FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
11/55-CA
11/55-CB
11/55-CC
11/55-CD
11/55-CE
11/55-CF

11/55 VOL.1

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØØ39

REVISIONS	REV.	CHG. NO.	DATE

USED ON OPTION/MODEL	
11/55-BA	
11/55-BB	
11/55-BC	
11/55-BD	

SHEET 1 OF 1

DRN. D.HEALY	DATE 2FEB76	TITLE: FIELD MAINTENANCE PRINT SET PDP11/55 (CPU)
CHK'D D.HEALY	DATE 10/FEB/76	
PROJ. ENG. Darrell Boor	DATE 18MAR76	
FIELD SERV. DAVE CARLOS	DATE 18MAR76	

digital

SIZE	CODE	NUMBER	REV.
B	TC	11/55-Ø-1	

DIST.

DRR 124

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

~~CUSTOMER PRINT SET INDEX~~

SEQUENCE SEQUENCE

~~THIS IS PRINT SET~~

NOTE:
FOR FIELD MAINTENANCE
PRINT SET REFER TO
B-TC-11/55-Ø-1 (CPU)
B-TC-11/55-Ø-2 (INTERNAL OPTIONS)

UNIT VARIATIONS

VAR	TITLE	PRINT SET
11/55-CA	BASIC ASSY PDP11/55 115V	
11/55-CB	BASIC ASSY PDP11/55 230V	
11/55-CC	BASIC ASSY PDP11/55 115V	
11/55-CD	BASIC ASSY PDP11/55 230V	
11/55-CE	BASIC ASSY PDP11/55 115V	
11/55-CF	BASIC ASSY PDP11/55 230V	

REVISIONS

REV	CHG. NO.	DATE
A	11/55-1	5-76

USED ON OPTION/MODEL	
11/55-BA	
11/55-BB	
11/55-BC	
11/55-BD	

DRN. K. BEASLEY	DATE 6 FEB 76	TITLE BASIC ASSY PDP11/55
CHK'D. D. HEALY	DATE 9 FEB 76	
PROJ ENG [signature]	DATE 12 FEB 76	
PROD. [signature]	DATE [illegible]	SIZE B · CODE DD · NUMBER 11/55-0 · REV A
~~FIELD SERV.~~	~~DATE~~	DIST

SHEET 1 OF 6

LN-01062-1A-16-R972-(325)

DRB 106

1 — BASIC ASSY
PDP11/55
D-UA-11/55-0-0
C-PL-11/55-0-0

2 — 16 BIT PROCESSOR
B-DD-KB11-D

3 — BIPOLAR CONTROLLER
B-DD-MS11-C

4 — BIPOLAR MATRIX
BOARD
B-DD-MS11-A

5 — 16 K CORE MEMORY
B-DD-MF11-U

6 — MEMORY MANAGEMENT
B-DD-KT11-CD

* 7 — RESTART LOADER
B-DD-BM873-Ø

* 8 — LINE TIME CLOCK
B-DD-KW11-L

* 9 — ASYNCHRONOUS LINE
INTERFACE
B-DD-DL11-Ø

* 10 — DEC WRITER II
B-DD-LA36-Ø

11 — ETCH BOARD ASSY
(11/45 CONSOLE)
E-IA-5409684-0-0

12 — CABINET ASSY
(PDP11)
D-UA-H96Ø-C-Ø
D-DI-H96Ø-C-1

13 — CONTROL POWER
861
B-DD-861-0

14 — POWER SUPPLY
H742Ø
B-DD-H742Ø-Ø

15 — +5V REGULATOR
B-DD-H744-Ø

16 — -15V REGULATOR
B-DD-H745-Ø

17 — POWER HARNESS
J-IA-7009540-0-0

18 — H95Ø-Q 19" COVER
PANEL (10½)
D-UA-H95Ø-Q-Ø
D-DI-H95Ø-Ø-1

19 — MOUNTING BOX ASSY
B-DD-BA11-F

20 — PANEL, INDICATOR
D-IA-7409271-0-0

21 — BEZEL 11/45
E-PS-1210710-0-0

22 — +20V, -5V REGULATOR
B-DD-H754-Ø

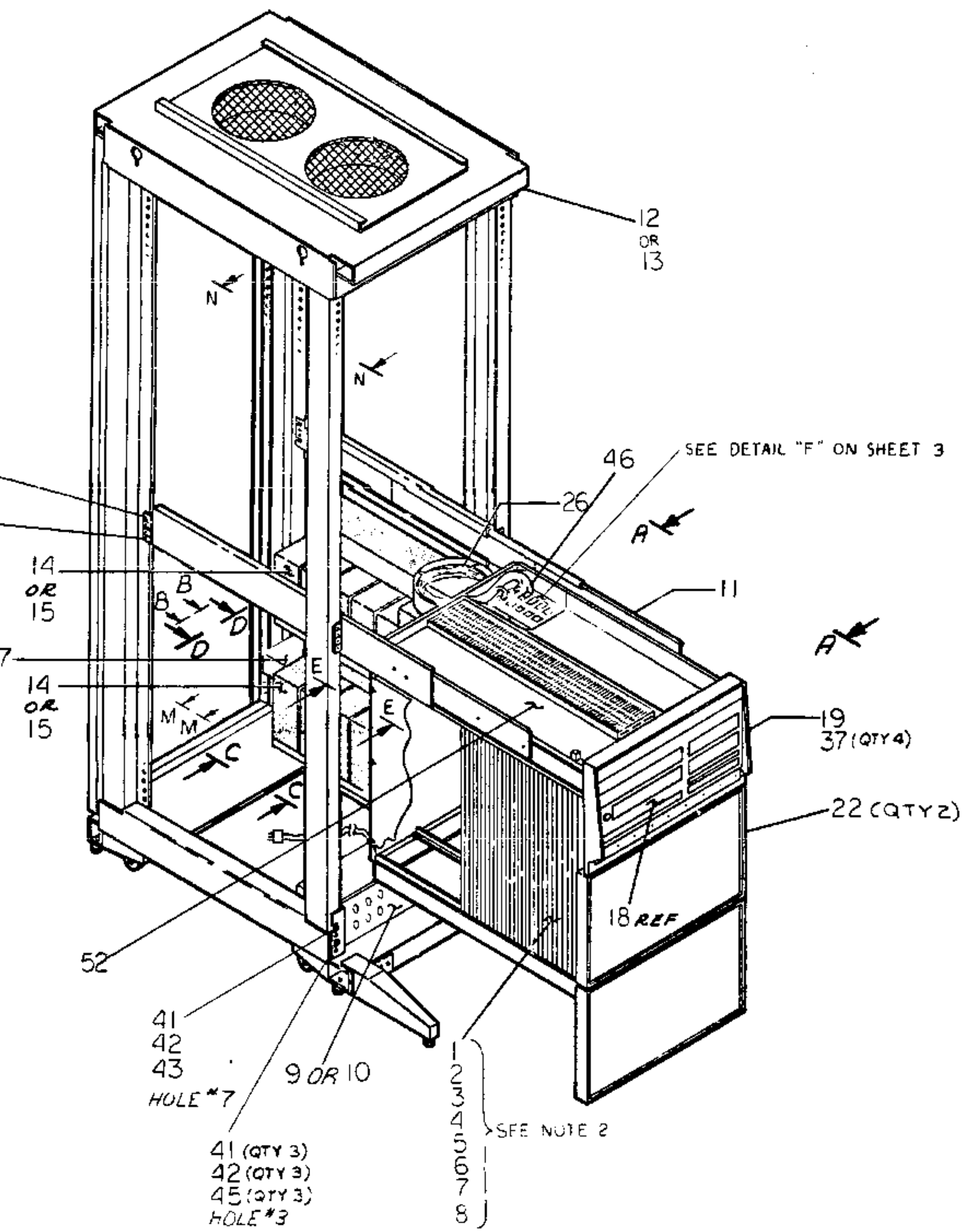
* 23 — ASYNCHRONOUS
INTERFACE
B-DD-DLII-W
A-PL-DLII-W

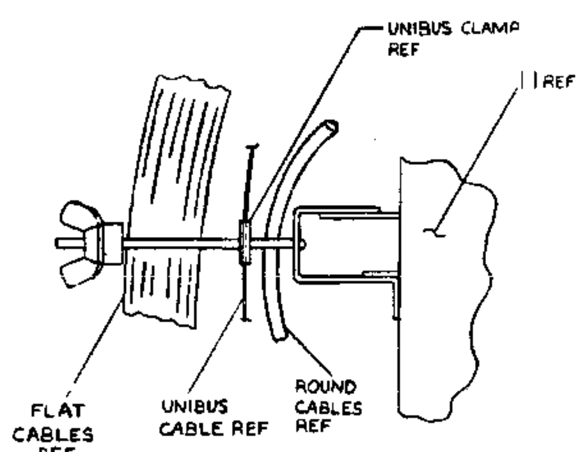
* 24 — RESTART LOADER
B-DD-M93ØI-YB
A-PL-M93ØI-YB

* OPTION

TITLE		SIZE	CODE	NUMBER	REV
BASIC ASSY PDP11/55	SHEET 2 OF 6	B	DD	11/55-0	A

DRB 107
DEC 16 - (325) - 1062 - 3 - N675





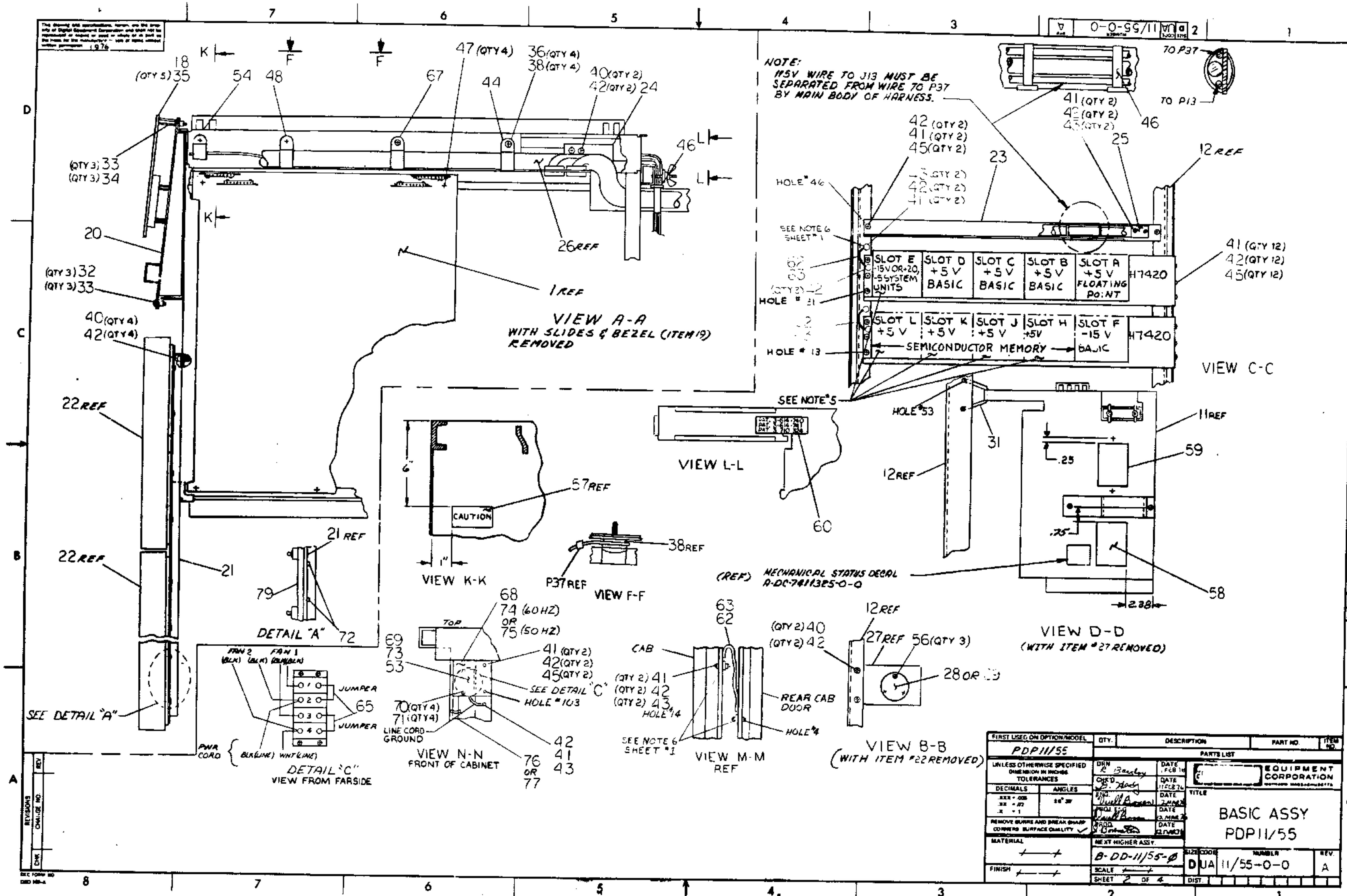
VIEW E-E
SCALE: NONE
SEE NOTE #7

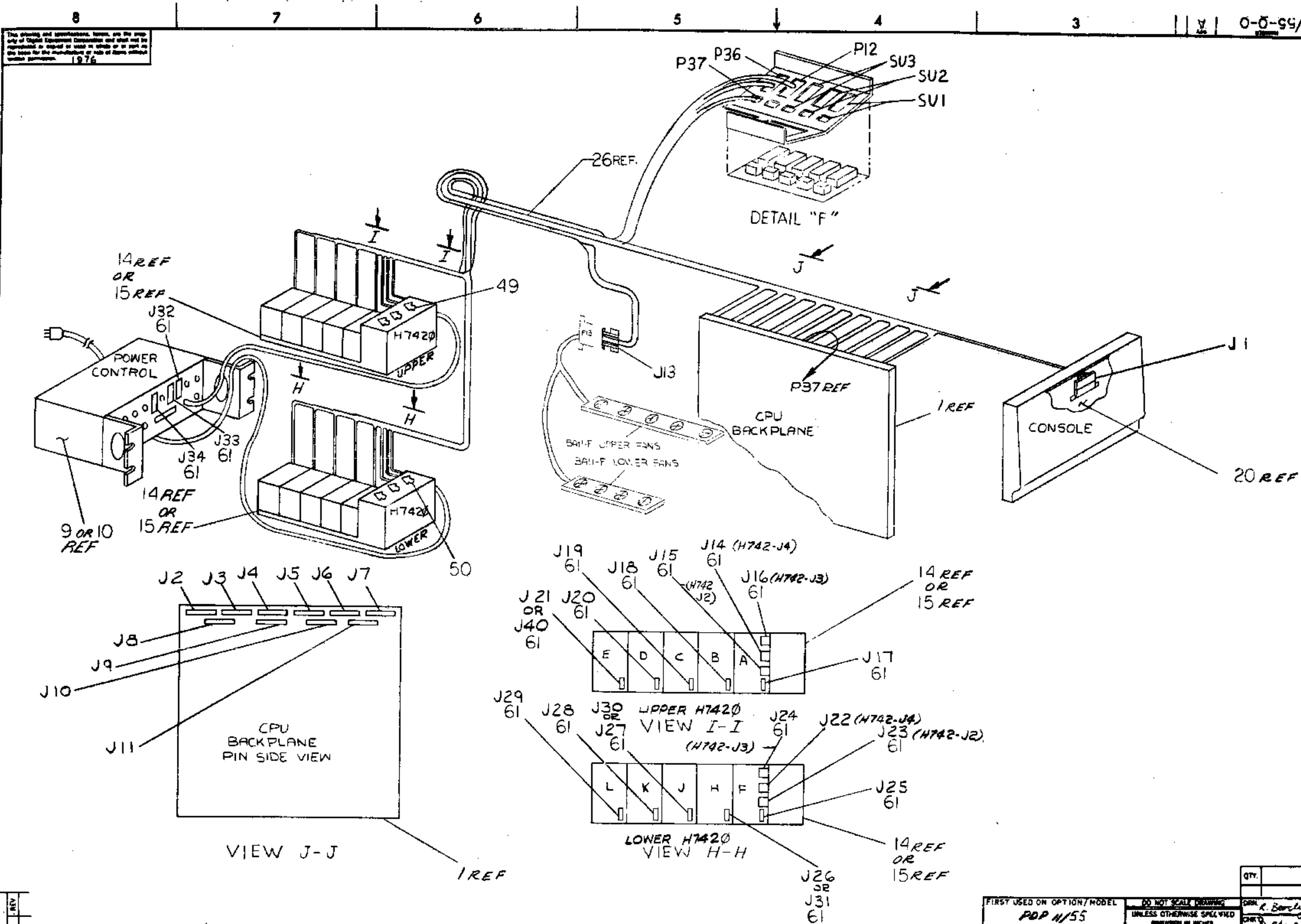
NOTES:

1. IN SYSTEMS CONFIGURATION, SEPARATE PARALLEL BC11-A UNIBUS CABLES WITH .12 IN. GRAY FOAM TAPE DEC #9006881.
2. ITEM'S # 2 THRU # 8 NOT SHOWN.
3. USE CABLE GUIDE (P/N 1212064) WHERE NECESSARY.
4. THE UPPER H7420 TO BE PLUGGED INTO THE SWITCHED CIRCUIT 2, AND THE LOWER H7420 TO BE PLUGGED INTO THE UNSWITCHED CIRCUIT 1. THE CABINET FANS MUST BE PLUGGED INTO UNSWITCHED CIRCUIT 1. THE REMAINING LOADS ARE TO BE BALANCED BETWEEN CIRCUIT 1 AND CIRCUIT 2 SELECTING SWITCHED OR UNSWITCHED AS APPROPRIATE.
5. ALL LOOSE CONNECTORS ON THE MAIN-POWER HARNESS (P/N 7009540) WHICH ARE NOT IN USE DUE TO THE LACK OF ONE OR MORE REGULATORS, ARE TO BE INSERTED INTO AN 8 PIN MATE-N-LOCK CONNECTOR, ITEM #66, AND THE CONNECTOR IS TO BE SECURED TO THE H7420 POWER SUPPLY USING ITEM'S #64 & #39 OR IN THE CASE OF EXTRA PLUGS FOR THE +20V REGULATORS, SECURE LOOSE PLUGS TO THE POWER HARNESS USING ITEM #46.
6. SCRAPE PAINT FROM GROUND MTG HOLE INDICATED IN CAB UPRIGHT-4 PLACES FOR MTG ITEM #62 GROUND STRAPS.
7. WHEN MTG CABLES IN THE CABLE CLAMP THEY SHALL BE MTD AGAINST CLAMP WALL IN THIS ORDER ONLY. ROUND CABLES FIRST, UNIBUS CABLES SECOND & FLAT CABLES LAST. ANY DEVIATION COULD CAUSE FRACTURE OF UNIBUS CABLE. (SEE VIEW E-E).

REVISIONS			
DWN	CHANGE NO	REV	
11/55	00001	A	V. BOAEN 21 JUNE 16

FIRST USED ON OPTION/MODEL: PDP11/55	QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES; DECIMALS .XXX ± .005, .XX ± .03, .X ± .1; ANGLES ± 0° 30'	DRN. L. Beasley	DATE	EQUIPMENT CORPORATION	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	CHK'D	DATE	TITLE: BASIC ASSY PDP11/55	
MATERIAL: SEE PARTS LIST	NEXT HIGHER ASSY. B-DD-11/55-0		SIZE D, CODE UA, NUMBER 11/55-0-0	REV. A
FINISH	SCALE; SHEET 1 OF 4		DIST	


NOTE:
115V WIRE TO J13 MUST BE SEPARATED FROM WIRE TO P37 BY MAIN BODY OF HARNESS.
VIEW A-A
WITH SLIDES & BEZEL (ITEM 19) REMOVED
VIEW C-C
SLOT E -15V OR +20, -5 SYSTEM UNITS
SLOT D +5 V BASIC
SLOT C +5 V BASIC
SLOT B +5 V BASIC
SLOT A +5 V FLOATING POINT
H7420
SLOT L +5 V
SLOT K +5 V
SLOT J +5 V
SLOT H +5V
SLOT F -15 V BASIC
SEMICONDUCTOR MEMORY
H7420
SEE NOTE 5
VIEW L-L
VIEW K-K
CAUTION
VIEW F-F
(REF) MECHANICAL STATUS DECAL A-DC-7411325-0-0
VIEW D-D
(WITH ITEM 27 REMOVED)
DETAIL "A"
SEE DETAIL "A"
DETAIL "C"
VIEW FROM FARSIDE
FAN 2 (BLK)
FAN 1
JUMPER
PWR CORD
VIEW N-N
FRONT OF CABINET
LINE CORD GROUND
SEE DETAIL "C"
VIEW M-M REF
REAR CAB DOOR
CAB
VIEW B-B
(WITH ITEM 22 REMOVED)
FIRST USED ON OPTION/MODEL PDP11/55
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
EQUIPMENT CORPORATION
TITLE BASIC ASSY PDP11/55
NEXT HIGHER ASSY B-DD-11/55-0
SIZE D CODE UA NUMBER 11/55-0-0 REV. A
SHEET 2 OF 4



FIRST USED ON OPTION/MODEL: PDP 11/55

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED — TOLERANCES

NEXT HIGHER ASSY: B-DD-11/55-0

EQUIPMENT CORPORATION

TITLE: BASIC ASSY PDP 11/55

SIZE CODE: D UA — NUMBER: 11/55-0-0 — REV: A

SHEET 3 OF 4

PARTS LIST: QTY. | DESCRIPTION | PART NO. | ITEM NO.

WIRE TABLE #1

ITEM NO.	FROM HARNESS CONNECTION	TO CONNECTION
26	P1	J1
	P2	J2
	P3	J3
	P4	J4
	P5	J5
	P6	J6
	P7	J7
	P8	J8
	P9	J9
	P10	J10
	P11	J11
	P12	J12
	P13	J13
	P14	J14
	P15	J15
	P16	J16
	P17	J17
	P18	J18
	P19	J19
	P20	J20
	P21	J21 (E-H745)
	P22	J22
	P23	J23
	P24	J24
	P25	J25
	P26	J26
	P27	J27
	P28	J28
	P29	J29
	P30	J30
	P31	J31
	P32	J32
	P33	J33
	P34	ELAPSED TIME METER
	P35	ELAPSED TIME METER
	P36	J36
	P37	GND CH
	P38	GND CH
	P39	GND CH
26	P40	J40 (E-H754)

REGULATOR/HARNESS JUMPER CONFIG. FOR SEMICOND. MEMORY

MEMORY	BACK PANEL SLOT							REG SLOT				HARNESS TO BE CUT	REMARKS
BIPOLAR	17	18	19	20	22	23	24	25	H	J	K	L		
4K	B	–	–	–	–	–	–	–	+5	–	–	–	NONE	NONE
8K		B	–	–						–			NONE	
12K			B	–						+5			P5 - PINS 7-8	
16K				B	–					–			P5 - PINS 7-8	
20K					B	–					+5		P5 - PINS 3-4 & 7-8	
24K						B	–					–	P5 - PINS 3-4 & 7-8	
28K						B	B	–					P5 - PINS 3-4 & 7-8, P6 - PINS 7-8	
32K	B	B	B	B	B	B	B	B	+5	+5	+5	+5	P5 - PINS 3-4 & 7-8, P6 - PINS 7-8	NONE

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
BASIC ASSY PDP11/55	D	UA	11/55-0-0	A
SCALE —#—	SHEET 4 OF 4		DIST.	

ITEM NO.	DWG. NO./PART NO.	DESCRIPTION	QUANTITY/VARIATIONS 11/55-CA	11/55-CB	11/55-CC	11/55-CD	11/55-CE	11/55-CF
1	A-PL-KB11-D-Ø	16 BIT PROCESSOR	1	1	1	1	1	1
2	A-PL-MS11-CC-Ø	BIPOLAR CONTROLLER	2	2	1	1	-	-
3	A-PL-MS11-AP-Ø	BIPOLAR MATRIX BOARD	8	8	4	4	-	-
4	D-UA-MF11-UP-Ø	16K CORE MEMORY	-	-	1	1	-	-
5	A-PL-KT11-CD-Ø	MEMORY MANAGEMENT	1	1	1	1	1	1
6	~~A-PL-BM873-YY-Ø~~	~~RESTART LOADER~~	1	1	1	1	1	1
7	~~C-UA-DJ[illegible]~~	~~ASYNCHRONOUS LINE INTERFACE~~	1	1	1	1	1	1
8	~~A-PL-KW[illegible]~~	~~LINE TIME CLOCK~~	1	1	1	1	1	1
9	E-UA-861-A-[illegible]	CONTROL POWER 115VAC	1	-	1	-	1	-
10	E-UA-861-B-Ø	CONTROL POWER 230VAC	-	1	-	1	-	1
11	E-UA-BA11-FA-Ø	MTG. BOX ASSY	1	1	1	1	1	1
12	D-UA-H96Ø-CD-Ø	CABINET ASSY (PDP-11)	1	-	1	-	1	-
13	D-UA-H96Ø-CE-Ø	CABINET ASSY (PDP-11)	-	1	-	1	-	1
14	E-UA-H742Ø-A-Ø	POWER SUPPLY H742ØA, 120VAC	2	-	2	-	2	-
15	E-UA-H742Ø-B-Ø	POWER SUPPLY, H742ØB 240VAC	-	2	-	2	-	2
16	E-UA-H744-0-0	+5V REGULATOR	3	3	3	3	3	3
17	E-UA-H745-0-0	-15 REGULATOR	1	1	1	1	1	1
18	D-IA-7409271-4-0	PANEL, CONSOLE INDICATOR	1	1	1	1	1	1
19	E-PS-1210710-0-0	BEZEL	1	1	1	1	1	1
20	E-IA-5409684-0-0	ETCH BOARD ASSY (11/45 CONSOLE)	1	1	1	1	1	1
21	D-IA-7409289-0-0	MTG. BRKT. 10.50 PANEL	2	2	2	2	2	2
22	D-UA-H95Ø-QB-Ø	H95Ø-Q 19" COVER PANEL 10.50	2	2	2	2	2	2
23	D-MD-7409445-0-0	BRACKET, HARNESS SUPPORT	1	1	1	1	1	1
24	D-MD-7409446-0-0	SUPPORT, HARNESS	1	1	1	1	1	1
25	B-MD-7409447-0-0	PLATE, SUPPORT	1	1	1	1	1	1
26	J-IA-7009540-0-0	11/45 POWER HARNESS	1	1	1	1	1	1
27	D-IA-7409622-0-0	BRKT. METER MTG.	1	1	1	1	1	1
28	1201208	METER, ELAPSED TIME M1906, 120VAC	1	-	1	-	1	-
29	1202234	METER, ELAPSED TIME M1905, 240VAC	-	1	-	1	-	1
30	C-IA-7008864-0-0	INDICATOR CABLE	2	2	2	2	2	2
31	A-PL-7010865-0-0	BRACKET, SHIPPING	1	1	1	1	1	1
32	9006022-3	SCR PHL HD TRUSS 6-32 x .38	3	3	3	3	3	3
33	9006633	WASHER INTERNAL TOOTH #6	6	6	6	6	6	6
34	9009120-1	SPACER, HEX SPECIAL	3	3	3	3	3	3
35	9006404-2	SCR FLAT HD NYLON #6-32 x .38	5	5	5	5	5	5
36	9006037-3	SCR PHL HD TRUSS 8-32 x .38	4	4	4	4	4	4
37	9006022-1	SCR PHL HD PAN 6-32 x .38	4	4	4	4	4	4
38	9008072	WASHER, LOCK EXT TOOTH #8	4	4	4	4	4	4
39	9006563	NUTS, KEPS 8-32	5	5	5	5	5	5
40	9006071-3	SCR PHL HD TRUSS 10-32 x .38	8	8	8	8	8	8
41	9006073-3	SCR PHL HD TRUSS 10-32 x .50	43	43	43	43	43	43
42	9007651	WASHER, LOCK EXT. TOOTH #10	53	53	53	53	53	53
43	9006565	NUTS, KEPS 10-32	8	8	8	8	8	8

REVISIONS	REV.	CHANGE NO.	CHK
	A	11/55-00001	V. BOAEN

DRN. R. BEASLEY	4 FEB 76	FIRST USED ON 11/55
CHK'D D. HEALY	4 FEB 76	TITLE: BASIC ASSY PDP11/55
ENG.	12 FEB 76	
PROJ. ENG.	12 FEB 76	
PROD.	12 FEB 76	
NEXT HIGHER ASSY.		
D-UA-11/55-0-0		SIZE C, CODE PL, NUMBER 11/55-0-0, REV. A
SCALE		DIST.
SHEET 1 OF 2		

DEC FORM NO. DRO 110 A

QUANTITY/VARIATIONS

ITEM NO.	DWG. NO./PART NO.	DESCRIPTION	11/55-CA	11/55-CB	11/55-CC	11/55-CD	11/55-CE	11/55-CF
44	9007090	CLAMP, CABLE .88	1	1	1	1	1	1
45	9007786	NUT, TINNERMAN	35	35	35	35	35	35
46	9007880	TIE WRAP	A/R	A/R	A/R	A/R	A/R	A/R
47	9007988-B	SCR SOCKET HD CAP 8-32 x 1.00	4	4	4	4	4	4
48	9007087	CLAMP, CABLE .62	1	1	1	1	1	1
49	A-DC-5310049-0-0	DECAL, POWER SUPPLY	1	1	1	1	1	1
50	A-DC-5310048-0-0	DECAL, POWER SUPPLY	1	1	1	1	1	1
51	9007867	TIE MOUNT	A/R	A/R	A/R	A/R	A/R	A/R
52	A-PS-5613212-0-1	DECAL (KB11-D)	1	1	1	1	1	1
53	9007928	CONN. SOLDERLESS	3	3	3	3	3	3
54	9007083	CLAMP, CABLE .38	A/R	A/R	A/R	A/R	A/R	A/R
55	9008881	TAPE, FOAM, GRAY .12 x 1.19	A/R	A/R	A/R	A/R	A/R	A/R
56	9009236	SCR SELF TAP 4-40 x .31	3	3	3	3	3	3
57	A-DC-7411170-0-0	BACK PANEL CAUTION DECAL	1	1	1	1	1	1
58	A-DC-5310710-0-0	DECAL 11/45 - 11/50 REG. CONF. B	1	1	1	1	1	1
59	A-DC-5310709-0-0	DECAL, 11/45 - 11/50 REG. CONF. A	1	1	1	1	1	1
60	A-DC-7409478-0-0	DECAL, PATENT	1	1	1	1	1	1
61	A-DC-7409873-0-0	DECAL J1-J4Ø WHITE ON CLR	A/R	A/R	A/R	A/R	A/R	A/R
62	9006990	GROUND STRAP	3	3	3	3	3	3
63	9107246	.50" TUBING	18"	18"	18"	18"	18"	18"
64	9006037-1	SCR. PHL. PAN HD. 8-32 x .38	5	5	5	5	5	5
65	9009002	CINCH JONES JUMPER	2	2	2	2	2	2
66	1209340	8 PIN MATE-N-LOCK CONN.	7	7	7	7	7	7
67	9007089	CLAMP CABLE .75	1	1	1	1	1	1
68	C-MD-7407607-0-0	PLATE JONES STRIP	1	1	1	1	1	1
69	9006899	CINCH JONES TERMINAL STRIP	1	1	1	1	1	1
70	9006025-1	SCR. PHL. PAN HD. 6-32 x .62	4	4	4	4	4	4
71	9006560	NUT, KEPS #6-32	4	4	4	4	4	4
72	9006071-2	SCR PHL. FLAT HD. 10-32 x .38	16	16	16	16	16	16
73	9007929	CONN. SOLDERLESS	4	4	4	4	4	4
74	100104-1	DECAL 115 VAC WHITE ON CLR.	1	-	1	-	1	-
75	100104-7	DECAL 230 VAC WHITE ON CLR.	-	1	-	1	-	1
76	1700006-9	LINE CORD 115V	1	-	1	-	1	-
77	1700016-9	LINE CORD 230V	-	1	-	1	-	1
78	1212064	CABLE GUIDE	1	1	1	1	1	1
79	A-PS-1209224-0-0	LATCH, MOLDING	8	8	8	8	8	8
80	9007649	WASHER, LOCK EXT. TOOTH #6	4	4	4	4	4	4
81	E-UA-H754-0-0	+20V, -5V REGULATOR	1	1	1	1	1	1
82	A-PL-M9301-YB	RESTART LOADER	1	1	1	1	1	1
83	A-PL-DL11-W	ASYNC. INTERFACE, LINE CLOCK	1	1	1	1	1	1
84	D-IA-7008360-0	DL11-W CABLE	1	1	1	1	1	1

REVISIONS: REV. / CHANGE NO. / CHK

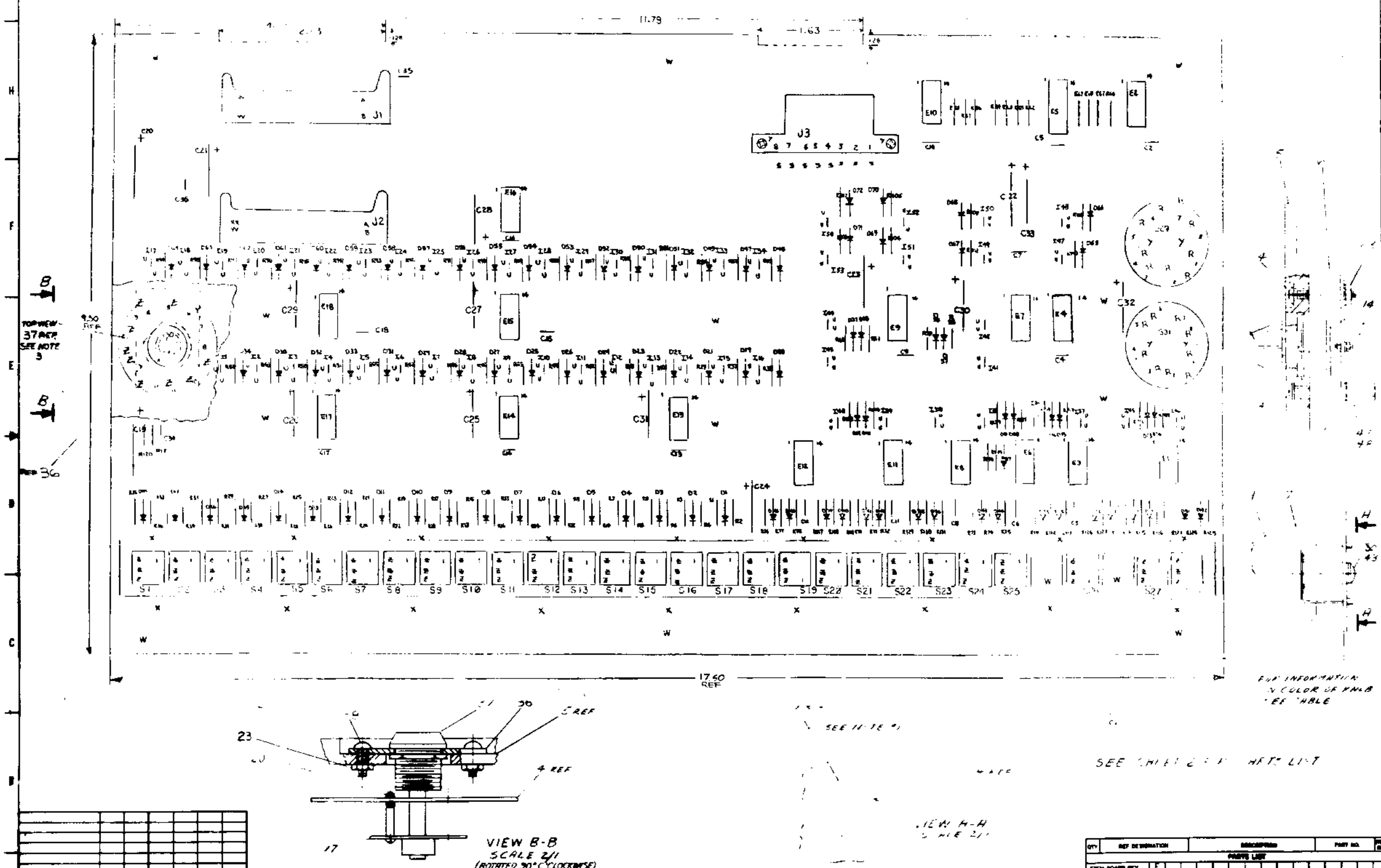
DRN. R. BEASLEY	4 FEB 76	FIRST USED ON 11/55
CHK'D D. HEALY	4 FEB 76	digital
ENG. [signature]	4 FEB 76	TITLE
PROJ. ENG. [signature]	4 FEB 76	BASIC ASSY PDP11/55
PROD. [signature]	12 MAR 76	
NEXT HIGHER ASSY. D-UA-11/55-0-0		SIZE C / CODE PL / NUMBER 11/55-0-0 / REV. A
SCALE		
SHEET 2 OF 2		DIST.

KNOB LOCATIONS

ITEM NO.	REFERENCE DESIGNATIONS
8	S1-S3,S7-S9,S13-S15, S20,S22,S24,S26,S28
40	S4-S6,S10-S12,S16-S18, S21,S23,S25,S27
41	S19

NOTES CONT.

3 IN ORDER TO SET THE PROPER ALIGNMENT BETWEEN ROTARY SWITCH #17 AND POWER LOCK #37, MOUNT ITEM #17 ON P.C. BOARD AND TURN SHAFT C CLOCKWISE (LEFT) TO STOP. MOUNT ITEM #37 TO SUPPORT BRACKET ITEM #5 WITH 'D' HOLE IN POSITION INDICATED. ROTATE KEY POSITION INDICATED AS 'B' OF ITEM #37 TO LINE UP WITH KEY POSITION INDICATED AS 'A' OF ITEM #37.



ETCH BOARD ASSY (11/45 CONSOLE)

5409684-0-0

PARTS LIST

5409684-1 QTY	5409684-0 QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM
13	0		KNOB SWITCH AC RED	1210796 09	53
4	0		KNOB SWITCH DC BLUE	1210796 08	52
1	1	R120	RES 68 1/4W 10%	1300221	51
1	1	R121	RES 56 1/4W 10%	1301429	50
					49
3	3		LOCKWASHER INT TOOTH [illegible]	9006633	48
4	4		SPACER [illegible]	[illegible]	47
4	4		LOCKWASHER [illegible]	9006631	46
4	4		NUT HEX [illegible]	9006555	45
2	2		SCR PHL [illegible] PAN [illegible]	[illegible]	44
2	2		LOCKWASHER [illegible]	9006634	43
REF	REF		ASSY/DRILLING HOLE LAYOUT	[illegible]	42
	1		KNOB, SWITCH GRAY	[illegible]	41
0	10		KNOB, SWITCH MAGENTA	[illegible]	40
1	1	E8	I.C. DEC [illegible]	[illegible]	39
2	2		[illegible]	9006022-1	38
1	1		POWER LOCK	[illegible]	37
1	1		STRAP, LOCK [illegible]	[illegible]	36
1	1	E7	I.C. MC 3001	[illegible]	35
7	7	E7, E18, E19 [illegible]	I.C. DEC [illegible]	[illegible]	34
1	1	E5	I.C. DEC [illegible]	[illegible]	33
2	2	E2, E4	I.C. DEC [illegible]	[illegible]	32
6	6	E1, E3 [illegible]	I.C. DEC [illegible]	[illegible]	31
2	4		[illegible]	[illegible]	30
34	[illegible]	R37-R50, R58-R61, R82, R109, R137-R140	RES [illegible]	[illegible]	29
[illegible]	[illegible]	R1-R36, R55-R57, R62, R78, R84-R117, R123-R131, R135, R136	RES [illegible]	[illegible]	28
3	3	C17, C33	CAP [illegible] TANT	[illegible]	27
21	21	C1-C18, C34-C36	CAP [illegible]	[illegible]	26
91	91	D1-D91	DIODE D664	1100114	25
6	6		SCR PHL [illegible]	[illegible]	24
5	5		NUT KEPS [illegible]	[illegible]	23
2	2		WASHER FIBER [illegible]	[illegible]	22
					21
4	4		NUT, NYLON #4-40	9007992	20
[illegible]	[illegible]		LAMP SOCKET	[illegible]	19
[illegible]	[illegible]	S1-[illegible]	LAMP [illegible]	[illegible]	18
1	1	S30	SWITCH ROTARY [illegible]	[illegible]	17
8	8	S19-[illegible]	SWITCH SPDT [illegible]	1210841	16
20	20	S1-S18, [illegible]	SWITCH SPDT (CEN)	1210840	15
2	2	S29, S31	SWITCH ROTARY [illegible]	1210775	14
2	2	J1, J2	CONN. RIGHT ANGLE [illegible]	[illegible]	13
8	8		PIN SOCKET AMP [illegible]	[illegible]	12
1	1	J3	PIN HOUSING	[illegible]	11
4	4		KNOB, FUNCTION [illegible]	[illegible]	10
2	2		KNOB, DUMMY GRAY	[illegible]	9
0	14		KNOB, SWITCH [illegible]	[illegible]	8
1	1		SUPPORT, SWITCH	[illegible]	7
1	1		STANDOFF, [illegible]	[illegible]	6
1	1		SUPPORT, INDICATOR PANEL	[illegible]	5
1	1		ETCHED CIRCUIT BOARD	[illegible]	4
REF	REF		MODULE [illegible] HISTORY	[illegible]	3
REF	REF		CIRCUIT SCHEMATIC	[illegible]	2
REF	REF		X-Y COORDINATE HOLE LOC.	[illegible]	1

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.
D664	1N3606

EQUIPMENT CORPORATION

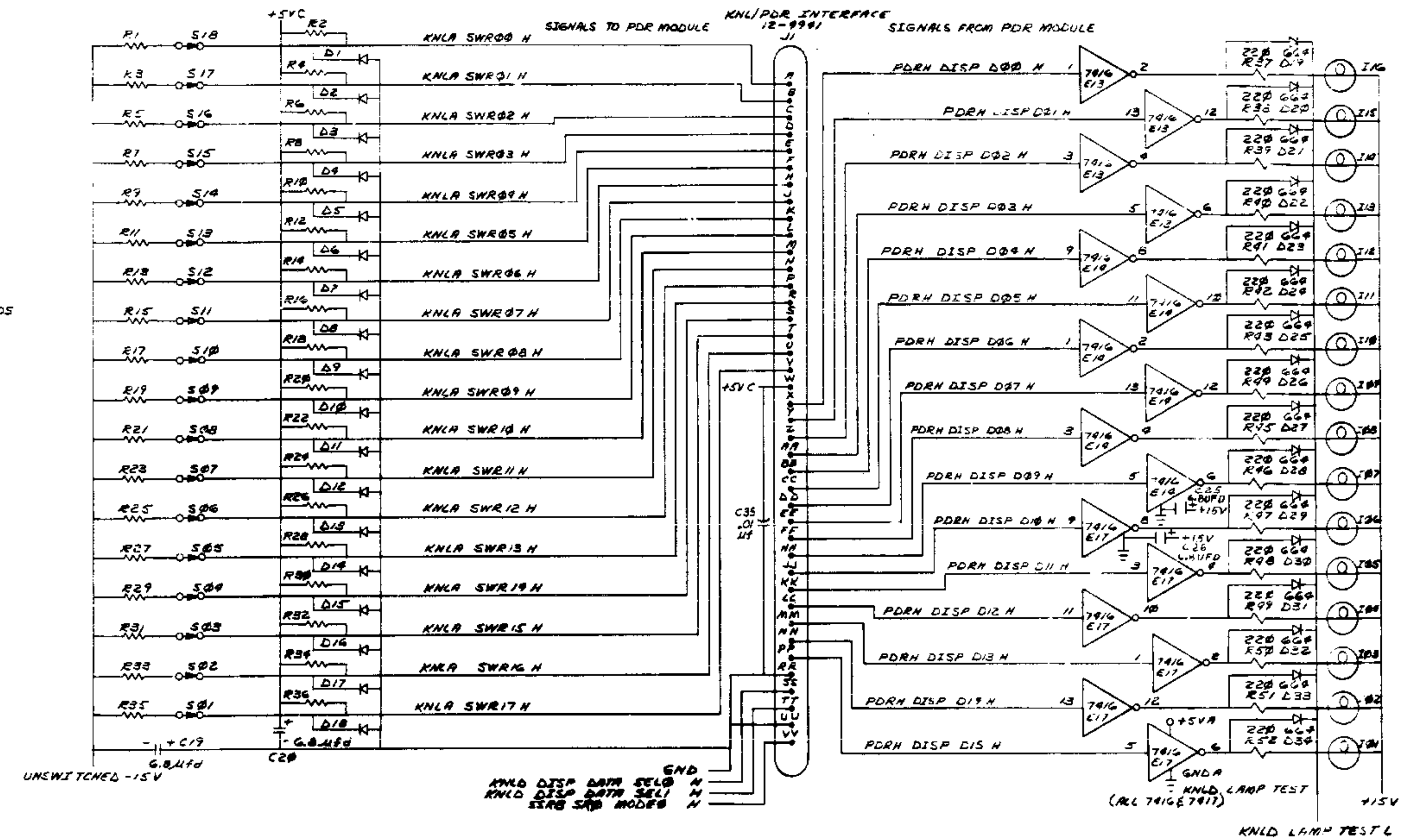
ETCH BOARD ASSY (11/45 CONSOLE)

D | A | 5409684-0-0 | H

"SWITCH REGISTER" SWITCHES SHOWN IN LOGICAL "Ø" STATE (DOWN)

NOTES:

1. CONTROL LOGIC AND DISPLAY GROUNDS MUST BE KEPT SEPARATE
2. ALL RESISTORS ARE 2.2K UNLESS MARKED OTHERWISE.
3. ALL UNMARKED DIODES ARE D664



SIGNALS TO PDR MODULE
KNL/PDR INTERFACE
12-9941
J1
SIGNALS FROM PDR MODULE
+5VC
KNLA SWR00 H
KNLA SWR01 H
KNLA SWR02 H
KNLA SWR03 H
KNLA SWR04 H
KNLA SWR05 H
KNLA SWR06 H
KNLA SWR07 H
KNLA SWR08 H
KNLA SWR09 H
KNLA SWR10 H
KNLA SWR11 H
KNLA SWR12 H
KNLA SWR13 H
KNLA SWR14 H
KNLA SWR15 H
KNLA SWR16 H
KNLA SWR17 H
PDRH DISP D00 H
PDRH DISP D01 H
PDRH DISP D02 H
PDRH DISP D03 H
PDRH DISP D04 H
PDRH DISP D05 H
PDRH DISP D06 H
PDRH DISP D07 H
PDRH DISP D08 H
PDRH DISP D09 H
PDRH DISP D10 H
PDRH DISP D11 H
PDRH DISP D12 H
PDRH DISP D13 H
PDRH DISP D14 H
PDRH DISP D15 H
UNSWITCHED -15V
GND
KNLD DISP DATA SEL0 H
KNLD DISP DATA SEL1 H
SSRB SRD MODES H
KNLD LAMP TEST
(ALL 7416 & 7417)
KNLD LAMP TEST L
+15V

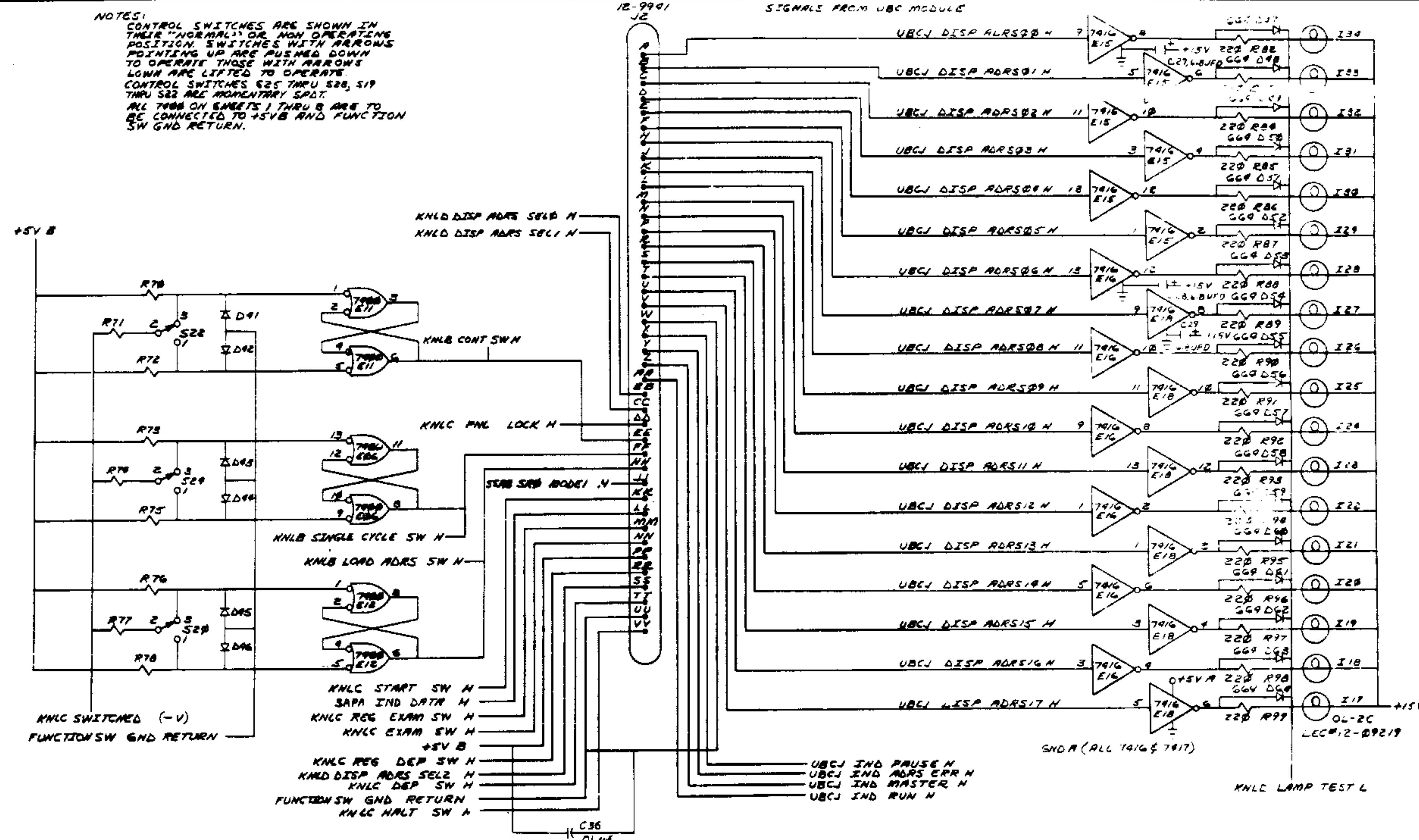
FIRST USED ON OPTION/MODEL	11/45
NEXT HIGHER ASSY	B-DD-11/45-0
TITLE	11/45 CONSOLE BOARD KNLA
SIZE	D
CODE	CS
NUMBER	5409684-0-1
REV	H
SHEET	1 OF 4

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

digital EQUIPMENT CORPORATION

NOTES:
1. CONTROL SWITCHES ARE SHOWN IN THEIR "NORMAL" OR NON OPERATING POSITION. SWITCHES WITH ARROWS POINTING UP ARE PUSHED DOWN TO OPERATE. THOSE WITH ARROWS DOWN ARE LIFTED TO OPERATE.
2. CONTROL SWITCHES S25 THRU S28, S19 THRU S22 ARE MOMENTARY SPDT.
3. ALL 7400 ON SHEETS 1 THRU 8 ARE TO BE CONNECTED TO +5VB AND FUNCTION SW GND RETURN.



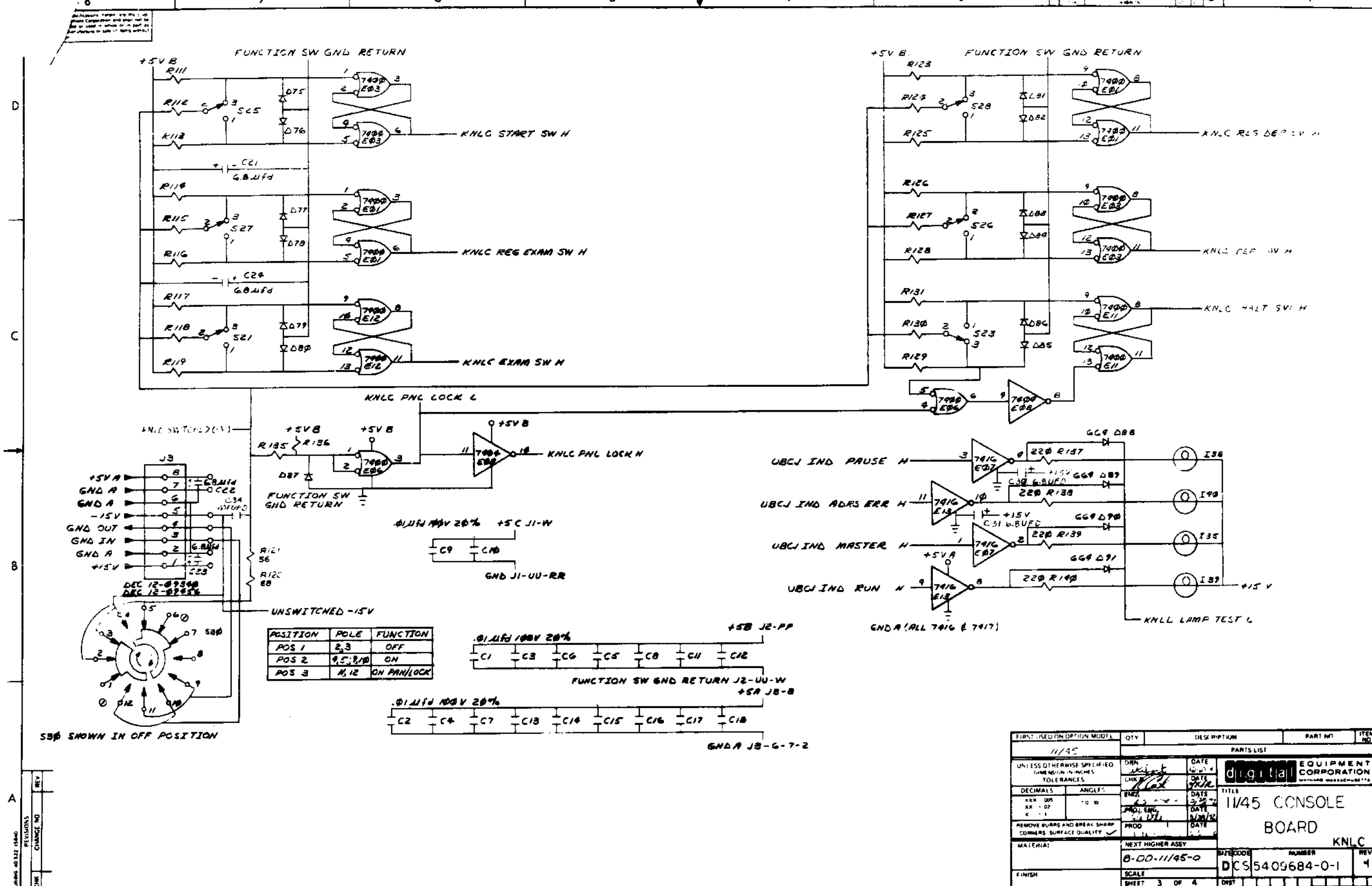
12-9991
J2
SIGNALS FROM UBC MODULE
UBCJ DISP ADRS00 H
UBCJ DISP ADRS01 H
UBCJ DISP ADRS02 H
UBCJ DISP ADRS03 H
UBCJ DISP ADRS04 H
UBCJ DISP ADRS05 H
UBCJ DISP ADRS06 H
UBCJ DISP ADRS07 H
UBCJ DISP ADRS08 H
UBCJ DISP ADRS09 H
UBCJ DISP ADRS10 H
UBCJ DISP ADRS11 H
UBCJ DISP ADRS12 H
UBCJ DISP ADRS13 H
UBCJ DISP ADRS14 H
UBCJ DISP ADRS15 H
UBCJ DISP ADRS16 H
UBCJ DISP ADRS17 H
KNLD DISP ADRS SEL0 H
KNLD DISP ADRS SEL1 H
+5V B
KNLB CONT SW H
KNLC PNL LOCK H
STBB SRB MODE1 H
KNLB SINGLE CYCLE SW H
KNLB LOAD ADRS SW H
KNLC START SW H
SAPA IND DATA H
KNLC REG EXAM SW H
KNLC EXAM SW H
+5V B
KNLC REG DEP SW H
KNLD DISP ADRS SEL2 H
KNLC DEP SW H
FUNCTION SW GND RETURN
KNLC HALT SW H
KNLC SWITCHED (-V)
FUNCTION SW GND RETURN
C36
.01 MF
UBCJ IND PAUSE H
UBCJ IND ADRS ERR H
UBCJ IND MASTER H
UBCJ IND RUN H
GND A (ALL 7416 & 7417)
KNLC LAMP TEST L
OL-2C
DEC# 12-09219

FIRST USED ON OPTION/MODEL: 11/45	QTY	DESCRIPTION	PART NO
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		PARTS LIST	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓			
MATERIAL	NEXT HIGHER ASSY: 8-00-11/45-0		
FINISH	SCALE: NONE	SHEET 2 OF 4	

digital EQUIPMENT CORPORATION

TITLE: 11/45 CONSOLE BOARD KNLB

SIZE: D CODE: CS NUMBER: 5409684-0-1 REV: H



POSITION	POLE	FUNCTION
POS 1	2,3	OFF
POS 2	4,5,9,10	ON
POS 3	11,12	ON PAN/LOCK

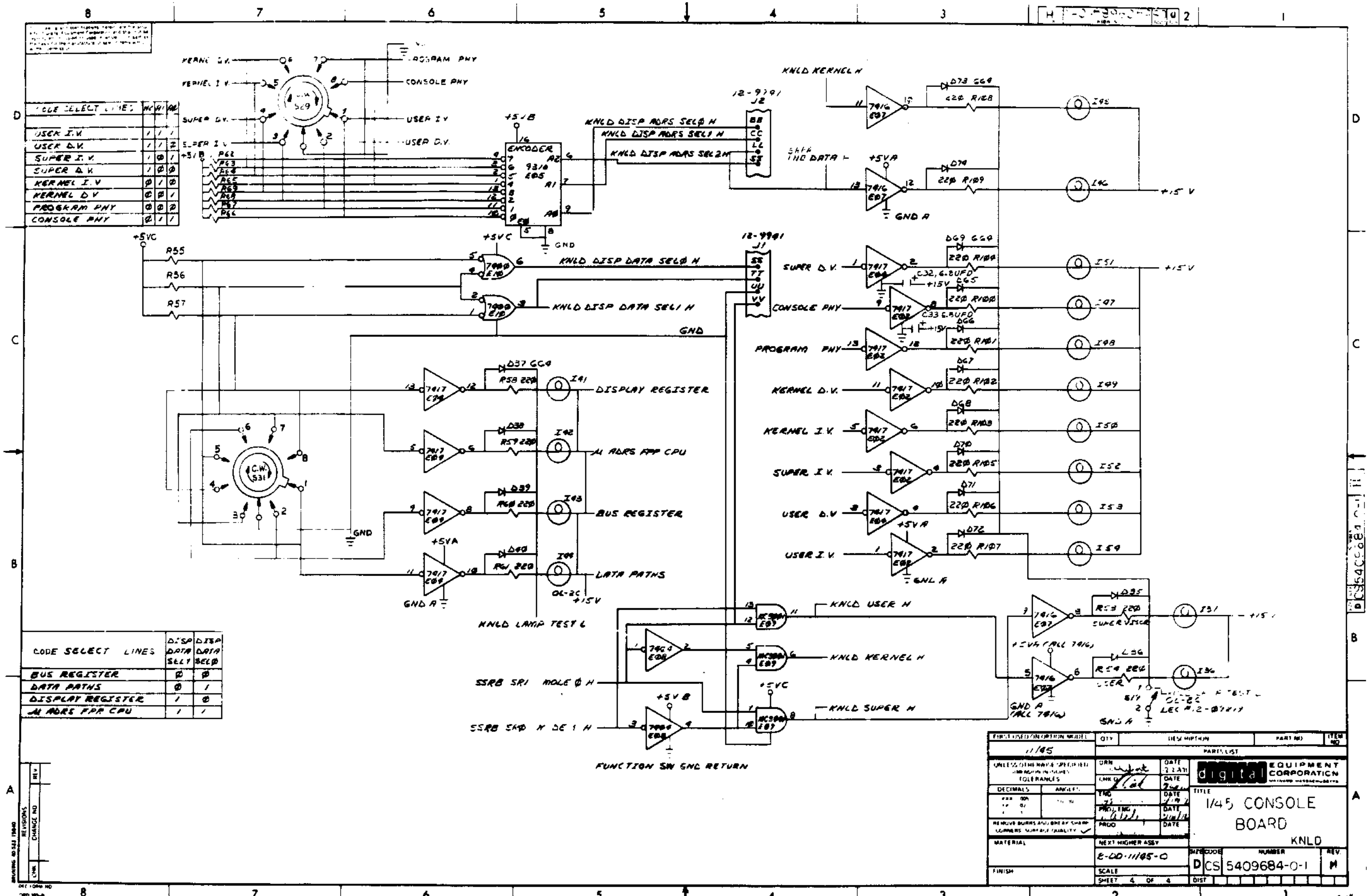
DIGITAL EQUIPMENT CORPORATION

TITLE: 11/45 CONSOLE BOARD KNLC

SIZE D CODE CS NUMBER 5409684-0-1 REV 4

NEXT HIGHER ASSY 8-00-11/45-0

SHEET 3 OF 4



MODE SELECT LINES	[illegible]	[illegible]	[illegible]
USER I.V.	1	1	1
USER D.V.	1	1	[illegible]
SUPER I.V.	1	Ø	1
SUPER D.V.	1	Ø	Ø
KERNEL I.V	Ø	1	Ø
KERNEL D.V	Ø	Ø	1
PROGRAM PHY	Ø	Ø	Ø
CONSOLE PHY	Ø	1	1

CODE SELECT LINES	DISP DATA SEL1	DISP DATA SEL0
BUS REGISTER	Ø	Ø
DATA PATHS	Ø	1
DISPLAY REGISTER	1	Ø
µ ADRS FPP CPU	1	1

11/45

digital EQUIPMENT CORPORATION

TITLE 11/45 CONSOLE BOARD KNLD

NEXT HIGHER ASSY E-CD-11/45-0

SIZE D CODE CS NUMBER 5409684-0-1 REV. H

SHEET 4 OF 4

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE		
DRAWING DIRECTORY	B-DD-KB11-D	(SHEETS 1 & 2 ONLY)
MODULE UTILIZATION	E-MU-KB11-D-1	
BUS CABLES & GRANT CHAIN	D-IC-KB11-A-BG	
BLOCK DIAGRAM	D-BD-KB11-D-2	
KB11-C FLOW DIAGRAMS	D-FD-KB11-C-1	
DATA PATHS (DAP)	E-CS-M8100-0-1	
GEN REG & ALU CONTROL (GRA)	E-CS-M8101-0-1	
IR DECODE & COND. CODES (IRC)	E-CS-M8132-0-1	
ROM & ADDR CONTROL (RAC)	E-CS-M8123-0-1	
PROC DATA & UNIBUS REG (PDR)	D-CS-M8104-0-1	
TRAP & MISC CONTROL (TMC)	E-CS-M8105-0-1	
UNIBUS & CONSL. CONTROL (UBC)	E-CS-M8119-0-1	
TIMING GENERATOR	E-CS-M8109-0-1	
SYSTEM JUMPER BOARD	D-CS-M8116-0-1	
CIRCUIT SCHEMATIC	C-CS-M930-0-1	
CIRCUIT SCHEMATIC	C-CS-M920-0-1	
CIRCUIT SCHEMATIC	E-CS-5409910-0-1	
CIRCUIT SCHEMATIC	E-CS-5409912-0-1	

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1
KB11-D	16 BIT PROCESSOR	X

REVISIONS	REV	CHG. NO.	DATE
	A	11/55-1	7-76

USED ON OPTION/MODEL	
11/45	
11/55	

SHEET 1 OF 5

		DATE
DRN.	HEALY	12/30/7-
CHK D.	D. HEALY	12/30/7-
PROJ ENG.	Derrill Bruce	1 Jan 76
PROD.	[illegible]	7 FEB 76
FIELD SERV.	[illegible]	5 Mar 76

TITLE: 16 BIT PROCESSOR

SIZE	CODE	NUMBER	REV
B	DD	KB11-D	A

DIST

EN-01062-1A-16-R972 (325)

DRB 106

(1) 16 BIT PROCESSOR
A-PL-KB11-D-Ø

(2) DATA PATHS (DAP)
E-CS-M81ØØ-Ø-1

(3) GENERAL REGS & ALU CNTL (GRA)
E-CS-M81Ø1-Ø-1

(4) IR DECODE & COND CODES (IRC)
E-CS-M8132-Ø-1

(5) ROM & ADDR. CONTROL (RAC)
D-CS-M8123-Ø-1

(6) PROC DATA & UNIBUS REG (PDR)
E-CS-M81Ø4-Ø-1

(7) TRAP & MISC CNTL (TMC)
E-CS-M81Ø5-Ø-1

(8) UNIBUS & CONSOLE CNTL (UBC)
D-CS-M8119-Ø-1

(9) TIMING GENERATOR (TIG)
E-CS-M81Ø9-Ø-1

(10) * SYSTEM JUMPER BOARD (SJB)
E-CS-M8116-Ø-1

(11) WIRED ASSY
E-AD-7008871-0-0

(12) BACK PLANE ASSY
E-AD-7008753-0-0

(13) CIRCUIT SCHEMATIC
E-CS-5409910-0-1

(14) CIRCUIT SCHEMATIC
E-CS-5409912-0-1

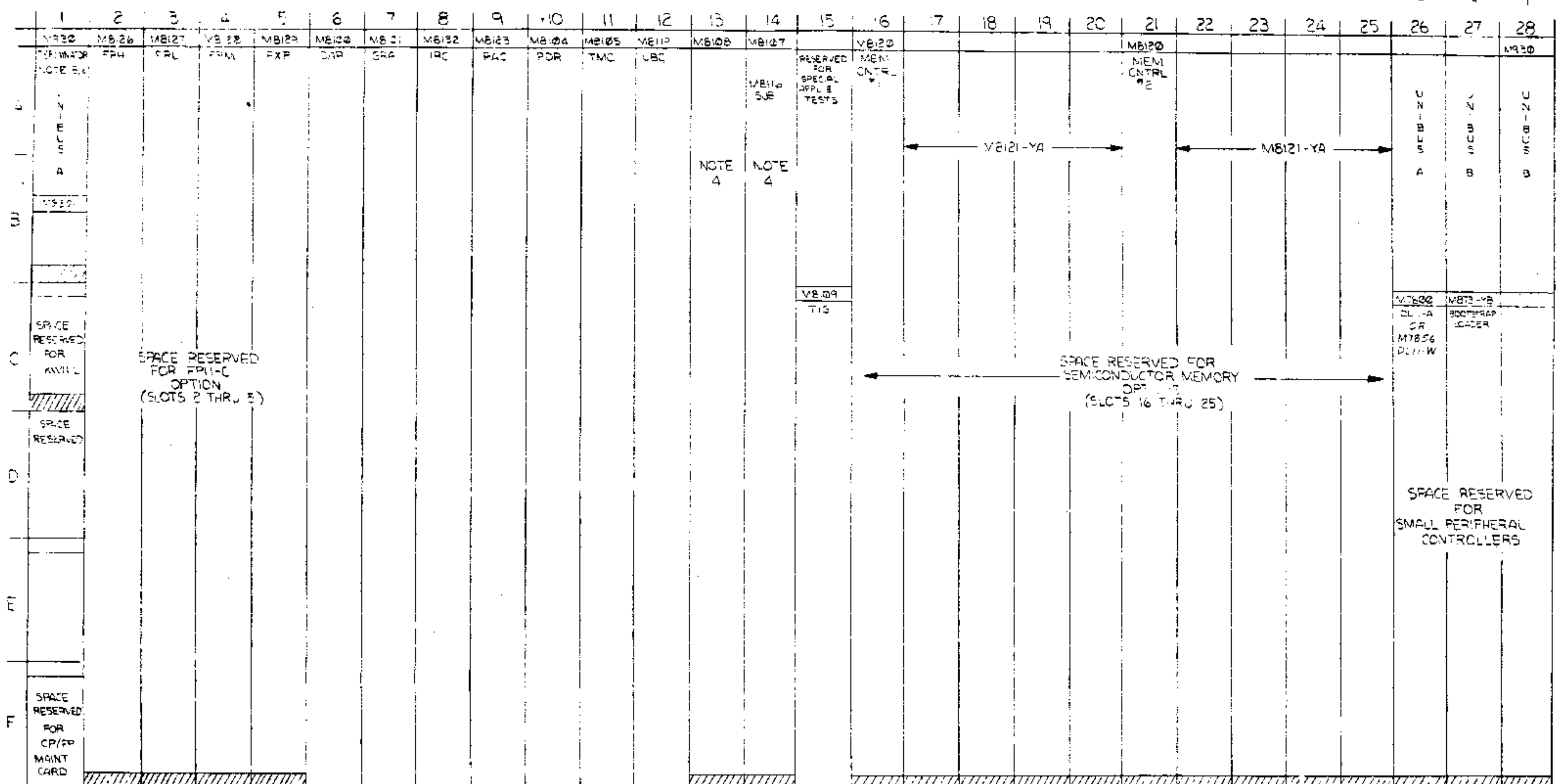
(15) BUS TERMINATOR M93Ø
A-PL-M93Ø-Ø-Ø

(16) INTERNAL BUS CONN ASSY
C-UA-M92ØØ-Ø-Ø

(17) * SYSTEM TOOLS
A-PL-SP45-KA-Ø
B-DD-SP45-KA

* OPTIONAL

TITLE		SIZE	CODE	NUMBER	REV
16 BIT PROCESSOR	SHEET 2 OF 5	B		KB11-D	A



DESIGNATES OPTION

NOTES:

1. POWER TO BIPOLAR MEMORY REMAINS ON WITH THE CONSOLE ON/OFF SWITCH IN THE OFF POSITION.
2. CAUTION MUST BE OBSERVED WHEN INSTALLING THE BOARDS INTO THE BACK PANEL SLOTS BECAUSE OF NON-STANDARD VOLTAGES PRESENT IN SLOTS 01, 02 AND 15 THRU 28.

3.0 THE KB11 BACKPLANE IS WIRED WITH TWO UNIBUSES:
   UNIBUS A - CONNECTS TO THE CPU, KW11-L AND SPC SLOTS
   UNIBUS B - CONNECTS TO THE TWO SEMICONDUCTOR MEMORY CONTROL SLOTS.
   USUALLY UNIBUS A AND UNIBUS B ARE JUMPERED TOGETHER TO FORM ONE CONTINUING UNIBUS.

3.1 IF ONLY ONE UNIBUS IS USED:
   A. THE UNIBUS PLUGS IN SLOT # 28
   B. PLUG AN INTERNAL BUS CONNECTOR JUMPER (M9200) INTO SLOTS # 26 AND # 27.
   C. PLUG A BUS TERMINATOR (M930) INTO SLOT # 1.

3.2 IF TWO UNIBUSES ARE USED:
   A) UNIBUS A PLUGS IN SLOT # 26.
   B) TERMINATOR (M930) FOR UNIBUS A PLUGS INTO SLOT # 1.
   C) UNIBUS B PLUGS IN SLOT # 27
   D) TERMINATOR (M930) FOR UNIBUS B PLUGS INTO SLOT # 28

4. IF KT11-CD OPTION IS PRESENT M8108-YA GOES IN SLOT # 13 AND M8107 GOES IN SLOT # 14, IF NO KT11 M8116 GOES IN SLOT # 14 AND SLOT # 13 IS EMPTY.

5. NEVER INSTALL A M9202 TERMINATOR IN SLOT AB1, AS UNIBUS WILL NOT OPERATE PROPERLY.

6. [illegible]

QTY	DESCRIPTION	DWG/PART NO.	ITEM NO.
	CONSOLE TERMINAL CONTROL	A-PL-DL11-W	
	BOOTSTRAP LOADER	A-PL-M9301-B	
	BOOTSTRAP LOADER	D-CS-M873-YA	
1	BUS CONN ASSY	D-UA-M9202-0-0	
	SYSTEM MAINT TOOLS	A-PL-SP45-KA-0	
	FLOATING POINT PROC	A-PL-FP11-C-0	
	CONSOLE TERMINAL CONTROL	A-PL-DL11-A-0	
	INTERVAL CLOCK	A-PL-KW11-0-0	
	BIPOLAR MEMORY	A-PL-MS11-A-0	
	BIPOLAR MEMORY CONTROL	A-PL-MS11-CC-0	
	MEM. MANAGEMENT UNIT	A-PL-KT11-CD-0	
1	INT. BUS CONN ASSY	C-UA-M9200-0-0	
2	BUS TERMINATOR	A-PL-M930-0-0	
	SYSTEM JUMPER BD	D-CS-M8116-0-1	
1	TIMING GENERATOR	D-CS-M8109-0-1	
1	UNIBUS & CONSOLE CNTL	D-CS-M8119-0-1	
1	TRAP & MISC CONTROL	E-CS-M8105-0-1	
1	PROC. DATA & UNIBUS REG	E-CS-M8104-0-1	
1	ROM & ADDR CONTROL	E-CS-M8123-0-1	
1	IR DECOD & COND CODES	E-CS-M8132-0-1	
1	GENERAL REGS & ALU CNTL	E-CS-M8101-0-1	
1	DATA PATHS	E-CS-M8100-0-1	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

FIRST USED ON: 11/55 - 11/45

digital

TITLE: MODULE UTILIZATION

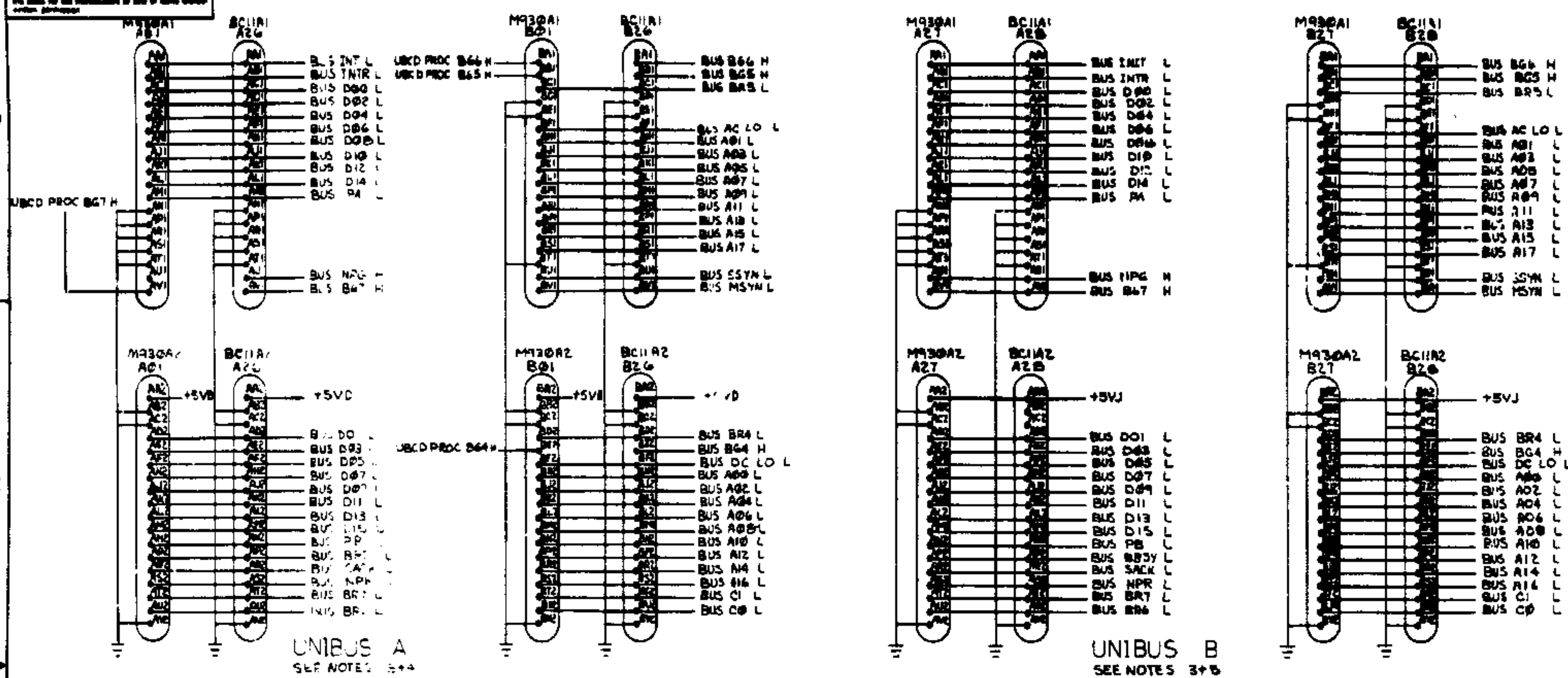
NEXT HIGHER ASSY.: B-DD-KB11-D

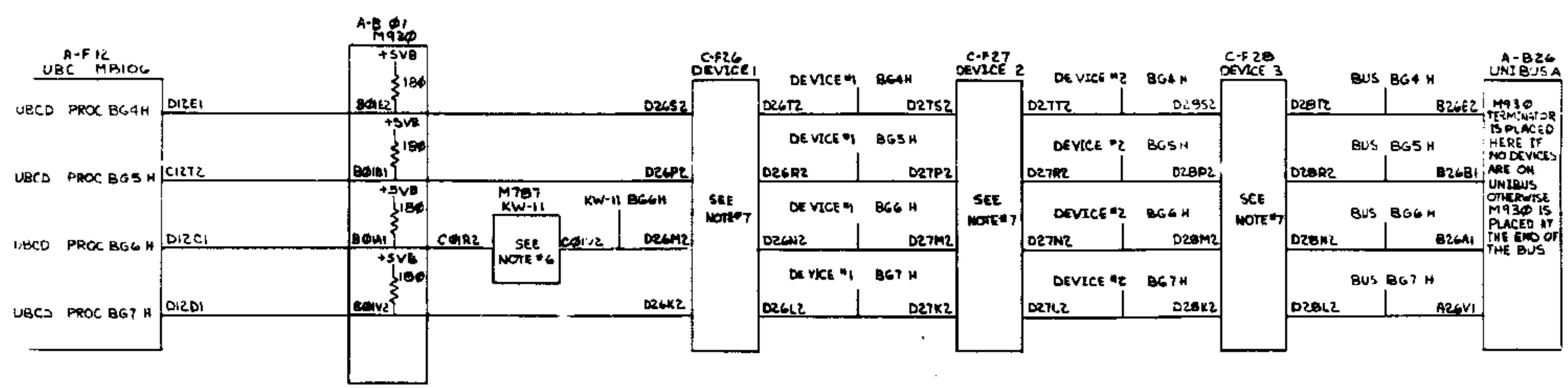
SIZE: E CODE: MU NUMBER: KB11-D-1 REV.: A

SHEET 1 OF 1

DO NOT SCALE DWG

KB11-D-1 A





NOTES:

1. UNIBUS A IS A CONVENTIONAL UNIBUS WITH PRIORITY ARBITRATION CONTAINED WITHIN THE KB11-A
2. UNIBUS B IS TRANSPARENT TO THE KB11-A IN THAT NO PRIORITY ARBITRATION IS PRESENT, SEMICONDUCTOR MEMORY (UNIBUS PORT) IS TIED TO BUS B.
3. TO CONNECT SEMICONUCTOR MEMORY TO UNIBUS A IN SINGLE BUS CONFIGURATION BUS A (AB26) IS CONNECTED TO BUS B (AB27) VIA M9200 AND BUS B OUT (AB28) BECOMES UNIBUS OUT.
4. BUS A SIGNAL PREFIXES IN KB11-A REFER TO UNIBUS A IN MULTIBUS CONFIGURATIONS.
5. BUS B SIGNAL PREFIXES IN MS11 REFER TO UNIBUS B IN MULIBUS CONFIGURATIONS.
6. C01R2 - C01V2 MUST BE DELETED ON BACKPANEL WHEN KW11 IS INSTALLED.
7. WHEN NO DEVICE IS INSERTED G727 MUST BE BE PLACED IN THE D SLOT TO JUMPER GRANT LINES TO UNIBUS OUT.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

DIGITAL EQUIPMENT CORPORATION

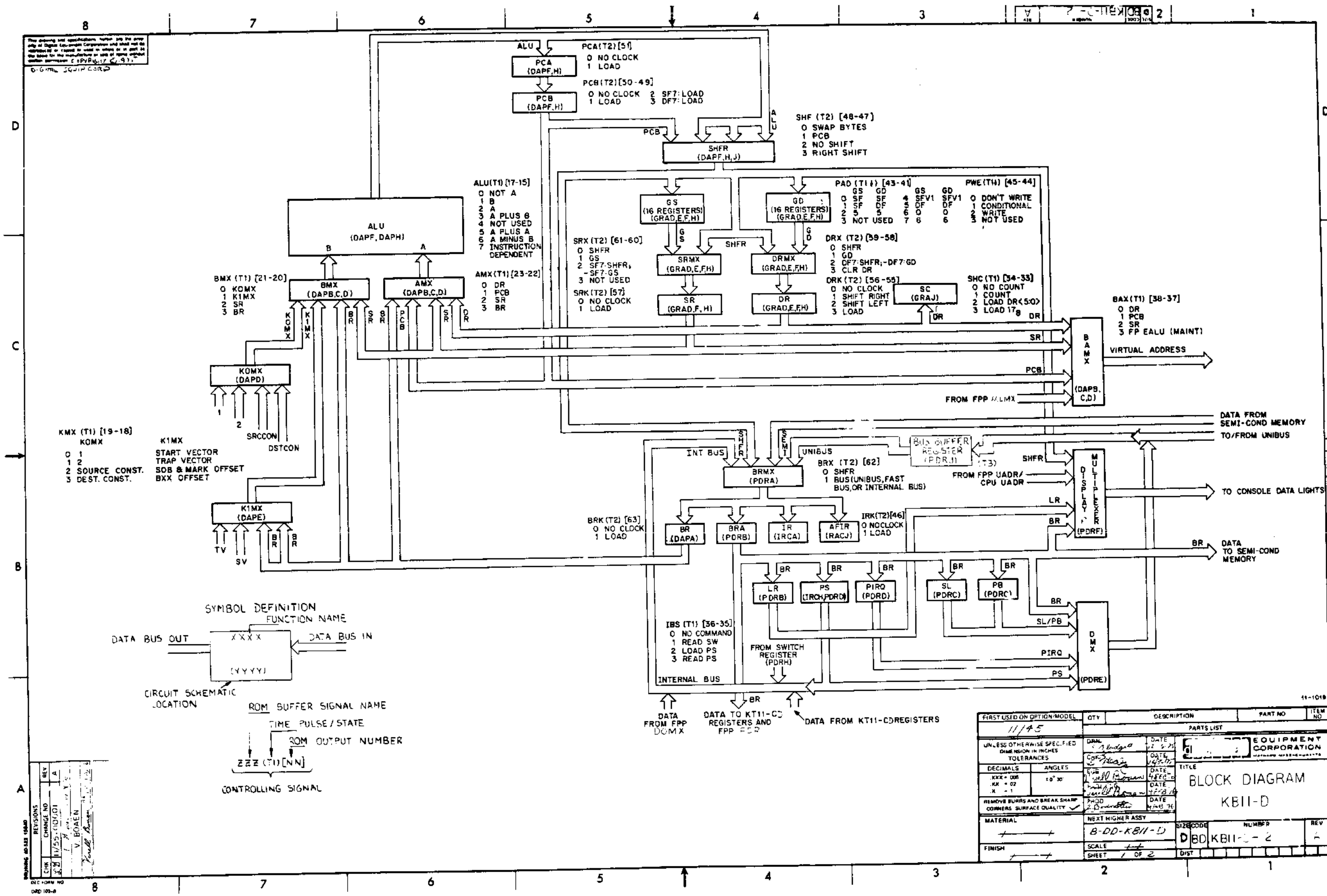
TITLE: BUS CABLES AND GRANT CHAIN (BUS)

NEXT HIGHER ASSY: B-DD-KB11-A

SIZE: D | CODE: IC | NUMBER: KB11-A-BG

SHEET 1 OF 1

19A



PCA(T2) [51]
0 NO CLOCK
1 LOAD
PCA (DAPF,H)
PCB(T2) [50-49]
0 NO CLOCK 2 SF7·LOAD
1 LOAD 3 DF7·LOAD
PCB (DAPF,H)
SHF (T2) [48-47]
0 SWAP BYTES
1 PCB
2 NO SHIFT
3 RIGHT SHIFT
SHFR (DAPF,H,J)
ALU(T1) [17-15]
0 NOT A
1 B
2 A
3 A PLUS B
4 NOT USED
5 A PLUS A
6 A MINUS B
7 INSTRUCTION DEPENDENT
ALU (DAPF, DAPH)
AMX(T1) [23-22]
0 DR
1 PCB
2 SR
3 BR
BMX (T1) [21-20]
0 KOMX
1 K1MX
2 SR
3 BR
BMX (DAPB,C,D)
AMX (DAPB,C,D)
GS (16 REGISTERS) (GRAD,E,F,H)
GD (16 REGISTERS) (GRAD,E,F,H)
PAD (T1) [43-41]
PWE(T1) [45-44]
0 DON'T WRITE
1 CONDITIONAL
2 WRITE
3 NOT USED
SRX (T2) [61-60]
0 SHFR
1 GS
2 SF7·SHFR, -SF7·GS
3 NOT USED
SRK (T2) [57]
0 NO CLOCK
1 LOAD
SRMX (GRAD,E,F,H)
DRMX (GRAD,E,F,H)
SR (GRAD,F,H)
DR (GRAD,E,F,H)
DRX (T2) [59-58]
0 SHFR
1 GD
2 DF7·SHFR; -DF7·GD
3 CLR DR
DRK (T2) [56-55]
0 NO CLOCK
1 SHIFT RIGHT
2 SHIFT LEFT
3 LOAD
SC (GRAJ)
SHC (T1) [34-33]
0 NO COUNT
1 COUNT
2 LOAD DR<5:0>
3 LOAD 17
BAX(T1) [38-37]
0 DR
1 PCB
2 SR
3 FP EALU (MAINT)
BAMX (DAPB,C,D)
VIRTUAL ADDRESS
FROM FPP
KOMX (DAPD)
SRCCON
DSTCON
KMX (T1) [19-18]
KOMX
0 1
1 2
2 SOURCE CONST.
3 DEST. CONST.
K1MX
START VECTOR
TRAP VECTOR
SOB & MARK OFFSET
BXX OFFSET
K1MX (DAPE)
TV
SV
DATA FROM SEMI-COND MEMORY
TO/FROM UNIBUS
BUS BUFFER REGISTER (PDRJ)
INT BUS
UNIBUS
BRMX (PDRA)
BRX (T2) [62]
0 SHFR
1 BUS(UNIBUS,FAST BUS,OR INTERNAL BUS)
FROM FPP UADR/ CPU UADR
DISPLAY MULTIPLEXER (PDRF)
TO CONSOLE DATA LIGHTS
BRK (T2) [63]
0 NO CLOCK
1 LOAD
BR (DAPA)
BRA (PDRB)
IR (IRCA)
AFIR (RACJ)
IRK(T2)[46]
0 NOCLOCK
1 LOAD
DATA TO SEMI-COND MEMORY
LR (PDRB)
PS (IRCH,PDRD)
PIRQ (PDRD)
SL (PDRC)
PB (PDRC)
IBS (T1) [36-35]
0 NO COMMAND
1 READ SW
2 LOAD PS
3 READ PS
FROM SWITCH REGISTER (PDRH)
INTERNAL BUS
DMX (PDRE)
SL/PB
DATA FROM FPP DDMX
DATA TO KT11-CD REGISTERS AND FPP
DATA FROM KT11-CDREGISTERS
11-1019
SYMBOL DEFINITION
FUNCTION NAME
DATA BUS OUT
DATA BUS IN
XXXX
(YYYY)
CIRCUIT SCHEMATIC LOCATION
ROM BUFFER SIGNAL NAME
TIME PULSE / STATE
ROM OUTPUT NUMBER
ZZZ (T1) [NN]
CONTROLLING SIGNAL
FIRST USED ON OPTION/MODEL
11/45
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
EQUIPMENT CORPORATION
TITLE
BLOCK DIAGRAM
KB11-D
NEXT HIGHER ASSY
B-DD-KB11-D
SIZE D CODE BD NUMBER KB11-D-2
SHEET 1 OF 2

CONDITION CODE LOAD

CCL (T2) [54-52]

0 NO CHANGE
1 INSTRUCTION DEPENDENT
2 SET/CLR FROM BR (CCOP)
3 LOAD FROM FPP IF ENABLED
4 CCLD4(Z & N ACC SHFR; C & V ← 0)
5 CCLD5(Z & N ACC SHFR; C ← AMX15; V ← V_{old} +(SHFR15 ⊕ AMX15))
6 CCLD6(N,C, & V UNAFFECTED; Z ← Z * SHFR=0)
7 CCLD7(Z,N,& V UNAFFECTED; C ← ALU CARRY)

FORK ENABLE

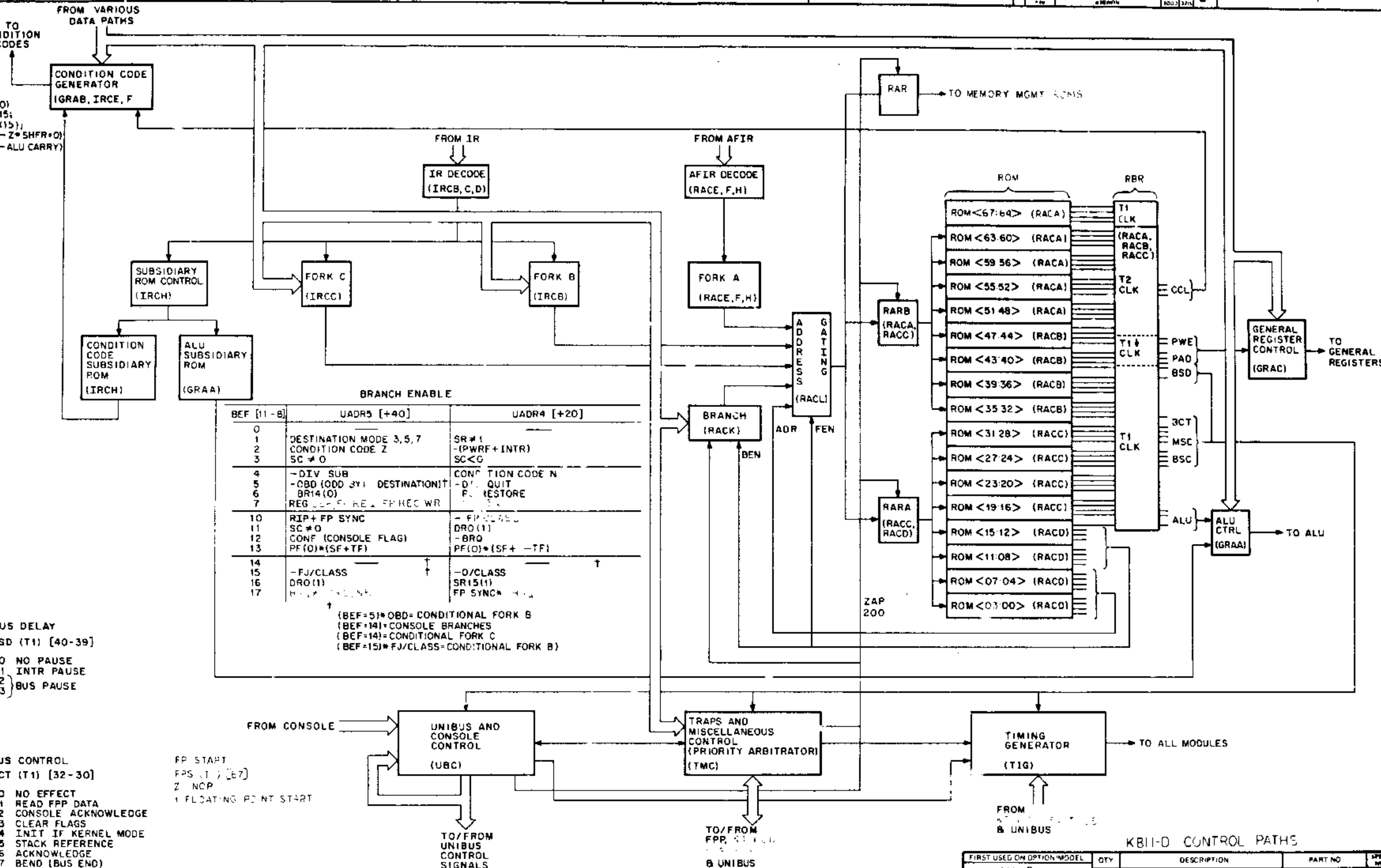
FEN [14-12]

0 NO FORK
1 FORK A
2 FORK B
4 FORK C

MICRO ADDRESS FIELD

UAD[07-00]

TO ADDRESS GATING



FROM VARIOUS DATA PATHS
TO CONDITION CODES
CONDITION CODE GENERATOR (GRAB, IRCE, F
FROM IR
IR DECODE (IRCB, C, D)
FROM AFIR
AFIR DECODE (RACE, F, H)
RAR
TO MEMORY MGMT
SUBSIDIARY ROM CONTROL (IRCH)
FORK C (IRCC)
FORK B (IRCB)
FORK A (RACE, F, H)
CONDITION CODE SUBSIDIARY ROM (IRCH)
ALU SUBSIDIARY ROM (GRAA)
ADDRESS GATING (RACL)
ADR
FEN
BRANCH (RACK)
BEN
RARB (RACA, RACC)
RARA (RACC, RACD)
ZAP 200
ROM
RBR
ROM<67:64> (RACA)
ROM<63:60> (RACA)
ROM<59:56> (RACA)
ROM<55:52> (RACA)
ROM<51:48> (RACA)
ROM<47:44> (RACB)
ROM<43:40> (RACB)
ROM<39:36> (RACB)
ROM<35:32> (RACB)
ROM<31:28> (RACC)
ROM<27:24> (RACC)
ROM<23:20> (RACC)
ROM<19:16> (RACC)
ROM<15:12> (RACD)
ROM<11:08> (RACD)
ROM<07:04> (RACD)
ROM<03:00> (RACD)
T1 CLK
(RACA, RACB, RACC)
T2 CLK
T1↓ CLK
T1 CLK
CCL
PWE
PAO
BSD
BCT
MSC
BSC
ALU
GENERAL REGISTER CONTROL (GRAC)
TO GENERAL REGISTERS
ALU CTRL (GRAA)
TO ALU
FROM CONSOLE
UNIBUS AND CONSOLE CONTROL (UBC)
TO/FROM UNIBUS CONTROL SIGNALS
TRAPS AND MISCELLANEOUS CONTROL (PRIORITY ARBITRATOR) (TMC)
TO/FROM FPP,
& UNIBUS
TIMING GENERATOR (TIG)
TO ALL MODULES
FROM
& UNIBUS

BRANCH ENABLE

BEF [11-8]	UADR5 [+40]	UADR4 [+20]
0	—	—
1	DESTINATION MODE 3,5,7	SR≠1
2	CONDITION CODE Z	-(PWRF+INTR)
3	SC ≠ 0	SC<G
4	-DIV SUB	CONDITION CODE N
5	-OBD (ODD BYTE DESTINATION)†	-D[illegible] QUIT
6	BR14(0)	F[illegible] RESTORE
7	REG [illegible] FP REC WR	[illegible]
10	RIP+ FP SYNC	- FP[illegible]
11	SC ≠ 0	DRO(1)
12	CONF (CONSOLE FLAG)	-BRQ
13	PF(0)*(SF+TF)	PF(0)*(SF+ -TF)
14	— †	— †
15	-FJ/CLASS †	-0/CLASS
16	DRO(1)	SR15(1)
17	[illegible]	FP SYNC* [illegible]

† (BEF=5)* OBD= CONDITIONAL FORK B
(BEF=14)=CONSOLE BRANCHES
(BEF=14)=CONDITIONAL FORK C
(BEF=15)* FJ/CLASS=CONDITIONAL FORK B)

MISCELLANEOUS

MSC (T1) [29-27]

0 NO EFFECT
1 FP ATTN
2 NOT USED
3 SET CONF IF KERNEL MODE
4 SPL (SET PRIORITY LEVEL)
5 CONDITIONAL BUST
6 BRQ STROBE
7 BUST (BUS START)

BUS DELAY

BSD (T1) [40-39]

0 NO PAUSE
1 INTR PAUSE
2, 3 BUS PAUSE

BUS CONDITION

BSC (T1) [26-24]

0 DATI
1 SRC1 DATI
2 KERNEL DATI
3 SRC2 DATI
4 FC (CONTROLLED BY FPP)
5 DATO
6 BSOP1
7 BSOP2

BUS CONTROL

BCT (T1) [32-30]

0 NO EFFECT
1 READ FPP DATA
2 CONSOLE ACKNOWLEDGE
3 CLEAR FLAGS
4 INIT IF KERNEL MODE
5 STACK REFERENCE
6 ACKNOWLEDGE
7 BEND (BUS END)

FP START

FPS (T1) [67]

Z NOP
1 FLOATING POINT START

FLOATING POINT CONTROL

FPC (T1) [65-64]

0 NOP
1 LD FGR
2 LD FIR
3 LD FPA
4 READ DATA
5 READ FPS
6 READ FGR
7 READ FPA

* BCT = FPS HIGH ORDER BIT OF FPC

CLEAR SYNC

CLS (T1) [66]

0 NOP
1 INITIALIZE SYNCHRONIZER

KB11-D CONTROL PATHS

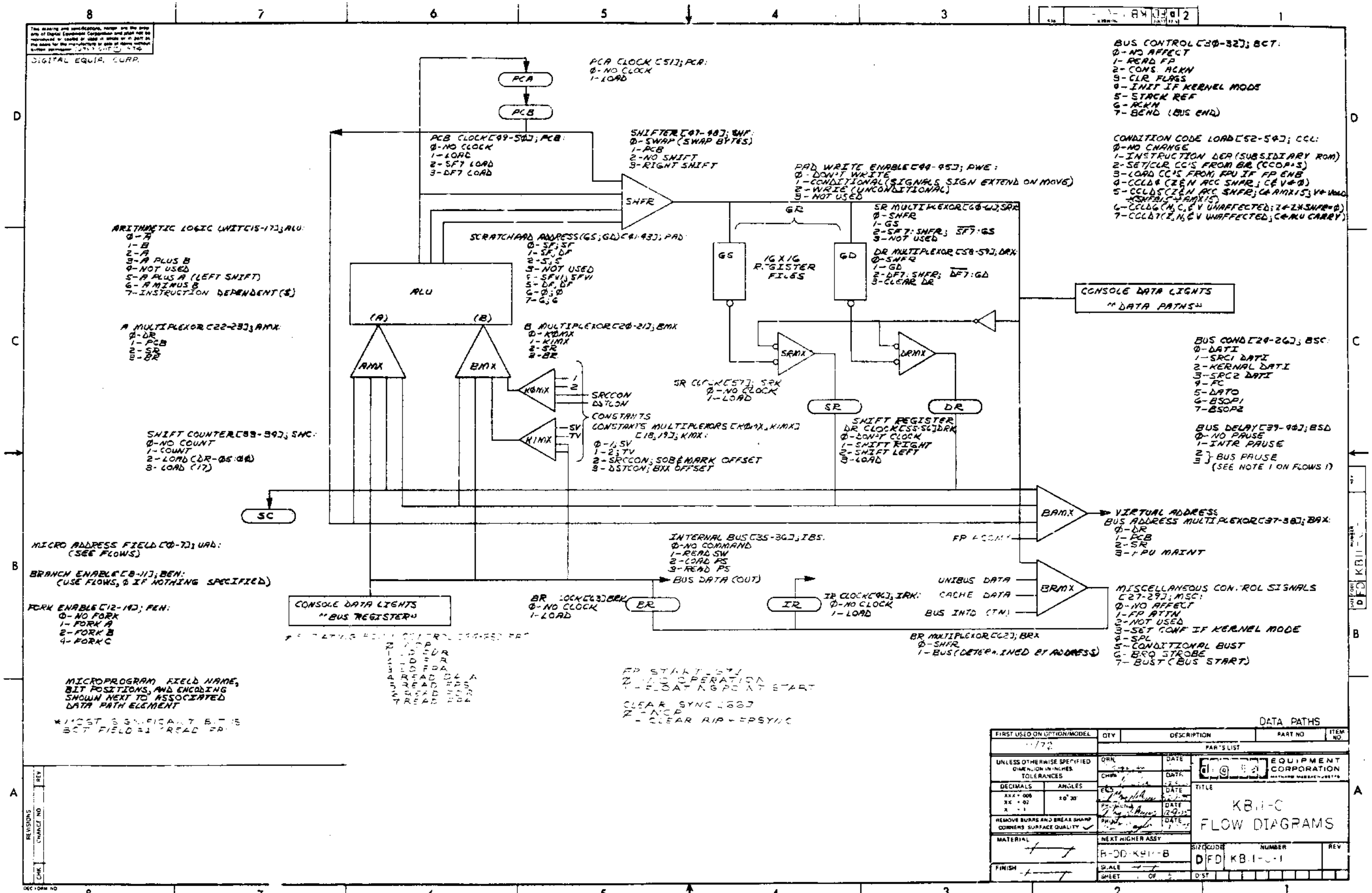
FIRST USED ON OPTION/MODEL: KB11-D

BLOCK DIAGRAM KB11-D

SIZE D, CODE BD, NUMBER KB11-D-2, REV A

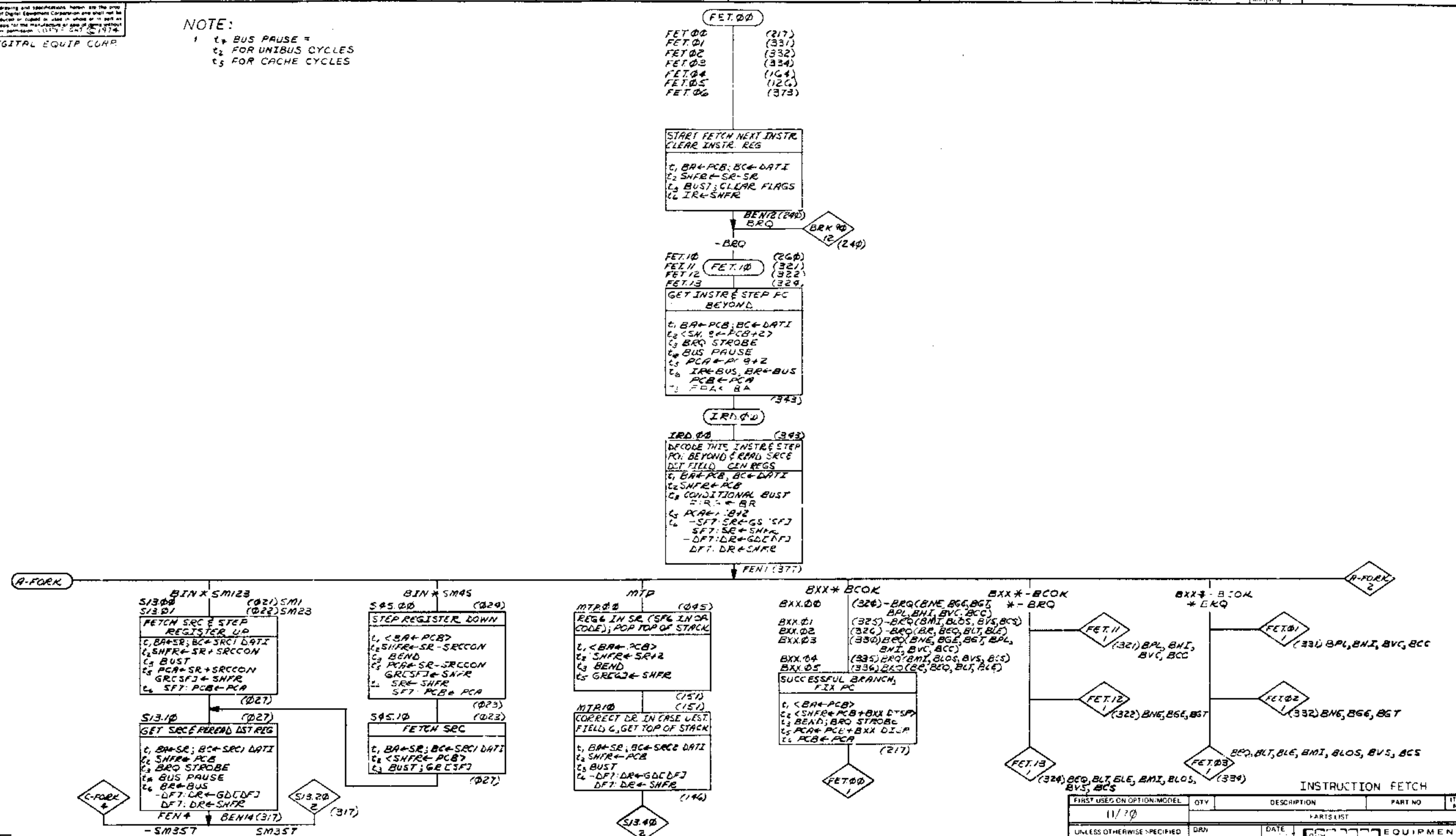
NEXT HIGHER ASSY: B-DD-KB11-D

EQUIPMENT CORPORATION



DIGITAL EQUIP. CORP.
PCA CLOCK [51]; PCA:
Ø-NO CLOCK
1-LOAD
PCA
PCB
PCB CLOCK[49-50]; PCB:
Ø-NO CLOCK
1-LOAD
2-SF7 LOAD
3-DF7 LOAD
SHIFTER[47-48]; SHF:
Ø-SWAP (SWAP BYTES)
1-PCB
2-NO SHIFT
3-RIGHT SHIFT
SHFR
PAD WRITE ENABLE[44-45]; PWE:
Ø-DON'T WRITE
1-CONDITIONAL (SIGNALS SIGN EXTEND ON MOVE)
2-WRITE (UNCONDITIONAL)
3-NOT USED
GR
GS
16 X 16 REGISTER FILES
GD
SR MULTIPLEXOR[60-61]; SRX:
Ø-SHFR
1-GS
2-SF7: SHFR; SF7: GS
3-NOT USED
DR MULTIPLEXOR[58-59]; DRX:
Ø-SHFR
1-GD
2-DF7: SHFR; DF7: GD
3-CLEAR DR
ARITHMETIC LOGIC UNIT[15-17]; ALU:
Ø-A
1-B
2-A
3-A PLUS B
4-NOT USED
5-A PLUS A (LEFT SHIFT)
6-A MINUS B
7-INSTRUCTION DEPENDENT ($)
SCRATCHPAD ADDRESS(GS; GD)[41-43]; PAD:
Ø-SF; SF
1-SF; DF
2-S; S
3-NOT USED
4-SFV; SFV
5-DF; DF
6-Ø; Ø
7-G; G
ALU
(A)
(B)
A MULTIPLEXOR[22-23]; AMX:
Ø-DR
1-PCB
2-SR
3-BR
AMX
BMX
B MULTIPLEXOR[20-21]; BMX:
Ø-KØMX
1-KIMX
2-SR
3-BR
KØMX
KIMX
SRCCON
DSTCON
CONSTANTS
CONSTANTS MULTIPLEXORS[KØMX, KIMX] [18,19]; KMX:
Ø-1; SV
1-2; TV
2-SRCCON; SOB & MARK OFFSET
3-DSTCON; BXX OFFSET
SV
TV
SR CLOCK[57]; SRK:
Ø-NO CLOCK
1-LOAD
SRMX
DRMX
SR
DR
SHIFT REGISTER DR CLOCK[55-56]; DRK:
Ø-DON'T CLOCK
1-SHIFT RIGHT
2-SHIFT LEFT
3-LOAD
CONSOLE DATA LIGHTS "DATA PATHS"
SHIFT COUNTER[38-39]; SHC:
Ø-NO COUNT
1-COUNT
2-LOAD (DR-05:00)
3-LOAD (17)
SC
BAMX
VIRTUAL ADDRESS
BUS ADDRESS MULTIPLEXOR[37-38]; BAX:
Ø-DR
1-PCB
2-SR
3-FPU MAINT
FP
MICRO ADDRESS FIELD[Ø-7]; UAD:
(SEE FLOWS)
BRANCH ENABLE[8-11]; BEN:
(USE FLOWS, Ø IF NOTHING SPECIFIED)
FORK ENABLE[12-14]; FEN:
Ø-NO FORK
1-FORK A
2-FORK B
4-FORK C
INTERNAL BUS[35-36]; IBS:
Ø-NO COMMAND
1-READ SW
2-LOAD PS
3-READ PS
BUS DATA (OUT)
CONSOLE DATA LIGHTS "BUS REGISTER"
BR CLOCK[63]; BRK:
Ø-NO CLOCK
1-LOAD
BR
IR
IR CLOCK[62]; IRK:
Ø-NO CLOCK
1-LOAD
UNIBUS DATA
CACHE DATA
BUS INTO (TN)
BRMX
BR MULTIPLEXOR[2]; BRX:
Ø-SHFR
1-BUS (DETERMINED BY ADDRESS)
MICROPROGRAM FIELD NAME, BIT POSITIONS, AND ENCODING SHOWN NEXT TO ASSOCIATED DATA PATH ELEMENT
BUS CONTROL[30-32]; BCT:
Ø-NO AFFECT
1-READ FP
2-CONS ACKN
3-CLR FLAGS
4-INIT IF KERNEL MODE
5-STACK REF
6-ACKN
7-BEND (BUS END)
CONDITION CODE LOAD[52-54]; CCL:
Ø-NO CHANGE
1-INSTRUCTION DEP (SUBSIDIARY ROM)
2-SET/CLR CC'S FROM BR (CCOP+S)
3-LOAD CC'S FROM FPU IF FP ENB
4-CCLD4 (Z&N ACC SHFR; C&V←Ø)
5-CCLD5 (Z&N ACC SHFR; C←AMX15; V←...)
6-CCLD6 (N,C,&V UNAFFECTED; Z←Z·SHFR=Ø)
7-CCLD7 (Z,N,&V UNAFFECTED; C←ALU CARRY)
BUS COND[24-26]; BSC:
Ø-DATI
1-SRC1 DATI
2-KERNAL DATI
3-SRC2 DATI
4-FC
5-DATO
6-BSOP1
7-BSOP2
BUS DELAY[39-40]; BSD:
Ø-NO PAUSE
1-INTR PAUSE
2 3 } BUS PAUSE (SEE NOTE 1 ON FLOWS 1)
MISCELLANEOUS CONTROL SIGNALS [27-29]; MSC:
Ø-NO AFFECT
1-FP ATTN
2-NOT USED
3-SET CONF IF KERNEL MODE
4-SPL
5-CONDITIONAL BUST
6-BRQ STROBE
7-BUST (BUS START)
DATA PATHS
FIRST USED ON OPTION/MODEL
QTY
DESCRIPTION
PART NO
ITEM NO
PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES
DECIMALS
ANGLES
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
MATERIAL
FINISH
DRN
CHKD
ENG
PROD
DATE
NEXT HIGHER ASSY
B-DD-KB11-B
SCALE
SHEET OF
EQUIPMENT CORPORATION
TITLE
KB11-C
FLOW DIAGRAMS
SIZE
CODE
NUMBER
REV
D
FD
KB11-C-1
REVISIONS
CHANGE NO
REV
CHK

NOTE:
1 t_4 BUS PAUSE = t_2 FOR UNIBUS CYCLES, t_5 FOR CACHE CYCLES



INSTRUCTION FETCH

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/70		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

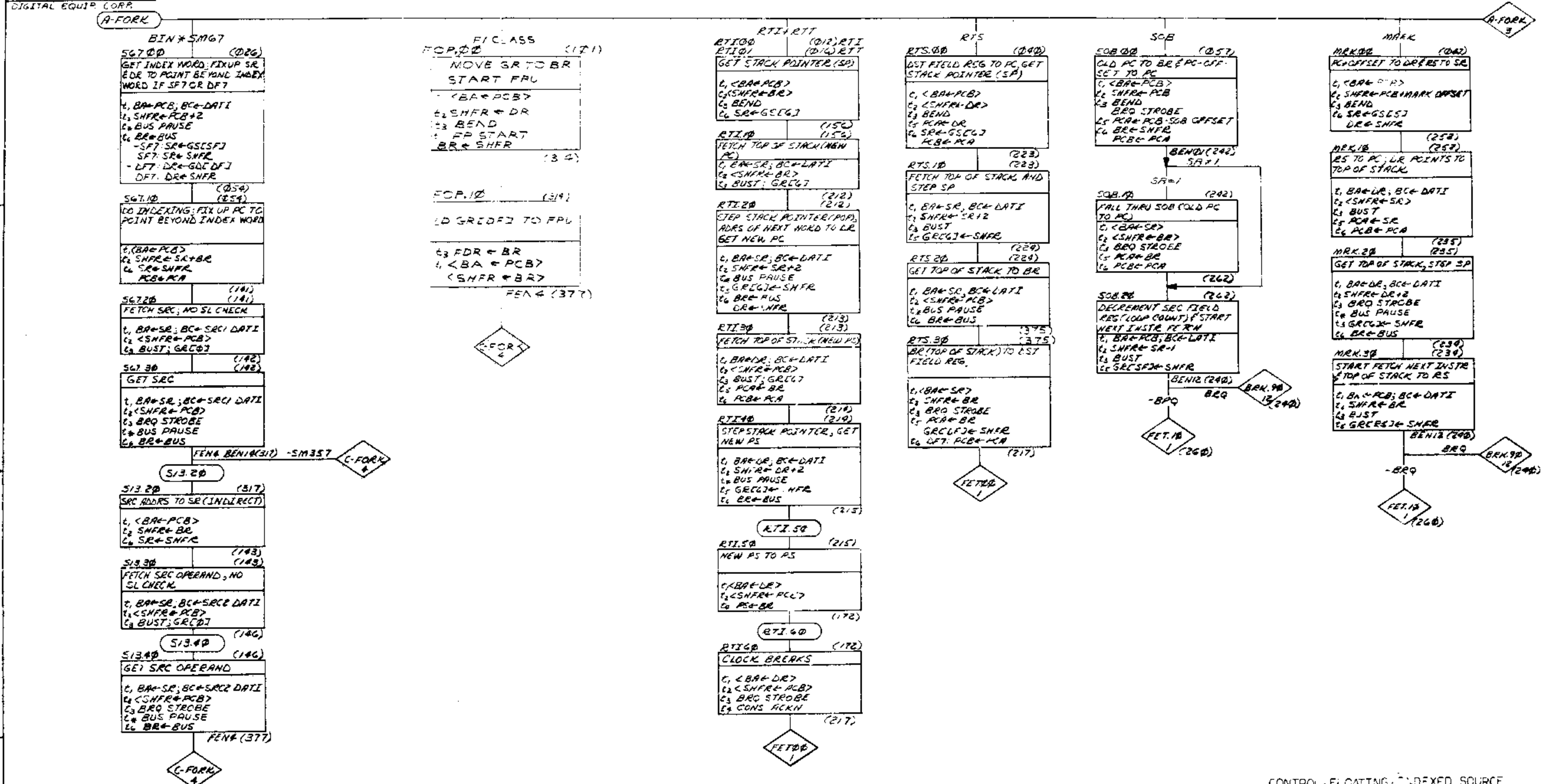
DIGITAL EQUIPMENT CORPORATION

TITLE: KB11-C FLOW DIAGRAMS (FLOWS 1)

NEXT HIGHER ASSY: B-DD-KB11-B

SIZE: D CODE: FD NUMBER: KB11-C-F

SHEET 2 OF


A-FORK
BIN * SM67
S67.00 (026)
GET INDEX WORD; FIXUP SR & DR TO POINT BEYOND INDEX WORD IF SF7 OR DF7
t1 BA←PCB; BC←DATI
t2 SHFR←PCB+2
t4 BUS PAUSE
t6 BR←BUS
-SF7: SR←GS[SF]
SF7: SR←SHFR
-DF7: DR←GD[DF]
DF7: DR←SHFR
S67.10 (054)
DO INDEXING: FIX UP PC TO POINT BEYOND INDEX WORD
t1 <BA←PCB>
t2 SHFR←SR+BR
t6 SR←SHFR
PCB←PCA
S67.20 (141)
FETCH SRC; NO SL CHECK
t1 BA←SR; BC←SRC1 DATI
t2 <SHFR←PCB>
t3 BUST; GR[0]
S67.30 (142)
GET SRC
t1 BA←SR; BC←SRC1 DATI
t2 <SHFR←PCB>
t3 BRQ STROBE
t4 BUS PAUSE
t6 BR←BUS
FEN4 BEN14(317) -SM357
C-FORK 4
S13.20
S13.20 (317)
SRC ADDRS TO SR (INDIRECT)
t1 <BA←PCB>
t2 SHFR←BR
t6 SR←SHFR
S13.30 (143)
FETCH SRC OPERAND, NO SL CHECK
t1 BA←SR; BC←SRC2 DATI
t2 <SHFR←PCB>
t3 BUST; GR[0]
S13.40 (146)
GET SRC OPERAND
t1 BA←SR; BC←SRC2 DATI
t2 <SHFR←PCB>
t3 BRQ STROBE
t4 BUS PAUSE
t6 BR←BUS
FEN4 (377)
C-FORK 4
F/CLASS
FOP.00 (171)
MOVE GR TO BR
START FPU
<BA←PCB>
t2 SHFR←DR
t3 BEND
FP START
BR←SHFR
(34)
FOP.10 (314)
LD GR[DF] TO FPU
t3 FDR←BR
t1 <BA←PCB>
<SHFR←BR>
FEN4 (377)
C-FORK 4
RTI+RTT
RTI00 (012) RTI
RTI01 (014) RTT
GET STACK POINTER (SP)
t1 <BA←PCB>
t2 <SHFR←BR>
t3 BEND
t6 SR←GS[6]
RTI.10 (156)
FETCH TOP OF STACK (NEW PC)
t1 BA←SR; BC←DATI
t2 <SHFR←BR>
t3 BUST; GR[6]
RTI.20 (212)
STEP STACK POINTER (POP), ADRS OF NEXT WORD TO DR GET NEW PC
t1 BA←SR; BC←DATI
t2 SHFR←SR+2
t4 BUS PAUSE
t5 GR[6]←SHFR
t6 BR←BUS
DR←SHFR
RTI.30 (213)
FETCH TOP OF STACK (NEW PS)
t1 BA←DR; BC←DATI
t2 <SHFR←PCB>
t3 BUST; GR[6]
t5 PCA←BR
t6 PCB←PCA
RTI.40 (219)
STEP STACK POINTER, GET NEW PS
t1 BA←DR; BC←DATI
t2 SHFR←DR+2
t4 BUS PAUSE
t5 GR[6]←SHFR
t6 BR←BUS
(215)
RTI.50
RTI.50 (215)
NEW PS TO PS
t1 <BA←DR>
t2 <SHFR←PCB>
t6 PS←BR
(172)
RTI.60
RTI.60 (172)
CLOCK BREAKS
t1 <BA←DR>
t2 <SHFR←PCB>
t3 BRQ STROBE
t4 CONS ACKN
(217)
FET00 1
RTS
RTS.00 (040)
DST FIELD REG TO PC, GET STACK POINTER (SP)
t1 <BA←PCB>
t2 <SHFR←DR>
t3 BEND
t5 PCA←DR
t6 SR←GS[6]
PCB←PCA
RTS.10 (223)
FETCH TOP OF STACK AND STEP SP
t1 BA←SR, BC←DATI
t2 SHFR←SR+2
t3 BUST
t5 GR[6]←SHFR
RTS.20 (224)
GET TOP OF STACK TO BR
t1 BA←SR, BC←DATI
t2 <SHFR←PCB>
t4 BUS PAUSE
t6 BR←BUS
RTS.30 (375)
BR (TOP OF STACK) TO DST FIELD REG.
t1 <BA←SR>
t2 SHFR←BR
t3 BRQ STROBE
t5 PCA←BR
GR[DF]←SHFR
t6 DF7: PCB←PCA
(217)
FET00 1
SOB
SOB.00 (057)
OLD PC TO BR & PC-OFFSET TO PC
t1 <BA←PCB>
t2 SHFR←PCB
t3 BEND
BRQ STROBE
t5 PCA←PCB-SOB OFFSET
t6 BR←SHFR
PCB←PCA
BEN01 (242)
SR≠1
SR=1
SOB.10 (242)
FALL THRU SOB (OLD PC TO PC)
t1 <BA←SR>
t2 <SHFR←BR>
t3 BRQ STROBE
t5 PCA←BR
t6 PCB←PCA
(262)
SOB.20 (262)
DECREMENT SRC FIELD REG (LOOP COUNT) & START NEXT INSTR FETCH
t1 BA←PCB; BC←DATI
t2 SHFR←SR-1
t3 BUST
t5 GR[SF]←SHFR
BEN12 (240)
BRQ
BRK.90 12 (240)
-BRQ
FET.10 1 (260)
MARK
MRK.00 (042)
PC+OFFSET TO DR & R5 TO SR
t2 SHFR←PCB+MARK OFFSET
t3 BEND
t6 SR←GS[5]
DR←SHFR
MRK.10 (257)
R5 TO PC; DR POINTS TO TOP OF STACK
t1 BA←DR; BC←DATI
t2 <SHFR←SR>
t3 BUST
t5 PCA←SR
t6 PCB←PCA
MRK.20 (235)
GET TOP OF STACK, STEP SP
t1 BA←DR, BC←DATI
t2 SHFR←DR+2
t3 BRQ STROBE
t4 BUS PAUSE
t5 GR[6]←SHFR
t6 BR←BUS
MRK.30 (234)
START FETCH NEXT INSTR & TOP OF STACK TO R5
t1 BA←PCB; BC←DATI
t2 SHFR←BR
t3 BUST
t6 GR[5]←SHFR
BEN12 (240)
BRQ
BRK.90 12 (240)
-BRQ
FET.10 1 (260)
A-FORK 3

CONTROL, FLOATING, INDEXED SOURCE

FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/70	PARTS LIST			

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES — DECIMALS: .XXX ±.005, .XX ±.02, .X ±.1; ANGLES ±0°30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —; FINISH —

DRN — DATE; CHK'D — DATE; ENG — DATE 2-9-7?; PROJ ENG — DATE 2-9-7?; PROD — DATE

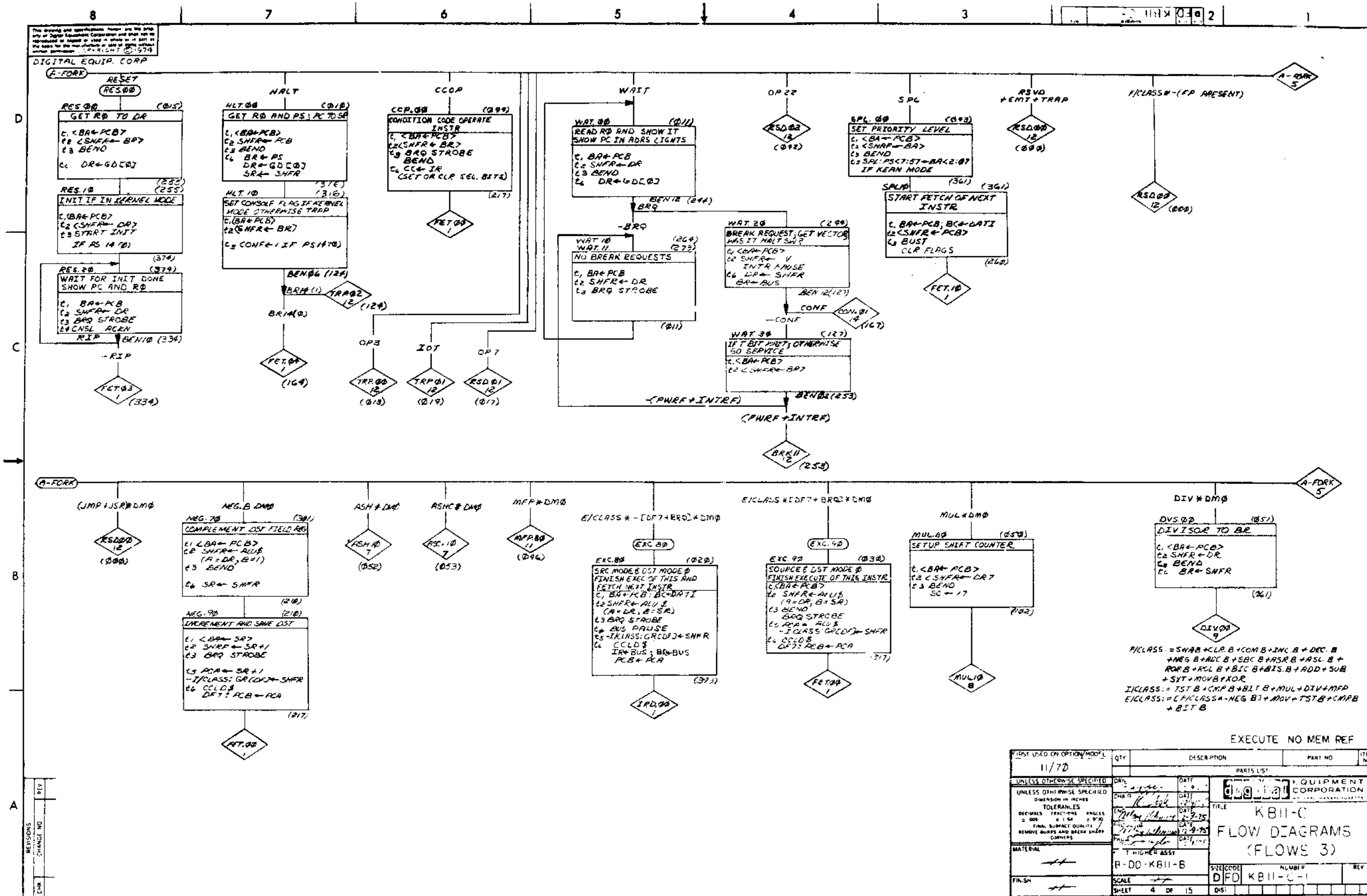
DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: KB11-C FLOW DIAGRAMS (FLOWS 2)

NEXT HIGHER ASSY: A-CD-KB11-C

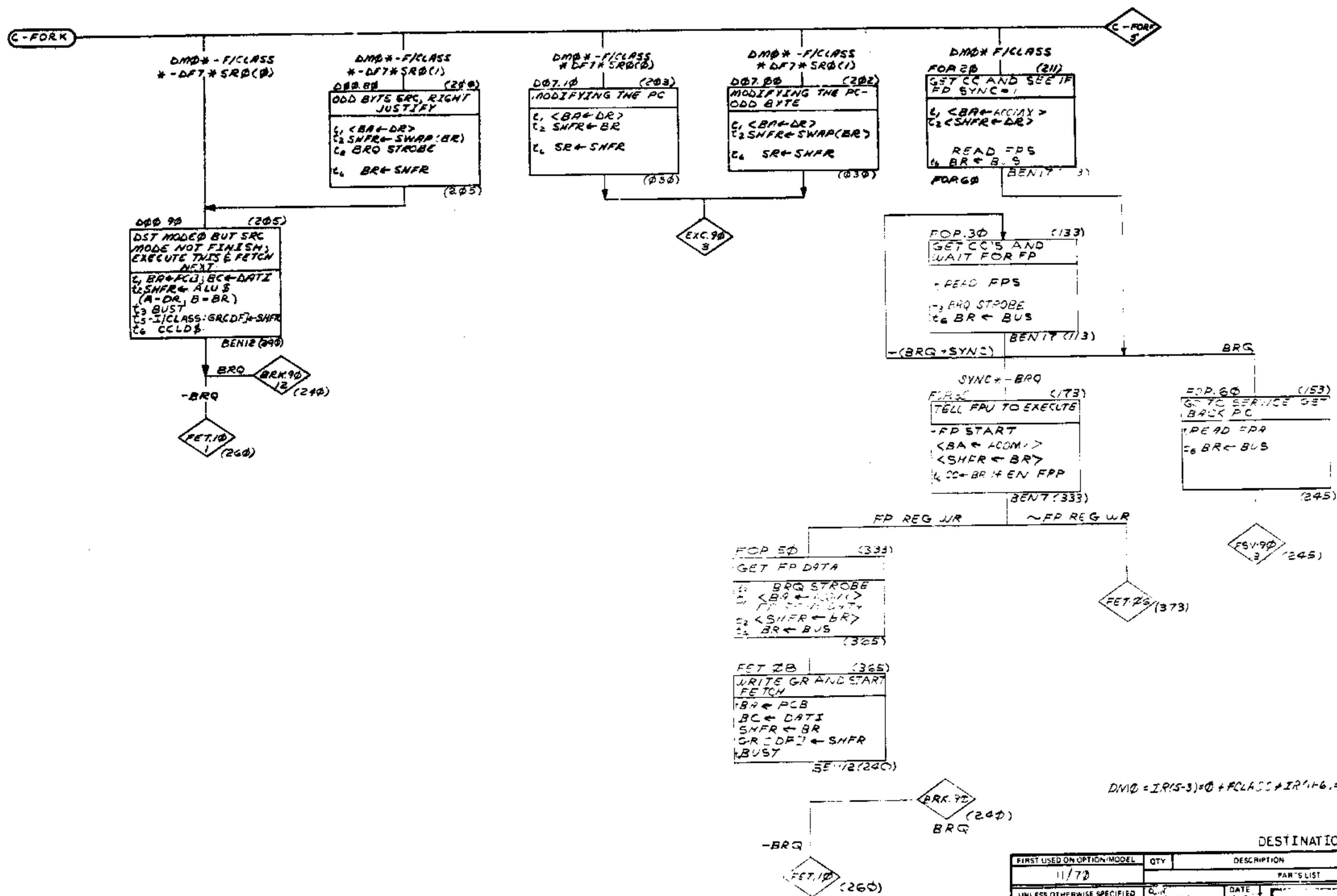
SIZE: D CODE: FD NUMBER: KB11-C

SCALE —; SHEET 5 OF 15


DIGITAL EQUIP. CORP
E-FORK
RESET
RES00
RES.00 GET R0 TO DR
RES.10 INIT IF IN KERNEL MODE
RES.20 WAIT FOR INIT DONE SHOW PC AND R0
FET.03
HALT
HLT.00 GET R0 AND PS; PC TO SR
HLT.10 SET CONSOLE FLAG IF KERNEL MODE OTHERWISE TRAP
TRAP02
FET.04
CCOP
CCP.00 CONDITION CODE OPERATE INSTR
FET.00
OP3
IOT
OP7
TRP.00
TRP.01
RSD.01
WAIT
WAT.00 READ R0 AND SHOW IT SHOW PC IN ADRS LIGHTS
WAT.10 WAT.11 NO BREAK REQUESTS
WAT.20 BREAK REQUEST; GET VECTOR WAS IT HALT SW?
WAT.30 IF T BIT WAIT; OTHERWISE GO SERVICE
-(PWRF+INTRF)
(PWRF+INTRF)
BRK.11
CON.01
OP 22
RSD.02
SPL
SPL.00 SET PRIORITY LEVEL
SPL.10 START FETCH OF NEXT INSTR
FET.10
RSVD +EMT+TRAP
RSD.00
F/CLASS*-(FP PRESENT)
A-FORK
(JMP+JSR)*DM0
NEG.B DM0
NEG.70 COMPLEMENT DST FIELD REG
NEG.90 INCREMENT AND SAVE DST
FET.00
ASH*DM0
ASH.10
ASHC*DM0
ASC.10
MFP*DM0
MFP.80
E/CLASS*-[DF7+BR0]*DM0
EXC.80 SRC MODE & DST MODE 0 FINISH EXEC OF THIS AND FETCH NEXT INSTR
IRD.00
E/CLASS*[DF7+BR0]*DM0
EXC.90 SOURCE & DST MODE 0 FINISH EXECUTE OF THIS INSTR
FET.00
MUL*DM0
MUL.80 SETUP SHIFT COUNTER
MUL.10
DIV*DM0
DVS.00 DIVISOR TO BR
DIV.00
P/CLASS: =SWAB+CLR.B+COM.B+INC.B+DEC.B+NEG.B+ADC.B+SBC.B+ASR.B+ASL.B+ROR.B+ROL.B+BIC.B+BIS.B+ADD+SUB+SXT+MOV.B+XOR
I/CLASS: = TST.B+CMP.B+BIT.B+MUL+DIV+MFP
E/CLASS: = E/F/CLASS*-NEG.B]+MOV+TST.B+CMP.B+BIT.B
EXECUTE NO MEM REF
FIRST USED ON OPTION/MODEL 11/70
UNLESS OTHERWISE SPECIFIED
TOLERANCES
MATERIAL
FINISH
NEXT HIGHER ASSY D-DD-KB11-B
SCALE
SHEET 4 OF 15
digital EQUIPMENT CORPORATION
TITLE KB11-C FLOW DIAGRAMS (FLOWS 3)
SIZE D CODE FD NUMBER KB11-C-1

26

DIGITAL EQUIP. CORP.



DESTINATION MODE Ø

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/7Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES

DIGITAL EQUIPMENT CORPORATION

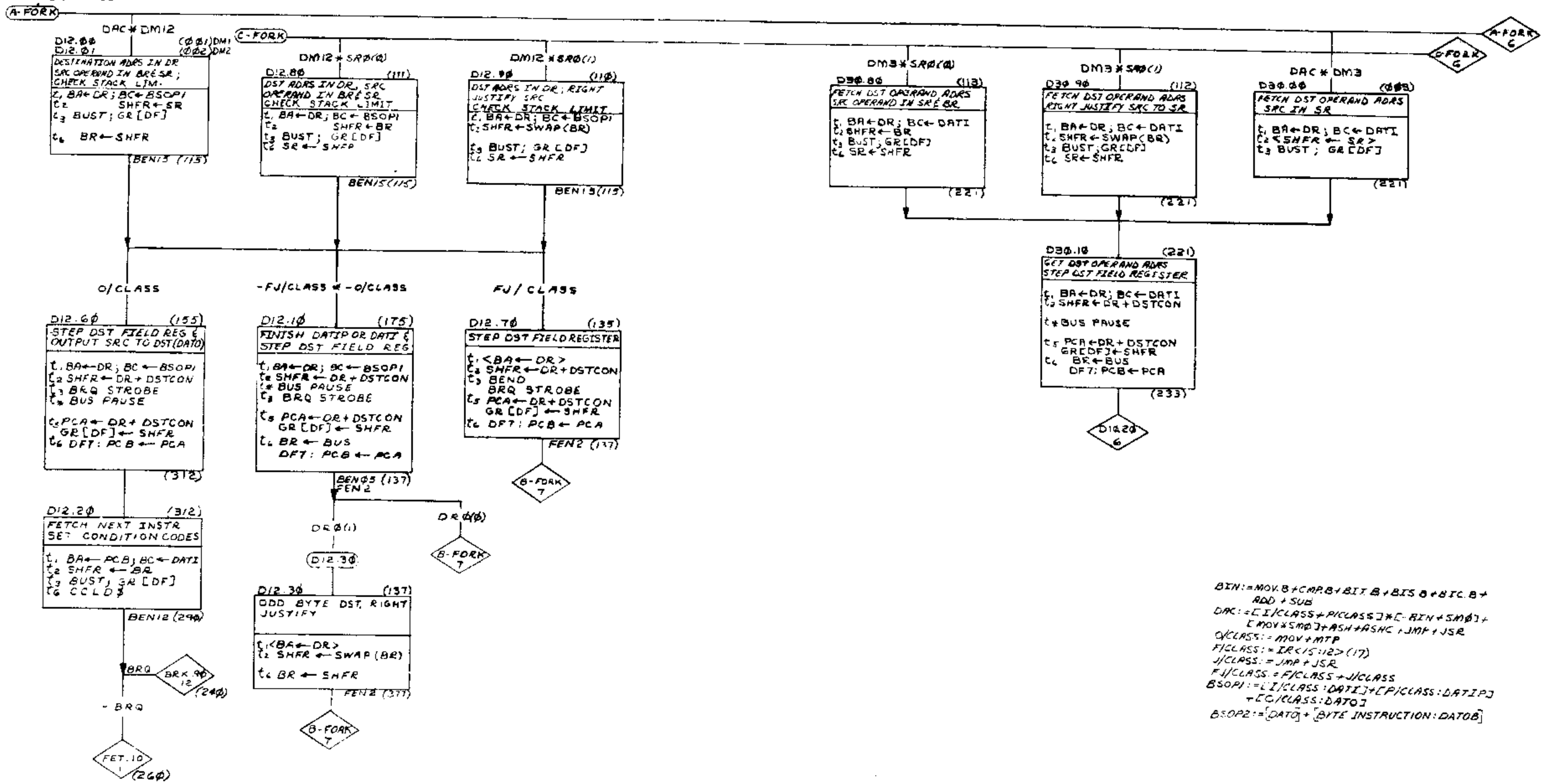
TITLE KB11-C FLOW DIAGRAMS (FLOWS 4)

NEXT HIGHER ASSY B-DD-KB11-B

SIZE D CODE FD NUMBER KB11-C-

SHEET 5 OF 15

26



DESTINATION MODES 1-3

FIRST USED ON OPTION/MODEL 11/70

EQUIPMENT CORPORATION

KB11-C
FLOW DIAGRAMS
(FLOWS 5)

NEXT HIGHER ASSY D-DD-KB11-B

SIZE D CODE FD NUMBER KB11-C

SHEET 6 OF 15

27

A-FORK

C-FORK

DM45 * SR0(0)

D45.0Ø (115)
STEP DST FIELD REGISTER
t, <BA←DR>
t2 SHFR←DR-DSTCON
t5 PCA←DR-DSTCON
GRCDF]←SHFR
t6 DR←SHFR
DF7: PCB←PCA

BEN0I(121)

-DM357

D40.2Ø (121)
DATIP DATI, DATO DST
SRC OPERAND TO SR;
CHECK STACK LIMIT
t, BA←DR; BC←BSOP1
t2 SHFR←BR
t3 BUST; GRCDF]
t6 SR←SHFR

BENIS(157)
FEN2

DM357

D50.2Ø (161)
FETCH DST OPERAND
ADRS; SRC OPERAND TO SR
t, BA←DR; BC←DATI
t2 SHFR←BR
t3 BUST; GRCDF]
t6 SR←SHFR

(231)

DM0.1Ø
6

DM45 * SR0(1)

D45.9Ø (114)
STEP DST FIELD REGISTER; ODD BYTE SOURCE
t, <BA←DR>
t2 SHFR←DR-DSTCON
t3 BRQ STROBE
t5 PCA←DR-DSTCON
GRCDF]←SHFR
t6 DR←SHFR
DF7: PCB←PCA

BEN0I(131)

-DM357

D40.3Ø (131)
DATIP DATI, DATO DST
EIGHT JUSTIFY SRC TO SR;
CHECK STACK LIMIT
t, BA←DR; BC←BSOP1
t2 SHFR←SWAP(BR)
t3 BUST; GRCDF]
t6 SR←SHFR

BENIS(177)
FEN2

-FJ/CLASS

D10.6Ø
6
(177)

FJ/CLASS

B-FORK
7

DM357

D50.3Ø (171)
FETCH DST OPERAND
ADRS; RIGHT JUSTIFY
SRC TO SR
t, BA←DR; BC←DATI
t2 SHFR←SWAP(BR)
t3 BUST; GRCDF]
t6 SR←SHFR

(231)

D10.1Ø

D10.1Ø (231)
GET DST OPERAND ADRS
t, BA←DR; BC←DATI
t2 <SHFR←BR>
t4 BUS PAUSE
t6 BR←BUS

(239)

D10.2Ø

D10.2Ø (233)
DST OPERAND ADRS TO DR
t, <BA←DR>
t2 SHFR←BR
t3 BRQ STROBE
t6 DR←SHFR

(311)

D10.5Ø (311)
DATIP DATI, DATO DST
SRC OPERAND TO BR
t, BA←DR; BC←BSOP1
t2 SHFR←SR
t3 BUST; GRCDF]
t6 BR←SHFR

BENIS(157)
FEN2

DAC * DM45

D50.0Ø (ØØØ4) DM4
D40.5Ø (ØØØ5) DM5
STEP DST FIELD REGISTER
t, <BA←PCB>
t2 SHFR←DR-DSTCON
t3 BEND
t5 PCA←DR-DSTCON
GRCDF]←SHFR
t6 DR←SHFR
DF7: PCB←PCA

BEN0I(122)

DM357

D10.0Ø

D10.0Ø (162)
FETCH DST OPERAND ADRS
t, BA←DR; BC←DATI
t2 <SHFR←PCB>
t3 BUST; GRCØF]

(231)

-DM357

D10.3Ø (122)
DATIP DATI, DATO DST
SRC OPERAND TO BR
CHECK STACK LIMIT
t, BA←DR; BC←BSOP1
t2 SHFR←SR
t3 BUST; SRCDF]
t6 BR←SHFR

BENIS(157)
FEN2

F-J/CLASS

B-FORK
7

DMG7 * SR0(0)

DG7.8Ø (117)
FETCH INDEX WORD; SRC TO SR
t, BA←PCB; BC←DATI
t2 SHFR←BR
t3 BUST; GRCØJ
t6 SR←SHFR

(ØØG)

DMG7 * SR0(1)

DG7.9Ø (116)
FETCH INDEX WORD; RIGHT JUSTIFY SRC TO SR
t, BA←PCB; BC←DATI
t2 SHFR←SWAP(BR)
t3 BUST; GRCØJ
t6 SR←SHFR

(ØØG)

DAC * DMG7

DG7.ØØ
DG7.Ø1
(ØØG) DMG
(ØØ7) DM7
GET INDEX WORD; AD-JUST DST 2F DSF FIELD PC
t, BA←PCB; BC←DATI
t2 SHFR←PCB+2
t4 BUS PAUSE
t5 ACA←PCB+2
t6 BR←BUS
- DF7: DR←GDCDF]
DF7: DR←SHFR

(251)

DG7.1Ø (251)
LO INDEXING, STEP PC;
t, BA←PCB>
t2 SHFR←BR+DR
t3 BRQ STROBE
t6 DR←SHFR
PCB←PCA

BEN0I(122)

-DM357

DM357

D10.0Ø
6
(162)

-O/CLASS * -FJ/CLASS

D10.6Ø

D10.6Ø (177)
FINISH DATIP, DATI DST
t, BA←DR; BC←BSOP1
t2 <SHFR←BR>
t4 BUS PAUSE
t6 BRQ STROBE
t6 BR←BUS

D12.3Ø
5
(137)

DR(1)

BENDS(187)
FEN2

DR(0)

B-FORK
7

O/CLASS

D10.4Ø

D10.4Ø (157)
FINISH DATO DST;
LOAD CC'S
t, BA←DR; BC←BSOP1
t2 SHFR←BR
t3 BRQ STROBE
t4 BUS PAUSE
t6 CCLD

(231)

RET0I
1

DESTINATION MODES 4-7

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/70		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS: .XX ± .005, .XXX ± .002, X ± 1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

		DATE
DSN		
CHKD		
ENG		
PROJ ENG		
PROD		

EQUIPMENT CORPORATION

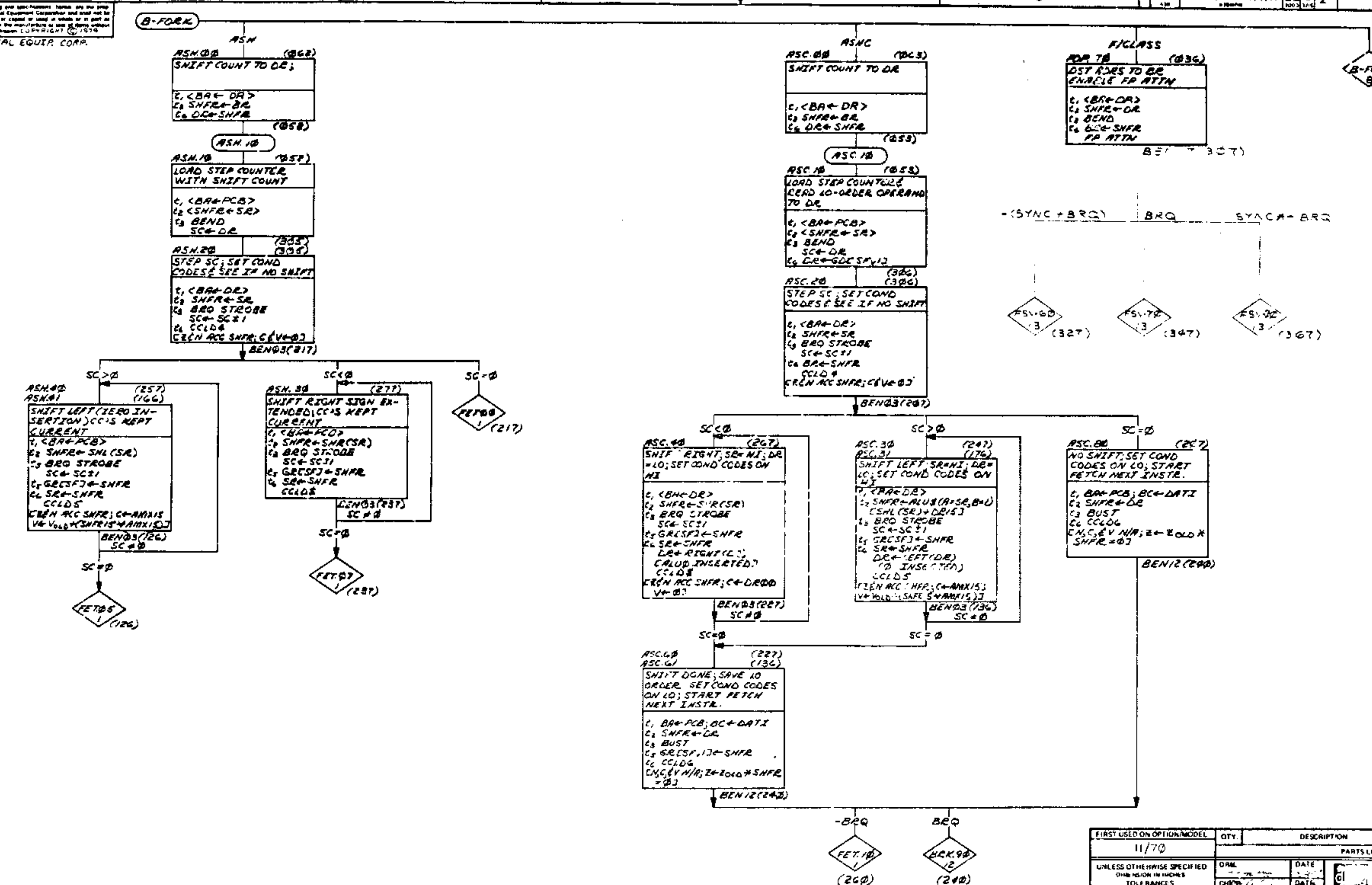
TITLE: KB11-C FLOW DIAGRAMS (FLOWS 6)

NEXT HIGHER ASSY: B-CD-KB1-B

SIZE	CODE	NUMBER	REV
D	DFD	KB11-C	

SCALE
SHEET 7 OF 15

REVISIONS: REV | CHANGE NO | ENG



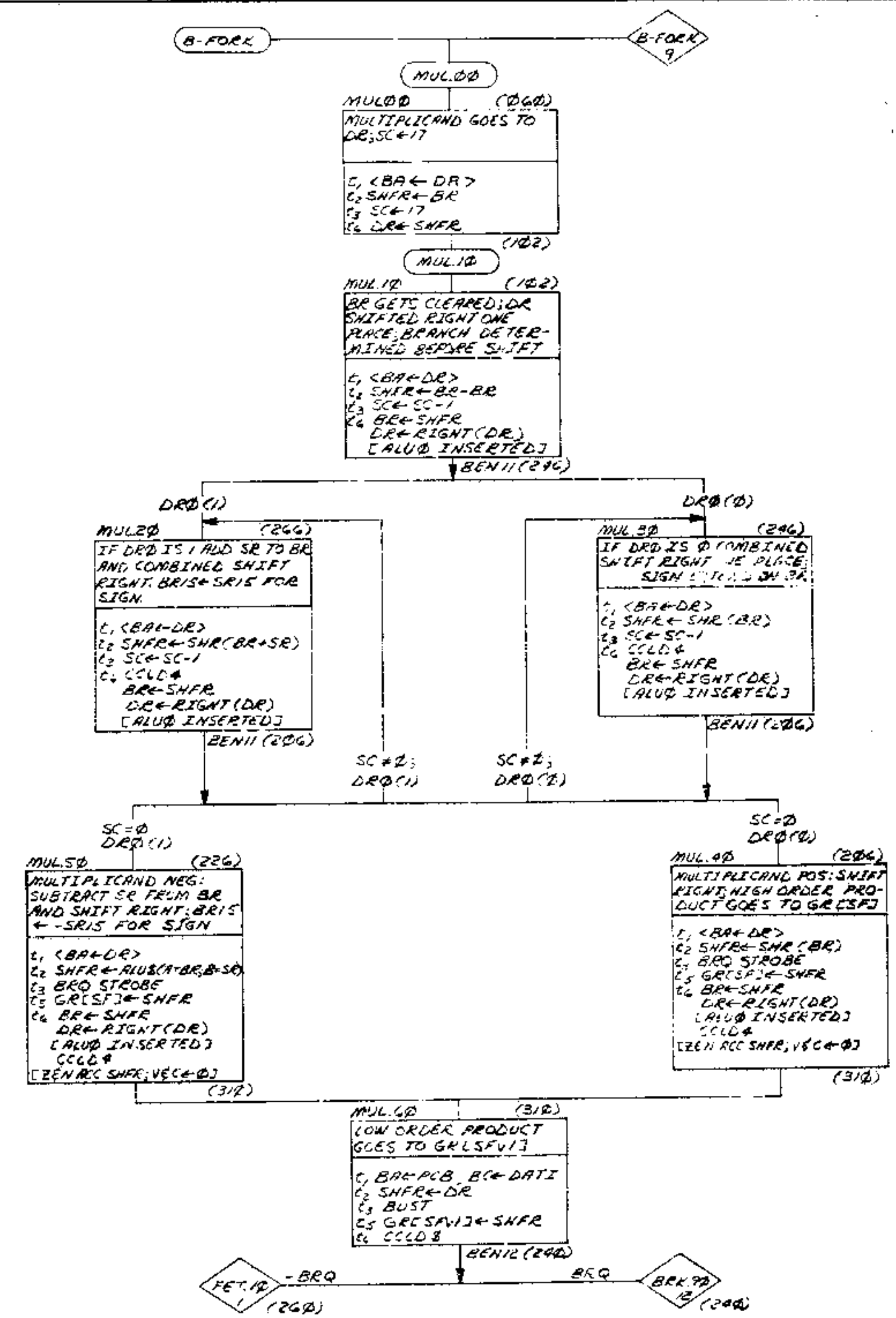
FIRST USED ON OPTION/MODEL	11/70
NEXT HIGHER ASSY	B-DD-KB11-B

EQUIPMENT CORPORATION

TITLE KB1-C FLOW DIAGRAMS (FLOWS 7)

SIZE D CODE FD NUMBER KB11-C-1

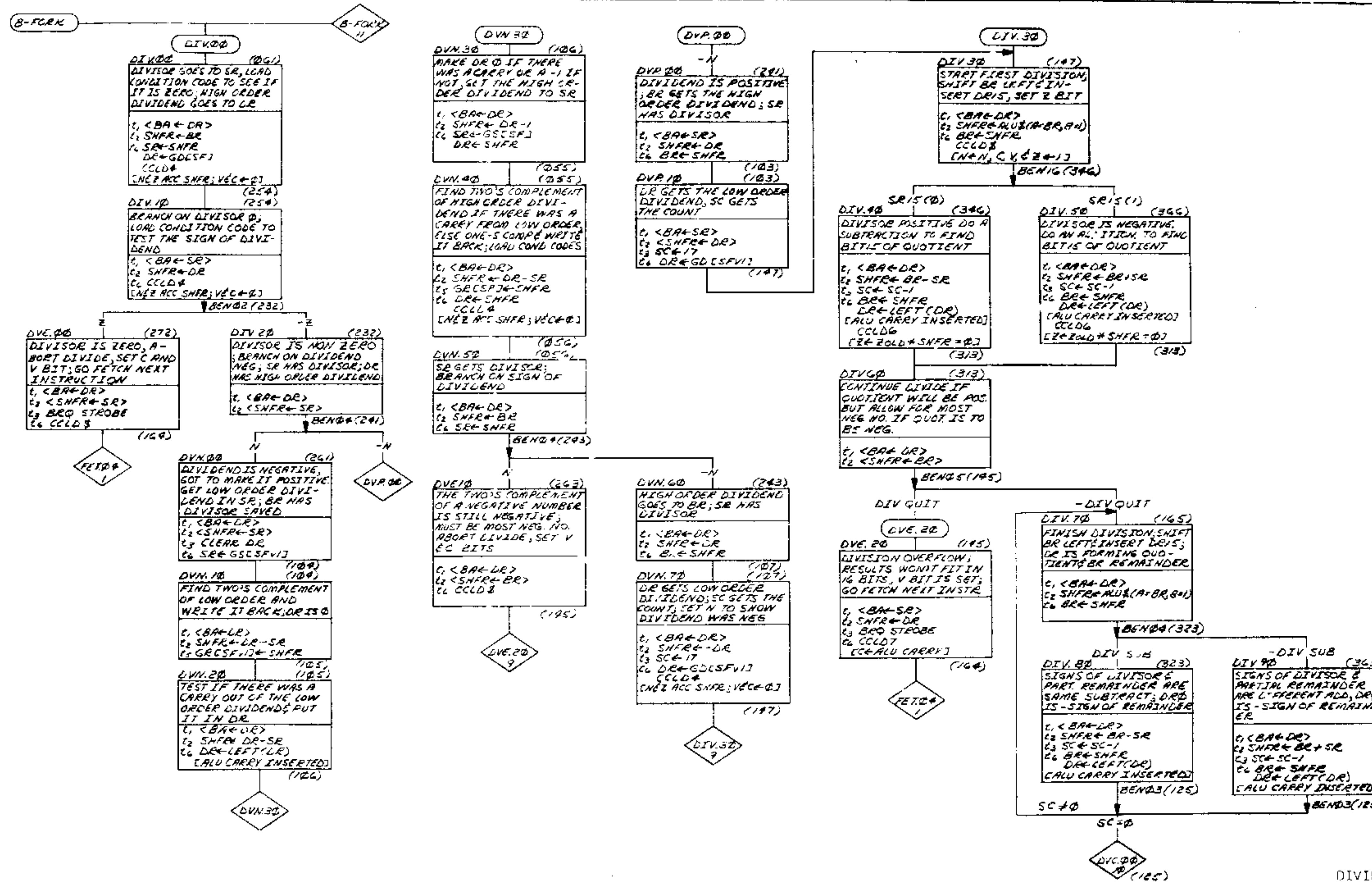
SHEET 8 OF 15



B-FORK
B-FORK 9
MUL.ØØ
MULØØ (Ø6Ø)
MULTIPLICAND GOES TO DR; SC←17
t1 <BA←DR>
t2 SHFR←BR
t3 SC←17
t4 DR←SHFR
(1Ø2)
MUL.1Ø
MUL.1Ø (1Ø2)
BR GETS CLEARED; DR SHIFTED RIGHT ONE PLACE; BRANCH DETERMINED BEFORE SHIFT
t1 <BA←DR>
t2 SHFR←BR-BR
t3 SC←SC-1
t4 BR←SHFR
DR←RIGHT(DR)
[ALUØ INSERTED]
BEN11 (246)
DRØ(1)
DRØ(Ø)
MUL2Ø (266)
IF DRØ IS 1 ADD SR TO BR AND COMBINED SHIFT RIGHT. BR15←SR15 FOR SIGN.
t1 <BA←DR>
t2 SHFR←SHR(BR+SR)
t3 SC←SC-1
t4 CCLD4
BR←SHFR
DR←RIGHT(DR)
[ALUØ INSERTED]
BEN11 (2Ø6)
MUL.3Ø (246)
IF DRØ IS Ø COMBINED SHIFT RIGHT ONE PLACE; SIGN
t1 <BA←DR>
t2 SHFR←SHR(BR)
t3 SC←SC-1
t4 CCLD4
BR←SHFR
DR←RIGHT(DR)
[ALUØ INSERTED]
BEN11 (2Ø6)
SC≠Ø; DRØ(1)
SC≠Ø; DRØ(Ø)
SC=Ø DRØ(1)
SC=Ø DRØ(Ø)
MUL.5Ø (226)
MULTIPLICAND NEG: SUBTRACT SR FROM BR AND SHIFT RIGHT: BR15 ← -SR15 FOR SIGN
t1 <BA←DR>
t2 SHFR←ALU$(A=BR,B=SR)
t3 BRQ STROBE
t5 GR[SF]←SHFR
t6 BR←SHFR
DR←RIGHT(DR)
[ALUØ INSERTED]
CCLD4
[ZEN ACC SHFR; V$C←Ø]
(31Ø)
MUL.4Ø (2Ø6)
MULTIPLICAND POS: SHIFT RIGHT; HIGH ORDER PRODUCT GOES TO GR[SF]
t1 <BA←DR>
t2 SHFR←SHR(BR)
t3 BRQ STROBE
t5 GR[SF]←SHFR
t6 BR←SHFR
DR←RIGHT(DR)
[ALUØ INSERTED]
CCLD4
[ZEN ACC SHFR; V$C←Ø]
(31Ø)
MUL.6Ø (31Ø)
LOW ORDER PRODUCT GOES TO GR[SFV1]
t1 BA←PCB, BC←DATI
t2 SHFR←DR
t3 BUST
t5 GR[SFV1]←SHFR
t6 CCLD8
BEN12 (24Ø)
-BRQ
BRQ
FET.1Ø 1 (26Ø)
BRK.9Ø 12 (24Ø)

MULTIPLY

FIRST USED ON OPTION-MODEL	11/70
TITLE	KB11-B FLOW DIAGRAMS (FLOWS 8)
NEXT HIGHER ASSY	A-D3-KB11-B
SIZE	D
CODE	FD
NUMBER	KB11-B
SHEET	5 OF 15



DIVIDE

DIGITAL EQUIP. CORP.

FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/70		PARTS LIST		

DIGITAL EQUIPMENT CORPORATION

TITLE: KB11-C FLOW DIAGRAMS (FLOWS 9)

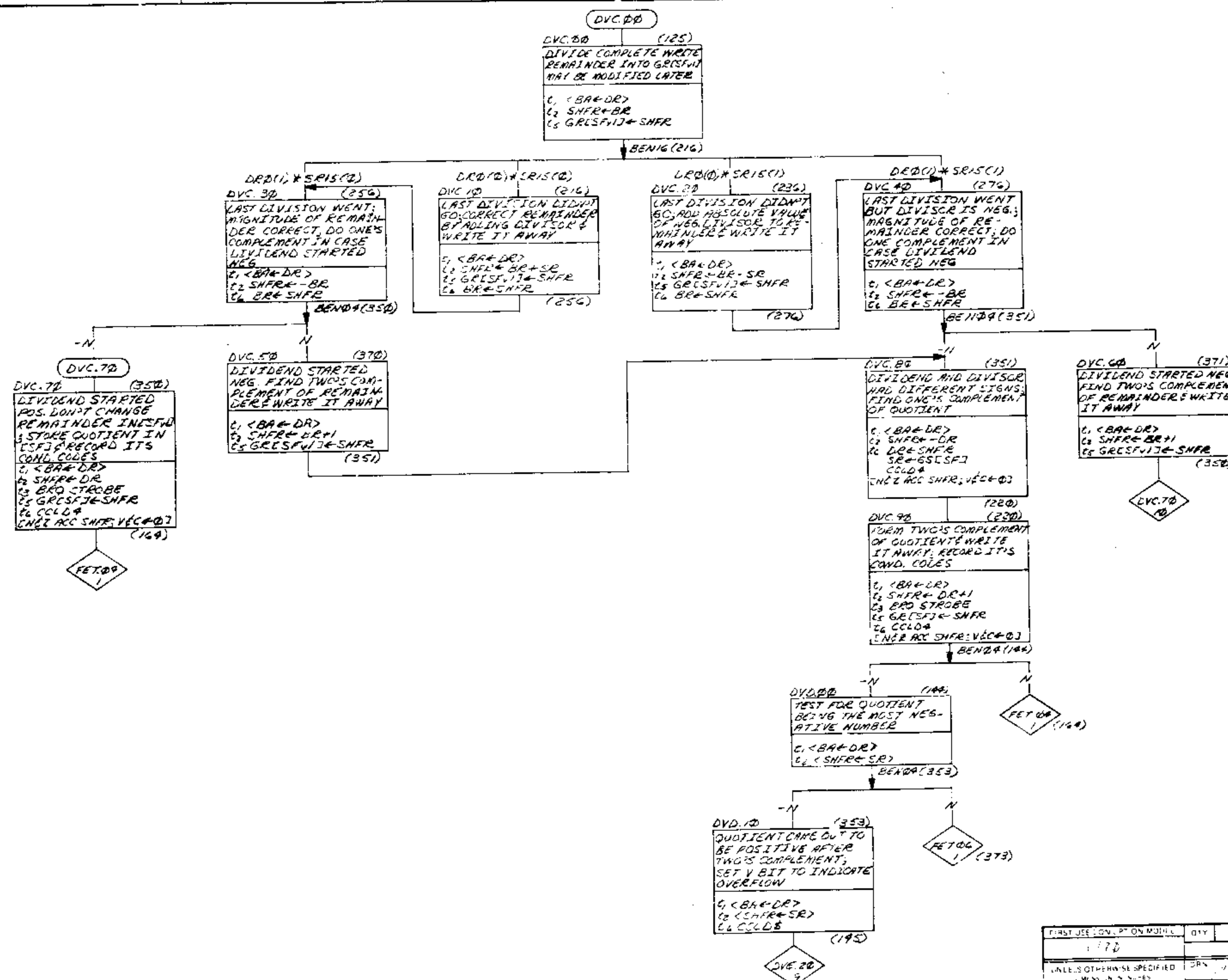
NEXT HIGHER ASSY: B-DD-KB11-B

SIZE D, CODE FD, NUMBER KB11-

SHEET 10 OF 15

31

DIGITAL EQUIP. CORP.



DIVIDE

FIRST USED ON/CPT ON MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
1170		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES
DECIMALS: XXX ± .005, XX ± .02, X ± .1 — ANGLES: ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN / CHK / ENG / PROD ENG / PROD — DATE

DIGITAL EQUIPMENT CORPORATION

TITLE KB11
FLOW DIAGRAMS
(FLOWS 1Ø)

NEXT HIGHER ASSY: B-DD-KB11-B
SIZE D CODE FD NUMBER KB11-0-1 REV
SCALE — SHEET 1 OF 15
DIST

DEC 12PM NO
DRD 102-B

32

B - FORM

NEG. B

NEG. ØØ (Ø67)
COMPLEMENT DST OPERAND
t1 <BA ← DR>
t2 SHFR ← $ALU(A=BR, B=1)
t6 BR ← SHFR
(271)

NEG. 1Ø (271)
AND THEN INCREMENT, SET CC'S, SEE IF DST IS ODD BYTE
t1 <BA ← DR>
t2 SHFR ← BR+1
t6 CCLD $
BR ← SHFR
BEN@5 (123)

DR Ø (1)

DR Ø (Ø)

NEG. 2Ø (163)
EVEN BYTE OR WORD-OUTPUT RESULTS; CHECK STACK LIMIT
t1 BA←DR; BC←BSOP2
t2 <SHFR ← BR>
t3 BUST; GD CDF]
(132)

[ASRB + R)RB] * DRØ(1)

SHR. ØØ (Ø64)
SHIFT OR ROTATE RIGHT ODD BYTE; SET CCS
t1 <BA ← DR>
t2 SHFR ← $ALU(A=BR, B=1)
t6 CCLD $
BR ← SHFR
(123)

SHR. 1Ø (123)
ODD BYTE-HI. ORDER BYTE POSITIONED & OUTPUT CHECK STACK LIMIT
t1 BA←DR; BC←BSOP2
t2 SHFR ← SWAP (BR)
t3 BUST; GD CDF]
t6 BR ← SHFR
(132)

P/CLASS* - C(ASRB + R)RB)* DRØ(1) + NEG. B]

EXC. ØØ (Ø31)
DO THE OPERATION; START BUS OPERATION
t BA ← DR; BC ← BSOP2
t2 SHFR ← $ALU(A=BR, B=SR)
t3 BUST; GD CØJ
t6 CCLD $
BR ← SHFR
(132)

EXEC. 1Ø (132)
FINISH BUS OPERATION
t1 BA←DR; BC ← BSOP2
t2 <SHFR ← BR>
t3 BRQ STROBE
t* BUS PAUSE
(217)

FET. ØØ /1

[TST. B + BIT. B + CMP. B]

TST. 1Ø (Ø33)
NO MORE BUS OPS: SET CC'S & START FETCH NEXT INSTR
t1 BA←PCB; BC←DATI
t2 SHFR←$ALU(A=BR, B=SR)
t3 BUST; GD CDF]
t6 CCLD $
BEN12 (24Ø)

-BRQ → FET. 1Ø /1 (26Ø)

BRQ → BRK. 9Ø /12 (241)

JMP

JMP. ØØ (Ø35)
LOAD NEW PC FROM DST ADRS
t1 <BA ← DR>
t2 <SHFR ← PCA>
t3 PEND
MRQ STROBE
t5 PCA ← DR
t6 PCB ← PCA
(217)

FET. ØØ /1

JSR

JSR. ØØ (Ø34)
SAVE DST ADRS IN PCA; GET MODIFIED SRC FIELD REG TO SR
t1 <BA ← DR>
t2 SHFR ← PCB
t3 BEND
t5 PCA ← DR
t6 - SF7: SR ← GS CSF]
SF7: SR ← SHFR
(2Ø1)

JSR. 1Ø (2Ø1)
GET SP AND PUT SRC FIELD REG IN BR FOR PUSHING OLD CONTENTS ON STACK
t1 <BA ← PCB>
t2 SHFR ← SR
t3 BRQ STROBE
t6 DR ← GD C6J
BR ← SHFR
(274)

JSR. 2Ø (274)
STEP SP BACK FOR PUSH
t1 <BA ← DR>
t2 SHFR ← DR-2
t5 GR C6J ← SHFR
t6 DR ← SHFR
(275)

JSR. 3Ø (275)
WRITE OLD SRC FIELD REG ON STACK, CHECK STACK LIMIT
t1 BA←DR; BC ← DATO
t2 <SHFR ← BR>
t3 BUST; STACK REF
(Ø32)

JSR. 4Ø (Ø32)
FINISH PUSH; OLD PC GOES TO SRC FIELD REG AND DST ADRS TO PC
t1 BA←DR; BC ← DATO
t2 SHFR ← PCB
t* BUS PAUSE
t3 BRQ STROBE
t5 GR CSF] ← SHFR
t6 PCB ← PCA
(217)

FET. ØØ /1

MFP

MFP. ØØ (Ø66)
PREVIOUS MODE DATA IN BR; GET CURRENT MODE SP; SET CC'S.
t1 <BA ← DR>
t2 SHFR ← BR
t4 CCLD $
SR ← GS C6J
(2Ø3)

MFP. 1Ø (25Ø)
STEP STACK POINTER BACK FOR PUSH
t1 <BA ← DR>
t2 SHFR ← SR-2
t3 BEND
t5 GR C6J ← SHFR
t6 DR ← SHFR
(222)

SYC. 8Ø /13

MFP. 8Ø

MFP. 8Ø (Ø46)
PREVIOUS MODE DATA IN GR'S; IF R6 USE PREV MODE SP; R6-R5 SET DETERMINED BY REG SET BIT (PS11)
+1 <BA ← PCB>
t2 SHFR ← PCB
t3 BEND
t5 -I/CLASS: GR CDF] ← SHFR
t6 - DF7: DR ← GD CDF]
DF7: DR ← SHFR
(324)

MFP. 9Ø (324)
PUT DATA IN BR & SET CC'S; GET CURRENT MODE SP
t1 <BA ← DR>
t2 SHFR ← DR
t6 CCLD $
BR ← SHFR
SR ← GS C6J
(25Ø)

EXECUTE - MEM REF

FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO
11/70	PARTS LIST			

DIMENSIONAL TOLERANCE
DIMENSIONS ARE MILLIMETERS / INCHES
UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
XXX = ±.10	.XXX = ±.005	±0° 30'
XX = ±.05	.XX = ±.02	
X = ±2.	.X = ±.1	

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —"—
FINISH —"—

DRN — DATE
CHK'D — DATE
ENGR — DATE
PROGRMG. — DATE
PHOTO — DATE
NEXT HIGHER ASSY.

digital

TITLE: KB11-I FLOW DIAGRAMS (FLOWS 11)

B-DD-KB11-B

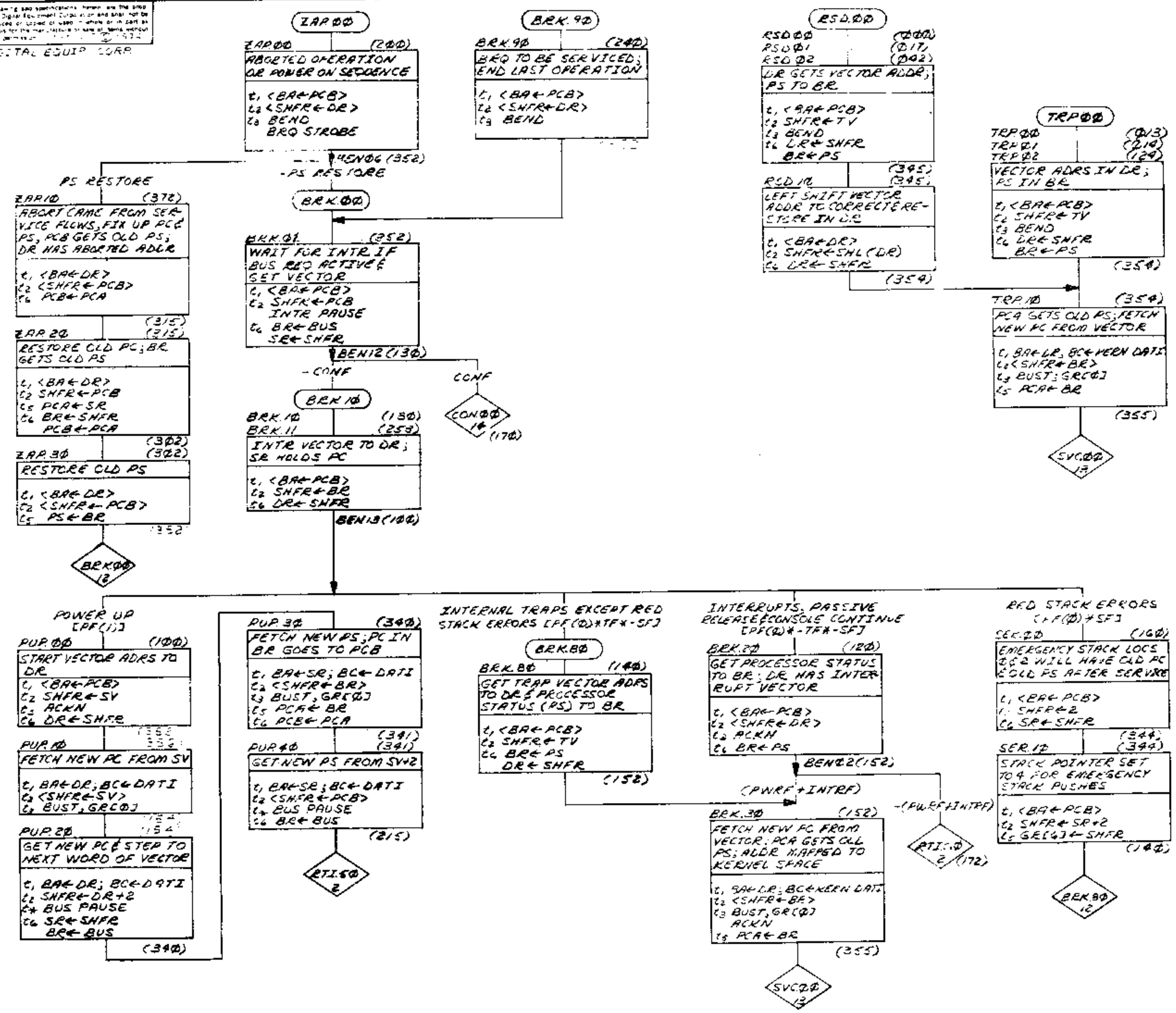
SIZE D | FSCM NO. DFDKB11-I | REV

SCALE NONE
SHEET 12 OF 15

REV	DIVISIONS	CHANGE NO

DFDKB11-I

DIGITAL EQUIP CORP



BREAK CONDITIONS

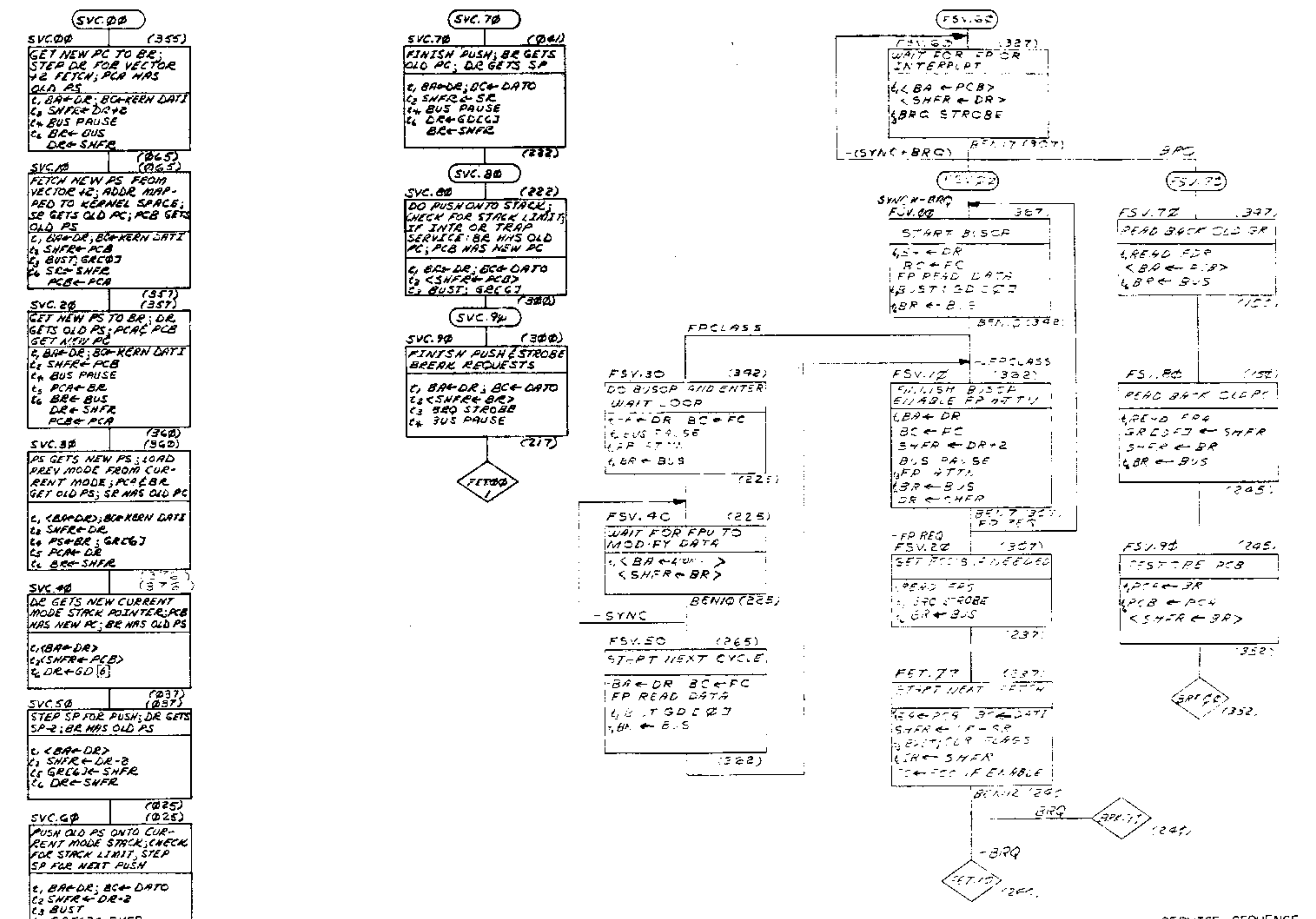
FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/70		PARTS LIST		

DIGITAL EQUIPMENT CORPORATION

TITLE: KB11 FLOW DIAGRAMS (FLOWS 12)

NEXT HIGHER ASSY: B-DD-KB11-B

SIZE D | CODE FD | NUMBER KB11



SERVICE SEQUENCE

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/70		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES
DECIMALS XXX ± .005, XX ± .02, X ± .1 — ANGLES ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS, SURFACE QUALITY ✓

NEXT HIGHER ASSY: B-DD-KB11-B

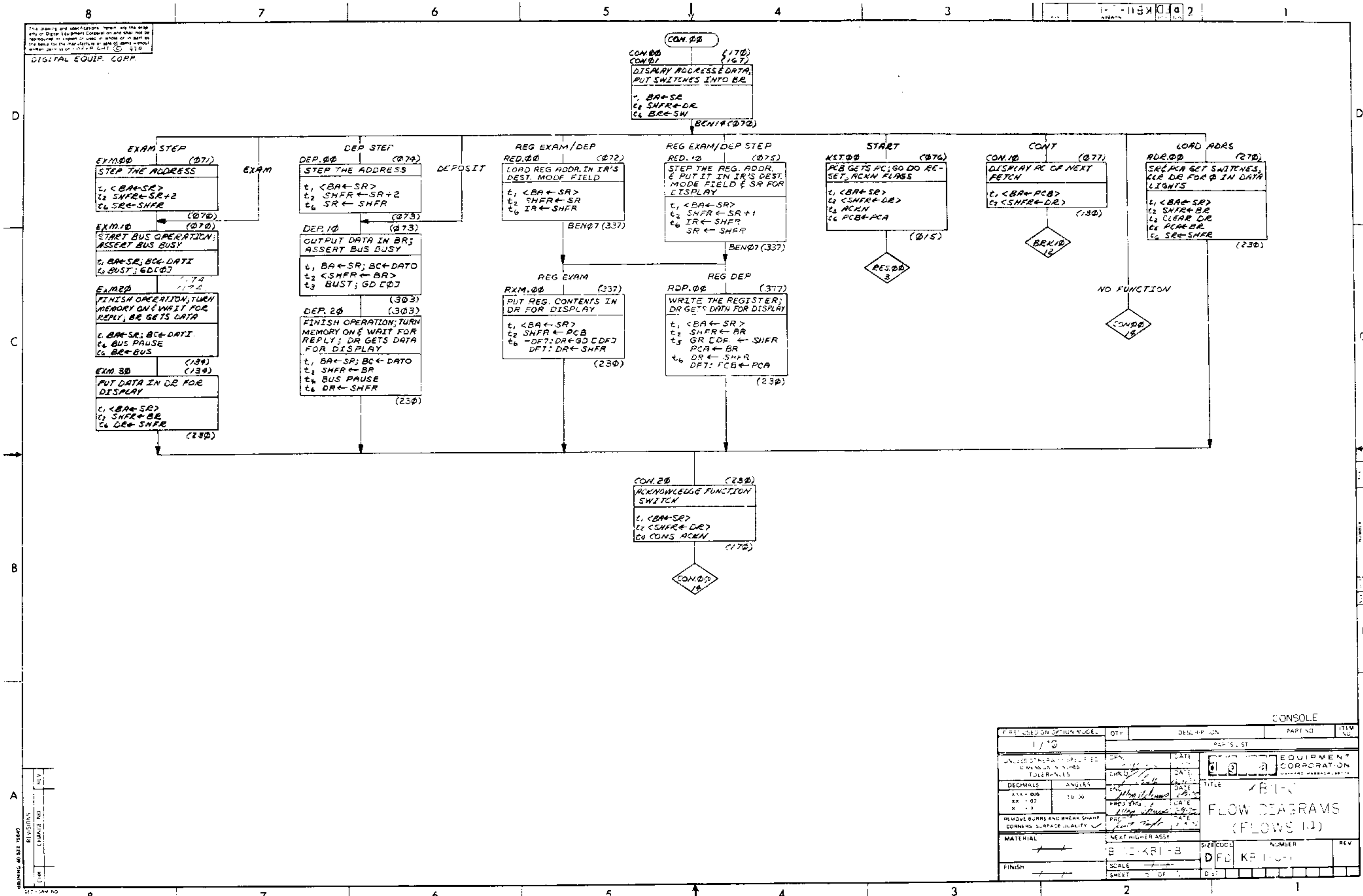
EQUIPMENT CORPORATION

TITLE: KB11-C FLOW DIAGRAMS (FLOWS 13)

SIZE D CODE FD NUMBER KB11-C-1

SHEET 14 OF 15

35

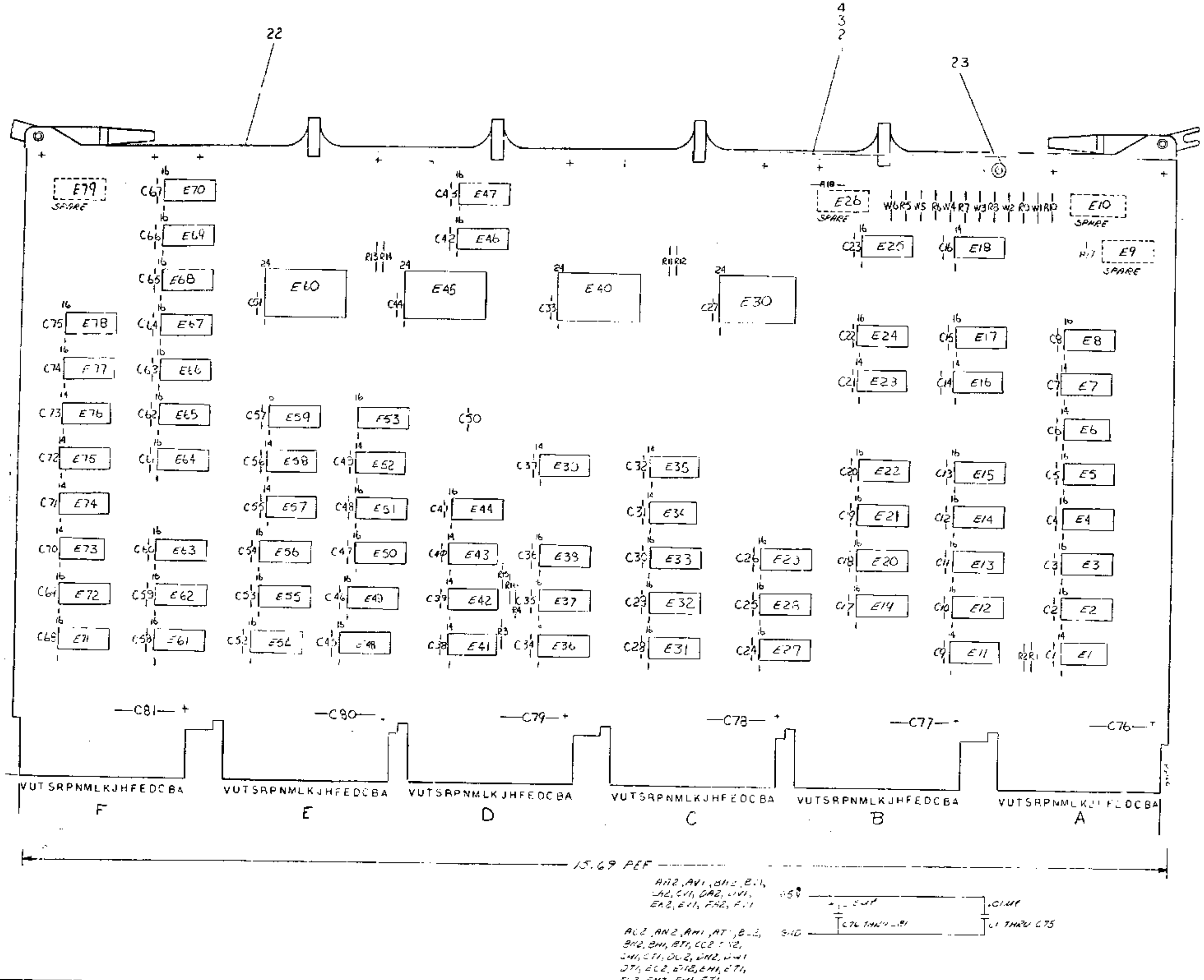


DIGITAL EQUIP. CORP.
CON.ØØ
DISPLAY ADDRESS & DATA; PUT SWITCHES INTO BR
BA←SR
SHFR←DR
BR←SW
BEN17(Ø7Ø)
EXAM STEP
EXM.ØØ (Ø71)
STEP THE ADDRESS
t1 <BA←SR>
t2 SHFR←SR+2
t6 SR←SHFR
EXAM
EXM.1Ø (Ø7Ø)
START BUS OPERATION; ASSERT BUS BUSY
EXM.2Ø
FINISH OPERATION; TURN MEMORY ON & WAIT FOR REPLY; BR GETS DATA
t1 BA←SR; BC←DATI
t4 BUS PAUSE
t6 BR←BUS
EXM.3Ø (134)
PUT DATA IN DR FOR DISPLAY
t1 <BA←SR>
t2 SHFR←BR
t6 DR←SHFR
(23Ø)
DEP STEP
DEP.ØØ (Ø74)
STEP THE ADDRESS
t1 <BA←SR>
t2 SHFR←SR+2
t6 SR←SHFR
DEPOSIT
DEP.1Ø (Ø73)
OUTPUT DATA IN BR; ASSERT BUS BUSY
t1 BA←SR; BC←DATO
t2 <SHFR←BR>
t3 BUST; GD CØJ
DEP.2Ø (3Ø3)
FINISH OPERATION; TURN MEMORY ON & WAIT FOR REPLY; DR GETS DATA FOR DISPLAY
t1 BA←SR; BC←DATO
t2 SHFR←BR
t4 BUS PAUSE
t6 DR←SHFR
(23Ø)
REG EXAM/DEP
RED.ØØ (Ø72)
LOAD REG ADDR. IN IR'S DEST. MODE FIELD
t1 <BA←SR>
t2 SHFR←SR
t6 IR←SHFR
BENØ7(337)
REG EXAM/DEP STEP
RED.1Ø (Ø75)
STEP THE REG. ADDR. & PUT IT IN IR'S DEST. MODE FIELD & SR FOR DISPLAY
t1 <BA←SR>
t2 SHFR←SR+1
t6 IR←SHFR
SR←SHFR
BENØ7(337)
REG EXAM
RXM.ØØ (337)
PUT REG. CONTENTS IN DR FOR DISPLAY
t1 <BA←SR>
t2 SHFR←PCB
t6 -DF7: DR←GD CDFJ
DF7: DR←SHFR
(23Ø)
REG DEP
RDP.ØØ (377)
WRITE THE REGISTER; DR GETS DATA FOR DISPLAY
t1 <BA←SR>
t2 SHFR←BR
t5 GR CDF. ←SHFR
PCA←BR
t6 DR←SHFR
DF7: PCB←PCA
(23Ø)
START
KST.ØØ (Ø76)
PCB GETS PC; GO DO RESET, ACKN FLAGS
t1 <BA←SR>
t2 <SHFR←DR>
t3 ACKN
t6 PCB←PCA
(Ø15)
RES.ØØ 3
CONT
CON.1Ø (Ø77)
DISPLAY PC OF NEXT FETCH
t1 <BA←PCB>
t2 <SHFR←DR>
(13Ø)
BRK.1Ø 12
LOAD ADRS
ADR.ØØ (27Ø)
SR&PCA GET SWITCHES, CLR DR FOR Ø IN DATA LIGHTS
t1 <BA←SR>
t2 SHFR←BR
t3 CLEAR DR
t6 PCA←BR
t6 SR←SHFR
(23Ø)
NO FUNCTION
CON.ØØ 14
CON.2Ø (23Ø)
ACKNOWLEDGE FUNCTION SWITCH
t1 <BA←SR>
t2 <SHFR←DR>
t6 CONS ACKN
(17Ø)
CON.ØØ 14
CONSOLE
DIGITAL EQUIPMENT CORPORATION
FLOW DIAGRAMS (FLOWS 1.1)

36

NOTES:

1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω AND CAPACITANCE IS IN PICOFARADS. CAPS WITHOUT VALUE NOTED ARE .01 MFD.
2. E7, E10 E26 & E79 ARE SPARE IC LOCATIONS
3. R7 R8 & R15 ARE NOT USED
4. [illegible] —UP POWER — UP VECTOR — JUMPERS IN ACCORDANCE WITH TABLES ON PAGE [illegible] OF THIS PRINT



QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
12		EYELETS	9006932	22
1		HANDLE, MODULE	[illegible]	21
1	E44	IC DEC 74182-1	[illegible]	20
5	E42, E48, E49, E64, E67, E46, E47, E69, E70	IC DEC 74S174	1910250	[illegible]
2	E45, E49	IC DEC 74S157	[illegible]	[illegible]
39	[illegible]	IC DEC, 74S153	191054	5
1	E[illegible]	IC DEC, 74S20	1910539	17
4	E7[illegible], E[illegible], E51, E43	IC DEC, 74S11	1910527	16
2	E16, E34	IC DEC, 74S10	1910[illegible]	15
3	[illegible] E59, E73, E76	IC DEC, 74S04	1910[illegible]	14
3	E[illegible], E35, E14	IC DEC, 74S00	[illegible]	13
4	C30, E40, E45, E60	IC DEC, 74S181	1910531	12
2	E1, E42	IC DEC 74S[illegible]	1910542	11
2	R12, R14	RES., 560Ω, 1/4W, 5%	1301890	10
3	R2, R4, R16	RES., 150Ω, 1/4W, 5%	1306250	9
2	R11, R13	RES., 330Ω, 1/4W, 5%	1300[illegible]	8
9	R5 [illegible]	RES. 10K, 1/4W, 5%	1300477	7
6	C76 THRU C81	CAP, 6.8μF, 35V, 20%	1000067	6
75	C1 THRU C75	CAP, .01μF, 100V, 20%	1001610	5
1		ETCH CIRCUIT BOARD	500[illegible]	4
REF		MODULE ETCH HISTORY	[illegible]	3
REF		ASSY/DRILLING HOLE LAYOUT	[illegible]	2
REF		[illegible] HOLE LOCATION	[illegible]	1

PARTS LIST

ETCH BOARD REV C

IC TYPE	GND	+5V
DEC 74182-1	8	16
DEC 74S174	8	16
DEC 74S157	8	16
DEC 74S153	8	16
DEC 74S181	12	24

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

DEC NO.	EIA NO.	DEC NO	EIA NO

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO	
D	M8100-00004	V. BOHLEN
C	M8100-00003	S. JENKINS
B	M8100-00002	S. JENKINS
A	M8100-0001A	S. JENKINS
	ORIGINATED	

REVISIONS

NEXT HIGHER ASSY [illegible]-KB11-A

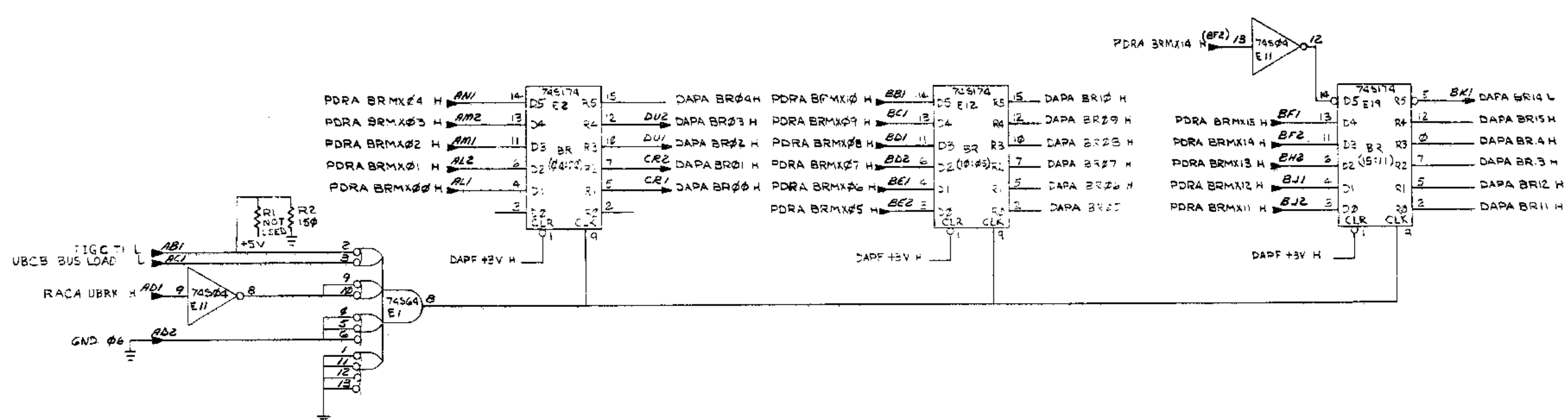
DIGITAL EQUIPMENT CORPORATION

TITLE: DAP-DATA PATHS

SIZE E CODE CS NUMBER M8[illegible]-0-1 REV D

SHEET 1 OF 3

37



BUS REGISTER — SLOTS

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
1/45				

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

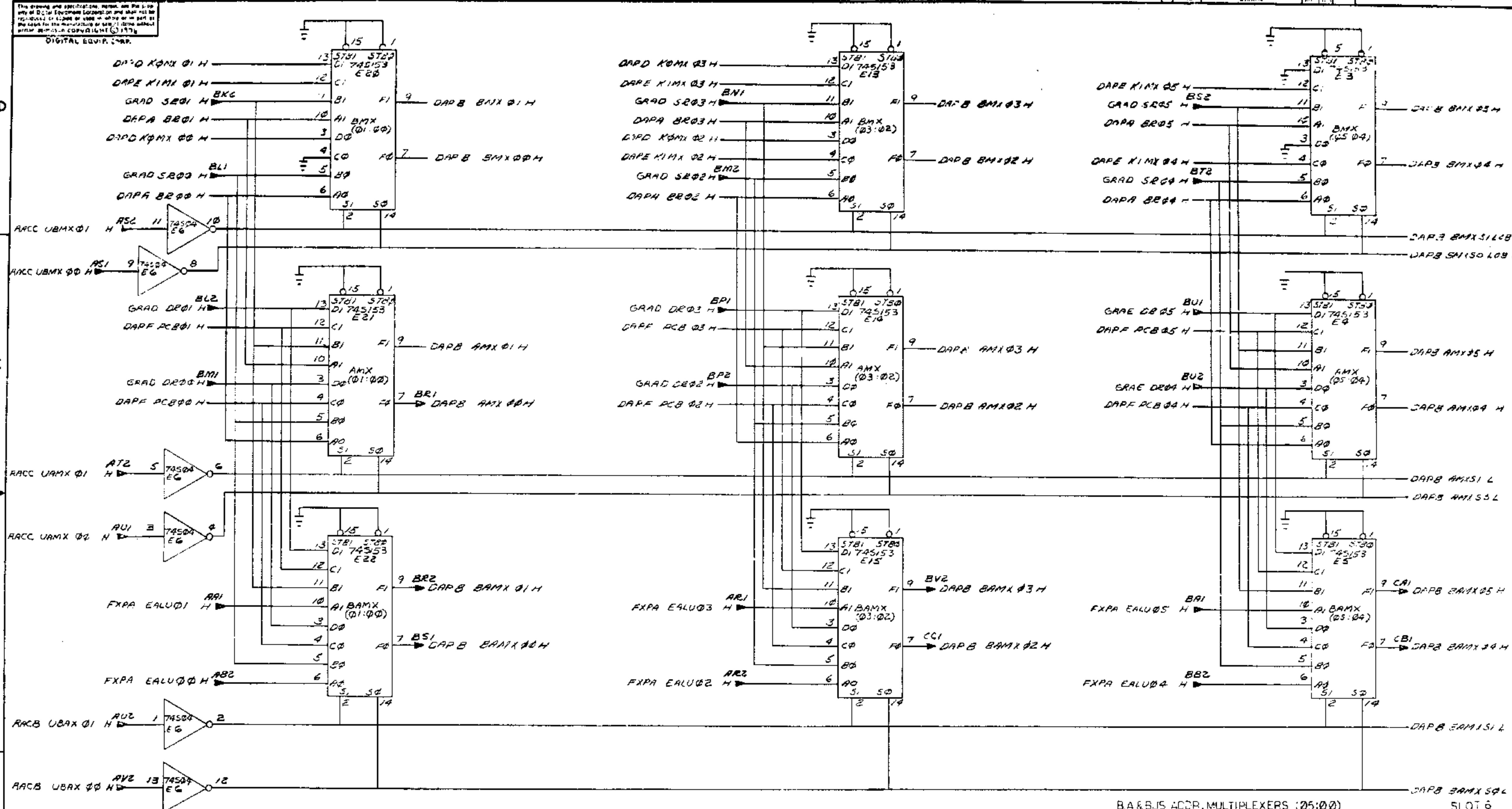
EQUIPMENT CORPORATION

TITLE: DATA PATHS (DAPA)

NEXT HIGHER ASSY: B-DD-KB11-A

SIZE D — CODE CS — NUMBER M8100-0-1 — REV D

SHEET 2 OF 9



UBAX Ø1	ØØ	
L	L	DR
L	H	PCB
H	L	SR
H	H	FP MAINT

UAMX Ø1	ØØ	
L	L	DR
L	H	PCB
H	L	SR
H	H	BR

UBMX Ø1	ØØ	
L	L	KØMX
L	H	KIMX
H	L	SR
H	H	BR

B,A,&BUS ADDR. MULTIPLEXERS (Ø5:ØØ) SLOT 6

FIRST USED ON OPTION: 1145

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES

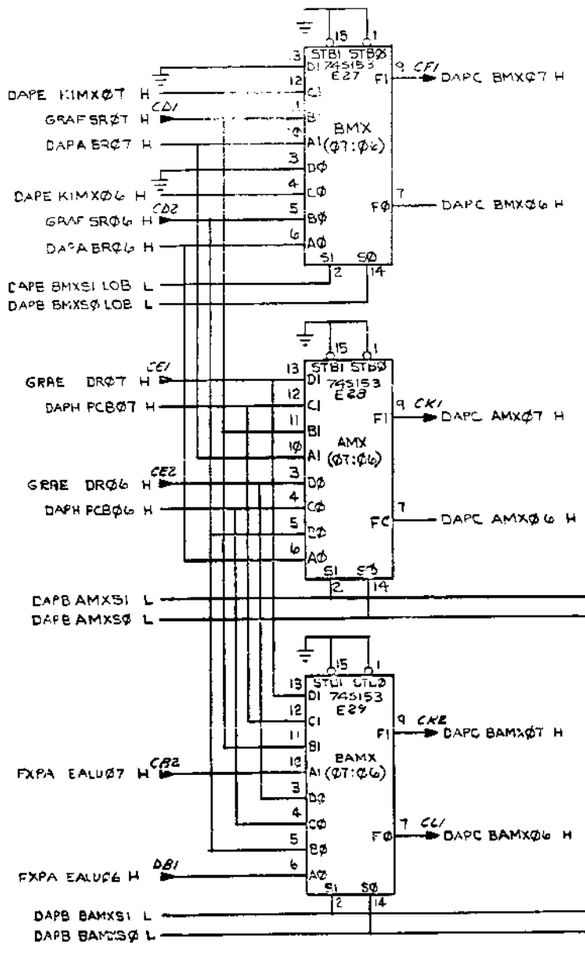
DIGITAL EQUIPMENT CORPORATION

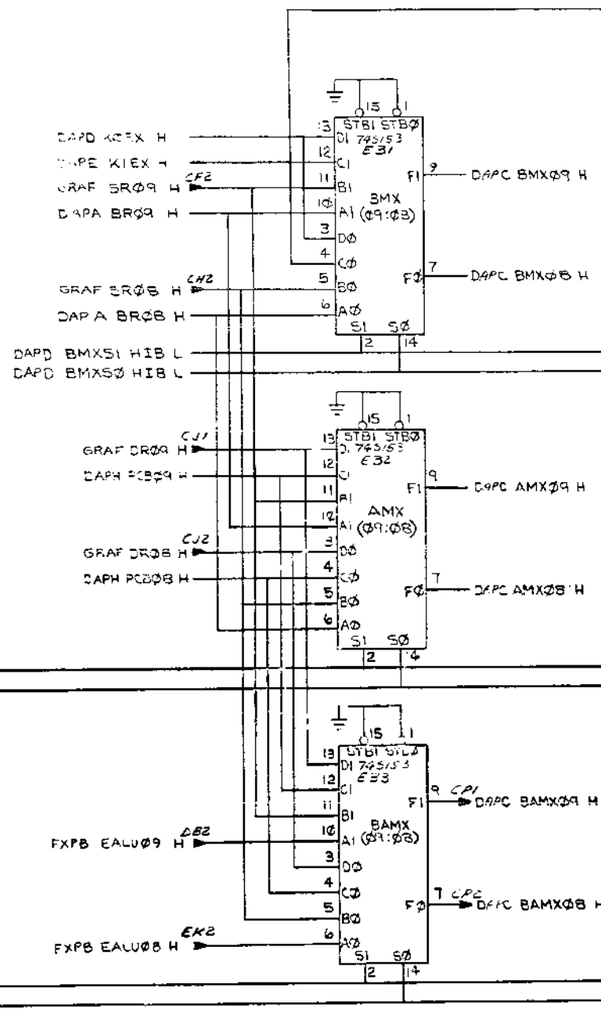
TITLE: DATA PATHS (DAPB)

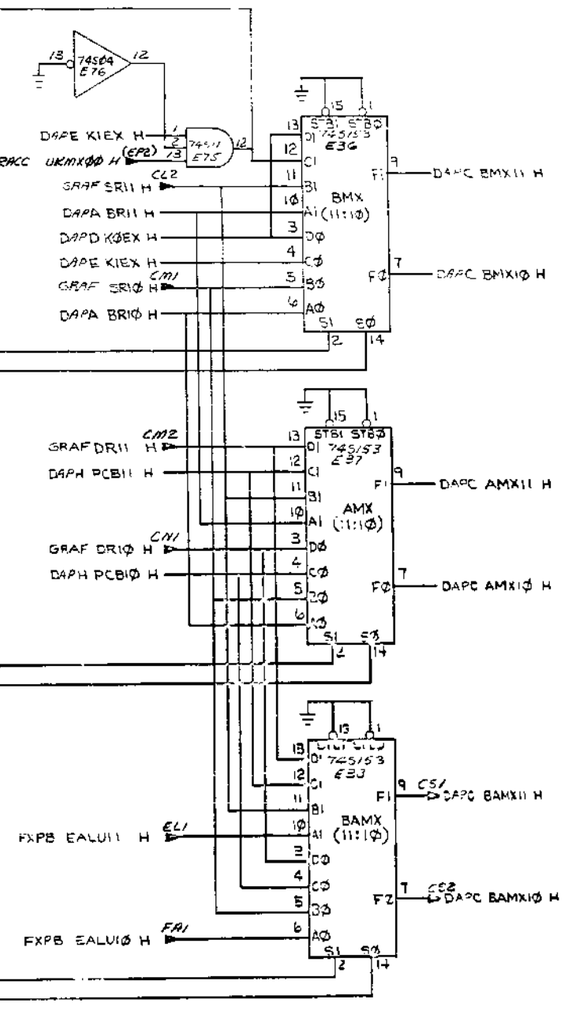
SIZE D CODE CS NUMBER M8100-0-1 REV D

NEXT HIGHER ASSY: 9-DD-KB11-A

SHEET 3 OF 9







B, A, & B BUS ADDR. MULTIPLEXERS (11:07) SLOTS

FIRST USED ON	QTY.	DESCRIPTION	PART NO	ITEM
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
DECIMALS: .XXX ± .005, .XX ± .02, .X ± .1
ANGLES: ± 30'
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓
MATERIAL —
FINISH —
NEXT HIGHER ASSY. B-DD-KB11-A
SCALE —
SHEET 4 OF 9

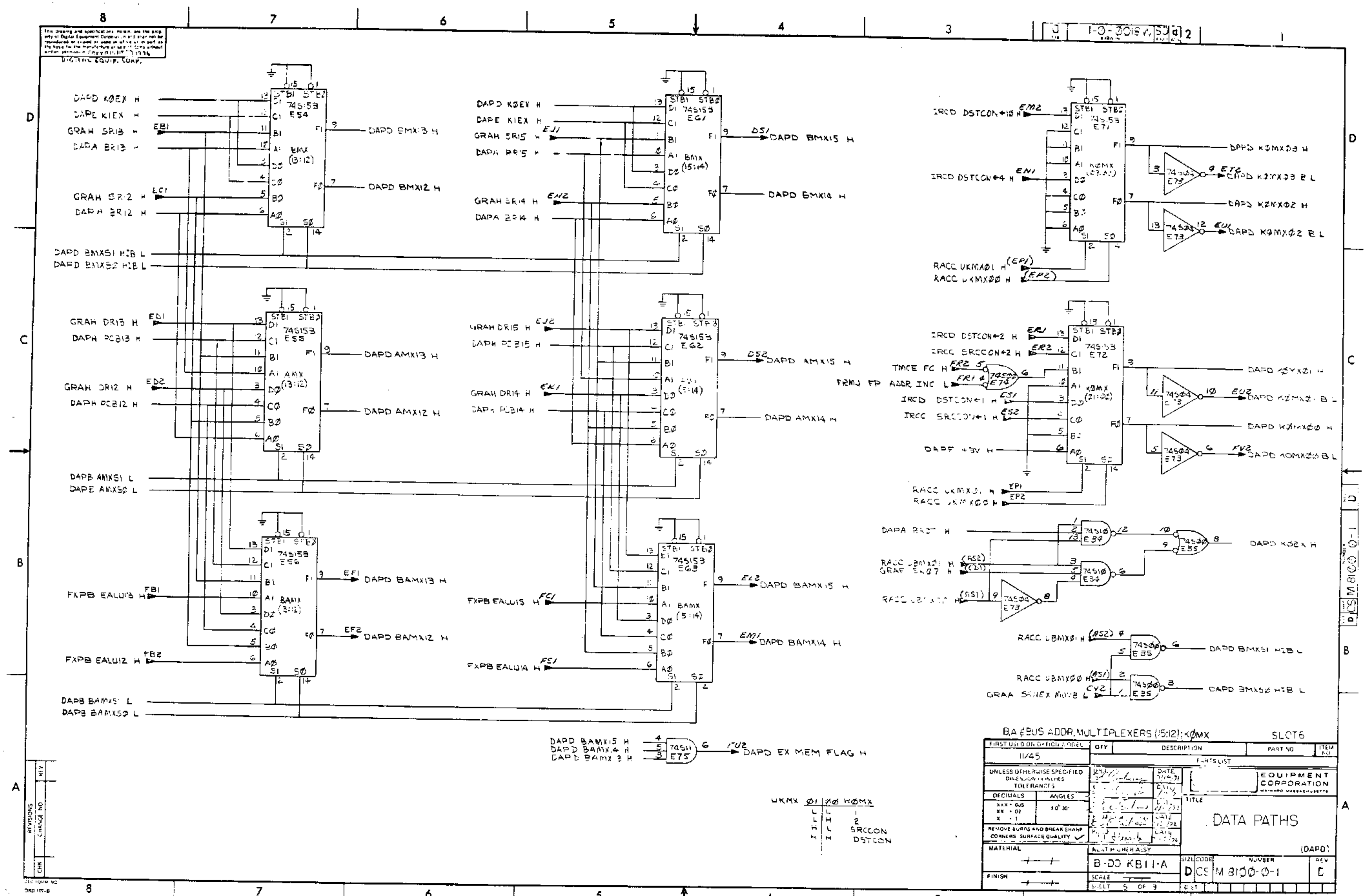
DIGITAL EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DATA PATHS (DAP C)

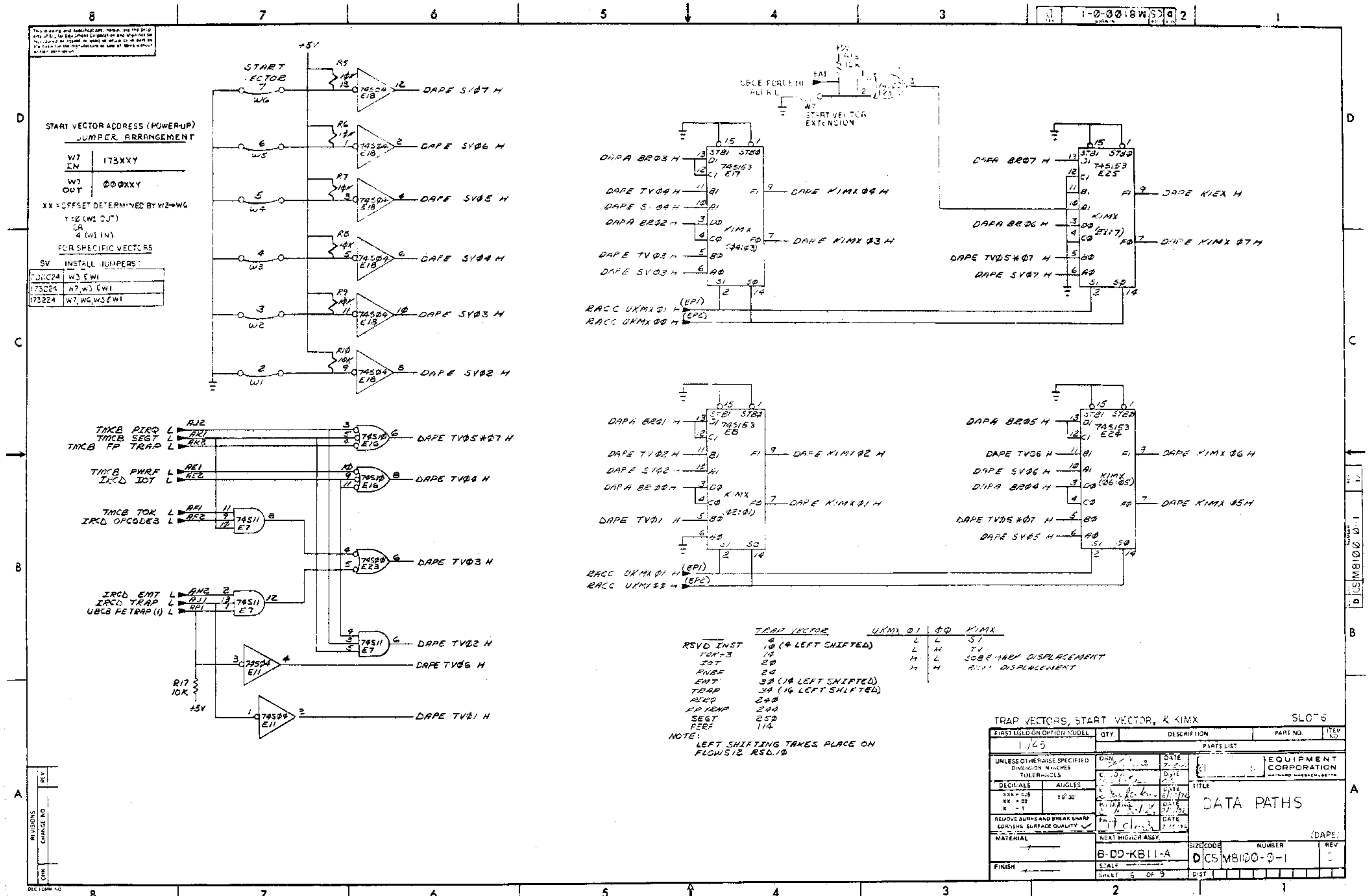
SIZE D | CODE CS | NUMBER MS10C-0-1 | REV D

REVISIONS	REV	CHANGE NO	CHK

DEC FORM NO DEC 102-B



DAPD KØEX H
DAPE K1EX H
GRAH SR13 H
DAPA BR13 H
GRAH SR12 H
DAPA BR12 H
74S153 E54
BMX (13:12)
DAPD BMX13 H
DAPD BMX12 H
DAPD BMXS1 HIB L
DAPD BMXSØ HIB L
GRAH DR13 H
DAPH PCB13 H
GRAH DR12 H
DAPH PCB12 H
74S153 E55
AMX (13:12)
DAPD AMX13 H
DAPD AMX12 H
DAPB AMXS1 L
DAPB AMXSØ L
74S153 E56
BAMX (13:12)
FXPB EALU13 H
FXPB EALU12 H
DAPD BAMX13 H
DAPD BAMX12 H
DAPB BAMXS1 L
DAPB BAMXSØ L
74S153 E61
BMX (15:14)
GRAH SR15 H
DAPA BR15 H
GRAH SR14 H
DAPA BR14 H
DAPD BMX15 H
DAPD BMX14 H
74S153 E62
AMX (15:14)
GRAH DR15 H
DAPH PCB15 H
GRAH DR14 H
DAPH PCB14 H
DAPD AMX15 H
DAPD AMX14 H
74S153 E63
BAMX (15:14)
FXPB EALU15 H
FXPB EALU14 H
DAPD BAMX15 H
DAPD BAMX14 H
DAPD BAMX15 H
DAPD BAMX14 H
DAPD BAMX13 H
74S11 E75
DAPD EX MEM FLAG H
74S153 E71
KØMX (23:22)
IRCD DSTCON+10 H
IRCD DSTCON+4 H
DAPD KØMXØ3 H
DAPD KØMXØ3 B L
DAPD KØMXØ2 H
DAPD KØMXØ2 B L
RACC UKMXØ1 H
RACC UKMXØØ H
74S153 E72
KØMX (21:20)
IRCD DSTCON+2 H
IRCC SRCCON+2 H
TMCE FC H
FRMJ FP ADDR INC L
IRCD DSTCON+1 H
IRCC SRCCON+1 H
DAPF +3V H
DAPD KØMXØ1 H
DAPD KØMXØ1 B L
DAPD KØMXØØ H
DAPD KØMXØØ B L
DAPA BRST H
DAPD KØEX H
RACC UBMXØ1 H
RACC UBMXØØ H
GRAA SR/EX MOVE L
DAPD BMXS1 HIB L
DAPD BMXSØ HIB L
UKMX Ø1 ØØ KØMX
L L 1
L H 2
H L SRCCON
H H DSTCON
BA & BUS ADDR MULTIPLEXERS (15:12): KØMX
SLOT 6
11/45
EQUIPMENT CORPORATION
DATA PATHS
(DAPD)
B-DD KB11-A
D CS M 8100-0-1
C
SHEET 5 OF 9



START VECTOR ADDRESS (POWER-UP)
JUMPER ARRANGEMENT

W7 IN	173XXY
W7 OUT	000XXY

XX = OFFSET DETERMINED BY W2→W6
Y = 0 (W1 OUT) OR 4 (W1 IN)

FOR SPECIFIC VECTORS

SV	INSTALL JUMPERS:
000024	W3 & W1
173024	W7, W3 & W1
173224	W7, W6, W3 & W1

	TRAP VECTOR
	4
RSVD INST	10 (4 LEFT SHIFTED)
TOK+3	14
IOT	20
PWRF	24
EMT	30 (14 LEFT SHIFTED)
TRAP	34 (16 LEFT SHIFTED)
PIRQ	240
FP TRAP	244
SEGT	250
PERF	114

UKMX 01	00	KIMX
L	L	SV
L	H	TV
H	L	SOB [illegible] DISPLACEMENT
H	H	[illegible] DISPLACEMENT

NOTE:
LEFT SHIFTING TAKES PLACE ON FLOWS 12 RSD.10

TRAP VECTORS, START VECTOR, & KIMX
SLOT 6

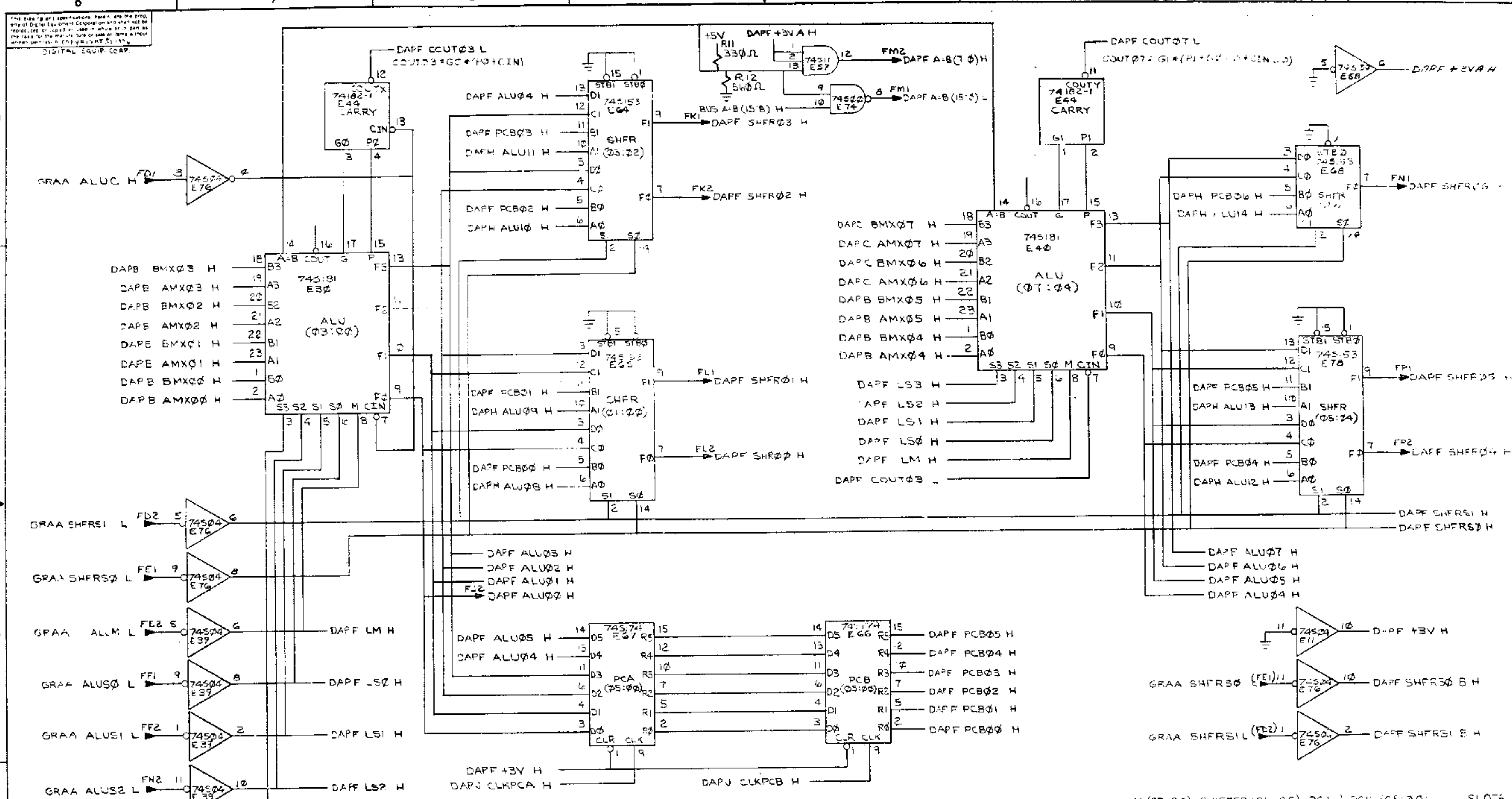
FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS .XXX ± .005, .XX ± .02, .X ± .1 — ANGLES ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

EQUIPMENT CORPORATION

TITLE: DATA PATHS (DAPE)

NEXT HIGHER ASSY.: B-DD-KB11-A
SIZE: D CODE: CS NUMBER: M8100-0-1
SHEET 6 OF 9



74S181 - ALU

S3 S2 S1 SØ	M=H LOGIC FUNCTIONS	M=L; ARITHMETIC OPERATIONS $C_N = Ø = H$	$C_N = 1 = L$
L L L L	F = Ā	F = A	F = A PLUS 1
L L H H	F = Ø	F = MINUS 1 (2'S COMP)	F = ZERO
L H H L	F = A⊕B	F = A MINUS B MINUS 1	F = A MINUS B
L H H H	F = AB̄	F = AB̄ MINUS 1	F = AB̄
H L L H	F = Ā⊕B̄	F = A PLUS B	F = A PLUS B PLUS 1
H L H L	F = B	F = (A+B̄) PLUS AB	F = (A+B̄) PLUS AB PLUS 1
H L H H	F = AB	F = AB MINUS 1	F = AB
H H L L	F = 1	F = A PLUS A	F = A PLUS A PLUS 1
H H H L	F = A+B	F = (A+B̄) PLUS A	F = (A+B̄) PLUS A PLUS 1
H H H H	F = A	F = A MINUS 1	F = A

ALU (Ø7:ØØ), SHIFTER (Ø5:ØØ), PCA & PCB (Ø5:ØØ) SLOT 5

FIRST USED ON OPTION MODEL: 11/45

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES

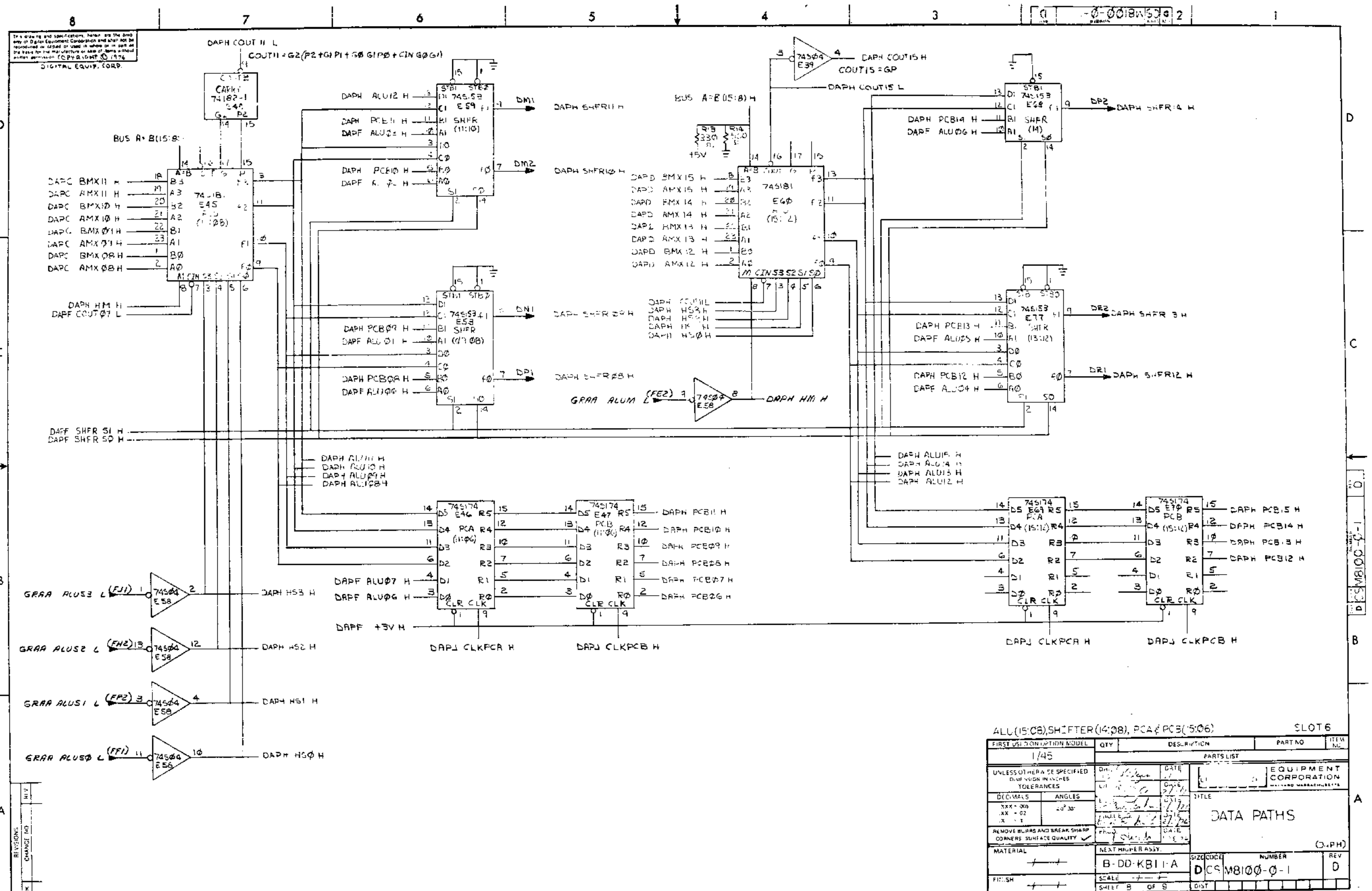
DIGITAL EQUIPMENT CORPORATION

TITLE: DATA PATHS (D1-F)

NEXT HIGHER ASSY: B-DD-KB11-A

SIZE D | NUMBER | REV D

SHEET 7 OF



ALU(15:08), SHIFTER(14:08), PCA & PCB(15:06)

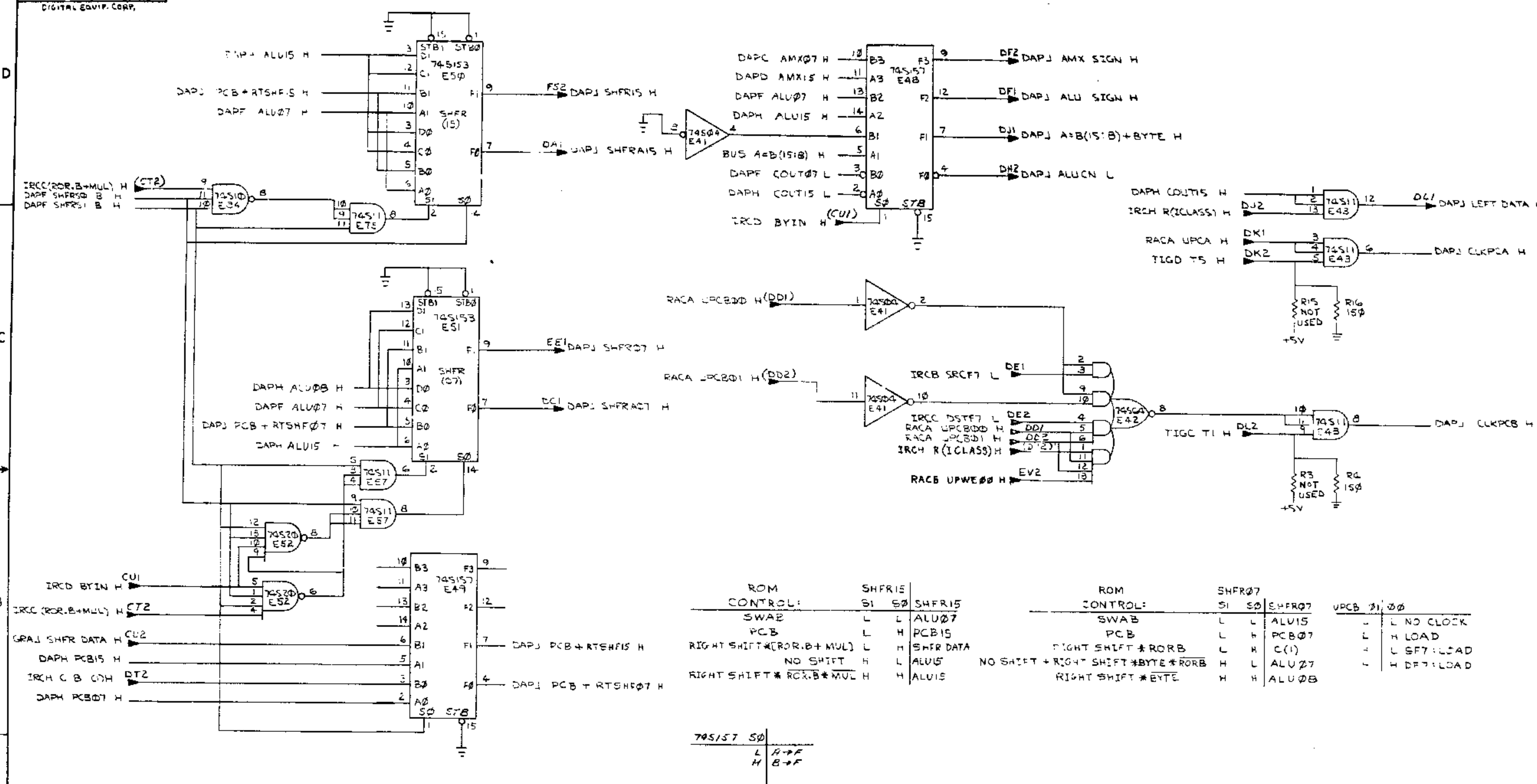
SLOT 6

DATA PATHS

B-DD-KB11-A

D CS M8100-0-1 REV D

SHEET 8 OF 8



ROM CONTROL:	SHFR15 S1	S0	SHFR15
SWAB	L	L	ALU07
PCB	L	H	PCB15
RIGHT SHIFT*[ROR.B+MUL]	L	H	SHFR DATA
NO SHIFT	H	L	ALU15
RIGHT SHIFT* $\overline{ROR.B}$ * $\overline{MUL}$	H	H	ALU15

ROM CONTROL:	SHFR07 S1	S0	SHFR07
SWAB	L	L	ALU15
PCB	L	H	PCB07
RIGHT SHIFT * RORB	L	H	C(1)
NO SHIFT + RIGHT SHIFT * BYTE * $\overline{RORB}$	H	L	ALU07
RIGHT SHIFT * $\overline{BYTE}$	H	H	ALU08

UPCB 01	00	
L	L	NO CLOCK
L	H	LOAD
H	L	SF7:LOAD
H	H	DF7:LOAD

74S157 S0	
L	A→F
H	B→F

SHIFTER (15:07); PCA & PCB CLOCKS — SLOT 6

DIGITAL EQUIPMENT CORPORATION

TITLE: DATA PATHS (DAPJ)

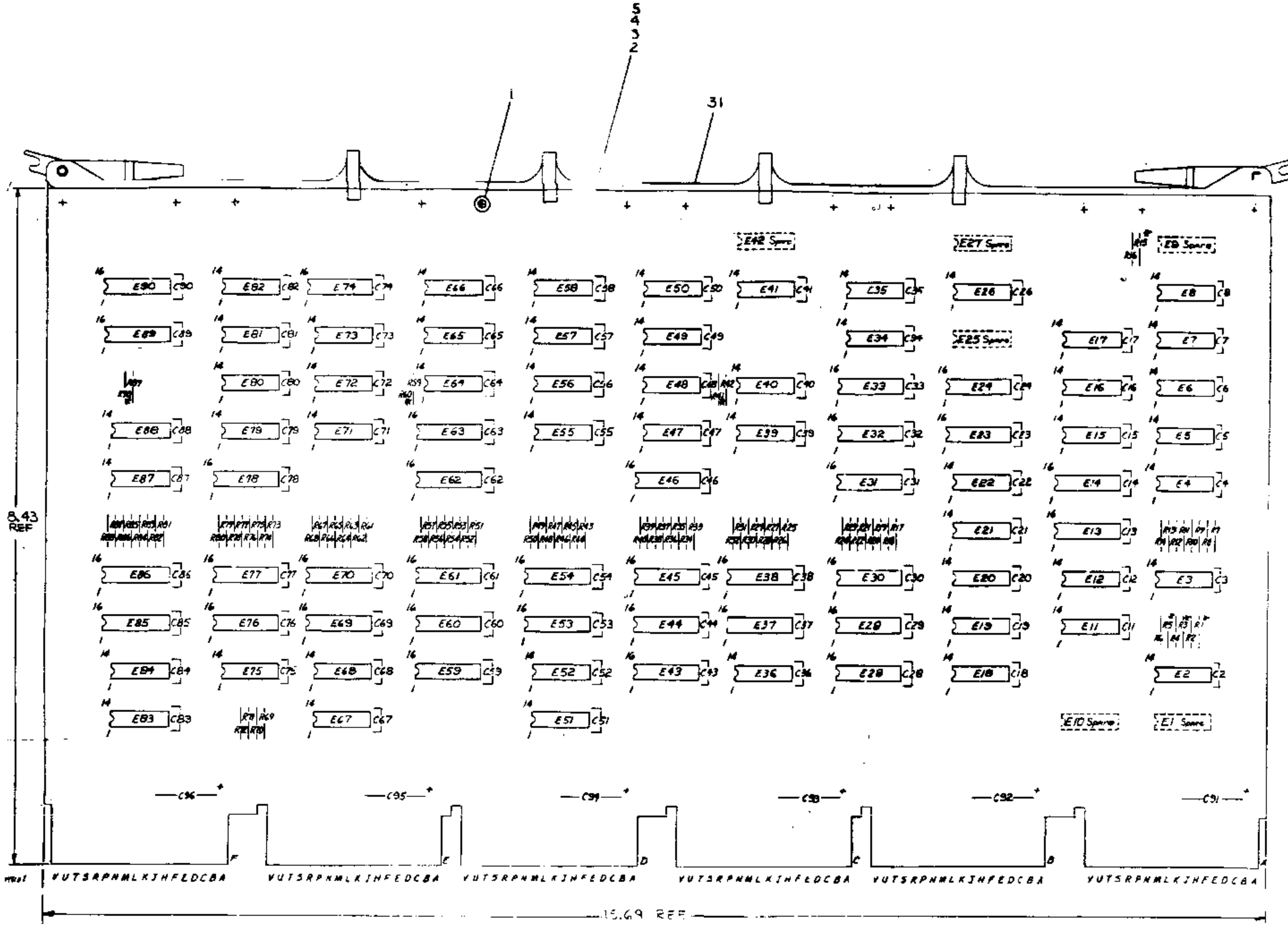
NEXT HIGHER ASSY: B-DD-KB11-A

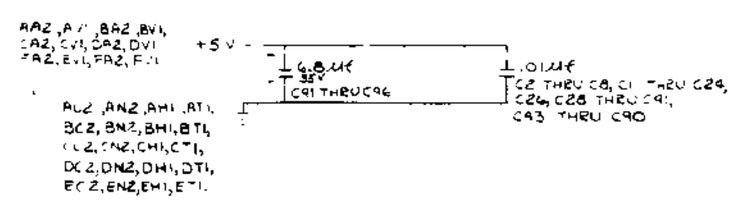
SIZE D | CODE CS | NUMBER M8100-0-1 | REV D

SHEET 9 OF 9

NOTES:

1. UNLESS OTHERWISE NOTED RESISTANCE IS IN OHMS & CAPACITANCE IS IN PICOFARADS. CAPACITORS WITHOUT VALUE NOTED ARE .01 MFD.
2. RESISTORS MARKED WITH ASTERISK ARE NOT USED.
3. LOCATIONS MARKED E1, E9, E10, E25, E27, & E42 ARE SPARES.





IC TYPE	GND	+5V
DEC DM8598-AD	8	16
DEC 3101A	8	16
DEC 74S174	8	16
DEC 74S158	8	16
DEC 74S153	8	16
DEC 74S194	8	16
DEC 74S112	8	16
DEC 74191	8	16

IC PIN LOCATIONS

ITEM NO.	AWG	FROM PT	TO PT

JUMPER LIST

QTY	REF DESIGNATOR	DESCRIPTION	PART NO	ITEM NO
1		HANDLE, MODULE	EPS-M8711-2	31
1	E74	I.C. DEC, DM8598-AD	23-C83AV	30
8	E47, E38, E53, E54, E62, E70, E85, E86	I.C. DEC, 3101A	1910658	29
4	E31, E46, E62, E78	I.C. DEC, 74S194	1910558	28
3	E28, E48, E57	I.C. DEC, 74S174	1910550	27
10	E29, E30, E44, E45, E60, E62, E76, E77, E89, E90	I.C. DEC, 74S158	1910549	26
4	E23, E24, E32, E33	I.C. DEC, 74S153	1910547	25
1	E63	I.C. DEC, 74S112	1910545	24
2	E50, E79	I.C. DEC, 74S74	1910544	23
11	E5, E6, E16, E18, E19, E35, E48, E49, E58, E75, E80	I.C. DEC, 74S64	1910542	22
3	E69, E73, E81	I.C. DEC, 74S20	1910539	21
7	E8, E21, E34, E41, E65, E71, E82	I.C. DEC, 74S11	1910537	20
5	E2, E15, E20, E22, E56	I.C. DEC, 74S10	1910526	19
5	E11, E12, E52, E68, E84	I.C. DEC, 74S05	1910535	18
10	E7, E36, E39, E40, E51, E57, E66, E67, E83, E87	I.C. DEC, 74S04	1910534	17
5	E3, E4, E17, E26, E88	I.C. DEC, 74S00	1910532	16
2	E13, E14	I.C. DEC, 74191	1910096	15
1	E47	I.C. DEC, 74H50	1909060	14
2	E55, E72	I.C. DEC, 74H30	1909059	13
2	R10, R12	RES, 750Ω, 1/4W, ±5%	1301401	12
32	R12, R19, R21, R23, R25, R27, R29, R31, R33, R35, R37, R39, R43, R45, R47, R49, R51, R53, R55, R57, R61, R63, R65, R67, R73, R75, R77, R79, R81, R85, R86, R87	RES, 680Ω, 1/4W, ±5%	1301424	11
4	R8, R10, R12, R14	RES, 560Ω, 1/4W, ±5%	1301890	10
7	R2, R4, R6, R8, R42, R59, R81	RES, 150Ω, 1/4W, ±5%	1300250	9
56	R7, R9, R11, R13, R16, R20, R22, R24, R26, R28, R30, R32, R34, R36, R38, R40, R44, R46, R48, R50, R52, R54, R56, R58, R60, R62, R64, R66, R68, R70, R72, R74, R76, R78, R80, R82, R84, R86	RES, 330Ω, 1/4W, ±5%	1300295	8
84	C2-C8, C11-C24, C26, C28-C91, C93-C90	CAP, .01µF, 100V, ±20% DISC	1001610	7
6	C91-C96	CAP, 6.8µF 35V, ±20% S TANT	1000067	6
1		ETCHED CIRCUIT BOARD	5009607	5
REF		MODULE ECO HISTORY	B-MH-M8101-0-6	4
		CIRCUIT LONG HOLE LAYOUT	E-AH-M8101-0-5	3
		MISCELLANEOUS HOLE LOCATION	K-CO-M8101-0-4	2
			9006732	1

PARTS LIST

ETCH BOARD REV 3

DEC NO	EIA NO	DEC NO	EIA NO

SEMICONDUCTOR CONVERSION CHART

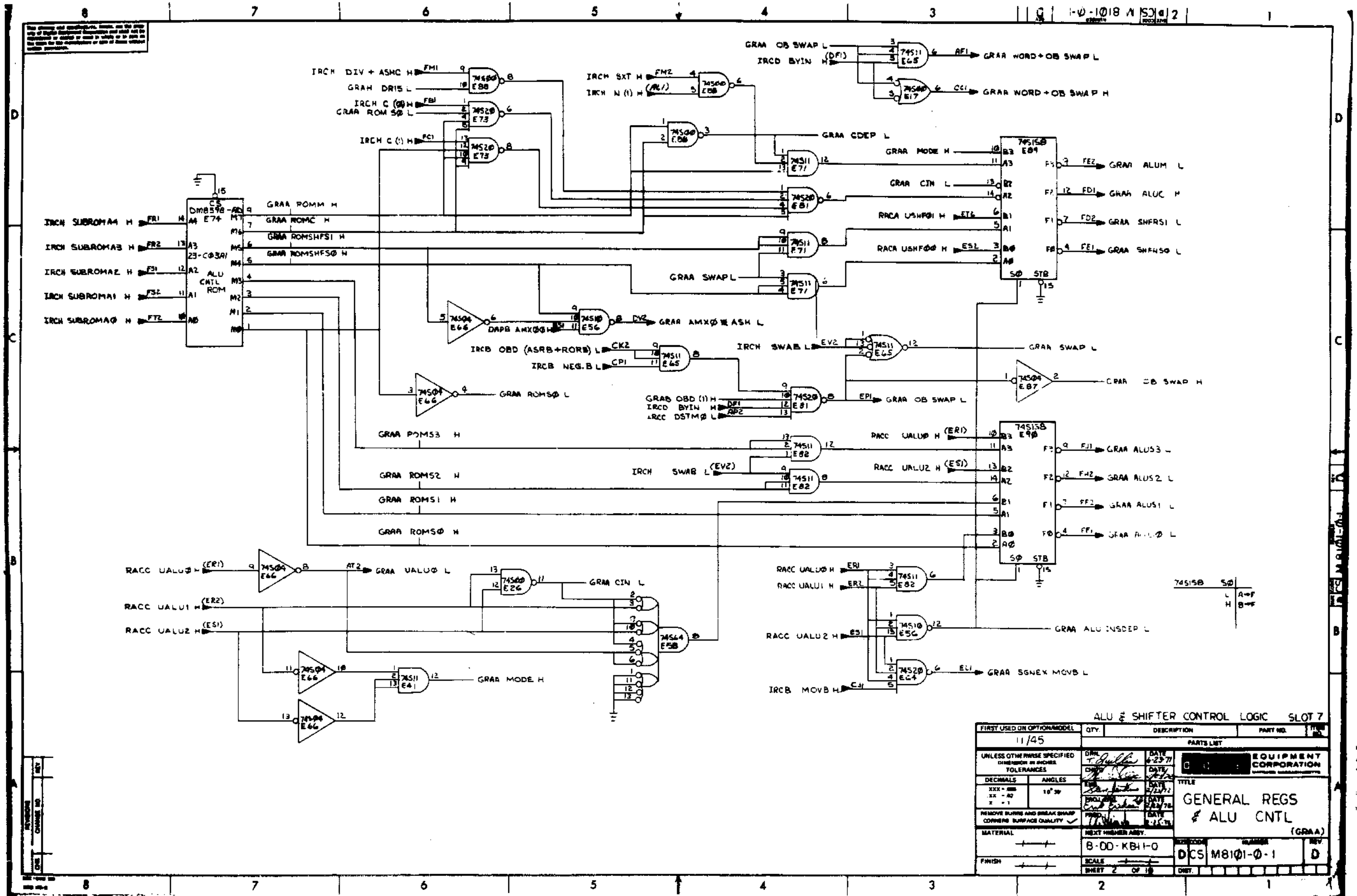
EQUIPMENT CORPORATION

TITLE: GENERAL REGS. & ALU. CNTL.

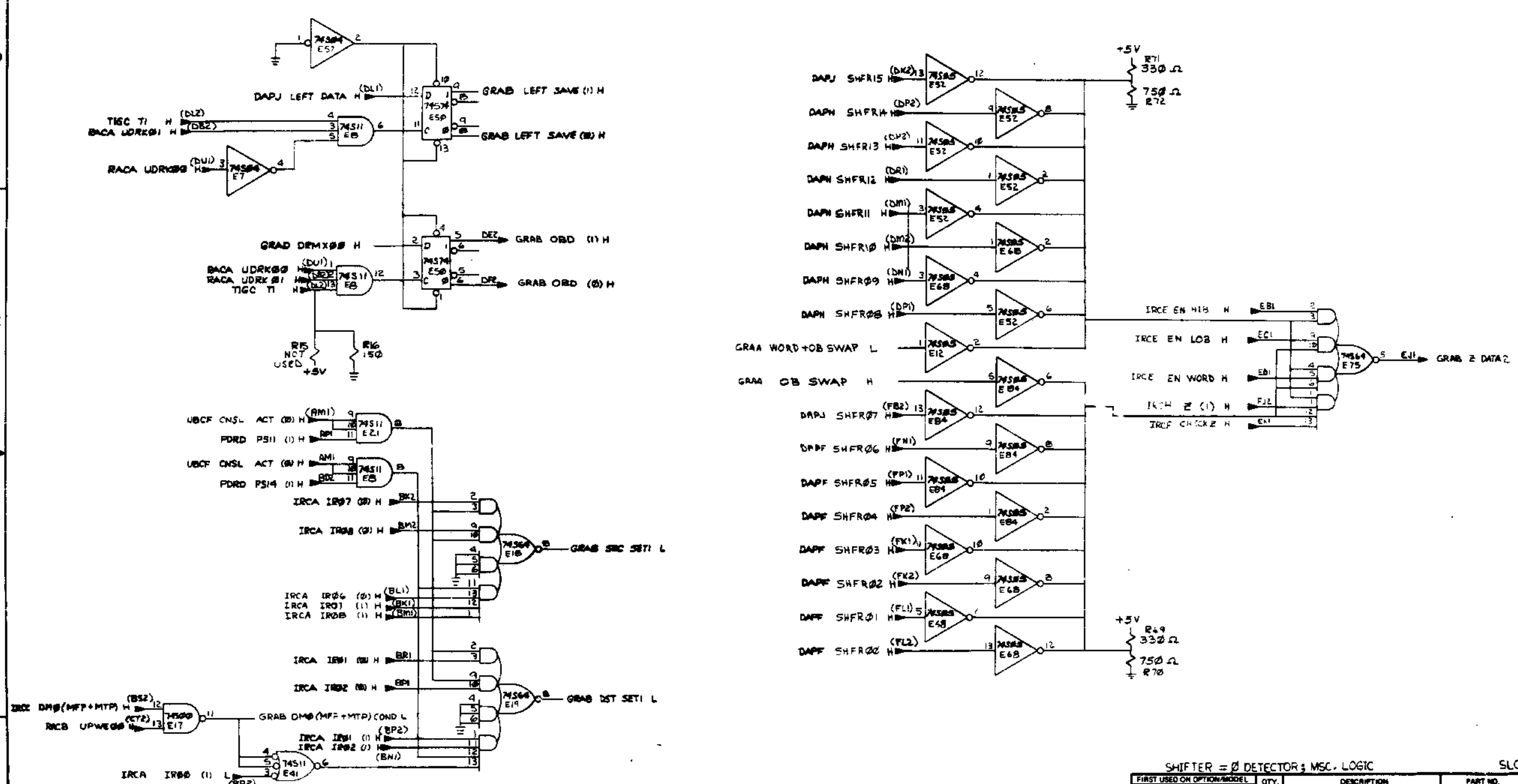
NEXT HIGHER ASSY: B-DD-KB11-0

SCALE 2/1 SHEET 1 OF 10

E CS M8101-0-1 D


IRCH DIV + ASHC H
GRAH DRIS L
IRCH C (0) H
GRAA ROM S0 L
IRCH C (1) H
IRCH SXT H
IRCH N (1) H
GRAA OB SWAP L
IRCD BYIN H
GRAA WORD + OB SWAP L
GRAA WORD + OB SWAP H
GRAA CDEP L
GRAA MODE H
GRAA CIN L
RACA USHF01 H
RACA USHF00 H
GRAA SWAP L
GRAA ALUM L
GRAA ALUC H
GRAA SHFRS1 L
GRAA SHFRS0 L
IRCH SUBROMA4 H
IRCH SUBROMA3 H
IRCH SUBROMA2 H
IRCH SUBROMA1 H
IRCH SUBROMA0 H
DM8598 E74
23-C03A1
ALU CNTL ROM
GRAA ROMM H
GRAA ROMC H
GRAA ROMSHFS1 H
GRAA ROMSHFS0 H
DAPB AMX00 H
GRAA AMX0 ASH L
IRCB OBD (ASRB+RORB) L
IRCB NEG.B L
IRCH SWAB L
GRAA SWAP L
GRAA OB SWAP H
GRAA ROMS0 L
GRAB OBD (1) H
IRCD BYIN H
IRCC DSTM0 L
GRAA OB SWAP L
GRAA ROMS3 H
GRAA ROMS2 H
GRAA ROMS1 H
GRAA ROMS0 H
IRCH SWAB L
RACC UALU0 H
RACC UALU2 H
GRAA ALUS3 L
GRAA ALUS2 L
GRAA ALUS1 L
GRAA ALUS0 L
RACC UALU0 H
RACC UALU1 H
RACC UALU2 H
GRAA UALU0 L
GRAA CIN L
GRAA MODE H
GRAA ALU INSDEP L
GRAA SGNEX MOVB L
IRCB MOVB H
74S158 S0
L A→F
H B→F
ALU & SHIFTER CONTROL LOGIC SLOT 7
11/45
EQUIPMENT CORPORATION
GENERAL REGS & ALU CNTL (GRAA)
B-DD-KB11-0
D CS M8101-0-1 D
SHEET 2 OF 10

47



SHIFTER = Ø DETECTOR; MSC. LOGIC

SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

DECIMALS .XXX ± .005, .XX ± .02, .X ± .1 — ANGLES ± 0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

DRN. DATE 7-15-71 — CHKD. DATE — ENG. DATE — PROJ. ENG. DATE — PROD. DATE 7-15-71

EQUIPMENT CORPORATION

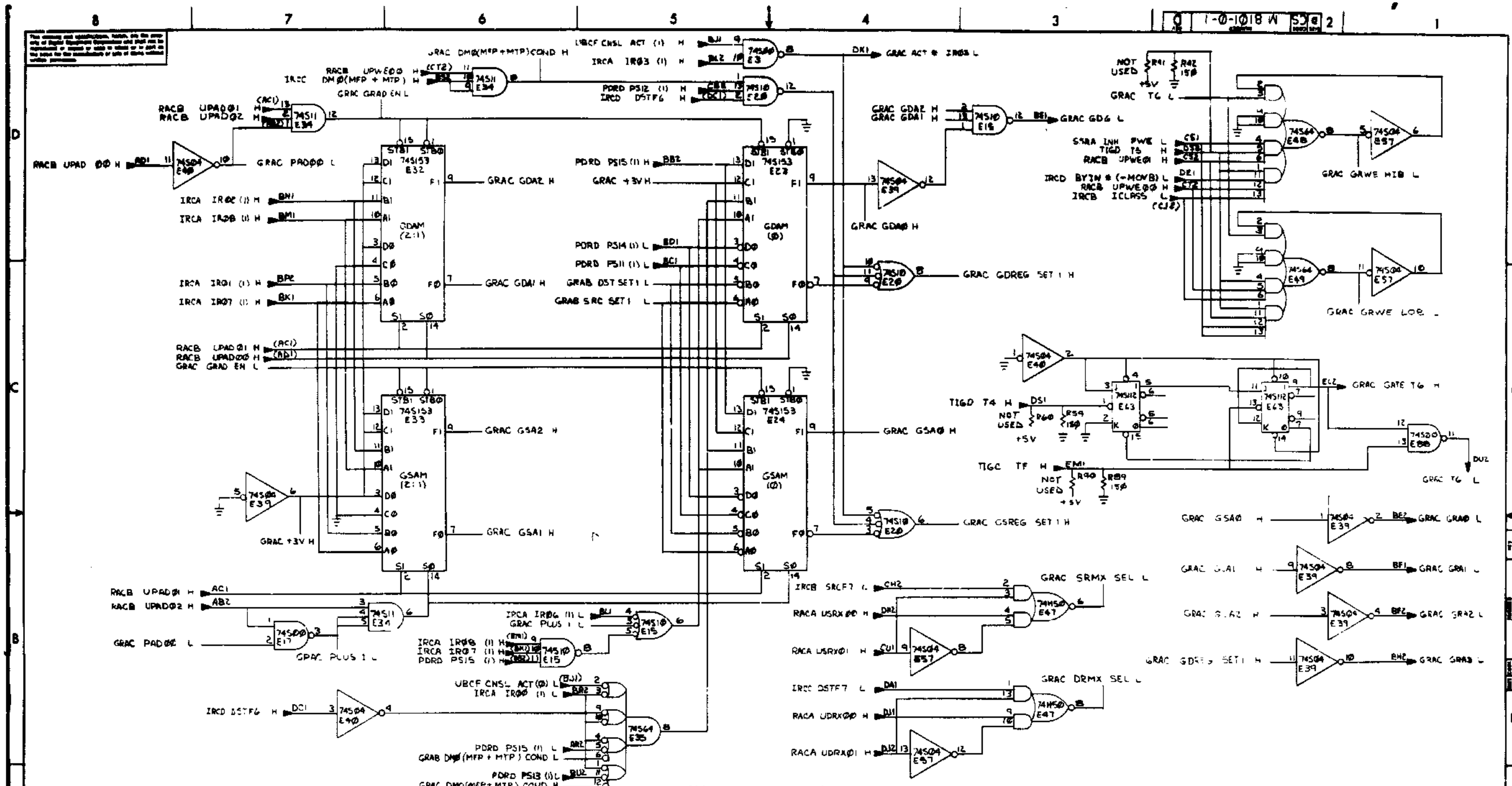
TITLE: GENERAL REGS. & ALU CNTL (GR...)

NEXT HIGHER ASSY. B-DD-KB11-0

MATERIAL — FINISH — SCALE

SIZE D — CODE CS — NUMBER M8101-Ø-1 — REV. Ø

SHEET 3 OF 10



GDAM

UPAD	S1	SØ	ADDR OUTPUT
Ø	L	L	SF
4	L	L	SFV1
1+5	L	H	DF
2	H	L	5
3+7	H	H	6

GSAM

UPAD	S1	SØ	ADDR OUTPUT
Ø+1	L	L	SF
4	L	L	SFV1
5	L	H	DF
2+3	H	L	5
7	H	H	6

UPWE Ø1	ØØ	GRWE LOB	GRWE HIB
L	L	DON'T WRITE	DON'T WRITE
L	H	WRITE COND: ICLASS	WRITE COND: ICLASS + BYTE INST + MOVB (SIGN EXTEN ED)
H	L	WRITE	WRITE
H	H	NOT USED	NOT USED

USRX Ø1	ØØ	OUTPUT (SRMX)
L	L	SHFR
L	H	GS
H	L	SF7: SHFR ; $\overline{SF7}$: GS
H	H	NOT USED

UDRX Ø1	ØØ	OUTPUT (DRMX)
L	L	SHFR
L	H	GD
H	L	DF7: SHFR ; $\overline{DF7}$: GD
H	H	CLEAR DR

GENERAL REGS ADDR & WRITE PULSE CNTL SLOT 7

FIRST USED ON OPTION/MODEL: 11/45

NEXT HIGHER ASSY: 8-DD-KB11-O

EQUIPMENT CORPORATION

TITLE: GENERAL REGS & ALU CNTL (GRAC)

SIZE D CODE CS NUMBER M8101-Ø-1 REV D

SHEET 4 OF 1Ø

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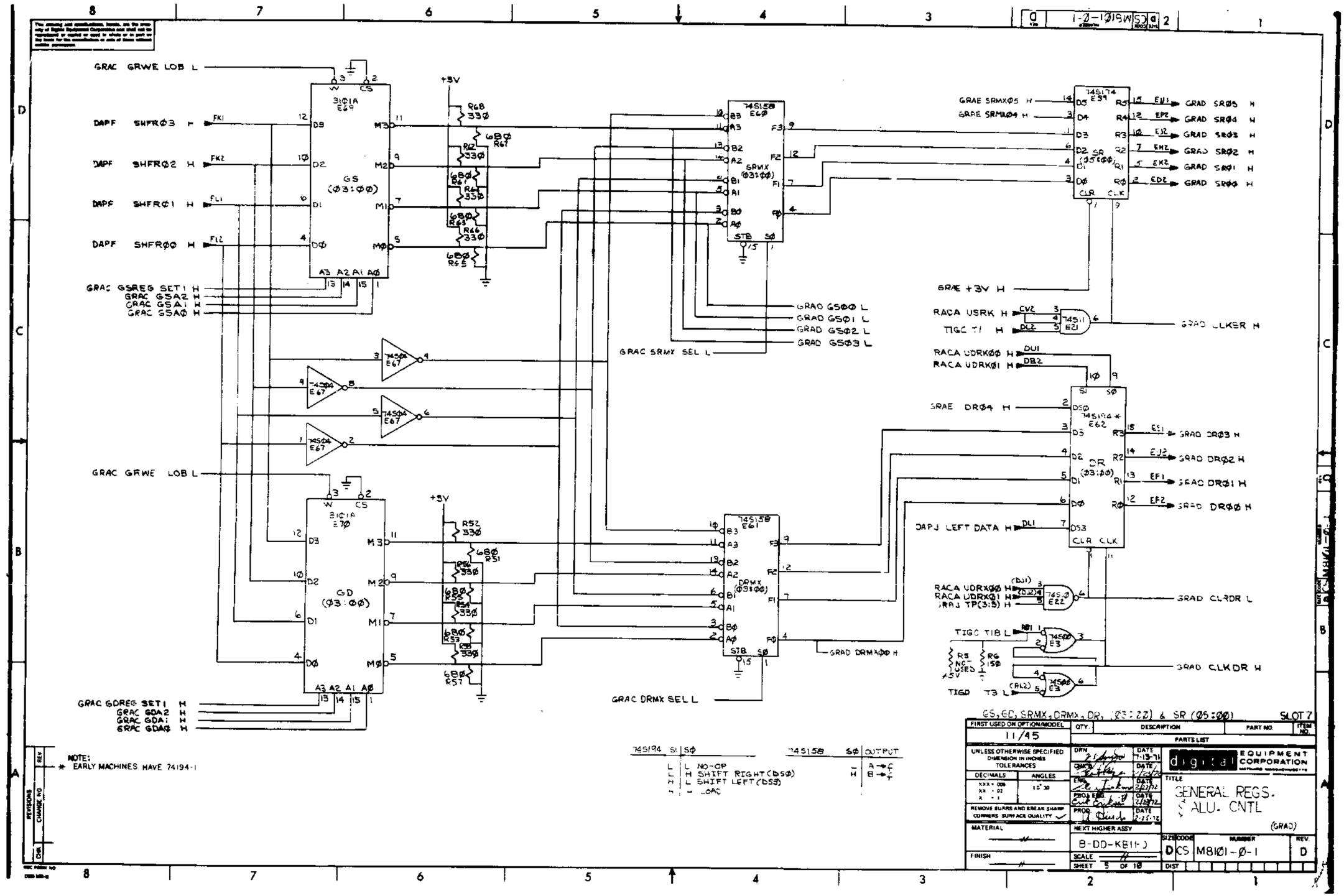
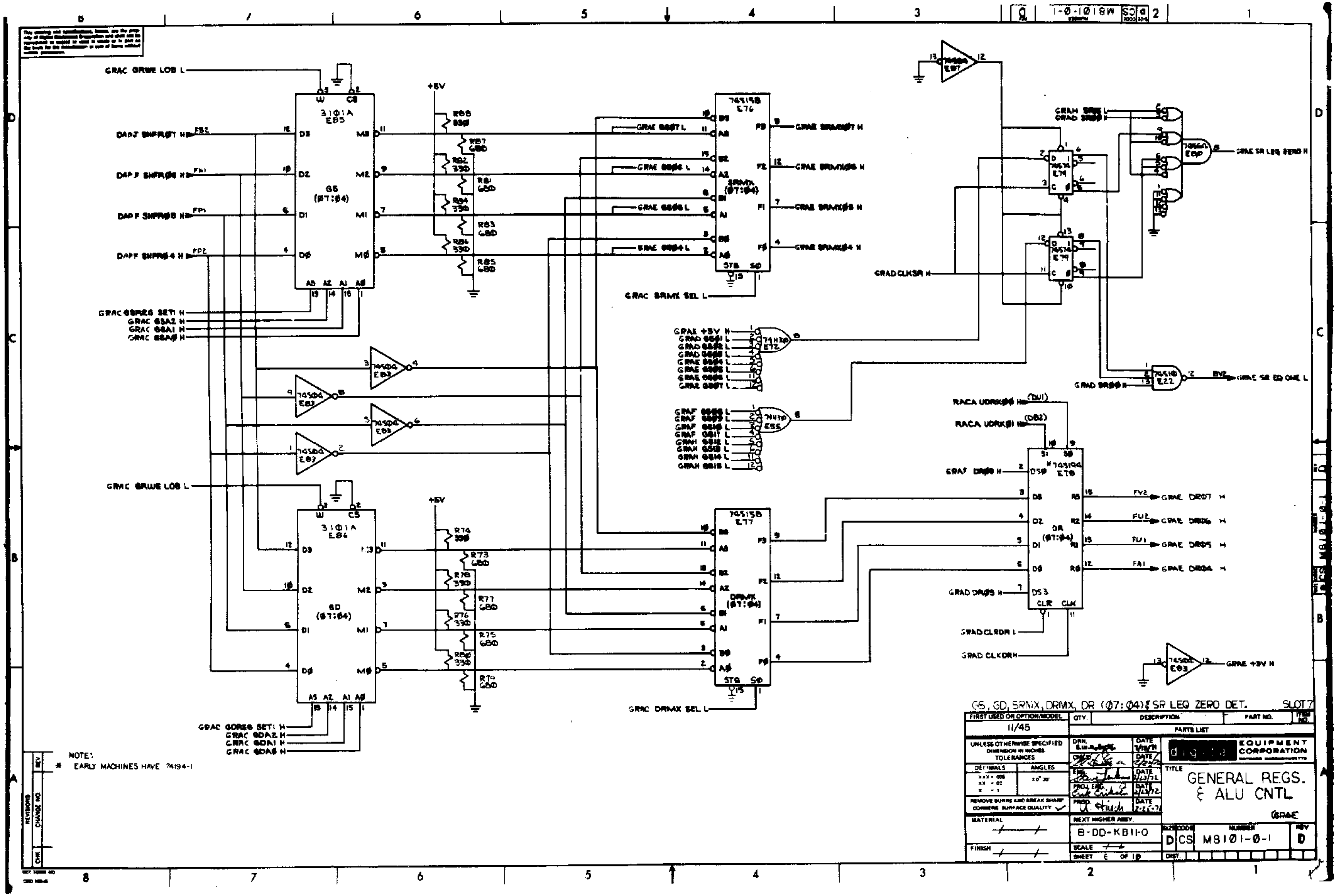

GRAC GRWE LOB L
DAPF SHFR03 H
DAPF SHFR02 H
DAPF SHFR01 H
DAPF SHFR00 H
GRAC GSREG SET1 H
GRAC GSA2 H
GRAC GSA1 H
GRAC GSA0 H
GRAC GRWE LOB L
GRAC GDREG SET1 H
GRAC GDA2 H
GRAC GDA1 H
GRAC GDA0 H
GRAC SRMX SEL L
GRAC DRMX SEL L
GRAD GS00 L
GRAD GS01 L
GRAD GS02 L
GRAD GS03 L
GRAE SRMX05 H
GRAE SRMX04 H
GRAE +3V H
RACA USRK H
TIGC T1 H
RACA UDRK00 H
RACA UDRK01 H
GRAE DR04 H
DAPJ LEFT DATA H
RACA UDRX00 H
RACA UDRX01 H
GRAJ TP(3:5) H
TIGC T1B L
TIGD T3 L
GRAD SR05 H
GRAD SR04 H
GRAD SR03 H
GRAD SR02 H
GRAD SR01 H
GRAD SR00 H
GRAD CLKER H
GRAD DR03 H
GRAD DR02 H
GRAD DR01 H
GRAD DR00 H
GRAD CLRDR L
GRAD CLKDR H
GRAD DRMX00 H
GS, GD, SRMX, DRMX, DR (03:00) & SR (05:00)
SLOT 7
NOTE:
* EARLY MACHINES HAVE 74194-1
74194 S1 S0
L L NO-OP
L H SHIFT RIGHT (DSO)
H L SHIFT LEFT (DSI)
H H LOAD
74158 S0 OUTPUT
L A→C
H B→C
FIRST USED ON OPTION/MODEL
11/45
PARTS LIST
QTY. DESCRIPTION PART NO. ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS ANGLES
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
MATERIAL
FINISH
DRN
CHK'D
ENG
PROJ ENG
PROG
DATE 7-13-71
NEXT HIGHER ASSY
B-DD-KB11-)
SCALE
SHEET 5 OF 10
digital EQUIPMENT CORPORATION
TITLE
GENERAL REGS. & ALU. CNTL
(GRAD)
SIZE D CODE CS NUMBER M8100-0-1 REV. D
DIST
REVISIONS REV CHANGE NO DWN


GS, GD, SRMX, DRMX, DR (Ø7:Ø4) & SR LEQ ZERO DET.
SLOT 7
NOTE:
* EARLY MACHINES HAVE 74194-1
GENERAL REGS.
& ALU CNTL
GRAE
B-DD-KB11-0
D CS M8101-0-1
EQUIPMENT CORPORATION

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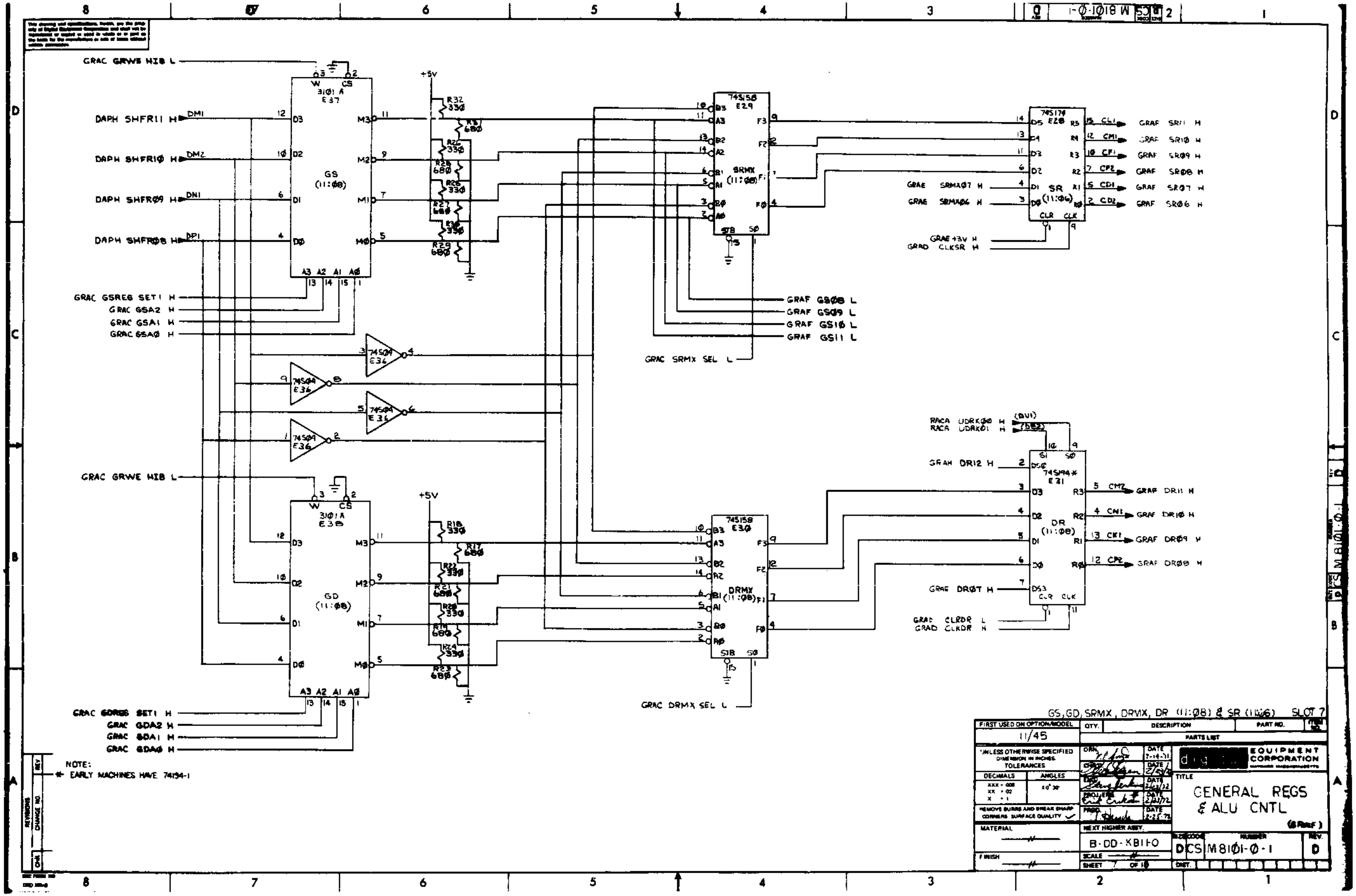
GRAC GRWE HIB L
DAPH SHFR11 H
DAPH SHFR10 H
DAPH SHFR09 H
DAPH SHFR08 H
3101 A
E37
GS
(11:08)
+5V
GRAC GSREG SET1 H
GRAC GSA2 H
GRAC GSA1 H
GRAC GSA0 H
74S04
E36
74S158
E29
SRMX
(11:08)
74S174
E28
SR
(11:06)
GRAF SR11 H
GRAF SR10 H
GRAF SR09 H
GRAF SR08 H
GRAF SR07 H
GRAF SR06 H
GRAE SRMA07 H
GRAE SRMA06 H
GRAE +3V H
GRAD CLKSR H
GRAF GS08 L
GRAF GS09 L
GRAF GS10 L
GRAF GS11 L
GRAC SRMX SEL L
RACA UDRK00 H
RACA UDRK01 H
GRAH DR12 H
74S194*
E31
DR
(11:08)
GRAF DR11 H
GRAF DR10 H
GRAF DR09 H
GRAF DR08 H
GRAE DR07 H
GRAE CLRDR L
GRAD CLKDR H
3101A
E38
GD
(11:08)
74S158
E30
DRMX
(11:08)
GRAC DRMX SEL L
GRAC GDREG SET1 H
GRAC GDA2 H
GRAC GDA1 H
GRAC GDA0 H
NOTE:
* EARLY MACHINES HAVE 74194-1
GS, GD, SRMX, DRMX, DR (11:08) & SR (11:06) SLOT 7
FIRST USED ON OPTION/MODEL
11/45
EQUIPMENT CORPORATION
TITLE
GENERAL REGS & ALU CNTL
NEXT HIGHER ASSY.
B-DD-KB11-O
D CS M8101-0-1
REV. D
SHEET 7 OF 18

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GRAC GRWE HIB L
DAPJ SHFRIE H
DAPH SHFRI4 H
DAPH SHFRI3 H
DAPH SHFRI2 H
GRAC GSREG SET1 H
GRAC GSA2 H
GRAC GSA1 H
GRAC GSA0 H
GRAC GRWE HIB L
GRAC GDREG SET1 H
GRAC GDA2 H
GRAC GDA1 H
GRAC GDA0 H
+5V
R50 330
R34 330
R51 680
R35 680
R52 330
R36 330
R53 680
R37 680
R54 330
R38 330
R55 680
R39 680
3101A E53 GS (15:12)
3101A E54 GD (15:12)
A3 A2 A1 A0
74S158 E44 SRMX (15:12)
74S158 E45 DRMX (15:12)
STB OE
GRAC SRMX SEL L
GRAC DRMX SEL L
GRAH GS12 L
GRAH GS13 L
GRAH GS14 L
GRAH GS15 L
74S74 E43 SR (15:12)
CLR CLK
GRAE +3V H
GRAD CLKSR H
74S04 E51
GRAH SR15 L
GRAH SR15 H
GRAH SR14 H
GRAH SR13 H
GRAH SR12 H
RACA UDRK00 H (DB1)
RACA UDRK01 H (DB3)
DAPF ALU00 H
74S194* E46 DR (15:12)
S1 S0
ENI
GRAF DR11 H
GRAD CLRDR L
GRAD CLKDR H
74S04 E87
GRAH DR15 L
GRAH DR15 H
GRAH DR14 H
GRAH DR13 H
GRAH DR12 H

NOTE:
* EARLY MACHINES HAVE 74S194-1

GS, GD, SRMX, DRMX, SR & DR (15:12) SLOT 7

FIRST USED ON OPTION/MODEL: 11/45

PARTS LIST: QTY. | DESCRIPTION | PART NO. | ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS: XXX ± .005, .XX ± .02, X ± 1 | ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
MATERIAL
FINISH

DRN [redacted] DATE 7-15-71
CHK [redacted] DATE 7/22/71
ENG [redacted] DATE 2/23/72
PROJ. ENG. [redacted] DATE 2/24/72
PROD. [redacted] DATE 6-14-72

NEXT HIGHER ASSY. B-00-KB11-0
SCALE —
SHEET 8 OF 18

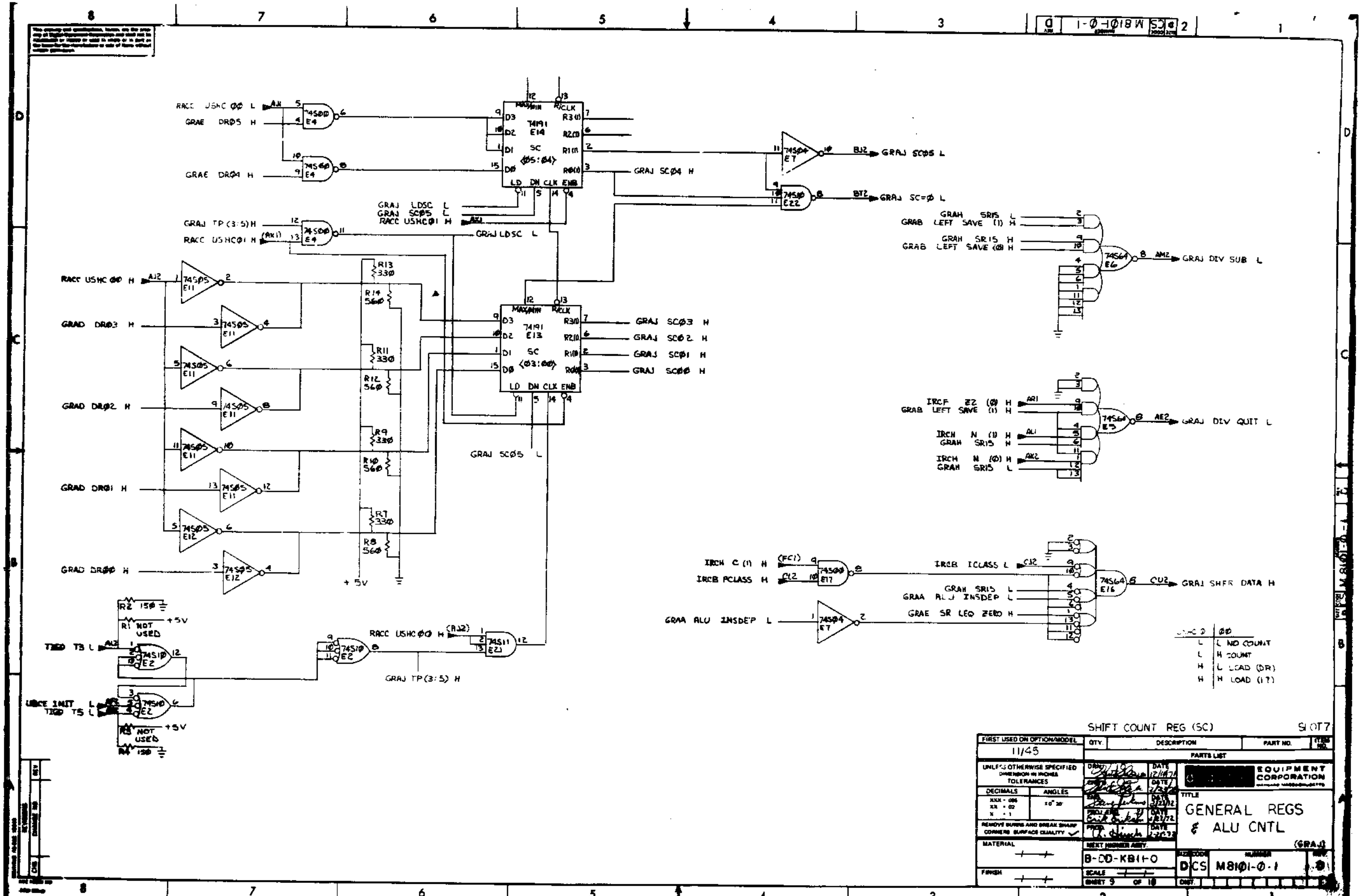
[redacted] EQUIPMENT CORPORATION

TITLE: GENERAL REGS & ALU CNTL (GRAH)

SIZE D | CODE CS | NUMBER M8101-0-1 | REV. 0
DIST

REVISIONS: REV. | DESCRIPTION | DATE | APPROVED

M8101-0-L



RACC USHC ØØ L
GRAE DRØ5 H
GRAE DRØ4 H
GRAJ TP (3:5) H
RACC USHCØ1 H
74S00 E4
74191 E14
SC <Ø5:Ø4>
GRAJ LDSC L
GRAJ SCØ5 L
GRAJ SCØ4 H
74S04 E7
GRAJ SCØ5 L
74S10 E22
GRAJ SC=Ø L
RACC USHC ØØ H
GRAD DRØ3 H
GRAD DRØ2 H
GRAD DRØ1 H
GRAD DRØØ H
74S05 E11
74S05 E12
74191 E13
SC <Ø3:ØØ>
GRAJ SCØ3 H
GRAJ SCØ2 H
GRAJ SCØ1 H
GRAJ SCØØ H
GRAJ SCØ5 L
+5V
GRAH SR15 L
GRAB LEFT SAVE (1) H
GRAH SR15 H
GRAB LEFT SAVE (Ø) H
74S64 E6
GRAJ DIV SUB L
IRCF ZZ (Ø) H
GRAB LEFT SAVE (1) H
IRCH N (1) H
GRAH SR15 H
IRCH N (Ø) H
GRAH SR15 L
74S64 E5
GRAJ DIV QUIT L
IRCH C (1) H
IRCB PCLASS H
74S00 E17
IRCB ICLASS L
GRAH SR15 L
GRAA ALU INSDEP L
GRAE SR LEQ ZERO H
74S64 E16
GRAJ SHFR DATA H
TIGD T3 L
UBCE INIT L
TIGD T5 L
74S10 E2
74S11 E21
GRAJ TP (3:5) H
RACC USHC ØØ H
R2 15Ø
R1 NOT USED
R3 NOT USED
R4 15Ø
L NO COUNT
H COUNT
L LOAD (DR)
H LOAD (17)
SHIFT COUNT REG (SC)
SLOT 7
FIRST USED ON OPTION/MODEL
11/45
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES
EQUIPMENT CORPORATION
TITLE
GENERAL REGS & ALU CNTL
(GRAJ)
NEXT HIGHER ASSY.
B-DD-KB11-0
D CS M81Ø1-Ø-1
SHEET 9 OF 18

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INSTRUCTION	OCTAL ADDRESS
MOV.B	00
MOV.B	01
ASR.B	02
ASL.B	03
MARK	04
MFP	05
MTP	06
SXT	07
CLR.B	10
COM.B	11
INC.B	12
DEC.B	13
NEG.B	14
ADC.B	15
SBC.B	16
TST.B	17
SUB	20
MOV.B	21
CMP.B	22
BIT.B	23
BIC.B	24
BIS.B	25
ADD	26
———	27
MUL	30
DIV	31
ASH	32
ASHC	33
XOR	34
———	35
———	36
SOB	37

ALU CNTL ROM
DM8598-AD

A7	A6	A5	A4	A3	A2	A1	A0	INSTRUCTION DEP. ALU FUNCTION (RACC UALU (2:0)=7)	INSTRUCTION DEP. SHFR FUNCTION (RACC UALU (2:0)=7)
L	L	H	H	L	L	L	L	F=A	RIGHT SHIFT
H	H	H	L	H	H	L	L	F=A PLUS A PLUS CRIT	MB → SHIFT **
L	L	H	H	L	L	L	L	F=A	RIGHT SHIFT
L	L	H	L	H	H	L	L	F=A PLUS A	NO - SHIFT **
L	L	L	L	L	L	L	L	NOT INST. DEP.	NOT INST. DEP.
H	L	H	L	H	L	H	L	F=B	NO - SHIFT
H	L	H	L	H	L	H	L	F=B	NO - SHIFT
H	L	H	L	L	L	N	N	N: F=NUMBR 1 ; N: F=B	NO - SHIFT
H	L	H	L	L	L	H	H	F=B	NO - SHIFT **
H	L	H	L	L	L	L	L	F=B	NO - SHIFT **
L	H	H	L	L	L	L	L	F=A PLUS 1	NO - SHIFT **
L	L	H	L	H	H	H	H	F=A MINUS 1	NO - SHIFT **
H	L	H	L	L	L	L	L	F=B	NO - SHIFT
H	H	H	L	L	L	L	L	F=A PLUS C BIT	NB - SHIFT **
H	H	H	L	H	H	H	H	F=A MINUS C BIT	NO - SHIFT **
L	L	H	L	L	L	L	L	F=A	NB - SHIFT **
L	H	H	L	L	H	H	L	F=A MINUS B	NO - SHIFT
H	L	H	L	H	L	H	H	F=B	NO - SHIFT **
L	L	H	L	H	H	H	L	F=A MINUS B MINUS 1	NO - SHIFT **
H	L	H	L	L	H	H	H	F=AB	NO - SHIFT **
H	L	H	L	H	H	H	L	F=A+B	NO - SHIFT **
L	L	H	L	H	L	L	H	F=A PLUS B	NO - SHIFT
L	L	L	L	L	L	L	L	———	———
L	H	H	H	L	H	H	L	F=A MINUS B	RIGHT SHIFT
L	H	H	L	H	H	L	L	F=A PLUS A PLUS DR15	NO - SHIFT
L	L	L	H	L	L	L	L	NOT INST. DEP.	NOT INST. DEP. *
L	H	H	L	H	H	L	L	F=A PLUS A PLUS DR15	NO - SHIFT
H	L	H	L	L	H	H	L	F=A X B	NO - SHIFT
L	L	L	L	L	L	L	L	———	———
L	L	L	L	L	L	L	L	———	———
L	L	L	L	L	L	L	L	NOT INST. DEP.	NOT INST. DEP.
SWAB								F=A	SWAP BYTES

NOTE: SWAB INST. HAS SAME ROM ADDRESS AS ASL.B
*ROMSHF OUTPUTS USED TO DECODE ASH
**DOD BYTE*BYTE INSTR: SWAP BYTES

ALU CNTL ROM MAP — SLOT 7

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: XXX ± .005, XX ± .02, X ± .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. [illegible] DATE 1-25-71
CHK. [illegible] DATE 2-4-72
ENG. [illegible] DATE 2/17/72
PROJ. ENG. [illegible] DATE 2/17/72
PROD. [illegible] DATE 2-27-72

digital EQUIPMENT CORPORATION

TITLE: GENERAL REGS. & ALU CNTL (BRAK)
NEXT HIGHER ASSY: B-DD-KB11-0
SCALE: NONE
SHEET 10 OF 10
DWG. CODE: DCS — NUMBER: M8101-0-1 — REV: D
DIST.

REVISIONS: REV | CHANGE NO | CHK

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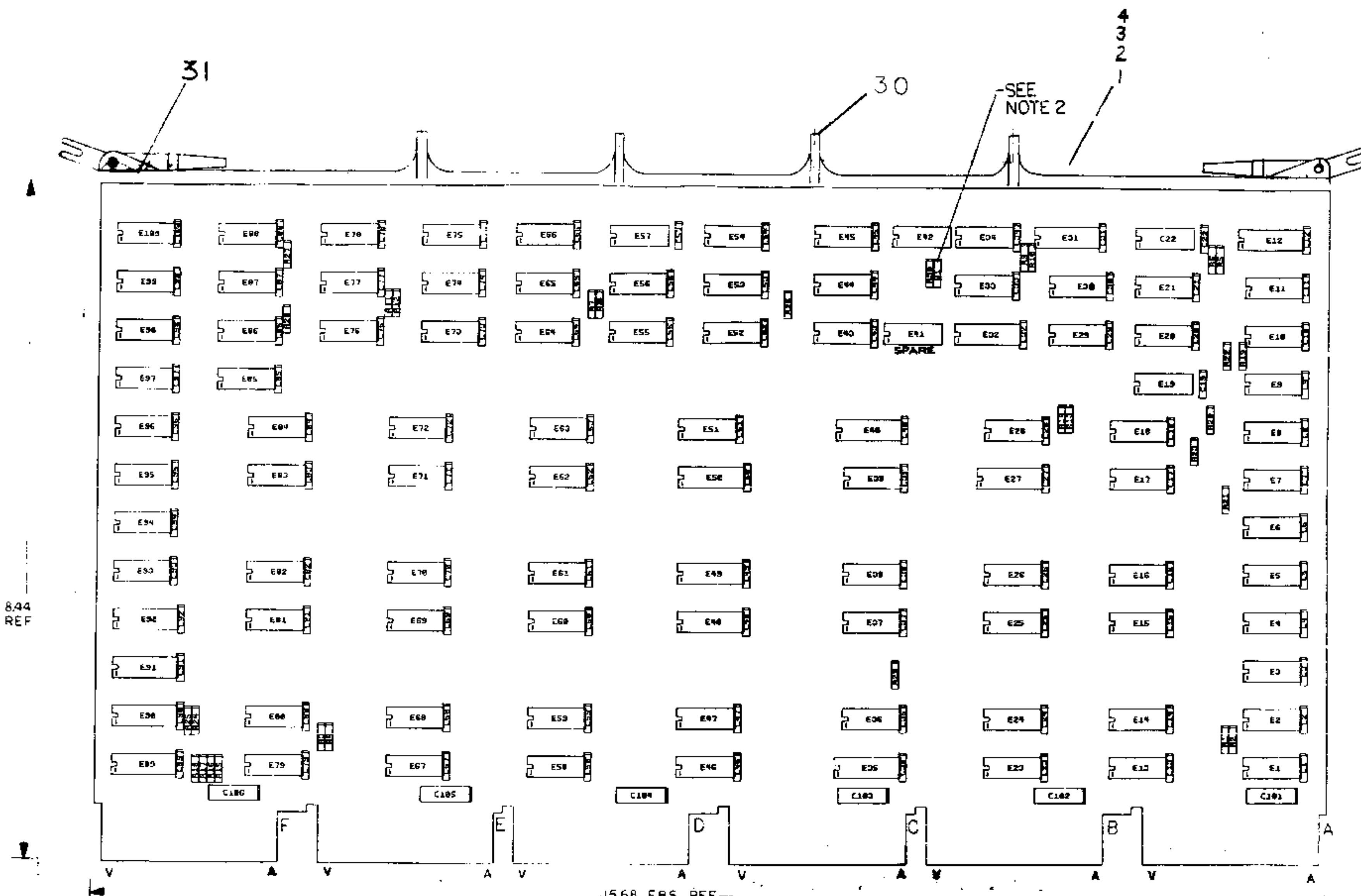
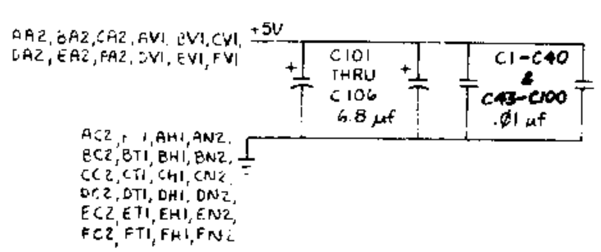
NOTES:

1. RESISTORS R1, R12 AND R14 ARE NOT USED.
2. INSTALL JUMPER W1 FOR USE WITH FP11-B



QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8132-0-4	1
REF		ASSY DRILLING HOLE LAYOUT	D-AH-M8132-0-5	2
REF		MODULE ECO HISTORY	B-MH-M8132-0-6	3
1		ETCHED CIRCUIT BOARD	5011394	4
6	C101 THRU C106	CAPACITOR, 6.8MFD, 35V 10%	1005306	5
98	C1 THRU C40 C43 THRU C100	CAPACITOR .01MFD, 100V 20% DISC	1001610-01	6
3	R2, R11, R13	RESISTOR 150, 1/4W 5%	1300250	7
4	R4, R5, R8, R9	RESISTOR, 330 1/4W 5%	1300295	8
10	R20 THRU R29	RESISTOR, 470 1/4W, 5%	1300316	9
4	R3, R6, R7, R10	RESISTOR, 560, 1/4W 5%	1301890	10
6	R15 THRU R19, R30	RESISTOR 1K, 1/4W, 5%	1300365	11
12	E8, E11, E19, E21, E36, E37, E39 E52, E55, E62, E64, E93	I.C. DEC 74S00	1910532	12
1	E34	I.C. DEC 74S03	1910533	13
8	E3, E17, E30, E43, E60, E87, E97, E45	I.C. DEC 74S04	1910534	14
9	E28, E33, E38, E53, E58, E74, E95 E98, E100	I.C. DEC 74S10	1910536	15
16	E4, E6, E10, E22, E29, E46, E56, E59, E60, E71, E72, E75, E76, E78, E86, E99	I.C. DEC 74S11	1910537	16
6	E7, E9, E18, E67, E70, E96	I.C. DEC 74S20	1910539	17
1	E2	I.C. DEC 74S40	1910541	18
11	E1, E5, E61, E63, E77, E81, E82, E83, E84, E88, E42	I.C. DEC 74S64	1910542	19
5	E20, E54, E57, E65, E66	I.C. DEC 74S65	1910543	20
11	E13, E14, E15, E16, E23, E24, E25 E26, E73, E79, E94	I.C. DEC 74S74	1910544	21
4	E12, F31, E91, E92	I.C. DEC 74S153	1910547	22
2	E35, E40	I.C. DEC 74S157	1910548	23
3	E51, E80, E85	I.C. DEC 74H50	1909060	24
5	E27, E32, E48, E49, E50	I.C. DEC 8251-1	1909854	25
1	E47	I.C. DEC 8815	1910647	26
2	E44, E69	I.C. DEC 8885	1910849	27
1	E89	I.C. DEC 8599-AB	23C01A1	28
1	E90	I.C. DM 8598-AC	23C02A1	29
1		HANDLE MODULE	1210711-2	30
12		EYELET	9006732	31

PARTS LIST



IC TYPE	GND	+ 5V
IC DEC 8598AC	8	16
IC DEC 74S157	8	16
IC DEC 74S153	8	16
IC DEC 8598AB	8	16
IC DEC 8251-1	8	16

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

REV	CHANGE NO	
A	M8132-00001	S. JENKINS
B	M8132-00002	A. HELENIUS
C	M8132-00003	A. HELENIUS

REVISIONS

DEC NO	EIA NO	DEC NO	EIA NO

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: 11/70

ETCH BOARD REV: B

NEXT HIGHER ASSY: B-DD-KB11-B

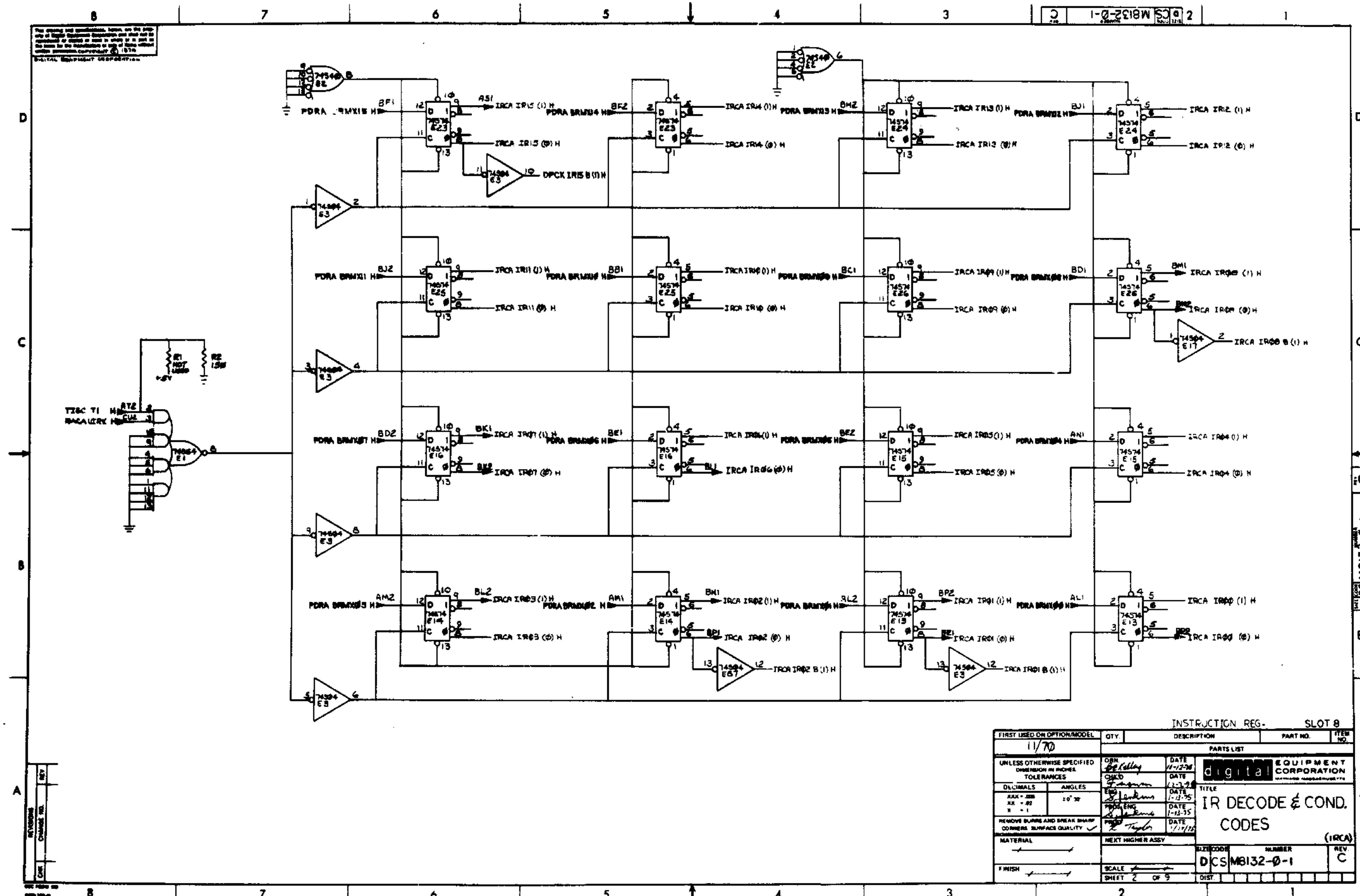
SCALE: --

SHEET 1 OF 9

digital EQUIPMENT CORPORATION

TITLE: IR DECODE & COND CODES (IRC)

SIZE: D CODE: CS NUMBER: M8132-0-1 REV: E



INSTRUCTION REG. SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70		PARTS LIST		

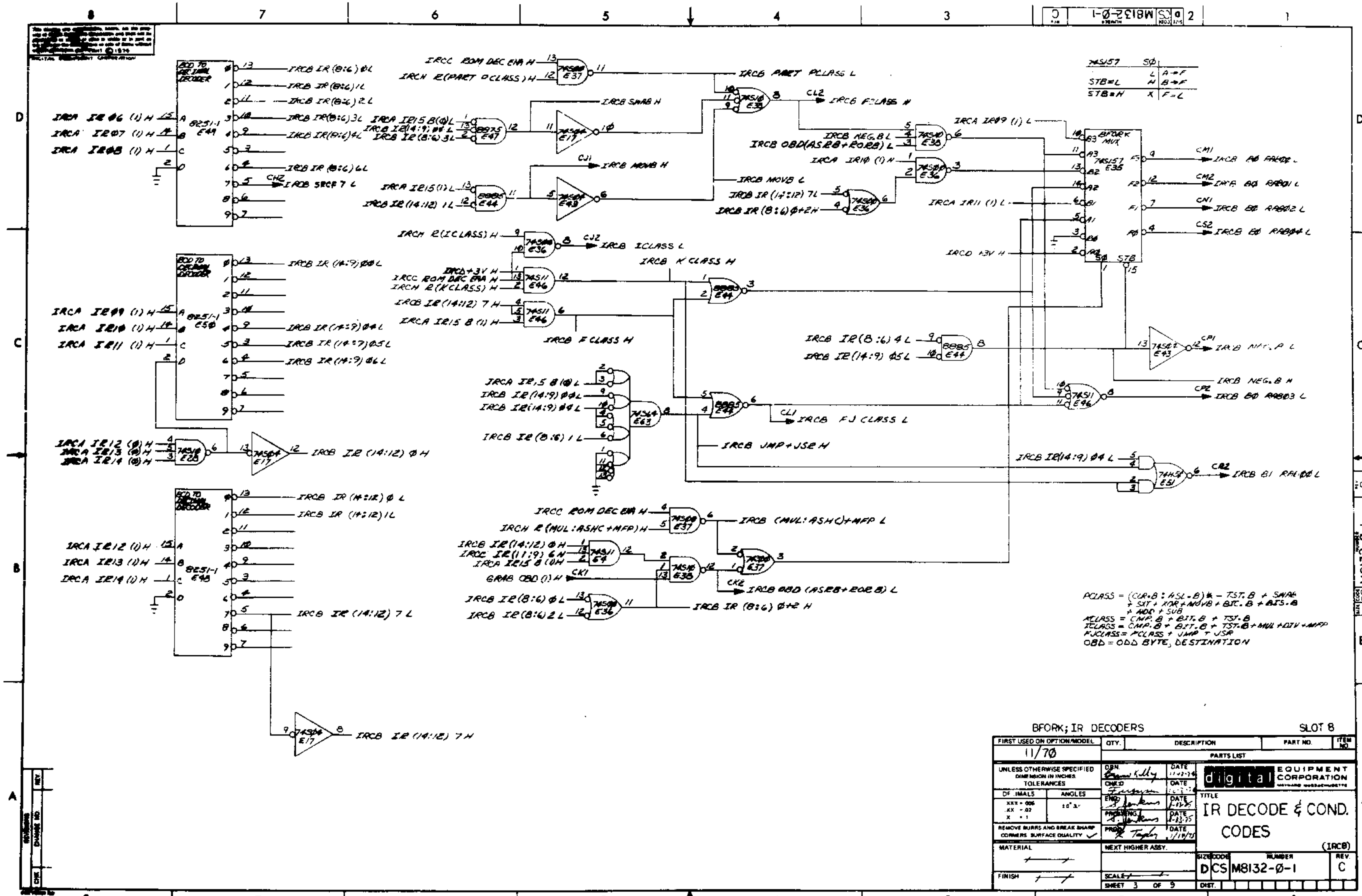
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

digital EQUIPMENT CORPORATION

TITLE: IR DECODE & COND. CODES (IRCA)

SIZE: D CODE: CS NUMBER: M8132-Ø-1 REV.: C

SHEET 2 OF 9


BFORK; IR DECODERS
SLOT 8
IR DECODE & COND. CODES
(IRCB)
D CS M8132-Ø-1
REV. C
SHEET 3 OF 9
FIRST USED ON OPTION/MODEL
11/70
digital EQUIPMENT CORPORATION
PCLASS = (CLR.B : ASL.B) * - TST.B + SWAB + SXT + XOR + MOVB + BIC.B + BIS.B + ADD + SUB
KCLASS = CMP.B + BIT.B + TST.B
ICLASS = CMP.B + BIT.B + TST.B + MUL + DIV + MFP
FJCLASS = PCLASS + JMP + JSR
OBD = ODD BYTE, DESTINATION

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GRAD SR0Ø AK2 — 74S00 E21 — 74S04 E37
IRCC FCLASS L
IRCA IR05(1)L — 74S00 E39
IRCA IR03 (1)L
IRCA IR04 (1) H

IRCA IR05 (1)L
CSI
IRCC DSTF7 L

IRCA IR06 (0)H
IRCA IR01 (0)H
IRCA IR02 (0)H
GRAC ACV 7809 L — 74S20 E7 — 74S04 E43 — 74S20 E39 — 74S00 E39

IRCB F CLASS H — 74S04 E43
IRCC FCLASS L

IRCC DSTMØ L

B3 CFORK MUX A3 B2 A2 B1 A1 B0 A0 S0 E78 — 74S157 E40

74S/57 S0	OUTPUT
L	A→F
H	B→F

Q4 IRCC CØ RAB ØØ L
ENI IRCC CØ RAB Ø1 L
DØ1 IRCC CØ RAB Ø2 L
DØ2 IRCC CØ RAB Ø3 L

IRCA IR15 (Ø) H — 74S00 E8
IRCB IR(14:12) 7 H

IRCB IR(14:9) Ø5 L
IRCB IR(14:9) Ø6 L — 74S20 E7
IRCH BIN L

+5V
R21 470
IRCC ROM DEC ENA H

IRCC DSTMØ H — 74S11 E4 — B52 IRCC DMØ (MFP+MTP) H
IRCD +3V H — 74S11 E6 — B72 IRCC MFP+MTP H
IRCH R(MFP+MTP) H — 74S11 E6 — BWI IRCC (RDR.B+MUL) H
IRCH RC(RDR.B+MUL) H — R23 470Ω — +5V

IRCB PART P CLASS L — 74S00 E8 — BRI
GRAA VALUØ L

IRCD SBYN H — 74S11 E4 — AVZ (SM24*SBYN*-SF67) IRCC SRCCON←1 H
IRCB IR(8:6)6 L
IRCB SRCF7 L
IRCC SRCM2 L — 74S00 E8
IRCC SRCM4 L

IRCC SRCM7 L
IRCC SRCM5 L
IRCC SRCM3 L — 74S10 E28 — B02 IRCC SM357 H

IRCA IR08 B(1) H — 74S20 E18
IRCA IR07 (1) H
IRCD SBYN H
IRCD WDIN H — 74S00 E8

IRCC SRCM3 L
IRCC SRCM5 L — 74S20 E18 — BSI [SM35+SM24(WDIN+SBYN*SF67)] IRCC SRCCON←2 H

IRCA IR15 B(Ø) L
IRCB IR(14:9) Ø6 L
IRCB IR(14:12) 1 L
IRCB IR(8:6)6 L — 74S64 E5 — AVI IRCC OCLASS H — 74S00 E17 — AVE IRCC OCLASS L

IRCC IR(5:3)Ø H — 74S04 E45

APE IRCC DSTMØ L
74S04 E45 — 45V IRCC DSTMØ H
D6Z IRCC DSTM2 L

BCD TO DECIMAL DECODER 8251-1 E27
IRCA IR09 (1)H — A
IRCA IR10 (1)H — B
IRCA IR11 (1)H — C
D — 2
Ø 13 IRCC SECMØ L
1 12
2 11 IRCC SECM2 L
3 10 IRCC SECM3 L
4 9 IRCC SECM4 L
5 3 IRCC SECM5 L
6 4
7 5 IRCC SECM7 L
8 6
9 7

IRCC IR(5:3) Ø H
IRCD SMØ H
IRCD IR(8:6) Ø H
IRCB FCLASS H — E42 74S64 — 8
WI — R30 1K — +5V

74S04 E17 — IRCC IR(1:0)6 H

BCD TO DECIMAL DECODER 8251-1 E32
IRCA IR03 (0)H — A
IRCA IR04 (0)H — B
IRCA IR05 (0)H — C
D — 2
Ø 13
1 12
2 11
3 10 IRCC DSTM3 L
4 9 IRCC DSTM4 L
5 3 IRCC DSTM5 L
6 4
7 5 IRCC DSTM7 L
8 6
9 7

INSTALL JUMPER WI FOR USE WITH FPII-B

NOTE: OCLASS=MOV+MTP
SBYN=MOVB+CMPB+BITB+BICB+BISB
SRØØ=OBS (ODD BYTE, SOURCE)
FCLASS=FPU OPCODES

CFORK; IR DECODERS; SOURCE CONSTANTS — SLOT 8

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
1117Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: XXX ± .005, X.X ± .02, X.X ± .1
ANGLES: ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

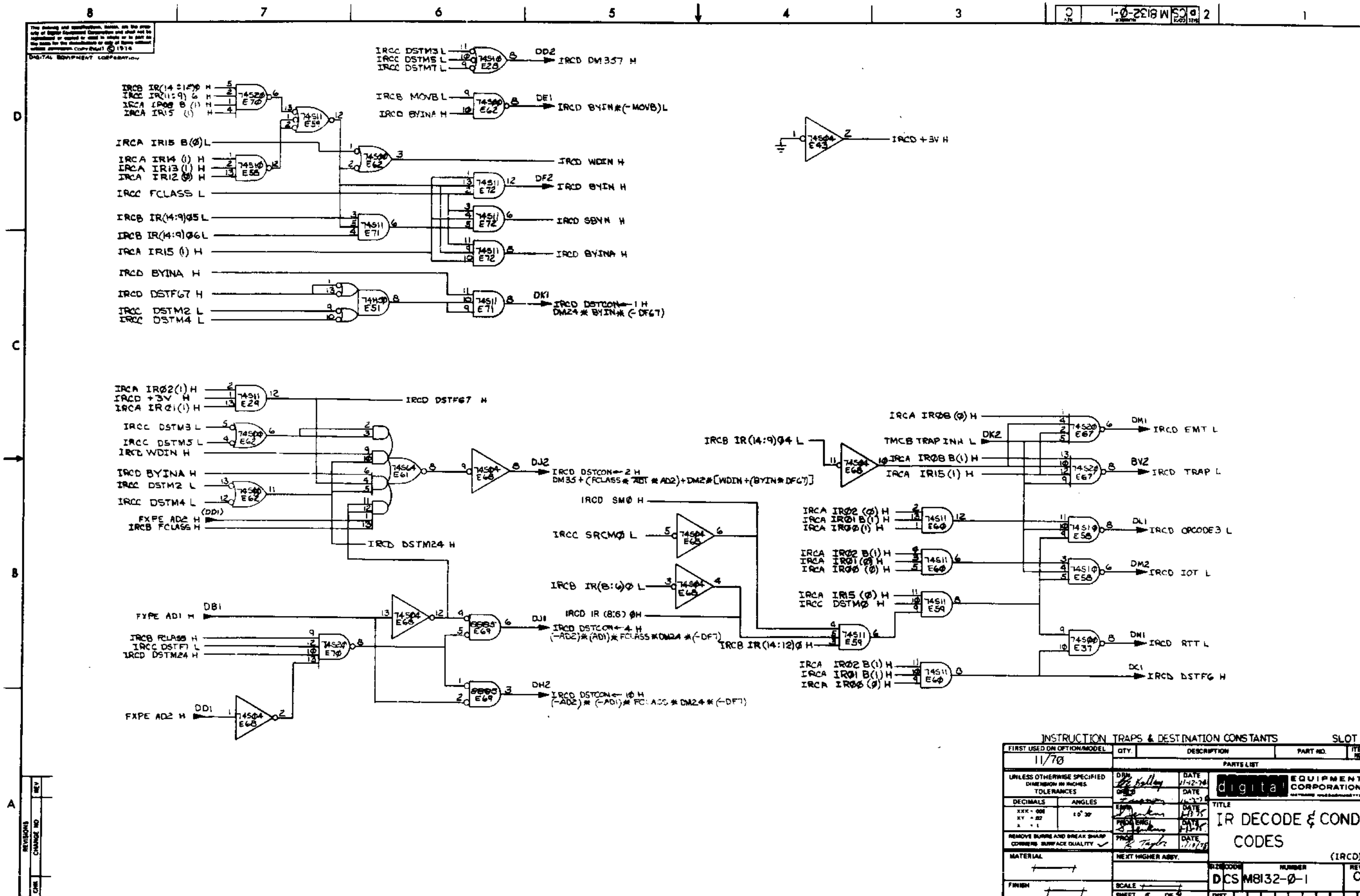
DRN. B. Kelley DATE 11-12-74
CHK'D DATE
ENG. DATE 12-13-74
PROJ. ENG. DATE 1-13-75
PROD. DATE 1/14/75
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION

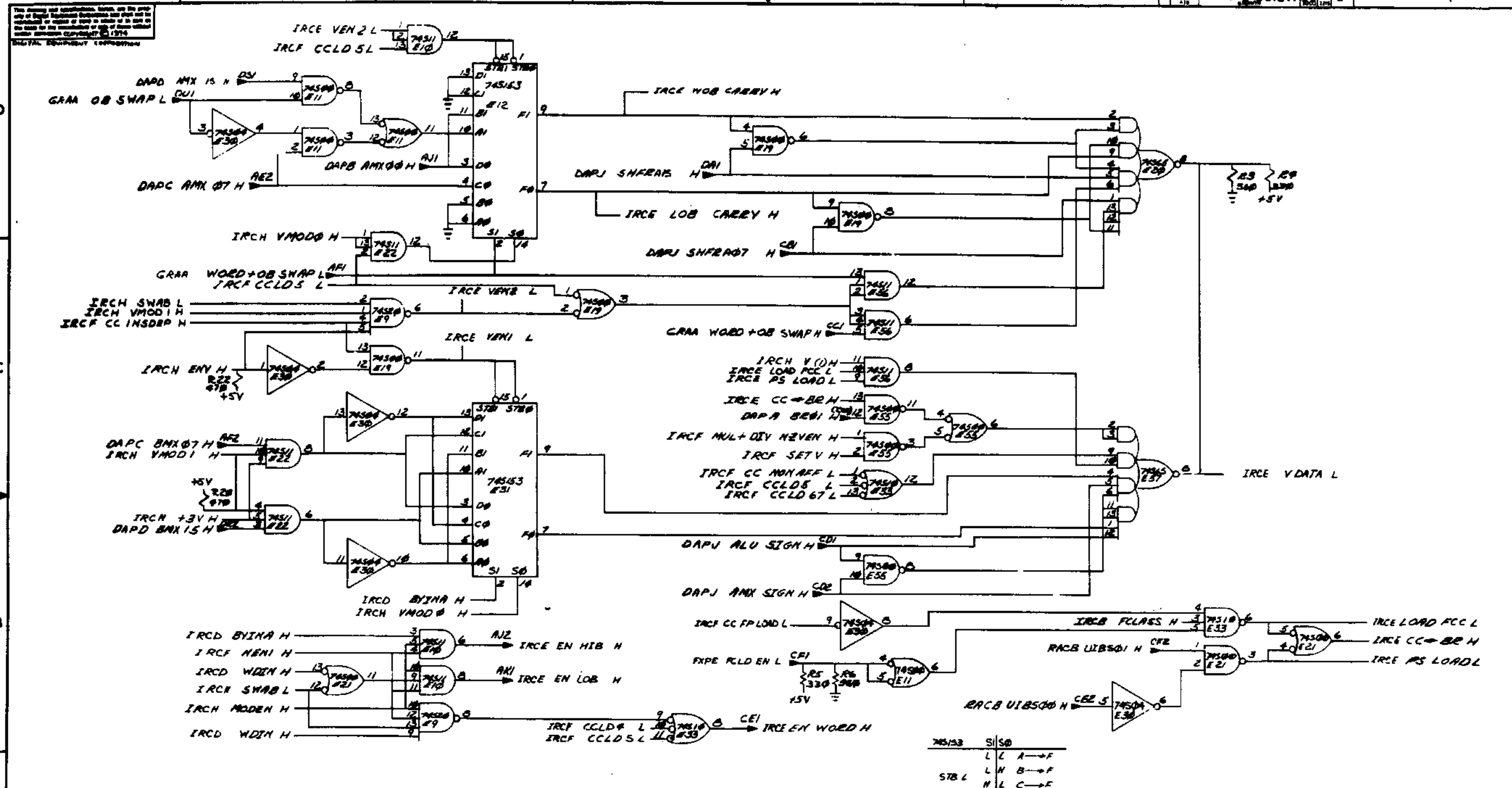
TITLE: IR DECODE & COND. CODES (IRCC)

SIZE D | CODE CS | NUMBER M8132-Ø-1 | REV C
SCALE
SHEET 4 OF 9 | DIST

REVISIONS: REV | CHANGE NO | LTR



IRCC DSTM3 L
IRCC DSTM5 L
IRCC DSTM7 L
74S10 E28
DD2
IRCD DM357 H
IRCB MOVB L
IRCD BYINA H
74S00 E62
DE1
IRCD BYIN*(~MOVB)L
IRCB IR(14:12)Ø H
IRCC IR(11:9) 6 H
IRCA IRØ8 B (1) H
IRCA IR15 (1) H
74S20 E70
74S11 E59
IRCA IR15 B(Ø)L
IRCA IR14 (1) H
IRCA IR13 (1) H
IRCA IR12 (Ø) H
74S10 E58
74S00 E62
IRCD WDIN H
IRCC FCLASS L
74S11 E72
DF2
IRCD BYIN H
IRCB IR(14:9)Ø5 L
IRCB IR(14:9)Ø6 L
74S11 E71
IRCD SBYN H
IRCA IR15 (1) H
IRCD BYINA H
IRCD BYINA H
IRCD DSTF67 H
IRCC DSTM2 L
IRCC DSTM4 L
74H50 E51
DK1
IRCD DSTCON←1 H
DM24 * BYIN * (~DF67)
74S04 E43
IRCD +3V H
IRCA IRØ2(1) H
IRCD +3V H
IRCA IRØ1(1) H
74S11 E29
IRCD DSTF67 H
IRCC DSTM3 L
IRCC DSTM5 L
74S00 E62
IRCD WDIN H
IRCD BYINA H
IRCC DSTM2 L
IRCC DSTM4 L
74S64 E61
74S04 E68
DJ2
IRCD DSTCON←2 H
DM35+(FCLASS * ~AD1 * AD2)+DM2*[WDIN+(BYIN*DF67)]
(DD1)
FXPE AD2 H
IRCB FCLASS H
IRCD DSTM24 H
FXPE AD1 H
DB1
IRCB FCLASS H
IRCC DSTF7 L
IRCD DSTM24 H
74S20 E70
74S04 E68
FXPE AD2 H
DD1
74S04 E68
DJ1
IRCD DSTCON←4 H
(~AD2)*(AD1)*FCLASS*DM24*(~DF7)
DH2
IRCD DSTCON←10 H
(~AD2)*(~AD1)*FCLASS*DM24*(~DF7)
IRCD SMØ H
IRCC SRCMØ L
74S04 E65
IRCB IR(8:6)Ø L
74S04 E68
IRCD IR (8:6) ØH
IRCB IR(14:12)Ø H
74S11 E59
IRCB IR(14:9)Ø4 L
74S04 E68
IRCA IRØ8 (Ø) H
TMCB TRAP INH L
DK2
IRCA IRØ8 B(1) H
IRCA IR15(1) H
74S20 E67
DM1
IRCD EMT L
BV2
IRCD TRAP L
IRCA IRØ2 (Ø) H
IRCA IRØ1 B(1) H
IRCA IRØØ(1) H
74S11 E60
74S10 E58
DL1
IRCD OPCODE3 L
IRCA IRØ2 B(1) H
IRCA IRØ1 (Ø) H
IRCA IRØØ (Ø) H
DM2
IRCD IOT L
IRCA IR15 (Ø) H
IRCC DSTMØ H
74S11 E59
74S00 E37
DN1
IRCD RTT L
IRCA IRØ2 B(1) H
IRCA IRØ1 B(1) H
IRCA IRØØ (Ø) H
74S11 E60
DK1
IRCD DSTF6 H
INSTRUCTION TRAPS & DESTINATION CONSTANTS
SLOT 8
FIRST USED ON OPTION/MODEL
11/70
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS
ANGLES
MATERIAL
FINISH
digital EQUIPMENT CORPORATION
TITLE
IR DECODE & COND. CODES
(IRCD)
D CS M8132-Ø-1
REV. C
SHEET 5 OF 9



74S153	S1	SØ	
STB L	L	L	A→F
	L	H	B→F
	H	L	C→F
	H	H	D→F
STB H	X	X	Ø = L

CONDITION CODE V LOGIC SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70		PARTS LIST		

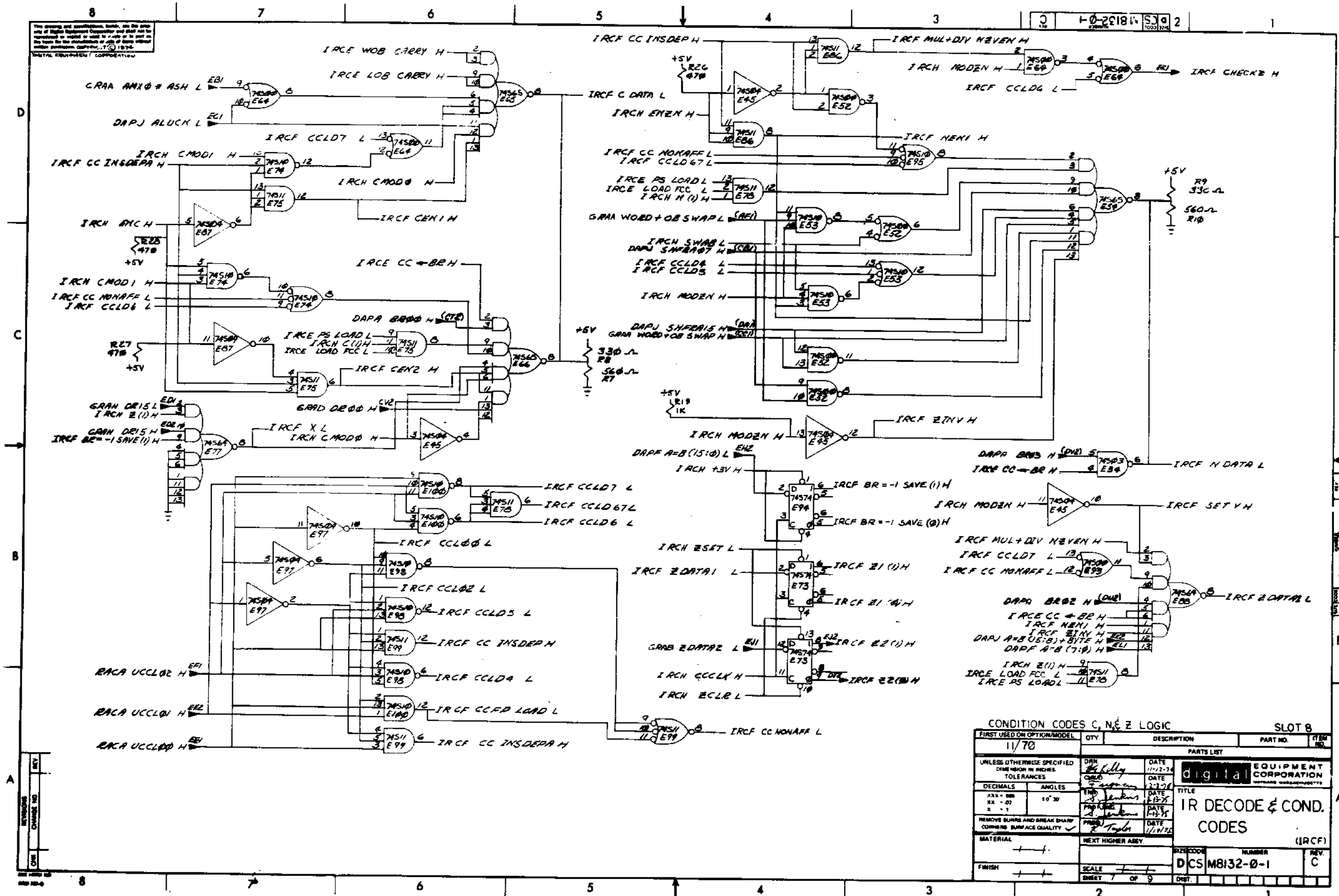
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES

DIGITAL EQUIPMENT CORPORATION

TITLE: IR DECODE & COND CODES (IRCE)

SIZE D CODE CS NUMBER M8132-Ø-1 REV. C

SHEET 6 OF 9


CONDITION CODES C, N, & Z LOGIC
SLOT B
FIRST USED ON OPTION/MODEL
11/70
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS
ANGLES
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
MATERIAL
FINISH
QTY.
DESCRIPTION
PART NO.
PARTS LIST
DRN
CHKD
ENG
PROJ ENG
PROD
DATE
NEXT HIGHER ASSY
SCALE
SHEET 7 OF 9
digital EQUIPMENT CORPORATION
TITLE
IR DECODE & COND. CODES
(IRCF)
SIZE D
CODE CS
NUMBER M8132-0-1
REV. C
IRCF C DATA L
IRCF CHECKZ H
IRCF N DATA L
IRCF Z DATA2 L
IRCF CC NONAFF L
IRCF CC INSDEPA H

62

IRCH SETCC H
IRCA IRØ3 (1) H
DAPA BRØ3 H
UBCB CC DATA (1) H
IRCF NDATA L
IRCH N (1) H
IRCH N (Ø) H
IRCH CCCLK H
IRCH CLK INH L
GRAC GATE TG H
TSC TF H
IRCH +3V H
UBCE INIT H
UBCB CCDATA (1) H
PDRB BRØ3 B L
IRCA IRØ3(1) H
IRCA IRØ4 (1) H
IRCA IRØ4 (Ø) H
IRCH SETCC H
IRCH CLK INH L
IRCH SUB L
IRCH +3V H
IRCA IRØ7(1) H
IRCA IR1Ø(1) H
IRCA IR13 (1) H
IRCA IRØ6(1) H
IRCA IRØ9(1) H
IRCA IR12(1) H
IRCA IR14(Ø) H
IRCA IR13(Ø) H
IRCA IR12(Ø) H
IRCA IR14(1) H
IRCA IR12(1) H
IRCA IR11(Ø) H
IRCH BIN L
IRCH SWAB L
IRCA IRØ2 B(1)H
DAPA BRØ2 H
IRCH 2 SET L
PDRB BRØ2 B L
IRCA IRØ2 B(1)H
IRCF E1(1) L
IRCF E2(1) L
IRCH E (1) H
IRCH E(1) H
IRCH E(Ø) H
IRCH MAT E H
IRCH N (1) L
IRCH MAT N H
IRCH N B (1) H
IRCA IRØ1 B(1)H
DAPA BRØ1 H
IRCH E CLR L
IRCA IRØ1 B(1)H
PDRE BRØ1 B L
IRCE VDATA L
IRCH MAT V H
IRCH V(1) H
IRCH V(Ø) H
IRCA IRØØ(1) H
DAPA BRØØ H
IRCF CDATA L
IRCH C(1) H
IRCH C(Ø) H
PDRB BRØØ B L
IRCA IRØØ(1) H
IRCH C (1) L
IRCH MAT C H
IRCH C B (1) H
IRCH MODEN H
IRCH ENEN H
IRCH CMODI H
IRCH CMODØ H
IRCH ENC H
IRCH VMODI H
IRCH VMODØ H
IRCH ENV H
IRCH SXT H
IRCH DIV+ASHC H
IRCH R(ROR-B+MUL) H
IRCH R(MFP+MTP) H
IRCH R(MUL-ASHC+MFP) H
IRCH R(KCLASS) H
IRCH R(ICLASS) H
IRCH R(PART PCLASS) H
IRCH SUBROMA4 H
IRCH SUBROMAB H
IRCH SUBROMA2 H
IRCH SUBROMAI H
IRCH SUBROMAØ H

STB=L	SI	SØ	
	L	L	A→F
	L	H	B→F
	H	L	C→F
	H	H	D→F
STB=H	X	X	F=L

COND. CODE BITS, CC CNTL & INSTR DECODE ROMS SLOT 8

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS .XXX ± .010, .XX ± .02, .X ± .1 — ANGLES ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

	NAME	DATE
DSN	[illegible]	11-13-74
CHK	[illegible]	11-13-74
ENG	[illegible]	1-13-75
PROJ MGR	[illegible]	1-13-75
PROG	[illegible]	1/10/75

NEXT HIGHER ASSY.
SCALE
SHEET 8 OF 9

digital EQUIPMENT CORPORATION

TITLE
IR DECODE & COND CODES
(IRCH)

SIZE	CODE	NUMBER	REV.
D	CS	M 8132-0-1	C

DIST.

INSTRUCTION DECODE ROM DM8598/AB

INSTRUCTION	OCTAL ADDRESS	M7 SXT	M6 D(MASHC)	M5 S(ROB D4 MUL)	M4 R(MFP+MTP)	M3 R(MUL ASHC+MFP)	M2 R(K CLASS)	M1 R(I CLASS)	M0 R(PART P CLASS)
ROR.B	00	L	L	X	L	L	L	L	H
ROL.B	01	L	L	L	L	L	L	L	H
ASR.B	02	L	L	L	L	L	L	L	H
ASL.B	03	L	L	L	L	L	L	L	H
MARK	04	L	L	L	L	L	L	L	L
MFP	05	L	L	L	H	H	L	H	L
MTP	06	L	L	L	H	L	L	L	L
SXT	07	H	L	L	L	L	L	L	H
CLR.B	10	L	L	L	L	L	L	L	H
COM.B	11	L	L	L	L	L	L	L	H
INC.B	12	L	L	L	L	L	L	L	H
DEC.B	13	L	L	L	L	L	L	L	H
NEG.B	14	L	L	L	L	L	L	L	H
ADC.B	15	L	L	L	L	L	L	L	H
SBC.B	16	L	L	L	L	L	L	L	H
TST.B	17	L	L	L	L	L	H	H	L
SUB	20	L	L	L	L	L	L	L	H
MOV.B	21	L	L	L	L	L	L	L	L
CMP.B	22	L	L	L	L	L	H	H	L
BIT.B	23	L	L	L	L	L	H	H	L
BIC.B	24	L	L	L	L	L	L	L	H
BIS.B	25	L	L	L	L	L	L	L	H
ADD	26	L	L	L	L	L	L	L	H
NOT USED	27	L	L	L	L	L	L	L	L
MUL	30	L	L	H	L	H	L	H	L
DIV	31	L	H	L	L	H	L	H	L
ASH	32	L	L	L	L	H	L	L	L
ASHC	33	L	H	L	L	H	L	L	L
XOR	34	L	L	L	L	L	L	L	H
NOT USED	35	L	L	L	L	L	L	L	L
NOT USED	36	L	L	L	L	L	L	L	L
SOB	37	L	L	L	L	L	L	L	L

COND. CODE CNTL. ROM DM8598/AC

INSTRUCTION	OCTAL ADDRESS	M7 MOD ZN	M6 EN ZN	M5 CMOD 1	M4 CMOD 0	M3 ENC	M2 VMOD 1	M1 VMOD0	M0 ENV
ROR.B	00	H	H	L	L	L	H	H	H
ROL.B	01	H	H	L	L	L	H	L	H
ASR.B	02	H	H	L	L	L	H	H	H
ASL.B	03	H	H	L	L	L	H	L	H
MARK	04	L	L	L	L	L	L	L	L
MFP	05	H	H	H	L	H	L	L	H
MTP	06	H	H	H	L	H	L	L	H
SXT	07	H	H	H	L	H	L	L	H
CLR.B	10	H	H	H	L	L	L	L	H
COM.B	11	H	H	L	H	L	L	L	H
INC.B	12	H	H	H	L	H	L	L	L
DEC.B	13	H	H	H	L	H	L	H	L
NEG.B	14	H	H	L	H	L	H	L	L
ADC.B	15	H	H	H	L	L	L	L	L
SBC.B	16	H	H	L	H	L	L	H	L
TST.B	17	H	H	H	L	L	L	L	X
SUB	20	H	H	L	H	L	H	H	L
MOV.B	21	H	H	H	L	H	L	L	H
CMP.B	22	L	H	H	L	L	H	H	L
BIT.B	23	H	H	H	L	H	L	L	H
BIC.B	24	H	H	H	L	H	L	L	H
BIS.B	25	H	H	H	L	H	L	L	H
ADD	26	H	H	H	L	L	H	L	L
NOT USED	27	L	L	L	L	L	L	L	L
MUL	30	H	L	L	H	H	L	L	H
DIV	31	L	L	H	H	L	L	L	H
ASH	32	[illegible]	H	H	L	L	L	L	H
ASHC	33	H	H	L	L	H	L	L	H
XOR	34	H	[illegible]	H	L	H	L	L	H
NOT USED	35	L	L	L	L	L	L	L	L
NOT USED	36	L	L	L	L	L	L	L	L
SOB	37	L	L	L	L	L	L	L	L

INSTRUCTION DEPENDENT CONTROL (RACA UCCL (2:Ø)=1)

INSTRUCTION	N WORD + ODD BYTE	N BYTE *(EVEN + DSTM0)	Z WORD	Z BYTE	V WORD	V BYTE	C WORD	C BYTE
ROR.B	* SHFR (15)1	SHFR (7)1	SHFR(15:0)0	SHFR(7:0)0	SHFR15 ⊻ AMX 0	SHFR7 ⊻ AMX0	AMX0	
ROL.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	SHFR15 ⊻ AMX15	SHFR15 ⊻ AMX7 / SHFR7 ⊻ AMX7	AMX15	AMX7
ASR.B	* SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(7:0)0	SHFR15 ⊻ AMX0	SHFR7 ⊻ AMX0	AMX0	
ASL.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	SHFR15 ⊻ AMX15	SHFR15 ⊻ AMX7 / SHFR7 ⊻ AMX7	AMX15	AMX7
MARK	NOT INSTR. DEP.		NOT INSTR. DEP.		NOT INSRT. DEP.		NOT INSRT. DEP.	
MFP	SHFR(15)1		SHFR(15:0)0		0		NOT AFFECTED	
MTP	SHFR(15)1		SHFR(15:0)0		0		NOT AFFECTED	
SXT	SHFR(15)1		SHFR(15:0)0		0		NOT AFFECTED	
CLR.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	0		ALUCOUT 15	ALUCOUT 7
COM.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	0		$\overline{ALUCOUT\ 15}$	$\overline{ALUCOUT\ 7}$
INC.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	$\overline{AMX15}$ * ALU15	$\overline{AMX7}$ * ALU7	NOT AFFECTED	
DEC.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	AMX15 * $\overline{ALU15}$	AMX7 * $\overline{ALU7}$	NOT AFFECTED	
NEG.B	* SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(7:0)0	A15*B15*ALU15 + $\overline{A15*B15}$*ALU15	A7*B7*ALU7 + $\overline{A7*B7}$*ALU7	$\overline{ALUCOUT\ 15}$	$\overline{ALUCOUT\ 7}$
ADC.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	$\overline{AMX15}$ * ALU15	$\overline{AMX7}$ * ALU7	ALUCOUT 15	ALUCOUT 7
SBC.B	SHFR (15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	AMX15 * $\overline{ALU15}$	AMX7 * $\overline{ALU7}$	$\overline{ALUCOUT\ 15}$	$\overline{ALUCOUT\ 7}$
TST.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	0		ALUCOUT 15	ALUCOUT 7
SUB	SHFR(15)1		SHFR(15:0)0		AMX15*$\overline{BMX15}$*$\overline{ALU15}$ + $\overline{AMX15}$*BMX15*ALU15		$\overline{ALUCOUT\ 15}$	
MOV.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	0		NOT AFFECTED	
CMP.B	SHFR(15)0	SHFR(7)0	A=B(15:0)	A=B(7:0)	A15*$\overline{B15}$*$\overline{ALU15}$ + $\overline{A15}$*B15*ALU15	A7*$\overline{B7}$*$\overline{ALU7}$ + $\overline{A7}$*B7*ALU7	ALUCOUT 15	ALUCOUT 7
BIT.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	0		NOT AFFECTED	
BIC.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	0		NOT AFFECTED	
BIS.B	SHFR(15)1	SHFR(7)1	SHFR(15:0)0	SHFR(BYTE)0	0		NOT AFFECTED	
ADD	SHFR(15)1		SHFR(15:0)0		AMX15*BMX15*$\overline{ALU15}$ + $\overline{AMX15}$*$\overline{BMX15}$*ALU15		ALUCOUT 15	
NOT USED	———		———		———		———	
MUL	NOT AFFECTED		Z(OLD) * SHFR(15:0)0		0		$\overline{I}$	
DIV	NOT AFFECTED		1		1		1(ALUCN + $\overline{ALUCN}$)	
ASH	SHFR(15)1		SHFR(15:0)0		0		AMXØ	
ASHC	SHFR(15)1		SHFR(15:0)0		0		DR00	
XOR	SHFR(15)1		SHFR(15:0)0		0		NOT AFFECTED	
NOT USED	———		———		———		———	
NOT USED	———		———		———		———	
SOB	NOT INSTR. DEP		NOT INSTR. DEP.		NOT INSTR DEP.		NOT INSTR. DEP.	
SWAB	SHFR(7)1		SHFR(7:0)0		0		0	
CCLD4 (RACC UCCL(2:0)=4)	SHFR(15)1		SHFR(15:0)0		0		0	
CCLD5 (RACC UCCL(2:0)=5)	SHFR(15)1		SHFR(15:0)0		V(OLD) + (SHFR15 ⊻ AMX15)		AMX15	
CCLD6 (RACC UCCL(2:0)=6)	NOT AFFECTED		Z(OLD) * SHFR(15:0)0		NOT AFFECTED		NOT AFFECTED	
CCLD7 (RACC UCCL(2:0)=7)	NOT AFFECTED		NOT AFFECTED		NOT AFFECTED		ALUOUT 15	

* ODD BYTE SWAPPED TO EVEN DURING COND. CODE CHECKING

NOTE: BYTE INSTRUCTION WITH DSTM0 IS ALWAYS EVEN BYTE

X = Z(OLD)* $\overline{DR15}$ + (SR=0)*DR15

SWAB INSTR. HAS SAME ROM ADDRESS AS ASL B

CC CNTL & INSTR DECODE ROM MAPS SLOT 8

FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO
11/70		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES — DECIMALS: XXX ± .005, XX ± .02, X ± .1 — ANGLES ± 0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —/—

FINISH —/—

DRN [signature] DATE 11-22-74 · CHK [signature] DATE · ENG [signature] DATE 1-13-75 · PROJ ENG [signature] DATE 1-13-75 · PROD [signature] DATE 1/17/75

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: IR DECODE & COND. CODES (IRCJ)

SIZE D CODE CS NUMBER M8132-0-1 REV C

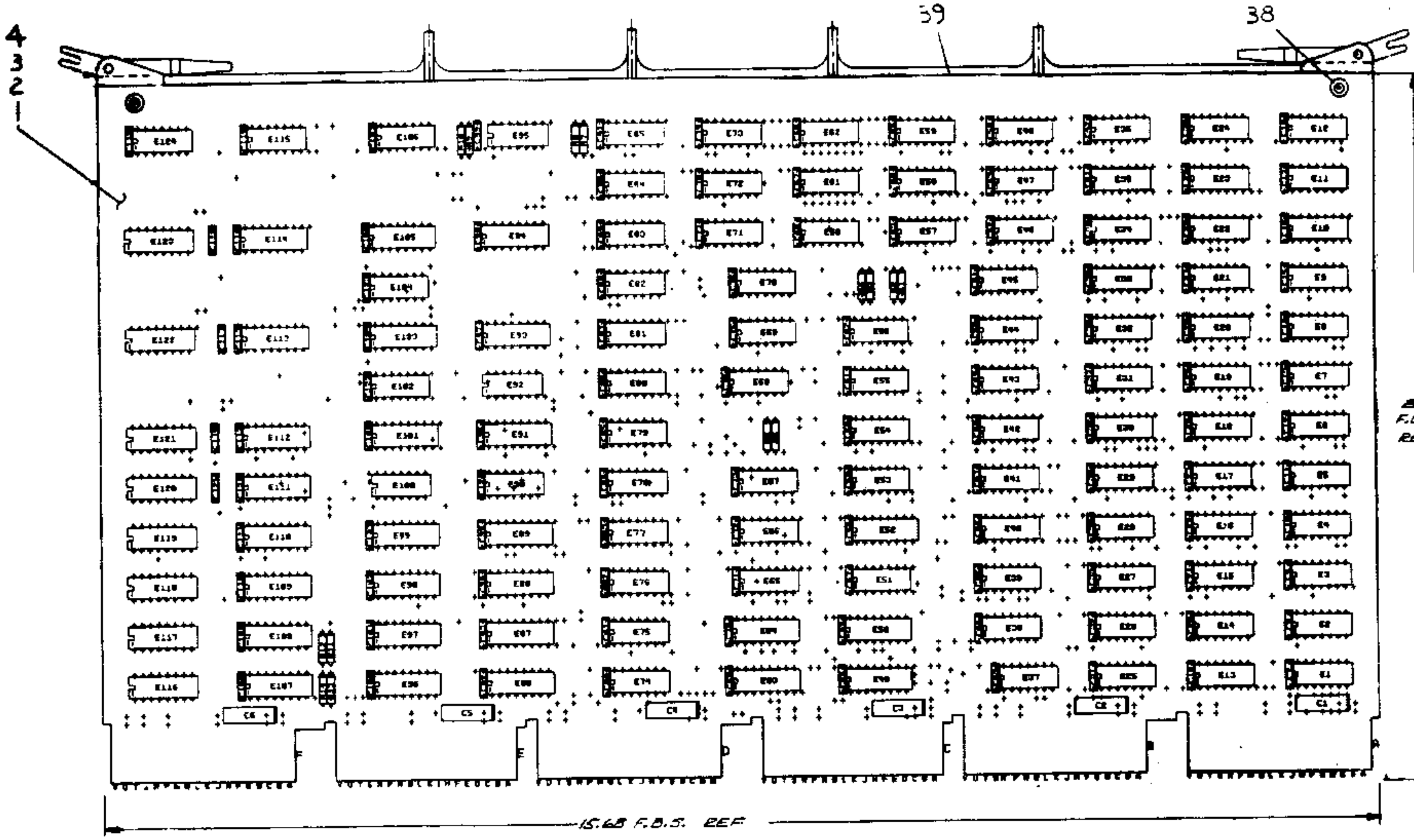
SCALE NONE SHEET 9 OF 9

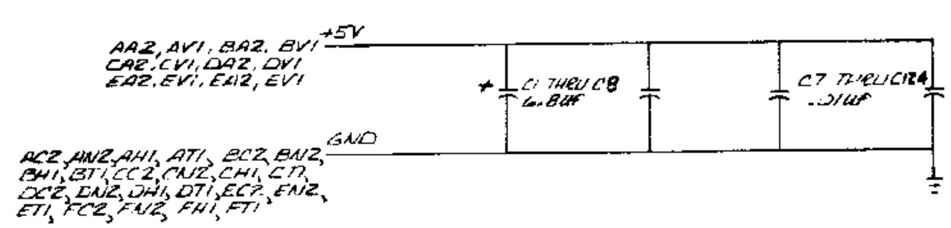
DIST

REVISIONS — REV — CHANGE NO — CHK

DEC FORM NO DRD 100-0

NOTES: 1. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS [illegible] TANCE [illegible] CAPACITANCES [illegible] [illegible] NET.
2. R21 & E62 ARE SPARE I.C. LOCATIONS.
3. R5, R7, R9, R12 & R13 ARE NOT USED





QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8123-0-4	1
REF		ASSY DRILLING HOLE LAYOUT	D-AH-M8123-0-5	2
REF		MODULE ECO HISTORY	B-MH-M8123-0-6	3
1		ETCHED CIRCUIT BOARD	5011869	4
1[illegible]	C7 THRU C124	CAPACITOR, .01uF, 50V	1031810-5[illegible]	5
6	C1 THRU C8	CAPACITOR, 6.8uF, 35V, 10%	1005306	6
5	R6, R8, R10, R11, R14	RESISTOR, 150 OHM, 1/4W, 5%	1300250	7
5	E4, E31, E50, E39, E104	I.C. DEC 74S00	1910532	8
12	E6, E27, E34, E52, E56, E57, E72, E78, E79, E84, E85, E100	I.C. DEC 74S04	1910534	9
12	E3, E10, E20, E29, E40, E48, E53, E59, E60, E67, E92, E102	I.C. DEC 74S10	1910536	10
4	E55, E86, E89, E85	I.C. DEC 74S11	1910537	11
3	E16, E30, E41	I.C. DEC 74S20	1910539	12
1	E15	I.C. DEC 74S40	1910541	13
37	E5, E7, E9, E8, E11, E12, E17, E18, E19, E20, E21, E22, E23, E24, E33, E35, E42, E43, E44, E45, E46, E47, E51, E54, E69, E70, E71, E74, E75, E76, E77, E80, E81, E82, E83, E32, E109	I.C. DEC 74S64	1910542	14
4	E49, E50, E63, E64	I.C. DEC 74S153	1910547	15
12	E66, E88, E96, E97, E98, E107, E108, E109, E110, E117, E119, E87	I.C. DEC 74S174	1910550	16
14	E1, E2, E13, E14, E25, E26, E36, E37, E38, E73, E115, E124, E68, E90	I.C. DEC 74S74	1910544	17
2	R1 R3	RES 680 Ω 1/4W 5%	1301424	18
2	R2, R4	RES 330 Ω 1/4W 5%	1300295	19
1	E[illegible]	ROM 256x4	230[illegible]	20
1	E[illegible]4	ROM 256x4	23[illegible]78A2	21
1	E[illegible]3	ROM 256x4	[illegible]	22
1	E89	ROM 256x4	23[illegible]80A2	23
1	E91	ROM 256x4	23[illegible]81A2	24
1	E[illegible]	ROM 256x4	23C82A2	25
1	E111	74[illegible]	19[illegible]157	26
1	E123	ROM 256x4	[illegible]66A2	27
1	E1[illegible]	ROM 256x4	23C[illegible]7A2	28
1	E12[illegible]	ROM 256x4	23C68A2	29
1	E122	ROM 256x4	23C[illegible]A2	30
1	E1[illegible]4	ROM 256x4	[illegible]70A2	31
1	E112	ROM 256x4	[illegible]	32
1	E10	ROM 256x4	23C72A2	33
1	E113	ROM 256x4	23C73A2	34
1	E105	ROM 256x4	[illegible]74A2	35
1	E103	ROM [illegible]x4	[illegible]75A2	36
1	E101	ROM 256x4	23[illegible]76A2	37
12		EYELET	90[illegible]732	38
1		HANDLE MODULE	1210711-2	39

PARTS LIST

FIRST USED ON OPTION MODEL: KB11-C

ETCH BOARD REV.: C

SEMICONDUCTOR CONVERSION CHART

ORIGINATED: A. HELENIUS

digital

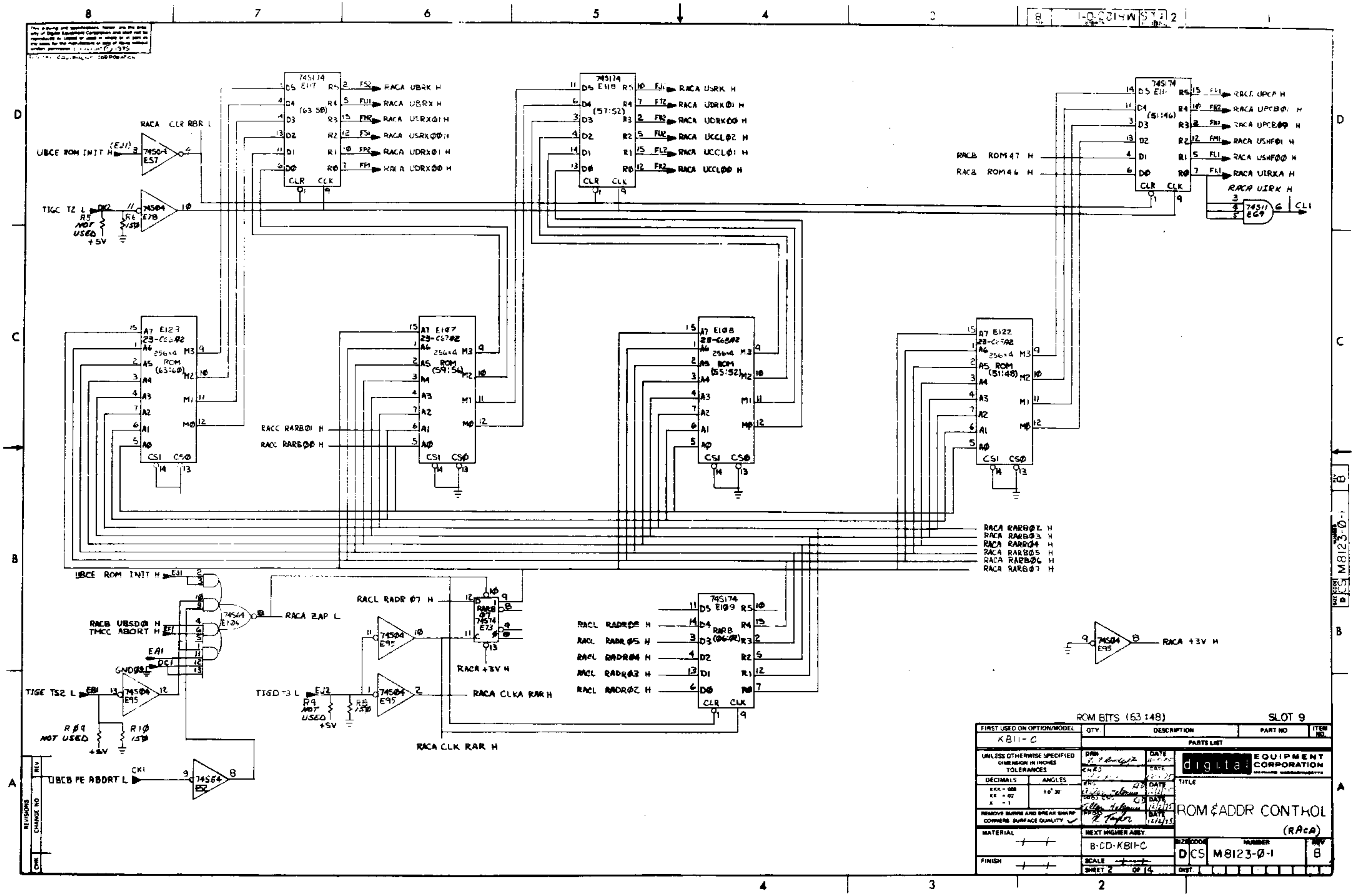
TITLE: ROM & ADDR CONTROL (RAC)

NEXT HIGHER ASSY: B-DD-KB11-C

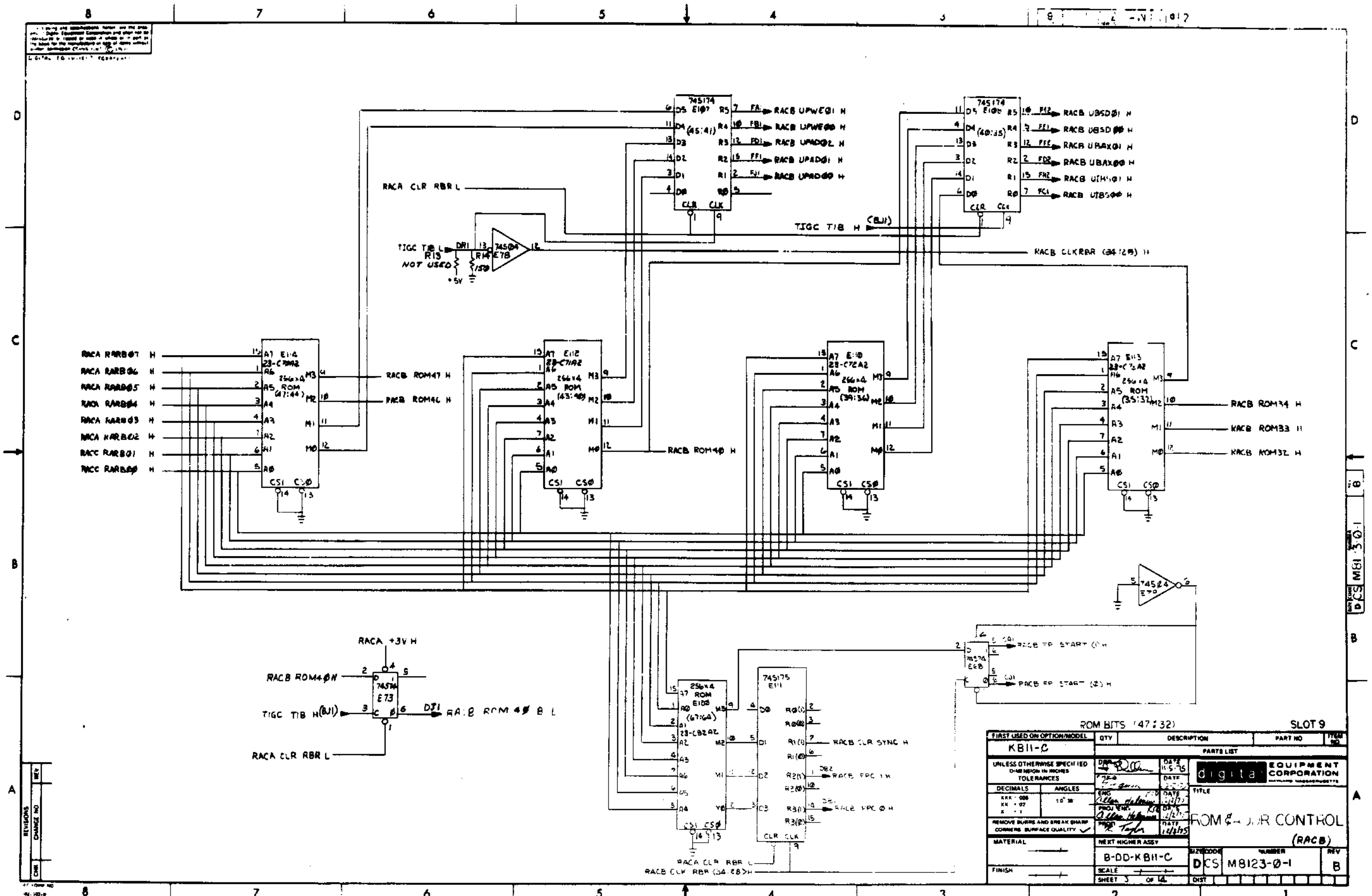
SIZE: D CODE: CS NUMBER: M8123-0-1

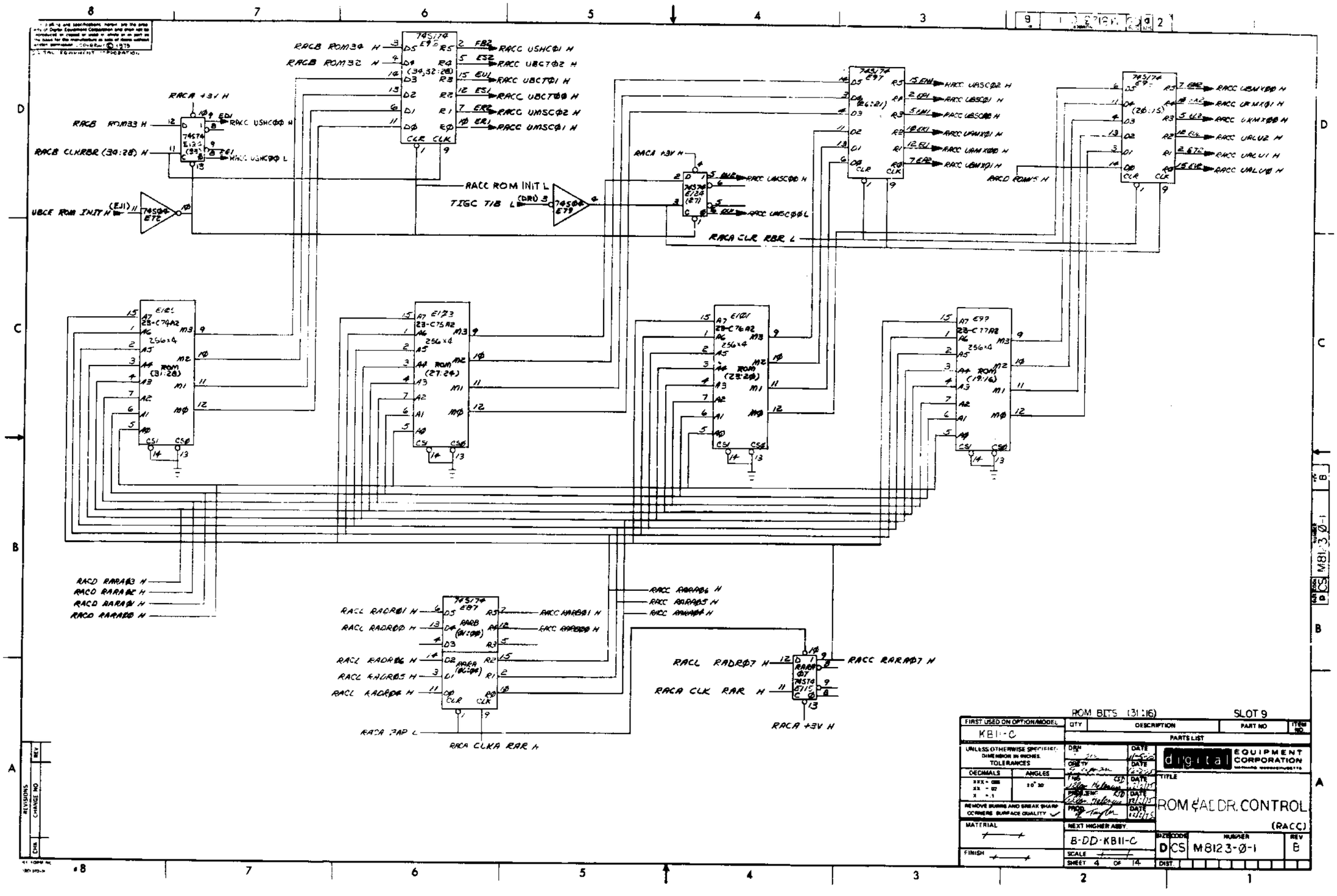
SHEET 1 OF 14

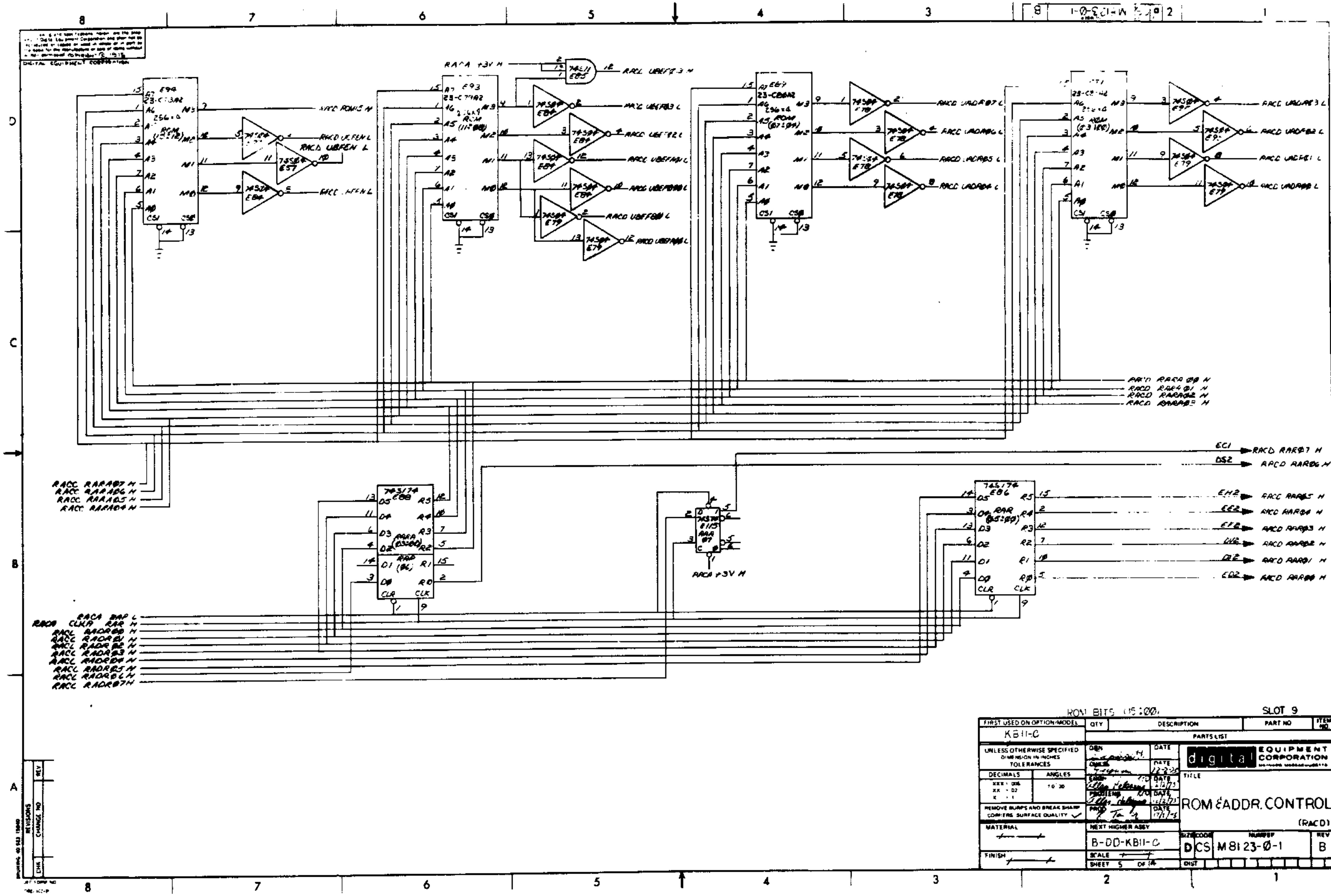
65

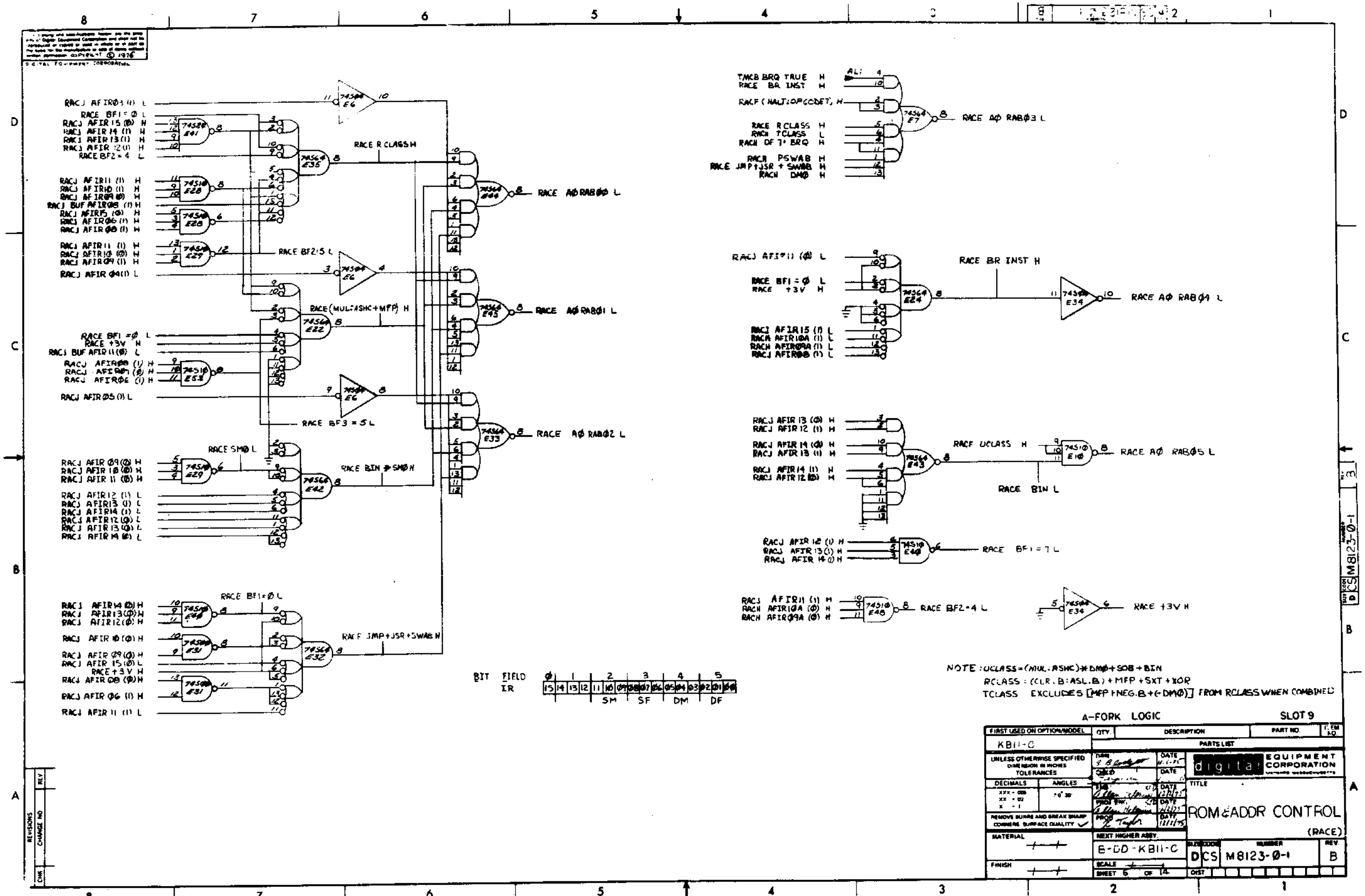

RACA CLR RBR L
UBCE ROM INIT H
TIGC T2 L
74S04 E57
74S04 E78
R5 NOT USED
+5V
74S174 E117 (63:58)
RACA UBRK H
RACA UBRX H
RACA USRX01 H
RACA USRX00 H
RACA UDRX01 H
RACA UDRX00 H
74S174 E118 (57:52)
RACA USRK H
RACA UDRK01 H
RACA UDRK00 H
RACA UCCL02 H
RACA UCCL01 H
RACA UCCL00 H
74S174 E111 (51:46)
RACB ROM47 H
RACA ROM46 H
RACA UPCP H
RACA UPCB01 H
RACA UPCB00 H
RACA USHF01 H
RACA USHF00 H
RACA UIRKA H
RACA UIRK H
74S11 E69
CL1
E123 23-C6702 256x4 ROM (63:60)
E107 23-C6702 256x4 ROM (59:56)
E108 23-C6802 256x4 ROM (55:52)
E122 23-C6702 256x4 ROM (51:48)
RACC RARB01 H
RACC RARB00 H
RACA RARB02 H
RACA RARB03 H
RACA RARB04 H
RACA RARB05 H
RACA RARB06 H
RACA RARB07 H
UBCE ROM INIT H
RACB UBSD01 H
TMCC ABORT H
74S64 E124
RACA ZAP L
RACL RADR 07 H
RARB 07 74S74 E73
RACA +3V H
74S04 E95
RACA CLKA RAR H
RACA CLK RAR H
TIGE TS2 L
TIGD T3 L
R9 NOT USED
R10 150
UBCB PE ABORT L
74S64
RACL RADR06 H
RACL RADR05 H
RACL RADR04 H
RACL RADR03 H
RACL RADR02 H
74S174 E109 RARB (06:02)
RACA +3V H
ROM BITS (63:48)
SLOT 9
FIRST USED ON OPTION/MODEL
KB11-C
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS
ANGLES
MATERIAL
FINISH
NEXT HIGHER ASSY
B-CD-KB11-C
digital EQUIPMENT CORPORATION
TITLE
ROM & ADDR CONTROL (RACA)
SIZE D CODE CS NUMBER M8123-0-1 REV B
SHEET 2 OF 14
D CS M8123-0-1

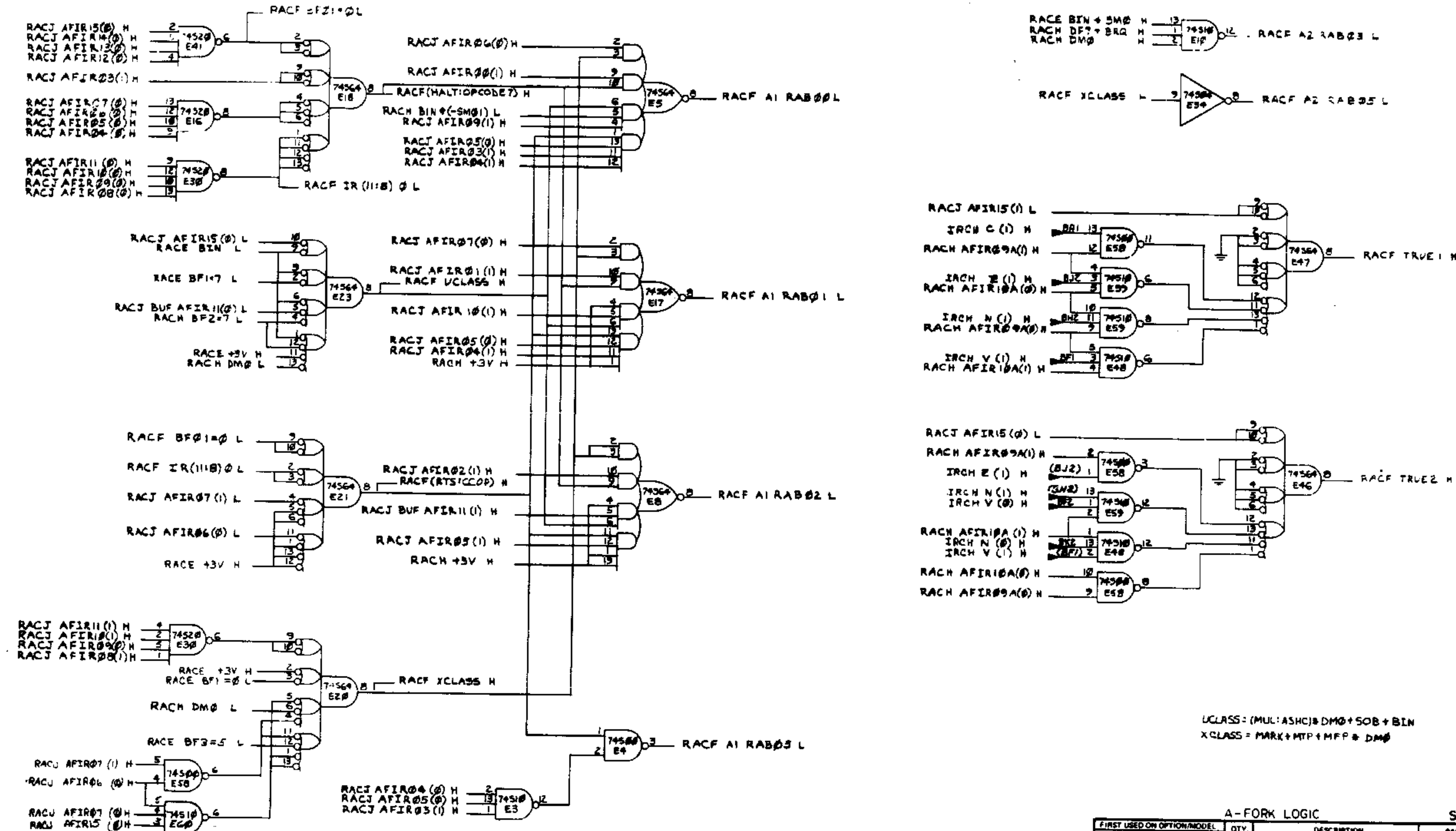
66


74S174 E107 (45:41)
RACB UPWE01 H
RACB UPWE00 H
RACB UPAD02 H
RACB UPAD01 H
RACB UPAD00 H
74S174 E106 (40:35)
RACB UBSD01 H
RACB UBSD00 H
RACB UBAX01 H
RACB UBAX00 H
RACB UIB501 H
RACB UIB500 H
RACA CLR RBR L
TIGC T18 H (BJ1)
TIGC T18 L
R13 NOT USED
R14 150
+5V
74S04 E78
RACB CLKRBR (34:28) H
RACA RARB07 H
RACA RARB06 H
RACA RARB05 H
RACA RARB04 H
RACA RARB03 H
RACA RARB02 H
RACC RARB01 H
RACC RARB00 H
E114 23-C79A2 256x4 ROM (47:44)
RACB ROM47 H
RACB ROM46 H
E112 23-C71A2 256x4 ROM (43:40)
RACB ROM40 H
E110 23-C72A2 256x4 ROM (39:36)
E113 23-C73A2 256x4 ROM (35:32)
RACB ROM34 H
RACB ROM33 H
RACB ROM32 H
74S04 E79
RACA +3V H
RACB ROM40 H
74S74 E73
TIGC T18 H (BJ1)
RA:B ROM 40 B L
RACA CLR RBR L
256x4 ROM E100 (47:64) 23-C82A2
74S175 E111
RACB CLR SYNC H
RACB FPC 1 H
RACB FPC 0 H
74S74 E68
RACB FP START (1) H
RACB FP START (0) H
RACA CLR RBR L
RACB CLK RBR (34:28) H
ROM BITS (47:32)
SLOT 9
KB11-C
B-DD-KB11-C
digital EQUIPMENT CORPORATION
ROM ... CONTROL (RACB)
D CS M8123-0-1 B
SHEET 3 OF 14


RACB ROM30 H
RACB ROM32 H
RACA +3V H
RACB ROM33 H
RACB CLKRBR (30:28) N
RACC USHC00 H
RACC USHC01 H
RACC UBCT02 H
RACC UBCT01 H
RACC UBCT00 H
RACC UMSC02 H
RACC UMSC01 H
RACC USHC00 L
RACC ROM INIT L
UBCE ROM INIT H (EJI)
TIGC TIB L (DRI)
RACC UASC00 H
RACC UASC00 L
RACA CLR RBR L
RACC UASC02 H
RACC UBSC01 H
RACC UBSC00 H
RACC UAMX01 H
RACC UAMX00 H
RACC UAMX01 H
RACD ROM15 H
RACC UBMX00 H
RACC UAMX01 H
RACC UAMX00 H
RACC UALU2 H
RACC UALU1 H
RACC UALU0 H
RACD RARA13 H
RACD RARA12 H
RACD RARA11 H
RACD RARA10 H
RACL RADR01 H
RACL RADR00 H
RACL RADR06 H
RACL RADR05 H
RACL RADR04 H
RACC RARA06 H
RACC RARA05 H
RACC RARA04 H
RACC RARB01 H
RACC RARB00 H
RACL RADR07 H
RACA CLK RAR H
RACC RARA07 H
RACA PAP L
RACA CLK RAR H
RACA +3V H
ROM BITS (31:16)
SLOT 9
KB11-C
PARTS LIST
B-DD-KB11-C
digital EQUIPMENT CORPORATION
ROM ADDR. CONTROL
(RACC)
D CS M8123-0-1
REV B
SHEET 4 OF 14
M8123-0-1


ROM BITS (05:00)
SLOT 9
FIRST USED ON OPTION/MODEL
KB11-C
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS
ANGLES
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
MATERIAL
FINISH
NEXT HIGHER ASSY
B-DD-KB11-C
SCALE
SHEET 5 OF 14
QTY
DESCRIPTION
PARTS LIST
PART NO
ITEM NO
digital EQUIPMENT CORPORATION
TITLE
ROM & ADDR. CONTROL
(RACD)
SIZE
CODE
NUMBER
REV
D
CS
M8123-Ø-1
B
RACA +3V H
RACC UBFEN L
RACC RARA07 H
RACC RARA06 H
RACC RARA05 H
RACC RARA04 H
RACA BAP L
RACA CLKA RAR H
RACC RADR00 H
RACC RADR01 H
RACC RADR02 H
RACC RADR03 H
RACC RADR04 H
RACC RADR05 H
RACC RADR06 H
RACC RADR07 H
RACD RARA00 H
RACD RARA01 H
RACD RARA02 H
RACD RARA03 H
RACD RAR07 H
RACD RAR06 H
RACD RAR05 H
RACD RAR04 H
RACD RAR03 H
RACD RAR02 H
RACD RAR01 H
RACD RAR00 H
74S174 E88
74S174 E86
74S74 E115
23-C71A2
23-C86A2


A-FORK LOGIC
SLOT 9
ROM & ADDR CONTROL
(RACE)
D CS M8123-Ø-1 B
KB11-C
E-DD-KB11-C
SHEET 6 OF 14
NOTE : UCLASS = (MUL:ASHC) * DMØ + SOB + BIN
RCLASS : (CLR.B:ASL.B) + MFP + SXT + XOR
TCLASS EXCLUDES [MFP + NEG.B + (-DMØ)] FROM RCLASS WHEN COMBINED
BIT FIELD
IR
SM
SF
DM
DF
RACE AØ RABØØ L
RACE AØ RABØ1 L
RACE AØ RABØ2 L
RACE AØ RABØ3 L
RACE AØ RABØ4 L
RACE AØ RABØ5 L
RACE R CLASS H
RACE BF2=5 L
RACE (MUL+ASHC+MFP) H
RACE BF3=5 L
RACE SMØ L
RACE BIN # SMØ H
RACE BF1=Ø L
RACE JMP+JSR+SWAB H
RACE BR INST H
RACE UCLASS H
RACE BIN L
RACE BF1=7 L
RACE BF2=4 L
RACE +3V H



A-FORK LOGIC

SLOT 9

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
KB11-C		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

DECIMALS / ANGLES

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

MATERIAL —//—

FINISH —//—

digital EQUIPMENT CORPORATION

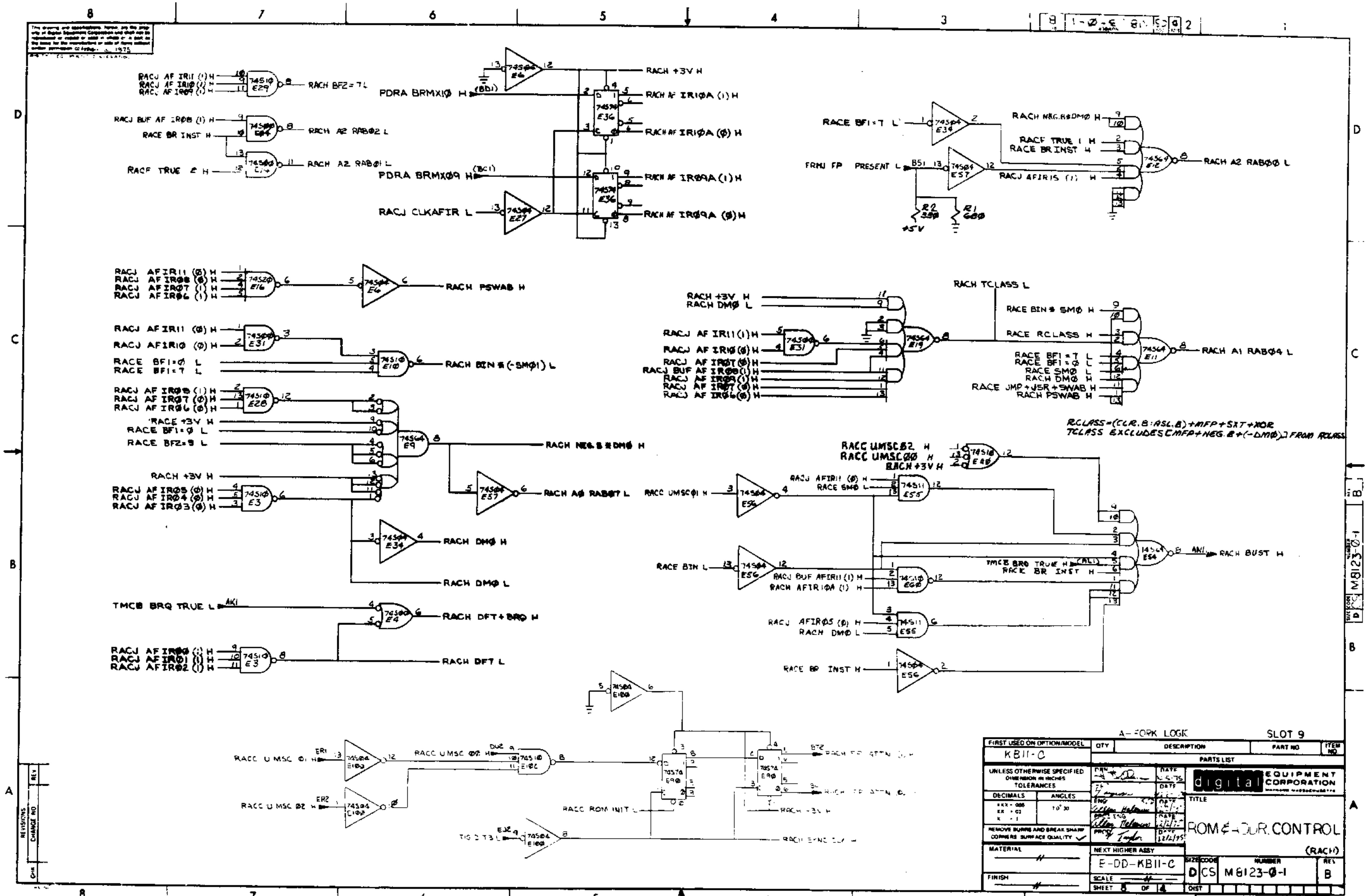
TITLE ROM & ADDR CONTROL (RACF)

NEXT HIGHER ASSY B-DD-KB11-C

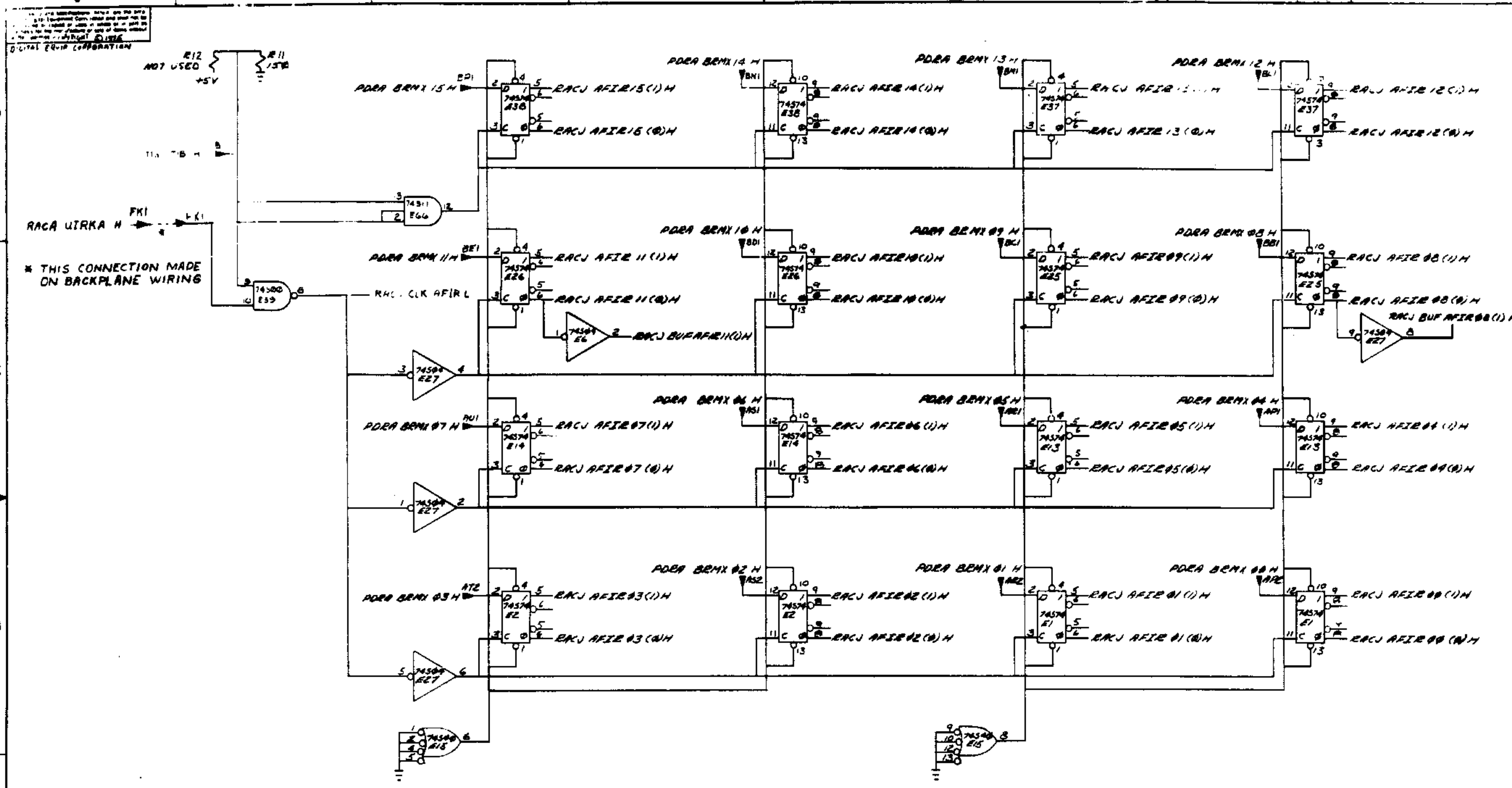
SIZE D CODE CS M8123-0-1 REV B

SCALE —//—

SHEET 7 OF 4



RACH +3V H
RACH AF IR1ØA (1) H
RACH AF IR1ØA (Ø) H
RACH AF IRØ9A (1) H
RACH AF IRØ9A (Ø) H
PDRA BRMX1Ø H
PDRA BRMXØ9 H
RACJ CLKAFIR L
RACH BFZ=7 L
RACH A2 RABØ2 L
RACH A2 RABØ1 L
RACE TRUE 2 H
RACE BR INST H
RACE BFI=7 L
FRMJ FP PRESENT L
RACH A2 RABØØ L
RACH PSWAB H
RACH BIN # (-SMØ1) L
RACH NEG.B#DMØ H
RACH AØ RABØ7 L
RACH DMØ H
RACH DMØ L
RACH DFT+BRQ H
RACH DFT L
TMCB BRQ TRUE L
RACH TCLASS L
RACE RCLASS H
RACE JMP+JSR+SWAB H
RACH PSWAB H
RACH A1 RABØ4 L
RCLASS=(CLR.B:ASL.B)+MFP+SXT+XOR
TCLASS EXCLUDES CMFP+NEG.B+(-DMØ)] FROM RCLASS
RACC UMSCB2 H
RACC UMSCØØ H
RACC UMSCØ1 H
RACE BIN L
RACE BR INST H
RACH BUST H
RACC ROM INIT L
A-FORK LOGIC
SLOT 9
KB11-C
ROM & -UR CONTROL
(RACH)
E-DD-KB11-C
M8123-Ø-1
DIGITAL EQUIPMENT CORPORATION



INSTRUCTION REG. (A-FORK COPY)

SLOT 9

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KB11-C				

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

DECIMALS	ANGLES
XXX ± .005 XX ± .02 X ± .1	± 0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

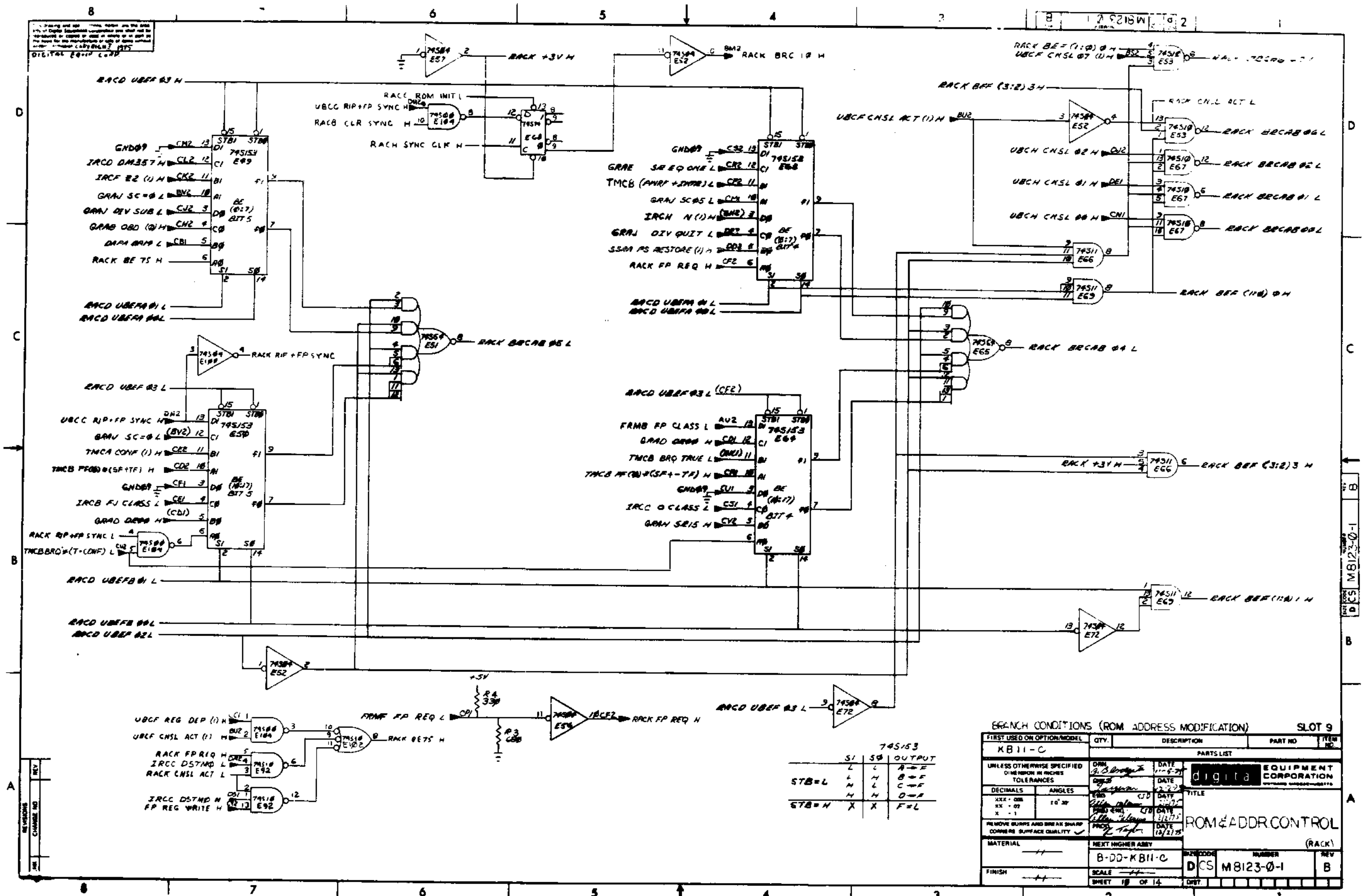
NEXT HIGHER ASSY. B-DD-KB11-C

digital EQUIPMENT CORPORATION

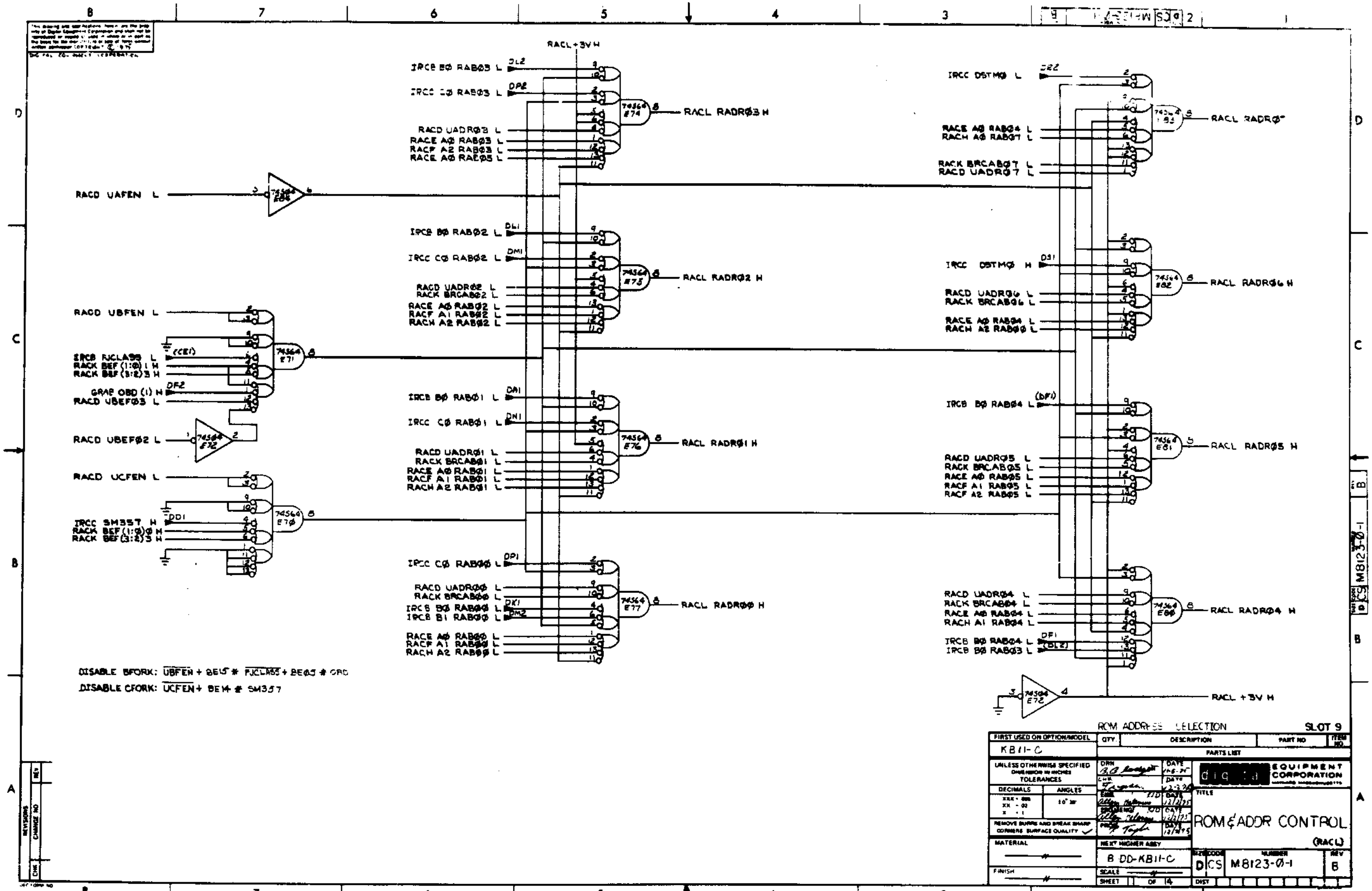
TITLE ROM & ADDR CONTROL (RACJ)

SIZE D CODE CS NUMBER M8123-Ø-1 REV B

SHEET 9 OF 14


BRANCH CONDITIONS (ROM ADDRESS MODIFICATION)
SLOT 9
74S153
STB=L
STB=H
FIRST USED ON OPTION/MODEL
KB11-C
QTY.
DESCRIPTION
PART NO
PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES
DECIMALS
ANGLES
MATERIAL
FINISH
NEXT HIGHER ASSY
B-DD-KB11-C
digital EQUIPMENT CORPORATION
TITLE
ROM & ADDR CONTROL
(RACK)
D CS M8123-Ø-1 B
SHEET 10 OF 14

74



RACD UAFEN L
RACD UBFEN L
RACD UBEFØ2 L
RACD UCFEN L
RACL RADRØ3 H
RACL RADRØ2 H
RACL RADRØ1 H
RACL RADRØØ H
RACL RADRØ6 H
RACL RADRØ5 H
RACL RADRØ4 H
RACL +3V H
DISABLE BFORK: UBFEN + BE15 * FJCLASS + BEØ3 * GRD
DISABLE CFORK: UCFEN + BE14 * SM357
ROM ADDRESS SELECTION
SLOT 9
KB11-C
ROM & ADDR CONTROL (RACL)
B DD-KB11-C
D CS M8123-Ø-1 B

75

	BRK	BRX	SRX	ORX	SRK	BRR	CCL	PCA	PCP	SHF	IPR	PVE	PAD	BSO	BAX	IBS	SHC	BCT	NSC	BSC	ANX	BMX	SMX	ALU	FEN	BEN	UAD	FPS	CLS	FPC	PGE
000	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	345	0	0	0	12
001	1	0	0	0	0	0	0	0	0	2	0	0	5	0	0	0	0	0	7	6	2	0	0	2	0	15	115	0	0	0	05
002	1	0	0	0	0	0	0	0	0	2	0	0	5	0	0	0	0	0	7	6	2	0	0	2	0	15	115	0	0	0	05
003	0	0	0	0	0	0	0	0	0	2	0	0	5	0	0	0	0	0	7	0	2	0	0	2	0	00	231	0	0	0	05
004	0	0	0	0	0	3	0	1	3	2	0	2	5	0	1	0	0	7	0	0	0	0	3	6	0	01	122	0	0	0	06
005	0	0	0	0	0	3	0	1	3	2	0	2	5	0	1	0	0	7	0	0	0	0	3	6	0	01	122	0	0	0	05
006	1	1	0	2	0	3	0	1	0	2	0	0	5	2	1	0	0	0	0	0	1	0	1	3	0	00	251	0	0	0	06
007	1	1	0	2	0	3	0	1	0	2	0	0	5	2	1	0	0	0	0	0	1	0	1	3	0	00	251	0	0	0	06
010	1	1	0	1	1	3	0	0	0	1	0	0	6	0	1	3	0	7	0	0	0	0	0	0	0	00	316	0	0	0	03
011	0	0	0	1	0	3	0	0	0	2	0	0	6	0	1	0	0	7	0	0	0	0	0	2	0	12	246	0	0	0	03
012	0	0	1	0	1	0	0	0	0	2	0	0	7	0	1	0	0	7	0	0	3	0	0	2	0	00	156	0	0	0	02
013	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	356	0	0	0	12
014	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	354	0	0	0	12
015	0	0	0	1	0	1	0	0	0	2	0	0	6	0	1	0	0	7	0	0	3	0	0	2	0	00	255	0	0	0	03
016	0	0	1	0	1	0	0	0	0	2	0	0	7	0	1	0	0	7	0	0	3	0	0	2	0	00	156	0	0	0	02
017	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	345	0	0	0	12
020	1	1	0	0	0	0	1	0	1	2	1	1	5	3	1	0	0	0	6	0	0	2	0	7	0	00	343	0	0	3	03
021	0	0	0	0	0	0	0	1	2	2	0	2	0	0	2	0	0	0	7	1	2	0	2	1	0	00	027	0	0	0	01
022	0	0	0	0	0	0	0	1	2	2	0	2	0	0	2	0	0	0	7	1	2	0	2	1	0	00	027	0	0	0	01
023	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	7	1	0	0	0	0	0	00	027	0	0	0	01
024	0	0	0	0	1	0	0	1	2	2	0	2	0	0	1	0	0	7	0	0	2	0	2	6	0	00	023	0	0	0	01
025	0	0	0	0	0	0	0	0	0	2	0	2	7	0	0	0	0	0	7	5	0	0	1	6	0	00	041	0	0	0	15
026	1	1	2	2	1	3	0	0	0	2	0	0	1	2	1	0	0	0	0	0	1	0	1	3	0	00	054	0	0	0	03
027	1	1	0	2	0	3	0	0	0	1	0	0	5	3	2	0	0	0	6	1	0	0	0	0	4	14	317	0	0	0	01
030	0	0	0	0	0	0	1	1	3	2	0	1	5	0	1	0	0	7	6	0	0	2	0	7	0	00	317	0	0	0	03
031	1	0	0	0	0	0	1	0	0	2	0	0	6	0	0	0	0	0	7	7	3	2	0	7	0	00	132	0	0	0	11
032	0	0	0	0	0	0	0	0	1	1	0	2	0	2	0	0	0	0	6	5	0	0	0	0	0	00	217	0	0	0	11
033	0	0	0	0	0	0	1	0	0	2	0	0	5	0	1	0	0	0	7	0	3	2	0	7	0	12	240	0	0	0	11
034	0	0	2	0	1	0	0	1	0	1	0	0	0	0	0	0	0	7	0	0	0	0	0	2	0	00	201	0	0	0	11
035	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	7	6	0	0	0	0	2	0	00	217	0	0	0	11
036	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	7	0	0	0	0	0	2	0	17	307	0	0	0	07
037	0	0	0	0	0	3	0	0	0	2	0	2	7	0	0	0	0	0	0	0	0	0	1	6	0	00	025	0	0	0	13
040	0	0	1	0	1	0	0	1	1	2	0	0	7	0	1	0	0	7	0	0	0	0	0	2	0	00	223	0	0	0	02
041	1	0	0	1	0	3	0	0	0	2	0	0	3	3	0	0	0	0	0	5	2	0	0	2	0	00	232	0	0	0	15
042	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	345	0	0	0	12
043	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	7	6	0	3	0	0	2	0	00	341	0	0	0	03
044	0	0	0	0	0	0	2	0	0	2	0	0	0	0	1	0	0	7	6	0	3	0	0	2	0	00	317	0	0	0	03
045	0	0	0	0	0	0	0	0	0	2	0	2	7	0	1	0	0	7	0	0	2	0	1	3	0	00	151	0	0	0	01
046	0	0	0	2	0	3	0	0	0	1	0	1	5	0	1	0	0	7	0	0	0	0	0	0	0	00	304	0	0	0	11
047	0	0	1	0	1	3	0	0	0	2	0	0	2	0	1	0	0	7	0	0	1	1	2	3	0	00	252	0	0	0	02
050	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3	7	0	0	0	0	0	2	0	00	102	0	0	0	05
051	1	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	7	0	0	0	0	0	2	0	00	061	0	0	0	03
052	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	2	7	0	0	2	0	0	2	0	00	305	0	0	0	07
053	0	0	0	1	0	0	0	0	0	2	0	0	4	0	1	0	2	7	0	0	2	0	0	2	0	00	306	0	0	0	07

	BRK	BRX	SRX	ORX	SRK	BRR	CCL	PCA	PCP	SHF	IPR	PVE	PAD	BSO	BAX	IBS	SHC	BCT	NSC	BSC	ANX	BMX	SMX	ALU	FEN	BEN	UAD	FPS	CLS	FPC	PGE
054	0	0	0	0	1	0	0	0	1	2	0	0	0	0	1	0	0	0	0	0	2	3	0	3	0	00	141	0	0	0	02
055	0	0	0	0	0	1	4	0	0	2	0	2	0	0	0	0	0	0	0	0	0	2	0	6	0	00	056	0	0	0	09
056	0	0	0	0	1	0	0	0	0	2	0	0	0	0	6	0	0	0	0	0	3	0	0	2	0	04	243	0	0	0	09
057	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	7	6	0	1	1	2	6	0	01	242	0	0	0	02
060	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	3	0	0	0	3	0	0	2	0	00	102	0	0	0	09
061	0	0	0	1	1	3	4	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	00	256	0	0	0	09
062	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	00	052	0	0	0	07
063	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	00	053	0	0	0	07
064	1	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	7	0	00	123	0	0	0	11
065	0	0	0	0	1	0	0	0	1	1	0	0	6	0	0	0	0	0	7	2	0	0	0	0	0	00	157	0	0	0	15
066	0	0	1	0	1	0	1	0	0	2	0	0	7	0	0	0	0	0	0	0	3	0	0	3	0	00	250	0	0	0	11
067	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	7	0	00	271	0	0	0	11
070	0	0	0	0	0	0	0	0	0	0	0	0	6	0	2	0	0	0	7	0	0	0	0	0	0	00	174	0	0	0	14
071	0	0	0	0	1	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	2	0	1	3	0	00	070	0	0	0	14
072	0	0	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0	0	0	0	2	0	0	2	0	07	337	0	0	0	14
073	0	0	0	0	0	0	0	0	0	2	0	0	6	0	2	0	0	0	7	5	3	0	0	2	0	00	303	0	0	0	14
074	0	0	0	0	1	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	2	0	1	3	0	00	073	0	0	0	14
075	0	0	0	0	1	0	0	0	0	2	1	0	0	0	2	0	0	0	0	0	2	0	0	3	0	07	137	0	0	0	14
076	0	0	0	0	0	0	0	0	1	2	0	0	0	0	2	0	0	6	0	0	0	0	0	2	0	00	015	0	0	0	14
077	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	00	130	0	0	0	14
100	0	0	0	0	0	3	0	0	6	2	0	0	0	0	1	0	0	6	0	0	0	1	0	1	0	00	356	0	0	0	12
101	1	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	3	0	0	0	0	0	2	0	00	316	1	0	0	02
102	1	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3	1	0	6	0	11	246	0	0	0	08
103	0	0	0	1	0	3	0	0	6	2	0	0	4	0	2	0	3	0	0	0	0	0	0	2	0	00	147	0	0	0	09
104	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	0	2	0	6	0	00	105	0	0	0	09
105	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0	00	106	0	0	0	09
106	0	0	1	0	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	00	055	0	0	0	09
107	0	0	0	1	0	3	0	0	0	2	0	0	4	0	0	0	3	0	0	0	0	0	0	0	0	00	147	0	0	0	09
110	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0	0	0	0	7	6	3	0	0	2	0	15	135	0	0	0	05
111	0	0	0	0	1	0	0	0	0	2	0	0	5	0	0	0	0	0	7	6	3	0	0	2	0	15	115	0	0	0	05
112	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0	0	0	0	7	0	3	0	0	2	0	00	221	0	0	0	05
113	0	0	0	0	1	0	0	0	0	2	0	0	5	0	0	0	0	0	7	0	3	0	0	2	0	00	221	0	0	0	05
114	0	0	0	0	0	3	0	4	3	2	0	2	5	0	0	0	0	0	6	0	0	0	3	6	0	01	131	0	0	0	06
115	0	0	0	0	0	3	0	1	3	2	0	2	5	0	0	0	0	0	0	0	0	0	3	6	0	01	121	0	0	0	06
116	0	0	0	0	1	0	0	0	0	0	0	0	6	0	1	0	0	0	7	0	1	0	3	2	0	00	006	0	0	0	06
117	0	0	0	0	1	0	0	0	0	2	0	0	6	0	1	0	0	0	7	0	3	0	0	2	0	00	006	0	0	0	06
120	1	1	0	0	0	0	0	0	0	2	0	0	0	0	1	3	0	6	0	0	0	0	0	2	0	02	152	0	0	0	12
121	0	0	0	0	1	0	0	0	0	2	0	0	5	0	0	0	0	0	7	6	3	0	0	2	2	15	157	0	0	0	06
122	1	0	0	0	0	0	0	0	0	2	0	0	5	0	0	0	0	0	7	6	2	0	0	2	2	15	157	0	0	0	06
123	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	7	7	3	0	0	2	0	00	132	0	0	0	11
124	1	1	0	0	0	3	0	0	0	2	0	0	0	0	1	3	0	7	0	0	0	1	1	1	0	00	354	0	0	0	12
125	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	1	0	0	2	0	16	216	0	0	0	10
126	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240	0	0	0	01
127	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	1	0	0	2	0	02	253	0	0	0	03

TITLE ROM & ADDR. CONTROL | SIZE D | CODE CS | NUMBER M8123-Ø-1 | REV B

SCALE | SHEET 12 OF 14

ROM & ADDR. CONTROL

SIZE	CODE	NUMBER	REV
D	CS	M8123-Ø-1	B

SHEET 13 OF 14

	BRK	BRX	BRI	DRX	SRB	DRK	CCL	PCA	PCB	SHF	IPF	PWE	PAD	RSD	BAX	IBS	SHC	BCT	MSC	BSC	AMX	BMX	KMX	ALU	FEN	BEN	UAD	FPS	CLR	FPC	PGE
260	1	1	0	0	0	0	0	1	1	2	1	0	0	1	1	0	0	0	0	0	1	0	1	3	0	00	343	0	0	3	01
261	0	0	1	1	1	0	0	0	0	2	0	0	4	0	0	0	0	0	0	0	2	0	0	3	0	00	104	0	0	0	05
262	0	0	0	0	0	0	0	0	0	2	0	2	0	0	1	0	0	0	7	0	2	0	0	4	0	12	240	0	0	0	02
263	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	00	145	0	0	0	04
264	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	00	011	0	0	0	03
265	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	7	0	0	0	0	7	0	00	362	0	0	0	15
266	1	0	0	0	0	1	4	0	0	1	0	0	0	0	0	0	1	0	0	0	1	2	0	3	0	11	206	0	0	0	00
267	0	0	0	0	1	1	1	0	0	3	0	2	0	0	0	0	1	0	0	0	2	0	0	2	0	03	227	0	0	0	07
270	0	0	0	1	1	0	0	1	0	2	0	0	0	0	2	0	0	0	0	0	1	0	0	3	0	00	230	0	0	0	14
271	1	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	05	121	0	0	0	11
272	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	3	0	00	104	0	0	0	09
273	0	0	0	0	0	3	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	00	011	0	0	0	03
274	0	0	0	0	0	1	0	0	0	2	0	2	7	0	0	0	0	0	0	0	0	0	1	6	0	00	275	0	0	0	11
275	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	5	7	5	3	0	0	2	0	00	032	0	0	0	16
276	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	04	351	0	0	0	10
277	0	0	0	0	1	0	1	0	0	3	0	2	0	0	1	0	1	0	6	0	2	0	0	2	0	03	237	0	0	0	07
300	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	6	5	3	0	0	3	0	00	217	0	0	0	13
301	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1	0	0	7	0	0	0	0	0	7	0	00	210	0	0	0	03
302	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	00	352	0	0	0	12
303	0	0	0	0	0	3	0	0	0	2	0	0	0	3	2	0	0	0	0	5	3	0	0	2	0	00	236	0	0	0	16
304	1	0	1	0	1	0	1	0	0	2	0	0	7	0	0	0	0	0	0	0	0	0	0	2	0	06	236	0	0	0	11
305	0	0	0	0	0	0	4	0	0	2	0	0	0	0	0	0	1	0	6	0	2	0	0	2	0	03	217	0	0	0	07
306	0	0	0	0	0	0	4	0	0	2	0	0	0	0	0	0	1	0	6	0	2	0	0	2	0	03	207	0	0	0	07
307	1	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	1	6	0	0	0	0	2	0	00	227	0	0	1	13
310	0	0	0	0	0	0	1	0	0	2	0	2	4	0	1	0	0	0	7	0	0	0	0	2	0	12	200	0	0	0	00
311	1	0	0	0	0	0	0	0	0	2	0	0	6	0	0	0	0	0	7	6	2	0	0	2	2	15	157	0	0	0	06
312	0	0	0	0	0	0	1	0	0	2	0	0	5	0	1	0	0	0	7	0	3	0	0	2	0	12	240	0	0	0	05
313	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	05	140	0	0	0	04
314	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	3	0	0	2	4	00	377	0	0	1	02
315	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	00	302	0	0	0	12
316	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	3	0	3	0	0	2	0	06	120	0	0	0	03
317	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	3	0	0	2	0	00	143	0	0	0	02
320	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217	0	0	0	01
321	1	1	0	0	0	0	0	1	1	2	1	0	0	3	1	0	0	0	6	0	1	0	1	3	0	00	343	0	0	3	01
322	1	1	0	0	0	0	0	1	1	2	1	0	0	3	1	0	0	0	6	0	1	0	1	3	0	00	343	0	0	3	01
323	1	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3	2	0	6	0	03	126	0	0	0	04
324	1	1	0	0	0	0	0	1	1	2	1	0	0	3	1	0	0	0	6	0	1	0	1	3	0	00	343	0	0	3	01
325	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217	0	0	0	01
326	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217	0	0	0	01
327	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	6	0	0	0	0	2	0	17	307	0	0	0	13
330	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217	0	0	0	01
331	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	3	0	6	0	12	200	0	0	0	02
332	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240	0	0	0	01
333	1	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	1	6	0	0	0	0	2	0	00	300	0	0	0	06

	BRK	BRX	SPX	DRX	SRF	DRK	CCL	PCA	PCB	SHF	IRX	PWE	PAD	RSD	BAX	IBS	SHC	BCT	MSC	BSC	AMX	BMX	KMX	ALU	FEN	BEN	UAD	FPS	CLR	FPC	PGE
334	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240	0	0	0	01
335	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217	0	0	0	01
336	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	7	6	0	1	1	3	3	0	00	217	0	0	0	01
337	0	0	0	2	0	3	0	0	0	1	0	0	5	0	2	0	0	0	0	0	0	0	0	0	0	00	230	0	0	0	14
340	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2	0	0	0	7	0	3	0	0	2	0	00	141	0	0	0	13
341	1	1	0	0	0	0	0	0	0	1	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	00	215	0	0	0	12
342	1	1	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	1	4	0	0	0	2	0	00	225	0	0	0	15
343	0	0	2	2	1	3	0	1	0	1	0	0	1	0	1	0	0	0	5	0	1	0	1	3	1	00	377	0	1	2	01
344	0	0	0	0	0	0	0	0	0	2	0	2	7	0	1	0	0	0	0	0	2	0	1	3	0	00	140	0	0	0	12
345	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	00	354	0	0	0	12
346	1	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3	2	0	6	0	00	315	0	0	0	09
347	1	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0	00	150	0	1	2	13
350	0	0	0	0	0	0	4	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	00	144	0	0	0	10
351	0	0	1	0	1	3	4	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	00	220	0	0	0	10
352	1	1	0	0	1	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	1	0	0	2	0	12	130	0	0	0	12
353	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	3	0	00	145	0	0	0	10
354	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	3	2	3	0	0	2	0	00	355	0	0	0	12
355	1	1	0	0	0	3	0	0	0	2	0	0	0	3	0	0	0	0	0	2	0	0	1	3	0	00	065	0	0	0	15
356	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	7	0	0	1	0	1	0	00	154	0	0	0	12
357	1	1	0	0	0	3	0	1	1	1	0	0	0	3	0	0	0	0	0	2	3	0	0	2	0	00	360	0	0	0	11
360	1	0	0	0	0	0	0	1	0	2	0	0	7	0	0	2	0	0	0	2	0	0	0	2	0	00	376	0	0	0	13
361	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	3	7	0	0	0	0	0	0	00	260	0	0	0	03
362	1	1	0	0	0	3	0	0	0	2	0	0	0	3	0	0	0	0	1	4	0	0	1	1	0	07	307	0	0	0	15
363	1	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3	2	0	1	0	03	125	0	0	0	09
364	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	00	364	0	0	0	00
365	0	0	0	0	0	0	0	0	0	2	0	2	5	0	1	0	0	3	7	0	3	0	0	2	0	12	240	0	0	0	04
366	1	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3	2	0	3	0	00	313	0	0	0	09
367	1	1	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	1	7	4	0	0	0	0	0	10	342	0	1	0	15
370	0	0	0	0	0	0	0	0	0	2	0	3	4	0	0	0	0	0	0	0	3	0	0	3	0	00	351	0	0	0	15
371	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	3	0	0	3	0	00	350	0	0	0	10
372	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	00	315	0	0	0	12
373	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	3	7	0	2	2	0	6	0	12	240	0	0	0	01
374	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	2	6	0	0	0	0	2	0	10	334	0	1	0	03
375	0	0	0	0	0	0	0	1	1	2	0	2	5	0	2	0	0	0	6	0	3	0	0	2	0	00	211	0	0	0	02
376	0	0	0	1	0	3	0	0	0	1	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	00	037	0	0	0	13
377	0	0	0	0	0	3	0	1	1	2	0	2	5	0	2	0	0	0	0	0	3	0	0	2	0	00	230	0	0	0	14

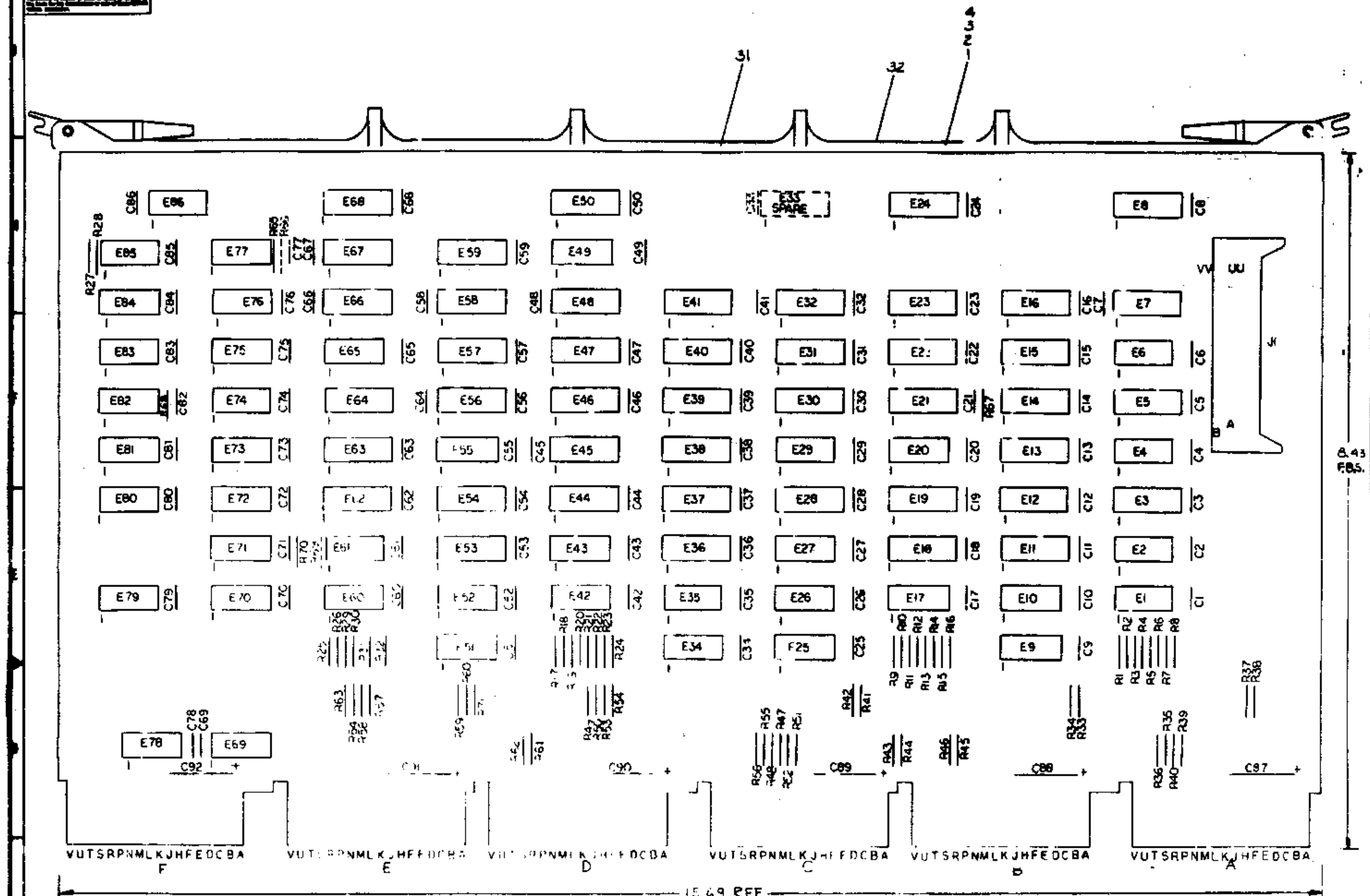
TITLE: ROM & ADDR. CONTROL

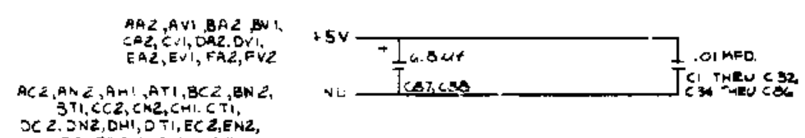
SIZE: D | CODE: CS | NUMBER: M8123-Ø-1 | REV: B

SCALE | SHEET [illegible] OF 14

NOTES:

1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω AND CAPACITANCE IS IN PICOFARADS. CAPS. WITHOUT VALUE NOTED .01 MFD





PARTS LIST

QTY	REF DESIGNATION	DESCRIPTION	PART NO	NO.
1		HANDLE, MODULE	E-PS-1210711-2	32
12		EYELET	9006732	31
1	J1	CONN 40PIN BERG	1209941	30
2	E47, E59	IC DEC 74175	1910651	29
4	E8, E24, E50, E68	IC DEC 7485	1910644	28
12	E11, E13, E15, E18, E22, E36, E38, E48, E53, E57, E63, E67	IC DEC 74S174	1910550	27
1	E31	IC DEC 74S157	1910548	26
24	E3, E5, E7, E12, E14, E16, E19, E21, E23, E28, E30, E32, E37, E39, E41, E44, E46, E48, E54, E56, E58, E62, E64, E66	IC DEC 74S153	1910547	25
7	E6, E49, E69, E80, E82, E83, E85	IC DEC 74S74	1910544	24
1	E79	IC DEC 74S40	1910541	23
1	E71	IC DEC 74S20	1910539	22
8	E4, E10, E29, E35, E52, E55, E65, E75	IC DEC 74S04	1910534	21
2	E20, E77	IC DEC 74S11	1910537	20
3	E70, E73, E86	IC DEC 74S10	1910536	19
1	E72	IC DEC 74S00	1910532	18
1	E40	IC DEC 9318	1910454	17
8	E9, E17, E25, E34, E51, E78, E81, E84	IC DEC 74H01	1909849	16
4	E1, E26, E42, E60	IC DEC 8881	1909705	15
4	E2, E27, E43, E61	IC DEC 380	1909485	14
1	E74	IC DEC 74H50	1909060	13
1	E76	IC DEC 74H40	1905586	12
1	R68	RESISTOR 390Ω, 1/4W, 5%	1300309	11
1	R67	RESISTOR 180Ω, 1/4W, 5%	1301322	10
3	R65, R70, R71	RESISTOR 150Ω, 1/4W, 5%	1300250	9
32	R1, R3, R5, R7, R9, R11, R13, R15, R17, R19, R21, R23, R25, R27, R29, R31, R33, R35, R37, R39, R41, R43, R45, R47, R49, R51, R53, R55, R57, R59, R61, R63	RESISTOR 330Ω, 1/4W, 5%	1300295	8
32	R2, R4, R6, R8, R10, R12, R14, R16, R18, R20, R22, R24, R26, R28, R30, R32, R34, R36, R38, R40, R42, R44, R46, R48, R50, R52, R54, R56, R58, R60, R62, R64	RESISTOR 680Ω, 1/4W, 5%	1301424	7
85	C1 THRU C32, C34 THRU C86	CAPACITOR .01 MF, 50V, 20% AXIAL	1000610	6
6	C87 THRU C92,	CAPACITOR 6.8 MF, 35V, 10% TANT	1005306	5
1		ETCHED CIRCUIT BOARD	5008104	4
REF		MODULE ECO HISTORY	B-MH-M8104-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8104-0-8	2
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8104-0-4	1

ETCH BOARD REV C

DEC 74S153	8	16
DEC 74175	8	16
DEC 7485	8	16
DEC 74S174	8	16
DEC 74S157	8	16
DEC 9318	8	16
DEC 380	1	8
IC TYPE		

SEMICONDUCTOR CONVERSION CHART

EQUIPMENT CORPORATION

PROCESSOR DATA & UNIBUS REGS.

8-DD-11/45-0

E-CS-M8104-0-1 C

79

BRMX (Ø1:ØØ) 74S153 E3 — DAPF SHFRØ1 H, SMCE MEM DØ1 H, PDRA INTDØ1 H, DAPF SHFRØØ H, SMCE MEM DØØ H, PDRA INTDØØ H, PDRJ DØ1 H, PDRJ DØØ H → AM2 PDRA BRMXØ1 H, BM2 PDRA BRMXØØ H

BRMX (Ø3:Ø2) 74S153 E12 — DAPF SHFRØ3 H, SMCE MEM DØ3 H, PDRA INTDØ3 H, DAPF SHFRØ2 H, SMCE MEM DØ2 H, PDRA INTDØ2 H, PDRJ DØ3 H, PDRJ DØ2 H → APZ PDRA BRMXØ3 H, BDZ PDRA BRMXØ2 H

BRMX (Ø5:Ø4) 74S153 E19 — DAPF SHFRØ5 H, SMCE MEM DØ5 H, PDRA INTDØ5 H, PDRJ DØ5 H, DAPF SHFRØ4 H, SMCE MEM DØ4 H, PDRA INTDØ4 H, PDRJ DØ4 H → BN1 PDRA BRMXØ5 H, BP2 PDRA BRMXØ4 H

BRMX (Ø7:Ø6) 74S153 E28 — DAPJ SHFRØ7 H, SMCE MEM DØ7 H, PDRA INTDØ7 H, PDRJ DØ7 H, DAPF SHFRØ6 H, SMCE MEM DØ6 H, PDRA INTDØ6 H, PDRJ DØ6 H → BM2 PDRA BRMXØ7 H, CF1 PDRA BRMXØ6 H

BRMX (09:08) 74S153 E37 — DAPH SHFR09 H, SMCE MEM DØ9 H, PDRA INTDØ9 H, PDRJ DØ9 H, DAPH SHFRØ8 H, SMCE MEM DØ8 H, PDRA INTDØ8 H, PDRJ DØ8 H → CR2 PDRA BRMXØ9 H, CR1 PDRA BRMXØ8 H

BRMX (11:10) 74S153 E44 — DAPH SHFR11 H, SMCE MEM D11 H, PDRA INTD 11 H, PDRJ D11 H, DAPH SHFR10 H, SMCE MEM D 10 H, PDRA INTD 10 H, PDRJ D10 H → DC1 PDRA BRMX11 H, DD1 PDRA BRMX10 H

BRMX (13:12) 74S153 E54 — DAPH SHFR13 H, SMCE MEM D13 H, PDRA INTD13 H, PDRJ D13 H, DAPH SHFR12 H, SMCE MEM D 12 H, PDRA INTD12 H, PDRJ D12 H → DS2 PDRA BRMX13 H, EM2 PDRA BRMX12 H

BRMX (15:14) 74S153 E62 — DAPJ SHFR15 H, SMCE MEM D15 H, PDRA INTD15 H, PDRJ D15 H, DAPH SHFR14 H, SMCE MEM D14 H, PDRA INTD14 H, PDRJ D14 H → ES1 PDRA BRMX15 H, EL2 PDRA BRMX14 H

PDRA BRMXØ1 H
PDRA BRMXSØ H

TMCF SEL MEM L, RACA 1/BRX H → 74S00 E72 → PDRA BRMXSI H
TMCF SEL INT L → 74S00 E72 → PDRA BRMXSØ H

BUS INTDØ3 L → 74S04 E10 → PDRA INTDØ3 H
BUS INTDØ2 L → 74S04 E10 → PDRA INTDØ2 H
BUS INTDØ1 L → 74S04 E10 → PDRA INTDØ1 H
BUS INTDØØ L → 74S04 E10 → PDRA INTDØØ H

BUS INTDØ7 L → 74S04 E35 → PDRA INTDØ7 H
BUS INTDØ6 L → 74S04 E10 → PDRA INTDØ6 H
BUS INTDØ5 L → 74S04 E10 → PDRA INTDØ5 H
BUS INTDØ4 L → 74S04 E35 → PDRA INTDØ4 H

BUS INTD12 L → 74S04 E52 → PDRA INTD12 H
BUS INTD11 L → 74S04 E35 → PDRA INTD11 H
BUS INTD10 L → 74S04 E35 → PDRA INTDØ H
BUS INTDØ9 L → 74S04 E35 → PDRA INTDØ9 H
BUS INTDØ8 L → 74S04 E35 → PDRA INTDØ8 H

BUS INTD15 L → 74S04 E52 → PDRA INTD16 H
BUS INTD14 L → 74S04 E52 → PDRA INTD14 H
BUS INTD13 L → 74S04 E52 → PDRA INTD13 H

BRMX S, SØ
L L BUSA DATA
L H INTD
H L MEMD
H H SHFR

REVISIONS

REV	CHANGE NO.	DWN

BUS REGISTER MULTIPLEXER SLOT IØ

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS: XXX ± .005, XX ± .02, X ± .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS BUT FACE QUALITY ✓
MATERIAL —
FINISH —

DRN. — DATE 7-16-71
CHK'D. — DATE 7/17/72
ENG. — DATE 7-17-72
PROJ. ENG. — DATE 7-17-72
PROD. — DATE 8-15-72

NEXT HIGHER ASSY. B-DD-11/45-Ø
SCALE —
SHEET 2 OF 9

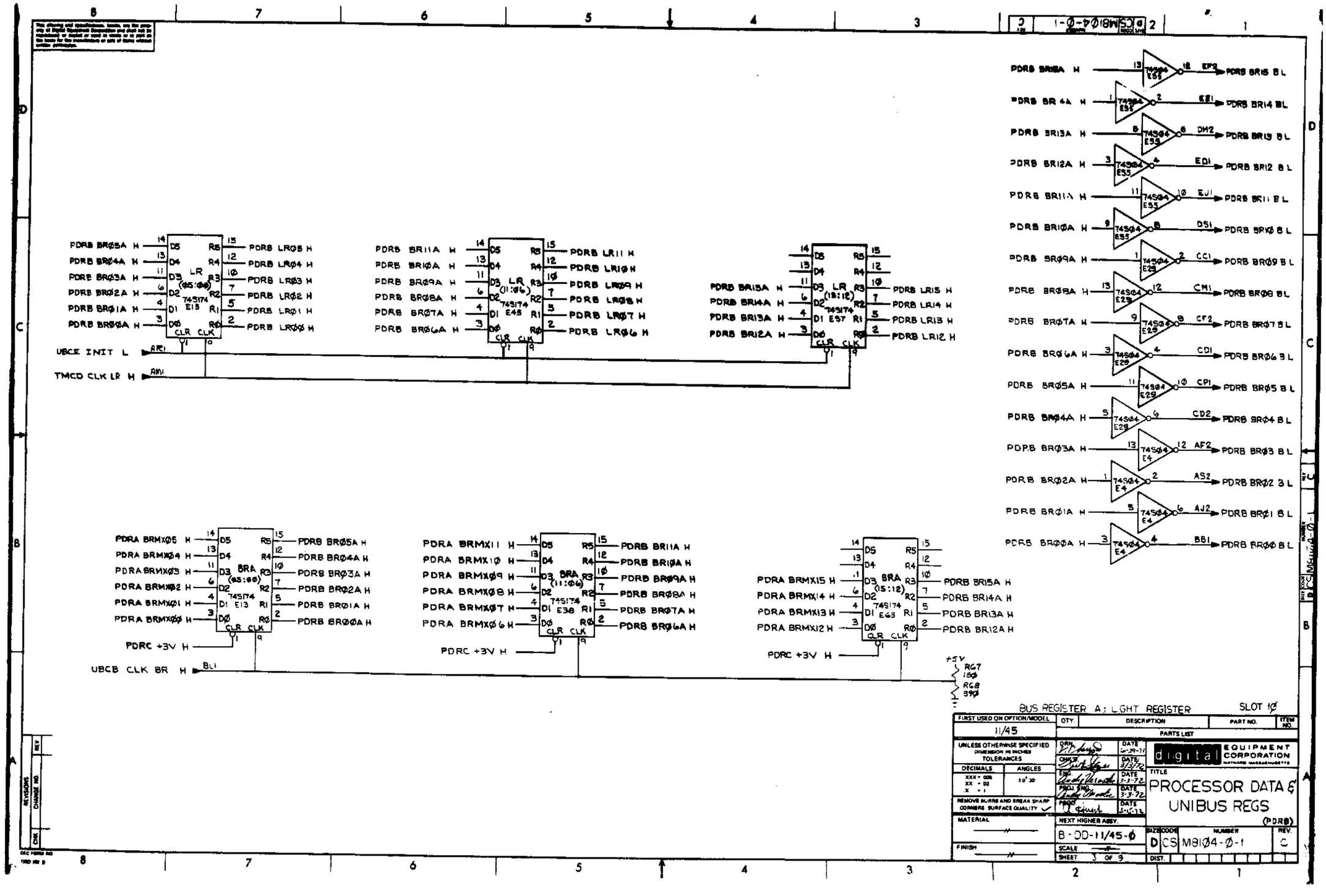
digital EQUIPMENT CORPORATION

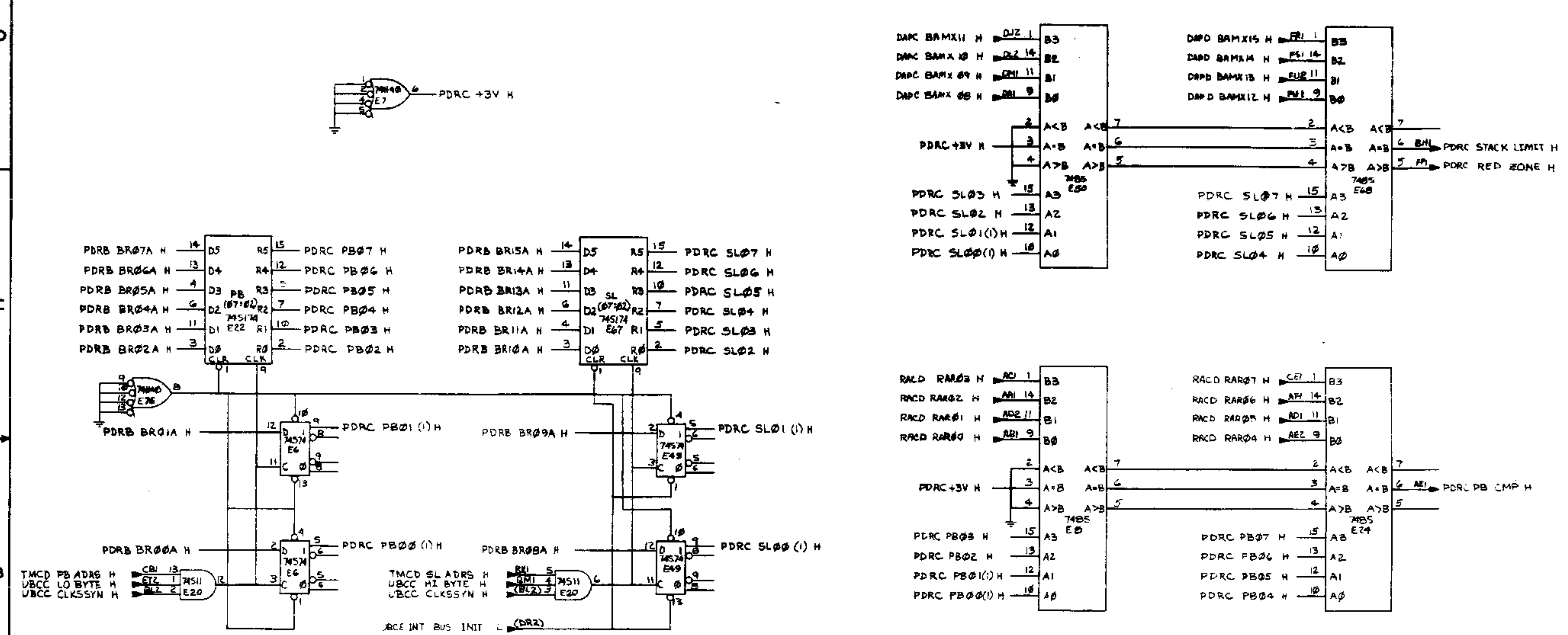
TITLE PROCESSOR DATA & UNIBUS REGS (PORA)

SIZE D | CODE DCS | NUMBER MB1Ø4-Ø-1 | REV C

DIST.

80


PDRB BR05A H
PDRB BR04A H
PDRB BR03A H
PDRB BR02A H
PDRB BR01A H
PDRB BR00A H
LR (05:00)
E15
PDRB LR05 H
PDRB LR04 H
PDRB LR03 H
PDRB LR02 H
PDRB LR01 H
PDRB LR00 H
UBCE INIT L
TMCD CLK LR H
PDRB BR11A H
PDRB BR10A H
PDRB BR09A H
PDRB BR08A H
PDRB BR07A H
PDRB BR06A H
LR (11:06)
E48
PDRB LR11 H
PDRB LR10 H
PDRB LR09 H
PDRB LR08 H
PDRB LR07 H
PDRB LR06 H
PDRB BR15A H
PDRB BR14A H
PDRB BR13A H
PDRB BR12A H
LR (15:12)
E57
PDRB LR15 H
PDRB LR14 H
PDRB LR13 H
PDRB LR12 H
PDRB BR15A H
PDRB BR14A H
PDRB BR13A H
PDRB BR12A H
PDRB BR11A H
PDRB BR10A H
PDRB BR09A H
PDRB BR08A H
PDRB BR07A H
PDRB BR06A H
PDRB BR05A H
PDRB BR04A H
PDRB BR03A H
PDRB BR02A H
PDRB BR01A H
PDRB BR00A H
PDRB BR15 B L
PDRB BR14 B L
PDRB BR13 B L
PDRB BR12 B L
PDRB BR11 B L
PDRB BR10 B L
PDRB BR09 B L
PDRB BR08 B L
PDRB BR07 B L
PDRB BR06 B L
PDRB BR05 B L
PDRB BR04 B L
PDRB BR03 B L
PDRB BR02 B L
PDRB BR01 B L
PDRB BR00 B L
PDRA BRMX05 H
PDRA BRMX04 H
PDRA BRMX03 H
PDRA BRMX02 H
PDRA BRMX01 H
PDRA BRMX00 H
BRA (05:00)
E13
PDRB BR05A H
PDRB BR04A H
PDRB BR03A H
PDRB BR02A H
PDRB BR01A H
PDRB BR00A H
PDRC +3V H
UBCB CLK BR H
PDRA BRMX11 H
PDRA BRMX10 H
PDRA BRMX09 H
PDRA BRMX08 H
PDRA BRMX07 H
PDRA BRMX06 H
BRA (11:06)
E38
PDRB BR11A H
PDRB BR10A H
PDRB BR09A H
PDRB BR08A H
PDRB BR07A H
PDRB BR06A H
PDRC +3V H
PDRA BRMX15 H
PDRA BRMX14 H
PDRA BRMX13 H
PDRA BRMX12 H
BRA (15:12)
E63
PDRB BR15A H
PDRB BR14A H
PDRB BR13A H
PDRB BR12A H
PDRC +3V H
+5V
RG7 180Ω
RG8 390Ω
BUS REGISTER A; LIGHT REGISTER
SLOT 10
FIRST USED ON OPTION/MODEL
11/45
QTY.
DESCRIPTION
PART NO.
ITEM NO.
PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS
ANGLES
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
MATERIAL
FINISH
DRN.
CHK'D.
ENG.
PROJ. ENG.
PROG.
digital EQUIPMENT CORPORATION
TITLE
PROCESSOR DATA & UNIBUS REGS
(PDRB)
NEXT HIGHER ASSY.
B-DD-11/45-0
SIZE
CODE
NUMBER
REV.
D CS M8104-0-1 C
SCALE
SHEET 3 OF 9
DIST.
REVISIONS
REV
CHANGE NO
CHK



PROGRAM BREAK & STACK LIMIT REGISTERS SLOT 10

FIRST USED ON OPTION/MODEL: 11/45

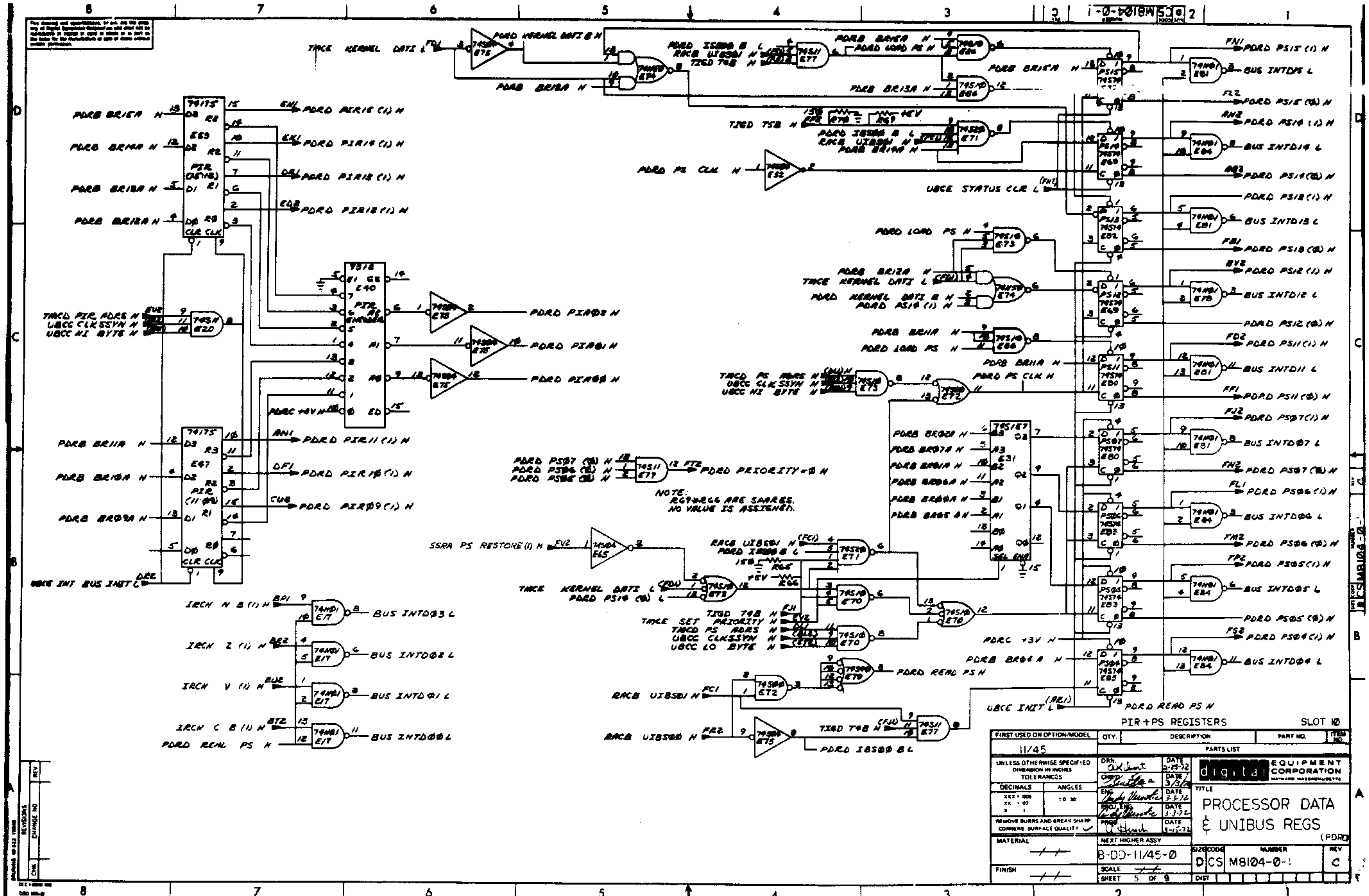
digital EQUIPMENT CORPORATION

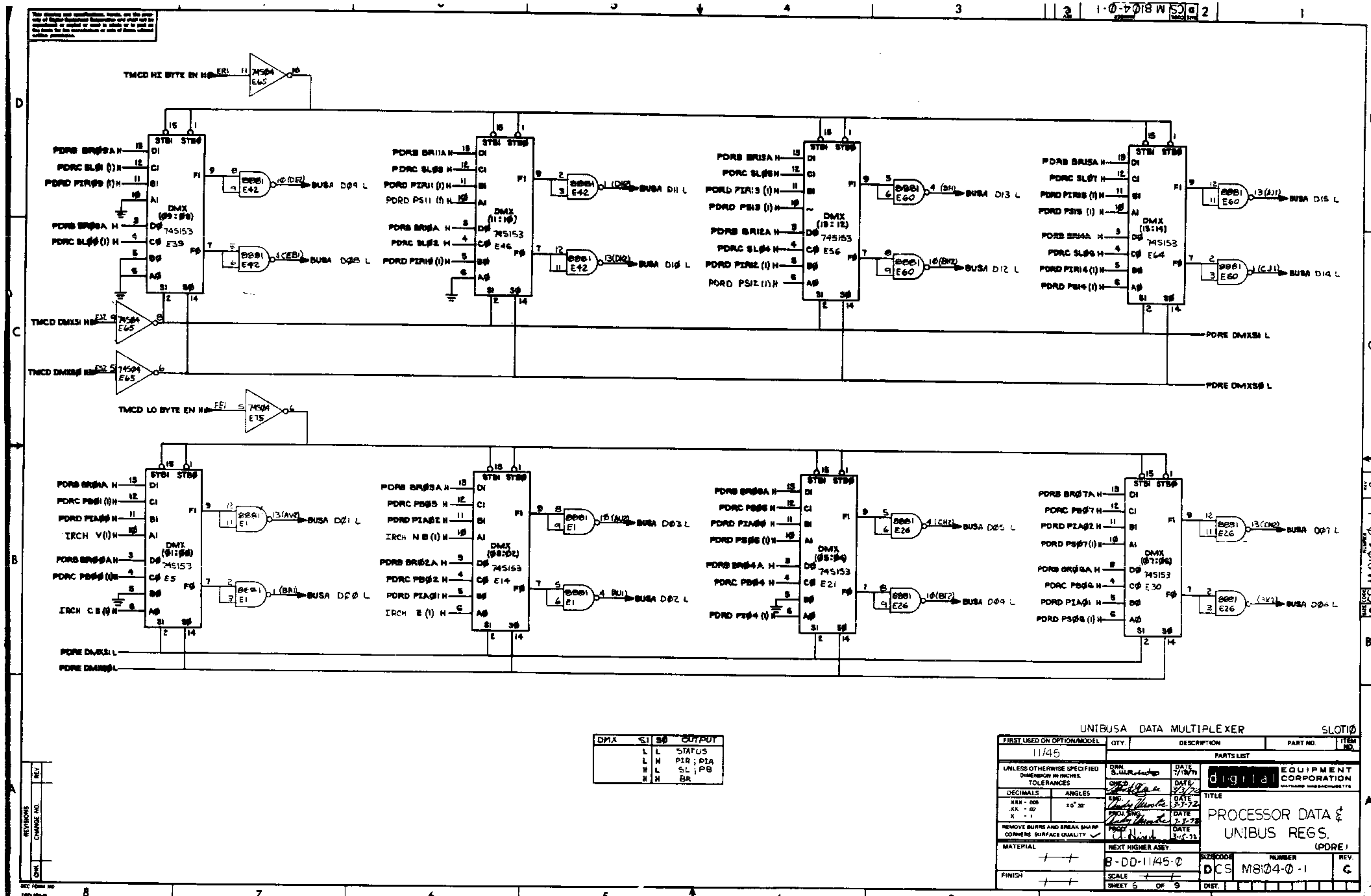
TITLE: PROCESSOR DATA & UNIBUS REGS (PDRC)

NEXT HIGHER ASSY: B-DD-11/45-0

SIZE: D CODE: CS NUMBER: M8104-0-1 REV: C

SHEET 4 OF 5


PIR + PS REGISTERS
SLOT 10
NOTE: RGTHRGG ARE SPARES. NO VALUE IS ASSIGNED.
11/45
EQUIPMENT CORPORATION
PROCESSOR DATA & UNIBUS REGS (PDR)
B-DD-11/45-0
D CS M8104-0-1 C
SHEET 5 OF 9



DMX	S1	S0	OUTPUT
	L	L	STATUS
	L	H	PIR ; PIA
	H	L	SL ; PB
	H	H	BR

FIRST USED ON OPTION/MODEL: 11/45

NEXT HIGHER ASSY: B-DD-11/45-0

digital EQUIPMENT CORPORATION

TITLE: PROCESSOR DATA & UNIBUS REGS. (PDRE)

SIZE D, CODE CS, NUMBER M8104-0-1, REV. C

SHEET 6 OF 9

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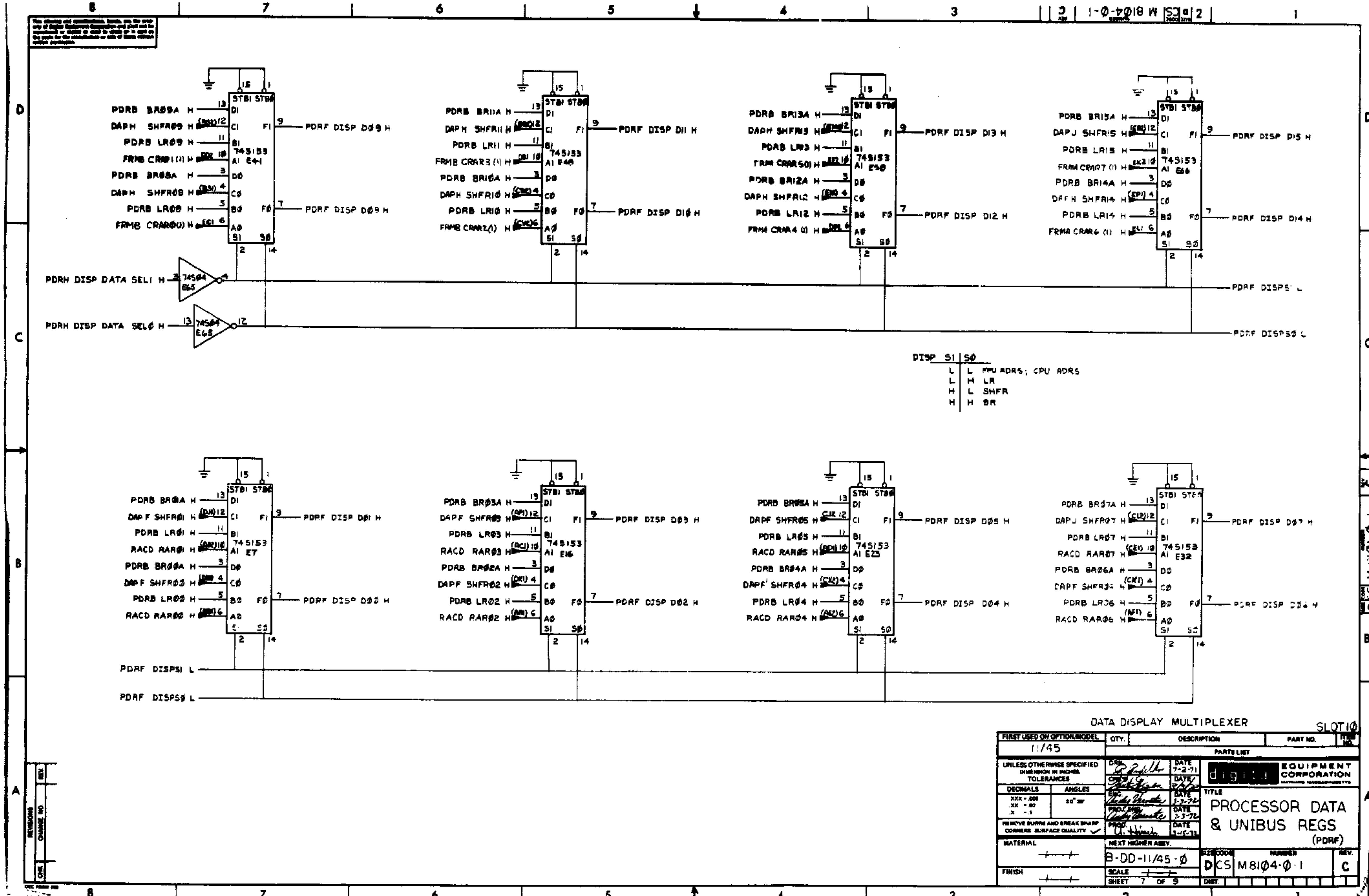
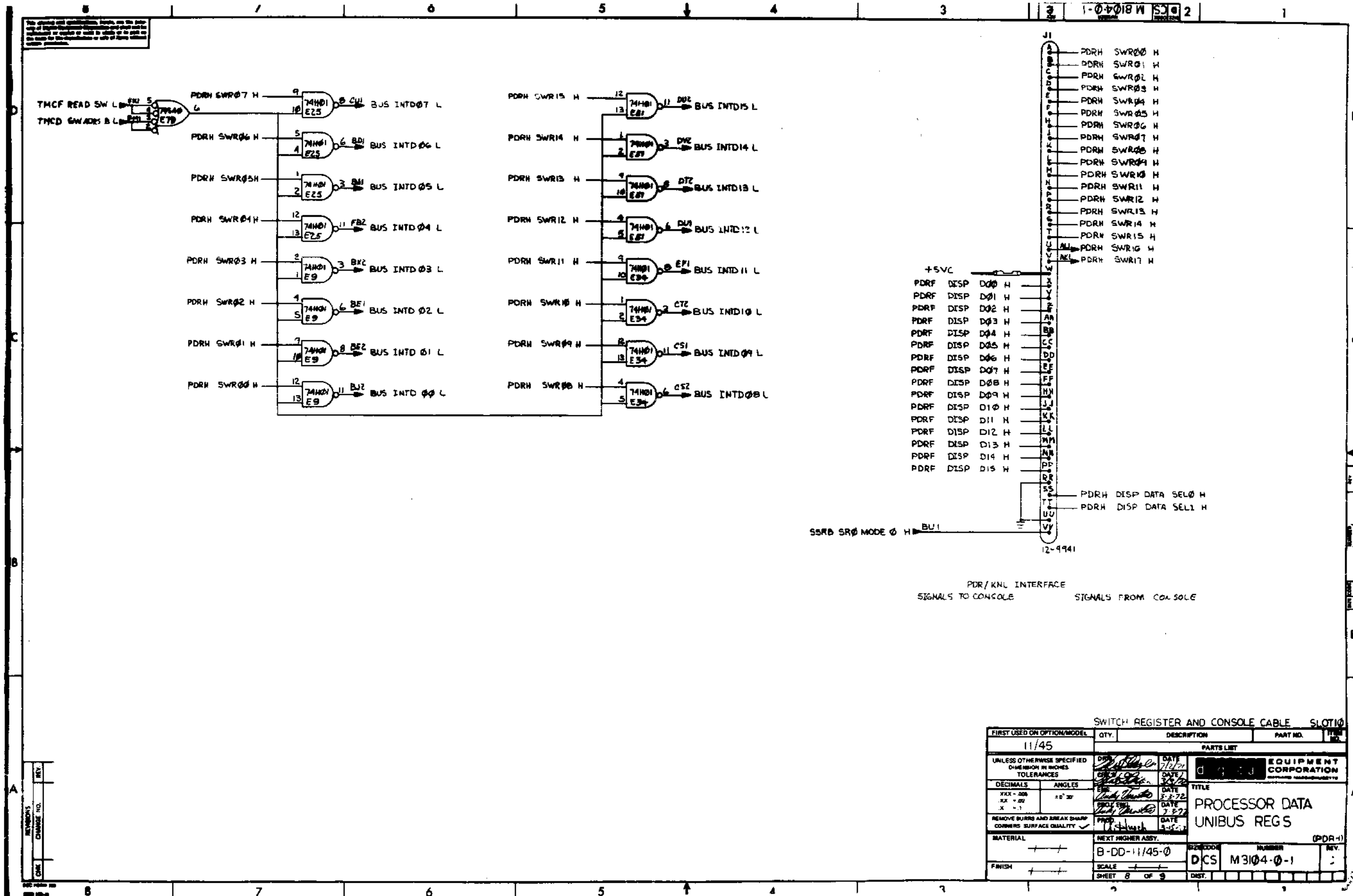
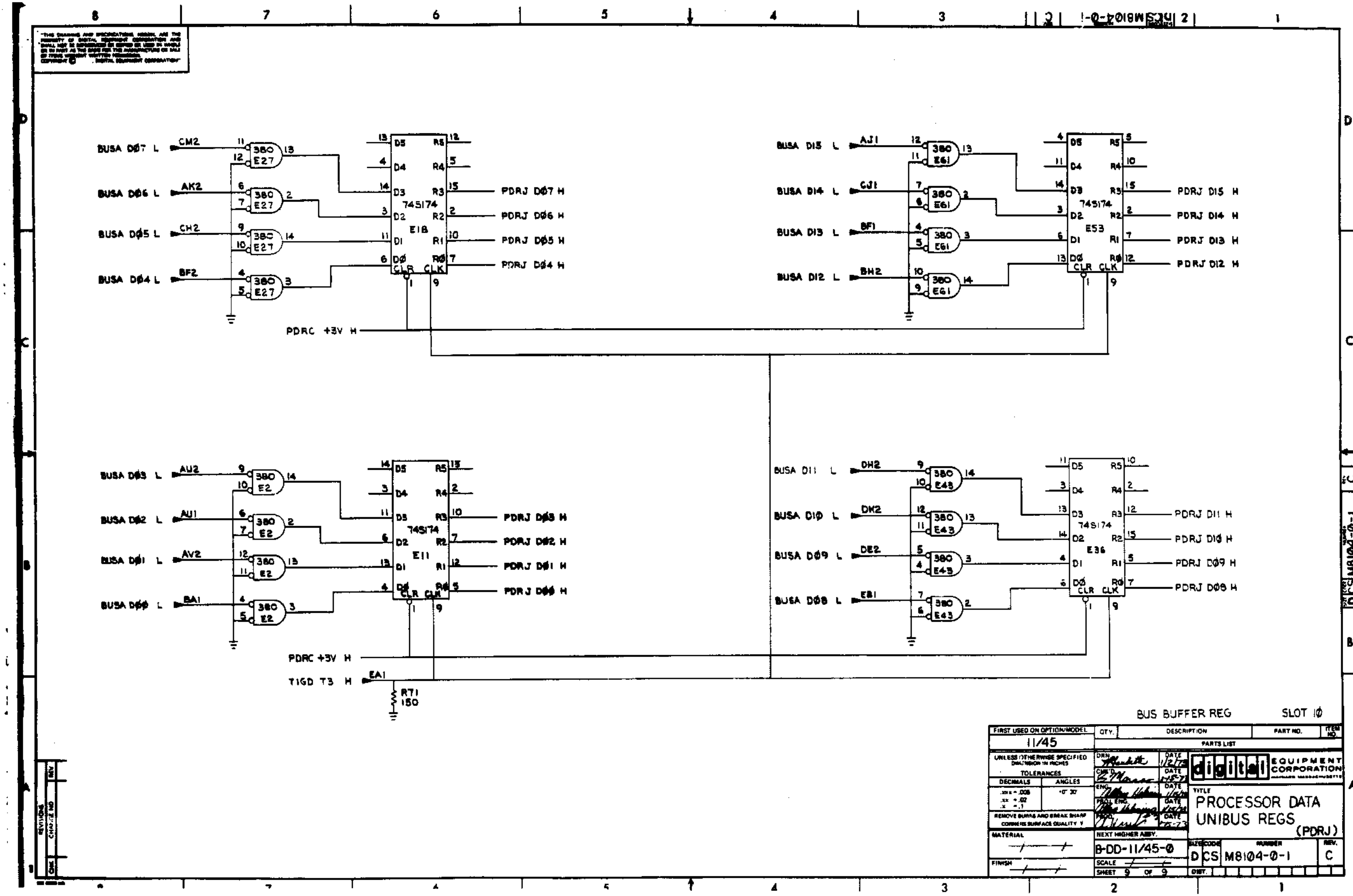


PDRB BR09A H
DAPH SHFR09 H
PDRB LR09 H
FRMB CRAR1(1) H
PDRB BR08A H
DAPH SHFR08 H
PDRB LR08 H
FRMB CRAR0(1) H
74S153 E41
PDRF DISP D09 H
PDRF DISP D08 H
PDRB BR11A H
DAPH SHFR11 H
PDRB LR11 H
FRMB CRAR3(1) H
PDRB BR10A H
DAPH SHFR10 H
PDRB LR10 H
FRMB CRAR2(1) H
74S153 E48
PDRF DISP D11 H
PDRF DISP D10 H
PDRB BR13A H
DAPH SHFR13 H
PDRB LR13 H
PDRB BR12A H
DAPH SHFR12 H
PDRB LR12 H
74S153 E58
PDRF DISP D13 H
PDRF DISP D12 H
PDRB BR15A H
DAPJ SHFR15 H
PDRB LR15 H
FRMM CRAR7 (1) H
PDRB BR14A H
DAPH SHFR14 H
PDRB LR14 H
FRMM CRAR6 (1) H
74S153 E66
PDRF DISP D15 H
PDRF DISP D14 H
PDRH DISP DATA SEL1 H
PDRH DISP DATA SEL0 H
74S04 E65
PDRF DISPS1 L
PDRF DISPS0 L
DISP S1 S0
L L FPU ADRS; CPU ADRS
L H LR
H L SHFR
H H BR
PDRB BR01A H
DAPF SHFR01 H
PDRB LR01 H
RACD RAR01 H
PDRB BR00A H
DAPF SHFR00 H
PDRB LR00 H
RACD RAR00 H
74S153 E7
PDRF DISP D01 H
PDRF DISP D00 H
PDRB BR03A H
DAPF SHFR03 H
PDRB LR03 H
RACD RAR03 H
PDRB BR02A H
DAPF SHFR02 H
PDRB LR02 H
RACD RAR02 H
74S153 E16
PDRF DISP D03 H
PDRF DISP D02 H
PDRB BR05A H
DAPF SHFR05 H
PDRB LR05 H
RACD RAR05 H
PDRB BR04A H
DAPF SHFR04 H
PDRB LR04 H
RACD RAR04 H
74S153 E25
PDRF DISP D05 H
PDRF DISP D04 H
PDRB BR07A H
DAPJ SHFR07 H
PDRB LR07 H
RACD RAR07 H
PDRB BR06A H
PDRB LR06 H
RACD RAR06 H
74S153 E32
PDRF DISP D07 H
PDRF DISPS1 L
PDRF DISPS0 L
DATA DISPLAY MULTIPLEXER
SLOT10
FIRST USED ON OPTION/MODEL 11/45
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS ANGLES
MATERIAL
FINISH
NEXT HIGHER ASSY. B-DD-11/45-0
SHEET 7 OF 9
EQUIPMENT CORPORATION
TITLE PROCESSOR DATA & UNIBUS REGS (PDRF)
D CS M8104-0-1 C

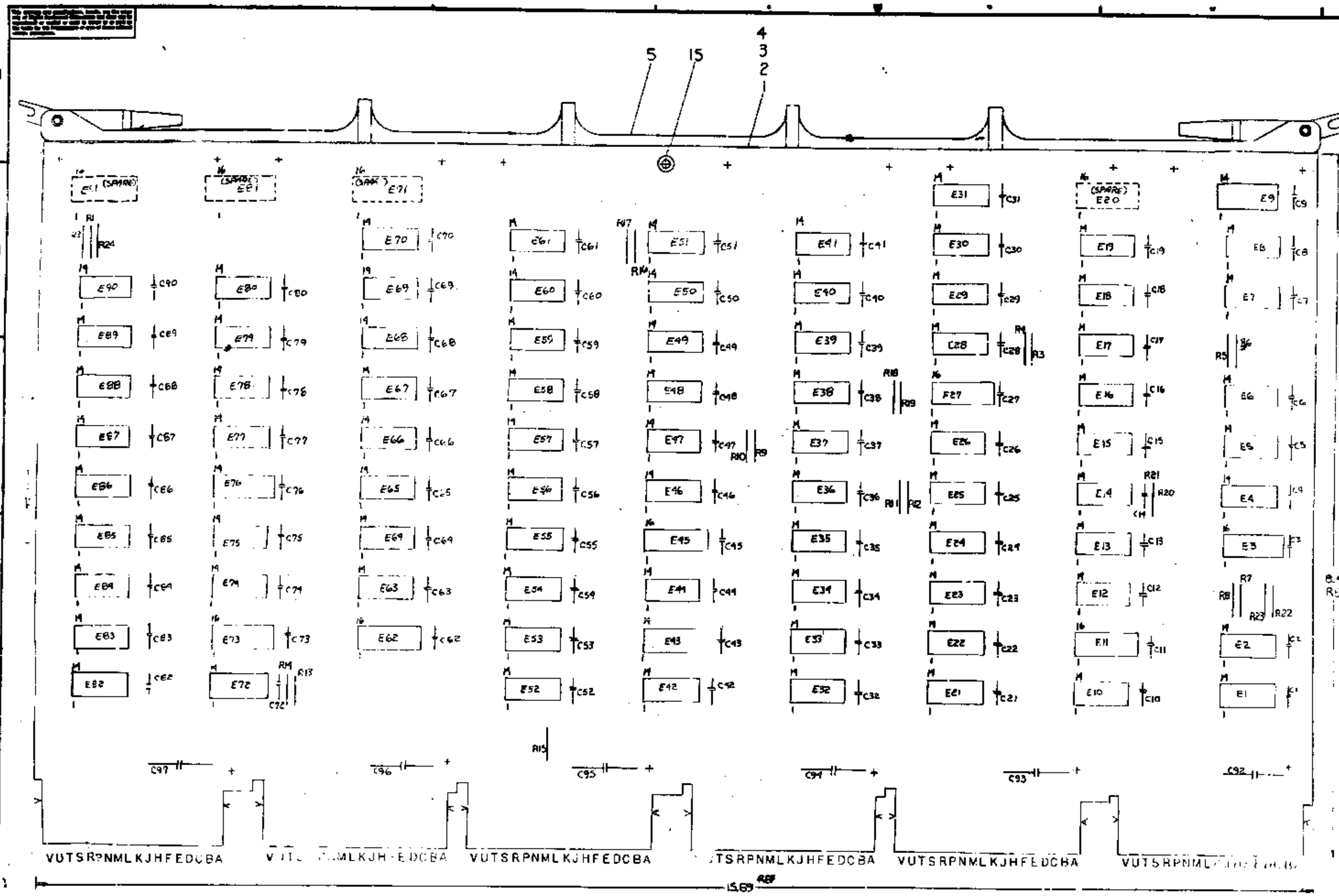
85

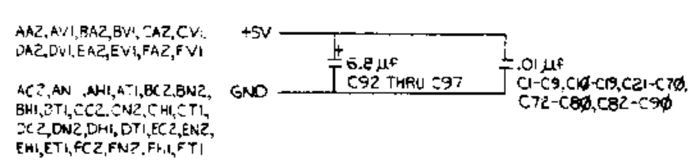


THCF READ SW L
THCD SWADRS B L
74H40
E79
PDRH SWR07 H
74H01 E25
BUS INTD07 L
PDRH SWR06 H
BUS INTD06 L
PDRH SWR05 H
BUS INTD05 L
PDRH SWR04 H
BUS INTD04 L
PDRH SWR03 H
74H01 E9
BUS INTD03 L
PDRH SWR02 H
BUS INTD02 L
PDRH SWR01 H
BUS INTD01 L
PDRH SWR00 H
BUS INTD00 L
PDRH SWR15 H
BUS INTD15 L
PDRH SWR14 H
BUS INTD14 L
PDRH SWR13 H
BUS INTD13 L
PDRH SWR12 H
BUS INTD12 L
PDRH SWR11 H
BUS INTD11 L
PDRH SWR10 H
BUS INTD10 L
PDRH SWR09 H
BUS INTD09 L
PDRH SWR08 H
BUS INTD08 L
J1
PDRH SWR00 H
PDRH SWR01 H
PDRH SWR02 H
PDRH SWR03 H
PDRH SWR04 H
PDRH SWR05 H
PDRH SWR06 H
PDRH SWR07 H
PDRH SWR08 H
PDRH SWR09 H
PDRH SWR10 H
PDRH SWR11 H
PDRH SWR12 H
PDRH SWR13 H
PDRH SWR14 H
PDRH SWR15 H
PDRH SWR16 H
PDRH SWR17 H
+5VC
PDRF DISP D00 H
PDRF DISP D01 H
PDRF DISP D02 H
PDRF DISP D03 H
PDRF DISP D04 H
PDRF DISP D05 H
PDRF DISP D06 H
PDRF DISP D07 H
PDRF DISP D08 H
PDRF DISP D09 H
PDRF DISP D10 H
PDRF DISP D11 H
PDRF DISP D12 H
PDRF DISP D13 H
PDRF DISP D14 H
PDRF DISP D15 H
PDRH DISP DATA SEL0 H
PDRH DISP DATA SEL1 H
SSRB SR0 MODE 0 H
12-9941
PDR/KNL INTERFACE
SIGNALS TO CONSOLE
SIGNALS FROM CONSOLE
SWITCH REGISTER AND CONSOLE CABLE SLOT10
FIRST USED ON OPTION/MODEL 11/45
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
EQUIPMENT CORPORATION
TITLE
PROCESSOR DATA UNIBUS REGS
(PDR-H)
NEXT HIGHER ASSY. B-DD-11/45-0
D CS M3104-0-1
SHEET 8 OF 9


BUSA D07 L
BUSA D06 L
BUSA D05 L
BUSA D04 L
BUSA D15 L
BUSA D14 L
BUSA D13 L
BUSA D12 L
BUSA D03 L
BUSA D02 L
BUSA D01 L
BUSA D00 L
BUSA D11 L
BUSA D10 L
BUSA D09 L
BUSA D08 L
74S174
E18
E53
E11
E36
PDRJ D07 H
PDRJ D06 H
PDRJ D05 H
PDRJ D04 H
PDRJ D15 H
PDRJ D14 H
PDRJ D13 H
PDRJ D12 H
PDRJ D03 H
PDRJ D02 H
PDRJ D01 H
PDRJ D00 H
PDRJ D11 H
PDRJ D10 H
PDRJ D09 H
PDRJ D08 H
PDRC +3V H
TIGD T3 H
R71
150
BUS BUFFER REG
SLOT 10
11/45
PROCESSOR DATA
UNIBUS REGS
(PDRJ)
B-DD-11/45-0
D CS M8104-0-1 C
SHEET 9 OF 9

NOTE:
1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω, CAPACITANCE IS IN PICOFARADS, CAPS WITHOUT VALUE NOTED ARE .01 MFD.





QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	R24	RESISTOR 10K, 1/4W, 5%	1300479	34
1	E3	DEC IC 74155	1910656	33
2	E24, E59	DEC IC 8885	1910649	32
3	E45, E62, E73	DEC IC 74S174	1910550	31
1	E11	DEC IC 74S153	1910547	30
3	E30, E56, E86	DEC IC 74S140	1910546	29
1	E27	DEC IC 74S112	1910545	28
5	E17, E40, E41, E54, E37	DEC IC 74S74	1910544	27
3	E16, E25, E28	DEC IC 74S64	1910542	26
11	E8, E38, E39, E48, E50, E55, E64, E65, E70, E75, E89	DEC IC 74S20	1910539	25
17	E5, E14, E21, E29, E31, E34, E35, E42, E47, E49, E56, E67, E72, E76, E77, E78, E88	DEC IC 74S11	1910537	24
5	E19, E32, E44, E51, E83	DEC IC 74S10	1910536	23
12	E4, E18, E22, E26, E33, E36, E46, E57, E63, E74, E85, E90	DEC IC 74S04	1910534	22
6	E1, E6, [illegible] E60, E79, E87	DEC IC 74S00	1910532	21
1	E2	DEC IC 8815A	1909713	20
1	E10	DEC IC 380A	1909485	19
1	E7	DEC IC 74H11	1909267	18
5	E15, E52, E58, E61, E84	DEC IC 74H50	1909060	17
7	E7, E9, E55, E68, E69, E80, E82	DEC IC 74H30	1909059	16
7		EYELET	9006792	15
2	R3, R14	RESISTOR, 680Ω, 1/4W, 5%	1301424	14
1	R17	RESISTOR, 180Ω, 1/4W, 5%	1301322	13
3	R15 THRU R17	RESISTOR, 1K, 1/4W, 5%	1300365	12
1	R3	RESISTOR, 390Ω, 1/4W, 5%	1300309	11
2	R1, R13	RESISTOR, 330Ω, 1/4W, 5%	1300295	10
1	R21	RESISTOR, 150Ω, 1/4W, 5%	1300250	9
4	R4, R6, R18, R23	RESISTOR, 120Ω, 1/4W, 5%	1300241	8
87	C1-C9, C10-C19, C21-C70, C72-C80, C82-C90	CAP .01 µF, 100V, 20% DISC	1000610	7
6	C92 THRU C97	CAP 6.8 µF, 35V, 10%	1005306	6
1		HANDLE, MODULE	1210711-2-0	5
1		ETCHED CIRCUIT BOARD	5009803	4
REF		ECO MODULE HISTORY	B-MH-M8105-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	E-AH-M8105-0-5	2
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8105-0-4	1

PARTS LIST

ETCH BOARD REV F

IC TYPE	GND	+5V
DEC 74S74	8	16
DEC 74155	8	16
DEC 74S153	8	16
DEC 74S112	8	16
DEC 380A	1	8

IC PIN LOCATIONS

JUMPER LIST

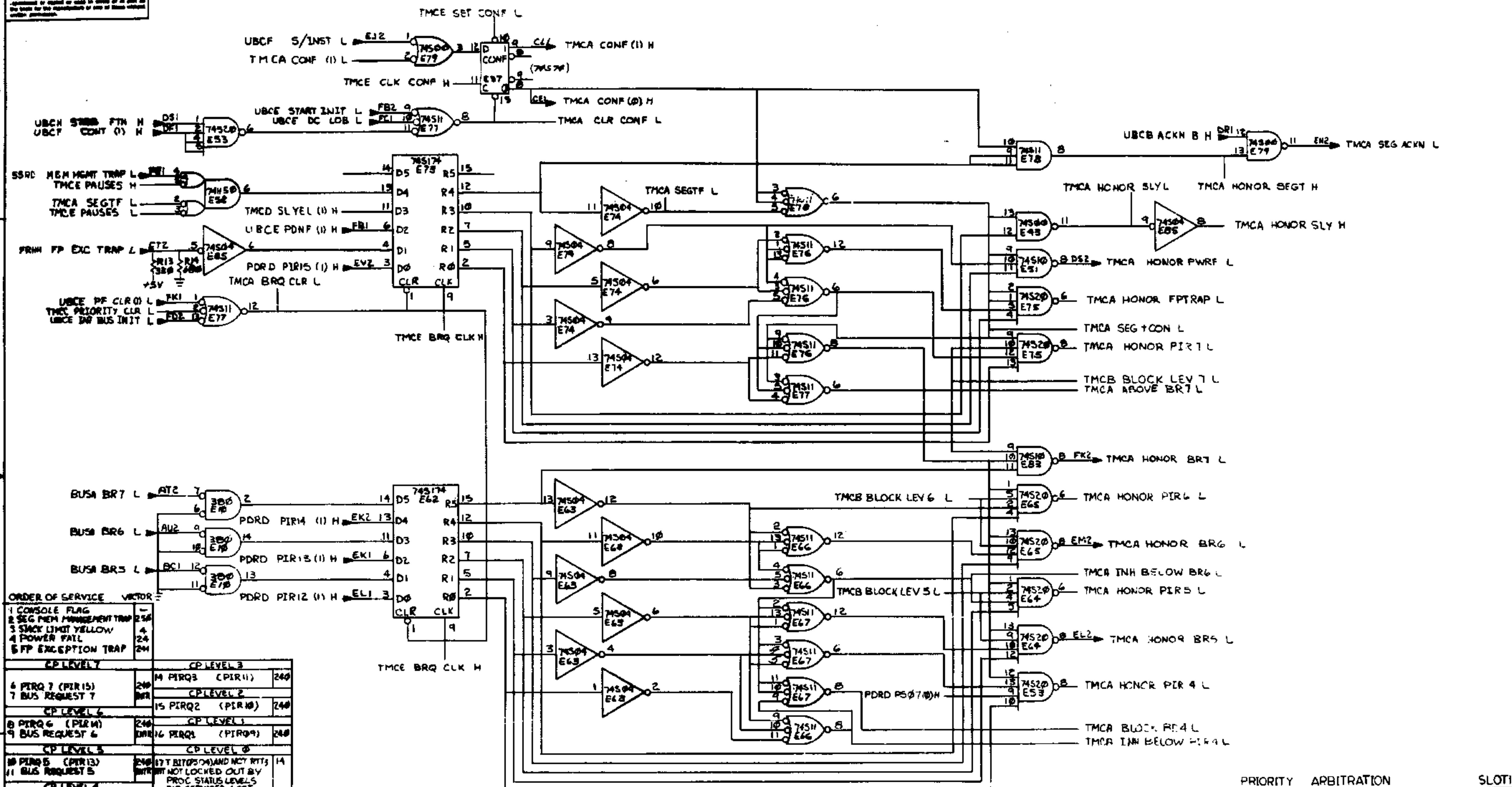
SEMICONDUCTOR CONVERSION CHART

EQUIPMENT CORPORATION

TRAP & MISC. CONTROL

CS M8105-0-1

8-DD-11/45-0



ORDER OF SERVICE	VECTOR
1 CONSOLE FLAG	—
2 SEG MEM MANAGEMENT TRAP	250
3 STACK LIMIT YELLOW	4
4 POWER FAIL	24
5 FP EXCEPTION TRAP	244

CP LEVEL 7		CP LEVEL 3	
6 PIRQ 7 (PIR15)	240	14 PIRQ3 (PIR11)	240
7 BUS REQUEST 7	BR7		
CP LEVEL 6		**CP LEVEL 2**	
8 PIRQ 6 (PIR14)	240	15 PIRQ2 (PIR10)	240
9 BUS REQUEST 6	BR6		
CP LEVEL 5		**CP LEVEL 1**	
10 PIRQ 5 (PIR13)	240	16 PIRQ1 (PIR09)	240
11 BUS REQUEST 5	BR5		
CP LEVEL 4		**CP LEVEL 0**	
12 PIRQ4 (PIR12)	240	17 T BIT(PS04) AND NOT RTT; NOT LOCKED OUT BY PROC STATUS LEVELS BUT SERVICED LAST	14
13 BUS REQUEST 4	BR4		

PRIORITY ARBITRATION SLOT11

FIRST USED ON OPTION/MODEL: 11/45

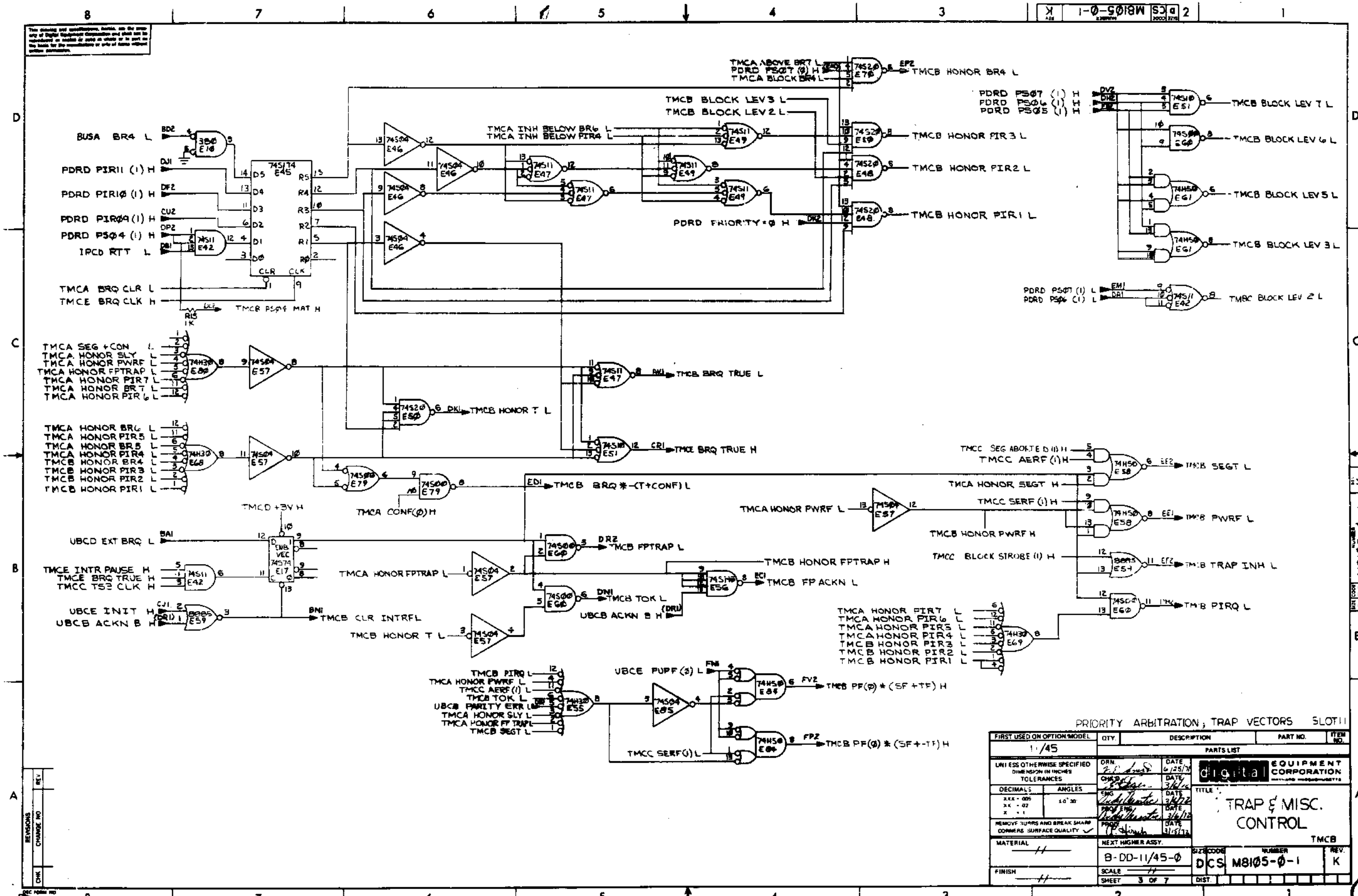
NEXT HIGHER ASSY: B-DD-11/45-0

DIGITAL EQUIPMENT CORPORATION

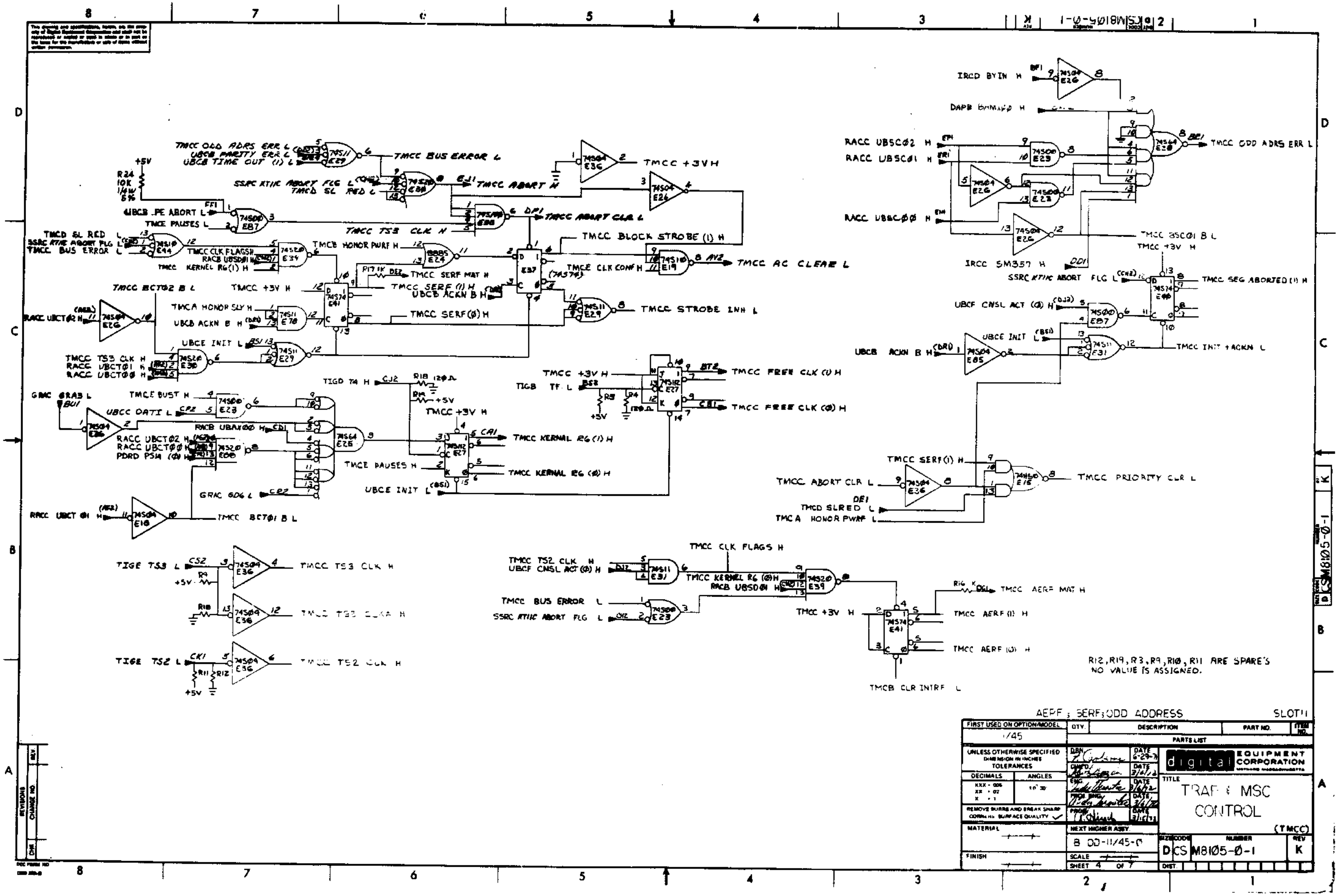
TITLE: TRAP & MISC CONTROL (TMCA)

SIZE D CODE CS NUMBER M8105-0-1 REV K

SHEET 2 OF 7



BUSA BR4 L
PDRD PIR11 (1) H
PDRD PIRØ (1) H
PDRD PIRØ9 (1) H
PDRD PSØ4 (1) H
IPCD RTT L
TMCA BRQ CLR L
TMCE BRQ CLK H
TMCB PSØ4 MAT H
TMCA ABOVE BR7 L
TMCA BLOCK BR4 L
TMCB HONOR BR4 L
TMCB BLOCK LEV3 L
TMCB BLOCK LEV2 L
TMCA INH BELOW BR6 L
TMCA INH BELOW PIR4 L
TMCB HONOR PIR3 L
TMCB HONOR PIR2 L
TMCB HONOR PIR1 L
PDRD PRIORITY-Ø H
PDRD PSØ7 (1) H
PDRD PSØ6 (1) H
PDRD PSØ5 (1) H
TMCB BLOCK LEV 7 L
TMCB BLOCK LEV 6 L
TMCB BLOCK LEV 5 L
TMCB BLOCK LEV 3 L
TMBC BLOCK LEV 2 L
TMCA SEG +CON L
TMCA HONOR SLY L
TMCA HONOR PWRF L
TMCA HONOR FPTRAP L
TMCA HONOR PIR7 L
TMCA HONOR BR7 L
TMCA HONOR PIR6 L
TMCB BRQ TRUE L
TMCB HONOR T L
TMCA HONOR BR6 L
TMCA HONOR PIR5 L
TMCA HONOR BR5 L
TMCA HONOR PIR4 L
TMCB HONOR BR4 L
TMCB HONOR PIR3 L
TMCB HONOR PIR2 L
TMCB HONOR PIR1 L
TMCE BRQ TRUE H
TMCB BRQ *-(T+CONF) L
TMCA CONF(Ø) H
TMCC SEG ABORT D (1) H
TMCC AERF (1) H
TMCB SEGT L
TMCA HONOR SEGT H
TMCA HONOR PWRF L
TMCC SERF (1) H
TMCB PWRF L
TMCB HONOR PWRF H
TMCC BLOCK STROBE (1) H
TMCB TRAP INH L
TMCB PIRQ L
TMCD +3V H
UBCD EXT BRQ L
TMCE INTR PAUSE H
TMCE BRQ TRUE H
TMCC TS3 CLK H
UBCE INIT H
UBCB ACKN B H
TMCB CLR INTRFL
TMCB FPTRAP L
TMCB HONOR FPTRAP H
TMCA HONOR FPTRAP L
TMCB FP ACKN L
TMCB TOK L
UBCB ACKN B H
TMCB HONOR T L
TMCB PIRQ L
TMCA HONOR PWRF L
TMCC AERF (1) L
TMCB TOK L
UBCB PARITY ERR L
TMCA HONOR SLY L
TMCA HONOR FP TRAP L
TMCB SEGT L
UBCE PUPF (S) L
TMCB PF(Ø) * (SF+TF) H
TMCC SERF(1) L
PRIORITY ARBITRATION, TRAP VECTORS SLOT 11
FIRST USED ON OPTION/MODEL 11/45
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES
DECIMALS ANGLES
MATERIAL
FINISH
DIGITAL EQUIPMENT CORPORATION
TITLE TRAP & MISC. CONTROL
TMCB
NEXT HIGHER ASSY. B-DD-11/45-Ø
SIZE D CODE CS NUMBER M81Ø5-Ø-1 REV. K
SHEET 3 OF 7


AERF ; SERF; ODD ADDRESS
SLOT 11
R12, R19, R3, R9, R10, R11 ARE SPARE'S
NO VALUE IS ASSIGNED.
FIRST USED ON OPTION/MODEL
11/45
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS
ANGLES
MATERIAL
FINISH
NEXT HIGHER ASSY
8 DD-11/45-0
SCALE
SHEET 4 OF 7
digital EQUIPMENT CORPORATION
TITLE
TRAF & MSC CONTROL
(TMCC)
SIZE
CODE
NUMBER
REV
D
CS
M8105-0-1
K

TMCD INTERNAL ADRS H
TMCD SL ADRS H
TMCD PS ADRS H
TMCD PB ADRS H
TMCD PIR ADRS H
TMCD SW ADRS L
TMCD SW ADRS B L
SSRK KT11C FAST(1) L
TMCD DMX S0 H
TMCD DMX S1 H
UBCB MSYN SET H
TIGE 755 L
TMCD SW ADRS BL
TMCE PAUSES L
TMCD CLKLE H
TMCD HI BYTE EN H
TMCD LO BYTE EN H
TMCD +3V H
TMCD SL YEL (1) H
TMCD SL RED L
TMCD YEL ZONE H
TMCD GET OFF L
TMCD BAMX 05 BH
TMCD +3VH
UBCA CPBSY B H
TMCE GET OFF H
TMCE C1 H
TMCD +3V H
TMCC SERF (1) H
TMCC BLOCK STROBE (1) H
TIGD T5 H
TMCC KERNEL R6 (1) H
PDRC STACK LIMIT H
PDRC RED ZONE H
UBCB ABORT ACKN L
UBCE INIT H
TIGC T2 L
DAPB BAMX 02 H
DAPB BAMX 01 H
DAPB BAMX 04 H
DAPB BAMX 03 H
DAPC BAMX 07 H
DAPC BAMX 06 H
DAPB BAMX 05 H

INTERNAL ADRS MUX

S1	S0	1F	F
L	L	PB	SW
L	H	PIR	
H	L	SL	
H	H	PS	

NOTE: R5 AND R20 ARE SPARE NO VALUE IS ASSIGNED

REGISTER ADDRESSES

PROC STATUS	777776
STACK LIMIT	777775
PROG INT	777774
PROG BREAK	777770
SWITCH REGISTER	777570 (IN)
DISPLAY REGISTER	777570 (OUT)

INTERNAL REG DECODES; STACK LIMIT SLOT11

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS: XXX ± .005, XX ± .01, X ; ANGLES ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN. — DATE 2/6/72
CHK'D — DATE 3/6/72
ENG — DATE 3/6/72
PROJ. ENG. — DATE 3/6/72
PROJ. — DATE 3/6/72

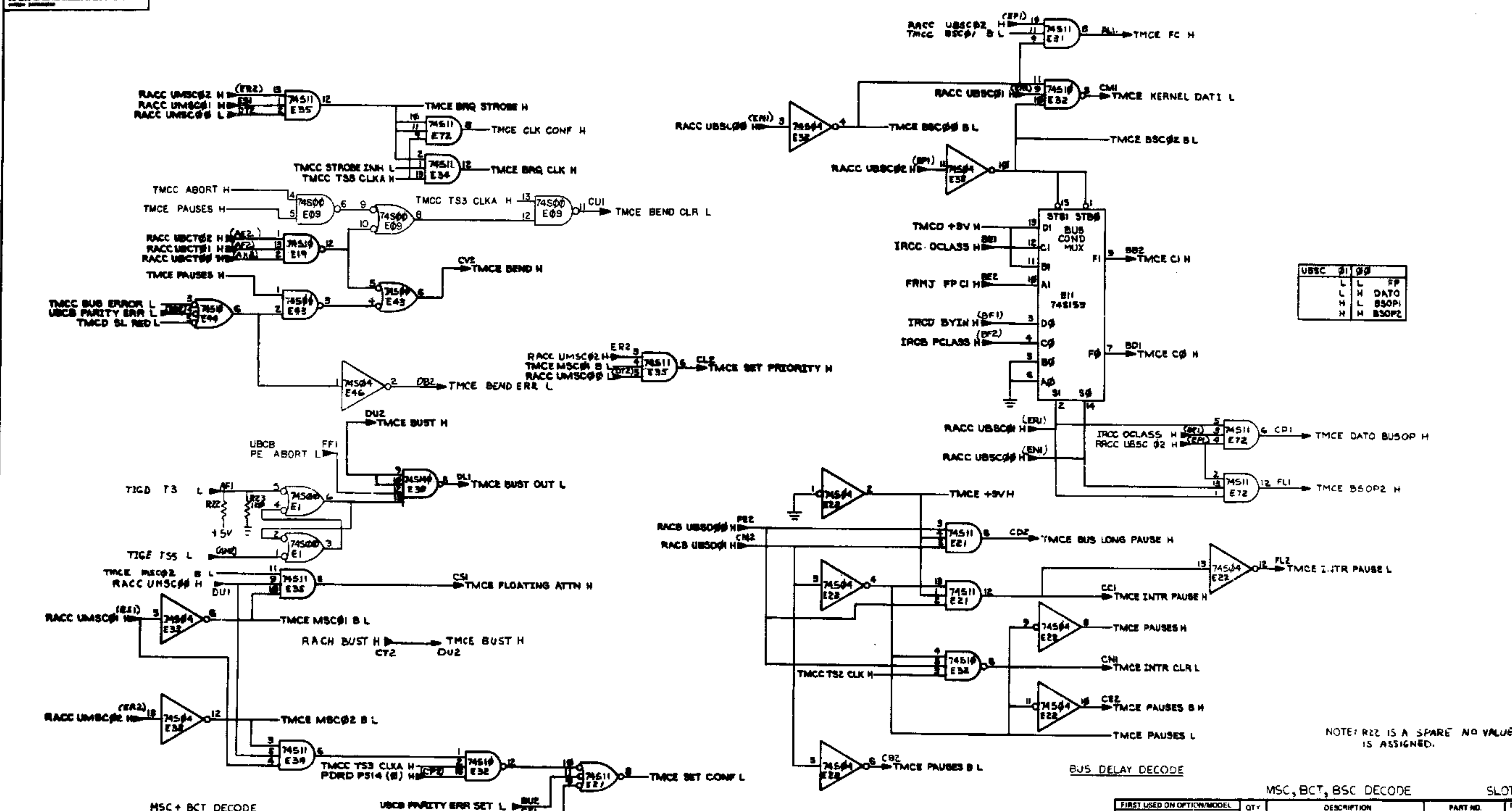
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: TRAP & MSC CONTROL (TMCD)

NEXT HIGHER ASSY: B-DD-11/45-0
SIZE: D | CODE: CS | NUMBER: M8105-0-1 | REV: K
SCALE —
SHEET 5 OF 7
DIST.

REVISIONS: REV | CHANGE NO | CHK

92


RACC UMSCØ2 H
RACC UMSCØ1 H
RACC UMSCØØ L
TMCE BRQ STROBE H
TMCE CLK CONF H
TMCC STROBE INH L
TMCC TS8 CLKA H
TMCE BRQ CLK H
TMCC ABORT H
TMCE PAUSES H
TMCC TS3 CLKA H
TMCE BEND CLR L
RACC UBCTØ2 H
RACC UBCTØ1 H
RACC UBCTØØ H
TMCE BEND H
TMCC BUS ERROR L
UBCB PARITY ERR L
TMCD SL RED L
TMCE BEND ERR L
RACC UMSCØ2 H
TMCE MSCØ1 B L
RACC UMSCØØ L
TMCE SET PRIORITY H
TMCE BUST H
UBCB PE ABORT L
TMCE BUST OUT L
TIGD T3 L
R22
R23
+5V
TIGE TS5 L
TMCE MSCØ2 B L
RACC UMSCØØ H
TMCE FLOATING ATTN H
RACC UMSCØ1 H
TMCE MSCØ1 B L
RACH BUST H
TMCE BUST H
RACC UMSCØ2 H
TMCE MSCØ2 B L
TMCC TS3 CLKA H
PDRD PS14 (B) H
TMCE SET CONF L
UBCB PARITY ERR SET L
UBCF CNSL RESET L
MSC + BCT DECODE
RACC UBSCØ2 H
TMCC BSCØ1 B L
TMCE FC H
RACC UBSCØ1 H
TMCE KERNEL DATI L
RACC UBSCØØ H
TMCE BSCØØ B L
TMCE BSCØ2 B L
RACC UBSCØ2 H
TMCD +5V H
IRCC OCLASS H
FRMJ FP CI H
IRCD BYIN H
IRCB PCLASS H
BUS COND MUX
74S153
TMCE CI H
TMCE CØ H
RACC UBSCØ1 H
IRCC OCLASS H
RACC UBSC Ø2 H
TMCE DATO BUSOP H
RACC UBSCØØ H
TMCE BSOP2 H
TMCE +5V H
RACB UBSCØØ H
RACB UBSCØ1 H
TMCE BUS LONG PAUSE H
TMCE INTR PAUSE L
TMCE INTR PAUSE H
TMCE PAUSES H
TMCC TS2 CLK H
TMCE INTR CLR L
TMCE PAUSES B H
TMCE PAUSES L
TMCE PAUSES B L
BUS DELAY DECODE
UBSC Ø1 ØØ
L L FP
L H DATO
H L BSOP1
H H BSOP2
NOTE: R22 IS A SPARE NO VALUE IS ASSIGNED.

MSC, BCT, BSC DECODE SLOT11

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES

DRN S.W. Roberts DATE 8/18/72

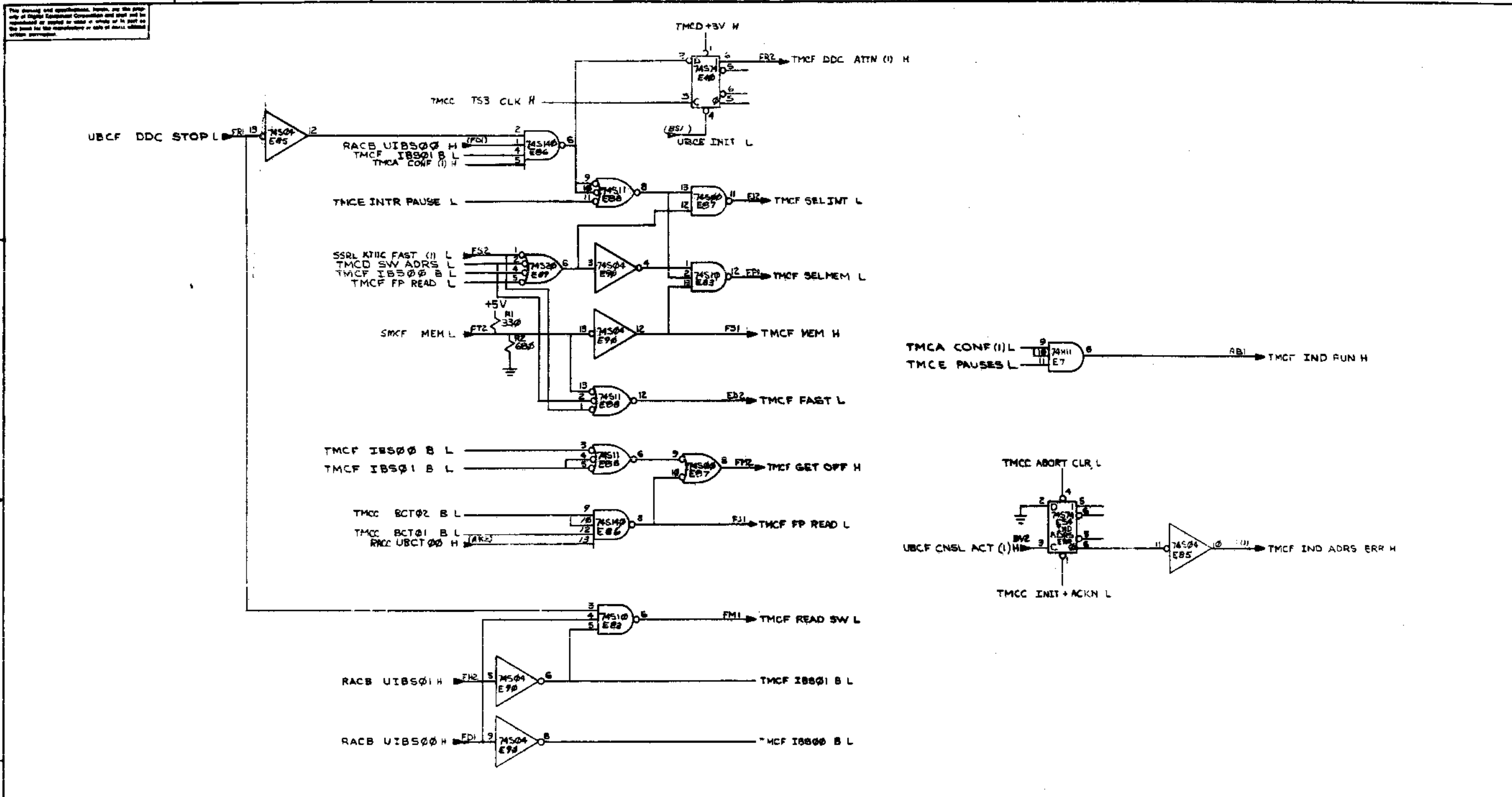
digital EQUIPMENT CORPORATION

TITLE TRAP & MSC CONTROL (TMCE)

NEXT HIGHER ASSY -11/45-Ø

SIZE D CODE CS NUMBER M8105-Ø-1 REV K

SCALE — SHEET 6 OF 7



BRMX SELECTION; FP READ SLOT11

FIRST USED ON OPTION/MODEL	11/45
NEXT HIGHER ASSY	B-DD-11/45-0
SCALE	—
SHEET	7 OF 7

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

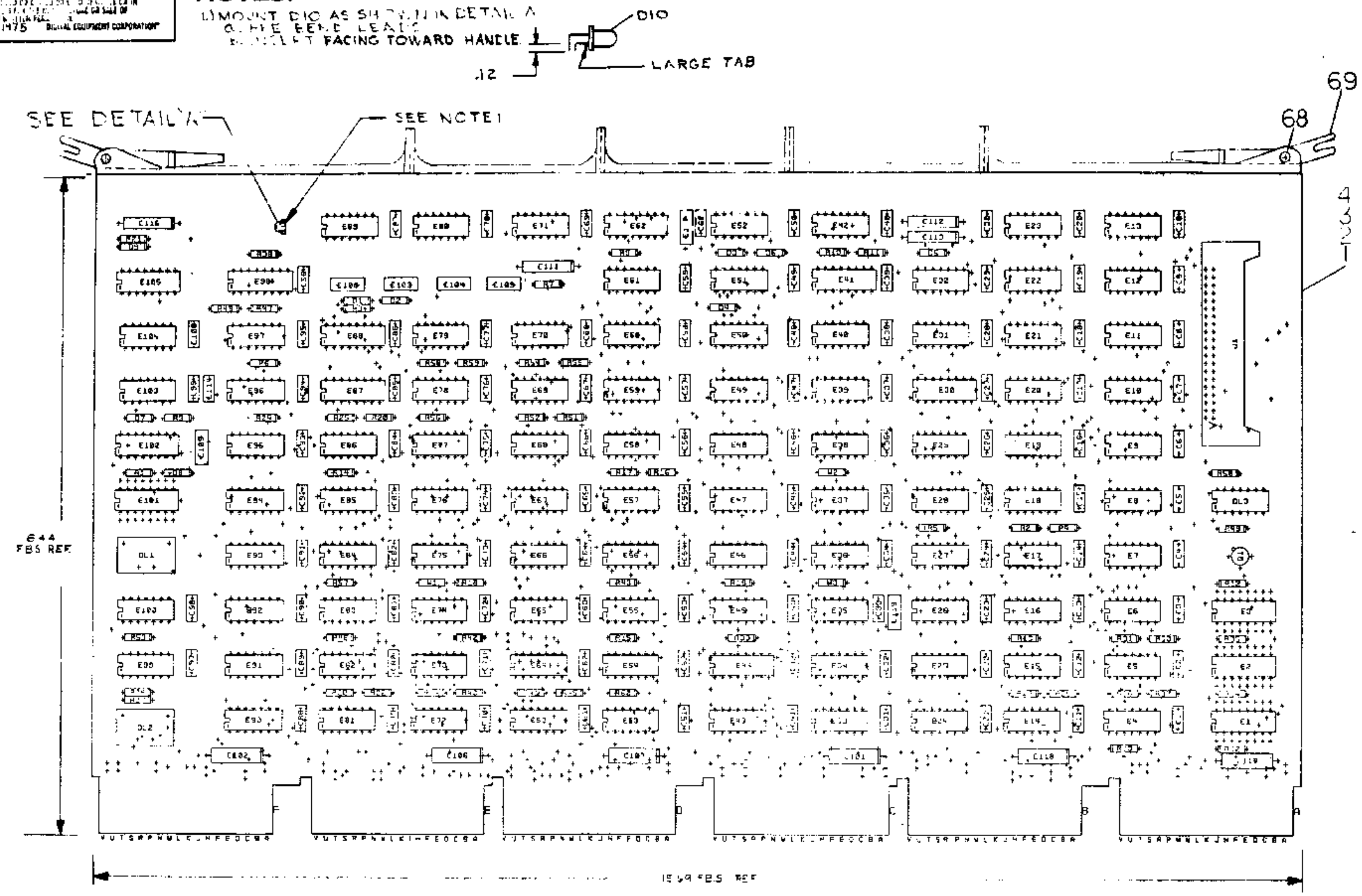
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TRAP & MSC CONTROL (TMCF)

SIZE	CODE	NUMBER	REV.
D	CS	M8105-0-1	K

NOTES:

1) MOUNT D10 AS SHOWN IN DETAIL A
   a) FREE BEND LEADS
   b) OUTLET FACING TOWARD HANDLE.



QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CP-M8119-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8119-0-5	2
REF		MODULE ECO HISTORY	D-MI-M8119-0-6	3
1		ETCHED CIRCUIT BOARD	5011908	4
1	C116	CAPACITOR, 2.2, 35V, 10% TANT	1002431	5
1	C102,C106,C107,C112,C118, C117,C101	CAPACITOR, 6.8, 35V, 10% TANT	1005308	6
101	C1 THRU C100,C114	CAPACITOR, .01, 100V, 20%	1001610-01	7
4	C103,C104,C109,C109	CAPACITOR, 1200pf, 100V, 5% DM	1002424	8
2	C105,C110	CAPACITOR, 330pf, 100V, 5% DM	1000023	9
2	C111,C113	CAPACITOR, .47uf, 35V, 10% TANT	1005965	10
1	C115	CAPACITOR, 22pf, 100V, 5%	1005820	11
9	D1 THRU D9	DIODE, D664	1100114	12
1	D10	DIODE, LED	1110324	13
5	R1,R3,R6,R8,R21	RESISTOR, 15K, 1/4W, 5%	1300498	14
4	R2,R22,R24,R39	RESISTOR, 330, 1/4W, 5%	1300295	15
4	R4,R19,R23,R25	RESISTOR, 680, 1/4W, 5%	1301424	16
9	R5,R13,R26,R27,R42,R43,R46, R53,R57	RESISTOR, 1K, 1/4W, 5%	1300365	17
2	R7,R11	RESISTOR, 20K, 1/4W, 5%	1302391	18
2	R9,R10	RESISTOR, 30K, 1/4W, 5%	1302394	19
1	R12	RESISTOR, 3.9K, 1/4W, 5%	1300444	20
2	R14,R18	RESISTOR, 100, 1/4W, 5%	1300229	21
8	R15,R52,R55,R56,R58,R60,R50 R20	RESISTOR, 150, 1/4W, 5%	1300250	22
9	R16,R29,R30,R34,R36,R44,R47 R32,R40	RESISTOR, 180, 1/4W, 5%	1301322	23
10	R17,R28,R31,R33,R35,R37,R45 R48,R41,R38	RESISTOR, 390, 1/4W, 5%	1300309	24
1	R49	RESISTOR, 220 1/4W, 5%	1300271	25
1	E87	I.C. DEC 74S174	1910550	26
3	R51,R54,R59	RESISTOR ENG OPTION NOT INST.		27
1	Q1	TRANSISTOR, DEC 3009B	1503100	28
1	DL3	DELAY LINE 125 NS	1611300	29
1	DL2	DELAY LINE 100 NS	1609559	30
1	DL1	DELAY LINE 50 NS	1609428	31
4	E4,E83 E56,E33	I.C. DEC 8640	1917467	32
2	E3,E7	I.C. DEC 7400	1905575	33
3	E5,E70,E36	I.C. DEC 74H04	1909931	34
3	E9,E12 E13	I.C. DEC 7474	1905547	35
2	E8,E19	I.C. DEC 7408	1910155	36
2	E10,E72	I.C. DEC 74H30	1909059	37
2	E11,E18	I.C. DEC 7404	1905598	38
9	E104,E22,E27,E51,E60,E81, E95,E92	I.C. DEC 74S00	1910532	39
3	E15,E38,E95	I.C. DEC 74H00	1909056	40
2	E16,E52	I.C. DEC 74H11	1909257	41
1	E49	I.C. DEC 74S74-45	1910950	42
11	E17,E29,E50,E67,E59 E84 E79 E69,E77,E96,E100	I.C. DEC 74S74	1910544	43
8	E20,E26,E53,E99,E54,E64,E28,E31	I.C. DEC 74S40	1910541	44
4	E76,E65,E93,E85	I.C. DEC 74S64	1910542	45
2	E55,E90	I.C. DEC 74H50	1909060	46
	E53,E60	I.C. DEC 8815	1909113	47
2	E98,E103	I.C. DEC 74S140	1910546	48
2	E74,E23	I.C. DEC 74S10	1910536	49

PARTS LIST

ETCH BOARD REV. A

FIRST USED ON OPTION MODEL

IC TYPE	GND	+5V
IC 74157	8	16
IC 74123	8	16
IC 74175	8	16
IC 74S112	8	16
IC 74S174	8	16
IC 380	1	8

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

REV. A — CS M8119-0-0-1 — V. BOWEN — 6-2-76

digital

TITLE: UNIBUS & CONSOLE CONTROL

SIZE D — CODE CS — NUMBER M8119-0-1 — REV. B

SHEET 1 OF 15

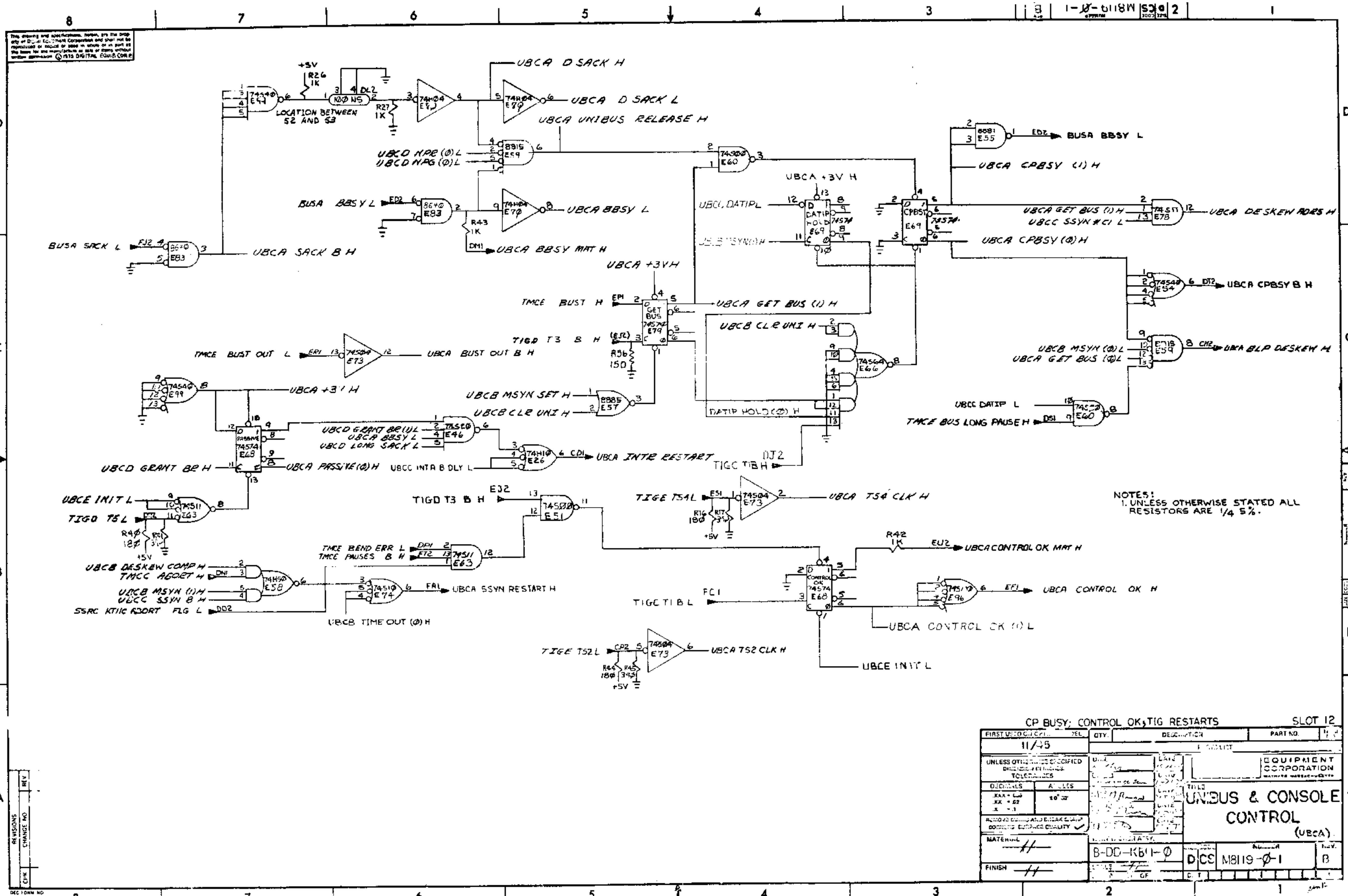
95

1	E98	I.C. DEC 74S112	1910545	51
2	E61,E42	I.C. DEC 74S51	1911712	52
2	E45,E46	I.C. DEC 74S20	1910539	53
4	E35,E37,E39,E89	I.C. DEC 74174	19[illegible]67	54
1	E28	I.C. DEC 74H10	1900057	55
3	E34,E24,E57	I.C. DEC 8905	1910349	56
1	E30	I.C. DEC 74175	1910351	57
7	E32,E40,E48,E91,E63,E76,E97	I.C. DEC 74S11	1910537	59
5	E102,E41,E86,E105,E62	I.C. DEC 74123	1910438	60
4	E14,E43,E25,E55	I.C. DEC 8881	1909705	62
1	E44	I.C. DEC 74157	1910655	63
6	E47,E75,E73,E82,E94,E71	I.C. DEC 74S04	1910534	64
4	E1,E2,E3,E101	SPARE I.C.'s		65
3	W1,W2,W3	JUMPER	9003185	66
1	J1	CONNECTOR, BERG	1209941-02	67
12		EYELET, HANDLE	9006732	68
1		HANDLE, HEX	1210711-02	69
A/R		WIRE, 30 AWG GRN	9105740-55	70

REVISIONS

CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS & CONSOLE CONTROL	D	CS	M8119-Ø-1	B
SCALE	SHEET 2 OF 15	DIST		



CP BUSY; CONTROL OK; TIG RESTARTS SLOT 12

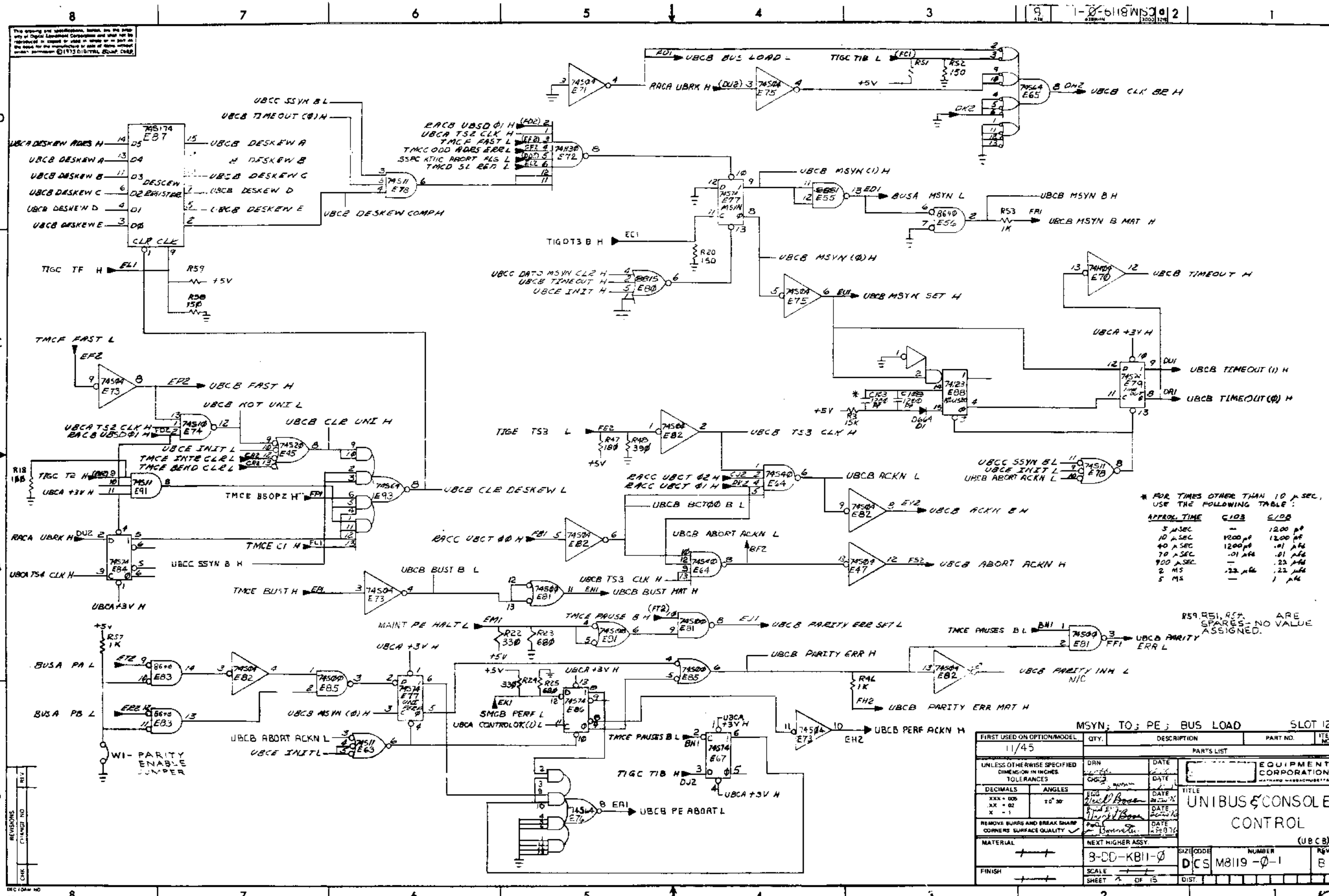
DIGITAL EQUIPMENT CORPORATION

UNIBUS & CONSOLE CONTROL (UBCA)

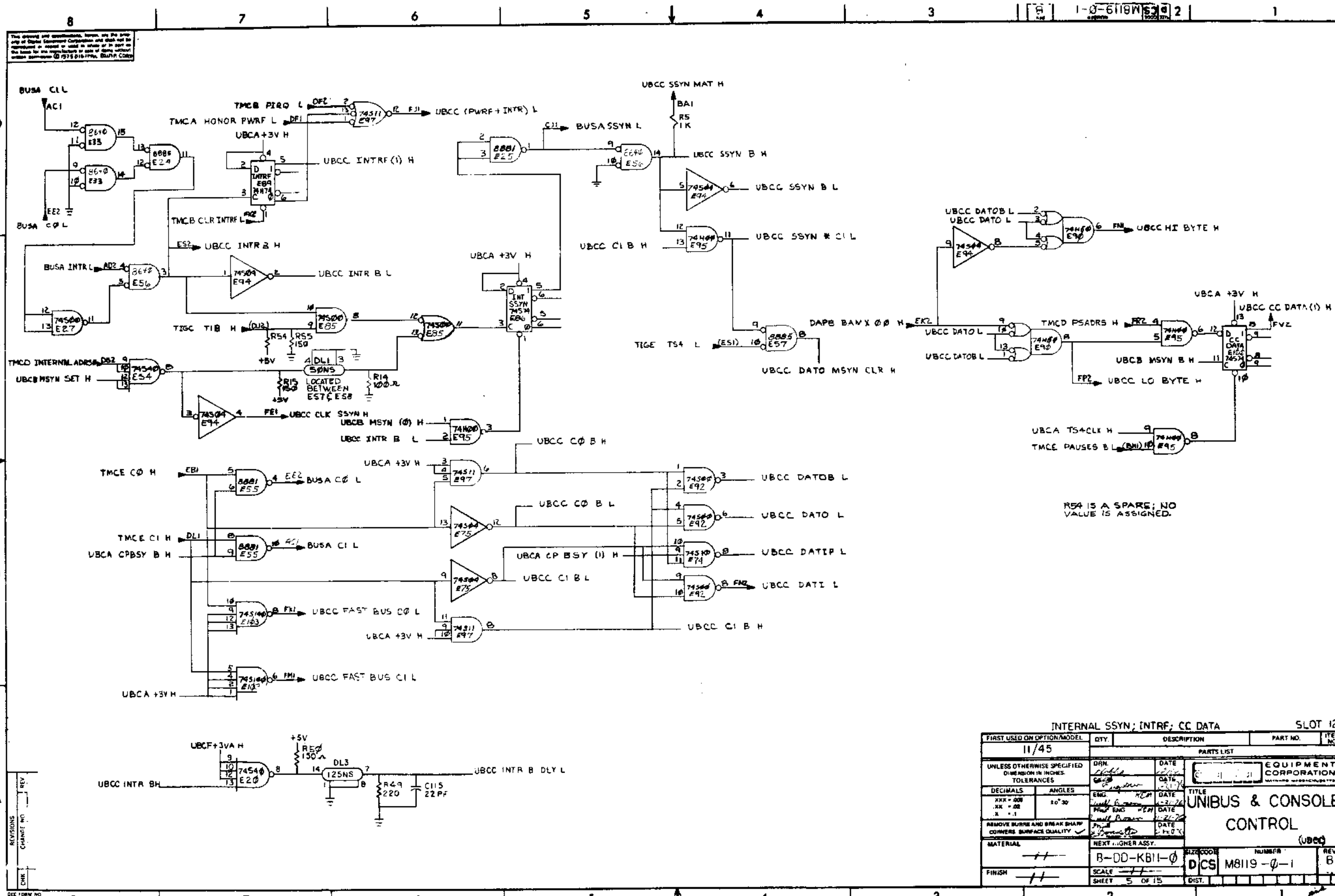
B-DD-KB11-Ø

D CS M8119-Ø-1 B

97



MSYN; TO; PE; BUS LOAD
SLOT 12
* FOR TIMES OTHER THAN 10 μSEC, USE THE FOLLOWING TABLE:
R59, R51, R54, ARE SPARES - NO VALUE ASSIGNED.
W1 - PARITY ENABLE JUMPER
FIRST USED ON OPTION/MODEL
11/45
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS
ANGLES
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
MATERIAL
FINISH
QTY.
DESCRIPTION
PART NO.
ITEM NO.
PARTS LIST
EQUIPMENT CORPORATION
TITLE
UNIBUS & CONSOLE CONTROL
(UBCB)
NEXT HIGHER ASSY.
B-DD-KB11-Ø
SIZE
CODE
NUMBER
REV.
D
CS
M8119-Ø-1
B
SCALE
SHEET
DIST.



BUSA C1 L
BUSA C0 L
BUSA INTR L
TMCB PIRQ L
TMCA HONOR PWRF L
UBCC (PWRF + INTR) L
UBCA +3V H
UBCC INTRF (1) H
TMCB CLR INTRF L
UBCC INTR B H
UBCC INTR B L
TIGC TIB H
TMCD INTERNAL ADRS H
UBCB MSYN SET H
LOCATED BETWEEN E57 & E58
UBCC CLK SSYN H
UBCB MSYN (0) H
UBCC INTR B L
BUSA SSYN L
UBCC SSYN MAT H
UBCC SSYN B H
UBCC SSYN B L
UBCC C1 B H
UBCC SSYN * C1 L
TIGE TS4 L
DAPB BAMX 00 H
UBCC DATO MSYN CLR H
UBCC DATOB L
UBCC DATO L
UBCC HI BYTE H
UBCC CC DATA (1) H
TMCD PSADRS H
UBCB MSYN B H
UBCC LO BYTE H
UBCA TS4CLK H
TMCE PAUSES B L
UBCC C0 B H
UBCC C0 B L
UBCC C1 B L
UBCA CP BSY (1) H
TMCE C0 H
TMCE C1 H
UBCA CPBSY B H
UBCC DATOB L
UBCC DATO L
UBCC DATIP L
UBCC DATI L
UBCC FAST BUS C0 L
UBCC FAST BUS C1 L
UBCC C1 B H
R54 IS A SPARE; NO VALUE IS ASSIGNED.
UBCF +3VA H
UBCC INTR BH
UBCC INTR B DLY L
INTERNAL SSYN; INTRF; CC DATA
SLOT 12
FIRST USED ON OPTION/MODEL 11/45
EQUIPMENT CORPORATION
UNIBUS & CONSOLE CONTROL (UBCC)
B-DD-KB11-0
D CS M8119-0-1
REV. B
SHEET 5 OF 15

TMCA HONOR BR7 L
TMCA HONOR BR6 L
TMCA HONOR BR5 L
TMCB HONOR BR4 L
74S20 E46
74S04 E47
UBCD EXT BRQ L
UBCD EXT BRQ H
74S04 E47
TMCA HONOR BR7 L
TMCA HONOR BR6 L
TMCA HONOR BR5 L
TMCB HONOR BR4 L
74157 E44
UBCD PROC BG7 H
UBCD PROC BG6 H
UBCD PROC BG5 H
UBCD PROC BG4 H
UBCD GRANT BR (Ø) H
UBCD GRANT L
74S00 E51
UBCD GRANT CLK L
UBCD NPG (Ø) H
74S11 E40
UBCD GRANT L
UBCD NPR RQ L
74S74-#5 E49
UBCD SERVICE BR (Ø) H
74S74 E50
74H04 E70
UBCD GRANT BR H
UBCD GRANT CLR L
TMCE INTR PAUSE H
UBCA TS2 CLK H
74S11 E48
TMCE FREE CLK (1) H
74S11 E48
UBCA PASSIVE (1) L
UBCE INIT L
74S11 E48
UBCD +3V H
TMCE FLOATING ATTN H
74S74 E67
FP ATTN
74S04 E53
UBCD FP ATTN L
TIGC TIB H
UBCE INIT L
74S04 E47
UBCD FP ATTN H
+5V
R5B 330 Ω
DIØ LED NO SACK ERROR AT HANDLE
UBCD +3V H
74S74 E64 NSAK
UBCE INIT L
T.G T5B H
DK1
R6Ø 150 Ω

*NOTE:
TO OBTAIN 5Ø SEC TIME OUT REMOVE ONE OF THE CAPACITORS BETWEEN PINS 7&6.
FOR LONGER TIME-OUTS USE TABLE FOR MSYN DELAYS ON UBC8

UBCD GRANT L
UBCD +3V H
+5V
R6 15K
D2
D66
C1Ø9
C1Ø9
1200 PF
74123 E88
UBCD NO SACK (1) L
74S74 E89
UBCA SACK B H
UBCA DSACK H
8686 E57
UBCD LONG SACK L
UBCD GRANT L
74S00 E51
UBCE INIT L
74H11 E52
UBCA D SACK L
UBCD NPR RQ L
UBCD +3V H
UBCD SERVICE BR (Ø) H
74S00 E51
UBCD NPG (1) H
BUS A NPR L
UBCF DISABLE NPR H
8641 E56
74S00 E27
UBCD NPR (1) H
UBCD GRANT CLK L
74S74 E50
UBCD NPG (Ø) H
UBCC DATIP L
UBCE ACLO B L
74S11 E32
TMCC FREE CLK (1) H
UBCE INIT L
UBCE INIT L
UBCA DSACK L
UBCD NO SACK (1) L
74H11 E52
UBCD GRANT CLR L
UBCE RIP L
74S04 E47
UBCD +3V H
8881 E43
8881 E43
8881 E43
8881 E43
8881 E25
UBCD PROC NPG H

NPR-BR SERVICING; FP ATTENTION SLOT 12

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: XXX ± .005, .XX ± .02, .X ± 1 — ANGLES: ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

		DATE
DRN.		
CHKD.		
ENGR	MCM	1-22-76
PROJ ENG		1-22-76
PROG	KHD	1-22-76

NEXT HIGHER ASSY. B-DD-KB11-Ø

EQUIPMENT CORPORATION

TITLE: UNIBUS & CONSOLE CONTROL (UBCD)

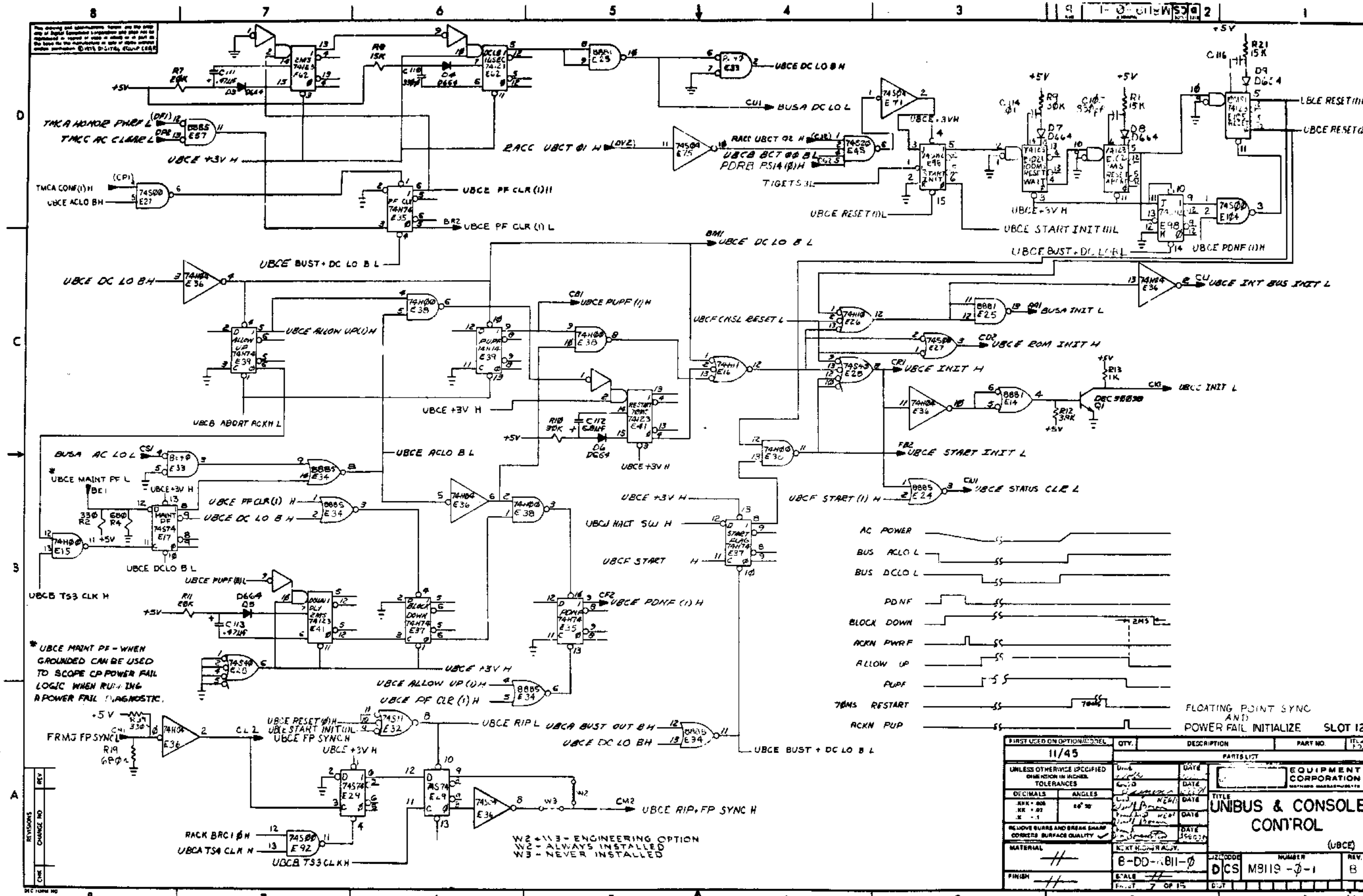
SIZE D | CODE CS | NUMBER M8119-Ø-1 | REV. B

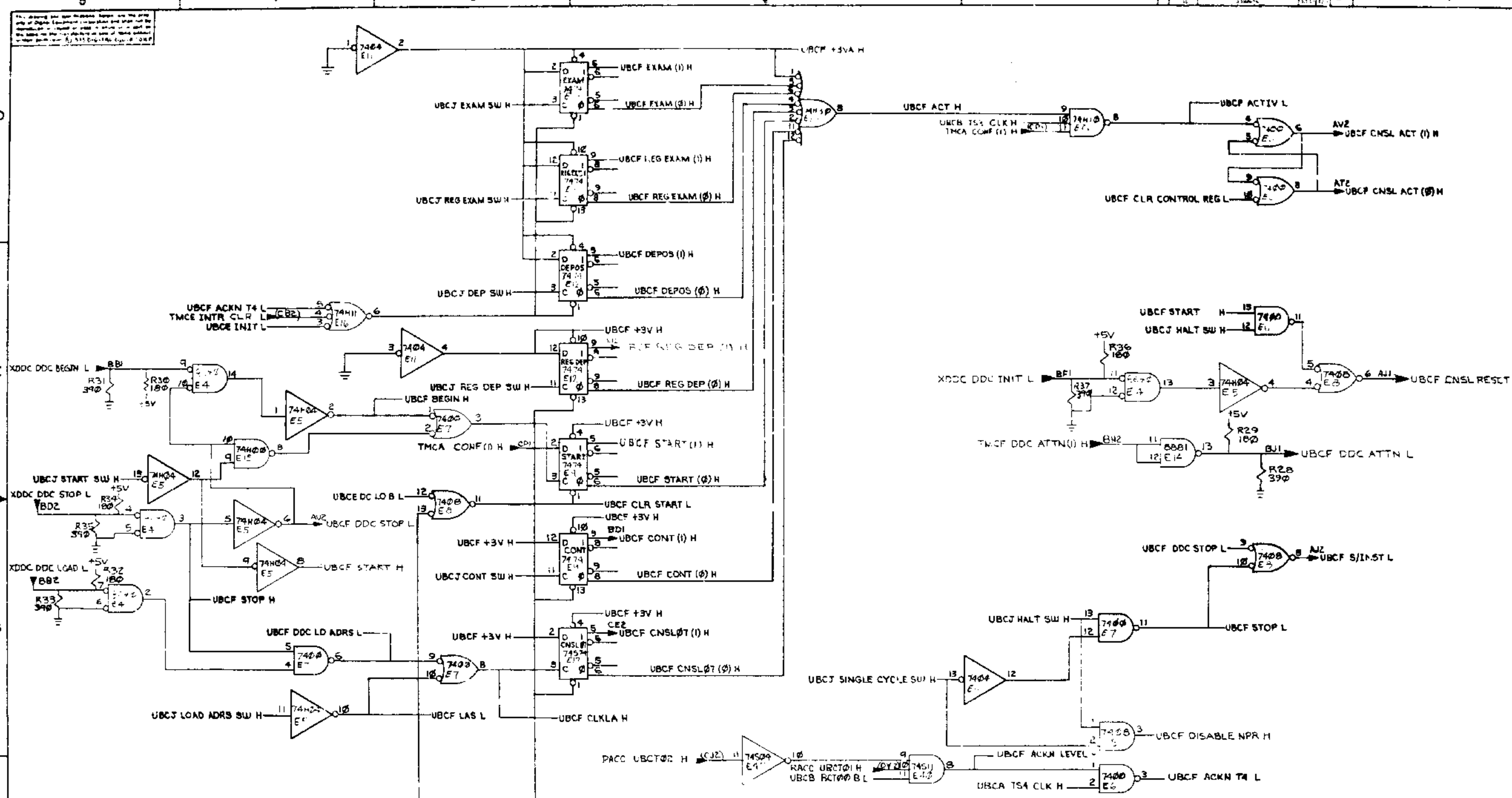
SCALE | SHEET 6 OF 15 | DIST

REVISIONS: REV | CHANGE NO | CHK

DEC FORM 340 DRD 102-B

100


UBCE DC LO B H
BUSA DC LO L
UBCE RESET (1) H
UBCE RESET (2) H
UBCE PF CLR (1) H
UBCE PF CLR (1) L
UBCE BUST + DC LO B L
UBCE DC LO B L
UBCE PUPF (1) H
UBCE ALLOW UP (1) H
UBCE INT BUS INIT L
BUSA INIT L
UBCE ROM INIT H
UBCE INIT H
UBCE INIT L
UBCE START INIT L
UBCE STATUS CLR L
UBCE PDNF (1) H
UBCE ACLO B L
UBCE START INIT (1) L
UBCE PDNF (1) H
UBCE RIP L
UBCE RIP + FP SYNC H
FRMJ FP SYNC L
RACK BRC1 Ø H
UBCA TS4 CLK H
UBCB TS3 CLK H
* UBCE MAINT PF - WHEN GROUNDED CAN BE USED TO SCOPE CP POWER FAIL LOGIC WHEN RUNNING A POWER FAIL DIAGNOSTIC.
W2 + W3 - ENGINEERING OPTION
W2 - ALWAYS INSTALLED
W3 - NEVER INSTALLED
AC POWER
BUS ACLO L
BUS DCLO L
PDNF
BLOCK DOWN
ACKN PWRF
ALLOW UP
PUPF
70MS RESTART
ACKN PUP
FLOATING POINT SYNC AND POWER FAIL INITIALIZE
SLOT 12
11/45
EQUIPMENT CORPORATION
UNIBUS & CONSOLE CONTROL
(UBCE)
D CS M8119-Ø-1
B
B-DD-M8119-Ø
SHEET 7 OF 15



CONSOLE FUNCTIONS SLOT 12

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/45	PARTS LIST			

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

DIGITAL EQUIPMENT CORPORATION

TITLE
UNIBUS & CONSOLE CONTROL
(UBCF)

NEXT HIGHER ASSY B-DD-K8II-Ø

SIZE D CODE CS NUMBER M8I??-Ø-1 REV H

SHEET 5 OF 1?

CONSOLE FUNCTION	MICRO ADRS BIT 7	2	1	0
EXAM	0	0	0	0
STEP EXAM	0	0	0	1
REG EXAM	0	0	1	0
DEPOSIT	0	0	1	1
STEP DEPOSIT	0	1	0	0
STEP REG DEP	0	1	0	1
START	0	1	1	0
LOAD ADDR	0	0	0	0
REG DEPOSIT	1	0	1	0
STEP REG EXAM	1	1	0	1

UBCH STEP DEPOSIT 2 L

UBCF DEPOS (1) H
UBCH STEP DEP +DEP H

UBCH MICRO AD2 H

UBCH GEN +5 L
UBCF START (1) L
UBCF CONT (1) L

UBCH MICRO AD1 H

UBCF CONT (1) L
UBCH GEN +2.5 L
UBCF START (1) L

UBCH EXAM + STEP EXAM H
UBCF EXAM (1) H
UBCH STEP EXAM Ø L

UBCH STEP DEP +DEP L
UBCF DEPOS (1) H
UBCH DEPOSIT +REG DPST L

UBCH MICRO AD Ø H

UBCF CONT (1) L
UBCH GEN X5 L

UBCF CNSL Ø 7 (Ø) H

UBCH RDEP+STP RDEP L

UBCH REXAM+STP REXAM H

UBCF REG DEP (1) H

UBCF REG EXAM (1) H

UBCH RDEP+STP RDEP H

UBCH REXAM+STP REXAM L

UBCH GEN +2 L

UBCH RDEP+STP RDEP H

UBCH REXAM+STP REXAM H

UBCH GEN X5 L

BPI
UBCH CNSL Ø 2 H

BLI
UBCH CNSL Ø 1 H

BA2
UBCH CNSL Ø Ø H

HOLDS MICROCODE OF PREVIOUS CONSOLE OPERATION

UBCE INIT L

UBCF ACKN LEVEL H
UBCB T53 CLK H

CK2
UBCH STRB FTN H

UBCH DEP L
UBCH STEP DEP +DEP H

UBCH STEP DEP L

UBCH STEP DEP + DEP L

UBCH EXAM + STEP EXAM H

<Ø 2> 2L

<Ø 2> 5L

UBCH REXAM +STP REXAM L

UBCH REXAM +STP REXAM H

UBCH RDEP +STP RDEP H

UBCH RDEP +STP RDEP L

CONSOLE 11 ADRS SLOT 12

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.
11/45		PARTS LIST	

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES
TOLERANCES
DECIMALS .XX ± .03, .XXX ± .010, X ± 1
ANGLES ± 1°
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

MATERIAL
FINISH

EQUIPMENT CORPORATION

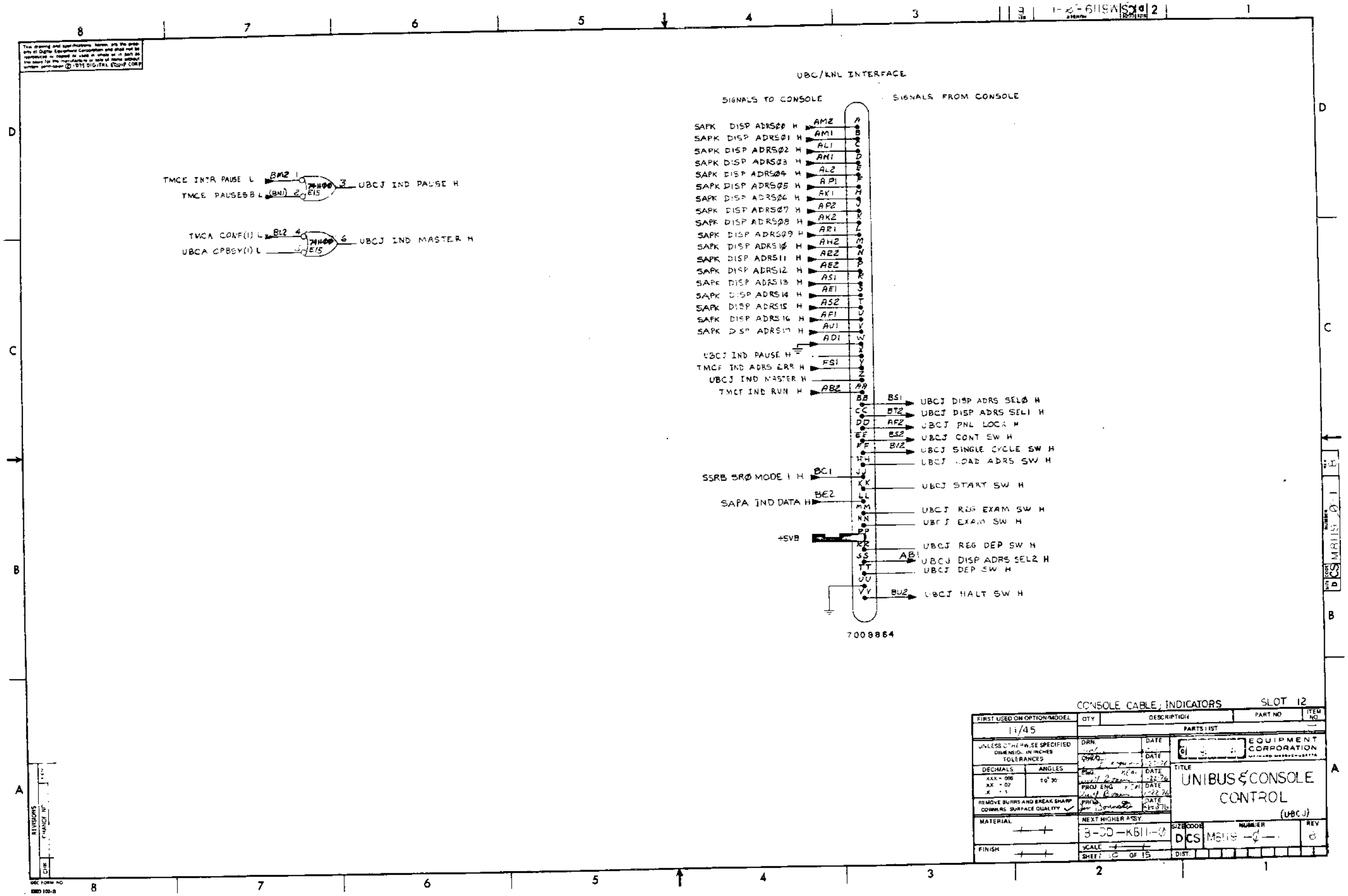
TITLE
UNIBUS & CONSOLE CONTROL
(UBCH)

NEXT HIGHER ASSY. 5-DU-K611-Ø

SIZE D | CODE DCS | NUMBER M8119-Ø-1 | REV. B

SCALE | SHT 1 OF 15

M8110-Ø-1



UBC/KNL INTERFACE
SIGNALS TO CONSOLE
SIGNALS FROM CONSOLE
TMCE INTR PAUSE L
TMCE PAUSES B L
74H00 E15
UBCJ IND PAUSE H
TMCA CONF(1) L
UBCA CPBSY(1) L
UBCJ IND MASTER H
SAPK DISP ADRS00 H
SAPK DISP ADRS01 H
SAPK DISP ADRS02 H
SAPK DISP ADRS03 H
SAPK DISP ADRS04 H
SAPK DISP ADRS05 H
SAPK DISP ADRS06 H
SAPK DISP ADRS07 H
SAPK DISP ADRS08 H
SAPK DISP ADRS09 H
SAPK DISP ADRS10 H
SAPK DISP ADRS11 H
SAPK DISP ADRS12 H
SAPK DISP ADRS13 H
SAPK DISP ADRS14 H
SAPK DISP ADRS15 H
SAPK DISP ADRS16 H
SAPK DISP ADRS17 H
UBCJ IND PAUSE H
TMCF IND ADRS ERR H
UBCJ IND MASTER H
TMCF IND RUN H
UBCJ DISP ADRS SEL0 H
UBCJ DISP ADRS SEL1 H
UBCJ PNL LOCK H
UBCJ CONT SW H
UBCJ SINGLE CYCLE SW H
UBCJ LOAD ADRS SW H
SSRB SR0 MODE 1 H
UBCJ START SW H
SAPA IND DATA H
UBCJ REG EXAM SW H
UBCJ EXAM SW H
+5VB
UBCJ REG DEP SW H
UBCJ DISP ADRS SEL2 H
UBCJ DEP SW H
UBCJ HALT SW H
7008864
CONSOLE CABLE; INDICATORS
SLOT 12
11/45
UNIBUS & CONSOLE CONTROL (UBCJ)
NEXT HIGHER ASSY 3-DD-KB11-0
D CS M8119-0
SHEET 10 OF 15

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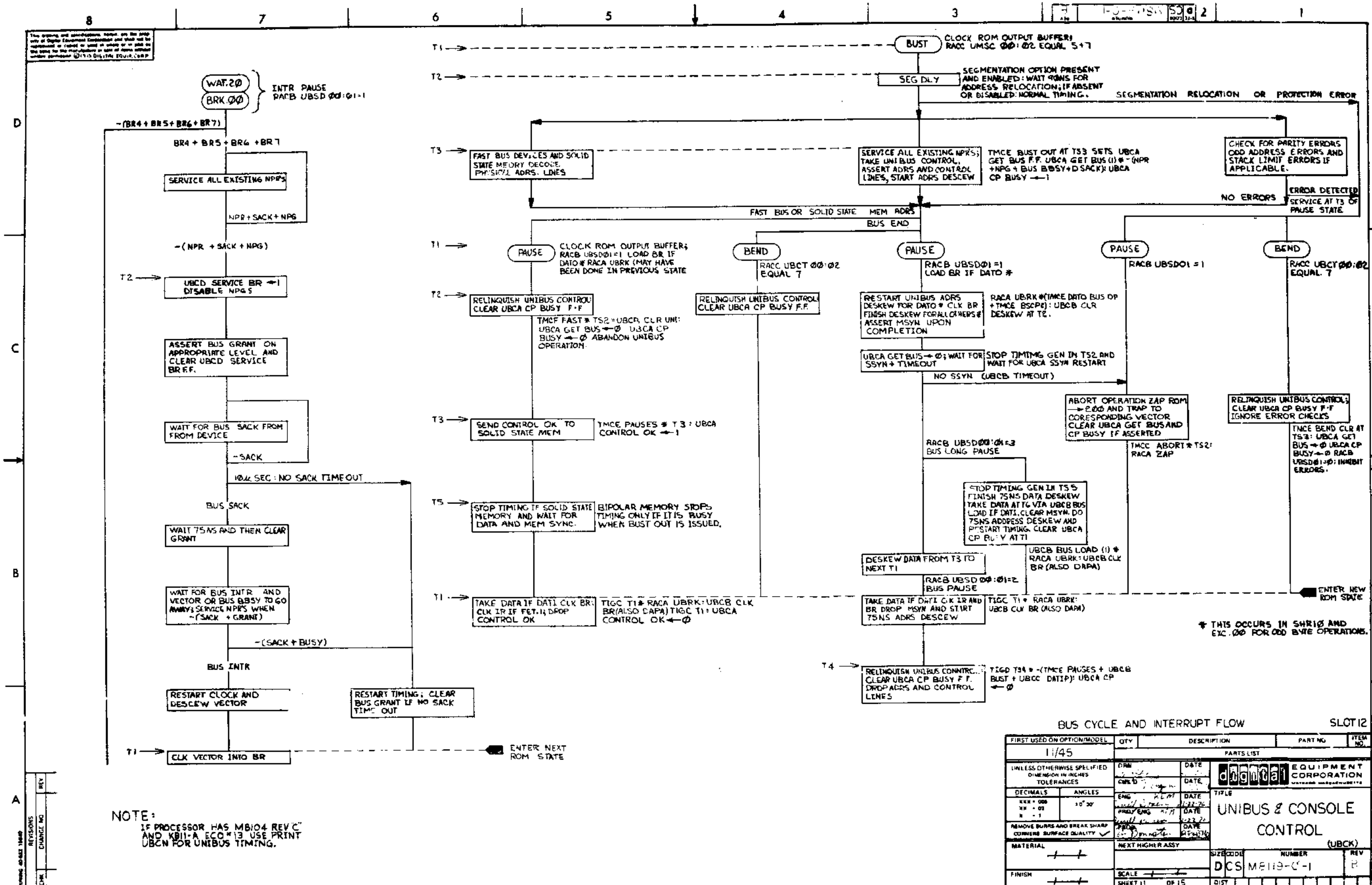
WAT.20
BRK.ØØ
INTR PAUSE RACB UBSD ØØ:Ø1=1
~(BR4 + BR5 + BR6 + BR7)
BR4 + BR5 + BR6 + BR7
SERVICE ALL EXISTING NPR'S
NPR + SACK + NPG
~(NPR + SACK + NPG)
UBCD SERVICE BR ← 1 DISABLE NPGS
ASSERT BUS GRANT ON APPROPRIATE LEVEL AND CLEAR UBCD SERVICE BR F.F.
WAIT FOR BUS SACK FROM FROM DEVICE
~SACK
10μ SEC : NO SACK TIMEOUT
BUS SACK
WAIT 75NS AND THEN CLEAR GRANT
WAIT FOR BUS INTR AND VECTOR OR BUS BBSY TO GO AWAY; SERVICE NPR'S WHEN ~(SACK + GRANT)
~(SACK + BUSY)
BUS INTR
RESTART CLOCK AND DESCEW VECTOR
RESTART TIMING; CLEAR BUS GRANT IF NO SACK TIME OUT
CLK VECTOR INTO BR
ENTER NEXT ROM STATE
BUST
CLOCK ROM OUTPUT BUFFER; RACC UMSC ØØ:Ø2 EQUAL 5+7
SEG DLY
SEGMENTATION OPTION PRESENT AND ENABLED: WAIT 90NS FOR ADDRESS RELOCATION; IF ABSENT OR DISABLED: NORMAL TIMING.
SEGMENTATION RELOCATION OR PROTECTION ERROR
FAST BUS DEVICES AND SOLID STATE MEMORY DECODE PHYSICAL ADRS. LINES
SERVICE ALL EXISTING NPR'S; TAKE UNIBUS CONTROL, ASSERT ADRS AND CONTROL LINES, START ADRS DESCEW
TMCE BUST OUT AT TS3 SETS UBCA GET BUS F.F. UBCA GET BUS (1) * ~(NPR + NPG + BUS BBSY + D SACK): UBCA CP BUSY ← 1
CHECK FOR PARITY ERRORS ODD ADDRESS ERRORS AND STACK LIMIT ERRORS IF APPLICABLE.
NO ERRORS
ERROR DETECTED
SERVICE AT T3 OF PAUSE STATE
FAST BUS OR SOLID STATE MEM ADRS
BUS END
PAUSE
CLOCK ROM OUTPUT BUFFER; RACB UBSDØ1=1 LOAD BR IF DATO # RACA UBRK (MAY HAVE BEEN DONE IN PREVIOUS STATE
BEND
RACC UBCT ØØ:Ø2 EQUAL 7
RACB UBSDØ1 =1 LOAD BR IF DATO *
RACB UBSDO1 = 1
RELINQUISH UNIBUS CONTROL CLEAR UBCA CP BUSY F·F
TMCF FAST * TS2 : UBCA CLR UNI UBCA GET BUS ← Ø UBCA CP BUSY ← Ø ABANDON UNIBUS OPERATION
RESTART UNIBUS ADRS DESKEW FOR DATO * CLK BR FINISH DESKEW FOR ALL OTHERS # ASSERT MSYN UPON COMPLETION
RACA UBRK * (TMCE DATO BUS OP + TMCE BSCPØ): UBCB CLR DESKEW AT T2.
UBCA GET BUS ← Ø; WAIT FOR SSYN + TIMEOUT
STOP TIMING GEN IN TS2 AND WAIT FOR UBCA SSYN RESTART
NO SSYN (UBCB TIMEOUT)
ABORT OPERATION ZAP ROM → 2ØØ AND TRAP TO CORESPONDING VECTOR CLEAR UBCA GET BUS AND CP BUSY IF ASSERTED
TMCC ABORT * TS2: RACA ZAP
RELINQUISH UNIBUS CONTROL; CLEAR UBCA CP BUSY F·F IGNORE ERROR CHECKS
TMCE BEND CLR AT TS3: UBCA GET BUS ← Ø UBCA CP BUSY ← Ø RACB UBSDØ1=Ø: INHIBIT ERRORS.
SEND CONTROL OK TO SOLID STATE MEM
TMCE PAUSES * T3 : UBCA CONTROL OK ← 1
RACB UBSDØØ:Ø1=3 BUS LONG PAUSE
STOP TIMING IF SOLID STATE MEMORY AND WAIT FOR DATA AND MEM SYNC.
BIPOLAR MEMORY STOPS TIMING ONLY IF IT IS BUSY WHEN BUST OUT IS ISSUED.
STOP TIMING GEN IN TS5 FINISH 75NS DATA DESKEW TAKE DATA AT T6 VIA UBCB BUS LOAD IF DATI, CLEAR MSYN. DO 75NS ADDRESS DESKEW AND RESTART TIMING. CLEAR UBCA CP BUSY AT T1
UBCB BUS LOAD (1) * RACA UBRK: UBCB CLK BR (ALSO DAPA)
DESKEW DATA FROM T3 TO NEXT T1
RACB UBSD ØØ:Ø1=2 BUS PAUSE
TAKE DATA IF DATI CLK BR: CLK IR IF FET.1; DROP CONTROL OK
TIGC T1 * RACA UBRK: UBCB CLK BR (ALSO DAPA) TIGC T1: UBCA CONTROL OK ← Ø
TAKE DATA IF DATI CLK IR AND BR DROP MSYN AND START 75NS ADRS DESCEW
TIGC T1 * RACA UBRK: UBCB CLK BR (ALSO DAPA)
ENTER NEW ROM STATE
* THIS OCCURS IN SHRIØ AND EXC.ØØ FOR ODD BYTE OPERATIONS.
RELINQUISH UNIBUS CONTROL CLEAR UBCA CP BUSY F.F. DROP ADRS AND CONTROL LINES
TIGD T34 * ~(TMCE PAUSES + UBCB BUST + UBCC DATIP): UBCA CP ← Ø
T1 T2 T3 T4 T5
NOTE: IF PROCESSOR HAS MB104 REV C AND KB11-A ECO #13 USE PRINT UBCN FOR UNIBUS TIMING.
BUS CYCLE AND INTERRUPT FLOW
SLOT12
11/45
digital EQUIPMENT CORPORATION
UNIBUS & CONSOLE CONTROL (UBCK)
D CS M8119-0-1
SHEET 11 OF 15

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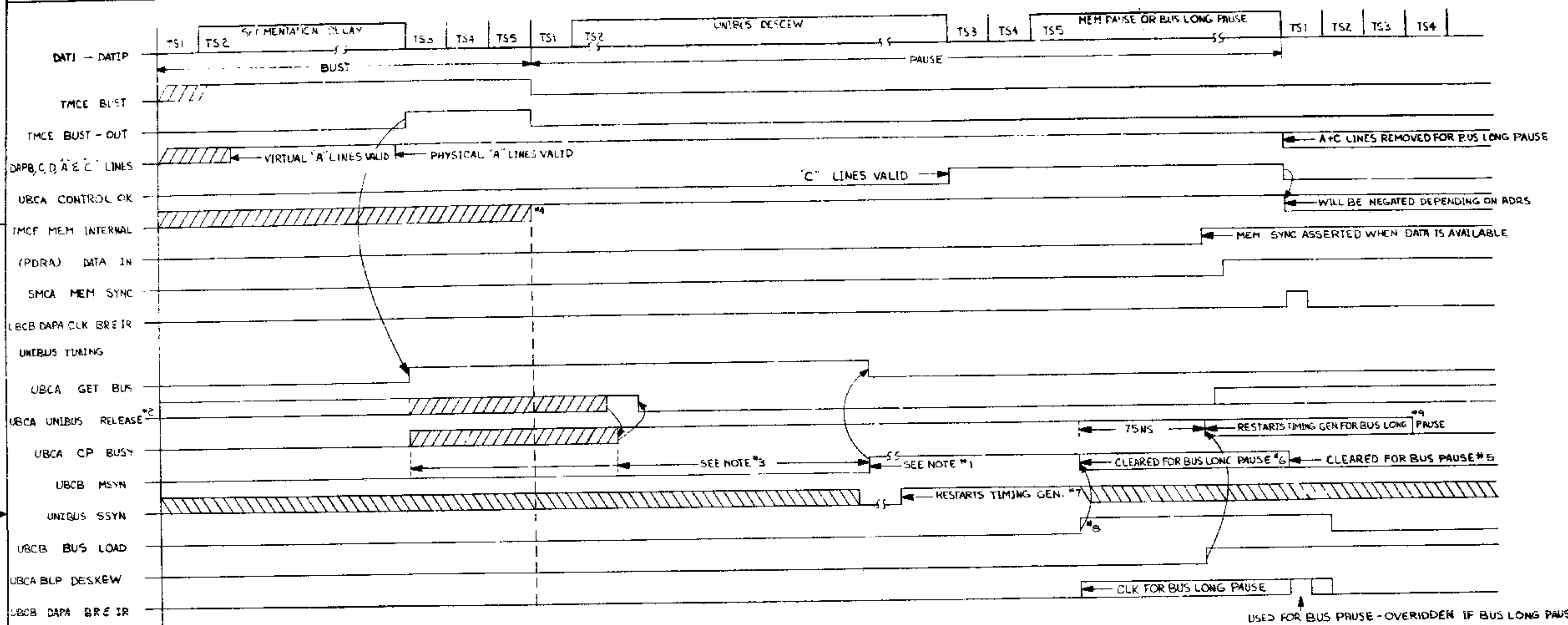


1. MSYN IS NOT SET IF ODD ADRS, SEGMENTATION, PARITY OR STACK LIMIT ERROR HAS OCCURED. ERROR CONDITION RESTARTS TIMING GENERATOR AND ROM IS FORCED TO ZAP.ØØ

2. UNIBUS RELEASE = ~(NPG + NPR + DSACK + BBSY)

3. MSYN IS SET 150 NS AFTER CP BUSY IS SET OR WHENEVER SSYN IS NOT PRESENT AFTER THE 150NS DESCEW

4. IF ADRS IS INTERNAL OR SOLID STATE MEMORY UNIBUS CNTL LOGIC IS CLEARED, DESCEW STOPPED, MSYN NOT ASSERTED.

5. BUS PAUSE - ADRS WILL NOT BE CHANGED IMMEDIATELY UPON EXITING PAUSE STATE

6. BUS LONG PAUSE - 75NS ADRS DESCEW AFTER NEGATION OF MSYN MUST BE DONE BEFORE TIMING GEN. RESTARTS AT T5 OF PAUSE CYCLE BECAUSE "A" & C LINES WILL CHANGE UPON EXITING PAUSE STATE

7. IF NON-EXISTANT MEMORY, TIMEOUT RESTARTS CLOCK.

8. BUS LOAD IS SET ONE CLOCK AFTER T5 TO ALLOW COMPLETION OF WRITE TO SCRATCHPAD FOR PREVIOUS CYCLE BEFOR NEW IR & BR ARE LOADED

9. CLEARED 75NS AFTER MSYN → Ø: T4 FOR BUS PAUSE

NOTE:
IF PROCESSOR HAS M8104 REV C AND KB11-A ECO #13 USE PRINT UBCP FOR UNIBUS TIMING.

DATI - DATIP TIMING DIAGRAM SLOT 12

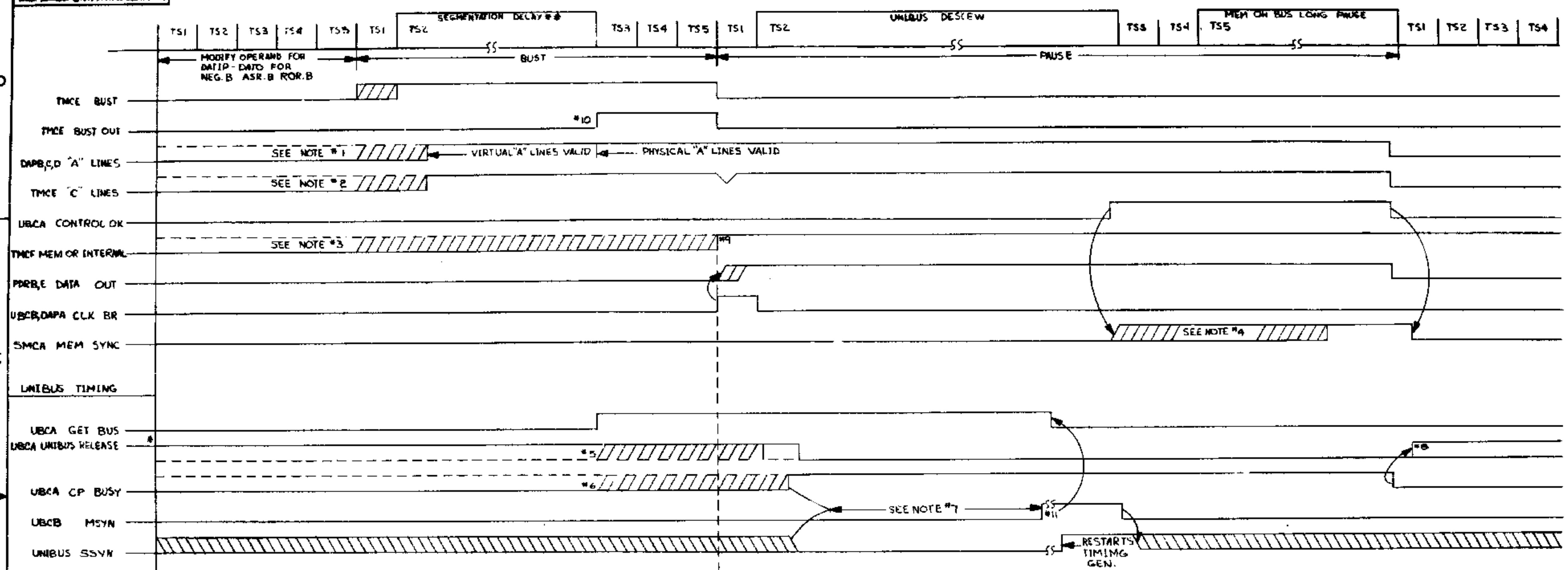
digital EQUIPMENT CORPORATION

TITLE: UNIBUS & CONSOLE CONTROL (UBCL)

NEXT HIGHER ASSY. B-DD-KB11-A

SIZE D CODE CS NUMBER M8119-Ø-1 REV. B

SHEET 12 OF 12



NOTES:

* UNIBUS RELEASE = ¬(NPR + NPG + BBSY + SACK)

** TIMING GEN: PROVIDES DELAY EQUIVALENT TO 3 TIME STATES FOR RELOCATION OF ADDRESSES IF SEGMENTATION IS PRESENT AND ENABLED

1. ADDRESS WILL NOT BE CHANGING IF DATO IS PRECEEDED BY DATIP (DOTTED LINE SHOWS DATIP)
2. CONTROL LINES WILL SHOW DATIP OR ELSE ARE INVALID UNTIL CONTROL OK
3. MEM OR INTERNAL WILL BE TRUE UPON ENTERING DATO IF ADDRESS WAS SEMI CONDUCTOR MEMORY OR INTERNAL FROM PREVIOUS DATIP
4. MEM SYNC IS ASSERTED BY SEMI CONDUCTOR MEMORY AS SOON AS DATA IS TAKEN. IF DATA IS TAKEN AND MEM SYNC ASSERTED PRIOR TO T5 OF THE PAUSE CYCLE TIMING GENERATOR IS NOT STOPPED IN T5
5. UNIBUS RELEASE WILL N[…] E TRUE IF PREVIOUS OPERATION WAS A DATIP TO A UNI[…]US ADDRESS.
6. CP BUSY WILL BE ASSERTED UPON ENTRY INTO DATO IF PREVIOUS OPERATION WAS A DATIP TO A UNIBUS ADDRESS
7. DESKEW FOR A C D LINES IS 150 NS STARTING WHEN CP BUSY IS SET AND SSYN FROM THE PREVIOUS BUS OPERATION IS NEGATED.
8. UNIBUS RELEASE BECOMES TRUE IF NO NPR DEVICE HAS BEEN GIVEN CONTROL OR IS REQUESTING PRIOR TO CP BSY GETING CLEARED
9. IF ADDRESS IS SEMI CONDUCTOR MEMORY OR INTERNAL, UNIBUS LOGIC IS CLEARED DESKEW IS STOPPED AND MSYN IS NOT ASSERTED.
10. BUST OUT IS INHIBITED IN [RDØØ FOR CONDITIONAL BUST (MSC=5) IF FIN # SM123 + BR INST # BRQ TRUE. DM123 # ¬(BIN # SMB + BR INSTR)
11. MSYN IS NOT SET IF AN ODD ADRS, STACK LIMIT RED SEGMENTATION OR PARITY ERROR HAS OCCURED

NOTE:
IF PROCESSOR HAS M8104 REV C AND KB11-A ECO #13, USE PRINT UBCP FOR UNIBUS TIMING.

NOTE:
1. ALL SIGNALS ARE SHOWN TRUE WHEN HIGH

DATO TIMING DIAGRAM — SLOT 12

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

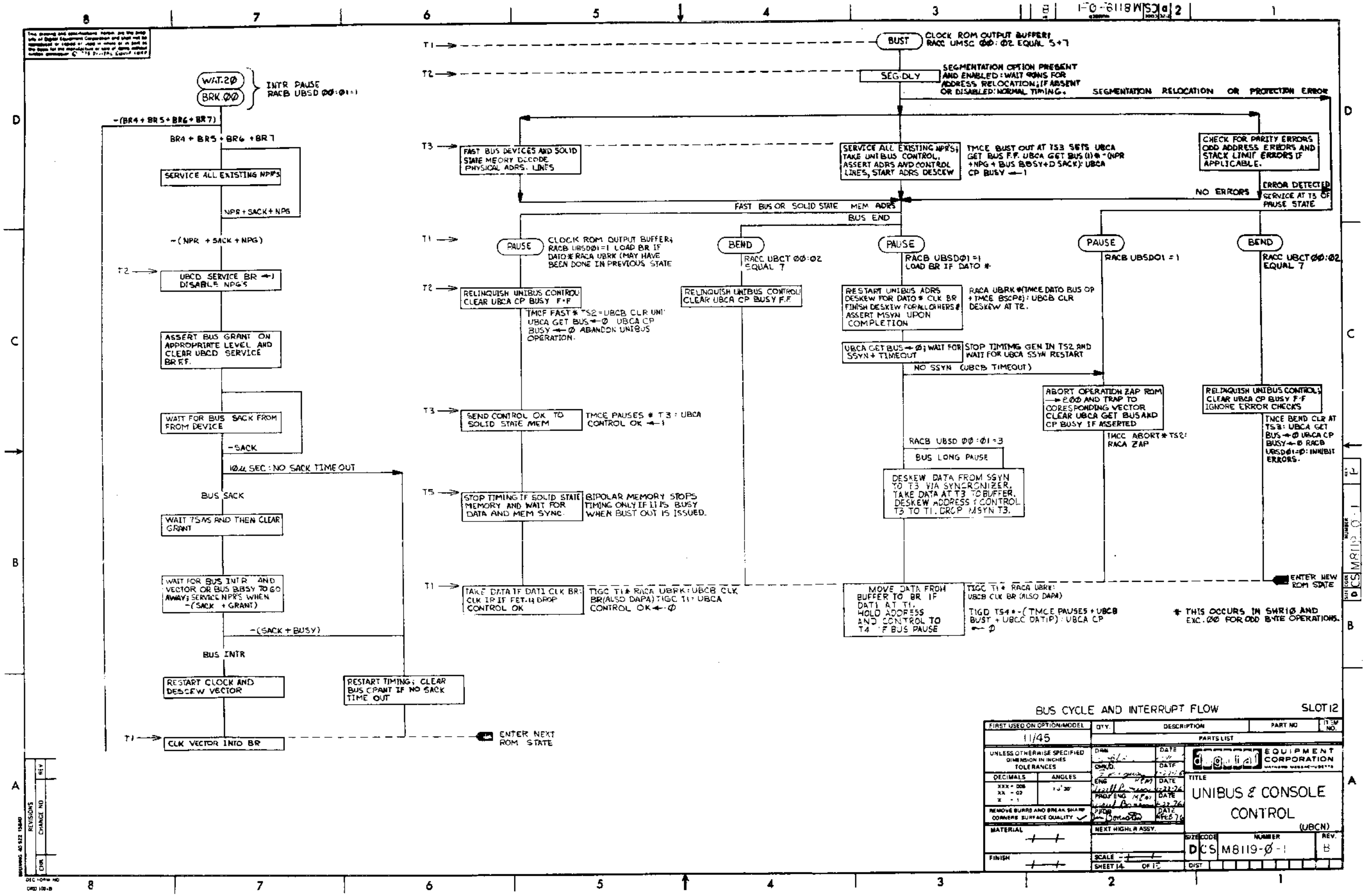
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

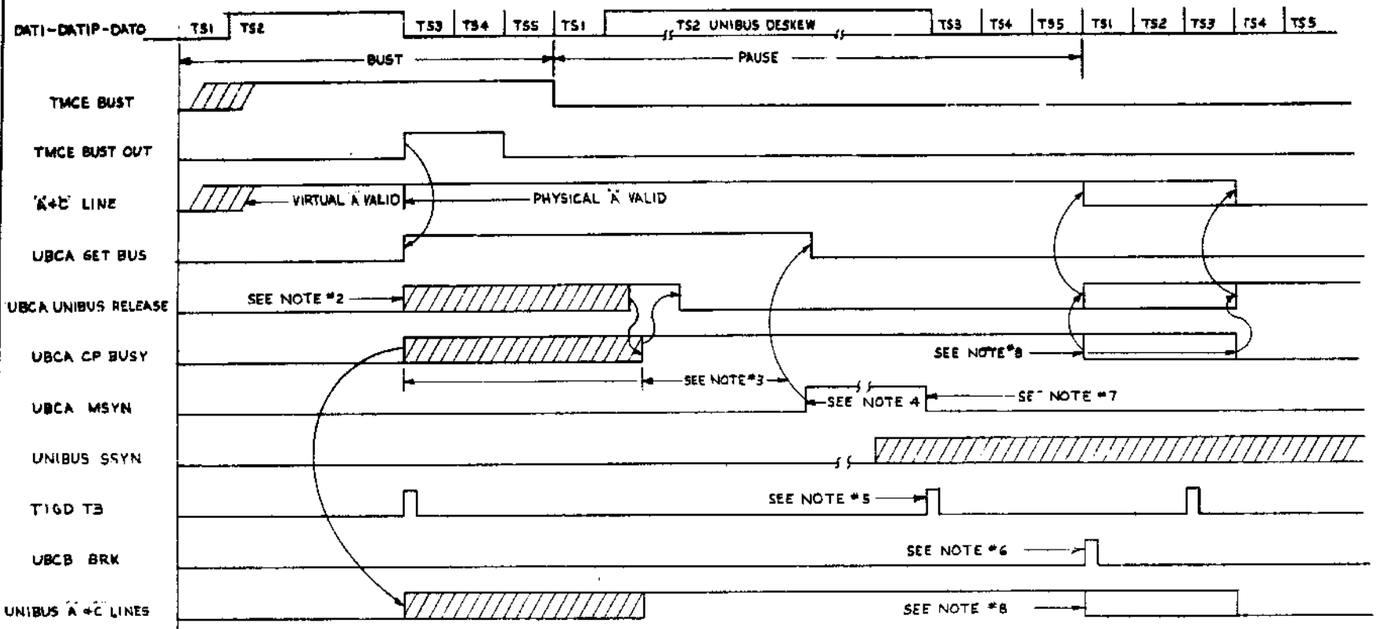
DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: UNIBUS & CONSOLE CONTROL (UBCM)

SIZE D — CODE CS — NUMBER M8119-Ø-1 — REV B

SHEET 13 OF 15


BUST
CLOCK ROM OUTPUT BUFFER; RACC UMSC ØØ:Ø2 EQUAL 5+7
SEG DLY
SEGMENTATION OPTION PRESENT AND ENABLED: WAIT 90NS FOR ADDRESS RELOCATION; IF ABSENT OR DISABLED: NORMAL TIMING.
SEGMENTATION RELOCATION OR PROTECTION ERROR
WAT.2Ø
BRK.ØØ
INTR PAUSE RACB UBSD ØØ:Ø1=1
~(BR4 + BR5 + BR6 + BR7)
BR4 + BR5 + BR6 + BR7
SERVICE ALL EXISTING NPR'S
NPR + SACK + NPG
~(NPR + SACK + NPG)
UBCD SERVICE BR ←1 DISABLE NPG'S
ASSERT BUS GRANT ON APPROPRIATE LEVEL AND CLEAR UBCD SERVICE BR F.F.
WAIT FOR BUS SACK FROM FROM DEVICE
~SACK
10µ SEC: NO SACK TIME OUT
BUS SACK
WAIT 75NS AND THEN CLEAR GRANT
WAIT FOR BUS INTR AND VECTOR OR BUS BBSY TO GO AWAY; SERVICE NPR'S WHEN ~(SACK + GRANT)
~(SACK + BUSY)
BUS INTR
RESTART CLOCK AND DESKEW VECTOR
RESTART TIMING; CLEAR BUS GRANT IF NO SACK TIME OUT
CLK VECTOR INTO BR
ENTER NEXT ROM STATE
FAST BUS DEVICES AND SOLID STATE MEMORY DECODE PHYSICAL ADRS. LINES
SERVICE ALL EXISTING NPR'S; TAKE UNIBUS CONTROL, ASSERT ADRS AND CONTROL LINES, START ADRS DESKEW
TMCE BUST OUT AT TS3 SETS UBCA GET BUS F.F. UBCA GET BUS (1) ← ~(NPR + NPG + BUS BBSY + D SACK): UBCA CP BUSY ← 1
CHECK FOR PARITY ERRORS ODD ADDRESS ERRORS AND STACK LIMIT ERRORS IF APPLICABLE.
NO ERRORS
ERROR DETECTED SERVICE AT T3 OF PAUSE STATE
FAST BUS OR SOLID STATE MEM ADRS
BUS END
PAUSE
CLOCK ROM OUTPUT BUFFER; RACB UBSDØ1=1 LOAD BR IF DATO✱ RACA UBRK (MAY HAVE BEEN DONE IN PREVIOUS STATE
BEND
RACC UBCT ØØ:Ø2 EQUAL 7
PAUSE
RACB UBSDØ1=1 LOAD BR IF DATO ✱
PAUSE
RACB UBSDØ1 =1
BEND
RACC UBCT ØØ:Ø2 EQUAL 7
RELINQUISH UNIBUS CONTROL CLEAR UBCA CP BUSY F-F
TMCF FAST ✱ TS2 = UBCB CLR UNI UBCA GET BUS ← Ø UBCA CP BUSY ← Ø ABANDON UNIBUS OPERATION.
RELINQUISH UNIBUS CONTROL CLEAR UBCA CP BUSY F.F.
RESTART UNIBUS ADRS DESKEW FOR DATO✱ CLK BR FINISH DESKEW FOR ALL OTHERS; ASSERT MSYN UPON COMPLETION
RACA UBRK ✱(TMCE DATO BUS OP + TMCE BSCP8): UBCB CLR DESKEW AT T2.
UBCA GET BUS ← Ø; WAIT FOR SSYN + TIMEOUT
STOP TIMING GEN IN TS2 AND WAIT FOR UBCA SSYN RESTART
NO SSYN (UBCB TIMEOUT)
ABORT OPERATION ZAP ROM → 2ØØ AND TRAP TO CORRESPONDING VECTOR CLEAR UBCA GET BUS AND CP BUSY IF ASSERTED
TMCC ABORT ✱ TS2: RACA ZAP
RELINQUISH UNIBUS CONTROL; CLEAR UBCA CP BUSY F-F IGNORE ERROR CHECKS
TMCE BEND CLR AT TS3: UBCA GET BUS ← Ø UBCA CP BUSY ← Ø RACB UBSDØ1=Ø: INHIBIT ERRORS.
SEND CONTROL OK TO SOLID STATE MEM
TMCE PAUSES ✱ T3 : UBCA CONTROL OK ← 1
RACB UBSD ØØ:Ø1=3
BUS LONG PAUSE
DESKEW DATA FROM SSYN TO T3 VIA SYNCRONIZER. TAKE DATA AT T3 TO BUFFER. DESKEW ADDRESS & CONTROL T3 TO T1. DROP MSYN T3.
STOP TIMING IF SOLID STATE MEMORY AND WAIT FOR DATA AND MEM SYNC.
BIPOLAR MEMORY STOPS TIMING ONLY IF IT IS BUSY WHEN BUST OUT IS ISSUED.
TAKE DATA IF DATI CLK BR; CLK IR IF FET-H DROP CONTROL OK
TIGC T1✱ RACA UBRK: UBCB CLK BR(ALSO DAPA) TIGC T1: UBCA CONTROL OK ← Ø
MOVE DATA FROM BUFFER TO BR IF DATI AT T1. HOLD ADDRESS AND CONTROL TO T4 IF BUS PAUSE
TIGC T1✱ RACA UBRK: UBCB CLK BR (ALSO DAPA)
TIGD TS4✱~(TMCE PAUSES + UBCB BUST + UBCC DATIP): UBCA CP ← Ø
ENTER NEW ROM STATE
✱ THIS OCCURS IN SHR1Ø AND EXC.ØØ FOR ODD BYTE OPERATIONS.
T1
T2
T3
T5
BUS CYCLE AND INTERRUPT FLOW
SLOT 12
FIRST USED ON OPTION/MODEL
11/45
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS
ANGLES
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
MATERIAL
FINISH
QTY.
DESCRIPTION
PART NO
ITEM NO.
PARTS LIST
DRN
CHKD
ENG
PROJ ENG
PROD
DATE
digital EQUIPMENT CORPORATION
TITLE
UNIBUS & CONSOLE CONTROL (UBCN)
NEXT HIGHER ASSY.
SCALE
SHEET 14 OF 15
SIZE D
CODE CS
NUMBER M8119-Ø-1
REV. B
DIST
REVISIONS
CHANGE NO
CHK
REV
D CS M8119-Ø-1



NOTES:

*1 MSYN IS NOT SET IF ODD ADDRESS, KTIC, PARITY OR STACK LIMIT HAS OCCURED. ERROR CONDITION RESTARTS TIMING GEN. AND ROM IS FORCED TO ZAP.00

*2 UNIBUS RELEASE = -(NPG + NPR + SACK + B BUSY)

*3 MSYN IS SET 150 NS AFTER CP BUSY OR WHENEVER SSYN IS NOT PRESENT AFTER 150 NS DESKEW.

*4 IF ADRS IS INTERNAL OR SOLID STATE MEMORY, UNIBUS CONTROL LOGIC IS CLEARED, DESKEW STOPPED, MSYN NOT ASSERTED.

*5 T3 STROBES UNIBUS DATA TO BUS BUFFER REGISTER EVERY T3. FOR DATI- DATIP THE BR CLOCK IS NEXT T1

*6 BRK IS DEPENDENT ON ROM TO LOAD BUS TO BR.

*7 T5 NS DESKEW FOR MSYN IS OBTAINED BY THE FACT THAT SSYN MUST GO THROUGH 2 RANKS OF SYNCRONIZATION

*8 FOR BUS LONG PAUSE ADDRESS + CONTROL IS DESKEWED FROM T3 TO T1. FOR BUS PAUSE THEY ARE HELD TO TS4 OF THE NEXT ROM CYCLE.

SLOT 12

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS .XXX ± .005, .XX ± .02, .X ± .1
ANGLES ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √

DRN		DATE
CHK'D		DATE
ENG		DATE
PROJ ENG		DATE
APPD		DATE

MATERIAL
FINISH
NEXT HIGHER ASSY.
SCALE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

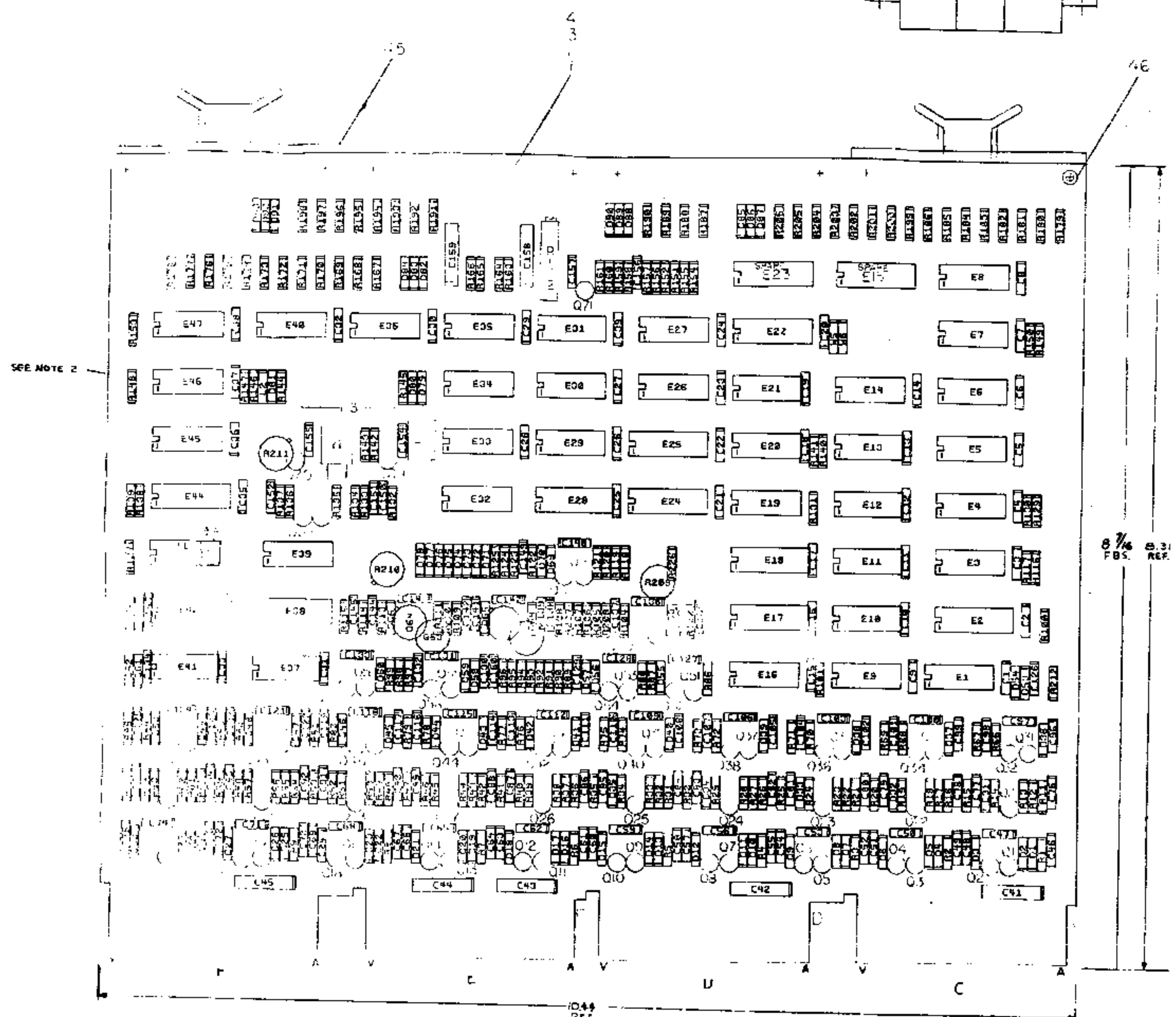
TITLE
UNIBUS & CONSOLE CONTROL (UBCP)

SIZE	CODE	NUMBER	REV.
D	CS	M8119-Ø-1	B

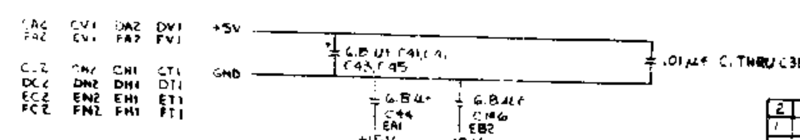
DIST.

REVISIONS	LEV	CHANGE NO	CHR

DEC M8119-Ø-1



NOTES:
1. UNLESS OTHERWISE NOTED: RESISTANCE IS IN Ω, CAPACITANCE IS IN PICOFARADS. CAPS WITHOUT VALUE NOTED ARE .22 MFD 5%. DIODES ARE TYPE FD777 & ALL NPN TRANSISTORS ARE DEC 3009B & PNP TRANSISTORS ARE DEC 4258
2. BOND L1 TO ETCHED BOARD



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2	R209, R210	POT 2K 1/2 W	13-09150-07	51
1	R211	POT. 100 1/2 W	13-09150-05	50
1	R136	RES 120 1/4 W 5%	13-00247	49
1	R212	RES 33 1/4 W 5%	[illegible]	48
2	W3, W5	JUMPER INSULATED	9009185	47
8		EYELET #G64-1	9006132	46
4		HANDLE FLIP CHIP MAGENTA	9008331-06	45
1	Y1	CRYSTAL 33.333 MHZ	[illegible]	44
1	L2	INDUCTOR ATAH NYTRONICS WEE WEE .047	[illegible]	43
1	L1	INDUCTOR .22 µH VARIABLE NYTRONICS WEE VL .22	1611100	42
1	L3	INDUCTOR RFCS 3.3 µH	1601159	41

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
35	Q1, Q3, Q5, Q7, Q9, Q11, Q13, Q15, Q17, Q19, Q21, Q23 THRU Q25, Q27 THRU Q40, Q51, Q54, Q56, Q58, Q59, Q61, Q65, Q66, Q69, Q70	TRANSISTOR DEC 4258	1505621	45
36	Q2, Q4, Q6, Q8, Q10, Q12, Q14, Q16, Q18, Q20, Q26 THRU Q30, Q41 THRU Q50, Q52, Q53, Q57, Q60, Q62, Q64, Q67, Q68, Q71, Q55	TRANSISTOR DEC 3009 B	1502150	44
1	E35	IC DEC 74S40	[illegible]	38
8	E2, E17, E18, E22, E24, E25, E28, E44	IC DEC 74S112	1910545	37
8	E5, E8, E19, E29, E33, E6, E26, E37	IC DEC 74S74	1910544	36
4	E11, E12, E13, E20	IC DEC 74S65	1910543	35
	E32	IC DEC 74S64	1910542	34
6	E1, E9, E14, E16, E37, E41	IC DEC 74S40	1910541	33
2	E40, E46	IC DEC 74S20	1910539	32
3	E3, E34, E47	IC DEC 74S11	1910537	31
5	E4, E7, E21, E30, E45	IC DEC 74S04	1910534	30
4	E10, E31, E36, E42	IC DEC 74S00	1910532	29
1	R162	POT 1K 3/4W 10%	1309143-07	28
9	R117, R130, R151, R140, R147, R150, R157, R163, R166	RES 680 1/4W 5%	1301424	27
1	R142	RES 750 1/4W 5%	1301401	26
13	R66, R68, R70, R72, R74, R76, R78, R80, R82, R84, R118, R119, R120	RES 1.2K 1/4W 5%	1301320	25
26	R13, R15, R18, R20, R23, R25, R28, R30, R33, R35, R38, R41, R44, R47, R50, R53, R56, R59, R62, R65, R102, R104, R114, R115, R132, R158	RES 10 1/4W 5%	1301317	24
5	R16, R17, R22, R27, R32	RES 15K 1/4 5%	1300496	23
17	R6 THRU R10, R40, R46, R52, R58, R64, R67, R69, R71, R73, R75, R90, R113	RES 4.7K 1/4 5%	1300447	22
12	R1 THRU R5, R77, R79, R81, R83, R85, R86, R103	RES 3K 1/4 5%	1300432	21
6	R11, R16, R21, R26, R31, R143	RES 1.5K 1/4 5%	1300391	20
76	R36, R37, R42, R43, R48, R49, R54, R55, R60, R61, R69 THRU R96, R105 THRU R112, R122, R123, R124, R126, R106, R138, R141, R148, R153, R167 THRU R208	RES 1K 1/4 5%	1300365	19
12	[illegible]	RES 330 1/4W 5%	1300295	18
1	R145	RES 220 1/4W 5%	1300277	17
6	R100, [illegible]	RES 150 1/4W 5%	1300250	16
11	R14, R19, R24, R29, R34, R39, R45, R51, R57, R63, R121	RES 100 1/4W 5%	1300229	15
2	R133, R137	RES 68 1/4W 5%	1300219	14
7	R87, R89, R97, R134, R135, R144, R98	RES 47 1/4W 5%	1300202	13
52	D1, D3, D4, D6, D7, D9, D10, D12, D13, D15, D16, D18, D19, D21, D22, D24, D25, D27, D28, D30, D31 THRU D50, D53, D54, D57, D58, D61, D62, D64, D65, D67, D68, D69, D70	DIODE FD777	1103041	12
19	D2, D5, D8, D11, D14, D17, D20, D23, D26, D29, D55, [illegible] D63, D66	DIODE D662	1100113	11
96	[illegible]	CAP .22 MF [illegible]	1010274-1	10
8	C40 THRU C45, C46, C158, C159	CAP 6.8 UF 35V 10% TANT	1005304	9
42	C1 THRU C39, C150, C155, C156	CAP .01 MF 100V 20% DISC	1001610	8
1	C154	CAP 100 PF 100V 5% DM	1000016	7
1	C157	CAP 47 PF 100V 5% DM	[illegible]	6
10	[illegible] C101, C104, C107, C110, C113, C116, C119, C122, C125	CAP 33PF 100V 5% DM	1000059	5
1		ETCHED CIRCUIT BOARD	5008799	4
REF		MODULE ECO HISTORY	R-HN M8109-0-6	3
REF		ASSY/DRILL HOLE LAYOUT	D-AH-M8109-0-8	2
REF		X-Y COORDINATE HOLE LOCATION	X-CO-M8109-0-6	1

PARTS LIST

IC TYPE	GND	+5V
DEC 74S112	8	16

IC PIN LOCATIONS

JUMPER LIST

DEC NO.	EIA NO.
DEC 4258	NONE
DEC 3009B	2N3646
DEC FD777	1103041
DEC 662	1N645

SEMICONDUCTOR CONVERSION CHART

ETCH BOARD REV F

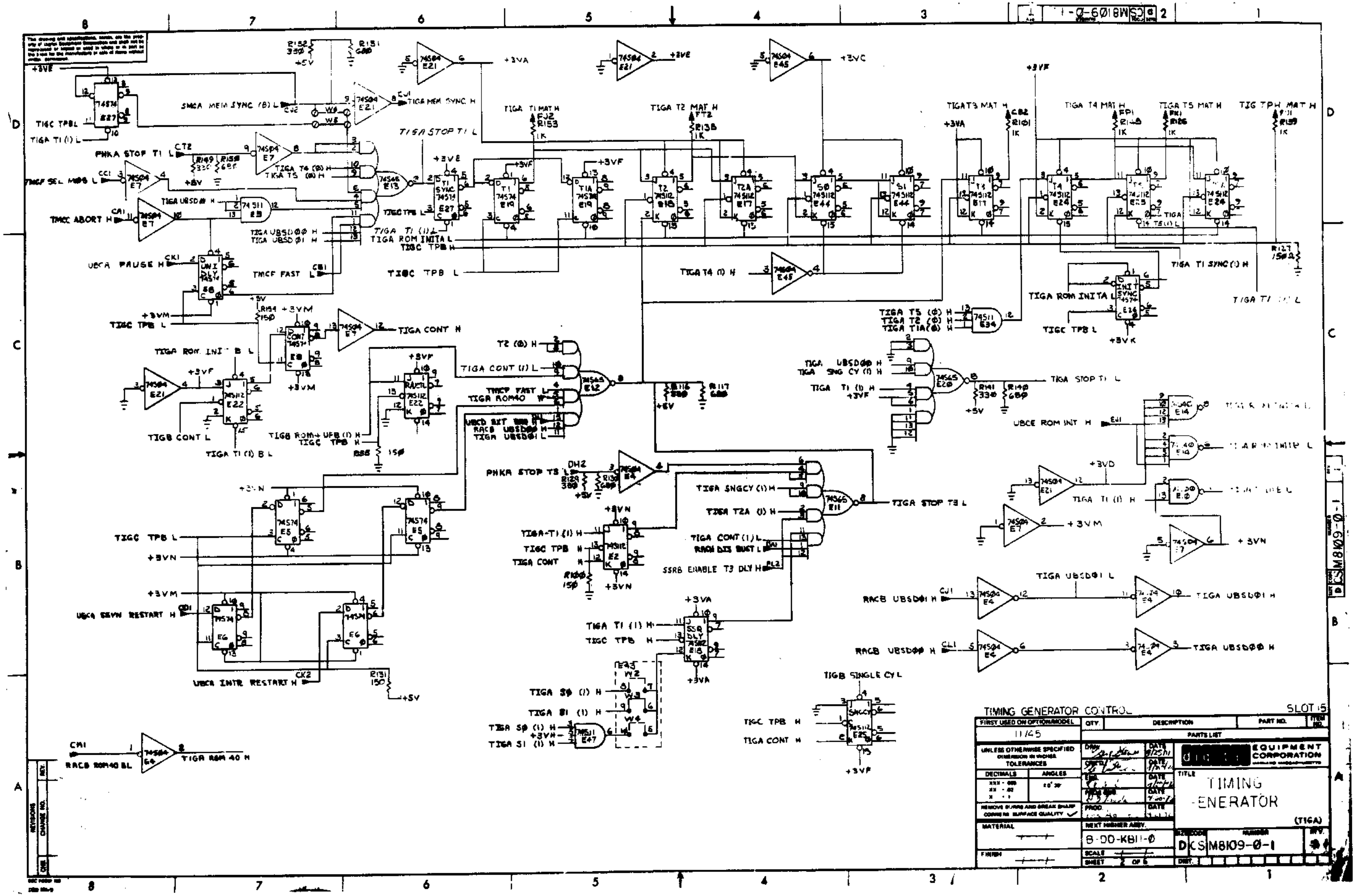
EQUIPMENT CORPORATION

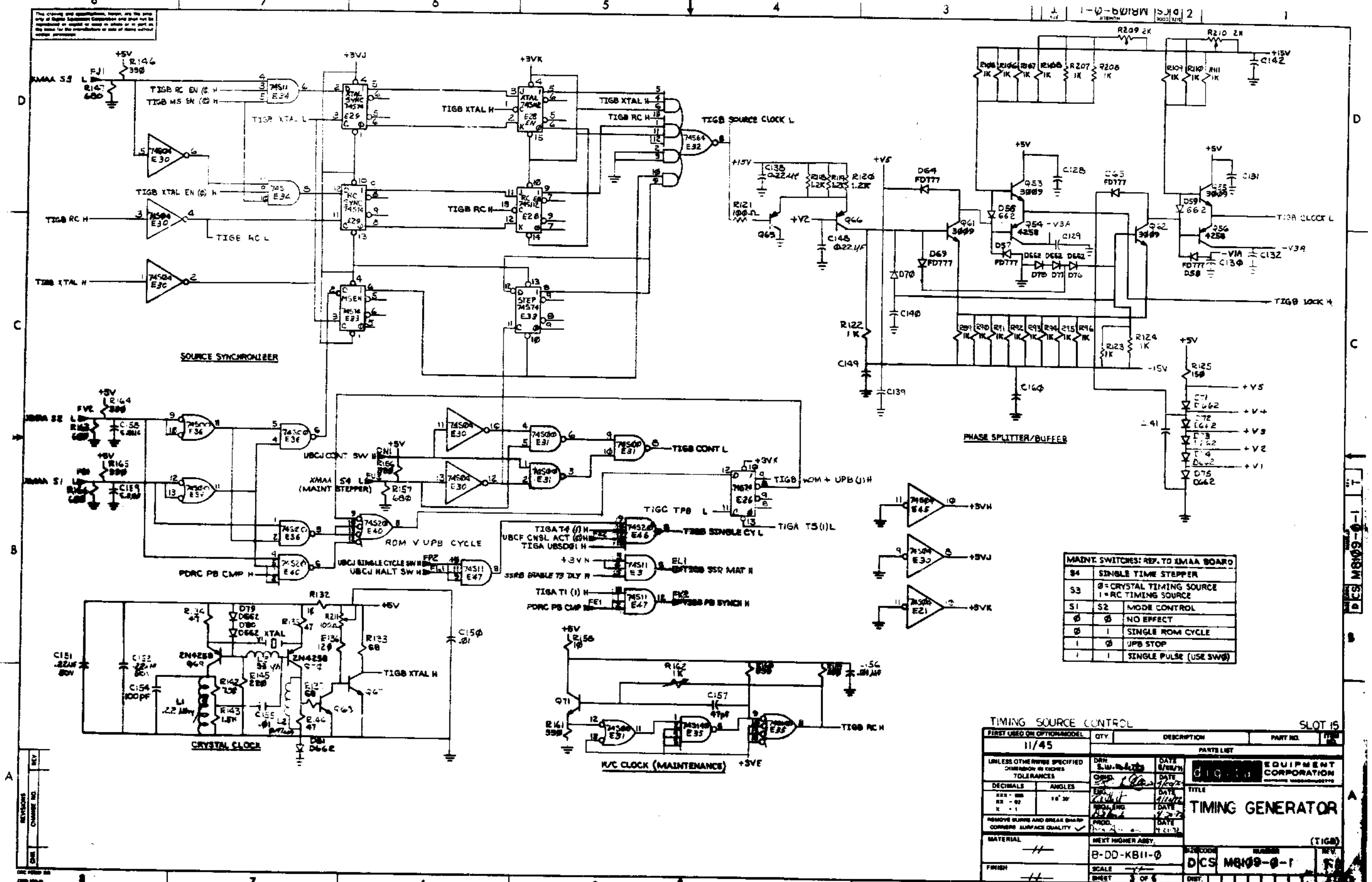
TIMING GENERATOR

B-DD-M8110-0

CS M8109-0-1

110


TIMING GENERATOR CONTROL
SLOT 15
FIRST USED ON OPTION/MODEL
11/45
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES
DECIMALS
ANGLES
MATERIAL
FINISH
NEXT HIGHER ASSY.
B-DD-KB11-Ø
EQUIPMENT CORPORATION
TITLE
TIMING GENERATOR
(TIGA)
D CS M8109-Ø-1
SHEET 2 OF 6
TIGA STOP T1 L
TIGA STOP T3 L
TIGA CONT H
TIGA UBSDØ1 H
TIGA UBSDØØ H
TIGA ROM 40 H
UBCE ROM INIT H
TIGA T1 SYNC (1) H
TIGA ROM INITA L
TIGC TPB L



MAINT. SWITCHES: REF. TO XMAA BOARD		
S4	SINGLE TIME STEPPER	
S3	Ø = CRYSTAL TIMING SOURCE 1 = RC TIMING SOURCE	
S1	S2	MODE CONTROL
Ø	Ø	NO EFFECT
Ø	1	SINGLE ROM CYCLE
1	Ø	UPB STOP
1	1	SINGLE PULSE (USE SWØ)

FIRST USED ON OPTION/MODEL: 11/45

DIGITAL EQUIPMENT CORPORATION

TITLE: TIMING GENERATOR (TIGB)

NEXT HIGHER ASSY: B-DD-KB11-Ø

SIZE: D | CODE: CS | NUMBER: M8109-Ø-1

SHEET 3 OF 6

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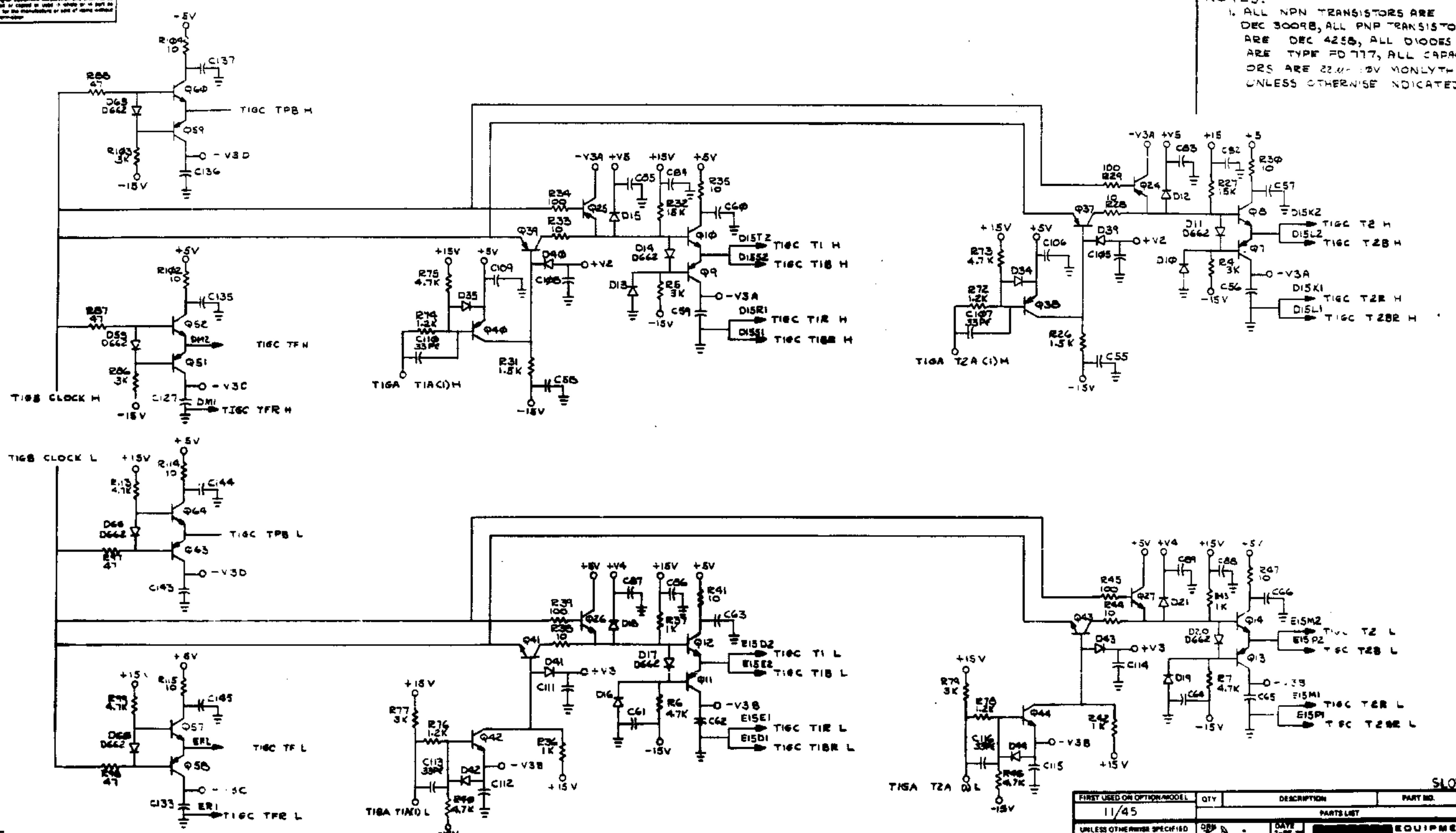
NOTES:
1. ALL NPN TRANSISTORS ARE DEC 3009B, ALL PNP TRANSISTORS ARE DEC 4258, ALL DIODES ARE TYPE FD 777, ALL CAPACITORS ARE 22µF 10V MONLYTHIC UNLESS OTHERWISE INDICATED.



SLOT 15

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.
11/45			

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

EQUIPMENT CORPORATION

TITLE: TIMING GENERATOR (TIGC)

NEXT HIGHER ASSY: B-DD-KB11-0

D CS M8109-0-1

SHEET 4 OF 6

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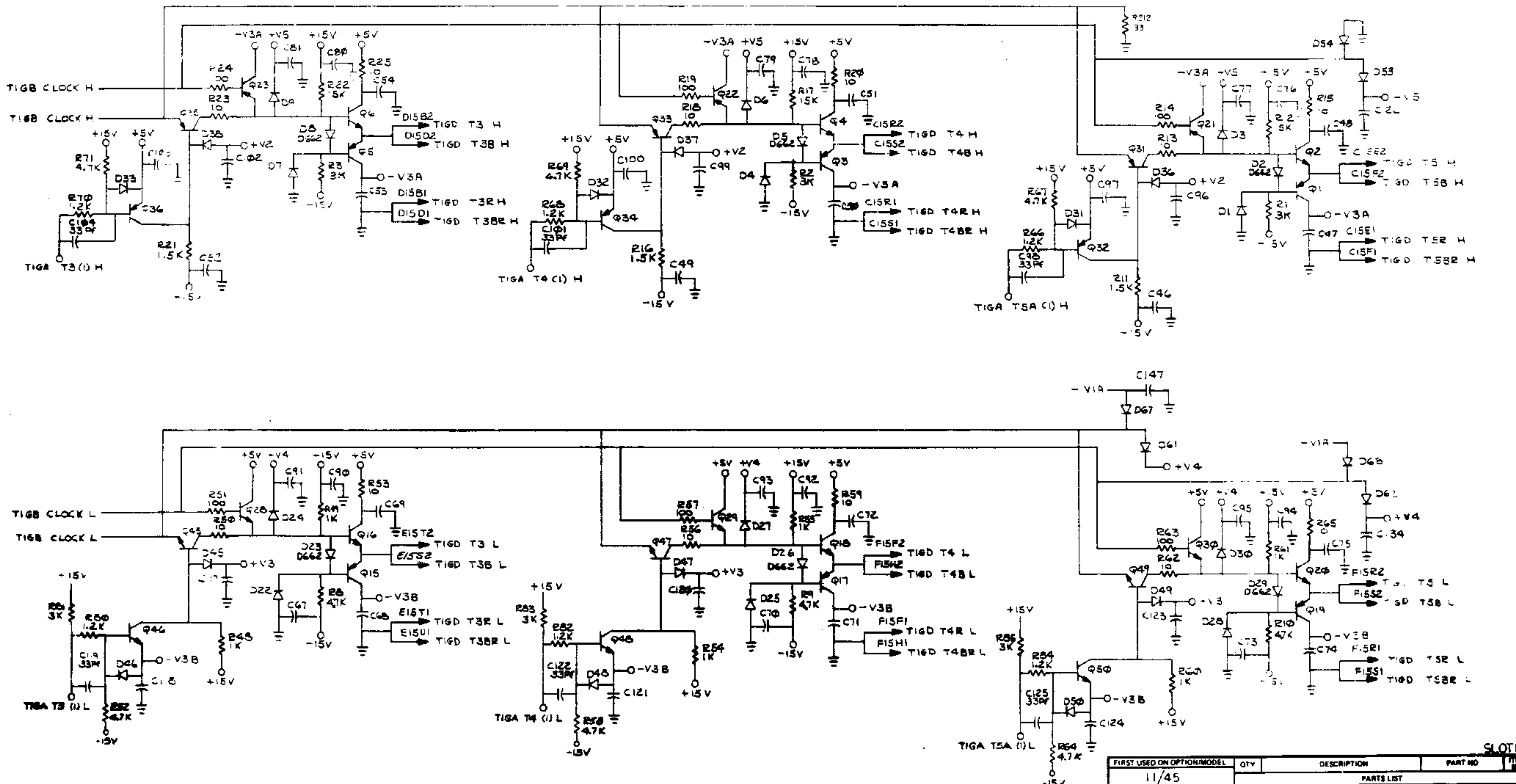


NOTE:
1. ALL NPN TRANSISTORS ARE DEC 3009B, ALL PNP TRANSISTORS ARE DEC 4258. ALL DIODES ARE TYPE FD777 ALL CAPACITORS ARE .22 μF MONOLYTHIC UNLESS OTHERWISE INDICATED.

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO
11/45		PARTS LIST	

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES

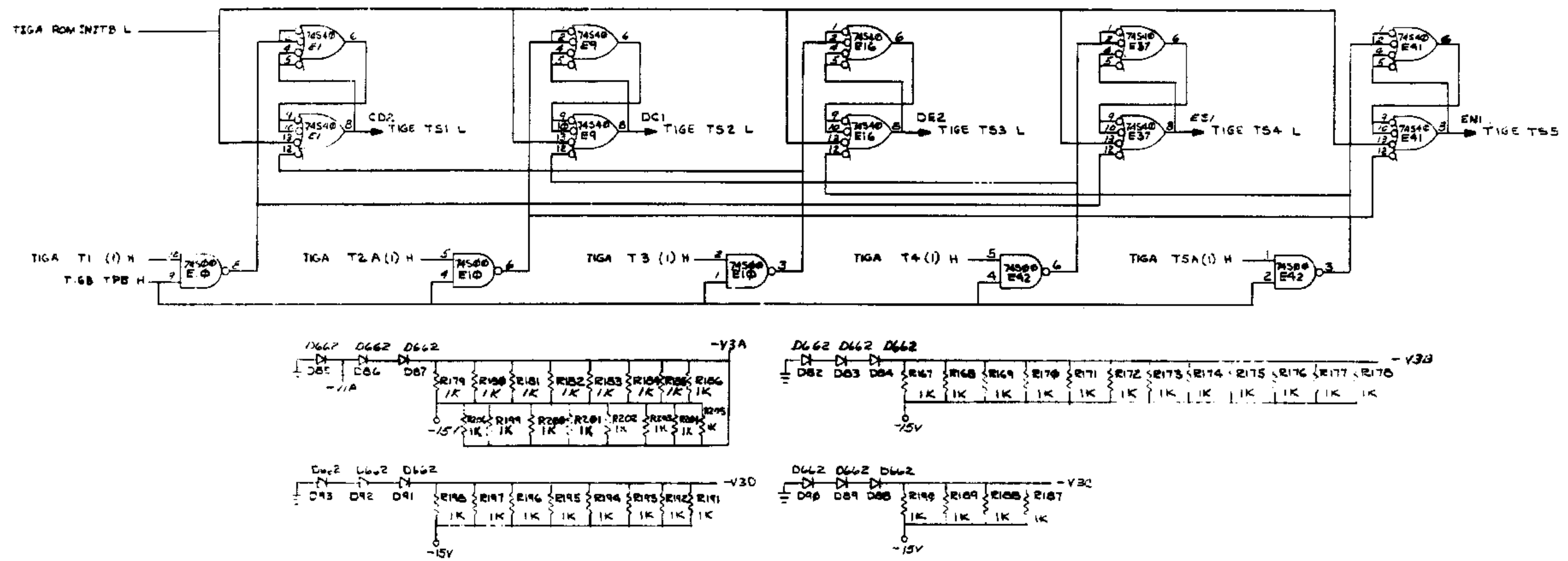
DIGITAL EQUIPMENT CORPORATION

TITLE: TIMING GENERATOR (TIGD)

NEXT HIGHER ASSY: B-DD-KB11-Ø

SIZE: D CODE: CS NUMBER: M8109-Ø-1

SHEET 5 OF 6



TIMING STATE DRIVERS

SLOT 15

FIRST USED ON OPTION/MODEL: 11/45

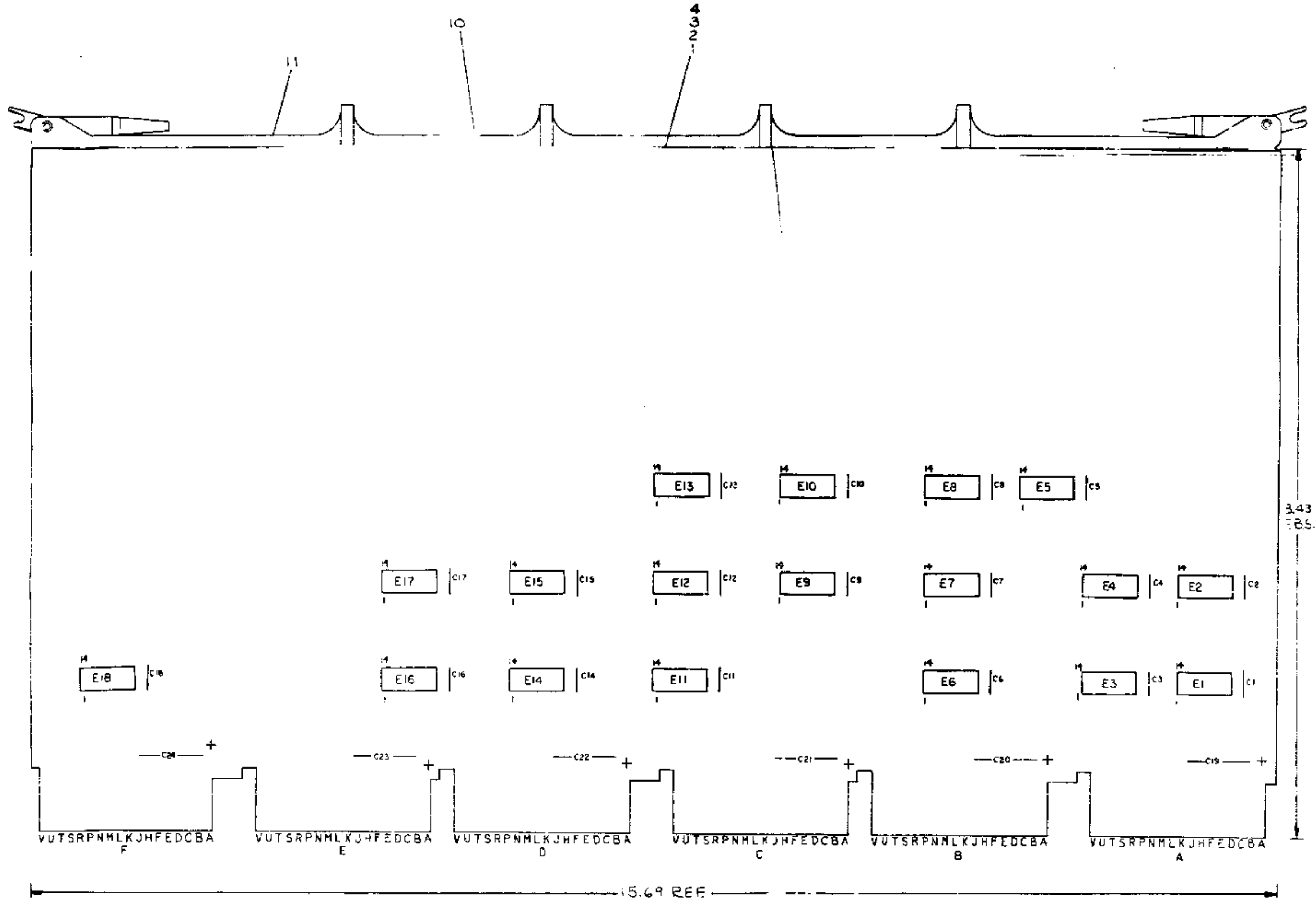
NEXT HIGHER ASSY.: B-DD-KB11-0

TITLE: TIMING GENERATOR (TIGE)

D CS M8100-0-1

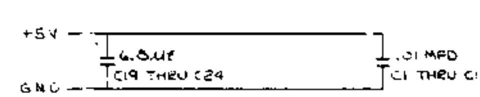
SHEET 6 OF 6

NOTES:
1. UNLESS OTHERWISE NOTED RESISTANCE IS IN Ω AND CAPACITANCE IS IN PICOFARADS. CAPS. WITHOUT VALUE NOTED ARE .01 MFD.



AA2, AV1, BA2, BV1, CA2, CV1, DA2, DV1, EA2, EV1, FA2, FV1

AT1, AN2, AT1 ...



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		HANDLE, MODULE	E-PS-2107|1-2	11
12		EYELET	9006732	10
6	E1, E2, E8, E10, E14, E17	IC DEC 74S11	1910531	9
5	E6, E7, E9, E11, E12	IC DEC 8881	1909705	8
7	E3, E4, E5, E13, E15, E16, E18	IC DEC 7404	1909686	7
18	C1 THRU C18	CAPACITOR .01UF,100V,20% DISC	1001610	6
6	C19 THRU C24	CAPACITOR 6.8UF, 35V, 10%	1005306	5
1		ETCHED CIRCUIT BOARD	5009950	4
REF		MODULE ECO HISTORY	B-HN-M8116-0-0	3
REF		ASSY/DRILLING HOLE LAYOUT	E-HN-M8116-0-5	2
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8116-0-4	1

PARTS LIST

ETCH BOARD REV A B C

EQUIPMENT CORPORATION

SYSTEM ADDRESS BUFFERS

B-DD-11/45-0

CS M8116-0-1 B

SHEET 1 OF 3

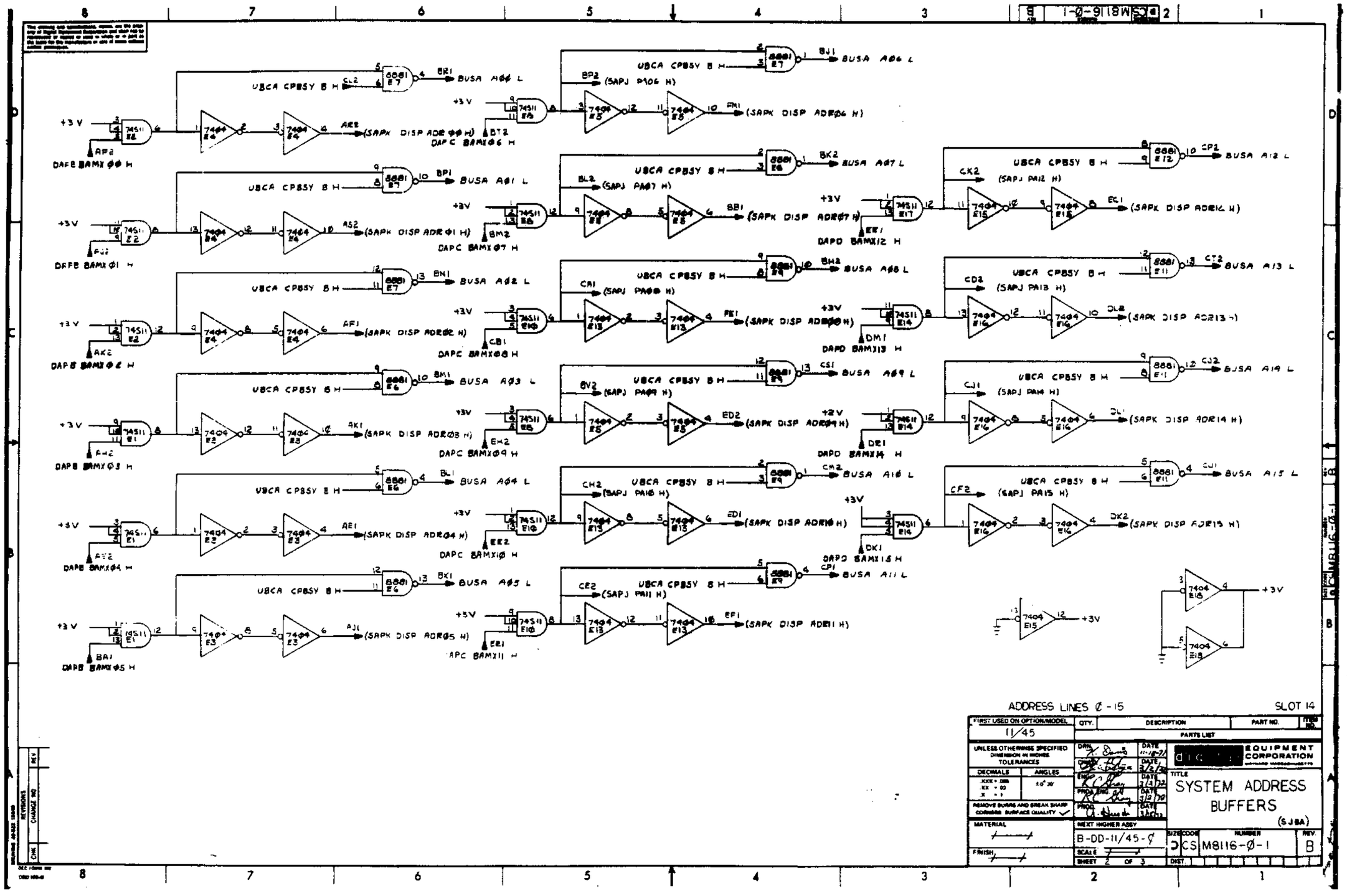
SEMICONDUCTOR CONVERSION CHART

IC TYPE | GND | +5V

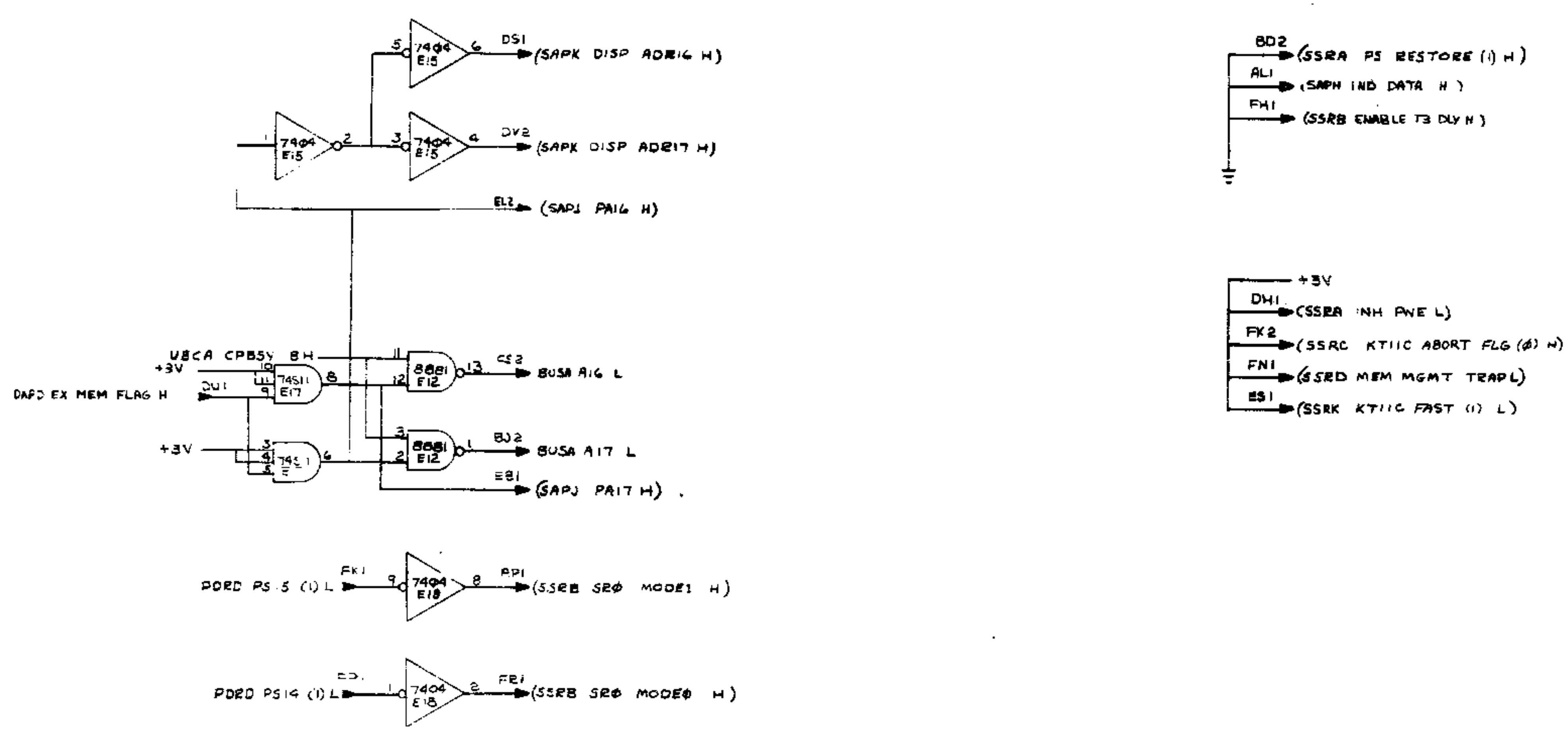
IC PIN LOCATIONS

JUMPER LIST

117


UBCA CPBSY B H
BUSA A00 L
BUSA A01 L
BUSA A02 L
BUSA A03 L
BUSA A04 L
BUSA A05 L
BUSA A06 L
BUSA A07 L
BUSA A08 L
BUSA A09 L
BUSA A10 L
BUSA A11 L
BUSA A12 L
BUSA A13 L
BUSA A14 L
BUSA A15 L
(SAPK DISP ADR00 H)
(SAPK DISP ADR01 H)
(SAPK DISP ADR02 H)
(SAPK DISP ADR03 H)
(SAPK DISP ADR04 H)
(SAPK DISP ADR05 H)
(SAPK DISP ADR06 H)
(SAPK DISP ADR07 H)
(SAPK DISP ADR08 H)
(SAPK DISP ADR09 H)
(SAPK DISP ADR10 H)
(SAPK DISP ADR11 H)
(SAPK DISP ADR12 H)
(SAPK DISP ADR13 H)
(SAPK DISP ADR14 H)
(SAPK DISP ADR15 H)
DAPB BAMX00 H
DAPB BAMX01 H
DAPB BAMX02 H
DAPB BAMX03 H
DAPB BAMX04 H
DAPB BAMX05 H
DAPB BAMX06 H
DAPB BAMX07 H
DAPC BAMX08 H
DAPC BAMX09 H
DAPC BAMX10 H
DAPC BAMX11 H
DAPD BAMX12 H
DAPD BAMX13 H
DAPD BAMX14 H
DAPD BAMX15 H
+3V
+2V
ADDRESS LINES 0 - 15
SLOT 14
SYSTEM ADDRESS BUFFERS
(SJBA)
M8116-0-1
B-DD-11/45-0
11/45
EQUIPMENT CORPORATION

117



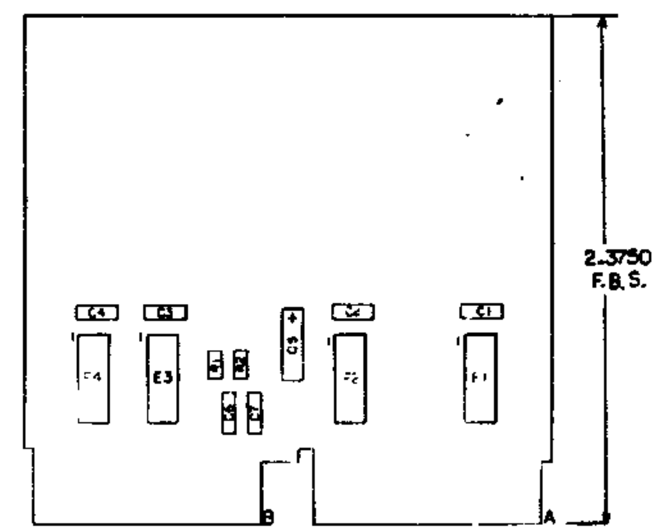
MISC. SIGNALS AND ADRS. LINES 16 & 17 SLOT 14

FIRST USED ON OPTION/MODEL	NEXT HIGHER ASSY	TITLE	SIZE	CODE	NUMBER	REV
11/45	B-DD-11/45-0	SYSTEM ADDRESS BUFFERS (SJBB)	D	CS	M8116-0-1	B

DIGITAL EQUIPMENT CORPORATION

SHEET 3 OF 3

NOTES:



QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M930-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M930-0-5	2
REF		MODULE ECO HISTORY	B-MH-M930-0-6	3
1		ETCHED CIRCUIT BOARD	5008696	4
4	C1 THRU C4	CAP .22 µF 50V CER	1010274-01	5
2	C6, C7	CAP 1000pF 250V 20% DISC	1000243	6
1	C5	CAP 39µF 10V 10% TANT	1000076	7
2	R1, R2	RES 383Ω 1/4W 1%	1305125	8
2	E1, E4	29 RES DIVIDER NETWORK	1312228-00	9
2	E2, E3	25 RES DIVIDER NETWORK	1312628-01	10

PARTS LIST

IC TYPE | GND | +5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

FIRST USED ON OPTION MODEL: M930

ETCH BOARD REV. E-P3

DEC NO. | EIA NO. | DEC NO. | EIA NO.

SEMICONDUCTOR CONVERSION CHART

REV. E — CHANGE NO. — ORIGINATED — K. SARGENT 12-3-75

DRN. J. CARTER 7-3-75

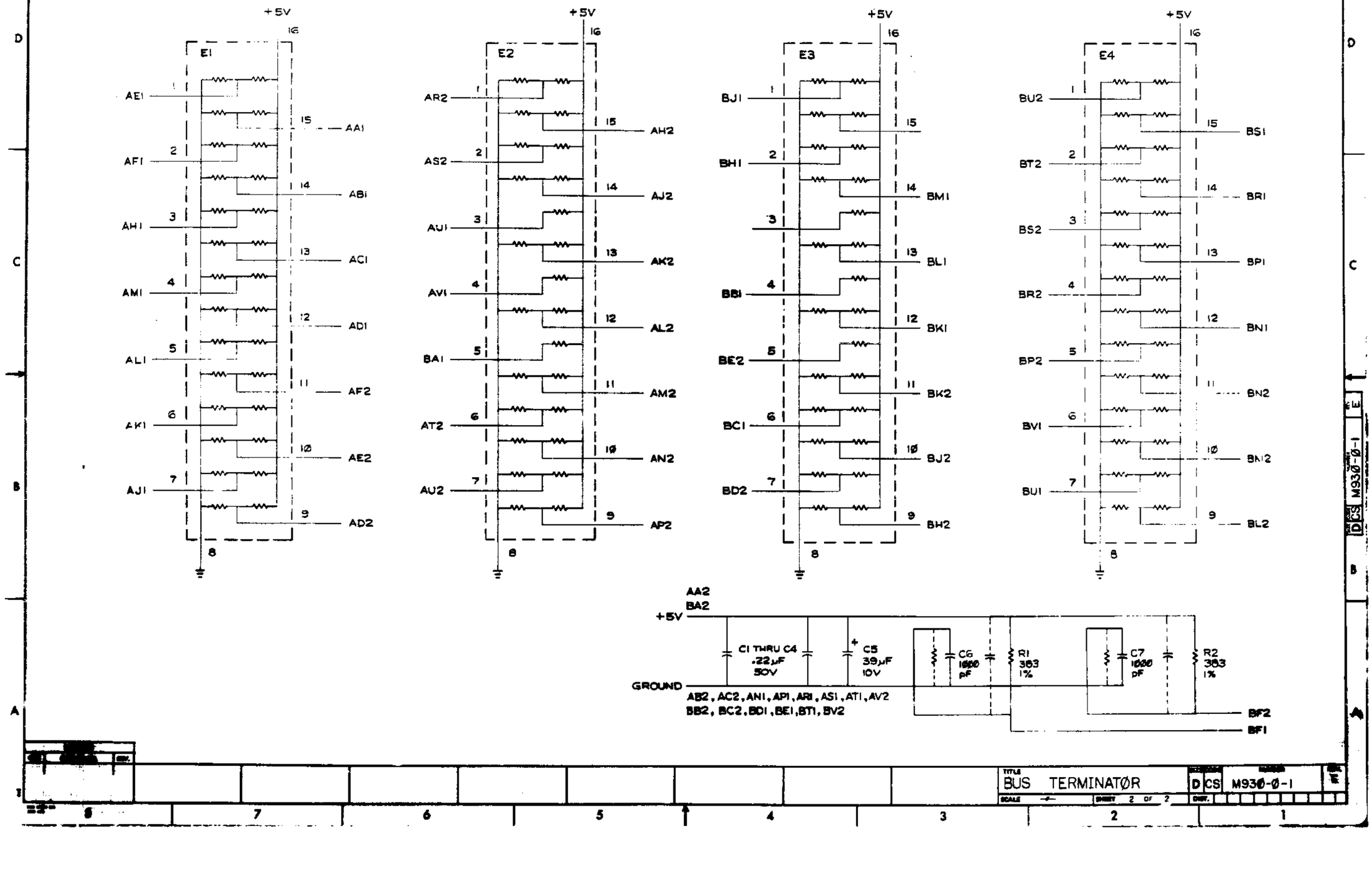
CHKD. 7-16-75

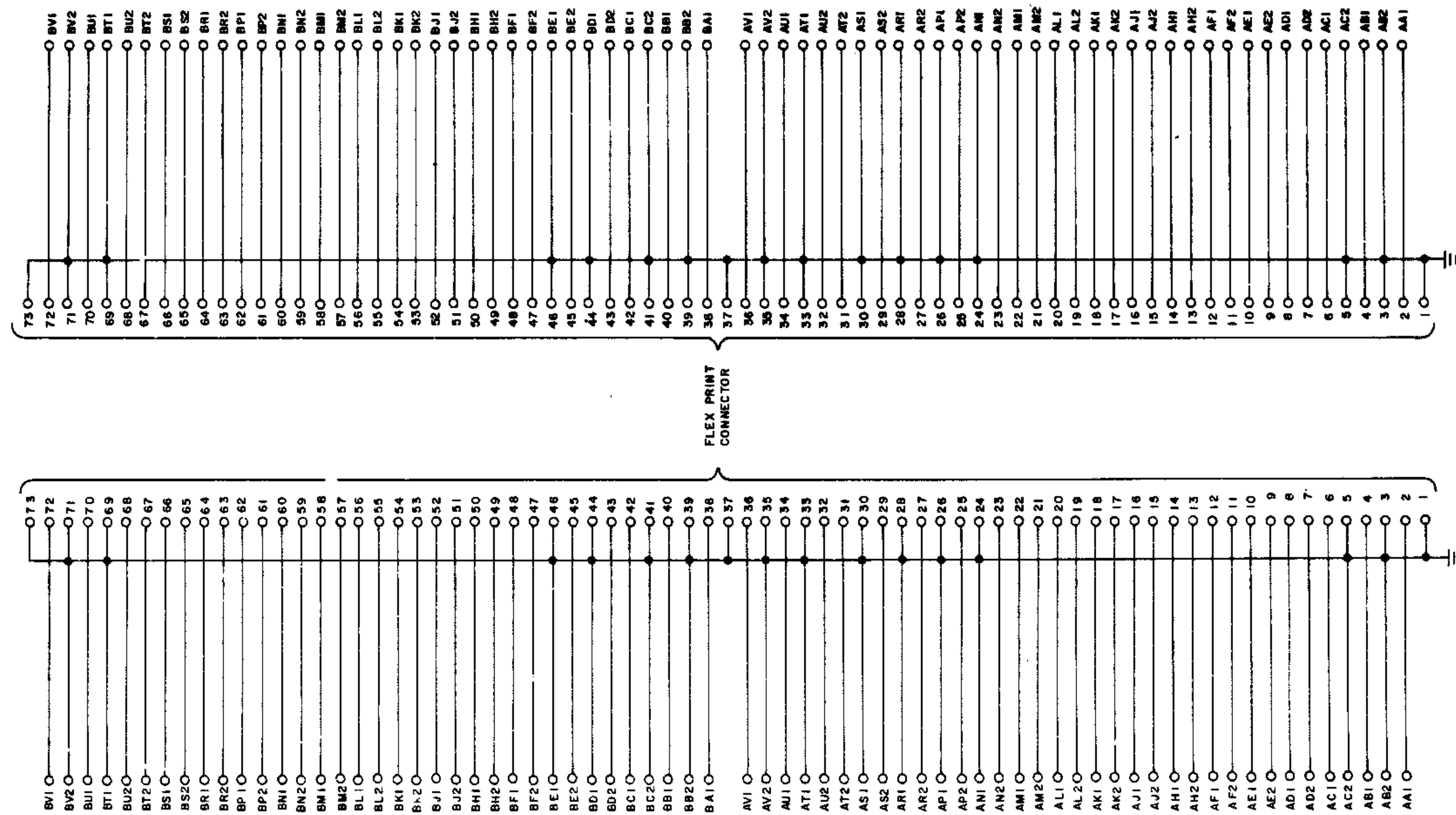
digital

TITLE: BUS TERMINATOR

SIZE D CODE CS NUMBER M930-0-1 REV. E

SCALE — SHEET 1 OF 2


+5V
E1
AE1
AF1
AH1
AM1
AL1
AK1
AJ1
AA1
AB1
AC1
AD1
AF2
AE2
AD2
E2
AR2
AS2
AU1
AV1
BA1
AT2
AU2
AH2
AJ2
AK2
AL2
AM2
AN2
AP2
E3
BJ1
BH1
BB1
BE2
BC1
BD2
BM1
BL1
BK1
BK2
BJ2
BH2
E4
BU2
BT2
BS2
BR2
BP2
BV1
BU1
BS1
BR1
BP1
BN1
BN2
BM2
BL2
AA2
BA2
+5V
GROUND
C1 THRU C4
.22µF
50V
C5
39µF
10V
C6
1000
pF
R1
383
1%
C7
1000
pF
R2
383
1%
AB2, AC2, AN1, AP1, AR1, AS1, AT1, AV2
BB2, BC2, BD1, BE1, BT1, BV2
BF2
BF1
TITLE
BUS TERMINATØR
SCALE
SHEET 2 OF 2
DCS M93Ø-Ø-1
DWG.



REVISIONS		
CHK	CHG NO.	REV
	00001	A
	00002	B
	00004	C

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

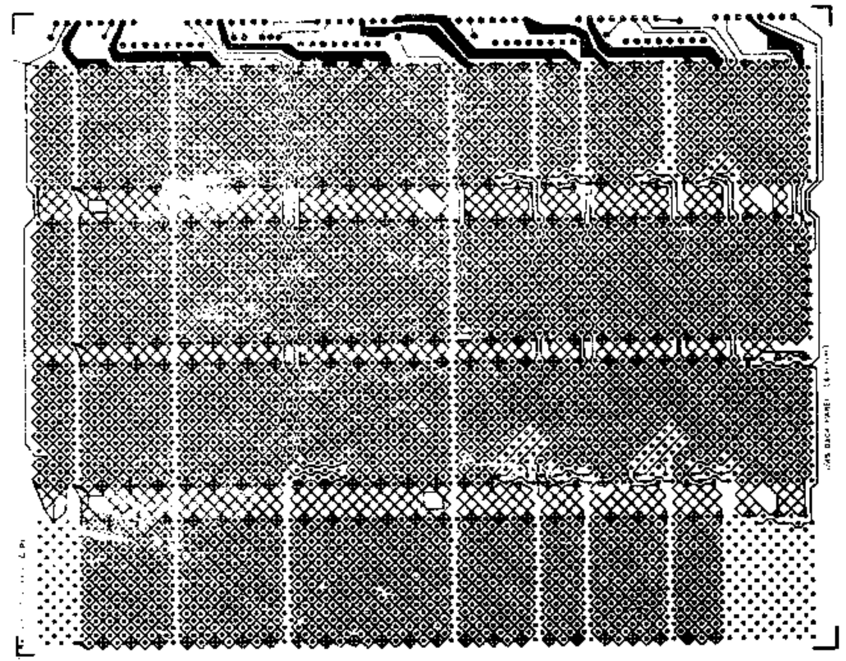
TITLE INTERNAL BUS CONNECTOR M920

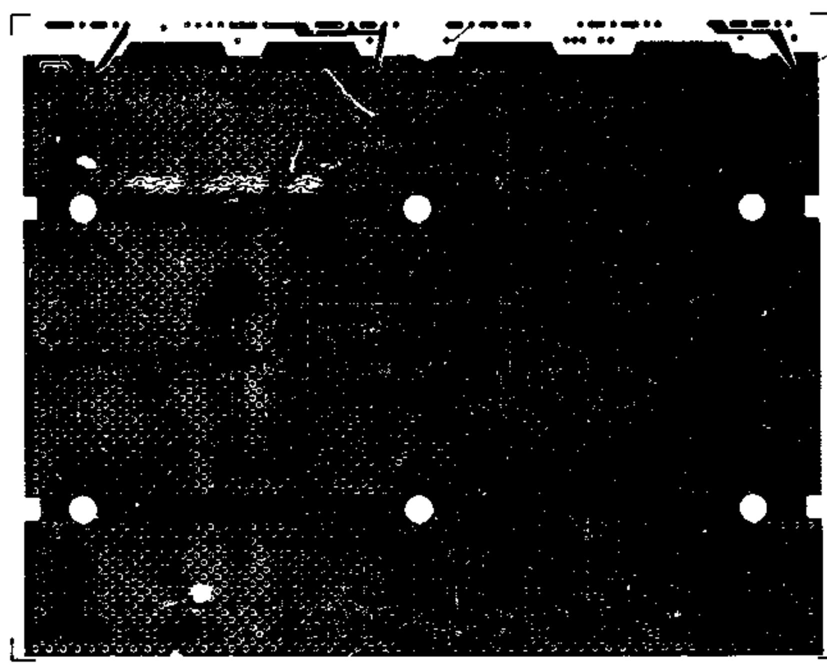
SIZE	CODE	NUMBER	REV.
C	CS	M920-0-1	C

PRINTED CIRCUIT REV.

DEC FORM NO. DRS-102

121





ITEM NO.	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
5			AS ... LAYOUT	D-AH-5409910-0-5
4			11/45 BACK PANEL	F-IA 5009909-0-0
3		REF	X-Y COORDINATE HOLE LOC	K-CD-5409910-0-4
2		REF	MODULE HISTORY	B-TH-5409910-0-6
1			ETCHED CIRCUIT BOARD	5009909

PARTS LIST

ETCH BOARD REV D

IC TYPE	GND	+5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO.	AWG	FROM PT	TO PT

JUMPER LIST

REV	CHANGE NO	CHK
A	ORIGINATED	
C	5409910-0000-...	

REVISIONS

DEC NO	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

NEXT HIGHER ASSY E-AD-7008753-0-0

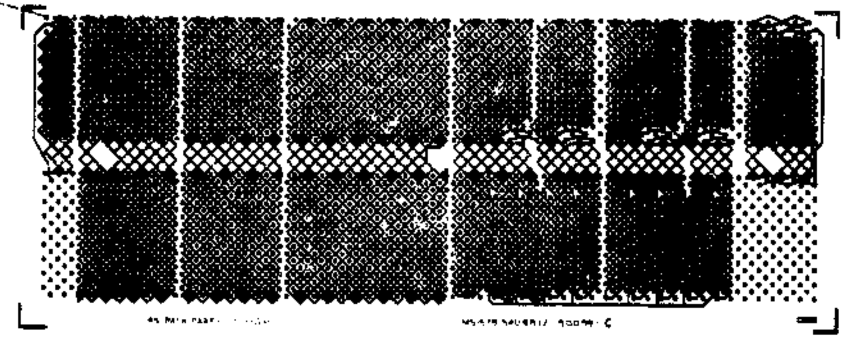
SCALE 1/1 SHEET 1 OF 1

[redacted] EQUIPMENT CORPORATION

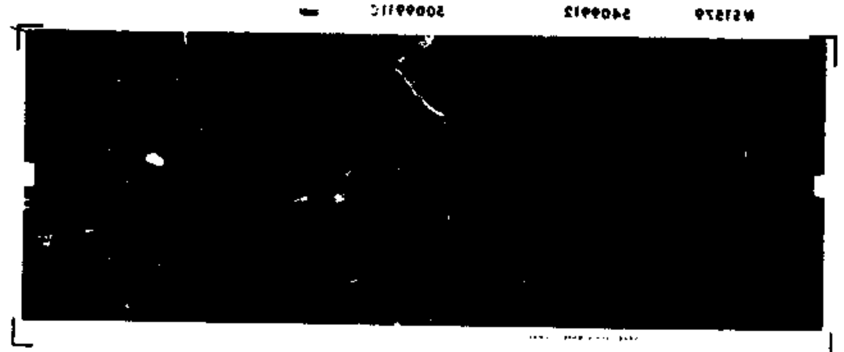
TITLE: CIRCUIT SCHEMATIC

SIZE E CS NUMBER 5409910-0-1 REV F

1A1



SOLDER SIDE (SIDE 2)



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	
		X-Y COORDINATE HOLE LOC	K-CD-5409912-0-5	3
		MODULE ECO HISTORY	B-MH-5409912-0-4	2
		ETCHED CIRCUIT BOARD	D-IA-5009914-0-0	1

PARTS LIST

ETCH BOARD REV C

SEMICONDUCTOR CONVERSION CHART

EQUIPMENT CORPORATION

CIRCUIT SCHEMATIC

E-AD-7008753-0-0

SCALE 1 TO 1

SHEET 1 OF 1

B CS 5409912-0-1 C

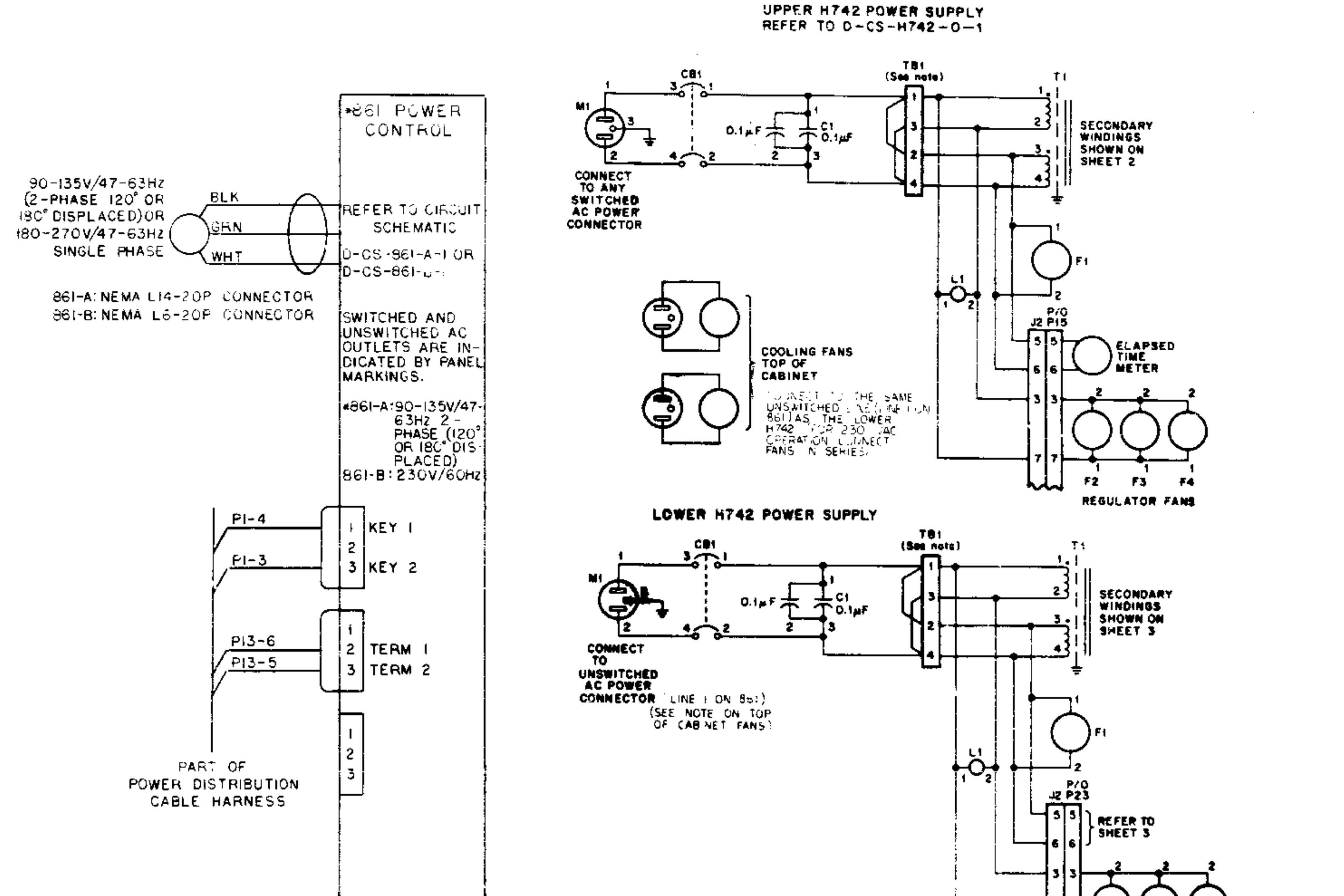
NOTE

1. FOR 11/45 SYSTEMS BUILT WITH 860 POWER CONTROLS, REFER TO D-IC-11/45-0-1 REV.A DRAWING.

TABLE I

POWER SYSTEM - MAJOR ECO SUMMARY

ECO#	D-IC-11/45-0-1 REV CHANGES FROM REV	TO REV	DESCRIPTION (PROBLEM-SOLUTION)
11/45-00031	A	B	REPLACED OBSOLETE 860 POWER CONTROL WITH 861 POWER CONTROL. (D-IC-11/45-0-1 REV. A DOCUMENTS MACHINES WITH 860 POWER CONTROL.)
11/45-00054	C	D	POWER DISTRIBUTION REDESIGNED TO ACCOMMODATE H754 REGULATOR (+20V & -5V) FOR 16K MEMORY. MAIN POWER HARNESS CHANGED FROM 7008754 TO 7009540. SYSTEM UNIT POWER DISTRIBUTION MOVED FROM BACK OF CPU BOX TO TOP REAR OF CPU BOX. SYSTEM UNIT CONNECTORS CHANGED FROM FLAT 8-PIN CONNECTOR TO 15-PIN AND 6-PIN RECTANGULAR CONNECTOR-PAIR. MACHINES WITH THIS ECO HAVE SERIAL NO'S ≥ 2000.
11/45-00057	D	E	7009540 HARNESS REVISED TO DISTRIBUTE +15V TO SYSTEM UNITS WHEN H754 REGULATOR IS INSTALLED FOR 16K MEMORY. P45/J45 (FLAT 4-PIN CONNECTORS) ADDED TO HARNESS NEAR P7. AFFECTS ONLY MACHINES WITH S/N ≥ 2000.
11/45-00060	E	F	+5V FROM SLOT D H744 REWIRED TO LOWER VOLTAGE DROPS TO SYSTEM UNITS.
11/45-00061	F	H	CPU HARNESS MODIFIED TO ACCOMODATE SECOND H746 MOS REGULATOR. ADD P32 TO 7009540 HARNESS NEAR P29 MACHINE WITH S/N ≥ 2000). IF S/N < 2000 P32 OF THE 7008754 HARNESS IS REWIRED TO DISTRIBUTE MOS VOLTAGE FROM AN H746 IN SLOT L OF THE LOWER H742. KB11-A ECO# MUST BE INSTALLED AT SAME TIME



NOTE:

FOR 115Vac OPERATION
JUMPER TB1-1 & 2, TB1-3 & 4 (H742-A)

FOR 230Vac OPERATION
JUMPER TB1-2 & 3 (H742-B)

TABLE 2

MEMORY CONFIGURATION	REGULATOR SLOTS H	J	K	L	JUMPERS +5V2 (F5-7&8)	+5V1 (F5-3&4)	+5V3 (F6-7&8)
BIPOLAR ONLY	—	—	—	—	—	—	—
[illegible]K	H744	X	X	X	IN	IN	IN
[illegible]-4K	H744	H744	X	X	X	IN	IN
[illegible]K	H744	H744	H744	X	X	X	IN
[illegible]-8K	H744	H744	H744	H744	X	X	X
MOS ONLY	—	—	—	—	—	—	—
4-[illegible]K	H746	H744	X	X	IN	IN	IN
[illegible]K	H746	H744	X	H746	IN	IN	IN
MIXED MOS BIPOLAR	—	—	—	—	—	—	—
4-16K MOS, [illegible]K BIPOLAR	H746	H744	H744	X	IN	X	IN
4-16K MOS, [illegible]-4K BIPOLAR	H746	H744	H744	H744	IN	X	X

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/45		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES

DECIMALS XXX ± .005, XX ± .02, X ± .1 — ANGLES ± 0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

MATERIAL —

FINISH —

NEXT HIGHER ASSY: H 00-11/45 Ø

SCALE —

SHEET 1 OF 3

digital EQUIPMENT CORPORATION

TITLE: [illegible]ER SYSTEM CONFIGURATION

SIZE D | CODE IC | NUMBER 11-45-Ø-1 | REV H

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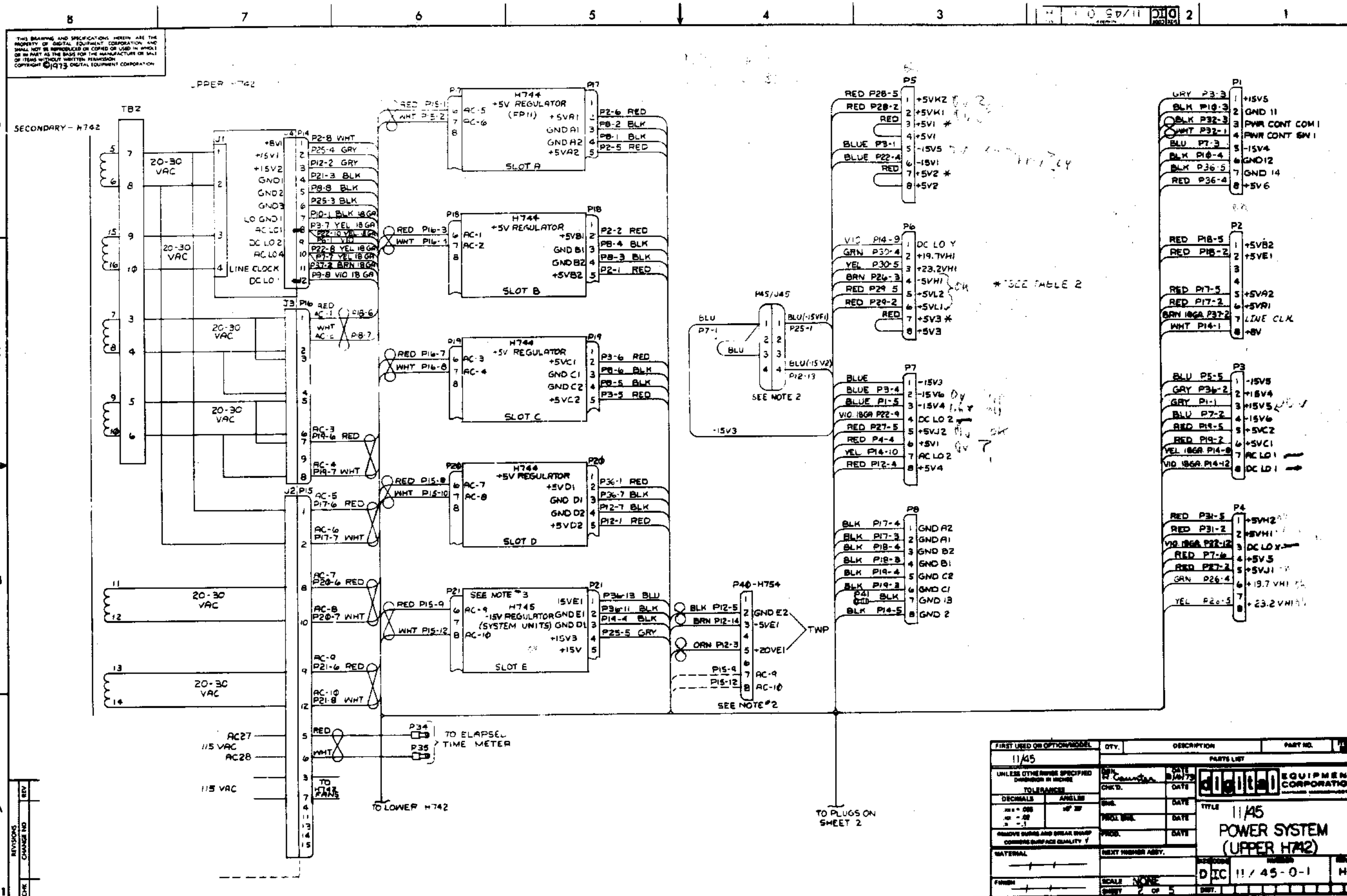

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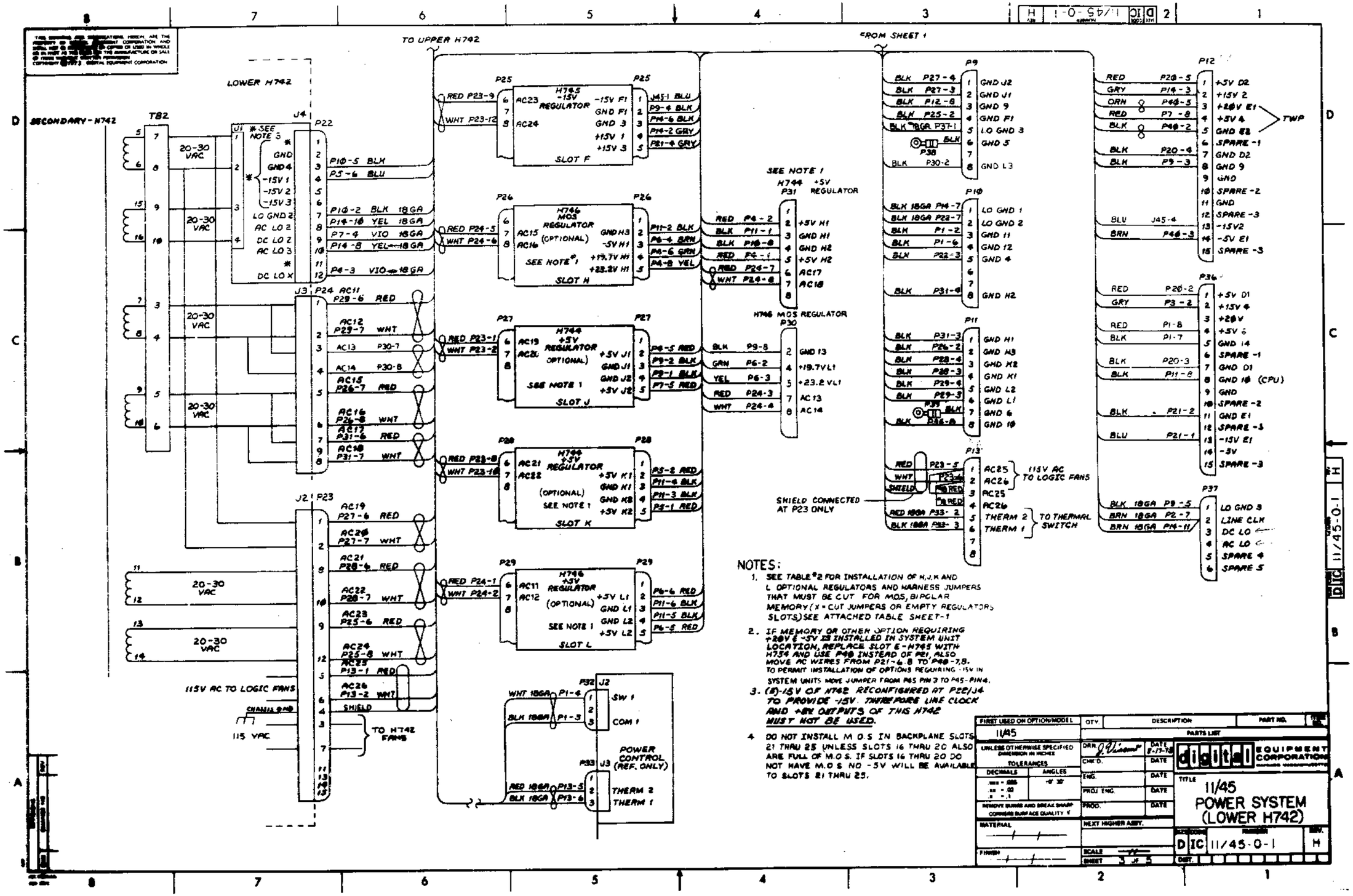
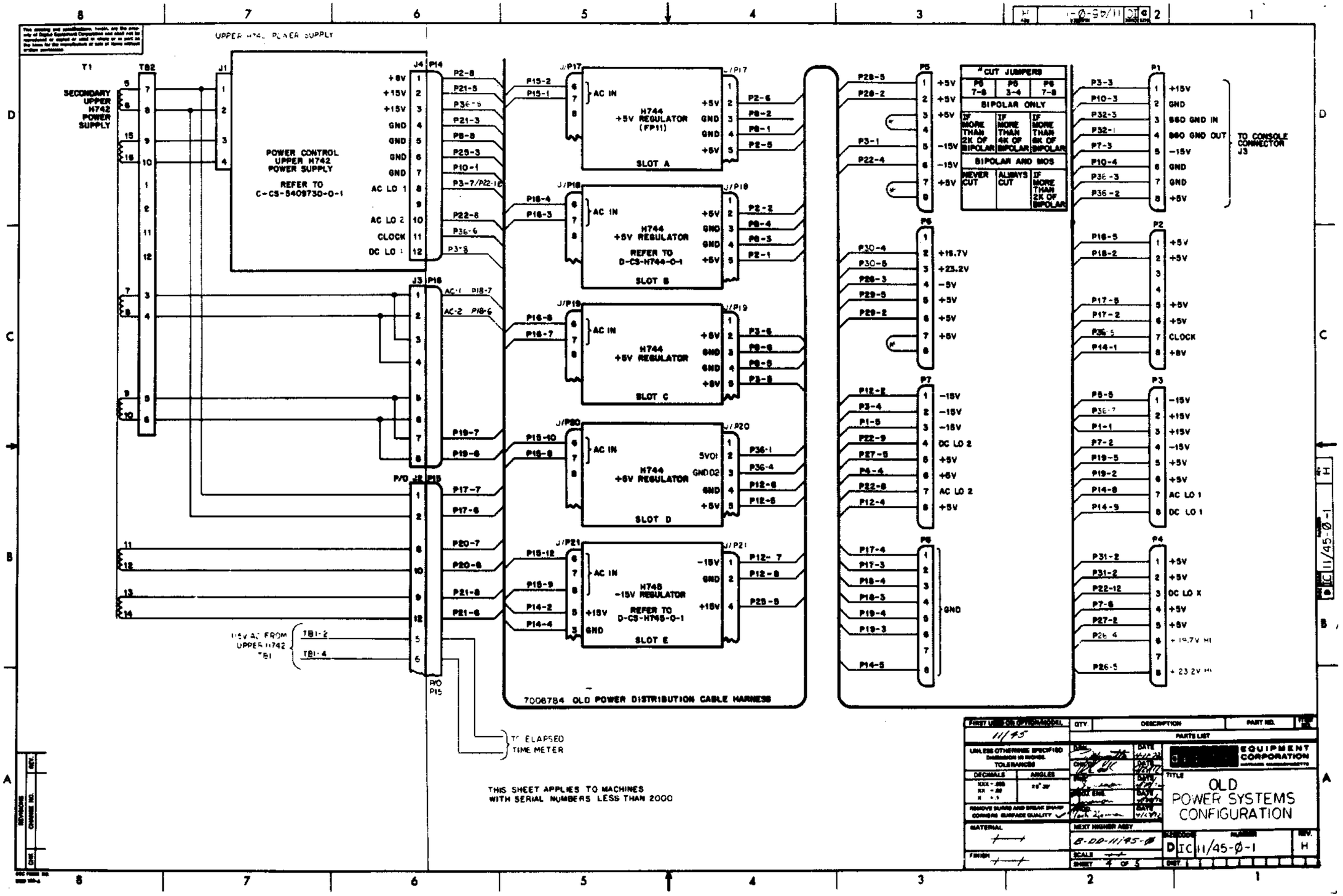
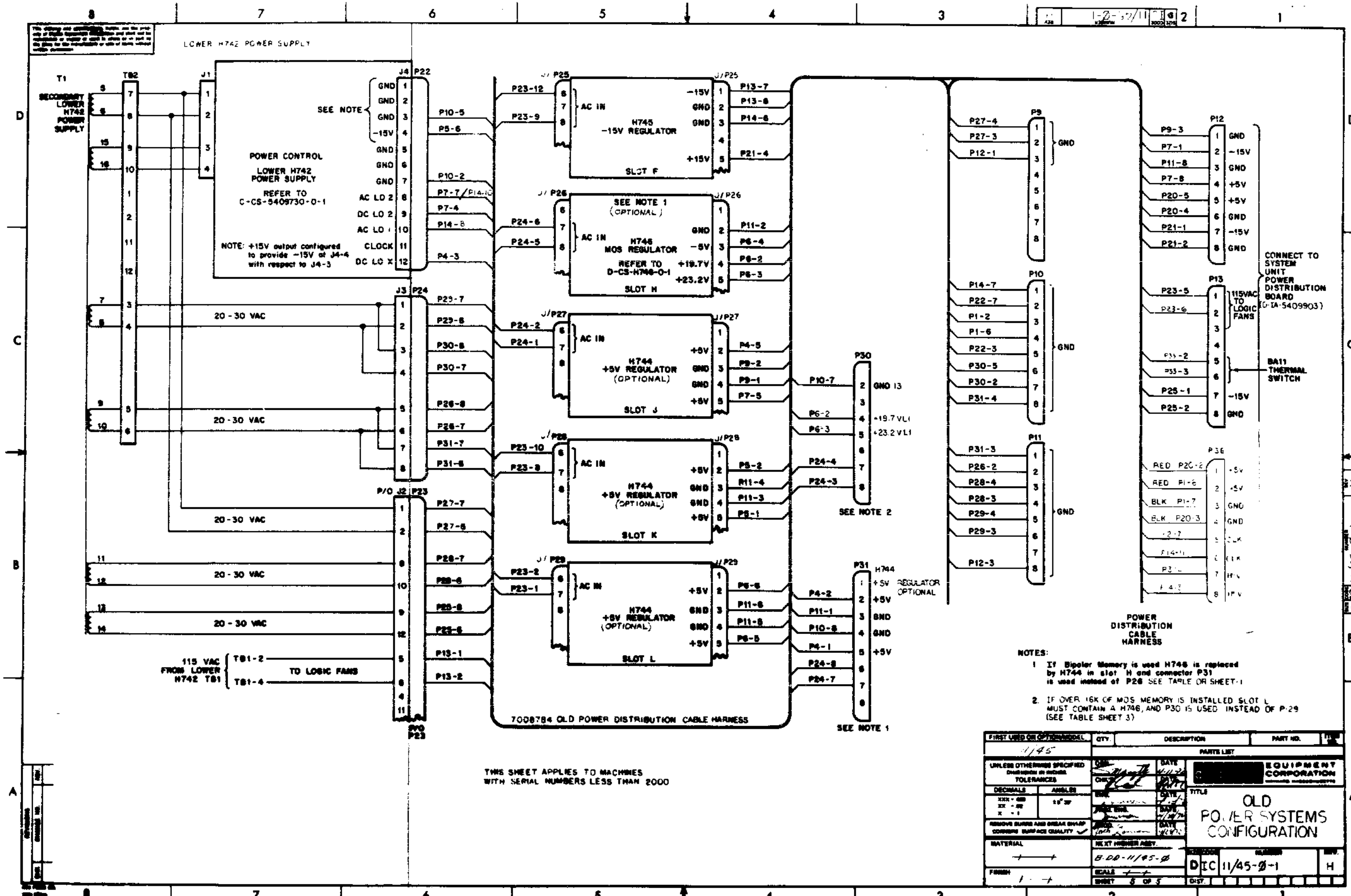
UPPER H742
SECONDARY - H742
TB2
20-30 VAC
J1
+8VI
+15VI
+15V2
GND1
GND2
GND3
LO GND1
AC LO1
DC LO2
AC LO4
LINE CLOCK
DC LO1
P14
P2-8 WHT
P25-4 GRY
P12-2 GRY
P21-3 BLK
P8-8 BLK
P25-3 BLK
P10-1 BLK 18GA
P3-7 YEL 18GA
P22-10 YEL 18GA
P6-1 VIO
P22-8 YEL 18GA
P7-7 YEL 18GA
P37-2 BRN 18GA
P3-8 VIO 18GA
J3 P16
J2 P15
H744 +5V REGULATOR (FP11)
SLOT A
H744 +5V REGULATOR
SLOT B
SLOT C
SLOT D
SEE NOTE 3
H745 -15V REGULATOR (SYSTEM UNITS)
SLOT E
P40-H754
GND E2
-5VEI
+20VEI
TWP
SEE NOTE 2
H45/J45
TO ELAPSED TIME METER
TO LOWER H742
TO H742 FANS
115 VAC
AC27
AC28
TO PLUGS ON SHEET 2
P5
P6
P7
P8
P1
P2
P3
P4
*SEE TABLE 2
PWR CONT COM 1
PWR CONT SW 1
LINE CLK
FIRST USED ON OPTION/MODEL
11/45
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES
TOLERANCES
DECIMALS
ANGLES
QTY.
DESCRIPTION
PART NO.
PARTS LIST
DRN.
CHK'D.
ENG.
PROJ. ENG.
PROD.
DATE
MATERIAL
FINISH
NEXT HIGHER ASSY.
digital EQUIPMENT CORPORATION
TITLE
11/45
POWER SYSTEM
(UPPER H742)
D C 11/45-0-1
REV. H
SCALE NONE
SHEET 2 OF 5

125


LOWER H742
TO UPPER H742
FROM SHEET 1
SECONDARY - H742
TB2
J4
P22
J3
P24
J2
P23
20-30 VAC
* SEE NOTE 5
GND
GND4
-15V 1
-15V 2
-15V 3
LO GND 2
AC LO 2
DC LO 2
AC LO 3
DC LO X
P10-5 BLK
P5-6 BLU
P10-2 BLK 18GA
P14-10 YEL 18GA
P7-4 VIO 18GA
P14-8 YEL 18GA
P4-3 VIO 18GA
P29-6 RED
AC12 P29-7 WHT
AC13 P30-7
AC14 P30-8
AC15 P26-7 RED
AC16 P26-8 WHT
AC17 P31-6 RED
AC18 P31-7 WHT
AC19 P27-6 RED
AC20 P27-7 WHT
AC21 P28-6 RED
AC22 P28-7 WHT
AC23 P25-6 RED
AC24 P25-8 WHT
AC23 P13-1 RED
AC26 P13-2 WHT
SHIELD
CHASSIS GND
115 VAC
TO H742 FANS
115V AC TO LOGIC FANS
P25
H745 -15V REGULATOR
AC23
AC24
-15V F1
GND F1
GND 3
+15V 1
+15V 3
SLOT F
J45-1 BLU
P9-4 BLK
P14-6 BLK
P14-2 GRY
P21-4 GRY
RED P23-9
WHT P23-12
P26
H746 MOS REGULATOR (OPTIONAL)
AC15
AC16
SEE NOTE #1
GND H3
-5V H1
+19.7V H1
+23.2V H1
SLOT H
P11-2 BLK
P6-4 GRN
P6-6 GRN
P4-8 YEL
RED P24-5
WHT P24-6
P27
H744 +5V REGULATOR (OPTIONAL)
AC19
AC20
SEE NOTE 1
+5V J1
GND J1
GND J2
+5V J2
P6-5 RED
P9-2 BLK
P9-1 BLK
P7-5 RED
RED P23-1
WHT P23-2
P28
H746 +5V REGULATOR (OPTIONAL)
AC21
AC22
SEE NOTE 1
+5V K1
GND K1
GND K2
+5V K2
SLOT K
P5-2 RED
P11-4 BLK
P11-3 BLK
P5-1 RED
RED P23-8
WHT P23-10
P29
H746 +5V REGULATOR (OPTIONAL)
AC11
AC12
SEE NOTE 1
+5V L1
GND L1
GND L2
+5V L2
SLOT L
P6-6 RED
P11-6 BLK
P11-5 BLK
P6-5 RED
RED P24-1
WHT P24-2
P32 J2
SW 1
COM 1
WHT 18GA P1-4
BLK 18GA P1-3
P33 J3
THERM 2
THERM 1
RED 18GA P13-5
BLK 18GA P13-6
POWER CONTROL (REF. ONLY)
SEE NOTE 1
H744 +5V REGULATOR
P31
RED P4-2
BLK P11-1
BLK P10-8
RED P4-1
RED P24-7
WHT P24-8
+5V H1
GND H1
GND H2
+5V H2
AC17
AC18
H746 MOS REGULATOR
P30
BLK P9-8
GRN P6-2
YEL P6-3
RED P24-3
WHT P24-4
GND 13
+19.7VL1
+23.2 VL1
AC13
AC14
SHIELD CONNECTED AT P23 ONLY
P9
BLK P27-4
BLK P27-3
BLK P12-8
BLK P25-2
BLK 18GA P37-1
BLK P30-2
GND J2
GND J1
GND 9
GND F1
LO GND 3
GND 5
GND L3
P10
BLK 18GA P14-7
BLK 18GA P22-7
BLK P1-2
BLK P1-6
BLK P22-3
BLK P31-8
LO GND 1
LO GND 2
GND 11
GND 12
GND 4
GND H2
P11
BLK P31-3
BLK P26-2
BLK P28-4
BLK P28-3
BLK P29-4
BLK P29-3
BLK P36-8
GND H1
GND H3
GND H2
GND H1
GND L2
GND L1
GND 6
GND 10
P13
RED P23-5
WHT P23-6
SHIELD
AC25
AC26
AC25
AC26
THERM 2
THERM 1
115V AC TO LOGIC FANS
TO THERMAL SWITCH
P12
RED P20-5
GRY P14-3
ORN P40-5
RED P7-8
BLK P40-2
BLK P20-4
BLK P9-3
+5V D2
+15V 2
+28V E1
+5V 4
GND E2
SPARE -1
GND D2
GND 9
GND
SPARE -2
GND
SPARE -3
-15V2
-5V E1
SPARE -3
TWP
BLU J45-4
BRN P40-3
P36
RED P20-2
GRY P3-2
RED P1-8
BLK P1-7
BLK P20-3
BLK P11-8
BLK P21-2
BLU P21-1
+5V D1
+15V 4
+28V
+5V 6
GND 14
SPARE -1
GND D1
GND 10 (CPU)
GND
SPARE -2
GND E1
SPARE -3
-15V E1
-5V
SPARE -3
P37
BLK 18GA P9-5
BRN 18GA P2-7
BRN 18GA P14-11
LO GND 3
LINE CLK
DC LO
AC LO
SPARE 4
SPARE 5
NOTES:
1. SEE TABLE #2 FOR INSTALLATION OF H,J,K AND L OPTIONAL REGULATORS AND HARNESS JUMPERS THAT MUST BE CUT FOR MOS, BIPOLAR MEMORY (X = CUT JUMPERS OR EMPTY REGULATORS SLOTS) SEE ATTACHED TABLE SHEET-1
2. IF MEMORY OR OTHER OPTION REQUIRING +28V & -5V IS INSTALLED IN SYSTEM UNIT LOCATION, REPLACE SLOT E-H745 WITH H754 AND USE P40 INSTEAD OF P21, ALSO MOVE AC WIRES FROM P21-6,8 TO P40-7,8. TO PERMIT INSTALLATION OF OPTIONS REQUIRING -15V IN SYSTEM UNITS MOVE JUMPER FROM P45 PIN 3 TO P45-PIN 4.
3. (E)-15V OF H742 RECONFIGURED AT P22/J4 TO PROVIDE -15V. THEREFORE LINE CLOCK AND +8V OUTPUTS OF THIS H742 MUST NOT BE USED.
4. DO NOT INSTALL M.O.S IN BACKPLANE SLOTS 21 THRU 25 UNLESS SLOTS 16 THRU 20 ALSO ARE FULL OF M.O.S. IF SLOTS 16 THRU 20 DO NOT HAVE M.O.S NO -5V WILL BE AVAILABLE TO SLOTS 21 THRU 25.
FIRST USED ON OPTION/MODEL
11/45
QTY.
DESCRIPTION
PART NO.
PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS
ANGLES
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
MATERIAL
FINISH
DRN J. Vincent
DATE 8-17-78
CHK'D.
ENG.
PROJ. ENG.
PROD.
NEXT HIGHER ASSY.
digital EQUIPMENT CORPORATION
TITLE
11/45 POWER SYSTEM (LOWER H742)
SIZE D
DRAWING NUMBER DIC 11/45-0-1
REV. H
SCALE
SHEET 3 OF 5
DIC 11/45-0-1 H


UPPER H742 POWER SUPPLY
T1
SECONDARY UPPER H742 POWER SUPPLY
T B2
J1
POWER CONTROL UPPER H742 POWER SUPPLY
REFER TO C-CS-5409730-0-1
J4 P14
+8V
+15V
+15V
GND
GND
GND
GND
AC LO 1
AC LO 2
CLOCK
DC LO 1
P2-8
P21-5
P36-5
P21-3
P8-8
P25-3
P10-1
P3-7/P22-12
P22-8
P36-6
P3-8
J3 P16
AC-1 P18-7
AC-2 P18-6
P19-7
P19-8
P/O J2 P15
P17-7
P17-8
P20-7
P20-8
P21-8
P21-6
P/O P15
115V AC FROM UPPER H742 "T1"
TB1-2
TB1-4
TO ELAPSED TIME METER
J/P17
P15-2
P15-1
AC IN
+5V REGULATOR (FP11)
SLOT A
P2-6
P8-2
P8-1
P2-5
J/P18
P16-4
P16-3
H744 +5V REGULATOR
REFER TO D-CS-H744-0-1
SLOT B
P2-2
P8-4
P8-3
P2-1
J/P19
P16-8
P16-7
+5V REGULATOR
SLOT C
P3-6
P8-6
P8-5
P3-5
J/P20
P15-10
P15-9
5VO1
GNDO2
SLOT D
P36-1
P36-4
P12-8
P12-6
J/P21
P15-12
P15-9
P14-2
P14-4
H745 -15V REGULATOR
+15V
GND
REFER TO D-CS-H745-0-1
SLOT E
P12-7
P12-9
P25-9
7006784 OLD POWER DISTRIBUTION CABLE HARNESS
P5
P28-5
P28-2
P3-1
P22-4
+5V
+5V
+5V
-15V
-15V
+8V
*CUT JUMPERS
P5 7-8
P6 3-4
P6 7-8
BIPOLAR ONLY
IF MORE THAN 2K OF BIPOLAR
IF MORE THAN 4K OF BIPOLAR
IF MORE THAN 6K OF BIPOLAR
BIPOLAR AND MOS
NEVER CUT
ALWAYS CUT
IF MORE THAN 2K OF BIPOLAR
P6
P30-4
P30-5
P28-3
P29-5
P29-2
+16.7V
+23.2V
-5V
+5V
+5V
+5V
P7
P12-2
P3-4
P1-6
P22-9
P27-6
P5-4
P32-6
P12-4
-15V
-15V
-15V
DC LO 2
+5V
+6V
AC LO 2
+5V
P8
P17-4
P17-3
P18-4
P18-5
P19-4
P19-3
P14-5
GND
P1
P3-3
P10-3
P32-3
P32-1
P7-3
P10-4
P36-3
P36-2
+15V
GND
560 GND IN
560 GND OUT
-15V
GND
GND
+8V
TO CONSOLE CONNECTOR J3
P2
P16-5
P18-2
P17-5
P17-2
P36-5
P14-1
+5V
+5V
+5V
+5V
CLOCK
+8V
P3
P5-5
P36-7
P1-1
P7-2
P19-5
P19-2
P14-8
P14-9
-15V
+15V
+15V
-15V
+5V
+5V
AC LO 1
DC LO 1
P4
P31-2
P31-2
P22-12
P7-6
P27-2
P26-4
P26-5
+5V
+5V
DC LO X
+5V
+8V
+15.7V HI
+23.2V HI
THIS SHEET APPLIES TO MACHINES WITH SERIAL NUMBERS LESS THAN 2000
11/45
EQUIPMENT CORPORATION
TITLE
OLD POWER SYSTEMS CONFIGURATION
MATERIAL
FINISH
NEXT HIGHER ASSY
B-DD-11/45-0
SCALE
SHEET 1 OF 5
DIC 11/45-0-1
REV. H
DIC 11/45-0-1



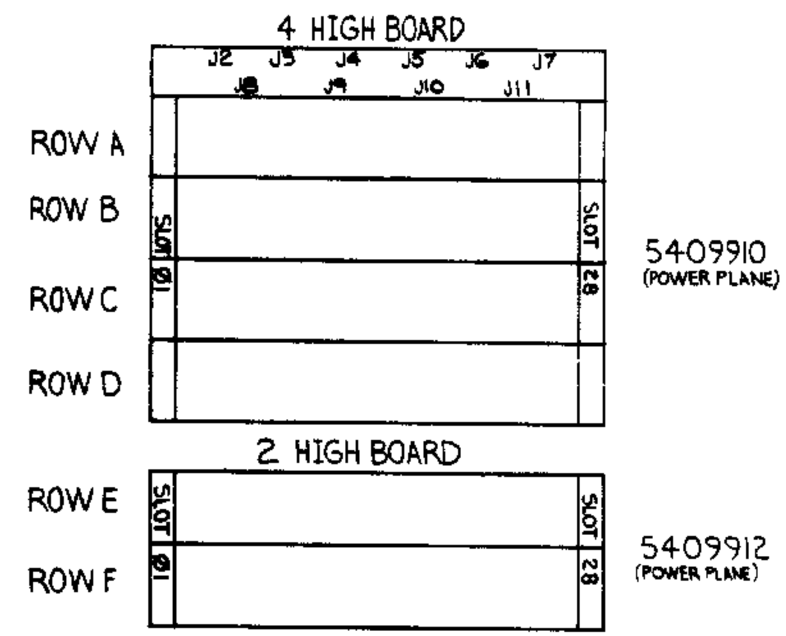
LOWER H742 POWER SUPPLY
T1
TB2
J1
SECONDARY LOWER H742 POWER SUPPLY
POWER CONTROL
LOWER H742 POWER SUPPLY
REFER TO C-CS-5409730-0-1
NOTE: +15V output configured to provide -15V at J4-4 with respect to J4-3
SEE NOTE
J4 P22
GND
-15V
AC LO 2
DC LO 2
AC LO 1
CLOCK
DC LO X
J3 P24
P/O J2 P23
P/O P23
20 - 30 VAC
115 VAC FROM LOWER H742 TB1
TB1-2
TB1-4
TO LOGIC FANS
H745 -15V REGULATOR
SLOT F
SEE NOTE 1 (OPTIONAL)
H746 MOS REGULATOR
REFER TO D-CS-H746-0-1
SLOT H
H744 +5V REGULATOR (OPTIONAL)
SLOT J
SLOT K
SLOT L
AC IN
7008784 OLD POWER DISTRIBUTION CABLE HARNESS
P30
SEE NOTE 2
P31 H744
REGULATOR OPTIONAL
SEE NOTE 1
P9
P10
P11
P12
P13
P36
GND
115VAC TO LOGIC FANS
BA11 THERMAL SWITCH
CONNECT TO SYSTEM UNIT POWER DISTRIBUTION BOARD (D-IA-5409903)
POWER DISTRIBUTION CABLE HARNESS
NOTES:
1. If Bipolar Memory is used H746 is replaced by H744 in slot H and connector P31 is used instead of P26 SEE TABLE ON SHEET 1
2. IF OVER 16K OF MOS MEMORY IS INSTALLED SLOT L MUST CONTAIN A H746, AND P30 IS USED INSTEAD OF P29 (SEE TABLE SHEET 3)
THIS SHEET APPLIES TO MACHINES WITH SERIAL NUMBERS LESS THAN 2000
EQUIPMENT CORPORATION
TITLE
OLD POWER SYSTEMS CONFIGURATION
NEXT HIGHER ASSY. B-DD-11/45-Ø
D IC 11/45-Ø-1 H
SHEET 5 OF 5

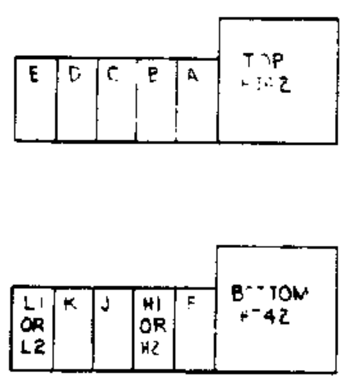
VOLTAGE	REGULATOR LOCATION	PIN	ROW	SLOT	MATE N LOCK CONNECTION	WIRE WRAP PIN
+5V	A	A2,V1	A-F	2-5	J2-5,6	
	B	A2		1,6-9	J2-3,4	
	B	V1		6-9	J2-3,4	
	C	A2,V1		10-15	J3-5,6	
	J			16-18	J4-6,7	
	H2			19,20	J4-1,2 , J5-8	
	K			21-23	J5-1,2,3	
	L	A2,V1	A-F	24,25	J6-5,6,7	
	J	A2	A	16	J5-4,7, J6-8	
	D		A,B	26	J7-8	
	D		C-F	26-28	J7-8	
+5V	J	A2	A,B	27,28	J7-5,6	
+8V	TOP H742	B1	F	1	J2-8	SP-1
LTCL	TOP H742	R1	C	1	J2-7	
DCLOY	TOP H742	—	—	—	J6-1	SP10
DCLO1	TOP H742	U1	C	12	J3-8	
ACLO1	TOP H742	S1	C	12	J3-7	
-15V	E	B2	E	2	J3-4	SP-3
+15V	TOP H742	A1	E	15	J3-2,3	SP-4
-15V	BOT. H742	B2	E	16	J3-1	SP-5
+23.2VL1	L2	V2	A,C,E	22-25	J6-3	
+19.7VL1	L2	U2	A,C,E	22-25	J6-2	
DCLOX	BOT. H742	U2	B	16	J4-3	
-15V	BOT. H742	B2	E	21	J5-5,6	SP-8
-5V	H1	C1	F	17-20,22-25	J6-4	SP-9
+23VH1	H1	V2	A,C,E	17-20	J4-8	SP-6
+19VH1	H1	U2	A,C,E	17-20	J4-6	SP-7
ACLOZ	BOT. H742	F1	B	28	J7-7	
DCLOZ	BOT. H742	F2	E	28	J7-4	

	PIN	ROW	SLOT	MATE N LOCK CONNECTION
GROUND	C2,N2,T1	A-F	2-25	J8-1, 8
	C2,T1	A-F	1,26-28	J9-1, 8
	B2,V2	A,B		J10-1, 8
	N1,P1,R1,S1	A		J11-1,8
	D1,E1	B	1,26-28	

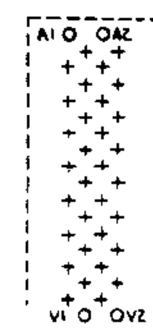
NOTES:

1. THIS LISTING IS FURNISHED TO SHOW COMBINATIONS OF MATE N LOCK CONNECTORS (J#) AND WIREWRAP PINS THAT ARE TO BE ETCHED TOGETHER. VOLTAGES WILL BE WIREWRAPPED BETWEEN 5409910 AND 5409912
2. ALL MATE N LOCK CONNECTORS AND PINS LISTED ARE CONNECTED TOGETHER BY THE GROUND PLANE (5409910-4 HIGH BOARD). WIREWRAP CONNECTIONS WILL BE MADE BETWEEN DXXT1 (5409910) AND EXXC2 (5409912)-XX= SLOT NUMBERS Ø1-28

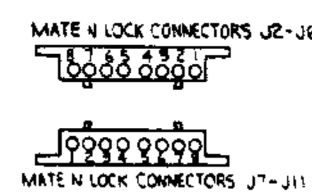




REGULATOR LOCATIONS



PIN CONFIGURATION
(ONE ROW-ONE SLOT SECTION)



FIRST USED ON OPTION/MODEL: PDP11/45

NEXT HIGHER ASSY: B-DD-11/45-0

EQUIPMENT CORPORATION

TITLE: 11/45 BACK PANEL PC BOARD

D IC 11/45-0-2 A

SHEET 1 OF 1

REV.	NUMBER	SIZE	CODE
C	7009540-0-2	K	WL

REVISIONS	CHANGE NO.	REV.	CHK
V. BOAEN	11/45-00057	A	RH
V. BOAEN	11/45-00060	B	RH
V. BOAEN	11/45-00061	C	RH

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		

DRN. B. Leager	DATE 10-5-73	digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS
CHK'D. M Tighe	DATE 11/5/73	
ENG. Verell Boaen	DATE 11/5/73	TITLE: WIRE LIST
PROJ. ENG. Verell Boaen	DATE 11/5/73	
PROD. Jack Hamer	DATE 11-5-73	
NEXT HIGHER ASSEMBLY: J-IA-7009540-0-0		SIZE K, CODE WL, NUMBER 7009540-0-2, REV. C
SCALE —		DIST.
SHEET 1 OF —		

DEC FORM NO DRB 109

150

RUN NAME	A/P	PIN LOCATION		BAY ORDER	Q	DRAW RV RG Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
SEE NOTE:		NOTE							ALL WIRES #24 AWG	X	1
SEE NOTE:		NOTE							UNLESS OTHERWISE NOTED		1
+15V1		P14-2								X	2
+15V1		P25-4	42.25"			GRY					2
+15V2		P12-2								X	3
+15V2		P14-3	56.5"			GRY					3
+15V3		P21-4								X	4
+15V3		P25-5	51"			GRY					4
+15V4		P3-2								X	5
+15V4		P36-2	31.5"			GRY					5
+15V5		P1-1								X	6
+15V5		P3-1	18"			GRY					6
+19.7VH1		P26-4	96"			GRN				X	7
+19.7VH1		P4-6									7
+19.7VL1		P30-4								X	8
+19.7VL1		P6-2	81"			GRN					8
+20VE1		P12-3								X	9
+20VE1		P40-5	62.5"						OR+=BLK TWP(GND E2)		9
+23.2VH1		P26-5	96"			YEL				X	10
+23.2VH1		P4-8									10
+23.2VL1		P30-5								X	11
+23.2VL1		P6-3	81"			YEL					11
+5J1		P27-2	80"			RED				X	12
+5J1		P4-5									12
+5V1		P5-3								X	13
+5V1		P5-4	2.25"			RED					13
+5V2		P5-7								X	14
+5V2		P5-8	2.25"			RED					14
+5V3		P6-7								X	15
+5V3		P6-8	2.25"			RED					15
+5V4		P12-4	20.5"			RED				X	16
+5V4		P7-8									16
+5V5		P4-4								X	17
+5V5		P7-6	17"			RED					17
+5V6		P1-8	38"			RED				X	18
+5V6		P36-4									18

RUN NAME	A/P	PIN LOCATION		BAY ORDER	Q	DRAW RV RG Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
+5VA1		P17-2	65"			RED				X	19
+5VA1		P2-6									19
+5VA2		P17-5	65.5"			RED				X	20
+5VA2		P2-5									20
+5VB2		P15-5	69"			RED				X	21
+5VB2		P2-1									21
+5VC1		P19-2	71"			RED				X	22
+5VC1		P3-6									22
+5VC2		P19-5	71"			RED				X	23
+5VC2		P3-5									23
+5VD1		P20-2	61"			RED				X	24
+5VD1		P36-1									24
+5VD2		P12-1								X	25
+5VD2		P20-5	59.5"			RED					25
+5VE1		P18-2	64"			RED				X	26
+5VE1		P2-2									26
+5VH1		P31-2	77"			RED				X	27
+5VH1		P4-2									27
+5VH2		P31-5	77"			RED				X	28
+5VH2		P4-1									28
+5VJ2		P27-5	72.5"			RED				X	29
+5VJ2		P7-5									29
+5VK1		P28-2	81.25"			RED				X	30
+5VK1		P5-2									30
+5VK2		P28-5	81"			RED				X	31
+5VK2		P5-1									31
+5VL1		P24-2	81"			RED				X	32
+5VL1		P6-6									32
+5VL2		P24-5	81"			RED				X	33
+5VL2		P6-5									33
+8V		P14-1	71"			WHT				X	34
+8V		P2-9									34
-15V1		P22-4	76.5"			BLU				X	35
-15V1		P5-6									35
-15V2		J45-4	21"			BLU				X	36
-15V2		P12-13									36

RUN NAME	A/P	PIN LOCATION		BAY ORDER	#	DRAW RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
=15V3		P07-1	4"				BLU			#16AWG		X	37
=15V3		P45-1	2"				BLU			#16AWG			37
=15V3		P46-3											37
=15V4		P1-5										X	38
=15V4		P7-3	27.75"				BLU						38
=15V5		P3-1										X	39
=15V5		P5-5	14.5"				BLU						39
=15V6		P3-4										X	40
=15V6		P7-2	19.5"				BLU						40
=15VE1		P21-1										X	41
=15VE1		P34-13	44"				BLU						41
=15VP1		J45-1										X	42
=15VP1		P25-1	45"				BLU						42
=5VE1		P12-14										X	43
=5VE1		P40-3	62.75"				BRN						43
=5VH1		P26-3	72.5"				BRN					X	44
=5VH1		P6-4											44
AC L01		P14-8	70.5				YEL			#16AWG		X	45
AC L01		P3-7											45
AC L01'		P14-8										X	46
AC L01'		P22-10	47"				YEL			#16AWG			46
AC L02		P14-10										X	47
AC L02		P7-7	60.25"										47
AC L02'		P14-10										X	48
AC L02'		P22-8	46"				YEL			#16AWG			48
AC01		P16-1										X	49
AC01		P18-6	11"							RED-WHT TWP(AC2)			49
AC02		P16-2										X	50
AC02		P18-7	11"							WHT-RED TWP(AC3)			50
AC03		P16-7										X	51
AC03		P19-6	15.75"							RED-WHT TWP(AC4)			51
AC04		P16-8										X	52
AC04		P19-7	15.75"							WHT-RED TWP(AC5)			52
AC05		P15-1										X	53
AC05		P17-6	11.5"							RED-WHT TWP(AC6)			53
AC06		P15-2										X	54
AC06		P17-7	11.5"							WHT-RED TWP(AC5)			54

RUN NAME	A/P	PIN LOCATION		BAY ORDER	#	DRAW RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
AC07		P15-8										X	55
AC07		P20-6	44"							RED-WHT TWP(AC8)			55
AC08		P15-10										X	56
AC08		P20-7	44"							WHT-RED TWP(AC7)			56
AC09		P15-9										X	57
AC09		P21-6	24.5"							RED-WHT TWP(AC10)			57
AC10		P15-12										X	58
AC10		P21-8	24.5"							WHT-RED TWP(AC9)			58
AC11		P24-1										X	59
AC11		P29-6	27"							RED-WHT TWP(AC12)			59
AC12		P24-2										X	60
AC12		P29-7	27"							WHT-RED TWP(AC11)			60
AC13		P24-3										X	61
AC13		P30-7	27"							RED-WHT TWP(AC14)			61
AC14		P24-4										X	62
AC14		P30-8	27"							RED-WHT TWP(AC13)			62
AC15		P24-5										X	63
AC15		P26-7	18"							RED-WHT TWP(AC16)			63
AC16		P24-6										X	64
AC16		P26-8	18"							WHT-RED TWP(AC15)			64
AC17		P24-7										X	65
AC17		P31-6	17.5"							RED-WHT TWP(AC18)			65
AC18		P24-8										X	66
AC18		P31-7	17.5"							WHT-RED TWP(AC17)			66
AC19		P23-1										X	67
AC19		P27-6	21"							RED-WHT TWP(AC20)			67
AC20		P23-2										X	68
AC20		P27-7	21"							WHT-RED TWP(AC19)			68
AC21		P23-8										X	69
AC21		P28-6	17.5"							RED-WHT TWP(AC22)			69
AC22		P23-10										X	70
AC22		P28-7	17.5"							WHT-RED TWP(AC21)			70
AC23		P23-9										X	71
AC23		P25-6	9.5"							RED-WHT TWP(AC24)			71
AC24		P23-12										X	72
AC24		P25-8	9.5"							WHT-RED TWP(AC23)			72

RUN NAME	A/P	PIN LOCATION		BAY ORDER	Q	DRAW RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
AC25		P13-1										X	73
AC25		P13-3	2.75"				RED				#16AWG		73
AC25'		P13-1										X	74
AC25'		P23-5	64.5"				RED				CABLE 9107763		74
AC26		P13-2										X	75
AC26		P23-6	64.5"				WHT				CABLE 9107763		75
AC26'		P13-2										X	76
AC26'		P13-4	2.75"				WHT				#16AWG		76
AC27		P15-5										X	77
AC27		P34	57"								RED-WHT TWP TO TIME MTK		77
AC28		P15-6										X	78
AC28		P35	57"								WHT-RED TWP TO TIME MTK		78
DC L01		P14-12	69.5"				VIO				#16AWG	X	79
DC L01		P3-8											79
DC L02		P22-9	71"				VIO				#16AWG	X	80
DC L02		P7-4											80
DC L0X		P22-12					VIO				#16AWG	X	81
DC L0X		P4-3	78.5"										81
DC L0Y		P14-9										X	82
DC L0Y		P6-1	64"				VIO						82
GND 01		P14-4										X	83
GND 01		P21-3	28.5"				BLK						83
GND 02		P14-5	73"				BLK					X	84
GND 02		P8-8											84
GND 03		P14-6										X	85
GND 03		P25-3	43.5"				BLK						85
GND 04		P10-5										X	86
GND 04		P22-3	74"				BLK						86
GND 05		P34	9"				BLK					X	87
GND 05		P9-6											87
GND 06		P11-7										X	88
GND 06		P39	9"				BLK						88
GND 09		P12-8	31.5"				BLK					X	89
GND 09		P9-3											89
GND 10		P11-8										X	90
GND 10		P36-8	25.5"				BLK						90

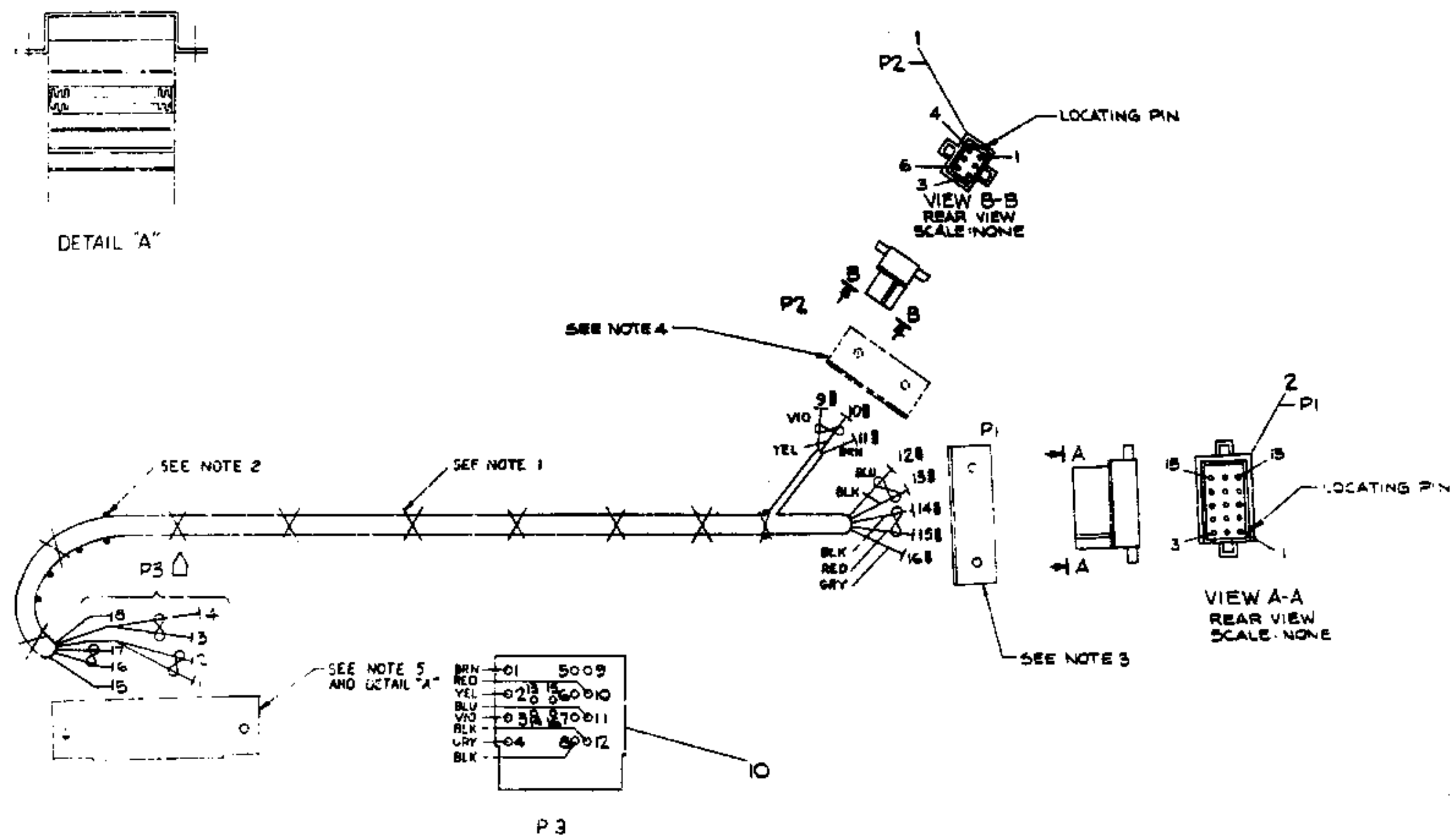
RUN NAME	A/P	PIN LOCATION		BAY ORDER	Q	DRAW RV	RG	Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
GND 11		P1-2										X	91
GND 11		P10-3	24.5"				BLK						91
GND 12		P1-6										X	92
GND 12		P10-4	24.5"				BLK						92
GND 13		P41	9"				BLK					X	93
GND 13		P8-7											93
GND 14		P1-7	38				BLK					X	94
GND 14		P36-5											94
GND A1		P17-3	64.5"				BLK					X	95
GND A1		P8-2											95
GND A2		P17-4	66"				BLK					X	96
GND A2		P8-1											96
GND B1		P18-3	70.75"				BLK					X	97
GND B1		P8-4											97
GND B2		P18-4	71.5"				BLK					X	98
GND B2		P8-3											98
GND C1		P19-3	73.5"				BLK					X	99
GND C1		P8-6											99
GND C2		P19-4	73.5"				BLK					X	100
GND C2		P8-5											100
GND D1		P20-3	61"				BLK					X	101
GND D1		P36-7											101
GND D2		P12-7										X	102
GND D2		P20-4	61"				BLK						102
GND E1		P21-2										X	103
GND E1		P36-11	64"				BLK						103
GND E2		P12-5										X	104
GND E2		P40-2	63"								BLK-ORN TWP(+20V&1)		104
GND F1		P25-2	75.5"				BLK					X	105
GND F1		P9-4											105
GND H1		P11-1										X	106
GND H1		P31-3	74.5"				BLK						106
GND H2		P11-8										X	107
GND H2		P31-4	74"				BLK						107
GND H3		P11-2										X	108
GND H3		P26-2	74"				BLK						108

RUN NAME	A/P	PIN LOCATION		BAY ORDER	Ø	DRAW RV	RG Y	X	Z LEVEL	REMARKS	NEW RUN INDICATOR	RUN NUM
GND J1		P27-3	82.5"				BLK				X	109
GND J1		P9-2										109
GND J2		P27-4	82.5"				BLK				X	110
GND J2		P9-1										110
GND K1		P11-4									X	111
GND K1		P28-3	78"				BLK					111
GND K2		P11-3									X	112
GND K2		P28-4	78"				BLK					112
GND L1		P11-6									X	113
GND L1		P29-3	81"				BLK					113
GND L2		P11-5									X	114
GND L2		P29-4	81"				BLK					114
GND L3		P30-2									X	115
GND L3		P9-6	84"				BLK					115
LINE CLOCK		P14-11									X	116
LINE CLOCK		P37-2	58.5"				BRN		#18AWG			116
LINE CLOCK'		P2-7									X	117
LINE CLOCK'		P37-2	33"				BRN		#18AWG			117
LO GND D1		P10-1									X	118
LO GND D1		P14-7	66"				BLK		#18AWG			118
LO GND D2		P10-2									X	119
LO GND D2		P22-7	78"				BLK		#18AWG			119
LO GND D3		P37-1	30.5"				BLK		#18AWG		X	120
LO GND D3		P9-5										120
PWR CONT COM1		P1-3									X	121
PWR CONT COM1		P32-3	98.25"				BLK-WHT		TWP(P.C SW1)#18AWG			121
PWR CONT SW1		P1-4									X	122
PWR CONT SW1		P32-1	98.25"				WHT-BLK		TWP(P.C COM1)#18AWG			122
SHIELD		P23-4							CABLE 9107761		X	123
THERM 1		P13-6									X	124
THERM 1		P33-3	77.75"				BLK		#18AWG			124
THERM 2		P13-5									X	125
THERM 2		P33-2	77.75"				RED		#18AWG			125

WIRE TABLE										
ITEM	DESCRIPTION		FROM			TO				
NO.	AWG	COLOR	POINT	CONNECTION	TERM	POINT	CONNECTION	TERM	SIGNAL	
5	14 TWP	RED	3	P3-10	SOLD	15	P1-1	3	+5V	
		BLK	4	P3-8	SOLD	14	P1-7	3	GND	
9	14	GRY	5	P3-4	SOLD	16	P1-2	3	+15V	
6	14 TWP	BLK	1	P3-12	SOLD	13	P1-9	3	GND	
		BLU	2	P3-11	SOLD	12	P1-15	3	-15V	
8	18	BRN	8	P3-1	SOLD	11	P2-2	3	LTc	
7	18 TWP	VIO	6	P3-3	SOLD	9	P2-3	3	Dclo	
		YEL	7	P3-2	SOLD	10	P2-4	3	Aclo	
11	22	-	-	P3-13	SOLD	-	P3-14	SOLD	Dclo	
11	22	-	-	P3-15	SOLD	-	P3-16	SOLD	Aclo	

NOTES:

1. USE TIE WRAPS (X) ITEM #4 APPROXIMATELY EVERY THREE (3) INCHES WHEN NECESSARY AND AT EVERY BREAKOUT POINT.
2. DOT (●) INDICATES NAIL LOCATIONS FOR ASSEMBLY USE ONLY, COVER NAILS WITH SHRINK TUBING TO PREVENT CUTTING HARNESS.
3. USE CONN BRKT C-MD-990576 - 0-0 MOUNT WITH WOOD SCREWS. USE MATING CONN 1209350-15
4. USE CONN BRKT C-MD-9905761-46-0 MOUNT WITH WOOD SCREWS USE MATING CONN 1209350-06
5. USE CONN. HOLD DOWN B-MD-9905767-0-0 WITH PLATE B-MD-9905767-0-1, USE TAPE DEC #9006734 & CONN H807 DEC # (1209123) REMOVE PINS & FLANGES AS SHOWN IN DETAIL "A". MOUNT WITH WOOD SCREWS.



SYM	QTY.	DESCRIPTION	PART NO.	ITEM NO.
	A/R	BUSS WIRE #22AWG	9107560-01	11
	1	POWER CONN	G772	10
	A/R	WIRE #14AWG GRY	9107370-86	9
	A/R	WIRE #18AWG BRN	9107360-11	8
	A/R	WIRE #18TWP YEL/VIO	9107450-47	7
	A/R	WIRE #14TWP BLK/BLU	9107440-06	6
	A/R	WIRE, #14TWP BLK/RED	9107440-02	5
X	A/R	WRAP, TIE	9007031	4
	8	PIN, MALE	1209378-00	3
	1	HOUSING, CONN. 15 PIN	1209351-15	2
	1	HOUSING, CONN. 6 PIN	1209351-06	1

PARTS LIST

[redacted] EQUIPMENT CORPORATION

G772 SYSTEM UNIT HARNESS

MATERIAL: SEE PARTS LIST

B | A | 7009562-0-0

13

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE
DRAWING DIRECTORY	B-DD-861-0
POWER CONTROL, 861	E-UA-861-0-0
PILOT CONTROL	D-CS-5411522-0-1
CIRCUIT SCHEMATIC 861	D-CS-861-A-1
CIRCUIT SCHEMATIC 861	D-CS-861-B-1
CIRCUIT SCHEMATIC 861	D-CS-861-C-1
PACKAGING INSTRUCTION	A-PI-3700083-0-0
CIRCUIT SCHEMATIC 861	D-CS-861-F-1

UNIT VARIATIONS

VAR	TITLE	PRINT SET
861-A	POWER CONTROL, 861-A	
861-B	POWER CONTROL, 861-B	
861-C	POWER CONTROL, 861-C	
861-F	POWER CONTROL, 861-F	

REVISIONS

REV	CHG. NO.	DATE
A	861-3	2/73
B	861-4	3/74
C	861-6	12-74
D	861-7	4-75
E	861-8	7-75
F	861-9	2-76
H	861-10	4-76
J	861-11	8-76
K	861-12	9-76

USED ON OPTION/MODEL	

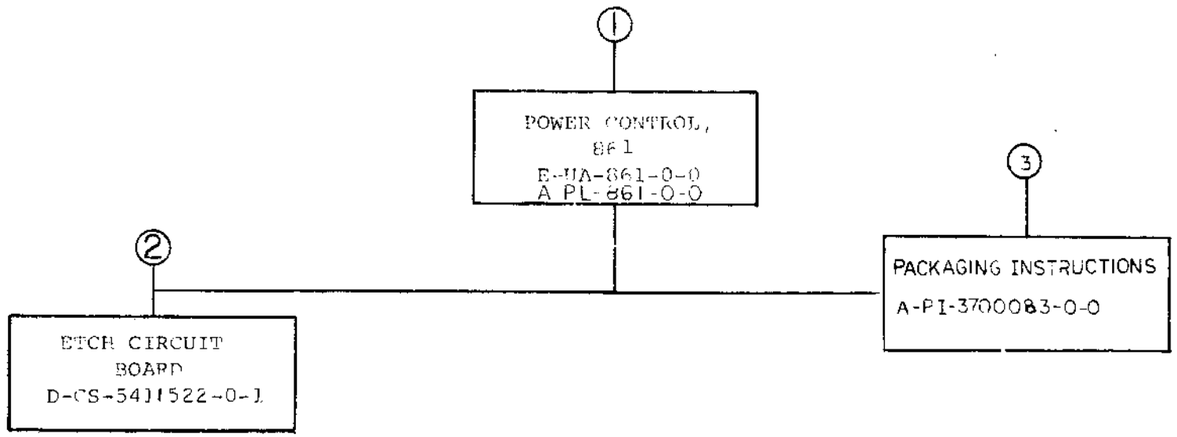
		DATE
DRN.	SCHMIDT	9/13/72
CHK'D.	B. ALLEN	9/13/72
PROJ ENG.	JIM KALAGHER	9/13/72
PROD.	Fazio Paul	9/25/72
FIELD SERV.	Paton Irving	9/25/72

SHEET 1 OF 3

TITLE: 861 POWER CONTROL

SIZE	CODE	NUMBER	REV
B	DD	861-0	K

DIST



TITLE		SIZE	CODE	NUMBER	REV
POWER CONTROL,	SHEET 2 OF 3	B	DD	861-0	K

DRB 107
DEC 16-(325)-1062-3-N871

ELECTRICAL

CUSTOMER PRINT SET 861-1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	D-CS-861-A-1	E	1	CIRCUIT SCHEMATIC, 861 P.C.	
X			D-CS-861-B-1	E	1	CIRCUIT SCHEMATIC, 861 P.C.	
X			D-CS-861-C-1	E	1	CIRCUIT SCHEMATIC, 861 P.C.	
			A-SP-861-0-1		2	TEST AND INSPECTION PRO.	
X			D-CS-861-F-1	D	1	CIRCUIT SCHEMATIC, 661 P.C.	
X		2	D-CS-5411522-0-1	A	1	PILOT CONTROL	
			PC-5011522			ETCH CIRCUIT BOARD	
			K CO-5411522-0-4			X Y COORDINATE HOLE LOCATION	
			D-AH-5411522-0-5			ASSY DRILLING HOLE LAYOUT	
			B-MH-5411522-0-6			MODULE ECO HISTORY	

MECHANICAL

CUSTOMER PRINT SET 861-1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	E-UA-861-0-0	K	2	POWER CONTROL, 861	
			B-IA-7410567-0-0	C	1	CHASSIS, 861 PC	
			D-IA-7410568-0-0	C	2	COVER, 861 P.C.	
			A-PS-3611216-0-0			NAME PLATE 861-A	
			C-SS-3611216-0-1		1	NAME PLATE 861-A ARTWORK	
			A-PS-3611217-0-0			NAME PLATE 861-B	
			C-SS-3611217-0-1		1	NAME PLATE 861-B ARTWORK	
			A-PS-3611218-0-0			NAME PLATE 861-C	
			C-SS-3611218-0-1		1	NAME PLATE 861-C ARTWORK	
			A-PS-3612382-0-0			NAME PLATE 861-F	
			C-SS-3612382-0-1		1	NAME PLATE 861-F ARTWORK	
			A-PL-861-0-0	J	4	POWER CONTROL,861	
		3	A-PI-3700085-0-0		2	PACKAGING INSTRUCTIONS	
			A-PS-9905229-0-0		2	FULL OVER LAP CARTON	
			A-PS-9905228-0-0		2	EXPANDER POLYSTYRENE FOAM INSERT	

CUSTOMER PRINT SET CODES	
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
	C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
	S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE	SHEET	SIZE	CODE	NUMBER	REV
POWER CONTROL, 861	3 OF 3	B	DD	861-0	K

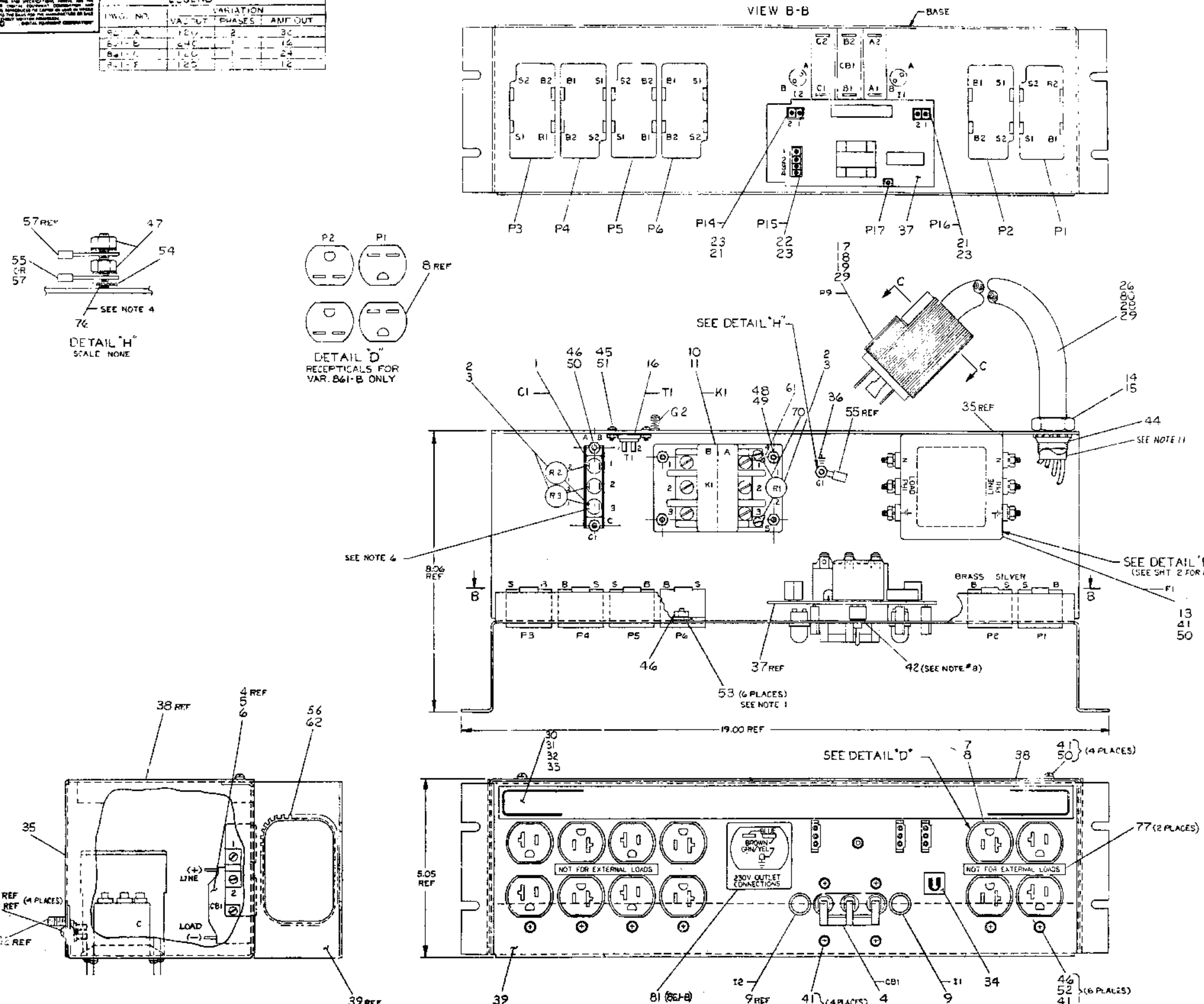
138

DRB 108

DEC 16-(325)-1062-2B-R572

DWG. NO.	VARIATION		
	VAC OUT	PHASES	AMP OUT
861-A	120	2	30
861-B	240	1	16
861-C	120	1	24
861-F	120		12

LEGEND



NOTES:

1. ITEM 53 SKIRT WASHER MUST BE BETWEEN CHASSIS AND MOUNTING TAB OF RECEPTACLE (P1-P6).
2. ~~REMOVE FASTON TABS FOR 861-F~~
3. ~~LOCKWASHER (ITEM 40 OR 41) MUST BE PLACED BETWEEN FILTER (ITEM 12 OR 13) AND TERM CLAMP (ITEM 24 OR 25).~~
4. REMOVE PAINT MASK FROM AROUND 10-32 GROUND STUD (G1) AND COAT EXPOSED SURFACE WITH CONDUCTIVE GREASE (ITEM 76) PLACE EXTERNAL TOOTH LOCK WASHER (ITEM 54) ON STUD FIRST, THEN CRIMP LUG (FROM THIS LUG A WIRE GOES TO THE FILTER, LUG IS ITEM 55 OR 57) THEN KEPNUT (ITEM 47), THEN CRIMP LUG (ITEM 57, WIRE FROM THIS LUG GOES TO PC BOARD) AND LAST KEPNUT (ITEM 47) SEE DETAIL "H".
5. ~~REMOVE ALL FASTONS FROM FILTERS (ITEMS 12 & 13).~~
6. C1-3 IS THE COMMON (C) SIDE OF C1.
7. RECOMMENDED TORQUE LEVEL FOR VARIOUS HARDWARE SIZES:

THREAD	TORQUE
6-32	10 IN-LBS
8-32	14 IN-LBS
10-32	18 IN-LBS

8. TO PREVENT STRESS FROM SWITCH ON PC BOARD USE ITEM 42 (FIBER WASHER) BETWEEN CHASSIS AND PC BOARD.
9. USE TIE WRAPS (ITEM 43) A/R.
10. REMOVE PAINT MASK FROM AROUND 10-32 STUD (G2) AND APPLY CONDUCTIVE GREASE (ITEM 76).
11. POWER CORD TO EXTEND APPROX .50 IN BEYOND LOCKNUT (ITEM 44) FOR ITEMS 27 & 25. ITEMS 26 & 28 TO REMAIN FLUSH WITH LOCKNUT.
12. RECOMMENDED TORQUE LEVEL FOR LUGS ON K1 (ITEMS 10 & 11) IS 18 INCH-LBS

FOR PARTS LIST SEE A-PL-861-0-0

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

TITLE: POWER CONTROL 861

DRAWING NO.: 861-0-0 REV. K

WIRE TABLE 861-A

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONN	FROM POINT	WITH	TO CONN	TO POINT	WITH	REMARKS
	—	—	R1-1		—	K1-4		70,61	1. IN
2	—	—	R1-2		—	K1-5		70,61	1. IN
73	14	BLU	K1-B3		*	P4-S1		60	4 IN
					*	P4-S2		60	4.25 IN
			K1-B2		*	C1-3B		63	3.5 IN
			P4-S2		60	P5-S1		60	4.5 IN
73		BLU	P4-S1		60	P5-S2		60	4.5 IN
72		BRN	K1-B2		*	C1-2B		63	3.5 IN
72		BRN	K1-B2		*	P6-B1		60	6 IN
72		BRN	P6-B2		60	P5-B2		60	3 IN
71		BLK	K1-B1		*	C1-1B		63	3.5 IN
71		BLK	K1-B1		*	P4-B1		60	6 IN
71		BLU	P4-S2		60	P5-B2		60	3 IN
73	14	BLU	C81-C2		55	P1-S1		60	3 IN
66	12					K1-A3		*	3.5 IN
73	14		K1-A3		*	P15-2		23,22	3.75 IN
73	14	BLU	P16-2		23,21	K1-A3		*	6.5 IN
65	12	BLU	C81-B2		55	K1-A2		*	6.75 IN
72	14	BRN				P1-B1		60	10.5 IN
64	12	BLK	C81-A2		55	K1-A1		*	7.5 IN
71	14	BLK				P2-B1		60	6 IN
71		BLK	K1-A1		*	P15-3		23,22	5.5 IN
72		BRN	K1-A2		*	K1-4		63	3 IN
72		BRN	P16-1		23,21	K1-5		63	7.5 IN
73	14	BLU	K1-S2		60	P2-S1		60	3 IN
66	12	BLU	C81-C1		55	F1-N	LOAD	55	5.5 IN
9	—	RED	I1-A		—	C81-C1		57	5.25 IN
9	—	RED	I2-A		—				4 IN
9	—	BLK	I1-B		—	C81-A1		58	5.75 IN
64	12	BLK	F1-PH1	LOAD	55	C81-A1		55	8 IN
9	—	BLK	I2-B		—	C81-B1		58	4.75 IN
63	12	BRN	F1-PH2	LOAD	55	C81-B1		55	5.25 IN
74	14	ORN	P14-1		23,21	T1-1		63	10. IN
74	14	ORN	P14-2		23,21	T1-2		63	10. IN
67	12	GRN/YEL	F1-⏚	LOAD	55	G1	SEE DETAIL H	55	4.75 IN
67	14	GRN/YEL	P17		SOLD	G1		57	7.78 IN
3	—	—	R2-1		70	C1-3A		59	1. IN
1	—	—	R3-1			C1-1A		59	1.25 IN
2	—	—	R3-2		70	C1-2A		59	1. IN
26	12	BLK	P9-Y		17	F1-PH1	LINE	55	15. FT
		WHT	P9-S			F1-N	LINE	55	
		RED	P9-X			F1-PH2	LINE	55	
26	1	GRN	P9-G		17	F1-⏚	LINE	55	15. FT

WIRE TABLE 861-E

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONN	FROM POINT	WITH	TO CONN	TO POINT	WITH	REMARKS
	—	—	R1-1		—	K1-4		70,61	1. IN
3	—	—	R1-2		—	K1-5		70,61	1. IN
73	14	BLU	K1-B3		*	P4-S1		60	4 IN
					*	P4-S2		60	4.25 IN
			K1-B2		*	C1-3B		63	3.5 IN
			P4-S2		60	P5-S1		60	4.5 IN
73		BLU	P4-S1		60	P5-S2		60	4.5 IN
72		BRN	K1-B2		*	P6-B1		60	6 IN
						P4-B1		60	3.5 IN
			K1-B1		*	C1-1B		63	3.5 IN
			P6-B2		60	P5-B2		60	3 IN
			K1-A1		*	K1-4		63	3.25 IN
			K1-A1		*	P15-4		23,22	6 IN
			C81-A2		55	P1-B2		60	10 IN
72		BRN				K1-A1		*	7.5 IN
73		BLU	C81-C2		55	K1-A3		*	5.5 IN
						F1-S2		60	8 IN
			K1-A3		*	P16-2		23,22	6 IN
			K1-A3		*	P15-2		23,22	4 IN
73	*	BLU	P1-S1		60	P2-S2		60	8 IN
72	14	BRN	P1-B1		60	P2-B2		60	4.5 IN
9	—	BLK	I1-B		—	C81-B2		57	4 IN
		BLK	I2-B						4 IN
9	—	RED	I1-A		—	C81-A1		58	5 IN
9	—	RED	I2-A		—	C81-C1		58	5 IN
72	14	BRN	C81-A1		57	F1-PH1	LOAD	57	3 IN
73		BLU	C81-C1		57	F1-N	LOAD	57	4.75 IN
74		ORN	P14-1		23,21	T1-1		63	10. IN
74		ORN	P14-2		23,21	T1-2		63	10. IN
67		GRN/YEL	F1-⏚	LOAD	57	G1	SEE DETAIL "H"	57	4.75 IN
67	14	GRN/YEL	P17		SOLD	G1		57	7.75 IN
3	—	—	R2-1		70	C1-3A		59	1. IN
	—	—	R2-2		70	C1-2A		59	1. IN
72	14	BRN	P16-1		23,21	K1-5		63	7. IN
80		GRN/YEL	P9-G		18	F1-⏚	LINE	57	15. FT
80		BRN	P9-X		18	F1-PH1	LINE	57	15 FT
80	14	BLU	P9-Y		18	F1-N	LINE	57	15. FT

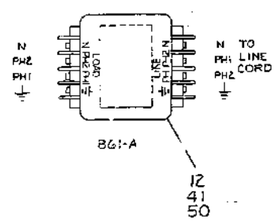
WIRE TABLE 861-C

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONN	FROM POINT	WITH	TO CONN	TO POINT	WITH	REMARKS
	—	—	R1-1		—	K1-4		70,61	1. IN
2	—	—	R1-2		—	K1-5		70,61	1. IN
73	14	BLU	K1-B2		*	P4-S1		60	4.25 IN
		BLU				P4-S2			4 IN
			K1-B2		*	C1-3B		63	3.5 IN
72		BRN	K1-B2		*	C1-2B		63	3.5 IN
71		BLK	K1-B1		*	C1-1B		63	3.5 IN
72		BRN	C81-B2		55	K1-A2		*	6.5 IN
		BRN				K1-A3		*	6.75 IN
72		BRN	K1-A3		*	K1-4		63	3.5 IN
71		BLK				P2-B1		60	6 IN
71		BLK	C81-C2		55	K1-A1		*	7.5 IN
73		BLU	C81-A2		55	K1-A3		*	6 IN
			P1-S1		60	P2-S2		60	3.0 IN
			P15-2		23,21	K1-A3		*	3.75 IN
73		BLU	P16-2			K1-A3		*	6.5 IN
72		BRN	P16-1			K1-5		63	7.5 IN
74		ORN	P14-1			T1-1		63	10. IN
74	14	ORN	P14-2		23,21	T1-2		63	10. IN
2	—	—	R2-1		70	C1-3A		59	1. IN
	—	—	R3-1						1. IN
	—	—	R2-2			C1-1A		59	1.25 IN
2	—	—	R3-2		70	C1-2A		59	1. IN
68	12	GRN/YEL	F1-⏚	LOAD	55	G1	SEE DETAIL "H"	55	4.75 IN
67	14	GRN/YEL	P17		SOLDER	G1		57	7.75 IN
65	12	BRN	C81-B1		55	F1-PH2	LOAD	55	5 IN
64	12	BLK	C81-C1		55	F1-PH1	LOAD	55	3.25 IN
9	—	RED	I1-A			C81-B1		57	4.25 IN
	—	RED	I2-A						4.75 IN
	—	BLK	I1-B			C81-A1		57	3.00 IN
9	—	BLK	I2-B						5.75 IN
66	12	BLU	C81-A1		55	F1-N	LOAD	55	4.5 IN
28		GRN	P9-G		19	F1-⏚	LINE	55	15. FT
28		BLK	P9-B		19	F1-PH1	LINE	55	15. FT
28	12	WHT	P9-S		19	F1-N	LINE	55	15. FT

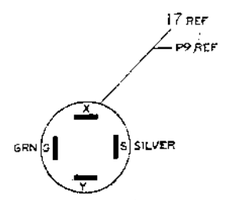
* STRIP WIRE .38 IN

WIRE TABLE 861-F

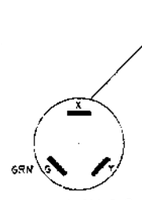
ITEM NO	DESCRIPTION AWG	COLOR	FROM CONN	FROM POINT	WITH	TO CONN	TO POINT	WITH	REMARKS
2	—	—	R1-1		—	K1-4		70,61	1. IN
	—	—	R1-2		—	K1-5		70,61	1. IN
73	14	BLU	K1-B3		*	P4-S1		60	4 IN
73		BLU				P4-S2			4.25 IN
72		BRN	K1-B2			P6-B1			5.25 IN
72		BRN				P6-B2			5.25 IN
71		BLK	K-B1			P4-B1			6.25 IN
7		BLK				P3-B2		60	6.25 IN
73		BLU	K1-B3			C1-3B		63	3.5 IN
72		BRN	K1-B2			C1-2B		63	3.5 IN
71		BLK	K1-B1			C1-1B		63	3.5 IN
2	—	—	R2-2		70	C1-1A		59	1. IN
	—	—	K2-1			C1-3A		59	1. IN
2	—	—	R3-1						1. IN
	—	—	R3-2		70	C1-2A		59	1.25 IN
73	14	BLU	K1-A3		*	P15-2		23,22	4.25 IN
			K1-A3		*	P16-2		23,21	5.75 IN
		BLU	CBI-A2		55	K1-A3		*	6.75 IN
73		BLU				P1-S2		60	8 IN
72		BRN	K1-A2		*	K1-4		63	3.75 IN
			CBI-B2		55	K1-A2		*	4.5 IN
						P1-B2		60	8.25 IN
72		BRN	K1-5		63	P16-1		23,21	6.75 IN
71		BLK	K1-A1		*	P15-3		23,22	4. IN
71		BLK	CBI-C2		55	P2-B1		60	8 IN
71		BLK				K1-A1		*	7. IN
73	14	BLU	P1-S1		60	P2-S2		60	3 IN
9	—	BLK	I1-B		—	CBI-B1		57	4.5 IN
	—	BLK	I2-B						4.5 IN
	—	RED	I1-A		—	CBI-A1		57	3.5 IN
9	—	RED	I2-A		—				4.5 IN
73	14	BLU	CBI-A1		57	F1-N	LOAD	57	4.5 IN
71		BLK	CBI-C1	LOAD	57	CBI-B1		55	3 IN
71		BLK	F1-PH1	LOAD		CBI-B1			6.5 IN
67		GRN/YEL	F1-⏚	LOAD	57	G1	SEE DETAIL H	57	4.75 IN
67		GRN/YEL	P17		SOLD	G1		57	7.75 IN
74		ORN	P14-1		23,21	T1-1		63	10. IN
74		ORN	P14-2		23,21	T1-2		63	10. IN
73		BLU	P3-S1		60			60	4.5 IN
73	14	BLU	P5-S1		60			60	4.5 IN
71	14	GRN	P9-G			F1-⏚	LINE	57	15 FT
71	14	BLK	P9-X			F1-PH1	LINE	57	15 FT
71	14	WHT	P9-Y			F1-N	LINE	57	15 FT



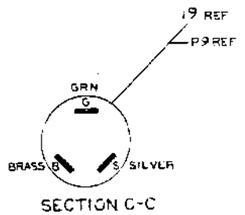
DETAIL "F"
SCALE: NONE



SECTION C-C
861-A
SCALE: NONE



SECTION C-C
861-B
SCALE: NONE

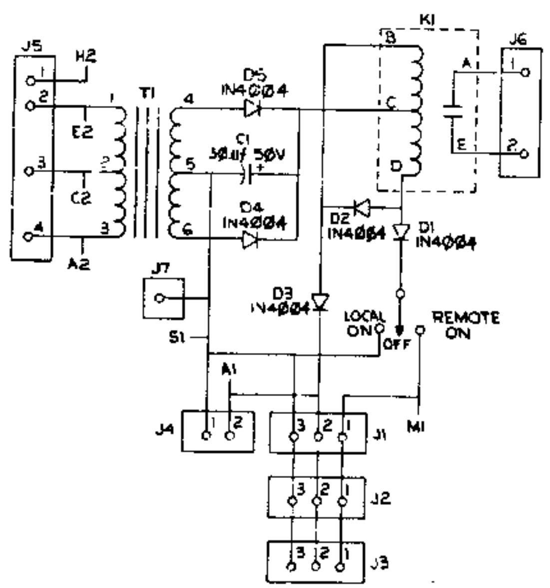


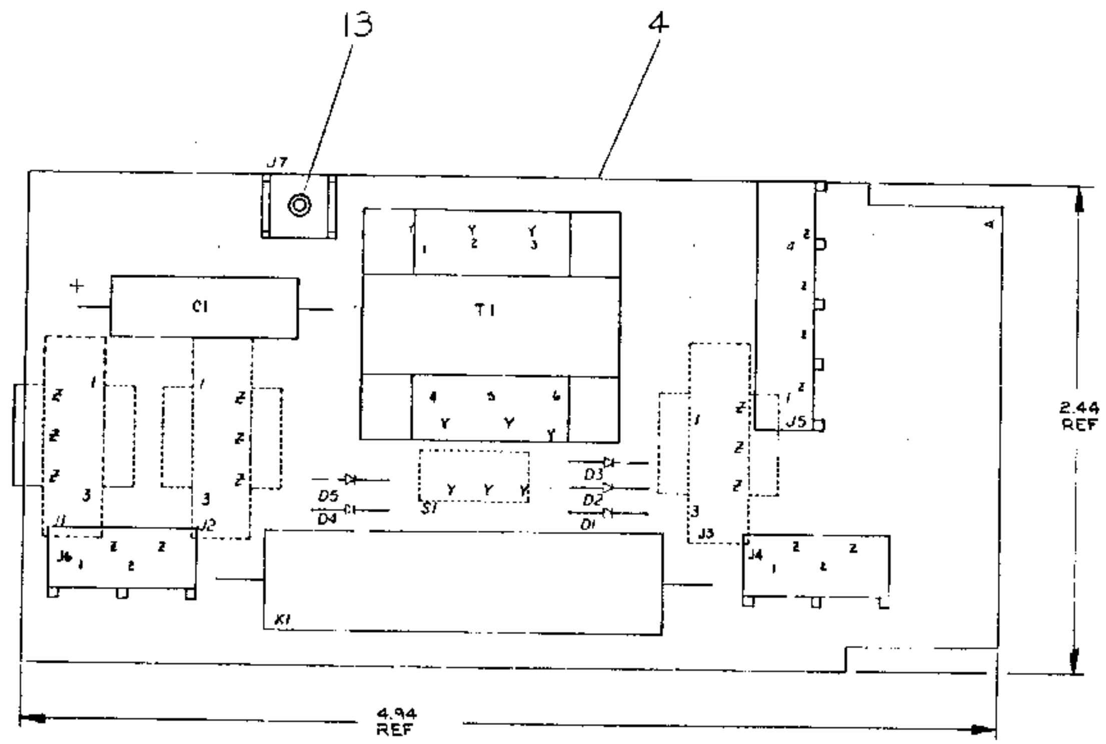
SECTION C-C
861-C
SCALE: NONE

REAR VIEW

140

NOTES:





QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411522-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411522-0-5	2
REF		MODULE ECO HISTORY	B-MH-5411522-0-6	3
1		ETCHED CIRCUIT BOARD	5011521	4
1	K1	RELAY, REED, 48 V COIL, 2.5 A CONT.	1212267-00	5
1	T1	TRANSFORMER MMC 54.5	1612342-00	6
1	C1	CAP 50 MFD 50V TANT	1000080-00	7
5	D1-D5	DIODE IN4004	1105796-00	8
1	S1	SWITCH	1211180-00	9
3	J1-J3	HOUSING, SOCKET	1209350-03	10
1	J5	CONN, UNIVERSAL, 4 PIN HEADER	1212297-01	11
2	J4, J6	CONN, UNIVERSAL, 2 PIN HEADER	1212297-00	12
1		EYELET	9006732-00	13
9		TERMINAL, SOCKET CONTACT	1209456-01	14
1	J7	TERMINAL, SOLDERLESS	9007113-00	15

PARTS LIST

ETCH BOARD REV B

FIRST USED ON OPTION MODEL: 861-D / 861-E

IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

DEC NO	EIA NO	DEC NO.	EIA NO

SEMICONDUCTOR CONVERSION CHART

CHANGE NO / REVISIONS / REV / CHK

DRN: [signature] DATE 2/4/75
CHK'D: W.E. [signature] DATE 2/4/75
ENG: [signature] DATE 2/4/75
PROD ENG: [signature] DATE 2/4/75
PROD: [signature] DATE 2/4/75

NEXT HIGHER ASSY: E-UA-861-D-0

digital EQUIPMENT CORPORATION

TITLE: PILOT CONTROL

SIZE: D CODE: CS NUMBER: 5411522-0-1 REV. A

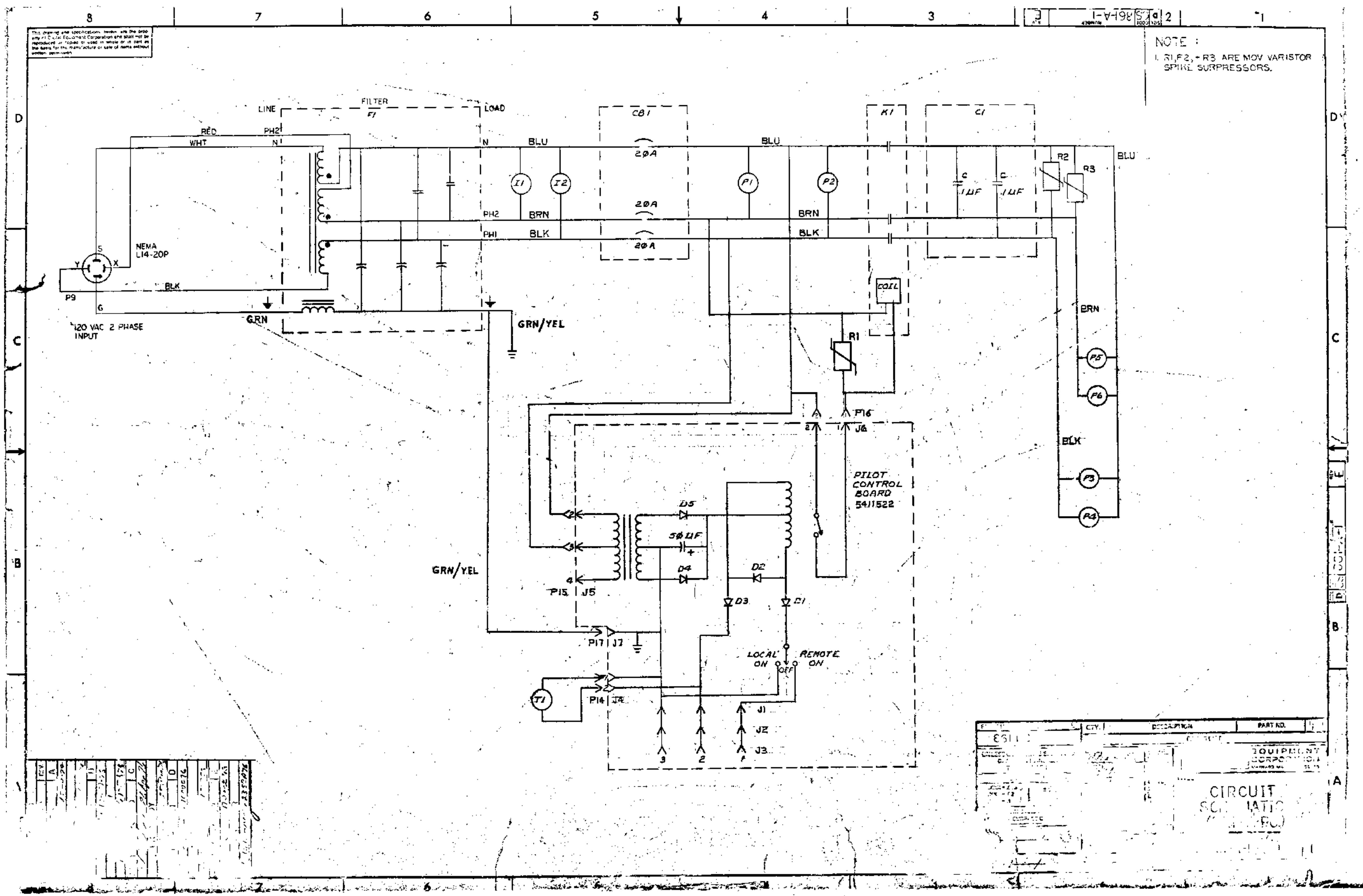
SCALE: NONE

SHEET 1 OF 1

DIST

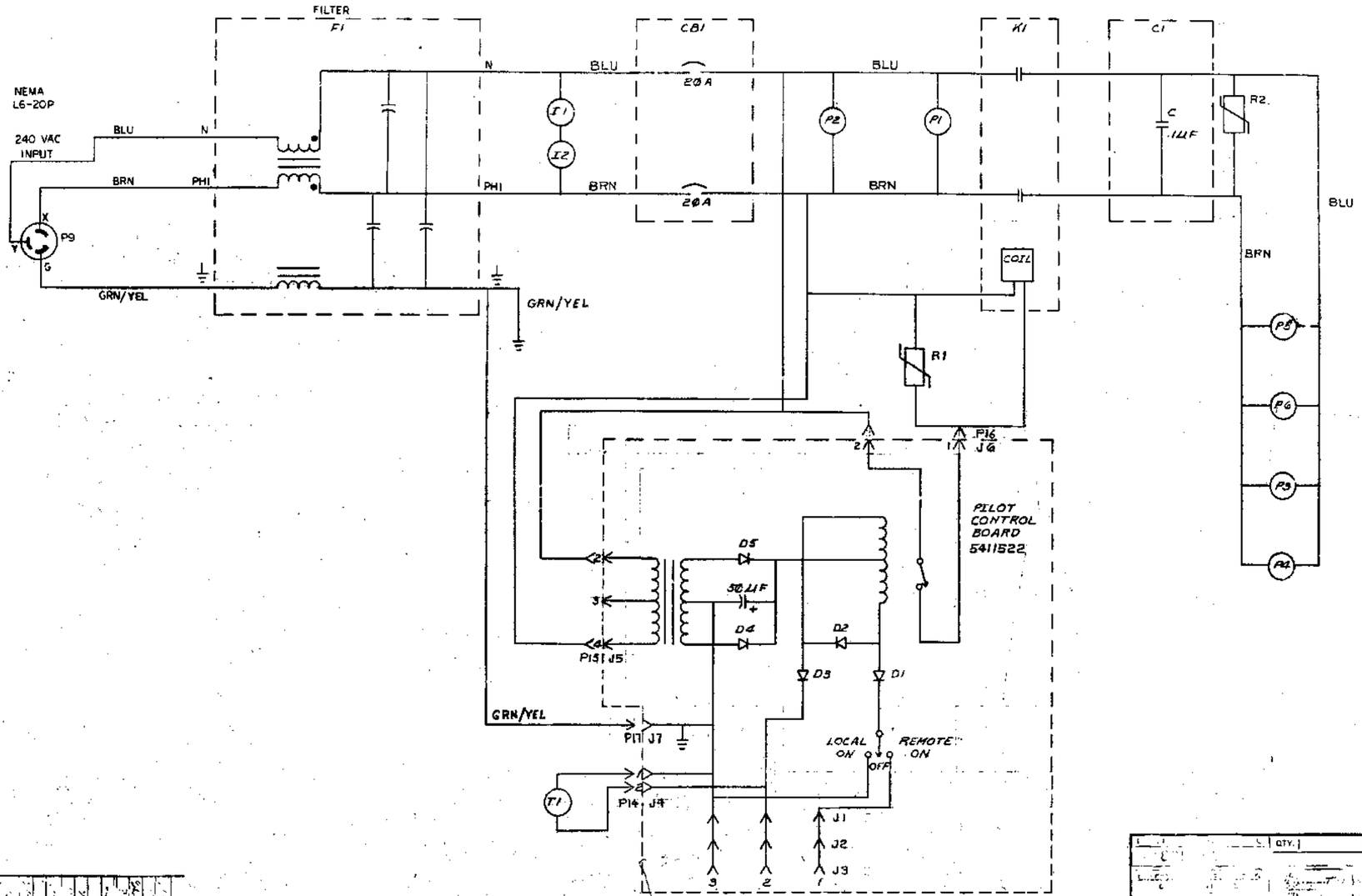
D CS 5411522-0-1 A

142


NOTE :
1. R1, R2, + R3 ARE MOV VARISTOR SPIKE SURPRESSORS.
LINE
FILTER
F1
LOAD
RED
PH2
WHT
N
BLU
BRN
BLK
PH2
PH1
CB1
20A
K1
C1
C
.1µF
R2
R3
COIL
R1
NEMA
L14-20P
P9
BLK
GRN
GRN/YEL
120 VAC 2 PHASE
INPUT
I1
I2
P1
P2
P3
P4
P5
P6
P16
J6
PILOT
CONTROL
BOARD
54J1522
D5
D4
D3
D2
D1
50µF
P15
J5
P17
J7
P14
J4
T1
LOCAL ON
OFF
REMOTE ON
J1
J2
J3
CIRCUIT
SCHEMATIC

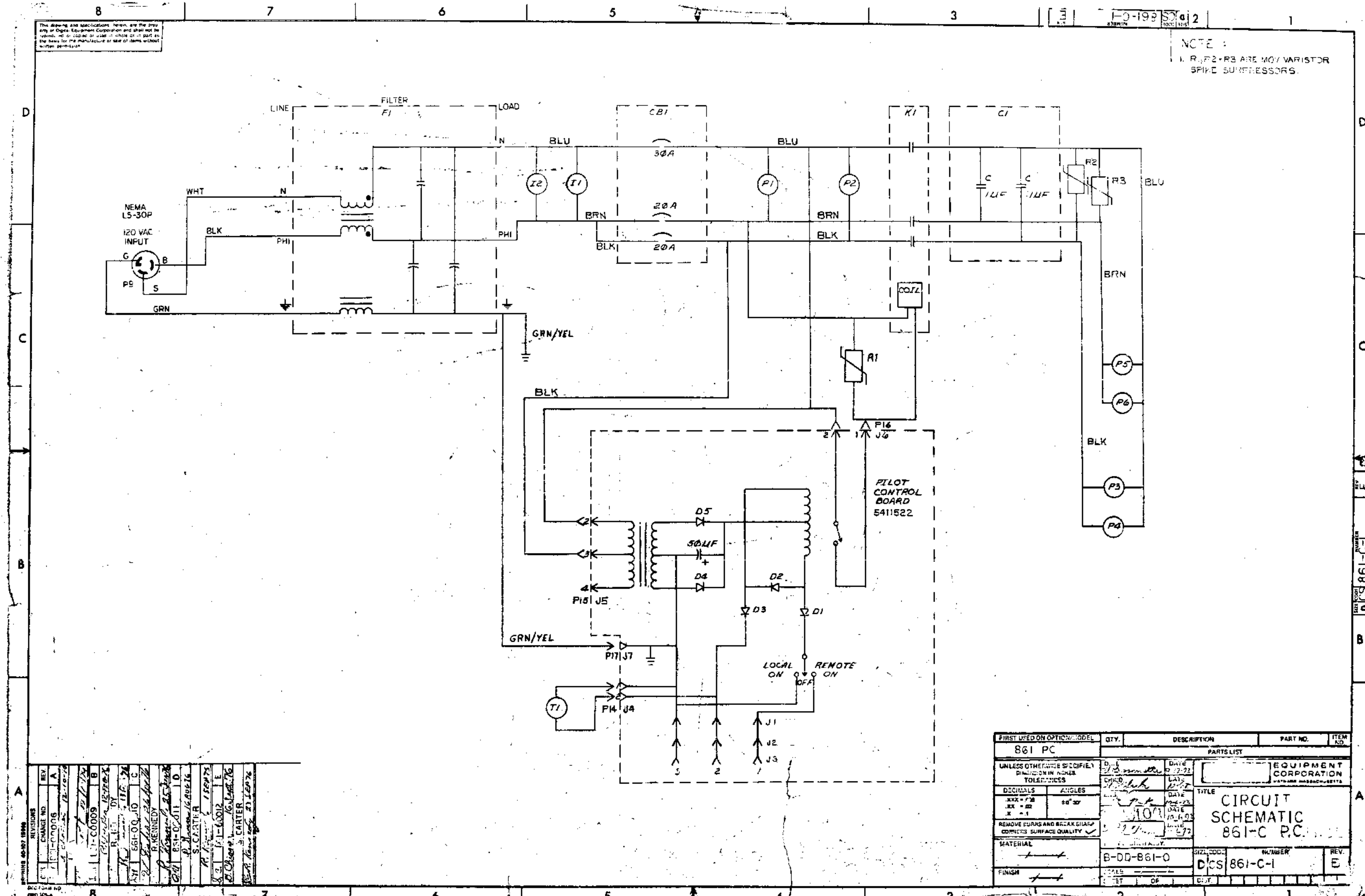
142

NOTE :
1. R1-R2 ARE MOV VARISTOR SPIKE SURPRESSORS.



QTY.	DESCRIPTION	PART I.D.

CIRCUIT SCHEMATIC (DSI-B PCI)



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
861 PC				

PARTS LIST

EQUIPMENT CORPORATION

TITLE: CIRCUIT SCHEMATIC 861-C P.C.

B-DD-861-0

SIZE D CODE CS NUMBER 861-C-1 REV. E

REVISIONS: A, B, C, D, E

144

DIGITAL EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

PACKAGING INSTRUCTION REV: A DATE: 4-73

TITLE 861 POWER CONTROL, INTERPLANT PACKAGE

MATERIAL REQUIREMENTS

Quantity	Identification No.	Purchase Spec	Description
1	7-2008 1314 0500-0	9905229	Full overlap carton
2		9905228	Expanded polystyrene foam insert
A/R			3-inch wide Glasflex tape

PACKAGING INSTRUCTIONS

Step	Procedure
1	Set up the full over lap carton (9905229) using one strip of tape across the bottom and extending up the sides approximately three inches. See Figure 1.
2	Place one expanded polystyrene foam insert (9905228) in each end of the carton with the slots in the foam facing inward.
3	Place the 861 power control in the carton with the ears of the upright sliding into the slots in the foam.
4	Coil the power cord so that it fits into the cavity in the rear of the power control.
5	Close and seal the carton with one piece of tape across the top of the carton and extending down the sides approximately three inches.

ENG	APPD	SIZE	CODE	NUMBER	REV
[illegible] 4/13/73	[illegible]	A	P1	3700083-0-0	A

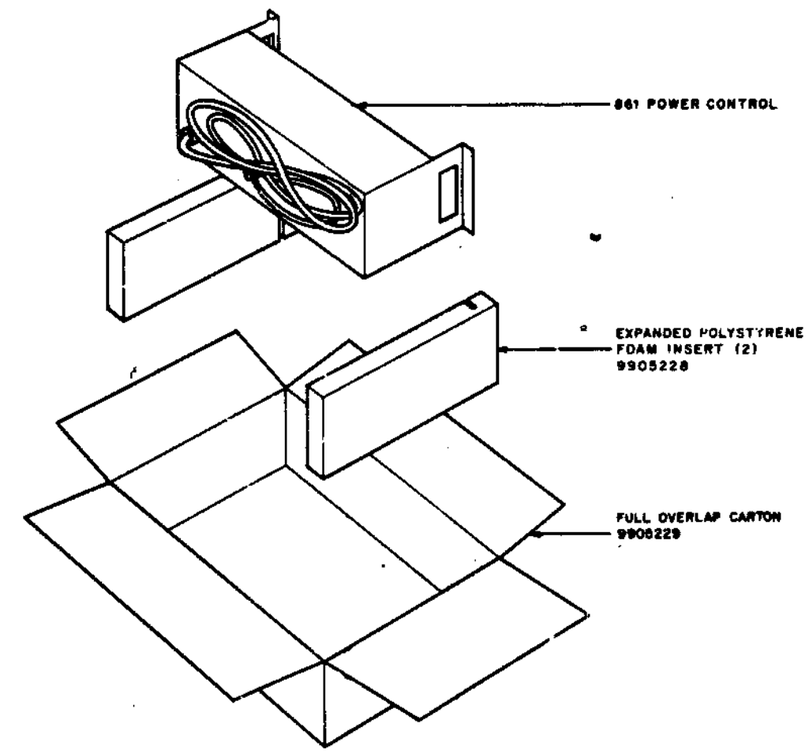
DEC 8 (5511)-1031-1-R671
DRA - 120

SHEET 1 OF 2

PACKAGING INSTRUCTION REV: A DATE: 4/73

TITLE 861 POWER CONTROL , INTERPLANT PACKAGE

FIGURE 1



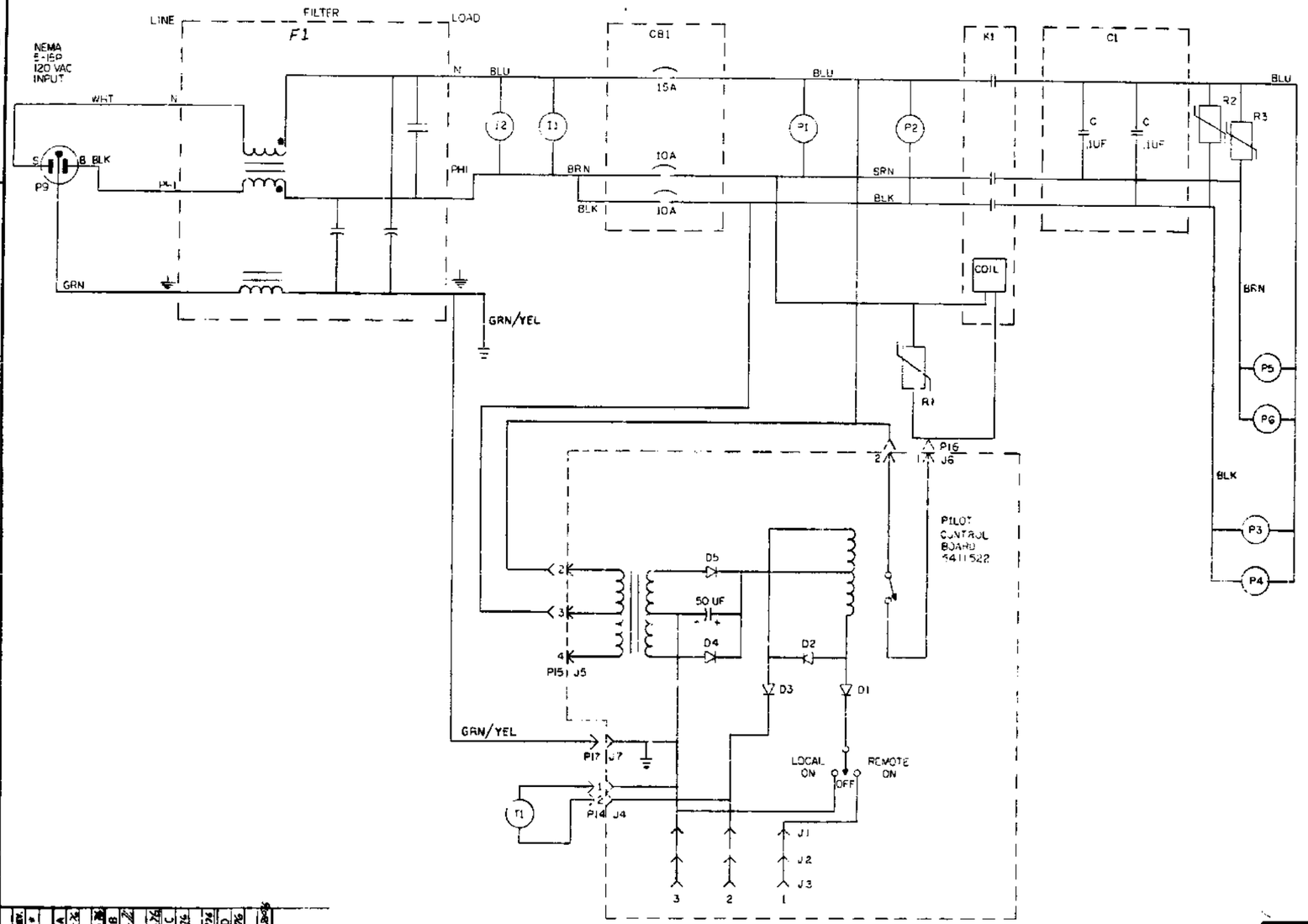
NOTE
Make changes to the "C" size original only and rephotograph.

ENG.	APPD.	SIZE	CODE	NUMBER	REV
[illegible]	[illegible]	A	P1	3700083-0-0	A

DRC-107

SHEET 2 OF 2

NOTE :
1. R1 R2 + R3 ARE MOV VARISTOR SPIKE SURPRESSORS.



REVISIONS				
DR	CHANGE NO.	REV.		
—	861-00007	A	ORIGINATED	861-00009
	861-00010	B	R. KENNEDY	861-00011
	861-00012	D	R. KENNEDY	S. CARTER

DESCRIPTION	DWG./PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE (INCHES)					
SURFACE QUALITY		0 TO 0.5	0.5 TO 2.5	2.5 TO 6.0	6.0 TO 12.0	12.0 TO 48.0	48.0 TO 80.0
MEDIUM		±.004	±.008	±.012	±.016	±.024	±.04
PREFERRED		±.002	±.004	±.006	±.01	±.012	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

DRN.		
CHK'D		
ENG.		
PROJ. ENGR.		
PROJ.		

FIRST USED ON: 861 P.C.

TITLE: CIRCUIT SCHEMATIC 861-F P.C.

NEXT HIGHER ASSY.

MATERIAL

FINISH

SIZE	CODE	NUMBER	REV.
D	CS	861-F-1	D

SCALE

SHEET OF

DIST.

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE	
DRAWING DIRECTORY	B-DD-H742Ø-Ø
WIRING DIAGRAM	D-CS-H742Ø-Ø-Ø
POWER LINE MONITOR	D-CS-5411086-0-1
H742Ø POWER SUPPLY	E-UA-H742Ø-Ø-Ø
H7420 POWER SUPPLY (P.L.)	A-PL-H742Ø-Ø-Ø

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1
H742ØA	H742Ø POWER SUPPLY (120V)	
H742ØB	H742Ø POWER SUPPLY (240V)	

REVISIONS

REV	CHG. NO.	DATE
A	H7420 - 1	6-75
B	H7420 - 2	7-75
C	H7420 - 3	3-76
D	H7420 - 4	4-76
E	H7420 - 5	9-76

USED ON OPTION/MODEL

DRN. R.E. Thellen	DATE 1/29/75
CHK'D. R. [illegible]	DATE 2/3/75
PROJ ENG. [illegible]	DATE [illegible]
PROD. [illegible]	DATE [illegible]
FIELD SERV. [illegible]	DATE [illegible]

SHEET 1 OF 3

TITLE H742Ø POWER SUPPLY

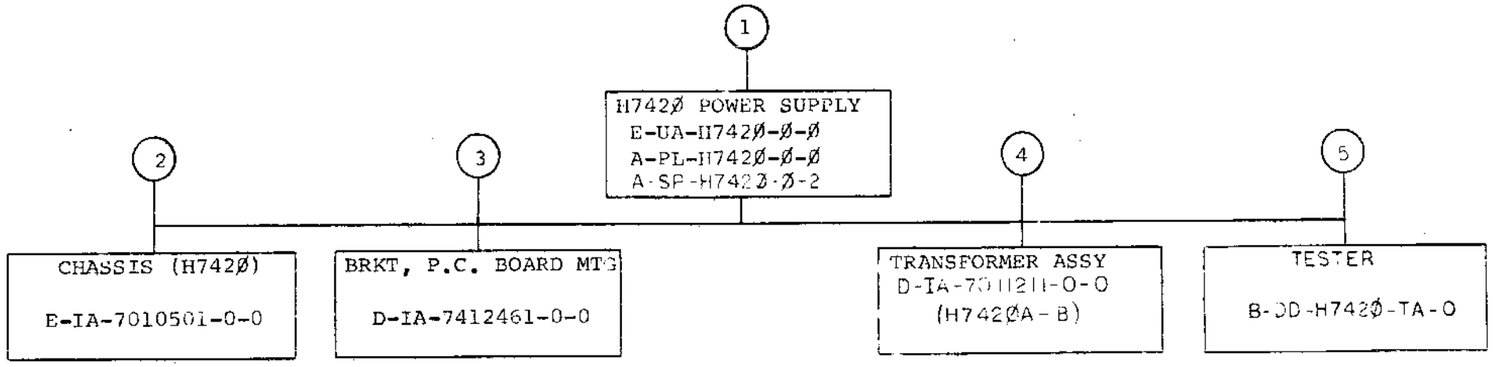
SIZE	CODE	NUMBER	REV
B	DD	H742Ø-Ø	E

DIST

DEC 16-(1225)-1062-1A-R972

DRB 106

147



TITLE		SIZE	CODE	NUMBER	REV
H742Ø POWER SUPPLY	SHEET 2 OF 3	B	DD	H742Ø-Ø	E

DRB 107
DEC 16-(325)-1062-3-N871

ELECTRICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	B-DD-H742Ø-Ø	E	3	DRAWING DIRECTORY	
X			D-CS-H742Ø-Ø-1	A	2	WIRING DIAGRAM	
X			D-CS-5411086-0-1	#	4	POWER LINE MONITOR	
			A-SP-H742Ø-Ø-2	#	16	ENGINEERING SPEC.	
		5	B-DD-H742Ø-TA		1	TESTER DRAWING DIRECTORY	
			B-CS-H742Ø-TA-1	A	1	TESTER WIRING DIAGRAM	
			A-UA-H742Ø-TA-Ø		1	H7420 TESTER	
			A-PL-H742Ø-TA-Ø		2	TESTER PARTS LIST	
			A-SP-H742Ø-Ø-3		2	TEST PROCEDURE	

MECHANICAL

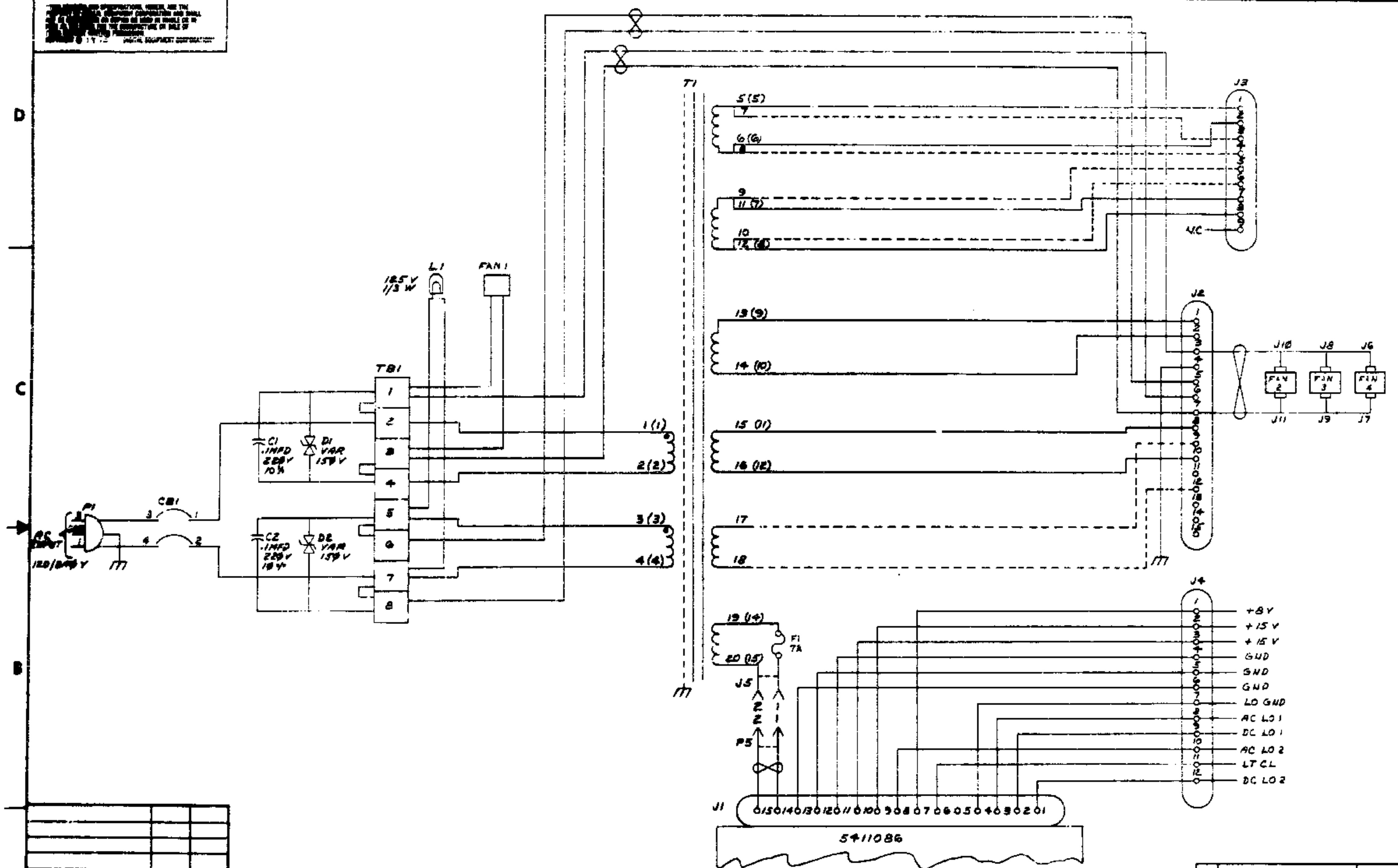
CUSTOMER PRINT SET 1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	E-UA-H742Ø-Ø-Ø	E	4	H742Ø POWER SUPPLY	
X			A-PL-H742Ø-Ø-Ø	E	2	H742Ø POWER SUPPLY	
			D-MD-7412459-0-0	A	1	COVER, CONTROL BOX	
			C-IA-7010730-0-0		1	POWER INDICATOR ASSY	
			D-IA-7010729-0-0	A	1	CABLE, REGULATOR BOARD	
			D-IA-7010728-0-0		1	CABLE, FAN POWER	
			C-IA-7010727-0-0	C	1	POWER CORD, ASSEMBLY	
			A-DC-7413184-0-0		1	POWER SUPPLY DECAL (H742Ø)	
			A-DC-7413966-0-0		1	POWER SUPPLY DECAL (H7420A)	
			A-DC-7413967-0-0		1	POWER SUPPLY DECAL (H7420B)	
		2	E-IA-7010501-0-0		1	CHASSIS (H742Ø)	
			E-IA-7412948-0-0		2	PLATE, BASE	
			E-IA-7412949-0-0		2	HOUSING, REGULATOR	
		3	D-IA-7412461-0-0		1	BRKT, P.C. BOARD MTG.	
			B-SS-7412461-0-1		1	BRKT, P.C. BOARD MTG. (SS)	
		4	D-IA-7011211-0-0	A	2	TRANSFORMER ASSY (H7420A&B)	
			C-IA-7010813-0-0		1	CAP/VAR ASSEMBLY	

CUSTOMER PRINT SET CODES	
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
	C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
	S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
H742Ø POWER SUPPLY	SHEET 3 OF 3	B	DD	H742Ø-Ø	E

DRB 108

DEC 16 (335)-1062-2B-R972



NOTES:

1. DOTTED LINES INDICATED WINDINGS OMITTED IN E AND F VERSIONS.

2\.

VERSION	TB1 JUMPERS	CB1
A	2 + 6, 4 + 8	20 A
B	4 + 6	15
E	2 + 6, 4 + 8	
F	4 + 6	15

3. NUMBERS IN ( ) INDICATE XFORMER LEAD NUMBERS ON E & F VERSION.

~~4. ...~~

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: H742Ø

DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

REV. A — CHANGE NO. H7420 ... — F. LOYA

DRN. DATE 1-17-75
CHKD. DATE
ENG. DATE
PROD. ENG. DATE
PROD. DATE

NEXT HIGHER ASSY

SCALE

SHEET 1 OF 1

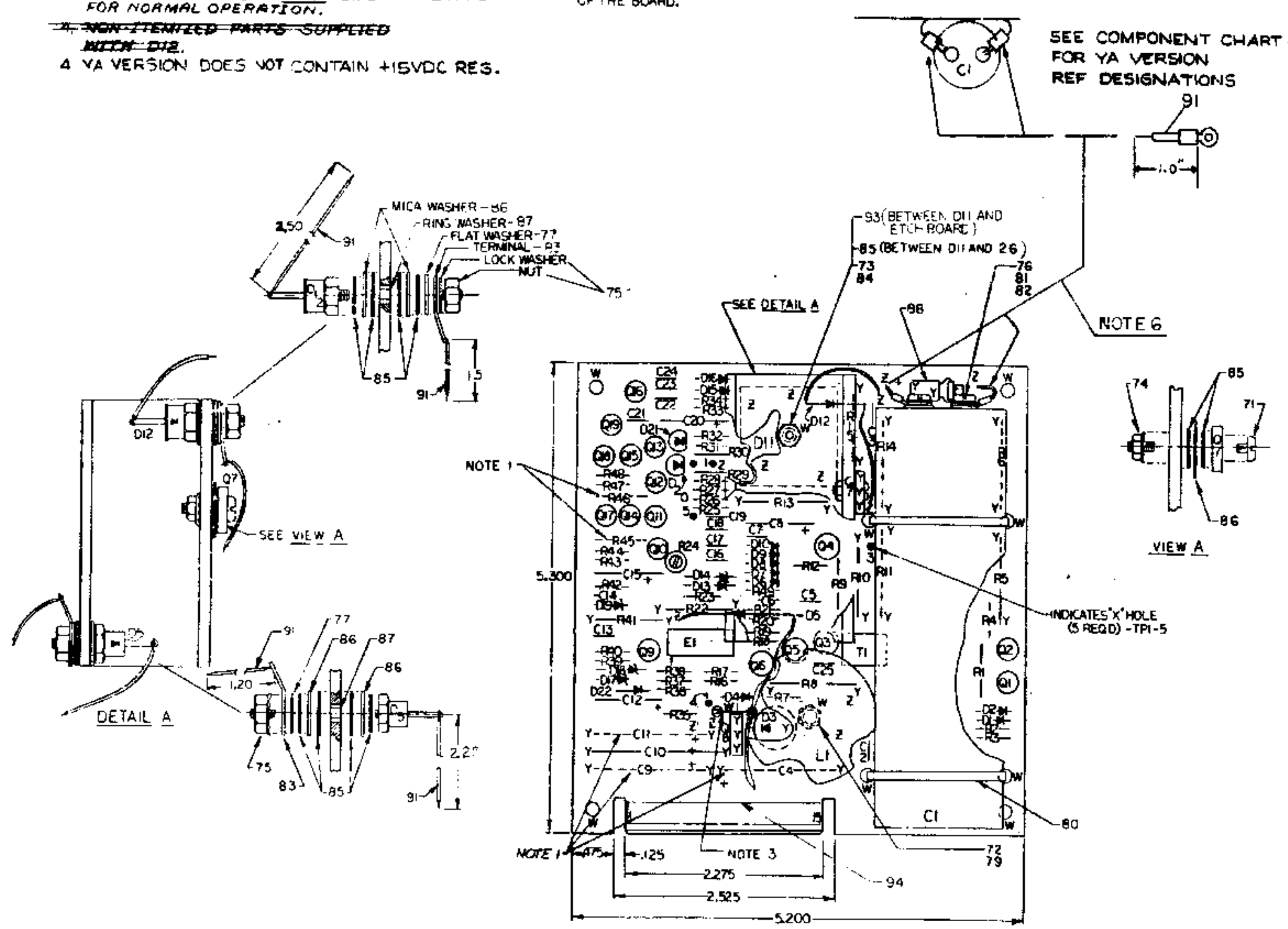
digital

TITLE: WIRING DIAGRAM

SIZE D CODE CS NUMBER H742Ø-Ø-1 REV. A

NOTES:

1. R45, R46, C4, C9, & C11 ARE NOT USED ON BASIC 5411086 BUT ARE RESERVED FOR PLANNED FUTURE MODULE VARIATIONS.
2. ** TOTAL +15V AND +8V CURRENT NOT TO EXCEED 40 AMPERES.
3. W1 (TEST JUMPER) MAYBE TEMPORARILY REMOVED WHILE TROUBLE-SHOOTING TO DETERMINE IF LOSS OF 15V IS DUE TO CROW-BAR CIRCUITRY. BUT MUST BE IN THE BOARD FOR NORMAL OPERATION.
~~4. NON-ITEMIZED PARTS SUPPLIED WITH D12.~~
4. YA VERSION DOES NOT CONTAIN +15VDC RES.
5. A) FOR STANDARD VERSION USE SHEETS 1,2,3, & 4 OF THIS DWG.
   B) FOR YA VERSION USE SHEETS 1,2, & 3 OF THIS DWG.
6. WIRES MUST NOT EXTEND BEYOND THE DIMENSIONS OF THE BOARD.



COMPONENT CHART - YA VERSION		
3	C19, C22, C23	7
1	C8	8
1	D19	14
7	D6, D7, D8, D9, D15, D16, D22	17
1	D10	18
1	R49	30
2	R44, R48	40
1	R28	50
4	Q3, Q5, Q10, Q19	63
4	Q11, Q12, Q13, Q16	66
QTY	REF. DESIGNATION	ITEM

IC TYPE	GND	+5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

PARTS LIST

YA	QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF	REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411086-0-4	1
REF	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411086-0-9	2
REF	REF		MODULE ECO HISTORY	B-MH-5411086-0-6	3
	1		ETCHED CIRCUIT BOARD	5011065	4
0	1	C2	CAPACITOR 56PF 100V 5%	1000012	5
4	4	C16, C17, C18, C21	CAPACITOR 330PF 100V 5%	1000023	6
3	5	C3, C13, C19, C22, C23	CAPACITOR .01uf 100V 20%	1001610-01	7
1	3	C8, C12, C15	CAPACITOR 2.2uf 35V 10%	1002431	8
2	2	C6, C25	CAPACITOR 10PF 100V 5%	1002900	9
1	1	C20	CAPACITOR 1.5uf 35V 10	1009725	10
4	4	C5, C7, C14, C24	CAPACITOR .22uf 50V -20% +80%	1010274-01	11
0	1	C10	CAPACITOR 500uf 25V -10% +75%	1010509-01	12
1	1	C1	CAPACITOR 8400uf 50V -10% +75%	1010851	13
1	2	D2, D19	DIODE 1N748A	1100122	14
0	1	D5	DIODE 1N2970B	1100134	15
0	1	D3	DIODE MR1033B	1103341	16
7	8	D1, D6, D7, D8, D9, D15, D16, D22	DIODE D672	1105275	17
1	2	D10, D17	DIODE 1N4744	1105640	18
0	1	D4	DIODE 1N4004	1105796	19
0	1	D12	DIODE 1N3890	1109440	20
0	1	D18	DIODE 1N9674	1110008	21
2	2	D20, D21	DIODE MV5054-1 (LIGHT EMITTING)	1110324	22
1	1	D11	DIODE BRIDGE 200V 29A	1110714	23
2	2	D13, D14	DIODE 1TTZ429	1110925	24
0	1	F1	FUSE PICO 5A	1205747	25
0	1		HEAT SINK	1211986	26
0	1	R23	RESISTOR 47 1/4W 5%	1300202	27
0	2	R7, R40	RESISTOR 100 1/4W 5%	1300229	28
0	1	R41	RESISTOR 100 1W 5%	1300232	29
1	3	R4, R12, R49	RESISTOR 220 1/4W 5%	1300271	30
0	1	R14	RESISTOR 220 2W 10%	1300278	31
0	1	R11	RESISTOR 680 2W 5%	1300348	32
2	2	R18, R28	RESISTOR 1K 1/4W 5%	1300365	33
0	1	R1	RESISTOR 1.5K 1/2W 5%	1300394	34
0	1	R10	RESISTOR 2.2K 1W 10%	1300420	35
1	1	R15	RESISTOR 3.3K 1W 10%	1300437	36
0	1	R3	RESISTOR 3.3K 1/4W 5%	1300439	37
2	2	R43, R47	RESISTOR 10K 1/4W 5%	1300479	38
0	1	R37	RESISTOR 10 1/4W 5%	1301317	39
2	3	R2, R44, R48	RESISTOR 750 1/4W 5%	1301401	40
0	1	R39	RESISTOR 680 1/4W 5%	1301424	41
0	1	R16	RESISTOR 22K 1/4W 5%	1301808	42
1	1	R13	RESISTOR 1K 2W 5%	1301952	43
0	1	R9	RESISTOR 27 1/2W 5%	1302253	44
2	2	R19, R21	RESISTOR 30K 1/4W 5%	1302394	45
0	1	R36	RESISTOR 511 1/4W 1%	1302411	46
0	1	R39	RESISTOR 909 1/4W 1%	1302885	47
1	1	R25	RESISTOR 3.16K 1/4W 1%	1303045	48
1	1	R8	RESISTOR 470 2W 5%	1303082	49
1	2	R17, R28	RESISTOR 1K 1/4W 1%	1303114	50
1	1	R31	RESISTOR 2.61K 1/4W 1%	1303303	51
0	1	R42	RESISTOR 10K 1/4W 1%	1303312	52
2	2	R33, R34	RESISTOR 5.11K 1/4W 1%	1304054	53
1	1	R30	RESISTOR 4.09K 1/4W 1%	1304055	54

FIRST USED ON OPTION MODEL

ETCH BOARD REV.

CHANGE NO.	REVISIONS	CHK
5411086-00001 ORIGINATED		
5411086-00002		
5411086-00003		
5411086-00004		
5411086-00005		

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.	DEC NO.	EIA NO.

DRN. DATE 10-9-74
CHKD. DATE
ENG. DATE
PROD. ENG. DATE
PROD. DATE
NEXT HIGHER ASSY

digital

TITLE: PWR. LINE MONITOR/15V REG.

SIZE D CODE CS NUMBER 5411086-0-1 REV. J

SCALE
SHEET OF 4

NOTES:

YA	QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1	1	R29	RESISTOR 3.40K 1/4W 1%	1305114	55
1	1	R28	RESISTOR 3.83K 1/4W 1%	1305120	56
1	1	R27	RESISTOR 4.99K 1/4W 1%	1305324	57
0	1	R30	RESISTOR 24.0K 1/4W 1%	1300400	58
0	1	R24	RESISTOR 200 20% 82PR	1300150-10	59
1	1	R32	RESISTOR 10 2K 1/4W 1%	1309412	60
0	2	R5, R6	RESISTOR .2 5W 5% WW	1300084	61
0	1	Q7	TRANSISTOR MJE3055	1510555	62
4	6	Q2, Q3, Q5, Q8, Q16, Q19	TRANSISTOR MPSA05	1510705	63
0	2	Q4, Q9	TRANSISTOR MPS A55	1510706	64
0	1	Q6	TRANSISTOR 2N 4441	1505867	65
4	5	Q1, Q11, Q12, Q13, Q18	TRANSISTOR 2N 4258	1509142	66
4	4	Q14, Q15, Q17, Q10	TRANSISTOR 2N 5433	1511606	67
0	1	L1	INDUCTOR, 500 uh	1611060	68
1	1	T1	TRANSFORMER	1612028	69
0	1	E1	I.C DEC 723	1910415	70
0	1		SCREW, PHM #4-40 X 7/16 LG.	9008012-1	71
0	1		SCREW, PHM #6-32 X 1/4 LG	9008020-1	72
0	1		SCREW, PHM #6-32 X 7/8 LG	9006027-1	73
0	1		KEP NUT #4-40	9006557	74
0	2		KEP NUT #10-32	9006565	75
2	2		WASHER, ITTLKWR #10	9006635	76
0	2		WASHER, FLAT	9006660	77
0	2	(W1)	SPLIT LUG	9006851	78
0	1		SPACER, 1/4AF X 1/2	9006844	79
4	4		CABLE TIE	9007080	80
2	2		TERMINAL	9007[illegible]	81
2	2		SCREW, PHM #10-32 X 1/4 LG	9008007-1	82
0	2		TERMINAL	9008150	83
0	1		KEP NUT #6-32	9008185	84
0	A/R		COMPOUND, THERMAL JOINT	9008258	85
0	5		WASHER, MICA	9008424	86
0	2		WASHER, RING	9008440	87
0	1		FUSE HOLDER	9009141	88
1	1	R22	RESISTOR, 390, 2W 10%	130/[illegible]	89
0	1	W1	JUMPER	9009185	90
2	12		WIRE #18 STRANDED BLK	9107360-0-0	91
REF	REF		MODULE TEST PROCEDURE	A-SP-[illegible]-2	92
1	1		WASHER, RING	9006713	93
1	1		.010 INCH SHIM	7413721-0-0	94
REF	REF		ENG. SPEC-AND TEST PROC.	A-SP-5411086-0-3	95

PARTS LIST

FIRST USED ON OPTION MODEL

ETCH BOARD REV: D

IC TYPE	GND	+5V

GND AND +5V ARE USUALLY PIN 7 AND 14; EXCEPTIONS ARE STATED ABOVE

IC APPLICATIONS

DEC NO	EIA NO	DEC NO	EIA NO

SEMICONDUCTOR CONVERSION CHART

CHANGE NO | REVISIONS | REV | CHK

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

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION

TITLE: PWR. LINE MONITOR/15V REG.

SIZE	CODE	NUMBER	REV
D	CS	5411086-0-1	J

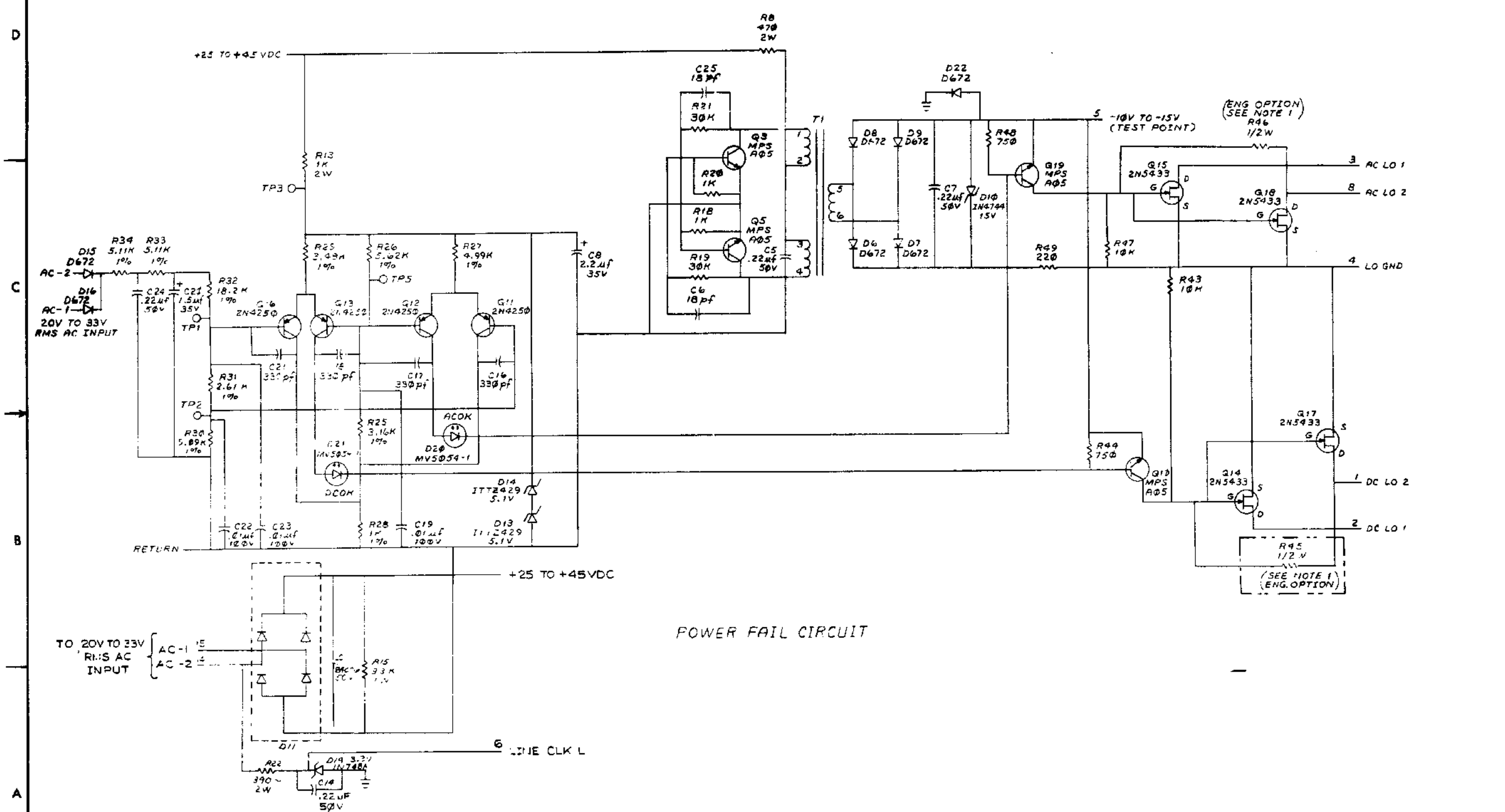
SCALE

SHEET 2 OF 4

DIST

D CS 5411086-0-1 J

152



TITLE PWR. LINE MONITOR/15V REG.

SIZE D CODE CS NUMBER 5411086-0-1

SHEET 3 OF 4

+25 TO +45 VDC

F1

25 - 45 VDC

C3 .01μf

R14 22Ω 2W, 10%

D12 IN3880

L1 560μH

Q7 MJE 3055

R9 27 1/2W

Q4 MPS A55

R11 65Ω 2W

R12 22Ω

R10 2.2K 1W, 10%

TP4

+15V

R35 24.9K 1%

4.28V

D3 MR1033B

D4 IN4004

D5 IN2970B 6.8V

R41 100 1W

9 10 +15VDC ± 5% @ 4A MAX (SEE NOTE 2)

7 +8VDC ± 10% @ 1A MAX (SEE NOTE 2)

W1 (SEE NOTE 3)

C12 2.2μf 35V

D17 IN4744 15V ± 1% 1/2 723C E1

REF

R36 511 1%

R24 200 4.28V

R17 1K 1%

R39 909 1%

C15 2.2μf 35V

R16 22K 1%

1/2 723C E1

COMP

R23 47

Q6 MPS A05

R7 100

D1 D672

C2 56pf

R2 75Ω

D2 IN748A 3.9V

R3 3.3K

Q1 2N4250

R1 1.5K 1/2W

R42 10K 1%

R38 68Ω

R37 1Ω

Q9 MPS F55

Q8 2N4441

C13 .01μf

R40 100

D18 IN196-A 18V

Q2 MPS A05

R4 22Ω

R6 2 5W

R5 .2 5W

C10 500μf 25V

C4 50μf 50V

C9 50μf 50V

C11 50μf 50V

SEE NOTE #1

11 GND

12 GND

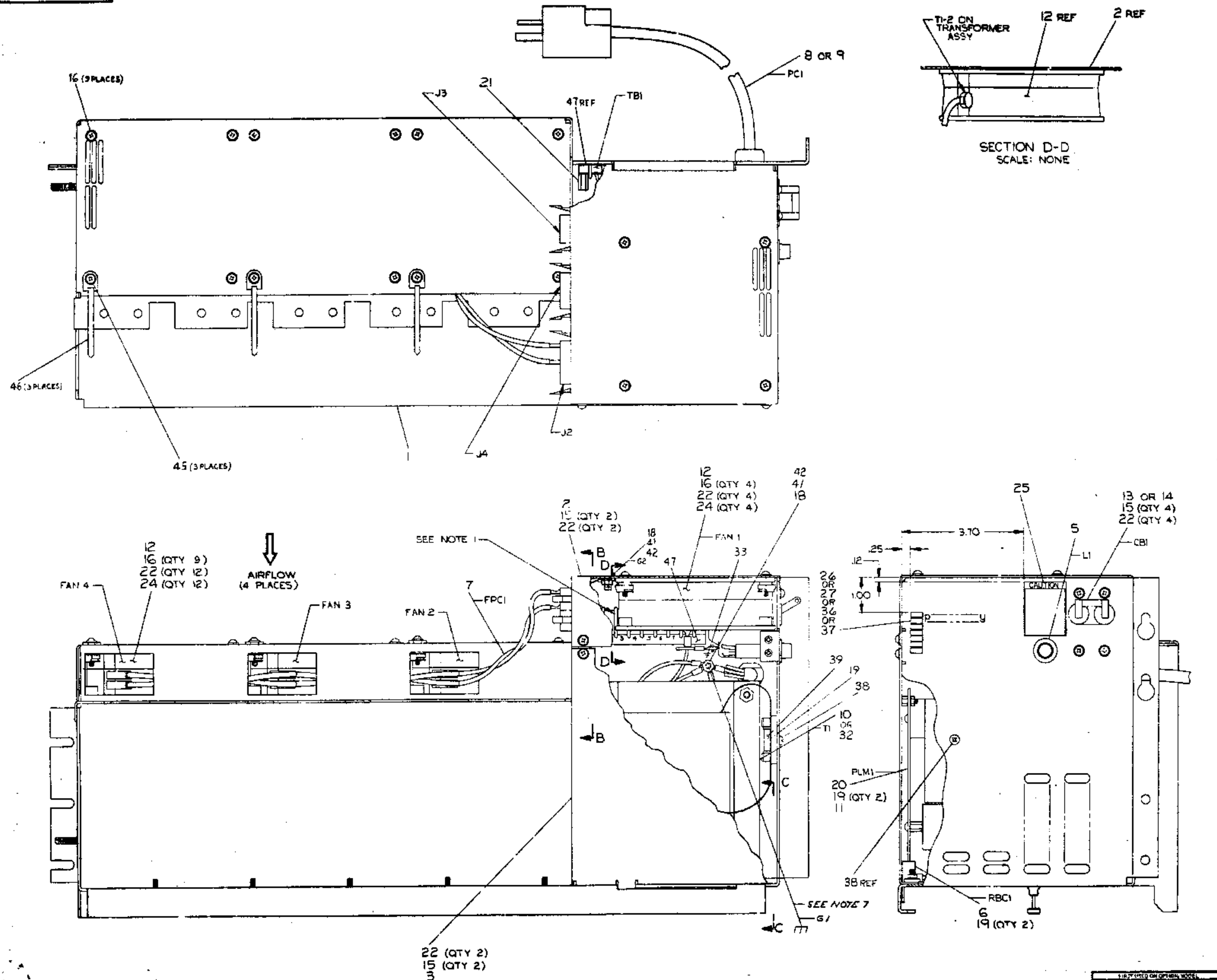
13 GND

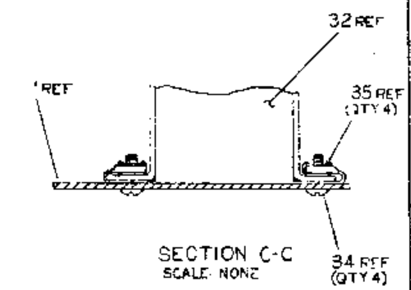
15V REGULATOR
(SEE NOTE #4)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER
PWR. LINE MONITOR/15V REG.	D		CS5411086-0-1
SCALE —H—	SHEET 4 OF 4	DIST.	

DO NOT SCALE DRAWING





NOTES:

1. AFTER TERMINAL BLOCK (PART OF TRANSFORMER ASSEMBLY) IS MOUNTED TO CHASSIS, CAPACITOR AND VARISTOR SHOULD BE BENT FORWARD TO ALLOW CLEARANCE FOR COVER.
2. ~~REV. D AND EARLIER TRANSFORMERS DO NOT HAVE THIS WIRE. H7420 E+F ONLY.~~
3. FILLER PANELS (D-IA-7413405-0-0) MAY BE USED IN UNFILLED REGULATOR SLOTS (REF).
4. CABLE TIE MOUNTS TO BE MOUNTED AFTER TRANSFORMER ASSEMBLY IS INSTALLED.
5. ~~H7420 A+B ONLY.~~
6. ~~H7420 E+F ONLY.~~
7. *REMOVE PAINT MASK, APPLY CONDUCTIVE GREASE ITEM #2. PLACE ITEM #1 8-32 EXT TOOTH WASHER NEXT TO CHASSIS BEFORE INSTALLING REMAINING HARDWARE. DO THIS AT G1 AND G2.*

FOR PARTS LIST REFER TO A-PL-H7420-0-0

QTY.	DESCRIPTION	PART NO.
	PARTS LIST	

FIRST USED ON OPTION/MODEL: H7420

digital

TITLE: H7420 POWER SUPPLY

MATERIAL: SEE PARTS LIST

CD-H7420-0

E | UA | H7420-0-0 | REV. E

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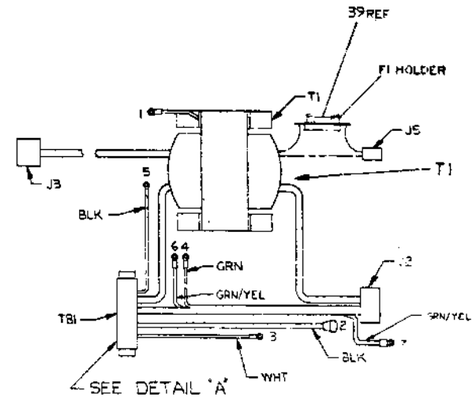
DO NOT SCALE DRAWING

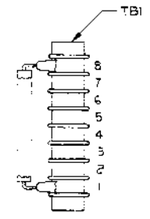
WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	TO CONNECTION	REMARKS
10	⟷	⟷	T1-J5	RBC1-P5	
1	14	GRN	T1-1	G1	SEE NOTE 2&7
	⟷	BLK	T1-2	FAN1-1 & 2	
	14	WHT	T1-3	CB1-1	
1	14	GRN	T1-4	G1	SEE NOTE 7
10	14	BLK	T1-5	CB1-2	
5	22	BLK	L1-1	TB1-5	
5	22	BLK	L1-2	TB1-7	
7	18	RED	FPC1-J6	FAN 4-1	
1	1	WHT	FPC1-J7	FAN 4-2	
		RED	FPC1-J8	FAN 3-1	
		WHT	FPC1-J9	FAN 3-2	
		RED	FPC1-J10	FAN 2-1	
		WHT	FPC1-J11	FAN 2-2	
	1	RED	FPC1-1	J2-3	
7	18	WHT	FPC1-2	J2-7	
8/9	4	BRN	PC1-1	CB1-4	
8/9	4	GRN/YEL	PC1-2	G1	SEE NOTE 7
8/9	14	BLUE	PC1-3	CB1-3	
11	⟷	⟷	PLM1	RBC1-J1	
10	14	GRN/YEL	T1-6	G1	SEE NOTE 7
10	14	GRN/YEL	T1-7	G2	SEE NOTE 7

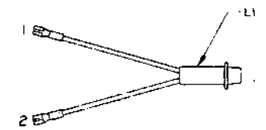
JUMPER TABLE

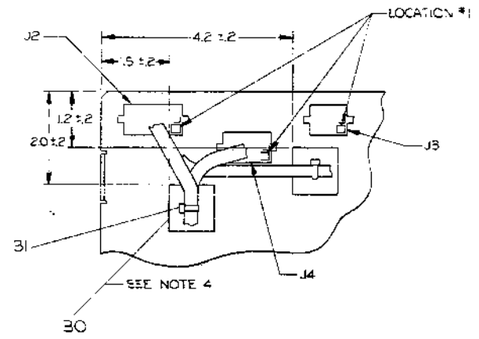
ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH	PRECUT LENGTH	VARIATION
29	14	BLK	TB1-2	ITEM 28	TB1-6	ITEM 28	3.0	H7420E&A
29	14	BLK	TB1-4	ITEM 28	TB1-8	ITEM 28	3.0	
29	14	BLK	TB1-4	ITEM 28	TB1-6	ITEM 28	3.0	H7420F&B



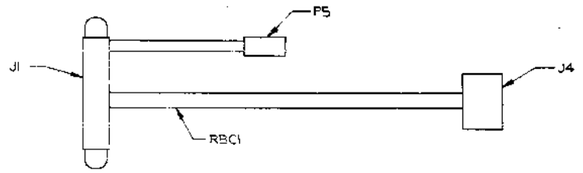


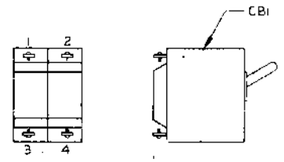
DETAIL "A"
SCALE: NONE



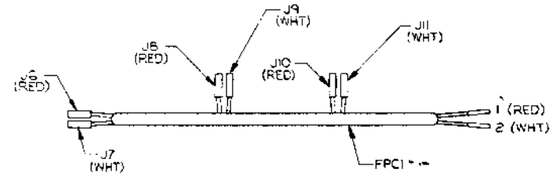


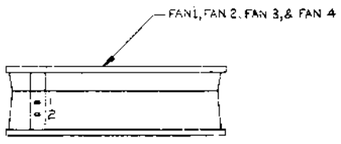
SECTION B-B
SCALE: NONE

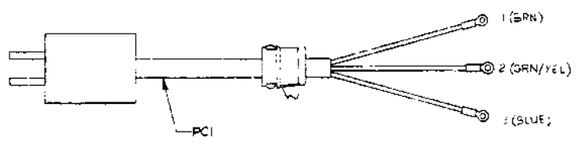




PLM1
(5411086)







REVISIONS		
ZONE	CHANGE NO.	REV

TITLE: H7420 POWER SUPPLY	SIZE: E	CAGE CODE: UA	PART NUMBER: H7420-0-0
SCALE: NONE	SHEET 2 OF 2		REV: E

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. THELLEN — DATE 1/17/75
CHECKED P. CAPPABIANCA — DATE 2/3/75 — SECTION 1
ENG R. WOLF — DATE 2/3/75
PROD J. BORENSTEIN — DATE 2/3/75 — ISSUED SECT. 1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION H7420A	H7420B
1	E-IA-7010501-0-0	CHASSIS (H742Ø)	1	1
2	D-MD-7412459-0-0	COVER, CONTROL BOX	1	1
3	D-IA-7412461-0-0	BRKT, P.C. BOARD MTG.	1	1
~~4~~	~~C-IA-7413133-0-0~~	~~PLATE, ADAPTER (H742Ø)~~	~~-~~	~~-~~
5	C-IA-7010730-0-0	POWER INDICATOR ASSEMBLY	1	1
6	D-IA-7010729-0-0	CABLE, REGULATOR BOARD	1	1
7	D-IA-7010728-0-0	CABLE, FAN POWER	1	1
8	C-IA-7010727-1-0	POWER CORD ASSY (120V)	1	-
9	C-IA-7010727-2-0	POWER CORD ASSY (240V)	-	1
~~10~~	~~D-IA-7010814-0-0~~	~~TRANSFORMER ASSY~~	~~-~~	~~-~~
11	D-CS-5411086-0-1	POWER LINE MONITOR	1	1
12	1209403-01	FAN	4	4
~~13~~	~~1210192-06~~	~~CIRCUIT BREAKER (20A)~~	~~1~~	~~-~~
~~14~~	~~1210191-03~~	~~CIRCUIT BREAKER (15A)~~	~~-~~	~~1~~
15	9006020-01	SCR,PHL PAN HAD #6-32 x .25	8	8
16	9006025-01	SCR,PHL PAN HD #6-32 x .62	13	13
~~17~~	~~9006565-00~~	~~NUT,KEP #10-32~~	~~-~~	~~-~~
18	9006563-00	NUT,KEP #8-32	2	2
19	9008185-00	NUT,KEP #6-32	5	5
20	9006840-00	SPACER, #6-32 x .19	2	2
21	9006851-00	SPACER, #6-32 x .50	2	2
22	9006633-00	WASHER, INT. TOOTH LOCK #6	24	24

TITLE: POWER SUPPLY H742Ø
ASSY NO. E-UA-H742Ø-Ø-Ø
SHEET 1 OF 3
SIZE A | CODE PL | NUMBER H742Ø-Ø-Ø | REV. E | ECO NO H7420-00005
DIST

DEC FORM DEC 16-(325)-1031-N870
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. THELLEN — DATE 17-JAN-75
CHECKED P.CAPPABIANCA — DATE 3-FEB-75 — SECTION 1
ENG R. WOLF — DATE 3-FEB-75
PROD J. BORENSTEIN — DATE 3-FEB-75 — ISSUED SECT. 1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION H7420A	H7420B
45	9006026-1	SCR PH PAN HD #6-32 x 3/4	3	3
46	9007033	TIE CABLE	3	3
47	9006933	BLOCK, TERM MARKER STRIP	1	1

TITLE: POWER SUPPLY H742Ø
ASSY NO. E-UA-H742Ø-Ø-Ø
SHEET 3 OF 3
SIZE A | CODE PL | NUMBER H742Ø-Ø-Ø | REV. E | ECO NO
DIST

DEC FORM DEC 16-(325)-1031-N870
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. THELLEN — DATE 1/17/75
CHECKED P. CAPPABIANCA — DATE 2/3/75 — SECTION 1
ENG R. WOLF — DATE 2/3/75
PROD J. BORENSTEIN — DATE 2/3/75 — ISSUED SECT. 1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION H7420A	H7420B
~~23~~	~~9008599-00~~	~~RELIEF, STRAIN~~	~~1~~	~~-~~
24	9009165-00	CLIP, FAN MOUNTING	16	16
25	A-DC-7413184-0-0	POWER SUPPLY DECAL (H742Ø)	1	1
~~26~~	~~A-DC-7413188-0-0~~	~~POWER SUPPLY DECAL (H7420E)~~	~~-~~	~~-~~
~~27~~	~~A-DC-7413185-0-0~~	~~POWER SUPPLY DECAL (H7420F)~~	~~-~~	~~-~~
28	9007969-00	TERMINAL, QUICK CONNECT	4	2
29	9107370-00	WIRE, #14 AWG, TYC	A/R	A/R
30	9008264-00	MOUNT, CABLE TIE ADHESIVE	2	2
31	9007880-00	TIE, CABLE	2	2
32	D-IA-7011211-0-0	TRANSFORMER ASSY	1	1
33	3612680-01	SAFETY GROUND DECAL	1	1
34	9036074-3	SCR, PP. HD. TRUSS 10x32x5/8	4	4
35	9006586	TINNERMAN SPEED NUT 10-32	4	4
36	A-DC-7413965-0-0	POWER SUPPLY DECAL (H7420A)	1	-
37	A-DC-7413967-0-0	POWER SUPPLY DECAL (H7420B)	-	1
38	9006021-1	SCR. PAN HD. 6-32x5/16	1	1
39	9007224	FUSE 7 AMP SLOW BLOW	1	1
~~40~~	~~9009748-02~~	~~RELIEF, STRAIN~~	~~1~~	~~1~~
41	9008072	8-32 WASHER EXT. TOOTH	1	1
42	4901173-01	CONDUCTIVE GREASE	A/R	A/R
43	1212124-01	CIRCUIT BREAKER (20A)SCREW TERM	1	-
44	1212124-02	CIRCUIT BREAKER (15A)SCREW TERM	-	1

TITLE: POWER SUPPLY H742Ø
ASSY NO. E-UA-H742Ø-Ø-Ø
SHEET 2 OF 3
SIZE A | CODE PL | NUMBER H742Ø-Ø-Ø | REV. E | ECO NO
DIST

DEC FORM DEC 16-(325)-1031-N870
DRA 110

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE

DRAWING DIRECTORY	B-DD-H744-Ø
CIRCUIT SCHEMATIC	D-CS-H744-Ø-1
UNIT ASS'Y	E-UA-H744-0-0

MFG. SET

TEST PROCEDURE	A-SP-H744 Ø-3
MFG. SPE	A-SP-H744-Ø-Ø
PACKAGING INSTRUCTIONS	A-PI-3700074-0-0

UNIT VARIATIONS

VAR	TITLE	PRINT SET H744-1
H744	+5v REGULATOR	X

REVISIONS

REV	CHG. NO.	DATE
L	00015	
M	00016	
N	00017	9-76
P	00018	10-76

USED ON OPTION/MODEL	
11/45	

SHEET 1 OF 2

		DATE
DRN.	D. FONTAINE	2-4-72
CHK'D.	D. FONTAINE	2-4-72
PROJ ENG.	G. POTTER	2-25-72
PROD.	A. HIRSCH	2-24-72
FIELD SERV.	A. ZINS	2-25-72

TITLE: +5v REGULATOR

SIZE	CODE	NUMBER	REV
B	DD	H744-Ø	P

DIST

DRB 106

EN-01062-1A-1C-R872-(32S)

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ELECTRICAL

CUSTOMER PRINT SET H744-1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x		1	D-CS-H744-Ø-1	Y	1	CIRCUIT SCHEMATIC	H744
	x		A-SP-H744-Ø-3			TEST PROCEDURE	H744
	x		A-SP-H744-Ø-8			MFG. SPEC	H744

MECHANICAL

CUSTOMER PRINT SET H744-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
x		1	E-UA-H744 Ø-Ø	Y	1	UNIT ASSY	H744
			D-PS 1210737-0-0		1	HEAT SINK	H744
			D-IA-5309756-0-0		1	REGULATOR BRK'T	H744
			C-IA 5309760-0-0		1	COMPONENT COVER	H744
			C-MD-5309759-0-0		1	CAPACITOR STRAP	H744
		2	A-PI-3700074-0-0	-	2	PACKAGING INSTRUCTION	H744
			A-PS-9905211-0-0	-	2	OUTER CARTON	
			A-PS-9905212-0-0	-	2	INNER PACKAGING	
			C-IA-7412388-0-0			2.5 CAP HOLDER	H744

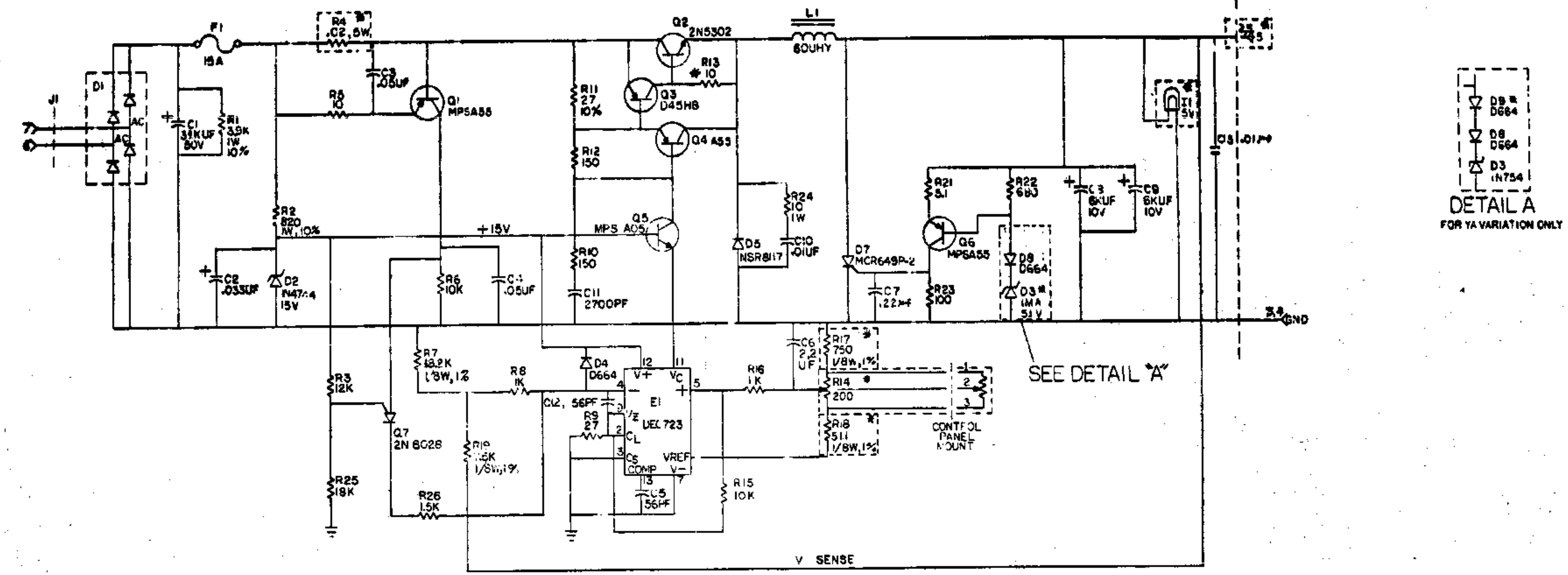
CUSTOMER PRINT SET CODES
X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE: +5v REGULATOR

SHEET 2 OF 2 | SIZE: B | CODE: DD | NUMBER: H744-Ø | REV: P

DRB 108

DEC 16-(325)-1062-28-A972



★FUSIBLE RESISTOR

[ ] FOR YA VARIATION COMPONENT VALUES ARE AS FOLLOWS:
R4 - .06 5W
R14 - 1K 10 TURN
R17 - 300 1/8W 1%
R18 - 150 1/4W 5%
D3 - 1N754
I1 - 15V
J1-2,5 - +2.0-8.0V

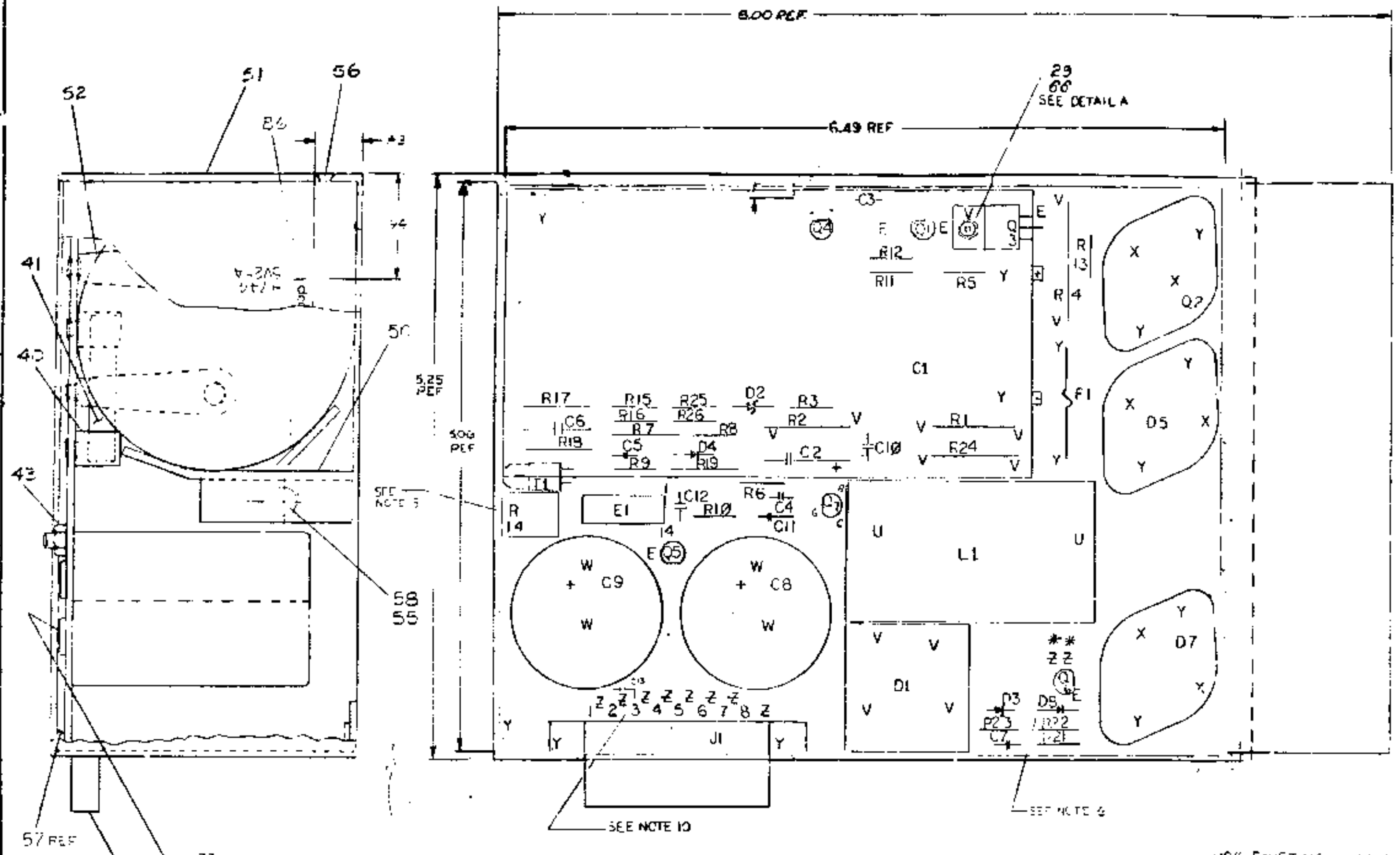
D9 - D664 ADDED FOR YA VARIATION ONLY

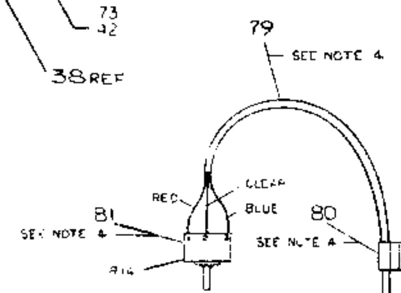
UNLESS OTHERWISE INDICATED:
RESISTORS ARE 1/4W, 5%

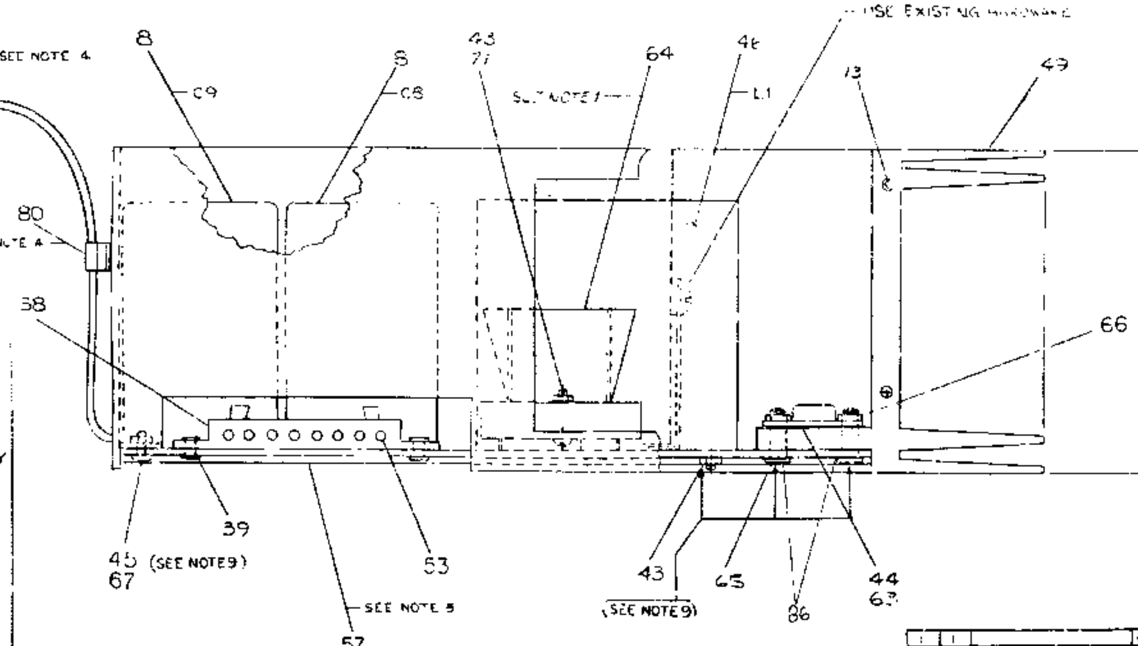
QTY	REF DESIGNATION	DESCRIPTION	PART NO.

5V REGULATOR

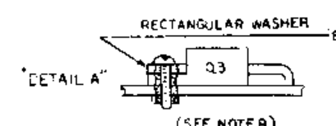
H744-0-1







NOTES:
3. R14 - 200Ω VARIABLE IN THIS LOCATION DELETED ONLY FOR YA VARIATION.
4. ITEMS # 79,80,81 ADDED ONLY FOR YA VARIATION.
5. ITEM # 57A ADDED ONLY FOR YA VARIATION.
6. RELOCATING D8 AND ADDITION OF D9 ONLY FOR YA VARIATION.
7. USE C9 IN YA VARIATION ONLY.



NOTE 8:
(1) Q3 SCREW HEAD SHOULD BE ON TOP OF FLAT RECTANGULAR WASHER AS SHOWN. APPLY 6 INCH LBS. OF TORQUE WHEN SECURING Q3 TO CKT. BOARD BEFORE SOLDERING.

NOTE 9: TORQUE APPLICATION
(1) APPLY 12 INCH LBS. OF TORQUE TO ALL #4 HARDWARE EXCEPT Q3.
(2) APPLY 10 INCH LBS. OF TORQUE TO ALL #6 AND #10 HARDWARE.
(3) ALL HARDWARE TO BE TORQUED BEFORE SOLDERING.

NOTE 10:
INSERT C-3 INTO ETCH PAD HOLES CONNECTED TO J1 TERMINALS, 2-3.

* SEE NOTE 7

NOTES:
1. APPLY ITEM # 63 (COMPOUND) BETWEEN TRANSISTOR (Q2), DIODES (D5, D7) AND ITEM #44 (WASHER) ALSO BETWEEN ITEM #44 (WASHER) AND HEAT SINK (ITEM #49). ALSO APPLY ITEM # 63 (COMPOUND) BETWEEN ITEM # 9 (DIODE BRIDGE) AND ITEM # 64 (HEAT SINK BRIDGE).

QTY 744-YA	QTY 744	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	1	R22	RES 680 1/4W 5%	1301424	69
1	1		PACKING INSTRUCTIONS	API 3700074-0-0	70
1	1		SCR, PHL PAN HD #6 32 × 5/8 LG	9006025	71
1	Ø	I1	15 VOLT LAMP	1207169	72
4	4		LOCKWASHER #10 INT	9006658	73
~~A/R~~	~~A/R~~		~~[illegible]~~	~~[illegible]~~	74
~~A/R~~	~~A/R~~		~~[illegible] TUBING~~	~~[illegible]~~	75
~~A/R~~	~~A/R~~		~~TEF TUBING~~	~~[illegible]~~	76
~~1~~	~~1~~	~~Q8~~	~~TRANSISTOR [illegible]~~	~~[illegible]~~	77
~~A/R~~	~~A/R~~		~~SHRINK SLEEVING~~	~~[illegible]~~	78
1	Ø	12 IN	WIRE, MICRODOT	1700014	79
1	Ø		CLAMP, CABLE	9007079	80
1	Ø	R14	POT, 10 TURN, 1K Ω	1309532-04	81
1	Ø	R17	RES, 300 Ω 1/4 W 5%	1301425	82
1	Ø	R16	RES, 150 Ω 1/4 W 5%	1300250	83
1	Ø	R4	RES, .06 Ω 5 W 3%	1310876-02	84
1	Ø	D3	DIODE ZENER 1N754	1109991	85
1			DECAL (H744)	A-0-7416/40-0-D24	
Ø	1	I1	5 VOLT LAMP	12-09219-1	68
2	2		WASHER #4	9006632	67
7	7		NUT KEPS #4 40	9006597	66
6	6		SCR PHL PAN HD #4-40 × 9/16 LG	9008035-1	65
1	1		HEAT SINK BRIDGE	1210907	64
A/R	A/R		COMPOUND THERMAL JOINT	9008268	63
1	1	R26	RESISTOR 1.5K 1/4W 5%	1300381	62
1	1	R19	RESISTOR 7.5K 1/8W 1%	1305322	61
1	1	R3	RESISTOR 12K 1/4W 5%	1300488	60
1	1	Q7	TRANSISTOR, UNIJUNCTION 2N6028	1510877	59
1	1		SCR PHL PAN HD #6 32 × 3/4 LG	9006020-1	58
~~1~~	~~1~~		~~COVER~~	~~C-MD-5309760-0~~	57
1	1		SCR PHL FLT HD #6-32 × 3/16 LG	9006020-2	56
1	1		WASHER, LOCK #6	9006633	55
~~1~~	~~1~~		~~SCR PHL FLT HD [illegible]~~	~~[illegible]~~	54
P	P		CONTACT FEMALE	1209956	53
2	2		STRAP, CAPACITOR	C-MD-5309759-0	52
1	1		BRACKET, REGULATOR	D-IA-5309756-0	51
1	1		HOLDER, CAPACITOR 2.5	C-IA-12376-0	50
1	1		HEAT SINK REGULATOR	D-PS-1203-0-0	49
2	2	C5, C12	CAP 56 PF	1000012	48
1	1	R24	RESISTOR 10 1W	1300171	47
1	1	L1	REACTOR 60 μHY MIN. 4347	1610852	46
2	2		SCR, PHL PAN HD #4-40 1/4 LG	9008307-1	45
3	3		WASHER, INSULATOR	9006721	44
3	3		NUT, KEPS #6-32	9006155	43
4	4		SCR #10-32 × 3/8 SLOTTED PAN HD	9006659-0	42
1	1	F1	FUSE 15 AMP	1213237-01	41
2	2		FUSE CLIP	9007205	40
6	6		EYELET SS-4-3	9001000	39
1	1	J1	MATE N-LOCK CONN. 6 PIN	1209340	38
1	1	E1	INTEGRATED CIRCUIT DEC 723C	1910415	37
1	1	Q5	TRANSISTOR A05	1510705	36
1	1	Q3	TRANSISTOR D45H8	1510708-1	35
3	3	Q1, Q6, Q4	TRANSISTOR MPSA55 MOD	1510706	34
1	1	Q2	TRANSISTOR 2N5302	1510196	33
Ø	1	R14	RES VARIABLE 200	1310852	32
1	1	R21	RES 5.1 1/4W 5%	1309422	31
1	1	R23	RES 100 1/4W 5%	1300229	30
1	1		SCR, HPW #4-40 × 1/4	9006011-1	27
1	1	R11	RES 27 1/4W 10%	1301420	26
Ø	1	R17	RES 750 1/8W, 1%	1302955	[illegible]
1	1	R9	RES 27 1/4W 5%	1301522	26
1	1	R7	RES 18.2K 1/8W, 1%	1319412	25
2	2	R8, R16	RES 1K 1/4W 5%	1300505	24
Ø	1	R18	RES 511 1/8W 1%	1302411	23
1	1	R25	RES 18 K 1/4W 5%	1302467	22
2	2	R6, R15	RES 10 K 1/4W 5%	130047	21
Ø	1	R4	RES .02 5W 3%	1310276	20
1	1	R2	RES 320 1W 10%	1300356	19
1		R1	RES 3.9K 1W 10%	1302927	18
1	1	R5	RES 10 1/4W 5%	1301317	17
2	2	R12 R10	RES 150 1/4W 5%	1300250	16
Ø	1	D3	DIODE ZENER 1 MA, 6.1V	1110925	15
1	1	D7	SCR MCR 649P-2	1109465	14
4	4		SCR, FFH #4 × 5/16 LK SEC [illegible]	900914	13
1	1	D5	DIODE PWR NSR 817	1110715	12
3	2	D4, D8 D9*	DIODE PWR D664	1100114	11
1	1	D2	DIODE ZENER 1N4744	1105648	10
1	1	D1	DIODE BRIDGE	1110714	9
2	2	C8, C9	CAP 6 K μF 10V	1010704	8
1	1	C1	CAP 31 K μF 50V	1010858	7
2	2	C4, C3	CAP .68 μF 25 V	1001174	6
1	1	C2	CAP .033 μF 100V [illegible]	1000050	5
1	1	C11	CAP 2700PF 100V 5% DM	1001637	4
2	2	C10, C13	CAP .01 μF 100V 20% DISC	1001610	3
1	1	C6	CAP 2.2 μF, 20%, [illegible]	1002527	2
1	1		ETCHED CIRCUIT BOARD	5009725	1
			ASSY/DRILLING HOLE 4/OUT	D-AH-H744-0-5	
			X-Y COORDINATE HOLE LOCATION	K-D-H744-0-0	REF
			MODULE ECO HISTORY	B-H-H744-0-0	REF
			CIRCUIT SCHEMATIC	D-CS-H744-0-1	REF

QTY	QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	1		WASHER, RECTANGULAR	9009765	89
1	1	R13	RES 10 1/4W 5% FUSIBLE	1312406	88
1	1	C7	CAP .22 μF 50V	1010274	87
6	6		WASHER, INT TOOTH #4	9006632	86

PARTS LIST

FIRST USED ON OPTION D-UA-H742A-0-0

ETCH BOARD REV H

D664 | 1N3606
1N4749

DIGITAL EQUIPMENT CORPORATION

TITLE: 5V REGULATOR

H744-0-0

161

DRAWING DIRECTORY

digital EQUIPMENT CORPORATION · MAYNARD, MASSACHUSETTS

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-H745-Ø		
CIRCUIT SCHEMATIC	D-CS-H745-Ø-1	MFG. SET	
UNIT ASS'Y	E-UA-H745-Ø-Ø		
		TEST PROCEDURE	A-SP-11/45 TA-2
		MFG. SPEC.	A-SP-H745 Ø 8
		PACKAGING INSTRUCTION	A-PI-3700074 0-0

UNIT VARIATIONS

VAR	TITLE	PRINT SET H745-1			
H745	-15V REGULATOR	X			

REVISIONS

REV	CHG. NO.	DATE
K	H745 16	
L	H745-17	
M	H745-18	
N	H745-19	9-76
P	H745-20	10-76

USED ON OPTION/MODEL	
11/45	

SHEET 1 OF 2

		DATE
DRN.	D. FONTAINE	2-7-72
CHK'D.	J GAUDETTE	2-17-72
PROJ ENG.	G POTTER	2-25-72
PROD.	A HUSCH	2-25-72
FIELD SERV.	A ZINS	2-25-72

TITLE: -15V REGULATOR

SIZE	CODE	NUMBER	REV
B	DD	H745-Ø	P

DIST

DRB 106

DEC 16-(13)-(1)-1062-1A-N872

162

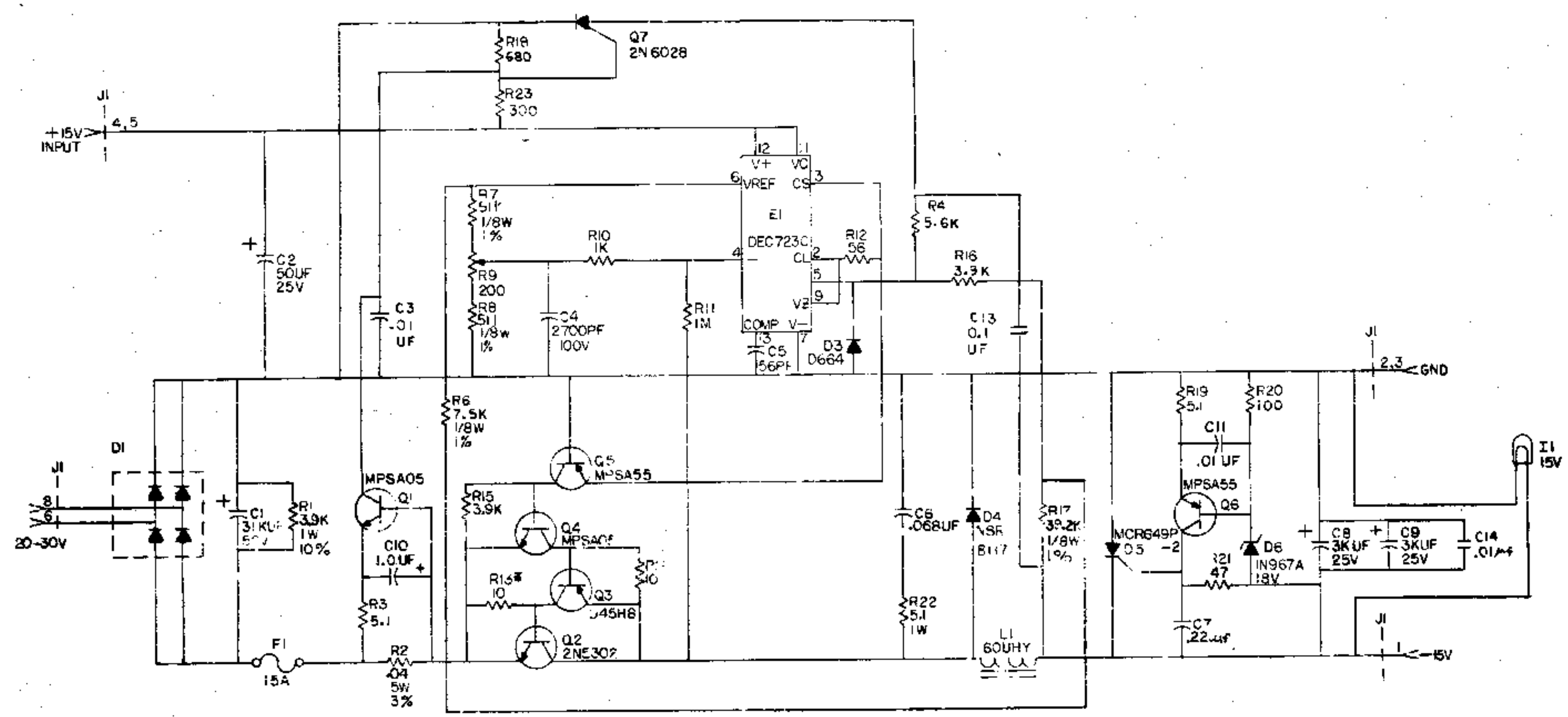
ELECTRICAL

CUSTOMER PRINT SET H745-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	D-CS-H745-Ø-1	[illegible]	1	CIRCUIT SCHEMATIC	H745
	X		A-SP-H745-TA-2			TEST PROCEDURE	H745
	X		A-SP-H745-Ø-8			MFG SPEC	H745
			D-AH-H745-0-5				
			B-MH-H745-0-6				

MECHANICAL

CUSTOMER PRINT SET H745-1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	E-UA-H745-Ø-Ø	[illegible]	1	UNIT ASSY	H745
			D-PS-1210737-0-0		1	HEAT SINK	H745
			D-IA-5309756-0-0		1	REGULATOR BRKT	H745
			C-IA-5309761-0-0		1	2 - 5 CAP BRKT	H745
			C-MD-5309759-0-0		1	CAPACITOR STRAP	H745
		2	A-PI-3700074-0-0	-	2	PACKAGING INSTRUCTIONS	H745
			A-PS-9905211-0-0	-	2	OUTER CARTON	H745
			A-PS-9905212-0-0	-	2	INNER PACKAGE	H745

TITLE		SIZE	CODE	NUMBER	REV
-15V REGULATOR	SHEET 2 OF 2	B	DD	H745-Ø	QP



* FUSIBLE

UNLESS OTHERWISE INDICATED:

RESISTORS = 1/4W, 5%

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV E

DEC NO.	EIA NO.	DEC NO.	EIA NO.
D664	1N 3606	D45H8	
NSR 8117		2N 6028	
MCR 649P − 2			
1N 967A	SAME		
2N 5302			
MPS A05			
MPS A55			

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	
Y	H745-00020	
W	H745-00019	A. BARON
V	H745-00018	A. BARON
U	H745-00017	A. BARON
S	H745-00016	A. BARON
R	H745-00015	A. BARON
P	H745-00014	D. MARTEL
N	H745-00013	D. MARTEL
M	H745-00012	
L	H745-00009	R.J. WOLF
K	H745-00007	G. POTTER
J	H745-00006	G. POTTER
H	H745-00005	J. W. LAWRENCE
F	H745-00004	G. POTTER
E	H745-00003A	G. POTTER
D	H745-00002 2A	G. POTTER
C	H745-C0001	

REVISIONS

DRN. DATE 11-4-71
CHK'D. NANCY MOORE DATE 1-4-71
ENG. DATE
PROJ. ENG. DATE
PROD. DATE 1/13/72

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE −15V REG.

SIZE D CODE CS NUMBER H745-Ø-1 REV. Y

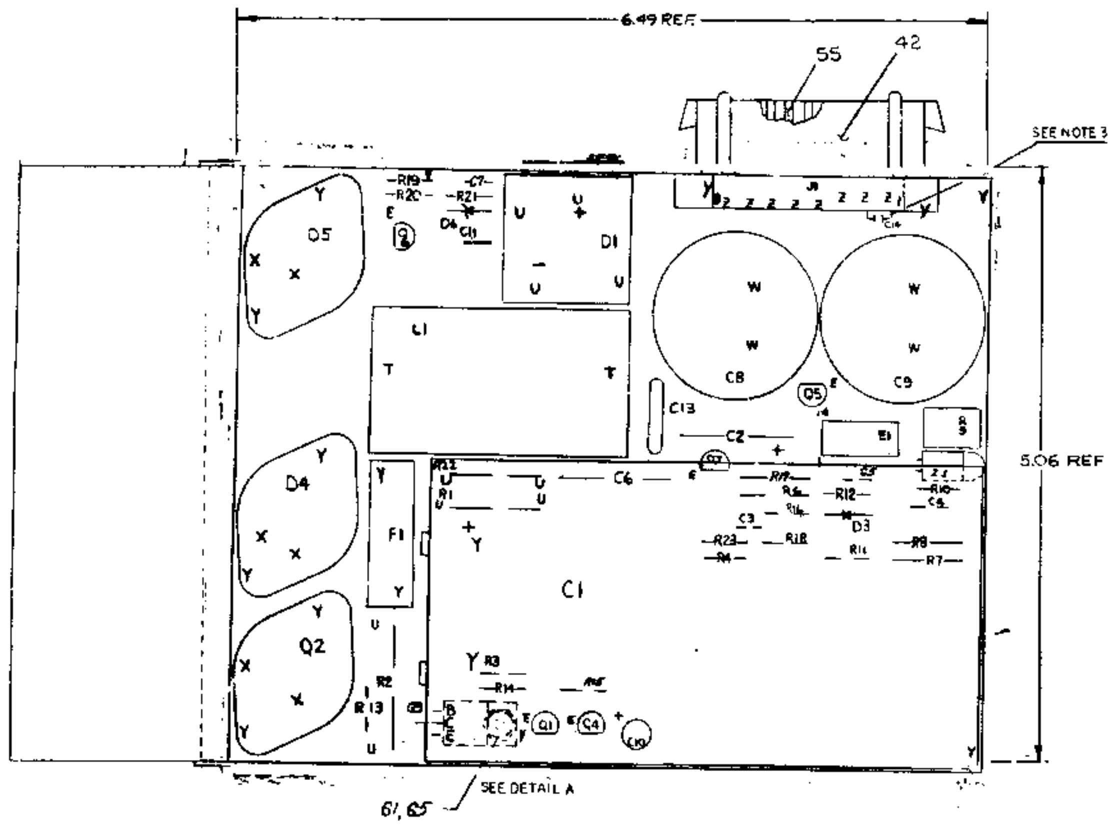
SCALE

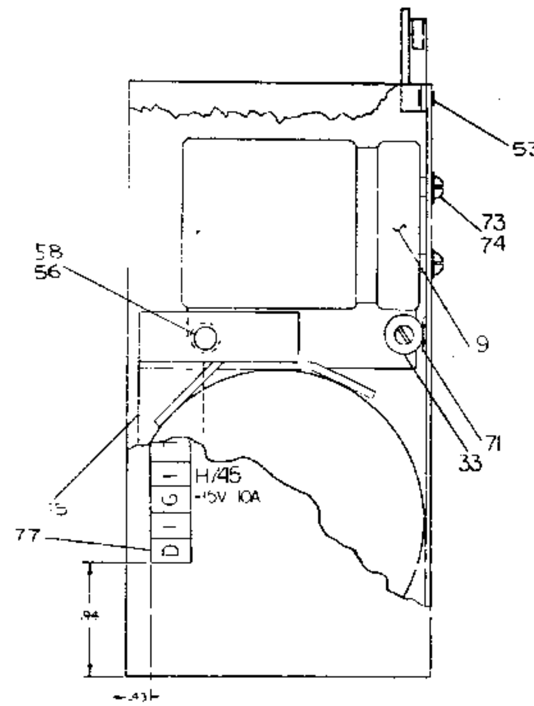
SHEET 1 OF 1

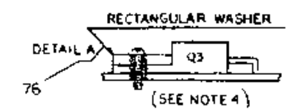
DIST.

NOTE:
3. INSERT C14 INTO ETCH PAD HOLES CONNECTED TO J1 TERMINALS 1-2.

NOTE:
1. APPLY ITEM #51 (THERMAL COMPOUND) BETWEEN TRANSISTOR AND INSULATOR, WASHER (ITEM #52) ALSO BETWEEN WASHER & HEAT SINK FOR Q2, Q4 & Q5. ALSO APPLY ITEM #51 (COMPOUND) BETWEEN ITEM #11 (DIODE BRIDGE) AND ITEM #59 (HEAT SINK).
2. 1010621 MAY BE SUBSTITUTED FOR C13 (1000030).

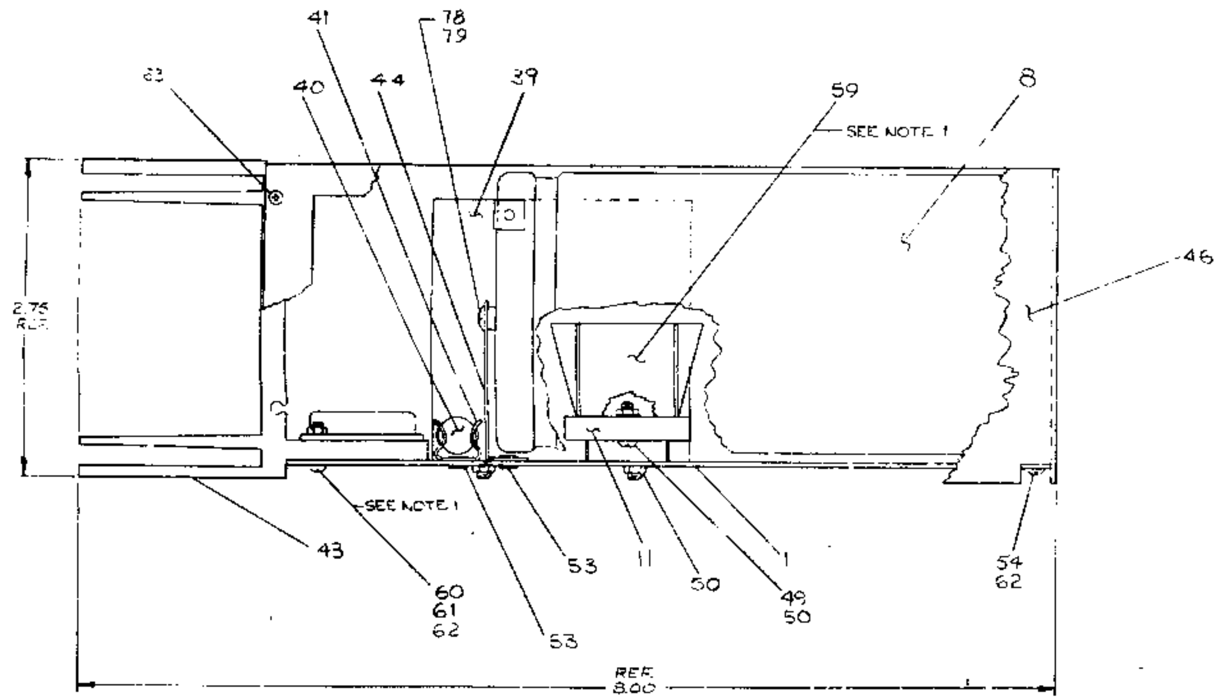






NOTE 4: Q3 SCREW HEAD SHOULD BE ON TOP OF FLAT RECTANGULAR WASHER AS SHOWN. APPLY 6 INCH LBS. OF TORQUE WHEN SECURING Q3 TO CKT. BOARD BEFORE SOLDERING.

NOTE 5: TORQUE APPLICATION
(1) APPLY 12 INCH LBS. OF TORQUE TO ALL #4 HARDWARE EXCEPT Q3.
(2) APPLY 16 INCH LBS. OF TORQUE TO ALL #6 AND #10 HARDWARE.
(3) ALL HARDWARE TO BE TORQUED BEFORE SOLDERING.



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM
		ASSY/DRILLING HOLE LAYOUT	D-AH-H745-0-5	70
1		PACKING INSTRUCTIONS	API-3700076-0-0	69
1	R18	RES 680 1/4W 5%	1301424	68
1	R23	RES 300 1/4W 5%	1301425	67
1	C13 (SEE NOTE 2)	CAP 0.1 UF 100V 20%	1000030	66
1		SCR PH #4-40 X 5/16 LG	9008010-1	65
1	I1	LAMP 15V	1209169	64
4		SCR, PFH #4 X 5/16 LG, SELF TAPPING	9006442	63
8		L WASHER #4	9006632	62
7		NUT KEPS #4-40	9006557	61
6		SCR PHL PAN HD #4-40 X [illegible] LG	[illegible]	60
1		HEAT SINK BRIDGE RECT	1210807	59
1		SCR PHL PAN HD #6-32 X [illegible] LG	9006020-1	58
1		SCR PHL FLT HD #6-32 X 1/4 LG	9006020-02	57
1		WASHER LOCK #6	9006635	56
8		CONTACT FEMALE	1208406	55
2		SCR PHL PAN HD #4-40 X [illegible] LG	9008301-[illegible]	54
6		EYELET 05-[illegible]	9006400	53
3		INSULATOR WASHER	9008721	52
A-R		THERMAL COMPOUND	[illegible]	51
3		NUT KEPS 6-32	[illegible]	50
1		SCREW PHL PAN HD 6-32 X 3/8 LG	9006025-01	49
~~4~~		~~SCREW PHL PAN HD [illegible]~~	~~9006008-[illegible]~~	48
~~1~~		~~[illegible]~~	~~[illegible]~~	47
1		REGULATOR UNIT	D-IA-5309758-0-[illegible]	46
1		2.5 HOLDER CAPACITOR	C-IA-74 23[illegible]-0	45
2		STRAP CAPACITOR	C-MD-5309758-0-0	44
1		HEAT SINK	C-PS-1210737-0-0	43
1	J1	CONN MATE-N-LOCK 8 PIN	[illegible]	42
2		FUSE CLIP	[illegible]	41
1	F1	FUSE	1213237-01	40
1	L1	REACTOR [illegible]	[illegible]	39
1	E1	INTEGRATED CIRCUIT MA723C	[illegible]	38
1	Q3	TRANSISTOR [illegible]	1510708	37
2	Q5 Q6	TRANSISTOR [illegible]	1510706	36
2	Q1,Q4	TRANSISTOR [illegible]	[illegible]	35
1	Q2	TRANSISTOR 2N5302	[illegible]	34
1	R8	RES VARIABLE 200 Ω, 20%	[illegible]	33
1	R20	RES 100 [illegible] 5%	1300223	32
1	R11	RES 1 MEG [illegible] 5%	1309595	31
1	R4	RES. 6.6K 1/4W 5%	130 874	30
2	R5, R16	RES 3 [illegible] 5%	[illegible]	29
2	R19, R3	RES 5.1 [illegible] 5%	[illegible]	28
1	R12	RES 56 [illegible] 5%	[illegible]	27
1	R21	RES 47 [illegible] 5%	[illegible]	26
1	R17	RES 38.2K 1/8W 1%	[illegible]	25
1	R10	RES 15 [illegible] 5%	[illegible]	24
1	R14	RES 10 [illegible] 5%	[illegible]	23
1	R6	RES 7.5K 1/8W 1%	1305322	22
2	R7, R9	RES [illegible] 1/8W 1%	[illegible]	21
1	R27	RES 5.1 [illegible] 5%	[illegible]	20
~~[illegible]~~		~~[illegible]~~	~~[illegible]~~	19
1	R2	RES .04 [illegible] 3%	1311562-00	18
1	R1	RES 3 [illegible] 10%	[illegible]	17
2	D2	DIODE [illegible]	[illegible]	16
1	D6	SCR [illegible]	[illegible]	15
1	D4	DIODE [illegible]	[illegible]	14
2	D3	DIODE [illegible]	[illegible]	13
1	Q7	TRANSISTOR UNI JUNCTION [illegible]	[illegible]	12
1	D1	DIODE [illegible]	[illegible]	11
~~[illegible]~~		~~[illegible]~~	~~[illegible]~~	10
2	C8 C9	CAP 3.0[illegible] UF 25V	[illegible]	9
1	C1	CAP [illegible] UF 50V	[illegible]	8
1	C10	CAP 1.0 UF 25V	1010906-01	7
1	C2	CAP 50 UF 25V -10+75%	[illegible]	6
1	C6	CAP [illegible] UF 100V 10%	[illegible]	5
1	C4	CAP 2700PF 100V 5%	[illegible]	4
3	C11, C5, C14	CAP [illegible] 100V 20%	[illegible]	3
[illegible]	[illegible]	[illegible]	[illegible]	2
[illegible]		[illegible]	[illegible]	1
[illegible]		[illegible]	[illegible]	0

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM
1		DECAL (H745)	7416945-02	80
2		WASHER INT. TOOTH #10	9006635	79
2		SCREW PAN 10-32 5/16 LG	9009669-01	78
1	C7	CAP .022 UF 50V	1010274	77
1		WASHER, RECTANGULAR	9003769	76
1	R13	RES 10Ω 1/4W FUSIBLE	1312496-00	75
4		LOCKWASHER #10 INT	9006635	74
4		SCR #10-32X31 SLOTTED PIN HD.	9009669-01	73
				72
1		TRANSIPAD	9008206	71

PARTS LIST

ETCH BOARD REV E

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.	DEC NO.	EIA NO.

IC TYPE	GND	+5V

IC PIN LOCATIONS

EQUIPMENT CORPORATION

-15 REGULATOR

E | 11A | H745-0-0 | Y

165

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-H754-Ø	
+20 VOLT REGULATOR	E-CS-H754-0-1	

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1			
H754-0	+20 VOLT REGULATOR	X			

REVISIONS

REV	CHG. NO.	DATE
A	H754-9	10-75
B	H754-10	11-3

USED ON OPTION/MODEL		
DRN. J.Fleming	DATE 2/21/74	TITLE +20 VOLT REGULATOR
CHK'D. J.Fleming	DATE 2/21/74	
PROJ ENG. E. [signature]	DATE 3-13-74	
PROD. [signature]	DATE 3-14-74	SIZE B, CODE DD, NUMBER H754-Ø, REV B
FIELD SERV. [signature]	DATE 7/25/74	DIST

SHEET 1 OF 3

DRB 106

ELECTRICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	B-DD-H754-Ø	#	3	DRAWING DIRECTORY	
X			E-CS-H754-Ø-1	#	2	+20 VOLT REGULATOR	
			K-CO-H754-Ø-4		-	X-Y COORDINATE HOLE LOCATION	
			D-AH-H754-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
			B-MH-H754-Ø-6		1	MODULE ECO HISTORY	
			5010531		-	ETCHED CIRCUIT BOARD	
			A-SP-H754-Ø-8		3	MANUFACTURING SPEC	

MECHANICAL

CUSTOMER PRINT SET 1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	E-CS-H754-0-1	#	2	+20 VOLT REGULATOR	
			D-PS-1210737-0-0		1	HEAT SINK REGULATOR	
			C-IA-5309758-0-0		1	CAPACITOR BRACKET	
		2	D-IA-5409756-0-0		1	BRACKET REGULATOR	
			A-SS-5309756-0-1		1	SILK SCREEN	
			A-SS-5309756-0-2		1	SILK SCREEN	
			A-SS-5309756-0-3		1	SILK SCREEN	

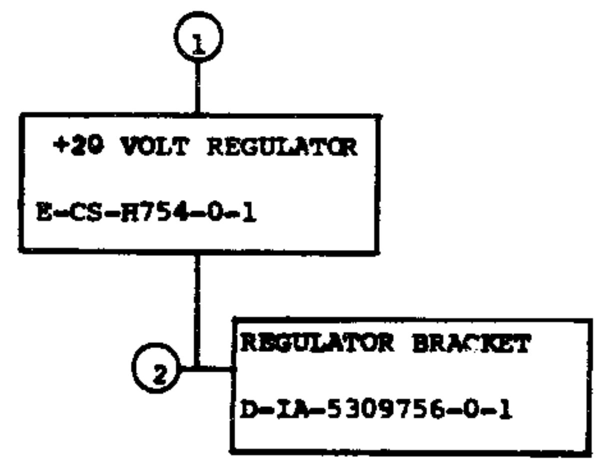
CUSTOMER PRINT SET CODES

X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
$ = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE	SHEET	SIZE	CODE	NUMBER	REV
+20 VOLT REGULATOR	2 OF 3	B	DD	H754-Ø	B

DPB 108

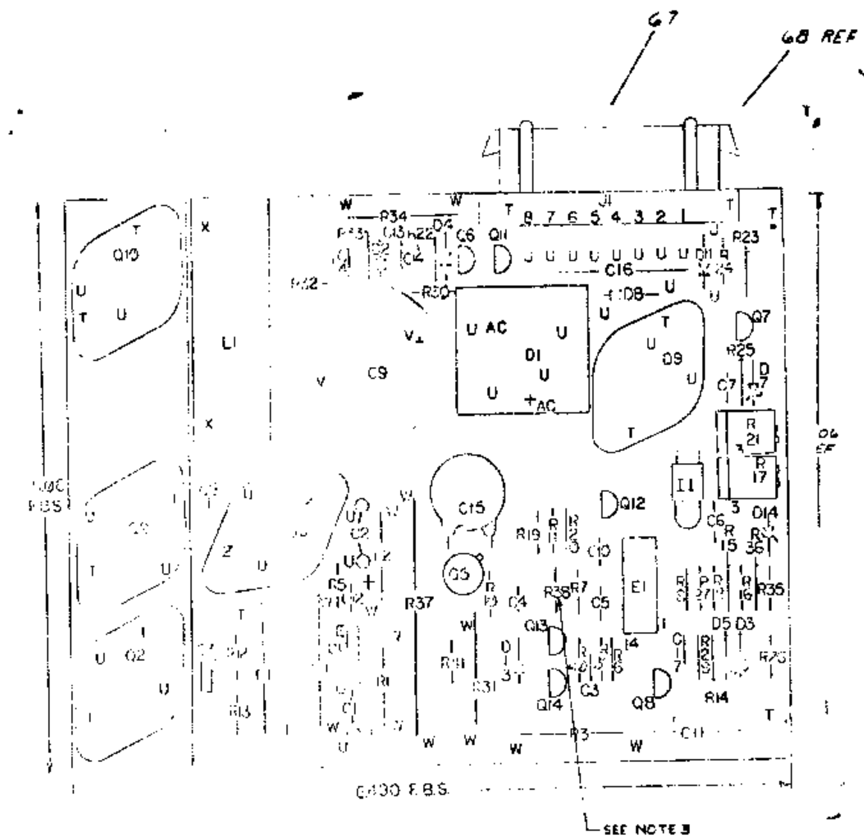
DEC 10-(325)-1062-20-H673

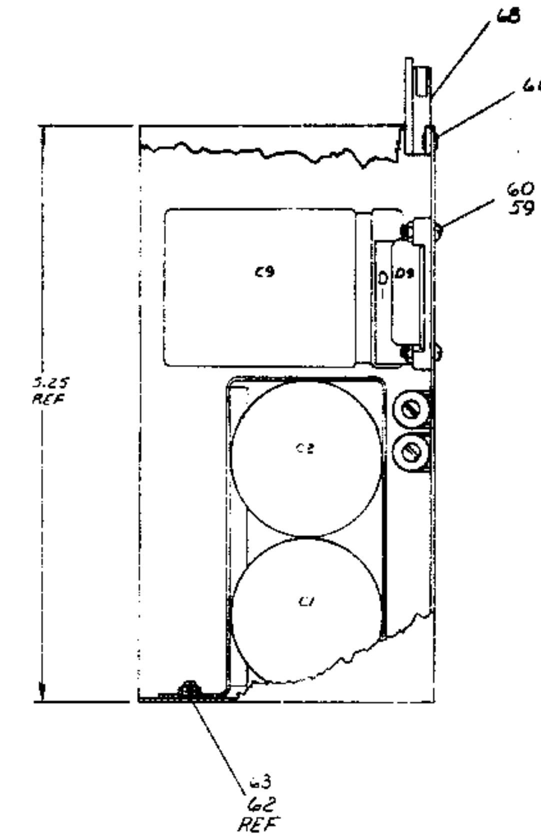


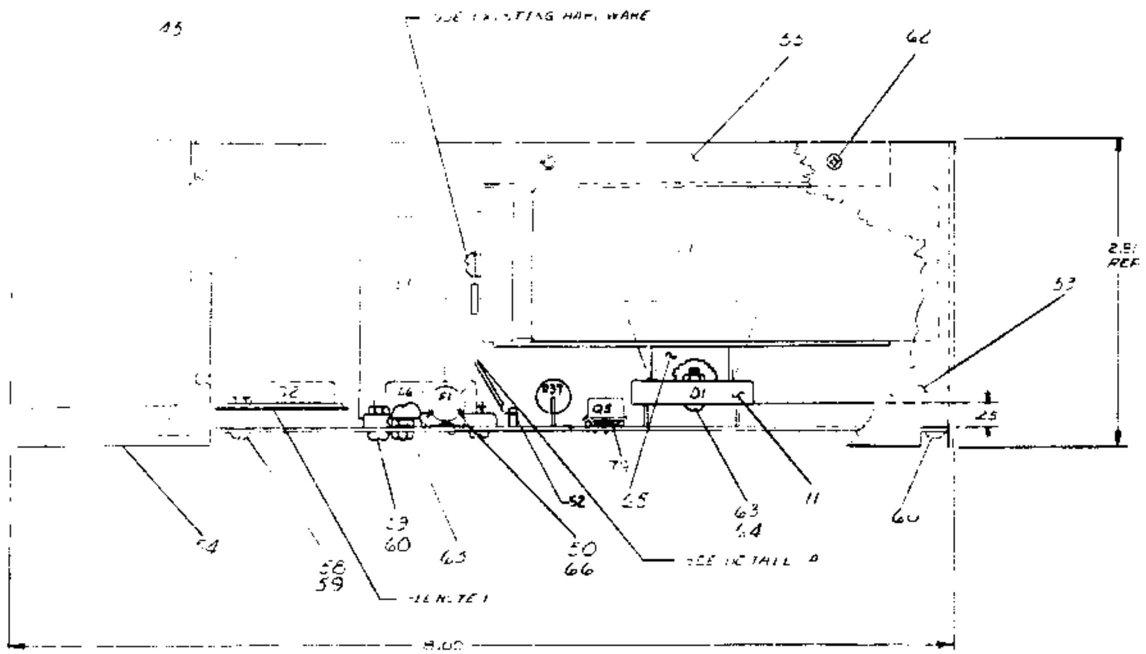
TITLE	SHEET	SIZE	CODE	NUMBER	REV
+20 VOLT REGULATOR	3 OF 3	B	DD	H754-Ø	B

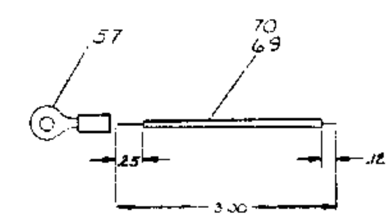
DRB 107

M8









DETAIL A
SCALE: NONE
RED WIRE GOES TO POSITIVE TERMINAL
BLK WIRE GOES TO NEGATIVE TERMINAL

DELETED COMPONENTS	
RESISTORS	R9
DIODES	D10,D12

NOTES:

1. APPLY ITEM # 71 (COMPOUND) ON BOTH SIDES OF ITEM # 72 (INSULATOR WASHER) FOR Q2, Q5, Q10. ALSO APPLY BETWEEN ITEM # 11 (DIODE BRIDGE D1) AND ITEM # 65 (HEAT SINK, BRIDGE RECT.)
2. UNLESS OTHERWISE INDICATED: RESISTORS ARE 1/4 W, ±5%. CAPACITORS ARE 100 V, ±5%.
3. ADD INSULATION [illegible] TO BOTH LEADS [illegible]

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM
1	R13	RES. 27 Ω 1 W 5% FUSIBLE	[illegible]	[illegible]
A/R		INSULATION	[illegible]	[illegible]
1	R39	RES 220 1/4 W 5%	[illegible]	[illegible]
1	R37	RES .1 10 W 1%	[illegible]	[illegible]
1	R38	[illegible] THERMISTOR	[illegible]	[illegible]
1	C16	CAP. 100 µF 25 V	[illegible]	[illegible]
1	Q10	TRANSISTOR MJ [illegible]	[illegible]	[illegible]
1	Q9	TRANSISTOR MJ [illegible]	1511341	[illegible]
1	C13	CAP. 100 PF 100 V ±5% DM	[illegible]	[illegible]
2	Q4, Q14	TRANSISTOR MPS A05	1510705	81
1	D2	DIODE [illegible]	[illegible]	80
2	[illegible]	TRANSIPAD	[illegible]	79
1	R31	RES .15 Ω 2 W 10%	[illegible]	[illegible]
2	C4, C17	CAP. 1000 PF 100 V, 5% DM	[illegible]	77
1	R22	RES 383 Ω 1/8 W ±1%	1305123	76
2	R38, R8	RES 4.78 K 1/8 W ±1%	1302612	75
1	R11	RES 15 K 1/4 W ±5%	1300496	74
1	R20	RES 470 Ω 1/4 W ±5%	[illegible]	73
3		[illegible] INSULATOR	[illegible]	72
A/R		COMPOUND, THERMAL	[illegible]	71
A/R		WIRE, [illegible]	[illegible]	70
A/R		WIRE, [illegible]	[illegible]	69
1	J1	[illegible] CONN 8 PIN	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
4		EYELET [illegible]	[illegible]	[illegible]
1		HEAT SINK BRIDGE [illegible]	[illegible]	[illegible]
1		SCR PNL PAN HD [illegible]	[illegible]	[illegible]
5		KEPS NUT [illegible]	[illegible]	[illegible]
2		SCR PNL FLAT HD. 6-32 [illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
4		SCR PNL PAN HD 4-40 [illegible]	[illegible]	[illegible]
10		KEPS NUT 4-40	[illegible]	[illegible]
4		SCR PNL PAN HD 4-40 [illegible]	[illegible]	[illegible]
4		TERMINAL [illegible]	[illegible]	57
[illegible]		[illegible]	[illegible]	[illegible]
1		[illegible] CAP [illegible]	C-IA-[illegible]-0-0	55
1		HEAT SINK REGULATOR	D-PS-[illegible]-0-0	54
1		BRACKET REG	[illegible]	53
4		SPLIT LUG	[illegible]	52
1	Q8	TRANSISTOR [illegible]	[illegible]	51
2		FUSE CLIP	[illegible]	50
1	F1	FUSE [illegible]	[illegible]	49
1	L1	REACTOR [illegible]	[illegible]	48
1	E1	INTEGRATED CIRCUIT [illegible]	[illegible]	47
5	Q3, Q6, Q11, Q12, Q13	TRANSISTOR [illegible]	[illegible]	46
4		SCR PNL FLAT HD [illegible]	[illegible]	45
1	Q[illegible]	TRANSISTOR [illegible]	[illegible]	44
1	Q[illegible]	TRANSISTOR [illegible]	[illegible]	43
2	[illegible]	TRANSISTOR [illegible]	[illegible]	42
[illegible]	R17, R21	RES VARIABLE [illegible] POT	[illegible]	41
2	R[illegible], R36	RES 5.1 [illegible] 5%	[illegible]	40
1	R16	RES 237 1/8 W 1%	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
2	R14, R5	RES [illegible] 5%	[illegible]	[illegible]
1	R10	RES 150 [illegible] 5%	[illegible]	[illegible]
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-H734-0-[illegible]	[illegible]
2	R[illegible], R40	RES 2 K 1/8 W 1%	1302308	[illegible]
2	R[illegible], R15	RES [illegible] 5%	[illegible]	[illegible]
6	R[illegible], R30, R24, R35, R[illegible]	RES 100 [illegible] 5	[illegible]	[illegible]
1	R12	RES [illegible] 1/4 W 5% FUSIBLE	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
1	R[illegible]	RES 10 K [illegible] 1%	[illegible]	[illegible]
1	R32	RES [illegible]	[illegible]	[illegible]
1	R[illegible]	RES [illegible] 1/8 W 1%	[illegible]	[illegible]
1	R[illegible]	RES 100 [illegible] 5%	[illegible]	[illegible]
1	C11	CAP 2.2 µF [illegible] TANT	[illegible]	[illegible]
1	R[illegible]	RES [illegible]	1311362	[illegible]
1	R[illegible]	RES 1.5 K 5 W 5%	[illegible]	[illegible]
1	R34	RES 47 [illegible] 5%	[illegible]	[illegible]
1	R[illegible]	RES [illegible] 5%	[illegible]	[illegible]
2	R[illegible] R[illegible]	RES [illegible]	[illegible]	[illegible]
1	R[illegible]	RES 10 [illegible] 1/4 W, 5%	[illegible]	[illegible]
2	D11, D8	DIODE 1N5624	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]
1	D[illegible]	DIODE [illegible] ZENER	[illegible]	[illegible]
1	D[illegible]	DIODE [illegible]	[illegible]	[illegible]
1	D[illegible]	DIODE [illegible] 24 V	[illegible]	[illegible]
1	D[illegible]	DIODE, 20 AMP FAST REC	[illegible]	[illegible]
1	D[illegible]	DIODE [illegible] ZENER, 15 V	[illegible]	[illegible]
1	D[illegible]	DIODE [illegible]	[illegible]	[illegible]
3	D[illegible], D3, D4	DIODE [illegible]	[illegible]	[illegible]
1	C15	CAP [illegible] 100 V 20% DISC	1000030	[illegible]
1	C[illegible]	CAP [illegible] AL EL	[illegible]	[illegible]
5	C[illegible], C[illegible], C[illegible], C10, C8	CAP [illegible] DISC	[illegible]	[illegible]
1	C[illegible]	CAP [illegible] DM	[illegible]	[illegible]
1	C[illegible]	CAP [illegible] DM	[illegible]	[illegible]
1	I1	LAMP 28 V, 40 MA	[illegible]	[illegible]
1	C12	CAP [illegible] DISC	[illegible]	[illegible]
2	C1, C2	CAP 5.8 µF 50 V [illegible] AL EL	[illegible]	[illegible]
1		ETCHED CIRCUIT BOARD	[illegible]	[illegible]
		MODULE [illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]

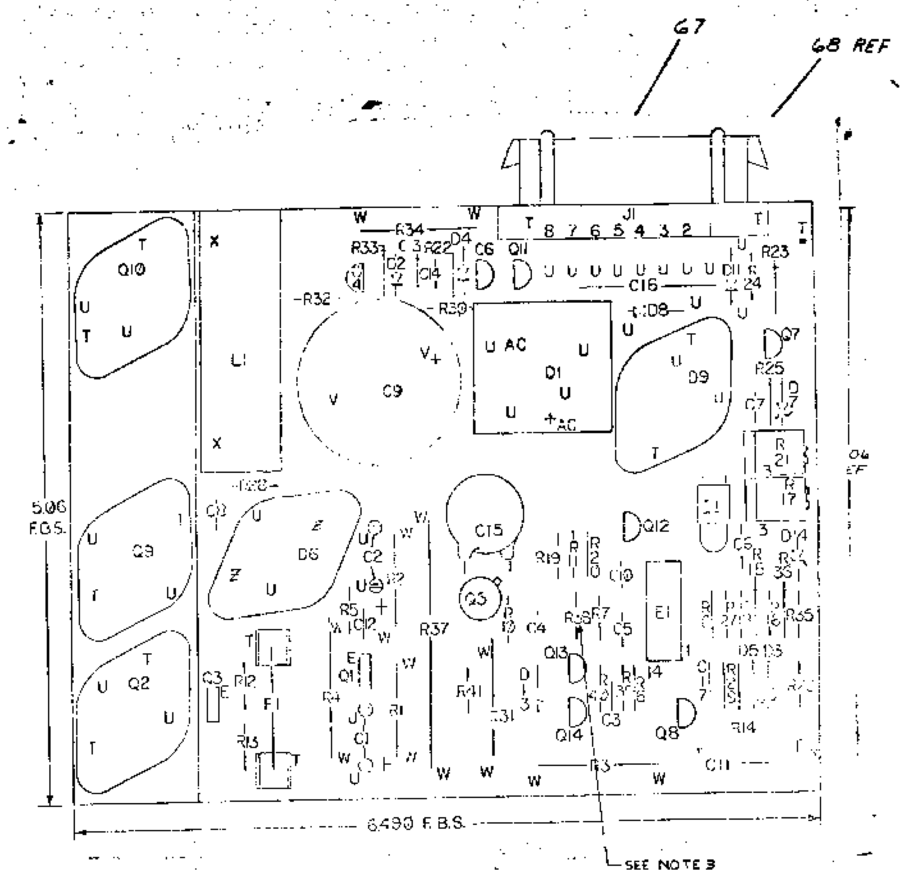
PARTS LIST

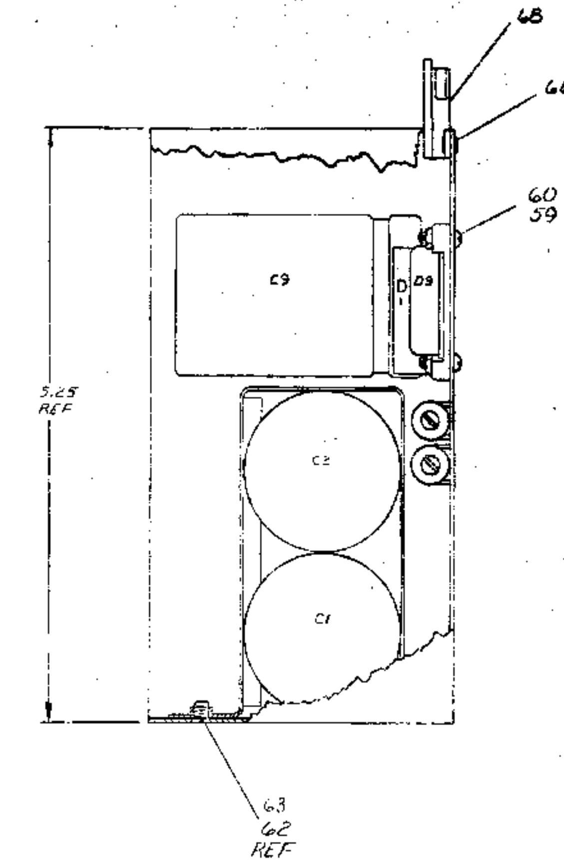
D664	1N3606	[illegible]

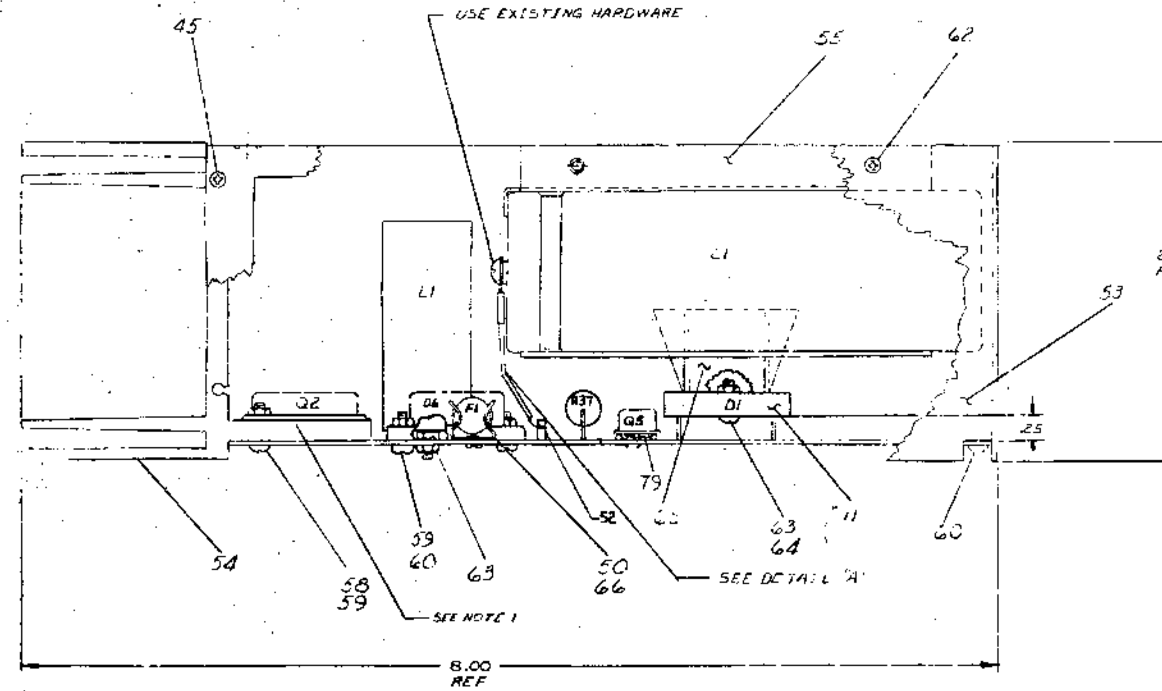
+ 20 VOLT
REGULATOR

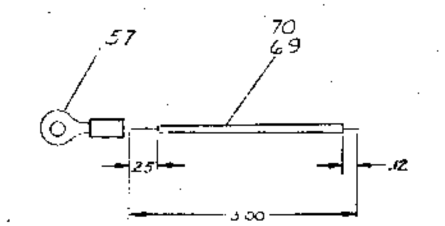
[illegible]H734-[illegible]-1 N

169









DETAIL 'A'
SCALE : NONE
RED WIRE GOES TO POSITIVE TERMINAL
BLK WIRE GOES TO NEGATIVE TERMINAL

NOTES:
1. APPLY ITEM #71 (COMPOUND) ON BOTH SIDES OF ITEM #72 (INSULATOR WASHER) FOR Q2, Q9, Q10. ALSO APPLY BETWEEN ITEM #11 (DIODE BRIDGE D1) AND ITEM #65 (HEAT SINK, BRIDGE RECT.)
2. UNLESS OTHERWISE INDICATED: RESISTORS ARE 1/4 W, ±5%. CAPACITORS ARE 100V, ±5%.
3. ADD INSULATION (9107256-11) TO BOTH LEADS OF R38 TO AVOID SHORT TO ETCH.

DELETED COMPONENTS	
RESISTORS	R9
DIODES	D10, D12

PARTS LIST

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM
1	Q1	TRANSISTOR 2N4920-1	1509605-1	92
1	R13	RES. 27Ω 1/2W 5% FUSIBLE	1312496-01	91
AR		INSULATION	9107256-11	90
1	R39	RES 220 1/4W 5%	1300271	89
1	R37	RES. .1 10W 1%	1309108	88
1	R38	RES. 1K 1% THERMISTOR	1310071	87
1	C16	CAP. 100µF 25V	1002781	86
1	Q10	TRANSISTOR MJ900	1510712	85
1	Q9	TRANSISTOR MJ1000	1511349	84
1	C13	CAP. 100 PF 100V ±5% DM	1000016	83
				82
2	Q4, Q14	TRANSISTOR MPS A05	1510705	81
1	D2	DIODE C003	1100100	80
2	(UNDER Q2 & Q9)	TRANSIPAD	9007293	79
1	R31	RES .15Ω 2W 10%	1310147	78
2	C14, C17	CAP. 100 µF 100V, ±5% DM	1200042	77
1	R22	RES 383Ω 1/8W ±1%	1305125	76
2	R33, R8	RES 1.78K 1/8W ±1%	1302612	75
1	R11	RES 15K 1/4W ±5%	1500496	74
1	R20	RES 470Ω 1/4W ±5%	1300316	73
3		WASHER INSULATOR	[illegible]	72
AR		COMPOUND, THERMAL	[illegible]	71
AR		WIRE, #18 AWG, STRD, PVC INS (BLK)	[illegible]-00	70
AR		WIRE #18 AWG, STRD, PVC INS (RED)	[illegible]-22	69
1	J1	MATE-N-LOCK CONN 8 PIN	[illegible]	68
8		PIN, SOCKET, MATE-N-LOCK	[illegible]	67
4		EYELET [illegible]	[illegible]	66
1		HEAT SINK, BRIDGE RECTIFIER	[illegible]	65
1		SCR PHL PAN HD 6-32 X [illegible]	[illegible]-1	64
3		KEPS NUT 6-32 SS	[illegible]	63
2		SCR PHL FLAT HD 6-32 X [illegible]	[illegible] 2	62
[illegible]		[illegible]	[illegible]	61
6		SCR PHL PAN HD 4-40 X 3/8	[illegible]	60
10		KEPS NUT 4-40	[illegible]	59
6		SCR PHL PAN HD 4-40 X [illegible]	[illegible]-1	58
4		TERMINAL, SOLDERLESS, #10	[illegible]	57
[illegible]		[illegible]	[illegible]	56
1		[illegible]	C-IA 5305758-0-0	55
1		HEAT SINK, REGULATOR	D-PS 1210737-0-0	54
1		BRACKET REG.	D-IA 5308756-4-0	53
4		SPLIT LUG	[illegible]	52
1	Q8	TRANSISTOR [illegible]	15 10077	51
2		FUSE CLIP	[illegible]	50
1	F1	FUSE 10 AMP	[illegible]	49
1	L1	REACTOR 170 µHY	16-10040	48
1	E1	INTEGRATED CIRCUIT 723	19-10415	47
5	Q1, Q6, Q11, Q12, Q13	TRANSISTOR MPS A55	15 10700	46
4		SCR PHL FLAT HD #4-40 SELF TAPPING	[illegible]	45
1	Q5	TRANSISTOR DEC3500	15 03700	44
1	Q2	TRANSISTOR 2N5038	15-10089	43
1	Q3	TRANSISTOR [illegible]	15-00005	42
2	R17 R21	RES VARIABLE 200 ±20% POT	13 10052	41
2	R23, R36	RES 5.1 1/4 5%	13-[illegible]	40
1	R18	RES 257 1/8W 1%	1304857	39
				38
2	R14, R5	RES [illegible]	13 01522	37
1	R10	RES [illegible]	13-[illegible]	36
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-H754-0-5	35
2	R1, R40	RES 2K 1/4W 5%	1302368	34
2	R6, R19	RES [illegible]	13-[illegible]	33
6	R15, R25, R30, R24, R35, R41	RES 100 1/4 5%	13-00216	32
1	R12	RES 68Ω 1/2W 5% FUSIBLE	1312496-02	31
				30
1	R27	RES 10K 1/8W 1%	1305312	29
1	R32	RES 39K 1% [illegible]	13-00444	28
1	R16	RES 287Ω 1/8W 1%	13 05124	27
1	R29	RES 100 1/4 5%	[illegible]	26
1	C11	CAP. 2.2 UF [illegible] 10% S TANT	10-[illegible]	25
1	R4	RES [illegible] .03Ω	1310876-1	24
1	R3	RES 1.5K 5W 5%	13 01897	23
1	R34	RES 47 [illegible]	13-01250	22
1	R26	RES 1.[illegible]	13-[illegible]	21
2	R1, R2	RES [illegible]	13-[illegible]	20
1	R28	RES 10Ω, 1/4W, 5%	1301317	19
2	D11, D8	DIODE 1N5624	1110420	18
				17
1	D4	DIODE 752A ZENER	1102806	16
1	D9	DIODE [illegible]	11 [illegible]	15
1	D7	DIODE [illegible] 24 V	11-10006	14
1	D6	DIODE, 20 AMP FAST REC	11-10016	13
1	D3	DIODE [illegible] ZENER, 15 V	11-[illegible]	12
1	D1	DIODE [illegible]	11-[illegible]	11
3	D5, D13, D4	DIODE D664	11 [illegible]	10
1	C15	CAP. .1 UF 100 , 20%, DISC	10000[illegible]	9
1	C4	CAP 2.2 UF [illegible] G% AL EL	[illegible]	8
5	C3, C5, C6, C10, C8	CAP [illegible] 50V 20% DISC.	10-[illegible]	7
1	C8	CAP 270PF 100V 5% DM	10-[illegible]	6
1	C2	CAP 82PF 100V 5% DM	10-00012	5
1	I1	LAMP 28V 40 MA	12-[illegible]	4
1	C12	CAP [illegible] DISC	10 01174	3
2	C1, C2	CAP 5.8 [illegible] 50V 5% AL EL	10-[illegible]	2
1		ETCHED CIRCUIT BOARD	5010531	1
		[illegible] HISTORY	[illegible]-H754-0-[illegible]	
		X-Y COORDINATE HOLE LOCATION	[illegible]-H754-0-[illegible]	

ETCH BOARD REV H

D664 | 1N3606

SEMICONDUCTOR CONVERSION CHART

IC PIN LOCATIONS | JUMPER LIST

EQUIPMENT CORPORATION

TITLE: +20 VOLT REGULATOR

C | CS | H754-0 | REV. P

F1 10A

D1 NSS 3514

C1 5800UF 50V

C2 5800UF 50V

R1 3.9K 1W 10%

R2 3.9K 1W 10%

J1-8 AC

J1-7 AC

R4 .03Ω 5W, 3%

R5 27Ω

R3 1.5K 5W, 5%

C12 .05UF 25V

Q1 2N4920-1

Q2 2N5038

Q3 2N4920

R13 27Ω 1/2W

R12 68Ω 1/2W *

L1 170 UHY

R28 10Ω

C8 .01UF 20% 50V

D6 20AMP

D11 1N5624

R23 5.1Ω

R24 100Ω

C16 1000UF 25V

C9 2200UF 30V

Q7 MPSA55

J1-5 +20V

I1

D13 D664

C3 .01UF

R39 220Ω

R40 2K

Q13 MPS A55

Q8 2N6028

C11 2.2UF 35V 10%

D3 1N4744 15V

R6 12K

1000PF 100V C17

R29 18K

R7 2K

R38 1K THERM.

Q5 DEC 3500

R10 150Ω

C4 .01UF 50V 20%

C15 .1UF 20%

Q14 MPS A05

R41 100Ω

R37 .1 10W 1%

D9 MCR 649P-2

C7 .01UF 20% 50V

R25 100Ω

R11 15K

R20 470Ω

Q12 MPS A55

R36 5.1Ω

R35 100Ω

D14 752A

D8 1N5624

D7 1N970B 24V

J1-3 -5V

J1-2 GND

R26 1.5K

D5 D664

R8 1.78K Ω 1/8W, 1%

R27 10K 1/8W, 1%

C10 .01UF 20% 50V

R19 12K

C6 2100 PF

R18 237Ω 1/8W 1%

R15 100Ω

R17 200Ω 20% 1/2W

R14 27Ω

R16 287Ω 1/8W 1%

DEC 723C

C5 56PF

R33 1.78K 1/8W 1%

C14 100PF

R32 3.9K

R34 47Ω 2W 5%

Q11 MPS A55

Q10 MJ900

MPS A05 Q4

D2 D003

D4 D664

R31 .15Ω 2W 10%

MPS A55 Q6

C14 1000 PF

R30 100Ω

Q9 MJ3000

R22 383Ω 1/8W 1%

R21 200Ω 20% 1/2W

* FUSIBLE RESISTOR

DRAWN B.BISSONNETTE	8-22-72	FIRST USED ON H754	digital
CHK'D R.VOWLES	12-17-72	TITLE +20 VOLT REGULATOR	
ENG. R. BURTON	4-9-73		
PROJ. ENG. R.BURTON	5-7-73		
PROD. L.BRISTER	5-9-73		
NEXT HIGHER ASSY.			
SCALE		SIZE D CODE CS NUMBER H754-0-1 REV P	
SHEET 2 OF 2		DIST.	

QUANTITY/VARIATION

ITEM NO.	DWG.NO/PART NO.	DESCRIPTION	11/55-BA	11/55-BB	11/55-BC	11/55-BD
1	C-PL-11/55-CA-Ø	BASIC ASSY 115V 60HZ	1	-	-	-
2	C-PL-11/55-CB-Ø	BASIC ASSY 230V 50HZ	-	1	-	-
3	C-PL-11/55-CC-Ø	BASIC ASSY 115V 60HZ	-	-	1	-
4	C-PL-11/55-CD-Ø	BASIC ASSY 230V 50HZ	-	-	-	1
5	A-PL-LA36-CE-Ø	SERIAL DEC WRITER 115V 60HZ	1	-	1	-
6	A-PL-LA36-CJ-Ø	SERIAL DEC WRITER 230V 50HZ	-	1	-	1

REVISIONS: REV. | CHANGE NO. | CHK

DRN. R.BEASLEY	3 FEB 76	FIRST USED ON PDP11/55	digital
CHK'D D. HEALY	10 FEB 76	TITLE 11/55 SYSTEMS PARTS LIST	
ENG. [signature]	12 MAR 76		
PROJ. ENG. [signature]	12 MAR 76		
PROD. [signature]	12 MAR 76		
NEXT HIGHER ASSY. B-DD-11/55-0		SIZE C, CODE PL, NUMBER 11/55-0-4	REV.
SCALE —			
SHEET 1 OF 1		DIST.	

DEC FORM NO. DRC 118 A

11/55-0-4 C PL B

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	MAT GAIGE	CHECKED	D. HEALY	SECTION	
DATE	8 MAR 76	DATE	9 MAR 76	1	
ENG	Darell Booen	PROD	[illegible]	ISSUED SECT.	
DATE	12 MAR 76	DATE	12 MARCH 76	1	

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	MPØØØ39	11/55 PRINT SET (CPU)	1
2	MPØØØ4Ø	11/55 PRINT SET (INTERNAL OPTIONS)	1
3	EK-11045-MM	11/45 SYSTEM & INSTALLATION MANUAL	1
4	EK-KB11A-MM	KB11 MAINTENANCE MANUAL	1
5	2ØØ2-2Ø175-4526	PDP11 PERIPHERALS HANDBOOK	1
6	67-ØØ473-2743	11/45 PROCESSOR HANDBOOK	1
7	ZRØØ1-RB	SYSTEM SOFTWARE KIT	1
8	MAINDEC-11-DZQMB-D	MEMORY Ø-124 DIAGNOSTIC	1
9	MAINDEC-11-DZQMB-PB	MEMORY Ø-124 DIAGNOSTIC	1
10	MAINDEC-11-DZMMJ-D	8K SPECIAL DIAGNOSTIC	1
11	MAINDEC-11-DZMMJ-PB	8K SPECIAL DIAGNOSTIC	1
12	MAINDEC-11-DCMFA-D	MOS-CORE PARITY DIAGNOSTIC	1
13	MAINDEC-11-DCMFA-PB	MOS-CORE PARITY DIAGNOSTIC	1
14	EK-MS11-MM	MS11 MAINTENANCE MANUAL	1
15	EK-MF11U-M	MF11-U/UP MAINTENANCE MANUAL	1
16	EK-KT11C-MM	KT11 MAINTENANCE MANUAL	1
17	ZR1Ø4-RB	KT11 SOFTWARE KIT	1
18	ZJ135-RB	DL11 SOFTWARE KIT	1
19	EK-DL11-TM	DL11 MANUAL	1
20	EK-BM873-TM	BM873 LOADER, MANUAL	1
21	ZJJØ6-RB	BM873 SOFTWARE KIT	1
22	ZJJ37-RB	KW11-L, LINE CLOCK SOFTWARE KIT	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
SHIPPING LIST 11/55	NONE	A	PL	11/55-0-3	A	11/55-[illegible]
	SHEET 1 OF 2	DIST.				

DEC FORM DEC 16 (325) 1031 N870
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	MAT GAIGE	CHECKED	D. HEALY	SECTION	
DATE	8 MAR 76	DATE	9 MAR 76	1	
ENG	Darell Booen	PROD	[illegible]	ISSUED SECT.	
DATE	12 MAR 76	DATE	12 MARCH 76	1	

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
23	EK-KW11L-TM	KW11L MAINTENANCE MANUAL	1
24	7008855	POWER CABLE, SYSTEMS UNIT	3
25	9007221	AGC 5A FUSE	5
26	9007226	AGC 15A FUSE	5
27	9009039	2/10A S B FUSE	5
28		H96Ø-C CAB FILTER	1
29		CONSOLE KEY	2
30		LOG BOOK	1
31		PDP11 INSTRUCTION CARD	1
32	EK-DL11-W-MM	DL11-W MAINTENANCE MANUAL	1
33	EK-M9301-MM	M9301-YB MAINTENANCE MANUAL	1
34	DZYM9A--	M9301-YB SOFTWARE KIT	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
SHIPPING LIST 11/55	NONE	A	PL	11/55-0-3	A	
	SHEET 2 OF 2	DIST.				

DEC FORM DEC 16 (325) 1031 N870
DRA 110

DIGITAL EQUIPMENT CORPORATION

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE

SEQUENCE

THIS IS PRINT SET

UNIT VARIATIONS		PRINT SET
VAR	TITLE	
11T55-BA	11/55-BA,FP11-C,RK11J-DE,	
	RKØ5J-AA,115V 60 HZ	
11T55-BB	11/55-BB,FP11-C,RK11J-DJ,	
	RKØ5J-BB,230V 50 HZ	
11T55-BC	11/55-BC,FP11-C,RK11J-DE,	
	RKØ5J-AA,115V 60 HZ	
11T55-BD	11/55-BD,FP11-C,RK11J-DJ,	
	RKØ5J-BB,230V 50 HZ	

REVISIONS: REV | CHG. NO. | DATE

USED ON OPTION/MODEL

SHEET 1 OF 2

DRN. B. Mahoney	DATE 1 MAR 76	TITLE: STANDARD SYSTEM 11T55
CHK'D. D. Mahoney	DATE 2 MAR 76	
PROJ ENG. Russell Boos	DATE 12 MAR 76	
PROD. L. Bornstein	DATE 12 MAR 76	SIZE B / CODE DD / NUMBER 11T55-Ø / REV
FIELD SERV. David M. Cobb	DATE 12 MAR 76	DIST

DRB 106

FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
1	B-AR-11T55-Ø-Ø		3	STANDARD SYSTEM 11T55	
	A-PL-11T55-Ø-1		1	SHIPPING LIST 11T55	
2	B-DD-11/55-0		6	BASIC BASIC ASSY PDP11/55	
3	B-DD-FP11-C		2	FLOATING POINT PROCESSOR FP11-C	
4	B-DD-RK11-D		4	DISK DRIVE & CONTROL RK11J	
5	B-DD-RKØ5J-Ø		5	DISK DRIVE RKØ5J	
6	D-IA-7409271-0-0			CONSOLE PANEL 11T55	
	C-SS-7009271-0-13			SILK SCREEN	
	C-SS-7009271-0-14			SILK SCREEN	
	C-SS-7009271-0-15			SILK SCREEN	
	C-SS-7009271-0-16			SILK SCREEN	
	C-SS-7009271-0-17			SILK SCREEN	
	C-SS-7009271-0-12			SILK SCREEN	

CUSTOMER PRINT SET CODES
X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE: STANDARD SYSTEM 11T55 | SHEET 2 OF 2 | SIZE B | CODE DD | NUMBER 11T55-Ø | REV

DRB 108

digital EN-01082-28-16-R972-(325)

TABLE OF CONTENTS

REVISIONS		
CHK	CHANGE NO.	REV.

SHEET NO.

ENG.	18 MAR 76
CHK.	3 MAR 76
MKT.	18 MAR 76
PROD.	18 MAR 76
FIELD S.	18 MAR 76
NEXT HIGHER ASSY.	B-DD-11T55-Ø
SCALE	—
SHEET	1 OF 3

FIRST USED ON

digital

TITLE: STANDARD SYSTEM 11T55

SIZE	CODE	NUMBER	REV.
B	AR	11T55-Ø-Ø	

DIST.

EN-01121-16-N575-(325)
DRB 121

ARRANGEMENT
GUIDELINES

NOTES:

1. FOR MODULE PLACEMENT INFORMATION REFER TO E-MU-KB11-D-1, A-SP-FP11-C-5,D-MF11-U-MU, and D-MU-RK11-D-1.

VARIATIONS OF 11T55

11T55-BA	=	115V,60 HZ
11T55-BB	=	230V,50 HZ
11T55-BC	=	115V,60 HZ
11T55-BD	=	230V,50 HZ

2. AIR FLOW RESTRICTIONS:

   NO FULL DEPTH OPTION WILL BE INSTALLED ABOVE THE 11/55 CPU BOX; ONLY SEMI-DEPTH OPTION (PCØ5, RXØ1, TU56, etc.) CAN BE INSTALLED ONLY IF THERE IS A MINIMUM OF 5 INCHES BETWEEN THE TOP OF CPU BOX AND THE OPTION.

3. NO NON-PARITY MEMORY WILL BE INSTALLED IN ANY 11/55 SYSTEM.

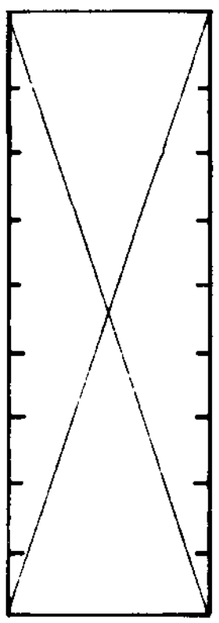
B AR 11T55-Ø-Ø

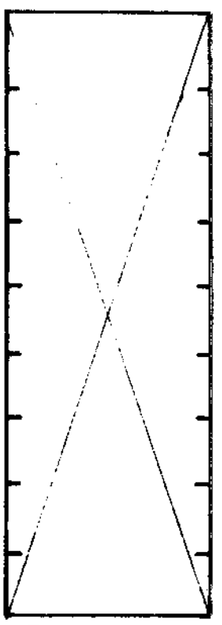
REVISIONS		
CHK	CHANGE NO.	REV.

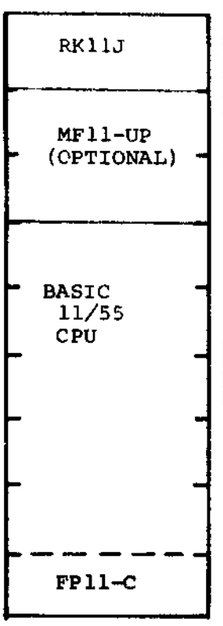
TITLE: STANDARD SYSTEM 11T55		SIZE: B	CODE: AR	NUMBER: 11T55-Ø-Ø / REV.
SCALE: —11—	SHEET 2 OF 3	DIST.		

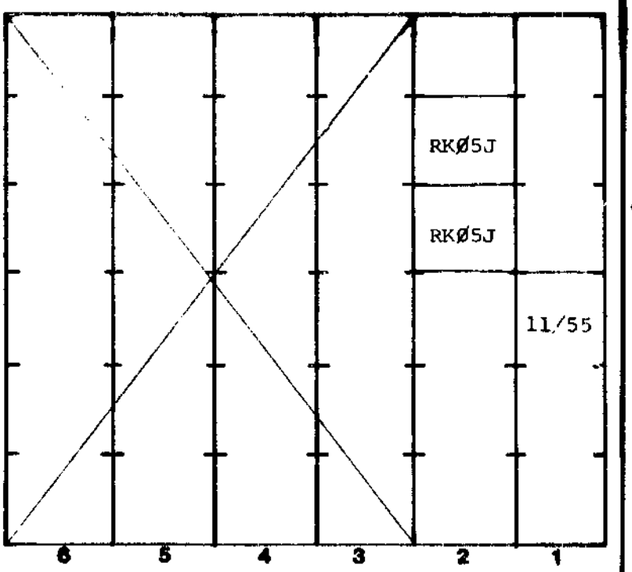
EN-01120-16-N575- (325)

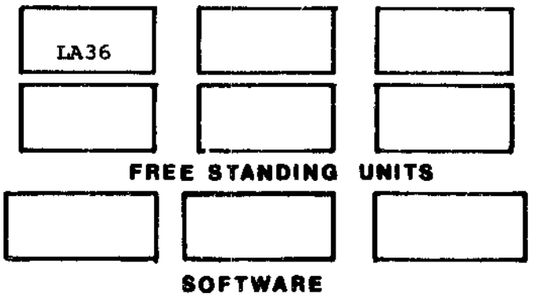
DRB 122











115 60 230 50 115 60 230 50

REVISIONS		
CHK	CHANGE NO.	REV.

QUANTITY	DESCRIPTION	DWG./PART NO.	VARIATION				ITEM NO.
1	CONSOLE PANEL 11T55	7409271-5	-	-	-	-	5
1	DISK DRIVE	RKØ5J	AA	BB	AA	BB	4
1	DISK DRIVE & CONTROL	RK11J	DE	DJ	DE	DJ	3
1	FLOATING POINT PROCESSOR	FP11	C	C	C	C	2
1	BASIC ASSY	11/55	BA	BB	BC	BD	1
	SYSTEM - BASIC 11T55	11T55	BA	BB	BC	BD	

TITLE	SIZE	CODE	NUMBER	REV.
STANDARD SYSTEM 11T55	B	AR	11T55-Ø-Ø	
SCALE —// — SHEET 3 OF3	DIST.			

11T55-Ø-Ø

EN-01119-18-N575-(325)

DRB 123

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY M. GAIGE DATE 15 Mar 76	CHECKED D.HEALY DATE 16 Mar 76	SECTION 1
ENG Verell Bogen DATE 18 MARCH '76	PROD J Bornetta DATE 3-18-76	ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION 11T55-BA	11T55-BB	11T55-BC	11T55-BD
1	A-PL-11/55-Ø-3	SHIPPING LIST 11/55	1	1	1	1
2	A-PL-RK11-D-7	SOFTWARE LIST RK11-D	1	1	1	1
3	A-AL-RK11-D-6	ACCESSORY LIST RK11-D	1	1	1	1
4	A-PL-FP11-C-4	SHIPPING LIST FP11-C	1	1	1	1
5	A-PL-FP11-C-3	SOFTWARE LIST FP11-C	1	1	1	1
6	MAINDEC-DZZA-I-HB	RKDP DISK SOFTWARE KIT #1	1	1	1	1
7	MAINDEC-DZZB-I-HB	RKDP DISK SOFTWARE KIT #2	1	1	1	1
8	MAINDEC-DZQXA-H-D	RKDP OPERATOR MANUALS	1	1	1	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO
SHIPPING LIST 11T55	NONE	A	PL	11T55-Ø-1		
	SHEET 1 OF 1	DIST				

DEC FORM DEC 16 (375) 1031 N870