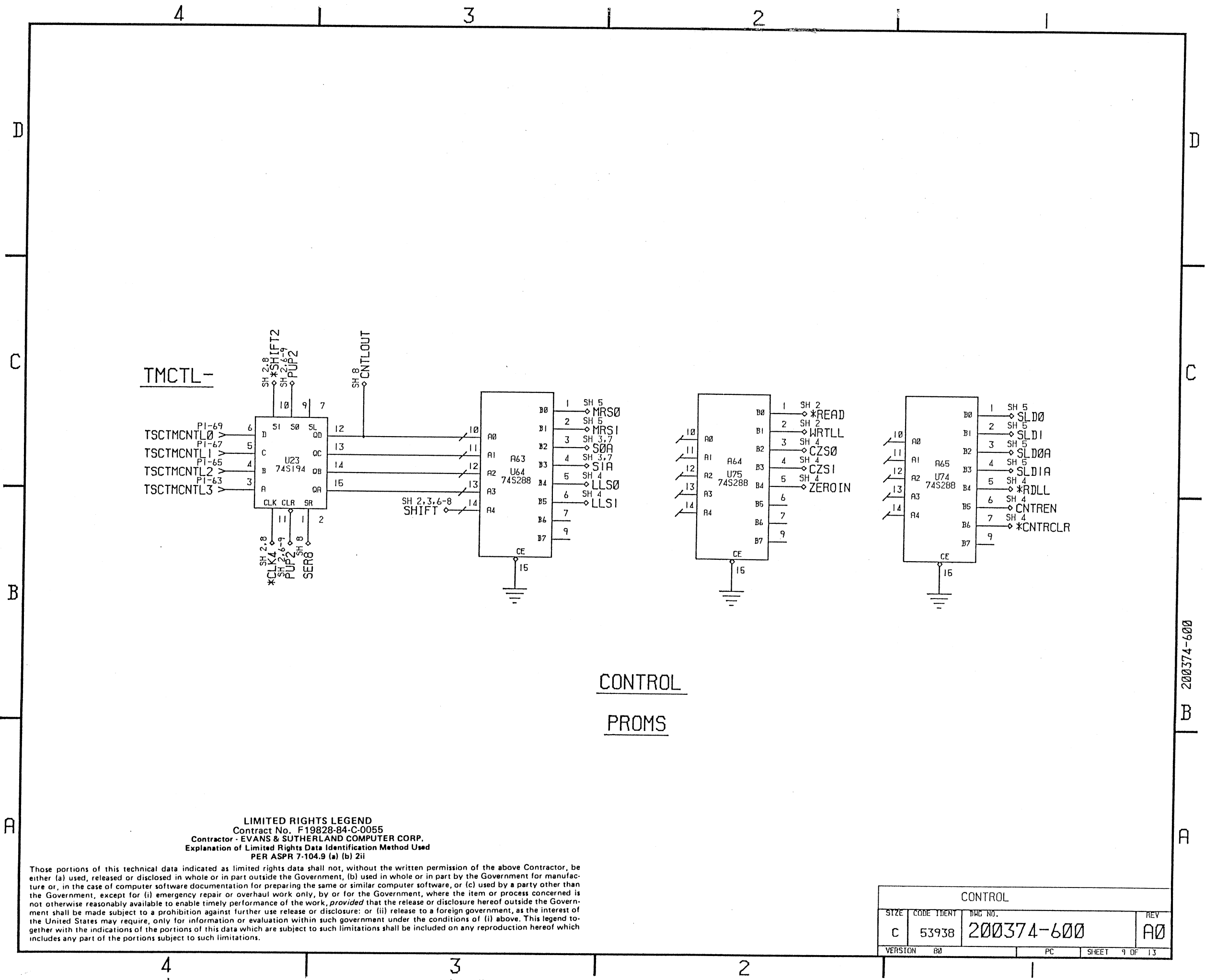
D
C
B
A

200374-600

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) (2)

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INT DELAY/MULTI/REG			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200374-600	A0
VERSION	00	PC	SHEET 8 OF 13



TMCTL-

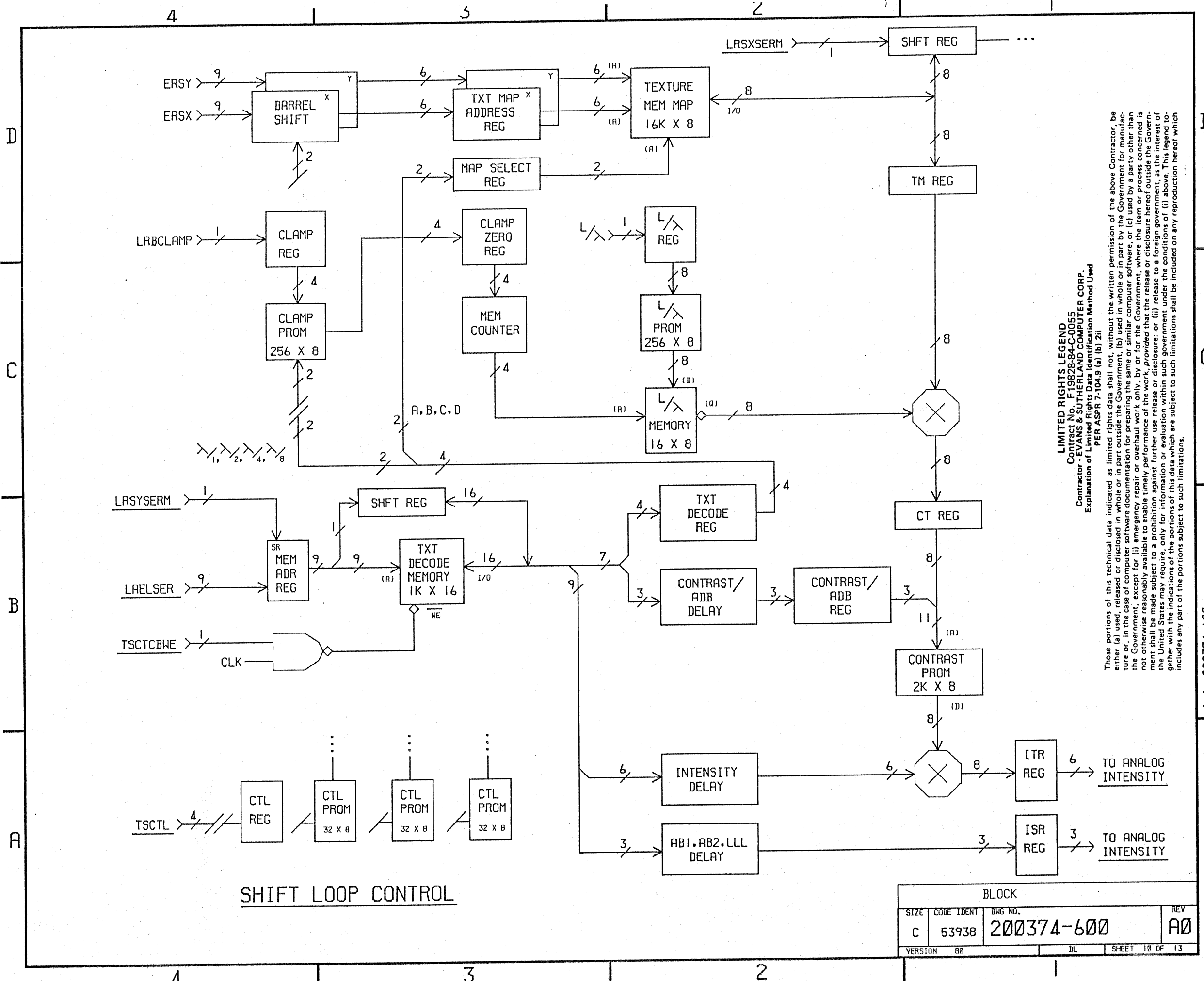
CONTROL
PROMS

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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CONTROL			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200374-600	A0
VERSION	B0	PC	SHEET 9 OF 13

200374-600 B 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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SHIFT LOOP CONTROL

BLOCK			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200374-600	A0
VERSION	80	BL	SHEET 10 OF 13

D

D

C

C

B

B

A

A

UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN
PI	1	FEMALE	GROUND	1	C4		PI	45	FEMALE	ERSTY-5	3	B4	
PI	2	FEMALE	+5VIN	2	A2		PI	46	FEMALE	ERSTX-5	3	D4	
PI	3	FEMALE	*CMCLK	2	B4		PI	47	FEMALE	ERSTY-4	3	A4	
PI	4	FEMALE	+5VIN	2	A2		PI	48	FEMALE	ERSTX-4	3	C4	
PI	5	MALE	TGINT2	8	C1		PI	49	FEMALE	ERSTY-3	3	A4	
PI	6	MALE	*ITSME	2	B1		PI	50	FEMALE	LRSXSERM	3	D1	
PI	7	MALE	TGINT3	8	C1		PI	51	FEMALE	GROUND	1	B4	
PI	8	FEMALE	SERIN	3	D1		PI	52	FEMALE	ERSTX-3	3	C4	
PI	9	MALE	TGINT4	8	C1		PI	53	MALE	TGINT1	8	C1	
PI	10	MALE	*TGMAINT	2	C1		PI	54	FEMALE	ERSTX-2	3	C4	
PI	11	FEMALE	GROUND	1	C4		PI	55	FEMALE	ERSTY-2	3	A4	
PI	12	MALE	TGDATA8	8	B1		PI	56	FEMALE	ERSTX-1	3	C4	
PI	13	MALE	TGINT5	8	C1		PI	57	FEMALE	ERSTY-1	3	A4	
PI	14	MALE	TGDATA7	8	B1		PI	59	FEMALE	CMSHIFT	2	C2	
PI	15	MALE	TGINT6	8	C1		PI	61	FEMALE	GROUND	1	B4	
PI	16	MALE	TGDATA6	8	B1		PI	63	FEMALE	TSCTMCNTL3	9	B4	
PI	17	MALE	TGINT7	8	B1		PI	65	FEMALE	TSCTMCNTL2	9	C4	
PI	19	FEMALE	TSCTCBSERLD	6	A3		PI	66	FEMALE	*CMCHAN0	2	C2	
PI	20	FEMALE	TSCTCBWE	6	A2		PI	67	FEMALE	TSCTMCNTL1	9	C4	
PI	21	FEMALE	GROUND	1	C4		PI	68	FEMALE	CMDEVEN0	2	B2	
PI	22	FEMALE	LAELSEROUT5	6	C4		PI	69	FEMALE	TSCTMCNTL0	9	C4	
PI	23	FEMALE	LAELSEROUT0	6	A4		PI	70	MALE	TGSEROUT	2	B1	
PI	24	FEMALE	LAELSEROUT4	6	B4		PI	71	FEMALE	GROUND	1	B4	
PI	25	FEMALE	LAELSEROUT8	6	C4		PI	72	MALE	TGINT0	8	D1	
PI	26	FEMALE	LAELSEROUT3	6	B4								
PI	27	FEMALE	LAELSEROUT7	6	C4								
PI	28	FEMALE	LAELSEROUT2	6	B4								
PI	29	FEMALE	LAELSEROUT6	6	C4								
PI	30	FEMALE	LAELSEROUT1	6	B4								
PI	31	FEMALE	GROUND	1	B4								
PI	32	FEMALE	LRBLLAMBDA	4	C4								
PI	33	FEMALE	ERSTY-9	3	B4								
PI	34	FEMALE	ERSTX-9	3	D4								
PI	35	FEMALE	LRSYSERM	6	C4								
PI	36	FEMALE	LRBCLAMP	5	A4								
PI	37	FEMALE	ERSTY-8	3	B4								
PI	38	FEMALE	LAELSEROUTM	6	A4								
PI	39	FEMALE	ERSTY-7	3	B4								
PI	40	FEMALE	ERSTX-8	3	D4								
PI	41	FEMALE	GROUND	1	B4								
PI	42	FEMALE	ERSTX-7	3	D4								
PI	43	FEMALE	ERSTY-6	3	B4								
PI	44	FEMALE	ERSTX-6	3	D4								

200374-600

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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CONNECTORS BY UNIT/PIN			
SIZE	CODE IDENT	DRG NO.	REV
C	53938	200374-600	A0
VERSION	00	CS	SHEET 11 OF 13

STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
*CMCHAN0	PI	66	FEMALE	2	C2	
*CMCLK	PI	3	FEMALE	2	B4	
*ITSME	PI	6	MALE	2	B1	
*TGMAINT	PI	10	MALE	2	C1	
+5VIN	PI	2	FEMALE	2	A2	
+5VIN	PI	4	FEMALE	2	A2	
CMDEVEN0	PI	68	FEMALE	2	B2	
CMSHIFT	PI	59	FEMALE	2	C2	
ERSTX-1	PI	56	FEMALE	3	C4	
ERSTX-2	PI	54	FEMALE	3	C4	
ERSTX-3	PI	52	FEMALE	3	C4	
ERSTX-4	PI	48	FEMALE	3	C4	
ERSTX-5	PI	46	FEMALE	3	D4	
ERSTX-6	PI	44	FEMALE	3	D4	
ERSTX-7	PI	42	FEMALE	3	D4	
ERSTX-8	PI	40	FEMALE	3	D4	
ERSTX-9	PI	34	FEMALE	3	D4	
ERSTY-1	PI	57	FEMALE	3	A4	
ERSTY-2	PI	55	FEMALE	3	A4	
ERSTY-3	PI	49	FEMALE	3	A4	
ERSTY-4	PI	47	FEMALE	3	A4	
ERSTY-5	PI	45	FEMALE	3	B4	
ERSTY-6	PI	43	FEMALE	3	B4	
ERSTY-7	PI	39	FEMALE	3	B4	
ERSTY-8	PI	37	FEMALE	3	B4	
ERSTY-9	PI	33	FEMALE	3	B4	
GROUND	PI	1	FEMALE	1	C4	
GROUND	PI	11	FEMALE	1	C4	
GROUND	PI	21	FEMALE	1	C4	
GROUND	PI	31	FEMALE	1	B4	
GROUND	PI	41	FEMALE	1	B4	
GROUND	PI	51	FEMALE	1	B4	
GROUND	PI	61	FEMALE	1	B4	
GROUND	PI	71	FEMALE	1	B4	
LAELSEROUT0	PI	23	FEMALE	6	A4	
LAELSEROUT1	PI	30	FEMALE	6	B4	
LAELSEROUT2	PI	28	FEMALE	6	B4	
LAELSEROUT3	PI	26	FEMALE	6	B4	
LAELSEROUT4	PI	24	FEMALE	6	B4	
LAELSEROUT5	PI	22	FEMALE	6	C4	
LAELSEROUT6	PI	29	FEMALE	6	C4	
LAELSEROUT7	PI	27	FEMALE	6	C4	
LAELSEROUT8	PI	25	FEMALE	6	C4	

STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
LAELSEROUTM	PI	38	FEMALE	6	A4	
LRBCLAMP	PI	36	FEMALE	5	A4	
LRBLLAMBDA	PI	32	FEMALE	4	C4	
LRSXSERM	PI	50	FEMALE	3	D1	
LRSYSERM	PI	35	FEMALE	6	C4	
SERIN	PI	8	FEMALE	3	D1	
TGDATA6	PI	16	MALE	8	B1	
TGDATA7	PI	14	MALE	8	B1	
TGDATA8	PI	12	MALE	8	B1	
TGINT0	PI	72	MALE	8	D1	
TGINT1	PI	53	MALE	8	C1	
TGINT2	PI	5	MALE	8	C1	
TGINT3	PI	7	MALE	8	C1	
TGINT4	PI	9	MALE	8	C1	
TGINT5	PI	13	MALE	8	C1	
TGINT6	PI	15	MALE	8	C1	
TGINT7	PI	17	MALE	8	B1	
TGSEROUT	PI	70	MALE	2	B1	
TSCTCBSERLD	PI	19	FEMALE	6	A3	
TSCTCBWE	PI	20	FEMALE	6	A2	
TSCTMCNTL0	PI	69	FEMALE	9	C4	
TSCTMCNTL1	PI	67	FEMALE	9	C4	
TSCTMCNTL2	PI	65	FEMALE	9	C4	
TSCTMCNTL3	PI	63	FEMALE	9	B4	

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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CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200374-600	A0
VERSTON	80	CS	SHEET 12 OF 13

200374-600

B

A

PAGE	TYPE	PAGE NAME
1	PC	CAPS
2	PC	CLK BUFFER & MAINT
3	PC	BARREL SHIFT/MAP ADR
4	PC	CLAMP FUNCTION
5	PC	TM/CT REG & LAMBA MULTI
6	PC	DECODE MEMORY
7	PC	DECODE/CONT DELAY/CON PROM
8	PC	INT DELAY/MULTI/REG
9	PC	CONTROL
10	BL	BLOCK

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C

C

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200374-600

B

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TABLE OF CONTENTS			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200374-600	A0
VERSION	00	TC	SHEET 13 OF 13

4

3

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1



TIME=17:43

RUN DATE=05/29/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200390-100

REV: A0 = AA

DESC: CD POSITION DAC (PC)

%CAD20B%

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C101 C103 C105	BD,P02R DFIX2X2	53938	EVANS & SUTHERLAND.	200390-500	200390-500	1
C102 C104 C106	C,,RDL .01UF	31433	KEMET ELECTRONICS CORP.	C052K103K1X5CA	804119-103	3
J3 J2	C,,RDL 4.7UF	31433	KEMET ELECTRONICS CORP.	T370D475M035AS	804128-475	3
J5 J4	CN,STRP 8PINSTRP	17117	ELECTRONIC MOLDING CORP.	15108-04-451 (8SCKT)	801605-008	2
R101	CN,STRP 4PINSTRP	17117	ELECTRONIC MOLDING CORP.	15104-04-451 (4SCKT)	801605-004	2
R102	R,,AXL 12.1K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-12.1K-1%	803454-121	1
U101	R,,POT 82PR20K	73138	BECKMAN INDUSTRIES CORP.	82PR20K	803523-203	1
	IC,ANLG DAC71SBI	13919	BURR-BROWN CORP.	DAC71-CSB-I	806071-888	1
8 ITEMS LISTED						



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 AND COVERS ALL INFORMATION ON THIS DRAWING.

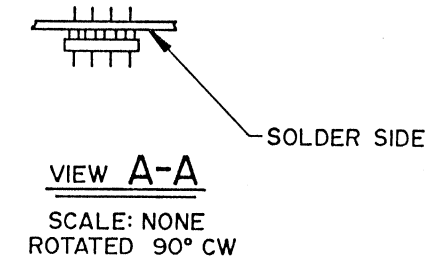
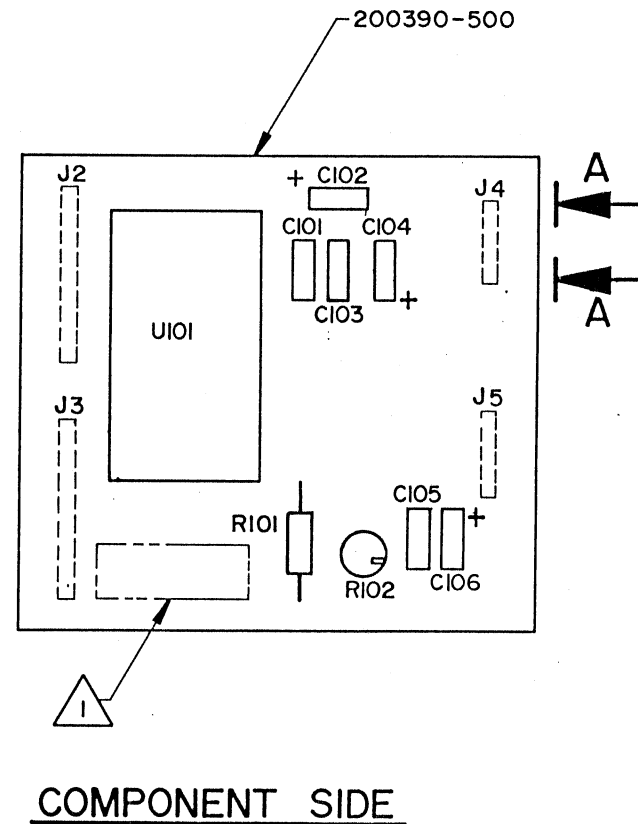
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
AO		RELEASED TO AO	8-22-83	<i>D. Hoopes</i>



NOTES:

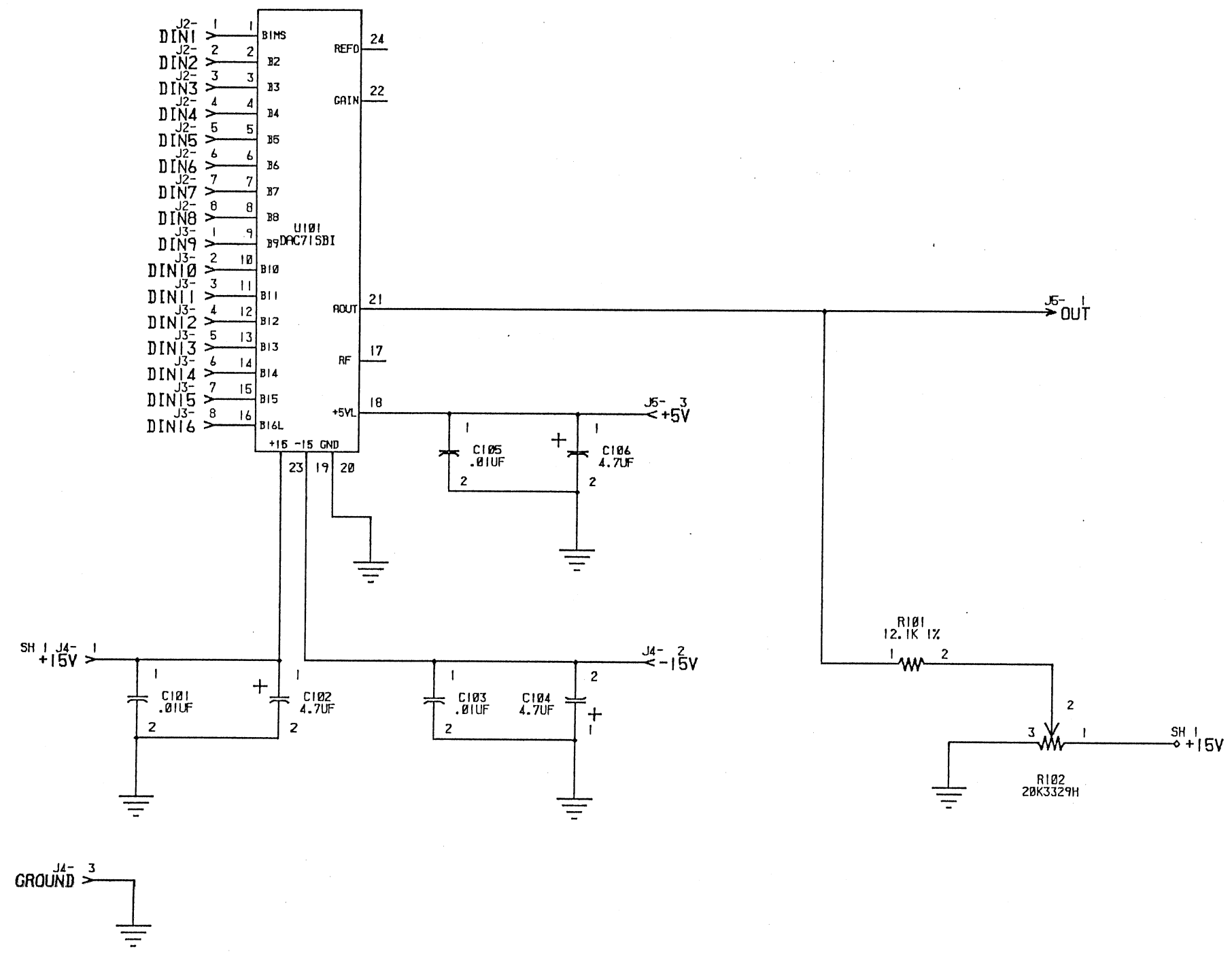
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E&S PRODUCTION PROCESSES NO. R-8. LOCATE APPROXIMATELY AS SHOWN.
2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± _____ .xxx ± _____ ANGLES ± _____ ✓ HOLES PER AND 10387	DRAWN R. HOUSTON 6-28-83	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108			
	CHECKED <i>J. Madam</i> 7-1-83				
	MACH.	CD POSITION DAC (P.C.)			
	ELEC. <i>Dick B. Hoopes</i>				
MATERIAL SEE PARTS LIST	PROJ. ENG. <i>Dick B. Hoopes</i>	SIZE	CODE IDENT NO	REV	
FINISH	APPROVED	C	53938	200390-100	AO
		SCALE 2/1	DO NOT SCALE	SHEET 1 OF 1	



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AB	RELEASE TO AB WITH NO CHANGES.	C.N.	88-18-83 <i>ed. Hoopes 9-6</i>

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C
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 Contract No. F196244-C0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 21

009-065002 B

LIMITED RIGHTS LEGEND

CONTRACT NO. -----
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DRAWN	J. STERNER
CHECKED	<i>[Signature]</i> 3-17-83
ELEC ENG	D. HOOPES
PROJ ENG	R. SHENSEN
APPROVED	
NEXT ASSY	
MODIFIED DATE	18-AUG-83
CREATION DATE	26-APR-83
FILE NAME	2803900A.MDF

EVANS & SUTHERLAND		SALT LAKE CITY, UTAH 84108	
POSITION DAC (PC)			
SIZE	CODE IDENT	DRG NO.	REV
C	53938	200390-600	A0
VERSION	39	PC	SHEET 1 OF 1

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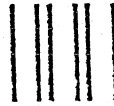
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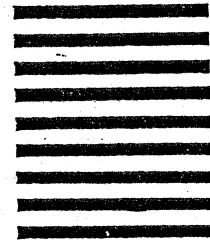


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