

TU77 Magnetic Tape Transport Technical Manual Volume I

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DECUS	EDUSYSTEM	RSTS
UNIBUS	VAX	RSX
	VMS	IAS

CONTENTS

Figure No.	Title	Page
1	System Functional Block Diagram.....	2
2	Power Supply and Distribution Functional Block Diagram.....	4
3	System Control Functional Block Diagram	6
4	Air Load/Control Functional Block Diagram	8
5	Reel Servo Functional Block Diagram	12
6	Capstan Servo Functional Block Diagram.....	14
7	Write Functional Block Diagram.....	15
8	Read Functional Block Diagram	16
9	Schematic, Base Assembly (107307)	19
10	PCBA, Interconnect F1.....	22
11	Schematic, Base Assembly (107198)	24
12	PCBA, Interconnect F.....	26
13	Schematic, Controls Assembly.....	28
14	PCBA, Transducer	29
15	Schematic, Power Package	30
16	Schematic, Control M	32
17	PCBA, Control M.....	42
18	Schematic, Reel Servo	43
19	PCBA, Reel Servo	47
20	Schematic, Capstan/Regulator	49
21	PCBA, Capstan/Regulator	53
22	Schematic, Write.....	54
23	PCBA, Write.....	58
24	Schematic, Data L	60
25	PCBA, DATA L.....	64
26	Schematic, 9 TK Preamp	66
27	PCBA, 9 TK Preamp.....	68

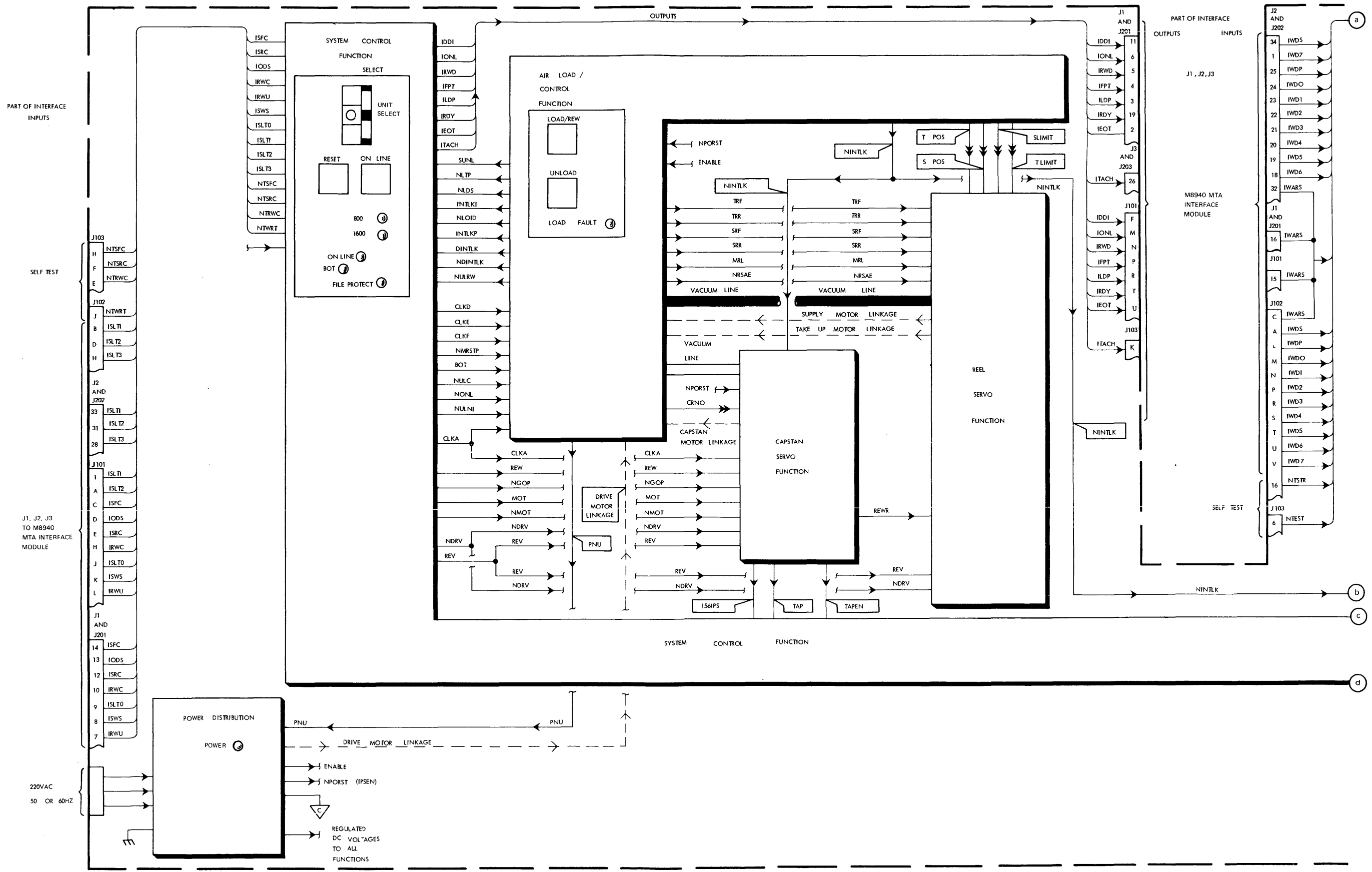


Figure 1 System Functional Block Diagram (Sheet 1 of 2)

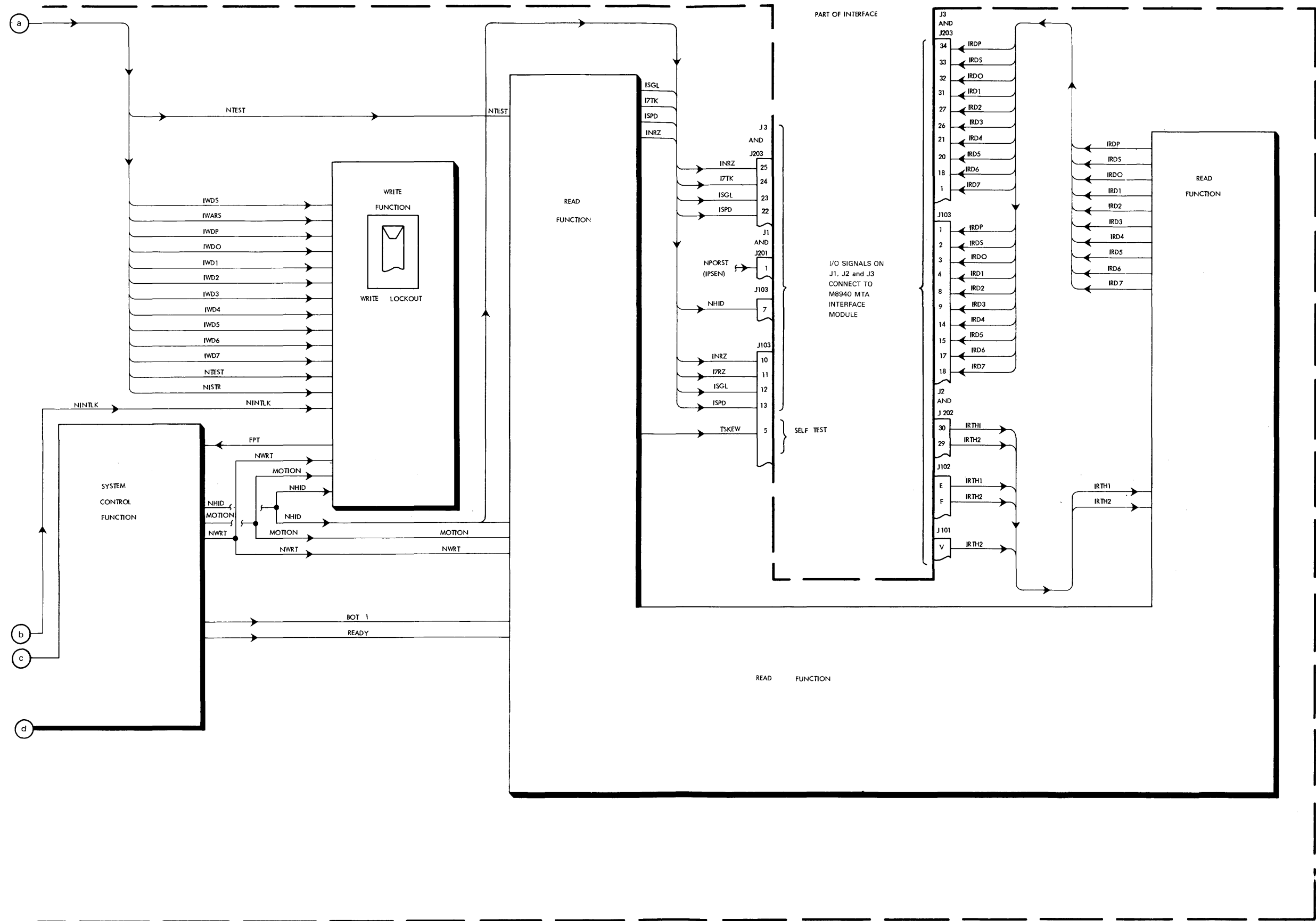


Figure 1 System Functional Block Diagram (Sheet 2 of 2)

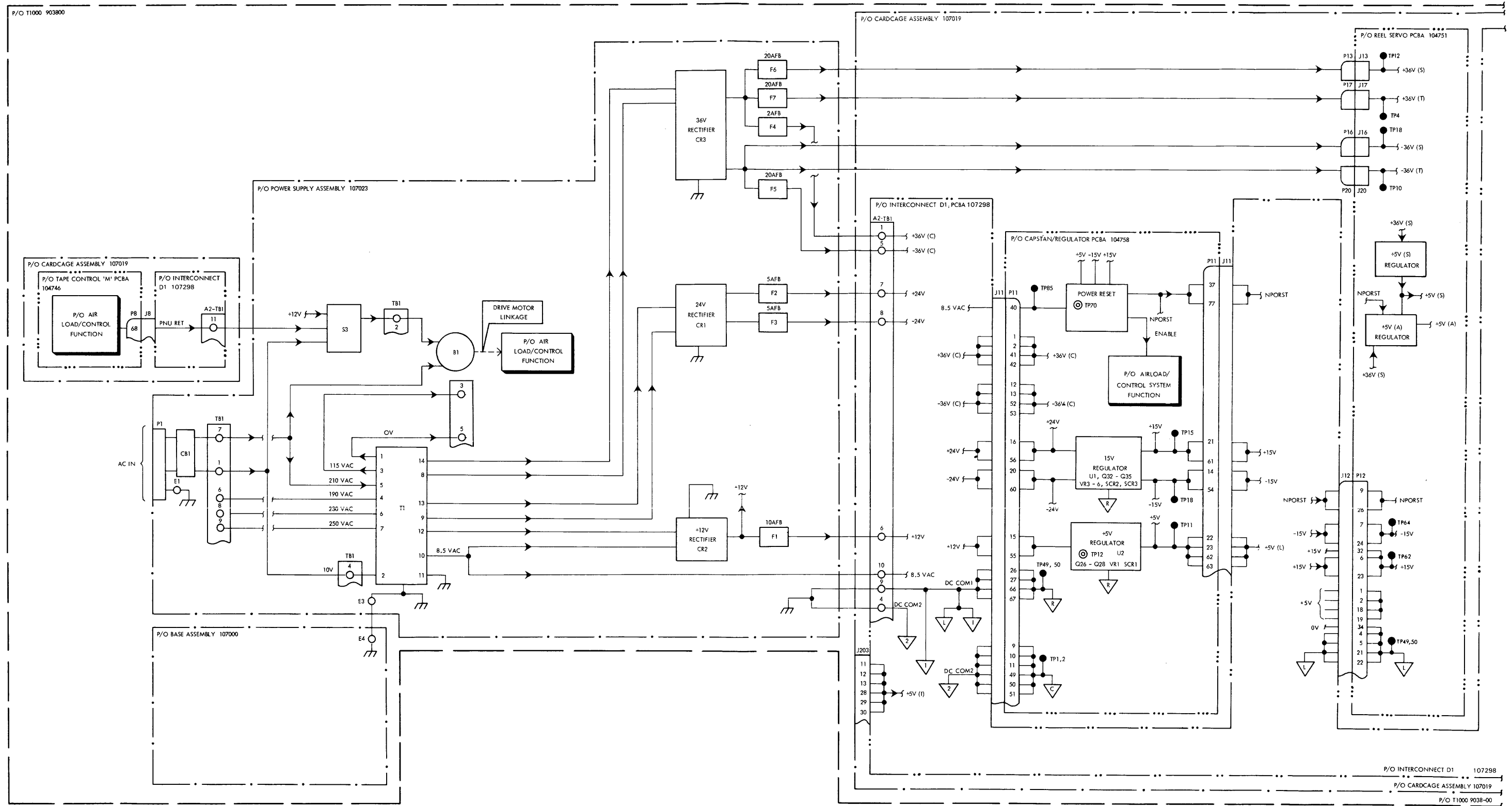


Figure 2 Power Supply and Distribution Functional Block Diagram (Sheet 1 of 2)

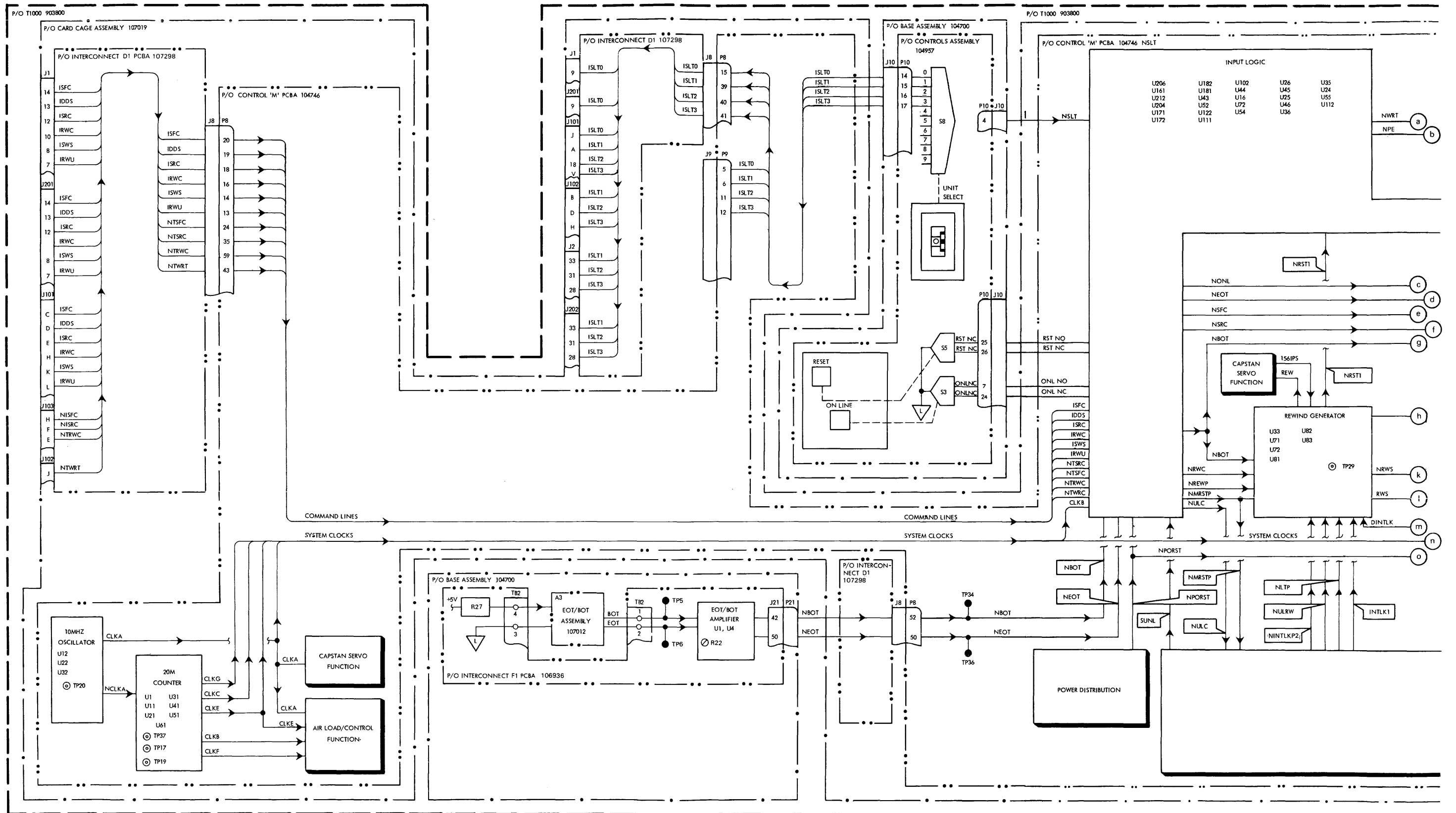


Figure 3 System Control Functional Block Diagram (Sheet 1 of 2)

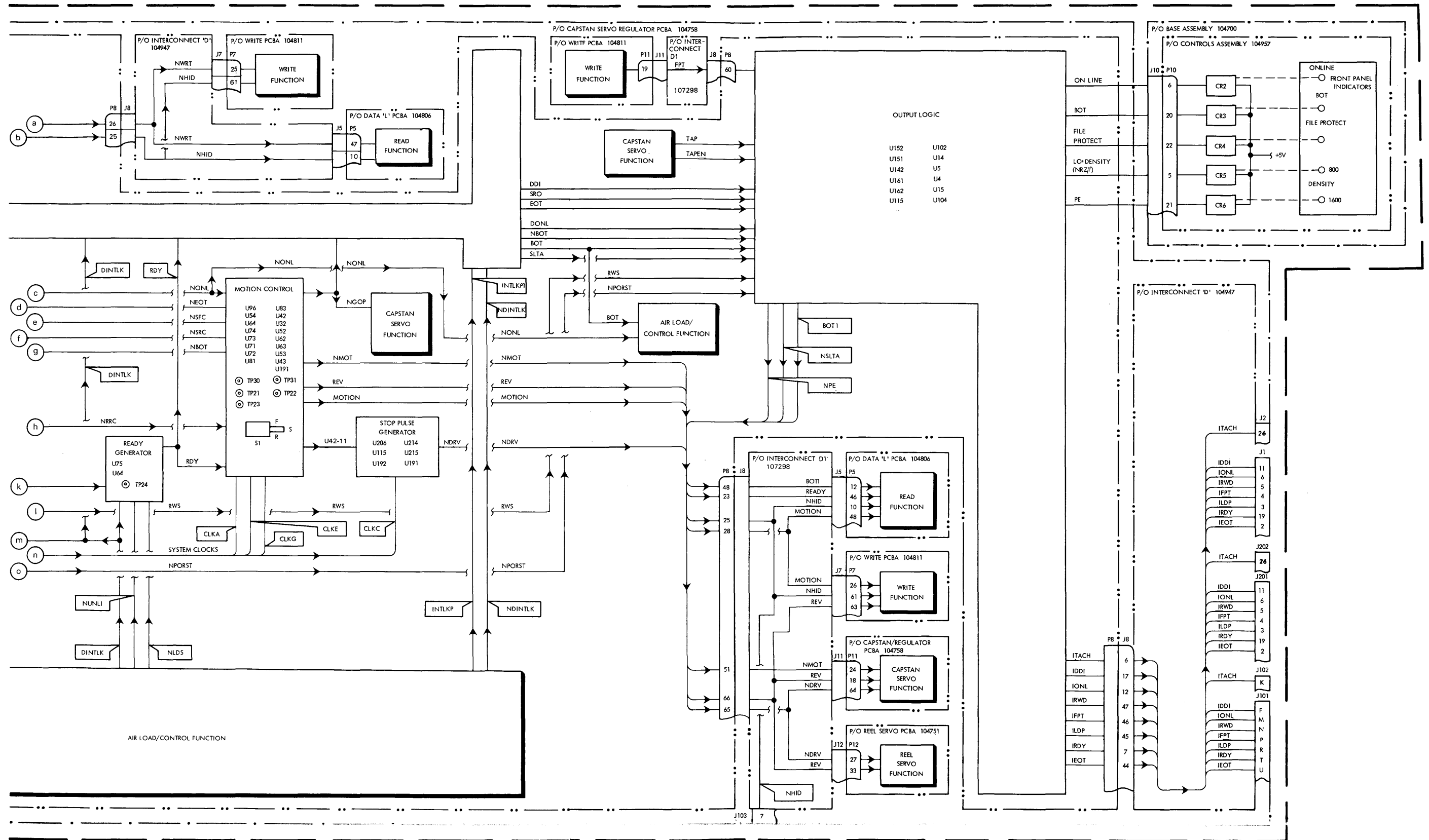
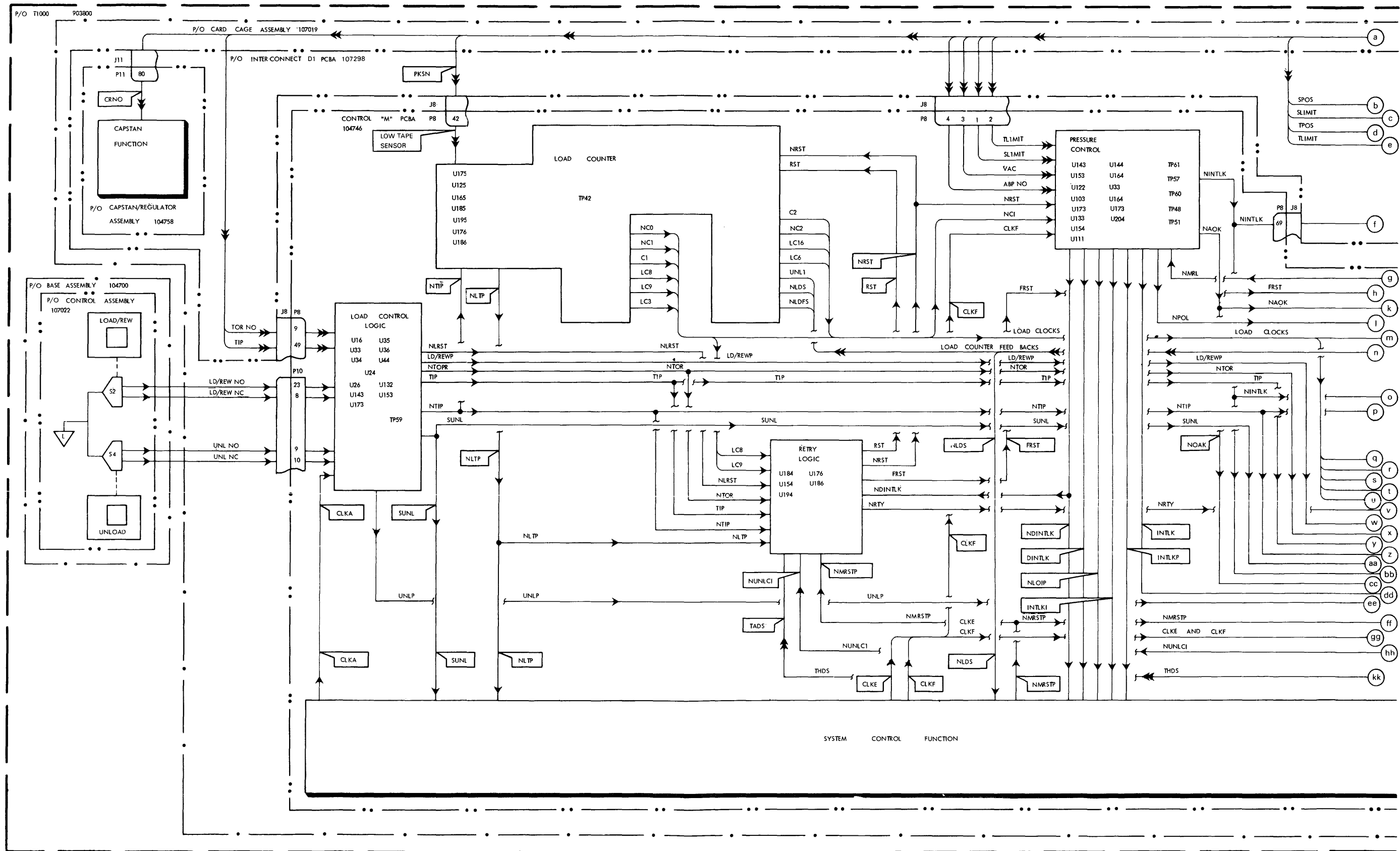


Figure 3 System Control Functional Block Diagram (Sheet 2 of 2)



MA-5785

Figure 4 Air Load/Control Functional Block Diagram (Sheet 1 of 4)

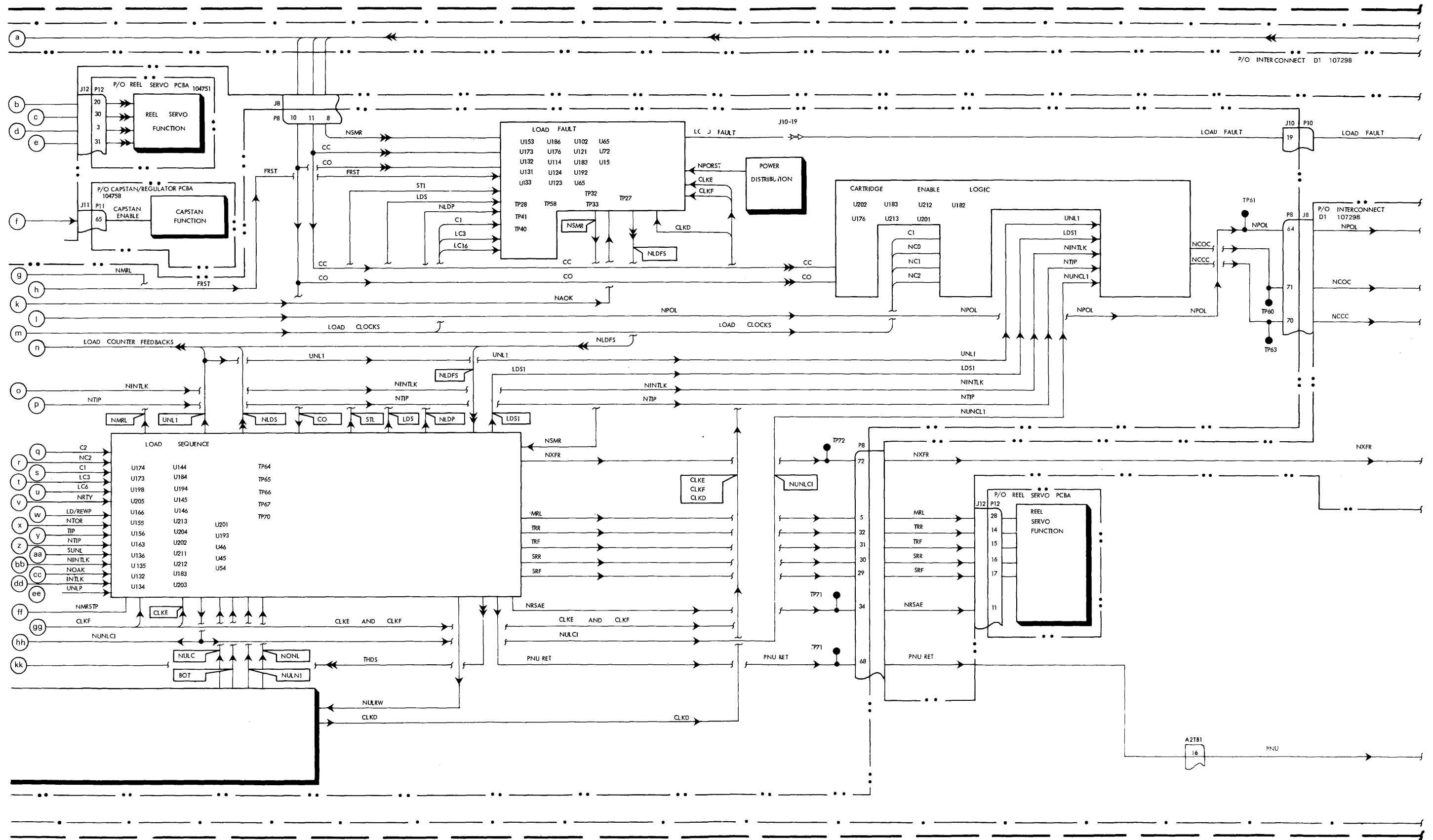


Figure 4 Air Load/Control Functional Block Diagram (Sheet 2 of 4)

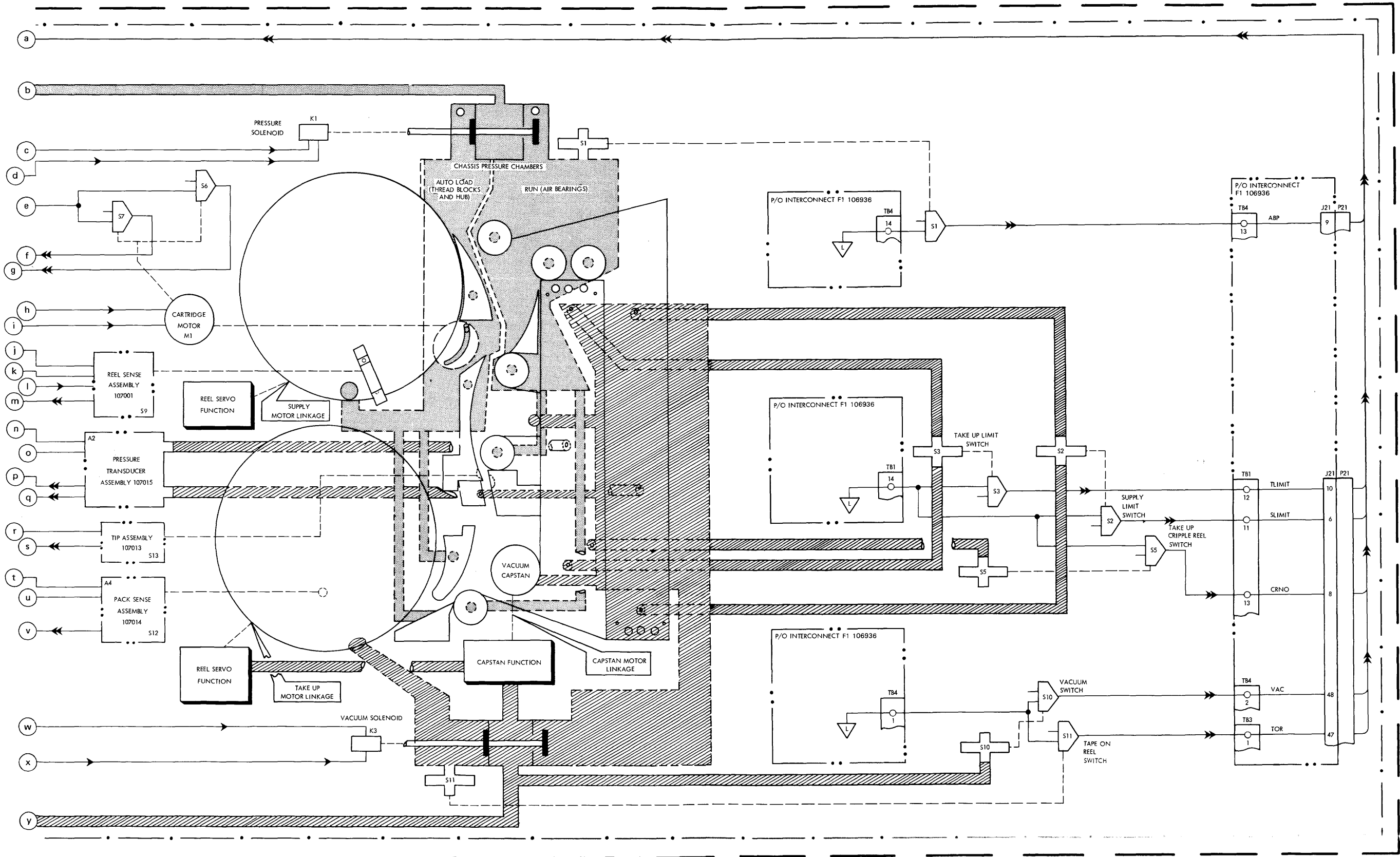
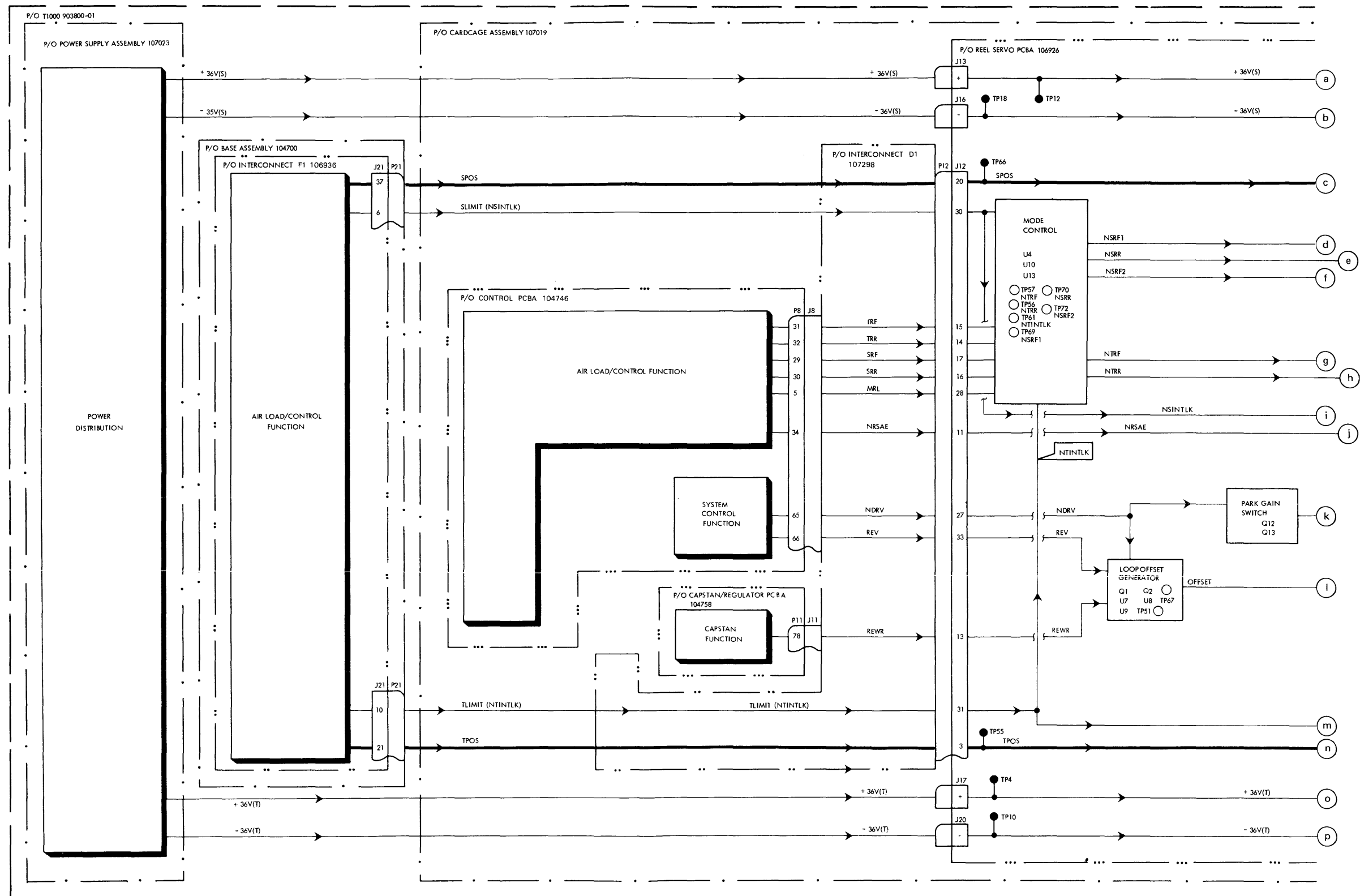


Figure 4 Air Load/Control Functional Block Diagram (Sheet 4 of 4)



MA-5789

Figure 5 Reel Servo Functional Block Diagram (Sheet 1 of 2)

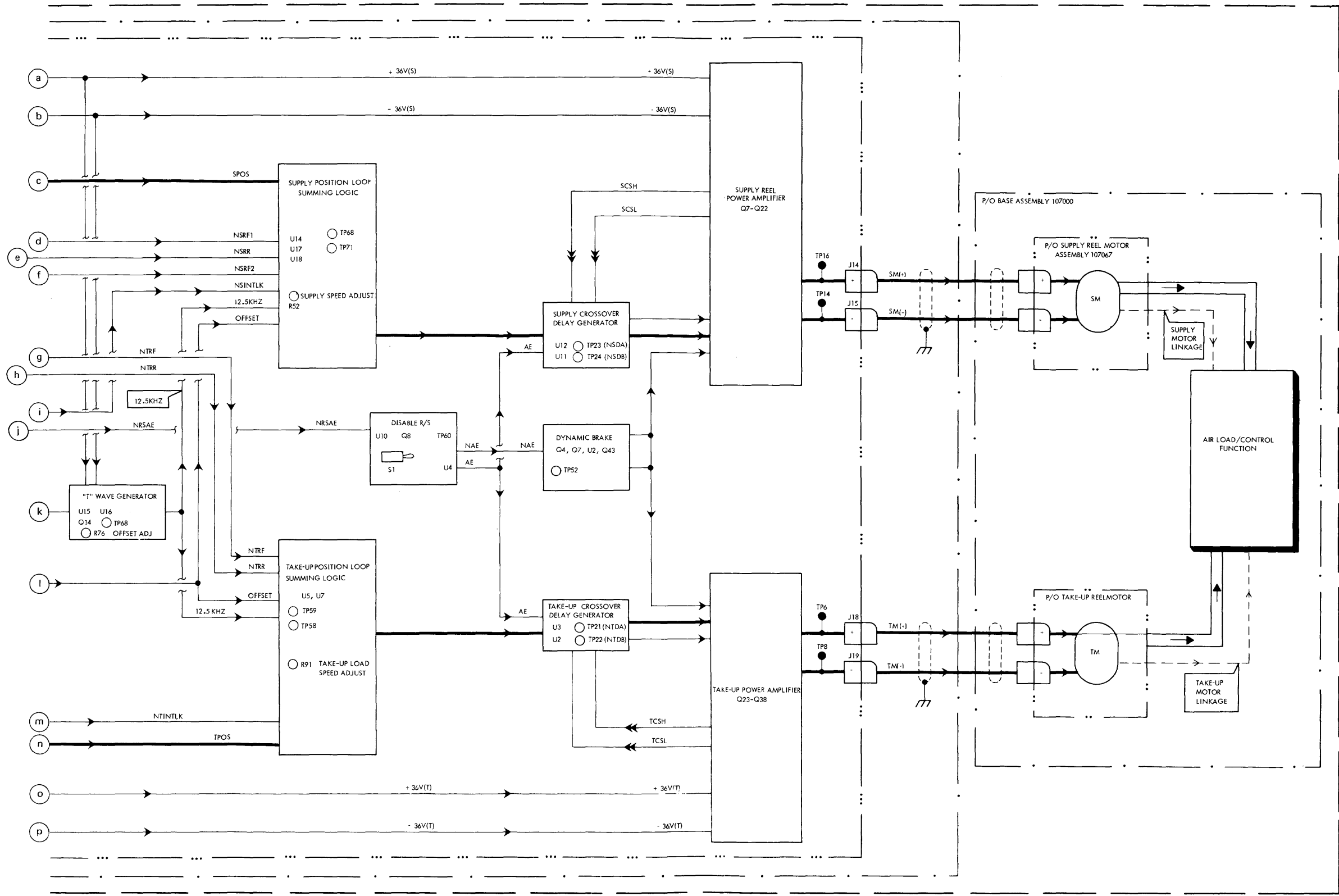


Figure 5 Reel Servo Functional Block Diagram (Sheet 2 of 2)

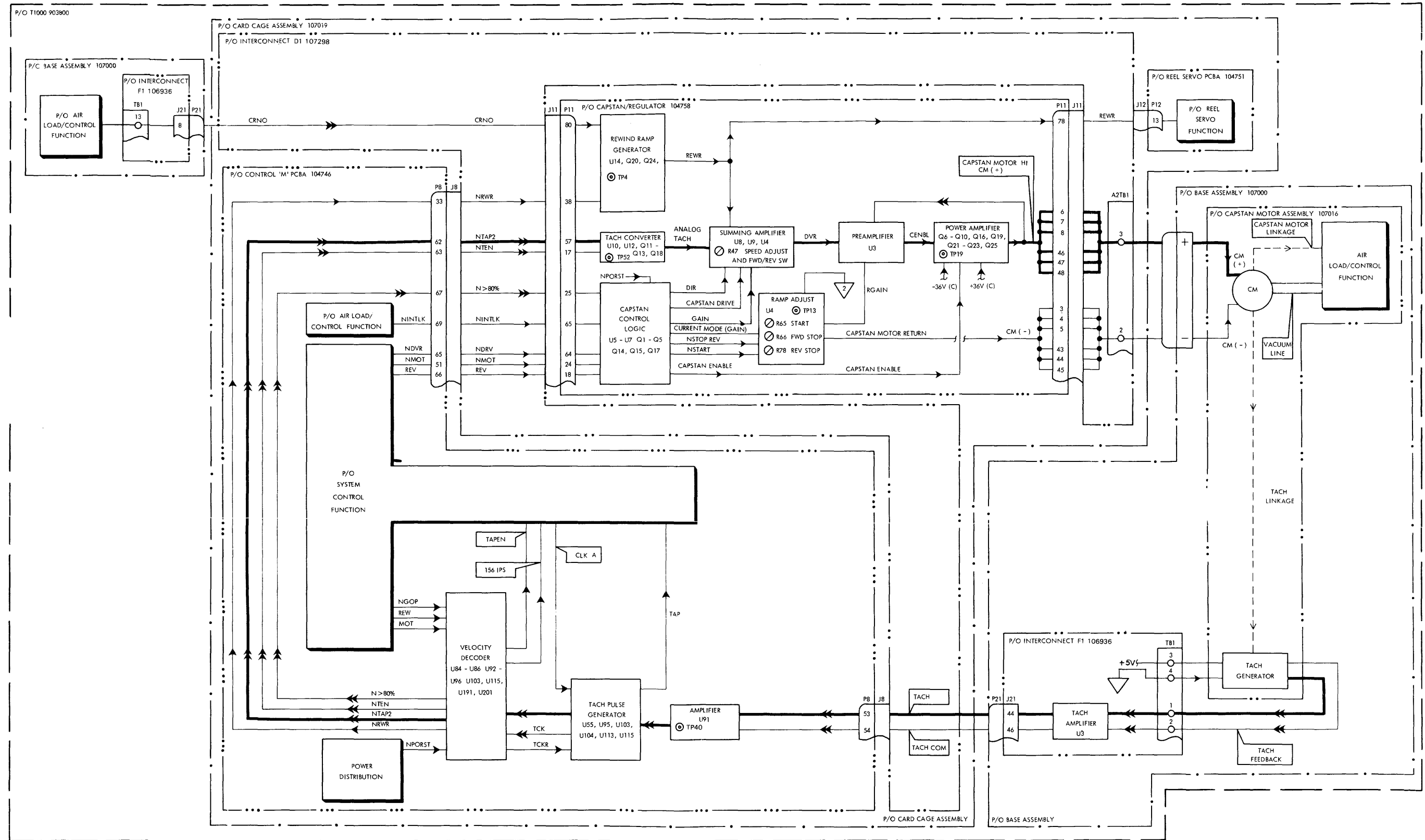
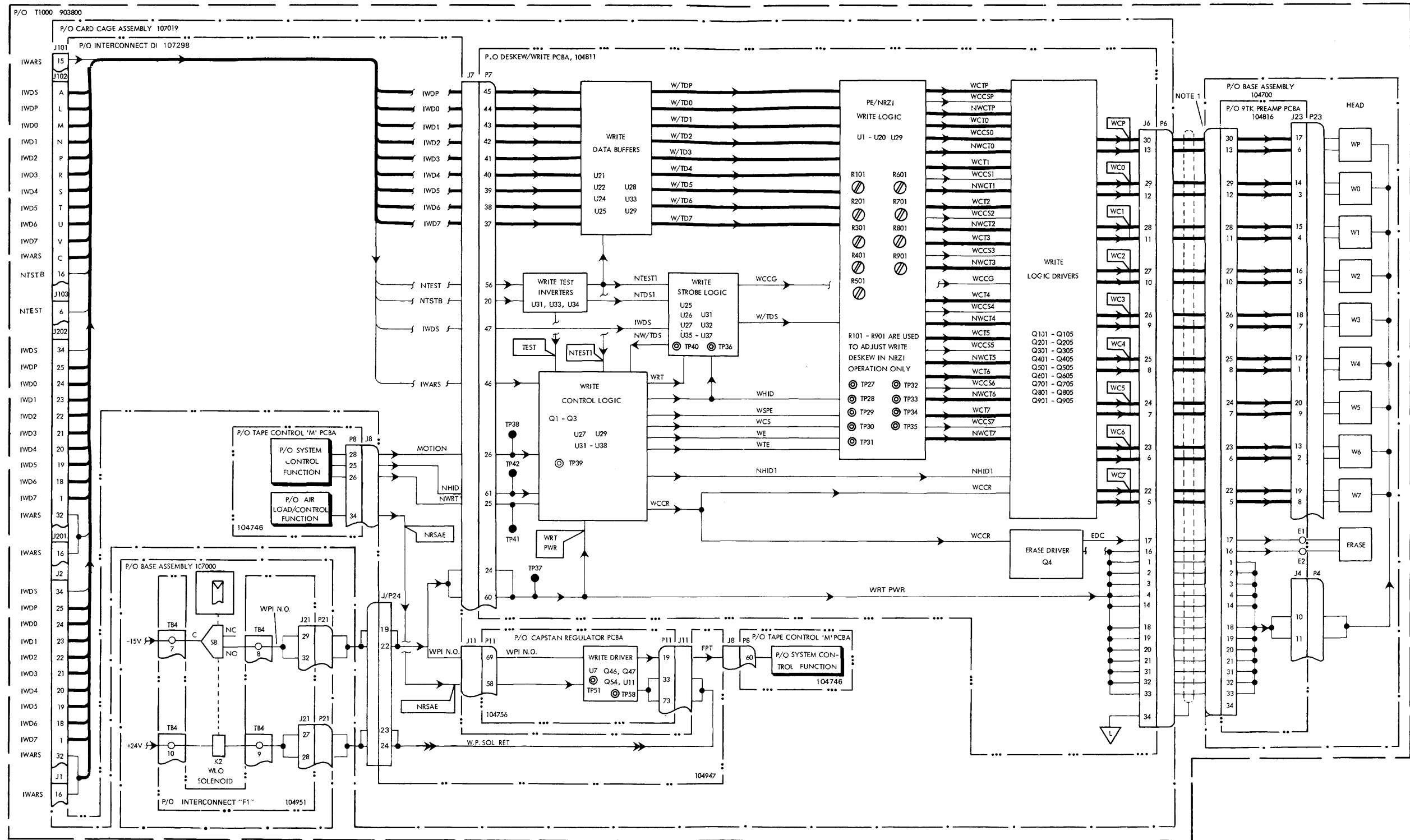


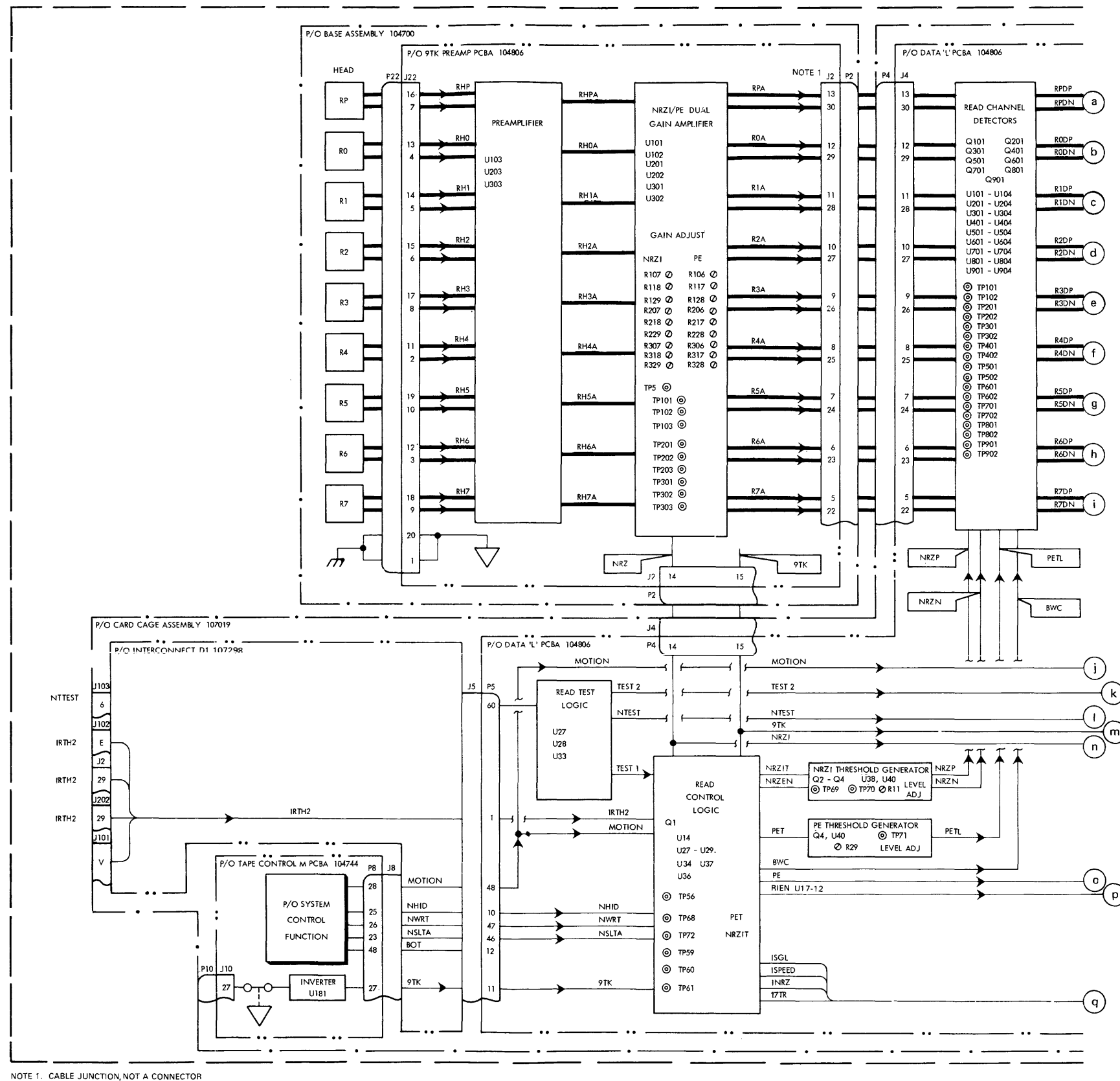
Figure 6 Capstan Servo Functional Block Diagram



NOTE 1. CABLE JUNCTION. NOT A CONNECTOR.

MA-5792

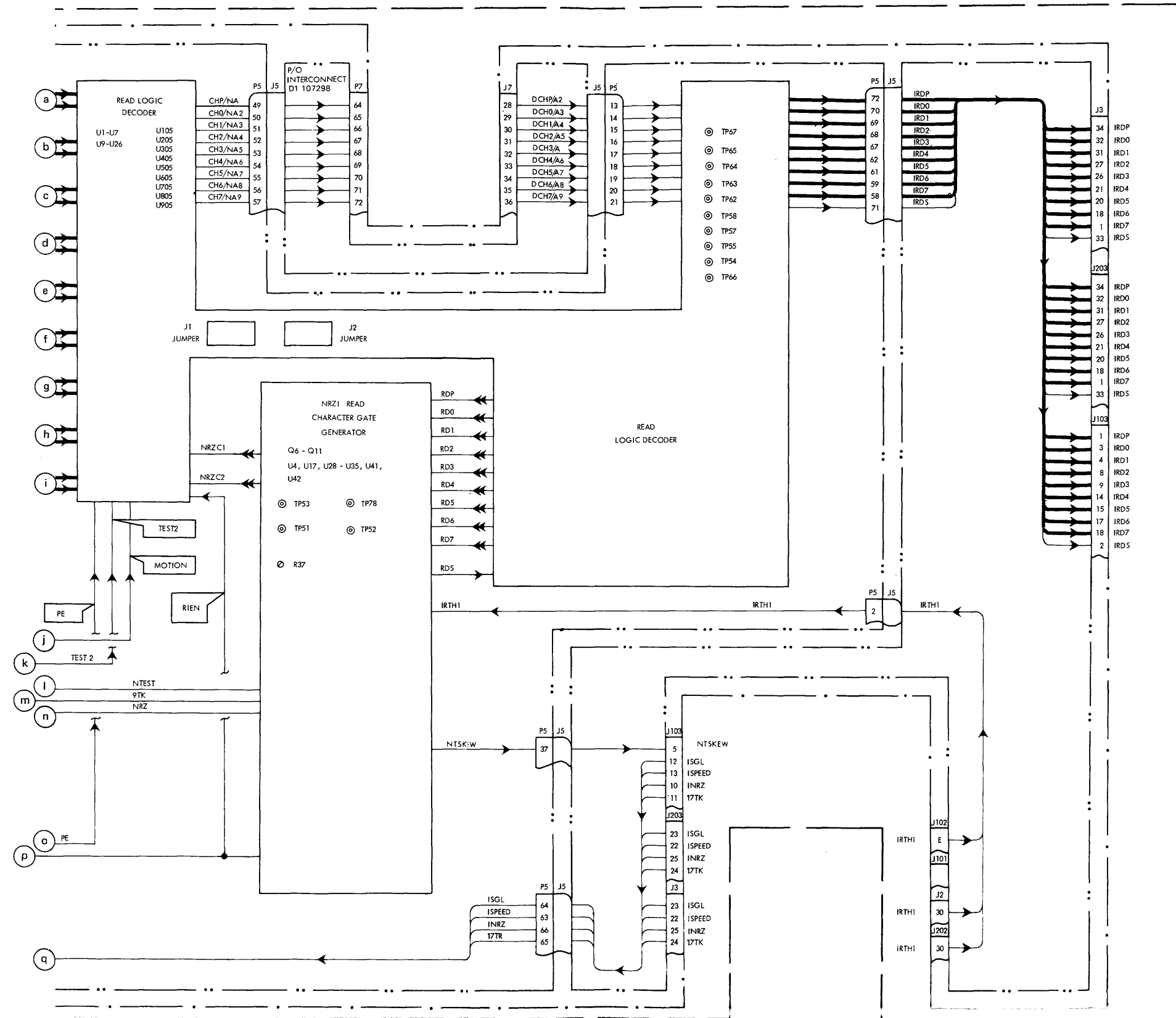
Figure 7. Write Functional Block Diagram



NOTE 1. CABLE JUNCTION, NOT A CONNECTOR

MA-5793

Figure 8 Read Functional Block Diagram (Sheet 1 of 2)



MA-5794

Figure 8 Read Functional Block Diagram (Sheet 2 of 2)

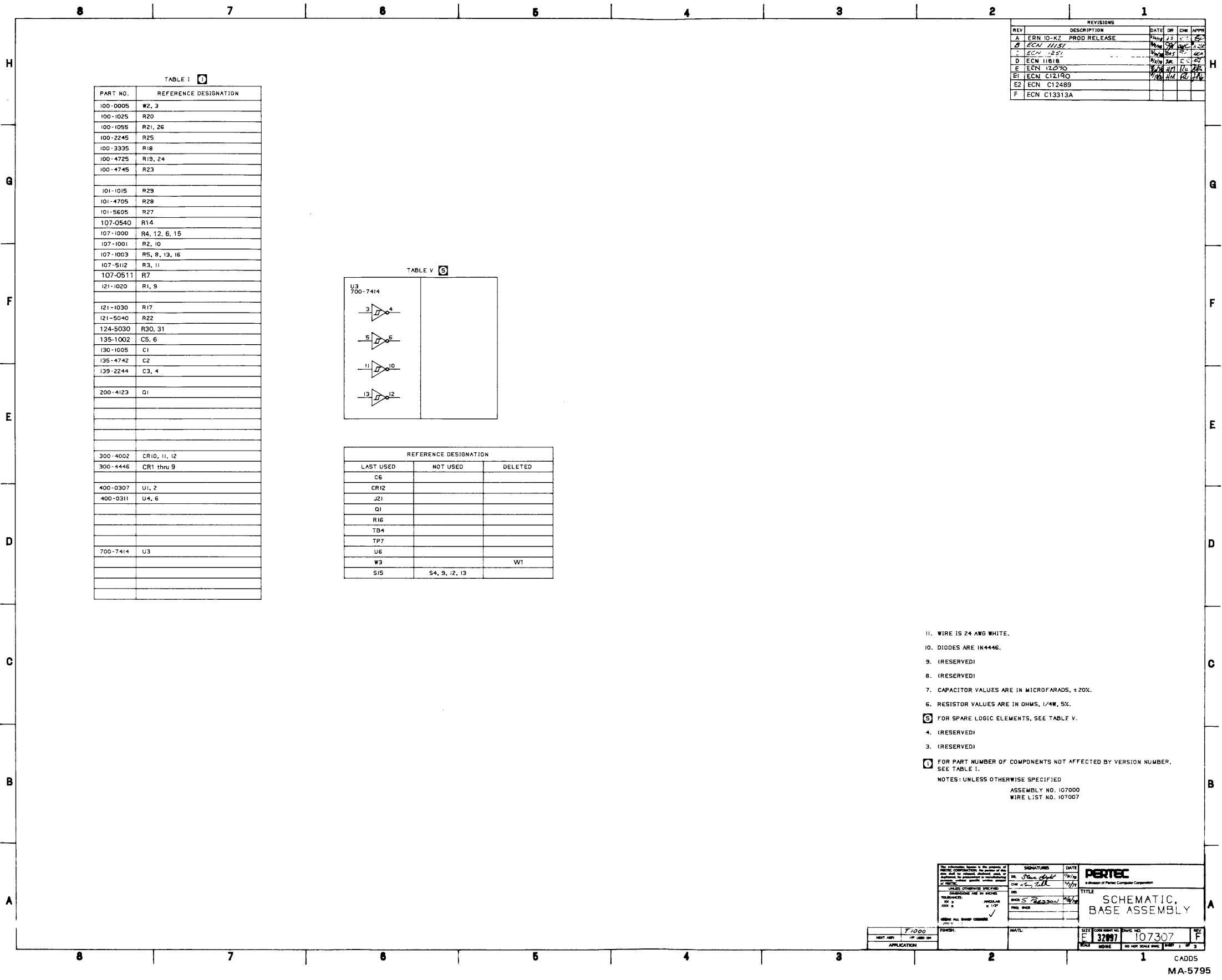
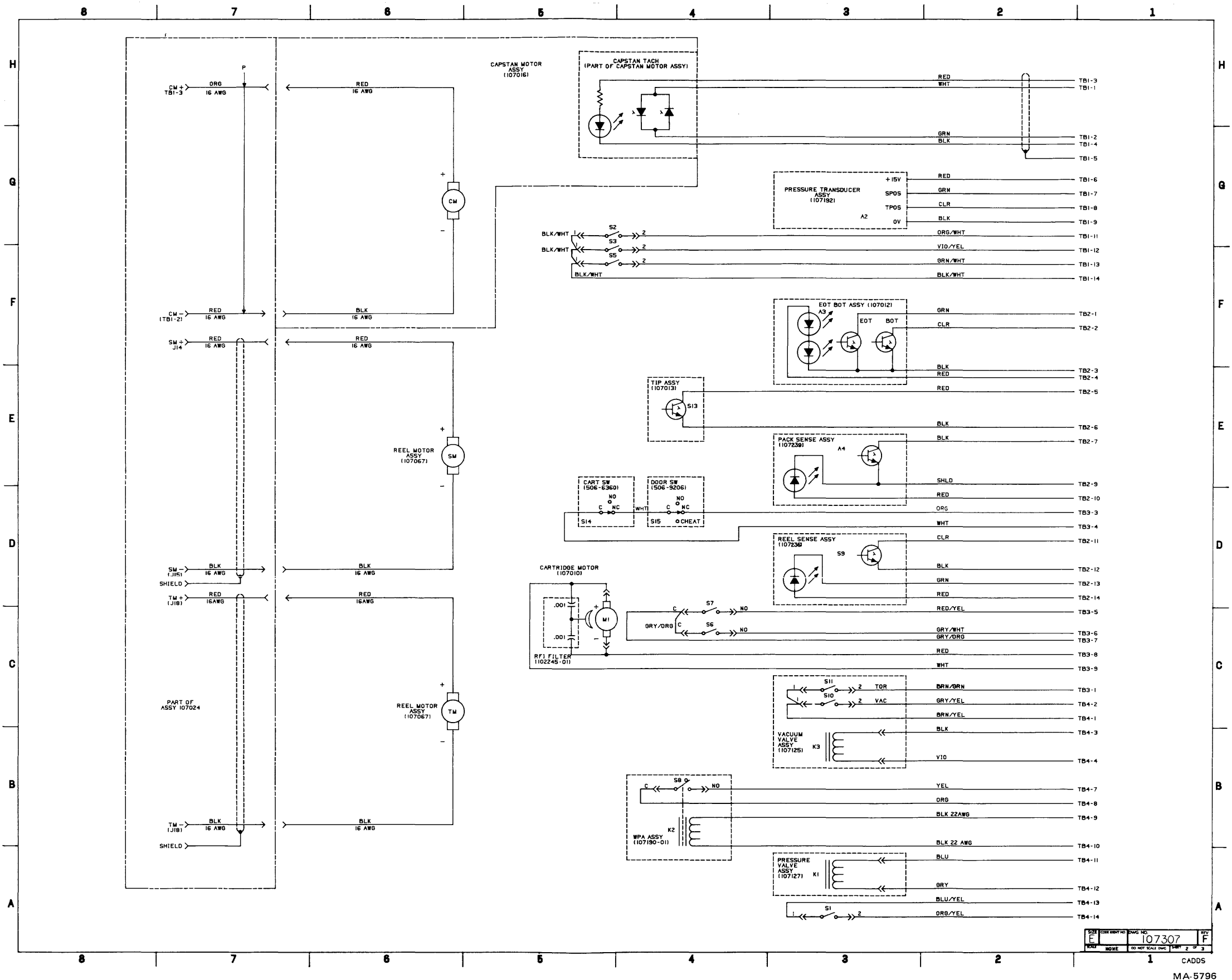


Figure 9 Schematic, Base Assembly (107307) (Sheet 1 of 3)



REV	DATE	BY	CHKD	APP'D	DWG NO.	REV
					107307	F

1 CADDs
MA-5796

Figure 9 Schematic, Base Assembly (107307) (Sheet 2 of 3)

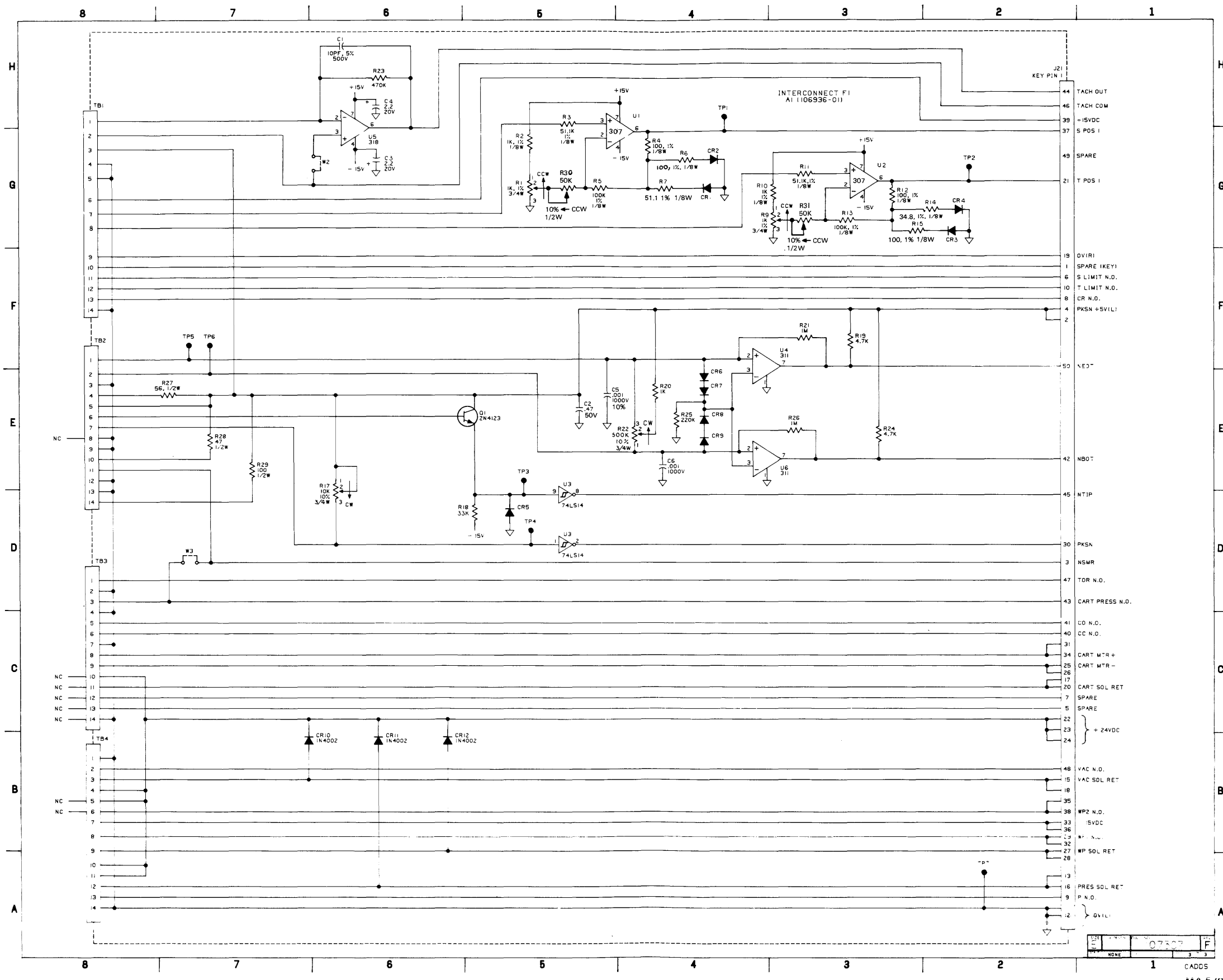
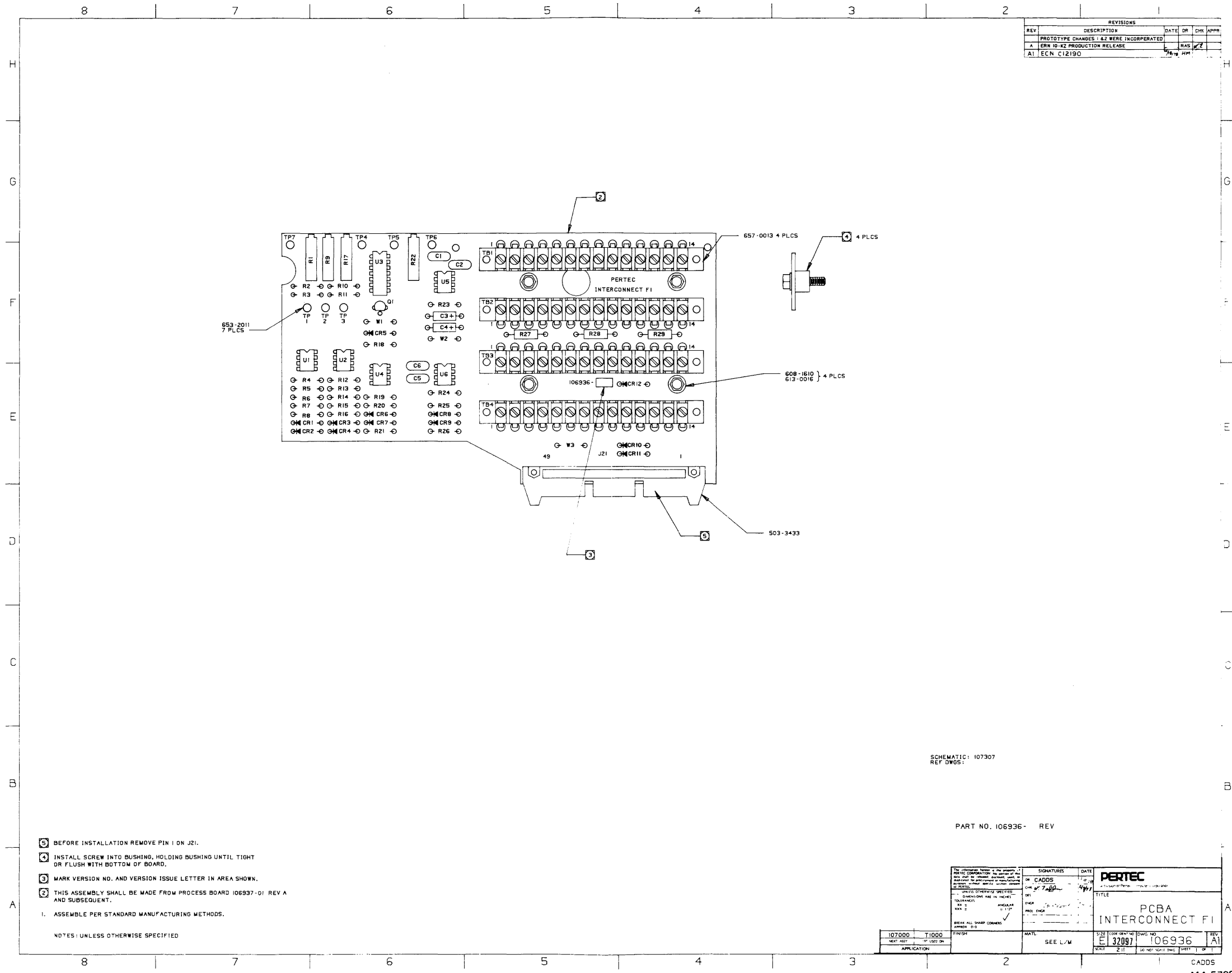


Figure 9 Schematic, Base Assembly (107307) (Sheet 3 of 3)



REVISIONS				
REV	DESCRIPTION	DATE	CHK	APPR
A	PROTOTYPE CHANGES 1 & 2 WERE INCORPORATED			
A	ERN 10-12 PRODUCTION RELEASE			
A1	ECN C12190			

1. ASSEMBLE PER STANDARD MANUFACTURING METHODS.
- NOTES: UNLESS OTHERWISE SPECIFIED
- BEFORE INSTALLATION REMOVE PIN 1 ON J21.
 - INSTALL SCREW INTO BUSHING, HOLDING BUSHING UNTIL TIGHT OR FLUSH WITH BOTTOM OF BOARD.
 - MARK VERSION NO. AND VERSION ISSUE LETTER IN AREA SHOWN.
 - THIS ASSEMBLY SHALL BE MADE FROM PROCESS BOARD 106937-01 REV A AND SUBSEQUENT.

SCHEMATIC: 107307
REF DWGS:

PART NO. 106936- REV

PERTEC MA-5798		DATE: 7/80 CHK: JAS
TITLE: PCBA INTERCONNECT F1		DES:
ENG:		PRO: ENGR
APP:		DATE: 7/80
SIZE: 107000 T1000 NEXT ASSY: 1" USED ON: APPLICATION		MATERIAL: SEE L/M
SCALE: 2:1		SHEET: 1 OF 1

Figure 10 PCBA, Interconnect F1

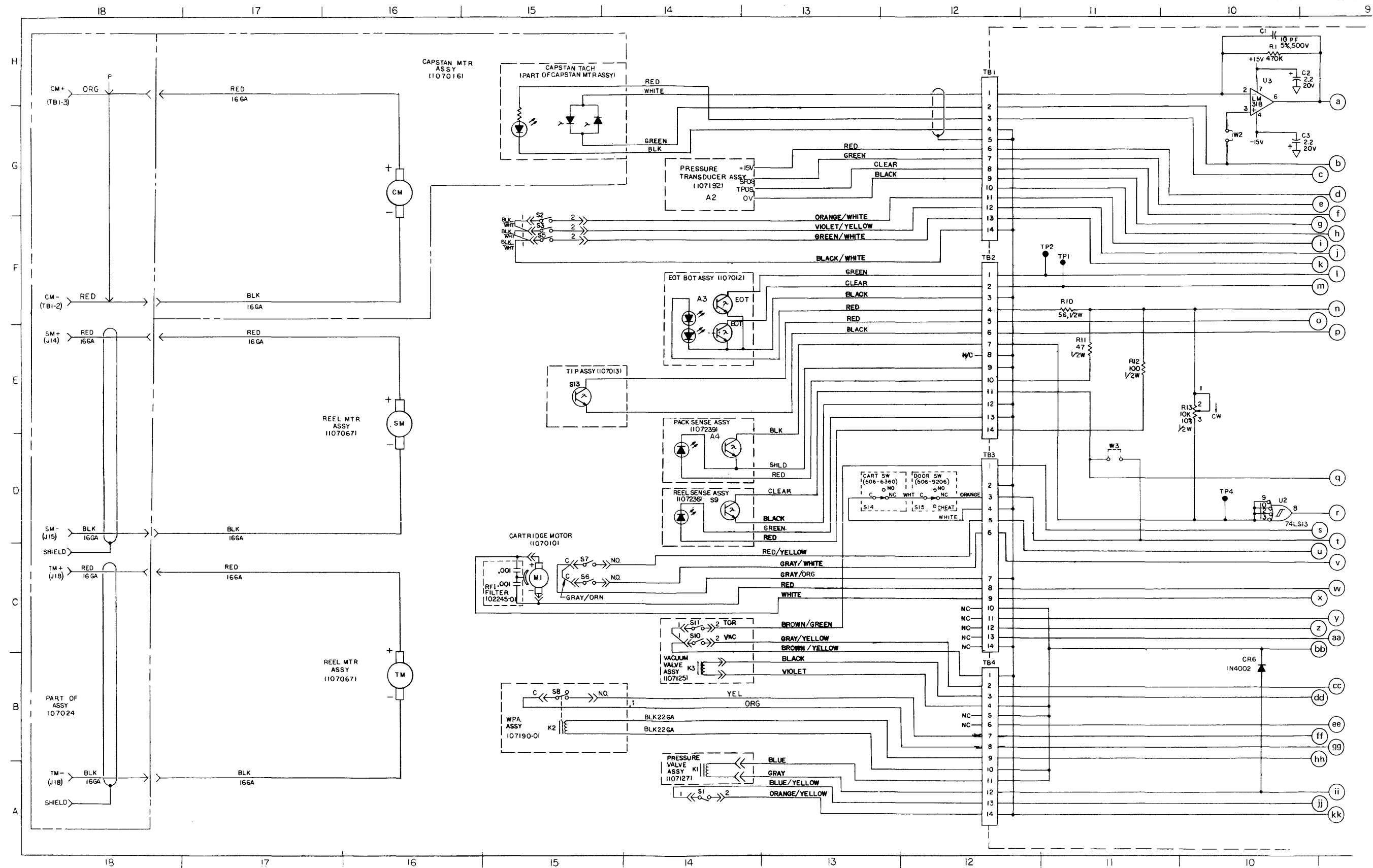


Figure 11 Schematic, Base Assembly (107189) (Sheet 1 of 2)

MA-5799

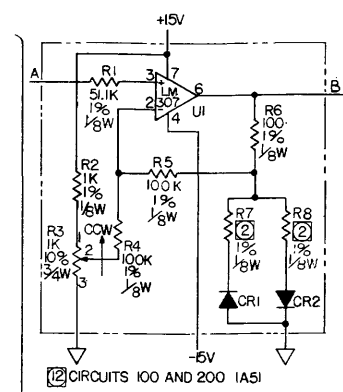
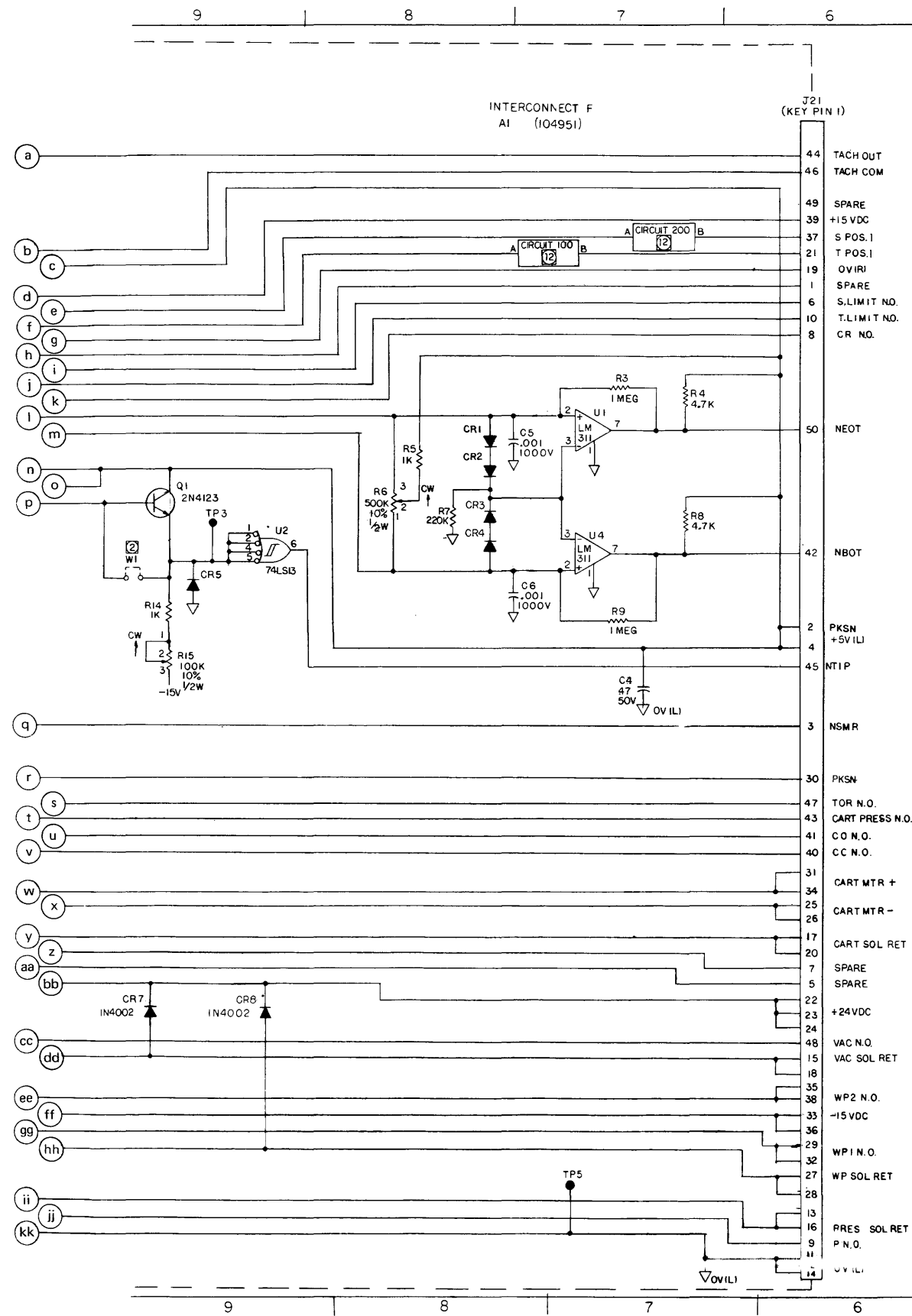


TABLE I

PART NO.	REFERENCE DESIGNATION
100-0005	W2
100-1025	R5,14
100-1055	R3,9
100-2245	R7
100-4725	R4,8
101-1015	R12
101-4705	R11
101-5605	R10
107-1000	R 106, 206
107-1001	R 102, 202
124-1030	R13
124-1040	R15
124-5040	R6
107-1003	R104, 105, 204, 205
107-5112	R101, 201
121-1020	R 103, 203
100-4745	R1
130-1005	C1
135-1002	C5,6
135-4742	C4
139-2244	C2,3
200-4123	Q1
300-4002	CR6,7,8
300-4446	CR1, 2,3,4,5,101,102, 201, 202
400-0307	U101, 201
400-0311	U1,4
400-0318	U3
691-6030	W3
710-7413	U2

REVISIONS

REV	DESCRIPTION	DATE	BY	CHK	APP
A	EMN 9-54 PROD. RELEASE	9/5/54	...	...	...
B	ECN 10618	...	...	...	...
C	ECN 10674	...	...	...	...
D	ECN 10757	...	...	...	...
E	ECN 10841	...	...	...	...
F	ECN 10824	...	...	...	...
G	ECN 10945A	...	...	...	...
H	ECN 11157	...	...	...	...
J	ECN 11251	...	...	...	...
J1	ECN 11210	...	...	...	...

REFERENCE DESIGNATION

LAST USED	NOT USED	DELETED
C6		
CR8	CR2	
J22		
Q1		
R15	R8	R2
TB4		
TP5		
U4	U1	
W3		
S15		

TABLE II

ASSEMBLY NO.	VERSION NO.	W1	R107, 208	R 108	R 207
107000	107000	100-0005	VALUE PART NO.	VALUE PART NO.	VALUE PART NO.
-01		OMIT	100 107-1000	34.8 107-0348	51.1 107-0511

② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATION PREFIX WITH CIRCUIT NUMBER [R1 IN CIRCUIT 200 IS R201].

11. WIRE IS 24 GA WHITE.
 10. DIODES ARE 1N4446.
 9. (RESERVED)
 8. (RESERVED)
 7. CAPACITORS ARE IN MICROFARADS, ±20%
 6. RESISTOR VALUES ARE IN OHMS, 1/4W, 5%
 5. (RESERVED)
 4. (RESERVED)
 3. (RESERVED)

② FOR VALUE, PART NO AND USAGE OF COMPONENTS AFFECTED BY VERSION NO., SEE TABLE II.
 ① FOR PART NO. OF COMPONENTS NOT AFFECTED BY VERSION NO. SEE TABLE I.

NOTES: UNLESS OTHERWISE SPECIFIED

ASSEMBLY NO 107000
 WIRE LIST NO 107007

PERTEC PERIPHERAL EQUIPMENT DIVISION

TITLE: SCHEMATIC BASE ASSY

DATE: 107189

APPROVED: [Signature]

DESIGNED: [Signature]

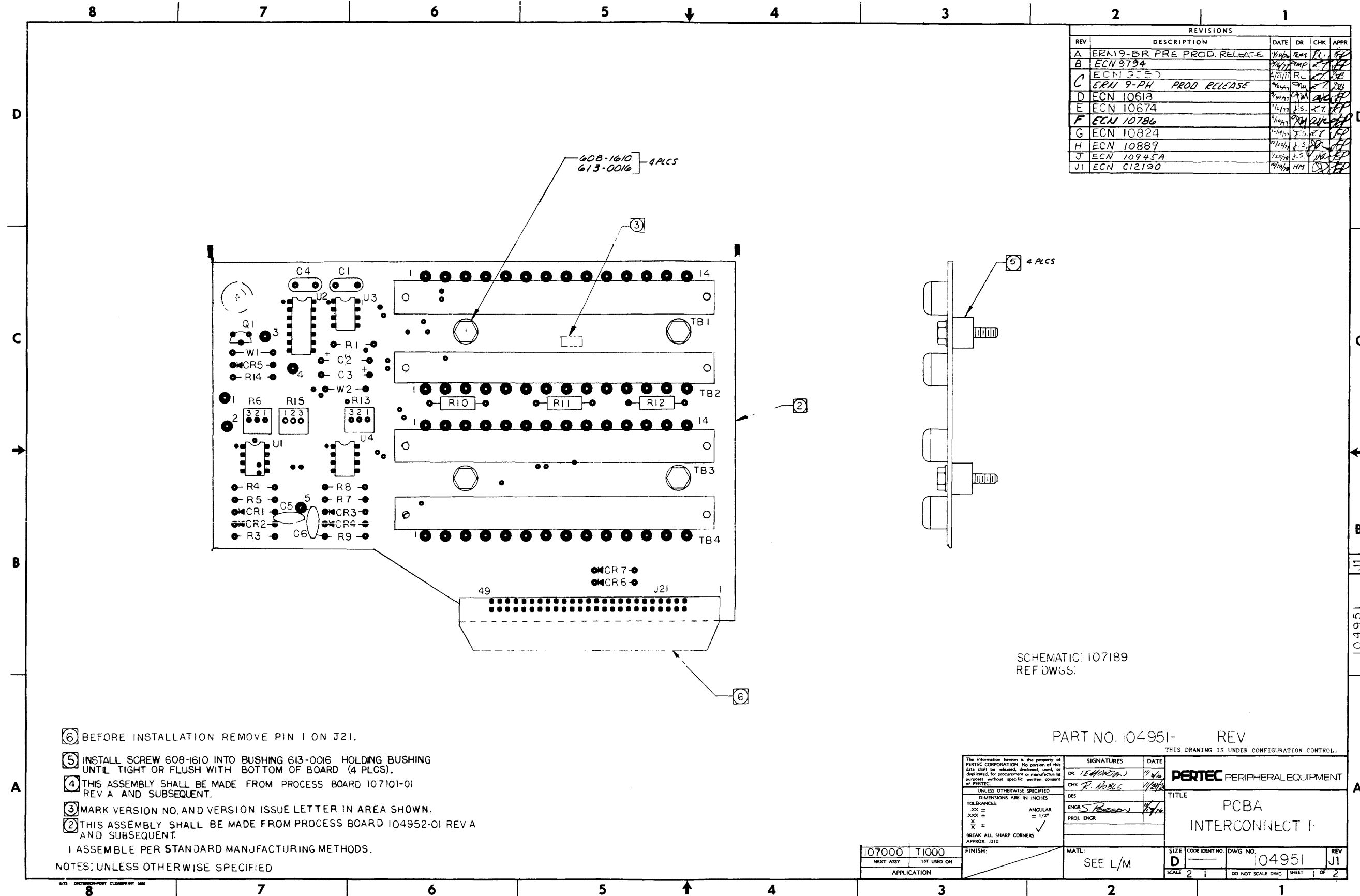
DATE: [Date]

SCALE: [Scale]

NO. OF SHEETS: [Number]

SHEET NO: [Number]

Figure 11 Schematic, Base Assembly (107189) (Sheet 2 of 2)



REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	ERN 9-BR PRE PROD. RELEASE	11/4/76	TE	PL	EP
B	ECN 9794	11/4/76	AMP	KT	EP
C	ECN 9050	11/21/77	R	CT	EP
	ERN 9-PH PROD RELEASE	11/21/77	CA	KT	EP
D	ECN 10618	11/30/77	CA	CT	EP
E	ECN 10674	11/1/77	J.S.	KT	EP
F	ECN 10786	11/10/77	CA	CT	EP
G	ECN 10824	11/14/77	J.S.	KT	EP
H	ECN 10889	11/21/77	J.S.	KT	EP
J	ECN 10945A	1/25/78	J.S.	KT	EP
J1	ECN C12190	2/19/78	HM	CT	EP

- ⑥ BEFORE INSTALLATION REMOVE PIN 1 ON J21.
 - ⑤ INSTALL SCREW 608-1610 INTO BUSHING 613-0016 HOLDING BUSHING UNTIL TIGHT OR FLUSH WITH BOTTOM OF BOARD (4 PLCS).
 - ④ THIS ASSEMBLY SHALL BE MADE FROM PROCESS BOARD 107101-01 REV A AND SUBSEQUENT.
 - ③ MARK VERSION NO. AND VERSION ISSUE LETTER IN AREA SHOWN.
 - ② THIS ASSEMBLY SHALL BE MADE FROM PROCESS BOARD 104952-01 REV A AND SUBSEQUENT.
- I ASSEMBLE PER STANDARD MANUFACTURING METHODS.
- NOTES: UNLESS OTHERWISE SPECIFIED

SCHEMATIC: 107189
REF DWGS:

PART NO. 104951- REV

THIS DRAWING IS UNDER CONFIGURATION CONTROL.

<small>The information herein is the property of PERTEC CORPORATION. No portion of this data shall be released, disclosed, used, or duplicated, for procurement or manufacturing purposes without specific written consent of PERTEC.</small>	SIGNATURES	DATE	PERTEC PERIPHERAL EQUIPMENT TITLE PCBA INTERCONNECT F
	DR. <i>TEMPERON</i>	11/8/76	
	CHK. <i>R. NOBLE</i>	11/21/76	
UNLESS OTHERWISE SPECIFIED	DIMENSIONS ARE IN INCHES		SIZE CODE IDENT NO. DWG NO. 104951 REV J1 SCALE 2 1 DO NOT SCALE DWG SHEET 1 OF 2
TOLERANCES:	XX ±	ANGULAR ± 1/2°	
	XXX ±		
	X ±		
BREAK ALL SHARP CORNERS APPROX. .010			FINISH: MATL: SEE L/M
107000	T1000	APPLICATION	

Figure 12 PCBA, Interconnect F (Sheet 1 of 2)

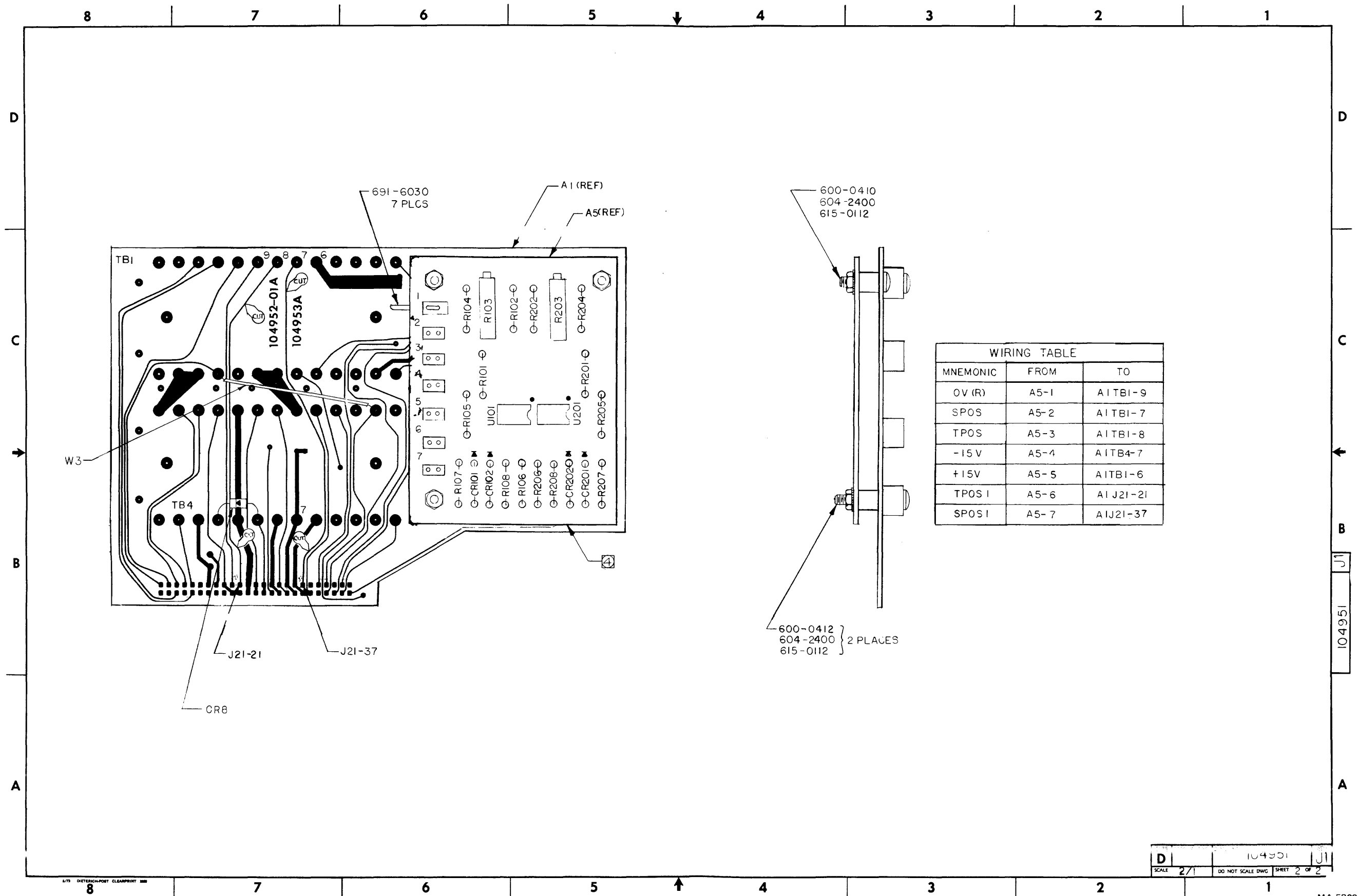


Figure 12 PCBA, Interconnect F (Sheet 2 of 2)

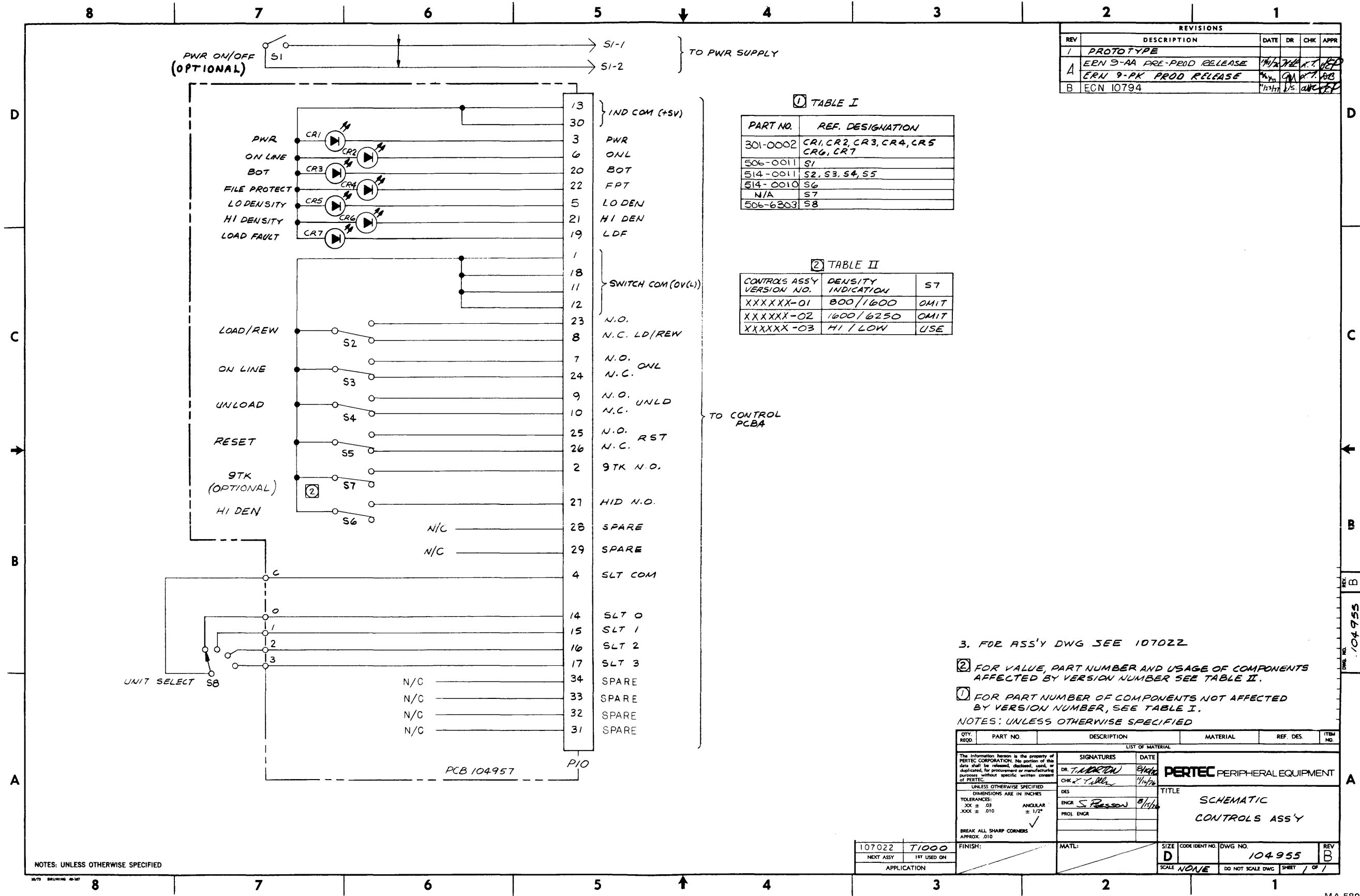
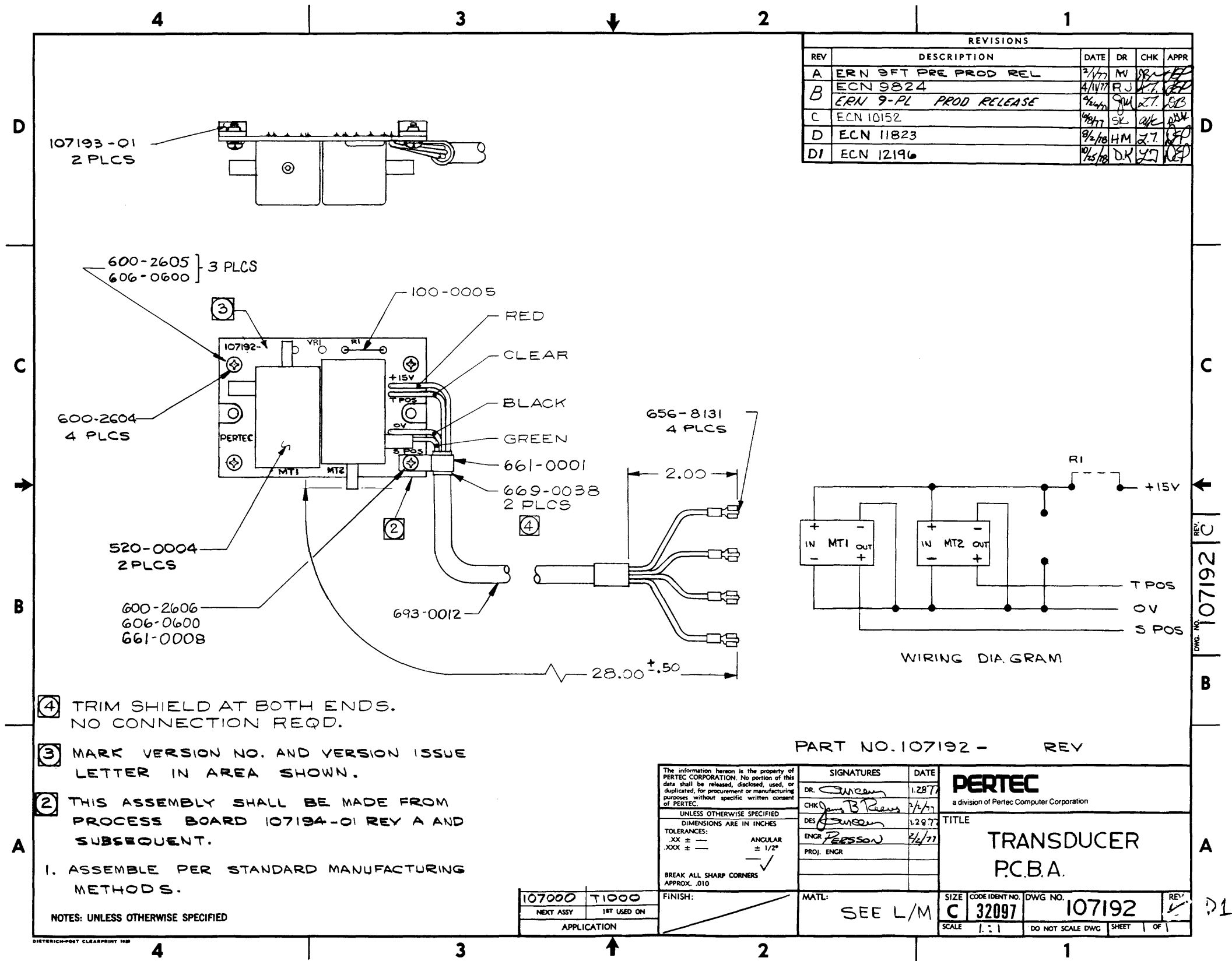


Figure 13 Schematic, Controls Assembly



REVISIONS						
REV	DESCRIPTION	DATE	DR	CHK	APPR	
A	ERN 9FT PRE PROD REL	2/1/77	MJ	JK	JK	
B	ECN 9824	4/14/77	RJ	JK	JK	
C	ERN 9-PL PROD RELEASE	4/4/77	JK	JK	JK	
D	ECN 10152	9/8/77	SK	JK	JK	
D	ECN 11823	9/2/78	HM	JK	JK	
D1	ECN 12196	10/15/78	DK	JK	JK	

- ④ TRIM SHIELD AT BOTH ENDS. NO CONNECTION REQD.
 - ③ MARK VERSION NO. AND VERSION ISSUE LETTER IN AREA SHOWN.
 - ② THIS ASSEMBLY SHALL BE MADE FROM PROCESS BOARD 107194-01 REV A AND SUBSEQUENT.
1. ASSEMBLE PER STANDARD MANUFACTURING METHODS.

NOTES: UNLESS OTHERWISE SPECIFIED

107000	T1000
NEXT ASSY	1ST USED ON
APPLICATION	

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UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOLERANCES:
.XX ± — ANGLULAR ± 1/2°
.XXX ± —

BREAK ALL SHARP CORNERS APPROX. .010

FINISH:

SIGNATURES	DATE
DR. <i>[Signature]</i>	1/28/77
CHK. <i>[Signature]</i>	2/1/77
DES. <i>[Signature]</i>	1/29/77
ENGR. <i>[Signature]</i>	3/4/77
PROJ. ENGR	

PART NO. 107192 - REV

PERTEC
a division of Pertec Computer Corporation

TITLE
TRANSDUCER P.C.B.A.

MATL:	SEE L/M	SIZE	CODE IDENT. NO.	DWG. NO.	REV.
		C	32097	107192	D1
SCALE 1:1		DO NOT SCALE DWG		SHEET 1 OF 1	

Figure 14 PCBA, Transducer

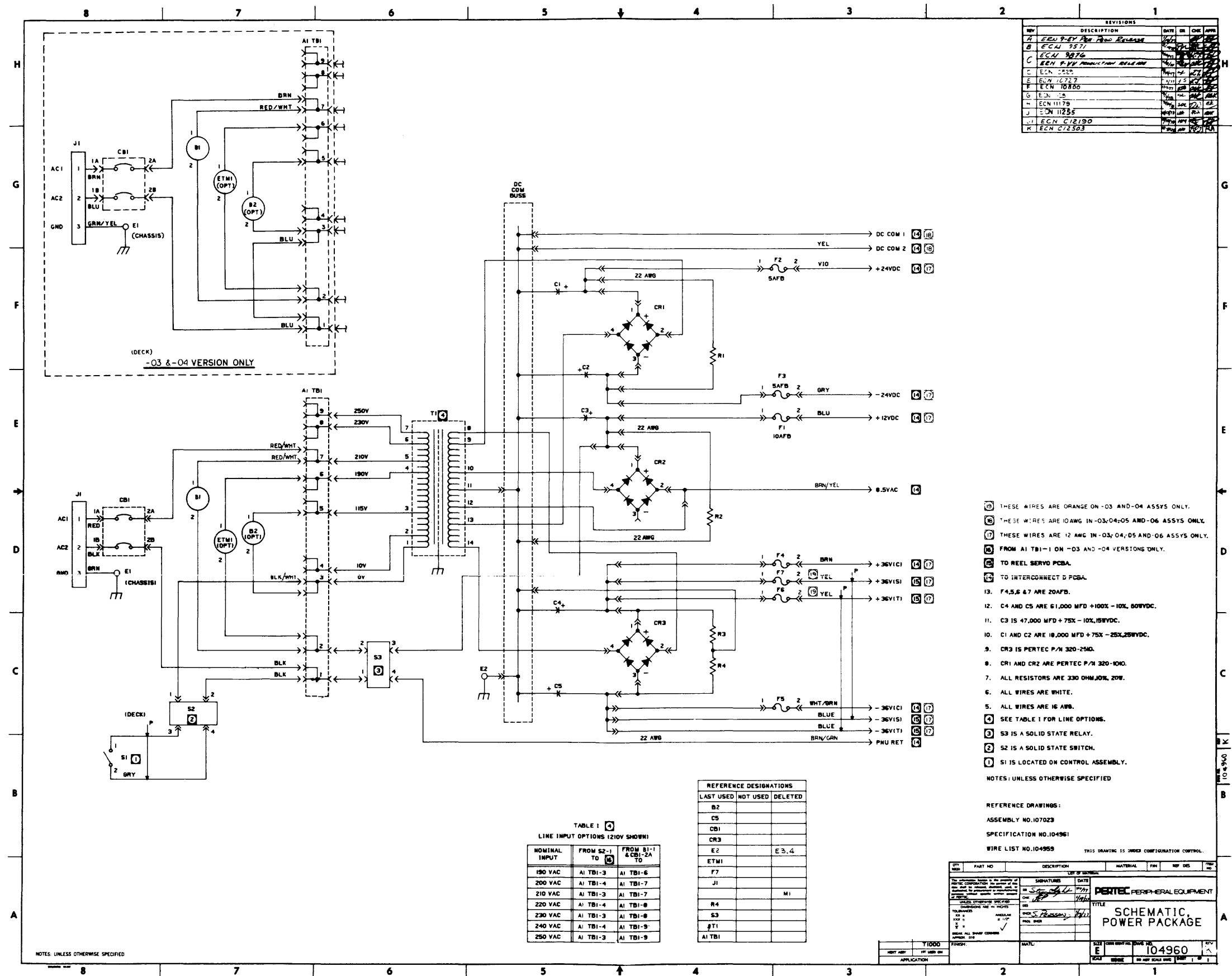
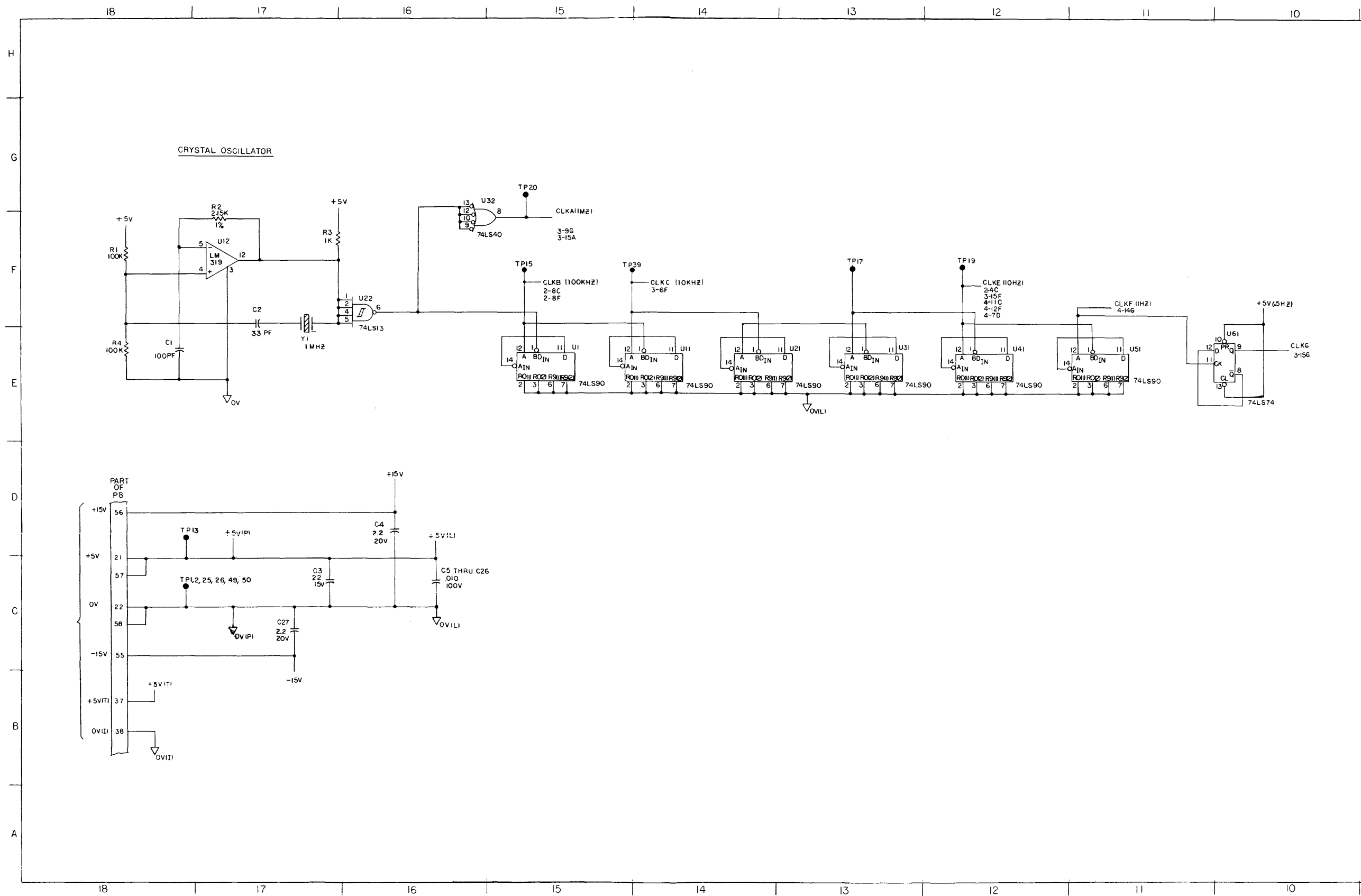


Figure 15 Schematic, Power Package



MA-5805

Figure 16 Schematic, Control M (Sheet 1 of 10)

TABLE I (1)

REFERENCE DESIGNATION	
100-1015	R5 THRU 11
100-1025	R3
100-1085	R14, 16
100-1095	R1, 4, 15
	R25
	R26
100-4725	R17, 18, 13
	R19 THRU R24
107-2151	R2
120-000B	U16, 96, 148, 206
130-3305	C2
130-1015	C1
132-2752	C32, 33, 37, 38
135-1091	C5 THRU 26, 29, 30, 31, 34, 35, 36, 46, 47
139-2244	CA, Z7
139-2262	C3
333-045	VR1
400-0318	U91
400-0319	U12
514-000B	S1
524-1000	Y1
700-5452	U4, 5, 14, 15, 141, 142, 151, 152, 211
700-7400	U65
710-4132	U171
710-4199	U163, 214, 215
710-7400	U24, 33, 42, 43, 45, 53, 54, 74, 83, 109, 111, 115, 125, 131, 133, 144, 156, 175, 188, 189, 194, 201, 204, 213
710-7404	64, 72, 102, 104, 132, 155, 173, 176, 181, 184, 191
710-7410	U46, 71, 114, 134, 172, 174, 182, 202, 56, 23, 116
710-7413	U22, 112
710-7420	U73, 75, 208
710-7430	U105, 121
710-7440	U55, 32, 154
710-7442	U185
710-7474	U25, 26, 34, 35, 36, 61, 62, 63, 81, 82, 92, 93, 94, 95, 113, 122, 126, 135, 136, 145, 146, 164, 166, 192, 196, 205
710-7490	U1, 11, 21, 31, 41, 51, 165
710-7493	U84, 85, 86, 123, 124, 195, 76, J01
710-7414	U153, 44, 212

TABLE VI (14)

OPTION	CODE	OMIT
SELECTABLE	A	W17
PERMANENT STATUS	B	W1
REMOTE DENSITY	C	W2
ON LINE AT BOT	D	W3
REMOTE 7TK/9K	E	W4

TABLE II (2)

MODEL	SPD (PS)	OPTION CODE (13)	ASSEMBLY 104746 VERSION NO.	100-0005																	691-6030	R19 THRU R24	C39 THRU C45	C35		R25	R26
				W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	100-1015	135-1031	PN	VALUE			
STD	125	A	-01	USE	USE	USE	USE	OMIT	USE	USE	OMIT	OMIT	OMIT	USE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	135-1031	.01	USE	USE		
STD	125	B,C	-02	OMIT	OMIT	USE	USE	OMIT	USE	USE	OMIT	OMIT	OMIT	USE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	USE	USE	135-1002	.001	OMIT	OMIT
STD	125	A,C	-03	USE	OMIT	USE	USE	OMIT	USE	USE	OMIT	OMIT	OMIT	USE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT		.01	USE	USE		
GCR	125	A	-11	USE	USE	USE	USE	OMIT	USE	USE	OMIT	OMIT	OMIT	USE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT		.01	USE	USE		
GCR	125	B,C	-12	OMIT	OMIT	USE	USE	OMIT	USE	USE	OMIT	OMIT	OMIT	USE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	USE	USE	.001	OMIT	OMIT	
GCR	125	A,C	-13	USE	OMIT	USE	USE	OMIT	USE	USE	OMIT	OMIT	OMIT	USE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT		.01	USE	USE		
STD	75	A	-21	USE	USE	USE	USE	OMIT	USE	USE	OMIT	OMIT	OMIT	USE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT		.01	USE	USE		
STD	75	B,C	-22	OMIT	OMIT	USE	USE	OMIT	USE	USE	OMIT	OMIT	OMIT	USE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	USE	USE	.01	OMIT	OMIT	
GCR	75	A	-31	USE	USE	USE	USE	OMIT	USE	USE	OMIT	OMIT	OMIT	USE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT		.01	OMIT	OMIT		
GCR	75	B,C	-32	OMIT	OMIT	USE	USE	OMIT	USE	USE	OMIT	OMIT	OMIT	USE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	USE	USE	.01	OMIT	OMIT	

REVISIONS

REV	DESCRIPTION	DATE	BY	CHK
A	ERN 9-DL PRE PROO RELEASE			
B	ECN 9860			
C	ECN 9875			
D	ECN 9874			
E	ECN 9920A			
F	ECN 9928			
G	ECN 10100			
H	ECN 10592B			
J	ECN 10470A			
K	ECN 10471			
L	ECN 10671			
M	ECN 10739			
N	ECN 10849			
P	ECN 11017			
R	ECN 11140			
S	ECN 10971			
T	ECN 11283			
U	ECN 11328			
V	ECN 11359			
W	ECN 11380			
Y	ECN 11487			
Z	ECN 11620			
AA	ECN 11622			
AAA	ECN C12730			
AB	ECN C12646			
AC	ECN C12965			
AD	ECN C13056A			
AE	ECN C13446A			
AF	ECN C13705			

TABLE IV (4)

I.C. VOLTAGE AND GROUND PIN NO.					
TYPE	+9V(L)	+15V	OVL	-15V	Ov(I) +5v(+)
LM318		7		4	
LM319		11		6	
120-000B	14				
74LS00	14		7		
74LS04	14		7		
74LS10	14		7		
74LS20	14		7		
74LS30	14		7		
74LS42	14		7		
74LS50	14		7		
74LS40	14		7		
74LS42	14		7		
74LS74	14		7		
74LS90	5		10		
74LS98	5		10		
74LS199	16		8		
7542	8		4		
74LS14	14		7		
74LS132	14		7		
120-0001				7	14

REFERENCE DESIGNATION

LAST USED	NOT USED	DELETED
C47		C28
R26		R12
S1		
U215	U3	
W17		
Y1		
TP72	TP3 THRU 12, 14, 48	
VR1		

TABLE V (5)

SPARE LOGIC ELEMENTS	
TYPE	REFERENCE DESIGNATION
120-000B	U148H, L, K, L, M, U208L, U194H
120-0001	U161K, U162A, B, C, D, E, F, G, H
74LS00	U1250, U174B
74LS04	U102E, U118E, U72C, U181F, U102E
74LS13	U228
74LS42	U185C, D
74LS74	U618, U135B, U136A
7542	U148, U211A
74LS14	U440

- (15) RESISTOR NETWORKS U161 & 162 (120 0001) ARE SPECIFIED AT TOP ASSY.
 - (16) FOR OPTION CODE SEE TABLE VI.
 - (17) U2, 3, 6 THRU 10, 13, 17 THRU 20, 27 THRU 30, 37 THRU 40, 47 THRU 50, 57 THRU 60, 66 THRU 70, 77 THRU 80, 87 THRU 90, 97 THRU 100, 106 THRU 110, 117 THRU 120, 127 THRU 130, 137 THRU 140, 147 THRU 150, 157 THRU 160, 167 THRU 170, 177 THRU 180, 187 THRU 190, 197 THRU 200, 207 THRU 210
 - (18) DELETE
 - 11 SIGNALS ARE CROSS-REF BETWEEN SHEETS AND WITHIN A SHEET BY NUMBERS APPEARING UNDER THE ASSOCIATED LOGIC TERM MNEMONIC. THE FIRST NO. IS THE SHEET NO. AND THE SECOND NO. IS THE ZONE NO.
 - 10 (RESERVED)
 - 9 (RESERVED)
 - 8 (RESERVED)
 - 7. CAPACITOR VALUES ARE IN MICROFARADS, 20%, 100V.
 - 6. RESISTOR VALUES ARE IN OHMS, 5%, 1/4W.
 - (5) FOR SPARE LOGIC ELEMENTS, SEE TABLE V.
 - (4) FOR I. C. GENERIC TYPE NO. AND GROUND/VOLTAGE PIN NOS. SEE TABLE IV.
 - (3) (RESERVED)
 - (2) FOR VALUE, PART NUMBER AND USAGE OF COMPONENTS AFFECTED BY VERSION NUMBER, SEE TABLE II.
 - (1) FOR PART NUMBER OF COMPONENTS NOT AFFECTED BY VERSION NUMBER, SEE TABLE I.
- NOTES: UNLESS OTHERWISE SPECIFIED
- ASSEMBLY NO. 104746
 SPECIFICATION NO.
 REFERENCE DRAWINGS

<p>104746 1000</p>	<p>DATE: 10/10/74</p>	<p>PERTEC PERIPHERAL EQUIPMENT DIVISION</p>
<p>DESIGNED BY: J. S. PETERSON</p>	<p>CHECKED BY: J. S. PETERSON</p>	<p>TITLE: SCHEMATIC CONTROL M</p>
<p>DATE: 10/10/74</p>	<p>DATE: 10/10/74</p>	<p>DATE: 10/10/74</p>
<p>104745</p>	<p>104745</p>	<p>104745</p>

Figure 16 Schematic, Control M (Sheet 2 of 10)

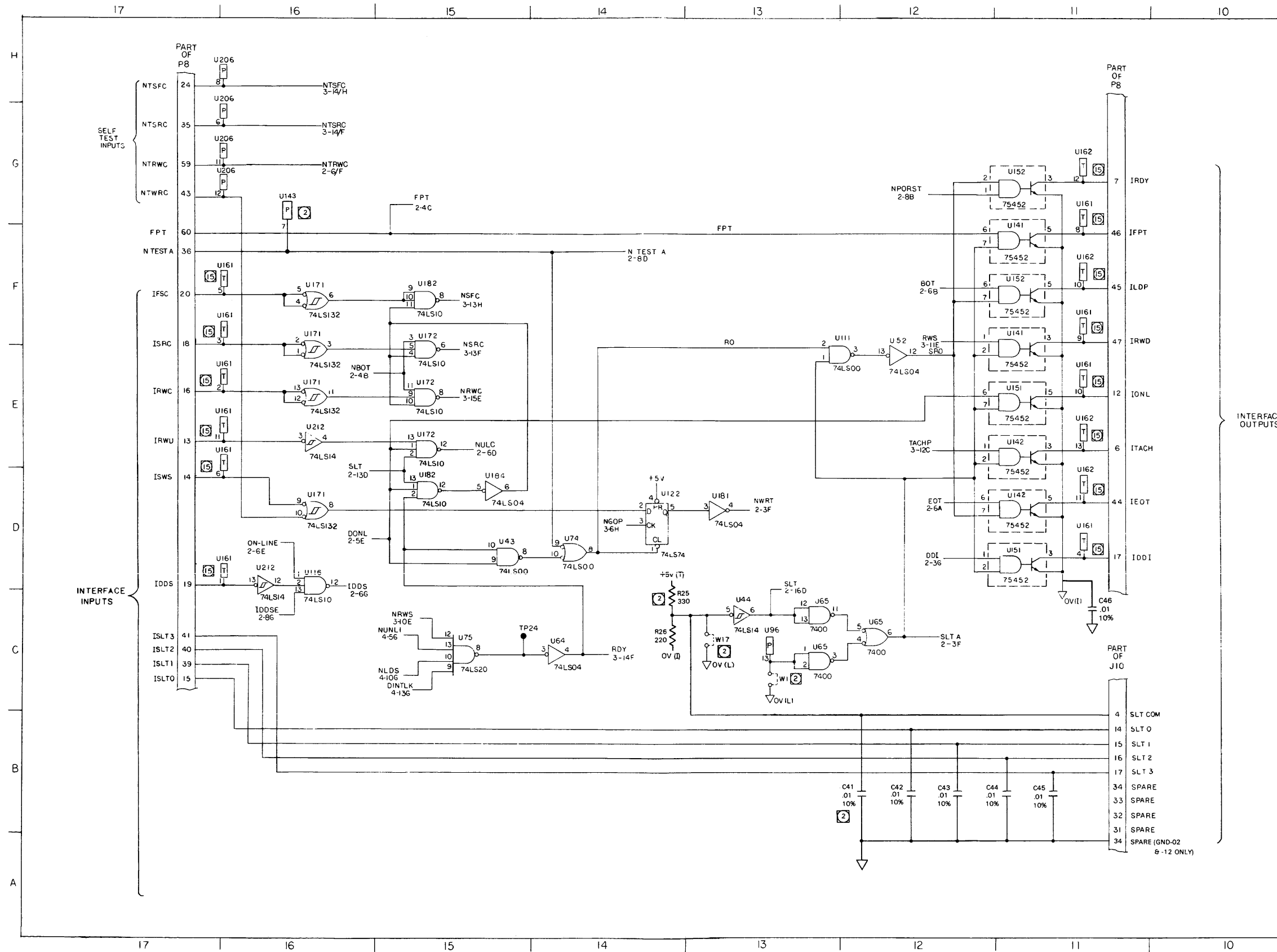


Figure 16 Schematic, Control M (Sheet 3 of 10)

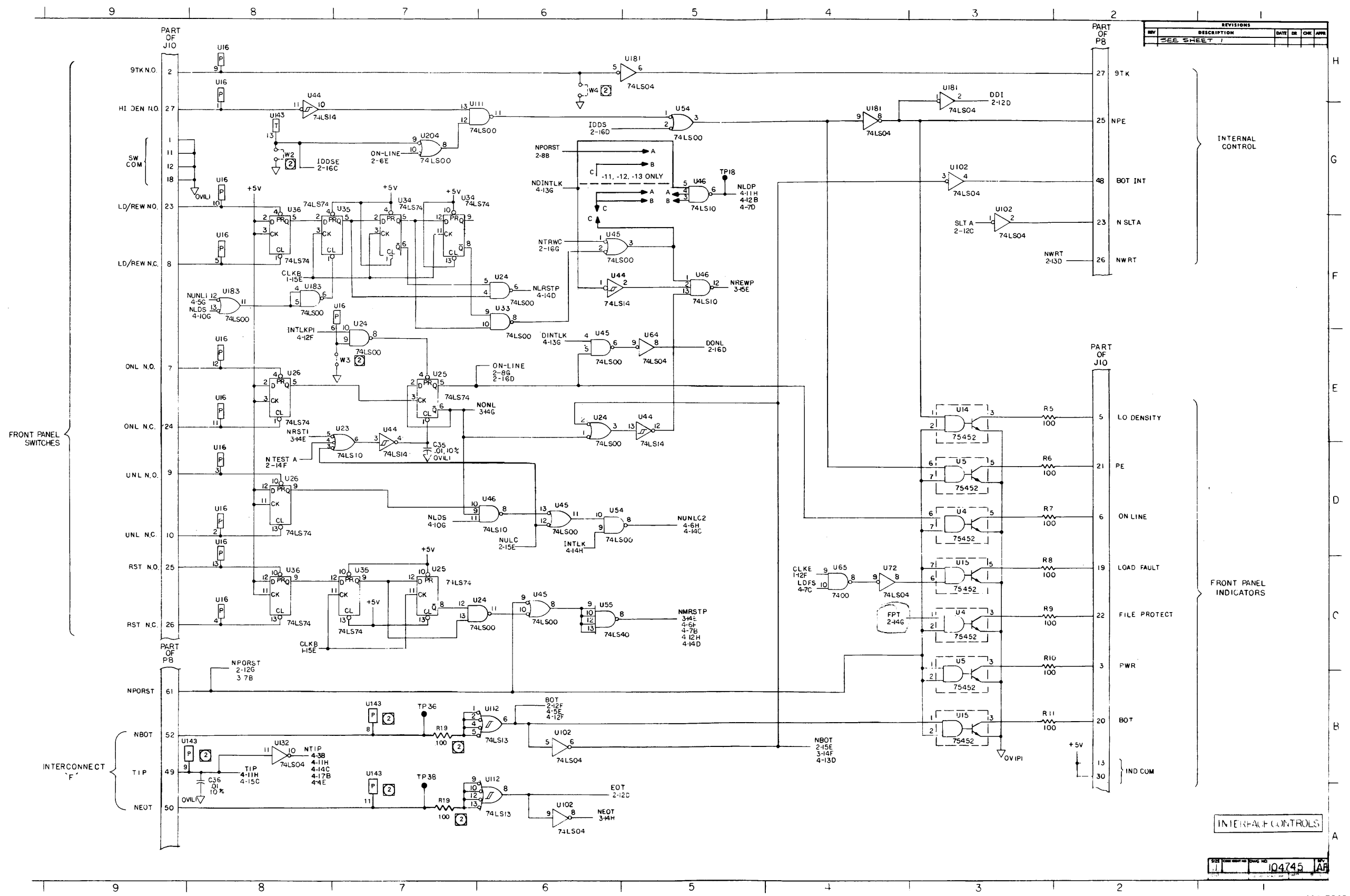
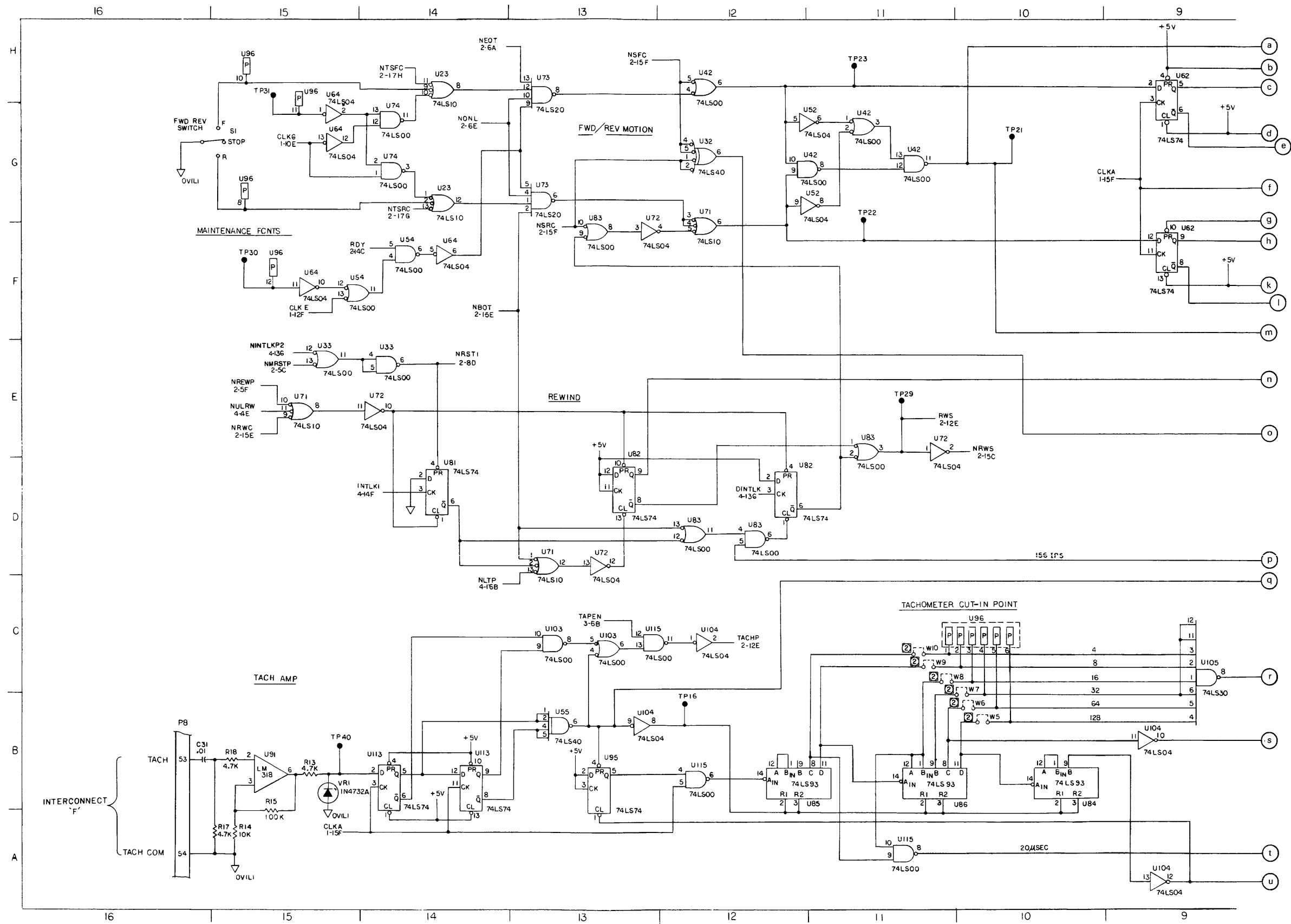


Figure 16 Schematic, Control M (Sheet 4 of 10)



MA-5809

Figure 16 Schematic, Control M (Sheet 5 of 10)

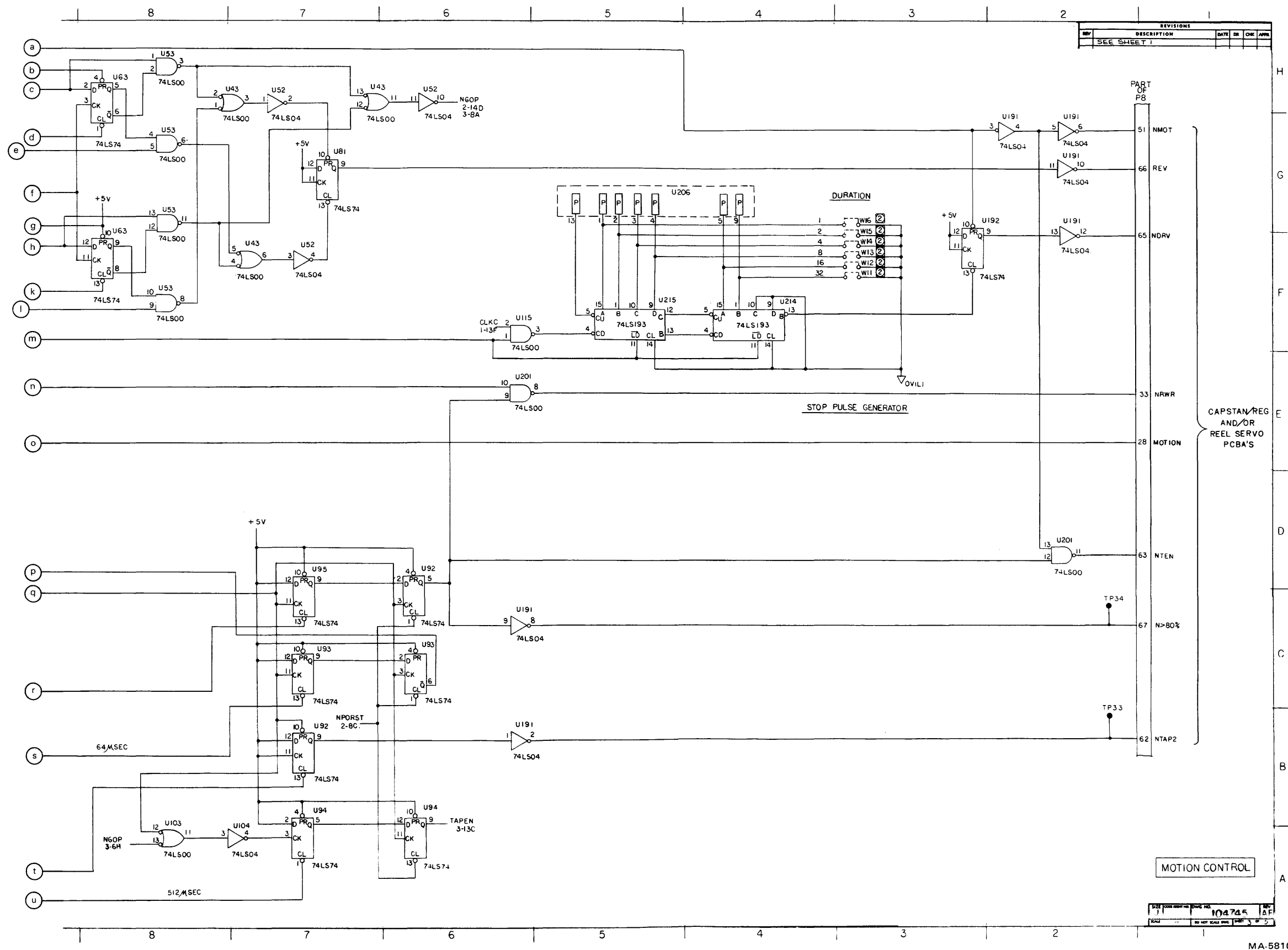


Figure 16 Schematic, Control M (Sheet 6 of 10)

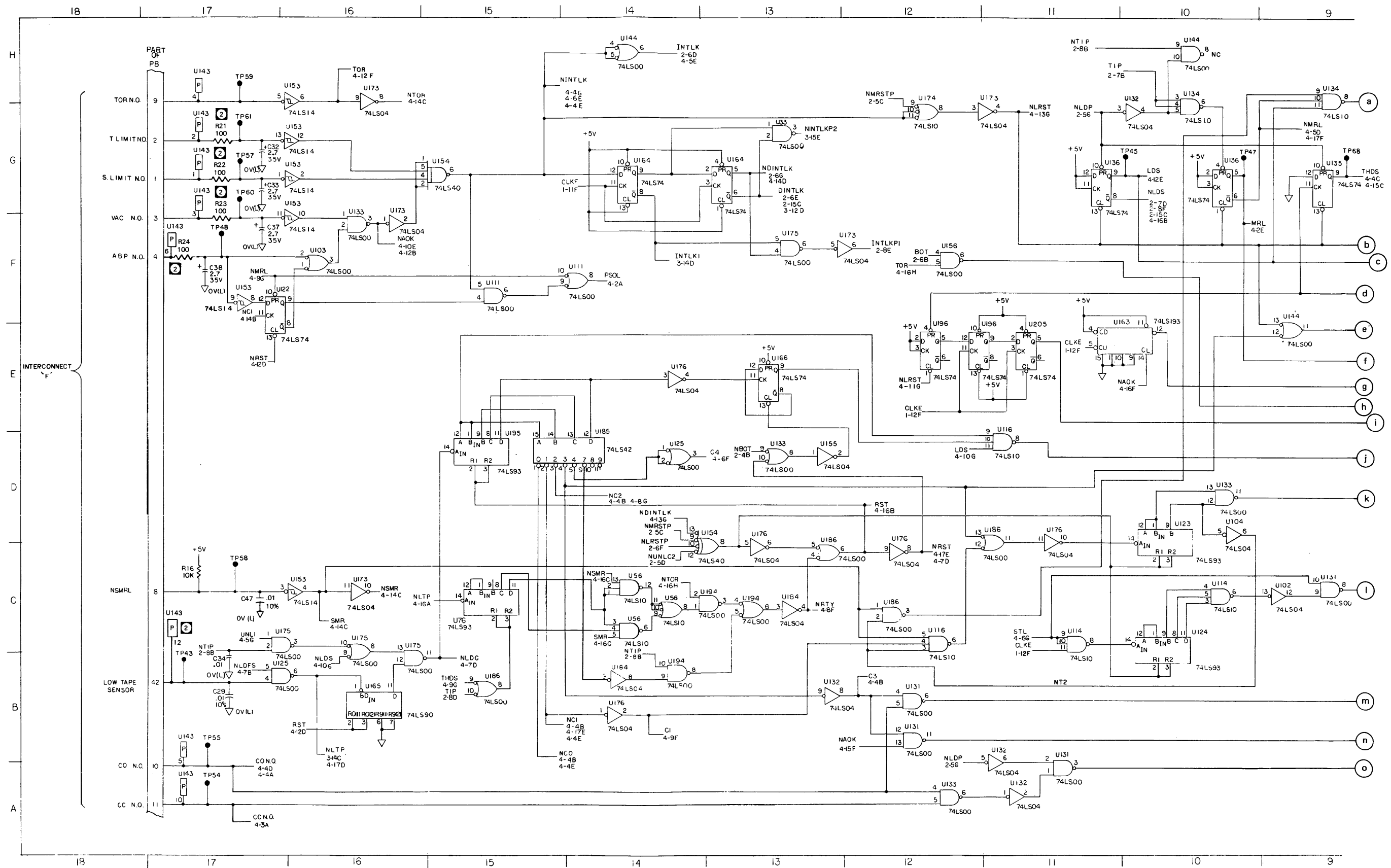


Figure 16 Schematic, Control M (Sheet 7 of 10)

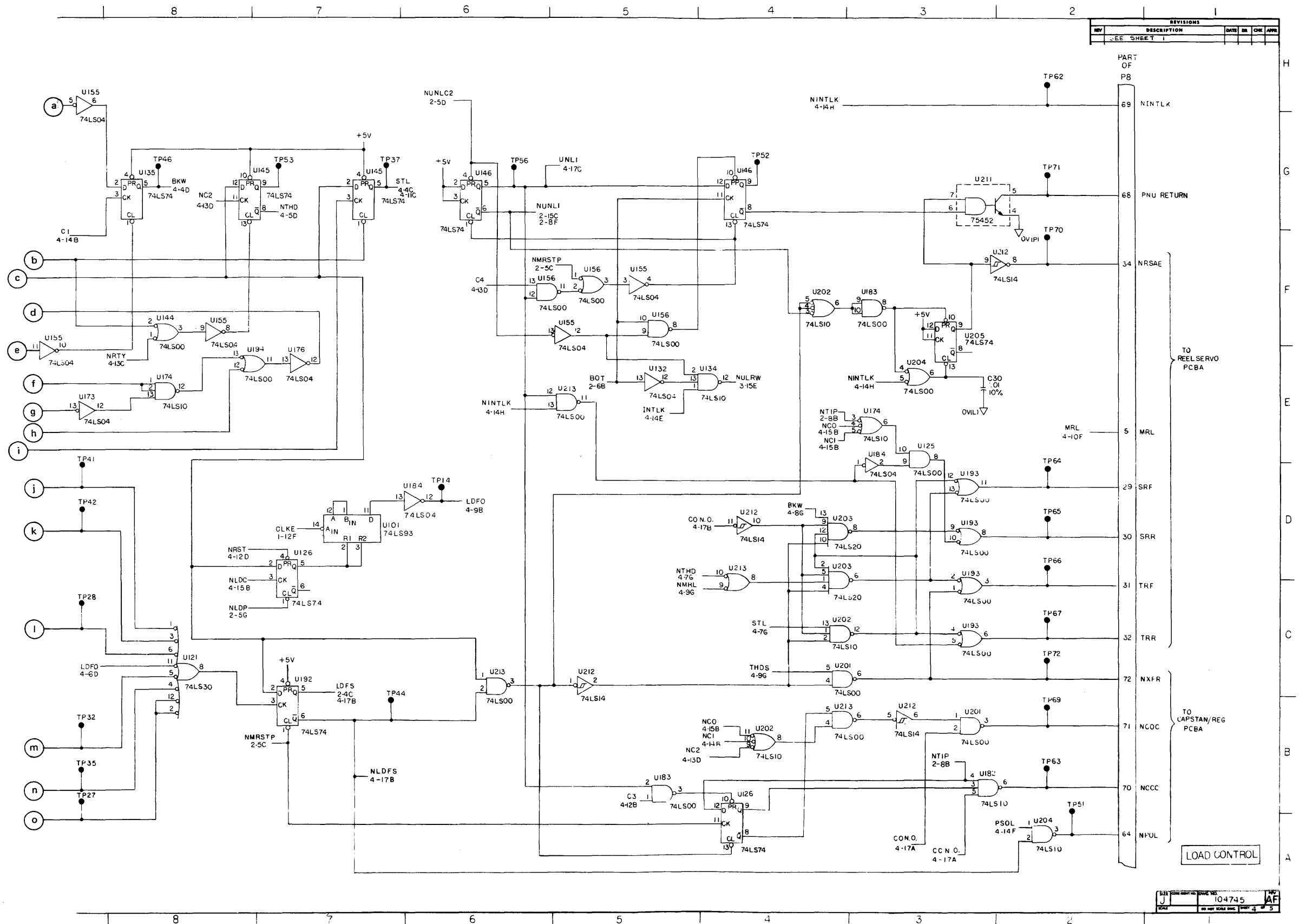
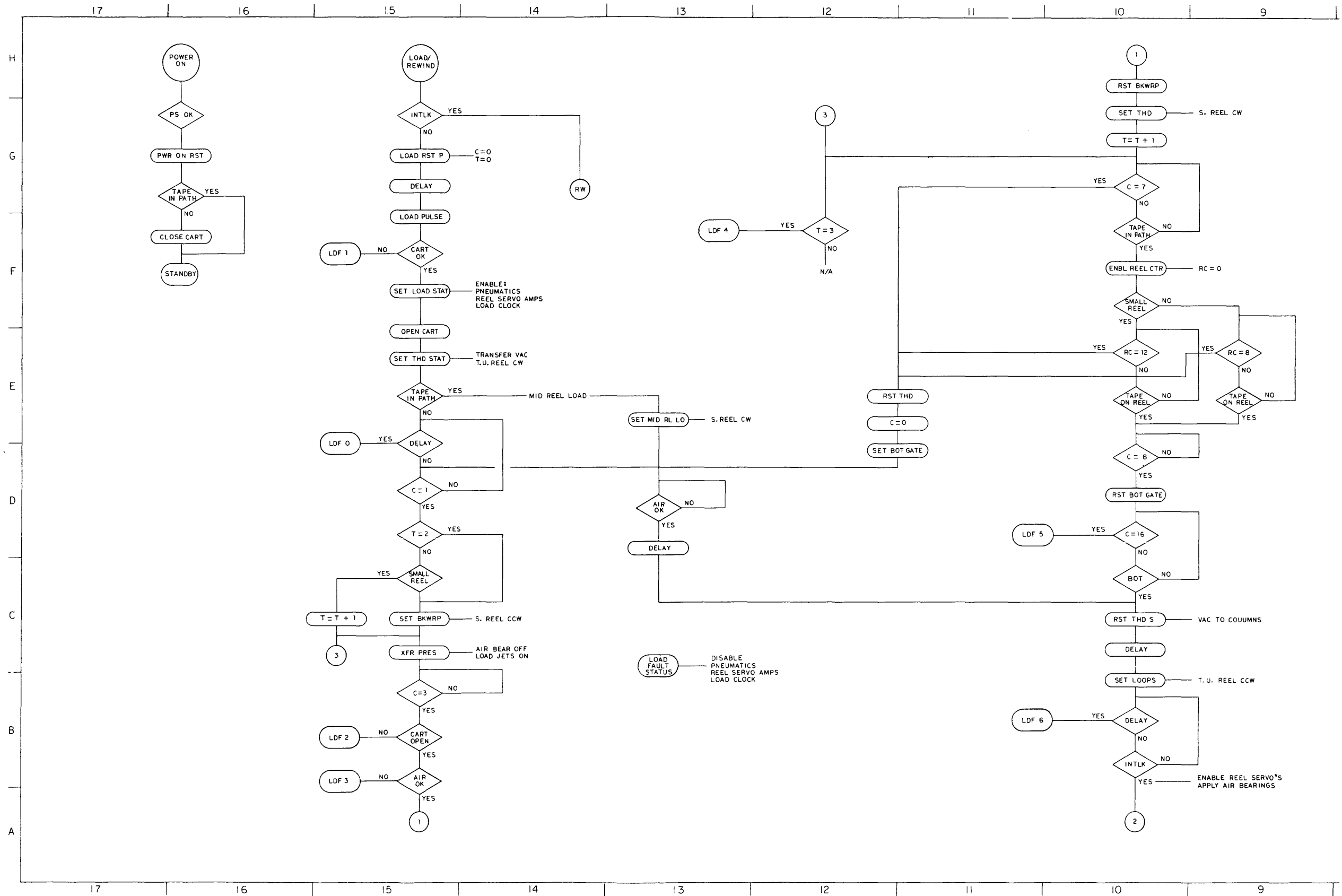


Figure 16 Schematic, Control M (Sheet 8 of 10)



MA-5813

Figure 16 Schematic, Control M (Sheet 9 of 10)

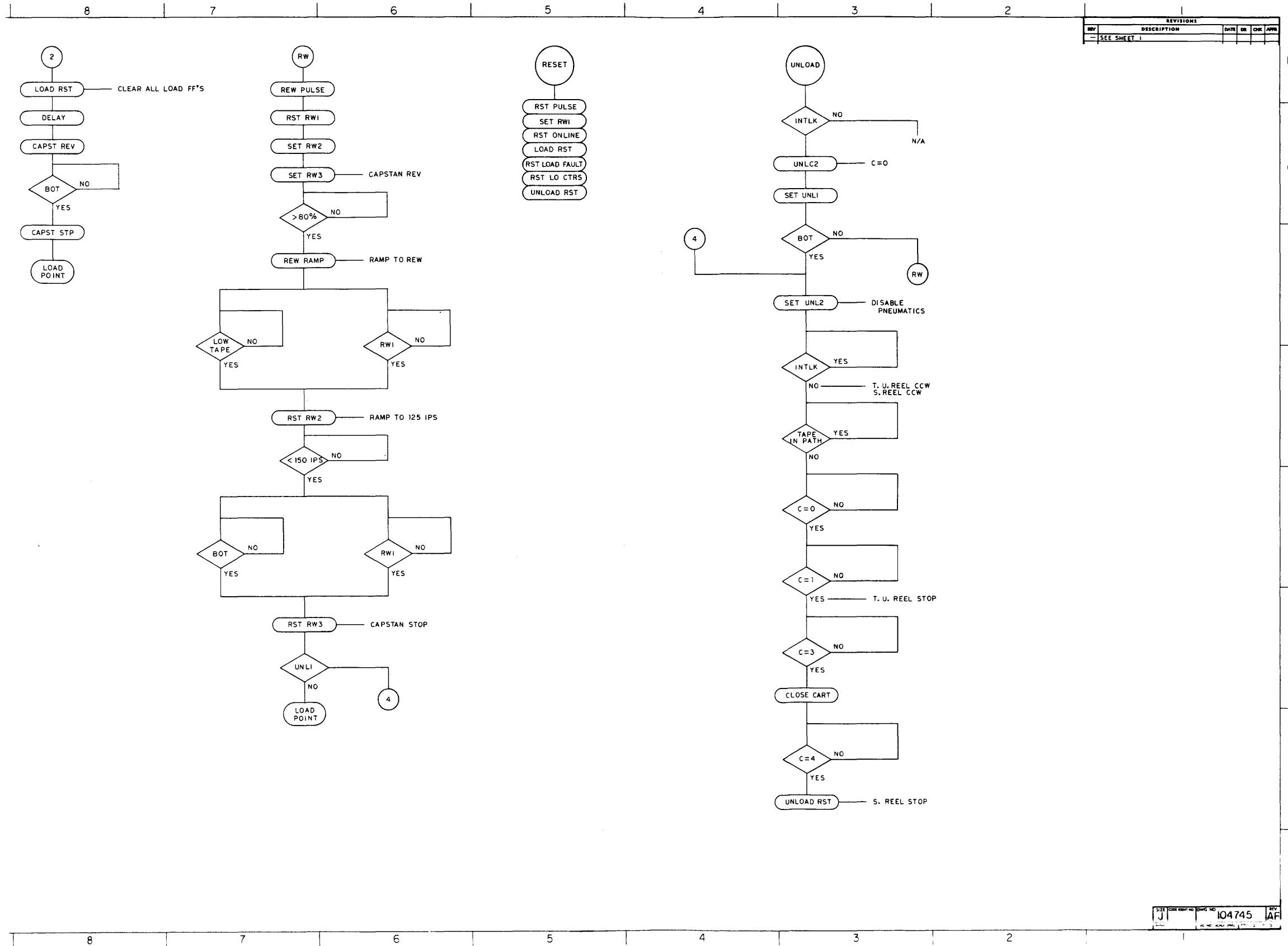
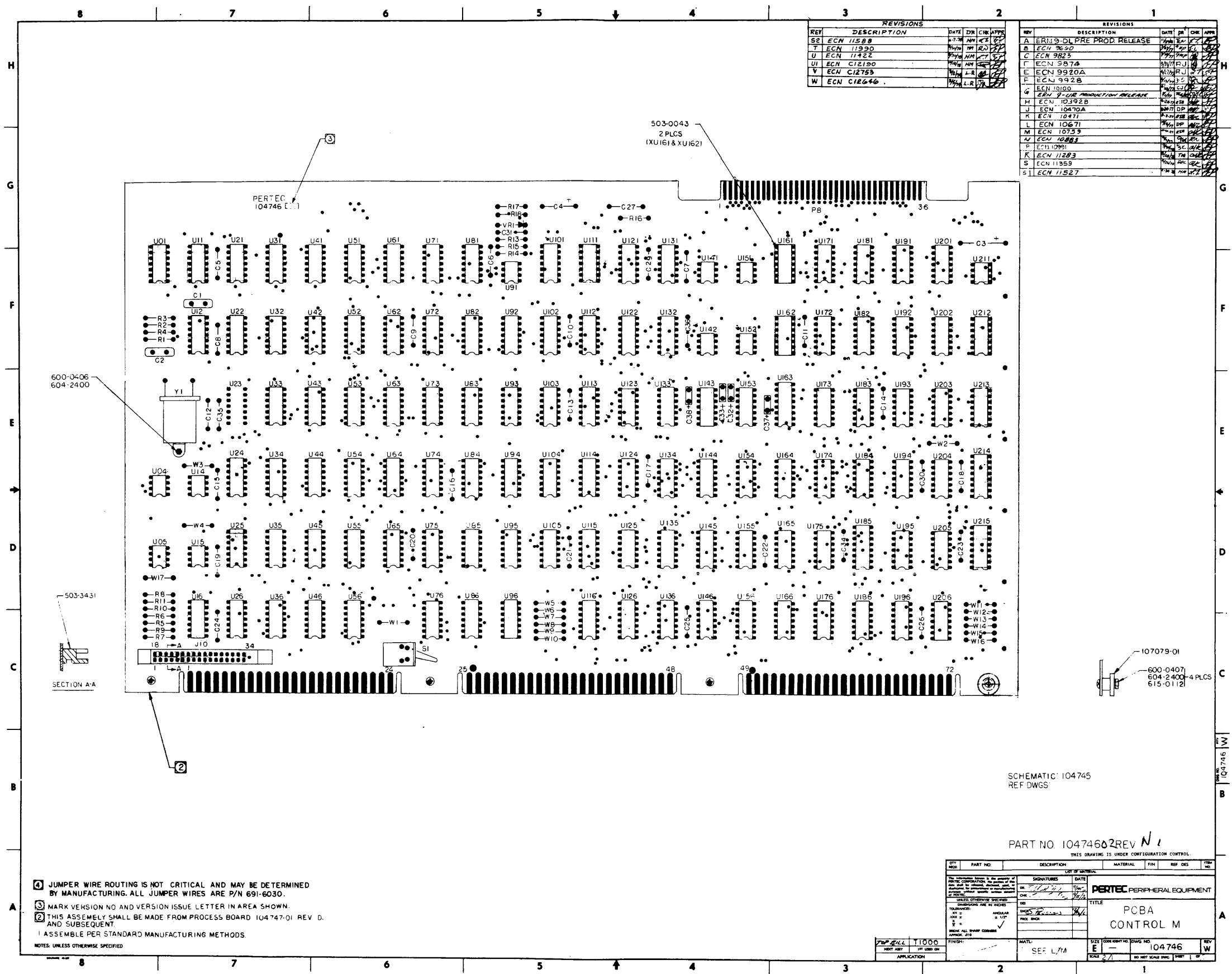


Figure 16 Schematic, Control M (Sheet 10 of 10)



REVISIONS				
REV	DESCRIPTION	DATE	DR	CHK APPR
S2	ECN 11588	4-7-88	MM	KL
T	ECN 11990	7-27-88	MM	KL
U	ECN 11422	7-27-88	MM	KL
VI	ECN C12190	7-27-88	MM	KL
V	ECN C12759	7-27-88	MM	KL
W	ECN C12646	7-27-88	MM	KL

REVISIONS				
REV	DESCRIPTION	DATE	DR	CHK APPR
A	ERN 9-DL PRE PROD RELEASE	7-27-88	MM	KL
B	ECN 9620	7-27-88	MM	KL
C	ECN 9823	7-27-88	MM	KL
F	ECN 9874	7-27-88	MM	KL
E	ECN 9920A	7-27-88	MM	KL
F	ECN 9928	7-27-88	MM	KL
G	ECN 10100	7-27-88	MM	KL
G	ERN 9-DL PRODUCTION RELEASE	7-27-88	MM	KL
H	ECN 10392B	7-27-88	MM	KL
J	ECN 10470A	7-27-88	MM	KL
K	ECN 10471	7-27-88	MM	KL
L	ECN 10671	7-27-88	MM	KL
M	ECN 10739	7-27-88	MM	KL
N	ECN 10883	7-27-88	MM	KL
P	ECN 10991	7-27-88	MM	KL
K	ECN 11283	7-27-88	MM	KL
S	ECN 11559	7-27-88	MM	KL
G1	ECN 11527	7-27-88	MM	KL

- ④ JUMPER WIRE ROUTING IS NOT CRITICAL AND MAY BE DETERMINED BY MANUFACTURING. ALL JUMPER WIRES ARE P/N 691-6030.
 - ③ MARK VERSION NO AND VERSION ISSUE LETTER IN AREA SHOWN.
 - ② THIS ASSEMBLY SHALL BE MADE FROM PROCESS BOARD 104747-01 REV D AND SUBSEQUENT.
 - ① ASSEMBLE PER STANDARD MANUFACTURING METHODS.
- NOTES: UNLESS OTHERWISE SPECIFIED

QTY	PART NO.	DESCRIPTION	MATERIAL	FIN	REP DES	FORM
THIS DRAWING IS UNDER CONFIGURATION CONTROL.						
SIGNATURES		DATE	PERTEC PERIPHERAL EQUIPMENT			
DESIGNED BY		DATE	TITLE			
CHECKED BY		DATE	PCBA CONTROL M			
APPROVED BY		DATE	SCALE			
MATERIAL		DATE	REV			
FINISH		DATE	E			
APPLICATION		DATE	104746			

Figure 17 PCBA, Control M

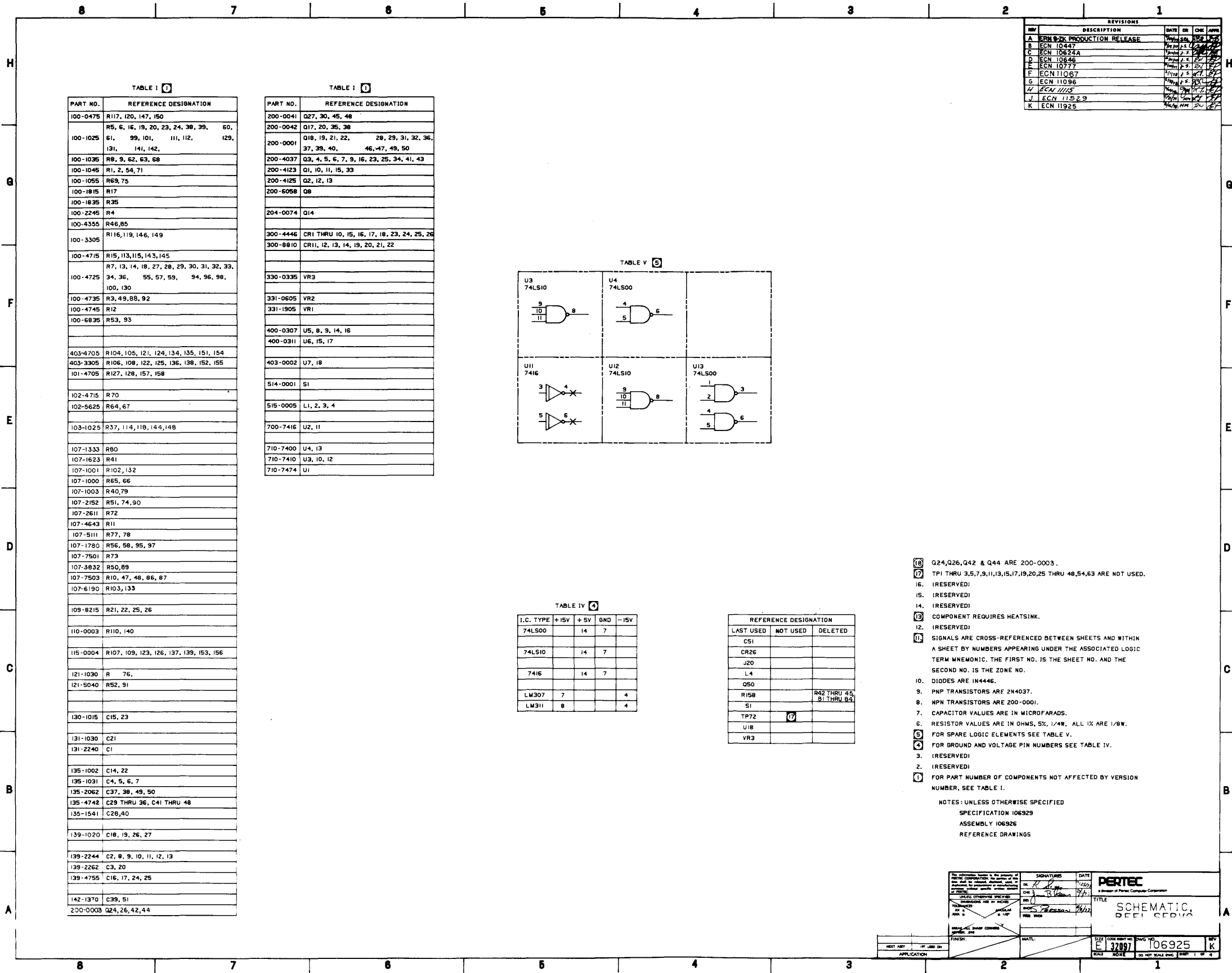
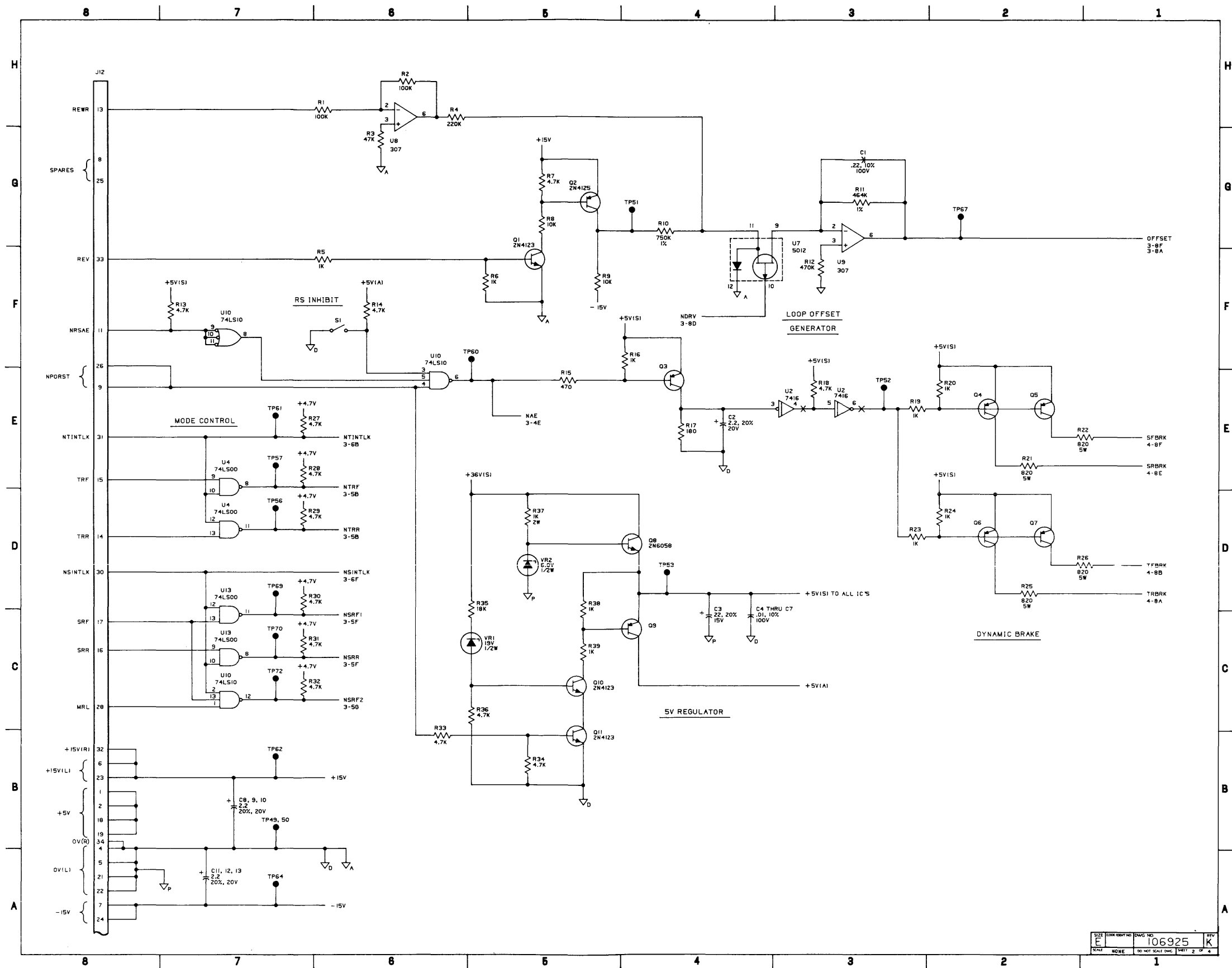


Figure 18 Schematic, Reel Servo (Sheet 1 of 4)



SIZE	FORM NO.	DATE	REV.
E	106925		K
FORM	NO.	NO. OF SHEETS	SHEET 2 OF 4

MA-5817

Figure 18 Schematic, Reel Servo (Sheet 2 of 4)

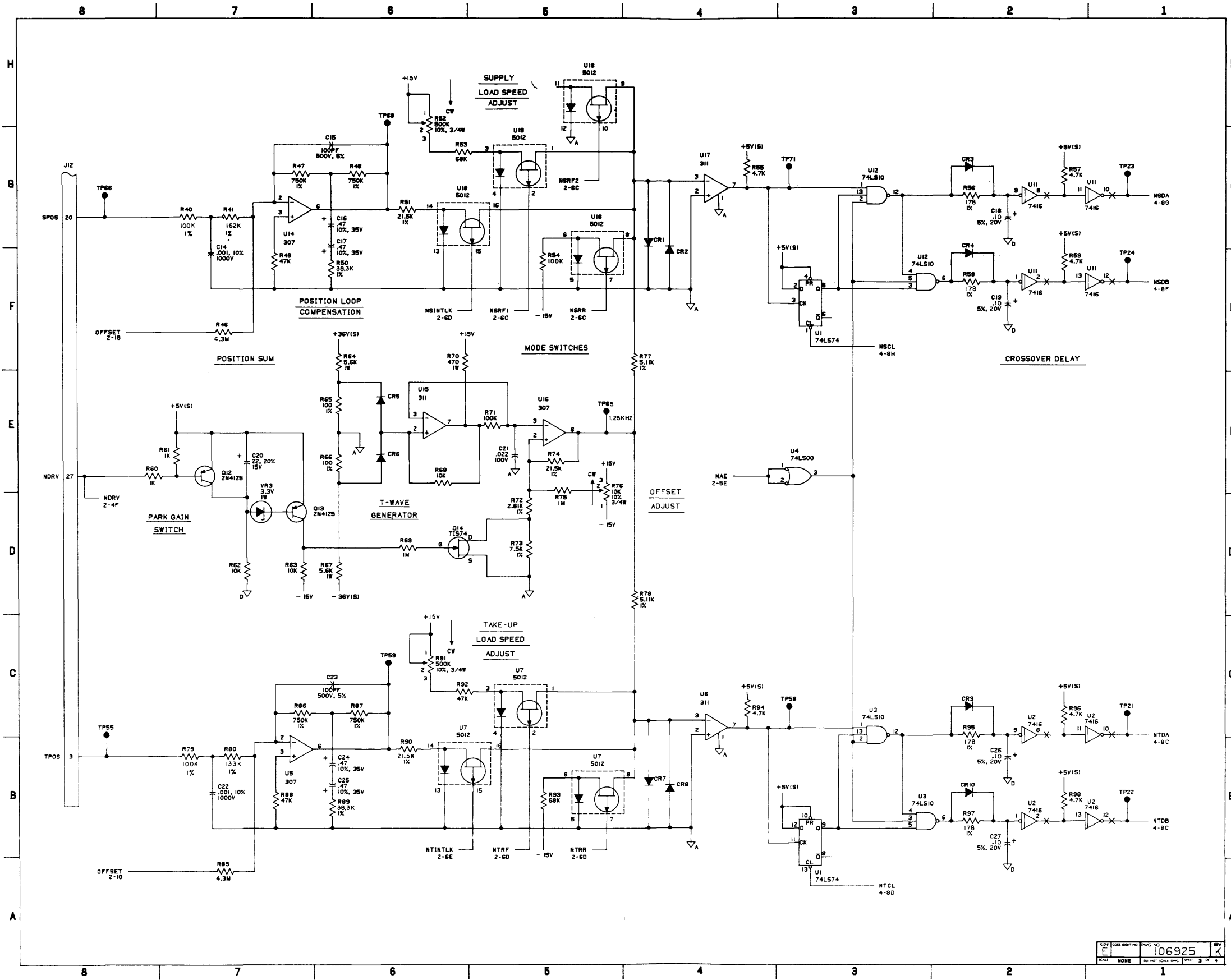
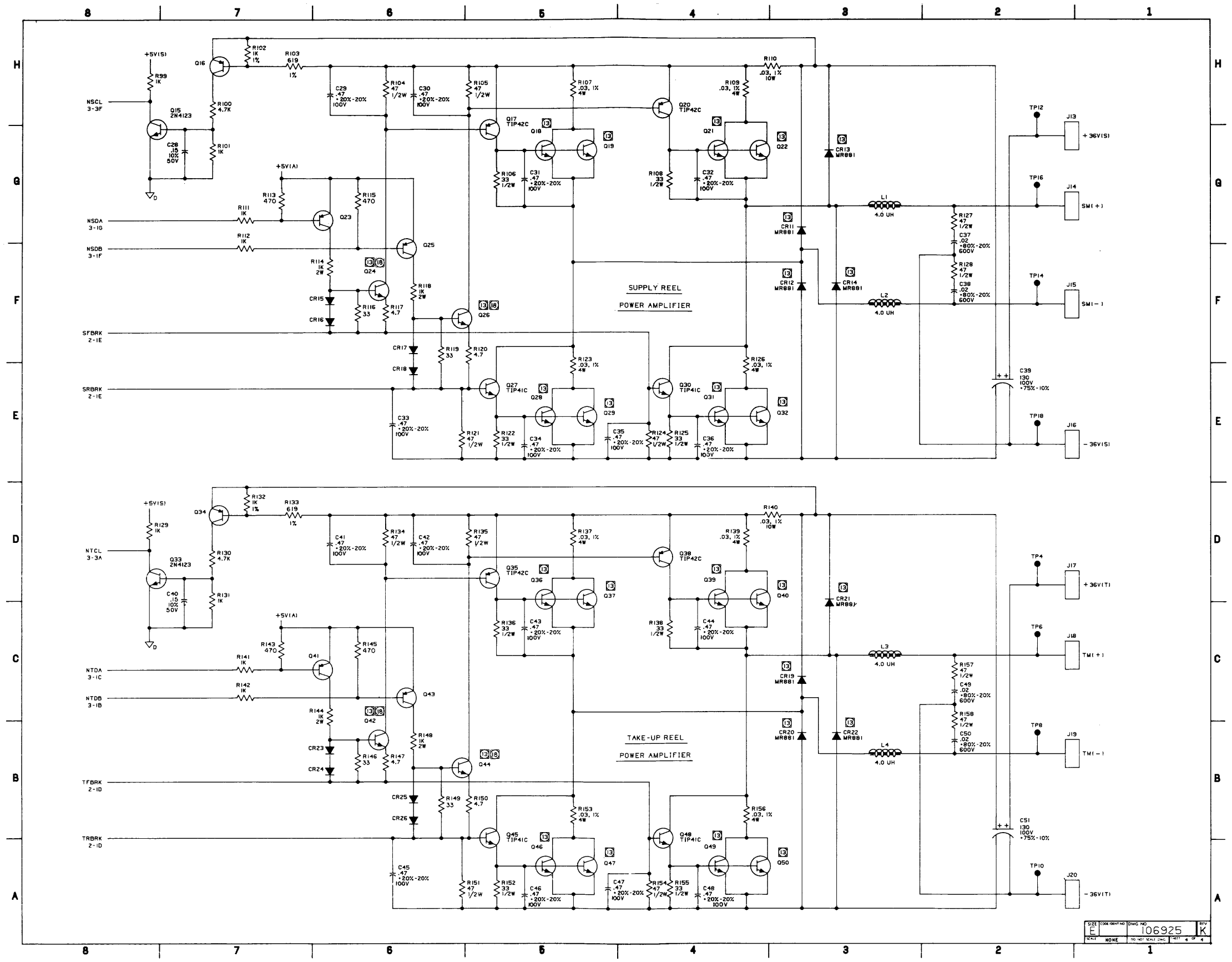


Figure 18 Schematic, Reel Servo (Sheet 3 of 4)



SIZE E CODE 106925 K
 DATE NONE 100 NOT SCALE DIMS 100% 4 OF 4

MA-5819

Figure 18 Schematic, Reel Servo (Sheet 4 of 4)

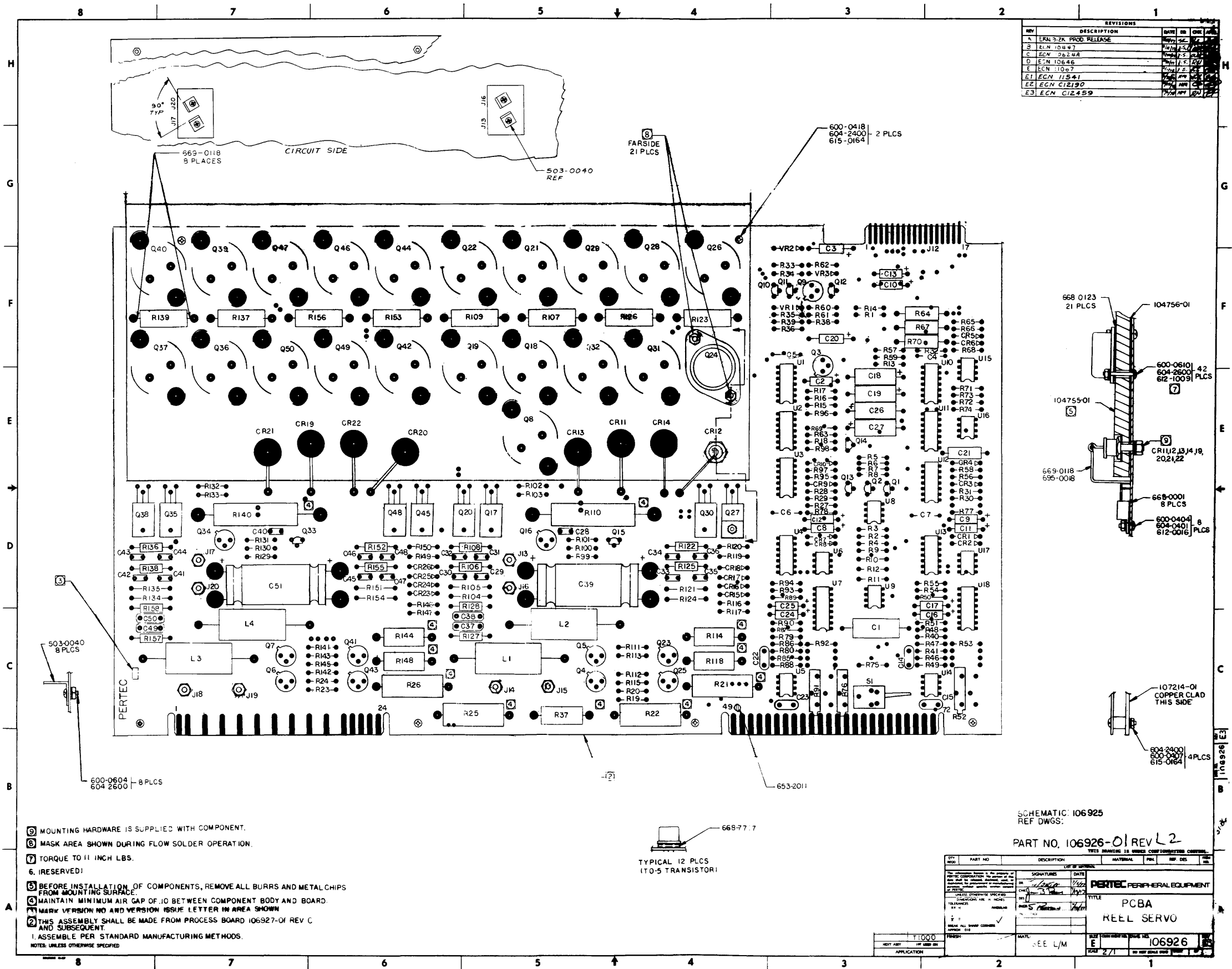


Figure 19 PCBA, Reel Servo

TABLE I (CONT'D)

PART NO.	REFERENCE DESIGNATION
100-1015	R24, 49, 101, 102, 137, 147, 154, 158, 176
100-1025	R1, 3, 4, 8, 10, 21, 22, 42, 44, 54, 65, 67, 73, 75, 84, 85, 87, 88, 89, 100, 109, 110, 111, 132, 144, 145, 150, 151, 152, 155, 163, 171, 172, 173
100-1035	R2, 4, 6, 8, 10, 11, 13, 14, 17, 20, 25, 26, 27, 41, 43, 47, 71, 115, 121, 130, 149, 164 THRU 169
100-1045	R38, 50
100-1055	R5, 15, 53, 86, 131, 134, 173
100-1065	R92, 174
100-1085	R34, 35, 75, 76, 114, 122
100-2225	R156
100-3315	R108, 125, 126, 177
100-4735	R91
100-4715	R128, 139
100-4725	R7, 9, 12, 19, 74, 99, 129, 136, 138, 178
100-5605	R95, 96, 104, 116, 117, 118, 119, 120, 124
100-6825	R46
101-1075	R175
101-1015	R146, 153, 157
101-1805	R70, 87
101-3905	R125
102-1015	R51
102-4715	R135, 148
107-1001	R27, 106
107-1302	R25, 37, 39, 40, 41, 49, 118
107-1308	R48
107-2151	R94
107-3481	R107
107-3632	R36
107-6810	R 64
107-8811	R26
107-9112	R72
108-4715	R23, 68
109-0900	R133
109-2715	R40
110-0911	R90
111-0901	R89
115-2908	R51, 32, 33, 81, 82, 83
118-0913	R127
118-2933	R112
121-5010	R59, 66, 78
121-1020	R47, 179
130-1015	C14, 29
130-2215	C18
130-3315	C4
131-3320	C2, 5, 8, 34
131-4720	C3, 6, 7
131-6800	C9

TABLE I (CONT'D)

PART NO.	REFERENCE DESIGNATION
135-1281	C12, 13, 32
139-2244	C19, 25, 30, 31
139-2262	C9, 10, 17, 20, 21, 16
139-3392	C15
139-6845	C22, 23, 24, 28
142-1070	C26
142-9360	C1, 11
200-7901	Q19, 42, 43, 45, 47
200-7942	Q6, 36
200-3085	Q26, 32, 35
200-4537	Q41
200-4623	Q2, 4, 11, 17, 18, 20, 24, 30, 31, 33, 34, 35, 52, 55, 56
200-4125	Q1, 3, 13, 14, 28, 29, 33, 34, 57, 58, 58
200-4548	Q7, 8, 9, 21, 22, 23
200-5321	Q10
200-5323	Q16, 27, 44, 46
201-0126	SCR2, 3
201-3669	SCR1
204-0074	Q5, 12, 15, 25, 53
300-4032	CR1, 4, 5, 8, 10, 11
300-4446	CR2, 3, 6, 7, 9, 12
330-0995	VR2
330-0475	VR4, 5, 9
330-0565	VR1
330-0515	VR7
330-1275	VR8
331-1805	VR3, 6
400-0265	U2
400-0307	U3, 8, 9, 10, 15
400-0325	U1
400-0318	U12
400-0732	U4, 13
710-7422	U5, 11, 14
710-7424	U7
710-7410	U6

TABLE II

ASSEMBLY DATES VERSION NO.	VERSION CHARACTERISTIC	039, 40, 46, 49, 51, 54, 141, 142, 143, 156, 160, 161, 162	R11, 2	R28, 29	R36, 65, 77			
-01	BASIC	OMIT	.3	118-0933	26, 1K	107-2612	82, 5	107-0825
-02	GCR	OMIT	.15	118-0913	1A, 2K	107-1622	562	107-5620

TABLE III

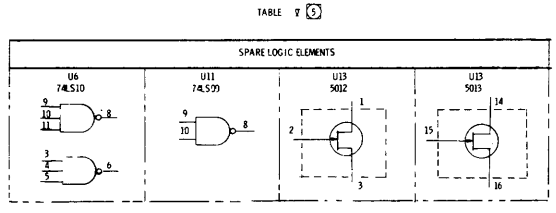
PART NO.	REFERENCE DESIGNATION
100-1015	R143, 162
100-1025	R140, 142, 159, 160
101-1015	R141, 161
200-0041	Q40, 49
200-4207	Q39
200-5323	Q48

TABLE IV

GROUND & VOLTAGE PIN NOS.				
I.C. TYPE	+15V	+5V	GND (0)	-15V
74LS00	14	14	7	
74LS04		14	7	
74LS10		14	7	
LM307	7			4
LM318	7			4

REFERENCE DESIGNATIONS

LAST USED	NOT USED	DELETED
C34		C27
CR12		
P11		
Q26		
R179	R78, 113, 123	R107
SCR3		
TP11		
U15		
VR9		



- (10) TP3, 4, 5 THRU 17, 14, 16, 17, 20, 21, 22, 23, 25 THRU 48, 53, 54, 60 THRU 64, 66, 67, 68, 69, 72
 - (11) COMPONENTS REQUIRE HEATSINK.
 - (12) RESISTORS WITH 1% TOL. ARE U2W.
 - (13) SIGNALS ARE CROSS-REF BETWEEN SHEETS AND WITHIN A SHEET BY NUMBERS APPEARING UNDER THE ASSOCIATED LOGIC TERM ANEMONIC. THE FIRST NO. IS THE SHEET NO. AND THE SECOND NO. IS THE ZONE NO.
 - (14) DIODES ARE IN/AMM.
 - (15) PNP TRANSISTORS ARE 2N4125.
 - (16) NPN TRANSISTORS ARE 2N4123.
 - (17) CAPACITOR VALUES ARE IN MICROFARADS, 20%, 35V.
 - (18) RESISTOR VALUES ARE IN OHMS, 5%, 1/4W.
 - (19) FOR SPARE LOGIC ELEMENTS, SEE TABLE IV.
 - (20) FOR I.C. GENERIC TYPE NO. AND GROUND/VOLTAGE PIN NOS. SEE TABLE IV.
 - (21) FOR PART NUMBER, SEE TABLE III.
 - (22) FOR VALUE, PART NUMBER AND USAGE OF COMPONENTS AFFECTED BY VERSION NUMBER, SEE TABLE II.
 - (23) FOR PART NUMBER OF COMPONENTS NOT AFFECTED BY VERSION NUMBER, SEE TABLE I.
- NOTES: UNLESS OTHERWISE SPECIFIED

REVISIONS

NO.	DESCRIPTION	DATE	BY	CHK	APP
A	PROTOTYPE NO. 2, 3, 4				
B	ERN 98W PRE PROD. RELEASE	7/1/72	JL	JK	JL
C	ECN 10915	7/1/72	JL	JK	JL
D	ECN 10915	7/1/72	JL	JK	JL
E	ECN 10915	7/1/72	JL	JK	JL
F	ECN 10915	7/1/72	JL	JK	JL
G	ECN 10915	7/1/72	JL	JK	JL
H	ECN 10915	7/1/72	JL	JK	JL
I	ECN 10915	7/1/72	JL	JK	JL
J	ECN 10915	7/1/72	JL	JK	JL
K	ECN 11626 B	7/1/72	JL	JK	JL
L	ECN 11626 B	7/1/72	JL	JK	JL
M	ECN 11626 B	7/1/72	JL	JK	JL
N	ECN 11626 B	7/1/72	JL	JK	JL
O	ECN 11626 B	7/1/72	JL	JK	JL
P	ECN 11626 B	7/1/72	JL	JK	JL
R	ECN 11626 B	7/1/72	JL	JK	JL

PERTEC PERIPHERAL EQUIPMENT DIVISION

TITLE: SCHEMATIC CAPSTAN/REGULATOR

DATE: 7/1/72

BY: JL

CHK: JK

APP: JL

SCALE: 1:1

NO. OF SHEETS: 4

SHEET NO.: 1

Figure 20 Schematic, Capstan/Regulator (Sheet 1 of 4)

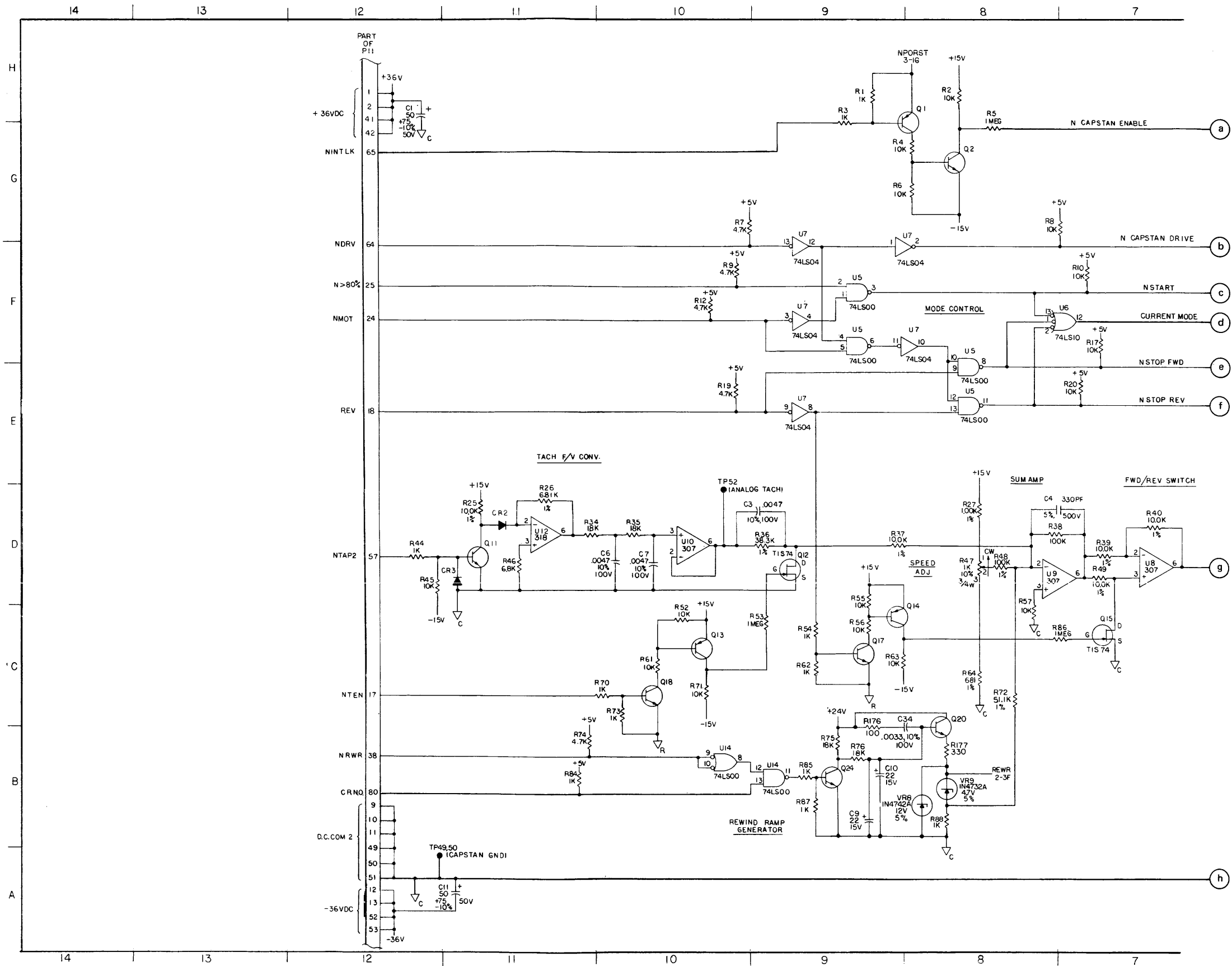


Figure 20 Schematic, Capstan/Regulator (Sheet 2 of 4)

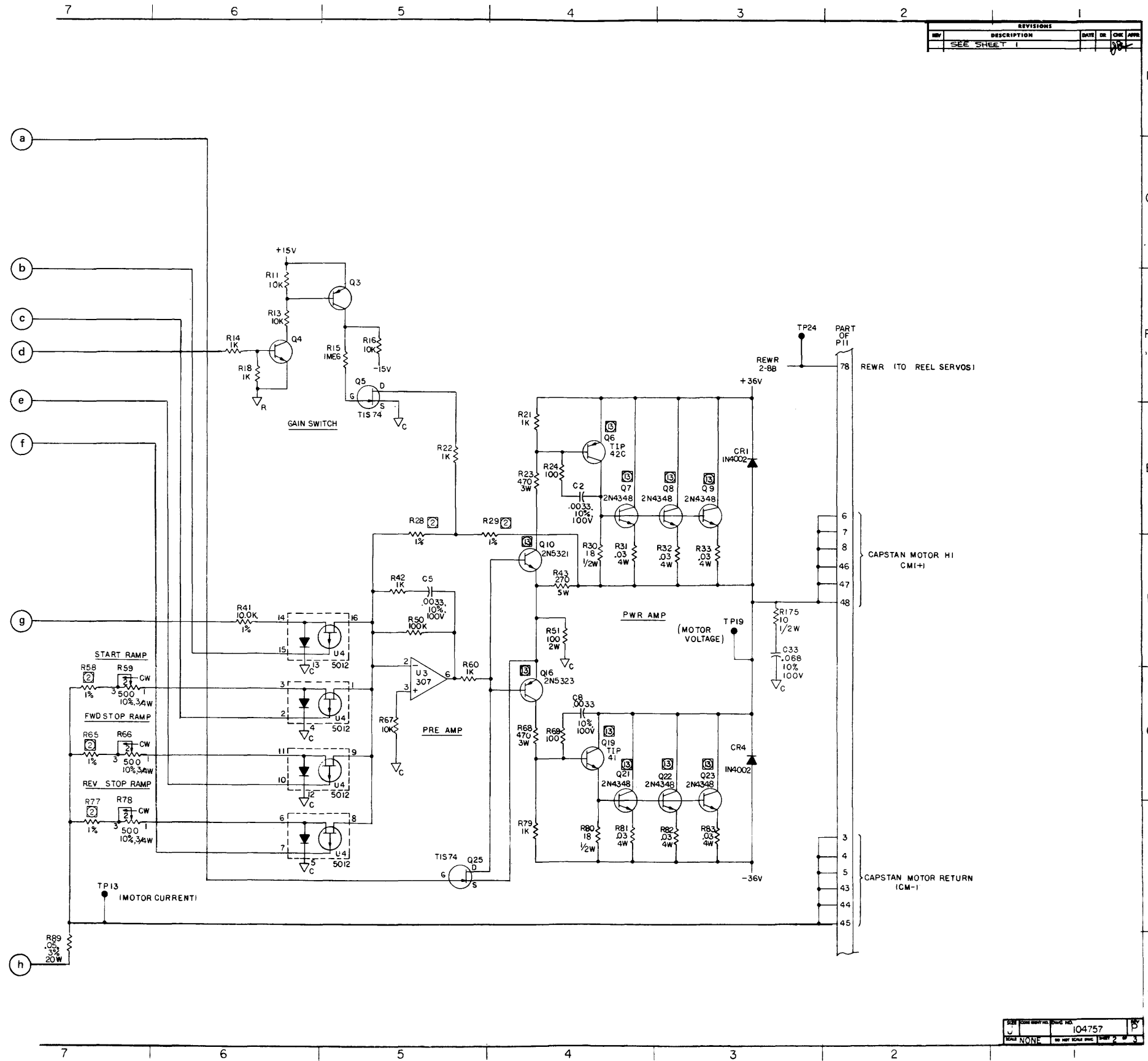


Figure 20 Schematic, Capstan/Regulator (Sheet 3 of 4)

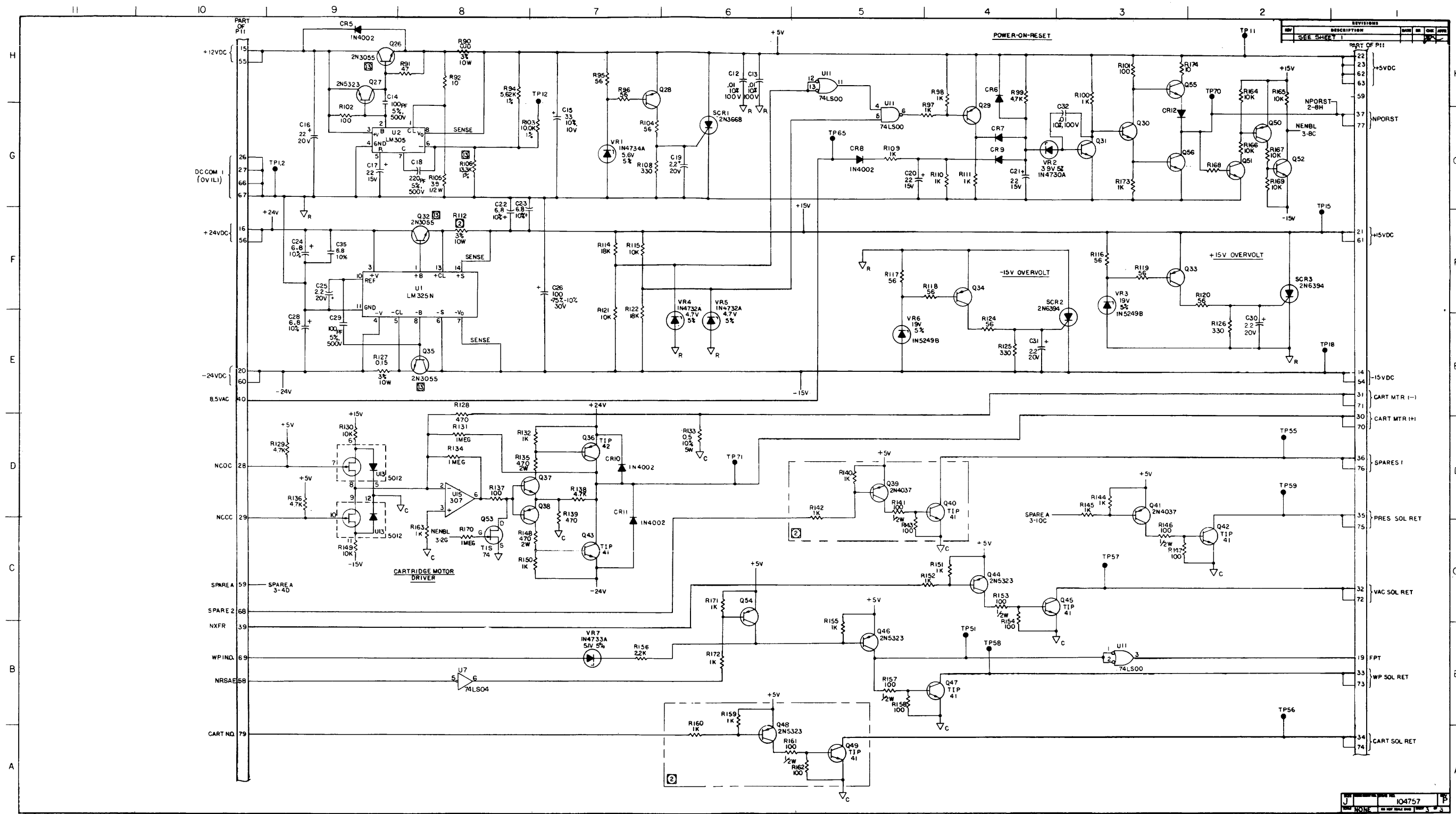
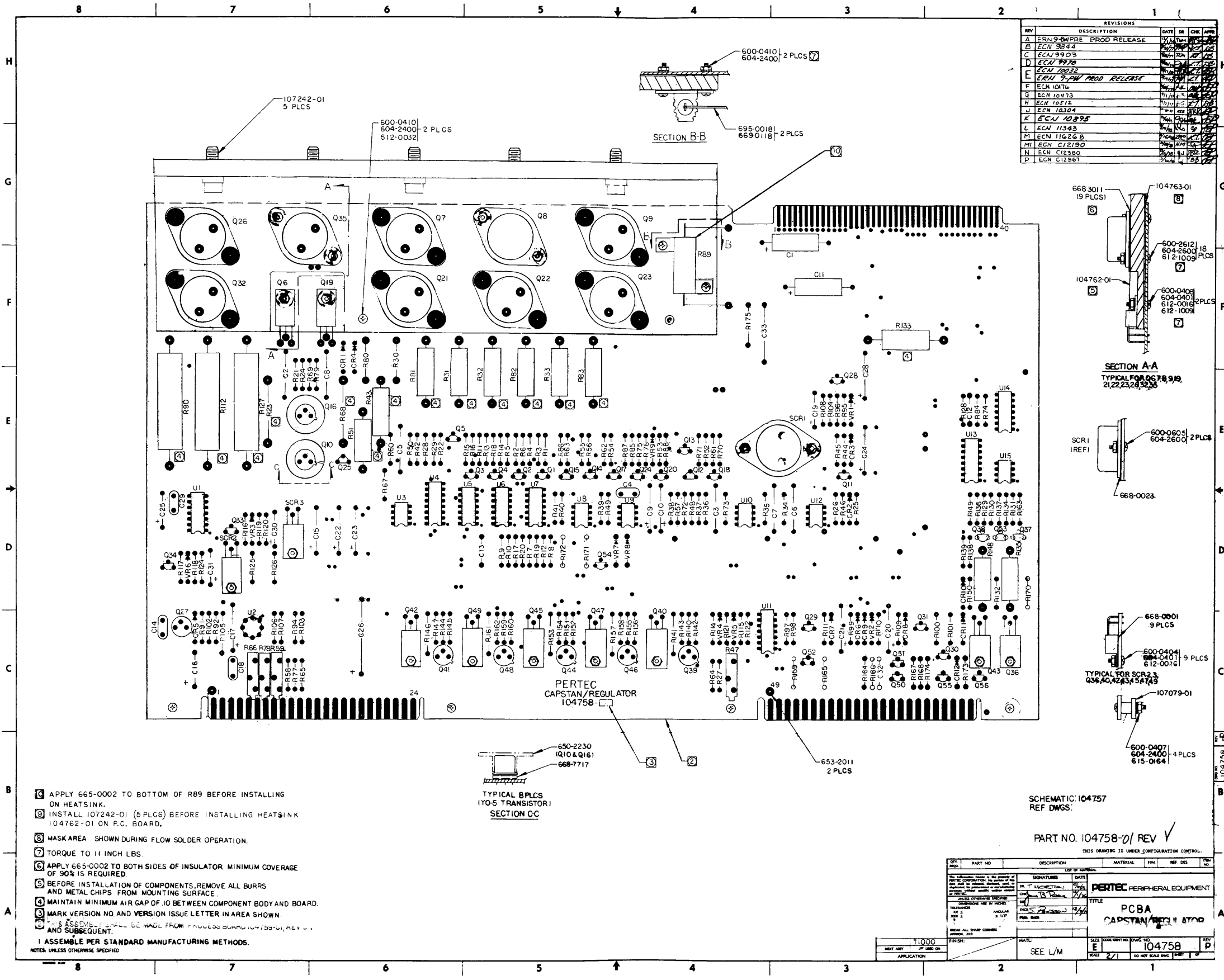
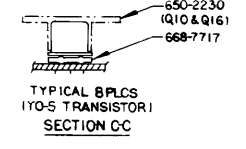


Figure 20 Schematic, Capstan/Regulator (Sheet 4 of 4)



REV	DESCRIPTION	DATE	DR	CHK	APP
A	ERN 9-04 PRE PROD RELEASE	11/1/71	WJA	WJA	
B	ECN 9844	11/1/71	WJA	WJA	
C	ECN 9903	11/1/71	WJA	WJA	
D	ECN 9978	11/1/71	WJA	WJA	
E	ECN 10032	11/1/71	WJA	WJA	
F	ECN 9-PM PROD RELEASE	11/1/71	WJA	WJA	
G	ECN 10476	11/1/71	WJA	WJA	
H	ECN 10473	11/1/71	WJA	WJA	
I	ECN 10512	11/1/71	WJA	WJA	
J	ECN 10304	11/1/71	WJA	WJA	
K	ECN 10898	11/1/71	WJA	WJA	
L	ECN 11343	11/1/71	WJA	WJA	
M	ECN 11026 B	11/1/71	WJA	WJA	
N	ECN C12380	11/1/71	WJA	WJA	
P	ECN C12387	11/1/71	WJA	WJA	

- 14 APPLY 665-0002 TO BOTTOM OF R89 BEFORE INSTALLING ON HEATSINK.
 - 15 INSTALL 107242-01 (5 PLCS) BEFORE INSTALLING HEATSINK 104762-01 ON P.C. BOARD.
 - 16 MASK AREA SHOWN DURING FLOW SOLDER OPERATION.
 - 17 TORQUE TO 11 INCH LBS.
 - 18 APPLY 665-0002 TO BOTH SIDES OF INSULATOR. MINIMUM COVERAGE OF 90% IS REQUIRED.
 - 19 BEFORE INSTALLATION OF COMPONENTS, REMOVE ALL BURRS AND METAL CHIPS FROM MOUNTING SURFACE.
 - 20 MAINTAIN MINIMUM AIR GAP OF .10 BETWEEN COMPONENT BODY AND BOARD.
 - 21 MARK VERSION NO. AND VERSION ISSUE LETTER IN AREA SHOWN.
 - 22 THIS ASSEMBLY SHALL BE MADE FROM PROCESS BOARD 104758-01, REV. 1, AND SUBSEQUENT.
 - 23 ASSEMBLE PER STANDARD MANUFACTURING METHODS.
- NOTES: UNLESS OTHERWISE SPECIFIED.



SCHMATIC: 104757
 REF DWGS:
 PART NO. 104758-01 REV V

REV	PART NO	DESCRIPTION	MATERIAL	FIN.	REF DES	DATE
	104758	PCBA CAPSTAN/REGULATOR				

DATE	11/1/71	BY	WJA	CHKD	WJA
TOLERANCES	UNLESS OTHERWISE SPECIFIED				
ANGULAR	30° ± .1°				
FINISH	SEE L/M				
SCALE	2/1				
SIZE	E				
REV	P				

Figure 21 PCBA, Capstan/Regulator

H
G
F
E
D
C
B
A

PART NO.	REFERENCE DESIGNATION
100-1025	R2, 4, 5, 11, 18, 22, 23, 27, 29, 30, 31, 33 THRU 38, 111, 112, 114, 211, 212, 214, 311, 312, 314, 411, 412, 414, 511, 512, 514, 611, 612, 614, 711, 712, 714, 811, 812, 814, 911, 912, 914
100-1085	R13
100-1086	R9
100-1225	R15
100-1515	R24, 25, 26, 32
100-1525	R102, 202, 302, 402, 502, 602, 702, 802, 902
100-1595	R8
100-1815	R104, 116, 204, 216, 304, 316, 404, 416, 504, 516, 604, 616, 704, 716, 804, 816, 904, 916
100-1825	R20
100-2225	R7, 12
100-2246	R10
100-2735	R108, 208, 308, 408, 508, 608, 708, 808, 908
100-3315	R19
100-3325	R106, 206, 306, 406, 506, 606, 706, 806, 906
100-3985	R3
100-4725	R6, 28
101-1015	R17, 107, 109, 207, 209, 307, 309, 407, 409, 507, 509, 607, 609, 707, 709, 807, 809, 907, 909
101-1025	R1, 21
101-1215	R39, 40, 41, 42
101-3625	R16
101-7505	R105, 205, 305, 405, 505, 605, 705, 805, 905
107-1212	R110, 210, 310, 410, 510, 610, 710, 810, 910
107-1621	R106, 206, 306, 406, 506, 606, 706, 806, 906
107-3161	R113, 213, 313, 413, 513, 613, 713, 813, 913
107-8251	R115, 215, 315, 415, 515, 715, 715, 815, 915
120-0001	U22, 25
121-1080	R101, 201, 301, 401, 501, 601, 701, 801, 901
130-0705	C3, 20
135-4742	C5
139-2244	C1, 2, 4, 7 THRU 19, 21, 22
200-4087	Q101, 201, 301, 401, 501, 601, 701, 801, 901, 102, 202, 302, 402, 502, 602, 702, 802, 902, 105, 205, 305, 405, 505, 605, 705, 805, 905
200-4123	Q2, 104, 105, 204, 205, 304, 305, 404, 405, 504, 505, 604, 605, 704, 705, 804, 805, 904, 905
200-4125	Q1

PART NO.	REFERENCE DESIGNATION
200-5929	Q3, 4
307-4446	CR1
400-2741	U38
700-7416	U33, 37
710-4132	U21, 24, 28
710-4221	U2, 5, 7, 10, 12, 15, 17, 20, 23, 35
710-7400	U31, 32
710-7404	U34
710-7414	U27
710-7438	U36
710-7474	U4, 9, 14, 19, 26
710-7476	U1, 6, 11, 16, 30
710-7486	U3, 8, 13, 18, 29

ASSEMBLY 104811 VERSION NO.	VERSION CHARACTERISTIC	C6		C101, 201, 301, 401, C501, 601, 701, 801, C901		C102, 202, 302, 402, C502, 602, 702, 802, C902	
		VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.
-01	75 IPS	.0022	131-2220	750 PF	130-7515	56 PF	130-5605
-02	100 IPS	.0022	131-2220	750 PF	130-7515	48 PF	130-4805
-0B	112.5/125 IPS	.0015	131-1520	560 PF	130-5615	33 PF	130-3305

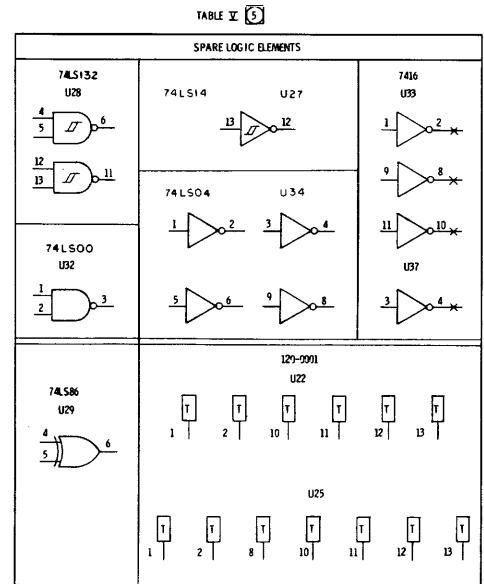


Figure 22 Schematic, Write (Sheet 1 of 4)

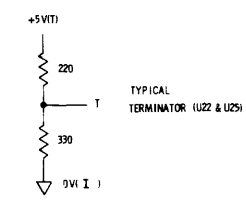
REVISIONS				
REV	DESCRIPTION	DATE	BY	CHK
A	ERN 8-ND PRE-PRODUCTION REL	8/18/64	WJ	WJ
A	ECN 9731	8/18/64	WJ	WJ
B	ECN 10164	8/18/64	WJ	WJ
C	ECN 10215	8/18/64	WJ	WJ
D	ECN 10477	8/18/64	WJ	WJ
E	ECN 10864	8/18/64	WJ	WJ
F	ECN 11378	8/18/64	WJ	WJ
G	ECN 11486	8/18/64	WJ	WJ
H	ECN 11641	8/18/64	WJ	WJ
J	ECN C13088	8/18/64	WJ	WJ

TABLE IV

I.C. TYPE	+5V (L) PIN NO.	GND PIN NO.
7416	14	7
74LS00	14	7
74LS04	14	7
74LS38	14	7
74LS74	14	7
74LS76	5	13
74LS86	14	7
74LS221	16	8
74LS14	14	7
74LS132	14	7

REFERENCE DESIGNATION

	LAST USED	NOT USED	DELETED
	12	12	12
C22	C2	—	—
CR1	—	—	—
Q4	Q5	—	—
R42	R16	—	R14
TP48	—	TP3 THRU 24, 43, 44, 46	—
U38	—	—	—



- 14. RESISTOR NETWORK U22 & U25 ARE SPECIFIED AT TOP ASSY.
 - 13. ALL UNMARKED GNDS ARE 0V (I).
 - 12. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH CIRCUIT NUMBER. (R1 IN CIRCUIT 200 IS R201).
 - 11. (RESERVED)
 - 10. (RESERVED)
 - 9. PNP TRANSISTORS ARE 2N4027.
 - 8. NPN TRANSISTORS ARE 2N4123.
 - 7. CAPACITOR VALUES ARE IN MICROFARADS, 20%, 20V.
 - 6. RESISTOR VALUES ARE IN OHMS, 5%, 1/4W.
 - 5. FOR SPARE LOGIC ELEMENTS, SEE TABLE IV.
 - 4. FOR I.C. GENERIC TYPE NO. AND GROUND/VOLTAGE PIN NOS. SEE TABLE IV.
 - 3. (RESERVED)
 - 2. FOR VALUE, PART NUMBER AND USAGE OF COMPONENTS AFFECTED BY VERSION NUMBER, SEE TABLE II.
 - 1. FOR PART NUMBER OF COMPONENTS NOT AFFECTED BY VERSION NUMBER, SEE TABLE I.
- NOTES: UNLESS OTHERWISE SPECIFIED

ASSEMBLY NUMBER 104811
 SPECIFICATION NUMBER 104814
 REFERENCE DRAWINGS

104811	110000	DATE	8/18/64
APPLICATION	REV	BY	WJ
PERTEC PERIPHERAL EQUIPMENT DIVISION		TITLE	
SCHEMATIC		WRITE	
J		104810	
2		2	

Figure 22 Schematic, Write (Sheet 2 of 4)

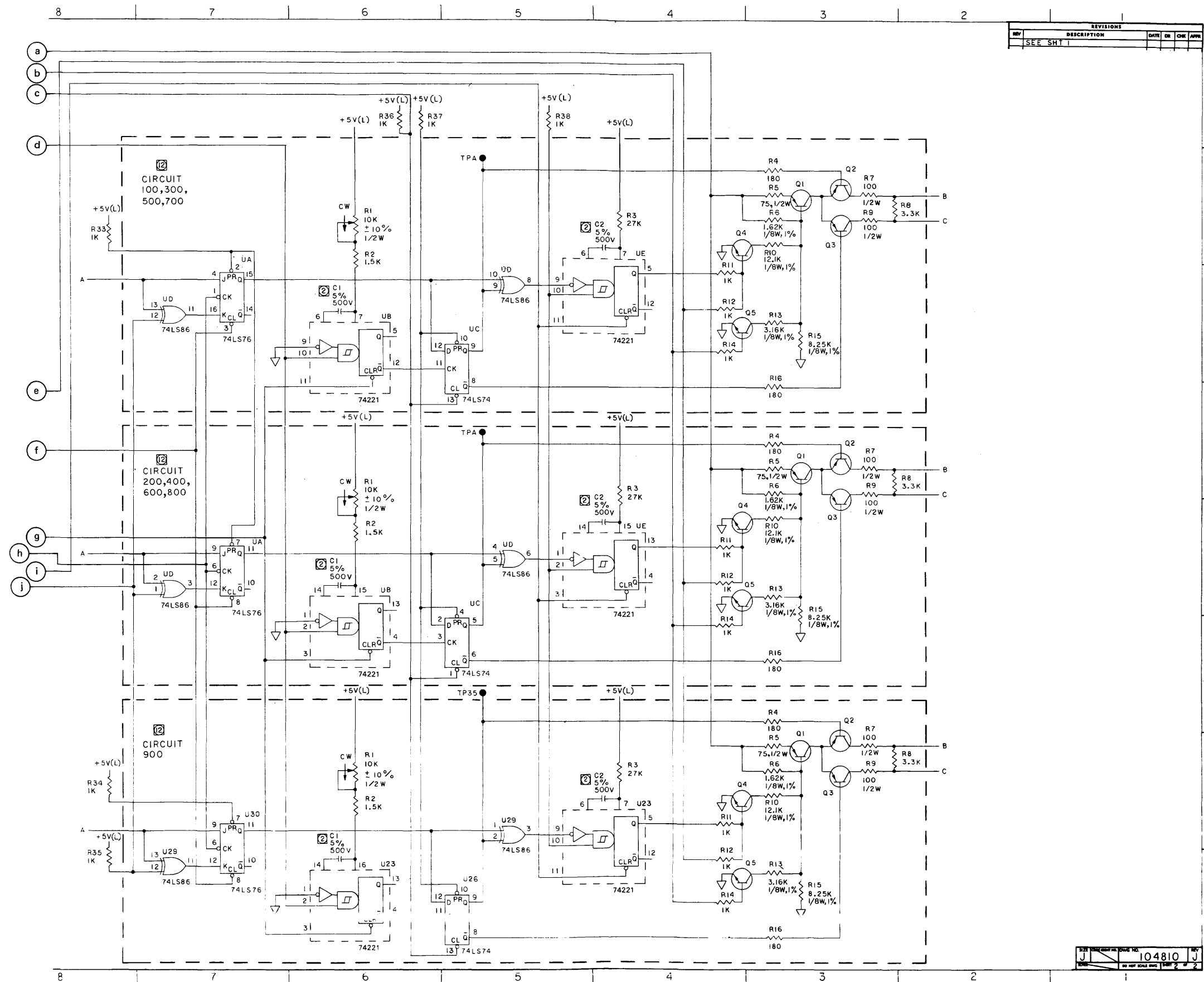


Figure 22 Schematic, Write (Sheet 4 of 4)

TABLE I		TABLE I (CONT'D)		TABLE III	
PART NO.	REFERENCE DESIGNATION	PART NO.	REFERENCE DESIGNATION	PART NO.	REFERENCE DESIGNATION
100-1015	R136, 136, 236, 236, 336, 336, 436, 436, 536, 536, 636, 636, 736, 736, 836, 836, 936, 936	200-4123	04, 10, 11	100-1055	R40, 44
100-1025	R4, 13, 33 THRU 34, 47, 49, 53, 53, 73, 137, 237, 337, 437, 537, 637, 737, 837, 927, 927, 927	200-4125	01, 2, 3, 5, 6, 9	100-2225	R39, 43
100-1035	R1, 2, 15, 16, 36, 66			107-3162	R42
100-1055	R52, 58, 68, 134, 118 THRU 121, 238, 218 THRU 221, 339, 318 THRU 321, 434, 418 THRU 421, 534, 518 THRU 521, 634, 618 THRU 621, 734, 718 THRU 721, 834, 818 THRU 821, 934, 918 THRU 921	204-0074	0101, 201, 301, 401, 501, 601, 701, 801, 901	107-5112	R46
100-2205	R57, 54			121-5399	R41, 45
100-2225	R35	300-4446	CR1, 2, 101 THRU 108, 201 THRU 208, 301 THRU 308, CR401 THRU 408, 501 THRU 508, 601 THRU 608, CR701 THRU 708, 801 THRU 808, 901 THRU 908	200-4125	Q7, 8
100-2235	R3			710-7426	U33
100-4745	R74				
100-3925	R55, 56, 57, 63, 67, 110 THRU 117, 210 THRU 217, 310 THRU 317, 410 THRU 417, 510 THRU 517, 610 THRU 617, 710 THRU 717, 810 THRU 817, 910 THRU 917	400-0318	U101, 102, 201, 202, 301, 302, 401, 402, 501, 502, 601, U402, 701, 702, 801, 802, 901, 902		
100-4715	R48, 51, 59, 69, 122, 123, 222, 223, 322, 323, 422, 423, R522, 523, 622, 623, 722, 723, 822, 823, 922, 923	400-0319	U41, 42, 105, 104, 203, 204, 303, 304, 403, 404, 503, U504, 603, 604, 703, 704, 803, 804, 903, 904		
100-4725	R14, 61	400-2741	U38, 39, 40		
107-0100	R72				
107-0196	R75				
107-0348	R10, 28				
107-0511	R9, 27				
107-1002	R19, 20, 22, 108, 208, 308, 408, 508, 608, 708, 808, R908, 17				
107-1101	R7	515-1015	L1 THRU 6		
107-1212	R108, 105, 203, 205, 303, 305, 403, 405, 503, 505, 603, R605, 705, 705, 805, 805, 903, 905				
107-1330	R8, 26	700-5452	U7, 8, 9, 18 THRU 26		
107-1622	R38	709-7416	U17, 34		
107-2151	R64, 65				
107-2371	R62				
107-2800	R5				
107-3030	R23				
107-4641	R12				
107-5111	R21				
107-5110	R101, 102, 201, 202, 301, 302, 401, 402, 501, 502, 601, R602, 701, 702, 801, 802, 901, 902	710-4123	U105, 205, 305, 405, 505, 605, 705, 805, 905		
107-3161	R18				
107-8250	R6				
120-0001	U12, 14				
121-1010	R11, 29				
121-1020	R37				
130-1515	C64				
130-2215	C65				
130-4705	C63, 66, 67, 107 THRU 110, 207 THRU 210, C307 THRU 310, 407 THRU 410, 507 THRU 510, C607 THRU 610, 707 THRU 710, 807 THRU 810, C907 THRU 910				
135-1031	C73				
135-4742	C48 THRU 58, 68, C31 THRU 34, C69 THRU 72				
139-4755	C59, 60, 61				
139-2244	C1 THRU 35 THRU 46, 101, 102, 201, C202, 301, 302, 401, 402, 501, 502, 601, 602, 701, 702, C801, 802, 901, 902				

Figure 24 Schematic, DATA L (Sheet 1 of 4)

TABLE II

ASSEMBLY VERSION NO.	VERSION CHARACTERISTIC	C62		C10B, 20B, 30B, 40B, 50B, 60B, 70B, 80B, 90B		C10A, 20A, 30A, 40A, 50A, 60A, 70A, 80A, 90A		C10C, 20C, 30C, 40C, 50C, 60C, 70C, 80C, 90C		C111, 211, 311, 411, 511, 611, 711, 811, 911		C112, 212, 312, 412, 512, 612, 712, 812, 912			
		VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.		
-01	75 IPS	.001	131-1020	33 PF	130-3305	100 PF	130-1015	560 PF	130-5615	56 PF	130-5605	.003	131-3320	.0022	131-2220
-02	100 IPS	.001	131-1020	22 PF	130-2205	68 PF	130-6805	330 PF	130-3315	33 PF	130-3305	.003	131-3320	.0022	131-2220
-03	112, 5/125 IPS	750 PF	130-7515	15 PF	130-1505	56 PF	130-5605	330 PF	130-3315	33 PF	130-3305	.0022	131-2220	.0015	131-1520

REVISIONS

REV	DESCRIPTION	DATE	DR	CHK	APP
A	ERN B-C PRE PROD RELEASE	7/20/54	EW	EW	EW
B	ECN 9653A	7/21/54	LO	LO	MA
C	ERN 9-LIT PROD RELEASE	7/21/54	LO	LO	MA
D	ECN 10455B	7/21/54	LO	LO	MA
E	ECN 10866	7/21/54	LO	LO	MA
F	ECN 11127	7/21/54	LO	LO	MA
G	ECN 11331	7/21/54	LO	LO	MA
H	ECN 11736	7/21/54	LO	LO	MA
I	ECN 11953	7/21/54	LO	LO	MA
L	ECN C1318A	7/21/54	LO	LO	MA
M	ECN C13455A	7/21/54	LO	LO	MA

TABLE II (CONT'D)

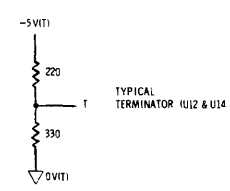
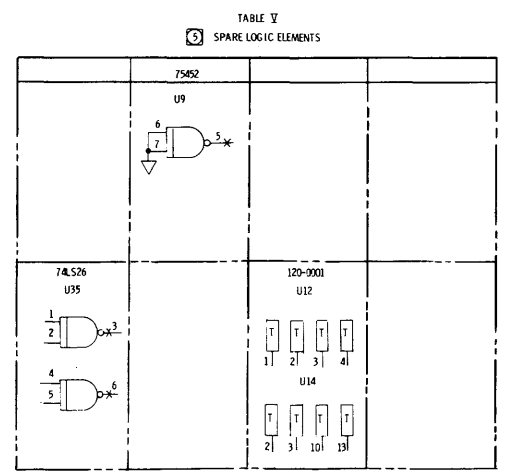
ASSEMBLY VERSION NO.	VERSION CHARACTERISTIC	R124, 125, 224, 225, 324, 325, 424, 425, 524, 525, 624, 625, R124, 725, 824, 825, 924, 925		J1, 2		Q7, 8 R39, 40, 41, 42, 43, 44, 45, 46 U35	
		VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.
-01	75 IPS	27K	100-2735	101913-91	USE	OMIT	OMIT
-02	100 IPS	18K	100-1835	USE	OMIT	OMIT	OMIT
-03	112, 5/125 IPS	22K	100-2235	USE	OMIT	OMIT	OMIT

REFERENCE DESIGNATIONS

LAST USED	NOT USED	DELETED
C73	C12	C47
CR2	CR8	
J5		
L6		
Q11	Q1	
R24	R25	
TP78	TP2	TP1 THRU 48
U42	U5	TP77

TABLE IV

I. C. TYPE	I. C. VOLTAGE AND GROUND PIN NOS.							
	+15V(F2)	+15V(F1)	+5V(L)	+5V(T)	0V(L)	0V(T)	-15V(F2)	-15V(F1)
318		7						4
319		11				3, 8		6
741	7							4
7416		14			7			
7462		8			4			
74LS00		14			7			
74LS04		14			7			
74LS10		14			7			
74LS26		14			7			
74LS27		14			7			
74LS30		14			7			
74LS38		14			7			
74LS74		14			7			
74LS86		14			7			
74LS123		16			8			
120-0001				14		7		
U41, U42, U39	11					3, 8		6



- 14. RESISTOR NETWORK U12 & U14 ARE SPECIFIED AT TOP ASSY.
 - 13. CAPACITORS LISTED AS PICOFARADS ARE 5%, 500 V.
 - 12. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH CIRCUIT NUMBER, R1 IN CIRCUIT 200 IS R201.
 - 11. SIGNALS ARE CROSSED WITHIN SMT 2 BY NUMBERS APPEARING UNDER THE ASSOCIATED LOGIC TERM MNEMONIC. THE FIRST NO. IS THE SHEET NO. AND THE SECOND NO. IS THE ZONE NO.
 - 10. DIODES ARE 1N446.
 - 9. PNP TRANSISTORS ARE 2N4125.
 - 8. NPN TRANSISTORS ARE 2N4123.
 - 7. CAPACITORS ARE IN MICROFARADS, 20%, 20V.
 - 6. RESISTOR VALUES ARE IN OHMS, 5%, 1/4W, 1% ARE 1/8W.
 - 5. FOR SPARE LOGIC ELEMENTS, SEE TABLE V.
 - 4. FOR I. C. GENERIC TYPE NO. AND GROUND/VOLTAGE PIN NOS. SEE TABLE IV.
 - 3. FOR PART NUMBER, SEE TABLE III.
 - 2. FOR VALUE, PART NUMBER AND USAGE OF COMPONENTS AFFECTED BY VERSION NUMBER, SEE TABLE II.
 - 1. FOR PART NUMBER OF COMPONENTS NOT AFFECTED BY VERSION NUMBER, SEE TABLE I.
- NOTES: UNLESS OTHERWISE SPECIFIED
- ASSEMBLY DWG. NO. 104806
SPECIFICATION DWG. NO. 104809
REFERENCE DRAWINGS

104806	1000	FINISH	MATERIAL	SIZE	104805
SIGNATURES		DATE		PERTEC PERIPHERAL EQUIPMENT DIVISION	
DESIGNED BY		DATE		TITLE	
CHECKED BY		DATE		SCHEMATIC DATA L	
APPROVED BY		DATE		DRAWING NO.	
DATE		DATE		SCALE	

Figure 24 Schematic, DATA L (Sheet 2 of 4)

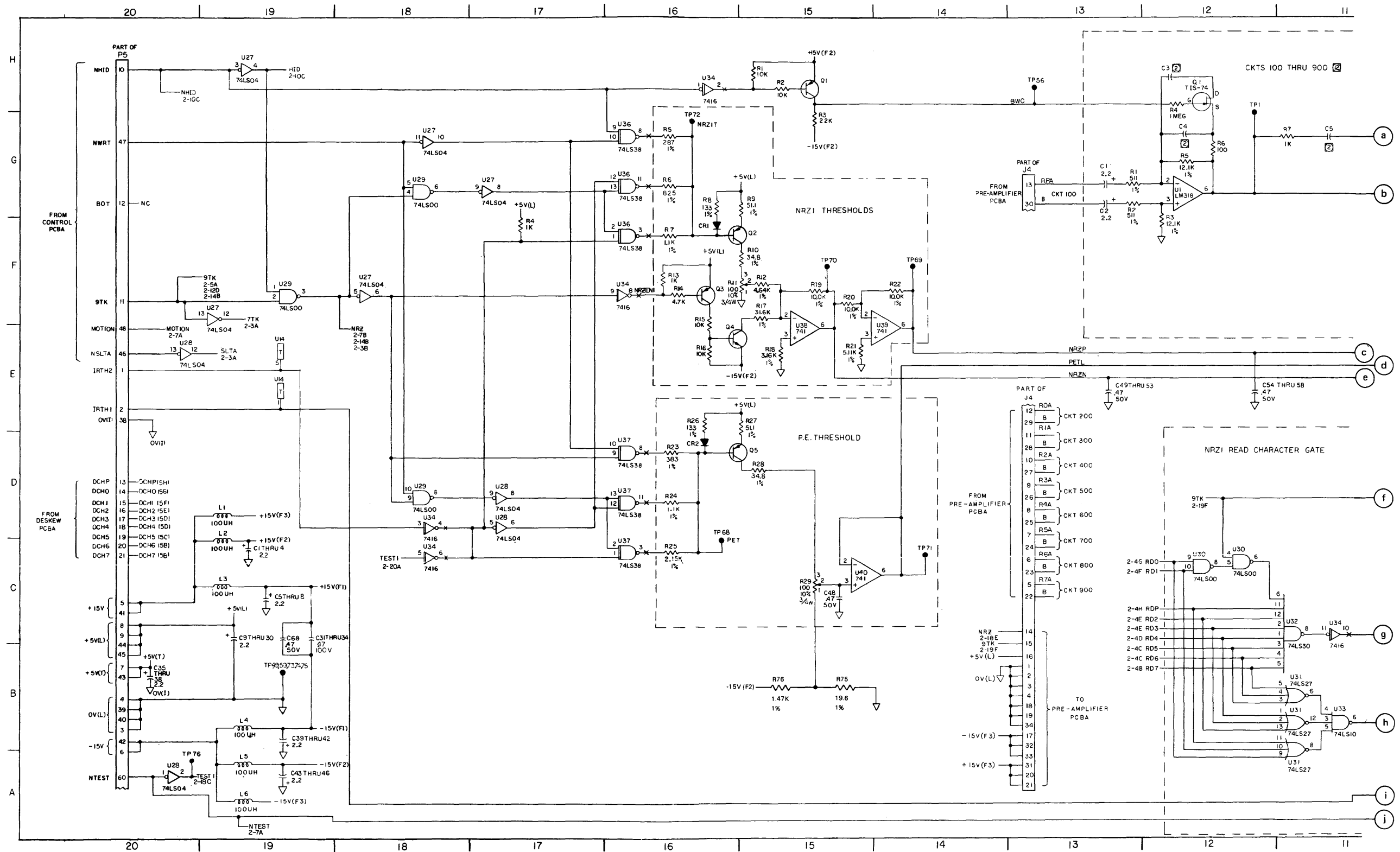


Figure 24 Schematic, DATA L (Sheet 3 of 4)

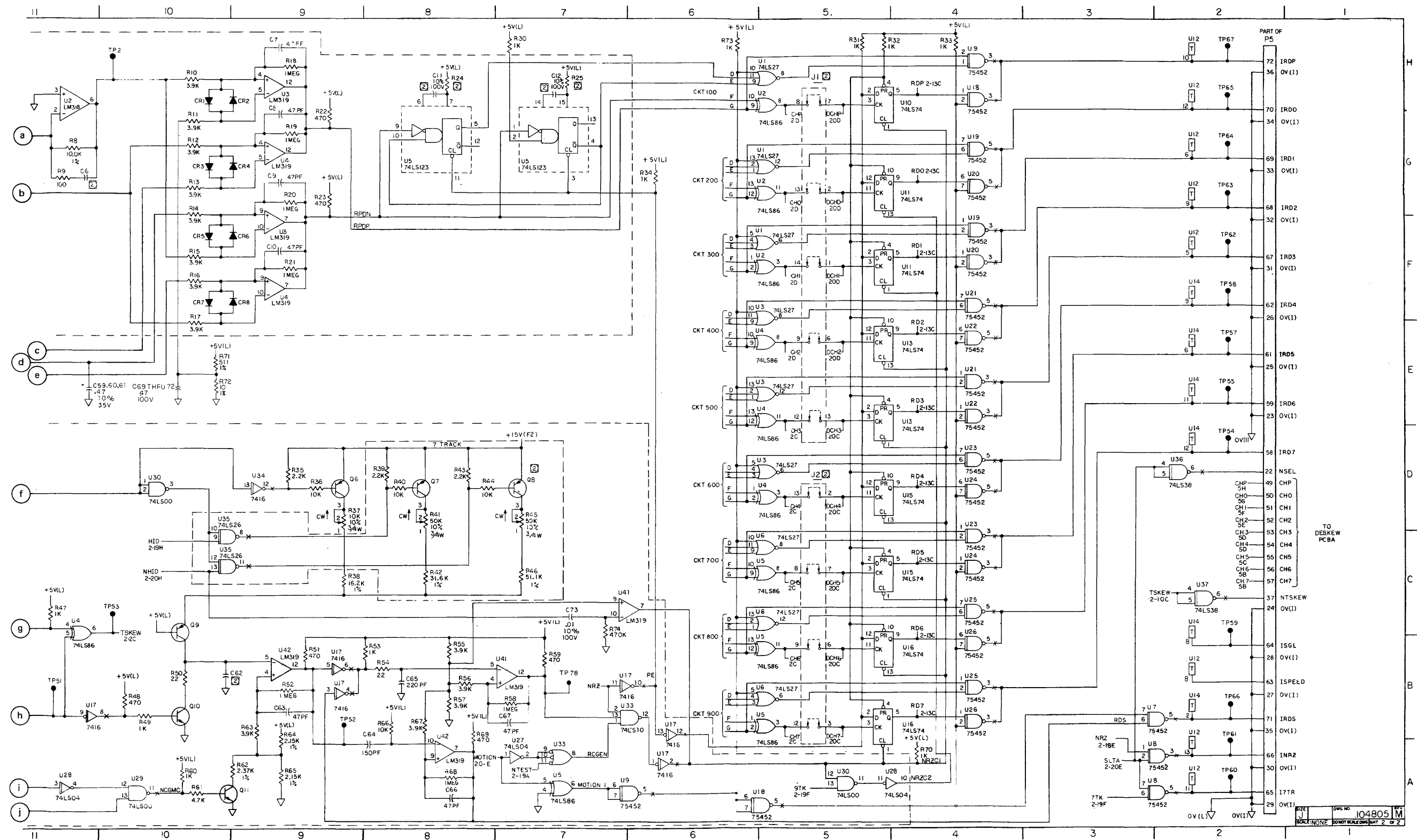


Figure 24 Schematic, DATA L (Sheet 4 of 4)

MA-5834

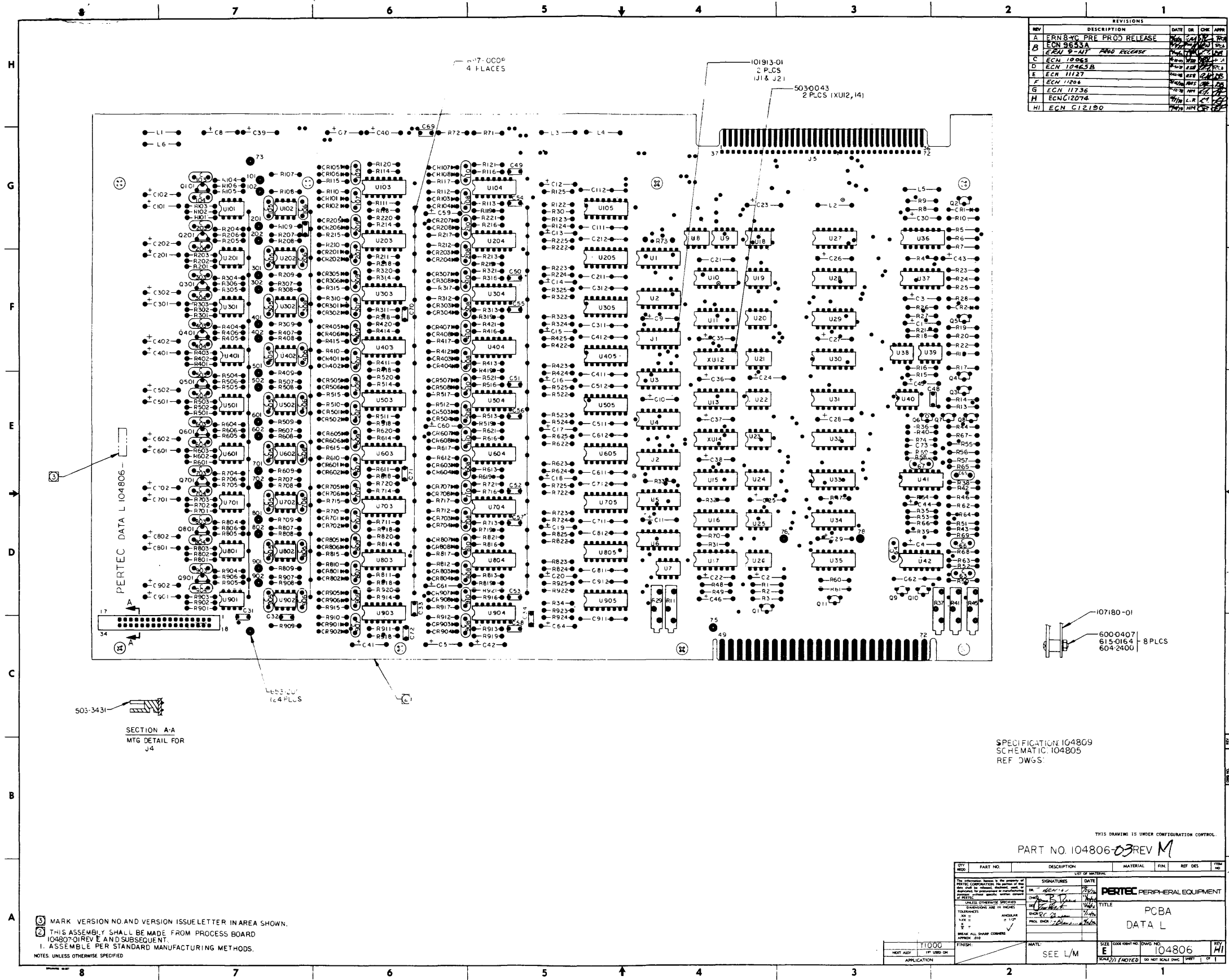
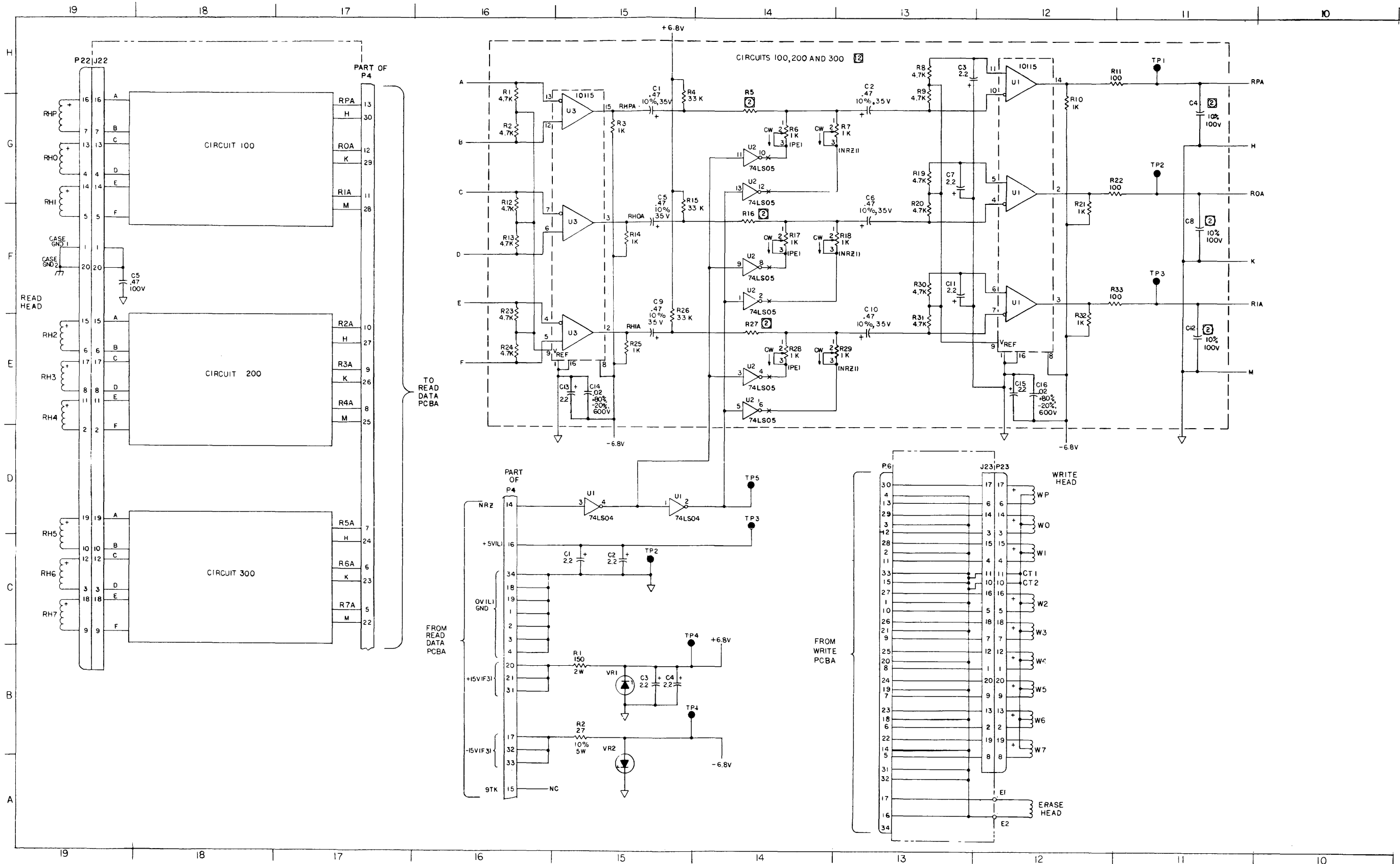


Figure 25 PCBA, DATA L



MA-5836

Figure 26 Schematic, 9 TK Preamp (Sheet 1 of 2)

1 TABLE I

PART NO.	REFERENCE DESIGNATOR
100-1015	R111, 122, 133, 211, 222, 233, 311, 322, 333
100-1025	R108, 110, 114, 121, 125, 132, 209, 210, 214, 221, 225, 232, R308, 310, 314, 321, 325, 332
100-3335	R104, 115, 126, 204, 215, 226, 304, 315, 326
100-4725	R101, 102, 108, 109, 112, 113, 119, 120, 123, 124, 130, 131, R201, 202, 208, 209, 212, 213, 219, 220, 223, 224, 230, 231, R301, 302, 308, 309, 312, 313, 319, 320, 323, 324, 330, 331
103-1515	R1
109-2705	R2
123-1020	R106, 107, 117, 118, 128, 129, 206, 207, 217, 218, 228, 229, R306, 307, 317, 318, 328, 329
135-2862	C114, 116, 214, 216, 314, 316
135-3352	C5
139-2244	C1, 2, 3, 4, 108, 109, 111, 113, 115, 209, 207, 211, 213, 215, 309, 307, 311, 313, 315
139-4735	C101, 102, 105, 106, 109, 110, 201, 202, 205, 206, 209, 210, 301, 302, 305, 306, 309, 310
330-6685	VR1, 2
700-0115	U101, 102, 201, 202, 301, 302
710-7405	U102, 202, 302
710-7404	U1

2 TABLE II

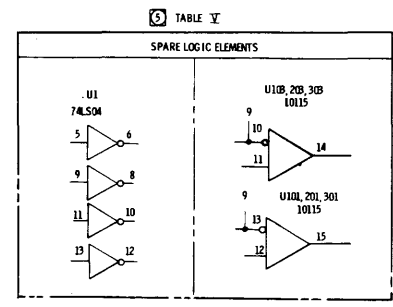
ASSEMBLY VERSION NO.	VERSION CHARACTERISTIC	C104, 108, 112, C204, 208, 212, C304, 308, 312	R105, 116, 127, 205, 216, 227, R305, 316, 327		
SPEED	VALUE	PART NO.	VALUE	PART NO.	
-01	75 IPS	.0068	131-6820	220	100-2215
-02	100 IPS	.0047	131-4720	560	100-5615
-03	112 1/2 IPS	.0033	131-3320	960	100-9615

REFERENCE DESIGNATIONS

LAST USED	DELETED
C5	C16
E2	---
J4	---
P4	---
R2	R33
TP5	TP9
U1	U9
VR2	---
W1	---

4 TABLE IV

I.C. TYPE	GROUND AND VOLTAGE PIN NO.	
	+5V	GND
74LS05	14	7
74LS04	14	7



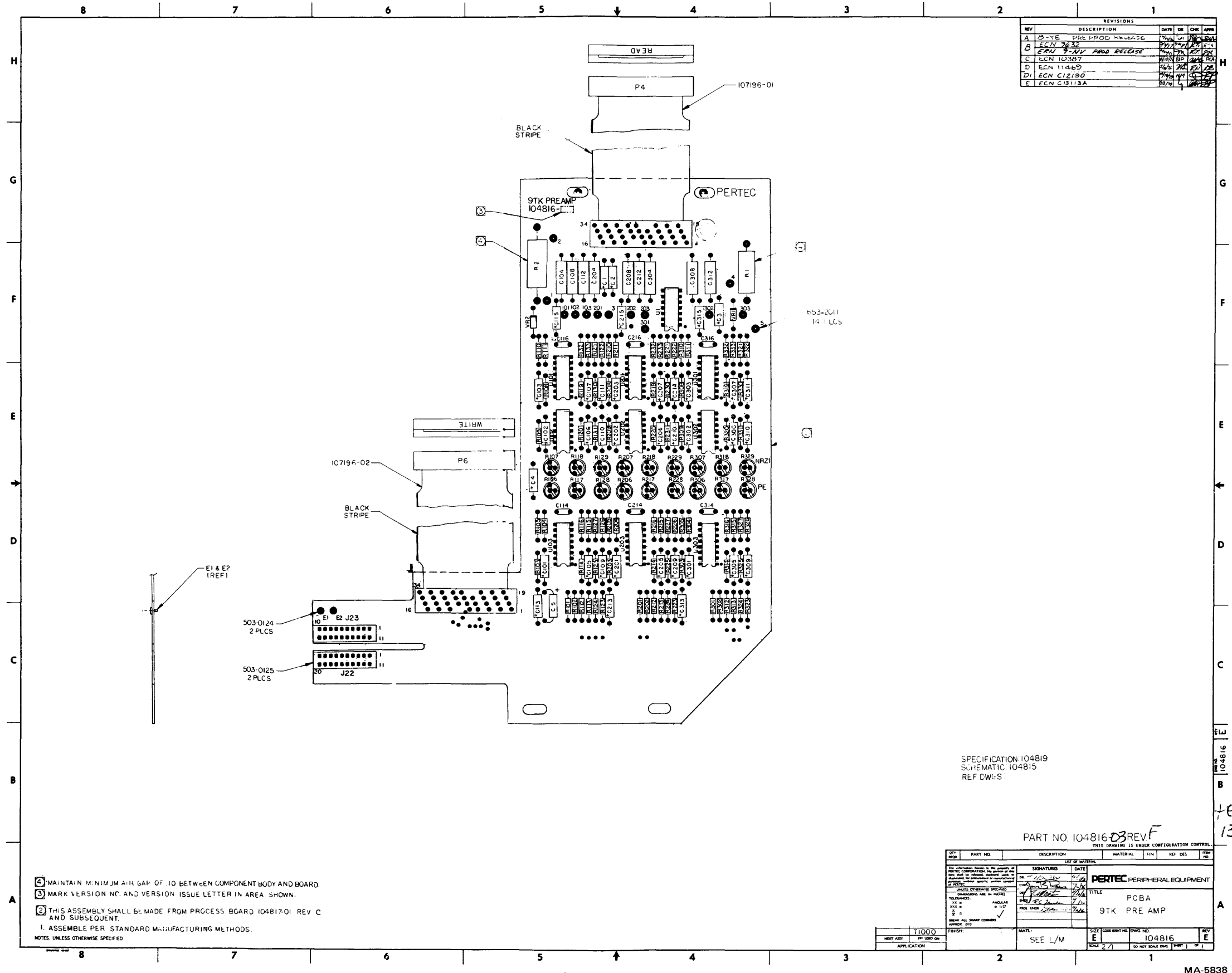
REVISIONS

REV	DESCRIPTION	DATE	BY	CHK	APP
A	ERN 8-YE PRE PROD RELEASE	1/14/70	...	...	...
B	ECN 9632	...	...	...	...
C	ERN 9-NV PREL RELEASE	...	...	...	...
D	ECN 10178	...	...	...	...
E	ECN 10936	...	...	...	...
F	ECN 10990	...	...	...	...
G	ECN 11209	...	...	...	...
H	ECN C1319D	...	...	...	...
H	ECN C13113A	...	...	...	...

- 10. DIODES ARE IN4736.
 - 9. (RESERVED)
 - 8. (RESERVED)
 - 7. CAPACITOR VALUES ARE IN MICROFARADS ± 20%, 20V.
 - 6. RESISTOR VALUES ARE IN OHMS, 5%, 1/4W.
 - 5. FOR SPARE LOGIC ELEMENTS, SEE TABLE V.
 - 4. FOR I. C. GENERIC TYPE NO. AND GROUND/VOLTAGE PIN NOS. SEE TABLE IV.
 - 3. POTENTIOMETERS ARE ± 10% 1/2W.
 - 2. FOR VALUE, PART NUMBER AND USAGE OF COMPONENTS AFFECTED BY VERSION NUMBER, SEE TABLE II.
 - 1. FOR PART NUMBER OF COMPONENTS NOT AFFECTED BY VERSION NUMBER, SEE TABLE I.
- NOTES: UNLESS OTHERWISE SPECIFIED
SPECIFICATION 10M19
ASSEMBLY 10M16
- REFERENCE DRAWINGS:

<p>104816 11000</p> <p>APPLICATION</p>	<p>DATE: 7/1/70</p> <p>BY: [Signature]</p> <p>CHK: [Signature]</p> <p>APP: [Signature]</p>	<p>PERTEC</p> <p>PERIPHERAL EQUIPMENT DIVISION</p> <p>TITLE: SCHEMATIC 9TK PREAMP</p>
<p>REV: J</p> <p>DATE: 7/1/70</p>	<p>REV: H</p> <p>DATE: 7/1/70</p>	<p>REV: H</p> <p>DATE: 7/1/70</p>

Figure 26 Schematic, 9 TK Preamp (Sheet 2 of 2)



REVISIONS				
REV	DESCRIPTION	DATE	BY	APPV
A	3-YE PRE PROD RELEASE	7/27/71	MM	MM
B	ECN 9832	7/27/71	MM	MM
C	ECN 10387	7/27/71	MM	MM
D	ECN 11469	7/27/71	MM	MM
DI	ECN C12190	7/27/71	MM	MM
E	ECN C13113A	7/27/71	MM	MM

SPECIFICATION 104819
 SCHEMATIC 104815
 REF DWGS

PART NO. 104816-03 REV. F

ECN
 13113A

- ④ MAINTAIN MINIMUM AIR GAP OF .10 BETWEEN COMPONENT BODY AND BOARD.
 - ③ MARK VERSION NO. AND VERSION ISSUE LETTER IN AREA SHOWN.
 - ② THIS ASSEMBLY SHALL BE MADE FROM PROCESS BOARD 104817-01 REV C AND SUBSEQUENT.
 - 1. ASSEMBLE PER STANDARD MANUFACTURING METHODS.
- NOTES: UNLESS OTHERWISE SPECIFIED

QTY	PART NO.	DESCRIPTION	LIST OF MATERIAL	MATERIAL	FIN	REF DES	REP NO
SIGNATURES		DATE	PERTEC PERIPHERAL EQUIPMENT				
TITLE		PCBA					
TITLE		9TK PRE AMP					
SCALE		2/1					
FINISH		SEE L/M					
MATERIAL		104816					
REV		E					

Figure 27 PCBA, 9 TK Preamp