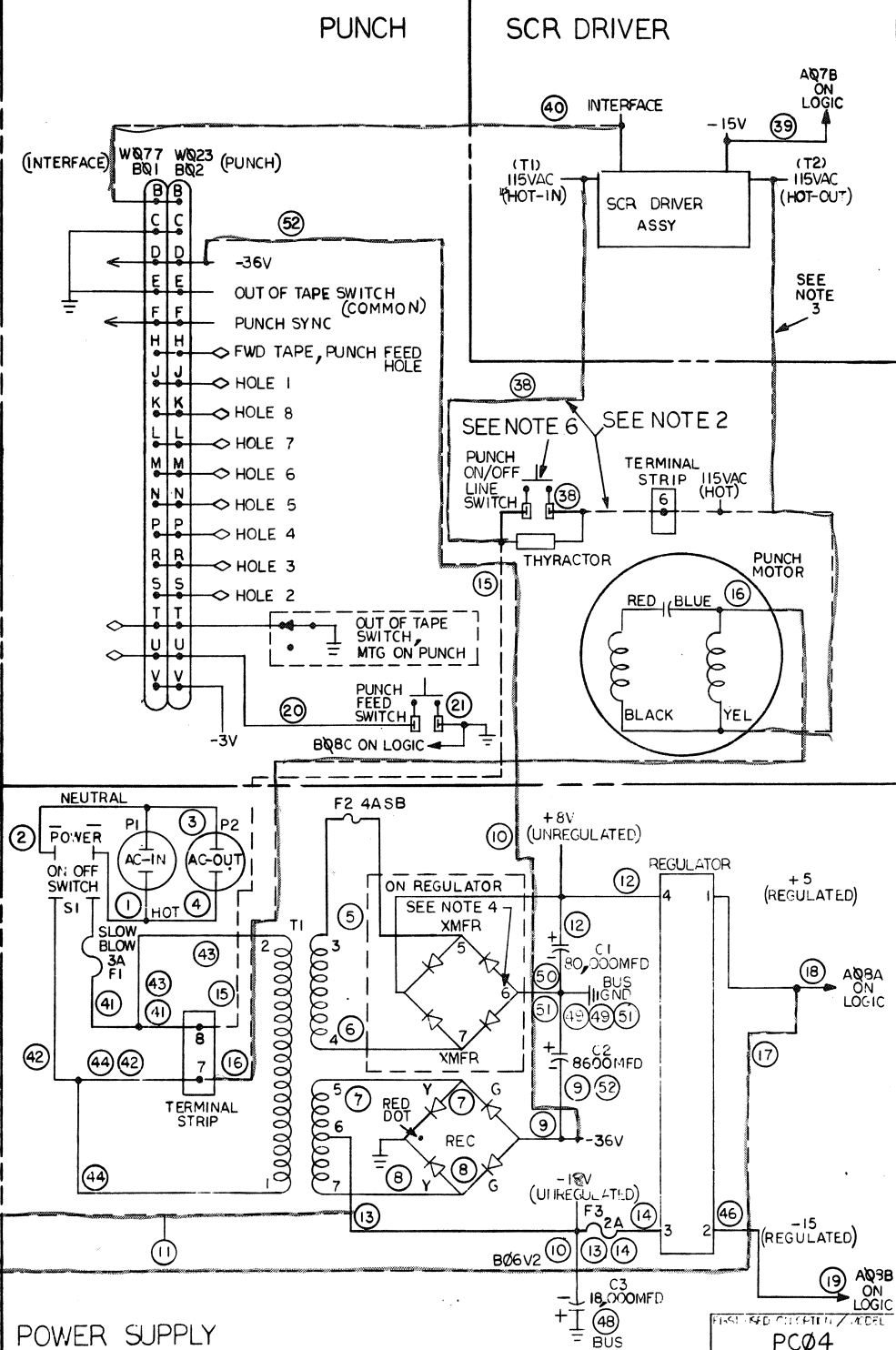
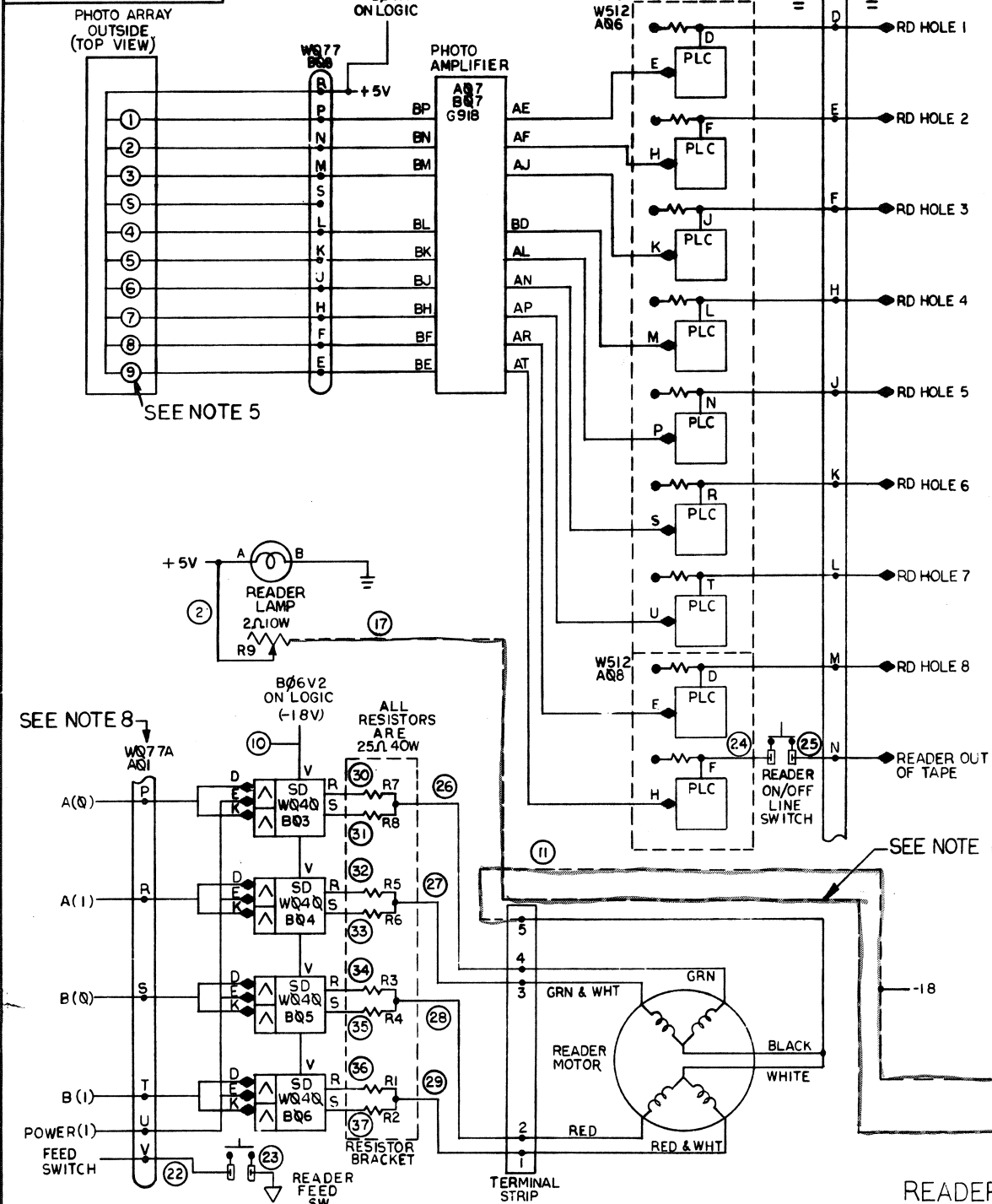


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- NOTES:**
1. DOTTED LINES INDICATE POSSIBLE CONNECTIONS BETWEEN POWER SUPPLY, READER, PUNCH AND SCR DRIVER. SEE LEGEND.
 2. WIRE NO. 38 HAS TWO POSSIBLE ROUTES DEPENDING ON THE SCR DRIVER OPTION WITH THE OPTION IT GOES TO THE SCR BOARD WITHOUT THE OPTION IT GOES TO THE TERMINAL STRIP.
 3. WITH SCR DRIVER THE BLACK-YEL COMBINATION FROM THE PUNCH MOTOR GOES TO THE SCR BD. WITHOUT DRIVER IT GOES TO THE TERMINAL STRIP.
 4. THE UNCIRCLED NUMBERS 1 THRU 7 REFER TO CONNECTIONS ON REGULATOR BOARD.
 5. THIS PHOTO TRANSISTOR USED TO DETECT OUT OF TAPE.
 6. WITH SCR OPTION SWITCHED AC WILL BE WIRED TO COMMON TERMINAL. THYRISTOR NOT REQD.
 7. CIRCLED NUMBERS 1 THRU 46 ARE WIRE NUMBERS. SEE TABLE.
 8. SEE PAGE 2 FOR MODELS BB, BC, & RB. SEE PAGE 3 FOR MODELS BL, BM, PL, & PM.

WIRE NO.	COLOR	WIRE NO.	COLOR
1	RED	24	WHITE-YELLOW
2	WHITE	25	BROWN
3	WHITE	26	WHITE-BROWN
4	RED	27	WHITE-ORANGE
5	ORANGE	28	WHITE-YELLOW
6	GRAY-BLUE	29	WHITE-VIOLET
7	GRAY-WHITE	30	BROWN
8	YELLOW	31	BROWN
9	BLUE	32	ORANGE
10	GRN	33	ORANGE
11	GRN	34	YELLOW
12	GRAY-VIOLET	35	YELLOW
13	GREEN	36	VIOLET
14	GREEN	37	VIOLET
15	RED	38	RED
16	WHITE	39	WHITE-BLUE
17	GRAY-RED	40	WHITE-GREEN
18	GRAY-RED	41	RED
19	GRAY-YELLOW	42	WHITE
20	WHITE	43	RED
21	BLACK	44	WHITE
22	YELLOW	45	WHITE
23	WHITE-BLACK	46	GRAY-YELLOW
48THRU51	BLACK	47	GRAY-RED
52	BLUE		

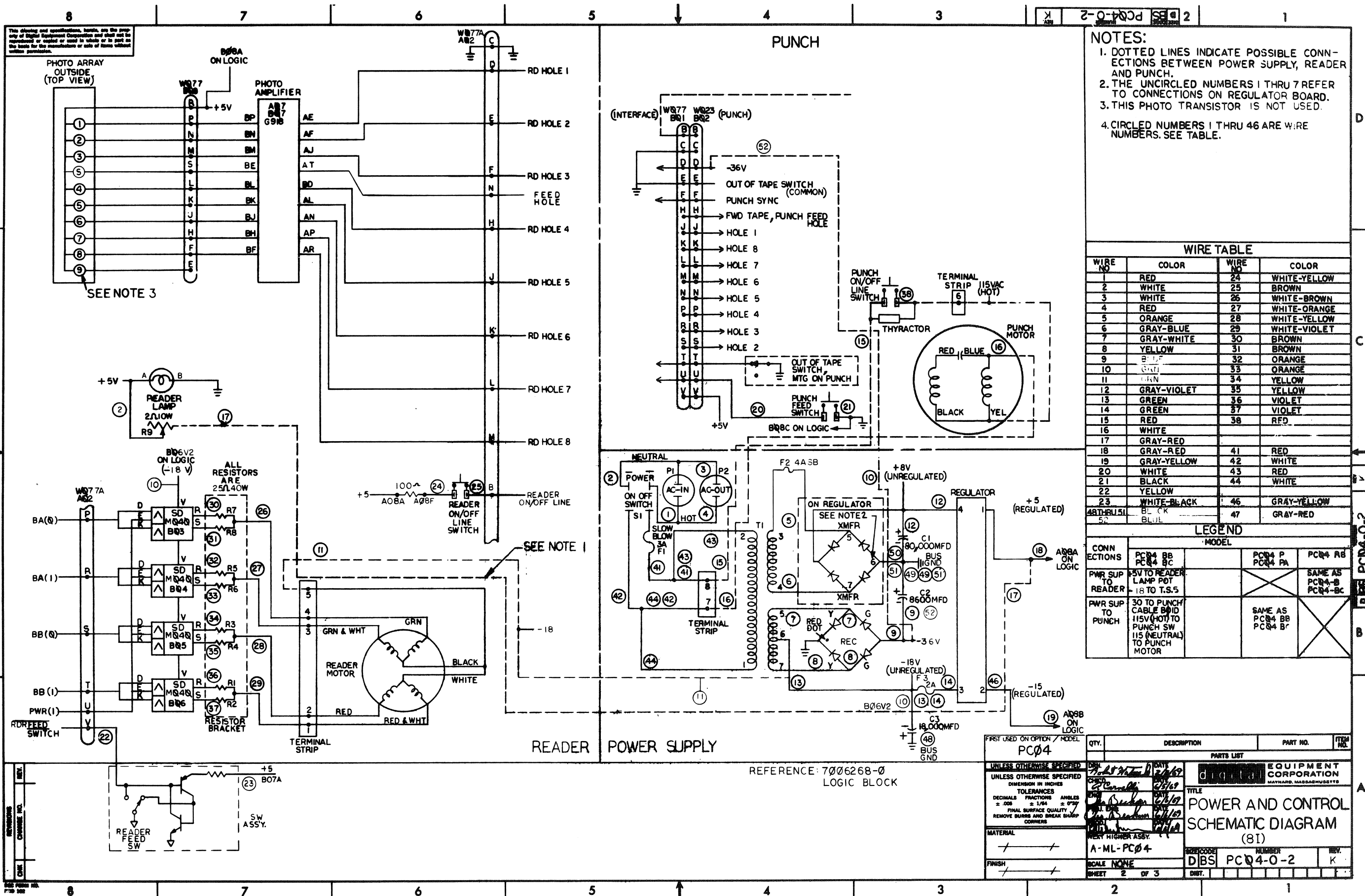
LEGEND			
CONN. ECTIONS	MODEL	PC04 B	PC04 R
PWR SUP TO READER	SAME AS PC04-B	PC04-B	SAME AS PC04-B
PWR SUP TO PUNCH	SAME AS PC04-B	PC04-B	SAME AS PC04-B
PWR SUP TO SCR DRVR	SAME AS PC04-B	PC04-B	SAME AS PC04-B
SCR DRVR TO PUNCH	SAME AS PC04-B	PC04-B	SAME AS PC04-B

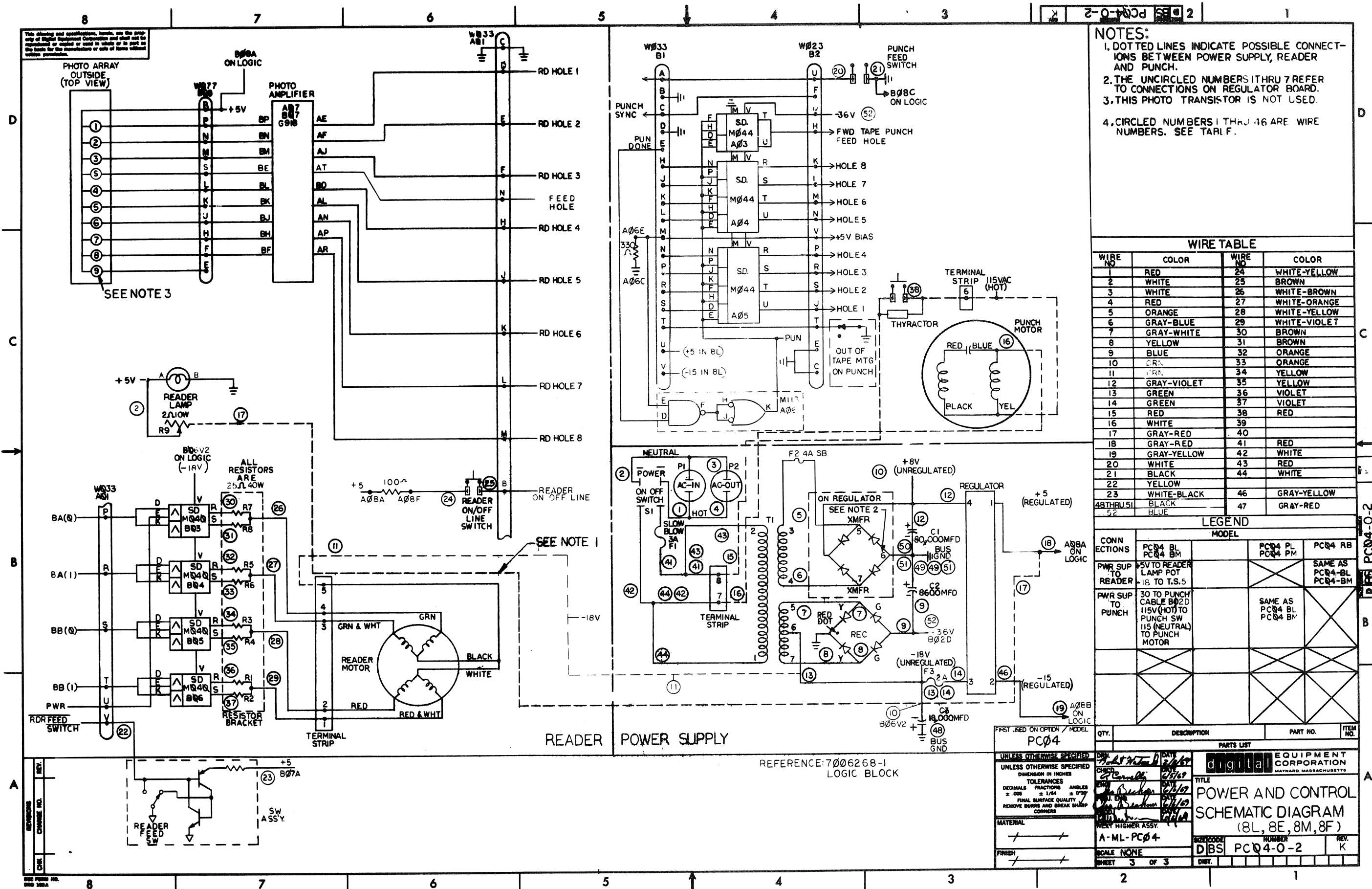
REV.	CHANGE	DATE	BY	CHKD.
1	PC04-00006	7-11-69	A	
2	PC04-00003	7-11-69	B	
3	PC04-00002	7-11-69	C	
4	PC04-00001	7-11-69	D	
5	PC04-00000	7-11-69	E	
6	PC04-00000	7-11-69	F	
7	PC04-00000	7-11-69	G	
8	PC04-00000	7-11-69	H	
9	PC04-00000	7-11-69	I	
10	PC04-00000	7-11-69	J	
11	PC04-00000	7-11-69	K	
12	PC04-00000	7-11-69	L	
13	PC04-00000	7-11-69	M	
14	PC04-00000	7-11-69	N	
15	PC04-00000	7-11-69	O	
16	PC04-00000	7-11-69	P	
17	PC04-00000	7-11-69	Q	
18	PC04-00000	7-11-69	R	
19	PC04-00000	7-11-69	S	
20	PC04-00000	7-11-69	T	
21	PC04-00000	7-11-69	U	
22	PC04-00000	7-11-69	V	
23	PC04-00000	7-11-69	W	
24	PC04-00000	7-11-69	X	
25	PC04-00000	7-11-69	Y	
26	PC04-00000	7-11-69	Z	

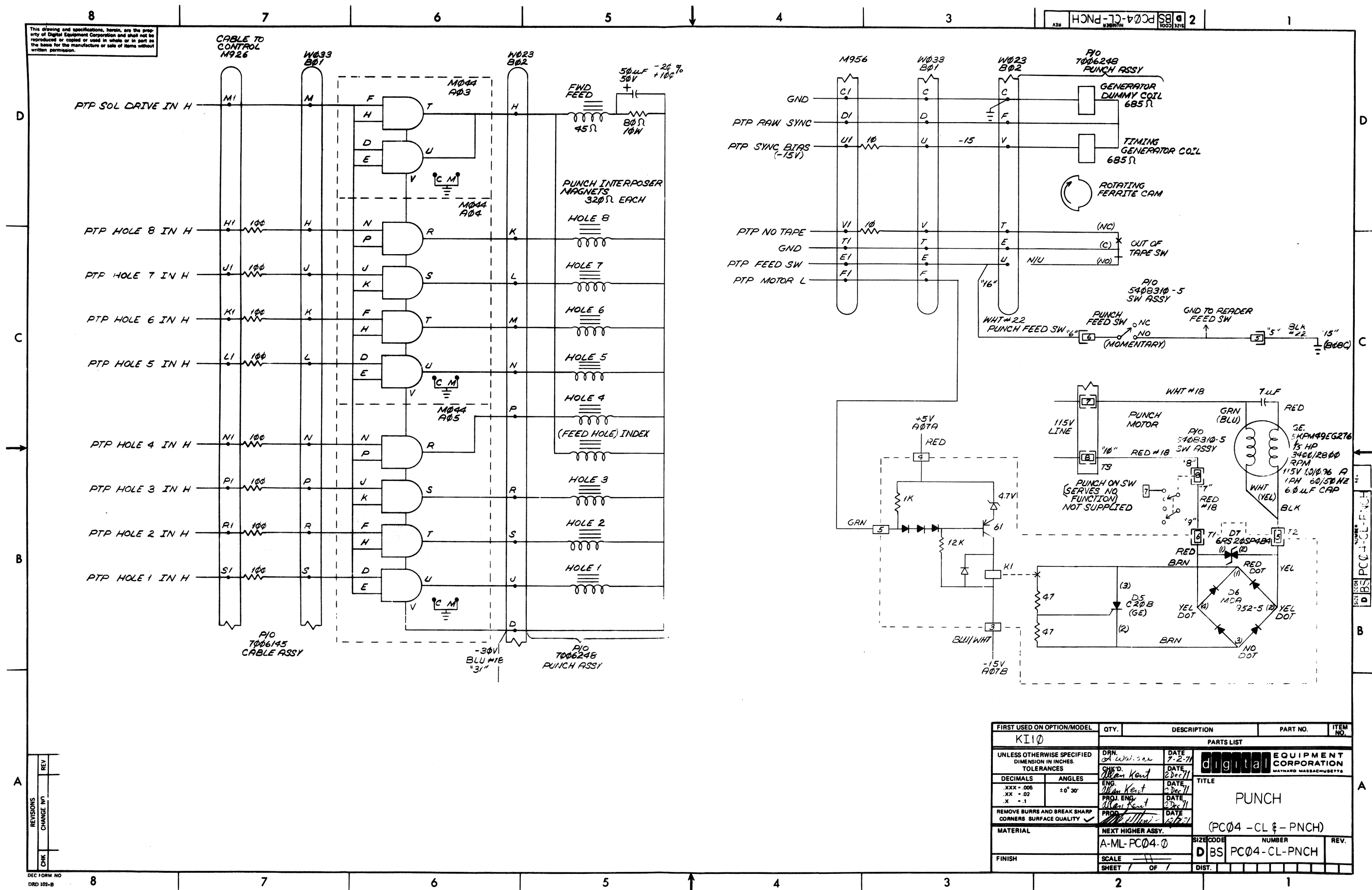
NOTE 9: SEE NOTE 4 ON AD-7006268-0-0

REFERENCE: 7006268-0-0 LOGIC BLOCK

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES ± .005 ± .125 ± .005 FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DATE 7/11/69 BY A. J. CARROLL CHKD. J. CARROLL TITLE POWER AND CONTROL SCHEMATIC DIAGRAM NEXT HIGHER ASSY. A-ML-PC04- SCALE NONE SHEET 1 OF 3	DATE 7/11/69 BY A. J. CARROLL CHKD. J. CARROLL TITLE POWER AND CONTROL SCHEMATIC DIAGRAM NEXT HIGHER ASSY. A-ML-PC04- SCALE NONE SHEET 1 OF 3	DATE 7/11/69 BY A. J. CARROLL CHKD. J. CARROLL TITLE POWER AND CONTROL SCHEMATIC DIAGRAM NEXT HIGHER ASSY. A-ML-PC04- SCALE NONE SHEET 1 OF 3
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- NOTES:
1. G918 REVISION MUST BE "B" CIRCUIT SCHEMATIC, "D" ETCHED BOARD OF HIGHER.
 2. * 50 HZ VARIATION

	1	2	3	4	5	6	7	8
A	W077					W512	G918	W512
B	PUNCH CONTROL CABLE	W077	W023	W040	W040	W040	W040	W077

PC04-B-BA*-C-CA*
(SEE E-AD-7006268-0-0 WITH NOTE 4; PDP-8/S, -9, KAI0)

	1	2	3	4	5	6	7	8
A	W077						G918	
B	PUNCH CONTROL CABLE	W077	W023	W040	W040	W040	W040	W077

PC04-BB-BC*
(7006268-0; PDP-8/I)

	1	2	3	4	5	6	7	8
A	W033	W044	W044	W044	W044	W044	G918	
B	PUNCH CONTROL CABLE	W033	W023	W040	W040	W040	W040	W077

PC04-BL-BM*
(7006268-1; PDP-8/L, -8/E, -8/M, -8/F)

	1	2	3	4	5	6	7	8
A								
B	PUNCH CONTROL CABLE	W077	W023					

PC04-P-PA*
(SEE E-AD-7006268-0-0 WITH NOTE 4; PDP-8/S)

	1	2	3	4	5	6	7	8
A			W044	W044	W044			
B	PUNCH CONTROL CABLE	W033	W023					

PC04-PL-PM*
(7006268-1; PDP-8/L, -8/E, -8/M, -8/F)

	1	2	3	4	5	6	7	8
A	W033						G918	
B	PUNCH CONTROL CABLE	W033	W023	W040	W040	W040	W040	W077

PC04-RL
(7006268-1; PDP-8/L, -8/E, -8/M, -8/F)

	1	2	3	4	5	6	7	8
A	W077					W512	G918	W512
B	PUNCH CONTROL CABLE	W077	W023	W040	W040	W040	W040	W077

PC04-R
(SEE E-AD-7006268-0-0 WITH NOTE 4; PDP-8/S)

	1	2	3	4	5	6	7	8
A	W077						G918	
B	PUNCH CONTROL CABLE	W077	W023	W040	W040	W040	W040	W077

PC04-RB
(7006268-0; PDP-8/I)

	1	2	3	4	5	6	7	8
A	W033	W044	W044	W044	W044	W044	G918	
B	PUNCH CONTROL CABLE	W033	W023	W040	W040	W040	W040	W077

PC04-CL-CM*
(7006268-2; KAI0)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PC04-0				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. P. MARCOTTI	DATE 6-6-69	PARTS LIST	
DECIMALS	CHK'D. R. CARVELL	DATE 6-6-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
ANGLES	ENG. G. BECKNER	DATE 6-6-69	TITLE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. G. BECKNER	DATE 6-6-69	MODULE UTILIZATION LIST PC04	
MATERIAL	PROD. R. ANTONUCCIO	DATE 6-6-69	NEXT HIGHER ASSY.	
FINISH	A-ML-PC04	SCALE	SIZE CODE DMU	NUMBER PC04-0-3
	SHEET 1 OF 1	DIST.		REV. D

DIGITAL EQUIPMENT CORPORATION

MAYNARD, MASSACHUSETTS

PARTS LIST

PARTS LIST

MADE BY P. MARCOTTE		CHECKED <i>G. Carwell</i>		SECTION 1
DATE		DATE	6/5/69	
ENG		PROD		ISSUED SECT.
DATE	<i>6/4/69</i>	DATE	<i>6/4/69</i>	1

[illegible]

TITLE MODULE UTILIZATION	ASSY NO. D-MU-PCØ4-Ø-3	SIZE CODE A PL	NUMBER PCØ4-Ø-3	REV D	ECO NO. PC04-00055
	SHEET 1 OF 2	DIST.			

DEC FORM NO.
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

MASSACHUSETTS PARTS LIST

MADE BY		P. MARCOTTE		CHECKED		R. CARVELLI		SECTION	
DATE				DATE		6/5/69		1	
ENG		G. BUCKNER		PROD		ANTONNUCIO			
DATE		6/6/69		DATE		6/6/69		ISSUED SECT.	
								1	

[illegible]

TITLE	MODULE UTILIZATION	ASSY NO.	SIZE CODE	NUMBER	REV.	ECO NO.
		D-MD-PC04-0-3	A PL	PC04-0-3	D	
SHEET 2 OF 2		DIST.				

DEC FORM NO.
DRA 110

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS					
ENGINEERING SPECIFICATION					
TITLE PC#4 Engineering Specification					
DATE 11/11/69					
REV CHG NO DESCRIPTION DATE APPD BY					
A 10046 M. LEIS 11/11/69					
General Information:					
The PC#4 comes in eight (8) configurations. They are the PC#4P, P (basic punch), PC#4R, RE (basic reader), PC#4AB, BB, BL, (punch and reader), and PC#4C (punch, SCR, and reader). The 50 cycle variations are PC#4PA, PM; PC#4BA, BC, BM, and PC#4CA with no variation in PC#4R and RB. Table 1-1 gives the block schematic references, UML, interface cables, and the applicable computers.					
Logic Levels: Negative Logic Systems					
Logic 1 is -3.2V to -3.9 volts					
Logic 0 is 0V to -0.3 volts					
Logic Levels: Positive Logic Systems					
Logic 1 is >+2.0v					
Logic 0 <+0.8v					
Reader Signals:					
Reference drawing BS-D-PC#4-0-2					
(1) A(0), A(1), B(0), and B(1) are the signals used to drive the stepping motors via the four solenoid drivers.					
The timing chart and graph for these signals would be:					
DEC FORM NO. 1004 107					

CONTINUATION SHEET					
TITLE PC#4 Engineering Specification					
(5) The eight data holes also require a 10 msec. level to activate the punches.					
(6) Out-of-tape signal is generated from a micro-switch on the punch. It is at ground when the punch is out-of-tape.					
(7) Punch feed switch is used to manually feed tape through the punch.					
(8) The -3 volt or +5v supply is a bias on the punch sync coil.					
(9) The punch on/off power switch is used in the options not using the SCR driver. It simply supplies 115 volts to the punch motor.					
Power Supply					
(1) Regulated +5 volts $\pm .25$ volts					
(2) Regulated -15 volts ± 1.0 volt					
(3) -36 volts ± 4 volts					
Power Requirements					
Unit will run at 50 or 60 cycles, 115 volts $\pm 10\%$. 2.5 AMPS run					
Reader					
(a) Temperature					
(1) 55° - 110°F operating, 10° - 150°F non-operating					
(b) Humidity					
(1) 20% - 95% w/o condensation operating; 5% - 95% w/o condensation non-operating.					
(c) Speed					
(1) 300 - 310 characters/second full speed.					
(2) 20 - 26 character/second single character rate.					
(d) Type of tape					
(1) non-oil (less than 12% transmissivity)					
(e) Tape Life: Acceleration de-accelerate type operation - 30,000 cycles.					
DEC FORM NO. 1004 108					

CONTINUATION SHEET					
TITLE PC#4 Engineering Specification					
(2) Power (1) serves the function of supplying only half current to the stepping motor when the motor is stopped. This signal is 0 volts when the motor is stopped and -3 volts when the motor is active for negative logic systems and >+2.0 volts when motor is active and <+0.8 v when the motor is stopped for positive logic systems.					
(3) The reader feed switch is simply an off line means of moving tape through the reader. A ground level performs this function.					
(4) The reader on/off line switch allows the operator to disable the unit from reading by putting the switch in the off-line position.					
(5) The reader on/off line switch is open whenever the reader is off line, and is >2.4v when the reader is on line.					
(6) Data Output Lines:					
Negative Systems					
Positive Systems					
Hole					
No Hole					
-3 volts					
0 volts					
+2.4 volts					
0 volts					
Punch Signals:					
Refer to drawing BS-D-PC#4-0-2					
(1) The interface signal used to turn on the punch motor with an SCR driver option is Gnd when active and open or -3v when inactive.					
(2) The -36 volt is supplied to the solenoid coils on the punch motor and also to the solenoid drivers at the external control.					
(3) Punch sync is the signal generated from the sync timing wheel on the punch. Equally spaced (in time) positive and negative pulses (one each) for each shaft revolution is generated on this line.					
(4) Forward tape and punch feed hole: A ground level for 10 msec. $\pm 10\%$ will punch feed hole and then advance the tape forward in preparation for another cycle for all configurations except PC#4PI and BL when the solenoid drivers are activated by a +2.0v signal.					
DEC FORM NO. 1004 109					

CONTINUATION SHEET					
TITLE PC#4 Engineering Specification					
Punch					
(a) Temperature					
(1) 55° - 110°F operating; 10° - 150°F non-operating					
(b) Humidity					
(1) 20% - 95% w/o condensation - operating					
(2) 5% - 95% w/o condensation - non-operating					
(c) Tension of tape supply					
(1) Not to exceed 6 ounces					
(d) Speed					
(1) 50 characters/second $\pm 5\%$					
Margins					
+5v is +5v $\pm .5v$					
-15v is -15v $\pm 20\%$					
-30v is -36v $\pm 8\%$					
DEC FORM NO. 1004 109A					

CONTINUATION SHEET					
TITLE PC#4 Engineering Specification					
TABLE 1-1 PC#4 Configuration					
CONFIGURATION	REFERENCE BLOCK SCHEMATICS	PUNCH MODULES	INTERFACE CABLES	READER MODULES	APPLICABLE COMPUTERS
PC#4P	D/BS/PC#4-0-2 Page 1 of 3	None	1-W077A	N/A	PDP8; PDP8/S; PDP8/I
PC#4PL	D/BS/PC#4-0-2 Page 3 of 3	3-M044	1-W033A	N/A	PDP8/L; PDP8E
PC#4R	D/BS/PC#4-0-2 Page 1 of 3	N/A	1-W077A	1-G918 4-W040 2-W512	PDP8; PDP8/S
PC#4RB	D/BS/PC#4-0-2 Pages 2 and 3 of 3	N/A	1-W077A	1-G918 4-M040	PDP8/I; PDP8/L PDP8/E
PC#4B	D/BS/PC#4-0-2 Page 1 of 3	None	2-W077A	1-G918 4-W040 2-W512	PDP8; PDP8/S
PC#4BB	D/BS/PC#4-0-2 Page 2 of 3	None	2-W077A	1-G918 4-M040	PDP8/I
PC#4BL	D/BS/PC#4-0-2 Page 3 of 3	3-M044	2-W033C	1-G918 4-M040	PDP8/L PDP8/E
PC#4C	D/BS/PC#4-0-2 Page 1 of 3	None	2-W077A	1-G918 4-W040 2-W512	PDP9; PDP10
				SIZE CODE SP A	NUMBER PCO-0-4
				REV A	7
				SHEET 5 OF 7	
				DEC FORM NO DRA 108A	

CONTINUATION SHEET					
TITLE PC#4 Engineering Specification - Test Procedure for Reader					
B. -15 volts on A#8B and B#8B (#1 volts).					
C. -30 volts on B#6V and B#2D (-32 to -40 volts).					
3. Shut power off and insert modules for PC#4.					
4. Apply power and make same check as in 2.					
5. Put cap. (6.8uf, 10-5306) between pins A#3A (+) and A#3C (-) and between pins B#3C (+) and B#3B (-).					
				SIZE CODE A	NUMBER PCO4-U-4
				REV A	7
				SHEET 7 OF 7	
				DEC FORM NO 16-1022 DRA 108	

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CONTINUATION SHEET

TITLE PC#4 Engineering Specification - Test Procedure for reader

1. Do not apply power until the following checks are made.
 - a. Logic block empty.
 - b. A#1A, A#2A, A#1B, A#2B, B#1A, and B#2A are bare (no wiring or bussing).
 - c. B#1B and B#2B should be bussed together without any wires on them except for the PC#4C configuration when a white/green wire will be on B#1B.
 - d. Remove reader lamp.
 - e. Check caps for proper polarity in wiring.
 - f. Put ohmmeter on X100 scale and check regulator board tabs 1 thru 5 and 7 for lack of short to ground. Tabs 6 and 8 should indicate a short to ground.
 - g. Check fuses for proper rating. Also, should be slo/blo.
 - h. Check for continuity between reader lamp ground slot and chassis ground.
 - i. Check the following wires for proper connection.

Color	Location	Color	Location
+black (str)	B#8C	*wh/blue	A#7B
#wh/black (str)	B#7C	*wh/green	B#1B
#brown (str)	A#2B A#1B	#brown (solid)	B#3R, S
#yellow (str)	A#1V	#orange (solid)	B#4R, S
#wh/yellow (str)	A#8F	#yellow (solid)	B#5R, S
+white (str)	B#1U	#violet (solid)	B#6R, S
grey/red (str)	A#8A	+punch configurations	
grey/yellow (str)	A#8B	*only on PC#4C configuration	
blue (str)	B#6V	+reader configurations	

- j. Put reader lamp back in position making sure that the tension on the lamp is sufficient for good contact.

2. Apply AC power to the unit and check.

- a. +5 volts on A#8A and B#8A (+5 volts \pm .25 volts).

DEC FORM NO DRA 108A	SIZE	CODE	NUMBER	REV
	A	SP	PCO4-U-4	A
SHEET 6 OF 7				7

