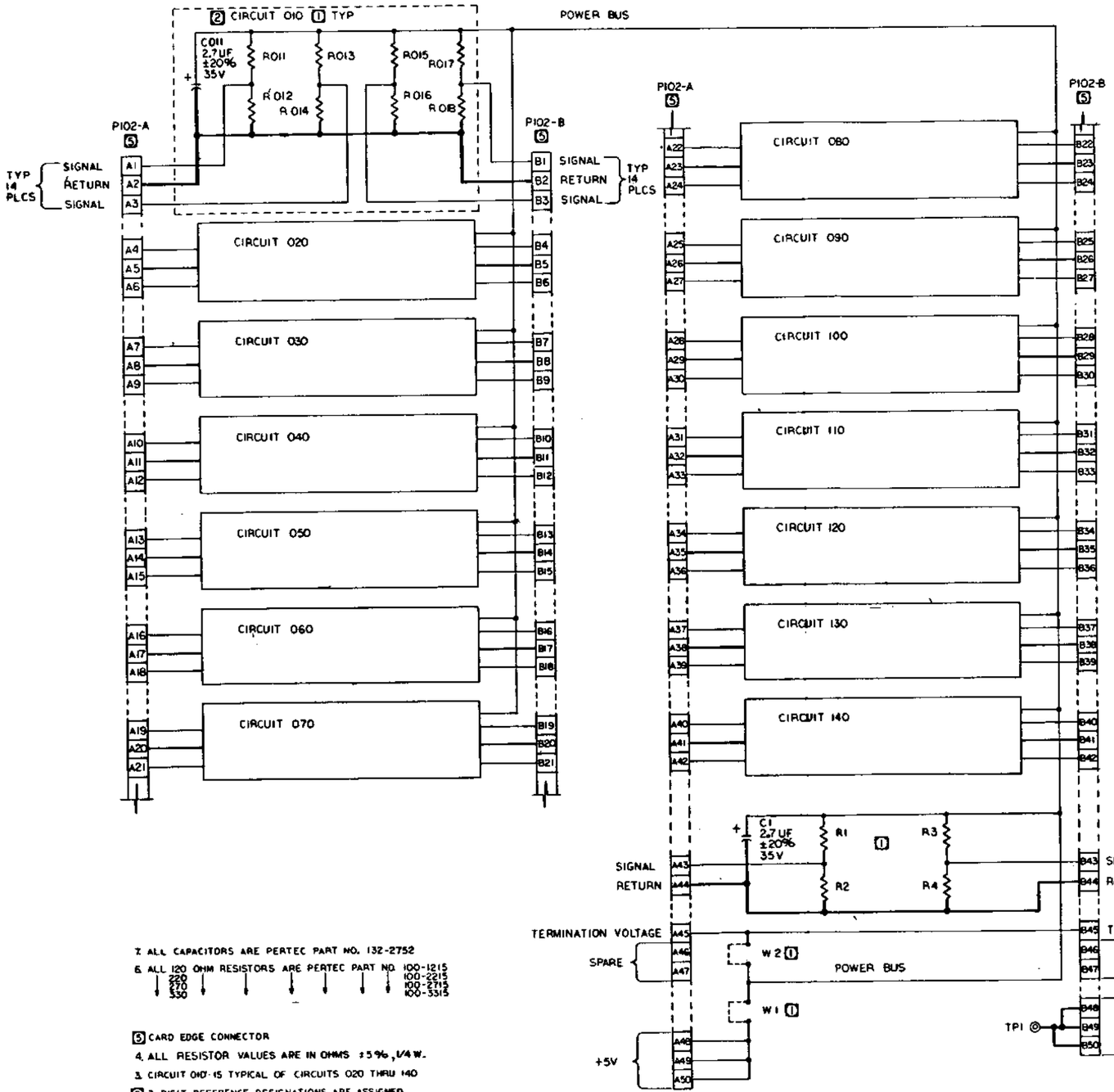
REVISIONS					
REV	DESCRIPTION	DATE	BY	CHK	APPR
A	ERN 4-6-W PRE-PRODUCTION RELEASE	7/25	RKS	VTA	[illegible]
	ERN 8-YN PRODUCTION RELEASE	8/6			
A1	ECN 5906	7/17	LT	[illegible]	[illegible]
B	ECN 7722	9/14	AJR	[illegible]	[illegible]



REFERENCE DESIGNATIONS			
LAST USED		DELETED	
BASIC	REPETITIVE 2	BASIC	REPETITIVE
C1	C141		
R4	R148		
TP1			
W2			

1. ALL CAPACITORS ARE PERTEC PART NO. 132-2752
2. ALL 120 OHM RESISTORS ARE PERTEC PART NO. 100-1215, 220 100-2215, 270 100-2715, 330 100-3315
5. CARD EDGE CONNECTOR
4. ALL RESISTOR VALUES ARE IN OHMS ±5%, 1/4 W.
3. CIRCUIT 040 IS TYPICAL OF CIRCUITS 020 THRU 140
2. 3 DIGIT REFERENCE DESIGNATIONS ARE ASSIGNED TO REPETITIVE CIRCUITS
1. SEE VERSION TABLE, SHEET 2, FOR VALUE OR USAGE.

NOTES: UNLESS OTHERWISE SPECIFIED

PEC	PERIPHERAL EQUIPMENT CORPORATION		
TITLE	SCHEMATIC, I/Ø TERMINATION BD		
SIZE E	DWG NO. 102800	REV B	
SCALE NONE		SHEET 2 OF 2	

102601 03000

PEC PERIPHERAL EQUIPMENT CORPORATION
TITLE SCHEMATIC, I/Ø TERMINATION BD
SIZE E DWG NO. 102800 REV B
SCALE NONE SHEET 2 OF 2

	-01	-02	-03	-04	-05	-06	-07
R011	OMIT	OMIT	220	120	120	220	120
R012	↓	↓	330	OMIT	OMIT	330	OMIT
R013			220	120	120	220	120
R014			330	OMIT	OMIT	330	OMIT
R015			220	120	120	220	120
R016			330	OMIT	OMIT	330	OMIT
R017			220	120	120	220	120
R018			330	OMIT	OMIT	330	OMIT
R021			220	120	120	220	120
R022			330	OMIT	OMIT	330	OMIT
R023			220	120	120	220	120
R024			330	OMIT	OMIT	330	OMIT
R025			220	120	120	220	120
R026			330	OMIT	OMIT	330	OMIT
R027			220	120	120	220	120
R028			330	OMIT	OMIT	330	OMIT
R031			220	120	120	220	120
R032			330	OMIT	OMIT	330	OMIT
R033			220	120	120	220	120
R034			330	OMIT	OMIT	330	OMIT
R035			220	120	120	220	120
R036			330	OMIT	OMIT	330	OMIT
R037			220	120	120	220	120
R038			330	OMIT	OMIT	330	OMIT
R041			220	120	120	220	120
R042			330	OMIT	OMIT	330	OMIT
R043			220	120	120	220	120
R044			330	OMIT	OMIT	330	OMIT
R045			220	120	120	220	120
R046			330	OMIT	OMIT	330	OMIT
R047			220	120	120	220	120
R048			330	OMIT	OMIT	330	OMIT
R051			220	120	120	220	120
R052			330	OMIT	OMIT	330	OMIT
R053			220	120	120	220	120
R054			330	OMIT	OMIT	330	OMIT
R055			220	120	120	220	120
R056			330	OMIT	OMIT	330	OMIT
R057			220	120	120	220	120
R058			330	OMIT	OMIT	330	OMIT
R061			220	120	120	220	120
R062			330	OMIT	OMIT	330	OMIT
R063			220	120	120	220	120
R064			330	OMIT	OMIT	330	OMIT
R065			220	120	120	220	120
R066			330	OMIT	OMIT	330	OMIT
R067			220	120	120	220	120
R068			330	OMIT	OMIT	330	OMIT
R071			220	120	120	220	120
R072			330	OMIT	OMIT	330	OMIT
R073			220	120	120	220	120
R074			330	OMIT	OMIT	330	OMIT
R075			220	120	120	220	120
R076			330	OMIT	OMIT	330	OMIT
R077	↓	↓	220	120	120	220	120
R078	OMIT	OMIT	330	OMIT	OMIT	330	OMIT

	-01	-02	-03	-04	-05	-06	-07
R081	OMIT	220	220	120	270	220	120
R082	↓	330	330	OMIT	OMIT	330	OMIT
R083		220	220	120	270	220	120
R084		330	330	OMIT	OMIT	330	OMIT
R085		220	220	120	270	220	120
R086		330	330	OMIT	OMIT	330	OMIT
R087		220	220	120	270	220	120
R088		330	330	OMIT	OMIT	330	OMIT
R091		220	220	120	270	220	120
R092		330	330	OMIT	OMIT	330	OMIT
R093		220	220	120	270	220	120
R094		330	330	OMIT	OMIT	330	OMIT
R095		220	220	120	270	220	120
R096		330	330	OMIT	OMIT	330	OMIT
R097		220	220	120	270	220	120
R098		330	330	OMIT	OMIT	330	OMIT
R101		220	220	120	270	220	120
R102		330	330	OMIT	OMIT	330	OMIT
R103		220	220	120	270	220	120
R104		330	330	OMIT	OMIT	330	OMIT
R105		220	220	120	270	220	120
R106		330	330	OMIT	OMIT	330	OMIT
R107		220	220	120	270	220	120
R108		330	330	OMIT	OMIT	330	OMIT
R111		220	220	120	270	220	120
R112		330	330	OMIT	OMIT	330	OMIT
R113		220	220	120	270	220	120
R114		330	330	OMIT	OMIT	330	OMIT
R115		220	220	120	270	220	120
R116		330	330	OMIT	OMIT	330	OMIT
R117		220	220	120	270	220	120
R118		330	330	OMIT	OMIT	330	OMIT
R121		220	220	120	270	220	120
R122		330	330	OMIT	OMIT	330	OMIT
R123		220	220	120	270	220	120
R124		330	330	OMIT	OMIT	330	OMIT
R125		220	220	120	270	220	120
R126		330	330	OMIT	OMIT	330	OMIT
R127		220	220	120	270	220	120
R128		330	330	OMIT	OMIT	330	OMIT
R131		220	220	120	270	220	120
R132		330	330	OMIT	OMIT	330	OMIT
R133		220	220	120	270	220	120
R134		330	330	OMIT	OMIT	330	OMIT
R135		220	220	120	270	220	120
R136		330	330	OMIT	OMIT	330	OMIT
R137		220	220	120	270	220	120
R138		330	330	OMIT	OMIT	330	OMIT
R141		220	220	120	270	220	120
R142		330	330	OMIT	OMIT	330	OMIT
R143		220	220	120	270	220	120
R144		330	330	OMIT	OMIT	330	OMIT
R145		220	220	120	270	220	OMIT
R146		330	330	OMIT	OMIT	330	OMIT
R147		220	220	120	270	220	120
R148		330	330	OMIT	OMIT	330	OMIT
R1		220	220	120	270	220	120
R2		330	330	OMIT	OMIT	330	OMIT
R3		220	220	120	270	220	120
R4		330	330	OMIT	OMIT	330	OMIT
W1	↓	USE	USE	OMIT	OMIT	OMIT	OMIT
W2	OMIT	OMIT	OMIT	USE	USE	USE	USE
J1, J011 THRU J141	USE	USE	USE	USE	USE	USE	USE

PEC			
TITLE	SCHEMATIC, I/Ø TERMINATION BD		
102801	03000		
SIZE E	DWG. NO. 102800	REV B	
SCALE NONE	DO NOT SCALE DRAWING	SHEET 2 OF 2	

H G I E D C B A

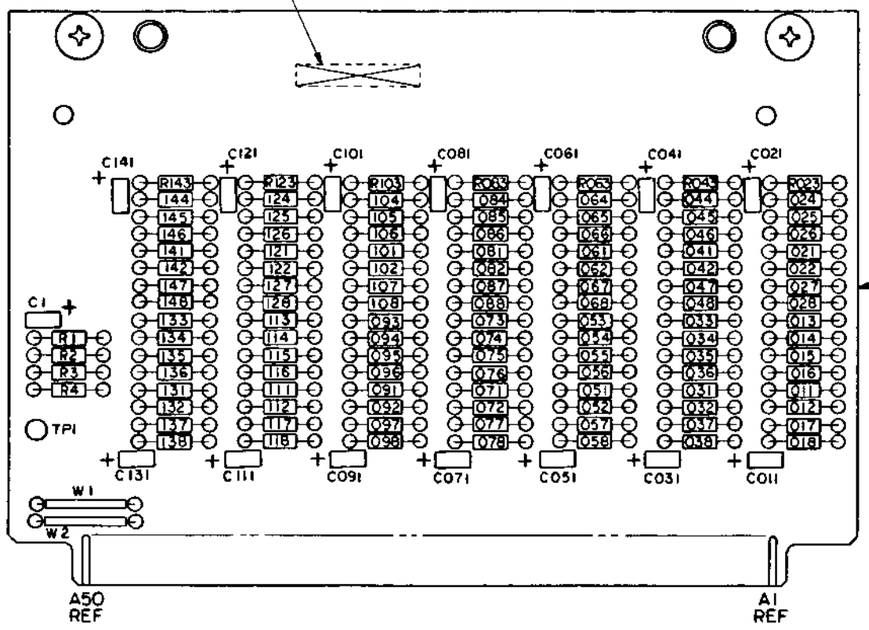
7 6 5 4 3 2 1

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	ERN 46 W PRE-PRODUCTION RELEASE	7/9/76	RAS	[illegible]	[illegible]
	ERN 4-YN PRODUCTION RELEASE	7/9/76	RAS	[illegible]	[illegible]
B	ECN 7331	8/1/76	WLS	[illegible]	[illegible]
C	ECN 7941	12/5/77	AN	[illegible]	[illegible]
D	ECN 9712	7/31/78	PMP	[illegible]	[illegible]

615-6822
2 PLCS

102709-04
601-0803
} 2 PLCS

3



102802-01 4

FOR ASSEMBLY VERSION INFORMATION SEE SCHEMATIC 102800.
FOR LIST OF MATERIALS SEE LM 102801 AND APPLICABLE DASH NO.
PART NO. 102801-03 REV C

4 THIS ASSY SHALL BE MADE FROM PROCESS BOARD 102802-01 REV E AND SUBSEQUENT.

3 RUBBER STAMP ASSY PART NO. 102801 INCLUDING VERSION NO. AND VERSION ISSUE LETTER NEARSIDE ORIENTED AS SHOWN.

2. ASSEMBLE PER STANDARD MFG METHODS.

1. REFERENCE DRAWING SCHEMATIC 102800.

NOTES: UNLESS OTHERWISE SPECIFIED:

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
.XX ± —
.XXX ± —
X ± —
ANGULAR —
BREAK ALL SHARP CORNERS

SIGNATURES	DATE
DR R. Ley	7/20/78
CHK [illegible]	[illegible]
DES	
ENGR FULTZ	6-22-78
PROJ ENGR [illegible]	6-22-78

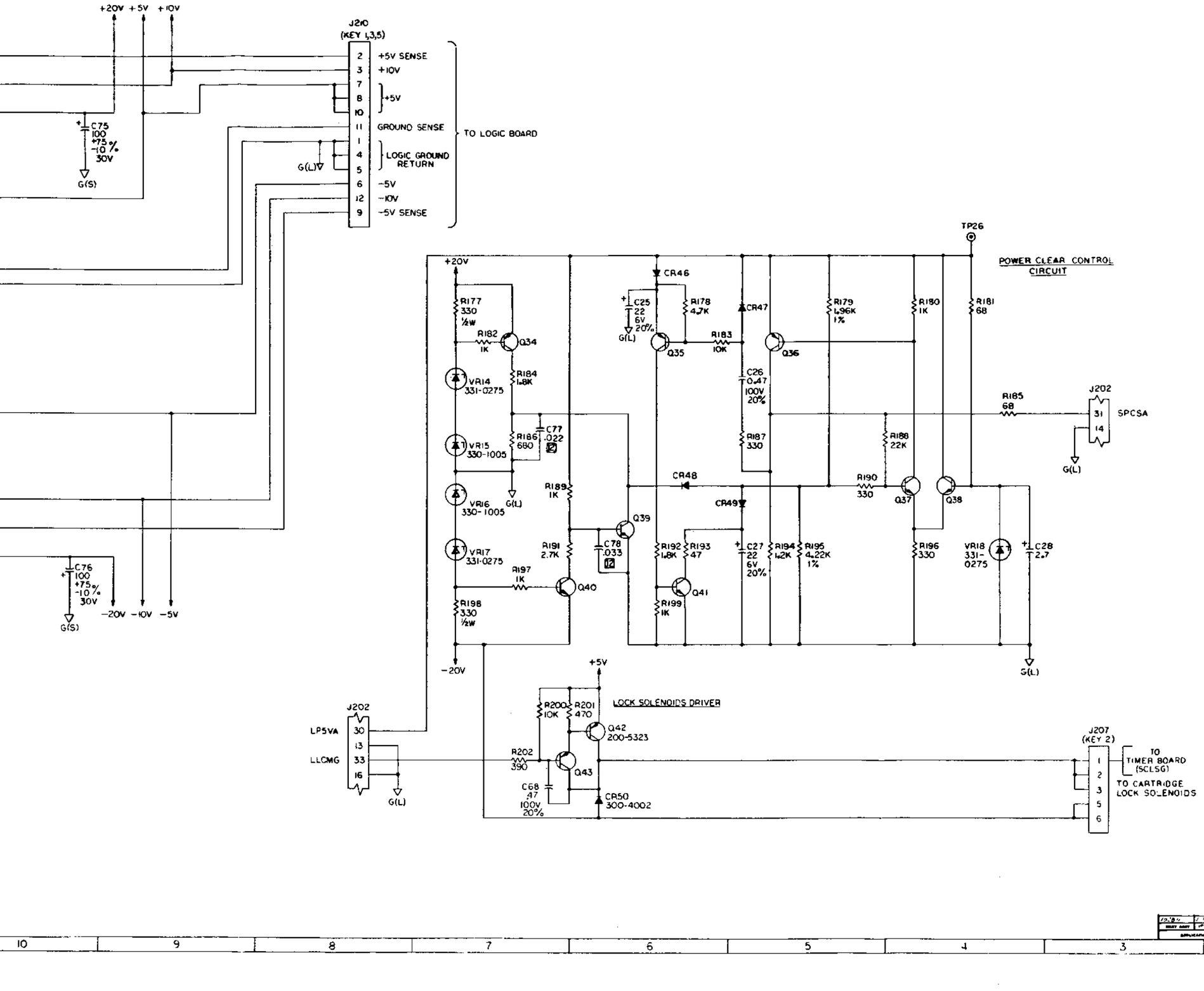
PERTEC PERIPHERAL EQUIPMENT

TITLE
PCBA
I/O TERMINATION BOARD

—	03000
NEXT ASSY	1ST USED ON
APPLICATION	

FINISH
MATL

SIZE	CODE IDENT NO	DWG NO	REV
D		102801	D
SCALE —	DO NOT SCALE DWG	SHEET	OF



REV	DESCRIPTION	DATE	BY	CHK	APPD
-	SEE SHT 1				

PEC

TITLE
SCHEMATIC —
SERVO BOARD

SIZE J

102810

POWER SUPPLY REGULATORS

J208 (KEY 1,4,5)

FROM TIMER BOARD (T5RTT)

FROM POWER SUPPLY

J212 (KEY 1,5,8)

21 VAC.(PK)

+10 VDC.(RAW)

+20 VDC.(RAW)

MAIN GROUND

-20 VDC.(RAW)

SHIELD

TP1

TP4

TP21

TP25

TP12

Q24 Q25 Q26 Q27 200-3053

Q28 200-3053

Q29

Q30 200-4037

Q31 200-3055

Q32 200-4037

Q33

U15 U18

R148 1K

R149 10

R150 220

R151 22

R152 200 3%,3W

R153 68 1/2W

R154 0.2 5W 3%

R155 150 2W

R156 100 2W

R157 1.2K

R158 5K

R159 2.2K

R160 680

R161 39

R162 680

R163 1 1W,3%

R164 680

R165 22

R166 150

R167 5K

R168 1.2K

R169 1.2K

R170 1K

R171 100

R172 56

R173 68 1/2W

R174 330 2W

R175 330

R176 0.2 5W 3%

C16 .015

C17 .0047

C18 2.7

C19 2.7

C20 22 6V 20%

C21 .0047

C22 .0047

C23 .001

C24 2.7

C75 100 +75% -10% 30V

C76 100 +75% -10% 30V

VR4 330-1001

VR5 330-0685

VR6 330-0685

VR7 330-0685

VR8 330-0685

VR9 330-0685

VR10 330-1001

VR11 330-0685

VR12 330-0685

VR13 330-0685

SCR2 201-3228

SCR3 201-3228

SCR4 201-3228

CR36 CR38 CR40 CR41 CR42 CR43 CR44

+20V +5V +10V

-20V -10V -5V

G(L) G(P) G(S)

BRUSH MOTOR DRIVER

AC MOTOR SPEED CONTROL CIRCUIT

POSITION TRANSDUCER LAMP FAILURE DETECTOR

EMERGENCY UNLOAD RELAY DRIVER

EMERGENCY UNLOAD CHARGING NETWORK

EMERGENCY UNLOAD RELAY

TYPICAL DECOUPLING NETWORK

TYPICAL DECOUPLING NETWORK

TO BRUSH MOTOR

GND TO TIMER BOARD

TO TIMER BOARD (NSRSSS)

TO TIMER BOARD (+10 VDC RAW)

TO AC MOTOR CONTROL BOARD

TO POSITIONER

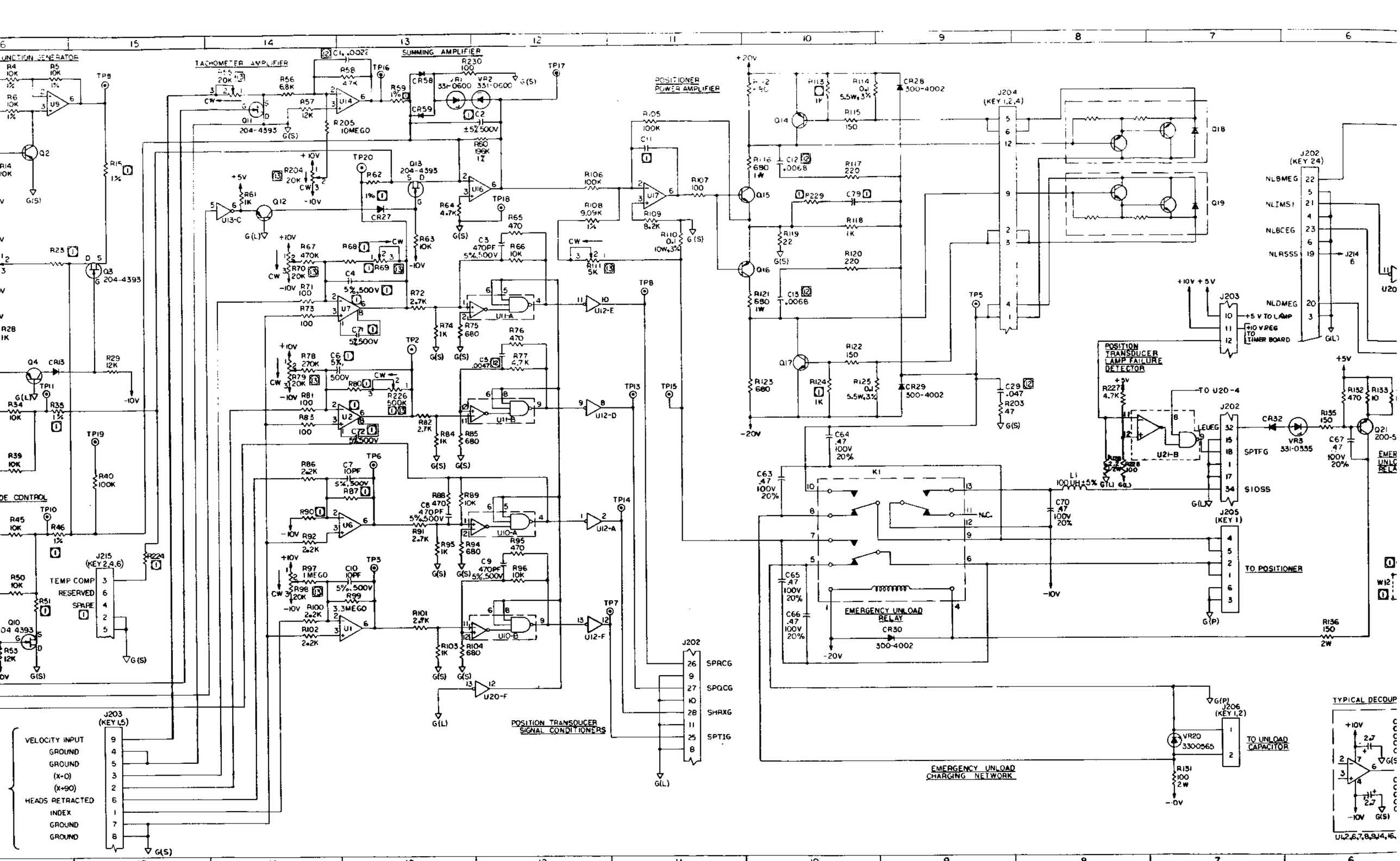
TO UNLOAD CAPACITOR

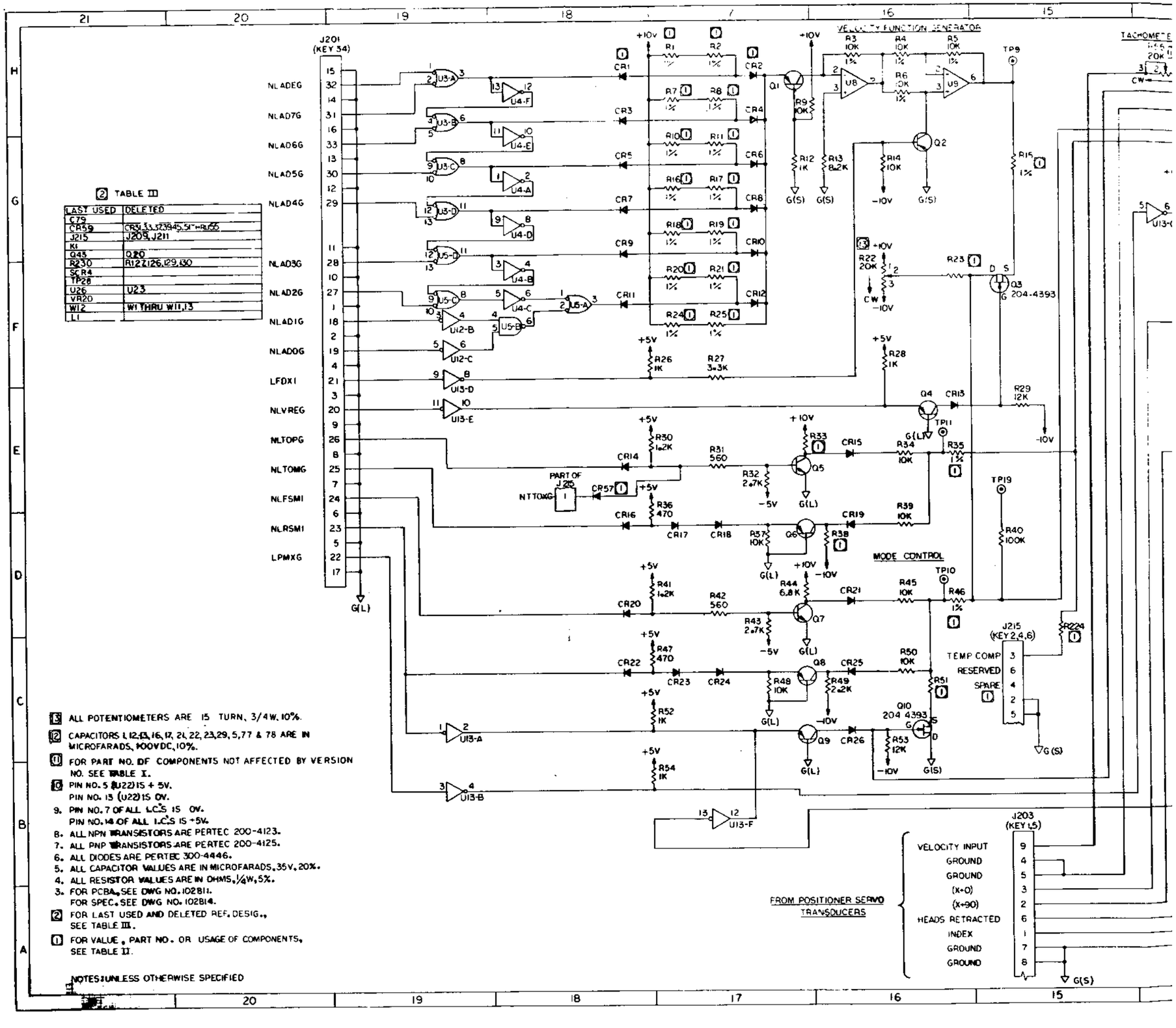
REV	DESCRIPTION	BY	CHK	DATE
A	ECN 4917 PRELIMINARY RELEASE			
B	ECN 4913			
C	ECN 4923			
D	ECN 4965			
E	ECN 4986			
F	ECN 4987			
G	ECN 4994			
H	ECN 4993			
J	ECN 5092 A			
	ERN 5-H-B PRODUCTION RELEASE			
K	ECN 5443			
L	ECN 5636			
M	ECN 5776			
N	ECN 5849			
P	ECN 6086			
R	ECN 6056 A			
S	ECN 6117			
T	ECN 6147			
U	ECN 6224A			
V	ECN 6356 F			
W	ECN 7468			
Y	ECN 7365			
Z	ECN 7650A			
AA	ECN 7714			
AB	ECN 7731A			
AC	ECN 7892			
AD	ECN 8025A			
AE	ECN 8064			
AF	ECN 8340			
AG	ECN 8391			
AH	ECN 8452			
AJ	ECN 8588			
AJ1	ECN 8788			
AK	ECN 8904			
AL	ECN 9007			
AM	ECN 9819A			
AN	ECN 12393			
AP	ECN 9872A			

PEC

TITLE: SCHEMATIC – SERVO BOARD

SIZE J | DWG NO. 102810 | SCALE NONE


FUNCTION GENERATOR
TACHOMETER AMPLIFIER
SUMMING AMPLIFIER
POSITIONER POWER AMPLIFIER
POSITION TRANSDUCER SIGNAL CONDITIONERS
EMERGENCY UNLOAD CHARGING NETWORK
POSITION TRANSDUCER LAMP FAILURE DETECTOR
TYPICAL DECOUPLING
TO POSITIONER
TO UNLOAD CAPACITOR
EMERGENCY UNLOAD RELAY
CR30 300-4002
VELOCITY INPUT
GROUND
GROUND
(X+0)
(X+90)
HEADS RETRACTED
INDEX
GROUND
GROUND
TEMP COMP
RESERVED
SPARE
+5 V TO LAMP
+10 V REG TO TIMER BOARD
SPRCG
SPQCG
SHRXG
SPTIG
SPTFG
SIOSS
NLBMEG
NLIMS1
NLBCEG
NLRSSS
NLDMEG
LEUEG
N.C.


J201 (KEY 34)
NLADEG
NLAD7G
NLAD6G
NLAD5G
NLAD4G
NLAD3G
NLAD2G
NLAD1G
NLAD0G
LFDX1
NLVREG
NLTOPG
NLTOMG
NLFSMI
NLRSMI
LPMXG
G(L)
TABLE III
LAST USED | DELETED
C79 |
CR59 | CR54,53,37,39,45,51 THRU R56
J215 | J205, J211
K1 |
Q43 | Q20
R230 | R122,126,129,130
SCR4 |
TP28 |
U26 | U23
VR20 |
W12 | W1 THRU W11, 13
L1 |
VELOCITY FUNCTION GENERATOR
+10V
-10V
+5V
-5V
G(S)
G(L)
TP9
TP10
TP11
TP19
MODE CONTROL
TEMP COMP
RESERVED
SPARE
J215 (KEY 2,4,6)
J203 (KEY 45)
VELOCITY INPUT
GROUND
(x+0)
(x+90)
HEADS RETRACTED
INDEX
FROM POSITIONER SERVO TRANSDUCERS
PART OF J205
NTTOMG
204-4393
ALL POTENTIOMETERS ARE 15 TURN, 3/4W, 10%.
CAPACITORS L12,13,16,17,21,22,23,29,5,77 & 78 ARE IN MICROFARADS, 100VDC, 10%.
FOR PART NO. OF COMPONENTS NOT AFFECTED BY VERSION NO. SEE TABLE I.
PIN NO. 5 (U22) IS + 5V.
PIN NO. 13 (U22) IS 0V.
9. PIN NO. 7 OF ALL L.C.'S IS 0V.
PIN NO. 14 OF ALL L.C.'S IS +5V.
8. ALL NPN TRANSISTORS ARE PERTEC 200-4123.
7. ALL PNP TRANSISTORS ARE PERTEC 200-4125.
6. ALL DIODES ARE PERTEC 300-4446.
5. ALL CAPACITOR VALUES ARE IN MICROFARADS, 35V, 20%.
4. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%.
3. FOR PCBA, SEE DWG NO. 102811.
FOR SPEC., SEE DWG NO. 102814.
FOR LAST USED AND DELETED REF. DESIG., SEE TABLE III.
FOR VALUE, PART NO. OR USAGE OF COMPONENTS, SEE TABLE II.
NOTES: UNLESS OTHERWISE SPECIFIED

REVISIONS				
REV	DESCRIPTION	DATE	BY	CHK
—	SEE SHT 1			

(1) TABLE II

C11	CR1	CR2	R1	R2	R7	R8	R10	R11	R16	R17	R18	R19	R20	R21	R24	R25	R113	R124	C50	C51	C52	C56	C57	C58	C59	W12	C4	C6	R23	R35	R46	R51	R62	R68, R80	C79	R229
OMIT	OMIT	OMIT	OMIT	OMIT	51.1K	2.15K	56.2K	3.83K	82.5K	2.61K	82.5K	2.61K	121K	9.09K	196K	75K	1K	1K	OMIT	2.7	2.7	2.7	2.7	22	OMIT	OMIT	47 PF	47 PF	820K	422K	61.9K	220	287K	56K	OMIT	OMIT
					104-5112	104-2151	104-5622	104-3831	104-8252	104-2611	104-8252	104-2611	104-1213	104-9091	104-1963	104-7502	100-1025	100-1025		132-2752	132-2752	132-2752	132-2752	132-2262			130-4705	130 4705	100-8245	104-4223	104-6192	100-2215	104-2873	100-5635		
OMIT	USE	USE	51.1K	3.16K	61.9K	237	82.5K	4.64K	121K	3.16K	162K	12.1K	196K	26.1K	422K	75K	1K	1K	OMIT	2.7	2.7	2.7	2.7	22	OMIT	OMIT	15PF	15PF	820K	1.5M	100K	330	562K	100K	OMIT	OMIT
	300-4446	300-4446	104-5112	104-3161	104-6192	104-2370	104-8252	104-4641	104-1213	104-3161	104-1623	104-1212	104-1963	104-2612	104-4223	104-7502	100-1025	100-1025		132-2752	132-2752	132-2752	132-2752	132-2262			130-1505	130-1505	100-8245	104-1504	104-1003	100-3315	104-5623	100-1045		
OMIT	OMIT	OMIT	OMIT	OMIT	51.1K	2.15K	56.2K	3.83K	82.5K	2.61K	82.5 K	2.61K	121K	9.09K	196K	75K	1K	1K	OMIT	2.7	2.7	2.7	2.7	22	OMIT	OMIT	47PF	47PF	820K	422K	61.9K	220	287K	56K	OMIT	OMIT
					104-5112	104-2151	104-5622	104-3831	104-8252	104-2611	104-8252	104-2611	104-1213	104-9091	104-1963	104-7502	100-1025	100-1025		132-2752	132-2752	132-2752	132-2752	132-2262			130-4705	130-4705	100-8245	104-4223	104-6192	100-2215	104-2873	100-5635		
OMIT	USE	USE	51.1K	3.16 K	61.9K	237	82.5K	4.64K	121K	3.16K	162K	12.1K	196K	26.1K	422K	75K	1K	1K	OMIT	2.7	2.7	2.7	2.7	22	OMIT	OMIT	15PF	15PF	820K	1.5M	100K	330	562K	100K	OMIT	OMIT
	300-4446	300-4446	104-5112	104-3161	104-6192	104-2370	104-8252	104-4641	104-1213	104-3161	104-1623	104-1212	104-1963	104-2612	104-4223	104-7502	100-1025	100-1025		132-2752	132-2752	132-2752	132-2752	132-2262			130-1505	130-1505	100-8245	104-1504	104-1003	100-3315	104-5623	100-1045		
OMIT	USE	USE	51.1 K	3.16 K	61.9K	237	82.5K	4.64K	121K	3.16 K	162K	12.1K	196K	26.1K	422K	75 K	1 K	1 K	OMIT	2.7	2.7	2.7	2.7	22	OMIT	OMIT	15PF	15PF	820K	1.5M	100K	330	562K	100K	OMIT	OMIT
	300-4446	300-4446	104 – 5112	104 – 3161	104 – 6192	104-2370	104-8252	104-4641	104 – 1213	104 – 3161	104-1623	104+1212	104 -1963	104 – 2612	104.4223	104-7502	100-1025	100-1025		132-2752	132 - 2752	132 – 2752	132-2752	132-2262			130-1505	130-1505	100-8245	104-1504	104-1003	100 – 3315	104-5623	100-1045		
OMIT	USE	USE	51.1K	3.16 K	61.9K	237	82.5K	4.64 K	121K	3.16 K	162K	12.1K	196K	26.1K	422K	75K	1 K	1 K	OMIT	2,7	2.7	2.7	2.7	22	OMIT	OMIT	15PF	15PF	820K	1.5M	100K	330	562K	100K	OMIT	OMIT
	300-4446	300-4446	104 – 5112	104 – 3161	104 – 6192	104-2370	104-8252	104-4641	104 - 1213	104 - 3161	104 – 1623	104 – 1212	104 – 1963	104 – 2612	104.4223	104-7502	100 – 1025	100 – 1025		132 – 2752	132 – 2752	132 – 2752	132 – 2752	132 – 2262			130-1505	130-1505	100-8245	104 – 1504	100-1003	100 – 3315	104-5623	100-1045		

R224	C71,72	U2,7	J215	R87	R90	R33	R38	R226	R225	R15,59	CR57
OMIT	OMIT	741 OP-AMP	OMIT	2.2MEGO	2.2MEGO	2.7K	2.2K	500K	3.3 K	6.81K	OMIT
		400—2741		100-2255	100-2255	100-2725	100-2225	121-5040	100-3325	104-6811	
220K	OMIT	318 OP-AMP	USE	1.0MEGO	680K	12K	12K	500K	3.3 K	6.19 K	OMIT
00-2245		400—0318		100-1055	100-6845	100-1235	100-1235	121-5040	100-3325	104-6191	
OMIT	OMIT	741 OP-AMP	OMIT	2.2 MEGO	2.2 MEGO	2.7K	2.2K	500K	3.3K	6.81K	OMIT
		400-2741		100-2255	100-2255	100-2725	100-2225	121-5040	100-3325	104-6811	
220K	OMIT	318 OP-AMP	USE	1.0 MEGO	680K	12K	12K	500K	3.3 K	6.19K	OMIT
00-2245		400-0318		100-1055	100-6845	100-1235	100-1235	121-5040	100-3325	104-6191	
220K	OMIT	3180P-AMP	USE	1.0MEGO	680 K	12 K	12K	500K	3.3 K	6.19 K	USE
00-2245		400-0318		100-1055	100-6845	100-1235	100-1235	121-5040	100-3325	104-6191	300-4446
220K	OMIT	3180P-AMP	USE	1.0 MEGO	680K	12K	12 K	500K	3.3K	6.19 K	USE
00-2245		400-0318		100-1055	100-6845	100-1235	100-1235	121-5040	100-3325	104-6191	300-4446

102811	D5000		
APPLICATION			

PERTEC PERIPHERAL EQUIPMENT

TITLE: SCHEMATIC – SERVO BOARD

SIZE J | 102810 | REV A

SCALE NONE

H G F E D C B A

(I) TABLE I

PART NO.	REF DESIGNATION
100-1005	R133,134,149
-1015	R107,171,71,73,81,83,228,230
-1025	R12,26,28,52,54,61,74,84, 93,103,118, 148,170,180, 182,197,199,211,215,219, 221,223, 189,213
-1035	R9,14,34,37,39,45,48,50, 63,66, 89,96,183,200
-1045	R40, 105,106
-1055	R97
-1225	R30,41,168,194,157,169
-1235	R29,53,57
-1515	R115,122,135, 166
-1825	R184, 192
-2205	R119,151,165,214
-2215	R117,120, 220,150
-2225	R49,86, 92,100,102,137,143, 144,159
-2235	R188
-3905	R161
-2725	R32,43,72,82,91,101, 191
-5625	R208
-3315	R175, 187,190,196
-3325	R27
-3335	R216
-3355	R99
-3915	R202
-3925	R141
-4705	R193,203
-4715	R36,47,65,76,88,95,132, 138,145,146,201,140,206, 210,222
-4725	R64,178,227,77
-4735	R147,207,58
-4745	R67
-5605	R172
-5615	R31,42,209
-6805	R181,185
-6815	R75,85,94,104,112,123, 160,162,164,186, 139
-8225	R13,109
-1065	R205
-2745	R78
-1535	R218
-6835	R217
100-6825	R56,44
101-0225	R128
101-6805	R153,173
101-3315	R177,198
102-6815	R116,121
103-1015	R131,156
105-1515	R138,155,142
103-3315	R174

(I) TABLE I

PART NO.	REF DESIGNATION
104-1002	R3,4,5,6
-1961	R179
-1963	R60
-4221	R195
104-9091	R108
108-2013	R152
109-0002	R154,176
109-0003	R114,125
110-0011	R110
113-0103	R163
121-2030	R22,55,70,79,98,204
121-5020	R111,158,167
123-5020	R212
130-1005	C7,10
130-4715	C3, 8,9
131-2230	C77
131-3330	C78
131-1020	C23
-2220	C1
-4720	C17,21,22,5
-4730	C29
131-6820	C12,13
131-1530	C16
132-2262	C20,25,27
132-2752	C15,18,19,24,28,30 THRU 49,61,62
132-1062	C54,55
135-4742	C14,26, 53, 60, 63 THRU 70
139-1051	C73,74
142-1070	C75,76
200-3053	Q23,27,28
-3055	Q31
-4037	Q30,32
-4123	Q5,7,15,17, ,37 THRU 41
-4125	Q1,2,4,6,8,9,12,14,16,22, 29,34,35,36,43
200-5323	Q21,42
201-3228	SCR2,3,4

(I) TABLE I

PART NO.	REF DESIGNATION
204-4393	Q3,10,11,13
205-4010	SCR1
300-4002	CR28-30,50
300-4446	CR3 THRU 27,32,34,35, 36,38,40 THRU 44,46 THRU 49,56,58,59
330-0565	VR20
330-0685	VR5 THRU 9,11 THRU 13
330-1005	VR15,16
330-1001	VR4,10
331-0275	VR18,14,17
331-0335	VR3,19
331-0600	VR1,2
400-2741	U1, 6, 8,9,14 THRU 18,24
502-1243	K1
515-1015	L1
700-5107	U10,11,21,25
-7400	U3,5
-7404	U4,12,20
-7405	U13
-7438	U19
-7476	U22
700-7545	U26

(I) TAB

ASSEMBLY 102811 DASH NO.	VERSION CHARACTERISTIC 100 TPI	200 TPI	+5V TIMER		C2	C11	CR1	CR2	R1	R2	R7	R8
-01	X			VALUE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	51.1K	2.15K
				PART NO.							104-5112	104-2
-02		X		VALUE	220PF	OMIT	USE	USE	51.1K	3.16K	61.9K	237
				PART NO.	130-2215		300-4446	300-4446	104-5112	104-3161	104-6192	104-2
-31	X		X	VALUE	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	51.1K	2.15K
				PART NO.							104-5112	104-2
-32		X	X	VALUE	220 PF	OMIT	USE	USE	51.1K	3.16K	61.9K	237
				PART NO.	130-2215		300-4446	300-4446	104-5112	104-3161	104-6192	104-2
-04		X		VALUE	220PF	OMIT	USE	USE	51.1K	3.16K	61.9K	237
				PART NO.	130-2215		300-4446	300-4446	104-5112	104-3161	104-6192	104-23
-34		X	X	VALUE	220PF	OMIT	USE	USE	51.1K	3.16K	61.9K	237
				PART NO.	130-2215		300-4446	300-4446	104-5112	104-3161	104-6192	104-23

ASSEMBLY 102811 DASH NO.	VERSION CHARACTERISTIC 100 TPI	200 TPI	+5V TIMER		R69	R224	C71,72	U2,7	J215	R87	R90	
-01	X			VALUE	500K	OMIT	OMIT	741 OP-AMP	OMIT	2.2MEGO	2.2MEGO	2
				PART NO.	121-5040			400-2741		100-2255	100-2255	100
-02		X		VALUE	500K	220K	OMIT	318 OP-AMP	USE	1.0MEGO	680K	
				PART NO.	121-5040	100-2245		400-0318		100-1055	100-6845	100
-31	X		X	VALUE	500K	OMIT	OMIT	741 OP-AMP	OMIT	2.2 MEGO	2.2 MEGO	
				PART NO.	121-5040			400-2741		100-2255	100-2255	100
-32		X	X	VALUE	500K	220K	OMIT	318 OP-AMP	USE	1.0 MEGO	680K	
				PART NO.	121-5040	100-2245		400-0318		100-1055	100-6845	100
-04		X		VALUE	500K	220K	OMIT	318OP-AMP	USE	1.0MEGO	680K	
				PART NO.	121-5040	100-2245		400-0318		100-1055	100-6845	100
-34		X	X	VALUE	500K	220K	OMIT	318OP-AMP	USE	1.0 MEGO	680K	
				PART NO.	121-5040	100-2245		400-0318		100-1055	100-6845	100

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	ERN 4-H-X PRE-PROD RELEASE	9/17/74	TB	[illegible]	[illegible]
B	ECN 4224A	[illegible]	[illegible]	[illegible]	[illegible]
C	ECN 4686	[illegible]	FR	[illegible]	[illegible]
D	ECN 4687	[illegible]	[illegible]	[illegible]	[illegible]
E	ECN 5092A	[illegible]	[illegible]	[illegible]	[illegible]
	ERN 5-H-B PRODUCTION RELEASE	[illegible]	[illegible]	[illegible]	[illegible]
F	ECN 5159	[illegible]	[illegible]	[illegible]	[illegible]
F1	ECN 5417A	[illegible]	[illegible]	[illegible]	[illegible]
G	ECN 5457	[illegible]	[illegible]	[illegible]	[illegible]
H	ECN 5776	[illegible]	[illegible]	[illegible]	[illegible]
J	ECN 5719	[illegible]	[illegible]	[illegible]	[illegible]
K	ECN 6086	[illegible]	[illegible]	[illegible]	[illegible]
L	ECN 6054A	[illegible]	[illegible]	[illegible]	[illegible]
M	ECN 6147	[illegible]	[illegible]	[illegible]	[illegible]
N	ECN 6224 B	[illegible]	[illegible]	[illegible]	[illegible]
P	ECN 6569	[illegible]	[illegible]	[illegible]	[illegible]
R	ECN 6664	[illegible]	[illegible]	[illegible]	[illegible]
S	ECN 7714	[illegible]	[illegible]	[illegible]	[illegible]
T	ECN 7731A	[illegible]	[illegible]	[illegible]	[illegible]
U	ECN 7892	[illegible]	[illegible]	[illegible]	[illegible]
V	ECN 8025A	[illegible]	[illegible]	[illegible]	[illegible]
W	ECN 8064	[illegible]	[illegible]	[illegible]	[illegible]
Y	ECN 8360	[illegible]	[illegible]	[illegible]	[illegible]
Z	ECN 8391	[illegible]	[illegible]	[illegible]	[illegible]
AA	ECN 8588	[illegible]	[illegible]	[illegible]	[illegible]
AB	ECN 9819A	[illegible]	[illegible]	[illegible]	[illegible]
AC	ECN 11166	[illegible]	[illegible]	[illegible]	[illegible]
AD	ECN 11351	[illegible]	[illegible]	[illegible]	[illegible]
AE	ECN 9872A	[illegible]	[illegible]	[illegible]	[illegible]
AF	ECN 12891	[illegible]	[illegible]	[illegible]	[illegible]

(5) 667-4476 — 103594-01
2 PLCS 600-0406, 604-2400, 612-0005-2 REQD
COPPER SIDE
102698-01

VIEW D-D

668-7717

TO-5 TRANSISTOR MOUNTING CONFIGURATION 7 PLACES

.450 MAX

TO-92 TRANSISTOR MOUNTING HEIGHT 25 PLACES

600-0405, 604-2400 — 2 REQD

102681-01

(10) C5 (REF)

SECTION J-J

DENOTES PIN 1

IC ORIENTATION

.450 MAX

TO-18 TRANSISTOR MOUNTING HEIGHT 4 PLACES

502-6113

KI MOUNTING

668-0166

SECTION B-B
3 PLACES

600-0405, 604-0400 — 2 REQD
605 0400 4 REQD

REQD
REQD

DENOTES PIN 1

MOLEX CONN ORIENTATION REF

FOR ASSY VERSION INFORMATION SEE SCHEMATIC 102810
FOR LIST OF MATERIALS SEE LM 102811 AND APPLICABLE DASH NO.

PART NO 102811 02 REV AK

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.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES
XX ± —
XXX ± —
X ± —
ANGULAR ±
BREAK ALL SHARP CORNERS APPROX .010

SIGNATURES	DATE
DR	4-15-75
CHK	
DES ENGR	
ENGR	
PROJ. ENGR	

PERTEC PERIPHERAL EQUIPMENT

TITLE
PCBA
SERVO BOARD

TOP BILL	03000
NEXT ASSY	1ST USED ON
APPLICATION	

FINISH:

MATL.

SIZE E | CODE IDENT NO | DWG NO. 102811 | REV AF

SCALE 2/1 | DO NOT SCALE DWG | SHEET 1 OF 1

F F

8

102812-01 4

8

503-2560
26 REQD

503-2561
61 REQD

D D

10 BEND LEADS AS SHOWN PRIOR TO COMPONENT INSTALLATION.

9. (DELETED)

8 REMOVE PIN 34 FOR J201 CONNECTOR KEYING AND REMOVE PIN 24 FOR J202 CONNECTOR KEYING.

7. (DELETED)

6. MAINTAIN MINIMUM AIR GAP OF .10 BETWEEN COMPONENT BODY & BOARD.

5 BEFORE INSTALLING SUPPORT ANGLE, 102698-01 TO THE BOARD ASSY, APPLY VINYL TAPE 667-4476 TO THE P.C. BOARD AS SHOWN IN VIEW D-D. TRIM TO CLEAR COMPONENTS AS REQD.

4 THIS ASSY SHALL BE MADE FROM PROCESS BOARD 102812-01 REV U AND SUBSEQUENT.

3 RUBBER STAMP ASSY PART NO. INCLUDING VERSION NO. AND VERSION ISSUE LETTER.

2. ASSEMBLE PER STANDARD MFG METHODS.

1. REFERENCE DRAWINGS: SCHEMATIC 102810
SPECIFICATION 102814

NOTES: UNLESS OTHERWISE SPECIFIED.

5 667-4476
600-0406
2 PLCS 604-2400
612-0005-2 REQD
103594-01
COPPER SIDE
102698-01

VIEW D-D

668-7717

TO-5 TRANSISTOR MOUNTING CONFIGURATION 7 PLACES

TO-92 TRANS MOUNTING HE 25 PLACES

600-0405
604-2400
2 REQD

102681-01

VIEW F-F
2 PLACES

10 C5 (REF)

SECTION J-J

DENOTES PIN 1

IC ORIENTATION

TO-18 TRANSIS MOUNTING HI 4 PLACES

600-0405
604-2400

SECTION H-H

600-2406
612-1204
604-0400
600-0405
604-2400
102698-01 REF

SECTION G-G

503-3431

SECTION E-E
MTG DETAIL FOR J201 AND J202

502-6113

K1 MOUNTING

668-0001
665-0002
612-1006
205-4010
604-2400
(TORQUE 4-6 IN. LBS)
600-0405

SECTION A-A

668-0123
600-0607
604-0600
2 REQD
605-0600 4 REQD

SECTION C-C

DENOTES PIN 1

MOLEX CONN ORIENTATION REF

668-0166

SECTION B-B
3 PLACES

600-0405
604-0400
2 REQD
605 0400 4 REQD

TOP BILL
NEXT ASSY
APP

615-6822
2 REQD

3

102812-01 4

8

8

6

503-2560
26 REQD

503-2561
61 REQD

10. BEND LEADS AS SHOWN PRI
INSTALLATION.

9. (DELETED)

8. REMOVE PIN 34 FOR J201 CONN
REMOVE PIN 24 FOR J202 CONN

7. (DELETED)

6. MAINTAIN MINIMUM AIR GAP OF.
BODY & BOARD.

5. BEFORE INSTALLING SUPPORT
THE BOARD ASSY, APPLY VINYL
THE P.C. BOARD AS SHOWN IN
TRIM TO CLEAR COMPONENTS A

4. THIS ASSY SHALL BE MADE FRO
102812-01 REV U AND SUBSE

3. RUBBER STAMP ASSY PART NO
NO. AND VERSION ISSUE LETTE

2. ASSEMBLE PER STANDARD MF

1. REFERENCE DRAWINGS: SCHEM
SPECI

NOTES: UNLESS OTHERWISE SPEC

600-0405
604-2400

SECTION H-H

600-2406
612-1204
604-0400

SECTION G-G

668-0001
665-0002
612-1006

205-4010

604-2400
(TORQUE 4-6 IN. LBS)

600-0405

SECTION A-A

SEE SHEET 6 FOR TABLE II (CONT)

TABLE II [4]

R72 P/N 101-1825	U301,322 P/N 700-7419	U402 P/N 700-7483	W1 P/N 100373-02	W2 P/N 103596-01	W3 P/N 100373-03	W4	W5	W6	W7	W8	W9	W10	W11 P/N 103596-01	W12	W13	W14	W15	W16	W17	W18	W19 P/N 100373-02	W20 P/N 103596-01	W21 P/N 100373-01	ASSY 102831 VERSION NUMBER
USAGE																								
OMIT	USE	USE	OMIT	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	USE	OMIT	USE	OMIT	USE	-01
OMIT	↓	↓	USE	USE	OMIT	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	USE	-02
OMIT	↓	↓	OMIT	OMIT	USE	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	USE	-03
OMIT	↓	↓	USE	USE	USE	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	USE	-04
USE	↓	↓	OMIT	OMIT	OMIT	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	OMIT	-05
USE	↓	↓	USE	USE	OMIT	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	OMIT	-06
USE	↓	↓	OMIT	OMIT	USE	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	OMIT	-07
USE	↓	↓	USE	USE	USE	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	OMIT	-08
OMIT	↓	↓	↓	OMIT	OMIT	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	USE	-09
OMIT	↓	↓	↓	USE	OMIT	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	USE	-10
OMIT	↓	↓	↓	OMIT	USE	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	USE	-11
OMIT	↓	↓	↓	USE	USE	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	USE	-12
USE	↓	↓	↓	OMIT	OMIT	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	OMIT	-13
USE	↓	↓	↓	USE	OMIT	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	OMIT	-14
USE	↓	↓	↓	OMIT	USE	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	OMIT	-15
USE	↓	↓	↓	USE	USE	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	OMIT	-16
OMIT	↓	↓	USE	OMIT	OMIT	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	USE	-17
OMIT	USE	USE	USE	USE	OMIT	USE	USE	OMIT	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	USE	OMIT	USE	-18
OMIT	USE	USE	USE	OMIT	USE	USE	USE	OMIT	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	USE	OMIT	USE	OMIT	USE	-19
																								-20
USE	USE	USE	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	USE	OMIT	USE	OMIT	OMIT	-21
																								-22
USE	USE	USE	USE	OMIT	USE	USE	USE	OMIT	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	USE	OMIT	USE	OMIT	OMIT	-23
USE	USE	USE	USE	USE	USE	USE	USE	OMIT	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	USE	OMIT	OMIT	-24
																								-25
																								-26
																								-27
																								-28
																								-29
																								-30
OMIT	USE	USE	OMIT	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	USE	OMIT	USE	OMIT	USE	-31
OMIT	↓	↓	USE	USE	OMIT	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	USE	-32
OMIT	↓	↓	OMIT	OMIT	USE	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	USE	-33
OMIT	↓	↓	USE	USE	USE	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	USE	-34
USE	↓	↓	OMIT	OMIT	OMIT	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	OMIT	-35
USE	↓	↓	USE	USE	OMIT	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	OMIT	-36
USE	↓	↓	OMIT	OMIT	USE	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	OMIT	-37
USE	↓	↓	USE	USE	USE	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	OMIT	-38
OMIT	↓	↓	↓	OMIT	OMIT	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	USE	-39
OMIT	↓	↓	↓	USE	OMIT	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	USE	-40
OMIT	↓	↓	↓	OMIT	USE	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	USE	-41
OMIT	↓	↓	↓	USE	USE	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	USE	-42
USE	↓	↓	↓	OMIT	OMIT	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	OMIT	-43
USE	↓	↓	↓	USE	OMIT	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	OMIT	-44
USE	↓	↓	↓	OMIT	USE	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	OMIT	-45
USE	↓	↓	↓	USE	USE	↓	↓	↓	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	↓	↓	↓	↓	OMIT	-46
OMIT	↓	↓	USE	OMIT	OMIT	↓	↓	↓	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	↓	↓	↓	↓	USE	-47
OMIT	USE	USE	USE	USE	OMIT	USE	USE	OMIT	USE	OMIT	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	USE	OMIT	USE	-48
OMIT	USE	USE	USE	OMIT	USE	USE	USE	OMIT	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	USE	OMIT	USE	OMIT	USE	-49
																								-50
USE	USE	USE	USE	OMIT	OMIT	USE	USE	OMIT	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	USE	OMIT	USE	OMIT	OMIT	-51
																								-52
USE	USE	USE	USE	OMIT	USE	USE	USE	OMIT	OMIT	USE	OMIT	USE	USE	OMIT	OMIT	USE	USE	OMIT	USE	OMIT	USE	OMIT	OMIT	-53

REVISIONS

REV	DESCRIPTION	DATE	DR	CHK	APPR
	A, EPN 4 JT PRE PROD B, ECN 4901	—	—	—	—
C	ECN 5047	[illegible]	[illegible]	[illegible]	JVF
D	ECN REVISED (REDRAWN)	[illegible]	[illegible]	[illegible]	[illegible]
	ERNS-M-5 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
E	ECN 5799	[illegible]	[illegible]	[illegible]	[illegible]
F	ECN 5731	[illegible]	C.J.	[illegible]	[illegible]
G	ECN 5481	[illegible]	[illegible]	[illegible]	[illegible]
H	ECN 6085	[illegible]	[illegible]	[illegible]	[illegible]
J	ECN 6250	[illegible]	[illegible]	[illegible]	[illegible]
K	ECN 6555	[illegible]	[illegible]	CCA	[illegible]
K1	ECN 6830	[illegible]	[illegible]	[illegible]	[illegible]
L	ECN 6549	[illegible]	[illegible]	[illegible]	[illegible]
M	ECN 7445B	[illegible]	SDL	[illegible]	[illegible]
N	ECN 7707B	[illegible]	[illegible]	[illegible]	[illegible]
P	ECN 8335	[illegible]	CJ	[illegible]	[illegible]
P1	ECN 8703	6-30-76	RJ	[illegible]	[illegible]
R	ECN 8793A	[illegible]	[illegible]	[illegible]	[illegible]
R1	ECN 8858	[illegible]	MN	[illegible]	[illegible]
S	ECN 10166	[illegible]	[illegible]	[illegible]	[illegible]
T	ECN 10095	[illegible]	J.S.	[illegible]	[illegible]
T1	ECN 11738	[illegible]	MM	[illegible]	[illegible]

9 IC TYPE IDENTIFICATION
2 INPUT NANDS ARE 7400
2 INPUT NORS ARE 7402
HEX INVERTERS ARE 7404
HEX INVERTERS (OPEN COLLECTOR) ARE 7405
3 INPUT NANDS ARE 7410
8 INPUT NANDS ARE 7430
J-K FF ARE 7476

8 ALL CAPACITOR VALUES ARE IN MICROFARADS, ±20%, 35V.

[7] THESE SIGNALS AND CIRCUITS ARE CONNECTED ONLY IN THOSE VERSIONS HAVING THE SPECIAL-INTERFACE-SIGNAL OPTION.

[6] R72 AND C78 ARE USED AND W21 OMITTED ONLY IN GROUND ISOLATION VERSIONS. SEE TABLE II FOR VERSION NUMBER. W21 MUST BE USED FOR ALL OTHER VERSIONS.

[5] E1, E2, AND E3 ARE TEST PADS INTENDED FOR USE WITH MINIATURE OSCILLOSCOPE PROBE TIPS WHICH WILL FIT IN A .040 DIAMETER HOLE.

[4] FOR PART NUMBER AND USAGE OF COMPONENTS AFFECTED BY VERSION NUMBER SEE TABLE II.

[3] FOR PART NUMBER OF COMPONENTS NOT AFFECTED BY VERSION NUMBER SEE TABLE I.

2. ALL RESISTOR VALUES ARE IN OHMS, ±5% 1/4W.

1. SIGNALS ARE CROSS-REFERENCED BETWEEN SHEETS AND WITHIN A SHEET BY NUMBERS APPEARING WITH THE ASSOCIATED LOGIC TERM MNEMONIC. THE FIRST NUMBER IS THE SHEET NUMBER AND THE SECOND NUMBER IS THE ZONE NUMBER. EXAMPLE: (3-12)
SHEET 3 — ZONE 12

NOTES: UNLESS OTHERWISE SPECIFIED

REFERENCE DRAWINGS:
ASSEMBLY 102831
SPECIFICATION 102834

102831	03000
NEXT ASSY	1ST USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGULAR ± 1/2°
BREAK ALL SHARP CORNERS APPROX .010
FINISH:
MATL.

SIGNATURES | DATE
CHK | 3/5/6
ENGR J.V. FULTZ | 2-29-72
PROJ ENGR | 2-29-72

PERTEC PERIPHERAL EQUIPMENT

TITLE
SCHEMATIC – LOGIC BOARD

SIZE J | DWG NO. 102830 | REV T1
SHEET 1 OF 6

SEE SHEET 6 FOR TABLE II (CONT)

TABLE II ④

ASSY 102831 VERSION NUMBER	VERSION CHARACTERISTICS: TRACKS PER INCH 100	TRACKS PER INCH 200	INTERNAL TERMINATION VOLTAGE POWER SUPPLY	TERMINATION VOLTAGE FEED-THRU	GROUND ISOLATION	READY SIGNAL GATED BY INTERNAL TEMP GO 200 TPI ONLY	SPECIAL INTERFACE SIGNAL JUMPERS ARE SHOWN ON DWG 102831 ☑: 100 TPI RUN CONDITION INDICATION	SAFE COND INDICATION 100 TPI	SAFE COND INDICATION 200 TPI	200TPI INTERNAL TEMP GO	+5V TIMER	W23 P/N 103596-01	CR1 THRU CR4 P/N 300-4002	C78 P/N 137-2250	R26,28 P/N 100-1816		R72 P/N 101-1825	U301,322 P/N 700-7419	U402 P/N 700-7483	W1 P/N 100373-02	W2 P/N 103596-01	W3 P/N 100373-03	W4	W5
												USAGE											
-01	X		X							X		OMIT	USE	OMIT	USE		OMIT	USE	USE	OMIT	OMIT	OMIT	USE	USE
-02		X	X										USE	OMIT	USE		OMIT			USE	USE	OMIT		
-03	X			X						X			OMIT	OMIT	OMIT		OMIT			OMIT	USE	USE		
-04		X		X									OMIT	OMIT	OMIT		OMIT			USE	OMIT	USE		
-05	X		X		X					X			USE	USE	USE		USE			OMIT	USE	OMIT		
-06		X	X		X								OMIT	USE	OMIT		USE			OMIT	OMIT	USE		
-07	X			X	X					X			OMIT	USE	OMIT		USE			USE	USE	OMIT		
-08		X		X	X												OMIT				OMIT	OMIT		
-09	X		X				X			X		OMIT	USE	OMIT	USE		OMIT				USE	OMIT		
-10		X	X			X						USE	OMIT	OMIT	OMIT		OMIT				OMIT	USE		
-11	X			X			X			X		OMIT	OMIT	OMIT	OMIT		OMIT				USE	OMIT		
-12		X		X		X						USE	OMIT	USE	USE		USE				OMIT	OMIT		
-13	X		X		X		X			X		USE	USE	USE	USE		USE				USE	OMIT		
-14		X	X		X	X						OMIT	OMIT	USE	OMIT		USE				OMIT	USE		
-15	X			X	X		X			X		USE	OMIT	USE	OMIT		USE				USE	USE		
-16		X		X	X	X						OMIT	USE	OMIT	USE		OMIT			USE	OMIT	OMIT		
-17	X		X					X				OMIT	USE	OMIT	USE		OMIT	USE	USE	USE	USE	OMIT	USE	USE
-18		X	X						X			OMIT	OMIT	OMIT	OMIT		OMIT	USE	USE	USE	OMIT			
-19	X			X				X																
-20									X			OMIT	USE	USE	USE		USE	USE	USE	USE	OMIT	OMIT	USE	USE
-21	X		X		X																			
-22									X			OMIT	OMIT	USE	OMIT		USE	USE	USE	USE	OMIT	USE	USE	USE
-23	X			X	X					X		USE	OMIT	USE	OMIT		USE	USE	USE	USE	USE	USE	USE	USE
-24		X		X	X	X																		
-25																								
-26																								
-27																								
-28																								
-29																								
-30											X	OMIT	USE	OMIT	USE		OMIT	USE	USE	OMIT	OMIT	OMIT	USE	USE
-31	X		X							X	X	↑	USE	OMIT	USE		OMIT	↑	↑	USE	USE	USE	↑	↑
-32		X	X								X		OMIT	OMIT	OMIT		OMIT			OMIT	OMIT	USE		
-33	X			X						X	X		OMIT	OMIT	OMIT		OMIT			USE	USE	USE		
-34		X		X							X		USE	USE	USE		USE			OMIT	OMIT	OMIT		
-35	X		X		X					X	X		USE	USE	USE		USE			USE	USE	OMIT		
-36		X	X		X						X		OMIT	USE	OMIT		USE			OMIT	OMIT	USE		
-37	X			X	X					X	X		OMIT	USE	OMIT		USE			USE	USE	USE		
-38		X		X	X						X	↓								↓	OMIT	OMIT		
-39	X		X				X			X	X	OMIT	USE	OMIT	USE		OMIT				USE	OMIT		
-40		X	X			X					X	USE	USE	OMIT	USE		OMIT				OMIT	USE		
-41	X			X			X			X	X	OMIT	OMIT	OMIT	OMIT		OMIT				USE	USE		
-42		X		X		X					X	USE	USE	USE	USE		USE				OMIT	OMIT		
-43	X		X		X		X			X	X	OMIT	USE	USE	USE		USE				USE	OMIT		
-44		X	X		X	X					X	USE	OMIT	USE	OMIT		USE				OMIT	USE		
-45	X			X	X		X			X	X	OMIT	USE	OMIT	USE		USE				USE	USE		
-46		X		X	X	X					X	↓								↓	OMIT	OMIT		
-47	X		X					X			X	OMIT	USE	OMIT	USE		OMIT	USE	USE	USE	USE	OMIT	USE	USE
-48		X	X								X	OMIT	OMIT	OMIT	OMIT		OMIT	USE	USE	USE	OMIT	USE	USE	USE
-49	X			X				X			X													
-50											X	OMIT	USE	USE	USE		USE	USE	USE	USE	OMIT	OMIT	USE	USE
-51	X		X		X						X													
-52											X													
-53	X			X	X						X	OMIT	OMIT	USE	OMIT		USE	USE	USE	USE	OMIT	USE	USE	USE

LOGIC ELEMENTS

	U346 700-7410	U341 700-7476
	U404 700-7410	DELETED
	U104 700-7450 RESERVED	DELETED
U406 700-7450 RESERVED		U70 700-7545 RESERVED
U267 700-7476		U269 700-7405

PROGRAMMING ARRAY LOCATION TABLE

J NUMBER	ARRAY PART NUMBER	ARRAY FUNCTIONAL DESCRIPTION
J121	103611-XX	TIME DEMULTIPLEXER SPEED OPTION
J122	103612-XX	SPEED OPTION
J123	103613-XX	SPEED OPTION
J125	103615-XX	SECTORING OPTION
J126	103616-XX	ELECTRONIC OR INDEX SECTORING
J127	103617-XX	SECTORING FOR DUAL DISK UNITS
J128	BLANK	TEST PURPOSES ONLY

3247A

18 17 16 15 14 13

H G F E D C B A

TABLE I [3]

PART NO.	REF. DESIGNATION
100-1015	R12
100-1025	R1 THRU 9, 17THRU 24,35,43,73, 98
100-1035	R31
100-1515	R9
100-1525	R39
100-1545	R37
100-1825	R42
100-2215	R14
100-2715	R32,38
100-3315	R11,40
100-3325	R33,65
100-4715	R27,36
100-4725	R34,41
100-5625	R10,18
100-6805	R92,95
100-6815	R15
101-6805	R44,45
102 1015	R60
104-2370	R13
104-5112	R28
104-6113	R29,30
121 5010	R93
130-1005	C5
130-1515	C86
130-4705	C11,15
130-4715	C1,4
130-7515	C84,85
131-1020	C12
131-1030	C81,82
132-1062	C16,17
132-2752	C6,7,9,10,13,14, C25,26,30 THRU 76, C87,88,89,90
135-4742	C2,3,8,21, 77
139-2262	C83
200-3291	Q1,2
200-4125	Q4
300-4446	CR7
330 0478	VR1
400-0318	U425
400-2741	U168,387,U228
524-0002	Y1
107-1000	R100
107-1001	R46,47,81,82,96
107-1980	R94
107-2150	R89, 97
107-3481	R77, 80
107-4221	R76,79
107-4223	R66
107-4640	R75,78
107-4642	R83, 84
107-5110	R101
107-6810	R91, 98
107-7500	R90
107-7502	R85
107-9092	R87

PART NO.	REF. DESIGNATION
700-4161	U1,41,61,106, U121,124,125, U143,144,145, U161,164,166, U181,184,202, U205,221,241, U283
700-4164	U2,22,23,43,109
700-5107	U268,409
700-7400	U49,86,87,88, U165,223,246, 282,304,328, U343,385,403
700-7402	U48,63,82,122, U127,183,187,263, U281,284,324, U327,383,445
700-7404	U42,50,51,71, U72,81,102, U123,162,185, U186,222,224, U226,303,348, U362,363,365, U401,408,423, U448
700-7405	U147,444,446, U447,269
700-7410	U107,261,262, U264,266,326, U346,361,404
700-7413	U286,406
700-7450	U306,442
700-7450	U62,84,85,89, U104,105,406
700-7476	U83, U129,142,163, U167,203,206, U242,243,267, U341,344,345, U364,384
700-7483	U382,421
700-7486	U422,441,443
700-7493	U225,245,265, U285,305,325
700-7496	U101,108,148 U182,244,323,347
700-7419	U287,302,308, U321,342,381
700-7545	U3,44,45,46,47, U64,65,66,67, U68,69,70,386, U407,424
700-0004	U128

SPARE LOGIC ELEMENTS

U165 700-7400 RESERVED	U123 700-7404	U362 700-7404	U346 700-7410	U341 700-7476
U328 700-7400	U162 700-7404	U408 700-7404	U404 700-7410	DELETED
DELETED	U186 700-7404	U448 700-7404	U104 700-7450 RESERVED	DELETED
U445 700-7402 RESERVED	U222 700-7404	U147 700-7405 RESERVED	U406 700-7450	U70 700-7545 RESERVED
U50 700-7404 RESERVED	U226 700-7404	U444 700-7405	U287 700-7476	U269 700-7405

REFERENCE DESIGNATIONS

LAST USED	NOT USED	DELETED
C90		C18,19,20,22,23,24,27,28, 29,79,80
CR7		Q3
Q4		
J128		J124
R101		R48 THRU 64, 66 THRU 71, 74
TP30		TP14, 15
U448	U4 THRU 21, 24 THRU 40, U52 THRU 60, 73 THRU 80, U90 THRU 100, 103, 110 THRU 120, U126, 130 THRU 141, 146 THRU 160, U169 THRU 180, 188 THRU 201, U204, 207 THRU 220, 229 THRU 240, U247 THRU 260, 270 THRU 280, U288 THRU 300, 307, 309 THRU 320, U329 THRU 340, 349 THRU 360, U366 THRU 380, 388 THRU 400, U410 THRU 420, 426 THRU 440,	U227
VR1		
W27		
Y1		

PROGRAMMING ARRAY LOCATION TABLE

J NUMBER	ARRAY PART NUMBER	ARRAY FUNCTIONAL DESCRIPTION
J121	103611-XX	TIME DEMULTIPLEXER SPEED OPTION
J122	103612-XX	SPEED OPTION
J123	103613-XX	SPEED OPTION
J125	103615-XX	SECTORING OPTION
J126	103616-XX	ELECTRONIC OR INDEX SECTORING
J127	103616-XX	SECTORING FOR DUAL DISK UNITS
J128	BLANK	TEST PURPOSES ONLY

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
	SEE SHEET 1				

SEQUENCE CONTROL F-F

LSCFF

NLSCFF

U383

BRAKE CYCLE ENABLE F-F

(2-14) LLBL2

U384

LBCFF

NLBCFF

FUNCTION CONTROL LOGIC

NLLCMG

U363

U404

U445

NLBPSL (2-17)

J105

22 NLBMEG

5

23 NLBCEG

6

33 LLCMG

18

E8 LLCMG (3-12)

LAMP DRIVERS

U407 75451

C85

J111

5 NLSLDT (SAFE LAMP)

U386 75451

8 NLRXDT (RUN LAMP)

+5V

R73 1000Ω

LRG

4 NLRLDT

(2-10) LLHFF

(2-13) NLEUFF

U385

NLNRSG

U365

READY LOGIC

LESDG (3-3)

U386 75451

(4-4) NLHRXG

NLSNHG

U326

LDMEG (3-8) (5-20)

U304

DELAY COUNTER DECODE

U286 7413

TP17

SEQUENCE TIMING PULSE F-F

LLBL3 (2-13)

U345

LSTPF (2-17)

NLCBUG (2-14)

LSXXG (3-18)

NLSARG (3-17) (3-19) (3-20) (5-9)

LRXXG (4-12)

U327

LSARG (3-16) (4-7) (4-12)

U226

NLRXXG (3-20)

U401 7545J

NLRLDT (READY LAMP)

J107

NTRHCG 10

E7 NTRHCG (3-12)

W23

W22

W17

W18

SELECTED AND READY LOGIC

DELAYED READY CONDITION LOGIC

U444

+5V

R16 5.6K

U405 7413

LDRCG (3-12)

C4 470PF 5% 500V

U325 7493 DELAY COUNTER

U285 7493

LC17F (4-5)

LC20F (2-14)

SIZE	CODE IDENT NO.	DWG NO.	REV
D		102830	T1
SCALE NONE		DO NOT SCALE DWG	SHEET 2 OF 6

U364 END OF RUN F-F — NLERFF

U344 PURGE CYCLE F-F — LPCFF (3-8), NLPCFF (3-8)

U344 LOAD HEADS F-F — LLHFF (2-5) (4-8), NLLHFF (4-6)

NLW8EG (3-15) U343

E5 NLRFFF (3-12) 7

U345 EMERGENCY UNLOAD F-F — LEUFF (3-12), NLEUFF (2-5)

U303 U444 J105 32 15 LEUEG C65

NLDRXG

U324 SEQUENCE CONTROL LOGIC

LLPNG U303 NLLPNG (4-4)

U363

LNLPG (2-17)

LLPXG (2-17)

LLNPG (2-17)

U383 U384 SEQUENCE CONTROL F-F — LSCFF, NLSCFF

U383

(2-14) LLBL2 BRAKE CYCLE ENABLE F-F — LBCFF, NLBCFF

FUNCTION CONTROL LOGIC

U385 U365 NLNRSG

U385 (4-4) NLHRXG NLSNHG

U326

U304 DELAY COUNTER DECODE

U286 7413

U304 U365 LLBL3 (2-13)

NLCBXG (2-14)

U284

U365 NLC09G (4-4)

CRYSTAL OSCILLATOR

R14 220

Q2 2N3251

Y1 10MHZ

C3 0.47UF ±20% 100V

R15 680

U186 TP13

U205 74161 CK P T CL LD

U186 LLBL3 (2-6)

LC01F (4-12)

LC02F (3-10)

LC03F (3-10) (4-9) (4-14)

LC04F (3-10) (5-7) (5-9)

CLOCK COUNTDOWN

U225 7493

LC08F (5-17)

U245 7493

LC09F (2-18) (5-17)

LC10F (5-17)

U305 7493

U325 7493 DELAY COUNTER

U265 7493

LC13F (4-4) (4-12)

U285 7493

LC17F (4-5)

LC20F (2-14)

RUN/STOP PULSE REGISTER

CARTRIDGE INSERTED LATCHES

BRUSHES PARKED LATCH

POWER CLEAR

RUN F-F

END OF RUN F-F

PURGE CYCLE F-F

EMERGENCY UNLOAD F-F

SEQUENCE CONTROL LOGIC

DISK ROTATION DETECTOR COUNTER

EMERGENCY UNLOAD LOGIC

CRYSTAL OSCILLATOR

CLOCK COUNTDOWN

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
	SEE SHEET 1				

SPEED HIGH LIMIT F-F

DISK SPEED LOW F-F

SPEED LOW LIMIT F-F

SPEED CONTROL COUNTER

SPEED OUT OF TOLERANCE F-F

INCREASE MOTOR SPEED F-F

(2048)

(3-19) LLBX1

(64)

(128)

LLBX2

(2-12) LPCFF

(2-12) NLPCFF

DISK SPEED COUNT PROGRAMMING

J122

LTSCG

NLSCRG

SPEED SEQUENCE REGISTER

(2-16) NLSDMG

(2-2) LESDG

NLDSEG (2-16)

LSETF (2-17)

NLIMSI

LPSVA

CG5

POWER DISTRIBUTION AND FEED THRU

+5V DISTRIBUTION BUS

2.7UF CAPACITORS LOCATED ALONG DISTRIBUTION BUS, ONE CAPACITOR PER 4 I.C. (APPROX.). 47 CAPACITORS TOTAL REF DESIG. C30 THRU 76

GND BUS

NLUPSG (3-19)

NLUHSG (3-19)

S10SS

C77 0.47UF ±20% 100V

CHASSIS GROUND CONNECTIONS

I/O GND

R72 1.8K 1/2W 5%

R21

C78 .022UF 200V

CHASSIS

SIZE	CODE IDENT NO.	DWG NO.		REV
D	NONE	102830		T1
SCALE		DO NOT SCALE DWG	SHEET 3 OF 6	

J103
20 NLWMXG
(2-11) 11
29 NLECEG
12
18 NLRECG
1
CG3

READ SIGNAL DRIVERS
J103 20 NRRCSG, 19 NRRDSG
U67 75451
J102 B16 IRCXO, B17 IRDXO
J101 B16 IRCXO, B17 IRDXO
DG6B

MALFUNCTION SIGNAL
(2-3) LDRCG, (2-13) LEUFF
U282
U64 75451
B6 IMDXD
DG6A

DOUBLE TRACK STATUS
(3-18) NLSXXG
U45 75451
W2
A7 IDTDD
DG3A

ILLEGAL ADDRESS STATUS
(4-6) NLIAXG
U3 75451
B3 IICAD

FILE PROTECTED STATUS
U87
U44 75451
A1 IFPXD

DUAL PLATTER STATUS
(5-13) NLDPSG
U45 75451
DG1A
A2 IDPDD

SPECIAL SIGNAL DRIVER
E4 NLRFFF (2-13) (LLCMG) (2-4)
U65 75451
W1
DG3B
B8 A3 SPECIAL INTERFACE SIGNAL

TERMINATION VOLTAGE POWER SUPPLY
CR1 1N4002
CR2 1N4002
CR3 1N4002
CR4 1N4002
R26 180
(B3)
A45 B45 TERMINATION VOLTAGE (+3.5V)

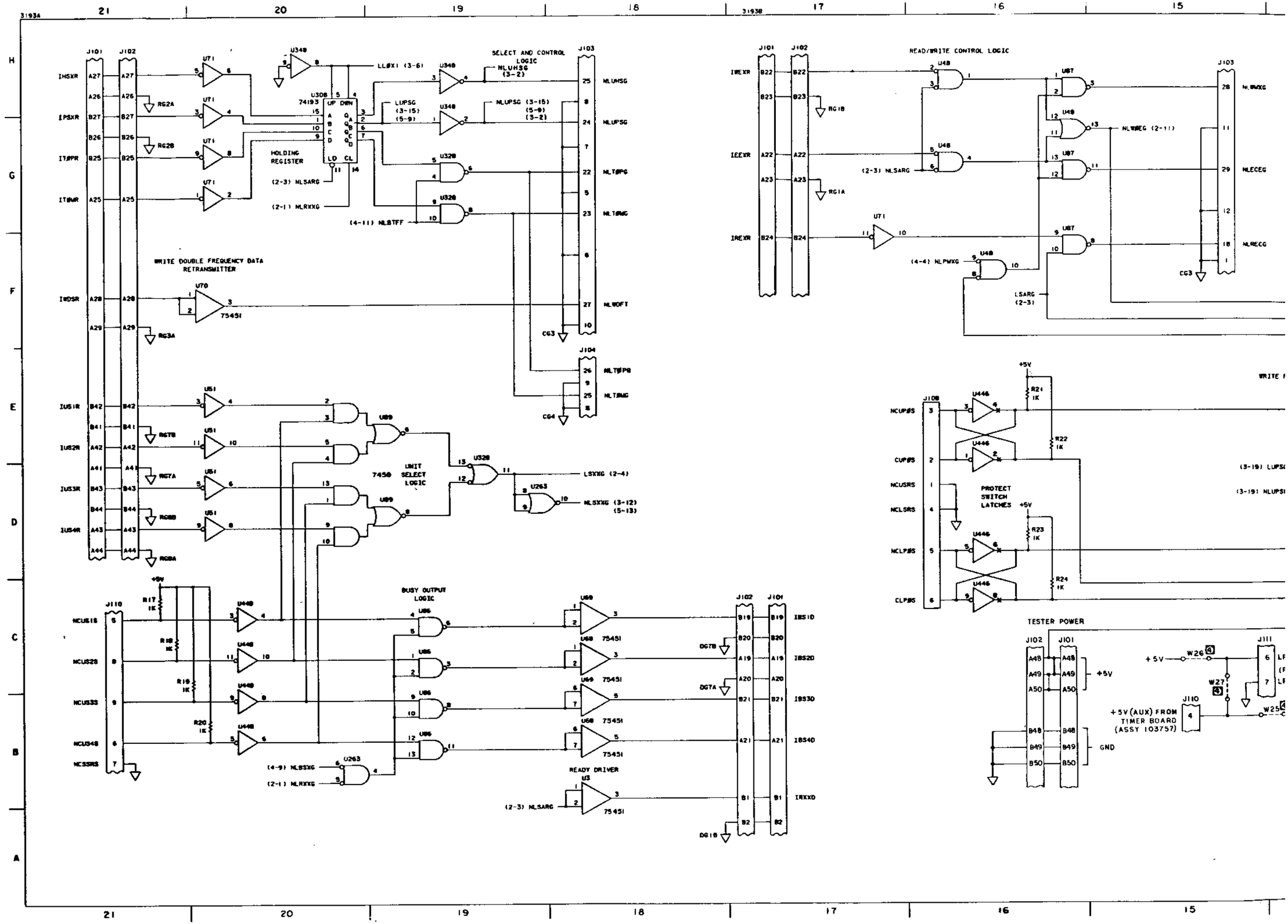
WRITE PROTECT LOGIC
(3-19) LUPSG
(3-19) NLUPSG
U406 7450
U71
LFPWL
FILE PROTECT MODE LATCH
U88

U424 75451
+10V
J111
3 LP10A (LAMP POWER) NLUPLT (PROTECT LAMPS)
2 NLLPLT
LRG

5V
W26
W27
J111
6 LP05A (POWER INDICATOR)
7 LPIRA
J110
4
W25
W24
+5V
(FROM BOARD 03757)

SPEED CONTROL PROGRAMMING
PART OF J121 REFER TO SHEET 5 ALSO
(2-12) LC02F
(2-12) LC03F
(2-12) LC04F
U224
SC
U222
LL8X2
U202 74161
U221
(2-12) LPCFF
(2-12) NLPCFF
U263
U223
U244 7496 SPEED SEQUENCE REGISTER
(5-19) LPLFF
(2-5) LOMEG

CHASSIS GROUND CONNECTIONS
I/O GND
R72 1.8K 1/2W 5%
W21
C78 .022UF 200V
CHASSIS


3193A
31938
SELECT AND CONTROL LOGIC
NLUHSG (3-2)
NLUPSG (3-15) (5-9) (3-2)
LUPSG (3-15) (5-9)
LLØX1 (3-6)
HOLDING REGISTER
(2-3) NLSARG
(2-1) NLRXXG
(4-11) NLBTFF
WRITE DOUBLE FREQUENCY DATA RETRANSMITTER
UNIT SELECT LOGIC
7450
BUSY OUTPUT LOGIC
READY DRIVER
READ/WRITE CONTROL LOGIC
(2-3) NLSARG
(4-4) NLPMXG
LSARG (2-3)
(4-9) NLBSXG
LSXXG (2-4)
NLSXXG (3-12) (5-13)
(3-19) LUPSX
(3-19) NLUPSX
PROTECT SWITCH LATCHES
TESTER POWER
+5V (AUX) FROM TIMER BOARD (ASSY 103757)
+5V
GND
RG1A
RG1B
RG2A
RG2B
RG3A
RGTA
RGTB
RGBA
RGBB
DGTA
DGTB
DGIB
CG3
CG4
IHSXR
IPSXR
ITØPR
ITØNR
IWDSR
IUS1R
IUS2R
IUS3R
IUS4R
IEEXR
IREXR
NLUHSG
NLUPSG
NLTØPG
NLTØNG
NLWDFT
NLTØPB
NLTØNG
NLWWXG
NLWWEG (2-11)
NLECEG
NLRECG
IBS1D
IBS2D
IBS3D
IBS4D
IRXXD
NCUS1S
NCUS2S
NCUS3S
NCUS4S
NCSSRS
NCUPØS
CUPØS
NCUSRS
NCLSRS
NCLPØS
CLPØS
+5V
R17 1K
R18 1K
R19 1K
R20 1K
R21 1K
R22 1K
R23 1K
R24 1K
W26
W27
W25
LF

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
	SEE SHEET 1				

COMPLEMENTOR

U422 7486 U441 7486 U441 U422 7486 U441 U422 7486 U443 7486 U443 7486

J104

32 NLADEG
15
31 NLAD7G
14
33 NLAD6G
16
30 NLAD5G
13
29 NLAD4G
12
28 NLAD3G
11
27 NLAD2G
10
18 NLAD1G
1
19 NLAD0G
2
CG4

SEEK TIME ERROR CHECK COUNTER

U287 74193

(2-7) LC17F → UP
DWN
LD CL A B C D
CY → NLSTEG (2-16)

U246
(4-11) NL8TFF
(4-4) NLR#FF

U226

LL#X5 (4-6) (4-7) (4-10)

U267 J PR Q CK K CL

(4-4) NLR#FF
(4-14) SPTIG

POSITION LIMIT MONITOR F-F

NLLPNG (2-10)

U246 → NLPLEG (2-16)

POSITION/VELOCITY MODE LOGIC

LL#X5 (4-4) → W15 W16

U403 U383 U423

NLDACG (4-15)
SPQCG (4-14)
NLPMXG (2-17) (3-16)
LPMXG (4-12)

TP29 TP27 TP28 TP25 TP26 TP23

J104
20 NLVREG
3
22 LPMXG
5
21 LFDXI
4
24 NLFSMI
7
23 NLRSMI
6
CG4

SHRXG (4-14) → U186 U187
NLLHFF (2-10) → U187
SPTIG (4-14) → U186 U187
NLHRXG (2-7)

LSARG (2-3) → U107 → NLIAXG (3-12)

LL#X5 (4-4) → U167 J PR Q CK K CL → ILLEGAL ADDRESS F-F

U49

FORWARD SLOW MODE F-F
SPQCG (4-14) → U187 J PR Q CK K CL

U206 J PR Q CK K CL
NLCD9G (2-9) →
REVERSE SLOW MODE F-F

RESTORE OPERATION F-F
LC13F (2-9) → U206 J PR Q CK K CL → LR#FF (4-5)
NLR#FF (4-5)

LLHFF (2-10) → U107 → U186

SIZE	DWG NO.	REV
	102830	TI
SCALE NONE	DO NOT SCALE DWG	SHEET 4 OF 6

CURRENT ADDRESS BUFFER

SUBTRACTOR

COMPLEMENTOR

CURRENT ADDRESS COUNTER

UP/DOWN COUNT LOGIC

CARRY CONTROL

LOAD ADDRESS LOGIC AND BUSY LOGIC

COUNT CLOCK DETECTOR REGISTER

STROBE SHIFT REGISTER

BUSY TIME F-F

HOLD BUSY TIME F-F

HOLD DELAY SHIFT REGISTER

ILLEGAL ADDRESS F-F

SETTLE- TIME DELAY REGISTER

3194A 3194B

DEMAND ADDRESS REGISTER

CURRENT ADDRESS BUFFER

CURRENT ADDRESS COUNTER

UP/DOWN COUNT LOGIC

200 TPI VALID ADDRESS DECODER

100 TPI VALID ADDRESS DECODER

COUNT CLOCK DETECTOR REGISTER

LLBRX3 (4-9)

ΣB= TRACK NO.

NLDACG (4-6)

SPTIG (4-5) (4-6)

SHRXG (2-15) (4-6)

SPQCG (4-4) (4-5)

(2-12) LCO1F

(2-12) LCO3F

(2-3) LSARG

(2-2) LRXXG

LC13F (2-9)

LPMXG (4-3)

ICDER ICO7R ICO6R ICD5R ICD4R ICD3R ICD2R ICD1R ICDOR IRICR ICASR

RG5B RG5A RG6B RG6A RG4A RG4B

LDAMG CG3 CG5

31950

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
	SEE SHEET 1				

UPPER SECTOR PULSE FORMER

LL#X6 (5-9) LC04F (2-12)

LOWER SECTOR PULSE FORMER

(SECTOR)

UPPER INDEX PULSE FORMER

LOWER INDEX PULSE FORMER

(INDEX)

LUMEG

LLMEG

SECTOR PULSE MULTIPLEXER

INDEX PULSE MULTIPLEXER

SECTOR COUNT MULTIPLEXER

UPPER SECTOR NUMBER COUNTER

UPPER COUNT CONTROL F-F

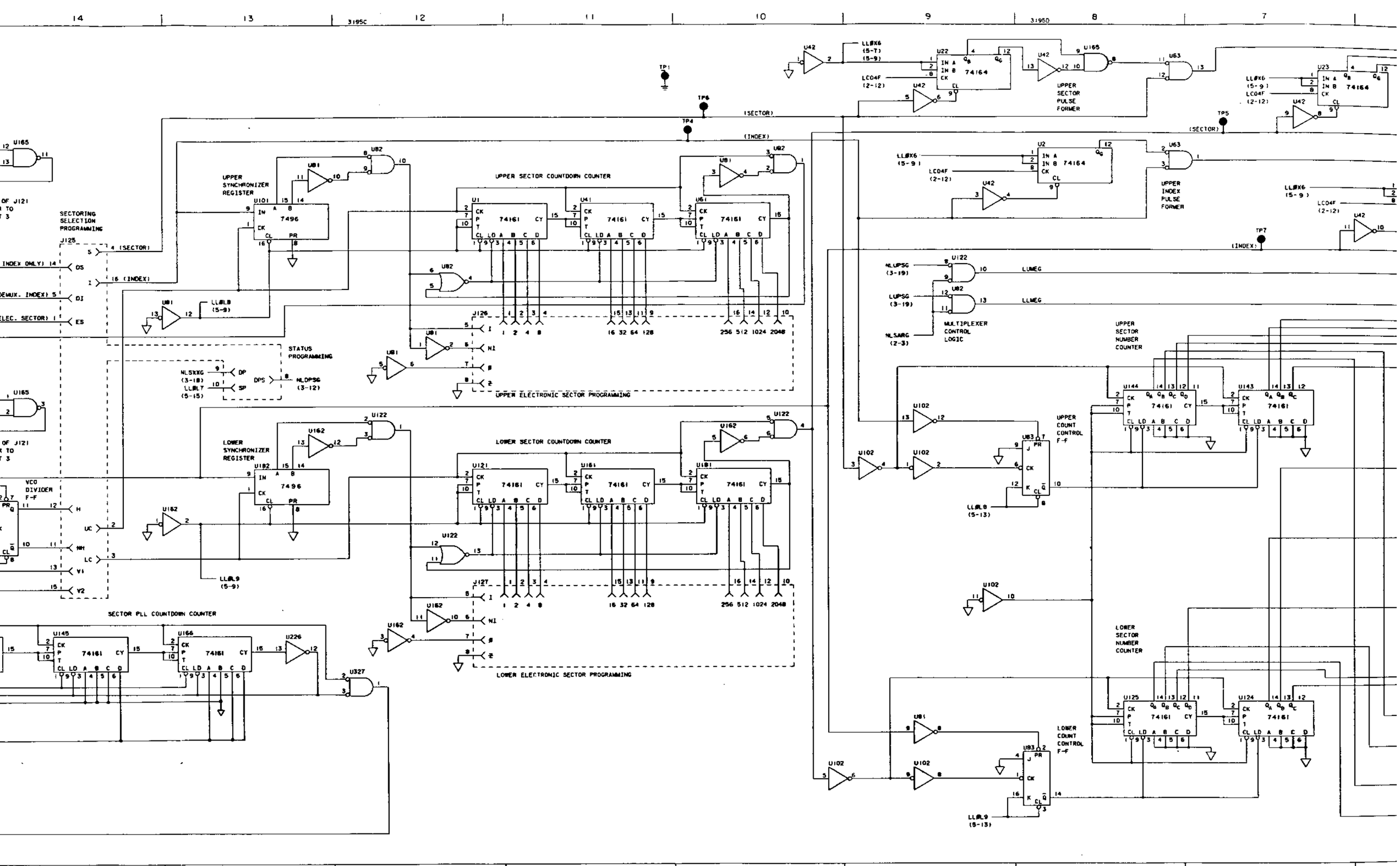
LOWER SECTOR NUMBER COUNTER

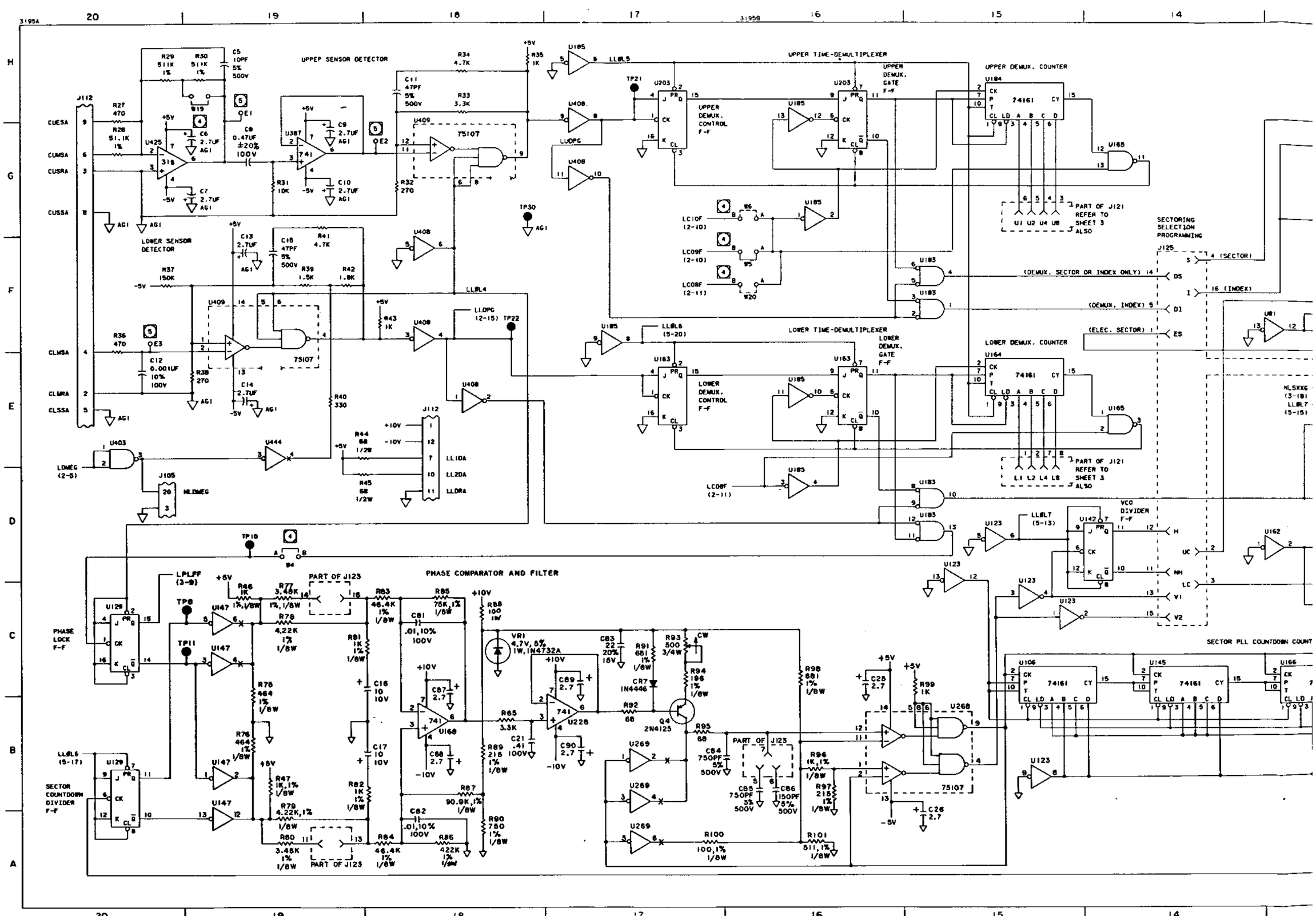
LOWER COUNT CONTROL F-F

J102 A4	J101 A4	ISPXD
J102 A5	J101 A5	
J102 B4	J101 B4	IJPXD
J102 B5	J101 B5	
J102 A10	J101 A10	ISC6D
J102 B12	J101 B12	ISC5D
J102 B11	J101 B11	
J102 A12	J101 A12	ISC4D
J102 A11	J101 A11	
J102 B13	J101 B13	ISC3D
J102 A13	J101 A13	ISC2D
J102 B15	J101 B15	ISC1D
J102 B14	J101 B14	
J102 A15	J101 A15	ISC0D
J102 A14	J101 A14	

DG2A DG2B DG4B DG4A DG5B DG5A

SIZE	CODE IDENT NO.	DWG NO.	REV
		102830	T1
SCALE NONE	DO NOT SCALE DWG	SHEET 5 OF 6	


SECTORING SELECTION PROGRAMMING
J125
(SECTOR)
(INDEX)
DS
DI
ES
STATUS PROGRAMMING
NLSXXG (3-18)
LLØL7 (5-15)
DP
SP
DPS
NLOPSG (3-12)
UPPER SYNCHRONIZER REGISTER
UPPER SECTOR COUNTDOWN COUNTER
UPPER ELECTRONIC SECTOR PROGRAMMING
LLØLB (5-9)
LOWER SYNCHRONIZER REGISTER
LOWER SECTOR COUNTDOWN COUNTER
LOWER ELECTRONIC SECTOR PROGRAMMING
LLØL9 (5-9)
VCO DIVIDER F-F
H
UC
NH
LC
V1
V2
SECTOR PLL COUNTDOWN COUNTER
LLØX6 (5-T) (5-9)
LC04F (2-12)
UPPER SECTOR PULSE FORMER
UPPER INDEX PULSE FORMER
LLØX6 (5-9)
LC04F (2-12)
NLUPSG (3-19)
LUPSG (3-19)
NLSARG (2-3)
LLMEG
MULTIPLEXER CONTROL LOGIC
UPPER SECTOR NUMBER COUNTER
UPPER COUNT CONTROL F-F
LLØL8 (5-13)
LOWER SECTOR NUMBER COUNTER
LOWER COUNT CONTROL F-F
LLØL9 (5-13)
74161
74164
7496

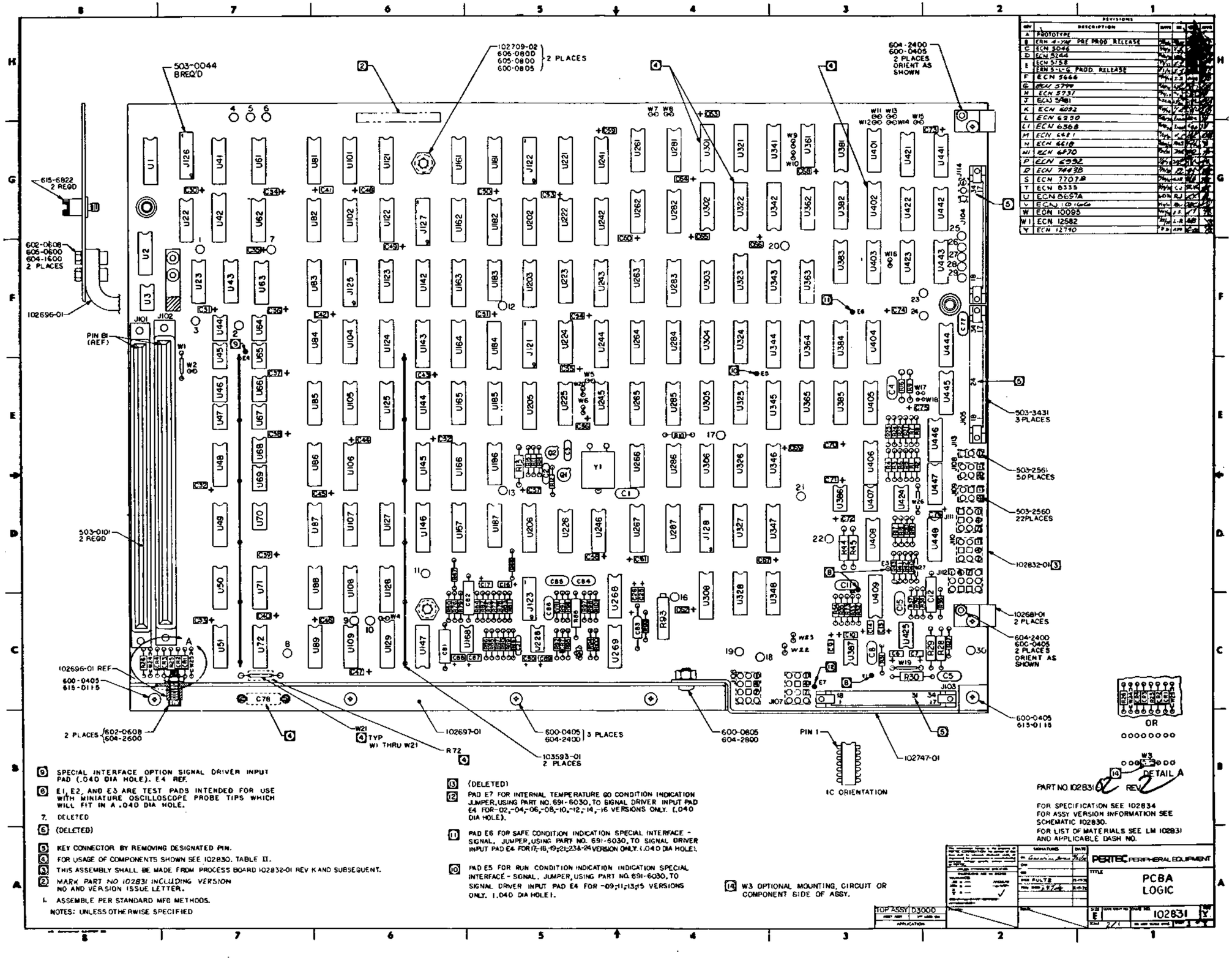

UPPER SENSOR DETECTOR
LOWER SENSOR DETECTOR
UPPER TIME-DEMULTIPLEXER
LOWER TIME-DEMULTIPLEXER
UPPER DEMUX. COUNTER
LOWER DEMUX. COUNTER
PHASE COMPARATOR AND FILTER
SECTORING SELECTION PROGRAMMING
SECTOR PLL COUNTDOWN COUNT
PART OF J121 REFER TO SHEET 3 ALSO
PART OF J123
PART OF J125
(DEMUX. SECTOR OR INDEX ONLY)
(DEMUX. INDEX)
(ELEC. SECTOR)
PHASE LOCK F-F
SECTOR COUNTDOWN DIVIDER F-F
VCO DIVIDER F-F
74161
75107
741
CUESA
CUMSA
CUSRA
CUSSA
CLMSA
CLMRA
CLSSA
LDMEG (2-5)
LLDPG (2-15)
LLBL4
LLBL5
LLBL6 (5-20)
LLBL7 (5-13)
LPLFF (3-9)
LLBL6 (5-17)
LC10F (2-10)
LC09F (2-10)
LC08F (2-11)
NLDMEG
NLSXXG (3-18) LLBL7 (5-15)

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
	SEE SHT 1				

TABLE II (4)

ASSY 102831 VERSION NUMBER	W22 P/N 103596-01	W24 P/N 100-0005	W25 P/N 100-0005	W26 P/N 100-0005	W27 P/N 100-0005
	USAGE				
-01	USE	USE	OMIT	USE	OMIT
-02	↑	↑	↑	↑	↑
-03	|	|	|	|	|
-04	|	|	|	|	|
-05	|	|	|	|	|
-06	|	|	|	|	|
-07	|	|	|	|	|
-08	↓	|	|	|	|
-09	USE	|	|	|	|
-10	OMIT	|	|	|	|
-11	USE	|	|	|	|
-12	OMIT	|	|	|	|
-13	USE	|	|	|	|
-14	OMIT	|	|	|	|
-15	USE	|	|	|	|
-16	OMIT	|	|	|	|
-17	USE	|	|	|	|
-18	USE	|	|	|	|
-19	USE	|	|	|	|
-20	|	|	|	|	|
-21	USE	|	|	|	|
-22	↓	↓	↓	↓	↓
-23	USE	USE	OMIT	USE	OMIT
-24	OMIT	USE	OMIT	USE	OMIT
-25	|	|	|	|	|
-26	|	|	|	|	|
-27	|	|	|	|	|
-28	|	|	|	|	|
-29	|	|	|	|	|
-30	|	|	|	|	|
-31	USE	OMIT	USE	OMIT	USE
-32	↑	↑	↑	↑	↑
-33	|	|	|	|	|
-34	|	|	|	|	|
-35	|	|	|	|	|
-36	|	|	|	|	|
-37	|	|	|	|	|
-38	↓	|	|	|	|
-39	USE	|	|	|	|
-40	OMIT	|	|	|	|
-41	USE	|	|	|	|
-42	OMIT	|	|	|	|
-43	USE	|	|	|	|
-44	OMIT	|	|	|	|
-45	USE	|	|	|	|
-46	OMIT	|	|	|	|
-47	USE	|	|	|	|
-48	USE	|	|	|	|
-49	USE	|	|	|	|
-50	|	|	|	|	|
-51	USE	|	|	|	|
-52	|	↓	↓	↓	↓
-53	USE	OMIT	USE	OMIT	USE

SIZE	CODE IDENT NO.	DWG NO.	REV
		102830	T1
SCALE		DO NOT SCALE DWG	SHEET 6 OF 6



REVISIONS				
REV	DESCRIPTION	DATE	BY	APPD
A	PROTOTYPE			
B	ECN 4178 PRE PROD RELEASE			
C	ECN 5046			
D	ECN 5244			
E	ECN 5758			
F	ECN 5946			
G	ECN 5799			
H	ECN 5931			
J	ECN 5981			
K	ECN 6092			
L	ECN 6330			
L1	ECN 6368			
M	ECN 6481			
N	ECN 6618			
N1	ECN 6670			
P	ECN 6952			
R	ECN 7443B			
S	ECN 7707B			
T	ECN 8335			
U	ECN 8697A			
V	ECN 10166			
W	ECN 10085			
W1	ECN 12582			
Y	ECN 12790			

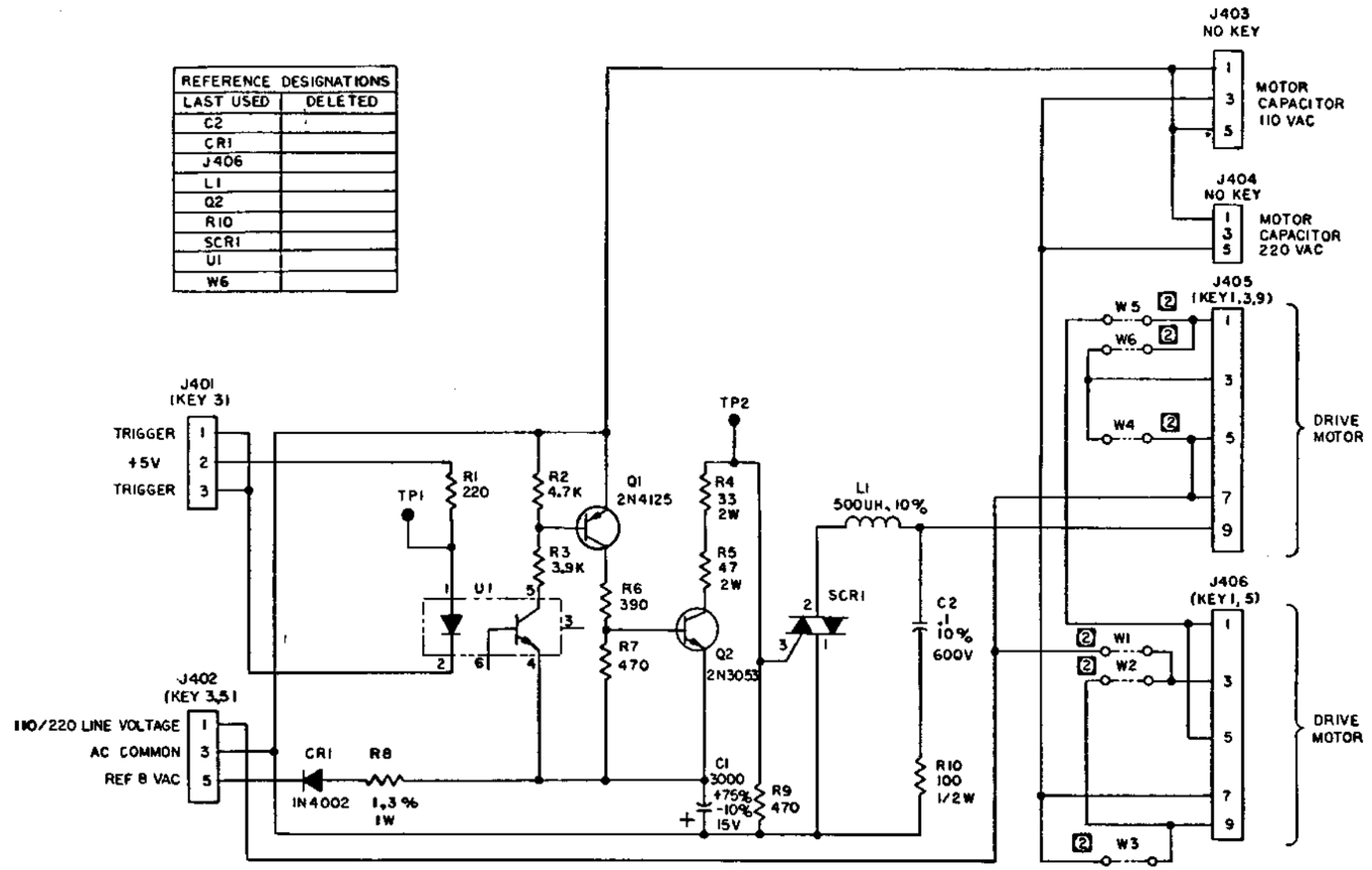
9. SPECIAL INTERFACE OPTION SIGNAL DRIVER INPUT PAD (.040 DIA HOLE). E4 REF.
8. E1, E2, AND E3 ARE TEST PADS INTENDED FOR USE WITH MINIATURE OSCILLOSCOPE PROBE TIPS WHICH WILL FIT IN A .040 DIA HOLE.
7. DELETED
6. (DELETED)
5. KEY CONNECTOR BY REMOVING DESIGNATED PIN.
4. FOR USAGE OF COMPONENTS SHOWN SEE 102830, TABLE II.
3. THIS ASSEMBLY SHALL BE MADE FROM PROCESS BOARD 102832-01 REV K AND SUBSEQUENT.
2. MARK PART NO 102831 INCLUDING VERSION NO AND VERSION ISSUE LETTER.
1. ASSEMBLE PER STANDARD MFG METHODS.

NOTES: UNLESS OTHERWISE SPECIFIED

13. (DELETED)
12. PAD E7 FOR INTERNAL TEMPERATURE GO CONDITION INDICATION JUMPER, USING PART NO. 691-6030, TO SIGNAL DRIVER INPUT PAD E4 FOR -02, -04, -06, -08, -10, -12, -14, -16 VERSIONS ONLY. (.040 DIA HOLE).
11. PAD E6 FOR SAFE CONDITION INDICATION SPECIAL INTERFACE - SIGNAL, JUMPER, USING PART NO. 691-6030, TO SIGNAL DRIVER INPUT PAD E4 FOR -17, -18, -19, -21, -23 & -24 VERSION ONLY. (.040 DIA HOLE).
10. PAD E5 FOR RUN CONDITION INDICATION INDICATION SPECIAL INTERFACE - SIGNAL, JUMPER, USING PART NO. 691-6030, TO SIGNAL DRIVER INPUT PAD E4 FOR -09, -11, -13, -15 VERSIONS ONLY. (.040 DIA HOLE).
14. W3 OPTIONAL MOUNTING, CIRCUIT OR COMPONENT SIDE OF ASSY.

REV	DESCRIPTION	DATE	DR	CHK	APPR
A	ECN 6-VA RRQC RELEASE	9/6/74			

REFERENCE DESIGNATIONS	
LAST USED	DELETED
C2	
CR1	
J406	
L1	
Q2	
R10	
SCR1	
U1	
W6	



[1] TABLE I

PART NO.	REFERENCE DESIG
100-2215	R1
100-3915	R6
100-3925	R3
100-4715	R7,9
100-4725	R2
101-1015	R10
103-3305	R4
103-4705	R5
113-0103	R8
131-1046	C2
134-3000	C1
200-3053	Q2
200-4125	Q1
205-4010	SCR1
300-4002	CR1
403-0001	U1
103585-01	L1

[2] TABLE II

PART NO.	ASSY 103571	
100-0005	-01 (90-125VAC)	-02 (190-250VAC)
W1	USE	OMIT
W2	OMIT	USE
W3	USE	OMIT
W4	USE	OMIT
W5	USE	OMIT
W6	OMIT	USE

4. ALL CAPACITOR VALUES ARE IN MICROFARADS.

3. ALL RESISTOR VALUES ARE IN OHMS, 5%, 1/4W.

[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. 103571
SPECIFICATION NO. 103574
REFERENCE DRAWINGS:

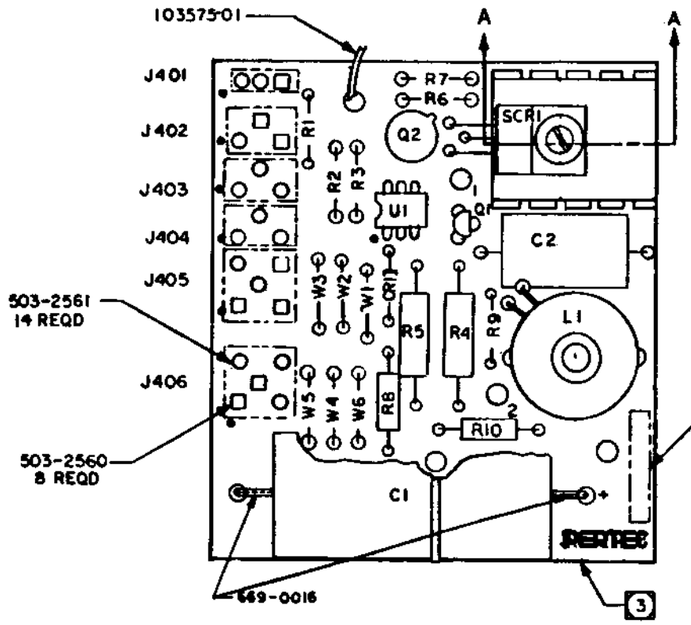
PERTEC PERIPHERAL EQUIPMENT

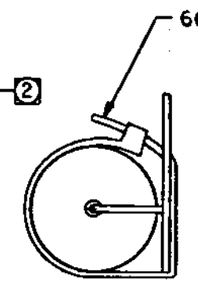
TITLE: SCHEMATIC - MOTOR CONTROL BOARD

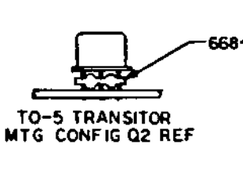
SIZE F | DWG NO. 103570 | REV A

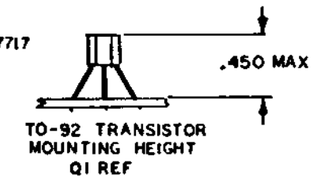
DO NOT SCALE DWG. | SHEET 1 OF 1

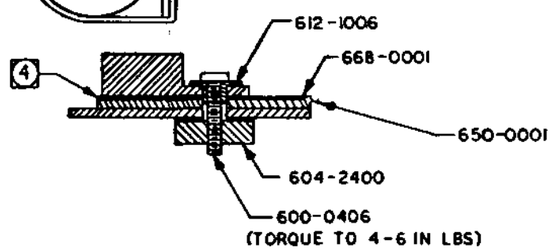
REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	ERN 6-VA PROD RELEASE				
A1	ECN 7066				
B	ECN 7834				
C	ECN 8382				











SECTION A-A
SCALE: NONE

103571 - 01 REV C

FOR ASSY VERSION INFORMATION SEE SCHEMATIC 103570.

4. APPLY 665-0001 TO BOTH SIDES OF 668-0001.

3. THIS ASSY SHALL BE MADE FROM PROCESS BOARD 103572-01 REV E AND SUBSEQUENT.

2. MARK PART NO 103571 INCLUDING VERSION NO. AND VERSION ISSUE LETTER. LOCATE APPROX AS SHOWN.

1. ASSEMBLE PER STANDARD MFG METHODS.

NOTES: UNLESS OTHERWISE SPECIFIED

NEXT ASSY	03000
APPLICATION	

FINISH:

MATL: SEE LM

PERTEC PERIPHERAL EQUIPMENT

TITLE: PCBA
MOTOR CONTROL BOARD

SIZE D | DRAWING NO. 103571 | REV C

SCALE 2/1 | DO NOT SCALE DRAWING | SHEET 1 OF 1

103571 C

REVISIONS				
REV	DESCRIPTION	DATE	BY	CHK	APPR
A	ERN 6-V8 PROD REL				
B	ECN 7041				
C	ECN 9661				
D	ECN 10563				
E	ECN 10885				
F	ECN 115568				

POWER SWITCH CABLE ASSY
REF ONLY
(DWG 102756)

FRONT PANEL
POWER SWITCH
REF ONLY

F1
LINE FILTER

J501 P501
(KEY 4,5,8)

T1

P212
(KEY 1,5,8)

TO SERVO BOARD

(MOTOR CAPACITORS)

P402
(KEY 3,5) J402

J403 P403 [5]

J404

P213
(KEY 1,3)

P401
(KEY 3) J401

J405 P405

J406 P406

DRIVE MOTOR
REF ONLY
(DWG 103579)

PART OF MOTOR CONTROL BOARD
REF ONLY
(SCHEM 103570)
(ASSY 103571)

S=START
F=FINISH

FOR ASSEMBLY SEE 103581

TABLE I [3]

TRANSFORMER PRIMARY CONNECTIONS						
NOMINAL LINE VOLTAGE	FROM E28 TO	FROM E27 TO	JUMPER FROM	JUMPER TO	JUMPER FROM	JUMPER TO
90	13	3	12	13	3	7
100	6	3	2	6	3	7
110	5	3	1	5	3	7
115	6	4	2	6	4	8
125	5	4	1	5	4	8
190	13	3	12	7		
200	6	3	2	7		
210	6	3	1	7		
215	6	4	2	7		
220	5	3	1	7		
225	5	4	2	7		
230	6	4	2	8		
235	5	4	1	7		
240	6	4	1	8		
250	5	4	1	8		

VERSION TABLE

ASSEMBLY 103581 VERSION NUMBER	VERSION CHARACTERISTIC	VOLTAGE & Hz
-01	NORMAL GROUNDING (POWER SUPPLY MAIN GROUND CONNECTED TO CHASSIS GROUND)	LO VOLTS 60Hz
-02	GROUND ISOLATION [6]	
-05	NORMAL GROUNDING (POWER SUPPLY MAIN GROUND CONNECTED TO CHASSIS GROUND)	HI VOLTS 60Hz
-06	GROUND ISOLATION [6]	
-07	NORMAL GROUNDING (POWER SUPPLY MAIN GROUND CONNECTED TO CHASSIS GROUND)	MI & LO VOLTS 50Hz
-08	GROUND ISOLATION [6]	
-09	NORMAL GROUNDING (POWER SUPPLY MAIN GROUND CONNECTED TO CHASSIS GROUND)	SPECIAL VOLTAGE REQUEST
-10	GROUND ISOLATION [6]	

REFERENCE DESIGNATIONS		
NOT USED	LAST USED	DELETED
C1 THRU C8	C14	
	CR2	
	F4	
	R5	
	T1	
	W1	

ANC -10 VERSIONS
NNECTION, E2 (MAIN GROUND
ND).

OR NOMINAL LINE
125 VOLTS.
J404 FOR
TAGE OF 190 TO 250 VOLTS.

VOLTAGE OF 90 TO 125 VOLTS
TILIZED.
VOLTAGE OF 190 TO 250 VOLTS
UTILIZED.

ORMER PRIMARY SHOWN FOR
AGE 115 VOLTS.
ONS UTILIZED FOR
INE TAGES.

UES ARE IN OHMS, ±5%, 2W.

UES ARE IN MICROFARADS.

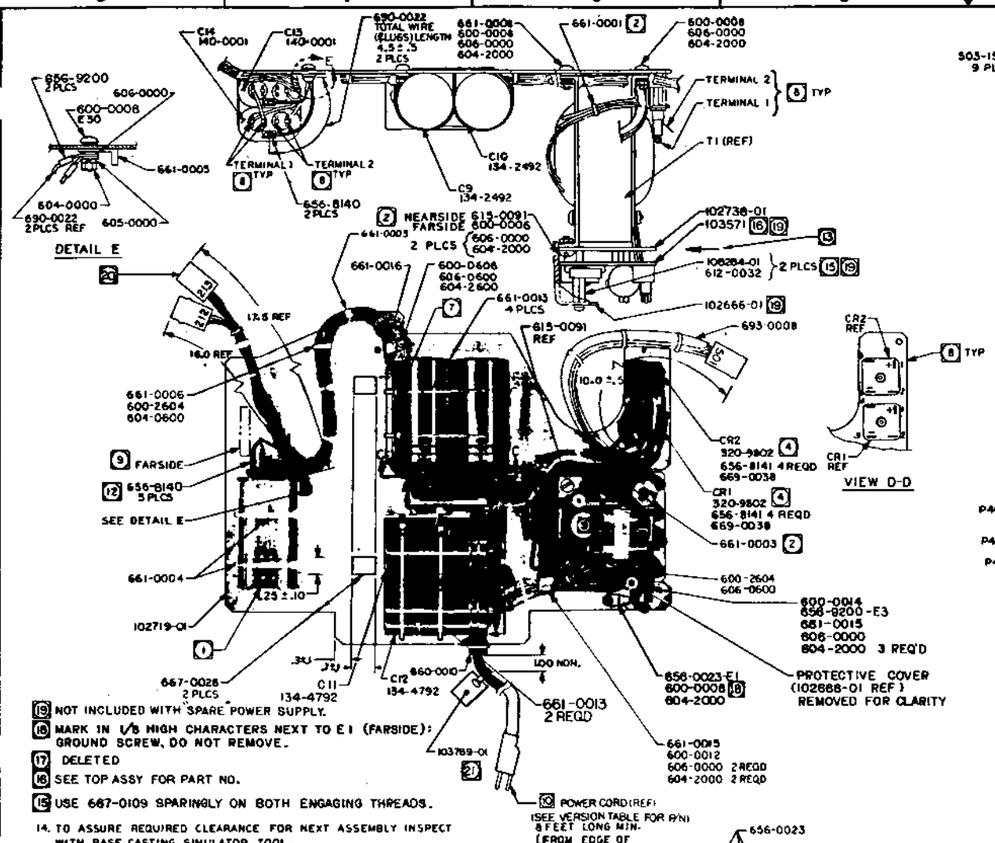
PWISE SPECIFIED

103581	D3400		
103581	D3000		

PERTEC PERIPHERAL EQUIPMENT

TITLE: SCHEMATIC, POWER SUPPLY

SIZE J | DRAWING NO 103580 | REV F



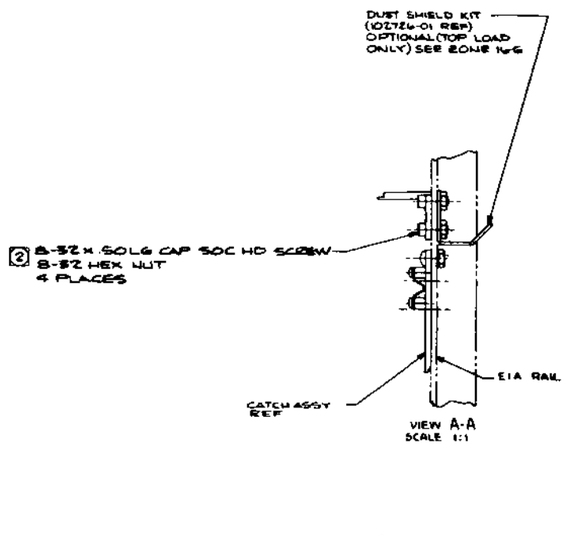
REVISIONS				
REV	DESCRIPTION	DATE	BY	CHK
A	ERN 6-V0 PROD. RELEASE			
B	ECN 7041			
C	ECN 7799			
D	ECN 8844			
E	ECN 9323			
F	ECN 9590			
G	ECN 9661			
H	ECN 10373A			
J	ECN 10903			
K	ECN 10963			
L	ECN 10885			
M	ECN 10999			
N	ECN 11329			
P	ECN 115568			

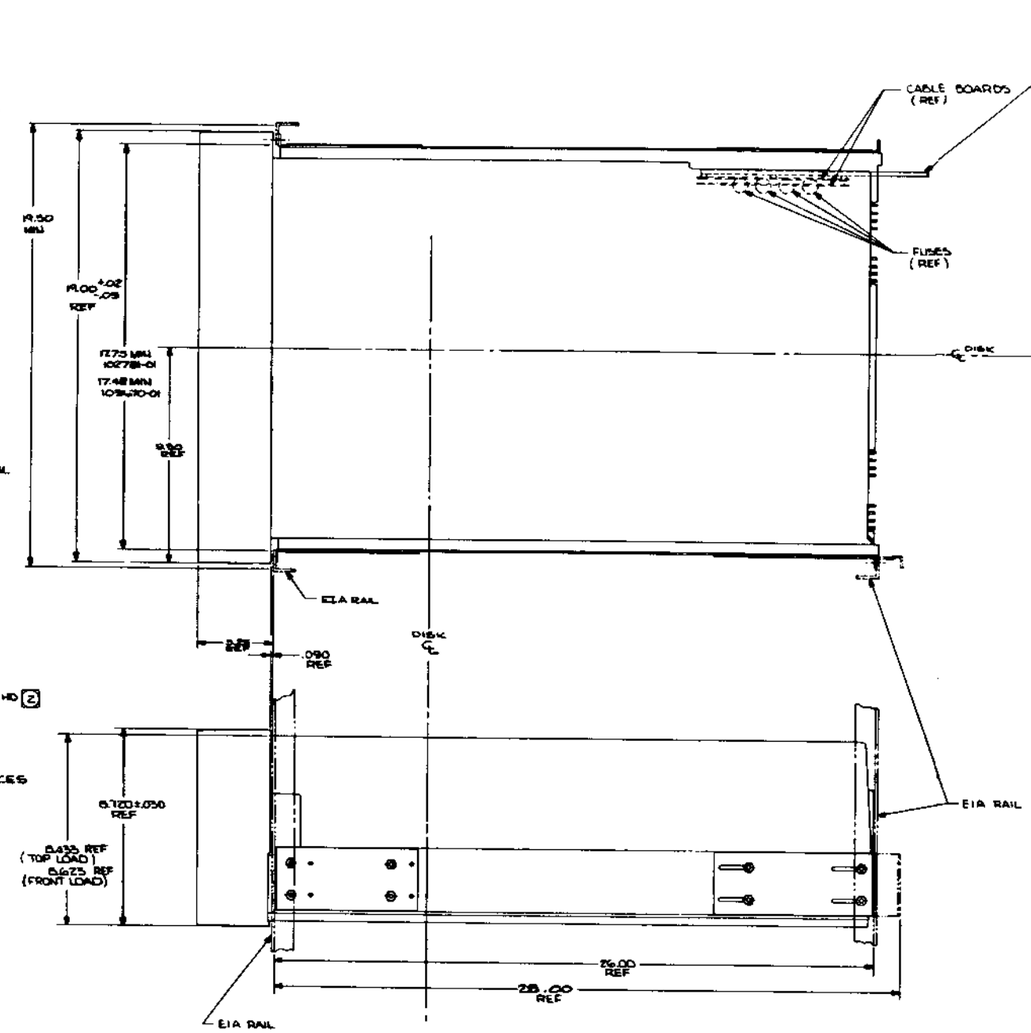
FOR WIRE LIST SEE 103582
FOR SCHEMATIC SEE 103580

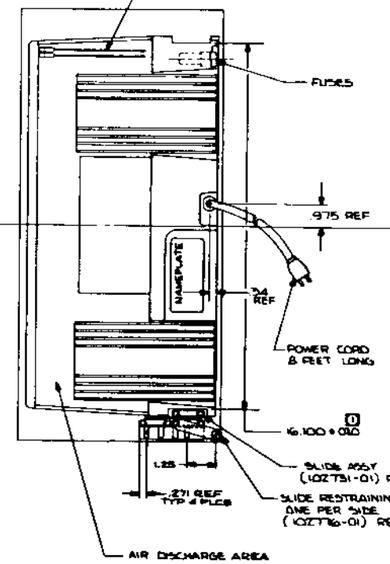
PART NO. 103581- REV

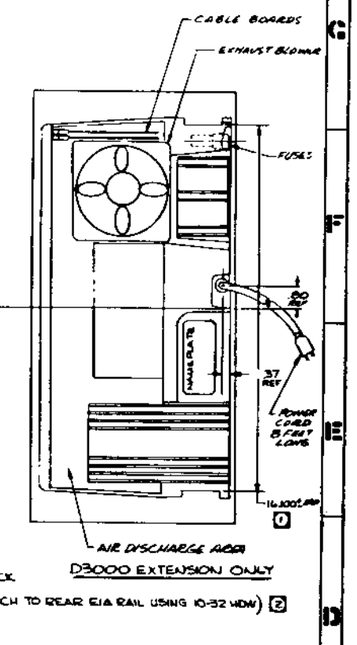
TOP ASSY D3000 / APPLICATION	MATL: SEE LM	PERTEC PERIPHERAL EQUIPMENT TITLE: POWER SUPPLY ASSEMBLY SIZE E — DWG NO. 103581 — REV P

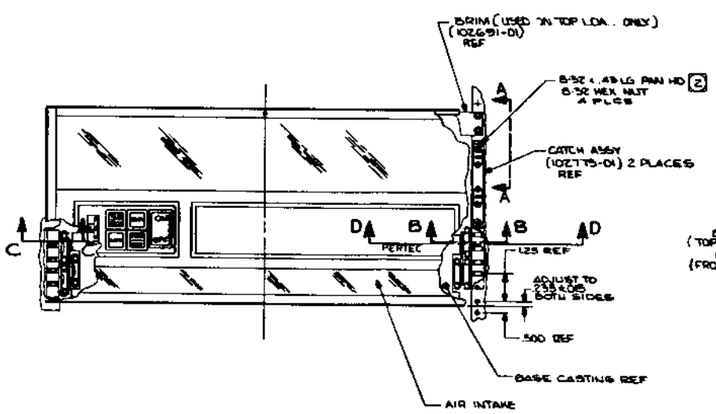
REV	DESCRIPTION	DATE	BY	CHK'D
A	[illegible]	[illegible]	[illegible]	[illegible]
B	ECN 4878	[illegible]	[illegible]	[illegible]
C	ECN 5187	[illegible]	[illegible]	[illegible]
D	ECN 5792	[illegible]	[illegible]	[illegible]
E	ECN 6398	[illegible]	[illegible]	[illegible]
F	ECN 7219	[illegible]	[illegible]	[illegible]
G	ECN 9701	[illegible]	[illegible]	[illegible]

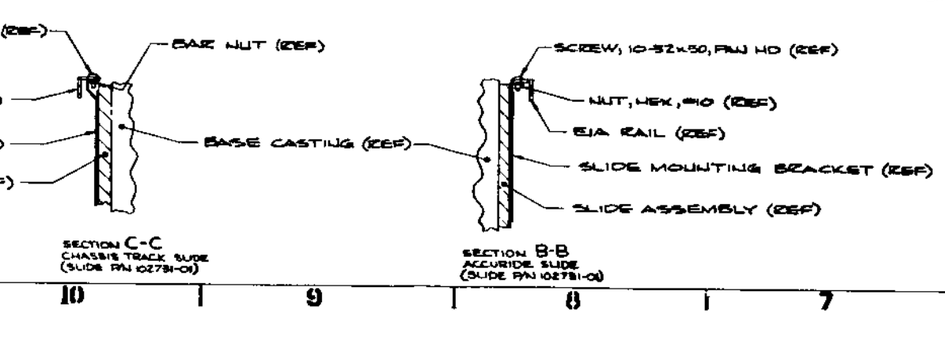


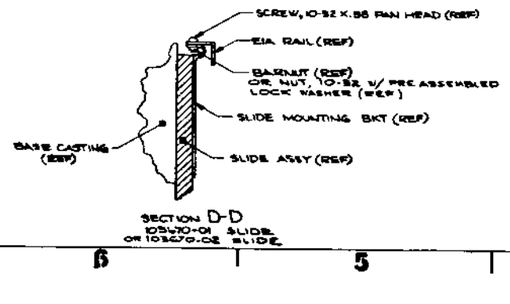












PERTEC PERIPHERAL EQUIPMENT			
TITLE: INSTALLATION DWG			
REF DWG 103000		103597	G

-1604
RD REF

105623-01 REF

BEIM

01 REF

TION

TIONAL
LS ONLY

DUST SHIELD KIT
(102726-01 REF)
OPTIONAL (TOP LOAD
ONLY) SEE ZONE H-G

2 8-32 x .50 LG CAP SOC HD SCREW
8-32 HEX NUT
4 PLACES

CATCH ASSY
REF

EIA RAIL

VIEW A-A
SCALE 1:1

8.50
MIN

R.00 +.02 -.05
REF

17.73 MIN
102781-01
17.48 MIN
105470-01

9.50
REF

BRKT (USED IN TOP LOA. ONLY)
(102691-01)
REF

8-32 x .38 LG PAN HD 2
8-32 HEX NUT
4 PLACES

CATCH ASSY
(102775-01) 2 PLACES
REF

A

A

B

D

C

D

B

PERTEC

B

L25 REF

ADJUST TO
2.25 LOAD
BOTH SIDES

.500 REF

BASE CASTING REF

AIR INTAKE

6.720±.050
REF

8.433 REF
(TOP LOAD)
8.625 REF
(FRONT LOAD)

EIA RAIL

SCREW A
3 3 0

APPROX
12.015

APPROX
17.875

3.25

29.06

8-32 P.H. X.38 LG
10 PLACES (REF) 2

SCREW, 10-32x.50, PAN HD (REF)

BASE NUT (REF)

EIA RAIL (REF)

SLIDE MOUNTING BRACKET (REF)

SLIDE ASSEMBLY (REF)

BASE CASTING (REF)

SECTION C-C
CHASSIS TRACK SLIDE
(SLIDE P/N 102731-01)

SCREW, 10-32x.50, PAN HD (REF)

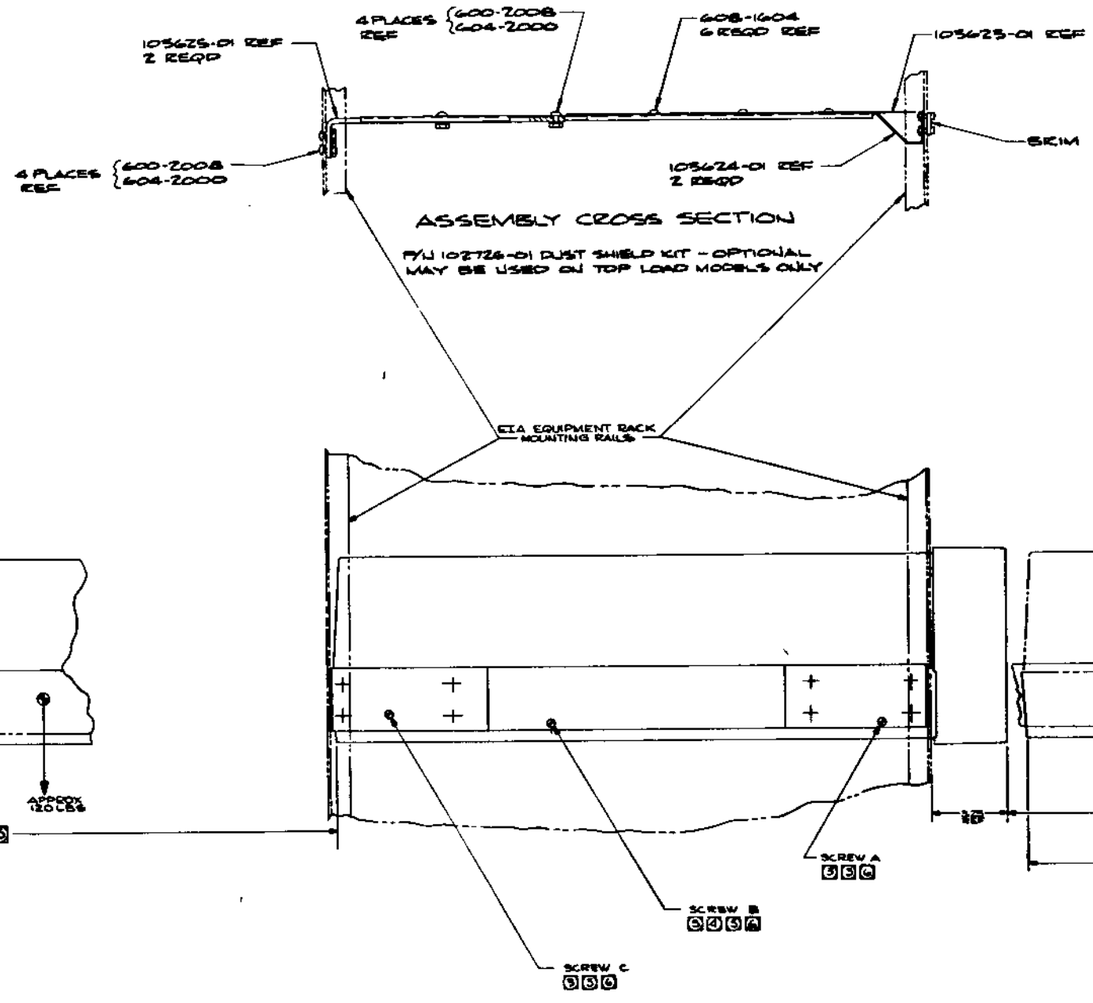
NUT, HEX, #10 (REF)

EIA RAIL (REF)

SLIDE MOUNTING BRACKET (REF)

SLIDE ASSEMBLY (REF)

SECTION B-B
ACCURIDE SLIDE
(SLIDE P/N 102781-01)



6 AFTER INSTALLATION OF DRIVE ENSURE THAT SCREWS A,B & C ARE TIGHTENED. (BOTH SIDES)

8 23.00 INCH REAR TRAVEL ON 102731-01 SLIDE ASSEMBLY.
21.00 INCH REAR TRAVEL AS INSTALLED
21.25 INCH REAR TRAVEL WITH SCREW C REMOVED } 105470-01

4 SLIDE DISCONNECT ACCOMPLISHED BY REMOVING SCREW B.

9 30.00 INCH FWD TRAVEL ON 102731-01 SLIDE ASSEMBLY.
11.00 INCH FWD TRAVEL AS INSTALLED
31.25 INCH FWD TRAVEL WITH SCREW A REMOVED } 105470-01

2 ALL MOUNTING HARDWARE SHOWN IS SUPPLIED WITH EACH UNIT.

1 ADJUST SLIDES TO ±.005-.050 BEFORE INSTALLING UNIT.

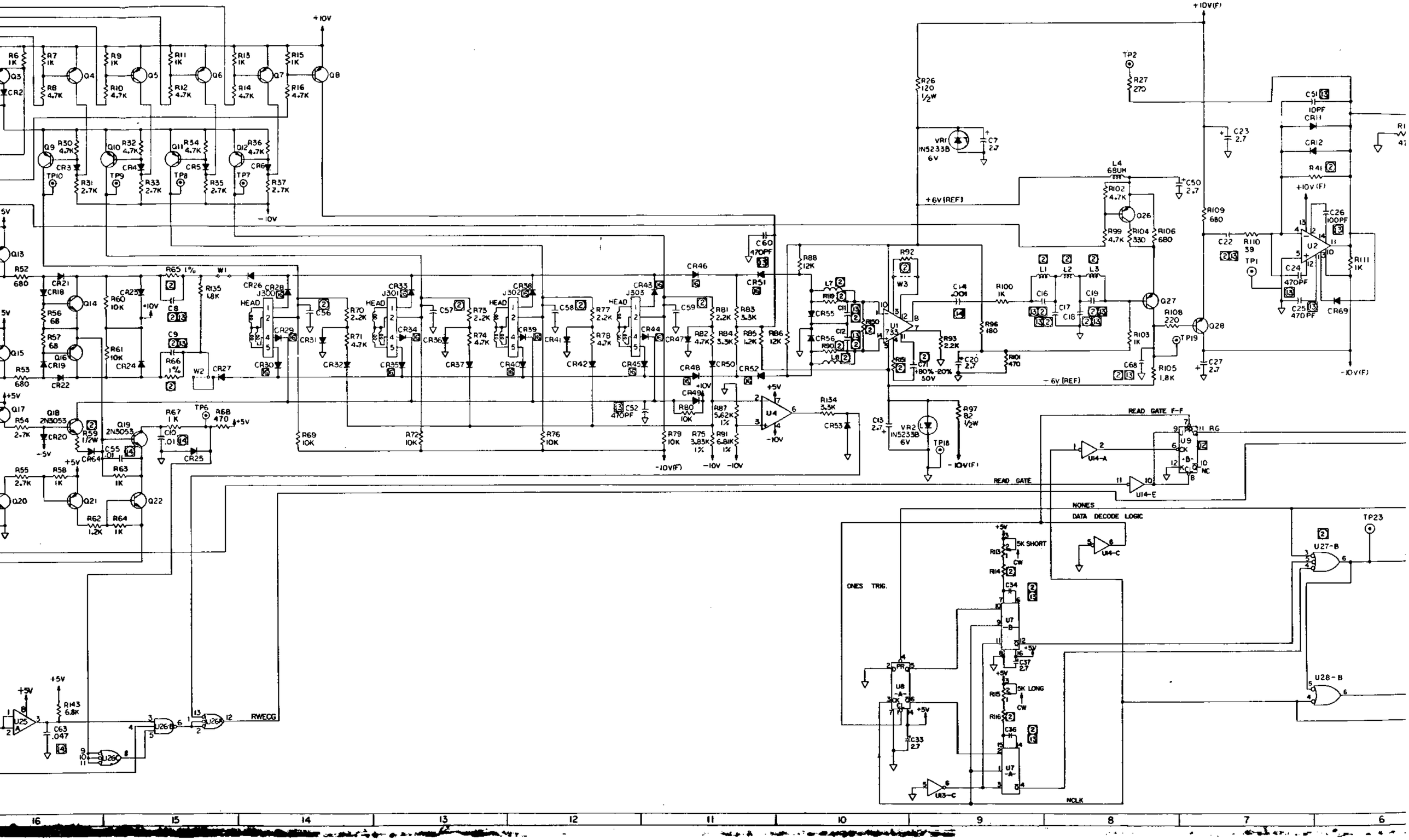
NOTES: UNLESS OTHERWISE SPECIFIED.

DEVIATIONS				
DEV	DESCRIPTION	DATE	BY	CHK
A	ECN 7-AM DEAD RELEASE	7/74	JT	
B	ECN 7254	7/74	LCR	
C	ECN 8425	7/74	J.K.	
D	ECN 10420A	10/74	JK	
E	ECN 11218	10/74	AMT	
F	ECN 12287	12/74	AMT	

+10V(F)
TP2
R26 120 1/2W
R27 270
VR1 IN5233B 6V
C7 2.7
C23 2.7
C51 10PF
CR11
CR12
R41
+10V(F)
L4 68UH
C50 2.7
+6V(REF)
R102 4.7K
Q26
R99 4.7K
R104 330
R106 680
R109 680
C22
R110 39
TP1
C26 100PF
U2
C24 470PF
C25 470PF
CR69
R111 1K
-10V(F)
+5V
R157 5K
CW
R156 2.15K 1%
C74 10 PF
R159 47
U30
R158 47
R160 3.3 K
U14-F
C75 2.7
-5V
C78 10 PF
TP25
R88 12K
R92
W3
L1 L2 L3
C14 .001
R100 1K
C16 C17 C18 C19
Q27
R108 220
Q28
TP19
R103 1K
R105 1.8K
C68
C27 2.7
R86 12K
L7
R89
CR55
C11
R95
C12
CR56
R90
L6
U1 733
R93 2.2K
C20 2.7
R101 470
C71 +80%-20% 50V
-6V(REF)
+5V
U4
R134 3.3K
-10V
CR53
C13 2.7
VR2 IN5233B 6V
TP18
-10V(F)
R97 82 1/2W
READ GATE F-F
U14-A
U9
-B-
11 RG
10 NC
U14-E
READ GATE
NONES
DATA DECODE LOGIC
U14-C
ONES TRIG.
+5V
R13 5K SHORT
CW
R14
C34
U7
-B-
C37 2.7
R15 5K LONG
CW
R16
C36
U7
-A-
C33 2.7
U8
-A-
U13-C
NCLK
TP23
U27-B
U28-B
TP24
U27-A
U27-C
U14-D
+5V
R153 5K
R152 5.11K 1%
C76 22PF
CW
U29-A
U28-D
TP15
READ DATA
READ CLOCK
J305
30 RWECG
19 NRRDSG
20 NRRCSG
+5V
R155 5K
R154 5.11K 1%
C77 22PF
CW
U29-B
U28-C
TP16

REF DWGS:
ASSEMBLY 103751
SPECIFICATION 103754

PEC
TITLE SCHEMATIC READ/WRITE C
DIABLO
100721
J
103750
F


+10V
-10V
+10V(F)
-10V(F)
+6V(REF)
-6V (REF)
+5V
-5V
TP2
TP1
TP19
TP23
TP6
TP7
TP8
TP9
TP10
TP18
VR1 IN5233B 6V
VR2 IN5233B 6V
W1
W2
W3
L4 68UH
U1 733
U2
U4
U7 -A-
U7 -B-
U8 -A-
U9
U14-A
U14-C
U14-E
U25 -A-
U26
U27-B
U28-B
5K SHORT
5K LONG
CW
READ GATE F-F
READ GATE
ONES TRIG.
ONES DATA DECODE LOGIC
RWECG
MCLK
11 RG
10 NC
HEAD
J300
J301
J302
J303
2N3053
1N5233B

[11] TABLE III

LAST USED	NOT USED
C78	C15,38 THRU 49,64,65,35,1 THRU 6,53,54,66,67,69,70,21
CR69	CR54,57 THRU 63,65,66,7 THRU 10,67,68
J305	
L8	
Q28	Q23,24,25
R160	R94,95,98,117 THRU 133,17 THRU 25,28,29,38,39,40,106, R144 THRU 149,137,138 139 THRU 142
U30	U10,13 23,8 3,6,17, 20,21,24,
VR2	
W3	
TP25	TP3,4,5,11,12,13,20,21,22

[11] TABLE III (CONT'D)

DELETED
C73

[16] CR 28,29,30,33,34,35,38,39,40,43 THRU 46, 48,51,52 ARE PERTEC P/N 300-0118.

[15] PIN 8 (U7,29) IS 0V.
PIN 16 (U7,29) IS +5V.

[14] C10,14,55,63 ARE IN MICROFARADS ±10% 100 VDC.

[13] C5,21,24,25,52,60,68,51,26, 22,34,36,11,12,16,19,8,9,17,18,74, 76,77,78 ARE IN PICOFARADS, 5%, 500VDC.

[12] PIN NO. 5 (U9) IS +5V.
PIN NO. 13 (U9) IS 0V.

[11] FOR LAST USED AND DELETED REF DESIG, SEE TABLE III.

10. CONNECTORS ARE NUMBERED FROM J300.
9. PIN NO. 7 OF ALL LCS IS 0V.
PIN NO. 14 OF ALL LCS IS +5V.
8. ALL NPN TRANSISTORS ARE 2N4123.
7. ALL PNP TRANSISTORS ARE 2N4125.
6. ALL DIODES ARE IN4446.
5. ALL CAPACITOR VALUES ARE IN MICROFARADS, 20%, 35VDC.
4. ALL RESISTOR VALUES ARE IN OHMS, 5%, 1/4W.
3. FOR PCBA, SEE DWG.NO. 103754.
FOR SPEC., SEE DWG. NO. 103754.

[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

[2] TABLE II

C17,C18		C22		C78				C34,36		C71		L7,8		C56,57,58,59		L1,L3		L2		R5		R59		R65,R66		R92				C68	
VE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.	VALUE	PART NO.
PF	330-5605	330 PF	130-3315	OMIT				68 PF	130-6805	OMIT	———	OMIT	———	OMIT	——	24 UH	515-2405	68 UH	515-6805	33	100-3305	100	101-1015	464	104-4640	OMIT	———			33 PF	130-3305
F	130-6805	560 PF	130-5615					150 PF	130-1515	OMIT	———	OMIT	———	OMIT	——	33 UH	515-3305	68 UH	515-6805	33	100-3305	100	101-1015	464	104-4640	OMIT	———			47 PF	130-4705
F	130-5605	330 PF	130-3315					68 PF	130-6805	.05	135-5062	33 UH	515-3305	OMIT	———	24 UH	515-2405	68 UH	515-6805	33	100-3305	100	101-1015	464	104-4640	OMIT	———			33 PF	130-3305
F	130-6805	560 PF	130-5615	OMIT				150 PF	130-1515	.05	135-5062	33 UH	515-3305	OMIT	——	33 UH.	515-3305	68 UH	515-6805	33	100-3305	100	101-1015	464	104-4640	OMIT	———			47 PF	130-4705

103721	DIABLO COMPATIBLE			PERTEC PERIPHERAL EQUIPMENT	
				TITLE SCHEMATIC READ/ WRITE $\frac{5}{8}$ -	
					103750

[1] TABLE I

PART NO.	REF DESIGNATION
100-1005	R112
-1025	R6,7,9,11,13,45, 49,58, 63,64,100,103,111, 67
-1035	R60,61,69,72,76,79,80
-1225	R62,85
-1235	R86,88
-1515	R45,47
-1815	R96
-1825	R105,135
-2215	R42,108
-2225	R50,51, 70,73,78,93
-2715	R27,44,46
-2725	R31,33,35,37,54,55
-3315	R43,104
-3325	R48,83, 84,134
-3905	R110
-4705	R158,159
-4715	R1,3,68, 101
-4725	R8,10,12,14,16,30,32,34,36 71,74,78,82,99,102
-5615	R2,4
-6815	R106,52,53,109
-6825	R143
100-6805	R56,57
101-1215	R26
101-8205	R97
104-2151	R156
104-5113	R152,154
104-3831	R75
104-5621	R87
104-6811	R91
121-5020	R113, 115,153,155,157
130-1005	C51,74
130-1015	C26,
130-2205	C76,77
130-4715	C24,52,60,25

[1] TABLE I

PART NO.	REF DESIGNATION
131-1020	C14
131-1030	C10, 55
131-4730	C63
132-2752	C7,13,20,23,27,29,30, 31,32, 33, 37,50 61,62,72, 75
133-7060	C28
200-3053	Q18,19
200-4123	Q1-4,6,20,22
200-4125	Q1 THRU Q13,15,17,21,26, 27,28
300-0115	CR23,29,30,33,34,35,39,40, 43 THRU 46,48,51,52
350-4446	CR1 THRU 6,11 THRU 27,31,32, 36,37,41,42,47,49,50,53,55, 56,64,69
331-0605	VR1,2
400-0715	U2
400-2741	U4
515-6805	L4,5,6
700-4123	U7,29
700-4740	U8
700-0001	U9
-0002	U13, 14
-0003	U22
-4000	U28
-5733	U1
-7400	U16
-7402	U15
-7404	U18
-7410	U26
-7416	U11,12
700-7545	U25
700-8020	U30
690-0022	W1,2

DESCRIPTION	ASSEMBLY 103751 DASH NO	VERSION 100 TPI	VERSION 200 TPI	R41 VALUE	R41 PART NO.	W3 PART NO.			C8,C9 VALUE	C8,C9 PART NO.	C11,C12 VALUE	C11,C12 PART NO.	C16,C19 VALUE	C16,C19 PART NO.	C17,C18 VALUE	C17,C18 PART NO.
2400 RPM 2200 BPI	-01,-05	X		4.3K	100-4325	100373-02			68 PF	130-6805	22 PF	130-2205	43 PF	130-4305	56 PF	130-5605
1500 RPM 2200 BPI	-02,-06	X		4.3K	100-4325	100373-02			OMIT		43 PF	130-4305	56 PF	130-5605	68 PF	130-6805
2400 RPM 2200 BPI	-03,-07		X	4.3K	100-4325	OMIT			68 PF	130-6805	22 PF	130-2205	43 PF	130-4305	56 PF	130-5605
1500 RPM 2200 BPI	-04,-08		X	4.3K	100-4325	OMIT			OMIT		43 PF	130-4305	56 PF	130-5605	68 PF	130-6805

[2] TABLE II (CONT'D)

DESCRIPTION	ASSEMBLY 103751 DASH NO.	VERSION 100 TPI	VERSION 200 TPI	R160 VALUE	R160 PART NO.		R150 VALUE	R150 PART NO.	R151 VALUE	R151 PART NO.	R89,90 VALUE	R89,90 PART NO.	R114,116,119,V4W VALUE	R114,116,119,V4W PART NO.
2400 RPM 2200 BPI	-01,-05	X		OMIT			OMIT	——	OMIT	——	470	100-4715	5.62K	104-5621
1500 RPM 2200 BPI	-02,-06	X					OMIT	——	OMIT	——	470	100-4715	4.64K	104-4641
2400 RPM 2200 BPI	-03,-07		X				5.6K	100-5625	15	100-1505	OMIT	——	5.62K	104-5621
1500 RPM 2200 BPI	-04,-08		X	OMIT			5.6K	100-5625	15	100-1505	OMIT	——	4.64K	104-4641

[2] TABLE II (CONT'D)

DESCRIPTION	ASSEMBLY 103751 DASH NO.	VERSION 100 TPI	VERSION 200 TPI	J306 PART NO.	U27 PART NO.
2400 RPM 2200 BPI	-01	X		OMIT	700-4010
1500 RPM 2200 BPI	-02	X			
2400 RPM 2200 BPI	-03		X		
1500 RPM 2200 BPI	-04		X	OMIT	700-4010
2400 RPM 2200 BPI	-05	X		103662-01	OMIT
1500 RPM 2200 BPI	-06	X			
2400 RPM 2200 BPI	-07		X		
1500 RPM 2200 BPI	-08		X	103662-01	OMIT

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	ERN 7MR. PROD RLSE	4/24/78	WLS	PBE	BMJ
B	ECN 7511	6/12/78	WLS	BMJ	RCA
C	ECN 7847	10/19/78	WLS	JWG	L. L.
D	ECN 8069	12/19/78	MM	RF	MB
E	ECN 8464	5-31-79	MM	RF	MB
F	ECN 8743	8/22/79	KJC	RF	MB
G	ECN 8929	10/22/79	KJC	RF	MB
H	ECN 8961	11/21/79	KJC	RF	MB
J	ECN 9014	12/19/79	SMT	RF	MB
K	ECN 9579	4-7-81	SMT	RF	MB

[1] TABLE I

PART NO.	REFERENCE DESIGNATION
100-1025	R1,2,3,30,31,A39
100-1235	R7,8,9,27
100-2735	R33
100-4725	R32
104-1001	R24
104-1002	R5,13,17 THRU 20,21,22
104-1212	R23
104-1472	R14
107-4643	R29
104-1962	R4
104-2152	R25
104-2870	R10,11
104-3163	R26
104-3832	R6
104-7501	R12
107-5163	R28
121-2030	R15,16
139-2244	C1,2,C4 THRU C7
139-2261	C3
200-4123	Q7
200-4125	Q1,2,3
204-4393	Q4,5,6
300-4446	CR1 THRU 5
400-0555	U5
400-2741	U6,7,8,9
700-7474	U20
700-7400	U4
700-7404	U1
700-7416	U2
700-7493	U3

THERMISTOR MOUNT ASSEMBLY 103456

PART NO.	REFERENCE DESIGNATION
103457-01	RT2

[2] TABLE II

ASSY 103977 VERSION NUMBER	VERSION CHARACTERISTIC	C9 THRU C14 CR6 Q8 R34 THRU R37 U10 THRU U19	DL1	C8		J1	W1	W2
		USAGE [3]	PART NO.	VALUE	PART NO.	PART NO.	PART NO.	PART NO.
-01	200 TPI, 2200 BPI, 1500RPM / 2400RPM	OMIT	OMIT	—	OMIT	OMIT	100-0005	OMIT
-02	200 TPI, 2200 BPI, 1500RPM / 2400RPM	OMIT	OMIT	—	OMIT	OMIT	OMIT	100-0005
-03				—	OMIT	OMIT	OMIT	OMIT
-04				—	OMIT	OMIT	OMIT	OMIT
-05	200 TPI, 4400 BPI, 1500RPM	USE	120-0008	68 PF	130-6805	103982-01	OMIT	OMIT
-06	200 TPI, 4400 BPI, 2400RPM	USE	120-0004	43 PF	130-4305	103982-01	OMIT	OMIT

[3] TABLE III

PART NO.	REFERENCE DESIGNATION
100-1525	R36
100-3915	R35
101-1015	R37
104-3161	R34
139-2244	C9 THRU 14
200-4123	Q8
300-4446	CR6
700-0132	U16,18
700-4040	U10
700-4121	U12
700-4300	U15
700-4741	U11,14,17,19
103983-02	U13

SPARE LOGIC ELEMENTS

7404		
U1		
7416		7400
U2		U4
7474		745132
U20		U16

REF DESIGNATION

LAST USED	NOT USED	DELETED
C14		
CR6		
DL1		
Q8		
R38		R38,
TP12		
U20		
RT3		RT1,3
W2		

8. ALL DIODES ARE 1N4446.

7. ALL PNP TRANSISTORS ARE 2N4125.

6. ALL CAPACITOR VALUES ARE IN MICROFARADS, ±20%, 20 VOLTS

5. ALL RESISTOR VALUES ARE IN OHMS, ±1%, 1/4WATT.

4. ON ALL I.C.'S PIN NO.7 IS GND AND PIN NO.14 IS +5V.

[3] FOR PART NUMBER, SEE TABLE III

[2] FOR 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

THERMISTOR MOUNT ——— 103456
TEMP & WRITE COMP ——— 103977
SPECIFICATION NUMBER ——— 103980
REFERENCE DRAWINGS

TP11
2 WDC
3 WP

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
.XX ± ANGULAR ±
.XXX ± X 1/2°
X ±
X ±
BREAK ALL SHARP CORNERS
APPROX .010
FINISH:

SIGNATURES	DATE
DR.	
CHK. T.B.R.	4/24/78
MFR.	
ENGR.	
PROJ. ENGR. A.N.	4/24/78

MATL:

103977	D3000
NEXT ASSY	PART USED ON
APPLICATION	

PERTEC PERIPHERAL EQUIPMENT

TITLE
SCHEMATIC, TEMPERATURE & WRITE COMPENSATION

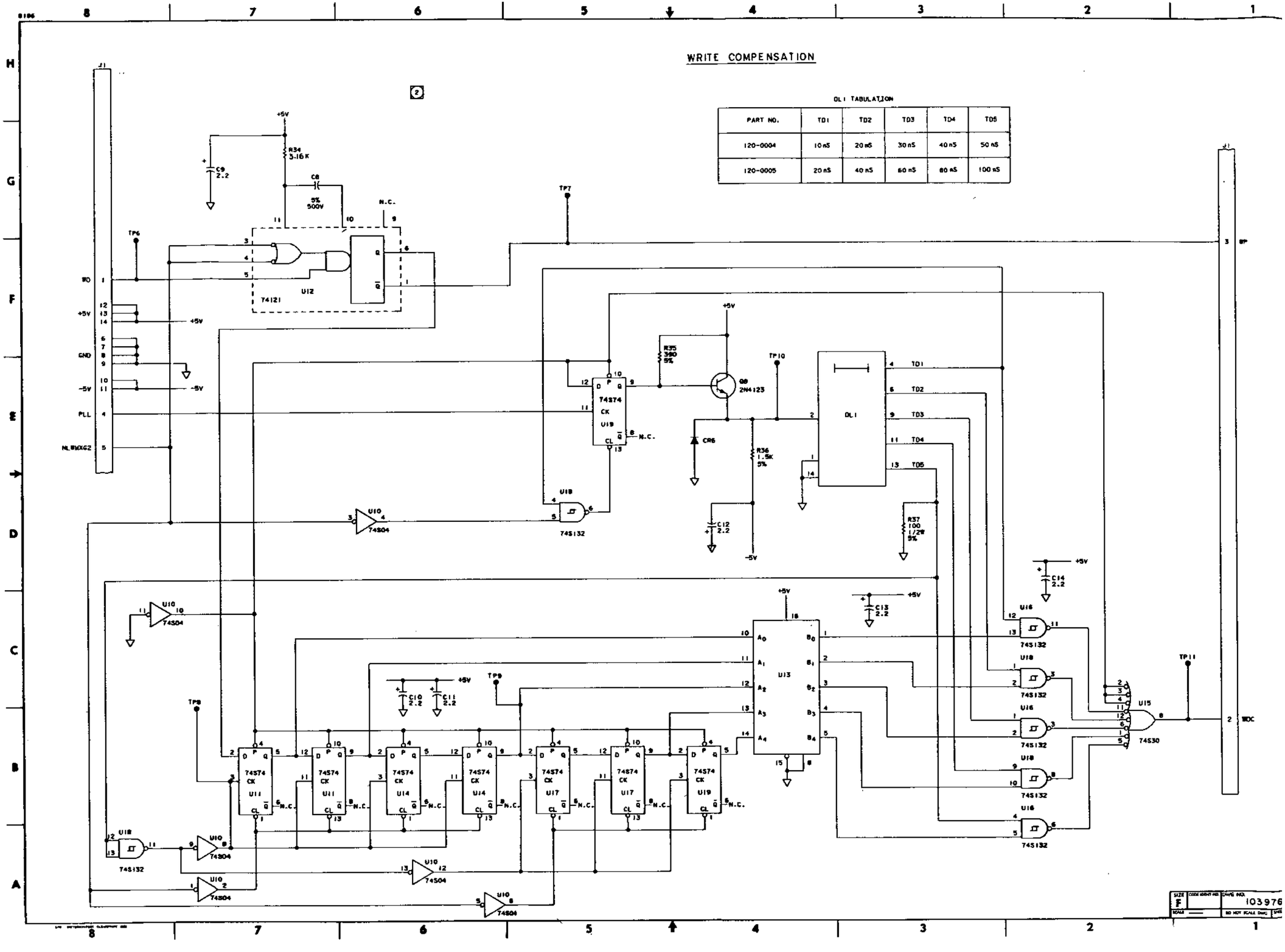
SIZE	CODE IDENT NO.	DWG NO.	REV
F		103976	K
SCALE —	DO NOT SCALE DWG.	SHEET 2 OF 3	

SIZE	CODE IDENT NO.	DWG NO.	REV
F		103976	-H
SCALE —	DO NOT SCALE DWG.	SHEET 2 OF	

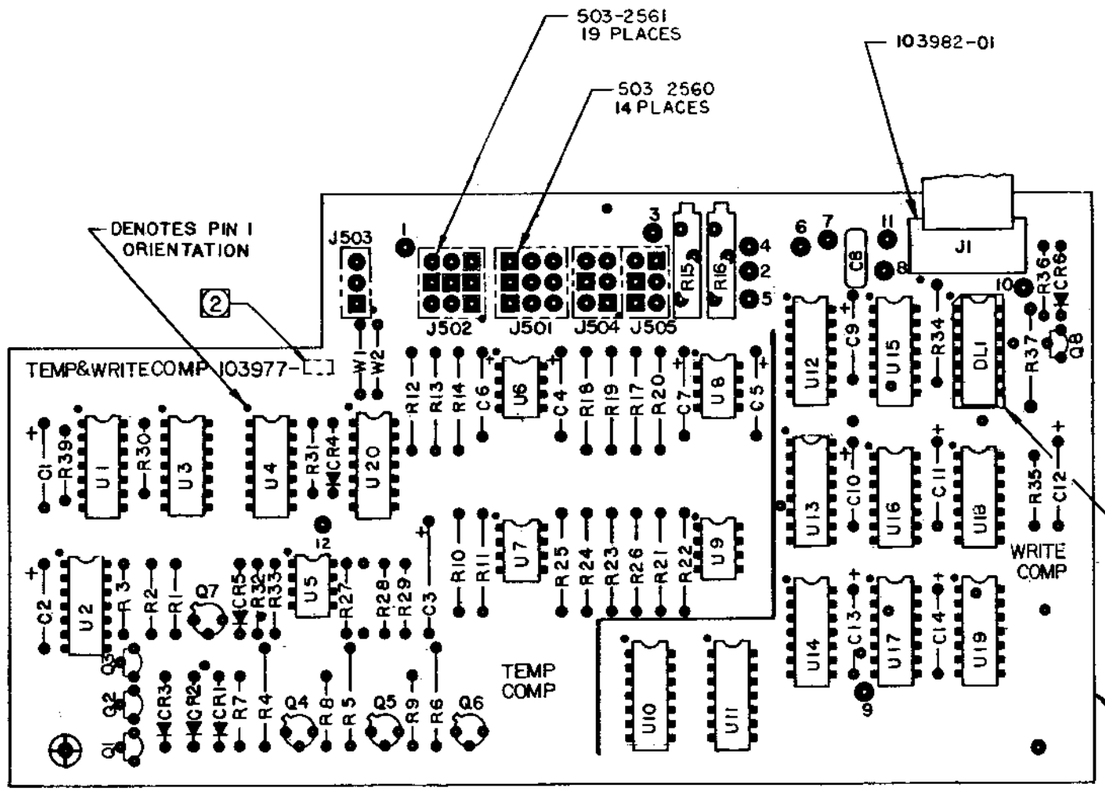
WRITE COMPENSATION

DL1 TABULATION

PART NO.	TD1	TD2	TD3	TD4	TD5
120-0004	10 nS	20 nS	30 nS	40 nS	50 nS
120-0005	20 nS	40 nS	60 nS	80 nS	100 nS



REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	ERN 7414 PRODUCTION REL				
B	ECN 7713				
C	ECN 8069				
D	ECN 8464				
E	ECN 8521				
F	ECN 8743				
G	ECN 8929				
H	ECN 8961				
J	ECN 9014				
K	ECN 9878				
L	ECN 10887				



SPECIFICATION 103980
SCHEMATIC 103976

REF DRAWINGS

PART NO. 103977-01 REV N

[3] THIS ASSEMBLY SHALL BE MADE FROM PROCESS BOARD 103978-01 REV H AND SUBSEQUENT.

[2] MARK VERSION NO. AND VERSION ISSUE LETTER.

ASSEMBLE PER STANDARD MFG METHODS.

NOTES: UNLESS OTHERWISE SPECIFIED

	D8000
NEXT ASSY	I/W USED ON
APPLICATION	

SIGNATURES	DATE
DR Lexington	4/21/82
CHK	4/19/82
DES	
ENGR	
PROJ. ENGR	4/16/82

PERTEC PERIPHERAL EQUIPMENT

TITLE: PCBA TEMPERATURE AND WRITE COMPENSATION

FINISH:

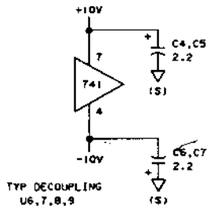
MATL: SEE L M

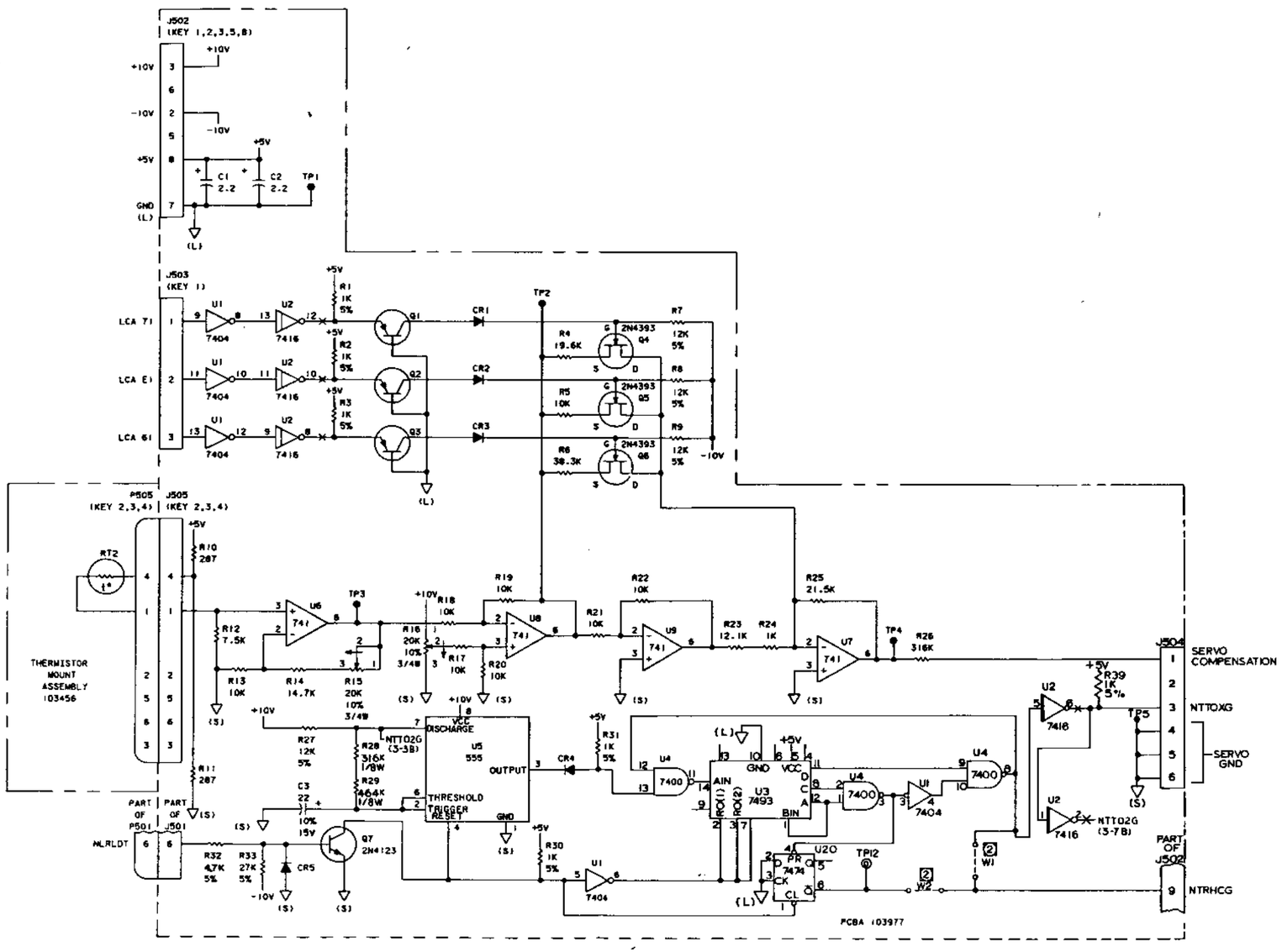
SIZE	CODE IDENT NO	DWG NO	REV
D		103977	L

SCALE 2/1 DO NOT SCALE DWG SHEET 1 OF 1

103977 AL

TEMPERATURE COMPENSATION





[3] THIS ASSEMBLY SH
103978-01 REV H

[2] MARK VERSION NO.

1 ASSEMBLE PER ST

NOTES: UNLESS OTHI

SIZE	CODE IDENT NO	DWG NO	REV
F		103976	
SCALE	DO NOT SCALE DWG	SHEET 3 OF	

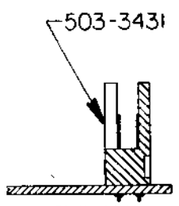
IFY

ARD

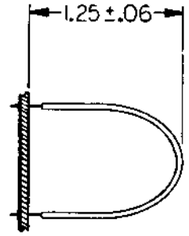
3754

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	ERN 7-AM PROD RELEASE	11-8-78	WLM		
B	ECN 7254	4/30/79	GDL		
C	ECN 7726				
D	ECN 7754				

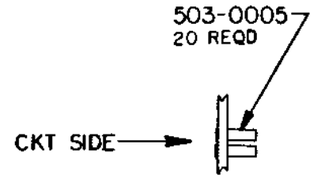
H



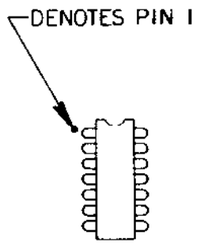
SECTION A-A
MTG DETAIL FOR J305



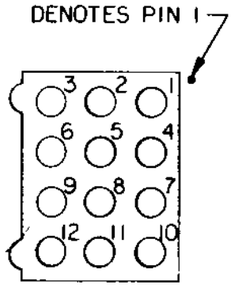
SECTION B-B
W1 & W2



VIEW C-C
INSERTION FOR J300
THRU J303 FROM
CIRCUIT SIDE

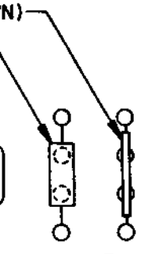


IC ORIENTATION

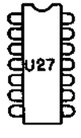


MOLEX CONN ORIENTATION

TO-92 TRANSISTOR
MAX MTG HEIGHT



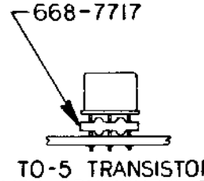
DETAIL E
SCHEMATIC 103750
ASSEMBLY INFORMATION



-01 THRU -04

-05 THRU -08 (8)

DETAIL G



TO-5 TRANSISTOR
MTG CONFIGURATION

PART NO. 103751-03 REV 7

FOR ASSY VERSION INFORMATION SEE SCHEMATIC 103750
FOR LIST OF MATERIAL SEE LM103751 & APPLICABLE DASH NO.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES
XX ± —
XXX ± —
X ± —
ANGULAR ± —
FINISH
MATL

SIGNATURES	DATE
DR	
CHK	
QE	
ENGR	
PROJ ENGR	

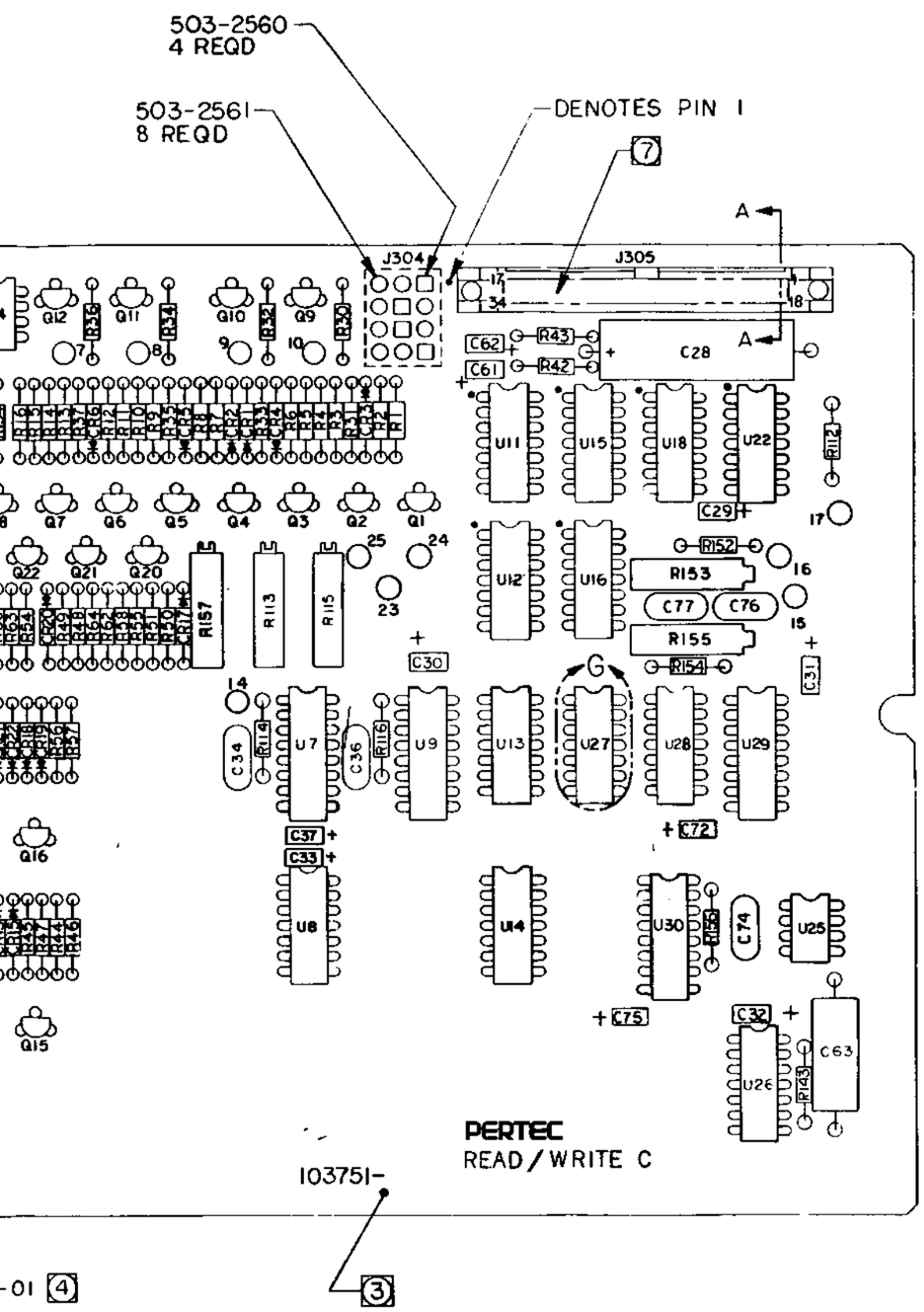
PERTEC PERIPHERAL EQUIPMENT

TITLE: PCBA
READ / WRITE C

TOP ASSY	
NEXT ASSY	USED ON
APPLICATION	

SIZE	CODE IDENT NO	DWG NO	REV
E		103751	D

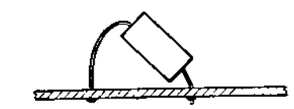
SCALE 2/1 DO NOT SCALE DWG SHEET 1 OF 1



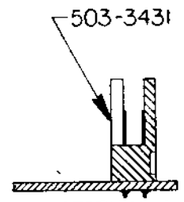
-01 [4]

9. ALTERNATE DIODE P/N 300-4446 MAY BE SUBSTITUTED FOR P/N 300-0115 ONLY WITH PRE-WRITTEN ENGINEERING APPROVAL.
8. FOR VERSIONS -05 THRU -08 REIDENTIFY U27 AS J306.
7. REMOVE PIN 31 FOR CONNECTOR KEYING.
6. MOUNT L1, 2 & 3 ON END AS INDICATED IN VIEW D-D.
5. C22 & 25 ALTERNATE CONFIGURATION SHOWN IN PHANTOM.
4. THIS ASSY SHALL BE MADE FROM PROCESS BOARD 103752-01 REV C AND SUBSEQUENT.
3. MARK PART ASSY VERSION NO. AND VERSION ISSUE LETTER.
2. ASSEMBLE PER STANDARD MFG METHODS.
1. REFERENCE DRAWINGS: SCHEMATIC 103750
   SPECIFICATION 103754

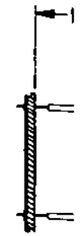
NOTES: UNLESS OTHERWISE SPECIFIED.



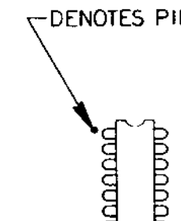
VIEW D-D [6]
TYP METHOD OF
MOUNTING INDUCTORS L1, 2 & 3



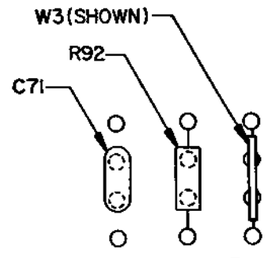
SECTION A-A
MTG DETAIL FOR J305



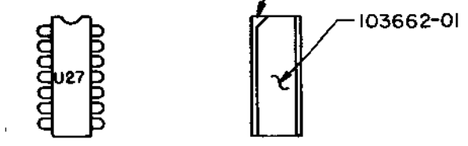
SECT
W1 &



IC ORIENTATION

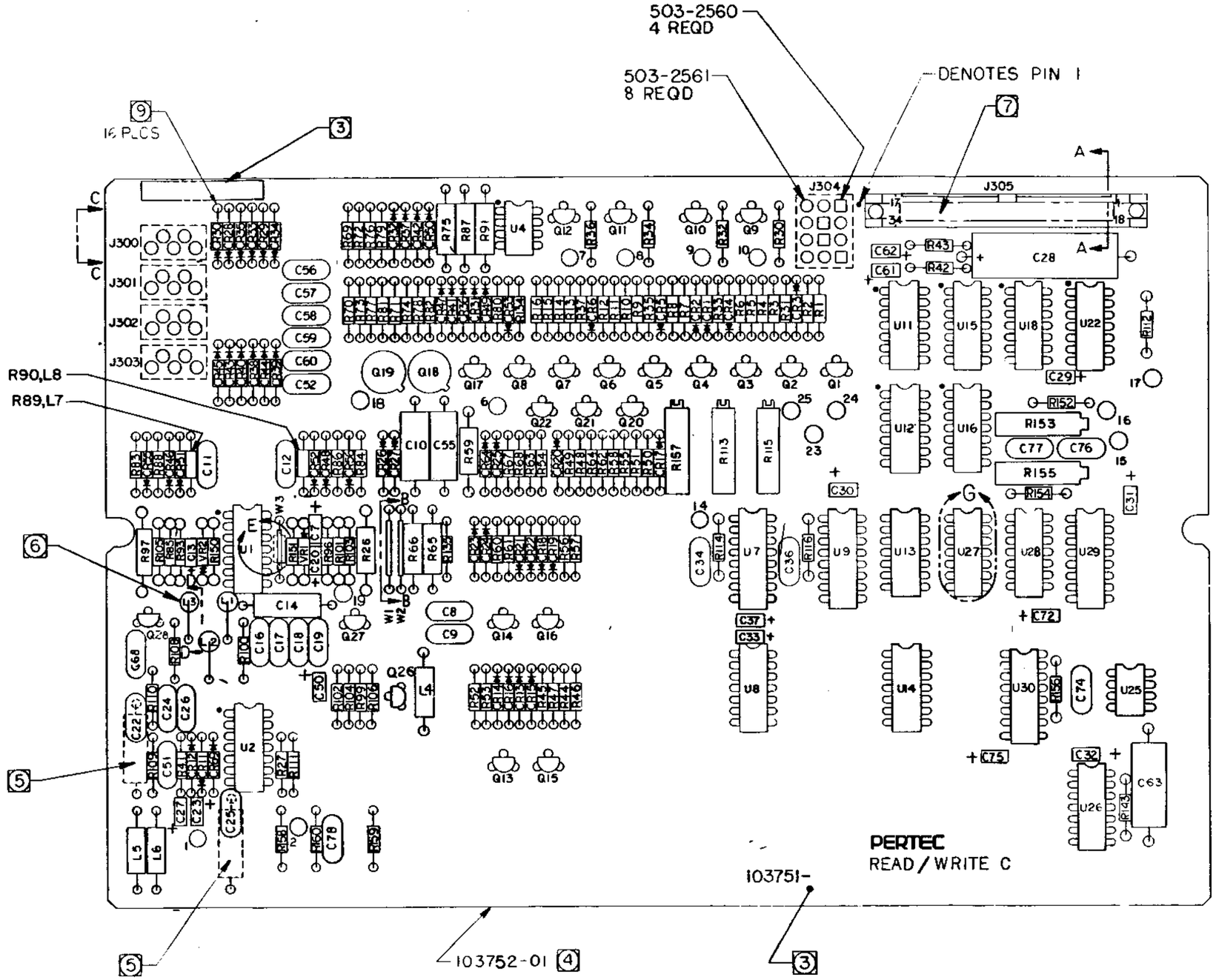


DETAIL E
SEE SCHEMATIC 103750
FOR ASSEMBLY INFORMATION



-01 THRU -04 -05 THRU -08 [8]

DETAIL G



9 AL
SU
PR

8 FC
U2

7 RE

6 MC
IN

5 C2
SH

4 TH
10

3 M
AN

2. AS

1. RE

NOTES

VIEW
TYP MET
MOUNTING