

**H-78-0096 (REV B)**

# Graphic7<sup>TM</sup>

## **COMPUTER GRAPHICS DISPLAY SYSTEM**

**TERMINAL CONTROLLER  
MAINTENANCE MANUAL  
VOLUME II — DIAGRAMS  
AND PARTS LISTS**

603-885-4321

Information Products Division  
Federal Systems Group



**SANDERS**

DANIEL WEBSTER HIGHWAY, SOUTH-NASHUA, NEW HAMPSHIRE 03061

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January 1981

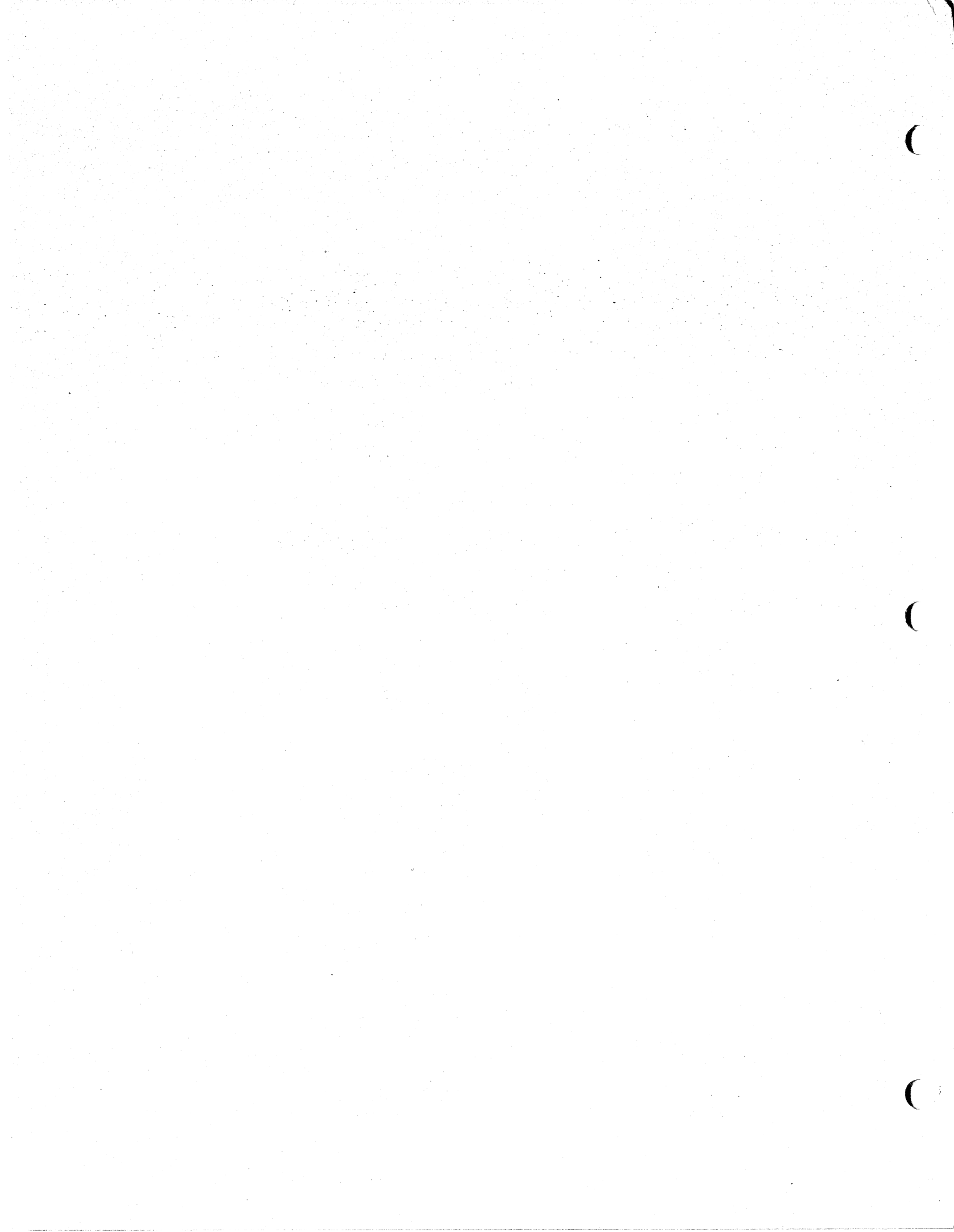
Reprint - May 1981

Reprint - October 1981

Reprint - April 1982

## RECORD OF CHANGES

CHANGE NO.	DATE	TITLE OR BRIEF DESCRIPTION	ENTERED BY
1	May 81	Adds 5977328, PL5976105	



TECHNICAL MANUAL CHANGES

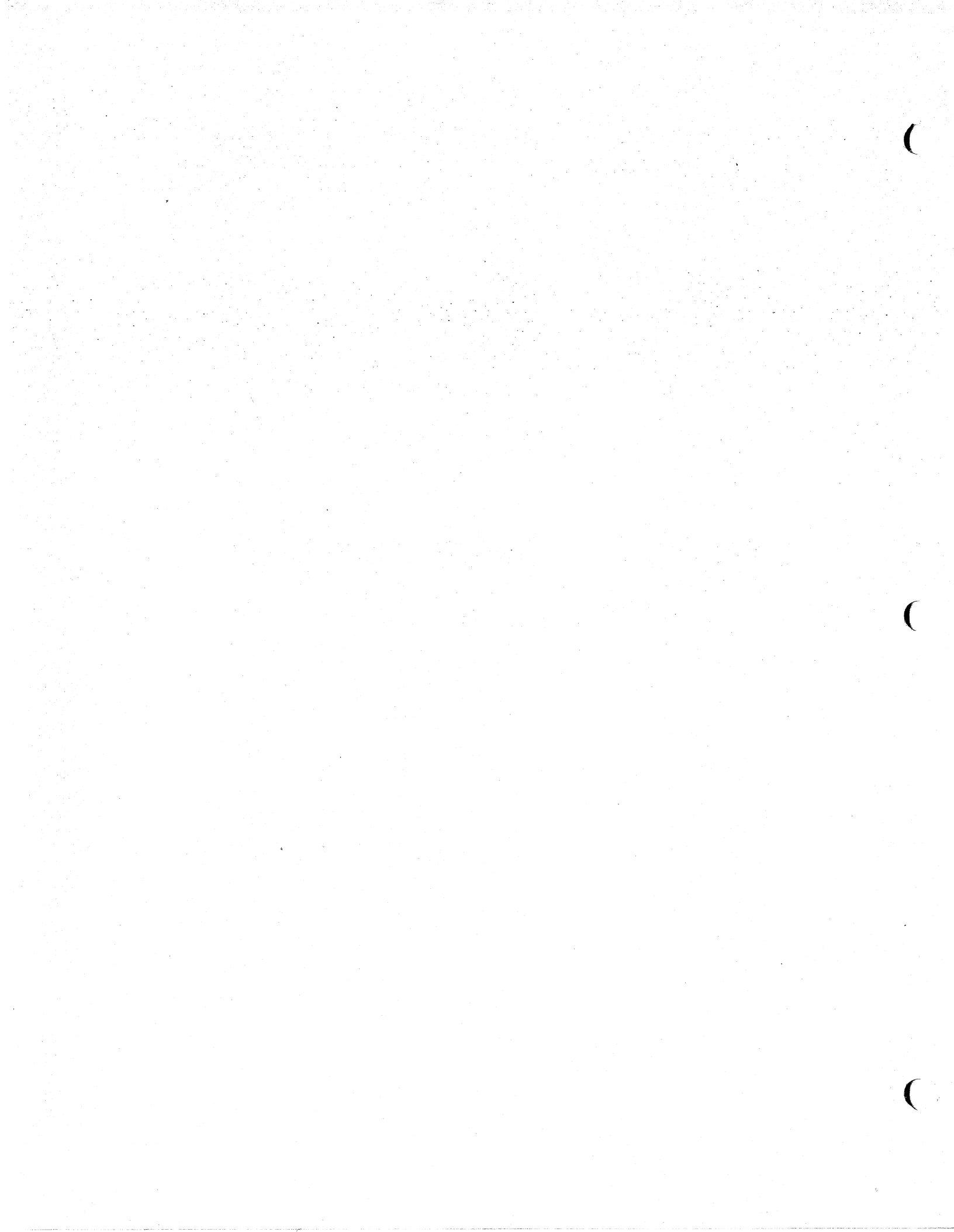
MANUAL NO. H-78-0096 Rev B DESCRIPTION GRAPHIC 7 Terminal Controller  
MTCE MANUAL - Vol. II - Diagrams

CCN NO. N/A DATE May 81 CHANGE NO 1

CHANGE INSTRUCTIONS

- Remove old pages and insert new pages as follows:

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iii, iv	iii, iv
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	1-160A/1-160B
	1-160C/1-160D
	1-160E/1-160F
	1-160G/1-160H
2-1, 2-2	2-1, 2-2
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## INTRODUCTION

This document is Volume II of the GRAPHIC 7 Terminal Controller Maintenance Manual. Volume II is divided into two sections: Section 1, Diagrams, and Section 2, Parts Lists.

Section 1 contains the assembly, schematic, wiring, and logic diagrams for the major items that make up the GRAPHIC 7 Terminal Controller. Section 2 contains parts lists of the same assemblies.

Both sections are arranged in numerical order to facilitate reference. This arrangement means that assembly drawings in Section 1 are immediately followed by the applicable electrical diagram, facilitating component location both physically and electrically. Both sections are preceded by indexes that list the contents and page numbers of the items in the section. Taken together, these items define the standard GRAPHIC 7 system Terminal Controller as follows:

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## SECTION 1

## DIAGRAMS

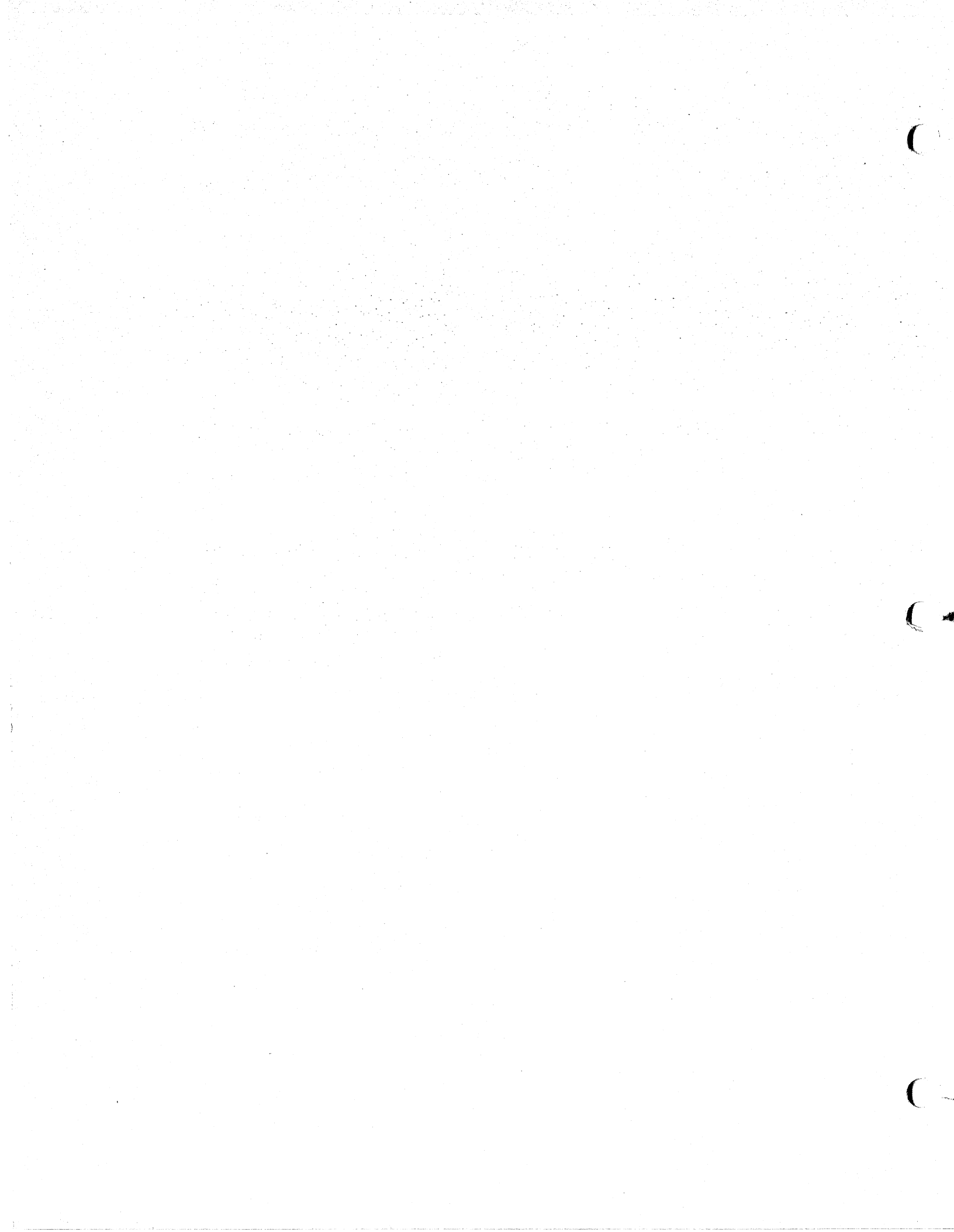
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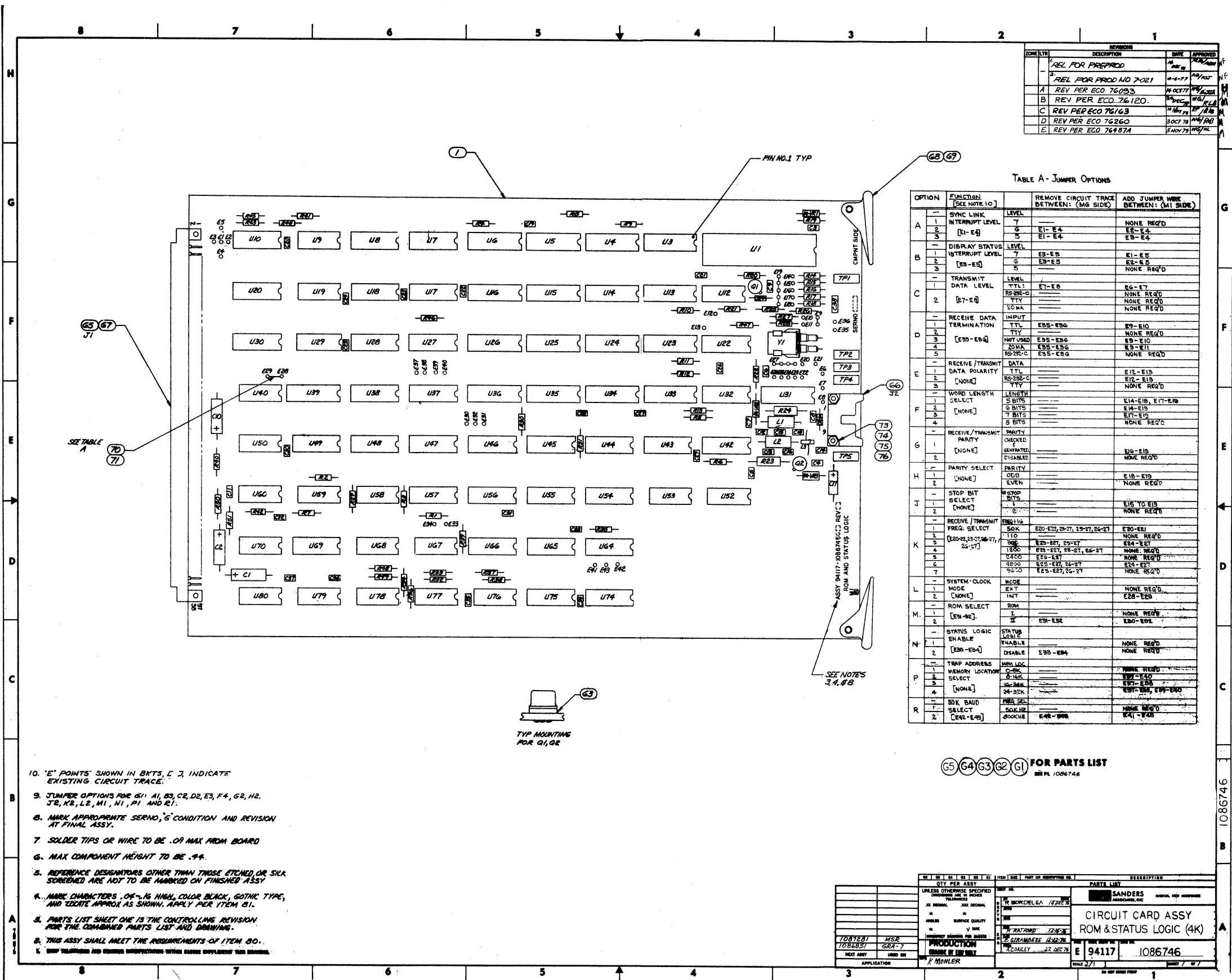
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REV	DESCRIPTION	DATE	APPROVED
REL FOR PREPROD			
REL FOR PROD NO 7021			
A	REV PER ECO 76093	18 OCT 77	
B	REV PER ECO 76120	18 DEC 77	
C	REV PER ECO 76163	18 MAR 78	
D	REV PER ECO 76260	30 OCT 78	
E	REV PER ECO 76487A	5 NOV 79	

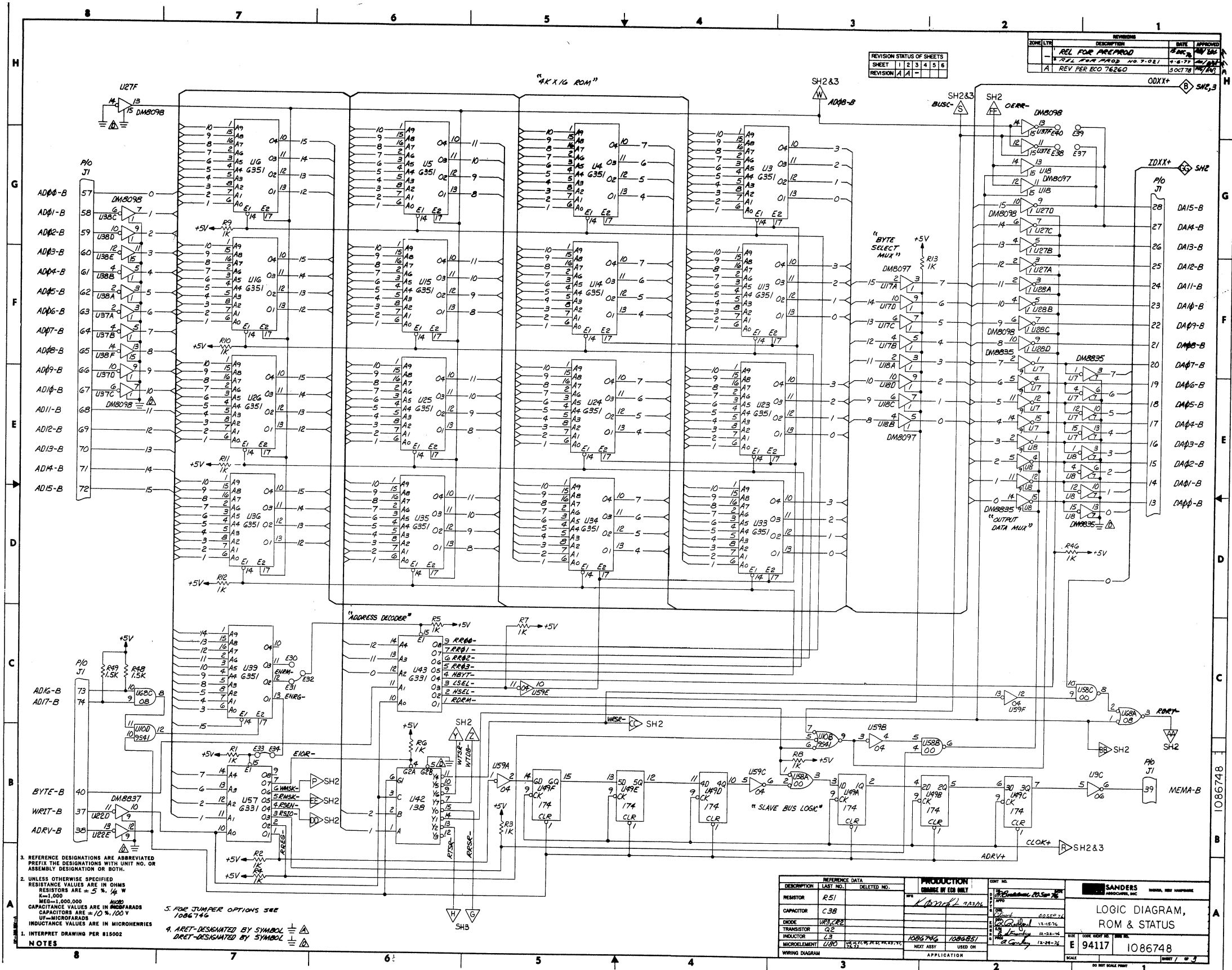
TABLE A - JUMPER OPTIONS

OPTION	FUNCTION [SEE NOTE 10]	REMOVE CIRCUIT TRACE BETWEEN: (MFG SIDE)	ADD JUMPER WIRE BETWEEN: (M1 SIDE)
A	1 SYNC LINK INTERRUPT LEVEL	7	NONE REQ'D
	2 [E1-E4]	E1-E4	E2-E4
	3	E1-E4	E2-E4
B	1 DISPLAY STATUS INTERRUPT LEVEL	7	E1-E5
	2 [E5-E8]	E5-E8	E2-E5
	3	E5-E8	NONE REQ'D
C	1 TRANSMIT DATA LEVEL	TTL: E7-E8	E6-E7
	2 [E7-E8]	RS232-C	NONE REQ'D
D	1 RECEIVE DATA TERMINATION	INPUT TTL	E5-E8
	2	TTL	E9-E10
	3 [E5-E8]	RS232-C	NONE REQ'D
	4	RS232-C	E5-E8
	5	RS232-C	E5-E8
E	1 RECEIVE/TRANSMIT DATA POLARITY	TTL	E12-E13
	2 [NONE]	RS232-C	E12-E13
	3	TTY	NONE REQ'D
F	1 WORD LENGTH SELECT	LENGTH 5 BITS	E14-E15, E17-E18
	2	[NONE]	E14-E15
	3	7 BITS	E17-E18
	4	8 BITS	NONE REQ'D
G	1 RECEIVE/TRANSMIT PARITY CHECKED	PARITY	E18-E19
	2 [NONE]	SEMI-ENABLED	NONE REQ'D
H	1 PARITY SELECT	PARITY ODD	E18-E19
	2 [NONE]	EVEN	NONE REQ'D
J	1 STOP BIT SELECT	1	E19 TO E18
	2 [NONE]	2	NONE REQ'D
K	1 RECEIVE/TRANSMIT FREQ SELECT	50K	E20-E21, E23-E24
	2	110	E20-E21, E23-E24
	3	[E20-E21, E23-E24, 25-27]	E24-E27
	4	1200	E28-E29, E31-E32
	5	2400	E28-E29, E31-E32
	6	4800	E28-E29, E31-E32
	7	9600	E28-E29, E31-E32
L	1 SYSTEM CLOCK MODE	EXT	NONE REQ'D
	2 [NONE]	INT	E28-E29
M	1 ROM SELECT	ROM	NONE REQ'D
	2 [E8-E9]	SR	E30-E31
N	1 STATUS LOGIC ENABLE	STATUS LOGIC ENABLE	NONE REQ'D
	2 [E30-E31]	DISABLE	E30-E31
P	1 TRAP ADDRESS MEMORY LOCATION	MEM LOC	NONE REQ'D
	2	2-16K	E32-E33
	3	16-32K	E34-E35
	4 [NONE]	32-64K	E36-E37, E39-E40
R	1 50K BAUD SELECT	50K	NONE REQ'D
	2 [E41-E42]	100K	E41-E42

10. 'E' POINTS SHOWN IN BXTS. C, J, INDICATE EXISTING CIRCUIT TRACE.
9. JUMPER OPTIONS FOR G1, A1, B3, C2, D2, E3, F4, G2, H2, J2, K2, L2, M1, N1, P1 AND R1.
8. MARK APPROPRIATE SERNO, S CONDITION AND REVISION AT FINAL ASSY.
7. SOLDER TIPS OR WIRE TO BE .09 MAX FROM BOARD.
6. MAX COMPONENT HEIGHT TO BE .94.
5. REFERENCE DESIGNATORS OTHER THAN THOSE ETCHED OR SILK SCREENED ARE NOT TO BE MARKED ON FINISHED ASSY.
4. MARK CHARACTERS .04-.16 HIGH, COLOR BLACK, GOTHIC TYPE, AND LOCATE APPROX AS SHOWN. APPLY PER ITEM 31.
3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
2. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM 30.
1. NEW TELEPHONES AND DRAWING MODIFICATIONS OTHER THAN SUPPLEMENTARY THIS DRAWING.

G5 G4 G3 G2 G1 FOR PARTS LIST  
 1086746

QTY PER ASSY	DESCRIPTION
1	CIRCUIT CARD ASSY
1	ROM & STATUS LOGIC (4K)
PARTS LIST SANDERS 94117 1086746	



REVISION STATUS OF SHEETS						
SHEET	1	2	3	4	5	6
REVISION	A	-	-	-	-	-

REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED
1	REL FOR PREPROD	8-27-77	W/S
2	REV PER ECO 76261	9-2-77	W/S
3	REV PER ECO 76260	5 OCT 78	W/S

3. REFERENCE DESIGNATIONS ARE ABBREVIATED PREFIX THE DESIGNATIONS WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS  
 RESISTORS ARE ± 5% 1/4 W  
 Ω = 1,000  
 K = 1,000,000  
 CAPACITANCE VALUES ARE IN MICROFARADS  
 CAPACITORS ARE ± 10% 100 V  
 μF = MICROFARADS  
 INDUCTANCE VALUES ARE IN MICROHENRIES
1. INTERPRET DRAWING PER 815002
- NOTES

5. FOR JUMPER OPTIONS SEE 1086746

6. ARET-DESIGNATED BY SYMBOL  $\frac{1}{2}$   $\Delta$

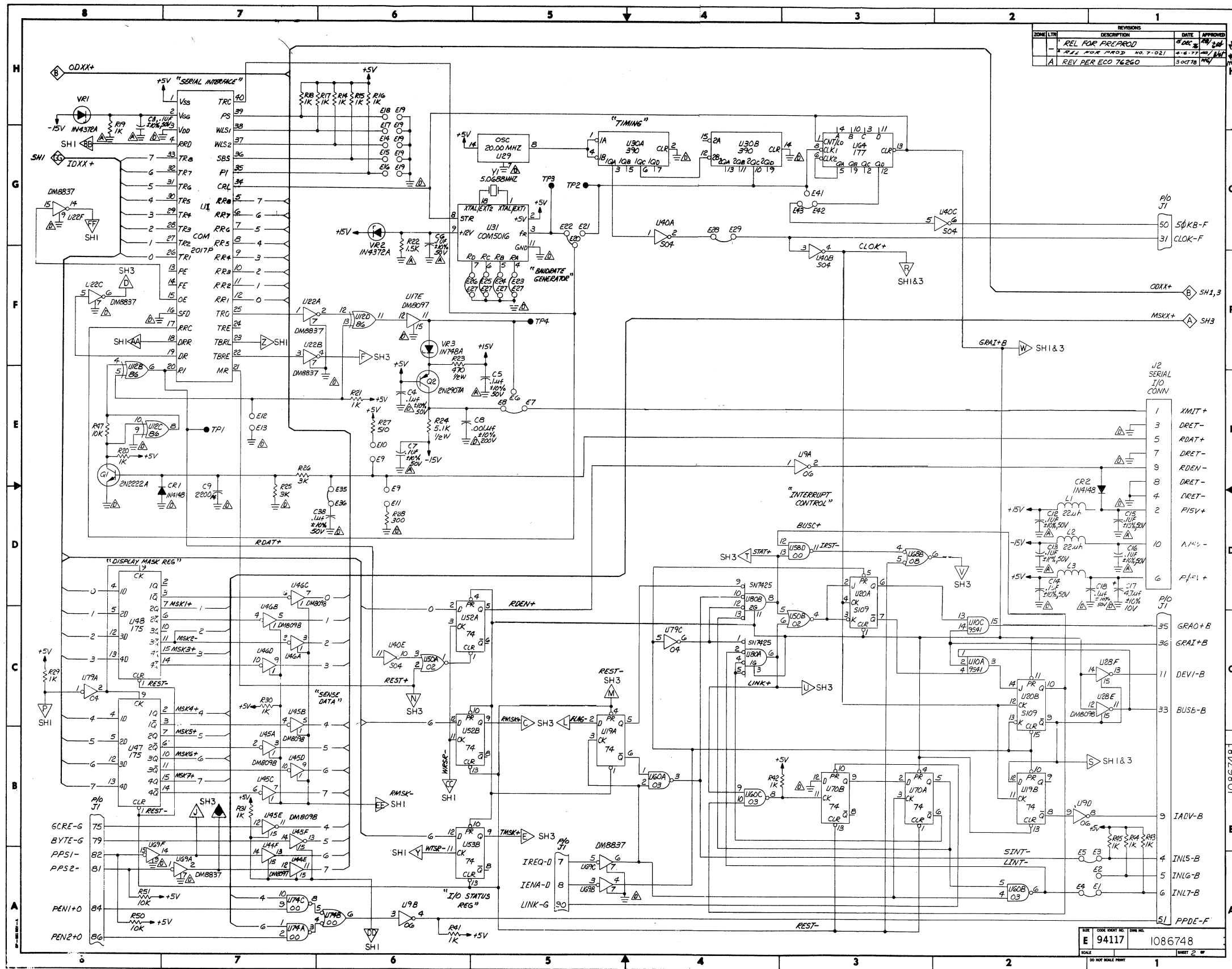
7. DRET-DESIGNATED BY SYMBOL  $\frac{1}{2}$   $\nabla$

DESCRIPTION		REFERENCE DATA		PRODUCTION		SANDERS	
REVISION	LAST NO.	DELETED NO.	DATE	CHANGE BY	ECO NO.	DATE	APPROVED
RESISTOR	R51						
CAPACITOR	C38						
DIODE	U93,CR2						
TRANSISTOR	Q2						
INDUCTOR	L2						
MICROELEMENT	U80						
WIRING DIAGRAM							

LOGIC DIAGRAM, ROM & STATUS

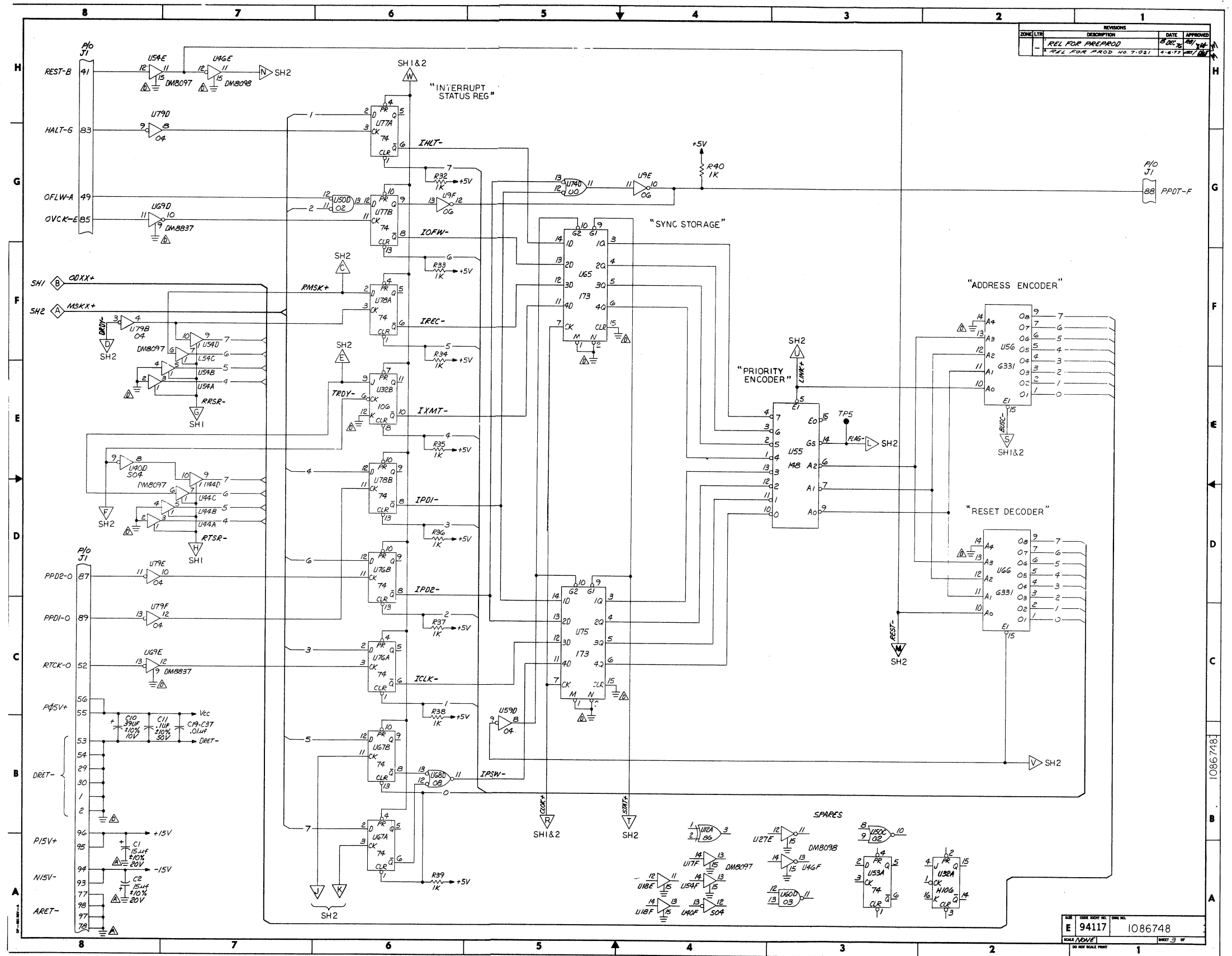
94117 1086748





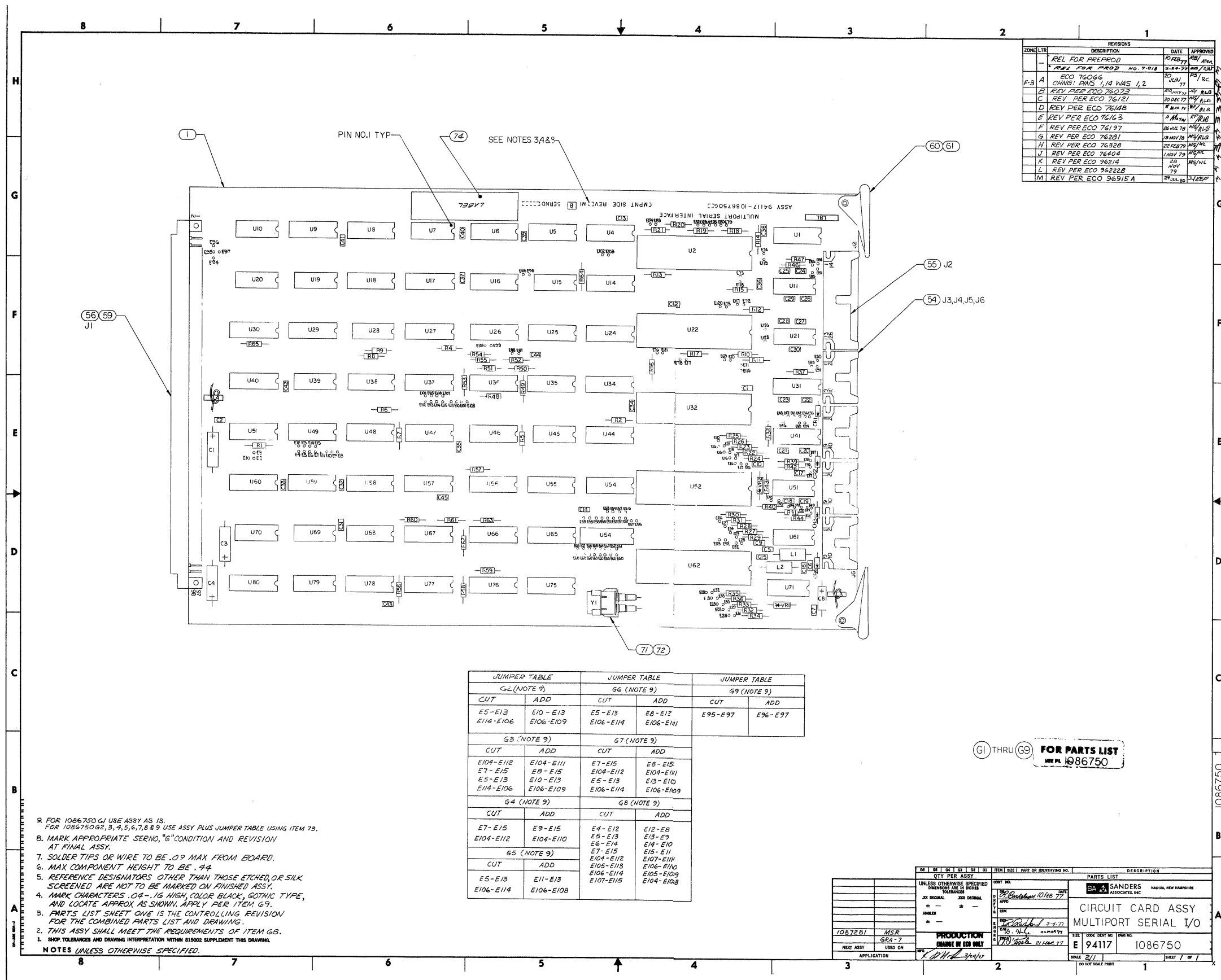
REV	DESCRIPTION	DATE	APPROVED
1	REL FOR PREPROD	8 DEC 77	WJ
2	REL FOR PROD NO. 7-021	4-8-77	WJ
3	REV PER ECO 76260	3 OCT 78	WJ

E 94117 1086748  
 SHEET 2 OF 10



REVISIONS			
ZONE LTR	DESCRIPTION	DATE	APPROVED
-	REL FOR PREPROD	8 DEC 74	[Signature]
-	REL FOR PROD NO 7-021	1-6-77	[Signature]

E 94117 1086748



ZONE	LTN	DESCRIPTION	DATE	APPROVED
		REL FOR PREPROD	10 FEB 77	RSJ
		REL FOR PROD NO. 7-018	23 FEB 77	RSJ
F-3	A	ECO 76066 CHNG: PINS 1,14 WAS 1,2	20 JUN 77	PS/RC
	B	REV PER ECO 76073	20 JUN 77	ALD
	C	REV PER ECO 76121	30 DEC 77	ALD
	D	REV PER ECO 76148	17 MAR 77	ALD
	E	REV PER ECO 76163	17 MAR 77	ALD
	F	REV PER ECO 76197	25 NOV 78	ALD
	G	REV PER ECO 76281	13 NOV 78	ALD
	H	REV PER ECO 76328	22 FEB 79	ALD
	J	REV PER ECO 76404	1 NOV 79	ALD
	K	REV PER ECO 76214	25 NOV 79	ALD
	L	REV PER ECO 96222B	25 NOV 79	ALD
	M	REV PER ECO 96915A	29 JUL 80	ALD

JUMPER TABLE G4 (NOTE 9)		JUMPER TABLE G6 (NOTE 9)		JUMPER TABLE G9 (NOTE 9)	
CUT	ADD	CUT	ADD	CUT	ADD
E5-E13	E10-E13	E5-E13	E8-E12	E95-E97	E96-E97
E114-E106	E106-E109	E106-E114	E106-E111		

G3 (NOTE 9)		G7 (NOTE 9)	
CUT	ADD	CUT	ADD
E104-E112	E104-E111	E7-E15	E8-E15
E7-E15	E8-E15	E104-E112	E104-E111
E5-E13	E10-E13	E5-E13	E13-E10
E114-E106	E106-E109	E106-E114	E106-E109

G4 (NOTE 9)		G8 (NOTE 9)	
CUT	ADD	CUT	ADD
E7-E15	E9-E15	E4-E12	E12-E8
E104-E112	E104-E110	E5-E13	E13-E9
		E6-E14	E14-E10
		E7-E15	E15-E11
		E104-E112	E107-E110
		E105-E113	E105-E110
		E106-E114	E105-E109
		E107-E115	E104-E108

G5 (NOTE 9)	
CUT	ADD
E5-E13	E11-E13
E106-E114	E106-E108

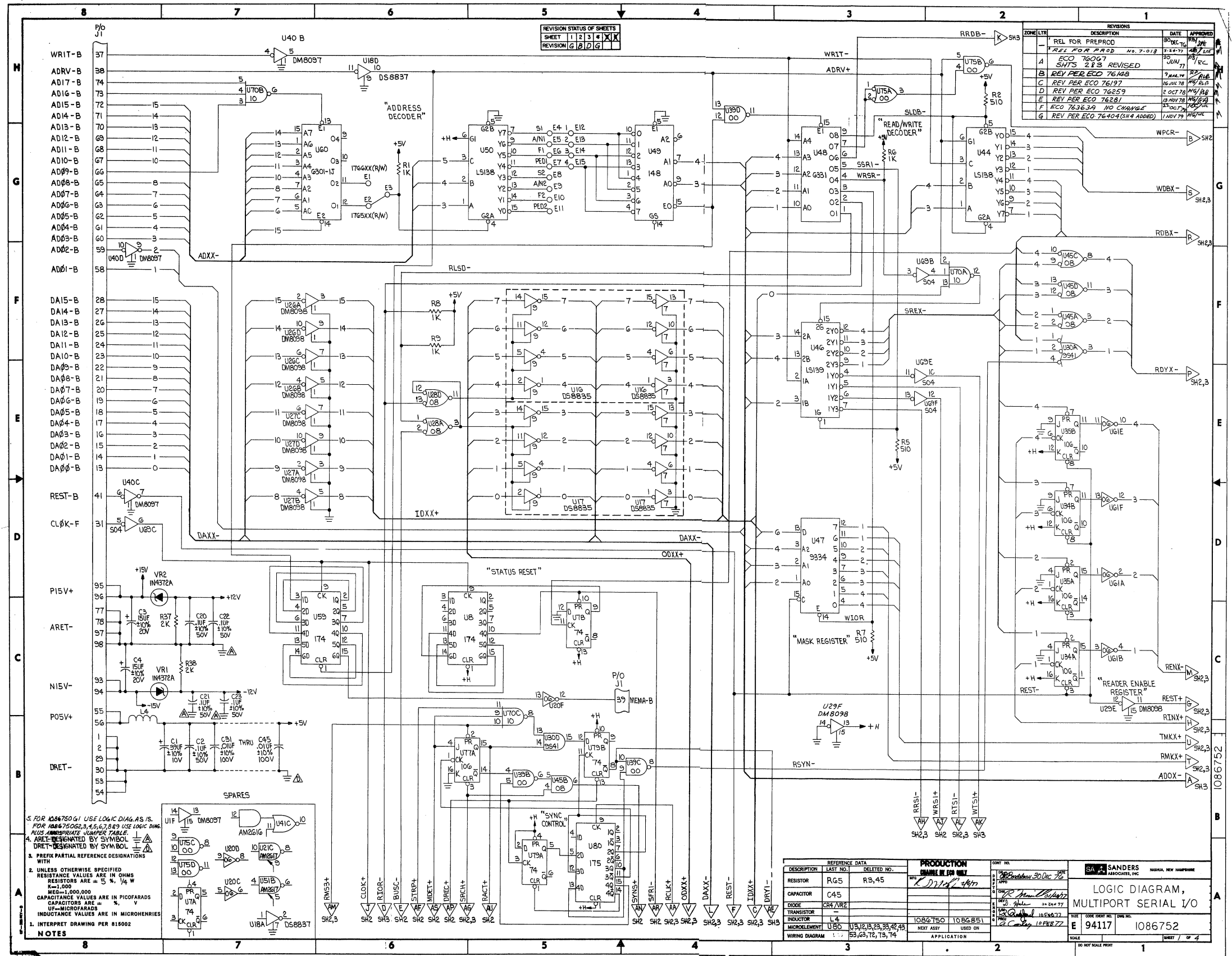
G1 THRU G9 FOR PARTS LIST SEE PL 1086750

9. FOR 1086750 G1 USE ASSY AS IS. FOR 1086750 G2, 3, 4, 5, 6, 7, 8 & 9 USE ASSY PLUS JUMPER TABLE USING ITEM 73.
8. MARK APPROPRIATE SERNO, "G" CONDITION AND REVISION AT FINAL ASSY.
7. SOLDER TIPS OR WIRE TO BE .09 MAX FROM BOARD.
6. MAX COMPONENT HEIGHT TO BE .44.
5. REFERENCE DESIGNATORS OTHER THAN THOSE ETCHED, OR SILK SCREENED ARE NOT TO BE MARKED ON FINISHED ASSY.
4. MARK CHARACTERS .04-.16 HIGH, COLOR BLACK, GOTHIC TYPE, AND LOCATE APPROX AS SHOWN. APPLY PER ITEM G9.
3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
2. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM G8.
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.
- NOTES UNLESS OTHERWISE SPECIFIED.

QTY PER ASSY	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DATE	DESCRIPTION
1087281	MGR	10 FEB 77	CIRCUIT CARD ASSY MULTIPORT SERIAL I/O
	GRN-7		
	USED ON		
	APPLICATION		

QTY PER ASSY	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DATE	DESCRIPTION
1087281	MGR	10 FEB 77	CIRCUIT CARD ASSY MULTIPORT SERIAL I/O
	GRN-7		
	USED ON		
	APPLICATION		

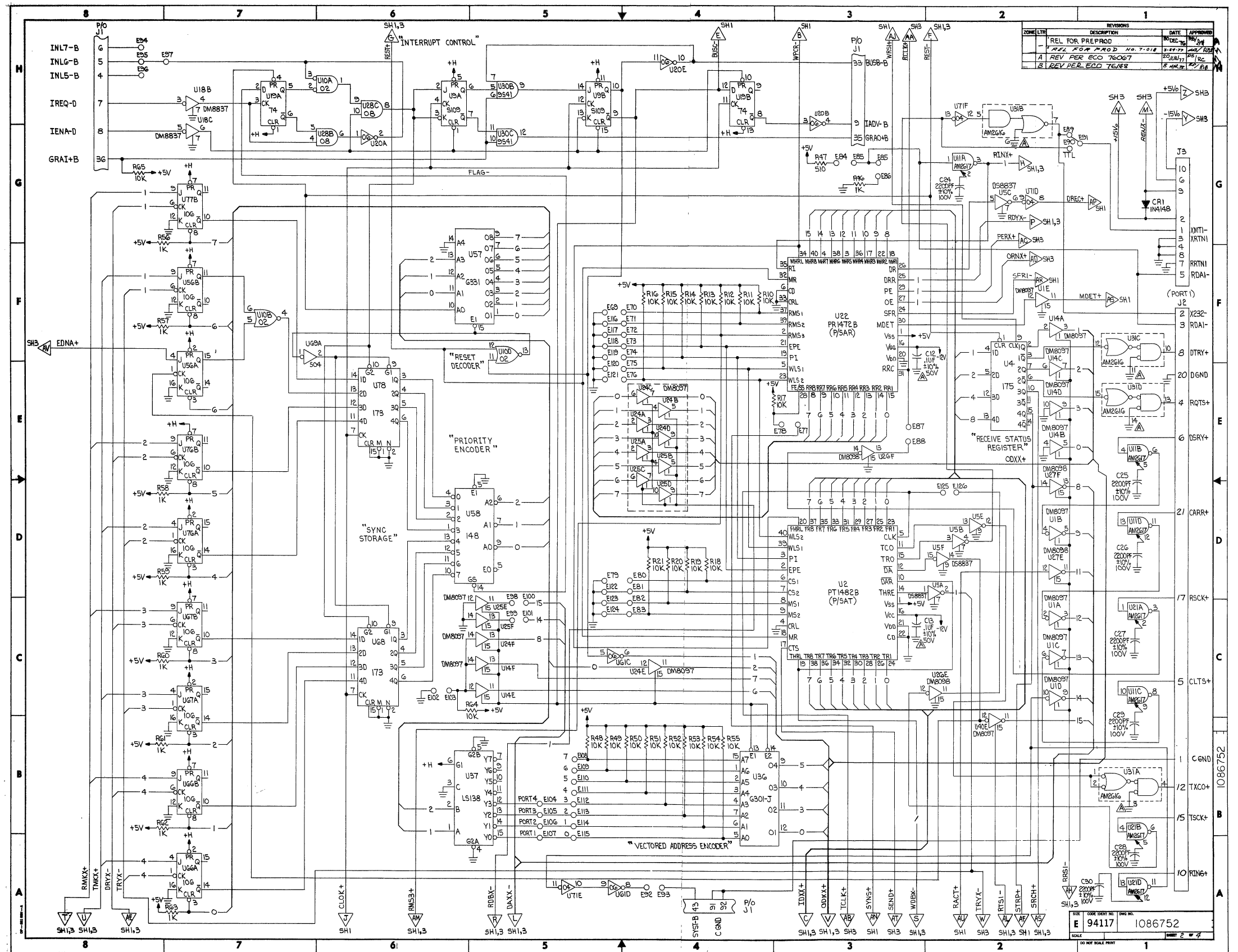


REVISION STATUS OF SHEETS			
SHEET	1	2	3
REVISION	G	D	G

REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED
1	REL FOR PREPROD	7-24-75	WJ
2	REL FOR PROD	8-7-75	WJ
A	ECO 76007 SH1'S 2 P'S REVISED	10/1/75	WJ
B	REV PER ECO 76148	9/24/75	WJ
C	REV PER ECO 76197	10/21/75	WJ
D	REV PER ECO 76259	2 OCT 76	WJ
E	REV PER ECO 76281	13 NOV 76	WJ
F	ECO 76363A NO CHANGE	3 OCT 77	WJ
G	REV PER ECO 76404(SH4 ADDED)	1 NOV 78	WJ

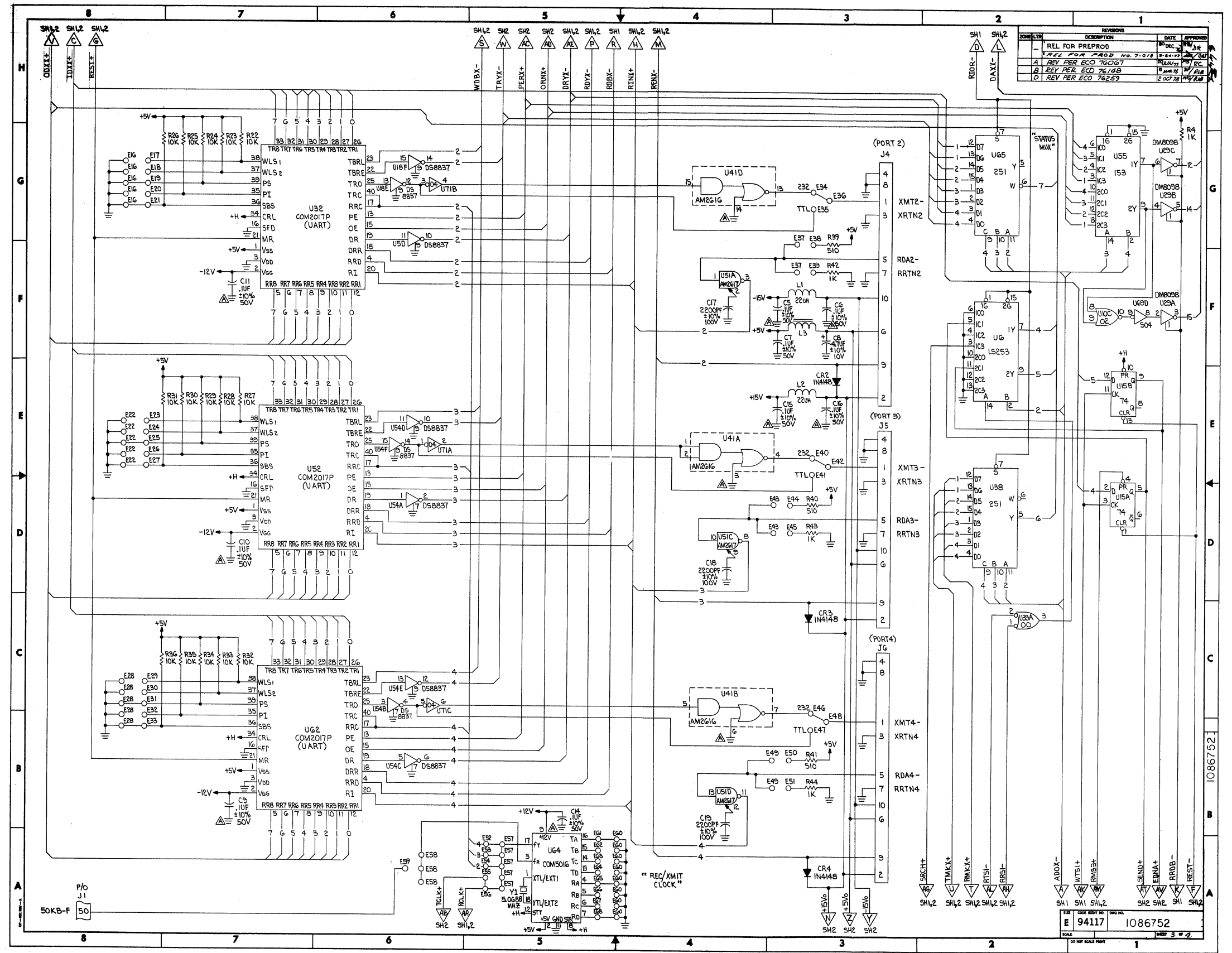
- NOTES**
1. INTERPRET DRAWING PER 815002
  2. UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS RESISTORS ARE 5%, 1/4 W
  3. PREFIX PARTIAL REFERENCE DESIGNATIONS WITH
  4. ARET- DESIGNATED BY SYMBOL
  5. DRET- DESIGNATED BY SYMBOL
  6. FOR 1086750 G1 USE LOGIC DIAG. AS IS. FOR 1086750 G2, 3, 4, 5, 6, 7, 8, 9 USE LOGIC DIAG. PLUS APPROPRIATE JUMPER TABLE.

REFERENCE DATA		PRODUCTION	
DESCRIPTION	LAST NO.	DELETED NO.	DATE
RESISTOR	R65	R3, 45	
CAPACITOR	C45		
DIODE	CR4, VR2		
TRANSISTOR			
INDUCTOR	L4		
MICROELEMENT	U80	U3, 12, 15, 23, 33, 42, 43, 53, 63, 72, 75, 74	
WIRING DIAGRAM			



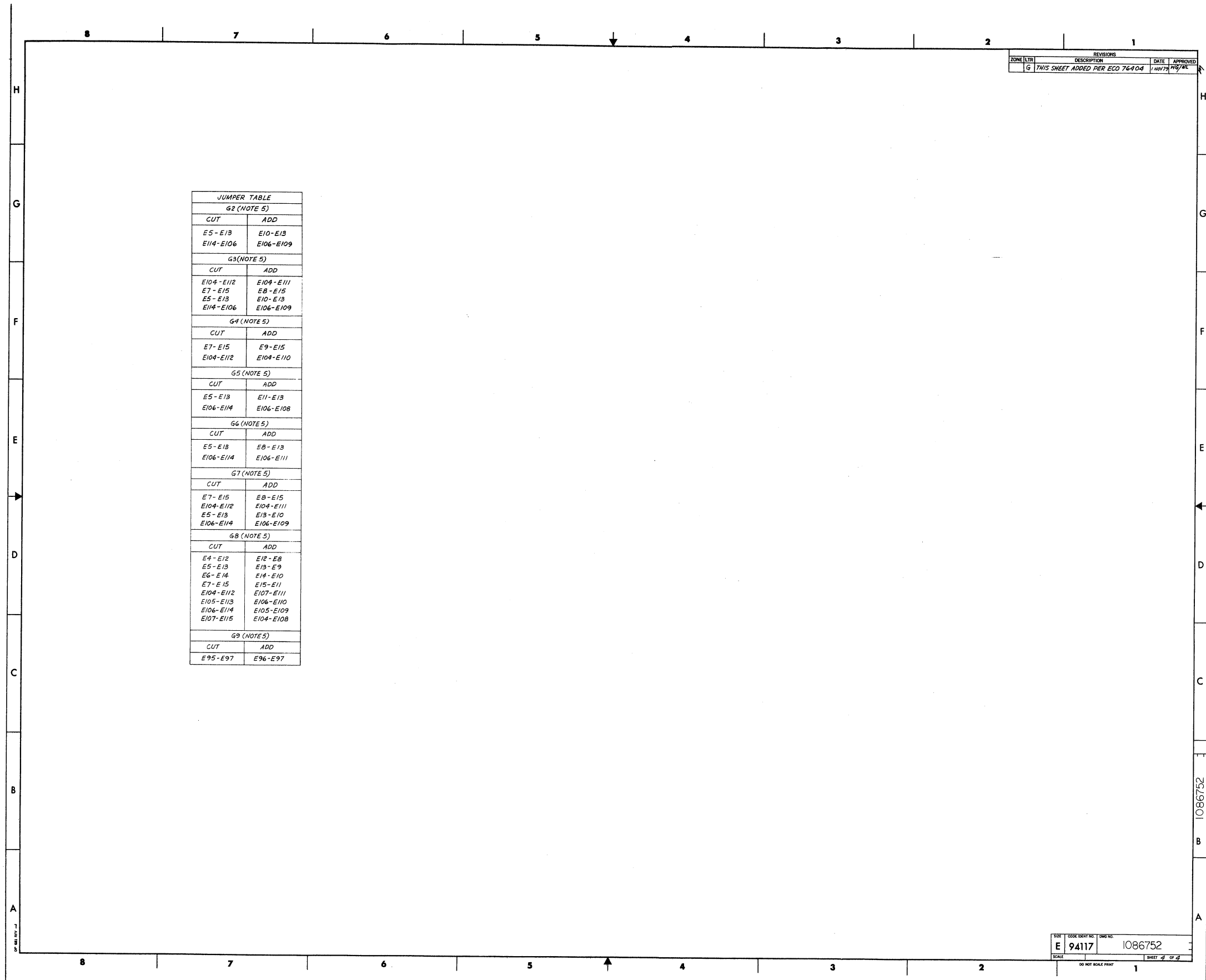
ZONE/LTR	DESCRIPTION	DATE	APPROVED
REL FOR PREPROD			
REV PER ECO 7/6/67			
REV PER ECO 7/6/67			

E 94117 1086752



REV	DESCRIPTION	DATE	APPROVED
1	REL FOR PREPROD	10 DEC 77	WJH
2	REL FOR PROD NO. 7-018	5-2-77	WJH
3	REV PER ECO 76067	10/11/77	PC
4	REV PER ECO 76148	11/17/77	PC
5	REV PER ECO 76259	2/27/78	WJH

FILE: 94117  
 SHEET: 1086752  
 SCALE: 1:1  
 PRINTED: 3 OF 2

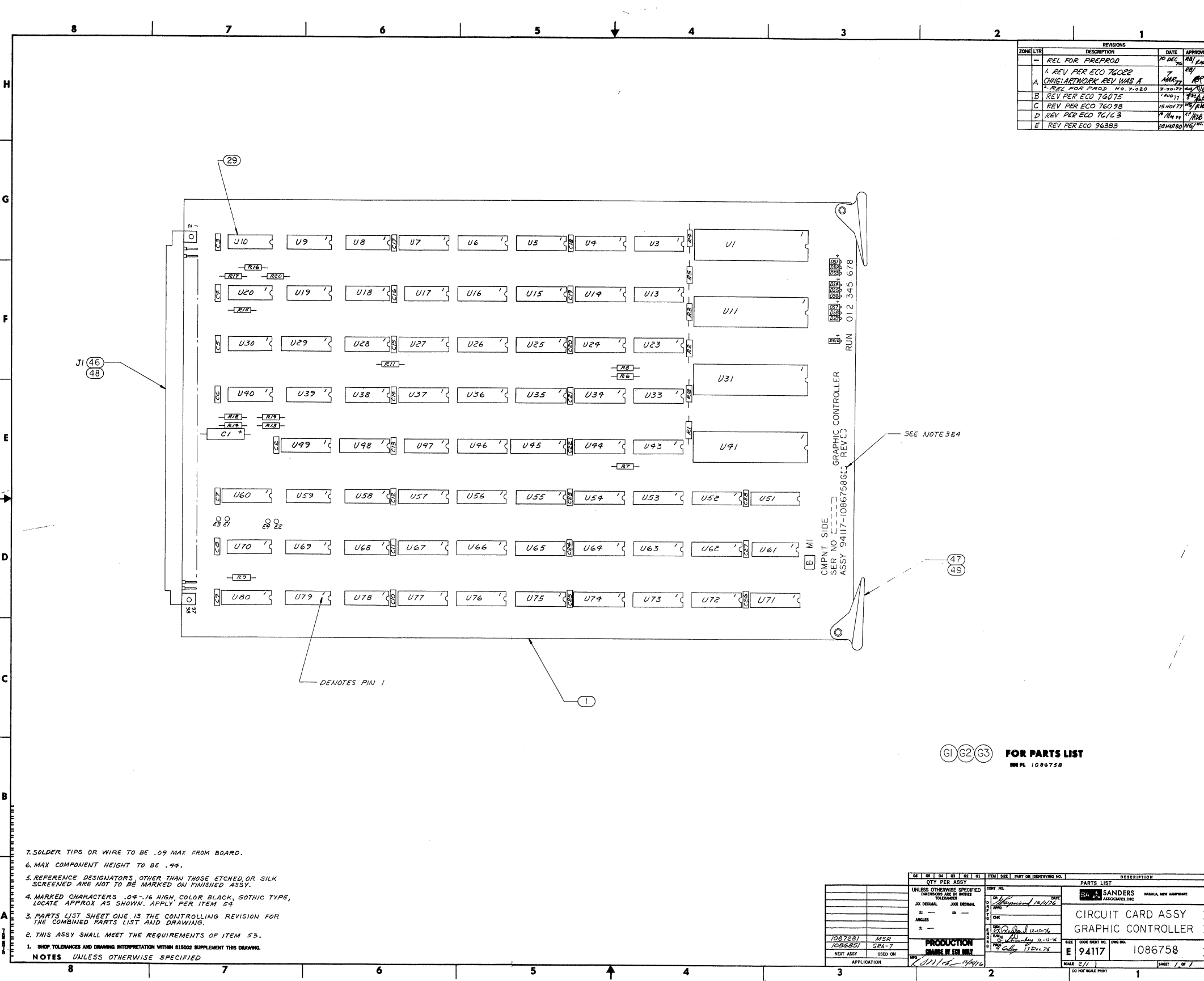


REVISIONS		DATE	APPROVED
ZONE	LTN	DESCRIPTION	
G		THIS SHEET ADDED PER ECO 76404	1/10/17 P/S/TK

JUMPER TABLE	
G2 (NOTE 5)	
CUT	ADD
E5-E13	E10-E13
E114-E106	E106-E109
G3 (NOTE 5)	
CUT	ADD
E104-E112	E104-E111
E7-E15	E8-E15
E5-E13	E10-E13
E114-E106	E106-E109
G4 (NOTE 5)	
CUT	ADD
E7-E15	E9-E15
E104-E112	E104-E110
G5 (NOTE 5)	
CUT	ADD
E5-E13	E11-E13
E106-E114	E106-E108
G6 (NOTE 5)	
CUT	ADD
E5-E13	E8-E13
E106-E114	E106-E111
G7 (NOTE 5)	
CUT	ADD
E7-E15	E8-E15
E104-E112	E104-E111
E5-E13	E13-E10
E106-E114	E106-E109
G8 (NOTE 5)	
CUT	ADD
E4-E12	E12-E8
E5-E13	E13-E9
E6-E14	E14-E10
E7-E15	E15-E11
E104-E112	E107-E111
E105-E113	E106-E110
E106-E114	E105-E109
E107-E115	E104-E108
G9 (NOTE 5)	
CUT	ADD
E95-E97	E96-E97

SIZE	CODE IDENT NO.	DWG NO.
E	94117	1086752
SCALE	DO NOT SCALE PRINT	
SHEET #		OF #
1		1

REV	DATE	APPROVED	DESCRIPTION
-	10 DEC 76	RAJ/EM	REL FOR PREPROD
A	7 APR 77	RAJ	1. REV PER ECO 76022 CHG. PARTWORK REV WAS A
B	7 NOV 77	RAJ	2. REV FOR PROD. NO. 7-120
C	15 NOV 77	RAJ	REV PER ECO 76075
D	14 MAR 78	RAJ	REV PER ECO 76163
E	28 MAR 78	RAJ	REV PER ECO 96383



GRAPHIC CONTROLLER  
SER NO 94117-108675861  
ASSY 94117-108675861  
RUN 012 345 678

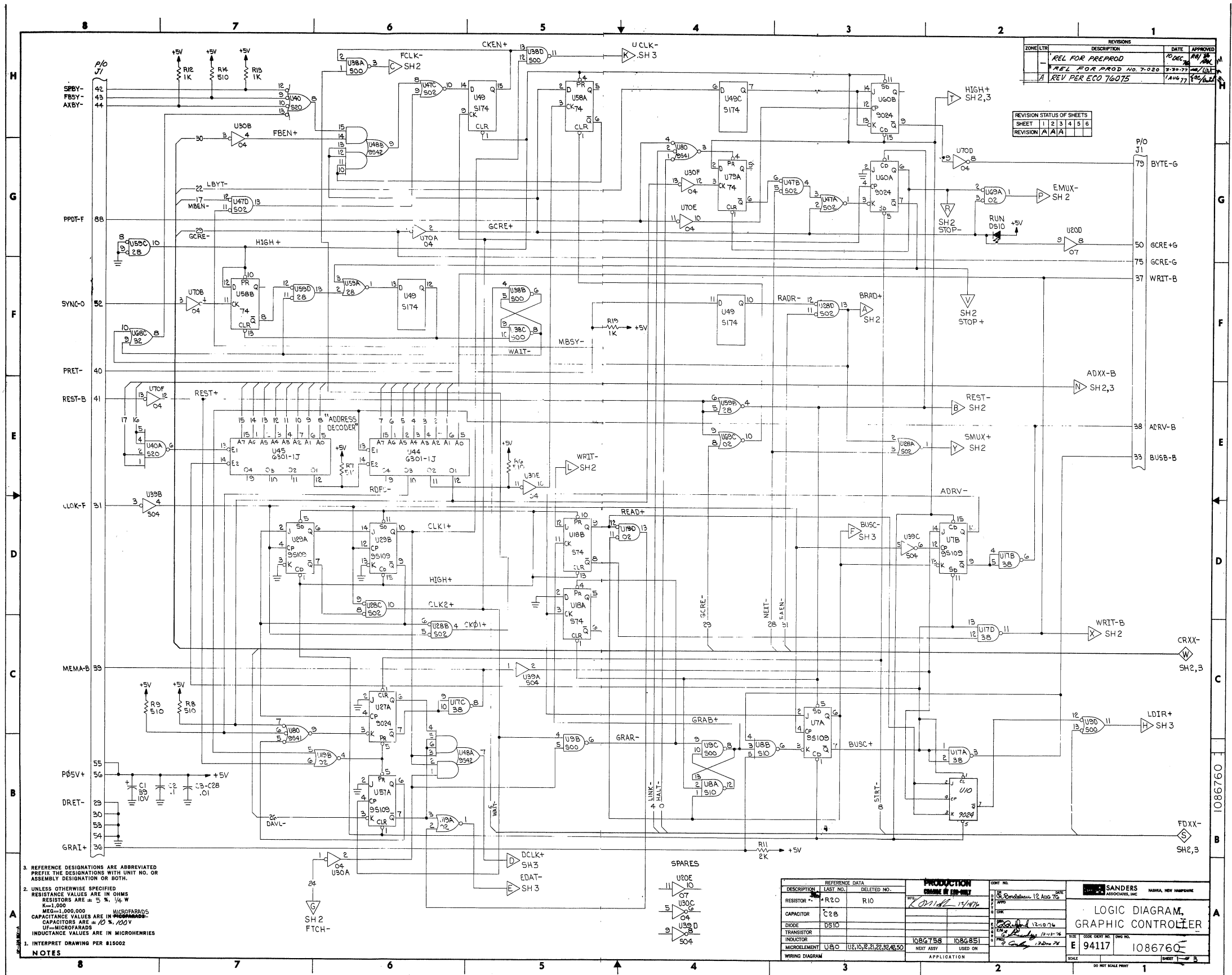
SEE NOTE 384

(G1) (G2) (G3) FOR PARTS LIST  
IMP. 1086758

- NOTES UNLESS OTHERWISE SPECIFIED
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.
  2. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM 53.
  3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
  4. MARKED CHARACTERS .04-.16 HIGH, COLOR BLACK, GOTHIC TYPE, LOCATE APPROX AS SHOWN, APPLY PER ITEM 54.
  5. REFERENCE DESIGNATORS, OTHER THAN THOSE ETCHED OR SILK SCREENED ARE NOT TO BE MARKED ON FINISHED ASSY.
  6. MAX COMPONENT HEIGHT TO BE .99.
  7. SOLDER TIPS OR WIRE TO BE .09 MAX FROM BOARD.

QTY PER ASSY	CONF NO.	PARTS LIST
1	1087281	SANDERS ASSOCIATES, INC. HANNAH, NEW HAMPSHIRE
1	1086857	CIRCUIT CARD ASSY
1	1086857	GRAPHIC CONTROLLER
1	94117	1086758
1	1086758	1086758





REVISIONS			
ZONE/LTR	DESCRIPTION	DATE	APPROVED
	REL FOR PREPROD	10 DEC 74	
	REL FOR PROD NO. 7-020	3-30-77	
A	REV PER ECO 76075	1/10/77	

REVISION STATUS OF SHEETS						
SHEET	1	2	3	4	5	6
REVISION	A	A	A	A	A	A

3. REFERENCE DESIGNATIONS ARE ABBREVIATED PREFIX THE DESIGNATIONS WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS RESISTORS ARE 5% 1/4 W K=1,000 MEG=1,000,000 CAPACITANCE VALUES ARE IN MICROFARADS CAPACITORS ARE 10% 100V U= MICROFARADS INDUCTANCE VALUES ARE IN MICROHENRIES
1. INTERPRET DRAWING PER 815002
- NOTES

- SPARES
- U20E 10
  - U30C 07
  - U30B 04
  - U30D 04
  - U30A 04
  - U30F 04

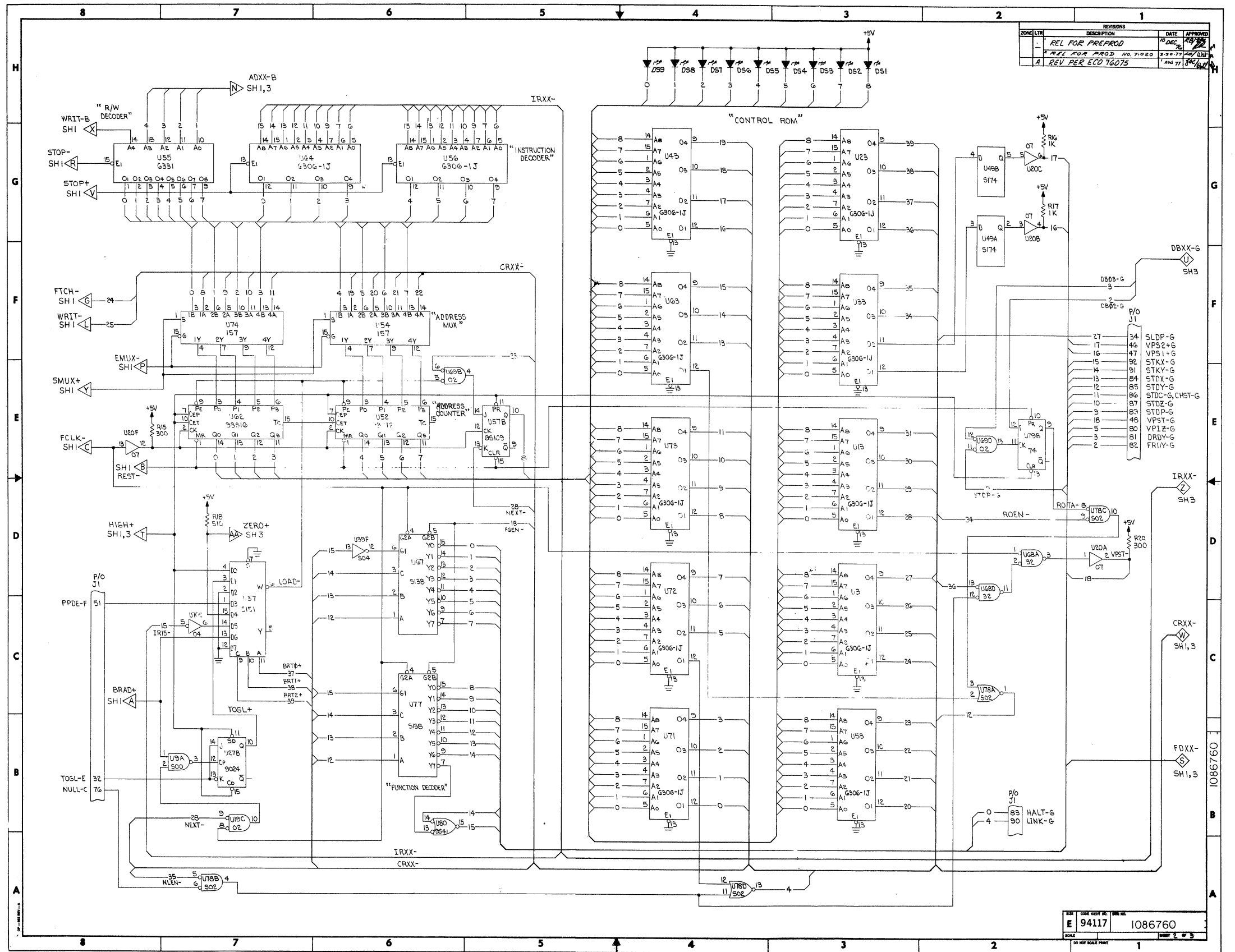
DESCRIPTION	REFERENCE DATA	DELETED NO.	PRODUCTION	CONT. NO.	DATE
RESISTOR	R10		1086760		12 AUG 76
CAPACITOR	C2B				
DIODE	D510				
TRANSISTOR	U30A				
INDUCTOR					
MICROELEMENT	U30A U30B U30C U30D U30E U30F U30G U30H U30I U30J U30K U30L U30M U30N U30O U30P U30Q U30R U30S U30T U30U U30V U30W U30X U30Y U30Z		1086760 1086761		
WIRING DIAGRAM					

SANDERS ASSOCIATES, INC. MARIETTA, NEW HAMPSHIRE

LOGIC DIAGRAM, GRAPHIC CONTROLLER

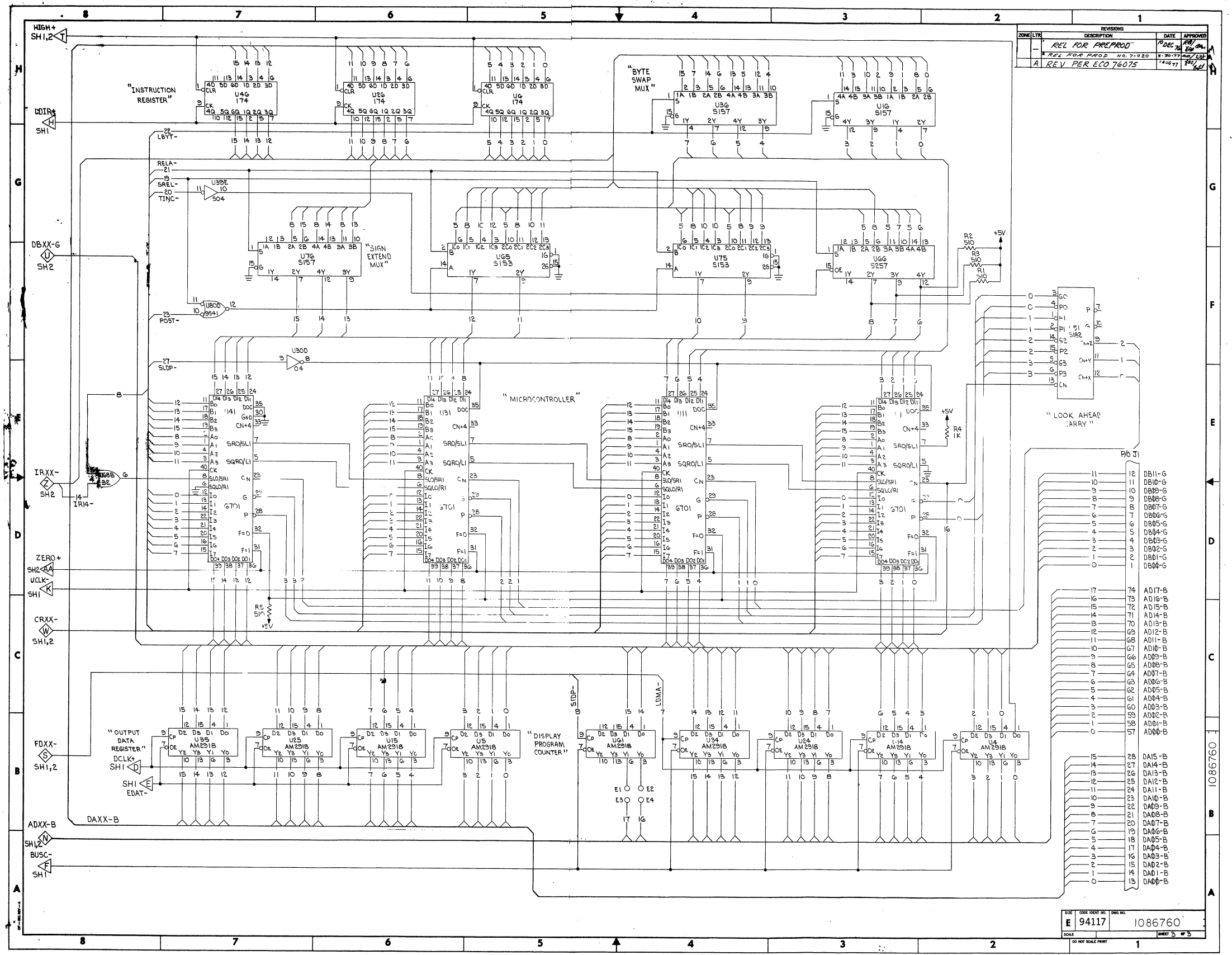
E 94117 1086760

SCALE: 1" = 1" SHEET 1 OF 3



REVISIONS		DATE	APPROVED
1	REL FOR PREPROD	12/28/70	[Signature]
2	REL FOR PROD NO. 7-220	3-30-71	[Signature]
3	REV PER ECO 76075	7-1-71	[Signature]

E 94117 1086760  
 SCALE: 1/8" = 1" (1/16" = 1")  
 SHEET 2 OF 3  
 DO NOT SCALE PRINT

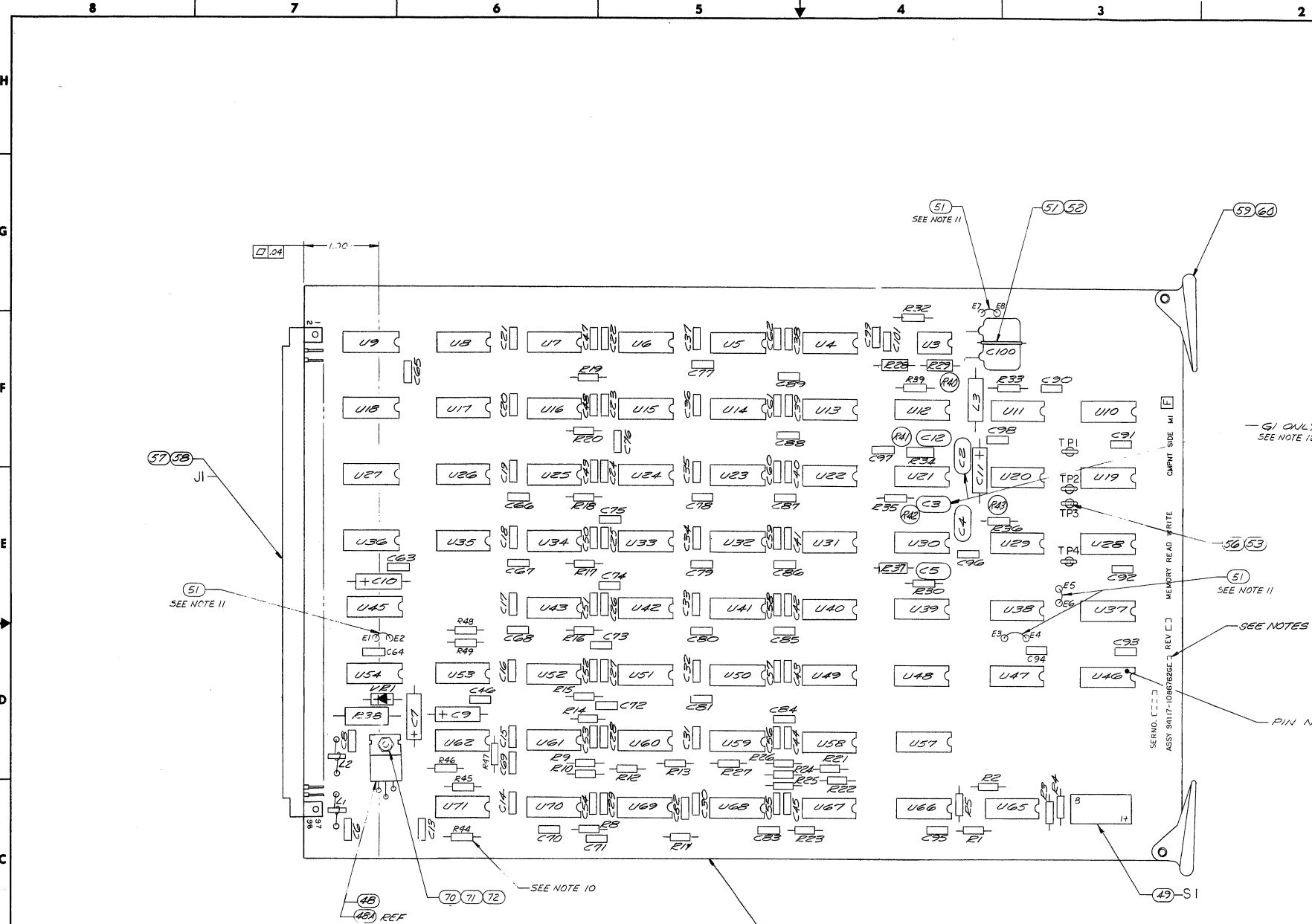


REVISIONS			
ZONE/LTR	DESCRIPTION	DATE	APPROVED
-	REL FOR PREPROD	10 DEC 74	[Signature]
-	REL FOR PROE NO. 7-920	1-30-77	[Signature]
A	REV PER ECO 76075	14 06 77	[Signature]

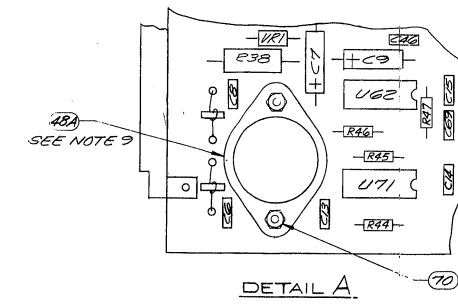
11	12	DB11-G
10	10	DB10-G
9	9	DB09-G
8	8	DB07-G
7	7	DB06-G
6	6	DB05-G
5	5	DB04-G
4	4	DB03-G
3	3	DB02-G
2	2	DB01-G
1	1	DB00-G
17	74	AD17-B
16	73	AD16-B
15	72	AD15-B
14	71	AD14-B
13	70	AD13-B
12	69	AD12-B
11	68	AD11-B
10	67	AD10-B
9	66	AD09-B
8	65	AD08-B
7	64	AD07-B
6	63	AD06-B
5	62	AD05-B
4	61	AD04-B
3	60	AD03-B
2	59	AD02-B
1	58	AD01-B
0	57	AD00-B
15	28	DA15-B
14	27	DA14-B
13	26	DA13-B
12	25	DA12-B
11	24	DA11-B
10	23	DA10-B
9	22	DA09-B
8	21	DA08-B
7	20	DA07-B
6	19	DA06-B
5	18	DA05-B
4	17	DA04-B
3	16	DA03-B
2	15	DA02-B
1	14	DA01-B
0	13	DA00-B

SIZE	CODE	REV. NO.	DRG. NO.
E	94117		1086760
SCALE		SHEET 5 OF 5	

REV	DESCRIPTION	DATE	APPROVED
-	BEL FOR PREPROD	12-10-76	WJ
A	REV PER ECO 76019 ARTWORK REV WAS A	MAR 77	WJ
	B. REL FOR PRODUCTION *7015		
B	REV PER ECO 76044	MAR 77	WJ
C	REV PER ECO 76065	JUN 77	WJ
D	REV PER ECO 76053	24 OCT 77	WJ
E	REV PER ECO 76054	77	WJ
F	REV PER ECO 76075	77	WJ
G	REV PER ECO 76106	77	WJ
H	REV PER ECO 76123	5 JAN 78	WJ
J	REV PER ECO 76143	10 MAY 78	WJ
K	REV PER ECO 76250	25 SEP 78	WJ
L	REV PER ECO 76262A	11 OCT 78	WJ
M	REV PER ECO 76292	8 NOV 78	WJ
N	REV PER ECO 76398	31 DEC 78	WJ
P	REV PER ECO 76355A	25 SEP 80	WJ



12. C2 & C3 TO BE INSTALLED AT TEST IF REQUIRED.  
 11. JUMPERS TO BE ADDED AFTER TESTING (SEE JUMPER TABLE).  
 10. R44 THRU R49 USED ON 1086762G ONLY. FOR G1 USE ITEMS 51 & 52.  
 9. SELECT ONE ALTERNATE ITEM ONLY.  
 8. MARK SER NO., G CONDITION, & REV AT ASSY.  
 7. SOLDER TIPS OR WIRES TO BE .09 MAX FROM BOARD.  
 6. MAX COMPONENT HEIGHT TO BE .44  
 5. REFERENCE DESIGNATORS OTHER THAN THOSE ETCH OR SILK SCREENED ARE NOT TO BE MARKED ON FINISHED ASSY.  
 4. MAX CHARACTERS 04-16 HIGH. COLOR BLK. GOTTING TYPE AND LOCATE APPLIED AS SHOWN. APPLY PER ITEM 6G.  
 3. PARTS LIST SHEET ONE IS THE CONTROLLING SHEET FOR THE COMBINED PARTS LIST AND DRAWING.  
 2. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM 6S, AND  
 1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.  
 NOTES UNLESS OTHERWISE SPECIFIED



JUMPER TABLE

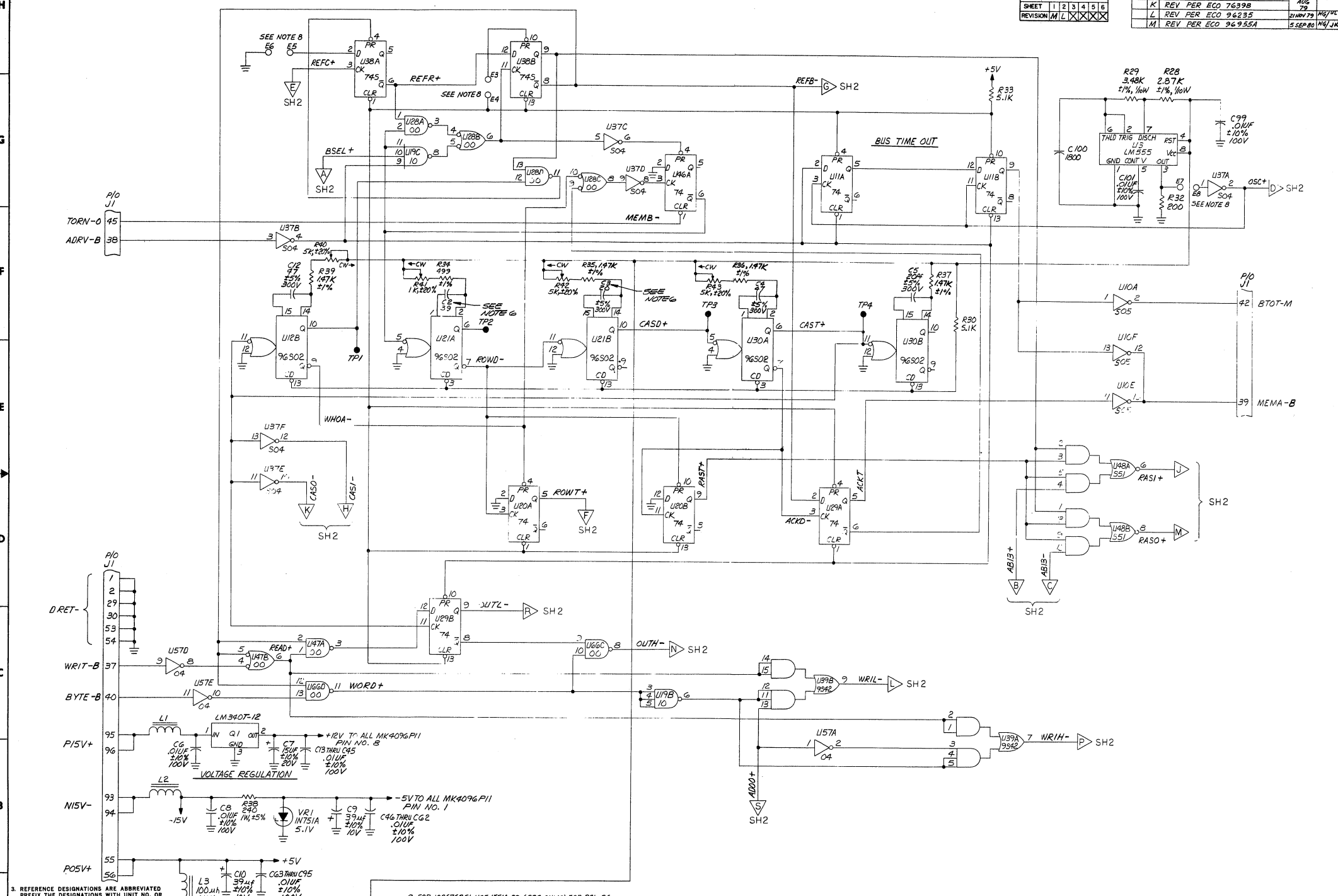
FROM	TO
E1	E2
E3	E4
E5	E6
E7	E8

G1 G2 FOR PARTS LIST  
 SER. 1086762

QTY PER ASSY	DESCRIPTION
1	CIRCUIT CARD ASSY R/W 8K X 16 MEMORY
1	94117 1086762

REVISIONS			
ZONE/LTR	DESCRIPTION	DATE	APPROVED
H	REV PER ECO 76240	29 AUG 79	WJ/JK
J	REV PER ECO 76322A	1 AUG 79	WJ/JK
K	REV PER ECO 76398	21 NOV 79	WJ/JK
L	REV PER ECO 96235	21 NOV 79	WJ/JK
M	REV PER ECO 96955A	5 SEP 80	WJ/JK

REVISION STATUS OF SHEETS						
SHEET	1	2	3	4	5	6
REVISION	M	L	X	X	X	X



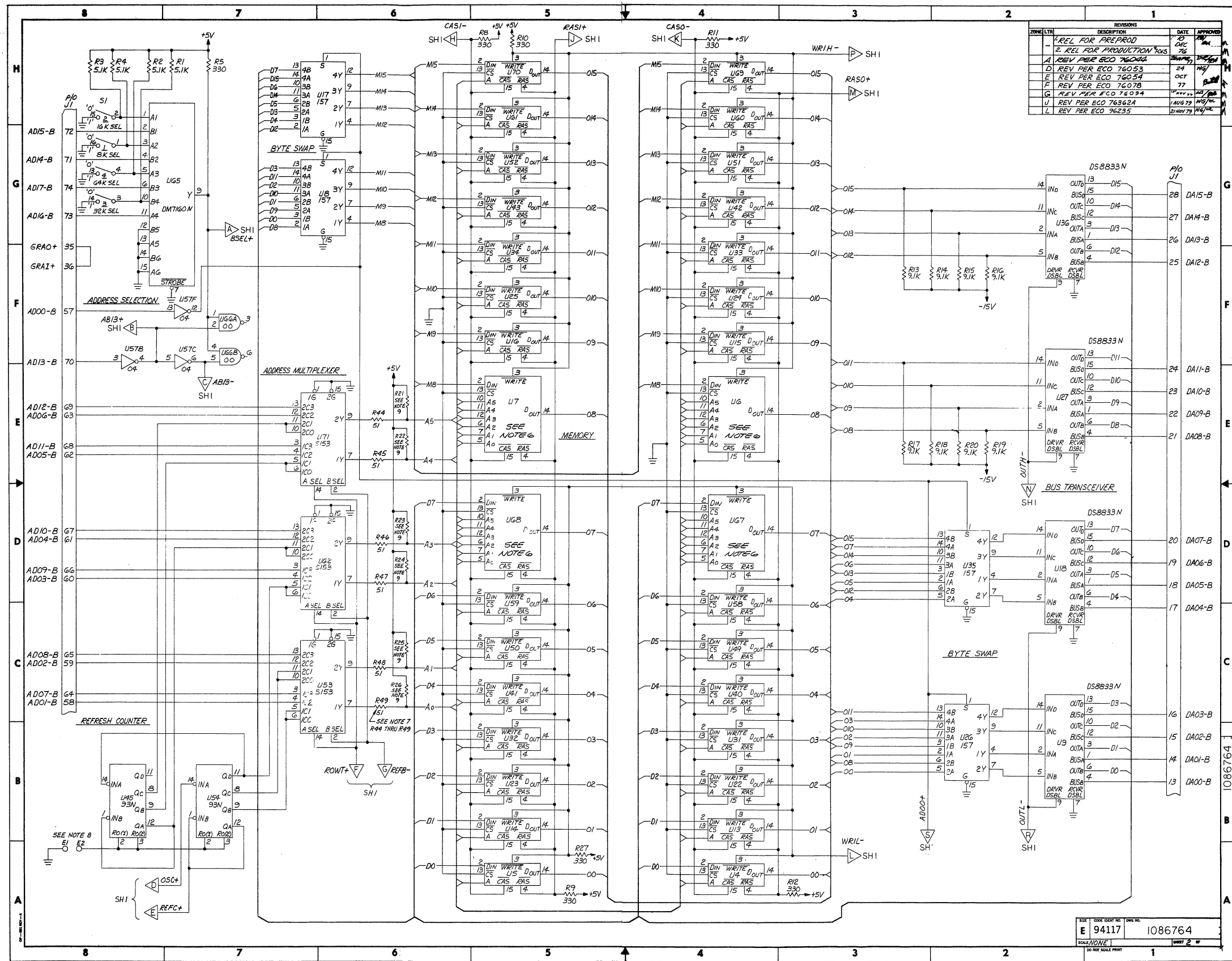
3. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATIONS WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN PICOFARADS. CAPACITORS ARE  $\pm 5\%$ ,  $\frac{1}{4}W$  UNLESS OTHERWISE SPECIFIED.  $\mu F$ —MICROFARADS.  $\mu H$ —MICROHENRIES.
1. INTERPRET DRAWING PER 815002 NOTES

9. FOR 1086762G1 USE ITEM 23 (330 OHMS) FOR R21-26. FOR 1086762G2 USE ITEM 29 (910 OHMS) FOR R21-26.
8. JUMPERS TO BE ADDED AFTER TEST.
7. R44 THRU R49 USED ON 1086762G2 ONLY FOR 1086762G1 USE JUMPER WIRES.
6. FOR 1086762G1 USE MK4096P6 WITH C2 & C3 IN CKT IF REQUIRED. TO BE DETERMINED AND INSTALLED BY TEST.
5. SIGNAL 'A' ON MICROELEMENT TYPE MK4096P11 DESIGNATES ADDRESS BUSES A0 THRU A5 AS SHOWN ON U6, U61, U68 WITH CORRESPONDING PINS.

REFERENCE DATA		PRODUCTION		CONT NO.	
DESCRIPTION	LAST NO.	DELETED NO.	DATE	BY	REV
RESISTOR	R49	R3, 4, 6, 7, 31	10/1/79	WJ/JK	1
CAPACITOR	C101	C1			
DIODE	VR7	VR2, 3, 5, 6, 7			
TRANSISTOR	Q7				
INDUCTOR	L3				
MICROELEMENT	U71	U1, 2, 3, 5, 6, 23, 24			

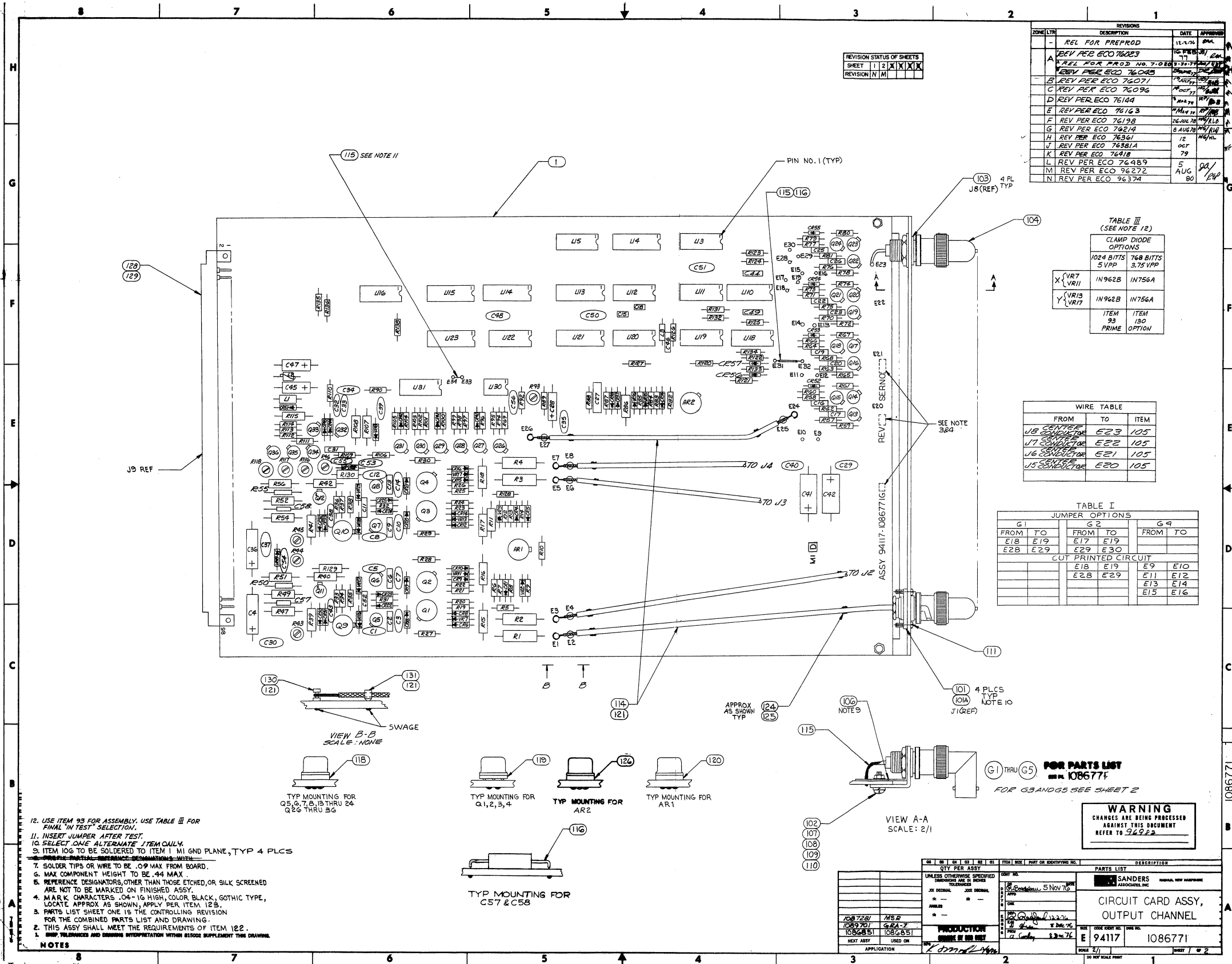
LOGIC DIAGRAM,  
R/W  $\times 16$  MEMORY

E 94117 1086764



REV	DATE	DESCRIPTION	APPROVED
1	28 DEC 76	REL FOR PREPROD	
2	28 DEC 76	REL FOR PRODUCTION	
A		REV PER ECO 76044	
D	24 OCT 77	REV PER ECO 76053	
E		REV PER ECO 76054	
F		REV PER ECO 76078	
G		REV PER ECO 76094	
J	AUG 78	REV PER ECO 76324	
L	28 NOV 78	REV PER ECO 76235	

SHEET 2 OF 2  
 E 94117 1086764  
 SCALE: NONE  
 DO NOT SCALE PRINT



REVISION STATUS OF SHEETS

SHEET	1	2	X	X	X	X
REVISION	N	M	L	K	J	I

REVISIONS

ZONE/LTR	DESCRIPTION	DATE	APPROVED
-	REL FOR PREPROD	11.2.74	AW
A	REV PER ECO 76023	11.2.74	AW
B	REV PER ECO 76049	11.2.74	AW
C	REV PER ECO 76096	11.2.74	AW
D	REV PER ECO 76114	11.2.74	AW
E	REV PER ECO 76113	11.2.74	AW
F	REV PER ECO 76128	11.2.74	AW
G	REV PER ECO 76214	11.2.74	AW
H	REV PER ECO 76361	11.2.74	AW
I	REV PER ECO 76381A	11.2.74	AW
J	REV PER ECO 76418	11.2.74	AW
K	REV PER ECO 76489	11.2.74	AW
L	REV PER ECO 96272	5 AUG 80	DA/PA
M	REV PER ECO 96272	5 AUG 80	DA/PA
N	REV PER ECO 96374	5 AUG 80	DA/PA

TABLE III (SEE NOTE 12)

CLAMP DIODE OPTIONS

	1024 BITS 5VPP	768 BITS 3.75VPP
X VR7	IN962B	IN756A
Y VR13	IN962B	IN756A
	ITEM PRIME	ITEM OPTION

WIRE TABLE

FROM	TO	ITEM
U8 SENSE	E23	105
U7 SENSE	E22	105
U6 SENSE	E21	105
U5 SENSE	E20	105

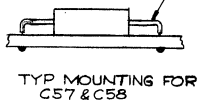
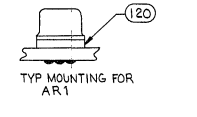
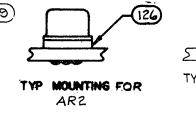
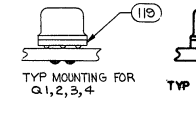
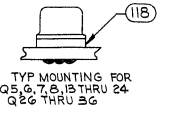
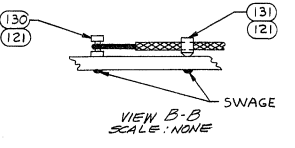
TABLE I JUMPER OPTIONS

G1		G2		G4	
FROM	TO	FROM	TO	FROM	TO
E18	E19	E17	E19		
E28	E29	E29	E30		

CUT PRINTED CIRCUIT

E18	E19	E9	E10
E28	E29	E11	E12
		E13	E14
		E15	E16

- NOTES
1. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM 122.
  2. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM 122.
  3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
  4. MARK CHARACTERS .04-16 HIGH, COLOR BLACK, GOTHIC TYPE, LOCATE APPROX AS SHOWN, APPLY PER ITEM 123.
  5. REFERENCE DESIGNATORS, OTHER THAN THOSE ETCHED, OR SILK SCREENED ARE NOT TO BE MARKED ON FINISHED ASSY.
  6. MAX COMPONENT HEIGHT TO BE .44 MAX.
  7. SOLDER TIPS OR WIRE TO BE .09 MAX FROM BOARD.
  8. UNLESS OTHERWISE SPECIFIED, ALL PARTS ARE TO BE MIL-SPEC.
  9. ITEM 106 TO BE SOLDERED TO ITEM 1 MI GND PLANE, TYP 4 PLCS
  10. SELECT ONE ALTERNATE ITEM ONLY.
  11. INSERT JUMPER AFTER TEST.
  12. USE ITEM 93 FOR ASSEMBLY. USE TABLE III FOR FINAL "IN TEST" SELECTION.



**WARNING**  
CHANGES ARE BEING PROCESSED  
AGAINST THIS DOCUMENT  
REFER TO 94922

FOR PARTS LIST  
OR IN 108677F  
FOR GS AND GS SEE SHEET 2

QTY PER ASSY	DESCRIPTION	PARTS LIST
1	UNLESS OTHERWISE SPECIFIED, ALL PARTS ARE TO BE MIL-SPEC.	SANDERS
1	JX DECIMAL	5 NOV 76
1	AMBER	PRODUCTION
1	1087281 MSP	94117
1	1089701 GEA	1086771
1	1086451 CSGB51	
1	NEXT ASSY	
1	USED ON	

ZONE/LTR	REVISIONS	DATE	APPROVED
-	THIS SHEET ADDED PER ECO 76198	26 JUL 78	MS/RA
G	REV PER ECO 76214	5 AUG 78	MS/RA
H	REV PER ECO 76361	15	MS/RA
J	REV PER ECO 76381A	OCT 79	
K	REV PER ECO 76418	9 AUG 80	MS/RA
L	REV PER ECO 76489	9 AUG 80	MS/RA
M	REV PER ECO 96374	9 AUG 80	MS/RA

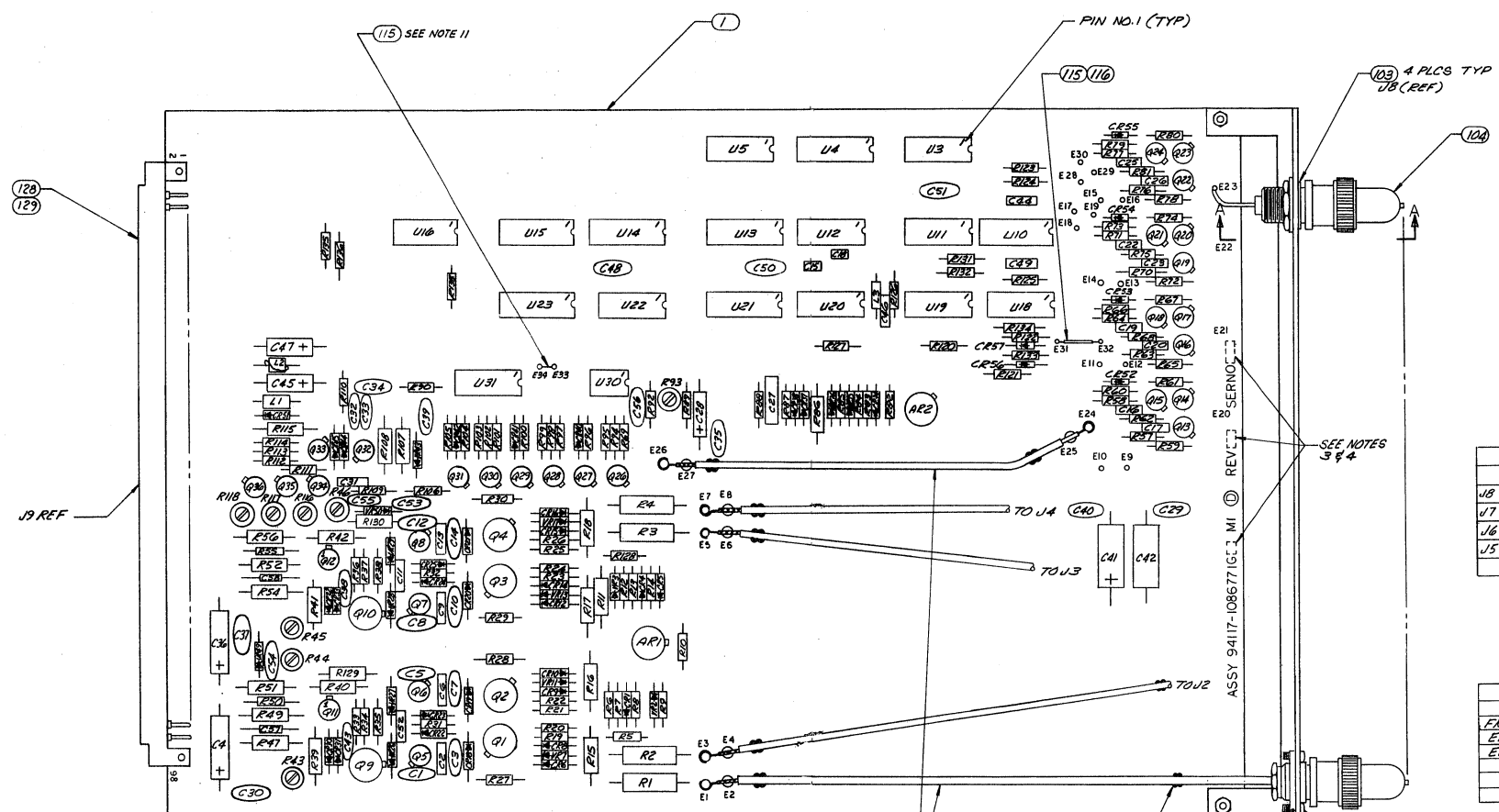


TABLE II  
(SEE NOTE 12)  
CLAMP DIODE  
OPTIONS

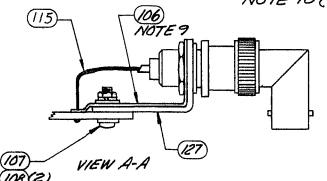
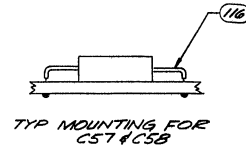
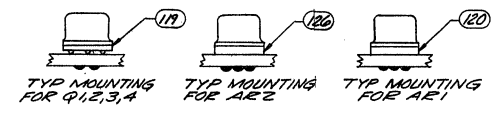
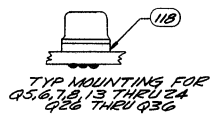
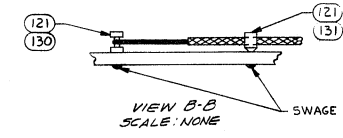
	1024 BITS 5VPP	768 BITS 3.75VPP
X VR7	IN962B	IN756A
Y VR13	IN962B	IN756A
	ITEM 93 PRIME	ITEM 130 OPTION

WIRE TABLE

FROM	TO	ITEM
J8 CENTER	E23	105
J7 CENTER	E22	105
J6 CENTER	E21	105
J5 CENTER	E20	105

TABLE I  
JUMPER OPTIONS

G3		G5	
FROM	TO	FROM	TO
E18	E19	E17	E19
E28	E29	E29	E30
CUT CIRCUIT			
	E18	E19	
	E28	E29	

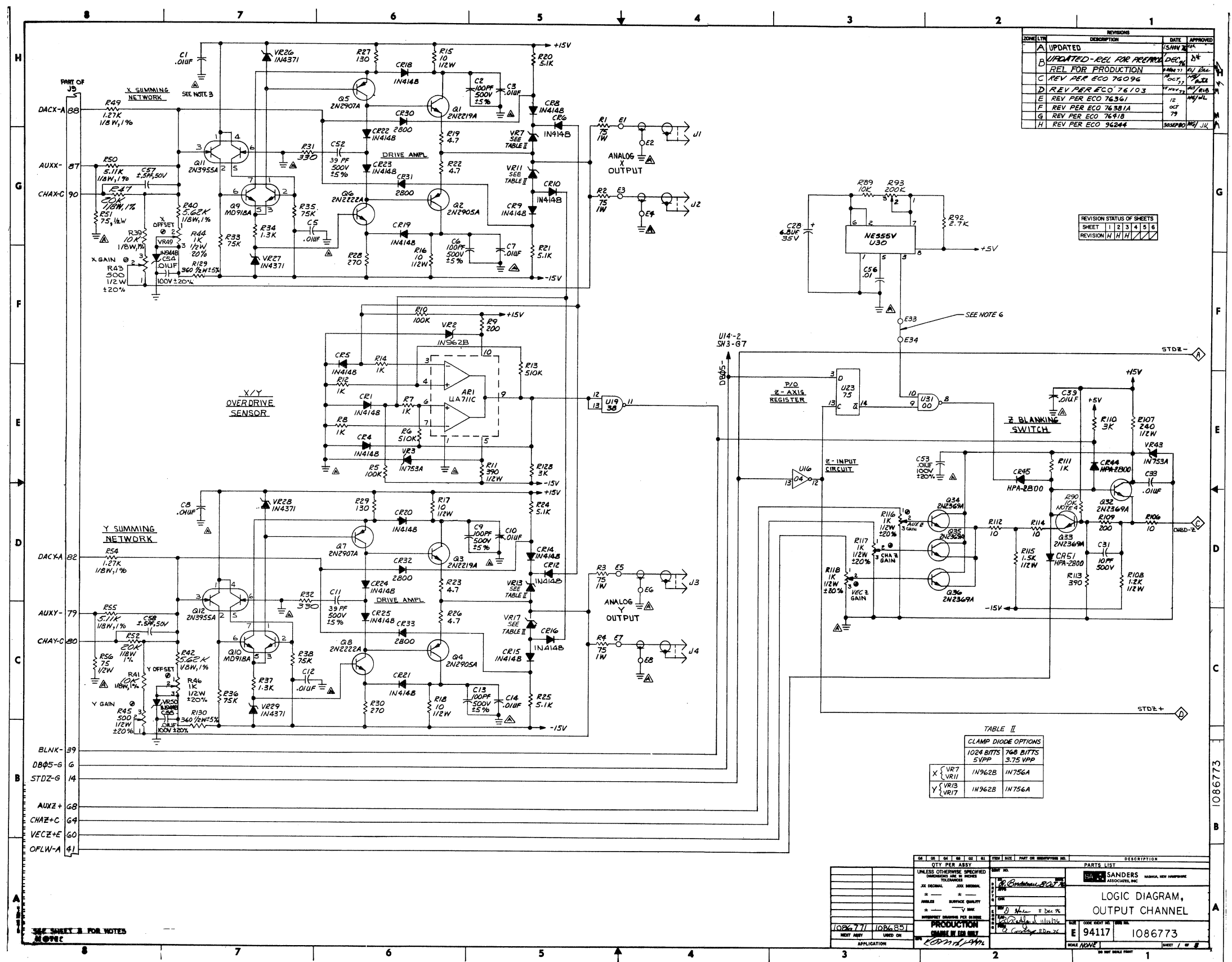


**WARNING**  
CHANGES ARE BEING PROCESSED  
AGAINST THIS DOCUMENT  
REFER TO 2432

G3 & G5

ECO NO. 94117  
DATE 1086771  
SCALE SHEET 2 OF 1





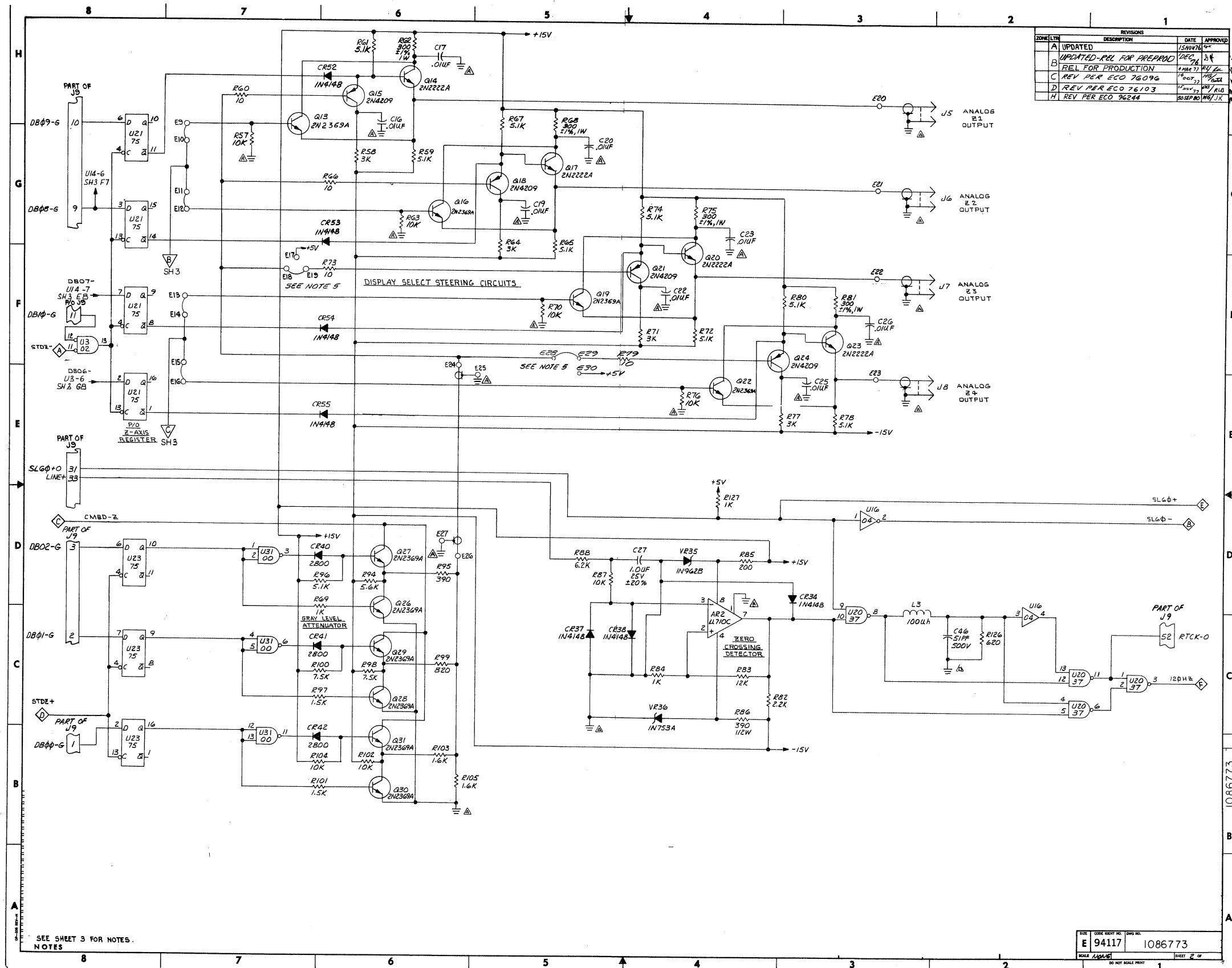
REV. LTR	DESCRIPTION	DATE	APPROVED
A	UPDATED	1/5/64	SAW
B	UPDATED-REL FOR PREPRO	DEC 21 1963	SAW
C	REL FOR PRODUCTION	1/14/64	SAW
D	REV PER ECO 76096	1/22/64	SAW
E	REV PER ECO 76103	1/22/64	SAW
F	REV PER ECO 76361	12/22/63	SAW
G	REV PER ECO 76381A	12/22/63	SAW
H	REV PER ECO 76918	1/14/64	SAW
I	REV PER ECO 96244	10/20/60	SAW

REVISION STATUS OF SHEETS
SHEET 1 2 3 4 5 6
REVISION H H H H H

TABLE II  
CLAMP DIODE OPTIONS

	1024 BITS	768 BITS
X VR7	IN962B	IN756A
Y VR11	IN962B	IN756A
Z VR13	IN962B	IN756A
VR17	IN962B	IN756A

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		PARTS LIST	
QTY PER ASSY	DESCRIPTION	QTY PER ASSY	DESCRIPTION
<b>LOGIC DIAGRAM, OUTPUT CHANNEL</b>			
E 94117		1086773	

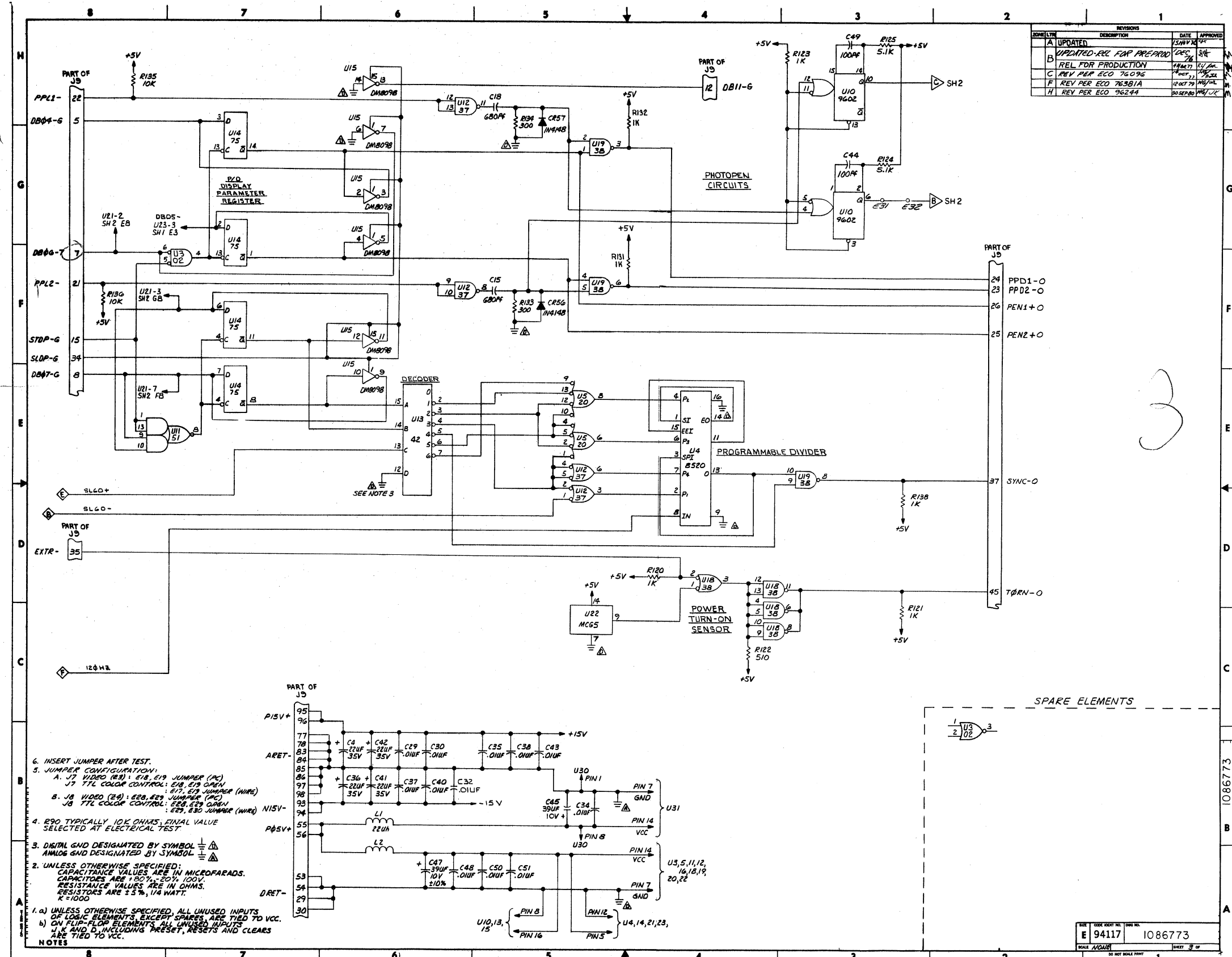


ZONE/REV	DESCRIPTION	DATE	APPROVED
A	UPDATED	15NOV74	[Signature]
B	UPDATED-REL FOR PREPROD	10DEC74	[Signature]
C	REL FOR PRODUCTION	14MAR75	[Signature]
D	REV PER ECO 76096	17OCT75	[Signature]
E	REV PER ECO 76103	17NOV75	[Signature]
H	REV PER ECO 76244	20SEP76	[Signature]

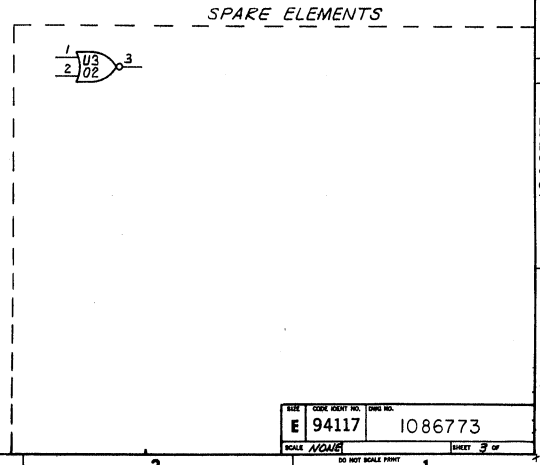
SEE SHEET 3 FOR NOTES.  
NOTES

REV	CODE	KEY	NO.	QTY	NO.
E	94117				1086773
DO NOT SCALE PRINT					
PAGE 14/15					

REV	DESCRIPTION	DATE	APPROVED
A	UPDATED	15 MAY 78	SH
B	UPDATED-REL FOR PREPROD	1 DEC 78	SH
C	REL FOR PRODUCTION	14 MAR 79	SH
D	REV PER ECO 76096	12 OCT 79	SH
E	REV PER ECO 76381A	12 OCT 79	SH
F	REV PER ECO 76244	20 SEP 80	SH

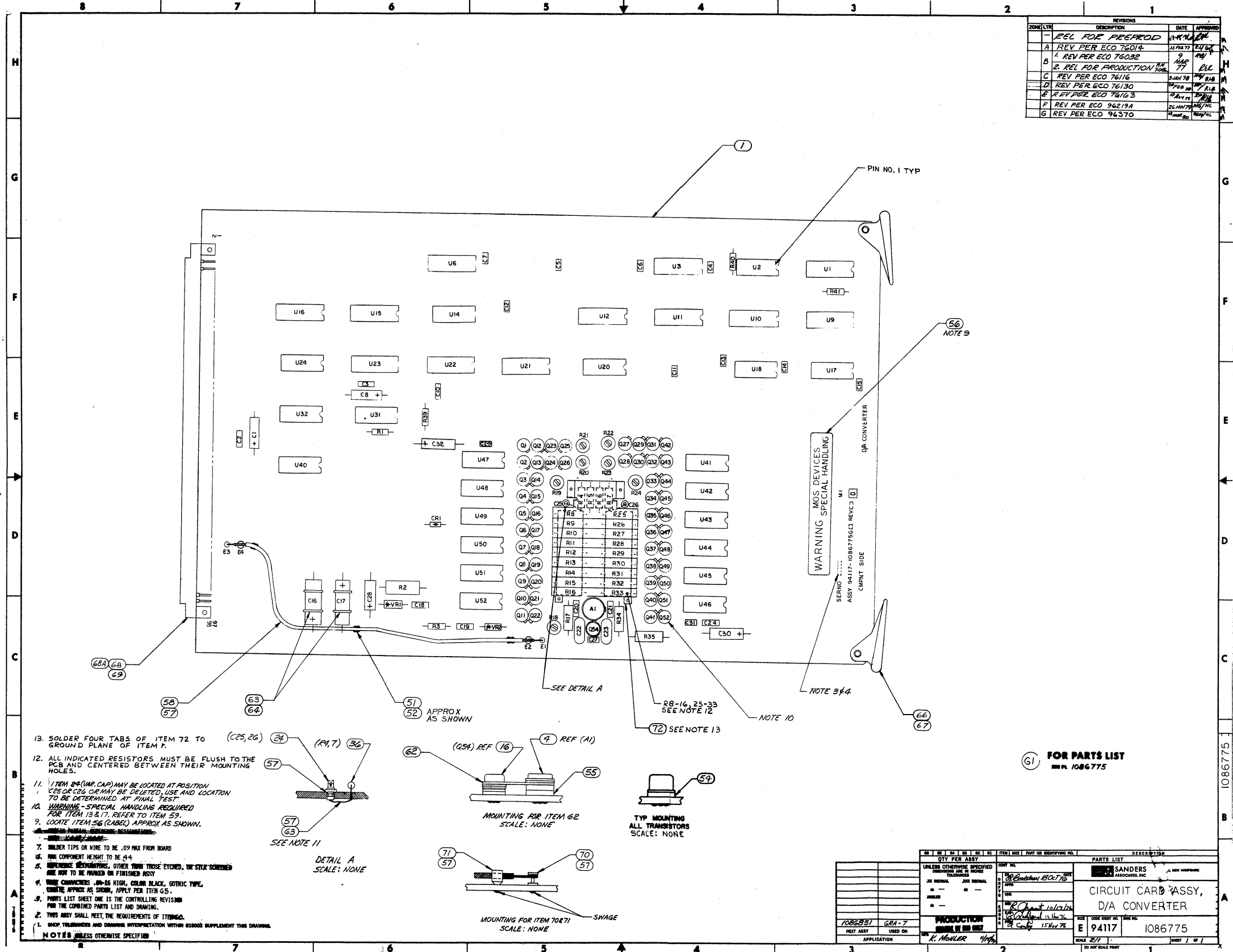


6. INSERT JUMPER AFTER TEST.
5. JUMPER CONFIGURATION:  
 A. J7 VIDEO (B3): E18, E19 JUMPER (PC)  
 J7 TTL COLOR CONTROL: E18, E19 OPEN  
 B. J8 VIDEO (E4): E28, E29 JUMPER (PC)  
 J8 TTL COLOR CONTROL: E28, E29 OPEN
4. R90 TYPICALLY 10K OHMS. FINAL VALUE SELECTED AT ELECTRICAL TEST
3. DIGITAL GND DESIGNATED BY SYMBOL  $\triangle$   
 ANALOG GND DESIGNATED BY SYMBOL  $\triangle$
2. UNLESS OTHERWISE SPECIFIED:  
 CAPACITANCE VALUES ARE IN MICROFARADS.  
 CAPACITORS ARE  $\pm 20\%$ ,  $\pm 20\%$ , 100V.  
 RESISTANCE VALUES ARE IN OHMS.  
 RESISTORS ARE  $\pm 5\%$ , 1/4 WATT.  
 K=1000
1. a) UNLESS OTHERWISE SPECIFIED, ALL UNUSED INPUTS OF LOGIC ELEMENTS EXCEPT SPARES ARE TIED TO VCC.  
 b) ON FLIP-FLOP ELEMENTS ALL UNUSED INPUTS A, K AND D, INCLUDING PRESET, RESETS AND CLEARS ARE TIED TO VCC.
- NOTES

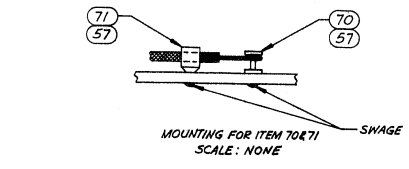
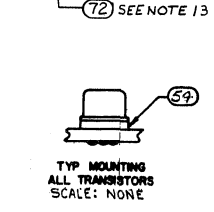
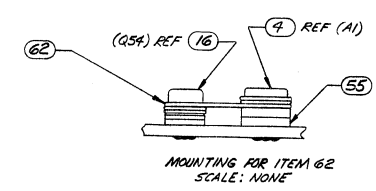
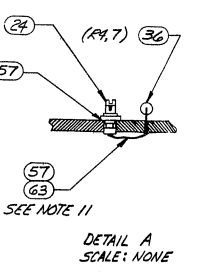


REV	DATE	DESCRIPTION	APPROVED
E	94117	1086773	SH

REV	DESCRIPTION	DATE	APPROVED
-	REL FOR PREPROD	11-14-77	WJL
A	REV PER ECO 76014	11-17-77	WJL
B	REV PER ECO 76032	9 MAR 77	WJL
C	REL FOR PRODUCTION	10-20-77	WJL
D	REV PER ECO 76116	3 JAN 78	WJL
E	REV PER ECO 76130	14 FEB 78	WJL
F	REV PER ECO 76133	17 MAR 78	WJL
G	REV PER ECO 96219A	26 NOV 79	WJL
H	REV PER ECO 96370	14 MAR 80	WJL



13. SOLDER FOUR TABS OF ITEM 72 TO GROUND PLANE OF ITEM P.
12. ALL INDICATED RESISTORS MUST BE FLUSH TO THE PCB AND CENTERED BETWEEN THEIR MOUNTING HOLES.
11. ITEM 24 (VAR. CAP) MAY BE LOCATED AT POSITION C25 OR C26 OR MAY BE DELETED, USE AND LOCATION TO BE DETERMINED AT FINAL TEST
10. WASHING - SPECIAL HANDLING REQUIRED FOR ITEM 13 & 17. REFER TO ITEM 53.
9. LOCATE ITEM 56 (LABEL) APPROX AS SHOWN.
8. SPECIAL PARTIAL RESISTOR DESIGNATION: - (C25, 26)
7. SOLDER TIPS OR WIRE TO BE .09 MAX FROM BOARD
6. HOLE COMPONENT HEIGHT TO BE .04
5. REFER TO SPECIFICATIONS, OTHER THAN THOSE ETCHED, OR STICK SCREENED AND NOT TO BE PRINTED ON FINISHED ASSY
4. HOLE DIMENSIONS .08-.16 HIGH, COLOR BLACK, GOTHIC TYPE, UNITS APPROX AS SHOWN, APPLY PER ITEM 65.
3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
2. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM 60.
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 81802 SUPPLEMENT THIS DRAWING.



61 FOR PARTS LIST  
MFR 1086775

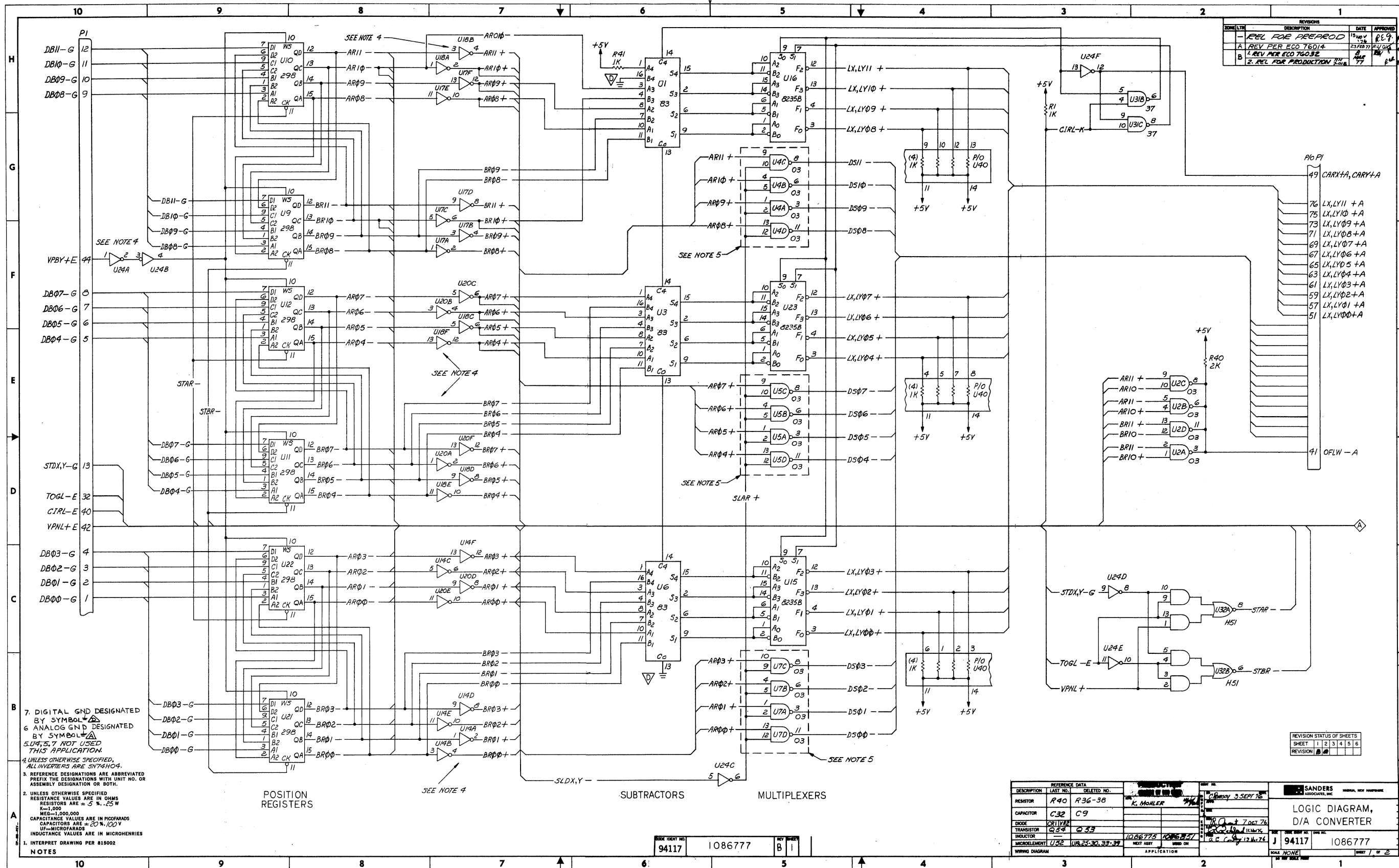
REV	DESCRIPTION	DATE	APPROVED
1	PRODUCTION	15 MAR 78	WJL

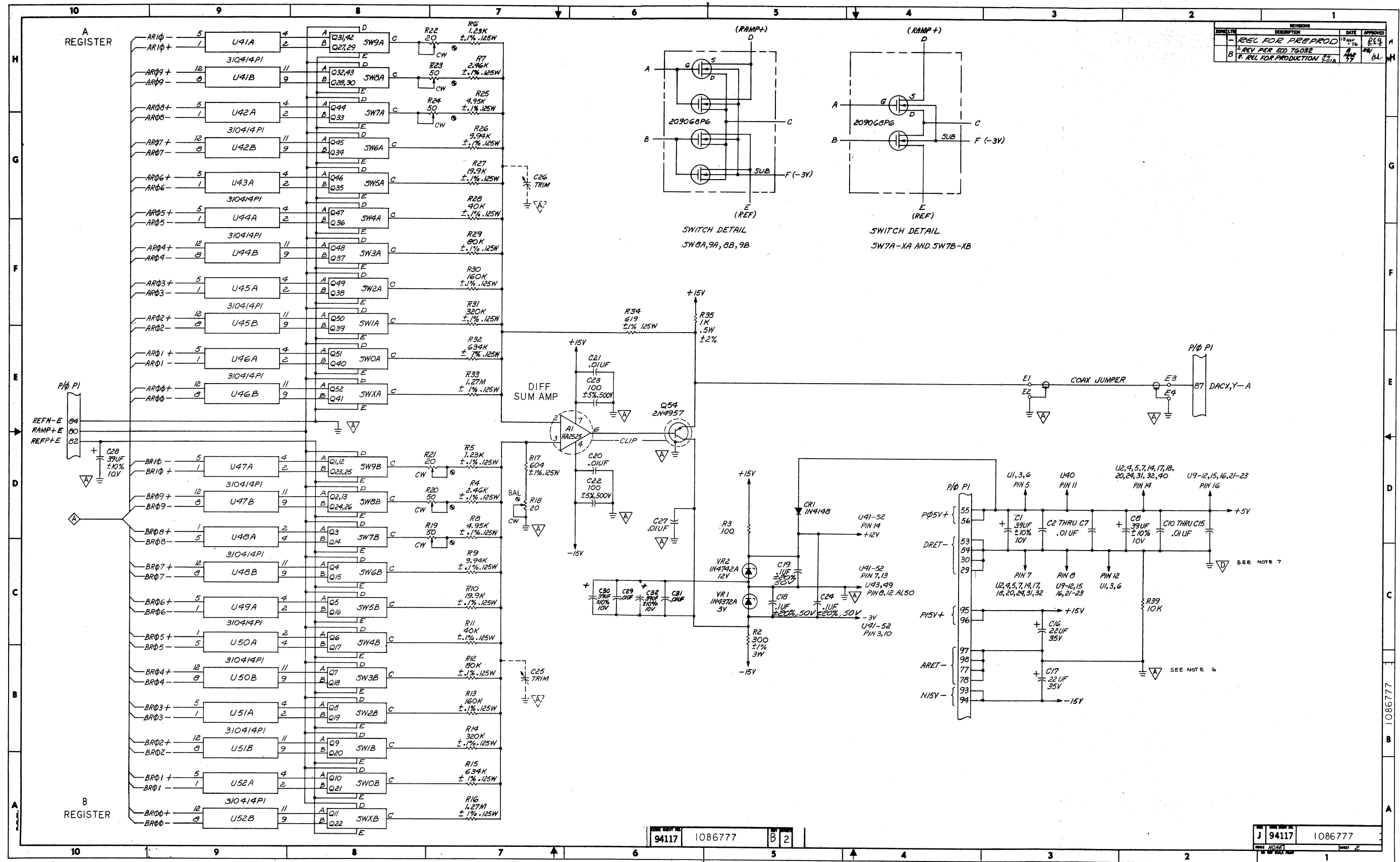
  

QTY PER ASSY	1
UNLESS OTHERWISE SPECIFIED	USE THIS VALUE
JE DIMEN	JE DIMEN
ANGLES	ANGLES
FINISH	FINISH
APPLIC	APPLIC
1086751	684-7
NEXT ASSY	USED ON
APPLICATION	BY: H. MULLER

PARTS LIST	DESCRIPTION
SANDERS ASSOCIATES, INC.	CIRCUIT CARD ASSY, D/A CONVERTER
94117	1086775
SCALE: 3/1	SHEET 1 OF 1

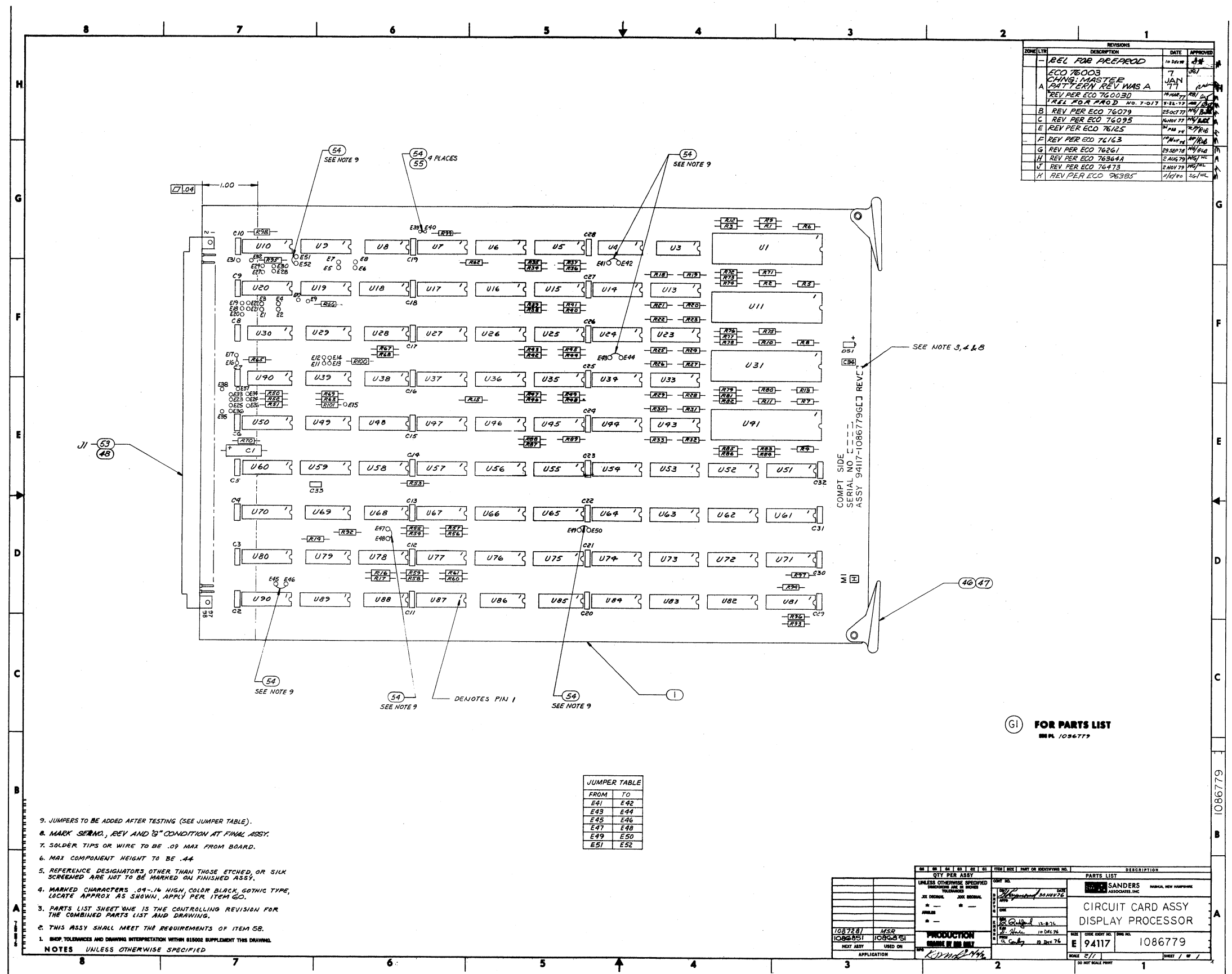




REV	DESCRIPTION	DATE	APPROVED
-	REL FOR PREPROD	15 APR 76	REL
A	REV PER ESD 76032	17 APR 76	REL
B	REL FOR PRODUCTION	23 APR 77	REL

94117 1086777 B 2

J 94117 1086777



REV	DESCRIPTION	DATE	APPROVED
-	BEL FOR PREPROD	10 Dec 76	JH
-	ECO 76003	7 JAN 77	JH
A	CHANGE MASTER PATTERN REV WAS A	14 MAR 77	JH
-	REV PER ECO 76003D	14 MAR 77	JH
-	REL FOR PROD NO. 7-017	14 MAR 77	JH
B	REV PER ECO 76079	23 Oct 77	JH
C	REV PER ECO 76095	16 NOV 77	JH
E	REV PER ECO 76125	17 FEB 78	JH
F	REV PER ECO 76163	17 MAR 78	JH
G	REV PER ECO 76261	29 SEP 78	JH
H	REV PER ECO 76364A	2 AUG 79	JH
J	REV PER ECO 76473	2 NOV 79	JH
K	REV PER ECO 76385	7/67/80	JH

9. JUMPERS TO BE ADDED AFTER TESTING (SEE JUMPER TABLE).
8. MARK SERIAL, REV AND 'G' CONDITION AT FINAL ASSY.
7. SOLDER TIPS OR WIRE TO BE .05 MAX FROM BOARD.
6. MAX COMPONENT HEIGHT TO BE .44
5. REFERENCE DESIGNATORS OTHER THAN THOSE ETCHED OR SILK SCREENED ARE NOT TO BE MARKED ON FINISHED ASSY.
4. MARKED CHARACTERS .09-.14 HIGH, COLOR BLACK, GOTHIC TYPE, LOCATE APPROX AS SHOWN, APPLY PER ITEM 6C.
3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
2. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM 5B.
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 619002 SUPPLEMENT THIS DRAWING.
- NOTES** UNLESS OTHERWISE SPECIFIED

FROM	TO
E41	E42
E43	E44
E45	E46
E47	E48
E49	E50
E51	E52

(G) FOR PARTS LIST  
IMP. 1096779

QTY PER ASSY	DESCRIPTION	REVISION
1	CIRCUIT CARD ASSY	1
1	DISPLAY PROCESSOR	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DATE: 10 Dec 76

DESIGNED BY: JH

CHECKED BY: JH

APPROVED BY: JH

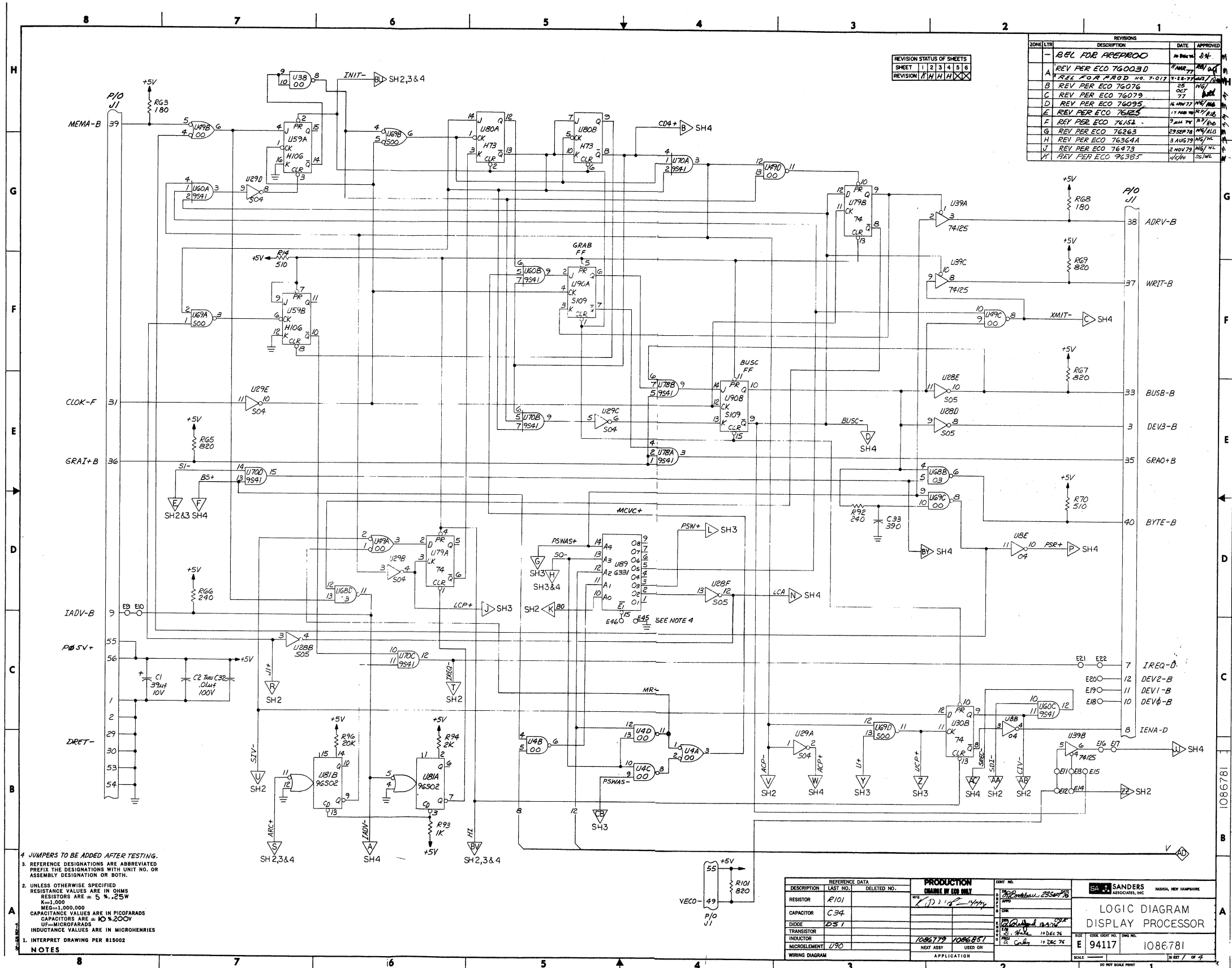
PRODUCTION QUANTITY: 1000

DATE: 10 Dec 76

APPLICATOR: JH

DATE: 10 Dec 76

SCALE: 1/1



REVISION STATUS OF SHEETS						
SHEET	1	2	3	4	5	6
REVISION	A	H	H	H	X	X

REVISIONS			
ZONE/LTR	DESCRIPTION	DATE	APPROVED
-	BEL FOR PREPROD	20 DEC 76	JH
A	REV PER ECO 76003D	21 DEC 76	AV
B	REV PER ECO 76076	25 OCT 77	WJ
C	REV PER ECO 76079	16 NOV 77	WJ
D	REV PER ECO 76095	16 NOV 77	WJ
E	REV PER ECO 76125	17 NOV 77	WJ
F	REV PER ECO 76152	9 JAN 78	WJ
G	REV PER ECO 76263	29 SEP 78	WJ
H	REV PER ECO 76364A	3 AUG 79	WJ
J	REV PER ECO 76473	2 NOV 79	WJ
K	REV PER ECO 76385	16 FEB 80	WJ

1. JUMPERS TO BE ADDED AFTER TESTING.
2. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS. RESISTORS ARE 5% .25W. CAPACITANCE VALUES ARE IN PICOFARADS. CAPACITORS ARE 10% .200V. INDUCTANCE VALUES ARE IN MICROHENRIES.
3. INTERPRET DRAWING PER 815002
- NOTES

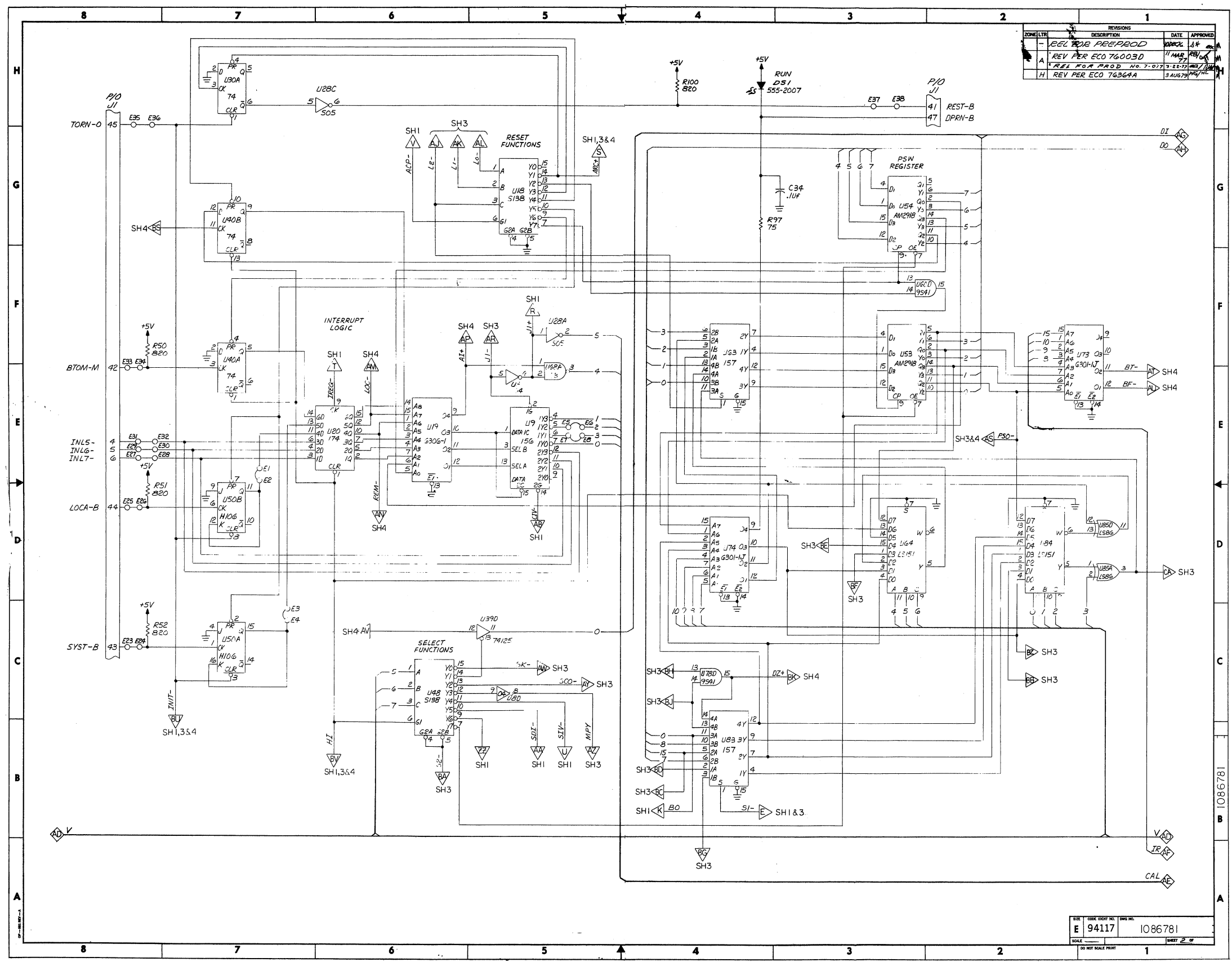
REFERENCE DATA		PRODUCTION		SAUNDERS	
DESCRIPTION	LAST NO.	DELETED NO.	CHANGE BY	DATE	APPROVED
RESISTOR	R101				
CAPACITOR	C34				
DIODE	D51				
TRANSISTOR					
INDUCTOR					
MICROELEMENT	U70				
WIRING DIAGRAM					

LOGIC DIAGRAM  
DISPLAY PROCESSOR

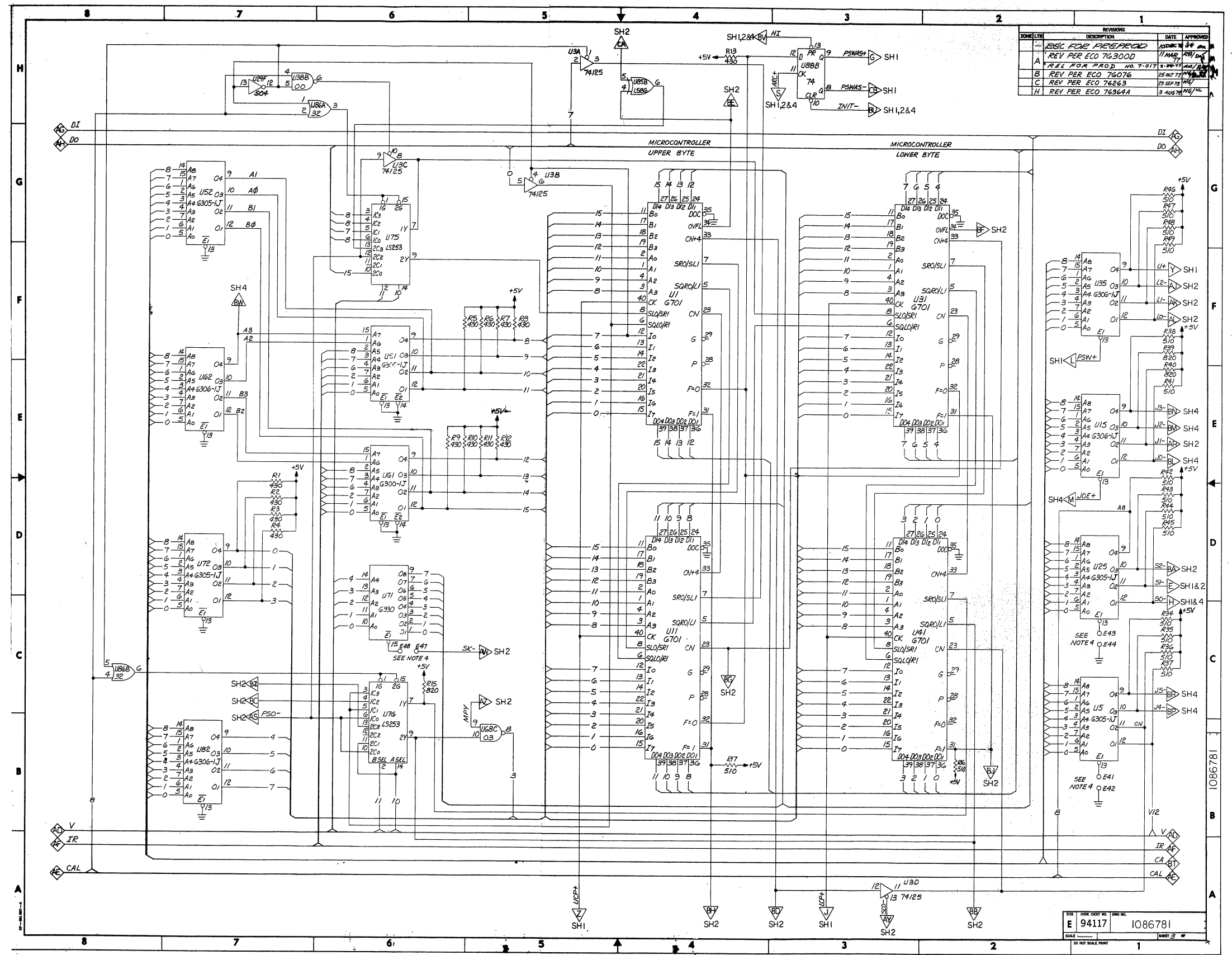
94117 1086781

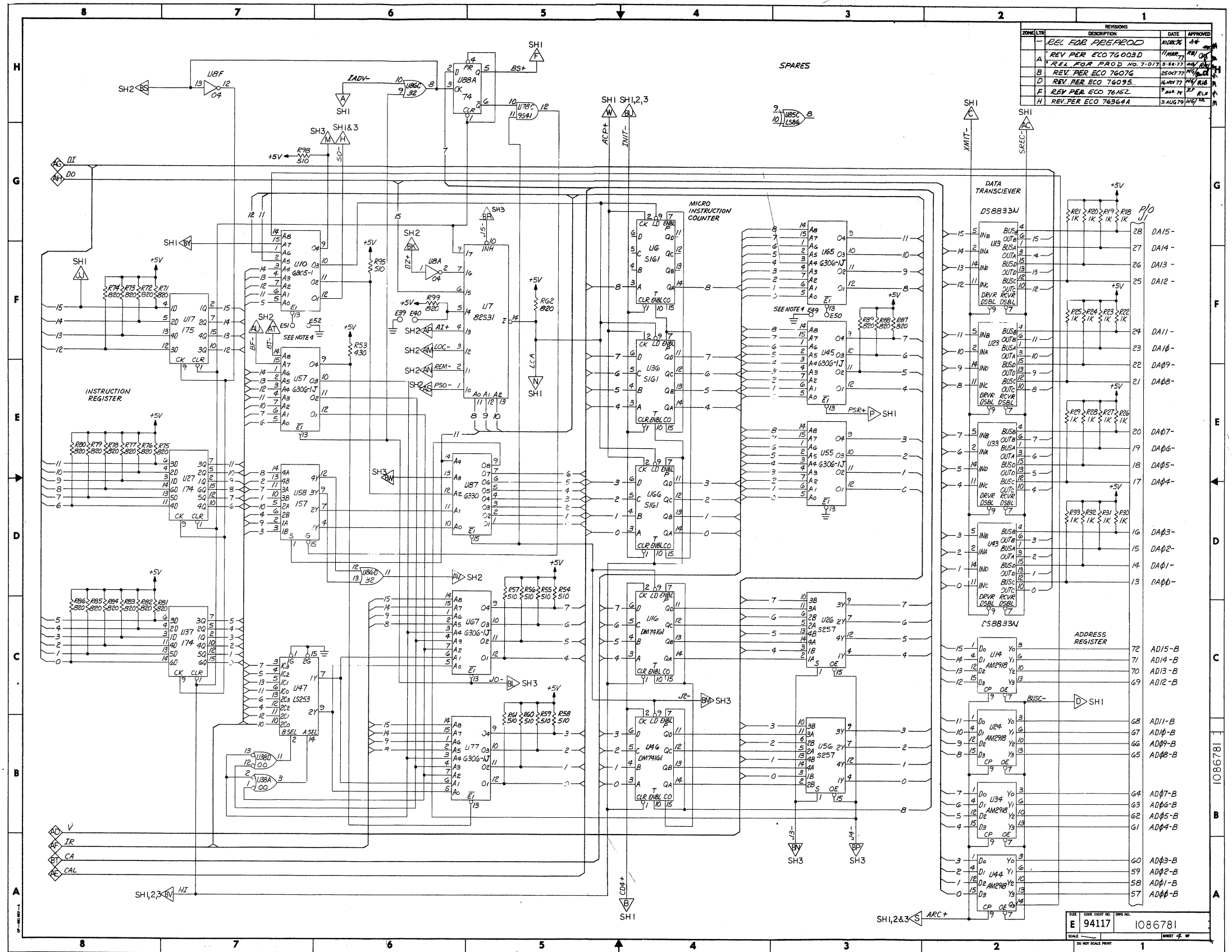


ZONE	LTR	REVISIONS	DATE	APPROVED
-	-	BEL FOR PREPROD	11 MAR 77	SH
A	-	REV PER ECO 76003D	11 MAR 77	SH
-	-	REL FOR PROD No. 7-0173-1-15-77	11 MAR 77	SH
H	-	REV PER ECO 76364A	3 AUG 79	SH



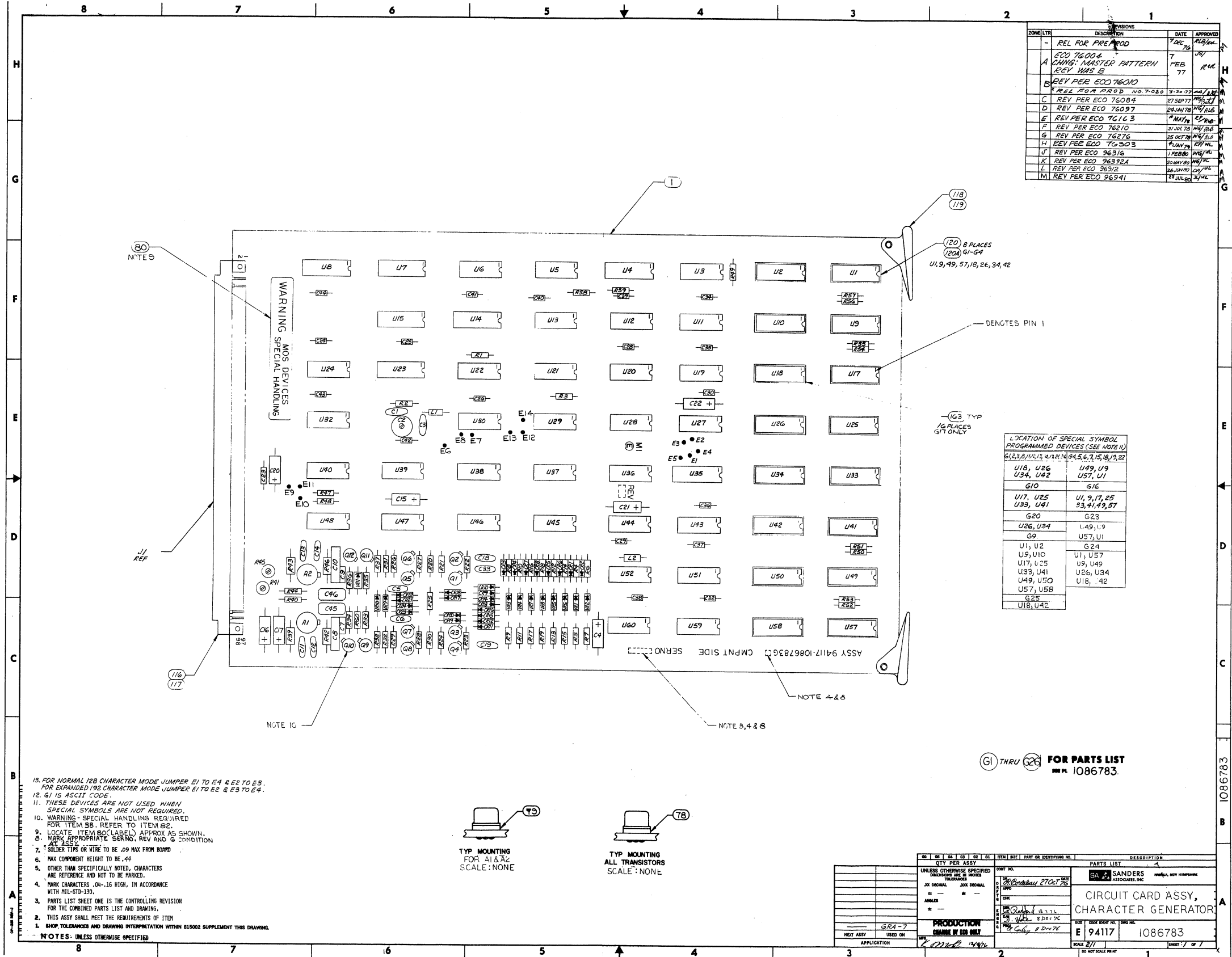
E 94117 1086781  
 SCALE \_\_\_\_\_ SHEET 2 OF 2  
 DO NOT SCALE PRINT





REV	DESCRIPTION	DATE	APPROVED
1	REL FOR PEE/PROD	10/28/76	AK
A	REV PER ECO 76003D	11/MAR/77	AK
B	REV PER ECO 76076	25/OCT/77	AK
D	REV PER ECO 76095	16/MAY/77	AK
F	REV PER ECO 76152	9/MAY/78	AK
H	REV PER ECO 76364A	24/AUG/79	AK

FILE: E 94117 1086781  
 SCALE: DO NOT SCALE PRINT  
 SHEET # OF: 1086781

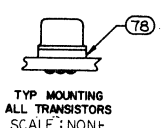
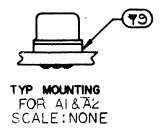


REV	DESCRIPTION	DATE	APPROVED
-	REL FOR PRE-PROD	7 DEC 76	RBJ/ML
A	ECO 76004 CHANGING MASTER PATTERN REV WAS 2	7 FEB 77	JWJ
B	REV PER ECO 76010 RECALL FOR PROD NO. 7-028	31 JAN 77	ML/ML
C	REV PER ECO 76084	27 SEP 77	ML/ML
D	REV PER ECO 76097	24 JAN 78	ML/ML
E	REV PER ECO 76113	2 MAY 78	ML/ML
F	REV PER ECO 76210	21 JUN 78	ML/ML
G	REV PER ECO 76276	25 OCT 78	ML/ML
H	REV PER ECO 76303	2 JUN 79	ML/ML
J	REV PER ECO 96316	1 FEB 80	ML/ML
K	REV PER ECO 96392A	20 MAY 80	ML/ML
L	REV PER ECO 96312	28 JUN 80	ML/ML
M	REV PER ECO 96941	27 JUL 80	ML/ML

LOCATION OF SPECIAL SYMBOL PROGRAMMED DEVICES (SEE NOTE 11)

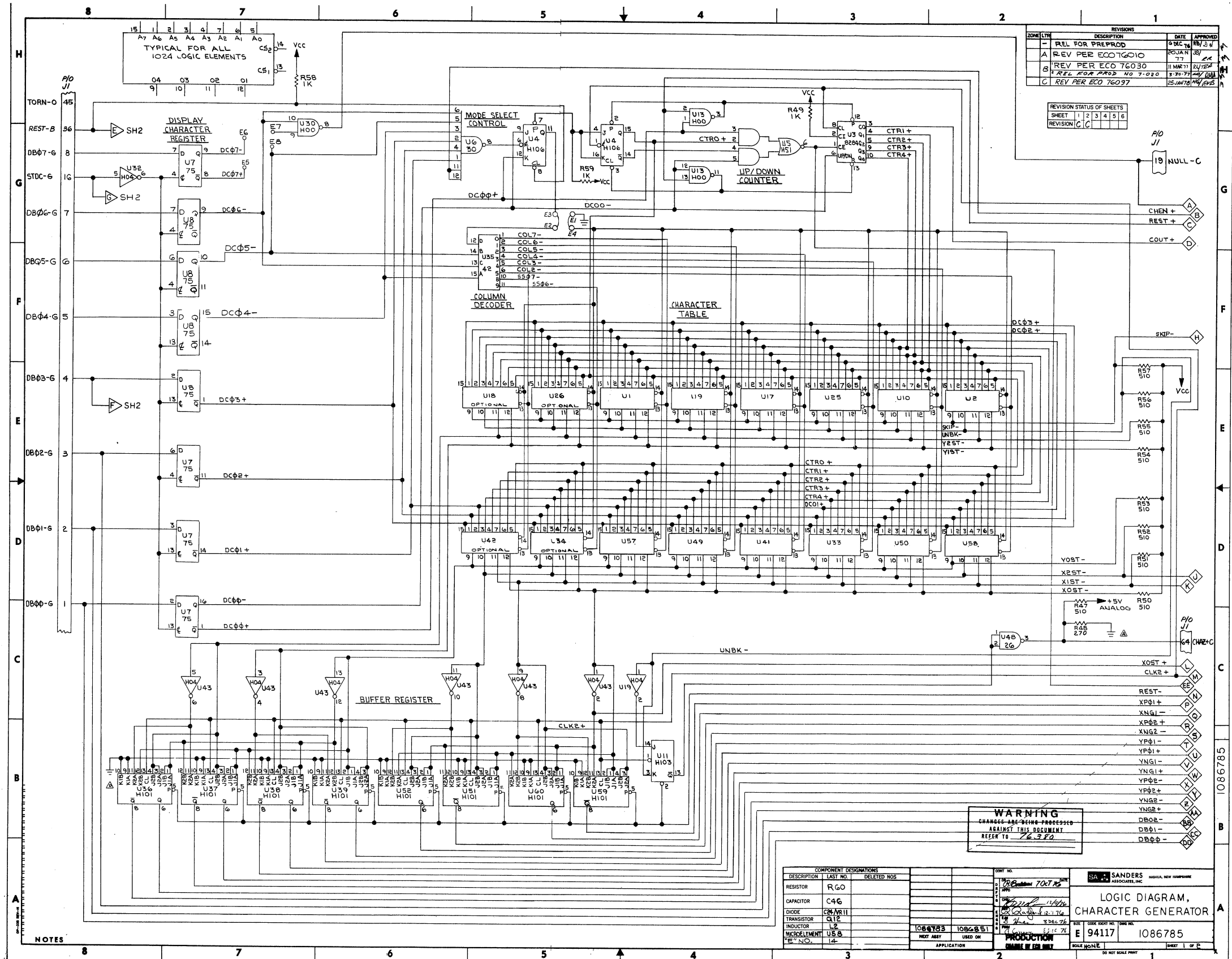
U18, U26	U49, U9
U34, U42	U57, U1
G10	G16
U17, U25	U1, 9, 17, 25
U33, U41	33, 41, 49, 57
G20	G23
U26, U34	U49, U9
G9	U57, U1
U1, U2	G24
U9, U10	U1, U57
U17, U25	U9, U49
U33, U41	U26, U34
U49, U50	U18, U42
U57, U58	
G25	
U18, U42	

13. FOR NORMAL 128 CHARACTER MODE JUMPER E1 TO E4 & E2 TO E3.  
FOR EXPANDED 192 CHARACTER MODE JUMPER E1 TO E2 & E3 TO E4.
12. G1 IS ASCII CODE.
11. THESE DEVICES ARE NOT USED WHEN SPECIAL SYMBOLS ARE NOT REQUIRED.
10. WARNING - SPECIAL HANDLING REQUIRED FOR ITEM 9B. REFER TO ITEM 9C.
9. LOCATE ITEM 9B (LABEL) APPROX AS SHOWN.
8. MARK APPROPRIATE SERNO, REV AND G CONDITION AT ASSY.
7. SOLDER TIPS ON WIRE TO BE .09 MAX FROM BOARD.
6. MAX COMPONENT HEIGHT TO BE .44.
5. OTHER THAN SPECIFICALLY NOTED, CHARACTERS ARE REFERENCE AND NOT TO BE MARKED.
4. MARK CHARACTERS .04-.16 HIGH, IN ACCORDANCE WITH MIL-STD-130.
3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
2. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM 1.
1. ENVP, TOLERANCES AND DRAWING INTERPRETATION WITHIN 615002 SUPPLEMENT THIS DRAWING.
- NOTES - UNLESS OTHERWISE SPECIFIED



G1 THRU G25 FOR PARTS LIST  
1086783

QTY	OR	Q4	Q3	Q2	Q1	ITEM	SERIAL	PART OR IDENTIFYING NO.	DESCRIPTION
UNLESS OTHERWISE SPECIFIED OTHERWISE INDICATED									
QTY PER ASSY									
PARTS LIST									
SA SANDERS ASSOCIATES, INC.									
CIRCUIT CARD ASSY, CHARACTER GENERATOR									
E 94117 1086783									
REVISION									
DATE									
APPROVED									
DRAWN									
CHECKED									
APPLES									
GSA-7									
NEXT ASSY USED ON									
APPLICATION									
PRODUCTION CHANGE BY EOB ONLY									
DATE									
BY									
SCALE									
SHEET 1 OF 1									

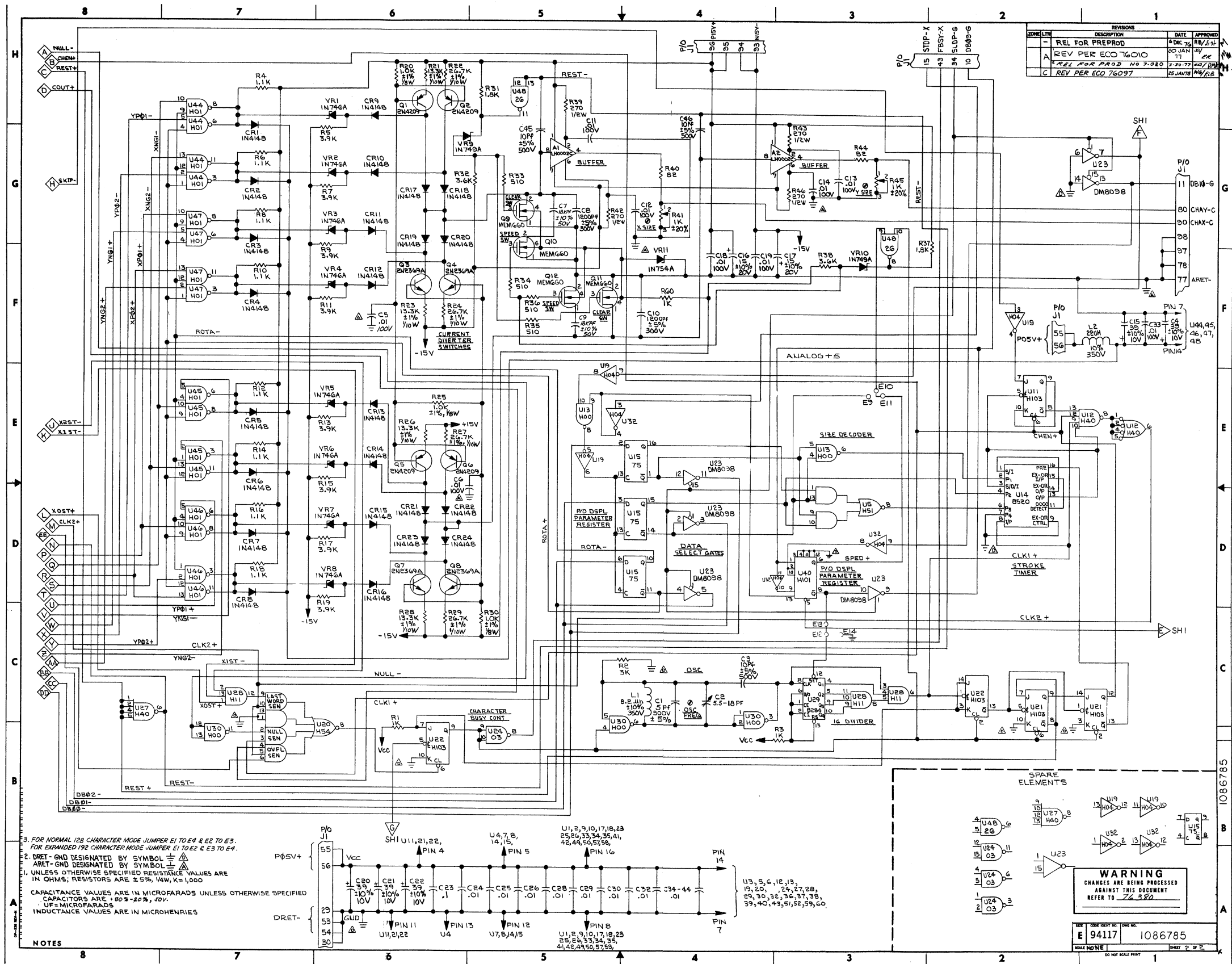


REV	DESCRIPTION	DATE	APPROVED
-	REL FOR PREPROD	9 DEC 76	RSJ/V
A	REV PER ECO 76010	11 JAN 77	RSJ
B	REV PER ECO 76030	11 MAR 77	RSJ
C	REV PER ECO 76097	25 JUN 78	RSJ/RSB

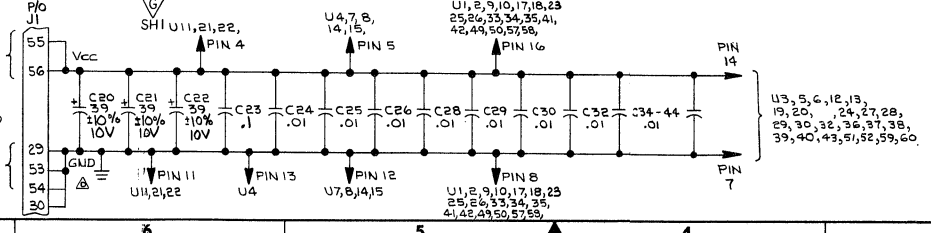
REVISION STATUS OF SHEETS						
SHEET	1	2	3	4	5	6
REVISION	C	C				

COMPONENT DESIGNATIONS			CONT NO		SANDERS ASSOCIATES, INC.	
RESISTOR	R60	DELETED NOS	1	2	LOGIC DIAGRAM, CHARACTER GENERATOR	
CAPACITOR	C46		3	4	E 94117 1086785	
DIODE	C8, NR11		5	6	1086783 1086781	
TRANSISTOR	Q12		7	8	PRODUCTION	
INDUCTOR	L2		9	10	SCALE NONE	
MISCELLANEOUS	U13, U15, U16, U17, U18, U19, U25, U10, U1, U2, U43, U49, U57, U58, U59, U50, U56		11	12	SHEET 1 OF 1	



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
-	REL FOR PREPROD	4 DEC 74	RB/SLH
A	REV PER ECO 76010	30 JAN 75	ec
B	REL FOR PROD NO 7-280	7-30-77	WJ/DB
C	REV PER ECO 76097	25 JAN 78	WJ/DB

3. FOR NORMAL 128 CHARACTER MODE JUMPER E1 TO E4 & E2 TO E3.  
FOR EXPANDED 192 CHARACTER MODE JUMPER E1 TO E2 & E3 TO E4.
2. DRET-GND DESIGNATED BY SYMBOL  $\triangle$   
ARET-GND DESIGNATED BY SYMBOL  $\triangle$
1. UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS; RESISTORS ARE  $\pm 5\%$ ,  $1/4W$ ,  $K=1,000$
- CAPACITANCE VALUES ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED  
CAPACITORS ARE  $\pm 10\%$  -  $20\%$ ,  $50V$ .  
UF= MICROFARADS  
INDUCTANCE VALUES ARE IN MICROHENRIES



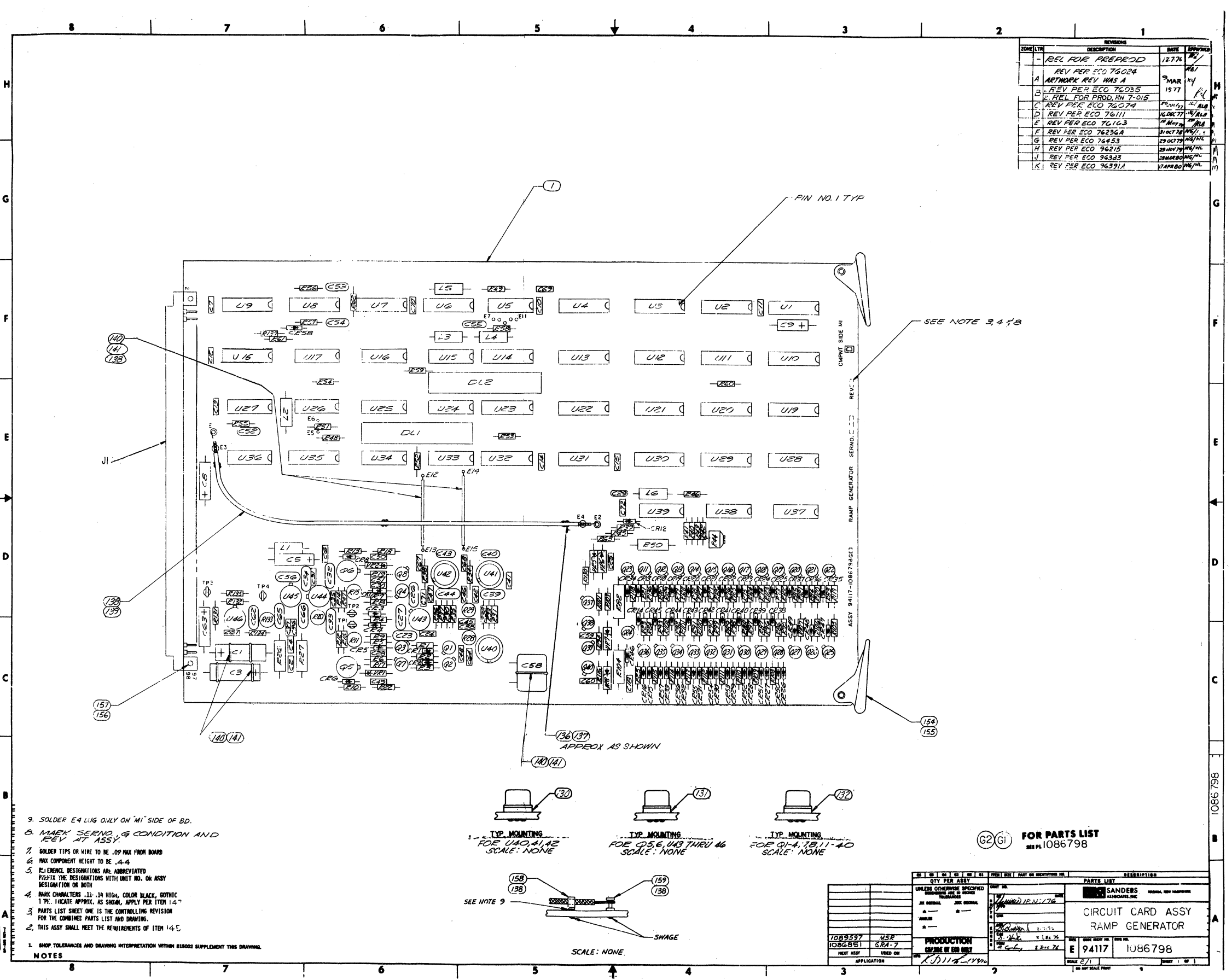
SPARE ELEMENTS

**WARNING**  
CHANGES ARE BEING PROCESSED  
AGAINST THIS DOCUMENT  
REFER TO 76-382

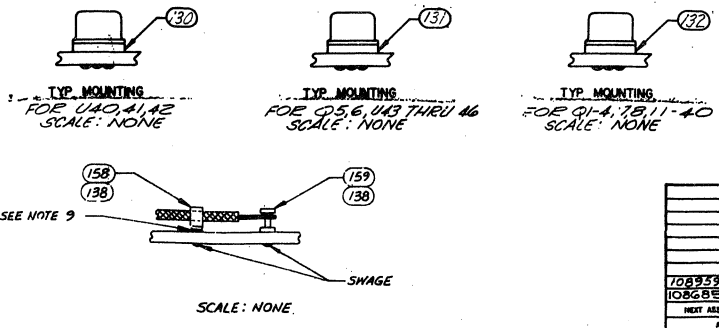
E 94117 1086785

SCALE NONE SHEET 2 OF 2

REV	DESCRIPTION	DATE	BY
-	REL FOR PREPROD	12/74	REI
A	REV PER ECO 76024	MAR 74	REI
B	ARTWORK REV WAS A	15 77	REI
C	REV PER ECO 76035		
D	REL FOR PROD, RN 7-015		
E	REV PER ECO 76074		
F	REV PER ECO 76111		
G	REV PER ECO 76163		
H	REV PER ECO 76236A		
I	REV PER ECO 76453		
J	REV PER ECO 96215		
K	REV PER ECO 96323		
L	REV PER ECO 96391A		



9. SOLDER E4 LUG ONLY ON "M" SIDE OF BD.  
 8. MAKE SERNO. 9 CONDITION AND REV AT ASSY.  
 7. SOLDER TIPS OR WIRE TO BE .09 MAX FROM BOARD  
 6. MAX COMPONENT HEIGHT TO BE .44  
 5. RESISTOR DESIGNATIONS ARE ABBREVIATED  
 PREFIX THE DESIGNATIONS WITH UNIT NO. OR ASSY  
 DESIGNATION ON BOTH  
 4. MARK CHARACTERS .11-.14 HIGH, COLOR BLACK, GOTHIC  
 1 PT. LOCATE APPROX. AS SHOWN, APPLY PER ITEM 1.4  
 3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION  
 FOR THE COMBINED PARTS LIST AND DRAWING.  
 2. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM 1.4.5  
 1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

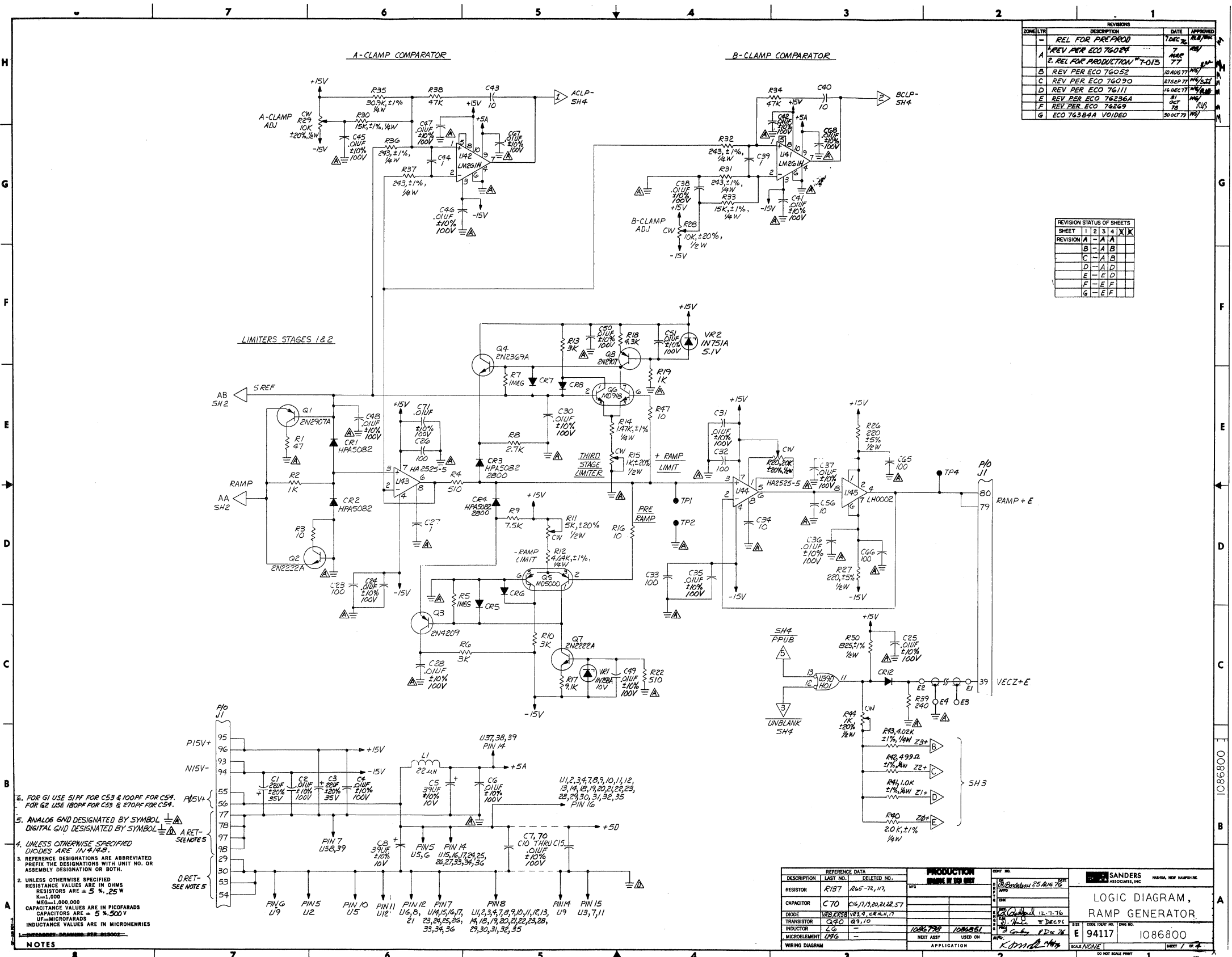


QTY PER ASSY	UNIT NO.	DESCRIPTION
1	94117	CIRCUIT CARD ASSY RAMP GENERATOR

FOR PARTS LIST SEE PL 1086798

1086798 USER GR4-7 PRODUCTION EXP. DATE OF REV 0001

94117 1086798



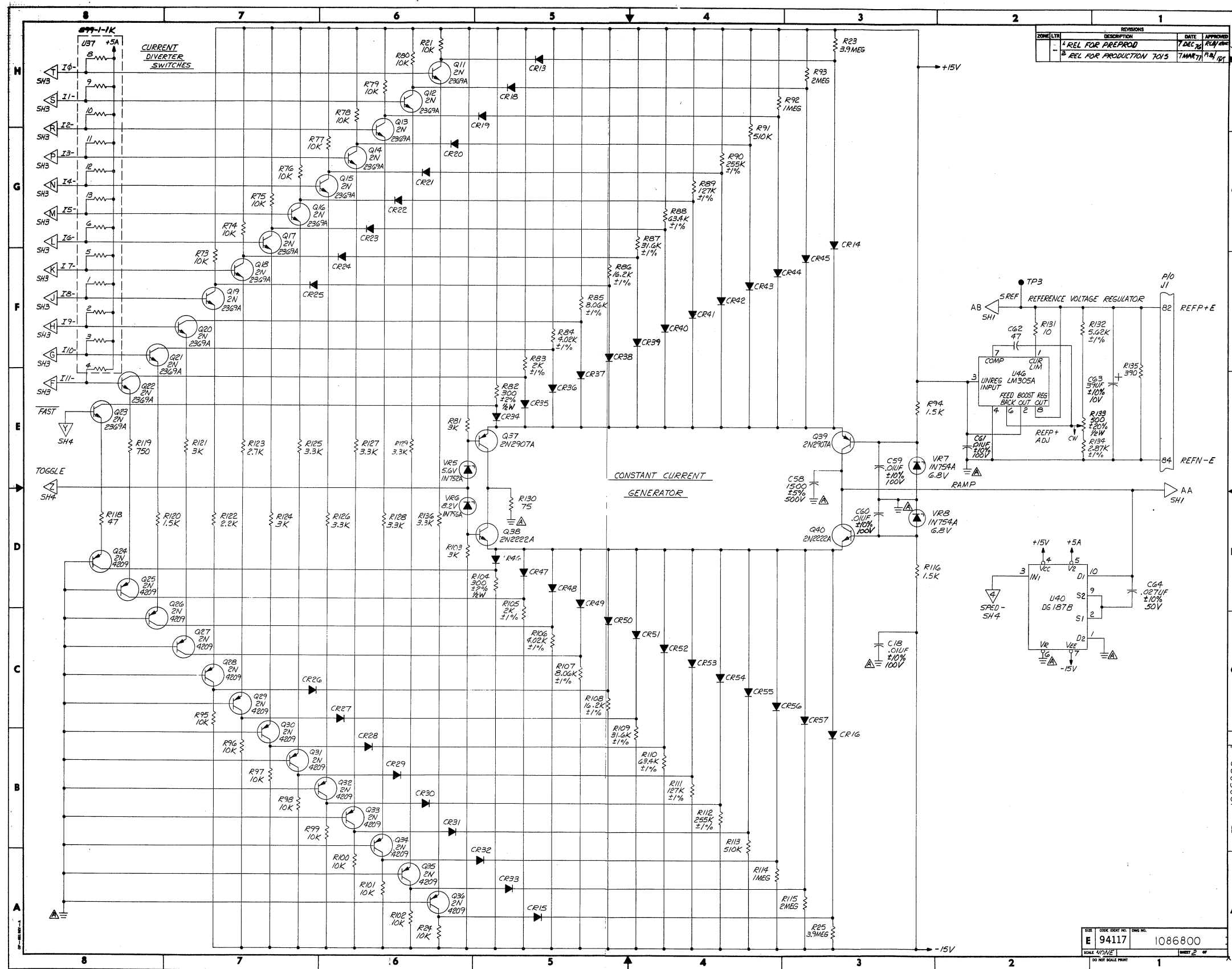
REV	DESCRIPTION	DATE	APPROVED
REL FOR PRE-PROD		10 DEC 77	
A	REL FOR PRODUCTION 7-015	7 MAR 77	
B	REV PER ECO 76052	10 AUG 77	
C	REV PER ECO 76090	27 SEP 77	
D	REV PER ECO 76111	14 DEC 77	
E	REV PER ECO 76236A	31 OCT 78	
F	REV PER ECO 76269	30 OCT 79	
G	ECO 76384A VOIDED		

REVISION STATUS OF SHEETS				
SHEET	1	2	3	4
REVISION A	X			
B		X		
C			X	
D				X
E				
F				
G				

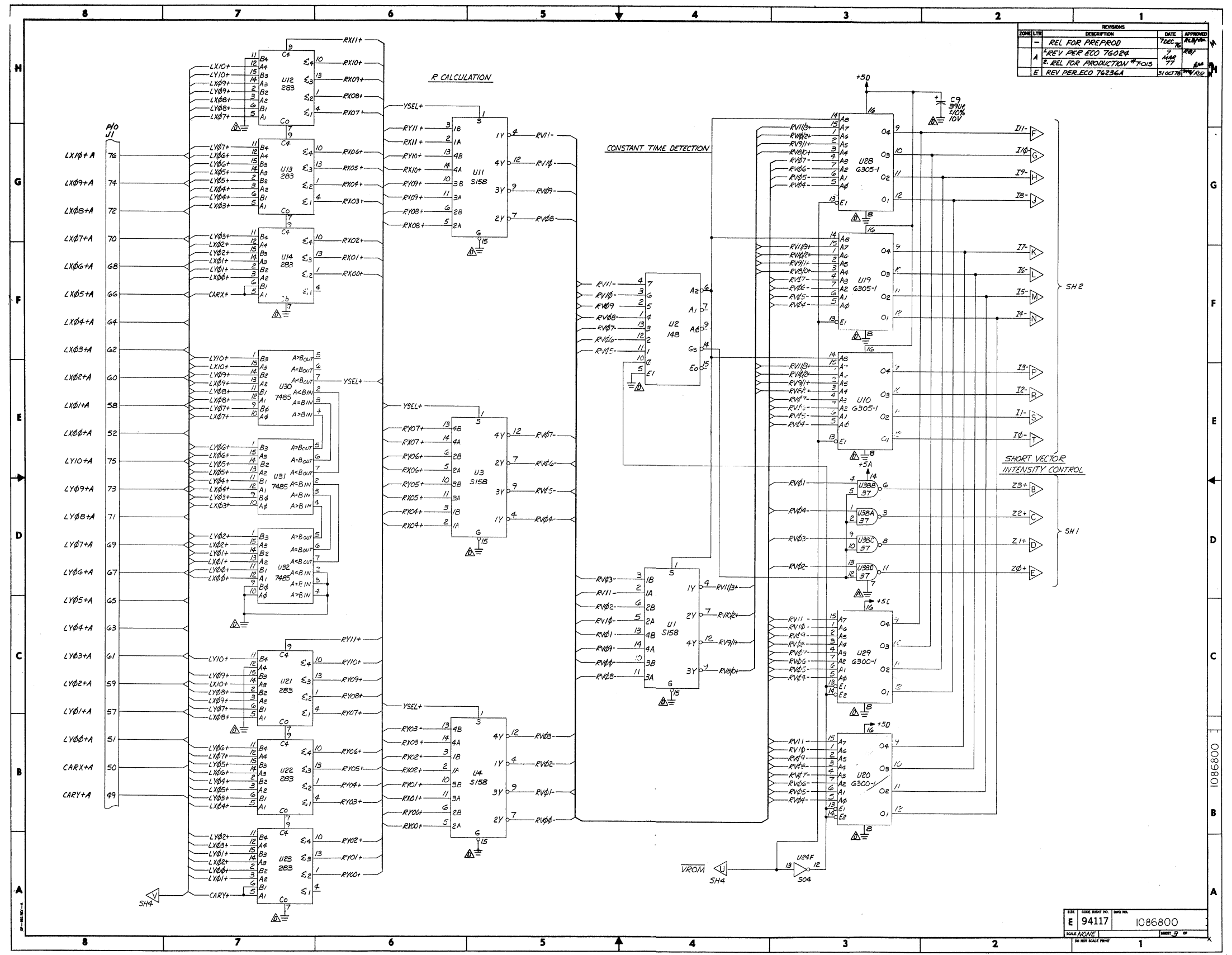
6. FOR Q1 USE 51PF FOR C53 & 100PF FOR C54. FOR Q2 USE 180PF FOR C53 & 270PF FOR C54.
5. ANALOG GND DESIGNATED BY SYMBOL  $\triangle$ . DIGITAL GND DESIGNATED BY SYMBOL  $\triangle$ . A RET-SENDERS
4. UNLESS OTHERWISE SPECIFIED DIODES ARE 1N4148.
3. REFERENCE DESIGNATIONS ARE ABBREVIATED PREFIX THE DESIGNATIONS WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS RESISTORS ARE  $\pm 5\%$ .  $\frac{1}{4}W$   $\leq 1,000$  MEG=1,000,000 CAPACITANCE VALUES ARE IN PICOFARADS CAPACITORS ARE  $\pm 5\%$ .  $500V$  U= MICROFARADS INDUCTANCE VALUES ARE IN MICROHENRIES
1. UNLESS OTHERWISE SPECIFIED

DESCRIPTION	REFERENCE DATA	SELECTED NO.	PRODUCTION	DATE
RESISTOR	R157	R45-74, 17,	100%	12-7-76
CAPACITOR	C70	C16, 17, 20, 21, 22, 25		12-7-76
DIODE	1N4148	1N4148, 1N4148, 1N4148		12-7-76
TRANSISTOR	2N2907	2N2907, 2N2907, 2N2907		12-7-76
INDUCTOR	L1	L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12, L13, L14, L15, L16, L17, L18, L19, L20, L21, L22, L23, L24, L25, L26, L27, L28, L29, L30, L31, L32, L33, L34, L35		12-7-76
MICROELEMENT	U4	U1, U2, U3, U4, U5, U6, U7, U8, U9, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U20, U21, U22, U23, U24, U25, U26, U27, U28, U29, U30, U31, U32, U33, U34, U35		12-7-76
WIRING DIAGRAM				



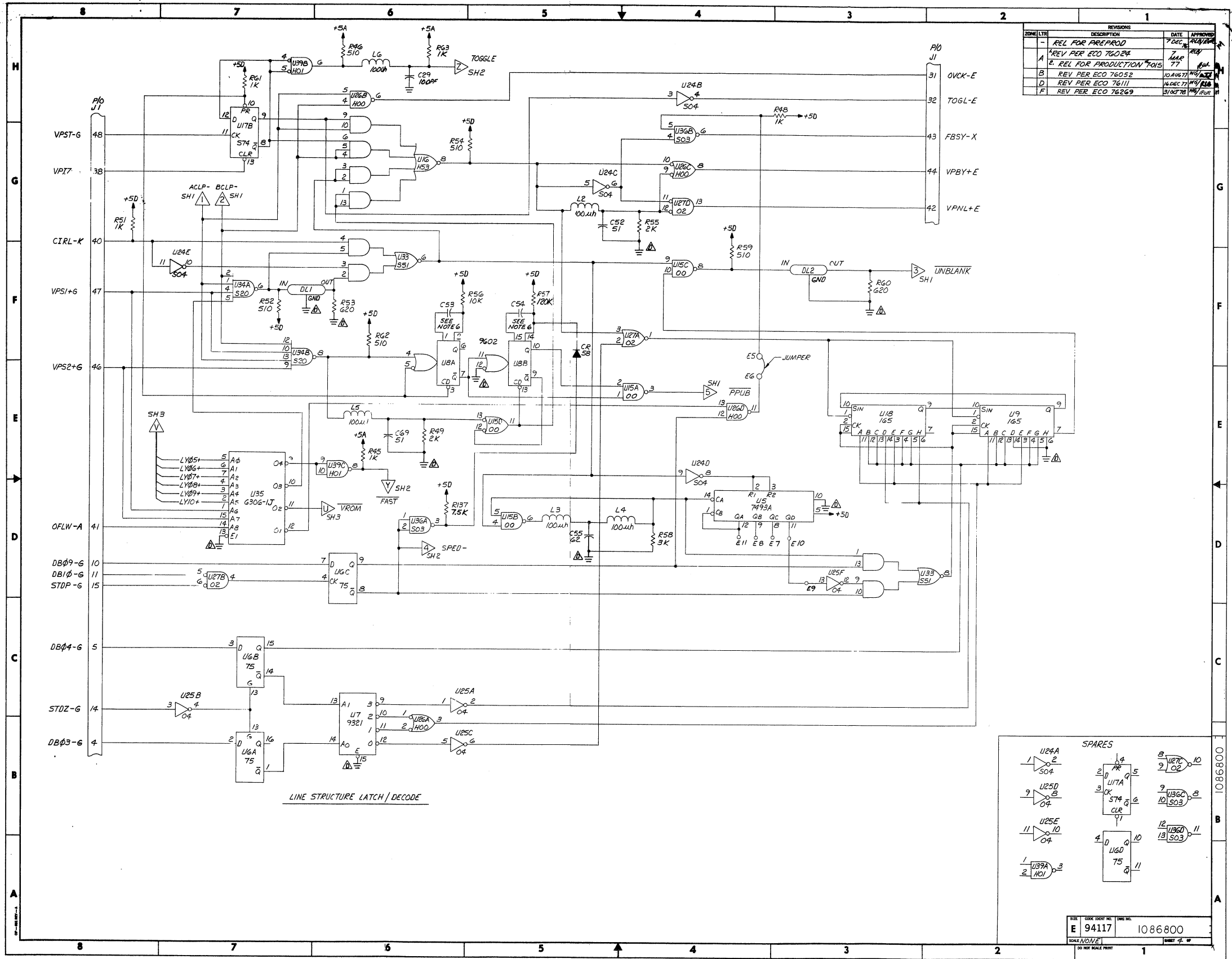


E 94117 1086800  
 SCALE 1/16" = 1" SHEET 2 OF 2  
 DO NOT SCALE PRINT

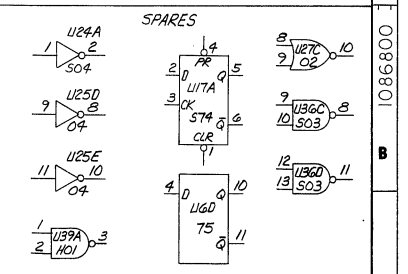


REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED
1	REL FOR PREPROD	7 DEC 76	AK/STW
2	REV PER ECO 76024	7 MAR 77	AK/STW
3	REL FOR PRODUCTION #7015		
4	REV PER ECO 76236A	9/02/78	AK/STW

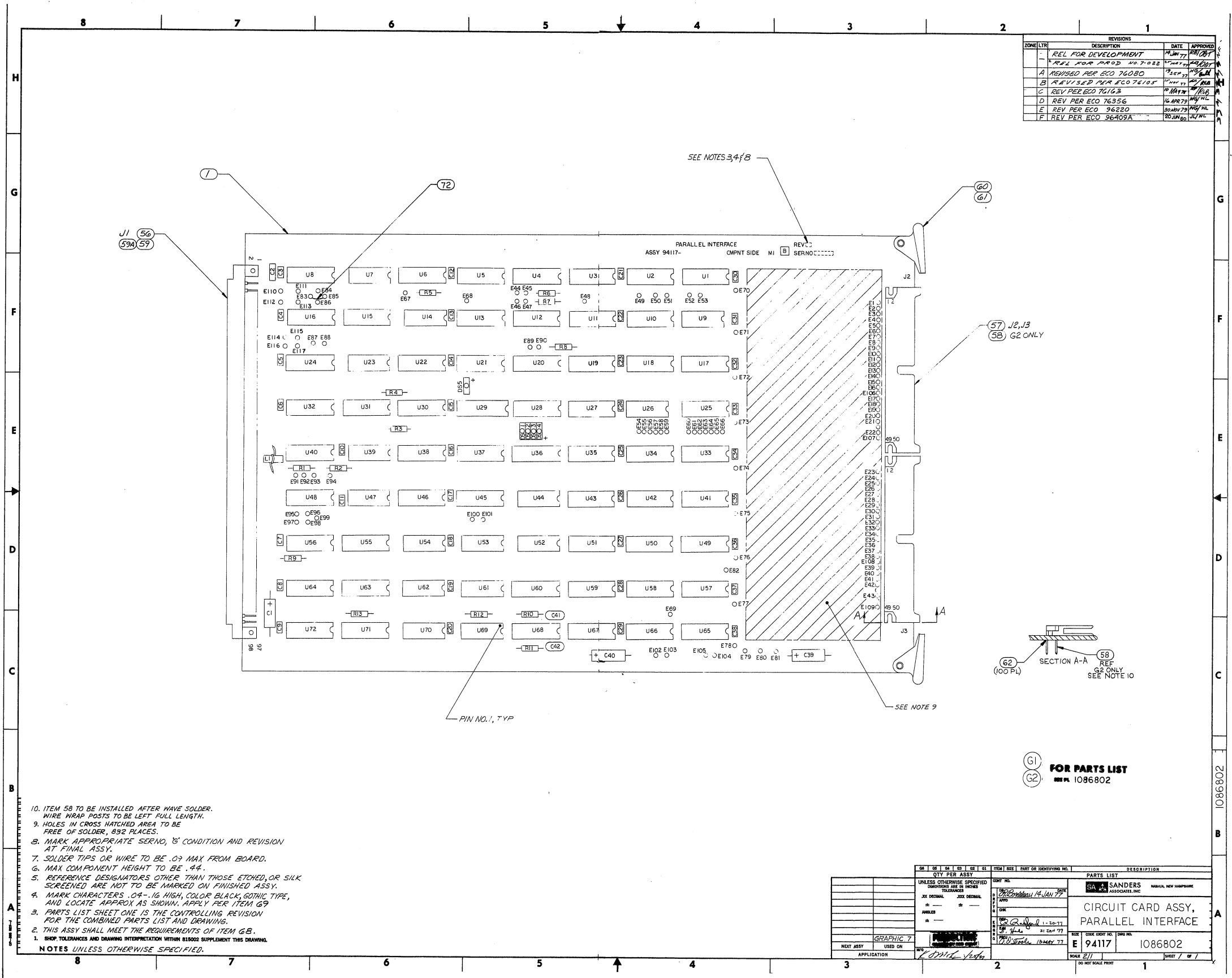
SIZE CODE SHEET NO. DWG NO.  
**E 94117** 1086800  
 SCALE *AS SHOWN* SHEET 2 OF 2  
DO NOT SCALE PRINT



REVISIONS			
ZONE/LTR	DESCRIPTION	DATE	APPROVED
-	REL FOR PREPROD	7 DEC 77	RLJ/PLJ
A	REV PER ECO 76024	7 MAR 77	RLJ
B	REV PER ECO 76052	10 AUG 77	RLJ/PLJ
D	REV PER ECO 76111	16 DEC 77	RLJ/PLJ
F	REV PER ECO 76269	31 OCT 78	RLJ/PLJ



SIZE	CODE IDENT NO.	QMS NO.
E	94117	1086800
SCALE/DRAWING		SHEET #
DO NOT SCALE PRINT		1

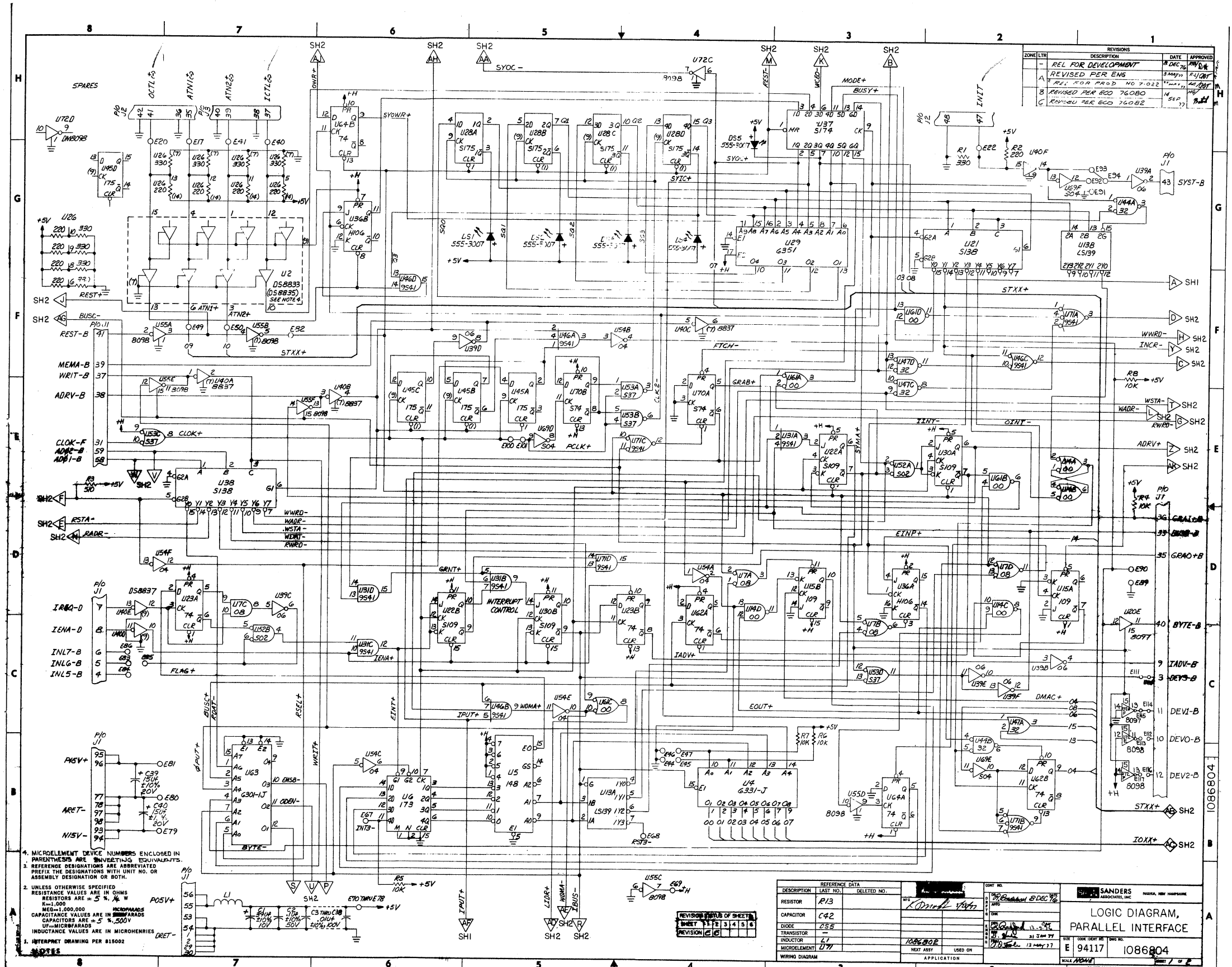


ZONE	LTN	DESCRIPTION	DATE	APPROVED
		REL FOR DEVELOPMENT	14 JUN 77	WJL/ML
		REL FOR PROD NO 7-022	14 JUN 77	WJL/ML
A		REVISED PER ECO 76080	14 JUN 77	WJL/ML
B		REVISED PER ECO 76105	14 JUN 77	WJL/ML
C		REV PER ECO 76123	14 JUN 77	WJL/ML
D		REV PER ECO 76356	16 APR 79	WJL/ML
E		REV PER ECO 96220	30 APR 79	WJL/ML
F		REV PER ECO 96409A	20 JUN 80	WJL/ML

10. ITEM 58 TO BE INSTALLED AFTER HAVE SOLDER. WIRE WRAP POSTS TO BE LEFT FULL LENGTH.
9. HOLES IN CROSS HATCHED AREA TO BE FREE OF SOLDER, 892 PLACES.
8. MARK APPROPRIATE SERNO, 'G' CONDITION AND REVISION AT FINAL ASSY.
7. SOLDER TIPS OR WIRE TO BE .03 MAX FROM BOARD.
6. MAX COMPONENT HEIGHT TO BE .44.
5. REFERENCE DESIGNATORS OTHER THAN THOSE ETCHED, OR SILK SCREENED ARE NOT TO BE MARKED ON FINISHED ASSY.
4. MARK CHARACTERS .04-.16 HIGH, COLOR BLACK, GOTHIC TYPE, AND LOCATE APPROX AS SHOWN. APPLY PER ITEM G9.
3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
2. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM G.B.
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.
- NOTES UNLESS OTHERWISE SPECIFIED.

QTY	QTY PER ASSY	DESCRIPTION
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		DATE: 14 JAN 77
		BY: WJL
		DATE: 1-20-77
		BY: WJL
		DATE: 13 MAY 77
		BY: WJL
		DATE: 21 SEP 77
		BY: WJL
		DATE: 13 MAY 77
		BY: WJL

QTY	DESCRIPTION
1	CIRCUIT CARD ASSY, PARALLEL INTERFACE
1	94117 1086802



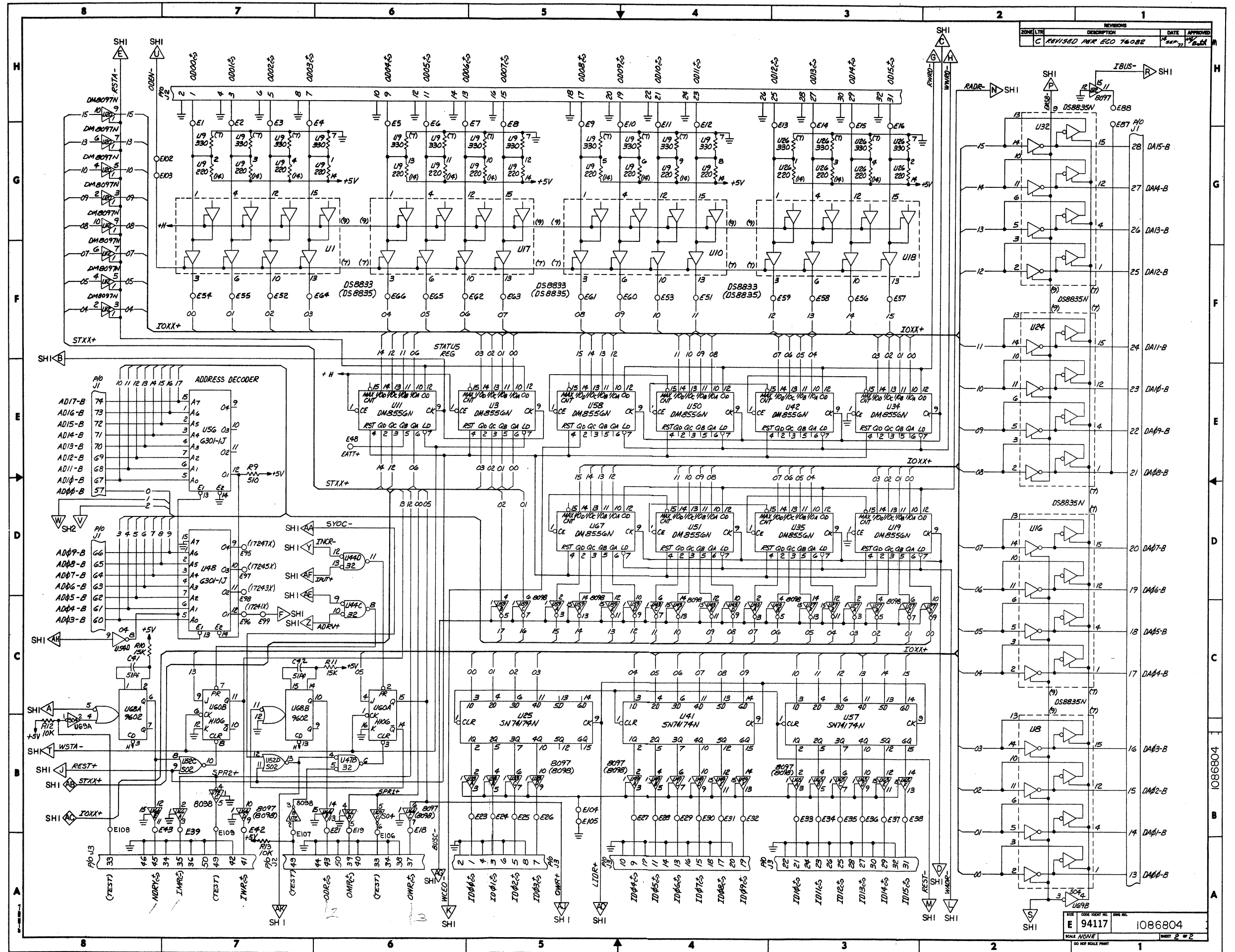
REV	DATE	APPROVED	DESCRIPTION
1	DEC 20 1977	...	REL FOR DEVELOPMENT
2	...	...	REVISED PER ENG
3	...	...	REVISED PER PRO NO 7-022
4	...	...	REVISED PER ECO 76080
5	...	...	REVISED PER ECO 76082

- MICROELEMENT DEVICE NUMBERS ENCLOSED IN PARENTHESES ARE ALTERNATING EQUIVALENTS.
- REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATIONS WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.
- UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS. RESISTORS ARE 5% 1/4 W. R=1,000. MEG=1,000,000. CAPACITANCE VALUES ARE IN MICROFARADS. CAPACITORS ARE .5% 500V. UF=MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES.
- INTERPRET DRAWING PER 815002

DESCRIPTION	REFERENCE DATA	DELETED NO.	DATE
RESISTOR	R13		1/20/77
CAPACITOR	C42		
DIODE	D55		
TRANSISTOR			
INDUCTOR	L1		
MICROELEMENT	U77		
WIRING DIAGRAM			

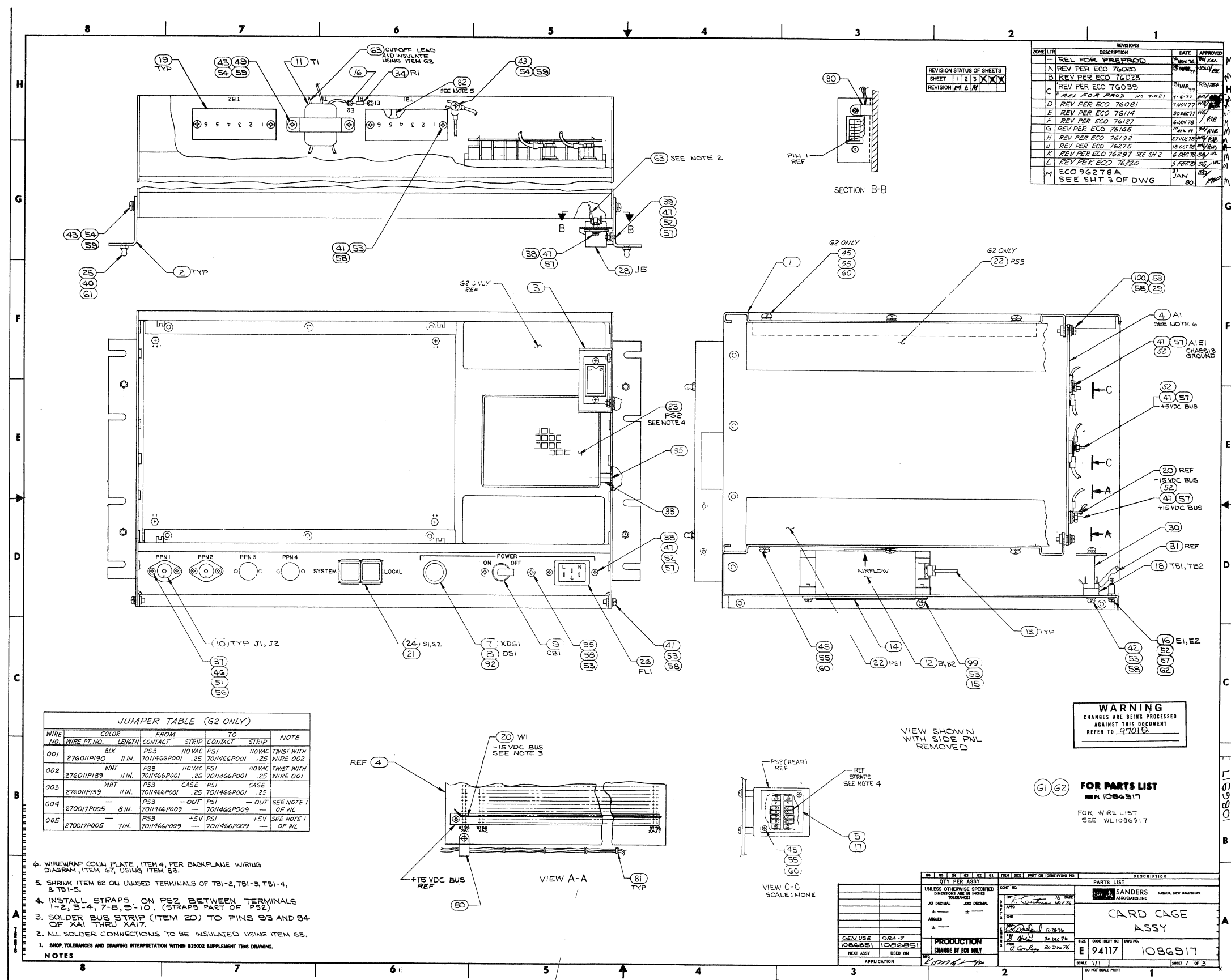
LOGIC DIAGRAM,  
PARALLEL INTERFACE

E 94117 1086804



REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED
C	10/27/82	REVISED PER ECO T6082	[Signature]

E 94117 I086804  
 SCALE NONE SHEET 2 OF 2  
 DO NOT SCALE PRINT



ZONE/REV	DESCRIPTION	DATE	APPROVED
-	REL FOR PREPROD	10/26/76	[Signature]
A	REV PER ECO 76020	3/27/77	[Signature]
B	REV PER ECO 76028	11/22/77	[Signature]
C	REV PER ECO 76039	5/16/78	[Signature]
D	REL FOR PROD NO 71021	4-6-77	[Signature]
E	REV PER ECO 76081	7/20/77	[Signature]
F	REV PER ECO 76114	30 DEC 77	[Signature]
G	REV PER ECO 76127	6 JAN 78	[Signature]
H	REV PER ECO 76145	27 JUL 78	[Signature]
I	REV PER ECO 76192	18 OCT 78	[Signature]
J	REV PER ECO 76275	2 DEC 78	[Signature]
K	REV PER ECO 76297 SEE SH 2	2 DEC 78	[Signature]
L	REV PER ECO 76320	5 FEB 79	[Signature]
M	ECO 96278A SEE SHT 3 OF DWG	31 JAN 80	[Signature]

REVISION STATUS OF SHEETS
SHEET 1 2 3 4 5 6 7 8 9 10
REVISION [M] [L] [K] [J] [I] [H] [G] [F] [E] [D] [C] [B] [A]

WIRE NO.	WIRE PT. NO.	COLOR	LENGTH	FROM CONTACT	STRIP	TO CONTACT	STRIP	NOTE
001	276011P190	BLK	11 IN.	PS3	110VAC	PS1	110VAC	WIRE 002 TWIST WITH WIRE 002
002	276011P189	WHT	11 IN.	PS3	110VAC	PS1	110VAC	WIRE 001 TWIST WITH WIRE 001
003	276011P189	WHT	11 IN.	PS3	110VAC	PS1	110VAC	WIRE 001 TWIST WITH WIRE 001
004	270017P005	-	8 IN.	PS3	- OUT	PS3	- OUT	SEE NOTE 1 OF WL
005	270017P005	-	7 IN.	PS3	+5V	PS1	+5V	SEE NOTE 1 OF WL

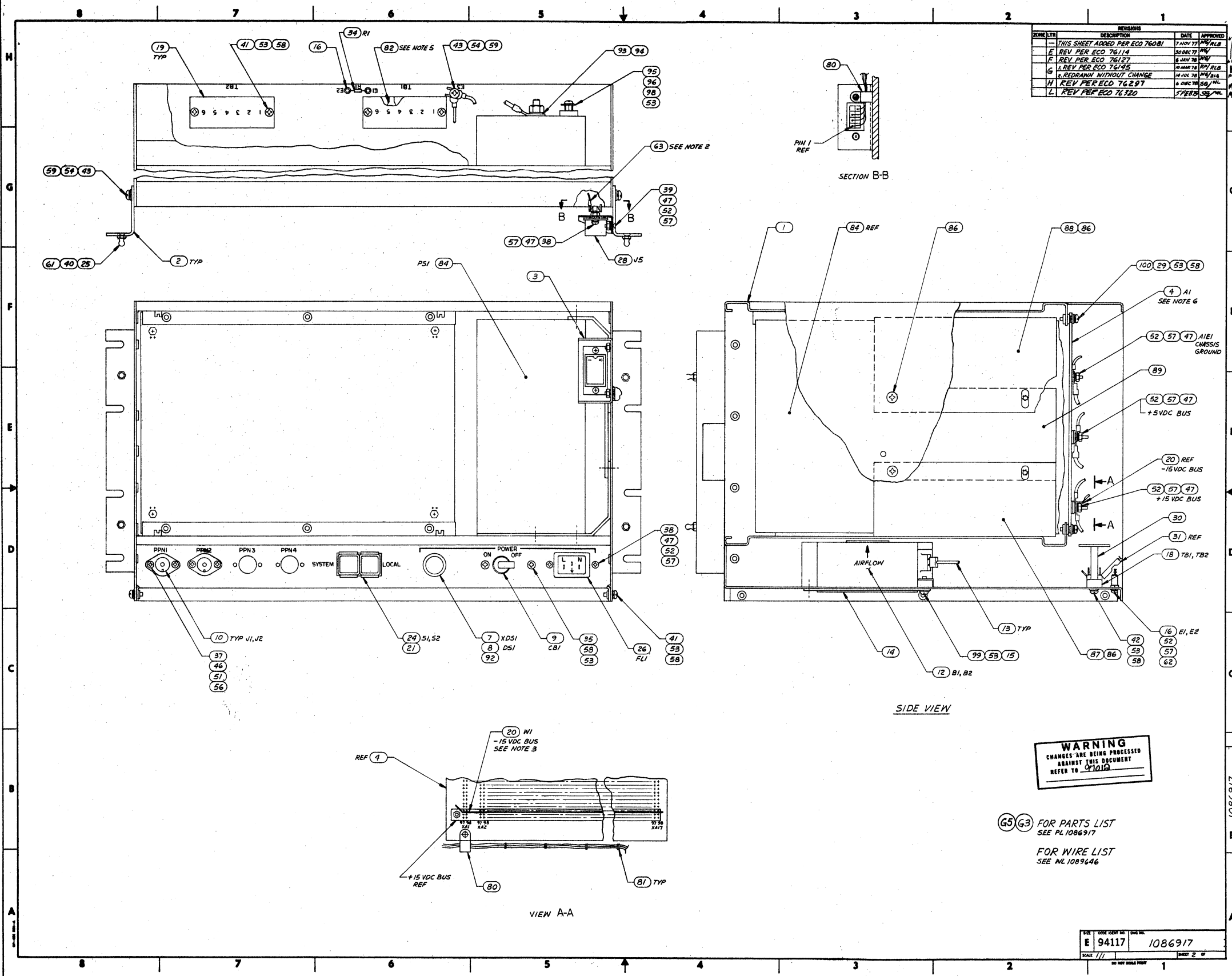
- WIREWRAP COUPLER PLATE, ITEM 4, PER BACKPLANE WIRING DIAGRAM, ITEM 67, USING ITEM 85.
- SHRINK ITEM 82 ON UNUSED TERMINALS OF TBI-2, TBI-3, TBI-4, & TBI-5.
- INSTALL STRAPS ON PS2 BETWEEN TERMINALS 1-2, 3-4, 7-8, 9-10. (STRAPS PART OF PS2)
- SOLDER BUS STRIP (ITEM 20) TO PINS 93 AND 94 OF XAI THRU XAI-7.
- ALL SOLDER CONNECTIONS TO BE INSULATED USING ITEM 63.
- SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

**WARNING**  
CHANGES ARE BEING PROCESSED  
AGAINST THIS DOCUMENT  
REFER TO 97018

**FOR PARTS LIST**  
W/L 1086917  
FOR WIRE LIST  
SEE WL1086917

QTY PER ASSY	DESCRIPTION
1	SANDERS ASSOCIATES, INC.
1	CARD CAGE ASSY
1	94117
1	1086917

REV	DESCRIPTION	DATE	APPROVED
-	THIS SHEET ADDED PER ECO 76081	7 NOV 77	PLA/PL
E	REV PER ECO 76114	30 DEC 77	PLA/PL
F	REV PER ECO 76127	8 JAN 78	PLA/PL
G	REV PER ECO 76125	14 MAR 78	PLA/PL
L	REDRAWN WITHOUT CHANGE	14 JUL 78	PLA/PL
H	REV PER ECO 76297	6 DEC 78	SS/PL
L	REV PER ECO 76320	27 FEB 79	SS/PL



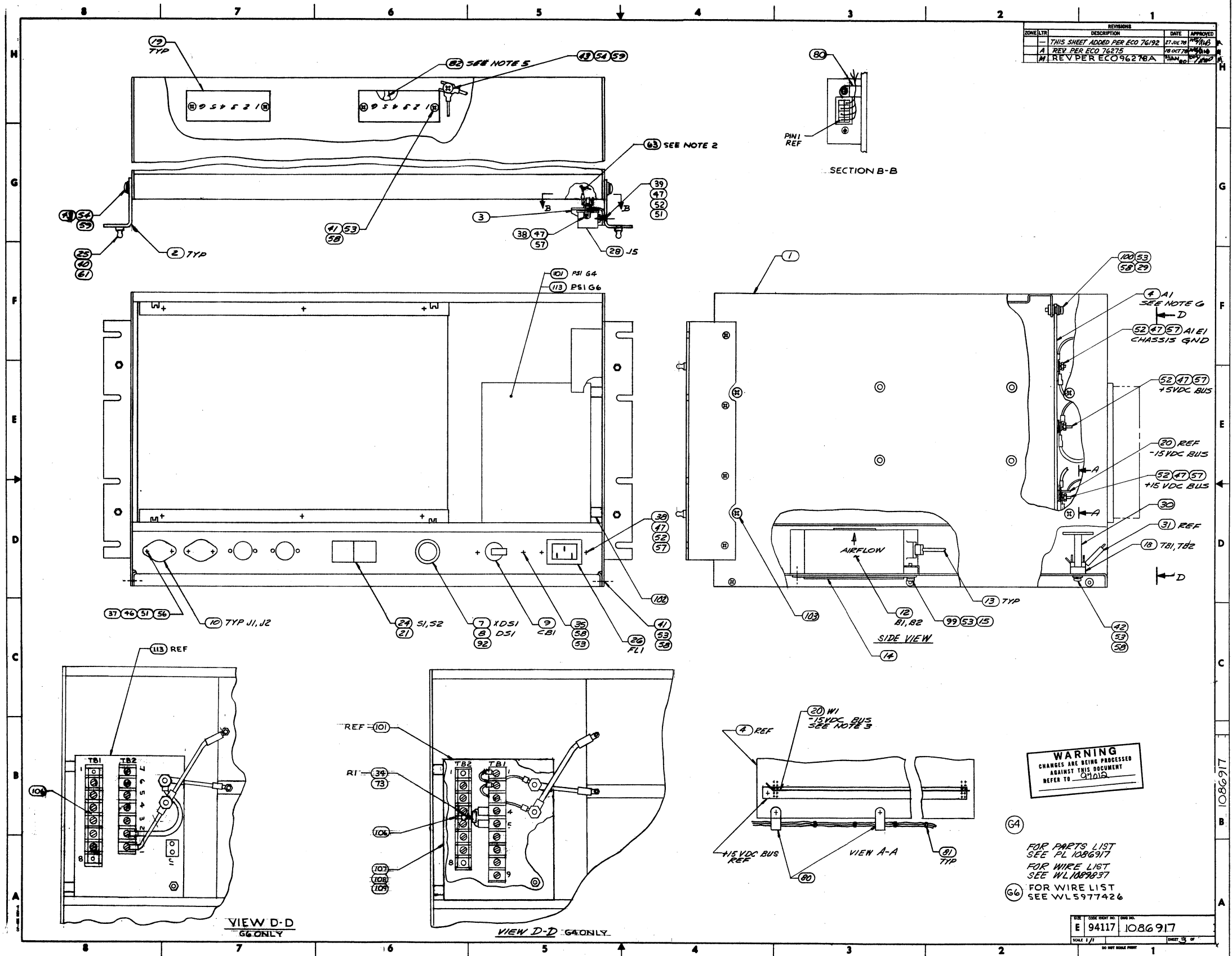
**WARNING**  
 CHANGES ARE BEING PROPOSED  
 AGAINST THIS DOCUMENT  
 REFER TO 071012

(G3) FOR PARTS LIST  
 SEE PL 1086917  
 FOR WIRE LIST  
 SEE NL 1089646

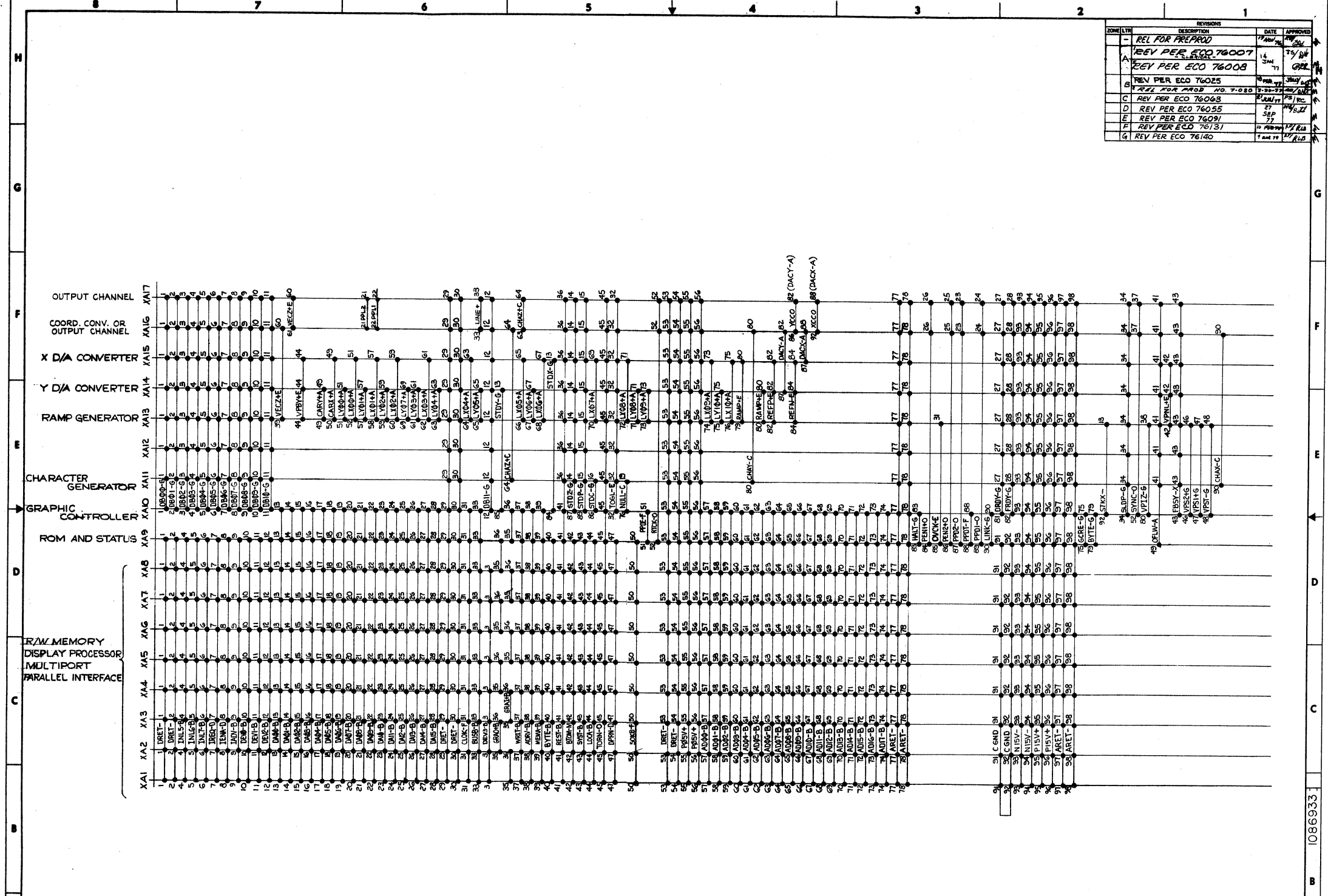
QTY	CODE	QTY	CODE
E	94117		1086917
SCALE 1/1		SHEET 2 OF	



REV	DESCRIPTION	DATE	APPROVED
-	THIS SHEET ADDED PER ECO 76192	27 JUL 79	1086917
A	REV PER ECO 76275	18 OCT 79	1086917
M	REV PER ECO 96278A	15 MAR 82	1086917



ZONE	LTN	DESCRIPTION	DATE	APPROVED
-		REL FOR PREPROD	17 APR 76	SKL
A		REV PER ECO 76007	17 APR 76	SKL
B		REV PER ECO 76008	17 APR 76	SKL
C		REV PER ECO 76025	17 APR 76	SKL
D		REL FOR PROD NO. 7-020	7-25-77	SKL
E		REV PER ECO 76065	17 JUN 77	SKL
F		REV PER ECO 76055	17 SEP 77	SKL
G		REV PER ECO 76091	17 FEB 78	SKL
H		REV PER ECO 76131	17 FEB 78	SKL
I		REV PER ECO 76140	17 FEB 78	SKL



3. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATIONS WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.

2. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS. RESISTORS ARE  $\pm 5\%$ , W.  $K=1,000$ .  $MEG=1,000,000$ . CAPACITANCE VALUES ARE IN PICOFARADS. CAPACITORS ARE  $\pm 5\%$ , Y.  $\mu F=$  MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES.

1. INTERPRET DRAWING PER D18002.

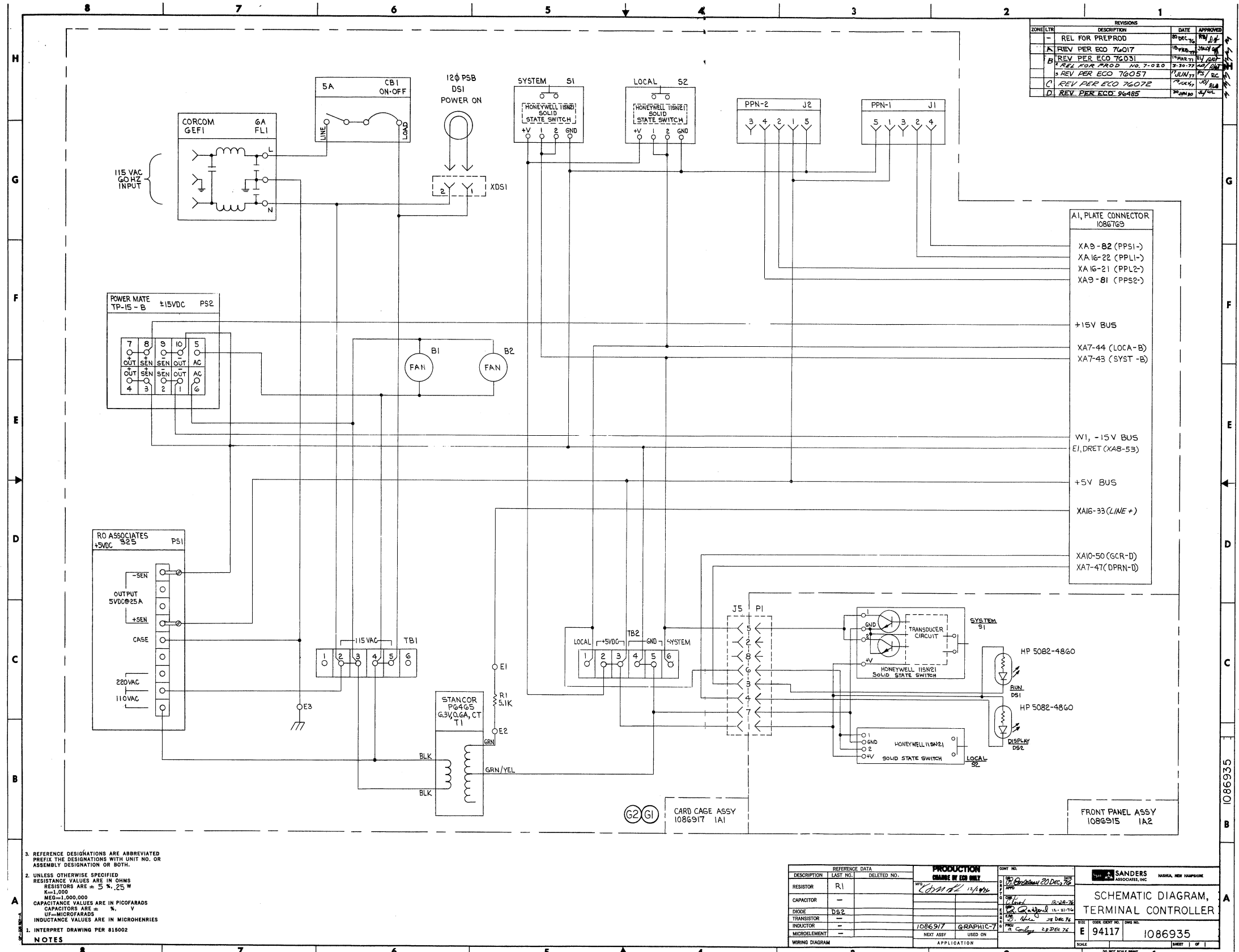
NOTES

REFERENCE DATA		PRODUCTION		SANDERS ASSOCIATES, INC.	
DESCRIPTION	LAST NO.	DELETED NO.	DATE	REV	APP
RESISTOR					
CAPACITOR					
DIODE					
TRANSISTOR					
INDUCTOR					
MICROELEMENT					
WIRING DIAGRAM					

DATE	1086933	1086933
REV	E	94117
APP	1086933	1086933
SCALE	NONE	
SHEET	1	OF 1

1086933



REVISIONS			
ZONE/LTR	DESCRIPTION	DATE	APPROVED
-	REL FOR PREPROD	10 Dec 76	PN/JP
A	REV PER ECO 76017	15 Dec 76	JP/JP
B	REV PER ECO 76031	19 Dec 76	JP/JP
C	REV FOR PROD No. 7-020	3-30-77	JP/JP
D	REV PER ECO 76057	1 JUN 77	PS/BL
E	REV PER ECO 76072	20 Jun 77	JP/BL
F	REV PER ECO 96485	20 Jun 80	JP/BL

A1, PLATE CONNECTOR 1086763	
XA8-B2 (PPS1-)	
XA16-22 (PPL1-)	
XA16-21 (PPL2-)	
XA8-B1 (PPS2-)	
+15V BUS	
XA7-44 (LOCA-B)	
XA7-43 (SYST-B)	
W1, -15V BUS	
E1, DRET (XA8-5B)	
+5V BUS	
XA16-33 (LINE +)	
XA10-50 (GCR-D)	
XA7-47 (DPRN-D)	

3. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATIONS WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS. RESISTORS ARE ± 5%, 25 W. K=1,000. MEG=1,000,000. CAPACITANCE VALUES ARE IN PICOFARADS. CAPACITORS ARE ± 5%, V. UF=MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES.
1. INTERPRET DRAWING PER 815002
- NOTES

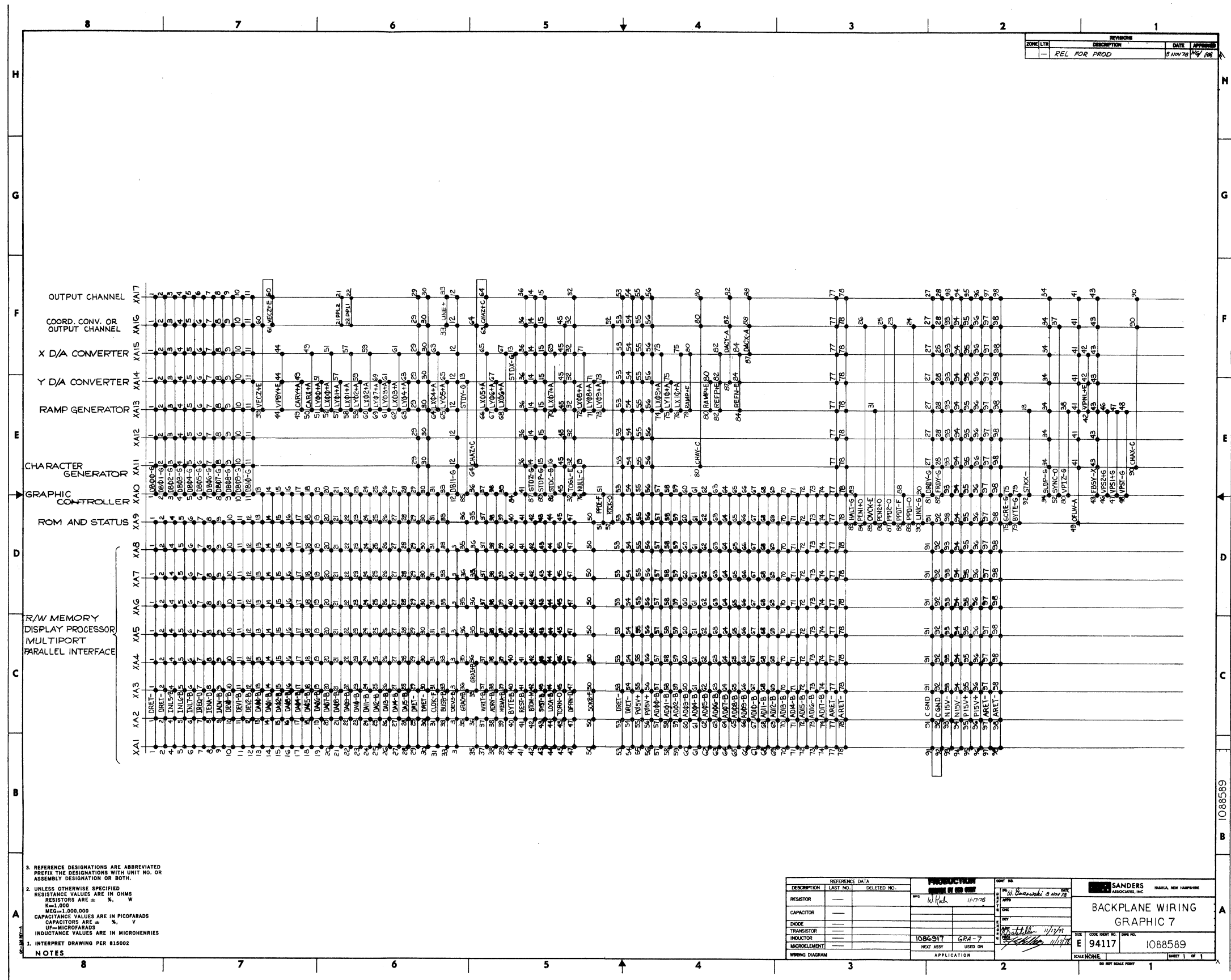
REFERENCE DATA			PRODUCTION		CONF. NO.		SANDERS ASSOCIATES, INC.	
DESCRIPTION	LAST NO.	DELETED NO.	DATE	BY	DATE	BY	SCALE	SHEET
RESISTOR	R1		1086917	GRAPHIC	28 Dec 76	JP	1	1
CAPACITOR								
DIODE	D52							
TRANSISTOR								
INDUCTOR								
MICROELEMENT								
WIRING DIAGRAM								

SCHEMATIC DIAGRAM, TERMINAL CONTROLLER

94117 1086935

SCALE: \_\_\_\_\_

SHEET 1 OF 1



ZONE/LTR	REVISION	DATE	APPROVED
REL FOR PROD		9 NOV 78	MJ/AB

3. REFERENCE DESIGNATIONS ARE ABBREVIATED  
PREFIX THE DESIGNATIONS WITH UNIT NO. OR  
ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED  
RESISTANCE VALUES ARE IN OHMS  
RESISTORS ARE: %, W  
K=1,000  
M=1,000,000  
CAPACITANCE VALUES ARE IN PICOFARADS  
CAPACITORS ARE: %, V  
UF=MICROFARADS  
INDUCTANCE VALUES ARE IN MICROHENRIES
1. INTERPRET DRAWING PER 815002  
NOTES

DESCRIPTION	REFERENCE DATA	DELETED NO.	PRODUCTION	DATE
RESISTOR			W/Red	11-17-78
CAPACITOR				
DIODE				
TRANSISTOR				
INDUCTOR				
MICROELEMENT	1086517	GRA-7		11/17/78
WIRING DIAGRAM				

SANDERS ASSOCIATES, INC. WARREN, NEW HAMPSHIRE	
BACKPLANE WIRING GRAPHIC 7	
SIZE: 1	DATE: 9/11/78
CODE: 94117	ISSUE NO: 1088589
SCALE: NONE	SHEET 1 OF 1

1088589

REV	DATE	DESCRIPTION	BY	APP'D
M	REV PER ECO 96408			
N	REV PER ECO 96918A			

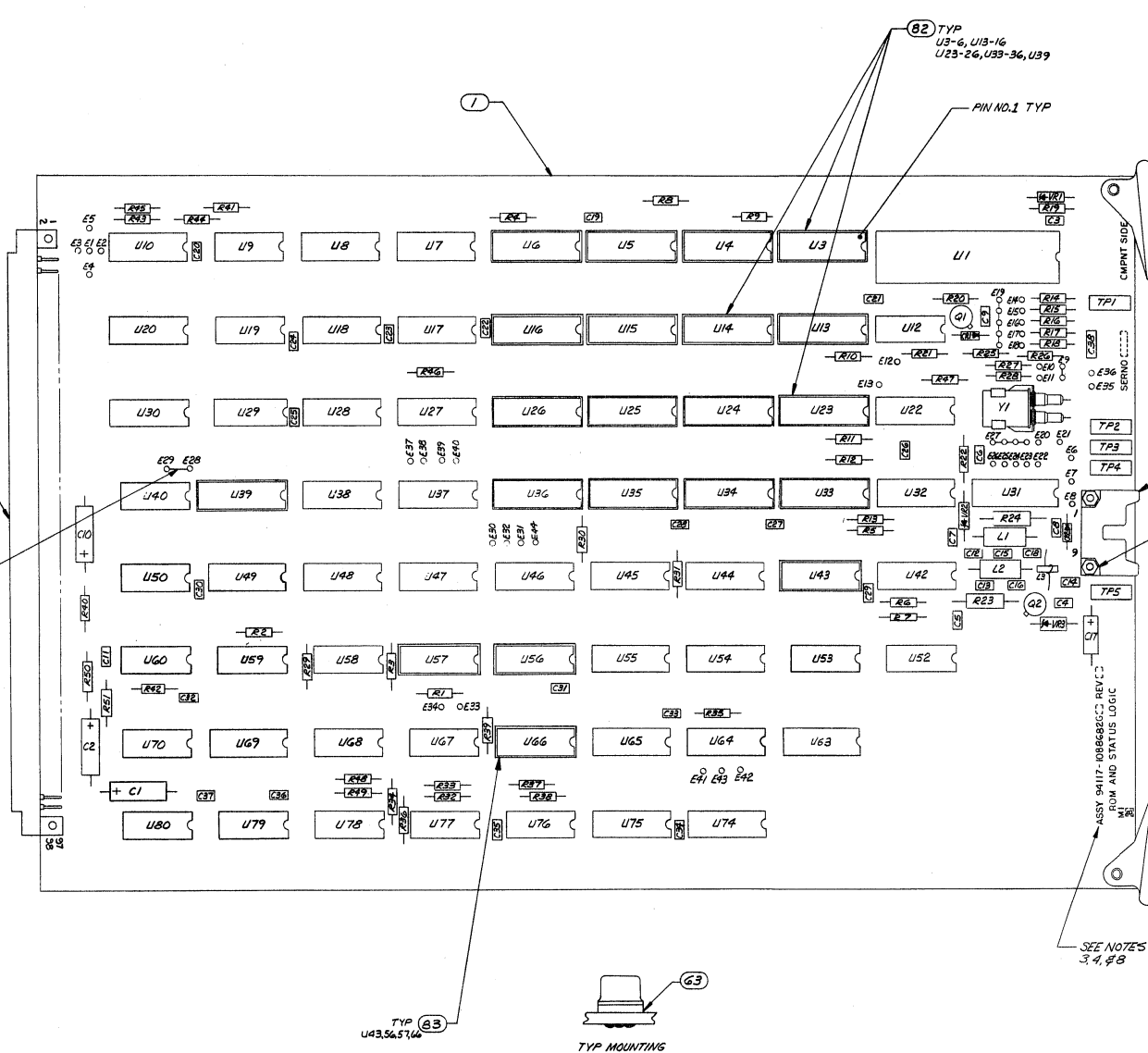


TABLE A - JUMPER OPTIONS

OPTION	FUNCTION [SEE NOTE 10]	REMOVE CIRCUIT TRACE BETWEEN: (M0 SIDE)	ADD JUMPER WIRE BETWEEN: (M1 SIDE)
A	1 SYNC LINK INTERRUPT LEVEL	LEVEL 7	NONE REQ'D
	2 [E1-E4]	6 E1-E4	E2-E4
	3	5 E1-E4	E3-E4
B	1 DISPLAY STATUS INTERRUPT LEVEL	LEVEL 7	E1-E5
	2 [E5-E5]	6 E5-E5	E2-E5
	3	5 E5-E5	NONE REQ'D
C	1 TRANSMIT DATA LEVEL	LEVEL TTL	E6-E7
	2 [E7-E8]	RS28-C	NONE REQ'D
	3	20mA	NONE REQ'D
D	1 RECEIVE DATA TERMINATION	INPUT TTL	E9-E10
	2 [E9-E9]	RS28-C	NONE REQ'D
	3	NOT USED	E9-E10
E	1 RECEIVE/TRANSMIT DATA POLARITY	TTL	E12-E13
	2 [NONE]	RS28-C	E12-E13
	3	TTL	NONE REQ'D
F	1 WORD LENGTH 5 BITS	LENGTH	E14-E15, E17-E18
	2 [NONE]	5 BITS	E14-E15
	3	3 BITS	E16-E15
G	1 RECEIVE/TRANSMIT PARITY CHECKER	PARITY	E16-E18
	2 [NONE]	GENERATED	NONE REQ'D
	3	PARITY SELECT	NONE REQ'D
H	1 [NONE]	ODD	E18-E19
	2	EVEN	NONE REQ'D
	3	[NONE]	NONE REQ'D
J	1 STOP BIT SELECT	#STOP BITS	E15 TO E18
	2 [NONE]	1	NONE REQ'D
	3	2	NONE REQ'D
K	1 RECEIVE/TRANSMIT FREQ. SELECT	RS28-C	E20-E21
	2	80K	NONE REQ'D
	3	110K	E22-E23, E5-E7
L	1 SYSTEM CLOCK MODE	EXT	NONE REQ'D
	2 [NONE]	INT	E28-E29
	3	ROM SELECT	NONE REQ'D
M	1 [E31-E32]	IF	NONE REQ'D
	2	IF	E30-E32
	3	IF	E34-E32
N	1 STATUS LOGIC ENABLE	STATUS LOGIC	NONE REQ'D
	2 [E33-E34]	ENABLE	NONE REQ'D
	3	DISABLE	E33-E34
P	1 TRAP ADDRESS	MEM LOC	NONE REQ'D
	2	MEMORY LOCATION	E39-E40
	3	[NONE]	E37-E38
R	1 SDK BAUD	FREQ SEL	NONE REQ'D
	2	SELECT	E41-E43
	3	[E40-E40]	E40-E43

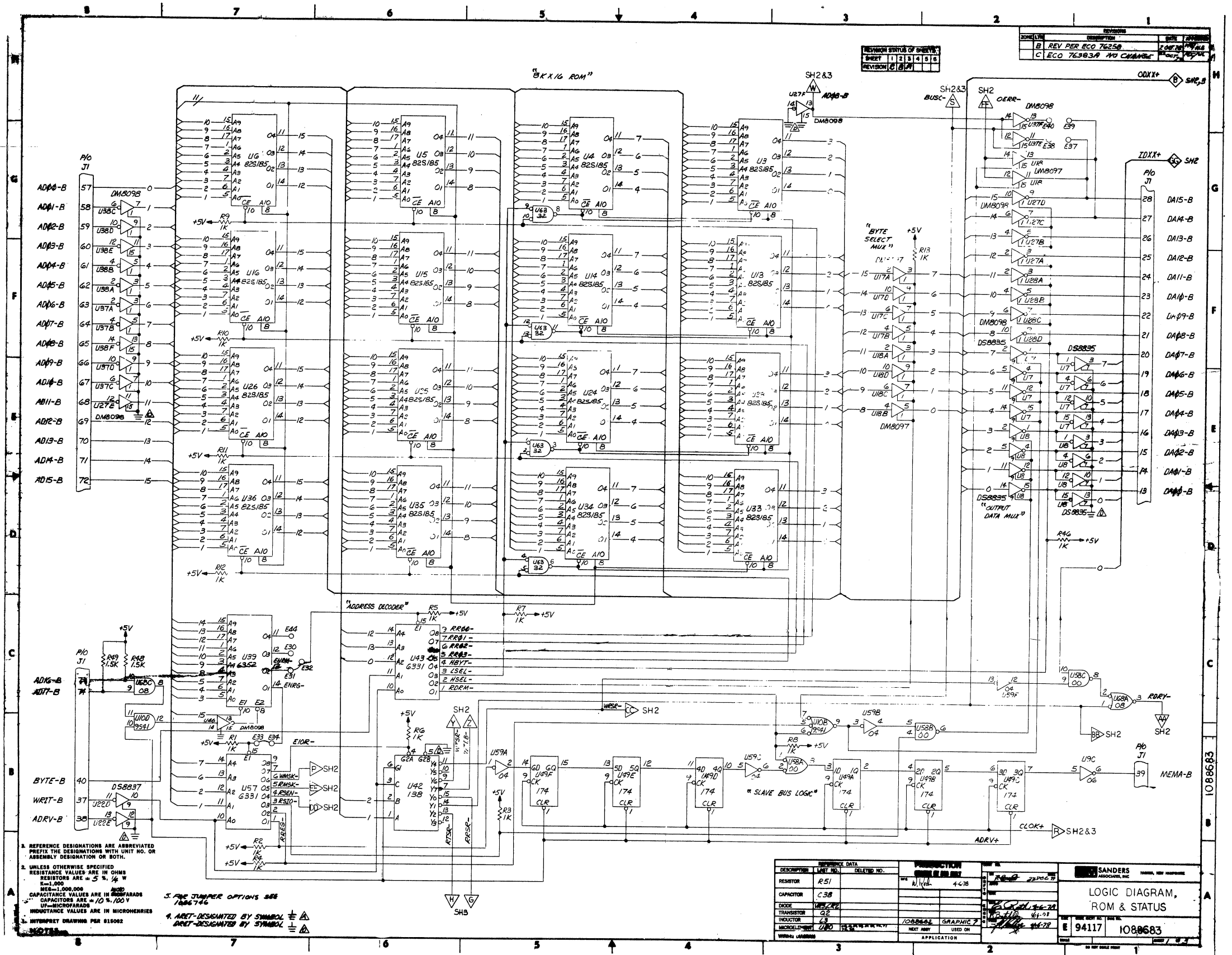
- ITEMS 146A, 147A, 148A, 149A MUST BE USED TOGETHER.
- "E" POINTS SHOWN IN BKTS, L 2, INDICATE EXISTING CIRCUIT TRACE.
- JUMPER OPTIONS FOR S1: A1, B3, C2, D2, E3, F4, G2, H2, J2, K2, L2, M1, N1, P1 AND R1.
- MARK APPROPRIATE SERNO, S CONDITION AND REVISION AT FINAL ASSY.
- SOLDER TIPS OR WIRE TO BE .09 MAX FROM BOARD
- MAX COMPONENT HEIGHT TO BE .44
- REFERENCE DESIGNATORS OTHER THAN THOSE ETCHED OR SILK SCREENED ARE NOT TO BE MARKED ON FINISHED ASSY.
- MARK CHARACTERS .04-.16 HIGH, COLOR BLACK, GOTHIC TYPE, AND LOCATE APPROX AS SHOWN. APPLY PER ITEM 51.
- PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
- THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM 80.
- SHOP TOLERANCES AND DIMENSION INTERPRETATION WITHIN ERROR SUPPLEMENT THIS DRAWING.

NOTES UNLESS OTHERWISE SPECIFIED.

(G1) THRU (G11) FOR PARTS LIST  
REF 1088682

**WARNING**  
CHANGES ARE BEING PROCESSED AGAINST THIS DOCUMENT  
REFER TO 97265-97044

QTY PER ASSY	DESCRIPTION	PARTS LIST
1	CIRCUIT CARD ASSY, ROM & STATUS LOGIC (8K)	
1	1088682	



REVISION	DESCRIPTION	DATE	BY
B	REV PER ECO 76258	10/18/78	WJA
C	ECO 76383A NO CHANGE	11/15/78	WJA

SHEET	1	2	3	4	5	6
REVISION	2	3	4	5	6	7

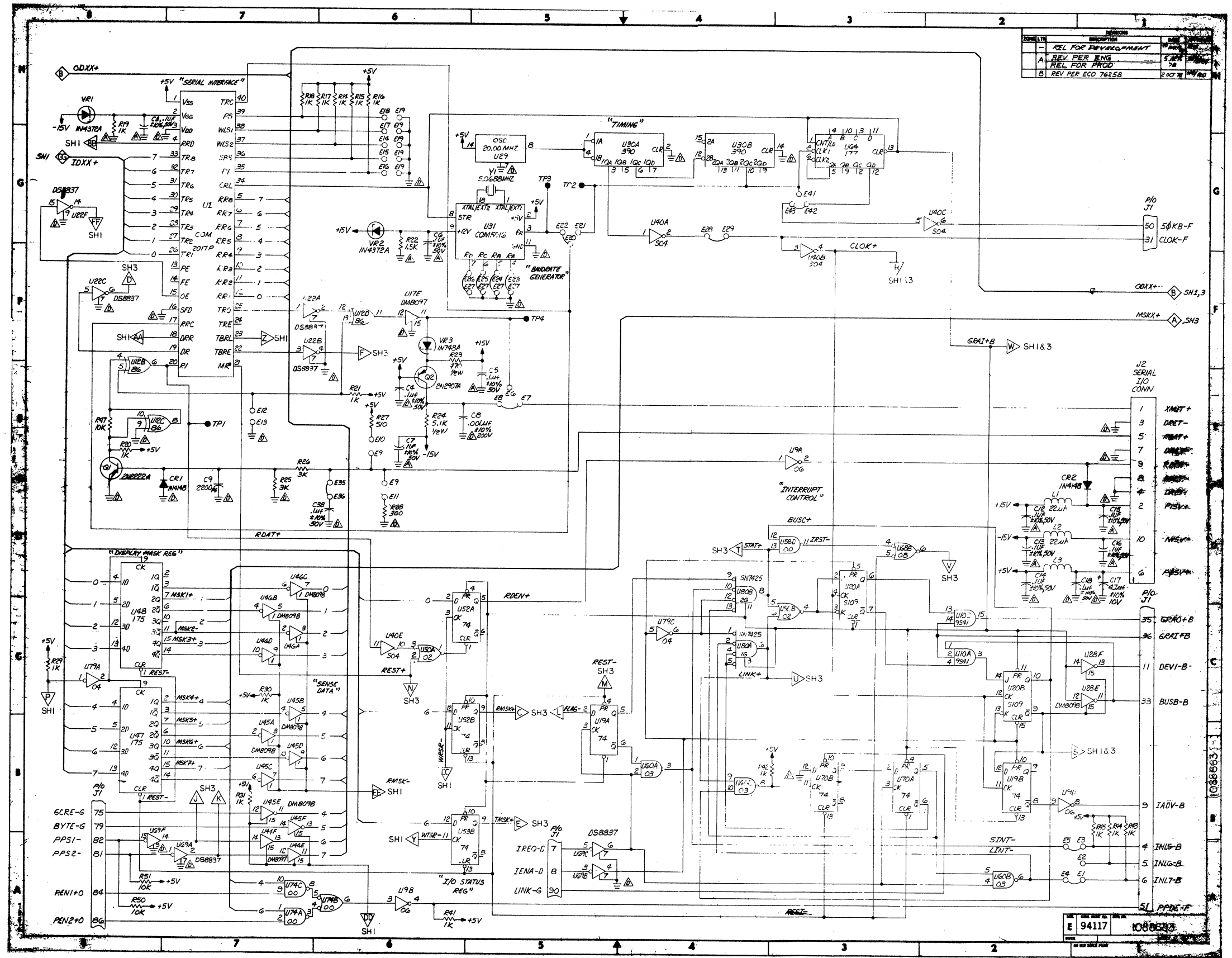
- REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATIONS WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.
- UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS. RESISTORS ARE 5% 1/4 W. CAPACITANCE VALUES ARE IN PICOFARADS. CAPACITORS ARE 10% 100V.
- UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN MEGAHMERS.
- INTERPRET DRAWING PER 816002.

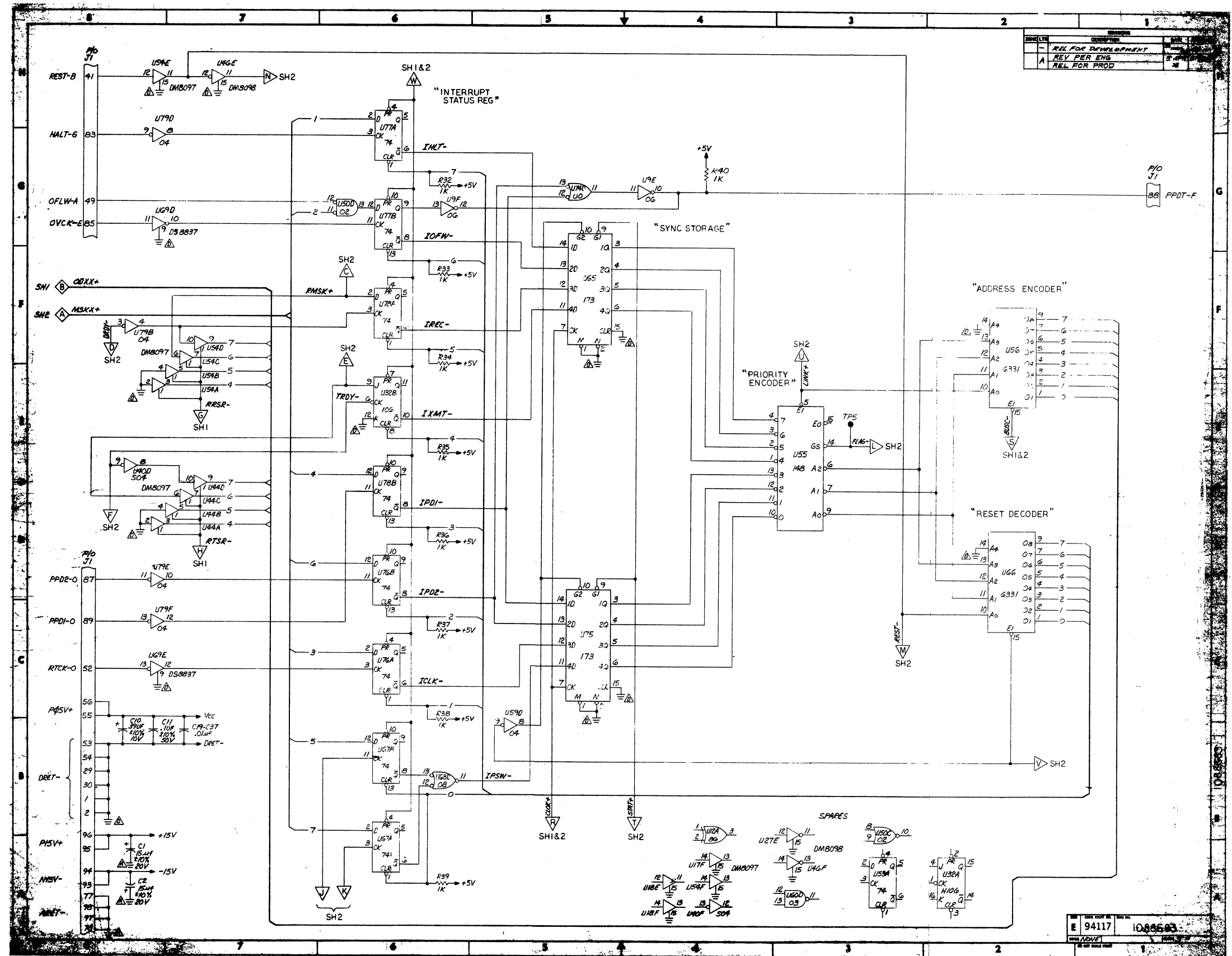
5. Jumper options see 1466746  
 6. ARET-DESIGNATED BY SYMBOL  $\frac{1}{2}$   $\frac{1}{2}$   
 7. ARET-DESIGNATED BY SYMBOL  $\frac{1}{2}$   $\frac{1}{2}$

DESCRIPTION	REFERENCE DATA	REVISION NO.	DELETED NO.
RESISTOR	R51	11/1/78	4-78
CAPACITOR	C38		
DIODE	U59C		
TRANSISTOR	Q2		
INDUCTOR	L3		
MICROPROCESSOR	U10		

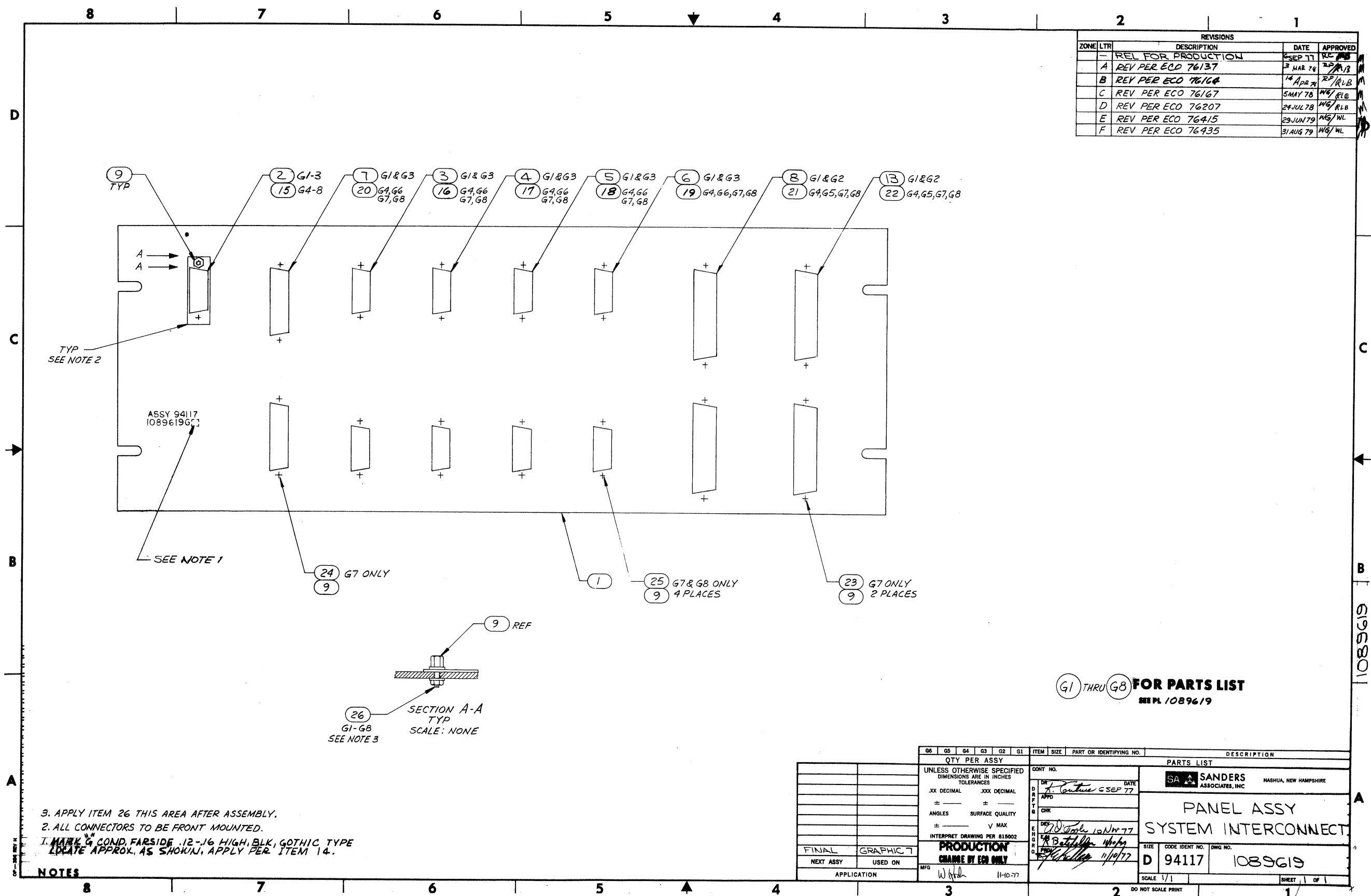
  

SANDERS ASSOCIATES, INC.	
LOGIC DIAGRAM, ROM & STATUS	
E 94117	1088683

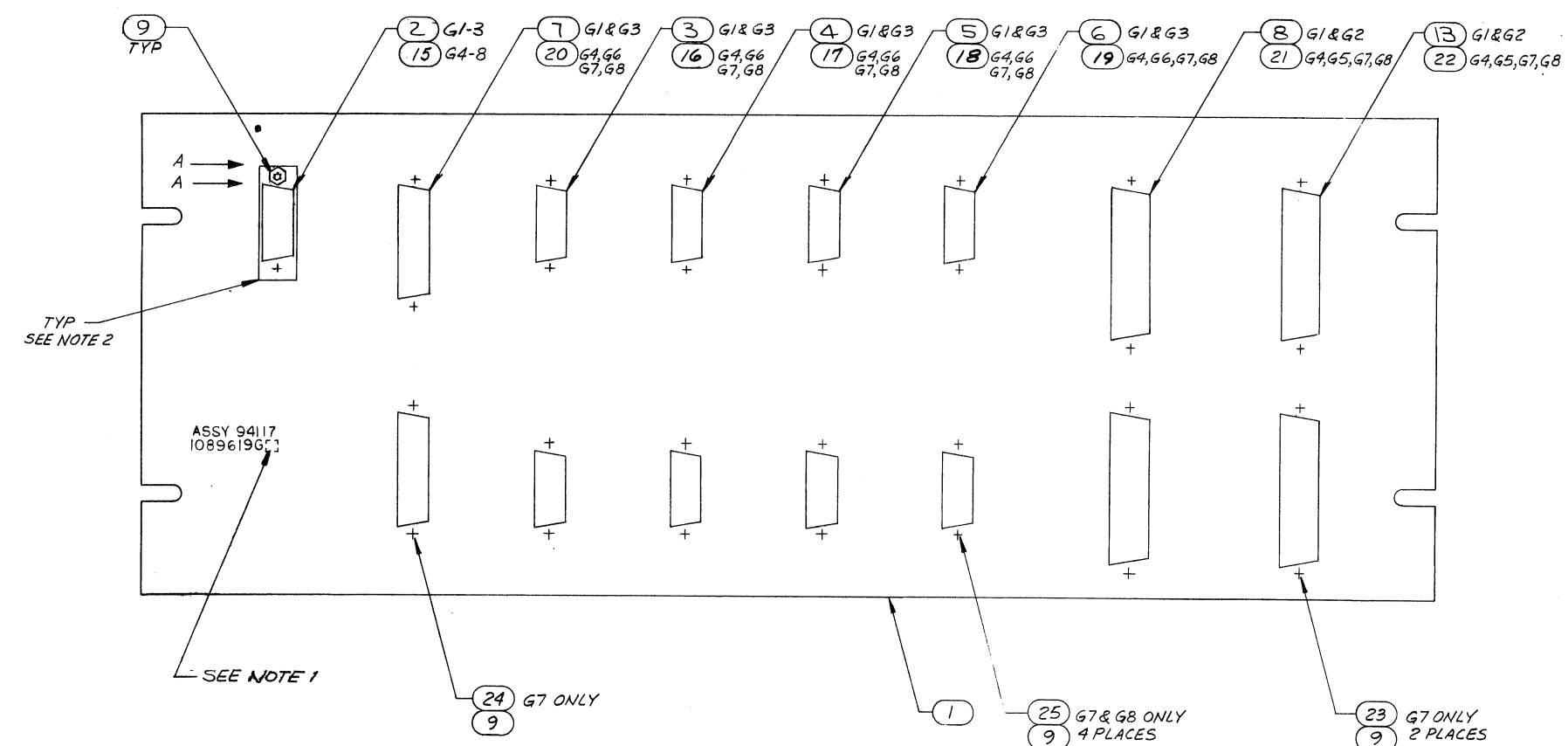








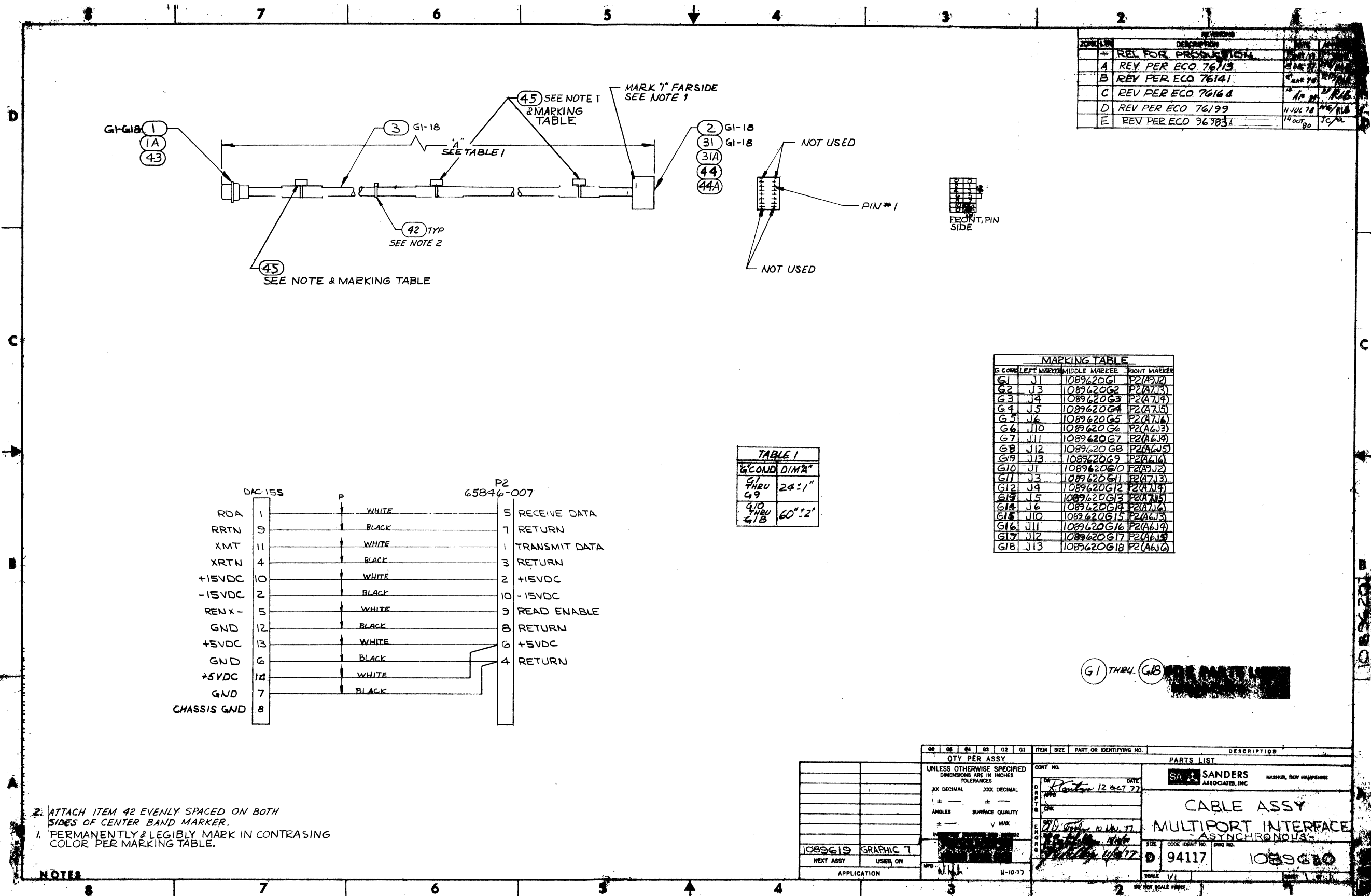
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		REL FOR PRODUCTION	6 SEP 77	WJL
A		REV PER ECO 76137	3 MAR 78	WJL
B		REV PER ECO 76164	14 APR 78	WJL
C		REV PER ECO 76167	5 MAY 78	WJL
D		REV PER ECO 76207	24 JUL 78	WJL
E		REV PER ECO 76415	23 JUN 79	WJL
F		REV PER ECO 76435	31 AUG 79	WJL



G1 THRU G8 FOR PARTS LIST  
SEE PL 1089619

- NOTES**
3. APPLY ITEM 26 THIS AREA AFTER ASSEMBLY.
  2. ALL CONNECTORS TO BE FRONT MOUNTED.
  1. MARK COND. FAR SIDE .12-.16 HIGH, BLK, GOTHIC TYPE LOCATE APPROX. AS SHOWN, APPLY PER ITEM 14.

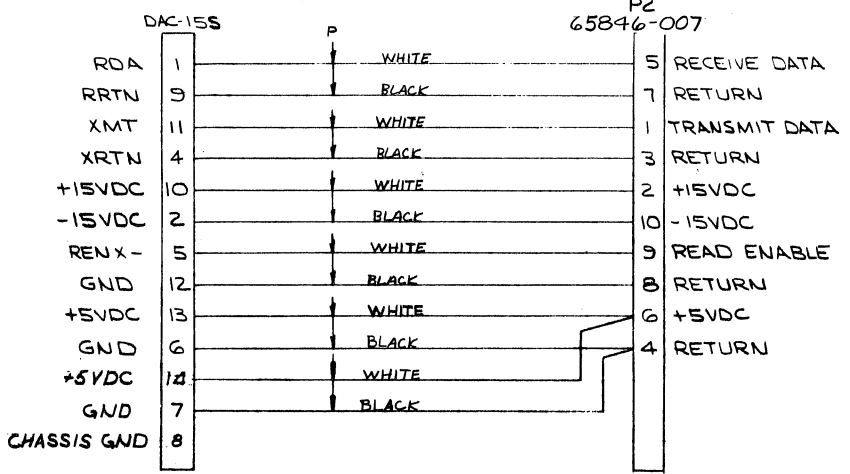
G5	G5	G4	G3	G2	G1	ITEM	SIZE	PART OR IDENTIFYING NO.	DESCRIPTION
QTY PER ASSY						PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES						SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE			
.XX DECIMAL .XXX DECIMAL						DATE 6 SEP 77			
± ±						APPD			
ANGLES SURFACE QUALITY						CHK			
± ± V MAX						E H G R G O			
INTERPRET DRAWING PER 818002						DEV 10/11/77			
PRODUCTION						APPD 11/19/77			
CHANGE BY ECO ONLY						MFG WJL 11-10-77			
APPLICATION						SIZE CODE IDENT NO. DWG NO.			
						D 94117 1089619			
						SCALE 1/1 SHEET 1 OF 1			



REV	DESCRIPTION	DATE	BY
A	REV PER ECO 76119	11 JUL 78	JC/AL
B	REV PER ECO 76141	14 OCT 80	JC/AL
C	REV PER ECO 76164	14 OCT 80	JC/AL
D	REV PER ECO 76199	11 JUL 78	JC/AL
E	REV PER ECO 96783A	14 OCT 80	JC/AL

COND	LEFT MARKER	MIDDLE MARKER	RIGHT MARKER
G1	J1	1089620G1	P2(A7J2)
G2	J3	1089620G2	P2(A7J3)
G3	J4	1089620G3	P2(A7J4)
G4	J5	1089620G4	P2(A7J5)
G5	J6	1089620G5	P2(A7J6)
G6	J10	1089620G6	P2(A6J3)
G7	J11	1089620G7	P2(A6J4)
G8	J12	1089620G8	P2(A6J5)
G9	J13	1089620G9	P2(A6J6)
G10	J1	1089620G10	P2(A7J2)
G11	J3	1089620G11	P2(A7J3)
G12	J4	1089620G12	P2(A7J4)
G13	J5	1089620G13	P2(A7J5)
G14	J6	1089620G14	P2(A7J6)
G15	J10	1089620G15	P2(A6J3)
G16	J11	1089620G16	P2(A6J4)
G17	J12	1089620G17	P2(A6J5)
G18	J13	1089620G18	P2(A6J6)

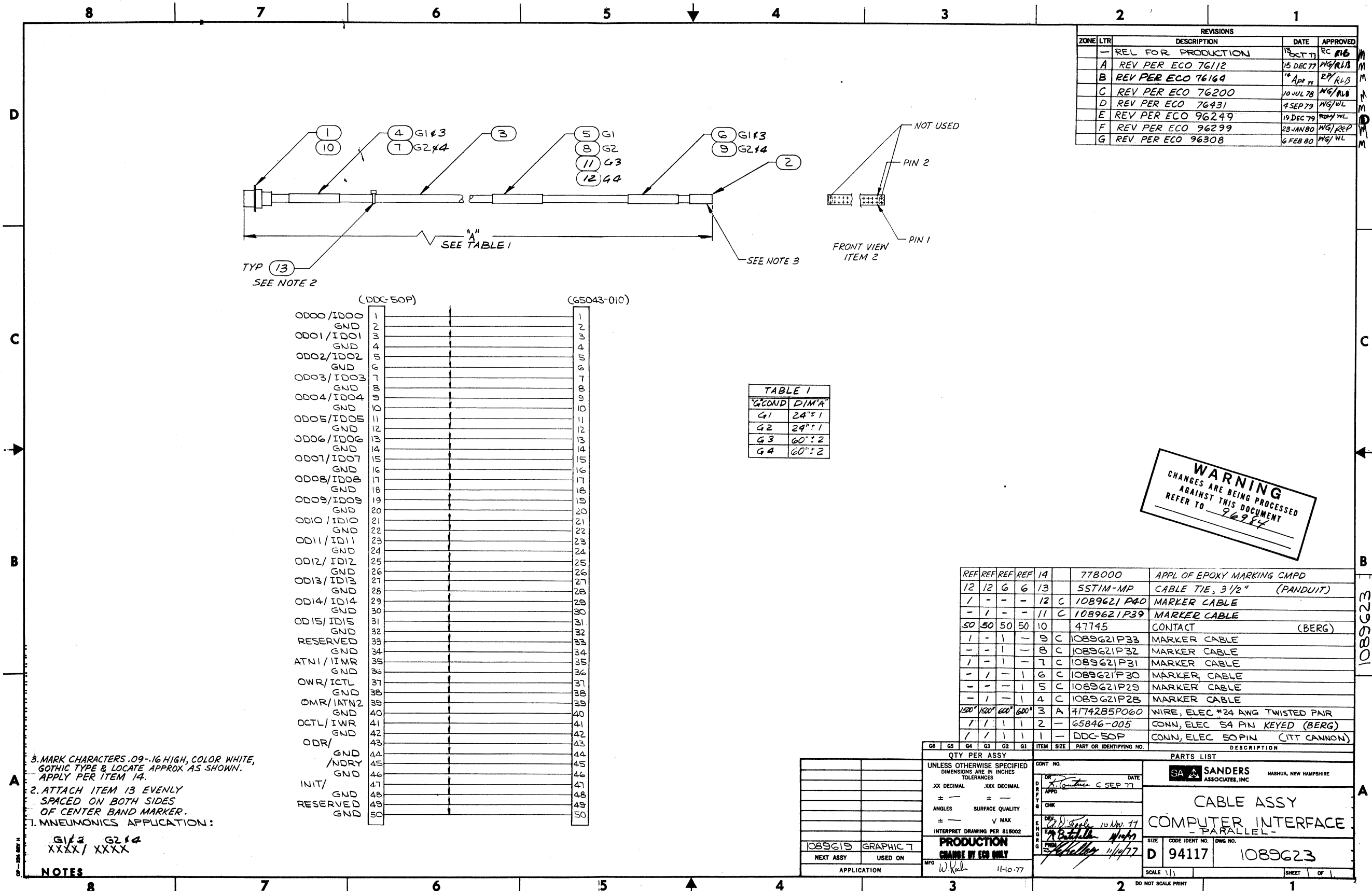
COND	DIM A
G1 THRU G9	24 ± .1"
G10 THRU G18	60 ± .2"



2. ATTACH ITEM 42 EVENLY SPACED ON BOTH SIDES OF CENTER BAND MARKER.  
 1. PERMANENTLY & LEGIBLY MARK IN CONTRASTING COLOR PER MARKING TABLE.

NOTES

QTY PER ASSY	CONTR NO.	PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: XXX DECIMAL .XXX DECIMAL ANGLES SURFACE QUALITY INCHES V MAX	DATE: 12 OCT 77 BY: [Signature]	SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE
1089619 GRAPHIC 7	1089620	CABLE ASSY MULTIPOINT INTERFACE - ASYNCHRONOUS -
NEXT ASSY: [Blank]	USED ON: [Blank]	SIZE: 94117 DWG NO: 1089620
APPLICATION: [Blank]	U-10-77	SCALE: VI



REVISIONS			
ZONE LTR	DESCRIPTION	DATE	APPROVED
-	REL FOR PRODUCTION	15 OCT 77	RC #16
A	REV PER ECO 76112	15 DEC 77	WS/RUB
B	REV PER ECO 76164	16 APR 78	RP/RUB
C	REV PER ECO 76200	10 JUL 78	WS/RUB
D	REV PER ECO 76431	4 SEP 79	WS/WL
E	REV PER ECO 96249	19 DEC 79	RM/WL
F	REV PER ECO 96299	23 JAN 80	WS/REP
G	REV PER ECO 96308	6 FEB 80	WS/WL

GCOND	DIM A
G1	24" ± 1
G2	24" ± 1
G3	60" ± 2
G4	60" ± 2

(DDC-50P)		(G5043-010)	
0000/ID00	1		1
GND	2		2
0001/ID01	3		3
GND	4		4
0002/ID02	5		5
GND	6		6
0003/ID03	7		7
GND	8		8
0004/ID04	9		9
GND	10		10
0005/ID05	11		11
GND	12		12
0006/ID06	13		13
GND	14		14
0007/ID07	15		15
GND	16		16
0008/ID08	17		17
GND	18		18
0009/ID09	19		19
GND	20		20
0010/ID10	21		21
GND	22		22
0011/ID11	23		23
GND	24		24
0012/ID12	25		25
GND	26		26
0013/ID13	27		27
GND	28		28
0014/ID14	29		29
GND	30		30
0015/ID15	31		31
GND	32		32
RESERVED	33		33
GND	34		34
ATN1/ITMR	35		35
GND	36		36
OWR/ICTL	37		37
GND	38		38
OMR/IATN2	39		39
GND	40		40
OCTL/IWR	41		41
GND	42		42
ODR/	43		43
GND	44		44
/NDRY	45		45
GND	46		46
INIT/	47		47
GND	48		48
RESERVED	49		49
GND	50		50

3. MARK CHARACTERS .09-.16 HIGH, COLOR WHITE, GOTHIC TYPE & LOCATE APPROX AS SHOWN. APPLY PER ITEM 14.

2. ATTACH ITEM 13 EVENLY SPACED ON BOTH SIDES OF CENTER BAND MARKER.

1. MNEUMONICS APPLICATION:

G1#3 G2#4  
XXXX/XXXX

NOTES

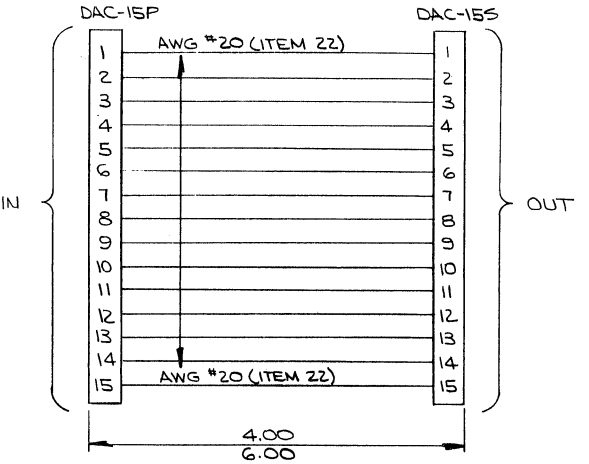
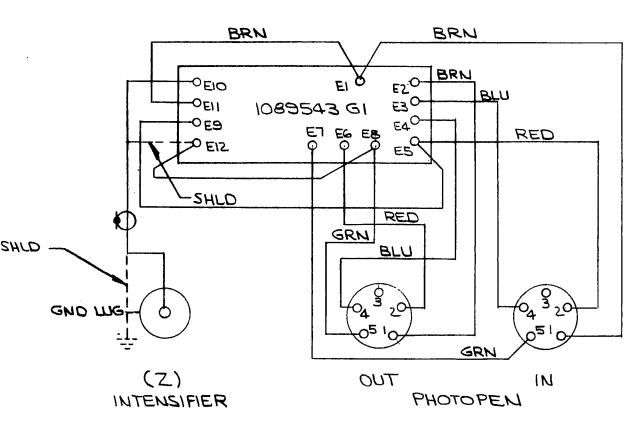
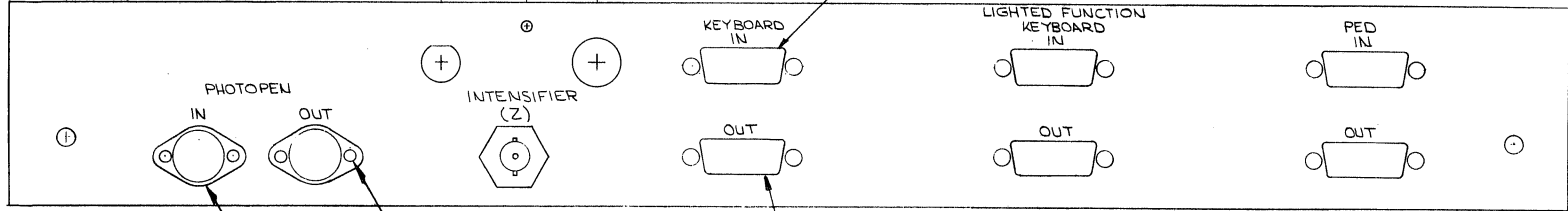
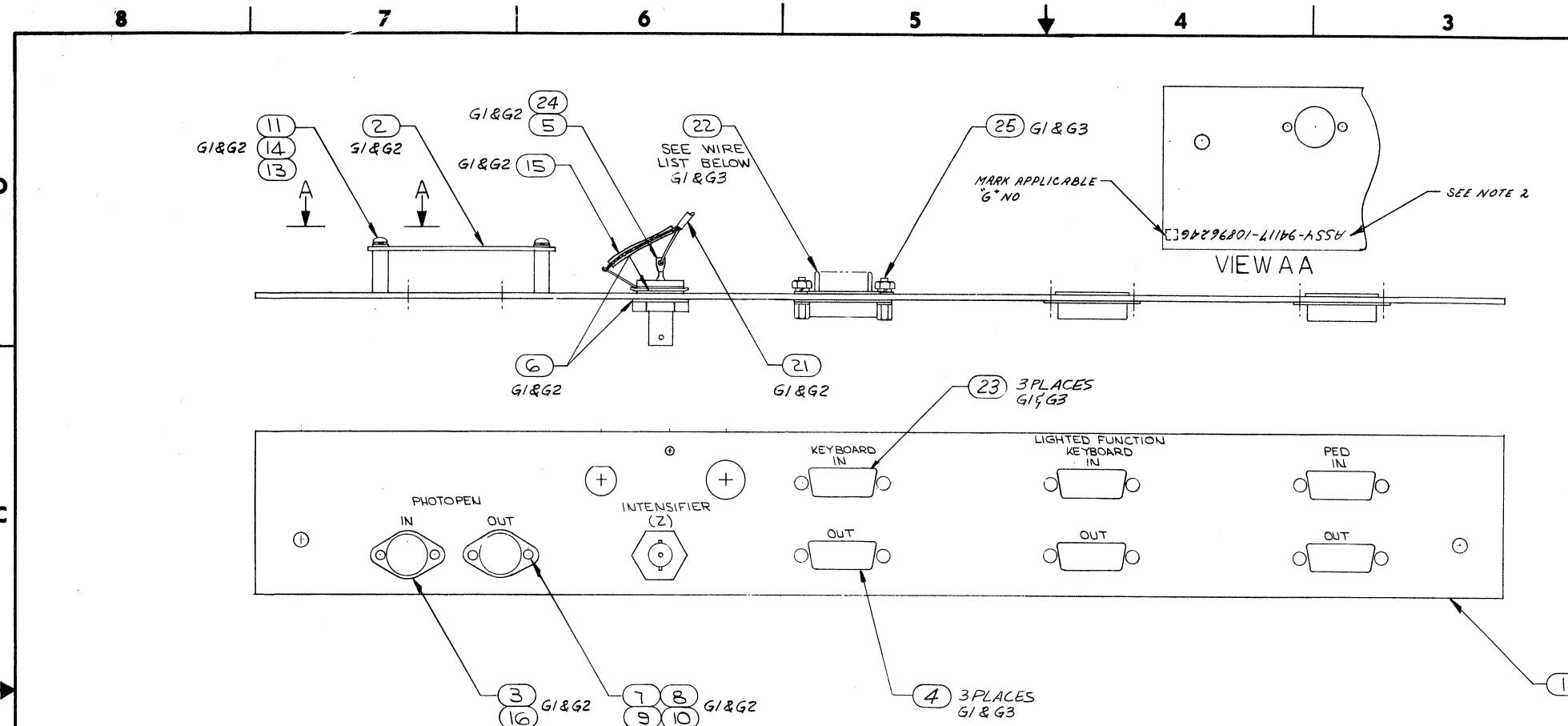
**WARNING**  
CHANGES ARE BEING PROCESSED  
AGAINST THIS DOCUMENT  
REFER TO 96299

REF	REF	REF	REF	14			
					778000	APPL OF EPOXY MARKING CMPD	
12	12	G	G	13	SSTIM-MP	CABLE TIE, 3/2" (PANDUIT)	
/	-	-	-	12	C 1089621P40	MARKER CABLE	
-	/	-	-	11	C 1089621P39	MARKER CABLE	
50	50	50	50	10	47745	CONTACT (BERG)	
/	-	/	-	9	C 1089621P33	MARKER CABLE	
-	-	-	-	8	C 1089621P32	MARKER CABLE	
/	-	/	-	7	C 1089621P31	MARKER CABLE	
-	/	-	/	6	C 1089621P30	MARKER CABLE	
-	-	-	-	5	C 1089621P29	MARKER CABLE	
-	/	-	/	4	C 1089621P28	MARKER CABLE	
1500	1500	600	600	3	A 474285P060	WIRE, ELEC #24 AWG TWISTED PAIR	
/	/	/	/	2	- 65846-005	CONN, ELEC 54 PIN KEYED (BERG)	
/	/	/	/	1	- DDC-50P	CONN, ELEC 50 PIN (ITT CANNON)	

QTY PER ASSY		PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		<div style="display: flex; justify-content: space-between;"> <div> <p>CONF NO. _____</p> <p>DATE _____</p> <p>APPD _____</p> <p>CHK _____</p> <p>DES _____</p> <p>ENG _____</p> <p>DATE _____</p> </div> <div> <p><b>SA SANDERS ASSOCIATES, INC.</b></p> <p>NASHUA, NEW HAMPSHIRE</p> <p><b>CABLE ASSY</b></p> <p><b>COMPUTER INTERFACE</b></p> <p>PARALLEL</p> <p>SIZE CODE IDENT NO. DWG NO.</p> <p><b>D 94117 1089623</b></p> <p>SCALE 1/1</p> </div> </div>	
1089619	GRAPHIC T	<p>PRODUCTION CHANGE BY ECO ONLY</p> <p>11-10-77</p>	
NEXT ASSY	USED ON	<p>APPLICATION</p>	

1089623

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
-	-	REL FOR PRODUCTION	24 OCT 77	EC/DMT
A	-	REV PER ECO 76128	13 JAN 78	WJ/K
B	-	REV PER ECO 76147	8 MAR 78	RJ/
C	-	REV PER ECO 76165	4 MAY 78	WJ/RIB
D	-	REV PER ECO 76323	5 FEB 79	SG/
E	-	REV PER ECO 76481	1 NOV 79	D/WL



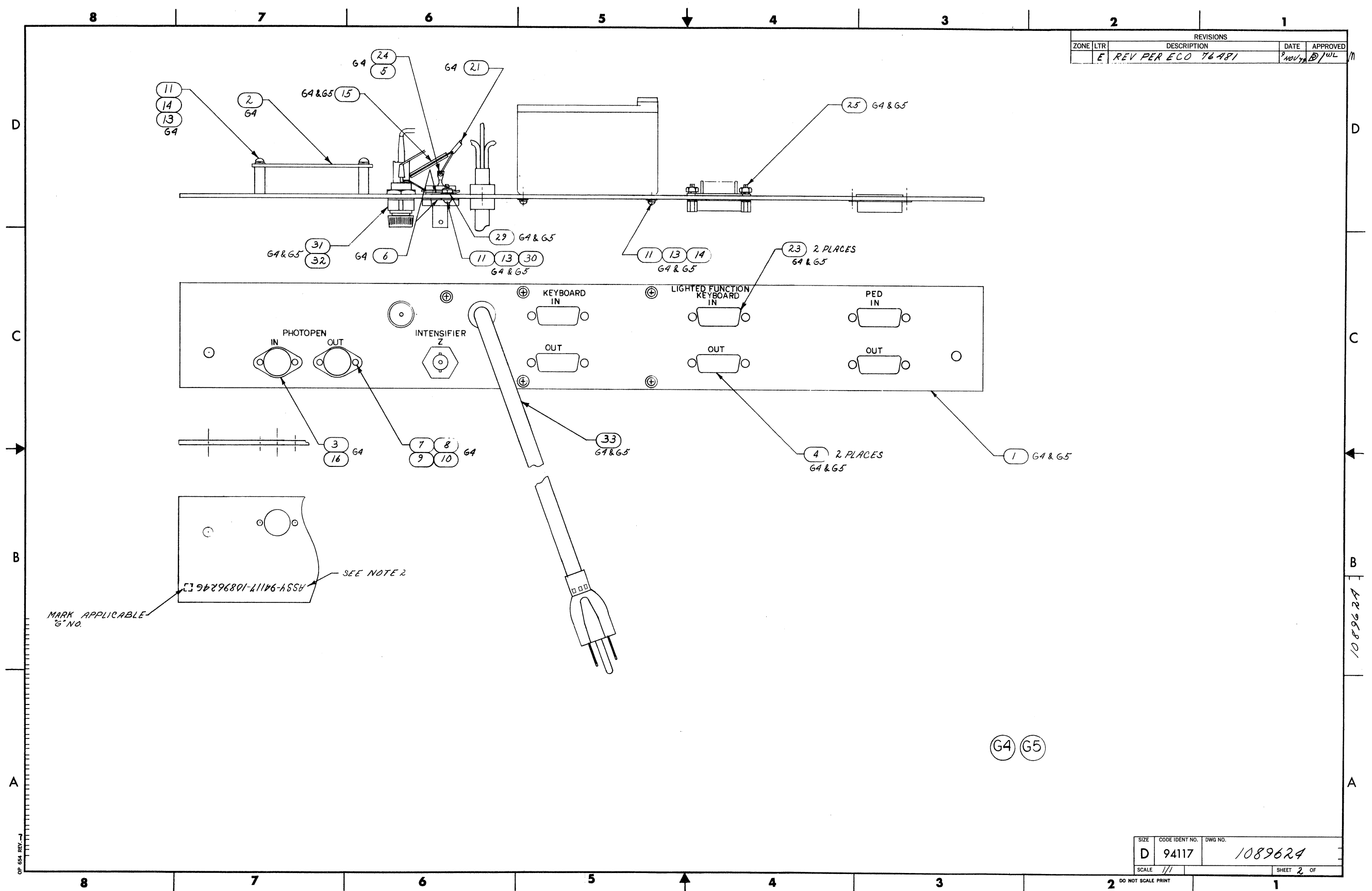
G3 G2 G1 FOR PARTS LIST  
SEE PL 1089624  
G4 G5 SEE SHT 2

REVISION STATUS OF SHEETS						
SHEET	1	2	3	4	5	6
REVISION	E	E				

2. MARK CHARACTER'S .04-.16 HIGH, WITH CONTRASTING COLOR GOTHIC TYPE & LOCATE APPROXIMATELY AS SHOWN, APPLY PER 115000.  
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

NOTES

QTY PER ASSY		PARTS LIST		DESCRIPTION	
Q6	Q5	Q4	Q3	Q2	Q1
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES		CONT NO.		DATE	
.XX DECIMAL .XXX DECIMAL		DR		7 OCT 77	
ANGLES		APPRO		14 Nov 77	
±		CHK		10 Dec 77	
±		MFG		12-1-77	
FINAL	GRAPHIC	PRODUCTION CHANGE BY ECR ONLY		SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE	
NEXT ASSY	USED ON	MFG		SIZE CODE IDENT NO DWG NO.	
APPLICATION				D 94117 1089624	
				SCALE 1/1 SHEET 1 OF 2	



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
E		REV PER ECO 76481	11/17/74	B/WL

MARK APPLICABLE  
"S" NO.

SEE NOTE 2

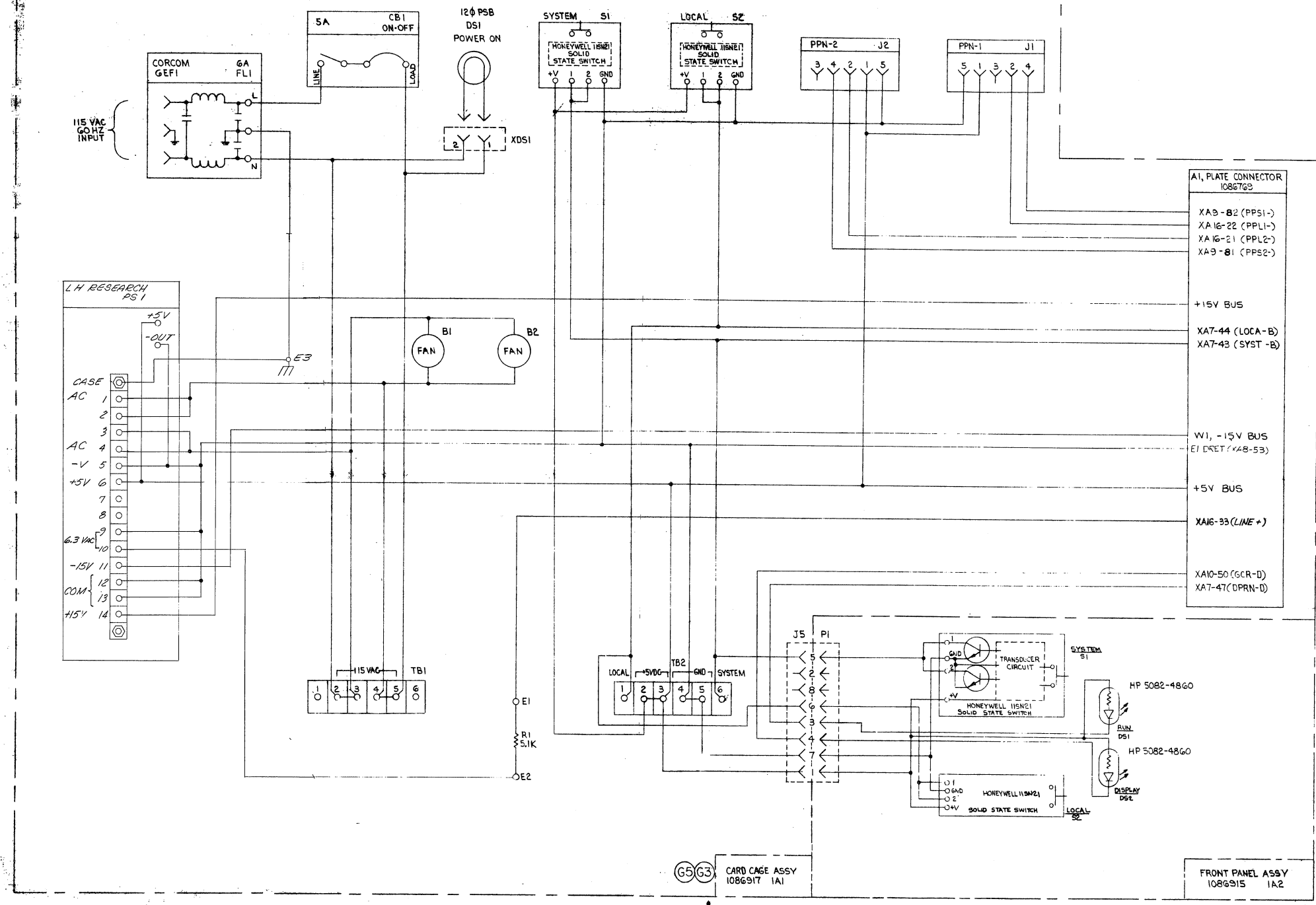
96296801-41106-1SSV

G4 G5

SIZE	CODE IDENT NO.	DWG NO.
D	94117	1089624
SCALE	1/1	SHEET 2 OF

DO NOT SCALE PRINT

ZONE/LTR	DESCRIPTION	DATE	APPROVED
-	REL FOR PRODUCTION	12/17/77	[Signature]
-	REV PER ECO 96484	12/17/77	[Signature]



RESISTOR DESIGNATIONS ARE ABBREVIATED FROM ONE DESIGNATION WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.  
 CAPACITOR DESIGNATIONS ARE ABBREVIATED FROM ONE DESIGNATION WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.  
 RESISTOR VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED.  
 CAPACITOR VALUES ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.  
 INDUCTANCE VALUES ARE IN MICROHENRIES UNLESS OTHERWISE SPECIFIED.  
 INTERPRET DRAWING PER 81800Z NOTES.

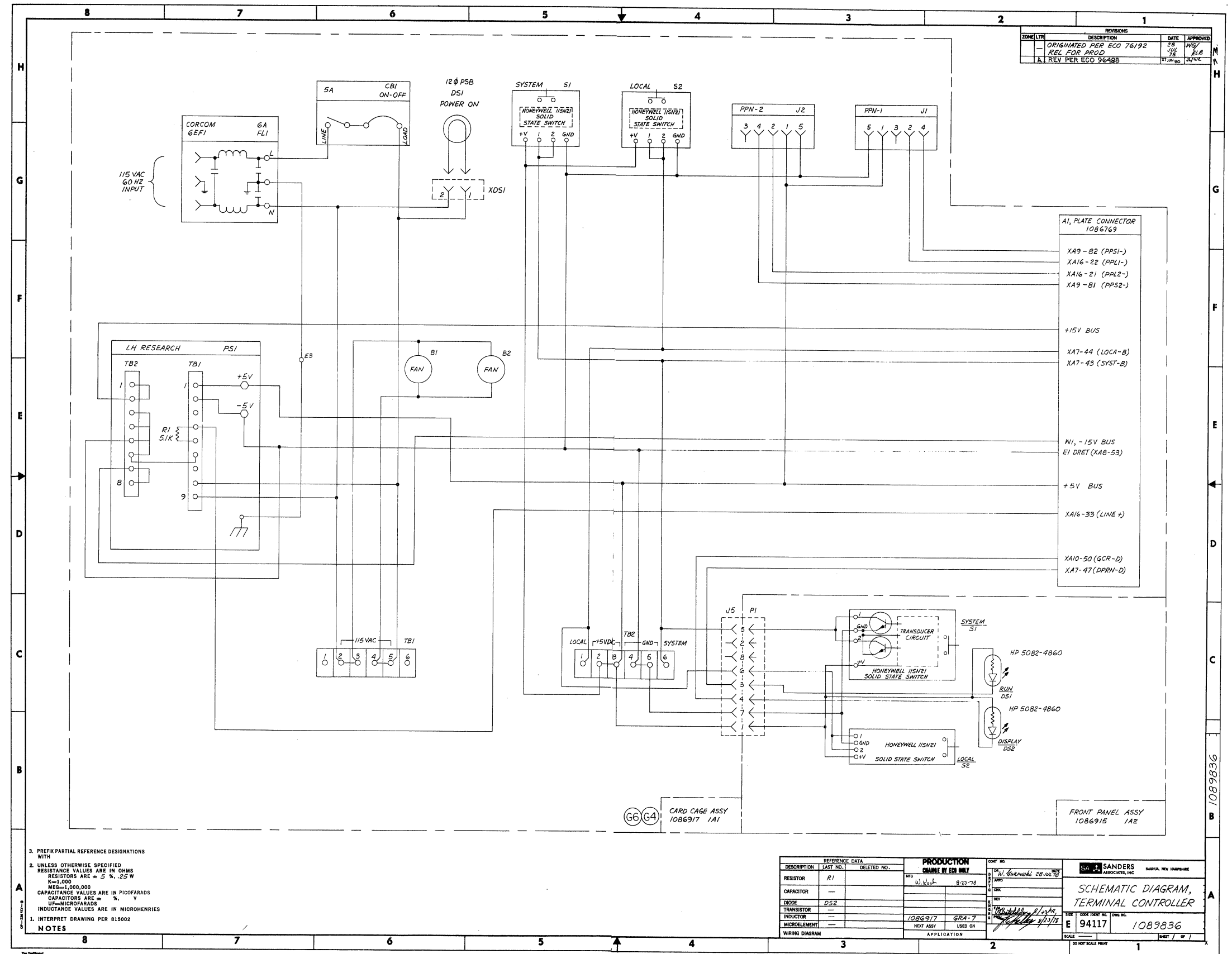
DESCRIPTION	REFERENCE DATA	ITEM NO.	PART OR IDENTIFYING NO.	DESCRIPTION
RESISTOR	R1			
CAPACITOR	-			
INDUCTOR	-			
TRANSFORMER	-			
INDICATOR	-			
MICROELEMENT	-			
WIRING DIAGRAM	-			

DATE	BY	DESCRIPTION
12/17/77	[Signature]	PRODUCTION

ITEM NO.	DESCRIPTION
1	SANDERS ASSOCIATES, INC.
2	SCHMATIC DIAGRAM
3	TERMINAL CONTROLLER
4	94117
5	1089647



REVISIONS			
ZONE/LTR	DESCRIPTION	DATE	APPROVED
	ORIGINATED PER ECO 76192	28 JUL 78	WJG
	REL FOR PROD	28 JUL 78	WJG
A	REV PER ECO 96488	27 APR 80	JJW

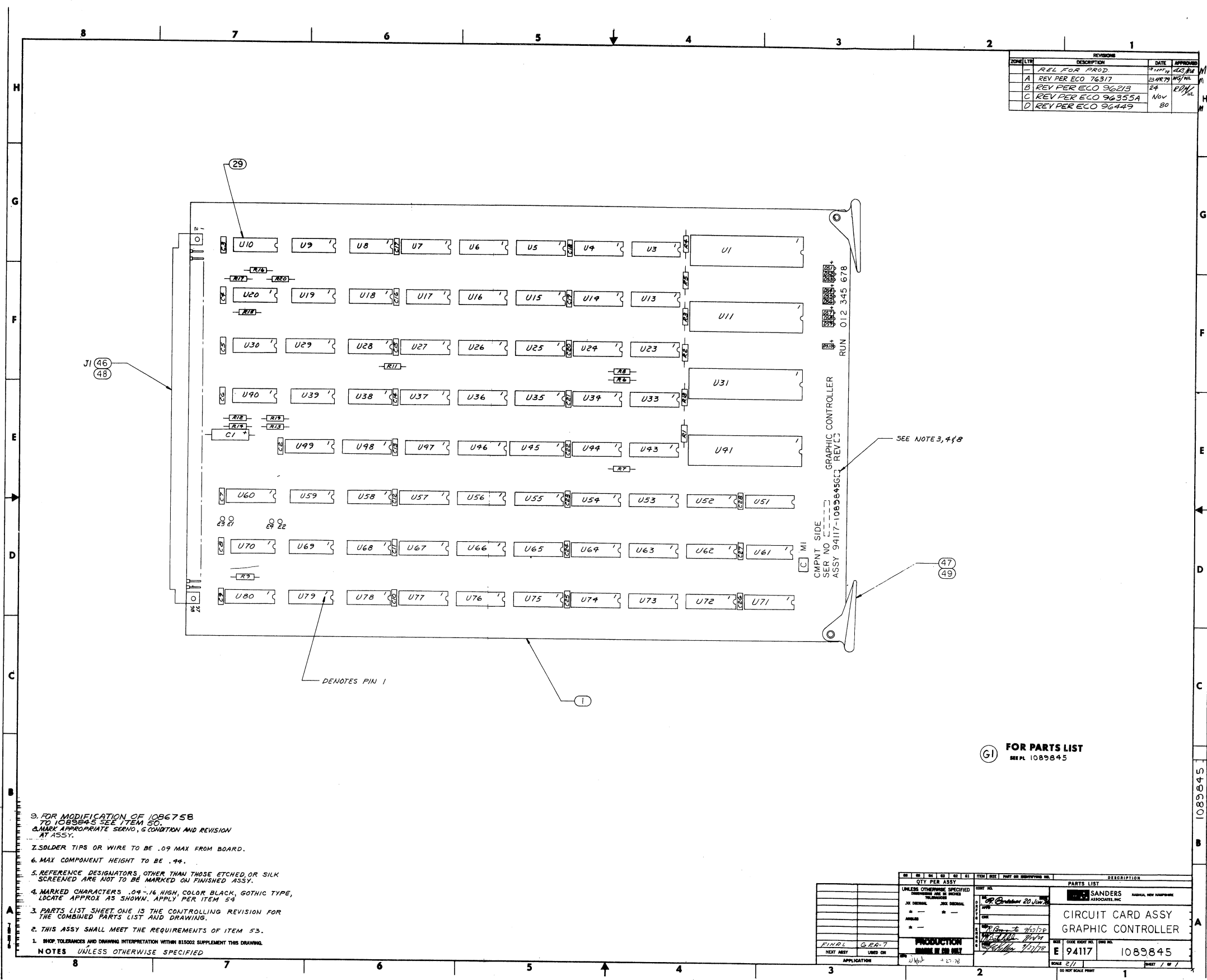
3. PREFIX PARTIAL REFERENCE DESIGNATIONS WITH
2. UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS  
RESISTORS ARE  $\pm 5\%$ , .25 W  
K=1,000  
MEG=1,000,000  
CAPACITANCE VALUES ARE IN PICOFARADS  
CAPACITORS ARE  $\pm 5\%$ , Y  
UF=MICROFARADS  
INDUCTANCE VALUES ARE IN MICRONHENRIES
1. INTERPRET DRAWING PER 915002
- NOTES**

REFERENCE DATA		PRODUCTION CHANGE BY ECU ONLY		DATE	
DESCRIPTION	LAST NO.	DELETED NO.	NO.	DATE	BY
RESISTOR	R1		WJG	8-23-78	
CAPACITOR					
DIODE	D52				
TRANSISTOR					
INDUCTOR					
MICROELEMENT					
WIRING DIAGRAM		APPLICATION		SCALE	

SANDERS ASSOCIATES, INC. SCHEMATIC DIAGRAM, TERMINAL CONTROLLER 94117 1089836	1089836 SHEET 1 OF 1
---	-------------------------

REV	DATE	DESCRIPTION	APPROVED
-	11/10/79	REL FOR PROD	AG/ML
A	23 APR 79	REV PER ECO 76317	AG/ML
B	24 NOV 80	REV PER ECO 96213	AG/ML
C		REV PER ECO 96355A	AG/ML
D		REV PER ECO 96449	AG/ML



9. FOR MODIFICATION OF 1086758 TO 1089845 SEE ITEM 50.  
 3. MARK APPROPRIATE SERVO, 6 CONDITION AND REVISION AT ASSY.
2. SOLDER TIPS OR WIRE TO BE .09 MAX FROM BOARD.
6. MAX COMPONENT HEIGHT TO BE .94.
5. REFERENCE DESIGNATORS OTHER THAN THOSE ETCHED OR SILK SCREENED ARE NOT TO BE MARKED ON FINISHED ASSY.
4. MARKED CHARACTERS .04-.16 HIGH, COLOR BLACK, GOTHIC TYPE, LOCATE APPROX AS SHOWN, APPLY PER ITEM 54
3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
2. THIS ASSY SHALL MEET THE REQUIREMENTS OF ITEM 53.
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.
- NOTES UNLESS OTHERWISE SPECIFIED

(G1) FOR PARTS LIST  
 SEE PL 1089845

QTY	PER	ASSY	DESCRIPTION
			CIRCUIT CARD ASSY
			GRAPHIC CONTROLLER

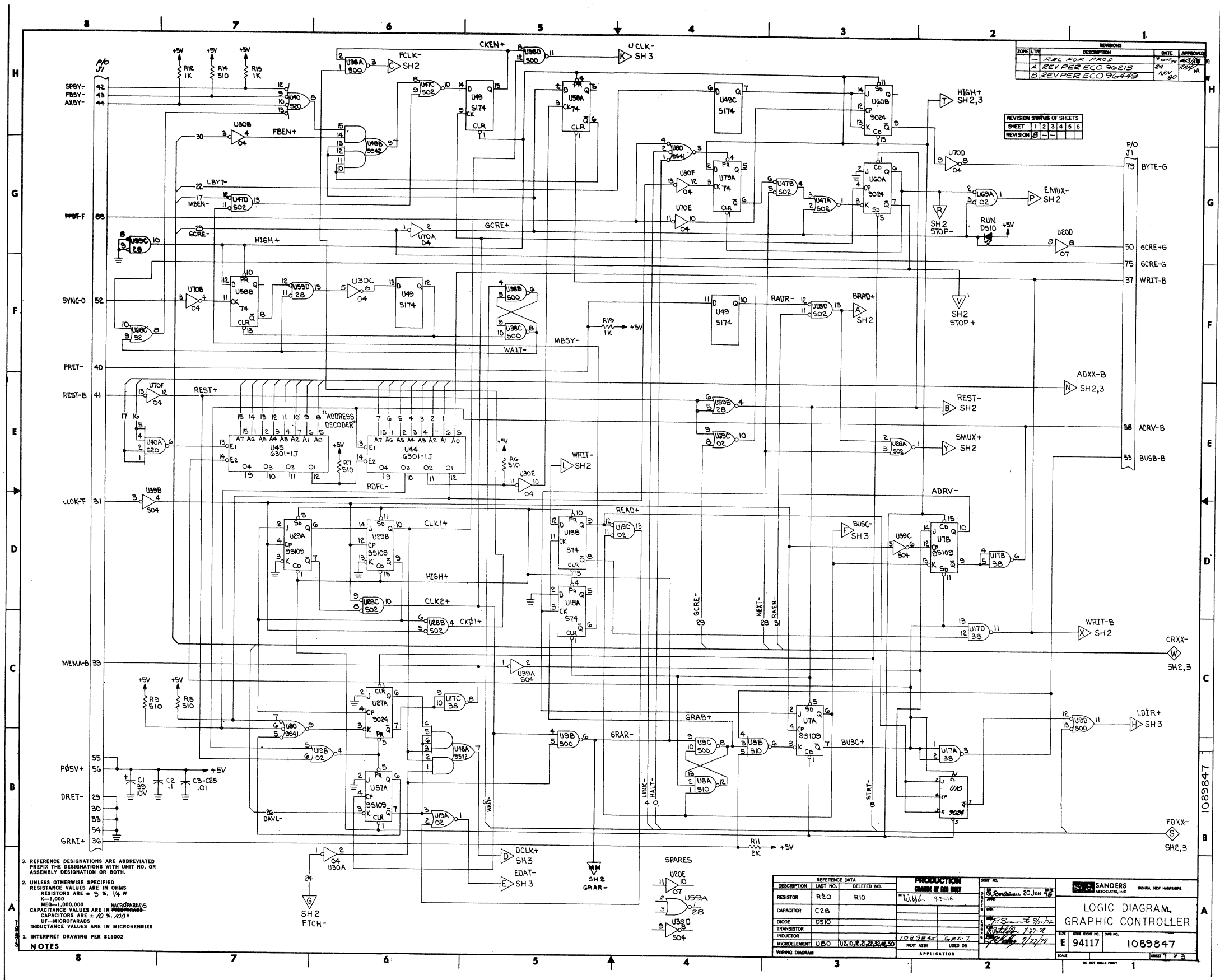
  

FINAL	GEA-7	PRODUCTION
NEXT ASSY	USED ON	ISSUED BY
APPLICATION	DATE	SCALE

DATE	2/11
SCALE	2/11
SHEET	1/1





REV	DATE	DESCRIPTION
1	10/12/78	REV PER ECO 96213
2	11/15/80	REV PER ECO 96449

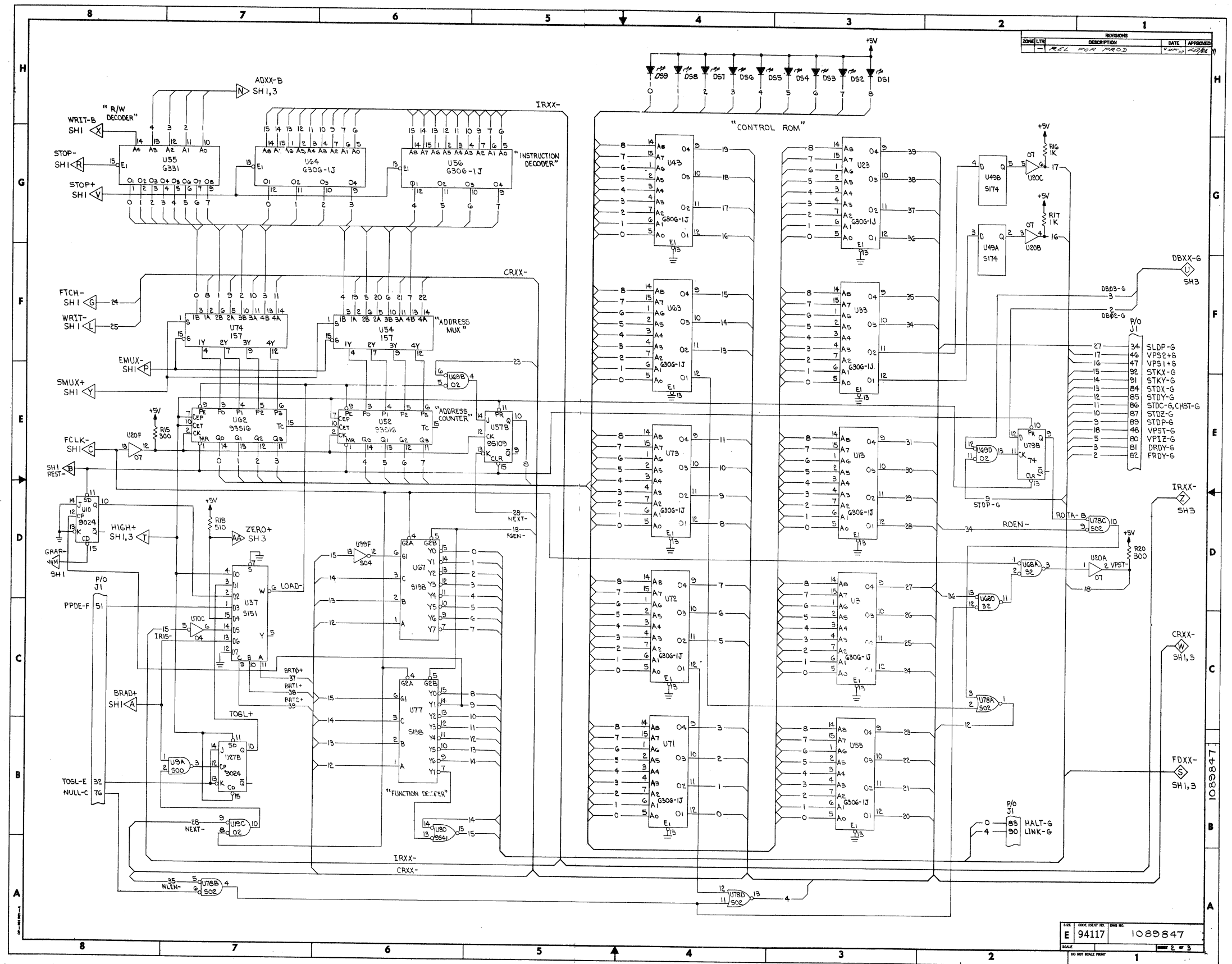
SHEET	1	2	3	4	5	6
REVISION						

3. REFERENCE DESIGNATIONS ARE ABBREVIATED PREFIX THE DESIGNATIONS WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS RESISTORS ARE  $\pm 5\%$ ,  $1/4$  W  
 K=1,000  
 M=1,000,000  
 CAPACITANCE VALUES ARE IN MICROFARADS CAPACITORS ARE  $\pm 10\%$ , 100V  
 U=MICROFARADS  
 INDUCTANCE VALUES ARE IN MICROHENRIES
1. INTERPRET DRAWING PER 816002

DESCRIPTION	REFERENCE DATA	DELETED NO.	PRODUCTION	DATE
RESISTOR	R20	R10	W. H. G. 7-21-78	
CAPACITOR	C2B			
DIODE	DS10			
TRANSISTOR				
INDUCTOR				
MICROELEMENT	U30	U2, U10, U27, U32, U50	1089847	6-22-78
WIRING DIAGRAM				

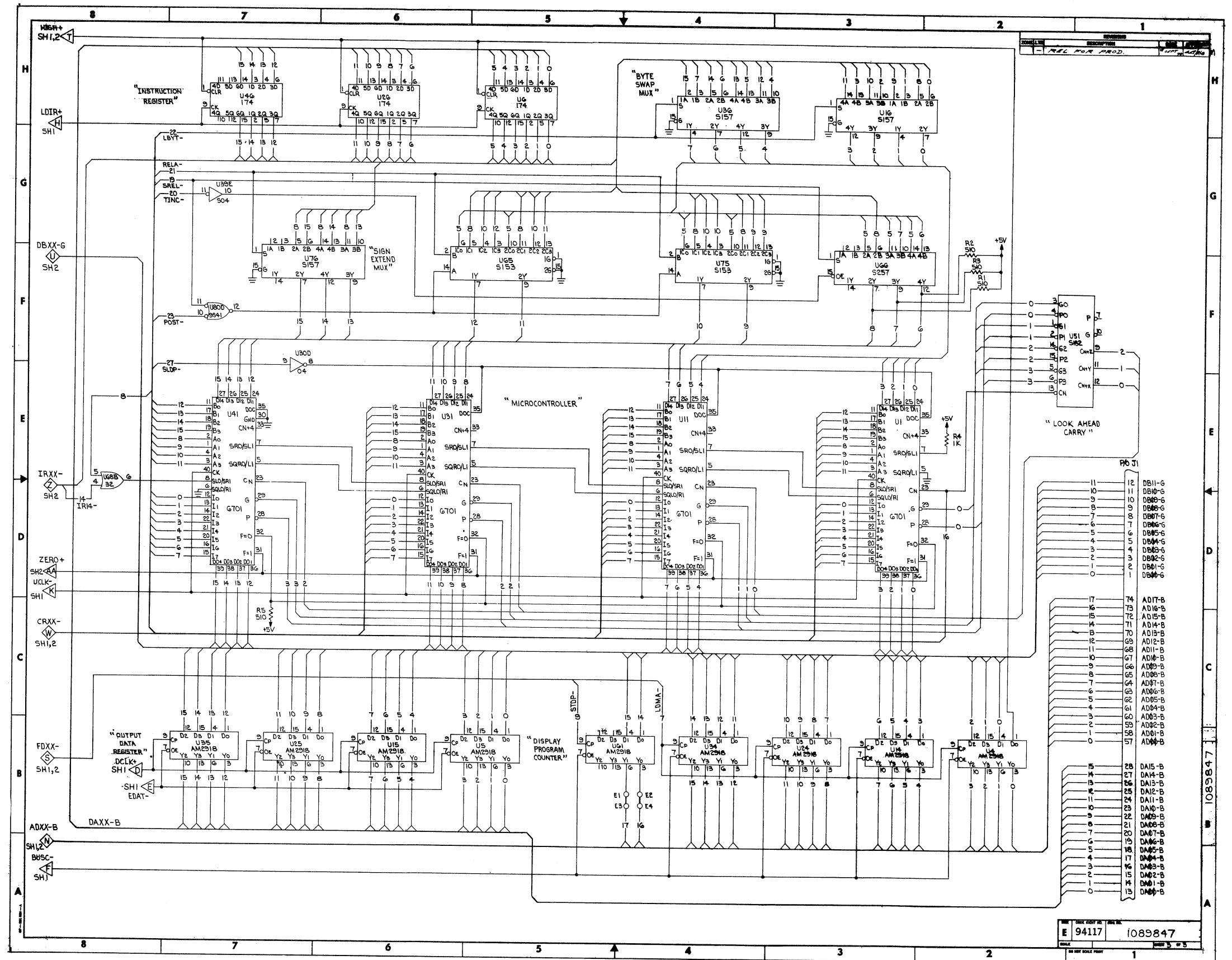
LOGIC DIAGRAM,  
 GRAPHIC CONTROLLER

E 94117 1089847

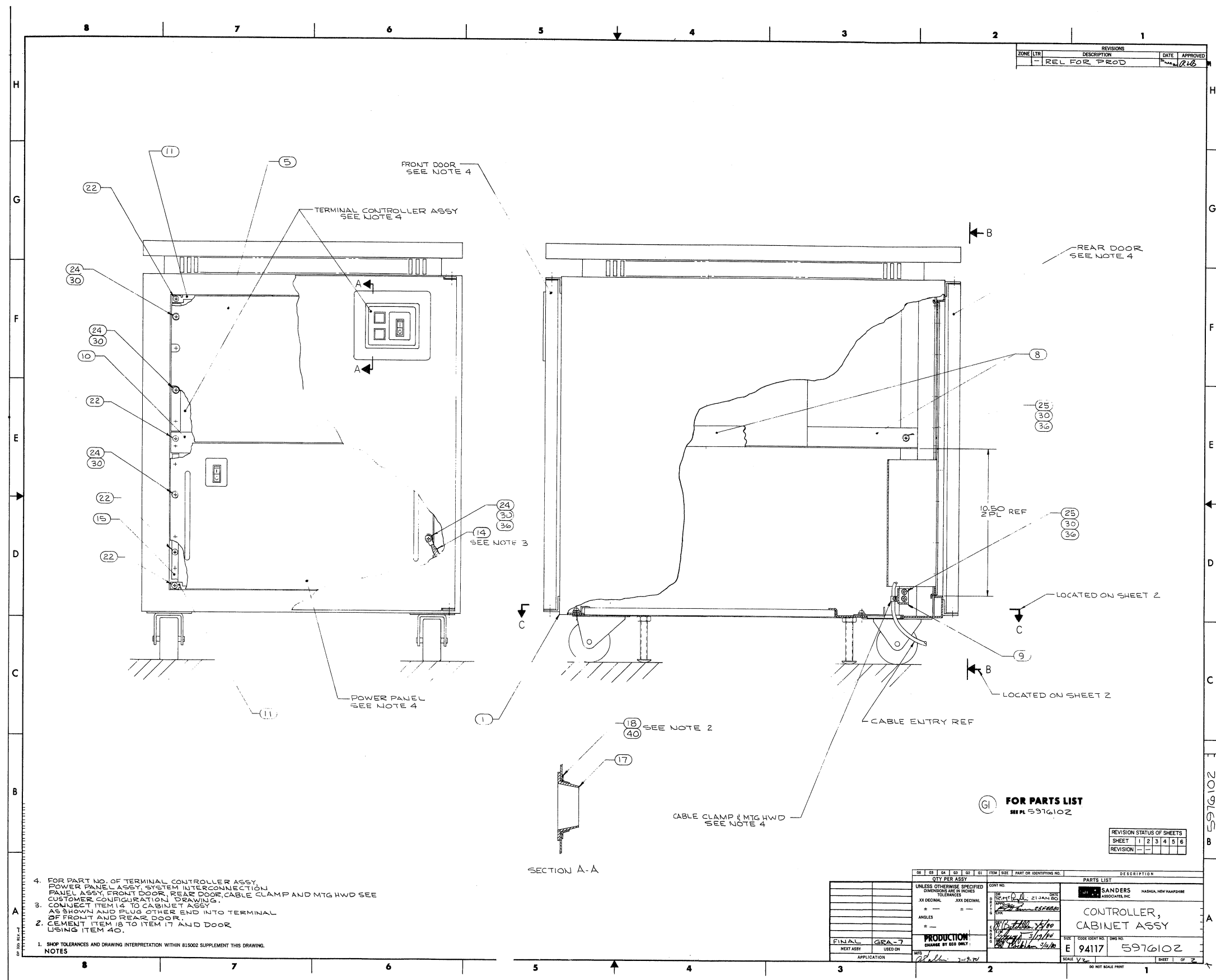


REVISIONS		DATE	APPROVED
ZONE	DESCRIPTION		
REL FOR PROD			

SIZE	CODE	DESK NO.	DWG NO.
E	94117		1080847
SCALE			SHEET 2 OF 3



ZONE	LTN	REVISIONS	DATE	APPROVED
		1	1/24/86	
REL FOR PROD				

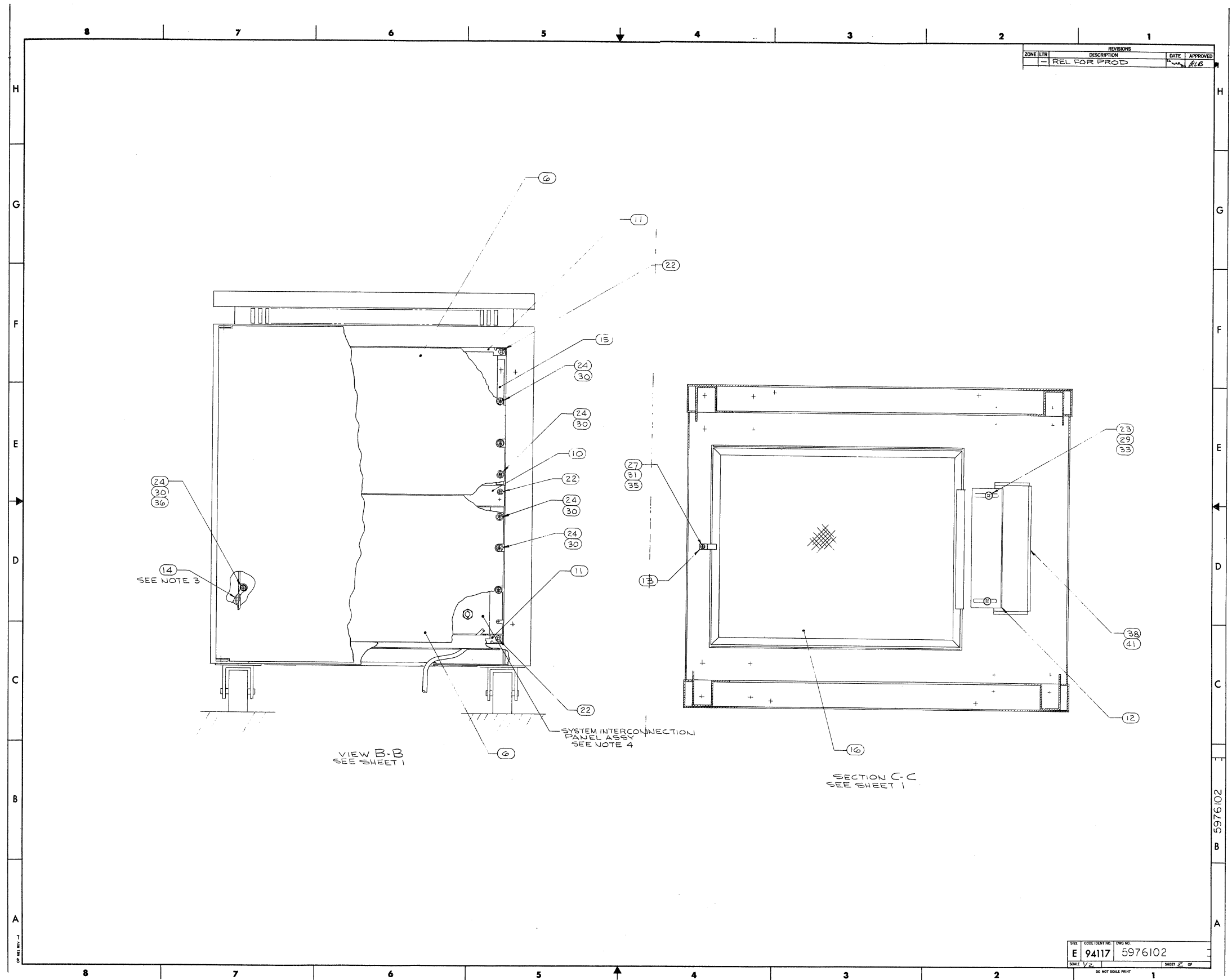


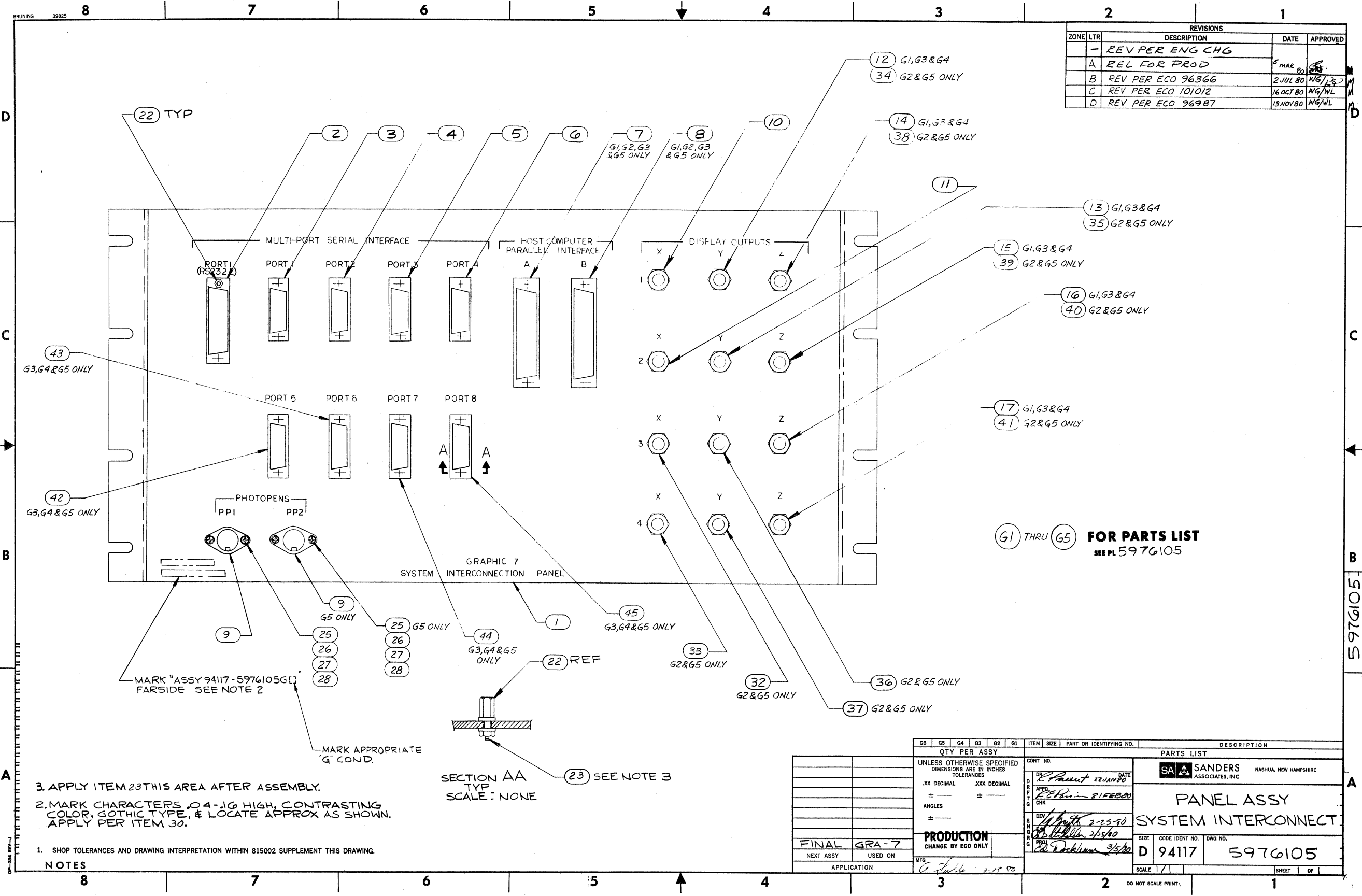
4. FOR PART NO. OF TERMINAL CONTROLLER ASSY, POWER PANEL ASSY, SYSTEM INTERCONNECTION PANEL ASSY, FRONT DOOR, REAR DOOR, CABLE CLAMP AND MTG HWD SEE CUSTOMER CONFIGURATION DRAWING.
3. CONNECT ITEM 14 TO CABINET ASSY AS SHOWN AND PLUG OTHER END INTO TERMINAL OF FRONT AND REAR DOOR.
2. CEMENT ITEM 18 TO ITEM 17 AND DOOR USING ITEM 40.
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.
- NOTES**

(G) FOR PARTS LIST  
SEE 597610Z

REVISION STATUS OF SHEETS						
SHEET	1	2	3	4	5	6
REVISION						

QTY PER ASSY	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	CONTR NO	DATE	DESCRIPTION
	XX DECIMAL		21 JAN 86	SANDERS ASSOCIATES, INC
				MADE IN NEW HAMPSHIRE
				CONTROL, CABINET ASSY
				E 94117 597610Z
				SCALE 1/2" = 1"





REVISIONS			
ZONE LTR	DESCRIPTION	DATE	APPROVED
-	REV PER ENG CHG		
A	REL FOR PROD	5 MAR 80	[Signature]
B	REV PER ECO 96366	2 JUL 80	WG/WL
C	REV PER ECO 101012	16 OCT 80	WG/WL
D	REV PER ECO 96987	13 NOV 80	WG/WL

3. APPLY ITEM 23 THIS AREA AFTER ASSEMBLY.  
 2. MARK CHARACTERS .04-.16 HIGH, CONTRASTING COLOR, GOTHIC TYPE, & LOCATE APPROX AS SHOWN. APPLY PER ITEM 30.

1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

**NOTES**

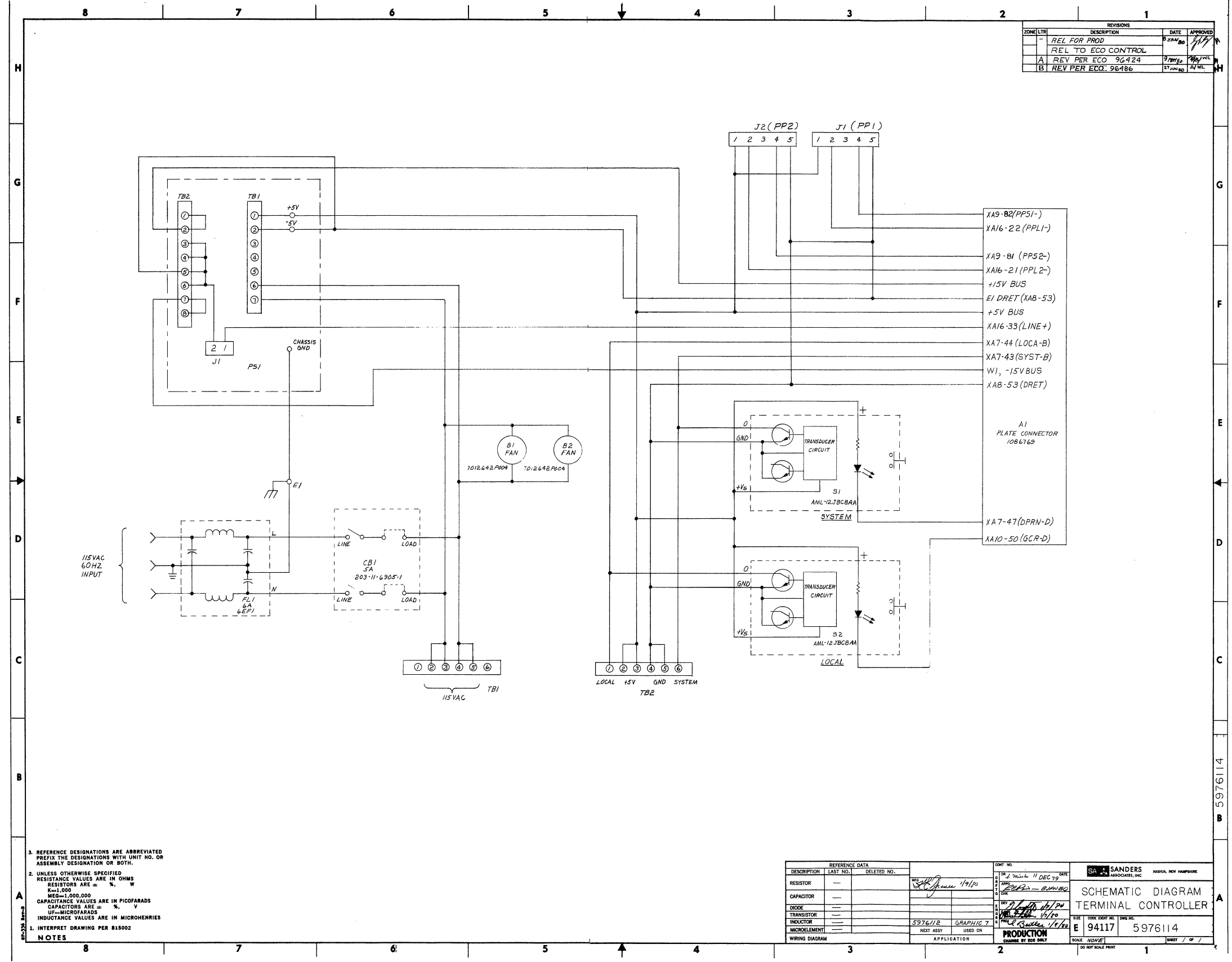
SECTION AA  
 TYP  
 SCALE: NONE

(G1 THRU G5) **FOR PARTS LIST**  
 SEE PL 5976105

G6		G5		G4		G3		G2		G1		ITEM	SIZE	PART OR IDENTIFYING NO.	DESCRIPTION
QTY PER ASSY												PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES												SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE			
.XX DECIMAL .XXX DECIMAL												PANEL ASSY SYSTEM INTERCONNECT			
ANGLES												D 94117 5976105			
PRODUCTION CHANGE BY ECO ONLY												SCALE 1/1 SHEET OF 1			
FINAL GRA-7												MFG C. Smith 2-23-80			
NEXT ASSY USED ON												DATE 2-23-80			
APPLICATION												APPD E. E. [Signature] 2/FEB/80			
												DEV [Signature] 2-23-80			
												CHK [Signature] 2/25/80			
												PROJ [Signature] 2/25/80			



ZONE	TR	DESCRIPTION	DATE	APPROVED
		REL FOR PROD	8 JAN 80	
		REL TO ECO CONTROL		
A		REV PER ECO 96424	9 JAN 80	
B		REV PER ECO 96486	27 JAN 80	



3. REFERENCE DESIGNATIONS ARE ABBREVIATED  
PREFIX THE DESIGNATIONS WITH UNIT NO. OR  
ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED  
RESISTANCE VALUES ARE IN OHMS  
RESISTORS ARE  $\pm$  %, W  
K=1,000  
M=1,000,000  
CAPACITANCE VALUES ARE IN PICOFARADS  
CAPACITORS ARE  $\pm$  %, V  
UF=MICROFARADS  
INDUCTANCE VALUES ARE IN MICROHENRIES
1. INTERPRET DRAWING PER 815002
- NOTES**

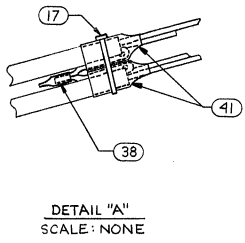
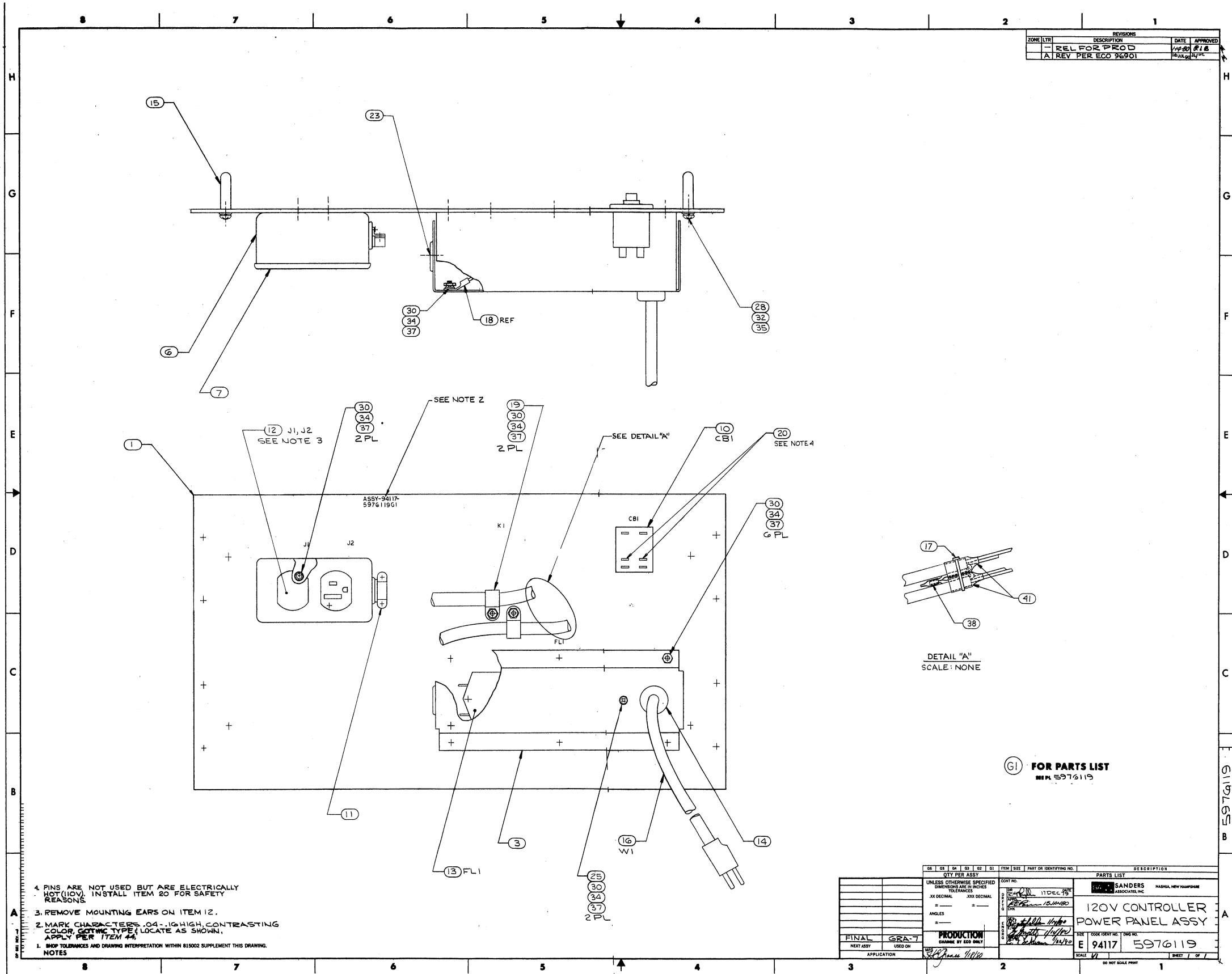
DESCRIPTION	REFERENCE DATA	LAST NO.	DELETED NO.
RESISTOR			
CAPACITOR			
DIODE			
TRANSISTOR			
INDUCTOR			
MICROELEMENT			
WIRING DIAGRAM			

DATE	11 DEC 79
BY	822-8280
CHKD	
DATE	11/1/80
BY	
CHKD	
DATE	1/1/80
BY	
CHKD	

SA SANDERS ASSOCIATES, INC.	MADE IN NEW HAMPSHIRE
SCHEMATIC DIAGRAM	
TERMINAL CONTROLLER	
SIZE	5976114
DATE	94117
SCALE	5976114
CHANGE BY	ECR ONLY
APPLICATION	PRODUCTION
SCALE	10X NOT SCALE PRINT



ZONE LTR	REVISIONS	DATE	APPROVED
-	REL FOR PROD	11/28/80	[Signature]
A	REV PER ECO 96901	11/28/80	[Signature]



(G) FOR PARTS LIST  
REF. 5976119

4. PINS ARE NOT USED BUT ARE ELECTRICALLY HOT (10V). INSTALL ITEM 20 FOR SAFETY REASONS.
3. REMOVE MOUNTING EARS ON ITEM 12.
2. MARK CHARACTERS .04-.16 HIGH, CONTRASTING COLOR, GOING TYPE 1; LOCATE AS SHOWN, APPLY PER ITEM 4.
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.
- NOTES

QTY PER ASSY	DESCRIPTION	ITEM	SIZE	PART OR IDENTIFYING NO.	DESCRIPTION
1	120V CONTROLLER POWER PANEL ASSY	1			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES	XX DECIMAL	XXX DECIMAL
ANGLES		
FINAL	GRA-7	PRODUCTION
NEXT ASSY	USED ON	CHANGE BY ECO ONLY
APPLICATION	11/28/80	11/28/80

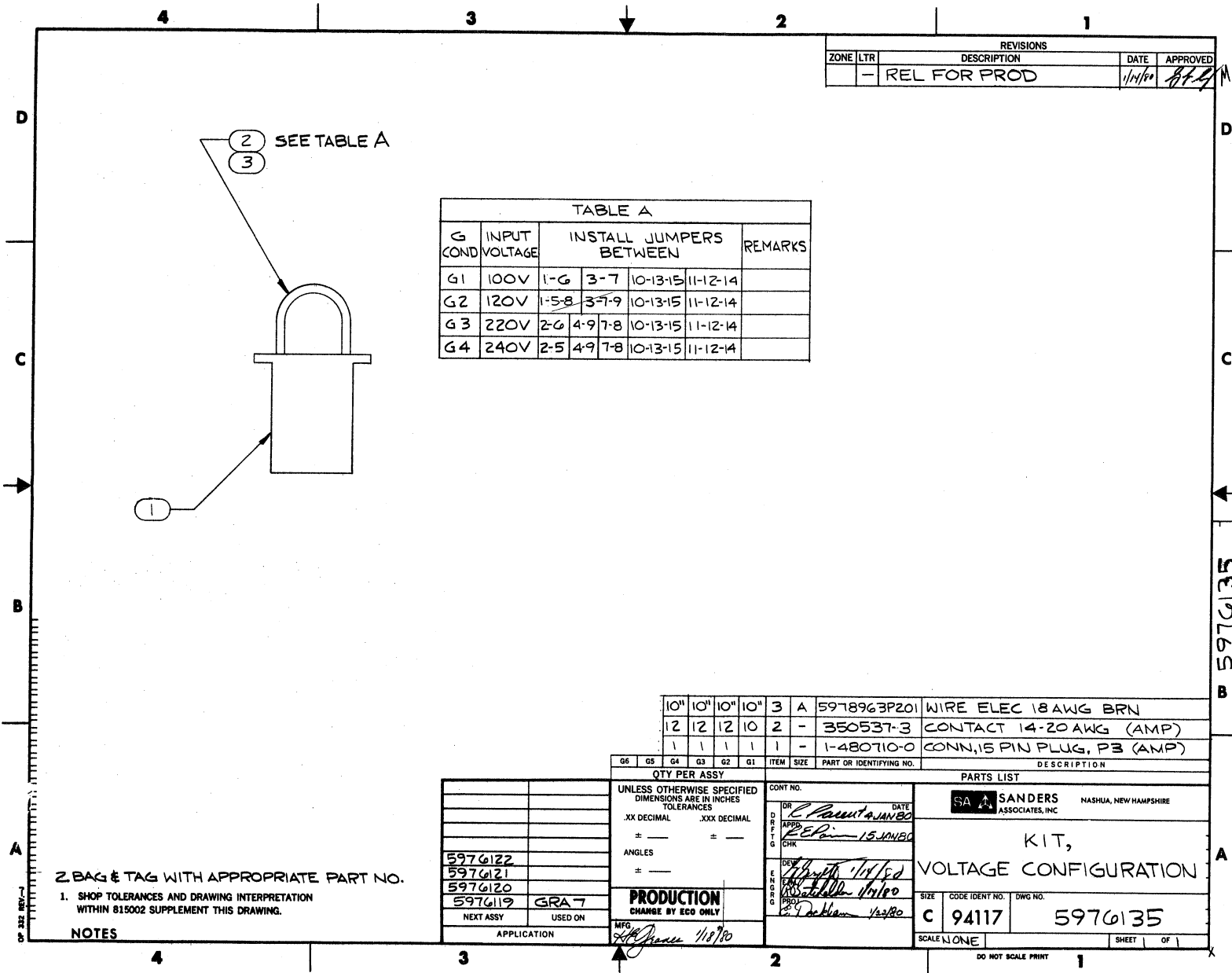
  

DATE	11/28/80	11/28/80
BY	[Signature]	[Signature]
CHECKED	[Signature]	[Signature]
APPROVED	[Signature]	[Signature]

PARTS LIST	SANDERS ASSOCIATES, INC.	NASHUA, NEW HAMPSHIRE
DESCRIPTION	120V CONTROLLER POWER PANEL ASSY	
ITEM NO.	E 94117	5976119
SCALE	1/1	
SHEET	1	OF 1





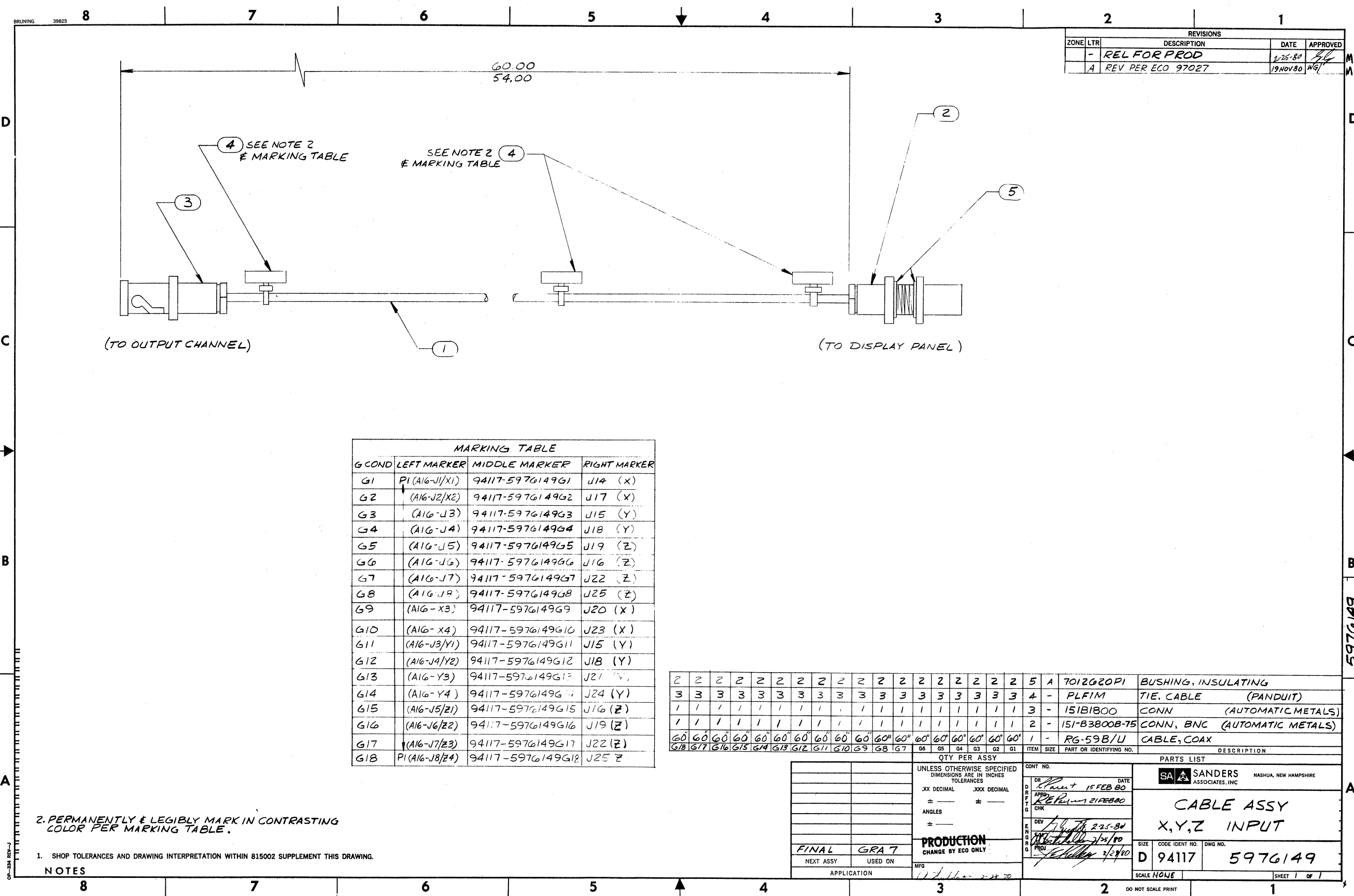
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
-		REL FOR PROD	1/11/80	[Signature]

TABLE A						
G COND	INPUT VOLTAGE	INSTALL JUMPERS BETWEEN			REMARKS	
G1	100V	1-6	3-7	10-13-15	11-12-14	
G2	120V	1-5-8	3-7-9	10-13-15	11-12-14	
G3	220V	2-6	4-9-7-8	10-13-15	11-12-14	
G4	240V	2-5	4-9-7-8	10-13-15	11-12-14	

QTY	GS	G4	G3	G2	G1	ITEM	SIZE	PART OR IDENTIFYING NO.	DESCRIPTION
10	10	10	10	3	A	5978963P20			WIRE ELEC 18AWG BRN
12	12	12	10	2	-	350537-3			CONTACT 14-20 AWG (AMP)
1	1	1	1	1	-	1-480710-0			CONN, 15 PIN PLUG, P3 (AMP)

QTY PER ASSY UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES .XX DECIMAL .XXX DECIMAL ± — ± — ANGLES ± —		CONT NO. DR [Signature] DATE 1/11/80 REVISIONS REVISION 15 JAN 80 CHK [Signature] DES [Signature] 1/11/80 PRO [Signature] 1/11/80 MFG [Signature] 1/11/80		PARTS LIST SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE KIT, VOLTAGE CONFIGURATION	
5976122		SIZE	C	CODE IDENT NO.	94117
5976121		DWG NO.			5976135
5976120		SCALE	1:1	SHEET	OF 1
5976119	GRA-7	DO NOT SCALE PRINT			

Z BAG & TAG WITH APPROPRIATE PART NO.  
 1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
-		REL FOR PROD	2-25-80	[Signature]
A		REV PER ECO 97027	19 NOV 80	[Signature]

MARKING TABLE			
G COND	LEFT MARKER	MIDDLE MARKER	RIGHT MARKER
G1	PI (A16-J1/X1)	94117-5976149G1	J14 (X)
G2	(A16-J2/X2)	94117-5976149G2	J17 (X)
G3	(A16-J3)	94117-5976149G3	J15 (Y)
G4	(A16-J4)	94117-5976149G4	J18 (Y)
G5	(A16-J5)	94117-5976149G5	J19 (Z)
G6	(A16-J6)	94117-5976149G6	J16 (Z)
G7	(A16-J7)	94117-5976149G7	J22 (Z)
G8	(A16-J8)	94117-5976149G8	J25 (Z)
G9	(A16-X3)	94117-5976149G9	J20 (X)
G10	(A16-X4)	94117-5976149G10	J23 (X)
G11	(A16-J3/Y1)	94117-5976149G11	J15 (Y)
G12	(A16-J4/Y2)	94117-5976149G12	J18 (Y)
G13	(A16-Y3)	94117-5976149G13	J21 (Y)
G14	(A16-Y4)	94117-5976149G14	J24 (Y)
G15	(A16-J5/Z1)	94117-5976149G15	J19 (Z)
G16	(A16-J6/Z2)	94117-5976149G16	J16 (Z)
G17	(A16-J7/Z3)	94117-5976149G17	J22 (Z)
G18	PI (A16-J8/Z4)	94117-5976149G18	J25 (Z)

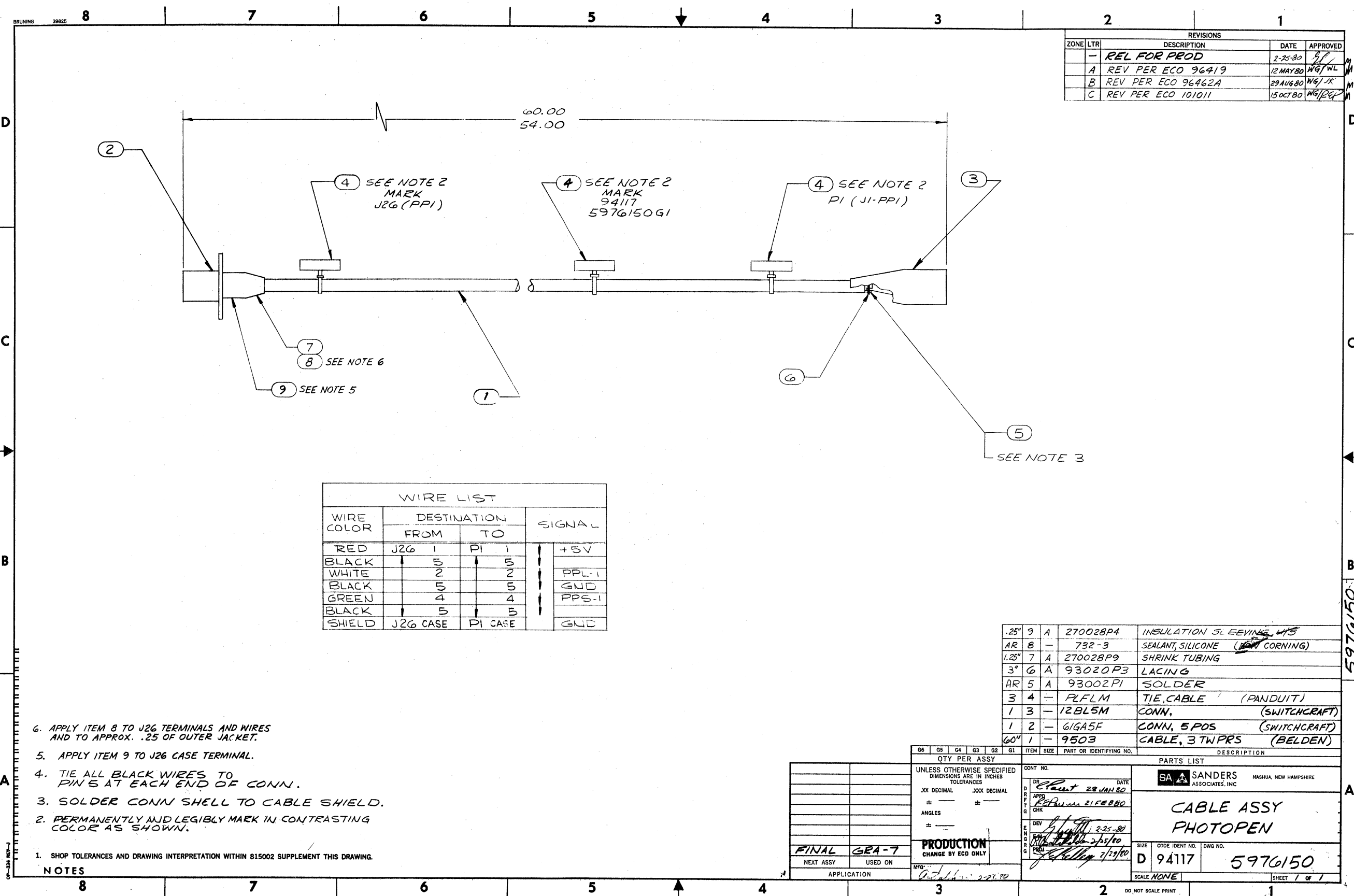
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	5	A	7012620P1	BUSHING, INSULATING
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	-	PLF1M	TIE, CABLE (PANDUIT)
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	-	151B1800	CONN (AUTOMATIC METALS)
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	-	151-B3B00B-75	CONN, BNC (AUTOMATIC METALS)
60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	1	-	RG-59B/U	CABLE, COAX

2. PERMANENTLY & LEGIBLY MARK IN CONTRASTING COLOR PER MARKING TABLE.

1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

NOTES

QTY PER ASSY		PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES		CONT. NO.	
.XX DECIMAL	.XXX DECIMAL	DATE	
±	±	15 FEB 80	
ANGLES		APP'D [Signature] 21 FEB 80	
±		CHK	
±		DEV [Signature] 2-25-80	
±		MFG [Signature] 2/25/80	
±		PROJ [Signature] 2/27/80	
±		SIZE CODE IDENT NO. DWG NO.	
±		D 94117 5976149	
±		SCALE NONE SHEET 1 OF 1	



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
-		REL FOR PROD	2-25-80	WJ
A		REV PER ECO 96419	12 MAY 80	WJ/WL
B		REV PER ECO 96462A	29 AUG 80	WJ/JK
C		REV PER ECO 101011	15 OCT 80	WJ/PC

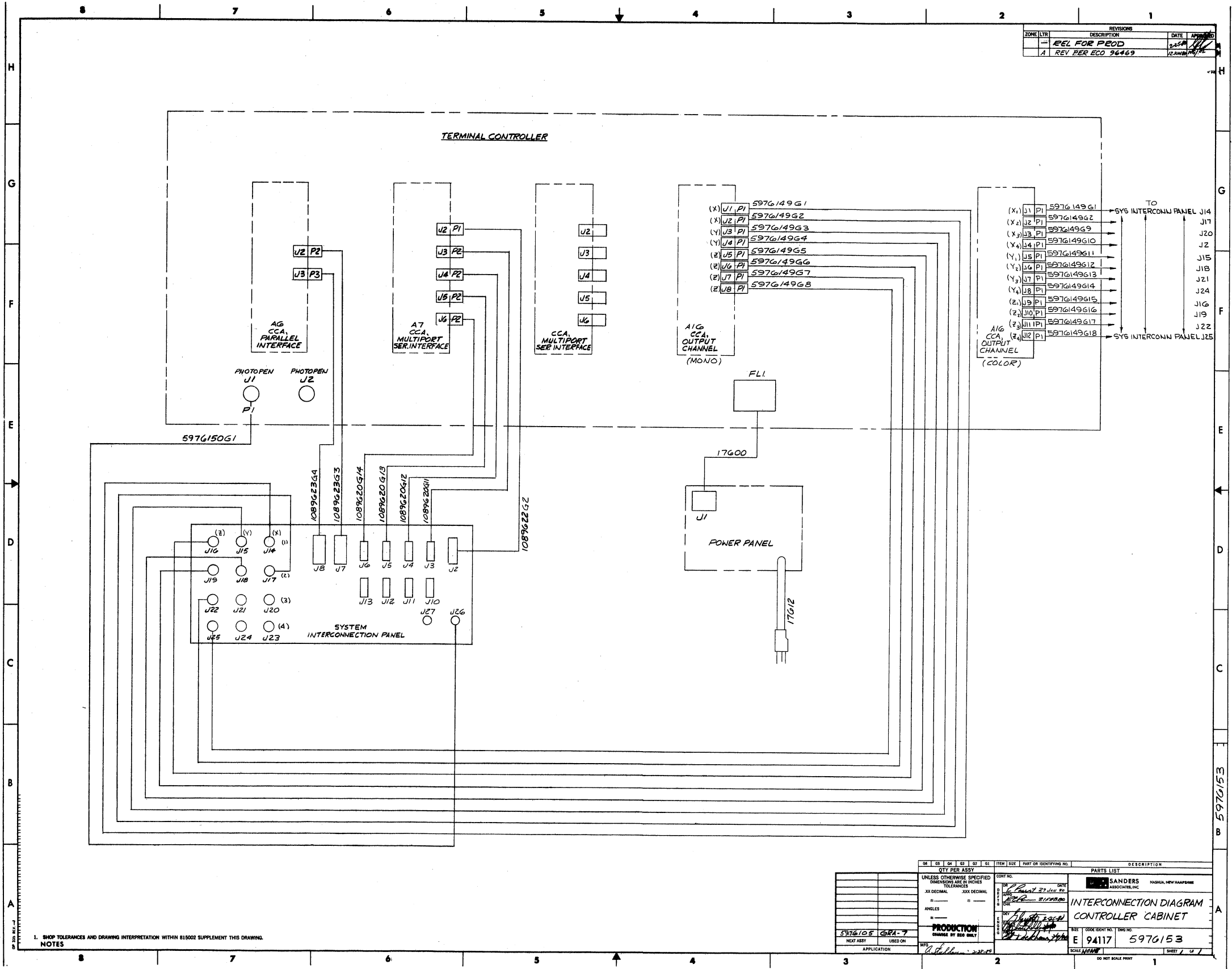
WIRE LIST				
WIRE COLOR	DESTINATION		SIGNAL	
	FROM	TO		
RED	J26 1	PI 1	+5V	
BLACK	5	5	PPL-1	
WHITE	2	2	GND	
BLACK	5	5	PPS-1	
GREEN	4	4	GND	
BLACK	5	5	GND	
SHIELD	J26 CASE	PI CASE		

QTY	SIZE	PART OR IDENTIFYING NO.	DESCRIPTION
.25"	9	A 270028P4	INSULATION SLEEVING 4/5
AR	8	- 732-3	SEALANT, SILICONE (CORNING)
1.25"	7	A 270028P9	SHRINK TUBING
3"	6	A 93020P3	LACING
AR	5	A 93002P1	SOLDER
3	4	- PLFLM	TIE, CABLE (PANDUIT)
1	3	- 12BL5M	CONN, (SWITCHCRAFT)
1	2	- 61G5F	CONN, 5 POS (SWITCHCRAFT)
60"	1	- 9503	CABLE, 3 TWPRS (BELDEN)

- NOTES**
- SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.
  - PERMANENTLY AND LEGIBLY MARK IN CONTRASTING COLOR AS SHOWN.
  - SOLDER CONN SHELL TO CABLE SHIELD.
  - TIE ALL BLACK WIRES TO PINS AT EACH END OF CONN.
  - APPLY ITEM 9 TO J26 CASE TERMINAL.
  - APPLY ITEM 8 TO J26 TERMINALS AND WIRES AND TO APPROX. .25 OF OUTER JACKET.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES .XX DECIMAL .XXX DECIMAL ± ± ANGLES ±		CONT. NO. DATE 28 JAN 80 APP'D DEV ENG GRG PRO	<b>SANDERS ASSOCIATES, INC.</b> MASHUA, NEW HAMPSHIRE <b>CABLE ASSY</b> <b>PHOTOPEN</b> SIZE CODE IDENT NO. DWG NO. <b>D 94117 5976150</b> SCALE NONE SHEET 1 of 1
FINAL NEXT ASSY USED ON APPLICATION	PRODUCED CHANGE BY ECO ONLY MFG	PRODUCTION DATE 2/25/80 DATE 2/25/80 DATE 7/29/80	DO NOT SCALE PRINT

REVISIONS		DATE	APPROVED
1	REV FOR PROD	2/25/69	[Signature]
2	REV PER ECO 96469	12/20/69	[Signature]



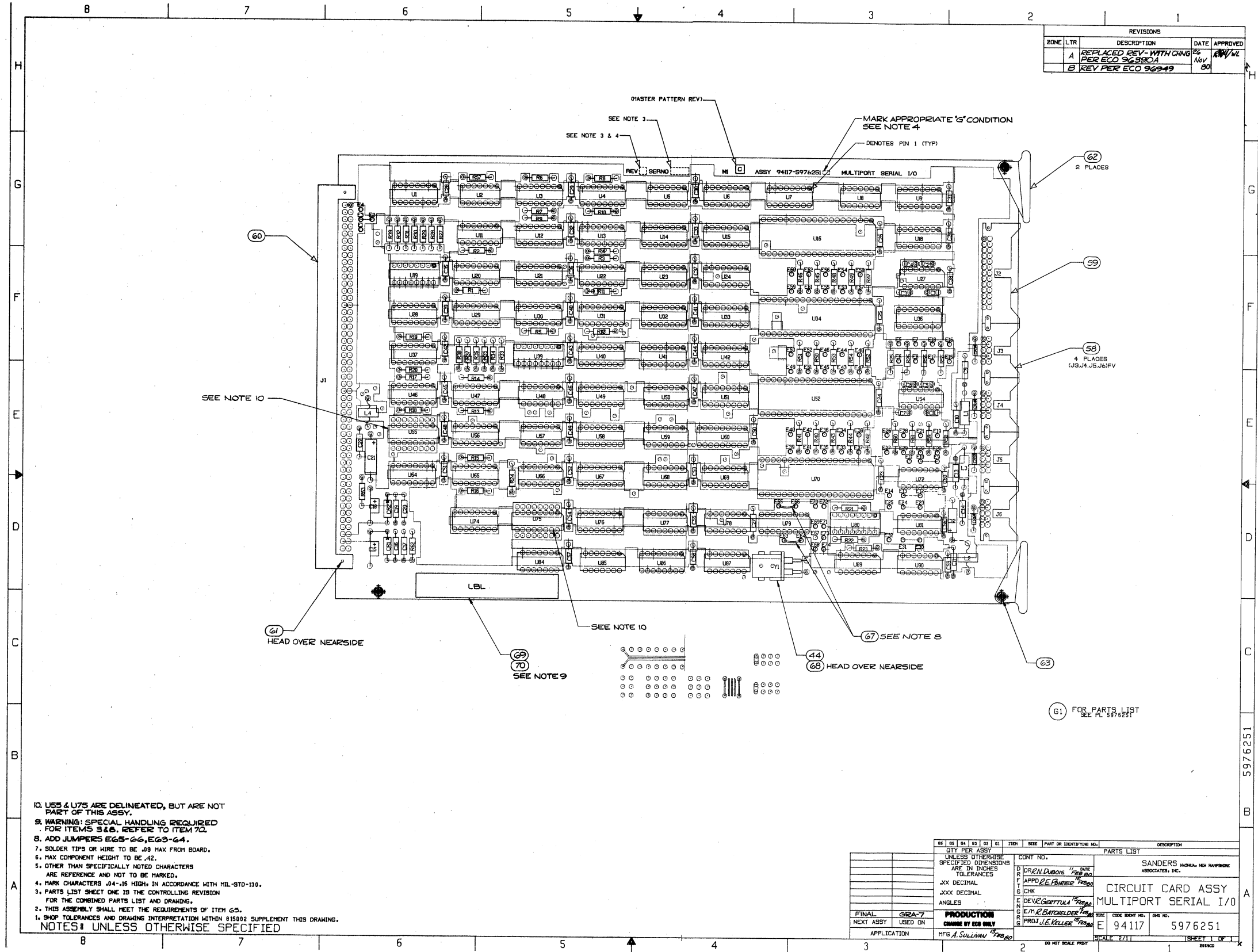
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.  
NOTES

QTY PER ASSY	ITEM SIZE	PART OR IDENTIFYING NO.	DESCRIPTION
1		597G150G1	TERMINAL CONTROLLER
1		1089G23G4	AG CCA PARALLEL INTERFACE
1		1089G23G3	A7 CCA MULTIPORT SER. INTERFACE
1		1089G20G14	CCA MULTIPORT SER. INTERFACE
1		1089G20G13	CCA MULTIPORT SER. INTERFACE (MONO)
1		1089G20G12	CCA MULTIPORT SER. INTERFACE (COLOR)
1		1089G20G11	CCA MULTIPORT SER. INTERFACE (COLOR)
1		17G12	POWER PANEL

(TO BE SUPPLIED)

Controller Cabinet Assembly,  
Installation Diagram  
(Dwg. No. 5976154).

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		REPLACED REV- WITH CHNG PER ECO 96390A	26 Nov 80	AW/HL
B		REV PER ECO 96949	80	



10. U55 & U75 ARE DELINEATED, BUT ARE NOT PART OF THIS ASSY.
9. WARNING: SPECIAL HANDLING REQUIRED FOR ITEMS 3 & 6. REFER TO ITEM 70.
8. ADD JUMPERS E65-66, E63-64.
7. SOLDER TIPS OR WIRE TO BE .08 MAX FROM BOARD.
6. MAX COMPONENT HEIGHT TO BE .42.
5. OTHER THAN SPECIFICALLY NOTED CHARACTERS ARE REFERENCE AND NOT TO BE MARKED.
4. MARK CHARACTERS .04-.15 HIGH, IN ACCORDANCE WITH MIL-STD-130.
3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE CONSIGNED PARTS LIST AND DRAWING.
2. THIS ASSEMBLY SHALL MEET THE REQUIREMENTS OF ITEM 65.
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.
- NOTES: UNLESS OTHERWISE SPECIFIED**

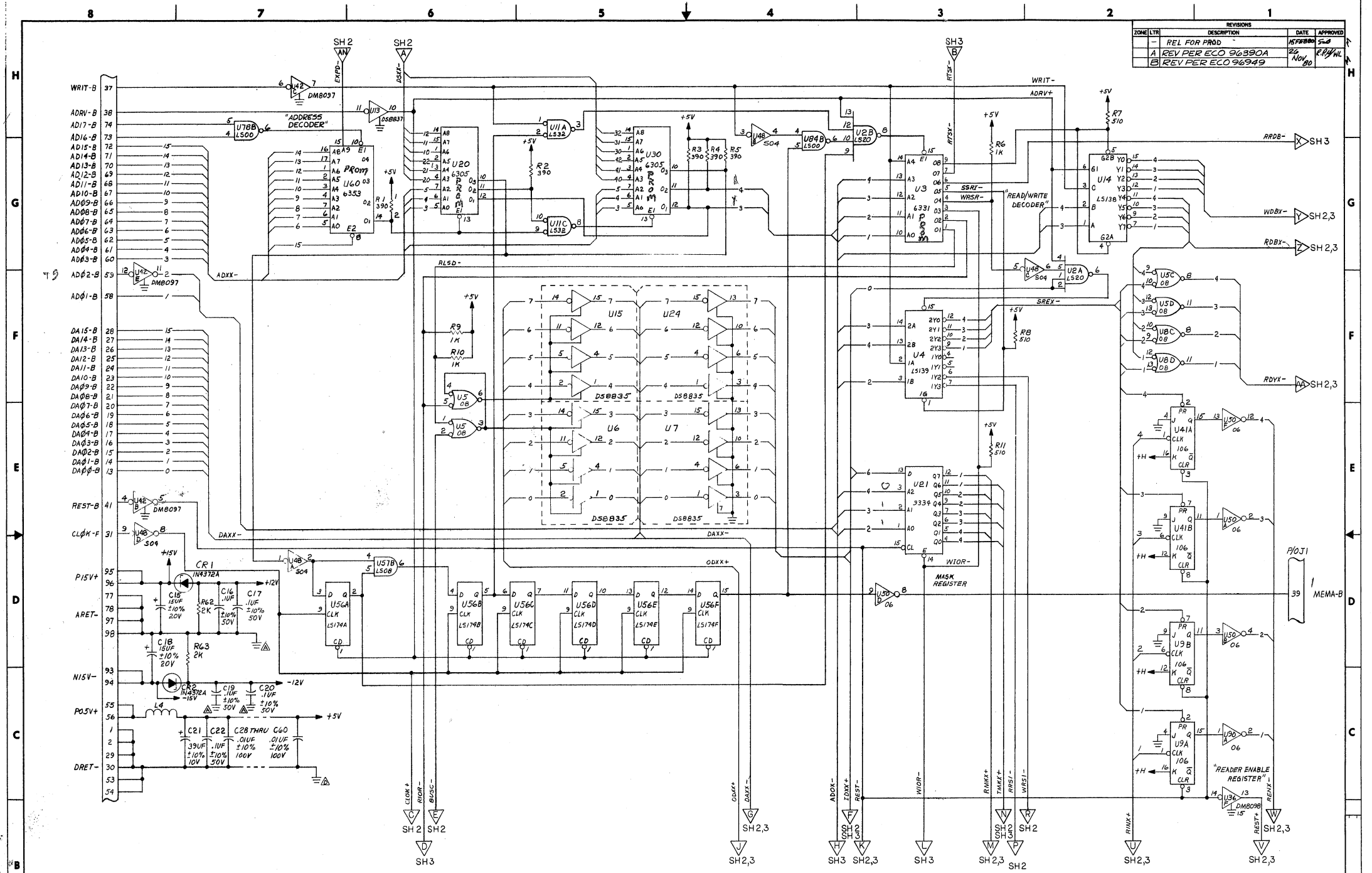
QTY PER ASSY	DESCRIPTION	PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	CNT NO.	SANDERS ASSOCIATES, INC.
XX DECIMAL	DRN DUBOIS 1/1 DATE	
XXX DECIMAL	APPD E. F. BARRER 1/2/80	
ANGLES	DEV: R. GEITZEL 1/2/80	
FINAL	E. M. R. BATHENDER 1/2/80	
NEXT ASSY	CHANGED BY ECO ONLY	
APPLICATION	MPG A. SULLIVAN 1/2/80	
	DO NOT SCALE PRINT	

SIZE	CODE	QTY	DESCRIPTION
1	94117	5976251	CIRCUIT CARD ASSY MULTIPORT SERIAL I/O



STAN 603-885-8925  
 BUSLOVICH



ZONE	TR	REVISIONS	DATE	APPROVED
-	-	REL FOR PROD	11/28/79	5/8
A	-	REV PER ECO 96390A	11/28/79	5/8
B	-	REV PER ECO 96949	11/28/79	5/8

3. REFERENCE DESIGNATIONS ARE ABBREVIATED  
 PREFIX THE DESIGNATIONS WITH UNIT NO. OR  
 ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED  
 RESISTANCE VALUES ARE IN OHMS  
 RESISTORS ARE  $\pm 5\%$ ,  $\frac{1}{4}$  W  
 $R_{max}=1,000,000$   
 CAPACITANCE VALUES ARE IN PICOFARADS  
 CAPACITORS ARE  $\pm 10\%$ , V  
 UP-MICROFARADS  
 INDUCTANCE VALUES ARE IN MICROHENRIES
1. INTERPRET DRAWING PER 815002

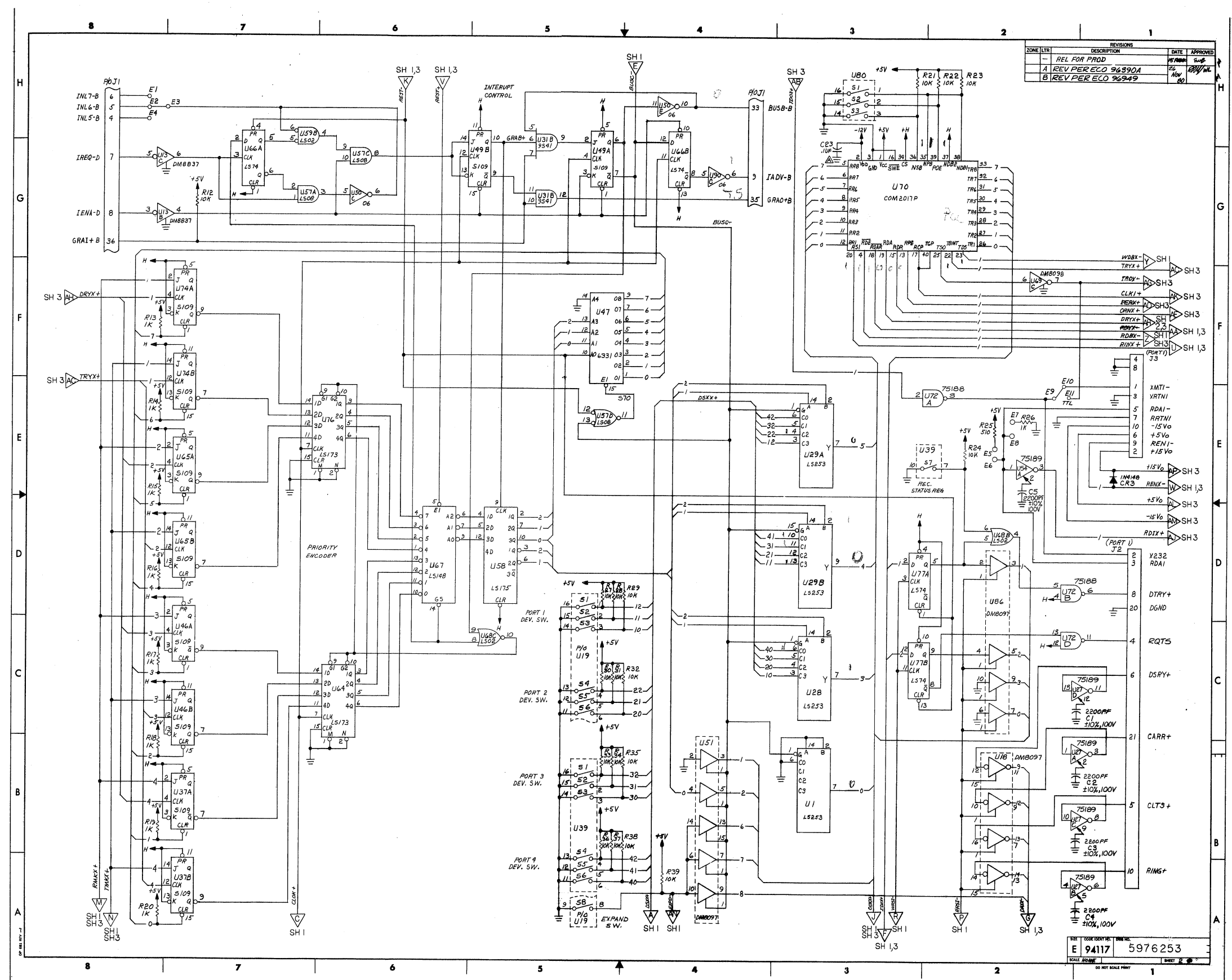
NOTES

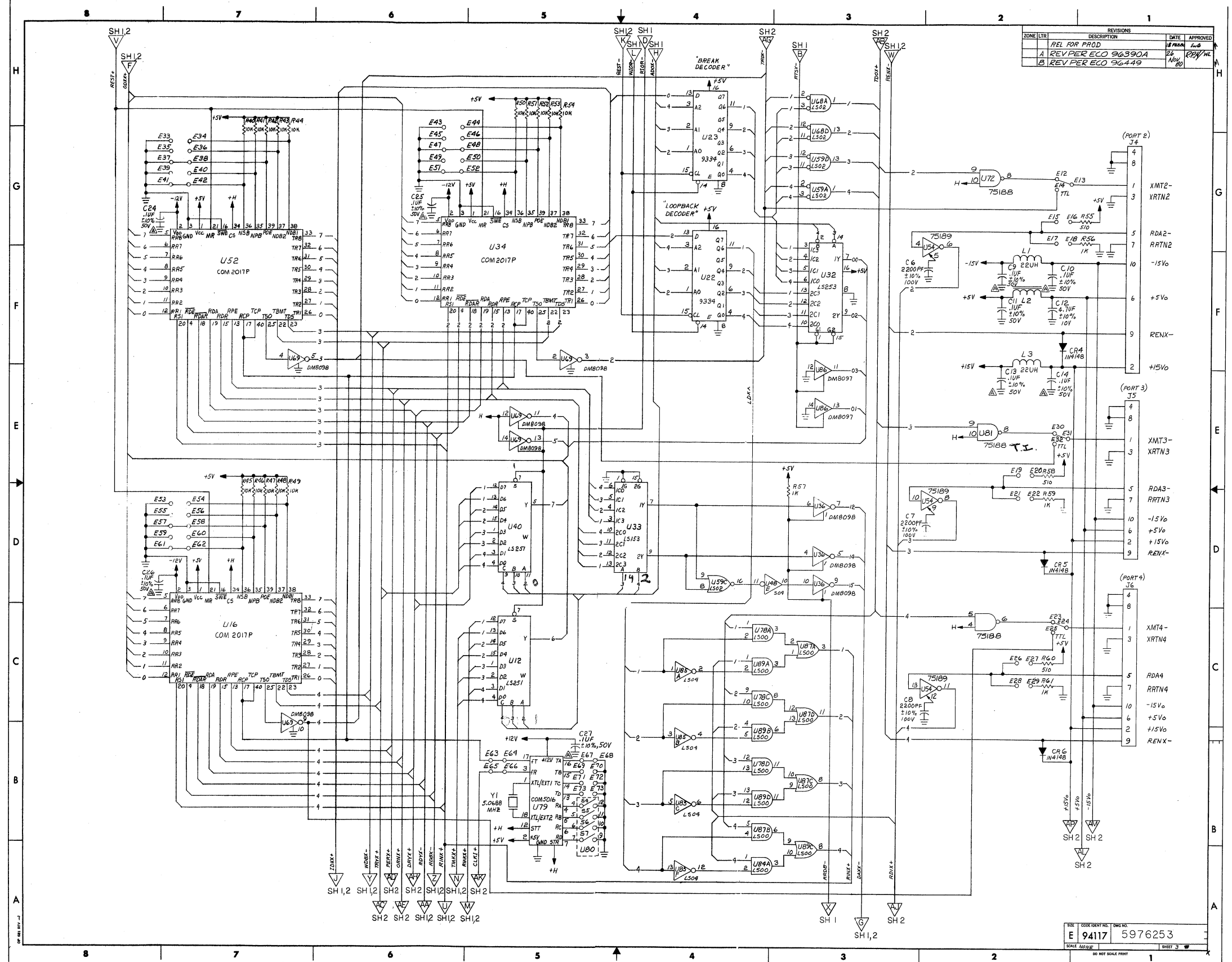
DESCRIPTION	REFERENCE DATA	DELETED NO.	DATE
RESISTOR	RG3		11/28/79
CAPACITOR	CG3		11/28/79
DIODE	CR6		11/28/79
TRANSISTOR	L2		11/28/79
INDUCTOR	L2		11/28/79
MICROELEMENT	U90		11/28/79
WIRING DIAGRAM			

REVISION STATUS OF SHEETS					
SHEET	1	2	3	4	5
REVISION	B	B	B	B	B

LOGIC DIAGRAM MULTIPORT SERIAL I/O
E 94117 5976253
PRODUCTION

10 2  
30 4  
50 6  
EDGE of EXTENDER

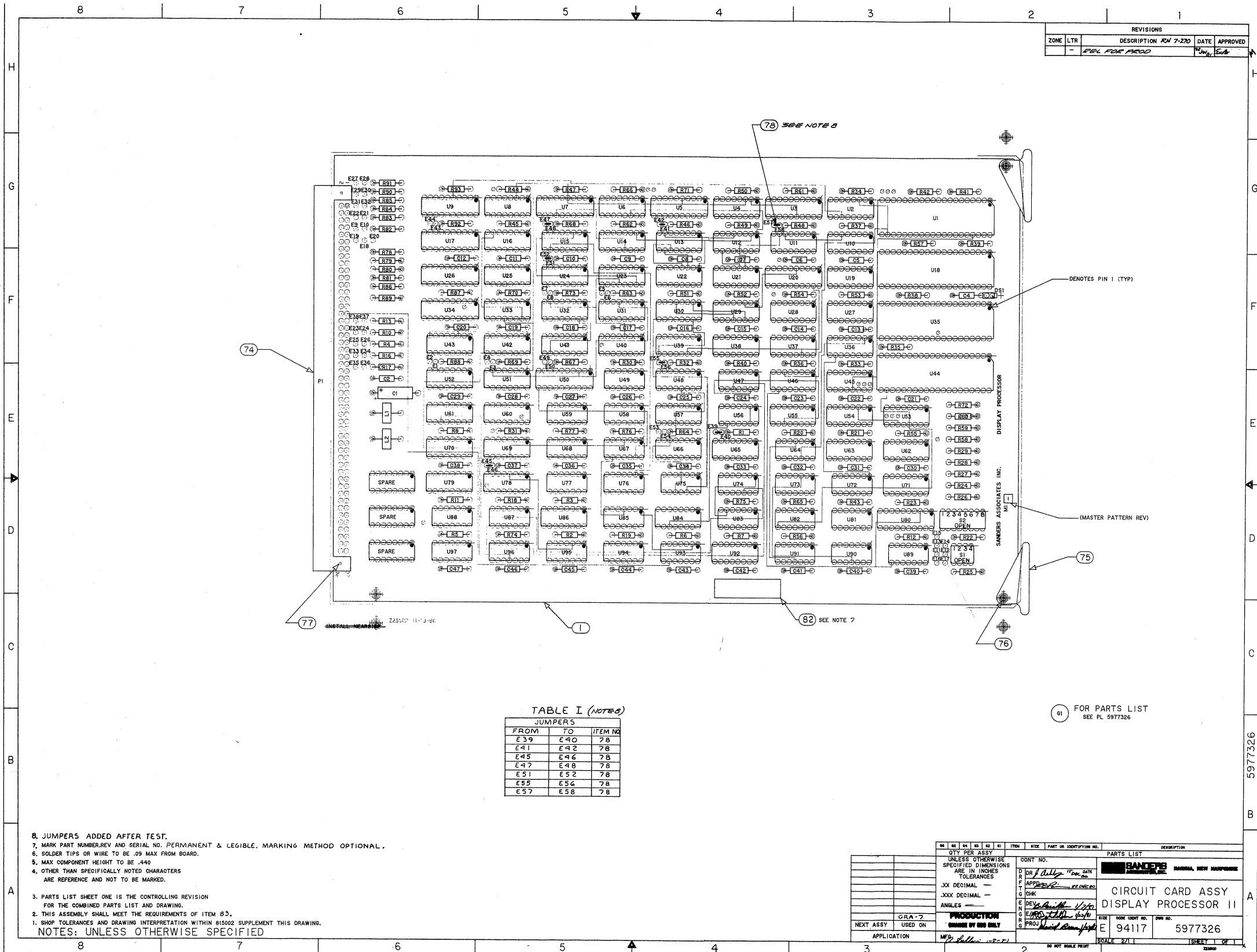




REVISIONS			
ZONE	LINE	DESCRIPTION	DATE
		REL FOR PROD	11/28/70
A		REV PER ECO 96390A	Nov 20
B		REV PER ECO 96449	Nov 20

PART 2		PART 3		PART 4	
LINE	DESCRIPTION	LINE	DESCRIPTION	LINE	DESCRIPTION
1	XMT2-	1	XMT3-	1	XMT4-
2	XRTN2	2	XRTN3	2	XRTN4
3		3		3	
4		4		4	
5	RDA2-	5	RDA3-	5	RDA4
6	RRTN2	6	RRTN3	6	RRTN4
7		7		7	
8		8		8	
9		9		9	
10	-15V <sub>o</sub>	10	-15V <sub>o</sub>	10	-15V <sub>o</sub>
11	+5V <sub>o</sub>	11	+5V <sub>o</sub>	11	+5V <sub>o</sub>
12		12		12	
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95		95		95	
96		96		96	
97		97		97	
98		98		98	
99		99		99	
100		100		100	

E 94117 5976253  
 SCALE: AS SHOWN SHEET 3



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		REL FOR PROD		

TABLE I (NOTES)

JUMPERS

FROM	TO	IFEM NO
E39	E40	78
E41	E42	78
E45	E46	78
E47	E48	78
E51	E52	78
E55	E56	78
E57	E58	78

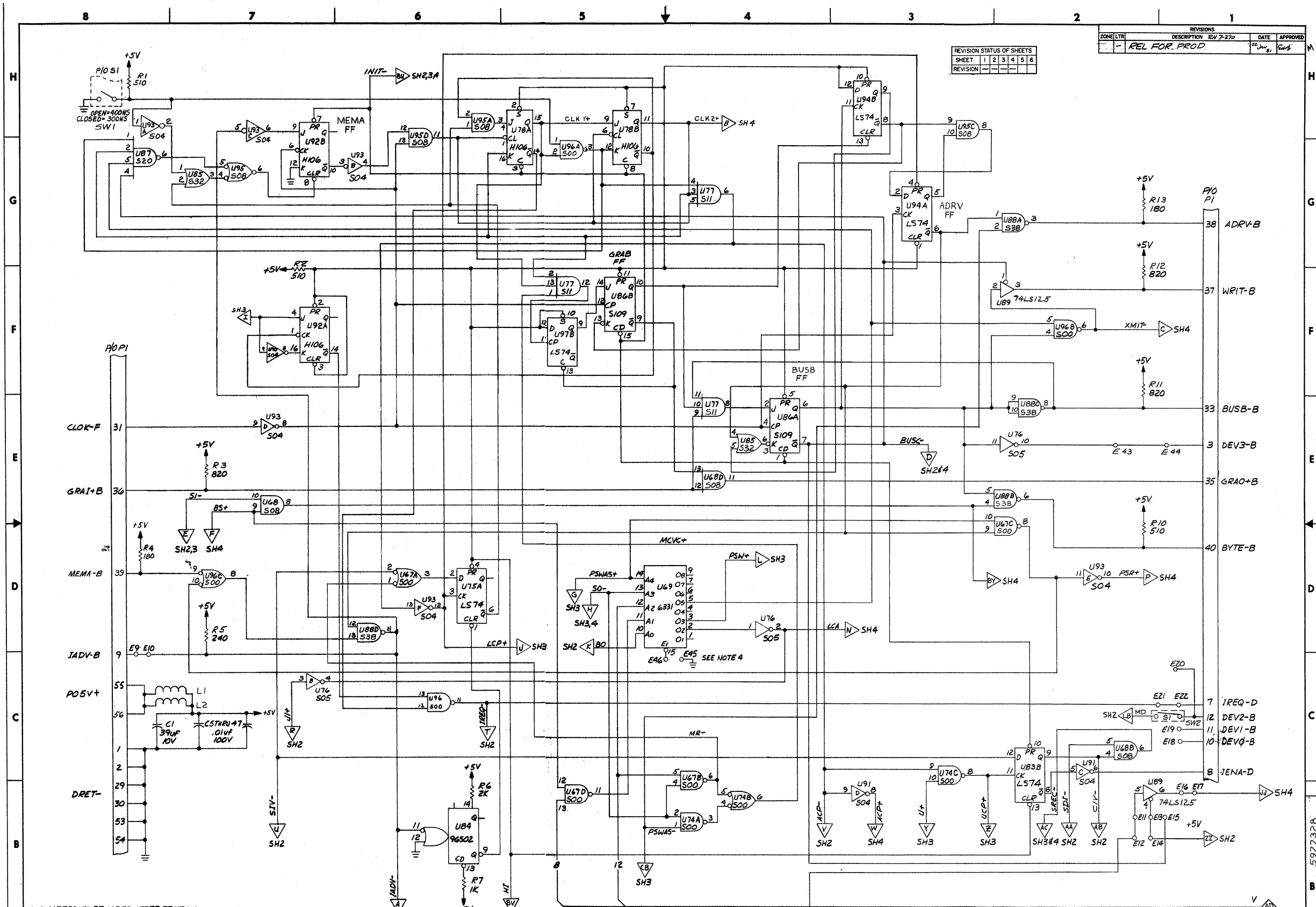
- JUMPERS ADDED AFTER TEST.
  - MARK PART NUMBER, REV AND SERIAL NO. PERMANENT & LEGIBLE. MARKING METHOD OPTIONAL.
  - SOLDER TIPS OR WIRE TO BE .09 MAX FROM BOARD.
  - MAX COMPONENT HEIGHT TO BE .440
  - OTHER THAN SPECIFICALLY NOTED CHARACTERS ARE REFERENCE AND NOT TO BE MARKED.
  - PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
  - THIS ASSEMBLY SHALL MEET THE REQUIREMENTS OF ITEM 83.
  - SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.
- NOTES: UNLESS OTHERWISE SPECIFIED

NO	QTY PER ASSY	DESCRIPTION
1	1	CIRCUIT CARD ASSY DISPLAY PROCESSOR II

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES  
 TOLERANCES  
 .XX DECIMAL  
 .XXX DECIMAL  
 ANGLES  
 GRADE 7  
 PRODUCTION  
 MADE BY 888 ONLY  
 APPLICATION

COUNT NO.  
 DATE  
 APPR  
 DEV  
 EMB  
 PROJ

PARTS LIST  
**SANDEP**  
 CIRCUIT CARD ASSY DISPLAY PROCESSOR II  
 SIZE: 94117  
 DWN NO: 5977326  
 SCALE: 2/1  
 SHEET 1 OF 1



ZONE	LT#	REVISIONS	DESCRIPTION	DATE	APPROVED
-	-	REL FOR PROD			

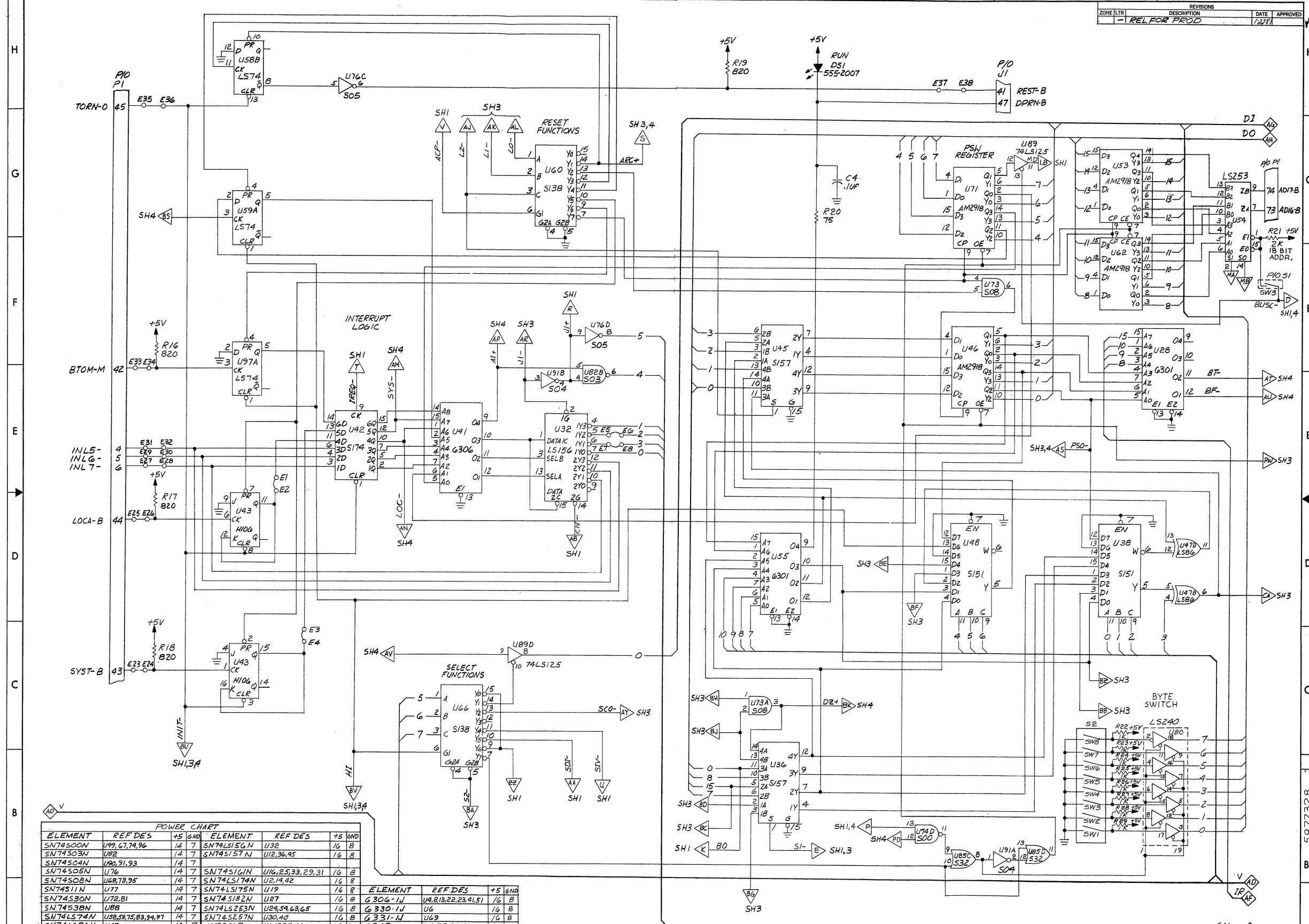
REVISION STATUS OF SHEETS						
SHEET	1	2	3	4	5	6
REVISION	-	-	-	-	-	-

4. JUMPERS TO BE ADDED AFTER TESTING
3. REFERENCE DESIGNATIONS ARE ABBREVIATED  
PREFIX THE DESIGNATIONS WITH UNIT NO. OR  
ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED  
RESISTANCE VALUES ARE IN OHMS  
RESISTORS ARE % W
1. INTERPRET DRAWING PER 816002
- NOTES

DESCRIPTION	LAST NO.	DELETED NO.	PRODUCTION	DATE
RESISTOR	93	14, 15, 9	CHANGE BY EDD ONLY	31 OCT 78
CAPACITOR	47	3		28 FEB 79
DIODE				
TRANSISTOR				
INDUCTOR	2			
MICROELEMENT	97			
WIRING DIAGRAM				

SA SANDERS ASSOCIATES, INC.	MERRIMACK, NEW HAMPSHIRE
LOGIC DIAGRAM DISPLAY PROCESSOR II	
94117	5977328
SCALE: NONE	

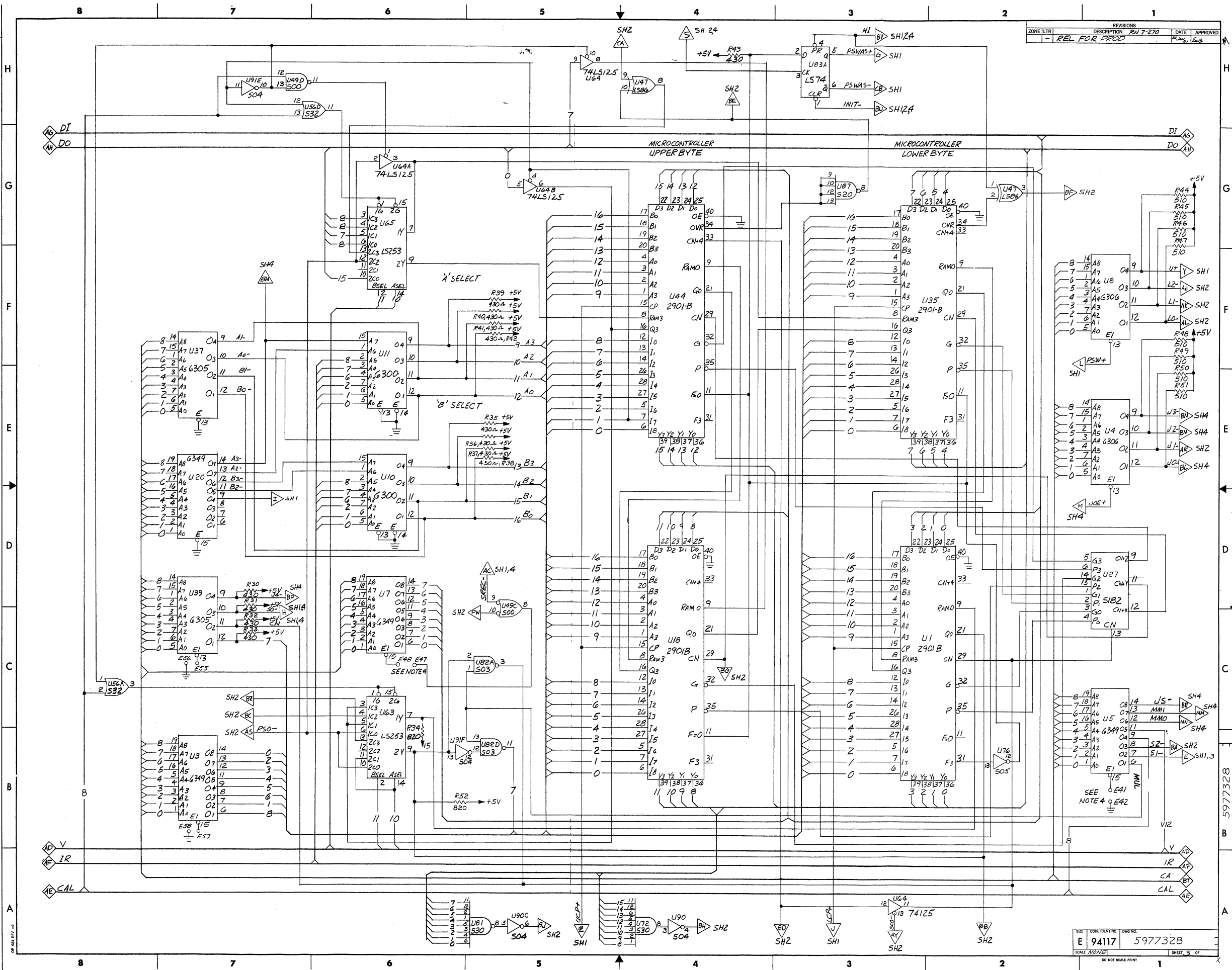
REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
		- REL FOR PROD	1/22/74



POWER CHART

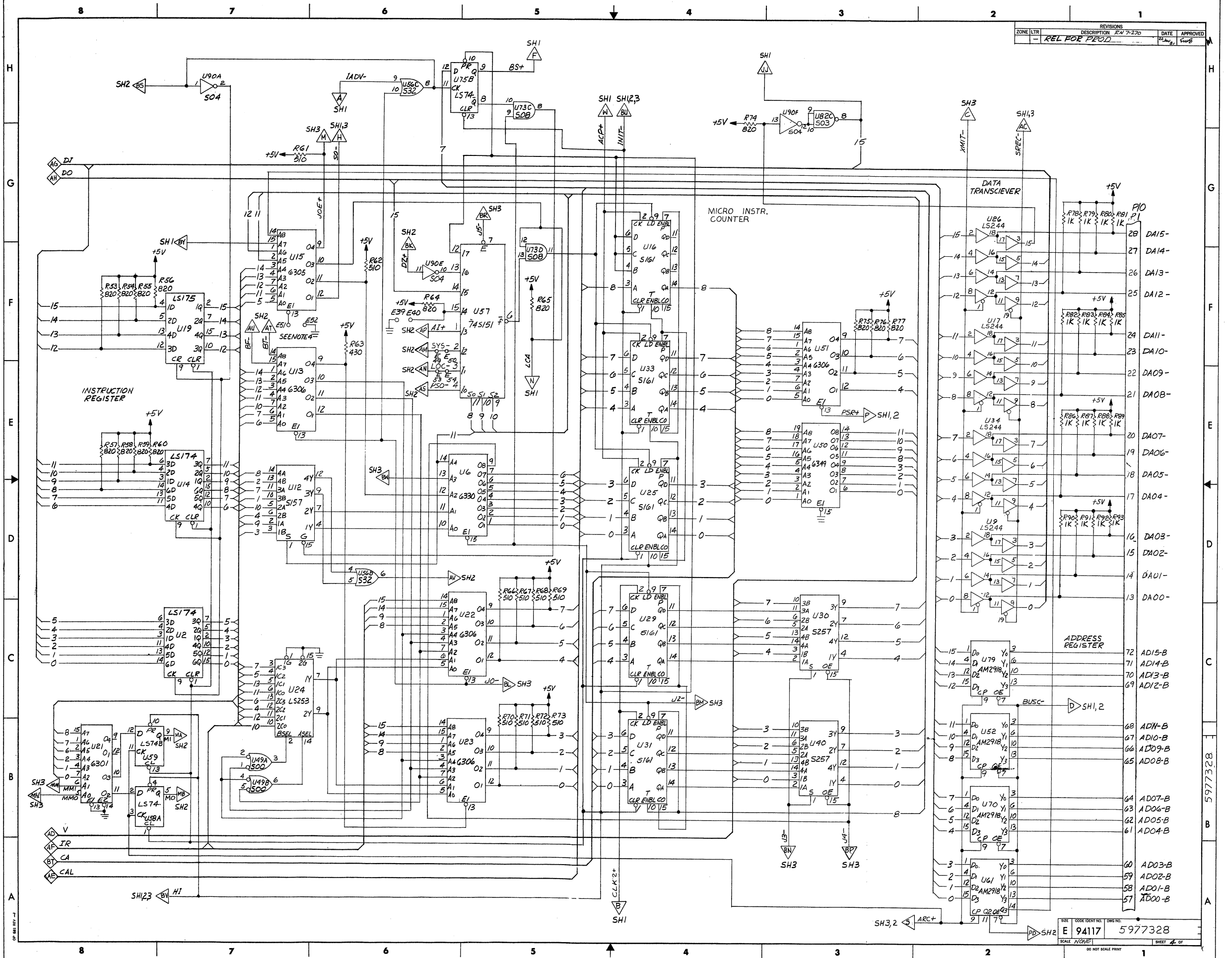
ELEMENT	REF DES	+5 GND	ELEMENT	REF DES	+5 GND
SN74500N	U49, 67, 74, 96	14	SN74LS15GN	U32	16
SN74503N	U82	14	SN74LS157N	U12, 36, 45	16
SN74504N	U80, 91, 93	14			
SN74505N	U76	14	SN74LS161N	U16, 25, 33, 29, 31	16
SN74508N	U69, 73, 95	14	SN74LS174N	U2, 14, 42	16
SN74511N	U77	14	SN74LS175N	U19	16
SN74530N	U72, 81	14	SN74LS182N	U27	16
SN74533N	U88	14	SN74LS253N	U24, 34, 63, 65	16
SN74LS74N	U58, 59, 75, 83, 94, 97	14	SN74LS257N	U30, 40	16
SN74LS86N	U47	14	AM2901B	U1, 18, 35, 44	10
SN74LS106N	U43, 78, 92	5	AM2918	U46, 52, 53, 64, 70, 76, 78	16
SN74LS109N	U86	16	9C502 PC	U84	16
SN74LS125N	U64, 89	14			
SN74LS138N	U60, 66	16	G301-1J	U21, 28, 55	16
SN74LS157N	U38, 48, 57	16	G305-1J	U15, 37, 39	16
			G306-1J	U4, 8, 13, 23, 41, 51	16
			G330-1J	U6	16
			G331-1J	U69	16
			G349	U3, 5, 7, 20, 50	20
			SN74532N	U56, 85	14
			G300-1J	U10, 11	16
			SN74530N	U87	14
			SN74LS240	U80	20
			SN74LS244N	U9, 17, 26, 34	20

SIZE: 100x100mm  
 E 94117 5977328  
 SCALE: 1/16"=1"  
 SHEET 2 OF



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
-	REL	FOR PROD		

SIZE	DOOR IDENT NO.	DWG NO.
E	94117	5977328
SCALE	NONE	SHEET 3 OF

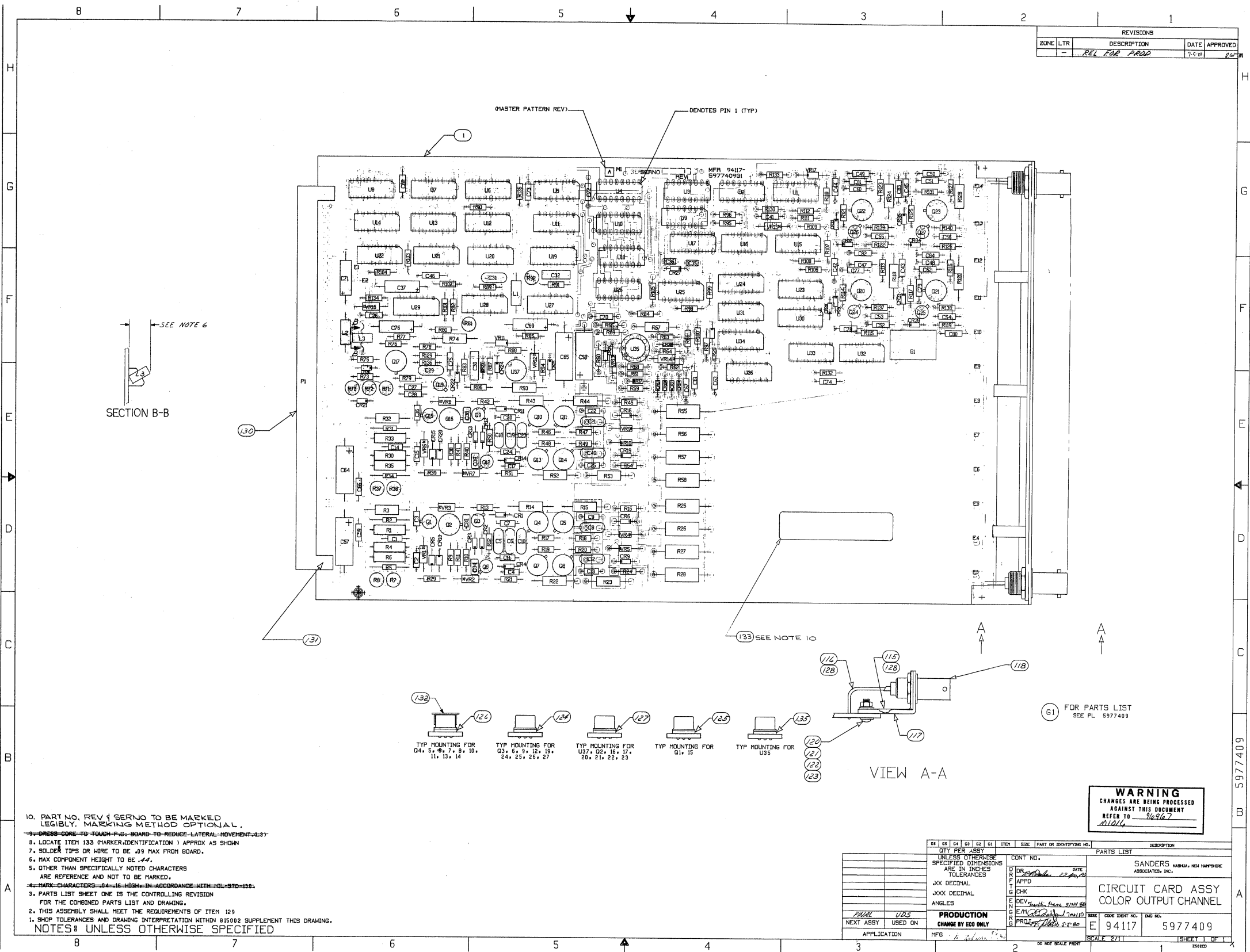


REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
-	REL FOR PROD	EA 7-270	12/2/55
			SWB

5977328  
 E 94117 5977328  
 SCALE NONE  
 DO NOT SCALE PRINT



REVISIONS			
ZONE	LTR	DESCRIPTION	DATE APPROVED
-	REL	FOR PROD	7-5-61 JAM



10. PART NO., REV # SERVO TO BE MARKED LEGIBLY. MARKING METHOD OPTIONAL.
11. PRESS-GO TO TOUCH P.D. BOARD TO REDUCE LATERAL MOVEMENT (U37)
8. LOCATE ITEM 133 (MARKER IDENTIFICATION) APPROX AS SHOWN
7. SOLDER TIPS OR WIRE TO BE .05 MAX FROM BOARD.
6. MAX COMPONENT HEIGHT TO BE .44.
5. OTHER THAN SPECIFICALLY NOTED CHARACTERS ARE REFERENCE AND NOT TO BE MARKED.
4. MARK CHARACTERS .04 IN HIGH IN ACCORDANCE WITH MIL-STD-133.
3. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
2. THIS ASSEMBLY SHALL MEET THE REQUIREMENTS OF ITEM 129
1. SHOP TOLERANCES AND DRAWING INTERPRETATION WITHIN 615002 SUPPLEMENT THIS DRAWING.
- NOTES: UNLESS OTHERWISE SPECIFIED

QTY PER ASSY	CONT NO.	PARTS LIST	DESCRIPTION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DR. DATE	SANDERS ASSOCIATES, INC.	
TOLERANCES	APPD. DATE		
XXX DECIMAL	CHK		
XXX DECIMAL	ENG. DATE		
ANGLES	PROJ. DATE		
FINAL	USED ON		
NEXT ASSY	USED ON		
APPLICATION	MFG. DATE		

QTY PER ASSY	CONT NO.	PARTS LIST	DESCRIPTION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DR. DATE	SANDERS ASSOCIATES, INC.	
TOLERANCES	APPD. DATE		
XXX DECIMAL	CHK		
XXX DECIMAL	ENG. DATE		
ANGLES	PROJ. DATE		
FINAL	USED ON		
NEXT ASSY	USED ON		
APPLICATION	MFG. DATE		

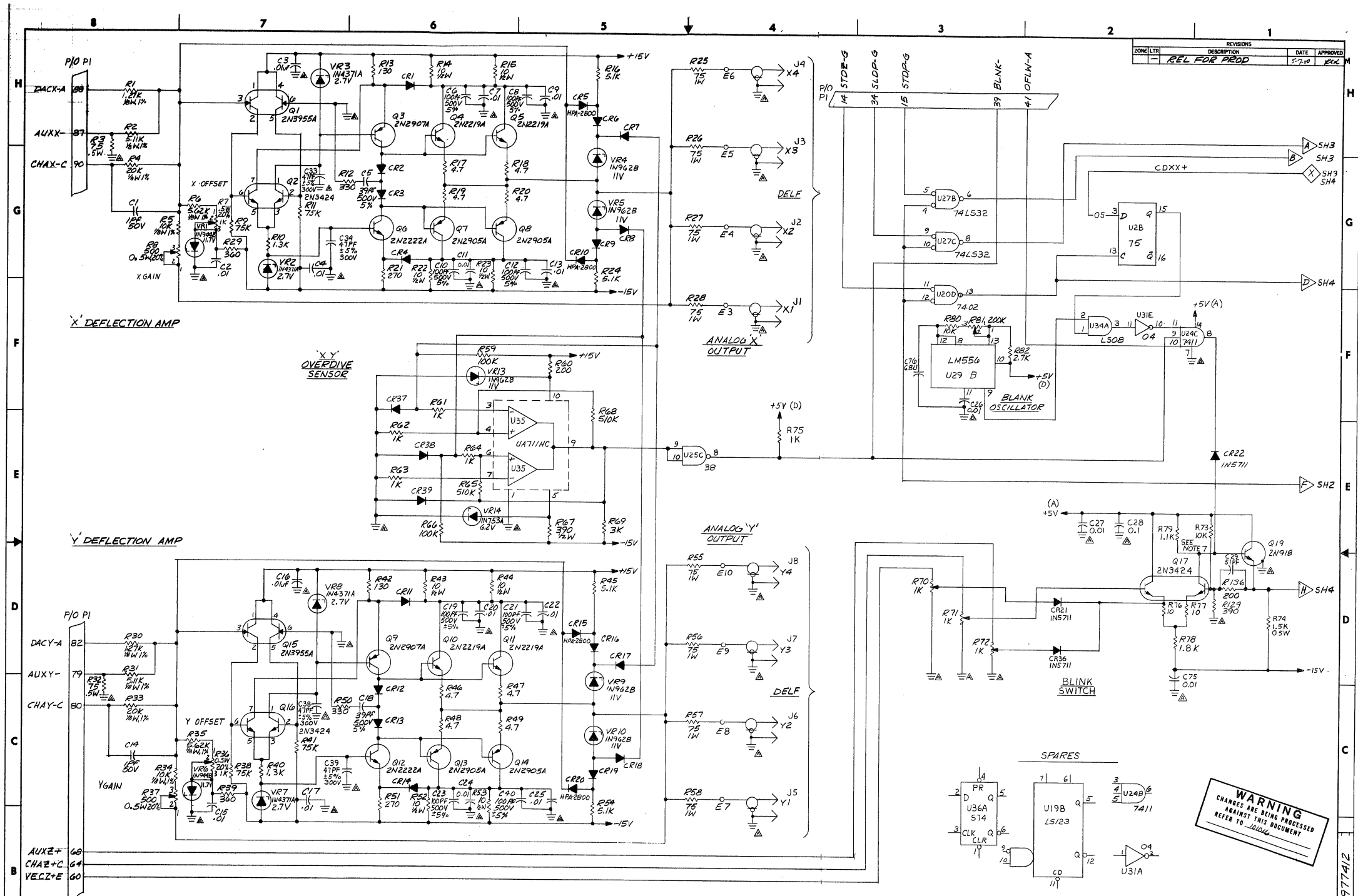
QTY PER ASSY	CONT NO.	PARTS LIST	DESCRIPTION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DR. DATE	SANDERS ASSOCIATES, INC.	
TOLERANCES	APPD. DATE		
XXX DECIMAL	CHK		
XXX DECIMAL	ENG. DATE		
ANGLES	PROJ. DATE		
FINAL	USED ON		
NEXT ASSY	USED ON		
APPLICATION	MFG. DATE		

QTY PER ASSY	CONT NO.	PARTS LIST	DESCRIPTION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DR. DATE	SANDERS ASSOCIATES, INC.	
TOLERANCES	APPD. DATE		
XXX DECIMAL	CHK		
XXX DECIMAL	ENG. DATE		
ANGLES	PROJ. DATE		
FINAL	USED ON		
NEXT ASSY	USED ON		
APPLICATION	MFG. DATE		

**WARNING**  
 CHANGES ARE BEING PROCESSED  
 AGAINST THIS DOCUMENT  
 REFER TO 7/6/67

QTY PER ASSY	CONT NO.	PARTS LIST	DESCRIPTION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DR. DATE	SANDERS ASSOCIATES, INC.	
TOLERANCES	APPD. DATE		
XXX DECIMAL	CHK		
XXX DECIMAL	ENG. DATE		
ANGLES	PROJ. DATE		
FINAL	USED ON		
NEXT ASSY	USED ON		
APPLICATION	MFG. DATE		



REVISIONS			
ZONE/LTR	DESCRIPTION	DATE	APPROVED
-	REL FOR PROD	5-10	RJC

3. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATIONS WITH UNIT NO. OR ASSEMBLY DESIGNATION OR BOTH.
4. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS. RESISTORS ARE - 5%, 1/4 W.
5. UNLESS OTHERWISE SPECIFIED, CAPACITANCE VALUES ARE IN MICROFARADS. CAPACITORS ARE -50% TO +100% V.
6. UNLESS OTHERWISE SPECIFIED, INDUCTANCE VALUES ARE IN MICROHENRIES.
7. R73 TYPICALLY 10K OHMS, FINAL VALUE SELECTED AT ELECTRICAL TEST.
8. UNLESS OTHERWISE SPECIFIED, ALL DIGITAL IC'S USE DIGITAL +5V AND DIGITAL GND.
9. DIGITAL GND DESIGNATED BY SYMBOL  $\square$ .
10. ANALOG GND DESIGNATED BY SYMBOL  $\square$ .
11. UNLESS OTHERWISE SPECIFIED, DIODES ARE TO BE IN 1A8.

POWER CHART							
ELEMENT	REF DES	+5V	GND	ELEMENT	REF DES	+5V	GND
7402	U20	14	7	7475	U2,12,23	5	12
7411	U24	14	7	74LS123	U19	16	8
7420	U18	14	7	74LS138	U3	16	8
74LS32	U27	14	7	74LS74	U5,11,32	14	7
7437	U9,28	14	7	74LS158	U4	16	8
7438	U22,25	14	7	74LS166	U7	16	8
7442	U10	16	8	DM8098N	U8,13,14	16	8
7451	U21	14	7	74LS175	U17	16	8
7404	U31	14	7	74LS50B	U34	14	7
74LS160	U33	16	8	74LS74	U36	14	7
7408	U16	14	7	8520	U22	5	12
74LS153	U30	16	8	74LS174	U6	16	8

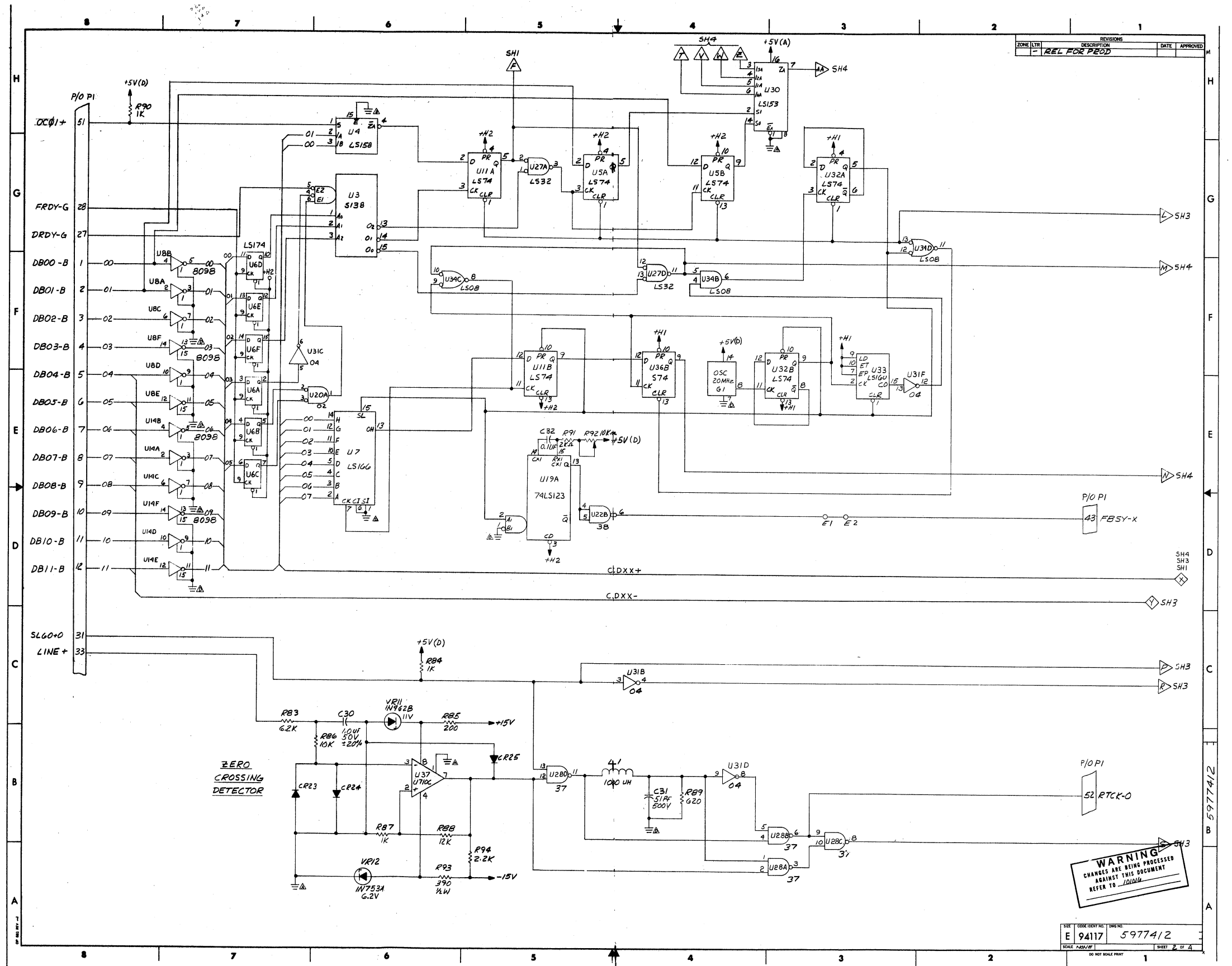
**WARNING**  
CHANGES ARE BEING PROCESSED  
REFER TO 10101

REVISION STATUS OF SHEETS				
SHEET	1	2	3	4
REVISION	-	-	-	-

REFERENCE DATA		PRODUCTION		DATE	
DESCRIPTION	LAST NO.	DELETED NO.	CHANGE BY	EQD ONLY	DATE
RESISTOR	R140				5/10/80
CAPACITOR	C84				5/10/80
DIODE	CR27				5/10/80
TRANSISTOR	Q27				5/10/80
INDUCTOR	L3				5/10/80
MICROELEMENT	U37				5/10/80
WIRING DIAGRAM					5/10/80

LOGIC DIAGRAM  
COLOR OUTPUT CHANNEL  
E 94117 5977412  
SCALE: AS SHOWN  
DO NOT SCALE PRINT

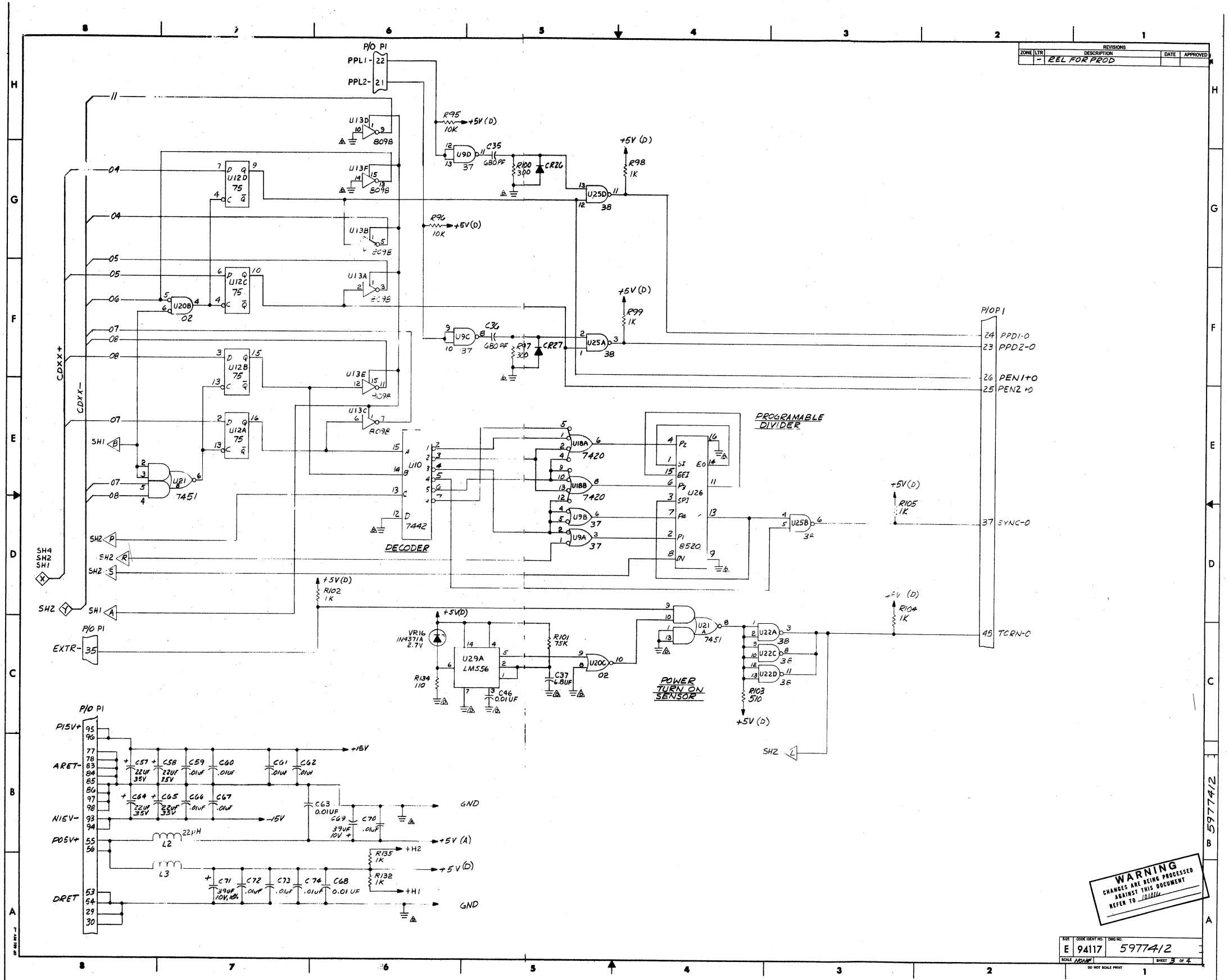
5977412



REVISIONS		DATE	APPROVED
ZONE	LTN		
- REL FOR PEDD			

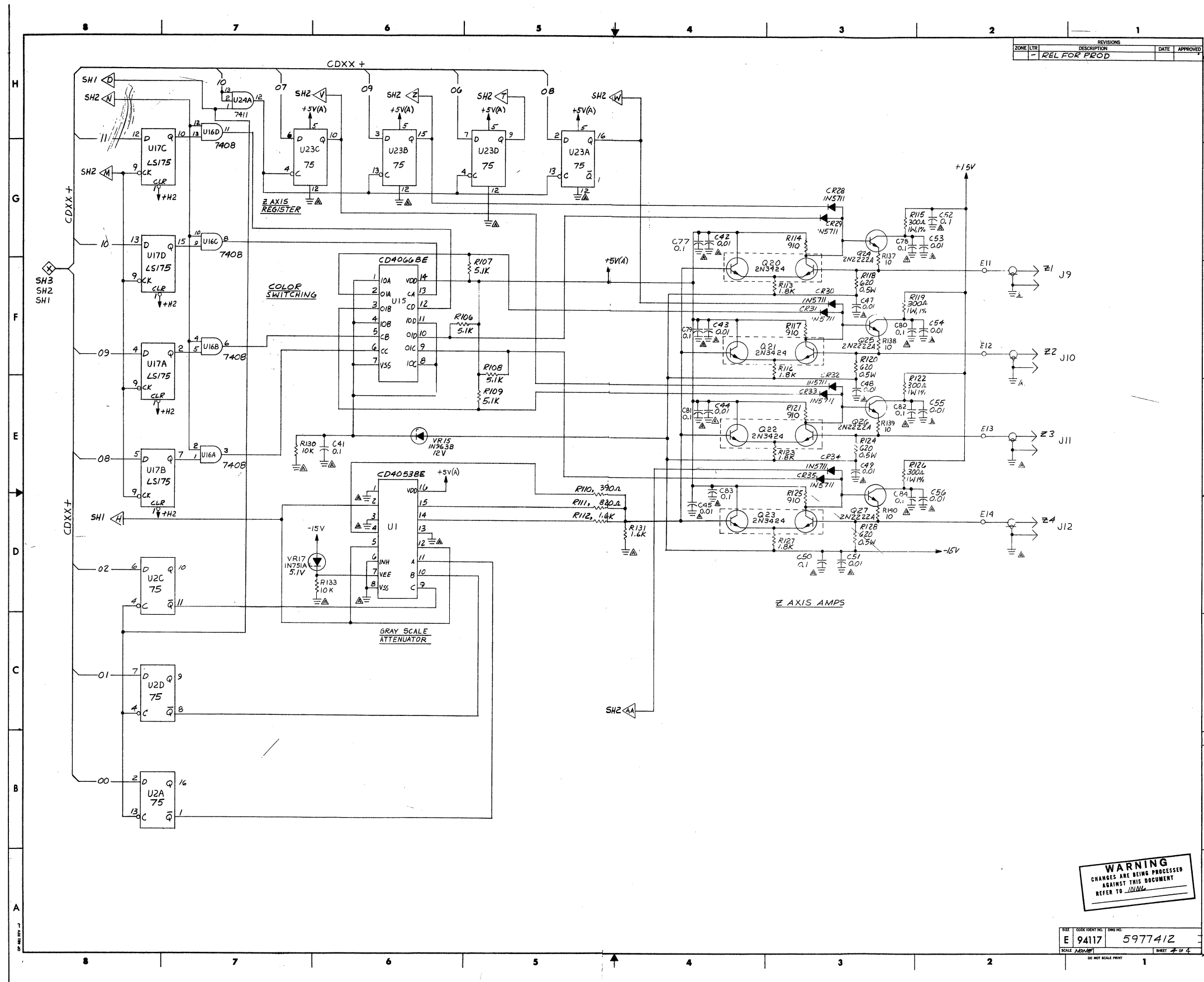
**WARNING**  
 CHANGES ARE BEING PROCESSED  
 AGAINST THIS DOCUMENT  
 REFER TO 101014

SCALE	AS SHOWN
CODE IDENT. NO.	5977412
DATE	E 94117
SHEET	2 OF 4



**WARNING**  
 CHANGES ARE BEING PROCESSED  
 AGAINST THIS DOCUMENT  
 REFER TO 101011

SCALE: AS SHOWN  
 SHEET 3 OF 4  
 94117 59774/2



B 5977412

SECTION 2  
PARTS LISTS

<u>Drawing Number</u>	<u>Drawing Title</u>	<u>Page</u>
PL1086746	ROM and Status Logic Circuit Card Assembly (4K)	2-3
PL1086750	Multiport Serial Interface Circuit Card Assembly	2-16
PL1086758	Graphic Controller Circuit Card Assembly	2-29
PL1086762	Read/Write 8K x 16-Bit Memory Circuit Card Assembly	2-36
PL1086771	Output Channel Circuit Card Assembly	2-43
PL1086775	D/A Converter Circuit Card Assembly	2-62
PL1086779	Display Processor Circuit Card Assembly	2-67
PL1086783	Character Generator Circuit Card Assembly	2-73
PL1086798	Ramp Generator Circuit Card Assembly	2-92
PL1086802	Parallel Interface Circuit Card Assembly	2-105
PL1086917	Card Cage Assembly	2-110
WL1086917	Card Cage Assembly Wire List	2-121
PL1088682	ROM and Status Logic Circuit Card Assembly (8K)	2-128
PL1089619	Interconnecting Panel Assembly	2-155
PL1089620	Cable Assembly Multiport Interface	2-159
PL1089624	Cable Assembly Multiport Interface	2-166
WL1089646	Card Cage Assembly Wire List	2-171
WL1089837	Card Cage Assembly Wire List	2-178
PL1089845	Graphic Controller, Circuit Card Assembly	2-185
PL5976102	Controller, Cabinet Assembly	2-191
PL5976105	Panel Assembly, System Interconnect	2-194

## PARTS LIST (Cont)

<u>Drawing Number</u>	<u>Drawing Title</u>	<u>Page</u>
PL5976112	Card Cage Assembly	2-194E
WL5976112	Card Cage Assembly Wire List	2-199
PL5976119	120V Controller Power Panel Assembly	2-203
WL5976119	120V Controller Power Panel Assembly Wire List	2-206
PL5976120	100-240V Controller Power Panel Assembly	2-208
WL5976120	100-240V Controller Power Panel Assembly Wire List	2-212
PL5976251	Serial Interface, Circuit Card Assembly	2-216
PL5977326	Circuit Card Assembly Display Processor II	2-221
PL5977409	Output Channel, Circuit Card Assembly	2-226
WL5977426	Card Cage Assembly Wire List	2-226

Change 1

REVISION STATUS			REVISIONS		
PARTS LIST		DRAWING	DESCRIPTION	DATE	APPROVED
SHEET	2 & UP	REV			
1	J	H	REL FOR PREPROD	14 DEC 76	RB/ RAL
		E	REV PER ECO 76021 PARTS LIST ONLY	8 FEB 77	RB/ RAL
			2 REL FOR PROD NO. 7-021	4-6-77	EG/ RAL
			REV PER ECO 76089	27 SEP 77	WG/ RAL
			REV PER ECO 76093	14 OCT 77	WG/ RAL
			REV PER ECO 76120	30 DEC 77	WG/ RAL
			REV PER ECO 76136	19 FEB 78	RP/ RLB
			REV PER ECO 76163	10 MAY 78	RP/ RLB
			REV PER ECO 76260	3 OCT 78	WG/ RLB
			REV PER ECO 76487A	5 NOV 79	WG/ W/L
			REV PER ECO 96314	1 FEB 80	WG/ W/L

3. SYMBOL † INDICATES VENDOR ITEM—SEE SPEC/SOURCE CONTROL DRAWING.

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

CONT. NO.

DRY P. 19 DEC 76

APPD

CHK

DEV

E/M

PROJ

1087281

1086851

MSR

GRA-7

USED ON

APPLICATION

PRODUCTION

CHANGE BY ECO ONLY

MEG

OP-1039 REV A

	<b>SANDERS ASSOCIATES, INC.</b> NASHUA, NEW HAMPSHIRE	<b>CIRCUIT CARD ASSY</b> <b>ROM &amp; STATUS LOGIC (4K)</b>
SIZE	CODE IDENT NO.	SHEET / OF 13
A	94117	PL 1086746



**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G 2	G 3					
1	1	1	-	E		1086747G2	CIRCUIT CARD SUBASSY, ROM & STATUS LOGIC	#
2	2	1	-	A		310092P1	MED (SN7400N) U58, 74	#
3	1	1	-	A		310200P1	MED (SN7402N) U50	#
4	1	1	-	A		310201P1	MED (SN7403N) U60	#
5	1	2	-	A		310202P1	MED (SN7404N) U59, 79	#
6	1	1	-	A		310319P1	MED (SN74504N) U40	#
7	1	1	-		01295	SN7406N	U9 (TI)	#
8	1	1	-	A		310234P1	MED (SN7408N) U63	#
9	1	8	-	A		310094P1	MED (SN7474N) U19, 52, 53, 67, 70, 76	#
10	1	1	-		01295		77, 78	#
11	1	1	-		01295	SN7486N	U12 (TI)	#
12	1	1	-	A		310378P3	MED (SN74H106N) U32	#
13	1	1	-	A		7013070P68	MED (SN74LS138N) U42	#
14	1	1	-	A		313026P1	MED (SN7448N) U55	#
15	2	2	-	A		7013070P54	MED (SN74173N) U65, 75	#
16	1	2	-	A		310279P1	MED (SN74174N) U49	#
17	2	1	-	A		310279P2	MED (SN74175N) U47, 48	#
18	1	1	-		01295	SN74390N	U30	#
19	1	1	-		07265	F9541PC	U10	#
20	1	1	-		07265	F95109PC	U20	#
21								#

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

1086746

REV H SHEET 2

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G2	G3					
22								#
23	4			A	27014	DM5097N	MED (DM8098N) U17,18,48,54 (NAT)	
24	6				27014	310368P2	MED U27,23,37,39,45,46 (NAT)	
25	2				27014	DM8835N	MED U17,3 (NAT)	
26	2				53848	DM8837N	MED U22,69 (NAT)	
27	1					COM5016	MED U31 (SMC)	
28	1				01295	COM2017P	MED U1 (SMC)	
29	1					SN7425N	MED U80 (TI)	
30								
31	1				01295	SN74177N	MED U64 (TI)	
32	1				75378	MX040-20MHZ	OSCILLATOR, DIP, 20MHZ, U29 (CTS)	
33								
34	39	39		A		7550001P73	RES, 1K OHMS ± 5% .25W R1,2,3,4 5,6,7,8,9,10,11,12,13,14,15,16,17,18,19 20,21,22,30,31,32,33,34,35,36,37,38 39,40,41,42,43,44,45,46 RES, 1.5K OHMS ± 5% .25W R22,48,49	
35	3			A		7550001P77	RES, 3K OHMS ± 5% .25W R25,26	
36	2			A		7550001P84	RES, 10K OHMS ± 5% .25W R47,50,51	
37	3			A		7550001P97	RES, 510 OHMS ± 5% .25W R27	
38	1			A		7550001P66	RES, 5.1K OHMS ± 5% .5W R24	
39	1			A		7550004P90	RES, 470 OHMS ± 5% .5W R23	
40	1			A		7550004P65		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	H	3
		1086746	

# PARTS LIST

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2	G 3					
41	1	1	-	A		7550001P60	RES, 300 OHMS ±5% .25W R28	
42	2	1	-	A		7011451P49	CAP, 15UF ±10% 20V C1,2	
43	1	1	-	A		7011451P19	CAP, 39UF ±10% 10V C10	
44	1	13	-	A		7502023P73	CAP, .1UF ±10% 50V C3,4,5,6,7	
45	1	13	-	A		7502023P73	11,12,13,14,15,16,18,38	
46	1	19	-	A		7502023P55	CAP, .01UF ±10%, 100V C19,20,21,22	
47	1	19	-	A		7502023P55	23,24,25,26,27,28,29,30,31,32,33,34	
48	1	1	-	A		CK058X222K	35,36,37	
49	1	1	-	A		7502023P37	CAP, 2200PF ±10%, 100V C9	
50	1	1	-	A		7011451P14	CAP, 1000PF ±10%, 200V C8	
51	1	1	-	A		1086937P1	CAP, 4.7UF ±10%, 10V C17	
52	1	1	-	A		7538002P35	CRYSTAL, 5.0688 MHz, Y1	
53	1	2	-	A		7538002P72	DIODE - ZENER (1N748A) VR3	
54	2	2	-	A		7538002P17	DIODE - ZENER (1N4372A) VR1,2	
55	2	2	-	A		7538002P17	DIODE (1N4148) CR1,2	
56	1	1	-	A		7610002P10	TRANSISTOR (2N2907A) Q2	
57	1	1	-	A		7610001P45	TRANSISTOR (2N2222A) Q1	
58	2	2	-	A		7518001P78	INDUCTOR, 22µh L1,2	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1086746

REV H

SHEET 4

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
61	1	1	B		7011935P1	ASSY, INDUCTOR L3	#
62	2	1	A		640093P1	WAFER, THERMAL CONDUCTIVE	#
63	5	1	A		256063P8	TEST POINT TPI, 2, 3, 4, 5	#
64	1	1	D		1086608P18	CONNECTOR, ELEC 98 PIN J1	#
65	1	1			3491-1002	CONNECTOR, ELEC 10 PIN J2 (3M)	#
66	2	2		20999	MS20470AD2-6	RIVET, SOLID UNIV HD .06 DIA X .38 LG	#
67	2	2	A		600107P1	CARD EJECTOR	#
68	2	2	A		630003P14	EYELET METALIC (SES10)	#
69	2	2	A		278000P13	WIRE, ELEC, 22 AWG	#
70	6"	6"	A		270006P5	TUBING, INSUL, TEFLON	#
71	5"	5"	A		930002P1	SOLDER	#
72	AR	AR	A		MS51957-6	SCR, MACH PH 2-56 X .41 LG	#
73	2	2			MS35338-134	WASHER, LOCK-SPRING NO. 2	
74	2	2			NAS620C2	WASHER, FLAT NO. 2	
75	2	2					
76	2	2			MS35649-224	NUT, 2-56	
77							
78							
79	REF	REF	E		1086748	LOGIC DIAGRAM, ROM AND STATUS LOGIC	
80	REF	REF	A		8150003	PWB, AND CXT BD, REQT FOR	
81	REF	REF	A		778000	APPL OF EPOXY MARKING CMPD	
82							
83							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.
A	94117 PL
REV	H
SHEET	5

1086746

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2	G3					
84	/	/	-	A	1086870P1	PROGRAMMED PROM (6331-J)	U-43	
85	/	/	-	A	1086870P2	(6331-J)	U-56	
86	/	/	-	A	1086870P3	(6331-J)	U-57	
87	/	/	-	A	1086870P4	(6331-J)	U-66	
88	/	/	-	A	1086871P1	(6351-J)	U-3	
89	/	/	-	A	1086871P2		U-4	
90	/	/	-	A	1086871P3		U-5	
91	/	/	-	A	1086871P4		U-6	
92	/	/	-	A	1086871P5		U-13	
93	/	/	-	A	1086871P6		U-14	
94	/	/	-	A	1086871P7		U-15	
95	/	/	-	A	1086871P8		U-16	
96	/	/	-	A	1086871P9		U-23	
97	/	/	-	A	1086871P10		U-24	
98	/	/	-	A	1086871P11		U-25	
99	/	/	-	A	1086871P12		U-26	
100	/	/	-	A	1086871P13		U-33	
101	/	/	-	A	1086871P14		U-34	
102	/	/	-	A	1086871P15		U-35	
103	/	/	-	A	1086871P16		U-36	
104	/	/	-	A	1086871P17	PROGRAMMED PROM (6351-J)	U-39	
105	-	-	/	E	1086746G2	CKT CD ASSY, ROM AND STATUS LOGIC		
106	-	-	/	A	1089512P1	PROGRAMMED PROM	U3	

SIZE CODE IDENT NO.

A 94117 PL

1086746

REV H SHEET G

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
107	-	-	A		1089512P2	PROGRAMMED PROM	U13
108	-	-	A		1089512P3	PROGRAMMED PROM	U23
109	-	-	A		1089512P4	PROGRAMMED PROM	U33
32A	REF	REF		75738	WKT080-133-0071	OSCILLATOR, DIP, 20 MHZ U29 (CTS)	
128	1	1	A		280035P008	SOCKET, CRYSTAL	

SIZE	CODE IDENT NO.	REV	H	SHEET	7
A	94117 PL	1086746			

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5					
1	1	1	E		1086747G2	CIRCUIT CARD SUBASSY, ROM & STATUS LOGIC	#
2	2	2	A		310092P1	MED (SN7400N) U58, 74	#
3	1	1	A		310200P1	MED (SN7402N) U50	#
4	1	1	A		310201P1	MED (SN7403N) U60	#
5	2	2	A		310202P1	MED (SN7404N) U59, 79	#
6	1	1	A		310319P1	MED (SN74504N) U40	#
7	1	1	A	01295	SN7406N	U9 (CTI)	#
8	1	1	A		310234P1	MED (SN7408N) U68	#
9	1	1	A		310094P1	MED (SN7474N) U19, 52, 53, 67, 70, 76	#
10	8	8	A			77, 78	#
11	1	1	A	01295	SN7486N	MED U12 (TI)	#
12	1	1	A		310378P3	MED (SN74H106N) U32	#
13	1	1	A		7013070P68	MED (SN74LS138N) U42	#
14	1	1	A		313026P1	MED (SN74198N) U55	#
15	2	2	A		7013070P54	MED (SN74173N) U65, 75	#
16	1	1	A		310279P1	MED (SN74174N) U49	#
17	2	2	A		310279P2	MED (SN74175N) U47, 48	#
18	1	1	A	01295	SN74390N	U30	#
19	1	1	A	07263	F9S41PC	U10	#
20	1	1	A	07263	F9S109PC	U20	#
21	1	1	A				#

SIZE CODE IDENT NO.  
A 94117 PL 1086746

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

REV H SHEET 8

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5					
22							#
23	4		A	27014	DMS097N	MED U17,18,44,54 (NAT)	
24	6			27014	310368P2	MED (DM8098N) U27,28,37,38,45,46	
25	2			27014	DM8835N	MED U17,8 (NAT)	
26	2			53848	DM8837N	MED U22,69 (NAT)	
27	1			01295	COM5016	MED U31 (SMC)	
28	1			01295	TMS6011NC	MED U1 (TI)	
29	1			01295	SN7425N	MED U80 (TI)	
30							
31	1			01295	SN74177N	MED U64 (TI)	
32	1			75378	MAX040-20MHZ	OSCILLATOR, DIP, 20MHZ, U29 (CTS)	
33							
34	39		A		7550001P73	RES, 1K OHMS ±5% .25W R1,2,3,4 5,6,7,8,9,10,11,12,13,14,15,16,17,18,19 20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38 39,40,41,42,43,44,45,46 RES, 1.5K OHMS ±5% .25W R22,48,49 RES, 3K OHMS ±5% .25W R25,26 RES, 10K OHMS ±5% .25W R47,50,51 RES, 510 OHMS ±5% .25W R27 RES, 5.1K OHMS ±5% .5W R24 RES, 470 OHMS ±5% .5W R23	
35	3		A		7550001P77		
36	2		A		7550001P84		
37	3		A		7550001P97		
38	1		A		7550001P66		
39	1		A		7550004P90		
40	1		A		7550004P65		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1086746

REV H SHEET 9



ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5					
41	1	1	A		7550001P60	RES, 300 OHMS ±5% .25W R 28	
42	2	2	A		7011451P49	CAP, 15UF ±10% 20V C1,2	
43	1	1	A		7011451P19	CAP, 39UF ±10% 10V C10	
44	13	13	A		7502023P73	CAP, 1UF ±10% 50V C3,4,5,6,7	
45	19	19	A		7502023P55	11,12,13,14,15,16,18,38 CAP, .01UF ±10%, 100V C19,20,21,22	
46	1	1	A		CK058X222K	23,24,25,26,27,28,29,30,31,32,33,34 35,36,37 CAP, 2200PF ±10%, 100V C9	
47	1	1	A		7502023P37	CAP, 1000PF ±10%, 200V C8	
48	1	1	A		7011451P14	CAP, 4.7UF ±10%, 10V C17	
49	1	1	A		1086937P1	CRYSTAL, 5.0688MHZ, Y1	
50	1	1	A		7538002P35	DIODE - ZENER (1N749A) VR3	
51	2	2	A		7538002P72	DIODE - ZENER (1N4372A) VR1,2	
52	2	2	A		7538002P17	DIODE (1N4148) CR1,2	
53	1	1	A		7610002P10	TRANSISTOR (2N2907A) Q2	
54	1	1	A		7610001P45	TRANSISTOR (2N2222A) Q1	
55	2	2	A		7518001P78	INDUCTOR, 22uh L1,2	
56	1	1	A				
57	1	1	A				
58	1	1	A				
59	2	2	A				
60	2	2	A				

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
A 94117 PL 1086746  
REV H SHEET 10

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5					
61	1	1	B		7011935P1	ASSY, INDUCTOR L3	
62	2	2	A		640098P1	WAFER, THERMAL CONDUCTING	#
63	5	5	A		256063P8	TEST POINT TPI, 2, 3, 4, 5	#
64	1	1	D		1086608P18	CONNECTOR, ELEC 98 PIN J1	#
65	1	1		20999	3491-1002	CONNECTOR, ELEC 10 PIN J2 (3M)	#
66	2	2	A		MS20470A02-6	RIVET, SOLID UNIV HD. 0.06 DIA X.38 LG	#
67	2	2	A		600107P1	CARD EJECTOR	#
68	2	2	A		630003P14	EYELET METALIC (SE310)	#
69	2	2	A		278000P13	WIRE, ELEC, 22 AWG	#
70	6"	6"	A		270006P5	TUBING, INSUL, TEFLON	#
71	5"	5"	A		930002P1	SOLDER	#
72	AR	AR			MS51957-6	SCR, MACH PH 2-56 X. 44 LG	
73	2	2			MS35338-134	WASHER, LOCK-SPRING NO. 2	
74	2	2			NAS620C2	WASHER, FLAT NO. 2	
75	2	2			MS35649-224	NUT, 2-56	
76	2	2					
77							
78	REF	REF	E		1086748	LOGIC DIAGRAM, ROM AND STATUS LOGIC	
79	REF	REF	A		815003	PWB, AND CHT BD, REQ FOR	
80	REF	REF	A		778000	APPL OF EPOXY MARKING CMPD	
81	REF	REF					
82							
83							

SIZE CODE IDENT NO.

A 94117 PL

1086746

REV H

SHEET 11

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.



PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5					
84	1	1	A		1086870P1	PROGRAMMED PROM (6331-J)	U-43
85	1	1	A		1086870P2	(6331-J)	U-56
86	1	1	A		1086870P3	(6331-J)	U-57
87	1	1	A		1086870P4	(6331-J)	U-66
88	1	1	A		1086871P1	(6351-J)	U-3
89	1	1	A		1086871P2		U-4
90	1	1	A		1086871P3		U-5
91	1	1	A		1086871P4		U-6
92	1	1	A		1086871P5		U-13
93	1	1	A		1086871P6		U-14
94	1	1	A		1086871P7		U-15
95	1	1	A		1086871P8		U-16
96	1	1	A		1086871P9		U-23
97	1	1	A		1086871P10		U-24
98	1	1	A		1086871P11		U-25
99	1	1	A		1086871P12		U-26
100	1	1	A		1086871P13		U-33
101	1	1	A		1086871P14		U-34
102	1	1	A		1086871P15		U-35
103	1	1	A		1086871P16		U-36
104	1	1	A		1086871P17	PROGRAMMED PROM (6351-J)	U-39
105	1	1	E		1086746G2	CKT CD ASSY, ROM AND STATUS LOGIC	
106	1	1	A		1089512P1	PROGRAMMED PROM	U3

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	H	12
		1086746	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5					
107	-	-	A		1089512P2	PROGRAMMED PROM	U13
108	-	-	A		1089512P3	PROGRAMMED PROM	U23
109	-	-	A		1089512P4	PROGRAMMED PROM	U33
110	-	-	A		1089570P1	PROGRAMMED PROM (6351-J)	U3
111	-	-	A		1089570P2		U4
112	-	-	A		1089570P3		U5
113	-	-	A		1089570P4		U6
114	-	-	A		1089570P5		U33
115	-	-	A		1089570P6		U34
116	-	-	A		1089570P7		U35
117	-	-	A		1089570P8	PROGRAMMED PROM (6351-J)	U36
32A	REF	REF	A		JK1080-133-0071	OSCILLATOR, DIP, 20MHZ, U29 (CTS)	
118	-	-	A		1086871P36	PROGRAMMED PROM (6351-J)	U6
119	-	-	A		P37		U5
120	-	-	A		P38		U4
121	-	-	A		P39		U3
122	-	-	A		P40		U16
123	-	-	A		P41		U15
124	-	-	A		P42		U14
125	-	-	A		P43		U13
126	-	-	A		P44		U25
127	-	-	A		1086871P45	PROGRAMMED PROM (6351-J)	U24
128	-	-	A		280035P008	SOCKET, CRYSTAL	

SIZE		CODE IDENT NO.	REV	SHEET
A		94117 PL	H	13
		1086746		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

REVISION STATUS				REVISIONS			
PARTS LIST		DRAWING		LTR	DESCRIPTION	DATE	APPROVED
SHEET	2 & UP	REV	REV				
1		R	M	P	ECO 96314 NO CHANGE	1 FEB 80	WG/WL
REV		K		R	REV PER ECO 96915 A	29 JUL 80	JYF
<p>5. ITEM NUMBERS WITH SUBSCRIPTS ARE ALTERNATE ITEMS, SELECT ONE ONLY.</p> <p>4. FOR AUTHORIZED COMPONENT SUBSTITUTION LIST SEE DWG SA1088588.</p> <p>3. SYMBOL † INDICATES VENDOR ITEM—SEE SPEC/SOURCE CONTROL DRAWING.</p> <p>2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.</p> <p>1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.</p>				<p>SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE</p> <p>CIRCUIT CARD ASSY, MULTIPOINT SERIAL I/O</p> <p>SIZE CODE IDENT NO. A 94117 PL 1086750</p> <p>SHEET 1 OF 13</p>			
<p><b>PRODUCTION CHANGE BY ECO ONLY</b></p> <p>MFG <i>Tom M... 3/24/77</i></p>				<p>CONT NO. <i>DR Brachman Co Jan 77</i></p> <p>DATE <i>1-21-77</i></p> <p>DRF <i>Q. Wood</i></p> <p>APP <i>E. H. Hule</i></p> <p>T <i>21 JAN 77</i></p> <p>G <i>PROG Feb 21 MAR 77</i></p> <p>CHK</p> <p>ENG <i>MSR</i></p> <p>GRG <i>GRA - 7</i></p> <p>USED ON APPLICATION</p>			

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/	G Z	G 3					
1	1	1	1	E		108675162	CKT CD SUBASSY, MULTI/PORT SERIAL INTERFACE	
2	2	1	2	A		310092P001	MED(SN7400N)	U-39, 75
3	1	1	1	A		310200P001	MED(SN7402N)	U-10
4	1	1	1	A		310202P001	MED(SN7404N)	U-71
5	1	1	1	A		310319P001	MED(SN74504N)	U-69
6	2	2	2	A	01295	SN7406N	MED	U-20, 61
7	2	2	2	A		310234P001	MED(SN7408N)	U-28, 45
8	1	4	1	A		310092P002	MED(SN7410N)	U-70
9	4	7	4	A		310094P001	MED(SN7474N)	U-7, 15, 19, 79
10	7	3	7	A		310378P003	MED(SN74H106N)	U-39, 35, 56, 66, 67, 76, 77
11	3	3	3	A		7013070P068	MED(SN74LS138N)	U-37, 44, 50
12	1	1	1	A	01295	SN74LS139N	MED	U-46
13	2	2	2	A		313026P001	MED(SN74148N)	U-49, 58
14	1	1	1	A		310311P001	MED(SN74153N)	U-55
15	2	2	2	A		7013070P054	MED(SN74173N)	U-68, 78
16	2	2	2	A		310279P001	MED(SN74174N)	U-8, 59
17	2	2	2	A		310279P002	MED(SN74175N)	U-4, 80
18	2	2	2	A	01295	SN74251N	MED	U-38, 65
19	1	1	1	A	01295	SN74LS253N	MED	U-6
20	1	1	1	A	07263	F9S11PC	MED	U-30
21	1	1	1	A	07263	F9S109PC	MED	U-9
22								
23								

SIZE CODE IDENT NO.

A 94117 PL 1086750

REV K SHEET 2

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2	G 3					
24	1	1	1	A	07263	F9334PC	MED U-47	
25	1	1	1	A		1086960P17	PROG. PROM (6301-IJ) U-36	
26	1	1	1	A		1086870P7	PROG. PROM (6331-J) U-48	
27	2	2	2	A	34335	AM2616PC	MED U-31, 41	
28	3	3	3	A	34335	AM2617PC	MED U-11, 21, 51	
29	5	5	5	A	27014	DM8097N	MED U-1, 14, 24, 25, 40	
30	3	3	3	A	27014	510368P002	MED (DM8098N) U-26, 27, 29	
31	2	2	2	A	27014	DS8835N	MED U-16, 17	
32	3	3	3	A	27014	DS8837N	MED U-5, 18, 54	
33	1	1	1	A	53848	COM501G	MED U-64	
34	1	1	1	A	52840	FR1472B	MED U-22	
35	1	1	1	A	52840	PT1482B	MED U-2	
36	3	3	3	A		COM2017P	MED U-32, 52, 62 (SMC)	
37	1	1	1	A		1086960P18	PROG. PROM (6301-IJ) U-60	
38	1	1	1	A		1086870P8	PROG. PROM (6331-J) U-57	
39	2	2	2	A		7550001P080	RES, 2K OHM ±5% .25W R-37, 38	
40	17	17	17	A		7550018P050	RES, 1K OHM ±5%, .125W R-1, 4, 6, 8, 9	
41	37	37	37	A		7550018P073	42, 43, 44, 46, 56, 57, 58, 59, 60, 61, 62, 63	
42	7	7	7	A		7550018FC42	RES, 10K OHM ±5%, .125W R-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, 36, 48, 49, 50, 51, 52	
							53, 54, 55, 64, 65	
							RES, 510 OHM ±5%, .125W R2, 3, 7, 39, 40, 41, 47	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A

94117

PL

1086750

REV K

SHEET 3

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2	G 3					
43	15	15	15	A		7502023P055	CAP .01UF, ±10%, 100V C-31, 32, 33 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45 CAP 2200PF ±10%, 100V C-17, 18, 19 24, 25, 26, 27, 28, 29, 30 C-8 CAP 4.7UF, ±10%, 10V C-2, 5, 6, 7 CAP 0.1UF, ±10%, 50V C-2, 5, 6, 7 9, 10, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23 CAP 15UF, ±10%, 20V C-3, 4 CAP 39UF, ±10%, 10V C-1	
44	10	10	10			CK05BX222K	INDUCTOR L-3, 4 INDUCTOR, 22 UH L-1, 2 CRYSTAL (5.0688MHZ) Y-1	
45	1	1	1	A		7011451P014	CONNECTOR, 10 PIN J-3, 4, 5, 6	
46	16	16	16	A		7502023P073	CONNECTOR, 26 PIN J-2	
47	2	2	2	A		7011451P049	CONNECTOR, 98 PIN J-1	
48	1	1	1	A		7011451P019	DIODE, (1N4148) CR-1, 2, 3, 4	
49							DIODE, ZENER (1N4372A) VR-1, 2	
50	2	2	2	A	53387	70136626P001	EYELET (USM)	
51	2	2	2	A	53387	7518001P078	CARD EJECTOR	
52	1	1	1	A		1086937P1	EYELET METALLIC (SE310)	
53							SOLDER	
54	4	4	4			3491-1002		
55	1	1	1			3493-1002		
56	1	1	1	D		1086603P18		
57	4	4	4	A		7538002P017		
58	2	2	2	A		7538002P072		
59	2	2	2	A		6010		
60	2	2	2	A		600107P1		
61	2	2	2	A		630003P14		
62	AR	AR	AR	A		93002P1		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

1086750

REV **X** SHEET **4**



**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/	G Z	G 3					
63								
64								
65								
66								
67	REF	REF	REF	E		1086752	LOGIC DIAGRAM, MULTIPART SERIAL INTERFACE PWB, AND CKT BD, REQT FOR APPL OF EPOXY MARKING CMPD JUMPER CONFIGURATION MULTIPART SERIAL INTERFACE SOCKET, CRYSTAL EYELET WIRE, ELEC # 24 AWG RIVET, SOLID LABEL, WARNING PROCEDURE FOR HANDLING MOS DEVICES	
68	REF	REF	REF	A		815003		
69	REF	REF	REF	A		778000		
70	REF	REF	REF	A		1088622		
71	1	1	1	A		280035P008		
72	2	2	2	A		630003P008		
73	-	4"	4"	A		0278002P015		
59A	REF	REF	REF			MS20470AD2-6		
74	1	1	1			5977208 P1		
75	REF	REF	REF			1088180		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086750  
REV A SHEET 5

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5					
1	1	1	E		1086751G2	CKT CD SUBASSY, MULTIPORT SERIAL INTERFACE	
2	2	1	A		310092P001	MED (SN7400N)	U-39, 75
3	1	1	A		310200P001	MED (SN7402N)	U-10
4	1	1	A		310202P001	MED (SN7404N)	U-71
5	1	1	A		310319P001	MED (SN74504N)	U-69
6	2	2	A	01295	SN7406N	MED	U-20, 61
7	2	2	A		310234P001	MED (SN7408N)	U-28, 45
8	1	1	A		310092P002	MED (SN7410N)	U-70
9	4	4	A		310094P001	MED (SN7474N)	U-7, 15, 19, 79
10	7	7	A		310378P003	MED (SN74H106N)	U-34, 35, 56, 66, 67, 76, 77
11	3	3	A		7013070P068	MED (SN74LS138N)	U-37, 44, 50
12	1	1	A	01295	SN74LS139N	MED	U-46
13	2	2	A		313026P001	MED (SN74148N)	U-49, 58
14	1	1	A		310311P001	MED (SN74153N)	U-55
15	2	2	A		7013070P054	MED (SN74173N)	U-68, 78
16	2	2	A		310279P001	MED (SN74174N)	U-8, 59
17	2	2	A		310279P002	MED (SN74175N)	U-4, 80
18	2	2	A	01295	SN74251N	MED	U-38, 65
19	2	2	A	01295	SN74LS253N	MED	U-6
20	1	1	A	07263	F9S4IPC	MED	U-30
21	1	1	A	07263	F9S109PC	MED	U-9

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1086750

REV 6 SHEET 6

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G							
	G4	G5	G6					
24	1	1	1	A	07263	F9334PC	MED	U-47
25	1	1	1	A		1086960P17	PROG. PROM (6301-N)	U-36
26	1	1	1	A		1086870P7	PROG. PROM (6331-U)	U-48
27	2	2	2	A	34335	AM2616PC	MED	U-31, 41
28	3	3	3	A	34335	AM2617PC	MED	U-11, 21, 51
29	5	5	5	A	27014	DM8097N	MED	U-1, 14, 24, 25, 40
30	3	3	3	A	27014	310368P002	MED (DM8098N)	U-26, 27, 29
31	2	2	2	A	27014	DS8835N	MED	U-16, 17
32	3	3	3	A	27014	DS8837N	MED	U-5, 18, 54
33	1	1	1	A	53848	COM5016	MED	U-64
34	1	1	1	A	52840	PR1472B	MED	U-22
35	1	1	1	A	52840	PT1482B	MED	U-2
36	3	3	3	A		COM2017P	MED	U-32, 52, 62 (SMC)
37	1	1	1	A		1086960P18	PROG. PROM (6301-N)	U-60
38	1	1	1	A		1086870P8	PROG. PROM (6331-U)	U-57
39	2	2	2	A		7550001P080	RES, 2K OHM $\pm 5\%$ , .25W	R-37, 38
40	17	17	17	A		7550018P050	RES, 1K OHM $\pm 5\%$ , .125W	R-1, 4, 6, 8, 9
41	37	37	37	A		7550018P073	42, 43, 44, 46, 56, 57, 58, 59, 60, 61, 62, 63	
42	7	7	7	A		7550018P042	RES, 10K OHM $\pm 5\%$ , .125W	R-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, 36, 48, 49, 50, 51, 52	
							53, 54, 55, 64, 65	
							RES, 510 OHM $\pm 5\%$ , .125W	R-2, 5, 7, 39, 40, 41, 47

SIZE CODE IDENT NO.

A 94117 PL

1086750

REV 7 SHEET 7

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5					
43	15	15	15	A	7502023P055	CAP. 0.01UF, ±10%, 100V C-31, 32, 33 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45	
44	10	10	10		CK05BX222K	CAP 2200PF, ±10%, 100V C-17, 18, 19	
45	1	1	1	A	7011451P014	24, 25, 26, 27, 28, 29, 30 C-8	
46	16	16	16	A	7502023P073	CAP 4.7 UF, ±10%, 10V C-2, 5, 6, 7	
47	2	2	2	A	7011451P049	CAP 0.1 UF, ±10%, 50V C-2, 5, 6, 7	
48	1	1	1	A	7011451P019	9, 10, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23	
49	1	1	1	A	7011451P019	CAP 15UF, ±10%, 20V C-3, 4	
50	2	2	2	A	7013626P001	CAP 39UF, ±10%, 10V C-1	
51	2	2	2	A	7518001P078	INDUCTOR L-3, 4	
52	1	1	1	A	1086937PI	INDUCTOR L-1, 2	
53	1	1	1	A	1086937PI	CRYSTAL (5.0688 MHZ) Y-1	
54	4	4	4		3491-1002	CONNECTOR, 10 PIN J-3, 4, 5, 6	
55	1	1	1		3493-1002	CONNECTOR, 26 PIN J-2	
56	1	1	1	D	1086608PI8	CONNECTOR, 98 PIN J-1	
57	4	4	4	A	7538002P017	DIODE (IN4148) CR-1, 2, 3, 4	
58	2	2	2	A	7538002P072	DIODE, ZENER (IN4372A) VR-1, 2	
59	2	2	2	A	6010	EYELET (USM)	
60	2	2	2	A	600107PI	CARD EJECTOR (SE310)	
61	2	2	2	A	630003PI4	EYELET METALLIC	
62	AR	AR	AR	A	93002PI	SOLDER	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS: INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086750

REV 8 SHEET 8

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5					
63							
64							
65							
66							
67	REF	REF	E		1086752	LOGIC DIAGRAM, MULTIPOINT SERIAL INTERFACE PNB, AND CKT BD, REQD FOR APPL OF EPOXY MARKING CMPD JUMPER CONFIGURATION MULTIPOINT SERIAL INTERFACE	
68	REF	REF	A		815003		
69	REF	REF	A		778000		
70	REF	REF	A		1088622		
71	1	1	A		280035P008	SOCKET, CRYSTAL	
72	2	2	A		630003P008	EYELET	
73	4	4	A		0278002P015	WIRE, ELEC # 24 AWG	
59A	REF	REF	REF		MS20470AD2-6	RIVET, SOLID	
74	1	1			5977208	LABEL, WARNING	
75	REF	REF	REF		1088180	PROCEDURE FOR HANDLING MOS DEVICES	

SHEET ONE REVISION LETTER IS THE IDENTIFYING  
REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE  
SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	K	9
			1086750

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G7	G8 G9					
1	1	1	E		108675192	CKT CD SUBASSY, MULTIPORT SERIAL INTERFACE	
2	2	1	A		310092P001	MED (SN7400N)	U-39,75
3	1	1	A		310200P001	MED (SN7402N)	U-10
4	1	1	A		310202P001	MED (SN7404N)	U-71
5	1	1	A		310319P001	MED (SN74504N)	U-69
6	2	2	A	01295	SN7406N	MED	U-20,61
7	2	2	A		310234P001	MED (SN7408N)	U-28,45
8	1	1	A		310092P002	MED (SN7410N)	U-70
9	4	4	A		310094P001	MED (SN7474N)	U-7,15,19,79
10	7	7	A		310378P003	MED (SN74HI06N)	U-34,35,56,66,67,76,77
11	3	3	A		7013070P068	MED (SN74LS138N)	U-37,44,50
12	1	1	A	01295	SN74LS139N	MED	U-46
13	2	2	A		313026P001	MED (SN74148N)	U-49,58
14	1	1	A		310311P001	MED (SN74153N)	U-55
15	2	2	A		7013070P054	MED (SN74173N)	U-68,78
16	2	2	A		310279P001	MED (SN74174N)	U-8,59
17	2	2	A		310279P002	MED (SN74175N)	U-4,80
18	2	2	A	01295	SN74251N	MED	U-38,65
19	2	2	A	01295	SN74LS253N	MED	U-6
20	1	1		07263	F9S4IPC	MED	U-30
21	1	1		07263	F9S109PC	MED	U-9

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	10	10

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G7	G8	G9					
24	1	1	1		07263	F9334PC	MED U-47	
25	1	1	1	A		1086960P17	PROG. PROM (6301-IJ) U-36	
26	1	1	1			1086870P7	PROG. PROM (6331-J) U-48	
27	2	2	2		34335	AM2616PC	MED U-31,41	
28	3	3	3		34335	AM2617PC	MED U-11,21,51	
29	5	5	5		27014	DM8097N	MED U-1,14,24,25,40	
30	3	3	3	A		310368P002	MED (DM8098N) U-26,27,29	
31	2	2	2		27014	DS8835N	MED U-16,17	
32	3	3	3		27014	DS8837N	MED U-5,18,54	
33	1	1	1		53848	COM5016	MED U-64	
34	1	1	1		52840	PR1472B	MED U-22	
35	1	1	1		52840	PT1482B	MED U-2	
36	3	3	3			COM2017P	MED U-32,52,62 (SMC)	
37	1	1	1	A		1086960P18	PROG. PROM (6301-IJ) U-60	
38	1	1	1			1086870P8	PROG. PROM (6331-J) U-57	
39	2	2	2	A		7550001P080	RES, 2K OHM $\pm 5\%$ , .25W R-37,38	
40	17	17	17	A		7550018P050	RES, 1K OHM $\pm 5\%$ , .125W R-1,4,6,8,9	
41	37	37	37	A		7550018P073	RES, 10K OHM $\pm 5\%$ , .125W R-10,11,12,13,14	
42	7	7	7	A		7550018P042	RES, 510 OHM $\pm 5\%$ , .125W R-2,5,7,39,40,41,47	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.		SIZE	CODE IDENT NO.	REV	SHEET //
		A	94117 PL	1086750	

## PARTS LIST

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G7	G8	G9					
43	15	15	15	A		7502023P055	CAP .01UF, ±10%, 100V C-31, 32, 33 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45	
44	10	10	10			CK05BX222K	CAP 2200PF, ±10%, 100V C-17, 18, 19 24, 25, 26, 27, 28, 29, 30	
45	1	1	1	A		7011451P014	CAP 4.7UF, ±10%, 10V C-8	
46	16	16	16	A		7502023P073	CAP 0.1UF, ±10% 50V C-2, 5, 6, 7 9, 10, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23	
47	2	2	2	A		7011451P049	CAP 15UF, ±10%, 20V C-3, 4	
48	1	1	1	A		7011451P019	CAP 39UF, ±10%, 10V C-1	
49							INDUCTOR L-3, 4	
50	2	2	2	A		7013626P001	INDUCTOR, 22 UH L-1, 2	
51	2	2	2	A		7518001P078	CRYSTAL (5.0688MHZ) Y-1	
52	1	1	1	A		1086937P1		
53								
54	4	4	4		53387	3491-1002	CONNECTOR, 10 PIN J-3, 4, 5, 6	
55	1	1	1		53387	3493-1002	CONNECTOR, 26 PIN J-2	
56	1	1	1	D		1086608P18	CONNECTOR, 98 PIN J-1	
57	4	4	4	A		7538002P017	DIODE, (IN4148) CR-1, 2, 3, 4	
58	2	2	2	A		7538002P072	DIODE, ZENER (IN4372A) VR-1, 2	
59	2	2	2	A		6010	EYELET (USM)	
60	2	2	2	A		600107P1	CARD EJECTOR	
61	2	2	2	A		630003P14	EYELET METALLIC (SE310)	
62	AR	AR	AR	A		93002P1	SOLDER	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1086750

REV K SHEET 12



PARTS LIST										
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM	SIZE		REV
	G7	G8						G9	A	
63										
64										
65										
66										
67	REF	REF	E		1086752	LOGIC DIAGRAM, MULTIPOINT SERIAL INTERFACE PWB, AND CKT BD, REQD FOR APPL OF EPOXY MARKING CMPD. JUMPER CONFIGURATION MULTIPOINT SERIAL INTERFACE SOCKET, CRYSTAL EYELET WIRE, ELEC #24 AWG RIVET, SOLID LABEL, WARNING PROCEDURE FOR HANDLING MOS DEVICES				
68	REF	REF	A		815003					
69	REF	REF	A		778000					
70	REF	REF	A		1088622					
71	1	1	A		280035P008					
72	2	2	A		630003P008					
73	4	4	A		0278002P015					
59A	REF	REF			MS20470AD2-6					
74	1	1			5977208 PI					
75	REF	REF			1088180					

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

REVISION STATUS				REVISIONS			
PARTS LIST		DRAWING		LTR	DESCRIPTION	DATE	APPROVED
SHEET	2 & UP	REV	REV				
1	E	D	E	-	REL FOR PREPROD	10 DEC 76	RBI <i>RBI</i>
REV	E	D	E	A	1 REV PER ECO 76022 SEE DWG REV A	7 MAR 77	RBI <i>RBI</i>
				B	2 REL FOR PROD NO. 7-020	3-30-77	AS / <i>AS</i>
				C	REV PER ECO 76075	1 AUG 77	WJ / <i>WJ</i>
				D	REV PER ECO 76098	15 NOV 77	WJ / <i>WJ</i>
				E	REV PER ECO 76163	10 MAY 78	RP / <i>RP</i>
					REV PER ECO 96383	28 MAR 80	WG / <i>WG</i>

3. SYMBOL † INDICATES VENDOR ITEM—SEE SPEC/SOURCE CONTROL DRAWING.

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

CONT NO.

DR	DATE
APPD	12/27/76
CHK	
ENG	12-10-76
GRG	12-13-76
PROJ	13 Dec 76

**PRODUCTION**  
**CHANGE BY ECO ONLY**

MFG *[Signature]* 1/19/77

OP-1039 REV A

**SA SANDERS ASSOCIATES, INC.**  
NASHUA, NEW HAMPSHIRE

CIRCUIT CARD ASSY  
GRAPHIC CONTROLLER

SIZE CODE IDENT NO. **A 94117** **PL1086758**

SHEET 1 OF 7

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2	G 3					
1	1	1	1	E		1086759G1	CIRCUIT CARD SUBASSY GRAPHIC CONTROLLER	
2	2	2	2	A		7013070P025	MED SN74500N 2-INPUT NAND GATE QUAD U9,38	
3	2	2	2	A		0310200P001	MED SN7402N QUAD 2-INPUT NOR GATE U19,69	
4	3	3	3	A		7013070P035	MED SN74502N QUAD 2-INPUT NOR GATE U28,47,78	
5	2	2	2	A		0310202P001	MED SN7404N HEX INVERTER U30,70	
6	1	1	1	A		0310319P001	MED SN74504N HEX INVERTER U39	
7	1	1	1	A		0310204P001	MED SN7407 HEX BUFFER/ DRIVER U20	
8	1	1	1	A		0310379P001	MED SN74510 TRIPLE INPUT NAND GATE U8	
9	1	1	1	A		7013070P019	MED SN7428N QUAD 2-INPUT NOR BUFFER U59	
10	1	1	1	A		0310320P001	MED SN74520N DUAL 4-INPUT NAND GATE U40	
11	1	1	1	A		0310248P002	MED SN7432N QUAD 2-INPUT-NOR GATE U68	
<p>SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG            SEE SHEET ONE FOR REVISION DESCRIPTIONS            SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.</p>								
SIZE					CODE IDENT NO.		REV D SHEET 2	
A					94117 PL		1086758	

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2	G3					
13	1	1	1	A		0310205P002	MED SN7438N QUAD 2-INPUT NAND BUFFER U17	
14	2	2	2	A		0310099P001	MED SN7474N DUAL-D-FLIP-FLOP U58, U79	
15	1	1	1	A		7013070P026	MED SN74574N DUAL-D-FLIP-FLOP U18	
16	3	3	3		07263	F-9S109PC	MED F-9S109PC DUAL-JK-FLIP-FLOP U7,29,57 (FAIR)	
17	2	2	2	A		7013070P077	MED SN745138N 3-8 LINE DECODE U67,77	
18	3	3	3		01295	SN74S157N	MED SN74S157N QUAD 2-LINE-TO-1 LINE MUX U16,36,76 (TI)	
19	3	3	3	A		0310279P001	MED SN74174N HEX/QUAD-D-FLIP-FLOP U6,26,46	
20	1	1	1		01295	SN74S174N	MED SN74S174N HEX/QUAD-D-FLIP-FLOP U49 (TI)	
21	1	1	1		01295	SN74S182N	MED SN74S182N LOOK AHEAD CARRY GEN. U51 (TI)	
22	1	1	1		01295	SN74S257N	MED SN74S257N QUAD 2-LINE-TO-1 LINE MUX, TRI-STATE U66 (TI)	
23	2	2	2	A		7013070P013	MED SN74S153N DUAL 4-LINE-TO-1 LINE MUX U65,75	
24	2	2	2	A		0310281P001	MED SN74157N QUAD 2-LINE-	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	D	3
		1086758	

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2	G 3					
25	1	1	1	A		7013070P053	TO-1 LINE MUX U54, 74 MED SN74S151N SINGLE 8 - LINE-TO-1 LINE MUX U37	
26	2	2	2		07263	F93516PC	MED F93516PC 4 BIT BINARY COUNTER U52, 62 (FAIR)	
27	1	1	1		07263	F9541PC	MED F9541PC QUAD AND GATE U80 (FAIR)	
28	1	1	1		07263	F9542PC	MED F9542PC DUAL 2-4 - INPUT AND/OR GATE U48 (FAIR)	
29	3	3	3	A		0310280P001	MED F9029PC DUAL - JK - FLIP- FLOP U10, 27, 60	
30								
31								
32								
33	4	4	4		50364	6701-J	MED 6701-J 4-BIT EXPANDABLE BI POLAR MICRO-CONTROLLER U1, 16, 31, 41 (MMI)	
34	9	9	9		34335	AM2918PC	MED AM2918PC U9, 5, 19, 15, 24, 25, 34, 35, 61 (AMD)	
35								

SHEET ONE REVISION LETTER IS THE IDENTIFYING  
REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE  
SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	D	SHEET	9
A	94117 PL			1086758	

PARTS LIST										
ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM	SIZE	
	G 1	G 2	G 3						CODE IDENT NO.	SHEET
36										
37	10	10	10	A	7550001P066	RES. RC07GF511J 510 $\Omega$ , $\pm$ 5%, .25W R1-3, 5-9, 14, 18				
38	6	6	6	A	7550001P073	RES. RC07GF102J 1K $\Omega$ , $\pm$ 5%, .25W R4, 12, 13, 16, 17, 19				
39	1	1	1	A	7550001P080	RES RC07GF202J 2K $\Omega$ , $\pm$ 5%, .25W R11				
40	2	2	2	A	7550001P060	RES RC07GF301J 300 $\Omega$ , $\pm$ 5%, .25W R15, 20				
41	26	26	26	A	7502023P055	CAP, CK05BX103K .01MF, $\pm$ 10%, 100V C-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				
42	1	1	1	A	7502023P037	CAP CK005BX102K .1MF, 100V, $\pm$ 10% C2				
43	1	1	1	A	7011451P019	CAP CSR13C396KL 39MF, 10V, $\pm$ 10% C1				
44										
45	10	10	10	D	555-2007	LED, DS1, 2, 3, 4, 5, 6, 7, 8, 9, 10 (DIALCO)				
46	1	1	1	D	1086608P18	CONN, ELEC 98 PIN, J1				
47	2	2	2	A	600107P1	CARD EJECTOR				
48	2	2	2	A	6010	EYELET				
49	2	2	2	A	630003P14	EYELET				
SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.										
					A 94117 PL		1086758		REV D SHEET 5	

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2					
50							
51	AR	AR	A		93002P1	SOLDER LOGIC DIAGRAM, GRAPHIC CONTROLLER PWB, REQ FOR APPL OF EPOXY MKG CMPD	
52	REF	REF	E		1086760		
53	REF	REF	A		815003		
54	REF	REF	A		778000		
55	/	/	/		1086960P1	PROGRAMMED PROM (6301-1J) U44 6306-1J) U45 U3 U13 U23 U33 U43 U53 U56 U63 U64 U71 U72 PROGRAMMED PROM (6306-1J) U73 PROGRAMMED PROM (6331-1J) U55	
56	/	/	/		1086960P2		
57	/	-	-		1086947P9		
58	/	-	-		1086947P10		
59	/	-	-		1086947P11		
60	/	-	-		1086947P12		
61	/	-	-		1086947P13		
62	/	-	-		1086947P14		
63	/	/	-		1086947P15		
64	/	-	-		1086947P16		
65	/	/	-		1086947P17		
66	/	-	-		1086947P18		
67	/	-	-		1086947P19		
68	/	-	-		1086947P20		
69	/	/	/		1086870 P5		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

1086758

REV D SHEET 6

PARTS LIST											
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM				
	G/	G 3						SIZE	REV	SHEET	
70	—	—			1086947P41	PROGRAMMED PROM (6306-1J)	U3				
71	—	—	/		42		U13				
72	—	—	/		43		U23				
73	—	—	/		44		U33				
74	—	—	/		45		U43				
75	—	—	/		46		U53				
76	—	—	/		47		U63				
77	—	—	/		48		U71				
78	—	—	/		49		U72				
79	—	—	/		50		U73				
80	—	—	/		51		U56				
81	—	—	/		1086947P52	PROGRAMMED PROM (6306-1J)	U64				
							SIZE CODE IDENT NO. <b>A 94117 PL 1086758</b>		REV <b>D</b> SHEET <b>7</b>		
SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.											



REVISION STATUS													REVISIONS			
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED
PARTS	Y	J	Y	Y	K	Y	J						R	1. REV PER ECO 76262A	11 OCT 78	WG/RIB
	13	14	15	16	17	18	19	20	21	22	23	24		2. REV PER ECO 76292	8 NOV 78	WG/R.B
LIST													T	REV PER ECO 76362A	31 JUL 79	WG/WL
													U	REV PER ECO 76398		
													V	REV PER ECO 96235	21 NOV 79	WG/WL
DWG													W	REV PER ECO 96383	28 MAR 80	WG/WL
REV													Y	REV PER ECO 96955A	5 SEP 80	WG/UK
WL																
REV																

**3. FOR AUTHORIZED COMPONENT SUBSTITUTION  
LIST SEE DWG SA1088588.**

**2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION  
FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.**

**1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION  
WITHIN 815002 SUPPLEMENT THIS DRAWING.**

**SA SANDERS ASSOCIATES, INC**  
NASHUA, NEW HAMPSHIRE

**CIRCUIT CARD ASSY,  
R/W 8K X 16 MEMORY**

SIZE CODE IDENT NO.  
**A 94117 PL 1086762**

SHEET 1 OF 7

<b>PRODUCTION CHANGE BY ECO ONLY</b>	DR	DATE
	J. SQUIRES	3 DEC 76
	APP	
	CHK	
	DES	R. RADFORD 10 DEC 76
	E/M	D. HALE 10 DEC 76
	PROJ	A. CONLEY 10 DEC 76
MFG K. MOHLER 8 DEC 76	NEXT ASSY	1087281 MSR
	APPLICATION	1086851 GRA - 7
	USED ON	

DWG SIZE E  
OP-1039 REV B

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G2					
1	1	1	E		1086763G1	CIRCUIT CARD SUBASSY	#
2	1	1	A		310319PI	MED (SN74S04N) U137	#
3	1	3	A		310092PI	MED (SN7400N) U28, 47, 66	#
4	1	1	A		310202PI	MED (SN7404N) U157	#
5	1	1	A	01295	SN74S05	MED (TI) U110	#
6	1	1	A	01263	F9S42PC	MED (FAIR) U39	#
7	1	1	A		310092P2	MED U119	#
8	1	4	A		310094PI	MED (SN7410N) U11, 20, 29, 46	#
9	2	2	A		310098PI	MED (SN7474N) U45, 54	#
10	4	4	A		310281PI	MED (SN7493N) U8, 17, 26, 35	#
11	4	3	A		7013070PI3	MED (SN74157) U53, 62, 71	#
12	3	3	A	01263	F9GS02PC	MED (SN74S153N) U12, 21, 30 (FAIR)	#
13	3	1	A		7013070P36	MED (SN74S51N) U48	#
14	1	1	A	27014	DM8160N	MED U65 (NAT)	#
15	1	1	A	27014	DS8833N	MED U9, 18, 27, 36 (NAT)	#
16	4	4	A	50088	MMK4096P-6	MED U4, 5, 6, 7, 13, 14	#
17	32	1	A			MED 15, 16, 22, 23, 24, 25, 31, 32, 33, 34, 40	#
18	1	1	A		321014PI	MED 41, 42, 43, 49, 50, 51, 52, 58, 59, 60, 61, 67, 68, 69, 70 (MOSTEK)	#
19	1	1	A			MED (NE555V) U3	#

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086762

REV U SHEET 2

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	Z					
20	4	4	A		RNC55H471FS	RES, 1.47K OHMS ±1% R35, 36, 37, 39	
21	8	8	A		7550001P096	RES, 9.1K OHMS ±5% .25W R13, 14, 15, 16, 17, 18, 19, 20	
22	6	6	A		7550001P090	RES, 5.1K OHMS ±5% .25W R1, 2, 3, 4, 30, 33	
23	13	-	A		RCR07G331JS	RES, 330 OHMS ±5% .25W R5, 8, 9, 10, 11, 12, 21, 22, 23, 24, 25, 26, 27	
24	1	1	A		7550001P048	RES, 240 OHMS ±5% 1W R38	
25	1	1	A		7550001P056	RES, 200 OHMS ±5% .25W R32	
26	1	1			RNC55H2871FS	RES, 2.87K OHMS ±1% .1W R28	
27	1	1			RNC55H3481FS	RES, 3.48K OHMS ±1% .1W R29	
28	3	3	A		7558001P009	RES, VARIABLE, 5K OHMS ±20% .5W R40, 42, 43	
29	-	7			RCR07G331JS	RES, 330 OHMS ±5% .25W R5, 8, 9, 10, 11, 12, 27	
30	-	6			RCR07G911JS	RES, 910 OHMS ±5% .25W R21, 22, 23, 24, 25, 26	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	Y	3
		1086762	

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G 2 G					
33	1	1	A		7538002P102	DIODE-ZENER (IN751A) 5.1V VR1	
34	90	90	A		7502023P055	CAP. .01UF $\pm 10\%$ 100V C6,8,13, 14,15,16,17,18,19,20,21,22,23,24,25,26, 27,28,29,30,31,32,33,34,35,36,37,38, 39,40,41,42,43,44,45,46,47,48,49,50 51,52,53,54,55,56,57,58,59,60,61,62,63 64,65,66,67,68,69,70,71,72,73,74,75,76 77,78,79,80,81,82,83,84,85,86,87,88, 89,90,91,92,93,94,95,96,97,98,99,101 CAP. 20 PF $\pm 5\%$ , 300V C3,5 CAP. 1800PF $\pm 5\%$ , 500V C100 CAP. 47PF $\pm 5\%$ , 300V C4,12 CAP. 15UF $\pm 10\%$ , 20V C7 CAP. 39UF $\pm 10\%$ , 10V C9,10,11	
35	2	1			DM5CC200J		
36	1	1	A		7506001P057		
37	2	2			DM5EC470J		
38	1	1	A		7011451P049		
39	3	3	A		7011451P019		
40							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	Y	SHEET
A	94117 PL	1086	762	4

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	GZ					
A1							
A2							
A3	2	2	A		7011935P001	INDUCTOR, L1,2,	
A4	1	1	A		7518001P86	INDUCTOR, 100 MH ± 10%, 350V L3	
A5							
A6							
A7	1	1		27014	LM3407-12	TRANSISTOR, Q1 (NAT)	
A8	1	1		27014	LM340K-12	TRANSISTOR, Q1 (NAT)	
A8A	REF	REF		86928	1008-692	SWITCH, DIP S1 (SAE)	
A9	1	1					
50							#
51	AR	AR	A		278000P13	WIRE, ELEC, #22 AWG	#
52	AR	AR	A		270006P5	TUBING, INSUL, TEFLON	
53	AR	AR	A		930002P1	SOLDER	
54							
55							
56	4	4	AD		165046P1	TEST POINT TPI,2,3,4	#
57	1	1			1086608P18	CONNECTOR, ELEC	
58	2	2	A	07707	6010	EYELET	#
59	2	2	A		600107P1	CARD EJECTOR	#
60					630003P14	EYELET	#

**PARTS LIST**

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

**1086762**

REV K SHEET 5



PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
61							
62					1086764	LOGIC DIAGRAM, MEMORY READ WRITE	
63					815003	PWB, REQ FOR	
64	REF	REF	E		778000	APPL OF EPOXY NGK CMPD	
65	REF	REF	A				
66	REF	REF					
67							
68							
69					MS57957-16	SCE, MACH PH 4-40X.44LG	
70	2	2			MS15795-803	WASHER, FLAT NO. 4	
71	2	2			MS2108300-4	NUT SLF-LXG 4-40	
72	2	2			MK4027-N3	MED U4,5,6,7,13,14,15,16,22	
73	-	-				U23,24,25,31,32,33,34,40,41	
						U42,43,49,50,51,52,58,59,60,61	
						U67,68,69,70 (MOSTEK)	
74	1	1			SN74S74N	MED U38	
75	-	-					
76	-	6			KCR07G510JS	RES, 510HMS, ±5%, .25W, R44,45,46,47,48,49	
77	1	1			7558001P007	RES, 1K OHMS, ±20%, .5W, R41	
78	1	1			RLR07C4990FM	RES, 499 OHMS, ±1%, .25W, R34	
79	1	-			7506001P17	CAP, 39 PF, ±5%, 500V, C2	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.	SIZE	CODE IDENT NO.	REV	SHEET
	A	94117 PL	Y	6

OP-277 REV C

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
17A	REF	—			MB8224E	MED, 15,16,22,23,24,25,31,32,33,34,40,41 42,43,49,50,51,52,58,59,60,61,67,68 69,70 (FUJITSU)	
17B	REF	—			40963DC	MED, 15,16,22,23,24,25,31,32,33,34,40,41 42,43,49,50,51,52,58,59,60,61,67,68 69,70 (FAIRCHILD)	
17C	REF	—			MK4096N-6	MED, 15,16,22,23,24,25,31,32,33,34,40,41 42,43,49,50,51,52,58,59,60,61,67,68 69,70 (MOSTEK)	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 9417 PL**

REV J SHEET 7  
**1086762**

REVISION STATUS			REVISIONS			
PARTS LIST		DRAWING	DESCRIPTION	DATE	APPROVED	
SHEET	1 2 & UP	REV				
1	N	K				
<div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>WARNING</b>            CHANGES ARE BEING PROCESSED            AGAINST THIS DOCUMENT            REFER TO 96982         </div>						
<p>5. ITEM NUMBERS WITH SUBSCRIPTS ARE ALTERNATE ITEMS. SELECT ONE ONLY.</p> <p>4. FOR AUTHORIZED COMPONENT SUBSTITUTION LIST SEE DWG SA 1088588.</p> <p>3. SYMBOL † INDICATES VENDOR ITEM—SEE SPEC/SOURCE CONTROL DRAWING.</p> <p>2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.</p> <p>1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.</p>			REL FOR PREPROD	12-2-76	KIR	
			A	ECO 76023	16	US/
				CHNG: ITEM 15 WAS U78960259X ITEM 102 WAS 70124859001 SEE DWG REV A	FEB	
				REF FOR PROD NO. 7-020	77	PKK
				3 REV PER ECO 76043	3-30-77	AS/ DWT
			B	REV PER ECO 76071	26 APR 77	DEIRA
			C	REV PER ECO 76096	19 JUNE 77	JOI RLB
			D	REV PER ECO 76144	14 OCT 77	HG/ BETH
			E	REV PER ECO 76163	8 MAR 78	RPI RLB
			F	REV PER ECO 76198	10 MAY 78	RP RLB
			G	REV PER ECO 76214	26 JUL 78	WG/ RLB
			H	REV PER ECO 76361	8 AUG 78	WG/ RLB
			J	REV PER ECO 76381A	12	WG/WL
			K	REV PER ECO 76418	OCT	
L	REV PER ECO 76489	79				
M	REV PER ECO 96272	5	90/			
N	REV PER ECO 96374	AUG				
		80				

**WARNING**  
 CHANGES ARE BEING PROCESSED  
 AGAINST THIS DOCUMENT  
 REFER TO 96982

5. ITEM NUMBERS WITH SUBSCRIPTS ARE ALTERNATE ITEMS. SELECT ONE ONLY.
4. FOR AUTHORIZED COMPONENT SUBSTITUTION LIST SEE DWG SA 1088588.
3. SYMBOL † INDICATES VENDOR ITEM—SEE SPEC/SOURCE CONTROL DRAWING.
2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

<b>SA SANDERS ASSOCIATES, INC.</b> NASHUA, NEW HAMPSHIRE		NASHUA, NEW HAMPSHIRE	
CIRCUIT CARD ASSY, OUTPUT CHANNEL		SIZE CODE IDENT NO. <b>A 94117 PL 1086771</b>	
CONT NO.		DATE	
D	DESIGNED	NOV 4, 1976	
R	APP'D		
F	CHK		
T			
G			
E	DEV		
N	APP'D		
C	CHK		
R			
G	PROJ		
MFG		USED ON	
1086851		APPLICATION	
NEXT ASSY		DWG SIZE	
1086851		<b>E</b>	
OP-1099 REV A		SHEET 1 OF 19	

**PRODUCTION**  
 CHANGE BY ECO ONLY  
 MFG



ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	GZ	G3					
1	1	1	1	E		1086772G2	CIRCUIT CARD SUBASSY	
2	1	1	1		0289	MCG5	MED	
3	1	1	1	A		310092P1	MED, SN7400N, U-22	(H1-G)
4	1	1	1	A		310202P1	MED, SN7404N, U-31	
5	1	1	1	A		310092P4	MED, SN7420N, U-16	
6	1	2	1	A		310205P2	MED, SN7438N, U-5	
7	1	1	1	A		310272P1	MED, SN7442N, U-18, 19	
8	1	1	1	A		310095P1	MED, SN7451N, U-13	
9	1	3	1	A		310208P1	MED, SN7475N, U-11	
10	1	1	1	A		321014P1	MED, SN7475N, U-14, 21, 23	
11	1	1	1	A		7534008P004	MED, NE555V, U-30	
12	1	1	1	A		7570001P008	LOGIC, VOLT COMP (UA710C) (U5B771039X) AR-2	
13	1	1	1	A		7539008P005	MED, DM8520N, U-4	
14	1	1	1	A		310328P1	LOGIC, VOLT COMP (UA711C) (U5F771139X) AR-1	
15	1	1	1	A		310200P1	MED, F9602PC U-10	
16	1	1	1	A		310205P1	MED, SN7402, U-3	
17	1	2	1	A		510368P2	MED, SN7437N, U-12, 20	
18	1	1	1	A		7502026P001	MED, DM8098M, U-15	
19	1	1	1	A		7502006P002	CAP, 1UF ± 20% 25V C-27	
20	26	26	26	A			CAP, .01UF +80% -20% 100V C-1, 3, 5, 7, 8, 10 12, 14, 29, 30, 32, 33, 34, 35, 37, 38, 39, 40, 43, 48, 50, 51, 53, 54, 55, 56,	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086771

REV K SHEET 2

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
21	1	1	A		7011451P064	CAP, 0.8UF ±10% 55V	C-28
22	4	4	A		7011451P066	CAP, 22UF ±10% 35V	C-9, 36, 41, 42
23	1	1	A		7506001P006	CAP, 10PF ±5PF 500V	C-31
24	2	2	A		7011451P019	CAP, 39UF ±10% 10V	C-45, 47
25	1	1	A		7506001P020	CAP, 51PF ±5% 500V	C-46
26	6	6	A		7506001P027	CAP, 100PF ±5% 500V	C-2, 6, 9, 13, 44, 49
27	2	2	A		7506001P017	CAP, 39PF ±5% 500V	C-11, 52
28	2	2	A		7502023P034	CAP, 680PF ±10% 200V	C-15, 18
29	8	8	A		7502023P055	CAP, .01UF ±10% 100V	C-16, 17, 19
31	2	2	A	16546	C13C1R0D	20, 22, 23, 25, 26, CAP 19PF ±.5PF 50V C-57, 58 (USCC)	
32	2	2	A		7550004P046	RES, 75 OHMS ±5%, .5W (RC20GF750J) R-51, 56	
33	4	4	A		7550001P017	RES, 4.7 OHMS ±5%, .25W (RC07GF47J) R-19	
34						22, 23, 26	
35	2	2	A		7556001P214	RES, 5.11K OHMS ±1%, .125W (RN60C5111F) R-50, 55	
36	7	7	A		7550001P025	RES, 100 OHMS ±5%, .25W (RC07GF100J) R-60	
37	2	2	A		7550001P061	66, 73, 79, 106, 112, 114 RES, 330 OHMS ±5%, .25W (RC07GF331) R-31, 32	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS 1 INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086771

REV K SHEET 3



**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
38	2	2	A		7550001P052	RES, 130 OHMS ±5%, .25W(RC07GF131J) R-27, 29	
39	3	3	A		7550001P056	RES, 200 OHMS ±5%.25W(RC07GF201J) R-9, 85, 109	
40	2	2	A		7550001P059	RES, 270 OHMS ±5%.25W(RC07GF271J) R-28, 30	
41	2	2	A		7550001P063	RES, 390 OHMS ±5%.25W(RC07GF391J) R-95, 113	
42	2	2	A		7550001P060	RES, 300 OHMS ±5%.25W(RC07GF301J) R-133, 134	
43	1	1	A		7550001P068	RES, 620 OHMS ±5%.25W(RC07GF621J) R-126	
44	1	1	A		7550001P066	RES, 510 OHMS ±5%.25W(RC07GF511J) R-122	
45	1	1	A		7550001P071	RES, 820 OHMS ±5%.25W(RC07GF821J) R-99	
46	14	14	A		7550001P073	RES, 1K OHM ±5%.25W(RC07GF102J) R-7, 8, 12, 14, 127, 84, 111, 120, 121, 123, 138, 131, 132, 69	
47	2	2	A		7550001P077	RES, 1.5K OHMS ±5%.25W(RC07GF152J) R-97, 101	
48	2	2	A		7550001P078	RES, 1.6K OHMS ±5%.25W(RC07GF162J) R-103, 105	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.	SIZE	CODE IDENT NO.	REV	K	SHEET
	A	94117 PL	1086771		4

OP-277 REV C

The Draftboard

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2	G3					
49	2	2	2	A		7550001P076	RES, 1.3K OHMS ±5%, .25W(RC07GF132J) R-34, 37	
50	2	2	2	A		7550004P062	RES, 360 OHMS ±5%, .5W(RC20GF361J) R-129, 130	
51	1	1	1	A		7550001P083	RES, 2.7K OHMS ±5%, .25W(RC07GF272J) R-92	
52	1	1	1	A		7550001P092	RES, 6.2K OHMS ±5%, .25W(RC07GF622J) R-88	
53	1	1	1	A		7550001P081	RES, 2.2K OHMS ±5%, .25W(RC07GF222J) R-82	
54	6	6	6	A		7550001P084	RES, 3K OHMS ±5%, .25W(RC07GF302J) R-58, 64, 71, 77, 110, 128	
55	15	15	15	A		7550001P090	RES, 5.1K OHMS ±5%, .25W(RC07GF512J) R-20, 21, 24, 25, 59, 61, 65, 67, 72, 74, 78, 80 96, 124, 125	
56	1	1	1	A		7550001P091	RES, 5.6K OHMS ±5%, .25W(RC07GF562J) R-94	
57	2	2	2	A		7550001P094	RES, 7.5K OHMS ±5%, .25W(RC07GF752J) R-98, 100	
58	11	11	11	A		7550001P097	RES, 10K OHMS ±5%, .25W(RC07GF103J) R-87, 89, 90, 102, 104, 57, 63, 70, 76, 135, 136	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086771

REV K SHEET 5

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2	G3					
59	1	1	1	A		7550001P099	RES, 12 K OHMS ±5%, .25W(RC07GF123J) R-83	
60	4	4	4	A		7550001P118	RES, 75K OHMS ±5%, .25W(RC07GF753J) R-33, 35, 36, 38	
61	2	2	2	A		7550001P121	RES, 100K OHMS ±5%, .25W(RC07GF104J) R-5, 10	
62	2	2	2	A		7550001P138	RES, 510K OHMS ±5%, .25W(RC07GF514J) R-6, 13	
63	2	2	2	A		7550004P063	RES, 390 OHMS ±5%, .5W(RC20GF391J) R-11, 86	
64	4	4	4	A		7550004P025	RES, 10 OHMS ±5%, .5W(RC20GF100J) R-15, 16, 17, 18	
65	1	1	1	A		7550004P058	RES, 240 OHMS ±5%, .5W(RC20GF241J) R-107	
66	1	1	1	A		7550004P075	RES, 1.2K OHMS ±5%, .5W(RC20GF122J) R-108	
67	1	1	1	A		7550004P077	RES, 1.5K OHMS ±5%, .5W(RC20GF152J) R-115	
68	4	4	4	A		7550007P036	RES, 75 OHMS ±5%, 1W(RC32GF750J) R-1, 2, 3, 4	
69	2	2	2	A		7556001P271	RES, 20.0 K OHMS ±1%, .125W(RN60C2002F) R-47, 52	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.	SIZE	CODE IDENT NO.	REV	K	SHEET
	A	94117 PL	1086771		

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2	G 3					
70	2	2	2	A		7556001P156	RES, 1.27K OHMS ±1%, .125W (RNG60C1271F) R-49, 54	
71	2	2	2	A		7556001P242	RES, 10K OHMS ±1%, .125W (RNG60C1002F) R-39, 41	
72	5	5	5	A		7558001P007	RES, VARIABLE, 1K OHM, ±20%, .5W R-44, 46, 116, 117, 118	
73	2	2	2	A		7558001P006	RES, VARIABLE, 500 OHMS ±20%, .5W R-43, 45	
74	1	1	1	A		7558001P015	RES, VARIABLE, 200K OHMS ±20%, .5W R-93	
75	4	4	4	A		RW81U3000F	RES, 300 OHMS ±1%, 1W (RW81U3000F) R-62, 68, 75, 81	
76	2	2	2	A		7556001P218	RES, 5.62K OHMS ±1%, .125W (RNG60C5621F) R-40, 42	
78	15	15	15	A		7610001P057	TRANSISTOR, NPN (2N2369A) Q-26, 27, 28 29, 30, 31, 32, 33, 34, 35, 36, 13, 16, 19, 22	
80	2	2	2	A		7610001P046	TRANSISTOR, PNP (2N2907A) Q-5, 7	
81	4	4	4	A		7610001P039	TRANSISTOR, PNP (2N4209) Q-15, 18, 21, 24	
82	2	2	2	A		7610001P053	TRANSISTOR, NPN (2N2219A) Q-1, 3	
83	2	2	2	A		7610001P085	TRANSISTOR, PNP (2N2905A) Q-2, 4	
84	6	6	6	A		7610001P084	TRANSISTOR, MPN (2NE222A) Q-6, 8, 14, 17, 20, 23,	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086771

REV K SHEET 7

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2	G3					
85	2	2	2	A		7610001P075	TRANSISTOR, (MD918A) Q-9, 10	
86	2	2	2	A		7610001P107	TRANSISTOR, FET P-CHANNEL (2N3955A) Q-11, 12	
87								
88								
89	28	28	28	A		7538002P017	DIODE, (1N4148) CR-1, 4, 5, 6, 8, 9, 10, 12, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 34, 37, 38, 52, 53, 54, 55, 56, 57	
90	10	10	10	A		7012776P001	DIODE, (MFA-5082-2800) CR-30, 31, 32, 33, 40, 41, 42, 44, 45, 51	
91	3	3	3	A		7538002P038	DIODE, ZENER (1N753A) VR-3, 36, 43	
92	4	4	4	A		7538002P094	DIODE, ZENER (1N4371) VR-26, 27, 28, 29	
93	6	6	6	A		7538002P047	DIODE, ZENER (1N9628) VR-27, 11, 13, 17, 35	
94	2	2	2	A		7538002P066	DIODE, ZENER (1N9448) VR-49, 50	
95								
96								
97	1	1	1	A		7518001P086	INDUCTOR, 100μh ±10%, 350V L-3	
98	1	1	1	A		7518001P078	INDUCTOR, 22μh ±10%, 350V L-1	
99	1	1	1	A		7011935P001	INDUCTOR L-2	
100								
101	4	4	4	C		819 83800-10	CONN, BNC, J1, 2, 3, 4 (AUTOMATIC)	
102	1	1	1	A		1086849P1	BRACKET, CONN	
103	4	4	4	A		7012774P001	RECEPTACLE, BULK HEAD (BNC) (UG10944/10)	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS ! INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.
A	94117 PL
REV	K
SHEET	8

1086771



**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2	G 3					
104	8	8	8	A	7012774P002	4-5, 6, 7, 8 ADAPTER, RIGHT ANGLE (BNC) (UG306A/U)		
105	4	4	4	A	0256079P004	TERMINAL, LUG		
106	2	2	2	A	7806311P029	SCREW, MACHINE-PAN HEAD .112-40X3/16		
107	2	2	2	A	7808003P005	WASHER, FLAT NO. 4		
108	2	2	2	A	7011338P004	WASHER, LOCK-SPRING NO. 4		
109	2	2	2	A	7807411P003	NUT PLAIN-HEX .112-40		
110	2	2	2	A	1089780P1	SCREW 3.56 X.25 CROSS RECESSED, PHILLIPS HEAD.		
111	16	16	16	A				
112								
113	AR	AR	AR	A	RG187A1U	COAX (75 OHM)		
114	AR	AR	AR	A	278002P13	WIRE, ELEC AWG 22 (MULTI DATA)		
115	AR	AR	AR	A	270006P5 5	INSULATION TUBING, ELEC		
116	AR	AR	AR	E	1086773	LOGIC DIAGRAM - OUTPUT CHANNEL		
117	REF	REF	REF	A	G40048P1	WAFER, THERMAL CONDUCTING		
118	27	27	27	A	G40049P1	WAFER, THERMAL CONDUCTING		
119	4	4	4	A	G40085P1	WAFER, THERMAL CONDUCTING		
120	1	1	1	A	93002P1	SOLDER		
121	AR	AR	AR	A	815003	PWB, REQUIREMENTS FOR		
122	REF	REF	REF	A	778000	APPL OF EPOXY MARKING CMPD		
123	REF	REF	REF	A	740061P1	ADHESIVE, EPOXY RESIN		
124	AR	AR	AR	A	740061P1	ADHESIVE, EPOXY RESIN		
125	AR	AR	AR	A	740061P2	ADHESIVE, EPOXY CATALYST	# #	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086771

REV K SHEET 9



**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2	G3					
126	1	1	1	A	99777	640085P2	<b>WAFER, THERMAL CONDUCTING CONN, BNC, J1, 2, 3, 4 (B-W ASSOC) BRACKET, CONN EYELET, (USM) CONN, ELEC (98 PIN) DIODE (M756A) VR7, 11, 13, 17 SEE NOTE 12 RIVET, SOLID SOLDER TERMINAL (CTC) TERMINAL, GROUND LUG</b>	
101A	REF	REF	REF			BW181699		
127	-	-	1	C		1086849P2		
128	2	2	2			6010		
129	1	1	1	D		1086608P18		
95A	REF	REF	REF			7538002P013		
128A	REF	REF	REF			MS20470AD2-6		
130	6	6	6			2089-2		
131	6	6	6	B		7012480P001		
132	-	-	-					
133	-	-	-					
134	-	-	-					
135	-	-	-					

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086771

REV K SHEET 10

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	164	65					
1	1	1	E		108677262	CIRCUIT CARD SUBASSY	
2	1	1		02889	MCG5	MED U-22 (H1-G)	
3	1	1	A		310092P1	MED, SN7400N, U-31	
4	1	1	A		310202P1	MED, SN7404N, U-16	
5	1	1	A		310092P4	MED, SN7420N, U-5	
6	2	2	A		310205P2	MED, SN7438N, U-18, 19	
7	1	1	A		310272P1	MED, SN7442N, U-13	
8	1	1	A		310095P1	MED, SN7451N, U-11	
9	3	3	A		310208P1	MED, SN7475N, U-14, 21, 23	
10	1	1	A		321014P1	MED, NE555V, U-30	
11	1	1	A		7534008P004	LOGIC, VOLT COMP (U1A710C) (U15B771039X) AR-2	
12	1	1	A		7570001P008	MED, DM8520N, U-4	
13	1	1	A		7534008P005	LOGIC, VOLT COMP (U1A711C) (U15F771139X) AR-1	
14	1	1	A		310328P1	MED, F9602PC U-10	
15	1	1	A		310200P1	MED, SN7402, U-3	
16	1	1	A		310205P1	MED, SN7437N, U-12, 20	
17	2	2	A		310368P2	MED, DM8098N, U-15	
18	1	1	A		7502026P001	CAP, 1UF ± 20% 25V C-27	
19	1	1	A		7502006P002	CAP, .01UF +80% -20% 100V C-1, 3, 5, 7, 8, 10	
20	26	26	A			12, 14, 29, 30, 32, 33, 34, 35, 37, 38, 39, 40, 43, 48, 50, 51, 53, 54, 55, 56,	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086771

REV K SHEET 11

**PARTS LIST**

ITEM NO.	QTY PER ASSY.		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
21	1	1	A		7011451/P064	CAP, 6.8UF ±10% 35V	C-28
22	4	4	A		7011451/P066	CAP, 22UF ±10% 35V	C-9, 36, 41, 42
23	1	1	A		7506001/P006	CAP, 10PF ±5PF 500V	C-31
24	2	2	A		7011451/P019	CAP, 39UF ±10% 10V	C-45, 47
25	1	1	A		7506001/P020	CAP, 51PF ±5% 500V	C-46
26	6	6	A		7506001/P027	CAP, 100PF ±5% 500V	C-2, 6, 9, 13, 44, 49
27	2	2	A		7506001/P017	CAP, 39PF ±5% 500V	C-11, 52
28	2	2	A		7502023/P034	CAP, 680PF ±10% 200V	C-15, 18
29	8	8	A		7502023/P055	CAP, .01UF ±10% 100V	C-16, 17, 19,
31	2	2	A	16546	C13C1E0D	20, 22, 23, 25, 26,	
32	2	2	A		7550004/P046	CAP 19F ±.5PF 50V C-57, 58 (USCC)	
33	4	4	A		7550001/P017	RES, 75 OHMS ±5%, .5W (RC20GF750J) R-51, 56	
34						RES, 4.7 OHMS, ±5%, .25W (RC07GF4R7J) R-19	
35	2	2	A		7556001/P214	RES, 5.11K OHMS ±1%, .125W (RN60C5111F)	
36	7	7	A		7550001/P025	R-50, 55	
37	2	2	A		7550001/P061	RES, 10 OHMS ±5%, .25W (RC07GF100J) R-60	
						66, 73, 79, 106, 112, 114	
						RES, 330 OHMS ±5%, .25W (RC07GF331)	
						R-31, 32	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM -SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	K	SHEET	12
A	94117 PL	1086771			

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5					
38	2	2	A		7550001P052	RES, 130 OHMS ±5%, .25W (RC07GF131J) R-27, 29	
39	3	3	A		7550001P056	RES, 200 OHMS ±5%, .25W (RC07GF201J) R-9, 85, 109	
40	2	2	A		7550001P059	RES, 270 OHMS ±5%, .25W (RC07GF271J) R-28, 30	
41	2	2	A		7550001P063	RES, 390 OHMS ±5%, .25W (RC07GF391J) R-95, 113	
42	2	2	A		7550001P060	RES, 300 OHMS ±5%, .25W (RC07GF301J) R-133, 134	
43	1	1	A		7550001P068	RES, 620 OHMS ±5%, .25W (RC07GF621J) R-126	
44	1	1	A		7550001P066	RES, 510 OHMS ±5%, .25W (RC07GF511J) R-122	
45	1	1	A		7550001P071	RES, 820 OHMS ±5%, .25W (RC07GF821J) R-99	
46	14	14	A		7550001P073	RES, 1K OHM ±5%, .25W (RC07GF102J) R-7, 8, 12, 14, 127, 84, 111, 120, 121, 123, 138, 131, 132, 69	
47	2	2	A		7550001P077	RES, 1.5K OHMS ±5%, .25W (RC07GF152J) R-97, 101	
48	2	2	A		7550001P078	RES, 1.6K OHMS ±5%, .25W (RC07GF162J) R-103, 105	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL 1086771**

REV K SHEET 13

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5					
49	2	2	A		7550001P076	RES, 1.3K OHMS ±5%, .25W(RC07GF132J) R-34, 37	
50	2	2	A		7550004P062	RES, 360 OHMS ±5%, .5W(RC20GF361J) R-129, 130	
51	1	1	A		7550001P083	RES, 2.7K OHMS ±5%, .25W(RC07GF272J) R-92	
52	1	1	A		7550001P092	RES, 6.2K OHMS ±5%, .25W(RC07GF622J) R-88	
53	1	1	A		7550001P081	RES, 2.2K OHMS ±5%, .25W(RC07GF222J) R-82	
54	6	6	A		7550001P084	RES, 3K OHMS ±5%, .25W(RC07GF302J) R-58, 64, 71, 77, 110, 128	
55	15	15	A		7550001P090	RES, 5.1K OHMS ±5%, .25W(RC07GF512J) R20, 21, 24, 25, 59, 61, 65, 67, 72, 74, 78, 80 96, 124, 125	
56	1	1	A		7550001P091	RES, 5.6K OHMS ±5%, .25W(RC07GF562J) R-94	
57	2	2	A		7550001P094	RES, 7.5K OHMS ±5%, .25W(RC07GF752J) R-98, 100	
58	7	11	A		7550001P097	RES, 10K OHMS ±5%, .25W(RC07GF103J) R-87, 89, 90, 102, 104, 57, 63, 70, 76, 135, 136	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS 1 INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
A 94117 PL 1086771

REV K SHEET 14

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
59	1	1	A		7550001P099	RES, 12 K OHMS ±5%, .25W(RC076F123L) R-83	
60	4	4	A		7550001P118	RES, 75K OHMS ±5%, .25W(RC076F753L) R-33, 35, 36, 38	
61	2	2	A		7550001P121	RES, 100K OHMS ±5%, .25W(RC076F104L) R-5, 10	
62	2	2	A		7550001P138	RES, 510K OHMS ±5%, .25W(RC076F514L) R-6, 13	
63	2	2	A		7550004P063	RES, 390 OHMS ±5%, .5W(RC206F391L) R-11, 86	
64	4	4	A		7550004P025	RES, 10 OHMS ±5%, .5W(RC206F100L) R-15, 16, 17, 18	
65	1	1	A		7550004P058	RES, 240 OHMS ±5%, .5W(RC206F241L) R-107	
66	1	1	A		7550004P075	RES, 1.2K OHMS ±5%, .5W(RC206F122L) R-108	
67	1	1	A		7550004P077	RES, 1.5K OHMS ±5%, .5W(RC206F152L) R-115	
68	4	4	A		7550007P036	RES, 75 OHMS ±5%, 1W(RC326F750L) R-1, 2, 3, 4	
69	2	2	A		7556001P271	RES, 20.0 K OHMS ±1%, .125W(RN60C2002F) R-47, 52	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS 1 INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	K	SHEET
A	94117 PL	1086771		15

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
70	2	2	A		7556001P156	RES, 1.27K OHMS ± 1%, .125W (RNG60C1271F) R-49, 54	
71	2	2	A		7556001P242	RES, 10K OHMS ± 1%, .125W (RNG60C1002F) R-39, 41	
72	5	5	A		7558001P007	RES, VARIABLE, 1K OHM, ± 20%, .5W R-44, 46, 116, 117, 118	
73	2	2	A		7558001P006	RES, VARIABLE, 500 OHMS ± 20%, .5W R-43, 45	
74	1	1	A		7558001P015	RES, VARIABLE, 200K OHMS ± 20%, .5W R-93	
75	4	4	A		RW81U3000F	RES, 300 OHMS ± 1%, 1W (RW81U3000F) R-62, 68, 75, 81	
76	2	2	A		7556001P218	RES, 5.62K OHMS ± 1%, .125W (RNG60C5621F) R-40, 42	
78	15	.15	A		7610001P057	TRANSISTOR, NPN (2N2369A) Q-26, 27, 28 29, 30, 31, 32, 33, 34, 35, 36, 13, 16, 19, 22	
80	2	2	A		7610001P046	TRANSISTOR, PNP (2N2907A) Q-5, 7	
81	4	4	A		7610001P038	TRANSISTOR, PNP (2N4209) Q-15, 18, 21, 24	
82	2	2	A		7610001P083	TRANSISTOR, NPN (2N2219A) Q-1, 3, 4	
83	2	2	A		7610001P085	TRANSISTOR, PNP (2N2905A) Q-2, 4	
84	6	6	A		7610001P084	TRANSISTOR, NPN (2N2222A) Q-6, 8, 1A, 17, 20, 23,	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS 1 INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO

A 94117 PL 1086771

REV K SHEET 16

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5					
85	2	2	A		7610001P075	TRANSISTOR, (MD918A) Q-9, 10	
86	2	2	A		7610001P107	TRANSISTOR, FET P-CHANNEL (2N3955A) Q-11, 12	
87							
88							
89	28	28	A		7538002P017	DIODE, (1N4148) CR-1, 4, 5, 6, 8, 9, 10, 12, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 34, 37, 38, 52, 53, 54, 55, 56, 57	
90	10	10	A		7012776P001	DIODE, (1N4148) CR-30, 31, 32, 33, 40, 41, 42, 44, 45, 51	
91	3	3	A		7538002P038	DIODE, ZENER (1N753A) VR-3, 36, 43	
92	4	4	A		7538002P094	DIODE, ZENER (1N4371) VR-26, 27, 28, 29	
93	6	6	A		7538002P047	DIODE, ZENER (1N9628) VR-2, 7, 11, 13, 17, 35	
94	2	2	A		7538002P066	DIODE, ZENER (1N9448) VR-49, 50	
96							
97	1	1	A		7518001P086	INDUCTOR, 100uH ±10%, 350V L-3	
98	1	1	A		7518001P078	INDUCTOR, 22uH ±10%, 350V L-1	
99	1	1	A		7011935P001	INDUCTOR L-2	
100							
101	4	4			819 83800-10	CONN, BNC, J1, 2, 3, 4 (AUTOMATIC)	
102	1	1	C		7086849PI	BRACKET, CONN	
103	4	4	A		7012774P001	RECEPTACLE, BULKHEAD (BNC) (UG109441U) J5, 6, 7, 8	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS 1 INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.
A	94117 PL
REV	K
SHEET	17



PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5					
104	8		A		7012774P002	ADAPTER, RIGHT ANGLE (BNC) (UG306A/U)	
105		8	A		0256079P004	TERMINAL, LUG	
106	4	4	A		7806311P029	SCREW, MACHINE-PAN HEAD .112-40X.31LG	
107	2	-	A		7808003P005	WASHER, FLAT NO. 4	
108	2	-	A		7011338P004	WASHER, LOCK-SPRING NO. 4	
109	2	-	A		7807411P003	NUT, PLAIN-HEX .112 - 4-1	
110	2	-	A		7089780P1	SCREW, 3-56 X.25 CROSS RECESSED, PHILLIPS HEAD.	
111	16	16	A				
112							
113							
114	AR	AR	A		RG187A7U	COAX (75 OHM)	
115	AR	AR	A		0278002P013	WIRE, ELEC AWG 22 (MULTI DATA)	
116	AR	AR	A		0270006P005	INSULATION TUBING, ELEC	
117	REF	REF	E		1086773	LOGIC DIAGRAM - OUTPUT CHANNEL	
118	27	27	A		640048P1	WAFER, THERMAL CONDUCTING	
119	4	4	A		640049P1	WAFER, THERMAL CONDUCTING	
120	1	1	A		640085P1	WAFER, THERMAL CONDUCTING	
121	AR	AR	A		93002P1	SOLDER	
122	REF	REF	A		8150003	PWB, REQUIREMENTS FOR	
123	REF	REF	A		778000	APPL OF EPOXY MARKING CMPD	
124	AR	AR	A		740061P1	ADHESIVE, EPOXY RESIN	
125	AR	AR	A		740061P2	ADHESIVE, EPOXY CATALYST	#

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS 1 INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	K	SHEET	18
A	94117 PL				

1086771

PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5					
126	1	1	A	99777	640085PZ	WAFER, THERMAL CONDUCTING	
101A	REF	REF			BW181699	CONN, BNC, J1, 2, 3, 4 (B+W ASSOC)	
127	-	1	C		1086849P2	BRACKET, CONN	
128	2	2			6010	EYELET, (USM)	
129	1	1	D		1086608P18	CONN, ELEC (98 PIN)	
130A	REF	REF			7538002P013	DIODE (M756A) VR7, 11, 13, 17 SEE NOTE 12	
128A	REF	REF			MS20470AD2-6	RIVET, SOLID	
130	6	6			2089-2	SOLDER TERMINAL (CTC) E1, 3, 5, 7, 24, 26	
131	6	6	B		7012480P001	TERMINAL, GROUND LUG E2, 4, 6, 8, 25, 27	
132	-	2	A		MS51957-4	SCR, MACH PAN HD. .086-.56 x .31LG	
133	-	4	A		MS15795-802	WASHER, FLAT NO. 2	
134	-	2	A		MS35338-134	WASHER, LOCK NO. 2	
135	-	2	A		MS35649-224	NUT, PLAIN HEX 086-56	

SIZE CODE IDENT NO.

A 94117 PL 1086771

REV K SHEET 19

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

REVISION STATUS			REVISIONS			
PARTS LIST		DRAWING	LTR	DESCRIPTION	DATE	APPROVED
SHEET	1 2 & UP	REV				
1	K	J	-	REL FOR PREPROD	1/15/76	RM
REV		G	A	REV PER ECO 76014 SEE DWG REV A	23 FEB 77	RLJ
			B	1. REV PER ECO 76032	9 MAR 77	RB1
			C	2. REL FOR PRODUCTION		
			D	REV PER ECO 76116	3 JAN 78	WG/RIB
			E	REV PER ECO 76130	24 FEB 78	RP/RVB
			F	REV PER ECO 76163	10 MAY 78	RP RIB
			G	REV PER ECO 76223	7 AUG 78	WG/RIB
			H	REV PER ECO 76471	19 OCT 79	RDY/WL
			J	REV PER ECO 96219A	26 NOV 79	WG/WL
			K	REV PER ECO 96243	19 DEC 79	RDY/WL
				REV PER ECO 96370	18 MAR 80	RDY/WL

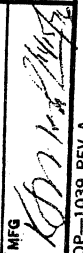
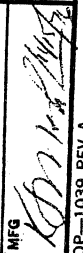
4. ITEM NUMBERS WITH SUBSCRIPTS ARE ALTERNATE ITEMS, SELECT ONE ONLY.

3. SYMBOL # INDICATES VENDOR ITEM—SEE SPEC/SOURCE CONTROL DRAWING.


2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

<b>PRODUCTION</b>		<b>CHANGE BY ECO ONLY</b>	
MFG	1086851	GRA-7	USED ON
	NEXT ASSY	APPLICATION	
			
OP-1039 REV A		DWG SIZE E	

 <b>SANDERS ASSOCIATES, INC</b> MASHUA, NEW HAMPSHIRE	
<b>CIRCUIT CARD ASSY</b> <b>D/A CONVERTER</b>	
SIZE	CODE IDENT NO.
A	94117 PL 1086775
SHEET 1 OF 5	

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
1	1		E		1086776G2	CIRCUIT CARD SUB ASSY	
2							
3							
4	1				7013128P001	MED, OP-AMP, A1 (HA2-2525-5)	
5	1				310201P1	MED, SN7403N, U-2	
6	5				310227P1	MED, SN74H04N, U-14, 17, 18, 20, 24	
7	1				310205P1	MED, SN7437N, U-31	
8	1				310231P2	MED, SN74H51N, U-32	
9	3				310274P1	MED, SN7483N, U-1, 3, 6	
10	6				7013070P044	MED, SN74298N, U-9, 10, 11, 12, 21, 22	
11	3				310310P3	MED, N8235-B, U-15, 16, 23	
12	1				228041P32	MED, 899-I-RIK, U-40	
13	12				310414P1	MED, 4900P-001 U41 THRU 52	
14							
15							
16	1			04713	2N4957	TRANSISTOR, Q-54 (MOTOROLA)	
17	52				209068P6	TRANSISTOR, MEM660-012, Q1 THRU 52	
18							
19							
20							
21	1				7538002P072	DIODE, ZENER, 3V, VR-1 (1N4372A)	
22	1				7538002P007	DIODE, ZENER, 12V, VR-2 (1N472A)	
23	1				7538002P017	DIODE, CR-1 (1N4148)	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS † INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086775

REV J SHEET 2

OP-277 REV C

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
24	1			91293	7265	CAP, VARIABLE (.3-1.2PF) (C250R22X100HAN50)	
25	5				7011451P019	CAP, 39UF ±10% 10V, C1, 8, 28, 30, 32 (CSR13C37K4L)	
26	17				7502023P055	CAP, .01UF ±10% 100V, C2-7, 10-15, 20, 21, 27, 29, 31 (CK05BX103K)	
27	3				7502023P073	CAP, .1UF ±20% 50V, C-18, 19, 24 (CK05BX104K)	
28	2				7011451P066	CAP, 22UF ±20% 35V, C-16, 17 (CSR13F226K4L)	
29	2				CM05FD101P3	CAP, 100PF ±5% 500V, C-22, 23	
30	1				RLR20C102GR	RES, 1K OHM ±2% .5W, R-35	
31	2				7550001P073	RES, 1K OHM ±5% .25W, R-1, 41 (RC07GF102J)	
32	1				7550001P080	RES, 2K OHM ±5% .25W, R-40 (RC07GF202J)	
33	1				7012317P003	RES, 300 OHM ±1% 3W, R-2 (RW79J300DF)	
34	1				7550001P097	RES, 10K OHM ±5% .25W, R-39 (RC07GF103J)	
35	2		B		1088305P1	RES, FIXED PRCN (1.23K) R-5, 6	
36	2		B		1088305P2	RES, FIXED PRCN (2.96K) R-4, 7	
37	2		B		1088305P3	RES, FIXED PRCN (4.95K) R-8, 25	
38	2		B		1088305P4	RES, FIXED PRCN (9.94K) R-9, 26	
39	2		B		1088305P5	RES, FIXED PRCN (19.9K) R-10, 27	
40	2		B		1088305P6	RES, FIXED PRCN (40.0K) R-11, 28	
41	2		B		1088305P7	RES, FIXED PRCN (80.0K) R-12, 29	
42	2		B		1088305P8	RES, FIXED PRCN (160K) R-13, 30	
43	2		B		1088305P9	RES, FIXED PRCN (320K) R-14, 31	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS: INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	J	SHEET	3
A	94117 PL	1086775			

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
44	1		B		1088305P10	RES, FIXED PRCN (619OHM) P-34	
45	1				RNGOE6040F	RES, FIXED RN60 (604Ω) ±1.0% R-17	
46	2			03888	PME6072-63438	RES, 634 KOHM ±1%.125W, R-15, 32	
47	2			03888	PME6072-1274B	RES, 1.27 MEG ±1%.125W R-16, 33	
48	3				7558001P2	RES, VARIABLE, 20 OHM ±20%.5W, R-18, 21, 22	
49	4				7558001P3	RES.VARIABLE, 50OHM±20%.5W, R-19, 20, 23, 24	
50	1				7550001P049	RES, 100 OHMS ±5%.25W, R-3 (RC076F10J)	
51	AR				740061P1	ADHESIVE EPOXY RESIN	
52	AR				740061P2	ADHESIVE EPOXY CATALYST	
54	53		A		640048P1	WAFER, THERMAL CONDUCTING	
55	1		A		640085P2	WAFER, THERMAL CONDUCTING	
56	1		A		7012353P1	LABEL, WARNING SPECIAL HANDLING	
57	AR				93002P1	SOLDER	
58	14"		A		R6187A/U	COAX (75 OHM)	
59	REF				1088180	PROCEDURE FOR HANDLING MOS DEVICES.	
60	REF		A		815003	PWB, REQ FOR	
61	REF		J		1086777	LOGIC DIAGRAM	
62	1		B		1086914P1	SPRING, GROUNDING	
63	10"		A		278002P13	WIRE, ELEC, # 22AWG	
64	10"		A		270006P5	TUBING, INSUL TEFLON	
65	REF		A		778000	APPL OF EPOXY MARKING CMPD	
SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.				SIZE		CODE IDENT NO.	
				A		94117 PL	1086775
				RF		J	SHEET 4

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
66	2		A		600107PI	CARD EJECTOR	
67	2		A		630003PIA	EYELET	
68	2				6010	EYELET (USM)	
68A	REF				MS20470AD2-6	RIVET SOLID UNIV, HD, .06 DIA X .38 LG (SEE NOTE 4)	
69	1		D		1086608PI8	CONNECTOR, ELEC	
70	2				2089-2	SOLDER TERMINAL (CTC)	
71	2		B		7012480P001	TERMINAL, GROUND LUG	
72	1		C		5976158PI	SHIELD D/A CONVERTER	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM -SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

1086775

REV J SHEET 5

REVISION STATUS			REVISIONS		
PARTS LIST		DRAWING	DESCRIPTION	DATE	APPROVED
SHEET	1	2 & UP	REL FOR PREPROD	12-77	DAK
REV	N	H	ECO 76003 SEE DWG REV A	JAN 77	JSI
			2 REV PER ECO 76003D	14 MAR 77	RB/DAK
			3 REL FOR PROD No. 7-017	3-22-77	AS/DAK
			8 REV PER ECO 76001	7 APR 77	DE/ITA
			C REV PER ECO 76058	17 JUN 77	PS/RC
			D REV PER ECO 76076	25 OCT 77	WG/Booth
			E REV PER ECO 76079		
			F REV PER ECO 76095	16 NOV 77	WG/Booth
			G REV PER ECO 76125	21 FEB 78	RP/RIB
			H REV PER ECO 76163	10 MAY 78	RP/RIB
			J REV PER ECO 76261	29 SEP 78	WG/RIB
			K REV PER ECO 76364A	2 AUG 79	WG/WL
			L REV PER ECO 76473	2 NOV 79	WG/WL
			M REV PER ECO 96383	28 MAR 80	WG/WL
			N REV PER ECO 96385	11/5/00	SG/WL

4. FOR AUTHORIZED COMPONENT SUBSTITUTION LIST SEE DWG SA1088588.

3. SYMBOL † INDICATES VENDOR ITEM—SEE SPEC/SOURCE CONTROL DRAWING.

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

<b>SA SANDERS ASSOCIATES, INC.</b> NASHUA, NEW HAMPSHIRE	
CIRCUIT CARD ASSY, DISPLAY PROCESSOR	
CODE IDENT NO. <b>A 94117</b>	PL 1086779
SIZE <b>A</b>	SHEET 1 OF 6
CONT NO. D R F T G DATE APPD CHK	DATE 12/1/77
E N G R G 1087281 1086851	DEV. J. J. J. 10 DEC 76 E.M. 2-7-76 PROJ. 10 DEC 76
MFG K.D. 14 1977	NEXT ASSY USED ON APPLICATION

**PRODUCTION**  
**CHANGE BY ECO ONLY**



ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
1	1		E		108678061	CIRCUIT CARD SUB-ASSY DISPLAY PROG.	
2	1		A		0310319P001	MED SN74504N U29	
3	1		A		0310201P001	MED SN7403N U68	
4	1		A	01295	SN74S05N	MED U28 (71)	
5	1		A		0310202P001	MED SN7404N U8	
6	1		A		0310298P002	MED SN7432N U86	
7	2		A		7013070P077	MED SN74S138N U18, U48	
8	2		A	01295	SN74LS151N	MED SN74LS151N U6 4, 84 (71)	
9	3		A		0310281P001	MED SN74157N U58, 63, 83	
10	2		A	27014	DM74161AN	MED U16, 46 (NAT)	
11	3		A		7013070P057	MED SN74S161N U6, 36, 66	
12	3		A	01295	SN74174N	MED U20, 27, 37, (71)	
13	1		A		0310279P002	MED SN74175N U17	
14	2		A		0310378P003	MED SN74H106 U50, 59	
15							
16	3		A	01295	SN74LS253N	MED U47, 75, 76 (71)	
17	2		A	01295	SN74S257N	MED U26, 56 (71)	
18	1		A		7013070P025	MED SN74S00N U69	
19	3		A		0310092P001	MED SN7400N U4, 38, 49	
20	1				1086947P31	PROGRAMMED FROM (6306-N) U82	
21	1				1086964P1	PROGRAMMED FROM (6330) U71	
22	1				1086964P2	PROGRAMMED FROM (6330) U87	
23	1				1086970P6	PROGRAMMED FROM (6331-N) U89	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL** 1086779  
 REV H SHEET 2

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
24	4			50364	6701	MED U11,1,3,1,41 (MMMI)	
25	6			34335	AM2918	MED U14, 24, 34, 44, 53, 54 (AMD)	
26	4			27014	DS8833N	MED U13, 23, 33, 43 (MAT)	
27	3			07263	F9541PC	MED U60, 70, 78 (FAIR)	
28	1			07263	F82S31	MED U7 (FAIR)	
29	2		A		7013070P005	MED U3, 39	
30	1		A	07263	95109	MED U90 (FAIR)	
31	4		A	01295	0310094P001	MED U30, 40, 79, 88	
32	1				SN74LS86	MED U85 (TI)	
33	1		A		0310377P001	MED SN74H73	U80
34	1		A		0313027P002	MED SN74156N	U9
35	28		A		7550001P066	RES RC07G51J 510 ±5%, 25W	
36	14		A			PA4, 6, 17, 34, 35, 36, 37, 38, 41, 42, 43, 44, 45, 46, 47	
37	14		A			48, 49, 54, 55, 56, 57, 58, 59, 60, 61, 70, 95, 98	
38	14		A		7550001P064	RES RC07GF431J 430 ±5%, 25W	
39	32		A			R1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 53	
40					7550001P071	RES RC07GF821J 820 ±5%, 25W R15, 39	
						40, 50, 51, 52, 62, 65, 67, 69, 71-89, 99, 100, 101	

**PARTS LIST**

SIZE CODE IDENT NO.  
**A 94117 PL**

1086779

REV H SHEET 3

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
41	2		A		7550001P058	RES. RC07GF241J 240Ω ±5%, .25W R66, 92	
42	1		A		7550001P080	RES. RC07GF202J 200Ω ±5%, .25W 94	
43	1		A		7011451P019	CAP. CSR13C396KL 39UF, ±10% 10VDC C1	
44	31		A		7502023P055	CAP. CK05BX103K .01UF, ±10% 100V C2-3C	
45	1		A		7502023P030	CAP. CK05BX391K 390PF, ±10%, 200V, C33	
46	2		A		600107P1	CARD, EJECTOR (6100)	
47	2		A		0630003P019	EYELET, METALLIC (SE310)	
48	2		A	07707	6010	EYELET	
49	17		A		7550001P073	RES. RC07GF102J 1K ±5%, .25W, R18, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35	
50	1		A	72619	555-2007	L.E.D. DS1 (DIACCO)	
51	1		A		7502023P073	CAP. CK05BX104K .1UF ±10%, 50V, C34	
52	1		A		F96S02PC	MED 96S02	
53	1		D		1086608P018	CONN J1	
54	6IN.		A		278000P13	WIRE, ELEC, UNINSL, 22 AWG	
55	AR		A		93002P1	SOLDER	
56	1		A		7550001P046	RES. RC07GF750J 75Ω ±5%, .25W R97	
57	1		A		7550001P104	RES. RC07GF203J 20K ±5%, .25W R96	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	H	4

1086779

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
58	REF		A		815003	PWB, REQ FOR LOGIC DIAGRAM, DISPLAY PROCESSOR APPL OF EPOXY MKG CMPD	
59	REF		E		1086781		
60	REF		A		778000		
61	1				1086963P8	PROGRAMMED PROM (6305-1J) U10 PROGRAMMED PROM (6306-1J) U15 PROGRAMMED PROM (6306-1J) U19 PROGRAMMED PROM (6306-1J) U35 PROGRAMMED PROM (6306-1J) U45 PROGRAMMED PROM (6306-1J) U55 PROGRAMMED PROM (6306-1J) U57 PROGRAMMED PROM (6306-1J) U62 PROGRAMMED PROM (6306-1J) U65 PROGRAMMED PROM (6306-1J) U67 PROGRAMMED PROM (6306-1J) U77	
62	2				1086962P2		
63	≠				<del>1086962P2</del>		
64	1				1086960P15		
65	1				1086960P16		
66	1				1086963P1		
67	1				1086963P2		
68	1				1086963P3		
69	1				1086963P4		
70	1				1086947P21		
71	1				1086947P22		
72	1				1086947P23		
73	1				1086947P24		
74	1				1086947P25		
75	1				1086947P26		
76	1				1086947P27		
77	1				1086947P28		
78	1				1086947P29		
79	1				1086947P30		
80	1				1086947P30		

SIZE		CODE IDENT NO.	REV	SHEET
A		94117 PL	H	5
		1086779		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

PARTS LIST							
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
81	2		A		7550001P055	RES, RC07GF181J, 180 $\mu$ , $\pm$ 5%, .25W, R63, 68	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.		SIZE	CODE IDENT NO.	REV H	SHEET 6
		A	94117 PL		1086779

REVISION STATUS			REVISIONS		
PARTS LIST		DRAWING	DESCRIPTION	DATE	APPROVED
SHEET	1	REV	LTR		
	2 & UP	M	N	1 FEB 80	WG/WL
REV	U R		P	28 MAR 80	WG/WL
			R	20 MAY 80	WG/WL
			T	26 JUN 80	PA/WL
			U	23 JUL 80	JW WL

5. ITEM NUMBERS WITH SUBSCRIPTS ARE ALTERNATE ITEMS, SELECT ONE ONLY.  
A.61 IS ASCII CODE

3. SYMBOL ‡ INDICATES VENDOR ITEM—SEE SPEC/SOURCE CONTROL DRAWING.

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE

CIRCUIT CARD ASSY, CHARACTER GENERATOR

CODE IDENT NO. 94117 PL 1086783

SIZE A

SHEET 1 OF 19

CONT NO.	DATE
DESIGNED BY	27 OCT 76
APPD	
CHK	
DESIGNED BY	12-27-76
ENG	8 DEC 76
PROJ	8 Dec 76

PRODUCTION	USED ON
CHANGE BY ECO ONLY	GRA-7
MFG	NEXT ASSY
	APPLICATION

DWG SIZE E

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
1	1	1	E		1086784G1	CIRCUIT CARD SUBASSY, CHARACTER GEN	
2	1	1		01295	SN7426N	MED, U-48	
3	1	1			7534002P008	MED, LH0002C, A1, A2	(71)
4	2	2	A		310225P1	MED, SN74H00N, U-13, 30	
5	2	2	A		310226P1	MED, SN74H01N, U-44, 45, 46, 47	
6	4	4	A		310201P1	MED, SN7403N, U-24	
7	1	1	A		310227P1	MED, SN74H04N, U-19, 32, 43	
8	3	3	A		310275P1	MED, SN74H11N, U-28	
9	1	1	A		310092P3	MED, SN7430N, U-6	
10	1	1	A		310228P1	MED, SN74H40N, U-12, 27	
11	2	2	A		310231P2	MED, SN74H51N, U-5	
12	1	1	A		310270P2	MED, SN74H54N, U-20	
13	1	1	A		310208P1	MED, SN7475N, U-7, 8, 15	
14	3	3	A		310378P1	MED, SN74H101N, U-36, 37, 38, 39, 40	
15	9	9	A			51, 52, 59, 60	
16	1	1	A		310272P1	MED, SN7442N, U-35	
17	3	3	A		310378P2	MED, SN74H103N, U-11, 21, 22	
18	1	1	A		310378P3	MED, SN74H106N, U-4	
19	2	2	A		3022869P1	MED, N8284A, U-3, 29	
20	1	1	A		7570001P008	MED, DM8520N, U-14	
21	1	1	A		310368P2	MED, DM8098N, U-23	
22	1	1	A		1086960P3	MED, PROGRAMMED PRGM (6301-1J) U-58	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.		SIZE	CODE IDENT NO.	REV	SHEET
		A	94117 PL	1	2
			1086783		

# PARTS LIST

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2	G3					
23	1	-	-	A		1086960P4	MED, PROGRAMMED PROM (6301-1J) U2	
24	1	-	-	A		1086960P5	MED, U50	
25	1	-	-	A		1086960P6	MED, U10	
26	1	-	-	A		1086960P7	MED, U33	
27	1	-	-	A		1086960P8	MED, U25	
28	1	-	-	A		1086960P9	MED, U41	
29	1	-	-	A		1086960P10	MED, U17	
30	1	-	-	A		1086960P11	MED, U49	
31	1	-	-	A		1086960P12	MED, U9	
32	1	-	-	A		1086960P13	MED, U57	
33	1	-	-	A		1086960P14	MED, PROGRAMMED PROM (6301-1J) U1	
34								
35								
36	4	4	-	A		7610001P038	TRANSISTOR, PNP 2N4209 Q-1,2,5,6	
37	4	4	-	A		7610001P057	TRANSISTOR, NPN 2N2369A Q-3,4,7,8	
38	4	4	-	A		209068P6	TRANSISTOR, MEM660-Q9,10,11,12	
39								
40								
41								
42	24	24	-	A		7538002P017	DIODE, IN4148, CR-1 THRU 24	
43	8	8	-	A		7538002P034	DIODE, ZENER, IN746A, VR1 THRU 8	
44	2	2	-	A		7538002P020	DIODE, ZENER, IN749A, VR9,10	
45	1	1	-	A		7538002P103	DIODE, ZENER, IN754A, VR11	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL 1086783**

REV **R** SHEET **3**



**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
46	5	5	A		7011451P019	CAP, 39UF ±10%, 10V, C-4, 15, 20, 21, 22	
47	2	2	A		7011451P049	CAP, 15UF ±10%, 20V, C-16, 17	
48	2	2	A		7502023P060	CAP, 18K Pf ±10%, 50V, C-7, 9	
49	2	2	A		7012851P010	CAP, 1200Pf ±5%, 300V C-8, 10	
50	1	1	A		7013297P001	CAP, 5.5-18 Pf VAR DISC C-2	
51	1	1	A		7506001P002	CAP, 5Pf ±5%, 500V C-1	
52	3	3	A		7506001P006	CAP, 10Pf, ±5%, 500V C-3, 45, 46	
53	18	18	A		7012848P001	CAP, 0.010UF +80%-20%, 50V, C-24, 25, 26, 28 29, 30, 32, 34, 35, 36, 37, 38, 39, 40, 41 42, 43, 44	
54	1	1	A		7012848P003	CAP, 0.1UF +80%-20%, 50V, C-23	
55	9	9	A		7502006P002	CAP, .01UF +80%-20%, 100V, C-5, 6, 11, 12, 13 14, 18, 19, 33	
56							
57							
58	13	13	A		7550001P066	RES, 510 OHMS ±5%, .25W R-33, 34, 35, 36 47, 50, 51, 52, 53, 54, 55, 56, 57	
59	2	2	A		7550001P079	RES, 1.8K OHMS, ±5%, .25W R-31, 37	
60	6	6	A		7550001P073	RES, 1K OHM ±5%, .25W R1, 3, 49, 58, 59, 60	
61	2	2	A		7550001P086	RES, 3.6K OHMS ±5%, .25W R-32, 38	
62	1	1	A		7550001P084	RES, 3K OHMS ±5%, .25W R-2	
63	2	2	A		7550001P047	RES, 820 OHMS ±5%, .25W R-40, 44	
64	8	8	A		7550001P074	RES, 1.1K OHMS ±5%, .25W R-4, 6, 8, 10, 12	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	R	SHEET	4
A	94117 PL				
				1086783	

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2					
65	8	8	-	A	7550001P087	14, 16, 18 RES, 3.9K OHMS, ±5%, .25W R-5, 7, 9, 11 13, 15, 17, 19	
66	1	1	-	A	7550001P059	RES, 270 OHMS, ±5%, .25W R-98	
67	4	4	-	A	7550004P059	RES, 270 OHMS, ±5%, .5W R-39, 42, 43, 46	
68	3	3	-	A	7556001P146	RES, 1K OHM, ±1%, .125W R-20, 25, 30	
69	4	4	-	A	7012853P006	RES, 13.3K OHM, ±1%, 1/10W R-21, 23, 26, 28	
70	4	4	-	A	7012853P007	RES, 26.7K OHM, ±1%, 1/10W R-22, 24, 27, 29	
71	2	2	-	A	7558001P007	RES, TRIMPOT 1K OHM ±20%, .5W R-41, 45	
72							
73							
74	1	1	-	A	7518001P024	INDUCTOR, 8.2UH, ±10% 350V L-1	
75	1	1	-	A	7518001P029	INDUCTOR, 22UH, ±10% 350V L-2	
76	AR	AR	-	A	276011P139	WIRE, ELEC INSULATED	
77	REF	REF	-	E	1086785	LOGIC DIAGRAM, CHARACTER GENERATOR	
78	12	12	-	A	640048P1	WAFER, THERMAL CONDUCTING	
79	2	2	-	A	640085P2	WAFER, THERMAL CONDUCTING	
80	1	1	-	B	7012353P1	LABEL, WARNING SPECIAL HANDLING	
81	AR	AR	-	A	93002P1	SOLDER	
82	REF	REF	-	A	1088180	PROCEDURE FOR HANDLING MOS DEVICES	
83	REF	REF	-	A	8150003	PWB, REQ FOR	
84	REF	REF	-	A	778000	APPL OF EPOXY MARKING CMPD	
85							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1086783

REV R SHEET 5

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2	G3					
94	—	—	1	E		1086783G1	CIRCUIT CARD ASSY, CHARACTER GEN	
95	—	—	1	A		1088782P1	MED, PROGRAMMED PROM U34	
96	—	—	1	A		1088782P2	MED, PROGRAMMED PROM U26	
97	—	—	1	A		1088782P3	MED, PROGRAMMED PROM U42	
98	—	—	1	A		1088782P4	MED, PROGRAMMED PROM U18	
116	1	1	—	D	07707	1086608P18	CONN, ELEC (98PIN)	
117	2	2	—			6010	EYELET	
118	2	2	—	A		600107P1	CARD EJECTOR	
119	2	2	—	A		630003P14	EYELET	
120	8	8	8			102-16-CCB	SOCKET 16 PIN (GARRY)	
120A	REF	REF	REF			516-AG10D	SOCKET 16 PIN (SEE NOTE 5) (AUGAT)	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A

94117 PL

1086783

REV R SHEET 6

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
1	1		E		1086784G2	CIRCUIT CARD SUBASSY, CHARACTER GEN	
2	1			01295	SN7426N	MED, U48 (TI)	
3	2		A		7534002P008	MED, LH0002C, A1, A2	
4	2		A		310225PI	MED, SN74H00N, U13, 30	
5	4		A		310226PI	MED, SN74H01N, U44, 45, 46, 47	
6	1		A		310201PI	MED, SN7403N, U24	
7	3		A		310227PI	MED, SN74H04N, U19, 32, 43	
8	1		A		310275PI	MED, SN74H11N, U28	
9	1		A		310092P3	MED, SN7430N, U6	
10	2		A		310228PI	MED, SN74H40N, U12, 27	
11	1		A		310231P2	MED, SN74H51N, U5	
12	1		A		310270P2	MED, SN74H54N, U20	
13	1		A		310208PI	MED, SN7475N, U7, 8, 15	
14	3		A		310378PI	MED, SN74H101N, U36, 37, 38, 39, 40	
15	9		A			51, 52, 59, 60	
16	1		A		310272PI	MED, SN7442N, U35	
17	3		A		310378P2	MED, SN74H103N, U11, 21, 22	
18	1		A		310378P3	MED, SN74H106N, U4	
19	2		A		3022869PI	MED, N8284A, U3, 29	
20	1		A		7570001P008	MED, DM8520N, U14	
21	1		A		310368P2	MED, DM8098N, U23	
22	1		A		1086960P3	MED, PROGRAMMED PROM (6301-N) U58	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

**A 94117 PL** 1086783

REV R SHEET 7

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
23	1		A		1086960P4	MED, PROGRAMMED PROM(6301-N) U2	
24	1		A		1086960P5	MED, U50	
25	1		A		1086960P6	MED, U10	
26	1		A		1086960P7	MED, U33	
27	1		A		1086960P8	MED, U25	
28	1		A		1086960P9	MED, U41	
29	1		A		1086960P10	MED, PROGRAMMED PROM(6301-N) U17	
36	4		A		7610001P038	TRANSISTOR, PNP 2N4209 Q1,2,5,6	
37	4		A		7610001P057	TRANSISTOR, NPN 2N2369A Q3,4,7,8	
38	4		A		209068P6	TRANSISTOR, MEM660 Q9,10,11,12	
42	24		A		7538002P017	DIODE, IN4148, CRI THRU 24	
43	8		A		7538002P034	DIODE, ZENER, IN746A, VRI THRU 8	
44	2		A		7538002P020	DIODE, ZENER, IN749A, VR9,10	
45	1		A		7538002P103	DIODE, ZENER, IN754A, VRI1	
46	5		A		7011451P019	CAP, 39UF ±10%, 10V, C4,15,20,21,22	
47	2		A		7011451P049	CAP, 15UF ±10%, 20V, C16,17	
48	2		A		7502023P060	CAP, 18K Pf ±10%, 50V, C7,9	
49	2		A		7012851P010	CAP, 1200Pf ±5%, 300V, C8,10	
50	1		A		7013297P001	CAP, 5.5-18 Pf VAR DISC, C2	
51	1		A		7506001P002	CAP, 5Pf ±5%, 500V, C1	
52	3		A		7506001P006	CAP, 10Pf ±5%, 500V, C3,45,46	
53	18		A		7012848P001	CAP, 0.010UF+80%-20%, 50V, C24,25,26,28,29 30,32,34,35,36,37,38,39,40,41,42,43,44	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086783

REV R SHEET 8

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
54	1		A		7012848P003	CAP, 0.1UF +80% -20%, 50V, C23	
55	9		A		7502006P002	CAP, .01UF +80% -20%, 100V, C5, 6, 11, 12, 13 14, 18, 19, 23	
58	13		A		7550001P066	RES, 510 OHMS, ±5%, .25W R33, 34, 35, 36 47, 50, 51, 52, 53, 54, 55, 56, 57	
59	2		A		7550001P079	RES, 1.8K OHMS, ±5%, .25W R31, 37	
60	6		A		7550001P073	RES, 1K OHMS, ±5%, .25W R1, 3, 49, 58, 59, 60	
61	2		A		7550001P086	RES, 3.6K OHMS, ±5%, .25W R32, 38	
62	1		A		7550001P084	RES, 3K OHMS, ±5%, .25W R2	
63	2		A		7550001P047	RES, 82 OHMS, ±5%, .25W R40, 44	
64	8		A		7550001P074	RES, 1.1K OHMS, ±5%, .25W R4, 6, 8, 10, 12, 14 16, 18	
65	8		A		7550001P087	RES, 3.9K OHMS, ±5%, .25W R5, 7, 9, 11, 13 15, 17, 19	
66	1		A		7550001P059	RES, 270 OHMS, ±5%, .25W R48	
67	4		A		7550004P059	RES, 270 OHMS, ±5%, .5W R39, 42, 43, 46	
68	3		A		7556001P146	RES, 1K OHMS, ±1%, .125W R20, 25, 30	
69	4		A		7012853P006	RES, 13.3K OHMS, ±1%, 1/10W R21, 23, 26, 28	
70	4		A		7012853P007	RES, 26.7K OHMS, ±1%, 1/10W R22, 24, 27, 29	
71	2		A		7558001P007	RES, TRIM POT, 1K OHMS, ±20%, 5W R41, 45	
74	1		A		7518001P024	INDUCTOR, 8.2UH, ±10%, 350V L1	
75	1		A		7518001P029	INDUCTOR, 22UH, ±10%, 350V L2	
76	AR		A		276011P139	WIRE, ELEC INSULATED	

	SIZE	CODE IDENT NO.	REV	SHEET
	A	94117 PL	R	9
1086783				

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
77	REF		E		1086785	LOGIC DIAGRAM, CHARACTER GENERATOR	
78	12		A		640048P1	WAFER, THERMAL CONDUCTING	
79	2		A		640085P2	WAFER, THERMAL CONDUCTING	
80	1		B		7012353P1	LABEL, WARNING SPECIAL HANDLING	
81	AR		A		93002P1	SOLDER	
82	REF		A		1088180	PROCEDURE FOR HANDLING MOS DEVICES	
83	REF		A		815003	PWB, REQ FOR	
84	REF		A		778000	APPL OF EPOXY MARKING CMPD	
99	1		A		1086960P11	MED, PROGRAMMED PROM (6301-N) U34	
100	1		A		1086960P12	MED, PROGRAMMED PROM (6301-N) U26	
101	1		A		1086960P13	MED, PROGRAMMED PROM (6301-N) U42	
102	1		A		1086960P14	MED, PROGRAMMED PROM (6301-N) U18	
116	1		D	07707	1086608P18	CONN, ELEC (98 PIN)	
117	2		A		6010	EYELET	
118	2		A		600107P1	CARD EJECTOR	
119	2		A		630003P14	EYELET	(GARRY)
120	8				102-16-CCB	SOCKET 16 PIN	(SEE NOTE 5)
120A	REF				516-AG10D	SOCKET 16 PIN	(AUGAT)

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1086783

REV A SHEET 10

# P A R T S   L I S T

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 5	G 6	G 7					
103	1	1	1	E		1086783G4	CIRCUIT CARD ASSY, CHARACTER GEN MED, PROGRAMMED FROM U49 MED, U9	
104	1	—	—			1089643P1		
105	1	—	—			1089643P2		
106								
107								
108	—	1	—			1089635P1	MED, U49 MED, U9 MED, U57 MED, U1 MED, U49 MED, U9 MED, U57 MED, U1	
109	—	1	—			1089635P2		
110	—	1	—			1089635P3		
111	—	1	—			1089635P4		
112	—	—	1			1089636P1		
113	—	—	1			1089636P2		
114	—	—	1			1089636P3		
115	—	—	1			1089636P4		
116								
117								
118								
119								

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	A	CODE IDENT NO.	94117 PL
			1086783
		REV	R
		SHEET	11



PARTS LIST				SYM		
ITEM NO.	QTY PER ASSY	DWG SIZE	CODE IDENT		PART OR IDENTIFYING NO.	DESCRIPTION
	G 8	G 9	G 10			
22	-	-	-	1086960 P3	MED, PROGRAMMED PROM	U-58
23	-	-	-	P4	MED,	U-2
24	-	-	-	P5	MED,	U-50
25	-	-	-	P6	MED,	U-10
30	-	-	-	P11	MED,	U-49
31	-	-	-	P12	MED,	U-9
32	-	-	-	P13	MED,	U-57
33	-	-	-	P14	MED,	U-1
124	-	-	-	1086960 P1	MED,	U-17
125	-	-	-	1089774 P1	MED,	U-25
126	-	-	-	P2	MED,	U-33
127	-	-	-	P3	MED,	U-41
128	-	-	-	1089774 P4	MED, PROGRAMMED PROM	
129	-	-	-	1086783 G2	C.C.A. CHARACTER GEN.	
94	1	-	REF	1089776	LEGEND SUMMARY (AMBA)	
131	1	-	-	1086783 G1	CCA CHARACTER GENERATOR	U18
132	1	-	-	1088679 P1	MED, PROGRAMMED PROM	U26
133	1	-	-	1088679 P2		U34
134	1	-	-	1088679 P3		U42
135	-	-	-	1088680 P1		U1
136	-	-	-	1088680 P2		U2
137	-	-	-	1088680 P3		U9
138	-	-	-	1088680 P4	MED, PROGRAMMED PROM	U10

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086783

REV R SHEET 12

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
201	1		A		1088680P5	MED, PROGRAMMED PROM (6306-1J)	U17
202	1		A		1088680P6		U25
203	1		A		1088680P7		U33
204	1		A		1088680P8		U41
205	1		A		1088680P9		U49
206	1		A		1088680P10		U50
207	1		A		1088680P11		U57
208	1		A		1088680P12	MED, PROGRAMMED PROM (6306-1J)	U58

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	A	CODE IDENT NO.	94117	PL	1086783
		REV	R	SHEET	13

# PARTS LIST

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/1	G/2	G/3					
139	1	1	1	F		1086783G1	CIRCUIT CARD ASSY, CHARACTER GEN MFD, PROGRAMMED PROM  MFD, PROGRAMMED PROM	
140	1	-	-	A		1089738P1		
141	1	-	-	A		1089738P2		
142	1	-	-	A		1089738P3		
143	1	-	-	A		1089738P4		
144	-	1	-	A		1089737P1		
145	-	1	-	A		1089737P2		
146	-	1	-	A		1089737P3		
147	-	1	-	A		1089737P4		
148	-	-	1	A		1089758P1		
149	-	-	1	A		1089758P2		
	-	-	1	A		1089758P3		
150	-	-	1	A		1089758P4		

SIZE CODE IDENT NO.

A 94117 PL 1086783  
 REV R SHEET 14

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.



PARTS LIST

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/4	G/5	G/6					
128	-	-	1	E		1086783G2	CCA CHARACTER GENERATOR	
151	-	-	1	A		1088665P1	MED. PROGRAMMED PROM	U1
152	-	-	1	A		1088665P2		U9
153	-	-	1	A		1088665P3		U17
154	-	-	1	A		1088665P4		U25
155	-	-	1	A		1088665P5		U33
156	-	-	1	A		1088665P6		U41
157	-	-	1	A		1088665P7		U49
158	-	-	1	A		1088665P8		U57
22	-	-	1	A		1086960P3	MED. PROGRAMMED PROM	U58
23	-	-	1	A		1086960P4		U2
24	-	-	1	A		1086960P5		U50
25	-	-	1	A		1086960P6		U10
94	1	-	-	E		1086783G1	CCA CHARACTER GENERATOR	
159	1	-	-	A		1089858P1	MED. PROGRAMMED PROM	U18
160	1	-	-	A		1089858P2		U26
161	1	-	-	A		1089858P3		U34
162	1	-	-	A		1089858P4		U42
103	-	1	-	E		1086783G4	CCA CHARACTER GENERATOR	
159	-	1	-	A		1089899P1	MED. PROGRAMMED PROM	U49
160	-	1	-	A		1089899P2		U9
161	-	1	-	A		1089899P3		U57
162	-	1	-	A		1089899P4		U1

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.		SIZE	CODE IDENT NO.	REV	SHEET
		A	94117 PL	R	15
		1086783			

### PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
128	1	-	E		1086783G2	CIRCUIT CARD ASSY, CHARACTER GEN	
163	8	-	A		516-AG10D	SOCKET 16 PIN (ALUGAT)	
103	-	1	A		1086783G4	CIRCUIT CARD ASSY, CHARACTER GEN	
164	-	1	A		1088782P1	MED, PROGRAMMED PROM U49	
165	-	1	A		1088782P2	MED, PROGRAMMED PROM U9	
166	-	1	A		1088782P3	MED, PROGRAMMED PROM U57	
167	-	1	A		1088782P4	MED, PROGRAMMED PROM U1	
22	1	-	A		1086960P3	MED, PROGRAMMED PROM (6301-1J)U58	
23	1	-	A		P4	↕	U2
24	1	-	A		P5	↕	U50
25	1	-	A		P6	↕	U10
26	1	-	A		P7	↕	U33
27	1	-	A		P8	↕	U25
28	1	-	A		P9	↕	U41
29	1	-	A		1086960P10	MED, PROGRAMMED PROM(6301-1J)U17	
30							
31							
32							
33							
168	1	-	A		5976300P1	MED, PROGRAMMED PROM(6301-1J) U49	
169	1	-	A		P2	↕	U9
170	1	-	A		P3	↕	U57
171	1	-	A		5976300P4	MED, PROGRAMMED PROM(6301-1J) U1	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO. A 94117 PL 1086783  
 REV R SHEET 16

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 19	G 20					
172	1	-	E		1086783G4	<p>CIRCUIT CARD ASSY, CHARACTER GEN. MED, PROGRAMMED PROM</p> <p>↑↑</p> <p>MED, PROGRAMMED PROM</p> <p>↑↑</p> <p>CIRCUIT CARD ASSY, CHARACTER GEN. MED, PROGRAMMED PROM</p> <p>↑↑</p> <p>MED, PROGRAMMED PROM</p> <p>↑↑</p> <p>CIRCUIT CARD ASSY, CHARACTER GEN. MED, PROGRAMMED PROM</p> <p>↑↑</p> <p>MED, PROGRAMMED PROM</p>	
173	1	-	A		1088782P5		
174	1	-	A		1088782P6		
175	1	-	A		1088782P7		
176	1	-	A		1088782P8		
94	-	1	E		1086783G1		
178	-	1	A		5977351P1		
179	-	1	A		5977351P2		
180	-	1	A		5976349P1		
181	-	1	A		5976349P2		
182	-	1	A		5976349P3		
183	-	1	A		5976349P4		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	R	17
		1086783	

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G22	G23					
184	/	/	E		1086783G4	CIRCUIT CARD ASSY, CHARACTER GEN.	
185	/	-	A		5976351P1	MED, PROGRAMMABLE PROM	U49
186	/	-	A		5976351P2		U9
187	/	-	A		5976351P3		U57
188	/	-	A		5976351P4	MED, PROGRAMMABLE PROM	U1
189	-	/	A		5977250P1	MED, PROGRAMMED PROM (6301-1J)	U1
190	-	/	A		5977250P2		U57
191	-	/	A		5977250P3		U9
192	-	/	A		5977250P4	MED, PROGRAMMED PROM (6301-1J)	U49
193	-	/	A		1901144P1	MED, PROGRAMMABLE PROM	U9
194	-	/	A		1901144P2		U49
195	-	/	A		1901144P3		U1
196	-	/	A		1901144P4		U57
197	-	/	A		1901144P5		U26
198	-	/	A		1901144P6		U34
199	-	/	A		1901144P7		U18
200	-	/	A		1901144P8	MED, PROGRAMMED PROM	U42
128	-	-	E		1086783G2	CCA, CHARACTER GENERATOR	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086783

REV R SHEET 18

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	25					
94	1	G	E		1086783G1	CCA, CHARACTER GENERATOR	
209	1	G	A		1901102P1	MED, PROGRAMMED PROM	U18
210	1	G	A		1901102P2		U42
211	1	G	A		1901105P1		U34
212	1	G	A		1901105P2		U26
213	1	G	A		1901105P3		U18
214	1	G	A		1901105P4	MED, PROGRAMMED PROM	U42

SIZE	A	CODE IDENT NO.	94117 PL	1086783
			REV R	SHEET 19

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.



REVISION STATUS			REVISIONS		
PARTS LIST		DRAWING	DESCRIPTION		
SHEET	1	2 & UP	LTR	DATE	APPROVED
REV	P	P	-	12776	RSL
		K	A	9 MAR 77	RB/
			B		R.L./
			C	7 APR 77	DR/RET
			D	20 JULY 77	JD/RLB
			E	10 AUG 77	WG/BULK
			F	27 SEP 77	WG/Bulk
			G	16 DEC 77	WG/RLB
			H	10 MAY 78	RP/RVB
			J	31 OCT 78	WG/RLB
			K	29 OCT 79	WG/WL
			L	79	
			M	29 NOV 79	WG/WL
			N	28 MAR 80	WG/WL
			P	17 APR 80	WG/WL

<p>4. ITEM NUMBERS WITH SUBSCRIPTS ARE ALTERNATE ITEMS, SELECT ONE ONLY.</p> <p>3. SYMBOL # INDICATES VENDOR ITEM—SEE SPEC/SOURCE CONTROL DRAWING.</p> <p>2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.</p> <p>1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.</p>		<p>SA SANDERS ASSOCIATES, INC.</p> <p>NASHUA, NEW HAMPSHIRE</p>	
<p>CIRCUIT CARD ASSY</p> <p>RAMP GENERATOR</p>		<p>SIZE CODE IDENT NO. A 94117 PL 1086798</p>	
<p>CONT NO.</p> <p>DR 1089597</p> <p>CHK 1086851</p> <p>ENG 1089597</p> <p>GRG 1086851</p>		<p>DATE 8 NOV 76</p> <p>BY [Signature]</p> <p>DATE 8 DEC 76</p> <p>BY [Signature]</p> <p>DATE 8 DEC 76</p> <p>BY [Signature]</p>	
<p>PRODUCTION CHANGE BY ECO ONLY</p>		<p>APPLICATION USED ON</p>	
<p>MFG [Signature]</p>		<p>SHEET 1 OF 13</p>	

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/	G2 G					
1	1	1	E		1086799G1	CCSA RAMP GEN.	
2	37	37	A		75060023P055	CAP. .01MF ±10% 100V C2, 4, 6, 7, 10-15, 18, 24, 25, 28, 30, 31, 35-38 41, 42, 45-51, 59-61, 67, 68, 70, 71, 72	
3	3	3	A		7506001P001	CAP. 1 PF ±5% 500V C27, 39, 44,	
4	4	4	A		7506001P006	CAP. 10 PF ±5% 500V C3A, 40, 43, 56,	
5	8	-	A		7506001P027	CAP. 100PF ±5% 500V C23, 26, 32, 33, 54, 65, 66, 29	
6	4	4	A		7011451P019	CAP. 39 MF ±10% 10V C5, 8, 9, 63,	
7	2	2	A		7011451P066	CAP. 22 MF ±20% 35V C1, 3,	
8	3	-	A		7506001P020	CAP. 51PF ±5% 500V C52, 53, 69,	
9	1	1	A		7506001P022	CAP. 62PF ±5% 500V C55	
10	1	1	A		7506001P019	CAP. 47PF ±5% 500V C62	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086798

REV P SHEET E

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
11	1	1	A		7550001P055	CAP, 1500PF ±5% 500V C58	
12	1	1	A		75502023P063	CAP, .027MF ±10% 50V C64,	
13							
14							
15	2	2	A		7550004P057	RES, 220 OHMS ±5% .50W R26, 27,	
16	2	2			RL20S3016	RES, 300 OHMS ±2% .50W R22, 104,	
17	1	1			RLR20C8250AM	RES, 825 OHMS ±1% .50W R50,	
18	4	4	A		7550001P025	RES, 10 OHMS ±5% .25W R3, 16, 47, 131,	
19	2	2	A		7550001P159	RES, 3.9M OHMS ±5% .25W R23, 25,	
20	2	2	A		7550001P041	RES, 47 OHMS ±5% .25W R1, 118,	
21	1	1	A		7550001P046	RES, 75 OHMS ±5% .25W R130	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS: 1 INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	1	3
	1086798		

PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
22	1	1	A		7550001P058	RES, 240 OHMS ± 5% . 25W R 39	
23	4	4			RLR07C2430FM	RES, 243 OHMS ± 1% . 25W R 31, 32, 36, 37	
24	1	1	A		7550001P063	RES, 390 OHMS ± 5% . 25W R 135	
25	1	1			RLR07C4990FM	RES, 499 OHMS ± 1% . 25W R 42	
26	7	7	A		7550001P066	RES, 510 OHMS ± 5% . 25W R 4, 22, 46, 52, 54, 59, 62,	
27	2	2	A		7550001P068	RES, 620 OHMS ± 5% . 25W R 53, 60	
28	1	1	A		7550001P070	RES, 750 OHMS ± 5% . 25W R 119	
29	7	7	A		7550001P073	RES, 1K OHMS ± 5% . 25W R 2, 19, 45, 48, 51, 61, 63,	
30	1	1			RLR07C1001FM	RES, 1K OHMS ± 1% . 25W R 41	
31	1	1			RLR07C1471FM	RES, 1.47K OHMS ± 1% . 25W R 14	
32	3	3	A		7550001P077	RES, 1.5K OHMS ± 5% . 25W R 9A, 116, 120	
33	3	3			RLR07C2001FM	RES, 2.0K OHMS ± 1% . 25W R 40, 83, 105,	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO

A 94117 PL 1086798

REV P SHEET A

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
34	2	2	A		7550001P080	RES, 2K OHMS ±5% . 25W R49, 55,	
35	1	1	A		7550001P081	RES, 2.2K OHMS ±5% . 25W R122,	
36	2	2	A		7550001P083	RES, 2.7K OHMS ±5% . 25W R8, 123	
37	1	1			RLR07C287IFM	RES, 2.87K OHMS ±1% . 25W R134,	
38	8	8	A		7550001P084	RES, 3K OHMS ±5% . 25W R6, 10, 13, 58, 81, 103, 121, 124	
39	6	6	A		7550001P085	RES, 3.3K OHMS ±5% . 25W R125-129, 136	
40	3	3			RLR07C402IFM	RES, 4.02K OHMS ±1% . 25W R43, 84, 106,	
41	1	1	A		7550001P088	RES, 4.3K OHMS ±5% . 25W R18,	
42	1	1			RLR07C464IFM	RES, 4.64K OHMS ±1% . 25W R16,	
43	1	1			RLR07C562IFM	RES, 5.62K OHMS ±1% . 25W R132,	
44	2	2	A		7550001P094	RES, 7.5K OHMS ±5% . 25W R9, 137,	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO
A	94117 PL
REV	P
SHEET	5

1086798

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
45	2	2			RLR07C8061FM	RES, 8.06K OHMS ±1%. 25W R85, 107,	
46	1	1	A		7550001P096	RES, 9.1K OHMS ±5%. 25W R17,	
47	19	19	A		7550001P097	RES, 10K OHMS ±5%. 25W R21, 24, 56, 73-80, 95-102,	
48	2	2			RLR07C1502FM	RES, 15K OHMS ±1%. 25W R30, 33,	
49	2	2			RLR07C1622FM	RES, 16.2K OHMS ±1%. 25W R86, 108,	
50	1	1	A		7550001P123	RES, 120K OHMS ±5%. 25W R57,	
51	1	1			RLR07C3092FM	RES, 30.9K OHMS ±1%. 25W R35,	
52	2	2			RLR07C3162FM	RES, 31.6K OHMS ±1%. 25W R87, 109,	
53	2	2	A		7550001P113	RES, 47K OHMS ±5%. 25W R34, 38,	
54	2	2			RLR07C6342FM	RES, 63.4K OHMS ±1%. 25W R88, 110,	
55	2	2			RLR07C1273FM	RES, 127K OHMS ±1%. 25W R89, 111,	

**PARTS LIST**

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

**1086798**

REV **P** SHEET **6**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G2					
56	2	2			RLR07C2553FM	RES, 255K OHMS ±1% .25W R90, 112,	
57	2	2	A		7550001P138	RES, 510K OHMS ±5% .25W R91, 113	
58	4	4	A		7550001P145	RES, 1M OHMS ±5% .25W R5, 7, 92, 114	
59	2	2	A		7550001P152	RES, 2M OHMS ±5% .25W R93, 115	
60	1	1	A		7558001P006	RES, VAR, 500 OHMS ±20%.50W R133	
61	1	1	A		7558001P007	RES, VAR, 1K OHMS ±20%.50W R15	
62	1	1	A		7558001P009	RES, VAR, 5K OHMS ±20%.50W R11	
63	2	2	A		7558001P010	RES, VAR, 10K OHMS ±20%.50W R28, 29	
64	1	1	A		7558001P011	RES, VAR, 20K OHMS ±20%.50W R20	
65	1	1	A		7558001P026	RES, VAR, 1K OHMS ±20%.50W R44	
66							

**PARTS LIST**

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086798

REV P SHEET 7

PARTS LIST											
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM	SIZE		SHEET	
	G	G						REV	P		
67											
68											
69	50	50	A		7538002P017	DIODE, 1N4148, CR5-8, 12-16, 18-57, 58,					
70	4	4	A		7012776P001	DIODE, HIPA-5082-2800 CR1-A,					
71	1	1	A		7538002P102	DIODE, 1N751-A, 5.1V VR2					
72	1	1	A		7538002P011	DIODE, 1N752-A, 5.6V VR5					
73	2	2	A		7538002P036	DIODE, 1N754-A, 6.8V VR7,8					
74	1	1	A		7538002P013	DIODE, 1N756-A, 8.2V VR6					
75	1	1	A		7538002P057	DIODE, 1N758-A, 10V VR1					
76											
77											
SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.							SIZE	CODE IDENT NO.	REV	SHEET	
							A	94117 PL	1086798	P	8



**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/	G 2 G					
78	4	4	A		7610001P084	TRANSISTOR, 2N2222-A, NPN Q2, 7, 38, 40.	
79	14	14	A		7610001P057	TRANSISTOR, 2N2369-A, NPN Q4, 11-23.	
80	4	4	A		7610001P046	TRANSISTOR, 2N2907-A, PNP Q1, 8, 37, 39	
81	14	14	A		7610001P038	TRANSISTOR, 2N4209, PNP Q3, 24-36,	
82	1	1	A		7610001P003	TRANSISTOR, MD-918, DUAL NPN Q6,	
83	1	1	A		7610001P004	TRANSISTOR, MD-5000, DUAL PNP Q5,	
84							
85							
86	1	1	A		7518001P078	COIL, 22 UH ±10% L1.	
87	5	5	A		7518001P086	COIL, 100 UH, ±10% L2-6	
88							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086798

REV P SHEET 9

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/	G					
89	1	1	A		7518003P002	DELAY LINE, 20NS (HM-20) DL2	
90	1	1	A		7518003P001	DELAY LINE, 160NS (HM-160) DL1	
91	1	-			1086962P4	PROGRAMMED PROM (6300-1J) U20	
92	1	-			1086962P5	PROGRAMMED PROM (6300-1J) U29	
93	1	1			1086963P5	↑ ↑ ↑	6305-1J U110
94	1	1			1086963P6	↑ ↑ ↑	6305-1J U119
95	1	1			1086963P7	↑ ↑ ↑	6305-1J U28
96	1	1			1086947P32	PROGRAMMED PROM	6306-1J U35
97							
98							
99	1	1			SN7400N	MED	U15
100	1	1	A		0310225P001	MED (SN74H00N)	U26
101	1	1	A		0310226P001	MED (SN74H01N)	U39
102	1	1	A		0310200P001	MED (SN7402N)	U27
103	1	1	A		703070P085	MED (SN74S03N)	U36
104	1	1	A		0310202P001	MED (SN7404N)	U25
105	1	1	A		0310319P001	MED (SN74S04N)	U24
106	1	1	A		0310320P001	MED (SN74S20N)	U34
107	1	1	A		0310205P001	MED (SN7437N)	U38

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.		SIZE	CODE IDENT NO.	REV	P	SHEET
		A	94117 PL	1086798		10

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
108	1	1	A		7013070P036	MED (SN74SS1N) U33	
109	1	1	A		0310270P001	MED (SN74H33N) U16	
110	1	1	A		0310208P001	MED (SN7475N) U16	
111	3	3	A		0313024P001	MED (SN7485N) U30,31,32	
112	1	1	A		0310088P001	MED (SN7493AN) U5	
113	1	1	A		7013070P026	MED (SN74S74N) U17	
114	1	1	A		0313026P001	MED (SN74148N) U2	
115	4	4	A		7013070P022	MED (SN74S158N) U1,3,4,11	
116	2	2		01295	SN74165N	MED U9,18, (T1)	
117	2	2		02714	LM261H	MED U41,42, (NAT)	
118	1	1	A		0310213P001	MED F932IPC U7	
119	1	1	A		0310328P001	MED F9602PC U8	
120	1	1		17856	DG1878	MED U40 (SILICONIX)	
121	1	1	A		7534002P008	MED LH-0002 U45	
122	6	6	A		7014130P002	MED U12,13,14,21,22,23(T1)	
123	1	1	A		0310244P001	MED LM-305-A U46	
124	2	2	A		7013128P001	MED (HA2525-5) U43,44	
125	1	1	A		0228041P032	MED (899-1-R1K) U37	
126							
127							
128							
129							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM -SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	P	SHEET
A	9417 PL			1086798

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/	G 2 G					
130	3	3	A		640085P1	WAFER, THERMAL CONDUCTING	
131	6	6	A		640085P2	WAFER, THERMAL CONDUCTING	
132	36	36	A		640048P1	WAFER, THERMAL CONDUCTING	
133	4	4	A		165046P1	TEST POINT, TPI-4,	
134							
135							
136	AR	AR	A		740061P1	ADHESIVE EPOXY RESIN	
137	AR	AR	A		740061P2	ADHESIVE EPOXY CATALYST	
138	AR	AR	A		930022P1	SOLDER	
139	AR	AR	A		EG187A/U	COAX (75 OHM)	
140	AR	AR	A		0278002P013	WIRE, ELEC, #22 AWG	
141	AR	AR	A		270006P5	TUBING, INSUL, TEFLON	
142							
143							
144							
145	REF	REF	A		815003	PWB, REQ FOR	
146	REF	REF	E		1086800	LOGIC DIAGRAM, RAMP GEN	
147	REF	REF	A		778000	APPL OF EPOXY MIXG CAMPD	
148	-	7	A		7506001P027	CAP, 100PF±5%, 500V	
149	-	2	A		7506001P020	C23, 26, 29, 32, 33, 65, 66	
150	-	1	A		7506001P033	CAP, 51PF±5% 500V, C52, 69	
151	-	1	A		7506001P037	CAP, 180PF±5% 500V, C53	
						CAP, 270PF±5% 500V, C54	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086798

REV P SHEET 1/2

PARTS LIST										
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM	SIZE		SHEET / 3
	G	G						REV	PL	
152	-	1	A		1086962P6	PROGRAMMED PROM (6300-N) U20		A	94117	1086798
153	-	1	A		1086962P7	PROGRAMMED PROM (6300-N) U29				
154	2	2	A		600107P001	CARD EJECTOR				
155	2	2	A		630003P014	EYELET				
156	2	2	A		6010	EYELET (USM)				
<del>156A</del>	<del>REF</del>	<del>REF</del>			<del>MS20470AD2-6</del>	<del>RIVET, SOLID</del>				
157	1	1	D		1086608P018	CONNECTOR, ELEC				
158	2	2	B		7012480P001	TERMINAL, GROUND LUG E3, E4				
159	2	2			2089-2	SOLDER TERMINAL E1, E2 (CTC)				

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

REVISION STATUS			REVISIONS		
PARTS LIST		DRAWING	DESCRIPTION	DATE	APPROVED
SHEET	1	REV	REL FOR INTERFACEMENT	14 JAN 77	RB/S N
REV	J	F	REVISED PER ENG	25 MAY 77	
			REL FOR PROD NO. 7-022	25 MAY 77	LS/ROT
			REVISED PER ECO 76080 SEE DWG RLV A	19 SEP 77	MS
			REV PER ECO 76105	15 NOV 77	AS/RUB
			REV PER ECO 76122	30 DEC 77	WG/RUB
			REV PER ECO 76163	10 MAY 78	RP/RUB
			REV PER ECO 76270	19 OCT 78	WG/RUB
			REV PER ECO 76356	16 APR 79	WG/WL
			REV PER ECO 96220	30 NOV 79	WG/WL
			REV PER ECO 96409A SEE DWG REV	20 JUN 80	JL/WL

- 4. ITEM NUMBERS WITH SUBSCRIPTS ARE ALTERNATE ITEMS, SELECT ONE ONLY.
- 3. SYMBOL # INDICATES VENDOR ITEM—SEE SPEC/SOURCE CONTROL DRAWING.
- 2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING.
- 1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

		MASHUA, NEW HAMPSHIRE	
CIRCUIT CARD ASSY, PARALLEL INTERFACE		CODE IDENT NO.	
SIZE A	94117	PL 1086902	SHEET 1 OF 5
CONT NO.		DATE	
DRG	19 JAN 77	APPD	
TGT		CHK	
ENG	1-20-77	PROJ	
RGR	21 JAN 77	12 MAY 77	
MFG	GRAPHIC 7	NEXT ASSY	USED ON
APPLICATION			
DWG SIZE E		OP-1039 REV A	

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
1	1	1	E		1086803G1	CIRCUIT CARD SUBASSY, PARALLEL INTERFACE	
2	2	1	A		310092PI	MED (SN7400N)	U14, G1
3	1	1	A		7013070P035	MED (SN74502N)	U52
4	1	1	A		310202PI	MED (SN7404N)	U54
5	1	1	A		310319PI	MED (SN74504N)	U69
6	1	1	A	01295	SN7406N	MED	U39
7	1	1	A		310234PI	MED (SN7408N)	U7
8	1	1	A		310248P2	MED (SN7432N)	U44, 47
9	2	1	A	01295	SN74537N	MED	U53
10	1	3	A		310094PI	MED (SN7474N)	U23, G2, 64
11	3	1	A		7013070P026	MED (SN74574N)	U70
12	2	2	A		310378P3	MED (SN74H106N)	U36, 60
13	2	1	A		7013070P020	MED (SN74109N)	U15
14	2	2	A		7013070P077	MED (SN745138N)	U21, 38
15	2	1	A	01295	SN74LS139N	MED	U13
16	1	1	A		313026PI	MED (SN74148N)	U5
17	1	1	A		7013070P054	MED (SN74173N)	U6
18	1	3	A		310279PI	MED (SN74174N)	U25, 41, 57
19	3	1	A	01295	SN745174N	MED	U37
20	1	1	A		310279P2	MED (SN74175N)	U45
21	1	1	A		7013070F028	MED (SN74S175N)	U28
22	1	1	A				
23	1	1	A				

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL 1086802**

REV **J** SHEET **2**

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/	G 2					
24	6	6	A	27014	DM8097N	MED U12,20,33,49,65,66 (NAT)	
25	5	5	A	27014	310368P2	MED (DM8098N) U27,43,55,59,72	
26	1	4	A	27014	DM8837N	MED U40 (NAT)	
27	4	5	A	27014	DS8835N	MED U18,16,24,32 (NAT)	
28	5	10	A	27014	DS8833N	MED U1,2,10,17,18 (NAT)	
29	10	1	A	27014	DM8556N	MED U3,11,19,34,35,42,50,51,58,67 (NAT)	
30	1	1	A		1086870P9	PROGRAMMED PROM U4 (6331-U)	
31	1	1	A		1086960P19	PROGRAMMED PROM U48 (6301-U)	
32	1	1	A		1086871P18	PROGRAMMED PROM U29 (6351-U)	
33	2	2	A	07263	F95109PC	MED U22,30 (FAIR)	
34	3	3	A	07263	F9541PC	MED U31,46,71 (FAIR)	
35	1	1	A	27014	310328P1	MED (F9602PC) U68 (NAT)	
36	2	2	A	27014	RA24-220-330N	MED U9,26 (NAT)	
37							
38							
39	2	2	A		RCR07G153JS	RES, 15K OHMS ±5%, .25W R10,11	
40	7	7	A		RCR07G103JS	RES, 10K OHMS ±5%, .25W R4-8,12,13	
41	2	2	A		RCR07G51JS	RES, 510 OHMS ±5%, .25W R-3,9	
42	1	1	A		RCR07G221JS	RES, 220 OHMS ±5%, .25W R-2	
43	1	1	A		RCR07G331JS	RES, 330 OHMS ±5%, .25W R-1	
44							
45							
46	2	2	A		701451P049	CAP, 15UF ±10% 20V C-39,40	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086802

REV  SHEET 3



**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
47	36	36	A		7502023P055	CAP, .01UF ±10%, 100V C-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, 36, 37, 38 CAP, 39UF ±10%, 10V C-1 CAP, .1UF ±10%, 50V C-2 CAP, 51PF ±5%, 500V C-4, 42	
48	1	1	A		7011451P019	LED DS1, 2, 3, 4, 5 (DIALCO)	
49	1	1	A		7502023P073	ASSY, INDUCTOR L-1	
50	2	2	A		7506001P020	CONNECTOR, ELEC 98 PIN J1	
51						CONNECTOR, 50 PIN SOLDER J2, J3	
52						CONNECTOR, 50 PIN WIREWRAP J2, J3	
53	5	5		72619	555-3007	EYELET (USM)	
54	1	1	A		7013626P001	CARD EJECTOR (MOD.)	
55	1	1	D	53387	1086608P18	EYELET METALLIC (SE310)	
56	2	2			3496-1002	SOLDER	
57	2	2			3496-3005		
58	2	2	A		6010		
59	2	2	A		1089678P1		
60	2	2	A		630003P14		
61	2	2	A		93002P1		
62	AR	AR					
63							
64							
65							
66							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	J	4
			1086802

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2					
67	REF	REF	E		1086804	LOGIC DIAGRAM, PARALLEL INTERFACE PWB, AND CKT BD, REQD FOR APPL OF EPOXY MARKING CMPD PROGRAMMED PROM U56 (6301-1U) PROGRAMMED PROM U63 (6301-1U) WIRE, ELEC UNINSULATED 22AWG RIVET, SOLID MED U6, U29 (BECKMAN) MED U9, 26 (SEE NOTE 4)	
68	REF	REF	A		815003		
69	REF	REF	A		778000		
70	1	1	A		1086960P20		
71	1	1	A		1086960P21		
72	1 IN	1 IN			278000P13		
59A	REF	REF			MS2047AD2-6		
36	2	2			899-5-R220/330		
36A	REF	REF			RA24-220/330N		

SHEET ONE REVISION LETTER IS THE IDENTIFYING  
 REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE  
 SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086802  
 REV J SHEET 5

REVISION STATUS				REVISIONS					
PARTS LIST		DRAWING		DESCRIPTION		DATE	APPROVED		
SHEET	REV	REV	REV	DESCRIPTION	DATE	APPROVED			
1	V	M	F	REPLACED SHI WITH CHANGE PER ECO 76297	6 DEC 78	SG/WL			
	V			REV PER ECO 76320	5 FEB 79	SG/WL			
				REV PER ECO 76451	24 SEP 79	WG/WL			
				REV PER ECO 96278A SEE DWG REV M	30 Jan 80	DMY			
				REV PER ECO 96389	27 MAR 80	WG/WL			
				REV PER ECO 96489	1 JUL 80	JL/WL			
3. SYMBOL † INDICATES VENDOR ITEM—SEE SPEC/SOURCE CONTROL DRAWING. 2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST AND DRAWING. 1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.				<b>WARNING</b> CHANGES ARE BEING PROCESSED AGAINST THIS DOCUMENT REFER TO <u>97018</u>					
MFG K. MOHLER 12/30/76		APPLICATION USED ON		SIZE A 94117 PL 1086917		SHEET 1 OF 11			

PARTS LIST											
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM	SIZE		SHEET	
	G1	G2						G3	REV		Y
1	1	2	E		1086916G1	CARD CAGE GRAPHIC 7		A	94117	PL	1086917
2	1	2	D		1086918P1	BRACKET, CARD CAGE					
3	1	1	C		1086862P1	BRACKET, CONNECTOR					
4	1	1	D		1086762P1	PLATE, CONNECTOR, AI					
5	1	1	B		1088867P1	COVER, PROTECTIVE, PS2					
6	1	1			7013587P003	HSG, INDICATOR, XDS1					
7	1	1			7013587P002	LAMP, INDICATOR, DSI					
8	1	1			0179005P6	CKT BREAKER, 5A, CBI					
9	1	1			7012241P001	CONN, 5 POS, J1, J2					
10	2	1			7600006P004	TRANSFORMER, T1					
11	1	2			7012642P004	FAN, TUBEAXIAL, B1, B2					
12	2	2			7012642P011	CORD, PWR FAN					
13	2	2			7012642P012	GUARD, FINGER					
14	2	2			7012642P013	NUT, CAPTIVE					
15	8	2			7592021P003	TERMINAL INSULATED, E1, 2					
16	2	2		06540	9756-55-1032	STANDOFF					
17	2	2	A		1083475P1	TERMINAL BOARD, TB1, TB2					
18	2	2	A		1088475P2	INSULATOR STRIP					
19	2	2	B		1086938P1	BUS STRIP, WI					
20	1	2			25W3-6	KEYCAP, WHITE (HONEYWELL)					
21	2	2		91929	325	LVPS, 5V, PS1, 3 (RO ASSOC)					
22	1	2		24230		LVPS, ±15V, PS2 (PWR MATE)					
23	1	1		23934	PT-15-B						

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2	G3					
24	2	2	2		91929	11SN21	SWITCH, SI,2 (HONEYWELL)	
25	4	4	4		78553	PI01-447-495	STUD, BALL (TINNERMAN)	
26	1	1	1		05245	GEF1	FILTER, AC, 6A, FLI (CORCOM)	
27	1	1	1		70903	17250B	CORD PWR (BELDEN)	
28	1	1	1		02660	26-4200-8S	CONN, 8 POS, J5 (CAMPENOL)	
29	12	12	12		86928	5605-28	WASHER, SHOULDER (SEASTROM)	
30	4	4	4		06540	8165-SS-0632-7	STANDOFF (AMATOM)	
31	28	28	23		00779	2-350800-2	CONN, FULLY INSL "187" (AMP)	
32	2	2	2		00779	2-350804-2	CONN, FULLY INSL "250" (AMP)	
33	4	4	4		06540	9288SS194	SPACER RD .31DIA X.38LG (AMATOM)	
34	1	1	1		RCR07G512J5		RESISTOR, 5.1K ±5%, 1/4W R1	
35	2	2	2		MS51957-26		SCR, MACH, PAN HD .138-32 X.25LG	
36	<del>4</del>	<del>4</del>	<del>4</del>		<del>MS51957-66</del>	<del>PAN HD .110-32 X.25LG</del>	<del>SCR, MACH, PAN HD .110-32 X.25LG</del>	
37	4	4	4		MS51957-4		SCR, MACH, PAN HD .086-56 X.31LG	
38	4	4	4		MS51957-16		SCR, MACH, PAN HD .112-40 X.44LG	
39	2	2	2		MS24693-C4		SCR, MACH, FLAT HD .112-40 X.38LG	
40	4	4	4		MS24693-C24		SCR, MACH, FLAT HD .138-32 X.25LG	
41	10	10	10		MS51957-28		SCR, MACH, PAN HD .138-32 X.38LG	
42	4	4	4		MS51957-31		SCR, MACH, PAN HD .138-32 X.62LG	
43	//	//	9		MS51957-44		SCR, MACH, PAN HD .164-32 X.44LG	
44	1	1	1					
45	8	14	4		MS51958-62		SCR, MACH, PAN HD .190-32 X.44 LG	
46	4	4	4		MS35649-234		NUT, FLAIN HEX #2-56	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS: I INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	V	3
1086917			

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
47	9	9			MS35649-244	NUT, PLAIN, HEX # 4-40	
48	2	2			MS35649-284	NUT, PLAIN, HEX # 8-32	
49	4	4			MS15795-802	WASHER, FLAT METAL # 2	
50	9	9			MS15795-803	WASHER, FLAT METAL # 4	
51	30	30			MS15795-805	WASHER, FLAT METAL # 6	
52	11	11			MS15795-807	WASHER, FLAT METAL # 8	
53	8	14			MS15795-808	WASHER, FLAT METAL # 10	
54	4	4			MS35338-134	WASHER LKG # 2	
55	11	11			MS35338-135	WASHER LKG # 4	
56	22	22			MS35338-136	WASHER LKG # 6	
57	11	11			MS35338-137	WASHER LKG # 8	
58	11	14			MS35338-138	WASHER LKG # 10	
59	8	AR			93012P7	LOCKING COMPOUND (GRADE C)	
60	2	2			MS57957-13	SCR, MACH, PAN HD .112-40 X.25 LG	
61	18"	18"			270029P4	SHRINK SLEEVING .12 DIA	
62	REF	REF	E		1086935	SCHEM. DIAG., TERMINAL CONTROLLER	
63	AR	AR	A		93002P1	SOLDER	
64	REF	REF	A		WL1086917	WIRE LIST, CARD CAGE ASSY	
65	REF	REF	A		1086933	BACKPLANE WIRING DIAG	
66	REF	REF	E		7011466P010	TERMINAL, LUG # 4 STUD	
67	3	3					
68	1	1					

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.		SIZE	CODE IDENT NO.	REV	SHEET
		A	94117 PL	1086917	4

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
70	2	6	-		7011466P009	TERMINAL LUG #10 STUD	
71	10	10	10		7400824P004	CONTACT, CRIMP	
72	2	2	2		7011466P007	TERMINAL, LUG #6 STUD	
73	10	16	5		7011466P001	TERMINAL, LUG #6 STUD	
74	24	24	24		270017P5	BAND, WIRE .25 DIA	
75	24	24	24		270006P20	INSULATION TUBING, TEFLON #8	
76	300	300	300		276011P139	WIRE ELEC AWG # 22, WHT	
77	120	120	120		276011P189	WIRE ELEC AWG # 18, WHT	
78	120	120	120		276011P190	WIRE ELEC AWG # 18, BLK	
79	120	120	120		276011P185	WIRE ELEC AWG # 18, GRN	
80	2	2	2		7011973P002	CLAMP, CABLE .19 DIA	
81	100	100	100		08474	TIE, CABLE DENNISON	
82	3	3	3		270029P5	SLEEVING, HEAT SHRINKABLE .19 DIA	
83	AR	AR	AR		7011460P036	WIRE KAYNAR, 26 AWG	
84	-	-	-	A	1086909P1	LVPS +5V, ±15V, 6.3 VAC, PSI (LH RESEARCH)	
85	4	4	10		MS24693-C274	SCREW, MACH, FLAT HD, .190-32 X .75 LG	
86	-	-	-		MS24693-C270	SCREW, MACH, FLAT HD, .190-32 X .38 LG	
87	-	-	-		1089630P1	BRACKET	
88	-	-	-		1089631P1	BRACKET	
89	-	-	-		1089632P1	PLATE	
90	-	-	REF		1089647	SCHEMATIC DIAGRAM, TERMINAL CONTROLLER	
91	-	-	REF		WL 1089646	WIRE LIST, CARD CAGE ASSY	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1086917

REV V SHEET 5

### PARTS LIST

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2	G3					
92	1	1	1	A		7013587P001	LENS, INDICATOR, RED (81-0111-100)	
93	—	—	2			34171	TERMINAL, RING TONGUE 1/4 STD (AMP)	
94	—	—	—			MS35333-74	WASHER, LOCK, FLAT, INTERNAL TOOTH 1/4	
95	—	—	1			MS-14 - 140	COVER, MARKER STRIP	
96	—	—	2			50-5215	SPACER, HEX THIRD (CONCORD ELEC CORP)	
97	2	2	2			7011466P002	TERMINAL, LUG	
98	—	—	2			MSS1957-27	SCR, MACH, PAN HD, .138-.32 X .31 LG	
99	8	8	8			MSS1957-32	SCR, MACH, PAN HD, .138-.32 X .75 LG	
100	6	6	6			MSS1957-30	SCR, MACH, PAN HD, .138-.32 X .50 LG	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

1086917

REV  SHEET 6



# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5					
1	1	1	E		1086916 G1	CARD CAGE GRAPHIC 7	
2	2	2	D		1086918 P1	BRACKET, CARD CAGE	
3	1	1	C		1086862 P1	BRACKET, CONNECTOR	
4	1	1	D		1086769 P1	PLATE, CONNECTOR, AI	
5							
6							
7	1	1			7013587 P003	HSG, INDICATOR, XDS1	
8	1	1			7013587 P002	LAMP, INDICATOR, DSI	
9	1	1			0179005 P6	CKT BREAKER, 5A, CBI	
10	2	2			7012241 P001	CONN, 5 POS, J1, J2	
11							
12	2	2			7012642 P004	FAN, TUBEAXIAL, B1, B2	
13	2	2			7012642 P011	CORD, PWR FAN	
14	2	2			7012642 P012	GUARD, FINGER	
15	8	8			7012642 P013	NUT, CAPTIVE	
16							
17							
18	2	2	A		1088475 P1	TERMINAL BOARD, TBI, TB2	
19	2	2	A		1088475 P2	INSULATOR STRIP	
20	1	1	B		1086938 P1	BUS STRIP, WI	
21	2	2		91929	2SW3-6	KEYCAP, WHITE (HONEYWELL)	
22							
23							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO

A 94117 PL

1086917

REV 7 SHEET 7

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5	G 6					
24	2	2	2		91929	11SN21	SWITCH, S1, 2 (HONEYWELL)	
25	4	4	4		78553	P101-447-495	STUD, BALL (TINNERMAN)	
26	1	1	1		05245	GEFI	FILTER, AC, GA, FLI (CORCOM)	
27	1	1	1		70903	17250B	CORD PWR (BELDEN)	
28	1	1	1		02660	26-4200-85	CONN, 8 POS, J5 (AMPHENOL)	
29	12	12	12		86928	5605-28	WASHER, SHOULDER (SEASTROM)	
30	4	4	4		06540	8165-SS-0632-7	STANDOFF (AMATOM)	
31	23	23	23		00779	2-350800-2	CONN, FULLY INSL "187" (AMP)	
32	2	2	2		00779	2-350804-2	CONN, FULLY INSL "250" (AMP)	
33								
34	1	1	1			RCR07G512J5	RES, 5.1K, ±5%, 1/4W, RI	
35	2	2	2			MS51957-26	SCR, MACH, PAN HD, .138-32 X .25 LG	
36								
37	4	4	4			MS51957-4	SCR, MACH, PAN HD, .086-56 X .31 LG	
38	4	4	4			MS51957-16	SCR, MACH, PAN HD, .112-40 X .44 LG	
39	2	2	2			MS24693-C4	SCR, MACH, FLAT HD, .112-40 X .38 LG	
40	4	4	4			MS24693-C24	SCR, MACH, FLAT HD, .138-32 X .25 LG	
41	10	10	10			MS51957-28	SCR, MACH, PAN HD, .138-32 X .38 LG	
42	4	4	4			MS51957-31	SCR, MACH, PAN HD, .138-32 X .62 LG	
43	9	9	9			MS51957-44	SCR, MACH, PAN HD, .164-32 X .44 LG	
44								
45								
46	4	4	4			MS35649-224	NUT, PLAIN HEX # 2-56	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086917

REV V SHEET 8

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5 G6					
47	9	9			MS35649-244	NUT, PLAIN HEX # 4-40	
48							
49							
50							
51	4	4			MS15795-802	WASHER, FLAT METAL #2	
52	9	9			MS15795-803	WASHER, FLAT METAL #4	
53	30	32			MS15795-805	WASHER, FLAT METAL #6	
54	9	9			MS15795-807	WASHER, FLAT METAL #8	
55							
56	4	4			MS35338-134	WASHER LKG #2	
57	11	11			MS35338-135	WASHER LKG #4	
58	22	22			MS35338-136	WASHER LKG #6	
59	9	9			MS35338-137	WASHER LKG #8	
60							
61	AR	AR			93012P7	LOCKING COMPOUND (GRADE C)	
62	-	-			MS51957-13	SCREW, MACHINE, PANHEAD .112-40 X.25 LG	
63	18"	18"			270029P4	SHRINK SLEEVING .12 DIA	
64							
65	AR	AR			93002PI	SOLDER	
66							
67	REF	REF			1086933	BACKPLANE WIRING DIAG	
68	2	2			34150	TERMINAL, RING TONGUE 1/4	
69	3	3			7011466P010	TERMINAL, LUG #4 STUD	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086917

REV V SHEET 9

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5					
70							
71	10	10			7400824P004	CONTACT, CRIMP	
72	2	2			7011466P007	TERMINAL, LUG #6 STUD	
73	9	5			7011466P001	TERMINAL, LUG #6 STUD	
74	24"	24"			270017P5	BRAID, WIRE .25 DIA	
75	24"	24"			270006P20	INSULATION TUBING, TEFLON #8	
76	300"	300"			276011P139	WIRE, ELEC AWG #22, WHT	
77	120"	120"			276011P189	WIRE, ELEC AWG #18, WHT	
78	120"	120"			276011P190	WIRE, ELEC AWG #18, BLK	
79	120"	120"			276011P185	WIRE, ELEC AWG #18, GRN	
80	3	2			7011973F002	CLAMP, CABLE, .19 DIA	
81	100	100			08474	TIE, CABLE (DENNISON)	
82	3"	3"			270029P5	SLEEVING, HEAT SHRINKABLE, .19 DIA	
83	AR	AR			7011460P036	WIRE, KAYNAR, 26 AWG	
84	-	1		A	1086909P1	LVPS, +5V, ±15V, 6.3VAC, PSI(LH RESEARCH)	
85							
86	-	10			MS24693-C20	SCREW, MACHINE, FLAT HEAD .190-32X.38LG	
87	-	1			1089630P1	BRACKET	
88	-	1			1089631P1	BRACKET	
89	-	1			1089632P1	PLATE	
90	-	REF			1089647	SCHEMATIC DIAG., TERMINAL CONTROLLER	
91	-	REF			WL1089647	WIRE LIST, CARD CAGE ASSY	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1086917

REV Y SHEET 10

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5					
92	1	1	A		7013587P001	LENS, INDICATOR, RED (81-0111-100)	
93	2	2			54171	TERMINAL, RING TONGUE 1/4 STUD (AMP)	
94	2	1			MS35333-74	WASHER, LOCK, FLAT, INTERNAL TOOTH 1/4	
95	-	2			MS-14-140	COVER, MARKER STRIP	
96	-	2			50-5215	SPACER, HEX THRD (CONCORD ELEC. CORP)	
97	2	2			7011466P002	TERMINAL, LUG	
98	-	2			MS51957-27	SCREW, MACHINE, PANHEAD .138-32 X .31LG	
99	8	8			MS51957-32	SCR, MACH, PAN HD, .138-32 X .75LG	
100	6	6			MS51957-30	SCR, MACH, PAN HD, .138-32 X .50LG	
101	1	-			MM230513/115	PWR SUPPLY (LH RESEARCH) PSI	
102	4	-	A		9319-A171-10A	SPACER (AMATOM)	
103	4	-	A		MS24693-C51	SCR, MACH, FLAT HD, .164-32 X .62LG	
104	REF	-	E		WL1089837	WIRE LIST, CARD CAGE ASSY	
105	REF	-	E		1089836	SCHEMATIC D/AG, TERMINAL CONTROLLER	
106	1	-	B		3690J	JUMPER, BARRIER STRIP (KULKA)	
107	1	-	B		1088666P1	SHIELD, PROTECTIVE	
108	2	-	E		610048P12	SCREW, NYLON 6-32 X 1.00LG	
109	2	-	E		2132	SPACER (H.HSMITH)	
110	-	REF			1088589	BACK PLANE WIRING DIAGRAM	
111	-	-			02-06-2103	CONTACT (MOLEX)	
112	-	-			03-06-2023	CONNECTOR PSI-PI (MOLEX)	
113	-	-			MM23-E0647/115	POWER SUPPLY PSI	
114	-	-			WL5977426	WIRE LIST	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	1	1086917 / 11

REVISION STATUS OF EACH SHEET

SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13
REVISION	F	C	D	A	F								
14	15	16	17	18	19	20	21	22	23	24	25	26	27
30	31	32	33	34	35	36	37	38	39	40	41	42	43
												44	45

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
—	REL FOR PREPROD	12-22-76	REA
A	REV PER ECO 76020	28 FEB 77	JSW/PFA
B	REV PER ECO 76031	10 MAR 77	R/L Dkt
C	2 REL FOR PROD NO. 7.021	4-6-77	AS/DNA
	REV PER ECO 76068	20 JUN 77	FS/RC
D	REV PER ECO 76114	30 DEC 77	WG/RUB
E	REV PER ECO 76145	9 MAR 78	RP/RUB
F	REV PER ECO 96489	1 JUL 80	JL/WL

**WARNING**  
 CHANGES ARE BEING PROCESSED  
 AGAINST THIS DOCUMENT  
 REFER TO 9702

PARTS LIST SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THE PARTS LIST, WIRE LIST, AND DRAWING COMBINED.  
 SYMBOL † INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG INTERPRET DWG PER 815002

<b>PRODUCTION</b> <b>CHANGE BY ECO ONLY</b>		CONT. NO. _____		<b>SA SANDERS ASSOCIATES, INC.</b> NASHUA, NEW HAMPSHIRE
		DR. DATE: 15 APR 76 APPD. _____ FT. CHK. _____ GEN. 12 APR 76 EMP. HLL 30 DEC 76 PROD. 30 DEC 76 DR. C. G. 30 DEC 76	WIRE LIST CARD CAGE ASSY	
GEN USE GRAPHIC-7 1086851		SIZE CODE IDENT NO. <b>A 94117 WL1086917</b>		
NEXT ASSY USED ON APPLICATION		SCALE _____ SHEET 1 OF 7		

MFG *[Signature]*  
 OP-276 REV D

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM		TO		NOTE	
	WIRE PART NUMBER	TERIA			LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER		TERIA
001	276011P139		WHT		J5 SOLDER		TBZ 2-350800-2	3 .19		
002					J5 SOLDER		TBZ 2-350800-2	5 .19		
003					J5 SOLDER		A1XA10 7400824P004	50 .19		
004					J5 SOLDER		A1XA7 7400824P004	47 .19		
005					J5 SOLDER		TBZ 2-350800-2	1 .25		
006					J5 SOLDER		TBZ 2-350800-2	6 .25		
007					S2 SOLDER		TBZ 2-350800-2	1 .25		
008	276011P139		WHT		S2 SOLDER		TBZ 2-350800-2	2 .25		
009	210017P5				PS1 OUTPUT 7011466P009		A1BUS 7011466P007	+5V -	SEE NOTE 1	
010	276011P139		WHT		S1 SOLDER		TBZ 2-350800-2	2 .25		
011					A1XA8 7400824P004		TBZ 2-350800-2	4 .25		
012					J2 SOLDER		TBZ 2-350800-2	3 .25		
013					S1 SOLDER		TBZ 2-350800-2	4 .25		
014	276011P139		WHT		J2 SOLDER		S2 SOLDER	GND .25		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
**A 94117** WL 1086917

REV. C

SHEET 2

WIRE LIST

WIRE NUMBER	FUNCTION CODE	COLOR	LENGTH	FROM		TO		NOTE
				LOCATION (REFERENCE DESIGNATION)	TERM.	LOCATION (REFERENCE DESIGNATION)	TERM.	
	WIRE PART NUMBER			CONTACT PART NUMBER	STRIP (INCHES)	CONTACT PART NUMBER	STRIP (INCHES)	
015	210017P5			PS1 -OUT 7011466P009		A1 7011466P007	E1	SEE NOTE1
016								
017	276011P139	WHT		S2 SOLDER	.25 GND	S1 SOLDER	.35 GND	
018	276011P139	WHT		S1 SOLDER	1	TB2 2-350800-2	.25	
019				T1 SELF LEAD	BLK	TB1 2-350800-2	.25	TWIST WITH WIRE 020
020				T1 SELF LEAD	BLK	TB1 2-350800-2	.25	TWIST WITH WIRE 019
021				T1 SELF LEAD	GRN	E2 SOLDER	.25	
022				T1 SELF LEAD	GRN/YEL	TB2 2-350800-2	.25	
023	276011P139	WHT		A1XA16 7400824P004	.33	SOLDER	.25	
024	276011P189	WHT		PS1 CASE 7011466P001	.25	E3 7011466P002	.25	
025	276011P139	WHT		TB2- 2-350800-2	.25	A1 7011466P010	.25	
026								
027	276011P189	WHT		FL1 SOLDER	N .12	TB1 2-350800-2	.25	TWIST WITH WIRE 038
028	276011P189	WHT		PS2 7011466P001	.25	TB1 2-350800-2	.25	TWIST WITH WIRE 036

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
SEE SHEET ONE FOR REVISION DESCRIPTION  
LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( ) PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
A 94117

WL 1086917

REV. D

SHEET 3



WIRE LIST

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM		TO		NOTE
	WIRE PART NUMBER	WIRE PART NUMBER			LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	
029	276011P190		BLK		PS1 110VAC 7011466P001 .25	TBI	2-350800-2 .25	4	TWIST WITH WIRE 027
030	276011P139		WHT		XDS1 SOLDER	FLI	SOLDER	N	
031	276011P185		GRN		FLI GND			E3	
032	7012642P011		BLK		SOLDER	B2	7011466P002 .25	3	
034	MOLDED CORD		BLK		B2	B1	2-350800-2 .25	5	PART OF 032
036	276011P189		WHT		PS2 7011466P001 .25	TBI	2-350800-2 .25	4	PART OF 034
037	189		WHT		PS1 110VAC 7011466P001 .25	TBI	2-350800-2 .25	5	TWIST WITH WIRE 028
038	190		BLK		CB1 LOAD 2-350804-2 .19	TBI	2-350800-2 .25	5	TWIST WITH WIRE 049
039	139		WHT		XDS1 SOLDER	TBI	2-350800-2 .25	5	
040	276011P189		WHT		PS2 7011466P001 .25	AIRBUS	SOLDER	WI	
041									
042	276011P139		WHT		PS2 7011466P001 .25	PS2	7011466P001 .25	10	

SIZE CODE IDENT. NO.

A 94117 WL 1086917

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
SEE SHEET ONE FOR REVISION DESCRIPTION  
LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( ) PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

REV. 4

SHEET 4

WIRE LIST

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM		TO		NOTE
	WIRE PART NUMBER				LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	
043									
044	276011P189		WHT		PSZ	81	AIBUS	715V	
045					7011466P001	.25	7011466P010	.25	
046	276011P189		WHT		PSZ	101	A1	E1	
047					7011466P001	.25	7011466P010	.25	
048									
049	276011P139		WHT	1.00	S2	.19	S2	.19	
050				1.00	S1	.19	S1	.19	
051	PPL2-				J2	.19	AIXAIG	.21	
052	+5V				J2	.19	7400824P004	.19	
053	PPS2-				J2	.19	J1	.19	
054	GND				J2	.19	SOLDER	.19	
055	PPL1-				J1	.19	AIXA9	.19	
056	PPS1-		WHT		J1	.19	7400824P004	.19	
	276011P139				SOLDER	.19	J1	.19	
					SOLDER	.19	AIXAIG	.22	
					SOLDER	.19	7400824P004	.19	
					J1	.19	AIXA9	.19	
					SOLDER	.19	7400824P004	.19	

SIZE CODE IDENT. NO.

A 94117 WL 1086917

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTION LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( ) PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

REV. F SHEET 5

WIRE LIST

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM		TO		NOTE
	WIRE PART NUMBER	WIRE PART NUMBER			LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	
057	276011P190		BLK		FLI		CBI	LINE	
058					SOLDER		2-350804-2	.19	
059									
060	276011P139		WHT		A1 XAT	44	TBZ		
061	276011P139		WHT		7400824 P004	.19	2-350800-2	.25	
062					A1 XAT	43	TBZ	6	
					7400824 P004	.19	2-350800-2	.25	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
 A 94117 WL 1086917

REV. —

SHEET 6

OP-23 REV D

WIRE LIST

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM			TO			NOTE	CON. FIG.	
	WIRE PART NUMBER	WIRE PART NUMBER			LOCATION REFERENCE DESIGNATION	CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION REFERENCE DESIGNATION	CONTACT PART NUMBER	TERM. STRIP (INCHES)			
					<p>NOTE 1 INSULATE BRAID PN 279017 P5 WITH TEFLON INSULATION TUBING PN 27006P01B</p>								
<p>SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTION LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )</p>													
					SIZE	CODE IDENT NO	DWG NO.						
					A	94117	WL/086917						
										REV	SHEET 7 of 7		

SA-00-910 (9-68)

REVISION STATUS													REVISIONS				
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED	
PARTS	REV	AA	B	C	D	E	AA	K	K	K	N	M	R	REV PER ECO 96310	1 FEB 80	WG/wL	
	SH	13	14	15	16	17	18	19	20	21	22	23	24	T	ECO 96291A NO DWG CHG	14 FEB 80	WG/wL
	REV	K	A	A	AA	C	A	B	B	AA	AA	AA	U	REV PER ECO 96325			
LIST	SH	25	26	27										V	REV PER ECO 96362	4 MAR 80	WG/wL
	REV	AA	AA	AA										W	REV PER ECO 96381A	25 MAR 80	WG/wL
DWG REV	M												AA	REV PER ECO 96408	22 APR 80	RDM/wL	
WL REV	X													AA	REV PER ECO 96918A	5 SEP 80	WG/JK

**WARNING**  
 CHANGES ARE BEING PROCESSED  
 AGAINST THIS DOCUMENT  
 REFER TO 97043-97046

4. ITEMS 146A, 147A, 148A, 149A MUST BE USED TOGETHER.

3. ITEM NUMBERS WITH SUBSCRIPTS ARE ALTERNATE ITEMS. SELECT ONE ONLY.

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

<b>PRODUCTION</b>		<b>CHANGE BY ECO ONLY</b>	
MFG	W. V. Kach	DATE	2-22-78
NEXT ASSY		USED ON	
APPLICATION		G-R-A-7	
CONT NO.		DR	DATE
		APPD	15 FEB 78
		CHK	
		DEV	10 Feb 78
		ENG	16 FEB 78
		GRG	19 FEB 78
		WRK	2/22/78

**SA SANDERS ASSOCIATES, INC.**

MASHUA, NEW HAMPSHIRE

CIRCUIT CARD ASSY,  
 ROM & STATUS LOGIC (8K)

SIZE	CODE IDENT NO.	SHEET	OF
A	94117 PL	1088682	1 OF 27

OP-1039 REV B DWG SIZE

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G		G 3					
	G 1	G 2	G 3					
1	1	1	E		1088684G2	CIRCUIT CARD SUBASSY, ROM & STATUS LOGIC	#	
2	2	1	A		310092P1	MED (SN7400N) U58, 74	#	
3	1	1	A		310200P1	MED (SN7402N) U50	#	
4	1	1	A		310201P1	MED (SN7403N) U60	#	
5	2	2	A		310202P1	MED (SN7404N) U59, 79	#	
6	1	1	A		310319P1	MED (SN74504N) U40	#	
7	1	1	A	01295	SN7406N	U9 (TI)	#	
8	1	1	A		310234P1	MED (SN7408N) U68	#	
9	1	8	A		310094P1	MED (SN7474N) U19, 52, 53, 67, 70, 76	#	
10	1	1	A			77, 78	#	
11	1	1	A	01295	SN7486N	U12 (TI)	#	
12	1	1	A		310378P3	MED (SN74H106N) U32	#	
13	1	1	A		7013070P68	MED (SN74LS138N) U42	#	
14	1	1	A		313026P1	MED (SN7448N) U55	#	
15	2	2	A		7013070P54	MED (SN74173N) U65, 75	#	
16	1	2	A		310279P1	MED (SN74174N) U49	#	
17	2	2	A		310279P2	MED (SN74175N) U47, 48	#	
18	1	1	A	01295	SN74390N	U30	#	
19	1	1	A	07263	F9S41PC	U10	#	
20	1	1	A	07263	F9S109PC	U20	#	
21	1	1	A				#	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
A 94117 PL

1088682

REV B SHEET 2

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2					
22	1	1		01295	SN 7432N	MED U63	#
23	4	4	A	2704	DM8097N	MED U17,18,49,54 (NAT)	
24	6	6		2704	310368P2	MED U27,28,37,38, 45, 46 (NAT)	
25	2	2		2704	DS8835N	MED U17,8 (NAT)	
26	2	2		2704	DS8837N	MED U22,69 (NAT)	
27	1	1		53848	COM5016	MED U31 (SMC)	
28	1	1			COM2017P	MED U1 (SMC)	
29	1	1		01295	SN7425N	MED U80 (TI)	
30							
31	1	1		01295	SN74177N	MED U64 (TI)	
32A	REF	REF		75378	MX040 - 20MHZ	OSCILLATOR, DIP, 20MHZ, U29 (CTS)	
33							
34	39	39	A		7550001P73	RES, 1K OHMS ± 5% .25W R1,2,3,4 5,6,7,8,9,10,11,12,13,14,15,16,17,18,19 20,21,29,30,31,32,33,34,35,36,37,38 39,40,41,42,43,44,45,46 RES, 1.5K OHMS ± 5% .25W R22,48,49 RES, 3K OHMS ± 5% .25W R25,26 RES, 10K OHMS ± 5% .25W R47,50,51 RES, 510 OHMS ± 5% .25W R27 RES, 5.1K OHMS ± 5% .5W R24 RES, 470 OHMS ± 5% .5W R23	
35	3	3	A		7550001P77		
36	2	2	A		7550001P84		
37	3	3	A		7550001P97		
38	1	1	A		7550001P66		
39	1	1	A		7550004P90		
40	1	1	A		7550004P65		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

REV C

SHEET 3

1088682

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2	G 3					
41	1	1	1	A		7550001P60	RES, 300 OHMS ±5% .25W R28	
42								
43	2	2	2	A		7011451P49	CAP, 15UF ±10% 20V C1,2	
44	1	1	1	A		7011451P19	CAP, 39UF ±10% 10V C10	
45	13	13	13	A		7502023P73	CAP, 1UF ±10% 50V C3,4,5,6,7	
46								
47	19	19	19	A		7502023P55	11,12,13,14,15,16,18,38 CAP, .01UF ±10%, 100V C19,20,21,22	
48	1	1	1	A		CK058X222K	23,24,25,26,27,28,29,30,31,32,33,34 35,36,37	
49	1	1	1	A		7502023P37	CAP, 2200PF ±10%, 100V C9	
50	1	1	1	A		7011451P14	CAP, 1000PF ±10%, 200V C8	
51	1	1	1	A		1086937P1	CAP, 4.7UF ±10%, 10V C17	
52	1	1	1	A		7538002P35	CRYSTAL, 5.0688MHZ, Y1	
53	2	2	2	A		7538002P72	DIODE - ZENER (IN748A) VR3	
54	2	2	2	A		7538002P17	DIODE - ZENER (IN4372A) VR1,2	
55	2	2	2	A			DIODE (IN4148) CR1,2	
56	1	1	1	A		7610001P46	TRANSISTOR (2N2907A) Q2	
57	1	1	1	A		7610001P84	TRANSISTOR (2N2222A) Q1	
58								
59	2	2	2	A		7518001P78	INDUCTOR, 22uh L1,2	
60								

**PARTS LIST**

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

1088682

REV D SHEET 4



ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2	G 3					
61	1	1	1	B		7011935P1	ASSY, INDUCTOR L3	#
62	2	2	2	A		640098P1	WAFER, THERMAL CONDUCTING	#
63	5	5	5	A		256063P8	TEST POINT TP1, 2, 3, 4, 5	#
64	1	1	1	D		1086608P18	CONNECTOR, ELEC 98 PIN J1	#
65	1	1	1		20999	3491-1002	CONNECTOR, ELEC 10 PIN J2 (3M)	#
66	2	2	2		07707	6010	EYELET	#
67	2	2	2	A		600107P1	CARD EJECTOR	#
68	2	2	2	A		630003P14	EYELET METALIC (SE310)	#
69	2	2	2	A		278000P13	WIRE, ELECT, 22 AWG	#
70	6	6	6	A		270006P5	TUBING, INSUL, TEFLON	#
71	5	5	5	A		93002P1	SOLDER	#
72	AR	AR	AR	A		MS51957-6	SCR, MACH PH 2-56 X. 44LG	#
73	2	2	2			MS35338-134	WASHER, LOCK-SPRING NO. 2	#
74	2	2	2			NAS 620 C2	WASHER, FLAT NO. 2	#
75	2	2	2			MS35649-224	NUT, 2-56	#
76	2	2	2					#
77								
78	REF	REF	REF	E		1088683	LOGIC DIAGRAM, BK ROM & STATUS LOGIC	
79	REF	REF	REF	A		815003	PWB, AND CXT BD, REQD FOR	
80	REF	REF	REF	A		778000	APPL OF EPOXY MARKING CMPD	
81	REF	REF	REF	A		102-18-CCB	IC SOCKET, 18 PIN (GARRY)	
82	17	17	17			102-16-CCB	IC SOCKET, 16 PIN (GARRY)	
83	4	4	4					

SIZE CODE IDENT NO.  
A 94117 PL

1088682

REV E SHEET 5

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.



PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
84	/	/	A		1086870P11	PROGRAMMED PROM (6331-U)	U-43
85	/	/	A		1086870P2	(6331-U)	U-56
86	/	/	A		1086870P3	(6331-U)	U-57
87	/	/	A		1086870P4	(6331-U)	U-66
88	-	/	A		1089807P1	(N825185F)	U-3
89	-	/	A		1089807P2		U-4
90	-	/	A		1089807P3		U-5
91	-	/	A		1089807P4		U-6
92	-	/	A		1089807P5		U-13
93	-	/	A		1089807P6		U-14
94	-	/	A		1089807P7		U-15
95	-	/	A		1089807P8		U-16
96	/	/	A		1089771P9		U-23
97	/	/	A		1089771P10		U-24
98	/	/	A		1089771P11		U-25
99	/	/	A		1089771P12		U-26
100	/	/	A		1089771P13		U-33
101	/	/	A		1089771P14		U-34
102	/	/	A		1089771P15		U-35
103	/	/	A		1089771P16	(N825185F)	U-36
104	/	/	A		1089812P1	PROGRAMMED PROM (6352-U)	U-39
105							
32	/	/		75378	JKPT080-1330071	OSCILLATOR, DIP, 20MHZ, V29	(CTS)

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
A 94117 PL

1088682

REV AA SHEET 6

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 1	G 2					
174	—	—	A		1901143P4	PROGRAMMED PROM (N82SI85F)	U23
175	—	—	A		1901143P3		U24
176	—	—	A		1901143P2		U25
177	—	—	A		1901143P1		U26
178	—	—	A		1901143P8		U33
179	—	—	A		1901143P7		U34
180	—	—	A		1901143P6		U35
181	—	—	A		1901143P5	PROGRAMMED PROM (N82SI85F)	U36

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
A 94117 PL

1088682

REV AA SHEET 7

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM.
	G4	G5	G6					
1	1	1	1	E		1088684G2	CIRCUIT CARD SUBASSY, ROM & STATUS LOGIC	#
2	2	2	2	A		310092P1	MED (SN7400N) U58, 74	#
3	1	1	1	A		310200P1	MED (SN7402N) U50	#
4	1	1	1	A		310201P1	MED (SN7403N) U60	#
5	2	2	2	A		310202P1	MED (SN7404N) U59, 79	#
6	1	1	1	A		310319P1	MED (SN74504N) U40	#
7	1	1	1	A	01295	SN7406N	U9 (TI)	#
8	1	1	1	A		310234P1	MED (SN7408N) U68	#
9	8	8	8	A		310094P1	MED (SN7474N) U19, 52, 53, 67, 70, 76, 77, 78	#
10	1	1	1	A	01295	SN7486N	U12 (TI)	#
11	1	1	1	A		310378P3	MED (SN74H106N) U32	#
12	1	1	1	A		7013070P68	MED (SN74LS138N) U42	#
13	1	1	1	A		313026P1	MED (SN74198N) U55	#
14	2	2	2	A		7013070P54	MED (SN74173N) U65, 75	#
15	1	1	1	A		310279P1	MED (SN74174N) U49	#
16	2	2	2	A		310279P2	MED (SN74175N) U47, 48	#
17	1	1	1	A	01295	SN74390N	U30 (TI)	#
18	1	1	1	A	07263	F9S41PC	U10	#
19	1	1	1	A	07263	F9S109PC	U20	#
20	1	1	1	A				#
21	1	1	1	A				#

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.		SIZE	CODE IDENT NO.	REV	SHEET
		A	94117 PL	K	8
		1088682			

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5	G6					
22	1	1	1		01295	SN 7432N	MED U63	
23	4	4	4		27014	DM8097N	MED U17,18,44,54 (NAT)	
24	6	6	6	A		310368P2	MED (DM8098N) U27,28,37,38,45,46 #	
25	2	2	2		27014	DS8835N	MED U17,8 (NAT)	
26	2	2	2		27014	DS8837N	MED U22,69 (NAT)	
27	1	1	1		53848	COM5016	MED U31 (SMC)	
28	1	1	1		01295	COM2017P	MED U1 (SMC)	
29	1	1	1		01295	SN7425N	MED U80 (TI)	
30	1	1	1		01295	SN74177N	MED U64 (TI)	
31	1	1	1		75378	MX040 -20MHZ	OSCILLATOR,DIP,20MHZ,U29 (CTS)	
32A	REF	REF	REF					
33	39	39	39	A		7550001P73	RES, 1K OHMS ±5% .25W R1,2,3,4	
34	39	39	39	A			5,6,7,8,9,10,11,12,13,14,15,16,17,18,19	
35	3	3	3	A			20,21,22,30,31,32,33,34,35,36,37,38	
36	2	2	2	A			39,40,41,42,43,44,45,46	
37	3	3	3	A		7550001P77	RES, 1.5K OHMS ±5% .25W R22,48,49	
38	1	1	1	A		7550001P84	RES, 3K OHMS ±5% .25W R25,26	
39	1	1	1	A		7550001P97	RES, 10K OHMS ±5% .25W R47,50,51	
40	1	1	1	A		7550001P66	RES, 510 OHMS ±5% .25W R27	
	1	1	1	A		7550004P90	RES, 5.1K OHMS ±5% .5W R24	
	1	1	1	A		7550004P65	RES, 470 OHMS ±5% .5W R23	

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	K	9
		1088682	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5	G 6					
41	1	1	1	A	7550001P60	RES, 300 OHMS ±5% .25W R28		
42								
43								
44	2	2	2	A	7011451P49	CAP, 15UF ±10% 20V C1,2		
45	1	1	1	A	7011451P19	CAP, 39UF ±10% 10V C10		
46	13	13	13	A	7502023P73	CAP, 1UF ±10% 50V C3,4,5,6,7		
47	19	19	19	A	7502023P55	11,12,13,14,15,16,18,38 CAP, .01UF ±10% 100V C19,20,21,22 23,24,25,26,27,28,29,30,31,32,33,34 35,36,37		
48	1	1	1		CK058X222K	CAP, 2200PF ±10% 100V C9		
49	1	1	1	A	7502023P37	CAP, 1000PF ±10% 200V C8		
50	1	1	1	A	7011451P14	CAP, 4.7UF ±10% 10V C17		
51	1	1	1	A	1086937P1	CRYSTAL, 5.0688MHZ, Y1		
52								
53	1	1	1	A	7538002P35	DIODE - ZENER (IN748A) VR3		
54	2	2	2	A	7538002P72	DIODE - ZENER (IN4372A) VR1,2		
55	2	2	2	A	7538002P17	DIODE (IN4148) CR1,2		
56								
57	1	1	1	A	7610001P46	TRANSISTOR (2N2907A) Q2		
58	1	1	1	A	7610001P84	TRANSISTOR (2N2222A) Q1		
59								
60	2	2	2	A	7518001P78	INDUCTOR, 22uh L1,2		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
A 94117 PL 1088682

REV K SHEET 10

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5	G6					
61	1	1	1	B		7011935P1	ASSY, INDUCTOR L3	
62	2	2	2	A		640048P1	WAFER, THERMAL CONDUCTING	#
63	5	5	5	A		256063P8	TEST POINT TPI, 2, 3, 4, 5	
64	1	1	1	D		1086608P18	CONNECTOR, ELEC 98 PIN J1	
65	1	1	1		20999	3491-1002	CONNECTOR, ELEC 10 PIN J2 (3M)	
66	2	2	2		07701	6010	EYELET	
67	2	2	2	A		600107P1	CARD EJECTOR	#
68	2	2	2	A		630003P14	EYELET METALIC (SE310)	#
69	2	2	2	A		278000P13	WIRE, ELEC, 22 AWG	#
70	6"	6"	6"	A		270006P5	TUBING, INSUL, TEFLON	#
71	5"	5"	5"	A		93002P1	SOLDER	#
72	AR	AR	AR	A		MS51957-6	SCR, MACH PH 2-56 X .44 LG	
73	2	2	2			MS35338-134	WASHER, LOCK-SPRING NO.2	
74	2	2	2			NAS 620 C2	WASHER, FLAT NO.2	
75	2	2	2			MS35649-224	NUT, 2-56	
76	2	2	2					
77	2	2	2					
78	REF	REF	REF	E		1088683	LOGIC DIAGRAM, BK RAM & STATUS LOGIC	
79	REF	REF	REF	A		815003	PWB, AND EXT BD, REQ FOR	
80	REF	REF	REF	A		778000	APPL OF EPOXY MARKING CMPD	
81	REF	REF	REF	A		102-18-CCB	IC SOCKET, 18 PIN (GARRY)	
82	17	17	17			102-16-CCB	IC SOCKET, 16 PIN (GARRY)	
83	4	4	4					

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1088682

REV N SHEET 11

OP-277 REV C

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5	G 6					
84	/	/	/	A		1086870P11	PROGRAMMED PROM (6331-U)	U-43
85	/	/	/	A		1086870P2	(6331-U)	U-56
86	/	/	/	A		1086870P3	(6331-U)	U-57
87	/	/	/	A		1086870P4	(6331-U)	U-66
88	/	/	/	A		1089807P1	(N825185F)	U-3
89	/	/	/	A		1089807P2		U-4
90	/	/	/	A		1089807P3		U-5
91	/	/	/	A		1089807P4		U-6
92	/	/	/	A		1089807P5		U-13
93	/	/	/	A		1089807P6		U-14
94	/	/	/	A		1089807P7		U-15
95	/	/	/	A		1089807P8		U-16
96	/	/	/	A		1089771P9		U-23
97	/	/	/	A		1089771P10		U-24
98	/	/	/	A		1089771P11		U-25
99	/	/	/	A		1089771P12		U-26
100	/	/	/	A		1089771P13		U-33
101	/	/	/	A		1089771P14		U-34
102	/	/	/	A		1089771P15		U-35
103	/	/	/	A		1089771P16	(N825185F)	U-36
104	/	/	/	A		1089812P1	PROGRAMMED PROM (6352-U)	U-39
105	/	/	/	A				
32	/	/	/		75378	JKPT080-1330071	OSCILLATOR, DIP, 20MHZ, U29	(CTS)

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1088682

REV M SHEET 12



ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5	G 6					
106	1	-	-	A	1089771 P17	PROGRAMMED PROM(N82S185F)	U26	
107	1	-	-	A	1089771 P18		U25	
108	1	-	-	A	1089771 P19		U24	
109	1	-	-	A	1089771 P20		U23	
110	-	1	-	A	1089807 P9		U3	
111	-	1	-	A	1089807 P10		U4	
112	-	1	-	A	1089807 P11		U5	
113	-	1	-	A	1089807 P12		U16	
114	-	1	-	A	1089807 P13		U13	
115	-	1	-	A	1089807 P14		U14	
116	-	1	-	A	1089807 P15		U15	
117	-	1	-	A	1089807 P16	PROGRAMMED PROM(N82S185F)	U6	

SIZE CODE IDENT NO.

A 94117 PL

1088682

REV K SHEET 13

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G7	G8 G9					
1	1	1	E		1088684G2	CIRCUIT CARD SUBASSY, ROM & STATUS LOGIC	#
2	2	2	A		310092PI	MED (SN7400N) U58,74	#
3	1	1	A		310200PI	MED (SN7402N) U50	#
4	1	1	A		310201PI	MED (SN7403N) U60	#
5	2	2	A		310202PI	MED (SN7404N) U59,79	#
6	1	1	A		310319PI	MED (SN74S04N) U40	#
7	1	1	A	01295	SN7406N	MED U9 (T1)	#
8	1	1	A		310234PI	MED (SN7408N) U68	#
9	8	8	A		310094PI	MED (SN7474N) U19,52,53,67,70,76	#
10	1	1	A			77,78	#
11	1	1	A	01295	SN7486N	MED U12 (T1)	#
12	1	1	A		310378P3	MED (SN74H106N) U32	#
13	1	1	A		7013070P68	MED (SN74LS138N) U42	#
14	1	1	A		313026PI	MED (SN74148N) U55	#
15	2	2	A		7013070P54	MED (SN74173N) U65,75	#
16	1	1	A		310279PI	MED (SN74174N) U49	#
17	2	2	A		310279P2	MED (SN74175N) U47,48	#
18	1	1	A	01295	SN74390N	MED U30	#
19	1	1	A	07263	F9S4IPC	MED U10	#
20	1	1	A	07263	F9S109PC	MED U20	#
21	1	1	A				#

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	A	14
		1088682	

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G7	G8	G9					
22	1	1	1		01295	SN7432N	MED U63	#
23	4	4	4		27014	DM8097N	MED U17,18,44,54 (NAT)	
24	6	6	6	A		310368P2	MED (DM8098N) U27,28,37,38,45,46	
25	2	2	2		27014	DS8835N	MED U7,8 (NAT)	
26	2	2	2		27014	DS8837N	MED U29,69 (NAT)	
27	1	1	1		53848	COM5016	MED U31 (SMC)	
28	1	1	1			COM2017P	MED U1 (SMC)	
29	1	1	1		01295	SN7425N	MED U80 (TI)	
30								
31	1	1	1		01295	SN74177N	MED U64 (TI)	
32A	REF	REF	REF		75378	MX040-20MHZ	OSCILLATOR,DIP,20MHZ,U29 (CTS)	
33								
34	39	39	39	A		7550001P73	RES,1K OHMS ±5% .25W R1,2,3,4 5,6,7,8,9,10,11,12,13,14,15,16,17,18,19 20,21,29,30,31,32,33,34,35,36,37,38 39,40,41,42,43,44,45,46	
35	3	3	3	A		7550001P77	RES,1.5K OHMS ±5% .25W R22,48,49	
36	2	2	2	A		7550001P84	RES,3K OHMS ±5% .25W R25,26	
37	3	3	3	A		7550001P97	RES,10K OHMS ±5% .25W R47,50,51	
38	1	1	1	A		7550001P66	RES,510 OHMS ±5% .25W R27	
39	1	1	1	A		7550004P90	RES,5.1K OHMS ±5% .5W R24	
40	1	1	1	A		7550004P65	RES,470 OHMS ±5% .5W R23	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.		SIZE	CODE IDENT NO.	REV	SHEET
		A	94117 PL	A	15
		1088682			

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G7	G8	G9					
41	1	1	1	A		755000IP60	RES, 300 OHMS ± 5% .25W R28	
42								
43								
44	2	1	2	A		701145IP49	CAP, 15UF ± 10% 20V C1,2	
45	1	1	1	A		701145IP19	CAP, 39UF ± 10% 10V C10	
46	13	13	13	A		7502023P73	CAP, .1UF ± 10% 50V C3,4,5,6,7 11,12,13,14,15,16,18,38	
47	19	19	19	A		7502023P55	CAP, .01UF ± 10% 100V C19,20,21,22 23,24,25,26,27,28,29,30,31,32,33,34 35,36,37	
48	1	1	1			CK05BX222K	CAP, 2200 PF ± 10% 100V C9	
49	1	1	1	A		7502023P37	CAP, 1000 PF ± 10% 200V C8	
50	1	1	1	A		701145IP14	CAP, 47UF ± 10% 10V C17	
51	1	1	1	A		1086937PI	CRYSTAL, 5.0688 MHZ Y1	
52								
53	1	1	1	A		7538002P35	DIODE-ZENER (IN748A) VR3	
54	2	2	2	A		7538002P72	DIODE-ZENER (IN4372A) VR1,2	
55	2	2	2	A		7538002P17	DIODE (IN4148) CR1,2	
56								
57	1	1	1	A		761000IP46	TRANSISTOR (2N2907A) Q2	
58	1	1	1	A		761000IP84	TRANSISTOR (2N2222A) Q1	
59								
60	2	2	2	A		751800IP78	INDUCTOR, 22 μh L1,2	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	A	16
		1088682	

**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G7	G8	G9					
61	1	1	1	B		7011935PI	ASSY, INDUCTOR L3	#
62	2	2	2	A		640048PI	WAFER, THERMAL CONDUCTING	
63	5	5	5	A		256063P8	TEST POINT TPI, 2, 3, 4, 5,	
64	1	1	1	D		1086608P18	CONNECTOR, ELEC 98 PIN J1	
65	1	1	1		20999	3491-1002	CONNECTOR, ELEC 10 PIN J2	
66	2	2	2		07707	6010	EYELET	
67	2	2	2	A		600107PI	CARD EJECTOR	
68	2	2	2	A		630003P14	EYELET METALLIC (SE310)	
69	2	2	2	A		278000P13	WIRE, ELECT, 22 AWG	
70	6"	6"	6"	A		270006P5	TUBING, INSUL, TEFLON	
71	5"	5"	5"	A		93002PI	SOLDER	
72	AR	AR	AR	A		MS51957-6	SCR, MACH PH 2-56 X.44LG	
73	2	2	2			MS35338-134	WASHER, LOCK-SPRING NO.2	
74	2	2	2			NAS620C2	WASHER, FLAT NO.2	
75	2	2	2			MS35649-224	NUT, 2-56	
76	2	2	2					
77								
78								
79	REF	REF	REF	E		1088683	LOGIC DIAGRAM, 8K ROM & STATUS LOGIC	
80	REF	REF	REF	A		815003	PWB, AND CKT BD, REQ FOR	
81	REF	REF	REF	A		778000	APPL OF EPOXY MARKING CMPD (AUGAT)	
82	17	17	17			102-18-CCB	IC SOCKET, 18 PIN (AUGAT)	
83	4	4	4			102-16-CCB	IC SOCKET, 16 PIN (AUGAT)	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1088682  
REV AA SHEET 17

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G7	G8					
84	1	1	A		1086870P11	PROGRAMMED PROM (6331-1J)	U43
85	1	1	A		1086870P2		U56
86	1	1	A		1086870P3		U57
87	1	1	A		1086870P4	PROGRAMMED PROM (6331-1J)	U66
88							
89							
90							
91							
92							
93							
94							
95							
96							
97							
98							
99							
100							
101							
102							
103							
104	1	1	A		1089812P1	PROGRAMMED PROM (6352-1J)	U39
105	1	1	A		5977119P1	PROGRAMMED PROM (6352-1J)	U39
32	1	1		75378	JKPT080-1330071	OSCILLATOR, DIP, 20MHZ, U29 (CTS)	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1088682

REV C SHEET 18

BRUNING

39825

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G7	G8 G9					
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118	1	-	A		1089807P9	PROGRAMMED PROM (N825185F)	U23
119	1	-	A		P10		U24
120	1	-	A		P11		U25
121	1	-	A		P12		U26
122	1	-	A		P13		U33
123	1	-	A		P14		U34
124	1	-	A		P15		U35
125	1	-	A		1089807P16	PROGRAMMED PROM (N825185F)	U36

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL 1088682**

REV A SHEET 19

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G7	G8					
126	-	/	A		1089807 P17	PROGRAMMED PROM (N82S185F)	U23
127	-	/			P18		U24
128	-	/			P19		U25
129	-	/			P20		U26
130	-	/			P21		U33
131	-	/			P22		U34
132	-	/			P23		U35
133	-	/			1089807 P24		U36
134	-	/			5977118 P1		U23
135	-	/			P2		U24
136	-	/			P3		U25
137	-	/			P4		U26
138	-	/			P5		U33
139	-	/			P6		U34
140	-	/			P7		U35
141	-	/			P8		U36
142	-	/			P9		U3
143	-	/			P10		U4
144	-	/			P11		U5
145	-	/			P12		U6
146	-	/			P13		U13
147	-	/			P14		U14
148	-	/	A		5977118 P15	PROGRAMMED PROM (N82S185F)	U15

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV B	SHEET 20
A	94117 PL	1088682	



**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 7	G 8					
149	-	-	A		5977118 P16	PROGRAMMED PROM (N82S185F)	U16
146A	-	-	REF		5977251 P1	PROGRAMMED PROM (N82S137)	U13
147A	-	-	REF		5977251 P2		U14
148A	-	-	REF		5977251 P3		U15
149A	-	-	REF		5977251 P4	PROGRAMMED PROM (N82S137)	U16

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL** 1088682

REV B SHEET 21

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/O	G/I					
1	1	1	E		1088684G2	CIRCUIT CARD SUBASSY, ROM & STATUS LOGIC	#
2	2	1	A		310092PI	MED (SN7400N) U58,74	#
3	1	1	A		310200PI	MED (SN7402N) U50	#
4	1	1	A		310201PI	MED (SN7403N) U60	#
5	2	1	A		310202PI	MED (SN7404N) U59,79	#
6	1	1	A		310319PI	MED (SN74504N) U40	#
7	1	1	A	01295	SN7406N	U9 (TI)	#
8	1	1	A		310234PI	MED (SN7408N) U68	#
9	1	8	A		310094PI	MED (SN7474N) U19,52,53,67,70,76,77,78	#
10	8	1	A	01295	SN7486N	U12 (TI)	#
11	1	1	A		310378P3	MED (SN74H106N) U32	#
12	1	1	A		7013070P68	MED (SN74LS138N) U42	#
13	1	1	A		313026PI	MED (SN74148N) U55	#
14	1	1	A		7013070P54	MED (SN74173N) U65,75	#
15	2	1	A		310279PI	MED (SN74174N) U49	#
16	1	2	A		310279P2	MED (SN74175N) U47,48	#
17	2	1	A	01295	SN74390N	U130	#
18	1	1		07263	F9541PC	U10	#
19	1	1		07263	F95109PC	U20	#
20	1	1					#
21	1	1					#

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	AA	SHEET	22
A	94117 PL				
		1088682			

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/O	G/I					
22	1	1		01295	SN7432N	MED U63	#
23	4	4		27014	DM8097N	MED U17,18,44,54 (NAT)	
24	6	6	A		310368P2	MED (DM8098N) U27,28,37,38,45,46	
25	2	2		27014	DS8835N	MED U7,8 (NAT)	
26	2	2		27014	DS8837N	MED U22,69 (NAT)	
27	1	1		53848	COM 5016	MED U31 (SMC)	
28	1	1			COM 2017P	MED U1 (SMC)	
29	1	1		01295	SN7425N	MED U80 (TI)	
30							
31	1	1		01295	SN74177N	MED U64 (TI)	
32A	REF	REF		75378	MX040-20MHZ	OSCILLATOR, DIP, 20MHZ, U29 (CTC)	
33							
34	39	39	A		7550001P73	RES, 1K OHMS ± 5% .25W R1,2,3,4 5,6,7,8,9,10,11,12,13,14,15,16,17,18,19 20,21,29,30,31,32,33,34,35,36,37,38 39,40,41,42,43,44,45,46	
35	3	3	A		7550001P77	RES, 1.5K OHMS ± 5% .25W R22,48,49	
36	2	2	A		7550001P84	RES, 3K OHMS ± 5% .25W R25,26	
37	3	3	A		7550001P97	RES, 10K OHMS ± 5% .25W R47,50,51	
38	1	1	A		7550001P66	RES, 510 OHMS ± 5% .25W R27	
39	1	1	A		7550004P90	RES, 5.1K OHMS ± 5% .5W R24	
40	1	1	A		7550004P65	RES, 470 OHMS ± 5% .5W R23	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	AA	23
		1088682	

## PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/O	G/I					
41	1	1	A		7550001P60	RES, 300 OHMS $\pm 5\%$ . 25W R28	
42							
43							
44	2	2	A		7011451P49	CAP, 15 UF $\pm 10\%$ , 20V C1,2	
45	1	1	A		7011451P19	CAP, 39 UF $\pm 10\%$ , 10V C10	
46	13	13	A		7502023P73	CAP, .1 UF $\pm 10\%$ , 50V C3,4,5,6,7 11,12,13,14,15,16,18,38	
47	19	19	A		7502023P55	CAP, .01 UF $\pm 10\%$ , 100V C19,20,21,22 23,24,25,26,27,28,29,30,31,32,33,34 35,36,37	
48	1	1			CK05BX222K	CAP, 2200PF $\pm 10\%$ , 100V C9	
49	1	1	A		7502023P37	CAP, 1000PF $\pm 10\%$ , 200V C8	
50	1	1	A		7011451P14	CAP, 4.7UF $\pm 10\%$ , 10V C17	
51	1	1	A		1086937P1	CRYSTAL, 5.0688 MHZ Y1	
52							
53	1	1	A		7538002P35	DIODE - ZENER (IN748A) VR3	
54	2	2	A		7538002P72	DIODE - ZENER (IN4372A) VR1,2	
55	2	2	A		7538002P17	DIODE (IN4148) CRI,2	
56							
57	1	1	A		7610001P46	TRANSISTOR (2N2907A) Q2	
58	1	1	A		7610001P84	TRANSISTOR (2N2222A) Q1	
59							
60	2	2	A		7518001P78	INDUCTOR, 22 $\mu$ h LI,2	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1088682

REV AA SHEET 24

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/O	G/I					
61	1	1	B		7011935PI	ASSY, INDUCTOR L3	#
62	2	2	A		640048PI	WAFER, THERMAL CONDUCTING	
63	5	5	A		256063P8	TEST POINT TPI, 2,3,4,5	
64	1	1	D		1086608PI8	CONNECTOR, ELEC 98 PIN J1	
65	1	1		20999	3491-1002	CONNECTOR, ELEC 10 PIN J2 (3M)	
66	2	2		07707	6010	EYELET	
67	2	2	A		600107PI	CARD EJECTOR	#
68	2	2	A		630003PI4	EYELET METALIC (SE310)	#
69	2	2	A		278000PI3	WIRE, ELEC, 22AWG	#
70	6"	6"	A		270006P5	TUBING, INSUL, TEFLON	#
71	5"	5"	A		93002PI	SOLDER	#
72	AR	AR	A		MS51957-6	SCR, MACH PH 2-56 X .44LG	
73	2	2			MS35338-134	WASHER, LOCK-SPRING NO.2	
74	2	2			NAS620C2	WASHER, FLAT NO.2	
75	2	2			MS35649-224	NUT, 2-56	
76	2	2					
77							
78							
79	REF	REF	E		1088683	LOGIC DIAGRAM, 8K ROM & STATUS LOGIC	
80	REF	REF	A		815003	PWB, AND CKT BD, REQD FOR	
81	REF	REF	A		778000	APPL OF EPOXY MARKING CMPD	
82	17	17			102-18-CCB	IC SOCKET, 18 PIN (GARRY)	
83	4	4			102-16-CCB	IC SOCKET, 16 PIN (GARRY)	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO. **A 94117 PL** 1088682

REV **AA** SHEET **25**

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	I					
84	/	/	A		1086870P11	PROGRAMMED PROM (6331-1J)	U-43
85	/	/	A		1086870P2	(6331-1J)	U-56
86	/	/	A		1086870P3	(6331-1J)	U-57
87	/	/	A		1086870P4	PROGRAMMED PROM (6331-1J)	U-66
88							
89							
90							
91							
92							
93							
94							
95							
96	/	/	A		1089771P9	PROGRAMMED PROM (N82S185F)	U-23
97	/	/	A		1089771P10		U-24
98	/	/	A		1089771P11		U-25
99	/	/	A		1089771P12		U-26
100	/	/	A		1089771P13		U-33
101	/	/	A		1089771P14		U-34
102	/	/	A		1089771P15		U-35
103	/	/	A		1089771P16	PROGRAMMED PROM (N82S185F)	U36
104	/	/	A		1089812P1	PROGRAMMED PROM (6352-1J)	U39
105	-	/	A		5977119P1	PROGRAMMED PROM (6352-1J)	U39
32A	REF	REF		75378	JKPT080-1330071	OSCILLATOR, DIP, 20MHZ, U29 (CTS)	(CTS)

SIZE CODE IDENT NO.

A 94117 PL

1088682

REV AA SHEET 26

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/O	G/I					
150	/	-	A		5976405P4	PROGRAMMED PROM (N82S185F)	U3
151	/	-	A		P3		U4
152	/	-	A		P2		U5
153	/	-	A		P1		U6
154	/	-	A		P8		U13
155	/	-	A		P7		U14
156	/	-	A		P6		U15
157	/	-	A		5976405P5	PROGRAMMED PROM (N82S185F)	U16
158	-	-	A		1901101P1	PROGRAMMED PROM (N82S185F)	U23
159	-	-	A		2		U24
160	-	-	A		3		U25
161	-	-	A		4		U26
162	-	-	A		5		U33
163	-	-	A		6		U34
164	-	-	A		7		U35
165	-	-	A		8		U36
166	-	-	A		9		U3
167	-	-	A		10		U4
168	-	-	A		11		U5
169	-	-	A		12		U6
170	-	-	A		13		U13
171	-	-	A		14		U14
172	-	-	A		15		U15
173	-	-	A		1901101P16	PROGRAMMED PROM (N82S185F)	U16

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 1088682

REVA SHEET 27

REVISION STATUS													REVISIONS			
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED
REV	F	C	C	C									-	REL FOR PRODUCTION	6 SEP 77	RC RLB
SH	13	14	15	16	17	18	19	20	21	22	23	24	A	REV PER ECO 76137	3 MAR 78	RP/RLB
REV													B	REV PER ECO 76164	18 APR 78	RP/RLB
													C	REV PER ECO 76167	5 MAY 78	WG/RB
													D	REV PER ECO 76207	24 JUL 78	WG/RB
													E	REV PER ECO 76415	29 JUN 79	WG/WL
DWG REV	F												F	REV PER ECO 76435	31 AUG 79	WG/WL
WL REV	A															

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

**SA SANDERS ASSOCIATES, INC.** NASHUA, NEW HAMPSHIRE

PANEL ASSY

SYSTEM INTERCONNECT

SIZE CODE IDENT NO. **A 94117** PL1089619

SHEET 1 OF 4

**PRODUCTION**

**CHANGE BY ECO ONLY**

MFG *W. K. H.* 11-10-77

CONT NO.

DR *A. G. G.* DATE 6 SEP 77

RF APPD

CHK

ENG *D. D. G.* 10/10/77

PER *J. B. H.* 11/10/77

CHK *J. B. H.* 11/10/77

FINAL GRAPHIC 7

NEXT ASSY USED ON

APPLICATION

DWG SIZE **D**

OP-1039 REV B



**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2	G3					
1	1	1	1	F		1089618P1	PANEL SYSTEM INTERCONNECT	
2	1	1	1	A/D		1089620G1	CABLE ASSY MULTIPOINT INTERFACE	
3	1	1	1	A/D		1089620G2		
4	1	1	1	A/D		1089620G3		
5	1	1	1	A/D		1089620G4		
6	1	1	1	A/D		1089620G5		
7	1	1	1	D		1089622G1		
8	1	1	1	D		1089623G1		
9	16	6	12			D204182		
10								
11								
12								
13	1	1	-	D		1089623G2	CABLE ASSY COMPUTER INTERFACE	
14	REF	REF	REF			778000	APPL OF EPOXY CMPD	
26	AR	AR	AR			79-31	COMPOUND, RETAINING TYPE EV	

SIZE CODE IDENT NO. **A 94117 PL 1089619**  
 SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

# PARTS LIST

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 4	G 5	G 6					
1	1	1	1	F		1089618P1	PANEL SYSTEM INTERCONNECT	
9	16	6	12			D20418-2	SCREW LOCK ASSY, FEMALE (SET OF 2)	
14	REF	REF	REF			778000	APPL OF EPOXY CMRD	
15	1	1	1	D		1089620G10	CABLE ASSY MULTIPORT INTERFACE	
16	1	-	1	D		1089620G11		
17	1	-	1	D		1089620G12		
18	1	-	1	D		1089620G13		
19	1	-	1	D		1089620G14		
20	1	-	1	D		1089622G2	MULTIPORT INTERFACE	
21	1	1	-	D		1089623G3	COMPUTER INTERFACE	
22	1	1	-	D		1089623G4	CABLE ASSY COMPUTER INTERFACE	
26	AR	AR	AR			79-31	COMPOUND, RETAINING TYPE EV	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV C
A	94117 PL	1089619
		SHEET 3

PARTS LIST									
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM		
	G7	G8						G	SIZE
1	1	1	F		1089618P1	PANEL SYSTEM INTERCONNECT			
9	30	24			D20418-2	SCREW LOCK ASSY, FEMALE (SET OF 2)			
14	REF	REF			778000	APPL OF EPOXY CMPD			
15	1	1	D		1089620G10	CABLE ASSY MULTIPORT INTERFACE			
16	1	1	D		1089620G11				
17	1	1	D		1089620G12				
18	1	1	D		1089620G13				
19	1	1	D		1089620G14				
20	1	1	D		1089622G2				
21	1	1	D		1089623G3	MULTIPORT INTERFACE			
22	1	1	D		1089623G4	COMPUTER INTERFACE			
23	2	2			DDC-50P	CABLE ASSY COMPUTER INTERFACE			
24	1	4			206653-1	CONN, ELEC, 50 PIN (ITT CANNON)			
25	4	4			DAC-15S	CONN, ELEC, 26 PIN (AMP)			
26	AR	AR			79-31	CONN, ELEC, BURGUN-D (ITT CANNON) COMPOUND, RETAINING TYPE EV			

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A

94117

PL

1089619

REV C

SHEET 4

REVISION STATUS													REVISIONS			
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED
PARTS	G	G	G	G	G	G	G						-	REL FOR PRODUCTION	13 OCT 77	RC RD
REV	13	14	15	16	17	18	19	20	21	22	23	24	A	REV PER ECO 76113	15 DEC 77	WG/RIB
SH													B	REV PER ECO 76141	7 MAR 78	RP/RUB
REV													C	REV PER ECO 76164	14 APR 78	RP/LB
LIST													D	REV PER ECO 76199	11 JUL 78	WG/RUB
DWG													E	REV PER ECO 76424	30 JUL 79	WG/WL
REV													F	REV PER ECO 96308	6 FEB 80	WG/WL
WL													G	REV PER ECO 96983A	14 OCT 80	JC/WL
REV																

3. ITEM NOS. WITH SUBSCRIPTS ARE ALTERNATE ITEMS, SELECT ONE ONLY.  
 2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.  
 1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

<b>SA SANDERS ASSOCIATES, INC.</b> NASHUA, NEW HAMPSHIRE		<b>CABLE ASSY</b> MULTIPOINT INTERFACE	
SIZE <b>A</b>	CODE IDENT NO. <b>94117</b>	PL 1089620	
MFG <i>W. Koch</i> 11-10-77		SHEET 1 OF 7	

DR	<i>R. G. ...</i>	DATE	30 AUG 77
APPD			
CHK			
DEV			
ENG			
GR			
PRO			

1089619	GRAPHIC
NEXT ASSY	USED ON
APPLICATION	

OP-1039 REV B DWG SIZE D

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
1	1	1	-		DAC-15 S-FO	CONN, ELEC BURGUN-D (SEE NOTE 3) (ITCANNON)	
2	1	1	-		65846-007	CONN, ELEC MINI LATCH KEYED (BERG)	
3	144"	144"	A		4174285P060	WIRE ELEC 24AWG TWISTED PR	
4							
5							
6							
7							
8							
9							
10							
11							
12							
31A	REF	REF			47745	CONTACT 22-26 AWG (BERG) (SEE NOTE 3)	
32							
42	6	6			SSTIM-MP	CABLE TIE, 3 1/2" (PANDUIT)	
43	12	12			D110238-35	SOCKET 20-28 AWG (CANNON)	
44	2	2			47566	CONTACT 18-20 AWG (BERG) SEE NOTE 3	
1A	REF	REF			DAC-15 S	CONN, ELEC BURGUN-D (SEE NOTE 3) (ITCANNON)	
31	8	8			47565	CONTACT 22-26 AWG (BERG) (SEE NOTE 3)	
44A	REF	REF			47746	CONTACT 18-20 AWG (BERG) (SEE NOTE 3)	
45	3	3			PL FIM	MARKER TIE (PANDUIT)	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	6	2
		1089620	

PARTS LIST										
ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM	SIZE CODE IDENT NO.	
	G 4	G 5	G 6						A	PL
1	1	1	1			DAC-155-F0	CONN, ELEC BURGUND-D (SEE NOTE 3) (ITCANNON)			
2	1	1	1			65846-007	CONN, ELEC MINI LATCH KEYED (BERG)			
3	144"	144"	144"	A		4174285P060	WIRE, ELEC 24 AWG TWISTED PR			
13										
14										
15										
16										
17										
18										
19										
20										
21	REF	REF	REF			47745	CONTACT 22-26 AWG (SEE NOTE 3) (BERG)			
31A	REF	REF	REF							
32										
42	6	6	6			SSTIM-MP	CABLE TIE, 3 1/2" (PANDUIT)			
43	12	12	12			DI10238-35	SOCKET 20-28 AWG (CANNON)			
44	2	2	2			47566	CONTACT 18-20 AWG (BERG) SEE NOTE 3			
1A	REF	REF	REF			DAC-155	CONN, ELEC BURGUND-D (SEE NOTE 3) (ITCANNON)			
31	8	8	8			47565	CONTACT 22-26 AWG (BERG) (SEE NOTE 3)			
44A	REF	REF	REF			47746	CONTACT 22-26 AWG (BERG) (SEE NOTE 3)			
45	3	3	3			PLFIM	MARKER TIE (PANDUIT)			

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A** **94117** **PL** **1089620**  
 REV **G** SHEET **3**

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G7	G8					
1	1	1			DAC-15S-F0	CONN, ELEC BURGUND-D (SEE NOTE 3) (TT CANNON)	
2	1	1			65846-007	CONN, ELEC MINI LATCH KEYED (BERG)	
3	144"	144"	A		4174285P060	WIRE, ELEC 24 AWG TWISTED PR	
22							
23							
24							
25							
26							
27							
28							
29							
30	REF	REF	REF		47745	CONTACT 22-26AWG (SEE NOTE 3) (BERG)	
31A	REF	REF	REF				
32	6	6	6		SSTM-MP	CABLE TIE, 3 1/2" (PANDUIT)	
42	12	12	12		D110238-35	SOCKET 20-28 AWG (CANNON)	
43	2	2	2		47566	CONTACT 18-20 AWG (BERG) SEE NOTE 3	
44	REF	REF	REF		DAC-15S	CONN, ELEC BURGUND-D (SEE NOTE 3) (TT CANNON)	
1A	8	8	8		47565	CONTACT 22-26 AWG (BERG) SEE NOTE 3	
31	8	8	8		47746	CONTACT 18-20 AWG (BERG) (SEE NOTE B)	
44A	REF	REF	REF		PLFIM	MARKER TIE (PANDUIT)	
45	3	3	3				

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

REV **G** SHEET **4**

1089620

## PARTS LIST

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/0	G/1	G/2					
1	1	1	1	-		DAC-15 S-FO	CONN, ELEC BURGUND (SEE NOTE 3) (IT CANNON)	
2	1	1	1	-		65846-007	CONN, ELEC MINI MATCH KEYED (BERG)	
3	360"	360"	360"	A		4174285P060	WIRE ELEC 24 AWG TWISTED PAIR	
4								
6								
7								
9								
10								
12								
3/A	REF	REF	REF	-		47745	CONTACT 22-26 AWG (SEE NOTE 3) (BERG)	
32								
33								
34								
35								
42	15	15	15			SSTIM-MP	CABLE TIE, 3 1/2" (PANDUIT)	
43	12	12	12			D110238-35	SOCKET 20-28 AWG (CANNON)	
44	2	2	2			47566	CONTACT 18-20 (BERG) SEE NOTE 3	
1/A	REF	REF	REF			DAC-15S	CONN, ELEC BURGUND (SEE NOTE 3) (IT CANNON)	
31	8	8	8			47565	CONTACT 22-26 AWG (BERG) (SEE NOTE 3)	
44A	REF	REF	REF			47746	CONTACT 18-20 AWG (BERG) (SEE NOTE 3)	
45	3	3	3			PLFIM	MARKER TIE (PANDUIT)	

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	G	5
		1089620	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.



**PARTS LIST**

ITEM NO.	QTY PER ASSY			DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G 13	G 14	G 15					
1	1	1	1	-		DAC-175S-FO	CONN, ELEC BURGUND (SEE NOTE 3) (IT CANNON)	
2	1	1	1	-		65846-007	CONN, ELEC MINI MATCH KEYS (BERG)	
3	360	360	360	A		4174285P060	WIRE ELEC 24 AWG TWISTED PAIR	
13								
15								
16								
18								
19								
21								
31A	REF	REF	REF	-		47745	CONTACT 22-26 AWG (SEE NOTE 3) (BERG)	
32								
36								
37								
38								
42	15	15	15			SSTIM-MP	CABLE TIE, 3 1/2" (PANDUIT)	
43	12	12	12			D110238-35	SOCKET 20-28 AWG (CANNON)	
44	2	2	2			47566	CONTACT 18-20 AWG (BERG) SEE NOTE 3	
1A	REF	REF	REF			DAC-15S	CONN, ELEC BURGUND (SEE NOTE 3) (IT CANNON)	
31	8	8	8			47565	CONTACT 22-26 AWG (BERG) (SEE NOTE 3)	
44A	REF	REF	REF			47746	CONTACT 18-20 AWG (BERG) (SEE NOTE 3)	
45	3	3	3			PLFIM	MARKER TIE (PANDUIT)	

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	G	6
		1089620	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/6	G/7					
1	1	1	-		DAC-155-F0	CONN, ELEC BURGUN-D (SEE NOTE 3) (TT CANNON)	
2	1	1	-		65846-007	CONN, ELEC MINI LATCH KEYS (BERG)	
3	360	360	A		4174285P060	WIRE, ELEC 24 AWG TWISTED PAIR	
22							
24							
25							
27							
28							
30							
31A	REF	REF	REF		17745	CONTACT 22-26 AWG (SEE NOTE 3) (BERG)	
32							
39							
40							
41							
42	15	15	15		SSIM-MP	CABLE TIE, 3/2" (PANDUIT)	
43	12	12	12		D110238-35	SOCKET 20-28 AWG (CANNON)	
44	2	2	2		47566	CONTACT 18-20 AWG (BERG) SEE NOTE 3	
1A	REF	REF	REF		DAC-155	CONN, ELEC BURGUN-D (SEE NOTE 3) (TT CANNON)	
31	8	8	8		47565	CONTACT 22-26 AWG (BERG) (SEE NOTE 3)	
44A	REF	REF	REF		47746	CONTACT 18-20 AWG (BERG) (SEE NOTE 3)	
45	3	3	3		PLFIM	MARKER TIE (PANDUIT)	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

1089620

REV 6 SHEET 7

REVISION STATUS													REVISIONS				
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED	
PARTS	REV	F	—	F									A	REL FOR PRODUCTION	24 OCT 77	RC	
	SH	13	14	15	16	17	18	19	20	21	22	23	24	B	REV PER ECO 76128	13 JAN 78	WG/RIB
	REV													C	REV PER ECO 76147	8 MAR 78	RP/RIB
														D	REV PER ECO 76165	9 MAY 78	WG/RIB
														E	REV PER ECO 76181	2 JUN 78	WG/RIB
														F	REV PER ECO 76323	5 FEB 79	SG/WL
DWG	REV	E													8 NOV 79	B/WL	
WL	REV																

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

		NASHUA, NEW HAMPSHIRE	
PANEL ASSY			
PHOTOPEN INT / DRVR			
SIZE	CODE IDENT NO.	SHEET 1 OF 5	
A	94117	PL 1089624	
CONT. NO.		DATE	
DR	R. Contine	20 OCT 77	
APPD			
CHK			
DEV	W. F. F. 12/1/77		
ENGR	A. B. F. 1/30/79		
PROGR	PRO. 10/1/77		
FINAL		USED ON	
NEXT ASSY		APPLICATION	
GRAPHIC 7			
PRODUCTION CHANGE BY ECO ONLY			
MFG	W. K. 12-1-77		

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
1	1	1	D		1089505G1	PANEL, REAR	
2	1	1	D		1089543G1	CKT CD, ASSY INTENSIFIER/DRIVER	
3	2	1			7012241P001	CONN, PHOTOPEN, 5 POS (ITT CANNON)	
4	3	1			DAG-15S	CONN, ELEC 15 PIN	
5	1	1			UG-911 A/U	CONN BNC	
6	2	2			330620	BUSHING (AMP)	
7	4	4			MS51957-4	SCR, MACH, PAN HD .086-56 X.31LG	
8	4	4			MS35649-224	NUT, PLAIN HEX # 2-56	
9	4	4			MS15795-802	WASHER, FLAT METAL # 2	
10	4	4			MS35338-134	WASHER, LKG # 2	
11	4	2			MS51957-15	SCR, MACH, PAN HD .112-40 X .38 LG	
12	2	2			MS15795-803	WASHER, FLAT METAL # 4	
13	2	2			MS35338-135	WASHER, LKG # 4	
14	2	2			754005P1	TEFLON SLVG	
15	1"	12"			270029P4	SLVG, HEAT SHRINK	
16	6"	6"			276011P101	WIRE ELEC AWG # 24 BRN	
17	6"	6"			106	BLU	
18	6"	6"			102	RED	
19	6"	6"			276011P105	WIRE ELEC AWG # 24 GRN	
20	6"	4"			RG187	WIRE COAXIAL	
21	4"	75"			276011P169	WIRE ELEC AWG # 20 WHT	
22	75"	3			DAG-15 P	CONN, ELEC 15 PIN (ITT CANNON)	
23	3	-					

**PARTS LIST**

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1089624

REV 1 SHEET 2

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
24	1	1	—		# 379	LUG, GROUND (HEILIND ELEC)	
25	6	—	6		D20418-2	SCREW LOCK ASSY, FEMALE (CANNON)	

SIZE	CODE IDENT NO.		REV	SHEET
A	94117	PL	—	3
		1089624		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
1	1	1	D		108950561	PANEL, REAR	
2	1	1	D		108954361	CKT CD ASSY INTENSIFIER/DRIVER	
3	2	2			1012241201	CONN, PHOTOEN, 5 POS	
4	2	2			DAC-153	CONN, ELEC 15 PIN (ITT CANNON)	
5	1	1			U6-911A/U	CONN BNC	
6	2	2			330620	BUSHING (MM)	
7	4	4			MS51957-4	SCR, MACH, PAN HD. 086-56 X. 3/16	
8	4	4			MS35649-22A	NUT, FLAIN HEX # 2-56	
9	4	4			MS15795-202	WASHER, FLAT METAL # 2	
10	4	4			MS35338-134	WASHER, LK6 # 2	
11	4	4			MS51957-15	SCR, MACH, PAN HD. 112-40 X. 38 L6	
12	7	7			MS15795-803	WASHER, FLAT METAL # A	
13	6	6			MS35338-135	WASHER, LK6 # A	
14	1"	1"			754005P1	TEFLON SVB	
15	12"	12"			270029PA	SIVG, HEAT SHRINK	
16	6"	6"			276011P101	WIRE ELEC AWG # 24 BRN	
17	6"	6"			276011P106	" " " " BLU	
18	6"	6"			276011P102	" " " " RED	
19	6"	6"			276011P105	" " " " GRN	
20	6"	6"			RG187	WIRE COAXIAL	
21	4"	4"			276011P169	WIRE ELEC AWG # 20 WHI	
22	150	150			DAC-152	CONN, ELEC 15 PIN (ITT CANNON)	
23	2	2					

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	F	A

108962A

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	GA	G5 G					
24	1	-			#379	LUG GROUND (HEILAND ELEC)	
25	8	8			D204117-2	SCREW LOCK ASY, FEMALE (CANNON)	
26							
27							
28	10"	10"			R76011P160	WIRE ELEC AWG #20 BLK	
29	1	1			MS77068-1	LUG SLDR STAR #4 HDW	
30	1	1			MS21044-C04	NUT LOCK 4-41 X .25	
31	1	1			155020 4	FUSE HOLDER WIRE (LITTLE)	
32	1	1			312.500	FUSE 3AG, .5 AMP (LITTLE FUSE)	
33	36"	36"			0-6125	POWER CORD 16-3 (ITT)	
34	1	1			512800	POWER MODULE (APOPIAN)	
35	1	1			WL5977427	WIRE LIST	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

10896224

REV F SHEET 5

REVISIONS

REVISION STATUS OF EACH SHEET

SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13																				
REVISION	C	B	A	A	C	-	-	-	-	-	-	-	-																				
14	15	16	17	18	19	20	21	22	23	24	25	26	27																				
28	29	30	31	32	33	34	35	36	37	38	39	40	41																				
42	43	44	45	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>LTR</th> <th>DESCRIPTION</th> <th>DATE</th> <th>APPROVED</th> </tr> </thead> <tbody> <tr> <td>-</td> <td>REL FOR PROD.</td> <td>DEC 77</td> <td>AS/RIB</td> </tr> <tr> <td>A</td> <td>REV PER ECO 76127</td> <td>6 JAN 78</td> <td>MG/RIB</td> </tr> <tr> <td>B</td> <td>REV PER ECO 76145</td> <td>10 MAR 78</td> <td>RP/RIB</td> </tr> <tr> <td>C</td> <td>REV PER ECO 96484</td> <td>25 JUN 80</td> <td>JL/WL</td> </tr> </tbody> </table>										LTR	DESCRIPTION	DATE	APPROVED	-	REL FOR PROD.	DEC 77	AS/RIB	A	REV PER ECO 76127	6 JAN 78	MG/RIB	B	REV PER ECO 76145	10 MAR 78	RP/RIB	C	REV PER ECO 96484	25 JUN 80	JL/WL
LTR	DESCRIPTION	DATE	APPROVED																														
-	REL FOR PROD.	DEC 77	AS/RIB																														
A	REV PER ECO 76127	6 JAN 78	MG/RIB																														
B	REV PER ECO 76145	10 MAR 78	RP/RIB																														
C	REV PER ECO 96484	25 JUN 80	JL/WL																														

**SA SANDERS ASSOCIATES, INC.** NASHUA, NEW HAMPSHIRE  
**WIRE LIST**  
**CARD CAGE ASSY**

CODE IDENT NO. **94117** WL **1089646**  
 SIZE **A** SCALE SHEET **1** OF **7**

CONT NO. **1086917** GRA-7  
 DATE **12/14/77**  
 DR **W. H. H. 6 OCT 77**  
 APP **W. H. H.**  
 CHK **W. H. H.**  
 DEV **W. H. H.**  
 ENGR **W. H. H.**  
 PROJ **W. H. H.**

**PRODUCTION**  
**CHANGE BY ECO ONLY**  
 MFG **W. H. H. 12-14-77** USED ON APPLICATION

PARTS LIST SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THE PARTS LIST, WIRE LIST, AND DRAWING COMBINED. SYMBOL † INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG INTERPRET DWG PER 815002



WIRE LIST

WIRE NUMBER	FUNCTION CODE	COLOR	LENGTH	FROM			TO			NOTE
				LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)	
001	276011P139	WHT		J5 SOLDER	1	.19	TB2 2-350800-2	3		
002				J5 SOLDER	7	.19	TB2 2-350800-2	5		
003				J5 SOLDER	4	.19	A1XA10 7400824P004	50		
004				J5 SOLDER	3	.19	A1XA7 7400824P004	47		
005				J5 SOLDER	6	.19	TB2 2-350800-2	1		
006				J5 SOLDER	5	.19	TB2 2-350800-2	6		
007				S2 SOLDER	1	.19	TB2 2-350800-2	1		
008	276011P139	WHT		S2 SOLDER	+V	.25	TB2 2-350800-2	2		
009	270017P5			PS1 34171	+OUT	.19	A1BUS +5V 7011466P007	-	NOTE 1	
010	276011P139	WHT		S1 SOLDER	+V	.19	TB2 2-350800-2	2		
011				A1XA8 7400824P004	5.3	.25	TB2 2-350800-2	4		
012				J2 SOLDER	1	.19	TB2 2-350800-2	3		
013				S1 SOLDER	GND	.19	TB2 2-350800-2	4		
014	276011P139	WHT		J2 SOLDER	5	.19	S2 SOLDER	GND .25		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
SEE SHEET ONE FOR REVISION DESCRIPTION  
LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.

A 94117 WL 1089646

REV. B

SHEET 2

WIRE LIST

WIRE NUMBER	FUNCTION CODE	COLOR	LENGTH	FROM			TO			NOTE
				LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)	
015										
016										
017	276011P139	WHT		S2 SOLDER	GND	.25	S1 SOLDER	GND	.25	
018	276011P139	WHT		S1 SOLDER		.25	T82 2-350800-25		.25	
019										
020										
021										
022										
023	276011P139	WHT		A1XA16 7400824P004	33 CASE	.19		SOLDER	E1 .25	
024	276011P189	WHT		7011466P001		.25	7011466P002		E3 .25	
025	276011P139	WHT		T82- 2-350800-2	3 .25		A1 7011466P010	+SVBUS	.25	
026										
027	276011P189	WHT		FL1 SOLDER	N	.19	T81 2-350800-2		2 .25	
028	276011P190	BLK		PSI 7011466P001	4 .25		T81 2-350800-2		3 .25	TWIST WITH 0.96

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
SEE SHEET ONE FOR REVISION DESCRIPTION  
LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
A 94117 WL 1089646

REV. A SHEET 3

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM		TO		NOTE
	WIRE PART NUMBER	WIRE PART NUMBER			LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	
029									
030	276011P139		WHT		XDS1 SOLDER	2 .19	FL1 SOLDER	N .25	
031	276011P185		GRN		FL1 SOLDER	GND .19	7011466P002	E3 .25	
032	7012642P011		BLK		B2		7B1	3 .25	
033	MOLDED CORD		BLK		B2		7B1	5 .25	PART OF 032
034	7012642P011		BLK		B1		7B1	3 .25	
035	MOLDED CORD		BLK		B1		7B1	4 .25	PART OF 034
036	276011P189		WHT		P51 7011466P001	1 .25	7B1 2-350800-2	4 .25	TWIST WITH 028
037									
038	276011P190		BLK		CBI LOAD 2-350804-2	5 .19	7B1 2-350800-2	5 .25	
039	276011P139		WHT		XDS1 SOLDER	1 .19	7B1 2-350800-2	5 .25	
040	276011P189		WHT		P51 7011466P001	11 .25	AIBUS SOLDER	W1 .19	
041	276011P189		WHT		P51 7011466P001	10 .25	SOLDER	E2 .19	
042									

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE A  
 CODE IDENT. NO. 94117  
 WL 1089646

REV. A  
 SHEET 4

WIRE NUMBER	FUNCTION CODE	COLOR	LENGTH	FROM		TO		NOTE
				LOCATION (REFERENCE DESIGNATION)	TERM. (INCHES)	LOCATION (REFERENCE DESIGNATION)	TERM. (INCHES)	
043				A1 7011466P007	E1 -	PS1 34171	-OUT	NOTE 1
044								
045	276011P189	WHT		PS1 7011466P001	.13 .25	SOLDER	E1 12	
046	276011P189	WHT		PS1 7011466P001	.9 .25	PS1 7011466P001	12 .25	
047								
048	276011P139	WHT		PS1 7011466P001	.14 .25	A1 H5V BUS 7011466P010	.19	
049	276011P139	WHT	1.00	S2 SOLDER	.19	S2 SOLDER	1 .19	
050			1.00	S1 SOLDER	.19	S1 SOLDER	1 .19	
051	PPL2-			J2 SOLDER	.19	A1XA16 7400824P004	21 .19	
052	+5V			J2 SOLDER	.19	J1 SOLDER	1 .19	
053	PPS2-			J2 SOLDER	.19	A1XA9 7400824P004	81 .19	
054	GND			J2 SOLDER	.19	J1 SOLDER	5 .19	
055	PPL1-			J1 SOLDER	.19	A1XA16 7400824P004	22 .19	
056	PPSI-	WHT		J1 SOLDER	.19	A1XA9 7400824P004	82 .19	

WIRE LIST

SIZE CODE IDENT. NO.

A 94117 WL 1089646

REV. C

SHEET 5

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
SEE SHEET ONE FOR REVISION DESCRIPTION  
LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM			TO			NOTE				
	WIRE PART NUMBER	WIRE PART NUMBER			LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM.	STRIIP (INCHES)	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER		TERM.	STRIIP (INCHES)		
					FLI SOLDER		L	.19	CBI LINE	2-350804-2			.19		
057	27601/P190		BLK												
058															
059															
060	27601/P139		WHT		AIXA7 7400824P004	44		7B2 2-350800-2			1				
061	27601/P139		WHT		AIXA7 7400824P004	43		7B2 2-350800-2			6				
062															
SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTION LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( ) PREFIX PARTIAL REFERENCE DESIGNATIONS WITH											SIZE	CODE IDENT. NO.	REV.	SHEET	
											A	94117	WL	1089646	6

OP-233 REV D



REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
-	REL FOR PREPROD		

1. INSULATE BRAID PN 270017P5 WITH  
TEFLON INSULATION TUBING PN 27006P013

NOTES:

SIZE	CODE IDENT NO.	DWG NO.
A	94117	WL 1089646
SCALE		SHEET 7 OF

OP-909 REV-A



REVISION STATUS OF EACH SHEET													REVISIONS						
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	LTR	DESCRIPTION	DATE	APPROVED		
REVISION	D	C	C	C	D	C	B							-	ORIGINATED PER ECO 76192 REL FOR PROD	28 JUL 78	WG/ RLB		
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29				
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	A	REV PER ECO 76235	30 AUG 78	WG/RLB
																B	REV PER ECO 76451	24 SEP 79	WG/WL
																C	REV PER ECO 96278A	31 JAN 80	DM/pep
																D	REV PER ECO 96488	27 JUN 80	JL/WL

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE

WIRE LIST,  
CARD CAGE ASSY

SIZE CODE IDENT NO. A 94117 WL 1089837

SCALE SHEET 1 OF 7

<b>PRODUCTION CHANGE BY ECO ONLY</b>	CONT NO.	
	DR	DATE
APPD	28 JUN 78	
CHK		
DEV		
ENG		
GRG		
PROJ		
1086917	GRA-7	
NEXT ASSY	USED ON	
APPLICATION		
MFG	W. N. L. 8-23-78	

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM		TO		NOTE	
	WIRE PART NUMBER	WIRE PART NUMBER			LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER		TERM. STRIP (INCHES)
001	276011P139		WHT		J5 SOLDER	J5 SOLDER	TB2 2-350800-2	TB2 2-350800-2	3 .19	
002					J5 SOLDER	J5 SOLDER	TB2 2-350800-2	TB2 2-350800-2	5 .19	
003					J5 SOLDER	J5 SOLDER	AIXA10 7400824P004	AIXA10 7400824P004	50 .19	
004					J5 SOLDER	J5 SOLDER	AIXA7 7400824P004	AIXA7 7400824P004	47 .19	
005					J5 SOLDER	J5 SOLDER	TB2 2-350800-2	TB2 2-350800-2	1 .25	
006					J5 SOLDER	J5 SOLDER	TB2 2-350800-2	TB2 2-350800-2	6 .25	
007					S2 SOLDER	S2 SOLDER	TB2 2-350800-2	TB2 2-350800-2	1 .25	
008	276011P139		WHT		S2 SOLDER	S2 SOLDER	TB2 2-350800-2	TB2 2-350800-2	2 .25	
009	270017P5				PSI 34171	PSI 34171	AIBUS 7011466P007	AIBUS 7011466P007	+5V —	NOTE 1
010	276011P139		WHT		S1 SOLDER	S1 SOLDER	TB2 2-350800-2	TB2 2-350800-2	2 .25	
011					AIXA8 7400824P004	AIXA8 7400824P004	TB2 2-350800-2	TB2 2-350800-2	4 .25	
012					J2 SOLDER	J2 SOLDER	TB2 2-350800-2	TB2 2-350800-2	3 .25	
013					S1 SOLDER	S1 SOLDER	TB2 2-350800-2	TB2 2-350800-2	4 .25	
014	276011P139		WHT		V2 SOLDER	V2 SOLDER	S2 SOLDER	S2 SOLDER	5 .25	

WIRE LIST

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.

A 94117 WL 1089837

REV. C SHEET 2



WIRE LIST										
WIRE NUMBER	FUNCTION CODE	COLOR	LENGTH	FROM			TO			NOTE
				WIRE PART NUMBER	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	
015										
016										
017	276011P139	WHT		S2 SOLDER	GND		.25	S1 SOLDER	GND	.25
018	276011P139	WHT		S1 SOLDER			.25	B2 2-350800-2		.25
019										
020										
021										
022										
023										
024	276011P189	WHT		PSI CASE 7011466P001	GND		.25	7011466P002	E3	.25
025	276011P139	WHT		TB2 - 2-350800-2		3	.25	A1 7011466P010	+5V BUS	.25
026										
027	276011P189	WHT		FLI SOLDER	N		.19	TB1 2-350800-2		.25
028										

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
**A 94117**

**WL 1089897**

REV. C SHEET 3

WIRE NUMBER	FUNCTION CODE	COLOR	LENGTH	FROM		TO		NOTE
				LOCATION (REFERENCE DESIGNATION)	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION)	TERM. STRIP (INCHES)	
	WIRE PART NUMBER			CONTACT PART NUMBER		CONTACT PART NUMBER		
029								
030	276011P139	WHT		XDSI SOLDER	2	FLI SOLDER	N	
031	276011P185	GRN		FLI SOLDER	.19 GND	7011466P002	E3	
032	7012642P011	BLK		B2		TBI	3	
	MOLDED CORD	BLK		B2		2-350800-2	4	PART OF 032
034	7012642P011	BLK		B1		2-350800-2	3	
	MOLDED CORD	BLK		B1		2-350800-2	4	PART OF 034
036								
037								
038	276011P190	BLK		CBI LOAD	2-350804-2	TBI	5	
039	276011P139	WHT		XDSI SOLDER	.19	TBI	5	
040	276011P189	WHT		PSI TB2	7	AI BUS	WI	
				7011466P001	.25	SOLDER	.19	
041	276011P139	WHT		PSI TB1	4	AIXA16	33	
				7011466P001	.25	7400824P004	.19	
042								

WIRE LIST

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
 A 94117 WL 1089837

REV. C SHEET 4

WIRE NUMBER	FUNCTION CODE WIRE PART NUMBER	COLOR	LENGTH	FROM		TO		NOTE
				LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	
043	270017P5			A1 7011466P007	E1	PS1 34171	-5V	NOTE 1
044								
045								
046								
047								
048	276011P139	WHT		PS1 TB2 7011466P001	2 .25	A1 +15V BUS 7011466P010	.19	
049	276011P139	WHT	1.00	S2 SOLDER	2 .19	S2 SOLDER	.19	
050			1.00	S1 SOLDER	2 .19	S1 SOLDER	.19	
051	PPL2-			J2 SOLDER	2 .19	A1XA16 7400824P004	.19	
052	+5V			J2 SOLDER	1 .19	J1 SOLDER	.19	
053	PPS2-			J2 SOLDER	4 .19	A1XA9 7400824P004	.19	
054	GND			J2 SOLDER	5 .19	J1 SOLDER	.19	
055	PPL1-			J1 SOLDER	2 .19	A1XA16 7400824P004	.19	
056	PPS1-			J1 SOLDER	4 .19	A1XA9 7400824P004	.19	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
SEE SHEET ONE FOR REVISION DESCRIPTION  
LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( ) PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE  
A 94117 WL 1089837  
CODE IDENT. NO.

REV. D SHEET 5

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM			TO			NOTE		
	WIRE PART NUMBER	WIRE PART NUMBER			LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. (INCHES)	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. (INCHES)			
057	276011P190		BLK		FLI	SOLDER		L	.19		CBI	LINE	
058											2-350800-2	.19	
059													
060	276011P139		WHT		AIXA7	44	TB2				TB2	1	
061	276011P139		WHT		AIXA7	43	TB2				2-350800-2	.25	
062	SUPPLIED		RED		PSI TBI	1	PSI				2-350800-2	.25	
063	SUPPLIED		BLK		7011466P001	2	PSI				34150	+5V	
064	276011P189		WHT		PSI TBI	5	AI				34150	-5V	
065	276011P190		BLK		PSI TB2	8	7011466P10				AI	EI	
066	276011P189		WHT		PSI TBI	9	TBI				2-350800-2	.25	
067	276011P189		WHT		7011466P001	6	TBI				2-350800-2	.25	
068	RCR07G512JS				PSI TB2	4	PSI TBI				PSI TBI	6	
					7011466P001	4	7011466P001				7011466P001	.25	
					PSI TBI	4	PSI TBI				7011466P001	5	
					7011466P001	4	7011466P001				7011466P001	5	

WIRE LIST

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
**A 94117**

**WL 1089837**

REV. C SHEET 6



REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
	<i>SEE SHEET 1</i>		

*1. INSULATE BRAID PN 270017P5 WITH TEFLON  
INSULATION TUBING PN 27006P018*

*NOTES:*

SIZE	CODE IDENT NO.	DWG NO.
<i>A</i>	<i>94117</i>	<i>WL 1089837</i>
SCALE	<i>—</i>	SHEET <i>7</i> OF

OP-909 REV-A



REVISION STATUS													REVISIONS				
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED	
PARTS	REV	D	-	-	C	B							-	REL FOR PROD	18 SEPT 78	AG/RUB	
	SH	13	14	15	16	17	18	19	20	21	22	23	24	A	REV PER ECO 76317	23 APR 79	WG/WL
	REV													B	REV PER ECO 96213	24	RPM/WL
														C	REV PER ECO 96355A	Nov	
														D	REV PER ECO 96449	80	

DWG REV	D
WL REV	X

3. FOR AUTHORIZED COMPONENT SUBSTITUTION LIST SEE DWG SA1088588.

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN B15002 SUPPLEMENT THIS DRAWING.

SA SANDERS ASSOCIATES, INC.		MASHUA, NEW HAMPSHIRE	
CIRCUIT CARD ASSY,			
GRAPHIC CONTROLLER			
SIZE	CODE IDENT NO.	SHEET 1 OF 6	
A	94117 PL 1089845		

CONT NO.	DATE
DR	9/22/78
APPD	
CHK	
ENG	
DRG	
PROJ	

APPLICATION	USED ON
FINAL	GRA-7
NEXT ASSY	

PRODUCTION  
CHANGE BY ECO ONLY

MFG W. Kod 9-27-78

QP-1039 REV B

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
1	1		E		1039846G1	CIRCUIT CARD SUBASSY GRAPHIC CONTROLLER	
2	2		A		03103070P005	MED SN74500N 2-INPUT NAND GATE QUAD U9, 38	
3	2		A		0310200P001	MED SN7402N QUAD 2-INPUT NOR GATE U19, 69	
4	3		A		03102070P035	MED SN74502N QUAD 2-INPUT NOR GATE U28, 47, 78	
5	2		A		0310202P001	MED SN7404N HEX INVERTER U30, 70	
6	1		A		0310319P001	MED SN74504N HEX INVERTER U39	
7	1		A		0310204P001	MED SN7407N HEX BUFFER / DRIVER U20	
8	1		A		0310379P001	MED SN74510N TRIPLE INPUT NAND GATE U18	
9	1		A		0310370P019	MED SN7428N QUAD 2-INPUT NOR BUFFER U59	
10	1		A		0310320P001	MED SN74520N DUAL 4-INPUT NAND GATE U40	
11	1		A		0310248P002	MED SN7432N QUAD 2-INPUT OR GATE U68	
12	1		A				

SIZE CODE IDENT NO.

**A 94117 PL**

1089345

REV - SHEET 2

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
13	1		A		0310205P002	MED SN7438N QUAD 2-INPUT NAND BUFFER U17	
14	2		A		0310094P001	MED SN7474N DUAL-D-FLIP-FLOP U58, U79	
15	1		A		7013070P026	MED SN74574N DUAL-D-FLIP-FLOP U18	
16	3			07263	F-95109PC	MED F-95109PC DUAL-JK-FLIP-FLOP U7, 29, 57 (FAIR)	
17	2		A		7013070P077	MED SN745138N 3-8 LINE DECODE U67, 77	
18	3			01295	SN745157N	MED SN745157N QUAD 2-LINE-TO-1 LINE MUX U16, 36, 76 (TI)	
19	3		A		0310279P001	MED SN74174N HEX/QUAD-D-FLIP-FLOP U6, 26, 46	
20	1			01295	SN745174N	MED SN745174N HEX/QUAD-D-FLIP-FLOP U49 (TI)	
21	1			01295	SN745182N	MED SN745182N LOOK AHEAD CARRY GEN U51 (TI)	
22	1			01295	SN745257N	MED SN745257N QUAD 2-LINE-TO-1 LINE MUX TRI-STATE U66 (TI)	
23	2		A		7013070P013	MED SN745153N DUAL 4-LINE-TO-1 LINE MUX U165, 75	
24	2		A		0310281P001	MED SN74157N QUAD 2-LINE-	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1081545

REV — SHEET 3



**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
25	1		A		7012070P053	TO-1 LINE MUX MED SN74S151N SINGLE 8- LINE-TO-1 LINE MUX U37 MED F93S16PC 4BIT BINARY COUNTER U52,62 (FAIR) MED F9541PC QUAD AND GATE U80 (FAIR)	
26	2			07263	F93S16PC		
27	1			07263	F9541PC		
28	1			07263	F9542PC		
29	3		A		0310280P001	MED F9542PC DUAL 2-4- INPUT AND/OR GATE U48 (FAIR) MED F9024PC DUAL -JK-FLIP- FLOP U10,27,60	
30							
31							
32	4			50364	6701-J	MED 6701-J 4-BIT EXPANDABLE BI POLAR MICRO-CONTROLLER U1,11,31,41 (MMI)	
33							
34	9			34335	AM2918PC	MED AM2918PC U4,5,14,15,24,25,34,35, 61 (AMD)	
35							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1089845

REV - SHEET 4

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
36							
37	10		A		7550001P066	RES RC07GF511J 510 $\Omega$ , $\pm$ 5%, .25W R1-3, 5-9, 14, 18	
38	6		A		7550001P073	RES RC07GF102J 1K $\Omega$ , $\pm$ 5%, .25W R4, 12, 13, 16, 17, 19	
39	1		A		7550001P080	RES RC07GF202J 2K $\Omega$ , $\pm$ 5%, .25W R11	
40	2		A		7550001P060	RES RC07GF301J 300 $\Omega$ , $\pm$ 5%, .25W R15, 20	
41	26		A		7502023P055	CAP, CK05BX103K .01MF, $\pm$ 10%, 100V, C-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	
42	1		A		7502023P037	CAP CK005BX102K .1MF, 100V, $\pm$ 10% C2	
43	1		A		7011451P019	CAP CSR13C396KL 39MF, 10V $\pm$ 10% C1	
44							
45	10		D	72619	555-2007	LED, DSI, 2, 3, 4, 5, 6, 7, 8, 9, 10 (DIALCO)	
46	1				1086608P18	CONN, ELEC 98 PIN, J1	
47	2		A		600107P1	CARD EJECTOR	
48	2				6010	EYELET	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

1089895

REV C SHEET 5

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
49	2		A		630003P14	EYELET	
50	REF		A		1088669	MOD. DWG. 1086758 TO 1089845	
51	AR		A		93002P1	SOLDER	
52	REF		E		1089847	LOGIC DIAGRAM, GRAPHIC CONTROLLER	
53	REF		A		8150003	PWB, REQ FOR	
54	REF		A		778000	APPL OF EPOXY MKG CMPD	
55	/				1086960P1	PROGRAMMED PROM (6301-1J)	U44
56	/				1086960P2		U45
57	/				1086947P1		U3
58	/				1086947P42		U13
59	/				1086947P2		U23
60	/				1086947P44		U33
61	/				1086947P3		U43
62	/				1086947P4		U53
63	/				1086947P51		U56
64	/				1086947P5		U63
65	/				1086947P52		U64
66	/				1086947P6		U71
67	/				1086947P7		U72
68	/				1086947P8	PROGRAMMED PROM (6306-1J)	U73
69	/				1086870P10	PROGRAMMED PROM (6331-1J)	U75

SIZE CODE IDENT NO.

A 94117 PL

1089845

REV B

SHEET 6

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

REVISION STATUS													REVISIONS			
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED
REVISIONS	—	—	—	—	—	—	—	—	—	—	—	—	—	REL FOR PROD	26 MAR 80	RUB
PARTS	SH	13	14	15	16	17	18	19	20	21	22	23	24			
LIST	REV	—	—	—	—	—	—	—	—	—	—	—	—			
	DWG REV	—														
	WL REV	X														

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

<b>SA SANDERS ASSOCIATES, INC.</b>		WASHUA, NEW HAMPSHIRE	
CONTROLLER		CABINET ASSY	
CODE IDENT NO.	SIZE	94117	PL 5976102
SHEET 1 OF 3			

**PRODUCTION**  
CHANGE BY ECO ONLY

MFG *[Signature]*

CONT NO.	DR	R	APP	CHK	E	L	M	P	S	T	C
	21 JAN 80		25 FEB 80		3/5/80						
	FINAL		GRA-7		USED ON						
			APPLICATION								

DWG SIZE **E**

OP-1039 REV B

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
1	1		E		5976104GI	CABINET, EQUIPMENT	
2	1		D		5976125P2	PANEL, COVER	
3	2		D		5976125PI	PANEL, COVER	
4	2		U		5976139PI	RAIL, MOUNTING	
5	1		U		5976145PI	BRACKET, CABLE SUPPORT	
6	2		U		5976131P2	BAFFLE, CENTER	
7	4		U		5976130PI	BAFFLE, TOP AND BOTTOM	
8	1		U		5976137PI	BAFFLE, CABLE ENTRY	
9	1		B		5976129PI	CLAMP, FILTER	
10	2		B		5976142GI	CABLE, GROUND	
11	4		B		5976146PI	SHIM, SIDE	
12	1		B		4170721PI	FILTER	
13	1		B		5976106PI	BEZEL	
14	1		U		5976107PI	COLLAR, BEZEL	
15							
16							
17							
18							
19							
20							
21	20		A		MS24693-C268	SCR, FL HD .190-32 UNF x .25 LG	
22	2		A		MS51957-79	SCR, MACH, PN HD.250-20UNC x .50LG	
23							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

**A 94117 PL** 5976102  
 REV - SHEET 2

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
24	32		A		M551958-64	SCR, MACH, PN HD. .190-32UNFX.62LG	
25	8		A		M551958-61	SCR, MACH, PN HD. .190-32UNFX.37LG	
26							
27	1		A		M551957-30	SCR, MACH, PN HD. .138-32UNC X.50 LG	
28	2		A		MS15795-810	WASHER, FLAT .281 I.D. X. .6250. D.	
29	40		A		MS15795-808	WASHER, FLAT .219 I.D. X. .4380. D.	
30	1		A		MS15795-805	WASHER, FLAT .156 I.D. X. .3120. D.	
31							
32	2		A		MS35338-139	WASHER, LOCK .255 I.D. X. .4890. D.	
33							
34	1		A		MS35338-138	WASHER, LOCK .194 I.D. X. .3340. D.	
35	10		A		MS35333-73	WASHER, LOCK .195 I.D. X. .3650. D.	
36							
37	14"		-	95987	CSG-06-BLK	GROMMET, NYTRIM EXTRUDED, BLK	
38							
39	AR		A		4174249PI	ADHESIVE, M6203	
40	AR		-		A-12	ADHESIVE CEMENT (ARMSTRONG)	
41	REF		E		5976153	INTERCONNECTION DIAG	
42	REF		E		5976154	INSTALLATION DWG	
43							
44							
45							
46							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

5976102

REV - SHEET 3

REVISION STATUS													REVISIONS			
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED
REVISION	E	B	C	-	A								-	REV PER ENG CHG		
SH	13	14	15	16	17	18	19	20	21	22	23	24	A	REL FOR PROD	5 MAR 80	<i>WGB</i>
REVISION													B	REV PER ECO 96366	2 JUL 80	<i>WGB</i>
													C	REV PER ECO 101012	16 OCT 80	<i>WGB</i>
													D	REV PER ECO 96987	13 NOV 80	<i>WGB</i>
													E	REV PER ECO 97059	16 JAN 81	<i>WGB</i>

DR	14 FEB 82
APP	25 FEB 82
CHK	
DEV	23 FEB 82
ENG	25 FEB 82
GRG	25 FEB 82

SA SANDERS ASSOCIATES, INC.	MASHUA, NEW HAMPSHIRE
PANEL ASSY SYSTEM INTERCONNECT	
SIZE	CODE IDENT NO.
A	94117 PL 5976105

CONT NO.	
DR	14 FEB 82
APP	25 FEB 82
CHK	
DEV	23 FEB 82
ENG	25 FEB 82
GRG	25 FEB 82

FINAL	GRA 7
NEXT ASSY	USED ON
APPLICATION	

PRODUCTION
CHANGE BY ECO ONLY

MFG	OP-1039 REV B
DWG SIZE	D
SHEET	1 OF 5

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.  
 1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

PARTS LIST					SYMBOL	
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT		PART OR IDENTIFYING NO.
	G	GZ			G3	
1	1	1	F		5976108P1	PANEL, SYSTEM INTERCONNECT CABLE, ASSY, MULTI PORT INTERFACE MULTI PORT INTERFACE MULTI PORT INTERFACE COMPUTER INTERFACE COMPUTER INTERFACE PHOTO PEN XYZ INPUT CABLE ASSY X Y Z INPUT SCREW LOCK ASSY (ITTCANNON) SEALING, LK, RETAINING COMP
2	1	1	D		1089622G2	
3	1	1			1089620G11	
4	1	1			1089620G12	
5	1	1			1089620G13	
6	1	1			1089620G14	
7	1	1			1089623G3	
8	1	1			1089623G4	
9	1	1			5976150G1	
10	1	1			5976149G1	
11	1	1			G2	
12	1	1			G3	
13	1	1			G4	
14	1	1			G5	
15	1	1			G6	
16	1	1			G7	
17	1	1	D		5976149G8	
18						
19						
20						
21						
22	14	14	-		D20418-Z	
23	AR	AR	A		93012P1	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
 A 94117 PL

5976105

REV B SHEET Z



BRUNING 39825

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G1	G2					
24	2	2	A		MS51957-4	SCREW, MACH PN HD. 086-56 X .31LG	
25	2	2	A		MS15795-802	WASHER FLAT METAL #2	
26	2	2	A		MS35338-134	WASHER LKG #2	
27	2	2	A		MS35649-224	NUT, PLAIN, HEX #2	
28	2	2	A		778000	APPL OF EPOXY MKG CMPD	
29	REF	REF	A		5976153	INTERCONNECTION DIAGRAM	
30	REF	REF	F		5976149G9	CABLE ASSY, XYZ INPUT	
31	REF	REF	D		G10		
32	-	-			G11		
33	-	-			G12		
34	-	-			G13		
35	-	-			G14		
36	-	-			G15		
37	-	-			G16		
38	-	-			G17		
39	-	-			G18		
40	-	-	D		5976149G18	CABLE ASSY, XYZ INPUT	
41	-	-	D		1089620G15	MULTIPOINT INTERFACE	
42	-	-	D		1089620G16		
43	-	-	D		1089620G17		
44	-	-	D		1089620G18		
45	-	-	D			MULTIPOINT INTERFACE	

Change 1

2-194B

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.		SIZE	CODE IDENT NO.	REV	SHEET
		A	94117 PL	C	3
		5976105			

OP-277 REV C

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G4	G5 G					
1	1	1	F		5976108PI	<p>PANEL, SYSTEM INTERCONNECT CABLE, ASSY, MULTIPOINT INTERFACE</p> <p>MULTIPOINT INTERFACE</p> <p>COMPUTER INTERFACE</p> <p>COMPUTER INTERFACE</p> <p>PHOTOPEN</p> <p>XYZ INPUT</p> <p>CABLE ASSY, XYZ INPUT</p> <p>SCREW LOCK ASSY (ITT CANNON) SEALING, LKG, RETAINING COMP</p>	
2	1	1	D		1089622G2		
3	1	1			1089620G11		
4	1	1			1089620G12		
5	1	1			1089620G13		
6	1	1			1089620G14		
7	1	1			1089623G3		
8	1	1			1089623G4		
9	1	2			5976150G1		
10	1	1			5976149G1		
11	1	1			G2		
12	1	1			G3		
13	1	1			G4		
14	1	1			G5		
15	1	1			G6		
16	1	1			G7		
17	1	1	D		5976149G8		
18							
19							
20							
21							
22	22	22			D20418-2		
23	AR	AR	A		93012PI		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL 5976105**

REV — SHEET 4

PARTS LIST				SYM		
ITEM NO.	QTY PER ASSY		DWG SIZE		CODE IDENT	PART OR IDENTIFYING NO.
	G 4	G 5		G		
24						
25	2	4	A		MS51957-4	SCREW, MACH PN HD .086-56 X .31LG
26	2	4	A		MS15795-802	WASHER, FLAT METAL #2
27	2	4	A		MS35338-134	WASHER, LKG #2
28	2	4	A		MS35649-224	NUT, PLAIN, HEX #2
29						
30	REF	REF	A		778000	APPL OF EPOXY MKG CMPD
31	REF	REF	F		5976153	INTERCONNECTION DIAGRAM
32		1	D		5976149G9	CABLE ASSY, XYZ INPUT
33		1			G10	
34		1			G11	
35		1			G12	
36		1			G13	
37		1			G14	
38		1			G15	
39		1			G16	
40		1			G17	
41		1			5976149 G18	CABLE ASSY, XYZ INPUT
42	1	1			1089620 G15	MULTIPOINT INTERFACE
43	1	1			G16	
44	1	1			G17	
45	1	1	D		1089620 G18	MULTIPOINT INTERFACE

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	A	5
			5976105

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM -SEE SPEC/SOURCE CONTROL DWG.

REVISION STATUS													REVISIONS				
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED	
PARTS	REV	H	B	E	C	F									REL FOR PROD	8 JAN 80	JL
	SH	13	14	15	16	17	18	19	20	21	22	23	24	A	REV PER ECO 96360	11 MAR 80	WG/WL
	REV													B	REV PER ECO 96413	16 APR 80	WG/WL
	LIST													C	REV PER ECO 96486 SEE WIRE LIST REVA	27 JUN 80	JL/WL
	DWG REV													D	REV PER ECO 96496	80	
	WL REV													E	REV PER ECO 96472	27 JUN 80	JL/WL
														F	REV PER ECO 96952	13 AUG 80	WG/WL
														G	REV PER ECO 96989	17 OCT 80	WG/WL
														H	REV PER ECO 96995	28 OCT 80	WG/WL

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

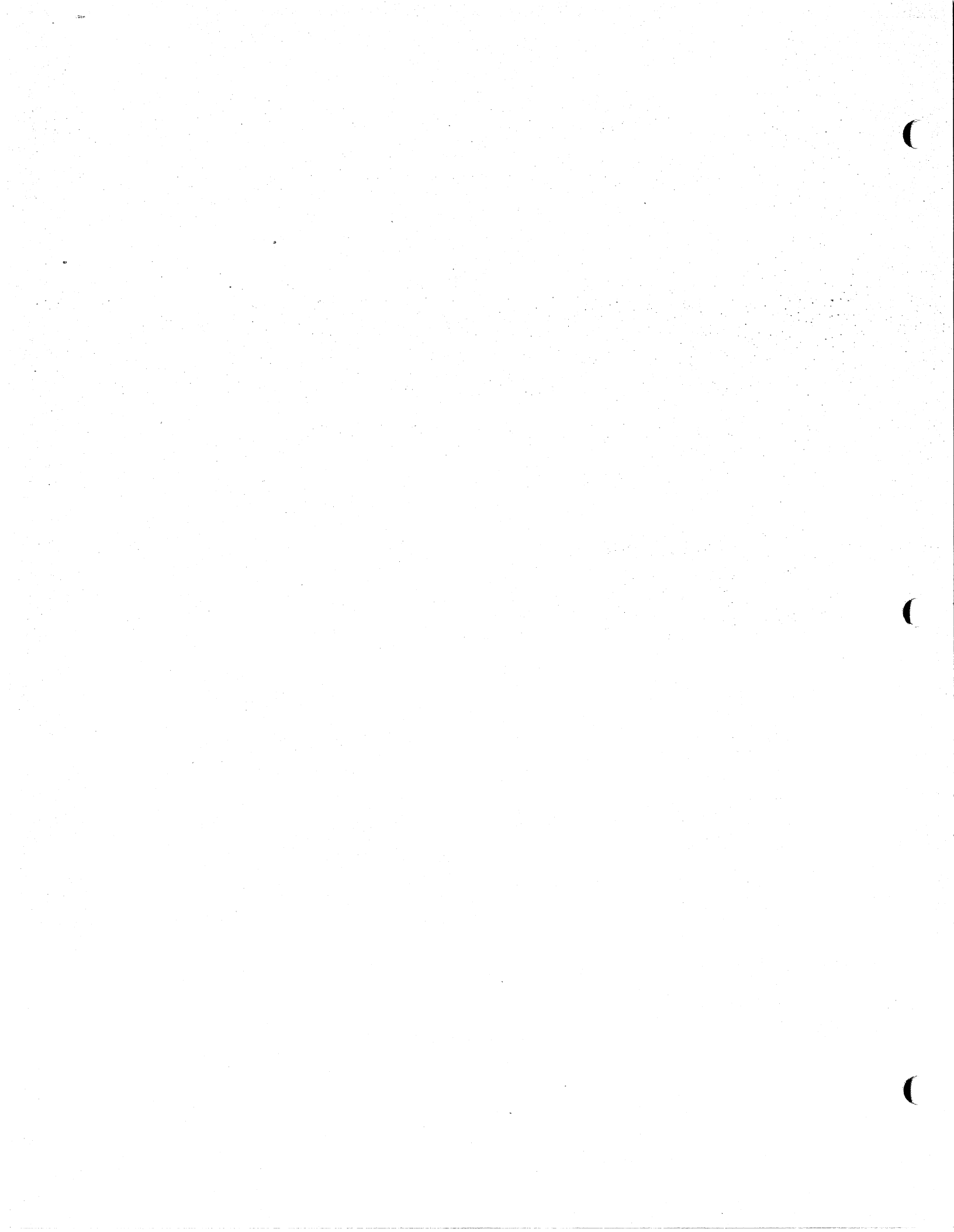
**PRODUCTION**  
CHANGE BY ECO ONLY

INFO: *11/9/80*

OP-1018 REV B

SA SANDERS ASSOCIATES, INC	NASHUA, NEW HAMPSHIRE	CARD CAGE ASSY
SIZE: A	CODE IDENT NO: 94117	PL5976112
DWG SIZE: E		SHEET 1 OF 5



**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
1	1		E		5976109 G1	CARD CAGE, GRAPHIC 7	
2	1		D		5976110 P1	BRACKET, CARD CAGE	
3	1		D		5976111 P1	BRACKET, CARD CAGE	
4	1		D		5976113 G1	PANEL, CONTROL, CARD CAGE	
5	1		D		1086769 P1	PLATE, CONNECTOR	A1
6	1		B		1086938 P1	BUS STRIP	W1
7	1		A/E		5976164 G1	WIRING HARNESS ASSY DC	
8	1		A/E		5976165 G1	WIRING HARNESS ASSY AC	
9	1		A		5976313 P1	KEYCAP, WHT, LEGEND	
10	1		A		5976313 P2	KEYCAP, WHT, LEGEND	
11	2		A		1088475 P1	TERMINAL BOARD	TB1/2
12	2		A		1088475 P2	INSULATOR STRIP	
13	2		A		7011973 P002	CLAMP, CABLE, .19 DIA	
14	2				7012642 P004	FAN, TUBE AXIAL	B1/2
15							
16							
17	2				7012241 P001	CONN, 5 POS	V1/2
18	2				7011466 P007	TERMINAL, LUG #4 STUD	
19							
20	2				34171	TERMINAL, .25	
21							
22							
23							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

5976112

REV B SHEET 2

PARTS LIST										
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM	SIZE		SHEET
	G	G						CODE IDENT NO.	REV	
24								A	94117	3
25									PL	5976112
26										
27	4"		A		M23053/8-006-C	SLEEVING, HEAT SHRINK, .25 DIA	F			
28	24"		A		270017 P5	BRAD, WIRE, .25 DIA				
29	24"				1/4 FR	EXPANDO SLEEVE (BEN/HAR)				
30										
31										
32										
33										
34										
35										
36										
37										
38	1		A		5977324PI	CIRCUIT BREAKER, 5A, CBI, #				
39	2				6-182-033	GUARD, FINGER (HOWARD	FL1			
40	REF				6EF1	FILTER, AC, 6A				
41	1			05245	17600	CORD, PWR, SUT INSUL				
42	10			70903	5605-28	WASHER, SHOULDER				
43	4			86928	8165-SS-0632-7	STANDOFF, 1/4 DIA, .138-32 INT THD X 1.25 LG				
44				06540						
45										
46	2				AML-12JBC8AA	SWITCH (MICROSWITCH) S1, 2				

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
47	1		-		MM23E06A7/115	POWER SUPPLY (LH RESEARCH) PSI	
48	4		-	06540	0319-A171-10A	SPACER, .38 LG	
49	1		-		3690J	JUMPER, BARRIER STRIP (KULKA)	
50							
51							
52							
53							
54	4		-		MS51957-4	SCR, MACH, PAN HD, .086-56 X, .31 LG	
55	2		-		MS51957-16	SCR, MACH, PAN HD, .112-40 X, .44 LG	
56	6		-		MS51957-30	SCR, MACH, PAN HD, .138-32 X, .50 LG	
57							
58	10		-		MS51957-28	SCR, MACH, PAN HD, .138-32 X, .38 LG	
59	5		-		MS51957-31	SCR, MACH, PAN HD, .138-32 X, .62 LG	
62	13		-		MS51957-44	SCR, MACH, PAN HD, .164-32 X, .44 LG	
63	8		-		MS51957-32	SCR, MACH, PAN HD, .138-32 X, .75 LG	
64	4		-		MS24693-C51	SCR, MACH, FLAT HD, .164-32 X, .62 LG	
65	4		-		MS35649-224	NUT, PLAIN HEX, .086-56	
66	4		-		MS35649-244	NUT, PLAIN HEX, .112-40	
67	5		-				
68							
69							
70					MS15795-802	WASHER, FLAT METAL, #2	
71	4		-				

**PARTS LIST**

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.		SIZE	CODE IDENT NO.	REV	SHEET
		A	94117 PL	C	4
			5976112		



**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
72	5				MS15795-803	WASHER, FLAT METAL, #4	
73	28				MS15795-805	WASHER, FLAT METAL, #6	
74	21				MS15795-807	WASHER, FLAT METAL, #8	
75							
76	4				MS35338-134	WASHER, LKG, #2	
77	5				MS35338-135	WASHER, LKG, #4	
78	20				MS35338-136	WASHER, LKG, #6	
79	13				MS35338-137	WASHER, LKG, #8	
80							
81							
82							
83	AR		A		7011460P036	WIRE, KAYNAR, 26 AWG	
84	AR				93002 P1	SOLDER	
85							
86	2				MS77068-2	SOLDER LUG	
87	REF		E		1086933	BACKPLANE WIRING DIAGRAM	
88	REF		E		5976114	SCHEMATIC DIAGRAM	
89	2				MS77068-4	SOLDER LUG	
90	2				2711-18550-PH40	WASHER SHOULDER (AMATON)	
91	2				CK06BX104K	CAP. 1.1UF, 200V (MIL-C-11015/19)	
92	8				MS35649-264	NUT, PLAIN HEX .138-32	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

**5976112**

REV F SHEET 5

REVISION STATUS OF EACH SHEET													REVISIONS				
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	LTR	DESCRIPTION	DATE	APPROVED
REVISION	B			B										-	REL FOR PROD	8 JAN 80	<i>[Signature]</i>
14	15	16	17	18	19	20	21	22	23	24	25	26	27	A	REV PER ECO 96486	27 JUN 80	<i>[Signature]</i>
30	31	32	33	34	35	36	37	38	39	40	41	42	43	B	REV PER ECO 96952	13 AUG 80	<i>[Signature]</i>
<p>NOTE 4: WIRES 007 &amp; 009 AT S1-GND TO BE CRIMPED TOGETHER IN 2-520084-2.</p> <p>NOTE 3: WIRES 004 &amp; 041 AT S1-IVs TO BE CRIMPED TOGETHER IN 2-520084-2.</p> <p>NOTE 2: WIRES 002 &amp; 042 AT S2-IVs TO BE CRIMPED TOGETHER IN 2-520084-2.</p> <p>NOTE 1: INSULATE BRAID PN 270017P5 WITH TEFLON INSULATION TUBING PN 27006P020</p>													<p>SA SANDERS ASSOCIATES, INC NASHUA, NEW HAMPSHIRE</p> <p>WIRELIST</p> <p>CARD CAGE ASSEMBLY</p>				
<p>PRODUCTION CHANGE BY ECO ONLY</p>													<p>SIZE A</p> <p>CODE IDENT NO. 94117</p> <p>SCALE NONE</p>				
<p>CONT NO.</p> <p>DR 10 DEC 79</p> <p>APP 10 DEC 79</p> <p>CHK BANSU</p> <p>DEL 10 DEC 79</p> <p>ENG 10 DEC 79</p> <p>FR 10 DEC 79</p> <p>GR 10 DEC 79</p> <p>5976112 GRAPHIC-7</p> <p>NEXT ASSY USED ON</p> <p>APPLICATION</p>													<p>SA SANDERS ASSOCIATES, INC</p> <p>WIRELIST</p> <p>CARD CAGE ASSEMBLY</p> <p>SIZE A</p> <p>CODE IDENT NO. 94117</p> <p>SCALE NONE</p>				
<p>1/9/80</p>													<p>SHEET 1 OF 4</p>				

WIRE LIST

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM			TO			NOTE
	WIRE PART NUMBER	WIRE PART NUMBER			LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. (INCHES)	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. (INCHES)	
001	5978963P009		WHT		S2	2-520084-2	0	TB2	2-350800-2	1	
002	5978963P009		WHT		S2	+Vs		TB2	2-350800-2	3	SEE NOTE 2
003	270017P5	+5V			PSI	OUTPUT+		AI BUS	+5V		SEE NOTE 1
004	5978963P009		WHT		S1	+Vs		TB2	7011466P010	3	SEE NOTE 3
005	DRET				AI	XAB-53		TB2		4	
006					J2	7400824P004	.25	TB2	2-350800-2	.25	
007	5978963P009		WHT		SOLDER		.19	TB2	2-350800-2	.25	
008	270017P5	-5V			S1	GND		TB2	2-350800-2	.25	SEE NOTE 4
009	5978963P009		WHT		PSI	OUTPUT-		AI	E1		SEE NOTE 1
010	5978963P009		WHT		S2	GND		S1	GND		SEE NOTE 4
011	5978963P209		WHT		S1	0		TB2	2-520084-2	.25	
012	5978963P009		WHT		PSI	CASE		CHASSIS	E1		
013	5978963P209		WHT		TB2	7011466P001	.25	AI	+5V BUS		
014	5978963P210		BLK		FLI	N		CBI	LINE		TWIST WITH WIRE 021
					PSI	TB1-6	.19	TB1	2-350804-2	.25	TWIST WITH WIRE 020
						7011466P001	.25		2-350800-2	.25	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
**A 94117**

**WL 5976112**

REV. — SHEET 2

WIRE LIST

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM		TO		NOTE
	WIRE PART NUMBER	WIRE PART NUMBER			LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	
015	5978963P214	GRN/YEL			FL1	GND	CHASSIS	E1	
016	7012642P011	BLK			B2		2-350800-2	3	
017	MOLDED CORD	BLK			B2		2-350800-2	4	PART OF 016
018	7012642P011	BLK			B1		2-350800-2	3	
019	MOLDED CORD	BLK			B1		2-350800-2	4	PART OF 018
020	5978963P209	WHT			PS1	TBI-7	2-350800-2	2	TWIST WITH WIRE 014
021	5978963P210	BLK			CBI	LOAD	2-350800-2	5	TWIST WITH WIRE 013
022	DRET 5978963P009	WHT			J2	5	TB2	4	
023					SOLDER	.19	2-350800-2	.25	
024	5978963P009	WHT			J2	2	A1	XA16-21	
025					SOLDER	.19	7400824P004	.19	
026					J2	1	J1	1	
027					SOLDER	.19	SOLDER	.19	
028	5978963P009	WHT			J2	4	A1	XA9-81	
					SOLDER	.19	7400824P004	.19	
					J2	5	J1	5	
					SOLDER	.19	SOLDER	.19	
					J1	2	A1	XA16-22	
					SOLDER	.19	7400824P004	.19	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
**A 94117** WL 5976112  
 REV. B SHEET 3

WIRE NUMBER	FUNCTION CODE				COLOR	LENGTH	FROM				TO				NOTE
	WIRE PART NUMBER	TERMINATION	LENGTH (INCHES)	TERMINATION			LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERMINATION	LENGTH (INCHES)	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERMINATION	LENGTH (INCHES)	
029	5978963P009	WHT			J1	SOLDER	4	.19	AI	XA9-82					
030	5978963P210	BLK			FLI	L			CBI	LINE					
031	5978963P009	WHT			AI	XA7-44			AI	XA7-44					
032	5978963P009	WHT			AI	XA7-43			AI	XA7-43					
033	5978963P209	WHT			CBI	LOAD			AI	2-350800-2					
034					PSI	TB2	6	.19	PSI	TB2					
035	LINE +				AI	XA16-33			PSI	J1					
036	+15BUSS				AI	7400824P004		.25	AI	7400824P004					
037	-15BUSS				AI	7011466P010		+15	AI	7011466P010					
038	DRET				AI	SOLDER			AI	WI, -15					
039	GCR-D				AI	7011466P010		E1	AI	7011466P010					
040	PPRN-D				AI	XA10-50			S2	LAMP					
041					AI	7400824P004			SI	2-520084-2					
042					SI	XA7-47		+Vs	SI	LAMP +				SEE NOTE3	
					S2	2-520084-2		+Vs	S2	LAMP +				SEE NOTE2	
	5978963P009	WHT			S2	2-520084-2			S2	LAMP +					

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
**A 94117**

**WL 5976112**

REV. **B**

SHEET **4**

REVISION STATUS												REVISIONS				
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED
PARTS	C	C	A										-	REL FOR PROD	1-14-80	RLO
REV													A	REV PER ECO 96364	19 MAR 80	RDM/WL
SH	13	14	15	16	17	18	19	20	21	22	23	24	B	REV PER ECO 96901	16 JUL 80	J1/WL
REV													C	REV PER ECO 96498		
LIST																

<p>2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.</p> <p>1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.</p>	<p>SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE</p> <p>120V CONTROLLER POWER PANEL ASSY</p> <p>SIZE CODE IDENT NO. A 94117 PL 5976119</p> <p>SHEET 1 OF 3</p>
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<p><b>PRODUCTION</b> CHANGE BY ECO ONLY</p>	<p>CONT NO. DR 17 DECE 15 1980</p> <p>CHK</p> <p>GRA-7</p> <p>USED ON</p> <p>APPLICATION</p>	<p>SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE</p> <p>120V CONTROLLER POWER PANEL ASSY</p> <p>SIZE CODE IDENT NO. A 94117 PL 5976119</p> <p>SHEET 1 OF 3</p>
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PARTS LIST				SYM	
ITEM NO.	QTY PER ASSY	DWG SIZE	CODE IDENT		PART OR IDENTIFYING NO.
	G   G				
1	1	F		5976115G1	PANEL, POWER
2	1	D		5976117G1	COVER, FILTER
3	1	-		58361-1/2	UTILITY BOX (STEEL CITY)
4	1	-		58-C-7	COVER, UTILITY BOX (STEEL CITY)
5	1	A		5976332 P1	CIRCUIT, BREAKER, CBI
6	1	-		C500	BOXCONN, 2 SCREW TYPE (NEER)
7	1	-		5262	OUTLET DUPLEX J1,2 (HUBBEL)
8	1	-		10 SPI	FILTER, POWER LINE, FLI (CORCOM)
9	1	-		SR-7W-2	BUSHING, STRAIN RELIEF (HEYCO)
10	2	-		10499-SS-1032-6	HANDLE (AMATON)
11	1	-		17612	CORD POWER W1 (BELDEN)
12	1	-		SST1M	TIE CABLE (PANDUIT)
13	4	-		AA-520-06	LUG RING #6 (ETC)
14	2	-		NPC-4	CLAMP, CABLE .250 (HOLUB)
15	2	-	00779	2-350804-2	CONN, FULLY INSUL, .250
16	12	-	00779	34541	TERMINAL, SPADE LUG, #6
17	1	-		19362	CABLE, 3 CONDUCTOR (BELDEN)
18	3	-		650017 P1	GROMMET .50 ID
19	1	A			

SIZE	CODE IDENT NO.
A	94117 PL
REV C	5976119
REV C	SHEET 2

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

PARTS LIST									
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM		
	G1	G						SIZE	CODE IDENT NO.
24									
25	2		A		MS51957-28	SCR, MACH, PN HD, .138-32 X .38LG			
26									
27	4		A		MS51958-65	SCR, MACH, PN HD, .190-32 X .75LG			
28									
29	13		A		MS15795-805	WASHER, FLAT #6			
30									
31	4		A		MS15795-808	WASHER, FLAT #10			
32									
33	13		A		MS35338-136	WASHER, LKG-SPLIT #6			
34	4		A		MS35338-138	WASHER, LKG-SPLIT #10			
35									
36	13		-		MS35649-264	NUT, PLAIN, HEX, .138-32			
37	6"		-		0270029P6	SLEEVING, SHRINKABLE .25 IN.			
38	3"		A		5978963P214	WIRE, ELEC, 18 AWG, GRN/YEL			
39	AR		A		93002P1	SOLDER			
40	6"		-		0270029P8	SLEEVING, SHRINKABLE .50 IN.			
41	6"		-		0270029P2	SLEEVING, SHRINKABLE .06 IN.			
42	REF		A		WL5976119	WIRE LIST			
43	REF		A		778000	EPOXY MARKING CMPD, APPL OF			
44									
45									
46									

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 9417 PL**  
 5976119  
 REV A SHEET 3



REVISION STATUS OF EACH SHEET													REVISIONS					
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	DESCRIPTION	DATE	APPROVED		
REVISION	A	A												- REL FOR PROD	1-14-80	<i>[Signature]</i>		
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	A REV PER ECO 96901	7 JUL-80	JEL/WLC
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45			
<p>4. SHRINK SLEEVE DRAIN WIRES WITH ITEM 42.</p> <p>3. SOLDER GRN/YEL WIRES TOGETHER AND SHRINK SLEEVE (ITEM 38).</p> <p>2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.</p> <p>1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.</p>																		
<b>PRODUCTION</b> CHANGE BY ECO ONLY													SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE					
MFG <i>[Signature]</i> 4/27/80 OP-1276 REV E													WIRE LIST 120V CONTROLLER POWER PANEL ASSY					
NEXT ASSY USED ON APPLICATION 5976119 GRA-7													SIZE CODE IDENT NO. A 94117 WL 5976119					
DR <i>[Signature]</i> 7/11/80 APP <i>[Signature]</i> T <i>[Signature]</i> 15 JAN 80 G DEV <i>[Signature]</i> ENG <i>[Signature]</i> RGR <i>[Signature]</i> PPS <i>[Signature]</i>													SCALE NONE SHEET 1 OF 2					

WIRE LIST

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM		TO		NOTE
	WIRE PART NUMBER	WIRE PART NUMBER			LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	
001	17612	LT BLU (BELDEN)			WIPI MOLDED PLUG	N	FL1 LINE	N	
002	17612	BRN (BELDEN)			WIPI MOLDED PLUG	L	FL1 LINE	L	
003	17612	GRN/YEL (BELDEN)			WIPI MOLDED PLUG	E	FL1 LINE	GND	
004	17612	SHLD DRAIN (BELDEN)			WIPI SHLD		FL1 MTG SCR		4
005	19362	LT. BLU (BELDEN)			FL1 LOAD	N	CBI AA-520-06	LINE	
006	19362	BRN (BELDEN)			FL1 LOAD	L	CBI 2-350804-2	LINE	
007	19362	GRN/YEL (BELDEN)			FL1 LOAD	E	EI AA-520-06	CHASSIS GND	
008	19362	GRN/YEL (BELDEN)			EI CHASSIS GND		CBI END		3
009	19362	SHIELD DRAIN (BELDEN)			FL1 MTG SCR		SOLDER TO WIRE 012		4 (ENB)
010	19362	LT BLU (BELDEN)			CBI HI		J2	N	
011	19362	BRN (BELDEN)			CBI HI		J2	L	
012	19362	GRN/YEL (BELDEN)			CBI END SOLDERED TO WIRE 008		J2	GRND SCR 34541	3
013	19362	SHIELD DRAIN (BELDEN)			CUT DRAIN WIRE FLUSH AT CBI END		ITEM 6-MTG SCR AA-520-06		4
014									

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.

A

94117

WL 5976119

REV.

A

SHEET

Z

0P-23 REV D

REVISION STATUS													REVISIONS			
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED
PARTS	REV	C	C	A									A	REL FOR PROD	1-14-80	RLO
	REV	13	14	15	16	17	18	19	20	21	22	23	24	A	REV PER ECO 96364	19 MAR 80 RMY/WL
	REV													B	REV PER ECO 96498	16 JUL 80 JLJ/WL
LIST	REV													C	REV PER ECO 97010	24 OCT 80 SG/WL

DWG REV	A
WL REV	A

4. ITEM NUMBERS WITH SUBSCRIPTS ARE ALTERNATE ITEMS SELECT ONLY ONE

3. SELECT VOLTAGE CONFIGURATION KIT (ITEM 42) AT FINAL TEST.

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

<b>PRODUCTION</b>		CONT NO.	DR	DATE
CHANGE BY ECO ONLY			APP	17 DEC 79
			CHK	15 JAN 80
			ENG	14/80
			PRG	1-14/80
FINAL			100-240V CONTROLLER	
NEXT ASSY	GRA-7		POWER PANEL ASSY	
APPLICATION			SIZE	CODE IDENT NO.
			A	94117
PL 5976120			SHEET	OF 4

SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE

SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE

100-240V CONTROLLER

POWER PANEL ASSY

SIZE CODE IDENT NO. A 94117 PL 5976120

SHEET 1 OF 4

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
1	1		F		5976115G2	PANEL, POWER	
2	1		B		5976116PI	BKT, POWER SELECTION	
3	1		D		5976117GI	FILTER, COVER	
4	1		E		5976118PI	CHASSIS, POWER PANEL	
5	1		A		5976134PI	LABEL, VOLTAGE SELECTION	
6	1				58361-Y2	UTILITY BOX (STEEL CITY)	
7	1				58-C-7	COVER, UTILITY BOX (STEEL CITY)	
8	14			00779	2-350804-2	CONN, FULLY INSUL, .250	
9	13			00779	350538-3	CONTACT, PIN	
10	1		A		5976332PI	CIRCUIT BREAKER, CBI	
11	2				C500	BOX CONN, 2 SCREWTYPE (NEER)	
12	1				5262	OUTLET DUPLEX J1, J2 (HUBBEL)	
13	1				10SPI	FILTER, POWER LINE, FLI (CORCOM)	
14	1				SR-7W-2	BUSHING STRAIN RELIEF (HEYCO)	
15	2				10499-SS-1032-6	HANDLE (AMATON)	
16	1				17612	CORD POWER, WI (BELDEN)	
17	1			00779	1480711-0	CONN 15 PIN, CAP J3	
18	1		A		5976141PI	POWER TRANSFORMER, MULTIPLE TAP PRIMARY	
19							
20	1			00779	34541	TERMINAL, SPADE LUG, #6	
21	10.5				19362	CABLE, 3 COND (BELDEN)	
22							
23			A		<del>5976141PI</del>	<del>POWER TRANSFORMER, MULTIPLE TAP PRIMARY</del>	#

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL .DWG.

SIZE	CODE IDENT NO.
A	94117 PL
REV C	5976120
SHEET 2	

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	GI	G					
24							
25	6		-		MS51957-28	SCR, MACH, PAN HD, .138-32X.38 LG	
26	4		-		MS51958-64	SCR, MACH, PAN HD, .190-32X.62 LG	
27							
28	4		-		MS51958-65	SCR, MACH, PAN HD, .190-32X.75 LG	
29							
30	18		-		MS15795-805	WASHER, FLAT #6	
31							
32	16		-		MS15795-808	WASHER, FLAT #10	
33							
34	18		-		MS35338-136	WASHER LKG-SPLIT #6	
35	12		-		MS35338-138	WASHER, LKG-SPLIT #10	
36							
37	18		-		MS35649-264	NUT, PLAIN, HEX, .138-32	
38	8		-		MS35650-304	NUT, PLAIN, HEX, .190-32	
39							
40	AR		A		93002 PI	SOLDER	
41							
42	1		A		5976135G--	KIT, VOLTAGE CONFIGURATION(NOTE3) P3	
43	REF		A		WL5976120	WIRE LIST	
44	REF		A		778000	EPOXY MARKING CMPD, APPL OF	
45	15"		A		5978963P201	WIRE, ELEC, 18 AWG, BRN	
46	15"		A		5978963P206	WIRE, ELEC, 18 AWG, LT BLU	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV A	SHEET 3
A	94117 PL	5976120	

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
47			A		5978963P209	WIRE, ELEC, 18 AWG, WHT	
48			A		5978963P211	WIRE, ELEC, 18 AWG, TAN	
49			A		5978963P213	WIRE, ELEC, 18 AWG, DK BLU	
50			A		5978963P214	WIRE, ELEC, 18 AWG, GRN/YEL	
51					MS24693-C28	SCREW FLAT HEAD .138-32 x .50 LG	
52				06383	PLT. 5M-M	TIEWRAP (SEE NOTE 4)	
53					7011973 P4	CLAMP CABLE .31	
54					0640056 P69	CLAMP CABLE .62	
52A				06383	SST1.5M-MP	TIEWRAP SEE NOTE 4	
55					MS57957-30	SCR MACH PAN HD .138x32 x .50 LG	
56					SST1M	TIE CABLE (PANDUIT)	
57					AA520-06	LUG RING *6 (ETC)	
58					0270029 P2	SLEEVING SHRINKABLE 1/6"	
59					0270029 P6	SLEEVING SHRINKABLE 1/4"	
60					0270029 P8	SLEEVING SHRINKABLE 1/2"	
61					AA-523-08	TERMINAL RING LUG #8 (ETC)	
62					780005P002	BRAID 1/4"	

**PARTS LIST**

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL** 5976120  
 REV A SHEET 4

REVISION STATUS OF EACH SHEET													REVISIONS				
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	LTR	DESCRIPTION	DATE	APPROVED
REVISION	A	A	A	A										-	REL FOR PRODUCTION		<i>RLB</i>
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	2-OCT 80	SG/WL
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45		
<p>7. attach 22 awg. wht. wire (5978963p009) to braid &amp; tie to j3 mtg. screw.</p> <p>6. wires 017 to 022 to be shielded with braid (item #62) &amp; shrink sleeved with item 60.</p> <p>5. cut grn/yel wires flush (unused).</p> <p>4. shrink sleeve drain wires with item #58</p> <p>3. solder grn./yel. wires together &amp; sleeve item #59</p>																	
<p>2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.</p>																	
<p>1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.</p>																	

<b>SA SANDERS ASSOCIATES, INC.</b>		NASHUA, NEW HAMPSHIRE	
WIRE LIST		100-240 V CONTROLLER	
POWER PANEL ASSY		SCALE	
SIZE	CODE IDENT NO.	SCALE	SHEET 1 OF 4
<b>A</b>	<b>94117</b>	<b>WL</b>	5976120

CONT. NO.		DR	DATE
		<i>P. PARENT</i>	<i>2/26/80</i>
DR	APPRO	CHK	DATE
	<i>P. PARENT</i>		<i>15/2/80</i>
DR	APPRO	CHK	DATE
	<i>P. PARENT</i>		<i>10/17/80</i>
DR	APPRO	CHK	DATE
	<i>P. PARENT</i>		<i>1/18/80</i>
DR	APPRO	CHK	DATE
	<i>P. PARENT</i>		<i>1/18/80</i>

5976120	GRAPHIC-7
NEXT ASSY	USED ON
APPLICATION	

MFG	H. GRAVES	1/18/80
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WIRE LIST

WIRE NUMBER	FUNCTION CODE WIRE PART NUMBER	COLOR LENGTH	FROM		TO		NOTE
			LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	
001	17612 (BELDEN) LT.BLU		WIPI MOLDED PLUG	N	FLI LINE 2-350804-2	N	
002	17612 (BELDEN) BRN		WIPI MOLDED PLUG	L	FLI LINE 2-350804-2	L	
003	17612 (BELDEN) GRN/YEL		WIPI MOLDED PLUG	E	FLI LINE 2-350804-2	E	
004	17612 (BELDEN) SHIELD DRAIN (BELDEN)		WIPI MOLDED PLUG	SHIELD	FLI MOUNTING SCREW AA-520-06		4
005	19362 (BELDEN) LT.BLU		FLI LOAD		CBI LINE 2-350804-2		
006	19362 (BELDEN) BRN		FLI LOAD		CBI LINE 2-350804-2		
007	5970963P214 GRN/YEL		FLI LOAD	E	EI CHASSIS GND AA-520-06		
008	19362 (BELDEN) GRN/YEL		EI CHASSIS GND		CBI END SOLDER TO WIRE #016		3
009	19362 (BELDEN) SHIELD DRAIN (BELDEN)		FLI MOUNTING SCREW		CBI END CUT DRAIN WIRE FLUSH		4
010	19362 (BELDEN) LT.BLU		CBI 2-350804-2	HI	J3 350538-3		
011	19362 (BELDEN) BRN		CBI 2-350804-2	HI	J3 350538-3		
012	19362 (BELDEN) SHIELD DRAIN (BELDEN)		CBI END CUT DRAIN WIRE FLUSH		J3 MOUNTING SCREW AA-520-06		4
013	19362 (BELDEN) LT.BLU		CBI 2-350804-2	LO	J3 350538-3		
014	19362 (BELDEN) BRN		CBI 2-350804-2	LO	J3 350538-3		

SHEET: ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
SEE SHEET ONE FOR REVISION DESCRIPTION  
LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
A 94117 WL 5976120  
REV. A SHEET 2 OF 4



WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM			TO			NOTE	
	WIRE PART NUMBER	SHIELD DRAIN			LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)		
												WIRE PART NUMBER
015	19362 (BELDEN)	SHIELD DRAIN	WHT		J3	CBI END CUT DRAIN WIRE FLUSH WIRE # 008	J3	350538-3	5	J3	MTG SCREW AA520-06	4
016	19362 (BELDEN)	SHIELD DRAIN	WHT		J3	CBI END SOLDERED TO WIRE # 008	J3	350538-3	6	J3	END SOLDERED TO WIRE # 022	3
017	5976963 P209	SHIELD DRAIN	WHT		J3	CBI END SOLDERED TO WIRE # 008	J3	350538-3	7	T1	SOLDER	C
018	5976963 P209	SHIELD DRAIN	WHT		J3	CBI END SOLDERED TO WIRE # 008	J3	350538-3	8	T1	SOLDER	A
019	5976963 P209	SHIELD DRAIN	WHT		J3	CBI END SOLDERED TO WIRE # 008	J3	350538-3	9	T1	SOLDER	E
020	5976963 P209	SHIELD DRAIN	WHT		J3	CBI END SOLDERED TO WIRE # 008	J3	350538-3	10	T1	SOLDER	D
021	5976963 P209	SHIELD DRAIN	WHT		J3	CBI END SOLDERED TO WIRE # 008	J3	350538-3	11	T1	SOLDER	F
022	5978963 P214	SHIELD DRAIN	GRN/YEL		J3	CBI END SOLDERED TO WIRE # 016 & 030	J3	350538-3	12	T1	SOLDER SH	3
023	BRRID (0270017P5)	SHIELD OF WIRES 017-022	LT BLU		J3	END TO J3 MTG. BRKT SCREW AA520-06	J3	350538-3	13	T1	END N/C	6,7
024	19362 (BELDEN)	SHIELD DRAIN	LT BLU		T1	SOLDER	T1	115	115	J3	350538-3	10
025	19362 (BELDEN)	SHIELD DRAIN	BRN		T1	SOLDER	T1	115	115	J3	350538-3	11
026	19362 (BELDEN)	SHIELD DRAIN	GRN/YEL		T1	SOLDER	T1	N/C	N/C	J3	N/C	5
027	19362 (BELDEN)	SHIELD DRAIN	SHIELD DRAIN		T1	END CUT DRAIN WIRE FLUSH	T1	END CUT DRAIN WIRE FLUSH	13	J3	END MTG SCREW AA520-06	4
028	19362 (BELDEN)	SHIELD DRAIN	LT BLU		J3	CBI END SOLDERED TO WIRE # 008	J3	350538-3	13	J2	N	

SHEET: ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTION LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( ) PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
A 94117 WL 5976120

REV. A SHEET 3 OF 4

WIRE LIST											
WIRE NUMBER	FUNCTION CODE	COLOR	LENGTH	FROM			TO			NOTE	
				WIRE PART NUMBER	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER		TERM. STRIP (INCHES)
029	19362 (BELDEN)	BRN		J3	350538-3	J2	L				
030	19362 (BELDEN)	GRN/YEL		J3	J3 END SOLDERED TO WIRE #022	J2		J2	GND SCREW	3	
031	19362 (BELDEN)	SHIELD DRAIN		J3	J3 END CUT DRAIN WIRE FLUSH	J2		J2	BOX MOUNTING SCREW AA-520-06	4	
032											
033											
034											
035											
036											
037											
038											
039											
040											
041											
042											
SHEET: ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTION LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( ) PREFIX PARTIAL REFERENCE DESIGNATIONS WITH							SIZE <b>A</b>	CODE IDENT. NO. <b>94117</b>	<b>WL 5976120</b>	REV. <b>A</b>	SHEET <b>4</b> OF <b>4</b>

REVISION STATUS													REVISIONS		
SH	1	2	3	4	5	6	7	8	9	10	11	12	DESCRIPTION	DATE	APPROVED
REVISIONS	B	B	-	B									REL FOR PROD	15 FEB 80	B/A
PARTS	13	14	15	16	17	18	19	20	21	22	23	24	A REV PER ECO 96390A	25 Nov 80	RPM/WL
LIST													B REV PER ECO 96949		
DWG REV	B														
WL REV	X														

3. ITEM NO'S WITH SUBSCRIPTS ARE ALTERNATE ITEMS. SELECT ONE ONLY.

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

<b>PRODUCTION</b> CHANGE BY ECO ONLY	<b>SA SANDERS ASSOCIATES, INC.</b> NASHUA, NEW HAMPSHIRE	<b>CIRCUIT CARD ASSY</b>	<b>MULTIPOINT SERIAL I/O</b>
<b>MFG</b>	<b>SIZE</b>	<b>CODE IDENT NO.</b>	<b>SHEET 1 OF 5</b>
	A	94117 PL	5976251

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
1	1		E		5976252G1	CIRCUIT CARD SUBASSY	
2	REF		E		5976253	SCHEMATIC DIAGRAM	
3	4				COM2017P	MED, UART U16, 34, 32, 70	
4	1				DS8837N	MED, HEX UNIFIED BUS RECEIVER U13	
5	2				75188N	MED, QUAD RS-232C LINE DRIVER, U72B	
6	2				75189N	MED, QUAD RS-232C LINE RECEIVER, U27, 54	
7	2				310368P2	MED, TRI-STATE HEX BUFFERS (DM8098N) U36, 69	
8	1				COM52N6	MED, BRAD RATE GEN U79	
9	2				74251N	MED, DATA SEL/MUX, TRI-STATE U12, 40	
10	1				74LS153N	MED, DUAL 4-TO-1-LINE MUX U33	
11	2				74LS74N	MED, DUAL TYPE D FLIP-FLOPS, U66, 77	
12	2				74LS02N	MED, QUAD NOR GATES U59, 68	
13	2				74HC00N	MED, DUAL J-K FLIP-FLOPS U9, 41	
14	2				7406N	MED, HEX INVERTERS WITH O.C. U50, 90	
15	1				74LS00N	MED, QUAD AND GATES U57	
16	1				74LS138	MED, 3 TO 8 LINE MUX U14	
17	1				74LS20N	MED, DUAL NAND GATES U2	
18	1				74S00N	MED, HEX INVERTERS U48	
19	1				74LS139N	MED, DUAL 2 TO 4 LINE MUX U4	
20	3				F9334PC	MED, 8 BIT ADDRESSABLE LATCH U21, 22, 23	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SBRJMS - INDICATES VENDOR ITEM # SEE SPEC/SOURCE CONTROL DWG.

REV CODE IDENT NO.

A 94117 PL 5976251

REV B SHEET 2

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/	G					
21	4				7ALS00N	MED, QUAD NAND GATES, U78, 84, 87, 89	
22	1				7ALS174N	MED, HEX D-TYPE FLIP-FLOPS, U56	
23	1				7ALS175N	MED, QUAD D-TYPE FLIP-FLOPS, U58	
24	1				7ALS148N	MED, PRIORITY ENCODER U67	
25	2				7A173N	MED, 4-BIT REGISTER U64,76	
26	1				F9S109PC	MED, DUAL J-R FLIP-FLOPS U49	
27	1				F9S41PC	MED, 2-2-3-3 INPUT AND GATE U31	
28	3				1008-692	MED, TRI-STATE HEX BUFFERS (DM8097N) U18, 42, 51, 86	
29	4				0310367P2	MED, QUAD BUS TRANSCEIVERS U6, 7, 15, 24	
30	4				DS8835N	MED, HEX INV U85	
31	1				7ALS04N	MED, QUAD AND GATES U5, 8	
32	2				7A08N	MED, QUAD OR GATE U11	
33	1				7ALS32N	MED, DUAL 4:1 MUX U1, 28, 29, 32	
34	4				7ALS253N	U37, 46, 65, 74	
35	4				7ALS109N	PROM	
36	1				1086870P8	PROM (6331-1J)U47	
37	1				5976404P1	PROM (6331-1J)U3	
38	1				5976403P1	PROM (6353-1J)U60	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS: INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

OP-277 REV C

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	-	3
			5976251

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G/	G					
39	1				5976402P1	PROM (6305-1T)U20	
40	1				5976402P2	PROM (6305-1T)U30	
41	4				1N4148	DIODE CR3-6	
42	2				1N4372A	DIODE, ZENOR 3.0V CR1, 2	
43	1		A		1086937P1	CRYSTAL, 5.0688 MHZ Y1	
44	1				280035P008	SOCKET, CRYSTAL	
45	33				RCR076103US	RES. 10K OHMS .25W 5% R12, 21-24 R27-5*	
46	16				RCR076102US	RES. 1K OHM .25W 5% R9, 10, 13-20, 26	
47	7				RCR07651US	R56, 59, 61, 6, 57 RES. 570 OHM .25W 5% R7, 8, 11, 25 R55, 58, 60	
48	5				RCR076391US	RES. 390 OHMS .25W 5% R1-5	
49	2				RCR076202US	RES. 2K OHMS .25W 5% R62, 63	
50	8				CK05BX222K	CAP 2200PF C1-8	
51	33				MA201E103Z	CAP .01uF C28-60	
52	1				M39003012019	CAP .39uF C21	
53	2				4174302P2	CAP 15uF C15, 18	
54	15				MA205E109Z	CAP .1uF C9-11, 13, 16, 17, 20, 22-27, 14, 19	
55	1				M39003012014	CAP 47uF C12	
56	2		A		7518001P7B	INDUCTOR 22uH 10% 350V L1, 3	
57	2		B		7013626P1	INDUCTOR ASSY L2, 4	
58	4			53387	3491-1002	CONN, DISPLAY/KEYBOARD J3-6	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 5976251

REV B SHEET A

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
59	1			53387	3493-1002	CONN, 26 PIN J2	
60	1		D		1086608P18	CONN, 98 PIN J1	
61	2			07707	6010	EYELET	
62	2		A		600107P1	EJECTOR, CARD	
63	2		A		630003P14	EYELET, METALLIC	
64	AR		A		93002P1	SOLDER	
65	REF		A		815003	PWB REPT'S FOR	
66	REF		A		778000	APPL OF EPOXY MKG CAPPD	
5A	REF				MC1488N	MED QUAD RS-232C LINE DRIVER	
6A	REF				MC1489N	U72, 81 MED QUAD RS-232C LINE RECEIVER	
67	2IN				278002P13	U27, 54 WIRE, ELEC, AWG22	
68	2		B		630003P8	EYELET, METALIC	
69	1		A		5977208P1	WARNING LABEL, MOS DEVICES	
70	REF				4171131	PROCEDURE FOR HANDLING MOS DEVICES	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	B	5
5976251			

REVISION STATUS												REVISIONS				
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED
	1	—	—	—	—	—	—	—	—	—	—	—	—	REL FOR PROD	22 JAN 81	<i>EWJ</i>
	13	14	15	16	17	18	19	20	21	22	23	24				
	REV															
	SH															
	REV															

DWG REV	—
WL REV	⊗

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

SA SANDERS ASSOCIATES, INC.		NASHUA, NEW HAMPSHIRE	
CIRCUIT CARD ASSY			
DISPLAY PROCESSOR II			
SIZE	CODE IDENT NO.	SHEET 1 OF 5	
A	94117	PL-5977326	

CONT. NO.	DATE
DR	<i>3/11/81</i>
DR	<i>4 AUG 81</i>
DR	<i>1/28/81</i>
DR	<i>1/24/81</i>
DR	<i>1/23/81</i>

PRODUCTION	USED ON
CHANGE BY ECO ONLY	APPLICATION
WFG	OP-1039 REV B
<i>1-8-81</i>	



ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
1			E	01295	59773261	CIRCUIT CARD SUB-ASSY	
2	4				SN74500N	MED, U67, 74, 96, 49	
3	1				SN74503N	U82	
4	3				SN74504N	U90, 91, 93	
5	1				SN74505N	U76	
6	3				SN74508N	U68, 73, 95	
7	1				SN74511N	U77	
8	2				SN74530N	U72, 81	
9	1				SN74538N	U88	
10	6				SN74LS74N	U58, 59, 83, 94, 97, 75	
11	1				SN74LS86N	U47	
12	3				SN74H106N	U43, 78, 92	
13	1				SN745109J	U86	
14	2				SN74LS125N	U64, 89	
15	2				SN745138N	U60, 66	
16	3				SN745151N	U38, 48, 57	
17	1				SN74LS156N	U32	
18	3				SN745157N	U12, 45, 36	
19	5				SN745161N	U16, 25, 29, 31, 33	
20	3				SN74LS174N	U2, 14, 42	
21	1				SN74LS175N	U19	
22	1				SN74S182N	U27	
23	4			01295	SN74LS253N	U24, 54, 63, 65	

**PARTS LIST**

SIZE CODE IDENT NO.

A 94117 PL 5977326

REV — SHEET 2

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
24	2			01295	SN745257N	MED, U130, 40	
25	4			34335	AM29018PC	MED, 4 BIT MICRO PROCESSOR, U1, 18, 35, 44	
26	8			34335	AM2918PC	MED, U46, 52, 53, 61, 62, 70, 71, 79	
27	1			07263	F96S02PC	MED, U84	
28	4			01295	SN74LS244N	MED, U19, 17, 26, 34	
29	2			01295	SN74S32N	MED, U56, 85	
30	1			01295	SN74LS240N	MED, U80	
31	1			01295	SN74S20N	MED, U87	
32	1				RCR07G750J5	RES, 75 OHMS, ± 5%, .25W R20	
33	1				RCR07G181J5	RES, 180 OHMS, ± 5%, .25W R4, 13	
34	2				RCR07G241J5	RES, 240 OHMS, ± 5%, .25W R5,	
35	1				RCE07G431J5	RES, 430 OHMS, ± 5%, .25W, R30, 31, 32	
36	14					33, 35 - 43, 63	
37	21				RCR07G511J5	RES, 510 OHMS, ± 5%, .25W, R1, 2, 10, 44 - 51, 61, 62, 66 - 73	
38	24				RCR07G821J5	RES, 820 OHMS, ± 5%, .25W, R3, 8, 11, 12, 16, 17, 18, 19, 34, 52 - 60, 64, 65, 74 - 77	
39	25				RCR07G102J5	RES, 1K OHMS, ± 5%, .25W, R7, 22 - 29, 78 - 93	
40	2				RCR07G202J5	RES, 2K OHMS, ± 5%, .25W, R6, 21	
41							

**PARTS LIST**

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

5977326

REV — SHEET 3

# PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
42	44				4174298PI	CAP, .01UFARAD, ±2%, 50WDC C2, 5-47	
43	1				4174298P3	CAP, .1UFARAD, ±2%, 50WDC C4	
44	1				M39003/01-2259	CAP, (MIL-C-39003/1) 39UFARAD, ±10%, 10WVDC C1	
45							
46							
47							
48	1			72619	555-2007	DIODE, LIGHT EMISSIVE DS1	
49	1				1008-692	SWITCH, DIP S2	
50	2				70136226P001	INDUCTOR L1, L2	
51	1				1004-692	SWITCH, DIP S1	
52	2				4172498PI	PROGRAMMED PROM(256X40C)MMI6300	
53	1				4172526PI	(512X40C) U10, I1	
54	1				4172499PI	(256X4TS) 6305, U15	
55	1				4172520PI	(512X4TS) 6301, U55	
56	1				4172494PI	(512X4TS) 6306, U41	
57	1				4172497PI	(512X4TS) 6306, U13	
58	1				4172497P2	(512X4TS) 6306, U22	
59	1				4172493PI	(32X80C) 6306, U23	
60	1				4172495PI	(256X4TS) 6330, U6	
61	1				4172519PI	PROGRAMMED PROM(32X8TS) MMI6333, U69	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL 5977326

REV — SHEET 4

PARTS LIST									
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM		
	G	G						SIZE	CODE IDENT NO.
62	1				4172990P1	PROGRAMMED PROM (512X8TS)MMI	6349, U20		
63	1				4172990P2	(512X8TS)	6349, U3		
64	1				4172990P3	(512X8TS)	6349, U5		
65	1				4172990P4	(512X8TS)	6349, U50		
66	1				4172990P5	(512X8TS)	6349, U7		
67	1				4172991P1	(512X40C)	6305, U37		
68	1				4172991P2	(512X40C)	6305, U39		
69	1				4172991P3	(512X4TS)	6306, U4		
70	1				4172991P4	(512X4TS)	6306, U8		
71	1				4172991P5	(512X4TS)	6306, U51		
72	1				4172992P1	PROGRAMMED PROM (256X4TS)MMI	6301, U21		
73	1				1086608P18	CONN, (98 PIN) P1			
74	2				600107P1	CARD EJECTOR (6100)			
75	2				630003P14	EYELET, METALIC (SE310)			
76	2			07707	6010	EYELET			
77	AR				278000P13	WIRE, ELEC. AWG 22			
78	AR				93002P1	SOLDER			
79	AR								
80	REF				5977328	LOGIC DIAGRAM, DISPLAY PROCESSOR			
81	1				417182P1	MARKER IDENTIFICATION			
82	1				815003	PW AND CKT BOARD, REQ FOR			
83	REF								

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG. SEE SHEET ONE FOR REVISION DESCRIPTIONS. SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	5	5977326

REVISION STATUS													REVISIONS				
SH	1	2	3	4	5	6	7	8	9	10	11	12	LTR	DESCRIPTION	DATE	APPROVED	
REV	A	-	-	-	-	-	-	A	-	-	-	-	-	-	REL FOR PROD	5-7-80	Rev
SH	13	14	15	16	17	18	19	20	21	22	23	24	A	REV PER ECO 101006A	16 JUL 80	JL/WL	
REV																	

PARTS	
LIST	
DWG REV	-
WL REV	X

**WARNING**  
 CHANGES ARE BEING PROCESSED  
 AGAINST THIS DOCUMENT  
 REFER TO 96967  
10/10/16

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

CONT. NO.

DR	Parent	DATE
APP		
CHK	ZMAV	

DES	Shaw-Walker	DATE	5-7-80
ENG	Rev		
PRO	5-7-80		

**PRODUCTION**

CHANGE BY ECO ONLY

5/5/80

SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE

CIRCUIT CARD ASSY

COLOR OUTPUT CHANNEL

SIZE CODE IDENT NO. A 94117 PL 5977409

SHEET 1 OF 10

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
1	1		E		5977410G1	CIRCUIT CARD SUBASSY	
2	1				SN7404	MED, DIGITAL HEX INVERTERS U31	
3	3		A		310208P1	MED, DIGITAL BISTABLE LATCH U2,12, 23	
4	1		A		310200P1	MED, DIGITAL NOR GATE U20	
5	2		A		310205P2	MED, DIGITAL NAND BUFFER U22, 25	
6	2		A		310205P1	MED, DIGITAL NAND BUFFER U9, 28	
7	1				SN74LS138N	MED, 1 OF 8 DEMULTIPLEXER U3	
8	1				SN74LS158N	MED, 2 TO 1 MULTIPLEXER U4	
9	1				SN74LS166N	MED, SHIFT REGISTER 8 BIT U7	
10	3				SN74LS74N	MED, DUAL POS FLIP FLOP U5,11,32	
11	1				SN74LS123N	MED, DUAL MULTIVIBRATOR U19	
12	1				SN74LS08N	MED, DIGITAL AND GATE U34	
13	7				<del>SN7406N</del>	<del>MED,</del>	
14	7				<del>SN74LS164N</del>	<del>MED,</del>	
15	1				SN74LS153	MED, 4 TO 1 MULTIPLEXER U30	
16	1				SN74LS175N	MED, QUAD FLIP FLOP U17	
17	1		A		310234P1	MED, DIGITAL AND GATE U16	
18	1				SN74LS32N	MED, DIGITAL OR GATE U27	
19	1		A		310095P1	MED, AND-OR INVERT GATES U21	
20	1		A		310272P1	MED, BCD TO DEC U10	
21	1				310092P2	MED, 4 INPUT NAND GATE U18	
22	1				SN74S74	MED, DUAL D-TYPE FLIP-FLOP U36	
23	1				SN74LS174	MED, HEX D-TYPE FLIP-FLOP U6	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL		5977409 Z

PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
24	1				SN7411N	MED, TRIPLE INPUT ANDGATE U24	
25	1				SN74LS160N	MED, COUNTER U33	
26	3			27014	DM8098M	MED, DIG HEX INV U8,13,14	
27	1			27014	DM8520N	MED, N-DIVIDER U26	
28	1				<del>DM8887N</del>	<del>MED,</del>	
29	1				NE556N	MED, LINEAR TIMER U29	
30	1			02735	CD4053BE	SWITCH, CMOS UI	
31	1			02735	CD4066 BE	SWITCH, CMOS UI5	
32							
33							
34	1		A		4174337P1	CAP, 1UF, ±20% 50V C30	
35	2				CM05ED510JP3	CAP, 51PF, ±5% 500V MICA C29,31	
37	13			04222	MA205E104Z	CAP. O.1UF C28,32,41,50,52,77-84	
38	4				M3900301-2306	CAP, 22UF, ±10% 35V C57,58,64,65	
39	2				M3900301-2259	CAP, 39UF, ±10% 10V C69,71	
40	2		A		4174129P1	CAP, 1PF, ±5PF 50 WVDC C1,14	
41	2				CM05ED390JP3	CAP, 39PF, ±5% 500V C5,18	
42	8				CM05FD101JP3	CAP, 100PF ±5% 500V C6,8,10,12,19,21,23,40	
43	2				M3900301-2304	CAP, 6.8UF ±10% 35V C37,76	
44	2				CK05BX681K	CAP, 680PF, ±10% 200V C35,36	
45	4		A		4174137P1	CAP, 47PF, ±5% 300V C33,34,38,39	
46							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.		SIZE	CODE IDENT NO.
		A	94117 PL
		REV	—
		SHEET 3	

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
47	15				RCR07G102JS	RES, 1K OHMS, 5%, .25W R61-64, 75, R89, 87, 90, 98, 99, 102, 104, 105, 132, 135	
48	8				RCR20G100JS	RES, 10 OHMS, 5% 0.5W R14, 15, 22, R23, 43, 44, 52, 53	
49	1				RCR07G622JS	RES, 6.2K OHMS, 5%, .25W R83	
50	3				RCR07G201JS	RES, 200 OHMS, 5% .25W R60, 85, 136	
51	1				RCR07G123JS	RES, 12K OHMS, 5% .25W R88	
52	2				<del>RCR20G391JS</del>	<del>RES, 390 OHMS, 5%, .5W</del>	
53	1				RCR07G222JS	RES, 2.2K OHMS, 5% .25W R94	
54	1				RCR07G621JS	RES. 620 OHMS, 5% .25W R89	
55	1				RCR07G202JS	RES, <K OHMS, 5% .25W R91	
56	1				RCR07G112JS	RES, 1.1K OHMS, 5% .25W R79,	
57	8				RCR07G512JS	RES, 5.1K OHMS, 5% .25W R16, 24, R45, 54, 106-109	
58	6				RCR07G100JS	RES, 10 OHMS, 5% .25W R76, 77, 137, 138, 139, 140	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	SHEET
A	94117 PL	5977409	4



BRUNING

39825

## PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
59	2				RCR07G391US	RES, 390 OHMS, 5% .25W R110,129	
60	5				RCR07G182US	RES, 1.8K OHMS, 5% .25W R78,113, 116,123,127	
61	1				RCR07G821US	RES, 820 OHMS, 5% .25W R111	
62	2				RCR07G162US	RES, 1.6K OHMS, 5% .25W R112,131	
63	2				RCR07G301US	RES, 300 OHMS, 5% .25W R97,100	
64	2				RNC60H127IFS	RES, 1.27K OHMS, 1% .125W R1,30	
65	2				RNC60H511IFS	RES, 5.11K OHMS, 1% .125W R2,31	
66	2				RNC60H200ZFS	RES, 20K OHMS, 1% .125W R4,33	
67	2				RCR20G750US	RES, 75 OHMS, 5% .5W R3,32	
68	2				RNC60H100ZFS	RES, 10K OHMS, 1% .125W R5,34	
69	2				RNC60H562IFS	RES, 5.62K OHMS, 1% 0.125W R6,35	

SHEET ONE REVISION LETTER IS THE IDENTIFYING  
REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM -SEE  
SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.

A 94117 PL

5977409

REV - SHEET 5

PARTS LIST									
ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM	SIZE	
	G	I						CODE IDENT NO.	REV - SHEET
70	2				RCR20G391JS	RES, 390 OHMS, 5% .05W R67,93		A	94117 PL
71	5				RCR07G753JS	RES, 75K OHMS, 5% .25W R9,11, R38,41,101			5977409
72	2				RCR07G132JS	RES, 1.3K OHMS, 5% .25W R10,90			
73	2				RCR07G331JS	RES, 330 OHMS, 5% .25W R12,50			
74	2				RCR07G131JS	RES, 130 OHMS, 5% .25W R13,42			
75	2				RCR07G271JS	RES, 270 OHMS, 5% .25W R21,51			
76	8				RCR07G471JS	RES, 4.70 OHMS, 5% .25W R17-20, R46-49			
77	8				RCR32G750JS	RES, 75 OHMS, 5% 1W R25-28 R55-58			
78	2				RCR07G104JS	RES, 100K OHMS, 5% .25W R59,66			
79	2				RCR07G514JS	RES, 510K OHMS, 5% .25W R65,68			
80	1				RCR07G302JS	RES, 3K OHMS, 5% .25W R69			

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
81	1				RCR07G272JS	RES, 2.7K OHMS 5% 0.25W R82	
82	7				RCR07G103JS	RES, 10K OHMS 5% .25W R73,80,86,95,96,130,133	
83	1		A		4174378PI0	POT, 10K OHMS 20% .5W R92	
84	5		A		4174378P7	POT, 1K OHMS 20% .5W 1/4 IN DIA R7,36,70-72	
85	2		A		4174378P6	POT, 500 OHMS 20% .5W R8,37	
86	1		A		4174378PI5	POT, 200K OHMS 20% .5W R81	
87	4				RW81U3000F	RES, 300 OHMS 1% 1.0W R115,119,122,126	
88	2		A		RCR07G361JS	RES, 360 OHMS 1/4W 5% R29,39	
89	7				4174179PI	TRANSISTOR, SILICON Q2,16,17,20-23	
90	1				2N918	TRANSISTOR, Q19	
91	6				2N2222A	TRANSISTOR, SILICON LW PWR NPN Q6,12,24-27	
92	2				2N3955A	TRANSISTOR FET P-CHANNEL Q1,15	
93	2				2N2907A	TRANSISTOR LW PWR PNP Q3,9	
94	4				2N2219A	TRANSISTOR LW PWR NPN Q4,5,10,11	
95	4				2N2905A	TRANSISTOR LW PWR PNP Q7,8,13,14	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG SEE SHEET ONE FOR REVISION DESCRIPTIONS SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.	SIZE	CODE IDENT NO.	REV	SHEET
	A	94117 PL	5977409	7

PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
96	24				IN4148	DIODE, 100 MA, 100V CRI-4, 6-9, CR11-14, 16-19, 23-27, 37-39	
97	6				IN962B	DIODE, ZENER 11V VR4, 5, 9-11, 13	
98	2				IN753A	DIODE, 6.2V VR12, 14	
99	11				IN5711	DIODE, CR21, 22, 28-36	
100	1				IN963B	DIODE, ZENER 12V VR15	
101	5				IN4371A	DIODE, ZENER 2.7V VR2, 3, 7, 8, 16	
102	4				HPA-2800	DIODE, CR5, 10, 15, 20	
103	2				IN944B	DIODE, ZENER 11.7V VR1, 6	
104	1				UKPT080-1330071	OSCILLATOR, 20MHZ G1	
105	1			75378		<del>OSCILLATOR, 20MHZ</del>	
106	REF						
107	1		A		4174341PI	INDUCTOR, 22 UH 10% 350V MOLDED L2	
108	1		A		4170692G1	INDUCTOR, L3	
109	1		A		4174342PI	INDUCTOR, 100 MH MOLDED LI	
110	1				UA710C	COMPARATOR U37	
111	1				UA711HC	LOGIC DIFF VOLT COMPATOR U35	
112	1						
113							
114							

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE	CODE IDENT NO.	REV	A	SHEET	8
A	94117	PL	5977409		

PARTS LIST

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
115	1		B		4171951PI	GROUND STRIP	
116	AR		A		278002P9	WIRE, ELEC 18 AWG	
117	1		C		4171491PI	BRACKET, CONN	
118	12				UG1094A/U	RECPT, BULKHEAD BNC J1-J12	
119							
120	2				MS51957-14	SCREW, PNHD, .112-40UNCx 3/2L6	
121	2				MS15795-803	WASHER, FLAT-METAL .125 IDx .250 OD	
122	2				MS35338-135	WASHER, LOCK SPRING 0.1120	
123	2				MS35649-244	NUT, PLAIN HEX .112-40	
124	9		A		640048PI	MOUNTING PAD, TO18 4H	
125	2		A		640077P2	MOUNTING PAD, TO18 6H	
126	8		A		640049PI	MTG PAD, TO5 4H THERMAL CONDUCTING	
127	8		A		640085P2	MTG PAD, THERMAL CONDUCTING	
128	AR		A		93002PI	SOLDER	
129	REF		A		815027	PW & CKT BD, REQ T FOR	
130	1		D		1086208P/B	CONN, ELEC PC BD (98 PIN)	
131	2			07704	6010	EYELET	
132	8		A		4174145PI	HEAT SINK-175	
133	1		A		4171182PI	MARKER IDENTIFICATION	
134							
135	1		A		640085PI	WAFER, THERMAL CONDUCTING	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
 SEE SHEET ONE FOR REVISION DESCRIPTIONS  
 SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL**

5977409

REV - SHEET 9

**PARTS LIST**

ITEM NO.	QTY PER ASSY		DWG SIZE	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION	SYM
	G	G					
136	1				RCR20G152JS	RES, 1.5K 5% 0.5W R74	
137	1				RCR07G111JS	RES, 110 OHMS 5% 0.25W R134	
138	1				RCR07G511JS	RES, 510 OHMS 5% 0.25W R103	
139	1				1N751A	DIODE, ZENER 5.1V VR17	
36	42				<del>MA201E03Z</del>	CAP .01UF +20% 200V C2-4 7,9,11,13,15-17,20,22,24-27,42-49 51,53-56,59-63,66-68,70,72-75	
140	4				RCR20G621JS	RES 620 OHMS ±5% .5W R18,120 124,128	
141	4				RCR07G911JS	RES, 910 OHMS 5% 0.25W R114,117, 121,125	
142	REF		E		5977412	LOGIC DIAGRAM	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG  
SEE SHEET ONE FOR REVISION DESCRIPTIONS  
SYMBOLS : INDICATES VENDOR ITEM - SEE SPEC/SOURCE CONTROL DWG.

SIZE CODE IDENT NO.  
**A 94117 PL 5977409**

REV - SHEET 10

REVISION STATUS OF EACH SHEET													REVISIONS			
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	DESCRIPTION	DATE	APPROVED
REVISION	A	-	-	-	A	-	-	-	-	-	-	-	-	REL FOR PROD.	13 FEB 80	80/80
14	15	16	17	18	19	20	21	22	23	24	25	26	27	A REV PER ECO 96487	27 JUN 80	JL/WL
30	31	32	33	34	35	36	37	38	39	40	41	42	43			

2. PARTS LIST SHEET ONE IS THE CONTROLLING REVISION FOR THE COMBINED PARTS LIST, DRAWING AND WIRE LIST.

1. SHOP PRACTICE TOLERANCES AND DRAWING INTERPRETATION WITHIN 815002 SUPPLEMENT THIS DRAWING.

SA SANDERS ASSOCIATES, INC. NASHUA, NEW HAMPSHIRE

WIRE LIST

CARD CAGE ASSY

SIZE: A    CODE IDENT NO.: 94117    WL 5977426

SCALE: NONE    SHEET 1 OF 7

<b>PRODUCTION</b>	DATE: 4 JAN 80	CONT NO.:	DATE: 1-28-80
CHANGE BY ECO ONLY	APPR: [Signature]		CHK: [Signature]
	DEV: [Signature]		APP: [Signature]
	ENG: [Signature]		PROJ: C
	1086917		1-28-80
	NEXT ASSY		
	APPLICATION		
MFR: [Signature]			

WIRE LIST

WIRE NUMBER	FUNCTION CODE	COLOR	LENGTH	FROM			TO			NOTE
				LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)	
001	276011P139	WHT		J5 SOLDER	1	.19	TB2 2-350800-2	3		
002				J5 SOLDER	7	.19	TB2 2-350800-2	5		
003				J5 SOLDER	4	.19	AIXA10 7400824P004	50		
004				J5 SOLDER	3	.19	AIXA7 7400824P004	47		
005				J5 SOLDER	6		TB2 2-350800-2	1		
006				J5 SOLDER	5		TB2 2-350800-2	6		
007				S2 SOLDER	1	.19	TB2 2-350800-2	1		
008	276011P139	WHT		S2 SOLDER	+V	.19	TB2 2-350800-2	2		
009	270017P5			PSI 34171	+5V		AIBUS 7011466P007	+5V		NOTE 1
010	276011P139	WHT		S1 SOLDER	+V	.19	TB2 2-350800-2	2		
011				AIXA8 7400824P004	53	.25	TB2 2-350800-2	4		
012				J2 SOLDER	1	.19	TB2 2-350800-2	3		
013				S1 SOLDER	GND	.19	TB2 2-350800-2	4		
014	276011P139	WHT		J2 SOLDER	5	.19	S2 SOLDER	GND		

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
SEE SHEET ONE FOR REVISION DESCRIPTION  
LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE  
A 94117  
CODE IDENT. NO.

WL 5977426  
REV. 2  
SHEET 2



WIRE LIST

WIRE NUMBER	FUNCTION CODE WIRE PART NUMBER	COLOR LENGTH	FROM		TO		NOTE
			LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	
015							
016							
017	276011P139	WHT	S2 SOLDER	GND .25	S1 SOLDER	GND .25	
018	276011P139	WHT	S1 SOLDER	.25	B2 2-350800-2	.25	
019							
020							
021							
022							
023							
024	276011P189	WHT	PS1 TBL 7011466P001	.25	E3 7011466P002	.25	
025	276011P139	WHT	TB2 2-350800-2	3 .25	A1 75V BUS 7011466P010	.25	
026							
027	276011P189	WHT	FL1 SOLDER	N .19	TB1 2-350800-2	.25	
028							

SIZE CODE IDENT. NO.  
A 94117 WL 5977426

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
SEE SHEET ONE FOR REVISION DESCRIPTION  
LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

REV. SHEET 3

WIRE LIST

WIRE NUMBER	FUNCTION CODE WIRE PART NUMBER	COLOR	LENGTH	FROM		TO		NOTE
				LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	
029								
030	276011P139	WHT		XDS1 SOLDER	2 .19	FLI SOLDER	N .25	
031	276011P185	GRN		FLI SOLDER	GND .19	7011466P002	E3 .25	
032	7012642P011	BLK		B2		TBI	3 .25	
034	MOLDED CORD	BLK		B2		TBI	4 .25	PART OF 032
036	7012642P011	BLK		BI		TBI	3 .25	
037	MOLDED CORD	BLK		BI		TBI	4 .25	PART OF 034
038	276011P190	BLK		CBI LOAD 2-350804-2	.19	TBI 2-350800-2	5 .25	
039	276011P139	WHT		XDS1 SOLDER	.19	TBI 2-350800-2	5 .25	
040	276011P189	WHT		PS1 TBI 7011466P001	.25	AI BUS SOLDER	WI .19	
041	276011P139	WHT		PS1 TBI 02-06-2103	.25	AI XA16 7400824P004	33 .19	2
042								

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE	CODE IDENT. NO.
A	94117
WL	5977426
REV.	4
SHEET	4

WIRE NUMBER	FUNCTION CODE		COLOR	LENGTH	FROM			TO			NOTE
	WIRE PART NUMBER				LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION)	CONTACT PART NUMBER	TERM. STRIP (INCHES)	
043	270017P5				A1	7011466P007	E1	PS1	34171	-5V	NOTE1
044											
045											
046											
047											
048	276011P139		WHT		PS1 TB2	7011466P001	2	A1 +15V BUS	7011466P010	.19	
049	276011P139		WHT	1.00	S2	SOLDER	.19	S2	SOLDER	.19	
050				1.00	S1	SOLDER	.19	S1	SOLDER	.19	
051	PPL2-				J2	SOLDER	.19	A1XA16	21	.19	
052	+5V				J2	SOLDER	.19	7400824P004	1	.19	
053	PPS2-				J2	SOLDER	.19	J1	SOLDER	.19	
054	GND				J2	SOLDER	.19	A1XA9	81	.19	
055	PPL1-				J2	SOLDER	.19	7400824P004	5	.19	
056	PPS1-				J1	SOLDER	.19	J1	SOLDER	.19	
	276011P139		WHT		J1	SOLDER	.19	A1XA16	22	.19	
					J1	SOLDER	.19	7400824P004	82	.19	

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

OR-233 REV D

SIZE CODE IDENT. NO.  
 A 94117

WL 5977426  
 REV. A SHEET 5



WIRE LIST

WIRE NUMBER	FUNCTION CODE WIRE PART NUMBER	COLOR	LENGTH	FROM		TO		NOTE
				LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	LOCATION (REFERENCE DESIGNATION) CONTACT PART NUMBER	TERM. STRIP (INCHES)	
057	276011P190	BLK		FLI SOLDER	L .19	CBI 2-350800-2	LINE	
058								
059								
060	276011P139	WHT		AIXA7 7400824P004	44 .19	TB2 2-350800-2	1 .25	
061	276011P139	WHT		AIXA7 7400824P004	43 .19	TB2 2-350800-2	6 .25	
062	SUPPLIED	RED		PSI TB1 7011466P001	1 .25	PSI 34150	+5V	
063	SUPPLIED	BLK		PSI TB1 7011466P001	2 .25	PSI 34150	-5V	
064	276011P189	WHT		PSI TB2 7011466P001	5 .25	AI 7011466P10	E1	
065	276011P190	BLK		PSI TB1 7011466P001	6 .25	TB1 2-350800-2	5 .25	
066	276011P189	WHT		PSI TB1 7011466P001	7 .25	TB1 2-350800-2	2 .25	
067	276011P189	WHT		PSI TB2 7011466P001	6 .25	PSI JT 102-06-2103	21 .25	2

SHEET ONE REVISION LETTER IS THE IDENTIFYING REVISION FOR THIS MULTISHEET DWG.  
 SEE SHEET ONE FOR REVISION DESCRIPTION  
 LOWER CASE LETTERS IN TERMINATION COLUMN DESIGNATED BY ( )  
 PREFIX PARTIAL REFERENCE DESIGNATIONS WITH

SIZE CODE IDENT. NO.  
**A 94117 WL 5977426**

REV. -

SHEET 6

OP-233 REV D

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
	SEE SHEET 1		

2. INSERT INTO MOLEX NO. 03-06-2023 CONNECTOR.
1. INSULATE BRAID PN 270017P5 WITH TEFLON INSULATION TUBING PN 27006P08

NOTES:

SIZE	CODE IDENT NO.	DWG NO.
A	94117	5977426
SCALE	—	SHEET 7 OF

OP-909 REV-A

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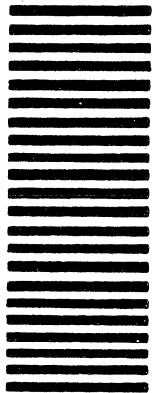
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Version \_\_\_\_\_

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Host operating system \_\_\_\_\_ Version \_\_\_\_\_

Host-GRAPHIC 7 interface \_\_\_\_\_

My problem is: hardware  software

firmware  manual

Description of problem (or suggestion for improvement):

Related tech manual number \_\_\_\_\_