

PRELIMINARY MANUAL  
SUPPLEMENT CEEN NO. 4

PURPOSE: TO INCREASE THE TECHNICAL  
VALUE OF THE COMMERCIAL MANUAL IN  
ACCORDANCE WITH MIL-M-7298C.

THE SPI MANUAL VOL 2 CONSISTING OF;  
DRAWINGS AND WIRE LISTS.

Prime Cont Name/Address American Airlines, Inc., Ft. Worth, Texas 76125 Notice No. 4  
 Vendor Name/Address or Code 53938 Part (Model/Type) No. 101000-170  
 Contract No. F42600-77-C-2679 FSN 6930 Price \* Qty(I/U) 8 (S) Unk  
 Nomenclature (and motivation) Novoview SPI Visual System (115 to 230 VAC, 60 Hz)  
 Installed on (for support of) \*\* System SMK-95 Divr Date 5 Oct 1977

	1	2	3	4	5	6	7	8	9	10	11
Pubs. Recm'd											
Operation											
Opr and Serv	N	Supplement (TBD)	U	U	MIL-M-7298C			30	4-0019-1	6 mos	Yes
Field Maint											
Overhaul											
IPB											
Overhaul/IPB											
Other											
Opr and Serv	N	Revised Manual (TBD)	U	U	MIL-M-7298C			700	4-0019-2	6 mos	Yes

Legend: 1 - New/Rev/Change 5 - Spec Number 9 - Prod. List and Item No.  
 2 - Technical Order No. 6 - Repair Kit 10 - Delivery Time  
 3 - Scty Class. of Title 7 - Estimated Cost 11 - Commercial or Other  
 4 - Scty Class. of Contents 8 - Est Qty of Pages Data Exist

Data Recommended: Yes  No  Reason: Item Repairable at O/I Level

Inspection and Acceptance Redifon Simulation, Inc. Notice Prepared (Date) 15 Nov 1977  
 Remarks \*See Contract Arlington, Texas 76011  
 \*\* C-5A/C141 Flight Simulator

Part (Model/Type) No. 101000-170 Notice No. 4

REMARKS (Continued):

Notice No. 4  
Part (Model/Type) No. 101000-170

- 1) Item 1 of the Production list addresses a supplement to the existing commercial manual. This supplement will correct the deficiencies identified by the Commercial Manual Evaluation, and provide a parts list generated from provisioning data. The parts list will contain Ref. Des., True Mfr. Part Nos., FMC and SMR Codes IAW AFAD 71-531-(19A)
- 2) Item 2 of the production list addresses a commercial manual restructured to contain supplemental data as outlined in Attachment A. Since the effort required to restructure the manual to include supplemental data necessary to revise the manual to MIL-M-7298C specifications and produce a set of photolithographic negatives is not significantly greater than the effort required to deliver the existing manuals under CDRL C006/F006 and produce a supplement (as outlined in 1 above) the contractor recommends that item 2 of the production list be exercised rather than Item 1. In the event that Production List Item 2 is approved the contractor will deliver 1 set of photolithographic negatives and a copy-right release in lieu of the manuals specified by CDRL C006/F006 and the supplement addressed by Item 1 of the production list.

Notice No. 4  
Part (Model/Type) No. 101000-170

COMMERCIAL MANUAL NUMBER: 901181-100		EQUIPMENT TYPE: Novoview SP1 Visual System		SUBCONTRACTOR OR VENDOR: E & S	
CONTENT	MANUAL CONTAINS	MANUAL PARTIALLY CONTAINS	MANUAL DOES NOT CONTAIN	NOT APPLICABLE	
FRONT MATTER					
Cover/Title Page/Heading	X				
Table of Contents	X				
List of Illustrations	X				
Introduction/Preface/Forward	X				
Safety Precautions	X				
PREPARATION FOR USE					
Installation Instructions	X				
GENERAL THEORY OF OPERATION	X				
OPERATING INSTRUCTIONS	X				
MAINTENANCE INSTRUCTIONS					
Cleaning	X				
Lubrication	X				
Troubleshooting	X				
Inspection	X				
Performance Verification				X (1)	
Disassembly				X (2)	
Repair	X				
Replacement				X (3)	
Reassembly				X (3)	
PREPARATION FOR RESHIPMENT				X (4)	
STORAGE	X				
PARTS LIST			X (5)		
ILLUSTRATIONS					
Diagrams	X				
CAUTION AND WARNING NOTES	X				

Reviewed By: *Richard Bethoff* Date: *Nov 15, 1977* Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

Equipment Type: Novoview Sp1 Visual System

Vendor: E & S

- A. Evaluation of The Commercial Manual indicates that the manual has inadequate information to effectively support the maintenance of the SP1 Visual System according to requirements outlined in MIL-M-7298C.
- B. The following comments are directed at specific deficiencies noted in Sheet 1 of this evaluation.

Noted Deficiency	Corrective Action
Performance Verification not included	(1) No measurement devices exist on System. Performance verification is by diagnostics described in the Novoview SP1 Manual.
Maintenance Instructions incomplete	(2) The delivered manual will contain disassembly instructions of major assemblies of the SP1. Including cabinets, blowers, and removal of sub-assemblies.  (3) Replacement and reassembly or references will be included. Where additional testing is required as a result of the removal and replacement, applicable references will be included.
Preparation for reshipment not included	(4) The delivered manual will include requirements for reshipment including necessary disassembly and references, special packaging, support requirements, cautions as required and covering and storage requirements as necessary
Parts List Data Incomplete	(5) The delivered manual will include additional parts list information including Ref Des, True Mfr Part Nos, FMC, and SMR codes

ATTACHMENT A SHEET 1

PRELIMINARY OUTLINE FOR NOVVIEW SP MANUAL

FRONT MATTER

Table of Contents

List of Illustrations

List of Tables

Safety Summary

List of Effective Pages

SECTION 1 INTRODUCTION

- 1.1 Manual Scope
- 1.2 System Description
- 1.3 Basic System Configuration
- 1.4 System Expansion Configuration
- 1.5 Performance Specification
- 1.6 List of Unit Hardware Furnished
- 1.7 List of Unit Software Furnished
- 1.8 List of Required Tools and Test Equipment

SECTION 2 INSTALLATION

- 2.1 Unpacking
- 2.2 Installation
- 2.3 Initial Power-up
- 2.4 Preparation for Reshipment
- 2.5 Special Packaging and Handling

SECTION 3 OPERATION

- 3.1 Startup Procedure
- 3.2 Operating Procedures

SECTION 4 THEORY OF OPERATION

- 4.1 Image Generation Terms and Principles
- 4.2 Data Processing Overview
- 4.3 Image Generator Hardware Implementation

SECTION 5 MAINTENANCE

- 5.1 Preventive Maintenance
- 5.2 Calibration
- 5.3 Troubleshooting
- 5.4 Removal of Assemblies
- 5.5 Replacement of Assemblies
- 5.6 Test Requirements

SECTION 6 DRAWINGS AND WIRE LISTS

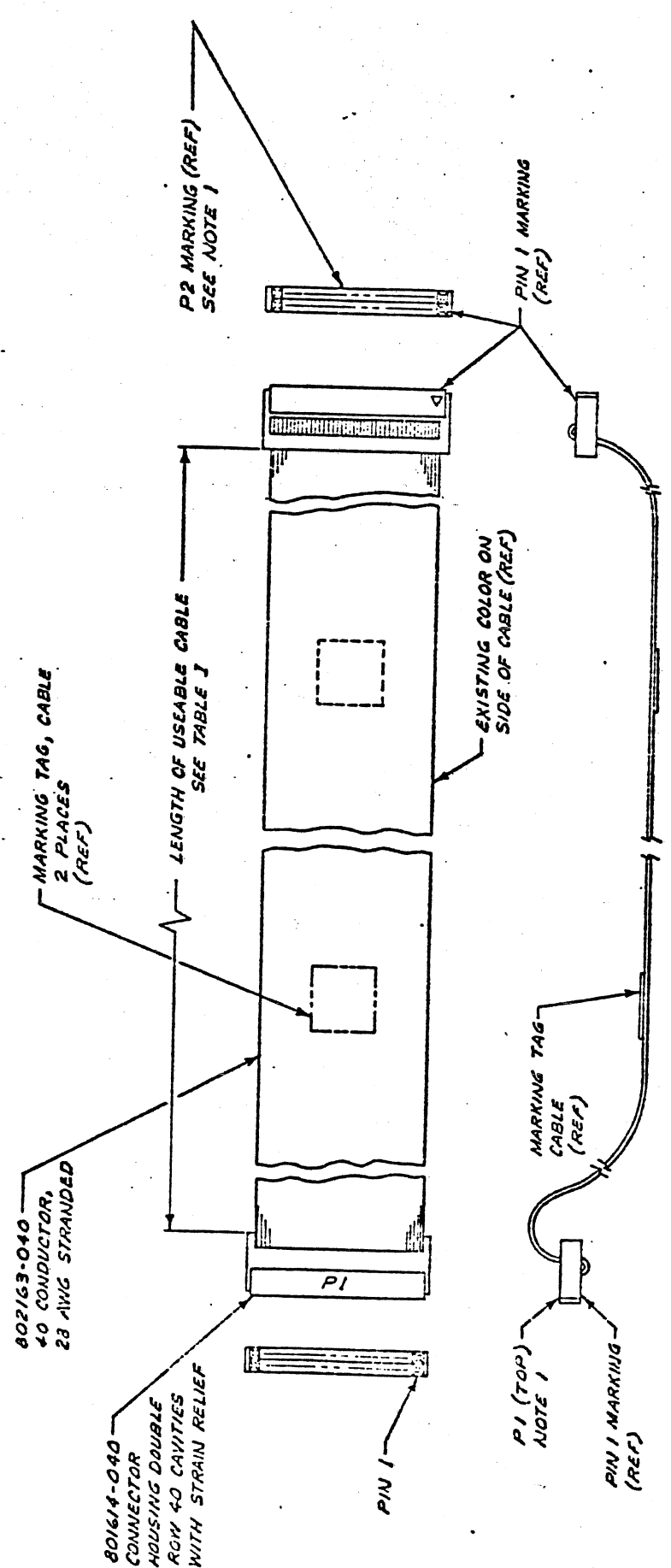
- 6.1 Introduction
- 6.2 Assembly Numbering System
- 6.3 Circuit Card Layout
- 6.4 Logic Drawings
- 6.5 How to Use the Back Panel Wire Lists

SECTION 7 PARTS LIST

APPENDIX A BACKPANEL SIGNAL NAME-TO-FUNCTION TABLES

- A.1 Introduction to Tables
- A.2 Signal Name
- A.3 Signal Function

APPENDIX B ROM TABLES



**TABLE I**

ECO	E & S PART NO.	CABLE LENGTH
NC	101328-002	2 FEET
NC	101328-003	3 FEET
NC	101328-004	4 FEET
NC	101328-007	7 FEET

**NOTES:**  
1. MARK IN 1/8 CHARACTERS USING WHITE EPOXY INK. LOCATE AS SHOWN.

SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±		CONTRACT NO. DRAWN BY: [Signature] 3-12-77 CHECKED BY: [Signature] 3-12-77 MECH ELEC P. [Signature] 3-12-77 PROJ. ENG APPROVED
MATERIAL	CABLE RIBBON, 40 COND.	
FINISH	SEE PARTS LIST	
NEXT ASSY	MULTI-USE	USED ON
APPLICATION		
SIZE CODE IDENT NO	C 53938	101328-TAB
REV	TABLE I	



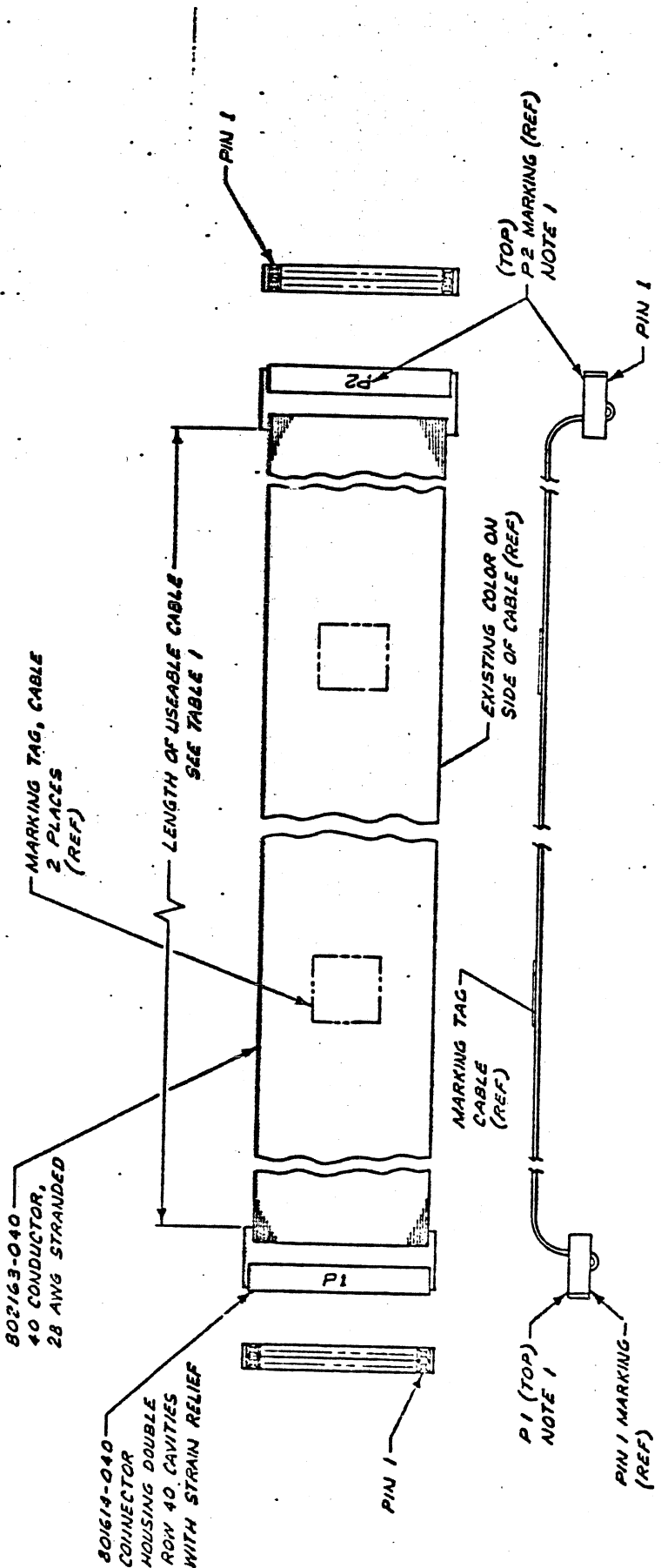


TABLE 1

ECO E F S PART NO.	CABLE LENGTH
NC 101329-002	2 FEET

NOTES:  
1. MARK IN 1/8 CHARACTERS USING WHITE EPOXY INK. LOCATE AS SHOWN.

SEE SEPARATE PARTS LIST

EVANS & SUTHERLAND  
COMPUTER CORPORATION  
SALT LAKE CITY, UTAH 84112

CABLE ASSEMBLY,  
FLAT RIBBON, 40 COND.,  
REVERSE

CONTRACT NO.  
DRAWN BY: JMM/MLC 9-23-77  
CHECKED BY: JMM/MLC 9-23-77  
MECH  
ELEC  
PROJ ENG  
APPROVED

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

MATERIAL  
FINISH

SEE PARTS LIST

NEXT ASSY  
MULTI-USE  
USED ON  
APPLICATION

SIZE CODE IDENT NO  
C 53938

REV  
TABLE  
1

101329-TAB

802163-040  
 40 CONDUCTOR,  
 28 AWG STRANDED

801614-040  
 CONNECTOR  
 HOUSING DOUBLE  
 ROW 40 CAVITIES  
 WITH STRAIN RELIEF

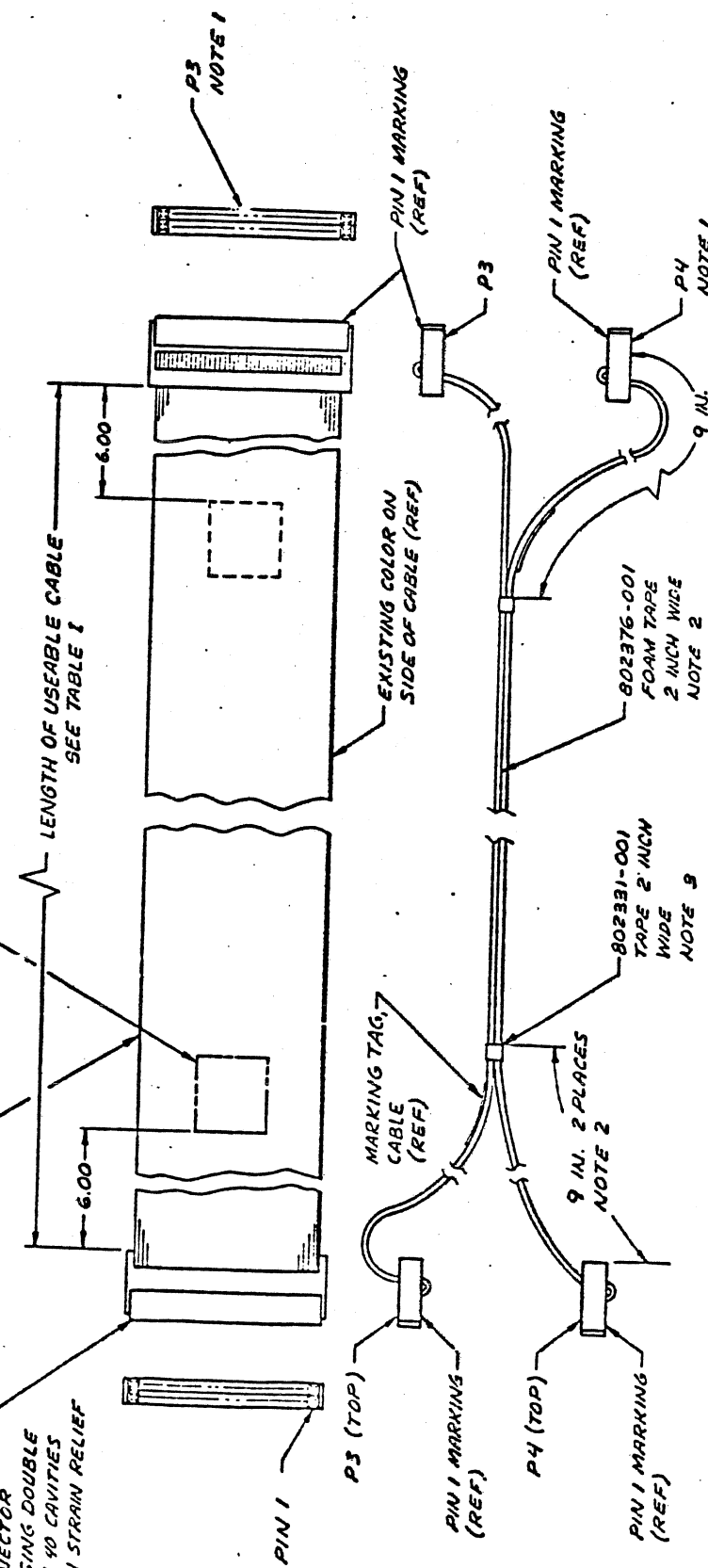


TABLE 1

ECO	EFS PART NO.	CABLE LENGTH
A1	101330-002	TWO FEET
A1	101330-003	THREE FEET
A1	101330-004	FOUR FEET
A1	101330-005	FIVE FEET
A1	101330-006	SIX FEET
A1	101330-007	SEVEN FEET

ECO	APPROVED
A1	7/1 4-1-77

EFS PART NO.	CABLE LENGTH	ECO
101330-008	EIGHT FEET	A1
101330-009	NINE FEET	A1
101330-010	TEN FEET	A1
101330-015	FIFTEEN FEET	A1
101330-020	TWENTY FEET	A1
101330-025	TWENTY-FIVE FEET	A1

- NOTES:
1. MARK IN 1/8 CHARACTERS USING WHITE EPOXY INK. LOCATE AS SHOWN.
  2. PLACE FOAM TAPE (802376-001) FULL LENGTH OF CABLE EXCEPT 9 INCHES FROM EACH END.
  3. AFTER THE FOAM TAPE HAS BEEN PLACED BETWEEN THE CABLES, WRAP TAPE (802931-001) AROUND THE CABLES 9 INCHES FROM EACH END AND ON 10 INCH CENTERS.

SEE SEPARATE PARTS LIST

EVANS & SUTHERLAND  
 COMPUTER CORPORATION  
 SALT LAKE CITY, UTAH 84112

CABLE ASSEMBLY  
 (FROM CARD TO CARD)

SCALE: 1 SHEET OF 1

REV TABLE 1

SIZE CODE IDENT NO C 53938 101330-TAB

CONTRACT NO.

DRAWN 1/24/77 BY R.S.75

CHECKED 1/24/77 BY S.S.75

MECH 1/24/77 BY S.S.75

ELEC

PROJ ENG 1/24/77 BY

APPROVED

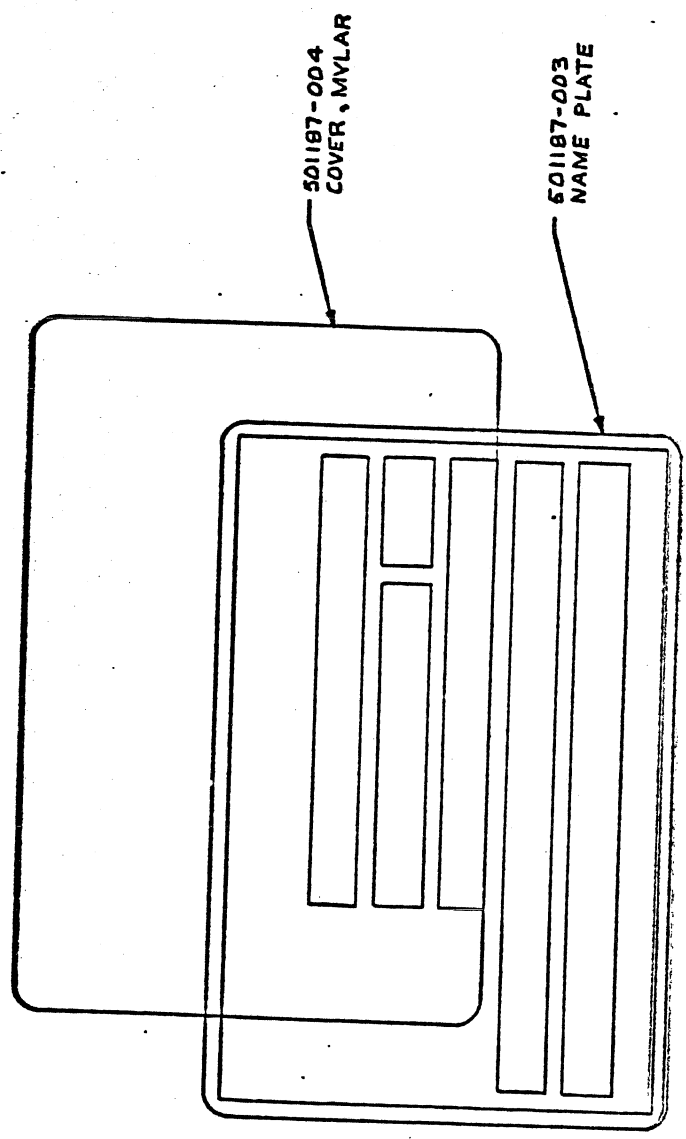
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES ON  
 .XX ±  
 .XXX ±  
 ANGLES ±  
 ✓

MATERIAL SEE PARTS LIST

FINISH

NEXT ASSY MULTI-USE USED ON APPLICATION

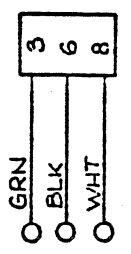
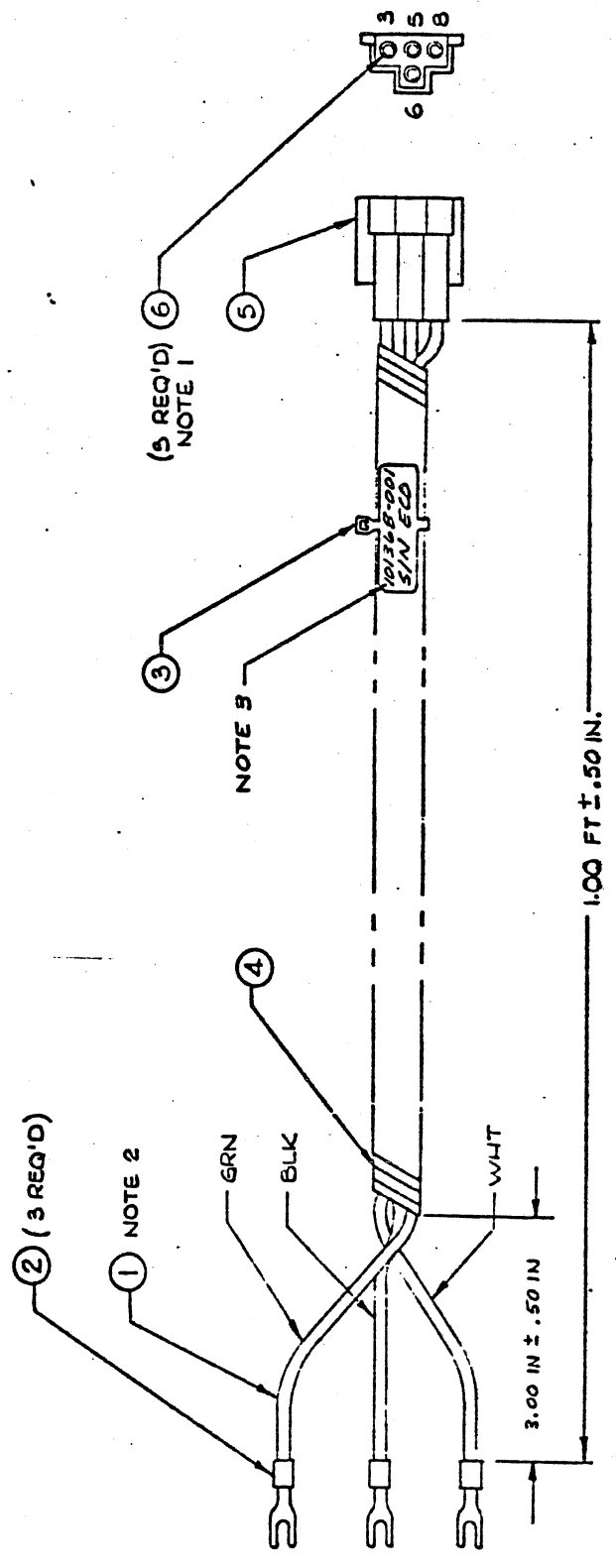


SEE NOTE 1

NOTE:  
 1. THIS ASSY DWG SHOWS THE MYLAR COVER 501187-004 WHICH IS TO BE INSTALLED IN PLACE ONLY AFTER ALL INFORMATION HAS BEEN ADDED TO THE NAME PLATE, (501187-003) AND IS READY FOR INSTALLATION ON THE PROPER EQUIPMENT.

SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		DRAWN <i>R. B. [Signature]</i> 10-21-75	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CHECKED <i>[Signature]</i> 10-22-75	
TOLERANCES ON		MECH	
.XX ±		ELEC	
.XXX ±		PROJ. ENG <i>[Signature]</i>	
ANGLES ±		APPROVED <i>[Signature]</i>	
MATERIAL		SIZE CODE IDENT NO	
FINISH		C 53938	
NEXT ASSY APPLICATION		REV	
MULTI-USE USED ON		101341-100	
APPLICATION		NC	
		SCALE 4/1	
		SHEET 1 OF 1	

ZONE	DESCRIPTION	DATE	APPROVED
—	ADDED ITEM 3 & 4. ADDED MARKING INFO. THIS DRAWING FORMALLY RELEASED IN NC STATUS.	3-13-77	15 AUG 77 P. S. 15



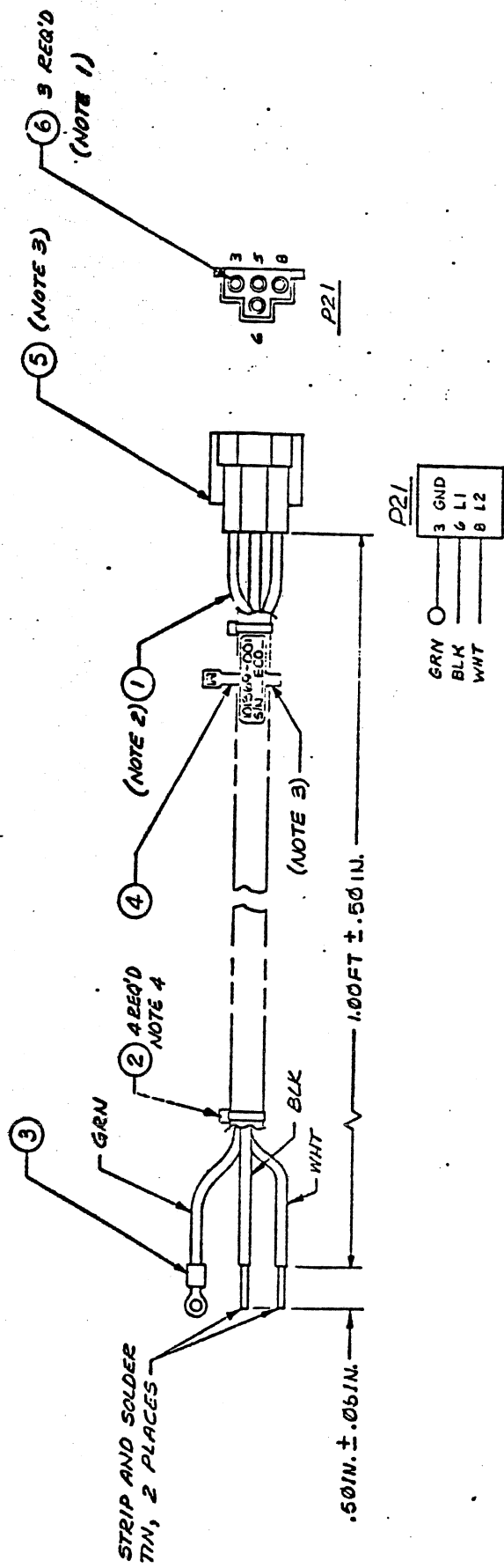
SCHEMATIC

3. MARK ASSY NO. S/N, ECO NO., 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 POSITION 5. UNLESS OTHERWISE SPECIFIED:

NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	
TOLERANCES ON		DRAWN	9-10-77
.XX ±	—	CHECKED	3-13-77
.XXX ±	—	MECH	
ANGLES ±	—	ELEC	15 AUG 77
	✓	PROJ. ENG	
		APPROVED	3-13-77
MATERIAL	SEE PARTS LIST	SEE SEPARATE PARTS LIST	
FINISH		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
200154-100	ND/0V/1W	ASSY, CABLE POWER, 230V (+5V POWER SUPPLY)	
NEXT ASSY	USED ON	SIZE / QTY IDENT NO	REV
	APPLICATION	C 53938	101368-001 NC

ZONE LTR	DESCRIPTION	DATE	APPROVED
-	ADDED ITEMS 2, 3, 4, & MARK 1 INFO. DWG. FORMALLY RELEA TO NC. REV. STATUS. <i>EMH.</i>	-12-17	R Sp... 15 AUG 77



SCHEMATIC

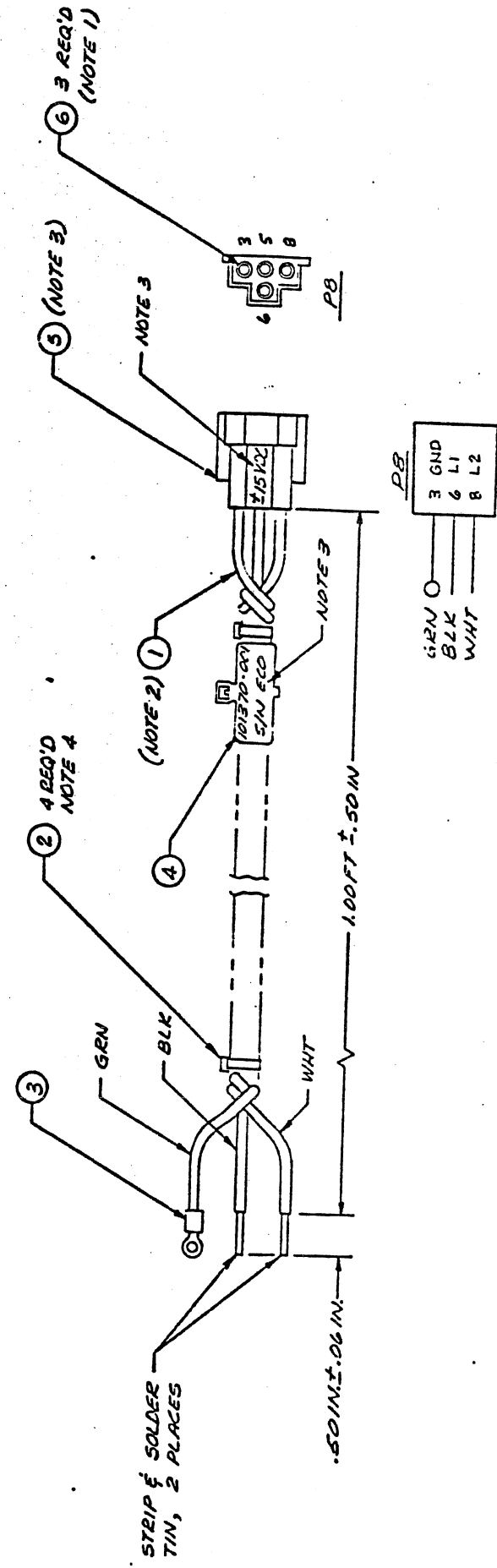
4. PLACE ITEM (2) APPROX. EVERY 3 INCHES.  
 5. MARK ASSY NO., SIN, ECO NO. & CONNECTOR "P21"  
 USING BLACK OPAQUE INDUSTRIAL INK,  
 PHILLIPS PROCESS CO. NO. 35A OR  
 EQUIVALENT.  
 2. LOOSELY TWIST ALL WIRES TOGETHER.  
 1. DO NOT INSTALL ITEM (6) INTO ITEM (5)  
 AT POSITION 5.  
 UNLESS OTHERWISE SPECIFIED:  
 NOTES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XXX ± ANGLES ± ✓		CONTRACT NO. DRAWN D 2122224 8-3-77 CHECKED BY [Signature] 5 AUG 77 MECH [Signature] 15 AUG 77 ELEC [Signature] 15 AUG 77 APPROVED BY [Signature] 15 AUG 77	SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
MATERIAL 200152-100 Nbd VIEW	FINISH SEE PARTS LIST	SIZE CODE IDENT NO C 53938	ASSY, CABLE, POWER, 280V (+12V POWER SUPPLY)
NEXT ASSY	USED ON	REV	REV
		101369-001	NC

REPLICATION

D C B 101369-001

REVISIONS		DATE	APPROVED
ZONE	LTR	DESCRIPTION	
—	NC	ADDED ITEM 2 AND 4 ADDED WIRING INFO THIS DWG FORMALLY RELEASED TO NC REV STATUS.	9-13-77 RSpcio



4. PLACE ITEM ② APPROX. EVERY 3 INCHES.
  3. MARK ±15VDC ON CANN AS SHOWN.  
WIRE ASSY NO. 5W, ECD NO. 7 CONNECTOR  
2-5 LISTING BLACK COPPER INDUSTRIAL INK,  
PHILIPS SCREWS CO. NO. 38 OF EQUIVALENT.
  2. LOOSELY TWIST ALL WIRES TOGETHER.
  1. DO NOT INSTALL ITEM ⑥ INTO ITEM ⑤  
AT POSITION 5.
- UNLESS OTHERWISE SPECIFIED:  
NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± ✓		CONTRACT NO.	
MATERIAL 200153-100 NOVAVIEW		DRAWN: D. CARROLL 8-3-77	
NEXT ASSY		CHECKED: J. J. [unclear] 5 AUG 77	
USED ON		MECH: J. J. [unclear] 8-15-77	
NOVAVIEW		ELEC: [unclear] 15 AUG 77	
FINISH		PROJ. ENG	
		APPROVED: J. J. [unclear] 8-15-77	
		SEE SEPARATE PARTS LIST	
		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84118	
		ASSY, CABLE, POWER, 230V (±15V POWER SUPPLY)	
		SIZE	REV
		C 53938	101370-001
			NC

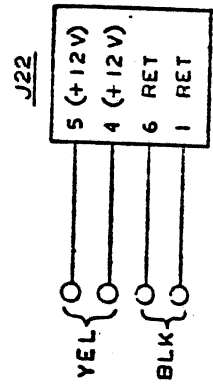
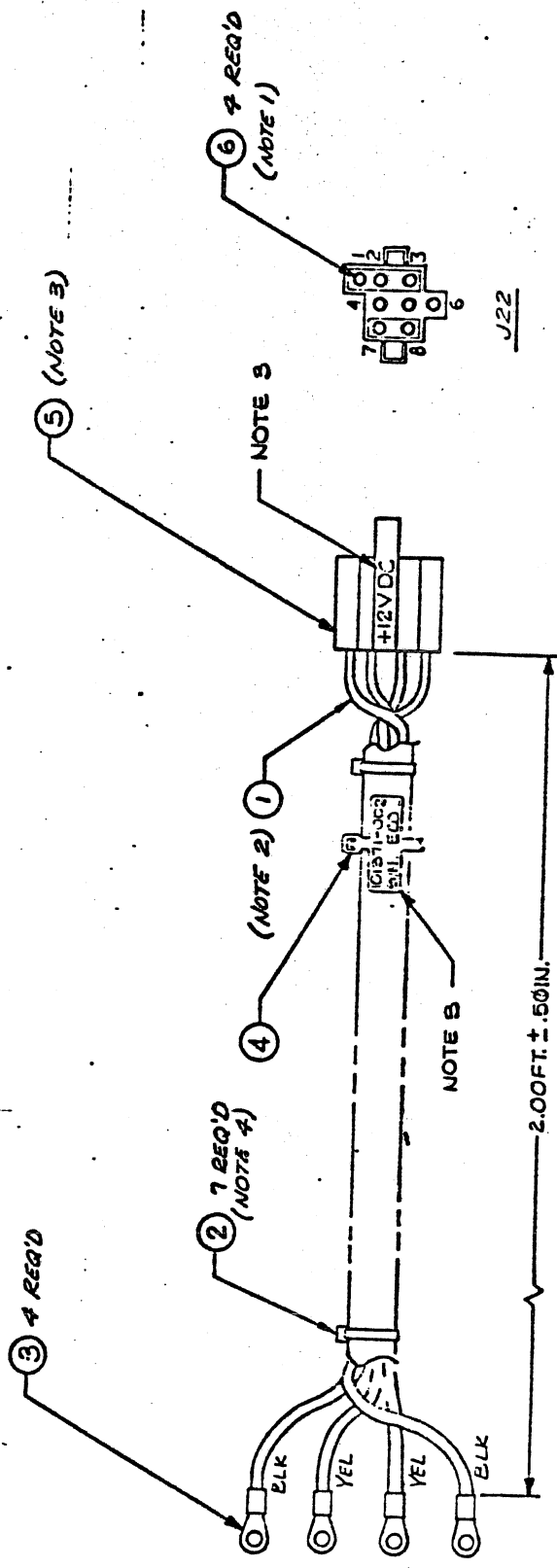
A

D

C

B 101370-001

ZONE	LTR	DESCRIPTION	E	APPROVED
-	NC	ADDED ITEMS 2 & 4. MARKING INFO. THIS DRAWING FORMAL RELEASED TO NC REV. STATUS. ZM	577	ZS 15 AUG 77



SCHEMATIC

- PLACE ITEM (E) APPROX. EVERY 3 INCHES
- MAKE "+12VDC" ON CONNS AS SHOWN, ALSO ADD: ASSY NO., S/N, ECO NO., & CONNECTOR "J22" USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 254 OR EQUIVALENT.
- LOOSELY TWIST ALL WIRES TOGETHER. DO NOT INSERT ITEM (F) INTO ITEM (E) AT POSITIONS 2, 3, 7 & 8. UNLESS OTHERWISE SPECIFIED:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	
TOLERANCES ON	.XX ±	DRAWN	101371-002
.XXX ±		CHECKED	101371-002
ANGLES ±	✓	MECH	101371-002
MATERIAL	SEE PARTS LIST	ELEC	101371-002
FINISH		PROJ ENG	101371-002
APPROVED		APPROVED	101371-002
DATE		DATE	
NEXT ASSY		DATE	
USED ON		DATE	
APPROVED		DATE	

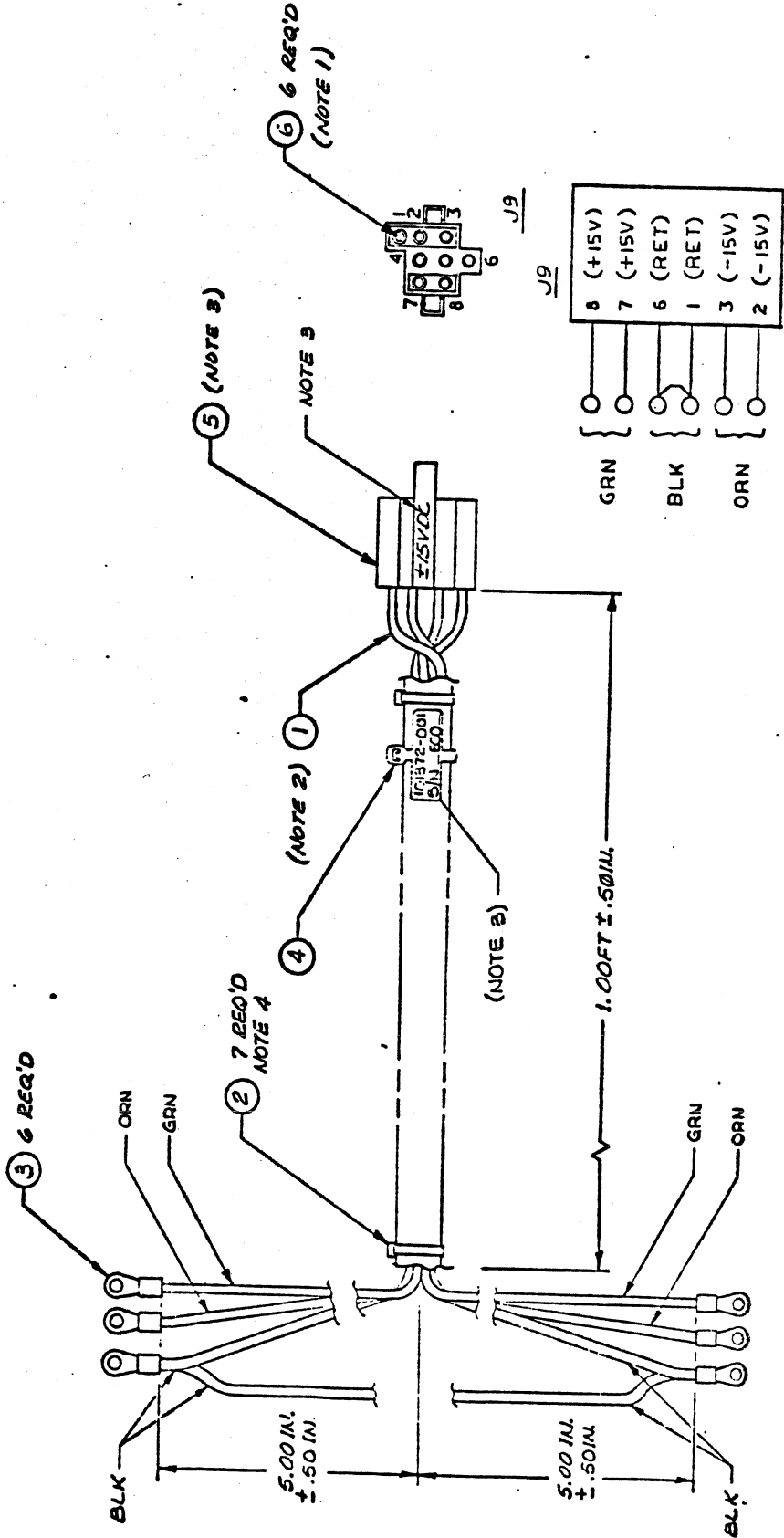
  

SEE SEPARATE PARTS LIST	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
ASSY, CABLE, POWER, +12V	

SIZE	CODE IDENT NO	REV
C	53938	NC

REVISIONS		APPROVED
ZONE	LTR	
—	NC	15 AUG 77
ADDED ITEMS 2, 4. ADDED WIRE COLORS. ADDED MARKING INFO. THIS DWG FORMALLY RELEASED TO NC REV STATUS.		B-14-77 <i>D. Spier</i>

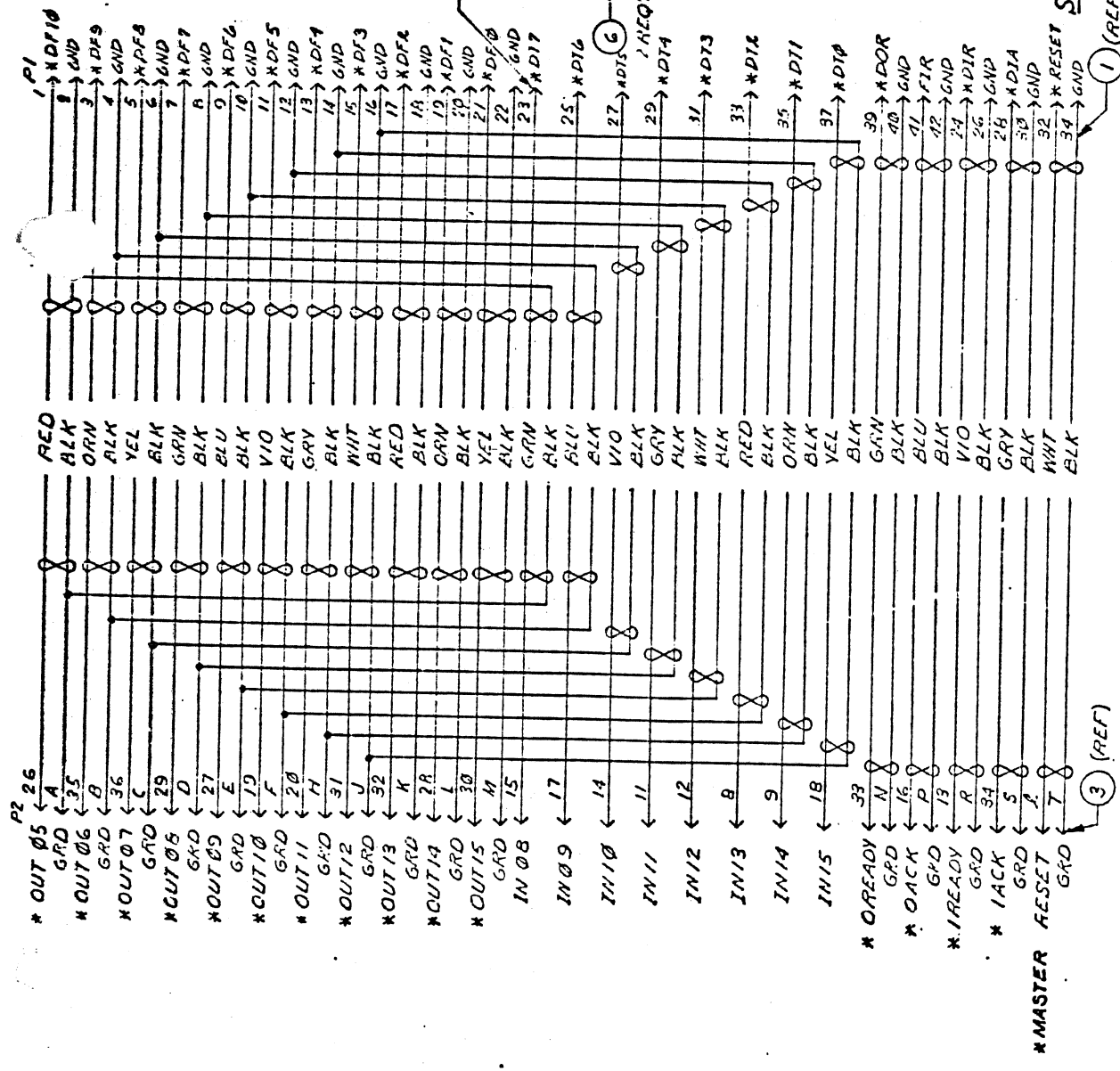


1. PLACE ITEM 2 APPROX EVERY 3 INCHES.  
 2. MARK ±15VDC ON CABLE APPROX AS SHOWN  
 MARK ASSY NO., S/N, ECO NO., CONNECTOR "J9"  
 USING BLACK OPAQUE INDUSTRIAL INK,  
 PHILLIPS PROCESS CO. NO. 35A OR  
 EQUIVALENT.  
 3. LOCALLY TWIST ALL WIRES TOGETHER.  
 4. DO NOT INSTALL ITEM 5 INTO ITEM 5  
 AT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

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.
TOLERANCES ON XX ±		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
.XXX ±		SEE SEPARATE PARTS LIST
ANGLES ±	✓	
MATERIAL		ASSY, CABLE, POWER, ± 15V
200153-100 NOVOVIEW		
NEXT ASSY	USED ON	SIZE 53938
FINISH		101372-001
		REV NC



ZONE	LTR	DESCRIPTION	DATE	APPROVED
	PI	ADDED NOTES AND CONNECTED	8-21-77	[Signature]
		IRC		



**SECTION A-A**  
(WIRING SIDE)

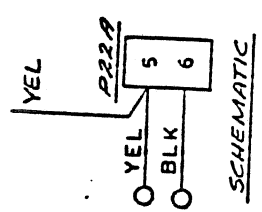
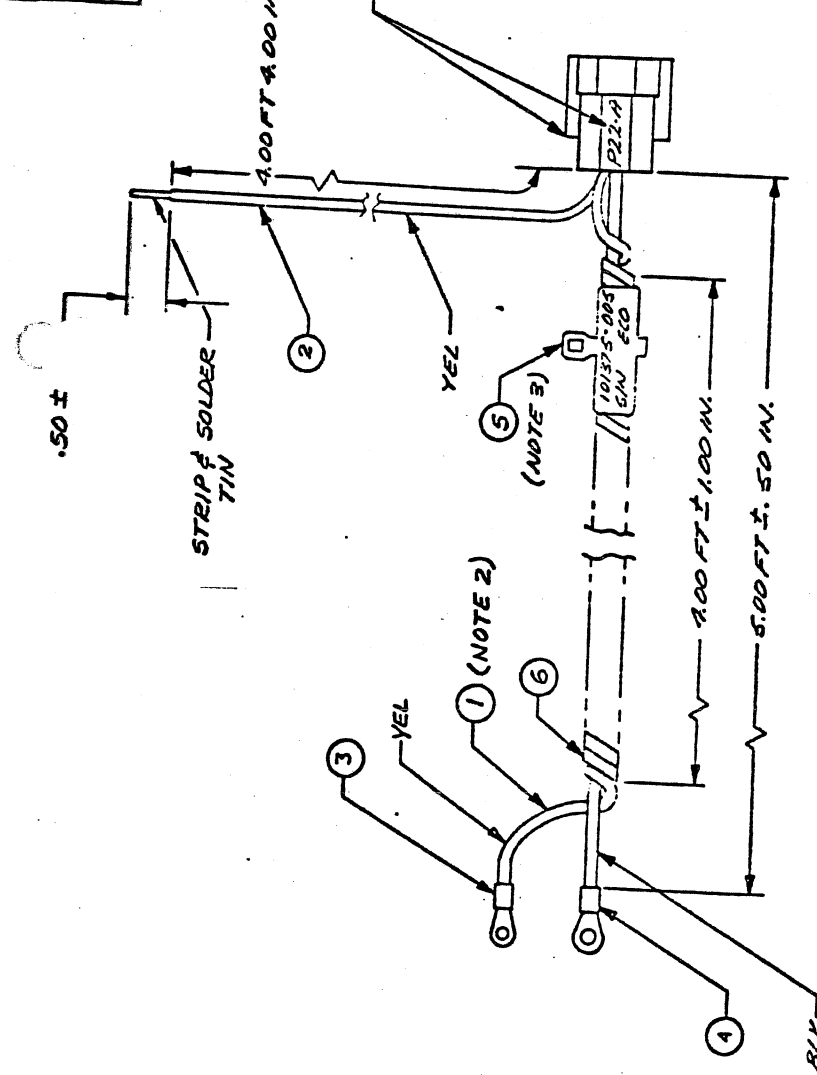
**SECTION B-B**  
(WIRING SIDE)

SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84118	
CONTRACT NO.		DRAWN BY WING 6-21-77	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON XX ± .XXX ± ANGLES ±		CHECKED BY [Signature] 29 JUN 77 MECH ELEC [Signature] PROJ. ENG [Signature]	
MATERIAL		APPROVED	
FINISH		CABLE ASSY, TERMINAL INTERFACE	
2.00/50-105	USED ON	SIZE	CODE IDENT NO
NEXT ASSY		C	53938
			101373-030
			REV
			P1

- PI-36, PI-38 ARE UNCOMMITTED.
- MARK TAPE, 101373-030, S/N-ECO COVER THE MARKING TAPE WITH (B02033-3TS) HEAT SHRINKING TUBING, CLEAR.
- MARK PI, P2 ON CONNECTORS APPROX AS SHOWN USING WHITE EPOXY INK.

NOTES:

ZONE LTR	DESCRIPTION	DATE	APPROVED
—	ADDED ITEMS 5 AND 6 TO DRAWING AND DWS FORMALLY REFERRED TO NC REV STATUS	5-12-77	RS
—	ADDED ITEMS 5 AND 6 TO DRAWING AND DWS FORMALLY REFERRED TO NC REV STATUS	5-12-77	RS

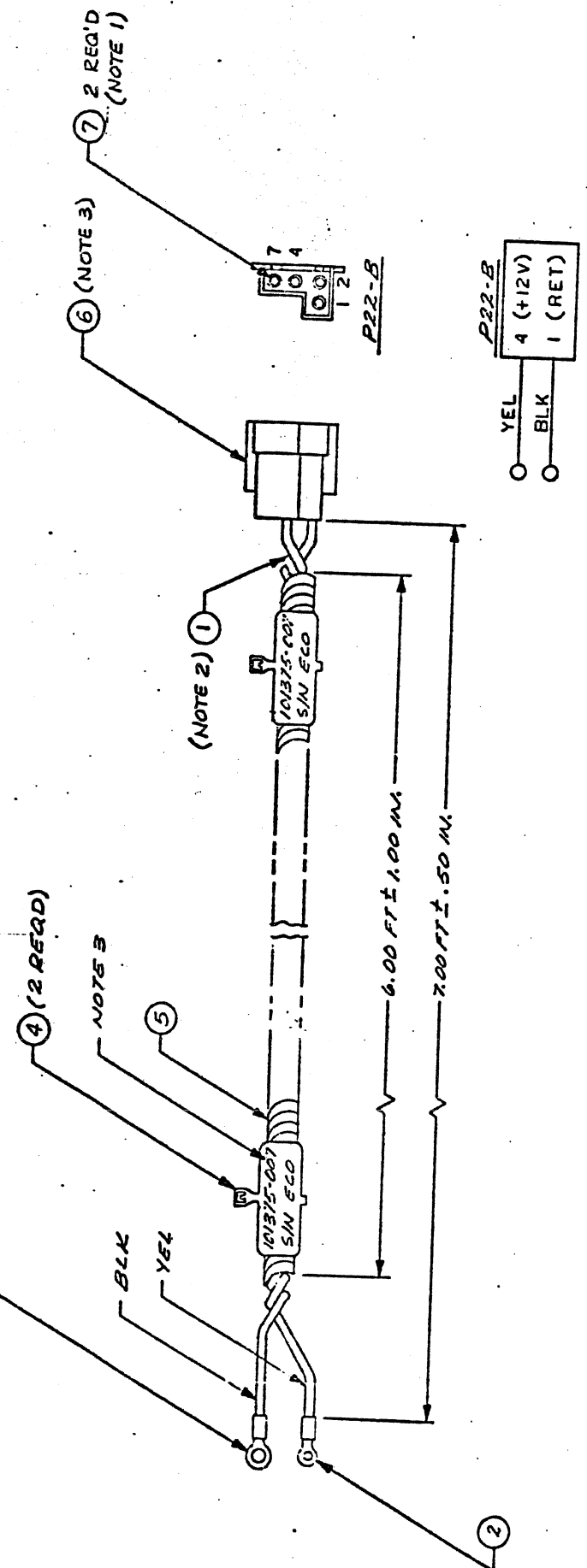


3. WIRE ASSY. NO. 5, IN, ECO NO., AND CONNECTOR P22-A USING BLACK OPALVE INDUSTRIAL INC. PHILLIPS PROCESS CO., NO. 35A OR EQUIVALENT.  
 2. LOOSELY TWIST ALL WIRES TOGETHER.  
 1. DO NOT INSTALL ITEM (8) INTO ITEM (7) AT POSITIONS 3 AND 5.  
 UNLESS OTHERWISE SPECIFIED!

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	CONTRACT NO.
TOLERANCES ON .XX ± .XXX ± ANGLES ±	DRAWN BY: [Signature] 8-3-77 CHECKED BY: [Signature] 5 AUG 77 MECH: [Signature] 2-15-77 ELEC: [Signature] 15 AUG 77 PROJ ENG: [Signature] 15 AUG 77 APPROVED: [Signature] 15-5-77
MATERIAL M. 1011714	SEC SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
FINISH SEE PARTS LIST	ASSY, CABLE POWER, +12V
APPLICATION NEXT ASSY USED ON	SIZE CODE IDENT NO C 53938
	REV NC

101375-005	REV	NC
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ZONE LTR	REVISIONS	DESCRIPTION	DATE	APPROVED
—	NC	ADDED ITEMS 4 AND 5 ADDED MARKING INFO THIS DWG FORMERLY RELEASED TO NC STATUS	8-4-77	PSR:ik 15 AUG 77



3. MARK ASSY NO., SIN, ECO NO., AND CONNECTOR P22-B USING BLACK/WHITE INDUSTRIAL INK PHILLIPS PROCESS CO. NO. 3 SA OR EQUIVALENT.  
 2. LOOSELY TWIST ALL WIRES TOGETHER.  
 1. DO NOT INSTALL ITEM 7 INTO ITEM 6 AT POSITIONS 2 AND 7.  
 UNLESS OTHERWISE SPECIFIED:  
 NOTES:

CONTRACT NO.		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		MATERIAL	
DRAWN BY	8-3-77	.XX ±		AC/DW/IV	
CHECKED BY	5 AUG 77	.XXX ±		USED ON	
MECH	8-15-77	ANGLES ±		NEXT ASSY	
ELEC	15 AUG 77			APPLICATION	
PROJ. ENG					
APPROVED	8-15-77				

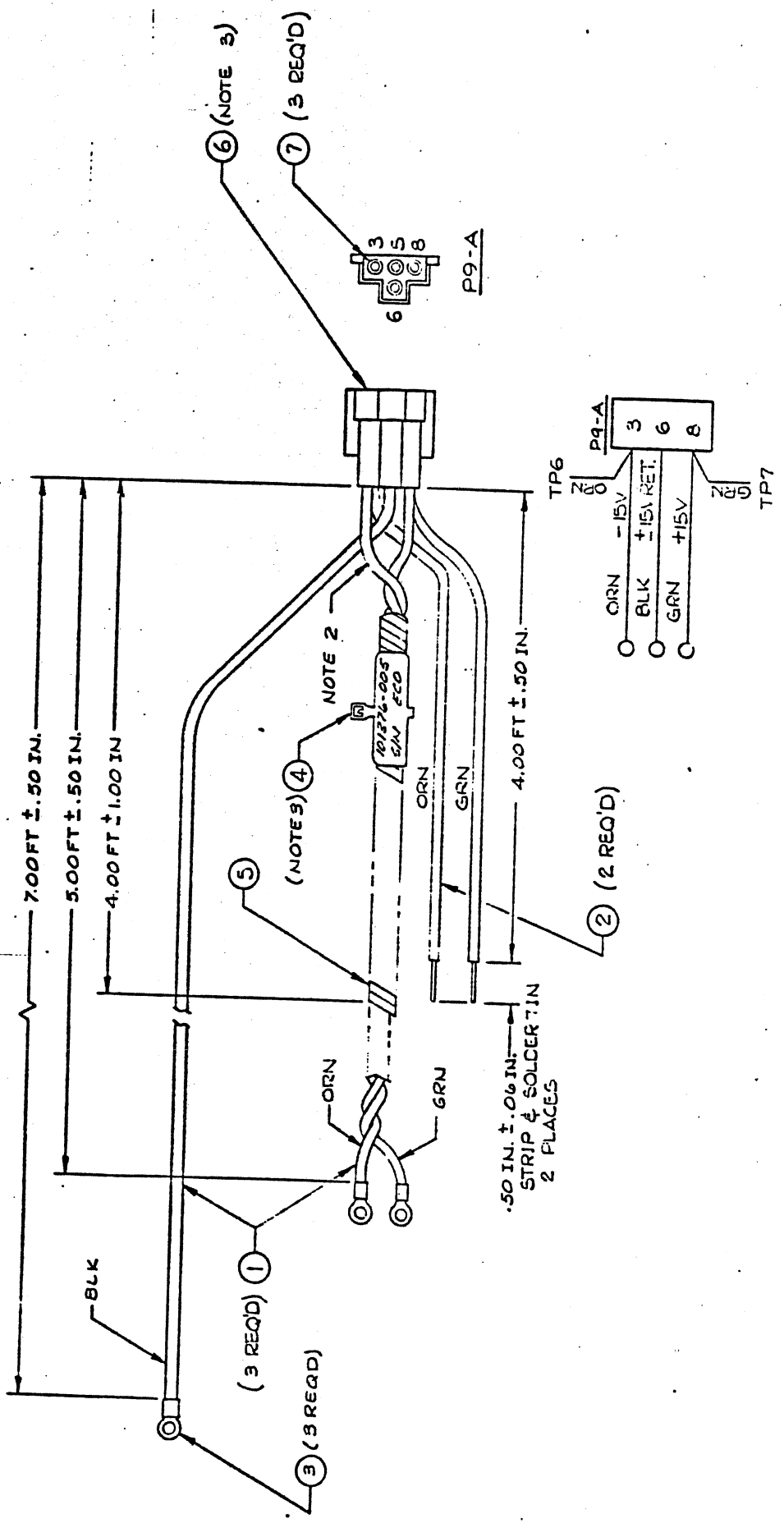
SEE SEPARATE PARTS LIST	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
ASSY, CABLE POWER, +12V	

SIZE	CODE IDENT NO	REV
C	53938	101375-007
		NC

101375-007

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	NC	ADDED ITEMS 4 AND 5 ADDED MARKING INFO. ROUTED BLK WIRE. THIS DWG FORMALLY RELEASED TO NC REV STATUS.	15 AUG 77	DS eid



3. MARK ASSY NO., S/N, ECO NO., & CONNECTOR "P9-A" USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIVALENT.

2. LOOSELY TWIST GRN & ORN WIRES AS SHOWN.

1. DO NOT INSTALL ITEM (7) INTO ITEM (6) AT POSITION 5, UNLESS OTHERWISE SPECIFIED:

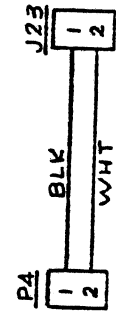
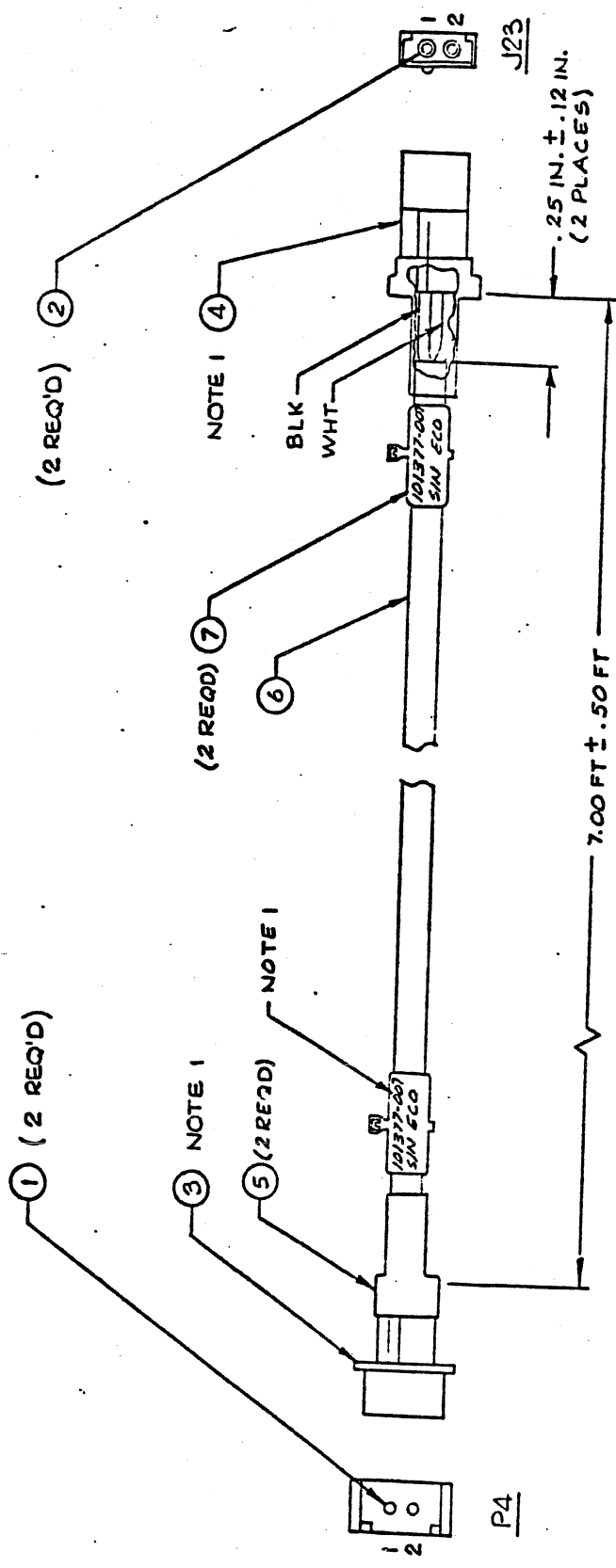
NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	
TOLERANCES ON	.XX ±	DRAWN AD SUTHERLAND	8-2-77
.XXX ±		CHECKED J. P. O.	8-15-77
ANGLES ±	✓	MECH	
		ELEC	15 AUG 77
		PROJ. ENG	
		APPROVED J. P. O.	8-15-77
MATERIAL	SEE PARTS LIST		
200153-100	NC/001517		
NEXT ASSY	USED ON		
	APPLICATION		

SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
ASSY, CABLE, POWER (±15V POWER SUPPLY)		SIZE	CODE IDENT NO
C 53938	101376-005	REV	NC

B 101376-005

REVISIONS		DATE	APPROVED
ZONE	LTR		
	NC	8-14-77	DSpr
ADDED ITEM (7) ADDED MARKING INFO. THIS DWG FORMALLY RELEASED TO NC REV STATUS.			



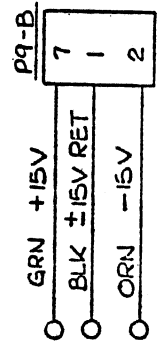
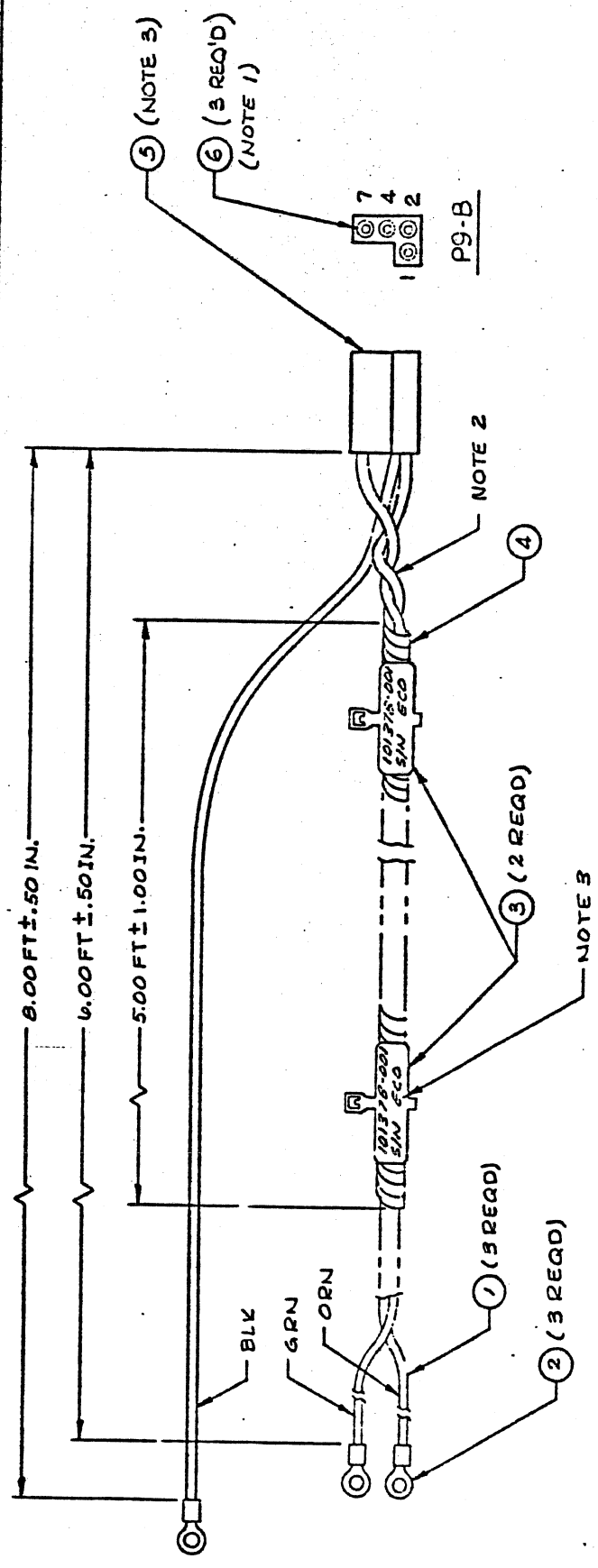
SCHEMATIC

1. MARK ASSY NO., S/N, ECO NO., CONNECTORS  
"P4" & "J23", USING BLACK OPAQUE INDUSTRIAL  
INK, PHILLIPS PROCESS CO. NO. 35A  
OR EQUIVALENT.

UNLESS OTHERWISE SPECIFIED:  
NOTES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± ✓	CONTRACT NO. DRAWN BY: [Signature] 8-10-77 CHECKED BY: [Signature] 8-15-77 MECH ELEC [Signature] (5AUG77) PROJ. ENG APPROVED BY: [Signature] 8-15-77
MATERIAL 210104-100 [Signature]	SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UT 84112
NEXT ASSY USED ON	ASSY. CABLE THERMAL SENSOR
FINISH	SIZE CODE IDENT NO C 53938
	REV 11C

ZONE LTR	DESCRIPTION	DATE	APPROVED
—	ADDED ITEMS 3 AND 4 ADDED MARKING INFO. REROUTED BLK WIRE. T. DWG FORMALLY RELEASED TO NC REV STATUS.	-1377 15AUG77	ESMIR



SCHEMATIC

3. MARK ASSY NO., S/N, ECO NO., AND CONNECTOR "P9-B" USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIVALENT.

2. LOOSELY TWIST GRN AND ORN WIRE TOGETHER.  
1. DO NOT INSTALL ITEM ⑥ INTO ITEM ⑤ AT POSITION 4.

UNLESS OTHERWISE SPECIFIED:

NOTES:

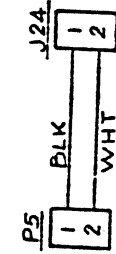
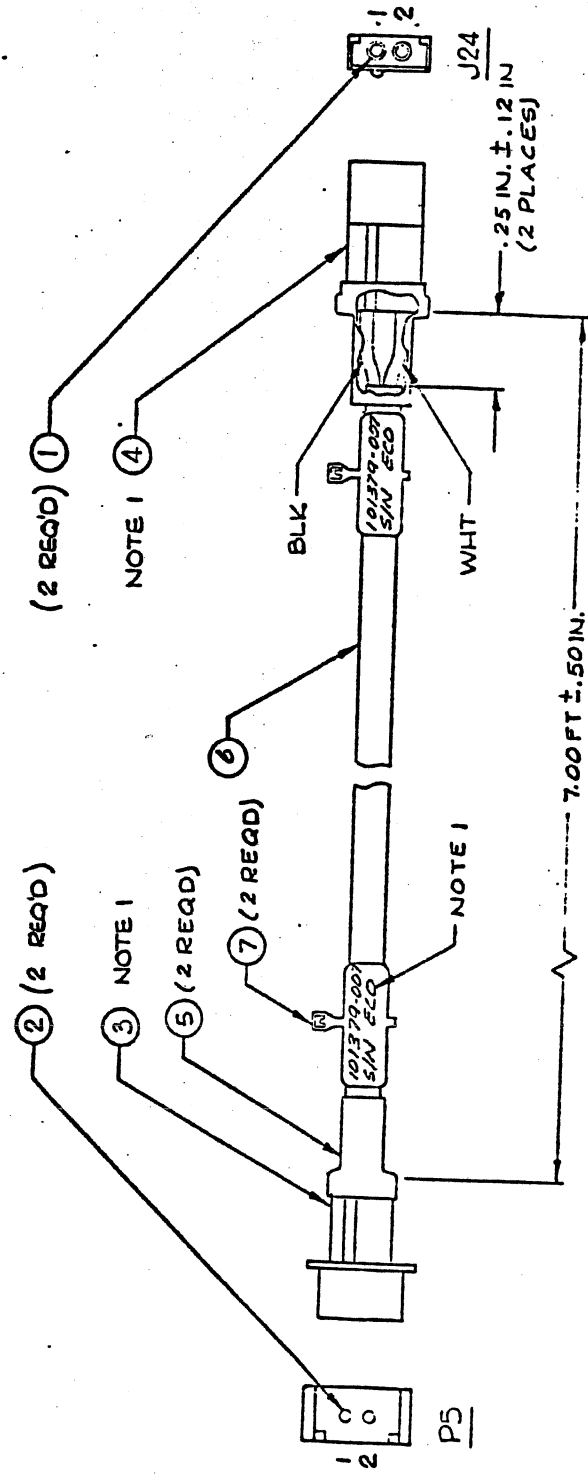
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	CONTRACT NO.	SEE SEPARATE PARTS LIST
.XX ±	DRAWING NUMBERWAY 84-77	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
.XXX ±	CHECKED BY JIND 8-15-77	
ANGLES ±	MECH	
✓	ELEC Y. S. S. 15AUG77	
	PROJ. ENG	
	APPROVED BY JIND 8-15-77	
MATERIAL SEE PARTS LIST		
200153-100 NOV01VW		
NEXT ASSY USED ON		
FINISH		

SIZE	CODE IDENT NO	REV
C 53938	101378-006	NC

A

ASSY, CABLE,  
POWER  
( ± 15V POWER SUPPLY)

REVISIONS		DATE	APPROVED
ZONE	LTR	DESCRIPTION	
-	NC	ADDED ITEMS (3) AND (7) ADDED MARKING INFO. DWG FORMALLY RELEASED TO NC REV STATUS.	8-14-77 DSC/pe 10
			15 AUG 77

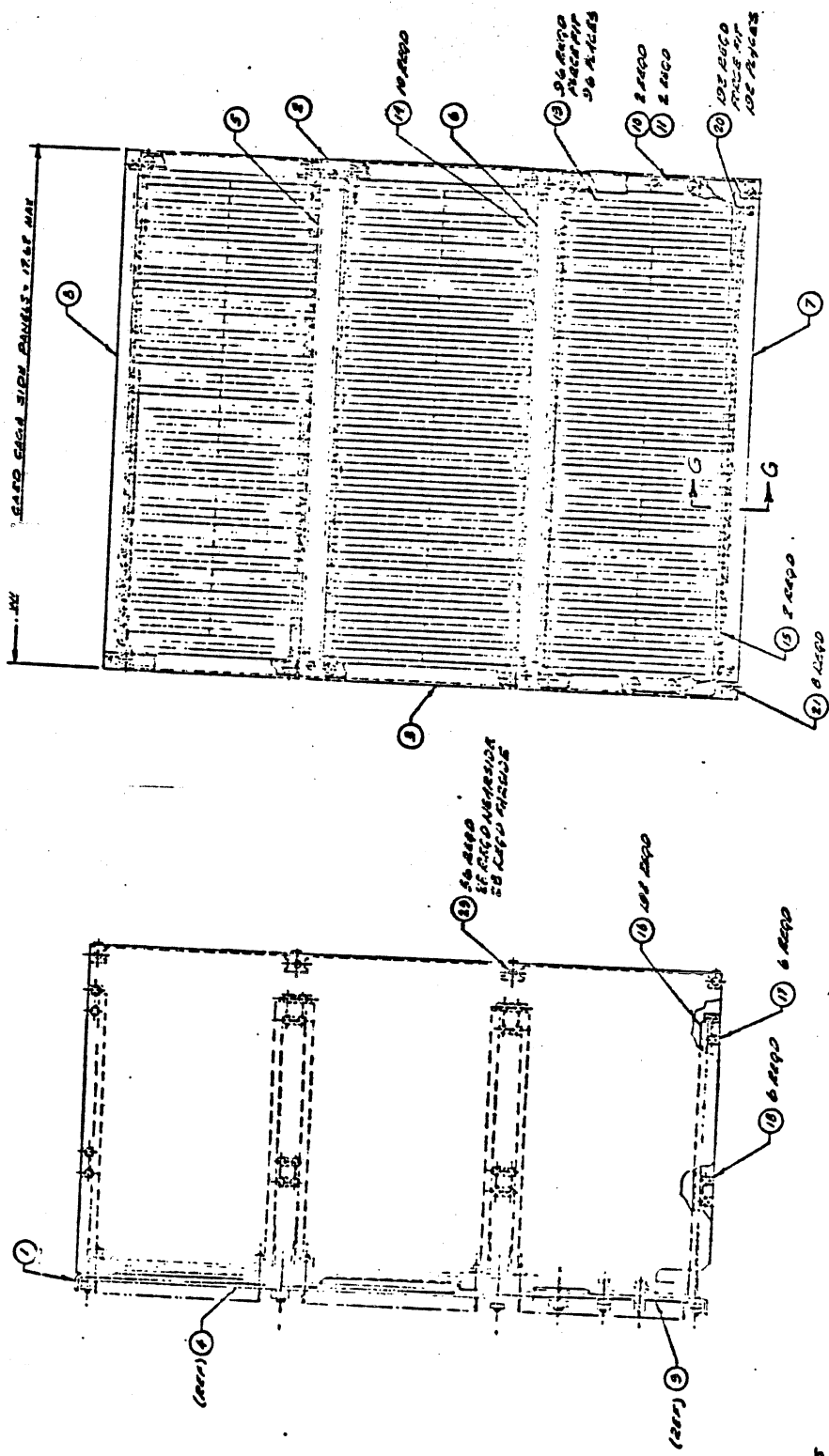


SCHMATIC

CONTRACT NO.		SEE SEPARATE PARTS LIST	
DRAWN AD HUNNWAY 8-10-77		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
MECH CHECKED J King 8-15-77		ASSY, CABLE THERMAL SENSOR	
ELEC 15/10/77 P 322.12		SIZE CODE IDENT NO C 53938	
PROJ. ENG APPROVED J King 8-15-77		REV NC	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±		MATERIAL 200104-100 NOVAVIEW	
NEXT ASSY USED ON		SEE PARTS LIST	
FINISH			

1. MARK ASSY NO., S/N, ECO NO., CONNECTORS P5 & J24 USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIVALENT.

UNLESS OTHERWISE SPECIFIED:  
NOTES



- NOTES**
1. MAXIMUM ALLOWABLE PANEL BOW IN VERTICAL AND HORIZONTAL PLANE IS .08.
  2. CORNER TO CORNER WARPAGE ALLOWED .10.
  3. PANELS ARE TO BE STRAIGHT WITHIN .02 TRUM POSITION.
  4. SIDE PANELS ARE TO BE PERPENDICULAR TO BACK PANEL WITHIN .05.
  5. CORO GUIDE WITHIN IS TO ACCEPT CARD OF .075 MAX THICKNESS.

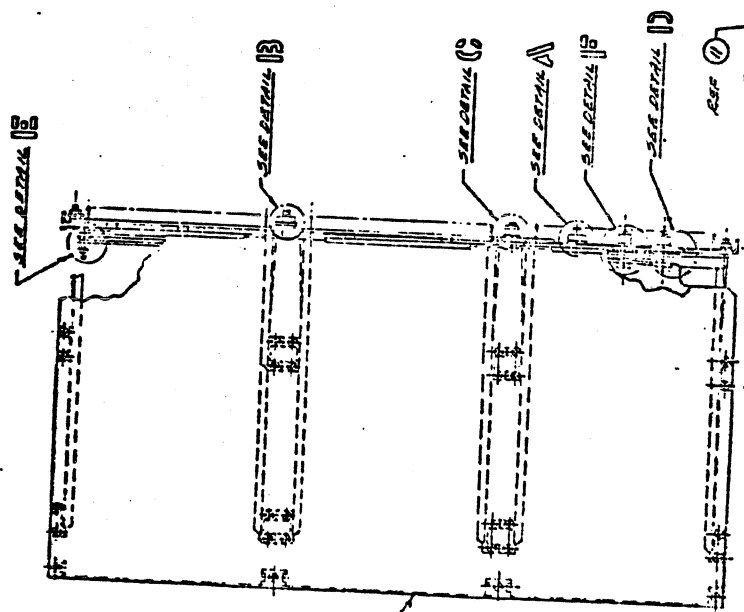
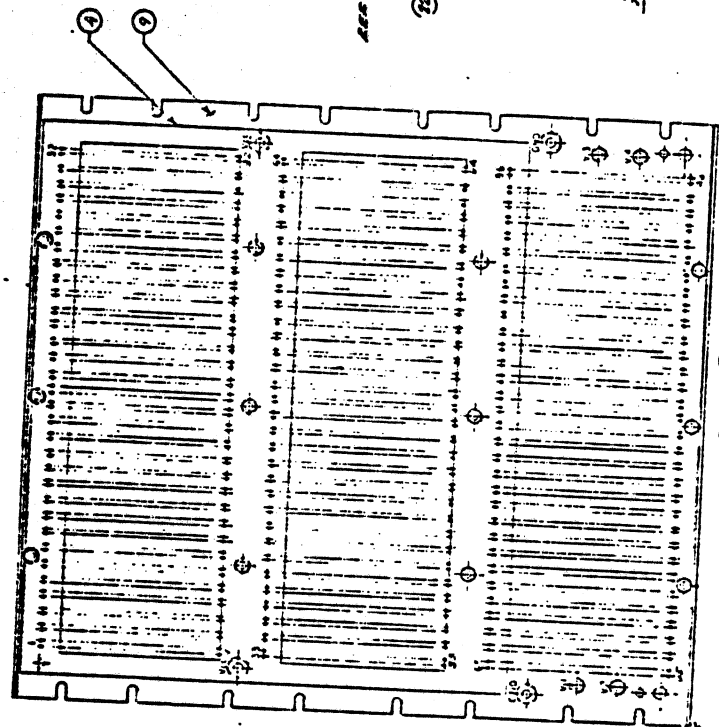
SEE SEPARATE PARTS LIST

CONTRACT NO.	EVANS & SUTHERLAND
PROJECT NO.	COMPUTER CORPORATION
DATE	ENGLAND CITY, ILL. 61812
DESIGNED BY	BACK PANEL ASSY
CHECKED BY	S. J. JEN
DATE	
SCALE	1/2" = 1'-0"
APP'D	

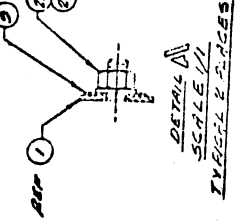
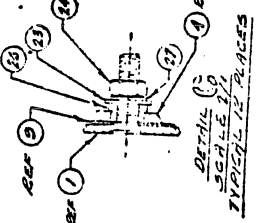
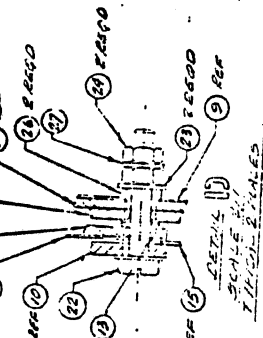
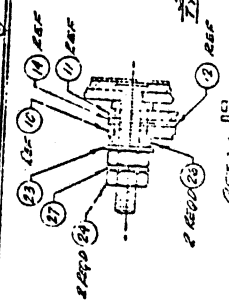
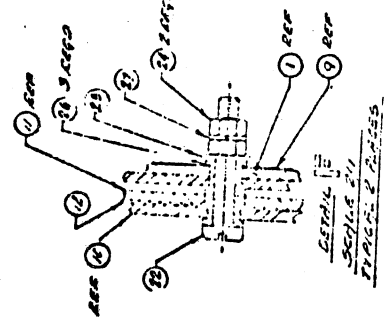
SECTION G-G  
SCALE 1/1"



REVISED	DATE



(REF) 2

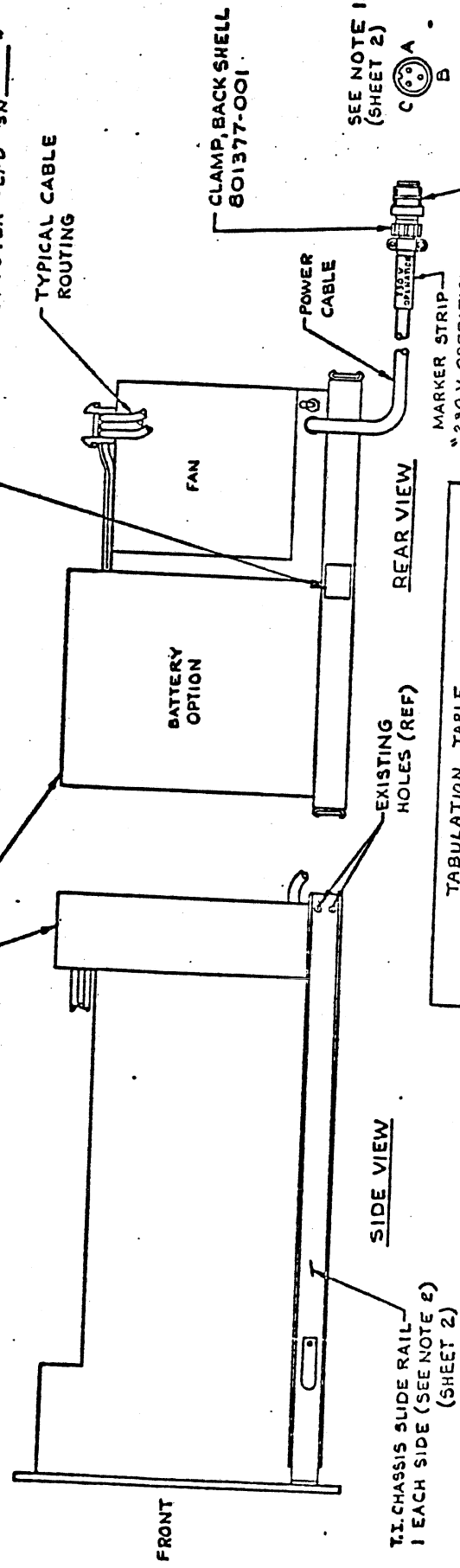


<b>EVANS &amp; SUTHERLAND</b> COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
DRAWN BY: [Signature] CHECKED BY: [Signature] PROJECT: [Blank] DATE: [Blank]	TITLE: <b>SLC - PLATE 2 - ASSEMBLY</b> SCALE: <b>3/8\"/&gt; </b>
PROJECT NO.: [Blank] DRAWING NO.: [Blank]	SHEET NO.: <b>D</b> TOTAL SHEETS: <b>1/2</b>

A SEE SHEET 2

COMPUTER, 980B  
 801390-  
 (SEE TAB TABLE)

NAME PLATE, ASSY  
 101341-100  
 LOCATE APPROXIMATELY AS SHOWN  
 MARK: 150125-(APPROPRIATE DRSH NO.)  
 T.I. COMPUTER -CPU 5N



SEE NOTE 1. (A), (B), (C).  
 (SHEET 2)

MARKER STRIP  
 "230 V OPERATION  
 ONLY" SEE NOTE 1  
 (SHEET 2)  
 MARKER STRIP  
 802311-004  
 SHRINK TUBING  
 802033-375

TABULATION TABLE

ASSY NO.	COMPUTER PART NO.	MEMORY EXPANSION MEMORY	TOTAL MEMORY
150125-11B	801390-C21	80165304	18K

SEE SHEET 2 FOR NOTES ON MODIF AND SPECIAL INSTRUCTIONS.

CONTRACT NO.	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84118
DRAWN	J. P. Wiley 7 JUL 77
CHECKED	7 JUL 77
MECH	7 JUL 77
ELECT	7 JUL 77
PROJ. ENG.	
DESIG. AUTO.	
TITLE	COMPUTER, 980B ASSEMBLY DRAWING (V.O.V. VIEW)
SIZE	C 53938 150125-118
CODE IDENT NO.	
REV	NC

150125-118

NOTES:

COMPUTER, MODEL 91 SPECIFICATIONS AND SPECIAL INSTRUCTIONS.

- POWER PLUG MOD: (REF. SHEET 3).
- (A) REMOVE EXISTING POWER PLUG FROM POWER CABLE.  
(B) ADD CONNECTOR; E65 PART NO. 801417-001, (MALE, 3 PIN), (M.S. NO. 453106A16-10P).  
WIRE BLACK WIRE TO PIN "A" OF CONNECTOR.  
WIRE GREEN WIRE TO PIN "B" OF CONNECTOR.  
WIRE WHITE WIRE TO PIN "C" OF CONNECTOR.  
CABLE LENGTH TO REMAIN APPROXIMATELY SAME AS RECEIVED.
- (C) ADD CLAMP, BACKSHELL; E65 PART NO. 801377-001, (M.S. PART NO. MS0387-0).  
(D) ADD IDENTIFICATION MARKER NEAR END OF POWER CABLE -- "230 VOLT OPERATION ONLY" -- ATTACH PERMANENTLY.
- T.I. CHASSIS SLIDE RAIL MOD: (REF. SHEET 3).  
(NO MODIFICATIONS NECESSARY).

T.I. CHASSIS SLIDE RAILS ARE TO BE MOUNTED IN CABINET AND ADJUSTED SO THAT THE FRONT PANEL OF THE T.I. COMPUTER WILL FIT FLUSH AGAINST CABINET RAILS AND WILL BE PROPERLY CENTERED.

- I.O. DATA MODULE CAPD (961648-0001) M.C.D. (PL. 3, CHLET2).  
ADD JUMPER WIRE FROM TERMINAL "E21" TO TERMINAL "E22". (COMPONENT SIDE)

INSERT I.O. DATA MODULE CARD IN SLOT 104 & 103.  
(THE 5616-48-0001 MODULE IS A PART OF THE 9615955-0001 KIT, E65 PN 801397-001).  
COMMUNICATIONS MODULE CARD SPECIAL INSTRUCTIONS (REF. SHEET 3)

SET SWITCHES S1 AND S2 ON THE COMMUNICATIONS MODULE (CARD, SLOT 102) AS FOLLOWS:

S1	S2
1 ON	1 ON
2 ON	2 ON
3 OFF	3 OFF
4 ON	4 ON
5 OFF	5 ON
6 ON	6 OFF
7 OFF	7 ON

- PLUG COMMUNICATIONS MODULE CARD INTO 102 CARD SLOT. THIS MODULE IS CONSIDERED AS A PART OF THE 9615955-0001 KIT, E65 PN 801397-001.  
(THE 5616-48-0001 MODULE IS A PART OF THE 9615955-0001 KIT, E65 PN 801397-001)
- INSTALL DMAC CABLE (E65 PN 801392-005) INTO DMAC CARD SLOT. (DMAC INTERFACE MODULE, 801396-001)
- INSTALL 733ASR CABLE INTO CM CARD. (CARD SLOT 102).
- TURN ON AC POWER AND BATTERY SWITCHES ON REAR OF T.I. 9809.

NOTE: BATTERY SWITCH MUST BE IN "OFF" POSITION BEFORE SHIPPING:

FOR COMPLETE PARTS LIST OF T.I. COMPUTER ASSY. SEE APPROPRIATE PARTS LIST.

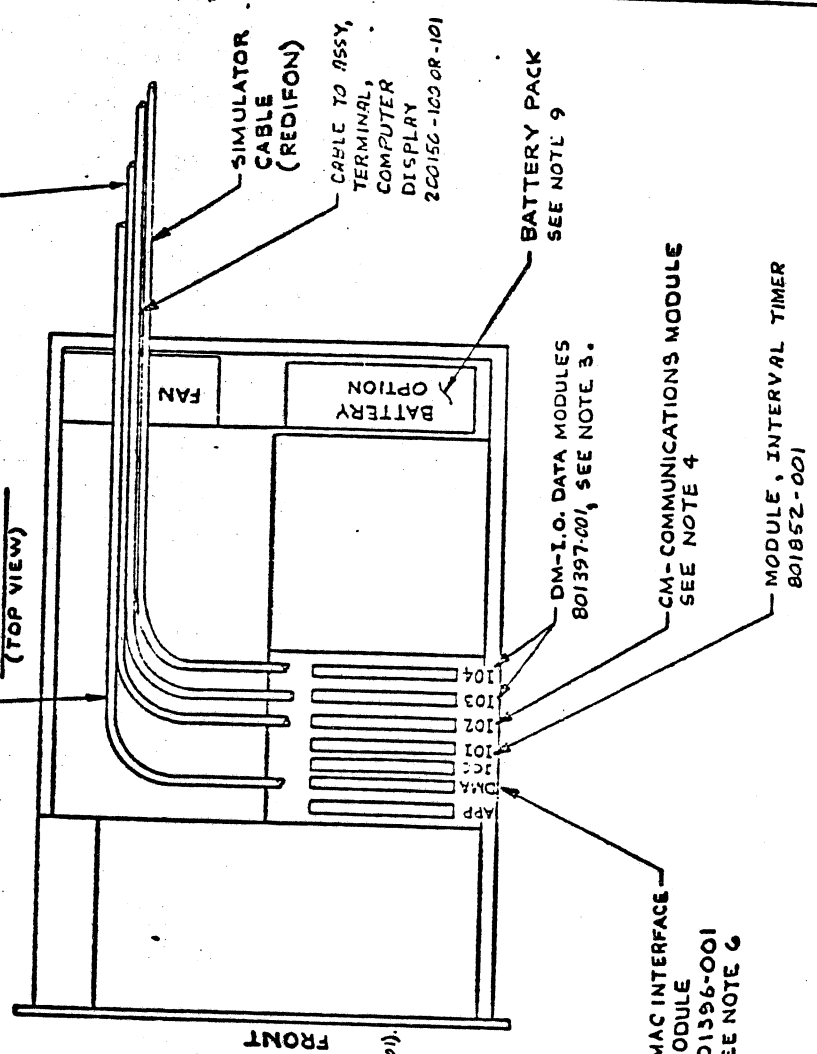
- THE FOLLOWING PARTS ARE INCLUDED IN THIS ASSY, BUT ARE NOT INSTALLED IN THE COMPUTER:
- DMAC EXTENDER E65 801398-001
  - DMAC EXTENDER 801399-001
  - DMAC EXTENDER 801400-001
  - DMAC SET, EXTENDER 801401-001
  - TEST KIT, I/O BOARD 801851-001

(CONSISTS OF 2 964381-0001 CABLES) (CONSISTS OF 964521-0001 ASSY AND 965956-9701 MANUAL).

DMAC CABLE ASSY  
153130-006  
SEE NOTE 6.  
(REF)

CABLE TO TERMINAL,  
ASR, TWIN CASSETTE  
801392-005

VIEW A-A  
(TOP VIEW)



NOTE:  
COMPONENT SIDE OF MODULES  
TOWARDS FRONT OF COMPUTER

101341-100  
 NAMEPLATE  
 LOCATE APPROX. AS SHOWN  
 MARK: 150125-118 TI COMPUTER - 733ASR SN \_\_\_\_\_  
 S/N TO BE APPLIED BY EFS AS APPLICABLE.

TERMINAL, ASR, TWIN CASSETTE,  
 SILENT 700  
 801392-001  
 (T.I. PART NO 966645-0005)

CABLE TO COMPUTER  
 (CM MODULE, IO2 CARD  
 SLOT)

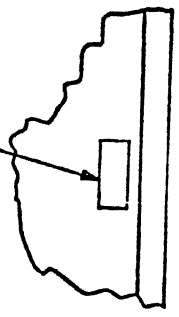
MARKER STRIP  
 802311-004  
 SHRTNK TUBING  
 802033-375

"MARKER STRIP  
 "230 V OPERATION ONLY"  
 SEE NOTE 1-(D)  
 (SHEET 3)

SEE NOTE 1-(B)  
 (SHEET 3)

CLAMP,  
 BACKSHELL  
 801377-001

CONNECTOR, MALE, 3 PIN  
 801417-001



PARTIAL VIEW B-B

FRONT

**NOTES:**

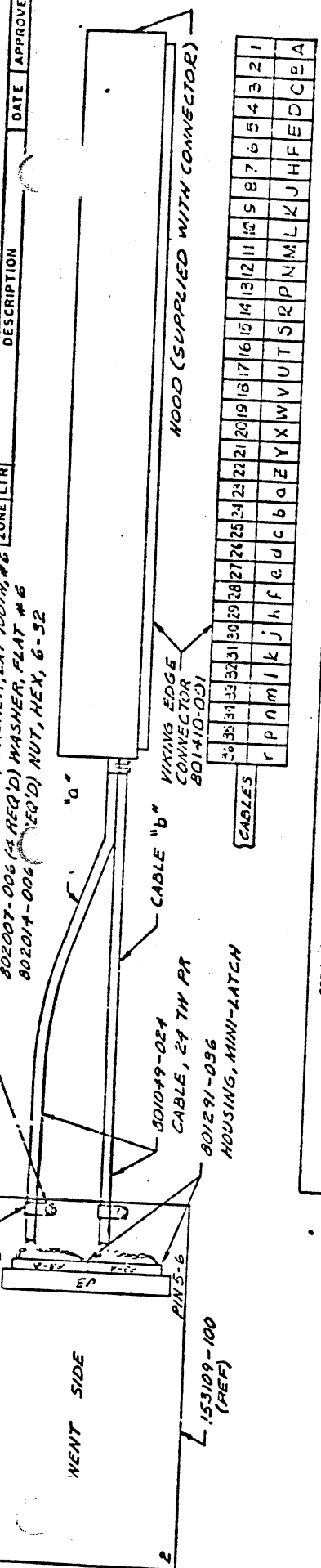
1. CASSETTE, TERMINAL MODIFICATIONS:

- 1. (A) REMOVE EXISTING POWER PLUG FROM CORD.
- (B) ADD-CONNECTOR EFS PART NO. 801417-001. (MALE, 3 PIN),  
 WIRE BLACK WIRE TO PIN "A" OF CONNECTOR.  
 WIRE GREEN WIRE TO PIN "B" OF CONNECTOR.  
 WIRE WHITE WIRE TO PIN "C" OF CONNECTOR.  
 CABLE LENGTH TO REMAIN APPROX AS RECEIVED.
- (C) ADD CLAMP, BACKSHELL; EFS PART NO. 801377-001 (MS PART NO. MS 3057-8)
- (D) ADD IDENTIFICATION MARKER NEAR END OF POWER CABLE - "230 V OPERATION ONLY" - ATTACH PERMANENTLY.

2. SPECIAL INSTRUCTIONS:

FOLLOW INSTALLATION INSTRUCTIONS IN T.I. MANUAL 959227-9701 TO ASSEMBLE 733ASR, TERMINAL, TWIN CASSETTE.  
 MAKE SURE PAPER IS IN PLACE PROPERLY BEFORE TURNING ON.

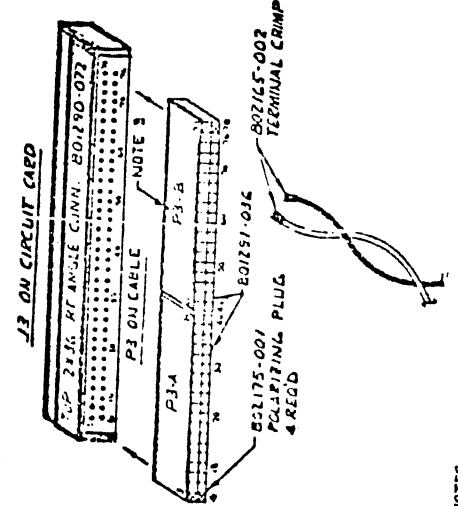
SIZE CODE IDENT NO	REV
C 53938	NC
150125-118	



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
r	p	n	m	k	j	h	f	e	d	c	b	a	z	y	x	w	v	u	t	s	r	p	n	m	l	k	j	h	f	e	d	c	b	a

GORE 'a' CABLE		GORE 'b' CABLE	
Signal Name	Gore Wire	Signal Name	Gore Wire
DNFETCH	RED	DNM007	RED
DNSTORE	BLACK*	DNM006	ORANGE
	ORANGE	DNM005	BLACK
	BLACK**	DNM004	YELLOW
	YELLOW**	DNM003	BLACK
	GREEN**	DNM002	GREEN
	BLACK**	DNM001	BLACK
	BLACK	CKJ01	BLACK
	BLUE	DNRES1	VIOLET
	VIOLET	DAT01	BLACK**
	GRAY	AT1ST01	BLACK**
	BLACK	AT1ST02	BLACK**
	GRAY	ACC001	ORANGE
	BLACK	DE0010	BLACK**
	WHITE	DE0011	YELLOW
	BLACK**	DE0012	BLACK
	RED	DE0013	GREEN
	BLACK**	DE0014	BLACK
	ORANGE	DE0015	BLUE
	BLACK**	DE0016	BLACK
	BLACK**	DE0017	VIOLET
	BLACK**	DE0018	GRAY
	BLACK**	DE0019	BLACK
	BLACK**	DE0020	WHITE
	BLACK**	DE0021	BLACK
	BLACK**	DE0022	BLUE
	BLACK**	DE0023	ORANGE
	BLACK**	DE0024	BLACK
	BLACK**	DE0025	YELLOW
	BLACK**	DE0026	BLACK**
	BLACK**	DE0027	BLACK**
	BLACK**	DE0028	BLACK**
	BLACK**	DE0029	BLACK**
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	BLACK**	DE0043	BLACK**
	BLACK**	DE0044	BLACK**
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	BLACK**	DE0064	BLACK**
	BLACK**	DE0065	BLACK**
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	BLACK**	DE0070	BLACK**
	BLACK**	DE0071	BLACK**
	BLACK**	DE0072	BLACK**
	BLACK**	DE0073	BLACK**
	BLACK**	DE0074	BLACK**
	BLACK**	DE0075	BLACK**
	BLACK**	DE0076	BLACK**

these two wires connected together at VIKING ends.  
 these two wires connected together at VIKING ends.  
 these four wires connected together at VIKING ends.  
 these two wires connected together at VIKING ends.



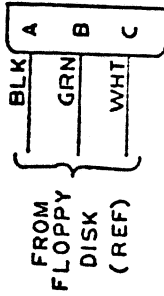
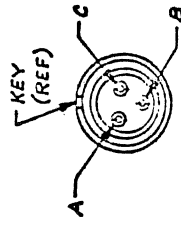
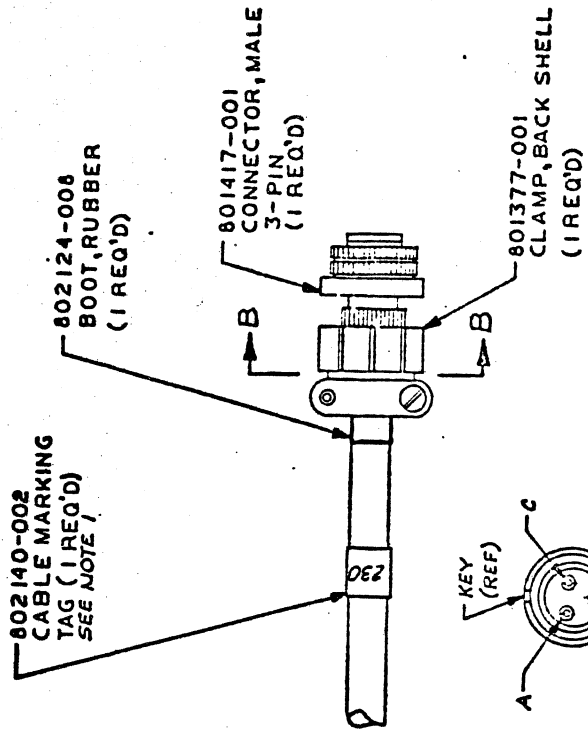
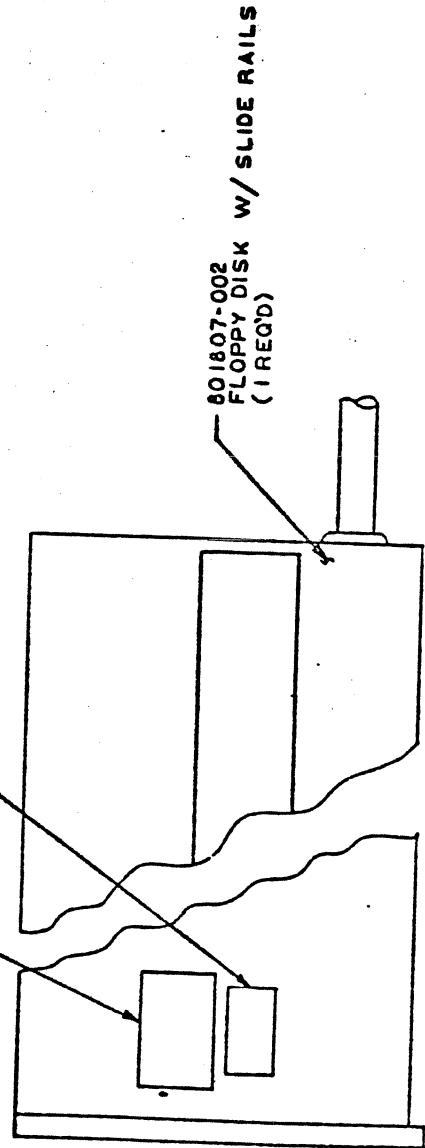
- NOTES.
1. CAVITIES 3 & 4 IN P3-A AND 77 & 78 IN P3-B WILL BE FILLED WITH POLARIZING PLUGS (802175-001)
  2. THE PIN NUMBERS AND CAVITY NUMBERS HAVE A ONE TO ONE CORRESPONDENCE WITH THE TEST POINTS ON THE CIRCUIT CARD.
  3. MARK P3-A & P3-B ON THE TOP OF THE CONNECTOR USING A WHITE EPOXY INK.
  4. USE SIZE ETC 18-16 SPLICE 802169-016 TO CRIMP THE 4 WIRES +1 FOR THE SPLICE TERMINATING TO 36-PIN VIKING CONNECTOR.

D2 A2	REVERSED CABLES A & B PER ECO A2	DATE	2-15-77
D3 A1	CORRECTED VIEW ZONE D3 PER ECO A1	DATE	11-22-76
REVISION	DESCRIPTION	DATE	APPROVED
CONTRACT NO. 153109-100 DRAWN BY: M. J. L. 7-1-74 CHECKED BY: J. W. L. 7-1-74 MECH. J. W. L. ELEC. J. W. L. PROJ. ENG. J. W. L. DESIG. AUTO. J. W. L. APPROVED. J. W. L.			
TITLE EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		SCALE: NONE SHEET: 1 OF 1	
CABLE ASSEMBLY T.I. DMM CONTROLLER		DWG NO. 153130-006 REV. 12	

ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED

VENDOR NAME PLATE (REF)

E & S NAME PLATE (101341-100) LOCATE APPROXIMATELY AS SHOWN. MARK AS FOLLOWS: "153145-101 S/N ECO" ASSY, FLOPPY DISC STORAGE.



WIRING DIAGRAM

NOTES:  
1. TAG CABLE END NEAR CONNECTOR USING 802140-002 CABLE ID TAG, MARK IN BLACK INK WITH "230VAC."

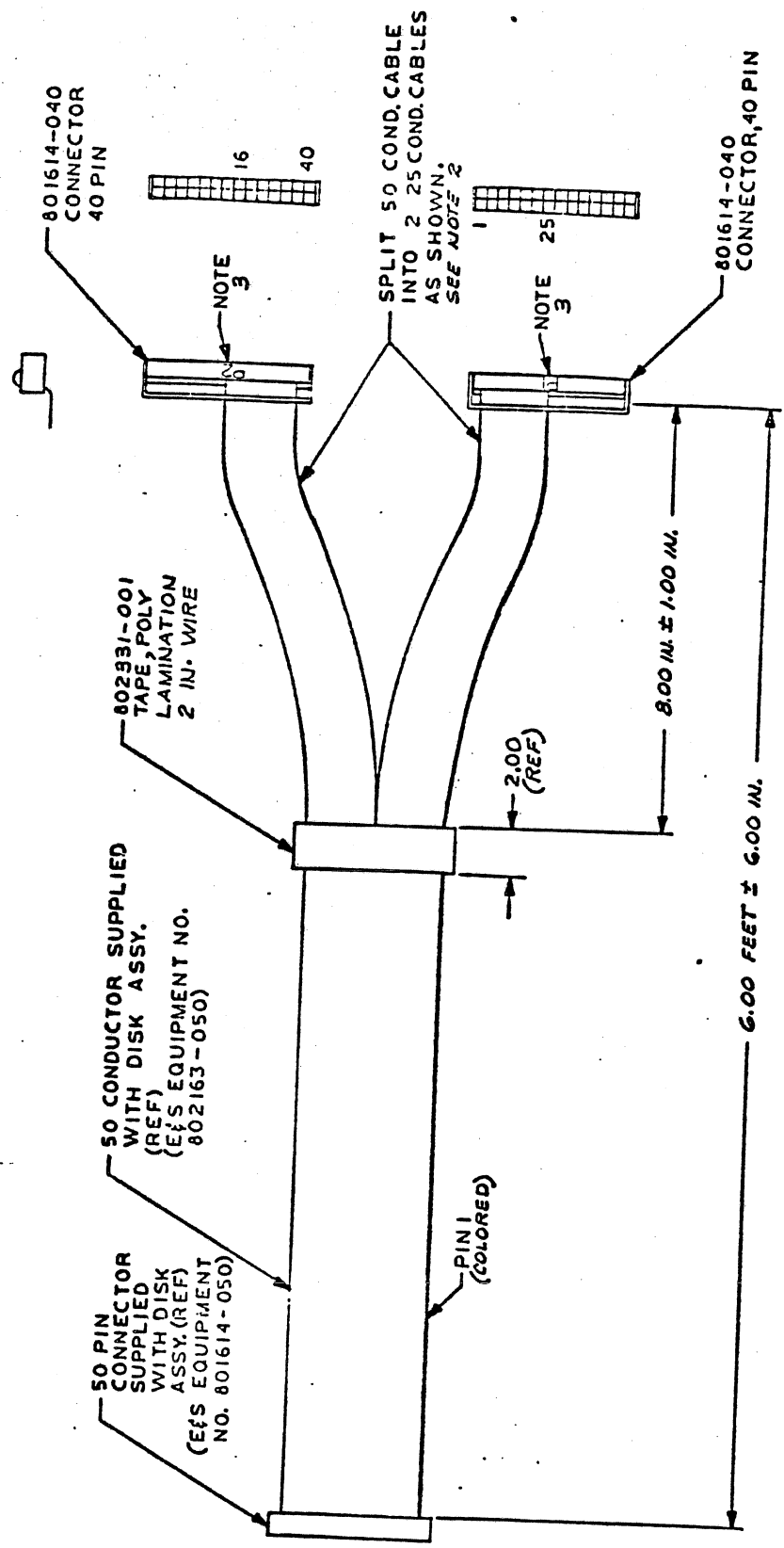
SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.	4-E-77	DISC STORAGE, 6200P W/ SLIDE RAILS	
DRAWN ADS	4-E-77	SIZE	CODE IDENT NO
CHECKED	BAPR 77	C	53938
MECH		REV	JJC
ELEC	02APR 77	ASSY, FLOPPY	
PROJ ENG		DISC STORAGE, 6200P	
APPROVED		W/ SLIDE RAILS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		SCALE: 1:1	
TOLERANCES ON			
.XX ±			
.XXX ±			
ANGLES ±			
✓			
MATERIAL		SEE PARTS LIST	
FINISH			
200101-100	110/0/0/VIEW		
NEXT ASSY	USED ON		
APPLICATION			

153145-101

A

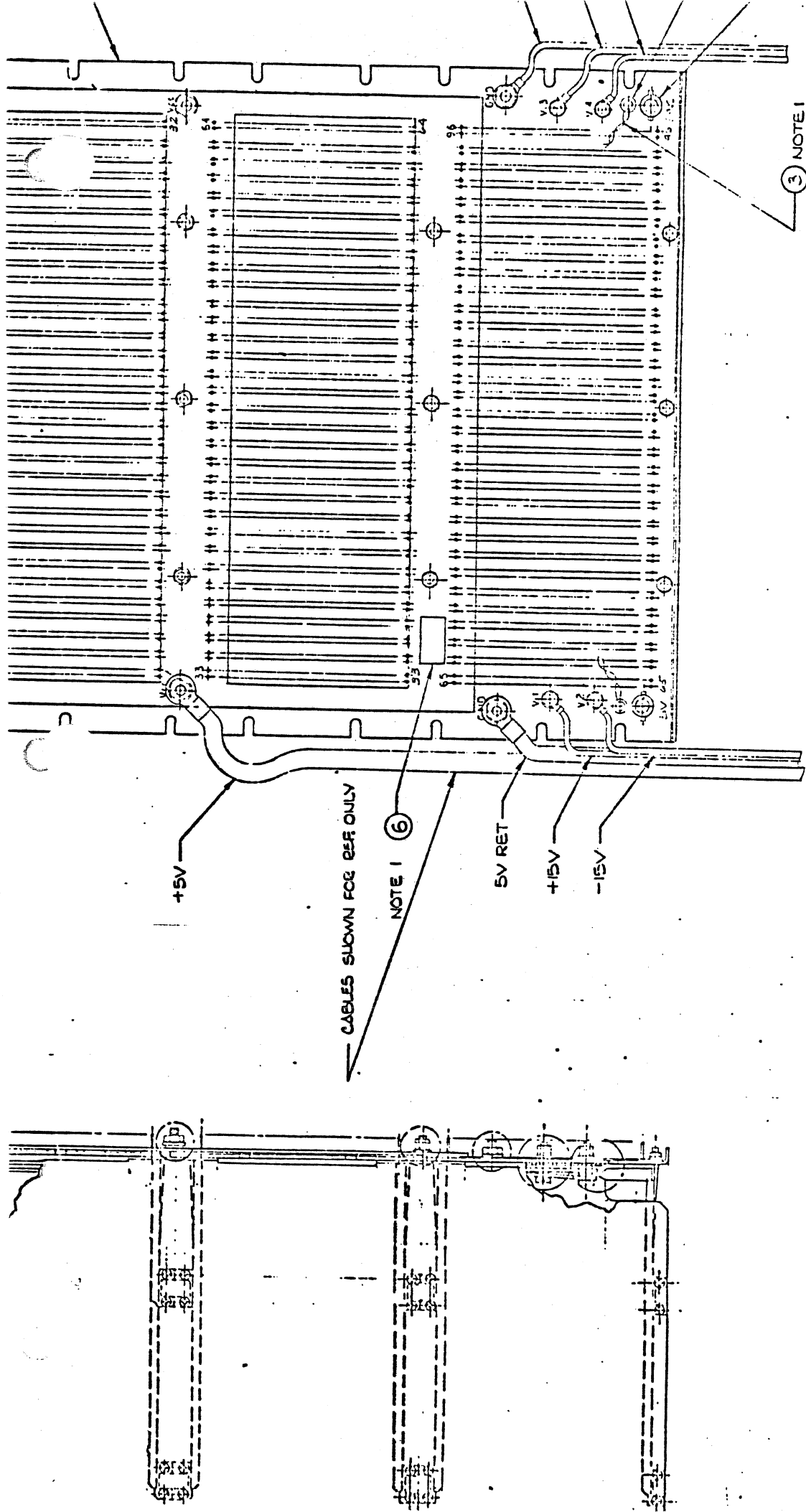
D

C



- NOTES: (CONTINUED)
2. MODIFICATIONS TO CABLE ASSY SUPPLIED WITH DISK ASSY 801807-002.
    - A. CUT OFF OR REMOVE EXISTING 50 PIN CONNECTOR.
    - B. SPLIT 50 CONDUCTOR RIBBON CABLE & ADD 2 NEW CONNECTORS PER DRAWING.
  3. MARK CONNECTORS AS SHOWN USING WHITE EPOXY INK 1/8 HIGH CHARACTERS.

SIZE	CODE IDENT NO	REV
C	53938	NC



NOTE I

CABLES SHOWN FOR REF ONLY

NOTE I (6)

TABLE II  
SEE NOTE I

RESISTOR NO.	VALUE	LOCATION
50-3300-151	150Ω	96.6 96.7
50-3300-221	220Ω	27.2 51.0
51-200-101	100Ω	75.3 76.2 77.2 78.2 79.2 80.2 81.2

TABLE I

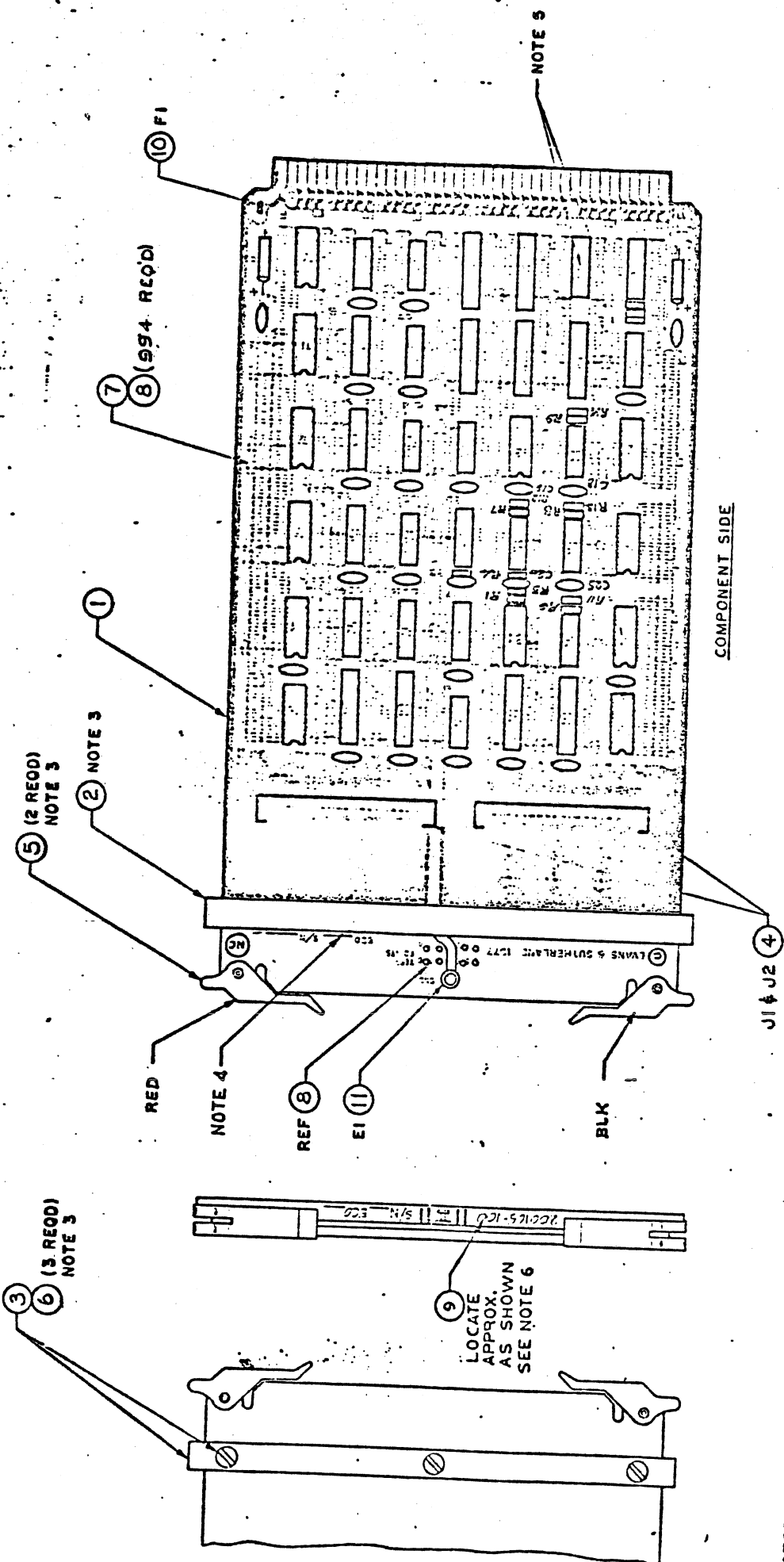
	SIG	GND
SYNC	85.9	85.11
5 V	65.2	65.1

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES		CONTRACT NO.
TOLERANCES ON		DRAWN
XXX		CHECKED
XXX		MECH
ANGLES		DATE
MATERIAL		REV
NEXT ASSY APPLICATION		DESIGN
USED ON		APPROVED

SPRING.



ZONE	DATE	APPROVED



REFERENCE DOCUMENTS  
 LOGIC DIAGRAM ----- 200105-600  
 PARTS LIST ----- PL200105-100

- NOTES:
1. ASSEMBLE PER E & S WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS (ITEM 5) AND SPACERS (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROXIMATELY AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK E & S ASSY. NO., S N & ECO LEVEL ON ITEM NO. 9.

SEE SEPARATE PARTS LIST		E & S EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		DRAWN: JIM P. 2-15-77	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		CHECKED: JIM P. 2-15-77	
FR ±		MISC. AD. CHANGES 2-15-77	
XXX ±		EEL: DON WILSON 3-21-77	
ANGLES ±		PROJ. EN: SAUL MORGAN 3-21-77	
MATERIAL		APPROVED: SAUL MORGAN 2-15-77	
200105-100 NOVONVIEW		SIZE	
NEXT ASSY		EDGE IDENT NO	
USEC ON		C 53938	
FINISH		200105-100	
SEE PARTS LIST		REV	
		110	

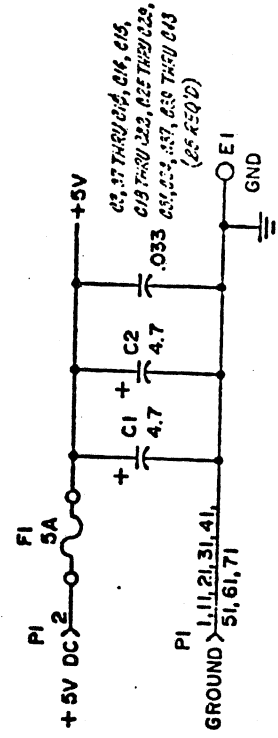
CARD ASSEMBLY  
 DMA INTERFACE, CABLE, W/W

A

D

C

200105-100



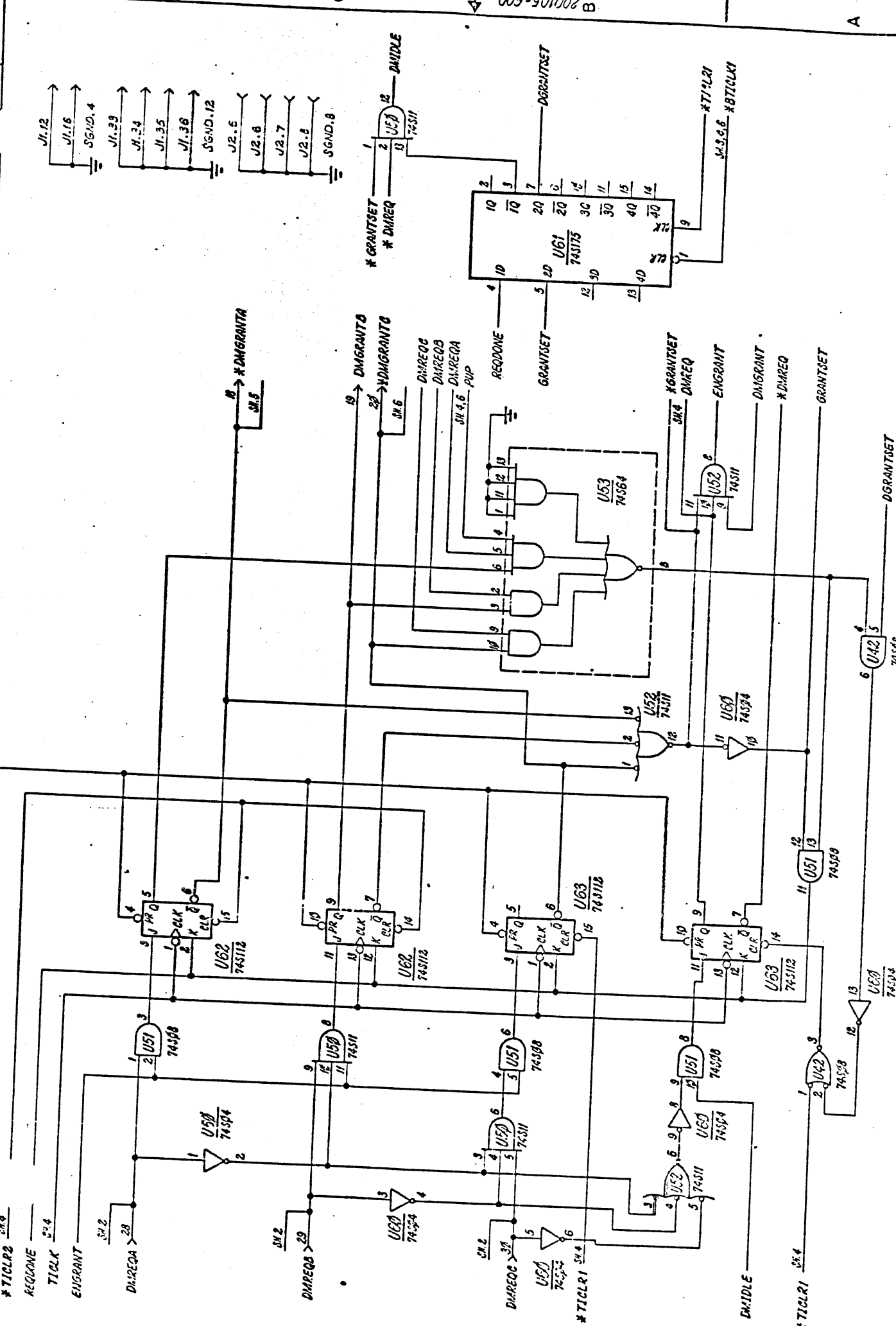
2. NUMBERS SHOWN REFER TO CONNECTOR PI. ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.
- RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.
- RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
- ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).
- ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND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

SEE SEPARATE PARTS LIST		EVANS & RUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		DRAWN R. MCLELLY 6-2-77	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CHECKED BY [Signature] 6-2-77	
TOLERANCES ON		MECH	
.XX ±		ELCC	
.XXX ±		PROJ. ENG. [Signature]	
ANGLES ±		APPROVED	
MATERIAL		DATA INTERFACE, CABLE	
FINISH		W/W	
NEXT ASSY		200105-600	
APPLICATION		SCALE NONE	
SIZE		CODE IDENT NO	
C		53938	
REV		NIC	

ZONE	LTR	DESCRIPTION	DATE	APPROVED

200105-600

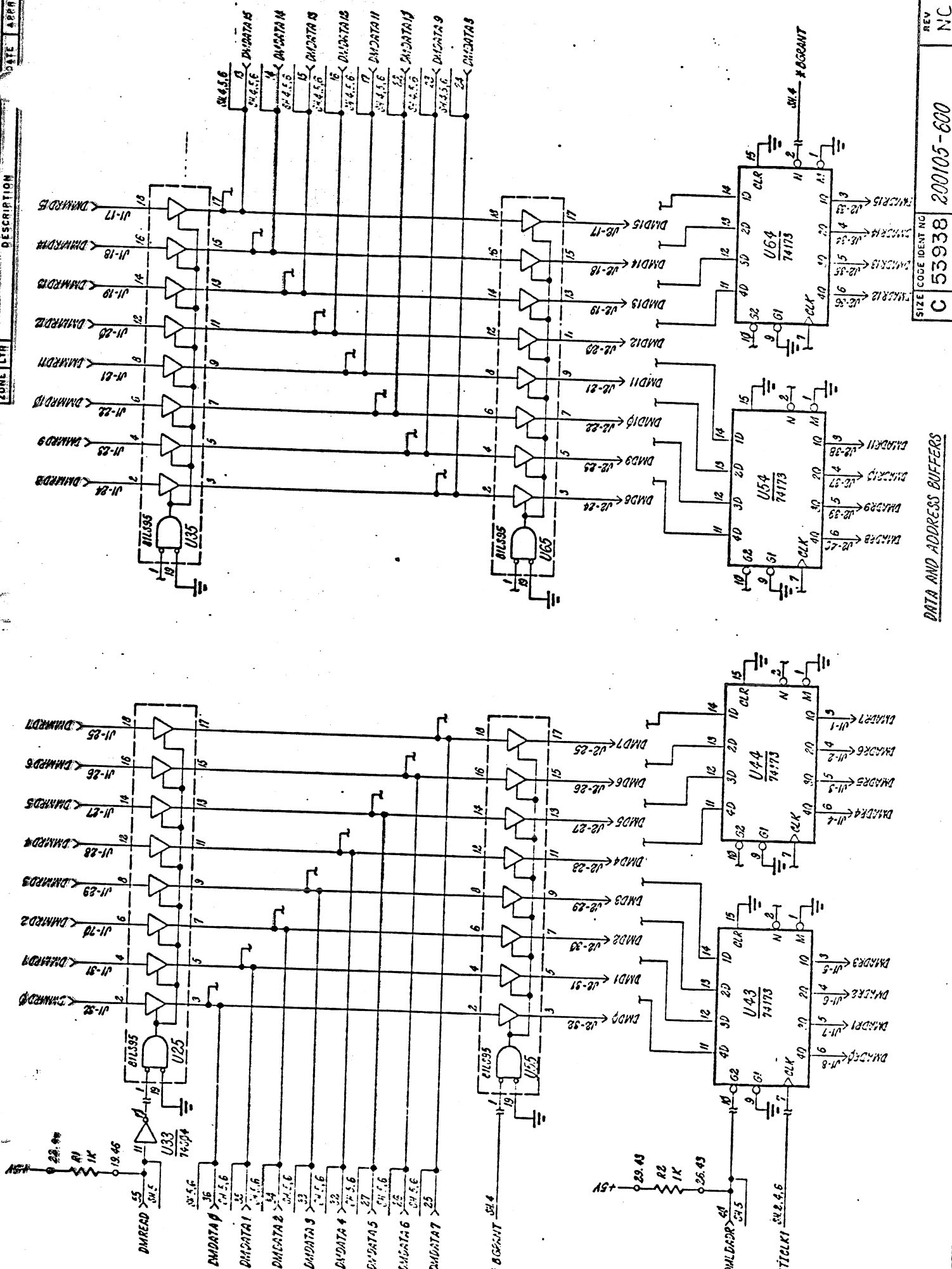


SIZE	CODE	IDENT NO	REV
C	53938	200105-600	NC

A

B

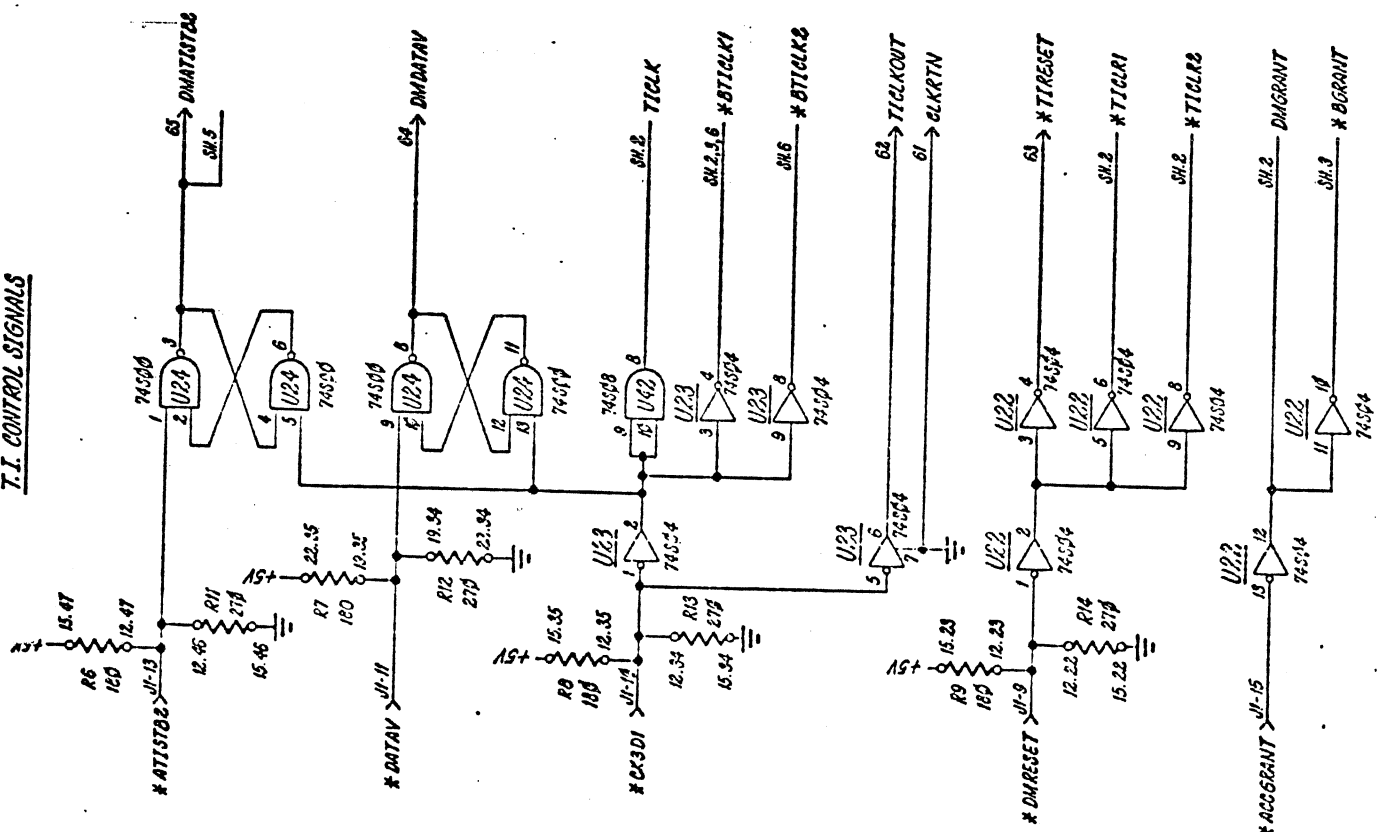
C



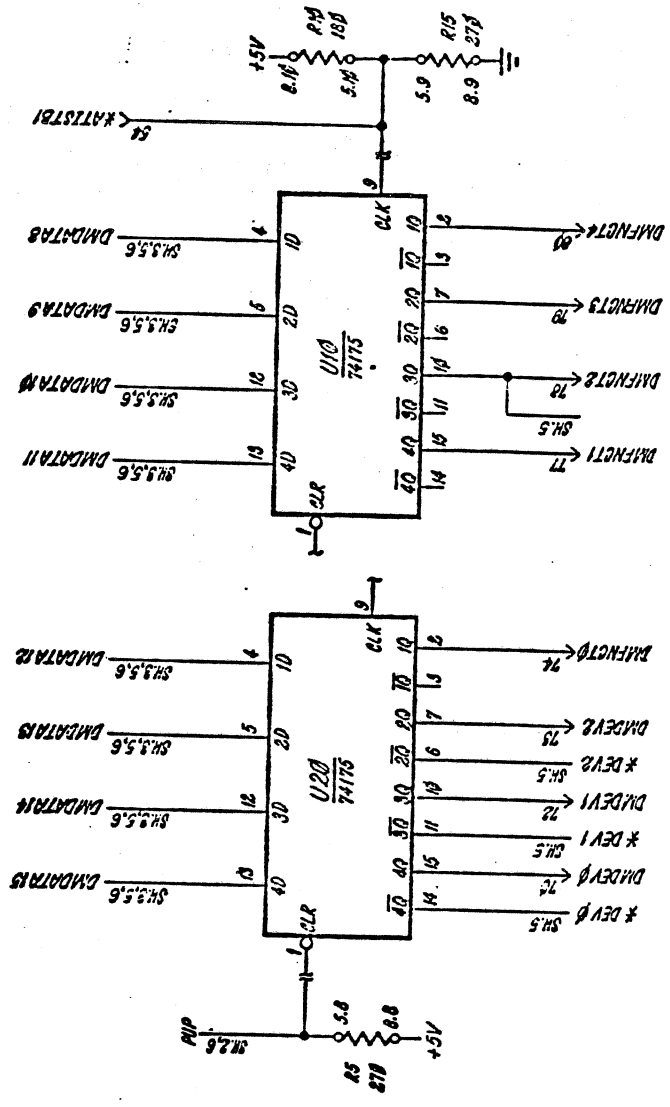
REV	NC
SIZE CODE IDENT NO	C 53938
	200105-600

DATA AND ADDRESS BUFFERS

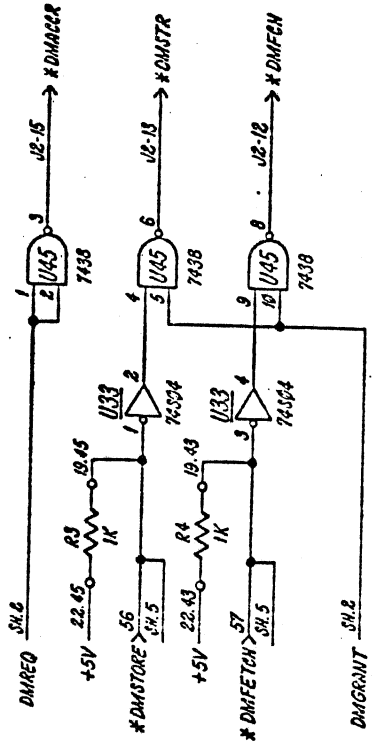
**T.I. CONTROL SIGNALS**



**ATI FUNCTION BITS**



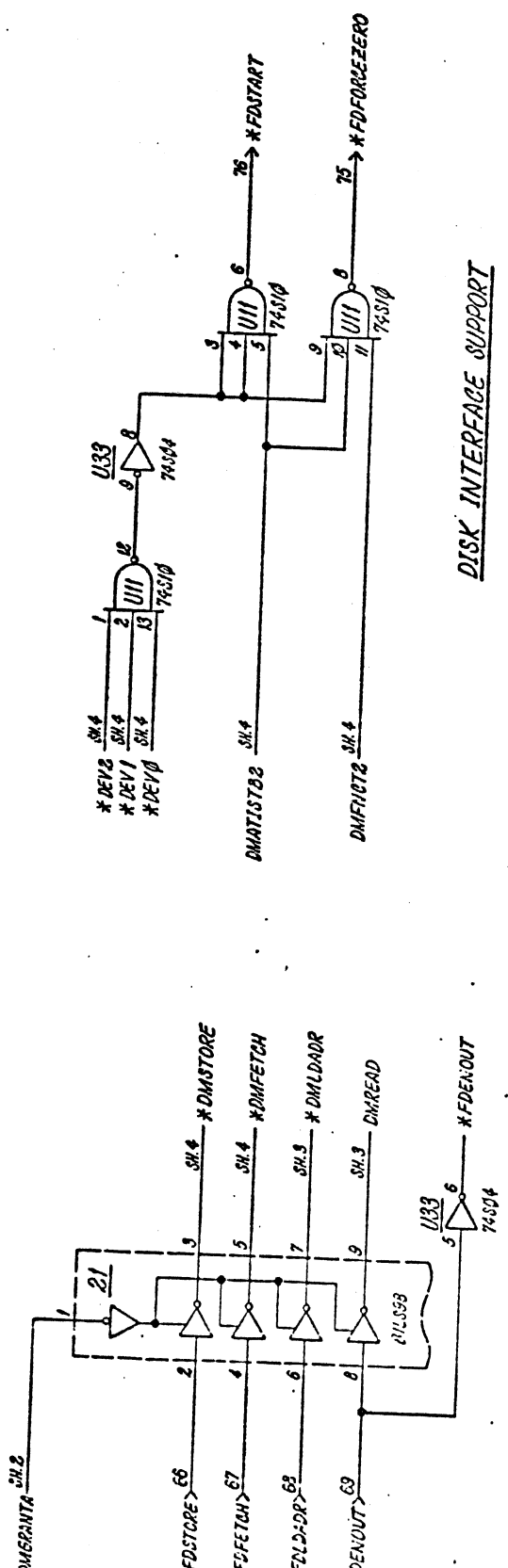
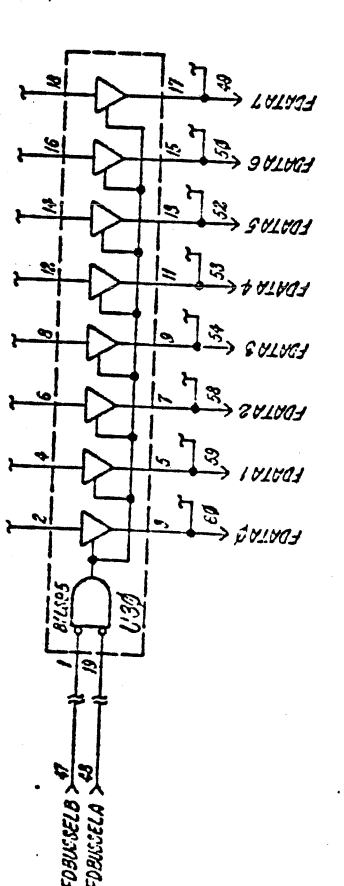
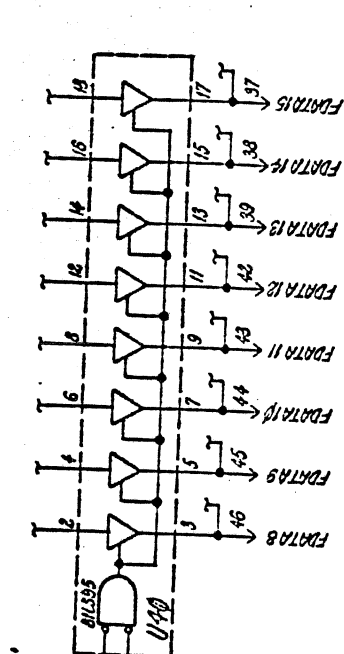
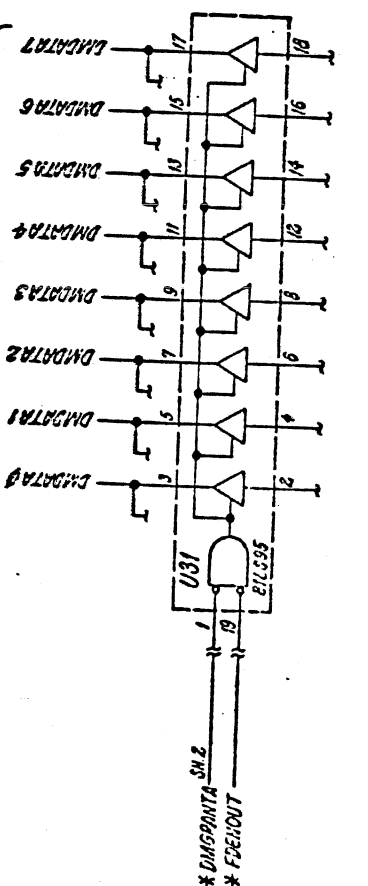
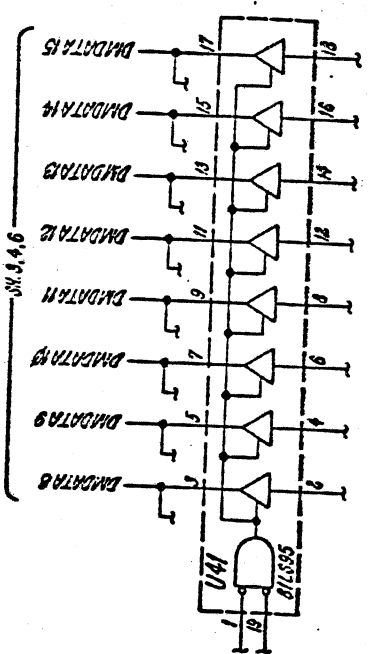
**INTERFACE CONTROL SIGNALS**



ZONE	LTR	DESCRIPTION	REV	APPROVED

TI BUS BUFF

REV 5, 4, 6



FLOPPY CONTROL BITS

DISK INTERFACE SUPPORT

SIZE	CODE IDENT NO	REV
C	53938	NC
200105-600		

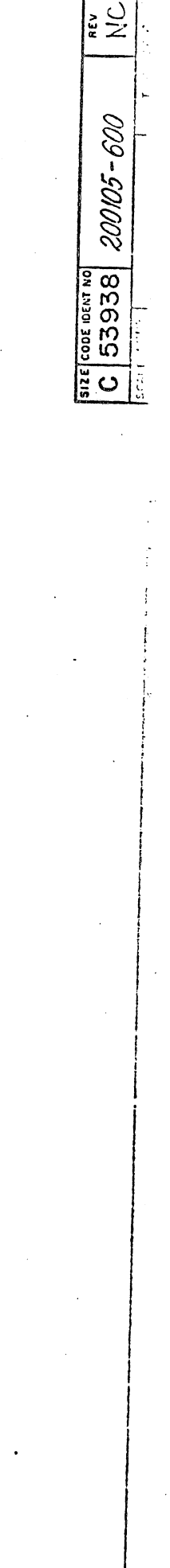
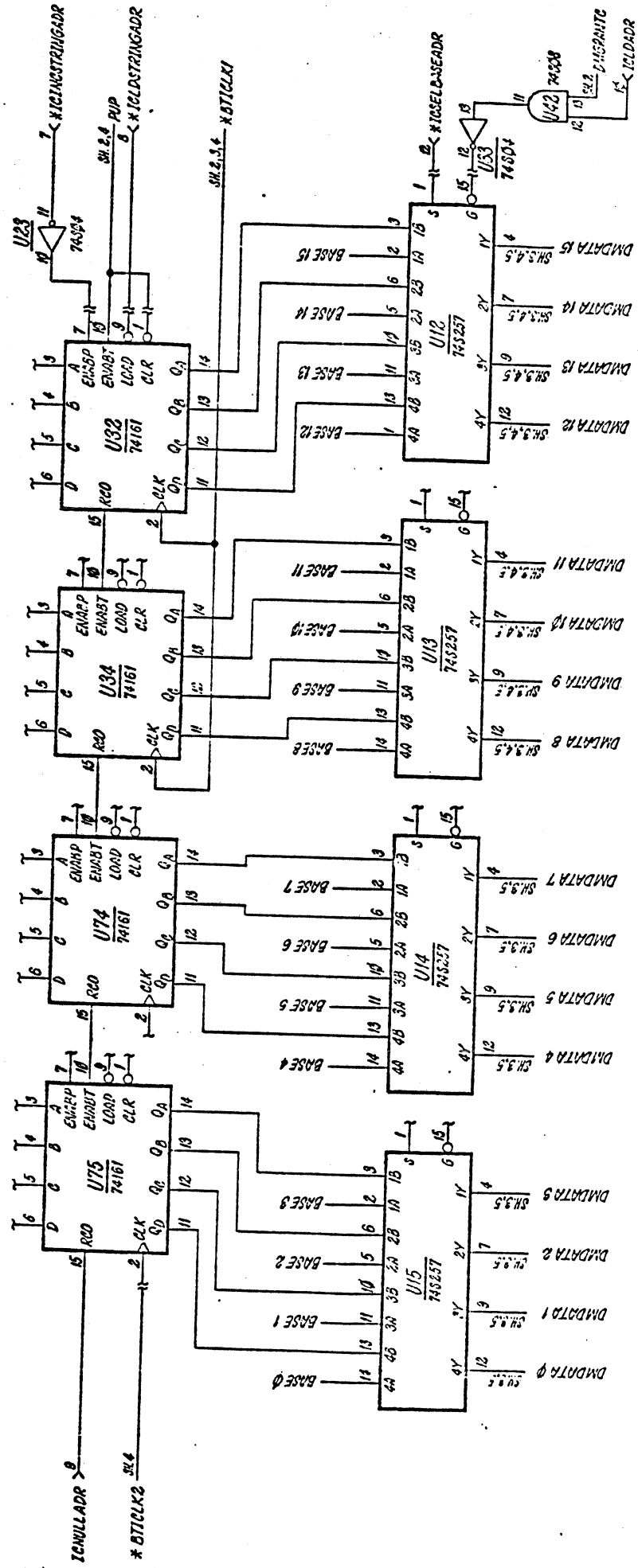
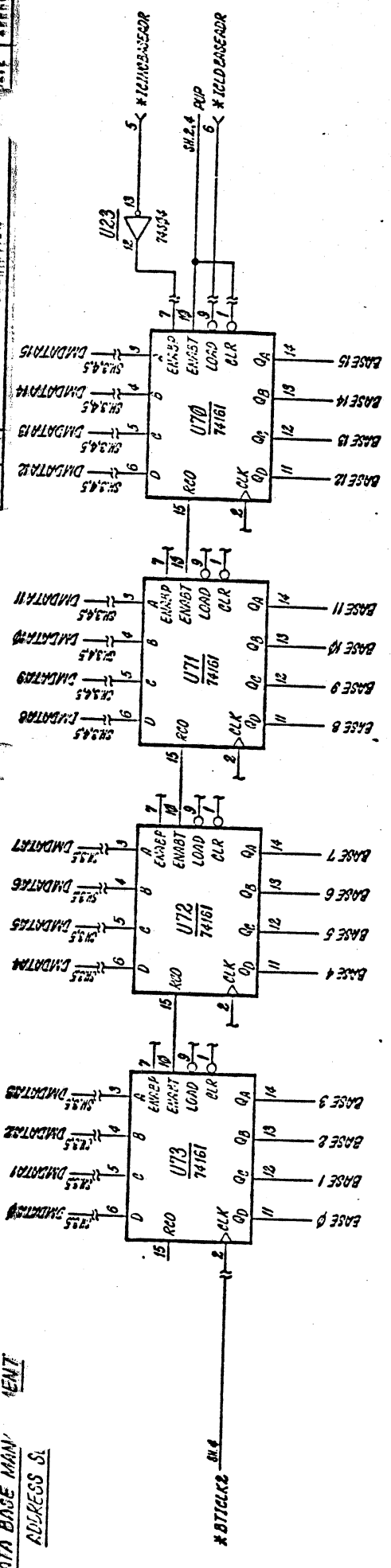
200105-600

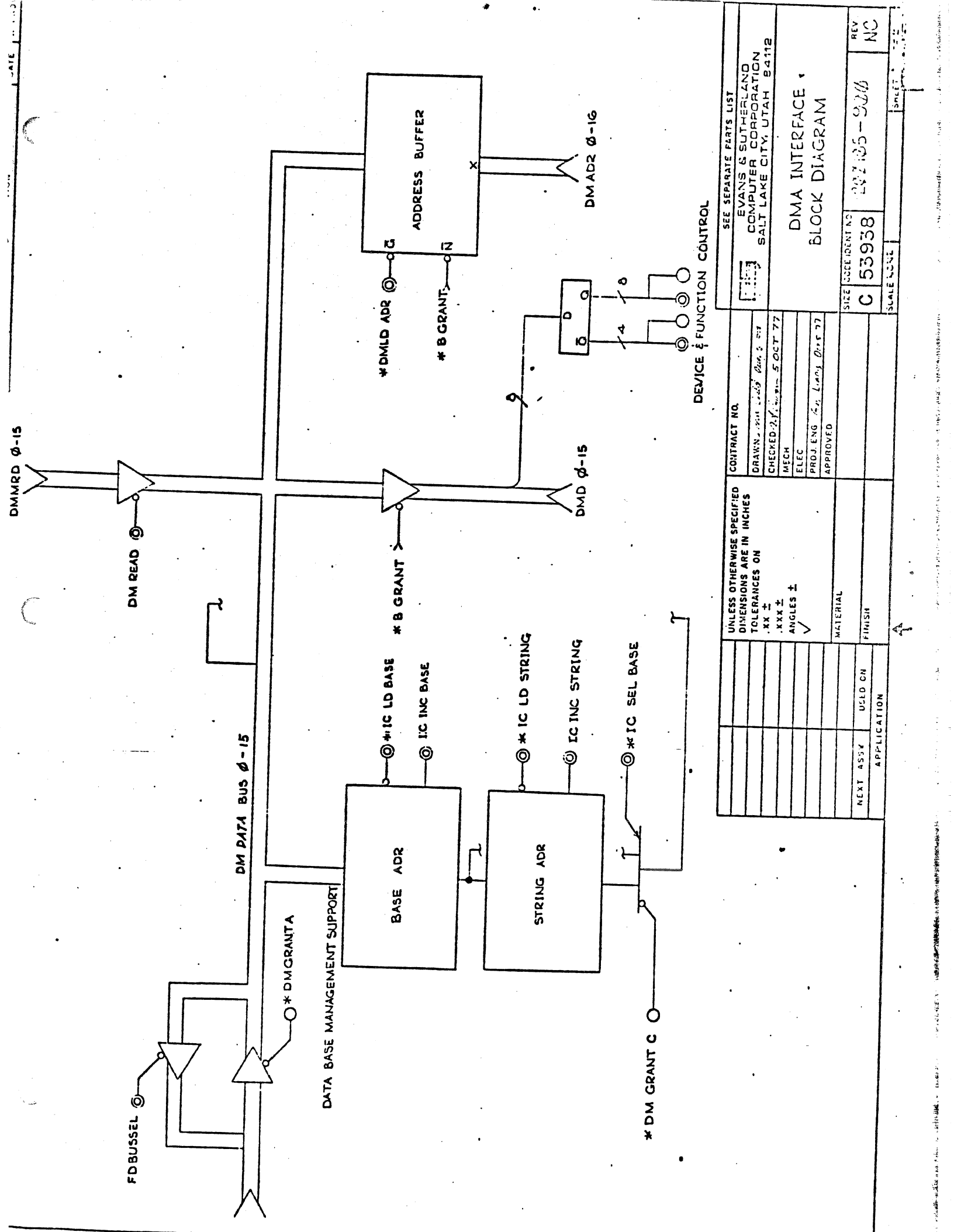
A

C

D

DATA BASE MAIN  
 ADDRESS 01





SEE SEPARATE PARTS LIST

EVANS & SUTHERLAND  
COMPUTER CORPORATION  
SALT LAKE CITY, UTAH 84112

DMA INTERFACE  
BLOCK DIAGRAM

CONTRACT NO.	53938
DRAWN BY	5 OCT 77
CHECKED BY	5 OCT 77
MECH	
ELEC	
PROJ. ENG.	
APPROVED	
SIZE	C 53938
SHEET NO.	207105-920
REV	NC

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES

TOLERANCES ON  
.XX ±  
.XXX ±  
ANGLES ±

APPLICATION	USED ON	MATERIAL	FINISH
NEXT ASSY			

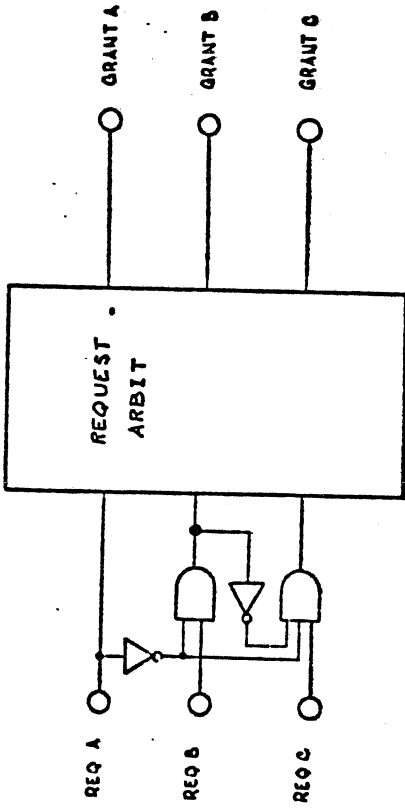
DATE

SCALE 1:1

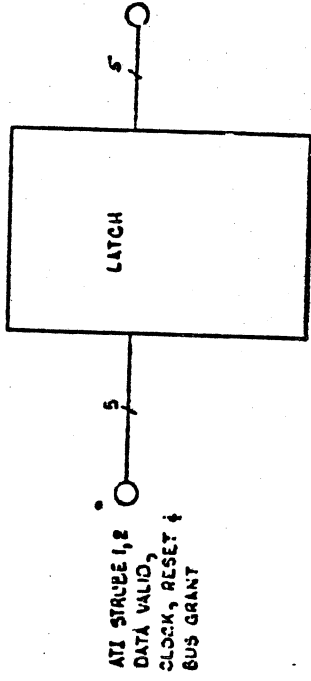
REV NC



MULTI-PORT ACCESS CONTROLLER



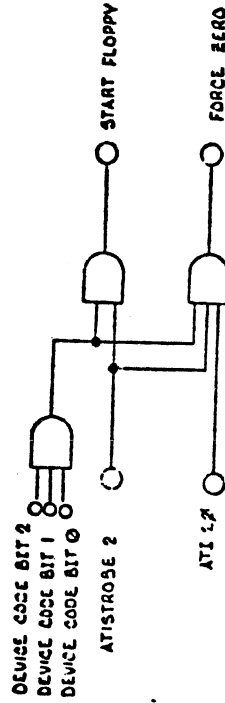
INTERFACE CONTROL SIGNALS



D:0 TO DMA BUFFERED SIGNALS



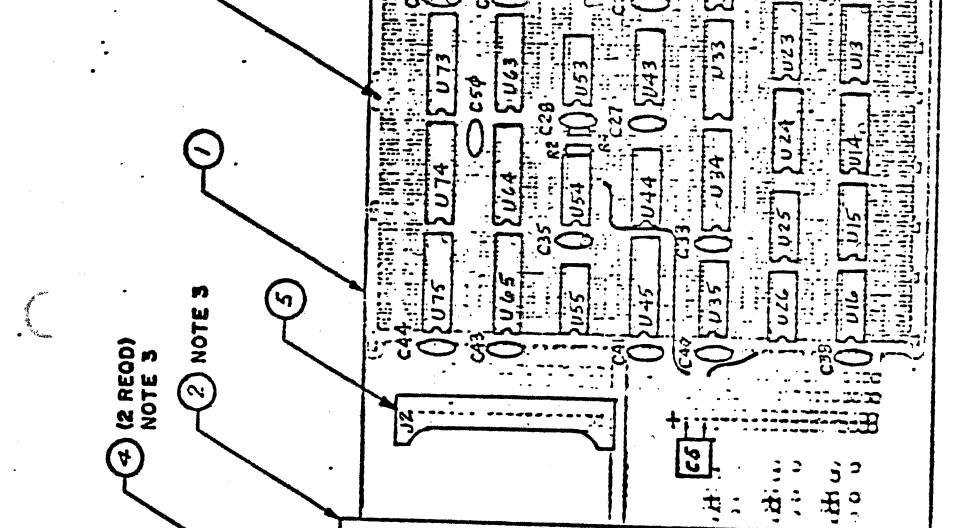
DISK INTER FACE SUPPORT



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

↑

ZONE	LTR	DESCRIPTION	DATE	APPROVED
P1		REV UPDATE W/NO DWG CHG	6-2-77	KS
B1	SM 4	ADDED R4 LOC. 33, 45, 36, 45	1-23-77	DL
P3		REV UPDATE W/EXTENSIVE CHG. SEE	7-12-77	DL



COMPONENT SIDE

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

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

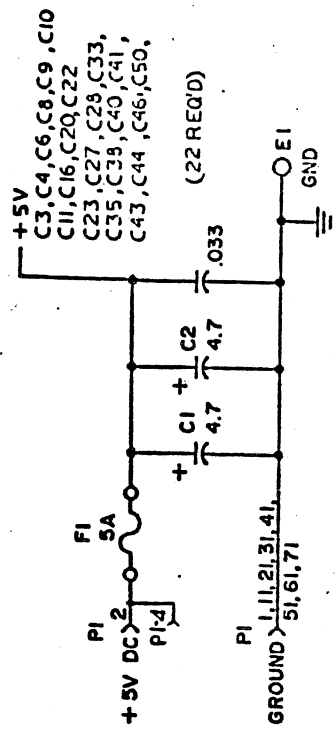
SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CARD ASSEMBLY, INPUT CONTROL, CABLE, W/WR	
SIZE	CODE IDENT NO
C 53938	200106-100
REV	P3

CONTRACT NO.	
DRAWN BY	MYING 3-18-77
CHECKED BY	211142 77
MECH	
ELEC	
PROJ. ENG.	
APPROVED	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
.XX ±	
.XXX ±	
ANGLES ±	
	✓
MATERIAL	
200130-100	NOV/VIEW
FINISH	
NEXT ASSY	USED ON
	APPLICATION
	SEE PARTS LIST

200106-100  
 PL 200106-100  
 EVANS & SUTHERLAND  
 COMPUTER CORPORATION  
 SALT LAKE CITY, UTAH 84112

REV	DESCRIPTION	DATE	APPROVED
P1	REV UPDATE W/NO DWG CHG	02-77	
P2	REV UPDATE W/NO DWG CHG	02-77	
P3	REV UPDATE W/EXTENSIVE CHGS	02-77	



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

1. 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:

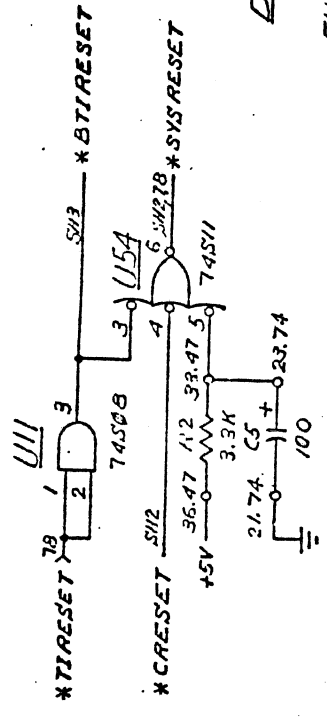
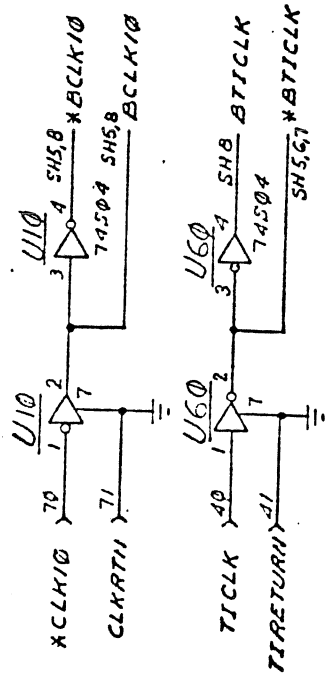
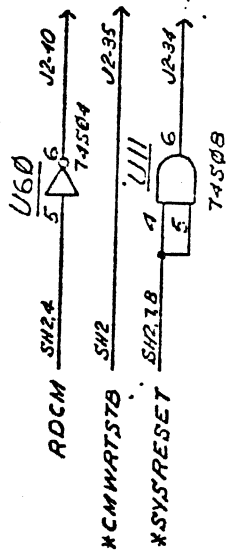
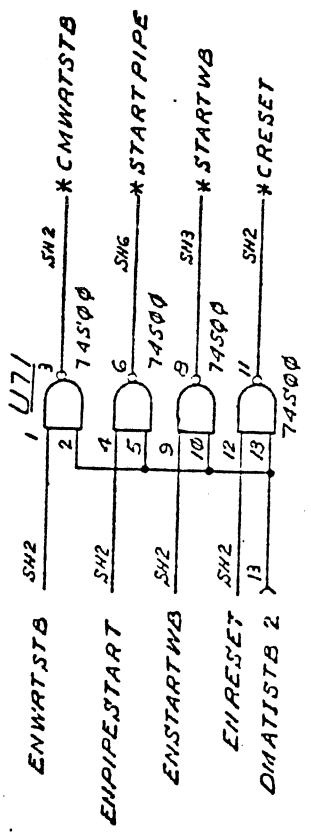
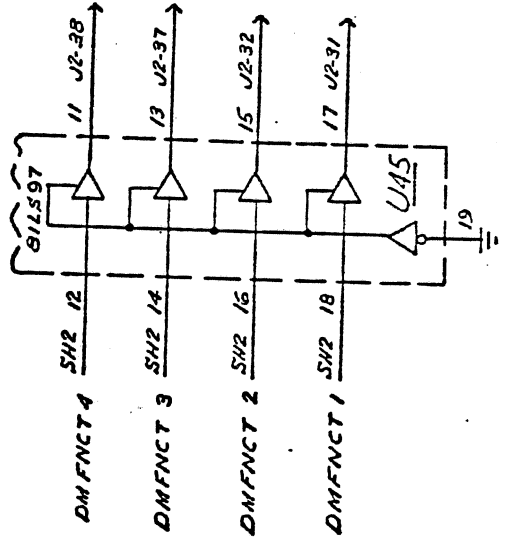
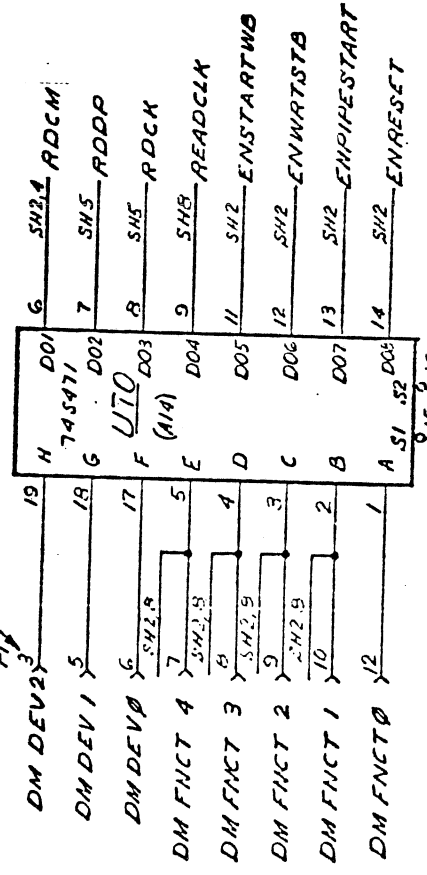
NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	CONTRACT NO.
.XX ±	DRAWN BY: [Signature]
.XXX ±	CHECKED BY: [Signature]
ANGLES ±	MECH
✓	ELEC
	PROJ. ENG. [Signature]
	APPROVED

SEE SEPARATE PARTS LIST
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
INPUT CONTROL CABLE W/W
SIZE CODE IDENT NO C 53938 200106-600
REV P3

SCALE	DATE
SCALE NONE	02-77

SEE NOTE 2



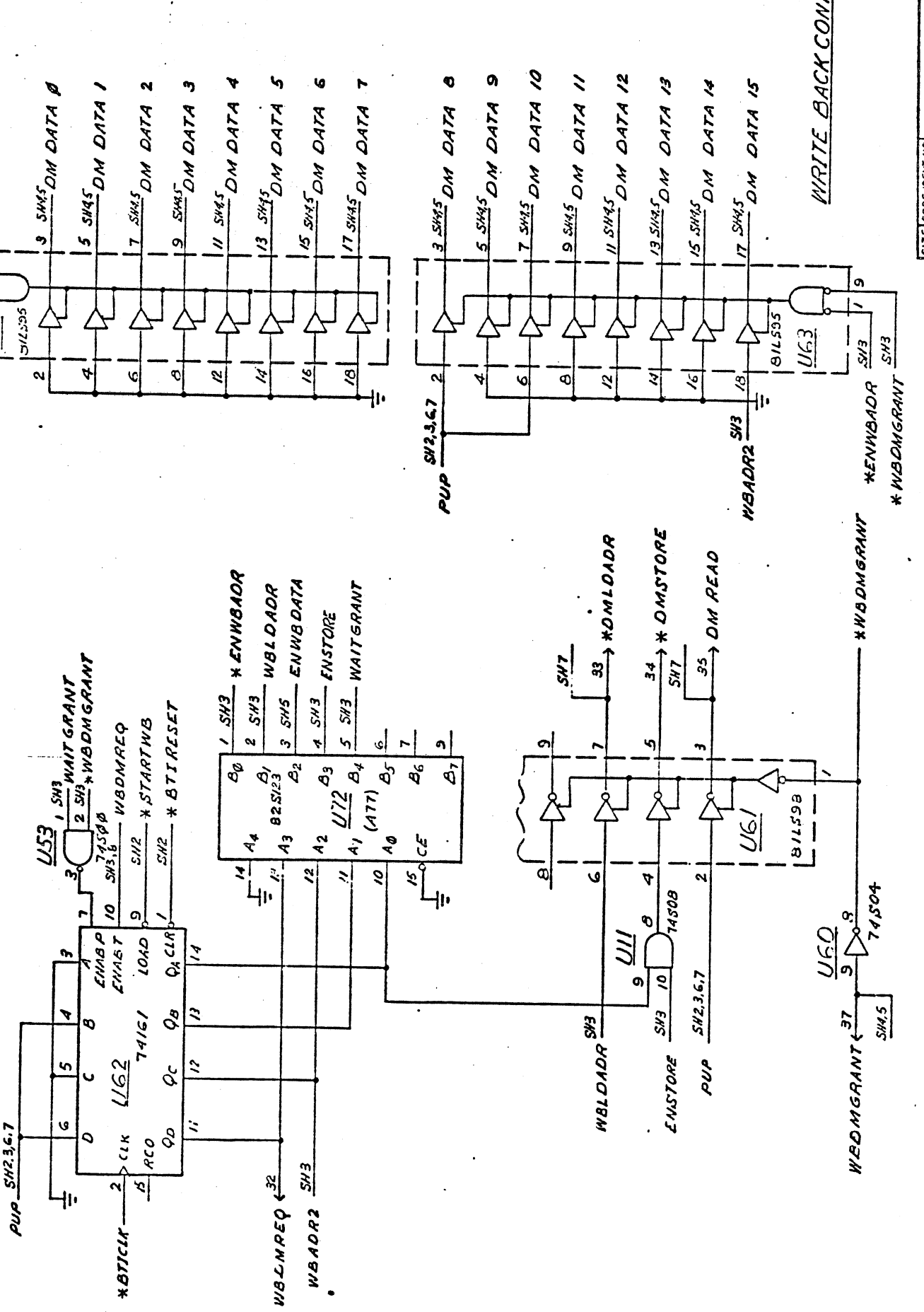
DMA INTERFACE  
AND  
FUNCTION DECODE

B 200106-600

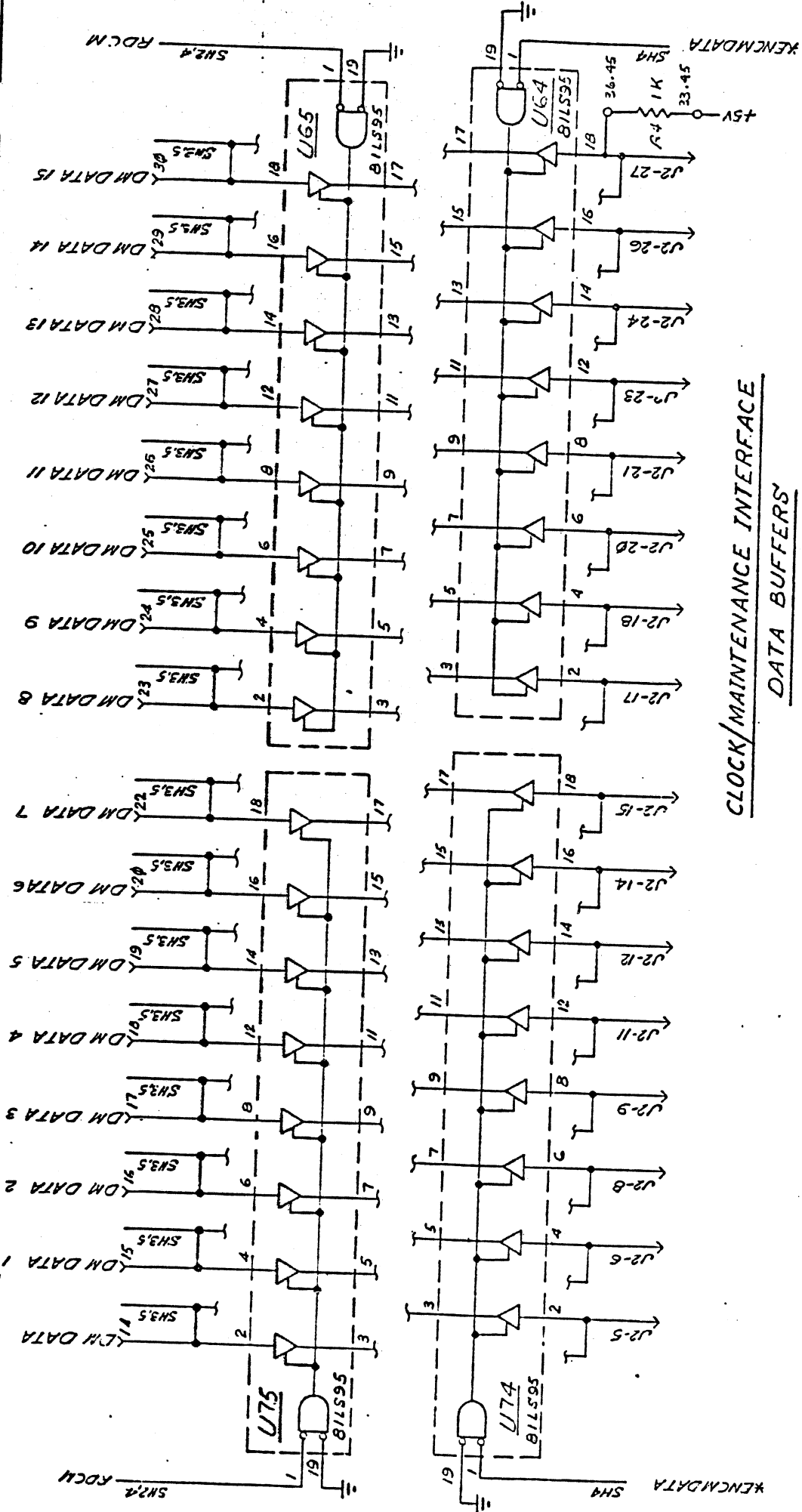
D

C

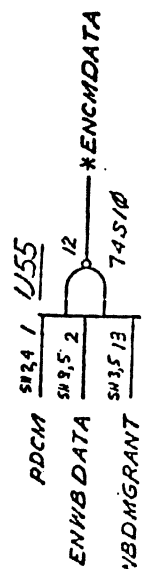
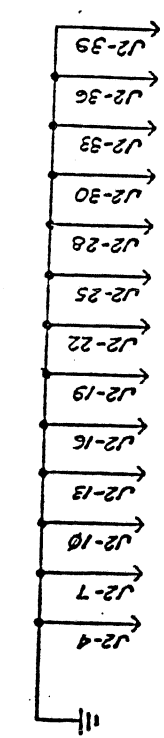
A



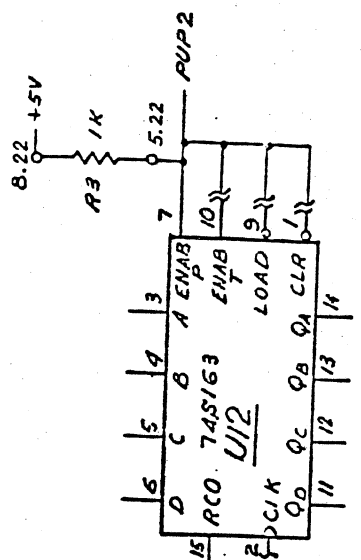
SIZE	CODE IDENT NO	REV	PROJECT	CF
C	53938	P3	200106-600	
SCALE: _____				



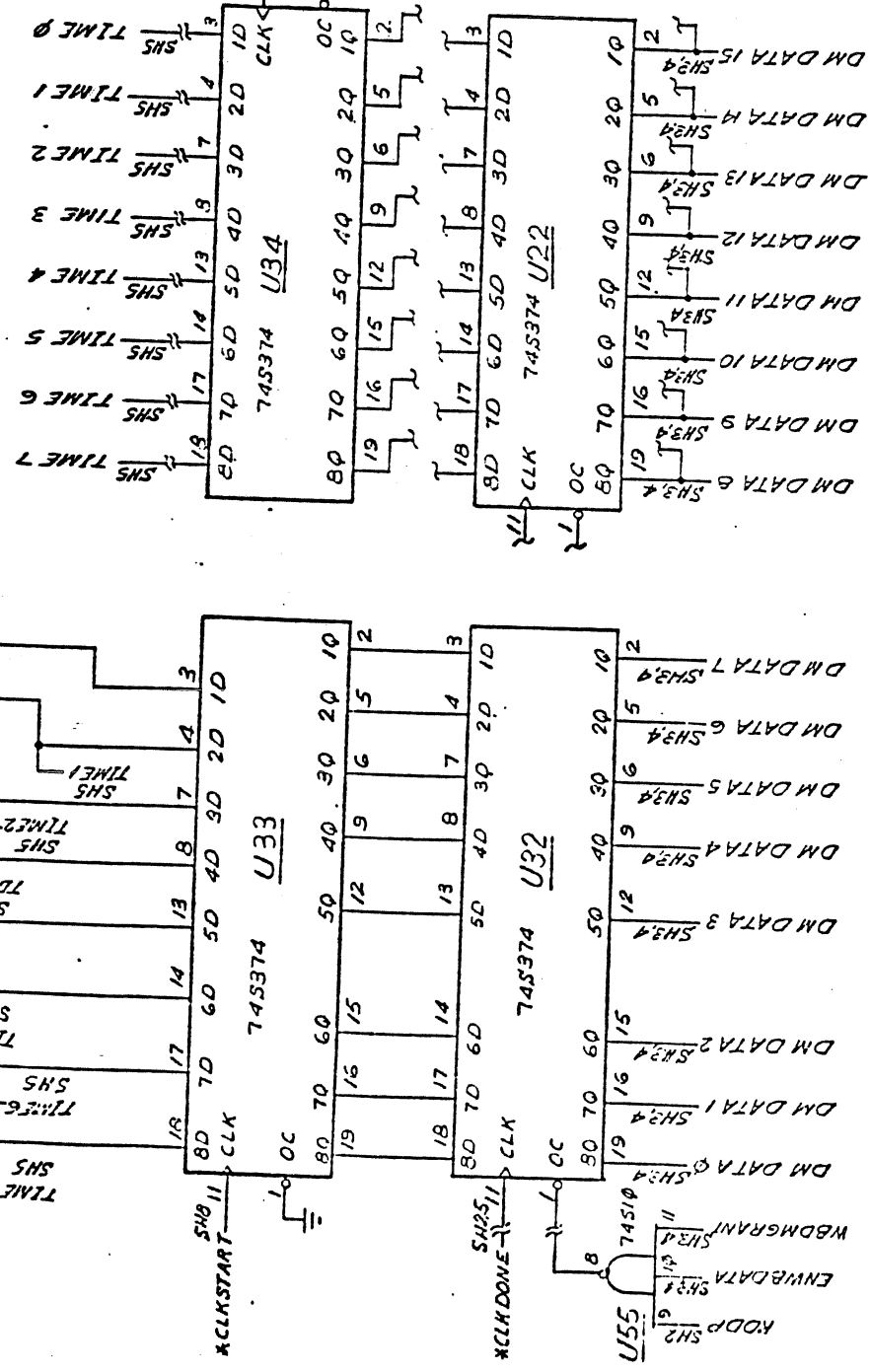
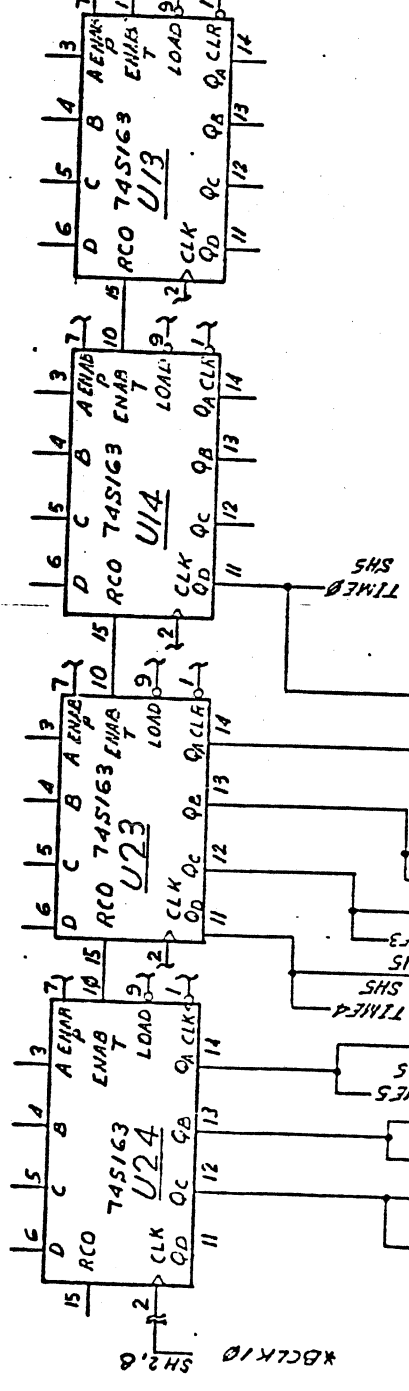
**CLOCK/MAINTENANCE INTERFACE**  
**DATA BUFFERS**



200106-600



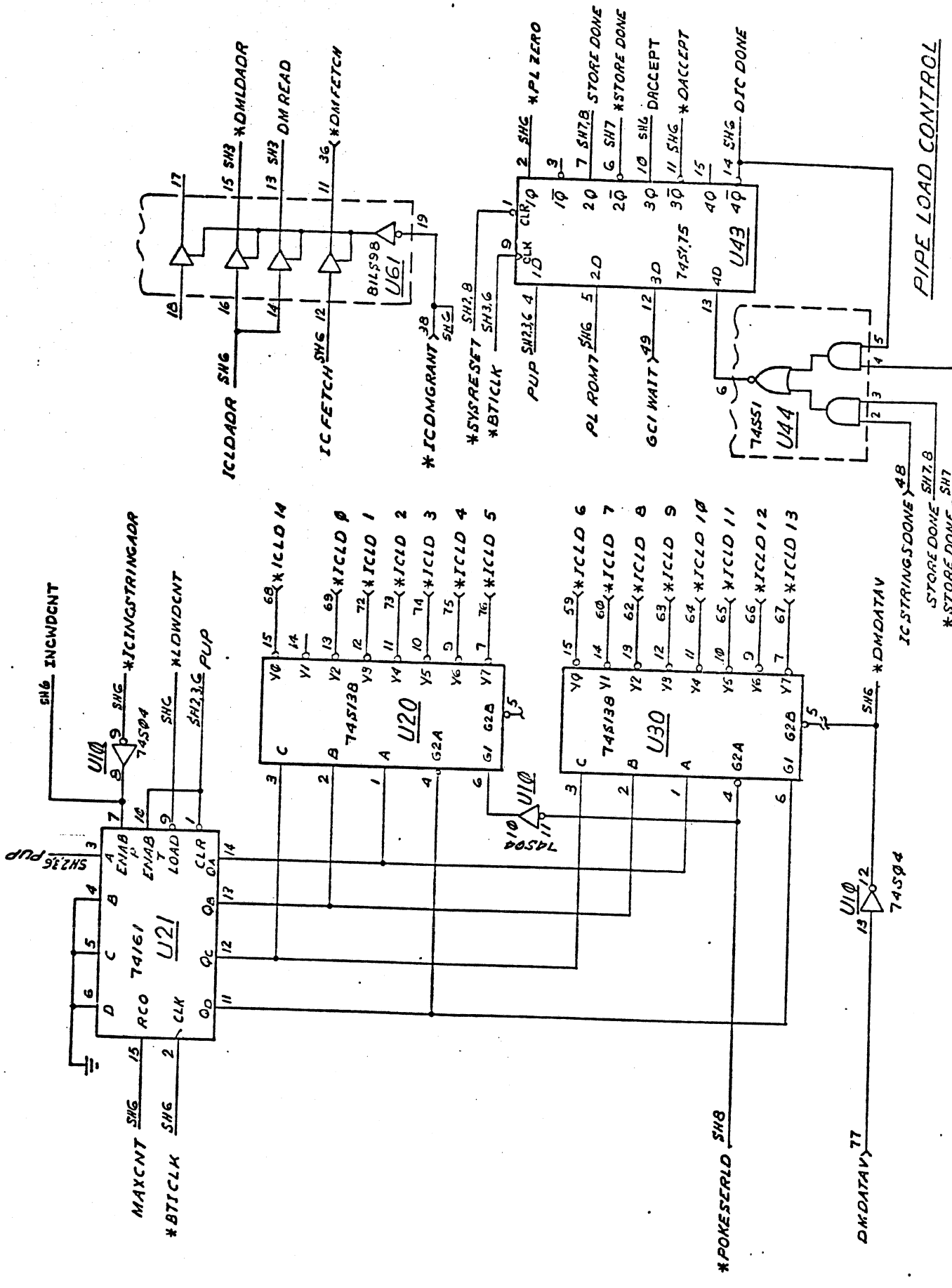
REAL-TIME CLOCK



REAL-TIME CLOCK AND TIME BUFFERS

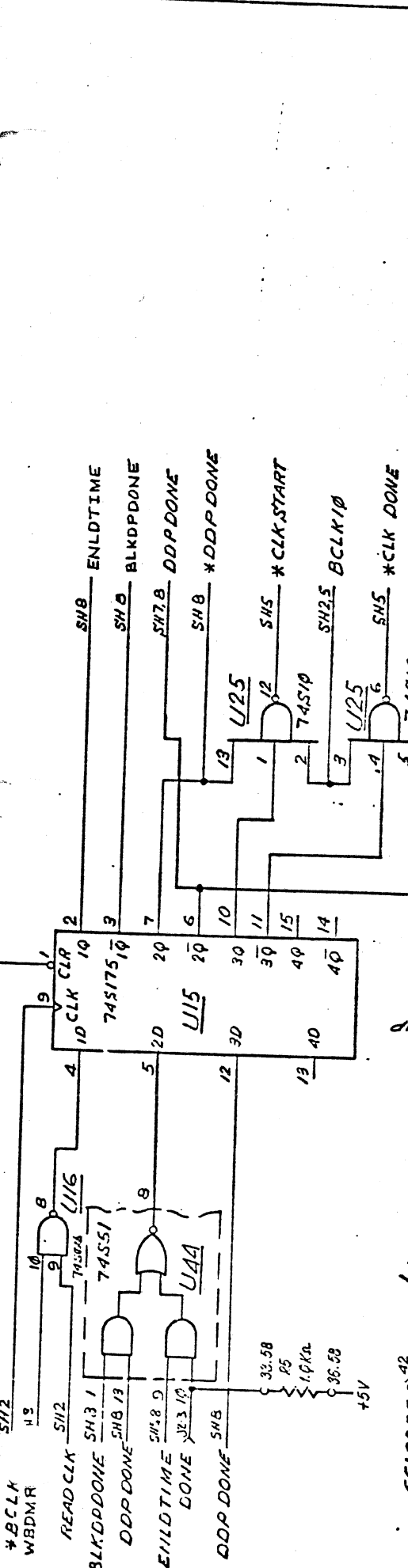






SIZE	CODE IDENT NO	REV
C	53938	200106-600
		P3

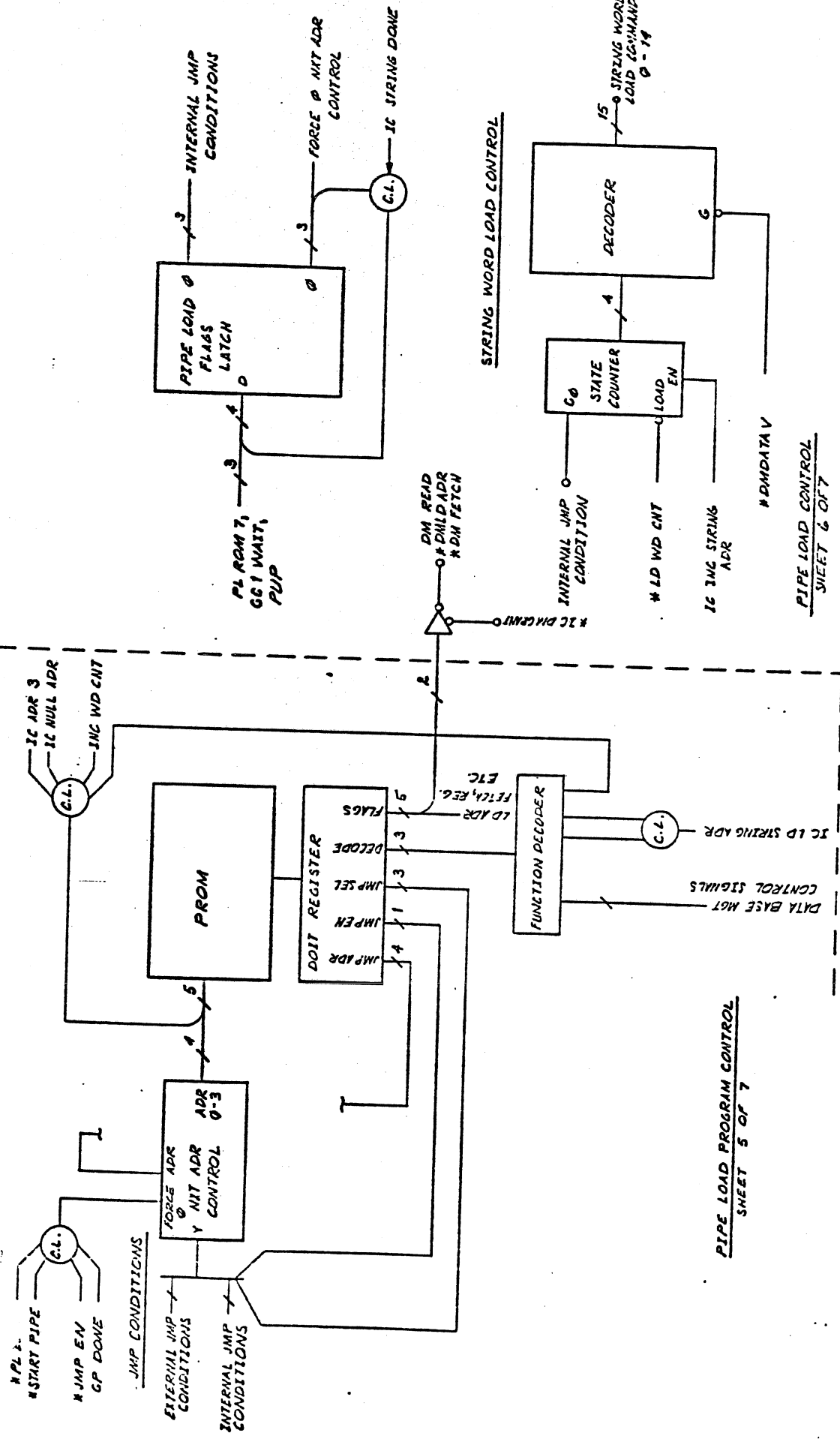
PIPE LOAD CONTROL



DP FRAME TIMING  
CONTROL

SIZE	CODE IDENT NO	REV
C	53938	200106-600
SCALE	1/2" = 1"	SHEET 8 OF 8

ZONE	LTR	DESCRIPTION	DATE	APPROVED



PIPE LOAD PROGRAM CONTROL  
SHEET 5 OF 7

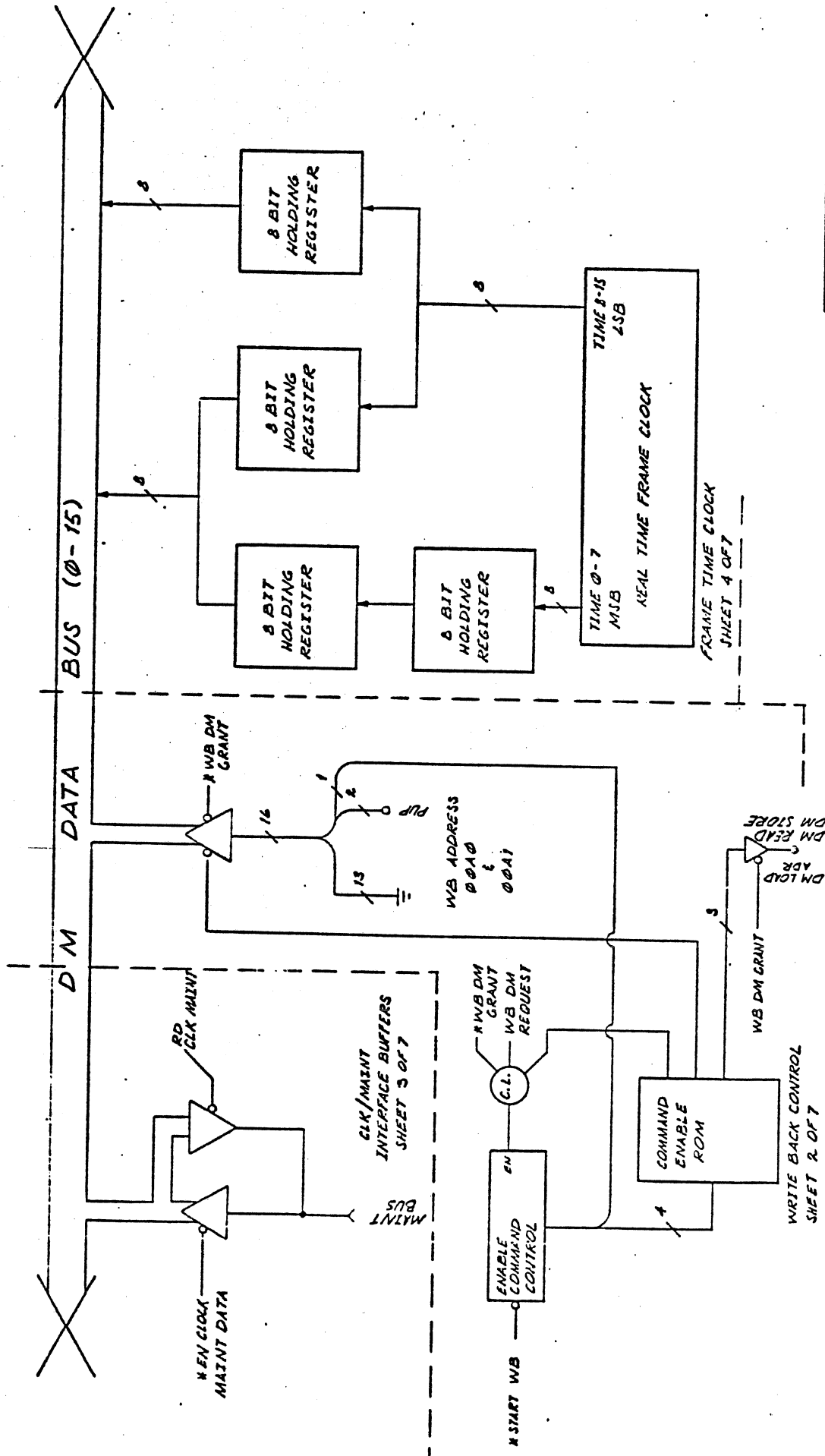
PIPE LOAD CONTROL  
SHEET 6 OF 7

STRING WORD LOAD CONTROL

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

CONTRACT NO.	SEE SEPARATE PARTS LIST
DRAWN D. CARY/COLL. P. 9-71	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
CHECKED	
MLCH	
ELCC	
PROJ. ENG	
APPROVED	

<b>INPUT CONTROL BLOCK DIAGRAM</b>	
SIZE CODE IDENT NO	C 53938
REV	200106-900
REV	P3



SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.	DRAWN 7/2/77 8-9-77
CHECKED	MECH
	ELEC
	PROJ. ENG.
	APPROVED
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
.XX ±	
.XXX ±	
ANGLES ±	
MATERIAL	
FINISH	
NEXT ASSY	USED ON
FUNCTION	
SIZE	CODE IDENT NO.
C 53938	200106-900
REV	F3

**INPUT CONTROL  
BLOCK DIAGRAM**

BUS (0-15)

DATA

DM

TIME 8-15  
LSB

TIME 0-7  
MSB

REAL TIME FRAME CLOCK

FRAME TIME CLOCK  
SHEET 4 OF 7

CLK/MINT  
INTERFACE BUFFERS  
SHEET 3 OF 7

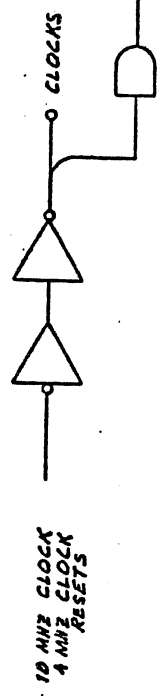
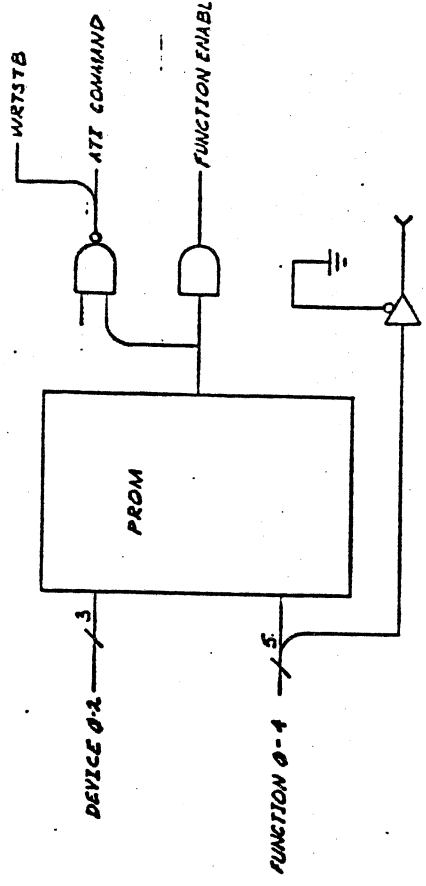
WRITE BACK CONTROL  
SHEET 2 OF 7

SIZE CODE IDENT NO.

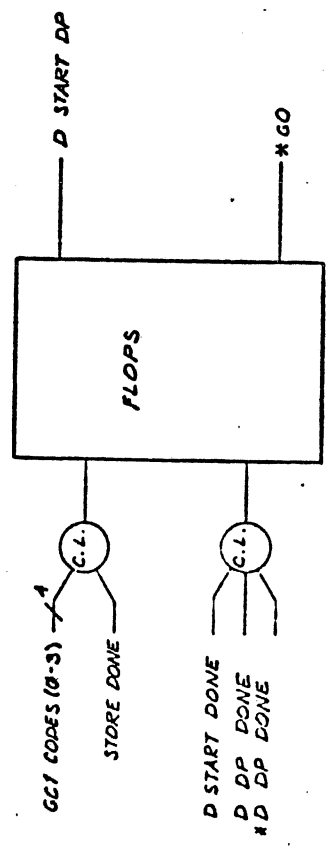
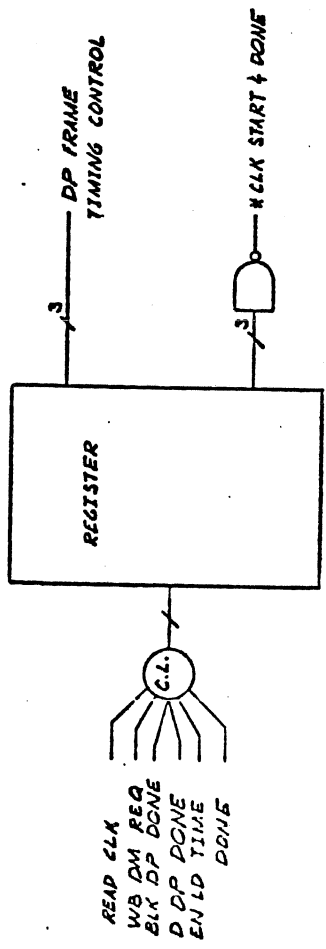
REV

REVISIONS	DATE	APPROVED
ZONE LTR	DESCRIPTION	

FUNCTION PECCODE



DMA I/F & FUNCTION DECODE  
SHEET 7 OF 7

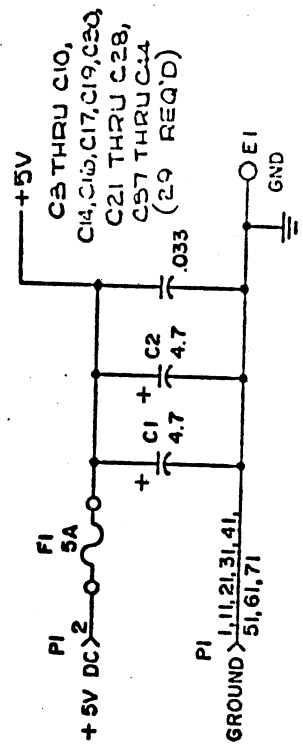


DP FRAME TIMING CONTROL  
SHEET 7 OF 7

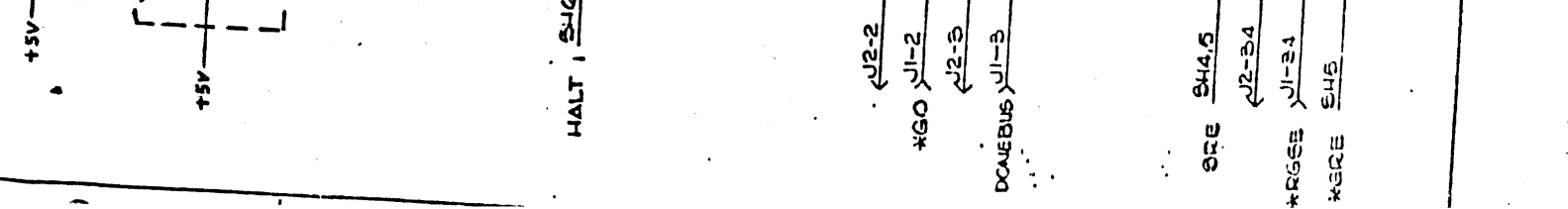
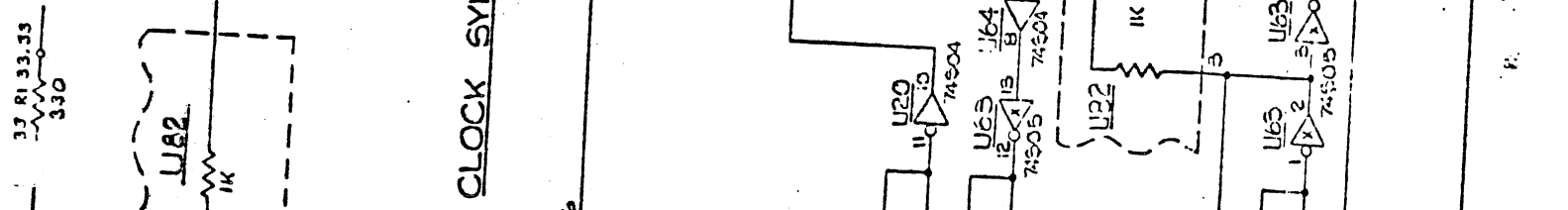
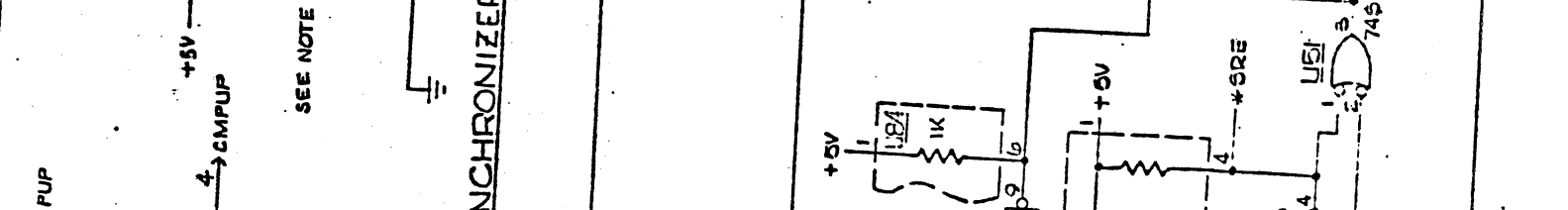
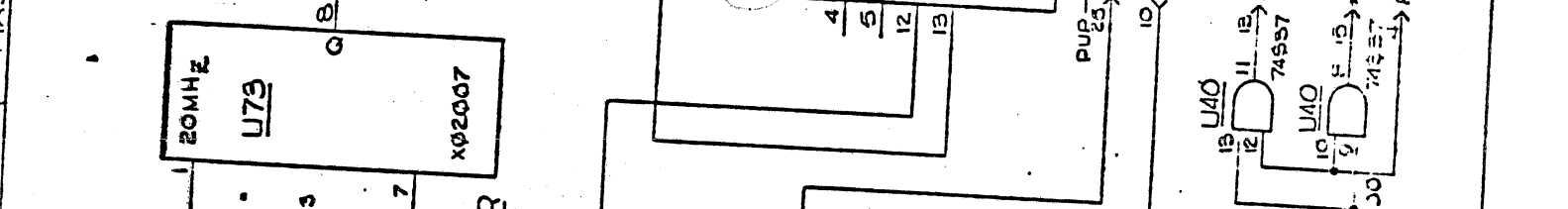
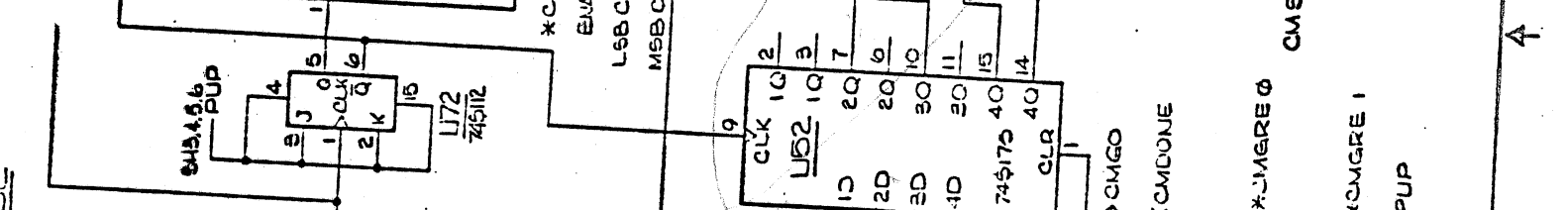
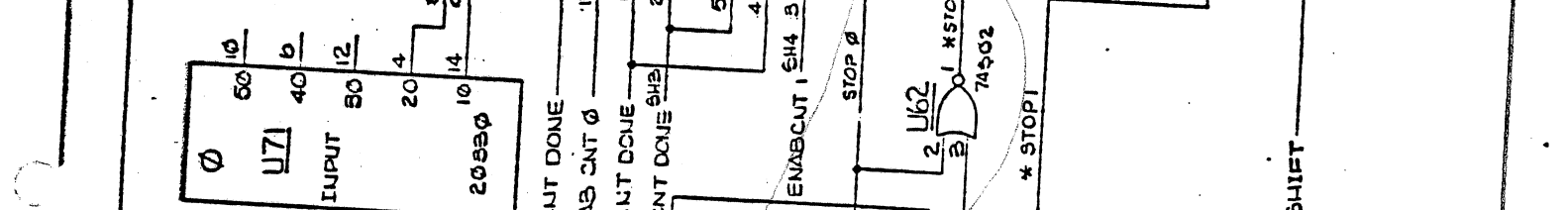
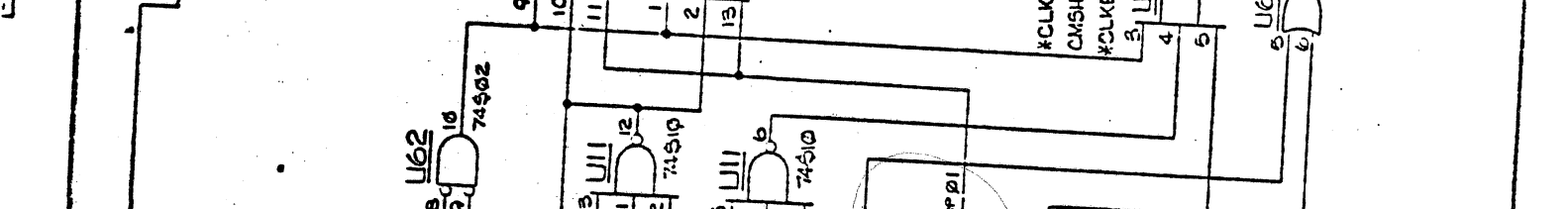
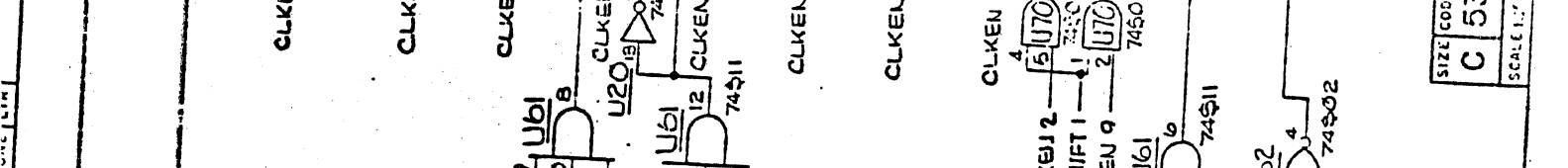
SIZE	CODE IDENT NO	REV
C	53938	200106-900
P3		

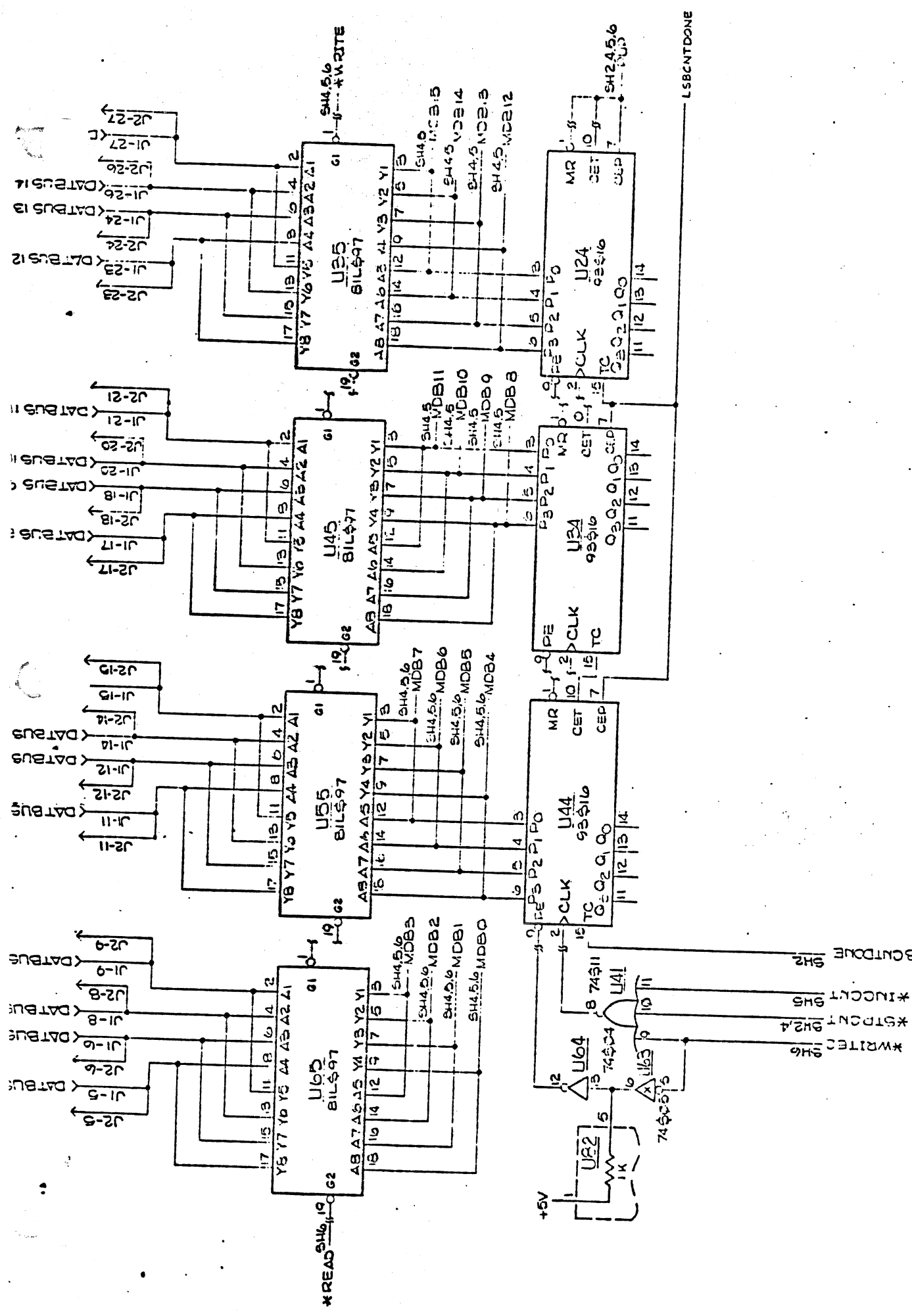
- U73 X02007-2.00 PIN 7 IS GND, PIN 1 IS POWER (+5V).
- NUMBERS SHOWN REFER TO CONNECTOR PI. ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS. RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000. RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE. ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+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		CONTRACT NO.	
TOLERANCES ON		DRAWN R MELLUS 6-20-77	
.XX ±		CHECKED J. L. 1-15-77	
.XXX ±		MECH	
ANGLES ±		ELEC	
✓		PROJ. ENG. J. L. 1-15-77	
MATERIAL		APPROVED	
FINISH		SEE SEPARATE PARTS LIST	
200130-100 NDVDVIEW		EVANS & SUTHERLAND	
NEXT ASSY		COMPUTER CORPORATION	
USED ON		SALT LAKE CITY, UTAH 84112	
APPLICATION		CLOCK / MAINTENANCE, CABLE (w/w)	
		SIZE CODE IDENT NO	
		C 53938	
		REV	
		200107-600	
		REV	
		A1	
		SCALE NONE	
		SHEET 1 OF 2	



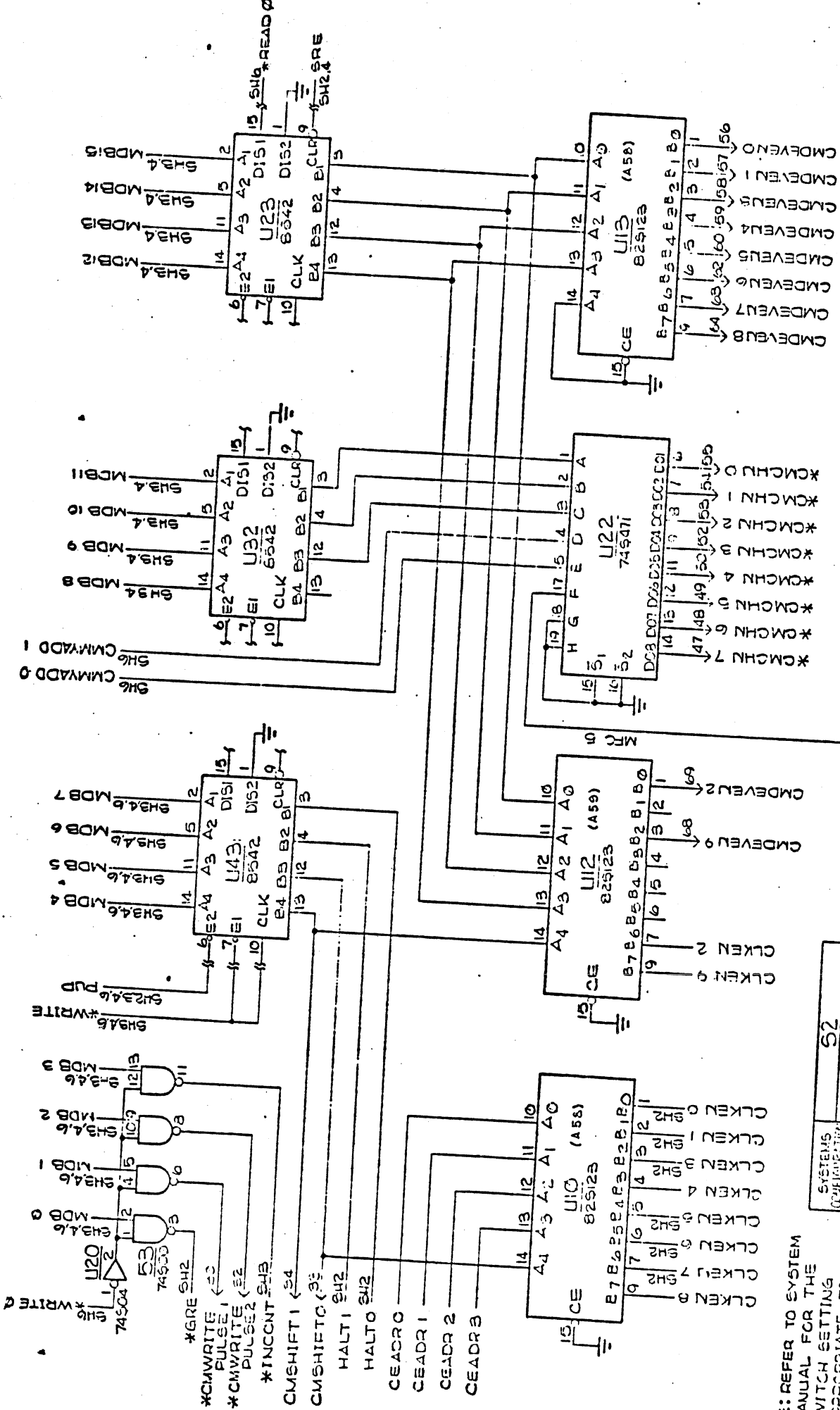


SIZE CODE IDENT NO	REV
C 53938	200107-6.00
SCALE: NONE	A1
SHEET 2 OF 3	



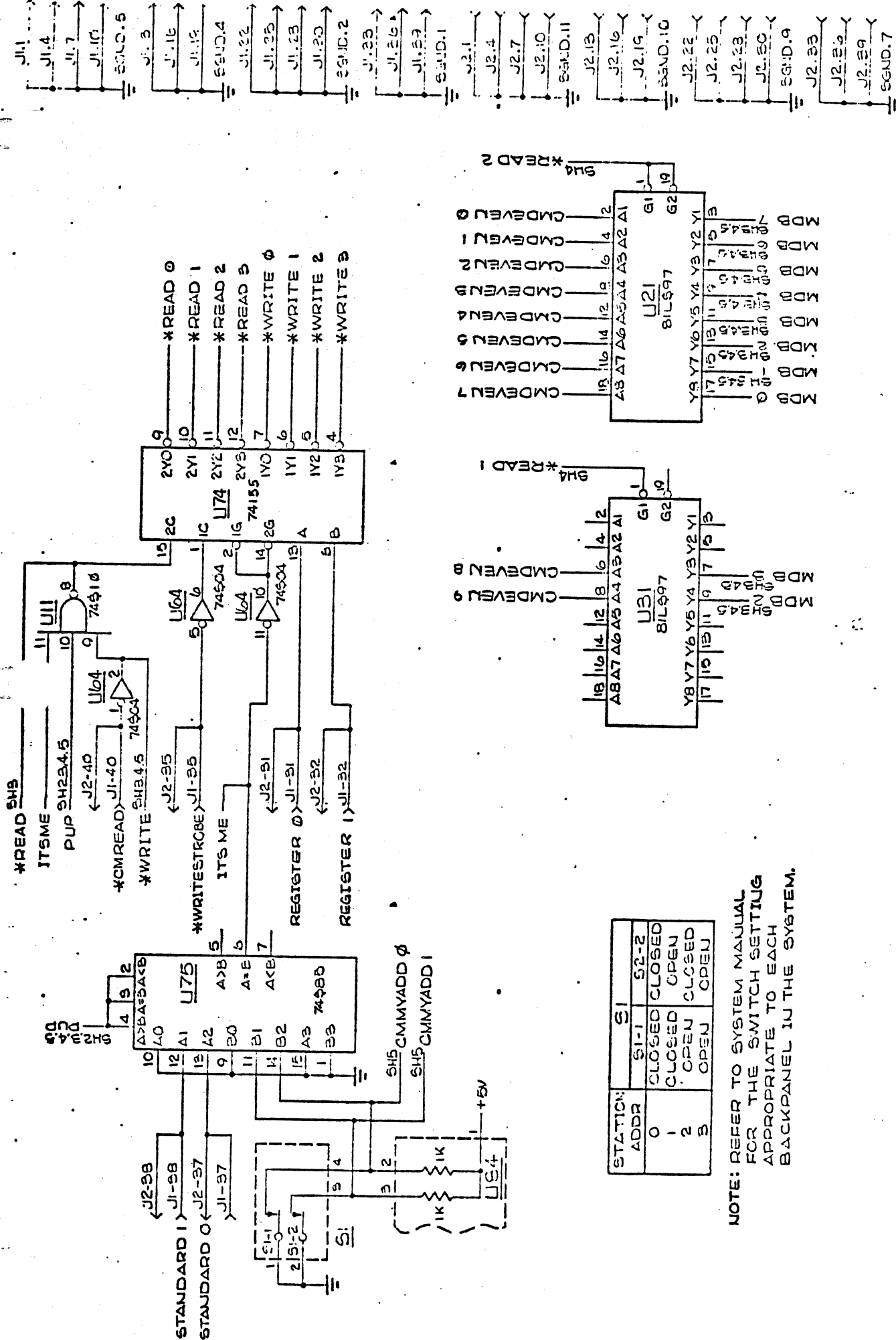






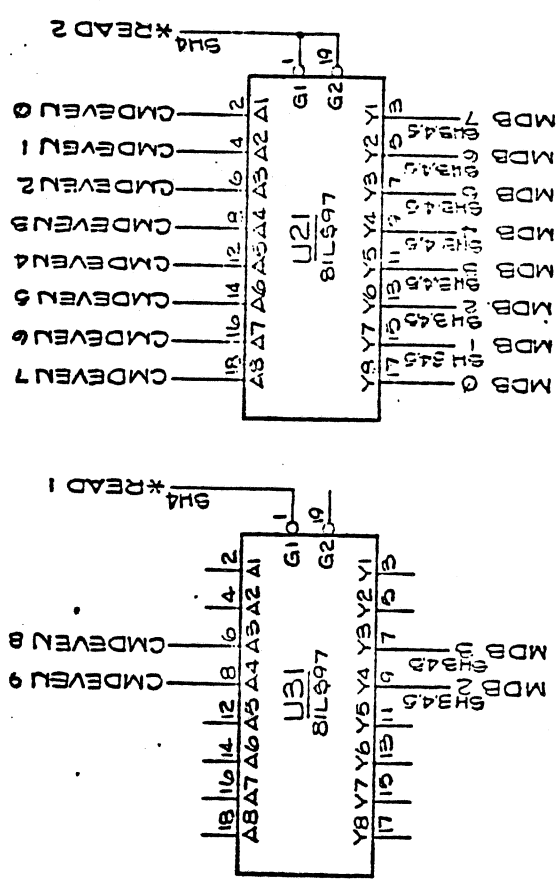
NOTE: REFER TO SYSTEM MANUAL FOR THE SWITCH SETTING APPROPRIATE TO THE NUMBER OF G.P. CHANNELS IN THE SYSTEM.

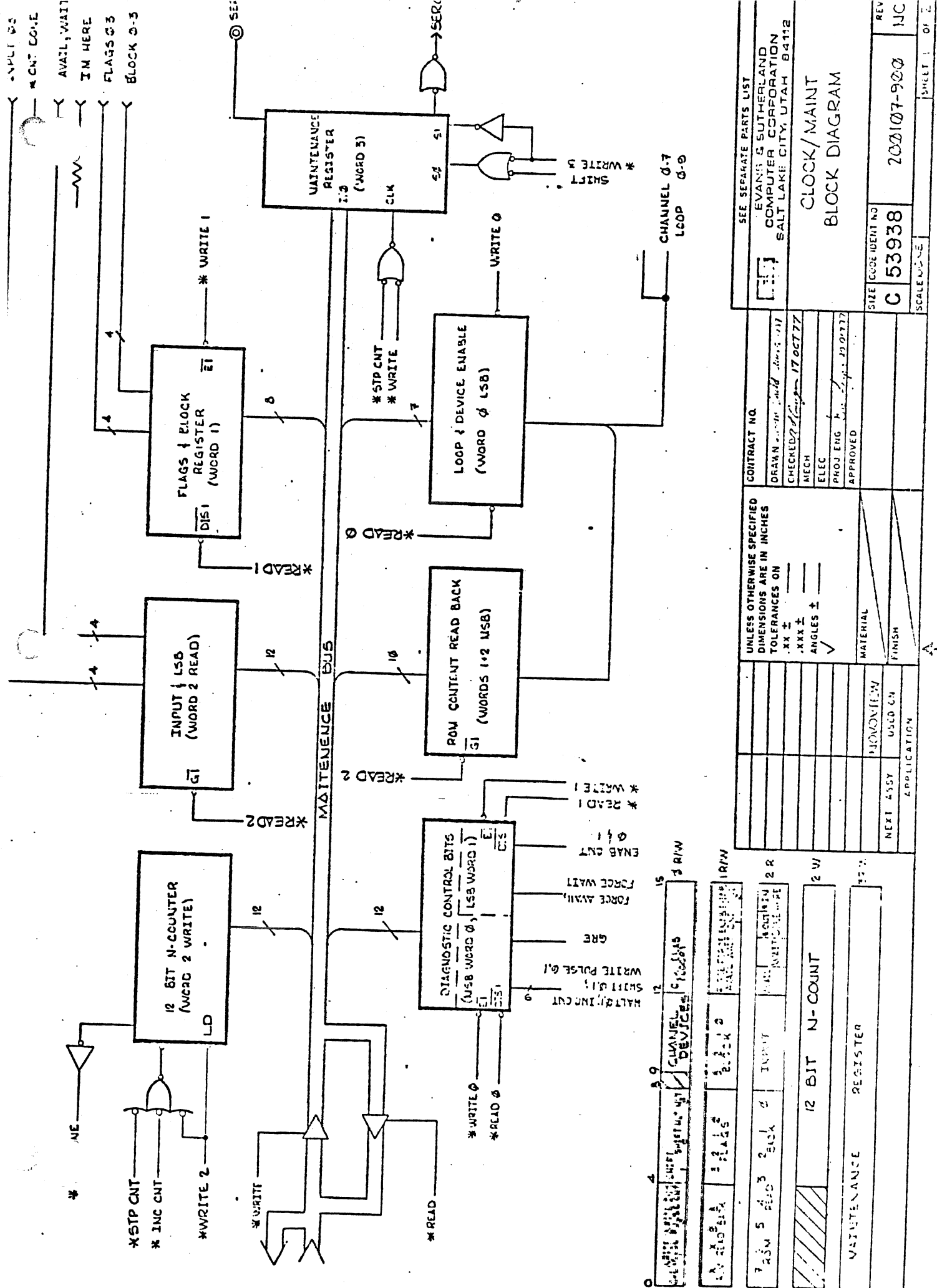
SYSTEMS (CONFIGURATION)		S2	
1 TO 4	CLOSED	52-1	52-2
G.P.	OPEN	2	NOT USED
5 TO 6	NOT USED		



STATION ADDR	S1	S2-2
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.





SEE SEPARATE PARTS LIST  
 EVANS & SUTHERLAND  
 COMPUTER CORPORATION  
 SALT LAKE CITY, UTAH 84112

CLOCK/MAINT  
 BLOCK DIAGRAM

SCALE: C 53938

SIZE CODE IDENT NO: 200107-900

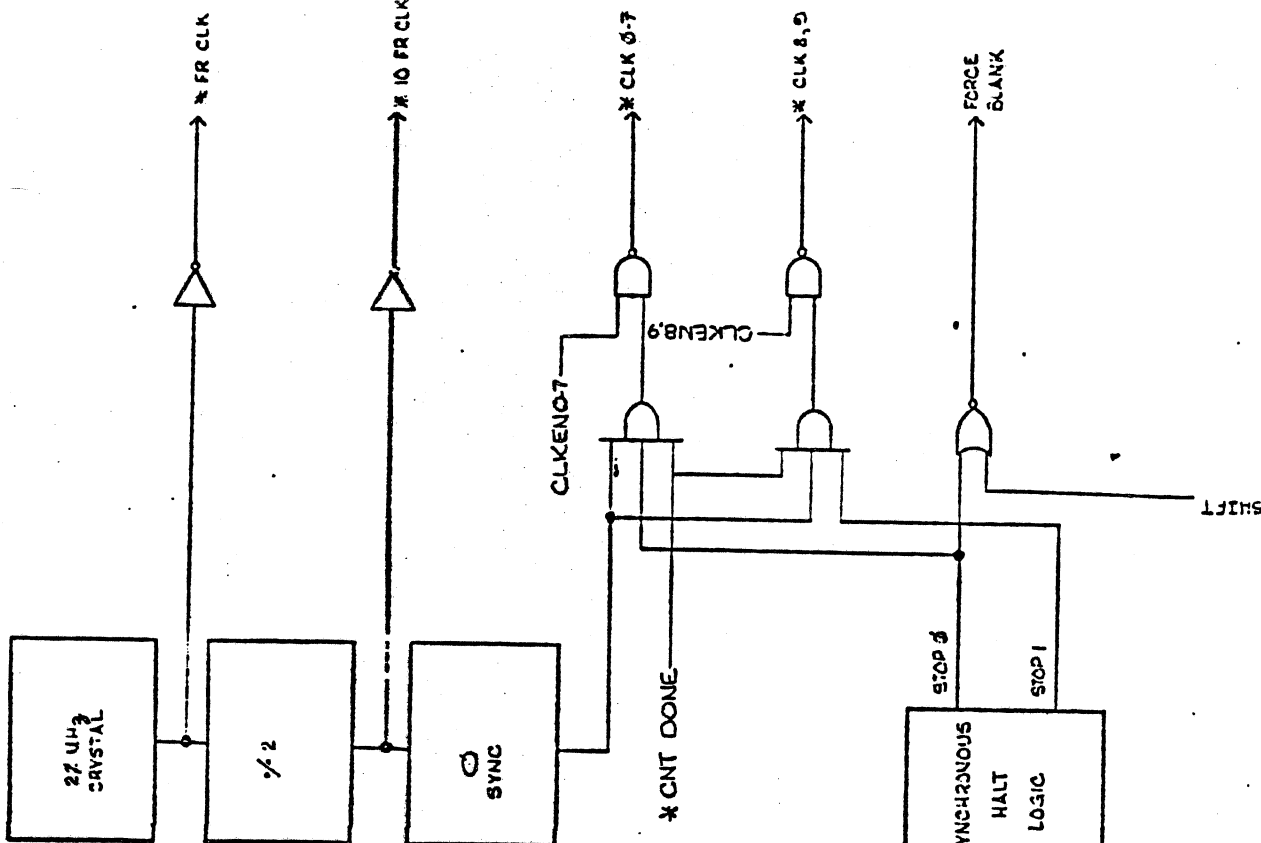
REV: N/C

SHEET 1 OF 2

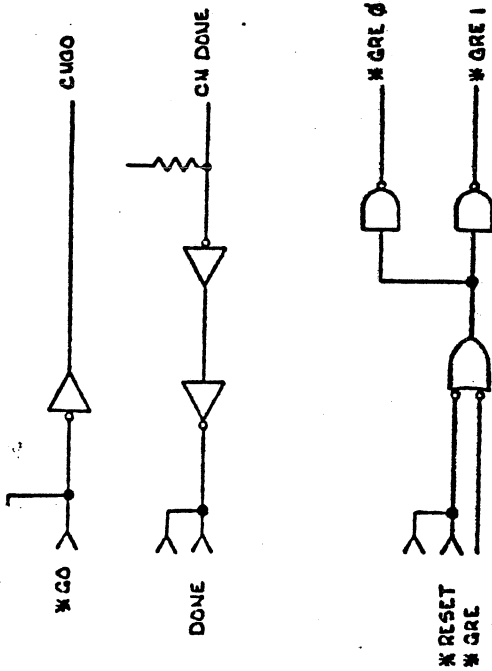
CONTRACT NO.	
DRAWN	
CHECKED	17 OCT 77
MECH	
ELEC	
PROJ ENG	
APPROVED	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
.XX ±	
.XXX ±	
ANGLES ±	
MATERIAL	
FINISH	
NEXT ASSY	
USED ON	
APPLICATION	

7 25M 5	2 2	2 R	2 W
MAINTENANCE REGISTER			
12 BIT N-COUNT			
INPUT			
BACK 0			
BACK 1			
BACK 2			
BACK 3			
BACK 4			
BACK 5			
BACK 6			
BACK 7			
BACK 8			
BACK 9			
BACK 10			
BACK 11			
BACK 12			
BACK 13			
BACK 14			
BACK 15			

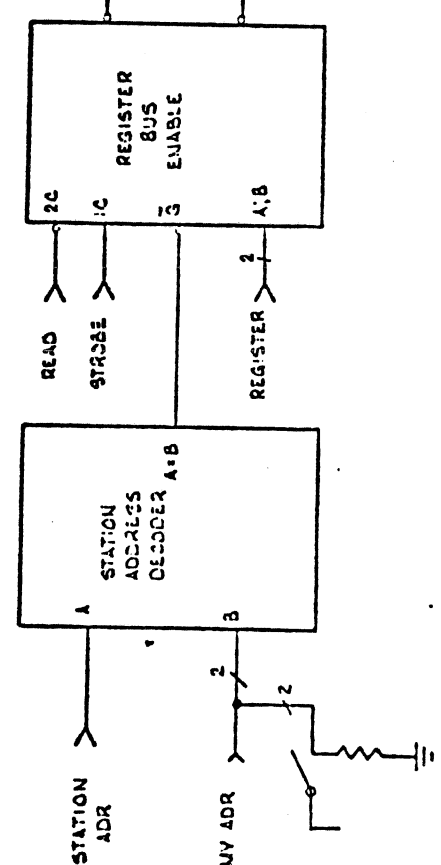
CLOCK GENERATION & DRIVERS



FEED THROUGH SIGNALS



STATION DECODE

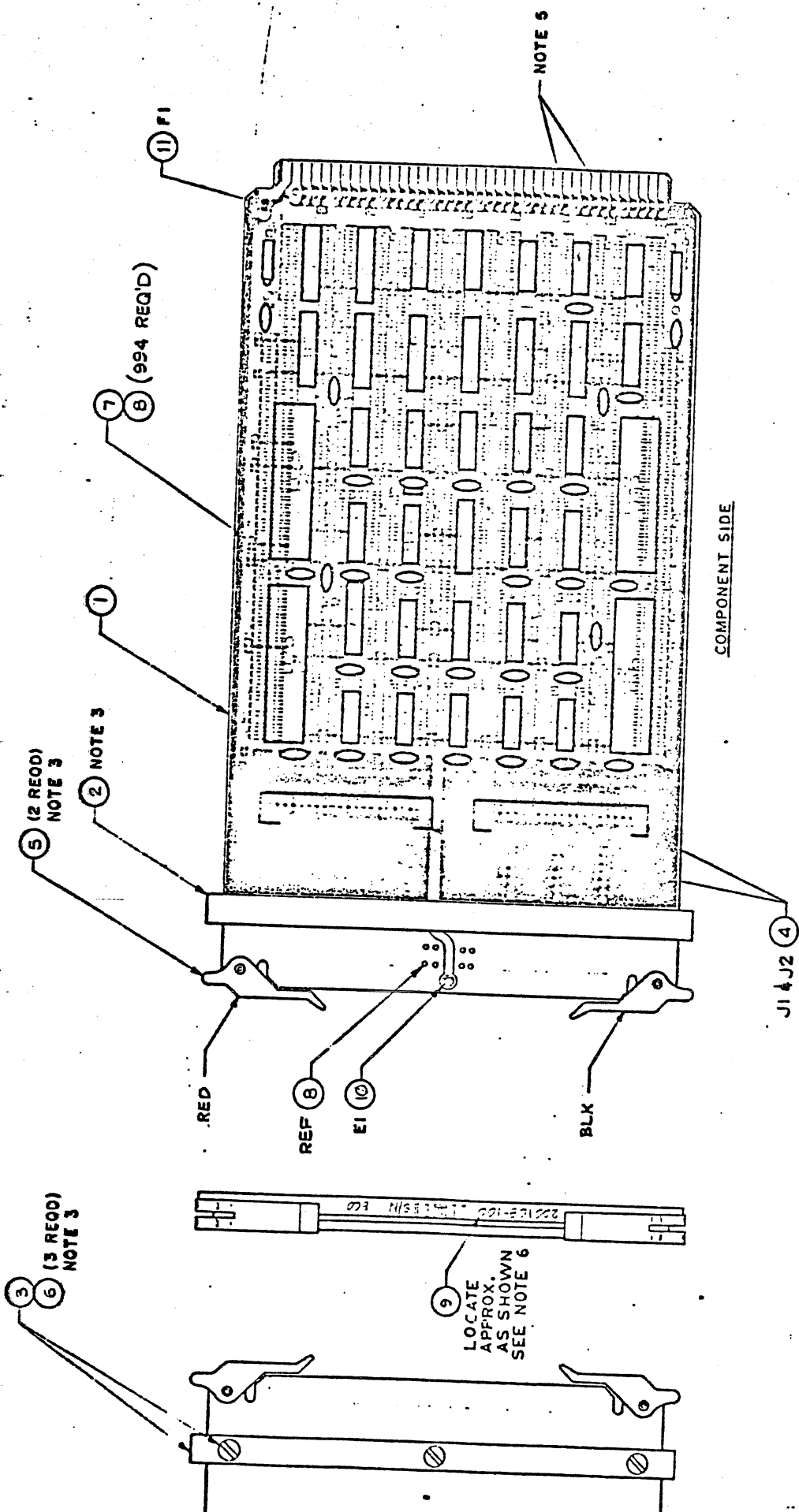


SYNCHRONOUS HALT LOGIC

Inputs: STOP 0, STOP 1, \*CNT DONE, \*CLK 0-7, \*CLK 8,9, \*FORCE BLANK, SHIFT.

Outputs: HLT 0, HLT 1, \*WRITE 0-5, \*READ 0-3.

SIZE CODE IDENT NO	REV
C 53938	HC
SCALE NONE	200107-950
	SHEET 2 OF 2

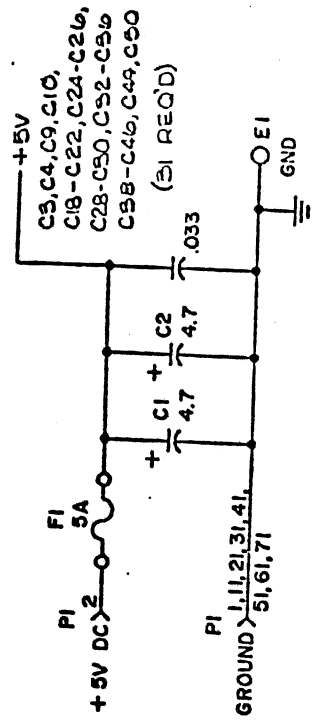


REFERENCE DOCUMENTS  
LOGIC DIAGRAM --- 200108-600  
PARTS LIST --- PL200108-100

- TES:
1. ASSEMBLE PER E & S WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS (ITEM 5) AND SPACERS (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROXIMATELY AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK E & S ASSY. NO., S/N & ECO LEVEL ON ITEM NO. 9.

SEE SEPARATE PARTS LIST		E & S EVANS & SUTHER, AND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO DRAWN ADS/JUNWAY 2-16-77		CARD ASSEMBLY, DISK INTERFACE, FLOPPY, AED, CABLE, W/W	
CHECKED BY MECH ELEC		DATE 16 FEB 77	
PROJECT ENG		APPROVED	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON XXX ± ANGLES ±		SEE PARTS LIST	
MATERIAL 200130-100 NOVVIEW		FINISH	
NEXT ASSY		USED ON	
APPLICATION		SIZE CODE IDENT NO C 53938 200108-100	
REV		REV	
NC		NC	

ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED
------	-----	-----------	-------------	------	----------



4. I.C. AM2901 LOCATION U1B,U15,U7B & U75, PIN 20 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).

NOTES:

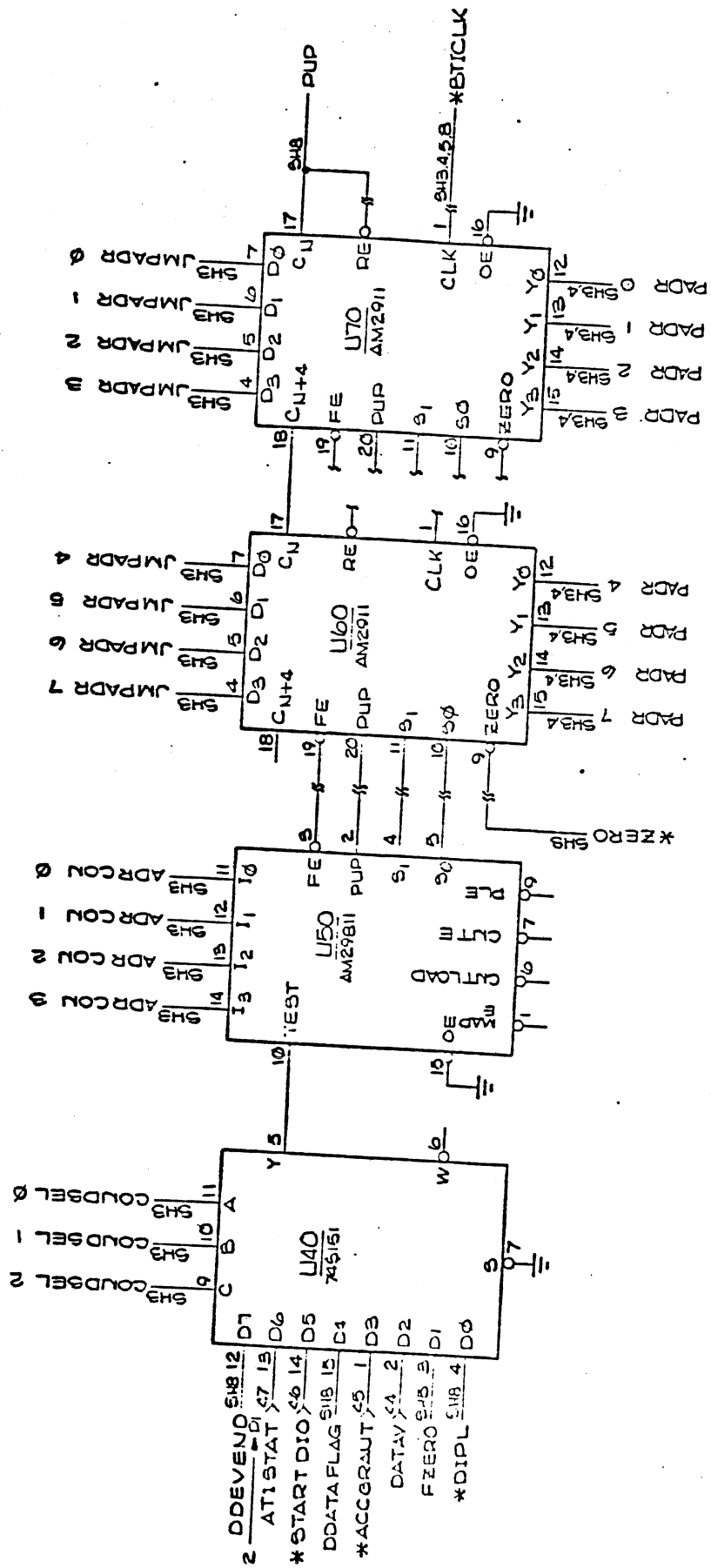
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	
TOLERANCES ON		DRAWN R MELLUS 7/8/77	
.XX ±		CHECKED/DATE 10 AUG 77	
.XXX ±		MECH	
ANGLES ±		ELEC	
MATERIAL		PROJ ENG	
FINISH		APPROVED	
NEXT ASSY		DISK INTERFACE	
USED ON		FLOPPY, AED, CABLE	
COMMENTS		(w/w)	
SIZE		SEE SEPARATE PARTS LIST	
CODE IDENT NO		EVANS & SUTHERLAND	
REV		COMPUTER CORPORATION	
C 53938		SALT LAKE CITY, UTAH 84112	
200108-600		A	

B 200108-600

C

D

# PROGRAM ADDRESS CONTROL

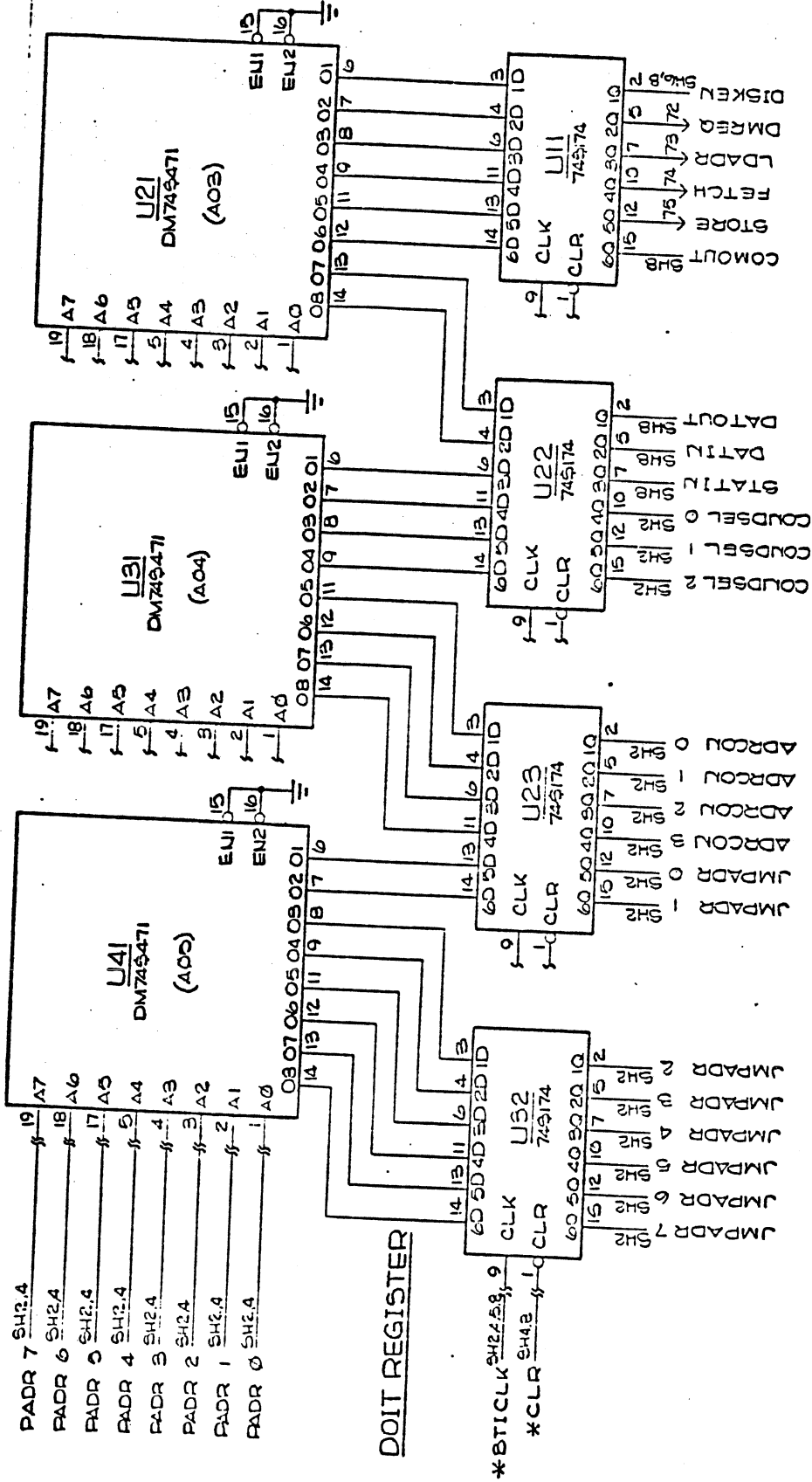


SEE NOTE 2  
 ODEVEND S18 12  
 AT1STAT S7 13  
 \*START DIO S6 14  
 DDATAFLAG S18 15  
 \*ACCRAUT S5 1  
 DATAV S4 2  
 FZERO S15 3  
 \*DIPL S18 4

W200108-600



PROM

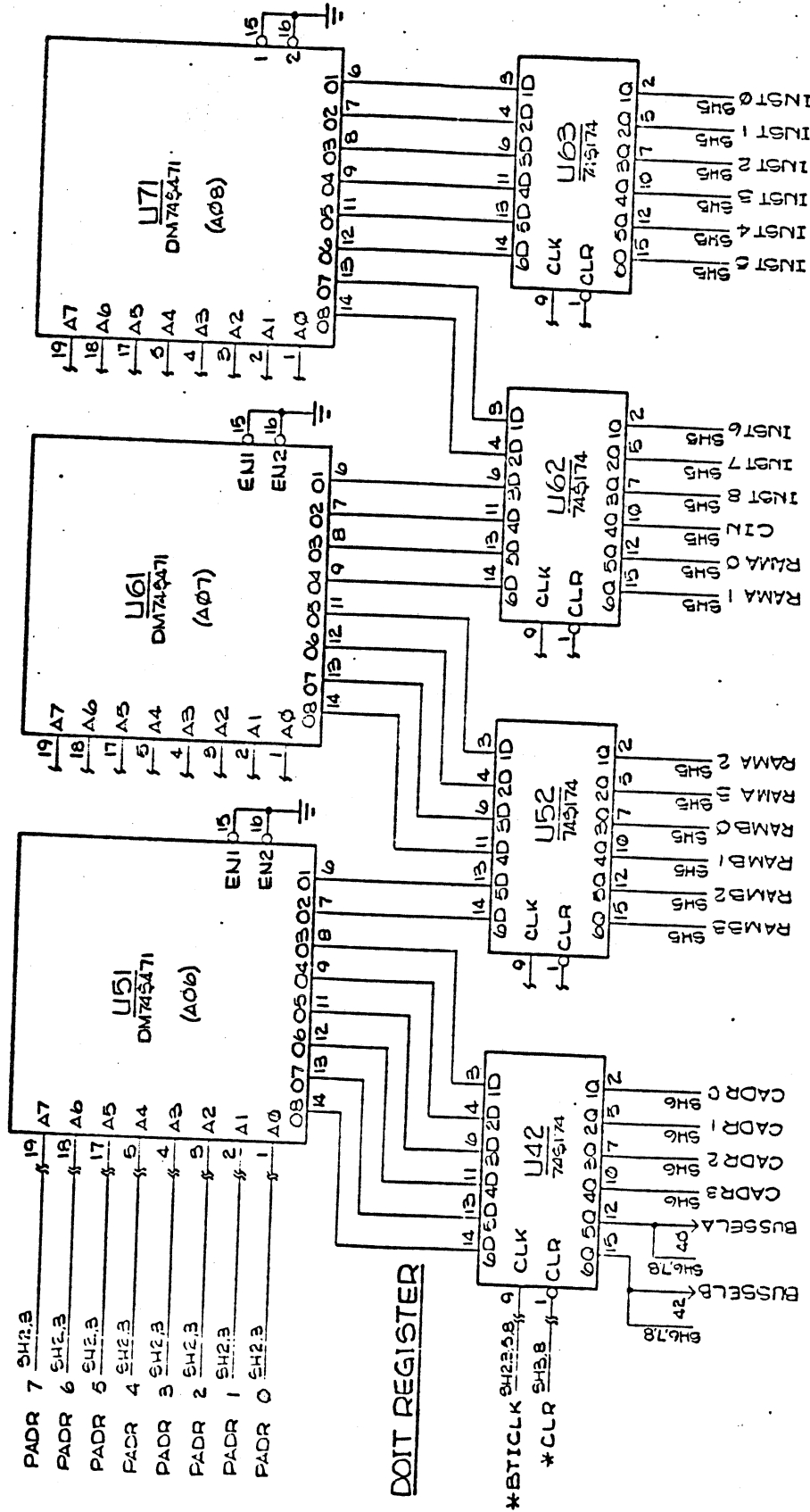


DOIT REGISTER

\*B1CLK SH2/58, 9  
\*CLR SH2/58, 9

PROM

- PADR 7 SH2.B
- PADR 6 SH2.B
- PADR 5 SH2.B
- PADR 4 SH2.B
- PADR 3 SH2.B
- PADR 2 SH2.B
- PADR 1 SH2.B
- PADR 0 SH2.B

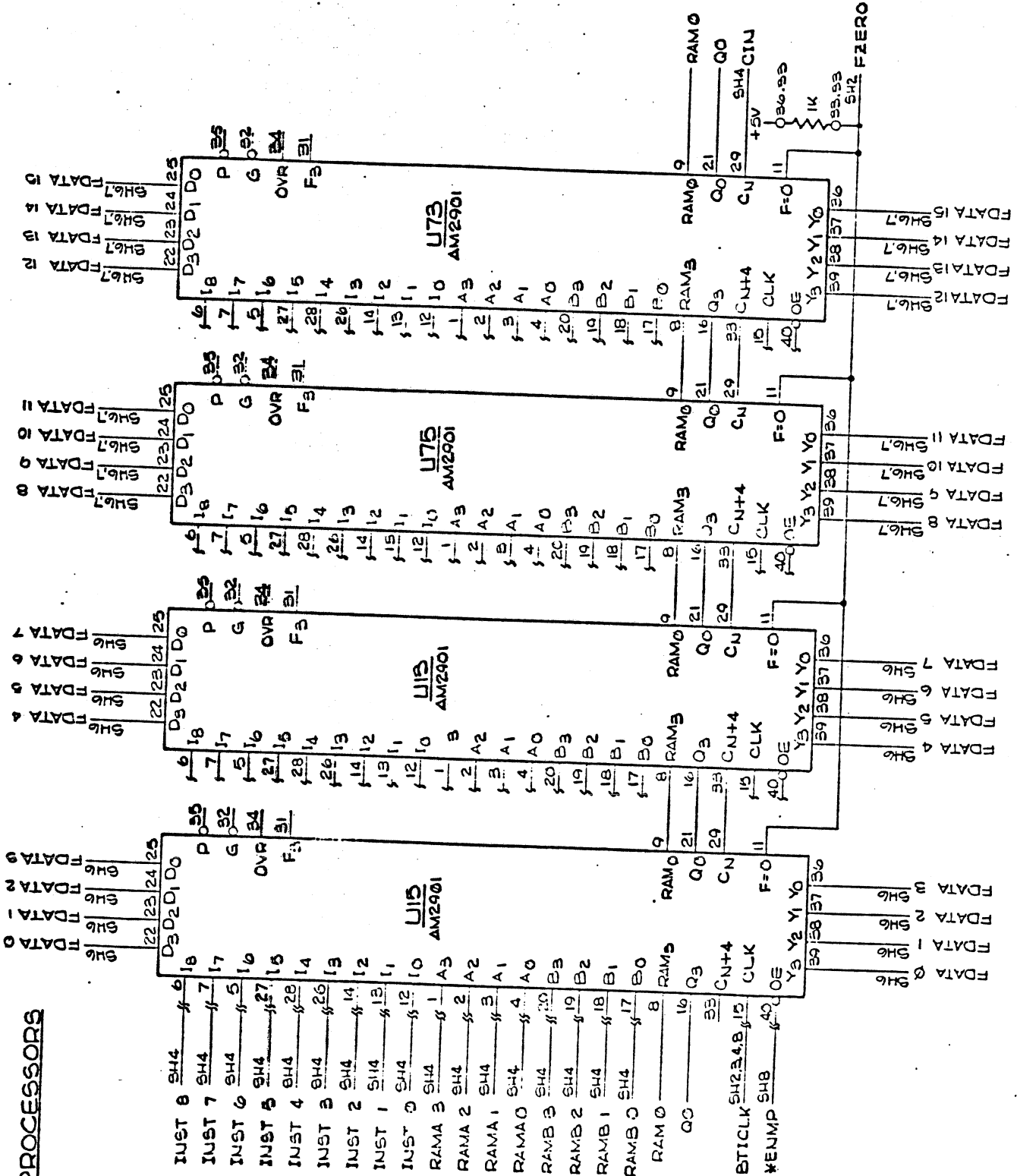


DOIT REGISTER

- \*BTICK SH2.B 9
- \*CLR SH2.B 1

ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED

# MICRO PROCESSORS

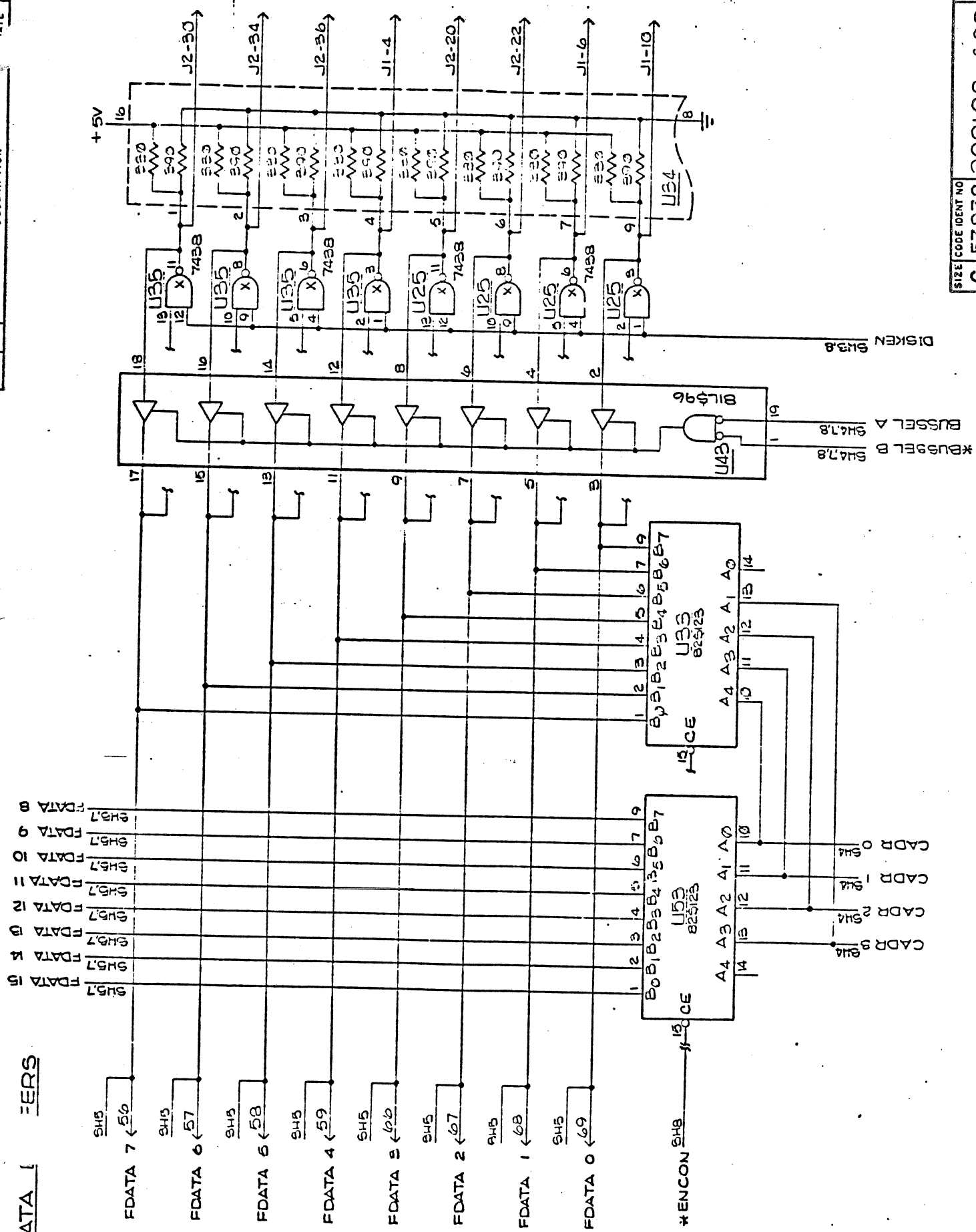


ZONE	LTR	DESCRIPTION	DATE	APPROVED

SIZE	FORCE IDENT NO	REV	NC
C	53938	200108-600	

ZONE	LT	REVISIONS	DATE	APPROVED
		DESCRIPTION		

DATA 1 FERS



SIZE CODE IDENT NO  
**C 53938**  
 200108-600  
 REV  
**NC**

DISKEN 8K3,8  
 \*BUSSEL B 8H4,7,8  
 \*BUSSEL A 8H4,7,8  
 U43 96  
 U53 82523  
 U54 82523  
 U438 7438  
 U135 7438  
 U125 7438  
 J1-4  
 J1-6  
 J1-10  
 J2-20  
 J2-22  
 J2-34  
 J2-36  
 +5V  
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DATA FEEDS

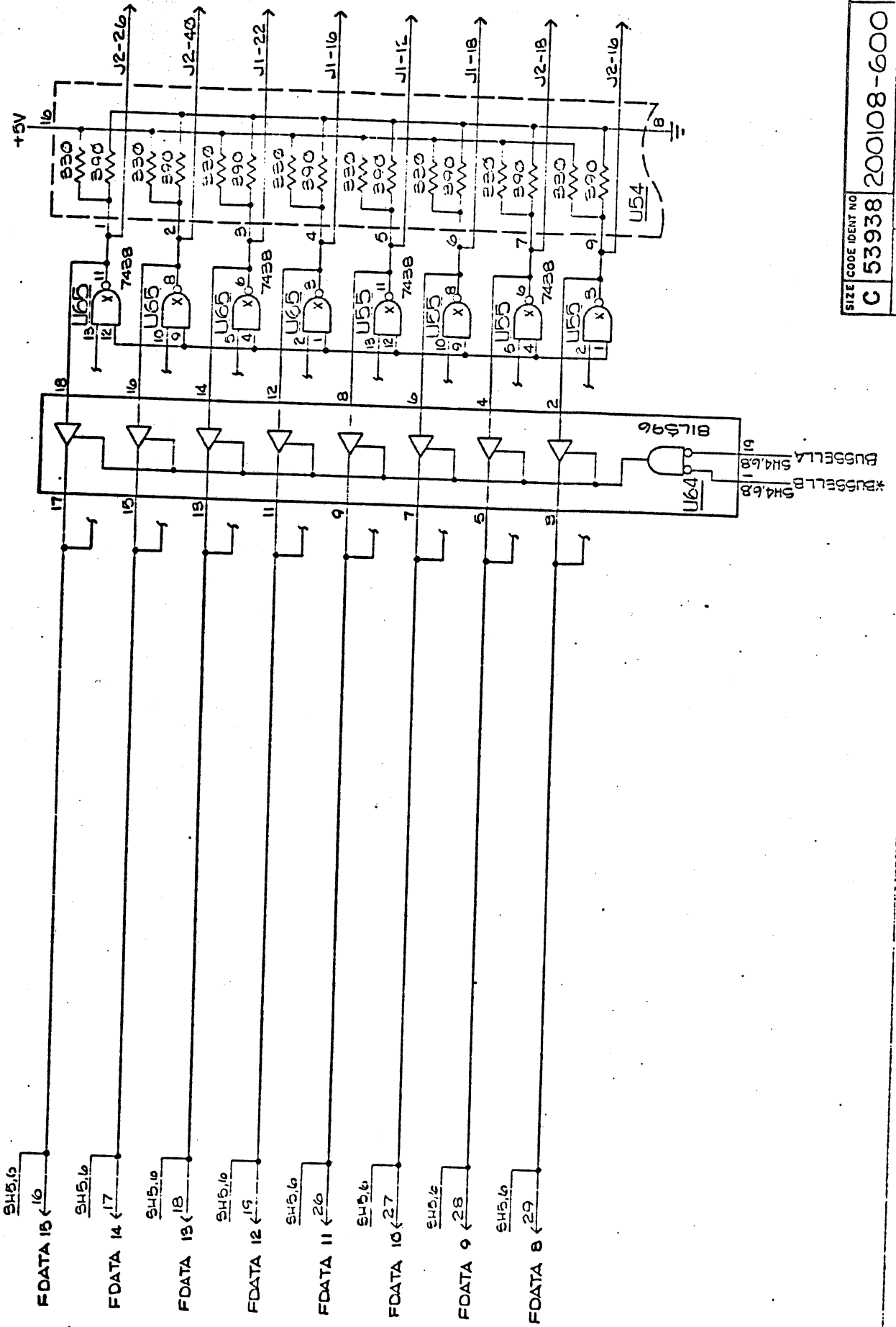
REVISIONS

ZONE LTR

DESCRIPTION

DATE

APPROVED



SIZE CODE IDENT NO  
**C 53938**

REV  
**MC**

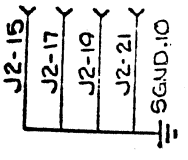
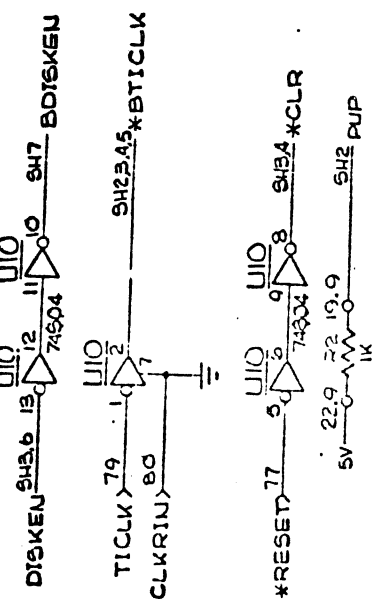
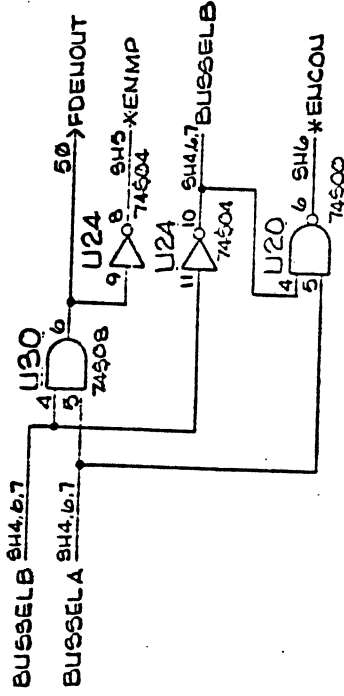
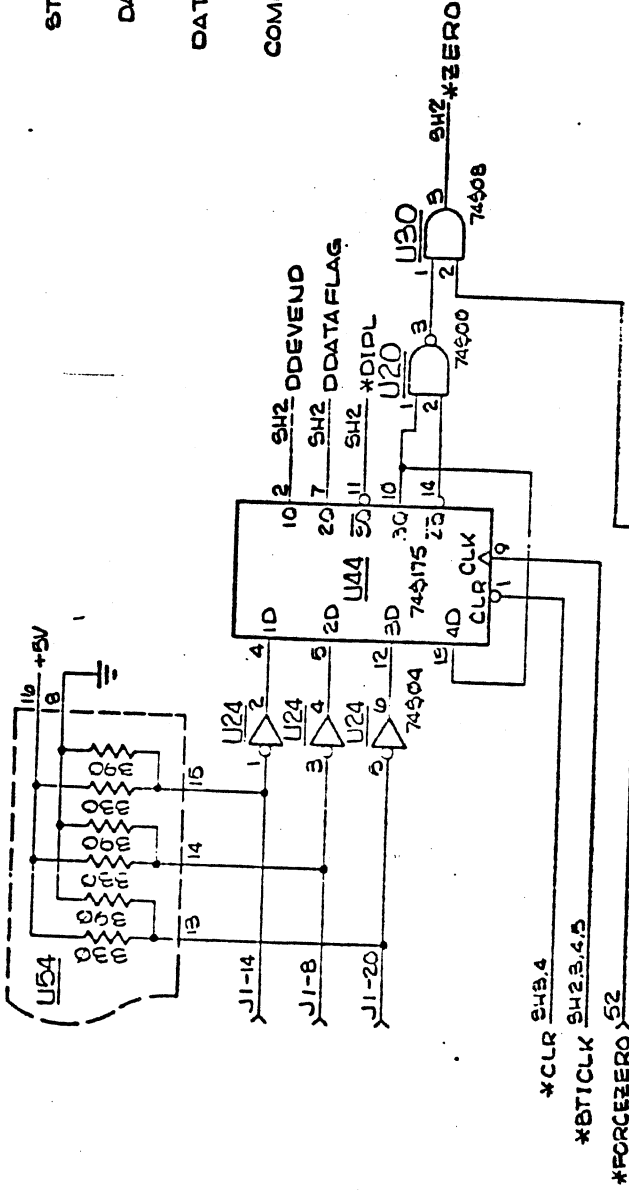
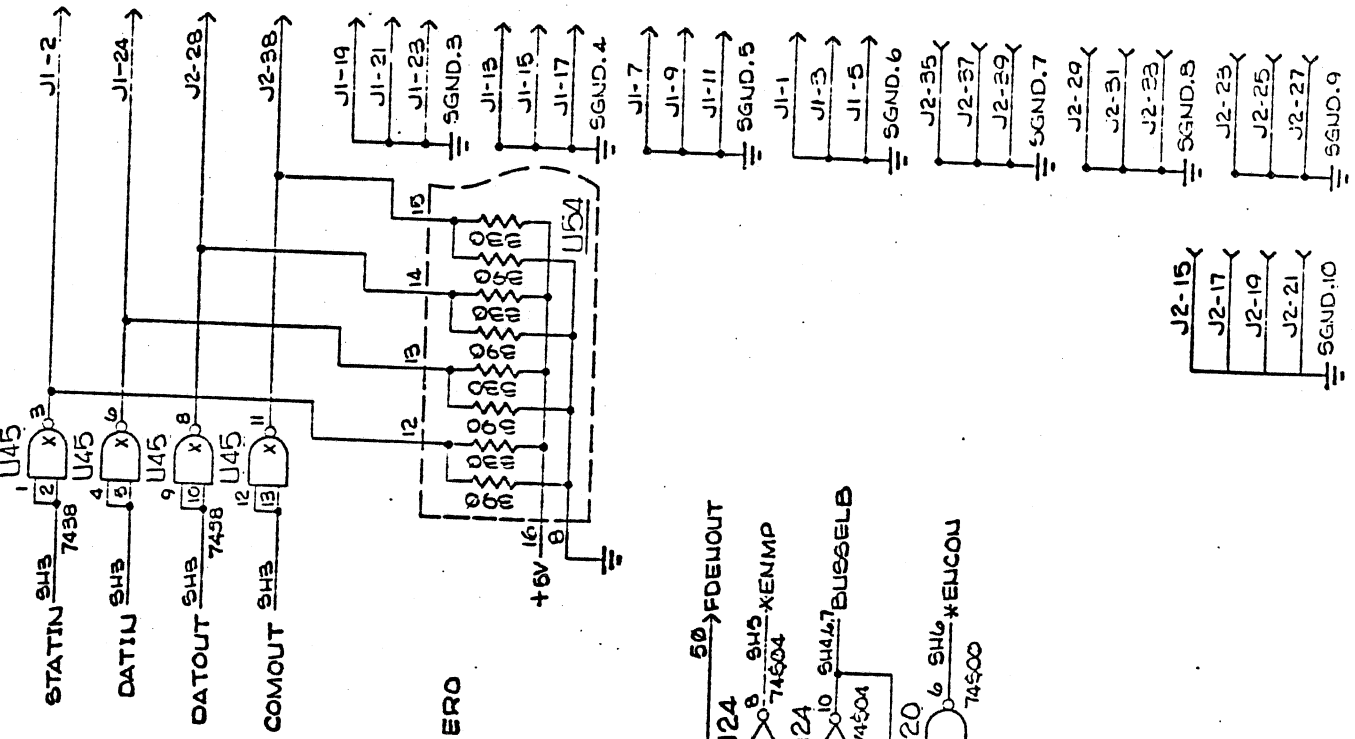
200108-600

B2C0108-600

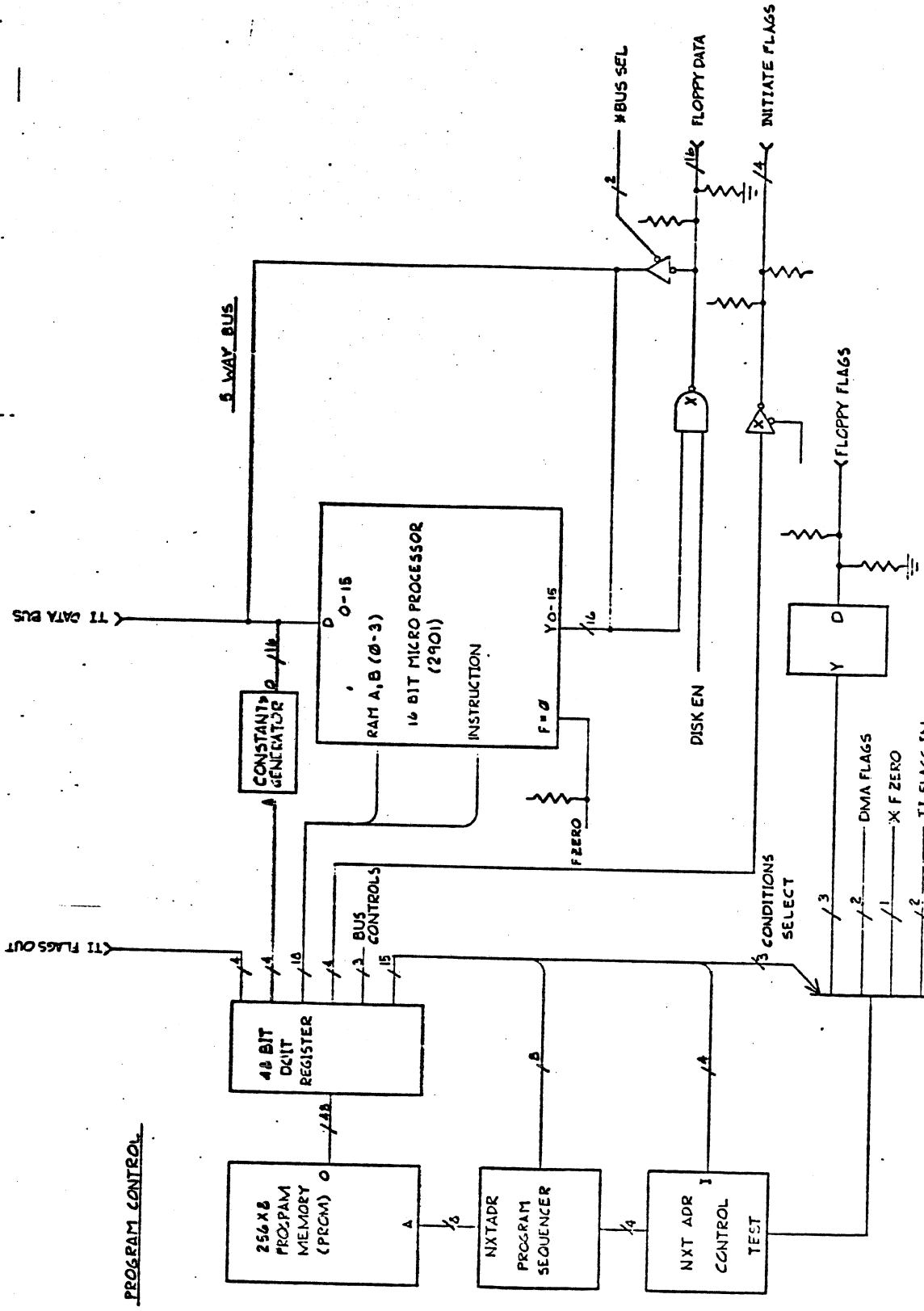
D

C

A



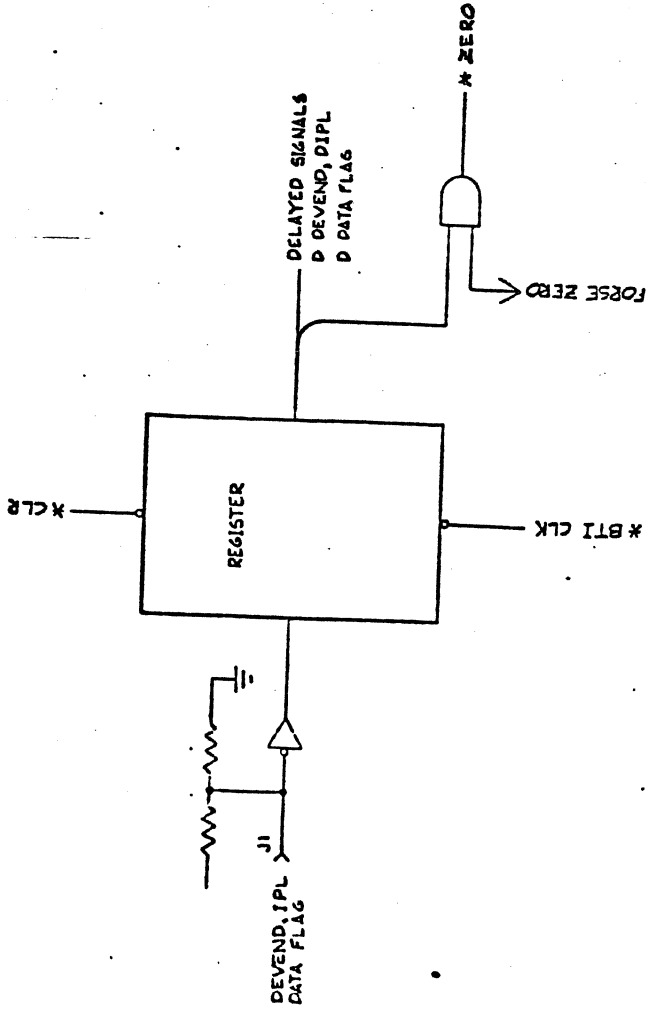
ZONE	LTR	DESCRIPTION	REVISED	APPROVED



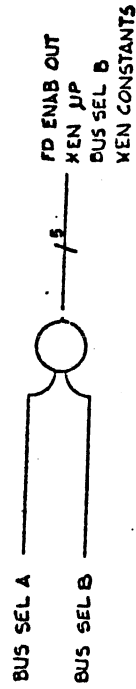
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TOLERANCES ON		ANGLES ±		MATERIAL		FINISH	
.XX ±		.XX ±		°					
200130-100	NOKOVLEW								
NEXT ASSY	U/FD ON								
CONTRACT NO.		DRAWN: D. GARDOLL		7-27-77		CHECKED		M.L.C.H.	
SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND		COMPUTER CORPORATION		SALT LAKE CITY, UTAH		8-4-112	
DISK INTERFACE, FLOPPY, AED, CABLE, W/W		SIZE		CODE IDENT NO		C 53938		200103-900	
								REV	
								11C	

D B20016B-500 C A

FLOPPY DISK FLAGS



BUS BUFFERING & CONTROL

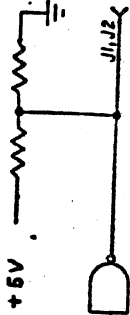


J1 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25

J2 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39

L

STAT IN  
DAT IN, DAT OUT  
COM OUT



ZONE	LTR	DESCRIPTION	DATE	APPROVED

SIZE	CODE IDENT NO	REV
C	53938	NC

SCALE: 1:1000

006-901002 B 200108-900

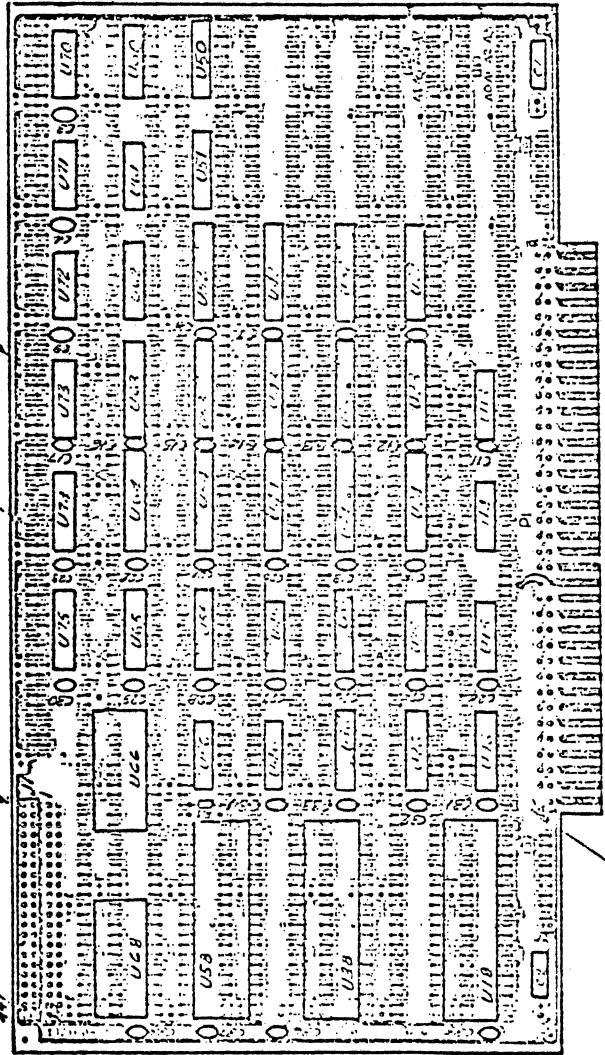
A

D

C



REVISIONS		DATE	APPROVED
ZONE	LTR	DESCRIPTION	
U20	P1	MINDED PC'S LOC 50 & 51, STAKING PIN /IND TWO JUMPER WIRES	17
	P2	INSTALLED STAKING PINS, U10, U20, ADDED 2 JUMPER WIRES	8-25-77



NOTE 2

NOTE 6

NOTE 4 NOTES COMPONENT SIDE

6. INSTALL STAKING PINS IN U10, 1, 3, 5, 7 & U20, 1, 3, 5, 7; A0, A1, A2, A5, A6, A7, A8, A9, A10, A11, A12, A13, A14, A15, A16, A17, A18, A19, A20, A21, A22, A23, A24, A25, A26, A27, A28, A29, A30, A31, A32, A33, A34, A35, A36, A37, A38, A39, A40, A41, A42, A43, A44, A45, A46, A47, A48, A49, A50, A51, A52, A53, A54, A55, A56, A57, A58, A59, A60, A61, A62, A63, A64, A65, A66, A67, A68, A69, A70, A71, A72, A73, A74, A75, A76, A77, A78, A79, A80, A81, A82, A83, A84, A85, A86, A87, A88, A89, A90, A91, A92, A93, A94, A95, A96, A97, A98, A99, A100, A101, A102, A103, A104, A105, A106, A107, A108, A109, A110, A111, A112, A113, A114, A115, A116, A117, A118, A119, A120, A121, A122, A123, A124, A125, A126, A127, A128, A129, A130, A131, A132, A133, A134, A135, A136, A137, A138, A139, A140, A141, A142, A143, A144, A145, A146, A147, A148, A149, A150, A151, A152, A153, A154, A155, A156, A157, A158, A159, A160, A161, A162, A163, A164, A165, A166, A167, A168, A169, A170, A171, A172, A173, A174, A175, 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5. JUMPER 2 WIRES FROM 2 STAKING PINS AS SHOWN.

4. MARK ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.

3. DO NOT INSTALL STAKING PINS IN J1-9344.

2. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON PARTS LIST.

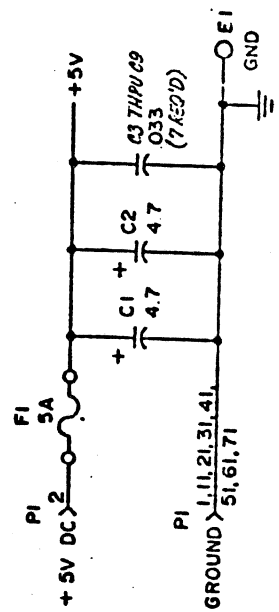
1. ASSEMBLE PER E&S WORKMANSHIP STANDARDS.

NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.
TOLERANCES ON		DRAWN <i>AK/WING</i> 6-29-77
.XX ±		CHECKED <i>JK</i> 6-30 JUN 77
.XXX ±		MECH <i>J. J. J.</i> 1-25-77
ANGLES ±		ELEC <i>J. J. J.</i>
		PROJ. ENG. <i>J. J. J.</i>
		APPROVED
MATERIAL		
FINISH		
NEXT ASSY	NOV/DEC/77	
USED ON		

SEE SEPARATE PARTS LIST		REV
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UT 84112		P2
CARD ASSEMBLY TERMINAL INTERFACE		
SIZE	CODE IDENT NO	
C 53938	200109-100	

ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED

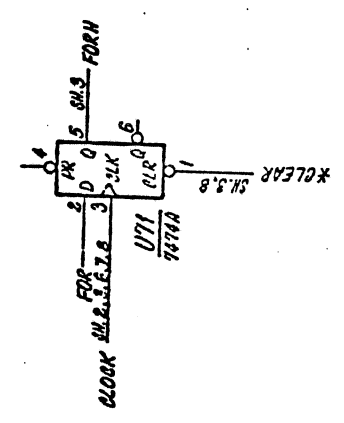
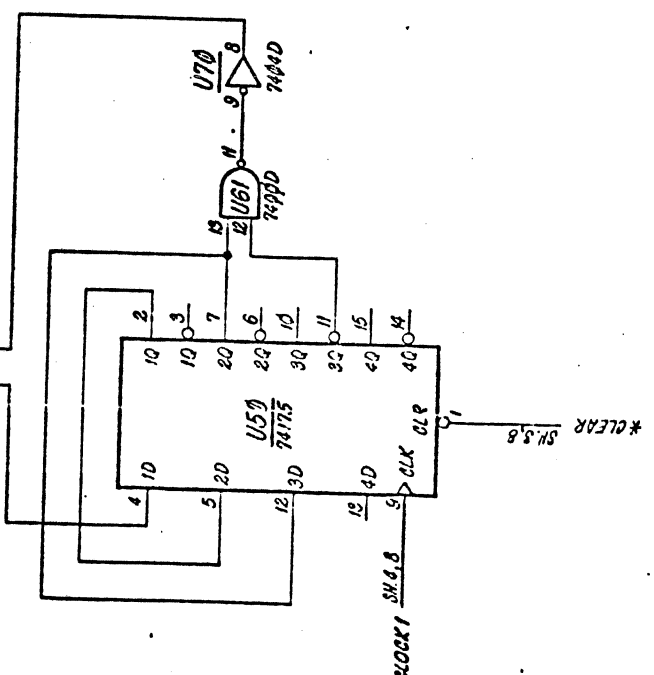
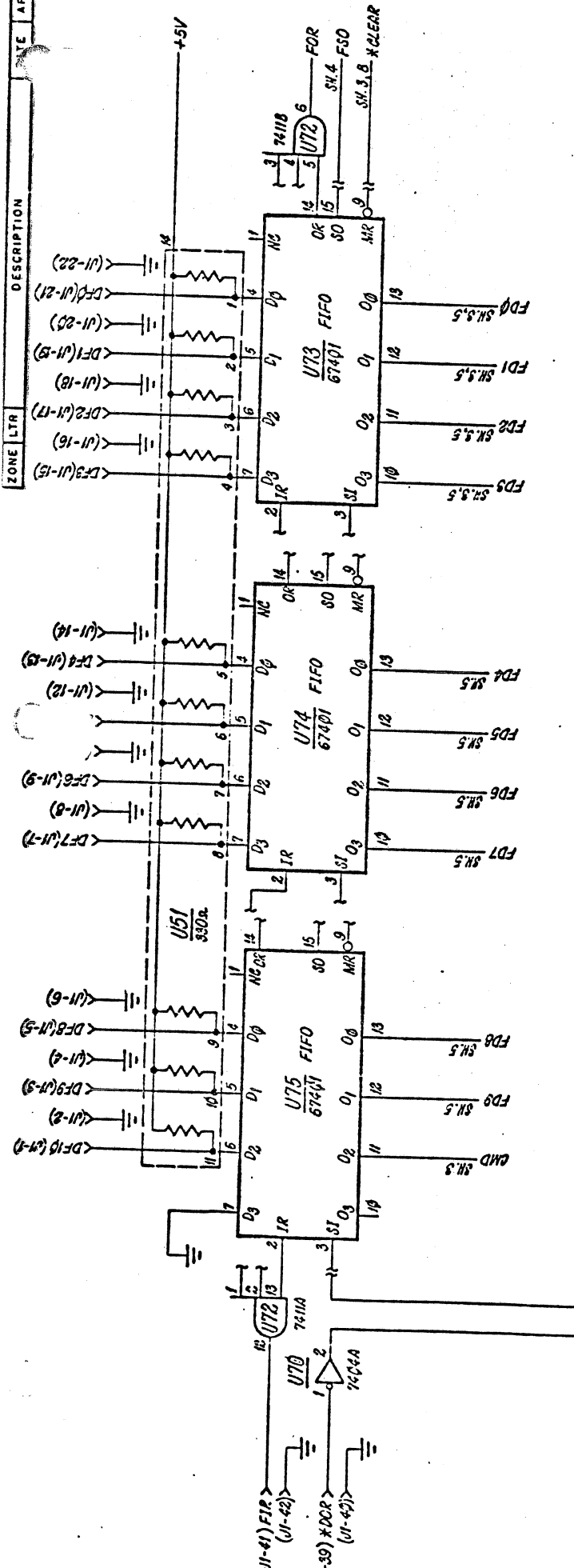


2. NUMBERS SHOWN REFER TO CONNECTOR PI. ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS. RESISTANCE VALUES ARE EXPRESSED IN OHMS. K DENOTES 1000. RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE. CN ALL 20 PIN IC'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V). CN ALL 16 PIN IC'S, PIN 8 IS GROUND AND PIN 16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

NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES XX ± XXX ± ANGLES ± ✓		CONTRACT NO. DRAWN R. HOLLEY 8-22-77		SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
MATERIAL		CHECKED MECH		4010 INTERFACE	
FINISH		ELEC PROJ ENG		SIZE CODE IDENT NO C 53958	
NEXT ASSY		APPROVED		REV P1	
USED ON				200109-600	

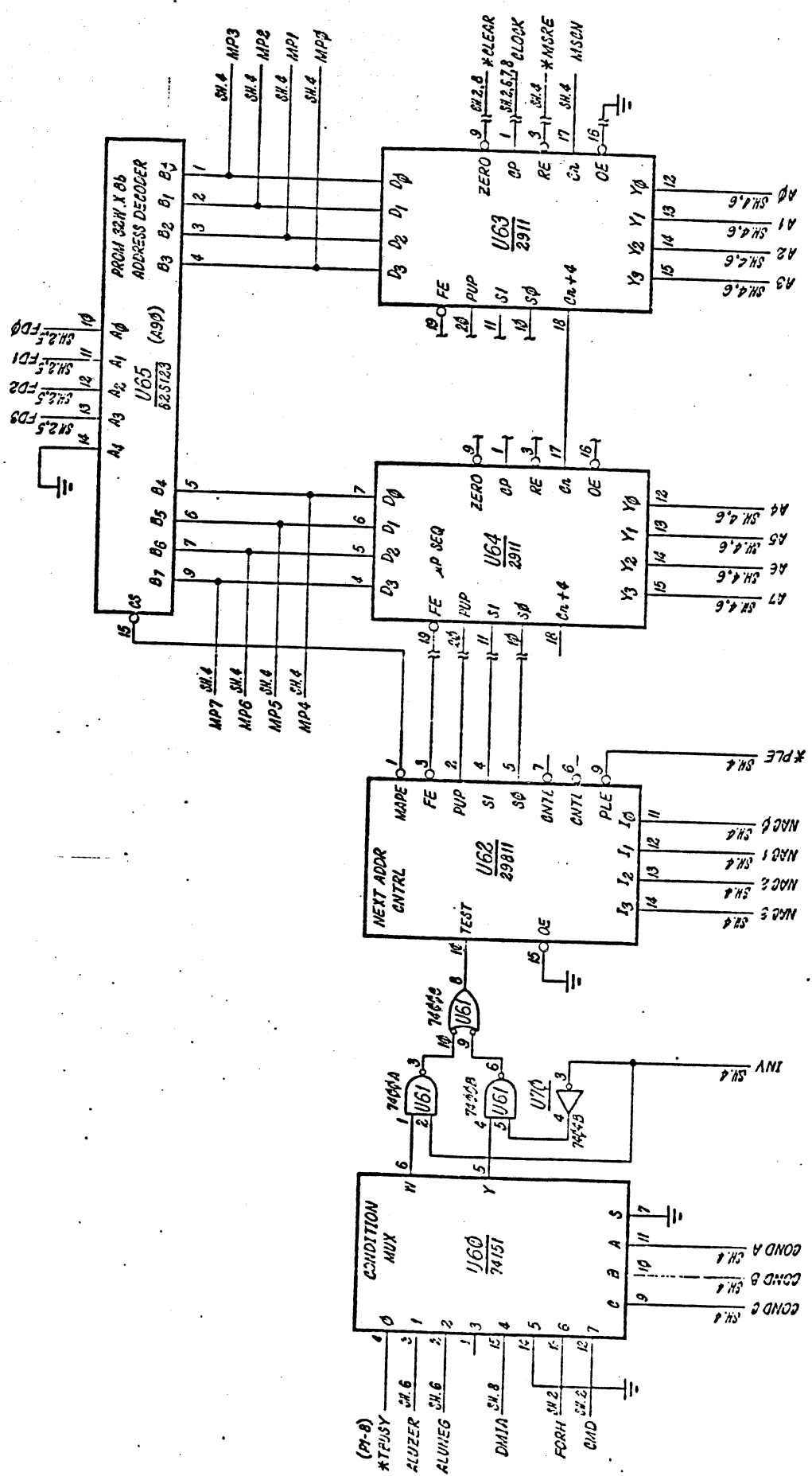
ZONE	LTR	DESCRIPTION	DATE	APPROVED



**FIFO**  
**4010 INTERFACE**

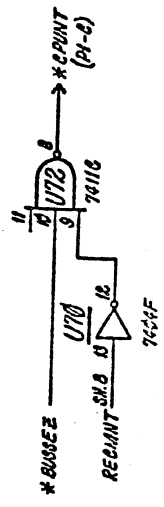
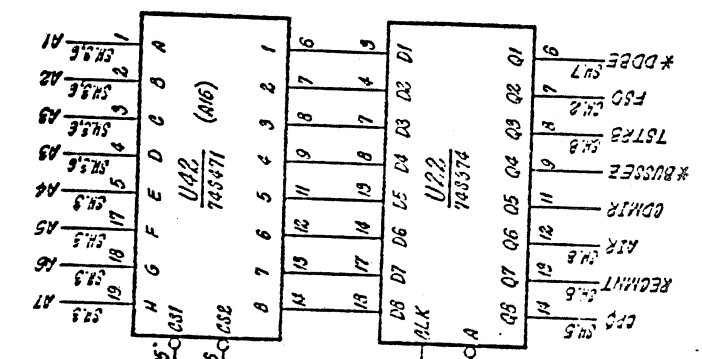
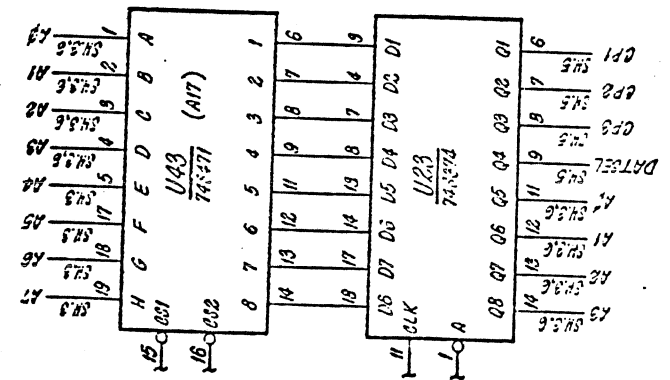
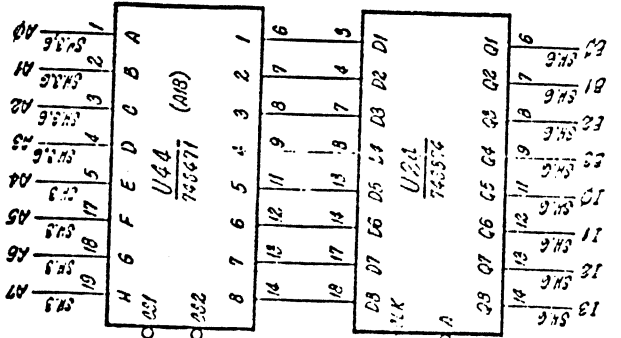
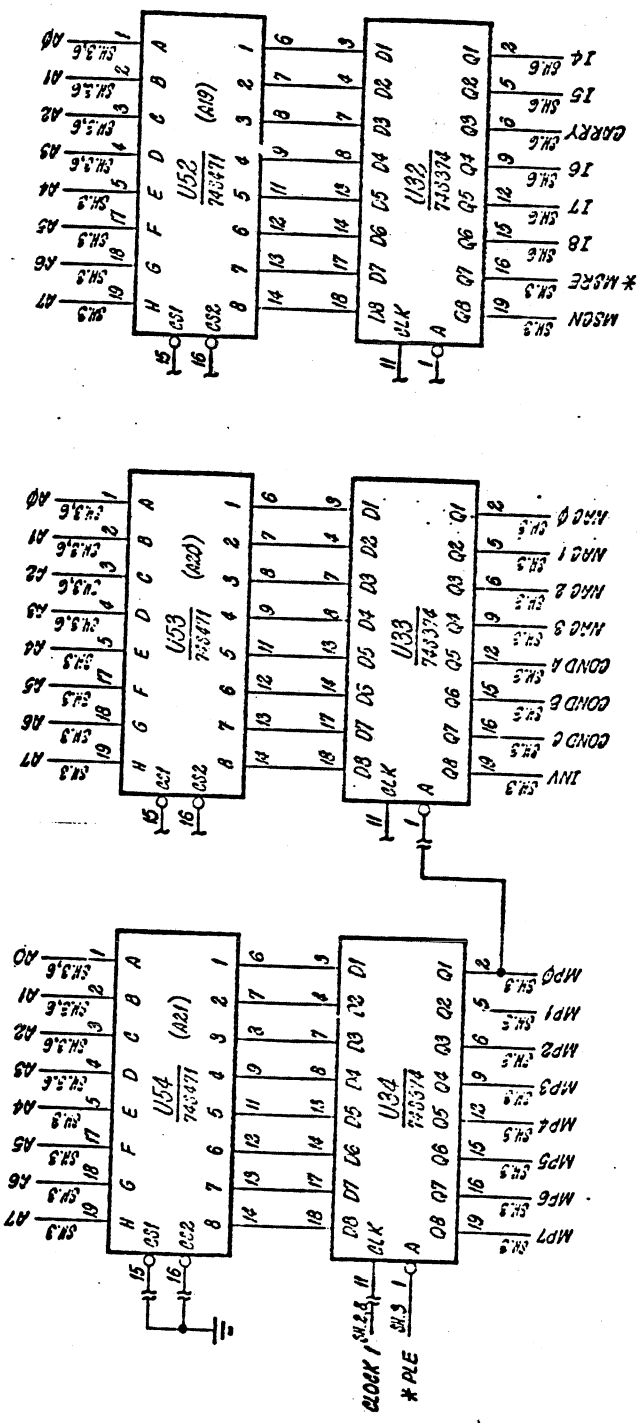
SIZE	CODE IDENT NO	REV
C	53938	P0
200109-600		REV
SCALE 1:1		P0

**CONTROLLER  
 4010 INTERFACE**



SIZE CODE IDENT NO	REV
C 53938	PJ
SCALE 1:100	
200109-600	

ZONE	LTR	DESCRIPTION	APPROVED

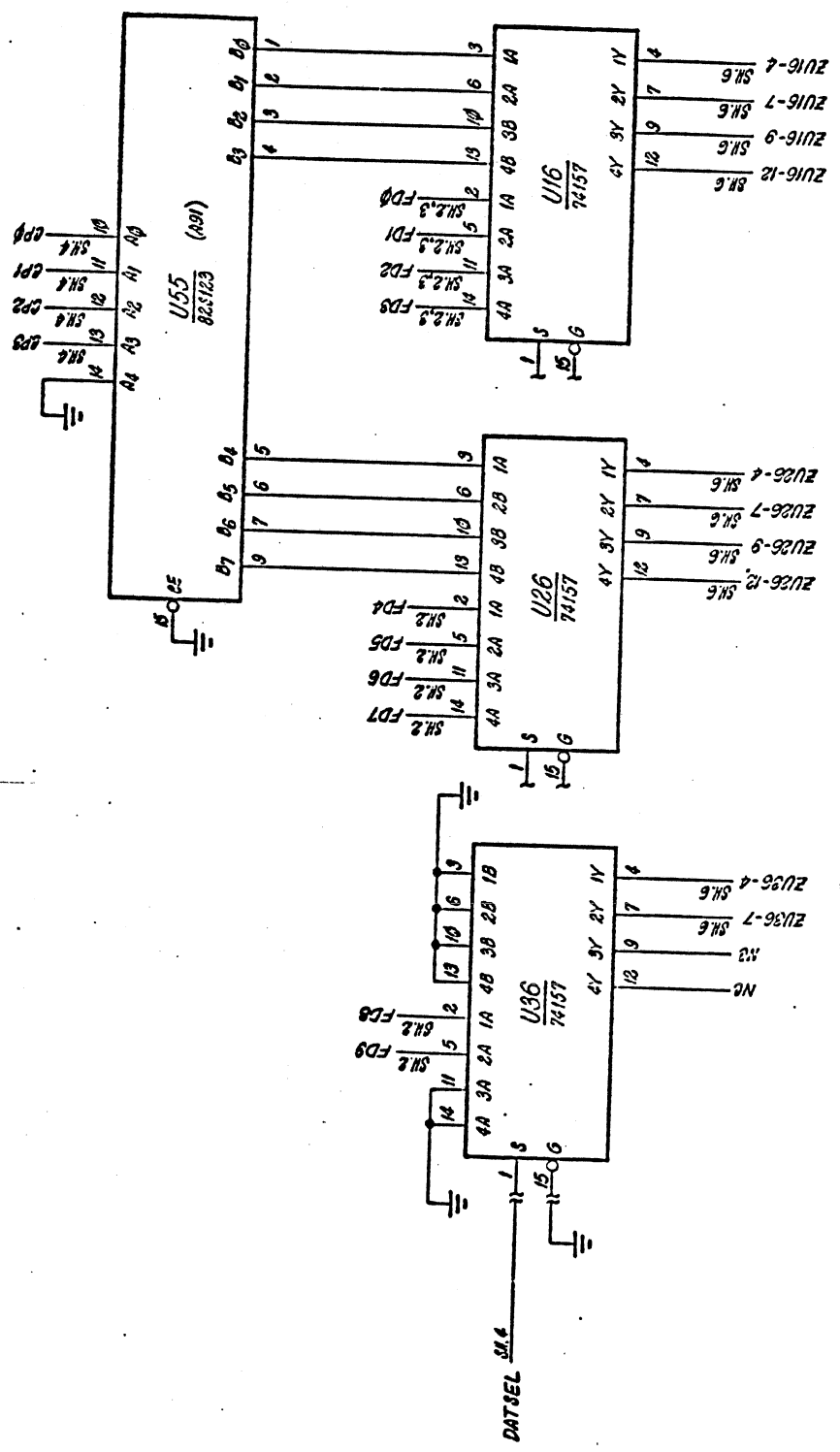


MP PROM + PL REG

SIZE CODE IDENT NO	REV
C 53938	P0
200109-600	
SCALE	

**DATA DIRECTOR**  
**4010 INTERFACE**

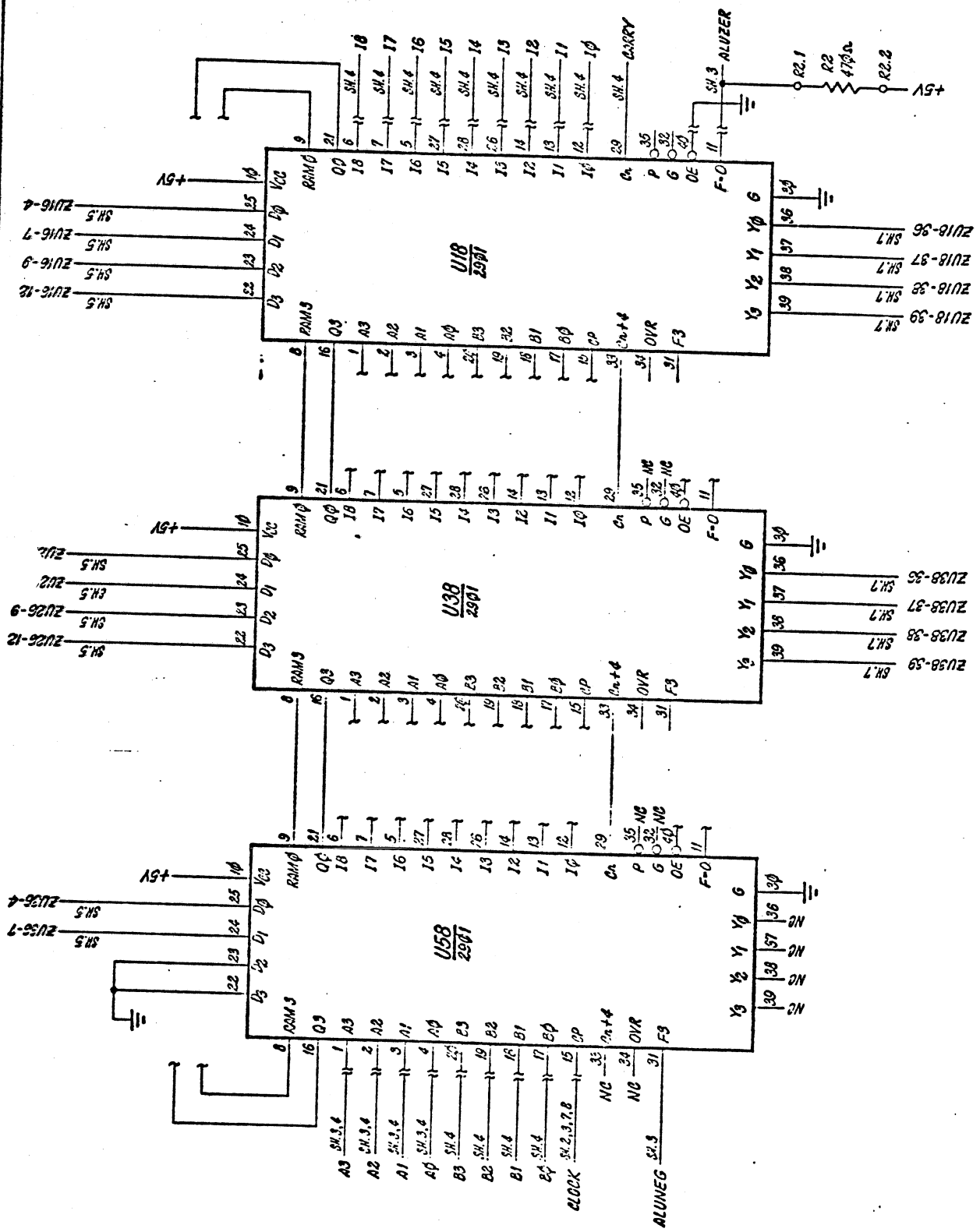
SIZE	CODE IDENT NO	REV
C	53938	P0
200109-600		SCALE



DATA DIRECTOR  
4010 INTERFACE

SIZE CODE IDENT NO  
C 53938 200109-600

REV P0



200109-600

D

C

A

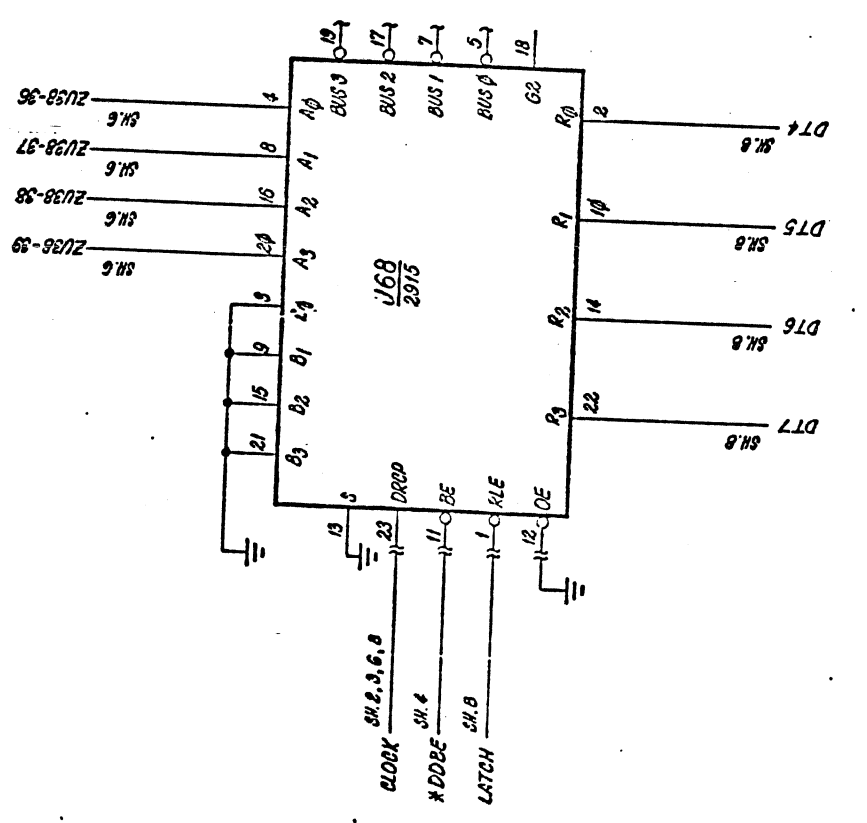
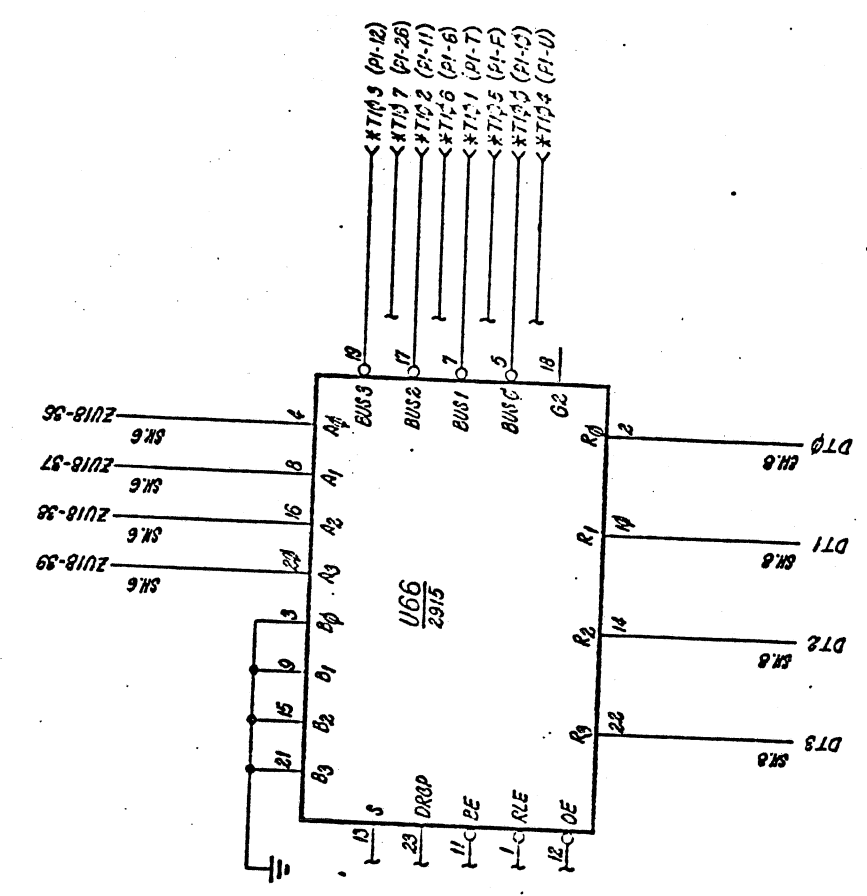
ZONE LTR	DESCRIPTION	DATE	APPROVED

D

C

200109-600

DATA DIRECTOR  
4010 INTERFACE



SIZE CODE IDENT NO	REV
C 53938	P0
200109-600	

SCALE 1:1

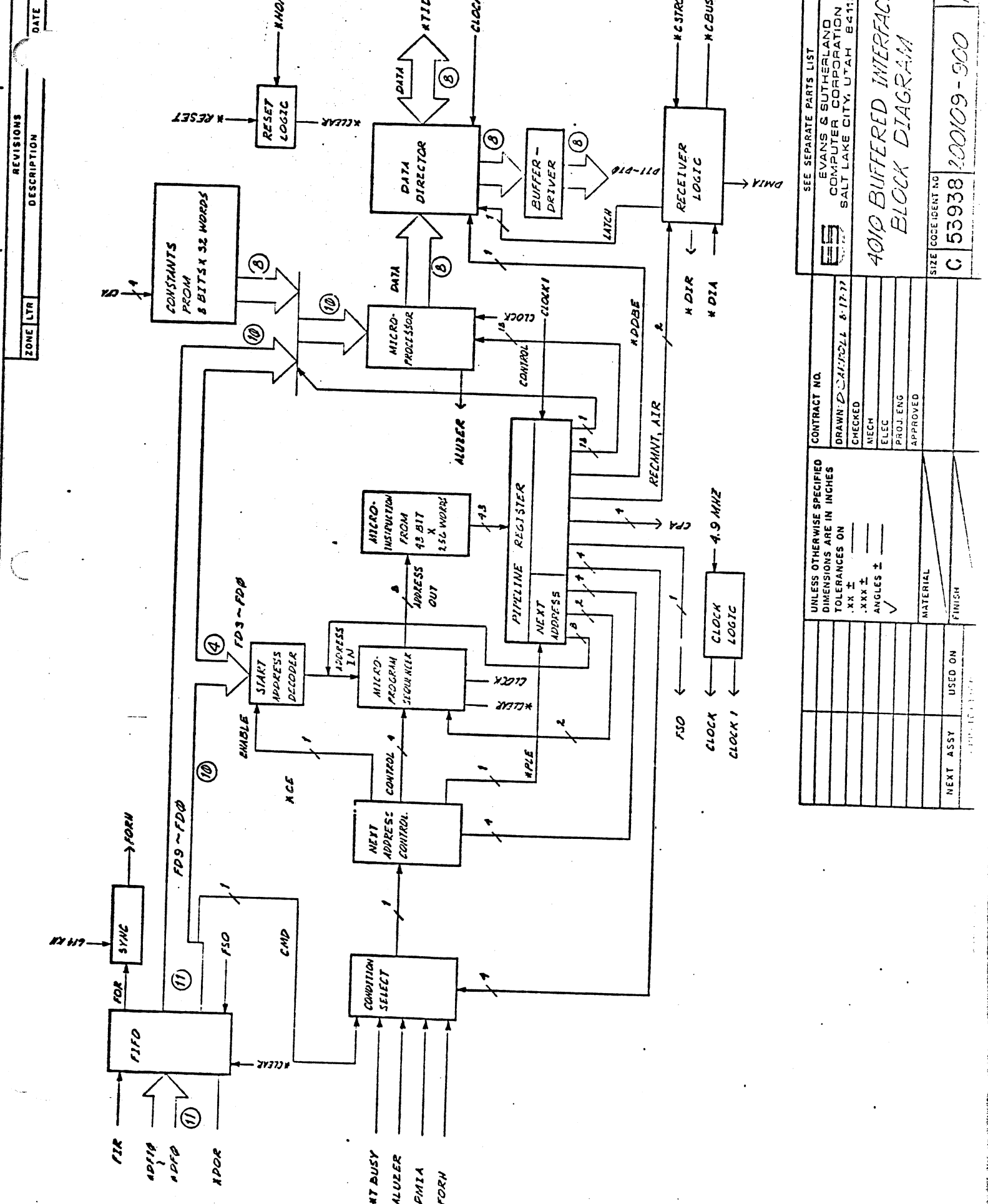
REV P0

200109-600

SIZE CODE IDENT NO C 53938







CONTRACT NO.	EVANS & SUTHERLAND
DRAWN	COMPUTER CORPORATION
CHECKED	SALT LAKE CITY, UTAH 84112
MECH	
ELEC	
PROJ. ENG	
APPROVED	

SEE SEPARATE PARTS LIST	
4010 BUFFERED INTERFACE	
BLOCK DIAGRAM	
SIZE CODE IDENT NO	C 53938
REV	PO

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± MATERIAL FINISH	
CONTRACT NO.	EVANS & SUTHERLAND
DRAWN	COMPUTER CORPORATION
CHECKED	SALT LAKE CITY, UTAH 84112
MECH	
ELEC	
PROJ. ENG	
APPROVED	

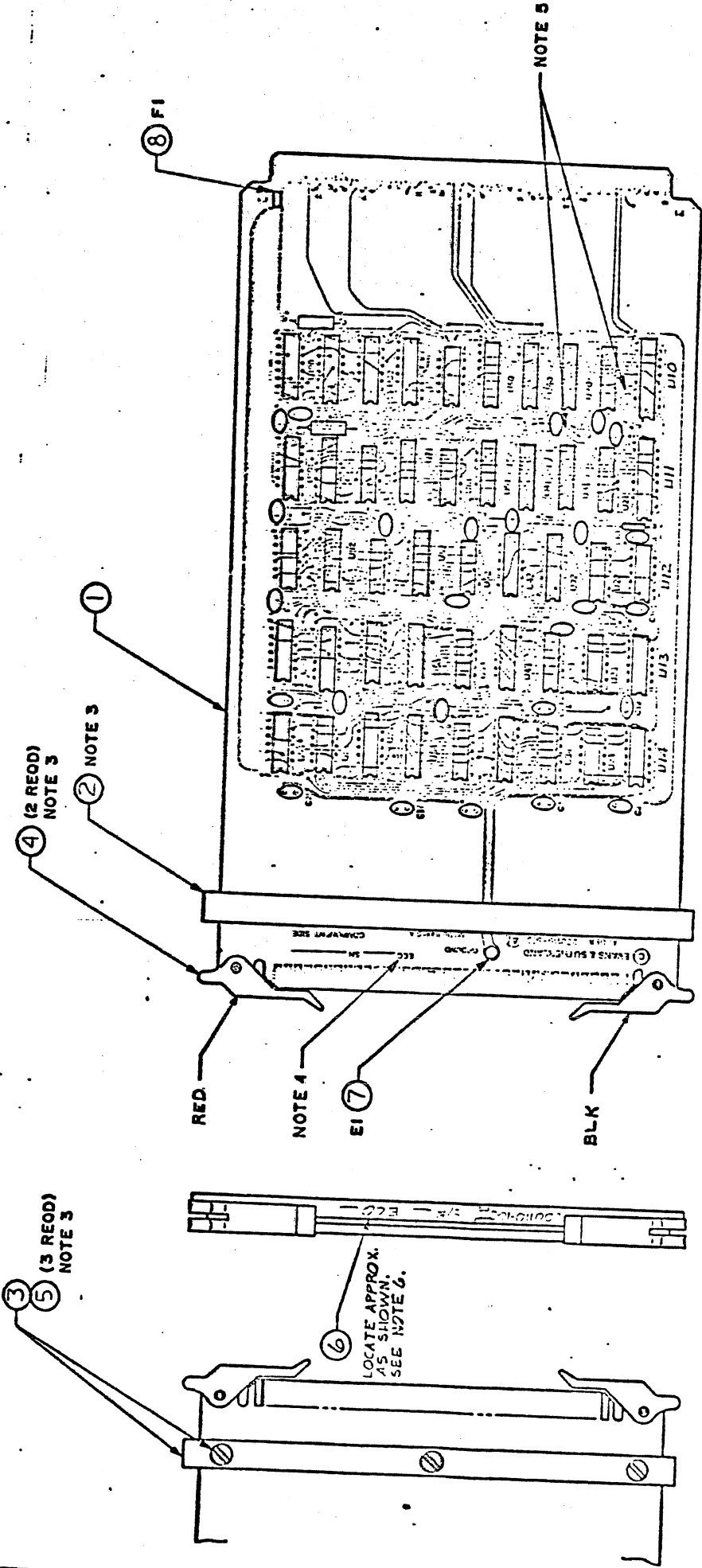
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± MATERIAL FINISH	
CONTRACT NO.	EVANS & SUTHERLAND
DRAWN	COMPUTER CORPORATION
CHECKED	SALT LAKE CITY, UTAH 84112
MECH	
ELEC	
PROJ. ENG	
APPROVED	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± MATERIAL FINISH	
CONTRACT NO.	EVANS & SUTHERLAND
DRAWN	COMPUTER CORPORATION
CHECKED	SALT LAKE CITY, UTAH 84112
MECH	
ELEC	
PROJ. ENG	
APPROVED	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± MATERIAL FINISH	
CONTRACT NO.	EVANS & SUTHERLAND
DRAWN	COMPUTER CORPORATION
CHECKED	SALT LAKE CITY, UTAH 84112
MECH	
ELEC	
PROJ. ENG	
APPROVED	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± MATERIAL FINISH	
CONTRACT NO.	EVANS & SUTHERLAND
DRAWN	COMPUTER CORPORATION
CHECKED	SALT LAKE CITY, UTAH 84112
MECH	
ELEC	
PROJ. ENG	
APPROVED	

ZONE	LTR	DESCRIPTION	DATE	APPROVED



COMPONENT SIDE

200110  
ADDER  
PC

REFERENCE DOCUMENTS  
LOGIC DIAGRAM --- 200110-600  
PARTS LIST --- PL200110-100

- NOTES:
1. ASSEMBLE PER E.B.S. WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK EFS ASSY. NO, S/N & ECO LEVEL ON ITEM 6.

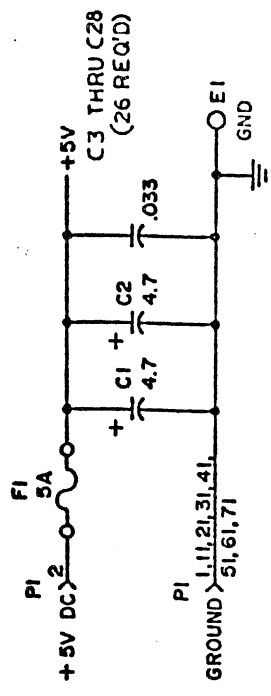
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	
TOLERANCES ON		DRAWN	2-18-77
.XX ±		CHECKED	22 FEB 77
.XXX ±		MECH	
ANGLES ±		ELEC	
		PROJ. ENG.	
		APPROVED	
MATERIAL	SEE PARTS LIST	SEE SEPARATE PARTS LIST	
FINISH		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
200130-100	NOVOVIEW	CARD ASSEMBLY	
NEXT ASSY	USED ON	ADDER P.C.	
		SIZE	CODE IDENT NO
		C 53938	200110-100
		REV	MC

D

C

B200110-600A

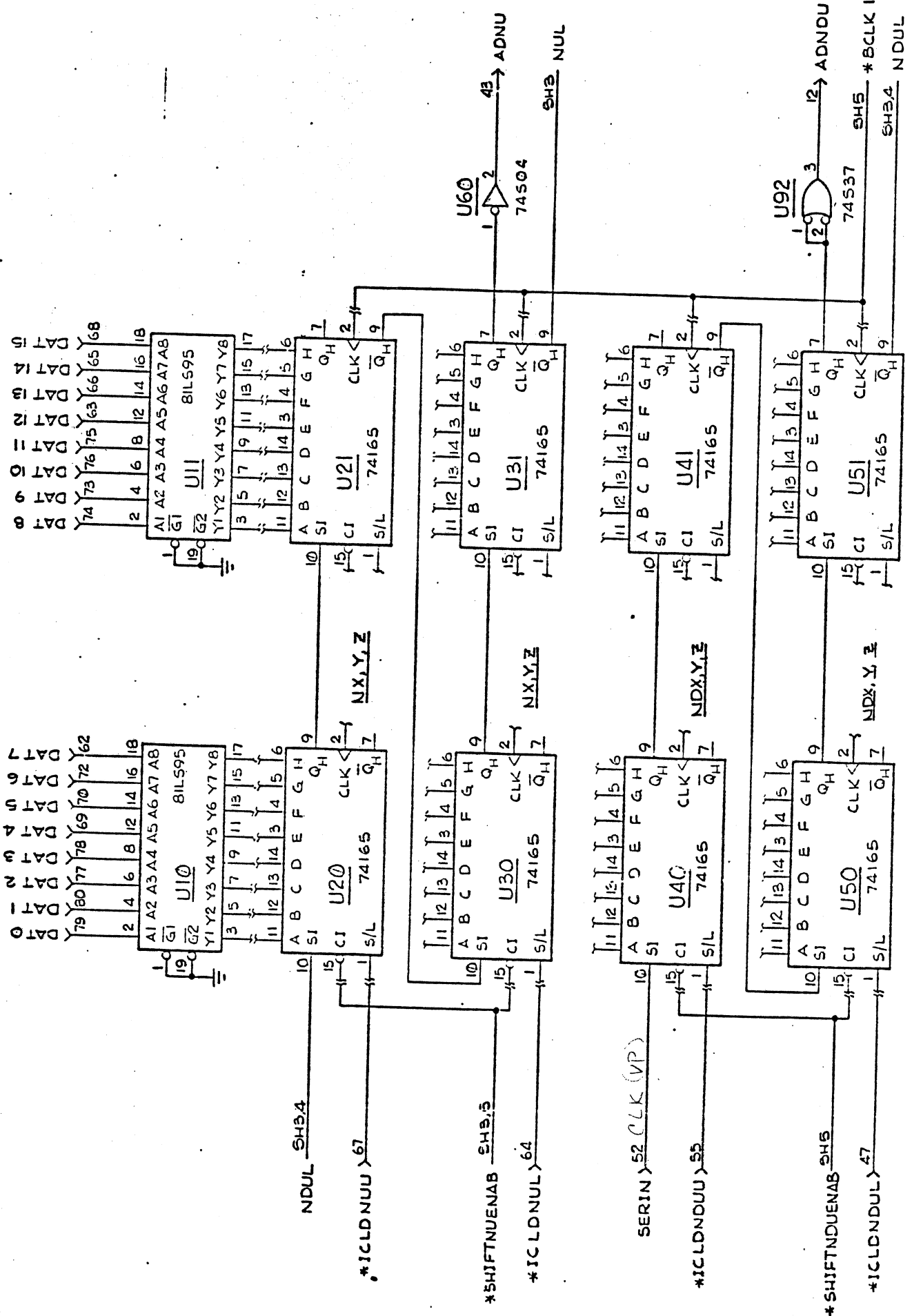
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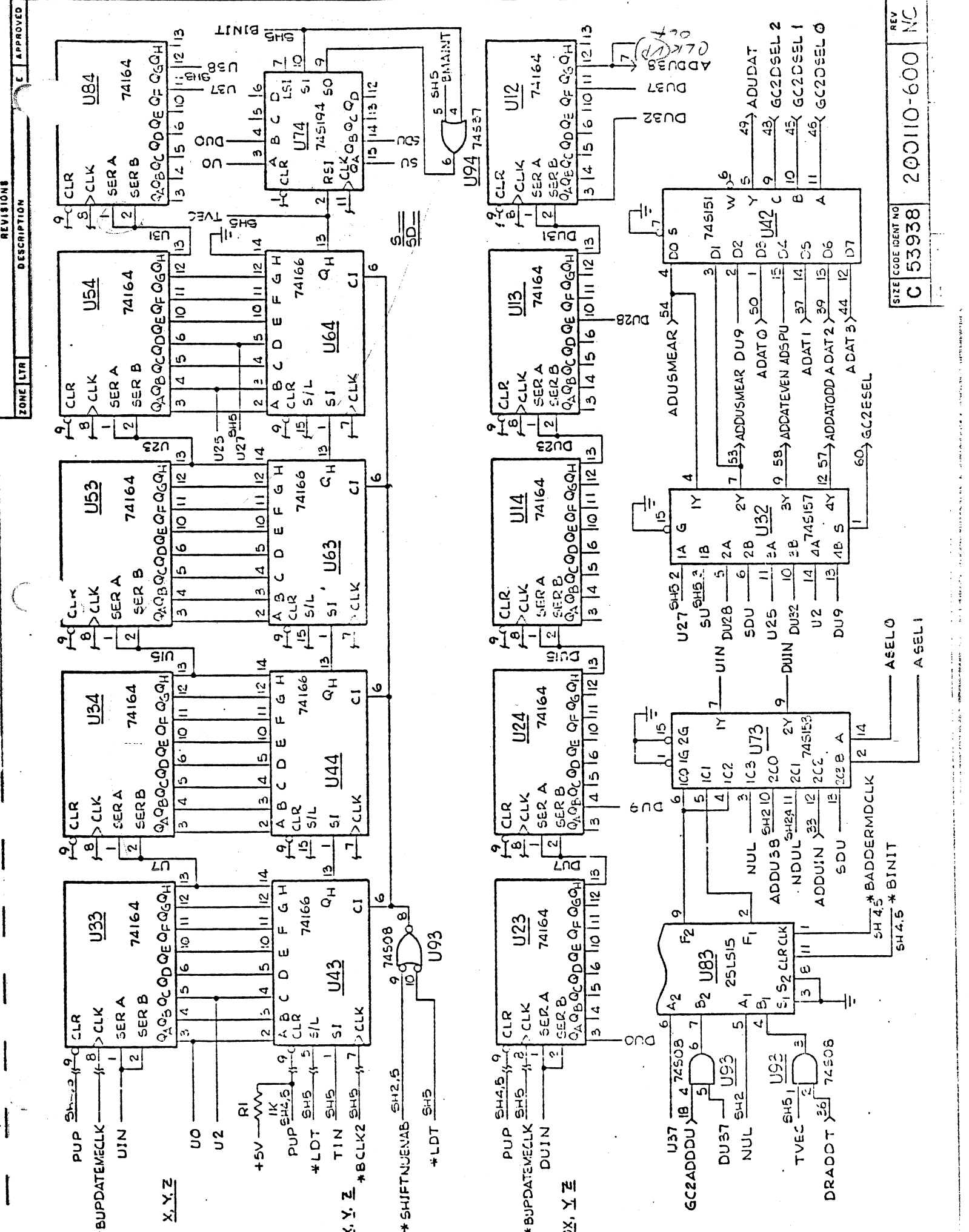
2. NUMBERS SHOWN REFER TO CONNECTOR P1.  
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.  
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.  
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.  
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).  
 ON ALL 16 PIN I.C.'S, PIN 8 IS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

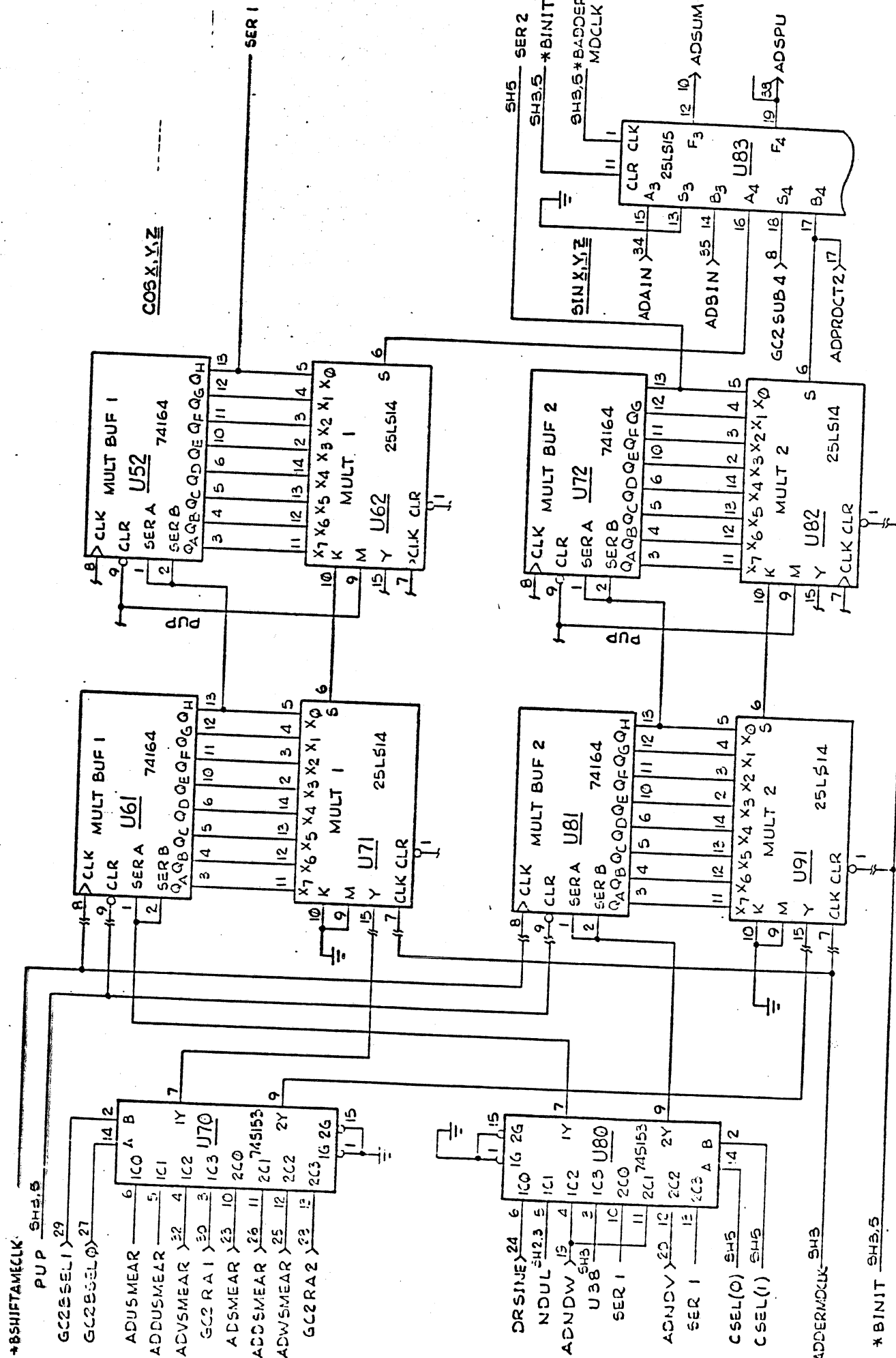
SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		CARD ASSY, ADDER PC	
DRAWN ACC. TO		SIZE CODE IDENT NO	
CHECKED		C 53938	
MECH		REV	
ELEC		P3	
PROJ. ENG		200110-600	
APPROVED		REV	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		P3	
TOLERANCES ON		P3	
.XX ±		P3	
.XXX ±		P3	
ANGLES ±		P3	
✓		P3	
MATERIAL		P3	
FINISH		P3	
NEXT ASSY		P3	
USED ON		P3	
APPLICATION		P3	



SIZE	CODE	AGENT	NO	REV	
C	53938		200110-600	NC	
SCALE 1:1					

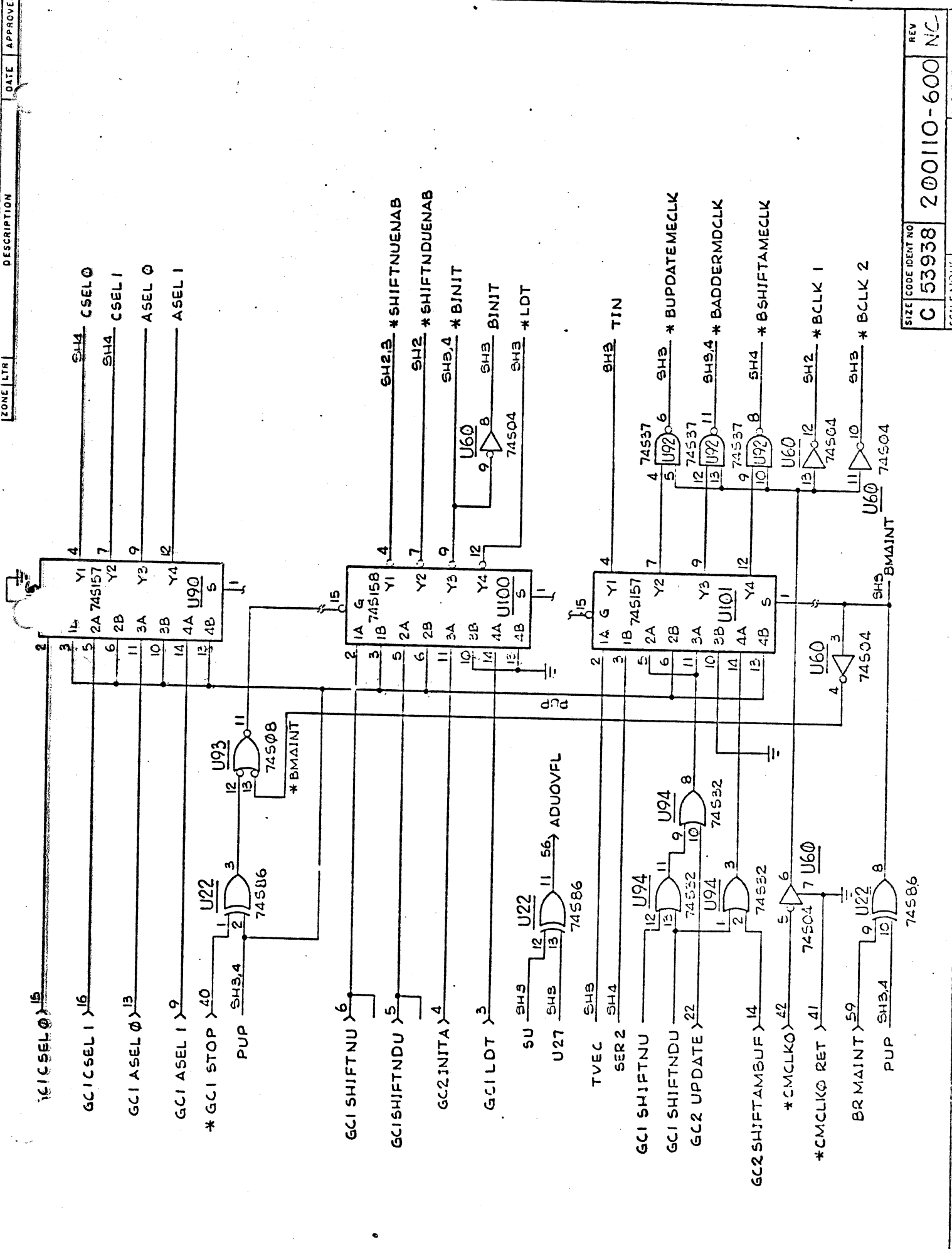


SIZE	CODE IDENT NO	REV	NC
C	53938	200110-600	NC



COS X, Y, Z

AUG X, Y, Z



D

C

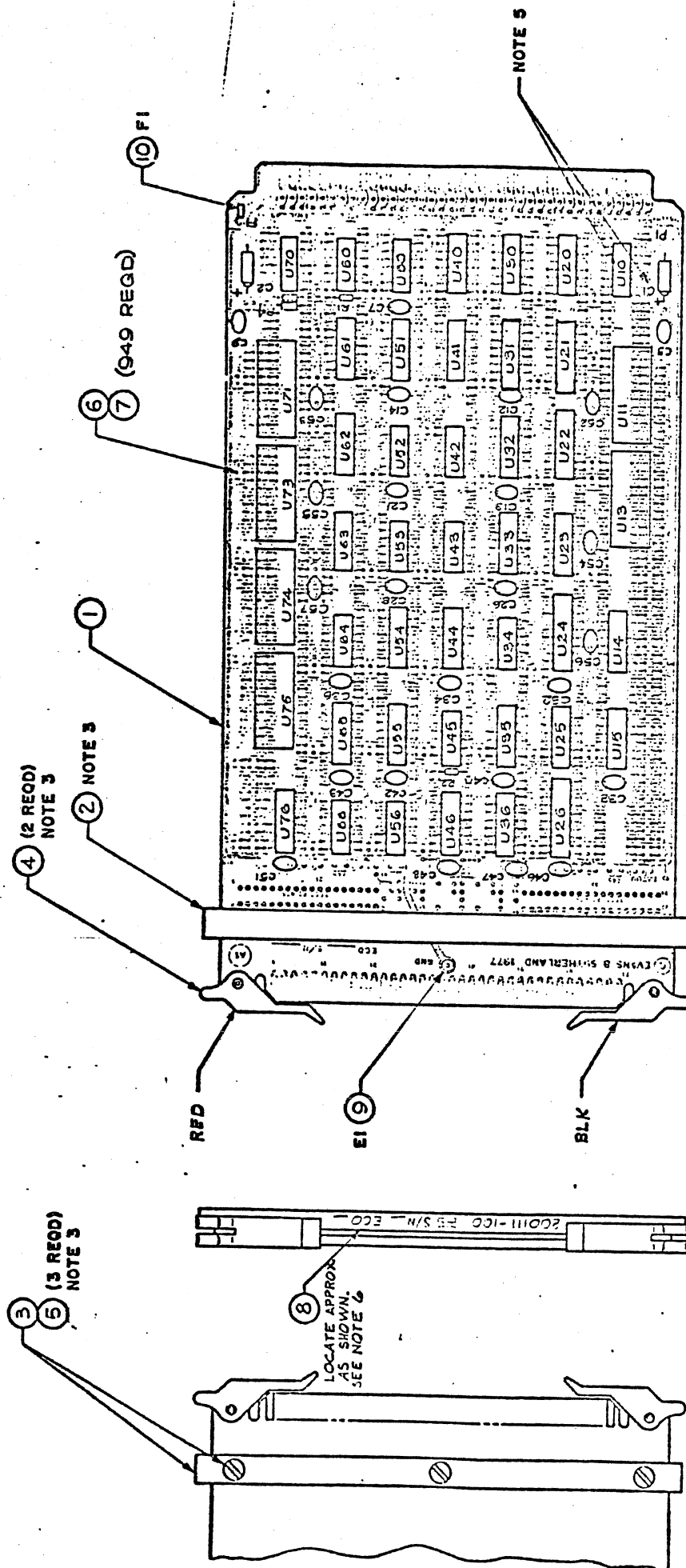
B200110-600

A

SIZE CODE IDENT NO	REV
C 53938	NC
SCALE: 1:1	

200110-600

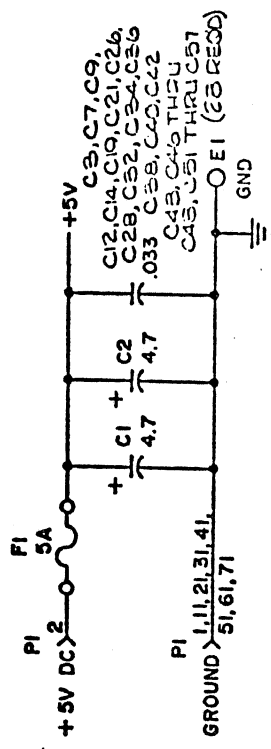




REFERENCE DOCUMENTS  
 LOGIC DIAGRAM --- 200111-600  
 PARTS LIST----- PL200111-100

SEE SEPARATE PARTS LIST		CONTRACT NO.
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		DRAWN BY MELLUS 2-22-77
CARD ASSEMBLY DIRECTIONALITY, W/W		CHECKED BY [Signature] 2-22 FEB 77
SIZE CODE IDENT NO C 53938 200111-100		MECH
REV CUC		ELEC
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±		APPROVED [Signature] 2-22-77
MATERIAL	SEE PARTS LIST	
NOV/VIEW	USED ON	
NEAT ASSY	APPLICATION	

- NOTES:
1. ASSEMBLE PER E & S WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM J) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. MARK ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK ETS ASSY. NO, S/N & ECO LEVEL ON ITEM 8.

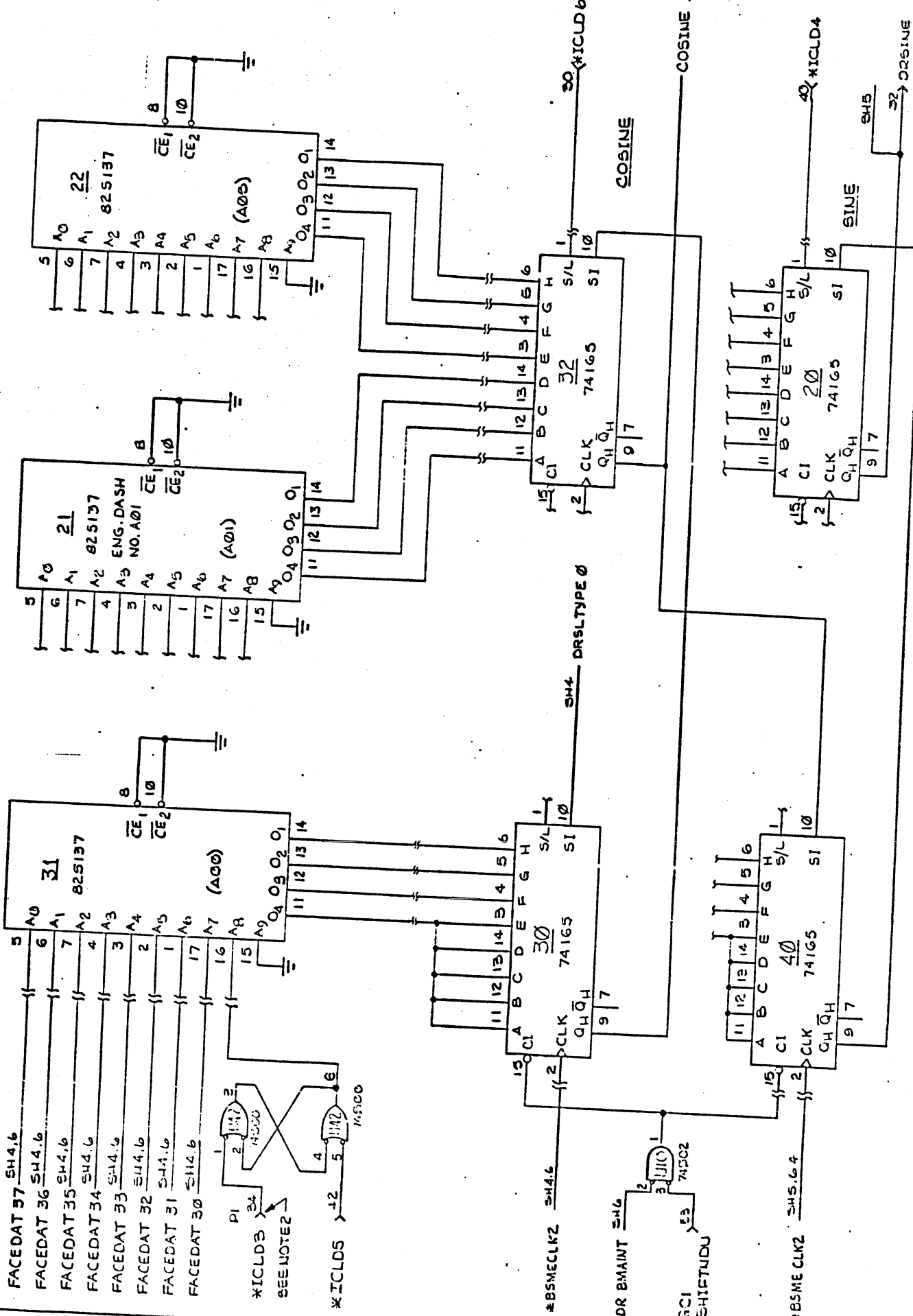


- 2. NUMBERS SHOWN REFER TO CONNECTOR P1. ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.
- RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.
- RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.
- ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).
- ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND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

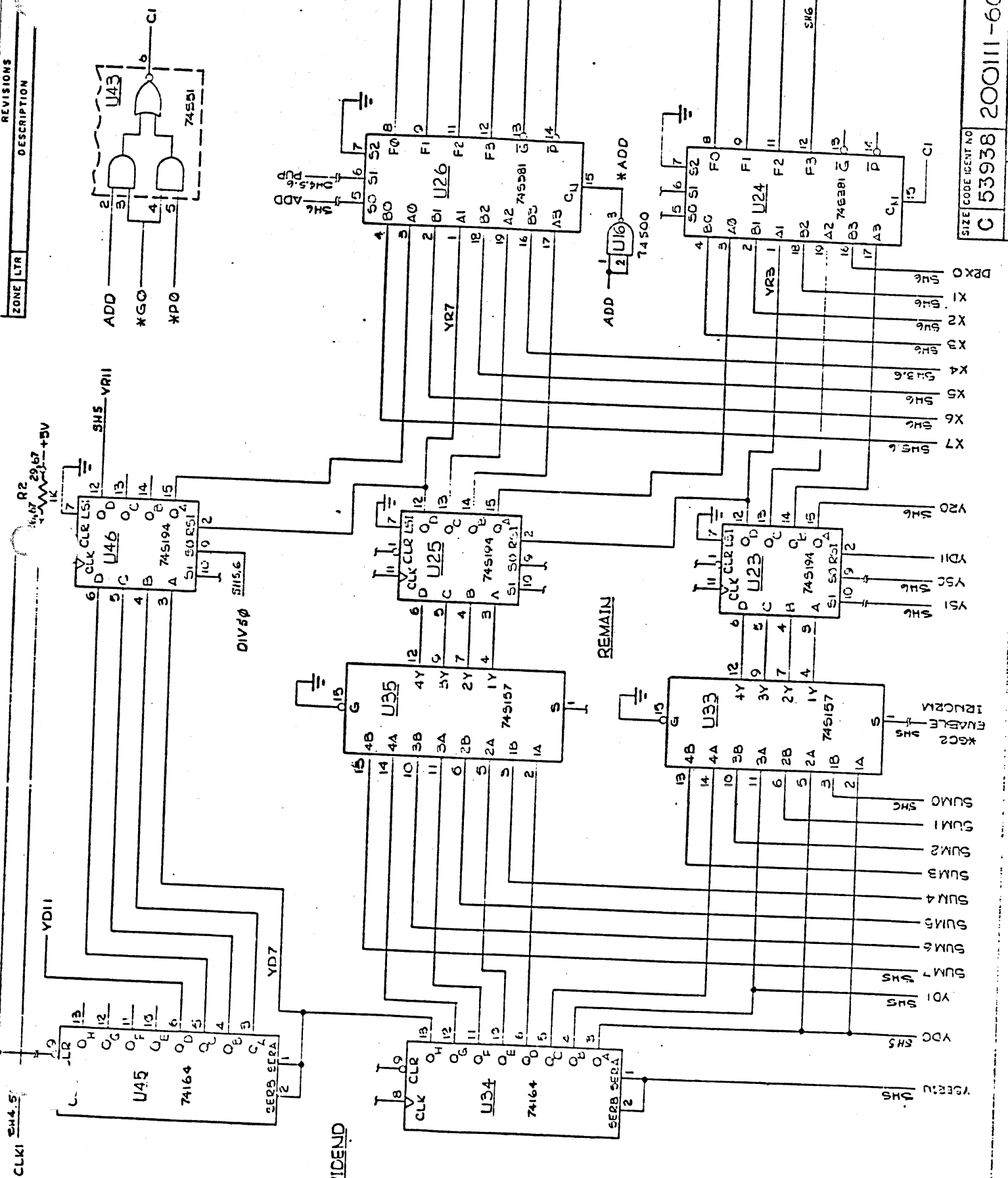
SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		DRAWN R MELLUS 4-1-77	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CHECKED <i>[Signature]</i> 9 JUN 77	
TOLERANCES ON		MECH	
.XX ±		ELEC-APP. DATE 6-10-77	
.XXX ±		PROJ ENG <i>[Signature]</i> 1/11/77	
ANGLES ±		APPROVED	
MATERIAL		DIRECTIONALITY	
FINISH		(V/W)	
NEXT ASSY		SIZE CODE IDENT NO	
USED ON		C 53938	
APPLICATION		REV	
		200111-600	
		MC	

ZONE	LTR	DESCRIPTION	DATE	APPROVED



SIZE	CODE IDENT NO	REV	NC
C	53938	20011-600	

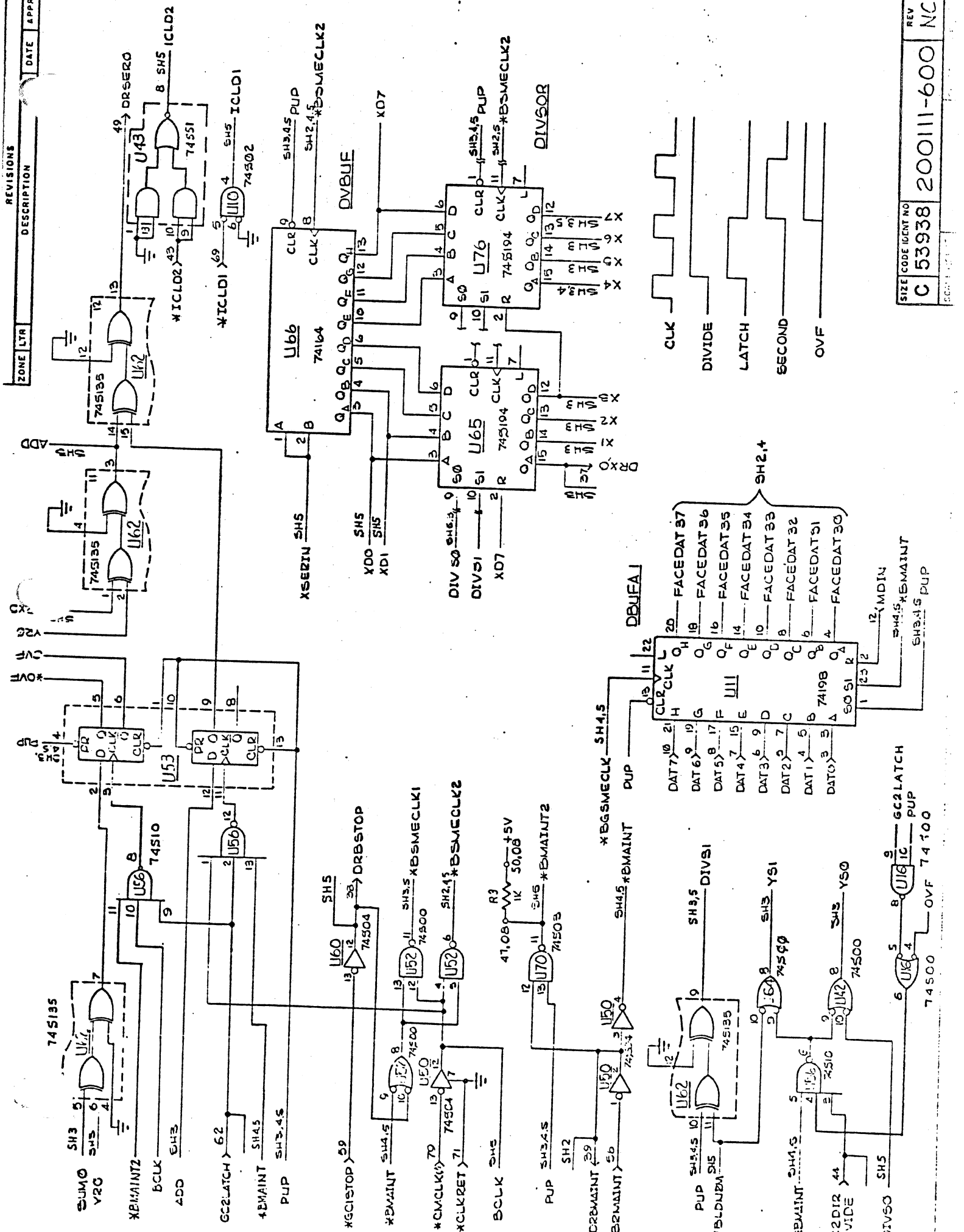
\*ICLD3 SEE NOTE2  
 \*ICLD5  
 \*BSMECLK2  
 DR BMAINT  
 GC1 SHIFTDU  
 \*BSME CLK2







ZONE	LTNR	DESCRIPTION	DATE	APPROVED

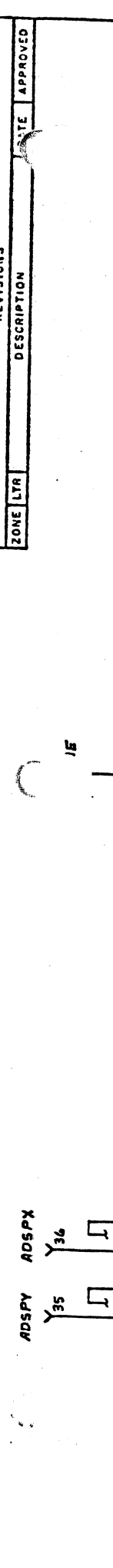


SIZE	CODE	IDENT	NO
C	53938	200111-600	NC

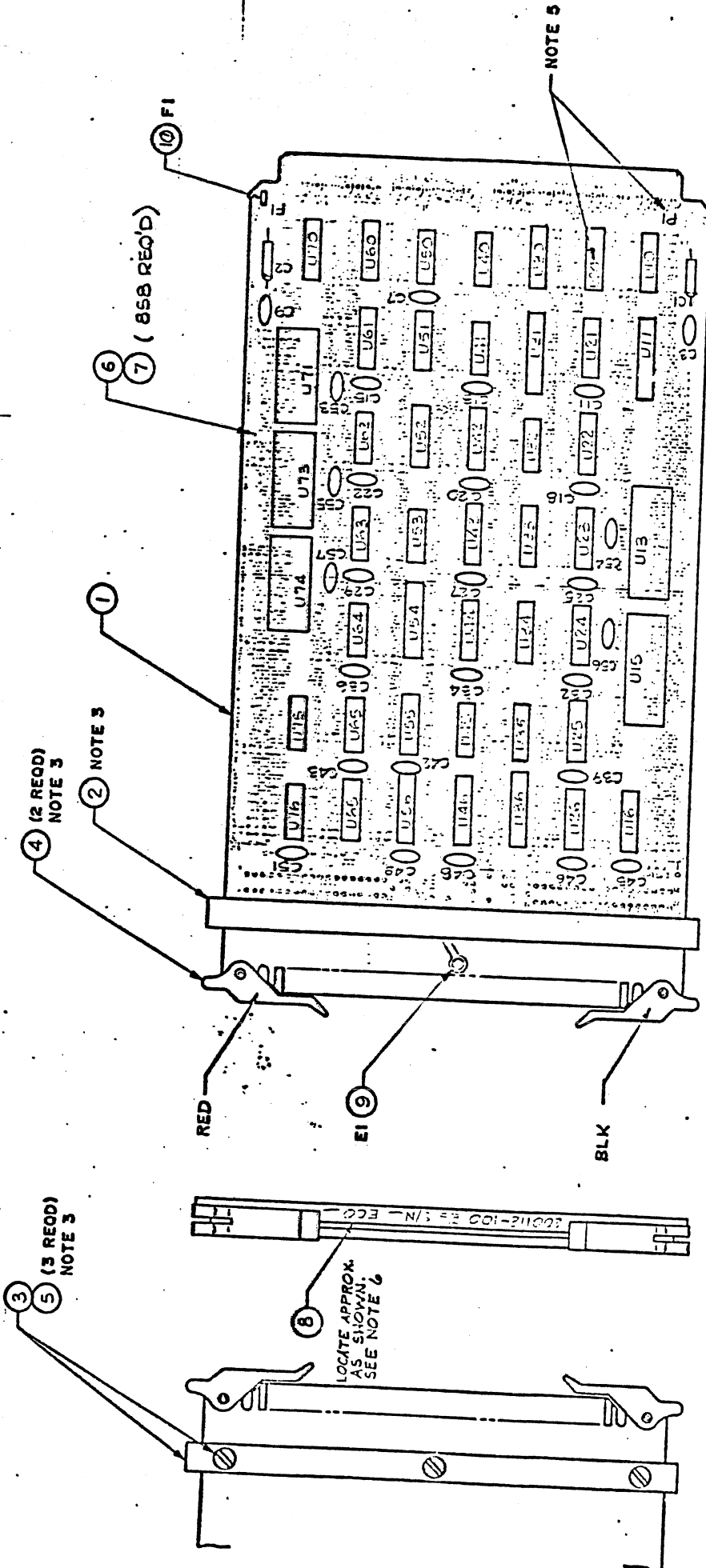
REV	NC
-----	----







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

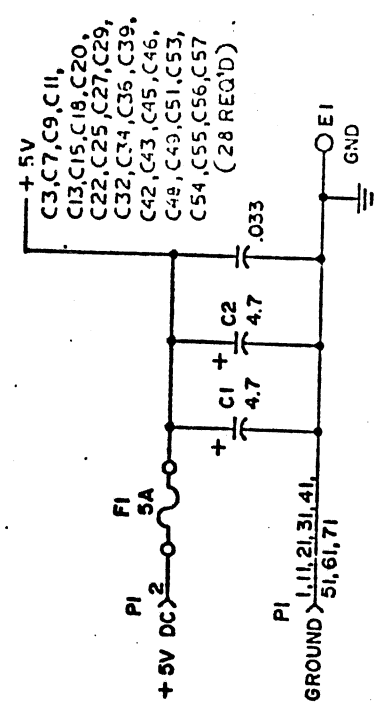


- NOTES:**
1. ASSEMBLE PER EBS WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 4 ) AND SPACERS, (ITEMS 2 & 5) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. THE LOCATION NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK E IS ASSY. NO, S/H & ECO LEVEL ON ITEM 8.

REFERENCE DOCUMENTS  
 LOGIC DIAGRAM --- 200112 - 600  
 PARTS LIST----- PL200112-100

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±		CONTRACT NO. DRAWN BY: S. R. INMANWAY 2-19-77 CHECKED BY: S. R. INMANWAY 23 FEB 77	SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
MATERIAL 2001-30-10X ANODIZED AL NEXT ASSY	FINISH USED ON	MECH ELEC PROJ. ENG. APPROVED	CARD ASSEMBLY BRIGHTNESS (w/w)
SEE PARTS LIST		SIZE C 53938	REV NC

ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED

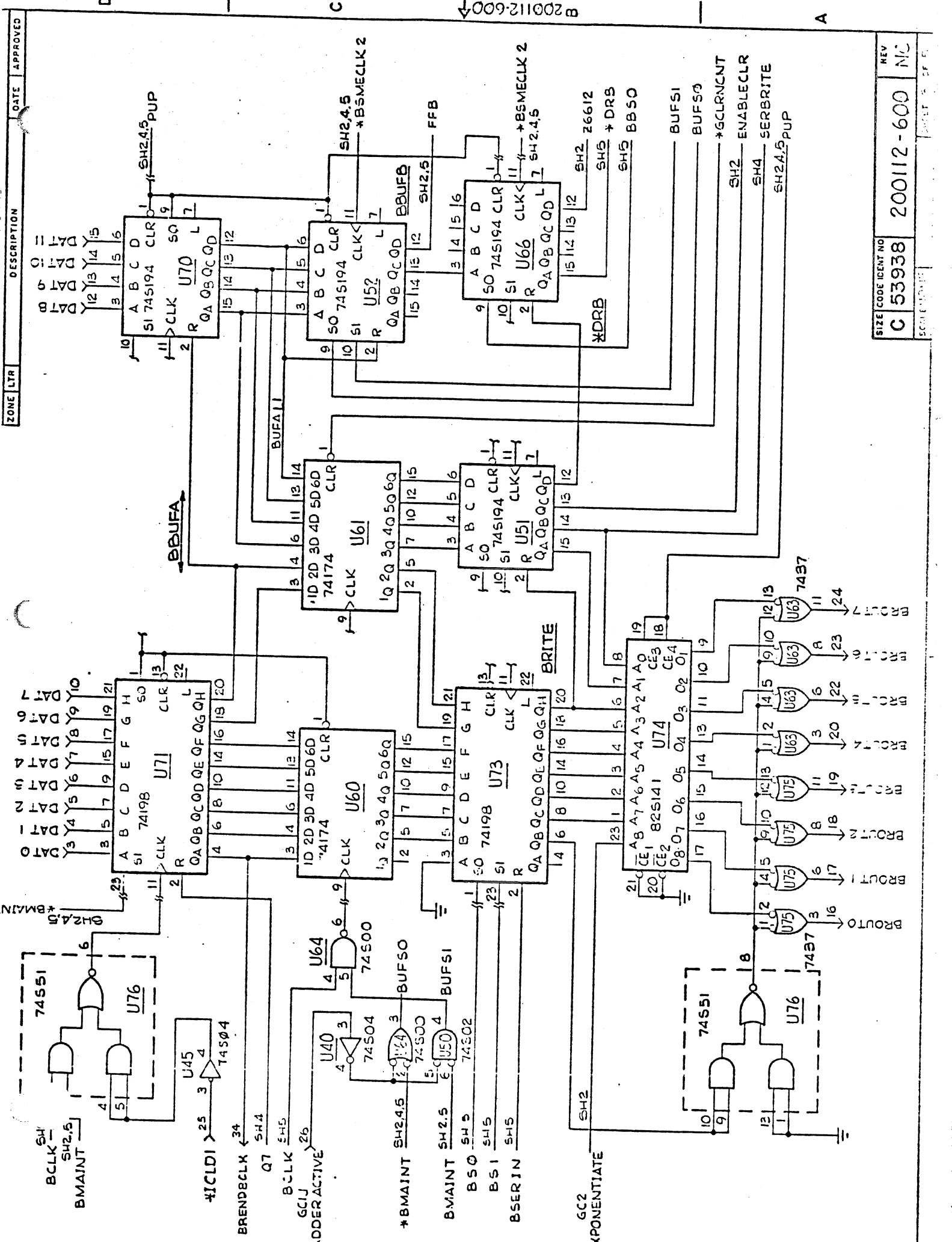


2. NUMBERS SHOWN REFER TO CONNECTOR PI.  
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.  
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.  
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.  
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).  
 ON ALL 16 PIN I.C.'S, PIN 8 IS 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. 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		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CHECKED		BRIGHTNESS CONTROL	
MECH		W/W	
ELEC		SIZE	
PROJ. ENG.		C 53938	
APPROVED		200112-600	
MATERIAL		REV	
FINISH		MC	
NOVO SP			
USED ON			
NEXT ASSY			
APPLICATION			





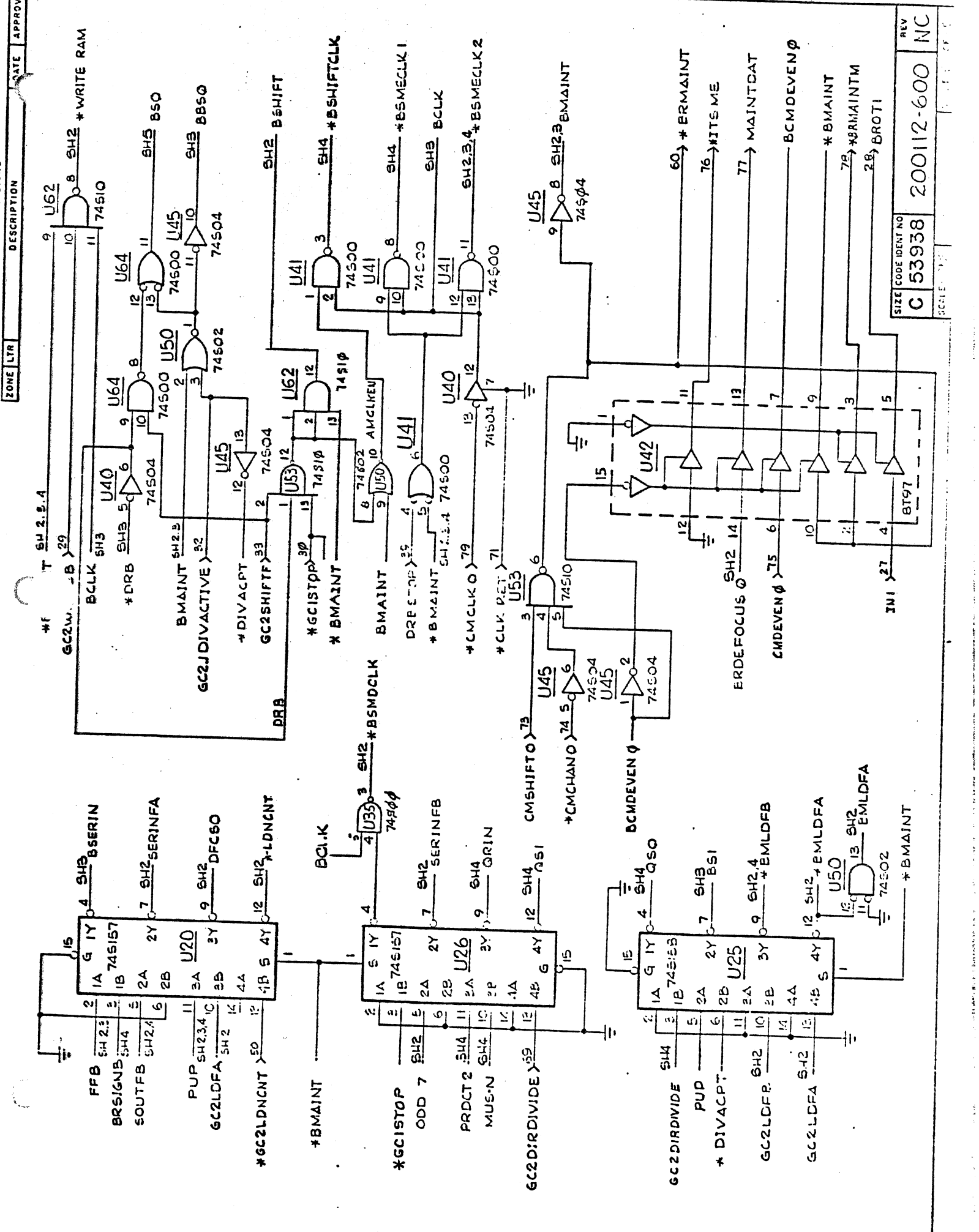
ZONE LTR DESCRIPTION DATE APPROVED

D C B 200112-600 A

SIZE	CODE IDENT NO	REV
C	53938	200112-600
SCALE		REV
		NC

EXPLANATION OF SYMBOLS: A solid line represents a logic connection. A line with a dot represents a connection to ground. A line with a circle represents a connection to power. A line with a triangle represents a connection to a specific logic state.

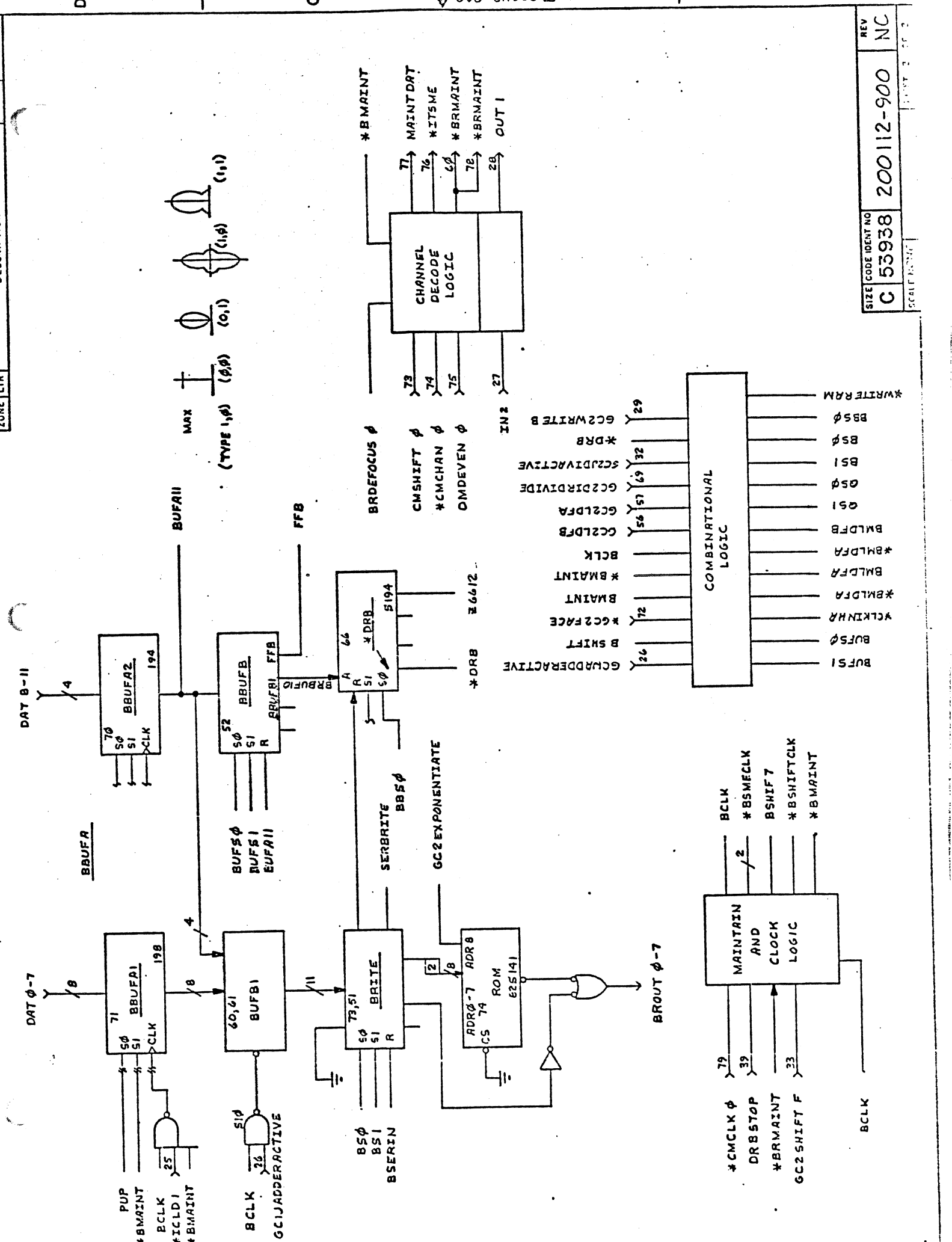




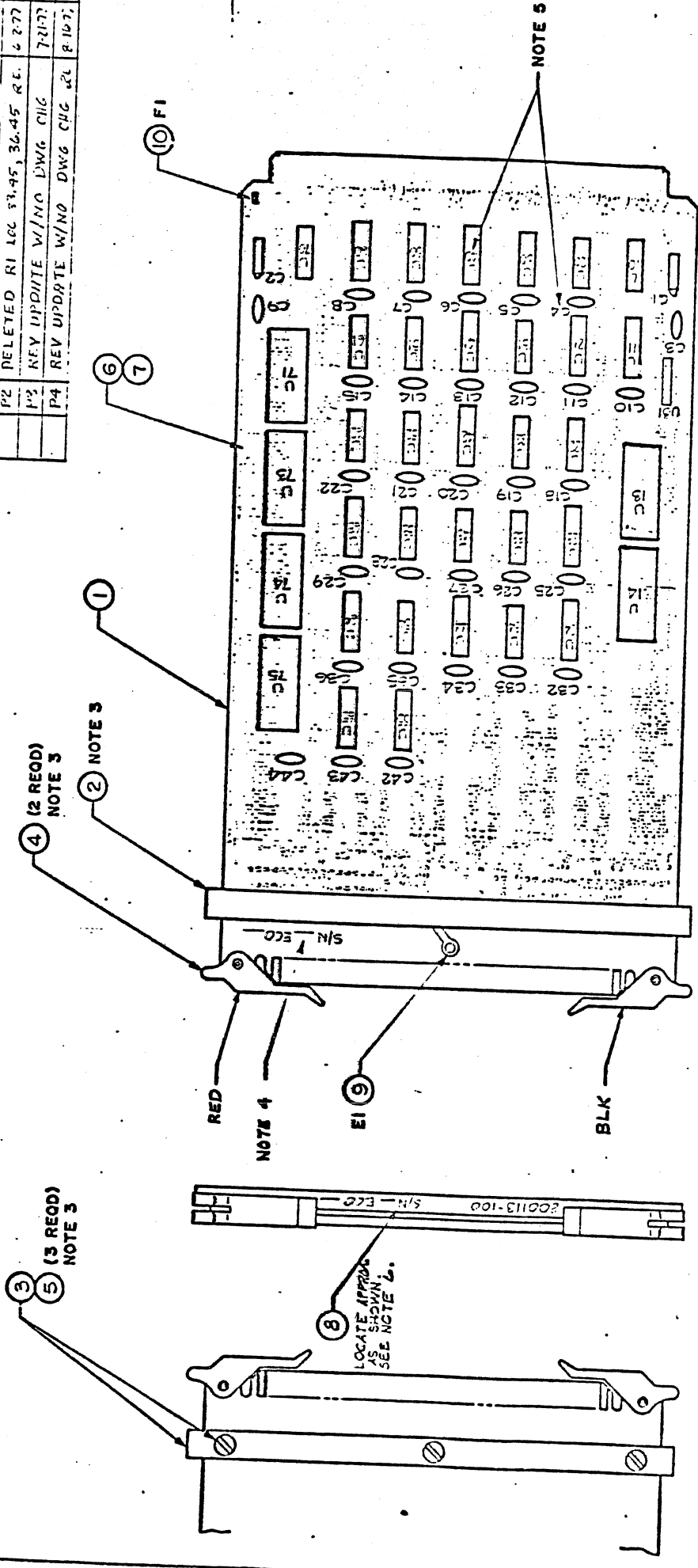
REV	NC
SIZE	C 53938
CODE IDENT NO	200112-600
SCALE	







REVISIONS			DATE	APPROVED
ZONE	LTR	DESCRIPTION		
	P1	EXTENSIVE CHANGES	5-27-77	
	P2	DELETED RI LOC 33.95, 36.45 RE.	6-27-77	
	P3	KEY UPDATE W/NO DWG CHG	7-17-77	
	P4	REV UPDATE W/NO DWG CHG	8-10-77	



COMPONENT SIDE

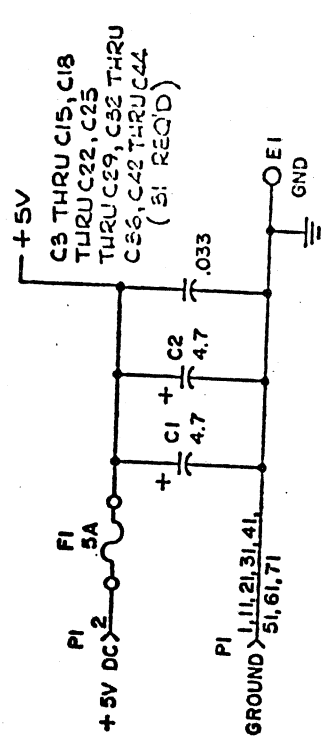
REFERENCE DOCUMENTS  
 LOGIC DIAGRAM --- 200113-600  
 PARTS LIST --- PL200113-100

- NOTES:
1. ASSEMBLE PER E & S WORKMANSHIP STANDARDS
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK E & S ASSY. NO, S/N & ECO LEVEL ON ITEM B.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	
TOLERANCES ON	.XX ±	DRAWN BY	BRUNSWY 2-5-77
.XXX ±		CHECKED BY	19 FEB 77
ANGLES ±		MELCH	
		LLEC	
		PROJ ENG	1/10/77
		APPROVED	1/10/77
MATERIAL	SEE PARTS LIST		
FINISH			
ECO130-100	MOVUVIEW		
NEXT ASSY	USED ON		
APPLICATION			

SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CARD ASSEMBLY GP CONTROL 1 W/W	
SITE CODE/IDENT NO C 53938	REV P4
200113-100	

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	P1	EX 7E N, IVL (P.C.)	5-22-77	
	P2	DELETE RI LOC 33-45, 36, 37	6-2-77	
	P3	REV UPDATE W/NO DWG CHG.	7-25-77	
	P4	REV UPDATE W/NO DWG CHG	8-16-77	

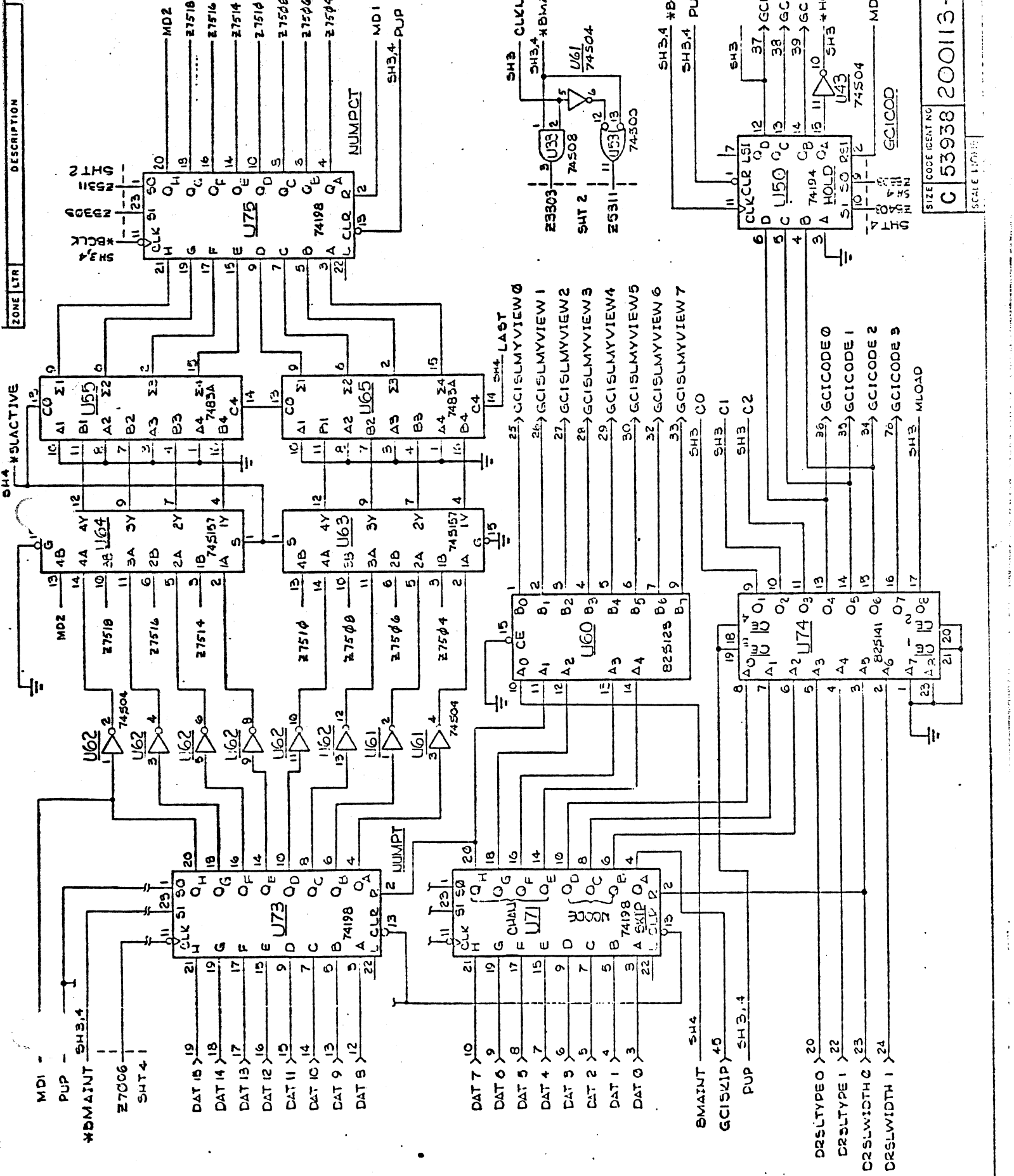


- ON IC. 7483A LOC 55, 65  
PIN 12 - GND  
PIN 5 - PWR (+5V).
- NUMBERS SHOWN REFER TO CONNECTOR P1.  
ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.  
RESISTANCE VALUES ARE EXPRESSED IN OHMS,  
K DENOTES 1000.  
RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.  
ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND  
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).

NOTES:  
1. UNLESS OTHERWISE SPECIFIED;

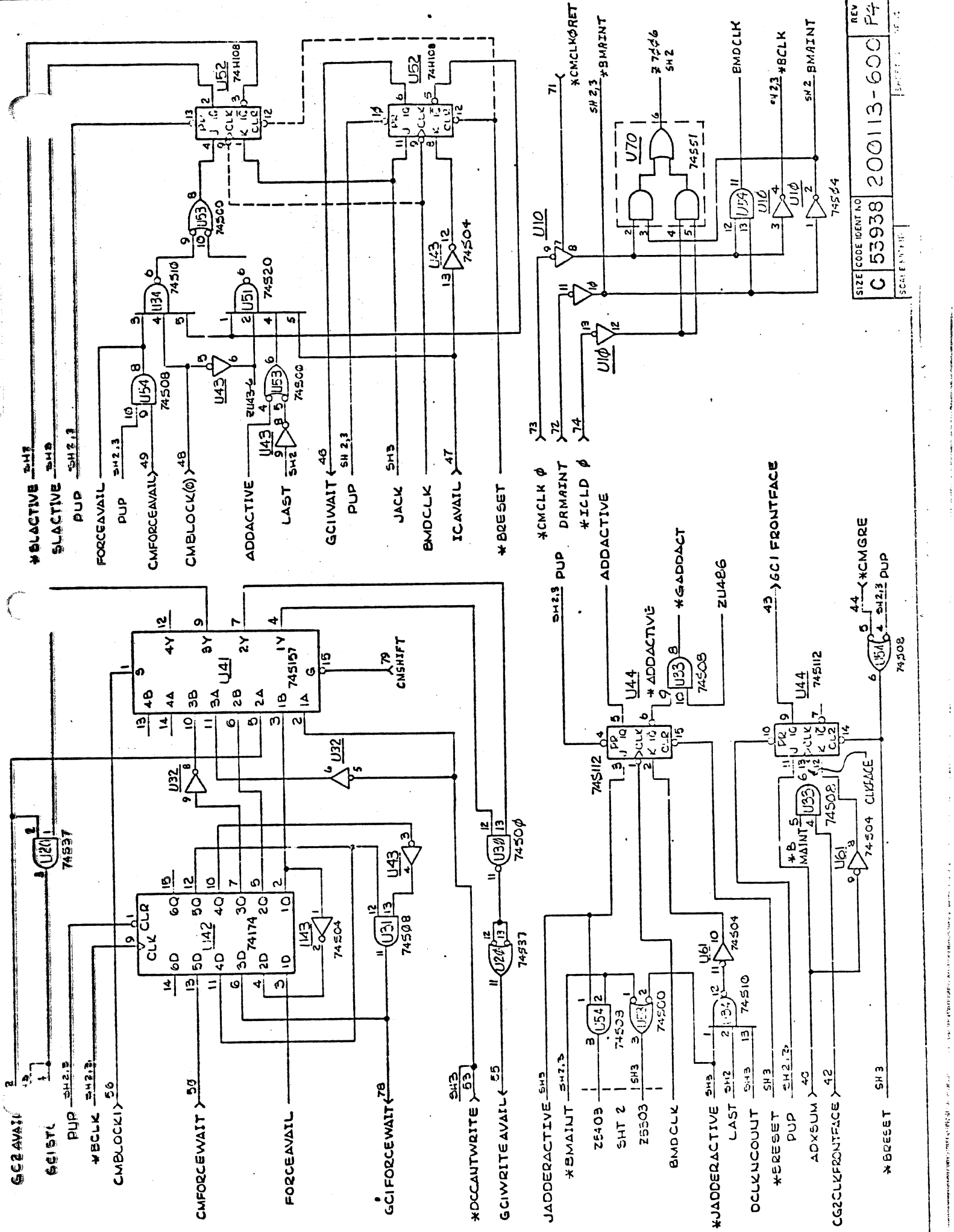
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TOLERANCES ON		ANGLES ±		MATERIAL		FINISH		
.XX ±	.XXX ±	✓								
200/30-100	NOVONVIEW									
NEXT ASSY	USED ON									
APPLICATION										
CONTRACT NO.										
DRAWN R MELLUS 8-21-77										
CHECKED <i>[Signature]</i> 9 JUN 77										
MECH										
ELEC <i>[Signature]</i> 6 JUN 77										
PROJ. ENG. <i>[Signature]</i> 8 JUN 77										
APPROVED										
SEE SEPARATE PARTS LIST										
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112										
GP CONTROL I (w/w)										
SIZE	CODE IDENT NO	REV								
C	53938	200113-600	P4							

ZONE LTR	DESCRIPTION	DATE	APPROVED
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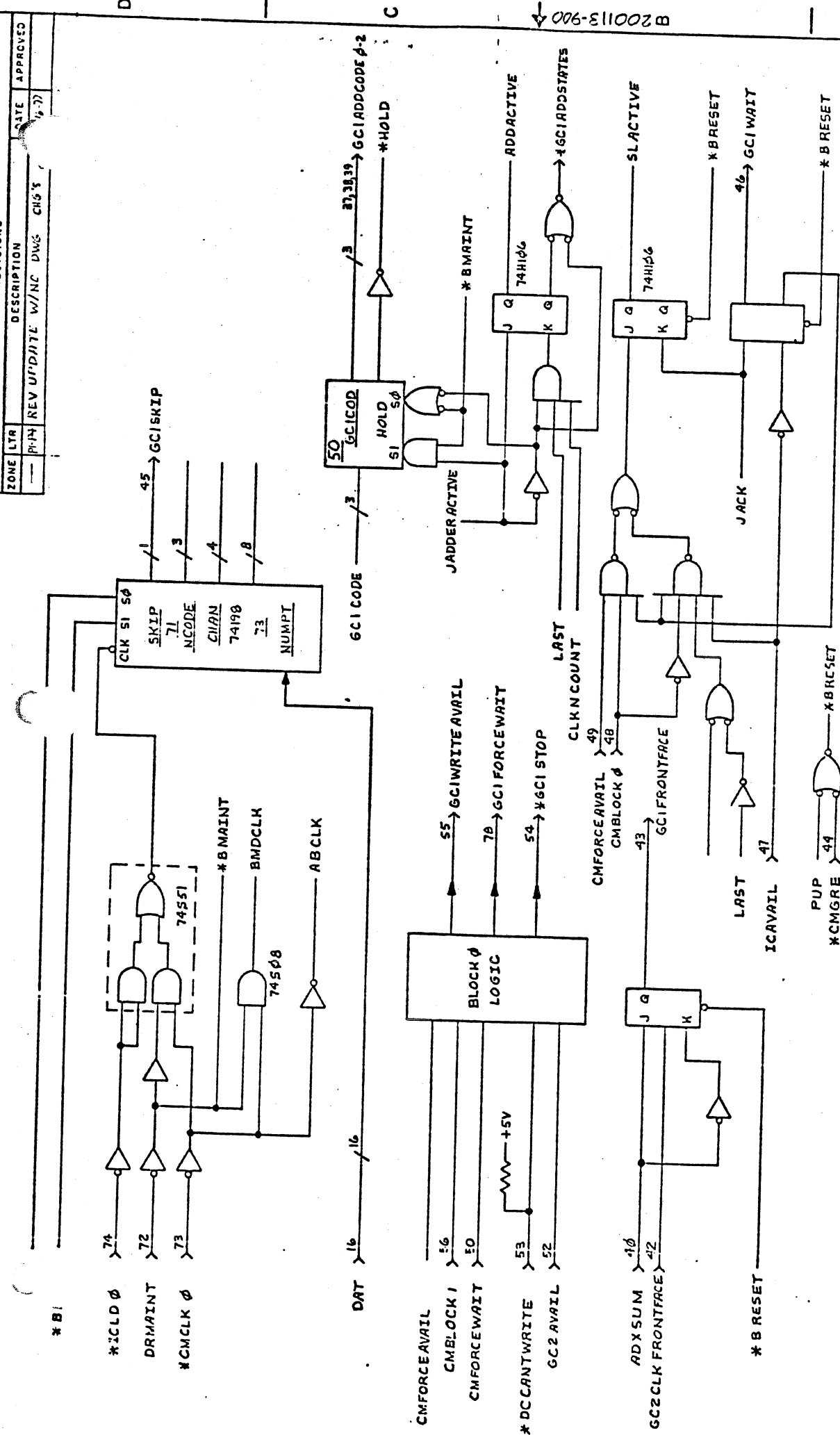
SIZE	CODE	REV
C	53938	200113-600
SCALE	1:1	PAGE 2 OF 3





SIZE	CODE IDENT NO	REV
C 53938	200113-600	P4
SCHEMATIC		SHEET 1

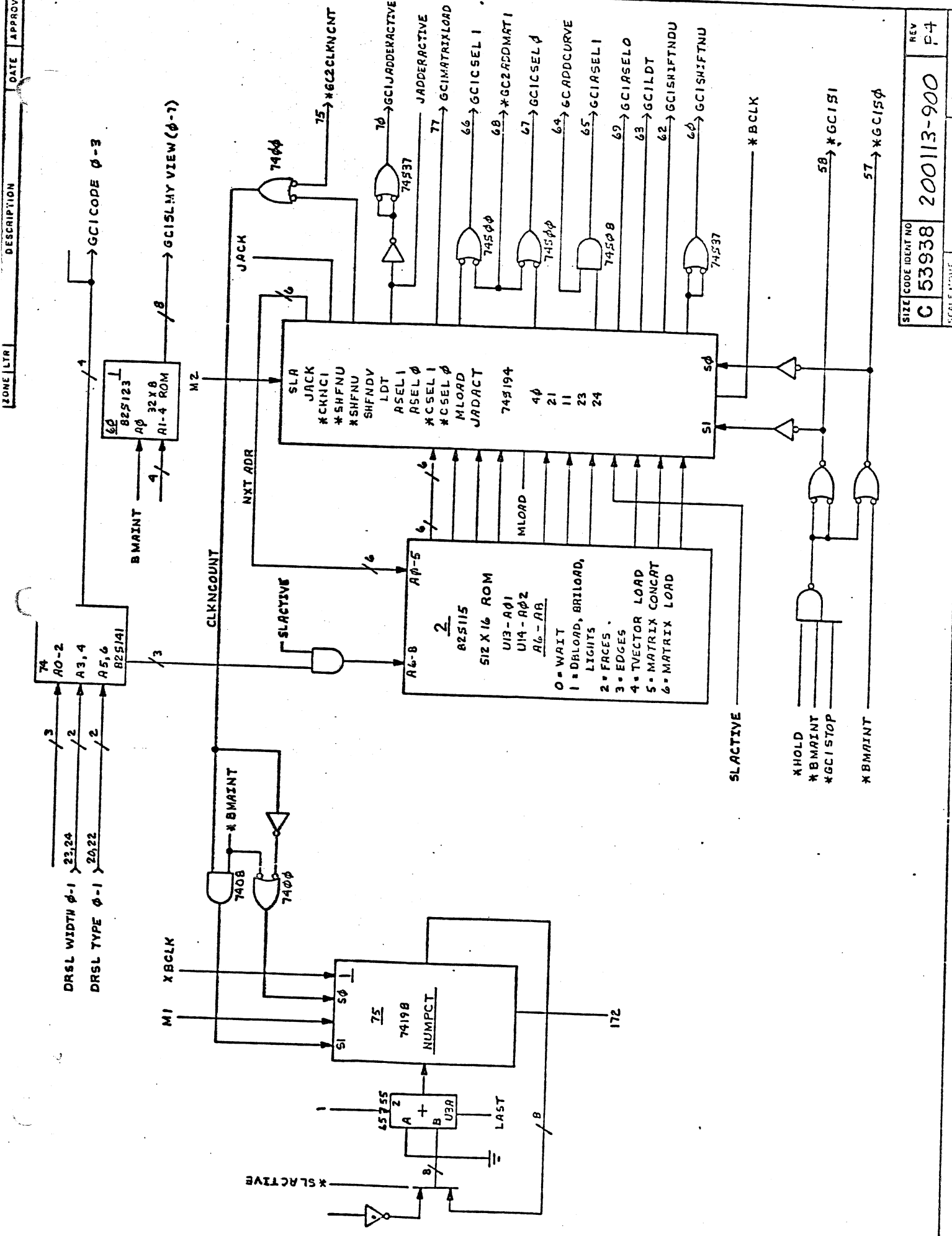
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		REV UP/DTE W/NC DWG CHG'S	5/77	



SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		DRAWN R. E. [Signature] 5-27-77	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CHECKED	
TOLERANCES ON		MECH	
.XX ±		ELEC	
.XXX ±		PROJ. ENG	
ANGLES ±		APPROVED	
MATERIAL		GP CONTROL I	
FINISH		SIZE CODE IDENT NO	
NEXT ASSY USED ON		C 53938	
APPLICATION		200113-900	
		REV	
		P4	

B 200113-900

A



DRSL WIDTH 0-1 23,24  
DRSL TYPE 0-1 20,22

MI XBCLK  
CLKNCOUNT  
NXT ADR  
SLACTIVE

74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

\*SLACTIVE  
\*BMAINT  
\*GCI STOP  
\*BMAINT

\*GCI CODE 0-3  
\*GCI SL MRY VIEW (0-7)  
\*GCI J ADDERACTIVE  
\*J ADDERACTIVE  
\*GCI CSEL 1  
\*GCI ADDDCURVE  
\*GCI ASEL 1  
\*GCI IASEL 1  
\*GCI IASEL 0  
\*GCI I DLT  
\*GCI SHIF TNDU  
\*GCI SHIF TNU  
\*BCLX  
\*GCI I S I  
\*GCI I S 0

0=WAIT  
1=DELOAD, BRILOAD, LIGHTS  
2=FRACES  
3=EDGES  
4=VECTOR LOAD  
5=MATRIX CONCAT  
6=MATRIX LOAD

825123  
32 X 8  
A1-4 ROM

825141

825115  
512 X 16 ROM  
U13-A01  
U14-A02  
A6-AB

74198  
NUMFACT

74194

74508  
74509

74537

7408  
7409

825123

825141

825115

74198

74194

74508

74509

74537

7408

7409

825123

825141

825115

74198

74194

74508

74509

74537

7408

7409

B 200113-900

C

D

A

SCALE NAME

REV

P4

SIZE CODE IDENT NO

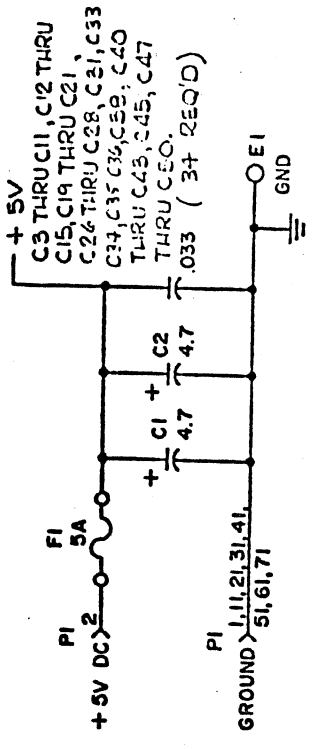
C 53938

200113-900

FIG 2 OF 2



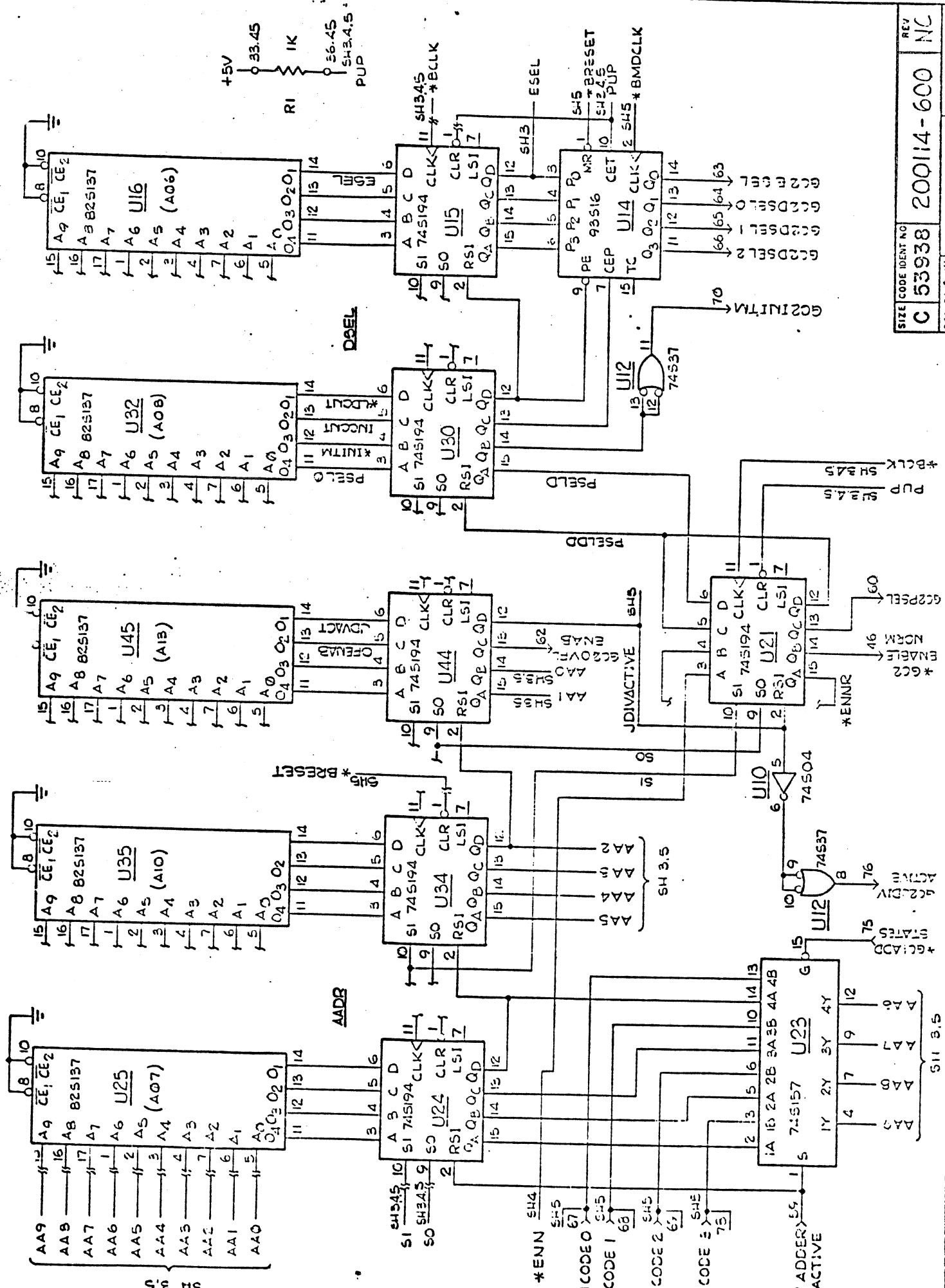




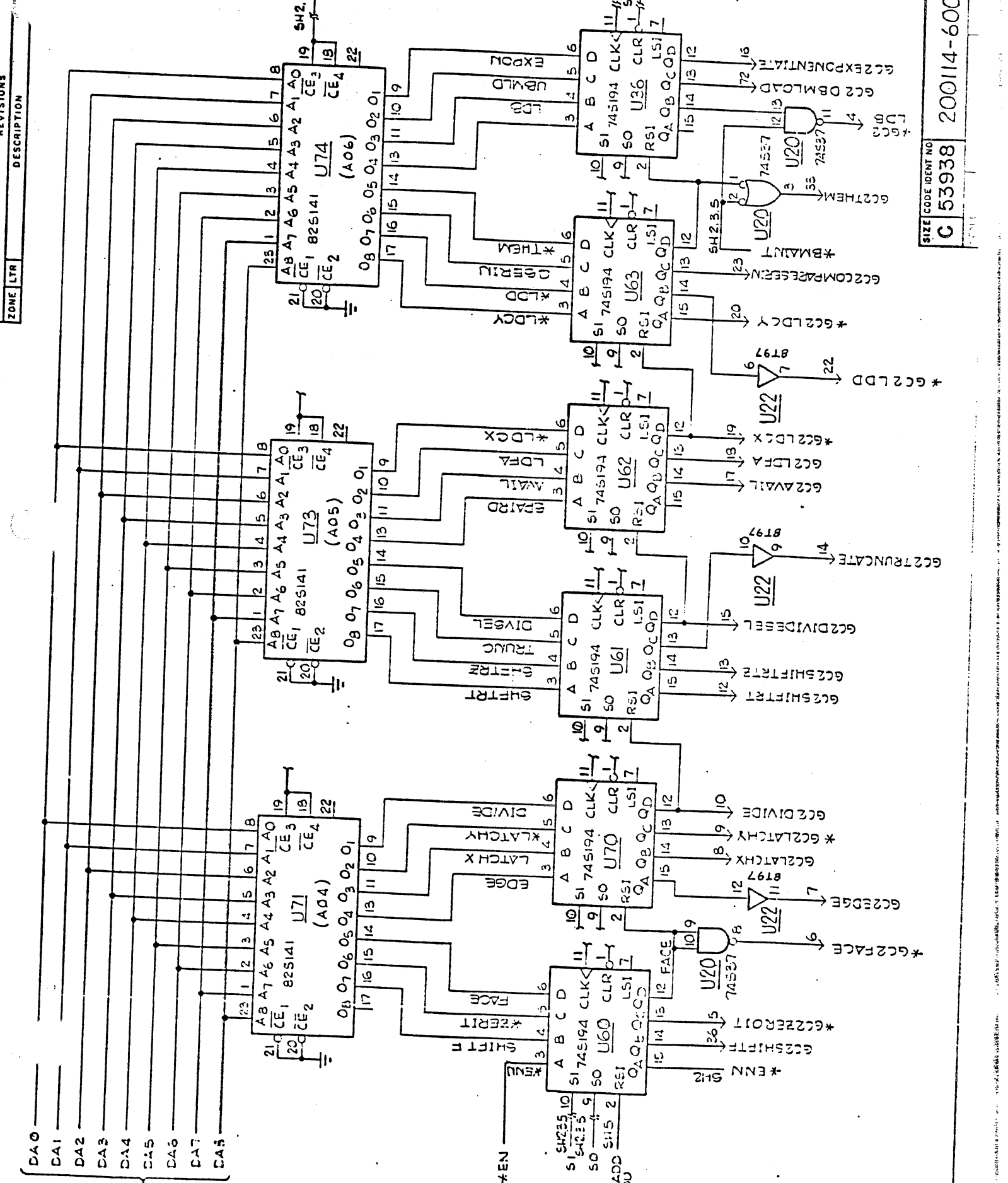
1. NUMBERS SHOWN REFER TO CONNECTOR P1.  
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.  
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.  
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.  
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).  
 ON ALL 16 PIN I.C.'S, PIN 8 IS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

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±		CONTRACT NO.	
MATERIAL		DRAWN A. J. ... NOV 2, 1977	
FINISH		CHECKED R. ... JUN 77	
200:30-100		MECH	
NEXT ASSY		ELEC. ...	
USED ON		PROJ. ENG. ...	
APPLICATION		APPROVED	
SEE SEPARATE PARTS LIST			
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112			
GP CONTROL II (w/w)			
SIZE	CODE IDENT NO	REV	
C	53938	200114-600	NC

NOTES:







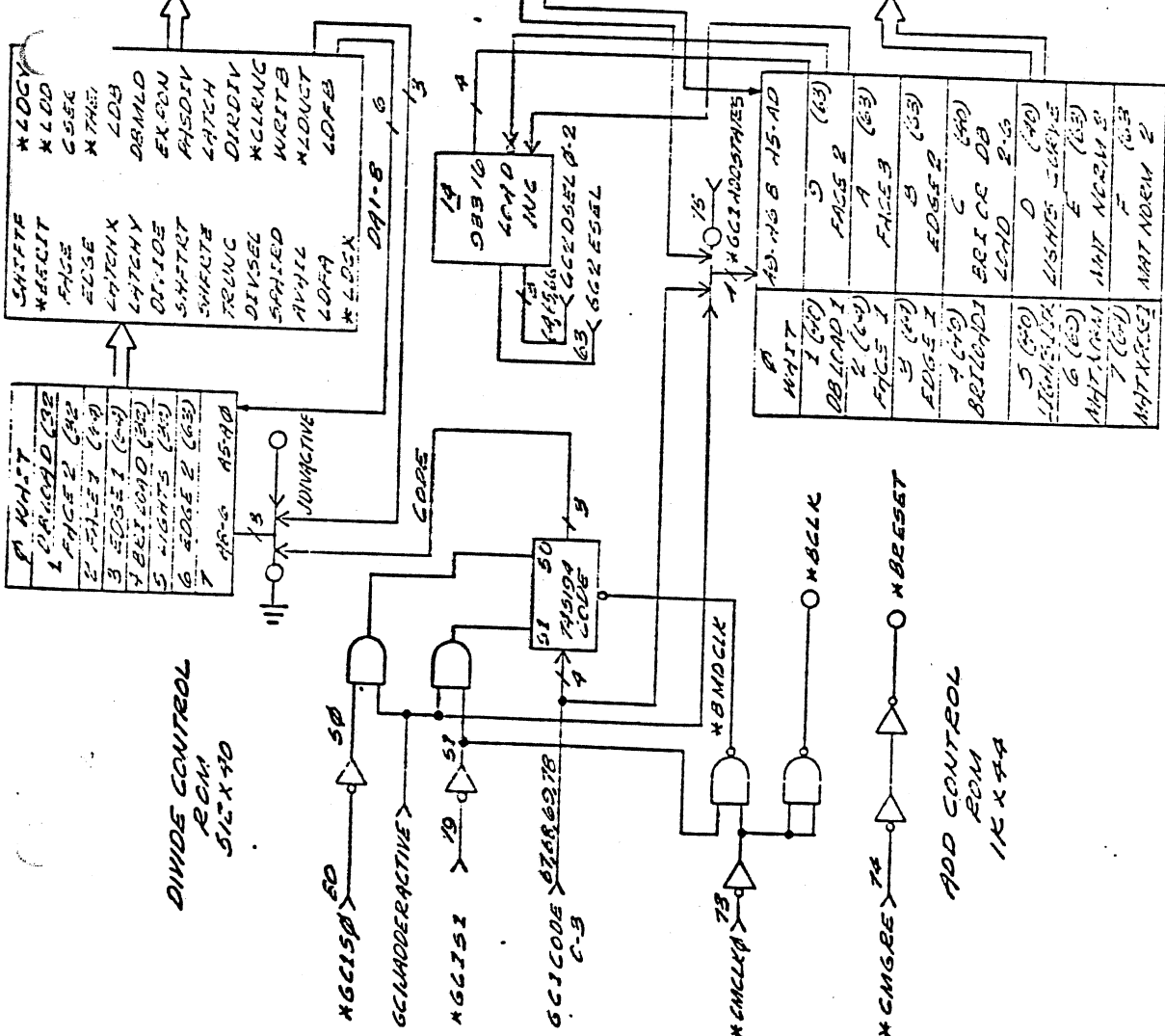


ZONE	LTR	DESCRIPTION	DATE	APPROVED

- 24 GCR ASSCAN
- 25 GCR LATCH
- 26 GCR DIRECTION
- 27 GCR CLEAR COUNT
- 28 GCR LATCH B
- 29 GCR LATCH C
- 30 GCR SHIFT F
- 31 GCR ZEROCOUNT
- 32 GCR FACE
- 33 GCR EDGE
- 34 GCR LATCH X
- 35 GCR LATCH Y
- 36 GCR SHIFTER
- 37 GCR TRUNTS
- 38 GCR DIVSEL
- 39 GCR DIVSEL
- 40 GCR DIVSEL
- 41 GCR DIVSEL
- 42 GCR DIVSEL
- 43 GCR DIVSEL
- 44 GCR DIVSEL
- 45 GCR DIVSEL
- 46 GCR DIVSEL
- 47 GCR DIVSEL
- 48 GCR DIVSEL
- 49 GCR DIVSEL
- 50 GCR DIVSEL
- 51 GCR DIVSEL
- 52 GCR DIVSEL
- 53 GCR DIVSEL
- 54 GCR DIVSEL
- 55 GCR DIVSEL
- 56 GCR DIVSEL
- 57 GCR DIVSEL
- 58 GCR DIVSEL
- 59 GCR DIVSEL
- 60 GCR DIVSEL
- 61 GCR DIVSEL
- 62 GCR DIVSEL
- 63 GCR DIVSEL

- 40 GCR LOGIC
- 41 GCR LOG
- 42 GCR LOG
- 43 GCR LOG
- 44 GCR LOG
- 45 GCR LOG
- 46 GCR LOG
- 47 GCR LOG
- 48 GCR LOG
- 49 GCR LOG
- 50 GCR LOG
- 51 GCR LOG
- 52 GCR LOG
- 53 GCR LOG
- 54 GCR LOG
- 55 GCR LOG
- 56 GCR LOG
- 57 GCR LOG
- 58 GCR LOG
- 59 GCR LOG
- 60 GCR LOG
- 61 GCR LOG
- 62 GCR LOG
- 63 GCR LOG

- 64 GCR DIVSEL
- 65 GCR DIVSEL
- 66 GCR DIVSEL
- 67 GCR DIVSEL
- 68 GCR DIVSEL
- 69 GCR DIVSEL
- 70 GCR DIVSEL
- 71 GCR DIVSEL
- 72 GCR DIVSEL
- 73 GCR DIVSEL
- 74 GCR DIVSEL
- 75 GCR DIVSEL
- 76 GCR DIVSEL
- 77 GCR DIVSEL
- 78 GCR DIVSEL
- 79 GCR DIVSEL
- 80 GCR DIVSEL
- 81 GCR DIVSEL
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- 84 GCR DIVSEL
- 85 GCR DIVSEL
- 86 GCR DIVSEL
- 87 GCR DIVSEL
- 88 GCR DIVSEL
- 89 GCR DIVSEL
- 90 GCR DIVSEL
- 91 GCR DIVSEL
- 92 GCR DIVSEL
- 93 GCR DIVSEL
- 94 GCR DIVSEL
- 95 GCR DIVSEL
- 96 GCR DIVSEL
- 97 GCR DIVSEL
- 98 GCR DIVSEL
- 99 GCR DIVSEL
- 100 GCR DIVSEL



DIVIDE CONTROL  
ROM  
512 X 10

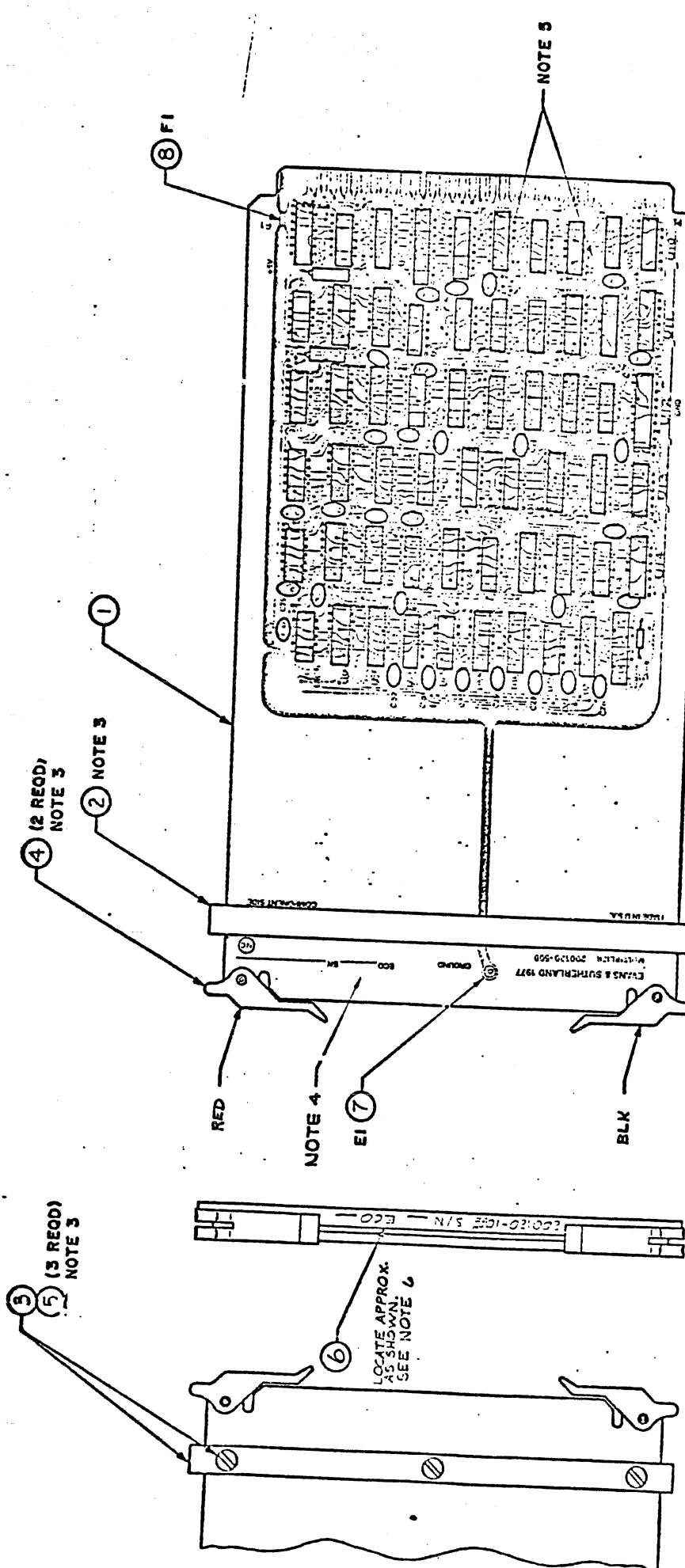
ADD CONTROL  
ROM  
1K X 44

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

CONTRACT NO.	DEF SEPARATE PARTS LIST
DRAWN BY: M.P. S. 10/57	EVANS & SUTHERLAND
CHECKED BY: M.P. S. 24 AUG 77	COMPUTER CORPORATION
MECH	SALT LAKE CITY, UTAH 84112
ELEC	
PROJ. ENG	
APPROVED	
GP CONTROL 2	
BLOCK DIAGRAM	
SIZE	CODE IDENT NO
C 53938	200114-300
REV	NC

B 200114-920

A



COMPONENT SIDE

REFERENCE DOCUMENTS  
 LOGIC DIAGRAM --- 200120-600  
 PARTS LIST ----- PL 200120-100

- NOTES:
1. ASSEMBLE PER EBS WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2, 8.5) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK E'S ASSY. NO, S/N & ECO LEVEL ON ITEM 6.

SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		DRAWN EIMCLLUS 18-FEB-77	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CHECKED BY [Signature] 19/2/77	
TOLERANCES ON		MECH	
.XX ±		ELEC	
.XXX ±		PROJ ENG [Signature]	
ANGLES ±		APPROVED [Signature] 10-2-77	
MATERIAL		SEE PARTS LIST	
FINISH		NEXT ASSY USED ON	
APPLICATION		200120-100	
SIZE CODE IDENT NO		C 53938	
REV		200120-100	
SCALE		NC	

A

NOTE 5

NOTE 4

LOCATE APPROX. AS SHOWN. SEE NOTE 6

RED

BLK

4 (2 REED) NOTE 3

2 NOTE 3

1

5 (3 REED) NOTE 3

3

6

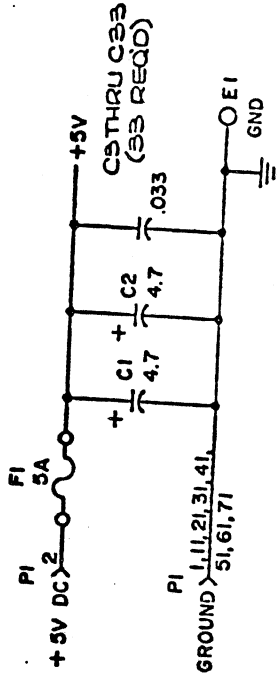
7

8 FI

200120-100



ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED



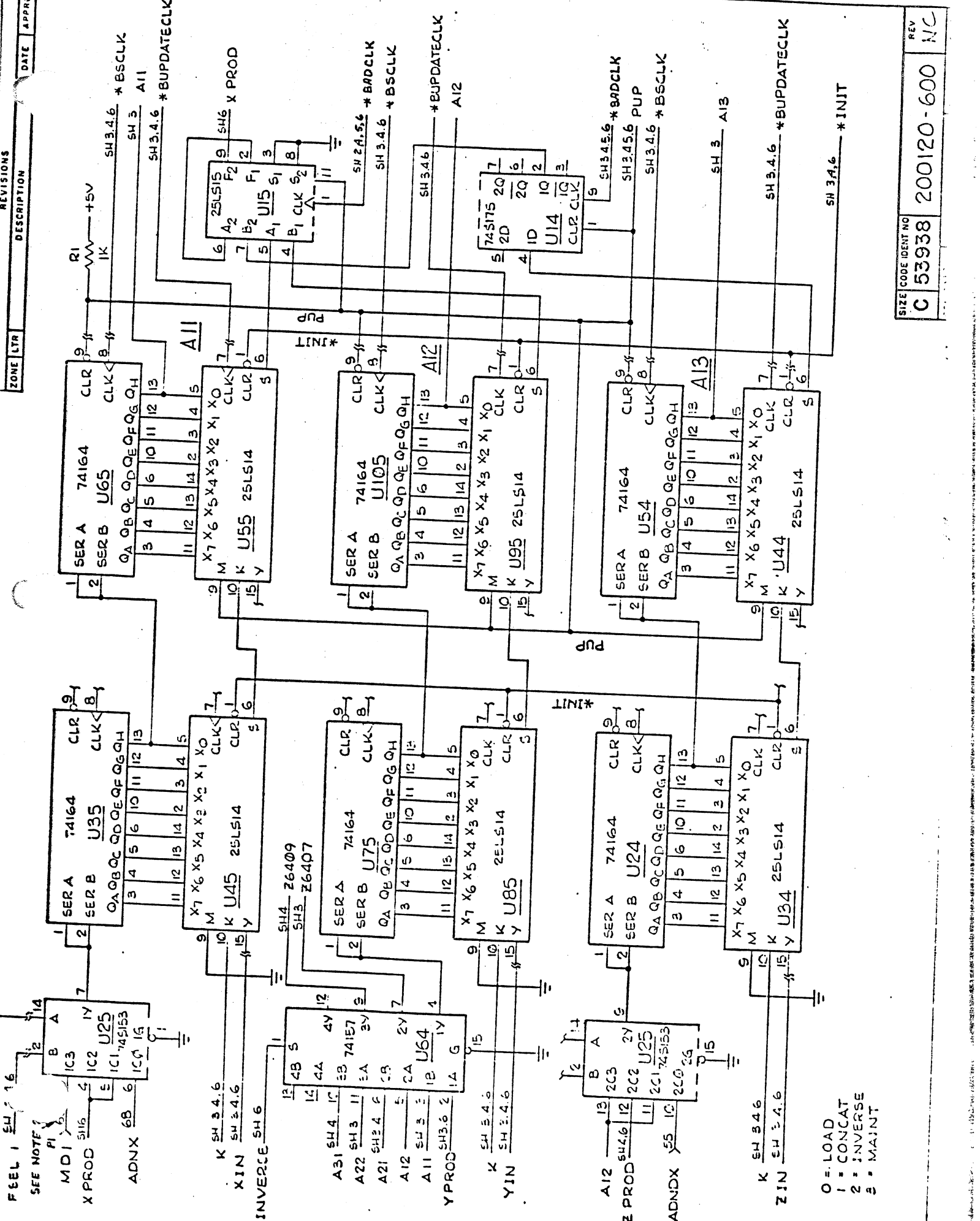
NUMBERS SHOWN REFER TO CONNECTOR PI.  
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.  
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.  
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.  
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).  
 ON ALL 16 PIN I.C.'S, PIN 8 IS GROUND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

SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		DRAWN BY: [Signature] 2/11/77	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CHECKED BY: [Signature] 2/11/77	
.XX ±		MECH	
.XXX ±		ELEC: [Signature] 6/2/77	
ANGLES ±		PROJ ENG: [Signature] 6/2/77	
✓		APPROVED	
MATERIAL		200120-600 200120-600	
FINISH		NEXT ASSY USED ON	
APPLICATION		APPLICATION	
SIZE CODE IDENT NO		C 53938	
REV		PI	

MULTIPLIER  
(W/W)

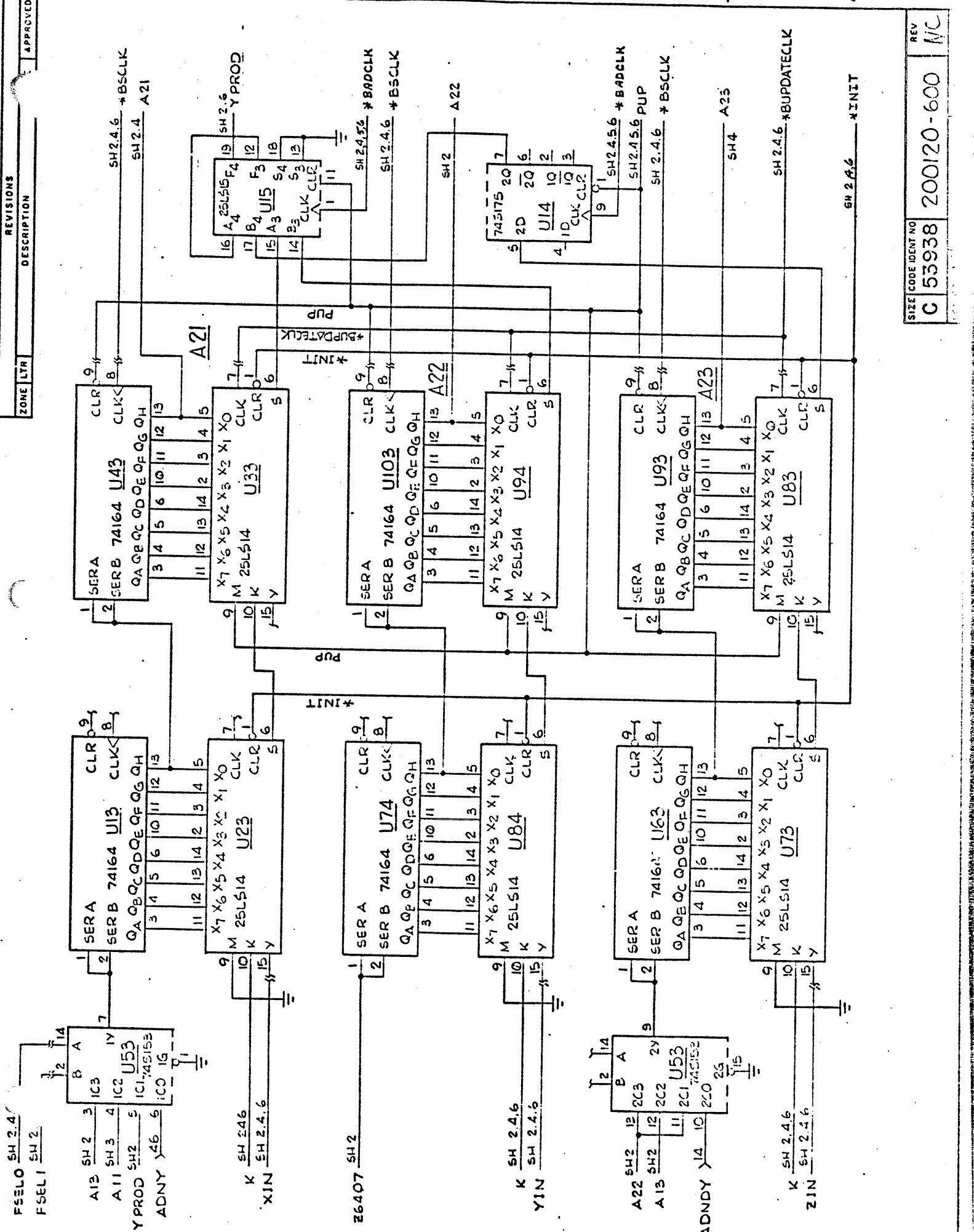
200120-600  
 C 53938  
 PI

200120-600



SIZE CODE IDENT NO  
**C 53938**  
 200120-600  
 REV  
**NC**

200120-600  
 B  
 C  
 A



FSELO SH 2.4  
 FSEL1 SH 2

A13 SH 2  
 A11 SH 3  
 Y PROD SH 2  
 ADNY X46 6

K SH 2.4.6  
 XJN SH 2.4.6

Z6407 SH 2

K SH 2.4.6  
 YJN SH 2.4.6

A22 SH 2  
 A13 SH 2  
 ADNDY X14 10

K SH 2.4.6  
 ZJN SH 2.4.6

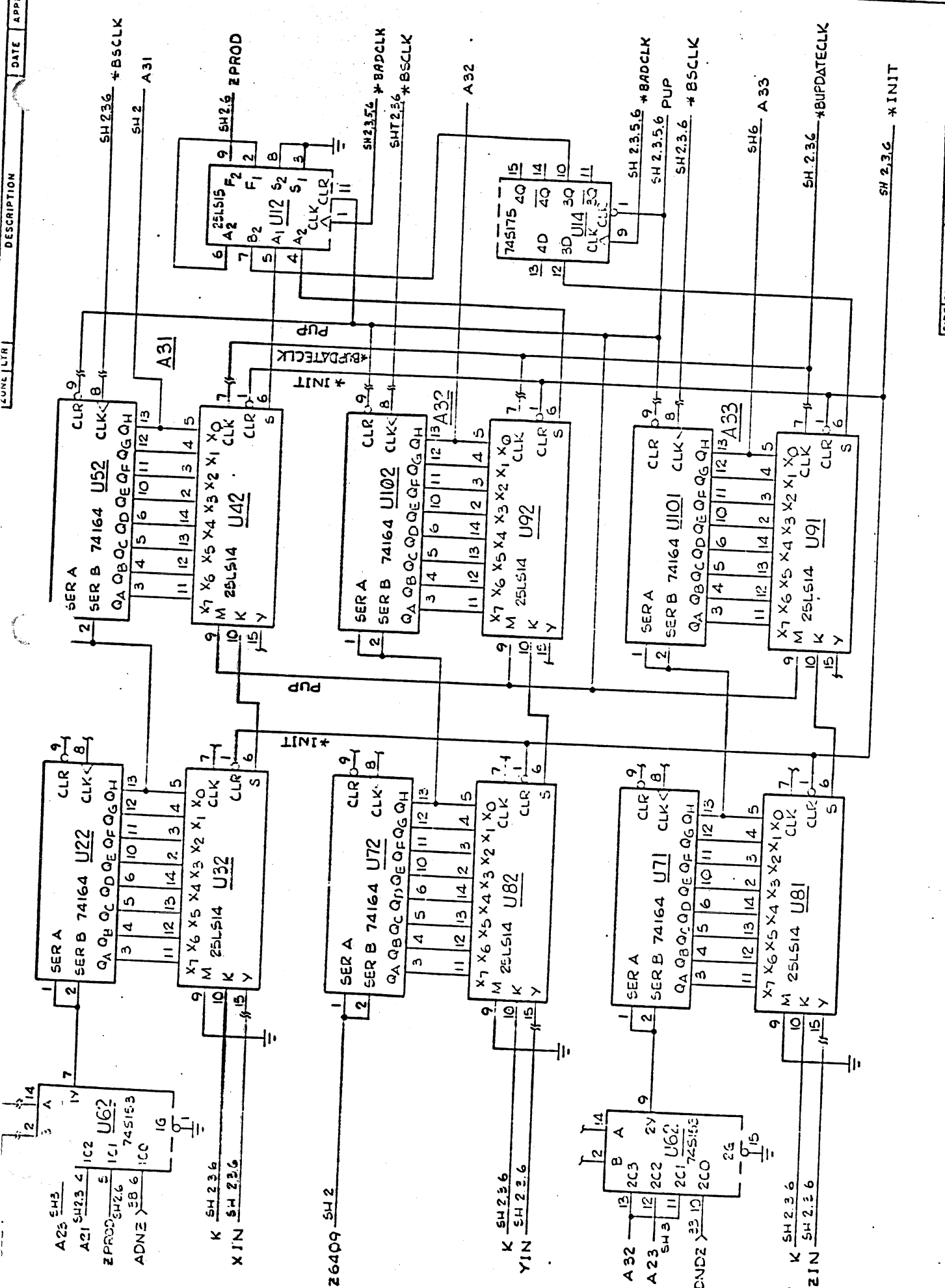
SIZE CODE IDENT NO  
**C 53938**

REV  
**NC**

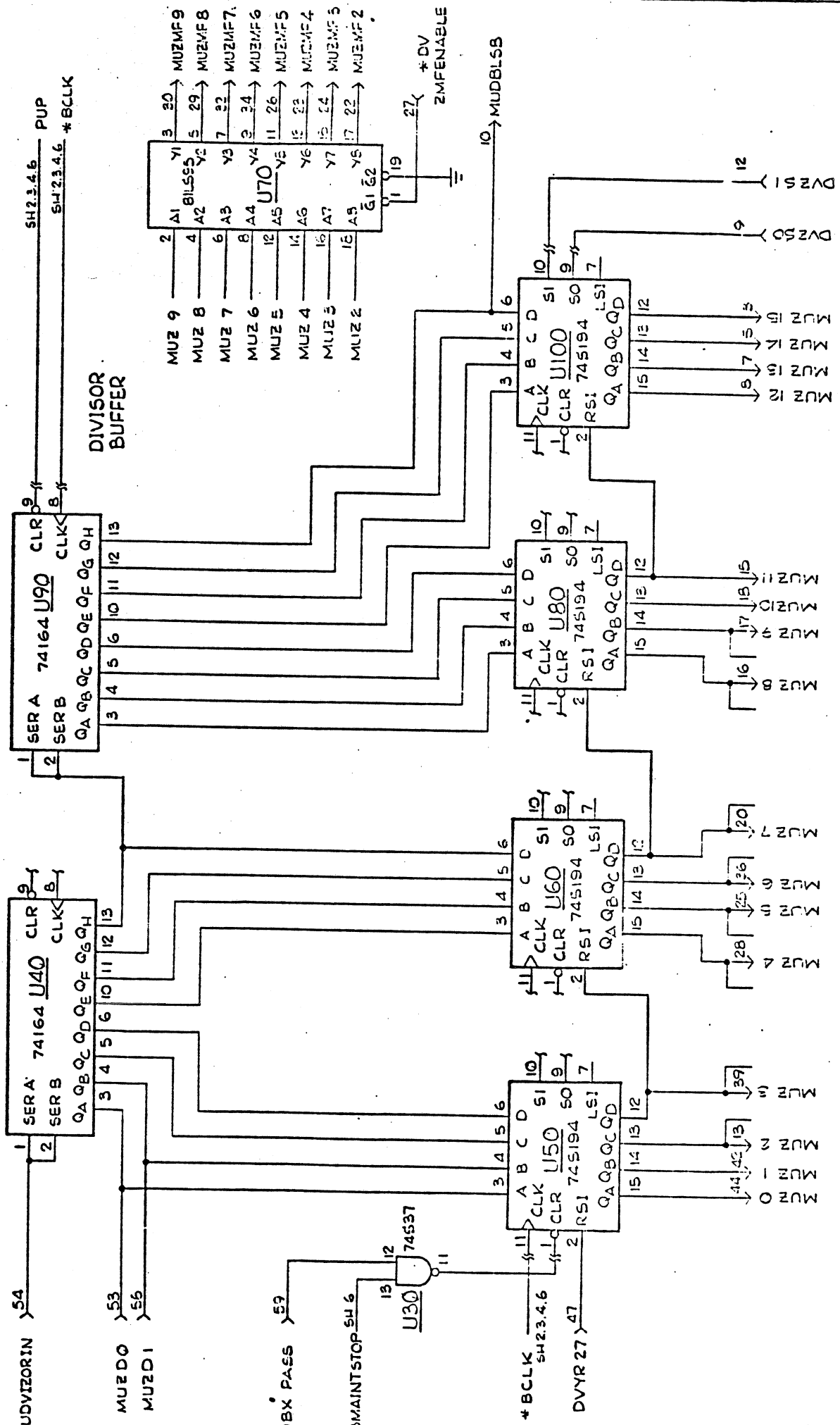
200120-600

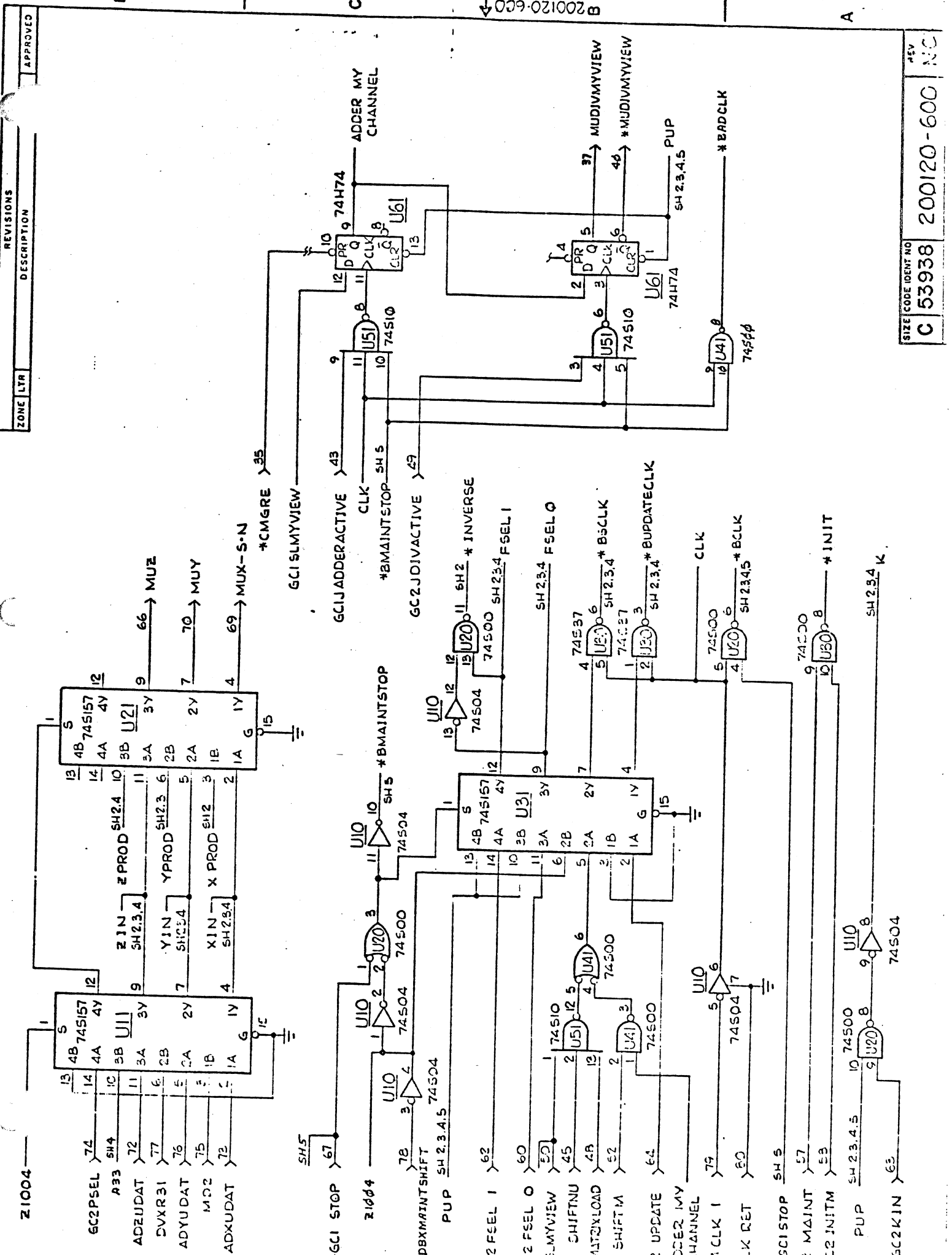
B 200120-600

DATE: 11/18/88 BY: J. W. BERRY



SIZE	CODE IDENT NO	REV
C	53938	200120-600
		NC





ZONE	LTR	DESCRIPTION	APPROVED

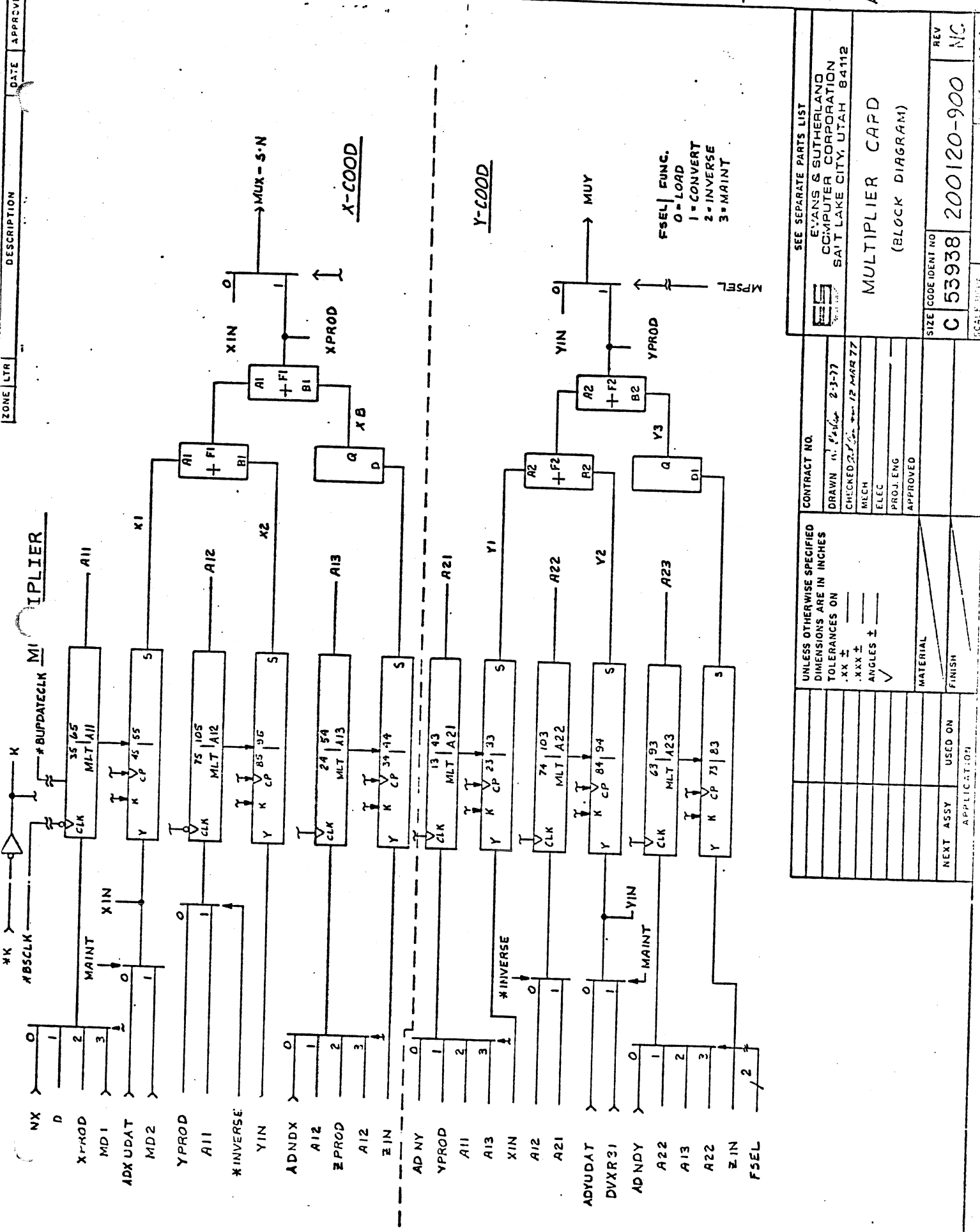
Z1004

REVISIONS

SIZE CODE IDENT NO  
**C 53938**  
 200120-600  
 #5V NC

B 200120-600

A



SEE SEPARATE PARTS LIST  
 EVANS & SUTHERLAND  
 COMPUTER CORPORATION  
 SALT LAKE CITY, UTAH 84112

MULTIPLIER CAPD  
 (BLOCK DIAGRAM)

SCALE: 1/4" = 1"

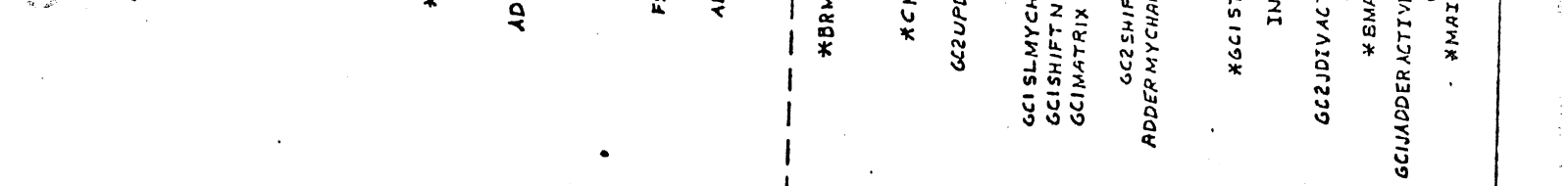
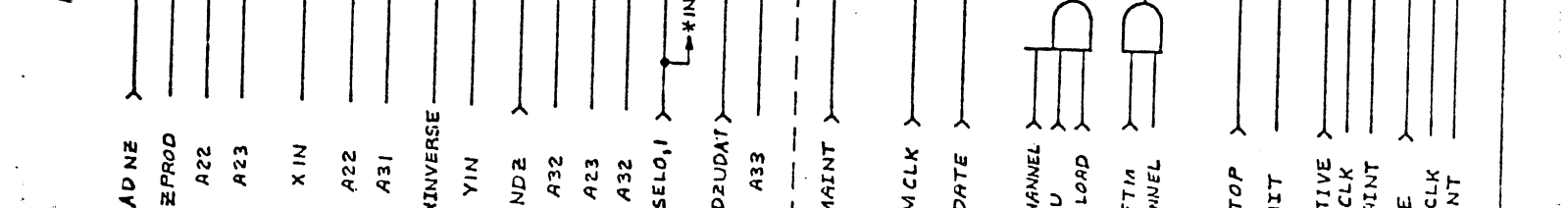
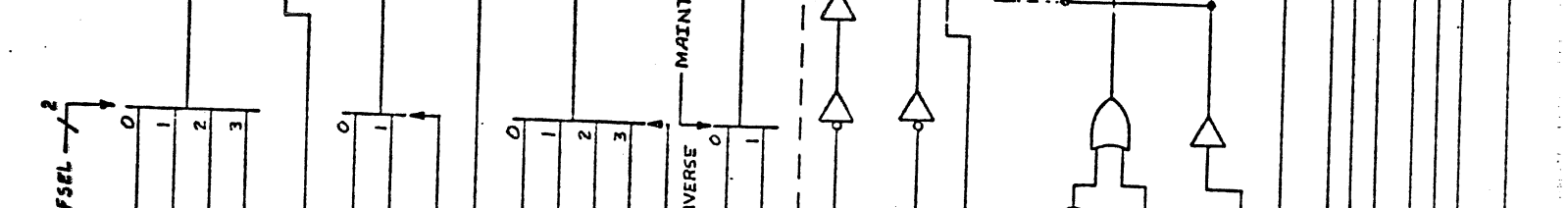
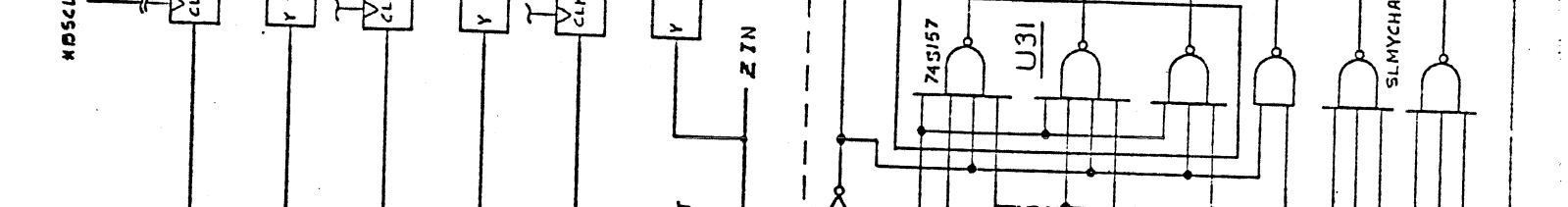
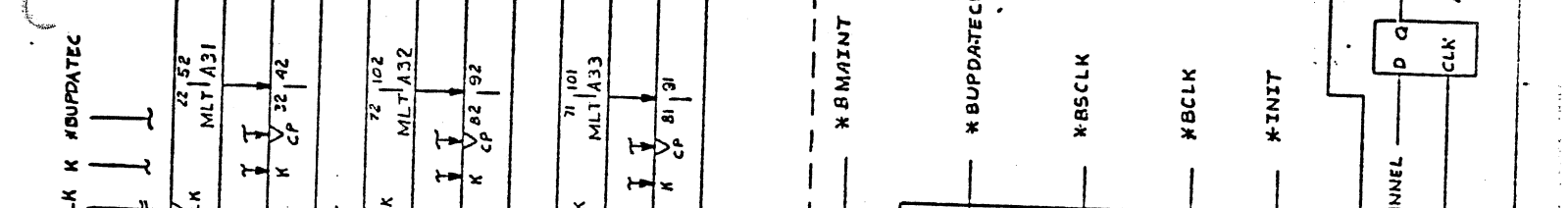
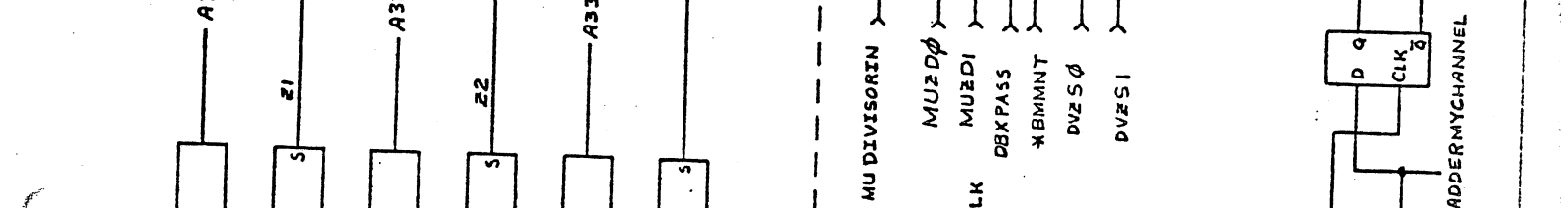
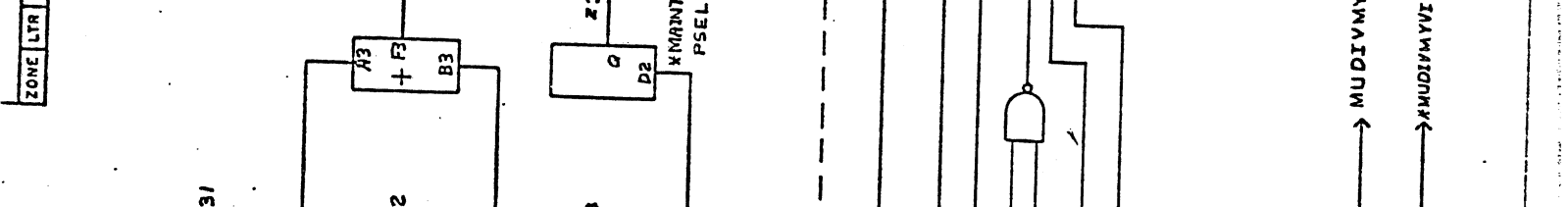
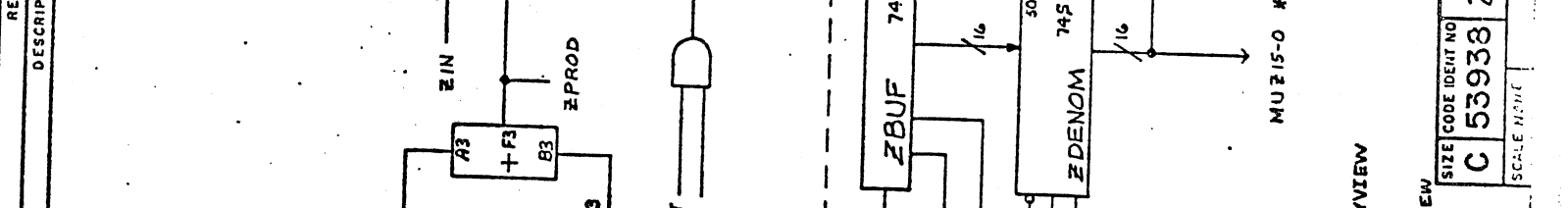
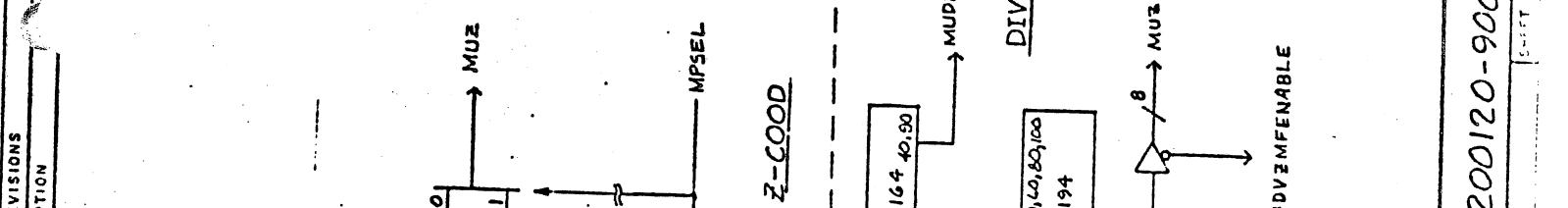
CONTRACT NO. \_\_\_\_\_  
 DRAWN BY: P. J. ... 2-3-77  
 CHECKED BY: ... 12 MAR 77  
 MECH \_\_\_\_\_  
 ELEC \_\_\_\_\_  
 PROJ. ENG \_\_\_\_\_  
 APPROVED \_\_\_\_\_

UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN INCHES  
 TOLERANCES ON  
 .XX ±  
 .XXX ±  
 ANGLES ±  
 MATERIAL \_\_\_\_\_  
 FINISH \_\_\_\_\_

SIZE CODE IDENT NO  
 C 53938 200120-900  
 REV NC

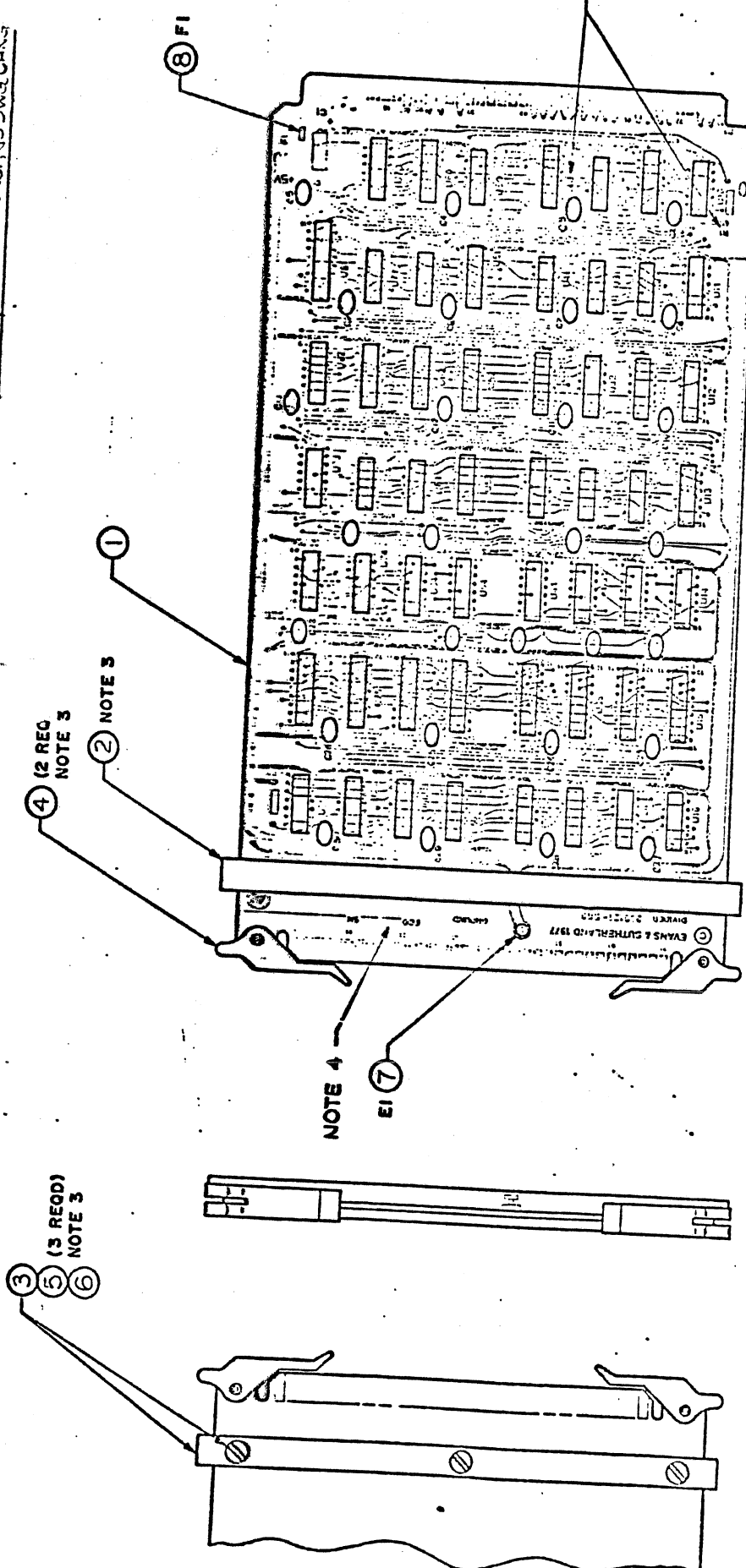
SIZE	CODE IDENT NO	REV
C	53938	NC

SCALE NONE





DESCRIPTION	DATE	APPROVED
PI REV UPDATE ONLY, NO DWG CHNG	5-11-77	K/1



COMPONENT SIDE

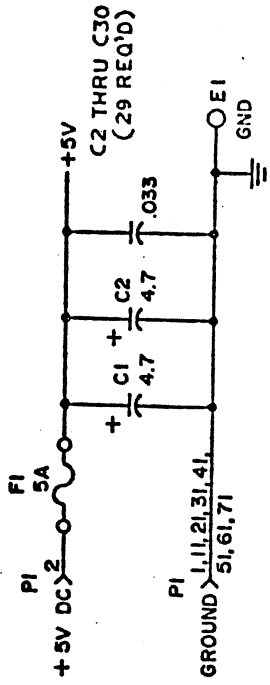
- NOTES:**
1. ASSEMBLE PER E & S WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT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

REFERENCE DOCUMENTS  
 LOGIC DIAGRAM ---- 200121-600  
 PARTS LIST ---- PL200121-100

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±		MATERIAL SEE PARTS LIST	
FINISH		FINISH	
CONTRACT NO.	DRAWN 2 MELLUS 18 FCR:77	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	SEE SEPARATE PARTS LIST
CHICKED 1/11/77	19 FEB 77	CARD ASSEMBLY DIVIDER (U.C.)	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
MLCH	PROJ. ENG. W. T. ... 3/1/77	SIZE CODE IDENT. NO.	REV
ELEC	APPROVED ... 10/10/77	C 53938	P1
APPLICATION		SCALE FULL	SHEET 1 OF 1

ZONE	LTR	DESCRIPTION	DATE	APPROVED
PI	REV	UPDATE W/ DWG CHG	7-77	

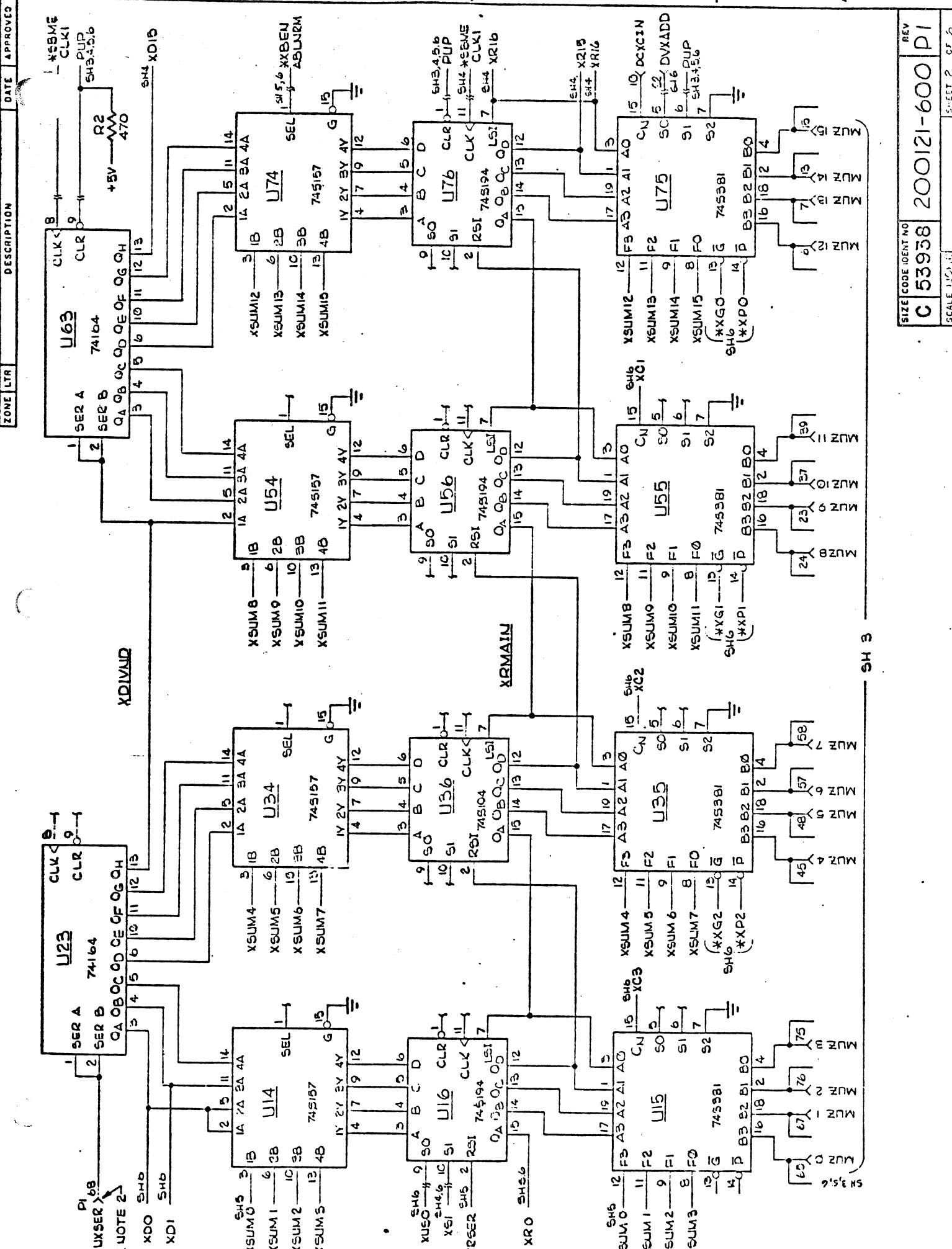
B200121-600



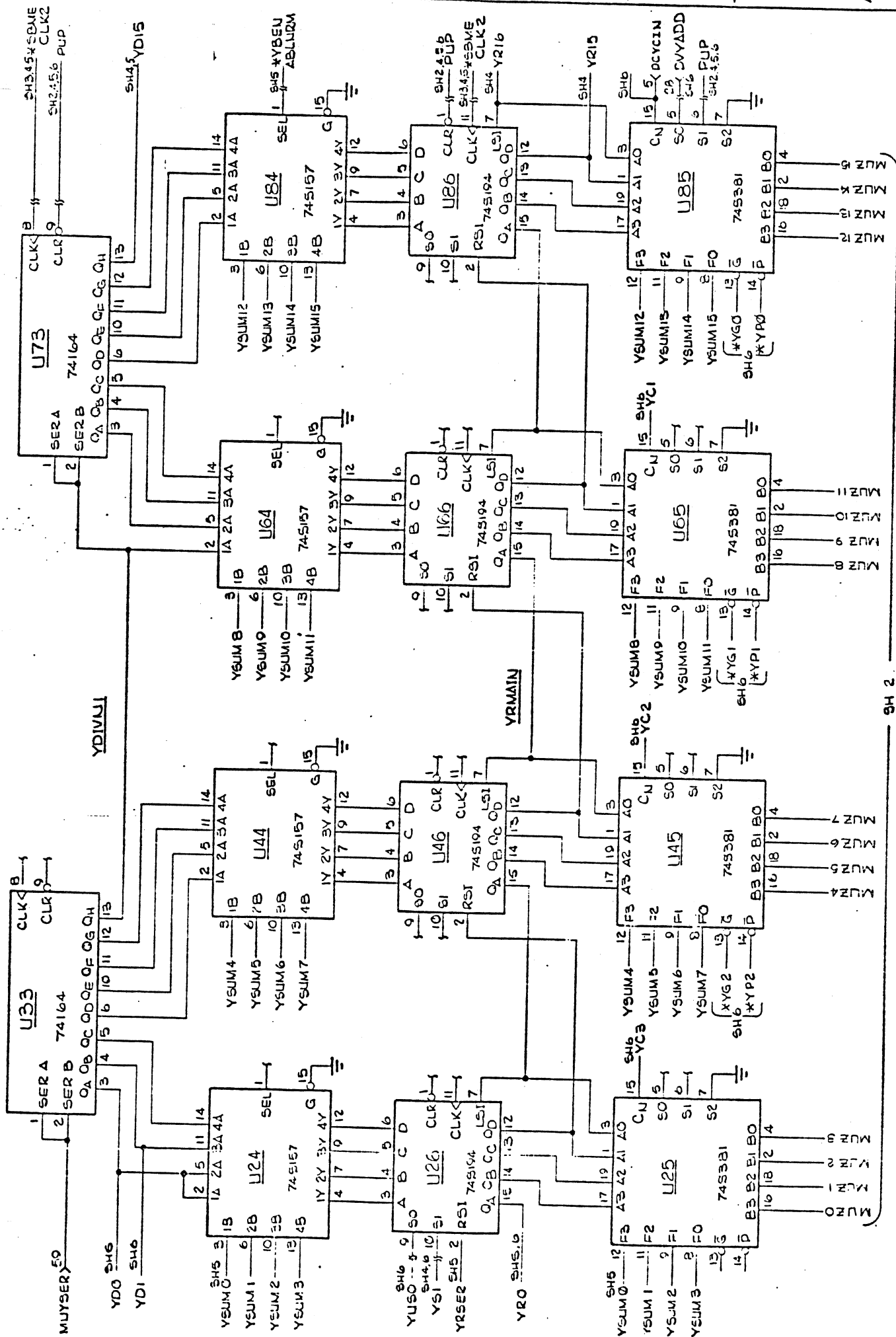
2. NUMBERS SHOWN REFER TO CONNECTOR PI.  
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.  
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.  
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.  
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).  
 ON ALL 16 PIN I.C.'S, PIN 8 IS 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. MELLUS 4-12-77 CHECKED [Signature] 9 JUN 77 MECH ELEC PROJ. ENG [Signature] APPROVED		SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
MATERIAL NOVO SP		DIVIDER PC		SIZE CODE IDENT NO C 53938 200121-600	
FINISH USED ON		SCALE NONE		REV PI	
APPLICATION		SCALE NONE		PAGE 1 OF 5	



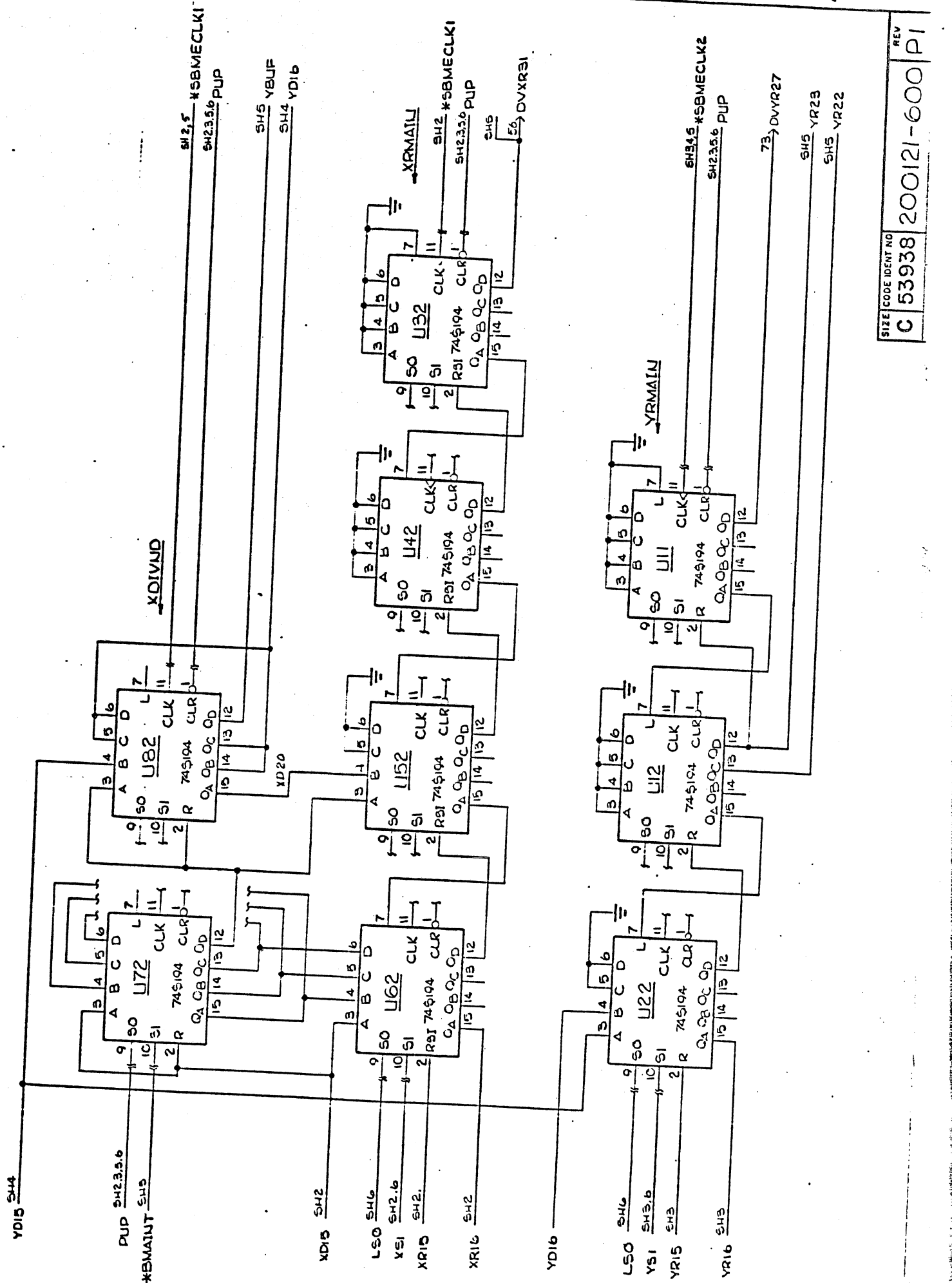
ZONE	LTR	DESCRIPTION	DATE	APPROVED



SIZE	CODE IDENT NO	REV
C	53938	200121-600
		P1

200121-600 B  
 A  
 8H 2  
 MUR 0  
 MUR 1  
 MUR 2  
 MUR 3  
 MUR 4  
 MUR 5  
 MUR 6  
 MUR 7  
 MUR 8  
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 MUR 99  
 MUR 100

ZONE	LTR	REVISIONS	DATE	APPROVED

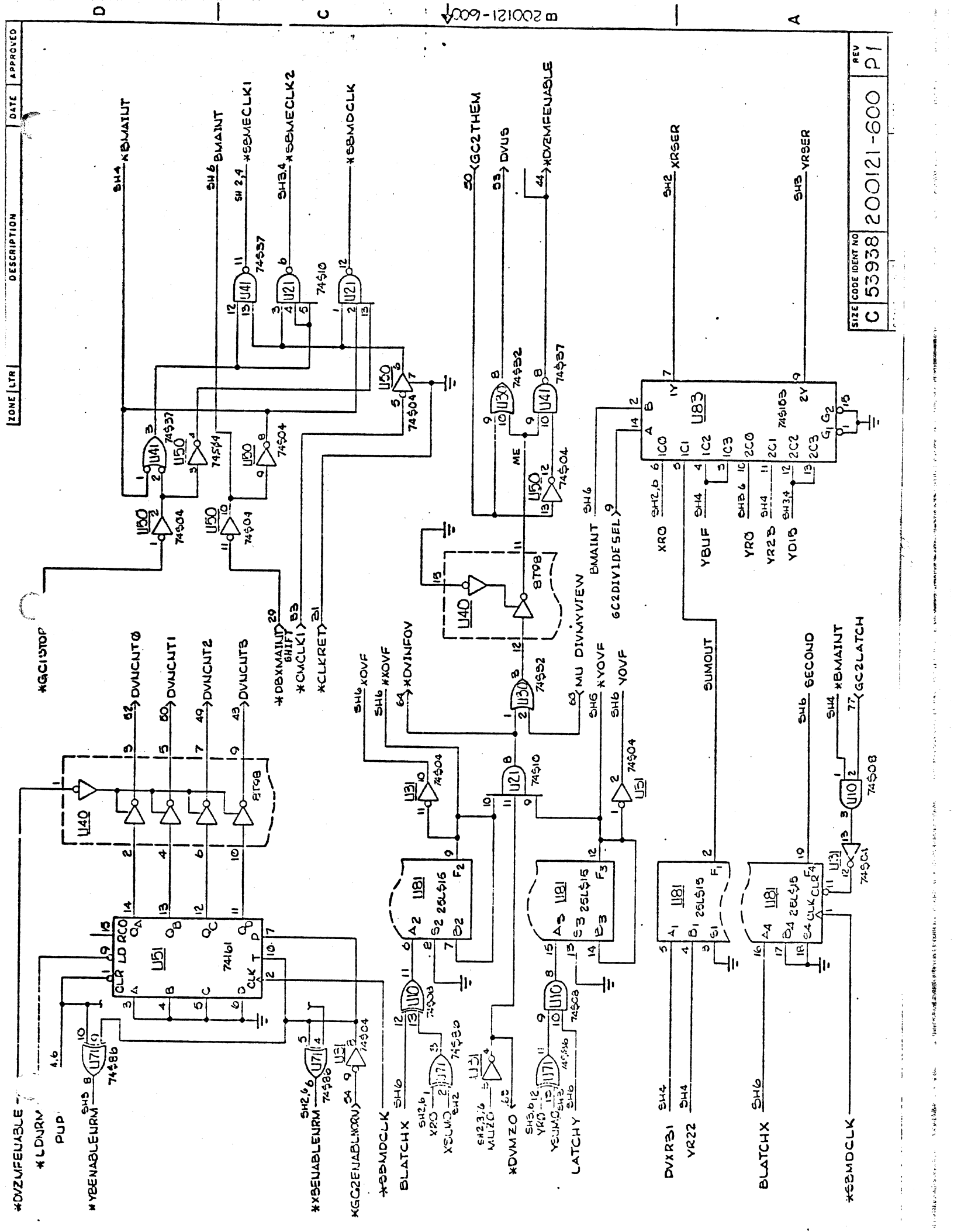


SIZE	CODE IDENT NO	REV
C	53938	200121-600
		PI

200121-600 B

A

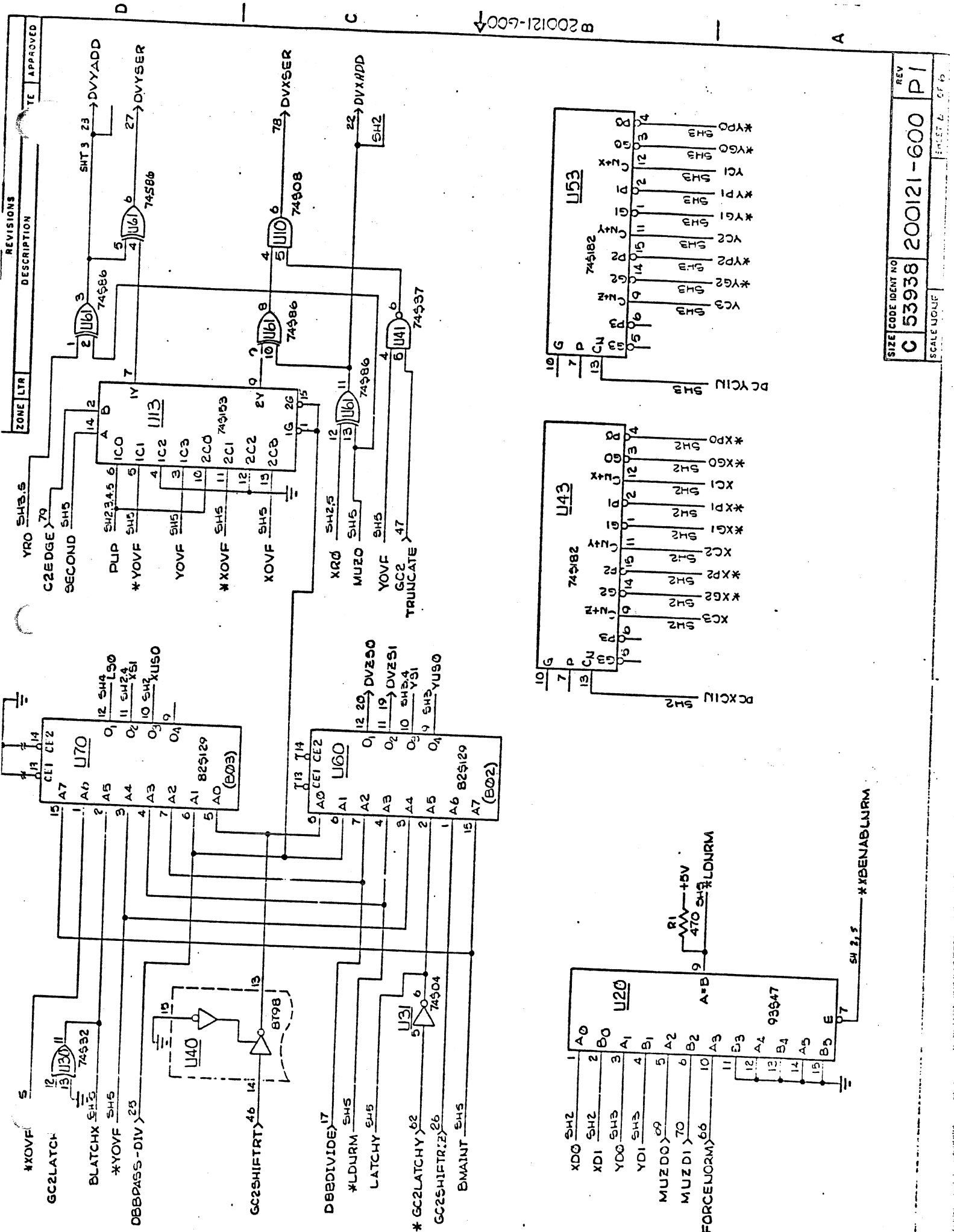
This drawing is the property of Lockheed Martin and is to be controlled as such. It is to be used only for the purpose intended and is not to be distributed, copied, or reproduced in any form without the express written permission of Lockheed Martin.



SIZE CODE IDENT NO	REV
C 53938	P1

200121-600
------------

#VZUFEUABLE - #LDJRM PUP #YBENABLERM #XBEUABLERM #GC2THEM #BMDCLK #GC2THEM #YVMEFEUABLE #BMDCLK #YR2 #YD1 #YD2 #SUMOUT #BLATCHX #BMDCLK #BLATCHY #BMDCLK #BLATCHZ

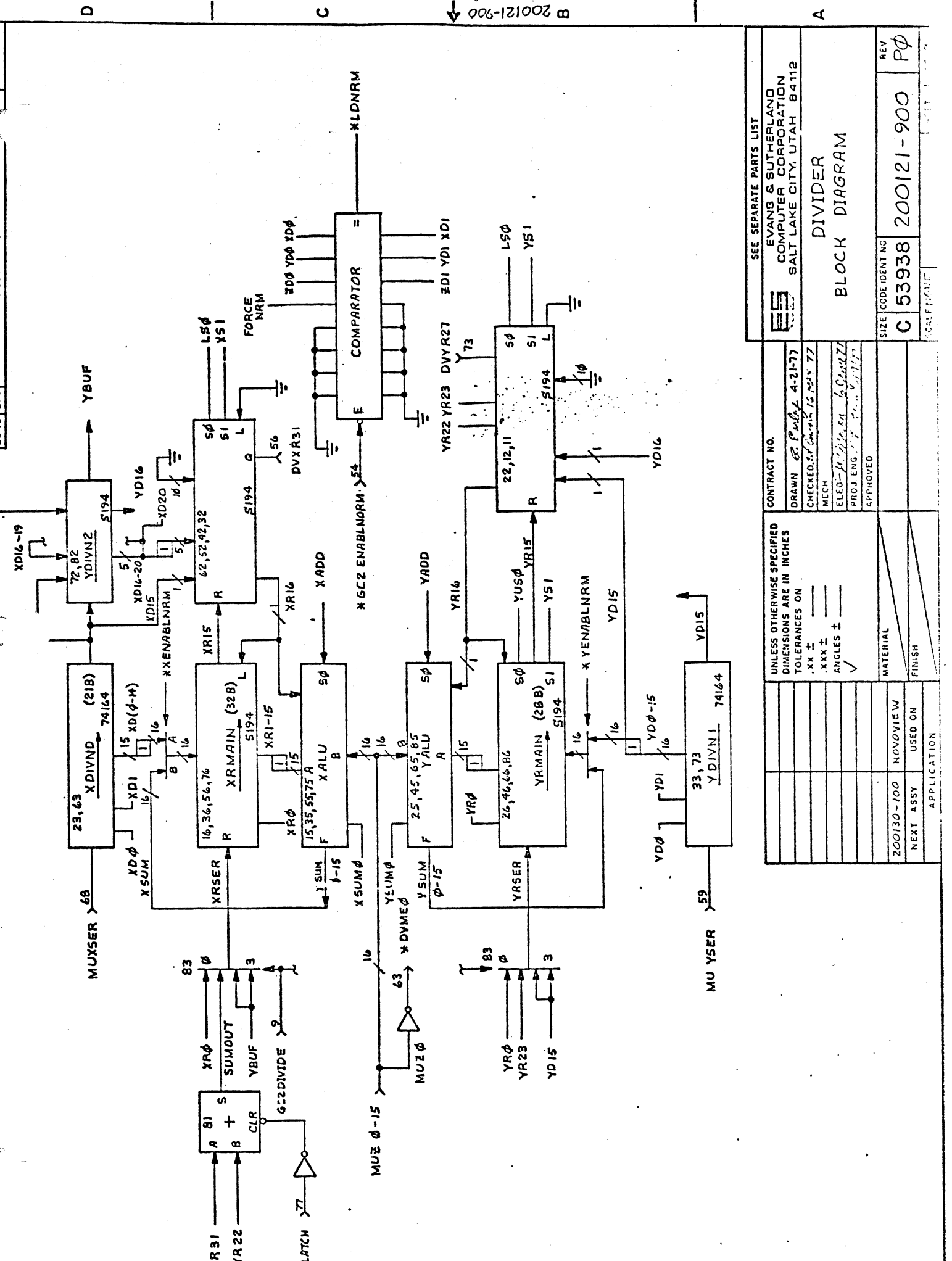


ZONE	LTR	DESCRIPTION	DATE	APPROVED

REVISED \_\_\_\_\_ DATE \_\_\_\_\_ APPROVED \_\_\_\_\_

SIZE	CODE IDENT NO	REV
C	53938	200121-600
SCALE	UOUP	PI

200121-600



UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES

TOLERANCES ON  
.XX ±  
.XXX ±  
ANGLES ±

MATERIAL  
FINISH

200130-100 NOV01VIEW  
NEXT ASSY USED ON  
APPLICATION

CONTRACT NO.

DRAWN BY: P. B. ... 4-21-77

CHECKED BY: ... 15 MAY 77

MECH

APPROVED

SCALE 1:1

REV P0

200121-900

C 53938

SIZE CODE IDENT NO

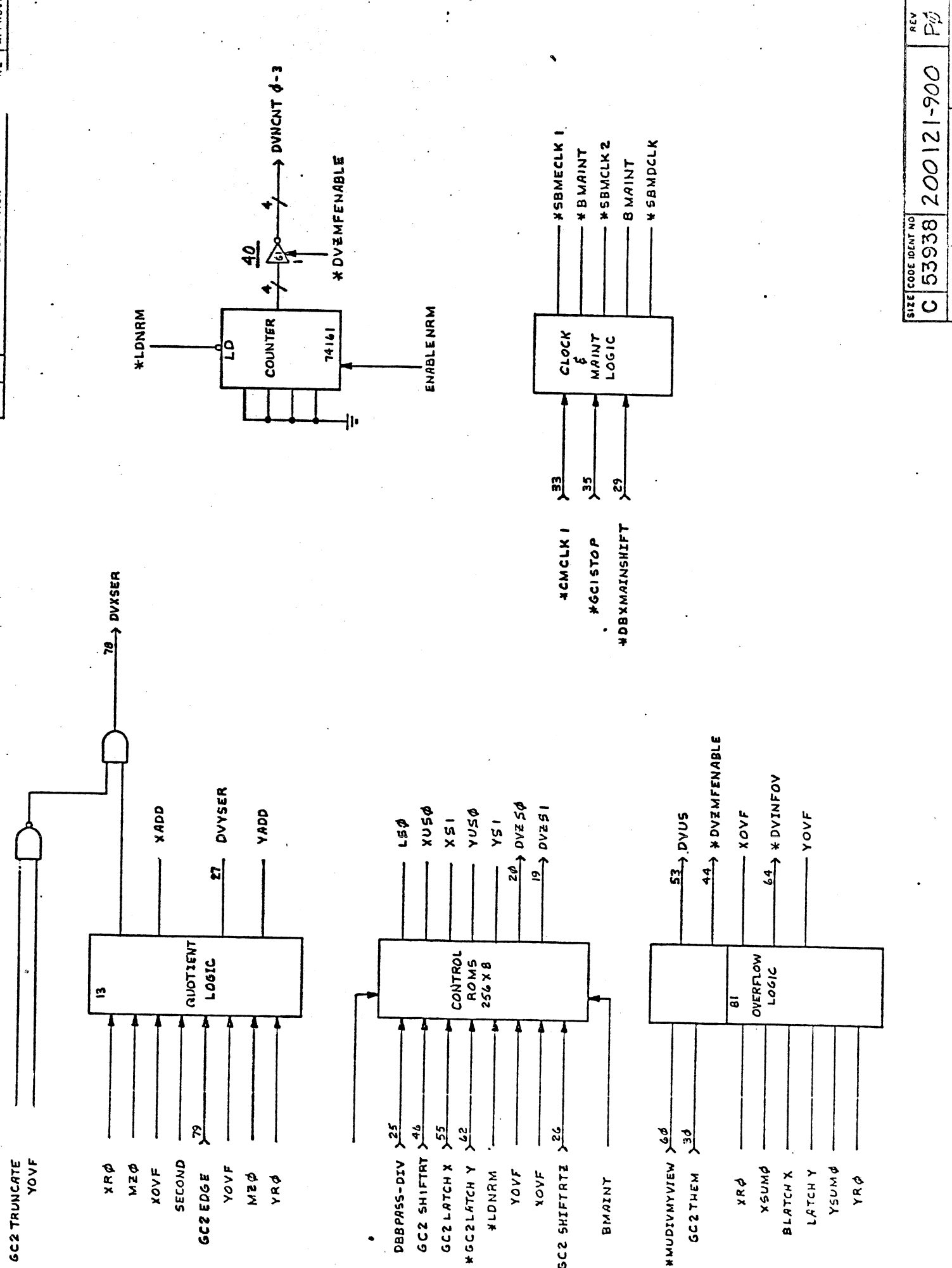
EVANS & SUTHERLAND  
COMPUTER CORPORATION  
SALT LAKE CITY, UTAH 84112

SEE SEPARATE PARTS LIST

DIVIDER

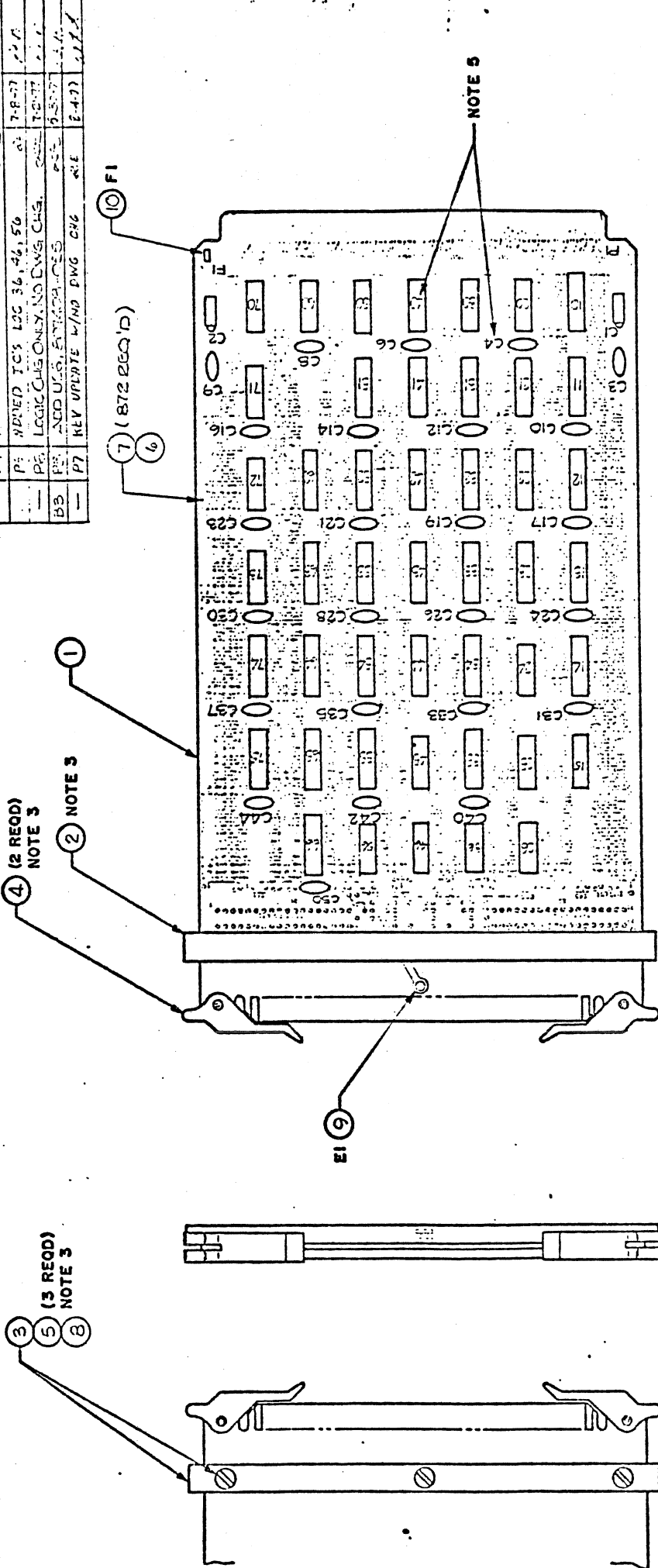
BLOCK DIAGRAM





SIZE	CODE IDENT NO	REV
C	53938	200121-900

ZONE	LTR	DESCRIPTION	DATE	APPROVED
1-C	P1	DELETE RI ECO P1	8/1	
2-B	P2	ADD UIS 74500	8/2	
	P3	REV UPDATE W/NO DWG CHG.	8/15	
	P4	REVISED TO'S LOG 36, 46, 56	7-8-77	
	P5	LOGIC DIAG ONLY NO DWG CHG.	7-9-77	
	P6	ADD U.S. SWITCHES	7-9-77	
	P7	REV UPDATE W/NO DWG CHG	8-4-77	



**REFERENCE DOCUMENTS**

LOGIC DIAGRAM --- 200122-600  
 PARTS LIST --- PL200122-100

- NOTES:**
- ASSEMBLE PER E S WORKMANSHIP STANDARDS.
  - FEED THRU HOLES SHOULD BE SOLDER FILLED.
  - INSTALL CARD EJECTORS, (ITEM 4 ) AND SPACERS. (ITEMS 2 & 3) AFTER FLOW SOLDER.
  - RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  - ITEM NUMBERS ON THE DRAWING CORRESPOND WITH PARTS LIST.

SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±		DRAWN: [Signature] HIGHWAY 2-20-77 CHECKED: [Signature] 25 FEB 77 MECH ELEC PROJ ENG APPROVED	
MATERIAL		SEE PARTS LIST	
NEXT ASSY	USED ON	SIZE	CODE IDENT NO
APPLICATION		REV	REV
		C 55938	200122-100 P7

CARD ASSEMBLY  
 DISPLAY BUFFER CONTROL  
 (w/w)

D

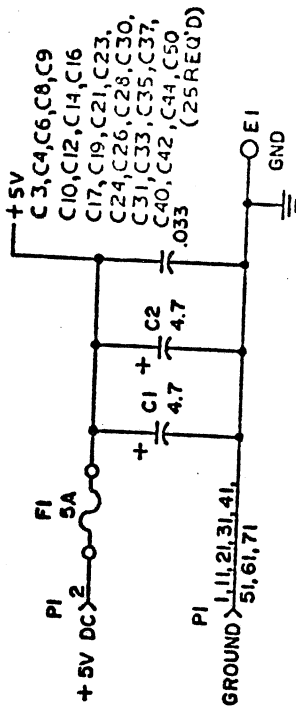
C

200122-100

A

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	P1	RLV UPDATE W/NO DWG CH	6-6-77	
	P2	REVISION WITH EXTENSIVE CHANGES	6-6-77	
	P5	REV UPDATE W/EXTENSIVE CHANGES	7-5-77	
	P6	REVISED WITH EXTENSIVE CHANGES	7-27-77	
	P7	REV UPDATE W/NO DWG CHGS	9-4-77	

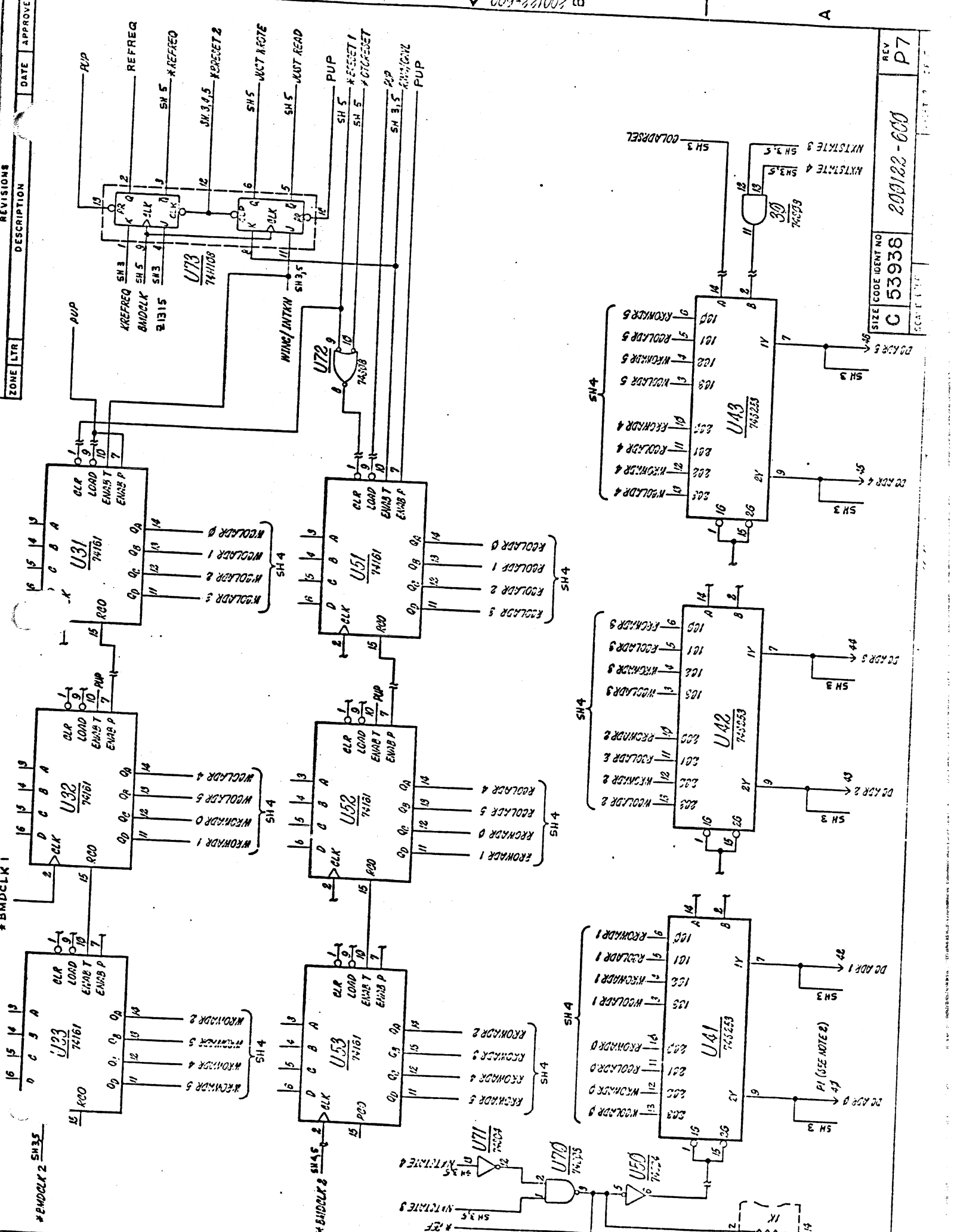
REVISIONS



2. NUMBERS SHOWN REFER TO CONNECTOR P1. ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS. RESISTANCE VALUES ARE EXPRESSED IN OHMS. K DENOTES 1000. RESTORERS 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:

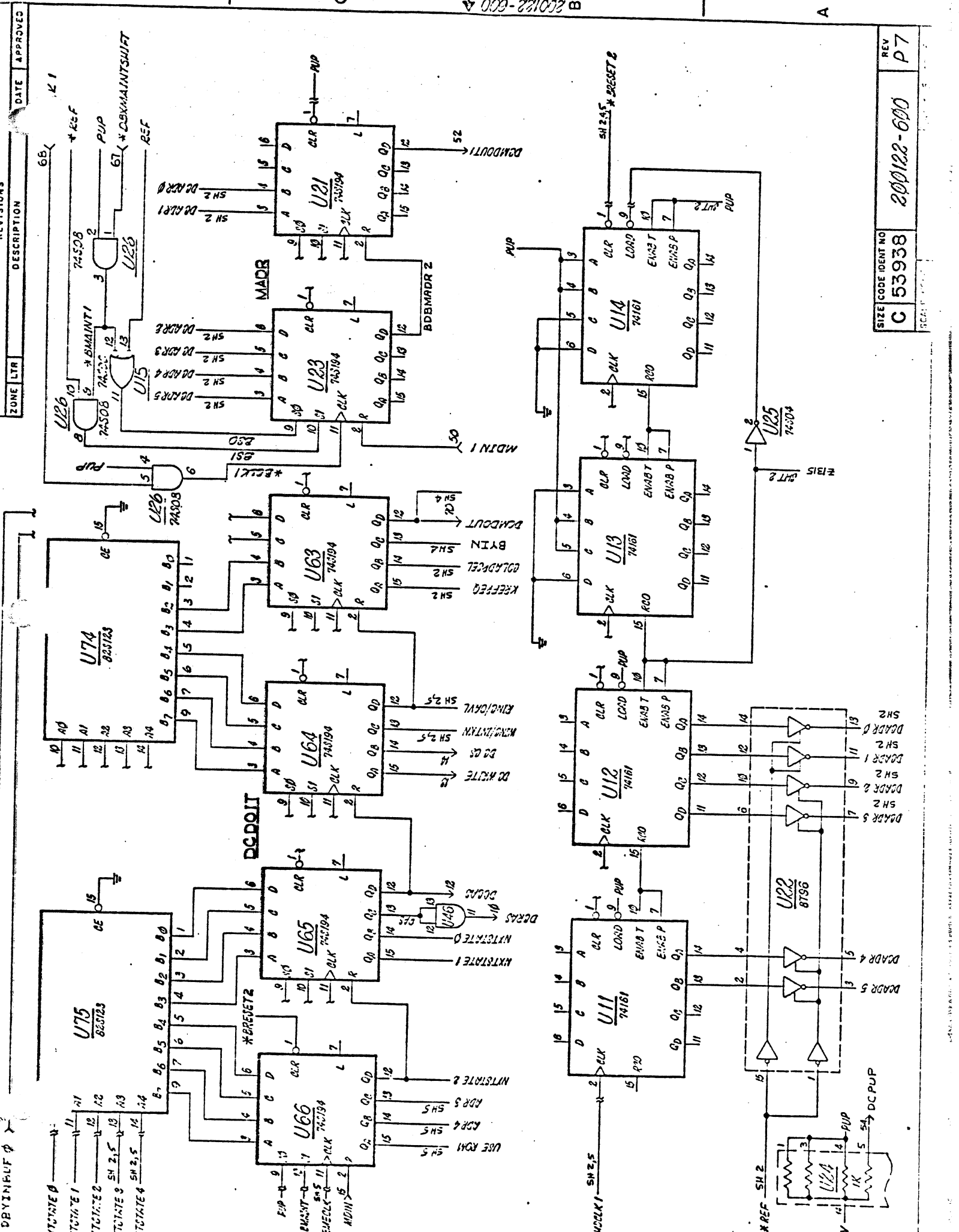
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	
TOLERANCES ON		DRAWN R. HOLLEY 6-6-77	
.XX ±		CHECKED J. J. 8 JUL 77	
.XXX ±		MECH. ELECT. 8 JUL 77	
ANGLES ±		PROJ. ENG. APPROVED	
MATERIAL		SEE SEPARATE PARTS LIST	
FINISH		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
NOVO SP		DISPLAY BUFFER CONTROL, W/W	
NEXT ASSY USED ON		SIZE CODE IDENT NO	
APPLICATION		C 53938 200122-600 P7	
		SCALE NOTE	
		REV P7	



ZONE	LTR	DESCRIPTION	DATE	APPROVED

SIZE	CODE IDENT NO	REV
C	53936	P7

200122-600

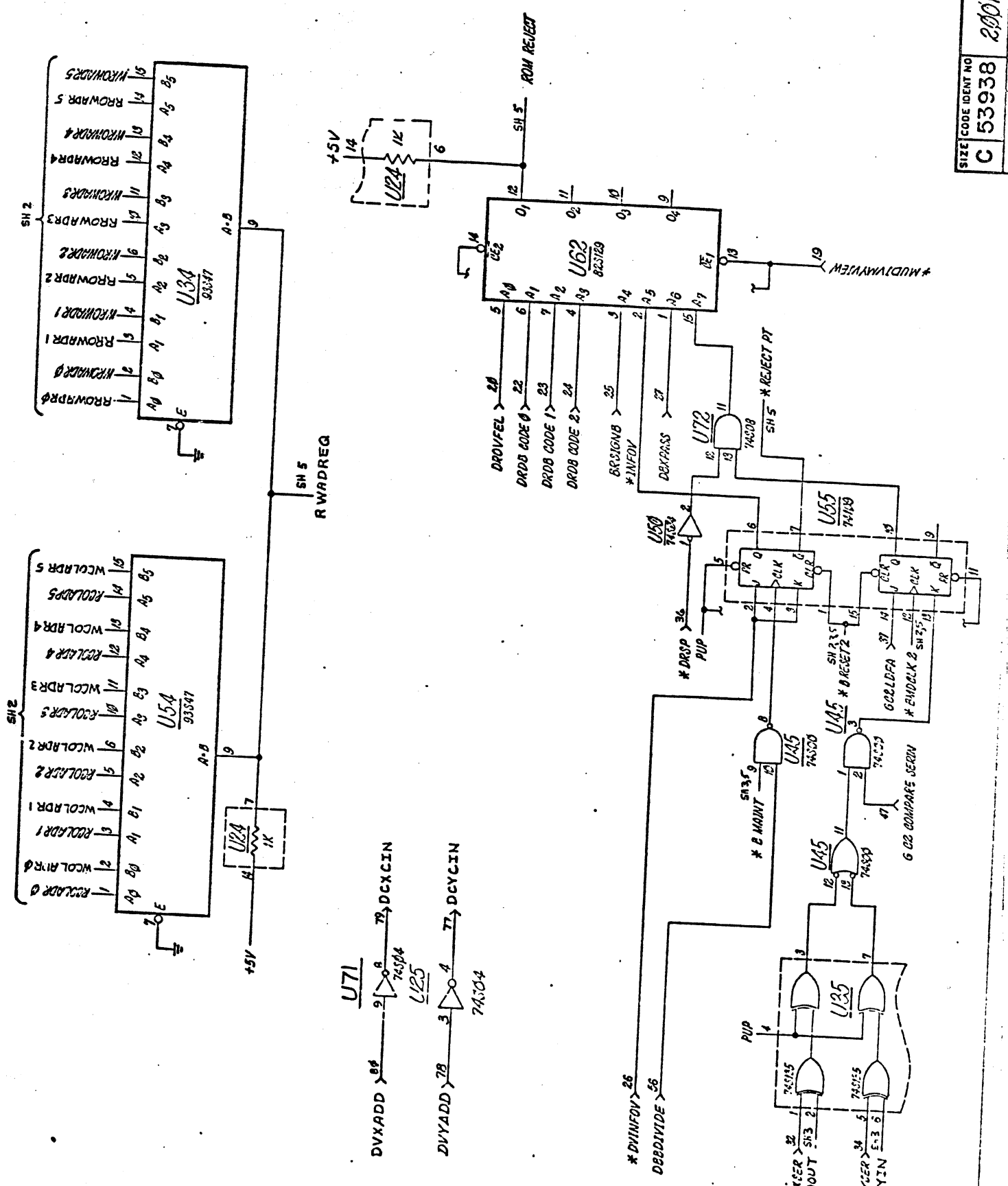


REVISIONS	DESCRIPTION	DATE	APPROVED

ZONE	LTR

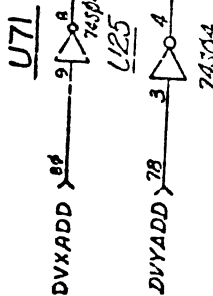
SIZE CODE IDENT NO	C 53938
REV	P7

200122-600

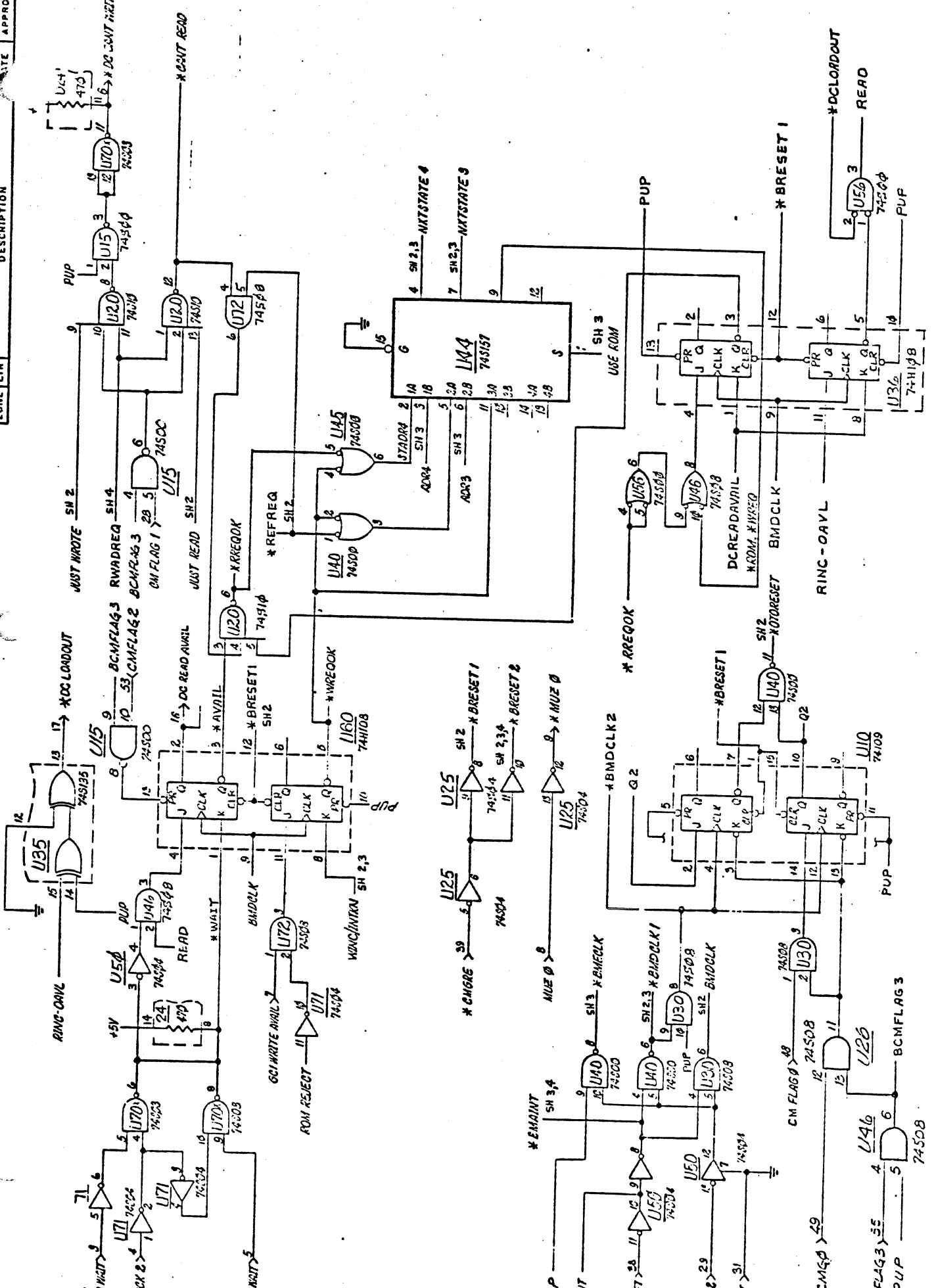


200122-600

A



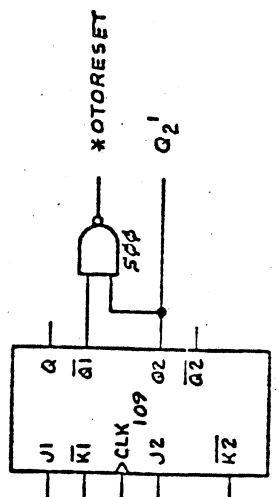
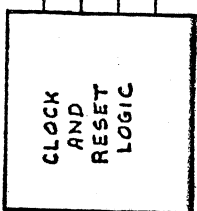
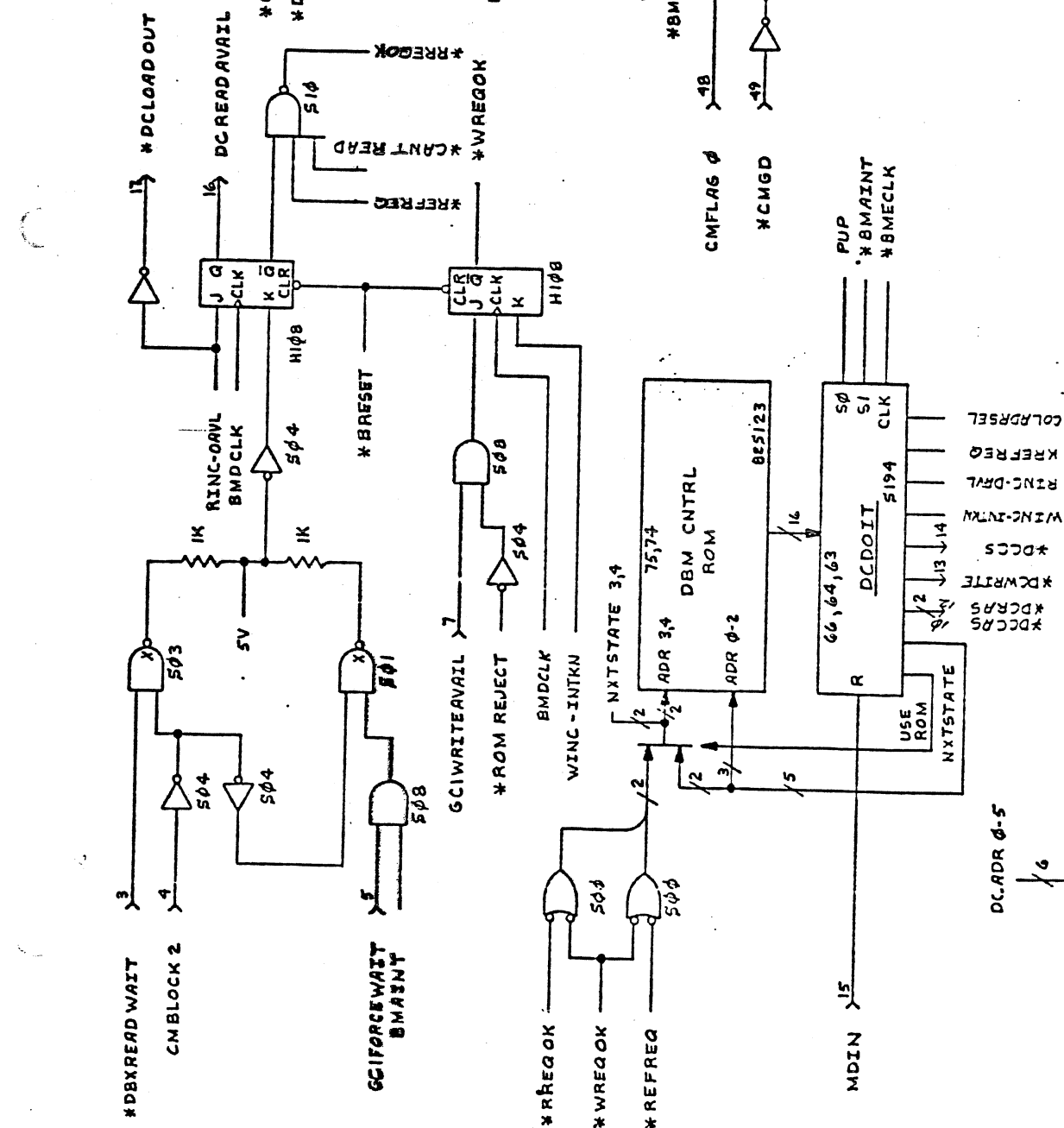
ZONE	LTR	DESCRIPTION	DATE	APPROVED



SIZE CODE IDENT NO	REV
C 53938	P7

200122-600

ZONE	LTR	DESCRIPTION	DATE	APPROVED
---	---	---	---	---
---	P5	REV UPDATE W/NO DWG CHGS	...	...
---	P3	LOGIC CHG ONLY, NO DWG CHGS	...	...
---	P7	REV UPDATE W/NO DWG CHGS	8-1-77	...



SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
DBM CONTROL BLOCK DIAGRAM	
SIZE CODE IDENT NO	REV
C 53938	P7
SCALE: NONE	

CONTRACT NO.	
DRAWN R. E. BULL 4-26-77	
CHECKED	DATE 27 MAY 77
ELEC. P. J. ...	
APPROVED	

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

NEXT ASSY	USED ON	APPLICATION

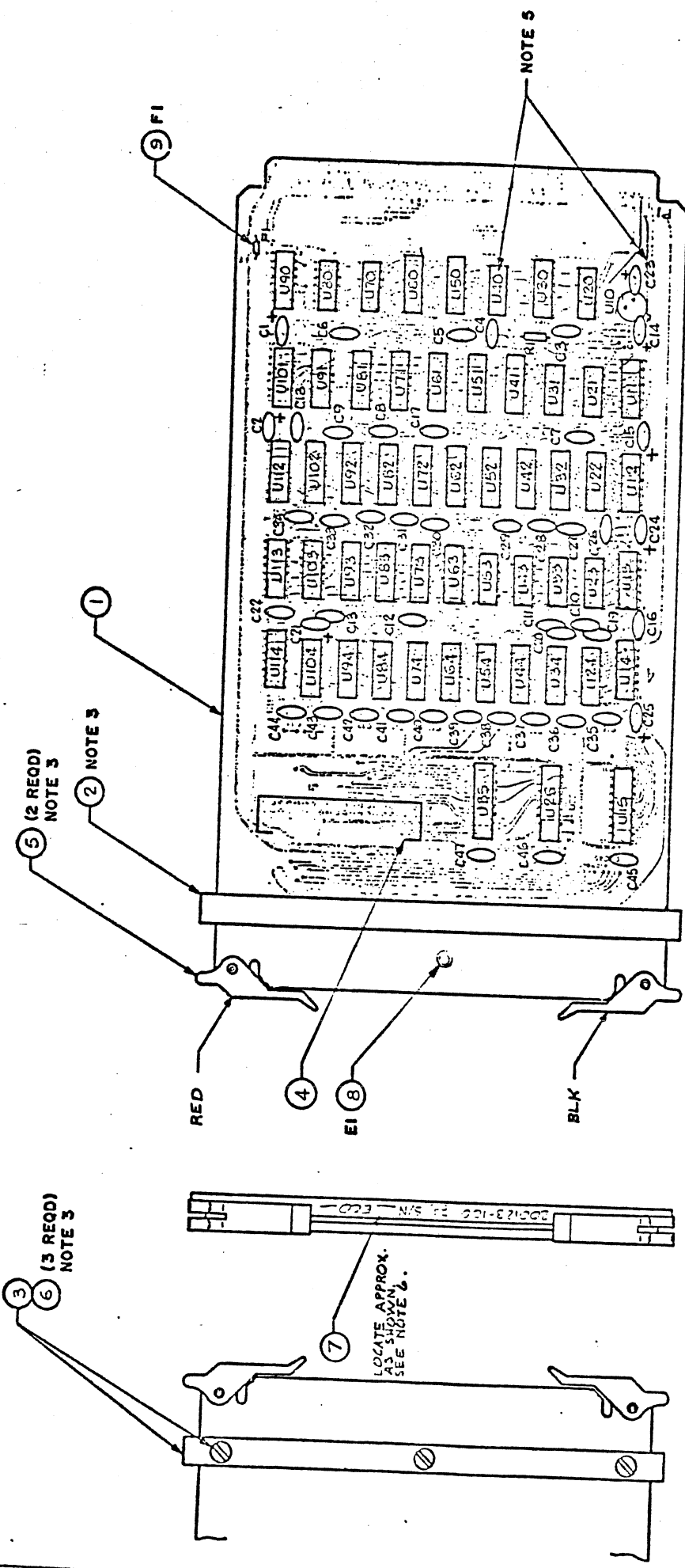
CONTRACT NO.	
DRAWN R. E. BULL 4-26-77	
CHECKED	DATE 27 MAY 77
ELEC. P. J. ...	
APPROVED	

B 200122-900  
 EVANS & SUTHERLAND  
 COMPUTER CORPORATION  
 SALT LAKE CITY, UTAH 84112  
 DBM CONTROL  
 BLOCK DIAGRAM  
 SIZE CODE IDENT NO: C 53938  
 REV: P7  
 SCALE: NONE





ZONE	LTR	DESCRIPTION	DATE	APPROVED



COMPONENT SIDE

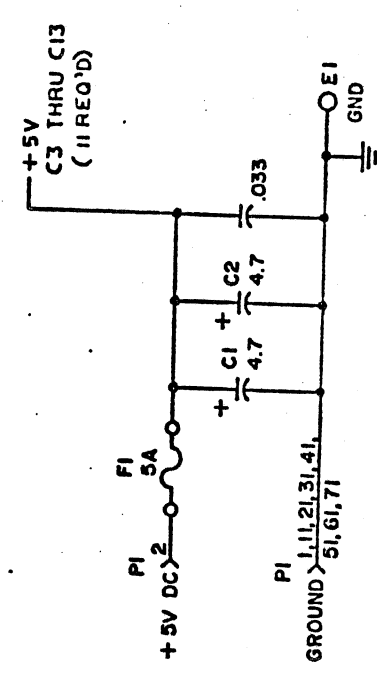
- NOTES:**
1. ASSEMBLE PER E & S WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 5) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK 5/5 ASSY. NO, 5/11 ECO LEVEL ON ITEM 7.

**REFERENCE DOCUMENTS**  
 LOGIC DIAGRAM --- 200123-600  
 PARTS LIST --- PL200123-100

SEE SEPARATE PARTS LIST		EYANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.	DRAWN	DATE	REV
	200123-100	2-22-77	1
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	CHECKED	DATE	REV
TOLERANCES ON	MLCH	2-24-77	1
.XX ±	ELEC		
.XXX ±	PROJ. ENG		
ANGLES ±	APPROVED		
✓			
MATERIAL	SEE PARTS LIST		
200123-100	NEXT ASSY USED ON		
	APPLICATION		
SIZE	CODE IDENT NO	REV	REV
C	53938	200123-100	1
CARD ASSEMBLY DISPLAY BUFF. (P.C.)			

ZONE	LYR	DESCRIPTION	DATE	APPROVED

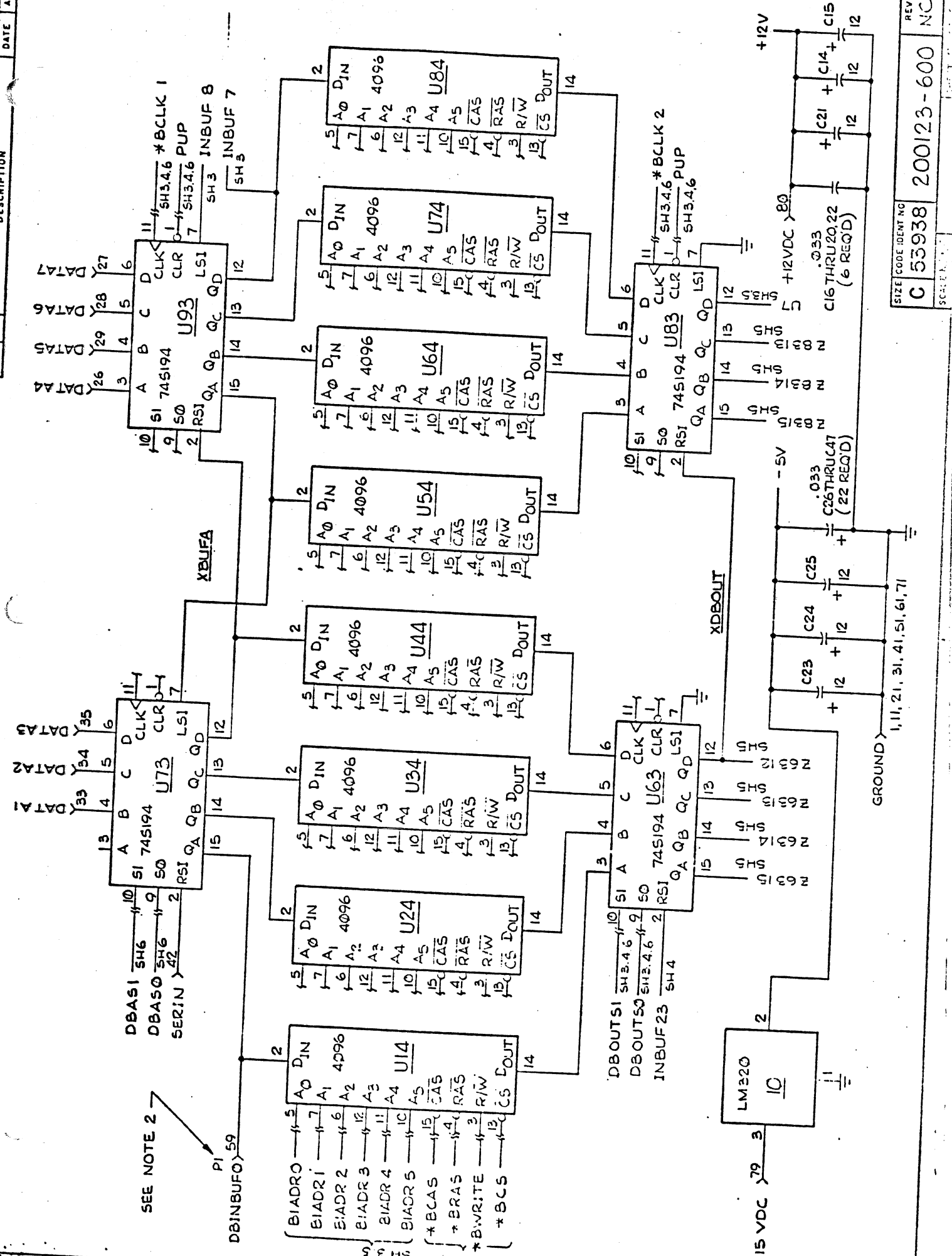
3. ON IC'S 4096:  
 PIN 1, VSS = -5V, PIN 8, VDD = +12V  
 PIN 9, VCC = +5V, PIN 16, VSS = GND.
2. NUMBERS SHOWN REFER TO CONNECTOR P1.  
 ALL CAPACITANCE VALUES ARE EXPRESSED  
 IN MICROFARADS.  
 RESISTANCE VALUES ARE EXPRESSED IN OHMS,  
 K DENOTES 1000.  
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.  
 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;



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ± ✓		CONTRACT NO.	
MATERIAL		DRAWN BY: <i>4.1.77</i>	
FINISH		CHECKED BY: <i>5 JUN 77</i>	
200130-100		ELEC	
NEXT ASSY		PROJ. ENG BY: <i>Ship</i>	
NOVO SP		APPROVED	
USED ON		SEE SEPARATE PARTS LIST	
APPLICATION		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
		DISPLAY BUFFER CABLE P.C.	
		SIZE	CODE IDENT NO
		C 53938	200123-600
		REV	NC
		SCALE	1:1

NOTES:

SEE NOTE 2

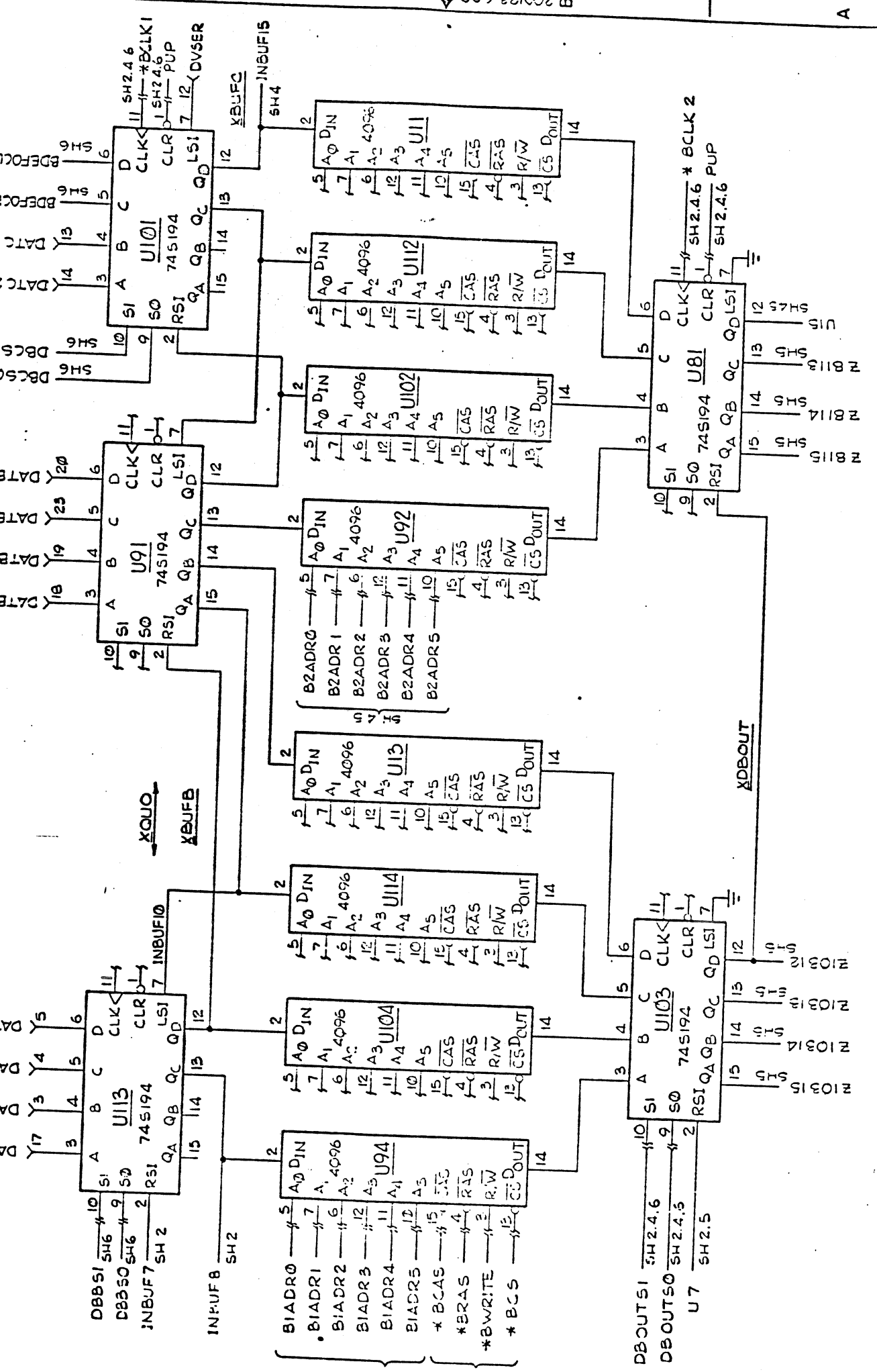


SIZE	CODE IDENT NO	REV
C	53938	200123-600
		NC

SECRET

B 200123-600

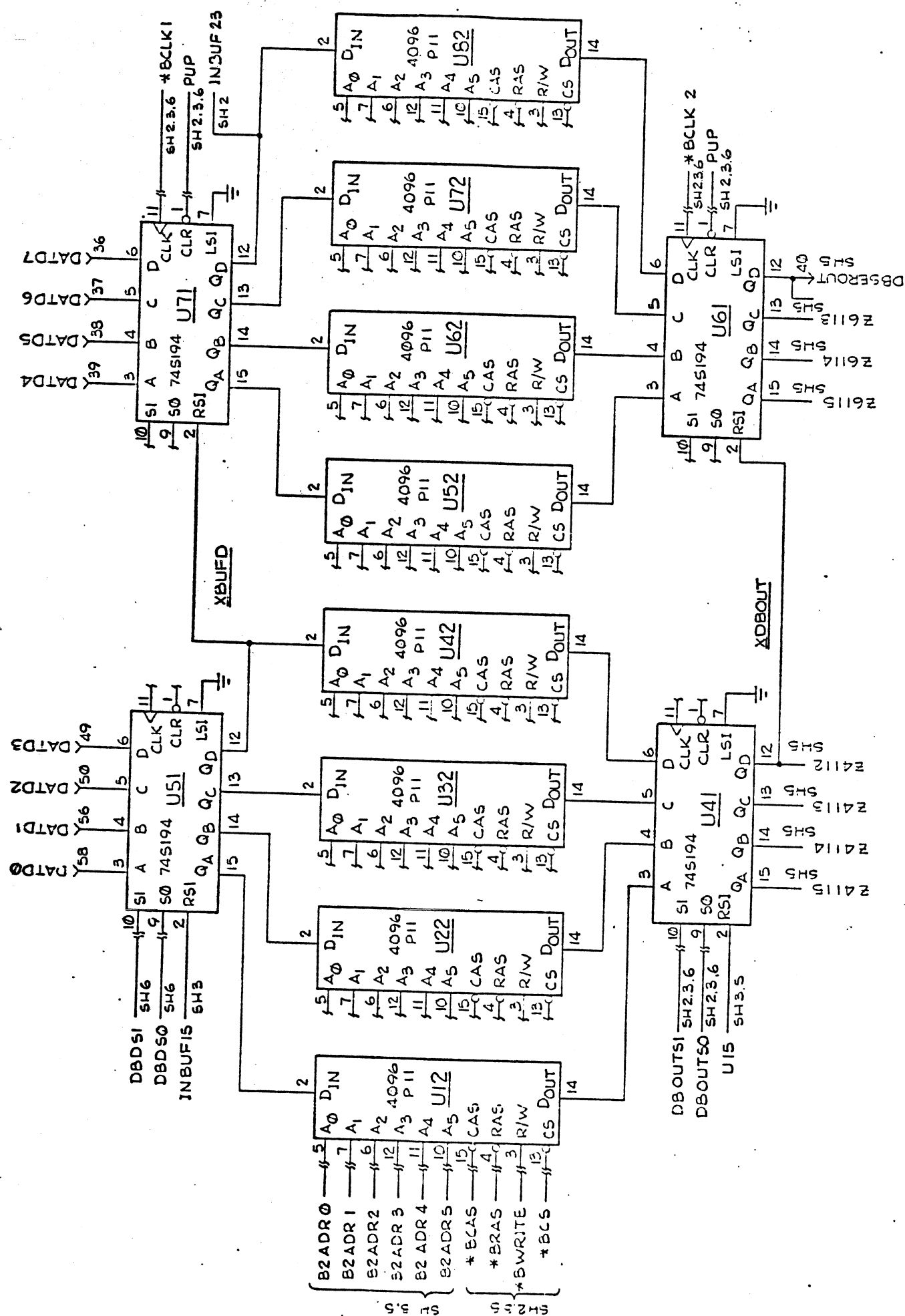
ZONE	LTR	DESCRIPTION	DATE	APPROVED



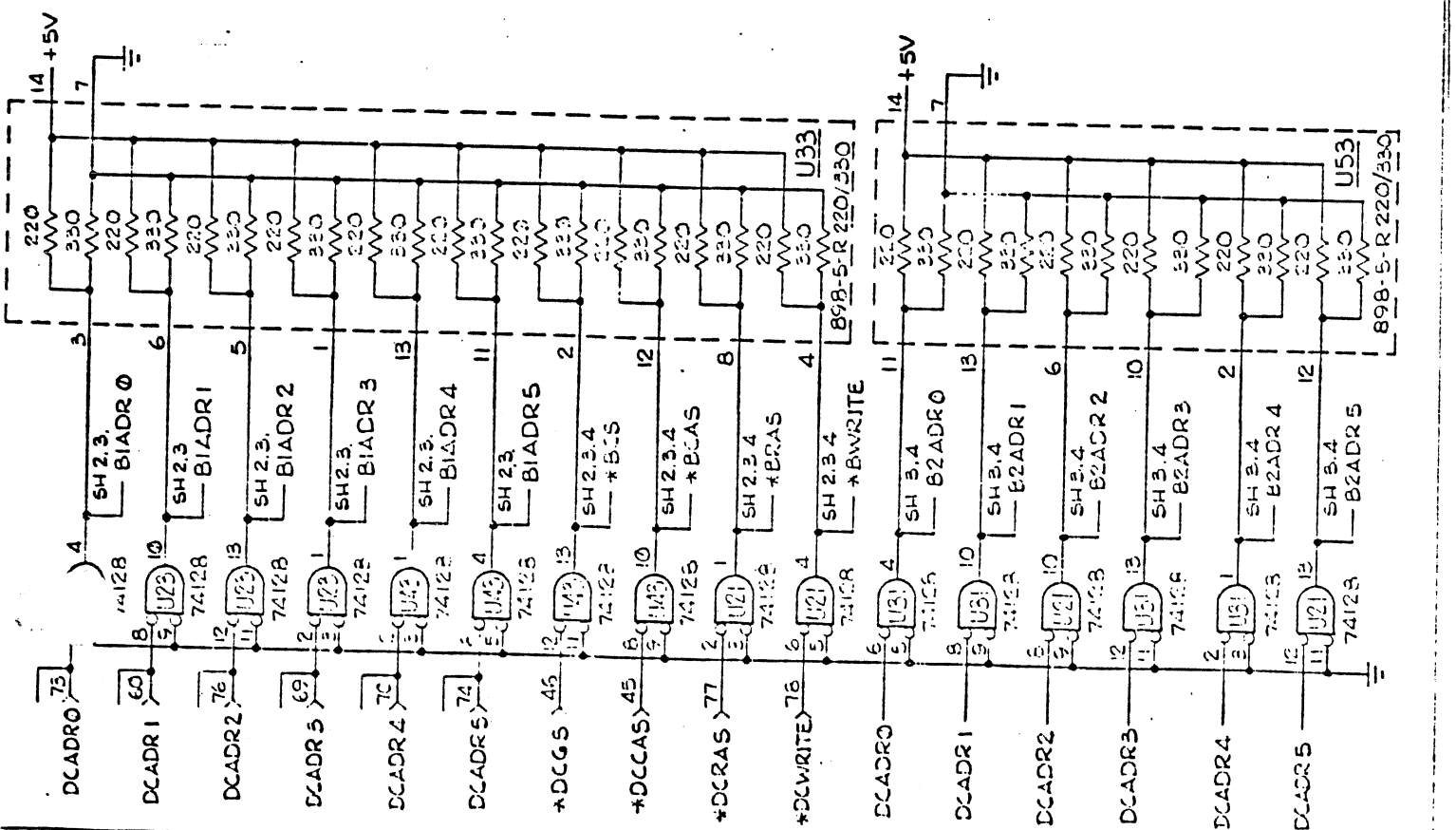
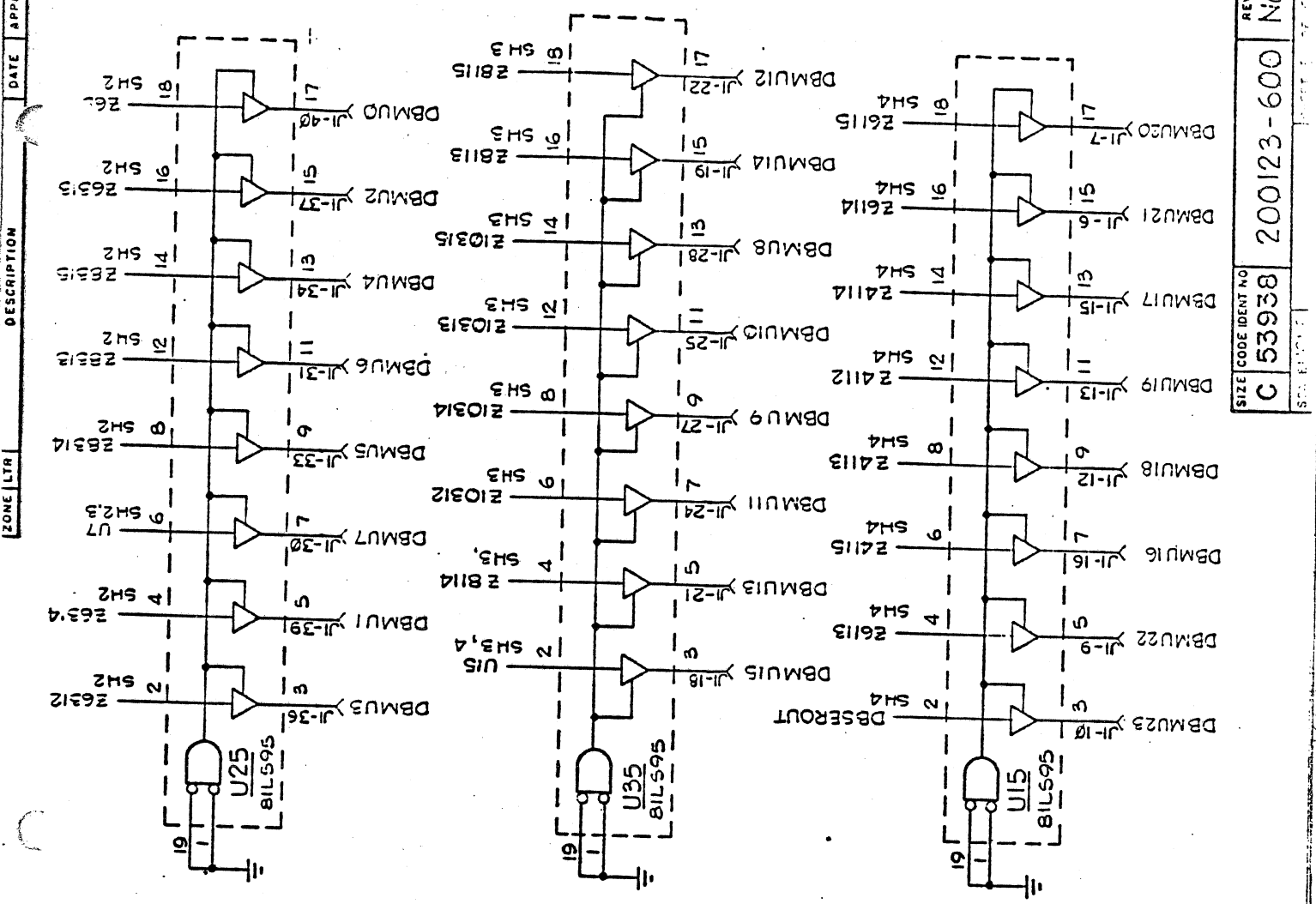
SIZE CODE IDENT NO	REV
C 53938	200123-600 NC

200123-600

ZONE	LTR	DESCRIPTION	DATE	APPROVED

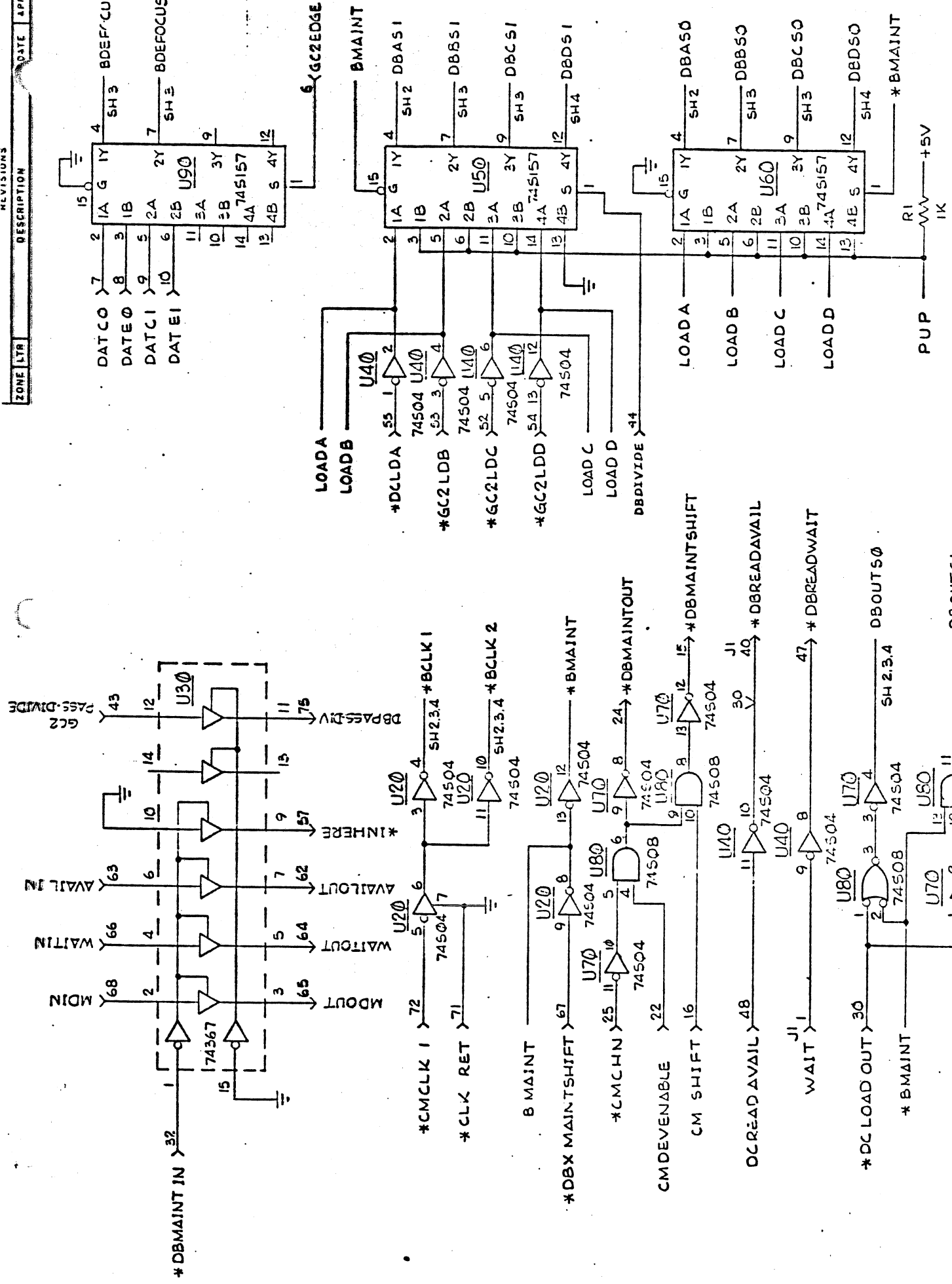


SIZE CODE IDENT NO	C 53938
REV	NC
200123-600	



SIZE CODE IDENT NO  
**C 53938**  
 200123-600 NC

REV  
 NC

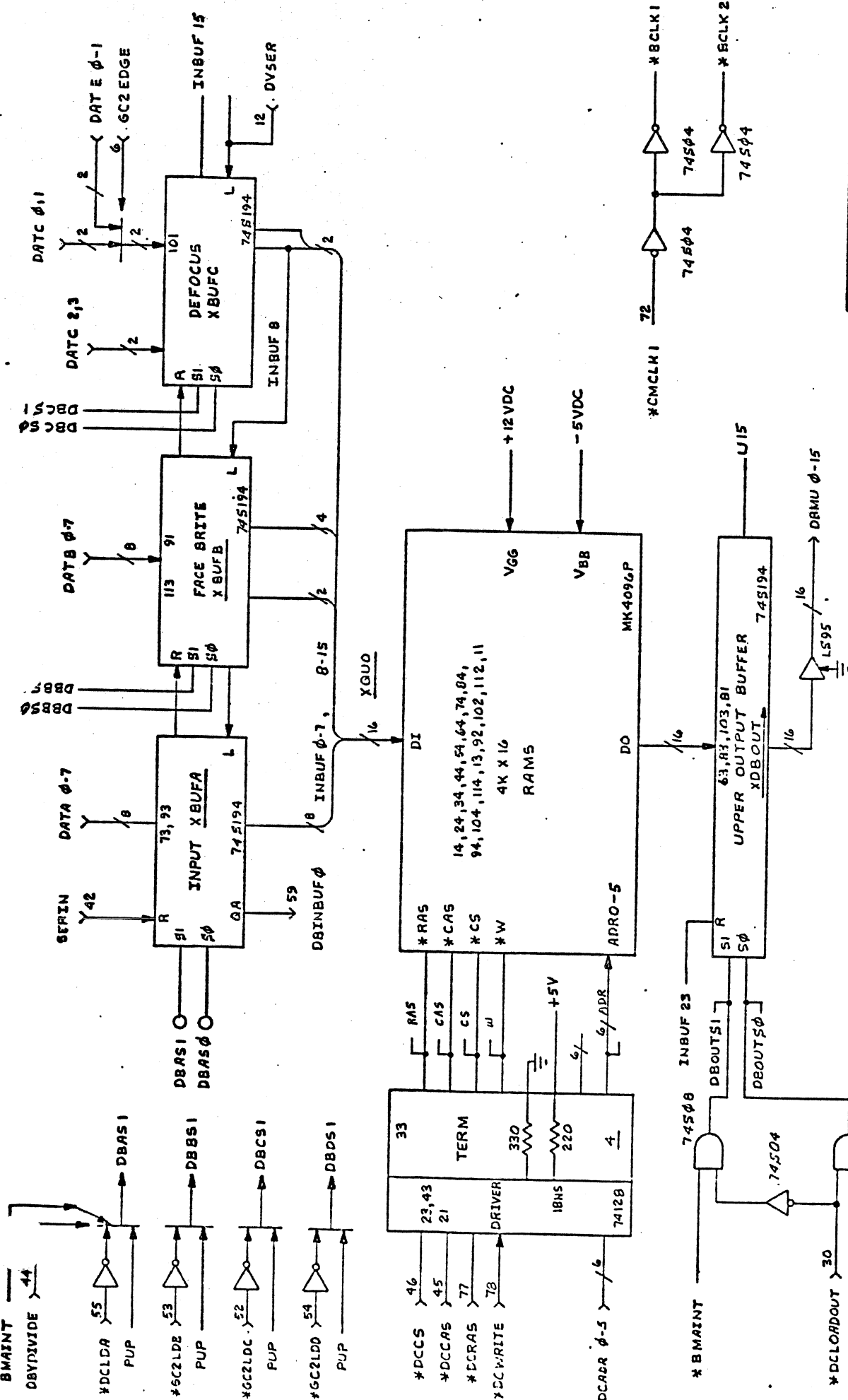


SIZE	CODE IDENT NO	REV
C	53938	200123-600
		NC

DATE: 11/11/73  
 DRAWN: J. J. J.  
 CHECKED: J. J. J.  
 APPROVED: J. J. J.

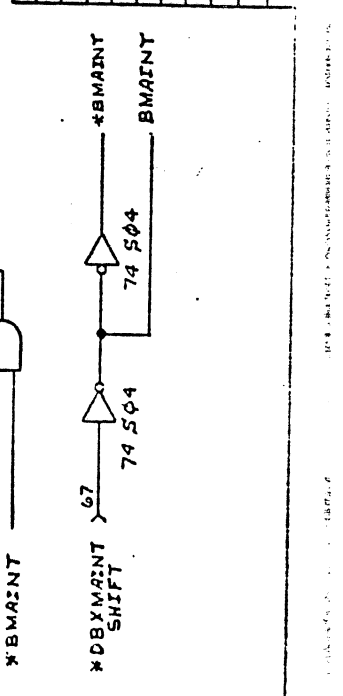


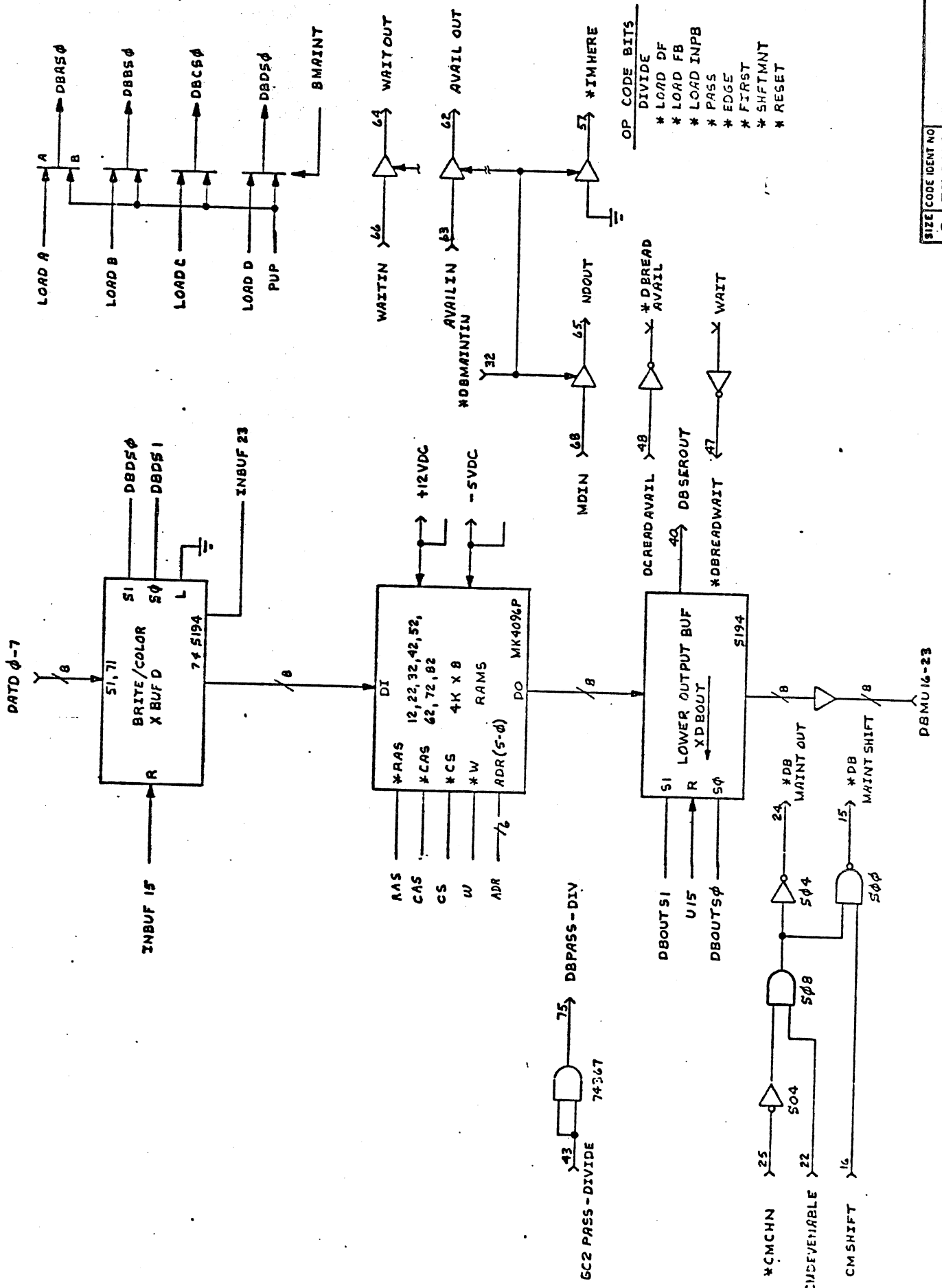
ZONE	LTR	DESCRIPTION	DATE	APPROVED



SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
A	
DISPLAY BUFFER MEMORY BLOCK DIAGRAM	
SIZE CODE IDENT NO	REV
C 53938	200123-900
NC	NC

CONTRACT NO.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DRAWN <i>A. E. ...</i> 4-22-77	TOLERANCES ON
CHECKED <i>...</i> 27 MAY 77	.XX ±
MECH	.XXX ±
ELECT <i>...</i>	ANGLES ±
PROJ. ENG <i>...</i>	✓
APPROVED	MATERIAL
	FINISH
	NEXT ASSY
	USED ON
	APPLICATION





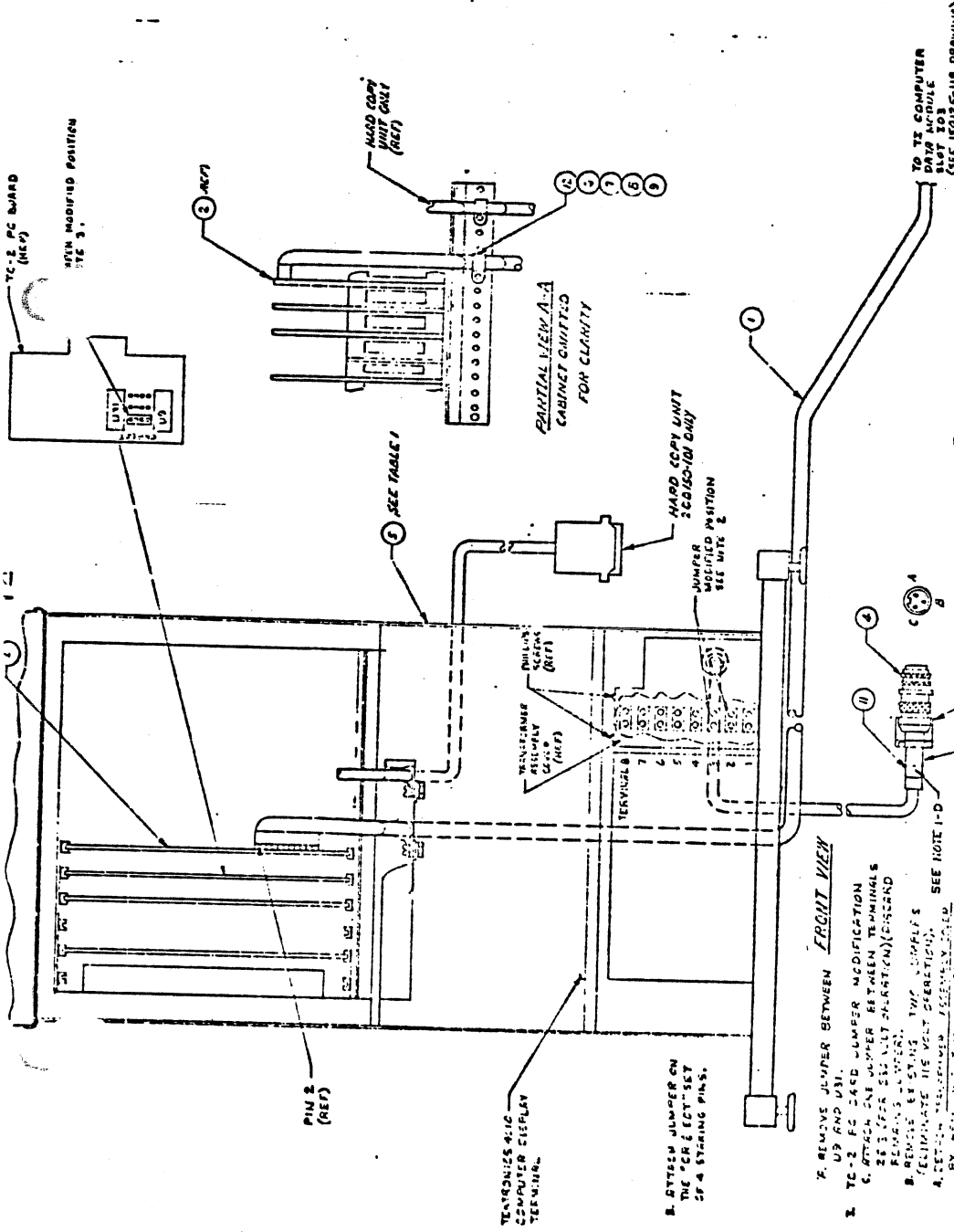


TABLE 1

QWS DRAW NO	COMPUTER DISPLAY TERMINAL
200150-700	1010-1
200150-701	1010-1

SEE SEPARATE PART LIST

CONTRACT NO. GRANT/ACQUIS 8-2-777

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

APPROVED: [Signature]

DATE: 10/10/77

ASSY, COMPUTER DISPLAY TERMINAL

D 53938 200150-700

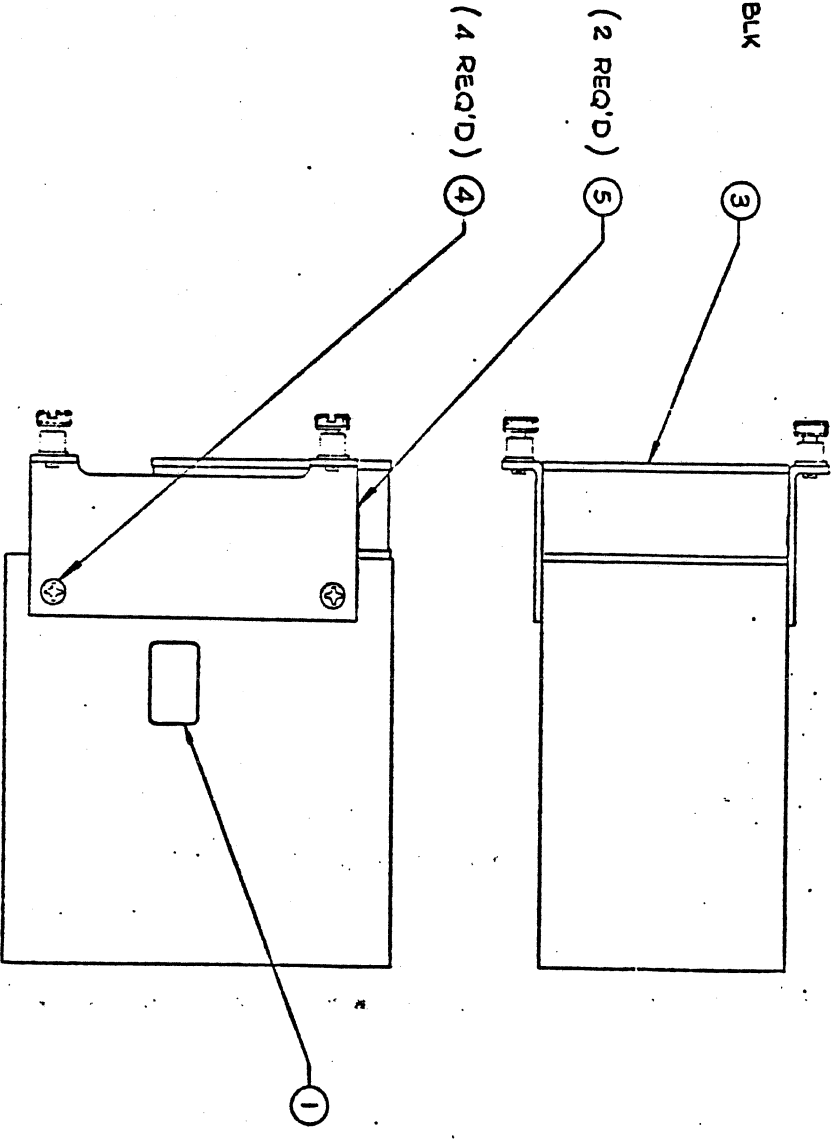
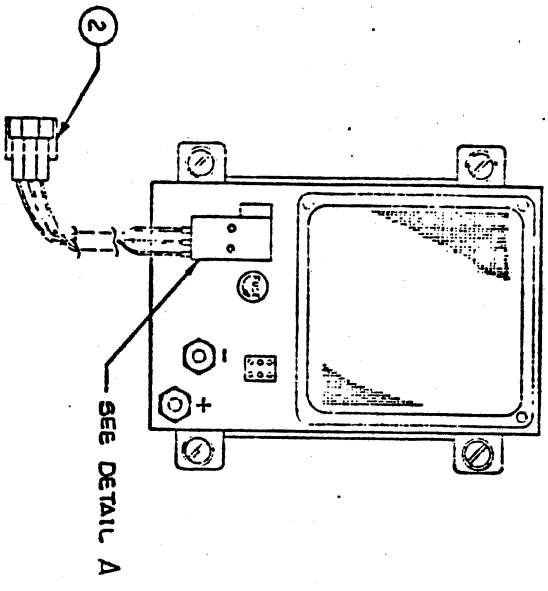
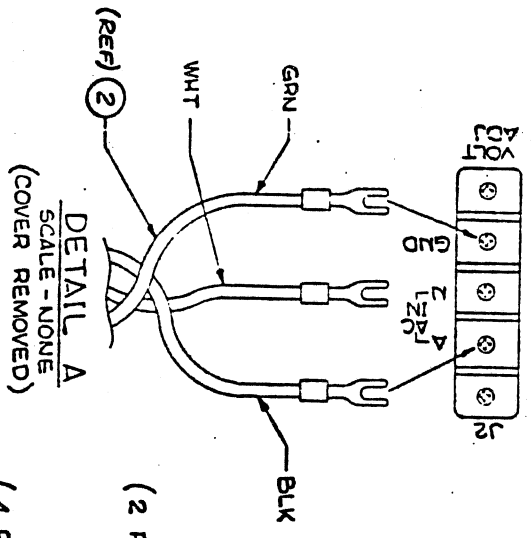
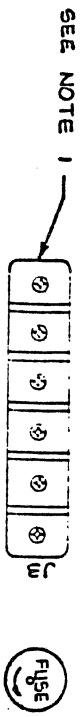
REV. MC

SCALE: 1:1

NOTES:

- REMOVE JUMPER BETWEEN US AND US1.
- TC-2 PCB JUMPER MODIFICATION
- ATTACH ONE JUMPER BETWEEN TERMINALS 28 & 29 PER SW GALT (PARTIAL) (GALTS) REMOVE ALL OTHERS.
- REMOVE BY STING THIS JUMPLETS RECALIBRATE THE VOLT OPERATOR.
- A. CHECK TERMINAL ASSEMBLY FROM BY REMOVING THE TERMINAL ASSEMBLY STOP OF COVER.
- LINE ASSEMBLY OPERATING MODE MODIFICATION.
- ADD IDENTIFICATION MARKER NEAR END OF POWER CABLE TO IDENTIFY ONLY ATTACH PERMANENTLY.
- GALT TO GALT ONLY ATTACH PERMANENTLY.
- WIRE WHITE WIRE TO PIN 8 OF CONNECTOR.
- WIRE BLACK WIRE TO PIN 9 OF CONNECTOR.
- WIRE GREEN WIRE TO PIN 4 OF CONNECTOR.
- WIRE RED WIRE TO PIN 3 OF CONNECTOR.
- WIRE YELLOW WIRE TO PIN 2 OF CONNECTOR.
- WIRE BLUE WIRE TO PIN 1 OF CONNECTOR.
- WIRE PURPLE WIRE TO PIN 10 OF CONNECTOR.
- WIRE BROWN WIRE TO PIN 11 OF CONNECTOR.
- WIRE PINK WIRE TO PIN 12 OF CONNECTOR.
- WIRE GREY WIRE TO PIN 13 OF CONNECTOR.
- WIRE LIGHT BLUE WIRE TO PIN 14 OF CONNECTOR.
- WIRE LIGHT GREEN WIRE TO PIN 15 OF CONNECTOR.
- WIRE LIGHT BLUE WIRE TO PIN 16 OF CONNECTOR.
- WIRE LIGHT GREEN WIRE TO PIN 17 OF CONNECTOR.
- WIRE LIGHT BLUE WIRE TO PIN 18 OF CONNECTOR.
- WIRE LIGHT GREEN WIRE TO PIN 19 OF CONNECTOR.
- WIRE LIGHT BLUE WIRE TO PIN 20 OF CONNECTOR.
- WIRE LIGHT GREEN WIRE TO PIN 21 OF CONNECTOR.
- WIRE LIGHT BLUE WIRE TO PIN 22 OF CONNECTOR.
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- WIRE LIGHT BLUE WIRE TO PIN 40 OF CONNECTOR.
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- WIRE LIGHT BLUE WIRE TO PIN 100 OF CONNECTOR.

4 3 2 1



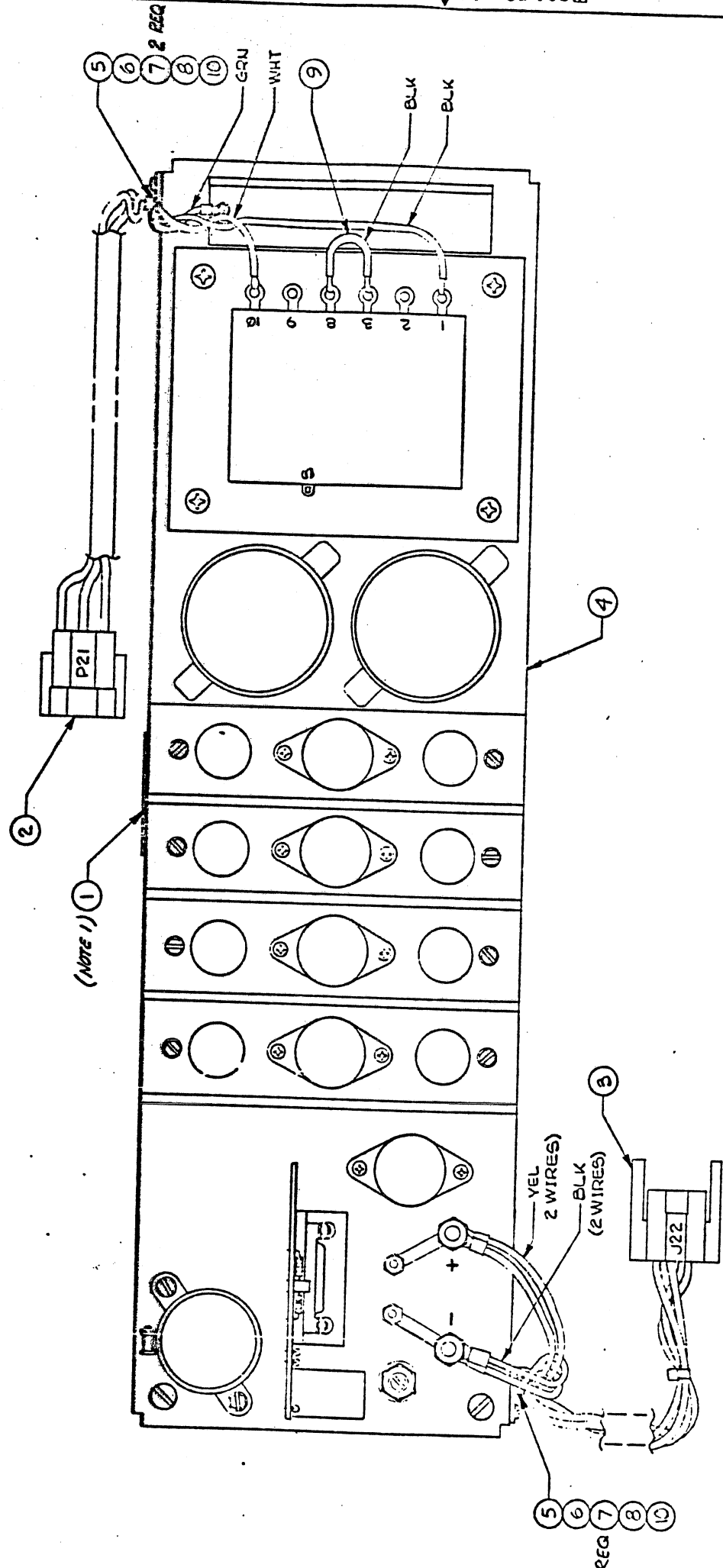
REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
-	MC	ADDED DETAIL 'A' INFORMATION, THIS DRAWING FORMALLY FOR RELEASED TO NC REV STATUS.	5-15-77
			APPROV: R.C.


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

CONTRACT NO.	6-15-77-1
DRAWN BY	JPH
CHECKED BY	JPH
MECH	
ELEC	
PROD. ENG	

SEE SEPARATE PARTS LIST  
 EVANS & SUTHERLAND  
 COMPUTER CORPORATION  
 SALT LAKE CITY, UTAH 84112  
 POWER SUPPLY  
 5V, 1500A  
 115V/60

REVISIONS		DATE	APPROVED
ZONE	LTR		
NC		FORMALLY RELEASED TO NC	DLL

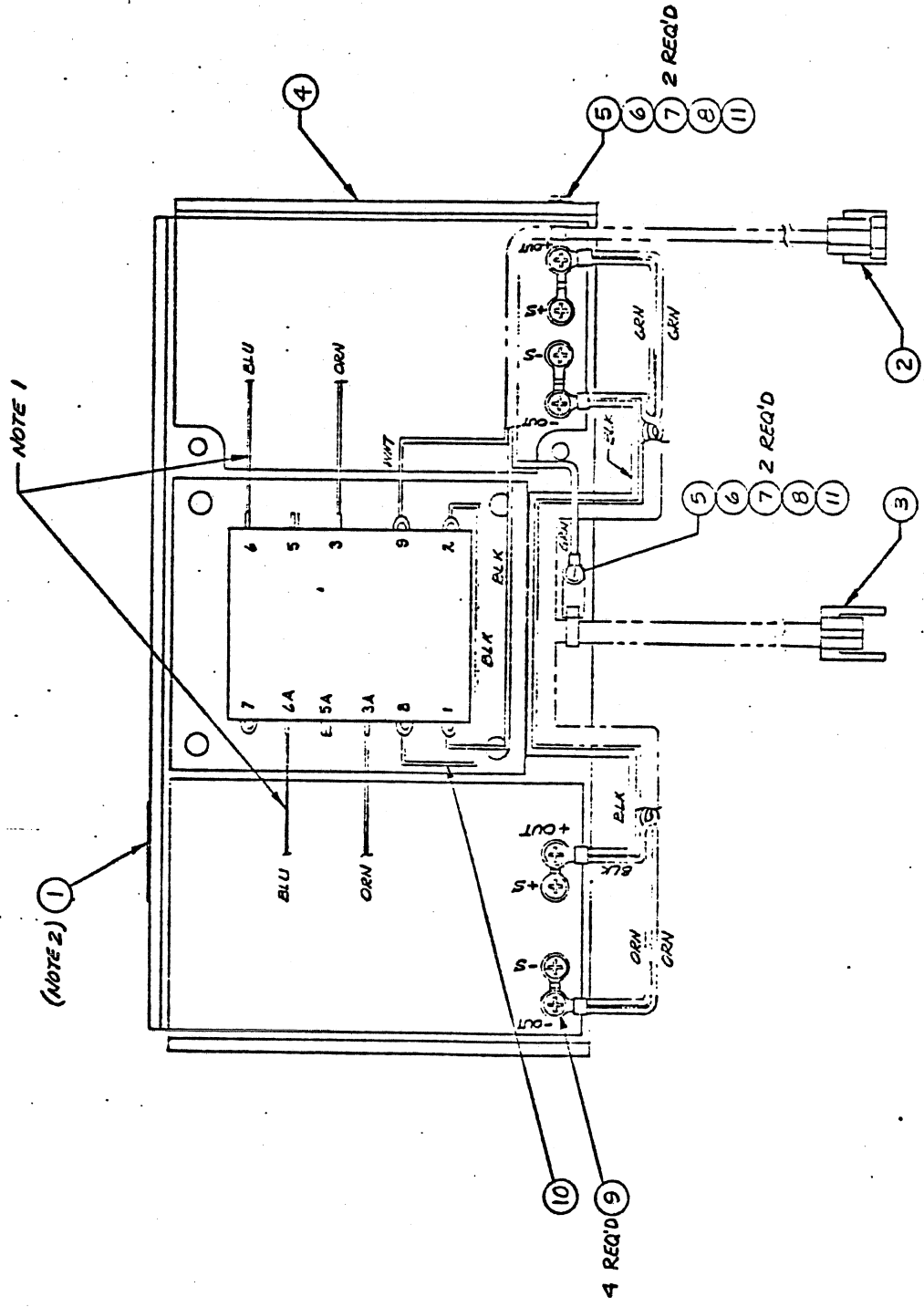


SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±		ASSY, POWER SUPPLY, 12V, 15A (NOVONVIEW SP)	
MATERIAL LIST		SIZE CODE IDENT NO C 53038	
NEXT ASSY USED ON		REV 142	
200152-100		200152-100	
APPROVED		APPROVED	
MECH		ELEC	
CHECKED BY: ... 8/17/77		PROJ ENG: ... 8/17/77	
DRAWN BY: J. L. ... 8-16-77		CONTRACT NO.	

1. MARK ASSY NO., S/N, & ECO NO. USING BLACK OPAQUE INDUSTRIAL INK, PHILLIPS PROCESS CO. NO. 35A OR EQUIVALENT.

NOTES:

REVISIONS		DATE	APPROVED
ZONE LTR	DESCRIPTION	1/17	J.A.D.
NC	FORMALLY RELEASED TO NC		



NOTE 1

(NOTE 2) ①

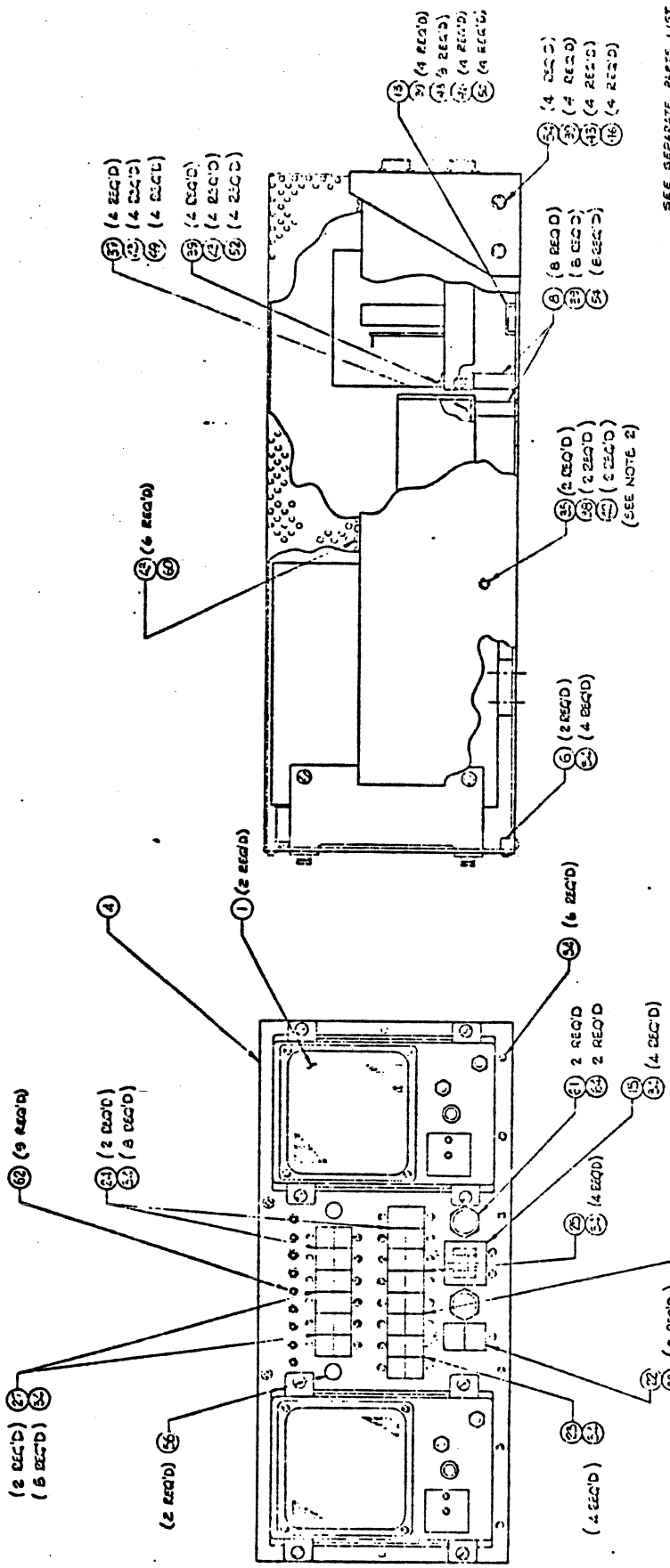
SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
ASSY, POWER SUPPLY, ± 15 V, 2.8 A	
SIZE	CODE IDENT NO
C 53938	200153-100
REV	NC

CONTRACT NO.	DRAWN P. 200153-100 3-16-77
CHECKED	L. J. ... 2/17/77
MECH	
ELEC	
PHOJ. ENG	
APPROVED	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	
.XX ±	
.XXX ±	
ANGLES ±	
✓	
MATERIAL	SEE PARTS LIST
FINISH	

200153-100	NEXT ASSY	USED ON	FINISH

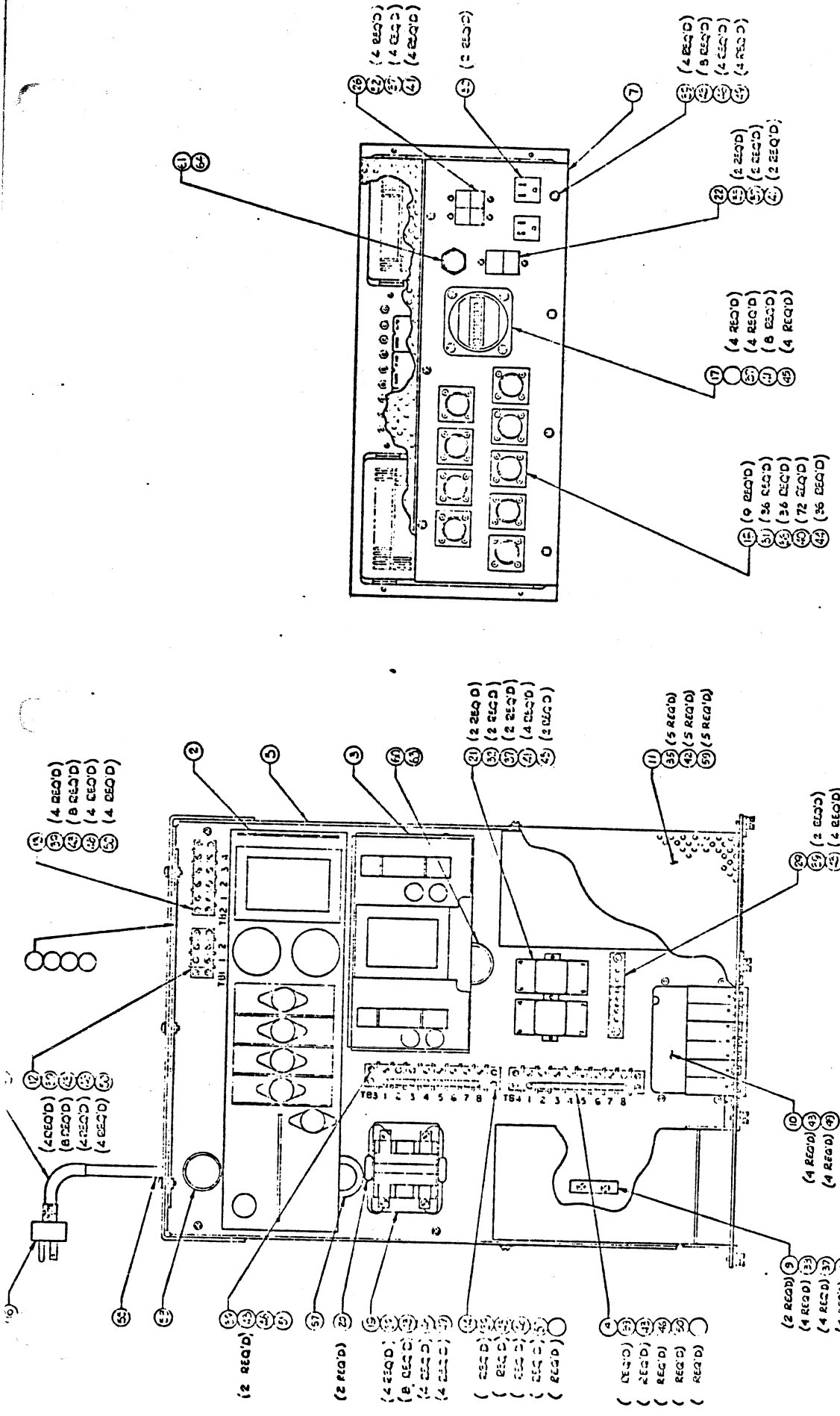
2. MARK ASSY NO., S/N & ECO NO. USING  
BLACK OPAQUE INDUSTRIAL INK, PHILLIPS  
PROCESS CO. NO. 35A OR EQUIV.
1. CONNECT EXISTING BLUE WIRES (2) AS SHOWN.
- NOTES:



2. TEMPORARY HARDWARE TO BE REMOVED AFTER TESTING & SHIPPING, TWO PLACES.  
 1. REFERENCE DRAWINGS: SCHEMATIC, 200154.500  
 UNLESS OTHERWISE SPECIFIED:

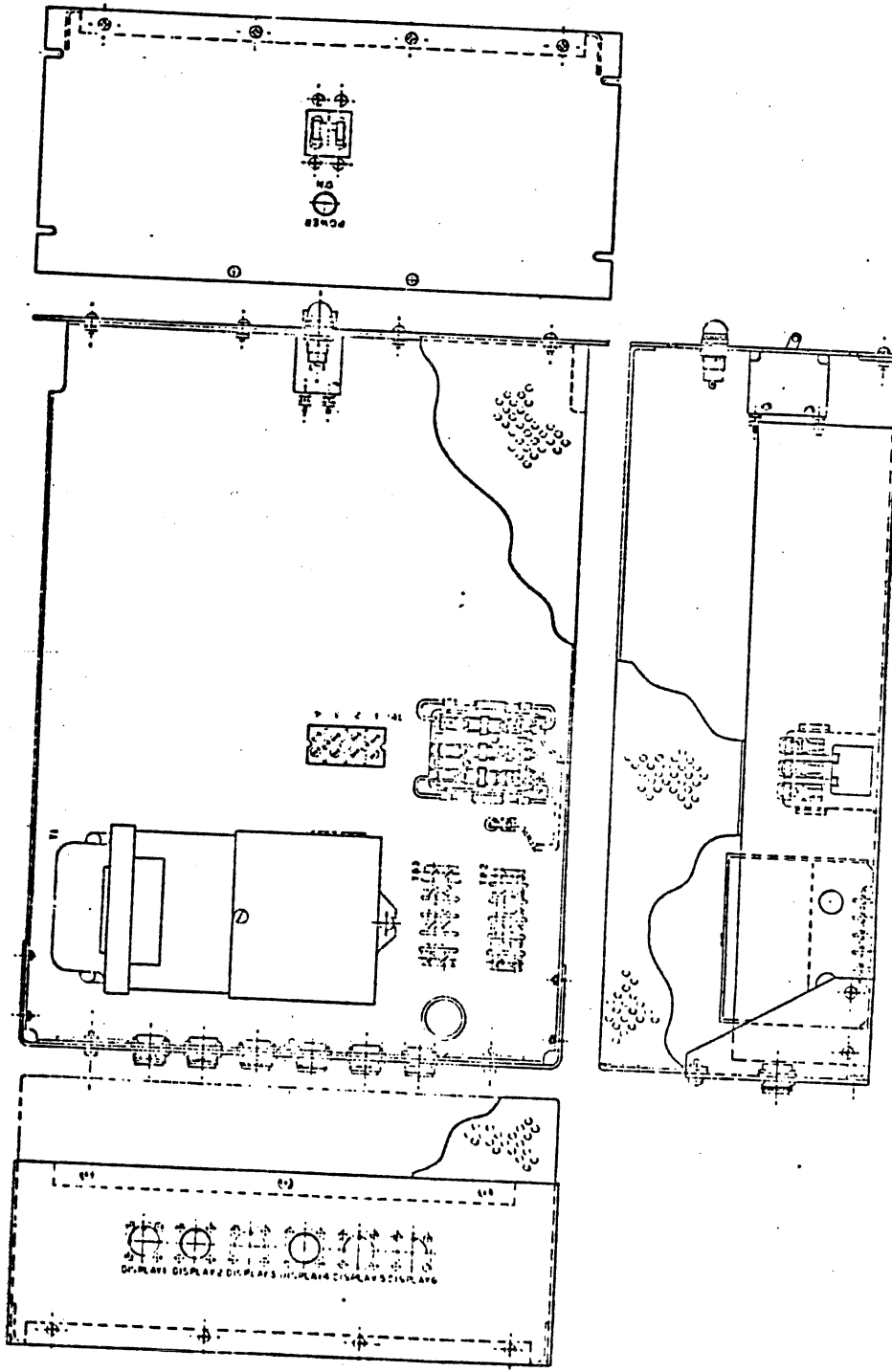
SEE SEPARATE PARTS LIST

EVA'S SUB-FLIGHT COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
TITLE	
PART NAME	
PROJECT	
DATE	
DRAWN BY	
CHECKED BY	
DESIGNED BY	
APPROVED BY	
MATERIALS	
QUANTITY	
UNIT PRICE	
TOTAL PRICE	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
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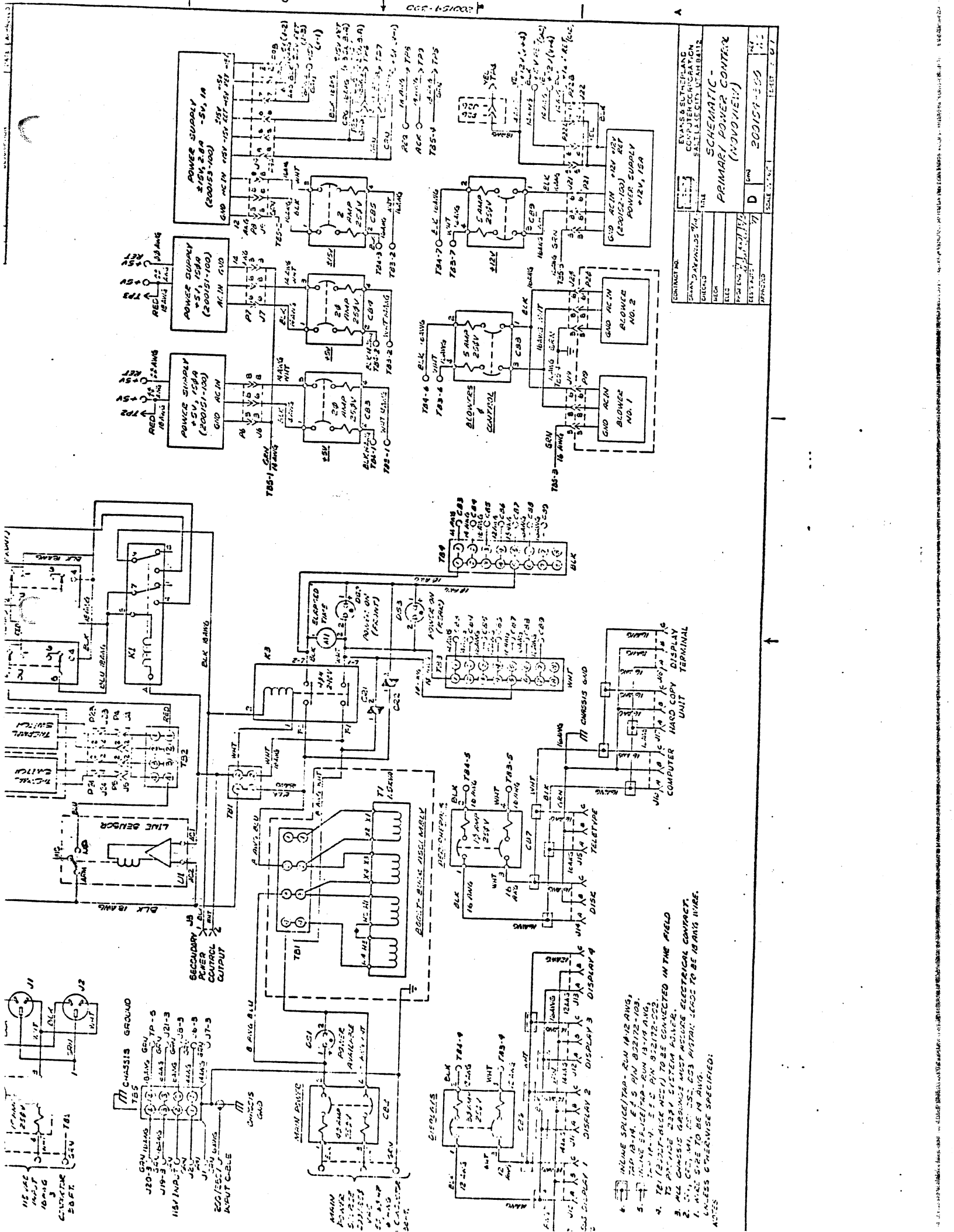
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DRAWING NO.	ASSEMBLY
DATE	F212A25-100
SCALE	1" = 10"
APPROVED	
DESIGNED BY	
CHECKED BY	
DATE	
PROJECT	
BY	
DATE	
SCALE	
APPROVED	
DESIGNED BY	
CHECKED BY	
DATE	
PROJECT	
BY	
DATE	





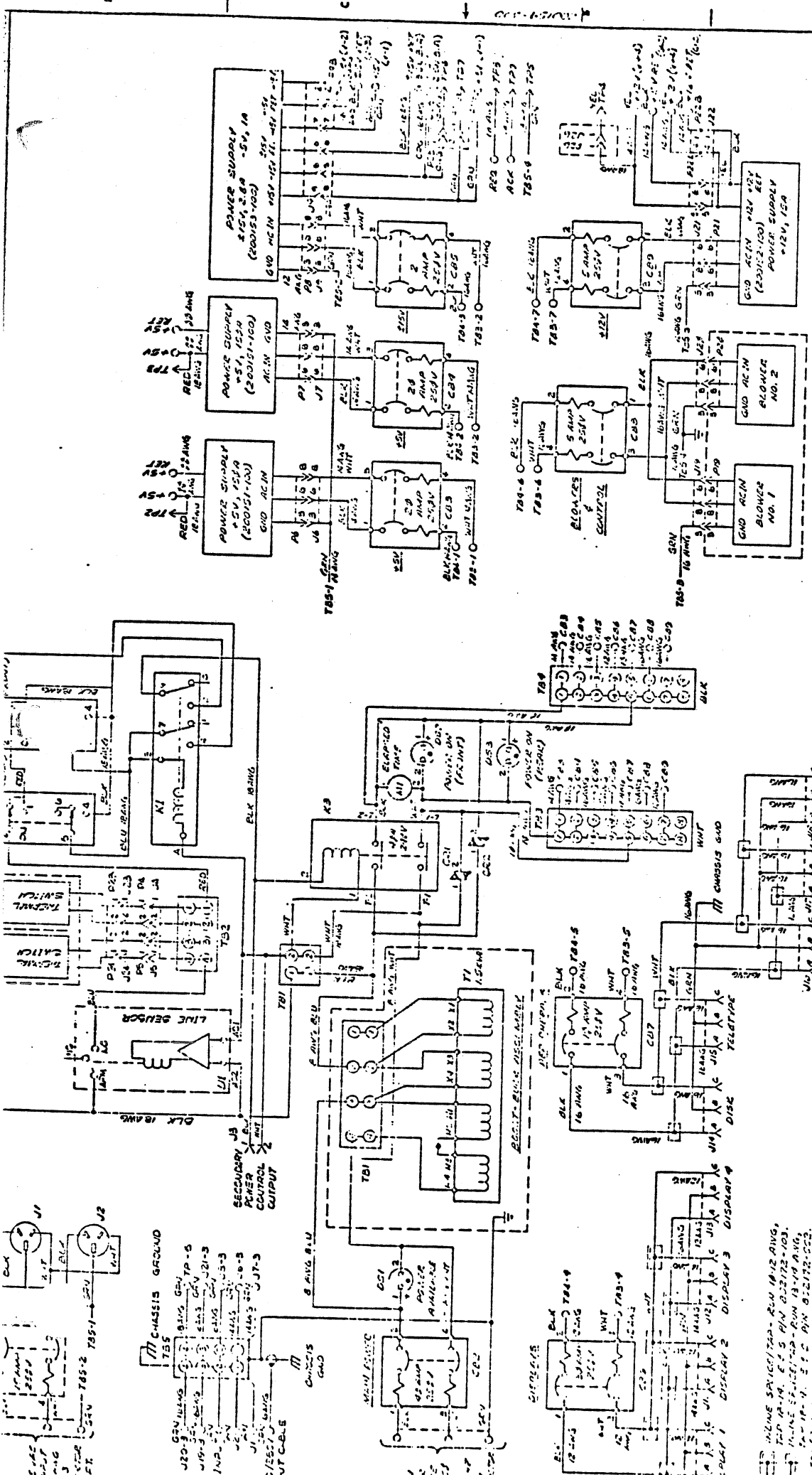
SEE SEPARATE PARTS LIST

EVANS & SUTHERLAND COMPUTER CORPORATION SELLERS CITY, UTAH 84112	
CONTRACT NO. DRAWING NO. 7-101-451002	TITLE ASSY SECONDARY POWER CONTROL (NEW/WHEN SP)
DESIGNED BY CHECKED BY DRAWN BY INCHES DECIMALS FRACTIONS	DATE 10/15/54
UNIT'S SHOWN IN PARENT DIMENSIONS AND IN NOTES UNLESS OTHERWISE NOTED	SCALE 1" = 10"



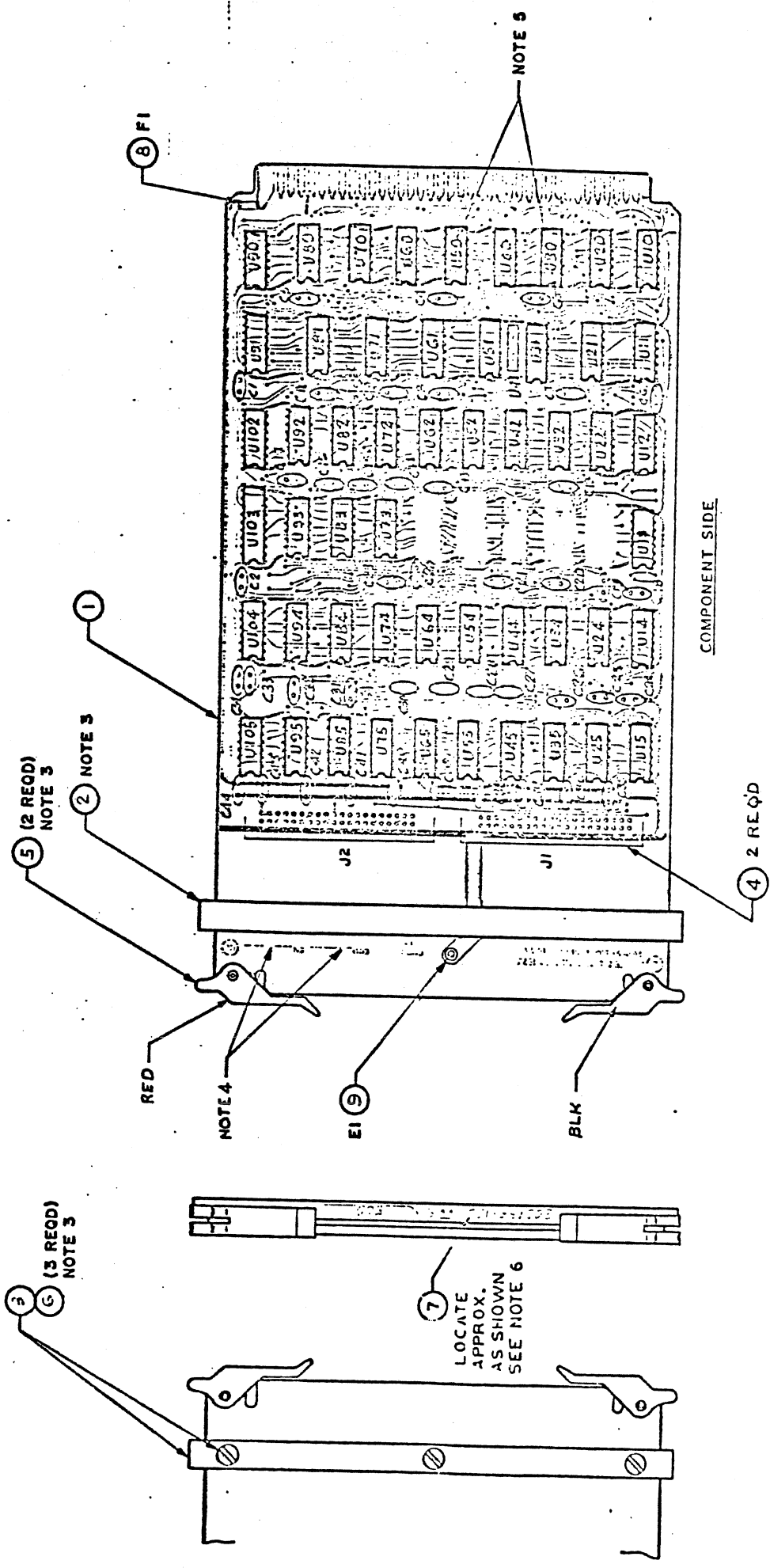
CONTRACT NO.	EVANS & SUTHERLAND
DRAWING APPROVED BY	COMPUTER CONFIGURATION
CHECKED	SAN LEA CITY, UTAH 84143
REVISION	
DATE	
DESIGNED BY	
APPROVED	
SCHEMATIC - PRIMARY POWER CENTER (12/20/67)	
DWG NO.	200151-100
SCALE	AS SHOWN
SHEET	1 OF 1

1. WIRE SIZE TO BE 18 AWG UNLESS OTHERWISE SPECIFIED.
2. ALL CHASSIS GROUNDS MUST BE ELECTRICAL CONTACT.
3. 5V, 1500W, 1500W, 1500W SYSTEM MUST BE ELECTRICAL CONTACT.
4. TO PREVENT 230V SYSTEM FROM BEING CONNECTED IN THE FIELD.
5. TO PREVENT 230V SYSTEM FROM BEING ELECTRICAL CONTACT.
6. TO PREVENT 230V SYSTEM FROM BEING ELECTRICAL CONTACT.
7. TO PREVENT 230V SYSTEM FROM BEING ELECTRICAL CONTACT.
8. TO PREVENT 230V SYSTEM FROM BEING ELECTRICAL CONTACT.
9. TO PREVENT 230V SYSTEM FROM BEING ELECTRICAL CONTACT.
10. TO PREVENT 230V SYSTEM FROM BEING ELECTRICAL CONTACT.



CONTRACT NO.	EVANS SUB-PLANT		
ORIGINATING OFFICE	COMPUTER CONFIGURATION		
DATE	11-2-67		
REVISION	SCHEMATIC -		
TITLE	PRIMARY POWER CONTROL		
DRAWING NO.	200151-100		
REVISED	D		
SCALE	1:1		

1. 12V LINE SWITCH/REG - REM 1A/2 AWG,  
 11/16" DIA. 1/4" PIN 3/32" DIA. 100.  
 2. 5V LINE SWITCH/REG - REM 1A/2 AWG,  
 11/16" DIA. 1/4" PIN 3/32" DIA. 100.  
 3. 5V LINE SWITCH/REG - REM 1A/2 AWG,  
 11/16" DIA. 1/4" PIN 3/32" DIA. 100.  
 4. TO ATTACH 250V SYSTEM BLOWER.  
 5. ALL CHASSIS GROUNDS MUST BE MADE ELECTRICAL CONTACT.  
 6. ALL WIRE TO BE 14 AWG.  
 7. ALL WIRE TO BE 14 AWG.  
 8. ALL WIRE TO BE 14 AWG.  
 9. ALL WIRE TO BE 14 AWG.  
 10. ALL WIRE TO BE 14 AWG.

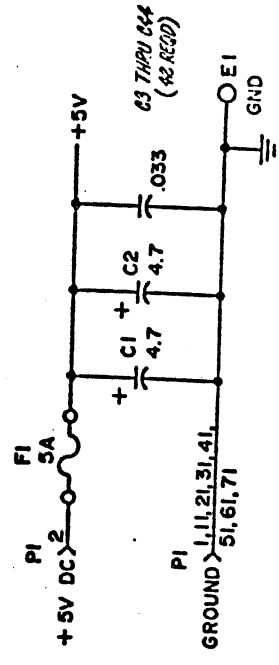


REFERENCE DOCUMENTS  
 LOGIC DIAGRAM --- 20Q155-600  
 PARTS LIST --- PL20Q155-100

COMPONENT SIDE

- NOTES:
1. ASSEMBLE PER E & S WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 5) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK E & S ASSY. NO., S/N & ECO LEVEL ON ITEM NO. 7.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON XX ± .XXX ± ANGLES ±		CONTRACT NO. DRAWN/VIII 3-14-77 CHECKED/... 18 MAR 77 MECH ELEC PROJ ENG APPROVED	SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
MATERIAL FINISH	SEE PARTS LIST	SIZE CODE IDENT NO	CARD ASSEMBLY DISPLAY DATA, CABLE (P.C.)
NEXT ASSY USED ON		C 63938	REV 111



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:

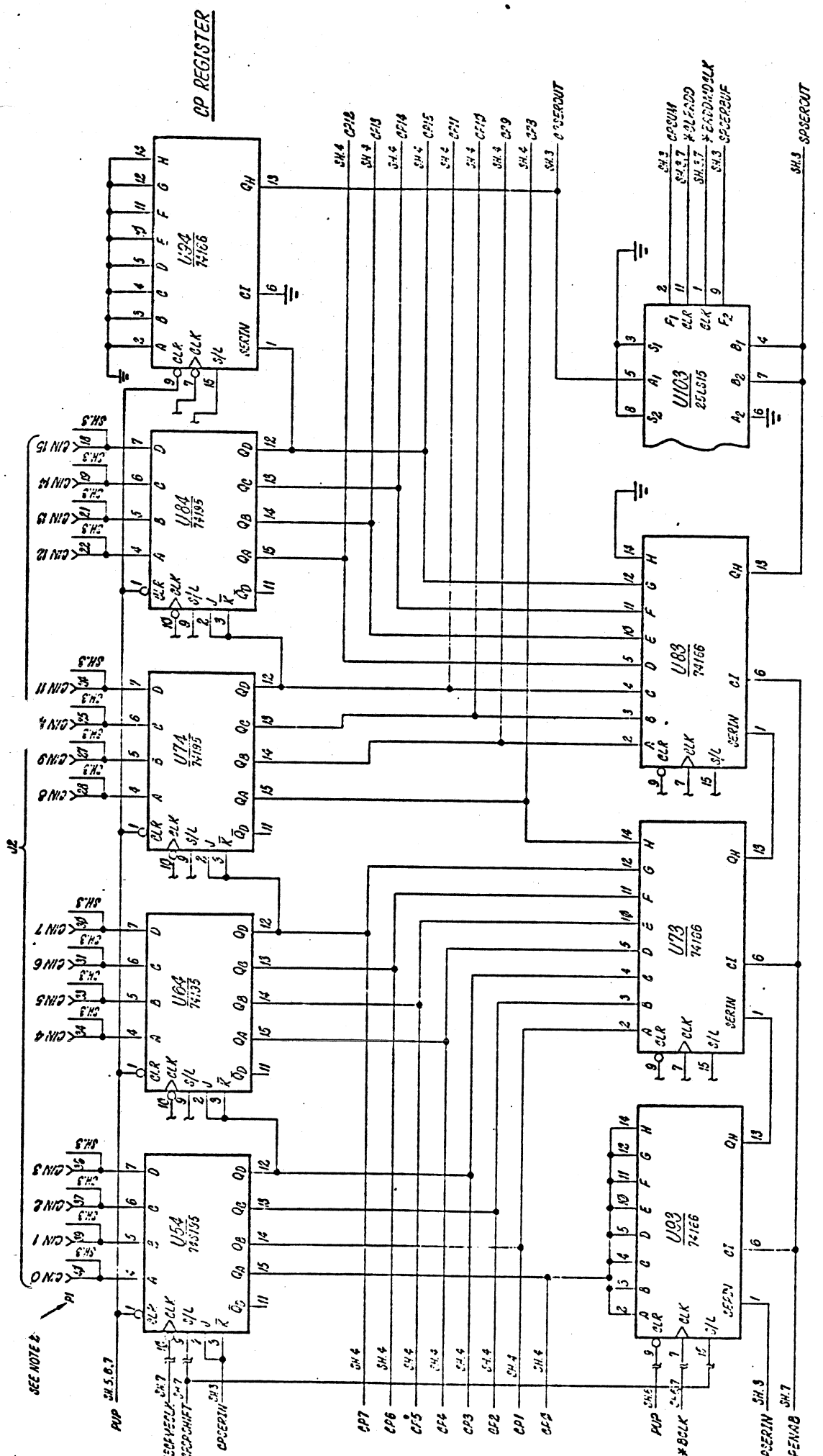
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	
TOLERANCES ON		DRAWN BY <i>MM WATLEY</i> 6-6-77	
.XX ±		CHECKED	
.XXX ±		MECH	
ANGLES ±		ELEC	
✓		PROJ. ENG	
MATERIAL		APPROVED	
NEXT ASSY		SIZE	
200130-1-3		C 53938	
APPROVAL		CCODE IDENT NO	
USED ON		200155-600	
APPLICATION		REV	
		MC	



SEE SEPARATE PARTS LIST  
 EVANS & SUTHERLAND  
 COMPUTER CORPORATION  
 SALT LAKE CITY, UTAH 84112

DISPLAY DATA,  
 (P.C.)

A



**CP REGISTER**

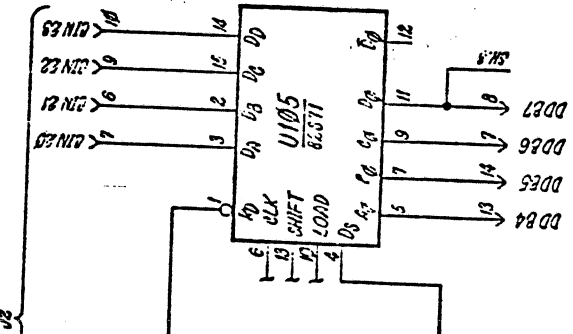
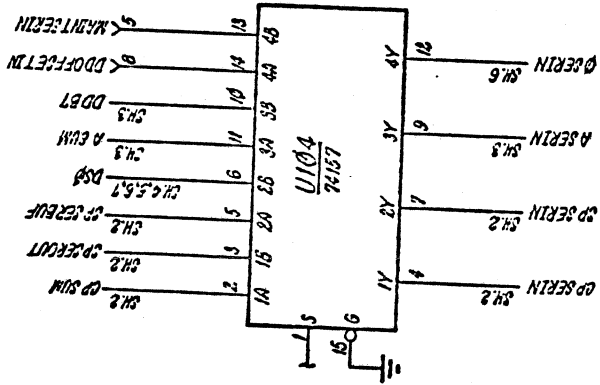
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U78 74166

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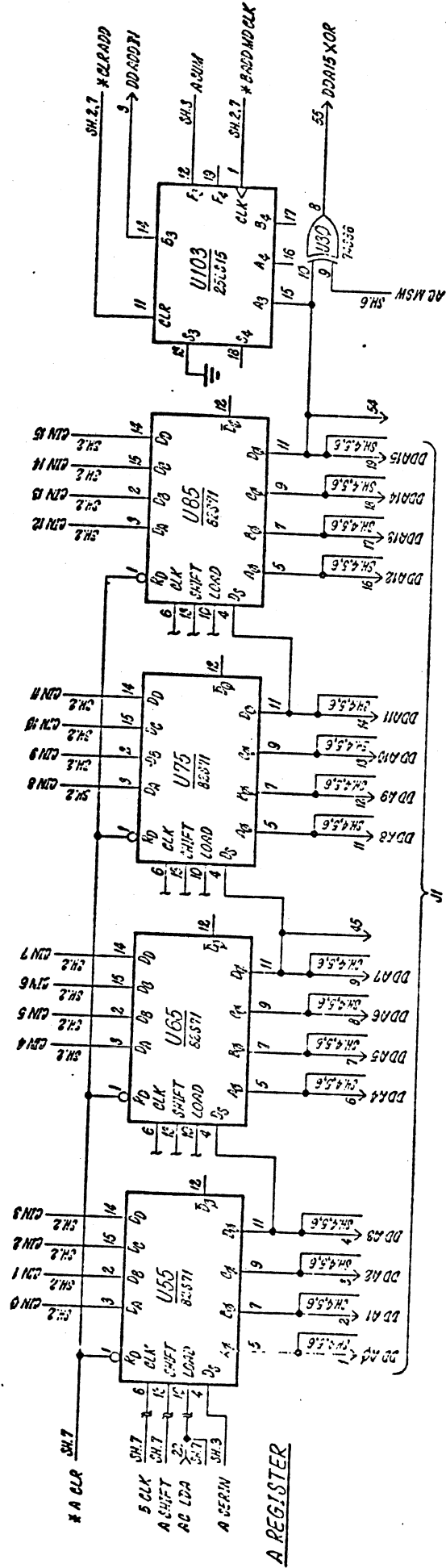
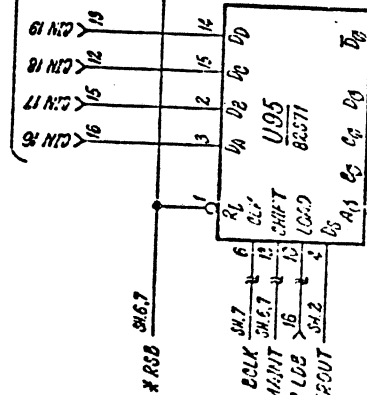
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U105 74166  
U106 74166  
U107 74166

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U2-4	U1-10
U2-5	U1-15
U2-8	U1-20
U2-11	U1-25
U2-14	U1-30
U2-17	U1-35
U2-20	U1-38
U2-23	
U2-26	
U2-29	
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U2-38	
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	U1-35
	U1-38

**SERIAL  
MULTIPLEXER**

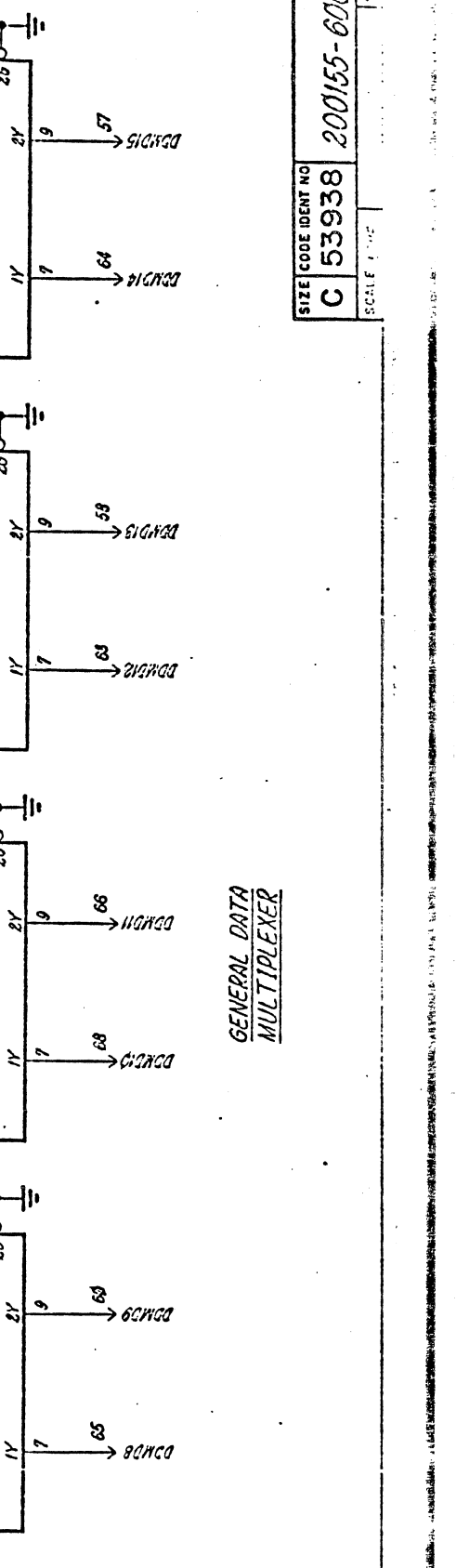
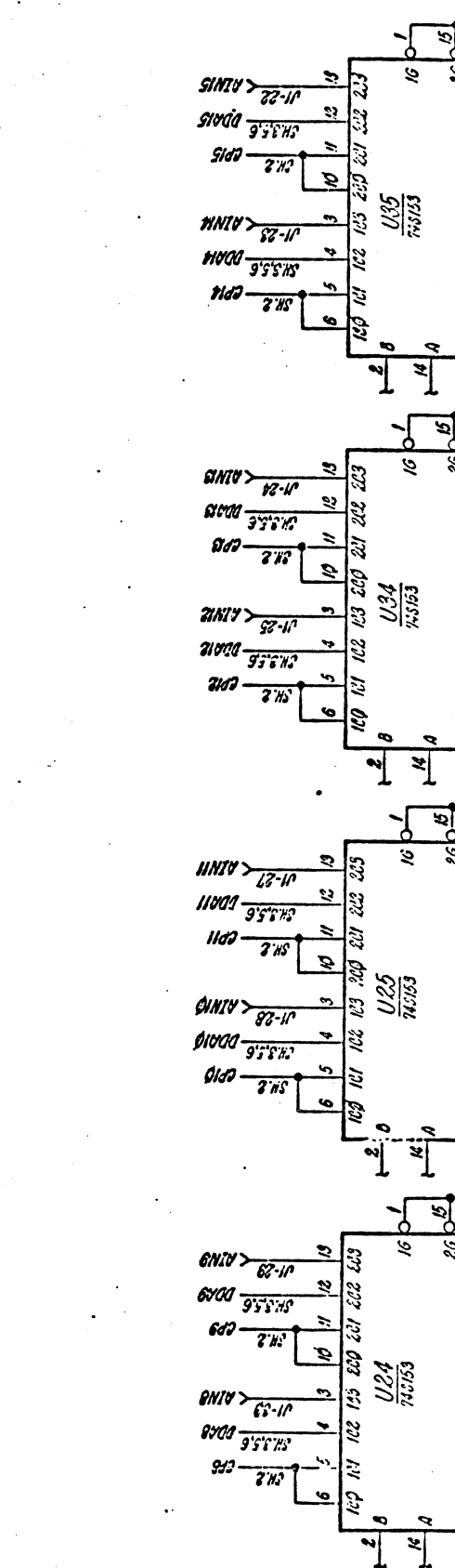
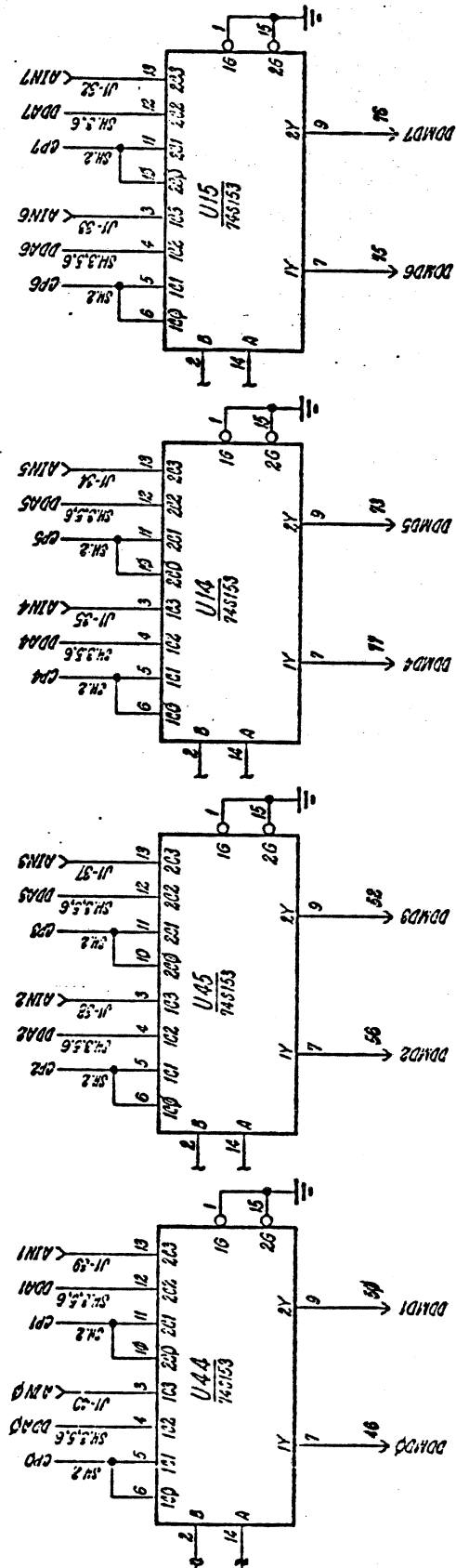


**B REGISTER**



**A REGISTER**

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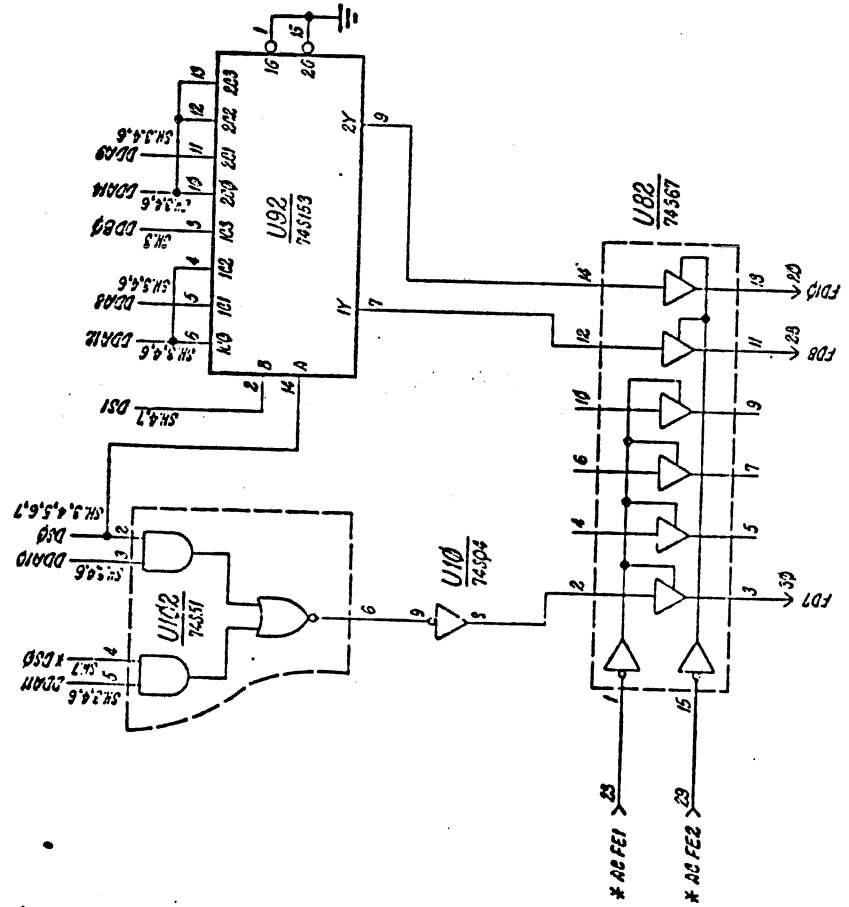
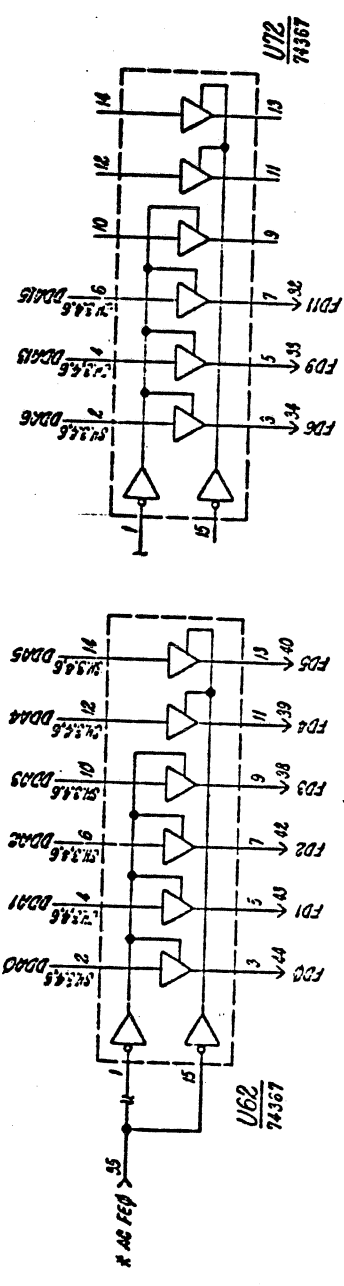


GENERAL DATA  
MULTIPLEXER

SIZE CODE IDENT NO	REV
C 53938	NC
200155-600	
SCALE 1:1	

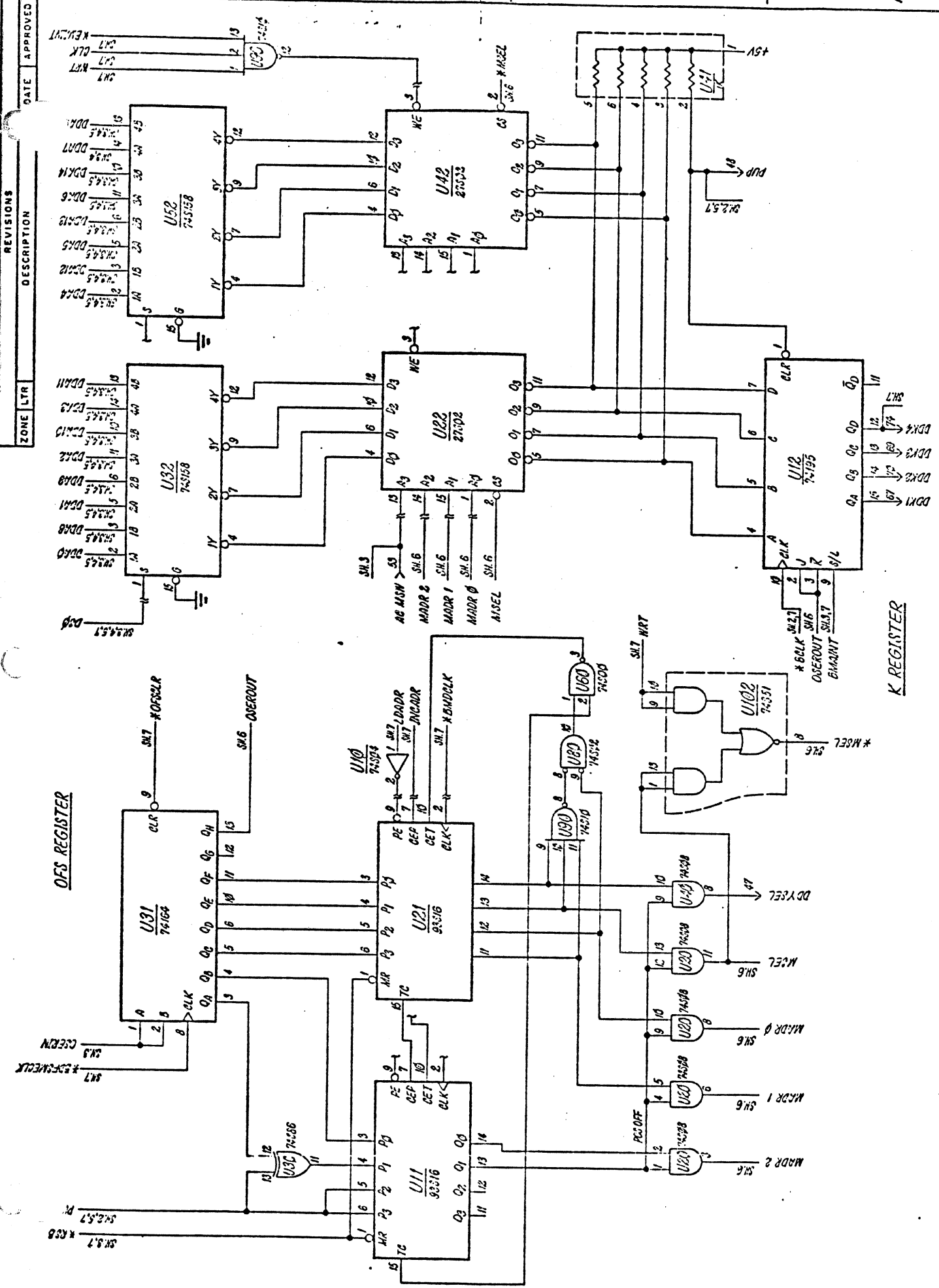


ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED



FACE DATA OUTPUT

SIZE CODE IDENT NO	REV
C 53938	NC
200155-600	



OFS REGISTER

K REGISTER

KNOT MEMORY AND ADDRESSING

REVISIONS	DESCRIPTION	DATE	APPROVED

ZONE	LYR

SIZE CODE IDENT NO	REV
C 53938	NC

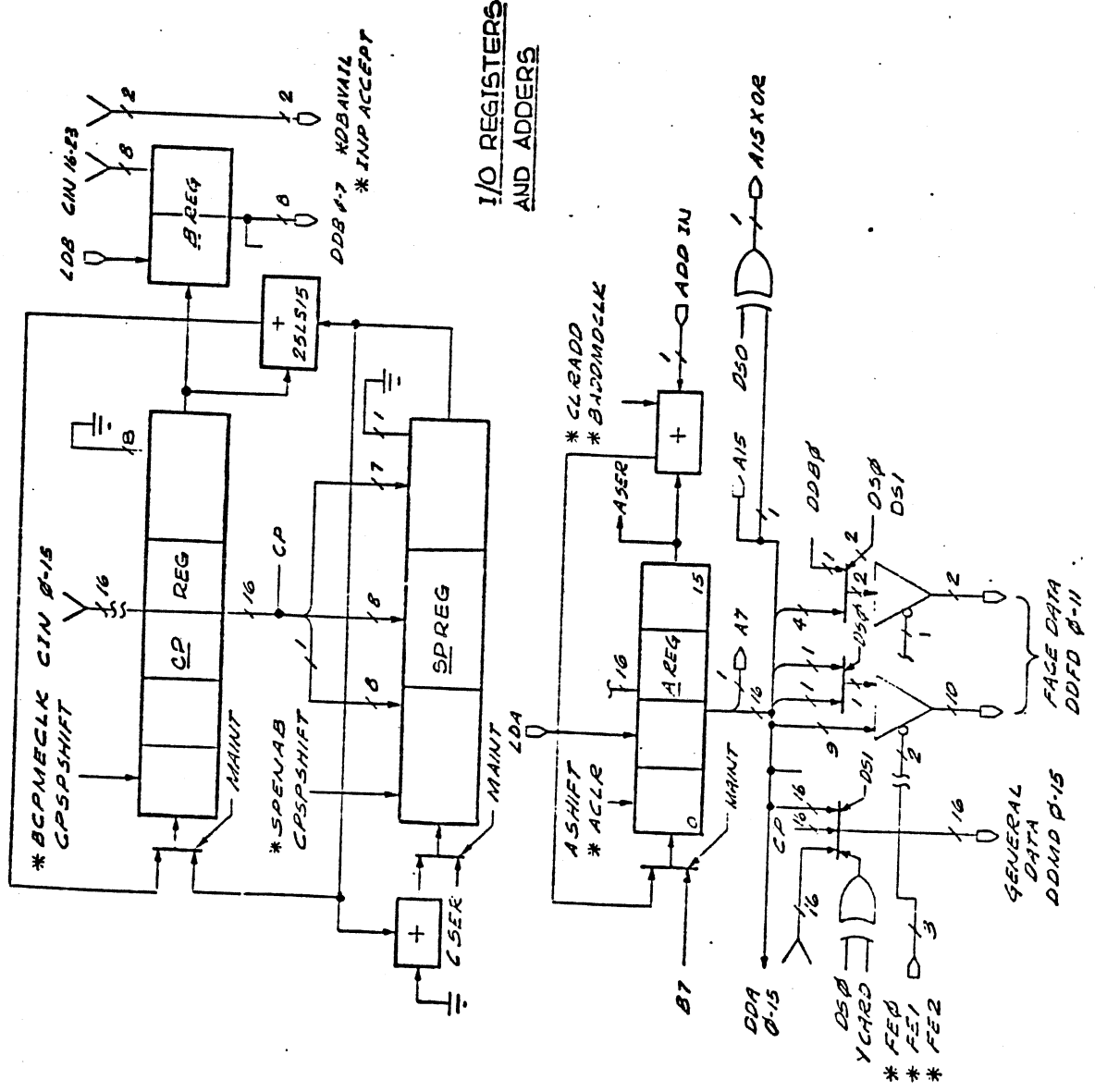
200155-600

200155-600





ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED
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**I/O REGISTERS  
AND ADDRES**

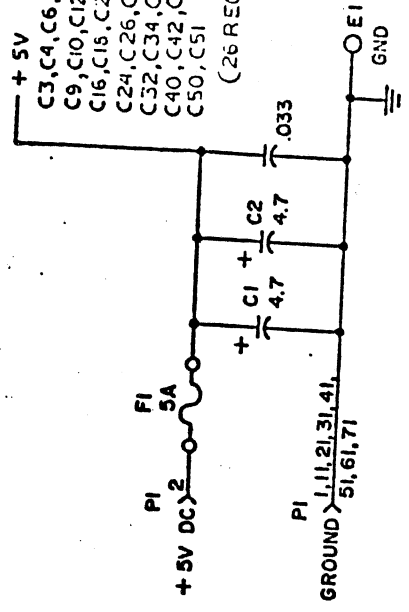
SIZE	CODE IDENT NO	REV
C	53938	NC
E00155-900		SCALE

SCALE

ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVE

- + 5V
- C3, C4, C6, C8,
- C9, C10, C12, C14,
- C16, C18, C20, C22,
- C24, C26, C28, C30,
- C32, C34, C36, C38,
- C40, C42, C44, C49,
- C50, C51

(26 REQ'D)



- 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		SEE SEPARATE PARTS LIST	
CHECKED		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
MECH		ANALOG CONTROL	
ELEC		W/W	
PROJ. ENG		SIZE CODE IDENT NO	
APPROVED		C 53938	
MATERIAL		200156-600	
FINISH		REV	
200130-100	NOVO SP	NG	
NEXT ASSY	USED ON		

5/1

DBAVAIL 4.7

\*DBAVAIL

BLOCK 2 40

FORCE AVAIL 79

INP AVAIL

\*DP BLK ACCEPT SH 3

DISAB INP 2

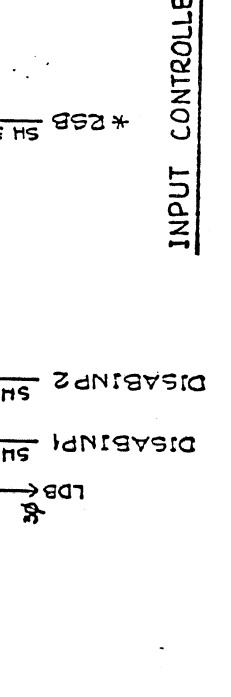
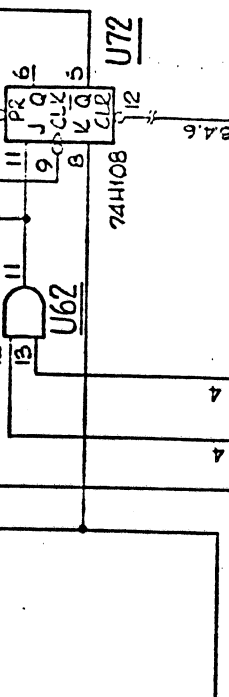
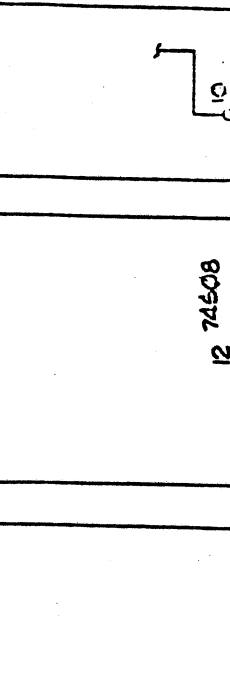
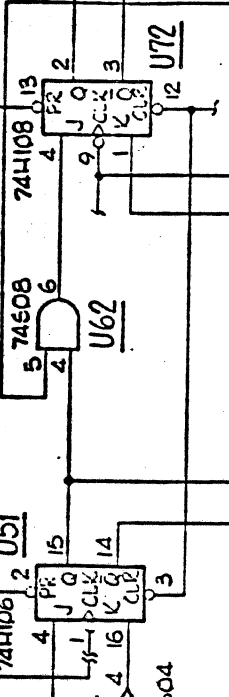
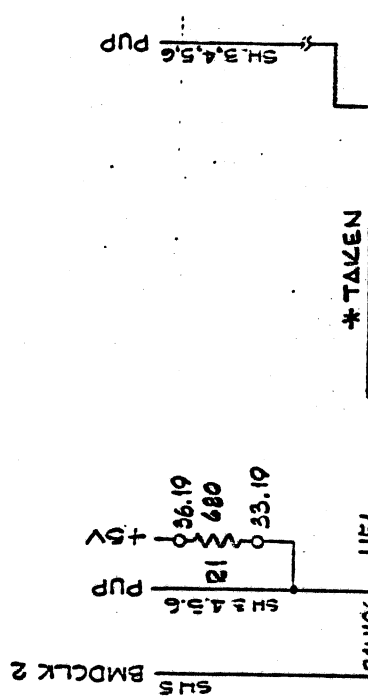
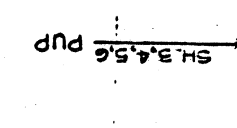
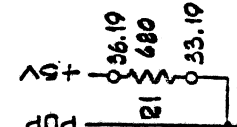
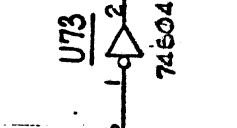
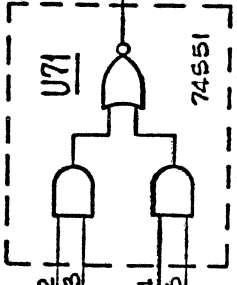
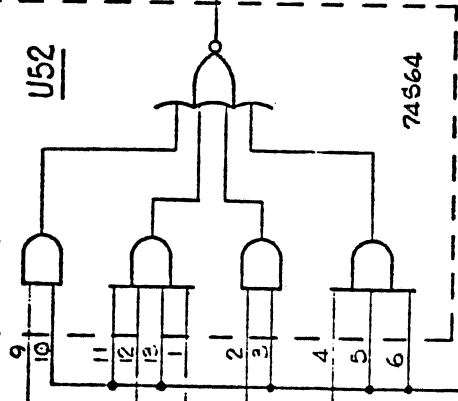
DP OCNEB SH 6

DISAB INP 1

\*INP ACCEPT

U41

74508



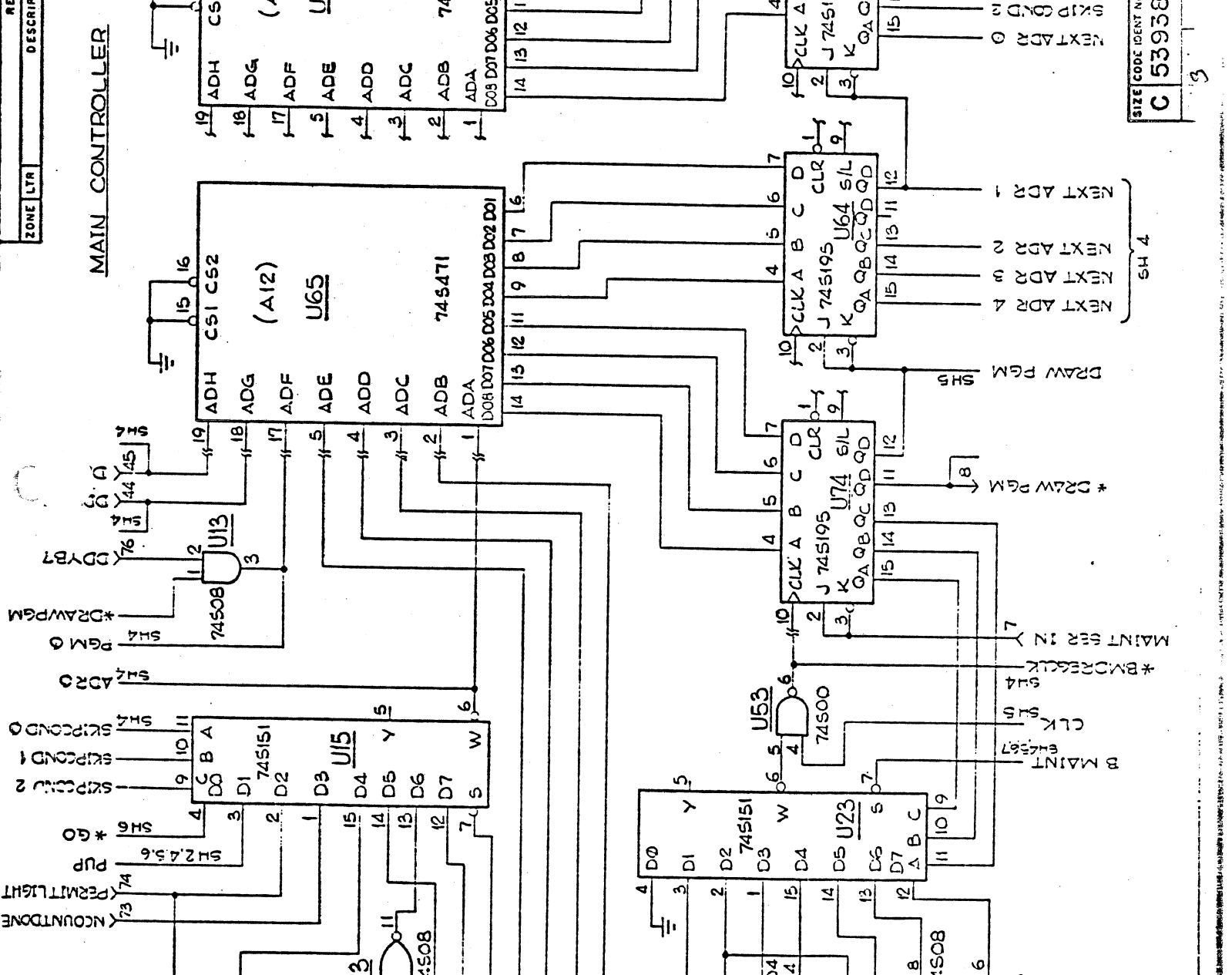
INPUT CONTROLLER

SIZE	CODE IDENT NO	REV
C	53938	200156-600
SCALE		NC

5h2

ZONE	LTR	DESCRIPTION	DATE	APPROVED

# MAIN CONTROLLER



SK1	CONDITIONS
+5V	R2 5.67
DDYB0	52 U33
+5V	8.43 R3 5.43
*SP EXISTS	75 U13
DDXB5	SH 11 U33
*TIMING DONE	SH 5 U33
SFCONE	
NEXT ACR 0	
NEXT ADR 4	
NEXT ACR 3	
NEXT ADR 2	
NEXT ADR 1	
*INP AVAIL	SH 2
DP BLK ACCEPT	SH 7
*INP AVAIL	SH 2 U43
DP BLK ACCEPT	SH 2 U53
*STATE DELAY DONE	SH 5 U13
*BETA CARRY	SH 7 U13
*TIMING DONE	SH 5 U13
*INP AVAIL	SH 2 U43

WAIT CONDITIONS

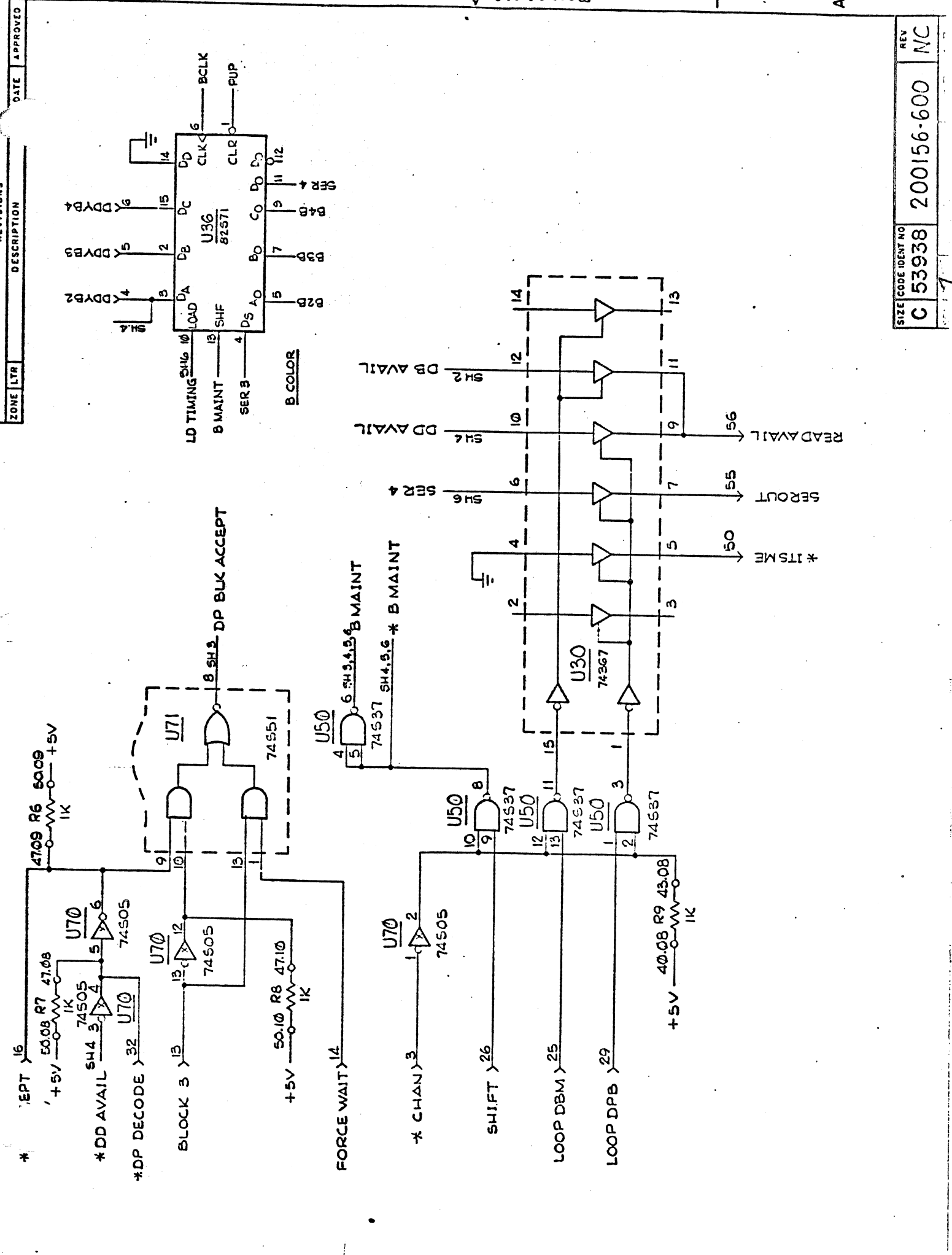
SIZE	CODE IDENT NO	REV
C	53938	200156-600
		NC







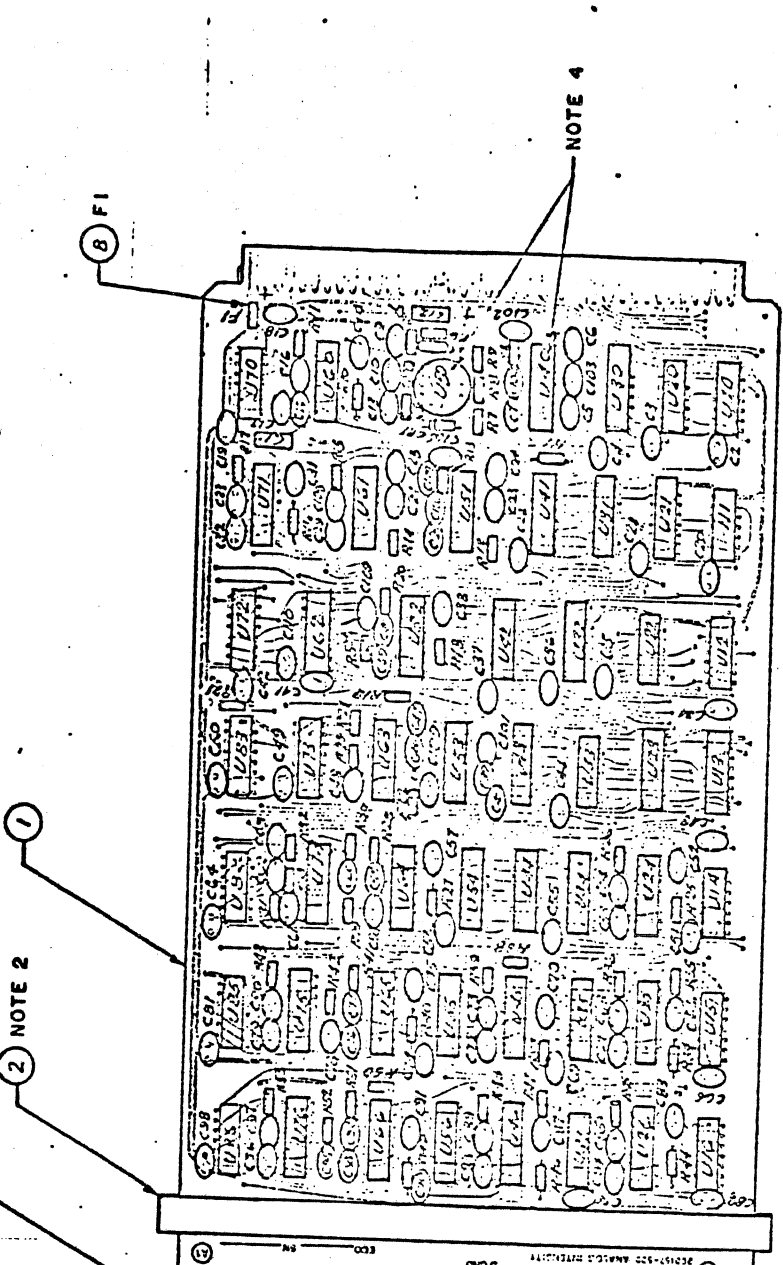






REVISIONS		DATE	BY
ZONE	LTR		
P1		5-77	
P2		8-10-77	

DESCRIPTION
EXTENSIVE LOGIC CHANGES
EXTENSIVE LOGIC CHANGES



COMPONENT SIDE

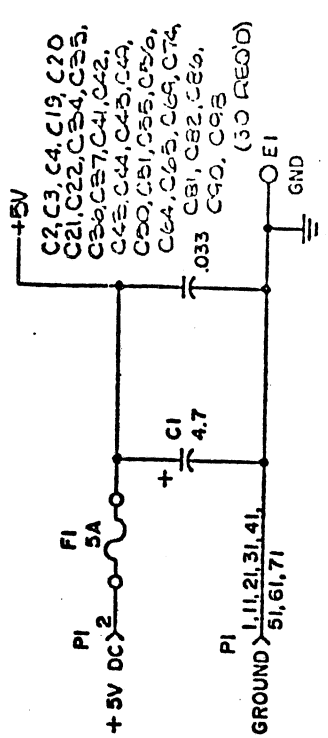
- NOTES.**
- ASSEMBLE PER EAS STANDARD.
  - INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  - MARK ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  - ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  - MARK L'S ASSY. NO., S/H & ECO LEVEL ON ITEM NO. 6.

**REFERENCE DOCUMENTS**

- LOGIC DIAGRAM --- 200157-600
- PARTS LIST --- PL200157-100
- ART WORK --- 200157-500 REVAI

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TOLERANCES ON		ANGLES ±		MATERIAL		FINISH	
XX ±	XXX ±	XXX ±	XXX ±	XXX ±	XXX ±	XXX ±	XXX ±	XXX ±	XXX ±
✓									
200157-100	NOVOVIEW-1								
NEXT ASSY	USED ON								
APPLICATION									
SEE PARTS LIST									
CONTRACT NO									
DRAWING 8-D-77									
CHECKED 11/AUG 77									
MECH									
ELEC									
PHOTO ENG									
APPROVED									
SEE SEPARATE PARTS LIST									
EVANS & SUTHERLAND									
COMPUTER CORPORATION									
SALT LAKE CITY, UTAH 84112									
CARD ASSEMBLY									
ANALOG INTENSITY (ARC)									
SIZE	CODE IDENT. NO.	REV							
C 53938	200157-100	P2							

ZONE	LTN	DESCRIPTION	DATE	APPROVED
	P1	REVISION	5-21-77	
	P2	EXTENSIVE REVISION A	5-9-77	



3 RESISTORS, R5, R24, R54 VALUES TO BE SELECTED AT TEST

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).

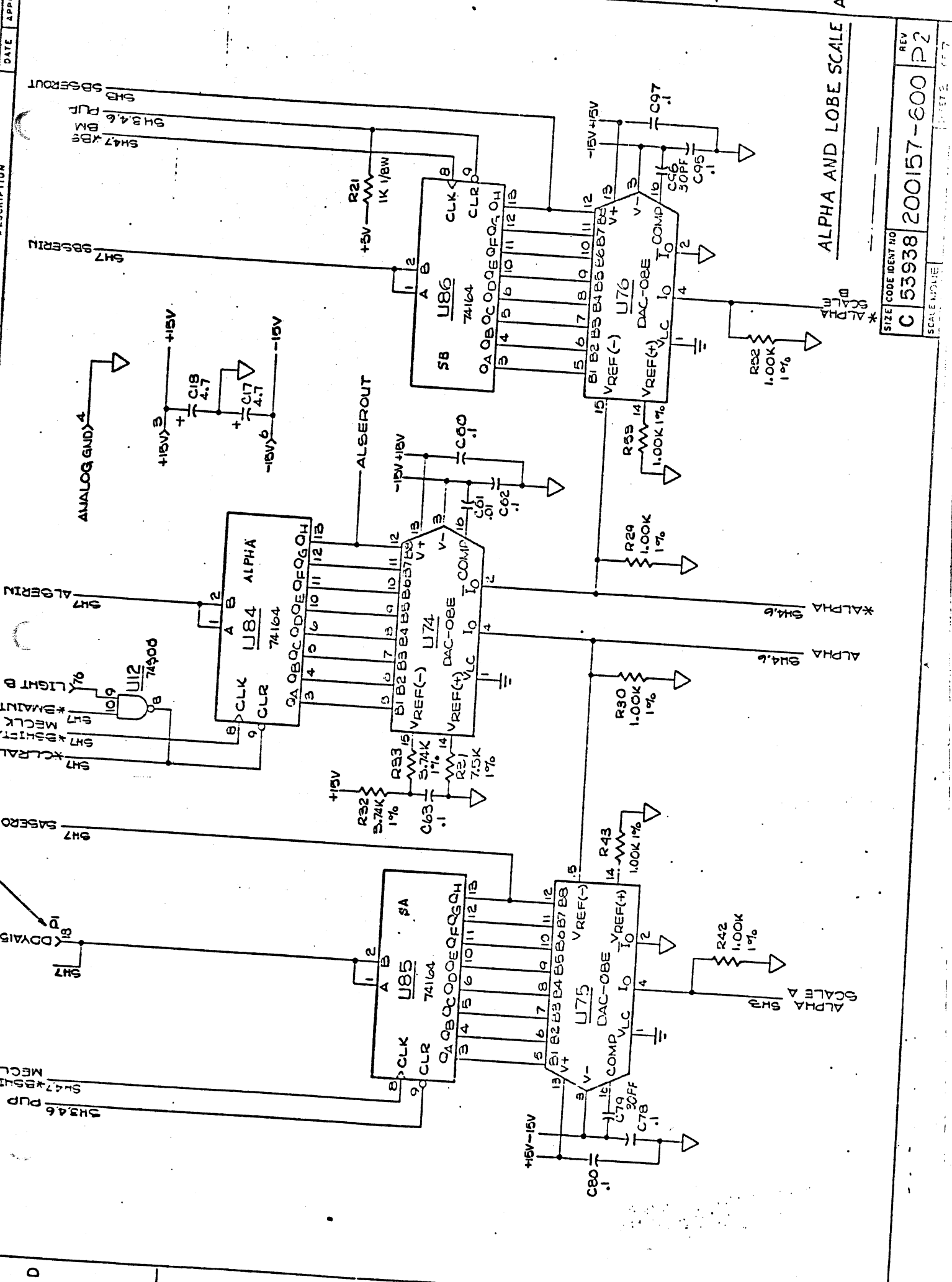
ON ALL 14 PIN I.C.'S, PIN 7 IS GROUND AND PIN 14 IS POWER (+5V).

UNLESS OTHERWISE SPECIFIED;

NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	
.XX ±	_____	DRAWN BY MELLUS 0-6-77	
.XXX ±	_____	CHECKED BY [Signature] 2-4 AUG 77	
ANGLES ±	_____	MECH	
✓	_____	ELCC	
	_____	PRCJ. ENG	
	_____	APPROVED	
	_____	MATERIAL	
	_____	FINISH	
200157-700	ADDVIEW		
NEXT ASSY	USED ON		
APPLICATION			

SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
ANALOG INTENSITY (P.C.)	
SIZE CODE IDENT NO	REV
C 53938	200157-600 P2
SCALE POINT	



ALPHA AND LOBE SCALE

SIZE CODE IDENT NO  
 C 53938 200157-600 P2

SCALE MODEL

REV P2

PAGE 2

DATE

APPRO

DESCRIPTION

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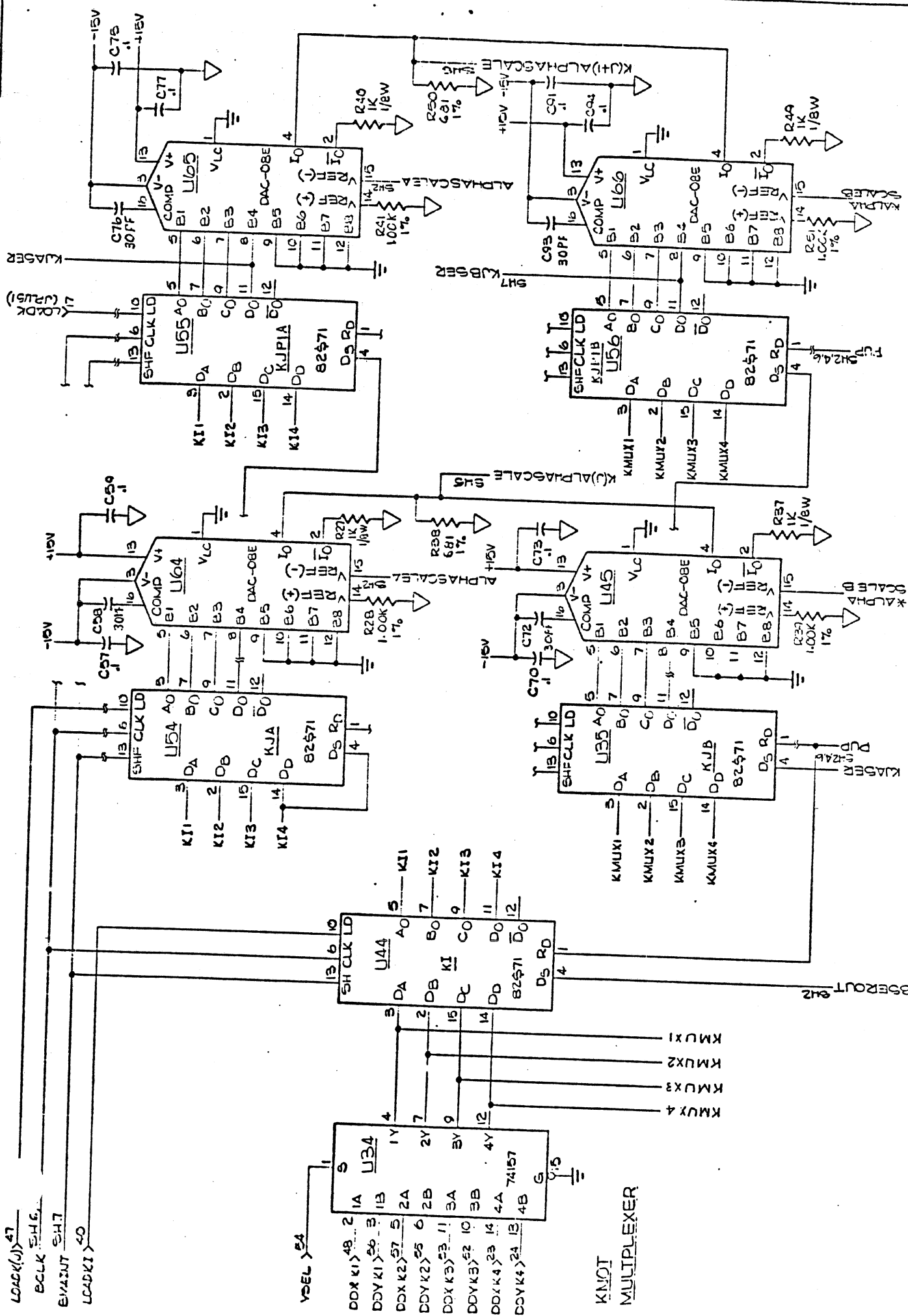
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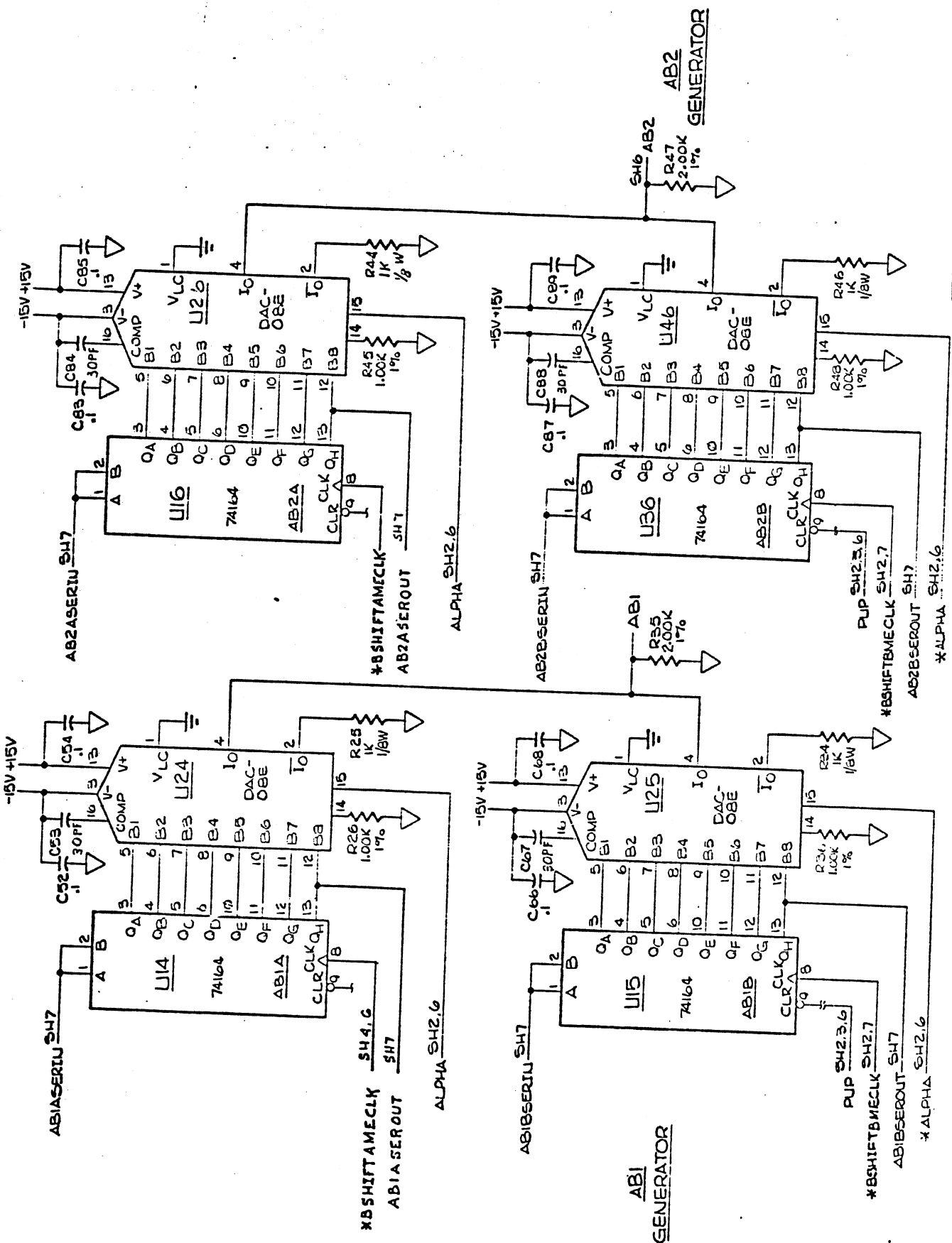
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140



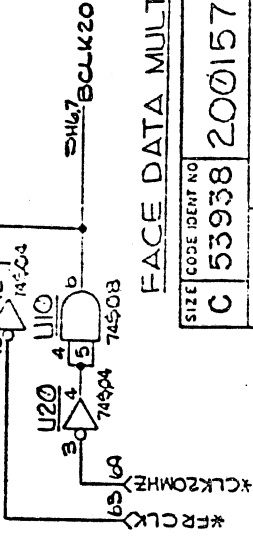
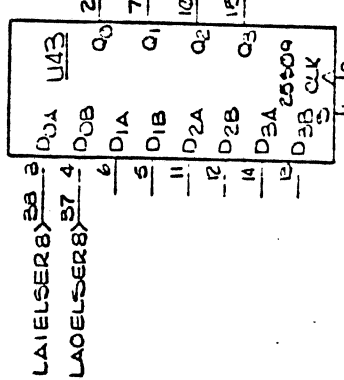
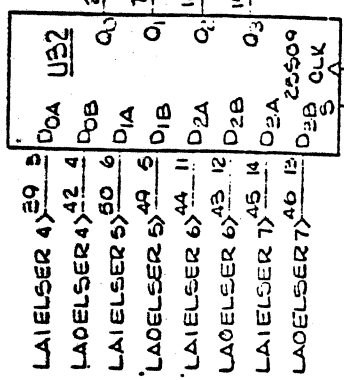
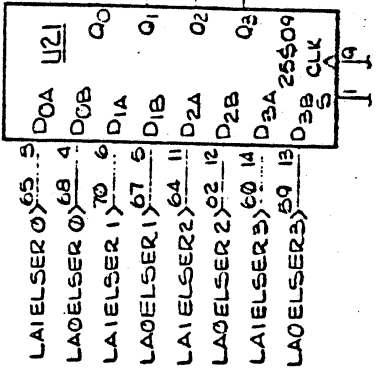


**LOBE GENERATOR  
 SEGMENT ALPHA-INTERPOLATION**

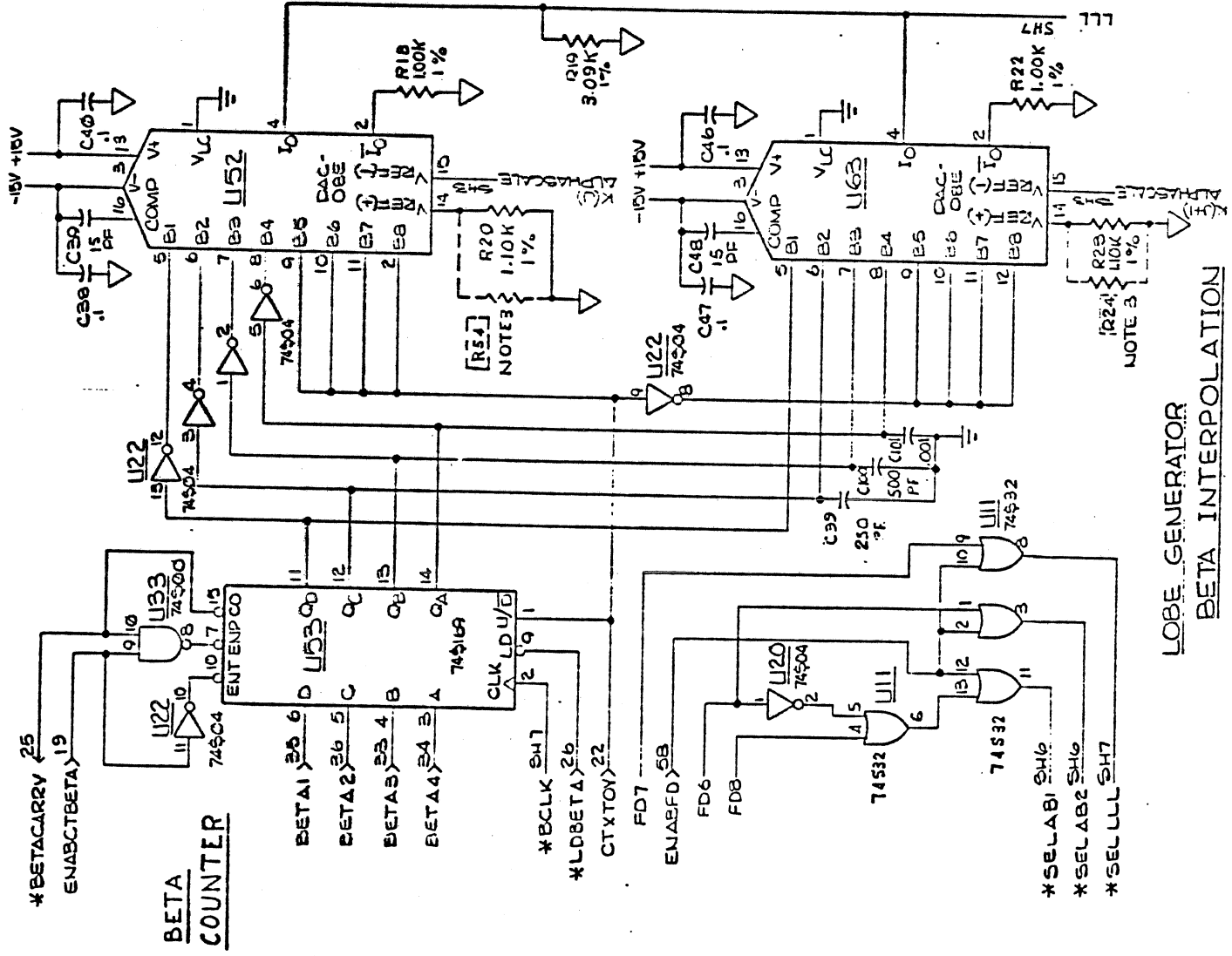


ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED

## FD REGISTER

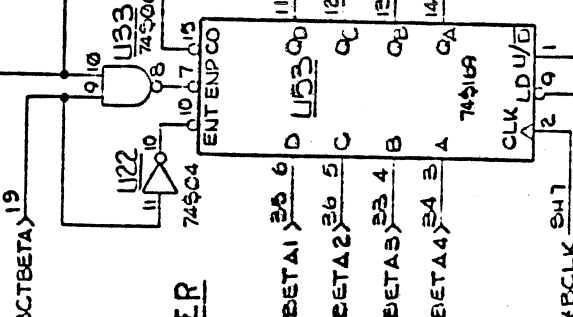


FACE DATA MULTIPLEXING
REV
SIZE
CODE IDENT NO
C 53938
200157-600
D2



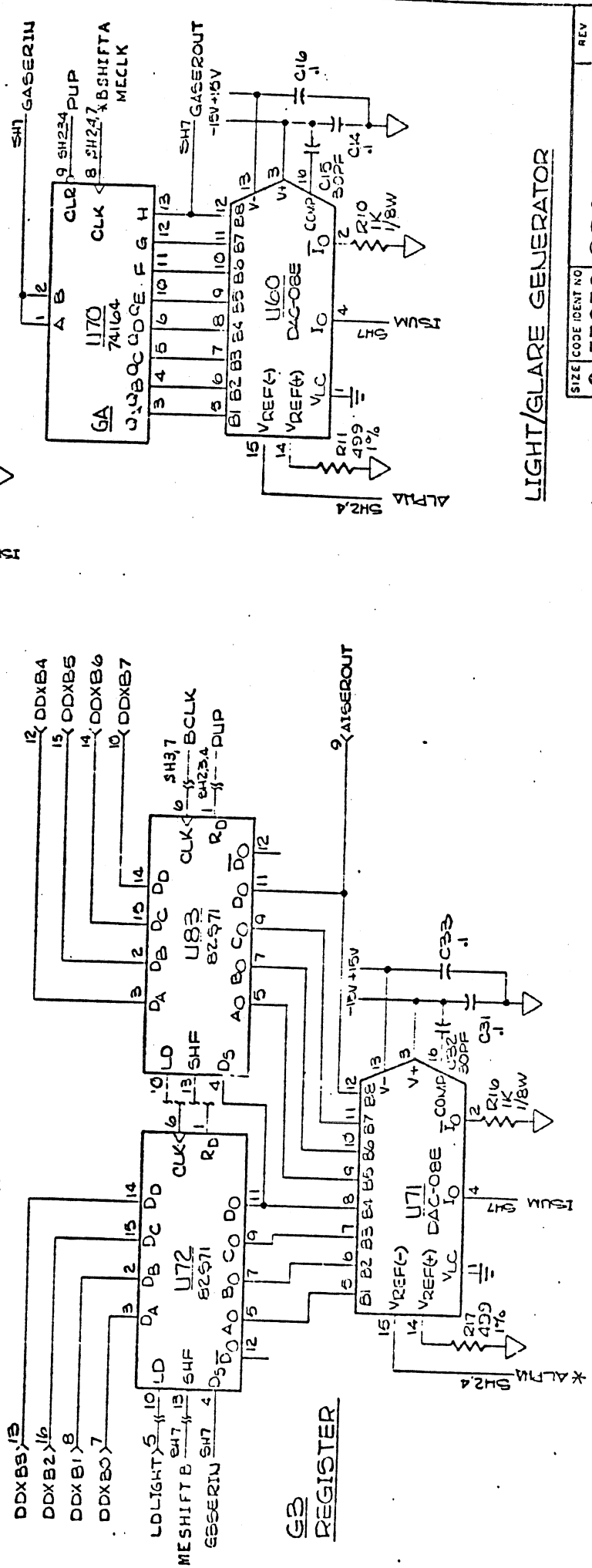
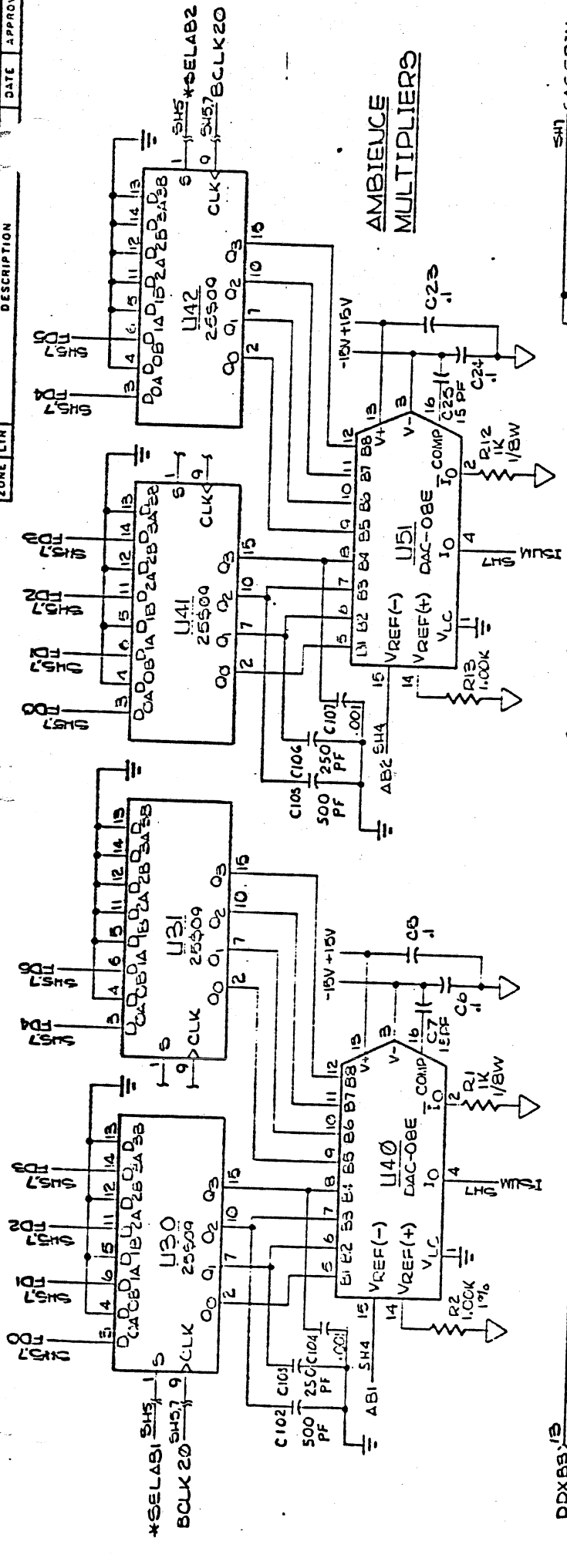
## BETA GENERATOR BETA INTERPOLATION

### BETA COUNTER



\*BETACARV 25  
ENABCTBETA 19

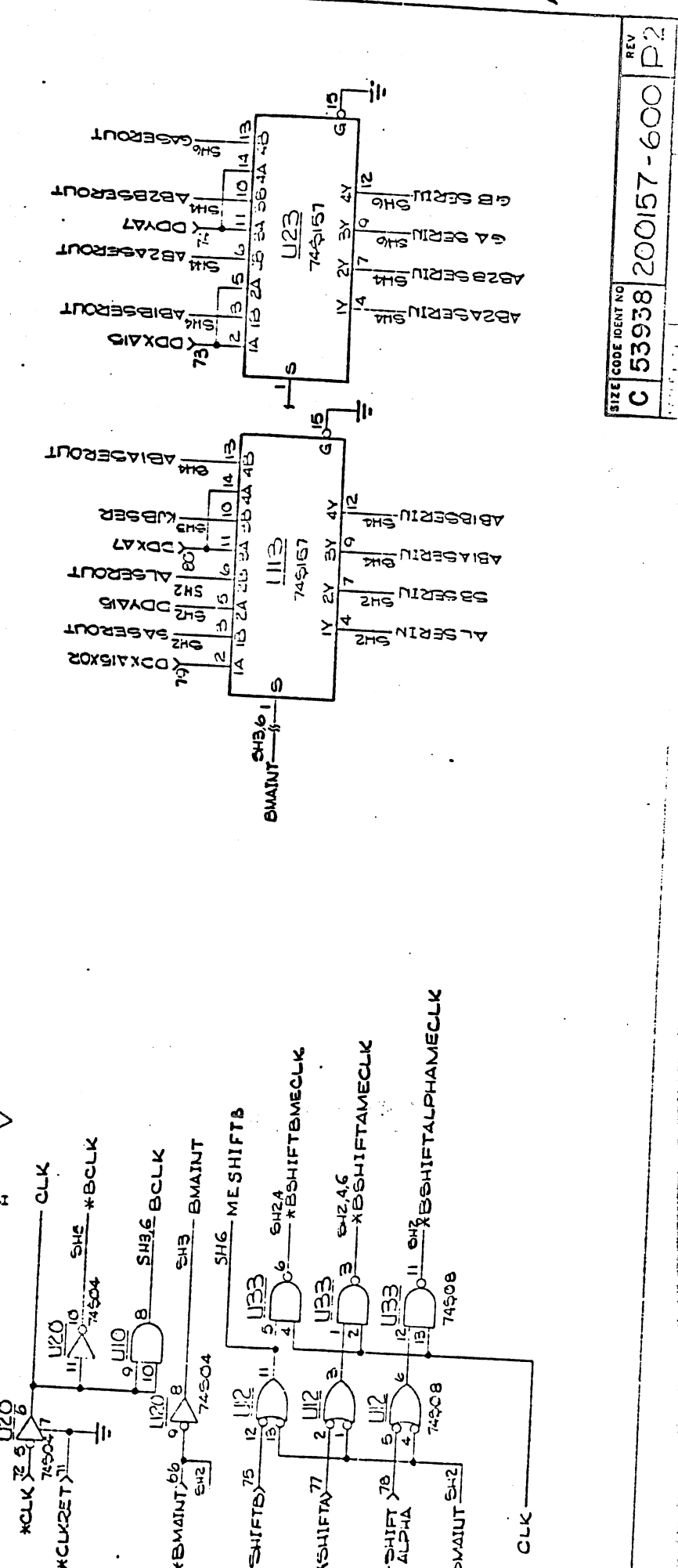
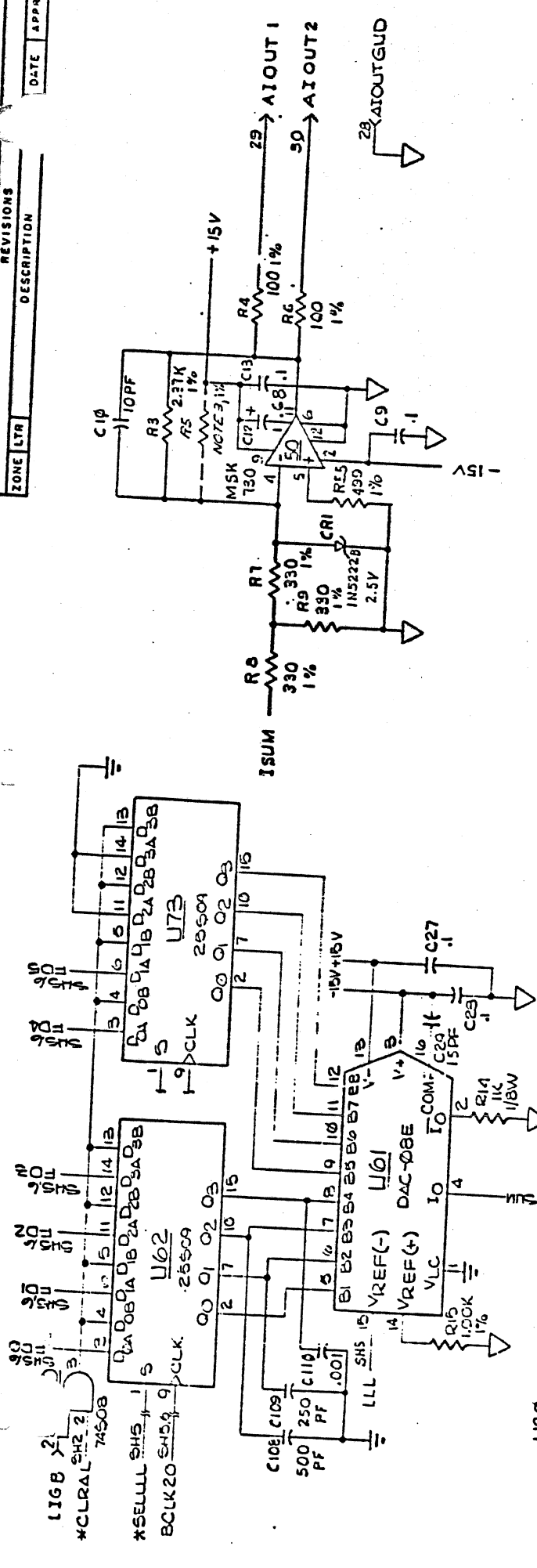
\*SEL AB1 SH16  
\*SEL AB2 SH16  
\*SEL LLL SH7



**LIGHT/GLARE GENERATOR**

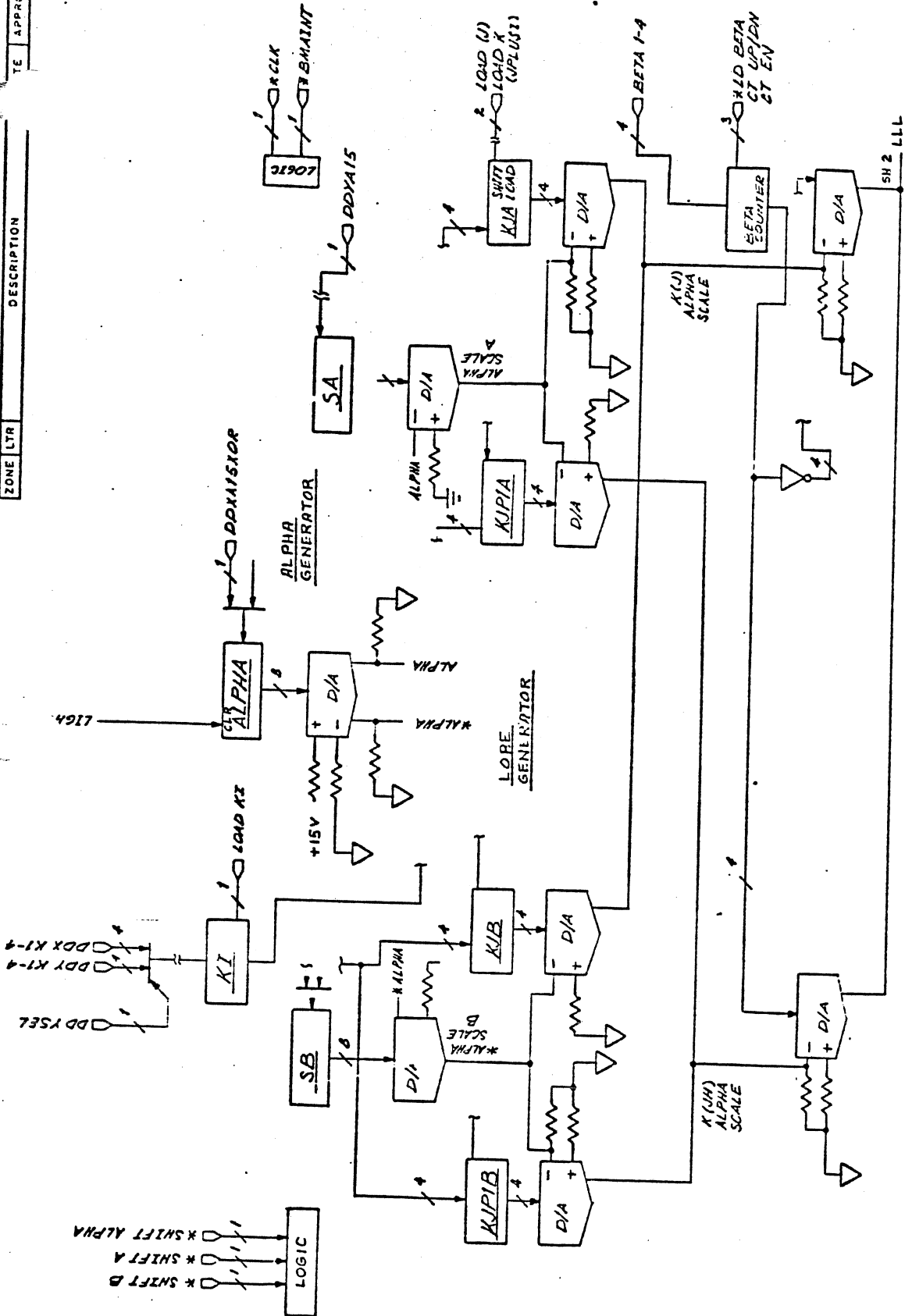
\*ALPHA SH24

ZONE	LTR	DESCRIPTION	DATE	APPROVED



SIZE CODE IDENT NO  
**C 53938**  
 REV  
**P2**

200157-600

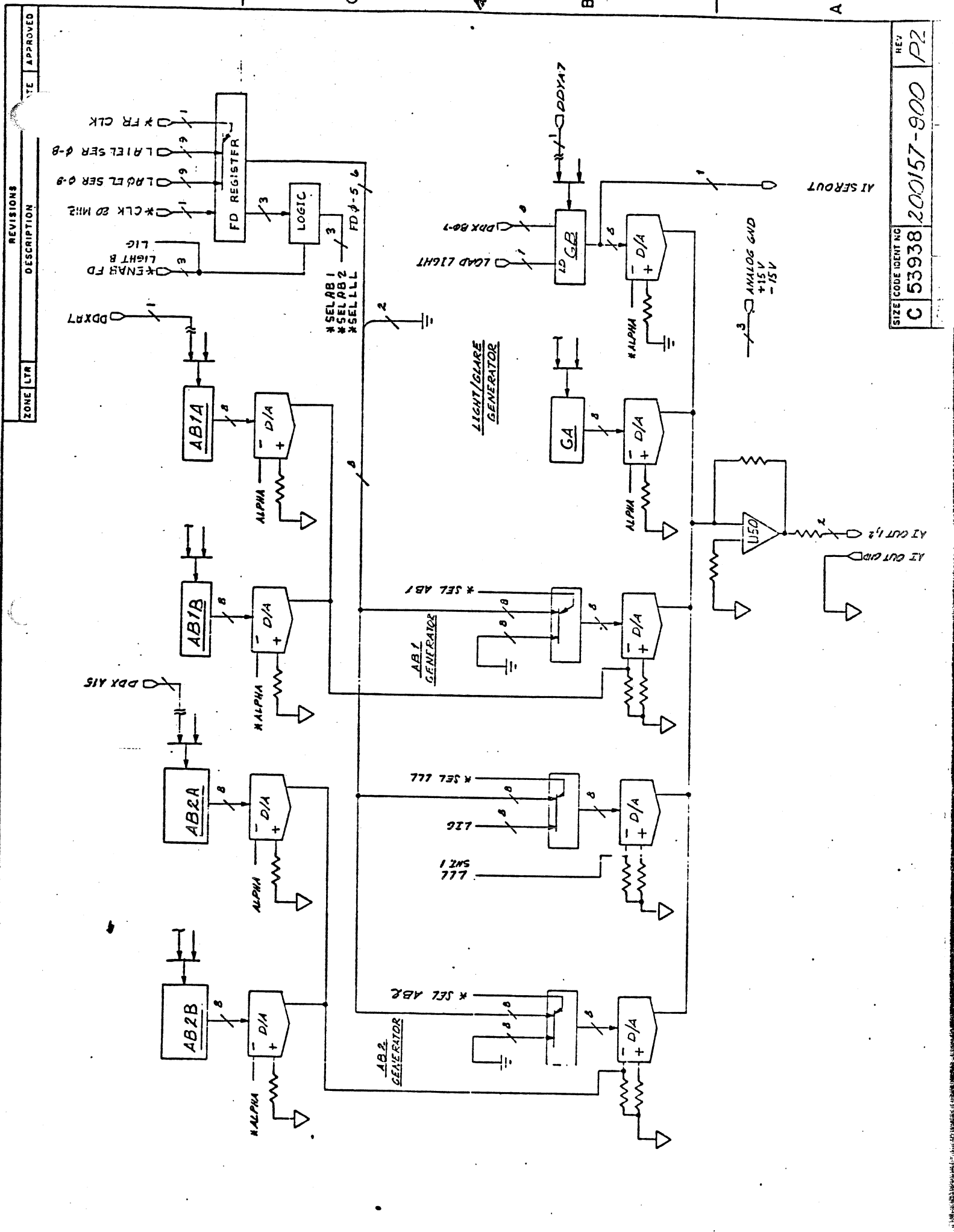


SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84118	
ANALOG INTENSITY P.C.	
SIZE	REV
C 53938	P2

CONTRACT NO.	EVANS & SUTHERLAND
DRAWN / CHECKED	A-4-77
MECH	
ELEC	
PROJ. ENG	
APPROVED	

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

MATERIAL	
FINISH	
NOV 1971	USED ON
200130-100	



REV	DATE	APPROVED

ZONE	LYR

DESCRIPTION

SIZE	CODE	IDENT	NO	REV
C	53938	200157-900	P2	

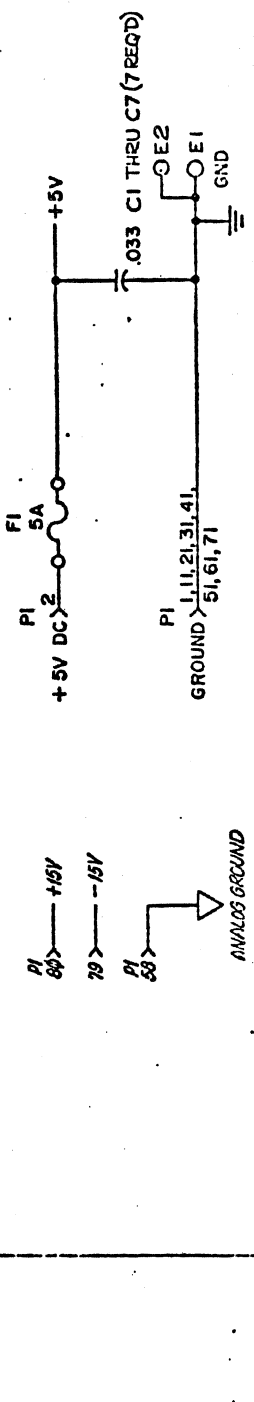
ZONE	LTR	DESCRIPTION	APPROVED
-	A2	ADDED SJ AND R30 PER ECO A2	AKR 3/17/77

REVISIONS	
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200158-600

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,  $\pm 5\%$  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:

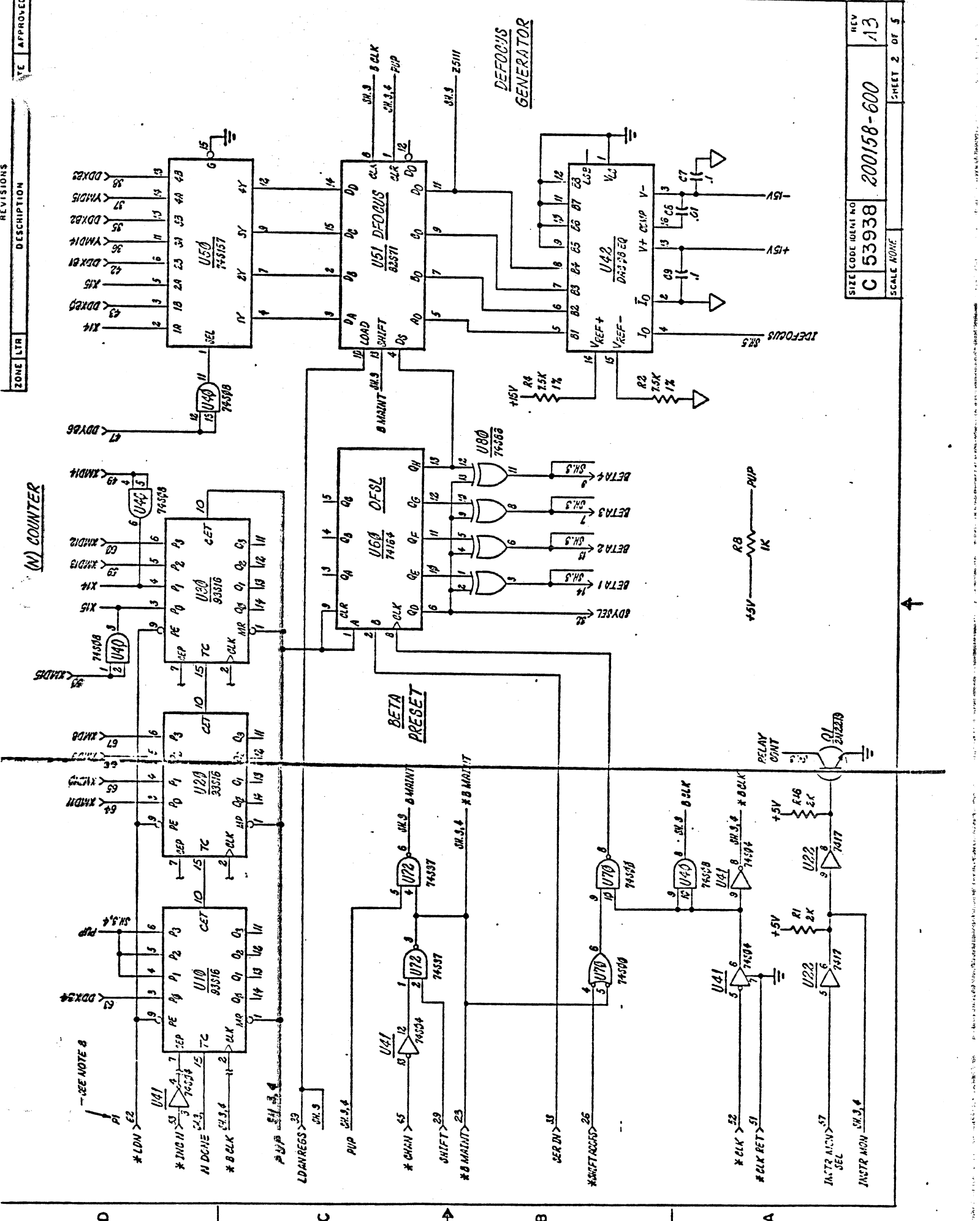


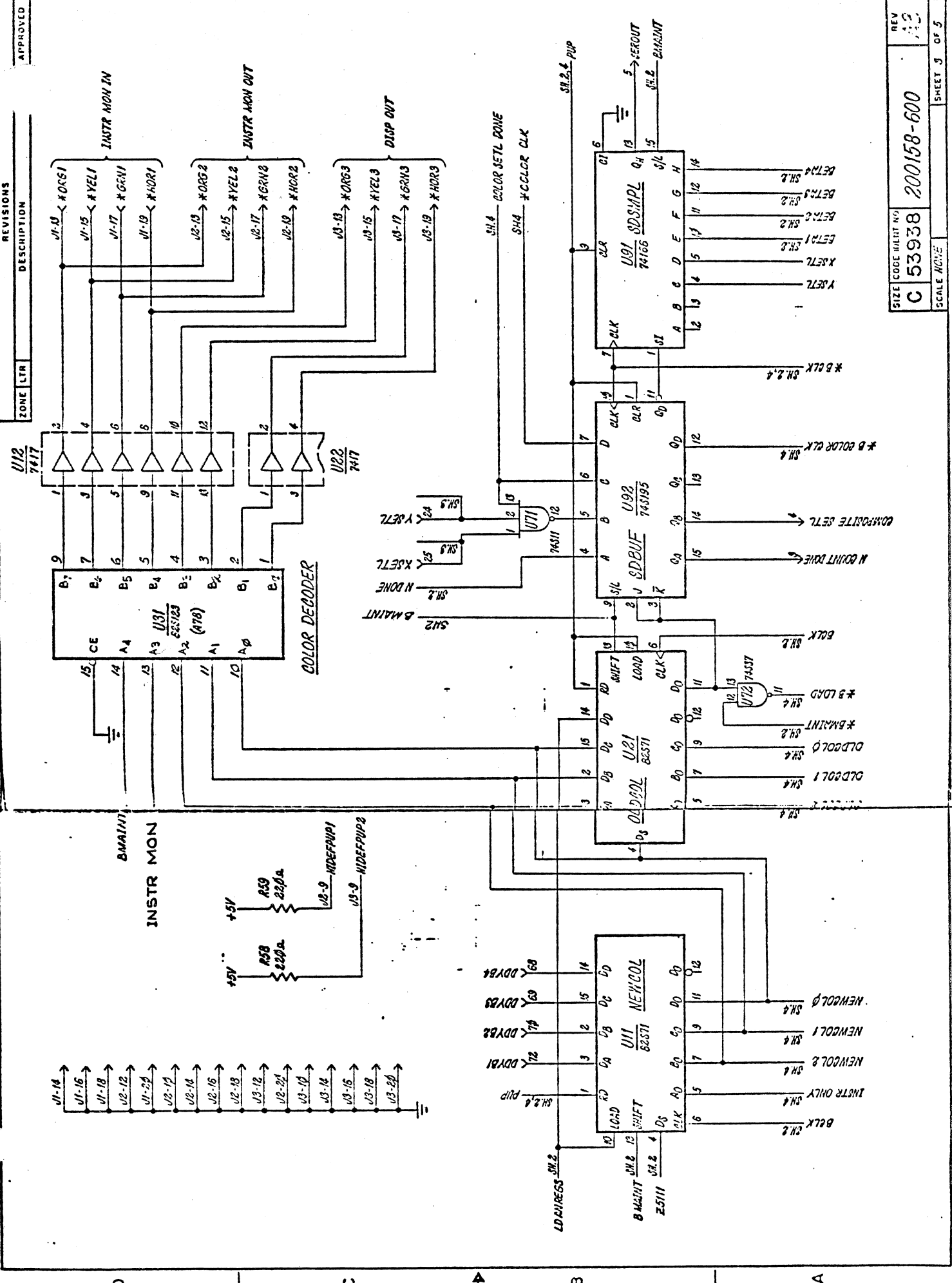
SEE SEPARATE PARTS LIST		EVSANIS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.	7-6-77	SIZE (CODE IDENT NO)	C 53938
DRAWN BY	WALLEY	RELV	13
CHECKED		SCALE	NONE
MECH		SCOPE DRIVER, CABLE, PG	
ELEC			
PROJ. ENG			
APPROVED			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX $\pm$ .XXX $\pm$ ANGLES $\pm$			
MATERIAL			
FINISH			
200158-100	NOV/NOV/77		
NEXT ASSY	USED ON		
APPLICATION			

SCALE NONE		SHEET 1 OF 5	
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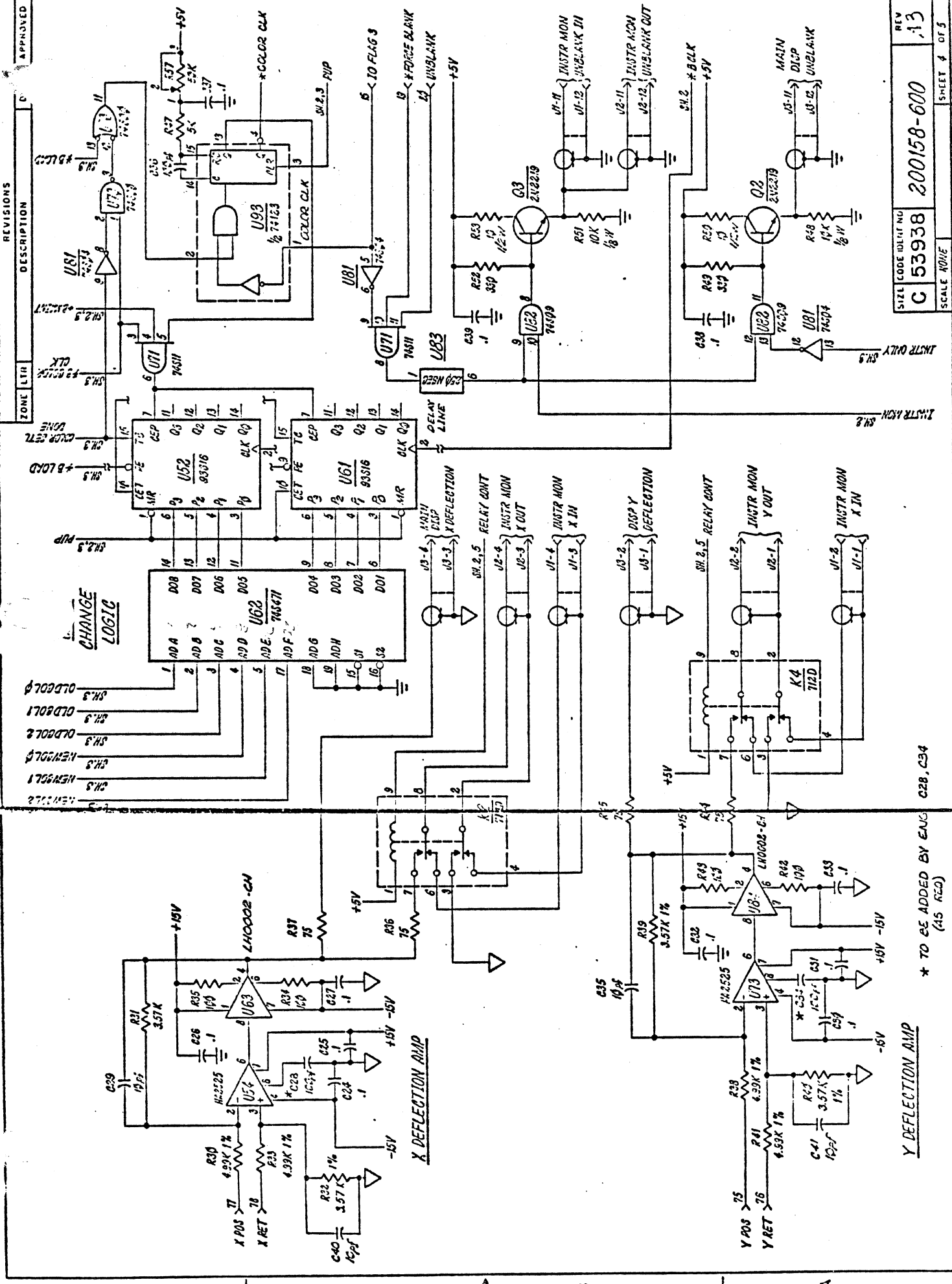
ZONE LTR	DESCRIPTION	REV
		APPROVED





ZONE	LTR	DESCRIPTION	REVISIONS	APPROVED

SIZE	CODE	W/HT NO	REV
C	53938	200158-600	1
SCALE			NOVE
SHEET			3 OF 5



REVISIONS

ZONE	LTR	DESCRIPTION	APPROVED

CHANGE LOGIC

U54 74LS04  
U56 74LS04  
U52 74LS04  
U61 74LS04  
U62 74LS04  
U71 74LS04  
U72 74LS04  
U73 74LS04  
U74 74LS04  
U75 74LS04  
U76 74LS04  
U77 74LS04  
U78 74LS04  
U79 74LS04  
U80 74LS04  
U81 74LS04  
U82 74LS04  
U83 74LS04  
U84 74LS04  
U85 74LS04  
U86 74LS04  
U87 74LS04  
U88 74LS04  
U89 74LS04  
U90 74LS04

X DEFLECTION AMP

Y DEFLECTION AMP

INSTR MON  
UNBLANK  
RELAY CNT

200158-600

REV 13

SCALE NONE

SHEET 4 OF 5

200158-600

200158-600

200158-600

200158-600

200158-600

200158-600

200158-600

200158-600

200158-600

200158-600

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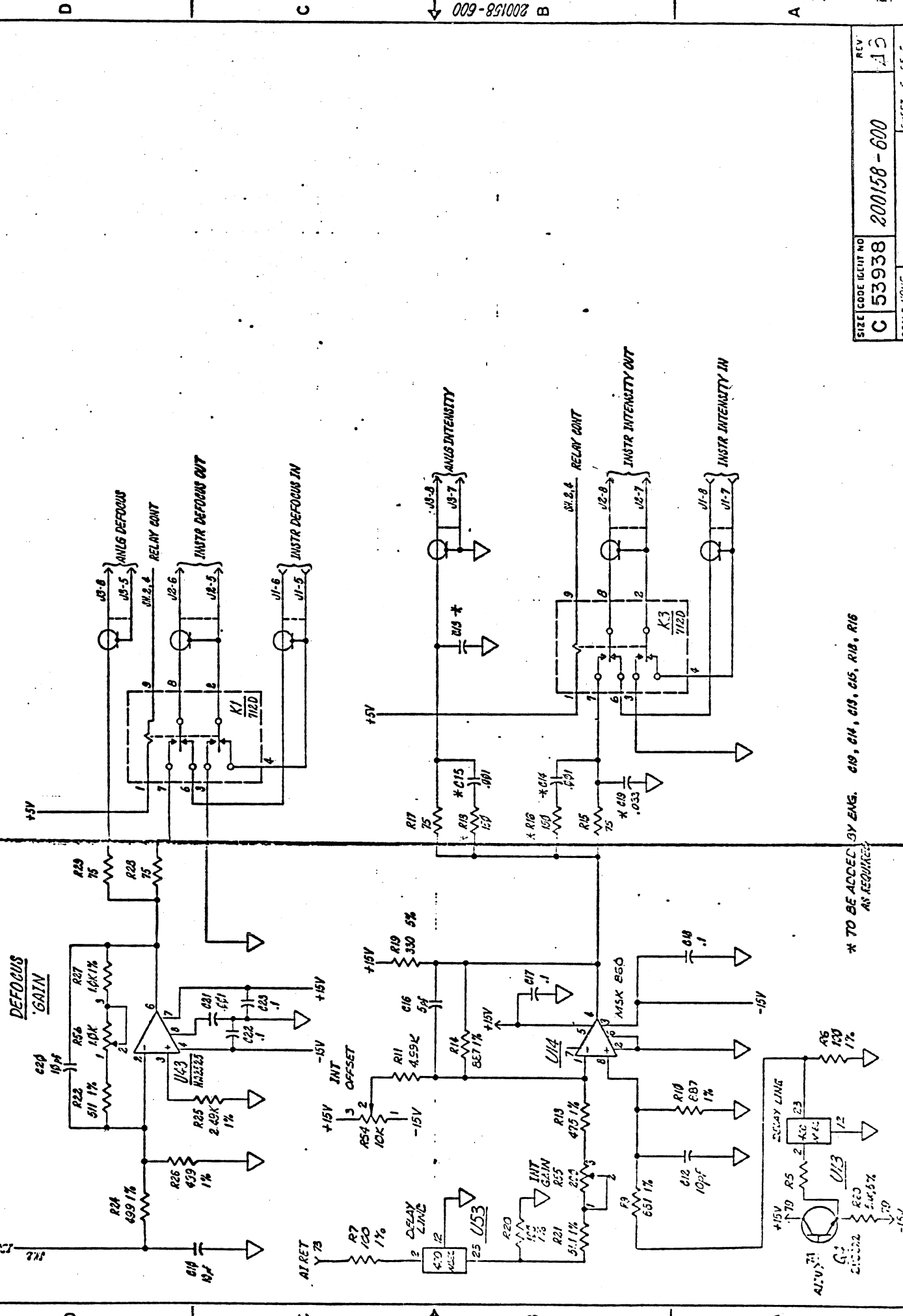
200158-600

ZONE	LT#	DESCRIPTION	REVISIONS	APPROVED
2				

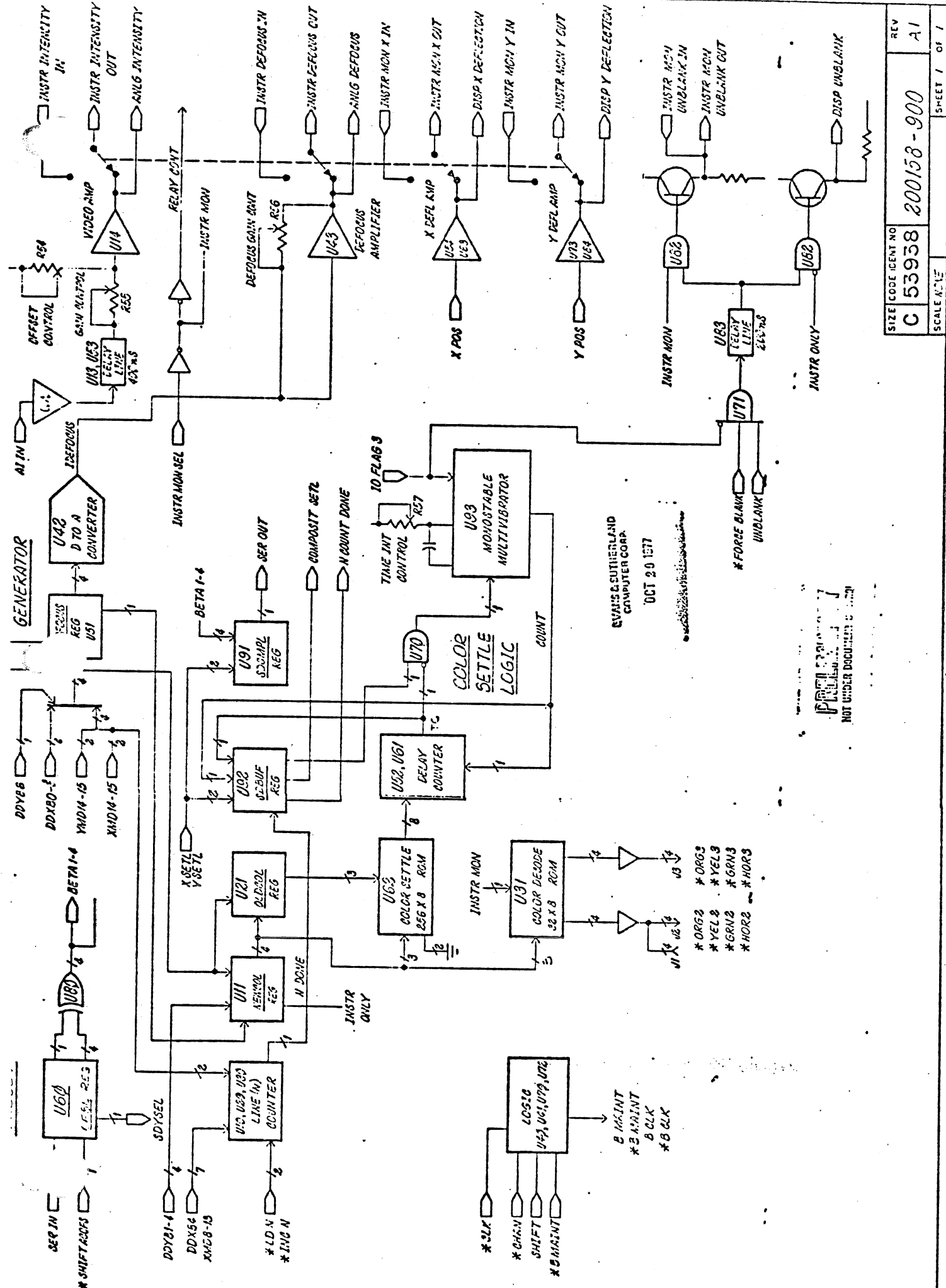
SIZE	CODE	ICHT NO	REV
C	53938	200158-600	13

SCALE 1/8"=1"

SHEET 5 OF 5



\* TO BE ADDED BY ENGR. C18, C14, C19, C15, R18, R16 AS REQUIRED

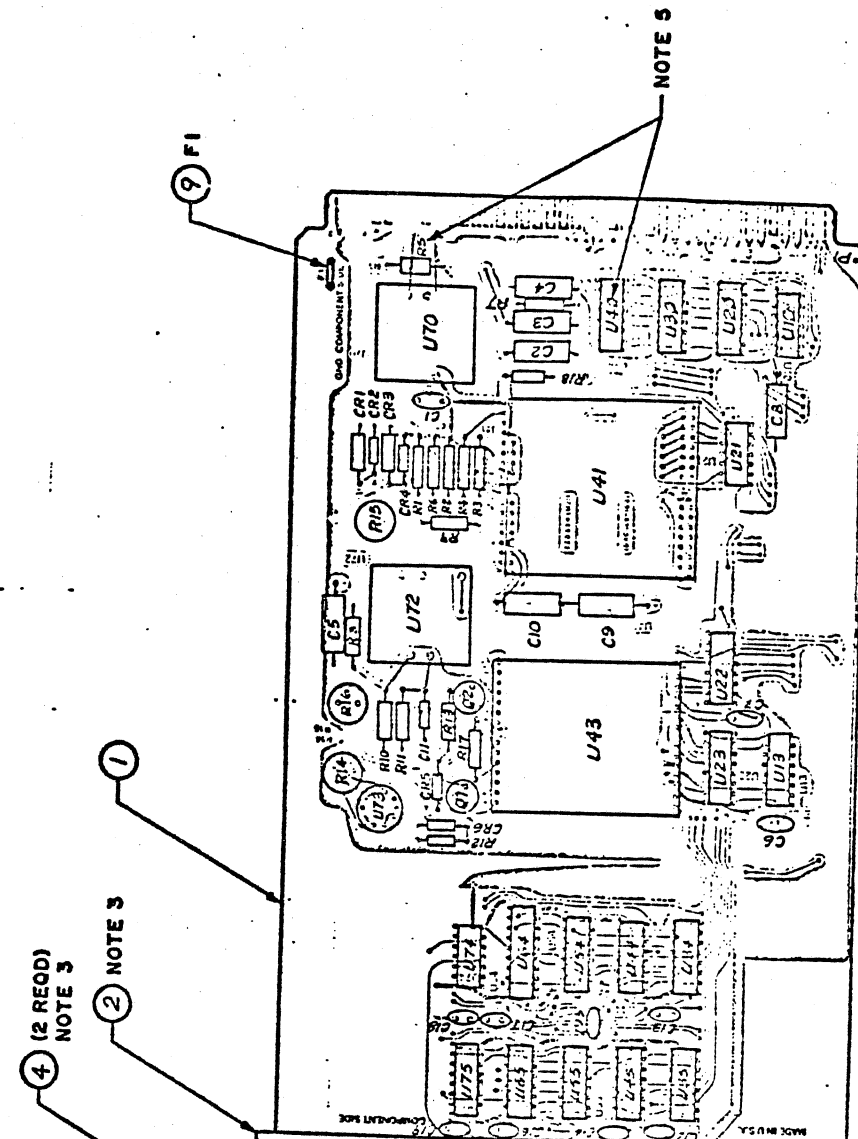


EVANS & SUTHERLAND  
COMPUTER CORP.  
OCT 20 1977

NOT UNDER DOCUMENT CONTROL

SIZE CODE	IDENT NO	REV
C 53938	200158-900	A1
SCALE NOTE		SHEET 1 OF 1

REVISIONS		DATE	APPROVED
ZONE	LTR		
	P4	REV UPDATE W/INC PWC CHA	1/7-77

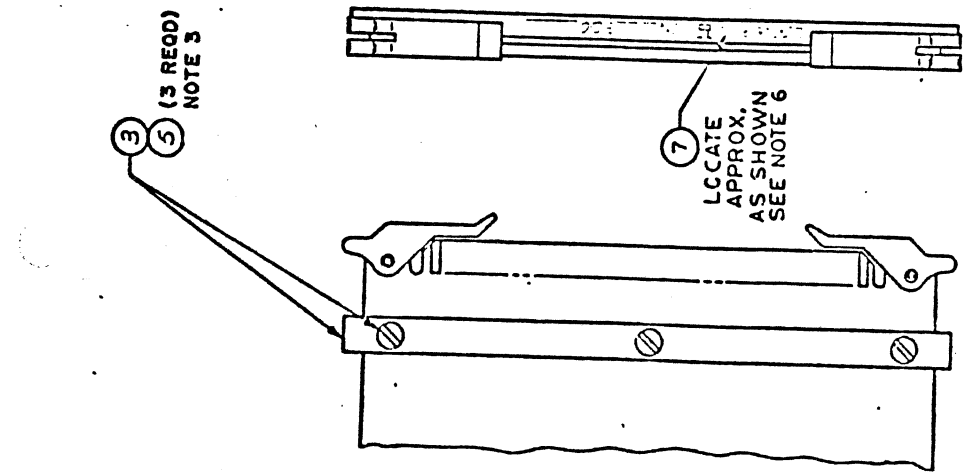


COMPONENT SIDE

REFERENCE DOCUMENTS  
 LOGIC DIAGRAM --- 200159-600  
 PARTS LIST --- PL200159-100

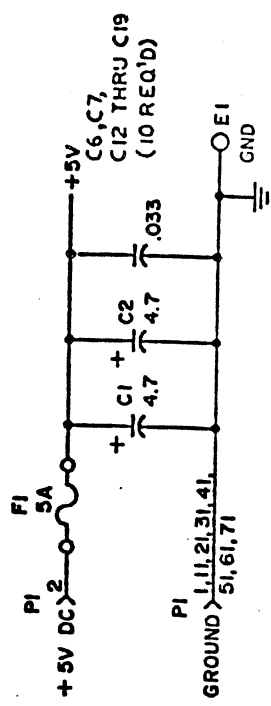
SEE SEPARATE PARTS LIST		CONTRACT NO.	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		DRAWN BY: J. H. Hask 4-7-77	
CARD ASSEMBLY X-Y D/A CONVERTER (P.C.)		CHECKED BY: J. H. Hask 11 APR 77	
SIZE IDENT NO. C 53938		MECH: J. H. Hask 11 APR 77	
REV P4		ELLC: J. H. Hask 11 APR 77	
		PROJ. ENG: J. H. Hask 11 APR 77	
		APPROVED BY: J. H. Hask 11 APR 77	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		MATERIAL	
TOLERANCES ON		SEE PARTS LIST	
.XX ±		NOVO SP	
.XXX ±		USED ON	
ANGLES ±		FINISH	
✓		NEXT ASSY	
		FINISH	

- NOTES:
1. ASSEMBLE PER E & S WORKMANSHIP STANDARD.
  2. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  3. RUBBER STAMP 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 & ECO LEVEL ON ITEM NO. 7.



LOCATE APPROX. AS SHOWN SEE NOTE 6

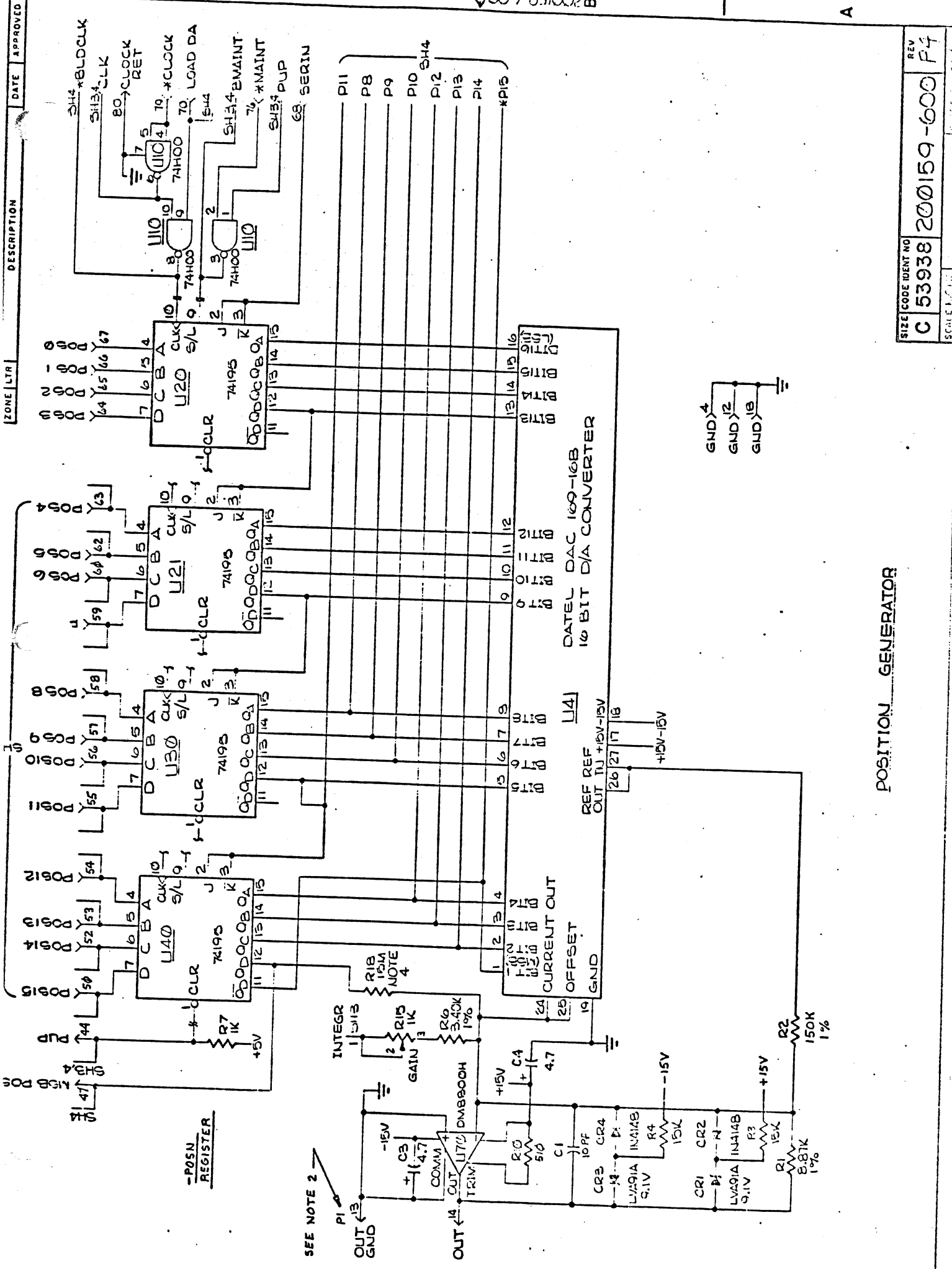
REVISIONS		DATE	APPROVED
ZONE	LYR	DESCRIPTION	
	14	REV COMPLETE W/ LOGIC CIRC.	5/19/77



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		CONTRACT NO.	SEE SEPARATE PARTS LIST
.XX ±	XX ±		
.XXX ±	XXX ±	DRAWN BY	EVANS & SUTHERLAND
✓	✓	CHECKED BY	COMPUTER CORPORATION
		MECH	SALT LAKE CITY, UTAH 84112
		ELEC	X-Y D/A
		PROJ. ENG	CONVERTER
		APPROVED	P.C.
200159-100	NOVO SIP	SIZE	CODE DESIG NO
NEXT ASSY	USED ON	C	53938
		REV	P4



ZONE	LTR	DESCRIPTION	DATE	APPROVED
1	0000			
2	0000			
3	0000			
4	0000			
5	0000			
6	0000			
7	0000			
8	0000			
9	0000			
10	0000			

U20	U21	U30	U40
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
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99	99	99	99
100	100	100	100

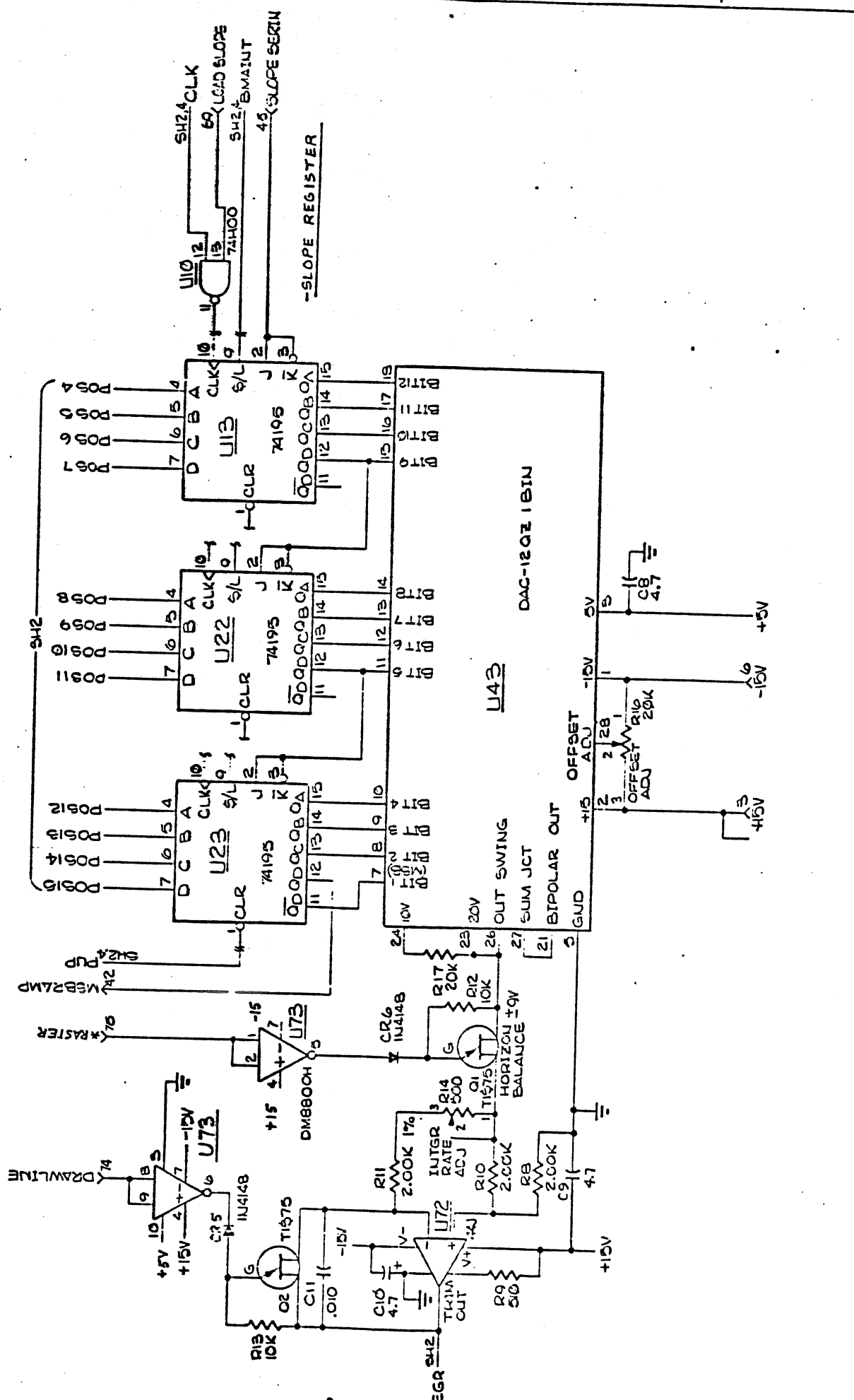
POSITION GENERATOR

SIZE	CODE IDENT NO	REV
C	53938	200159-600
		F4

SCALE 1:1



ZONE	LTR	REVISIONS	DESCRIPTION	APPROVED



**SWEEP GENERATOR**

SIZE	CODE IDENT NO	REV
C	53938	200159-600
P4		

SCALE 1:1

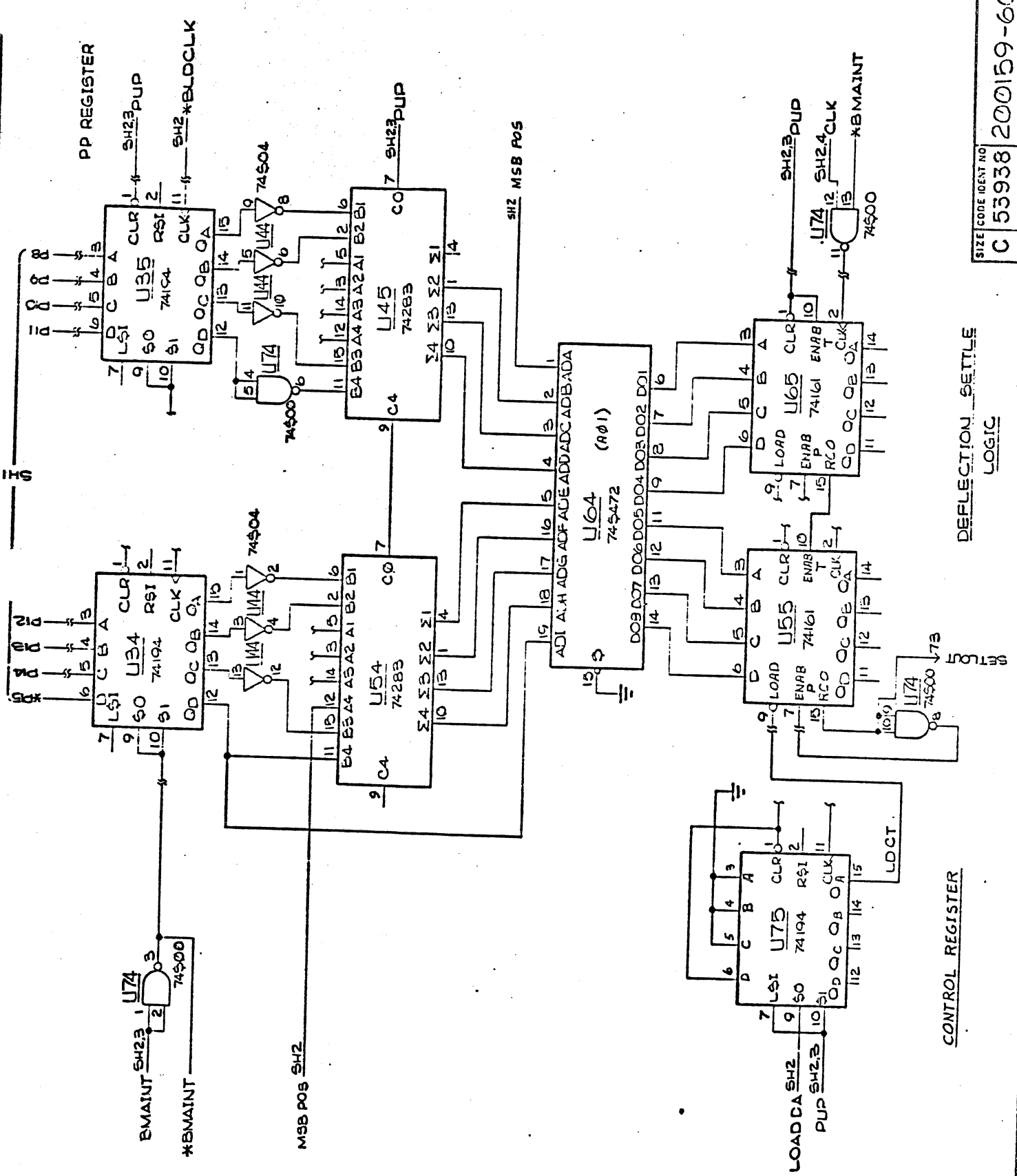
B 200159-600A

D

C

A

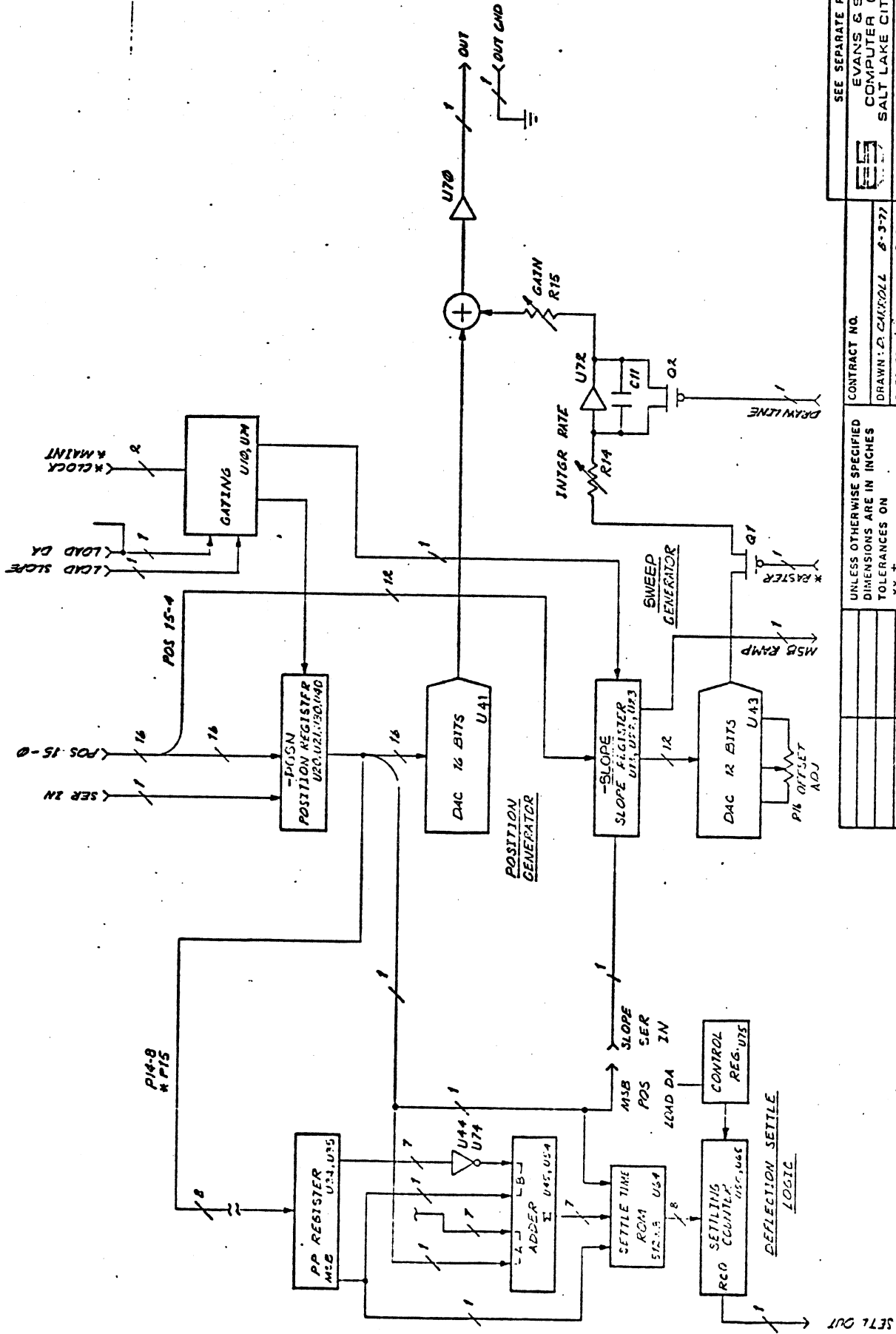
ZONE	LTR	DESCRIPTION



DEFLECTION SETTLE LOGIC

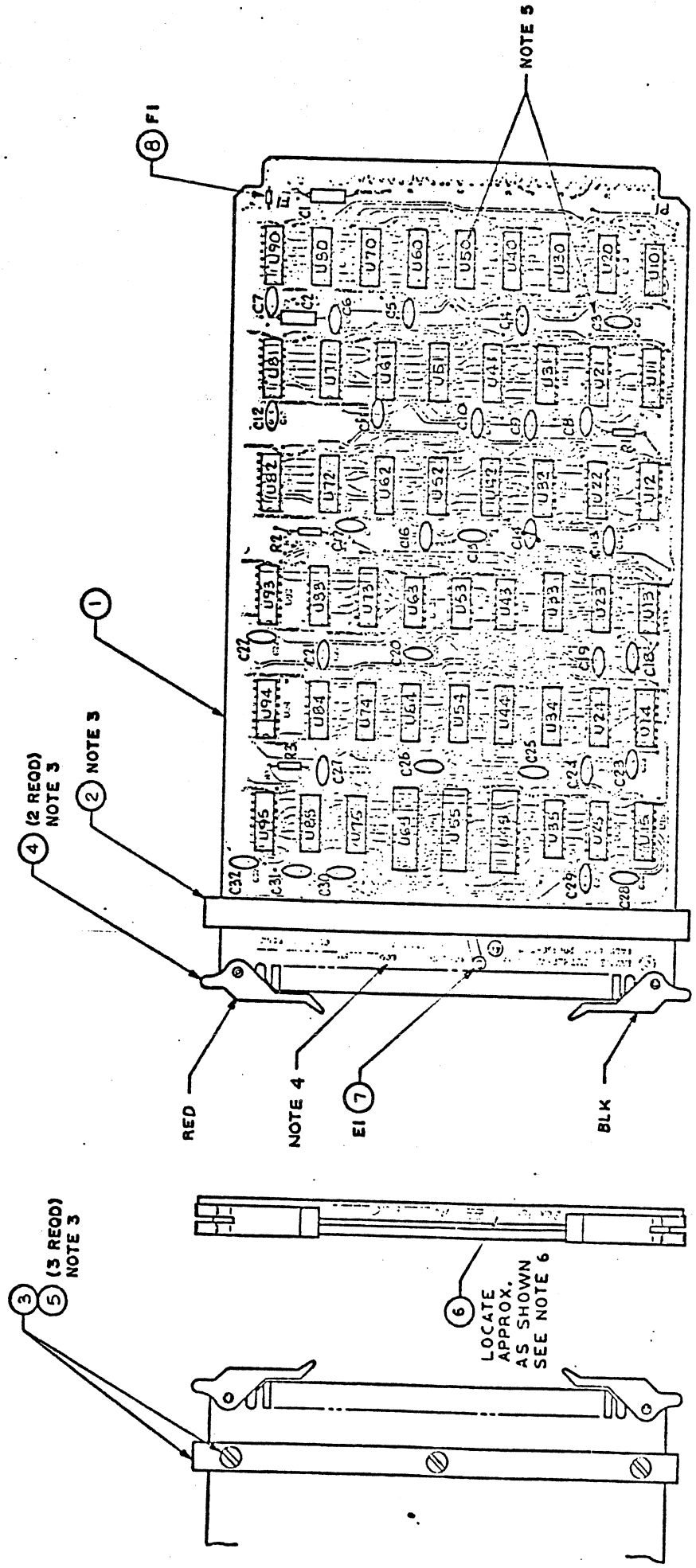
CONTROL REGISTER

SIZE	CODE IDENT NO	REV
C 53938	200159-600	F1



SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY UTAH 84112	
X-Y DIA CONVERTER BLOCK DIAGRAM	
CONTRACT NO.	8-377
DRAWN BY	D. CARROLL
CHECKED BY	J. H. H.
MECH	8/12/77
ELEC	8/12/77
PROJ. ENG.	8/12/77
APPROVED BY	J. H. H.
SIZE	CODE IDENT NO.
C 53938	200159-900
REV	84

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
.XX ±	
.XXX ±	
ANGLES ±	
MATERIAL	
FINISH	
200159-100	NOVONILW
NEXT ASSY	USED ON



**COMPONENT SIDE**

**REFERENCE DOCUMENTS**  
 LOGIC DIAGRAM --- 200160-600  
 PARTS LIST----- PL200160-100

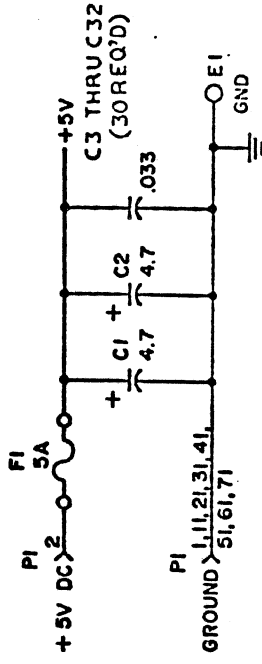
- NOTES:**
1. ASSEMBLE PER ERS WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK ERS ASSY. NO., S/N & ECO LEVEL ON ITEM NO. 6.

SEE SEPARATE PARTS LIST		CONTRACT NO.	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		DRAWN BY: [Signature] 2-23-77	
CARD ASSEMBLY FACE GENERATOR (P.C.)		CHECKED BY: [Signature] 25 FEB 77	
SIZE CODE IDENT NO	REV	MECH	
C 53938	200160-100	ELECT: [Signature] 25 FEB 77	
SCALE FULL	NC	PROJ ENG: [Signature]	
MATERIAL		APPROVED: [Signature]	
SEE PARTS LIST		DATE: [Signature]	
200170-100	ISSUED ON	FINISH	
NEXT ASSY	USED ON	APPLICATION	

D

C

200160 600

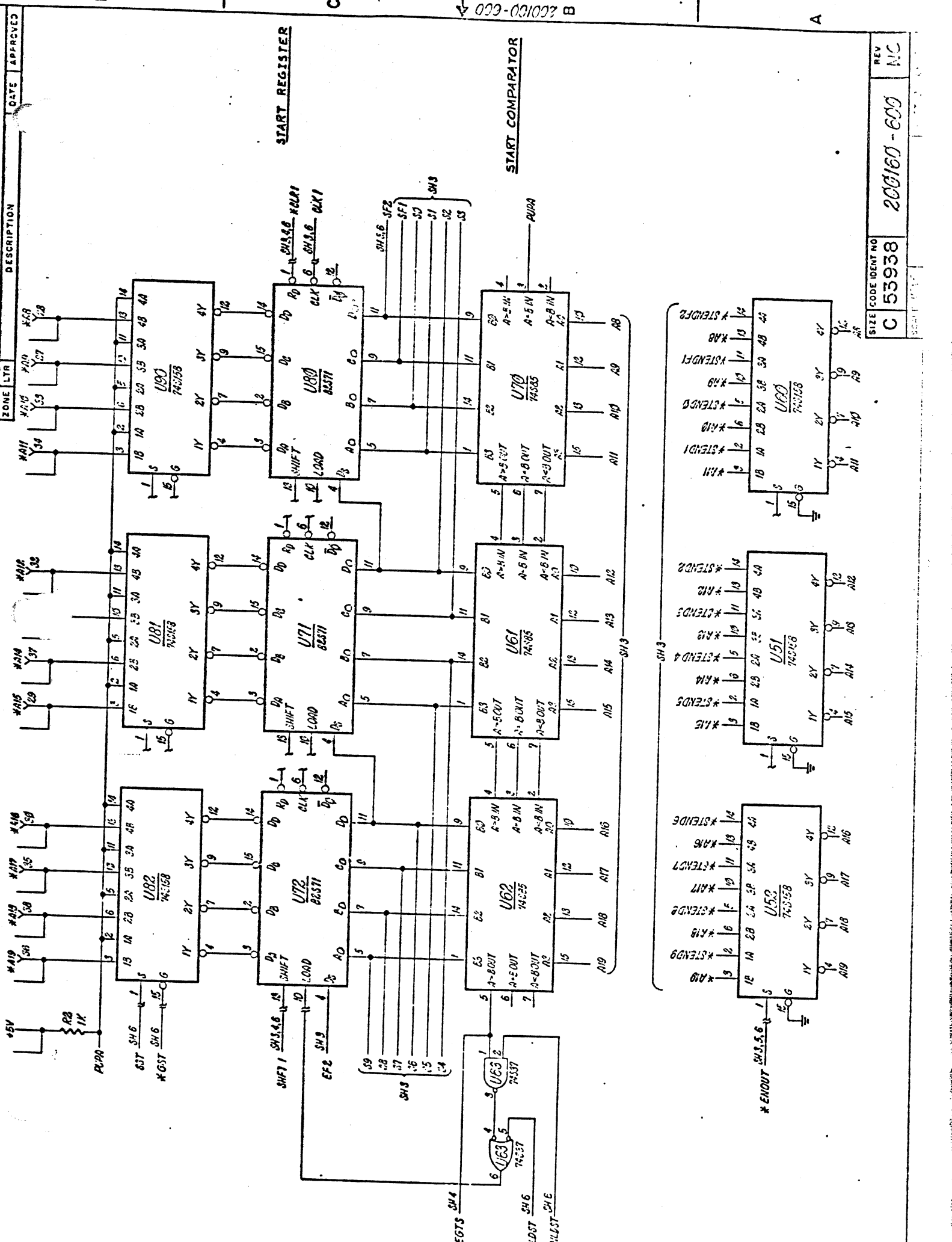


2. NUMBERS SHOWN REFER TO CONNECTOR PI.  
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.  
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.  
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.  
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).  
 ON ALL 16 PIN I.C.'S, PIN 8 IS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

SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
FACE GENERATOR (P.C.)	
SIZE	CODE IDENT NO
C	53938
SCALE	NOV 1977
REV	NC
REV	NC

CONTRACT NO.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DRAWN R HOLLEY 6-6-77	.XX ±
CHECKED/ [Signature] 2 AUG 77	.XXX ±
MECH	ANGLES ±
ELEC	✓
PROJ ENG	MATERIAL
APPROVED	FINISH
	NOVO SP
	USED ON
	APPLICATION



ZONE	LYR	DESCRIPTION	DATE	APPROVED

START REGISTER

START COMPARATOR

SIZE	CODE IDENT NO	REV
C	53938	NC
200160-600		

200160-600

A

C

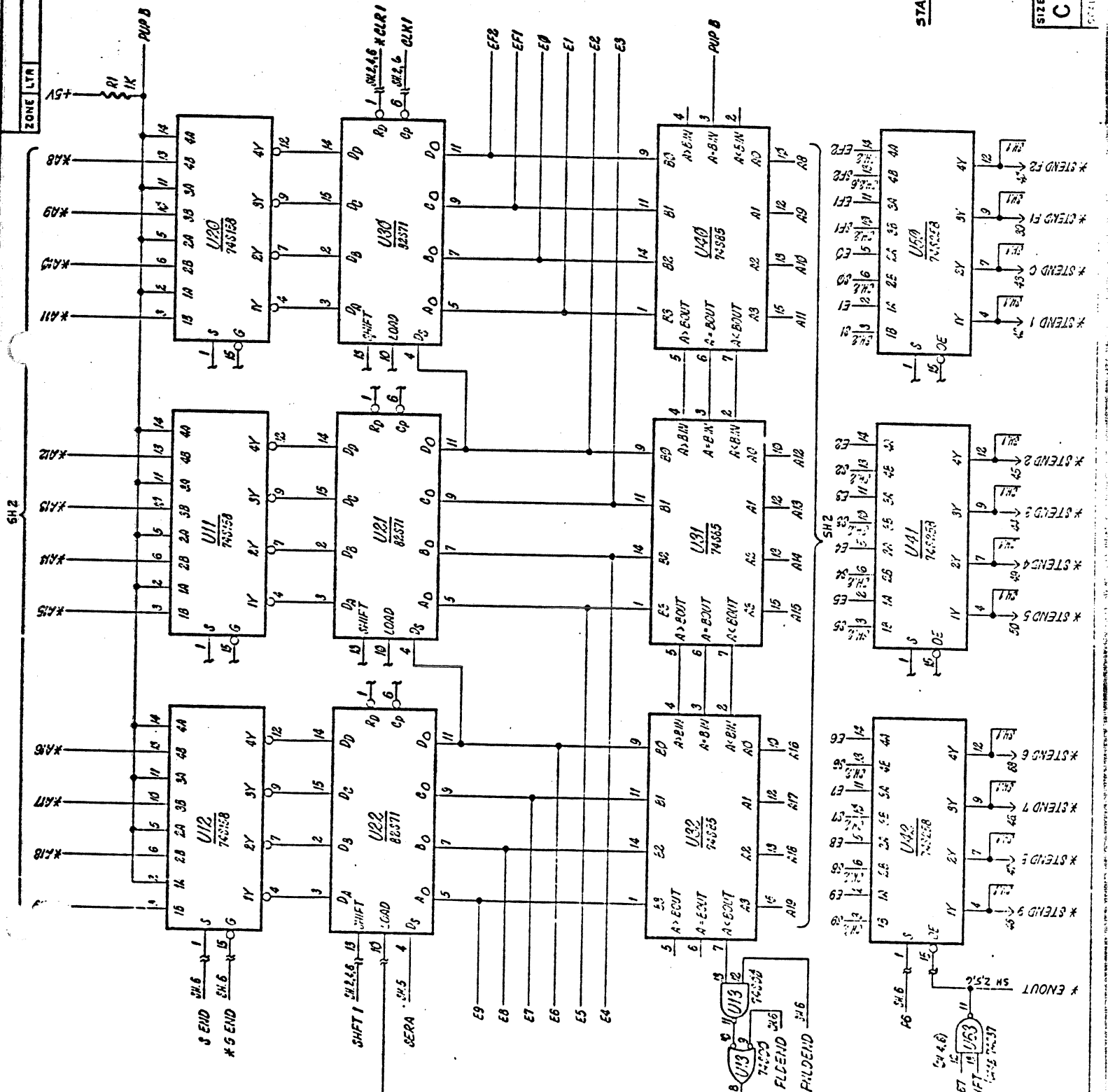
D

D

C

200160-600

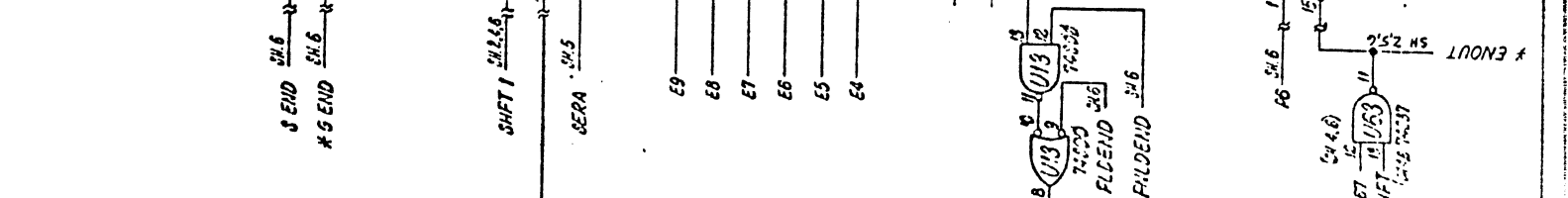
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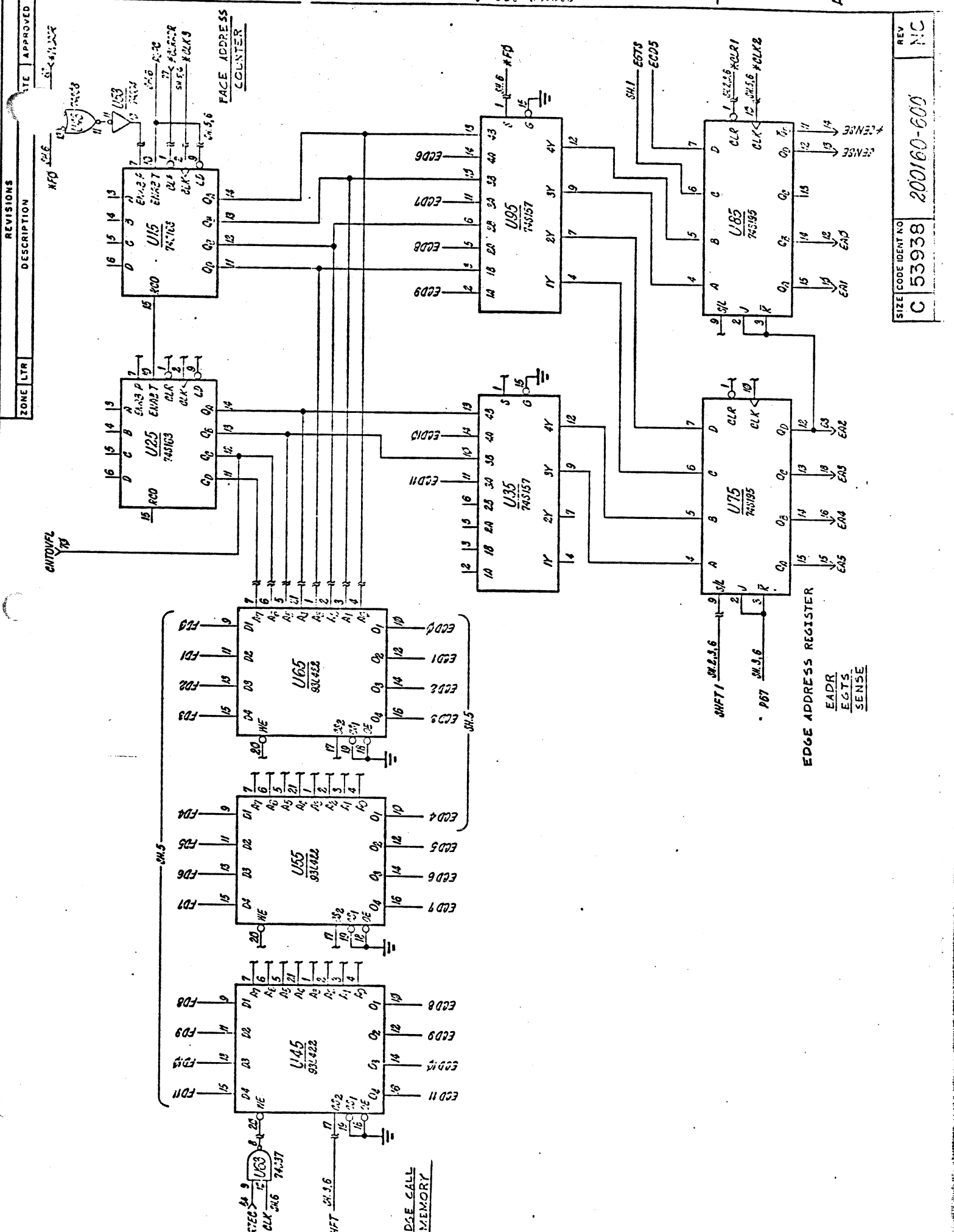


END REGISTER

END COMPARATOR

START/END MUX





SIZE	CODE IDENT NO	REV	REV
C	53938	200160-600	NC

EDGE CALL MEMORY

FACE ADDRESS COUNTER

EDGE ADDRESS REGISTER

SHFT SH1 SH2

EAS0 EAS1 EAS2

ECD0 ECD1 ECD2 ECD3 ECD4 ECD5 ECD6 ECD7 ECD8 ECD9 ECD10 ECD11

U45 74LS165

U55 74LS165

U65 74LS165

U15 74LS163

U25 74LS163

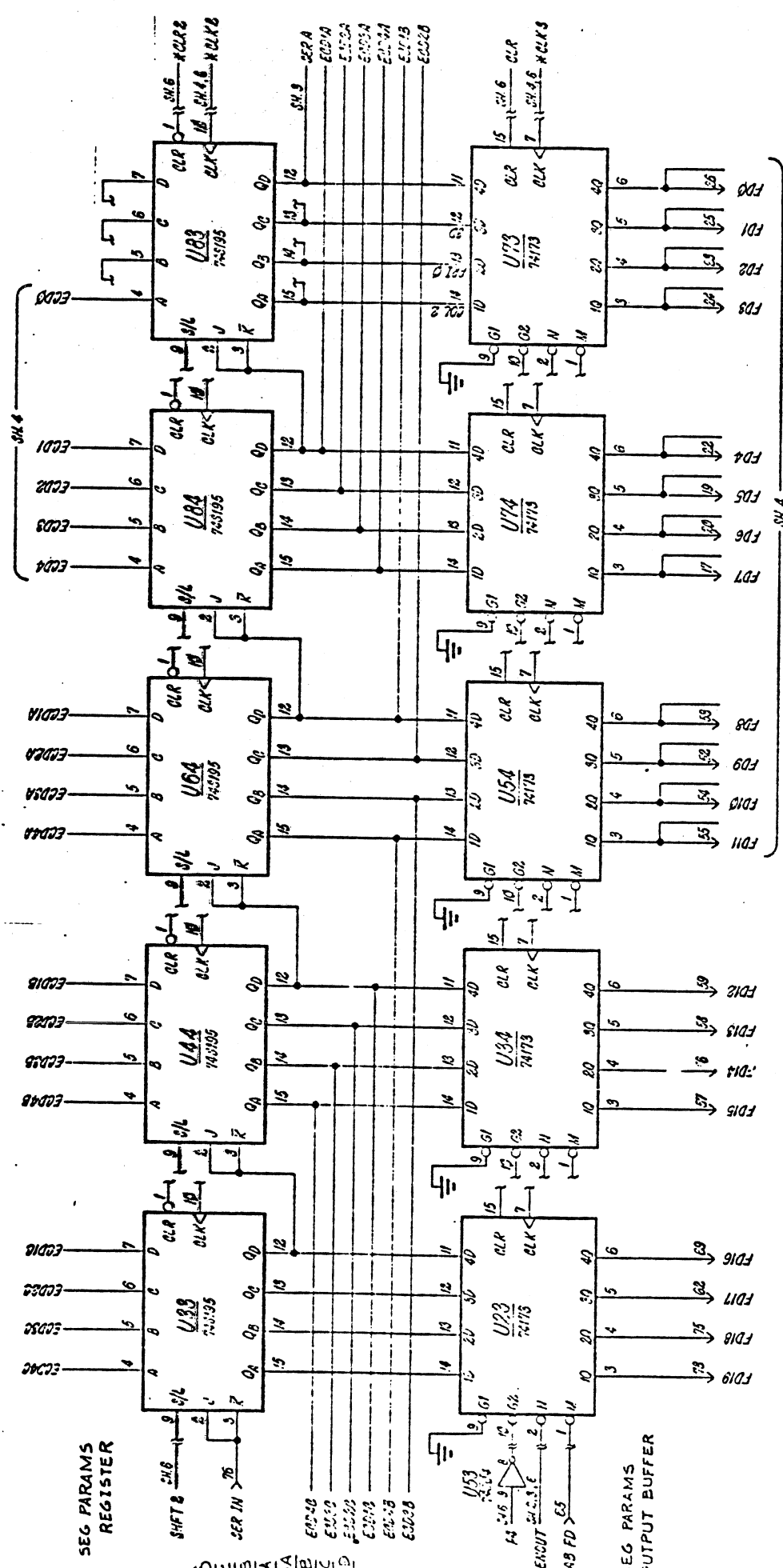
U95 74LS163

U75 74LS195

U85 74LS195

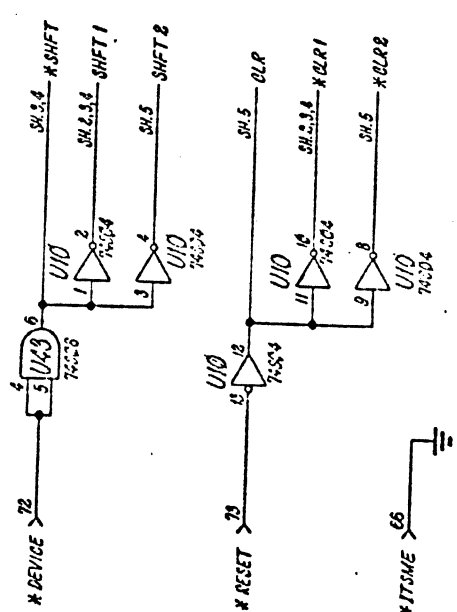
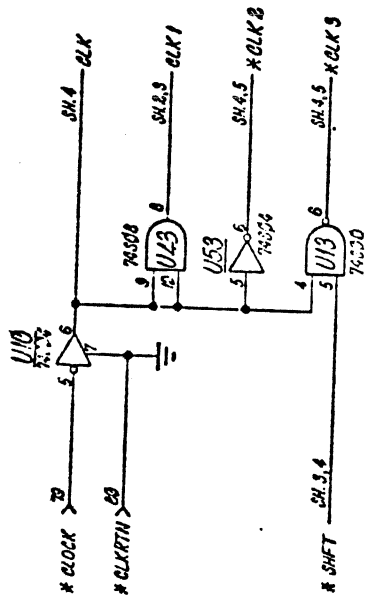
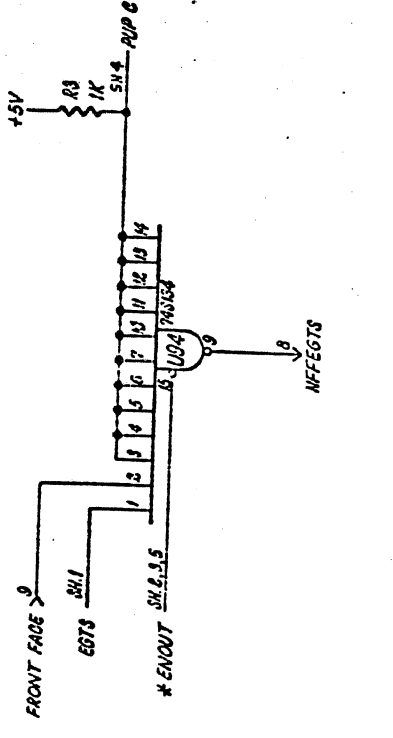
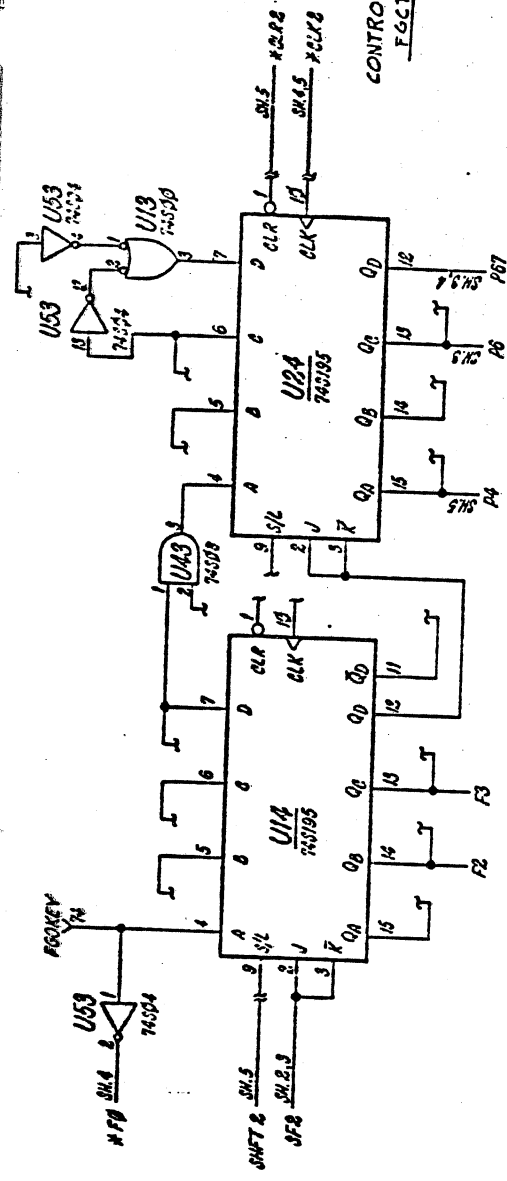
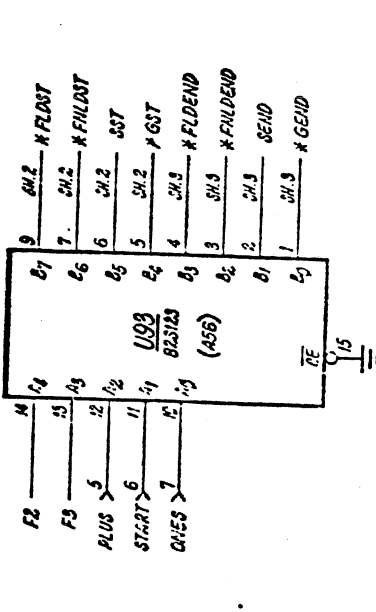
U95 74LS195

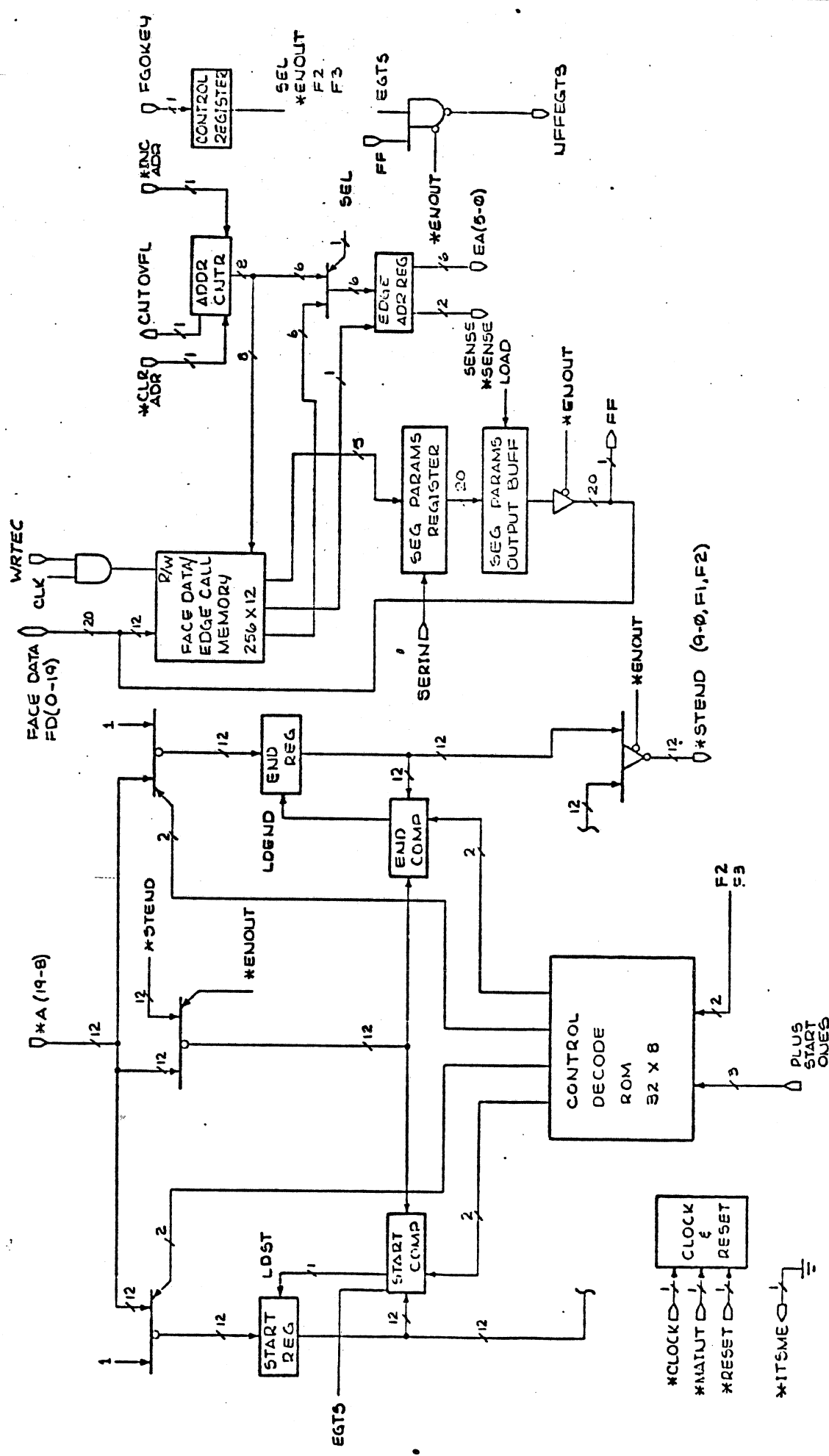




SEG PARAMS REGISTER

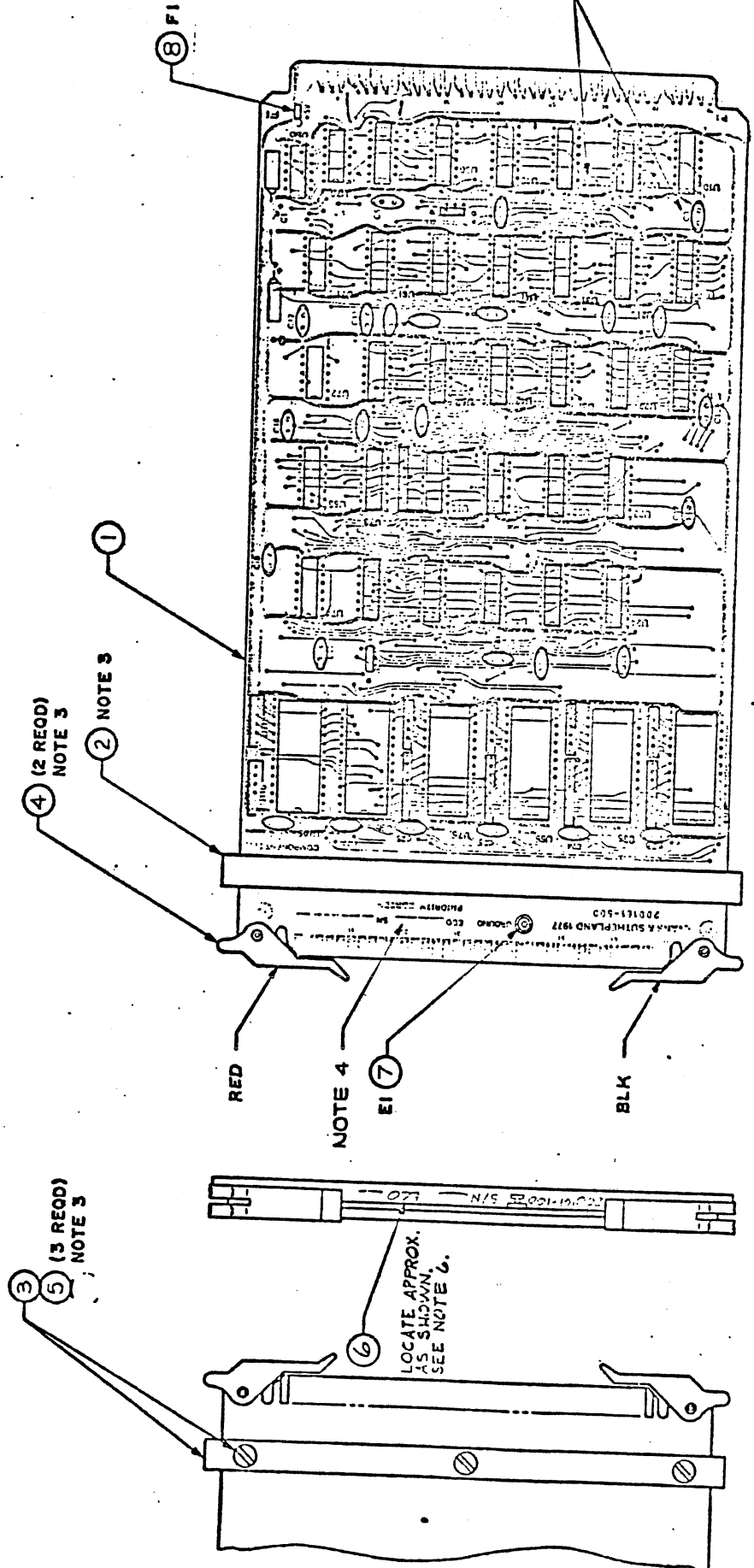
SEG PARAMS OUTPUT BUFFER





SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
FACE GENERATOR (BLOCK DIAGRAM)	
CONTRACT NO.	2-2-77
DRAWN BY	MELIUS
CHECKED BY	12 APR 77
MECH	
ELLC	
PHOJ. ENG.	
APPROVED	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±	
MATERIAL	
FINISH	
NEXT ASSY	USED ON
APPLICATION	
SIZE CODE IDENT NO	C 53938
REV	1
SCALE	200160-900
	INC

ZONE	LTR	DESCRIPTION	DATE	APPROVED
------	-----	-------------	------	----------

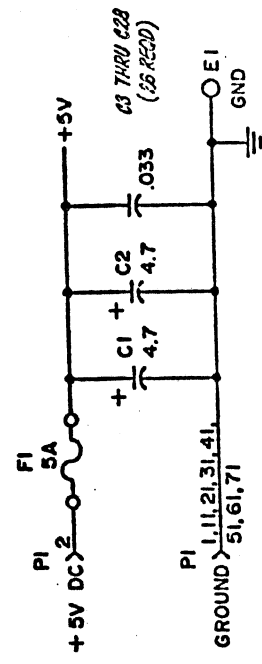


- NOTES:**
1. ASSEMBLE PER E & S WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK E & S ASSY. NO. 3, S/N & ECO LEVEL ON ITEM 6.

REFERENCE DOCUMENTS

LOGIC DIAGRAM ---- 200161-600  
 PARTS LIST ---- PL200161-100

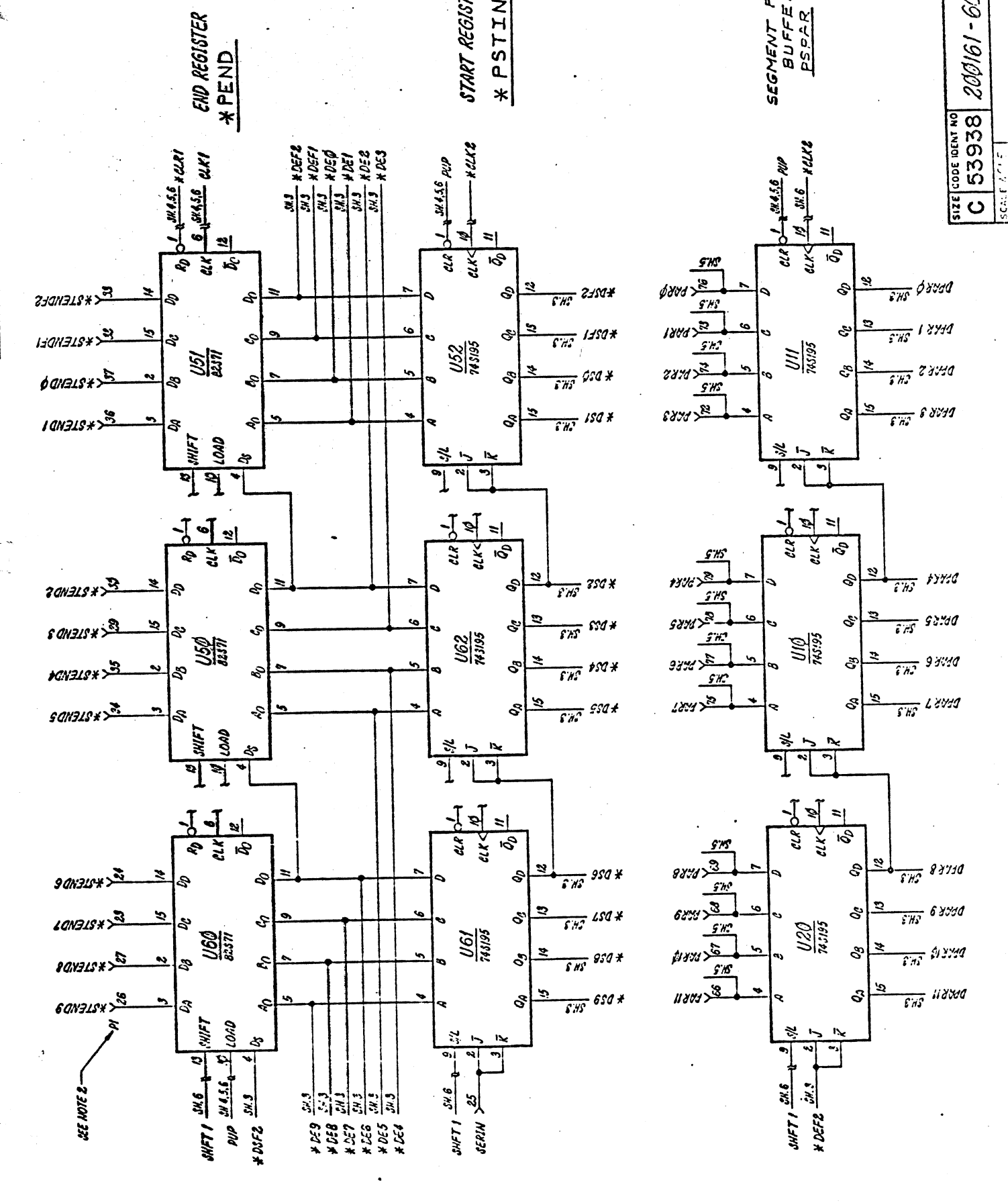
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	SEE SEPARATE PARTS LIST
.XX ±	XXX ±		
ANGLES ±	✓	MATERIAL	CARD ASSEMBLY, PRIORITY SORTER, (PC)
NO. VIEW	USED ON	FINISH	SIZE CODE IDENT NO
APPLICABLE			C 53938
			200161-100
			REV
			MC



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. DRAWN BY: HARLEY CHECKED BY: [Signature] 12 JUL 77 MECH ELEC PROJ. ENG. [Signature] APPROVED		SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
MATERIAL		PRIORITY SORTER, (P.C.)		REV VC	
FINISH		SCALE NONE		C 53938 200161-600	
NEXT ASSY USED ON		200150-100		NOVONVIEW	
APPLICATION					



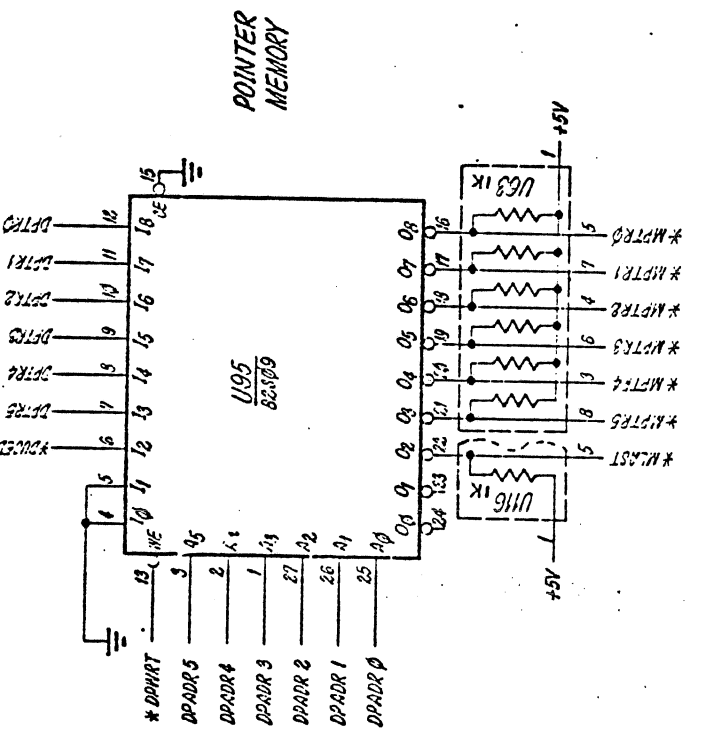
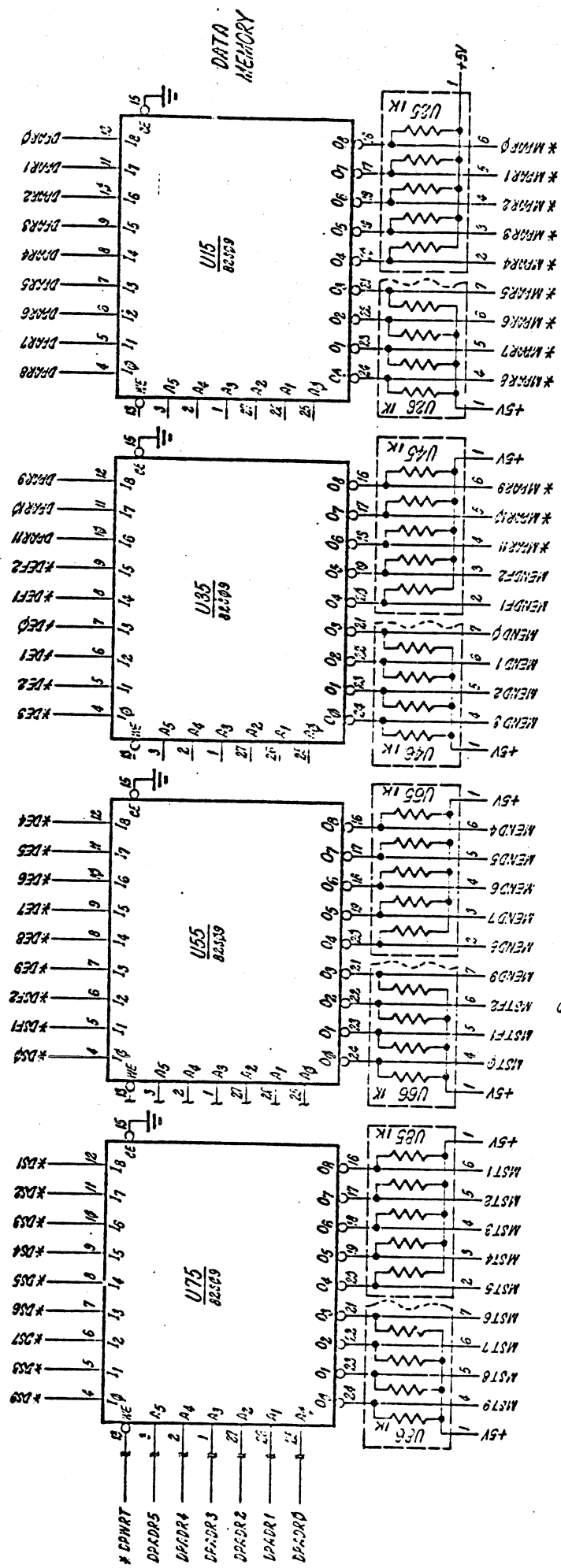
SEE NOTE 2

END REGISTER  
\*PEND

START REGISTER  
\*PSTIN

SEGMENT BUFFER  
PS.PAR

SCALE	1:1
IS-RT-2-CF	
C 53938	200161-600
REV	NC



BUCKET ADDRESS COUNTER

ZONE	LTR

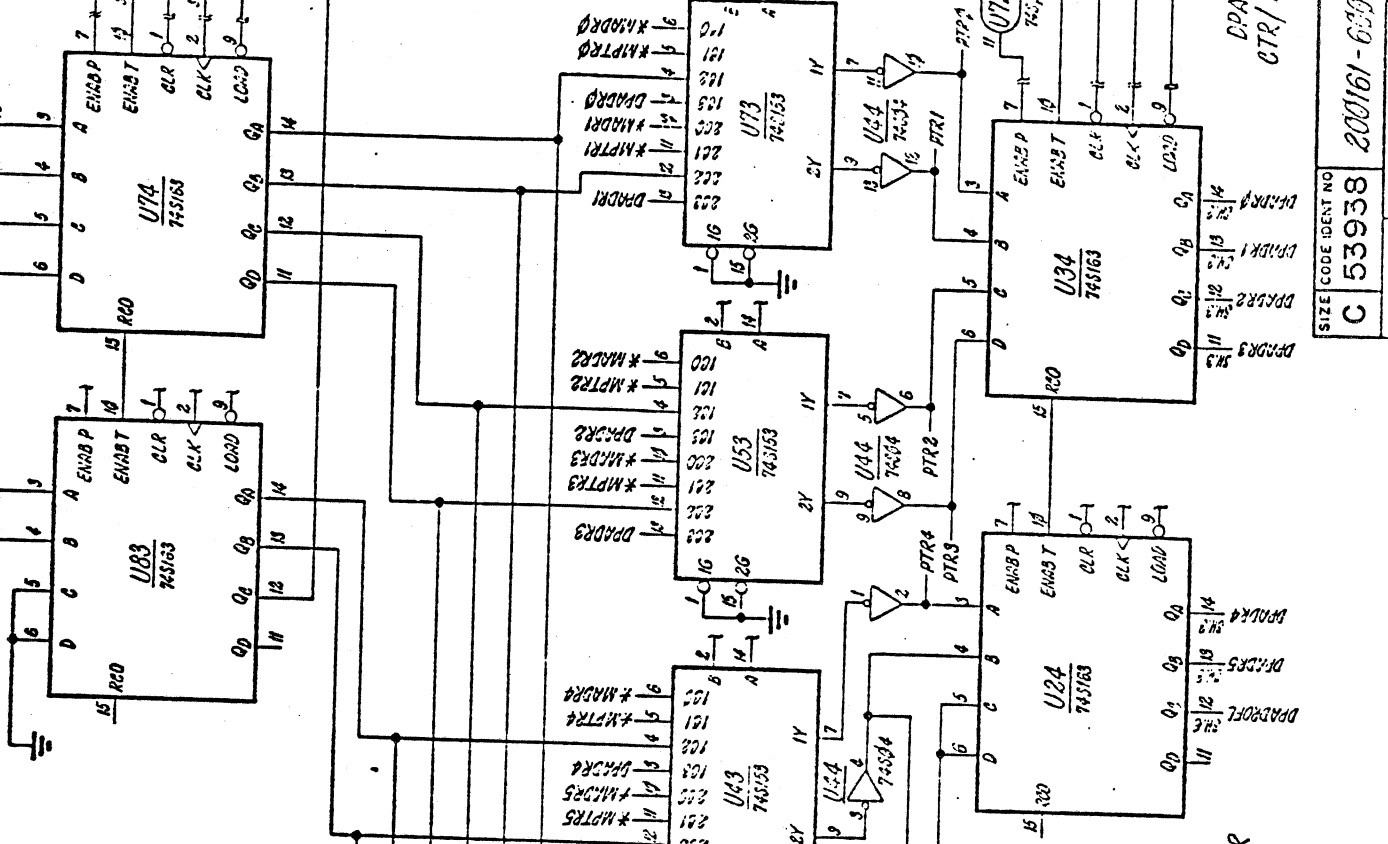
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PR12  
PR11  
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PR4  
PR3  
PR2  
PR1  
PR0

U183  
U184  
U185

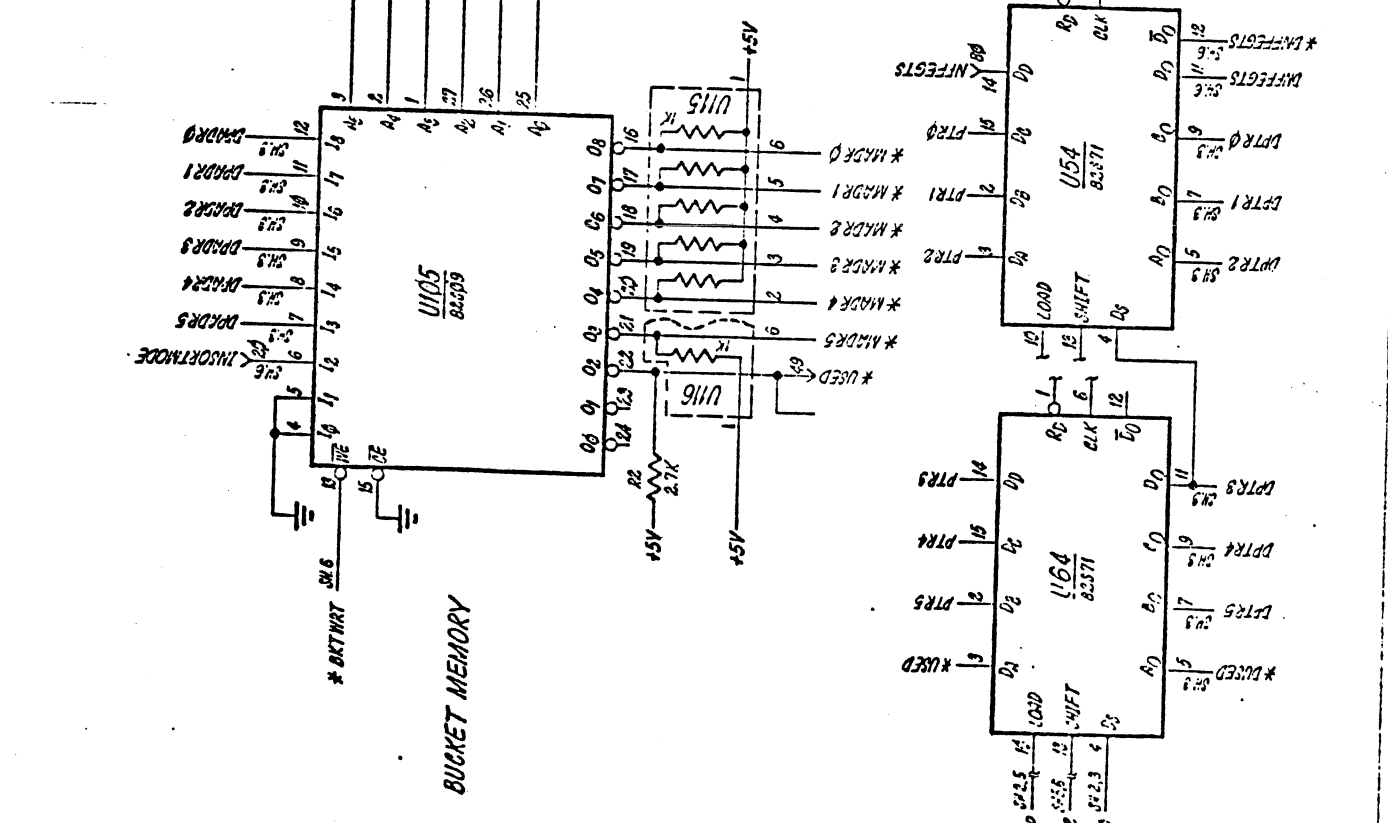


BUCKET MEMORY

U105  
U115  
U116  
U124  
U134  
U143  
U153  
U173  
U172

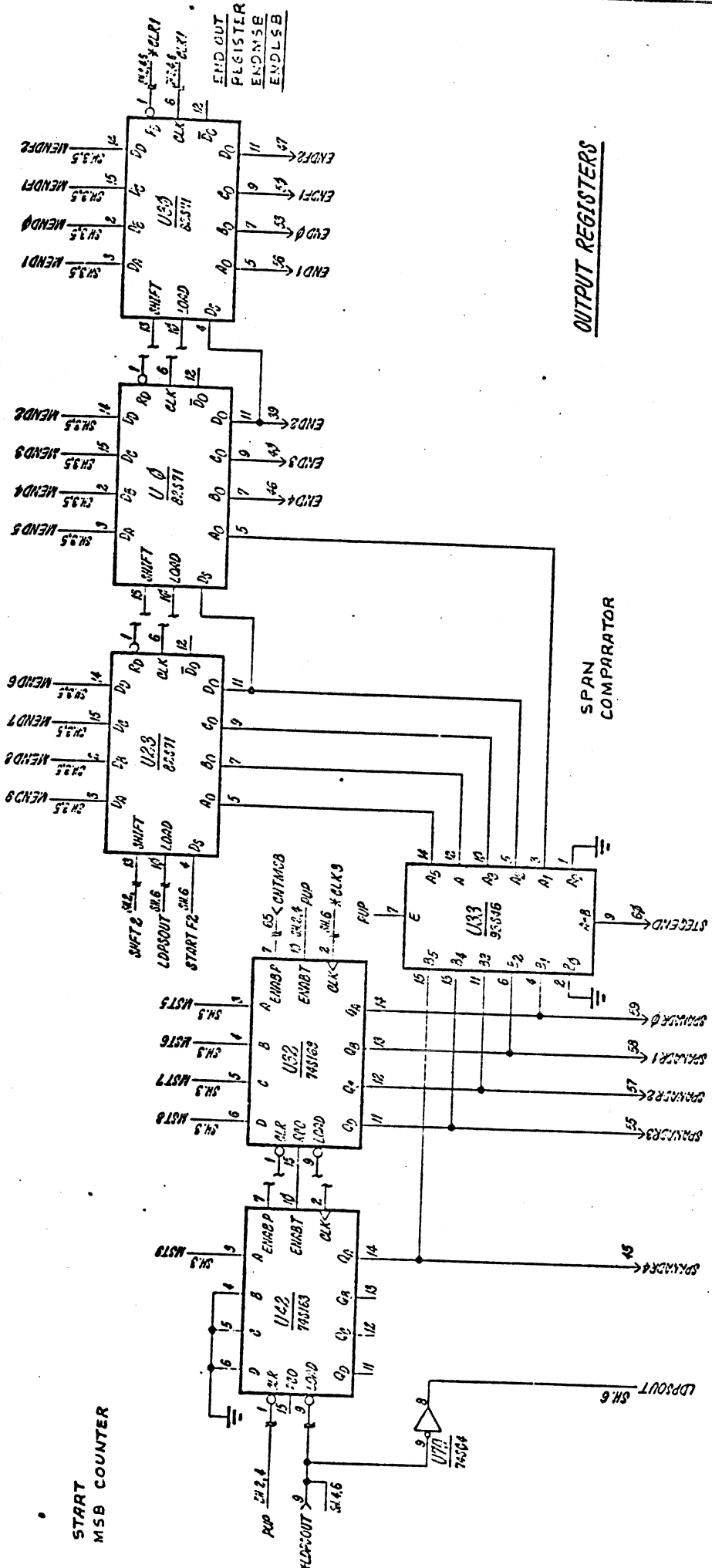
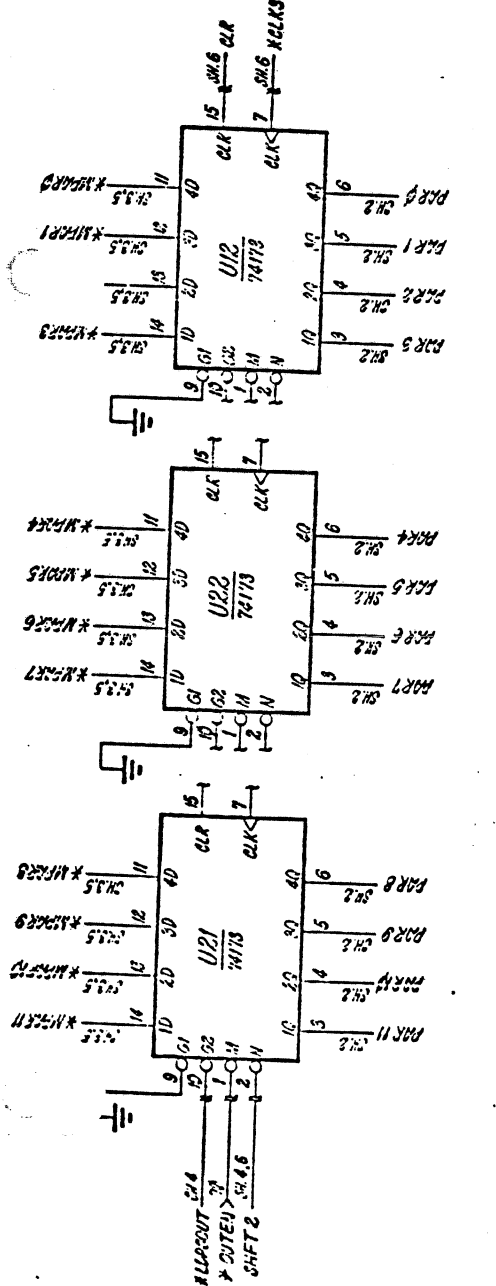


POINT REGISTER  
PTR  
\* USED



DPADR  
CTR/REG





D

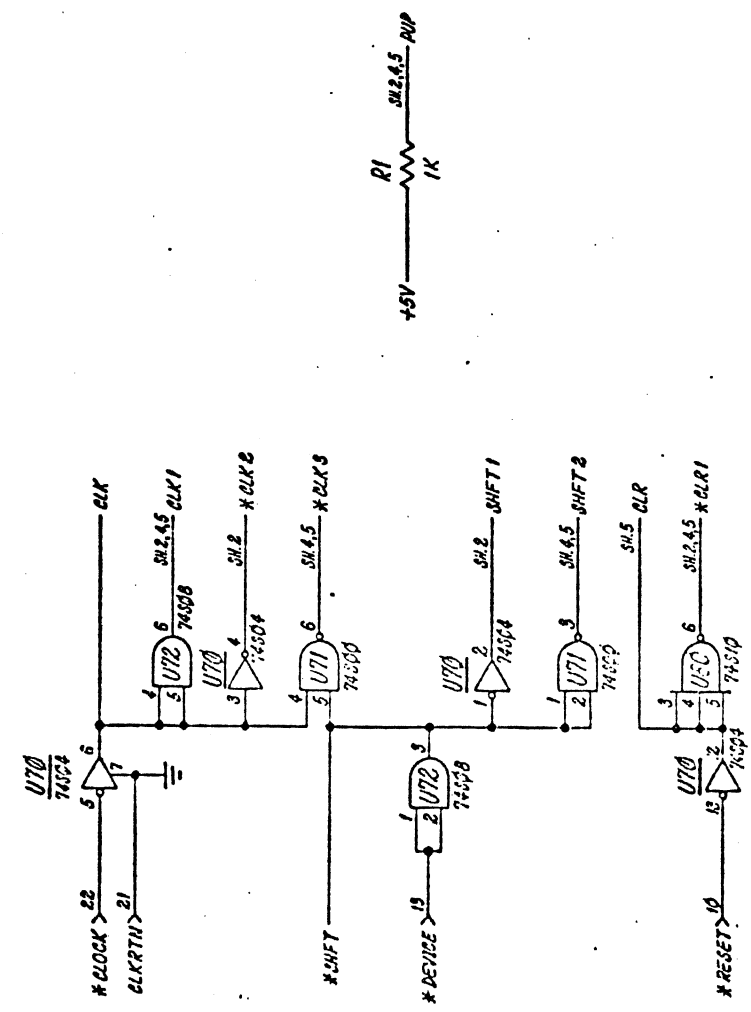
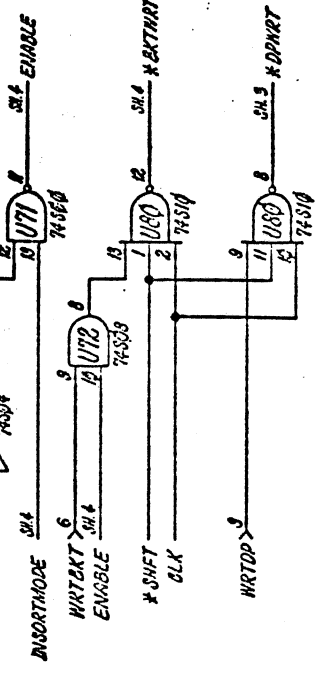
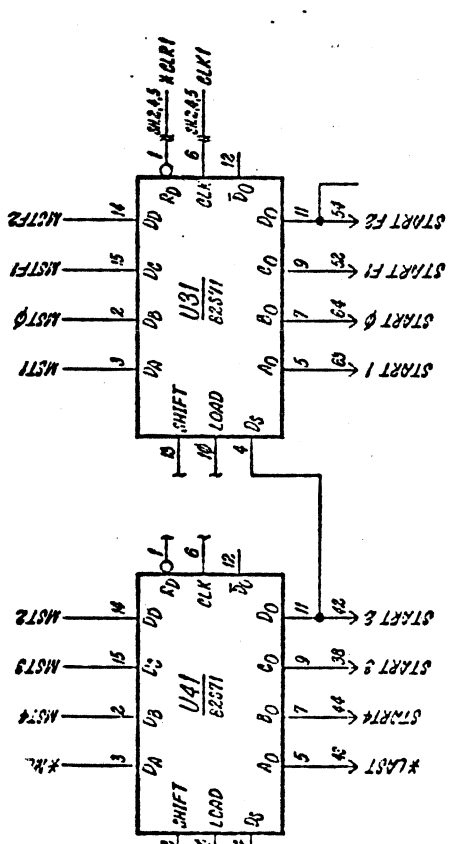
C

200161-600

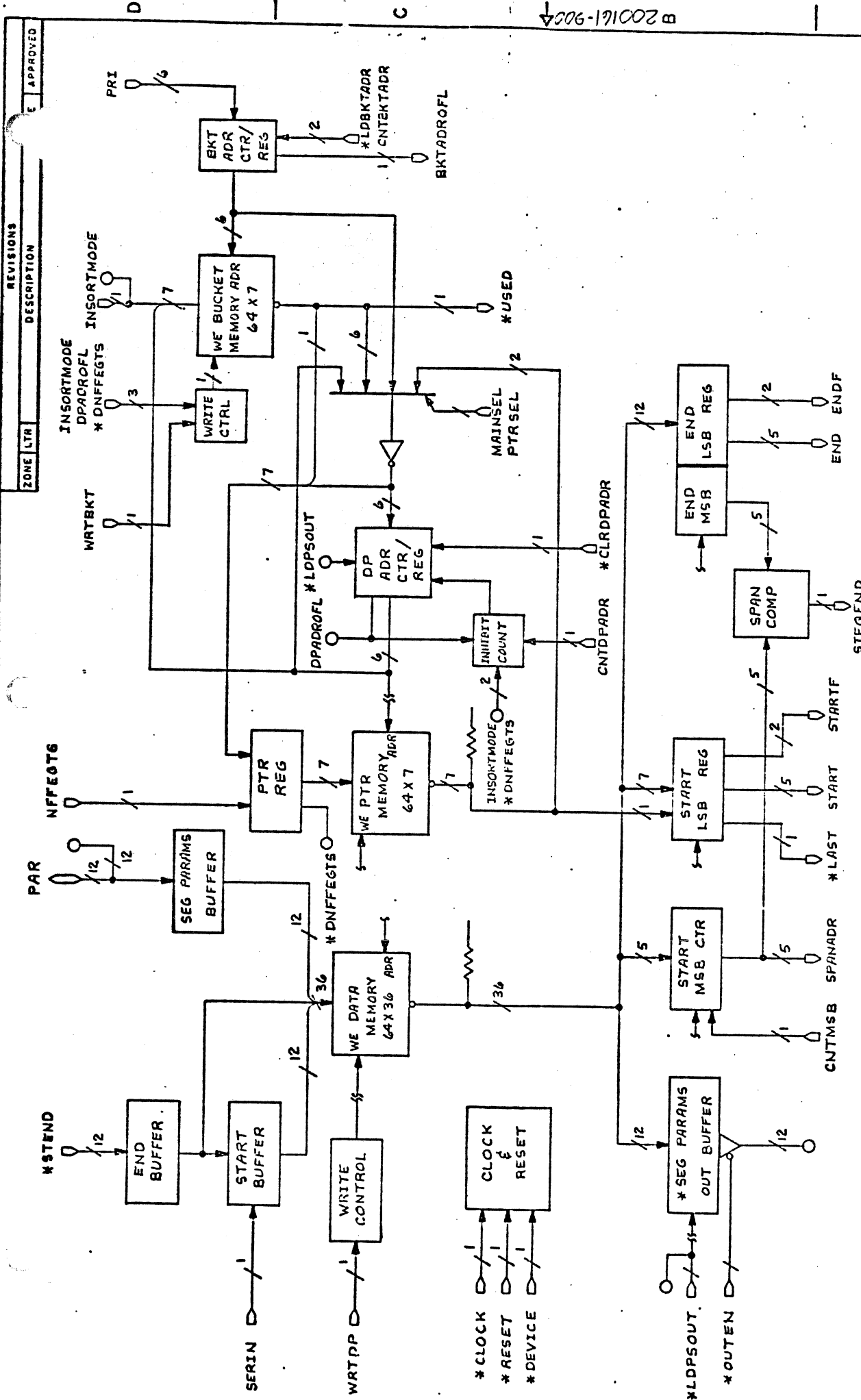
A

ZONE LTR	DESCRIPTION	DATE	APPROVED

START LSB REGISTER  
 \*LAST  
 \*SHIFT  
 \*RESET



SIZE CODE IDENT NO	REV
C 53938	NC
200161-600	
PAGE 1 OF 1	



ZONE	LTR	DESCRIPTION	REVISIONS	APPROVED

**SEE SEPARATE PARTS LIST**  
 EVANS & SUTHERLAND  
 COMPUTER CORPORATION  
 SALT LAKE CITY, UTAH 84112

**PRIORITY SORTER  
 BLOCK DIAGRAM**

SIZE CODE IDENT NO  
**C 53938 200161-900**

REV  
**NC**

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		MATERIAL	
.XX ±	MECH		USED ON
.XXX ±	ELEC		
ANGLES ±	APPROVED		
	FINISH		

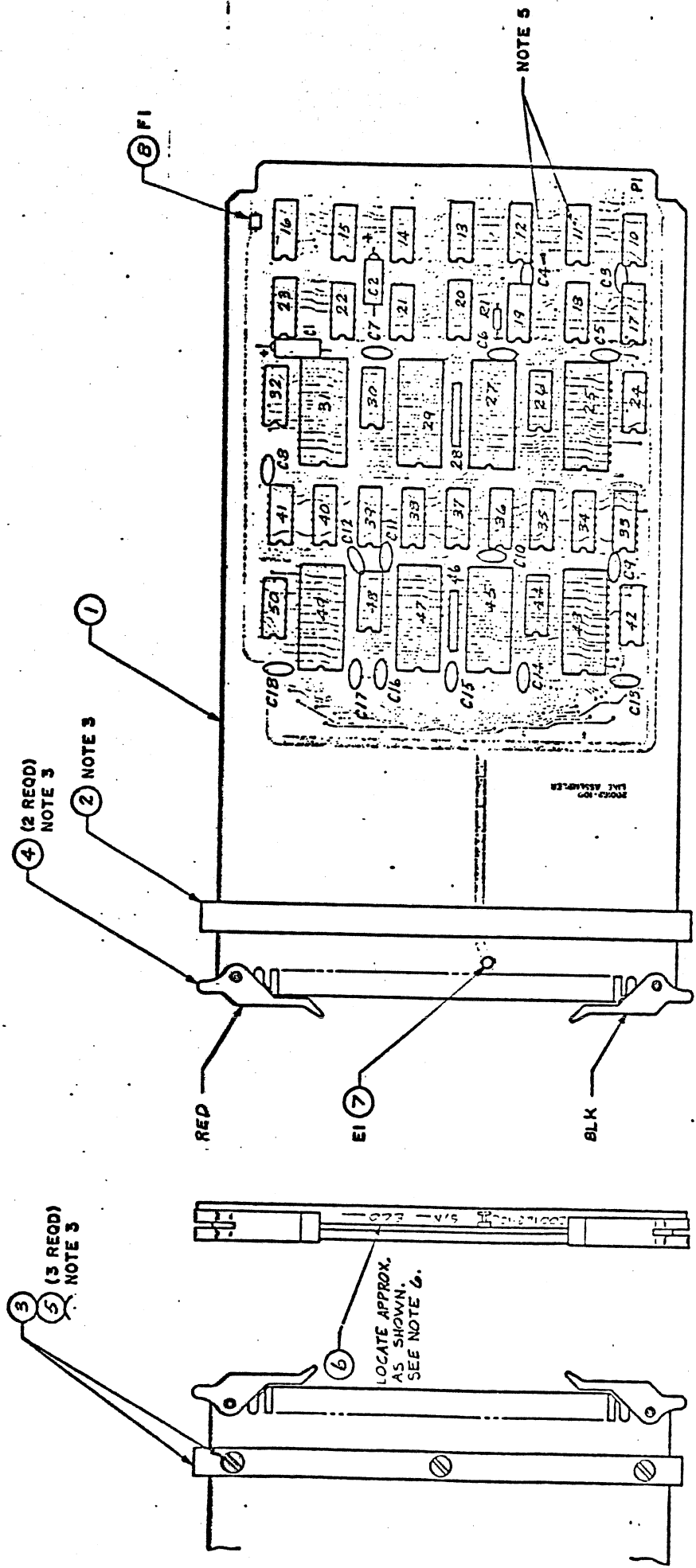
CONTRACT NO.	CHECKED	MECH	ELEC	PROJ. ENG	APPROVED

D

C

200162-100

A



COMPONENT SIDE

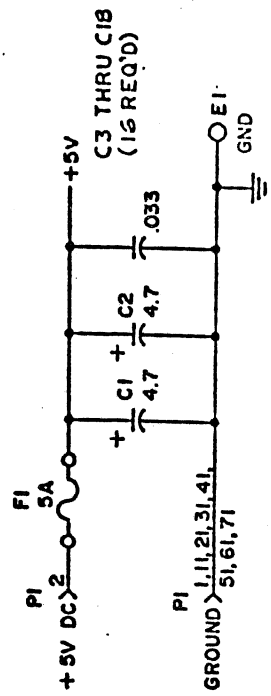
REFERENCE DOCUMENTS  
 LOGIC DIAGRAM --- 200162-600  
 PARTS LIST --- PL 200162-100

- NOTES:
1. ASSEMBLE PER E 8 S WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK E 8 S ASSY. NO, S/N & ECO LEVEL ON ITEM 6.

SEE SEPARATE PARTS LIST		CONTRACT NO.	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		DRAWN I. OLSEN 2-23-77	
CARD ASSEMBLY, LINE ASSEMBLER (P.C.)		CHECKED [Signature] 2-23 FEB 77	
SIZE CODE IDENT NO	REV	MATERIAL	
C 53938	200162-100	SEE PARTS LIST	
SCALE FIG. 1		FINISH	
		APPLICATION	
		NEXT ASSY USED ON	
		200162-100 200162-100	

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

ZONE	REVISIONS	DATE	APPROVED
LTR	DESCRIPTION		



- 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		CONTRACT NO.	
TOLERANCES ON		DRAWN R MELLUS 4-21-77	
.XX ±		CHECKED 7/14 JUN 77	
.XXX ±		MELCH	
ANGLES ±		ELLEC	
✓		PROJ ENG	
MATERIAL		APPROVED	
FINISH		SEE SEPARATE PARTS LIST	
200110 (30) NOVO 51P		EVANS & SUTHERLAND	
NEXT ASSY USED ON		COMPUTER CORPORATION	
		SALT LAKE CITY, UTAH 84112	
		LINE ASSEMBLER	
		P.C.	
		SIZE CODE IDENT NO	
		C 53938 200162-600	
		REV	
		NC	

B200162-600A

D

C

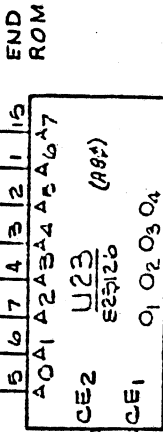
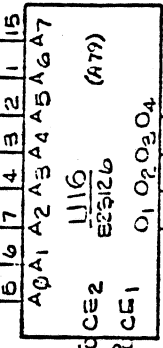
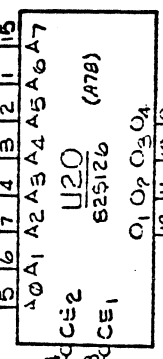
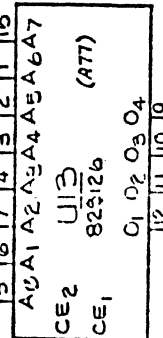
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ZONE	LTR	DESCRIPTION	DATE	APPROVED

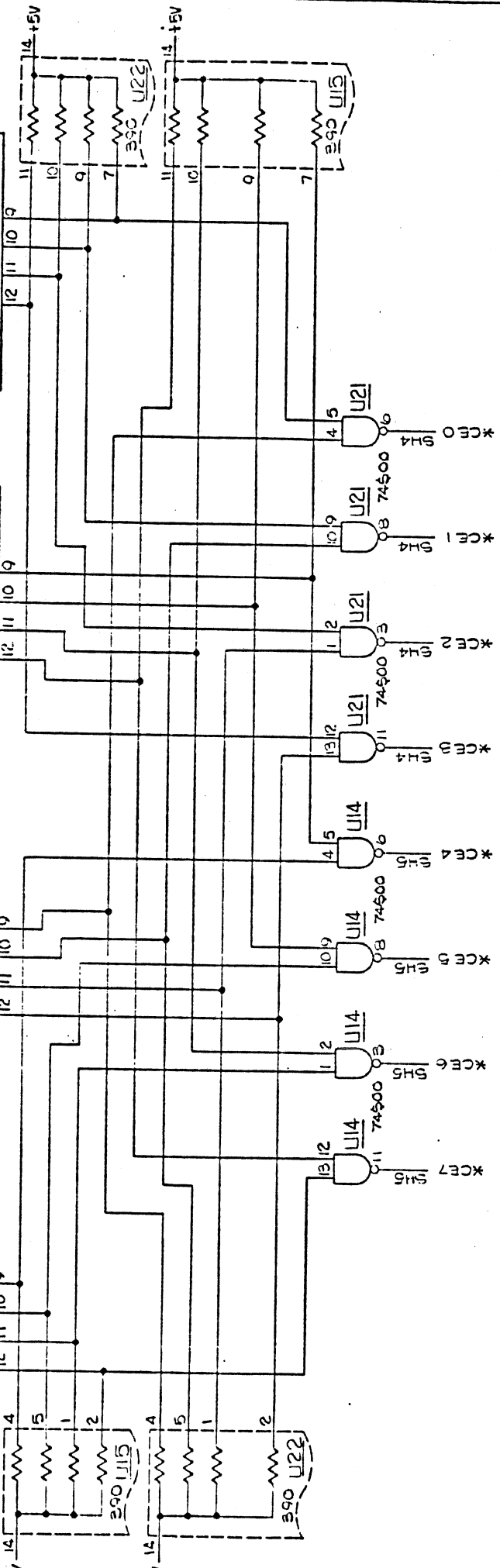
SEE NOTE 2  
P1 Y40 Y39 Y38 Y43 Y44 Y45 Y56

Y15 Y14 Y13 Y16 Y17 Y18 Y19 Y6  
Y2 Y3 Y4 Y5 Y6 Y7 Y8 Y9 Y10  
Y11 Y12 Y13 Y14 Y15 Y16 Y17 Y18 Y19 Y6

START ROM



END ROM



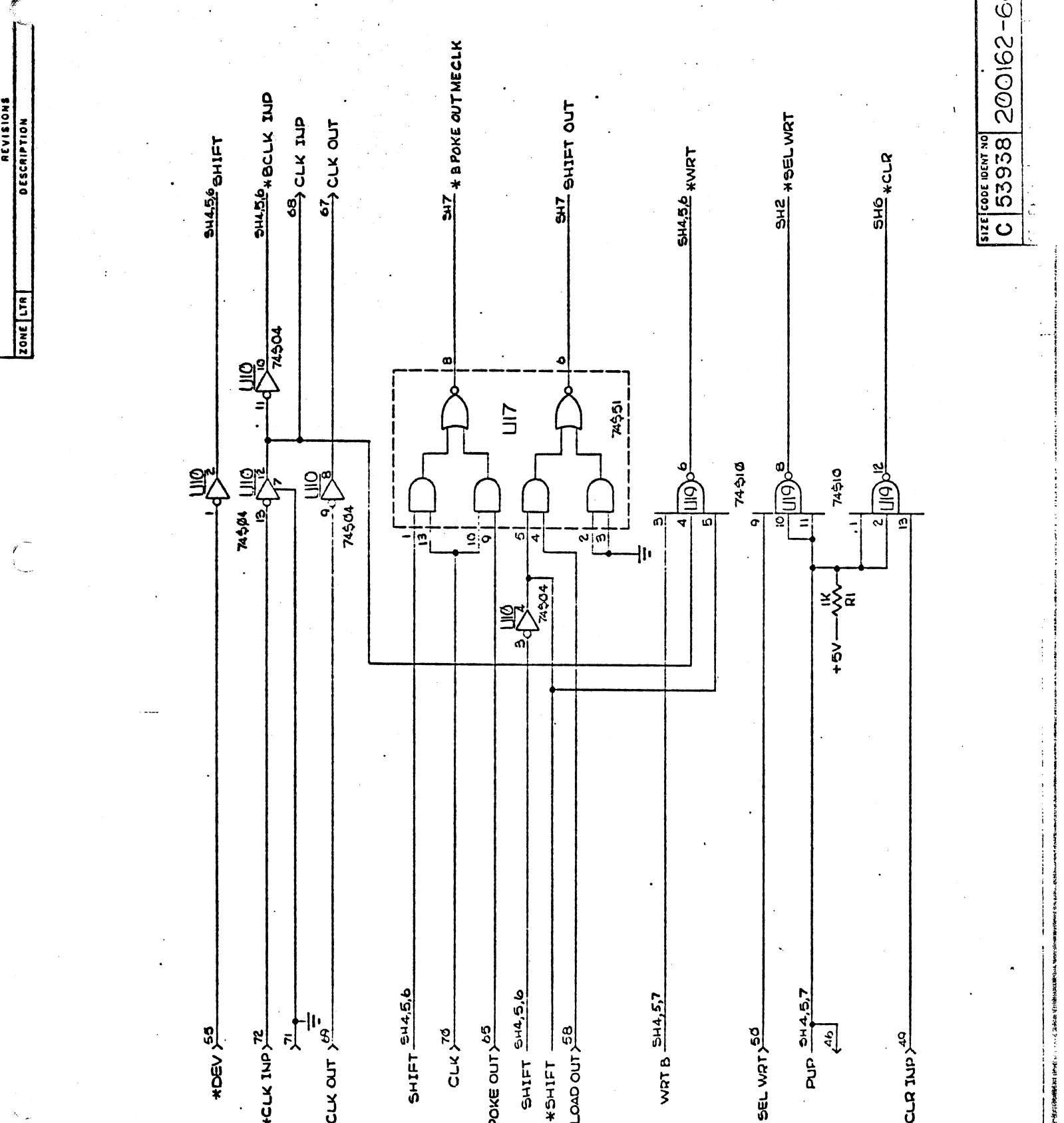
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C

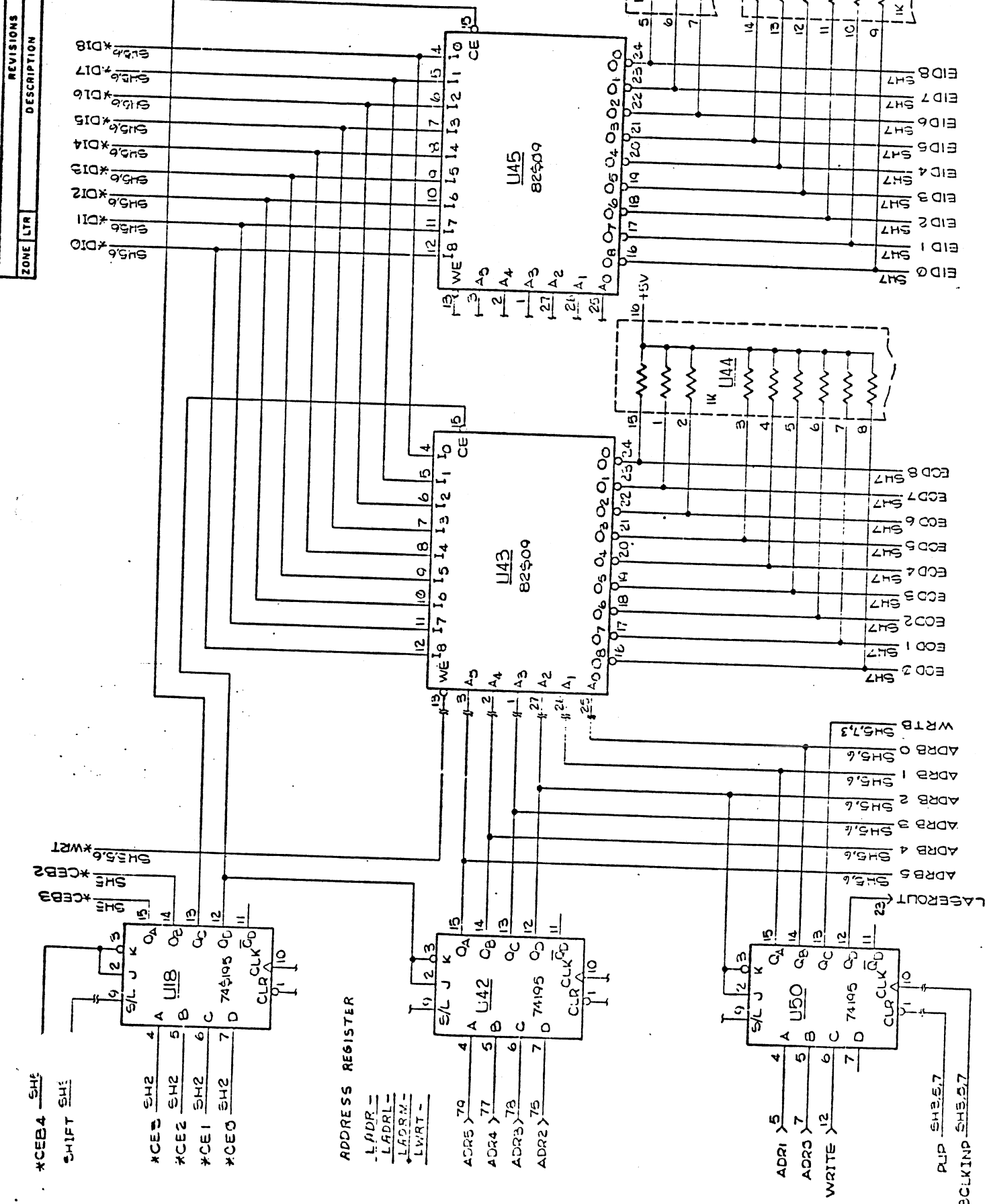
B 20062-600

A

SIZE CODE IDENT NO  
C 53938 200162-600  
REV NC



ZONE	LTR	DESCRIPTION	DATE	APPROVED



REV  
 C 53938  
 200162-600  
 W/C



ZONE	LTR	DESCRIPTION	DATE	APPROVED

REVISIONS

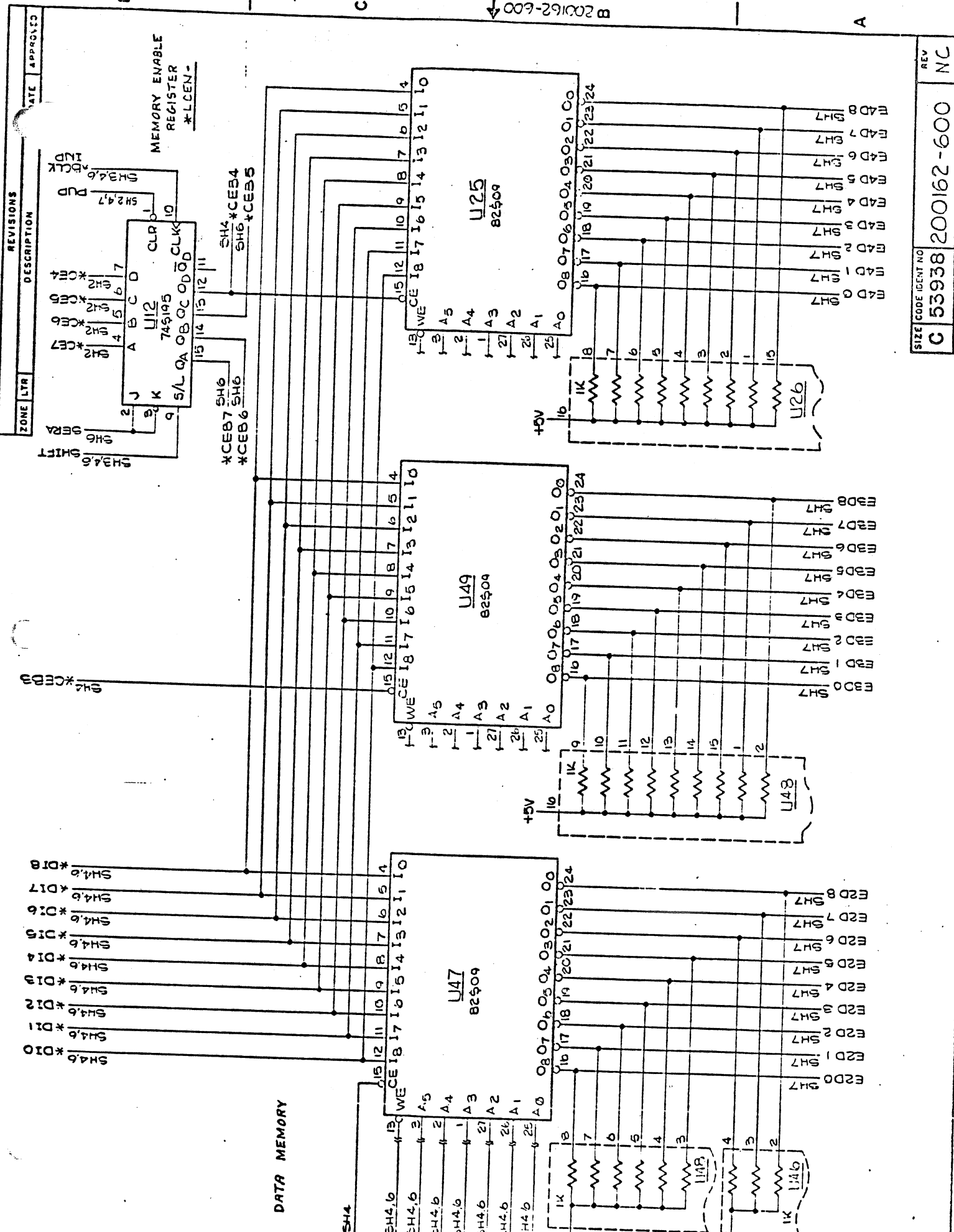
MEMORY ENABLE REGISTER \*LCEN -

DATA MEMORY

U25 82509

U49 82509

U47 82509

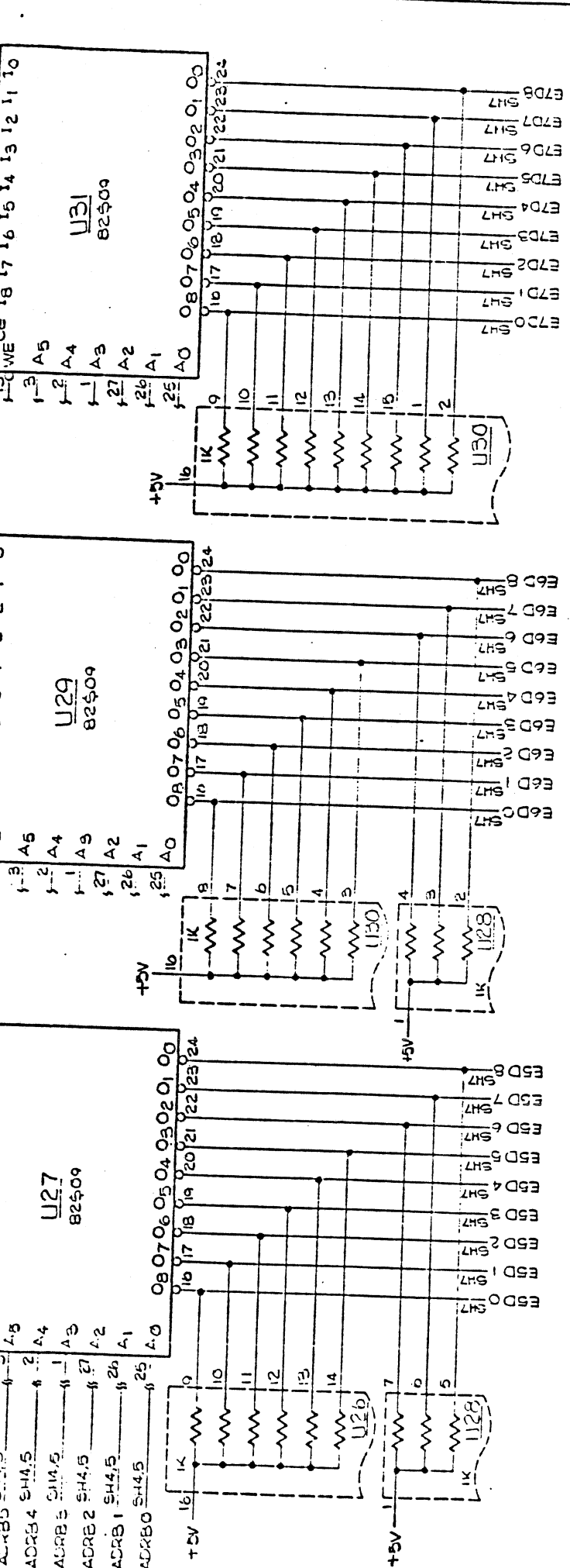
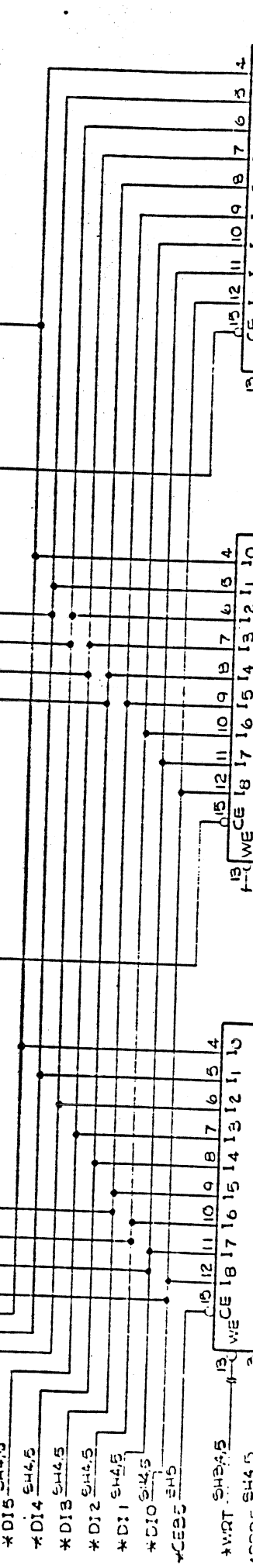
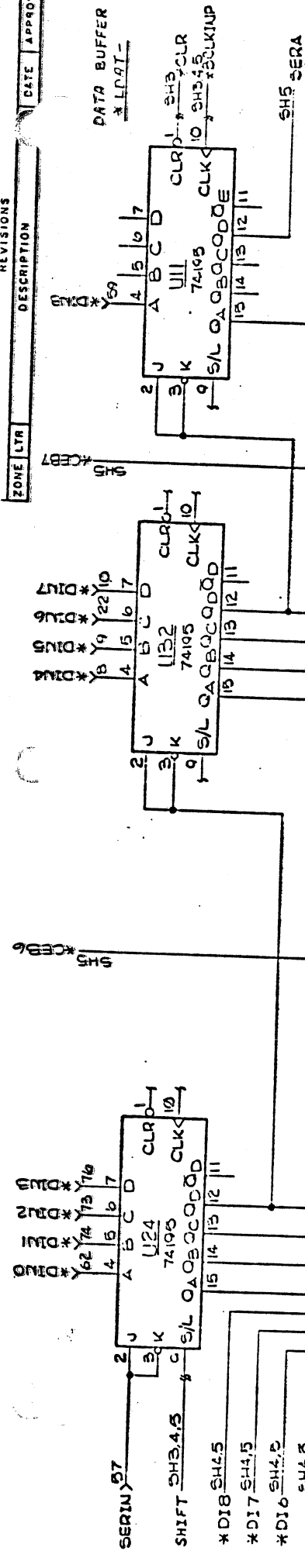


SIZE	CODE	IDENT	NO	REV	NC
C	53938	200162-600			

SCALE: A.C. 1:1

200162-600

ZONE	LTR	DESCRIPTION	DATE	APPROVED



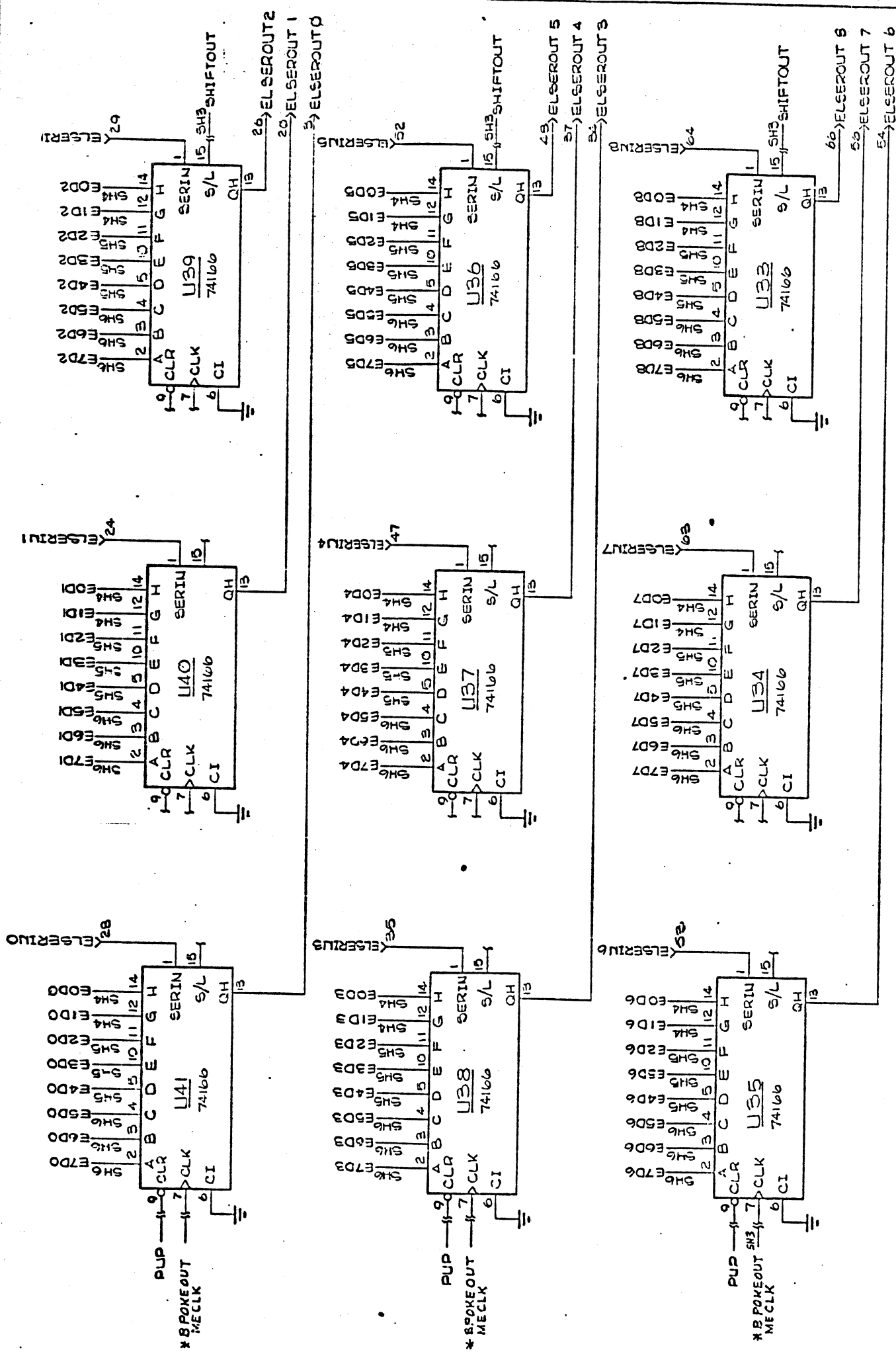
SIZE	CODE	IDENT	NO	REV
C	53938	200162-600	NC	

B 200162-600

A

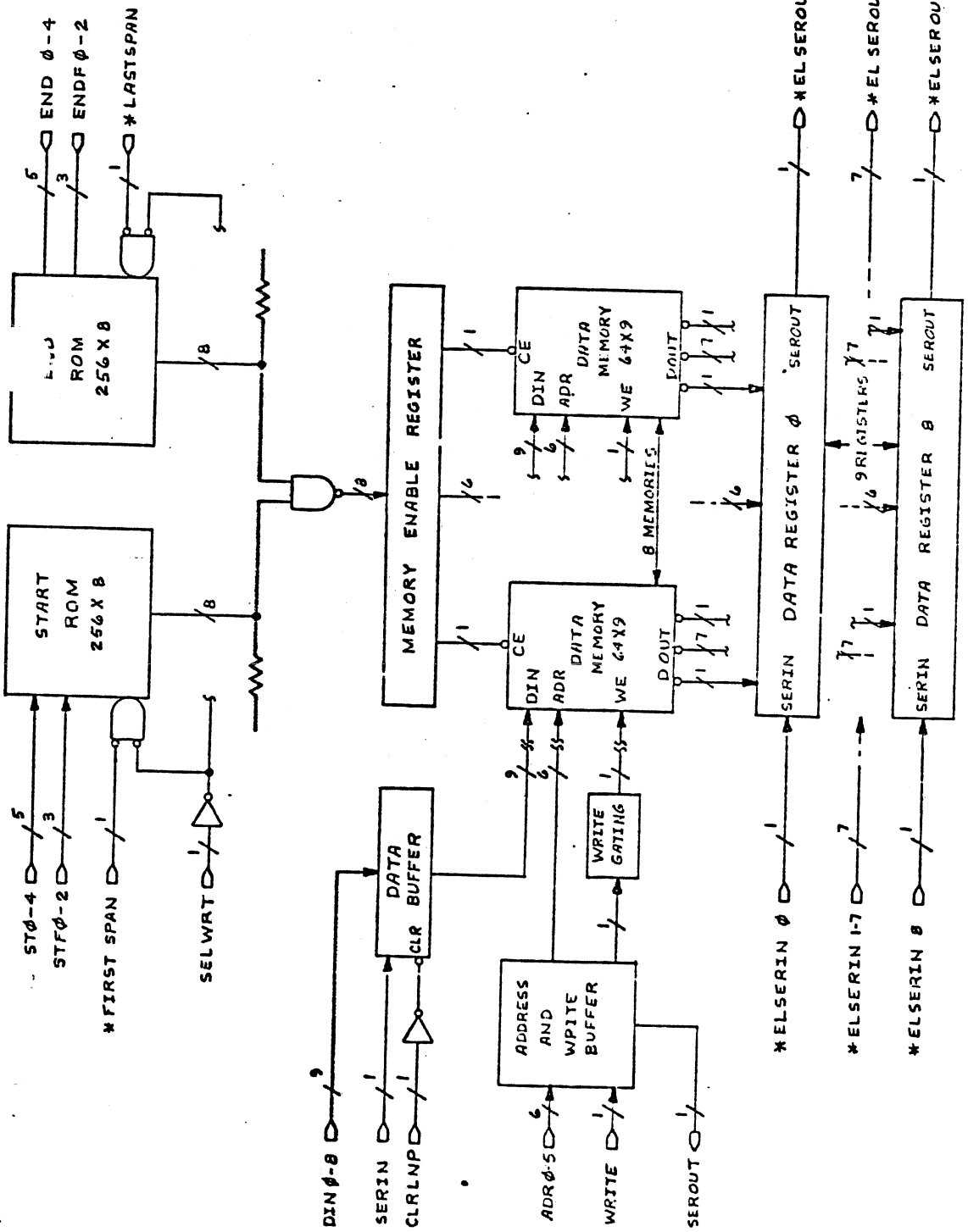
C

ZONE	LTR	DESCRIPTION	DATE	APPROVED
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DATA OUTPUT  
REGISTERS  
LAYOUT

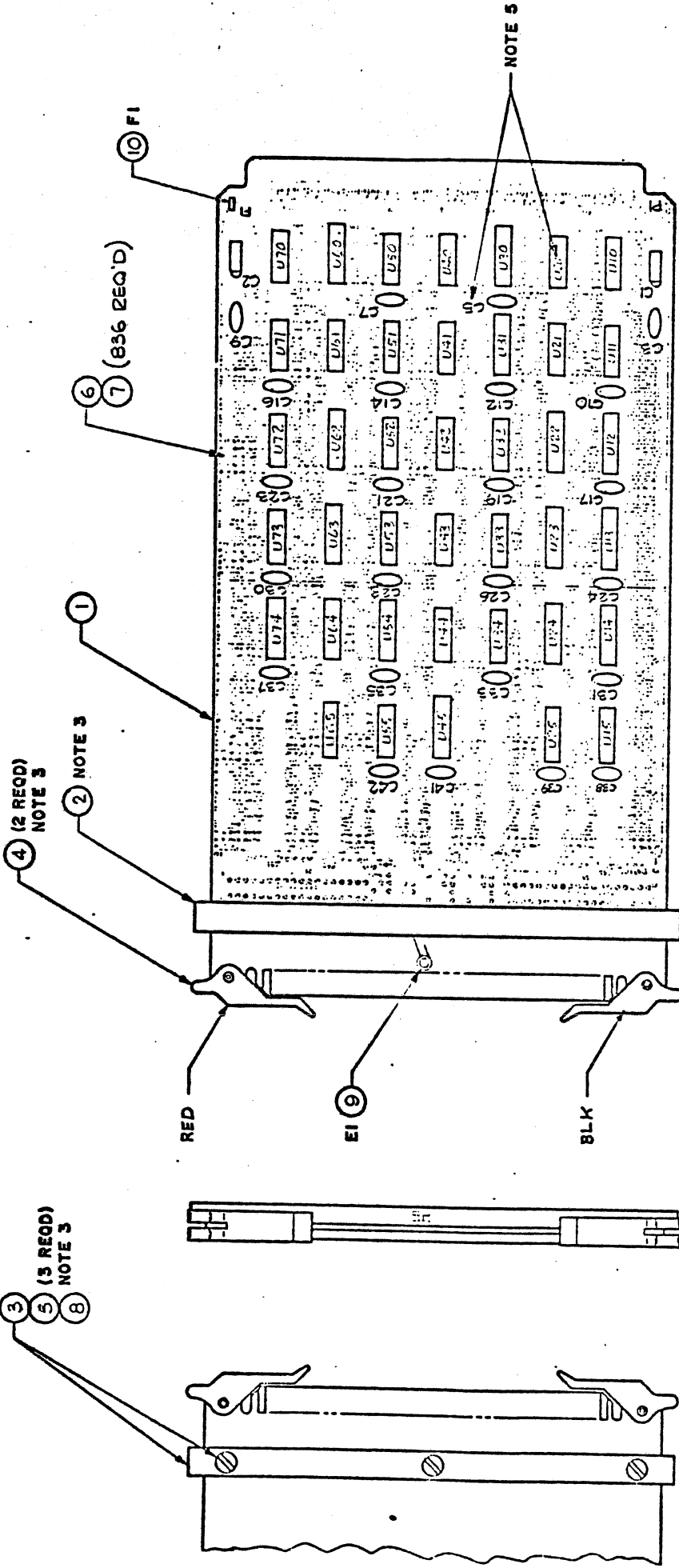
SIZE	CODE IDENT NO	REV
C	53938	200162-600
		NC



SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		DRAWN BY: [Signature] 8-5-77	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CHECKED	
.XX ±		MECH	
.XXX ±		ELEC	
ANGLES ±		PROJ. ENG	
MATERIAL		APPROVED	
FINISH		SIZE CODE IDENT NO	
NEXT ASSY		C 53938	
USED ON		200162-900	
APPLICATION		RCV	
		112	
LINE ASSEMBLER BLOCK DIAGRAM			

B 200162-900

ZONE	LTR	DESCRIPTION	DATE	APPROVED
—	NC	THIS DWG FORMALLY RELEASED TO ECO STATUS W/NO DWG CNS		



**COMPONENT SIDE**

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

**REFERENCE DOCUMENTS**

LOGIC DIAGRAM --- 200163-600  
PARTS LIST --- PL200163-100

SEE SEPARATE PARTS LIST		CONTRACT NO.	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		DRAWN/AGE: UNK/AVAY 2-21-77	
CARD ASSEMBLY		CHECKED: M. J. ... 22 FEB 77	
E / F CONTROL		MECH	
SIZE: CODE IDENT NO		ELEC	
C 53938		PROJ. ENG. ... 1-77	
REV NC		APPROVED: ... 1-77	
200163-100		MATERIAL	
		SEE PARTS LIST	
		FINISH	
		NEXT ASSY USED ON	
		PARTS LIST	

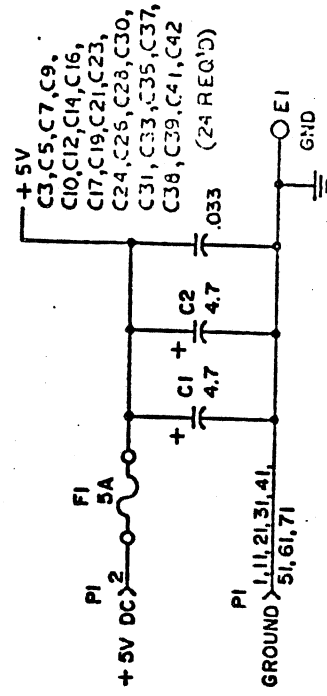
D

C

200163-100

A

ZONE	LTR	DESCRIPTION	DATE	APPROVED
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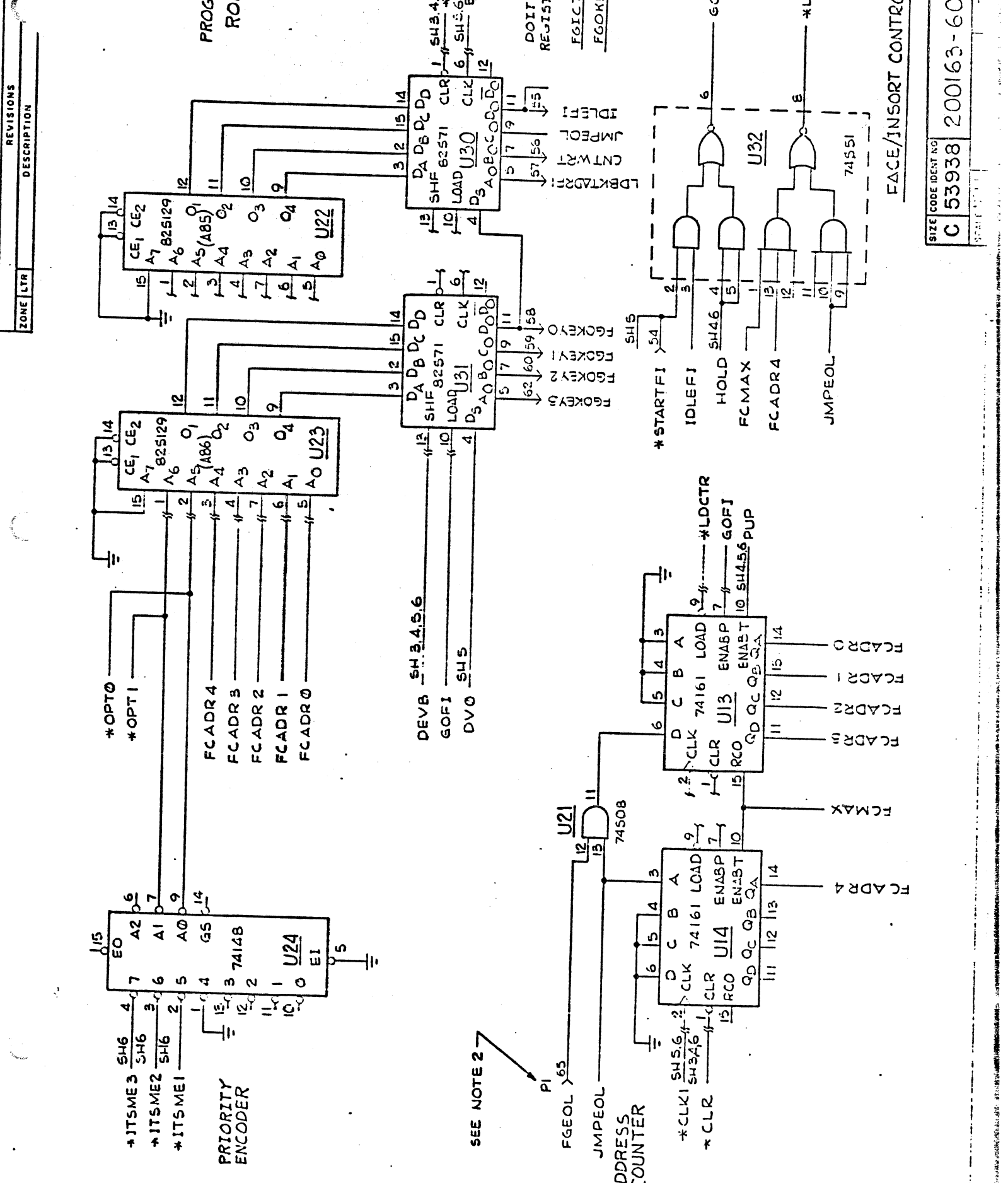


2. NUMBERS SHOWN REFER TO CONNECTOR P1.  
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.  
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.  
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.  
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).  
 ON ALL 16 PIN I.C.'S, PIN 8 IS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

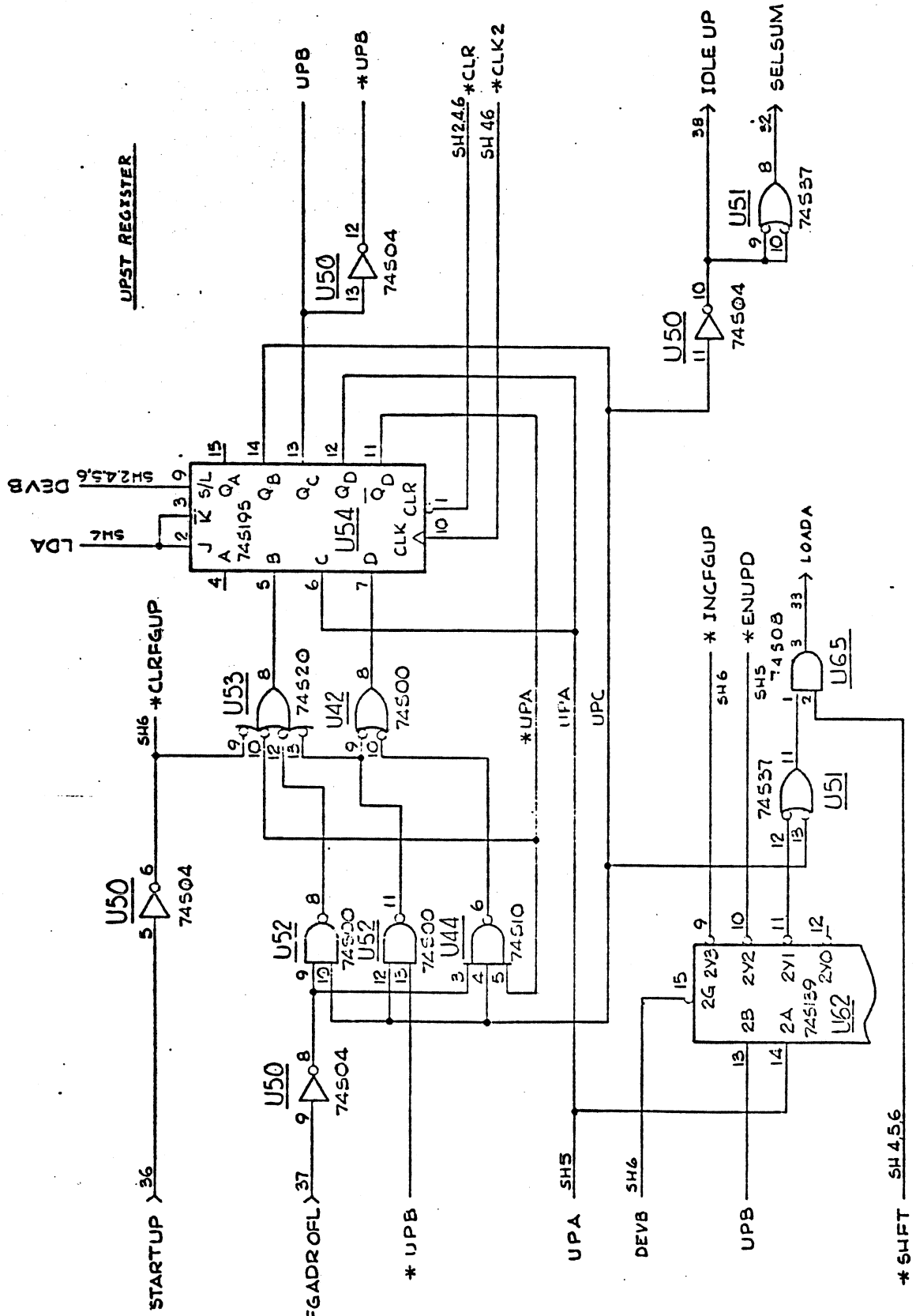
NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±		CONTRACT NO.	
MATERIAL		DRAWN BY: J.P.	
FINISH		CHECKED BY: J.P.	
200130-100		MECH	
NEXT ASSY		ELEC	
NOVO SP		PROJ ENG: J.P.	
USED ON		APPROVED	
200163-600		SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		E/F CONTROL W/W	
SIZE		CODE IDENT NO	
C 53938		200163-600	
REV		REV	
NC		NC	

200163-600A



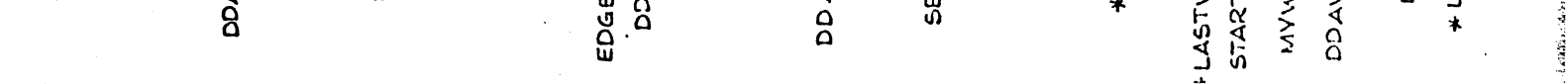
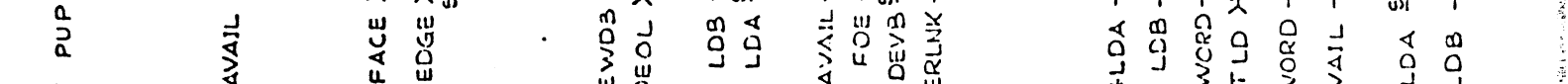
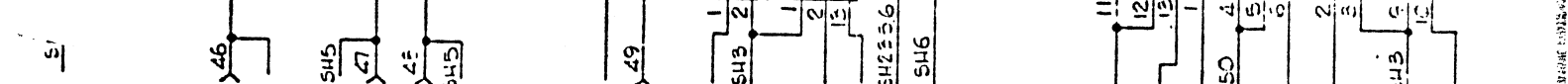
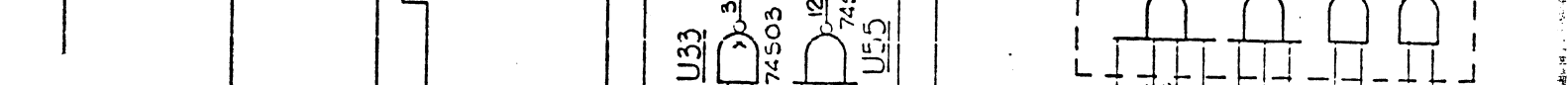
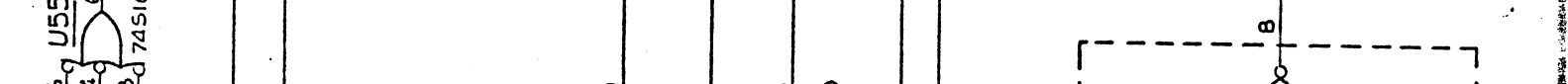
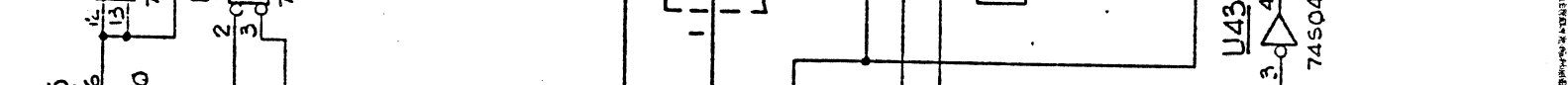
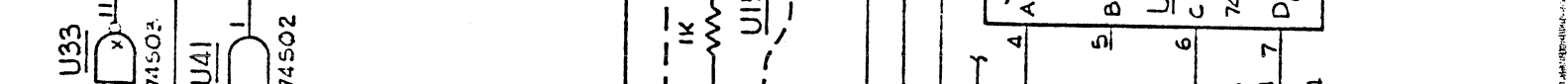
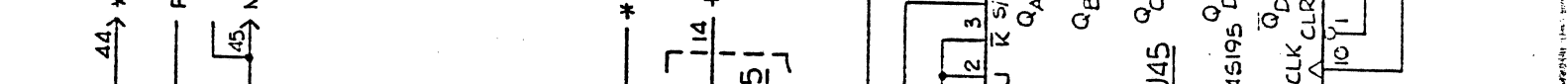
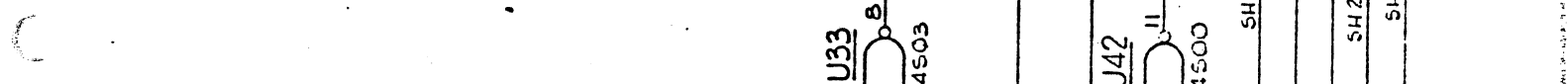
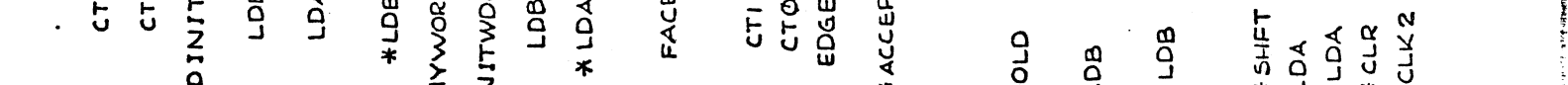
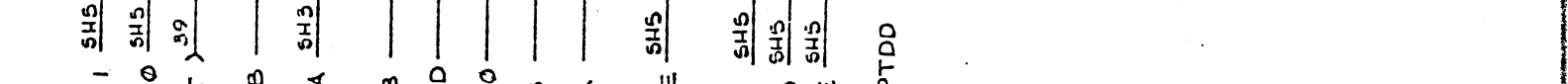
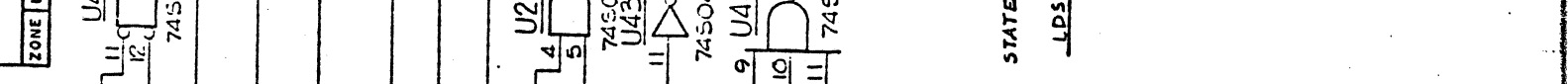
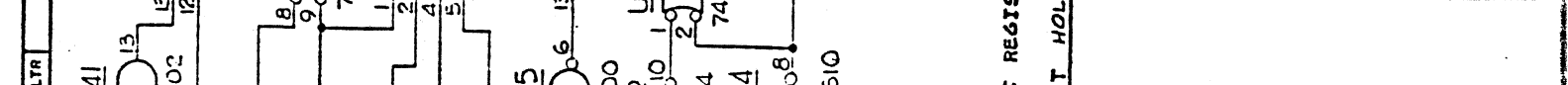
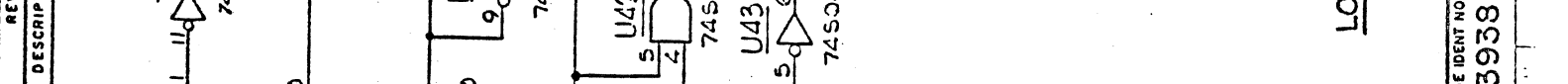
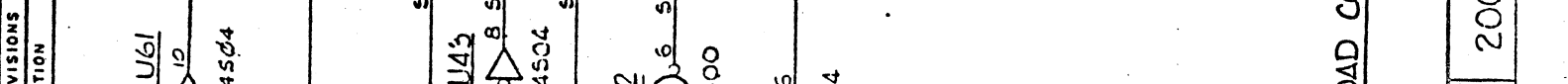
SEE NOTE 2



EDGE UPDATE CONTROL

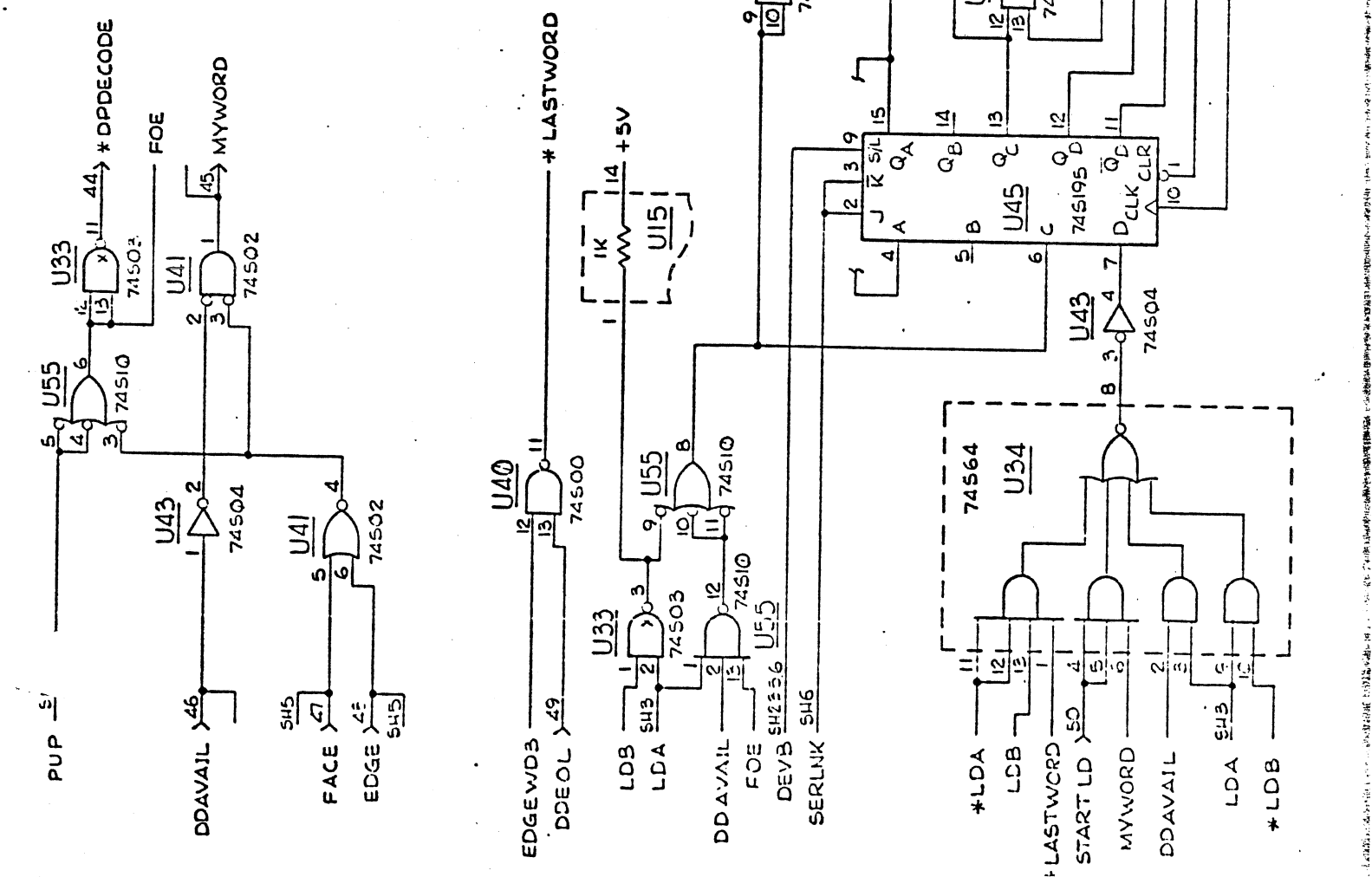
SIZE	CODE IDENT NO	REV
C	53938	NC



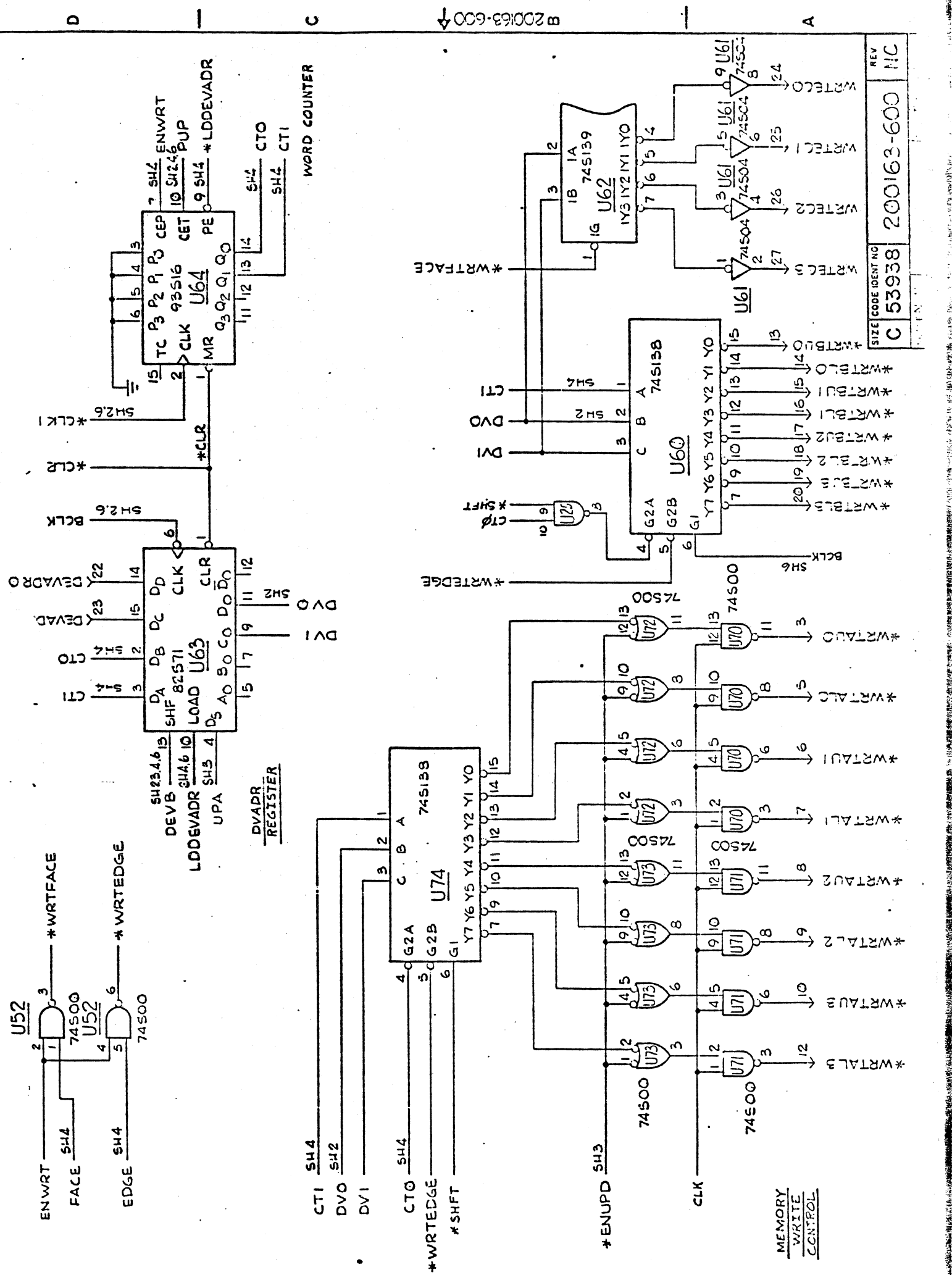


STATE REGISTER  
LDST HOLD

LOAD CONTROL



REV	NC
SIZE	C 53938
CODE	200163-600
IDENT	
NO	



SIZE	CODE IDENT NO	REV
C	53938	NC
200163-600		

B 200163-600

WORD COUNTER

MEMORY WRITE CONTROL

DVADR REGISTER

LDDEVADR

U64

U63

U62

U74

U73

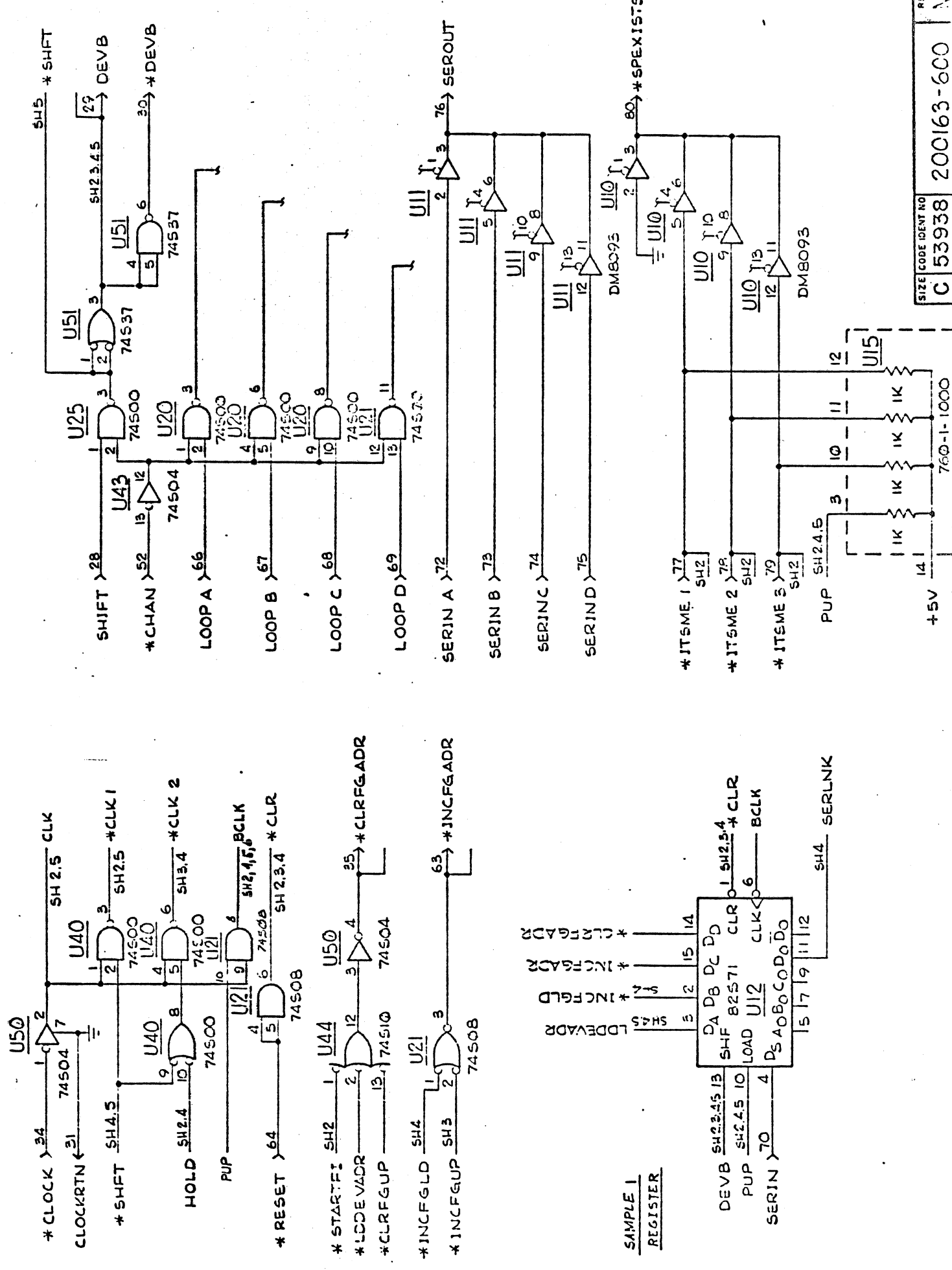
U72

U71

U70

U61

U52

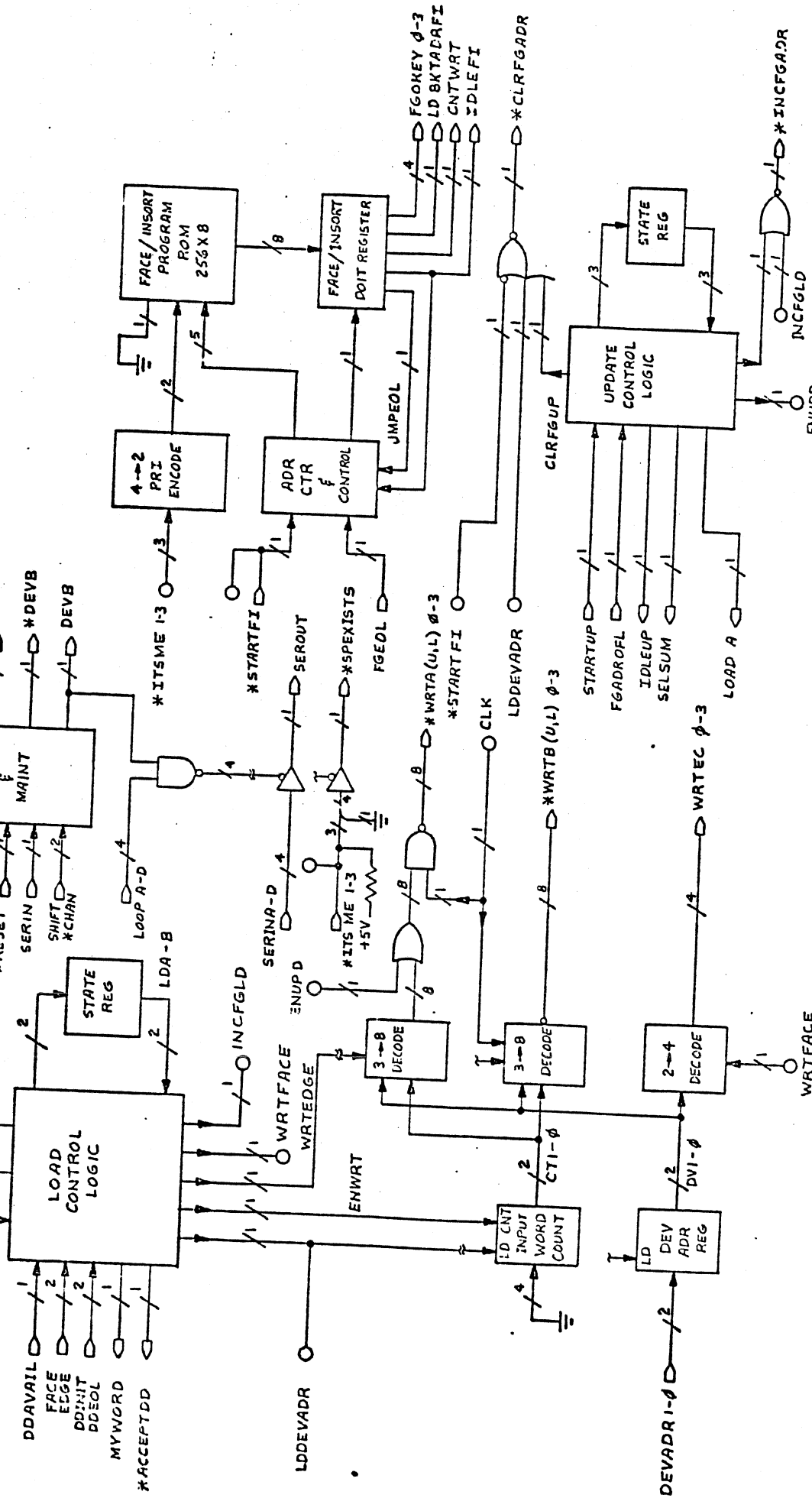


SIZE	CODE IDENT NO	REV
C	53938	NC
200163-600		

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	NC	THIS DWG FORMALLY ALLEAS TO ECO STATUS W/NO DWS CHG	8-14-77	

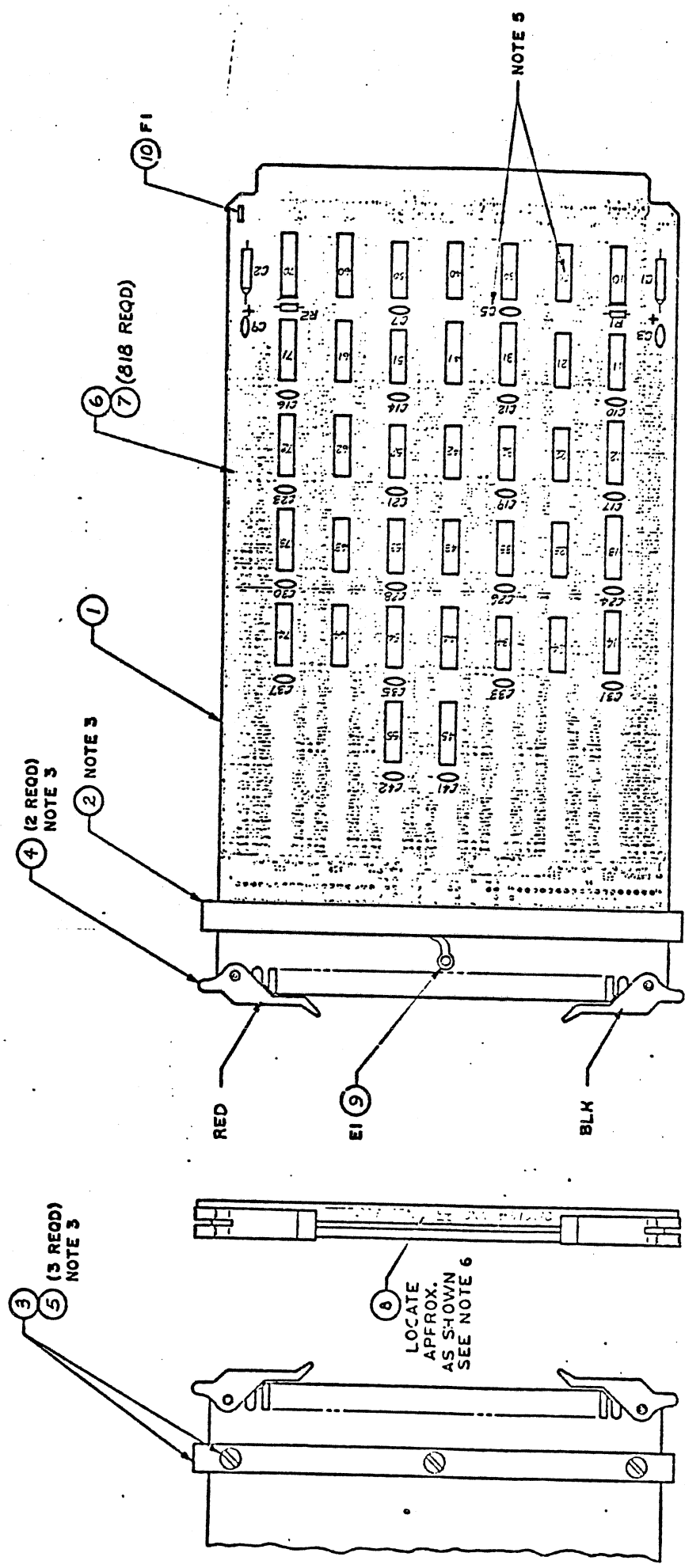
REVISIONS	DESCRIPTION	DATE	APPROVED

200163-900



SEE SEPARATE PARTS LIST		E/F CONTROL (BLOCK DIAGRAM)	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		SIZE CODE IDENT NO	REV
CONTRACT NO.		C 53938	200163-900
DRAWN A. FARLEY 1-31-77			
CHECKED BY J. H. HARRIS 3 FEB 77			
MECH			
ELEC. J. H. HARRIS			
PROJ. ENG. J. H. HARRIS			
APPROVED			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
.XX ±			
.XXX ±			
ANGLES ±			
MATERIAL			
FINISH			
NEXT ASSY			
USED ON			
APPLICATION			

REVISIONS	DESCRIPTION	DATE	APPROVED
ZONE LTR			



COMPONENT SIDE

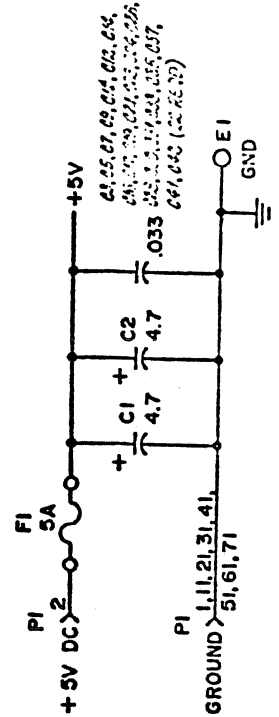
- NOTES:**
1. ASSEMBLE PER E & S WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH THE LOCATION DESIGNATION NUMBERS ON THE PARTS LIST.
  6. MARK F'S ASSY. NO., S/N & ECO LEVEL ON ITEM NO. 8.

**REFERENCE DOCUMENTS**  
 LOGIC DIAGRAM --- 200164-600  
 PARTS LIST----- PL200164-100

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.
TOLERANCES ON		DRAWN BY: J.S.P. 2-27-77
.XX ±		CHECKED BY: J.S.P. 22 FEB 77
.XXX ±		MELCH
ANGLES ±		ELEC
✓		PROJ. ENG. J.S.P.
		APPROVED
MATERIAL SEE PARTS LIST		SEE SEPARATE PARTS LIST
200164-100	ADVALTEIV	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
NEXT ASSY	USED ON	CARD ASSEMBLY S/L CONTROL W/W
APPLICATING		
		SIZE CODE IDENT NO
		C 53938
		REV NC
		200164-100

200164-100  
 EVANS & SUTHERLAND  
 COMPUTER CORPORATION  
 SALT LAKE CITY, UTAH 84112

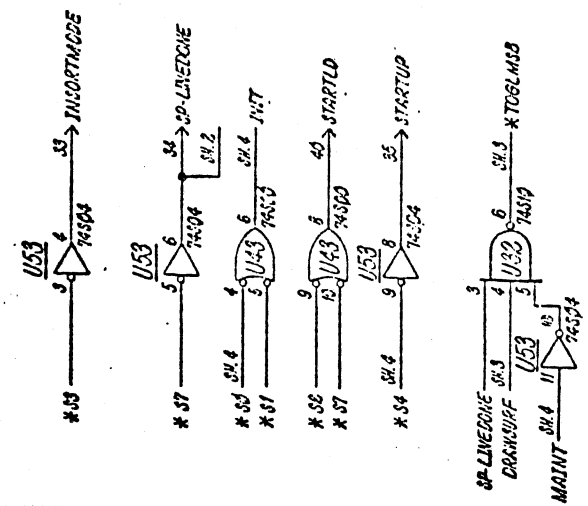
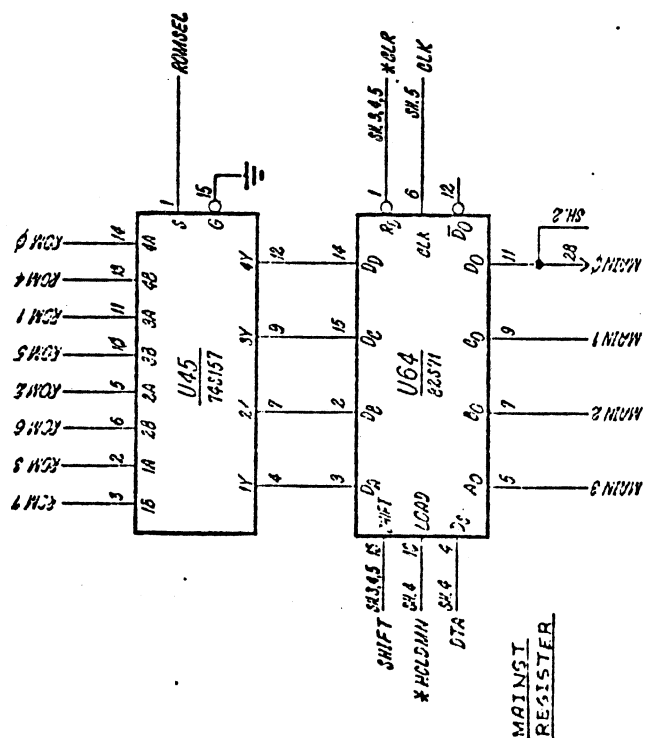
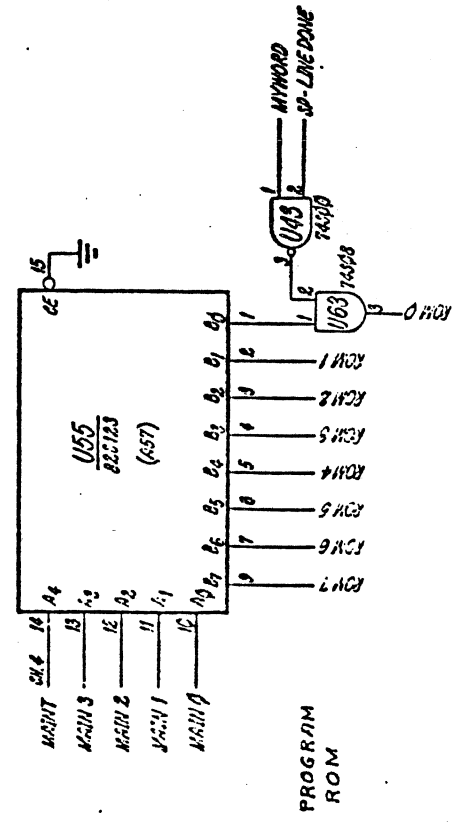
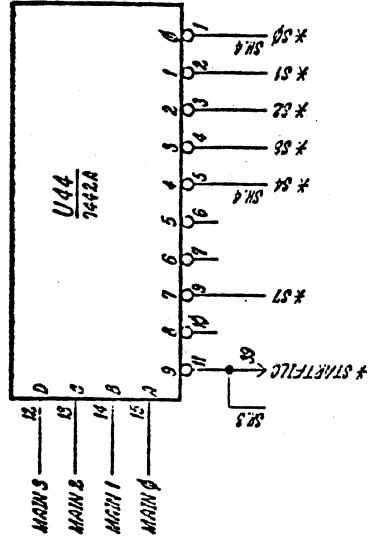
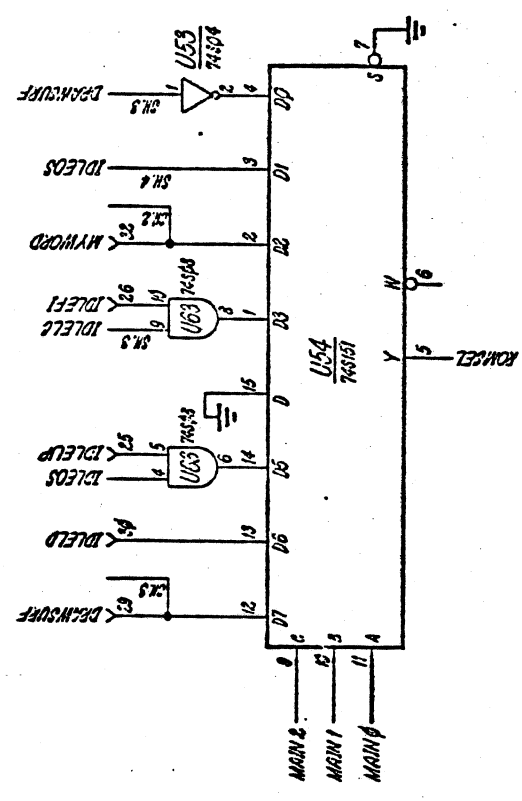
ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED
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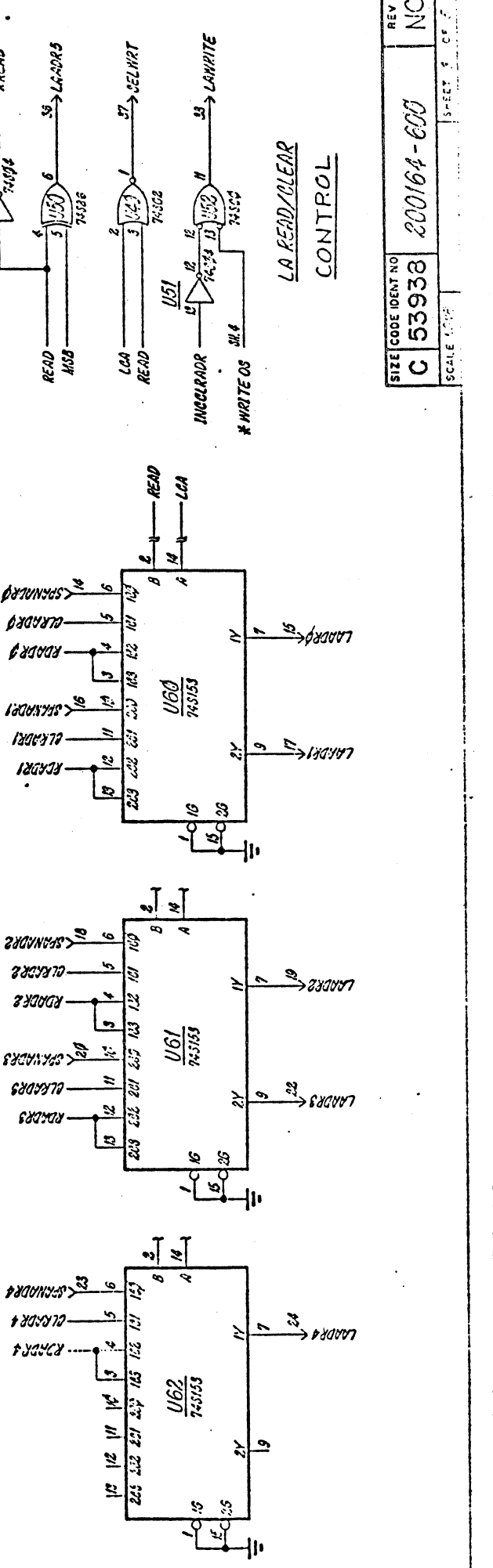
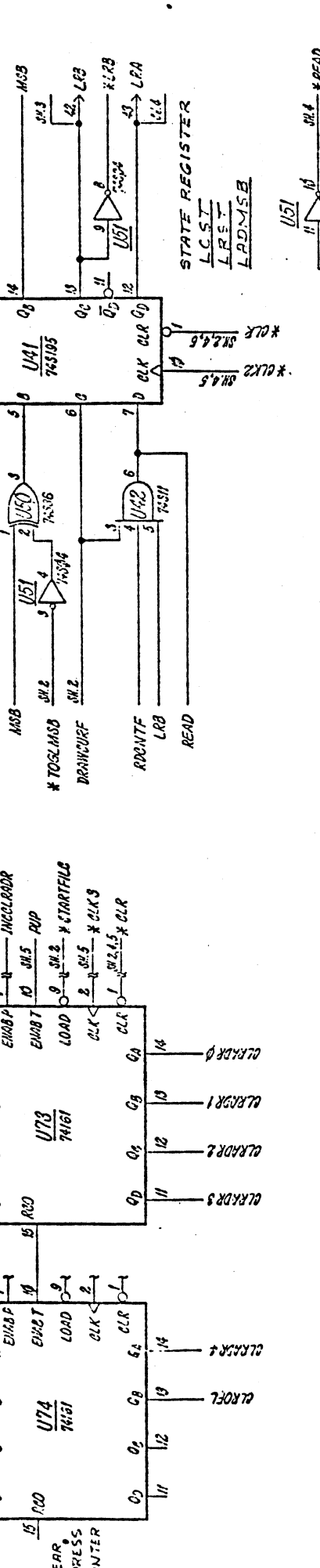
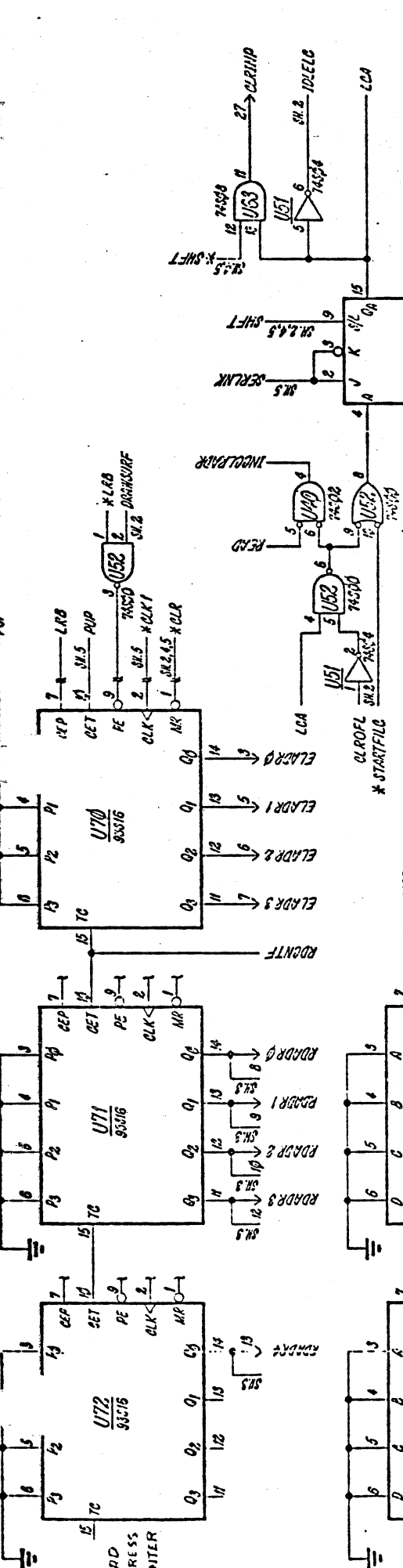
2. NUMBERS SHOWN REFER TO CONNECTOR PI.  
 ALL CAPACITANCE VALUES ARE EXPRESSED IN MICROFARADS.  
 RESISTANCE VALUES ARE EXPRESSED IN OHMS, K DENOTES 1000.  
 RESISTORS ARE 1/4 WATT, ± 5% TOLERANCE.  
 ON ALL 20 PIN I.C.'S, PIN 10 IS GROUND AND PIN 20 IS POWER (+5V).  
 ON ALL 16 PIN I.C.'S, PIN 8 IS 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 BY: M. J. WILEY R-3-77 CHECKED BY: M. J. WILEY 12 JUL 77 MUCH ELIC PROJECT ENG. APPROVED		SEE SEPARATE PARTS LIST EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
MATERIAL NOVONVIEW		SIZE CODE IDENT NO C 53938		REV 11C	
NEXT ASSY USED ON APPLICATION		S/L CONTROL: J/W		200104-600	



MAIN CONTROL

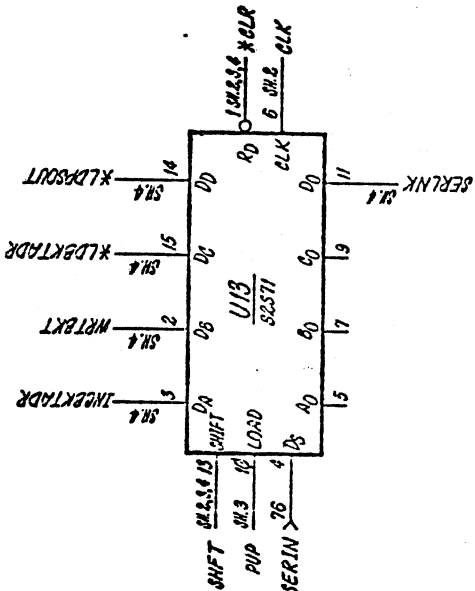
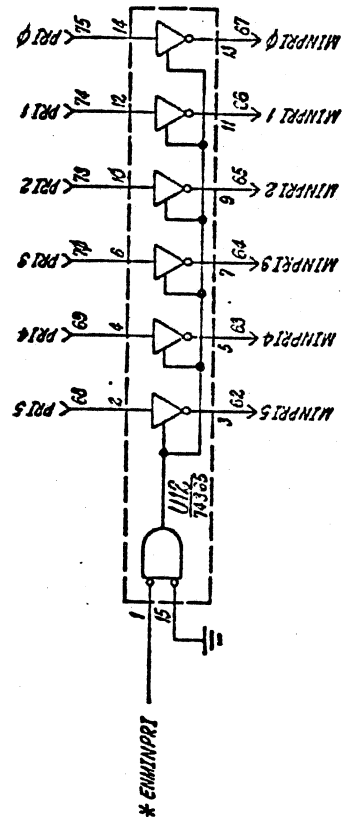
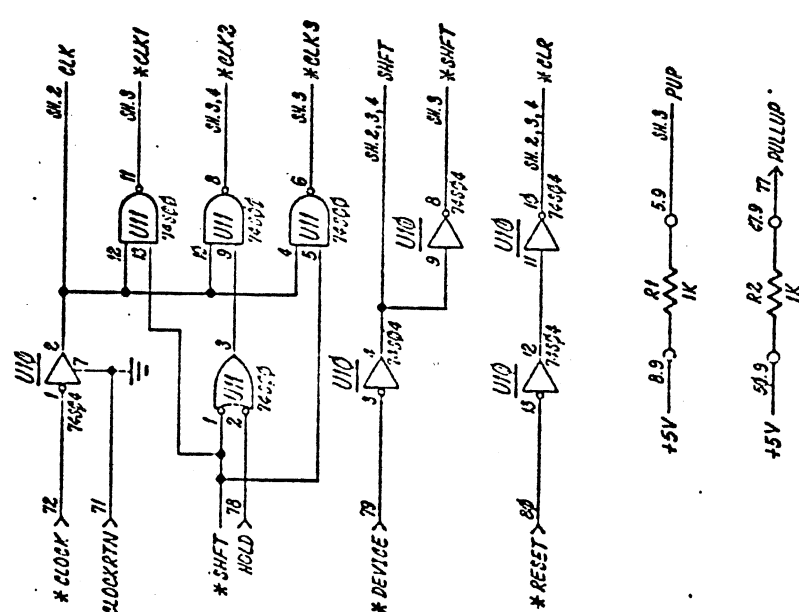






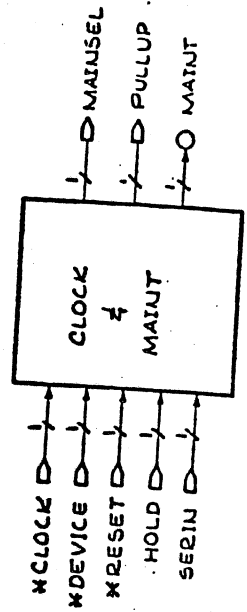
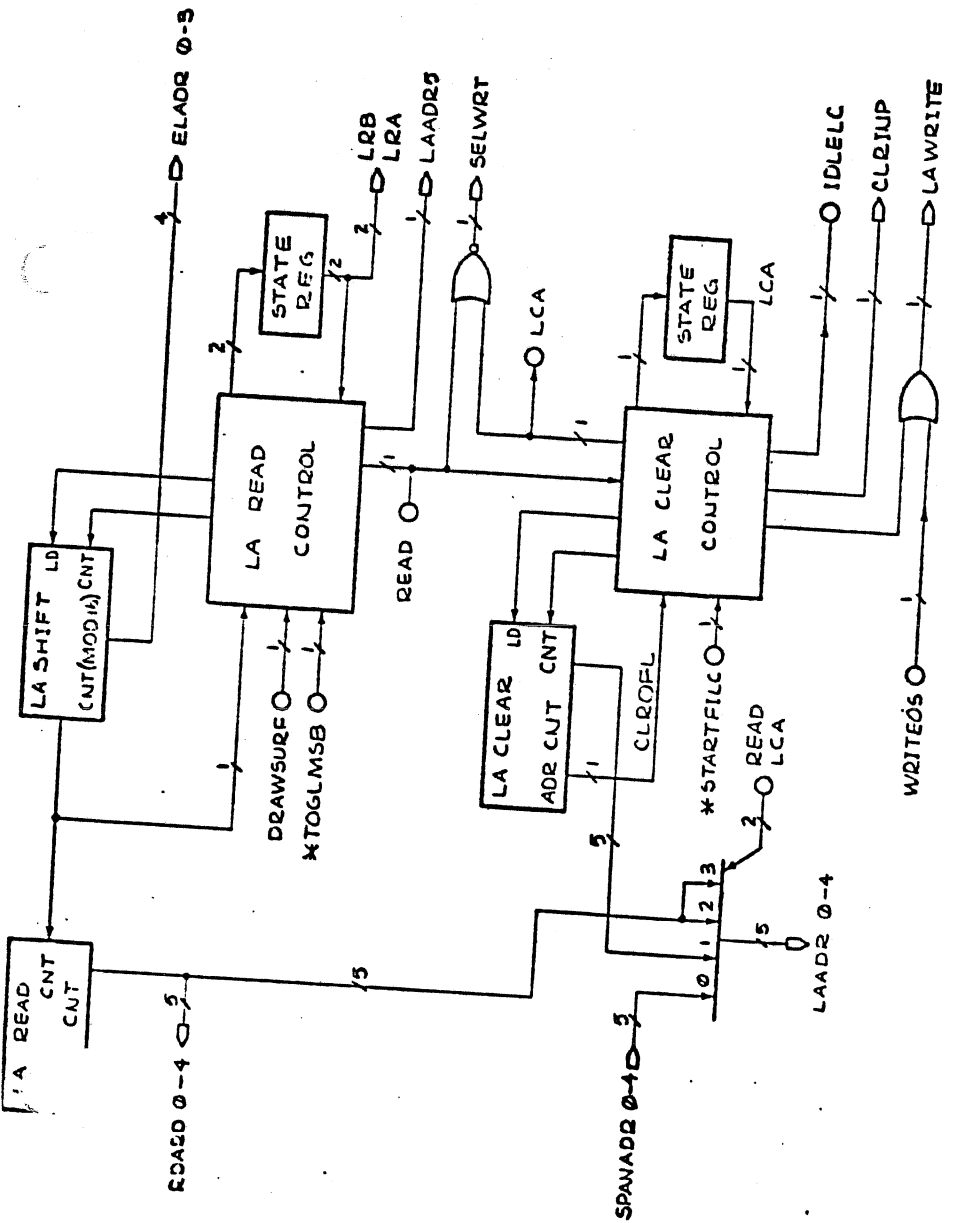
REVISIONS	DESCRIPTION	DATE	APPROVED

ZONE	LTR



SAMPL 2  
REGISTER

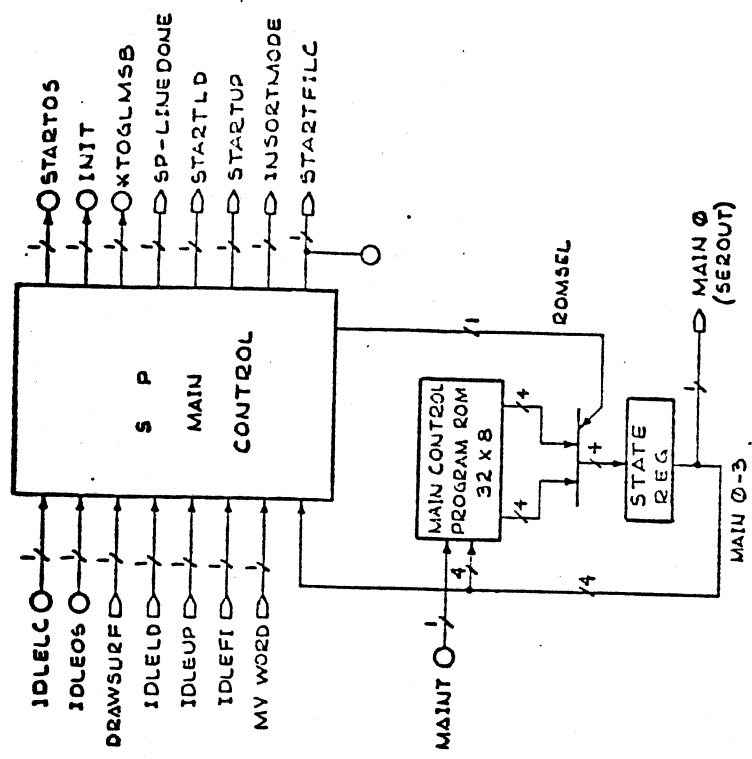
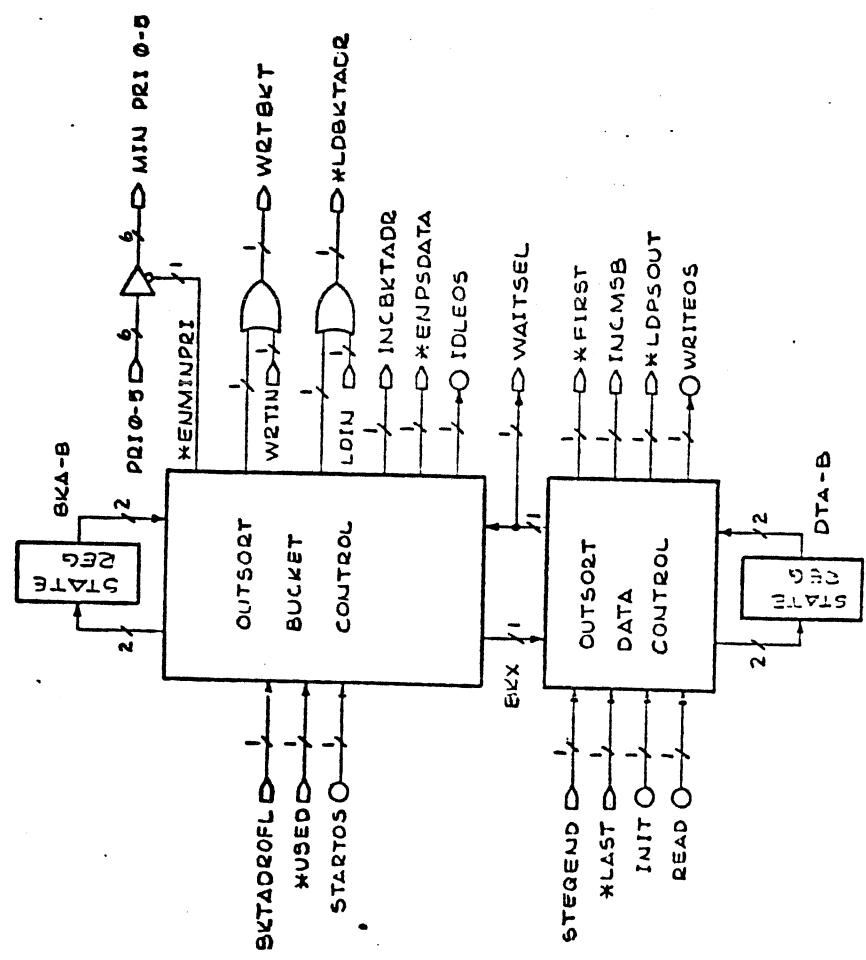
SIZE CODE IDENT NO	REV
C 53938	NC
200164-600	
SCALE 1:1	



SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		S/L CONTROL BLOCK DIAGRAM	
DRAWN P MELLUS 1-10-77		SIZE CODE IDENT NG C 53938 200164-900	
CHECKED JAY 3 FEB 77		REV NC	
MECH		APPROVED	
ELEC		MATERIAL	
PHOJ ENG		FINISH	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ANGLES ±		NEXT ASSY USED ON APPLICATION	

ZONE	LTR	DATE	APPROVED

REVISIONS	DESCRIPTION



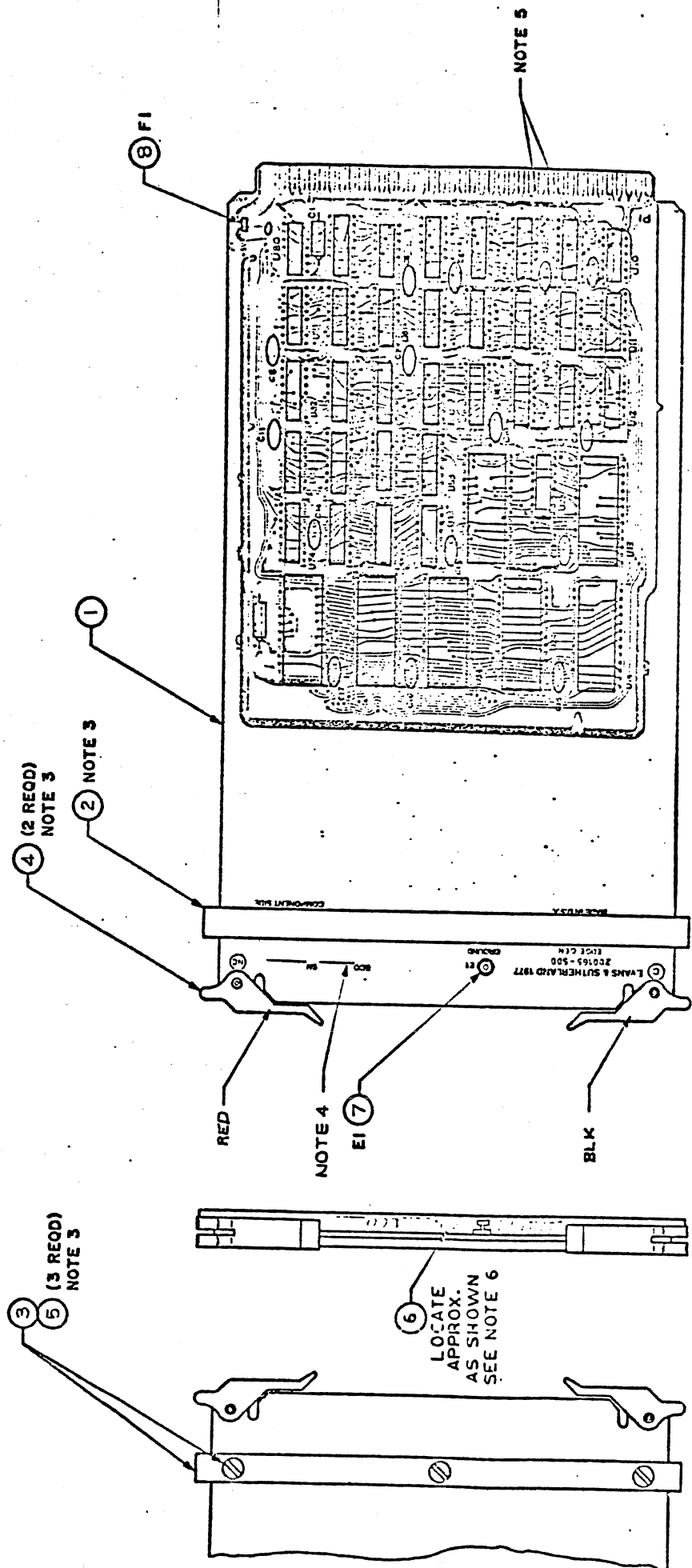
SIZE CODE IDENT NO	REV
C 53938	200164-900
	NC

200164-900

A

D

C

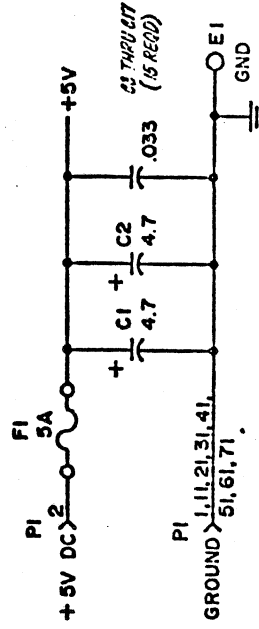


COMPONENT SIDE

REFERENCE DOCUMENTS  
 LOGIC DIAGRAM --- 200165-600  
 PARTS LIST----- PL 200165-100

- NOTES:
1. ASSEMBLE PER E & S WORKMANSHIP STANDARD.
  2. FEED THRU HOLES SHOULD BE SOLDER FILLED.
  3. INSTALL CARD EJECTORS, (ITEM 4) AND SPACERS, (ITEMS 2 & 3) AFTER FLOW SOLDER.
  4. RUBBER STAMP ECO NO. AND SERIAL NO. APPROX. AS SHOWN USING .12 INCH HIGH CHARACTERS IN CONTRASTING COLOR AND PERMANENT INK.
  5. ITEM NUMBERS ON THE DRAWING CORRESPOND WITH PARTS LIST.
  6. MARK EFS. ASSY. NO., S/N & ECO LEVEL ON ITEM NO. 6.

SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO. DRAWN BY: M.L.L. U.S. 23 FEB 77		CARD ASSEMBLY	
CHECKED BY: [Signature] 24 FEB 77		EDGE GENERATOR (PC)	
MECH		SIZE CODE IDENT NO	
ELEC		C 53938	
PROJ. ENG. [Signature]		200165-100	
APPROVED [Signature]		REV	
MATERIAL		HC	
SEE PARTS LIST		REV	
NEXT ASSY		REV	
NOV/OVIEW		REV	
USED ON		REV	
FINISH		REV	



3. ON IC 7483 LOCATION, U11, U30, U40, U42, U53, U61, U73, U81 PIN 12 IS GROUND, PIN 5 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;

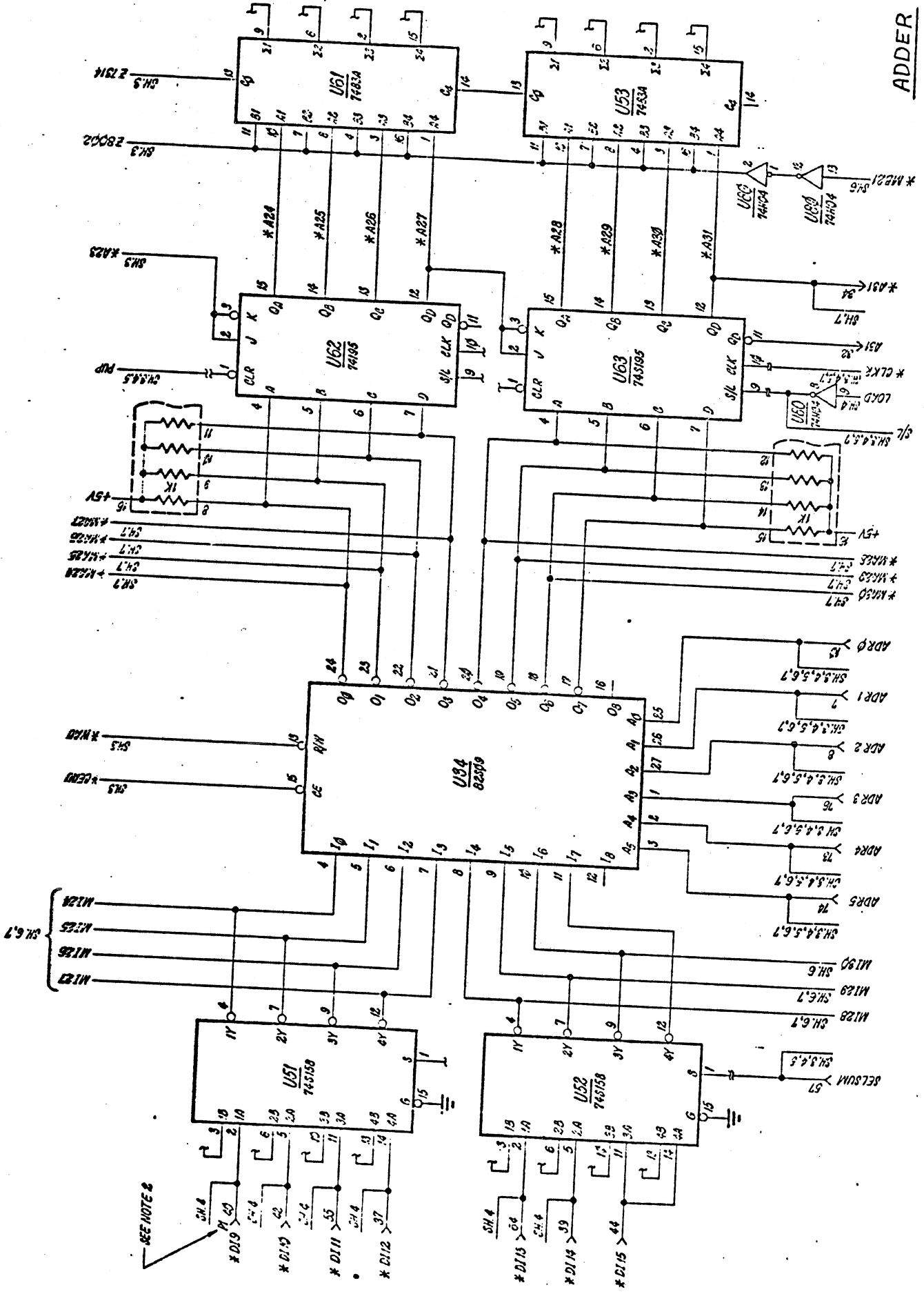
NOTES:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	TOLERANCES ON	.XX ±	---	---	---
		.XXX ±	---	---	---
		ANGLES ±	---	---	---
			✓		
MATERIAL					
FINISH					
200165-100	NOV07/77				
NEXT ASSY	USED ON				
APPLICATION					

CONTRACT NO.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DRAWN BY: R. HOLLEY	TOLERANCES ON
CHECKED BY: [Signature]	.XX ±
MECH	.XXX ±
ELEC	ANGLES ±
PROJ. ENG	✓
APPROVED	MATERIAL
	FINISH
	200165-100
	NOV07/77
	NEXT ASSY
	USED ON
	APPLICATION

SEE SEPARATE PARTS LIST	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
EDGE GENERATOR P.C.	
SIZE	CODE IDENT NO
C	53938
REV	REV
	MC
SCALE NONE	
PAGE 1 OF 1	

ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED



**ADDER**

\* A REGISTER

\* ACUT

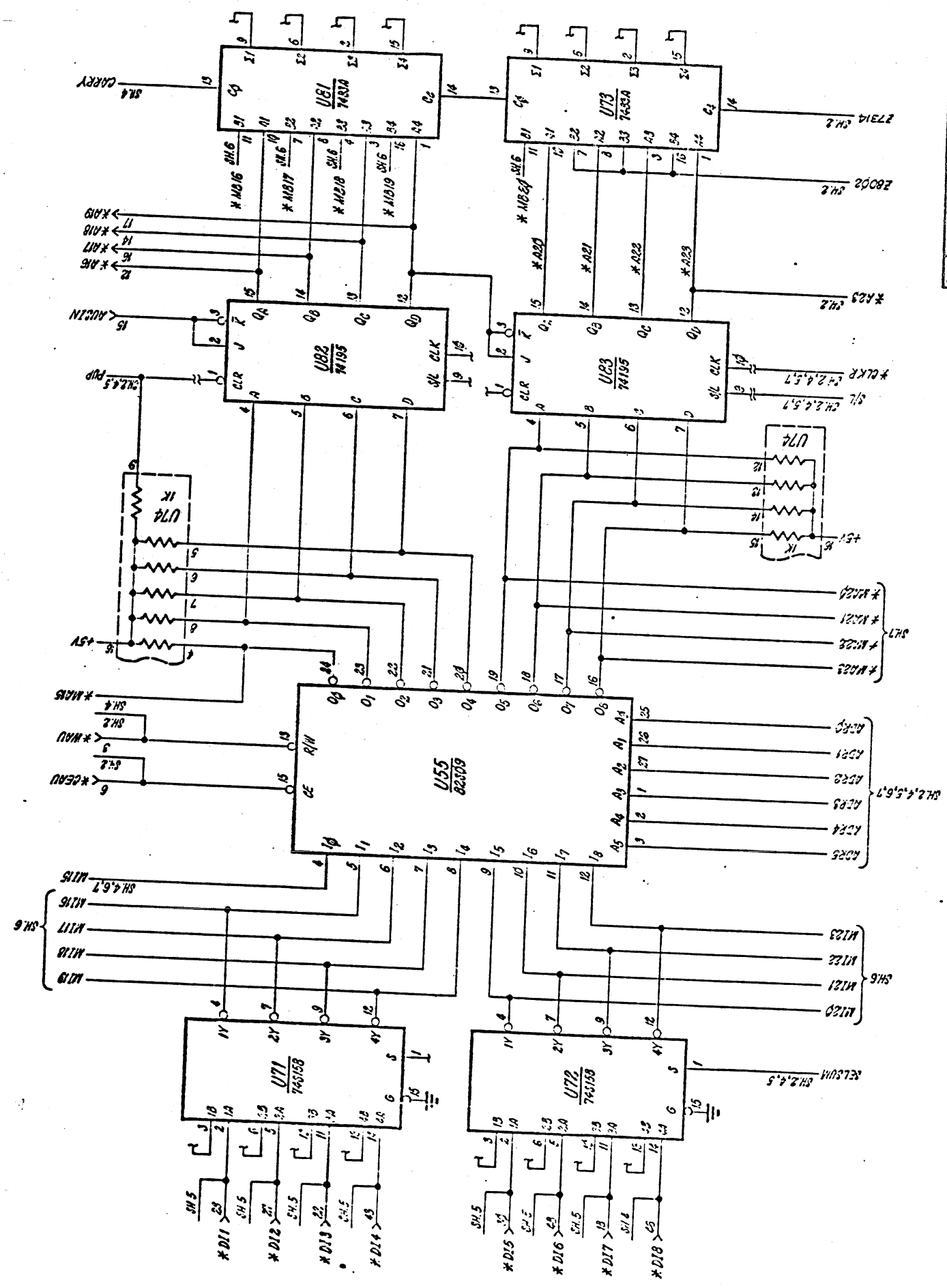
PLUS

SIZE CODE IDENT NO	C 53938
REV	NC

200165-600

B 200165-600

SEE NOTE 2

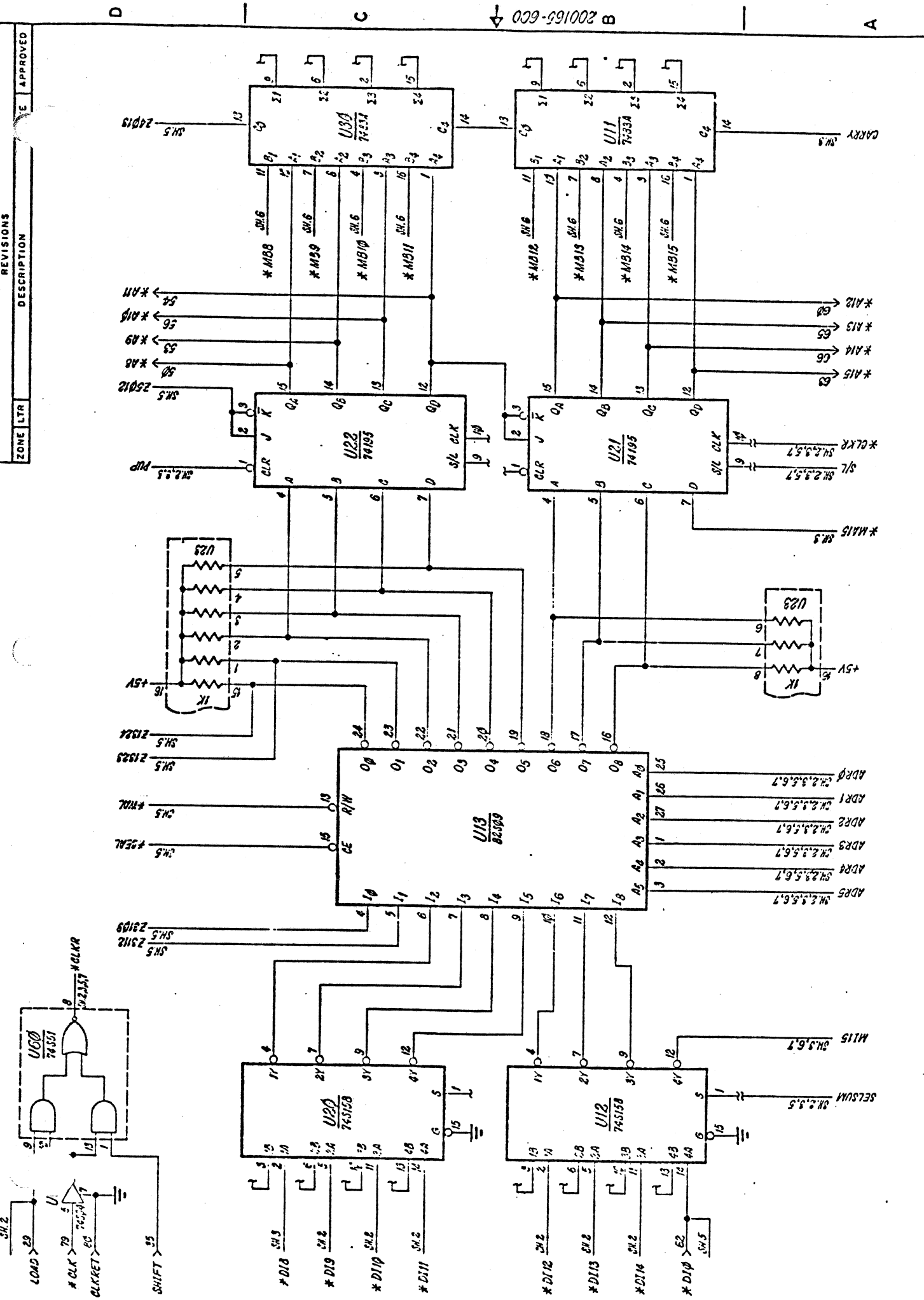


SIZE CODE ICENT NO	REV
C 53938	NC
200165-600	

B 200165-600

REVISIONS

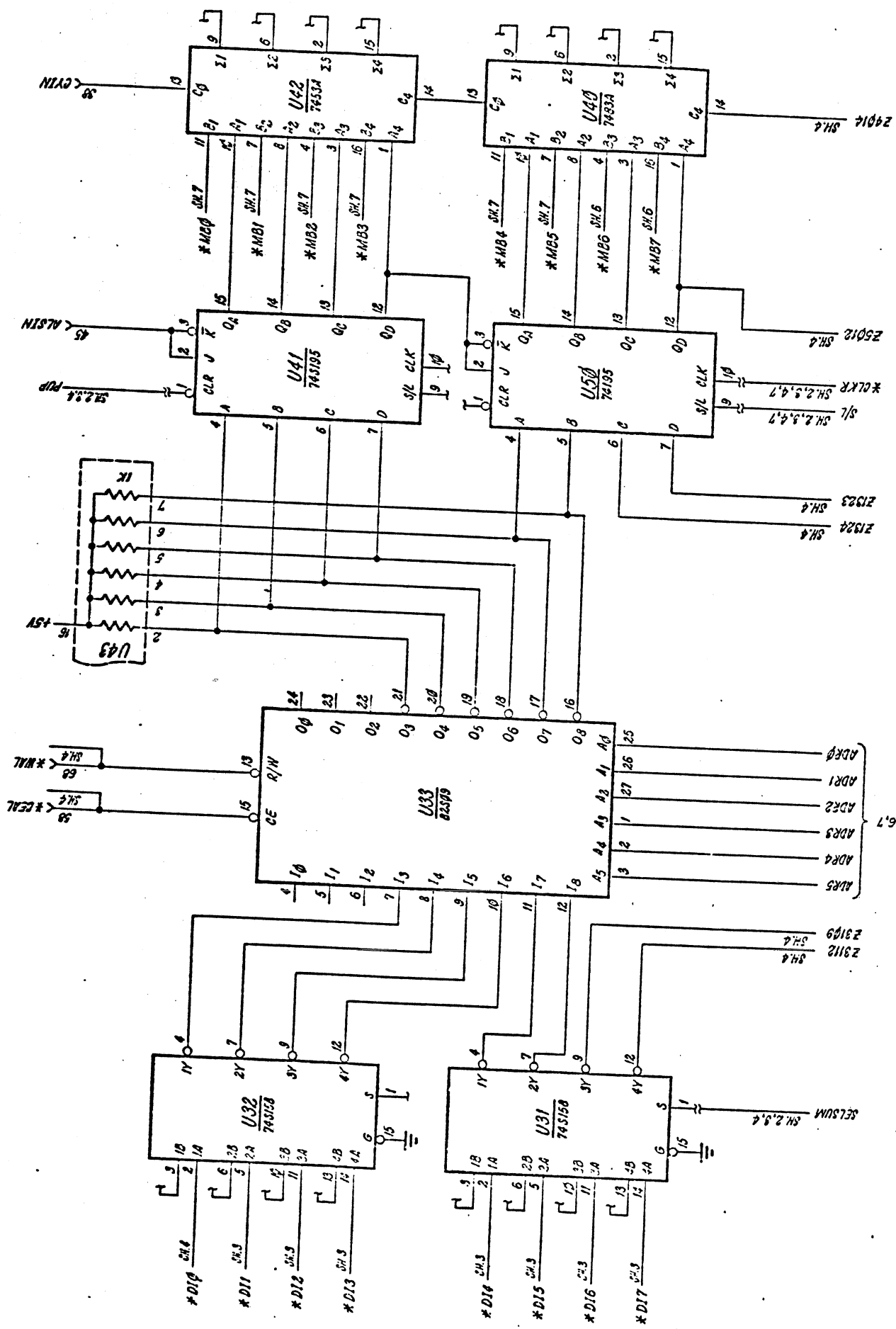


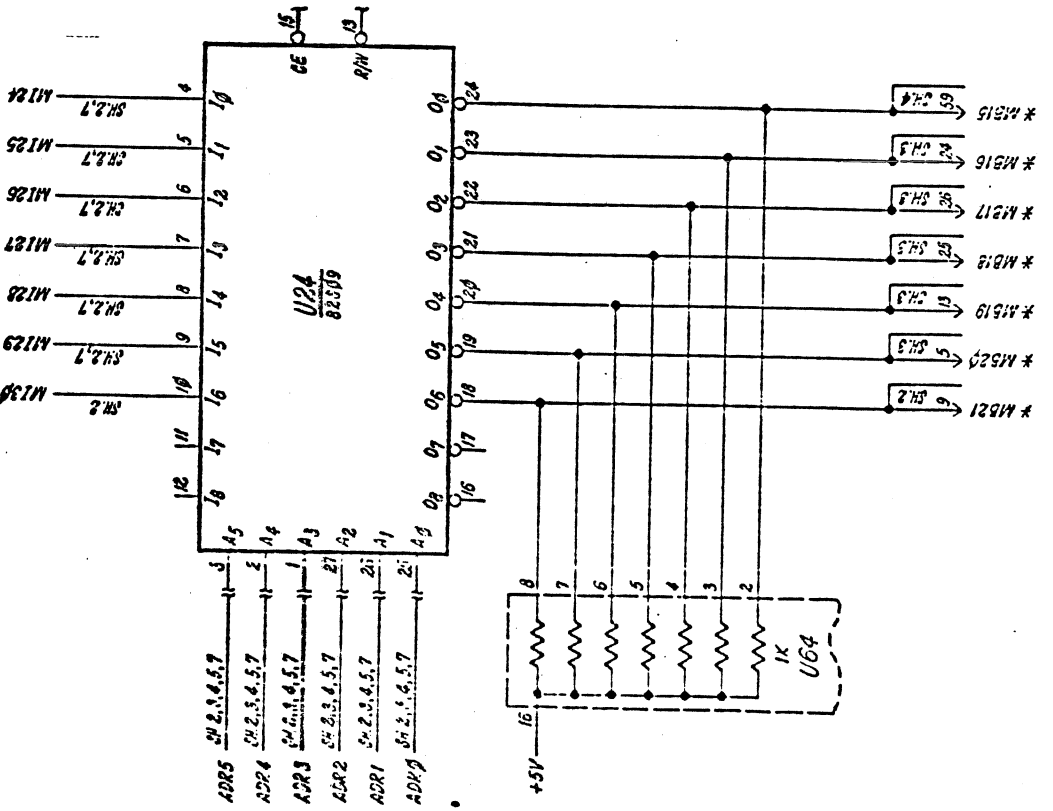
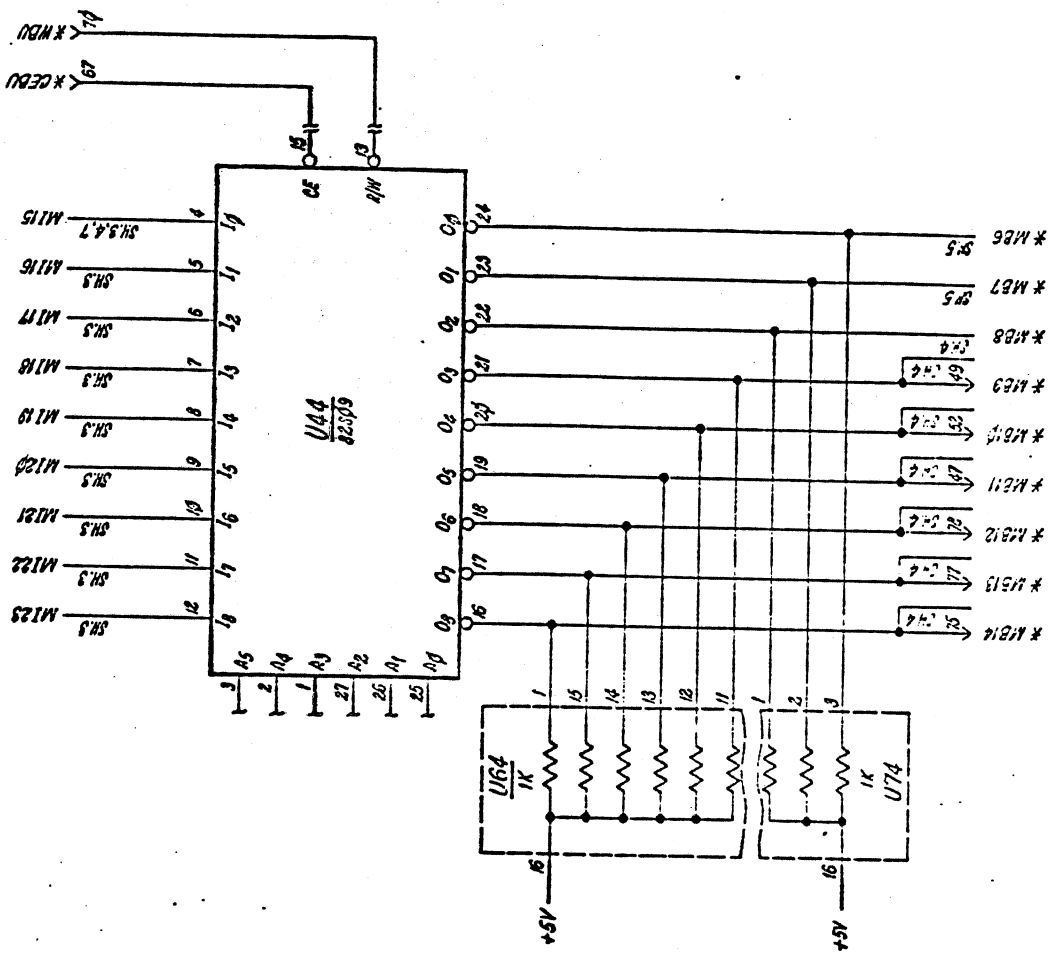


REVISIONS  
 ZONE LTR DESCRIPTION E APPROVED

D C B 200165-600 A

SIZE CODE IDENT NO C 53938  
 REV NC  
 200165-600





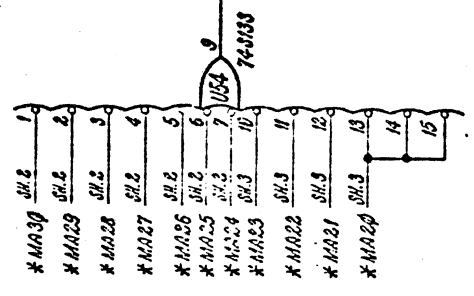
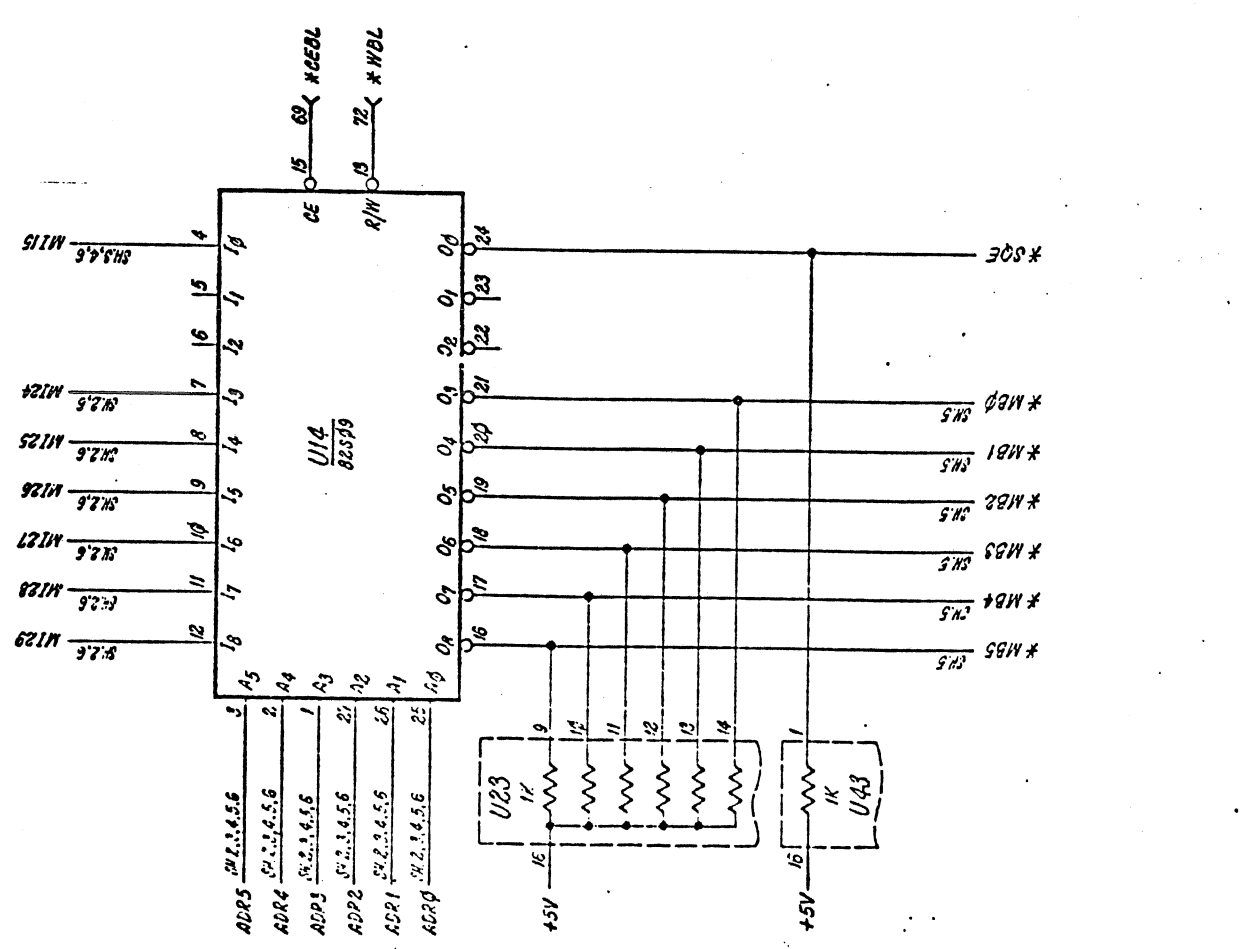
200165-600

D

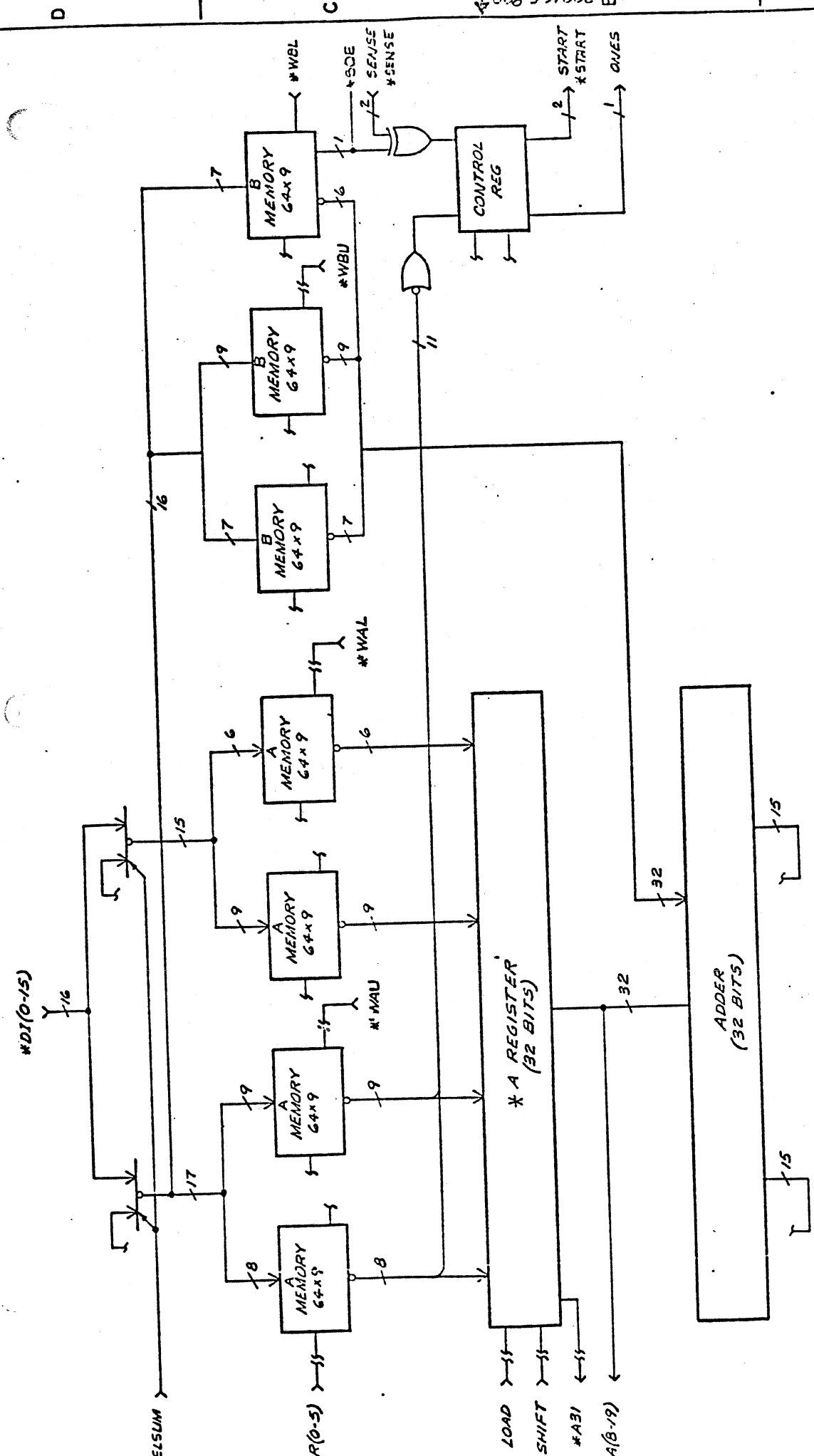
C

A

ZONE LTR	DESCRIPTION	DATE	APPROVED



SIZE	CODE IDENT NO	REV
C	53938	200165-600
REV	NC	



SEE SEPARATE PARTS LIST

EVANS & SUTHERLAND  
COMPUTER CORPORATION  
SALT LAKE CITY, UTAH 84112

EDGE GENERATOR  
BLOCK DIAGRAM

CONTRACT NO.	200165-900
DRAWN BY	W.H.H./A.K. 3-22-77
CHECKED BY	W.H.H./A.K. 29 MAR 77
MECH	
ELEC	
PROJ. ENG.	
APPROVED	
SIZE	C 53938
CODE IDENT NO.	200165-900
REV	NC

SCALE 1" = 1"

ADDER SCALING

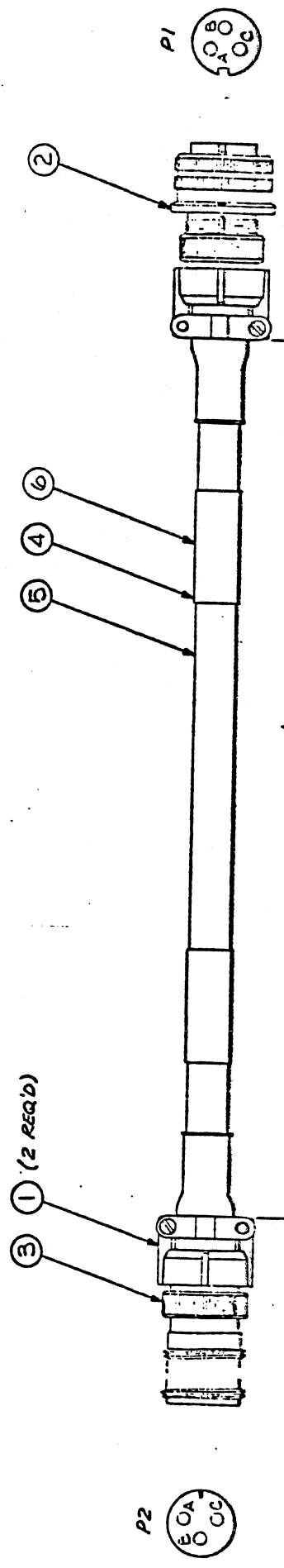
UPPER										LOWER																							
DI BITS	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	DI BITS	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
A	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
B	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		

D 200165-900 B A

200165-900

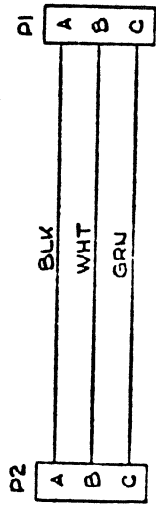
200165-900

ZONE LTR	DESCRIPTION	RATE	APPROVED
-	ITEM 5 WAS 802081-016. THIS DRAWING IS FORMALLY RELEASED TO NC REV. STATUS. 73	11	15 AUG 77 ES (P. 10)



CABLE LENGTH  
SEE  
TABULATION TABLE

INSTALL KALOGRAPH TAPE  
ITEM 6, (802311-004) MARKED  
WITH PART NUMBER, REV. LEVEL  
AND SERIAL NUMBER. COVER  
WITH ITEM 4 CLEAR SHRINK  
TUBING (802033-375). INSTALL  
PERMANENTLY.



SCHEMATIC

TABULATION TABLE

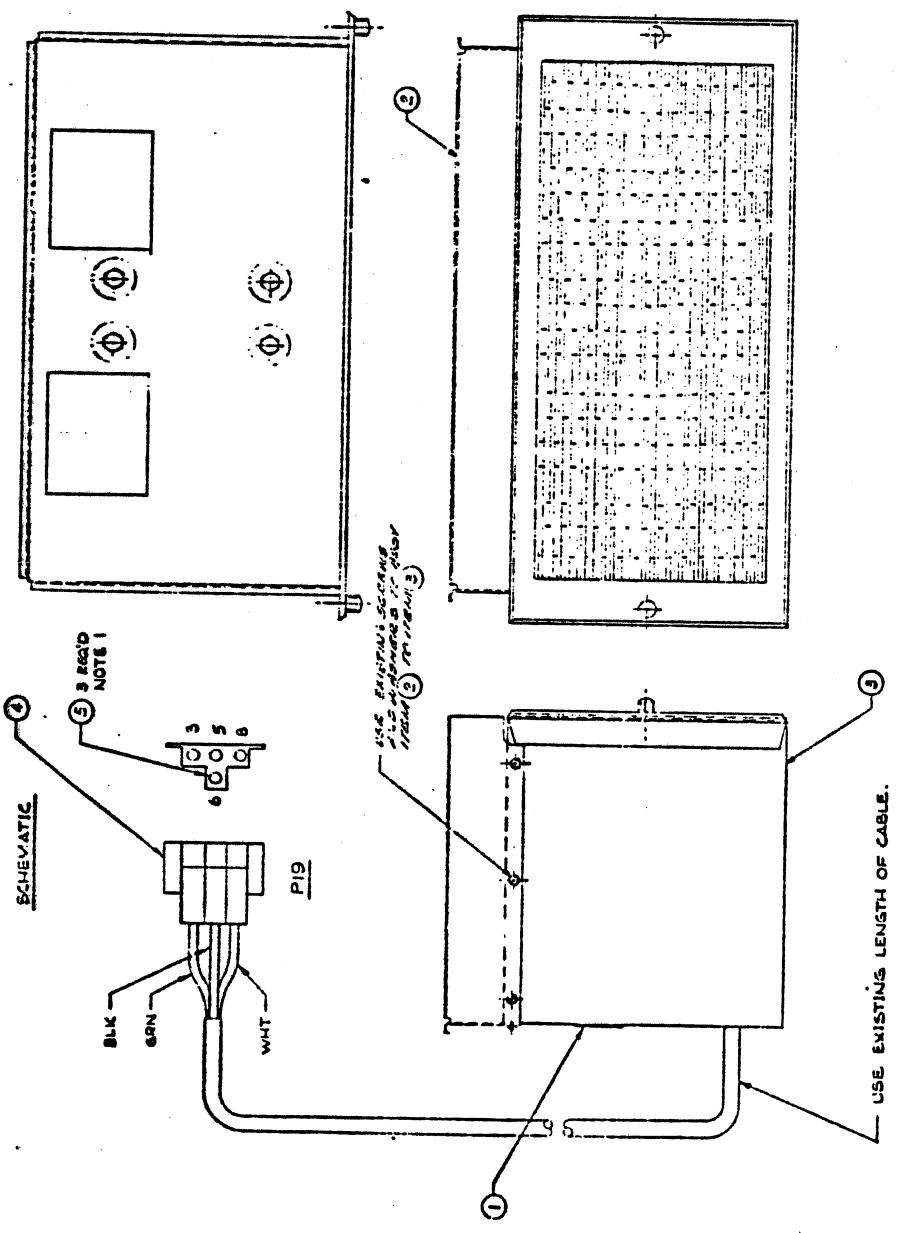
CABLE ASSY	CABLE LENGTH
200178 - 024	24FT. ± 5.0 IN.

SEE SEPARATE PARTS LIST		CONTRACT NO.	
EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112		DRAWN BY <i>[Signature]</i> 8-1-77	
CABLE ASSY, POWER EXTENTION		CHECKED BY <i>[Signature]</i> 2 AUG 77	
SIZE	CODE IDENT NO	MECH	2/15/77
C	53938	ELEC	15 AUG 77
REV		PROJ ENG	8-15-77
C 53938		APPROVED	8-15-77
200178-TAB		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
200178-TAB		TOLERANCES ON	
200178-TAB		.XX ±	
200178-TAB		.XXX ±	
200178-TAB		ANGLES ±	
200178-TAB		MATERIAL	
200178-TAB		SEE PARTS LIST	
200178-TAB		FINISH	
200178-TAB		NEXT ASSY USED ON	
200178-TAB		NOVONVIEW	

D  
C  
B 200178-TAB  
A

GRN	5
BLK	6
WHT	A

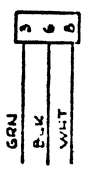
**SCHEMATIC**



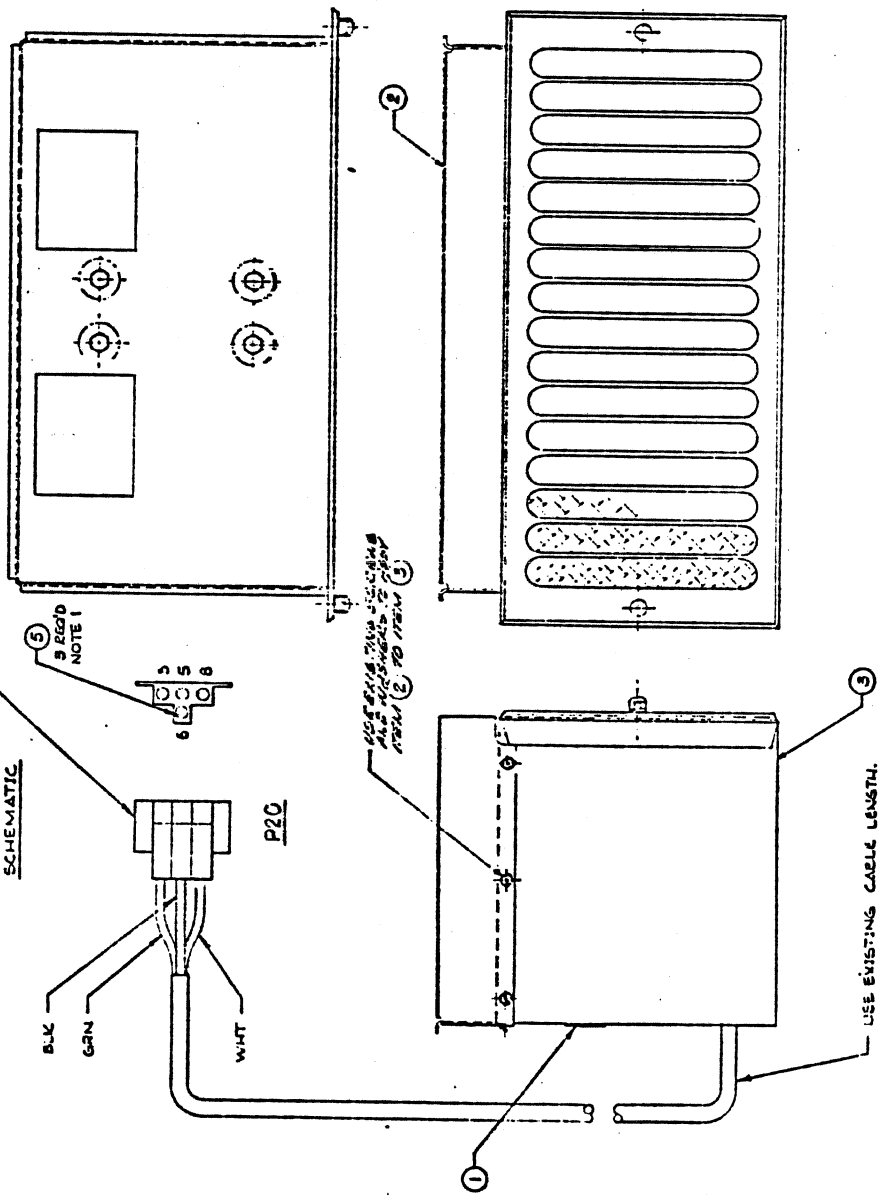
CONTRACT NO. DRAWN BY: J. L. ... CHECKED BY: ... DATE: 6-24-57 PROJECT: ... DESIG. AUTO. ... APPROVED BY: E. ... SCALE: 1/2" = 1'		EVANS & SUTHERLAND COMPUTER CORPORATION 225 WEST ... CHICAGO, ILL. 60601 ASSY. NO. ER P-18-100 (REVISED 5/57)	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: FITS: ... FINISH: ... MATERIAL: ... TYPICAL ... UNLESS NOTED OTHERWISE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3	PART NO. 20081-100	QTY. 1

SEE SEPARATE PARTS LIST

DO NOT INSTALL ITEM (5) INTO ITEM (4) AT LOCATION 5. UNLESS OTHERWISE SPECIFIED:  
 NOTES:



**SCHEMATIC**



SEE SEPARATE PARTS LIST

CONTRACT NO. DRAWN BY: [Signature] CHECKED BY: [Signature] DATE: [Date]		EVANS & SUTHERLAND COMPUTER CORPORATION 5811 BENTLEY BLVD CHICAGO, ILL. 60641	
TITLE: [Blank] PROJECT: [Blank]		ASSY: BLOWER IS-R-000 (REVISED 5/81)	
QUANTITY: [Blank]		Dwg No: 200191-101	
DATE: [Blank]		SCALE: [Blank]	

1. DO NOT INSTALL ITEM 5 INTO ITEM 4 AT LOCATION 6 UNLESS OTHERWISE SPECIFIED.

NOTES:



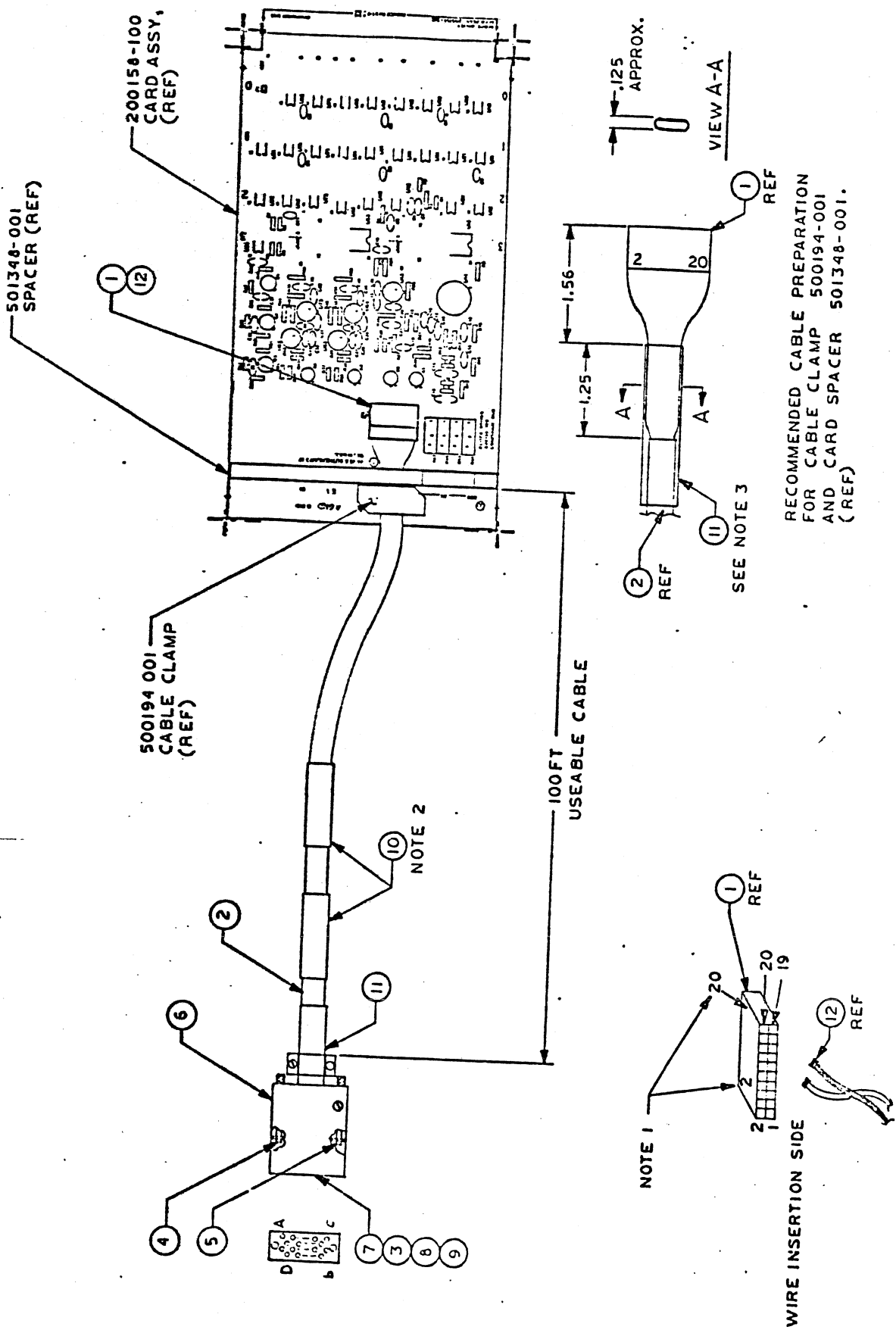
WIRE TABLE			P3	
SIGNAL NAME	NO.1 CONNECTOR PIN NUMBER	WIRE COLOR OR CODE	CONNECTOR PIN NUMBER	GROUND
SPARE	V	COAX	11	12
UNBLANK VIDEO	S	COAX	8	7
ANA DFFOCUS	T	COAX	6	5
XDEFL	P	COAX	4	3
YDEFL	R	COAX	2	1
DIGITAL DEFOCUS GND	a	RED	9	10
ORN GND	b	BLK	13	14
ORN GND	C	ORN	13	14
YEL GND	E	YEL	15	16
YEL GND	F	BLK	17	18
GRN GND	Y	GRN	17	18
GRN GND	Z	BLK	19	20
HORIZON GND	X	BLU	19	20
HORIZON GND	W	BLK	19	20

3. FOLD BACK UNUSED COAX & WIRES, ADD SHRINK TUBING ITEM NO.10.
2. INSTALL TWO PIECES OF HEAT SHRINK TUBING ON CABLE AS SHOWN, BUT DO NOT SHRINK AT TIME OF CABLE ASSEMBLY. AFTER FINAL FACTORY ACCEPTANCE OF SYSTEM, LABELS WITH PART NO. AND SERIAL NO. OF MATING ASSEMBLY SHALL BE INSERTED UNDER TUBING AND THE TUBING SHALL BE SHRUNK AT THAT TIME. USE 802311-004 TAPE PHOTO MARKING AND LABEL AS SHOWN.
1. MARK PIN NO.'S 2 AND 20 ON TOP OF THE CONNECTOR AS SHOWN, USING WHITE EPOXY INK.

NOTES:

SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CABLE ASSY, SIGNAL, FOR DSI-1910 DISPLAY, 100 FT.	
CONTRACT NO.	DRAWN BY	DATE	REV
	A. P. 216	7-1-77	NC
	CHECKED BY	DATE	
	A. L. L. L.	7-7-77	
	MECH	7/20/77	
	ELEC		
	PROJ. ENG.		
	APPROVED	7/20/77	
MATERIAL SEE PARTS LIST		SIZE CODE IDENT NO	
FINISH		C 53938 200183 - 100	
200158-1004 NOVO SP	USED ON		
NEXT ASSY			

ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROV.

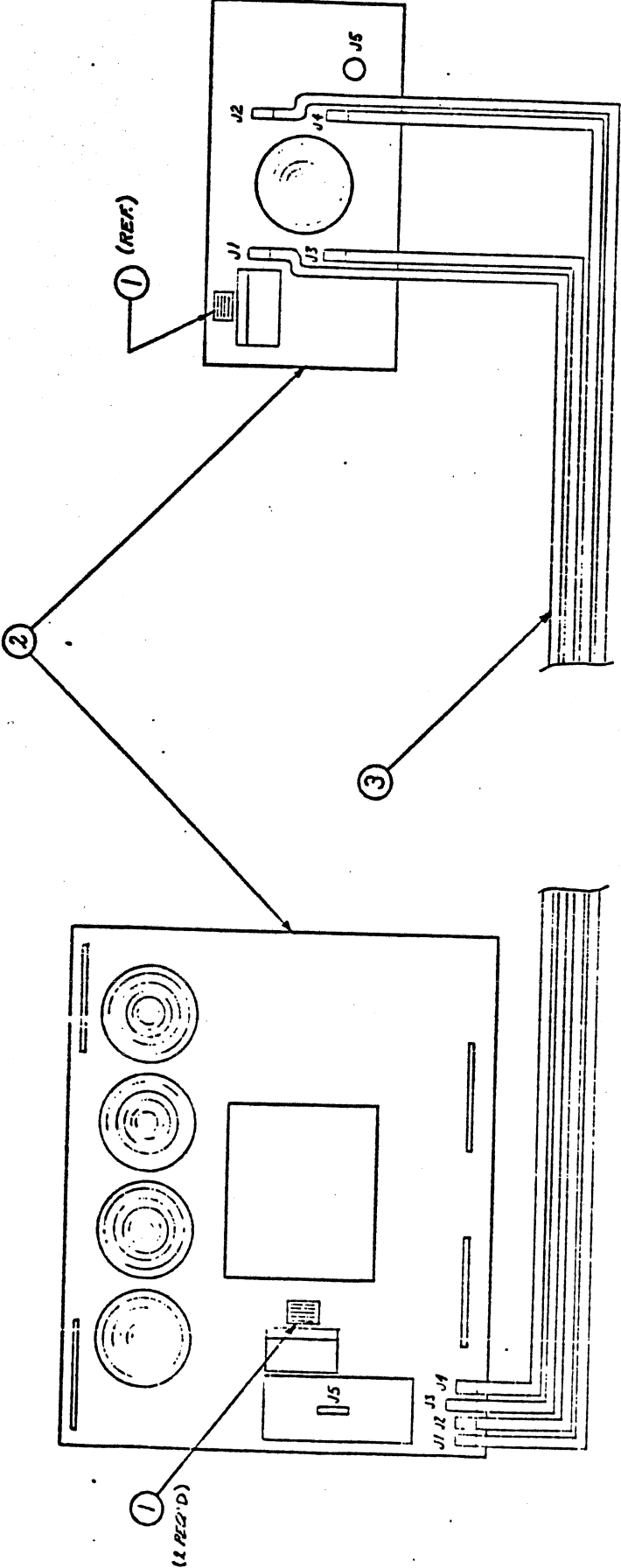


SIZE	CODE IDENT NO	REV
C	53938	NC
		200183-100

1. This drawing is the property of the U.S. Government and is loaned to your organization for your information only. It and its contents are not to be distributed outside your organization.

**TABULATION TABLE**

ASSY. NO.	ITEM	REV. LEVEL
200184 - 012	201786 - 012	NC
200184 - 030	201786 - 030	NC
200184 - 060	201786 - 060	NC
200184 - 100	201786 - 100	NC



SEE SEPARATE PARTS LIST	
CONTRACT NO.	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
DRAWN BY	CARROLL A 1872
CHECKED BY	DATE 23 AUG 71
MECH	
ELEC	
PROJ ENG	
APPROVED	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
.XX ±	
.XXX ±	
ANGLES ±	
MATERIAL	SEE PARTS LIST
FINISH	
NEXT ASSY	200184 - 100
USED ON	
SIZE CODE IDENT NO	C 53938
REV	SEE TABLE

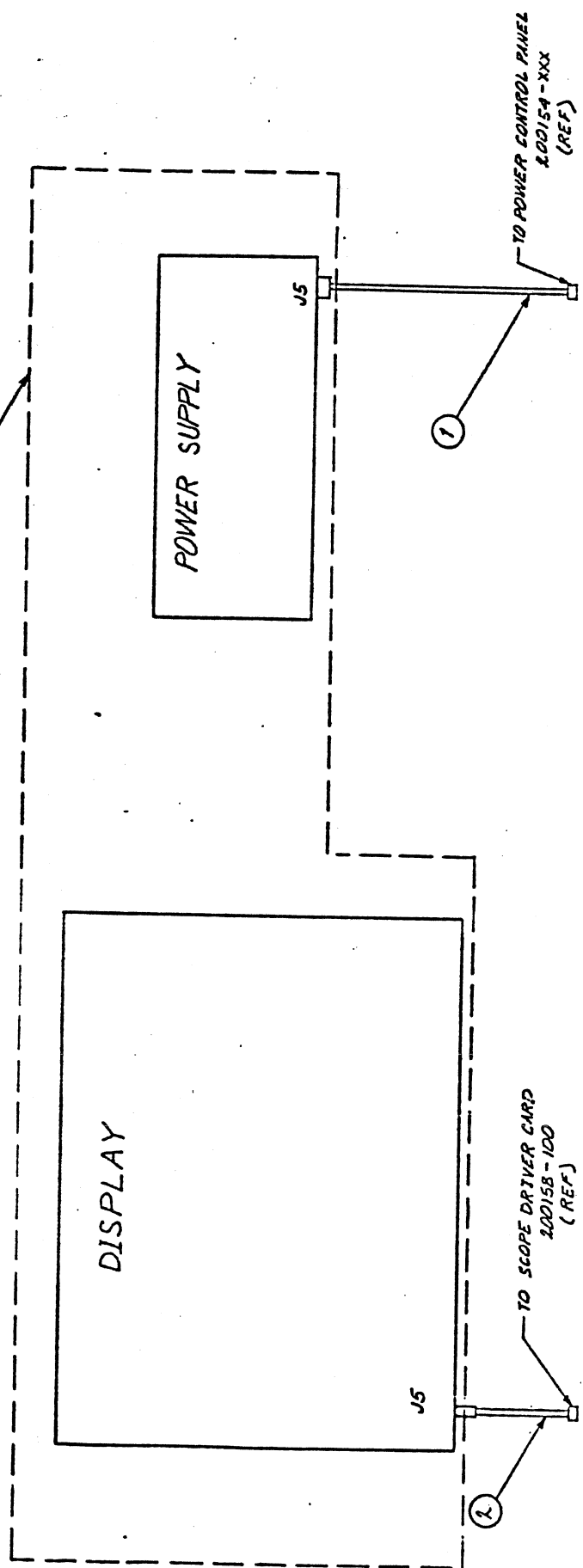
ASSY. DISPLAY, DSI-1910  
WITH INTERCONNECT CABLES

200184 - TAB

ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED
------	-----	-----------	-------------	------	----------

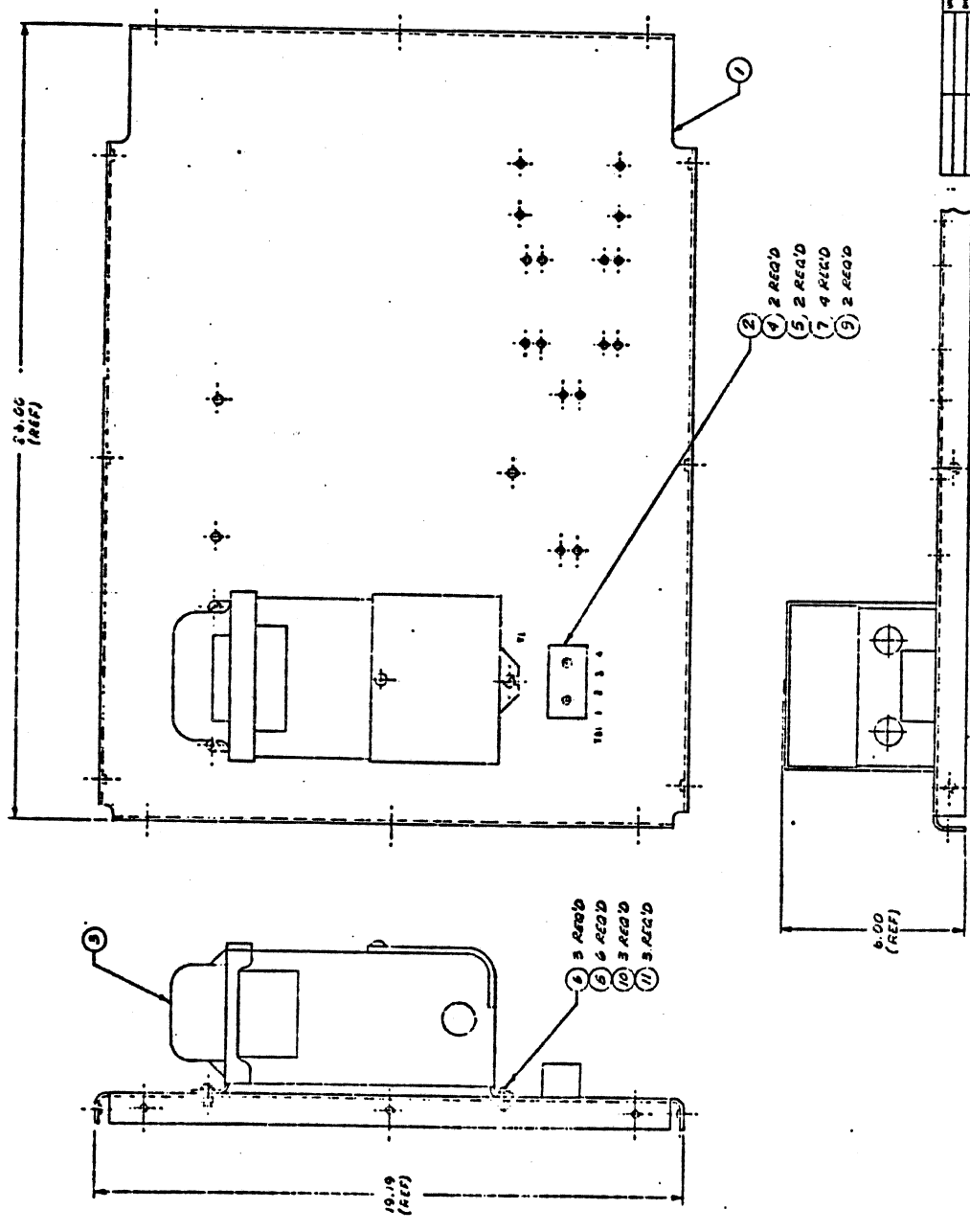
TABULATION TABLE

ASSY. NO.	ITEM 3	REV. LEVEL
200185-11A	200184-01A	NC
200185-120	200184-030	NC
200185-160	200184-060	NC
200185-199	200184-100	NC



SEE SEPARATE PARTS LIST.		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		DRAWN: <i>[Signature]</i> 2-18-77	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CHECKED: <i>[Signature]</i> 23 AUG 77	
TOLERANCES ON		MECH	
XX ±		ELEC	
.XXX ±		PROJ. ENG	
ANGLES ±		APPROVED	
✓			
MATERIAL		ASSY, DISPLAY & INTCT CABLES, WITH SIG & PWR CBLs.	
SEE PARTS LIST		SIZE CODE IDENT NO	
NEXT ASSY		C 53938	
USED ON		200185-TAB	
FINISH		REV	
		534	
		7225	

SEE SEPARATE PARTS LIST



		<b>EVANS &amp; SUTHERLAND</b> COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
TITLE <b>ASSY BOOST-BUCK</b> (NOVONVIEW SP)		DATE <b>D. 33938</b>	
CONTRACT NO.		SCALE	
DRAWN BY	CHECKED BY	PROJECT NO.	DESIGNED BY
MGR.	ELEC.	APPROVED	DATE
UNIT IS SHOWN IN SECTION	UNIT IS SHOWN IN FRONT	UNIT IS SHOWN IN SIDE	UNIT IS SHOWN IN TOP
UNIT IS SHOWN IN REAR	UNIT IS SHOWN IN BOTTOM	UNIT IS SHOWN IN LEFT	UNIT IS SHOWN IN RIGHT

CARD DESCRIPTION	QTY.
CABLE ASSY, FLAT, RIBBON, 40 COND., REVERSE 101329-002	1
CARD ASSY, DISPLAY DATA, CABLE, PC 200155-100	2
CARD ASSY, ANALOG CONTROL, W/ 1 200156-100	1
CARD ASSY, ANALOG INTENSITY, PC 200157-100	1
CARD ASSY, SCOPE DRIVER, CABLE, PC 200158-100	1
CARD ASSY, X-Y D/A CONVERTER 2 200159-100	2

SEE SEPARATE PARTS LIST		EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.	
TOLERANCES ON		DRAWN D. CARROLL 3-10-77	
.XX ±		CHECKED HEGG MACHINING 3-10-77	
.XXX ±		MECH	
ANGLES ±		ELEC 12-15-77	
✓		PROJ. ENG	
MATERIAL		APPROVED	
NO VIEW		SIZE CODE ICENT NC	
NEXT ASSY USED ON		C 53938 200191-100	
FINISH		REV N/C	

ASSY, CARD SET, BASIC  
DISPLAY, W/1 SCOPE DRIVER

ZONE	LTR	REVISIONS	DESCRIPTION	DATE	APPROVED

CARD DESCRIPTION QTY.

CABLE ASSY, FLAT RIBBON, 40 COND. REVERSE 1  
101328-002


CARD ASSY, DISPLAY DATA, CABLE, 2  
PC 200155-100

CARD ASSY, ANALOG CONTROL, MW 1  
200156-100

CARD ASSY, ANALOG INTENSITY, PC 1  
200157-100

CARD ASSY, SCOPE DRIVER, CABLE, 2  
PC 200158-100

CARD ASSY, X-Y D/A CONVERTER, PC 2  
200159-100

SEE SEPARATE PARTS LIST		 EVANS SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112	
CONTRACT NO.		DRAWN <i>D. CARROLL</i> CHECKED <i>J. HANNING</i> 8-16-77 MECH ELEC <i>J. S. ...</i> 12-20-77 PROJ. ENG APPROVED	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		ASSY, CARD SET, BASIC DISPLAY, W/2 SCOPE DRIVERS	
TOLERANCES ON		.XX ± .XXX ± ANGLES ± ✓	
MATERIAL		SIZE CODE IDENT NO C 53938 200191-101	
NEXT ASSY USED ON		REV NC	

200191-101

CARD DESCRIPTION	QTY.
CARD ASSY, FACE GENERATOR, PC 2 200160-100	2
CARD ASSY, PRIORITY SORTER, PC 1 200161-100	1
CARD ASSY, LINE ASSEMBLER, PC 1 200162-100	1
CARD ASSY, F/F CONTROL, W 1 200163-100	1
CARD ASSY, S/L CONTROL, W 1 200164-100	1
CARD ASSY, EDGE GENERATOR, PC 2 200165-100	2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
.XX ±	
.XXX ±	
ANGLES ±	✓
MATERIAL	4130 V1.1V
NEXT ASSY	USED ON
APPLICATION	

CONTRACT NO.	EVANS & SUTHERLAND COMPUTER CORPORATION SALT LAKE CITY, UTAH 84112
DRAWN	CHAYKOLL A 4-17-77
CHECKED	Hess M. A. 4-17-77
MECH	
ELEC	See in 18 AUG 77
PROJ ENG	
APPROVED	

SEE SEPARATE PARTS LIST	
SIZE	C 53938
CODE	100192-101
REV	NC

ASSY: CARD SET, SURFACE  
PROCESSOR BASIC, W/I E/F  
OPTION