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1	E51	IC DEC 74157	1910655	48
7	E68, E79, E88, E95, E107, E109, E115	IC DEC 74S158	1910549	49
3	E75, E93, E94	IC DEC 74163	1911713	50
2	E5, E42	IC DEC 74S175	1910957	51
8	E9, E11, E12, E16, E61, E99, E100, E114	IC DEC 74S194	1910552	52
1	E36	IC DEC 380	1909485	53
2	E67, E73	IC DEC 8093	1910837	54
4	E77, E84, E104, E105	IC DEC 8097	1911527	55
3	E90, E86, E98	IC DEC 8234	1911315	56
3	E81, E87, E92	IC DEC 8235	1909935	57
1	E31	IC DEC 8271	1909615	58
5	E30, E35, E37, E39, E55	IC DEC 8881	1909705	59
11	E50, E62, E83, E91, E96, E97, E103, E106, E108, E111, E112	IC DEC 74173-1	1911320-01	60
1	E69	256 BIT ROM (A)	23078A1	61
1	E57	256 BIT ROM (B)	23077A1	62
1	E70	256 BIT ROM (C)	23076A1	63
1	E72	256 BIT ROM (D)	23075A1	64
1	E76	256 BIT ROM (E)	23074A1	65
1	E63	256 BIT ROM (H)	23073A1	66
1	E38	256 BIT ROM (J)	23079A1	67
1	E53	1024 BIT ROM (F)	23080A2	68
6	WIPE	30AWS GREEN	9105740	69

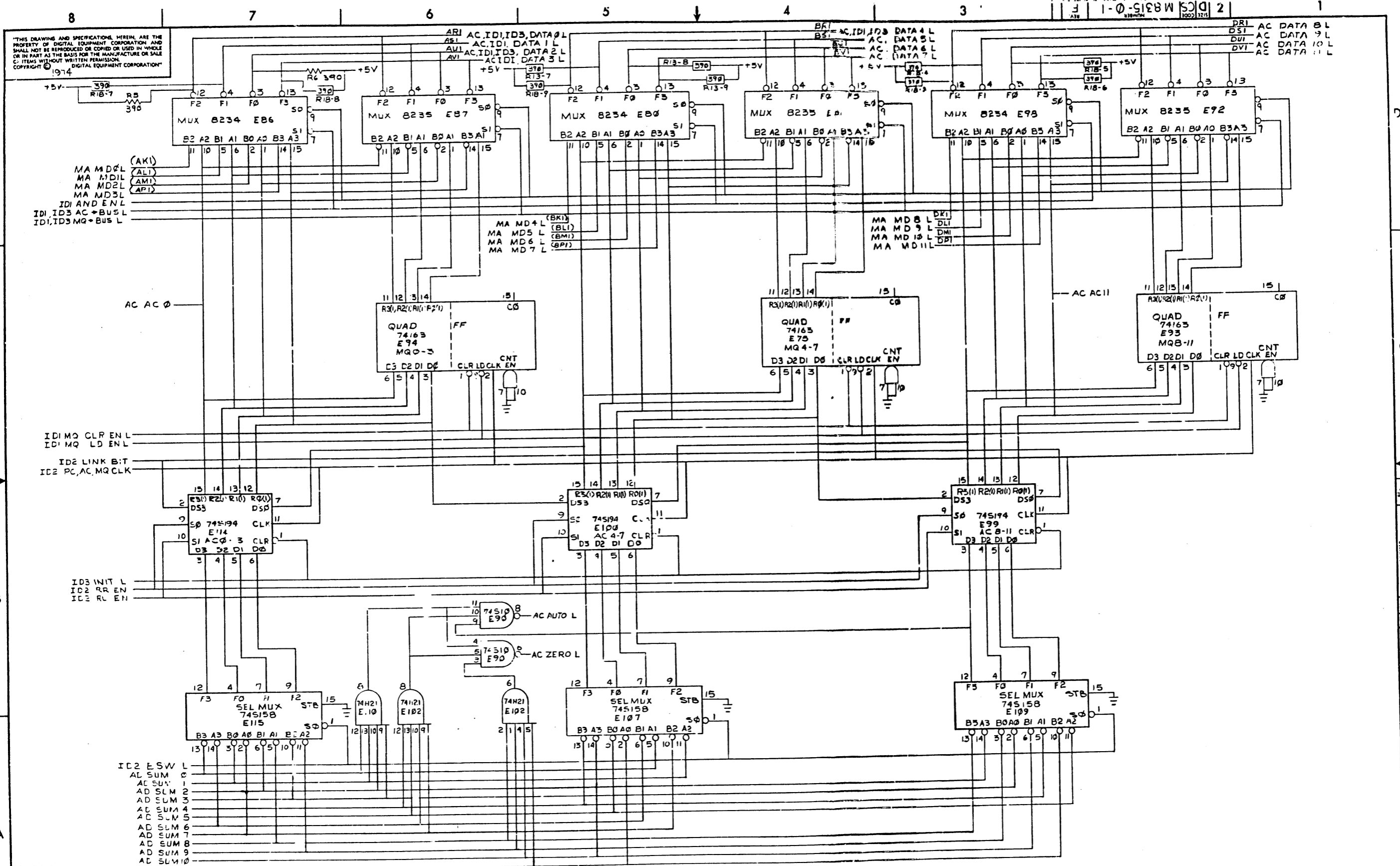
SWITCH SELECTION CHART
(FOR AUTO RESTART LOCATION)

SWI-	1	FIELD 7	} ONLY ONE SWITCH MAY BE CLOSED AT A TIME.
	2	4200	
	3	2200	
	4	1020	
	5	420	
	6	200	
	7	OFF (DISABLES AUTO RESTART)	
	8	OFF FOR NORMAL OPERATION	

COMPONENT SUBSTITUTION CHART

PART CALLED FOR			SUBSTITUTE PART		
QTY	PART NO	DESC	QTY	PART NO	DESC
1	1909485	IC 380	1	1910392	3350
			1	1909971	3380
			1	1910390	7330
			1	1911269	8640

REVISIONS		
CHK	CHANGE NO	REV

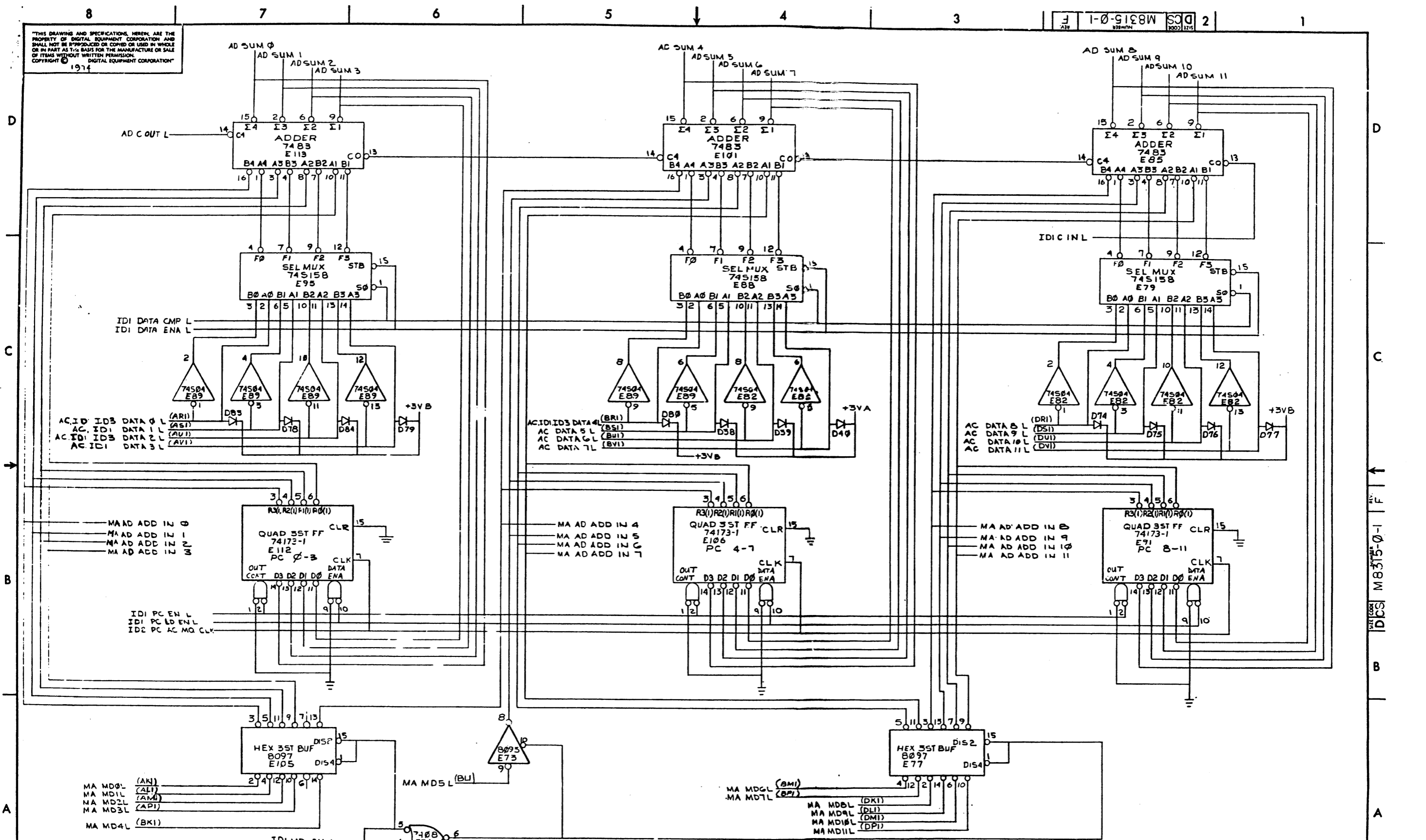


REVISIONS		
CHK	CHANGE NO	REV

TITLE PDP8A CPU	SIZE CODE (AC) DCC	NUMBER M8315-0-1	REV. F
SCALE	SHEET 3 OF 10		

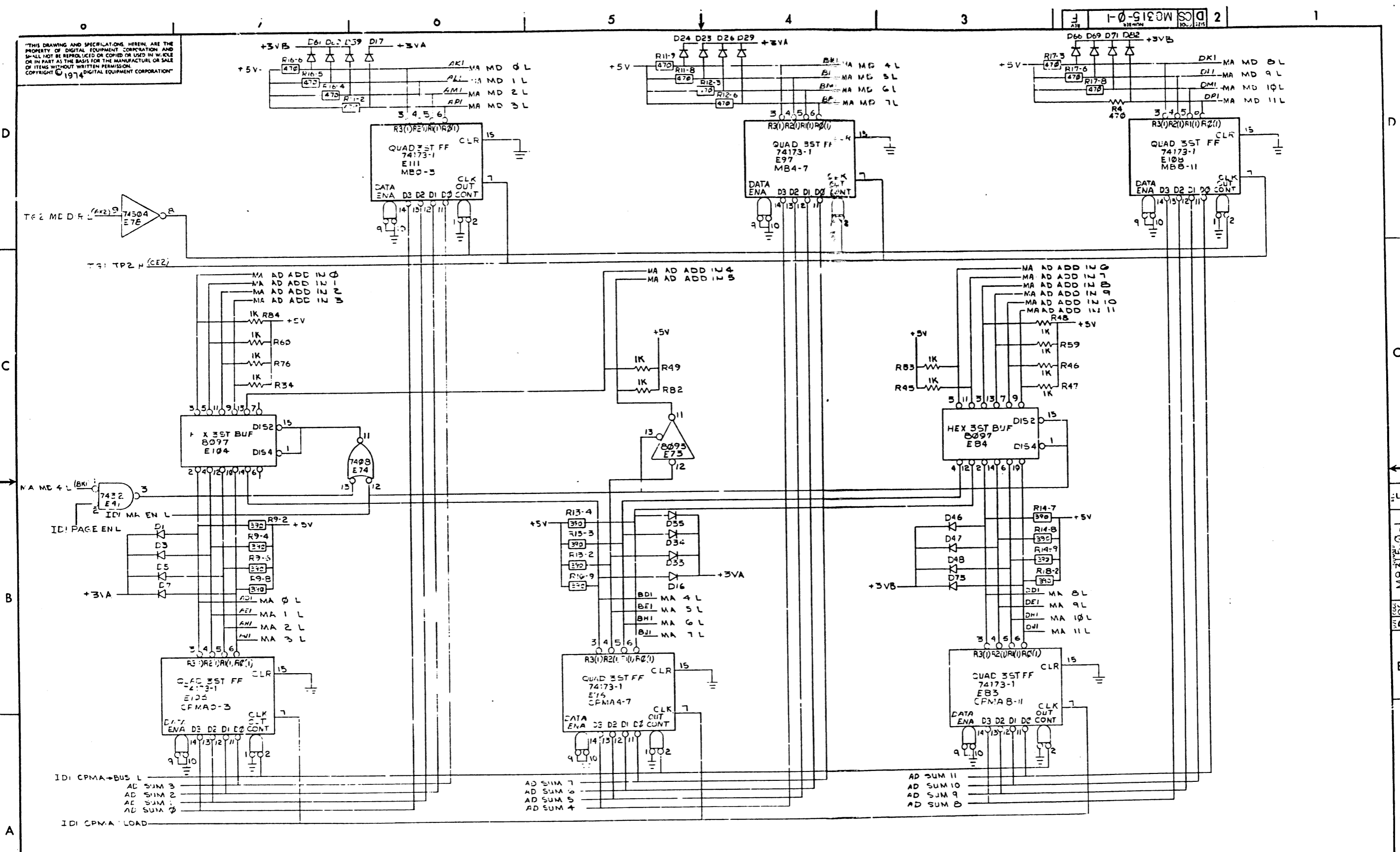
DCC M8315-0-1
 REV. F

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REVISIONS		
CHK	CHANGE NO.	REV.

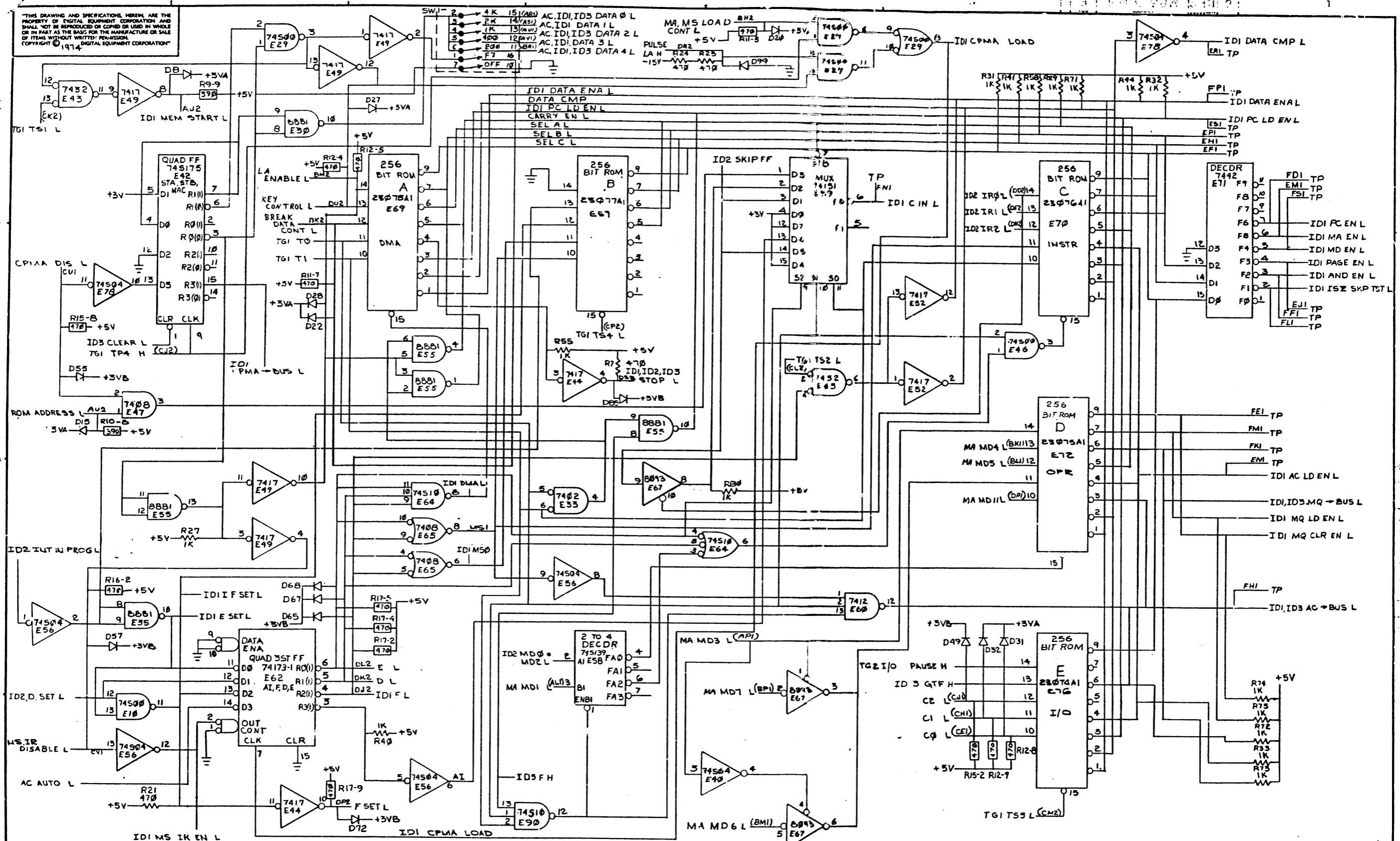
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REVISIONS		
CHK	CHANGE NO	REV

TITLE	PDP9A CPU (MA)	SIZE CODE	D.S.	NUMBER	13315-0-1	REV.	F
SCALE		SHEET	5	OF	10	DIST.	

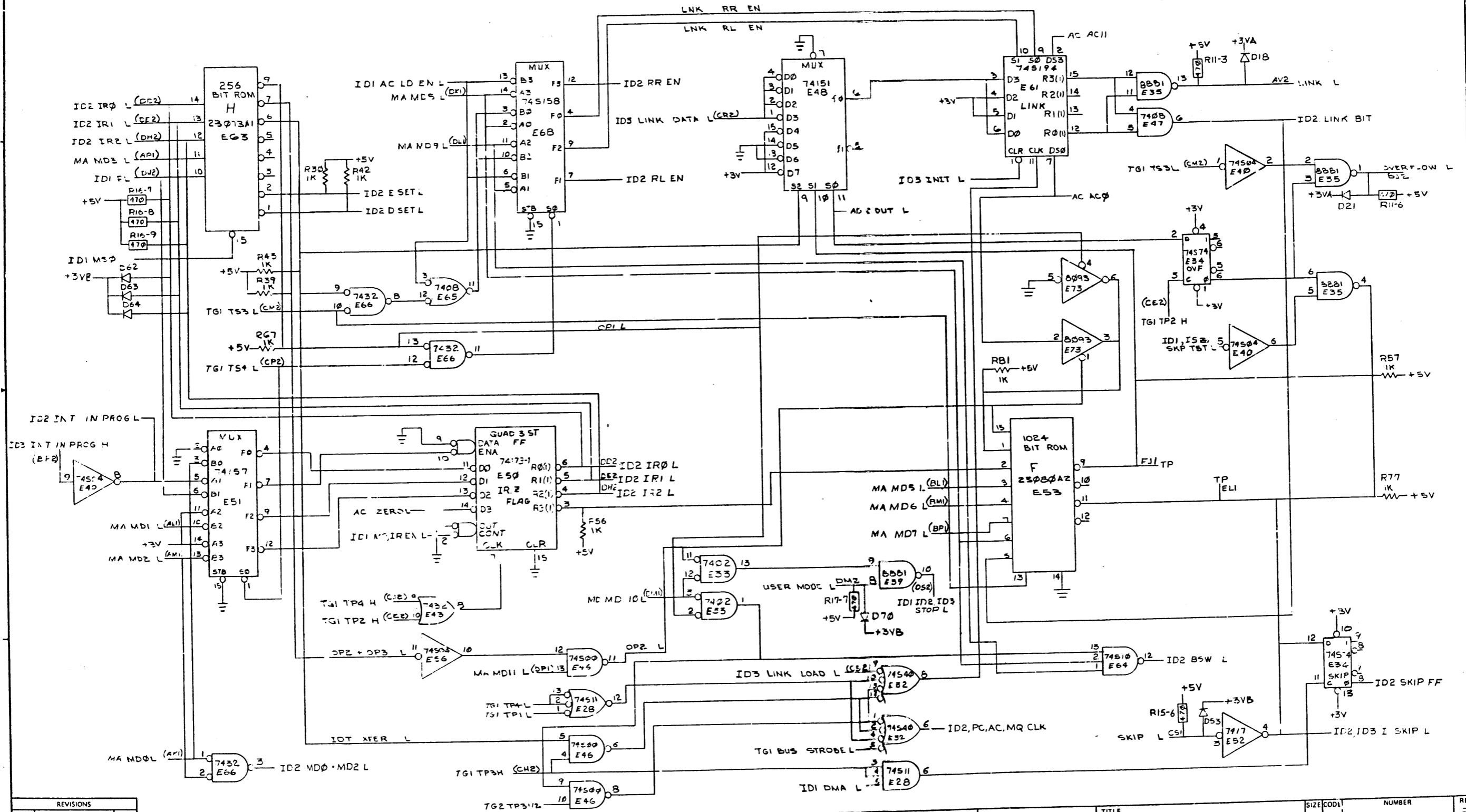
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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	PDP8A CPU (DD)	SIZE CODE	D CS	NUMBER	M8315-0-1	REV.	F
SCALE	SHEET 6 OF 10		DIST				

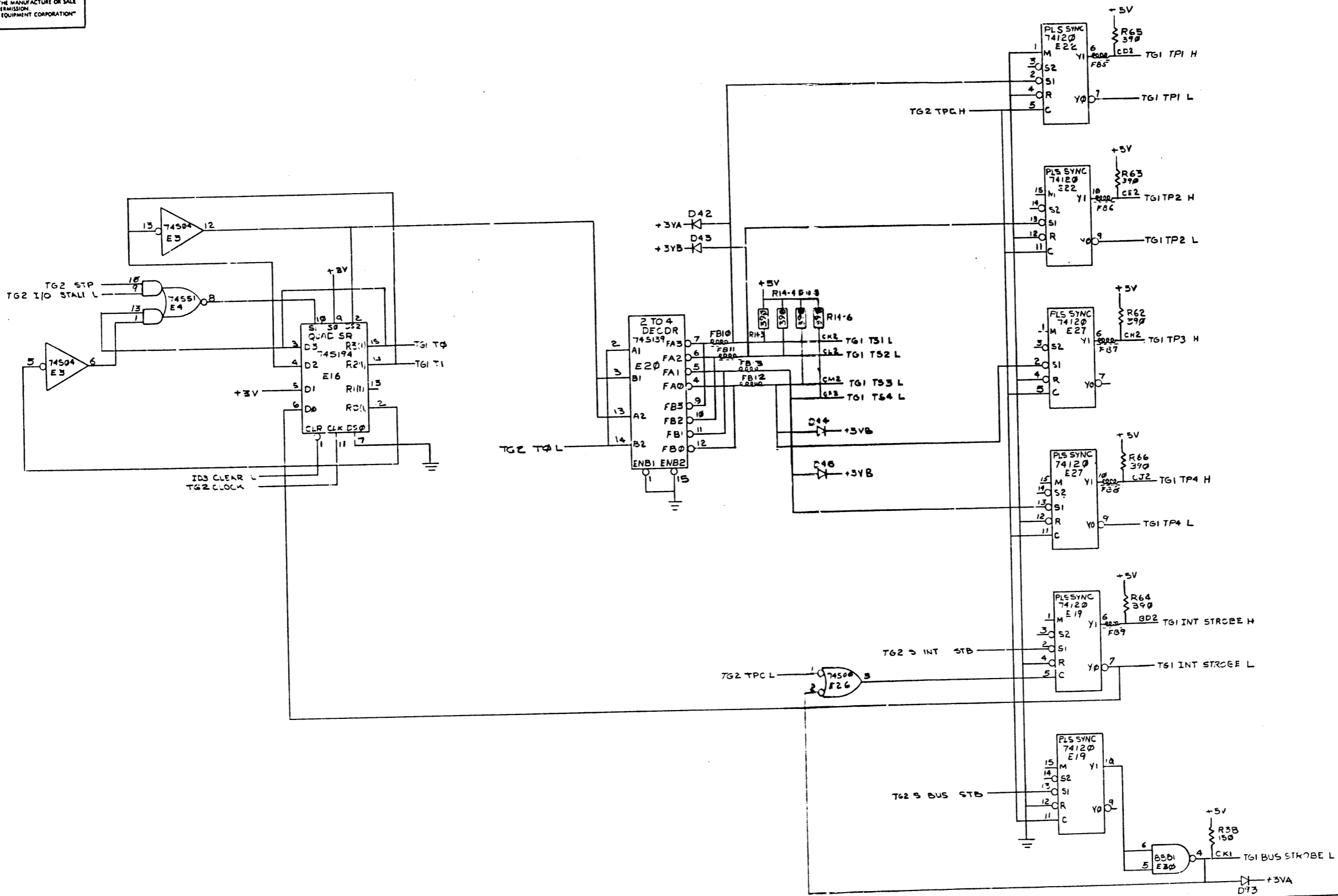
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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	PDP8A CPU (102)	SIZE CODE	D 05	NUMBER	18315-0-1	REV.	=
SCALE	1:1	SHEET	7	OF 10			

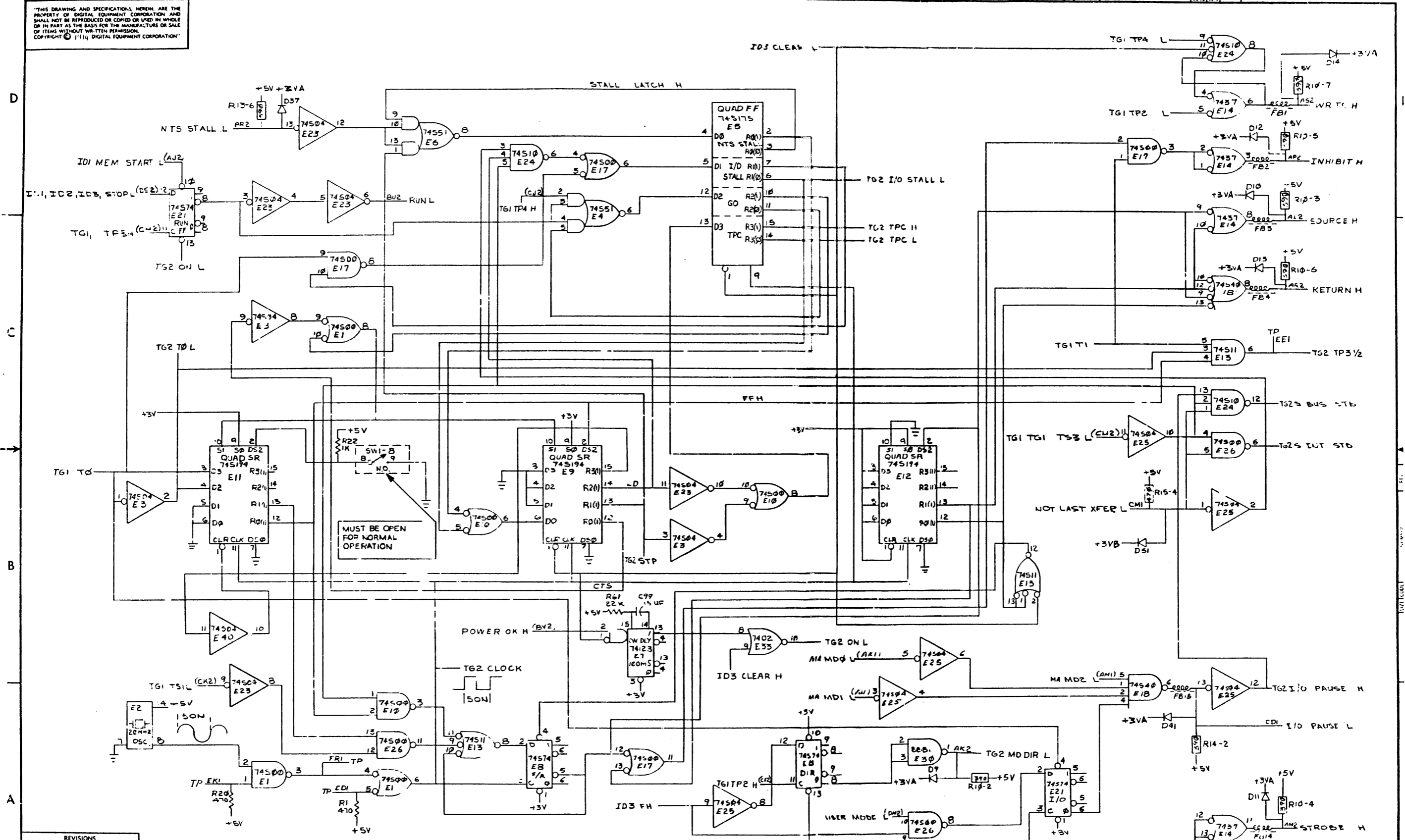
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REVISIONS		
CHK	CHANGE NO	REV.

TITLE	PDP8A CPU (TGD)	SIZE CODE	DCS	NUMBER	M315-0-1	REV.	F
SCALE	1/1	SHEET	9	OF 10	DIST		

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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	PDP8A CPU (TG2)	SIZE CODE	D	NUMBER	M8315-0-1	REV.	F
SCALE	1:1	SHEET	10 OF 10	DATE			

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FLOW CHART INDEX

F[^]TS1^vTS2
DATA=@TS1:INDICATOR
TS2:AC
MA=INST.ADD
EMA=IF
MD=INSTRUCTION

OPERATES

I/O XFRS

MEMORY REF OR JUMP

FC0
EXECUTION
OF OPERATE

FC3
EXECUTION
OF IOT

FC4
EXECUTION OF
JMP D OR
PAGE

F[^]JMP[^]MD3[^]TS3
MEM REF[^]F[^]TS3^vTS4
DATA=PRIOR @TS4
MA←PAGE ADD
EMA=IF

F[^]TS3[^]OPR
DATA=AC^vMIQ
MA=INST ADD
EMA=IF
MD=7XXX

F[^]TS3[^]IOT(PAUSE)
DATA=I/O INFO
MA=INST ADD
EMA=IF
MD=6XXX

JUMP DIRECT

DIRECT MEMORY REF

ALL INDIRECT

MS,IR DIS:DMA

FC5
EXECUTION OF
JMPI OR
DEFER

D[^]JMP[^]34
D[^]JMP
DATA=@TS1:INDIC
TS4:PRIOR
MA←OPERAND ADD
EMA←DF^v;EW IF
MD=M3←MD+AI

JUMP AND/TAD

ISZ

DCA^vJMS

MS,IR DIS:DMA

MS,IR DIS:DMA

MS,IR DIS:DMA

FC6
EXECUTE +
AND OR
T+D

FC7
EXECUTE
+ ISZ

FC8
EXECUTE +
DCA OR
JMS

E[^]AND^vTAD[^]TS4
DATA=@TS1:IND
@TS3[^]TAD:AC
@TS5[^]AND:AC^vMT
MA=OPERAND ADD
EMA=DF^vIF
MD=OPERAND

E[^]ISZ[^]TS4
DATA=@TS1:IND
MA=OPERAND ADD
EMA=DF^vIF
MD=MB+MD+1

E[^]DCA^vJMS[^]TS4
DATA=@TS1:IND
@TS2[^]DCA:AC
MA=OPERAND ADD
EMA=IF^vDF
DCA:MD←MB←AC
JMS:MD←MB←PC

FC9
NEXT ADD
OR INT

F SET AND OPI ROTATES
SENSE INTERRUPTS
MA←NEW INST ADD
EMA←NEW IF

INTERRUPT

INTERRUPT

MS,IR DIS:DMA

MS,IR DIS:DMA

DMA

FC10
BREAK

DIRECT MEMORY ACC.
ADD TO MEMORY

CPMA DIS

CPMA DIS

MAJOR STATE ENCODING

STATE	MS0	MS1
F	L	L
D	L	H
E	H	L
BK	H	H

TIME STATE ENCODING

T1	T0	T1
1	L	L
2	H	L
3	H	H
4	L	H

ROM'S ENABLED

	FETCH	DEFER	EXECUTE	BREAK
TS1	H,J	H,J	J,A	J
TS2	H,J	C,H,J	C,J,A	J
TS3	D,-IF OPR. E,-IF IOT J C,-IF JMP	C,F,H,J	C,F,J,A	F,J
TS4	B,H,J	B,H,J	E,J,A,B	J

NOTES:

THIS IS AN INDEX TO THE 8A FLOW CHARTS. THE FLOW CHART NUMBER THAT APPEARS WITHIN THE SYMBOL [FCX] REFERS TO ANOTHER FLOW WHICH DETAILS THE ACTION WHICH IS BRIEFLY DESCRIBED IN THE SYMBOL []

OPTION FLOW CHARTS WILL USE THE SAME FCX TIME REFERENCE TO SHOW ITS RELATION TO THE CPU

FLWS WILL BE NUMBERED AS FOLLOWS
M8315-FCX CPU FLOW FOR TIME 'X'
MABCD-FCX OPTION FLOW FOR CPU TIME 'X'

THE FOLLOWING IS A LIST OF MAJOR OMNIBUS SIGNALS AND THE FLOW CHARTS MOST PERTINENT TO THEM

BUS SIGNAL	FLOW CHARTS	MOST IMPORTA. T LOGIC PRINTS
IR0-2	FC1	ID2
F, D, E	(FC1, FC4), FC5, FC8	ID1
USER MODE	FC2, FC3	ID2, T62
FSET	FC8	?D1
PULSE LA	FC10	ID1
STOP	FC2, FC10	ID1, ID3, T62
KEY CONTROL	FC10	ID1
SW	SEE M8317 TIMING & FLOW CHARTS	
I/O PAUSE	FC3	T62
C0-2	FC3	ID1
BUS STB	FC3	ID2, T61
NOT LAST XFER	FC3	T62
INT RQST	FC3	ID3
SKIP	FC7, FC8, FC9	ID2
INITIALIZE	FC3	ID3
CPMA DIS	FC4, FC5, FC9	ID1
MSIR DIS	FC10	ID1
LK LD DATA	FC3	ID2, ID3
INDI-2	FC1	ID3
MAMS LD CTRL	FC4, FC9, FC10	ID1
OVERFLCW	FC7	ID2
BK DATA CTRL	FC10	ID1
LA ENABLE	FC1, FC10	ID1
INT IN PROG	FC9	ID2, ID3
RUN	FC2, FC10	T62
PWR OK		ID3
MEM START	FC10	ID1, T62

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8A				
DIMENSIONAL TOLERANCE				
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED				
MILLIMETERS	INCHES	ANGLES		
X.XX ±0.10	XXX ±0.008	±0°30'		
X.X ±0.08	XX ±0.02			
X ±0.2	X ±0.1			
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.	SIZE CODE	NUMBER
			B-DD-KK8A-0	D FD M8315-0-16
			SCALE	
			SHEET 1 OF 1	DIST.

REVISIONS
CHANGE NO.
CHK

REV. NUMBER
M8315-0-16

A

DEC FORM NO. 102 C

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MA+1 IS ENABLED TO THE PC

A MEMORY READ IS STARTED (REFER TO TIMING)

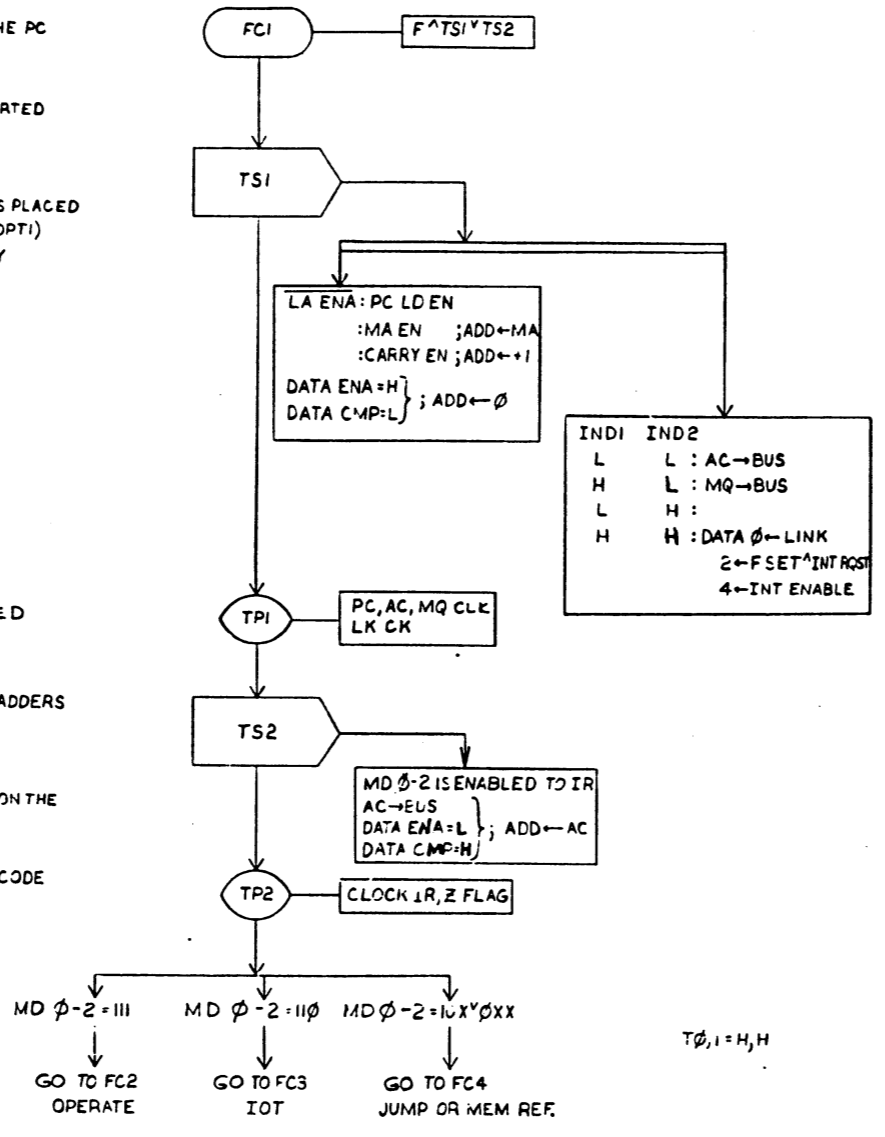
INDICATOR INFORMATION IS PLACED ON THE DATA BUS (REFER TO OPT1) FOR THE PANEL TO DISPLAY

THE PC IS LOADED

THE AC IS GATED THROUGH THE ADDERS TO SEE IF IT EQUALS 0

THE INSTRUCTION WILL APPEAR ON THE MD LINES FROM MEMORY

THE IR GETS LOADED WITH THE OPCODE AND THE Z FLAG IS ADJUSTED



THE INSTRUCTION IS DECODED AT THIS POINT AS FOLLOWS:

MD — 0 1 2 3 4 5 6 7 8 9 10 11

AND 0 0 0

AD 0 0 1

SZ 0 1 0

CA 0 1 1

MS 1 0 0

JMP 1 0 1

IOT 1 1 0

JPR 1 1 1

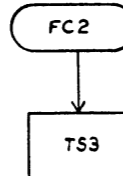
BITS 3-11 ARE NOT IMPORTANT AT THIS TIME

REV	CHG

FIRST USED ON OPTION/MODEL				QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8A							
DIMENSIONAL TOLERANCE				PARTS LIST			
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED				DRN	DATE	digital	
MILLIMETERS				CHKD	DATE		
INCHES				ENG	DATE		
ANGLES				PROJ. ENG.	DATE		
THIRD ANGLE PROJECTION				PROD.	DATE		
RELIEVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				NEXT HIGHER ASSY.			
MATERIAL				B-DD-KK8A-0			
FINISH				SCALE			
				SHEET 1 OF 1			
				SIZE CODE			
				NUMBER			
				REV.			
				D F D M8315-0-17			
				DIST.			

FLOW DIAGRAM M8315 FC1

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F[^]TS3[^]OPR

MS₀, I=L, L

T₀, I=H, H

THE INSTRUCTION IS DECODED AT THIS POINT AS FOLLOWS
 THE SEQUENCES OF OPERATION ARE LOGICAL NOT CHRONOLOGICAL
 ALL OP2 ≠ OP3 OCCUR AT TP3
 ALL OPI EXCEPT ROTATE LEFT OR RIGHT OCCUR AT TP3
 A SINGLE LEFT OR RIGHT ROTATE OCCURS AT TP4
 A DOUBLE LEFT OR RIGHT ROTATE OCCURS AT TP3 1/2 AND 4 } SEE FLOW CHART 9 F SET

OPERATE GROUP 3

TO AC	MQ TO AC	X	AC TO MQ	X	X	X	I
0	0	0	NO OPERATION				
0	0	1	AC GOES TO THE MQ AND THE AC IS CLEARED				
0	1	0	MQ "ORED" WITH THE AC GOES TO THE AC				
0	1	1	AC & MQ SWAPS WITH MQ & AC				
1	0	0	THE AC IS CLEARED				
1	0	1	BOTH THE AC AND MQ ARE CLEARED				
1	1	0	THE MQ GOES TO THE AC				
1	1	1	THE MQ GOES TO THE AC AND THE MQ IS CLEARED				

OPERATE GROUP 2

TO AC	SKIP IF AC	SKIP IF AC	SKIP IF L	REVERSE IF A	GET THE SWR	HALT	0
0	1	1	1	1	1	1	0
1	1	1	1	1	1	1	0

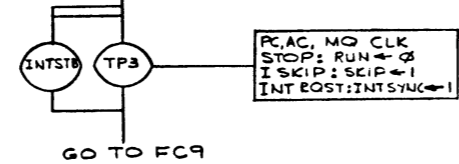
1ST MAKE A SKIP DECISION
 THEN REVERSE THEN DECISION IF BIT 8=1
 THEN CLEAR THE AC IF BIT 4=1
 THEN "OR" THE AC WITH THE SWITCHES IF BIT 9=1
 THEN STOP IF BIT 10=1

OPERATE GROUP 1

TO AC	TO LINK	AC TO LINK	LINK TO LINK	ROTATE	+1 TO AC
0	0	0	0	0	0
0	0	0	0	0	0

1ST CLEAR THE AC & LINK IF BITS=1
 THEN COMPLEMENT IF BITS=1
 THEN INCREMENT THE L, AC IF BIT 11=1
 THEN ROTATE DEPENDENT UPON 8, 9, 10 AS FOLLOWS

MD 8 9 10
 H H H NO ROTATE
 H H L SWAP AC & LINK WITH AC & LINK
 H L H ROTATE LEFT ONCE
 H L L ROTATE LEFT TWICE
 L H H ROTATE RIGHT ONCE
 L H L ROTATE RIGHT TWICE
 L L X ILLEGAL



FC, AC, MQ CLK
 STOP: RUN ← 0
 I SKIP: SKIP ← 1
 INT BOST: INTSYN ← 1

OP3

ENA. ROM D
 MD-4, 5, 7
 (NOP) H H H : DATA ENA; AC → BUS
 (MQL) H H L : DATA CMP; MQ LD EN
 (MQA) H L H : DATA ENA; AC → BUS, MQ → BUS
 (SWP) H L L : DATA ENA; MQ LD EN
 (CLA) L H H : DATA CMP;
 (CLA MQL) L H L : DATA CMP; MQ CLR EN
 (CLA MQA) L L H : DATA ENA; MQ → BUS
 (0 → MQ, AC) L L L : DATA ENA; MQ CLR EN; MQ → BUS

ENA. ROM F
 ADLK = LINK

OP2

ENA. ROM D
 DATA ENA:
 MD4 = 0 : AC → BUS

ENA. ROM F
 I SKIP L = (MD5 ^ AC ^ MD6 ^ ZERO ^ MD7 ^ LINK) ^ MD8
 ADLK = LINK

MDI 0 ^ 1 : STOP
 MD9 : CONSOLE PLACES SWITCH REG ON DATA BUS

OP1

ENA. ROM D : DATA ENA. L
 MD4 = 0 : AC → BUS
 MD6 = 1 : DATA CMP L
 MD11 = 1 : CARRY EN; C IN L = 1

ENA. ROM F
 MD-5, 7
 L L : ADLK = LINK
 L H : LINK
 H L : 0
 H H : 1

MD9 ^ MD8 ^ MDI 0 : BSW; ADD R 0-5 TO AC 6-11 ADDER 6-11 TO AC 0-5

AC LD EN L : RR EN
 : RL EN
 : LNK RR EN
 : LNK RL EN

EXECUTION OF AN OPERATE			
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
PDP8A			
PARTS LIST			
DIMENSIONAL TOLERANCE		DRN. <i>Q. Yoube</i>	DATE 11-7-74
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		CHK'D <i>Mark</i>	DATE 12/1/74
MILLIMETERS	INCHES	ENG. <i>Kob</i>	DATE 12/1/74
XXX ±0.10	JXX ±0.006	PROJ. ENG. <i>Mark</i>	DATE 12/1/74
XX ±0.8	JX ±0.02	PRD <i>Mark</i>	DATE 12/1/74
X ±2	J ±0.1		DATE 12/1/74
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.	
	MATERIAL	B-DD-KK8A-0	SIZE CODE
	FINISH		NUMBER
			REV.



TITLE
 FLOW DIAGRAM
 M8315 FC2

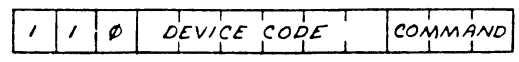
SIZE CODE
 DFD M8315-Q-18

REV.	CHANGE NO.

REV. NUMBER
 DFD M8315-Q-18

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THE INSTRUCTION AT THIS POINT IS DECODED AS FOLLOWS: ONLY IF *USER MODE IS NEGATED THUS ALLOWING PAUSE TO BE ASSERTED.



FOR DEVICE CODE 000 THE CPU TAKES CONTROL DEPENDING UPON THE COMMAND AS FOLLOWS:

MD-9	10	11	
SKON	0	0	0 SKIP IF INT ON, TURN IT OFF
ION	0	0	1 TURN INT SYS ON
IOF	0	1	0 TURN INT SYS OFF
SRQ	0	1	1 SKIP IF INT RQST
*GTF	1	0	0 LINK, INT ON, INT RQST TO AC0, 2, 4
*RTF	1	0	1 AC0 TO LINK, TURN INT, SYS ON
NOP	1	1	0 NO OPERATION
CAF	1	1	1 GENERATE INITIALIZE.

* ALSO SEE OPT 2

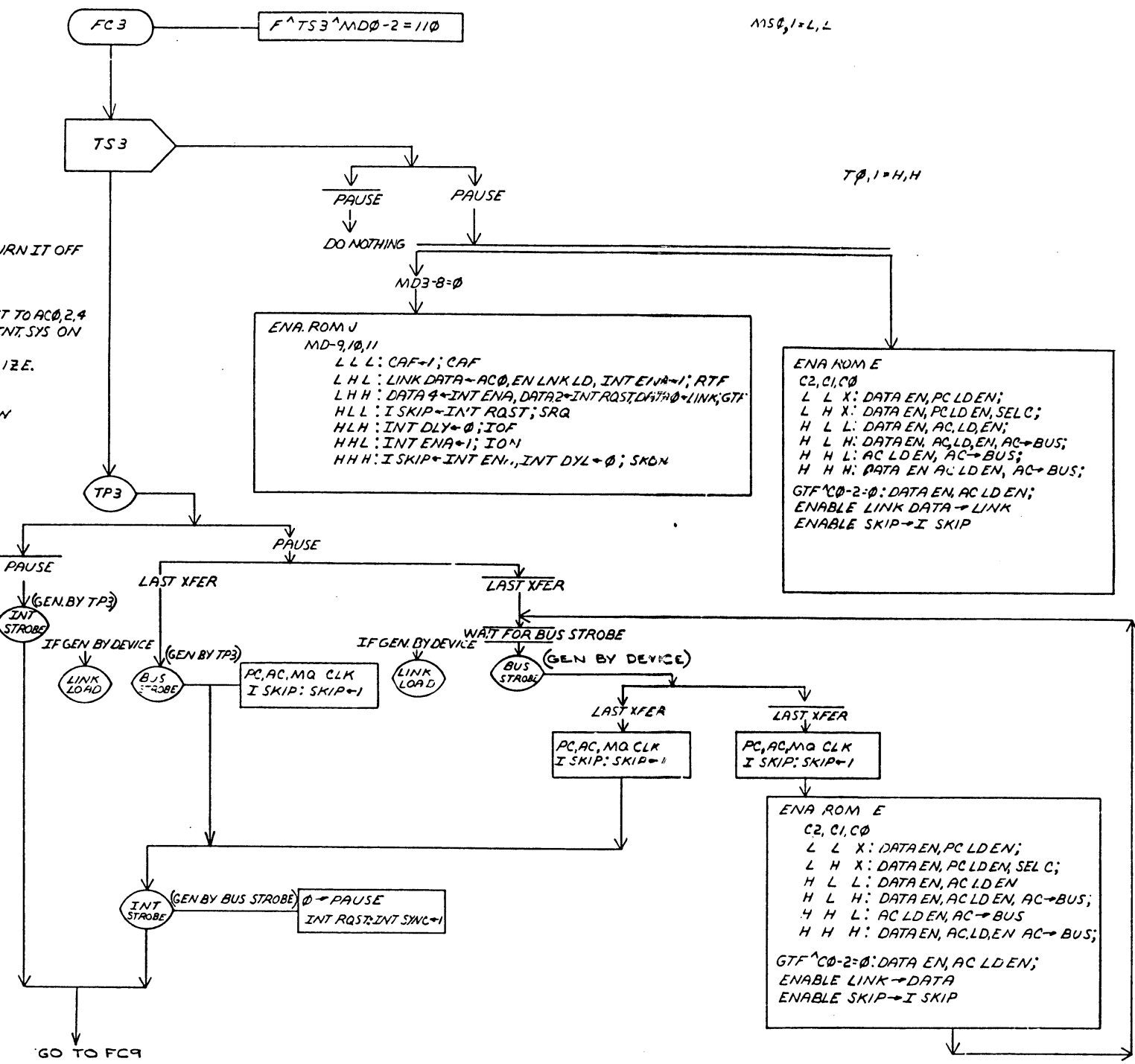
OTHER DEVICES SEND OR RECEIVE DATA DEPENDING UPON THE 'C' LINES AS FOLLOWS:

CO	C1	C2	
AC-DEV	H	H	H THE DEVICE RECEIVES THE AC AT TP3
RELATIVE JUMP	H	H	L THE DATA LINES+THE PC GO TO PC AT BUS STB
INPUT OR TO AC	H	L	H THE AC'ORED' WITH DATA LINES GOES TO THE AC BUS STB
ABSOLUTE JUMP	H	L	L THE DATA LINES GO TO THE PC AT BUS STB
AC-DEV 0-AC	L	H	H THE DEVICE RECEIVES THE AC AT TP3 AND THE AC IS CLEARED
INPUT JAM TO AC	L	L	H THE DATA LINES GO TO THE AC BUS STB

NOTE ALL I/O XFRS TAKE PLACE OVER THE DATA LINES.

IN REALITY ALL XFRS TAKE PLACE ON THE LEADING EDGE OF BUS STB IN ACCORDANCE WITH THE 'C' LINES AT THAT TIME. ASSERTING NOT LAST XFER CAUSES THE CPU TO WAIT FOR A BUS STROBE TO DO THE NEXT XFER. THE CPU WILL NOT ADVANCE TO TS4 UNTIL IT SEES A BUS STROBE WITH NOT LAST XFER NEGATED - THIS IN TURN CAUSES INTERRUPT STROBE.

LINK LOAD SHOULD BE GIVEN IN SYNC WITH BUS STROBE AND CAUSES LINK DATA TO GO TO THE LINK.

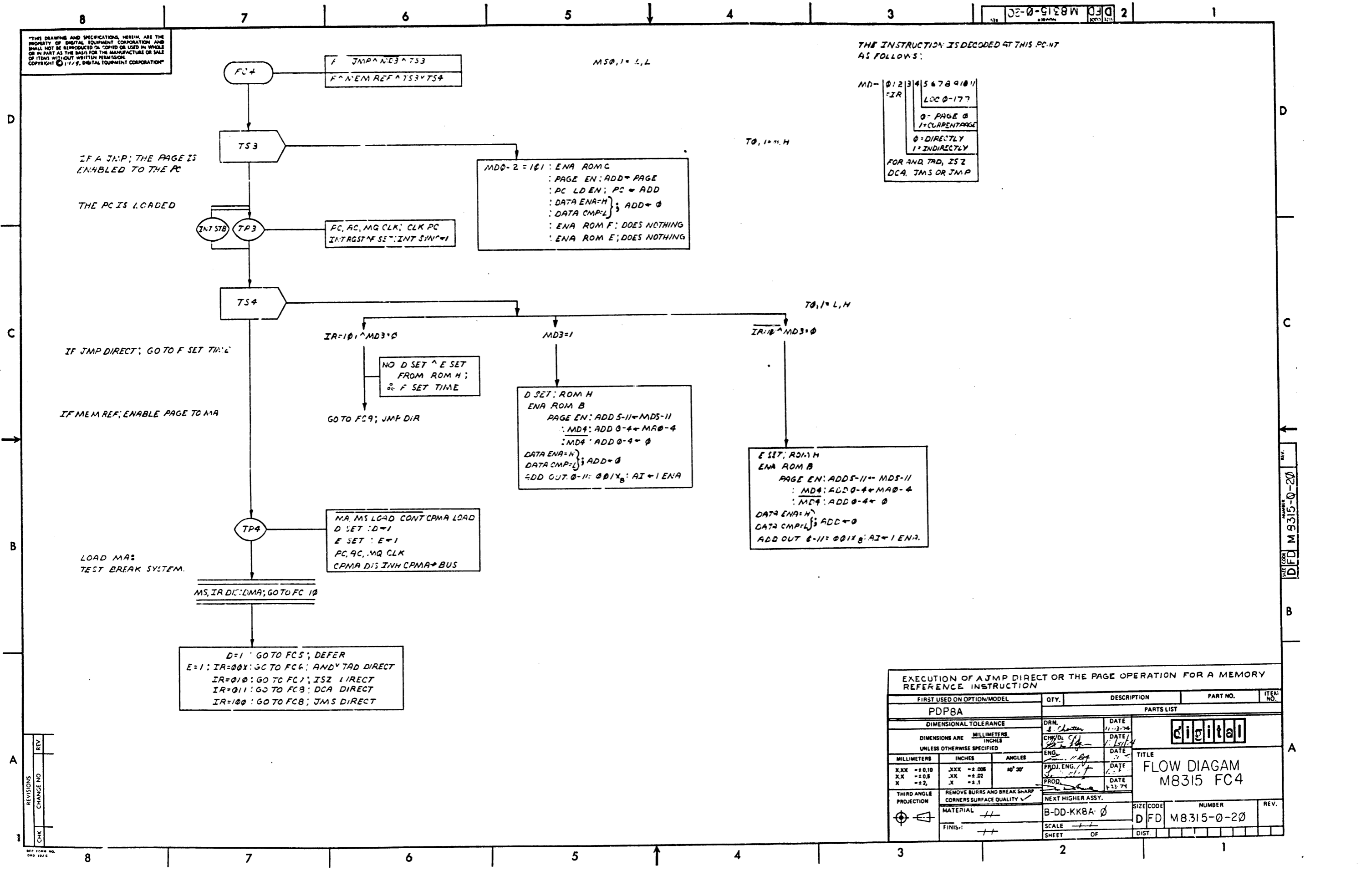
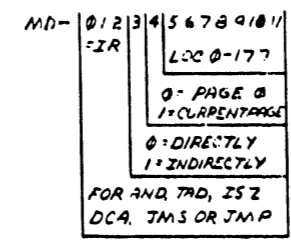


FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8A					
DIMENSIONAL TOLERANCE		DRN.	DATE	PARTS LIST	
DIMENSIONS ARE MILLIMETERS INCHES		S. Charrier	11-6-74		
UNLESS OTHERWISE SPECIFIED		CHK/DG	DATE		
MILLIMETERS	INCHES	ENG.	DATE		
X.XX ±0.10	.XXX ±0.006	PROJ. ENG.	DATE		
X.X ±0.8	.XX ±0.02	PROD.	DATE	TITLE	
X ±2	.X ±0.1		1-23-75	FLOW DIAGRAM	
THIRD ANGLE PROJECTION		REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		M8315-0-19	
MATERIAL		NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH		B-DD-KK8A-0		DFD	M8315-0-19
		SCALE		SHEET	OF
		1 OF 1		DIST.	

REVISIONS	REV.
CHANGE NO.	
CHK	

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THE INSTRUCTION IS DECODED AT THIS POINT AS FOLLOWS:



EXECUTION OF A JMP DIRECT OR THE PAGE OPERATION FOR A MEMORY REFERENCE INSTRUCTION

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8A				
PARTS LIST				
DIMENSIONAL TOLERANCE		DRN. & CHECKED	DATE	
DIMENSIONS ARE MILLIMETERS INCHES		CHKD. BY	DATE	
UNLESS OTHERWISE SPECIFIED		ENG. BY	DATE	
		PROJ. ENG. BY	DATE	
MILLIMETERS	INCHES	ANGLES	PROD. BY	DATE
X,XX = ±0.10	J,XX = ±0.008	30° 30'		
X,X = ±0.8	.XX = ±0.02			
X = ±2.	.X = ±.1			
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.		
MATERIAL	FINISH	B-DD-KK8A-0	SIZE CODE	NUMBER
			D	FD M8315-0-20
		SCALE	OF	REV.
		SHEET	OF	

REV.	CHANGE NO.	REVISIONS

REV. NUMBER M8315-0-20

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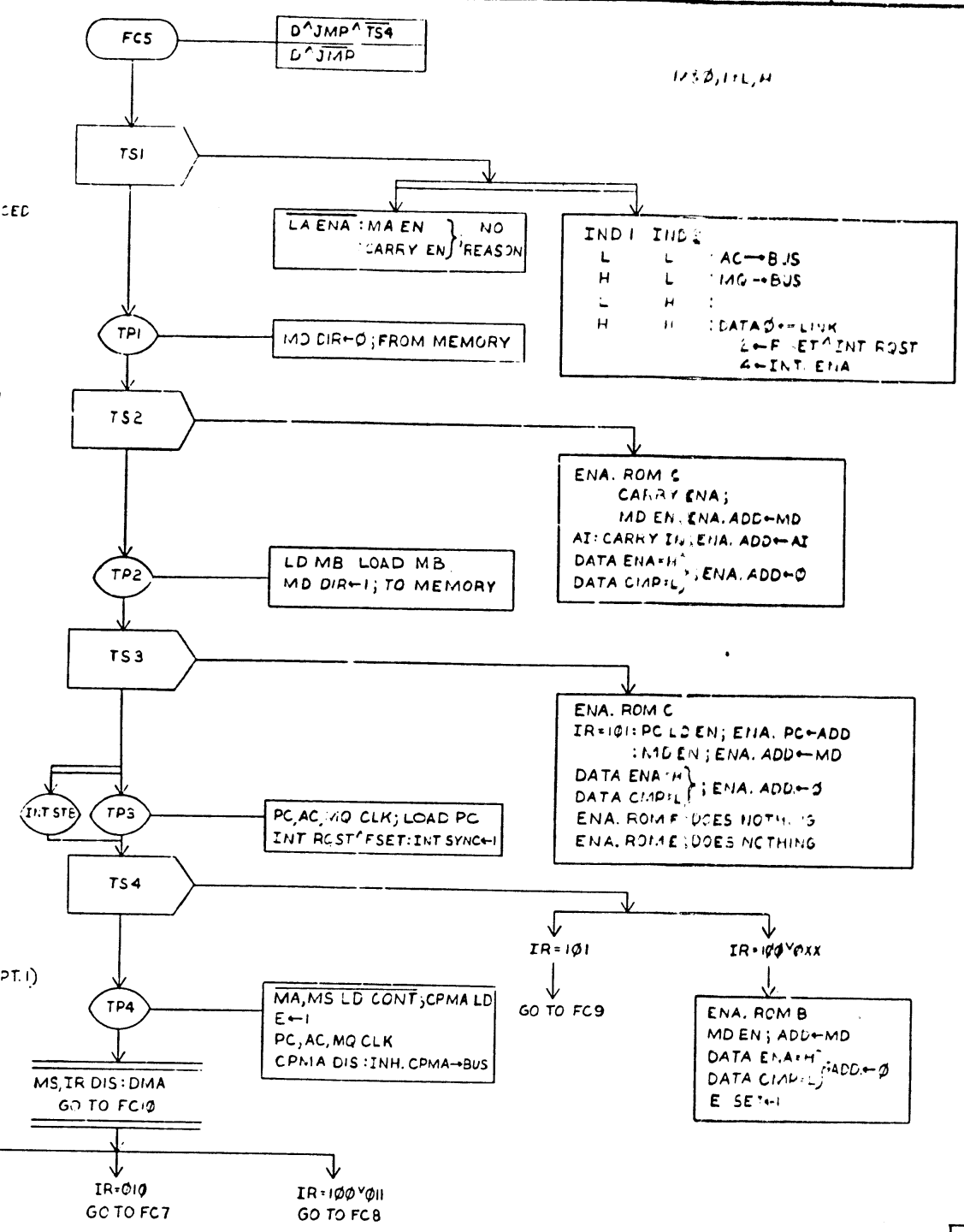
D
C
B
A

A MEMORY READ IS STARTED
INDICATOR INFORMATION IS PLACED ON DATA BUS

THE ADDRESS WILL APPEAR ON THE MD LINES
MEMORY DATA+AI GOES TO MEMORY BUFFER (AI= ADDRESS 000-0017)

MEMORY BUFFER IS LOADED AND PLACED ON MD LINES

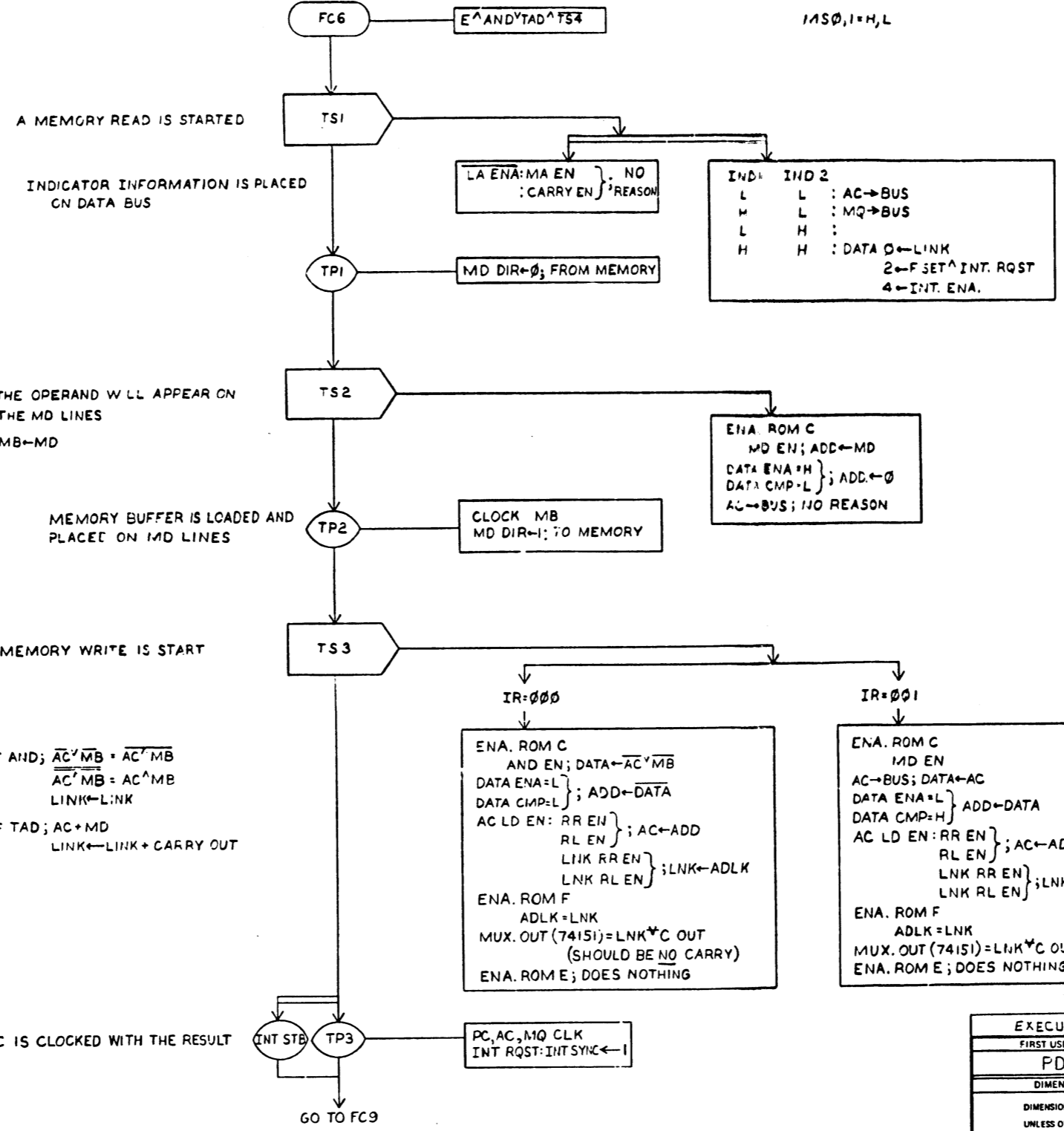
A MEMORY WRITE IS STARTED
IF JMP; ENABLE MD TO THE PC
IF JMP; LOAD THE PC
IF JMP, GO TO F SET TIME
IF JMP; GO TO E SET
MA+ME PLACES THE OPERAND ADDRESS IN THE MA (THE EMA LINES MAY HAVE CHANGED-SEE OPT.1)



EXECUTION OF A JUMP INDIRECT OR CALCULATING THE INDIRECT ADDRESS FOR AND, TAD, DCA, ISZ OR JMS				
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8A				
PARTS LIST				
DIMENSIONAL TOLERANCE		DRN	DATE	digital
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		CHK'D.	DATE	
MILLIMETERS	INCHES	ANGLES	DATE	TITLE
X.XX ±0.10	.XX ±0.006	30° 30'	PROJ. ENG.	FLOW DIAGRAM
X.X ±0.5	.X ±0.02		PROJ. ENG.	M8315 FC5
X ±2	.X ±.1		PROD.	
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.	DATE	SIZE CODE
	MATERIAL	B DD KK8A-0	DATE	NUMBER
	FINISH	SCALE	DATE	REV.
		SHEET 1 OF 1		D F D M8315-0-21

REV.	REV.
CHANGE NO.	
CHK	

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A MEMORY READ IS STARTED

INDICATOR INFORMATION IS PLACED ON DATA BUS

THE OPERAND WILL APPEAR ON THE MD LINES
MB←MD

MEMORY BUFFER IS LOADED AND PLACED ON MD LINES

A MEMORY WRITE IS START

IF AND; $\overline{AC}^* \overline{MB} = \overline{AC}^* \overline{MB}$
 $\overline{AC}^* \overline{MB} = \overline{AC}^* \overline{MB}$
LNK←LNK
IF TAD; AC←MD
LNK←LNK + CARRY OUT

THE AC IS CLOCKED WITH THE RESULT

IAS 0, I=H, L

T0, I=L, L

T0, I=H, L

T0, I=H, H

REV	CHANGE NO

EXECUTION OF AN AND OR TAD				QTY.	DESCRIPTION	PART NO.	ITEM NO.
FIRST USED ON OPTION/MODEL							
PDP8A							
DIMENSIONAL TOLERANCE				DRN	DATE		
DIMENSIONS ARE MILLIMETERS INCHES UNLESS OTHERWISE SPECIFIED				CHK'D BY	DATE		
MILLIMETERS	INCHES	ANGLES	ENG	DATE			
X.XX ±0.10	.XXX ±0.005	30° 30'	PROJ. ENG.	DATE			
X.X ±0.5	.X ±0.02		PROD.	DATE			
X ±2	X ±.1			DATE			
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		NEXT HIGHER ASSY.				
MATERIAL	FINISH						

digital
TITLE
FLOW DIAGRAM
M8315 FC6

SIZE CODE NUMBER
D F D M8315-0-22

REV. NUMBER
D F D M8315-0-22

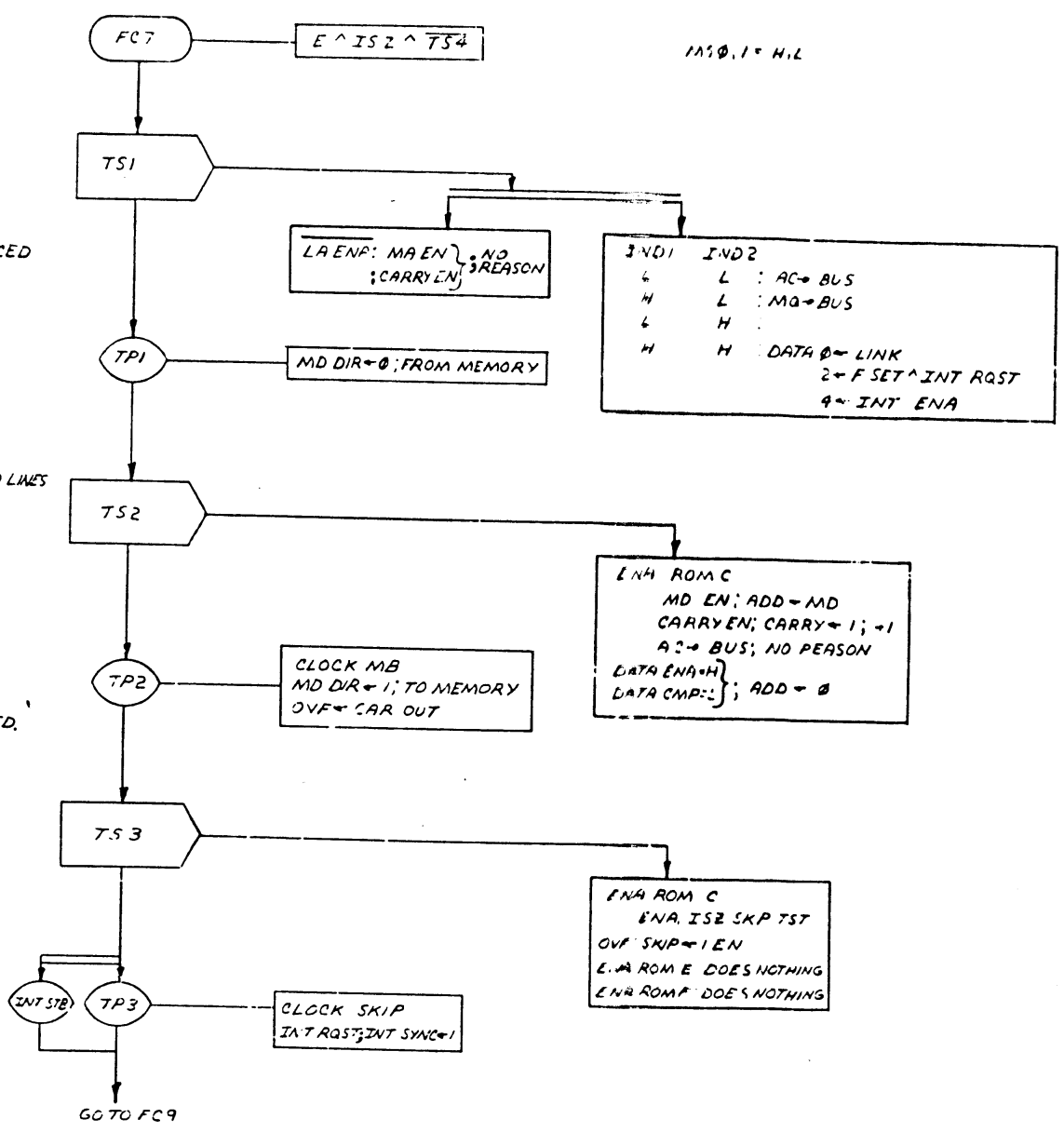
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FD M8315-0-23 2

D
C
B
A

REV	
CHK	
CHG	
REV	

SEC FORM NO. 102 C



A MEMORY READ IS STARTED
INDICATOR INFORMATION IS PLACED ON DATA BUS
THE OPERAND WILL APPEAR ON THE MD LINES MB = MD + 1
THE INCREMENTED MD IS SAVED IN THE MB AND PLACED ON THE MD LINES; THE CARRY IS SAVED.
SET SKIP = OVER FLOW

1MS 0.1 = H, L

T0,1 = L, L

T0,1 = H, L

T0,1 = H, H

EXECUTION OF AN ISZ			
FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION
PDP8A			
DIMENSIONAL TOLERANCE		DRN.	DATE
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		CHK'D.	DATE
MILLIMETERS	INCHES	ENG.	DATE
XXX = ± 0.10	XXX = ± 0.008	PROJ. ENG.	DATE
XX = ± 0.5	XX = ± 0.02	PROD.	DATE
X = ± 2	X = ± 0.1		
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.	
	MATERIAL	SIZE	CODE
	FINISH	B-DD-KK8A-0	D
		SCALE	NUMBER
		SHEET 1 OF 1	FD M8315-0-23
			REV.

8 7 6 5 4 3 2 1

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D
C
B
A

D
C
B
A

REV.	CHANGE NO.

REV. FROM 1.5
END 102 C

A MEMORY READ IS STARTED

INDICATOR INFORMATION IS PLACED ON DATA BUS.

THE OPERAND WILL APPEAR ON THE MD LINES

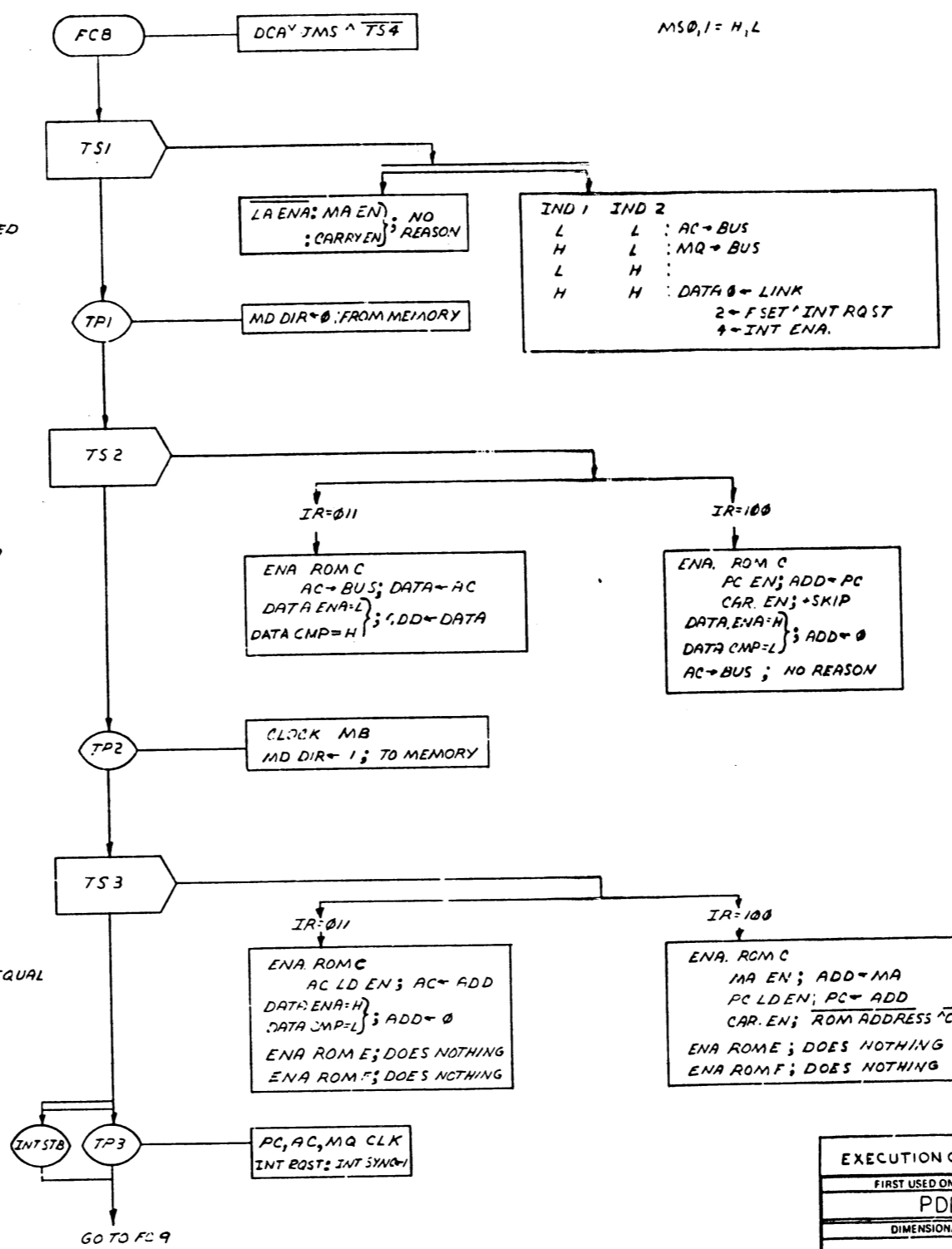
IF DCA; THE AC IS GATED TO THE MB
IF JMS; THE PC + SKIP IS GATED TO THE MB.

MB IS CLOCKED AND PLACED ON MD LINES

A MEMORY WRITE IS STARTED

IF DCA; THE AC GETS CLEARED
IF JMS; THE PC IS UPDATED TO EQUAL THE MA + ROM ADDRESS * CPMA DIS (+1 IS NORMAL)

IF DCA; CLOCK AC TO ZERO IT
IF JMS; CLOCK PC TO GET NEXT INST ADD.



MS0,1 = H,L

T0,1 = L,L

T0,1 = H,L

T0,1 = H,H

FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8A					
PARTS LIST					
DIMENSIONAL TOLERANCE		DRN. <i>Chetan</i>	DATE <i>1-2-76</i>		
DIMENSIONS ARE MILLIMETERS INCHES UNLESS OTHERWISE SPECIFIED		CHK'D <i>[Signature]</i>	DATE <i>2-5-76</i>		
MILLIMETERS	INCHES	ENG. <i>[Signature]</i>	DATE <i>1-1-76</i>		
.XX = ±0.10 .X = ±0.5 X = ±1	.XX = ±.008 .X = ±.02 X = ±.1	PROJ. ENG. <i>[Signature]</i>	DATE <i>1-21-76</i>		
THIRD ANGLE PROJECTION		REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		TITLE FLOW DIAGRAM M8315 FC8	
FINISH		NEXT HIGHER ASSY.		SIZE CODE	NUMBER
MATERIAL		B-DD-KK8A-0		D FD	M8315-0-24
SCALE		SHEET 1 OF 1		REV.	
FINISH		DIST		1	

REV. 2
D FD M8315-0-24

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IF NO INTERRUPT, PREPARE TO GET NEXT INSTRUCTION
PC ← SKIP → MA
IF INTERRUPT, EXECUTE A JMS TO LOCATION \emptyset

CLOCK THE MA

FC9 F SET TIME MSC, I=X, X

TS4

T \emptyset , I=L, H

ENA. ROM B
INT. IN PROG ^ F V D ^ E : PC EN ; ADD ← PC
: CAR. EN : SKIP ; CAR ← 1 ; ADD ← SKIP
: F SET ← 1
INT. IN PROG : NO ENABLES ; ADD ← \emptyset
: JMS → IR ENA.
: E SET ← 1

IF OPI : ENABLE 74S158 ROTATE MUX ;

1/0	5	9	
	\emptyset	\emptyset	NOP
	\emptyset	1 RL EN	ROTATE LEFT
	1	\emptyset PR EN	ROTATE RIGHT
	1	1 RR EN, RL EN	LOAD ; SHOULD NOT BE USED

TP3 1/2 OPI ^ MDI \emptyset : PC, AC, MQ CLK

MA, MS LOAD CONT : CPMA LOAD
F SET : F ← 1
E SET : E ← 1
: IR ← JMS ; IR \emptyset - 2 = \emptyset
PC, AC, MQ CLK
CPMA DIS : INH CPMA → BUS


TP4

MS, IR DIS : DMA
GC TO FC1 \emptyset

F
GO TO FC1

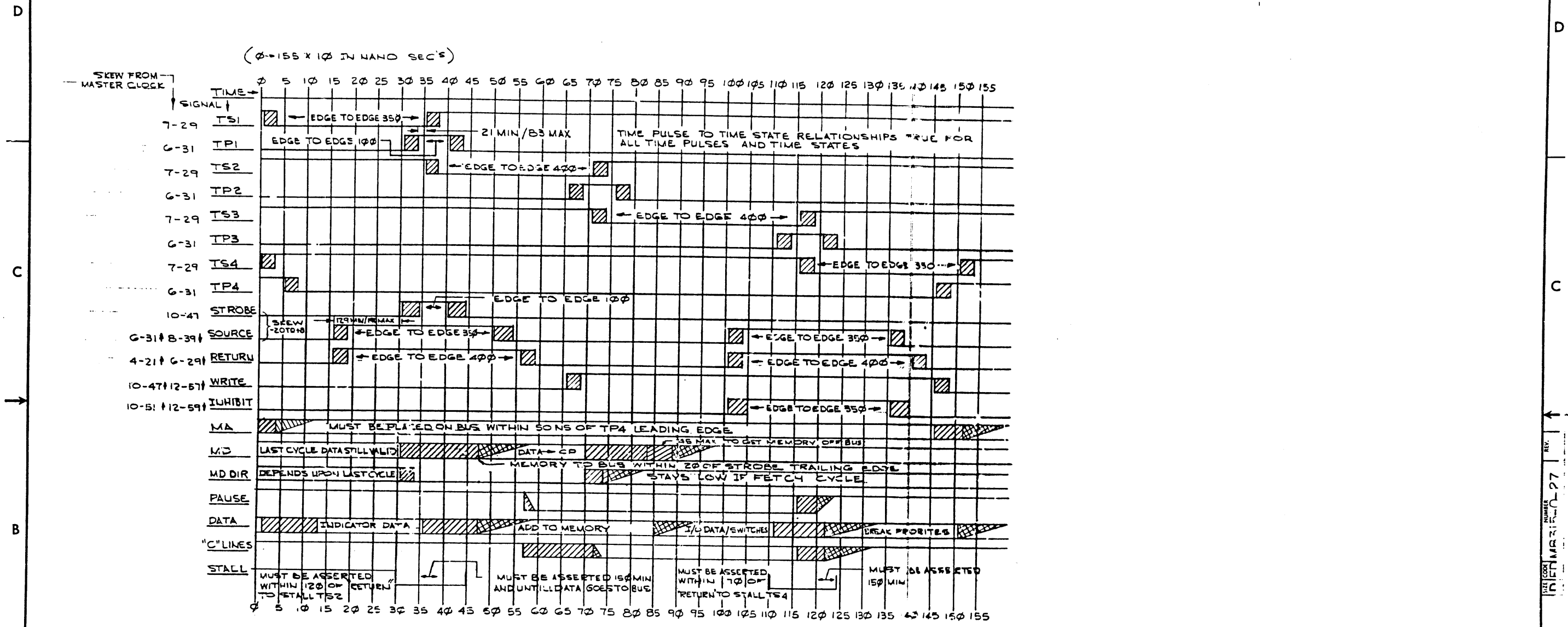
E
GO TO FC8
AN INTERRUPT HAS BEEN ALLOWED

REV.	CHANGE NO.

GETTING ADDRESS OF NEXT INSTRUCTION, OR ANSWERING INTERRUPT				
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP9A				
DIMENSIONAL TOLERANCE		DRN.	DATE	 TITLE FLOW DIAGM M8315 FC9
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		CHK'D.	DATE	
MILLIMETERS	INCHES	ENG.	DATE	
X,XX ± 0.10	.XXX ± .006	PROJ. ENG.	DATE	
X,X ± 0.5	.XX ± .02	PROD.	DATE	
X ± 2	.X ± .1		DATE	
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	NEXT HIGHER ASSY.		
MATERIAL	FINISH	SCALE	SHEET 1 OF 1	

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($\phi = 155 \times 10^9$ IN NANO SEC'S)

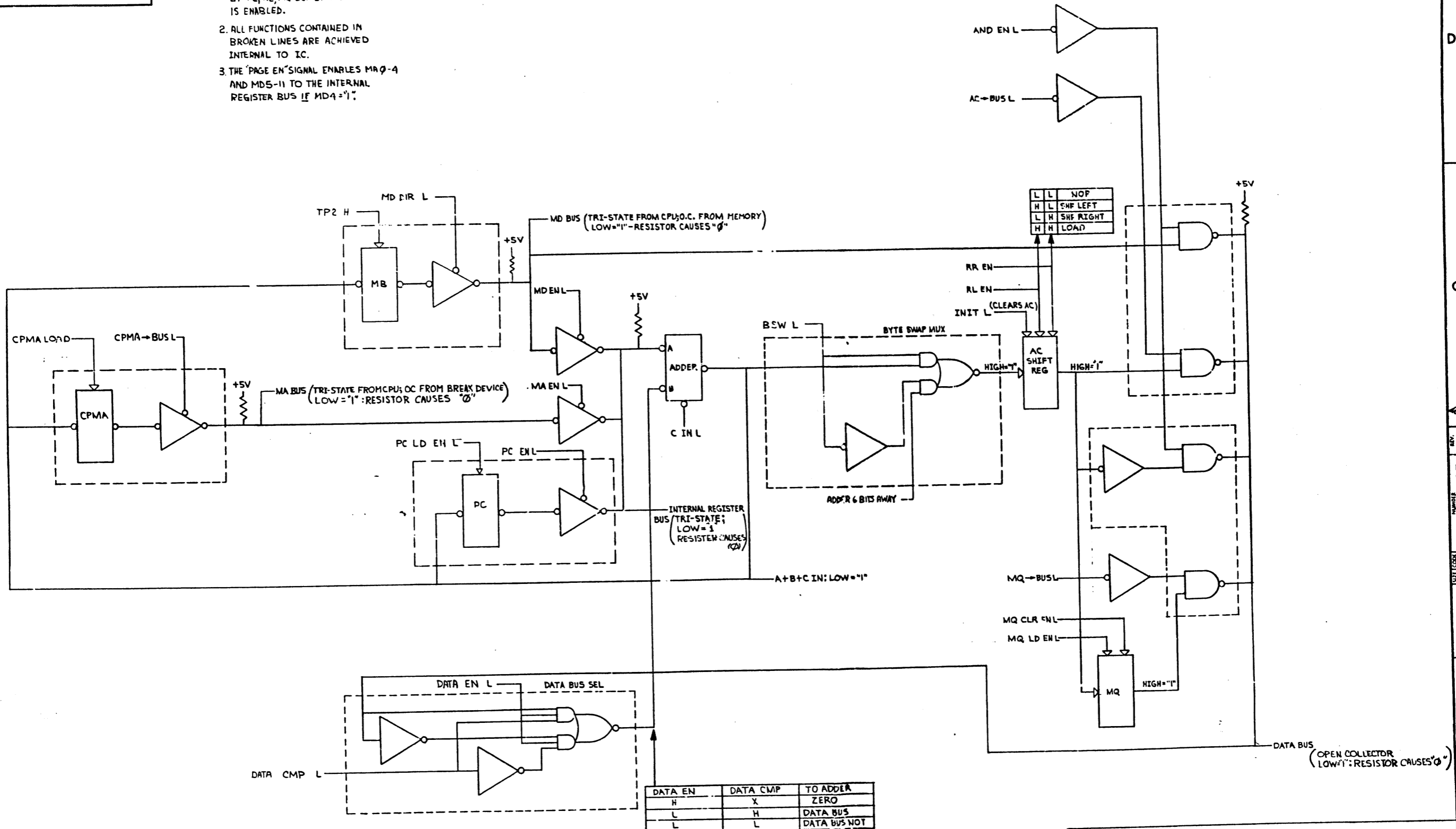


REV.	
CHANGE NO.	

PDP-11 DATA PATH FUNCTION & TIMING													
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.										
PDP-11													
DIMENSIONAL TOLERANCE		PARTS LIST											
DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED		<table border="1"> <tr> <td>DATE</td> <td>1/22/74</td> </tr> <tr> <td>CHK'D</td> <td>DATE</td> </tr> <tr> <td>ENG.</td> <td>DATE</td> </tr> <tr> <td>PROJ. ENG.</td> <td>DATE</td> </tr> <tr> <td>PH. JTL</td> <td>DATE</td> </tr> </table>		DATE	1/22/74	CHK'D	DATE	ENG.	DATE	PROJ. ENG.	DATE	PH. JTL	DATE
DATE	1/22/74												
CHK'D	DATE												
ENG.	DATE												
PROJ. ENG.	DATE												
PH. JTL	DATE												
TITLE		digital											
FLOW DIAGRAM		M8315 BUS TIMING											
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.											
MATERIAL	FINISH	B-DDK18A-3	SCALE										
			SHEET 1 OF 2										

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- NOTES:
1. THE PC, AC AND MQ ARE LOADED BY PC, AC, MQ CLK IF THE LOAD IS ENABLED.
 2. ALL FUNCTIONS CONTAINED IN BROKEN LINES ARE ACHIEVED INTERNAL TO IC.
 3. THE 'PAGE EN' SIGNAL ENABLES MQ-4 AND MD5-11 TO THE INTERNAL REGISTER BUS IF MD4='1'.



DATA EN	DATA CMP	TO ADDER
H	X	ZERO
L	H	DATA BUS
L	L	DATA BUS NOT

REVISIONS		DATA PATH FUNCTIONS	
CHK	CHANGE NO.	TITLE	NUMBER
		FLOW DIAGRAM MB315 BUS TIMING	D FD M8315-0-27
		SCALE	SHEET 2 OF 2

CHK	CHANGE NO.	REV.

REV. 1 DFD M8315-0-27