

PDP-15 SYSTEMS
TC59 MAGNETIC TAPE
TRANSPORT CONTROL
MAINTENANCE MANUAL
VOLUME 2

DRAWING NUMBER INDEX

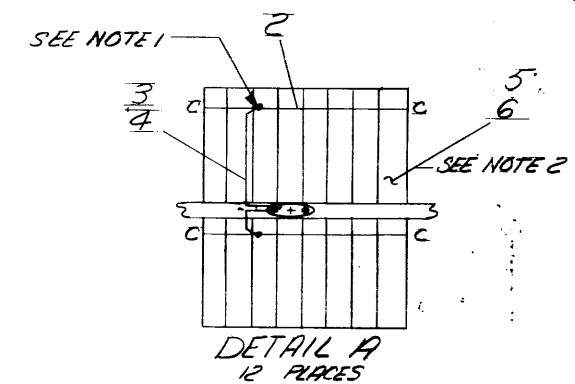
SIZE	TYPE	NUMBER	TITLE
A	ML	TC59-0	TC59 MAG TAPE CONTROL
A	PL	TC59-0-0	MAG TAPE CONTROL TYPE TC59
A	PL	7005319-0-0	WIRED ASS'Y (TC59)
D	AD	7005319-0-0	WIRED ASS'Y (TC59)
D	BS	TC59-0-1	DB REGISTER
D	BS	TC59-0-2	DATA AND IO CONTROL
D	BS	TC59-0-3	DEVICE SELECTOR
D	BS	TC59-0-4	TC59 BUSS
D	MU	TC59-0-5	UML FOR TC59
K	WL	TC59-0-6	WIRE LIST TC59/50
A	ML	TC50-0	TC50 CONTROL
D	BS	TC50-0-1	MOTION UP COUNTER AND WRITING DATA
D	BS	TC50-0-2	COMMAND
D	BS	TC50-0-3	DATA FLOW
D	BS	TC50-0-4	TIMING
D	IC	TC50-0-5	INDICATOR CONNECTIONS
D	FD	TC50-0-6	GENERAL MOTION TIMING
D	FD	TC50-0-7	WRITE FLOW
D	FD	TC50-0-8	ISOLATED FLOW LOGIC
D	FD	TC50-0-9	GENERAL FLOW GRAPH
D	FD	TC50-0-10	DATA FLOW DELAY SEQUENCE
E	TD	TC50-0-11	TIMING FLOW
A	CP	TC50-0-12	EXTERNAL COMPONENT LIST
D	MU	TC50-0-13	MODULE UTILIZATION
D	IC	TC50-0-14	POWER WIRING
B	CS	728-0-1	POWER SUPPLY 728
A	PL	728-0-1	728 POWER SUPPLY
	CS	B-834	ONE STEP POWER CONTROL PANEL 834
A	PL	834-0-1	834 POWER CONTROL
C	IA	5402526-0-0	MARGINAL CHECK PANEL ASSY
A	PL	7005261-0-0	INDICATOR PANEL
B	CS	4918-0-1	18 BIT INDICATOR BRACKET
B	CS	4917-0-1	9 BIT INDICATOR BRACKET
B	CS	R123-0-1	DIODE GATE R123
B	CS	R141-0-1	DIODE GATE R141
B	CS	R151-0-1	BINARY TO OCTAL DECODER R151
B	CS	R201-0-1	FLIP-FLOP R201
B	CS	R202-0-1	DUAL FLIP-FLOP R202
	CS	B-R203	TRIPLE FLIP-FLOP R203
	CS	B-R205	DUAL FLIP-FLOP R205
B	CS	R601-0-1	PULSE AMPLIFIER R601
B	CS	R602-0-1	PULSE AMPLIFIER R602
	CS	B-R603	PULSE AMPLIFIER R603
B	CS	5123-0-1	DIODE GATE 5123
B	CS	W005-0-1	CLAMPED LOADS W005
C	CS	W103-0-1	DEVICE SELECTOR W103
D	CS	W104-0-1	PDP-9 IO BUS MULTIPLEXER CONTROL W104
B	CS	W107-0-1	I/O BUS RECEIVER CKT. W107
B	CS	W640-0-1	PULSE AMPLIFIER W640

PARTS LIST			DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS			REVISIONS		
PART NO.	DRWG. NO.	NO. REQD.	DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG.	DEC. STOCK NO.	CHANGE NO.	DATE	ENG.	
1	A-PL-1943-D-0	3	1943-D MTG PANEL		MISC-00075 B	7-24 1970	<i>Am</i>	
2	1202188	AS REQ'D	VOLTAGE CHAIN					
3	9107560-01	A/R	#22 AWG BUS WIRE					
4	9107265-09	A/R	#22 TUBING TEFLON WHITE					
5	9107586-44	A/R	#24 AWG SOLID TEF INS WIRE (YEL)					
6	9107588-66	A/R	#24 AWG SOLID KYNAR WIRE (BLU)					
7	A-DC-7406371-0-0	A/R	LOGIC FRAME DECALS					
	K-WL-TC59-0-6	REF	WIRE LIST					
MADE BY G. GIANOULIS		DATE 2/15/67	TITLE WIRED ASS'Y (TC59)	SIZE A	CODE PL	NUMBER 7005319-0-0	REV. B	
CHECKED P. DAIGNEAULT		DATE 2/17/67	FOR	ASSY. NO. D-AD-7005319-0-0		SHEET 1 OF 1		
ENG. <i>[Signature]</i>		DATE 6/25/67	TC59					

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NOTES:

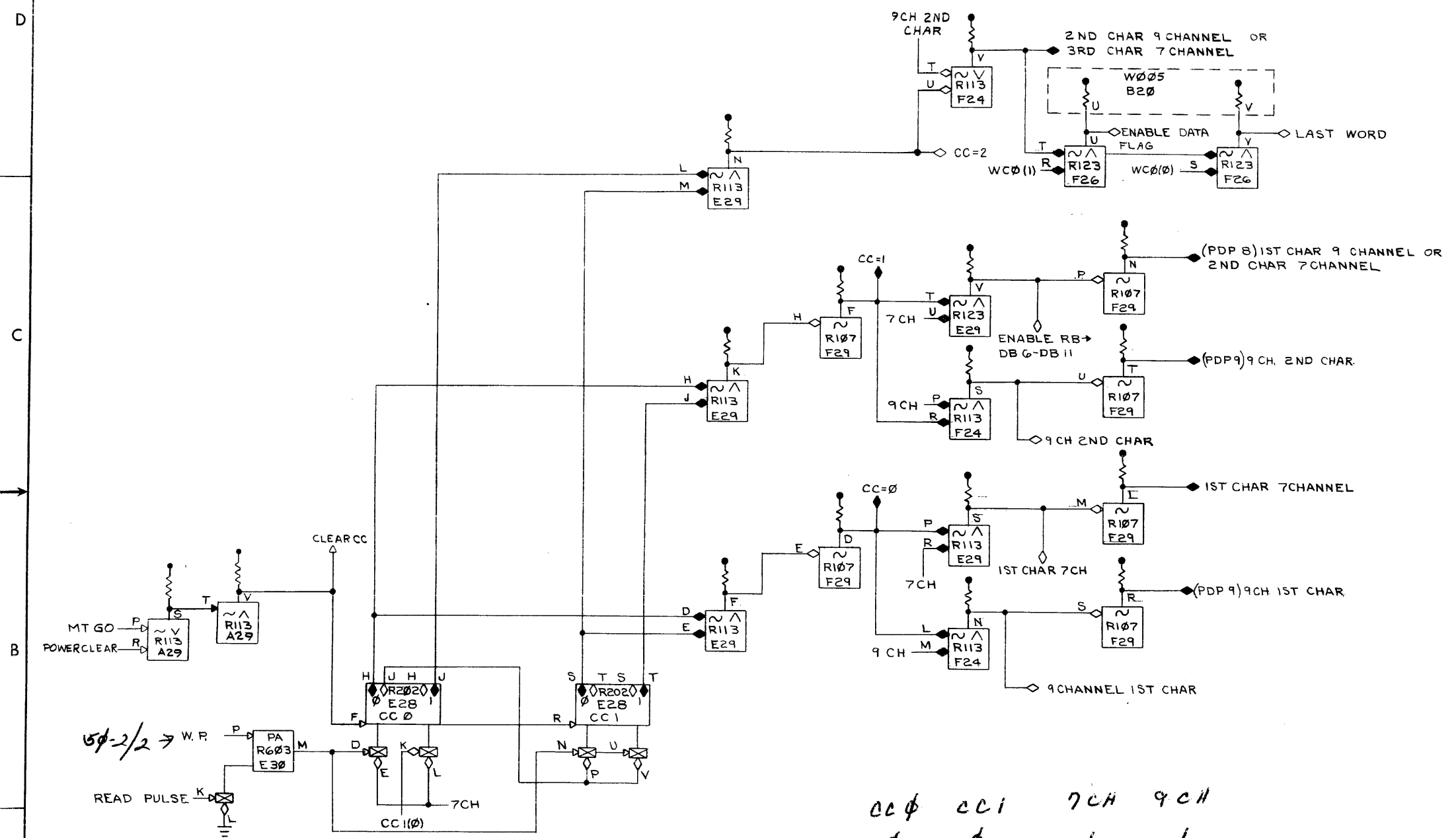
- 1 CONNECTIONS ON ITEMS 3 & 4 TO BE LOCATED AT MINIMUM PRACTICAL HEIGHT ABOVE BOARD.
- 2 USE YELLOW WIRE (ITEM 5) FOR MACHINE WRAPPED & BLUE WIRE (ITEM 6) FOR HAND WRAPPED WIRING.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED			
UNLESS OTHERWISE SPECIFIED		DATE 5-11-67	
DIMENSION IN INCHES		DATE 5-20-67	
TOLERANCES		TITLE	
DECIMALS	FRACTIONS	ANGLES	WIRED ASSY (TC59)
± .005	± 1/64	± 0°30'	
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL		FIRST USED ON	
FINISH		D-UA-TC59-0-0	
SCALE		SIZE CODE	NUMBER
SHEET 1 OF 1		DAD 7005310-0-0	REV. 20

REV.	CHANGE NO.	DATE
1	432	5-11-67
2	433	5-20-67
3	434	5-20-67
4	435	5-20-67
5	436	5-20-67
6	437	5-20-67
7	438	5-20-67
8	439	5-20-67
9	440	5-20-67
10	441	5-20-67
11	442	5-20-67
12	443	5-20-67
13	444	5-20-67
14	445	5-20-67
15	446	5-20-67
16	447	5-20-67
17	448	5-20-67
18	449	5-20-67
19	450	5-20-67
20	451	5-20-67
21	452	5-20-67
22	453	5-20-67
23	454	5-20-67
24	455	5-20-67
25	456	5-20-67
26	457	5-20-67
27	458	5-20-67
28	459	5-20-67
29	460	5-20-67

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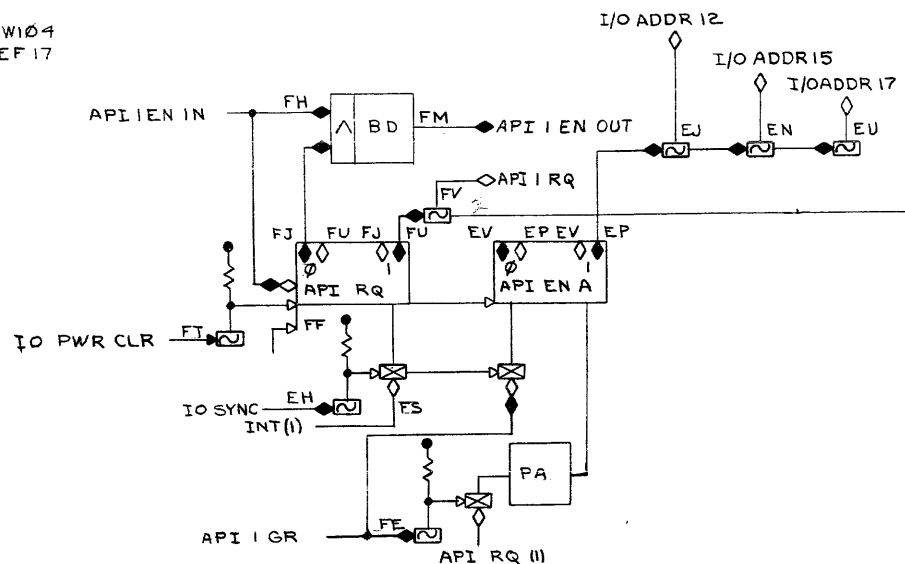
CC0 CC1 7CH 9CH
0 0 1 1
0 1 2 2

REV	CHANGE NO.	DESCRIPTION
1	ECO# 429	
2	ECO# 429	
3	ECO# 429	
4	ECO# 429	
5	ECO# 429	
6	ECO# 429	
7	ECO# 429	
8	ECO# 429	

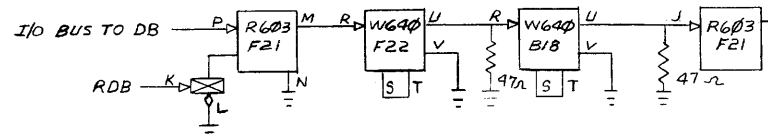
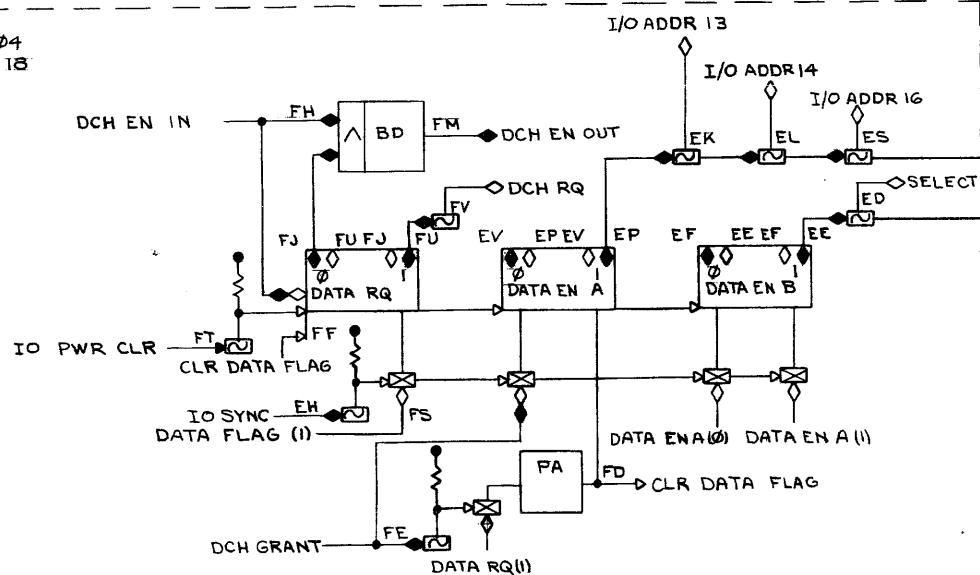
QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS	FRACTIONS	ANGLES	
± .005	± 1/64	± 0°30'	
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FINISH			
SCALE			
SHEET 1 OF 2			
DATE 9-29-67			
DRAWN BY J. L. L.			
CHECKED BY J. L. L.			
ENGINEER BY J. L. L.			
PROD. BY J. L. L.			
FIRST USED ON D-UA-TC59-0-0			
TITLE DATA & IO CONTROL			
SIZE CODE DBS			
NUMBER TC59-0-2			
REV J			

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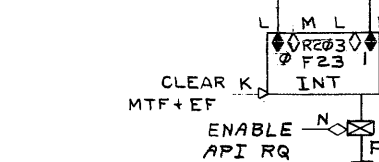
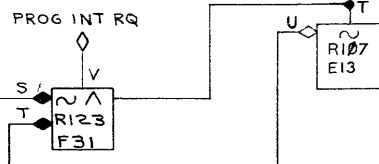
WIØ4
EF17



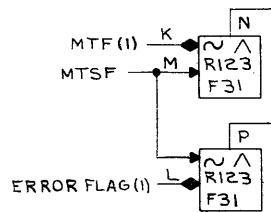
WIØ4
EF18



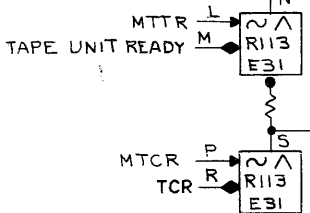
PROG INT RQ



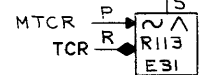
MTF (I)
MTSF



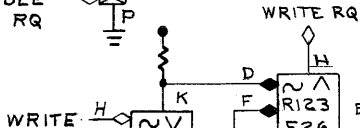
MTTR
TAPE UNIT READY



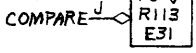
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TCR



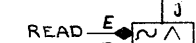
WRITE RQ



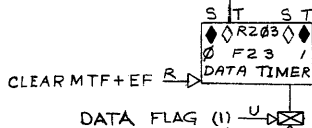
READ COMPARE



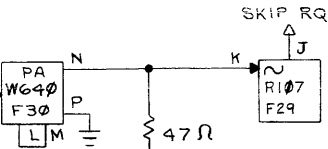
READ



STATUS -> I/O BUS



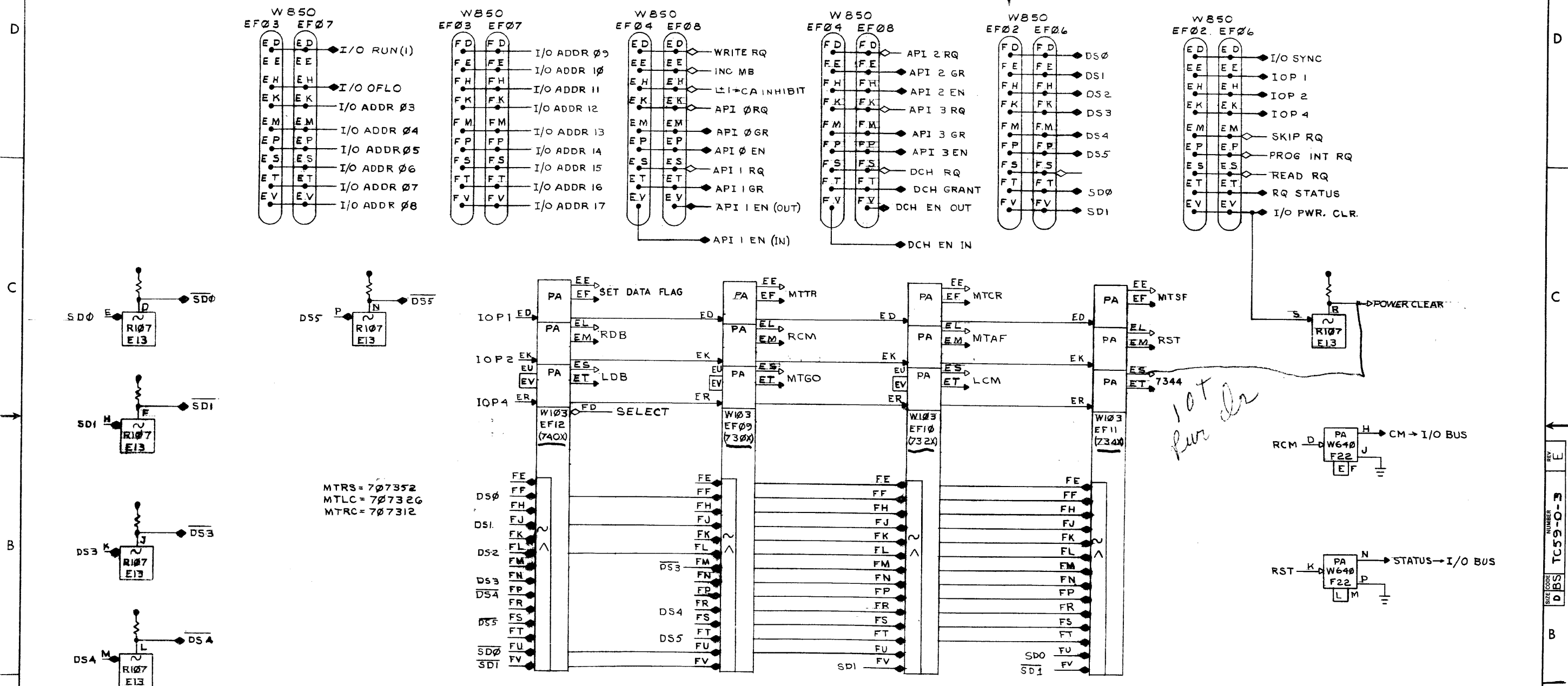
SKIP RQ



WRITING
SET DF

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E-O-6501 58 2
330032215



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REV. NUMBER 9-0-6501 K WL TC59-0-6

2

1

B

B

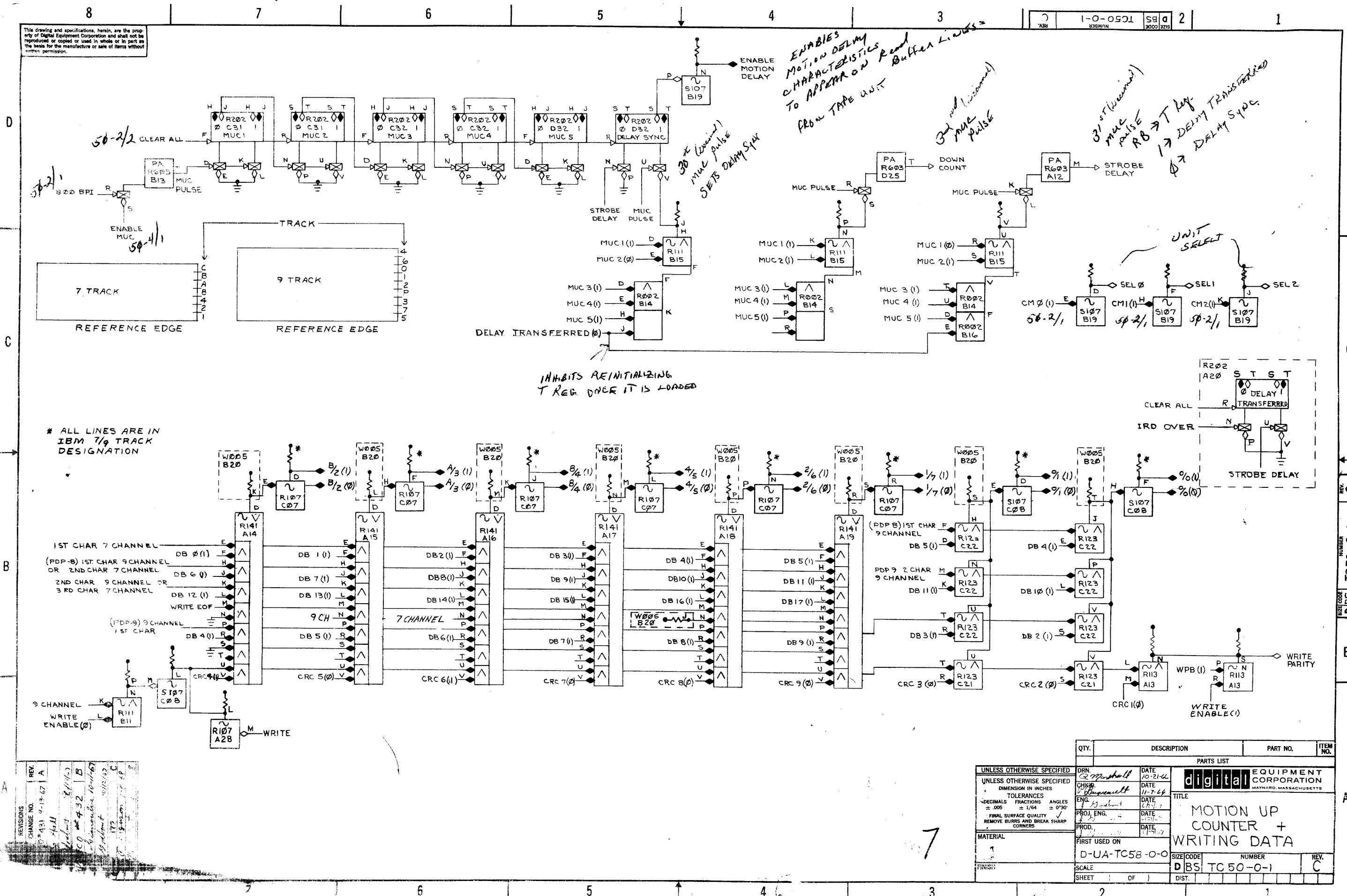
A

A

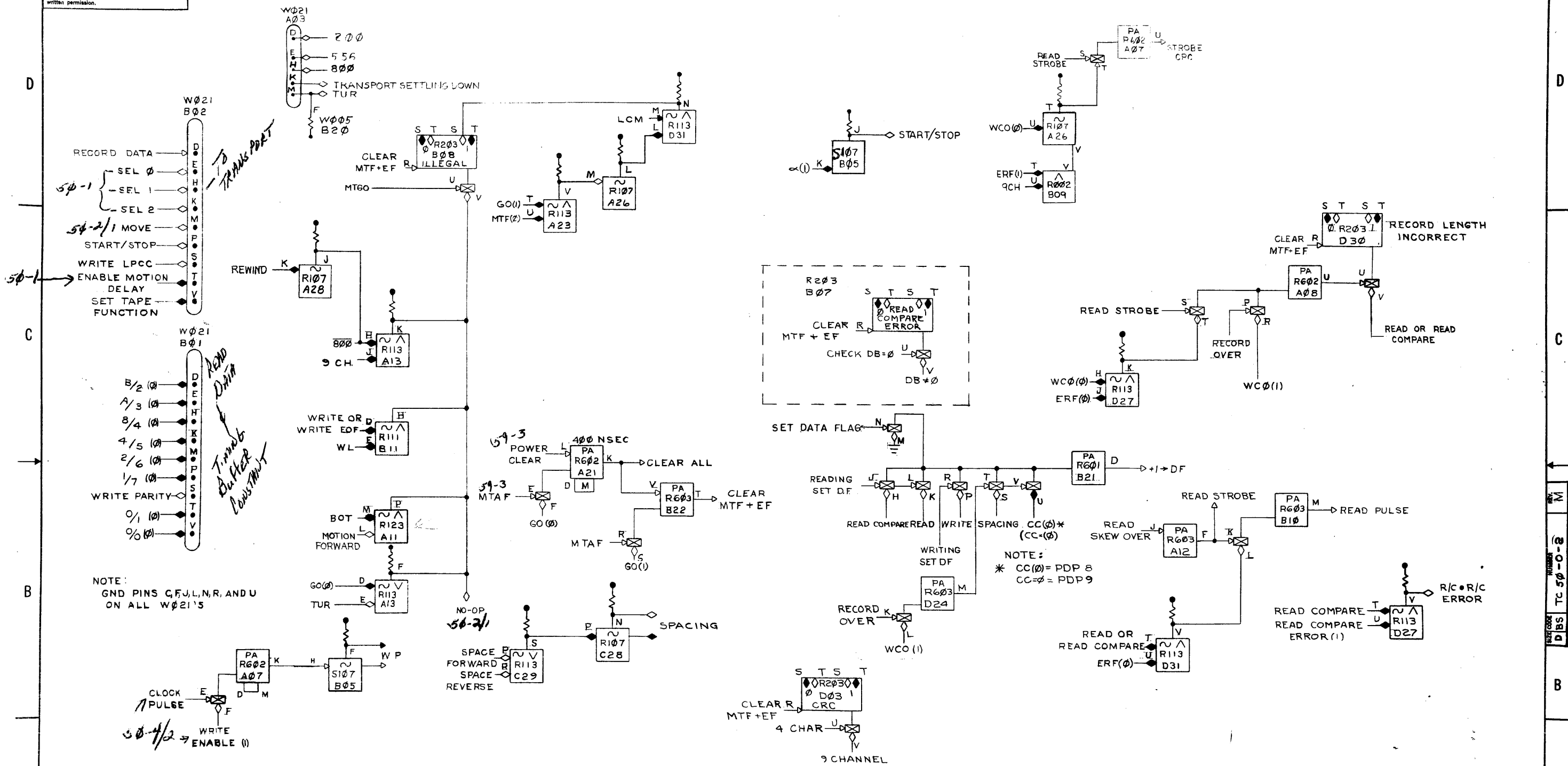
FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.	
TC 59		PARTS LIST			
DRN. J. LUBIN	DATE 12-28-72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE WIRE LIST TC59/50			
CHK'D. J. MCHUGH	DATE 7-5-72				
ENG. J. GODBOUT	DATE 7-10-72				
PROJ. ENG. J. GODBOUT	DATE 7-10-72				
PROD. J. GODBOUT	DATE 7-10-72				
NEXT HIGHER ASSEMBLY					
SCALE NONE	SIZE K		CODE WL	NUMBER TC59-0-6	REV. AA
SHEET	1	OF	1		

REVISIONS	
CHK	CHANGE NO.
LH	TC59-00014
AA	TC59-00016
A. Tonne 11-9-72	
SWANSON	
<i>[Signature]</i>	

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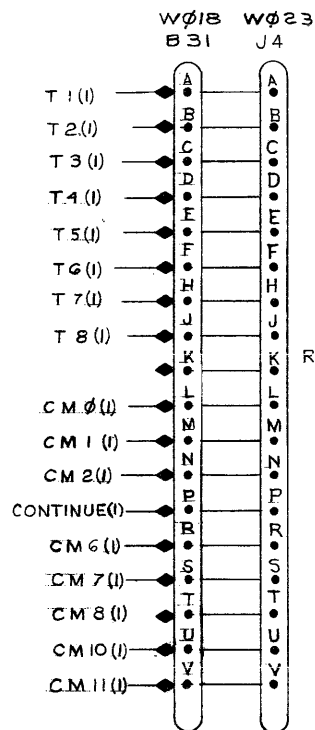
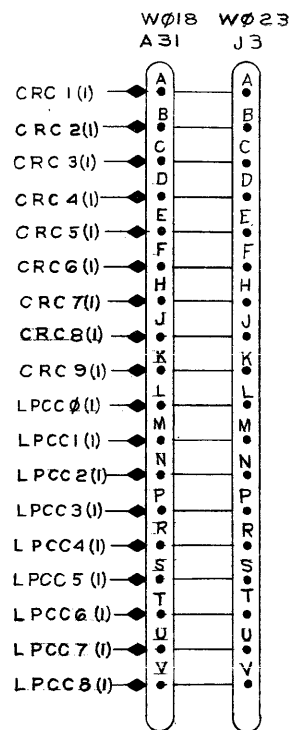
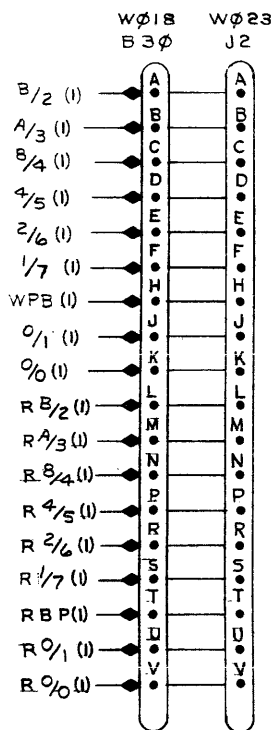
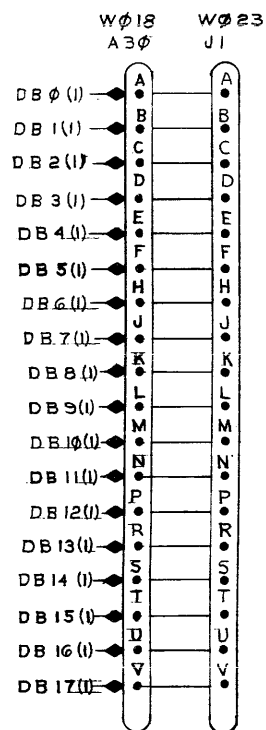


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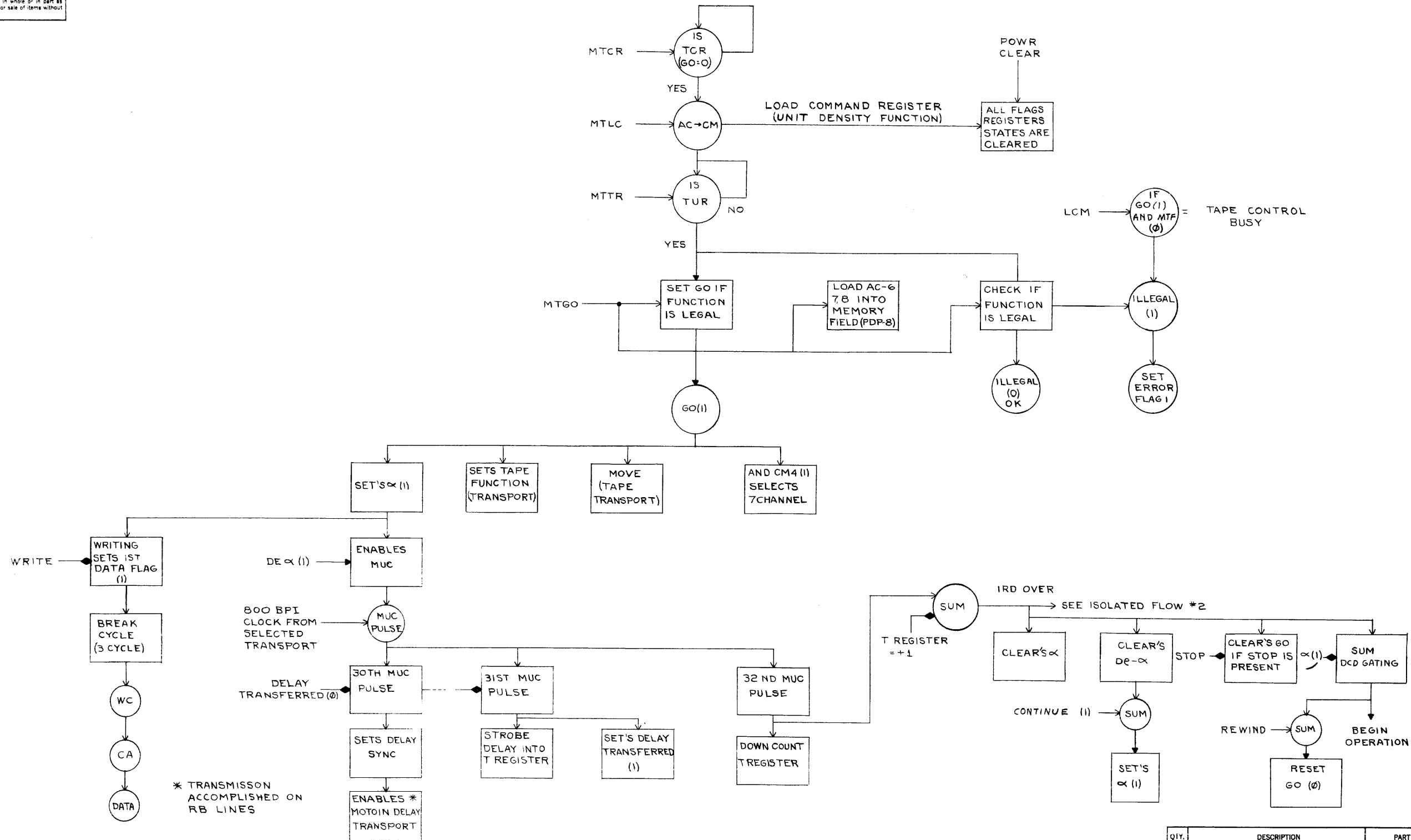


This drawing and specifications,

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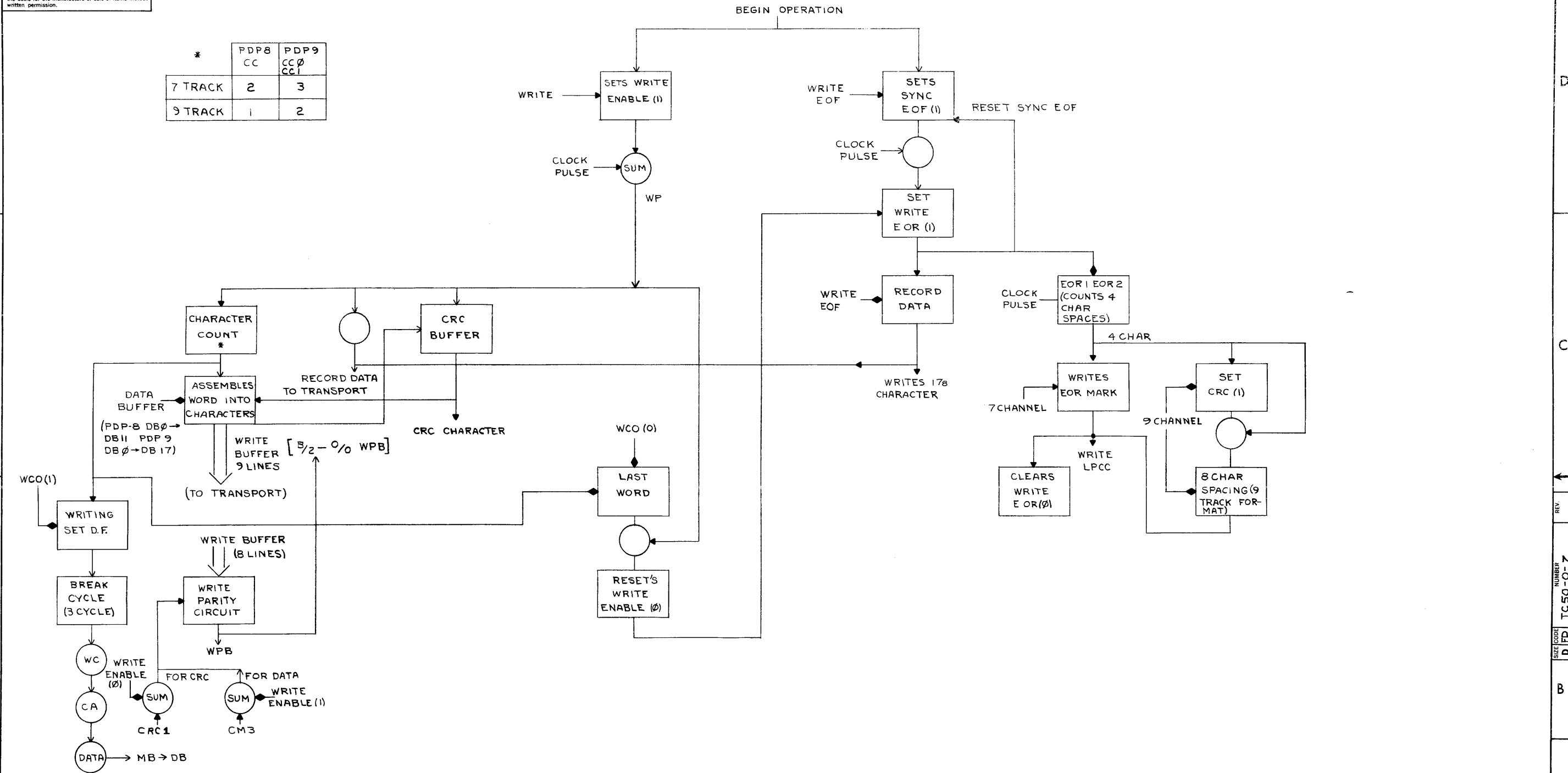


* TRANSMISSION ACCOMPLISHED ON RB LINES

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED			
DRN	DATE	DATE	
CHK'D	DATE	DATE	
ENG.	DATE	DATE	
PROJ. ENG.	DATE	DATE	
PRD.	DATE	DATE	
FIRST USED ON			
D-UA-TC58-0-0			
SCALE			
SHEET 1 OF 1			
DIST.			
TITLE			
GENERAL MOTION TIMING			
SIZE CODE			
D/FD TC50-0-6			
NUMBER			
REV.			

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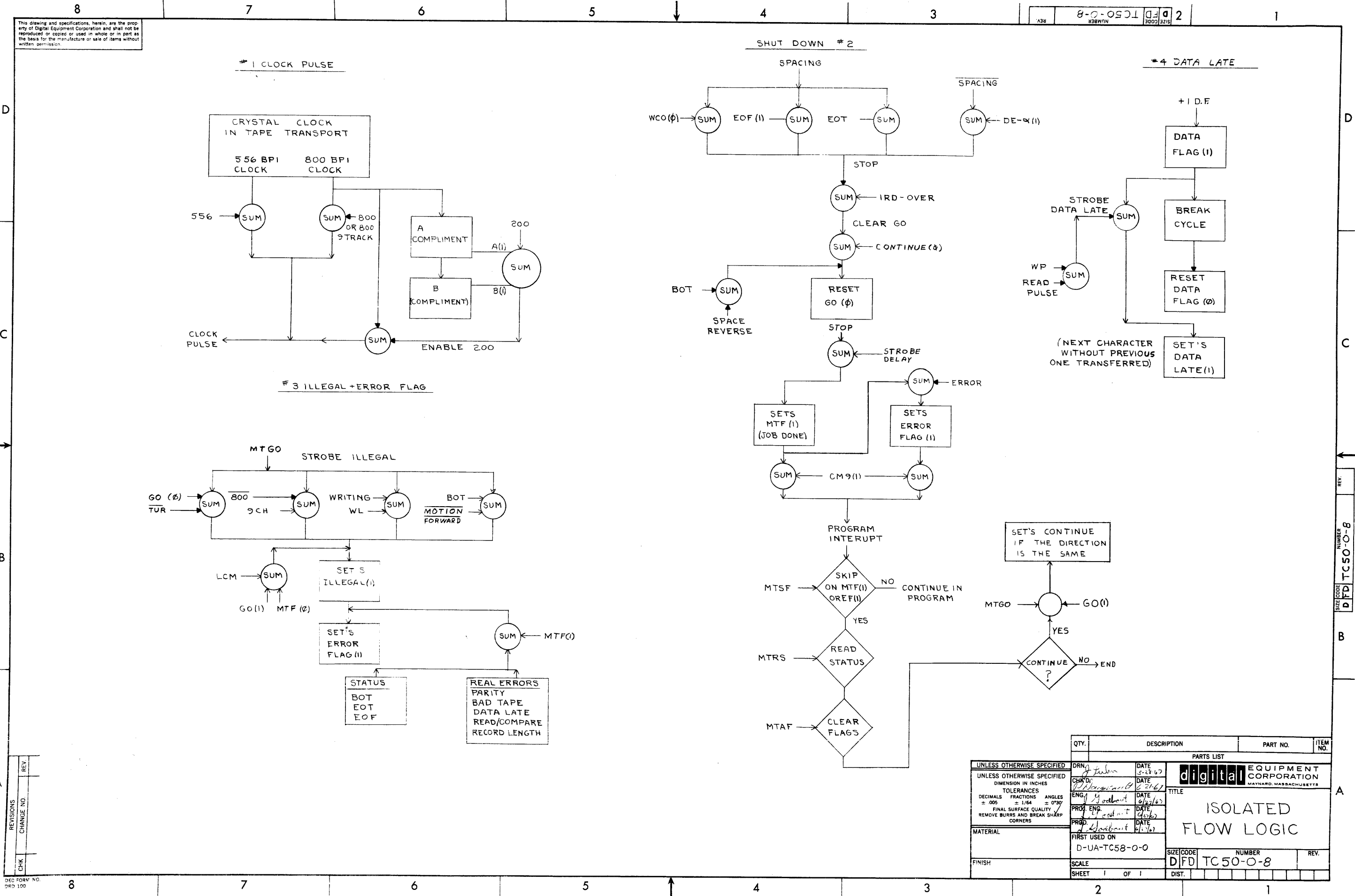
	PDP8	PDP9
*	CC	CC0
7 TRACK	2	3
9 TRACK	1	2



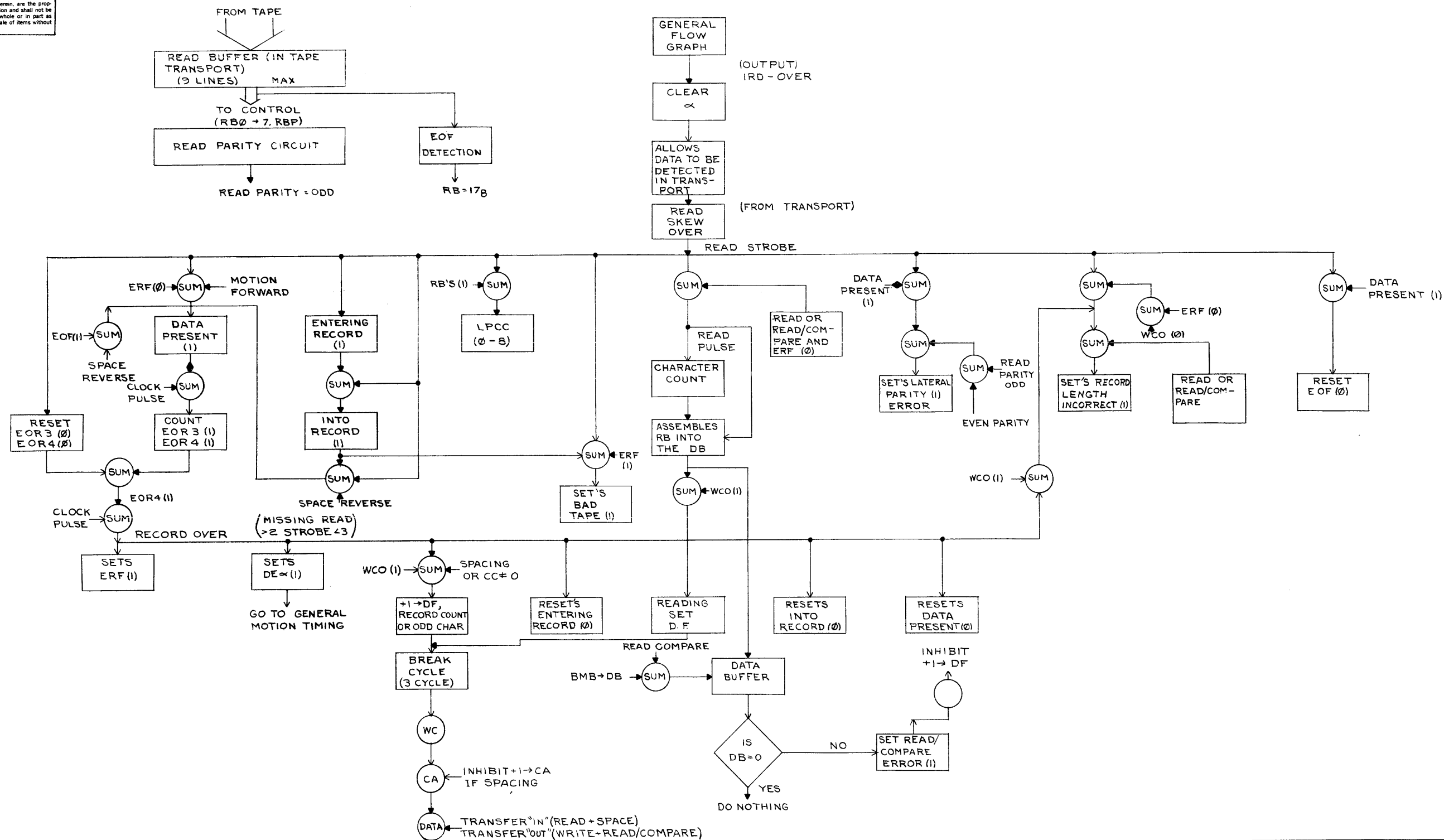
REV.	1
CHANGE NO.	1
CHK	1

DEC FORM NO. DRD 100

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED			
UNLESS OTHERWISE SPECIFIED			
TOLERANCES			
DECIMALS FRACTIONS ANGLES			
± .005 ± 1/64 ± 0°30'			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP			



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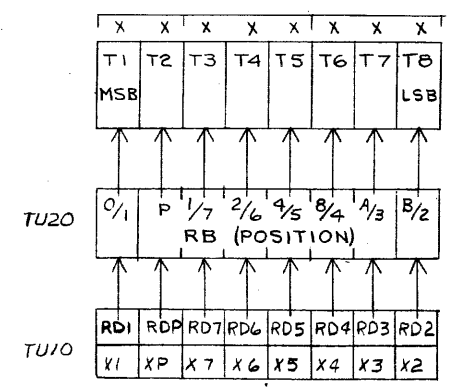
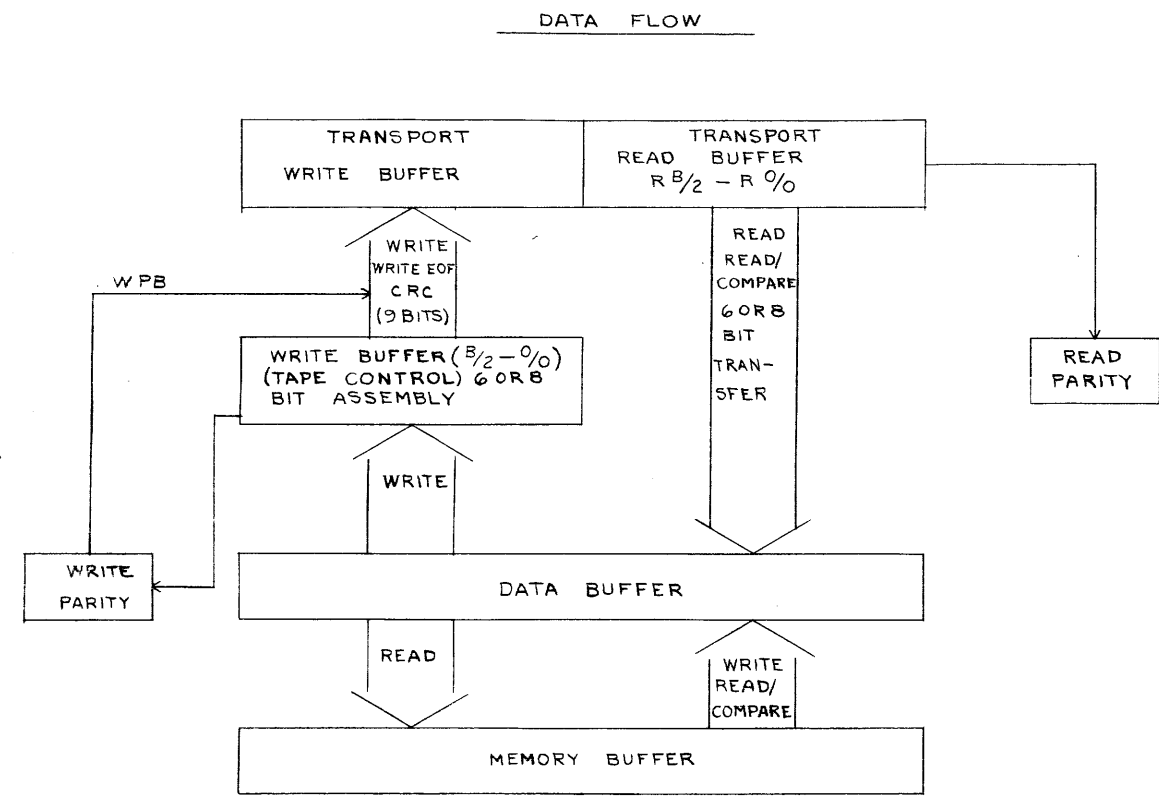
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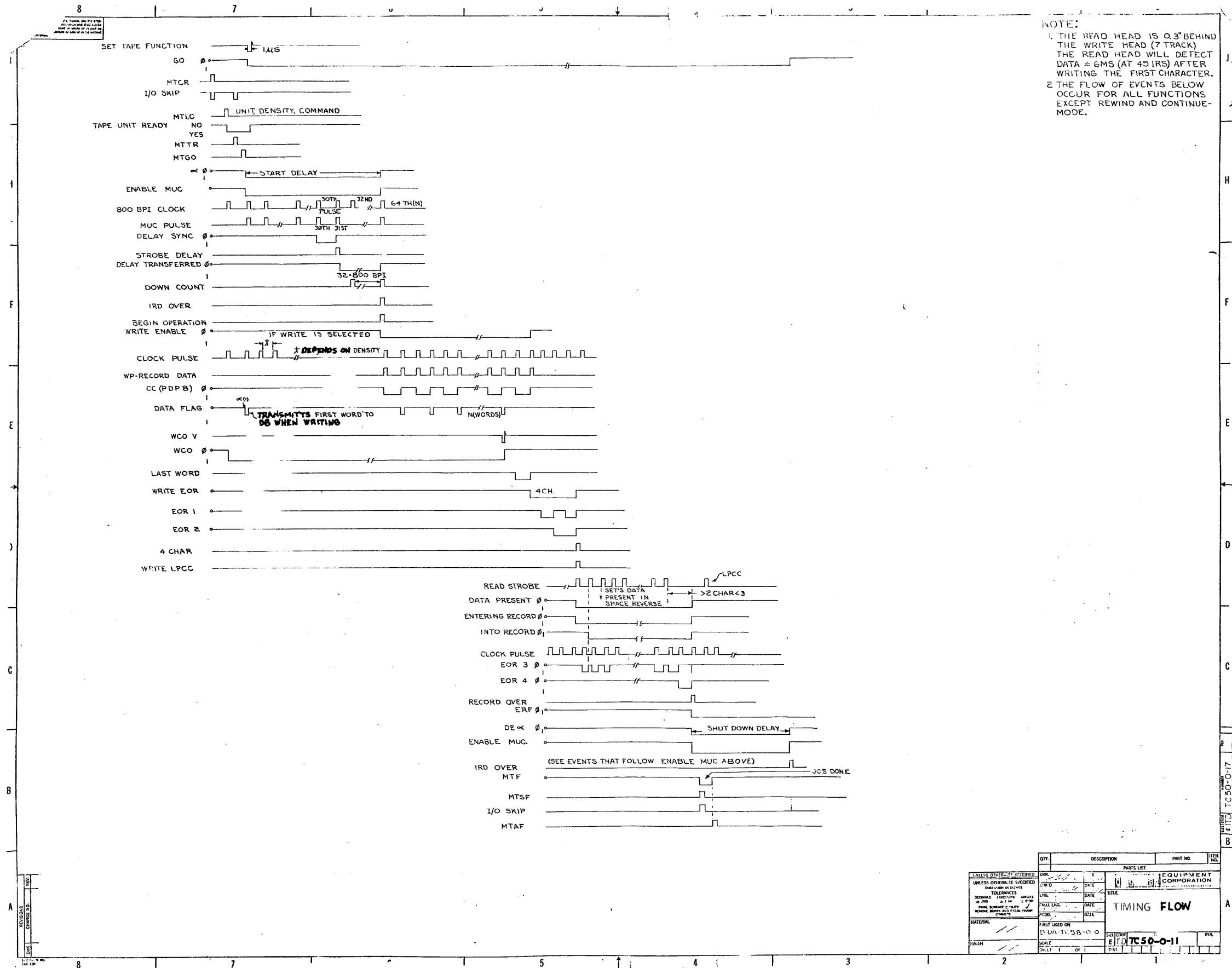
01-0-0501
938WNN
300(3215)

DELAY SEQUENCE

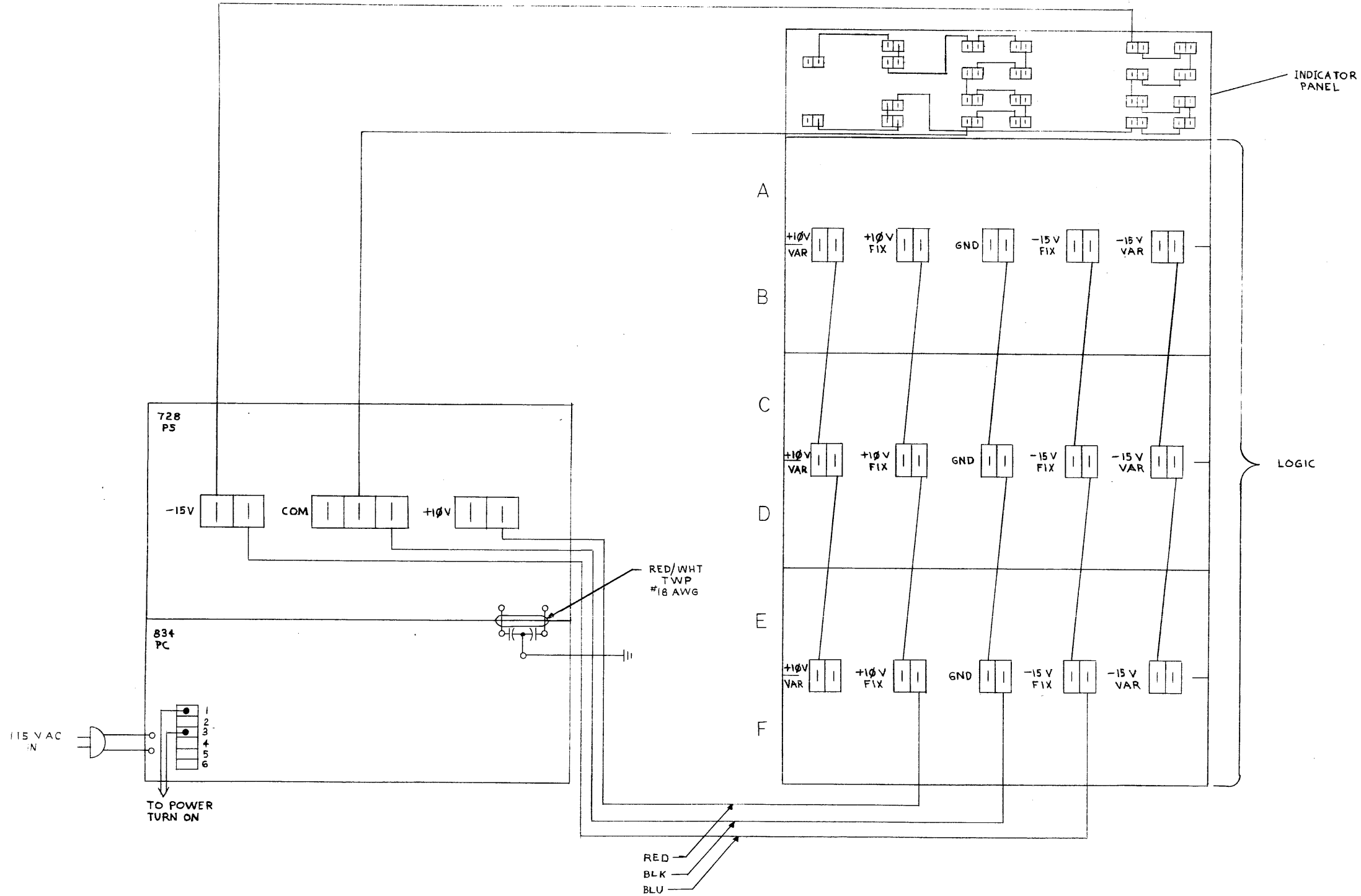
TRANSPORT TYPE	INITIAL NUMBER IN TIMING BUFFER OCTAL								WRITE EOF START BCT
	WRITE START (BOT)	WRITE STOP	WRITING START	WRITE FORWARD STOP	WRITE REVERSE STOP	WRITE START FROM BOT	WRITE START FROM BOT OR	WRITE EOF START (BOT)	
TU20	014	005	000	004 (USUALLY- WRITE STOP -1)	010	014 (IN TC50)	041 (IN TC50)	054 (IN TC50)	054 (IN TC50)
TU10 7 TRK	016	*003 002	001	002	007	016 (IN TC50)	041 (IN TC50)	056 (IN TC50)	056 (IN TC50)
TU10 9 TRK	012	*003 002	001	002	002	012 (IN TC50)	041 (IN TC50)	052 (IN TC50)	052 (IN TC50)

* ON NEW UNITS





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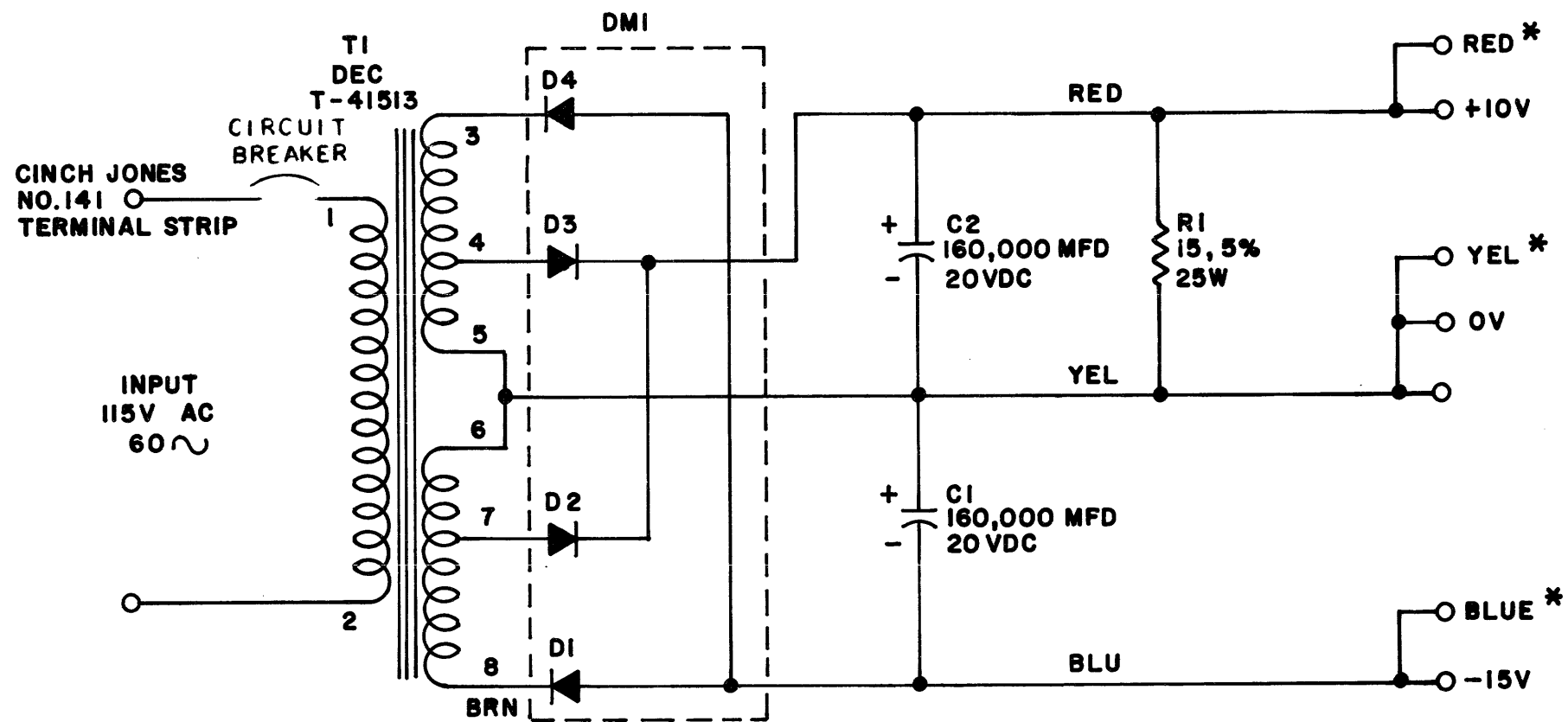


QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DO NOT SCALE DRAWING			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS	FRACTIONS	ANGLES	
± .005	± 1/64	± 0°30'	
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FINISH			
DRN.	DATE	6/29/67	
CHKD.	DATE	6/29/67	
ENG.	DATE	6/29/67	
PROJ. ENG.	DATE	6/29/67	
PROD.	DATE	6/29/67	
FIRST USED ON			
D-UA-TC58-0-0			
SCALE	SHEET	OF	1
TITLE			
POWER WIRING			
CODE	SIZE	NUMBER	REV.
IC	D	TC50-0-14	
DIST.			

REV.	CHANGE NO.
1	1

DEC FORM NO. 102

THIS SCHEMATIC IS FURNISHED ONLY FOR TEST AND MAINTENANCE PURPOSES. THE CIRCUITS ARE PROPRIETARY IN NATURE AND SHOULD BE TREATED ACCORDINGLY. COPYRIGHT 1963 BY DIGITAL EQUIPMENT CORPORATION



NOTE:
IN ORDER TO KEEP OUTPUT VOLTAGE WITHIN THE FOLLOWING LIMITS:
+10V: +9.5 TO +11V
-15V: -14.5 TO -16V
THE LOADING SHOULD BE WITHIN THE FOLLOWING LIMITS:

BOTH SIDES LOADED	+10V 0 TO 7.0 AMPS -15V 1.0 TO 8.0 AMPS
ONE SIDE LOADED	+10V 0 TO 7.5 AMPS -15V 1.0 TO 8.5 AMPS

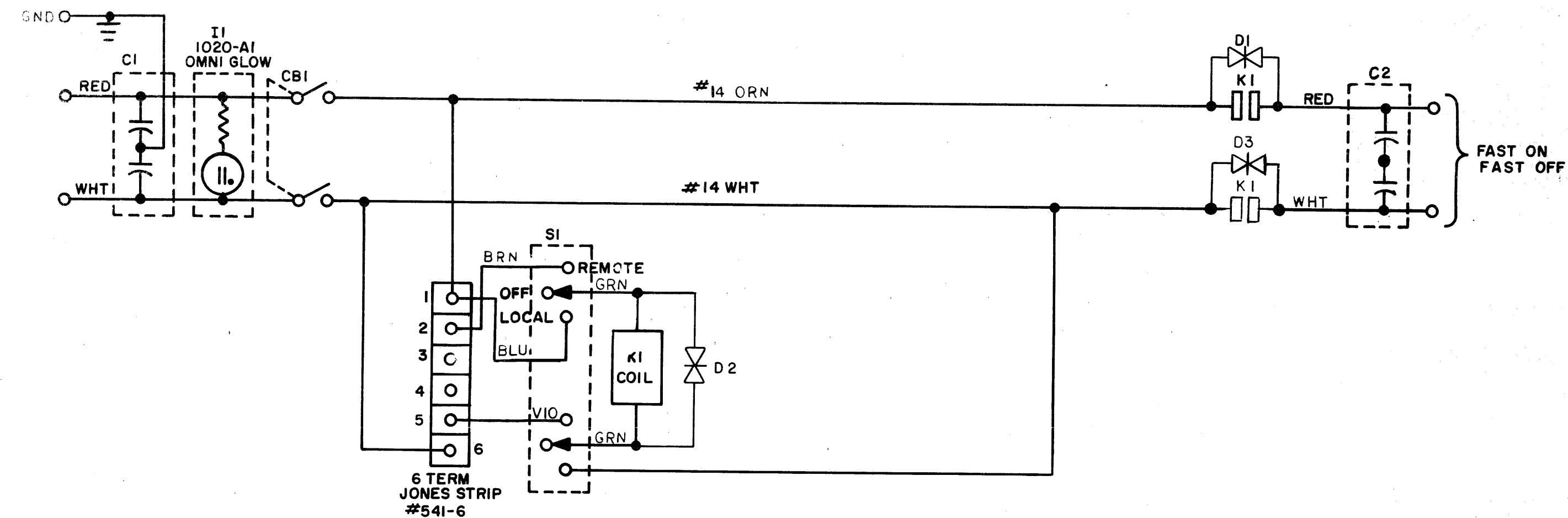
SUM OF THE OUTPUT CURRENTS ARE LIMITED BY THE EQUATION: $5I_{10} + 6I_{15} \leq 53$

* HEYMAN MFG. CO. TAB TERMINALS

REVISIONS	CHK	CHG NO.	REV.	DATE	DRN.	DATE	TRANSISTOR & DIODE CONVERSION CHART				digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE POWER SUPPLY 728			
	CHG	NO.	REV.	DATE	CHK'D	DATE	DEC	EIA	DEC	EIA		SIZE	CODE	NUMBER	REV
	CHG	NO.	REV.	DATE	ENG.	DATE						B	CS	728-0-1	J
	CHG	NO.	REV.	DATE	PROD.	DATE									
	CHG	NO.	REV.	DATE											

PARTS LIST		DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS				REVISIONS		
PART NO.	DRWG. NO.	NO. REQD.	DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG.	DEC. STOCK NO.	CHANGE NO.	DATE	ENG.	
32		A/R	STRD 14 AWG TEFLON INS (RED)	9107370-3				
33		A/R	STRD 14 AWG TEFLON INS (YEL)	9107370-5				
34		A/R	STRD 14 AWG TEFLON INS (BLU)	9107370-7				
35		A/R	STRD 14 AWG TEFLON INS (BRN)	9107370-2				
36		7	WASH INT TOOTH #6	9006633				
37		A/R	TUBE HY-SHRINK RED 3/16 ODX 9/16 LG	9107305				
38		4	#10 INTERNAL LOCKWASHER	9006635				
39		4	#8 INTERNAL LOCKWASHER	9006634				
40		1	RES 150HMS 25W 25F15 WARD L	1300181				
41		1	SCR PHL H PAN 6-32X2-3/8 LG	9007852				
42		2	WASH 916 CORE TYPE 2A LEONARD	9006674				
43		1	CIRCUIT BREAKER 2 AMP.	12-10896				
44		3	14 AWG CONNECTORS AMP.	9007919-0				
45		2	SCREWS #6-32 X 1/4 LG PPH	9006020-1				
	NOTE: #40, 41, 42, ARE REPLACEMENT PARTS ONLY FOR IT				EMS 24-25-	26	-	
MADE BY K. GULICK		DATE 3/4/67	TITLE 728 POWER SUPPLY		SIZE A	CODE PL	NUMBER 728-0-1	REV. AA
CHECKED <i>[Signature]</i>		DATE <i>[Signature]</i>	FOR		ASSY. NO. UA-D-728-0-1		SHEET 3 OF 3	
ENG. <i>[Signature]</i>		DATE 3/12/67						

CS-B-834 - C



NOTES:
C1 & C2 CAPACITOR BATHTUB-DEC PURCH. SPEC # CAF-0001
2X.1MFD 600VDC CORNELL DUBLIER.
SI TOGGLE SWITCH C.H. 7563K6
KI RELAY #EM-1115VAC EBERT ELECTRONICS.
CBI CIRCUIT BREAKER #190-220-101 20AMPS 250V, 60 CYC-CURVE4
D1,D2,D3 THYRECTOR GENERAL ELECTRIC 20 SP4 B4, 115V



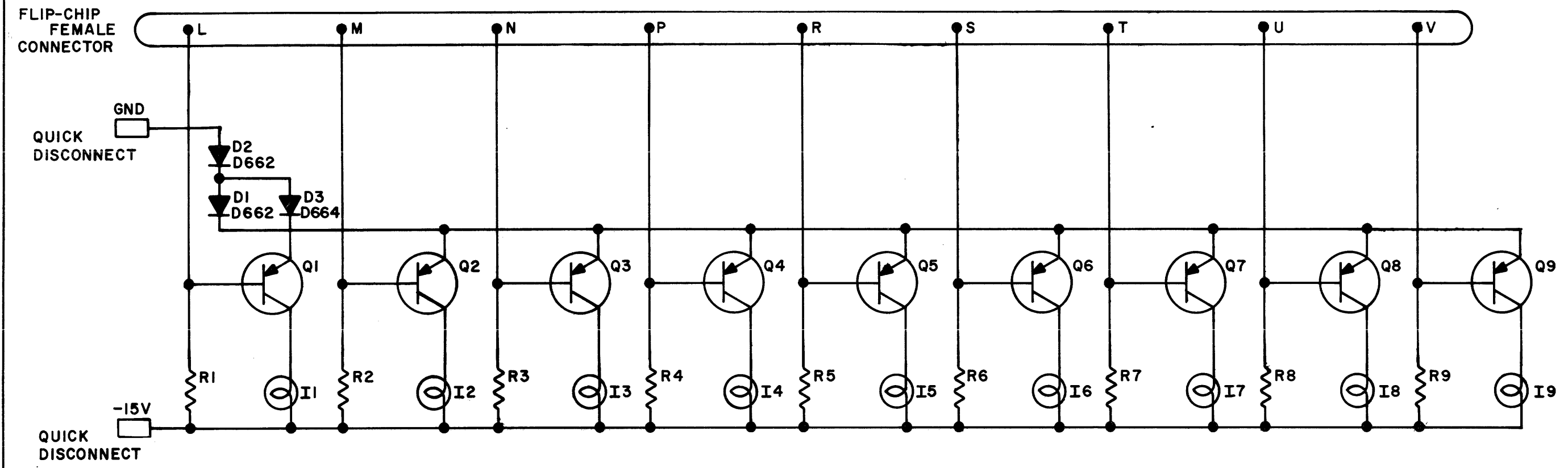
REV. A

NUMBER

4917-0-1

SIZE B
CODE CS

THIS SCHEMATIC IS FURNISHED ONLY FOR TEST AND MAINTENANCE PURPOSES. THE CIRCUITS ARE PROPRIETARY IN NATURE AND SHOULD BE TREATED ACCORDINGLY. COPYRIGHT 1966 BY DIGITAL EQUIPMENT CORPORATION



UNLESS OTHERWISE INDICATED:
RESISTORS ARE 15,000 1/4W; 10%
TRANSISTORS ARE DEC 6534B
INDICATOR LIGHTS ARE
DIALCO NO 39-28-375

REVISIONS	CHK	CHG NO.	REV.

DRN.	DATE
CHK'D	DATE
ENG.	DATE
PROD.	DATE

TRANSISTOR & DIODE CONVERSION CHART			
DEC	EIA	DEC	EIA
DEC6534B	MPS 6534		
D662	IN645		
D664	IN3606		

digital		EQUIPMENT CORPORATION		MAYNARD, MASSACHUSETTS	
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TITLE		9 BIT INDICATOR BRACKET 4917	
SIZE	CODE	NUMBER	REV.
B	CS	4917-0-1	A
PRINTED CIRCUIT REV.			C



