digital

11/34

Engineering Drawings

Digital Equipment Corporation

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
11/34-DC
11/34-DD
11/34-HC
11/34-HD
11/34-LC
11/34-LD
11/34-MC
11/34-MD

11/34 VOL 1

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØØ44

REVISIONS	REV.	CHG. NO.	DATE
	A	11/34-2	JUN 76
	B	11/34-3	SEP 76

USED ON OPTION/MODEL

SHEET 1 OF 1

DRN. D. HEALY	DATE 12 FEB 76	digital
CHK'D D. HEALY	DATE 24 FEB 76	TITLE: 11/34 FIELD MAINTENANCE PRINT SET (5.25)
PROJ. ENG. J. BLOEM	DATE 3 MAR 76	
FIELD SERV. R. EVANS	DATE 3 MAR 76	

SIZE	CODE	NUMBER	REV.
B	TC	11/34-0-1	B

DIST.

DRB 24

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
11/34-LH
11/34-LJ
11/34-DH
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11/34-MH
11/34-MJ
11/34-HH
11/34-HJ
11/34-LM
11/34-LN
11/34-DM
11/34-DN
11/34-MM
11/34-MN
11/34-HM
11/34-HN

11/34 VOL 2

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MP00082

REVISIONS		
REV.	CHG. NO.	DATE
A	11/34-2	JUN 76
B	11/34-3	SEP 76

USED ON OPTION/MODEL

SHEET I OF 1

DRN.	D. HEALY	DATE 25 FEB 76
CHK'D	D. HEALY	DATE 24 FEB 76
PROJ. ENG.	J. BLOEM	DATE 3 MAR 76
FIELD SERV.	R. EVANS	DATE 3 MAR 76

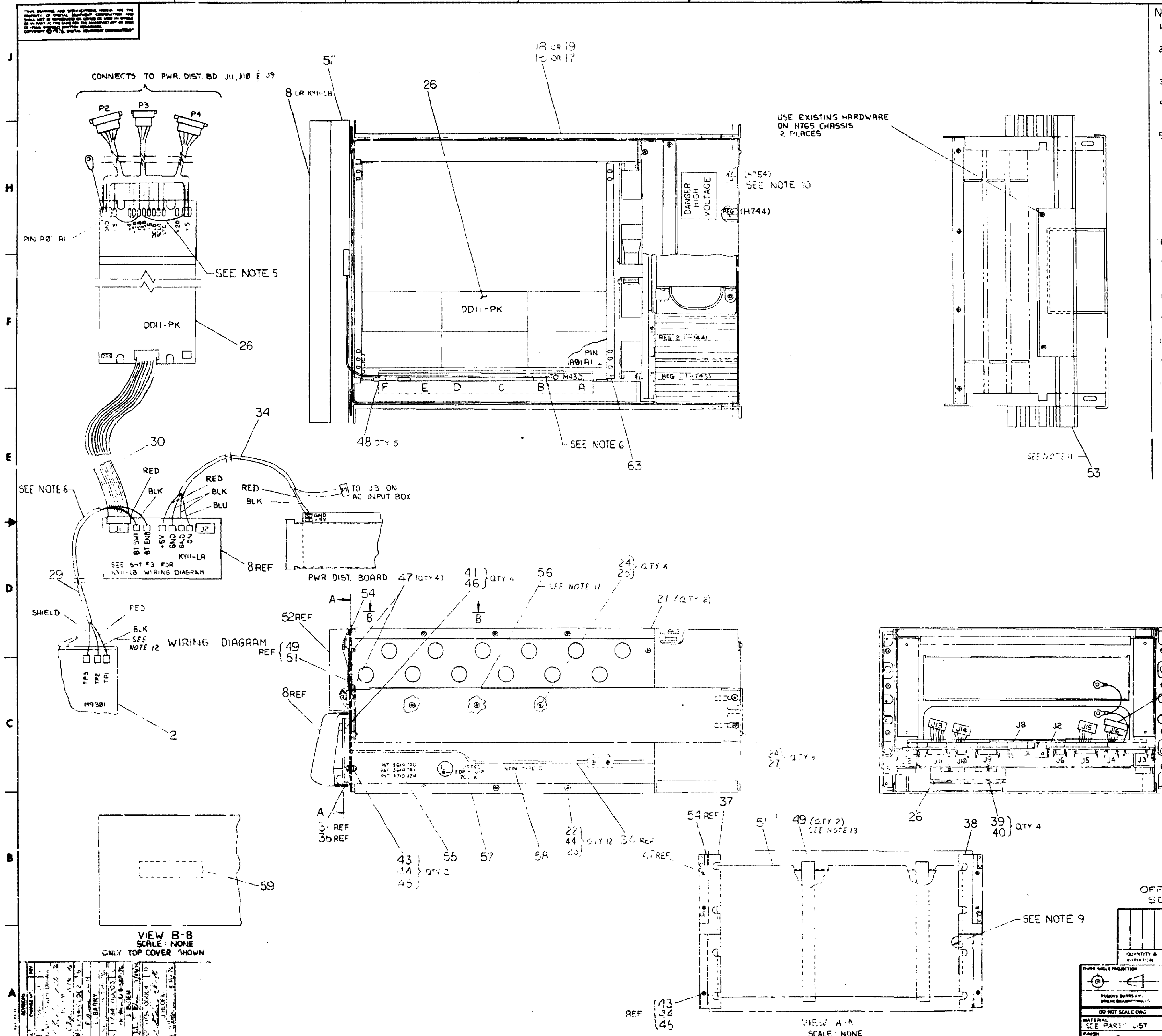
digital

TITLE: 11/34 FIELD MAINTENANCE PRINT SET (10.5)

SIZE	CODE	NUMBER	REV.
B	TC	11/34-Ø-2	B

DIST.

DRB 24



10½" 30X (BA11-K)

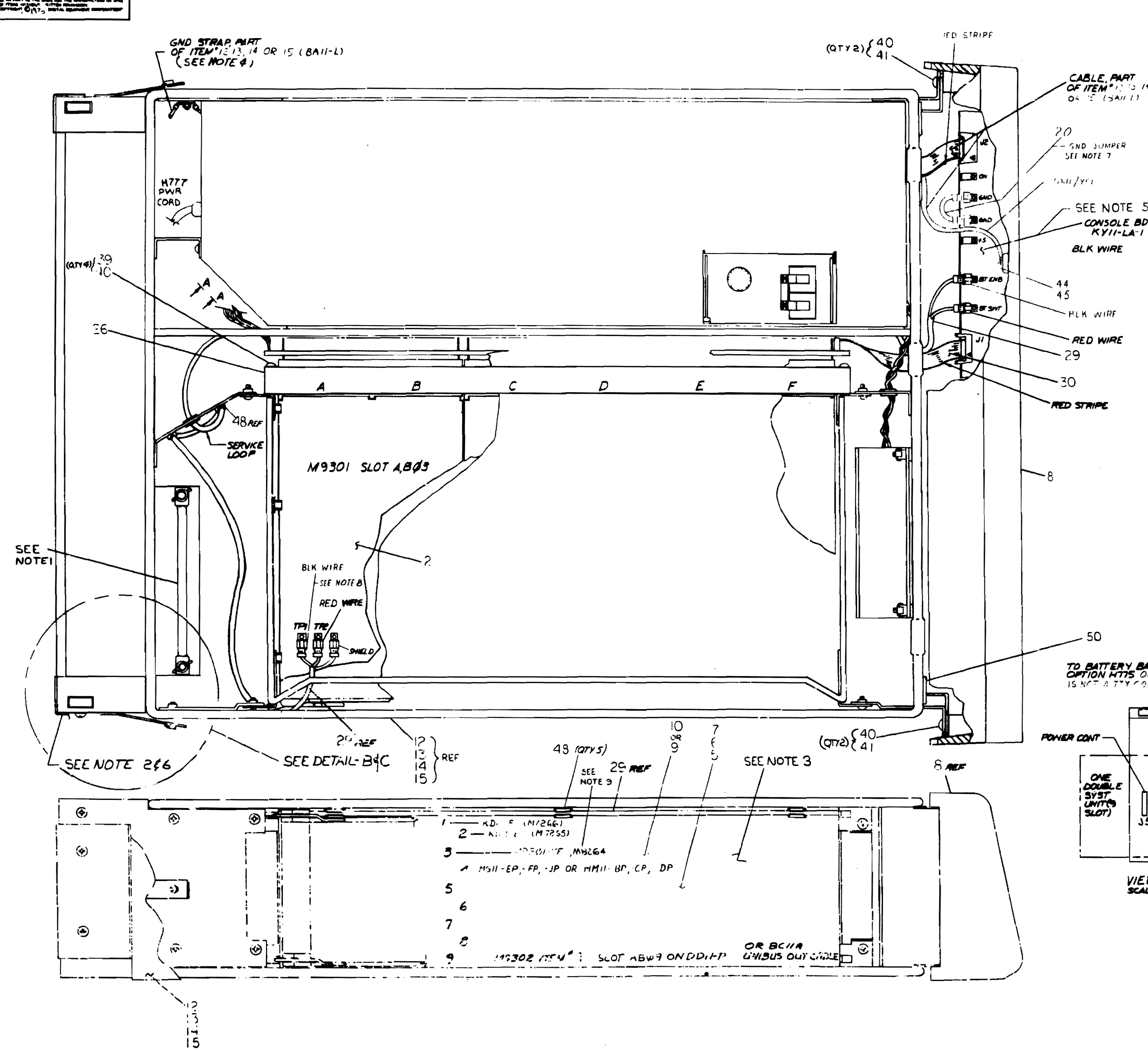
OFF SHEET PARTS LIST EXISTS
SEE C-PL-11/34-0

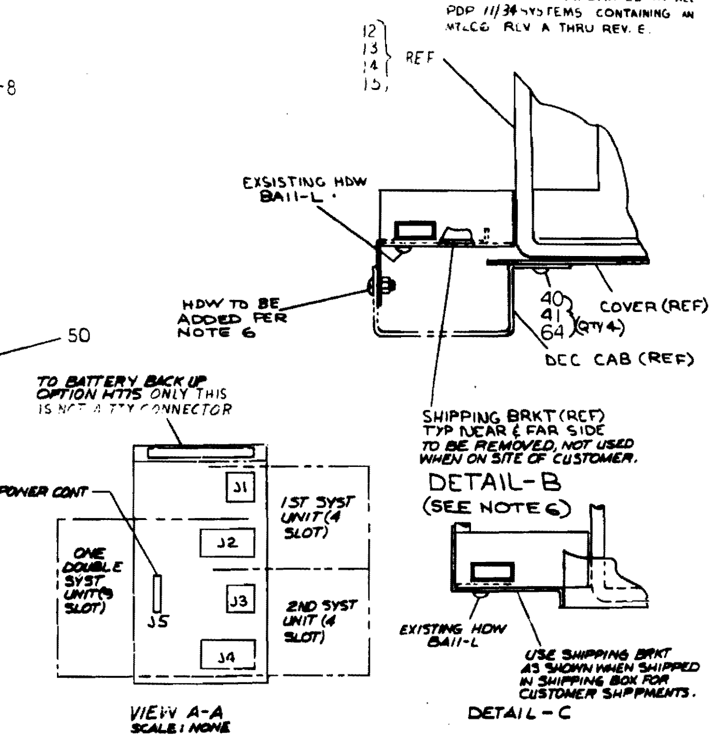
NOTES:

1. CAUTION: OFF SHEET PARTS LIST EXISTS SEE A-PL-11/34-0
2. SEE DD11-P MODULE UTILIZATION DRAWING FOR MODULE PLACEMENT INFORMATION
3. FOR ADDITIONAL INFORMATION REFER TO E-UA-BA11-K-0
4. TIGHTEN ALL SYSTEM UNIT MOUNTING SCREWS TO 13 IN LBS WITH A TORQUE SCREW DRIVER.
5. WHEN THE DD11-PK IS USED WITH A BA11-K EXPANSION BOX WITHOUT BATTERY BACK UP, INSTALL THE THREE JUMPERS SHOWN:
   1) -15 TO -15B
   2) +15 TO +15B
   3) +5 TO +5B

   USE # 20 INSULATED BUS WIRE ON SIDE 2. THIS WILL PROVIDE POWER TO THE MOS MEMORY VOLTAGE RAILS
6. LOOP THE M9301 CABLE ITEM # 29 UNDER THE CABLE HOLD DOWN BAR. (SERVICE LOOP)
7. TIE DOWN J16, PART OF ITEM # 16, WITH TWO TIE WRAPS (ITEM # 60) WHEN H754 IS NOT USED
8. GROUND THE BLK CHASSIS GROUND UNDER THE H744 MOUNTING SCREW.
9. CUTOUT IN FILTER ITEM # 51 FOR ROUTING OF CABLES ITEM # 34 & 29.
10. H754 REGULATOR AVAILABLE ONLY IN CORE MEMORY SYSTEMS.
11. ITEM 53 AND 56 ARE INSTALLED AT F.A. AND T.
12. IN PDP 11/34 SYSTEMS WITHOUT BATTERY BACKUP (OPTION H775) THE TP1 CONNECTION TO THE M9301 WILL CAUSE BOOTS ON ALL POWER RESTARTS. IF BOOTS ON POWER RESTARTS ARE NOT DESIRED, REMOVE THE TP1 CONNECTION INSULATE THE CABLE TERMINAL AND TIE IT BACK ON ITSELF WITH A T.E. WRAP.
13. REPLACE FOAM STRIPS WITH ITEM 49.

DESCRIPTION	DWG./PART NO. / ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
THIRD ANGLE PROJECTION	REMOVE BURRS AND BREAK SHARP CORNERS
DO NOT SCALE DWG	
FIRST USED ON	digital
TITLE	UNIT ASSY 11/34
NEXT HIGHER ASSY	3-00-11/34-0
MATERIAL	SEE PARTS LIST
SIZE	E
CODE	UA
NUMBER	11/34-0-0
SHEET	1 OF 3





LEGEND	
NUMBER	VARIATION
11/34-LC (115 V)	KD11-E, KY11-LA, M9302, M7850, M9301-YA, MS11-JP, DD11-PK, BA11-LC
11/34-LD (230 V)	KD11-E, KY11-LA, M9302, M7850, M9301-YA, MS11-JP, DD11-PK, BA11-LD
11/34-MC (115 V)	KD11-E, KY11-LA, M9302, M7850, M9301-YA, MM11-DP, DD11-PK, BA11-L
11/34-MD (230 V)	KD11-E, KY11-LA, M9302, M7850, M9301-YA, MM11-DP, DD11-PK, BA11-LE

NOTES: -

1. UNIBUS AND I/O CABLE HOLD DOWN BAR TO BE USED TO CLAMP ALL EXITING CABLES.
2. FOR RACK MOUNTING INSTRUCTION & DIM SEE DRAWING NO E-UA-BA11-L-0
3. FOR MODULE PLACEMENT RULES REFER TO DRAWING D-MU-LL11-02
4. DISCONNECT WRAP AROUND GROUND WIRE BEFORE REMOVING FROM ENCLOSURE.
5. FOR WIRING ... OF KY11-LB (PROGRAMMER CONSOLE) SEE SHEET 3 OF 3
6. FOR CAB MTG REMOVE SHIPPING BRKTS AND INSTALL AS SHOWN IN DETAIL "B" USING 2 #10-32X.50 TRUSS HD SCREWS & 2 #10-32 KEP (TYP BOTH SIDES) PLUS EXSISTING HDW AS INDICATED IN DETAIL "B".
7. THIS JUMPER IS REQUIRED ON ALL ... REV. F (KY11-LA CONSOLE) MODULES USED IN BA11-L BOXES.
8. IN PDP 11/34 SYSTEMS WITHOUT BATTERY BACKUP (OPTION H775) THE TP1 CONNECTION TO THE M9301 WILL CAUSE BOOTS ON ALL POWER RESTARTS. IF BOOTS ON POWER RESTARTS ARE NOT DESIRED, REMOVE THE TP1 CONNECTION, INSULATE THE CABLE TERMINAL AND TIE IT BACK ON ITSELF WITH A TIE WRAP.
9. AN M8264 NO SACK TIMEOUT MODULE MUST BE INCORPORATED IN ALL PDP 11/34 SYSTEMS CONTAINING AN M7266 REV A THRU REV. E.

5 1/4 BOX (BA11-L)

THIRD ANGLE PROJECTION

DO NOT SCALE DWG

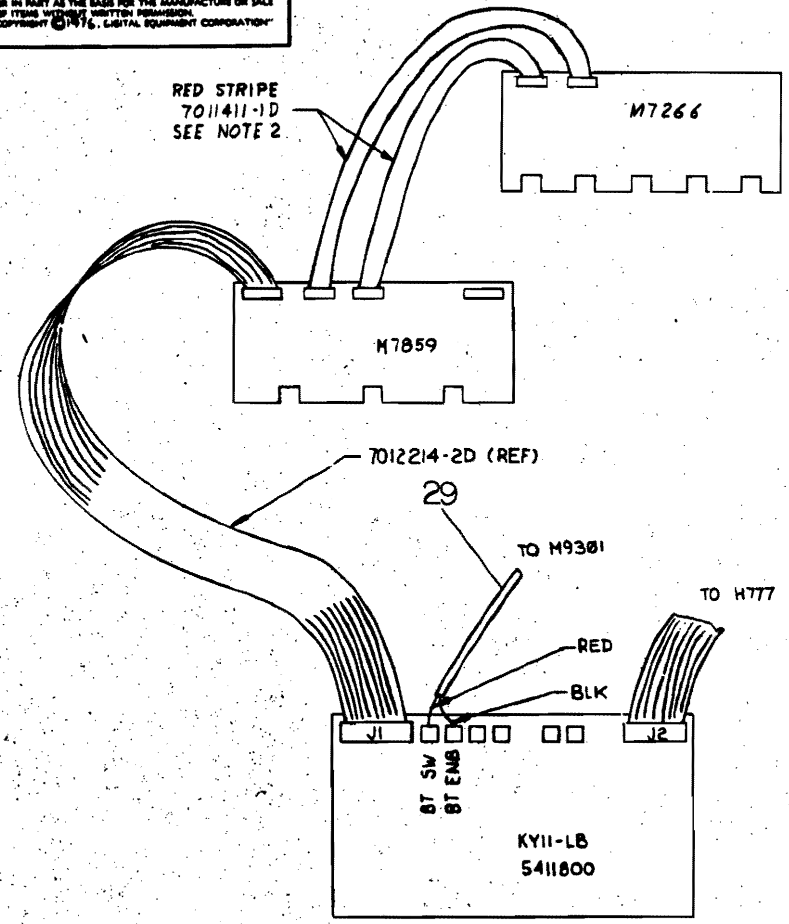
MATERIAL: SEE PARTS LIST

FIRST USED ON: 11/34

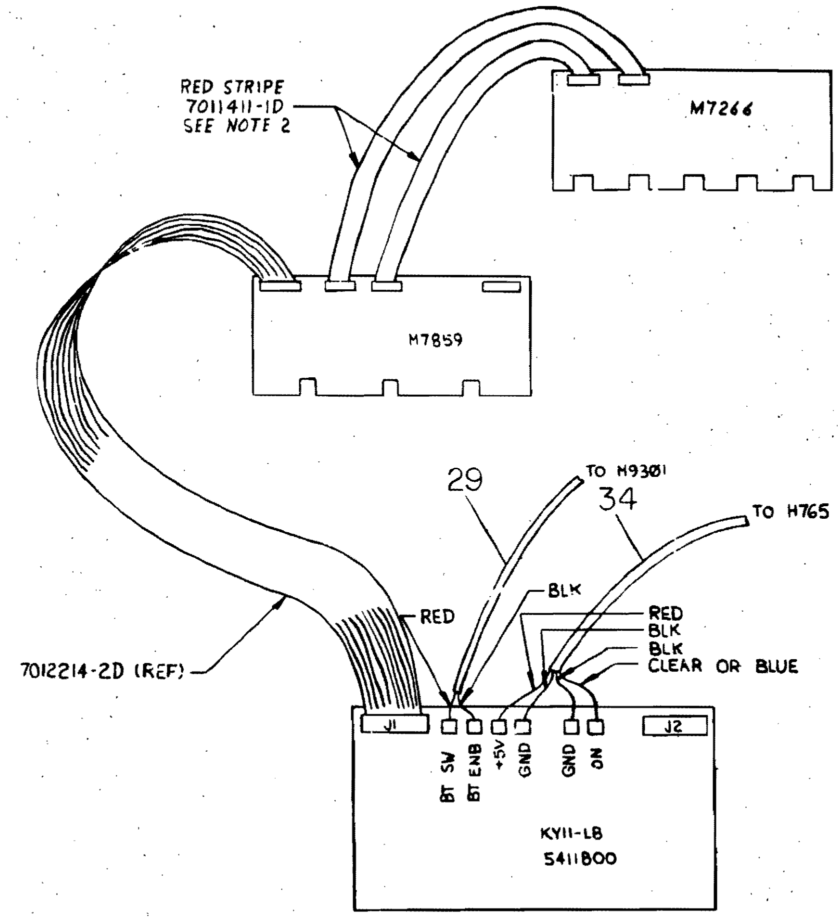
TITLE: UNIT ASS'Y 11/34

SIZE: E | CODE: UA | NUMBER: 11/34-0-0

WIRING DIAGRAMS FOR KY11-LB



BA11-L
5 1/4" MTG BOX



BA11-K
10 1/2" MTG BOX

NOTES:

1. THE M7859 PROGRAMERS CONSOLE INTERFACE MODULE, WHEN USED, MUST BE INSTALLED IN THE CPU BACKPLANE. IT IS AN SPC MODULE.
2. THESE CABLES ARE TO BE INSTALLED DURING MAINTENANCE ONLY.

TITLE	SIZE	CODE	NUMBER	REV.
UNIT ASSY 11/34	D	UA	11/34-0-0	D

SCALE — SHEET 3 OF 3

ITEM NO.	DRAWING NO.	DESCRIPTION	11/34-DC	11/34-DD	11/34-HC	11/34-HD	11/34-LC	11/34-LD	11/34-MC	11/34-MD		11/34-LH	11/34-LJ	11/34-DH	11/34-DJ	11/34-MH	11/34-MJ	11/34-HH	11/34-HJ	11/34-LM	11/34-LN	11/34-DM	11/34-DN	11/34-MM	11/34-MN	11/34-HM	11/34-HN
1	A-PL-KD11-E-Ø	11/34 CPU (M7266, M7265)	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	D-CS-M93Ø1-YF-1	TERM/BOOT	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
~~3~~	~~D-CS-M93Ø1-YB-1~~	~~TERM/BOOT (END USER)~~	~~-~~	~~-~~	~~-~~	~~-~~						~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~
4	D-CS-M93Ø2-Ø-1	UNIBUS TERMINATOR / SACK TURN AROUND	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	B-CS-G727-Ø-1	GRANT CONTINUITY	6	6	6	6	5	5	5	5		5	5	6	6	5	5	6	6	4	4	5	5	4	4	5	5
6	A-PL-DL11-WA-0	SERIAL LINE/LINE CLOCK (DL11-W)	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1
7	D-CS-M785Ø-Ø-1	PARITY, MEMORY MODULE	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	D-UA-KY11-LA-Ø	CONSOLE, OPERATORS	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	A-PL-MS11-JP-Ø	MEMORY, MOS 16K PARITY (M7847)	1	1	-	-	2	2	-	-		2	2	1	1	-	-	-	-	2	2	1	1	-	-	-	-
10	D-UA-MM11-DP-Ø	MEMORY, CORE 16K PARITY	-	-	1	1	-	-	2	2		-	-	-	-	2	2	1	1	-	-	-	-	2	2	1	1
11	D-CS-M8264-Ø-1	NO SACK TIMEOUT *	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	E-UA-BA11-LC-Ø	MTG. BOX 5.25, MOS ONLY 115V	1	-	-	-	1	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	E-UA-BA11-LD-Ø	MTG. BOX 5.25, MOS ONLY 230V	-	1	-	-	-	1	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	E-UA-BA11-LA-Ø	MTG. BOX 5.25, CORE/MOS 115V	-	-	1	-	-	-	1	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	E-UA-BA11-LB-Ø	MTG. BOX 5.25, CORE/MOS 230V	-	-	-	1	-	-	-	1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	D-UA-BA11-KK-Ø	MOUNTING BOX 10 1/2, MOS ONLY 115V	-	-	-	-	-	-	-	-		1	-	1	-	-	-	-	-	1	-	1	-	-	-	-	-
17	D-UA-BA11-KL-Ø	MOUNTING BOX 10 1/2, MOS ONLY 230V	-	-	-	-	-	-	-	-		-	1	-	1	-	-	-	-	-	1	-	1	-	-	-	-
18	D-UA-BA11-KH-Ø	MOUNTING BOX 10 1/2, CORE ONLY 115V	-	-	-	-	-	-	-	-		-	-	-	-	1	-	1	-	-	-	-	-	1	-	1	-
19	D-UA-BA11-KJ-Ø	MOUNTING BOX 10 1/2, CORE ONLY 230V	-	-	-	-	-	-	-	-		-	-	-	-	-	1	-	1	-	-	-	-	-	1	-	1
20	C-IA-7012752-0-0	CABLE JUMPER (BA11-L)	1	1	1	1	1	1	1	1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	D-IA-7009768-0-0	COVER, CHASSIS	-	-	-	-	-	-	-	-		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
22	9006020-2	SCREW, PHL FLAT HD #6-32 x .25	-	-	-	-	-	-	-	-		12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
23	9007801	WASHER LOCK #6	-	-	-	-	-	-	-	-		12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
24	9006071-3	SCREW, PHL TRUSS HD #10-32 x .38 *	-	-	-	-	-	-	-	-		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
25	9007651	WASHER EXTERNAL TOOTH #10 *	-	-	-	-	-	-	-	-		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
26	A-PL-DD11-PK-Ø	BACKPLANE, 11/34 9 SLOT for L & K BOXES	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
27	9006565	NUT, KEPS #10-32 *	-	-	-	-	-	-	-	-		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
28	B-MU-DD11-P-2	MODULE UTILIZATION (DD11P)	REF	REF	REF	REF	REF	REF	REF	REF		REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
29	C-IA-7011413-3F-Ø	CABLE, EXTERNAL BOOT M93Ø1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30	C-IA-7011411-ØJ-Ø	CABLE, CONSOLE/(DD11PK for L or K BOX)	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34	D-IA-7011992-0-0	CONSOLE POWER HARNESS (K BOX)	-	-	-	-	-	-	-	-		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
~~35~~	~~D-IA-7008360-0-0~~	~~CABLE ASSY TTY (20 MA)~~	~~-~~	~~-~~	~~-~~	~~-~~						~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~-~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~
37	D-IA-7012185-1-0	MOUNTING BRACKET CONSOLE (K BOX LEFT)	-	-	-	-	-	-	-	-		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
38	D-IA-7012185-0-0	MOUNTING BRACKET CONSOLE (K BOX RIGHT)	-	-	-	-	-	-	-	-		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
39	9006043-3	SCR PHIL TRUSS HD 8-32 x 1.00	4	4	4	4	4	4	4	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
40	9008072	WASHER, EXT. TOOTH #8	12	12	12	12	12	12	12	12		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
41	9006037-3	SCR PHIL TRUSS HD 8-32 x .38	6	8	8	8	8	8	8	8		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
43	9008185	NUT, KEP #6		-	-	-	-	-	-	-		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
			BASIC 5¼ ←							→	BASIC 5¼	BASIC 10½ ←														→	BASIC 10½

REVISIONS			
REV.	CHANGE NO.	CHK	
A	11/34-00001 REVISED AND REDRAWN	J.R.	J. BLOEM 19 Mar 76
B	11/34-00002	P.B.	D. BARRY 1 JUNE 76
C	11/34-00003	J.C.	J. BLOEM 8 SEP 76
D	11/34-00004	R.W.	J. BLOEM 15 NOV 76

DEC FORM NO. DEC 110 A

DRN. R. Bengly	9 FEB 76	FIRST USED ON 11/34	digital
CHK'D D. Koenig	24 FEB 76	TITLE UNIT ASSY 11/34	
ENG. J. Bloem	3-4-76		
PROJ. ENG. J. Bloem	3-4-76		
PROD K. J. Woodall	4 MAR 76		
NEXT HIGHER ASSY. D-UA-11/34-0-0		SIZE C / CODE PL / NUMBER 11/34-0-0	REV. D
SCALE			
SHEET 1 OF 2		DIST.	

SIZE C CODE PL NUMBER 11/34-0-0 REV. D

ITEM NO.	DRAWING NO.	DESCRIPTION	11/34-DC	11/34-DD	11/34-HC	11/34-HD	11/34-LC	11/34-LD	11/34-MC	11/34-MD	11/34-LH	11/34-LJ	11/34-DH	11/34-DJ	11/34-MH	11/34-MJ	11/34-HH	11/34-HJ	11/34-LM	11/34-LN	11/34-DM	11/34-DN	11/34-MM	11/34-MN	11/34-HM	11/34-HN
44	9006658	WASHER, FLAT #6	1	1	1	1	1	1	1	1	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
45	9006022-1	SCR, PHL PAN HD #6-32 x 3/8	1	1	1	1	1	1	1	1	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
46	9006634	WASHER, LOCK #8	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
47	9006070-2	SCR, PHL FLAT HD 10-32 x .31	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
48	9009771-0	CLAMP, CABLE	5	5	5	5	5	5	5	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
49	1211336-02	TAPE	-	-	-	-	-	-	-	-	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
50	1212707	AIR FILTER BA11-L	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51	1212392-02	AIR FILTER BA11-K	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
52	D-UA-H95Ø-PB-Ø	COVER, 5 1/4" BEZEL	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
53	D-IA-7010059-0-0	SHIPPING BRACKET ASSY BA11-K *	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
54	1209224	LATCH, MOLDING	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
55	A-DC-7409478-0-0	DECAL, PATENT	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
56	D-PS-1211825-01-0	SLIDE, 3 POS. TILT *	-	-	-	-	-	-	-	-	1PR	1PR	1PR	1PR	1PR	1PR	1PR	1PR	1PR	1PR	1PR	1PR	1PR	1PR	1PR	1PR
57	A-DC-5309414-0-0	DECAL, UL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
58	A-DC-5309413-0-0	DECAL, NFPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
59	B-DC-7414727-0-0	DECAL STICKER 11/34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
60	9007880	TIE WRAP	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
61	1209340-00	CONNECTOR, DUMMY	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	1	1	1	1	-	-	-	-
63	A-DC-7415501-0-0	MODULE DECAL	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
64	9006660	WASH, FL .38 O.D.X. .19 I.D.X .03	4	4	4	4	4	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	A-SP-3700197-0-0	INPLANT PKG. INSTRUCTIONS	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66	A-SP-3700061-0-0	CUSTOM CUSHIONED PKG. INSTRUCTIONS	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67	A-SP-3700134-0-0	CUSHION CONSOLIDATED LOAD ASSY	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68	A-SP-3700235-0-0	INPLANT PKG. INSTRUCTIONS	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
69	A-SP-3700165-0-0	SKID LOAD PKG. INSTRUCTIONS	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
70	A-SP-3700169-0-0	CUSTOM CUSHIONED PKG. INSTRUCTIONS	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

* INSTALLED AT F.A.& T.

BASIC 5¼ ← → BASIC 5¼ | BASIC 10½ ← → BASIC 10½

REVISIONS: REV. | CHANGE NO. | CHK

DRN.	Q. Bagley 9 FEB 76
CHK'D	24 FEB 76
ENG.	3-4-76
PROJ. ENG.	3-4-76
PROD.	
NEXT HIGHER ASSY.	D-UA-11/34-0-0
SCALE	
SHEET	2 OF 2
FIRST USED ON	11/34
TITLE	UNIT ASSY 11/34
SIZE	C
CODE	PL
NUMBER	11/34-0-0
REV.	D
DIST.	

digital

SIZE C | CODE PL | NUMBER 11/34-0-0 | REV. D

DEC FORM NO.

digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

~~CUSTOMER PRINT SET INDEX~~

~~THIS IS PRINT SET~~

SEQUENCE SEQUENCE

FOR FIELD MAINTENANCE
PRINT SET REFER TO
B-TC-11/34-Ø-1 (5.25)
B-TC-11/34-Ø-2 (10.50)

5.25 BOX (BA11-L)

10.50 BOX (BA11-K)

UNIT VARIATIONS

VAR	TITLE	PRINT SET
11/34-DC	KD11-E,MS11-JP,BA11-LC,M785Ø, M93Ø1-YF,115V	
11/34-DD	KD11-E,MS11-JP,BA11-LD,M785Ø, M93Ø1-YF,230V	
11/34-[illegible]	KD11-E,MM11-DP,BA11-LA,M785Ø, M93Ø1-YF,115V	
11/34-HD	KD11-E,MM11-DP,BA11-LB,M785Ø, M93Ø1-YF,230V	
11/34-LC	11/34-DC & MS11-JP 115V	
11/34-LD	11/34-DD & MS11-JP 230V	
11/34-MC	11/34-HC & MM11-DP 115V	
11/34-MD	11/34-HD & MM11-DP 230V	
11/34-LH	11/34-DH & MS11-JP 115V	
11/34-LJ	11/34-DJ & MS11-JP 230V	
11/34-DH	KD11-E,MS11-JP,BA11-KK,M785Ø, M93Ø1-YF,115V	
11/34-DJ	KD11-E,MS11-JP,BA11-KL,M785Ø, M93Ø1-YF,230V	
11/34-MH	11/34-HH & MM11-DP 115V	
11/34-MJ	11/34-HJ & MM11-DP 230V	
11/34-HH	KD11-E,MM11-DP,BA11-KH,M785Ø, M93Ø1-YF, 115V	
11/34-HJ	KD11-E,MM11-DP,BA11-KJ,M785Ø, M93Ø1-YF,230V	
11/34-LM	11/34-DM & MS11-JP 115V	
11/34-LN	11/34-DN & MS11-JP 230V	
11/34-DM	KD11-E,MS11-JP,BA11-KK,M785Ø, M93Ø1-YF,DL11-W,115V	
11/34-DN	KD11-E,MS11-JP,BA11-KL,M785Ø, M93Ø1-YF,DL11-W,230V	

REVISIONS		
DATE	CHG. NO.	REV
3-76	11/34-1	—
ORIGINATED		
6-76	11/34-2	A
11-76	11/34-4	B

USED ON OPTION/MODEL

SHEET 1 OF 6

DRN. DATE

CHK'D. DATE

PROJ ENG. DATE 3/4/76

PROD. DATE 4-MAR 76

TITLE

UNIT ASSY 11/34

SIZE	CODE	NUMBER	REV
B	DD	11/34-0	B

DIST

DRB 106

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

~~CUSTOMER PRINT SET INDEX~~

~~THIS IS PRINT SET~~

SEQUENCE

FOR FIELD MAINTENANCE
PRINT SET REFER TO
B-TC-11/34-Ø-1 (5.25)
B-TC-11/34-Ø-2 (10.50)

SEQUENCE

10.50
BOX
(BA11-K)

UNIT VARIATIONS

VAR	TITLE	PRINT SET
11/34-MM	11/34-HM & MM11-DP 115V	
11/34-MN	11/34-HN,MM11-DP 230V	
11/34-HM	KD11-E,MM11-DP,BA11-KH,M785Ø,	
	M93Ø1-YF,DL11-W,115V	
11/34-HN	KD11-E,MM11-DP,BA11-KJ,M785Ø,	
	M93Ø1-YF,DL11-W,230V	

REVISIONS	REV	CHG. NO.	DATE

USED ON OPTION/MODEL		DRN.	DATE
		CHK'D.	DATE
		PROJ ENG.	DATE
		PROD.	DATE
		~~FIELD SERV.~~	~~DATE~~

SHEET 2 OF 6

TITLE			
UNIT ASSY 11/34			
SIZE	CODE	NUMBER	REV
B	DD	11/34-0	B
DIST			

DPR 106

1 — UNIT ASSY 11/34
E/D-UA-11/34-0-0
C-PL-11/34-0-0

2 — 11/34 CPU
B-DD-KD11-E

3 — UNIBUS
TERM BOOT STRAP
B-DD-M9301-Ø

4 — UNIBUS TERM
SACK TURNAROUND
D-CS-M9302-Ø-1

5 — GRANT CONTINUITY
B-CS-G727-Ø-1

6 — SERIAL LINE
LINE CLOCK (DL11-W)
D-CS-M7856-Ø-1

7 — PARITY
MEMORY MODULE
D-CS-M785Ø-Ø-1

8 — CONSOLE OPERATORS
B-DD-KY11-LA

9 — MEMORY, MOS
16K PARITY
B-DD-MS11-E

10 — MTG BOX
10 1/2
B-DD-BA11-K

11 — BACK PLANE
11/34 9 SLOT
B-DD-DD11-P

12 — BRACKET, BEZEL
MTG.
D-IA-7012185-0-0

13 — COVER PANEL
5 1/4 (H95Ø-P)
D-DI-H95Ø-Ø-1

14 — SHIPPING BRACKET
ASSY (BA11-K)
D-IA-7010059-0-0

15 — BOX, MTG 5.25
B-DD-BA11-L

16 — MEMORY CORE
16 K SENSE PARITY
B-DD-MM11-D

* 17 — INPLANT PKG.
INSTRUCTIONS
A-SP-3700197-0-0

* 18 — CUSTOM CUSHIONED
PKG. INSTR.
A-SP-3700061-0-0

* 19 — CUSHION CONSOLIDATED
LOAD ASSY
A-SP-3700134-0-0

** 20 — INPLANT PKG.
INSTRUCTIONS
A-SP-3700235-0-0

** 21 — SKID LOAD PKG.
INSTRUCTIONS
A-SP-3700165-0-0

** 22 — CUSTOM CUSHIONED
PKG. INSTR.
A-SP-3700169-0-0

* 23 — SHIPPING LIST
11/34 (5.25)
A-PL-11/34-0-3

** 24 — SHIPPING LIST
11/34 (10.5)
A-PL-11/34-0-4

* Used for 5.25 box (BA11-L) only
** Used for 10.50 box (BA11-K) only

TITLE	SHEET	SIZE	CODE	NUMBER	REV
UNIT ASSY 11/34	3 OF 6	B	DD	11/34-Ø	B

DEB 107

ELECTRICAL (SECTION 1)

CUSTOMER PRINT SET	REG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO. / FILE DATE
		1	D-UA-11/34-0-0	A	1	UNIT ASSY 11/34	
			B-MU-DD11-P-2		REF	MODULE UTILIZATION (DD11-P)	
			D-IA-7008360-0-0		1	CABLE T1Y	
			D-IA-7011992-0-0		1	CONSOLE POWER HARNESS	
			C-IA-7011413-0-0		1	CABLE, EXTERNAL BOOT	
			C-IA-7011411-0-0		1	CABLE, CONSOLE, BACKPLANE	
		2	B-DD-KD11-E		2	11/34 CPU	
		3	B-DD-M93Ø1-Ø			UNIBUS TERMINATOR BOOT STRAP	
		4	D-CS-M93Ø2-Ø-1		2	UNIBUS TERM. SACK TURN AROUND	
			B-CS-G727-Ø-1		1	GRANT CONTINUITY	

ELECTRICAL (SECTION 1)

CUSTOMER PRINT SET	REG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO. / FILE DATE
		6	D-CS-M7856-Ø-1		9	SERIAL LINE/LINE CLOCK (DL11-W)	
		7	D-CS-M785Ø-Ø-1		3	PARITY MEMORY MODULE	
		8	B-DD-KY11-LA		2	CONSOLE OPERATORS	
		9	B-DD-MS11-E		2	MEMORY MOS 16K PARITY	
		10	B-DD-BA11-K		4	MTG BOX 10 1/2	
		11	B-DD-DD11-P		3	BACK PLANE 11/34 9 SLOT	
		15	B-DD-BA11-L		4	BOX, MTG 5.25	
		16	B-DD-MM11-D		2	MEM CORE, 16K SENSE PARITY	

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

TITLE	SHEET	SIZE	CODE	NUMBER	REV
UNIT ASSY 11/34	4 OF 6	B	DD	11/34-0	B

CRB 108

MECHANICAL (SECTION 2)

FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION
1	MP00044		REF	PRINT SET ORDER NO. 5.25
	B-TC-11/34-Ø-1		REF	FIELD MAINTENANCE PRINT SET 5.25
	MPØØØ82		REF	PRINT SET ORDER NO. 10.50
	B-TC-11/34-Ø-2		REF	FIELD MAINTENANCE PRINT SET 10.50
	D-UA-11/34-Ø-Ø	A	3	UNIT ASSY 11/34
	C-PL-11/34-Ø-Ø	A	2	UNIT ASSY 11/34 (PL)
	D-IA-7011992-0-0		1	CONSOLE, POWER HARNESS
	A-DC-7409478-0-0		1	DECAL, PATENT
	A-DC-5409413-0-0		1	DECAL, NFPA
	B-DC-7414727-0-0		1	DECAL, STICKER 11/34
	C-IA-7011413-0-0		1	CABLE, EXTERNAL BOOT M93Ø1
	C-IA-7011414-0-0		1	CABLE, CONSOLE/BACKPLANE
	A-DC-5309414-0-0		1	DECAL, UL
	D-IA-7008860-0-0		1	CABLE, TTY
	A-DC-7415501-0-0		1	DECAL, MODULE

MECHANICAL (SECTION 2)

FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION
2	B-DD-KD11-E		2	11/34 CPU
3	B-DD-M93Ø1-Ø			UNIBUS TERMINATOR BOOT STRAP
4	D-CS-M93Ø2-Ø-1		2	UNIBUS TERM. SACK TURN AROUND
	K-CO-M93Ø2-Ø-4		-	X-Y COORDINATE HOLE LOCATION
	D-AH-M93Ø2-Ø-5		1	ASSY/DRILLING HOLE LAYOUT
	B-MH-M93Ø2-Ø-6		1	MODULE ECO HISTORY
	5011311		REF	ETCHED CIRCUIT BOARD
5	B-CS-G727-Ø-1		1	GRANT CONTINUITY
6	D-CS-M7856-Ø-1		9	SERIAL LINE/LINE CLOCK (DL11-W)
	K-CO-M7856-Ø-4		-	X-Y COORDINATE HOLE LOCATION
	D-AH-M7856-Ø-5		1	ASSY/DRILLING HOLE LAYOUT
	B-MH-M7856-Ø-6		1	MODULE ECO HISTORY
	5011464		REF	ETCHED CIRCUIT BOARD
7	D-CS-M785Ø-Ø-1		3	PARITY MEMORY MODULE
	K-CO-M785Ø-Ø-4		-	X-Y COORDINATE HOLE LOCATION
	D-AH-M785Ø-Ø-5		1	ASSY/DRILLING HOLE LAYOUT
	B-MH-M785Ø-Ø-6		1	MODULE ECO HISTORY
	5010651		REF	ETCHED CIRCUIT BOARD
8	B-DD-KY11-LA		2	CONSOLE OPERATORS

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: UNIT ASSY 11/34 | SHEET 5 OF 6 | SIZE B | CODE DD | NUMBER 11/34-0 | REV B

MECHANICAL (SECTION 2)

FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
9	B-DD-MS11-E		2	MEMORY MOS 16K PARITY	
10	B-DD-BA11-K		4	MTG BOX 10 1/2	
11	B-DD-DD11-P		3	BACK PLANE 11/34 9 SLOT	
12	D-IA-7012185-0-0		1	BRACKET, BEZEL MTG. (K BOX)	
	C-MD-7415353-0-0		1	BRACKET, MTG	
	C-MD-7415352-0-0		1	BRACKET, MTG	
13	D-DI-H95Ø-Ø-1		1	COVER PANEL 5 1/4 (H95Ø-P)	
14	D-IA-7010059-0-0		1	SHIPPING BRACKET ASSY (BA11-K)	
	C-MD-7412190-0-0		1	SHIPPING BRACKET PT1	
	D-MD-7412131-0-0		1	SHIPPING BRACKET PT2	
15	B-DD-BA11-L		4	BOX, MTG 5.25	
16	B-DD-MM11-D		2	MEMORY CORE 16K SENSE PARITY	

MECHANICAL (SECTION 2)

FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
17	A-SP-3700235-0-0		3	INPLANT PKG. INSTRUCTIONS	
	A-PS-9905650-0-0		2	REGULAR SLOTTED CARTON	
	A-PS-9905889-0-0		2	BEZEL PROTECTOR	
	A-PS-9905644-0-0		2	REAR PAD	
	A-PS-9905323-0-0		2	LAMINATED SADDLE	
	A-PS-9905129-0-0		4	POLY BAG	
18	A-SP-3700165-0-0		4	SKID LOAD PKG. INSTRUCTIONS	
	A-PS-1210568-01-0		2	CUSHIONED SKID	
	A-PS-9905445-0-0		2	HALF OVERLAP SLOTTED CARTON (TOP)	
	A-PS-9905419-0-0		2	FLANGED TUBE (BOTTOM)	
19	A-SP-3700169-0-0		2	CUST. CUSHIONED PKG. INSTRUCTIONS	
	A-PS-9905645-0-0		2	FULL TELESCOPE	
	A-PS-9905642-0-0		2	FOAM, PAD	
	A-PS-9905643-0-0		2	FOAM/CORRUGATED SIDE WALL ASSY	
20	A-SP-3700197-0-0		3	INPLANT PKG. INSTRUCTIONS	
	A-PS-9905418-0-0		2	REGULAR SLOTTED CARTON	
	A-PS-9905754-0-0		2	BEZEL PROTECTOR	
	A-PS-9905755-0-0		2	LAMINATED SADDLE	
	A-PS-9905129-0-0		2	POLY BAG	
	A-PS-9905729-0-0		2	TAPE	
21	A-SP-3700061-0-0		4	CUSTOM CUSHIONED PKG. INSTR.	
22	A-SP-3700134-0-0		4	CUSHION CONSOLIDATED LOAD ASSY	
23	A-PL-11/34-0-3		1	SHIPPING LIST 11/34 (5.25)	
24	A-PL-11/34-0-4		1	SHIPPING LIST 11/34 (10.5)	

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

TITLE	SHEET	SIZE	CODE	NUMBER	REV
UNIT ASSY 11/34	6 OF 6	B	DD	11/34-0	B

DRB 108

digital

EN-01002-20-1-(972-(32)

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
KD11-E

KD11-E

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MP000043

REVISIONS	REV.	CHG. NO.	DATE

USED ON OPTION/MODEL	
11/34	

SHEET I OF 1

DRN.	D. HEALY	DATE	12/29/75
CHK'D	D. HEALY	DATE	12/29/75
PROJ. ENG.		DATE	2/3/76
FIELD SERV.		DATE	3/4/76

digital

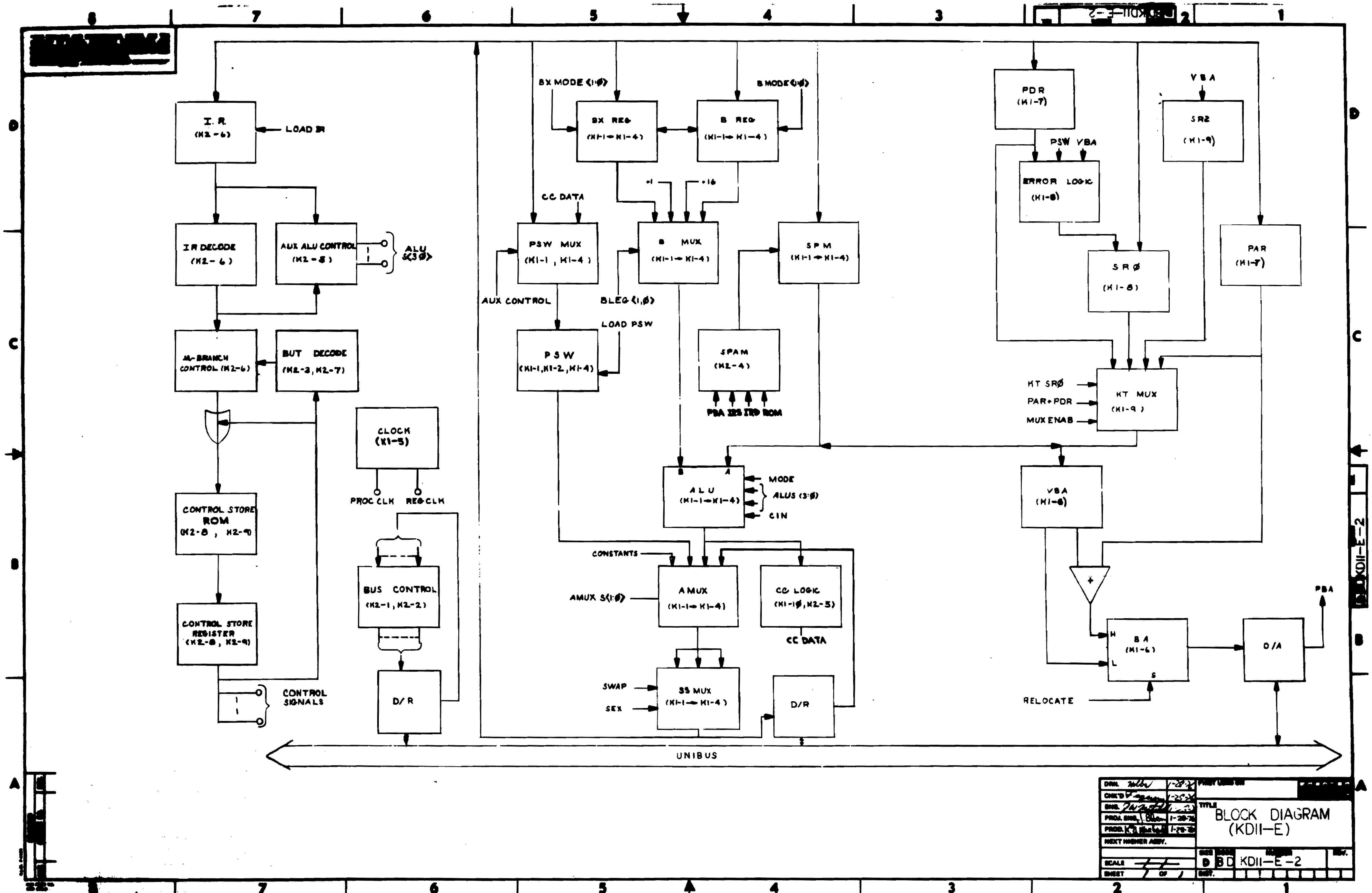
TITLE: FIELD MAINTENANCE PRINT SET KD11-E

SIZE	CODE	NUMBER	REV.
B	TC	KD11-E-3	

DIST.

EK-0136-16-MS-(22)

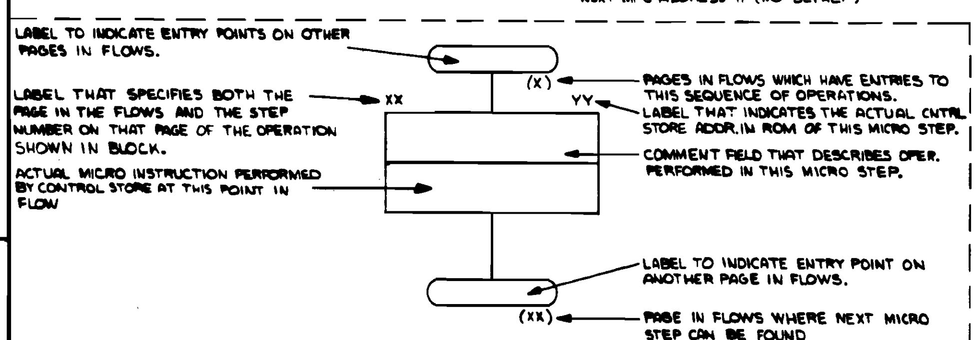
DRB 124


I. R. (K2-6)
LOAD IR
IR DECODE (K2-6)
AUX ALU CONTROL (K2-5)
ALU S(3:0)
μ-BRANCH CONTROL (K2-6)
BUT DECODE (K2-3, K2-7)
CONTROL STORE ROM (K2-8, K2-9)
CONTROL STORE REGISTER (K2-8, K2-9)
CONTROL SIGNALS
CLOCK (K1-5)
PROC CLK
REG CLK
BUS CONTROL (K2-1, K2-2)
D/R
BX MODE (1:0)
BX REG (K1-1 → K1-4)
B REG (K1-1 → K1-4)
B MODE (1:0)
+1
+16
CC DATA
PSW MUX (K1-1, K1-4)
B MUX (K1-1 → K1-4)
SPM (K1-1 → K1-4)
AUX CONTROL
BLEG (1,0)
LOAD PSW
PSW (K1-1, K1-2, K1-4)
SPAM (K2-4)
PBA 325 370 ROM
ALU (K1-1 → K1-4)
MODE
ALUS (3:0)
CIN
CONSTANTS
AMUX (K1-1 → K1-4)
AMUX S(1:0)
CC LOGIC (K1-10, K2-5)
CC DATA
SWAP
SEX
SS MUX (K1-1 → K1-4)
D/R
UNIBUS
PDR (K1-7)
VBA
SR2 (K1-9)
PSW VBA
ERROR LOGIC (K1-8)
SR0 (K1-8)
PAR (K1-7)
KT SR0
PAR+PDR
MUX ENAB
KT MUX (K1-9)
VBA (K1-6)
+
BA (K1-6)
H
L
S
RELOCATE
D/A
PBA
BLOCK DIAGRAM (KDII-E)
D BD KDII-E-2
KDII-E-2

KD11-E CONTROL WORD

INTEGRATED CIRCUIT DESIGNATION	E118				E117				E116				E115				E114				E96				E94				E95				E97				E112				E111				E113			
BIT	Ø	1	2	3	4	5	6	7	8	9	1Ø	11	12	13	14	15	16	17	18	19	2Ø	21	22	23	24	25	26	27	28	29	3Ø	31	32	33	34	35	36	37	38	39	4Ø	41	42	43	44	45	46	47
NORMAL CONDITION OF EACH BIT	x	x	x	x	x	x	x	x	x	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	1	Ø	1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	Ø	Ø	Ø	1	1	1	1	Ø	Ø	Ø	Ø	Ø	Ø

- ROM SPA H (R17)
- FORCE KERNEL H (NOP)
- BUT SERVICE H (NOP)
- PREVIOUS MODE L (NOP)
- FORCE RS V I L (NOP)
- SPA DST SEL H (RBA)
- SPA SRC SEL H (ROM)
- BUT BITS (NOP)
- AMUX CONTROL H (ALU)
- SSMUX CONTROL H (STRT)
- B,BX,OVX,DBE CONTROL H (HOLD)
- ALU,BLEG CONTROL H (A)
- AUX CONTROL H (NOP)
- LONGCYCLE L (SHORT)
- LOAD BAR (NOP)
- ENAB MAINT H (NOP)
- BUS CONTROL H (DATI)
- DATA TRAN H (NO TRANS)
- MISCELLANEOUS CONTROL H (NOP)
- NEXT MPC ADDRESS H (NO DEFALT)



DEFINITION OF FLOW SYMBOLS

MISC. CONTROL

OPERATION	MISC 9	MISC 1Ø	MISC 11
NOP	Ø	Ø	Ø
LOAD IR	Ø	Ø	1
LOAD PSW	Ø	1	Ø
LOAD CC	Ø	1	1
BUT DEST	1	Ø	Ø
ENAB STOV	1	Ø	1
LOAD CNT	1	1	Ø
COUNT	1	1	1

BUS CONTROL

OPERATION	CNTRL 13	CNTRL 14
DATI	Ø	Ø
DATIP	Ø	1
DATO	1	Ø
DATOB		1

ALU/BLEG CONTROL

ALU FUNCTION	ALU/BLEG CNTRL 19	2Ø	21	22	23
ZERO	Ø	Ø	Ø	Ø	Ø
ABAR	Ø	Ø	Ø	Ø	1
A+1	Ø	Ø	Ø	1	Ø
A-1	Ø	Ø	Ø	1	1
A-3	Ø	Ø	1	Ø	Ø
A	Ø	Ø	1	Ø	1
B	Ø	Ø	1	1	Ø
ONE BAR	Ø	Ø	1	1	1
A+B	Ø	1	Ø	Ø	Ø
A·B	Ø	1	Ø	Ø	1
ABAR·B	Ø	1	Ø	1	Ø
AVB	Ø	1	Ø	1	1
A⊕B	Ø	1	1	Ø	Ø
A·BBAR	Ø	1	1	Ø	1
K16	Ø	1	1	1	Ø
A+B+1	1	Ø	Ø	Ø	Ø
A+BX	1	Ø	Ø	Ø	1
A-BX	1	Ø	Ø	1	Ø
A+BX+1	1	Ø	Ø	1	1
A+2	1	Ø	1	Ø	Ø
A-2	1	Ø	1	Ø	1
A+A	1	Ø	1	1	Ø
BX	1	Ø	1	1	1
BBAR	1	1	Ø	Ø	Ø
BX BAR	1	1	Ø	Ø	1
A+A+1	1	1	Ø	1	Ø

B,BX,OVX,DBE CONTROL

OPERATION	B,BX CNTRL 24	25	26	27
HOLD	Ø	Ø	Ø	Ø
LOAD B	Ø	Ø	Ø	1
LOAD BX	Ø	Ø	1	Ø
SL(BX-Ø),LDB	Ø	Ø	1	1
SL(BX-COUT),LDB	Ø	1	Ø	Ø
SL(BX-1),LDB	Ø	1	Ø	1
SL(B-Ø)	Ø	1	1	Ø
SL(B-Ø),LDBX	Ø	1	1	1
SL(B-BX15)	1	Ø	Ø	Ø
SL(BX-Ø)	1	Ø	Ø	1
SL(BX-1)	1	Ø	1	Ø
SL(BX-OVX)	1	Ø	1	1
SL(BX-COUT)	1	1	Ø	Ø
SL(B-BX-Ø)	1	1	Ø	1
SR(B15-B-BX)	.	1	1	Ø
ENAB DBE	1	1	1	1

AMUX CONTROL

SELECT	AMUX 3Ø	AMUX 31
PSW	Ø	Ø
ALU	Ø	1
VECT	1	Ø
UBUS	1	1

SS MUX CONTROL

SELECT	SS 28	SS 29
STRT	Ø	Ø
SEX	Ø	1
SWAB	1	Ø
EXTRNL	1	1

BUT BITS

BRANCH COND.	BITS 32	33	34	35
NOP	Ø	Ø	Ø	Ø
N BIT	Ø	Ø	Ø	1
Z BIT	Ø	Ø	1	Ø
CØ5	Ø	Ø	1	1
IR9	Ø	1	Ø	Ø
BXØØ	Ø	1	Ø	1
BXØ1	Ø	1	1	Ø
COUT	Ø	1	1	1
SP15	1	Ø	Ø	Ø
NBIT + ZBIT	1	Ø	Ø	1
BXØØ + SP15	1	Ø	1	Ø
BXØ1 + BXØØ	1	Ø	1	1
CØ5 + BXØ1 + BXØØ	1	1	Ø	Ø
NBIT + CØ5	1	1	Ø	1
BXØØ + CØ5	1	1	1	Ø
ALL	1	1	1	1

SPA SRC SEL

FIELD SEL.	SPA SRC SEL 36	37
ROM	Ø	Ø
RS	Ø	1
RD	1	Ø
RBA	1	1

SPA DST SEL

FIELD SEL.	SPA DST SEL 38	39
ROM	Ø	Ø
RS	Ø	1
RD	1	Ø
RBA	1	1

ROM SPA LINES

REG. SELECTED	ROM SPA 44	45	46	47
RS	1	Ø	1	Ø
R6 (SP)	1	Ø	Ø	1
R7 (PC)	1	Ø	Ø	Ø
R1Ø	Ø	1	1	1
R11	Ø	1	1	Ø
R12	Ø	1	Ø	1
R13	Ø	1	Ø	Ø
R14	Ø	Ø	1	1
R15	Ø	Ø	1	Ø
R16	Ø	Ø	Ø	1
R17	Ø	Ø	Ø	Ø

A "1" IN THE TABLES SHOWN INDICATES A LOGIC "1" ROM OUTPUT BETWEEN +2.4 VOLTS AND +5.Ø VOLTS.
A "Ø" IN THE TABLES SHOWN INDICATES A LOGIC "Ø" ROM OUTPUT BETWEEN Ø.Ø VOLTS AND +Ø.4 VOLTS.
NOTE THAT ALL LEVELS SHOWN REPRESENT ACTUAL CONTROL STORE ROM OUTPUTS.

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

DIMENSIONAL TOLERANCE — DIMENSIONS ARE MILLIMETERS / INCHES UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
X.XX = ±0,10 X.X = ±0,5 X = ±2,	.XXX = ±.005 .XX = ±.02 .X = ±.1	

THIRD ANGLE PROJECTION — REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —/—
FINISH —/—

NEXT HIGHER ASSY.
SCALE —/—
SHEET 1 OF 26

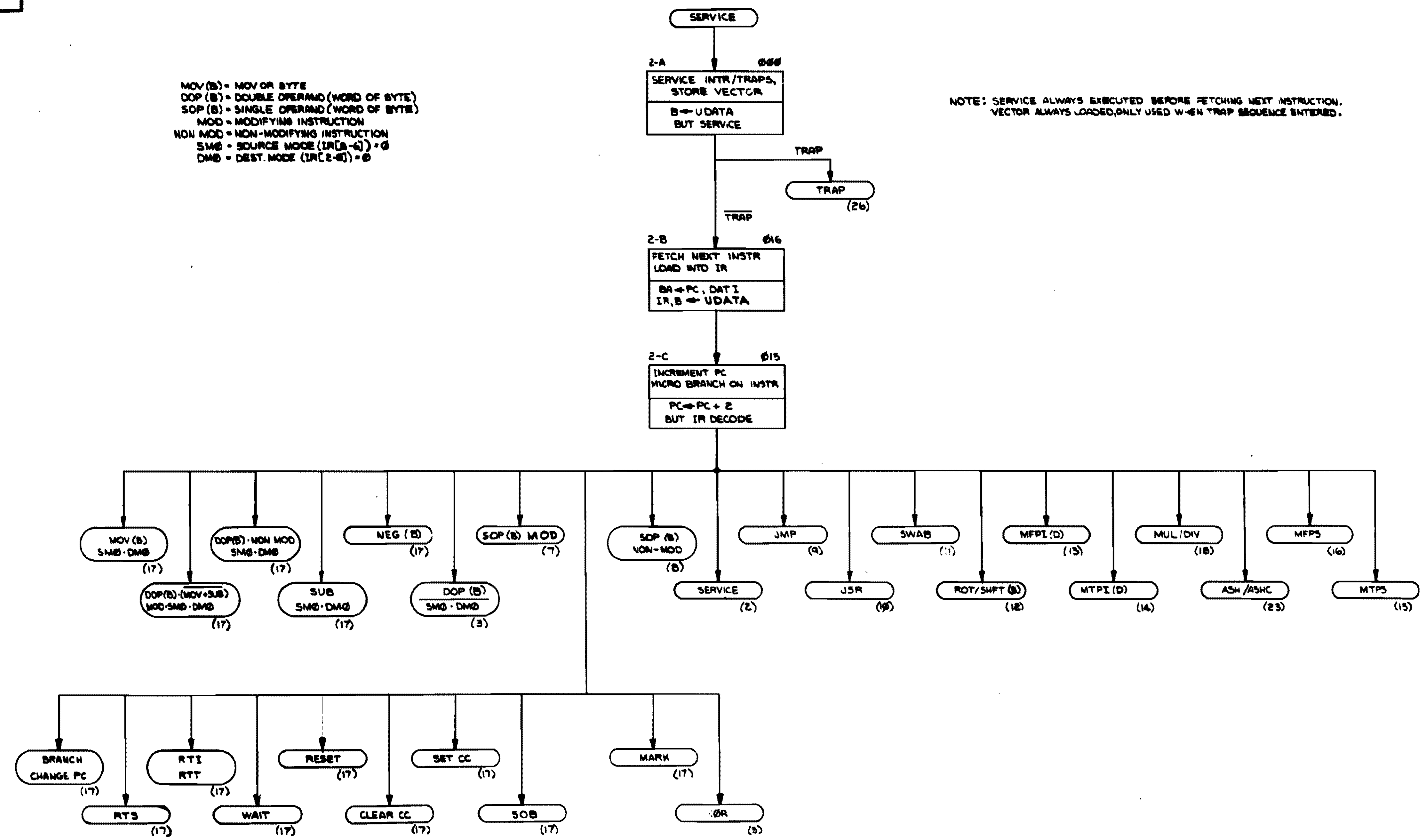
TITLE: KD11E FLOW DIAGRAMS

SIZE	CODE	NUMBER	REV.
D	FD	KD11-E-1	

D FD KD11-E-1

MOV (B) = MOV OR BYTE
DOP (B) = DOUBLE OPERAND (WORD OF BYTE)
SOP (B) = SINGLE OPERAND (WORD OF BYTE)
MOD = MODIFYING INSTRUCTION
NON MOD = NON-MODIFYING INSTRUCTION
SMØ = SOURCE MODE (IR[8-6]) = Ø
DMØ = DEST. MODE (IR[2-Ø]) = Ø

NOTE: SERVICE ALWAYS EXECUTED BEFORE FETCHING NEXT INSTRUCTION.
VECTOR ALWAYS LOADED, ONLY USED WHEN TRAP SEQUENCE ENTERED.



TITLE	SIZE	CODE	NUMBER	REV.
KD11E FLOW DIAGRAMS	D	FD	KD11-E-1	
SCALE	SHEET 2 OF 26			

DOP
SM∅, DM∅
(2)

SM∅ SM1 SM4 SM2 SM3 SM5 SM6 SM7

XOR
(2)

3-A 110
SOURCE OPERAND TO R12 AND BREG
R12, B ← RS BUT DEST

IF BYTE INSTRUCTION & NOT R6 OR R7, DECREMENT RSRC BY ONE IF NOT BYTE, DECREMENT RSRC BY TWO

3-C 114
DECREMENT RSRC ENAB STACK OVERFLOW
RS ← RS − (2)
ENAB STOV

3-B 111
FETCH SOURCE OPERAND
BA ← RS, DATI
R12, B ← (UDATA)
BUT DEST

3D 112
FETCH SOURCE OPERAND
BA ← RS DATI
R12, B ← (UDATA)

3-F 205
INCREMENT RSRC
RS ← RS + (2)
BUT DEST

IF BYTE INSTRUCTION & NOT R6 OR R7, INCREMENT RSRC BY ONE. IF NOT BYTE, INCREMENT RSRC BY TWO.

3P 113
FETCH SOURCE ADDRESS
BA ← RS, DATI
R12 ← UDATA

3Q 206
INCREMENT RSRC
RS ← RS + 2

3-H 115
DECREMENT RSRC ENAB STACK OVERFLOW
RS ← RS − 2
ENAB STOV

3-I 207
FETCH SOURCE ADDR
BA ← R12, DATI
R12 ← UDATA

3-J 211
FETCH SOURCE OPERAND
BA ← R12, DATI
R12, B ← (UDATA)
BUT DEST

3-K 118
FETCH INDEX DATA
BA ← PC, DATI
B ← UDATA

3-L 212
INCREMENT PC
PC ← PC + 2

3M 213
DETERMINE SOURCE ADDR
R12 ← RS + B

3-N 117
FETCH INDEX DATA
BA ← PC, DATI
B ← UDATA

3-O 214
INCREMENT PC
PC ← PC + 2

3-P 215
DETERMINE ADDR OF SOURCE ADDR
R12 ← RS + B

3-Q 216
FETCH SOURCE ADDR
BA ← R12, DATI
R12 ← UDATA

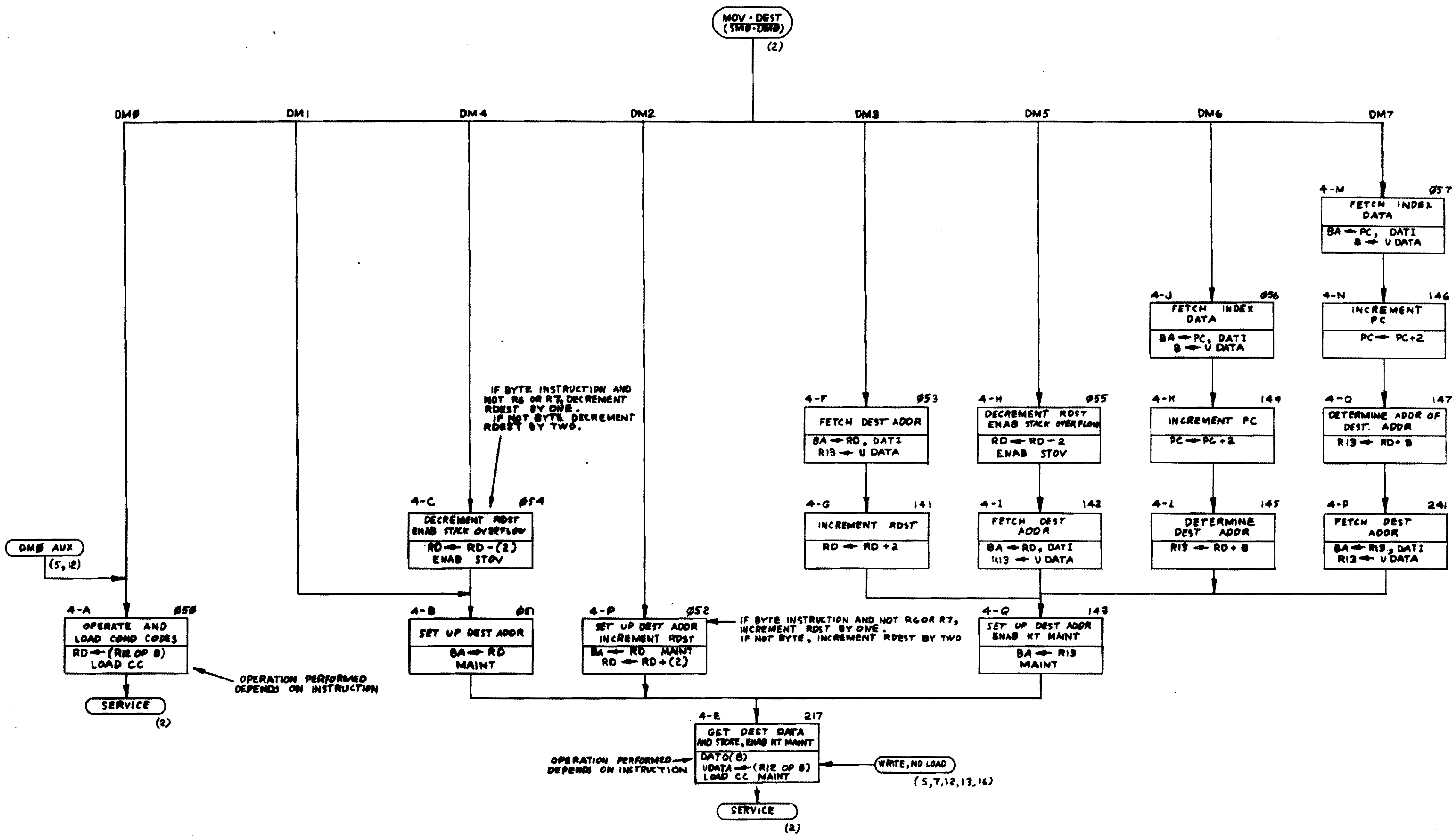
MOV DEST
(SM∅ ← DM∅)
(4)

DOP DEST
MOD(B) • SUB
(5)

DOP DEST
NON MOD
(6)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: KDIIE FLOW DIAGRAMS
SCALE: —
SHEET 3 OF 26
DIGITAL D FD KD11-E-1 REV.


MOV • DEST (SMF-DMF) (2)
DM0
DM1
DM4
DM2
DM3
DM5
DM6
DM7
4-M 057 FETCH INDEX DATA
BA ← PC, DATI B ← U DATA
4-N 146 INCREMENT PC
PC ← PC+2
4-J 056 FETCH INDEX DATA
BA ← PC, DATI B ← U DATA
4-F 053 FETCH DEST ADDR
BA ← RD, DATI R13 ← U DATA
4-H 055 DECREMENT RDST ENAB STACK OVERFLOW
RD ← RD - 2 ENAB STOV
4-K 144 INCREMENT PC
PC ← PC + 2
4-O 147 DETERMINE ADDR OF DEST. ADDR
R13 ← RD + B
IF BYTE INSTRUCTION AND NOT R6 OR R7, DECREMENT RDEST BY ONE. IF NOT BYTE, DECREMENT RDEST BY TWO.
4-C 054 DECREMENT RDST ENAB STACK OVERFLOW
RD ← RD - (2) ENAB STOV
4-G 141 INCREMENT RDST
RD ← RD + 2
4-I 142 FETCH DEST ADDR
BA ← RD, DATI R13 ← U DATA
4-L 145 DETERMINE DEST ADDR
R13 ← RD + B
4-P 241 FETCH DEST ADDR
BA ← R13, DATI R13 ← U DATA
DM0 AUX (5,12)
4-A 050 OPERATE AND LOAD COND CODES
RD ← (R12 OP B) LOAD CC
OPERATION PERFORMED DEPENDS ON INSTRUCTION
SERVICE (2)
4-B 051 SET UP DEST ADDR
BA ← RD MAINT
4-D 052 SET UP DEST ADDR INCREMENT RDST
BA ← RD MAINT RD ← RD + (2)
IF BYTE INSTRUCTION AND NOT R6 OR R7, INCREMENT RDST BY ONE. IF NOT BYTE, INCREMENT RDEST BY TWO
4-Q 143 SET UP DEST ADDR ENAB KT MAINT
BA ← R13 MAINT
4-E 217 GET DEST DATA AND STORE, ENAB KT MAINT
DATO(B) UDATA ← (R12 OP B) LOAD CC MAINT
OPERATION PERFORMED DEPENDS ON INSTRUCTION
WRITE, NO LOAD (5,7,12,13,16)
SERVICE (2)

TITLE KD11E FLOW DIAGRAMS

D FD KD11-E-1

SHEET 4 OF 26

DOP DEST
MOD(B)·SUB
(3,17)

DM0 | DM1 | DM4 | DM2 | DM3 | DM5 | DM6 | DM7

5-A 070
DEST. OPERAND TO BREG
R13, B⇐RD

DM0 AUX
(4)

IF BYTE INSTRUCTION & NOT R6 OR R7, DECREMENT RDST BY ONE. IF NOT BYTE, DECREMENT BY TWO.

5-C 074
DECREMENT RDST
ENAB STACK OVERFLOW
RD⇐RD-(2)
ENAB STOV

5-B 071
FETCH DEST OPERAND
BA⇐RD, DATIP
R13, B⇐(UDATA)
MAINT

5-D 072
FETCH DEST. OPERAND
BA⇐RD, DATIP
R13, B⇐(UDATA)
MAINT

5-E 242
INCREMENT RDST
RD⇐RD+(2)

IF BYTE INSTRUCTION & NOT R6 OR R7, INCREMENT RDST BY ONE. IF NOT BYTE, INCREMENT BY TWO.

5-F 075
FETCH DEST ADDR
BA⇐RD, DATI
R13⇐UDATA

5-G 243
INCREMENT RDST
RD⇐RD+2

5-N 075
DECREMENT RDST
ENAB STACK OVERFLOW
RD⇐RD-2
ENAB STOV

5-I 244
FETCH DEST ADDR.
BA⇐RD, DATI
R13⇐UDATA

5-J 245
FETCH DEST OPERAND
BA⇐R13, DATIP
R13, B⇐(UDATA)
MAINT

5-K 076
FETCH INDEX DATA
BA⇐PC, DATI
B⇐UDATA

5-L 246
INCREMENT PC
PC⇐PC+2

5-M 247
DETERMINE DEST ADDR
R13⇐RD+B

5-H 077
FETCH INDEX DATA
BA⇐PC, DATI
B⇐UDATA

5-O 664
INCREMENT PC
PC⇐PC+2

5-P 261
DETERMINE ADDR OF DEST ADDR
R13⇐RD+B

5-Q 262
FETCH DEST ADDR
BA⇐R13, DATI
R13⇐UDATA

WRITE, NO LOAD
(4)

REVISIONS
CHK | CHANGE NO. | REV.

TITLE: KDIIE FLOW DIAGRAMS
SCALE: — | SHEET 5 OF 24
SIZE: D | CODE: FD | NUMBER: KDII-E-1 | REV.
DIST.

D FD KDII-E-1

DOP DEST NON MOD (3)

DM0 DM1 DM4 DM2 DM3 DM5 DM6 DM7

6-A 060
DEST. OPERAND TO BREG
R13, B ← RD

6-B 061
FETCH DEST OPERAND
BA ← RD, DATI
R13, B ← (U DATA), MAINT

6-C 064
DECREMENT RDST ENAB STACK OVERFLOW
RD ← RD - (2) ENAB STOV

6-D 062
FETCH DEST OPERAND
BA ← RD, DATI
R13 ← (U DATA), MAINT

IF BYTE INSTRUCTION AND NOT R6 OR R7, DECREMENT RDST BY ONE.
IF NOT BYTE, DECREMENT BY TWO

6-E 263
INCREMENT RDST
RD ← RD + (2)

IF BYTE INSTRUCTION AND NOT R6 OR R7, INCREMENT RDST BY ONE.
IF NOT BYTE, INCREMENT BY TWO.

6-F 063
FETCH DEST ADDR
BA ← RD, DATI
R13 ← U DATA

6-G 264
INCREMENT RDST
RD ← RD + 2

6-I 065
DECREMENT RDST ENAB STACK OVERFLOW
RD ← RD - 2 ENAB STOV

6-J 266
FETCH DEST ADDR
BA ← RD, DATI
R13 ← U DATA

6-K 267
FETCH DEST. OPERAND
BA ← R13, DATI
R13, B ← (U DATA), MAINT

6-L 066
FETCH INDEX DATA
BA ← PC, DATI
B ← U DATA

6-M 662
INCREMENT PC
PC ← PC + 2

6-N 271
DETERMINE DEST. ADDR
R13 ← RD + B

6-O 067
FETCH INDEX DATA
BA ← PC, DATI
B ← U DATA

6-P 272
INCREMENT PC
PC ← PC + 2

6-Q 273
DETERMINE ADDR OF DEST ADDR
R13 ← RD + B

6-R 274
FETCH DEST ADDR.
BA ← R13, DATI
R13 ← U DATA

6-H 265
OPERATE AND LOAD COND CODES
R12 OP B
LOAD CC

OPERATION PERFORMED DEPENDS ON INSTRUCTION

NON MOD AUX (8)

SERVICE (2)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	DOCUMENT NO.	REV.
KDI1E FLOW DIAGRAMS	D FD KDII-E-1	
SCALE	SHEET 6 OF 26	DIST.

SOP MOD (2)

DM0 DM1 DM4 DM2 DM3 DM5 DM6 DM7

IF BYTE INSTRUCTION AND NOT RG OR R7, DECREMENT RDST BY ONE. IF NOT BYTE, DECREMENT BY TWO.

7-A 040
OPERATE AND LOAD COND CODES
RD ← (RD OP B) LOAD CC
← OPERATION PERFORMED DEPENDS ON INSTRUCTION
SERVICE (2)

7-B 041
FETCH DEST OPERAND
BA ← RD, DATIP
R12 ← (U DATA) MAINT

7-C 044
DECREMENT RDST ENAB STACK OVERFLOW
RD ← RD - (2) ENAB STOV

7-D 042
FETCH DEST OPERAND
BA ← RD, DATIP
R12 ← (U DATA), MAINT

7-E 275
INCREMENT RDST
RD ← RD + (2)
← IF BYTE INSTRUCTION AND NOT RG OR R7, INCREMENT RDST BY ONE IF NOT BYTE, INCREMENT BY TWO

WRITE, NO LOAD (4)

7-F 043
FETCH DEST ADDR
BA ← RD, DATI
R12 ← U DATA

7-G 276
INCREMENT RDST
RD ← RD + 2

7-H 045
DECREMENT RDST ENAB STACK OVERFLOW
RD ← RD - 2 ENAB STOV

7-I 277
FETCH DEST ADDR
BA ← RD, DATI
R12 ← U DATA

7-J 300
FETCH DEST OPERAND
BA ← R12, DATIP
R12 ← (U DATA), MAINT

7-K 046
FETCH INDEX DATA
BA ← PC, DATI
Bx ← U DATA

7-L 301
INCREMENT PC
PC ← PC + 2

7-M 302
DETERMINE DEST ADDR
R12 ← RD + BX

7-M 047
FETCH INDEX DATA
BA ← PC, DATI
Bx ← U DATA

7-O 303
INCREMENT PC
PC ← PC + 2

7-P 304
DETERMINE ADDR OF DEST. ADDR
R12 ← RD + BX

7-Q 305
FETCH DEST ADDR,
BA ← R12, DATI
R12 ← U DATA

REVISIONS
CHK | CHANGE NO. | REV.

TITLE: KDIIE FLOW DIAGRAMS
SIZE: D | FD KDII-E-1 | REV.
SCALE: NONE | SHEET 7 OF 26 | DWG.

D FD KDII-E-1

SOP
NON-MOD
(2)

DM0 DM1 DM4 DM2 DM3 DM5 DM6 DM7

IF BYTE INSTRUCTION AND NOT R6 OR R7, DECREMENT RDST BY ONE.
IF NOT BYTE, DECREMENT RDST BY TWO.

B-A 160
OPERATE ON OPERAND LOAD COND CODES
RD OP B LOAD CC
→ OPERATION IS DEPENDENT ON INSTRUCTION BEING PERFORMED
SERVICE
(2)

B-B 161
FETCH DEST OPERAND
BA ← RD, DATI
R12 ← (U DATA), MAINT

B-C 164
DECREMENT RDST
ENAB STACK OVERFLOW
RD ← RD - (2)
ENAB STOV

B-D 162
FETCH DEST OPERAND
BA ← RD, DATI
R12 ← (U DATA), MAINT

B-E 306
INCREMENT RDST
RD ← RD + (2)
← IF BYTE INSTRUCTION AND NOT R6 OR R7, INCREMENT RDST BY ONE.
IF NOT BYTE, INCREMENT RDST BY TWO.

NON MOD AUX
(6)

B-F 163
FETCH DEST ADDR
BA ← RD, DATI
R12 ← U DATA

B-G 307
INCREMENT RDST
RD ← RD + 2

B-H 165
DECREMENT RDST
ENAB STACK OVERFLOW
RD ← RD - 2
ENAB STOV

B-I 310
FETCH DEST ADDR,
BA ← RD, DATI
R12 ← U DATA

B-J 311
FETCH DEST OPERAND
BA ← R12, DATI
R12 ← (U DATA), MAINT

B-K 166
FETCH INDEX DATA
BA ← PC, DATI
B ← U DATA

B-L 312
INCREMENT PC
PC ← PC + 2

B-M 313
DETERMINE DEST ADDR
R12 ← RD + B

B-N 167
FETCH INDEX DATA
BA ← PC, DATI
B ← U DATA

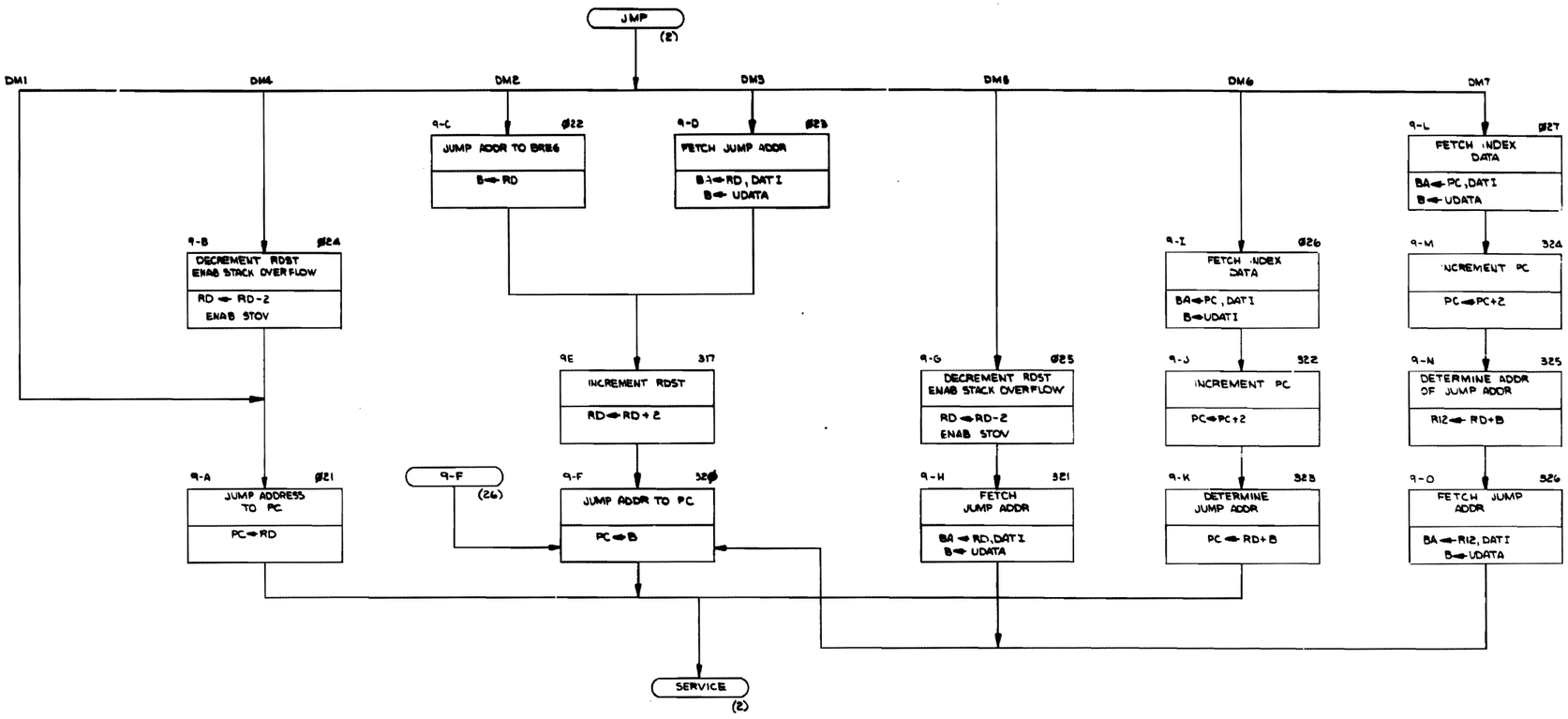
B-O 314
INCREMENT PC
PC ← PC + 2

B-P 315
DETERMINE ADDR, OF DEST ADDR
R12 ← RD + B

B-Q 316
FETCH DEST ADDR
BA ← R12, DATI
R12 ← U DATA

REVISIONS		
CHK	CHANGE NO.	REV.

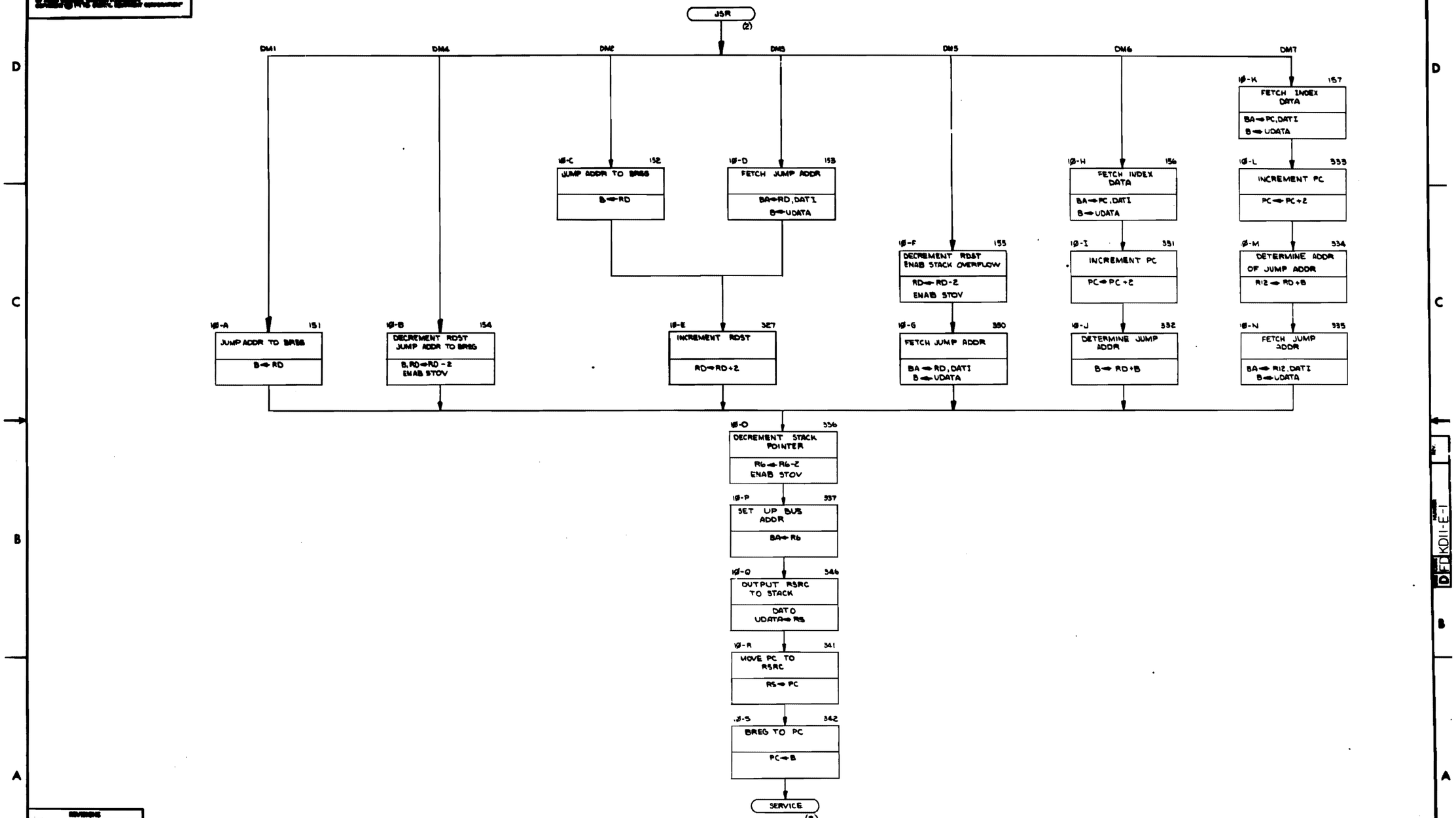
TITLE: KDII E FLOW DIAGRAM
SCALE:
SHEET 8 OF 24
DOCUMENT NUMBER: D FD KDII-E-I
REV.



REVISIONS

CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
KDIIE FLOW DIAGRAMS	D	FD	KD11-E-1	
SCALE —	SHEET 9 OF 26		DIST.	



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: KDIIE FLOW DIAGRAMS
SCALE: —
SHEET 10 OF 26
DWG. D FD KDII-E-1
REV.

SWAB
(2)

DM0 | DM1 | DM4 | DM2 | DM3 | DM5 | DM6 | DM7

11-A #36
SWAPPED DEST OPERAND TO REG 12
R12 ← RD SWAB

11-B 343
LOAD COND CODES
RD ← R12 OP B LOAD CC

SERVICE
(2)

11-D #34
DECREMENT RDST
ENAB STACK OVERFLOW
RD ← RD - 2
ENAB STOV

11-C #31
FETCH SWAPPED DEST OPERAND
BA ← RD, DATIP
R12 ← UDATA SWAB, MAINT

UPPER AND LOWER BYTES OF UNIBUS DATA ARE SWAPPED DURING INPUT

11-E #32
FETCH SWAPPED DEST OPERAND
BA ← RD, DATIP
R12 ← UDATA SWAB, MAINT

UPPER AND LOWER BYTES OF UNIBUS DATA ARE SWAPPED DURING INPUT

11-F 344
INCREMENT RDST
RD ← RD + 2

11-G #33
FETCH DEST ADDR
BA ← RD, DATI
R12 ← U DATA

11-H 345
INCREMENT RDST
RD ← RD + 2

11-I #35
DECREMENT RDST
ENAB STACK OVERFLOW
RD ← RD - 2
ENAB STOV

11-J 346
FETCH DEST ADDR
BA ← RD, DATI
R12 ← U DATA

11-R 354
FETCH SWAPPED DEST OPERAND
BA ← R12 DATIP
R12 ← U DATA SWAB, MAINT

UPPER AND LOWER BYTES OF UNIBUS DATA ARE SWAPPED DURING INPUT

11-K #36
FETCH INDEX DATA
BA ← PC, DATI
B ← U DATA

11-L 347
INCREMENT PC
PC ← PC + 2

11-M 350
DETERMINE DEST ADDR
R12 ← RD + B

11-N #37
FETCH INDEX DATA
BA ← PC, DATI
B ← U DATA

11-O 351
INCREMENT PC
PC ← PC + 2

11-P 352
DETERMINE ADDR OF DEST. ADDR.
R12 ← RD + B

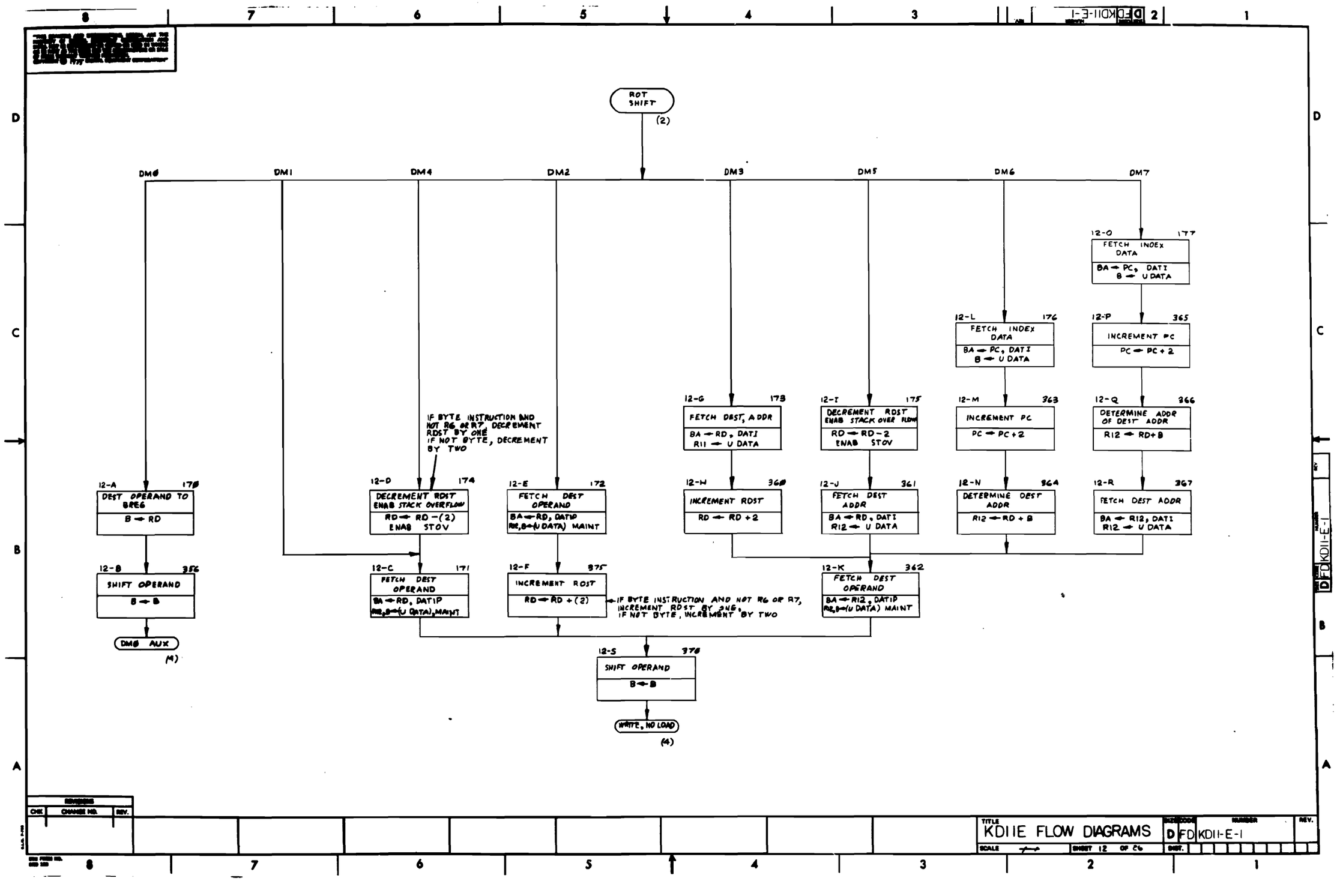
11-Q 353
FETCH DEST ADDR
BA ← R12, DATI
R12 ← U DATA

11-S 355
STORE DATA
LOAD COND CODES
DATO, MAINT
UDATA ← R12 LOAD CC OP B

SERVICE
(2)

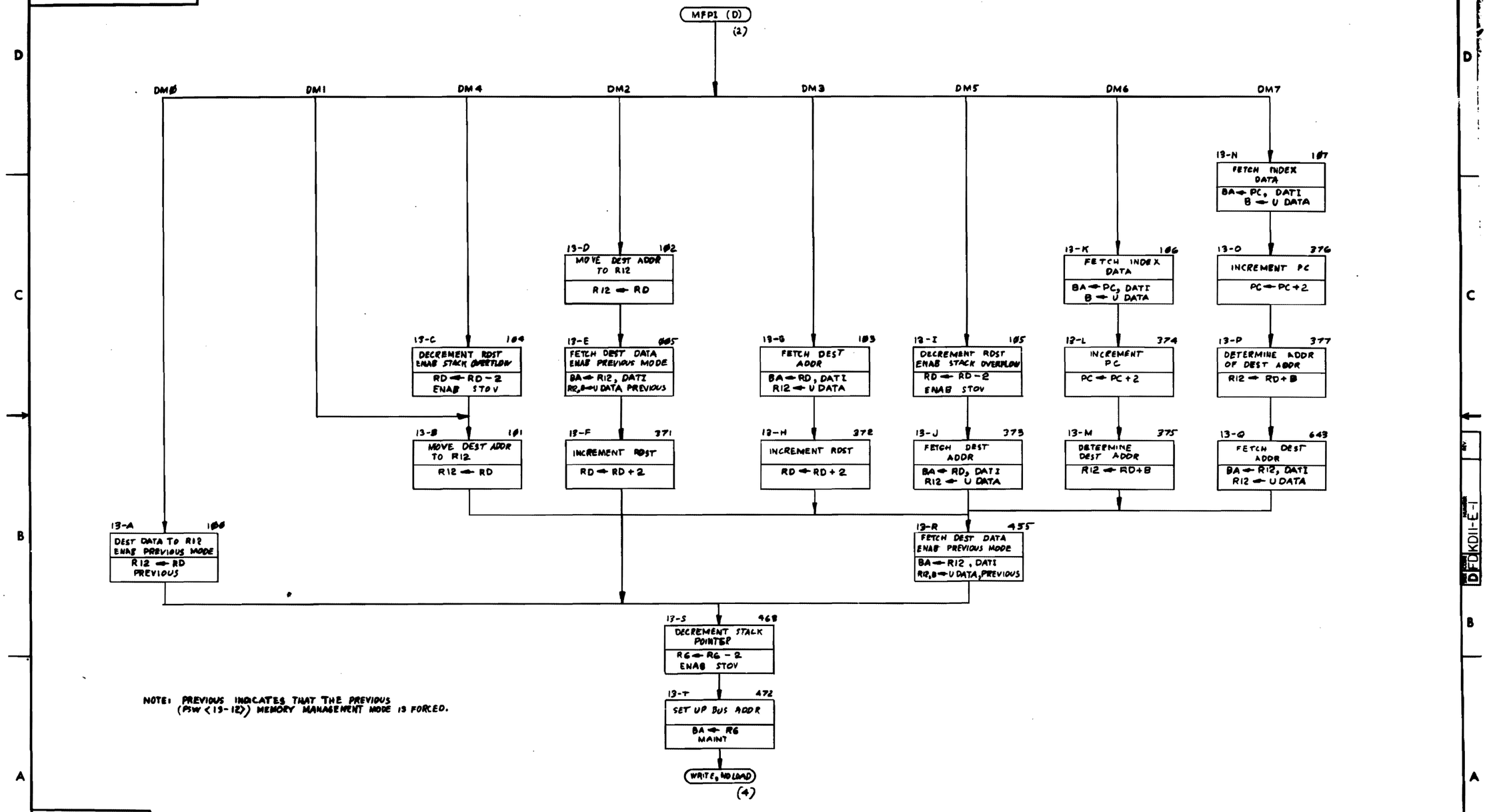
REVISIONS
CHK | CHANGE NO. | REV.

TITLE: KDIIE FLOW DIAGRAMS
SCALE | SHEET 11 OF 26
DFD KDII-E-1 REV.



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE/CODE	NUMBER	REV.
KDIIE FLOW DIAGRAMS	D FD	KDII-E-1	
SCALE	SHEET 12 OF 26	DIST.	



NOTE: PREVIOUS INDICATES THAT THE PREVIOUS (PSW <13-12>) MEMORY MANAGEMENT MODE IS FORCED.

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
KDIIE FLOW DIAGRAMS	D	FD	KDII-E-1	
SCALE —/— SHEET 13 OF 86			DIST.	

MTPI (D)
(2)

14-D 640
FETCH WORD FROM TOP OF STACK
BA ← R6, DATI
B ← UDATI

14-T 644
MOVE STACK DATA TO R12
R12 ← B

14-E 642
INCREMENT STACK POINTER
R6 ← R6 + 2
BUT DEST

DM0 DM1 DM4 DM2 DM3 DM5 DM6 DM7

14-N 257
FETCH INDEX DATA
BA ← PC, DATI
B ← U DATA

14-K 256
FETCH INDEX DATA
BA ← PC, DATI
B ← U DATA

14-D 506
INCREMENT PC
PC ← PC + 2

14-C 254
DECREMENT RDST ENAB STACK OVERFLOW
RD ← RD - 2
ENAB STOV

14-F 252
MOVE DEST ADDR TO R13
R13 ← RD

14-H 253
FETCH DEST ADDR
BA ← RD, DATI
R13 ← U DATA

14-I 258
DECREMENT RDST ENAB STACK OVERFLOW
RD ← RD - 2
ENAB STOV

14-L 476
INCREMENT PC
PC ← PC + 2

14-P 510
DETERMINE ADDR OF DEST ADDR
R13 ← RD + B

14-B 251
MOVE DEST ADDR TO R13
R13 ← RD

14-G 474
INCREMENT RDST
RD ← RD + 2

14-J 475
FETCH DEST ADDR
BA ← RD, DATI
R13 ← U DATA

14-M 552
DETERMING DEST ADDR
R13 ← RD + 2

14-Q 514
FETCH DEST ADDR
BA ← R13, DATI
R13 ← U DATA

14-A 250
MOVE DATA TO DEST REG
RD ← R12 OP B
LOAD CC, PREVIOUS

SERVICE
(27)

14-R 513
SET UP BUS ADDR ENAB PREVIOUS MODE
BA ← R13
MAINT PREVIOUS

14-S 526
OUTPUT DATA TO DEST ADDR
DATO, U DATA ← R12 OP B
LOAD CC
MAINT, PREVIOUS

SERVICE
(2)

NOTE: PREVIOUS INDICATES THAT THE PREVIOUS (PSW(13-12)) MEMORY MANAGEMENT MODE IS FORCED

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: KDIIE FLOW DIAGRAMS
SIZE: D | CODE: FD | NUMBER: KDII-E-1 | REV.
SCALE | SHEET 14 OF 26 | DWG.

DFDKDII-E-1

MTPS (2)

DM0 DM1 DM4 DM2 DM3 DM5 DM6 DM7

15-A 120
DEST OPERAND TO R12 AND BREG
R12, BA←RD

15-F 121
FETCH DEST OPERAND
BA←RD, DATI
R12, BA←(UDATA)

15-G 124
DECREMENT RDST ENAB STACK OVERFLOW
RD←RD-(2) ENAB STOV

IF BYTE INST & NOT R6 OR R7, DECREMENT RDST BY ONE. IF NOT BYTE, DECREMENT BY TWO

15-H 122
FETCH DEST OPERAND
BA←RD, DATI
R12, BA←(UDATA)

15-I 663
INCREMENT RDST
RD←RD + (2)

15-J 123
FETCH DEST ADDR
BA←RD, DATI
R12←UDATA

15-K 664
INCREMENT RDST
RD←RD + 2

15-L 666
FETCH DEST OPERAND
BA←R12, DATI
R12, BA←(UDATA)

15-M 125
DECREMENT RDST ENAB STACK OVERFLOW
RD←RD-2 ENAB STOV

15-N 665
FETCH DEST ADDR
BA←RD, DATI
R12←UDATA

15-O 126
FETCH INDEX DATA
BA←PC, DATI
B←UDATA

15-P 667
INCREMENT PC
PC←PC+2

15-Q 671
DETERMINE DEST ADDR
R12←RD+B

15-R 127
FETCH INDEX DATA
BA←PC, DATI
B←UDATA

15-S 672
INCREMENT PC
PC←PC+2

15-T 673
DETERMINE ADDR OF DEST ADDR
R12←RD+B

15-U 674
FETCH DEST ADDR
BA←R12, DATI
R12←UDATA

15-B 675
SET RIT TO ALL ONES
RIT←-1

15-C 676
SET RIT EQUAL TO PSW ADDR
RIT←RIT-1

15-D 677
PLACE PSW ADDR ON BUS ADDR LINES
BA←RIT MAINT

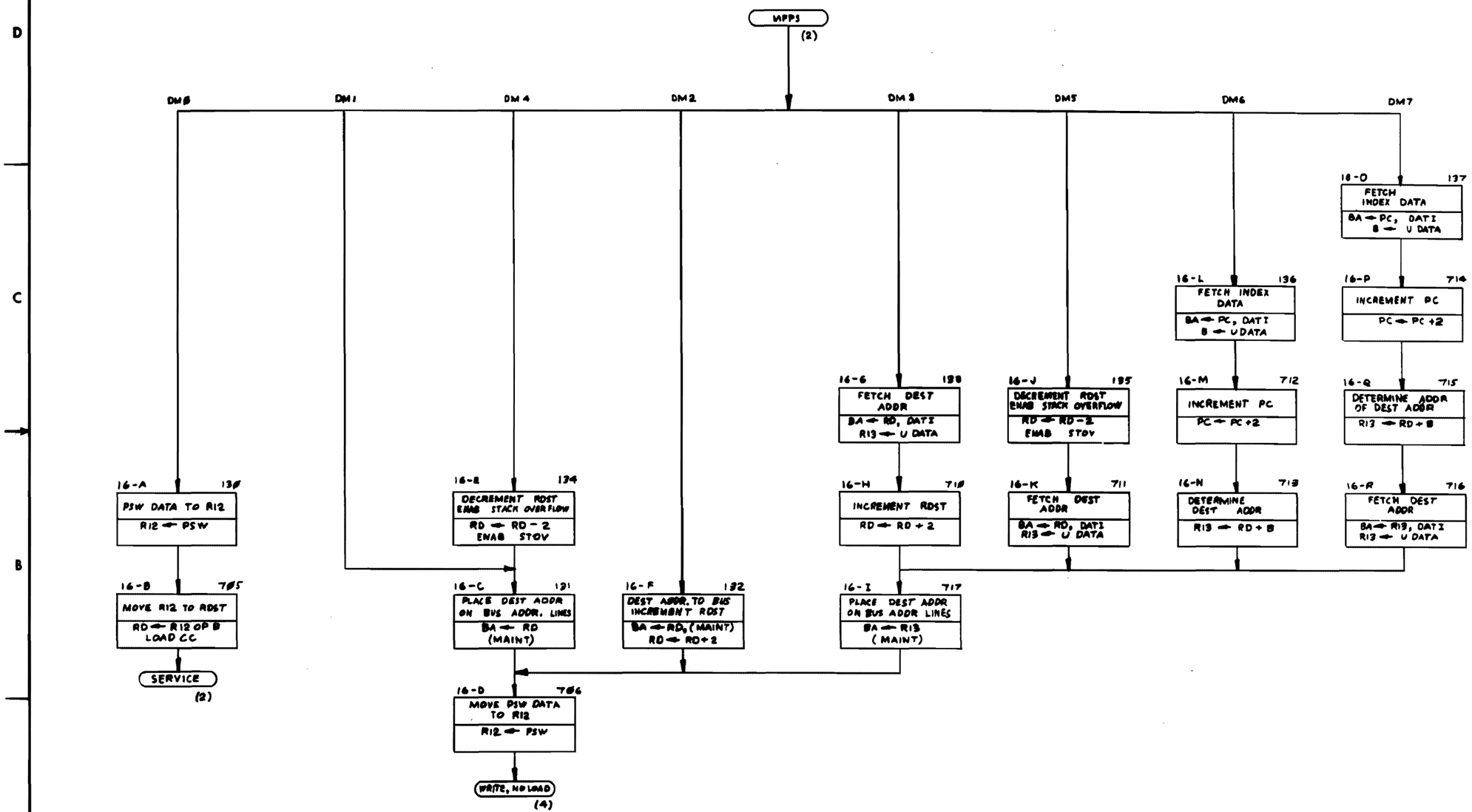
15-E 764
OUTPUT DEST OPERAND TO PSW
DATOB UDATA←R12 MAINT

SERVICE (2)

IF BYTE INSTRUCTION & NOT R6 OR R7, INCREMENT RDST BY ONE.
IF NOT BYTE, INCREMENT RDST BY TWO

REVISIONS		
CHK	CHANGE NO.	REV.

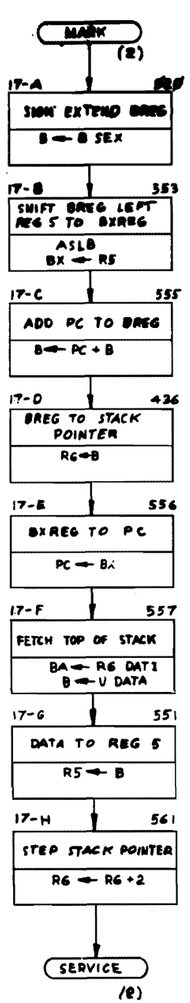
TITLE: KDIIE FLOW DIAGRAMS
SCALE: — SHEET 15 OF 26
DRAWING: D FD KDII-E-1
DIST.
REV.

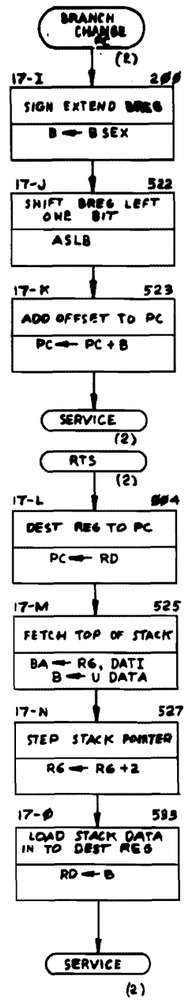


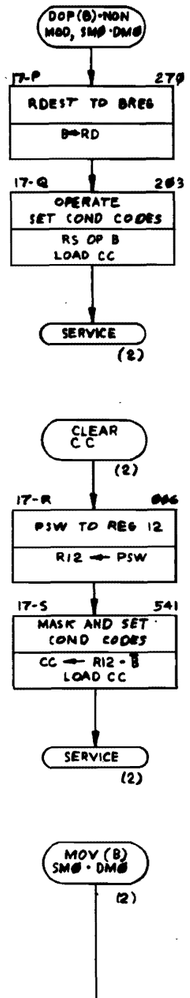
REVISIONS		
CHK	CHANGE NO.	REV.

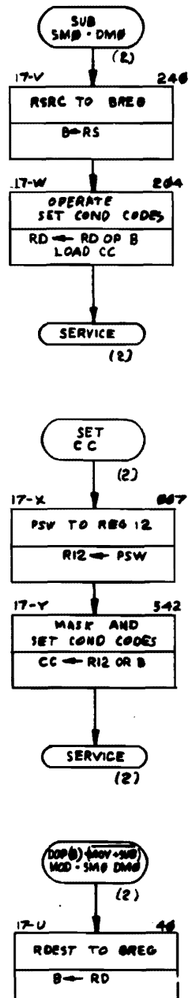
TITLE			
KD11E FLOW DIAGRAMS	D FD KD11-E-1		REV.
SCALE	SHEET 16 OF 26	DWG.	

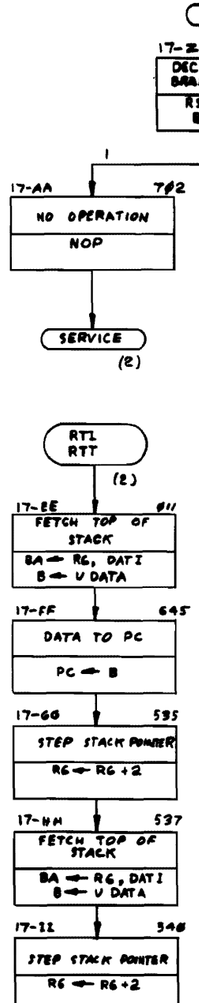
D FD KD11-E-1 REV.

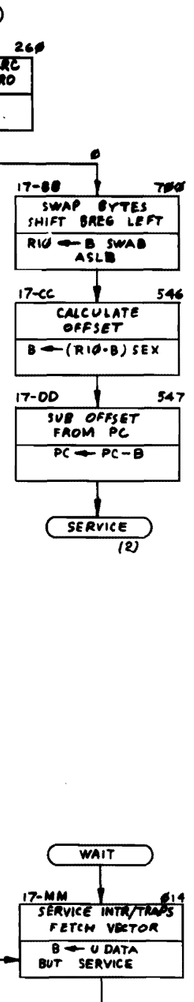


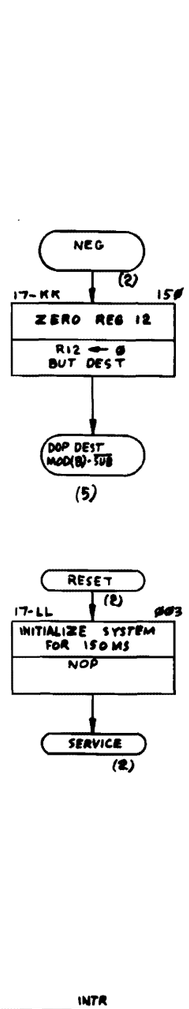






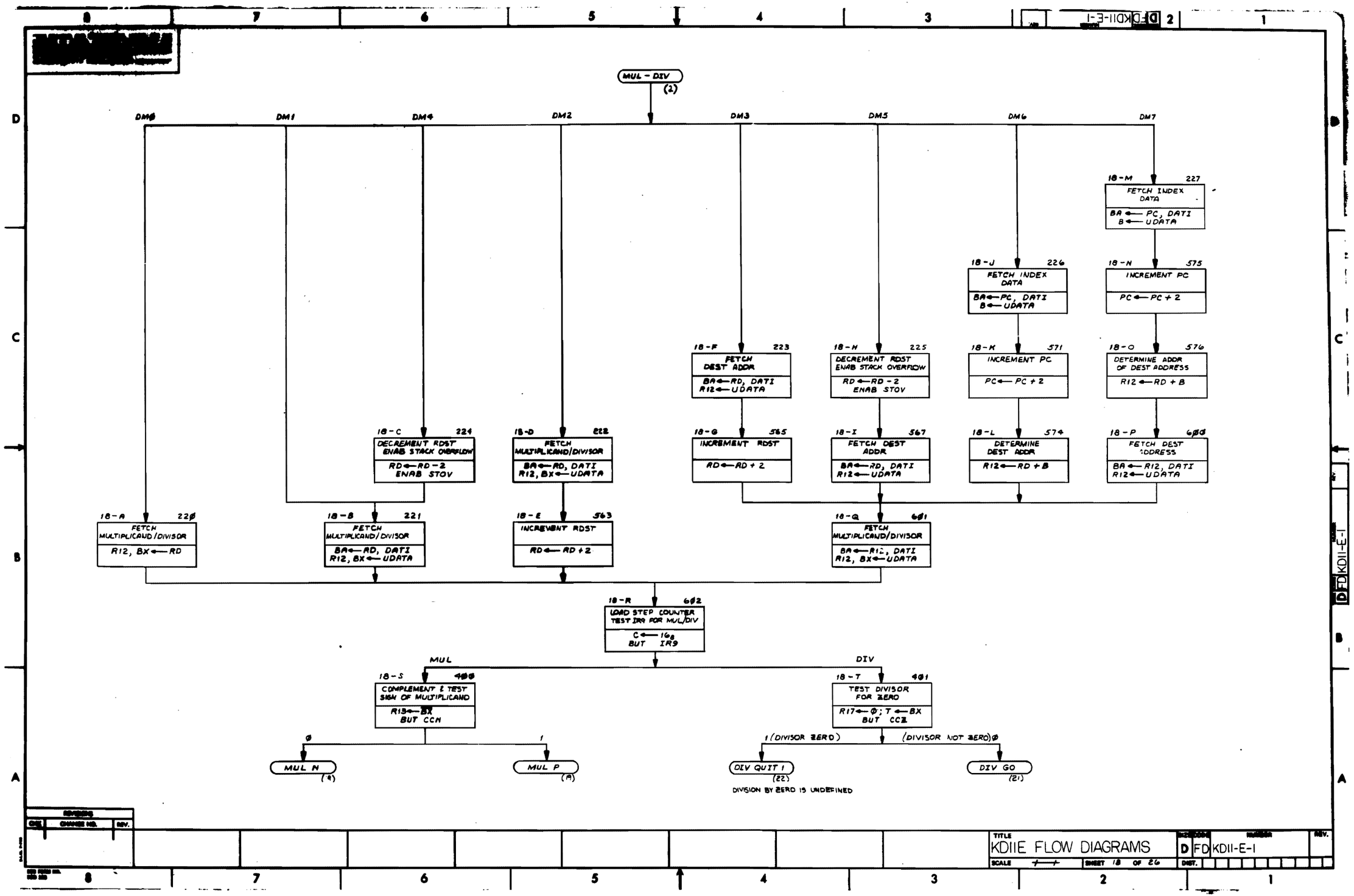






REVISIONS		
CHK	CHANGE NO.	REV.

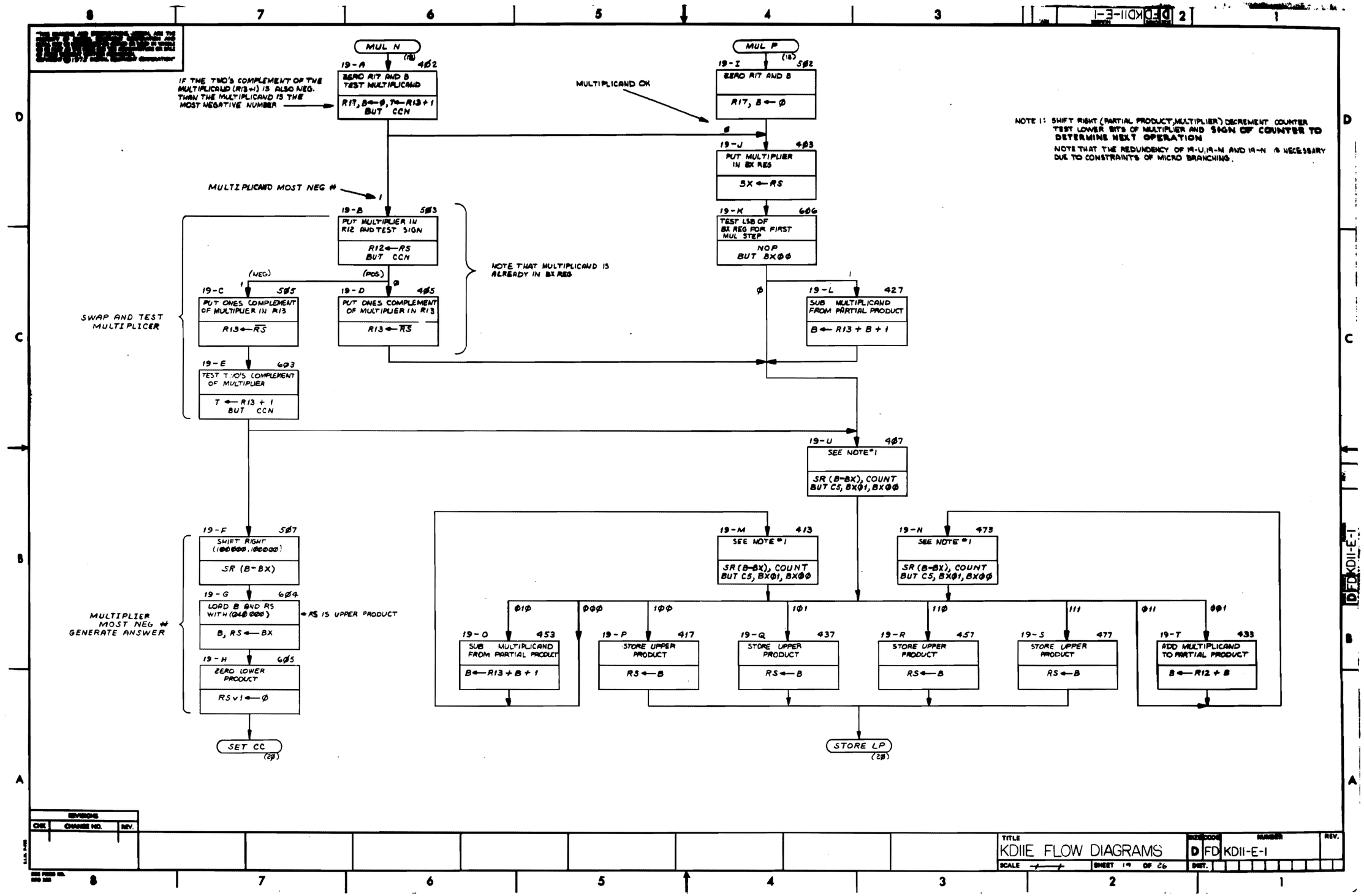
TITLE: KDII E FLOW DIAGRAMS
SCALE: — SHEET 17 OF 26
D FD KDII-E-1 REV.



REVISIONS		
ECO	CHANGE NO.	REV.

TITLE	SIZE/CODE	NUMBER	REV.
KDIIE FLOW DIAGRAMS	D FD	KDII-E-1	
SCALE —	SHEET 18 OF 26	DIST.	

D FD KDII-E-1



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE/CODE	NUMBER	REV.
KDIIE FLOW DIAGRAMS	D FD	KDII-E-1	
SCALE —	SHEET 19 OF 26	DIST.	

D FD KDII-E-1

SET CC (R)

STORE LP (R)

20-A 407
STORE LOWER PRODUCT
RSv1 ← BX

THIS SECTION OF CODE ACCUMULATES THE COND. CODES IN THE LOWER FOUR BITS OF THE BX REG

BX | N | Z | V | C

20-B 410
C OUT IS THE SIGN OF THE PRODUCT
R17 ← Ø, T ← RS + RS SL(BX - COUT)

SHIFT N BIT INTO BXØØ POSITION

20-N 701
TEST UPPER PRODUCT FOR ZERONESS
T ← B BUT CCZ

NOTE THAT FOR MUL VBIT IS ALWAYS ZERO

HP NOT ZERO

HP ZERO

21-C 410
TEST UPPER PRODUCT FOR ALL ONES
T ← B̄ BUT CCZ SL(BX-Ø)

SHIFT ZBIT=Ø INTO BXØØ POSITION

20-H 412
TEST LOWER PRODUCT FOR ZERONESS
T ← RSv1, SL(BX-Ø) BUT CCZ

SHIFT ZBIT=Ø INTO BXØØ POSITION

UPPER PRODUCT ALL ONES

UPPER PRODUCT NOT ALL ONES

LP ZERO

20-D 422
TEST MSB OF LOWER PRODUCT
T ← RSv1, SL(BX-Ø) BUT CCN

SHIFT VBIT = Ø INTO BXØØ POSITION

20-E 420
SET VBIT
SL(BX-0)

SHIFT VBIT=Ø INTO BXØØ POSITION

20-I 416
SET ZBIT NOTE THAT R17=Ø
BX ← R17 + BX + 1

SHIFT ZBIT=1 INTO BX00 POSITION

1 Ø

20-J 414
TEST MSB OF LOWER PRODUCT
T ← RSv1, SL(BX-Ø) BUT CCN

SHIFT VBIT=Ø INTO BXØØ POSITION

1 Ø

20-F 515
CLEAR CBIT
SL (BX - Ø)

SHIFT CBIT = Ø INTO BXØØ POSITION

20-G 415
SET CBIT
SL (BX - 1)

SHIFT CBIT=1 INTO BXØØ POSITION

20-K 511
SET CBIT
SL (BX - 1)

20-L 411
CLEAR CBIT
SL (BX - 1)

SHIFT CBIT = Ø INTO BXØØ POSITION

20-M 611
TRANSFER CONDITION CODES TO PSW
CC ← BX

SERVICE (R)

DIV 60
(18)

21-A 484
PUT ONE'S COMPLEMENT OF DIVISOR IN R13
R13 ← BX

21-B 612
FETCH UPPER DIVIDEND AND TEST SIGN
B ⇐ R5
BUT CCN

DIVIDEND NEGATIVE (1)

21-C 521
FETCH LOWER DIVIDEND
BX ← RSV 1

21-D 613
TAKE TWO'S COMPLEMENT OF LOWER DIVIDEND
BX ← R17 - BX
BUT COUT

NOTE THAT R17 IS ZERO

1 0

21-E 623
TAKE TWO'S COMPLIMENT OF UPPER DIVIDEND
B ← R17 - B
BUT CCN

21-F 423
TAKE ONES COMPLEMENT OF UPPER DIVIDEND
B ← B

DIVIDEND MOST NEG NUMBER
DIV QUIT 2
(22)

DIVIDEND POSITIVE (0)

21-L 421
FETCH LOWER DIVIDEND
BX ← RSV 1

DIVIDEND OK

21-M 424
SHIFT UPPER DIVIDEND LEFT - TEST SIGN OF DIVISOR
SL(B-BX(15)), T ← R12
BUT CCN

EXECUTION WILL BE TERMINATED AFTER THE FIRST DIVIDE STEP, IF THE REMAINDER IS NOT ZERO AND THE FIRST QUOTIENT BIT IS A ONE.

FIRST DIVIDE STEP

DIVISOR NEG

21-N 435
SUB DIVISOR FROM DIVIDEND, TEST REMAINDER
B ← B - R12, SL (BX, COUT)
BUT CCE

DIVISOR POS

21-O 425
SUB DIVISOR FROM DIVIDEND-TEST REMAINDER
B ← B + R13 + 1, SL (BX-COUT)
BUT CCE

1 1 0 0

21-P 445
TEST FIRST QUOTIENT BIT
NOP
BUT BX00

DIV QUIT 3
(22)

0

IF BX00 = 1 (LSB OF QUOTIENT) THAN THE REMAINDER IS POSITIVE AND THE DIVISOR IS SUBTRACTED

21-G 442
SHIFT REMAINDER LEFT
TEST SIGN OF DIVISOR
TEST LSB OF QUOTIENT
T ← R12, SL(B-BX(15)), COUNT
BUT BX00, CCN

IF BX00 = 0 (LSB OF QUOTIENT) THAN THE REMAINDER IS NEGATIVE AND THE DIVISOR IS ADDED

0 1 0 1

21-H 668
SUB DIVISOR FROM REMAINDER = TEST COUNTER SIGN
B ← B + R13 + 1, SL (BX-COUT)
BUT C05

21-I 678
SUB DIVISOR FROM REMAINDER
TEST COUNTER SIGN
B ← B + R12, SL (BX-COUT)
BUT C05

21-J 648
ADD DIVISOR TO REMAINDER
TEST COUNTER SIGN
B ← B + R12, SL (BX-COUT)
BUT C05

21-K 658
ADD DIVISOR TO REMAINDER
TEST COUNTER SIGN
B ← B + R13 + 1, SL (BX-COUT)
BUT C05

DIVIDE LOOP

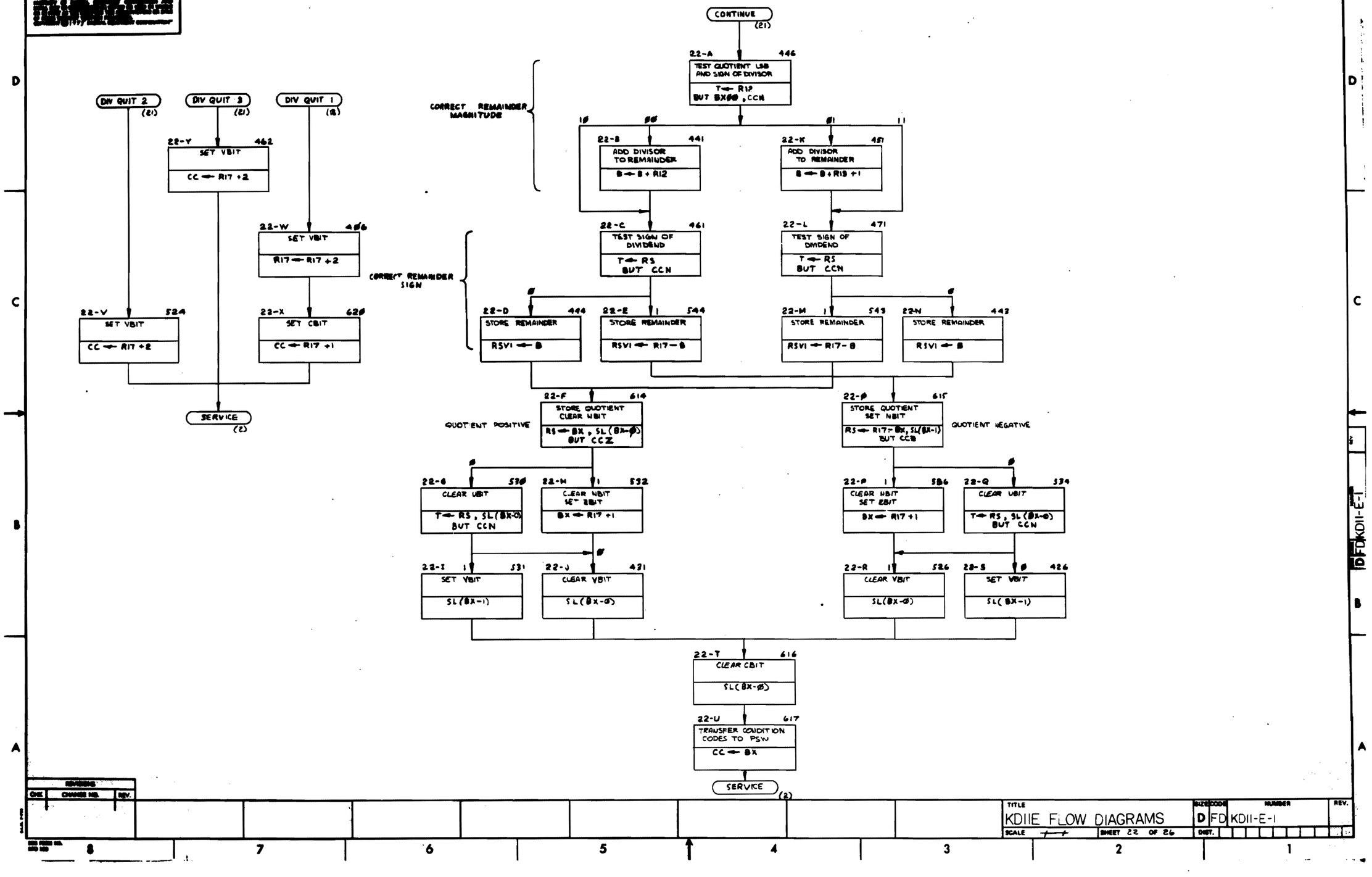
THE PROCESSOR WILL SEQUENCE THROUGH THIS LOOP 15 TIMES

CONTINUE
(22)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: KD11E FLOW DIAGRAMS
SIZE: D | CODE: FD | NUMBER: KD11-E-1 | REV.
SCALE | SHEET 21 OF 26 | DIST.

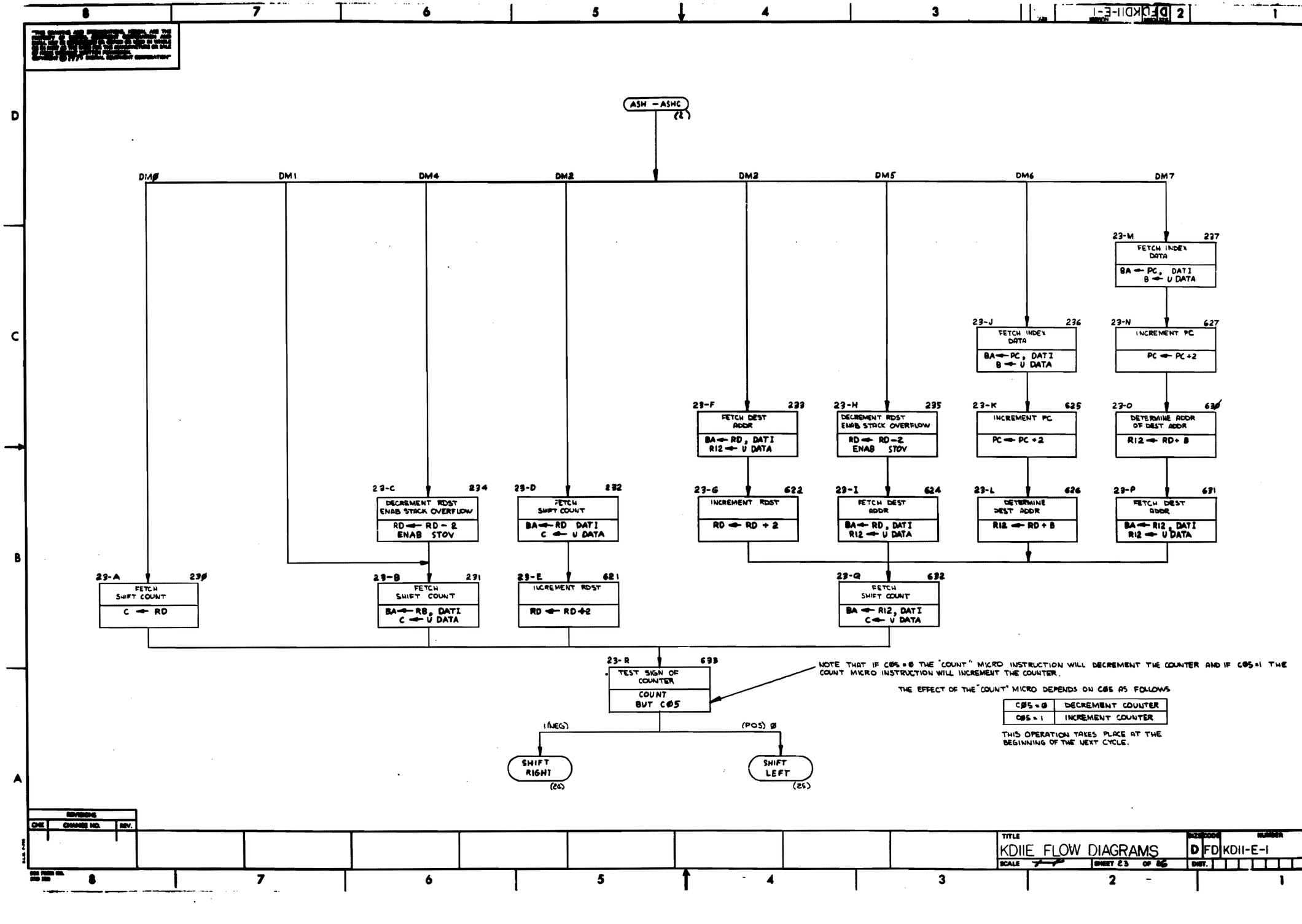
D FD KD11-E-1



REVISIONS		
ECR	CHANGE NO.	REV.

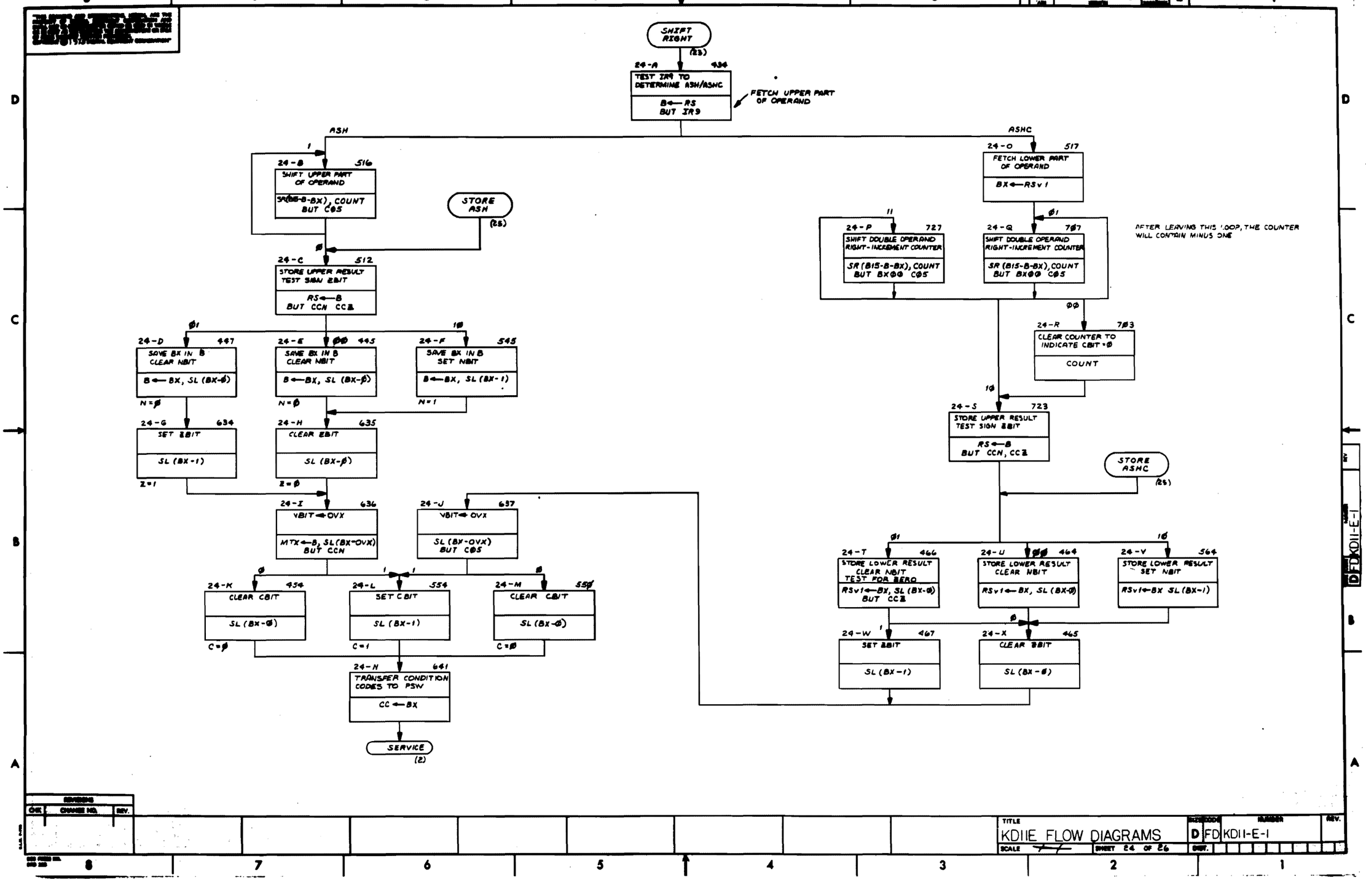
TITLE	SIZE	CODE	NUMBER	REV.
KDIIE FLOW DIAGRAMS	D	FD	KDII-E-1	
SCALE —	SHEET 22 OF 26	DIST.		

KDII-E-1



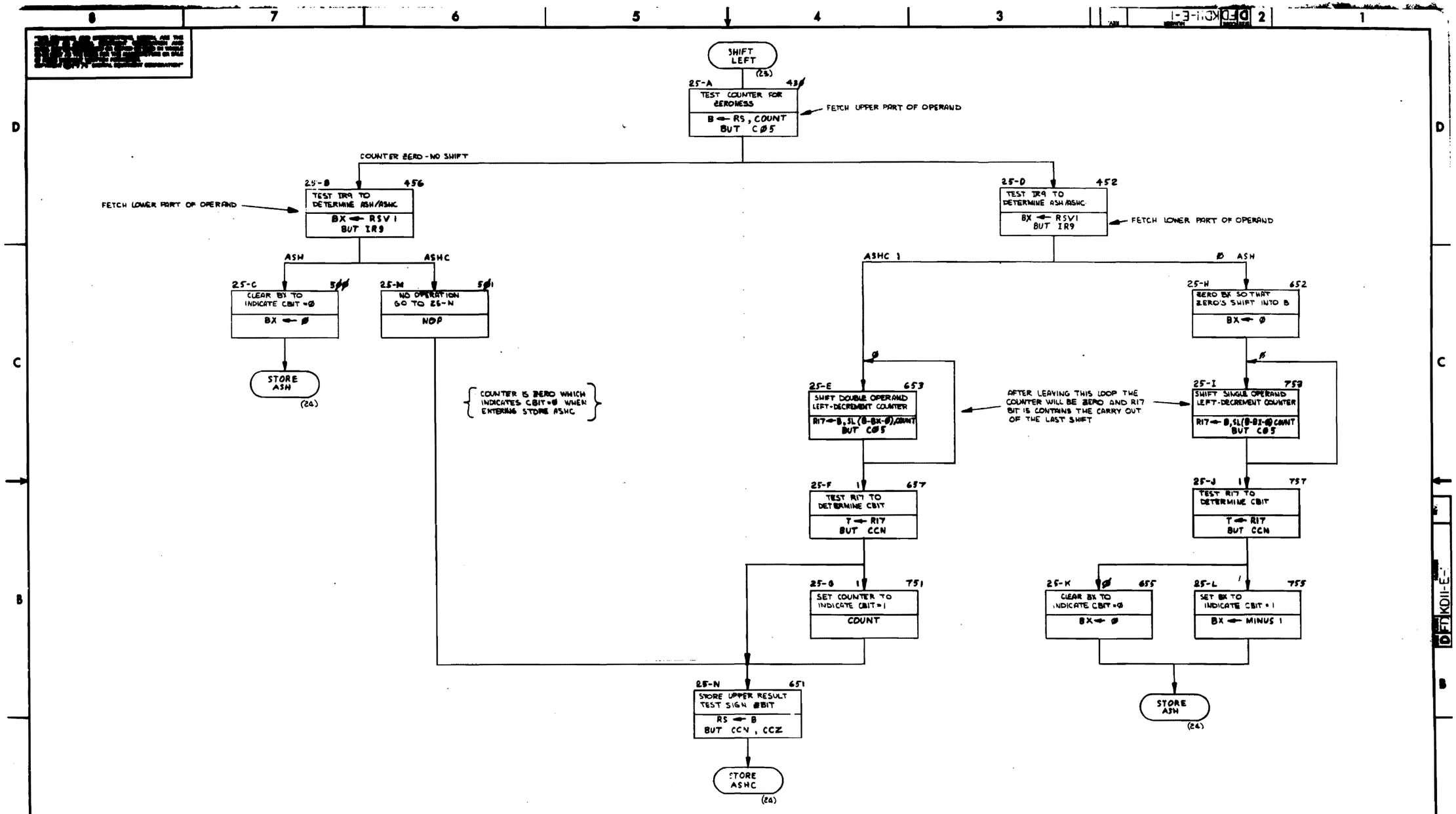
REVISIONS		
ECO	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
KDIIE FLOW DIAGRAMS	D	FD	KDII-E-I	
SCALE	SHEET 23 OF 86	DIST.		



REVISIONS		
CHK	CHANGE NO.	REV.

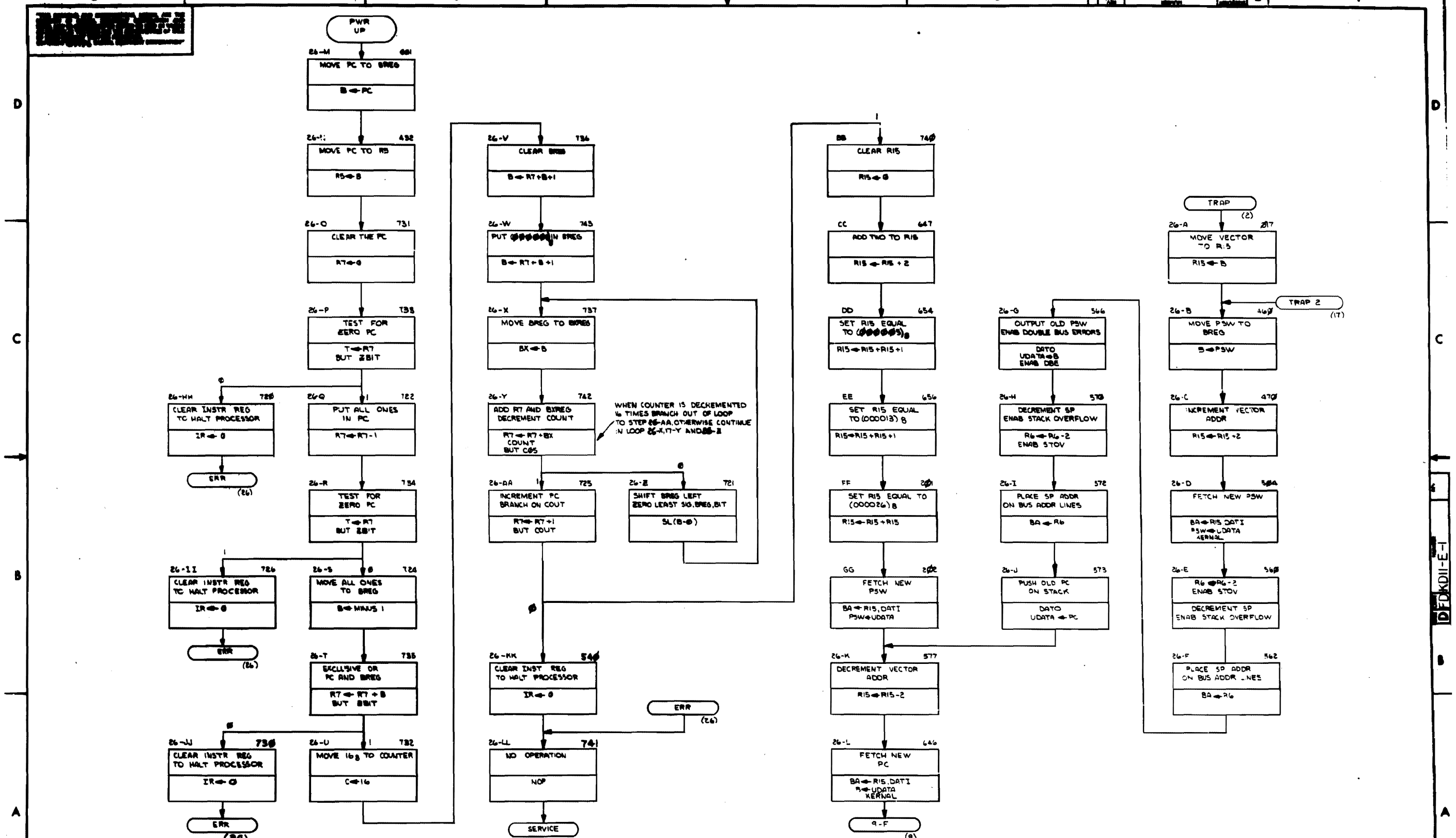
TITLE				NUMBER	REV.
KDIIE FLOW DIAGRAMS	DRAWING	D	FD	KDII-E-1	
SCALE	SHEET 24 OF 26	DWG.			



REVISIONS		
ENG	CHANGE NO.	REV.

TITLE			
KDIIE FLOW DIAGRAMS		DFD KDII-E-1	REV.
SCALE	SHEET 25 OF 26	DIST.	

DFD KDII-E-1

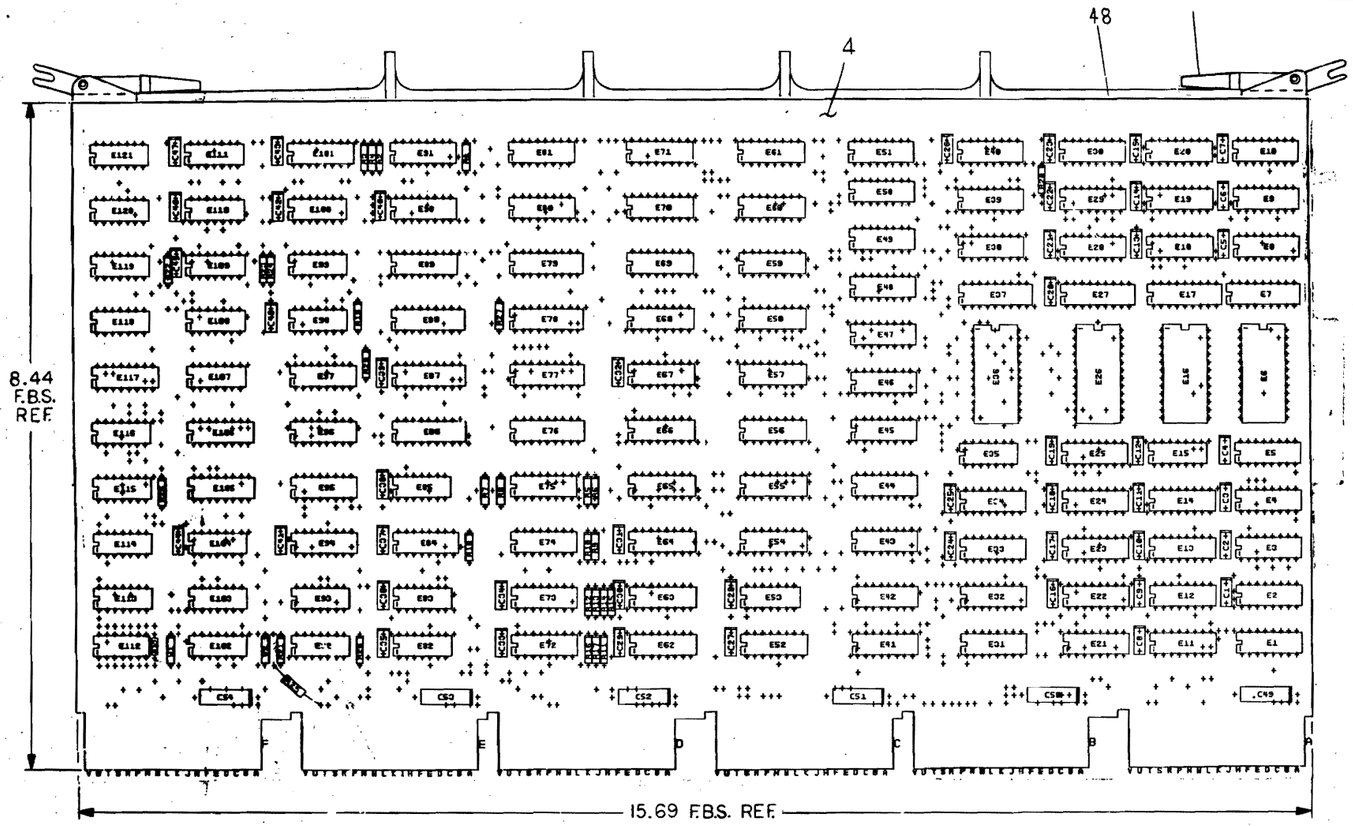


REVISIONS		
CHK	CHANGES NO.	REV.

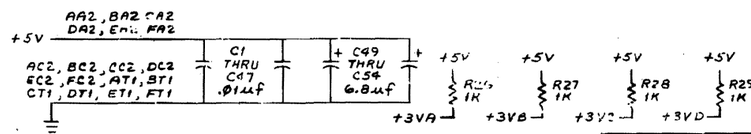
TITLE	SIZE	CODE	NUMBER	REV.
KDIIE FLOW DIAGRAMS	D	FD	KDII-E-1	
SCALE	SHEET 26 OF 26		DIST.	

NOTES:

2	E82, E83	IC DEC 74S37	1912746-00	51	
1	E175	IC 256X4 BIT ROM OC	23167A2	52	
1	E81	IC 256X4 BIT ROM OC	23165A2	53	
1	E84	IC 256X4 BIT ROM OC	23166A2	54	
1	E105	IC 256X4 BIT ROM TS	23164A2	55	
A/R		WIRE, 30AWG GREEN	9105740-55	56	
1	E112	IC. DEC 74S64	1910542-00	57	



I. C. DEC 74S181	12	24				
I. C. DEC 74S157	8	16				
I. C. DEC 74S153	8	16				
I. C. DEC 74S175	8	16				
I. C. DEC 8553-8	8	16				
I. C. DEC 74187	8	16				
I. C. DEC 74194	8	16	I. C. DEC 74S174	8	16	
I. C. DEC 7415	8	16	I. C. DEC 74S98	5	16	
I. C. DEC 74175	8	16	I. C. DEC 74174	8	16	
I. C. DEC 74S8	8	16	I. C. DEC 1983	12		5
I. C. DEC 7405	7	16	I. C. DEC 74LS182	8	16	
I. C. DEC 8641	8	16	I. C. DEC 74LS259	8	16	
IC TYPE	GND	+5V	IC TYPE	GND	+5V	-5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE						
IC PIN LOCATIONS						



REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7265-B-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7265-B-5	2
REF		MODULE ECO HISTORY	B-MH-M7265-B-6	3
1		ETCHED CIRCUIT BOARD	5011620	4
47	C1 THRU C47	CAPACITOR, .01uf, 100V, 20%	1001810-01	5
6	C49 THRU C54	CAPACITOR, 6.8uf, 35V, 10%	1005308	6
1	C48	CAPACITOR, 220pf, 100V, 5%	1000021	7
1		HANDLE, HEX MODULE	1210711-02	8
19	R1 THRU R19	RESISTOR, 470 OHM, 1/4W, 5%	1300316	9
8	R20 THRU R23, R26 THRU R29	RESISTOR, 1K, 1/4W, 5%	1300365	10
1	R24	RESISTOR, 47 OHM, 1/4W, 5%	1300202	11
2	R25, R30 (RETROFIT)	RESISTOR, 220 OHM, 1/4W, 5%	1300271	12
1	E102	DELAY LINE, 150 NS	1612463	13
1	E120	I.C. DEC 7432	1911521	14
1	E121	I.C. DEC 7410	1905576	15
2	E99, E100	I.C. DEC 7402	1909004	16
1	E115	I.C. DEC 7404	1909886	17
2	E104, E110	I.C. DEC 7408	1910155	18
1	E108	I.C. DEC 7400	1905575	19
1	E118	I.C. DEC 74132	1911637	20
2	E53, E85	I.C. DEC 7430	1905578	21
1	E114	I.C. DEC 7437	1910091	22
2	E98, E107	I.C. DEC 74S74	1910544	23
2	E80, E81	I.C. DEC 7485	191024[illegible]	24
1	E113	I.C. DEC 7486	1910011	25
9	E1, E11, E21, E31, E41, E42, E52, E82, E83	I.C. DEC 8641	1911579	26
2	E15, E35	I.C. DEC 8815	1909713	27
3	E5, E8, E117	I.C. DEC 74153	1909937	28
5	E18, E28, E38, E90, E91	I.C. DEC 74157	1910855	29
4	E49, E50, E51, E71	I.C. DEC 74174	1910852	30
3	E80, E97, E101	I.C. DEC 74175	1910851	31
8	E9, E10, E19, E20, E29, E30, E39, E40	I.C. DEC 74194	1910823	32
3	E44, E55, E65	I.C. DEC 7483-A	1909932-01	33
3	E43, E54, E84	I.C. DEC 74298	1911271	34
1	E109	I.C. DEC 74H01-1	1909849	35
3	E93, E111, E116	I.C. DEC 74S08	1910532	36
1	E103	I.C. DEC 74S04	1910534	37
10	E3, E4, E12, E13, E23, E24, E32, E33, E34, E45	I.C. DEC 74S153	1910547	38
8	E2, E14, E22, E70, E89, E94, E96, E106	I.C. DEC 74S157	1910548	39
3	E46, E47, E48	I.C. DEC 74S174	1910550	40
4	E6, E16, E26, E36	I.C. DEC 74S181	1910531	41
1	E25	I.C. DEC 74S182	1912097	42
8	E56, E57, E58, E59, E68, E67, E68, E69	I.C. DEC 74LS253	1912646	43
11	E7, E17, E27, E37, E76, E77, E78, E79, E86, E87, E88	I.C. DEC 85S08	1912588	44
2	E92, E119	I.C. DEC 74S10	1910538	45
1	E95	I.C. DEC 74S175	1910957	46
2	E72, E73, [illegible]	I.C. 256 X 4 BIT ROM OC	2316[illegible]A2	47
12		EYELET (HANDLE)	9006732	48
2	W1, W2	WIRE, JUMPER (INSULATED)	9009185	49
1	E74	I.C. 256 X 4 BIT ROM OC	23160A2	50
QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV. C

FIRST USED ON OPTION MODEL

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

SEMICONDUCTOR CONVERSION CHART

REV.	CHANGE NO.	DATE	REVISIONS
C	M7265-C0001	2-AUG-76	
D	M7265-D0002	11-AUG-76	

DRN J. Vincent DATE 10-23-75
CHK [illegible] DATE 12-1-75
ENG [illegible] DATE 12-1-75
QUAL [illegible] DATE 12-1-75
PROJ [illegible] DATE 12-1-75
NEXT HIGHER ASSY

digital

TITLE KDIIE DATA PATH

SCALE
SHEET 1 OF 11

SIZE	CODE	NUMBER	REV.
D	CS	M7265-Ø-1	D

DIST.

D CS M7265-Ø-1 D

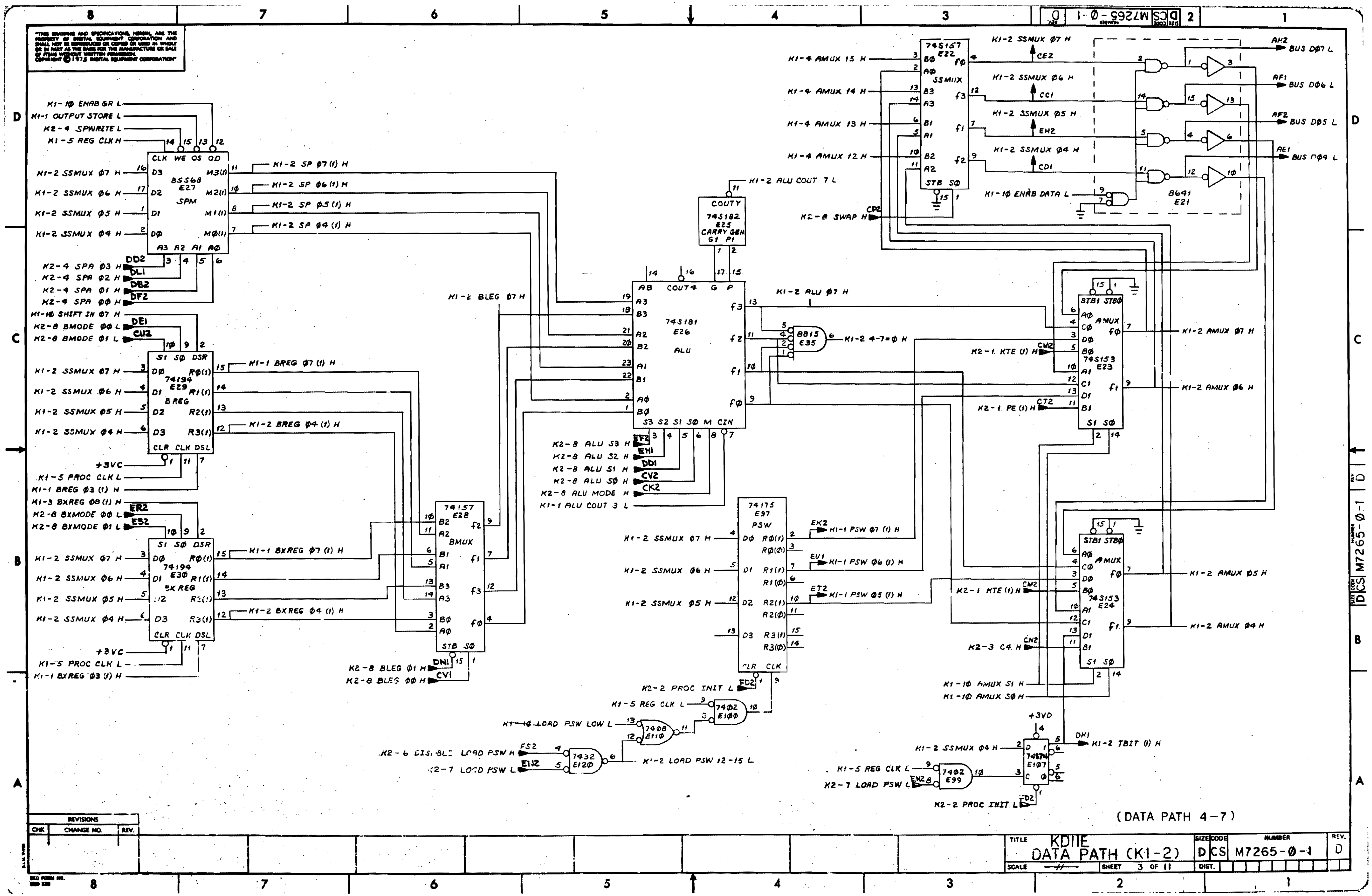
K1-10 ENAB GR L
K1-5 TAP 30 H
K1-10 GEN REG L
K2-4 SP WRITE L
K1-5 REG CLK H
74S00 E93
K1-1 OUTPUT STORE L
EF1
CLK WE OS OD
85S68 E7 SPM
A3 A2 A1 A0
K1-1 SSMUX Ø3 H
K1-1 SSMUX Ø2 H
K1-1 SSMUX Ø1 H
K1-1 SSMUX ØØ H
M3(1) M2(1) M1(1) MØ(1)
K1-1 SP Ø3 (1) H
K1-1 SP Ø2 (1) H
K1-1 SP Ø1 (1) H
K1-1 SP ØØ (1) H
DD2 DL1 DB2 DF2
K2-4 SPA Ø3 H
K2-4 SPA Ø2 H
K2-4 SPA Ø1 H
K2-4 SPA ØØ H
K1-2 BREG Ø4 (1) H
K2-8 BMODE ØØ L
K2-8 BMODE Ø1 L
DE1 CU2
S1 S0 DSR
D0 D1 D2 D3
74194 E9 BREG
R0(1) R1(1) R2(1) R3(1)
CLR CLK DSL
K1-1 BREG Ø3 (1) H
K1-1 BREG ØØ (1) H
DM1
+3VC
K1-5 PROC CLK L
K1-10 SHIFT IN B H
K1-2 BXREG Ø4 (1) H
K2-8 BXMODE ØØ L
K2-8 BXMODE Ø1 L
ER2 ES2
K1-1 BXREG Ø3 (1) H
K1-1 BXREG Ø2 (1) H
K1-1 BXREG Ø1 (1) H
K1-1 BXREG ØØ (1) H
DF1 CU1
B LEG
S1 S0 F
0 C 0 L
0 1 SX
2 1 0 R
3 1 1 +1
STB1 STB0
C1 D1 B1 A1 C0 D0 B0 A0 S1 S0
74153 E8 BMUX
f1 f0
74153 E5 BMUX
K2-8 BLEG Ø1 H
K2-8 BLEG ØØ H
K2-4 DISABLE ASYN +1 L
K2-8 AUX CONTROL 0) L
DN1 CV1 CS2 ER1
7432 E12Ø
7486 E113
K1-10 LOAD PSW LOW L
K1-1 ALU COUT 3 L
K2-8 ALU CIN L
COUTX 74S182 CIN E25 CARRY GEN
G0 P0
A B COUT4 G P
74S181 E6 ALU
f3 f2 f1 f0
K2-8 ALU S3 H
K2-8 ALU S2 H
K2-8 ALU S1 H
K2-8 ALU S0 H
K2-8 ALU MODE H
K2-8 ALU CIN L
EF2 EH1 DD1 CV2 CK2 CR2
S3 S2 S1 S0 M CIN
8815 E15
K1-1 Ø-3 = Ø H
K1-10 CC N H
K1-1 SSMUX Ø3 H
K1-10 CC Z H
K1-1 SSMUX Ø2 H
K1-10 CC V H
K1-1 SSMUX Ø1 H
K1-10 CC C H
K1-1 SSMUX ØØ H
74S157 E96 PSW MUX
74S175 E95 PSW
EP2 EV1 EU2 DV1
K1-1 N BIT (1) H
K1-1 Z BIT (1) H
K1-1 V BIT (1) H
K1-1 C BIT (1) H
CLR CLK
K2-2 PROC INIT L
FD2
K1-5 REG CLK L
K2-7 LOAD CC L
K2-7 LOAD PSW L
K1-10 LOAD PSW LOW L
FF2 EN2
7402 E100
7408 E110
7403 E110
74S157 E2 SSMUX
K1-3 AMUX 11 H
K1-3 AMUX 10 H
K1-3 AMUX Ø9 H
K1-3 AMUX Ø8 H
B0 A0 B3 A3 B1 A1 B2 A2 STB S0
f0 f3 f1 f2
K1-1 SSMUX Ø3 H
K1-1 SSMUX Ø2 H
K1-1 SSMUX Ø1 H
K1-1 SSMUX ØØ H
ED1 ED2 EE1 EB2
K1-10 ENAB DATA L
K2-8 SWAP H
LP2
8641 E1
AE2 AD1 AD2 AC1
BUS DØ3 L
BUS DØ2 L
BUS DØ1 L
BUS DØØ L
STB1 STB0
A0 C0 D0 B0 A1 C1 D1 B1 S1 S0
AMUX 74S153 E3
AMUX 74S153 E4
CS1 K2-3 C3 H
CL1 K2-3 C2 H
K1-1 AMUX Ø3 H
K1-1 AMUX Ø2 H
K1-1 AMUX Ø1 H
K1-1 AMUX ØØ H
K1-10 AMUX 1 H
K1-10 AMUX S0 H

S1	S0	F
Ø	Ø	UBUS
Ø	1	K
1	Ø	ALU
1	1	PSW

(DATA PATH Ø-3)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE KDIIE DATA PATH (K1-1)
SCALE —H— SHEET 2 OF 11
SIZE D CODE CS NUMBER M7265-Ø-1 REV D
DIST.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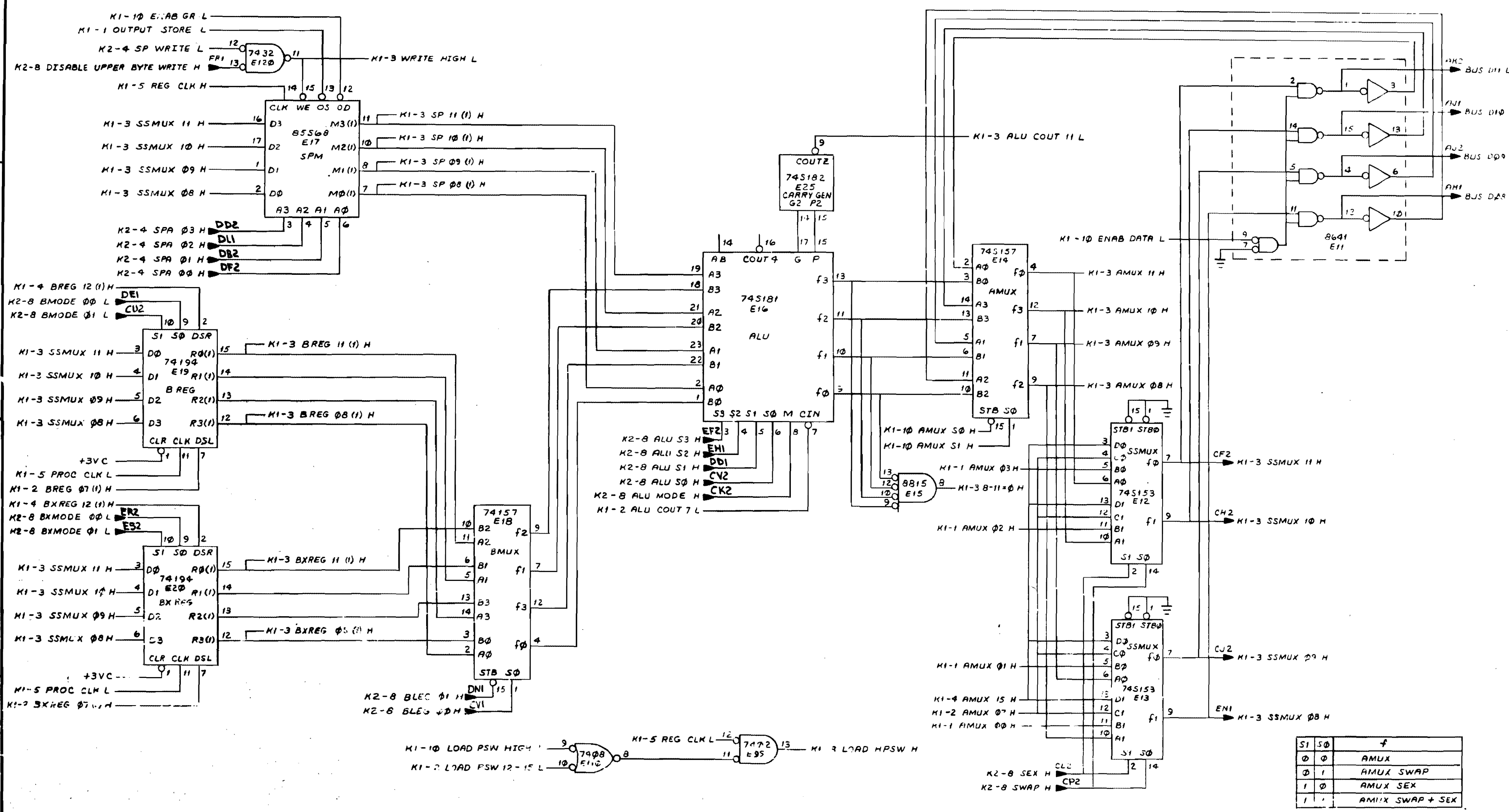
85S68 E27 SPM
74194 E29 BREG
74194 E30 BX REG
74157 E28 BMUX
74S182 E25 CARRY GEN
74S181 E26 ALU
8815 E35
74175 E97 PSW
74S157 E22 SSMUX
8641 E21
74S153 E23 AMUX
74S153 E24 AMUX
7402 E100
7408 E110
7432 E120
7402 E99
7474 E107
BUS D07 L
BUS D06 L
BUS D05 L
BUS D04 L
(DATA PATH 4-7)
REVISIONS
CHK
CHANGE NO.
REV.
TITLE
KD11E
DATA PATH (K1-2)
SIZE D
CODE CS
NUMBER M7265-0-1
REV. D
SCALE
SHEET 3 OF 11
DIST.



K1-10 ENAB GR L
K1-1 OUTPUT STORE L
K2-4 SP WRITE L
K2-8 DISABLE UPPER BYTE WRITE H
7432 E120
K1-3 WRITE HIGH L
K1-5 REG CLK H
85S68 E17 SPM
K1-3 SSMUX 11 H
K1-3 SSMUX 10 H
K1-3 SSMUX 09 H
K1-3 SSMUX 08 H
K1-3 SP 11 (1) H
K1-3 SP 10 (1) H
K1-3 SP 09 (1) H
K1-3 SP 08 (1) H
K2-4 SPA 03 H
K2-4 SPA 02 H
K2-4 SPA 01 H
K2-4 SPA 00 H
K1-4 BREG 12 (1) H
K2-8 BMODE 00 L
K2-8 BMODE 01 L
74194 E19 B REG
K1-3 BREG 11 (1) H
K1-3 BREG 08 (1) H
+3V C
K1-5 PROC CLK L
K1-2 BREG 07 (1) H
K1-4 BXREG 12 (1) H
K2-8 BXMODE 00 L
K2-8 BXMODE 01 L
74194 E20 BX REG
K1-3 BXREG 11 (1) H
K1-3 BXREG 05 (1) H
K1-2 BXREG 07 (1) H
74157 E18 BMUX
K2-8 BLEG 01 H
K2-8 BLEG 00 H
74S182 E25 CARRY GEN
K1-3 ALU COUT 11 L
74S181 E16 ALU
K2-8 ALU S3 H
K2-8 ALU S2 H
K2-8 ALU S1 H
K2-8 ALU S0 H
K2-8 ALU MODE H
K1-2 ALU COUT 7 L
74S157 E14 AMUX
K1-3 AMUX 11 H
K1-3 AMUX 10 H
K1-3 AMUX 09 H
K1-3 AMUX 08 H
K1-10 AMUX S0 H
K1-10 AMUX S1 H
8815 E15
K1-3 8-11=0 H
K1-1 AMUX 03 H
K1-1 AMUX 02 H
K1-1 AMUX 01 H
K1-4 AMUX 15 H
K1-2 AMUX 07 H
K1-1 AMUX 00 H
74S153 E12 SSMUX
74S153 E13 SSMUX
K1-3 SSMUX 11 H
K1-3 SSMUX 10 H
K1-3 SSMUX 09 H
K1-3 SSMUX 08 H
K2-8 SEX H
K2-8 SWAP H
K1-10 ENAB DATA L
8641 E11
BUS D11 L
BUS D10 L
BUS D09 L
BUS D08 L
K1-10 LOAD PSW HIGH
K1-2 LOAD PSW 12-15 L
7408 E110
K1-5 REG CLK L
7402 E95
K1-3 LOAD HPSW H

S1	S0	f
0	0	AMUX
0	1	AMUX SWAP
1	0	AMUX SEX
1	1	AMUX SWAP + SEX

(DATA PATH 8-11)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE KD11E DATA PATH (K1-3)

SIZE D CODE CS NUMBER M7265-0-1 REV D

SCALE — SHEET 4 OF 11 DIST.

K1-10 ENAB GR L
K1-1 OUTPUT STORE L
K1-3 WRITE HIGH L
K1-5 REG CLK H

CLK WE OS OD
85S68 E37 SPM
D3 D2 D1 D0
M3(1) M2(1) M1(1) M0(1)
A3 A2 A1 A0

K1-4 SSMUX 15 H
K1-4 SSMUX 14 H
K1-4 SSMUX 13 H
K1-4 SSMUX 12 H

CN1
K1-4 SP 15 (1) H
K1-4 SP 14 (1) H
K1-4 SP 13 (1) H
K1-4 SP 12 (1) H

K2-4 SPA Ø3 H
K2-4 SPA Ø2 H
K2-4 SPA Ø1 H
K2-4 SPA ØØ H
DD2
DL1
DB2
DF2

K1-10 SHIFT IN B H
K2-8 BMODE ØØ L
K2-8 BMODE Ø1 L
DE1
CU2

S1 S0 DSR
74194 E39 B REG
D0 D1 D2 D3
R0(1) R1(1) R2(1) R3(1)
CLR CLK DSL

K1-4 SSMUX 15 H
K1-4 SSMUX 14 H
K1-4 SSMUX 13 H
K1-4 SSMUX 12 H

K1-4 BREG 15 (1) H
K1-4 BREG 14 (1) H
K1-4 BREG 12 (1) H

+3VC
K1-5 PROC CLK L
K1-3 BREG 11 (1) H
K1-1 BREG ØØ (1) H

ER2
ES2
K2-8 BX MODE ØØ L
K2-8 BX MODE Ø1 L

S1 S0 DSR
74194 E40 BX REG
D0 D1 D2 D3
R0(1) R1(1) R2(1) R3(1)
CLR CLK DSL

K1-4 SSMUX 15 H
K1-4 SSMUX 14 H
K1-4 SSMUX 13 H
K1-4 SSMUX 12 H

K1-4 BX REG 15 (1) H
K1-4 BX REG 12 (1) H

+3VC
K1-5 PROC CLK L
K1-3 BX REG 11 (1) H

K1-4 BLEG 15 H

74157 E38 BMUX
B2 A2 B1 A1 B3 A3 B0 A0
f2 f1 f3 f0
STB S0

K2-8 BLEG Ø1 H
K2-8 BLEG ØØ H
DN1
CV1

+3VA
74S00 E116
FL2
K1-4 ALU COUT H

AB COUT4 G P
74S181 E36 ALU
A3 B3 A2 B2 A1 B1 A0 B0
f3 f2 f1 f0
S3 S2 S1 S0 M CIN

K1-4 ALU 15 H

8815 E35
K1-4 12-15=0 H

K2-8 ALU S3 H
K2-8 ALU S2 H
K2-8 ALU S1 H
K2-8 ALU S0 H
K2-8 ALU MODE H
K1-3 ALU COUT 11 L
EF2
EH1
DD1
CV2
CK2

74175 E80 PSW
D0 D1 D2 D3
R0(1) R0(Ø) R1(1) R1(Ø) R2(1) R2(Ø) R3(1) R3(Ø)
CLR CLK

K1-4 SSMUX 15 H
K1-4 SSMUX 14 H

K1-4 PSW 15 (1) H
K1-4 PSW 15 (1) L
K1-4 PSW 14 (1) H
K1-4 PSW 13 (1) H
K1-4 PSW 12 (1) H
EE2

74157 E90 PSW MUX
B3 A3 B2 A2 B1 A1 B0 A0
f3 f2 f1 f0
STB S1

K1-4 PSW 15 (1) H
K1-4 SSMUX 13 H
K1-4 PSW 14 (1) H
K1-4 SSMUX 12 H

K2-9 FORCE KERNEL (1) H
EK1
K2-2 PROC INIT L
FD2
K1-3 LOAD HPSW H

K1-10 ENAB DATA L

8641 E31

AM2 BUS DI5 L
AL1 BUS DI4 L
AL2 BUS DI3 L
AK1 BUS DI2 L

STB1 STB0
74S153 E34 AMUX
D0 D1 C0 C1 B0 B1 A0 A1
f0 f1
S1 S0

K1-4 AMUX 15 H
K1-4 AMUX 14 H

K1-2 AMUX Ø7 H
K1-2 AMUX Ø6 H

74S153 E32 SSMUX
K1-4 SSMUX 15 H
K1-4 SSMUX 14 H
CB2
CH1

74S153 E95 AMUX
K1-4 AMUX 13 H
K1-4 AMUX 12 H

K1-10 AMUX S1 H
K1-10 AMUX S0 H

K1-2 AMUX Ø5 H
K1-2 AMUX Ø4 H

74S153 E33 SSMUX
K1-4 SSMUX 13 H
K1-4 SSMUX 12 H
CD2
CU1

K2-8 SEX H
K2-8 SWAP H
CL2
CP2

(DATA PATH 12-15)

REVISIONS

CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
KDIIE DATA PATH (K1-4)	D	CS	M7265-Ø-1	D
SCALE	SHEET 5 OF 11		DIST.	

DEC FORM NO. 2003 139

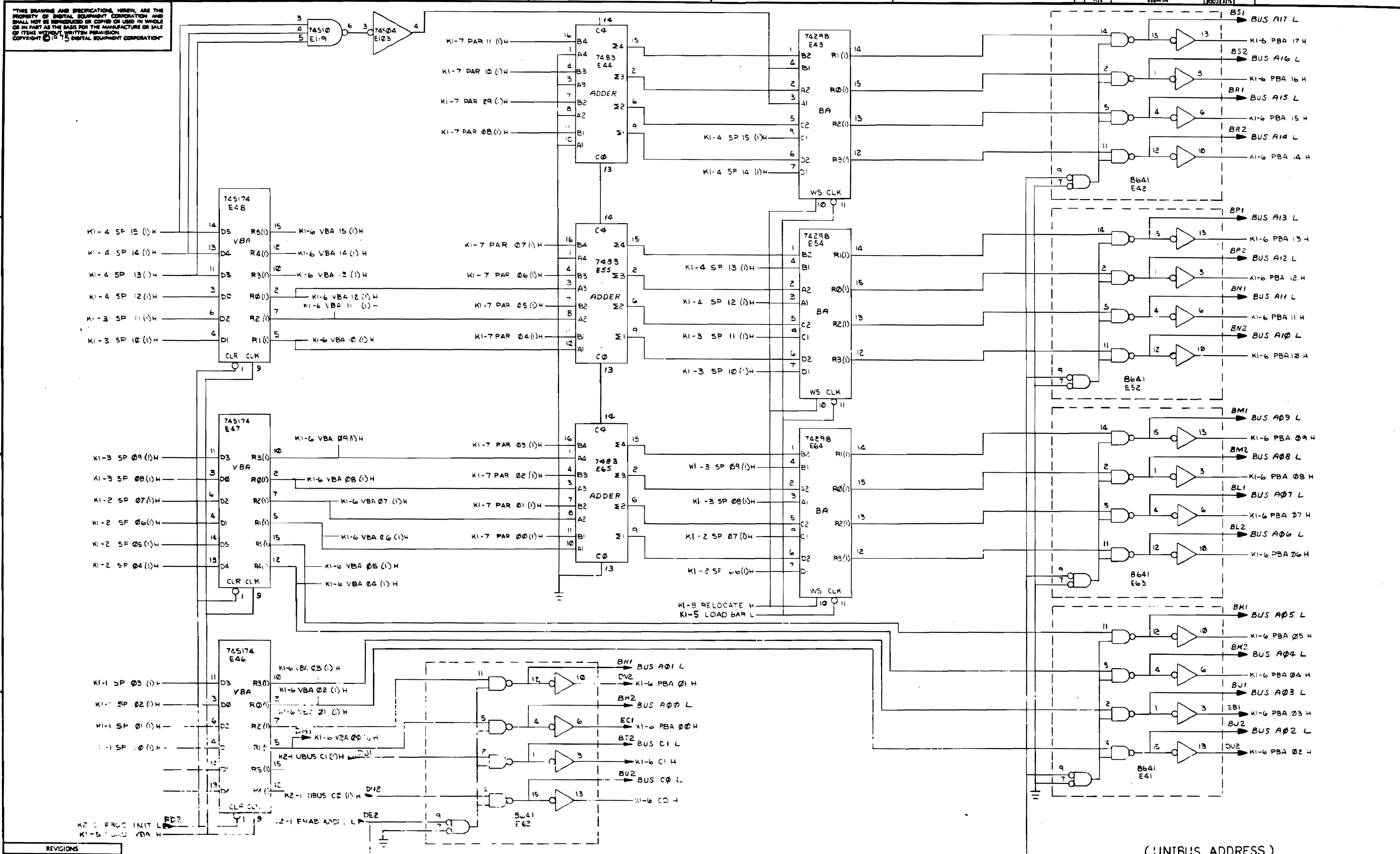
+5V
R2Ø 1K
R21 1K
MAN CLK L ES1
MAN CLK ENAB L FE1
74S1Ø E92
74S37 E83
K2-2 PROC INIT L FD2
K2-1 TRAN INH L EC1
K2-2 BG INH L FB1
74S1Ø E92
74S37 E83
74S1Ø E92
K1-1Ø ASSERT SSYN L
74S1Ø E92
R3Ø 22ØΩ +5V
74S04 E1Ø3
E1Ø2 15 3Ø 45 6Ø 75 9Ø 1Ø5 12Ø 135 15Ø
R25 22Ø
W1
W2
74S04 E1Ø3
74S04 E1Ø3
74S04 E1Ø3
K1-5 TAP 12Ø H
K1-5 TAP 9Ø H
EM2
K1-5 TAP 3Ø H
74S08 E1Ø4
74S157 E94
B Ø
A Ø
B1
A1
B2
A2
B3
A3
STB SØ
FØ
f1
f2
f3
74S08 E1Ø4
74S00 E93
K1-5 LOAD VBA H
FA1
K1-5 ALLOW MSYN H
K1-5 LOAD BAR L
K1-8 RELOCATE H
K2-8 LOAD BA (1) H FD1
K2-8 LONG CYCLE (1) L EV2
74S00 E93
74S00 E93
74S37 E83
74S37 E82
EJ2
K1-5 PROC CLK H
74S37 E82
EM1
K1-5 PROC CLK L
74S37 E82
K1-5 REG CLK L
74S37 E83
74S37 E82
K1-5 REG CLK H

(CPU CLK)

REVISIONS
CHK. | CHANGE NO. | REV.

TITLE KDIIE DATA PATH (K1-5)
SIZE D | CODE CS | NUMBER M7265-Ø-1 | REV D
SCALE — | SHEET 6 OF 11 | DIST.

SIZE D | CODE CS | NUMBER M7265-Ø-1 | REV D



REVISIONS		
CHK	CHANGE NO.	REV

TITLE: KD11E DATA PATH (K1-6)

SIZE: D | CODE: CS | NUMBER: M7265-0-1 | REV: D

SCALE: — | SHEET 7 OF 11 | DIST.

K1-10 LOAD PAR HIGH L
K1-5 REG CLK H
+3VB
85568 E78 PAR
K1-3 SSMUX 11 H
K1-3 SSMUX 10 H
K1-3 SSMUX 09 H
K1-3 SSMUX 08 H
K1-7 PAR 11 (1) H
K1-7 PAR 10 (1) H
K1-7 PAR 09 (1) H
K1-7 PAR 08 (1) H

K1-10 LOAD PAR LOW L
85568 E77 PAR
K1-2 SSMUX 07 H
K1-2 SSMUX 06 H
K1-2 SSMUX 05 H
K1-2 SSMUX 04 H
K1-7 PAR 07 (1) H
K1-7 PAR 06 (1) H
K1-7 PAR 05 (1) H
K1-7 PAR 04 (1) H

85568 E76 PAR
K1-1 SSMUX 03 H
K1-1 SSMUX 02 H
K1-1 SSMUX 01 H
K1-1 SSMUX 00 H
K1-7 PAR 03 (1) H
K1-7 PAR 02 (1) H
K1-7 PAR 01 (1) H
K1-7 PAR 00 (1) H

74S157 E89 PAR/PDR ADRS MUX
K1-6 MODE 01 H
K1-6 PBA 08 H
K1-6 PBA 03 H
K1-6 VBA 02 H
K1-6 PBA 02 H
K1-6 VBA 01 H
K1-6 PBA 01 H
S75 S0
K1-10 PAR + PDR L

K1-10 PAR + PDR L
K2-1 MSYN (1) L
FK2
7400 E108
K1-6 CI H

PAR
PAGE ADDRESS FIELD
PDR
PLF W ED ACF

K1-10 LOAD PDR HIGH L
K1-5 REG CLK H
85568 E87 PDR
K1-4 SSMUX 14 H
K1-4 SSMUX 13 H
K1-4 SSMUX 12 H
K1-7 PDR 14 (1) H
K1-7 PDR 13 (1) H
K1-7 PDR 12 (1) H

85568 E88 PDR
K1-3 SSMUX 11 H
K1-3 SSMUX 10 H
K1-3 SSMUX 09 H
K1-3 SSMUX 08 H
K1-7 PDR 11 (1) H
K1-7 PDR 10 (1) H
K1-7 PDR 09 (1) H
K1-7 PDR 08 (1) H

K1-10 LOAD PDR LOW L
85568 E86 PDR
K1-1 SSMUX 03 H
K1-1 SSMUX 02 H
K1-1 SSMUX 01 H
K1-7 ED (1) H
K1-7 ACF2 (1) H
K1-7 ACF1 (1) H

ED	DIRECTION
0	UP
1	DOWN

ACF2	ACF1	DESCRIPTION
0	0	NONRESIDENT
0	1	RESIDENT READ ONLY
1	0	ABORT ALL ACCESSES
1	1	RESIDENT READ/WRITE

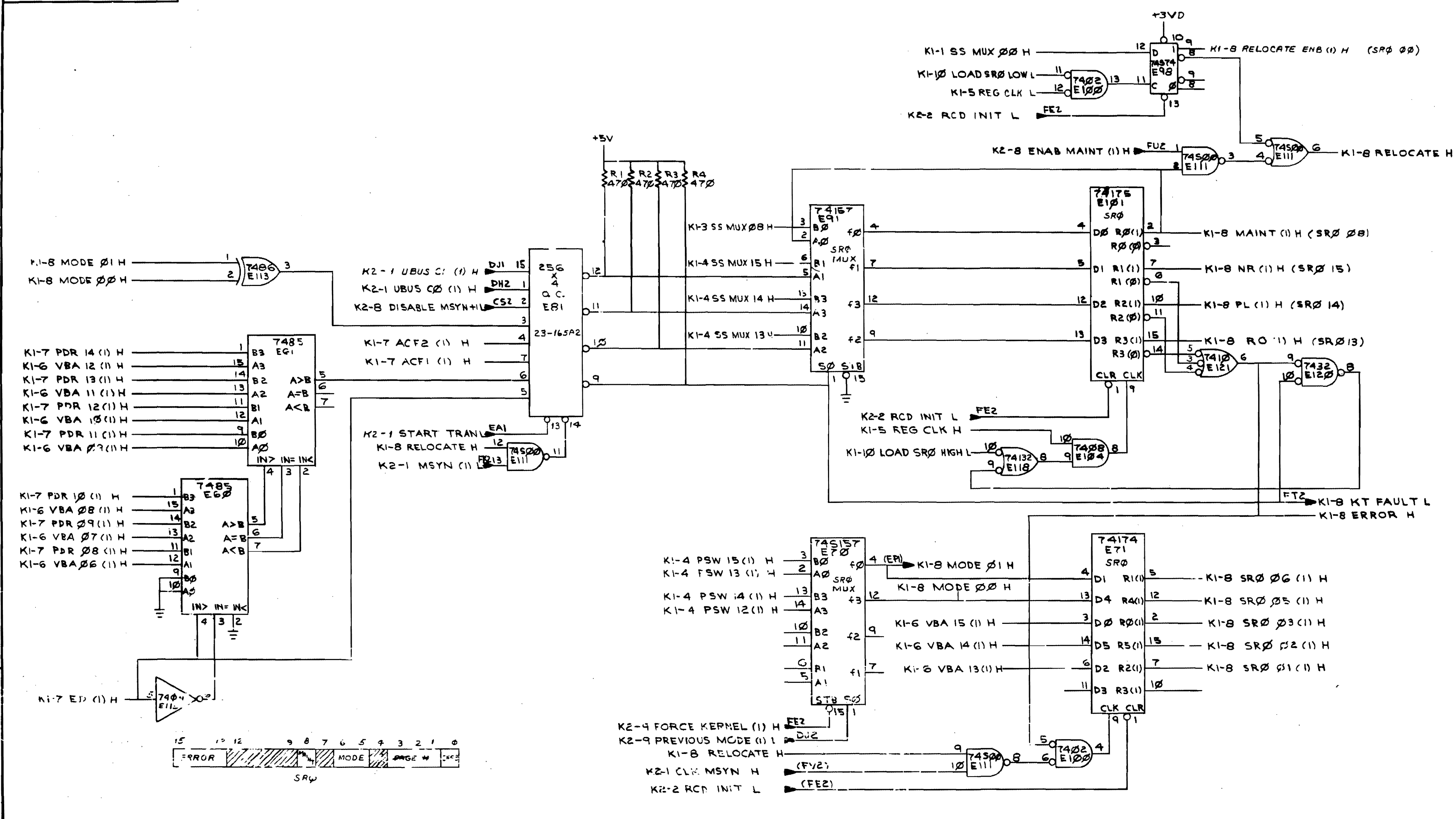
LOAD WBIT L
85568 E79 WBIT
7400 E115
K1-7 WBIT H
ENAB W L
K1-8 RELOCATE H
K2-1 DISABLE WBIT L
K1-10 KT MUX S1 L
7410 E121
7400 E108
K1-10 PAR + PDR L

(PAR + PDR)

REVISIONS
CHK | CHANGE NO. | REV.

TITLE KD11E DATA PATH (K1-7)
SIZE D CODE CS NUMBER M7265-0-1 REV D
SCALE — SHEET 8 OF 11 DIST.

8 7 6 5 4 3 2 1



+3VD
K1-1 SS MUX ØØ H
K1-1Ø LOAD SRØ LOW L
K1-5 REG CLK L
K2-2 RCD INIT L
7402 E1ØØ
74S74 E98
K1-8 RELOCATE ENB (1) H (SRØ ØØ)
K2-8 ENAB MAINT (1) H
74SØØ E111
K1-8 RELOCATE H
+5V
R1 47Ø R2 47Ø R3 47Ø R4 47Ø
K1-3 SS MUX Ø8 H
K1-4 SS MUX 15 H
K1-4 SS MUX 14 H
K1-4 SS MUX 13 H
74S157 E91 SRØ MUX
74175 E1Ø1 SRØ
K1-8 MAINT (1) H (SRØ Ø8)
K1-8 NR (1) H (SRØ 15)
K1-8 PL (1) H (SRØ 14)
K1-8 RO (1) H (SRØ 13)
74 1Ø E121
7432 E12Ø
K1-8 MODE Ø1 H
K1-8 MODE ØØ H
7486 E113
K2-1 UBUS C1 (1) H
K2-1 UBUS CØ (1) H
K2-8 DISABLE MSYN+1 L
K1-7 ACF2 (1) H
K1-7 ACF1 (1) H
256 X 4 O.C. E81 23-165A2
K1-7 PDR 14 (1) H
K1-6 VBA 12 (1) H
K1-7 PDR 13 (1) H
K1-6 VBA 11 (1) H
K1-7 PDR 12 (1) H
K1-6 VBA 1Ø (1) H
K1-7 PDR 11 (1) H
K1-6 VBA Ø9 (1) H
7485 E61
K2-1 START TRAN L
K1-8 RELOCATE H
K2-1 MSYN (1) L
74SØØ E111
K2-2 RCD INIT L
K1-5 REG CLK H
K1-1Ø LOAD SRØ HIGH L
74132 E118
7408 E1Ø4
K1-8 KT FAULT L
K1-8 ERROR H
K1-7 PDR 1Ø (1) H
K1-6 VBA Ø8 (1) H
K1-7 PDR Ø9 (1) H
K1-6 VBA Ø7 (1) H
K1-7 PDR Ø8 (1) H
K1-6 VBA Ø6 (1) H
7485 E6Ø
K1-7 ED (1) H
74Ø4 E11
K1-4 PSW 15 (1) H
K1-4 PSW 13 (1) H
K1-4 PSW 14 (1) H
K1-4 PSW 12 (1) H
74S157 E7Ø SRØ MUX
K1-8 MODE Ø1 H
K1-8 MODE ØØ H
K1-6 VBA 15 (1) H
K1-6 VBA 14 (1) H
K1-6 VBA 13 (1) H
74174 E71 SRØ
K1-8 SRØ Ø6 (1) H
K1-8 SRØ Ø5 (1) H
K1-8 SRØ Ø3 (1) H
K1-8 SRØ Ø2 (1) H
K1-8 SRØ Ø1 (1) H
K2-9 FORCE KERNEL (1) H
K2-9 PREVIOUS MODE (1) L
K1-8 RELOCATE H
K2-1 CLK MSYN H
K2-2 RCD INIT L
74SØØ E111
7402 E1ØØ
15 14 12 9 8 7 6 5 4 3 2 1 Ø
ERROR MODE PAGE # ENB
SRØ

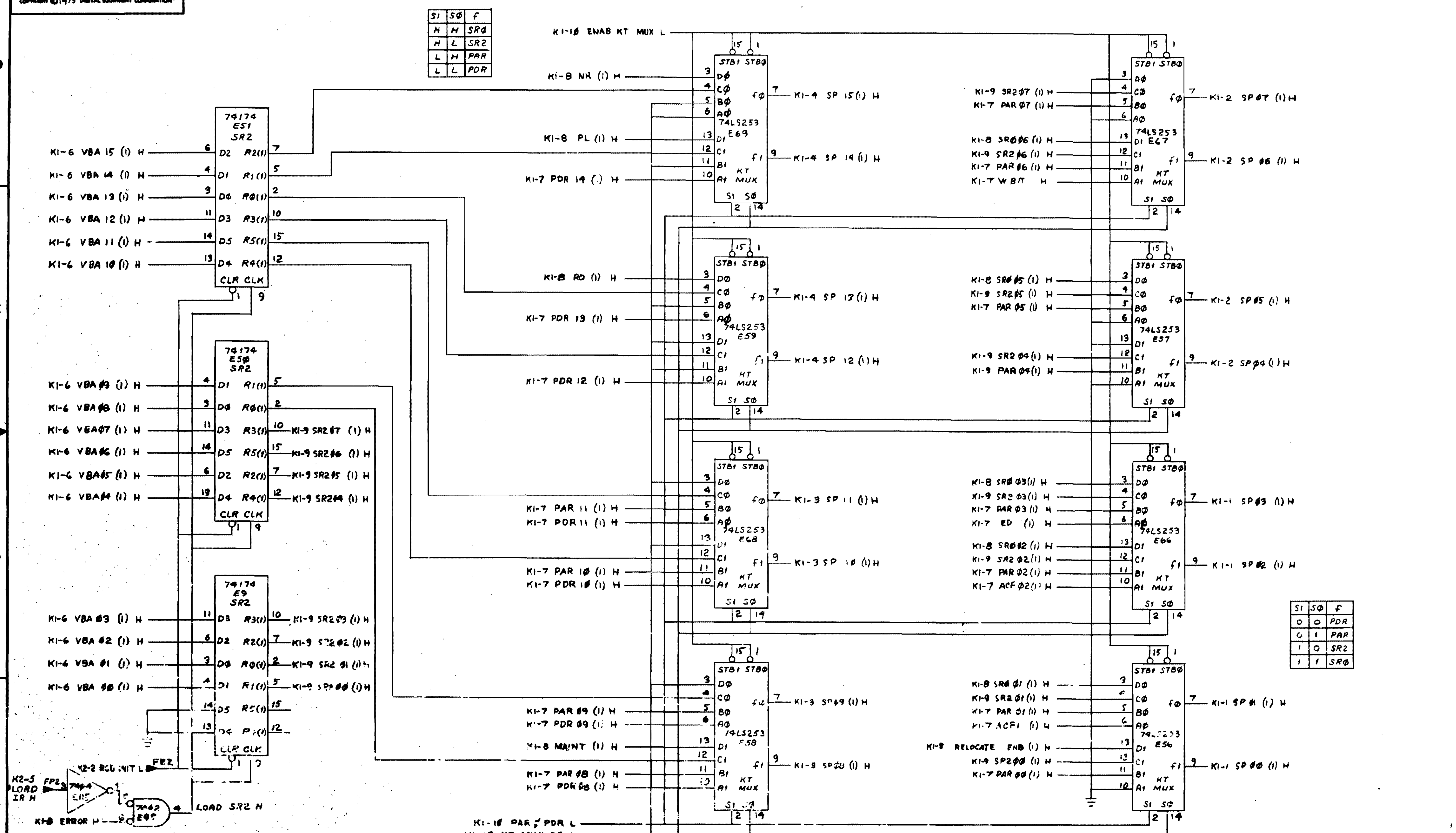
(SRØ AND KT ERROR)

REVISIONS		
CHK	CHANGE NO.	REV

TITLE	SIZE	CODE	NUMBER	REV.
KDIIE DATA PATH (K1-8)	D	CS	M7265-Ø-1	D
SCALE —	SHEET 9 OF 11	DIST.		

DEC FORM NO. DRD 130

S1	SØ	F
H	H	SRØ
H	L	SR2
L	H	PAR
L	L	PDR

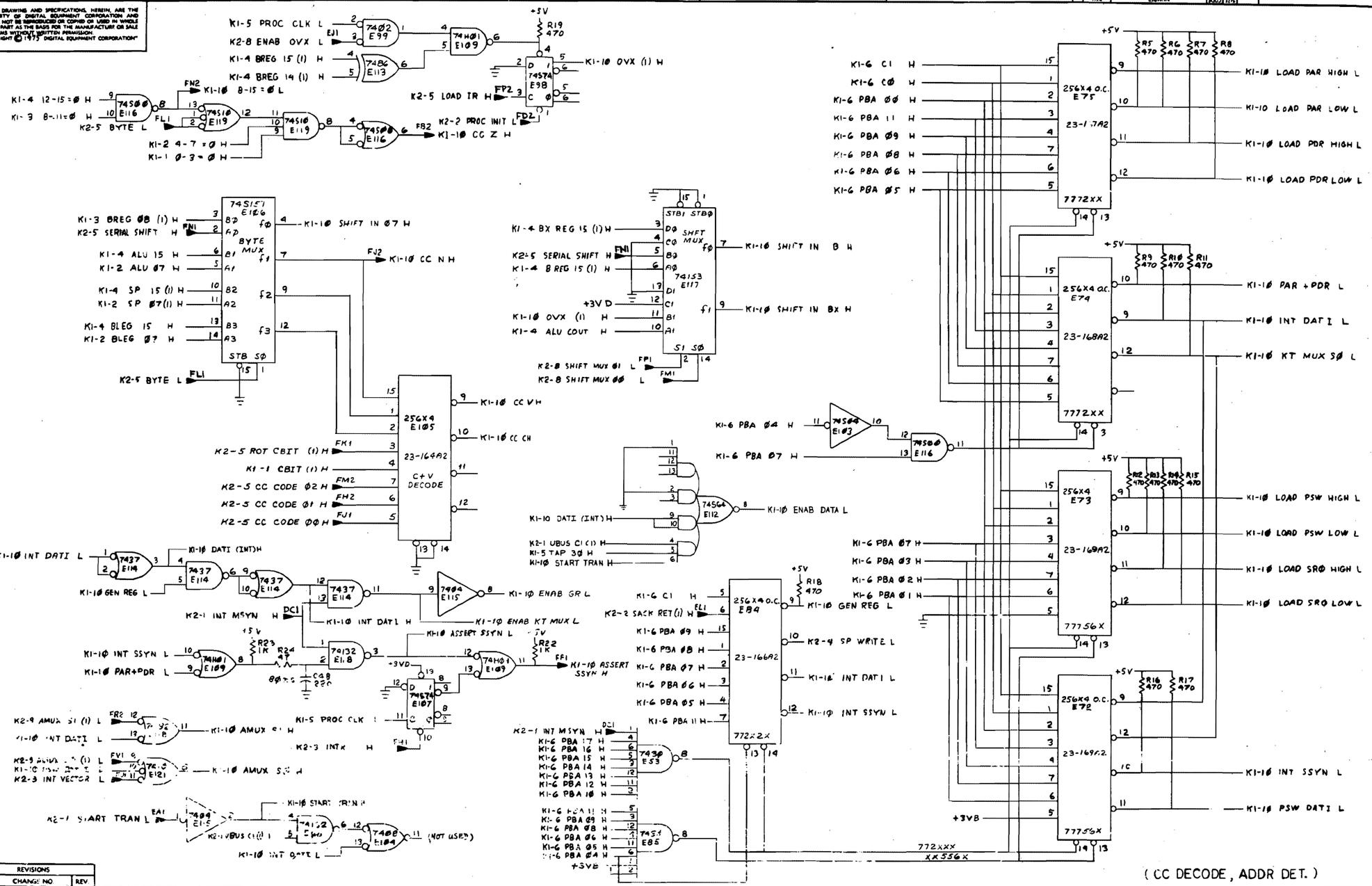


S1	SØ	F
0	0	PDR
0	1	PAR
1	0	SR2
1	1	SRØ

(SR2 AND KT MUX)

TITLE	SIZE	CODE	NUMBER	REV.
KD11E DATA PATH(K1-9)	D	CS	M7265-Ø-1	D

SCALE — SHEET 10 OF 11



(CC DECODE, ADDR DET.)

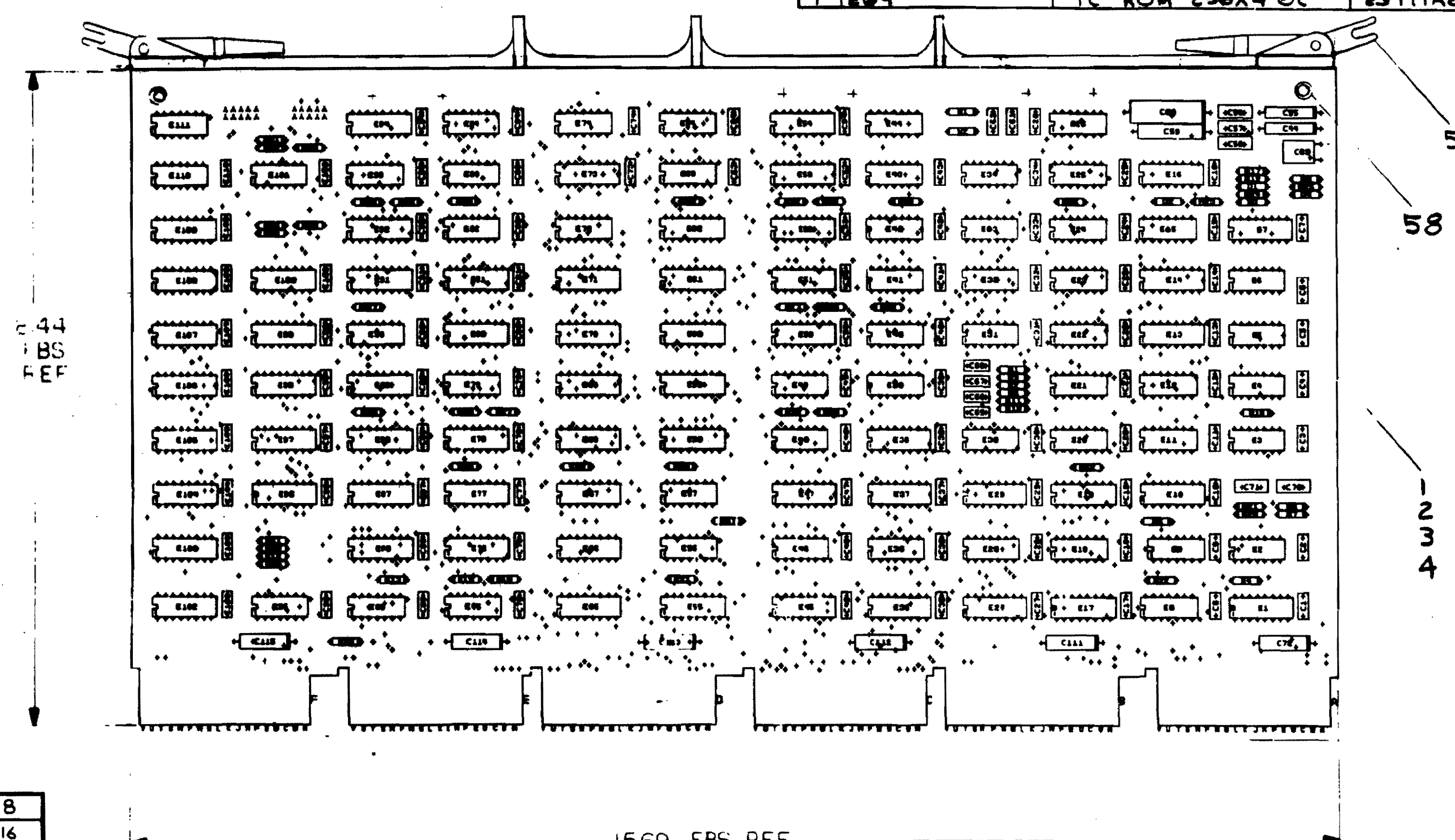
REVISIONS		
CHK	CHANGE NO	REV

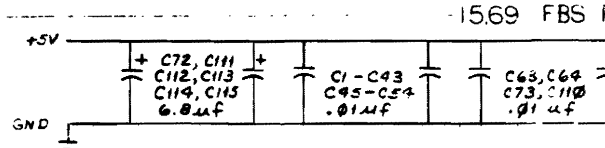
TITLE	SIZE	CODE	NUMBER	REV.
KDIIE DATA PATH (KI-10)	D	DCS	M7265-0-1	D
SCALE	SHEET 11 OF 11	DIST.		

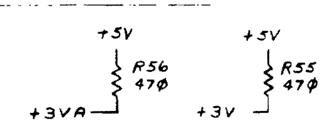
DEC FORM NO. DIND 1-68

PARTS LIST

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CD-M7266-Ø-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7266-Ø-5	2
REF		MODULE ECO HISTORY	B-MH-M7266-Ø-6	3
1		ETCHED CIRCUIT BOARD	5011621	4
3	C68,C58,C67	CAPACITOR, 100pf, 100V, 5%	1000016	5
6	C65,C66,C61,C57,C71,C56	CAPACITOR, 470pf, 100V, 5%	1000024	6
1	C69	CAPACITOR, 220pf, 250V, 20%	1000055	7
1	C60	CAPACITOR, 10uf, 35V, 10%	1001478	8
93	C1 THRU C43,C45 THRU C54, C63,C64,C73 THRU C110	CAPACITOR, .01uf, 100V DISC	1001610-01	9
1	C59	CAPACITOR, 15uf, 20V, 10%	1004812	10
6	C72,C111,C112,C113,C114, C115	CAPACITOR, 6.8uf, 35V, 10%	1005306	11
2	C44,C55	CAPACITOR, .68uf, 35V, 10%	1009984	12
2	C62,C70	CAPACITOR, 220pf, 100V, 5%	1000021	13
4	D1 THRU D4	DIODE, D664	1100114	14
5	R4,R7,R11,R21,R3	RESISTOR, 47 OHM, 1/4W, 5%	1300202	15
5	R1,R10,R17,R18,R52	RESISTOR, 150 OHM, 1/4W, 5%	1300250	16
1	R54	RESISTOR, 220 OHM, 1/4W, 5%	1300271	17
9	R40 THRU R48	RESISTOR, 390 OHM, 1/4W, 5%	1300309	18
21	R26 THRU R31,R33 THRU R39,R9 R49,R50,R51,R53,R56,R55,R5	RESISTOR, 470 OHM, 1/4W, 5%	1300316	19
3	R12,R20,R32	RESISTOR, 1K, 1/4W, 5%	1300365	20
1	R24	RESISTOR, 10K, 1/4W, 5%	1300479	21
4	R8,R19,R23,R25	RESISTOR, 30K, 1/4W, 5%	1302394	22
5	R13 THRU R16,R22	RESISTOR, 178 OHM, 1/4W, 1%	1311422	23
2	R2,R6	RESISTOR, 750 OHM, 1/4W, 5%	1301401	24
5	E5,E31,E32,E34,E12	I.C. DEC 7474	1905547	25
8	E3,E15,E18,E25,E28, ,E43, E85,E6	I.C. DEC 7400	1905575	26
1	E39	I.C. DEC 7410	1905578	27
2	E24,E44	I.C. DEC 7473	1905587	28
4	E22,E23,E42,E72,	I.C. DEC 7402	1909004	29
2	E8,E75	I.C. DEC 8881	1909705	30
2	E4,E30	I.C. DEC 8815	1909713	31
5	E40,E53,E64,E84,E93	I.C. DEC 74H01-Ø1	1909849	32
2	E90,E101	I.C. DEC 7405	1909930	33
2	E76,E77	I.C. DEC 74193	1910018	34
1	E89	I.C. DEC 7442	1910046	35
1	E79	I.C. DEC 7437	1910091	36
2	E11,E49	I.C. DEC 7408	1910155	37
3	E7,E14,E16	I.C. DEC 74123	1910438	38
3	E46,E36,E82	I.C. DEC 74S00	1910532	39
2	E110,E111	I.C. DEC 74S04	1910534	40
2	E56,E57	I.C. DEC 74S20	1910539	41
2	E35,E45	I.C. DEC 74S153	1910547	42
2	E38,E10	I.C. DEC 74S157	1910548	43
7	E37,E19,E7Ø,E87,E89,E91,E96	I.C. DEC 74S174	1910550	44
3	E13,E54,E88	I.C. DEC 74175	1910651	45
3	E55,E65 E92	I.C. DEC 74174	1910652	46
1	E74	I.C. DEC 7427	1910878	47
1	E47	I.C. DEC 74S175	1910957	48
2	E1,E17	I.C. DEC 8837	1911118	49
1	E21	I.C. DEC 7414	1911324	50
1	E9	I.C. DEC 8640	1911469	51
1	E26	IC DEC 74S37	1912746-00	52
2	E20,E95	IC DEC 74S02	1912388	53
1	E27	I.C. DEC 8641	1911579	54
2	E2,E41	I.C. DEC 74132	1911837	55
20		PIN WIRE WRAP	9009149	56
1		HANDLE ASSY	1210711-02	57
12		EYELET	9006732	58
1	W2	INSULATED JUMPER	9009185	59
2	E33, E48	IC DEC 74S74	1910544	60
1	E29	IC ROM 256X4 TS	23160A2	61
1	E50	IC ROM 32X8 TS	23106A1	62
1	E51	IC ROM 512X4 TS	23013A9	63
1	E52	IC ROM 256X4 OC	23175A2	64
1	E53	IC ROM 256X4 OC	23162A2	65
1	E58	IC ROM 256X4 OC	23174A2	66
1	E59	IC ROM 256X4 OC	23173A2	67
1	E60	IC ROM 256X4 TS	23161A2	68
1	E61	IC ROM 256X4 OC	23170A2	69
1	E62	IC ROM 256X4 OC	23176A2	70
1	E67	IC ROM 512X4 TS	23014A9	71
1	E68	IC ROM 256X4 OC	23172A2	72
1	E69	IC ROM 256X4 OC	23171A2	73
1	E71	IC ROM 256X4 OC	23A22A2	74
1	E73	IC ROM 32X8 OC	23110A1	75
1	E78	IC ROM 256X4 TS	23163A2	76
1	E80	IC ROM 32X8 TS	23108A1	77
1	E81	IC ROM 32X8 TS	23107A1	78
2	E86, E94	IC ROM 32X8 TS	23109A1	79
1	E97	IC ROM 512X4 TS	23021A9	80
1	E98	IC ROM 512X4 TS	23022A9	81
1	E99	IC ROM 512X4 TS	23020A9	82
1	E100	IC ROM 512X4 TS	23023A9	83
1	E102	IC ROM 512X4 TS	23025A9	84
1	E103	IC ROM 512X4 TS	23024A9	85
1	E104	IC ROM 512X4 TS	23026A9	86
1	E105	IC ROM 512X4 TS	23019A9	87
1	E106	IC ROM 512X4 TS	23018A9	88
1	E107	IC ROM 512X4 TS	23017A9	89
1	E108	IC ROM 512X4 TS	23016A9	90
1	E109	IC ROM 512X4 TS	23015A9	91
A/R		WIRE (WRAP) 30 AWG	9105740-55	92
1	E83	IC DEC 74S10	1910536	93







IC PIN LOCATIONS

IC TYPE	GND	+5V
IC DEC 8640	1	8
IC DEC 8837	8	16
IC DEC 74S175	8	16
IC DEC 74174	8	16
IC DEC 74175	8	16
IC DEC 74S174	8	16
IC DEC 74S157	8	16
IC DEC 74S153	8	16
IC DEC 74123	8	16
IC DEC 7442	8	16
IC DEC 74193	8	16
IC DEC 7473	11	4

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

REVISIONS: REV. | CHANGE NO. | CHK — E; D; C M7266-00003; B M7266-00002

FIRST USED ON OPTION MODEL

ETCH BOARD REV. B

SEMICONDUCTOR CONVERSION CHART — DEC NO. | EIA NO. | DEC NO. | EIA NO.

DRN: [signature] DATE 10/2/75
CHK'D: [signature] DATE 12-1-75
ENG: [signature] DATE 12-1-75
PROD: [signature] DATE 12-1-75
NEXT HIGHER ASSY

digital

TITLE: KDIIE CONTROL

SIZE: D | CODE: CS | NUMBER: M7266-Ø-1 | REV. E

SCALE: — | SHEET 1 OF 11 | DIST.

DEC FORM NO. DRG 1200

K2-1 MSYN (1) L
K2-1 MSYN H
K2-2 SACK RET (1) H
7400 E6
7400 E6
CF2
K2-1 INT MSYN H

K1-10 ASSERT SSYN H
EK2
R4 47
00715
C58 100
8641 E27
BUI
BUS SSYN L
K2-1 SSYN H

K2-1 DATIP (1) L
K2-1 DATIP (0) L
K2-1 BBSY H
K2-2 NPR H
K2-2 NPG (1) H
K2-2 NO SACK L
8815 E4
7402 E22
K2-1 BUS INUSE H

7474 E31
R1 150
40715
C68 100pF
7432 E41
7400 E43
START TRAN H

+5V
R2 750
R3 47
17075
C66 470
7414 E21
7402 E22

K2-1 UBUS C0 (1) L
K2-1 UBUS C1 (1) H
7402 E23
7474 E32
K2-1 DATIP (1) L
K2-1 DATIP (0) L

+3VA
K2-7 CLR MPC L
R54 220Ω
10075
C61 470 PF
7400 E36

K2-1 MSYN (1) H
CN2
K2-1 MSYN (1) L
K2-1 MSYN (0) H
7474 E31
CJ1
K2-1 CLK MSYN H

7400 E18
FB2
K2-1 ENAB ADDRS L

APZ
BUS BBSY L
K2-1 BBSY H
BUI
BUS MSYN L
K2-1 MSYN H
8641 E27

K2-1 SSYN H
K2-1 MSYN (1) H
8881 E8
8881 E8

+5V
R6 750
R7 47
00715
C70 220 PF
8837 E1
74132 E2
ENAB EOT H

BUS PB L
AN2
BUS PA L
AM1
8837 E1
R5 470
8640 E9
K2-1 MSYN (0) H
EV2
K1-5 ALLOW MSYN H
DET PE H
74132 E2
8837 E1

74S187 E10
B0
A0
B3
A3
B1
A1
B2
A2
STB SB
F0
F3
F1
F2

K2-5 BYTE H
K2-8 BUF C0 (1) H
K2-8 BUF C1 (1) H
7400 E99

K2-1 PARITY ERROR H
K2-1 ABORT RESTART L
EOT L
7410 E39
CK2
K2-1 TRAN IN L

74175 E13
D1
D3
D0
D2
CLR CLK
R1(0)
R1(1)
R3(0)
R3(1)
R2(0)
R2(1)
R0(0)
R0(1)
CB2
K2-1 UBUS C0 (1) H
K2-1 UBUS C0 (1) L
CC1
K2-1 UBUS C1 (1) H
K2-2 PROC INIT L

K2-8 DISABLE MSYN+1L
K1-8 KT FAULT L
DD2
74138 E91

C69 2200 PF
R8 30K
+5V
74125 E46
+3VA
K2-1 SSYN H
7474 E32
K2-1 TO (1) H
K2-1 TO (1) L
K2-1 MSYN (1) H

+5V
R9 470
R10 150
17523
C65 470 PF
7414 E21
K2-1 ABORT RESTART L

ENAB ABORT H
7410 E39
7400 E43
7402 E83
K2-1 TO (1) H
K2-1 ABORT H
7400 E99
DE2
K2-1 DISABLE MBIT L
R11 47
30723
C67 100 PF
7414 E21
K2-1 SET BE L

K2-1 ABORT H
K2-1 TO (1) L
74132 E91
7432 E41
K2-1 BE (1) H
K2-1 BE (1) L
7474 E33

K2-2 BUT SERVICE L
K2-2 PROC INIT L
7400 E43
7400 E43

CT2
K2-1 RE (1) H
7474 E34
W1
W2
EJ2
K2-1 KTE (1) H
7474 E34

(DAT TRAN)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE			
KDIIE CONTROL (K2-1)			
SCALE	SHEET 2 OF 14	DCS M7266-0-1	REV. E

DCS M7266-0-1 REV E

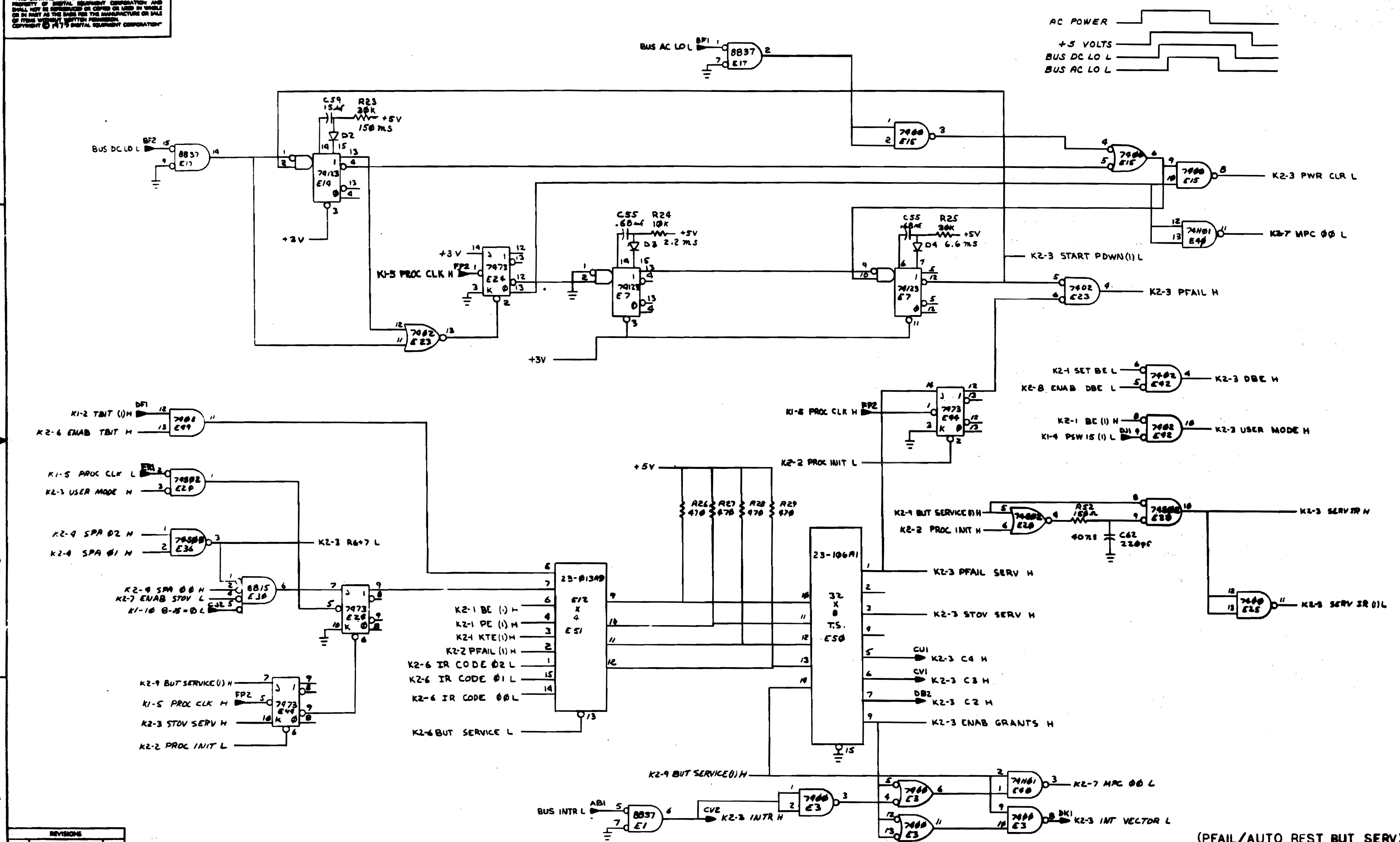
BUS BR7 L
BUS BR6 L
BUS BR5 L
BUS BR4 L
HLT RQST L
K2-3 PFAIL H
K2-2 SACK RET(1) L
K2-2 BUT SERVICE (1) H
K1-2 PSW @7(1) H
K1-2 PSW @6(1) H
K1-2 PSW @5(1) H
HLT RQST (1) H
K2-2 PFAIL (1) H
BG7 H
BG6 H
BG5 H
BG4 H
BG ENAB H
K2-3 ENAB GRANTS H
K2-2 BUT SERVICE L
CLK BG H
ALLOW BG H
K2-2 RESET (1) H
K2-2 HLT GRANT H
K2-2 BG IN H L
K2-2 SACK RET(1) H
K2-2 SACK RET(1) L
K2-2 NPG (1) H
NPG ENAB H
K2-2 PROC INIT H
K2-2 RCD INIT H
K2-2 RCD INIT L
BUS NPR L
K2-2 NPR H
K2-2 NPG H
BUS NPG H
NOSACK H
K2-2 NO SACK L
BUS SACK L
K2-2 RCD INIT L
K2-3 START PDWN L
K2-6 START RESET H
K1-5 PROC CLK L
K2-2 PROC INIT L
HLT RQST L
K2-3 PWR CLR L
BUS INIT L
K2-2 RCD INIT H
K2-2 PROC INIT L
K2-2 PROC INIT H
DR2, DL2 BUS BG7 H
DM2, DR BUS BG6 H
DP2, DR2 BUS BG5 H
DS2, DT2 BUS BG4 H
CA1, CB1 BUS NPG H

(PRIORITY ARB)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	KDIIE CONTROL (K2-2)		
SCALE	—	SHEET 3 OF 11	DWG.
SIZE	D	CS M7266-0-1	REV. E

DCSM7266-0-1 E



AC POWER
+5 VOLTS
BUS DC LO L
BUS AC LO L
BUS AC LO L
BUS DC LO L
8837 E17
74123 E19
C59 15µf
R23 39K
+5V
150 ms
D2
+3V
K1-5 PROC CLK H
7473 E24
7402 E23
C55 .68µf
R24 10K
2.2 ms
D3
74123 E7
C55 .68µf
R25 30K
6.6 ms
D4
7400 E15
K2-3 PWR CLR L
74H01 E40
K2-7 MPC 00 L
K2-3 START PDWN(1) L
K2-3 PFAIL H
K2-1 SET BE L
K2-8 ENAB DBE L
K2-3 DBE H
K2-1 BE (1) H
K1-4 PSW 15 (1) L
K2-3 USER MODE H
K1-8 PROC CLK H
7473 E44
K2-2 PROC INIT L
K1-2 TBIT (1) H
K2-6 ENAB TBIT H
K1-5 PROC CLK L
K2-3 USER MODE H
K2-4 SPA 02 H
K2-4 SPA 01 H
K2-3 R6+7 L
K2-4 SPA 00 H
K2-7 ENAB STOV L
K1-10 8-15=0 L
8815 E30
7473 E28
K2-9 BUT SERVICE(1) H
K1-5 PROC CLK H
K2-3 STOV SERV H
K2-2 PROC INIT L
23-01349
8/2 X 4
E51
K2-1 BE (1) H
K2-1 PE (1) H
K2-1 KTE(1) H
K2-2 PFAIL (1) H
K2-6 IR CODE 02 L
K2-6 IR CODE 01 L
K2-6 IR CODE 00 L
K2-6 BUT SERVICE L
+5V
R26 470
R27 470
R28 470
R29 470
23-106A1
32 X 8
T.S.
E50
K2-3 PFAIL SERV H
K2-3 STOV SERV H
K2-3 C4 H
K2-3 C3 H
K2-3 C2 H
K2-3 ENAB GRANTS H
K2-9 BUT SERVICE(1) H
K2-2 PROC INIT H
R52 150Ω
40 ns
C62 220pf
K2-3 SERV 2R H
K2-8 SERV 2R (1) L
K2-9 BUT SERVICE(1) H
BUS INTR L
8837 E1
K2-3 INTR H
7400 E3
74H01 E40
K2-7 MPC 00 L
K2-3 INT VECTOR L

(PFAIL/AUTO REST BUT SERV)

TITLE	KDIIE CONTROL (K2-3)
SIZE / CODE / NUMBER	D CS M7266-0-1
REV.	E
SCALE	—
SHEET	4 OF 11

K1-8 MODE Ø1 H
K2-10 ROM SPA Ø2 (1) H
K2-10 ROM SPA Ø4 (1) H
K2-10 ROM SPA Ø5 (1) L
K2-10 ROM SPA Ø3 (1) L
74S20 E67
74S00 E96

K2-5 IR Ø8 (1) H
K2-5 IR Ø7 (1) H
K2-5 IR Ø6 (1) L
74S20 E66
74S00 E96

K2-5 IR Ø2 (1) H
K2-5 IR Ø1 (1) H
K2-5 IR Ø0 (1) L
74S20 E56
74S00 E96

USER MODE SELECTS R16
KERNAL MODE SELECTS R6

K1-6 PBA Ø3 H
K2-10 ROM SPA Ø2 (1) H
K2-5 IR Ø8 (1) H
K2-5 IR Ø2 (1) H
74S153 E95
SPAM
STB1 STB0
7 CLK K2-4 SPA Ø3 H
9 CS1 K2-4 SPA Ø2 H

K1-6 PBA Ø4 H
K2-10 ROM SPA Ø1 (1) H
K2-5 IR Ø7 (1) H
K2-5 IR Ø1 (1) H
K1-6 PBA Ø0 H
K2-10 ROM SPA Ø0 (1) H
K2-5 IR Ø Ø (1) H
74S153 E35
7 CN1 K2-4 SPA Ø1 H
9 CS0 K2-4 SPA Ø0 H

K2-5 IR Ø6 (1) L
K2-9 FORCE RS+1 (1) L
74S00 E96

S1	S0	F
L	L	ROM
L	H	RS
H	L	RD
H	H	BA

K2-9 SPA DST SEL1 (1) H
K2-9 SPA SRC SEL1 (1) H
K2-9 SPA DST SEL Ø (1) H
K2-9 SPA SRC SEL Ø (1) H
K2-3 RG+7 L
74S157 E30
STB SØ
K15 TAP 30 H
RS7 1/4W +5V OPTIONAL RESISTOR

K2-8 BUF DAT TRAN (1) H
74S02 E95
K2-8 DISAB MSYN L
74S02 E20
74S04 E111
EM1 K2-4 DISABLE MSYN +1 L

K2-9 SPA DST SEL Ø (1) H
K2-9 SPA DST SEL 1 (1) H
74S00 E36
74S05 E98
+5V RS1 470 PV2 K2-4 SP WRITE L

(SPA MUX)

REVISIONS		
ZONE	CHANGE NO.	REV.

TITLE KDIIE CONTROL (K2-4)
SCALE — SHEET 8 OF 11
SIZE D NUMBER CSM7266-Ø-1 REV. E
DIST.

DCSM7266-Ø-1 E

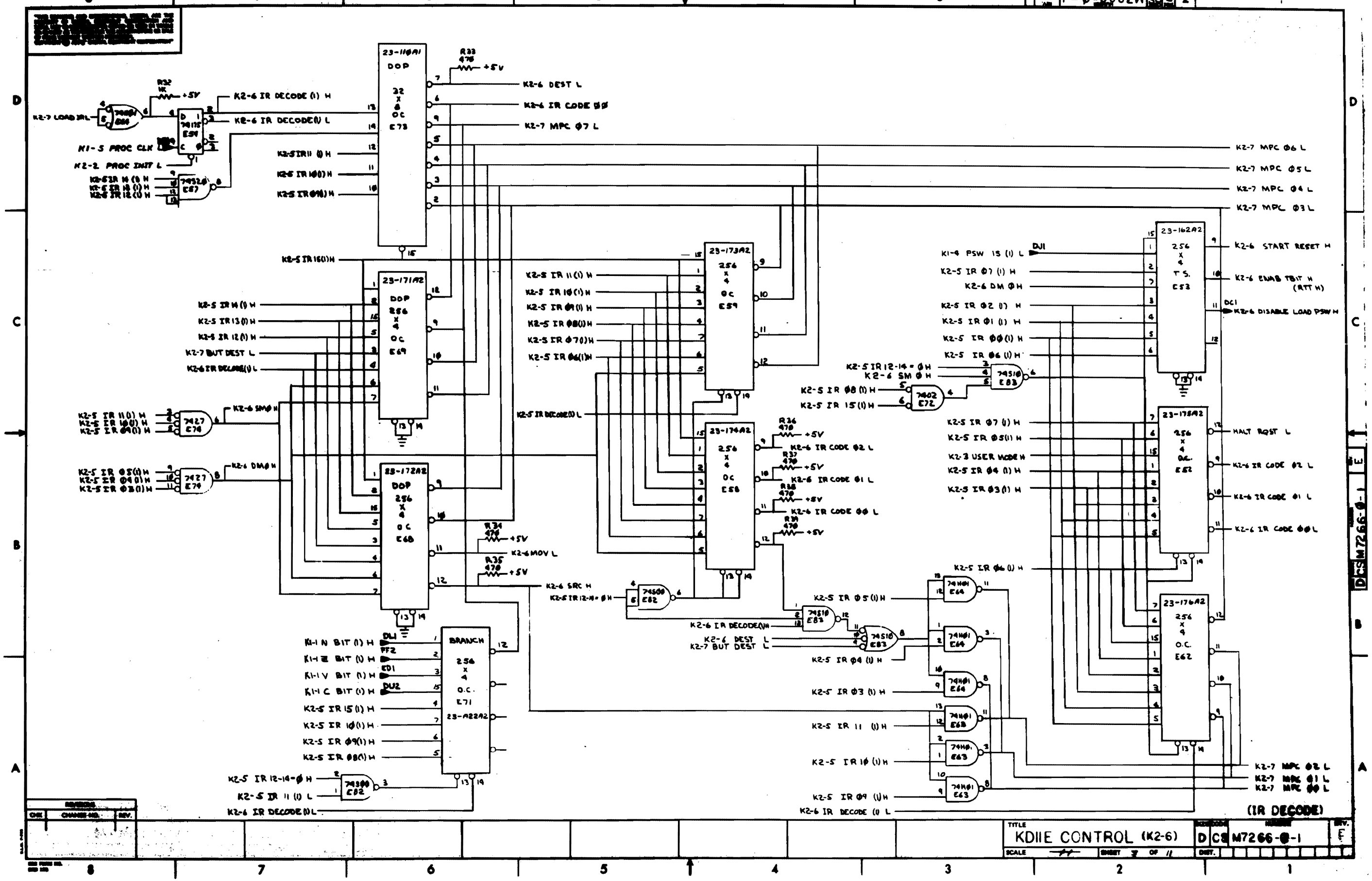
K2-3 SERV IR L
K1-4 SS MUX 15 H
CD1
74174 E33
K2-5 IR 15 (1) H
7402 E92
74179 E65
K1-4 SS MUX 14 H
K1-4 SS MUX 13 H
K1-4 SS MUX 12 H
K1-4 SS MUX 10 H
K1-4 SS MUX 09 H
K2-5 IR 14 (1) H
K2-5 IR 13 (1) H
K2-5 IR 12 (1) H
K2-5 IR 10 (1) H
K2-5 IR 09 (1) H
K2-3 DBE H
K2-3 SERV IR H
7402 E72
74174 E55
K1-2 SS MUX 07 H
K1-2 SS MUX 05 H
K1-2 SS MUX 04 H
K1-2 SS MUX 03 H
K1-2 SS MUX 02 H
K1-2 SS MUX 01 H
K2-5 IR 07 (1) H
K2-5 IR 05 (1) H
K2-5 IR 04 (1) H
K2-5 IR 03 (1) H
K2-5 IR 02 (1) H
K2-5 IR 01 (1) H
74175 E66
K1-2 SS MUX 11 H
K1-2 SS MUX 08 H
K1-2 SS MUX 06 H
K1-2 SS MUX 00 H
K2-5 IR 11 (1) H
K2-5 IR 11 (1) L
K2-5 IR 08 (1) H
K2-5 IR 08 (1) L
K2-5 IR 06 (1) H
K2-5 IR 06 (1) L
K2-5 IR 00 (1) H
K2-5 IR 00 (1) L
K2-7 LOAD IR L
K1-5 PROC CLK L
7402 E72
K2-5 LOAD IR H

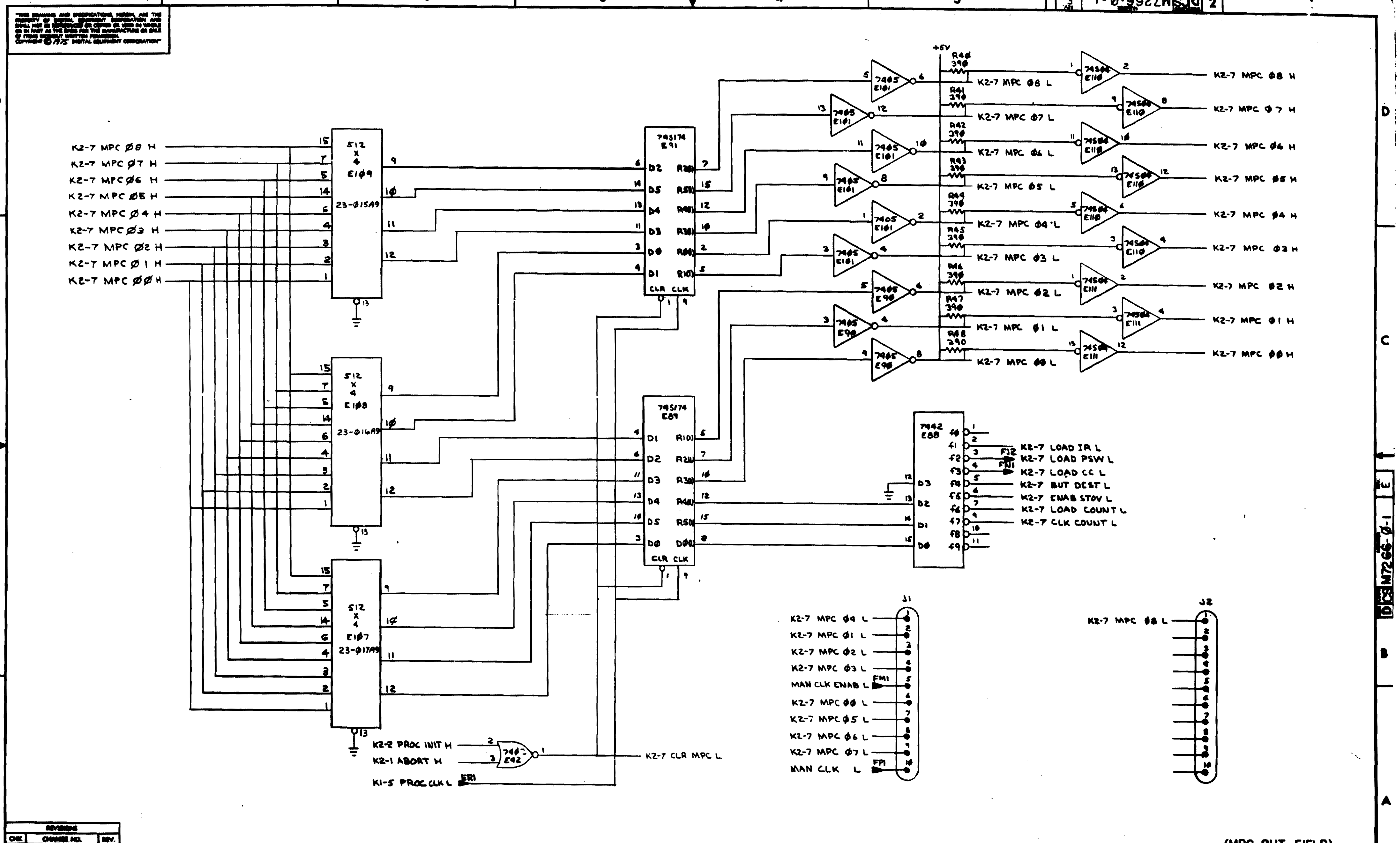
K2-6 IR DECODE (1) L
74H01 E63
+5V
R53 470Ω
K2-5 BYTE H
K2-5 IR 15 (1) H
K2-5 IR 14 (1) H
K2-5 IR 13 (1) H
K2-5 IR 12 (1) H
K2-5 IR 10 (1) H
K2-5 IR 09 (1) H
K2-5 IR 08 (1) H
K2-5 IR 07 (1) H
K2-5 IR 06 (1) H
512 x 4 E67
23-014A9
K2-5 BYTE L
K2-5 CC CODE 02 H
K2-5 CC CODE 01 H
K2-5 CC CODE 00 H
23-107A1
32 x 8 T.S. DOP E81
K2-5 IR 15 (1) H
K2-5 IR 14 (1) H
K2-5 IR 13 (1) H
K2-5 IR 12 (1) H
K2-B FUNC CODE 03 H
K2-B FUNC CODE 02 H
K2-B FUNC CODE 01 H
K2-B FUNC CODE 00 H
K2-8 AUX SET UP H
74S00 E82
23-161A2
SOP 256 x 4 T.S. E40
K2-5 IR 10 (1) H
K2-5 IR 09 (1) H
K2-5 IR 08 (1) H
K2-5 IR 07 (1) H
K2-5 IR 06 (1) H
K1-1 CBIT (1) H
K1-1 NBIT (1) H
K2-5 IR 15 (1) H
K2-8 AUX SET UP H
K2-5 IR 14 (1) H
K2-5 IR 13 (1) H
K2-5 IR 12 (1) H
74S27 E79
74S86 E82
K2-5 IR 12-14=0 H
23-170A2
ROT 256 x 4 O.C. E61
K2-5 IR 10 (1) H
K2-5 IR 09 (1) H
K2-5 IR 08 (1) H
K2-5 IR 07 (1) H
K2-5 IR 06 (1) H
K1-1 BREG 00 (1) H
K1-1 CBIT (1) H
K1-10 CC N H
+5V
R30 470
R31 470
K2-8 B MODE 01 L
K2-8 B MODE 00 L
K2-5 SERIAL SHIFT H
K2-5 ROT CBIT 0 H
74105 E59
K1-5 PROC CLK
K2-2 PROC INIT L

(IR, AUX CNTRL, CC CODE)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: KDIIE CONTROL (K2-5) DCS M7266-0-1
SCALE: — SHEET 6 OF 11
SIZE: B


23-110A1
DOP
32 x 8 OC
E73
R33 470 +5V
K2-6 DEST L
K2-6 IR CODE Ø5
K2-7 MPC Ø7 L
K2-7 MPC Ø6 L
K2-7 MPC Ø5 L
K2-7 MPC Ø4 L
K2-7 MPC Ø3 L
R32 1K +5V
K2-6 IR DECODE (1) H
K2-6 IR DECODE(1) L
K2-7 LOAD IRL
K1-5 PROC CLK
K2-2 PROC INIT L
74115 E59
74S20 E67
K2-5 IR 11 (1) H
K2-5 IR 10(1) H
K2-5 IR Ø9(1) H
K2-5 IR 160)H
23-171A2
DOP 256 x 4 OC E69
K2-5 IR 14 (1) H
K2-5 IR 13(1) H
K2-5 IR 12(1) H
K2-7 BUT DEST L
K2-6 IR DECODE(1) L
23-173A2
256 x 4 OC E59
K2-5 IR 11(1) H
K2-5 IR 10(1) H
K2-5 IR Ø9(1) H
K2-5 IR Ø8(1)H
K2-5 IR Ø7(1)H
K2-5 IR Ø6(1)H
K2-5 IR DECODE(1) L
23-162A2
256 x 4 T.S. E53
K1-4 PSW 15 (1) L
DJI
K2-5 IR Ø7 (1) H
K2-6 DM ØH
K2-5 IR Ø2 (1) H
K2-5 IR Ø1 (1) H
K2-5 IR ØØ(1) H
K2-5 IR Ø6 (1) H
K2-6 START RESET H
K2-6 ENAB TRAP H (RTT H)
DCI
K2-6 DISABLE LOAD PSW H
K2-5 IR 12-14 = Ø H
K2-6 SM Ø H
74S10 E83
K2-5 IR Ø8 (1) H
K2-5 IR 15(1) H
7402 E72
23-174A2
256 x 4 OC E58
R36 470 +5V
K2-6 IR CODE Ø2 L
R37 470 +5V
K2-6 IR CODE Ø1 L
R38 470 +5V
K2-6 IR CODE ØØ L
R39 470 +5V
23-175A2
256 x 4 OC E62
HALT RQST L
K2-6 IR CODE Ø2 L
K2-6 IR CODE Ø1 L
K2-6 IR CODE ØØ L
K2-7 MPC Ø2 L
K2-7 MPC Ø1 L
K2-7 MPC ØØ L
K2-5 IR Ø7 (1) H
K2-5 IR Ø5(1) H
K2-3 USER MODE H
K2-5 IR Ø4 (1) H
K2-5 IR Ø3 (1) H
K2-5 IR Ø6 (1) H
7427 E74
K2-6 SM Ø H
K2-5 IR 11 (1) H
K2-5 IR 10(1) H
K2-5 IR Ø9(1) H
7427 E79
K2-6 DM Ø H
K2-5 IR Ø5(1) H
K2-5 IR Ø4(1) H
K2-5 IR Ø3(1) H
23-172A2
DOP 256 x 4 OC E68
R34 470 +5V
K2-6 MOV L
R35 470 +5V
K2-6 SRC H
74S00 E82
K2-5 IR 12-14=Ø H
K2-5 IR 11 (1) L
K2-6 IR DECODE(1)L
K1-1 N BIT (1) H
K1-1 Z BIT (1) H
K1-1 V BIT (1) H
K1-1 C BIT (1) H
DJI
FF2
CD1
DU2
BRANCH 256 x 4 O.C. E71
23-A22A2
K2-5 IR 15(1) H
K2-5 IR 10(1) H
K2-5 IR Ø9(1) H
K2-5 IR Ø8(1) H
74S08 E81
K2-5 IR Ø5(1) H
K2-5 IR Ø4 (1) H
K2-5 IR Ø3 (1) H
K2-5 IR 11 (1) H
K2-5 IR 10 (1) H
K2-5 IR Ø9 (1) H
K2-6 IR DECODE (1) L
74H01 E64
74H01 E64
74H01 E64
74H01 E63
74H01 E63
23-176A2
256 x 4 O.C. E62
K2-5 IR Ø6 (1) H
(IR DECODE)
REVISIONS
CHK
CHANGE NO.
REV.
TITLE
KDIIE CONTROL (K2-6)
SCALE
SHEET 7 OF 11
DWG. NO.
D C S M7266-Ø-1
REV.
F



K2-7 MPC Ø8 H
K2-7 MPC Ø7 H
K2-7 MPC Ø6 H
K2-7 MPC Ø5 H
K2-7 MPC Ø4 H
K2-7 MPC Ø3 H
K2-7 MPC Ø2 H
K2-7 MPC Ø1 H
K2-7 MPC ØØ H
512 x 4 E1Ø9 23-Ø15A9
512 x 4 E1Ø8 23-Ø16A9
512 x 4 E1Ø7 23-Ø17A9
74S174 E91
74S174 E89
7405 E1Ø1
7405 E9Ø
74S04 E11Ø
74S04 E111
K2-7 MPC Ø8 L
K2-7 MPC Ø7 L
K2-7 MPC Ø6 L
K2-7 MPC Ø5 L
K2-7 MPC Ø4 L
K2-7 MPC Ø3 L
K2-7 MPC Ø2 L
K2-7 MPC Ø1 L
K2-7 MPC ØØ L
+5V
7442 E88
K2-7 LOAD IR L
K2-7 LOAD PSW L
K2-7 LOAD CC L
K2-7 BUT DEST L
K2-7 ENAB STOV L
K2-7 LOAD COUNT L
K2-7 CLK COUNT L
K2-2 PROC INIT H
K2-1 ABORT H
74Ø2 E42
K2-7 CLR MPC L
K1-5 PROC CLK L
J1
MAN CLK ENAB L
MAN CLK L
J2

(MPC BUT FIELD)

TITLE	SIZE	CODE	NUMBER	REV.
KD11E CONTROL (K2-7)	D	CS	M7266-Ø-1	E

SHEET Ø OF 11

K2-7 MPC Ø8 H
K2-7 MPC Ø7 H
K2-7 MPC Ø6 H
K2-7 MPC Ø5 H
K2-7 MPC Ø4 H
K2-7 MPC Ø3 H
K2-7 MPC Ø2 H
K2-7 MPC Ø1 H
K2-7 MPC ØØ H

23-Ø1849 512 X 4 E106
23-Ø1849 512 X 4 E105
23-Ø1849 512 X 4 E99
23-Ø2149 512 X 4 E97

K2-8 AUX SETUP H
K2-8 FUNC CODE Ø3 H
K2-8 FUNC CODE Ø2 H
K2-8 FUNC CODE Ø1 H
K2-8 FUNC CODE ØØ H
K2-9 SS Ø1 H
K2-9 SS ØØ H

74S174 E96
D3 R3(1) 10 — K2-8 BUF DAT TRAN (1) H
D2 R2(1) 7 — K2-8 BUF C1 (1) H
D4 R4(1) 12 — K2-8 BUF CØ (1) H
DI R1(1) 5 — FS2 K2-8 ENAB MAINT(1) H
D5 R5(1) 15 — FD1 K2-8 LOAD BA (1) H
D0 R0(1) 2 — FV1 K2-8 LONG CYCLE (1) L
CLR CLK

74S174 E76
D2 R2(0) 7
DI R1(0) 5
D5 R5(0) 15
D4 R4(0) 12
D3 R3(0) 10
D0 R0(0) 2
CLR CLK

74S174 E87
D2 R2(0) 7
D3 R3(0) 10
DI R1(0) 5
D4 R4(0) 12
D0 R0(0) 2
D5 R5(0) 15
CLR CLK

74175 E56 — K2-8 AUX CONTROL (1) H / DD1 K2-8 AUX CONTROL (1) L

23-1Ø8A1 32 X 8 T.S. E80
23-1Ø9A1 32 X 8 T.S. E86

7437 E79 — ER2 K2-8 ALU S3 H
7437 E79 — EF1 K2-8 ALU S2 H
7437 E79 — EH1 K2-8 ALU S1 H
7437 E79 — FB1 K2-8 ALU S0 H
FJ1 K2-8 ALU MODE H
FJ2 K2-8 ALU CIN L
FH2 K2-8 BLEG Ø1 H
FG1 K2-8 BLEG ØØ H

7405 E98 — R49 470 +5V — FU2 K2-8 B MODE Ø1 L
7405 E98 — R50 470 +5V — FL2 K2-8 B MODE ØØ L

FL1 K2-8 BX MODE Ø1 L
FK1 K2-8 BX MODE ØØ L
FJ1 K2-8 SHIFT MUX Ø1 L
FK2 K2-8 SHIFT MUX ØØ L
FJ1 K2-8 ENAB OVK L
K2-8 ENAB DBE L

23-16A92 256 X 4 E78
K2-8 BUF DAT TRAN(1) H
K2-8 AUX CONTROL(1) H
K2-5 BYTE H ET2
K2-6 MOV L
ES2 K2-8 SWAP H
EJ1 K2-8 SEX H
K2-8 DISAB MSYN L
EP1 K2-8 DISABLE UPPER BYTE WRITE H

K2-2 PROC INIT L
K1-5 PROC CLK L ER1
K1-6 VBA Ø5 (1) H ET2
K2-8 BUF DAT TRAN(1)H
7400 E6
7400 E6

REVISIONS		
CHG	CHANGE NO.	REV.

(MICRO STORE)

TITLE KDIIE CONTROL (K2-8)
SCALE — SHEET 4 OF 11
DCSM7266 0 1 REV. E

K2-9 SS Ø1 H
K2-9 SS ØØH

K2-7 MPC ØØ H
K2-7 MPC Ø7 H
K2-7 MPC Ø6 H
K2-7 MPC Ø5 H
K2-7 MPC Ø4 H
K2-7 MPC Ø3 H
K2-7 MPC Ø2 H
K2-7 MPC Ø1 H
K2-7 MPC ØØH

23-ØZZA9 E98 5/2 x 4
23-ØZ3A9 E105 5/2 x 4
23-ØZ4A9 E103 5/2 x 4
23-ØZ5A9 E102 5/2 x 4

74174 E92 D5 D0 D3 D2 D4 D1 CLR CLK RS0 R40 R30 R20 R40 R10

FH1 K2-9 AMUX S1 (1) L
FD2 K2-9 AMUX S0 (1) L

23-ØØA91 E96 32 x 8 T.S. +3VA

K1-4 ALU COUT H → CVI → 74H01 E93 → K2-7 MPC Ø7 L
K1-10 CC N H → FT2 → 74H01 E93 → K2-7 MPC Ø6 L
K1-1 BX REG Ø1 (1) H → FA1 → 74H01 E93 → K2-7 MPC Ø5 L
K1-1 BX REG ØØ (1) H → FK1 → 74H0 E93 → K2-7 MPC Ø4 L
K1-6 SP15 (1) H → FE1 → 74H01 E84 → K2-7 MPC Ø3 L
K2-10 COUNT ØS (1) H → 74H01 E84 → K2-7 MPC Ø2 L
K1-10 CC E H → ELI → 74H01 E84 → K2-7 MPC Ø1 L
K2-5 IR Ø9 (1) H → 74H01 E84 → K2-7 MPC ØØ L

+3VA
74S74 E48
K2-9 SPA SRC SEL 1 (1) H
K2-9 SPA SRC SEL Ø (1) H
K1-5 PROC CLK H → EP2

74S174 E37 D4 D0 D5 D1 D2 D3 CLR CLK R40 R00 R50 R10 R20 R30
K2-9 SPA DST SEL 1 (1) H
K2-9 SPA DST SEL Ø (1) H
K2-9 FORCE RS+1 (1) L
CS2 K2-9 PREVIOUS MODE (1) L
K2-9 BUT SERVICE (1) H
CLI K2-9 FORCE KERNEL (1) H

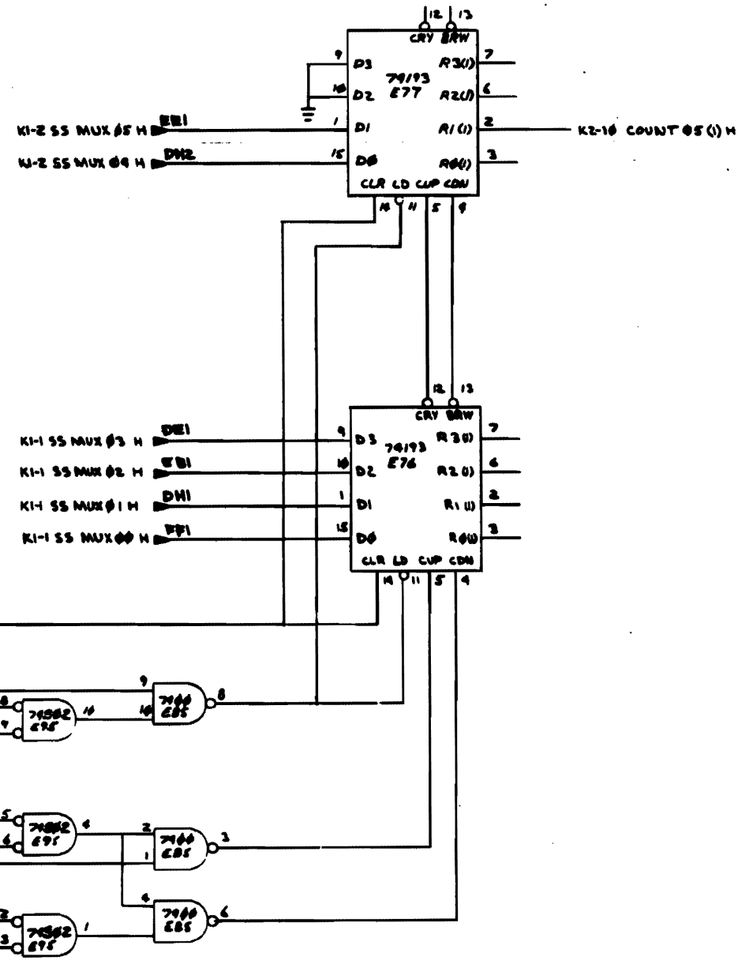
K2-2 PROC INIT L
K1-5 PROC CLK L → ER1

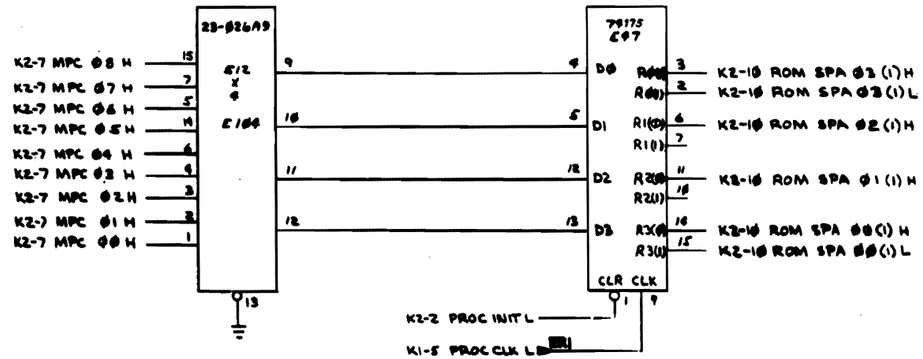
REVISIONS		
CHK	CHANGE NO.	REV.

(MICRO CODE)

TITLE: KDIIE CONTROL (K2-9)
SCALE: —
SHEET 9 OF 11
DCS M7266-0-1
REV. A

DCS M7266-0-1





REVISIONS		
CHG	CHANGE NO.	REV.

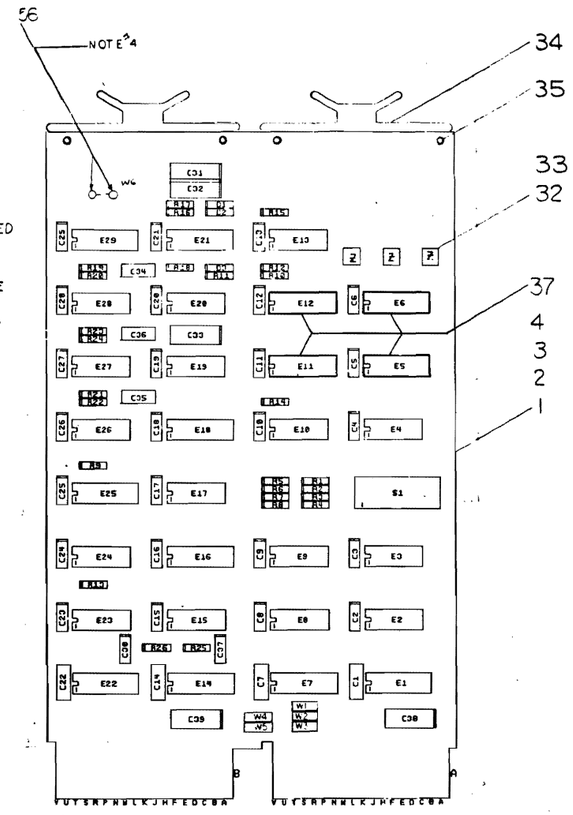
(ROM SPA COUNTER)

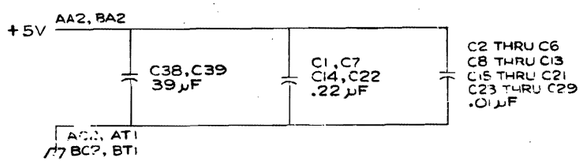
TITLE: KDIIE CONTROL (K2-10)			
SCALE	SHEET 11 OF 11	DCS	M7266-Ø-1

DCS M7266-Ø-1

NOTES:

1. IN PDP11/04,11/09 AND PDP11/34,11/39 SYSTEMS WITHOUT BATTERY BACKUP, TP1 SHOULD NOT BE CONNECTED TO THE POWER SUPPLY BATTERY STATUS SIGNAL UNLESS BOOTS ON ALL POWER RESTARTS ARE DESIRED.
2. IN ALL PDP11 SYSTEM WHOSE PROCESSOR MODULE DOES NOT CONTAIN GRANT PULL-UP RESISTORS, EITHER THE M9301 MUST BE POSITIONED IN THE TERMINATOR SLOT AT THE END OF THE UNIBUS FURTHEST FROM THE PROCESSOR OR JUMPERS W1 THRU W5 MUST BE INSTALLED, SO THE M9301 CAN BE INSERTED IN THE TERMINATOR SLOT NEXT TO THE PROCESSOR.
3. ON PDP11 SYSTEMS CONTAINING A BUS REPEATER OPTION, THE M9301 MUST BE INSTALLED ON THE PROCESSOR SIDE OF THE REPEATER SEE NOTE 2 FOR OTHER RESTRICTIONS.
4. JUMPER W6 SHOULD ONLY BE INSTALLED IN 11/55 AND 11/70 COMPUTERS WHOSE BACKPLANES HAVE BEEN MODIFIED FOR THIS MODULE. CONNECTOR PIN B01 IN THESE MODIFIED BACKPLANES WILL NOT BE TIED TO GROUND.
5. EARLIER VERSIONS USED PLASTIC SWITCH COVER (PN 12111184-06) TO PREVENT INADVERTENT PROGRAMING OF S1.





I.C. DEC 8131	1	8
I.C. DEC 7416	13	5
I.C. DEC 8640	1	6
I.C. DEC 8637	8	16
I.C. DEC 9602	8	5
IC TYPE	GND	+5V

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

REF	REF	REF	REF	REF	REF			
REF	REF	REF	REF	REF	REF		X-Y COORDINATE HOLE LOCATION	K-CO-M9301-0-4	1
REF	REF	REF	REF	REF	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M9301-0-5	2
REF	REF	REF	REF	REF	REF		MODULE ECO HISTORY	B-MH-M9301-0-6	3
1	1	1	1	1	1		ETCHED CIRCUIT BOARD	5011208	4
4	4	4	4	4	4	C1,C7,C14,C22	CAP .22µF 50V	1012274-01	5
25	25	25	25	25	25	C2 THRU C6, C8 THRU C13 C15 THRU C21, C23 THRU C29	CAP .01 µF 100V 20%	1001210-01	6
2	2	2	2	2	2	C30, C37	CAP .001µF 250V 20%	1000043	7
4	4	4	4	4	4	C32, C33, C38, C39	CAP 39 µF 10V 10%	1000076	8
3	3	3	3	3	3	C34, C35, C36	CAP 270pF 100V 5%	1000022	9
3	3	3	3	3	3	D1, D2, D3	DIODE DG64 IN3606	1[illegible]0114	10
8	8	8	8	8	8	R1 THRU R8	RES 10K 1/4W 5%	1300[illegible]	11
2	2	2	2	2	2	R9, R12	RES 1K 1/4W 5%	1300335	12
4	4	4	4	4	4	R11, R13, R14, R18	RES 4.7K 1/4W 5%	1300447	13
2	2	2	2	2	2	R16, R17	RES 30K 1/4W 5%	1302394	14
3	3	3	3	3	3	R19, R21, R23	RES 47Ω 1/4W 5%	1300202	15
3	3	3	3	3	3	R20, R22, R24	RES 2K 1/4W 5%	1302388	16
2	2	2	2	2	2	R25, R26	RES 383Ω 1/4W 5%	1305125	17
2	2	2	2	2	2	E1, E22	28 RES DIVIDER NETWORK	13-12628-00	18
2	2	2	2	2	2	E7, E14	25 RES DIVIDER NETWORK	13-12628-01	19
8	8	8	8	8	8	E2, E3, E8, E9 E15, E23, E27, E28	I.C. DEC 8881	1909705	20
2	2	2	2	2	2	E4, E10	I.C. DEC 7402	1909004	21
1	1	1	1	1	1	E13	I.C. DEC 7474	1905547	22
3	3	3	3	3	3	E16, E18, E25	I.C. DEC 8837	1911116	23
1	1	1	1	1	1	E17	I.C. DEC 7420	1905577	24
2	2	2	2	2	2	E19, E24	I.C. DEC 3[illegible]4	1909704	25
1	1	1	1	1	1	E20	I.C. DEC 8640	1911469	26
1	1	1	1	1	1	E21	I.C. DEC 9602	1910951	27
1	1	1	1	1	1	E26	I.C. DEC 7437	1910091	28
1	1	1	1	1	1	E29	I.C. DEC 7476	1905585	29
1	1	1	1	1	1	S1	SWITCH, DIP, 10 POLE	12111164-06	30
							~~SWITCH COVER~~	~~12111184-03~~	~~31~~
3	3	3	3	3	3		EYELET (FASTON)	9009000	32
3	3	3	3	3	3	TP1, TP2, TP3	TAB (FASTON)	9007112	33
2	2	2	2	2	2		HANDLE FLIP/CHIP MAGENTA	9008337-06	34
4	4	4	4	4	4		EYELET	9006732	35
1	1	1	1	1	1	C31	CAP 1µF 35V 10%	1001776	36
M9301-YF	M9301-YD	M9301-YC	M9301-YB	M9301-YA	M9301				

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

FIRST USED ON OPTION MODEL: 11/04

PARTS LIST

ETCH BOARD REV. F

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

SEMICONDUCTOR CONVERSION CHART

REV.	CHANGE NO.	DATE	BY
H	M9301-00003	12-15-75	JOHN BLOEM
L	M9301-00006	3-15-76	J. BLOM
K	M9301-00005	3-12-76	J. BLOM
J	M9301-00004	12-12-75	J. BLOM
F	REDESIGN-00002	6-23-75	JOHN BLOEM

DRN. J. VINCENT	DATE 4/3/75	digital	
CHK'D. R. COOK	DATE 5/28/75		
ENG. T. DUBANEUR	DATE 5/23/75		
PROJ. ENG. J. BLOEM	DATE 6/19/75		
ENGR. R. PETERSON	DATE 6/30/75		
NEXT HIGHER ASSY		TITLE UNIBUS TERMINATOR/ BOOTSTRAP	
SCALE —		SIZE D CODE CS NUMBER M9301-0-1 REV. M	
SHEET 1 OF 5		DIST.	

M9301-0-1 REV M
SIZE D CODE CS

Ø	4	4	4	4	4	E5, E6, E11, E12	SOCKET, 16 PIN, I.C.	1211813	37
Ø	Ø	Ø	Ø	1	Ø	E5	I.C. DEC. TRI-STATE 2Ø48 ROM	23Ø34A9	38
Ø	Ø	Ø	Ø	1	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø35A9	39
Ø	Ø	Ø	Ø	1	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø36A9	4Ø
Ø	Ø	Ø	Ø	1	Ø	E12	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø37A9	41
Ø	Ø	Ø	1	Ø	Ø	E5	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø38A9	42
Ø	Ø	Ø	1	Ø	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø39A9	43
Ø	Ø	Ø	1	Ø	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø4ØA9	44
Ø	Ø	Ø	1	Ø	Ø	E12	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø41A9	45
Ø	Ø	1	Ø	Ø	Ø	E5	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø42A9	46
Ø	Ø	1	Ø	Ø	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø43A9	47
Ø	Ø	1	Ø	Ø	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø44A9	48
Ø	Ø	1	Ø	Ø	Ø	E12	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø45A9	49
Ø	1	Ø	Ø	Ø	Ø	E5	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø46A9	5Ø
Ø	1	Ø	Ø	Ø	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø47A9	51
Ø	1	Ø	Ø	Ø	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	23123A9	52
Ø	1	Ø	Ø	Ø	Ø	E12	I.C. DEC TRI-STATE 2Ø48 ROM	23Ø49A9	53
Ø	Ø	5	Ø	Ø	Ø	W1 THRU W5	JUMPER, WIRE, WHITE INSULATION	9Ø99185	54
2	2	2	2	2	2	R10, R15	RES 220Ω, 1/4W, 5%	1300271	55
2	2	2	2	2	2		SPLIT LUG	9006735	56
1	Ø	Ø	Ø	Ø	Ø	E5	I.C. DEC TRI-STATE 2Ø48 ROM	2341Ø1A9	57
1	Ø	Ø	Ø	Ø	Ø	E6	I.C. DEC TRI-STATE 2Ø48 ROM	2341Ø2A9	58
1	Ø	Ø	Ø	Ø	Ø	E11	I.C. DEC TRI-STATE 2Ø48 ROM	2341Ø3A9	59
1	Ø	Ø	Ø	Ø	Ø	E12	I.C. DEC TRI-STATE 2Ø48 ROM	2341Ø4A9	6Ø

QTY	QTY	QTY	QTY	QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO
M9301-YF	M9301-YD	M9301-YC	M9301-YB	M9301-YA	M9301			

REVISIONS

SYM	CHANGE NO.	REV.

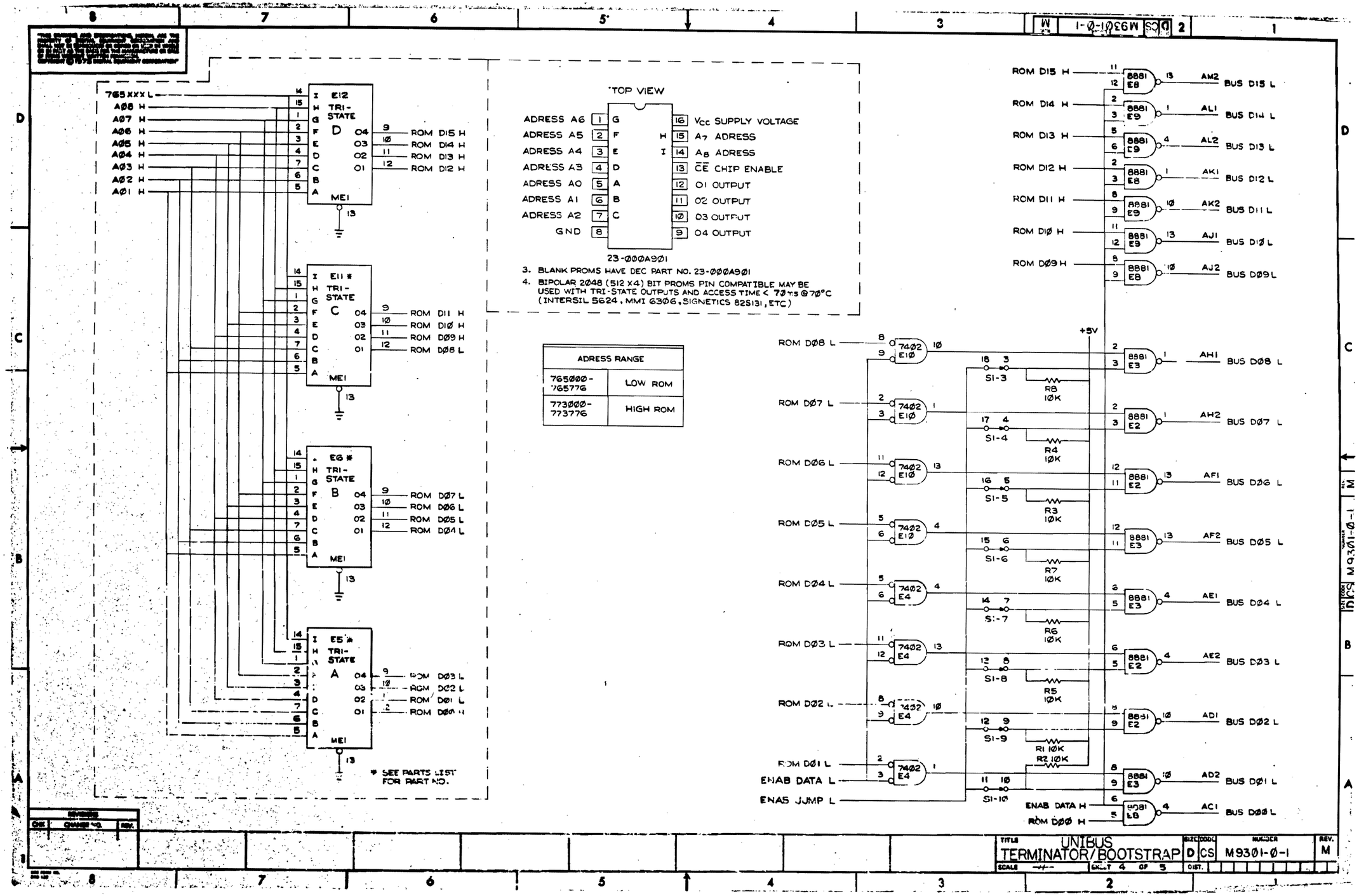
TITLE UNIBUS TERMINATOR/BOOTSTRAP
SIZE D | CODE CS | NUMBER M9301-Ø-1 | REV. M
SCALE — | SHEET 2 OF 5 | DIST.

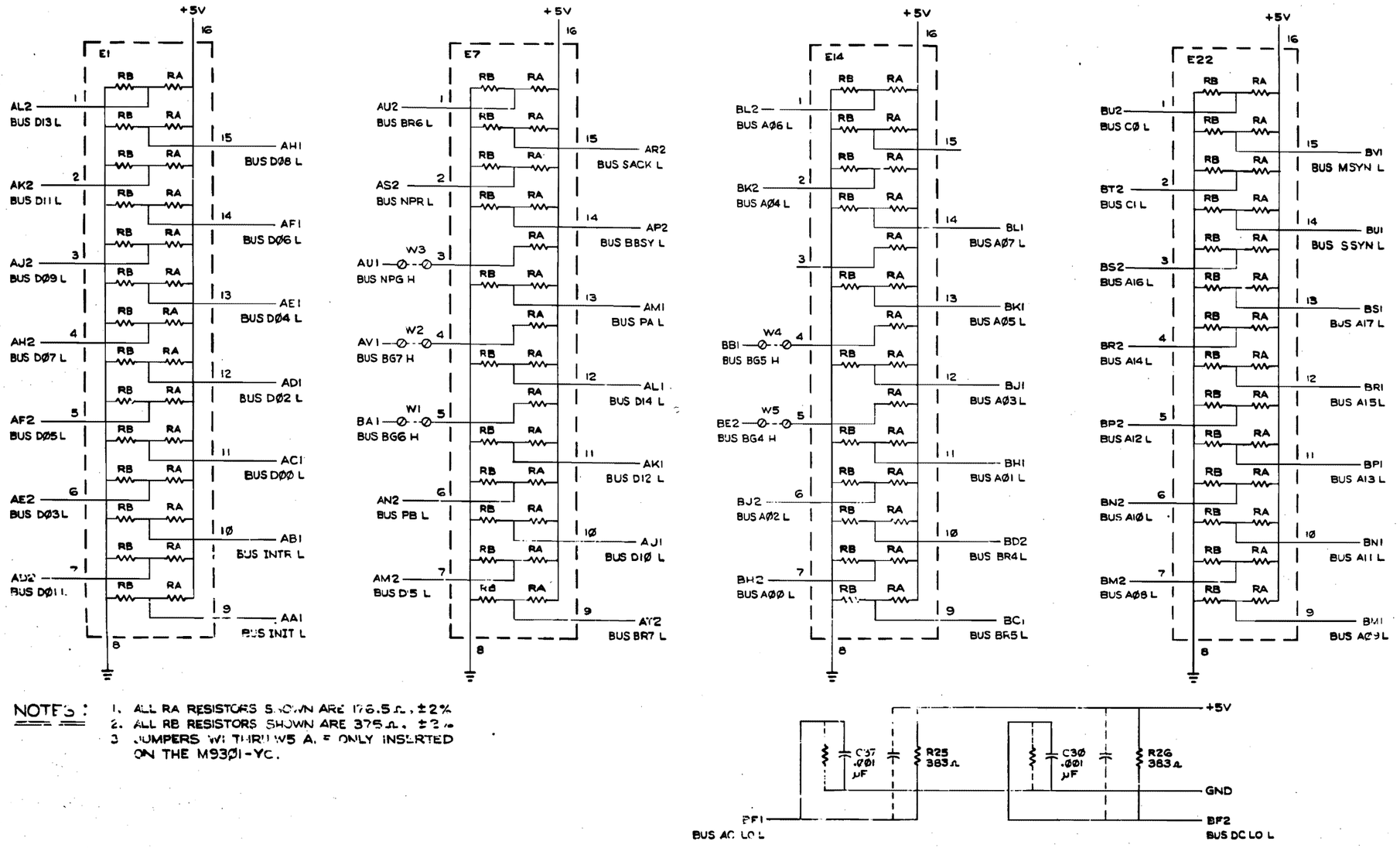
+5V
R15 220Ω
R16 30K
C31 1μF
D2 DG64
TP2
TP3
EXTERNAL BOOT SWITCH
PWR UP CLR L
9602 E21 8MS
7474 E13
BUS DC LO L
8837 E25
DC LO H
7437 E26
7476 E29
ENAB DATA H
8640 E20
8881 E28
BUS AC LO L
R17 30K
C32 39μF
D1 DG64
R12 1K
W6
8D1
ENB BOOT ADRS L
8881 E23
BUS A17 L
BUS A16 L
BUS A15 L
BUS A14 L
8881 E15
BUS A13 L
BUS A12 L
BUS A11 L
BUS A10 L
BUS A09 L
R10 220Ω
TP1
S1-2
POWER UP REBOOT ENABLE
R20 2K
R19 47Ω
C34 270pF 150NS
R22 2K
R21 47Ω
C35 270 pF 150NS
8881 E27
BU1
BUS SSYN L
R24 2K
R23 47Ω
C36 270 pF
BUS INIT L
AA1
R18 4.7K
C33 39μF
D3 D664
R11 4.7K
PWR UP CLR L
BUS MSYN L
BUS CI L
314 E24
9637 E25
R14 4.7K
R13 4.7K
ENAB DATA L
ENAB DATA H
BUS A12 L
BUS A11 L
BUS A10 L
BUS A09 L
8837 E16
7420 E17
SI-1
LOW ROM ENABLE
R9 1K
* 765XXXL
* 773XXL
BUS A06 L
BUS A08 L
BUS A04 L
BUS A05 L
BUS A03 L
BUS A01 L
BUS A02 L
BUS A07 L
8837 E18
E25-4 DC LO H
A08 H
A07 H
A06 H
A05 H
A04 H
A03 H
A02 H
A01 H
314 E19
7437 E26
ENAB JUMP L
765XXX L

* ADDRESS BITS A13-A17 ARE DECODED BY E24
** CAUTION SHOULD BE TAKEN TO GUARANTEE PROPER NOISE FILTERING & LOGIC LEVELS ON THESE INPUTS
*** JUMPER W6 SHOULD ONLY BE INSTALLED IN 11/55 AND 11/70 COMPUTERS WHOSE BACKPLANES HAVE BEEN MODIFIED FOR THIS MODULE.

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS TERMINATOR/ BOOTSTRAP	D	CS	M930I-0-1	M
SCALE	SHEET 3 OF 5	DIST.		


765XXX L
A08 H
A07 H
A06 H
A05 H
A04 H
A03 H
A02 H
A01 H
E12 TRI-STATE D
E11 * TRI-STATE C
E6 * TRI-STATE B
E5 * TRI-STATE A
ME1
ROM DI5 H
ROM DI4 H
ROM DI3 H
ROM DI2 H
ROM DI1 H
ROM DIØ H
ROM DØ9 H
ROM DØ8 L
ROM DØ7 L
ROM DØ6 L
ROM DØ5 L
ROM DØ4 L
ROM DØ3 L
ROM DØ2 L
ROM DØ1 L
ROM DØØ H
* SEE PARTS LIST FOR PART NO.
*TOP VIEW
ADRESS A6
ADRESS A5
ADRESS A4
ADRESS A3
ADRESS A0
ADRESS A1
ADRESS A2
GND
Vcc SUPPLY VOLTAGE
A7 ADRESS
A8 ADRESS
CE CHIP ENABLE
01 OUTPUT
02 OUTPUT
03 OUTPUT
04 OUTPUT
23-ØØØA9Ø1
3. BLANK PROMS HAVE DEC PART NO. 23-ØØØA9Ø1
4. BIPOLAR 2048 (512 X4) BIT PROMS PIN COMPATIBLE MAY BE USED WITH TRI-STATE OUTPUTS AND ACCESS TIME < 70 ns @ 70°C (INTERSIL 5624, MMI 6306, SIGNETICS 82S131, ETC)
ADRESS RANGE
765000-765776 LOW ROM
773000-773776 HIGH ROM
ROM DI5 H
ROM DI4 H
ROM DI3 H
ROM DI2 H
ROM DI1 H
ROM DIØ H
ROM DØ9 H
BUS DI5 L
BUS DI4 L
BUS DI3 L
BUS DI2 L
BUS DI1 L
BUS DIØ L
BUS DØ9 L
8881 E8
8881 E9
AM2
AL1
AL2
AK1
AK2
AJ1
AJ2
+5V
ROM DØ8 L
ROM DØ7 L
ROM DØ6 L
ROM DØ5 L
ROM DØ4 L
ROM DØ3 L
ROM DØ2 L
ROM DØ1 L
ENAB DATA L
ENAS JUMP L
7402 E1Ø
7402 E4
S1-3
S1-4
S1-5
S1-6
S1-7
S1-8
S1-9
S1-10
R8 10K
R4 10K
R3 10K
R7 10K
R6 10K
R5 10K
R1 10K
R2 10K
BUS DØ8 L
BUS DØ7 L
BUS DØ6 L
BUS DØ5 L
BUS DØ4 L
BUS DØ3 L
BUS DØ2 L
BUS DØ1 L
BUS DØØ L
AH1
AH2
AF1
AF2
AE1
AE2
AD1
AD2
AC1
ENAB DATA H
ROM DØØ H
8881 E3
8881 E2
8881 E8
UNIBUS TERMINATOR/BOOTSTRAP
D
CS
M9301-Ø-1
M
SHEET 4 OF 5



NOTES:
1. ALL RA RESISTORS SHOWN ARE 176.5Ω, ±2%
2. ALL RB RESISTORS SHOWN ARE 375Ω, ±2%
3. JUMPERS W1 THRU W5 A.R ONLY INSERTED ON THE M9301-YC.

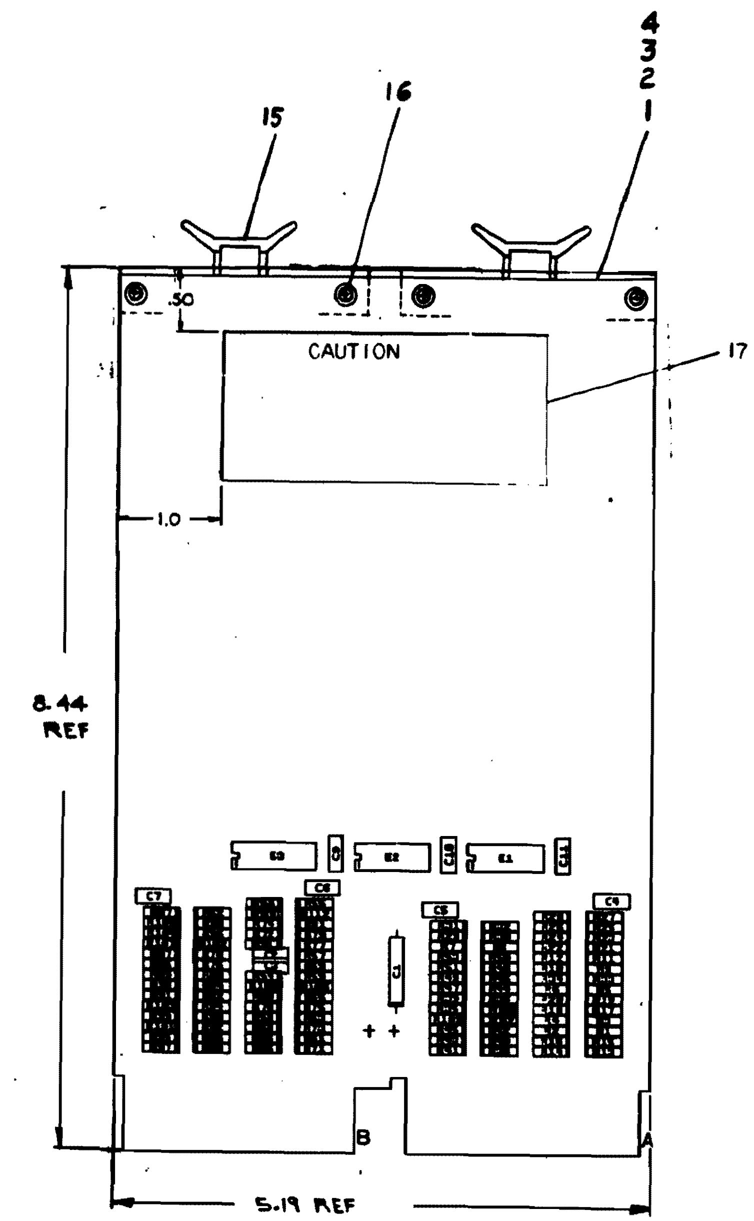
REVISIONS		
CHK	CHANGE NO	REV.

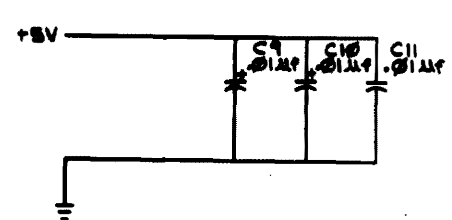
TITLE	SIZE	NUMBER	REV.
UNIBUS TERMINATOR/BOOTSTRAP	D	M9301-0-1	M
SCALE —	SHEET 5 OF 5	DIGT.	

DCS M9301-0-1 REV M

NOTES:

1) THE FOLLOWING REFERENCE DESIGNATIONS ARE NOT USED: C8, R64, AND R110.





IC TYPE	GND	+5V
IC DEC 8837	8	16

GND AND 5V ARE NORMALLY PIN 7 AND 14 RESPECTIVELY EXCEPT AS STATED ABOVE

IC PIN LOCATIONS

PARTS LIST

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y HOLE COORDINATE HOLE LOCATION	K-CO-M9302-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AM-M9302-0-5	2
REF		MODULE ECO HISTORY	D-AM-M9302-0-6	3
REF		ETCHED CIRCUIT BOARD	5011311A	4
3	C9, C10, C11	CAP .01 uf 100V 20% DISC	1001610-01	5
1	C1	CAP 39 µf 10V 10%	[illegible]	6
~~1~~	~~C8~~	~~[illegible]~~	~~[illegible]~~	~~7~~
4	C4 THRU C7	CAP .22 µf 50V 1%	1010274-01	8
2	C2, C3	CAP .001 µf 500V 20% DISC	1000043	9
56	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, R54, R56, R58, R60, R62, R66, R69, R70, R72, R74, R76, R78, R80, R82, R84, R86, R88, R90, R92, R94, R96, R98, R100, R102, R57, R66, R37, R52, R93, R108, R111	RES 383 OHM 1/4W 1%	1305125	10
56	R1, R3, R5, R7, R9, R11, R13, R15, R17, R19, R21, R23, R25, R27, R29, R31, R33, R35, R39, R41, R43, R45, R47, R49, R51, R53, R55, [illegible], R59, R61, R63, R65, R67, [illegible], R71, R73, R75, R77, R79, R81, R85, R87, R89, R91, R93, R95, R97, R99, R101, R103 THRU R107, R109, R112	RES 178 OH 1/4W 1%	1311422	11
1	E2	I.C. DEC 7438	1905578	12
1	E1	I.C. DEC 8881	[illegible]	13
1	E3	I.C. DEC 8837	1911118	14
2		HANDLE, FLIP-CHIP (MAGENTA)	[illegible]-0	15
4		EYELETS	9006782	16
1		DECAL	B-DC-7416791-0-0	17

FIRST USED ON OPTION MODEL

ETCH BOARD REV: B

REV	CHANGE NO.	CHK	
C	M9302-00002		R. BARRY 14 June 76, 6-1-76
B	M9302-00001		T. DUBANIEWICZ 6-23-75

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

DRN.	J. Nagle	10/1/7[illegible]
CHK'D.	Ferguson	[illegible]
ENG.	T. Dubaniewicz	7-23-75
PROD. ENG.	T. Dubaniewicz	7-25-75
APPD.	E. Peterson	[illegible]

NEXT HIGHER ASSY

SCALE: [illegible] SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: UNIBUS TERMINATOR

SIZE D, CODE CS, NUMBER M9302-0-1, REV. B

DIST.

D CS M9302-0-1 C

+5V — AA2, BA2

GND — AB2, AC2, AN1, AP1, AR1, AS1, AT1, AV2, BB2, BC2, BD1, BE1, BT1, BV2

C4 THRU C7 .22 µF

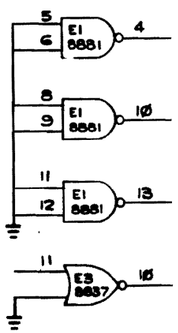
C1 30 µF 10V 10%

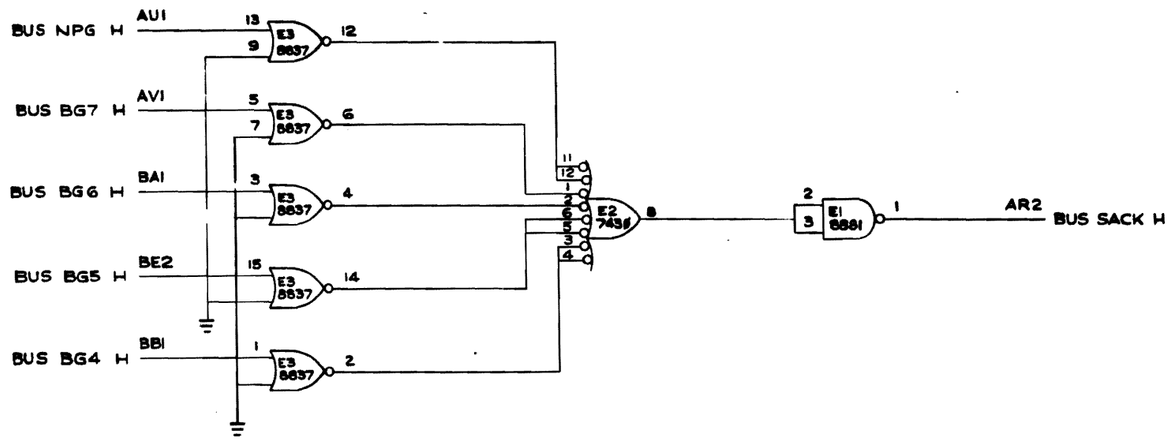
BUS	D00 L	D07 L	D09 L	D11 L	D08 L	D01 L	D04 L	D06 L	D10 L	D03 L	D02 L	D00 L	INTR L	INIT L	PA L	DI4 L	DI2 L	NPG H	BG7 H	SACK L	NPR L	BR7 L	BR6 L	BBSY L	PB L	DI5 L	DI3 L	BG6 H	
R1	178	R3	178	R5	178	R7	178	R9	178	R11	178	R13	178	R15	178	R17	178	R19	178	R21	178	R23	178	R25	178	R27	178	R29	178	R31	178
R2	383	R4	383	R6	383	R8	383	R10	383	R12	383	R14	383	R16	383	R18	383	R20	383	R22	383	R24	383	R26	383	R28	383	R30	383	R32	383
	AF2		AH2		AJ2		AK2		AE2		AD2		AE1		AF1		AH1		AJ1		AD1		AC1		AB1		AA1		AM1	

	BF1		BH1		BJ1		BK1		BL1		BM1		BF2		BH2		BJ2		BK2		BE2		BD2		BC1		BB1		BP2	
R57	383	R59	178	R61	178	R63	178	R65	178	R67	178	R69	383	R71	178	R73	178	R75	178	R77	178	R79	178	R81	178	R112	178	R85	178
C2	.001 µF	R54	383	R56	383	R58	383	R60	383	R62	383	C3	.001 µF	R66	383	R68	383	R70	383	R111	383	R72	383	R74	383	R83	383	R76	383
BUS	AC LO L		A01 L		A03 L		A05 L		A07 L		A09 L		DC LO L		A00 L		A02 L		A04 L		BG4 H		BR4 L		BR5 L		BG5 H		A12 L	

	BP1		BR1		BS1		BR2		BS2		BT2		BU2		BU1		BV1		BN2		BM2		BL2		BN1					
R87	178	R89	178	R91	178	R93	178	R95	178	R97	178	R99	178	R101	178	R103	178	R104	178	R105	178	R106	178	R107	178				
R78	383	R65	383	R82	383	R84	383	R86	383	R88	383	R90	383	R92	383	R94	383	R96	383	R98	383	R100	383	R102	383				
	A13 L		A15 L		A17 L		A14 L		A16 L		C1 L		C0 L		SSYN L		MSYN L		A01 L		A08 L		A06 L		A11 L					

SPARES





REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: UNIBUS TERMINATOR

SIZE D | CODE CS | NUMBER M9302-0-1 | REV. C

SCALE | SHEET 2 OF 2 | DIST.

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

B-TC-MM11-DP-3 MM11-DP PRINT SET TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
MM11-DP
MM11-D

MMII-DP

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO. MP 00032

REVISIONS	REV.	CHG. NO.	DATE
	A	MM11DP-1	MAY-76

USED ON OPTION/MODEL

SHEET 1 OF 1

DRN.	DATE	CHK'D	DATE	PROJ. ENG.	DATE	FIELD SERV.	DATE
W. LUFKIN	24/OCT/75	[illegible]	24/OCT/75	D. [illegible]	10/28/75	[illegible]	[illegible]

digital

TITLE: MM11-DP MEMORY MODULE

SIZE	CODE	NUMBER	REV.
B	TC	MM11-DP-3	A

DIST.

EN-01124-16-N678-(32)

DRB 124

DRAWING DIRECTORY

digital EQUIPMENT CORPORATION

CUSTOMER PRINT SET INDEX

SEQUENCE SEQUENCE

NOTE: FOR FIELD MAINTENANCE PRINT SET SEE:

B-TC-MM11-DP-3

THIS IS PRINT SET

UNIT VARIATIONS

VAR	TITLE	PRINT SET			
MM11-DP	16K X 18 BIT MEMORY/MODULE				
MM11-D	16K X 16 BIT MEMORY/MODULE				

REVISIONS

REV	CHG. NO.	DATE
A	MM11DP-1	MAY 76

USED ON OPTION/MODEL

SHEET 1 OF 2

DRN. W. LUFKIN	DATE 24 OCT 75	TITLE MM11-DP MEMORY MODULE
CHK'D. W. Lufkin	DATE 24/10/75	
PROJ. ENG. D. [illegible]	DATE 10/28/75	
PROD. R.A. Hill	DATE 10/29/75	SIZE B, CODE DD, NUMBER MM11-DP, REV A
FIELD SERV. [illegible]	DATE 11/4/75	DIST

DEC 15-(1281)-1062-1A-R672

DRB 106

ELECTRICAL

CUSTOMER PRINT SET	SET MFG	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			B-TC-MM11-DP -3	A		MM11-DP FIELD MAINT. PRINT SET	
			MP000032			MM11-DP PRINT SET	
			B-DD-MM11-DP			MM11-DP DRAWING DIRECTORY	
			D-TD-MM11-DP-2		2	MM11-DP TIMING DIAGRAM	
			D-CS-G652-0-1			16K X 18 BIT CORE MEMORY	

MECHANICAL

CUSTOMER PRINT SET	SET MFG	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			D-UA-MM11-DP-0		1	MM11-DP MEMORY MODULE ASSY	
			D-UA-H222-A-0		1	H222 MEMORY STACK ASSY	

CUSTOMER PRINT SET CODES		TITLE	SHEET	SIZE	CODE	NUMBER	REV
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED	MM11-DP MEMORY MODULE	2 OF 2	B	DD	MM11-DP	A

BANK SELECTION						
S.A. (INTER-LEAVED)	S.A. (NON-INTER-LEAVED)	EA+1	W1	W2	W3	W4
—	Ø	16K	OUT	OUT	OUT	IN
—	8K	24K	OUT	OUT	IN	OUT
Ø	16K	32K	OUT	OUT	IN	IN
8K	24K	40K	OUT	IN	OUT	OUT
16K	32K	48K	OUT	IN	OUT	IN
24K	40K	56K	OUT	IN	IN	OUT
32K	48K	64K	OUT	IN	IN	IN
40K	56K	72K	IN	OUT	OUT	OUT
48K	64K	80K	IN	OUT	OUT	IN
56K	72K	88K	IN	OUT	IN	OUT
64K	80K	96K	IN	OUT	IN	IN
72K	88K	104K	IN	IN	OUT	OUT
80K	96K	112K	IN	IN	OUT	IN
88K	104K	120K	IN	IN	IN	OUT
96K	112K	124K	IN	IN	IN	IN

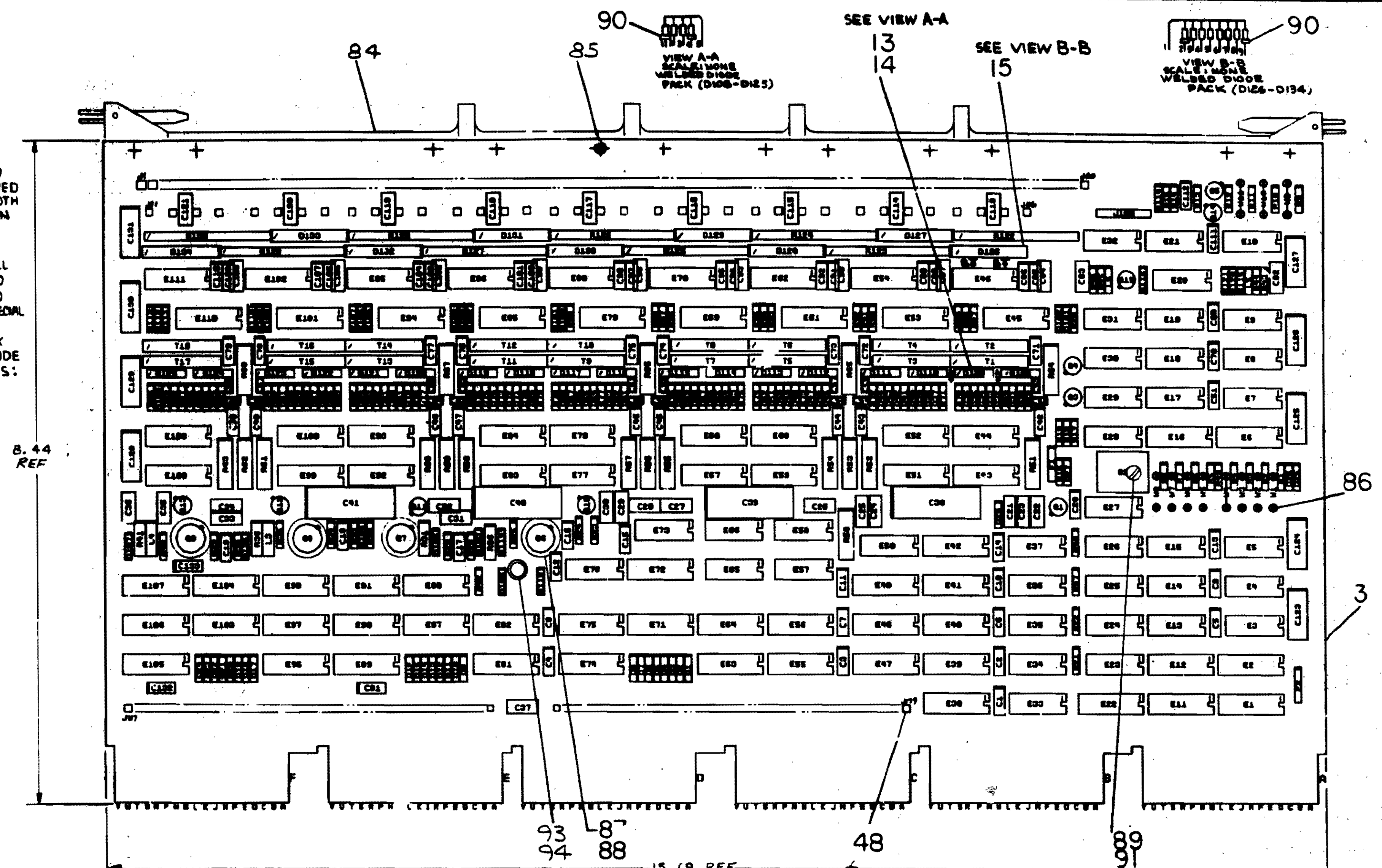
NOTES:

1. INTERLEAVE CONTROL IS ACHIEVED AS FOLLOWS:
   (A) NON-INTERLEAVED
   W5, W6 OUT
   (B) INTERLEAVED
   W5 IN, W6 OUT } ONE MEMORY
   W5 OUT, W6 IN } THE OTHER MEMORY
   (C) ADDRESS JUMPERS FOR THE COMBINED INTERLEAVED MEMORY ARE NOT THE SAME AS FOR THE NON-INTERLEAVED CASE (W1 THRU W4 MUST BE CUT THE SAME FOR BOTH INTERLEAVED MEMORIES). SEE BANK SELECTION CHART AT LEFT FOR BOTH INTERLEAVED AND NON-INTERLEAVED CASES.
2. UNDER NORMAL CONDITIONS (W8 OUT) THE MEMORY WILL NOT RESPOND TO ADDRESSES BETWEEN 124K AND 128K, BECAUSE THESE ADDRESSES ARE RESERVED FOR PERIPHERAL DEVICES ON THE UNIBUS. FOR SPECIAL APPLICATIONS WHERE THE RANGE OF PERIPHERAL ADDRESSES IS MORE RESTRICTED THAN THIS 4K RANGE THE MEMORY CAN BE CONFIGURED TO INCLUDE THE ADDITIONAL UNIBUS ADDRESSES AS FOLLOWS:
   W8 IN, W7 OUT } 124K TO 126K
   W8 IN, W7 IN } 124K TO 127K

   NOTE THAT FOR SYSTEMS WITHOUT MEMORY MANAGEMENT THIS MEANS THE USEFUL VIRTUAL ADDRESS SPACE FOR MEMORY CAN BE EXTENDED FROM 28K TO 30K OR 31K, BY SACRIFICING SOME PERIPHERAL SPACE.

   CAUTION

   SOME DIGITAL SOFTWARE MAY NOT BE COMPATABLE WITH THE REDUCED PERIPHERAL ADDRESS SPACE. TO ASSURE COMPATIBILITY W8 MUST BE OUT.
3. SCHEMATIC FOR H222 MEMORY STACK IS SHOWN ON CS 5411554-0-1.



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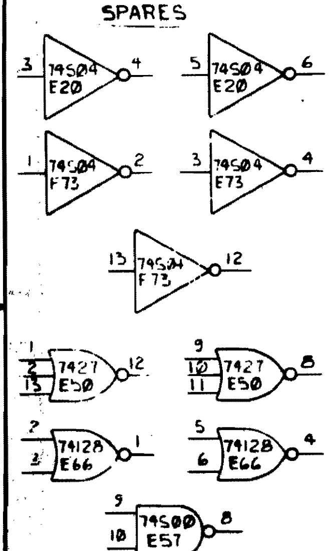
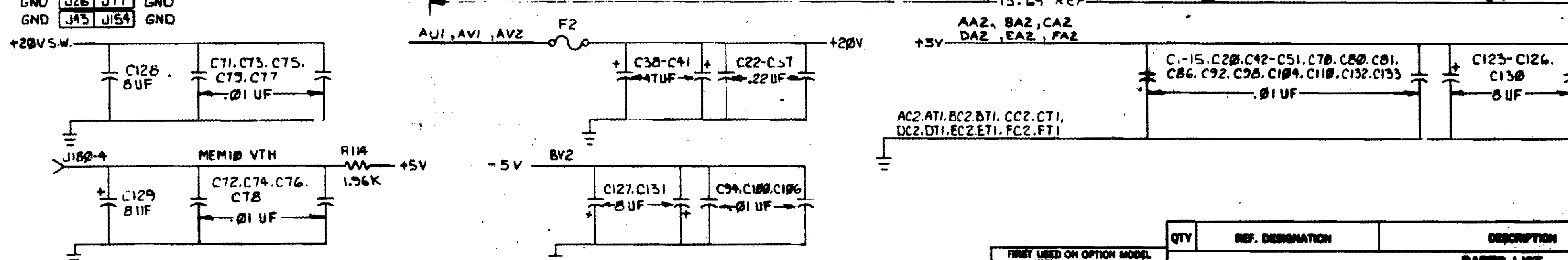


MEM9 BIT 16 & 17 LOCK OUT	J78	
BB2	J152	STACK XY
J180-T	J79	STACK XY LO
J180-5	J80	STACK XY HI
+20V	J153	
+5V	J155	
MEM1 X STACK CHG H	J149	
MEM2 Y STACK CHG H	J150	
CE1	J151	STACK V REF
GND	J9 / J60	GND
GND	J26 / J77	GND
GND	J43 / J154	GND

J180-1	+5V
J180-2	STROBE
J180-3	GND
J180-4	VTH
J180-5	STACK XY HI
J180-6	GND
J180-7	STACK XY LO



BUS GRANT LINES	
DK2	DL2
DM2	DN2
DP2	DR2
DS2	DT2

IC TYPE	GND	+5V	+20VSW
8640	7	14	
8641	8	16	
75325	8	9	16
7520	9	16	
74157	8	16	
74153	8	16	
7483	12	5	
7475	12	5	
7442	8	16	

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

IC PIN LOCATIONS

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: MMII-D/DP

ETCH BOARD REV. D

REVISIONS: D. SMELSER G652-00001 C; D. SMELSER G652-00032 D

SEMICONDUCTOR CONVERSION CHART

digital

TITLE: 16K X 18 MEMORY ELECTRONICS

SIZE D CODE CS NUMBER G652-0-1 REV. D

SHEET 1 OF 11

PARTS LIST

QTY	REF. DESIGNATIONS	DESCRIPTION	PART NO.	ITEM NO.
REF		ASSY/DRILLING HOLE LAYOUT	D-AM-G652-0-5	1
REF		MODULE ECO HISTORY	D-EM-G652-0-5	2
1		ETCHED CIRCUIT BOARD	5011492	3
2	C82,C83	CAPACITOR, 82 pf, 100V, 5%, DM	1000015-00	4
1	C111	CAPACITOR, 22 pf, 100V, 5%, DM	1005820-00	5
22	C16 THRU C19,C84,C87,C90,C93 C96,C99,C102,C105,C108,C113 THRU C121	CAPACITOR, 120 pf, 100V, 5%, DM	1000018-00	6
18	C52 THRU C69	CAPACITOR, 5600 pf, 50V, 10%, CER	1011740-00	7
4	C38 THRU C41	CAPACITOR, 47 uf, 30V, AL EL	1012219-00	8
60	C1 THRU C15,C20,C21,C42 THRU C51,C70 THRU C81,C86,C89,C92 C91,C92,C94,C95,C97,C98,C100 C101,C103,C104,C106,C107,C85, C109,C110,C112,C132,C133	CAPACITOR, .01 uf, 50V, 20%, CER	1001610-00	9
16	C22 THRU C37	CAPACITOR, .22 uf, 50V+80%, -20%, CER	1010274-00	10
9	C123 THRU C131	CAPACITOR, 8 uf, 25V, AL EL	1012084-01	11
1	D20	DIODE ZENER 1N751A 5.1V, 5%	1110994-00	12
9	D109,D111,D113,D115,D117, D119,D121,D123,D125	DIODE PACK COMMON CATHODE	7010918-0-0	13
9	D108,D110,D112,D114,D116, D118,D120,D122,D124	DIODE PACK COMMON ANODE	7010918-0-1	14
9	D126 THRU D134	DIODE PACK COMMON CATHODE	7010918-0-2	15
105	D1 THRU D27,D29 THRU D104, D107, D135	DIODE D672	1105275-00	16
1	D106	DIODE ZENER 1N758A, 8.2V, 5%	1103441-00	17
1	D105	DIODE ZENER 1N4742, 12V, 10%, 1W	1109502-00	18
18	R51 THRU R68	RESISTOR, 21, 3W, 1% WW	1311738-01	19
2	R16,R17	RESISTOR, 75, 1/4W, 5%	1302379-00	20
6	R25,R30,R35,R40,R43,R46	RESISTOR, 100, 1/4W, 5%	1300229-00	21
1	R50	RESISTOR, 220, 3W, 1%, WW	1312123-00	22
24	R23,R28,R33,R38,R87,R88,R91 THRU R94,R97 THRU R100,R103 THRU R106,R109 THRU R112, R115,R116	RESISTOR, 1K, 1/4W, 5%	1300365-00	23
1	R114	RESISTOR, 1.96K, 1/4W, 1%	1304835-00	24
1	R47	RESISTOR, 3.16K, 1/8W, 1%	1303045-00	25
1	R49	RESISTOR, 3.3K, 1/4W, 5%	1300439-00	26
1	R19	RESISTOR, 4.7K, 1/4W, 5%	1300447-00	27
1	R48	RESISTOR, 4.99K, 1/8W, 1%	1305324-00	28
9	R89,R90,R95,R96,R101,R102, R107,R108,R113	RESISTOR, 9.09K, 1/8W, 1%	1304855-00	29
16	R1 THRU R8,R18,R20,R21,R22, R24,R29,R34,R39	RESISTOR, 10K, 1/4W, 5%	1300479-00	30
2	R13,R14	RESISTOR, 14.7K, 1/8W, 1%	1302841-00	31
1	R10	RESISTOR, 27K, 1/4W, 5%	1306346-00	32
1	R9	RESISTOR, 56K, 1/4W, 5%	1302595-00	33
1	R15	RESISTOR, 120K, 1/4W, 5%	1300539-00	34
1	R11	RESISTOR, 15K 1/4W, 5%	1300496-00	35
10	R69 THRU R86	RESISTOR, 150, 1/4W, 5%	1300258-00	36
3	R45,R44,R119	RESISTOR, 47, 1/4W, 5%	1300202-00	37
2	R120,R121	RESISTOR, 56, 1/4W, 5%	1302602-00	38
1	R31	RESISTOR, 13, 1W, 1% WW	1312466-03	39
1	R118	RESISTOR, 750, 1/4W, 5%	1301401-00	40
1	R42	RESISTOR, 30, 1/4W, 5%	1302751-00	41
1	R12	RESISTOR, 4.64K, 1/8W, 1%	1304856-00	42
2	R28,R41	RESISTOR, 11, 1W WW	1312488-01	43
1	R36	RESISTOR, 12, 1W WW	1312488-02	44
9	R122 THRU R130	RESISTOR PACK, 100, 1/8W, 1%	1311741-00	45
1	F1	FUSE, PICO 1 AMPERE	1210829-02	46
1	F2	FUSE, PICO 5 AMPERE	1205747-00	47

PARTS LIST

QTY	REF. DESIGNATIONS	DESCRIPTION	PART NO.	ITEM NO.
179	J1 THRU J179	RECEPTACLE, SINGLE	1211726-00	48
1	J100	CONNECTOR, 7 PIN	1212184-00	49
2	Q14,Q15	TRANSISTOR, 3009B	1502100-00	50
2	Q3,Q4	TRANSISTOR, 9534B	1503409-01	51
5	Q5, Q10 THRU Q13	TRANSISTOR, 4258	1505321-00	52
1	Q1	TRANSISTOR, 8531B	1506330-00	53
4	Q6 THRU Q9	TRANSISTOR, 3702	1508648-01	54
1	Q2	TRANSISTOR, MJE 3055	1510555-00	55
18	T1 THRU T18	TRANSFORMER, INHIBIT DUAL	1812118-00	56
2	L3,L4	INDUCTOR, 0.47 uh, 10%	1810000-00	57
2	L5,L6	INDUCTOR, 100 uh	1810062-00	58
2	E9,E31	DELAY LINE, 250 NS	1811243-00	59
2	E26,E37	I.C. DEC 7400	1905575-00	60
1	E78	I.C. DEC 7406	1910741-00	61
1	E50	I.C. DEC 7427	1910070-00	62
1	E7	I.C. DEC 7430	1905578-00	63
2	E32,E85	I.C. DEC 7437	1910061-00	64
5	E49,E84,E82,E88,E97	I.C. DEC 7442	1910046-00	65
4	E39 THRU E42	I.C. DEC 7475	1909050-00	66
1	E6	I.C. DEC 7483	1909032-00	67
1	E1C	I.C. DEC 74121	1910230-00	68
3	E8,E30,E96	I.C. DEC 74128	1912066-00	69
1	E16	I.C. DEC 74153	1906037-00	70
1	E72	I.C. DEC 74157	1910055-00	71
1	E19	I.C. DEC 74H50	1909080-00	72
3	E10,E27,E57	I.C. DEC 74S00	1910532-00	73
5	E3,E4,E13,E14,E23	I C DEC 74S03	1910533-00	74
8	E5,E15,E17,E20,E24,E73	I C DEC 74S04	1910534-00	75
1	E21	I C DEC 74S10	1910536-00	76
1	E20	I.C. DEC 74S20	1910539-00	77
1	E58	I C DEC 74S74	1910544-00	78
18	E45,E48,E53,E54,E81,E82,E69 E70,E79,E80,E95,E86,E94,E95 E101,E102,E110,E111	I C DEC 7520	1911748-00	79
38	E43,E44,E47,E48,E51,E52,E55 E56,E59,E60,E83,E87,E90,E71 E74,E75,E77,E78,E91,E83,E84 E87,E89 THRU E93,E96,E98 THRU E100,E103 THRU E109	I.C. DEC 75325	1910960-00	80
5	E25,E33 THRU E36	I.C. DEC 8640	1911469-00	81
8	E1,E2,E11,E12,E22,E38	I.C. DEC 8641	1911579-00	82
1	E29	I.C. DEC 8885	1910649-00	83
1		HANDLE	1210711-02	84
12		EYELET (HANDLE)	9008732-00	85
22		EYELET (SPLIT LUGS)	9008735-00	86
4	(USE WITH Q6 THRU Q9)	HEAT SINK, RED	1210001-00	87
4	(USE WITH Q6 THRU Q9)	TRANSIPAD	9007201-00	88
1		SCREW PPH #4-40 x 3/8	9008011-01	89
56		DIODE ASSEMBLY SPACER	9107771-00	90
1		NUT, KEP #4-40	9006557-00	91
	(SEE NOTES AND CHART SHEET #1)	WIRE, #22 AWG (SOLID)	9007560-01	92
1		SPACER, THD, ROUND #4-40 X 3/8	9006968-00	93
1		SCREW, NYLON, BINDER -D#4-40 X 3/8	9006401-04	94

REVISIONS

CHK	CHANGE NO	REV

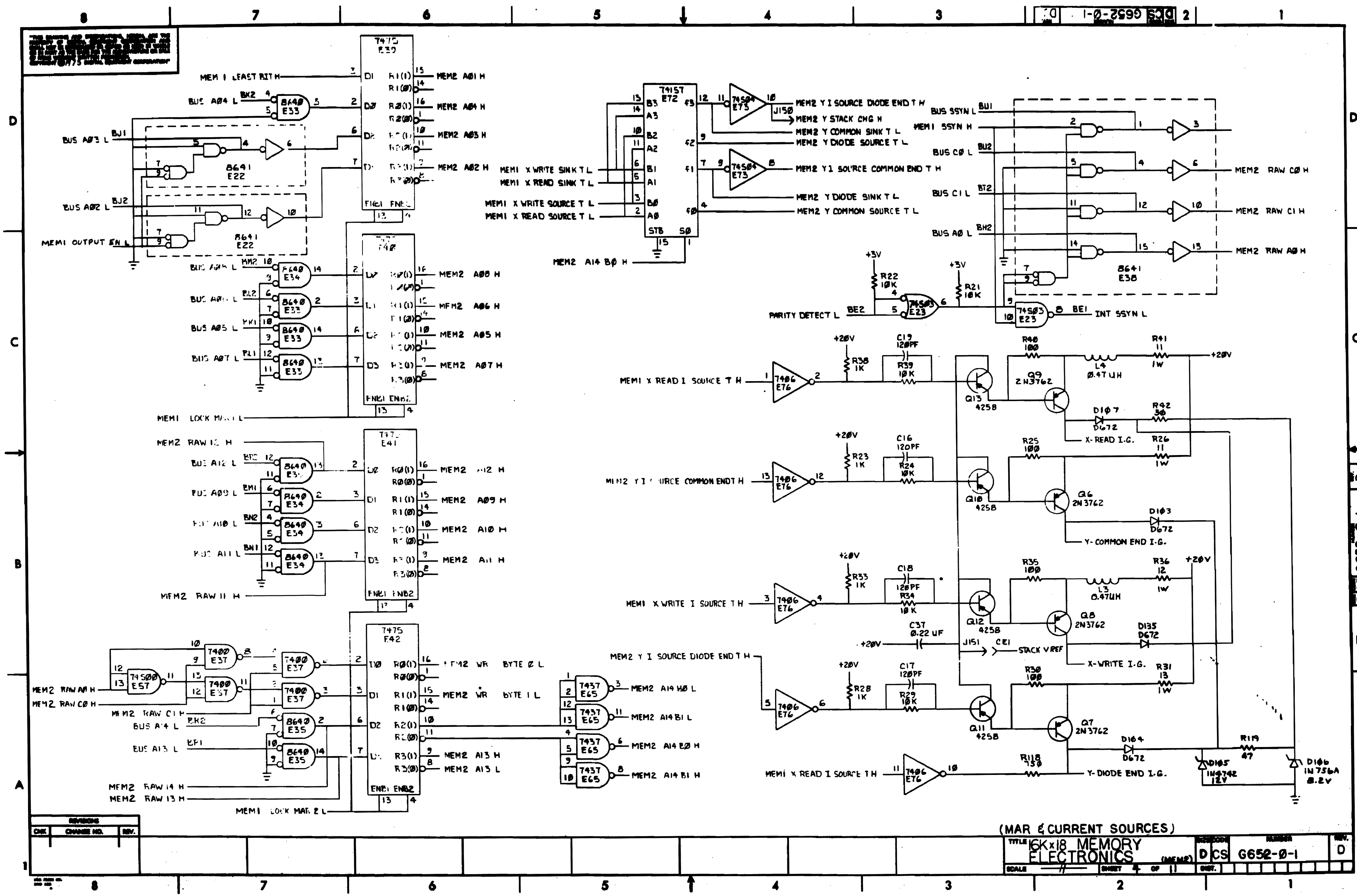
TITLE 16K X 18 MEMORY ELECTRONICS
SIZE DCS | NUMBER G652-0-1 | REV. D
SCALE | SHEET 2 OF 11 | DIST.

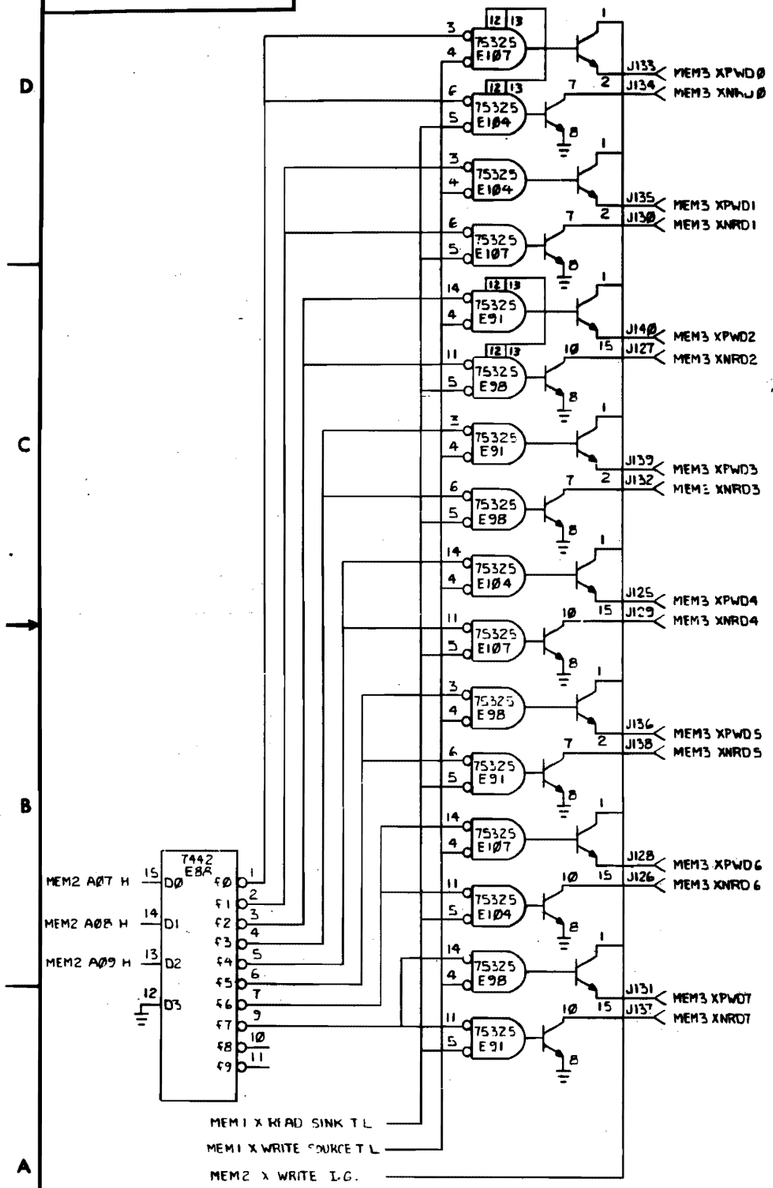
MEM2 RAW A12 H
MEM2 RAW A11 H
MEM1 A17 H
MEM1 A15 H
MEM2 RAW A13 H
MEM2 RAW A14 H
MEM1 A16 H
MEM1 SSYN L
MEM1 MSYN H
MEM1 NOT BUSY H
BANK SEL H
READ
WRITE
MEM1 A16 H
MEM1 A17 H
MEM1 A15 H
MEM2 RAW A14 H
MEM2 RAW A01 H
MEM2 RAW A01 L
MEM1 A15 H
MEM1 LEAST BIT H
INTERLEAVE
BUS A17 L
BUS A16 L
BUS A15 L
BUS A01 L
MEM1 A17 H
MEM1 A16 H
MEM1 A15 H
MEM1 RAW A01 H
BUS DCLØ L
MEM1 RØ H
MEM1 LOCK MAR H
BUS MSYN L
MEM1 MSYN H
MEM1 RAW A01 H
MEM1 RAW A01 L
+20V
+20V SW
F1 1 AMP
RØ L
MEM1 RØ H
MEM1 X READ SOURCE T L
MEM1 READ SINK T L
MEM1 X READ I SOURCE T H
MEM1 STROBE EN L
MEM2 WR BYTEØ L
MEM2 WR BYTE1 L
MEM1 INPUT MDRØ H
MEM1 INPUT MDR1 H
MEM1 CLR MDR L
MEM1 SSYN H
MEM1 SSYN L
MEM1 OUTPUT EN L
MEM1 MSYN H
MEM1 INH TØ L
MEM1 INH T1 L
MEM1 X WRITE SINK T L
MEM1 X WRITE I SOURCE H
J149
MEM1 X STACK CHG H
MEM1 X WRITE SOURCE T L
MEM1 INH RT L
MEM1 NOT BUSY H
MEM1 LOCK MAR1 L
MEM1 LOCK MAR2 L
MEM1 STBØ H
MEM1 STB1 H
J1ØØ-2

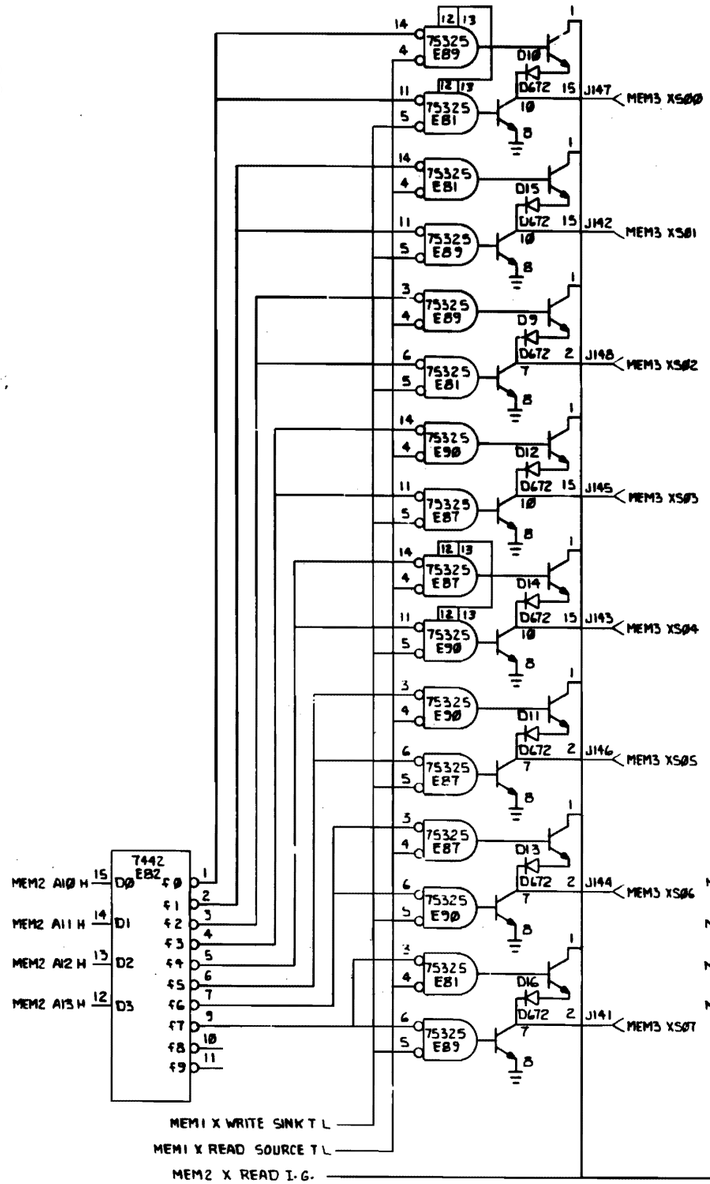
(TIMING & CONTROL)

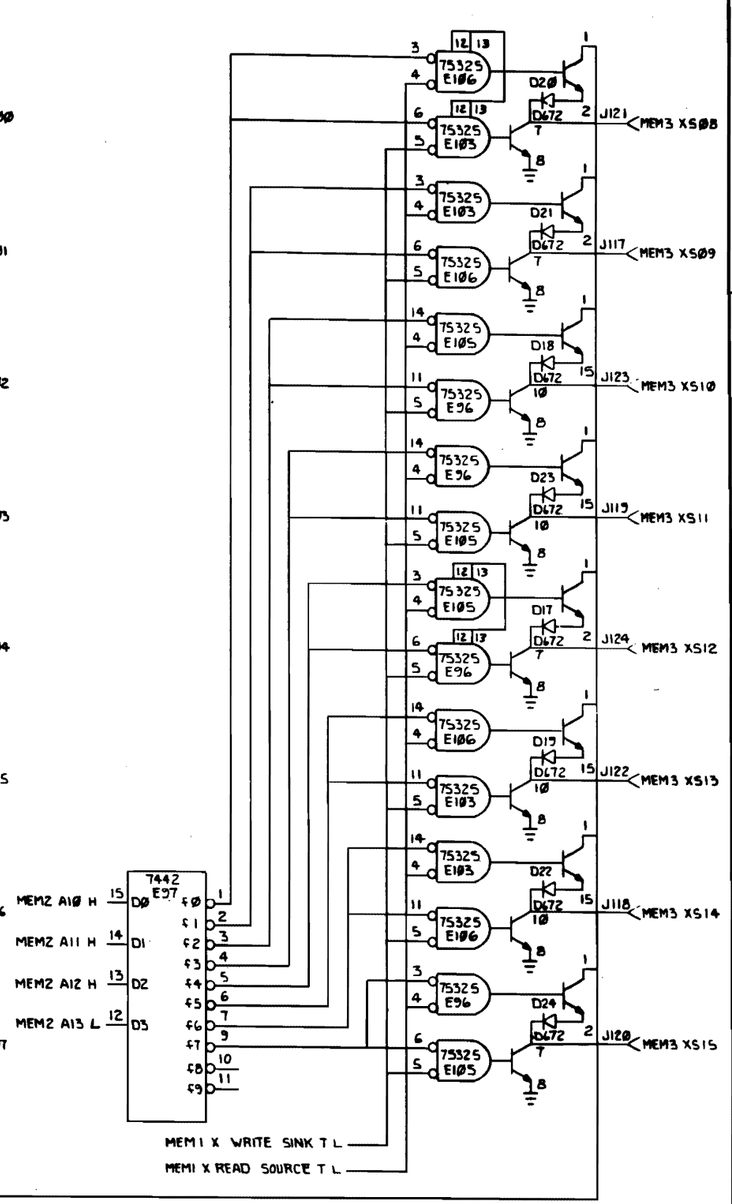
REVISIONS		
ENG	CHANGE NO.	DIV.

TITLE	SIZE	CODE	NUMBER	REV.
16K X18 MEMORY ELECTRONICS (MEM1)	D	CS	G652-0-1	D
SCALE	SHEET 3 OF 11		SHT.	


(MAR & CURRENT SOURCES)
16Kx18 MEMORY ELECTRONICS (MEM2)
D CS G652-0-1
SHEET 4 OF 11
REV. D
MEM1 LEAST BIT H
BUS A04 L
BUS A03 L
BUS A02 L
MEM1 OUTPUT EN L
MEM2 A01 H
MEM2 A04 H
MEM2 A03 H
MEM2 A02 H
MEM2 A08 H
MEM2 A06 H
MEM2 A05 H
MEM2 A07 H
MEM1 LOCK MAR 1 L
MEM2 A12 H
MEM2 A09 H
MEM2 A10 H
MEM2 A11 H
MEM2 RAW 11 H
MEM2 RAW A0 H
MEM2 RAW C0 H
MEM2 RAW C1 H
BUS A14 L
BUS A13 L
MEM2 RAW 14 H
MEM2 RAW 13 H
MEM1 LOCK MAR 2 L
MEM2 WR BYTE 0 L
MEM2 WR BYTE 1 L
MEM2 A13 H
MEM2 A13 L
MEM2 A14 B0 L
MEM2 A14 B1 L
MEM2 A14 B0 H
MEM2 A14 B1 H
MEM1 X WRITE SINK T L
MEM1 X READ SINK T L
MEM1 X WRITE SOURCE T L
MEM1 X READ SOURCE T L
MEM2 Y I SOURCE DIODE END T H
MEM2 Y STACK CHG H
MEM2 Y COMMON SINK T L
MEM2 Y DIODE SOURCE T L
MEM2 Y1 SOURCE COMMON END T H
MEM2 Y DIODE SINK T L
MEM2 Y COMMON SOURCE T L
BUS SSYN L
MEM1 SSYN H
BUS C0 L
BUS C1 L
BUS A0 L
MEM2 RAW C0 H
MEM2 RAW C1 H
MEM2 RAW A0 H
PARITY DETECT L
INT SSYN L
MEM1 X READ I SOURCE T H
MEM2 Y I SOURCE COMMON END T H
MEM1 X WRITE I SOURCE T H
MEM1 X READ I SOURCE T H
X-READ I.G.
Y-COMMON END I.G.
X-WRITE I.G.
Y-DIODE END I.G.
STACK V REF





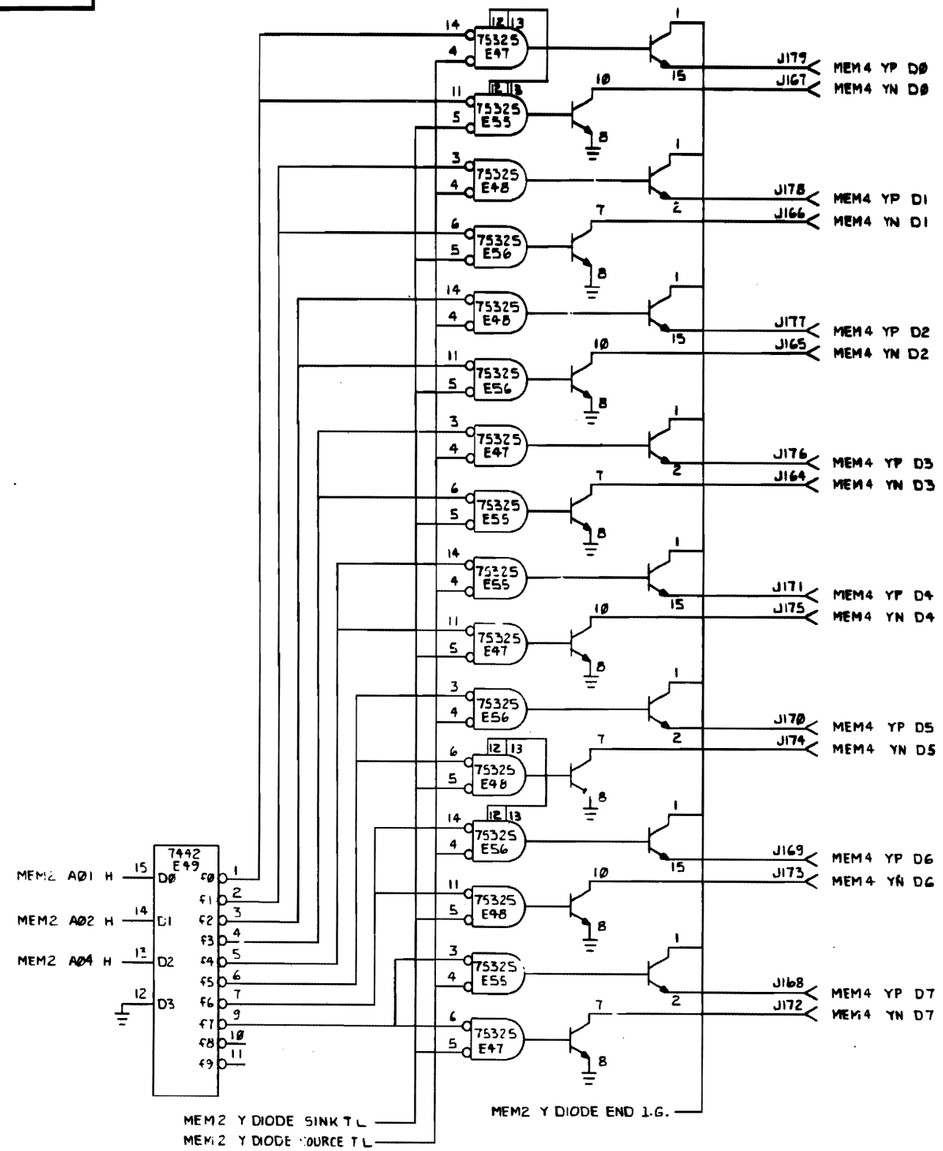


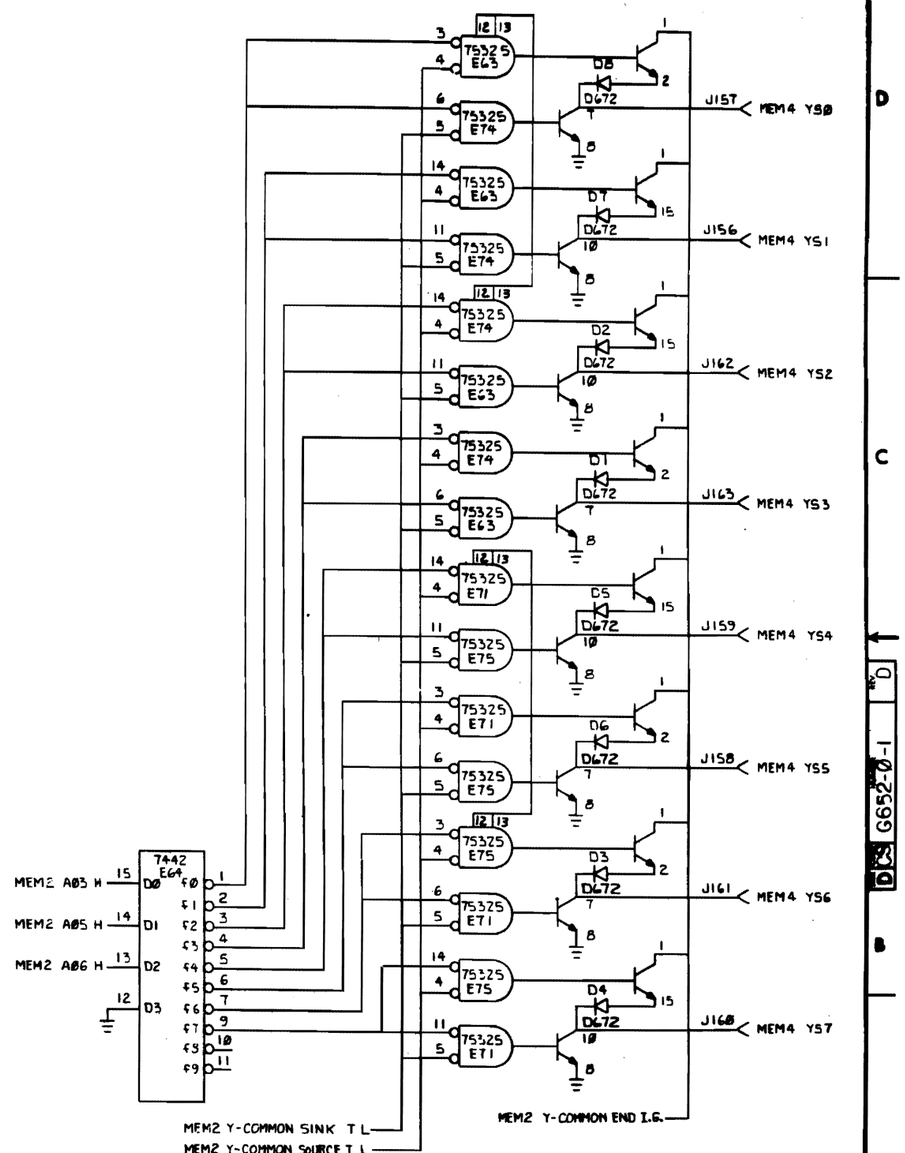
REVISIONS		
CHK	CHANGE NO.	REV.

(X DRIVE)

TITLE	SIZE	CODE	NUMBER	REV.
16K x 18 MEMORY ELECTRONICS (MEM3)	D	CS	G652-0-1	D
SCALE —	SHEET 5 OF 11		DIST.	

DCS G652-0-1 REV. D





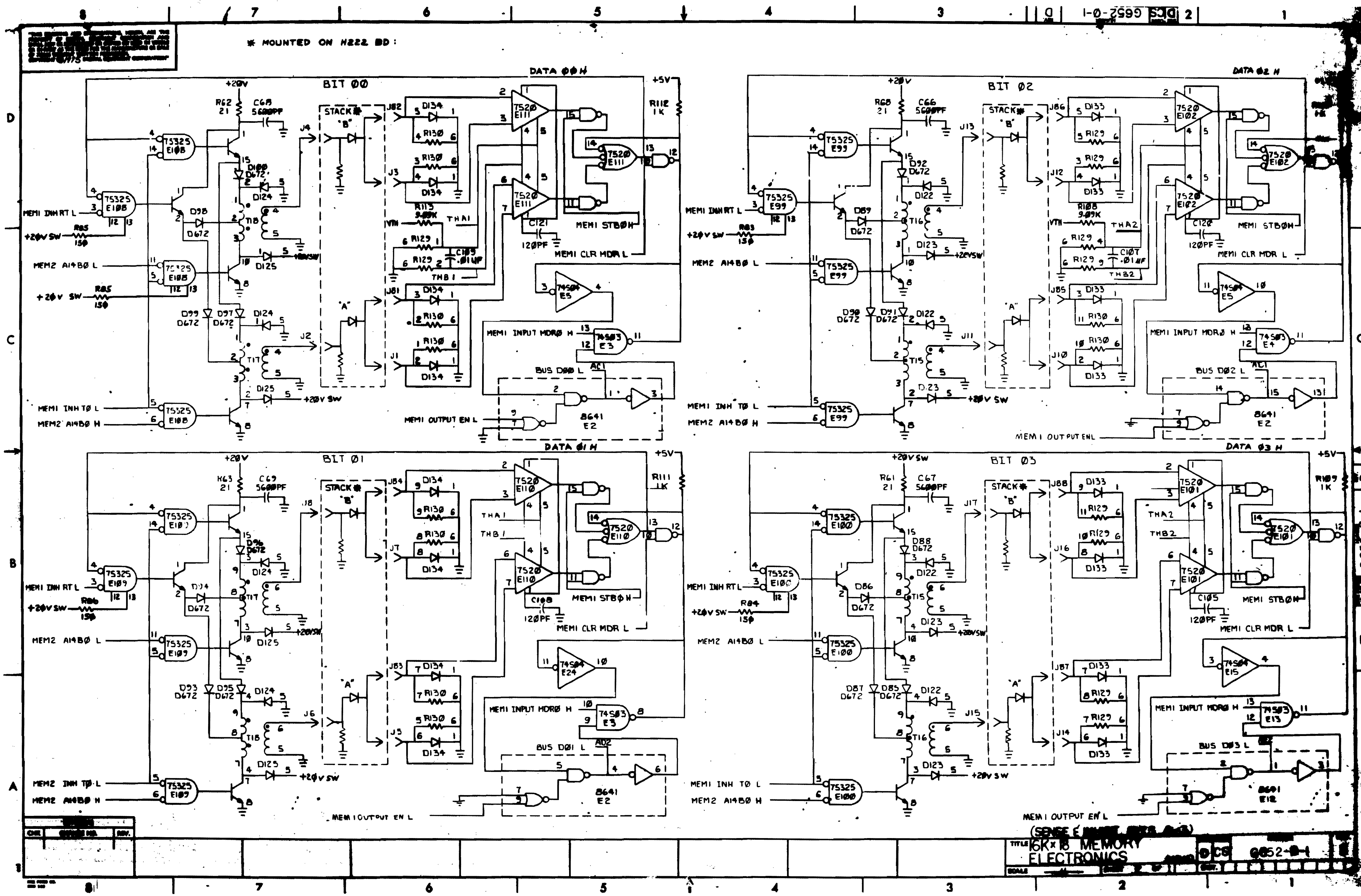
REVISIONS		
CHK	CHANGE NO.	REV.

(Y DRIVE)

TITLE 16K x 18 MEMORY ELECTRONICS (MEM4)

SIZE D CODE DCS NUMBER G652-0-1 REV. D

SCALE — SHEET 6 OF 11 DIST.


* MOUNTED ON H222 BD:
BIT 00
DATA 00 H
BIT 01
DATA 01 H
BIT 02
DATA 02 H
BIT 03
DATA 03 H
STACK *
MEM1 INH RT L
MEM2 A14B0 L
MEM1 INH T0 L
MEM2 A14B0 H
MEM2 INH T0 L
+20V SW
+20V
+5V
MEM1 STB0H
MEM1 CLR MDR L
MEM1 INPUT MDR0 H
MEM1 OUTPUT EN L
BUS D00 L
BUS D01 L
BUS D02 L
BUS D03 L
THA1
THB1
THA2
THB2
75325
7520
74S04
74S03
8641
D672
(SENSE & INHIBIT DRVS. & ...)
16K x 18 MEMORY ELECTRONICS
G652-0-1

* MOUNTED ON M222 BD

BIT 04

DATA 04 H

+20V. R59 21 C64 5600PF

MEMI INH RTL

+20V SW R01 13Ø

MEM2 A14BØ L

MEMI INH TØ L

MEM2 A14BØ H

75325 E92

D84 D672 D82 D672 D83 D672 D81 D672

DI2Ø DI21 T14 T13

STACK * "B" "A"

J21 J19 J9Ø J89 J18

DI32 RI28 RI27 WIRE 3.09K THA3 C105 .01MF

7520 E95 7520 E95

C119 12ØPF

MEMI STBØ H

MEMI CLR MDR L

+5V R1Ø6 1K

74S04 E5

MEMI INPUT MDRØ H

74S03 E3

BUS DØ4 L AE1

MEMI OUTPUT EN L

8641 E1

BIT Ø6

DATA Ø6 H

+20V R67 21 C62 5600PF

MEMI INH RT L

+20V SW R79 13Ø

MEM2 A14BØ L

MEMI INH TØ L

MEM2 A14BØ H

75325 E83

D76 D672 D73 D672 D74 D672 D75 D672 D118 D119

J30 J28

STACK * "B" "A"

J94 J29 J93 J27

DI31 RI27 RI28 RI02 9.09K THA4 C101 .01MF

7520 E86 7520 E86

C118 12ØPF

MEMI STBØ H

MEMI CLR MDR L

74S04 E5

MEMI INPUT MDRØ H

74S03 E4

BUS DØ6 L AF1

MEMI OUTPUT EN L

8641 E1

BIT Ø5

DATA Ø5 H

+20V R6Ø 21 C65 5600PF

MEMI INH RT L

+2Ø V SW R82 13Ø

MEM2 A14BØ L

MEMI INH TØ L

MEM2 A14BØ H

75325 E93

D8Ø D672 D78 D672 D77 D672 D79 D672 DI2Ø DI21 T13 T14

STACK * "B" "A"

J25 J23 J92 J91 J24 J22

DI32 RI28

7520 E94 7520 E94

THA3 THB3 C102 12ØPF

MEMI STBØ H

MEMI CLR MDR L

+5V R1Ø5 1K

74S04 E15

MEMI INPUT MDRØ H

74S03 E14

BUS DØ5 L AF2

MEMI OUTPUT EN L

8641 E12

BIT Ø7

DATA Ø7 H

+20V R58 21 C68 5600PF

MEMI INH RT L

+2Ø V SW R8Ø 15Ø

MEM2 A14BØ L

MEMI INH TØ L

MEM2 A14BØ H

75325 E84

D72 D672 D7Ø D672 D71 D672 D69 D672 DI18 DI19 T11 T12

STACK * "B" "A"

J34 J32 J96 J95 J33 J31

DI31 RI27

7520 E85 7520 E85

THA4 THB4 C99 12ØPF

MEMI STBØ H

MEMI CLR MDR L

+5V R1Ø3 1K

74S04 E24

MEMI INPUT MDRØ H

74S03 E13

BUS DØ7 L AH2

MEMI OUTPUT EN L

8641 E12

(SENSE INHIBIT BITS 4-7)

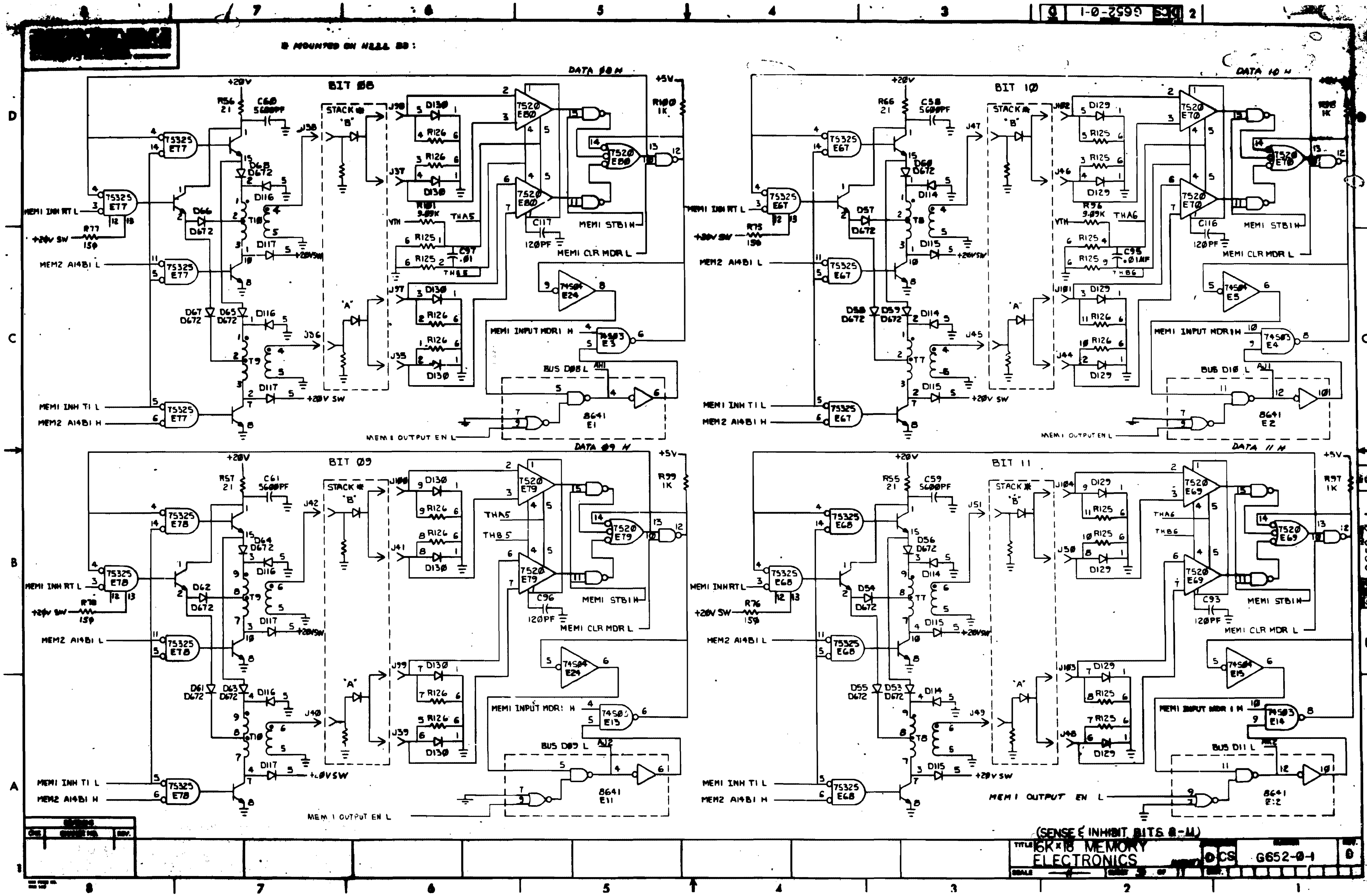
REVISIONS		
SYM	CHANGE NO.	REV.

TITLE 16K x 18 MEMORY ELECTRONICS (MEM18)

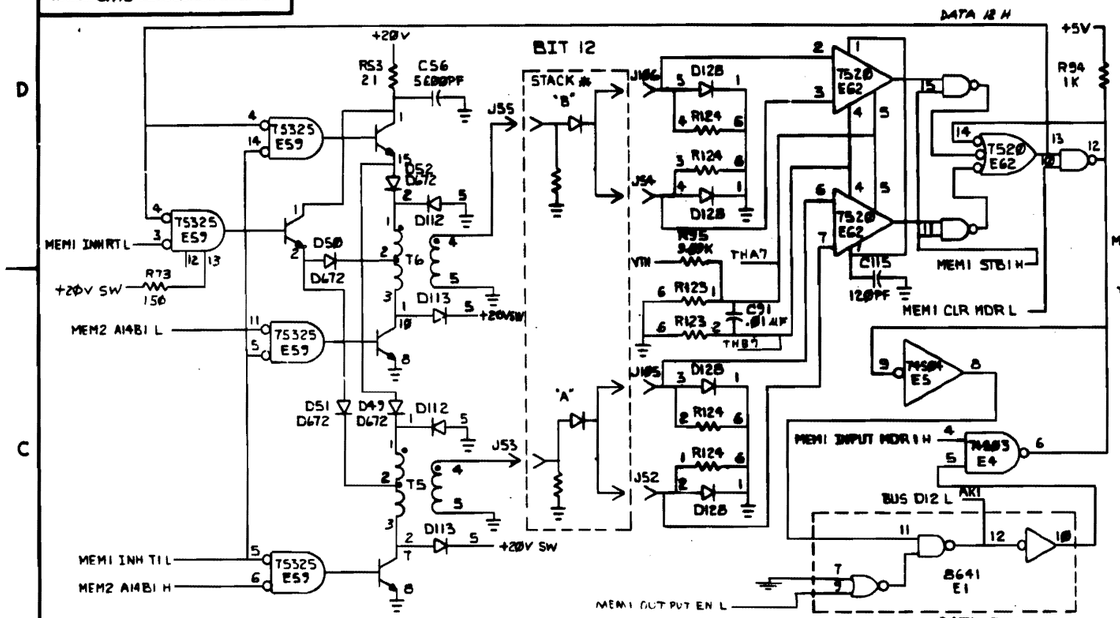
SIZE D CODE CS NUMBER G652-0-1 REV. D

SCALE — SHEET 5 OF 11

DCS G652-0-1

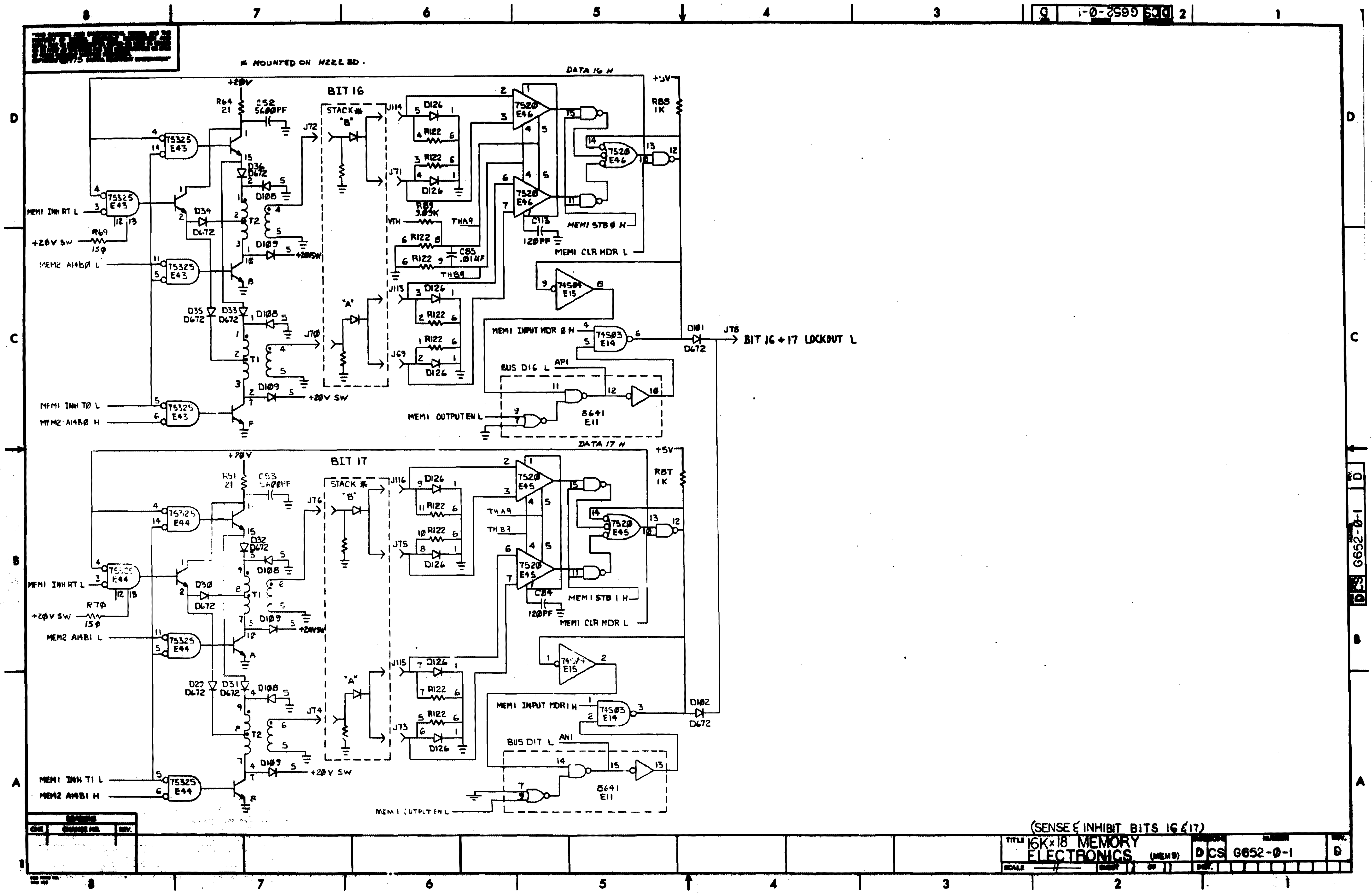

BIT Ø8
BIT 1Ø
BIT Ø9
BIT 11
DATA Ø8 H
DATA 1Ø H
DATA Ø9 H
DATA 11 H
MEM1 INH RT L
MEM1 INH T1 L
MEM2 A14B1 L
MEM2 A14B1 H
MEM1 STB1 H
MEM1 CLR MDR L
MEM1 INPUT MDR1 H
MEM1 OUTPUT EN L
BUS DØ8 L
BUS D1Ø L
BUS DØ9 L
BUS D11 L
(SENSE & INHIBIT BITS 8-11)
16K x 18 MEMORY ELECTRONICS
G652-0-1

MOUNTED ON M218 BD

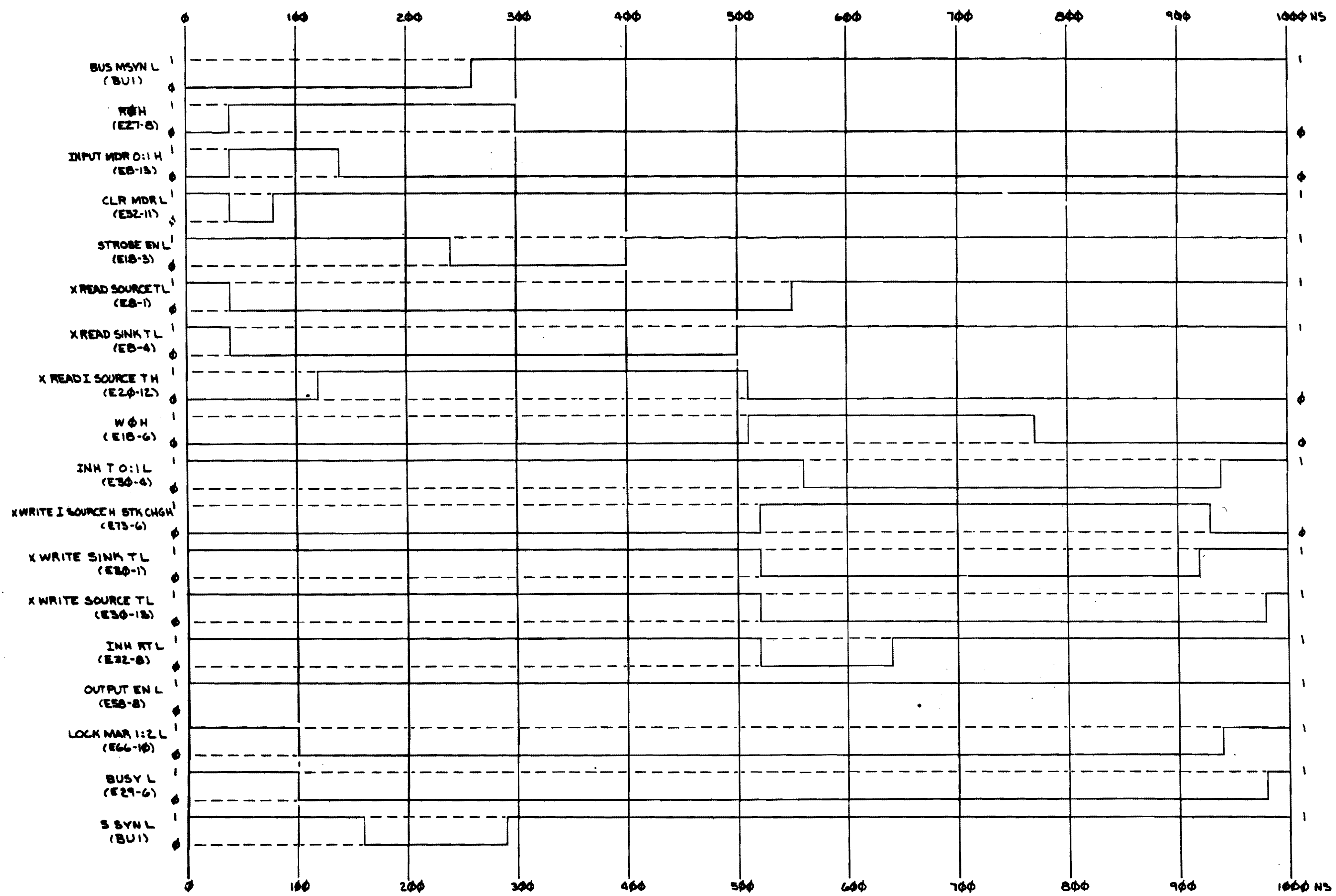


(SENSE & INHIBIT BITS 12-15)

TITLE	16K x 18 MEMORY ELECTRONICS (MEM8)	DRAWING NO.	REV.
SCALE —	SHEET 10 OF 11	D CS G692-8-1	A


* MOUNTED ON H222 BD.
BIT 16
BIT 17
STACK *
"B"
"A"
DATA 16 H
DATA 17 H
MEM1 INH RT L
+20V SW
MEM2 AI4B0 L
MEM1 INH T0 L
MEM2 AI4B0 H
MEM2 AI4B1 L
MEM1 INH T1 L
MEM2 AI4B1 H
MEM1 STB 0 H
MEM1 STB 1 H
MEM1 CLR MDR L
MEM1 INPUT MDR 0 H
MEM1 INPUT MDR 1 H
BUS D16 L
BUS D17 L
MEM1 OUTPUT EN L
BIT 16 + 17 LOCKOUT L
(SENSE & INHIBIT BITS 16 & 17)
16K x 18 MEMORY ELECTRONICS (MEM8)
D CS G652-0-1 D

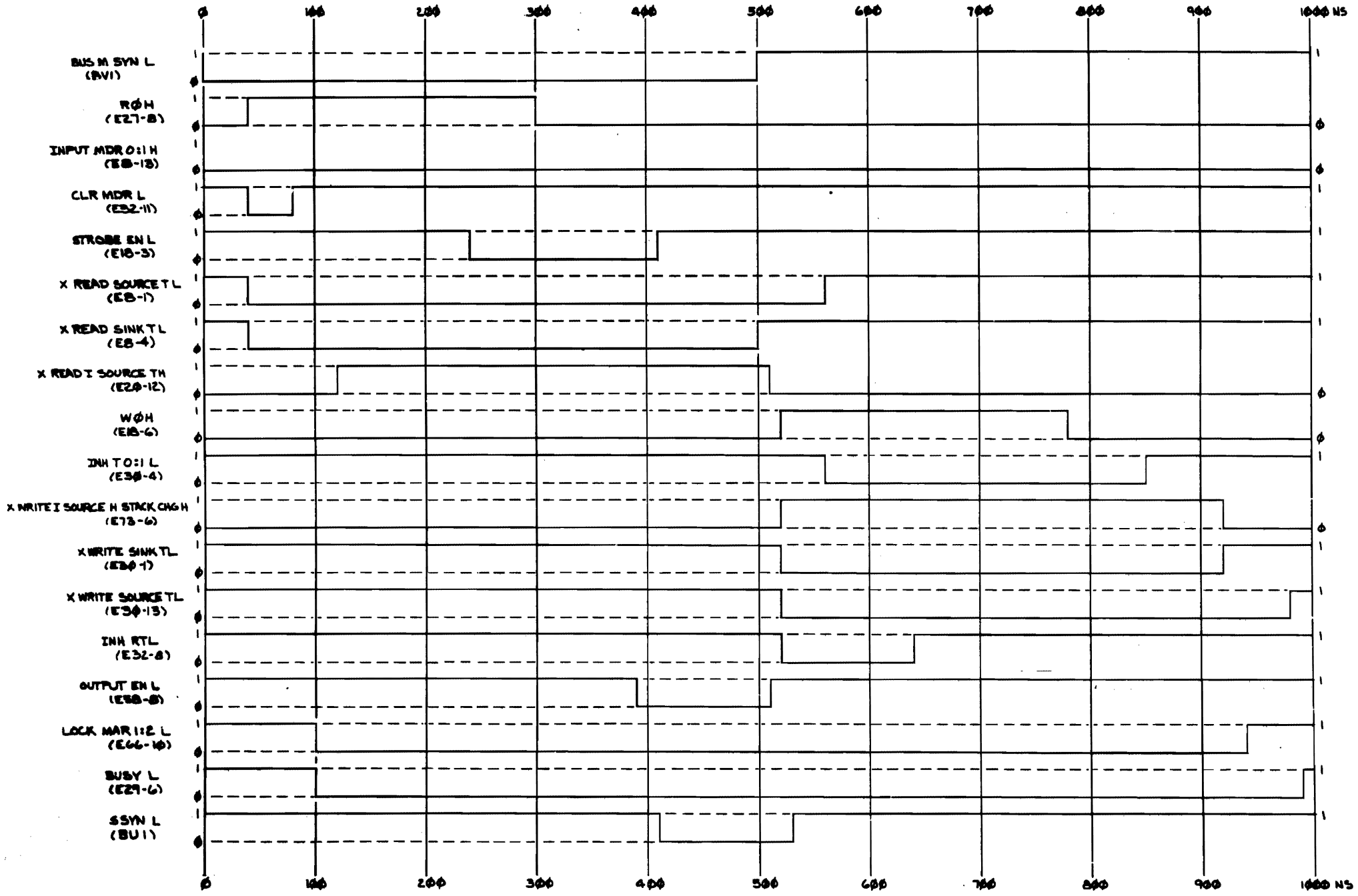
DAT O



DRN. W. LUPKIN	FIRST USED ON MM11-DP
CHK'D	TITLE
ENG.	MM11-DP
PROJ. ENG.	TIMING DIAGRAM
PROD. R.Q. VAAR	
NEXT HIGHER ASSY. B-DD-MM11-DP	SIZE D CODE TD NUMBER MM11-DP-2 REV.
SCALE	
SHEET 1 OF 2	DIST.

D TD MM11-DP-2

DAT I

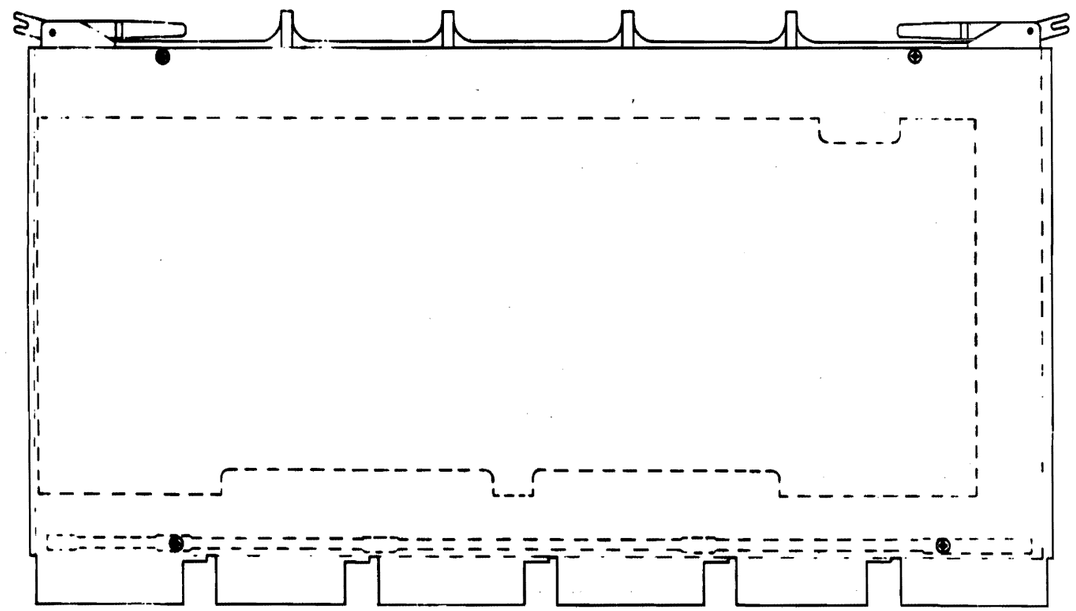


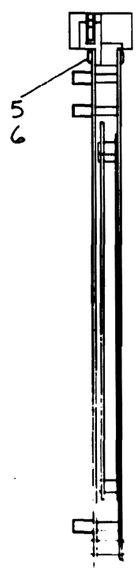
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: MMII-DP TIMING DIAGRAM	DTD MMII-DP-2	REV.
SCALE	SHEET 2 OF 2	SIZE

NOTE :

1. MMII-DP MEMORY MODULE ASSEMBLY (16K X18BIT) MAY BE SUBSTITUTED FOR MMII-D MODULE (16KX16BIT)





4
6
3

1 OR
2

4	4	WASHER, LOCK #2 INT TOOTH	9006631-00	6
2	2	SCR, PHL PAN HD 55 #2-56 X .3116	9006002-01	5
2	2	SCR, PHL PAN HD, 55 #2-56 X .19	9006000-01	4
1	1	16K X18 CORE MEMORY	D-CS-6652-0-1	3
1		H222 STACK BOARD (16 BIT)	D-UA-H222-B-0	2
	1	H222 STACK BOARD (18 BIT)	D-UA-H222-A-0	1
		DESCRIPTION	DWG./PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ± 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES					
		OVER 0 TO 12	OVER 12 TO 30	OVER 30 TO 60	OVER 60 TO 120	OVER 120 TO 240	OVER 240 TO 480
SURFACE QUALITY IN MICROINCHES	MEDIUM ☐	±.005	±.010	±.015	±.020	±.031	±.06
	PREFERRED ☐	±.002	±.005	±.005	±.01	±.015	±.03

MMII-D
MMII-DP
QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH

DRWN. M. LUFKIN	7/24/75	FIRST USED ON: MMII-DP
CHK'D	8/4/75	
ENG.	8/7/75	
PROJ. ENG.	8/11/75	TITLE: MMII-DP MEMORY MODULE ASSEMBLY
PROD.	8/11/75	
NEXT HIGHER ASSY.		
D-DD-MMII-DP		SIZE D / CODE UA / NUMBER MMII-DP-0 / REV.
SCALE 1/1		
SHEET 1 OF 1		DIST.

D UA MMII-DP-0

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE SEQUENCE

THIS IS PRINT SET

UNIT VARIATIONS

VAR	TITLE	PRINT SET			
H222-A	16K X 18 BIT				
H222-B	16K X 16 BIT				

REVISIONS

REV	CHG. NO.	DATE
A	H222-1	5-76

USED ON OPTION/MODEL

SHEET 1 OF 2

DRN.	N.LUFKIN	DATE 29/OCT/75
CHK'D.	N. Lufkin	DATE 29/OCT/75
PROJ ENG.	D. [signature]	DATE 10/28/75
PROD.	R.A. Hill	DATE 10/29/75
FIELD SERV.	[signature]	DATE 11/4/75

TITLE H222 MEMORY STACK

SIZE	CODE	NUMBER	REV
B	DD	H222-Ø	A

DIST

DEC 10-(1229)-1062-14-N672

DRB 106

ELECTRICAL

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			B-DD-H222-Ø		2	DRAWING DIRECTORY	
			D-CS-5411554-0-1			H222 STACK BOARD	
			E-IA-7011661-0-0		2	CORE PLANE WIRING ASSEMBLY	

MECHANICAL

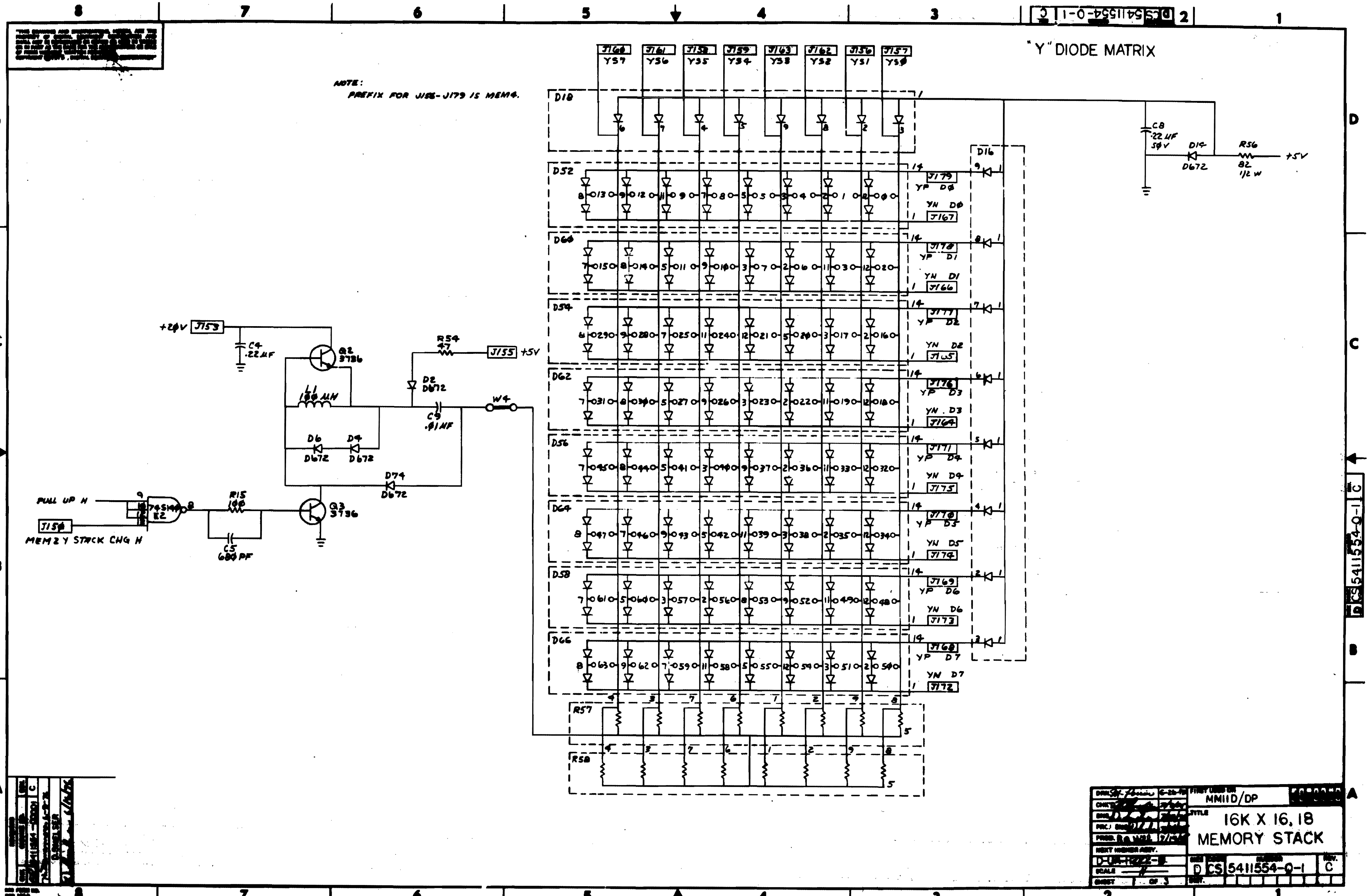
CUSTOMER PRINT SET	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
			D-UA-H222-A-0		1	H222 CORE MEMORY STACK ASSY	
			D-PA-1211725-0-0		1	STIFFENER, FINGER END	
			D-PS-1211726-0-0		1	STIFFENER, HANDLE END	
			D-MD-5511796-0-0		1	CORE SUPPORT (16K x 16/18 BIT)	
			D-MD-5511797-0-0		1	COVER (16K X 16/18 BIT)	
			A PL-5411554-0-0			PARTS LIST	
			D-AH-5411554-0-5			MEMORY STACK SUB	

CUSTOMER PRINT SET CODES

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

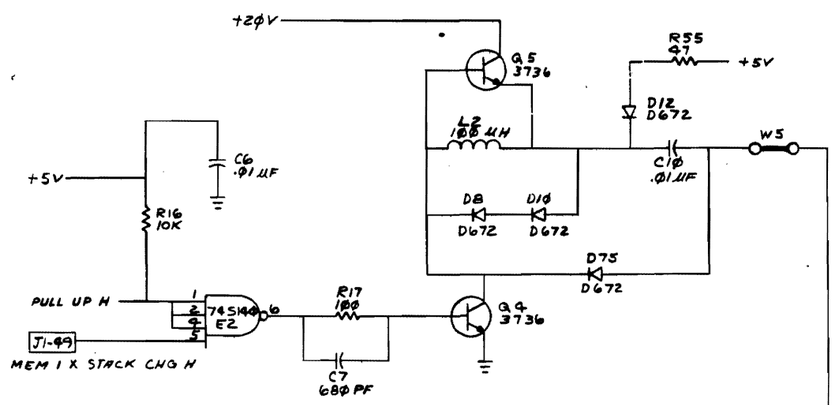
TITLE	SHEET	SIZE	CODE	NUMBER	REV
H222 MEMORY STACK	2 OF 2	B	DD	H222-Ø	A

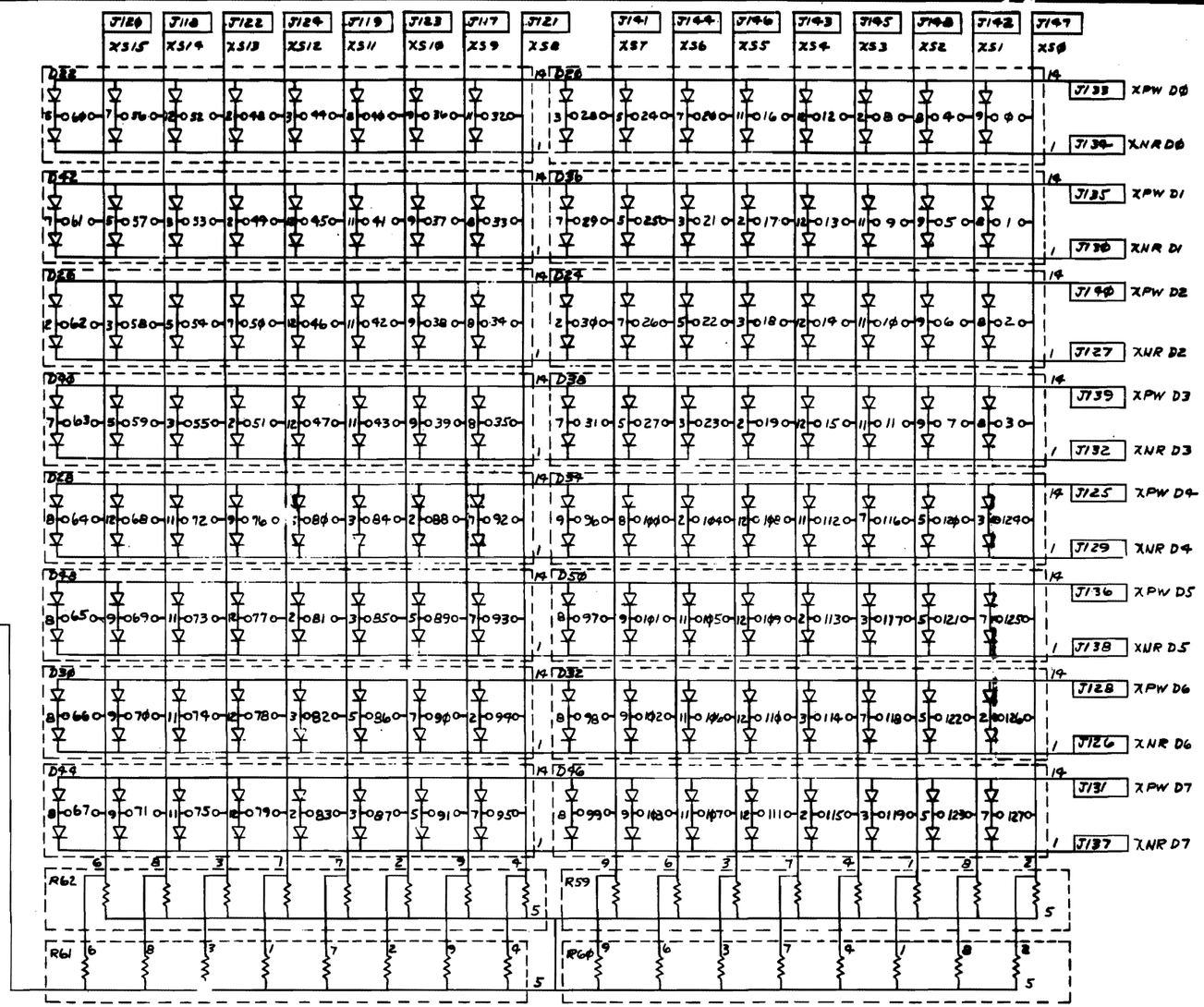
DRB 108


"Y" DIODE MATRIX
NOTE:
PREFIX FOR J155-J179 IS MEM4.
D18
D52
D60
D54
D62
D56
D64
D58
D66
D16
R57
R58
C8 .22 UF 50V
D14 D672
R56 82 1/2 W
+5V
+20V J153
C4 .22 UF
Q2 3736
L1 100 UH
D6 D672
D4 D672
D2 D672
R54 47
J155 +5V
C9 .01 UF
W4
D74 D672
PULL UP H
J154
MEM 2 Y STACK CHG H
74S140 E2
R15 100
C5 680 PF
Q3 3736
YP D0
YN D0
YP D1
YN D1
YP D2
YN D2
YP D3
YN D3
YP D4
YN D4
YP D5
YN D5
YP D6
YN D6
YP D7
YN D7
MMIID/DP
16K X 16, 18
MEMORY STACK
D CS 5411554-0-1 C

"X" DIODE MATRIX

NOTE:
PREFIX FOR J117-J148 IS MEM3.

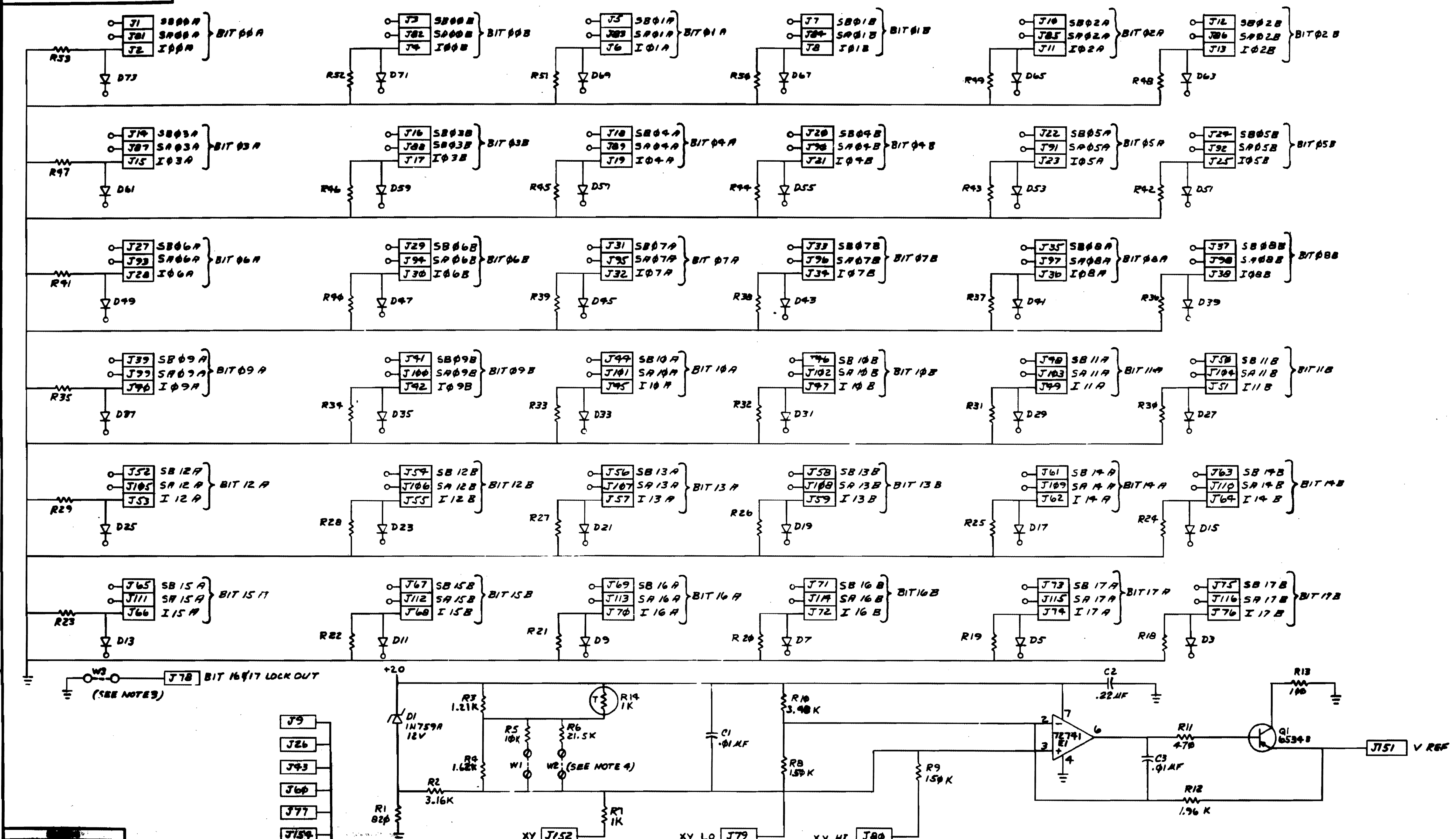




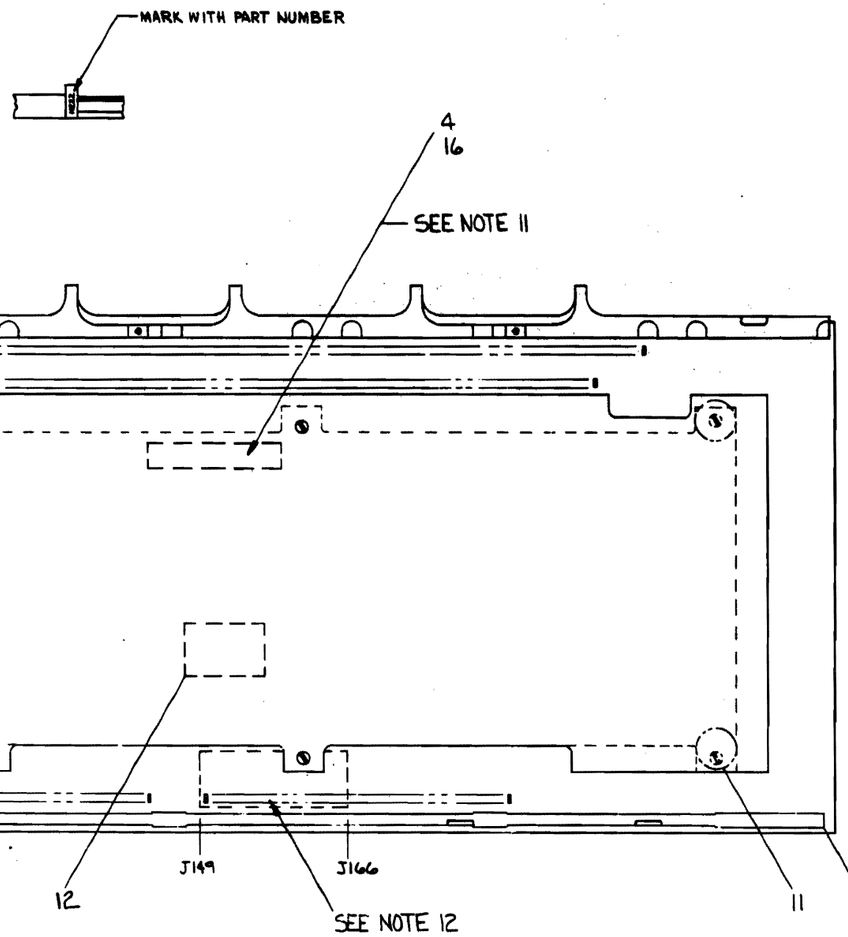
REVISIONS		
CHK	CHANGE NO.	REV.

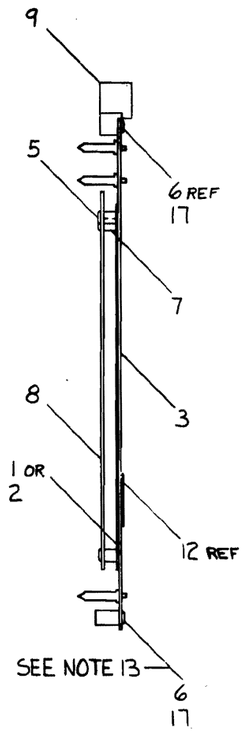
TITLE	16K X 16, 18 MEMORY STACK		
SCALE		SHEET 2 OF 3	
NUMBER	DCS 5411554-0-1		REV. C

NOTES:
1. R18 THRU R53 ARE 1K, 1/4W ±5%.
2. UNLESS OTHERWISE SPECIFIED: ALL DIODES ARE D672.
3. W3 MUST BE INSTALLED FOR A 16 BIT MEMORY -- H222B, OR H222A USED WITHOUT A PARITY CONTROLLER (M7850).
4. W1 & W2 ARE USED TO ADJUST VREF



TITLE	16K X 16, 18 MEMORY STACK
NUMBER	D CS 5411554-0-1
REV.	C
SHEET	3 OF 3





LEGEND		
NUMBER	VARIATION	USED ON
H222-A	16K X 18 BIT	MM11-DP
H222-B	16K X 16 BIT	MM11-D

NOTES:

1. BOND ITEM 1 (CORE PLANE) TO ITEM 3 (STACK BOARD) WITH ITEM 14 (ADHESIVE).
2. SWAGE ITEM 1 (CORE PLANE) AND ITEM 3 (STACK BOARD) TOGETHER WITH ITEM 7 (STANDOFF).
3. USE ITEM 15 (PROTECTIVE COATING) TO COAT ALL MAGNETIC WIRE TERMINATIONS AFTER ELECTRICAL TEST. (REF E-IA-7011661-0-0)
4. BOND TWISTED CABLES TO ITEM 1 (CORE PLANE) WITH ITEM 13 (ADHESIVE). SEE E-IA-7011661-0-0.
5. BOND X & Y DRIVE LOOPS IN PLACE WITH ITEM 13 (ADHESIVE). SEE E-IA-7011661-0-0 NOTES
6. REFER TO E-IA-7011661-0-0 WHEN SOLDERING WIRE TERMINATIONS TO ITEM 3 (STACK BOARD).
7. ASSEMBLE ITEMS 9 & 10 (STIFFENERS) TO ITEM 3 (STACK BOARD) USING ITEMS 6 & 17 .
8. ATTACH ITEM 8 (COVER) TO ITEM 3 (STACK BOARD) USING ITEM 5 (NYLON SCREW).
9. APPLY ITEM 11 (WARRANTY SEAL) WHERE SHOWN.
10. APPLY ITEM 12 (NAME PLATE) TO SIDE 2 OF ITEM 3 (STACK BOARD) AS SHOWN.
11. MARK ITEM 3 (STACK BOARD) ON SIDE 2 WITH DEC PART NUMBER, SEQUENTIAL SERIAL NUMBER, AND CIRCUIT SCHEMATIC REVISION USING ITEM 4 (INK) AND ITEM 6 (EPOXY). EXAMPLE: H222-A-001-C5-B.
12. TRIM AMP POSTS AND COMPONENT LEADS TO BE .05 IN THIS AREA OF SIDE 2.
13. INSTALL ITEM 17 (LOCKWASHER) "TORQUE HAND TIGHT".

8	8	WASHER, LOCK #2 INT TOOTH	9006631-00	17
A/P	A/R	EPOXY	4901082-00	16
A/R	A/R	PROTECTIVE COATING (F145)	4901083-00	15
A/R	A/R	ADHESIVE (RTV 3145)	4901086-00	14
A/R	A/R	ADHESIVE (RTV 3140)	4901085-00	13
1	1	NAME PLATE	9009238-00	12
2	2	WARRANTY SEAL		11
1	1	STIFFENER, FINGER END	D-PS-1211725-0-0	10
1	1	STIFFENER, HANDLE END	D-PS-1211726-0-0	9
1	1	COVER	D-MD-5511797-0-0	8
6	6	STANDOFF .25 DIA X .19 LG	9009677-00	7
8	8	SCR, PHL PAN HD SS #2-56X.19	9006000-01	6
6	6	SCR, SLT BNDR HD NYLON #4-40 X.19	9009233-04	5
A/R	A/R	INK, BLACK	4901084-00	4
1	1	H222 STACK BOARD	5411554	3
1		CORE PLANE WIRING ASSY	E-IA-7011661-1-0	2
	1	CORE PLANE WIRING ASSY	E-IA-7011661-0-0	1
		DESCRIPTION	DWG./PART NO.	ITEM NO.

H222-B H222-A
QUANTITY & VARIATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	GENERAL DIMENSION RANGE (INCHES)					
		OVER 0 TO 6	OVER 6 TO 12	OVER 12 TO 30	OVER 30 TO 120	OVER 120 TO 315	OVER 315 TO 1000
SURFACE QUALITY IN MICROINCHES	MEDIUM	±.005	±.008	±.012	±.016	±.024	±.04
	PREFERRED	±.010	±.015	±.025	±.04	±.060	±0.1

THIRD ANGLE PROJECTION
REMOVE BURRS AND BREAK SHARP CORNERS
DO NOT SCALE DWG
MATERIAL SEE PARTS LIST
FINISH

DRAWN M. LUPKIN 7/17/79
CHK'D
ENG
PROJ
PROD
NEXT HIGHER ASSY. D-UA-MM11-DP-◆
SCALE 1/1
SHEET 1 OF 1

FIRST USED ON MM11-DP

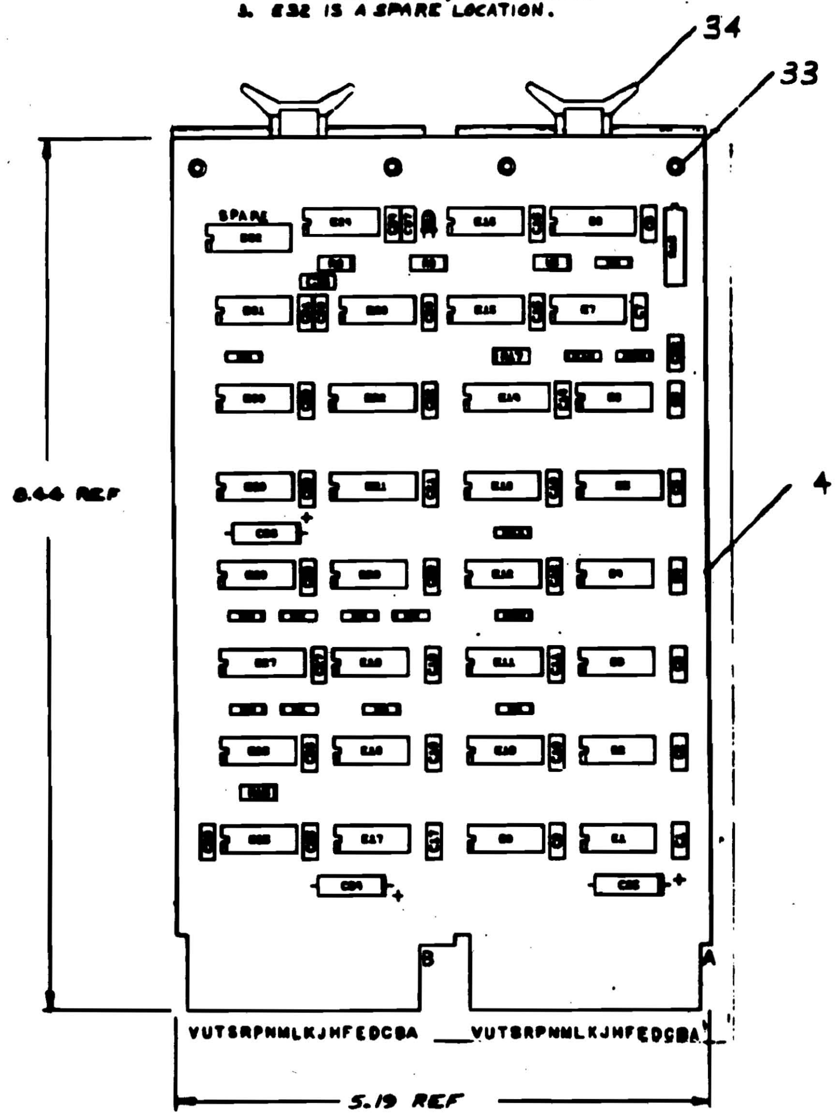
TITLE
H222 CORE MEMORY STACK ASSEMBLY

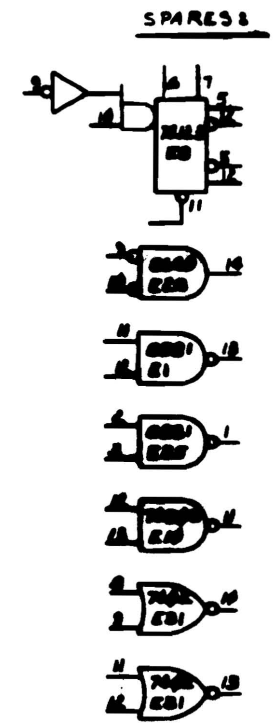
SIZE D | CODE UA | NUMBER H222-A-0 | REV.
DIST.

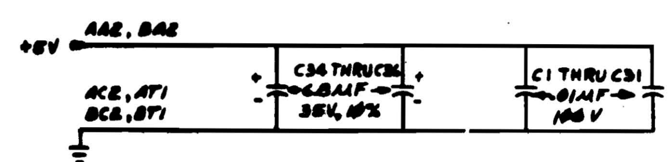
REVISIONS: REV. | CHANGE NO. | DATE

NOTES:

1. ALL RESISTORS 1/4 W, 5% UNLESS OTHERWISE NOTED. ALL CAPACITORS ARE 100V, 20% UNLESS OTHERWISE NOTED.
2. JUMPER CONTROL OPERATIONS AS FOLLOWS: W1 THRU W4 SELECT CSR ADDRESS, W5 CAPACITOR FOR S SYN DLY, NOT USED.
3. E32 IS A SPARE LOCATION.







QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		CIRCUIT SCHEMATIC	D-CS-M7850-0-1	REF
REF		X-Y COORDINATE HOLE LOCATION	K-C0-M7850-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7850-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7850-0-6	3
1		ETCHED CIRCUIT BOARD	5010651-00	4
1	C39	CAP 470 PF, 100V, 5% (DM)	000024-00	5
2	C33, C37	CAP 330 PF, 100V, 5% (DM)	1000023-00	6
32	C1 THRU C32	CAP .01MF, 100V, 20% DISC	1001610-01	7
3	C34, C35, C36	CAP 6.8MF, 35V, 10% S.TANT	1005306-00	8
1	D1	DIODE, LED.	1110324-00	9
5	R1 THRU R5	RES 4.7K 1/4W 5%	1300447-00	10
3	R8, R9, R15	RES 100 1/4W 5%	1300229-00	11
5	R6, R10, R11, R12, R17	RES 470 1/4W 5%	1300316-00	12
1	R13	RES 1K 1/4W 5%	1300365-00	13
1	R16	RES 10K 3/4W 20% (% PR.POT)	1309143-10	14
1	E24	I.C. 7400	1905575-00	15
1	E30	I.C. 7430	1905578-00	16
1	E31	I.C. 7402	1909004-00	17
1	E19	I.C. 314A	1909704-00	18
1	E23	I.C. 7408	1910155-00	19
4	E1, E9, E17, E25	I.C. 8881	1909705-00	20
1	E16	I.C. 74H04	1909931-00	21
1	E27	I.C. 7485	1910224-00	22
1	E8	I.C. 74123	1910436-00	23
1	E10	I.C. 74S03	1910533-00	24
1	E15	I.C. 74S74	1910544-00	25
1	E21	I.C. 74174	1910652-00	26
2	E5, E22	I.C. 74157	1910655-00	27
9	E2, E3, E11, E12, E18 E20, E26, E28, E29	I.C. 8640	1911469-00	28
2	E4, E13	I.C. 74S280	1911[illegible]73-00	29
1	E14	I.C. 8266	1909934-00	30
2	E6, E7	I.C. 7474	1905547-00	31
4	W1 THRU W4	INSULATED JUMPER	9009185-00	32
4		EYELET	9006732-00	33
2		HANDLE, FLIP-CHIP (MAGENTA)	9008337-6	34

PARTS LIST

ETCH BOARD REV. B

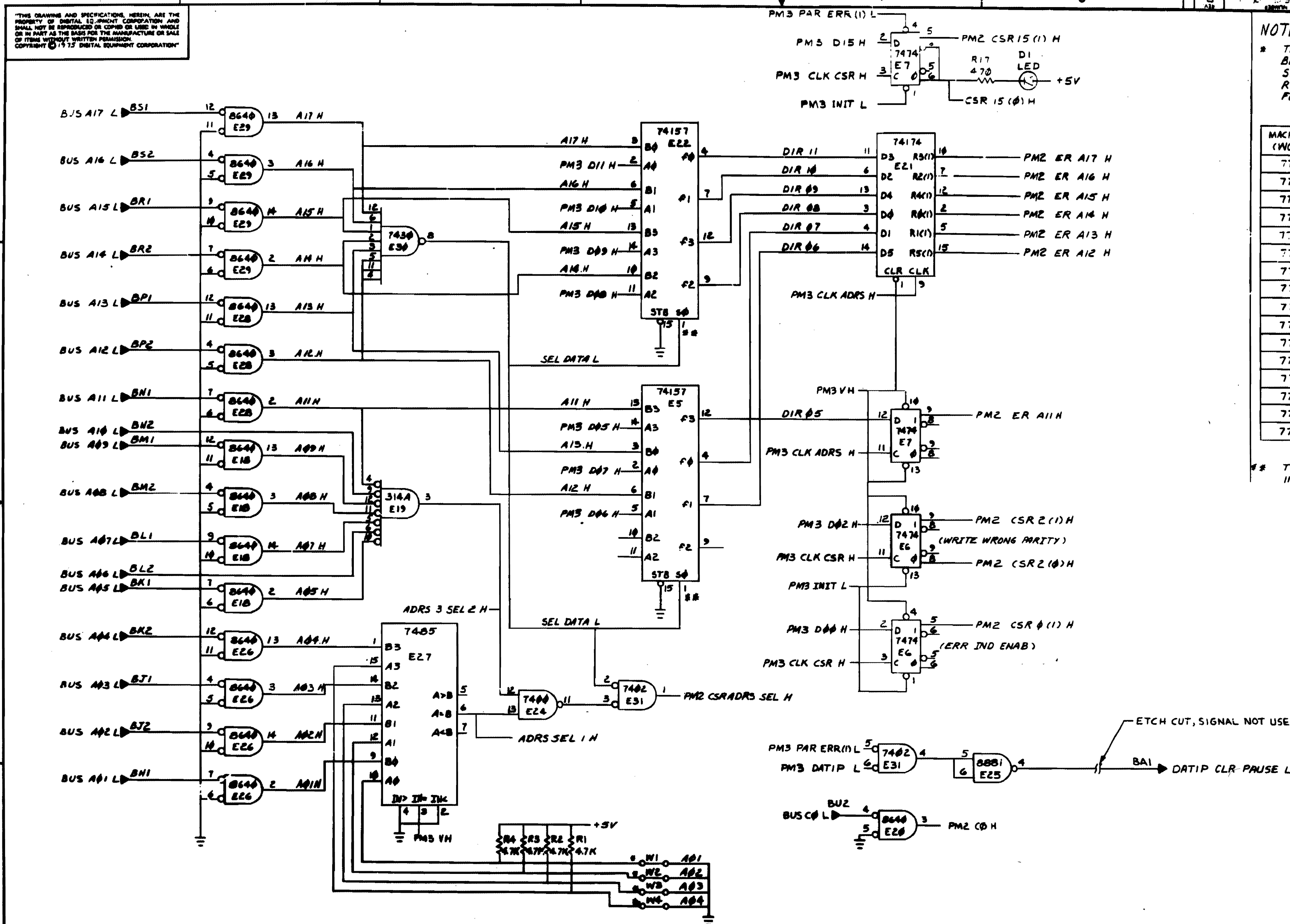
SEMICONDUCTOR CONVERSION CHART

digital

TITLE: PARITY MODULE

D CS M7850-0-1 REV. B

SHEET 1 OF 3



NOTES:

* THE CSR REGISTER ADDRESS IS LOCATED BETWEEN 772100 AND 772136. IT IS SELECTED WITH JUMPERS W1 THRU W4. REMOVING A JUMPER SELECTS A "ONE" FOR THAT BIT POSITION. (*)

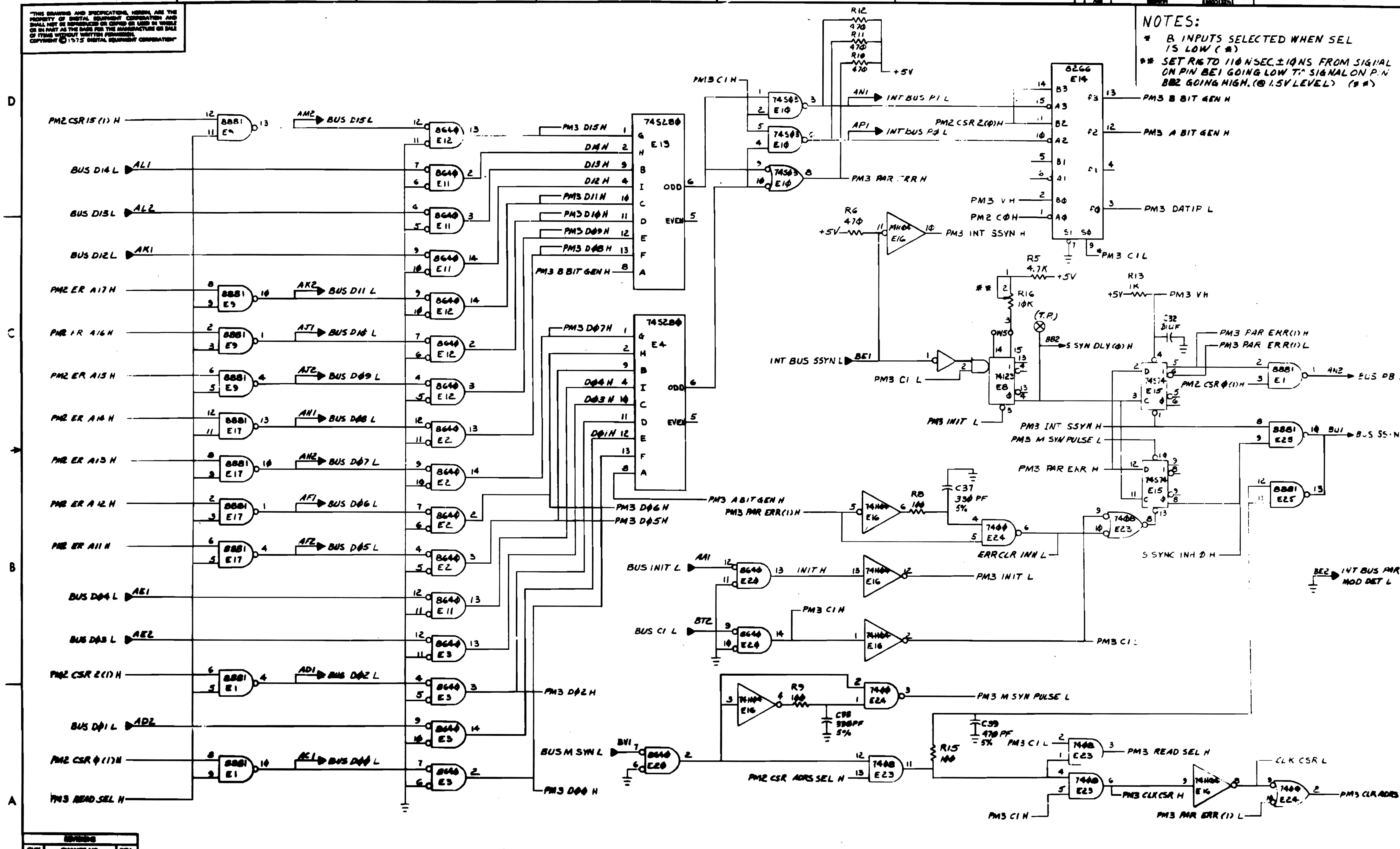
MACHINE ADDRESS (WORDS) 8	W4 A4	W3 A3	W2 A2	W1 A1
772100	IN	IN	IN	IN
772102	IN	IN	IN	OUT
772104	IN	IN	OUT	IN
772106	IN	IN	OUT	OUT
772110	IN	OUT	IN	IN
772112	IN	OUT	IN	OUT
772114	IN	OUT	OUT	IN
772116	IN	OUT	OUT	OUT
772120	OUT	IN	IN	IN
772122	OUT	IN	IN	OUT
772124	OUT	IN	OUT	IN
772126	OUT	IN	OUT	OUT
772130	OUT	OUT	IN	IN
772132	OUT	OUT	IN	OUT
772134	OUT	OUT	OUT	IN
772136	OUT	OUT	OUT	OUT

** THE "A" INPUTS ARE SELECTED WHEN THE SEL INPUT GOES LOW. (**)

REVISIONS: CHK. | CHANGE NO. | REV.

TITLE: PARITY MODULE (PM2) | SIZE: D | CODE: CS | NUMBER: M7850-0-1 | REV.: B

SCALE | SHEET 2 OF 3 | DIST.


NOTES:
* B INPUTS SELECTED WHEN SEL IS LOW (#)
** SET R16 TO 110NSEC.±10NS FROM SIGNAL ON PIN BE1 GOING LOW TO SIGNAL ON PIN BB2 GOING HIGH. (@ 1.5V LEVEL) (**)
PM2 CSR15 (1) H
BUS D14 L
BUS D13 L
BUS D12 L
PM2 ER A17 H
PM2 ER A16 H
PM2 ER A15 H
PM2 ER A14 H
PM2 ER A13 H
PM2 ER A12 H
PM2 ER A11 H
BUS D04 L
BUS D03 L
PM2 CSR 2(1) H
BUS D01 L
PM2 CSR 0(1) H
PM3 READ SEL H
BUS DISL
BUS D11 L
BUS D10 L
BUS D09 L
BUS D08 L
BUS D07 L
BUS D06 L
BUS D05 L
BUS D02 L
BUS D00 L
74S280
E13
E4
PM3 DIS H
PM3 D11 H
PM3 D10 H
PM3 D09 H
PM3 D08 H
PM3 B BIT GEN H
PM3 D07 H
PM3 D04 H
PM3 D03 H
PM3 D01 H
PM3 D06 H
PM3 D05 H
PM3 D02 H
PM3 D00 H
PM3 A BIT GEN H
PM3 PAR ERR(1) H
PM3 C1 H
INT BUS P1 L
INT BUS P0 L
PM3 PAR ERR H
PM2 CSR 2(0) H
8266
E14
PM3 B BIT GEN H
PM3 A BIT GEN H
PM3 DATIP L
PM3 V H
PM2 C0 H
PM3 C1 L
PM3 INT SSYN H
INT BUS SSYN L
PM3 C1 L
PM3 INIT L
S SYN DLY (0) H
PM3 PAR ERR(1) H
PM3 PAR ERR(1) L
PM2 CSR 0(1) H
BUS PB L
PM3 INT SSYN H
PM3 M SYN PULSE L
BUS SSYN L
PM3 PAR ERR H
ERRCLR INH L
S SYNC INH 0 H
BUS INIT L
INIT H
PM3 INIT L
BUS C1 L
PM3 C1 H
PM3 C1 L
PM3 M SYN PULSE L
BUS M SYN L
PM2 CSR ADRS SEL H
PM3 READ SEL H
PM3 CLK CSR H
CLK CSR L
PM3 CLR ADRS H
PM3 PAR ERR (1) L
PM3 C1 H
INT BUS PAR MOD DET L

TITLE	SIZE	CODE	NUMBER	REV.
PARITY MODULE (PM3)	D	CS	M7850-0-1	B

SCALE — SHEET 3 OF 3

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
MS11-E
MS11-EP
MS11-F
MS11-FP
MS11-J
MS11-JP

MS11-E
Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØØ21

REVISIONS		
REV.		
CHG. NO.		
DATE		

USED ON OPTION/MODEL	
11/Ø4-AA	11/Ø4-DC
11/Ø4-AB	11/Ø4-DD
11/Ø4-AC	11/Ø4-EC
11/Ø4-AD	11/Ø4-ED
11/Ø4-BA	
11/Ø4-BB	
11/Ø4-BC	
11/Ø4-BD	

SHEET 1 OF 1

DRN. D. HEALY	DATE 10/1/75	digital
CHK'D D. HEALY	DATE 10/1/75	TITLE: FIELD SERVICE MAINTENANCE PRINT SET MS11-E
PROJ. ENG.	DATE 10/22/75	
FIELD SERV.	DATE 10-22-75	

SIZE	CODE	NUMBER	REV.
B	TC	MS11-E-1	
DIST.			

DRS 124

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY D. HEALY	CHECKED D. HEALY	SECTION 1
DATE 10/6/75	DATE 10/6/75	
ENG R. BARRY R Barry	PROD RK Peters	ISSUED SECT. 1
DATE 10-27-75	DATE 10/27/75	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION											
			MS11-E	MS11-EP	MS11-F	MS11-FP	MS11-J	MS11-JP						
	D-CS-M7847-AA-1	UNIBUS MOS MEM	1	-	-	-	-	-						
	D-CS-M7847-AB-1	UNIBUS MOS MEM	-	1	-	-	-	-						
	D-CS-M7847-AC-1	UNIBUS MOS MEM	-	-	1	-	-	-						
	D-CS-M7847-AD-1	UNIBUS MOS MEM	-	-	-	1	-	-						
	D-CS-M7847-AH-1	UNIBUS MOS MEM	-	-	-	-	1	-						
	D-CS-M7847-AJ-1	UNIBUS MOS MEM	-	-	-	-	-	1						

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MOS RAM (MS11-E)	NONE	A	PL	MS11-E-Ø	A	MS11-E-00001
	SHEET 1 OF 1	DIST.				

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

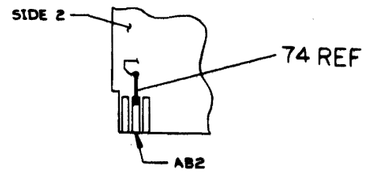
NOTES:

1. THERMAL COMPOUND (ITEM NO. 72) TO BE PLACED UNDER E41.

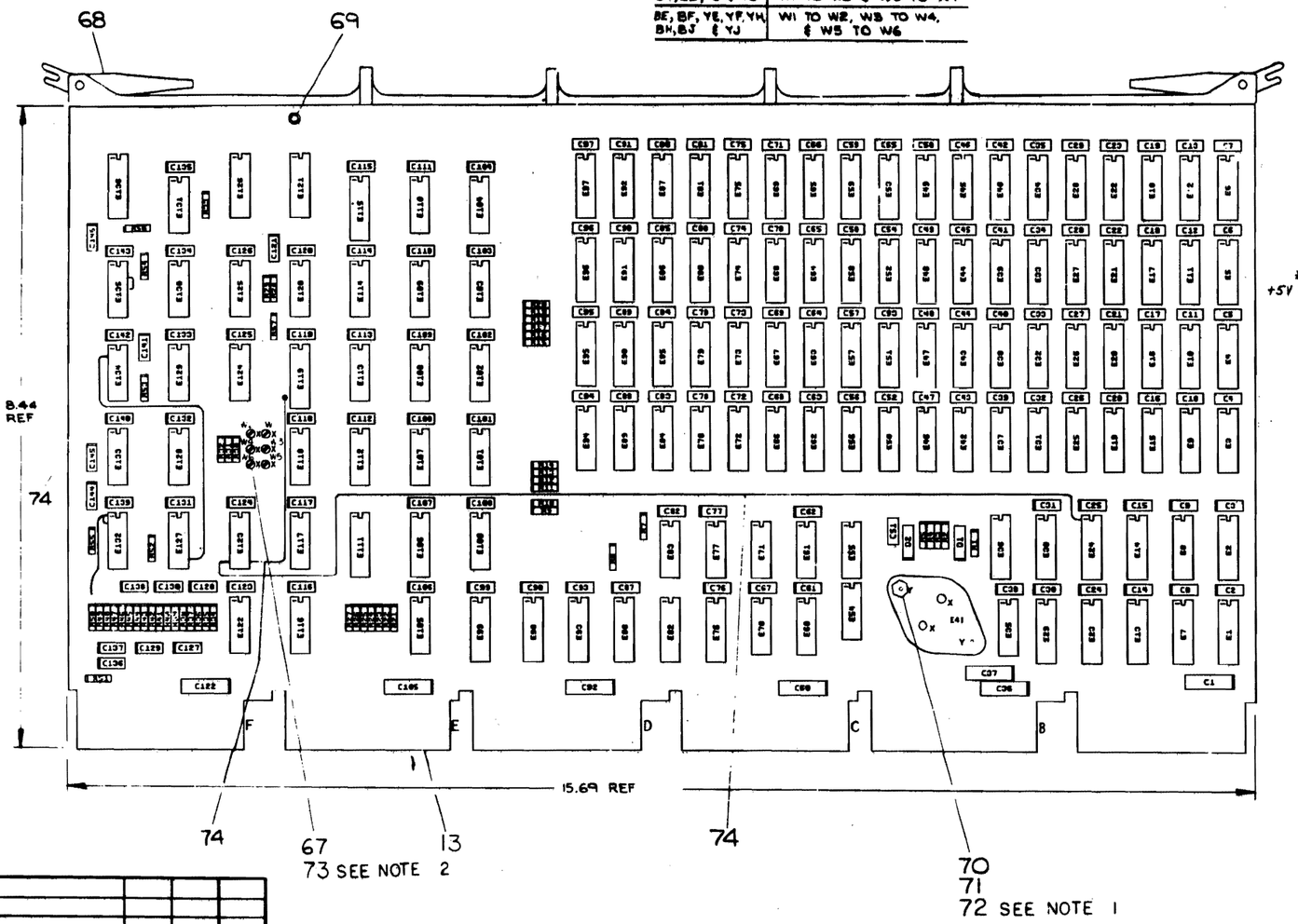
2. JUMPERS TO BE CONNECTED FOR EACH VARIATION AS FOLLOWS:

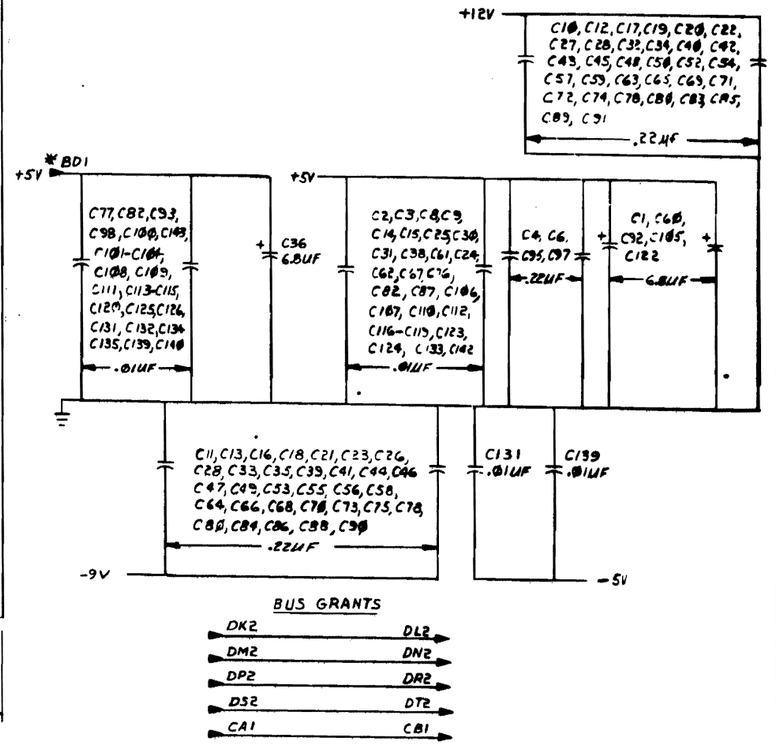
BA, BB, YA & YB	W3 TO W4
BC, BD, YC & YD	W1 TO W2 & W3 TO W4
BE, BF, YE, YF, YH, BH, BJ & YJ	W1 TO W2, W3 TO W4, & W5 TO W6

2.(CONT) CONNECTIONS TO BE MADE USING BUS WIRE (ITEM NO. 73).



VIEW OF SIDE 2 SHOWING JUMPER CONNECTION





BUS GRANTS

DK2	DL2
DM2	DN2
DP2	DR2
DS2	DT2
CA1	CB1

7475	12	5	—
74S153	8	16	—
75107	7	14	13
74174	8	16	—
8641	8	16	—
8448	1	8	—
7483	12	5	—
IC TYPE	GND	+5V	−5V

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

IC PIN LOCATIONS

REV.	REVISIONS	CHK	CHANGE NO.	DATE
D	M7847-00001	J. MANTON	30-OCT-75	
E	M7847-00002	J. MANTON	18-DEC-75	
F	M7847-00003	J. MANTON	13-JAN-76	

FOR PARTS LIST REFER TO SHEETS 2 & 3

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV. D

FIRST USED ON OPTION MODEL			
DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRAWN		DATE 5/12/75
CHECKED		DATE 6/12/75
ENGR.		DATE 6/12/75
PROJ. ENG.		DATE 6/12/75
PROG.		DATE 6-12-75
NEXT HIGHER ASSY		
SCALE		
SHEET 1 OF 16		

digital

TITLE: UNIBUS MOS MEMORY

SIZE	CODE	NUMBER	REV.
D	CS	M7847-0-1	F

NEXT

DCS M7847-0-1 F

DCS M7847-0-1 F

NOTES:
1. DEC PART NO. 1001610-00 IS AN ACCEPTABLE REPLACEMENT FOR DEC PART NO. 1001610-01 (ITEM 14).
2. VARIATIONS YA THRU YJ: ITEM 21; DI DIODE, ZENER 1N757A, 9.1V 5% (1109990-00)
   ITEM 26; R2 RES 270, 1/4W 5%, CC (1301972-00)
   VARIATIONS BA THRU BJ: DI DIODE, ZENER 1N751A, 5.1V 5% (1110994-00)
   R2 560Ω 1/4W 5% CC (1301890-00)
   VARIATIONS YA THRU YJ: ITEM 65; 4K16 PIN MOS RAM VBB = -9V (21-11749-00)
   VARIATIONS BA THRU BJ: ITEM 65; 4K16 PIN MOS RAM VBB = -5V (21-12726-00)

PARTS LIST

BJ M7847-YJ-1 QTY	BH M7847-YH-1 QTY	BF M7847-YF-1 QTY	BE M7847-YE-1 QTY	BD M7847-YD-1 QTY	BC M7847-YC-1 QTY	BB M7847-YB-1 QTY	BA M7847-YA-1 QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO
1	1	1	1	1	1	1	1		DATA BASE TAPE	5011215-0-0	1
-	-	-	-	-	-	-	1		DATA BASE TAPE	M7847-YA-0	2
-	-	-	-	-	-	1	-		DATA BASE TAPE	M7847-YB-0	3
-	-	-	-	-	1	-	-		DATA BASE TAPE	M7847-YC-0	4
-	-	-	-	1	-	-	-		DATA BASE TAPE	M7847-YD-0	5
-	-	-	1	-	-	-	-		DATA BASE TAPE	M7847-YE-0	6
-	-	1	-	-	-	-	-		DATA BASE TAPE	M7847-YF-0	7
-	1	-	-	-	-	-	-		DATA BASE TAPE	M7847-YH-0	8
1	-	-	-	-	-	-	-		DATA BASE TAPE	M7847-YJ-0	9
REF	REF	REF	REF	REF	REF	REF	REF		ASSY LAYOUT	D-AH-M7847-0-5	10
REF	REF	REF	REF	REF	REF	REF	REF		DRILLING HOLE LAYOUT	D-AH-5011215-0-5	11
REF	REF	REF	REF	REF	REF	REF	REF		MODULE ECO HISTORY	B-MH-M7847-0-0	12
1	1	1	1	1	1	1	1		ETCHED CIRCUIT BOARD	5011215	13
57	57	57	57	57	57	57	57	C2,C3,C8,C9,C14,C15,C24,C25,C30,C31,C38,C81,C82,C87,C76,C77,C82,C87,C93,C96-C104,C106 — C128,C123-C127,C131-C137,C139,C140,C142,C143	CAP .01UF, 100V, 20% DISC	1001610-01 (SEE NOTE)	14
-	-	-	-	37	37	37	37	C6,C7,C12,C13,C18,C19,C22,C23,C28,C29,C34,C35,C41,C42,C45,C46,C49-C51,C54,C55,C58,C59,C85,C86,C78,C74,C75,C88,C81,C85,C86,C98,C91,C97,C71,C96	CAP .22UF, 50V CER	1010274-01	15
73	73	73	73	-	-	-	-	C4-C7,C18-C13,C16-C23,C26-C29,C32-C35,C38-C59,C63 -C66,C68-C75,C78 -C81,C83-C86,C88-C91,C94-C97			
7	7	7	7	7	7	7	7	C1,C36,C37,C68,C92,C105,C122	CAP 6.8UF, 35V, 10% S.TANT	1005306-00	16
2	2	2	2	2	2	2	2	C141,C146	CAP 47PF, 100V .5% DM	1000011-00	17
4	4	4	4	4	4	4	4	C128 - C138,C138	CAP 220PF, 100V, 1% DM	1012121-00	18
1	1	1	1	1	1	1	1	C121	CAP 220PF, 100V, 5% DM	1000021-00	19
2	2	2	2	2	2	2	2	C144,C145	CAP 560PF, 100V,5% DM	1000025-00	20
1	1	1	1	1	1	1	1	D1	SEE NOTE*2		21
1	1	1	1	1	1	1	1	D2	DIODE,ZENER 1N751A,5.1V, 5%	1110994-00	22
13	13	13	13	13	13	13	13	R9-R21, R57	RES 10, 1/4W, 5%, CC	1302124-00	23
16	16	16	16	16	16	16	16	R7,R8,R21-R27,R30-R33,R52,R54,R55	RES 1K, 1/4W, 5%, CC	1300365-00	24
5	5	5	5	5	5	5	5	R3-R5,R28,R29	RES 560, 1/4W, 5%, CC	1301890-00	25
1	1	1	1	1	1	1	1	R2	SEE NOTE*2		26
1	1	1	1	1	1	1	1	R53	RES 398, 1/4W, 5%, CC	1300309-00	27
1	1	1	1	1	1	1	1	R1	RES 10K, 1/4W, 5%, CC	1300479-00	28
1	1	1	1	1	1	1	1	R48	RES 38K, 1/4W, 5%, CC	1302394-00	29
7	7	7	7	7	7	7	7	R37,R38,R41,R45,R47,R49,R58	RES 1K, 1/4W, 1%, MF	1303114-00	30
1	1	1	1	1	1	1	1	R34	RES 681, 1/4W, 1%, MF	1302872-00	31
3	3	3	3	3	3	3	3	R36,R46,R51	RES 4.7K, 1/4W, 5%, CC	1300447-00	32
1	1	1	1	1	1	1	1	R56	RES 100, 1/4W, 5%, CC	1300229-00	33
1	1	1	1	1	1	1	1	R43	RES 1.54K, 1/4W, 1%, MF	1312480-00	34
1	1	1	1	1	1	1	1	R40	RES 1.05K, 1/4W, 1%, MF	1312479-00	35
1	1	1	1	1	1	1	1	R35	RES 2.7K, 1/4W, 5%, CC	1300426-00	36
1	1	1	1	1	1	1	1	R39	RES 6.8K, 1/4W, 5%, CC	1301423-00	37
1	1	1	1	1	1	1	1	R44	RES 12K, 1/4W, 5%, CC	1300468-00	38
1	1	1	1	1	1	1	1	R42	RES 4.3K 1/4W, 5%, CC	1302389-00	39
8	8	8	8	8	8	8	8	E2,E8,E14,E24,E38,E36	IC 74174	1910852-00	40
5	5	5	5	5	5	5	5	E1,E7,E13,E23,E29	IC 8641	1911578-00	41

PARTS LIST

BJ M7847-YJ-1 QTY	BH M7847-YH-1 QTY	BF M7847-YF-1 QTY	BE M7847-YE-1 QTY	BD M7847-YD-1 QTY	BC M7847-YC-1 QTY	BB M7847-YB-1 QTY	BA M7847-YA-1 QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO
1	1	1	1	1	1	1	1	E35	IC 8881	1908705-00	42
6	6	6	6	6	6	6	6	E54,E55,E66,E61,E78,E71	IC 8648	1911489-00	43
2	2	2	2	2	2	2	2	E77,E135	IC 7474	1905547-00	44
1	1	1	1	1	1	1	1	E83	IC 74197	1910035-00	45
5	5	5	5	5	5	5	5	E76,E82,E86,E115,E110	IC 7475	1900050-00	46
3	3	3	3	3	3	3	3	E93,E98,E99	IC 74S153	1910547-00	47
6	6	6	6	6	6	6	6	E100-E103,E107,E108	IC 74S148	1910548-00	48
2	2	2	2	2	2	2	2	E104,E105	IC 7428	1905577-00	49
1	1	1	1	1	1	1	1	E106	IC 7403	1900032-00	50
3	3	3	3	3	3	3	3	E110,E113,E131	IC 7400	1905575-00	51
3	3	3	3	3	3	3	3	E112,E116,E123	IC 74S20	1910539-00	52
1	1	1	1	1	1	1	1	E117	IC 7406	1910011-00	53
1	1	1	1	1	1	1	1	E124	IC 74S04	1910534-00	54
1	1	1	1	1	1	1	1	E125	IC 74S03	1910533-00	55
3	3	3	3	3	3	3	3	E127,E132,E133	IC 75107	1910200-00	56
1	1	1	1	1	1	1	1	E120	IC 74S05	1910535-00	57
1	1	1	1	1	1	1	1	E128	IC 7404	1900006-00	58
3	3	3	3	3	3	3	3	E114,E128,E122	IC 7440	1900578-00	59
1	1	1	1	1	1	1	1	E118	IC 74S11	1910537-00	60
1	1	1	1	1	1	1	1	E109	IC 7437	1910091-00	61
1	1	1	1	1	1	1	1	E41	IC 7812	1912048-01	62
1	1	1	1	1	1	1	1	E134	IC 74S10	1910536-00	63
1	1	1	1	1	1	1	1	E139	IC 74S74	1910544-00	64
-	-	-	-	-	-	-	16	,E12,E18,E22,E26,E34,E40,E45,E49,E50,E05,E08,E75,E01,E07,E02,E97	SEE NOTE*2		
-	-	-	-	-	-	18	-	E0,E12,E18,E22,E26,E34,E40,E45,E49,E53,E59,E05,E09,E75,E01,E07,E92,E07			
-	-	-	-	-	32	-	-	,E11,E12,E17,E18,E21,E22,E27,E28,E33,E34,E39,E40,E44,E45,E48,E49,E50,E06,E04,E05,E08,E09,E74,E75,E00,E01,E06,E07,E91,E92,E96,E97			
-	-	-	-	36	-	-	-	E5,E8,E11,E12,E17,E18,E21,E22,E27,E28,E33,E34,E39,E40,E44,E45,E49,E50,E06,E04,E05,E08,E09,E74,E75,E00,E01,E06,E07,E91,E92,E06,E07			
-	-	-	48	-	-	-	-	,E18-E12,E16-E18,E20-E22,E26-E28,E32-E34,E38-E40,E43-E45,E47-E49,E57-E00,E03-E05,E07-E09,E73-E75,E78-E01,E05-E07,E98-E92,E95-E97			
-	-	54	-	-	-	-	-	E4-E8,E18-E12,E16-E18,E20-E22,E26-E28,E32-E34,E38-E40,E43-E45,E47-E49,E51-E53,E57-E58,E03-E05,E07-E09,E73-E75,E78-E01,E05-E07,E98-E92,E05-E07			
-	64	-	-	-	-	-	-	,E9-E12,E15-E22,E25-E28,E31-E34,E37-E40,E42-E49,E94-E97,E56-E59,E02-E09,E72-E75,E78-E01,E04-E07,E09-E92			
72	-	-	-	-	-	-	-	E3-E8,E9-E12,E15-E22,E25-E28,E31-E34,E37-E40,E42-E53,E56-E59,E02-E08,E72-E75,E78-E01,E04-E07,E09-E92,E04-E07			

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: UNIBUS MOS MEMORY
SIZE D CODE CS NUMBER M7847-0-1 REV F
SCALE — SHEET 2 OF 16 SHT.

DCS M7847-0-1 F

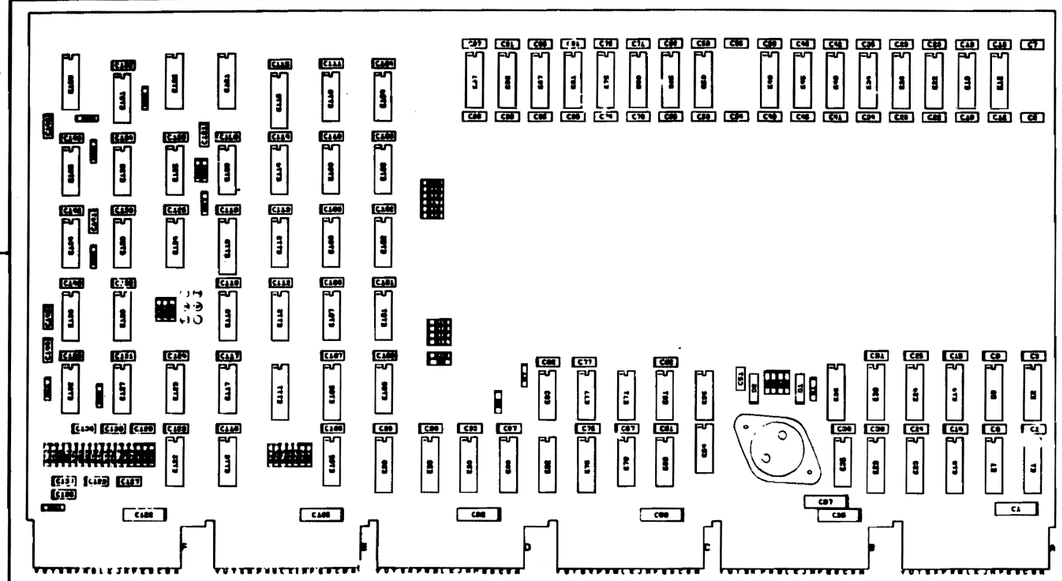
RJ	BH	BF	RF	BD	RC	BB	BA				
M7847-YJ-1	M7847-YH-1	M7847-YF-1	M7847-YE-1	M7847-YD-1	M7847-YC-1	M7847-YB-1	M7847-YA-1	PARTS LIST			
QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	1	1	1	1	1	1	1	E111	DIP SWITCH	1211164-04	66
8	8	8	8	8	8	8	8		SPLIT LUGS	9000735-00	67
1	1	1	1	1	1	1	1		HANDLE,ASSY	1210711-02	68
12	12	12	12	12	12	12	12		EYELET	9000732-00	69
2	2	2	2	2	2	2	2		NUT, KEP #4-40	9000557-00	70
2	2	2	2	2	2	2	2		SCR, PPH, #4-40 X .31	9000810-01	71
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R		THERMAL COMPOUND	9000260-00	72
A/R	A/R	A/P	A/R	A/P	A/R	A/R	A/R		WIRE,#22 AWG BUS	9107560-01	73
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R		WIRE,#30 AWG WIRE WRAP	9105740-55	74

REVISIONS
CHK | CHANGE NO. | REV.

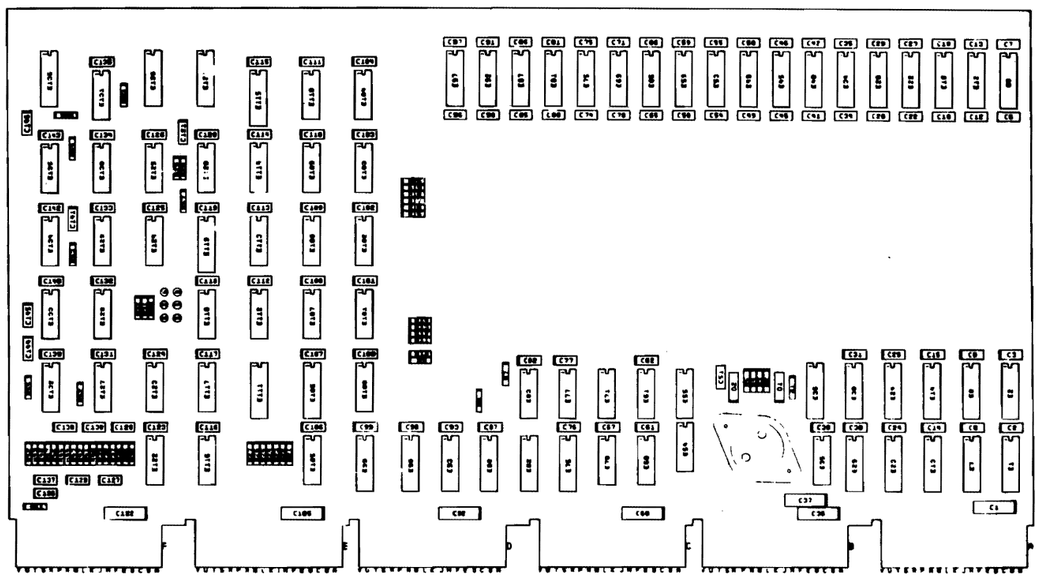
TITLE: UNIBUS MOS MEMORY
SIZE: D | DRAWING NUMBER: CS M7847-0-1 | REV: F
SCALE: | SHEET 3 OF 16 | DIST.

DCS M7847-0-1

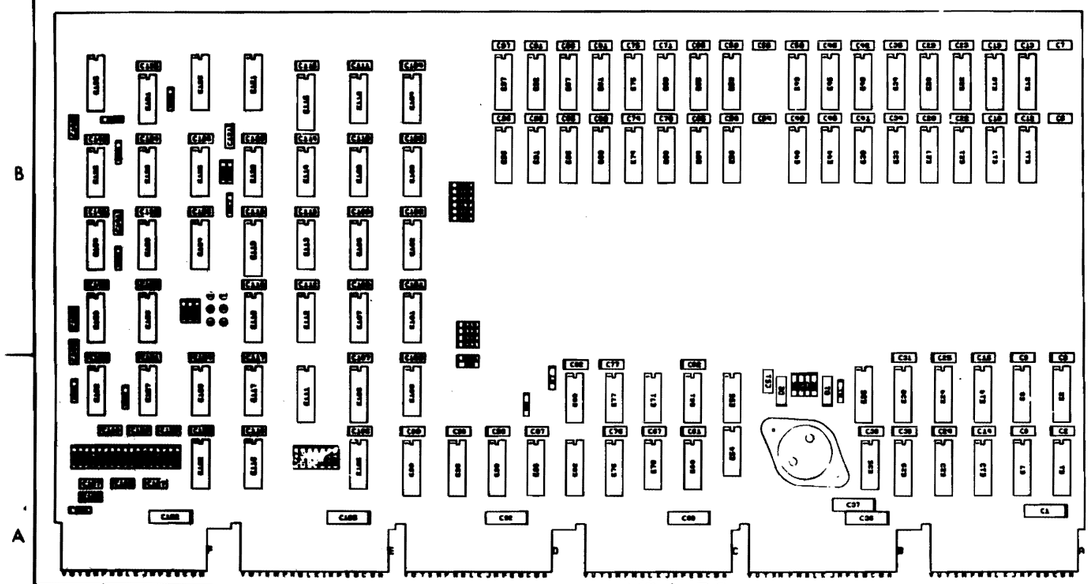
NOTE:
THESE OVERLAYS ONLY TO INDICATE POSITIONS FOR 4K MOS MEMORY IC'S & .22UF CAPS.



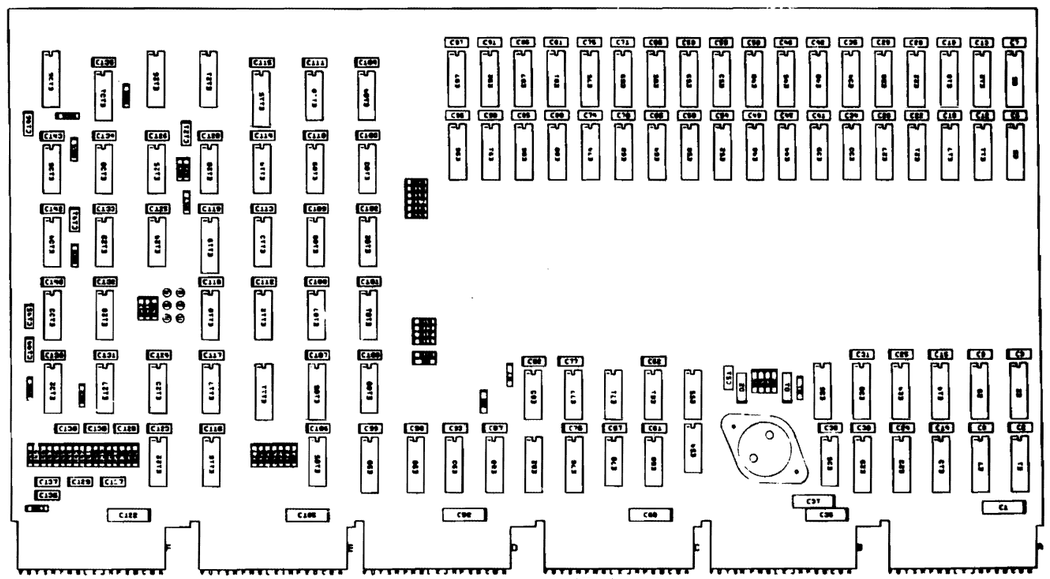
-YA & -BA



-YB & -PB



-YC & -BC



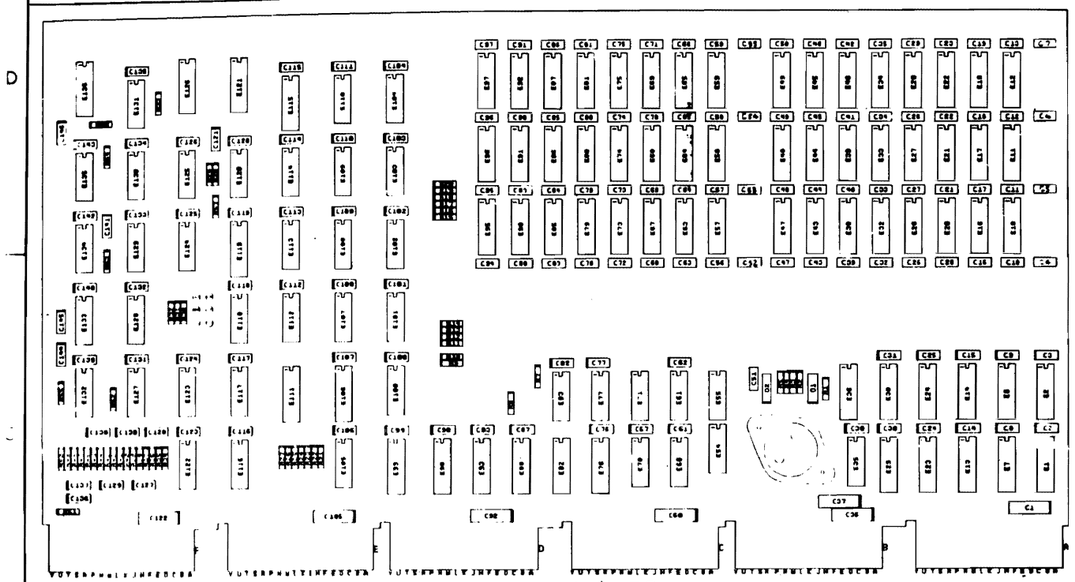
-YD & -BD

REVISIONS		
CHK	CHANGE NO	REV

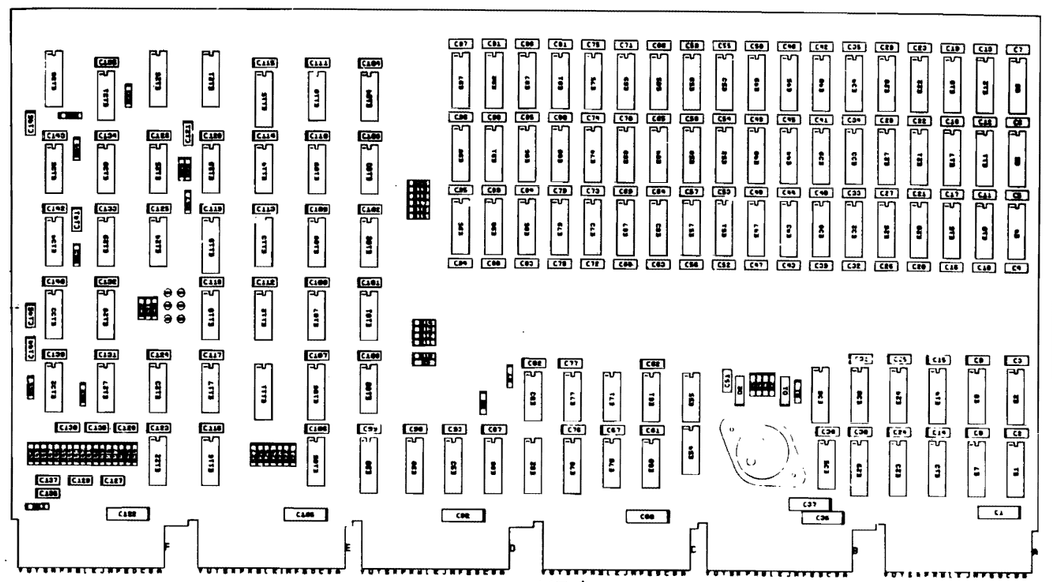
TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY	D	CS	M7847-Ø-1	F
SCALE	SHEET 4 OF 16	DIST.		

D CS M7847-0-1 F

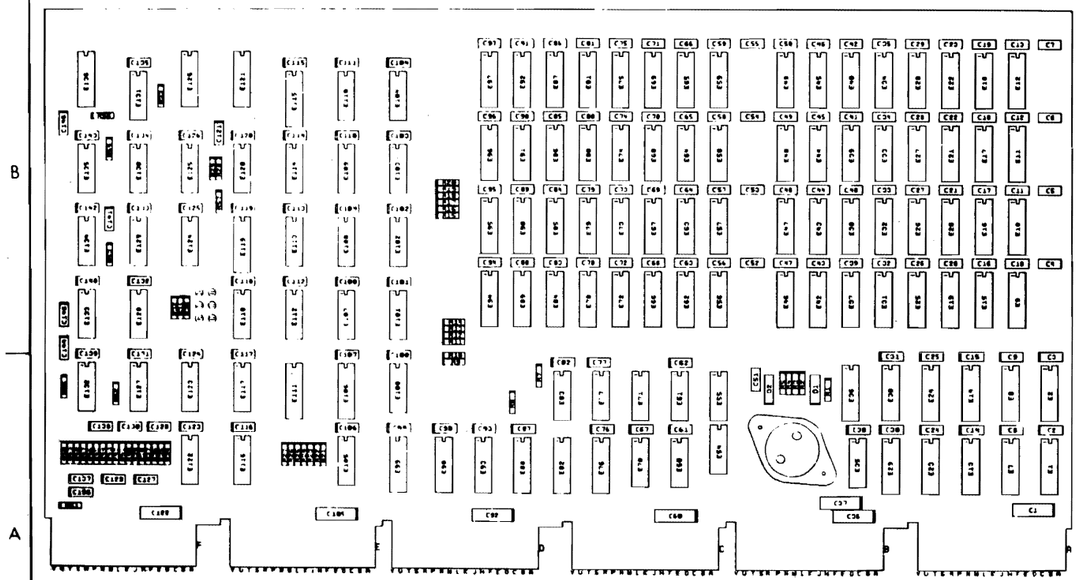
NOTE:
THESE OVERLAYS ONLY TO INDICATE POSITIONS FOR 8K MOS MEMORY ICS AND .1ZUF CAPS.



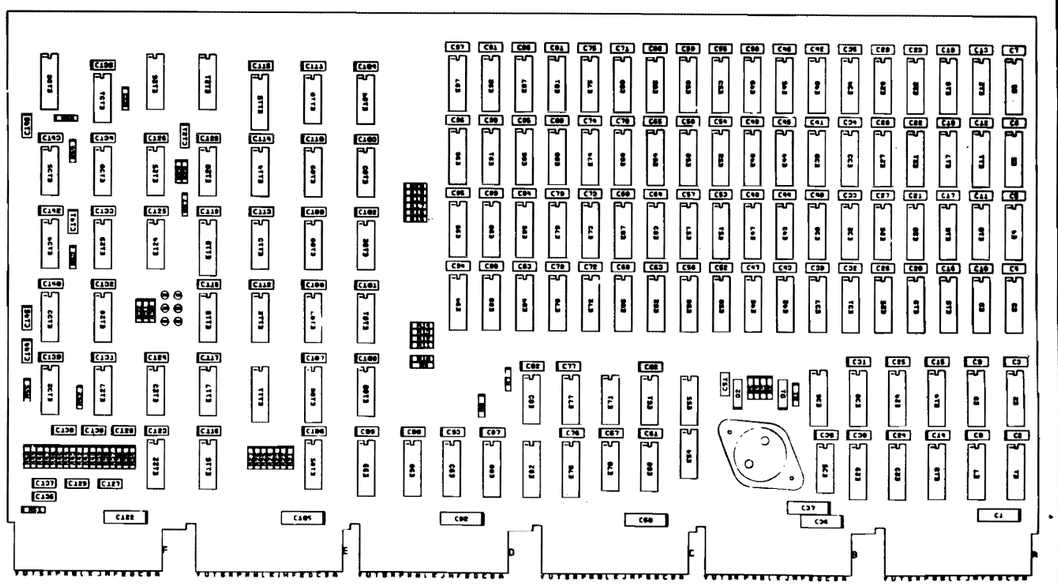
-YE & -BE



-YF & -BF



-YH & -BH



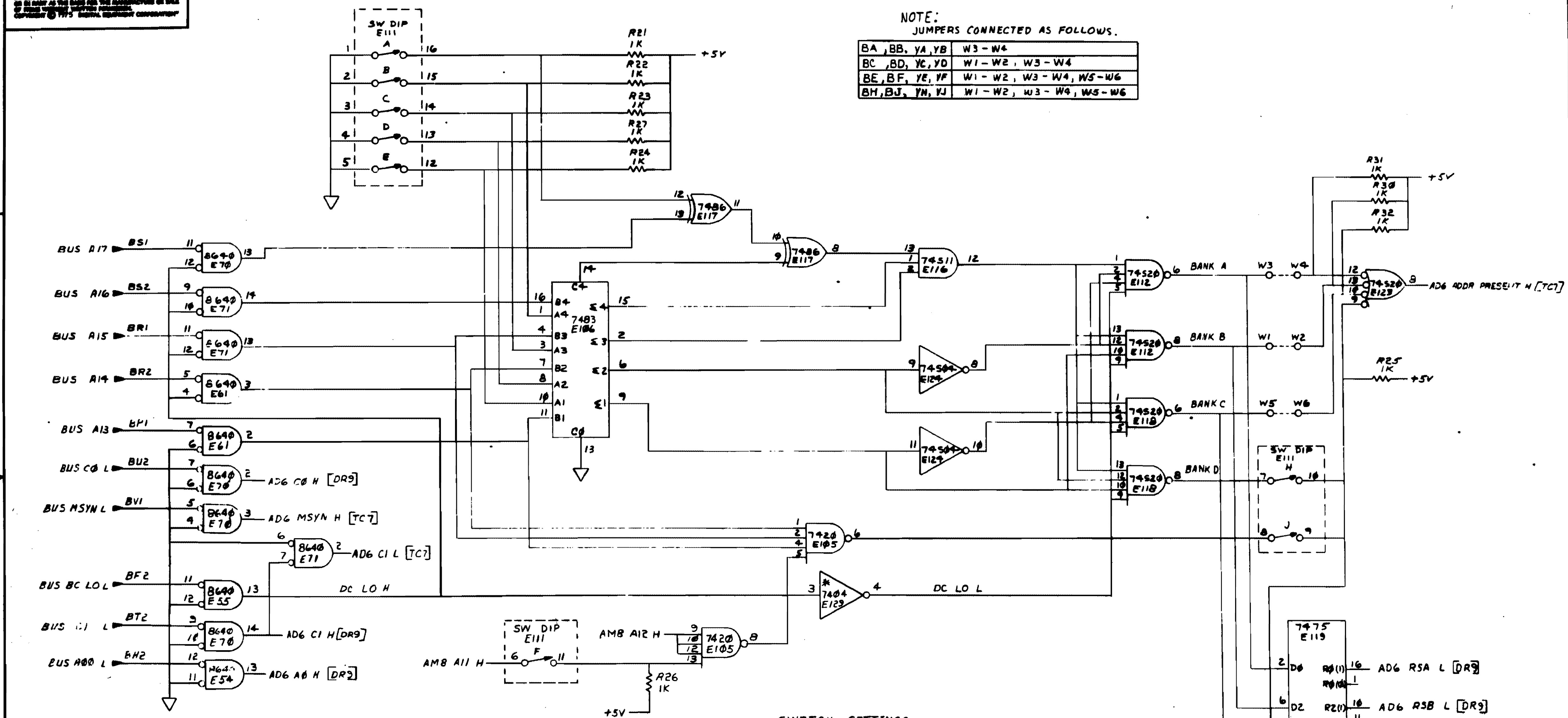
-YJ & -BJ

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
UNIBUS MOS MEMORY	D	CS	M7847-0-1	F
SCALE ←—→ SHEET 5 OF 16	DIST.			

NOTE:
JUMPERS CONNECTED AS FOLLOWS.

BA, BB, YA, YB	W3 - W4
BC, BD, YC, YD	W1 - W2, W3 - W4
BE, BF, YE, YF	W1 - W2, W3 - W4, W5 - W6
BH, BJ, YH, YJ	W1 - W2, W3 - W4, W5 - W6



ASSY VARIATION	F	H	J
BA, BB, YA, YB, YC, YD, BC, BD, BE, BF, YE, YF	OFF	OFF	OFF
BH, BJ, YH, YJ, NORMAL OPERATION	OFF	ON	OFF
BH, BJ, YH, YJ * 2K I/O PAGE	OFF	OFF	ON
BH, BJ, YH, YJ * 3K I/O PAGE	ON	OFF	OFF

* A-E MUST BE SET FOR STARTING ADDRESS OF 100 000.

SWITCH SETTINGS

STARTING ADDRESS	A	B	C	D	E	STARTING ADDRESS	A	B	C	D	E	STARTING ADDRESS	A	B	C	D	E	STARTING ADDRESS	A	B	C	D	E
0	1	1	1	0	0	200.000	1	0	1	0	0	400,000	0	1	1	0	0	600.000	0	0	1	0	0
20 000	1	1	0	1	1	220.000	1	0	0	1	1	420,000	0	1	0	1	1	620,000	0	0	0	1	1
40.000	1	1	0	1	0	240,000	1	0	0	1	0	440,000	0	1	0	1	0	640,000	0	0	0	1	0
60 000	1	1	0	0	1	260,000	1	0	0	0	1	460,000	0	1	0	0	1	660,000	0	0	0	0	1
100,000	1	1	0	0	0	300.000	1	0	0	0	0	500,000	0	1	0	0	0	700,000	0	0	0	0	0
120.000	1	0	1	1	1	320,000	0	1	1	1	1	520,000	0	0	1	1	1	720,000	1	1	1	1	1
140,000	1	0	1	1	0	340,000	0	1	1	1	0	540,000	0	0	1	1	0	740,000	1	1	1	1	0
160,000	1	0	1	0	1	360,000	0	1	1	0	1	560.000	0	0	1	0	1						

0 = ON
1 = OFF

(ADDRESS DECODE)

UNIBUS MOS MEMORY (AD6)

D CS M7847-0-1 F

SHEET 6 OF 16

BB+5V
R29 560
R28 560
R57 18
C121 220PF
74S03 E125
SRT CLK
REF REQ
TC7 REF WARN L
74S04 E129
7400 E131
TC7 BUSY L
TC7 SSYN (B) H
AD6 MSYN H
74S20 E123
R33 1K
BB+5V
E24 PIN 1
AD6 ADDR PRESENT L
AD6 C1 L
7400 E120
TC7 ENBUS [DP10, DP1]
R56 100
C146 47PF
*H1
74S74 E130
TC7 RFCY (1) H [TC7, AM8]
TC7 RFCY (1) L [DR9]
TC7 RFCY (0) H [TC7, DR9]
7400 E110
TC7 ADSTR H [TC7, AM8, DR9]
74S04 E124
74S05 E128
TC7 RAS H [TC7, DR9]
DA1
TP1
R36 4.7K
C27 .01UF
R38 1K
R37 1K
R34 681 1%
R35 2.7K
C128 220PF
R40 1.05K 1%
R39 6.2K
C130 220 PF
*75107 E127
TC7 COLAD H [TC7, AM8, DR9]
TC7 CAS H [TC7, DR9]
*H1
REF RST L
R41 1K 1%
R42 4.3K
C129 220PF
*75107 E133
TC7 BUSY L [TC7, DR9]
*HI
74S74 E135
TC7 REF WARN L [TC7]
REF CLK L
TC7 REFINC H [AM8]
TC7 RFCY (1) H
TC7 COLAD H
7400 E131
74S05 E128
CM4 560PF
C145 560PF
DA1
TP2
R46 4.7K
C137 .01μF
R47 1K 1%
R45 1K 1%
*75107 E132
CLR STR H
TC7 CAS H
74S04 E124
74S05 E128
R43 1.54K 1%
R44 12K
C138 220PF
DR9 LC1 (0) H
TC7 RFCY (0) H
74S10 E134
LC1 H
TC7 COLAD H
TC7 DLS H [DP10, DP1]
R53 390
C141 47PF
74S74 E135
TC7 SSYN (B) H [TC7]
AD6 MSYN H
8881 E35
BE1
INT SSYN
BE2
PARITY DETECT
R1 10K
+5V
1 BUI
BUS SSYN
DA1
TP3
DU1
R51 4.7K
C136 .01μF
R50 1K 1%
R49 1K 1%
DA1
TP4
DS1
R55 1K
+5V
R54 1K
R52 1K
TC7 *HI [TC7, AM8]
DP1
TP5

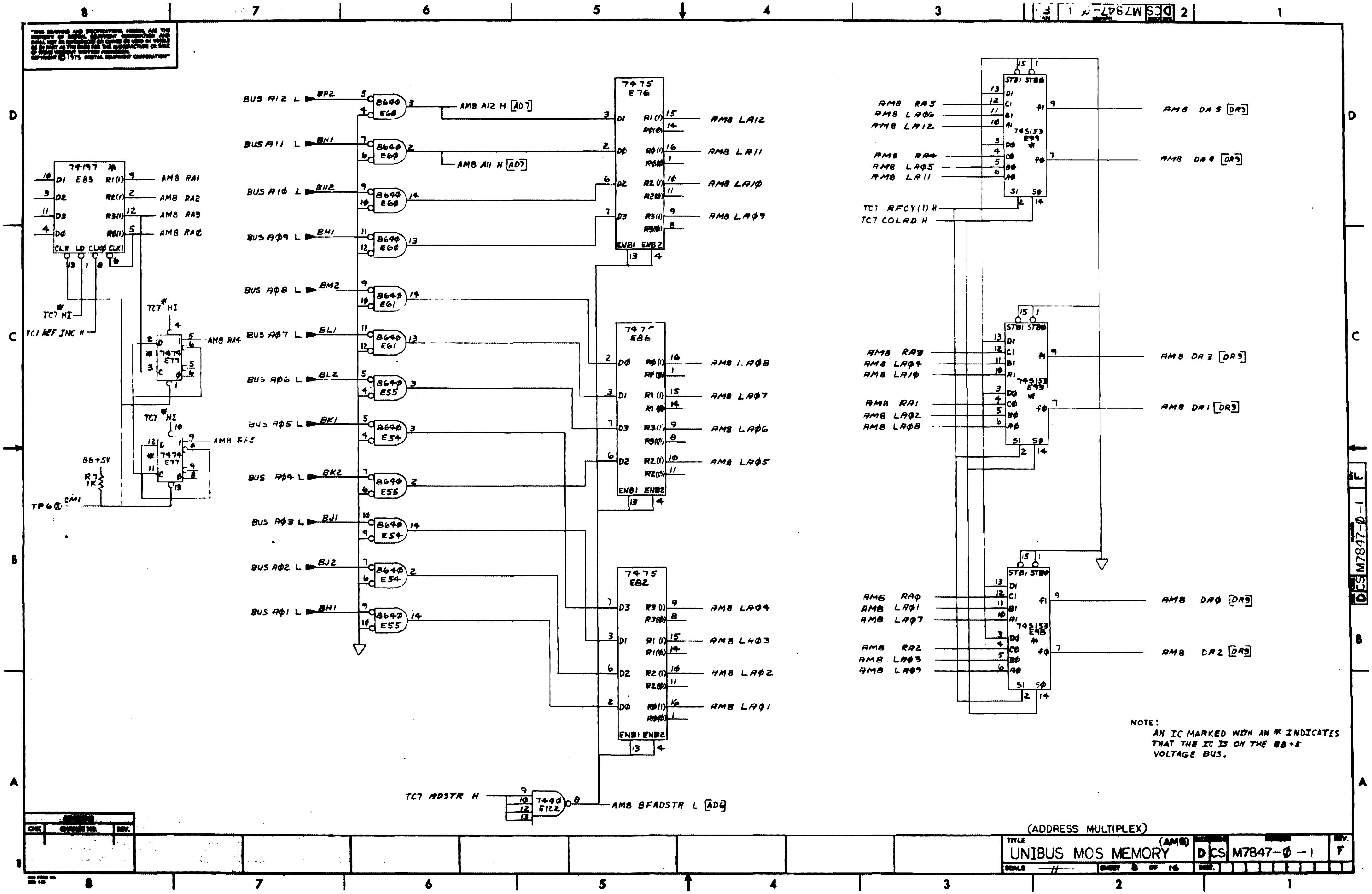
NOTES:
1. ALL SIGNAL NAMES WITHOUT PREFIX HAVE AN ASSUMED PREFIX OF TC7.
2. AN IC MARKED WITH AN * INDICATES THAT THE IC IS ON THE BB+5 VOLTAGE BUS.

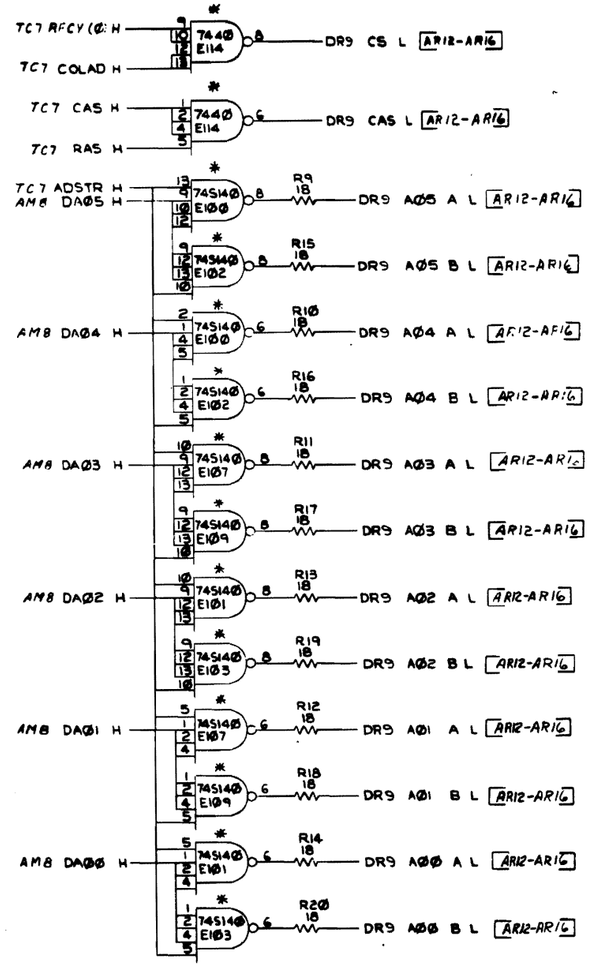
REVISIONS		
CHK	CHANGE NO.	REV.

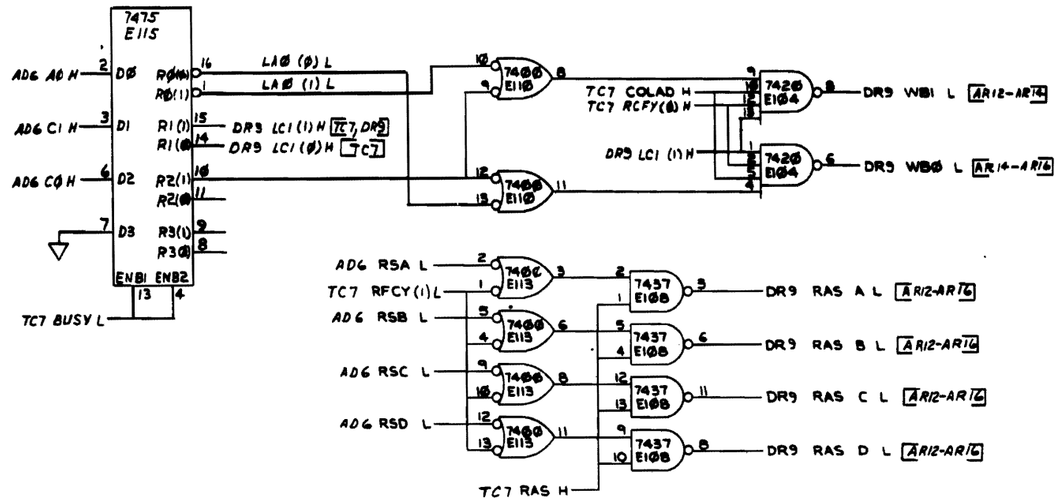
(TIMING CHAIN)

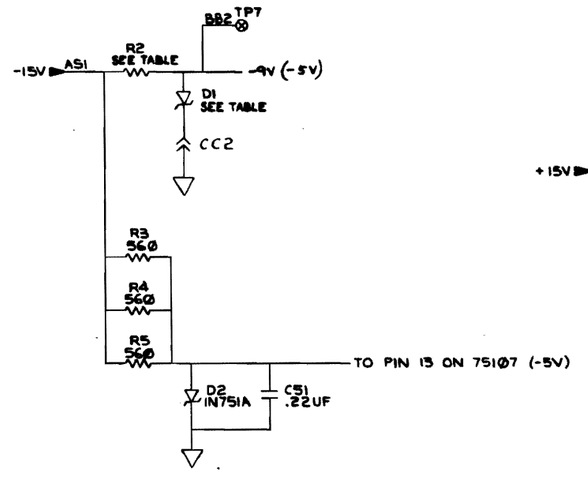
TITLE UNIBUS MOS MEMORY (TC7)
DCS M7847-0-1 REV F
SCALE
SHEET 7 OF 16
DIST.

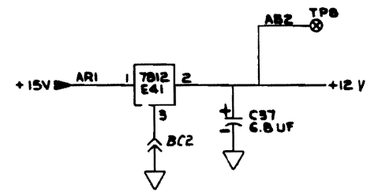
DCS M7847-0-1 REV F


BUS A12 L
BUS A11 L
BUS A10 L
BUS A09 L
BUS A08 L
BUS A07 L
BUS A06 L
BUS A05 L
BUS A04 L
BUS A03 L
BUS A02 L
BUS A01 L
AM8 A12 H
AM8 A11 H
AM8 LA12
AM8 LA11
AM8 LA10
AM8 LA09
AM8 LA08
AM8 LA07
AM8 LA06
AM8 LA05
AM8 LA04
AM8 LA03
AM8 LA02
AM8 LA01
AM8 RA1
AM8 RA2
AM8 RA3
AM8 RA0
AM8 RA4
TC7 HI
TC7 REF INC H
TC7 ADSTR H
AM8 BFADSTR L
TC7 RFCY(1) H
TC7 COLAD H
AM8 DA5
AM8 DA4
AM8 DA3
AM8 DA1
AM8 DA0
AM8 DA2
NOTE:
AN IC MARKED WITH AN * INDICATES THAT THE IC IS ON THE BB+5 VOLTAGE BUS.
(ADDRESS MULTIPLEX)
UNIBUS MOS MEMORY (AM8)
D CS M7847-0-1
F
SHEET 8 OF 16
© 1975 DIGITAL EQUIPMENT CORPORATION









VARIATION	R2 VALUE	D1 VALUE
YA, YB, YC, YD YE, YF, YH, YJ	27Ø	IN 757 A 9V
BA, BB, BC, BD, BE, BF BH, BJ	56Ø Ω	IN 751 A 5V

REVISIONS		
CHK	CHANGE NO.	REV.

(DRIVERS)

TITLE: UNIBUS MOS MEMORY (DR9)
SCALE: — SHEET 9 OF 16
SIZE: D CODE: CS NUMBER: M7847-Ø-1 REV: F
DIST.

74174 E36
AR12 DO 15 H → D1
AR12 DO 14 H → D5
AR12 DO 13 H → D3
R1(1) R5(1) R3(1)
CLR CLK

8641 E29
AM2 → BUS DI5
AL1 → BUS DI4

74174 E36
D2 R2(1) → DP1Ø DI 15 H [AR12]
DØ RØ(1) → DP1Ø DI 14 H [AR12]
D4 R4(1) → DP1Ø DI 13 H [AR12]
CLR CLK

74174 E3Ø
HR12 DO 12 H → D1
AR13 DO 11 H → D5
AR13 DO 1Ø H → D3
R1(1) R5(1) R3(1)
CLR CLK

8641 E23
AL2 → BUS DI3
AK1 → BUS DI2
AK2 → BUS DI1
AJ1 → BUS DIØ

74174 E3Ø
D2 R2(1) → DP1Ø DI 12 H [AR12]
DØ RØ(1) → DP1Ø DI 11 H [AR13]
D4 R4(1) → DP1Ø DI 1Ø H [AR13]
CLR CLK

74174 E29
AR13 DO Ø9 H → D1
AR13 DO Ø8 H → D5
AR14 DO P1 H → D3
R1(1) R5(1) R3(1)
CLR CLK

8641 E13
AJ2 → BUS DØ9
AN1 → BUS DØ8
AN1 → P1
TC7 ENBUS L

74174 E29
D2 R2(1) → DP1Ø DI Ø9 H [AR13]
DØ RØ(1) → DP1Ø DI Ø8 H [AR13]
D4 R4(1) → DP1Ø DI P1 H [AR14]
CLR CLK

DP1Ø H1 [DP11]
E123 PIN 6
TC7 DLS H

REVISIONS		
ECO	ENGINEERING NO.	REV.

(DATA PATH)
TITLE UNIBUS MOS MEMORY (DP1Ø)
SIZE D | CODE DCS | NUMBER M7847-Ø-1 | REV. F
SCALE — | SHEET 10 OF 16 | DRAFTING

8 7 6 5 4 3 2 1

74179 E14

AR14 DO Ø7 H — 4 D1 R1(1) 5
AR14 DO Ø6 H — 14 D5 R5(1) 15
AR14 DO Ø5 H — 11 D3 R3(1) 10
CLR 1, CLK 9

8641 E13

AH2 → BUS DØ7
AF1 → BUS DØ6
AF2 → BUS DØ5

74179 E14

6 D2 R2(1) 7 — DP11 DI Ø7 H [AR14]
3 DØ R0(1) 2 — DP11 DI Ø6 H [AR14]
13 D4 R4(1) 12 — DP11 DI Ø5 H [AR14]
CLR 1, CLK 9

74179 E8

AR15 DO Ø9 H — 4 D1 R1(1) 5
AR15 DO Ø3 H — 14 D5 R5(1) 15
AR15 DO Ø2 H — 11 D3 R3(1) 10
CLR 1, CLK 9

8641 E7

AE1 → BUS DØ4
AE2 → BUS DØ3

74179 E8

6 D2 R2(1) 7 — DP11 DI Ø4 H [AR15]
3 DØ R0(1) 2 — DP11 DI Ø3 H [AR15]
13 D4 R4(1) 12 — DP11 DI Ø2 H [AR15]
CLR 1, CLK 9

74179 E2

AR15 DO Ø1 H — 4 D1 R1(1) 5
AR16 DO ØØ H — 14 D5 R5(1) 15
AR16 DO P0 H — 11 D3 R3(1) 10
CLR 1, CLK 9

8641 E1

AD1 → BUS DØ2
AD2 → BUS DØ1
AC1 → BUS DØØ
AP1 → P0
TC7 ENBUS L — 7, 9

74179 E2

6 D2 R2(1) 7 — DP11 DI Ø1 H [AR15]
3 DØ R0(1) 2 — DP11 DI ØØ H [AR16]
13 D4 R4(1) 12 — DP11 DI P0 H [AR16]
CLR 1, CLK 9

DP16 HI
TC7 DLS H

REVISIONS		
ECN	CHANGE NO.	REV.

(DATA PATH)

TITLE UNIBUS MOS MEMORY (DPT1)
SCALE — SHEET 11 OF 16
DCS M7847-Ø-1 REV. F

DCS M7847-Ø-1 F

DR9 A05 B L
DR9 A04 B L
DR9 A03 B L
DR9 A02 B L
DR9 A01 B L
DR9 A00 B L

DP16 DI 15 H

DR9 CS L
DR9 CAS L
DR9 WR I L
DR9 RAS A L

DR9 RAS B L
DR9 RAS A L
DR9 A04 A L
DR9 A03 A L
DR9 A02 A L
DR9 A01 A L
DR9 A00 A L

DR9 RAS C L

DR9 RAS D L

4096 E97 — DP16 DI 14 H
4096 E92 — DP16 DI 13 H
4096 E87 — DP16 DI 12 H
4096 E81

4096 E96
4096 E91
4096 E86
4096 E80

4096 E95
4096 E90
4096 E85
4096 E79

4096 E94
4096 E89
4096 E84
4096 E78

AR12 DO 15 H [DP16]
AR12 DO 14 H [DP16]
AR12 DO 13 H [DP16]
AR12 DO 12 H [DP16]

4096 EXX

10	A05
11	A04
12	A03
6	A02
7	A01
5	A00
2	DIN
	CS CAS WR RAS
	DOUT 14
	13 15 3 4

GND PIN 16
(-5V) -9V PIN 1
+12V PIN 8
+5V PIN 9

NOTE:
1. SOME IC'S ARE OMITTED ON VARIOUS ASSEMBLY VERSIONS, SEE PARTS LIST FOR EXACT DETAILS.

(ARRAY)

TITLE UNIBUS MOS MEMORY (AR12)
DCS M7847-0-1 REV F
SCALE — SHEET 12 OF 16

DCS M7847-0-1 REV F

DR9 A05 B L
DR9 A04 B L
DR9 A03 B L
DR9 A02 B L
DR9 A01 B L
DR9 A00 B L

DP10 DI 11 H
DR9 CS L
DR9 CAS L
DR9 WR1 L
DR9 RAS A L

DR9 RAS B L
DR9 A05 A L
DR9 A04 A L
DR9 A03 A L
DR9 A02 A L
DR9 A01 A L
DR9 A00 A L

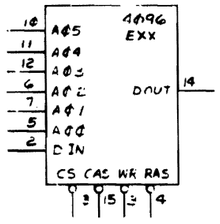
DR9 RAS C L

DR9 RAS D L

4096 E75	DP10 DI 10H	4096 E69	DP10 DI 09 H
4096 E74		4096 E68	
4096 E73		4096 E67	
4096 E72	AR13 DO 11H [DP10]	4096 E66	AR13 DO 10H [DP10]

4096 E65	DP10 DI 08 H	4096 E59	
4096 E64		4096 E58	
4096 E63		4096 E57	
4096 E62	AR13 DO 09 H [DP10]	4096 E56	AR13 DO 08H [DP10]

NOTES:
1. SOME IC'S ARE OMITTED ON VARIOUS ASSEMBLY VERSIONS. SEE PARTS LIST FOR EXACT DETAILS.



PIN 16 GND
PIN 1 -9V (-5V)
PIN 8 +12V
PIN 9 +5V

REVISIONS		
LTR	CHANGE NO.	DATE

(ARRAY)

TITLE UNIBUS MOS MEMORY (AR13)
DCS M7847-0-1 REV F
SCALE — SHEET 13 OF 16

DR9 A05 B L
DR9 A04 B L
DR9 A03 B L
DR9 A02 B L
DR9 A01 B L
DR9 A00 B L

4096 E53
4096 E49
4096 E45
4096 E41
4096 E52
4096 E48
4096 E44
4096 E39
4096 E51
4096 E47
4096 E43
4096 E38
4096 E50
4096 E46
4096 E42
4096 E37

DP11 DI 07 H
DP11 DI 06 H
DP11 DI 05 H
DP10 DI 01 H

DR9 CS L
DR9 CAS L
DR9 WB1 L
DR9 RAS A L

DR9 RAS B L
DR9 A05 A L
DR9 A04 A L
DR9 A03 A L
DR9 A02 A L
DR9 A01 A L
DR9 A00 A L

DR9 RAS C L

DR9 RAS D L

AR1A DO 01 H [DP10]
AR1A DO 07 H [DP11]
AR1A 06 H [DP11]
AR1A DO 05 H [DP11]

DR9 WB 0 L

NOTE:
SOME IC'S ARE OMITTED ON VARIOUS ASSEMBLY VERSIONS. SEE PARTS LIST FOR EXACT DETAILS.

4096 EXY
10 A05
11 A04
12 A03
6 A02
7 A01
5 A00
2 DIN
14 DO'IT
CS CLS W/R RAS
13 15 3 17

GND PIN 16
(-5V) -9V PIN 1
+12V PIN 8
+5V PIN 9

DCS M7847-0-1 F

(ARRAY)

TITLE UNIBUS MOS MEMORY (ARRAY)
DCS M7847-0-1 REV F
SCALE — SHEET 1 OF 16

NOTE:
SOME IC'S ARE OMITTED ON VARIOUS ASSEMBLY VERSIONS. SEE PARTS LIST FOR EXACT DETAILS.

DR9 AØ5 B L
DR9 AØ4 B L
DR9 AØ3 B L
DR9 AØ2 B L
DR9 AØ1 B L
DR9 AØØ B L

DP11 DI Ø4 H
DR9 CS L
DR9 CAS L
DR9 WBØ L
DR9 RAS A L

DR9 RAS B L
DR9 RØ5 A L
DR9 AØ4 A L
DR9 AØ3 A L
DR9 AØ2 A L
DR9 AØ1 A L
DR9 AØØ A L

DR9 RAS C L

DR9 RAS D L

4ØX6 EXX
10 AØ5
11 AØ4
12 AØ3
6 AØ2
7 AØ1
5 AØØ
2 DIN
D OUT 14
CS CAS WR RAS
13 15 3 4

GND PIN 16
(-5V) -9V PIN 1
+12V PIN 8
+5V PIN 9

4ØX6 E34	DP11 DI Ø3 H	4ØX6 E28	DP11 DI Ø2 H	4ØX6 E22	DP11 DI Ø1 H	4ØX6 E18
4ØX6 E33		4ØX6 E27		4ØX6 E21		4ØX6 E17
4ØX6 E32		4ØX6 E26		4ØX6 E20		4ØX6 E16
4ØX6 E31	ARI5 DO Ø4 H [DP11]	4ØX6 E25	ARI5 DO Ø3 H [DP11]	4ØX6 E19	ARI5 DO Ø2 H [DP11]	4ØX6 E15

ARI5 DO Ø1 H [DP11]

REVISIONS		
CHK	CHANGE NO.	REV.

(ARRAY)

TITLE: UNIBUS MOS MEMORY (ARI5)
DCS M7847-Ø-1 REV F
SCALE
SHEET 15 OF 16

DCS M7847-Ø-1 REV F

DR9 A05 B L
DR9 A04 B L
DR9 A03 B L
DR9 A02 B L
DR9 A01 B L
DR9 A00 B L

DP11 DI P0 H

DR9 CS L
DR9 CAS L
DR9 WB0 L
DR9 RAS A L

DR9 RAS B L
DR9 A05 A L
DR9 A04 A L
DR9 A03 A L
DR9 A02 A L
DR9 A01 A L
DR9 A00 A L

DR9 RAS C L

DR9 RAS D L

4096 E12 — DP11 DI 00 H
4096 E6
4096 E11
4096 E5
4096 E10
4096 E4
4096 E9
4096 E3

AR16 DO 00 H [DP11]
AR16 DO P0 H [DP11]

4096 EXX
16 A05
11 A04
12 A03
6 A02
7 A01
5 A00
2 DIN
DOUT 14
CS CLR WR RAS
13 15 3 4

GND PIN 16
(-5V)-9V PIN 1
+12V PIN 8
+5V PIN 9

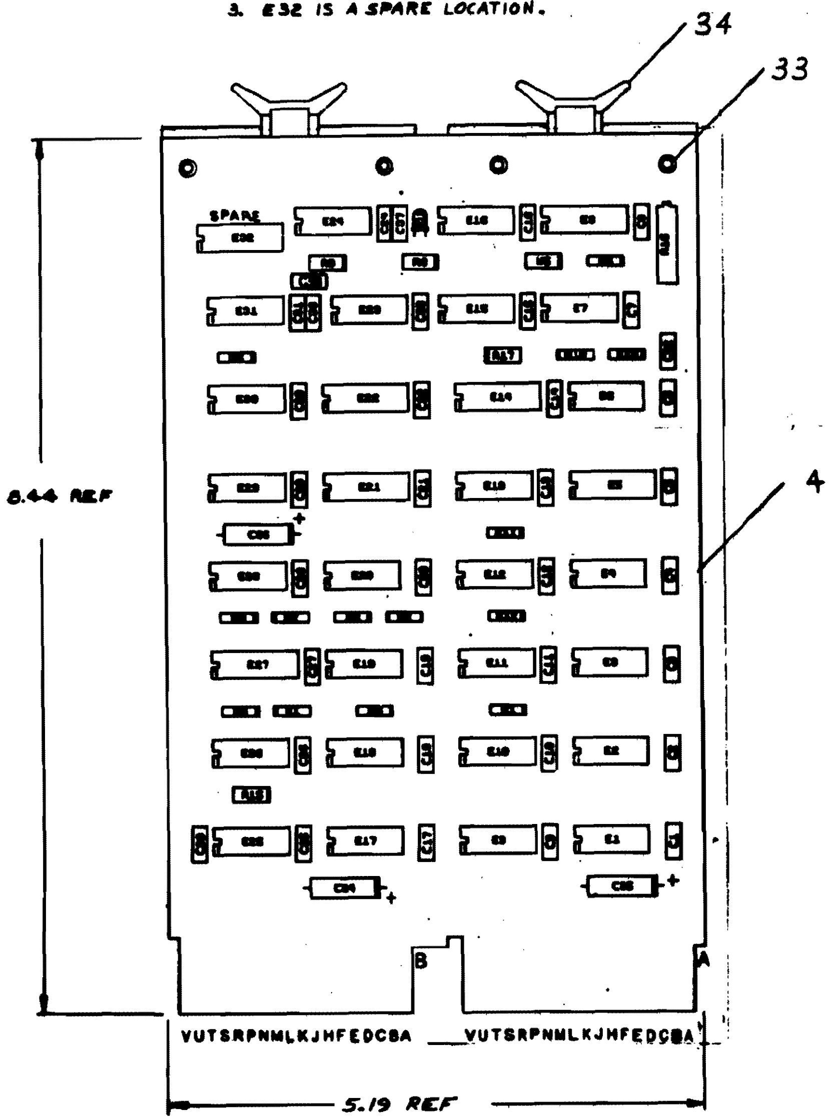
NOTE:
SOME IC'S ARE OMITTED ON VARIOUS ASSEMBLY VERSIONS. SEE PARTS LIST FOR EXACT DETAILS.

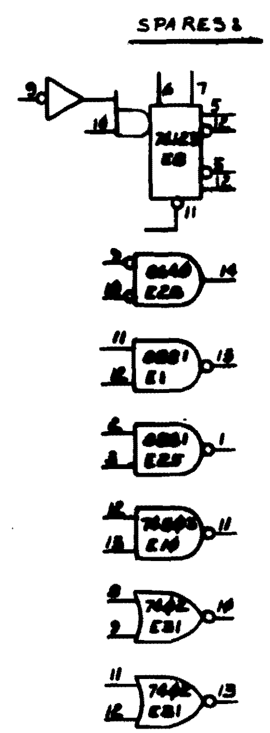
REVISIONS		
ECO	CHANGE NO.	REV.

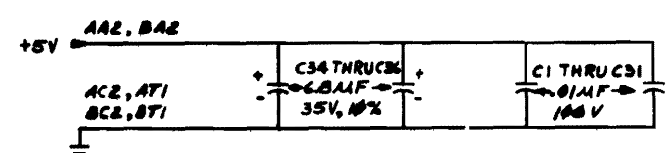
TITLE	UNIBUS MOS MEMORY (AR16) (ARRAY)		
SIZE	DCS	NUMBER M7847-0-1	REV. F
SCALE	SHEET 16 OF 16		

NOTES:

1. ALL RESISTORS 1/4 W, 5% UNLESS OTHERWISE NOTED. ALL CAPACITORS ARE 100V, 20% UNLESS OTHERWISE NOTED.
2. JUMPER CONTROL OPERATIONS AS FOLLOWS: W1 THRU W4 SELECT CSR ADDRESS, W5 CAPACITOR FOR S SYN DLY, NOT USED.
3. E32 IS A SPARE LOCATION.







QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		CIRCUIT SCHEMATIC	D-CS-M7850-0-1	REF
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7850-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M7850-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7850-0-6	3
1		ETCHED CIRCUIT BOARD	5010651-00	4
1	C39	CAP 470 PF, 100V, 5% (DM)	1000024-00	5
2	C33, C37	CAP 330 PF, 100V, 5% (DM)	1000023-00	6
32	C1 THRU C32	CAP .01 MF, 100 V, 20% DISC	1001610-01	7
3	C34, C35, C36	CAP 6.8 MF, 35 V, 10% S.TANT	1005306-00	8
1	D1	DIODE, L.E.D.	1110324-00	9
5	R1 THRU R5	RES 4.7K 1/4W 5%	1300447-00	10
3	R8, R9, R15	RES 100 1/4W 5%	1300229-00	11
5	R6, R10, R11, R12, R17	RES 470 1/4W 5%	1300316-00	12
1	R13	RES 1K 1/4W 5%	1300365-00	13
1	R16	RES 10K 3/4W 20% (% PR.RT)	1309143-10	14
1	E24	I.C. 7400	1905575-00	15
1	E30	I.C. 7430	1905578-00	16
1	E31	I.C. 7402	1909004-00	17
1	E19	I.C. 314A	1909704-00	18
1	E23	I.C. 7408	1910155-00	19
4	E1, E9, E17, E25	I.C. 8881	1909705-00	20
1	E16	I.C. 74H04	1909931-00	21
1	E27	I.C. 7485	1910224-00	22
1	E8	I.C. 74123	1910436-00	23
1	E10	I.C. 74S03	1910533-00	24
1	E15	I.C. 74S74	1910544-00	25
1	E21	I.C. 74174	1910652-00	26
2	E5, E22	I.C. 74157	1910655-00	27
9	E2, E3, E11, E12, E18 E20, E26, E28, E29	I.C. 8640	1911469-00	28
2	E4, E13	I.C. 74S280	1911-73-00	29
1	E14	I.C. 8266	1909934-00	30
2	E6, E7	I.C. 7474	1905547-00	31
4	W1 THRU W4	INSULATED JUMPER	9009185-00	32
4		EYELET	9006732-00	33
2		HANDLE, FLIP-CHIP (MAGENTA)	9008337-6	34

PARTS LIST

ETCH BOARD REV. B

8266	8	16
74157	8	16
74174	8	16
74123	8	16
7485	8	16
314A	1	8
[illegible]	[illegible]	+5V

SEMICONDUCTOR CONVERSION CHART

ENG.	K. LUFKIN
DATE	3-3-75

NEXT HIGHER ASSY

digital

TITLE: PARITY MODULE

D CS M7850-0-1 REV. B

SCALE —

SHEET 1 OF 3

PM3 PAR ERR(1) L
PM3 DI5 H
PM3 CLK CSR H
PM3 INIT L
7474 E7
PM2 CSR15(1) H
R17 470
DI LED
+5V
CSR 15(0) H

BUS A17 L BS1 — 8640 E29 — A17 H
BUS A16 L BS2 — 8640 E29 — A16 H
BUS A15 L BR1 — 8640 E24 — A15 H
BUS A14 L BR2 — 8640 E29 — A14 H
BUS A13 L BP1 — 8640 E28 — A13 H
BUS A12 L BP2 — 8640 E28 — A12 H
BUS A11 L BN1 — 8640 E23 — A11 H
BUS A10 L BN2
BUS A09 L BM1 — 8640 E18 — A09 H
BUS A08 L BM2 — 8640 E19 — A08 H
BUS A07 L BL1 — 8640 E19 — A07 H
BUS A06 L BL2
BUS A05 L BK1 — 8640 E18 — A05 H
BUS A04 L BK2 — 8640 E26 — A04 H
BUS A03 L BJ1 — 8640 E26 — A03 H
BUS A02 L BJ2 — 8640 E26 — A02 H
BUS A01 L BH1 — 8640 E26 — A01 H
7486 E30
314A E19

74157 E22: A17 H, PM3 D11 H, A16 H, PM3 D10 H, A15 H, PM3 D09 H, A14 H, PM3 D08 H, SEL DATA L, STB S0
74157 E5: A11 H, PM3 D05 H, A13 H, PM3 D07 H, A12 H, PM3 D06 H, SEL DATA L, STB S0

74 74 E21: DIR 11, DIR 10, DIR 09, DIR 08, DIR 07, DIR 06, PM3 CLK ADRS H
PM2 ER A17 H
PM2 ER A16 H
PM2 ER A15 H
PM2 ER A14 H
PM2 ER A13 H
PM2 ER A12 H

PM3 VH
DIR 05
PM3 CLK ADRS H
7474 E7
PM2 ER A11 H

PM3 D02 H
PM3 CLK CSR H
7474 E6
PM2 CSR 2(1) H
(WRITE WRONG PARITY)
PM2 CSR 2(0) H

PM3 INIT L
PM3 D00 H
PM3 CLK CSR H
7474 E6
PM2 CSR 0(1) H
(ERR IND ENAB)

7485 E27: A>B, A=B, A<B; IN> IN= IN<; PM3 VH
ADRS 3 SEL 2 H
7400 E24
7402 E31
PM2 CSR ADRS SEL H
ADRS SEL 1 H

PM3 PAR ERR(1) L
PM3 DATIP L
7402 E31
8881 E25
ETCH CUT, SIGNAL NOT USED
BA1
DATIP CLR PAUSE L

BUS C0 L BU2 — 8640 E26 — PM2 C0 H

+5V
R4 4.7K, R3 4.7K, R2 4.7K, R1 4.7K
W1 A01
W2 A02
W3 A03
W4 A04

NOTES:

* THE CSR REGISTER ADDRESS IS LOCATED BETWEEN 772100 AND 772136. IT IS SELECTED WITH JUMPERS W1 THRU W4. REMOVING A JUMPER SELECTS A "ONE" FOR THAT BIT POSITION. (*)

MACHINE ADDRESS (WORDS) 8	W4 A4	W3 A3	W2 A2	W1 A1
772100	IN	IN	IN	IN
772102	IN	IN	IN	OUT
772104	IN	IN	OUT	IN
772106	IN	IN	OUT	OUT
772110	IN	OUT	IN	IN
772112	IN	OUT	IN	OUT
772114	IN	OUT	OUT	IN
772116	IN	OUT	OUT	OUT
772120	OUT	IN	IN	IN
772122	OUT	IN	IN	OUT
772124	OUT	IN	OUT	IN
772126	OUT	IN	OUT	OUT
772130	OUT	OUT	IN	IN
772132	OUT	OUT	IN	OUT
772134	OUT	OUT	OUT	IN
772136	OUT	OUT	OUT	OUT

** THE 'A' INPUTS ARE SELECTED WHEN THE SEL INPUT GOES LOW. (**)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: PARITY MODULE (PM2)
SIZE DCS NUMBER M7850-0-1 REV B
SCALE — SHEET 2 OF 3 DIST.

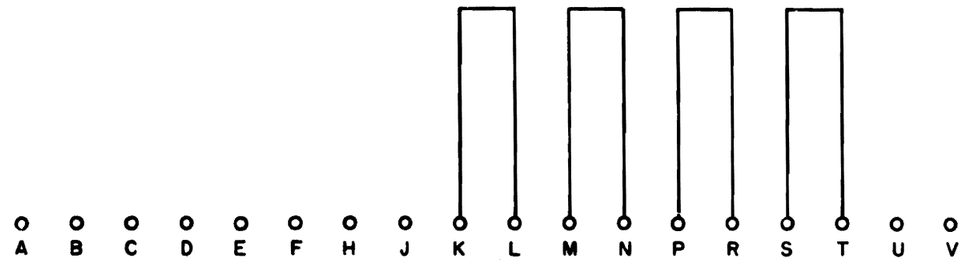
NOTES:
* B INPUTS SELECTED WHEN SEL IS LOW (@)
** SET R&S TO 110 NSEC ± 10 NS FROM SIGNAL ON PIN BE1 GOING LOW TO SIGNAL ON PIN BB2 GOING HIGH. (@ 1.5V LEVEL) (@ @)

PM2 CSR 15 (1) H
BUS DI4 L
BUS DI3 L
BUS DI2 L
PM2 ER A17 H
PM2 ER A16 H
PM2 ER A15 H
PM2 ER A14 H
PM2 ER A13 H
PM2 ER A12 H
PM2 ER A11 H
BUS DØ4 L
BUS DØ3 L
PM2 CSR E(1) H
BUS DØ1 L
PM2 CSR Ø (1) H
PM3 READ SEL H
8881 E9
8881 E17
8881 E1
AM2 BUS DI5 L
AL1 AL2 AK1 AK2 AJ1 AJ2 AH1 AH2 AF1 AF2 AE1 AE2 AD1 AD2 AC1
BUS DI4 L BUS DI3 L BUS DI2 L BUS DI1 L BUS DIØ L BUS DØ9 L BUS DØ8 L BUS DØ7 L BUS DØ6 L BUS DØ5 L BUS DØ4 L BUS DØ3 L BUS DØ2 L BUS DØ1 L BUS DØØ L
8640 E12 8640 E11 8640 E2 8640 E3
PM3 DI5 H
DI4 H
DI3 H
DI2 H
PM3 DI1 H
PM3 DIØ H
PM3 DØ9 H
PM3 DØ8 H
PM3 8 BIT GEN H
PM3 DØ7 H
DØ4 H
DØ3 H
DØ2 H
DØ1 H
PM3 DØ6 H
PM3 DØ5 H
PM3 DØ2 H
PM3 DØØ H
74S280 E13 E4
ODD EVEN
BUS M SYN L
BV1
8640 E20
PM3 C1 H
74S03 E10
4N1 INT BUS PI L
AP1 INT BUS PØ L
PM3 PAR ERR H
R12 470 R11 470 R10 470 +5V
8266 E14
PM2 CSR 2(Ø) H
PM3 VH
PM2 CØ H
PM3 INT SSYN H
PM3 8 BIT GEN H
PM3 A BIT GEN H
PM3 DATIP L
*PM3 C1 L
R6 4.7Ø +5V
8640 E16
R5 4.7K +5V
R16 10K (T.P.)
BB2 S SYN DLY (Ø) H
INT BUS SSYN L
BE1
PM3 C1 L
74123 E8
R13 1K +5V PM3 VH
C32 .01UF
PM3 PAR ERR(1) H
PM3 PAR ERR(1) L
74S74 E15
PM2 CSR Ø (1) H
8881 E1
AN2 BUS PB L
PM3 INIT L
PM3 INT SSYN H
PM3 M SYN PULSE L
8881 E28
BU1 BUS SSYN L
PM3 PAR ERR H
C37 330 PF 5%
R8 14Ø
7400 E24
ERRCLR INH L
7400 E23
S SYNC INH Ø H
PM3 PAR ERR(1) H
BUS INIT L
AA1
INIT H
PM3 INIT L
BUS C1 L
BT2
PM3 C1 H
BE2 INT BUS PAR MOD DET L
R9 14Ø
C38 330PF 5%
C39 470 PF 5%
R15 1KØ
PM2 CSR ADRS SEL H
PM3 READ SEL H
PM3 CLK CSR H
CLK CSR L
PM3 CLR ADRS H
PM3 PAR ERR (1) L

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: PARITY MODULE (PM3)
SCALE: SHEET 3 OF 3
SIZE: D CODE: DCS NUMBER: M7850-0-1 REV: B

SIZE	CODE	NUMBER	REV.
B	CS	G727-0-1	



REVISIONS	REV.	CHG NO.	CHK

DRN	BUTLER	DATE 11-19-69
CHK'D	P. L. Stark	DATE 6-Feb-1970
ENG	J. P. Johnson	DATE 1/28/70
PROD.		DATE

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: GRANT CONTINUITY G727

SIZE	CODE	NUMBER	REV.
B	CS	G727-0-1	

PRINTED CIRCUIT REV. A

DEC FORM NO. DRB 102

5 PINK

DIST. 324,454,4353

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
DL11-W
DL11-WA
DL11-WB
DL11-WC

DL11-W
Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØ1Ø6

REVISIONS	REV.	CHG. NO.	DATE
	A	DL11W-1	NOV 75

USED ON OPTION/MODEL

SHEET 1 OF 1

DRN.	DATE	CHK'D	DATE	PROJ. ENG.	DATE	FIELD SERV.	DATE
D. Healy	26 MAR 76	D. Healy	26 MAR 76	R. Pratt	29-MAR 1976	[illegible]	14-April 1976

digital

TITLE: FIELD MAINTENANCE PRINT SET DL11-W

SIZE	CODE	NUMBER	REV.
B	TC	DL11-W-1	A

DIST.

DRB 124

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

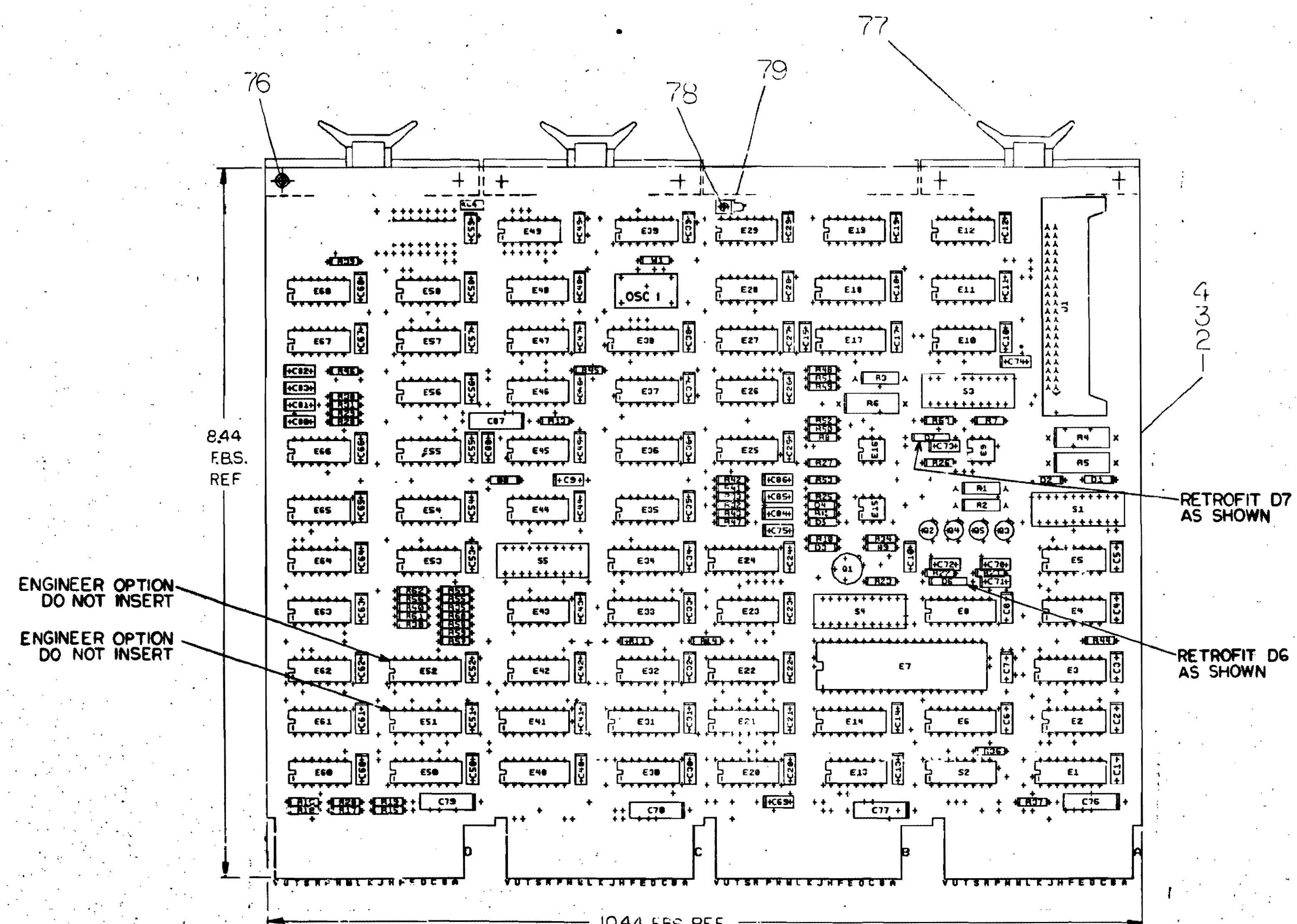
MADE BY D. HEALY	CHECKED D. HEALY	SECTION 1
DATE 25 MAR 76	DATE 25 MAR 76	
ENG RB Craft	PROD K J. MacDonald	ISSUED SECT. 1
DATE 1-APR-76	DATE 7 APR 76	

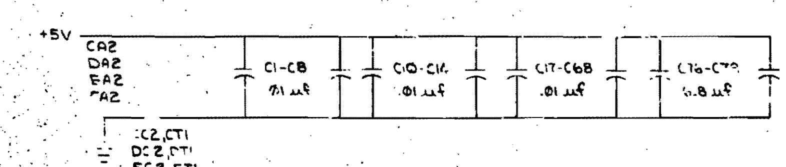
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION DL11-W	DL11-WA	DL11-WB	DL11-WC
1	D-CS-M7856-Ø-1	SLU/RTC OPTION	1	1	1	1
2	D-IA-7008360-1-0	CABLE ASSY (KL8-E)	-	1	-	-
3	D-UA-BCØ5C-25-0	CABLE MODEM BCØ5C	-	-	1	-
4	D-UA-BC03L-10-0	CABLE ASSY	-	-	-	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
SERIAL LINE/LINE CLOCK DL11-W	NONE	A	PL	DL11-W-Ø	A	DL11W 00001
	SHEET 1 OF 1	DIST				

DEC FORM DEC 16 (325) 1031 8870
DRAWING

NOTES:





IC 384		8
IC 8837	8	16
IC 314P	1	3
IC 74123	8	16
IC 74157	8	16
IC 74163	8	16
IC 7493	10	5
IC 7492	10	5
IC 74151	8	16
IC 74175	8	16
IC UART	1	3
IC 8097	8	16
IC 8641	8	16
IC TYPE	**GND**	**+5V**

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

IC PIN LOCATIONS

DEC FORM NO. DRD 138.B

PARTS LIST

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X Y COORDINATE HOLE LOCATION	K-CO-M7856-0-4	1
REF		ASSY DRILLING HOLE LAYOUT	D-AH-M7856-0-5	2
REF		MODULE ECO HISTORY	B-MH-M7856-0-8	3
1		ETCHED CIRCUIT BOARD	5011484	4
67	C1 THRU C8, C10 THRU C15, C17 THRU C68, C88	CAPACITOR, .01uf, 100V, 20%	1001610-01	5
7	C9, C69 THRU C74	CAPACITOR, 470pf, 100V, 5%	1000024	6
1	C75	CAPACITOR, 330pf, 100V, 5%	1000023	7
6	C80 THRU C85	CAPACITOR, 82pf, 100V, 5%	1000015	8
1	C86	CAPACITOR, 150pf, 100V, 5%	1000019	9
1	C87	CAPACITOR, 2.2uf, 20V, 10%	1002627	10
4	C76, C77, C78, C79	CAPACITOR, 6.8uf, 35V, 10%	1005306	11
1	C16	CAPACITOR, 5000pf, 100V, 20%	1001765	12
3	D1, D2, D3	DIODE, 1N4004	1105796	13
1	D4	DIODE, ZENER 1N4742	1109502	14
2	D6, D7	DIODE, CURRENT LIMITER MCL1301	1105610	15
1	D8	DIODE, D664	1100114	16
4	S1, S3, S4, S5	SWITCH, 10 POSITION	1211164-06	17
1	S2	SWITCH, 8 POSITION	1211164-04	18
				19
				20
1	J1	CONNECTOR, 40 PIN	1209941	21
1	R63	RESISTOR, 330, 1/4W, 5%	1300295	22
3	R1, R2, R3	RESISTOR, 180 OHM, 1/2W, 5%	1300260	23
3	R4, R5, R6	RESISTOR, 560 OHM, 1W, 5%	1303048	24
2	R7, R8	RESISTOR, 68K, 1/4W, 5%	1301327	25
1	R9	RESISTOR, 33 OHM, 1/4W, 5%	1300197	26
1	R10	RESISTOR, 120K, 1/4W, 5%	1300539	27
1	R12	RESISTOR, 680, 1/4W, 5%	1301424	28
1	R25	RESISTOR, 68 OHM, 1/4W, 5%	1300219	29
2	R13, R14	RESISTOR, 100 OHM, 1/4W, 5%	1300229	30
4	R15, R16, R17, R18	RESISTOR, 180 OHM, 1/4W, 5%	1301322	31
4	R19, R20, R21, R22	RESISTOR, 390 OHM, 1/4W, 5%	1300309	32
1	R23	RESISTOR, 7.5K, 1/4W, 5%	1301422	33
2	R27, R26	RESISTOR, 150 OHM, 1/4W, 5%	1300250	34
6	R28 THRU R33	RESISTOR, 270 OHM, 1/4W, 5%	1301972	35
27	R35, R36, R37, R39 THRU R62	RESISTOR, 10K, 1/4W, 5%	1300479	36
3	R11, R64, R38,	RESISTOR, 1K, 1/4W, 5%	1300365	37
1	R34	RESISTOR, 220 OHM, 1/4W, 5%	1300271	38
1	Q1	TRANSISTOR, DEC 6531B	1509338	39
2	Q3, Q4	TRANSISTOR, A05	1510705	40
2	Q2, Q5	TRANSISTOR, A55	1510706	41
2	E9, E16	OPTICALLY COUPLED ISOLATOR	1510727-1	42
1	OSC 1	OSCILLATOR 50688 MHZ	1811660-02	43
1	E15	I.C. DEC 4N26	1911998	44
3	E1, E8, E14	I.C. DEC 8641	1911579	45
6	E2, E13, E20, E60, E61, E49	I.C. DEC 8881	1909705	46
1	E3	I.C. DEC 8097	1911527	47
3	E4, E44, E64	I.C. DEC 7408	1910155	48
7	E5, E35, E37, E55, E57, E63, E68	I.C. DEC 7474	1905547	49
1	E7	I.C. DEC UART (1808)	1910459-01	50
1	E6	I.C. DEC 74175	1910651	51
1	E10	I.C. C 1489L	1910323	52
1	E11	I.C. DEC 1488L	1910322	53
2	E17, E18	I.C. DEC 74151	1909936	54

ETCH BOARD REV. D

FIRST USED ON OPTION MODEL

SEMICONDUCTOR CONVERSION CHART

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

REV.	CHANGE NO.	ECO
D	M7856-C7001	B. PRATT 2-3-76
E	M7856-00002	2-10-76

DRN. DATE 9/2/75
CHKD. DATE 9-4-75
ENG. R. Pratt DATE 11-24-75
PROJ. ENG. DATE 11-24-75
PROD. DATE
NEXT HIGHER ASSY

digital

TITLE SLU/RTC OPTION

SIZE D | CODE CS | NUMBER M7856-Ø-1 | REV. E

SCALE — SHEET 1 OF 9 DIST.

1	E12	I.C. DEC 7492	1909053	55
5	E19,E29,E27,E28,E39	I.C. DEC 7493	1909054	56
1	E21	I.C. DEC 74153	1909937	57
2	E22,E38	I.C. DEC 74157	1910655	58
5	E23,E53,E58,E62,E36	I.C. DEC 7402	1909004	59
1	E24	I.C. DEC 74123	1910436	60
1	E25	I.C. DEC 7437	1910091	61
1	E29	I.C. DEC 7486	1910011	62
1	E30	I.C. DEC 314A	1909704	63
4	E31,E40,E41,E50	I.C. DEC 8837	1911116	64
1	E32	I.C. DEC 7410	1905576	65
2	E42,E43	I.C. DEC 8242	1909712	66
2	E45,E66	I.C. DEC 7414	1911324	67
4	E46,E54,E65,E67	I.C. DEC 7400	1905575	68
1	E47	I.C. DEC 74197	1910035	69
1	E48	I.C. DEC 384	1909486	70
1	E56	I.C. DEC 7404	1909686	71
1	E59.	I.C. SPARE		72
1	E33	32 x 8 PROM	23095A1	73
1	E34	32 x 8 PROM	23094A1	74
1	W1	JUMPER, INSULATED	9009185	75
6		EYELET (HANDLE)	9006732	76
3		HANDLE, FLIP-CHIP (MAGENTA)	9008337-6	77
1		EYELET GS4-5	9009000	78
1		FASTON TAB (OFFSET)	9007112	79
1		TERMINAL	9007791	80
1	D5	DIODE 1N746A	1104860	81

REVISIONS		
CHG	CHANGE NO	REV

TITLE: SLU/RTC OPTION

SIZE: D CODE: CS NUMBER: M7856-Ø-1 REV: E

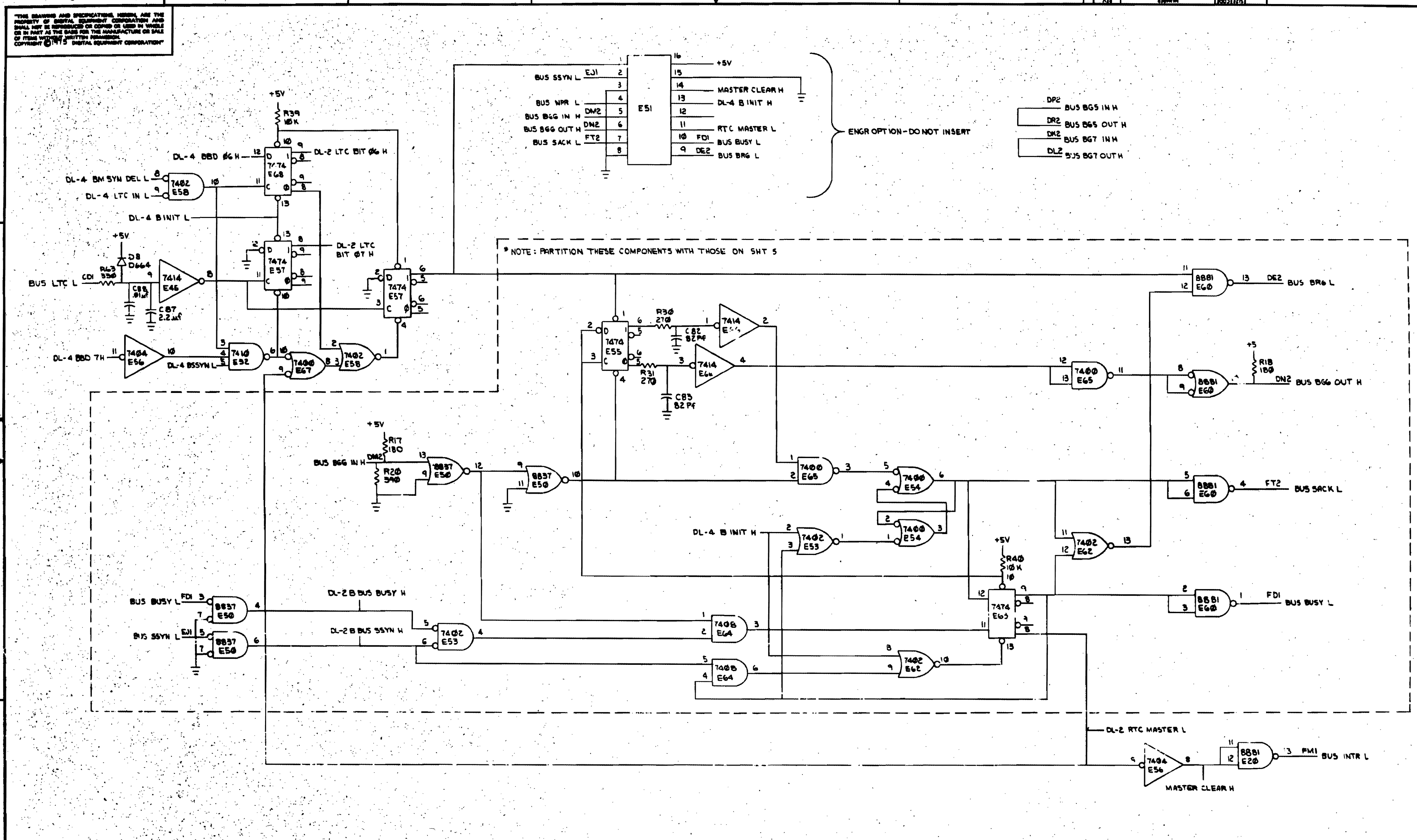
SCALE: —/— SHEET 2 OF 9

+5V
R45 10K
DL-4 BBD 6 H
RCSR CLK H
7474 E37
DL-4 B INIT L
DL-1 RDR ENB (1) L
DL-4 BBD0 H
7474 E35
7408 E44
DL-1 RCVR BUSY(1) H
DL-4 SEL 2 L
7474 E37
74197 E47
D3 D2 D1 D0
R3(1) R2(1) R1(1) R0(1)
LD CLR CLKB CLK1
7402 E58
DL-4 B INIT H
DL-6 XMIT CLK H
DL-6 RCVR CLK H
DL-5 TTL SERIAL DATA IN
DL-5 SERIAL OUT H
FR ERR H
74157 E38
A0 B0 A1 B1 A2 B2 A3 B3
f0 f1 f2 f3
S0 STB
7437 E25
RCVR DONE H
8881 E49
TB-1
BOOT SW L
(FASTON TAB)
+5V -12V
CLR R DONE
STB STATUS
STB RD
R CLK
SERIAL IN
DL-4 BBD 7 H
DL-4 BBD 6 H
DL-4 BBD 5 H
DL-4 BBD 4 H
DL-4 BBD 3 H
DL-4 BBD 2 H
DL-4 BBD 1 H
DL-4 BBD 0 H
DL-4 LD X DEL L
XD7 XD6 XD5 XD4 XD3 XD2 XD1 XD0 LD XD
X CLK
UART E7
R DONE
RD7 RD6 RD5 RD4 RD3 RD2 RD1 RD0
OP ERR
FR ERR
P ERR
EOC
X RDY
SERIAL OUT
LR LDC NB2 NB1 NP EP 2SB
S4-4 S4-3 S4-6 S4-2 S4-5
DL-4 B INIT H
8097 E3
DL-1 RD7 H
DL-1 RD6 H
DL-1 RD5 H
DL-1 RD4 H
DL-1 RD3 H
DL-1 RD2 H
DL-1 RD1 H
DL-1 RD0 H
DL-1 OR ERR H
DL-1 FR ERR H
DL-1 P ERR H
DL-1 XMIT RDY H
DL-1 RCVR DONE H
DL-3 RCVR SEL H
DL-3 MASTER H
7400 E46
7408 E4
DL-4 RCVR INTR ENB (1) H
DL-1 RCVR INTR RQST H
7474 E5
DL-4 LD X DEL L
DL-3 MASTER H
DL-3 XMIT SEL H
7408 E4
DL-1 XMIT INTR RQST H
74175 E8
DL-4 BBD 6 H
DL-4 BBD 0 H
DL-4 BBD 2 H
R3(1) R3(0) R1(1) R1(0) R0(1) R0(0) R2(1) R2(0)
CLK CLR
DL-4 XCSR CLK H
DL-4 B INIT L
XMIT INTR ENB (1) L
S4-1
DL-1 XMIT INTR ENB (1) H
DL-1 MAINT (1) H
DL-1 MAINT (1) L
DL-1 SERIAL OUT L
DL-1 BREAK (1) H
R46 10K
+5V
+5V
R47 10K
R32 270
R33 270
C84 .82MF
C85 .82MF
7414 E45
7414 E66
DL-1 ERROR H
XMIT INTR ENB(1) L
7402 E36
384 E48
1488L E11
1489L E10
8837 E41
SPARE LOGIC

REVISIONS		
CHK	CHANGE NO.	REV.

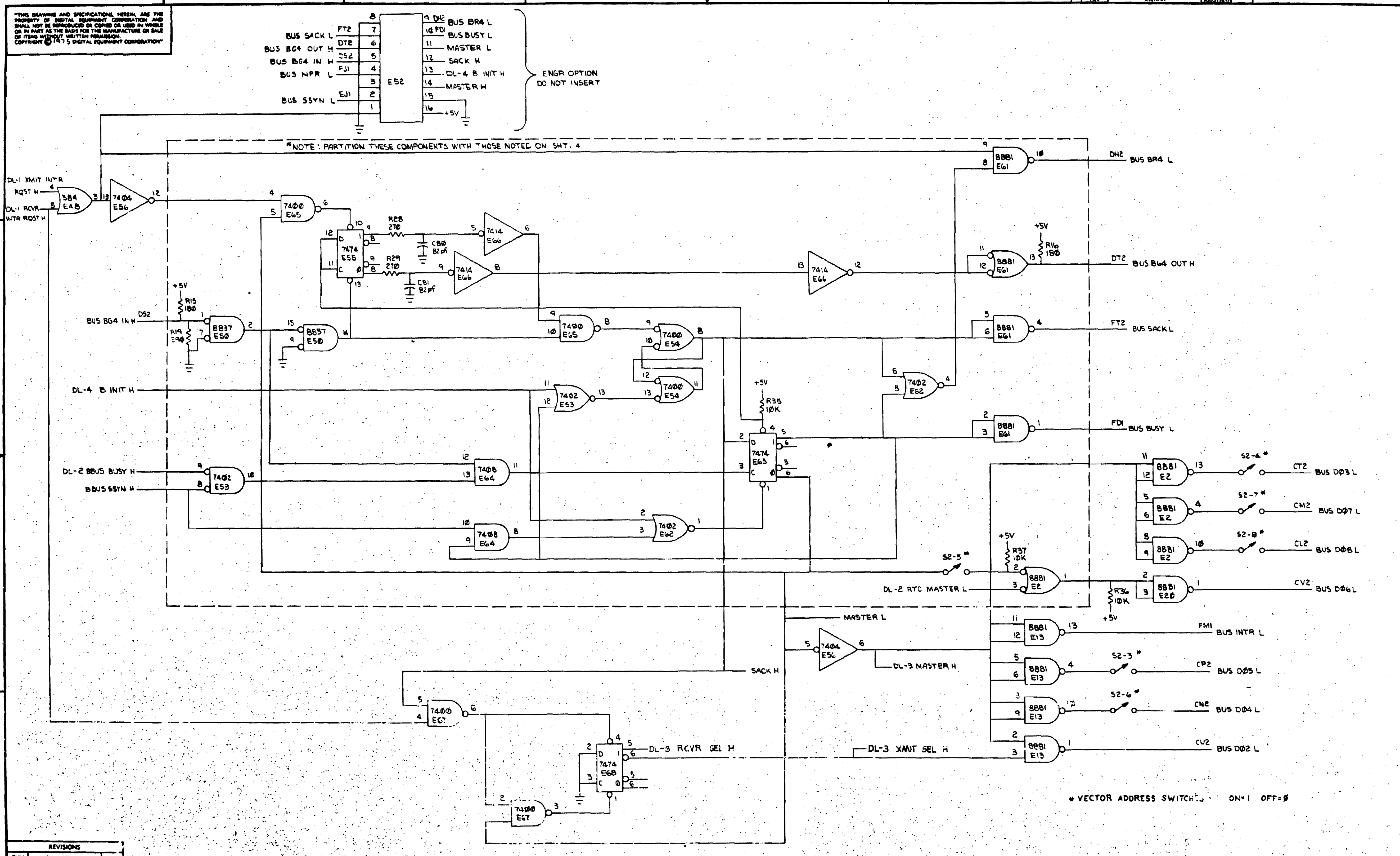
TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-1)	D	CS	M7856-0-1	E
SCALE	SHEET 3 OF 9	DIST.		

DEC FORM NO. (MED 139)



TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-2)	D	CS	M7856-Ø-1	E

SHEET 4 OF 9



REVISIONS		
CHK	CHANGE NO.	REV

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-3)	D	CS	M7856-Ø-1	E
SCALE	SHEET 5 OF 9	DIST.		

BUS MSYN L EE1 11 — 8837 E31 — 10 — R13 1KØ — C9 470 pf — 12 — 8881 E49 — 13 — DL-4 BMSYN DEL L

+5V — R64 1K — DL-7 3SYN EN L — 74Ø2 E23 — +5V — R11 1K — R14 1ØØ — C69 470 pf

7414 E45 — DL-4 BSSYN L

8881 E2Ø — E31 — BUS SSYN L

+5V — R41 1ØK — C84 15Ø pf — DL-7 LD XBUF H — 74123 E24 5ØØ MSEC — DL-4 LDXDEL L

BUS INIT L DL1 3 — 8837 E41 — 7404 E56 — DL-4 B INIT L — DL-4 B INIT H

DL-7 RBUF → BUS H — 74123 E24 USEC — DL-4 SEL 2 L

R43 1ØK +5V

DL-7 RCSR CLK ENB L — 74Ø2 E23 — DL-4 RCSR CLK H

DL-7 XCSR CLK ENBL — 74Ø2 E23 — DL-4 XCSR CLK H

74157 E22 2:1 MUX

DL-1 BREAK (1) H — A2
DL-1 RDØØ H — B2
DL-1 MAINT (1) H — A3
DL-1 RDØ2 H — B3
DL-7 E22 SØ H
DL-7 E22 STB L

DL-1 RDØ1 H — BUS DØ1 L CR2 — DL-4 BBD 1 H
DL-1 RDØ3 H — BUS DØ3 L CT2 — DL-4 BBD 3 H
DL-1 RDØ4 H — BUS DØ4 L CN2 — DL-4 BBD 4 H
DL-1 RDØ5 H — BUS DØ5 L CP2 — DL-4 BBD 5 H
DL-7 E14 ENL — B641 E14

DL-1 RDØ6 H — BUS DØ6 L CV2 — DL-4 BBD ØH
DL-1 RDØ2 L CU2 — DL-4 BBD 2H
DL-1 RDØØ H — BUS DØØ L CV2 — DL-4 BBD GH
DL-1 RDØ7 H — BUS DØ7 L CW2 — DL-4 BBD TH
DL-7 EG EN L — B641 EG

74153 E21 4-1 MUX

DL-1 XMIT INTR ENB (1) H
DL-1 RCVR INTR ENB (1) H
DL-2 LTC BIT ØG H
DL-1 XMIT READY H
DL-1 RCVR DONE H
DL-2 LTC BIT Ø7 H
DL-7 E21 S1 H
DL-7 E21 SØ H

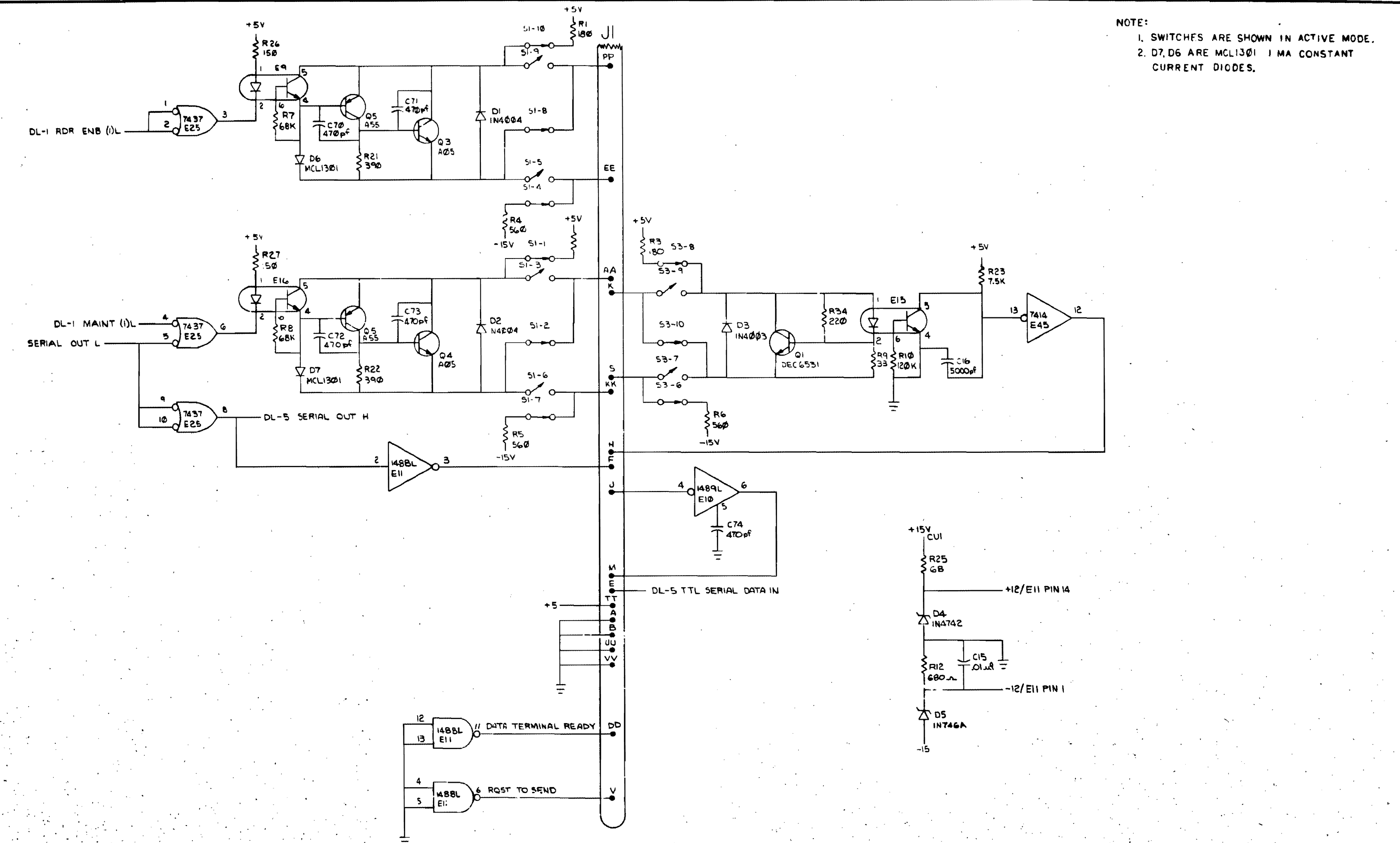
DL-1 RCVR BUSY (1) H — 8881 E2Ø — CH1 — BUS DI1 L
DL-7 E23 2N L — 7402 E23

DL-1 P ERR H — BUS DI2 L CW2
DL-1 FR ERR H — BUS DI3 L CF2
DL-1 OR ERR H — BUS DI4 L CE2
DL-1 ERROR H — BUS DI5 L CD2
B641 E1

+5V — R44 1ØK — S4-7 — DL-7 E1 F:R L

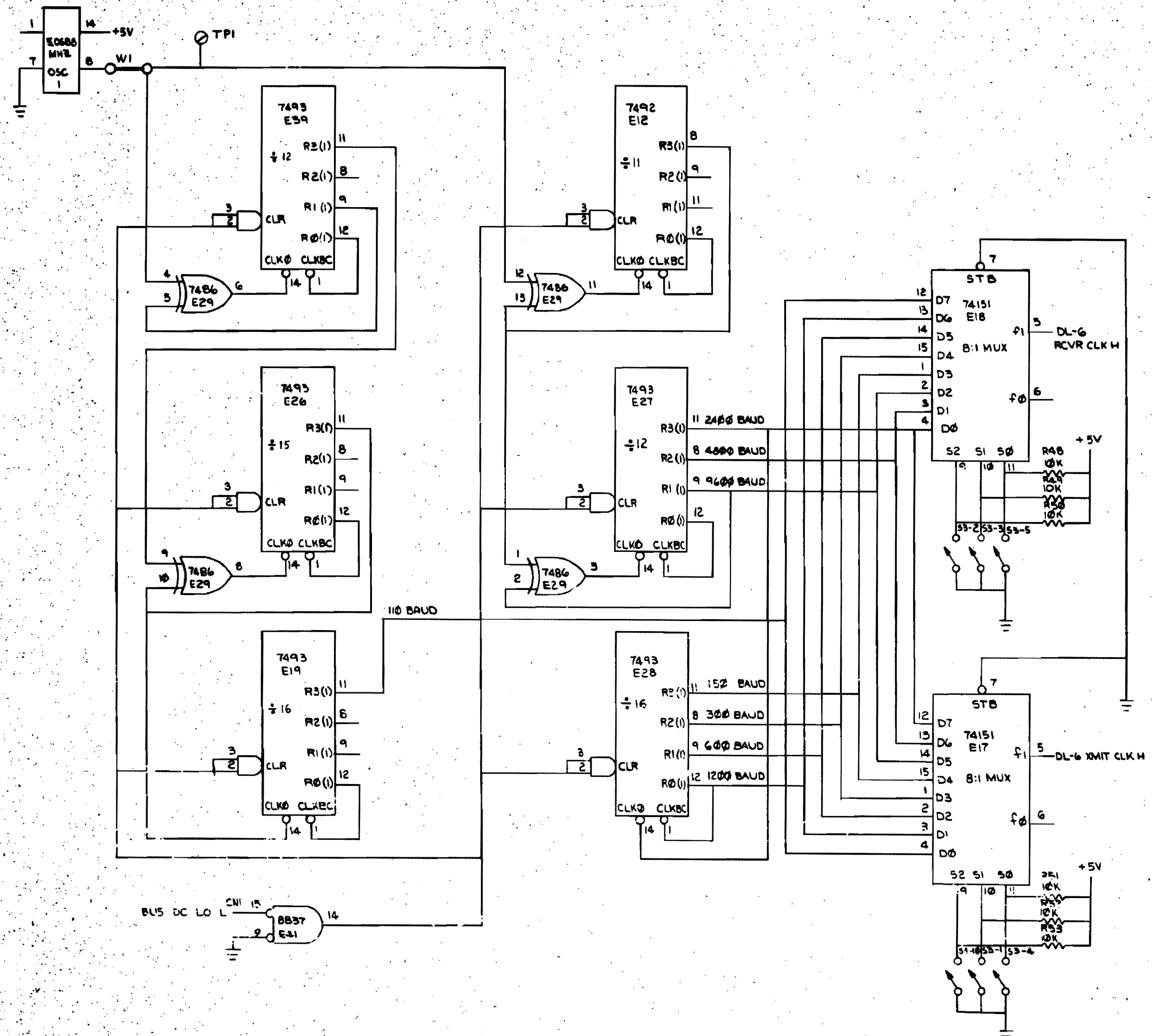
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RIC OPTION (DL-4)	D	CS	M7856-Ø-1	E
SCALE —	SHEET 6 OF 9	DIST.		



TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-5)	D	CS	M7856-0-1	E

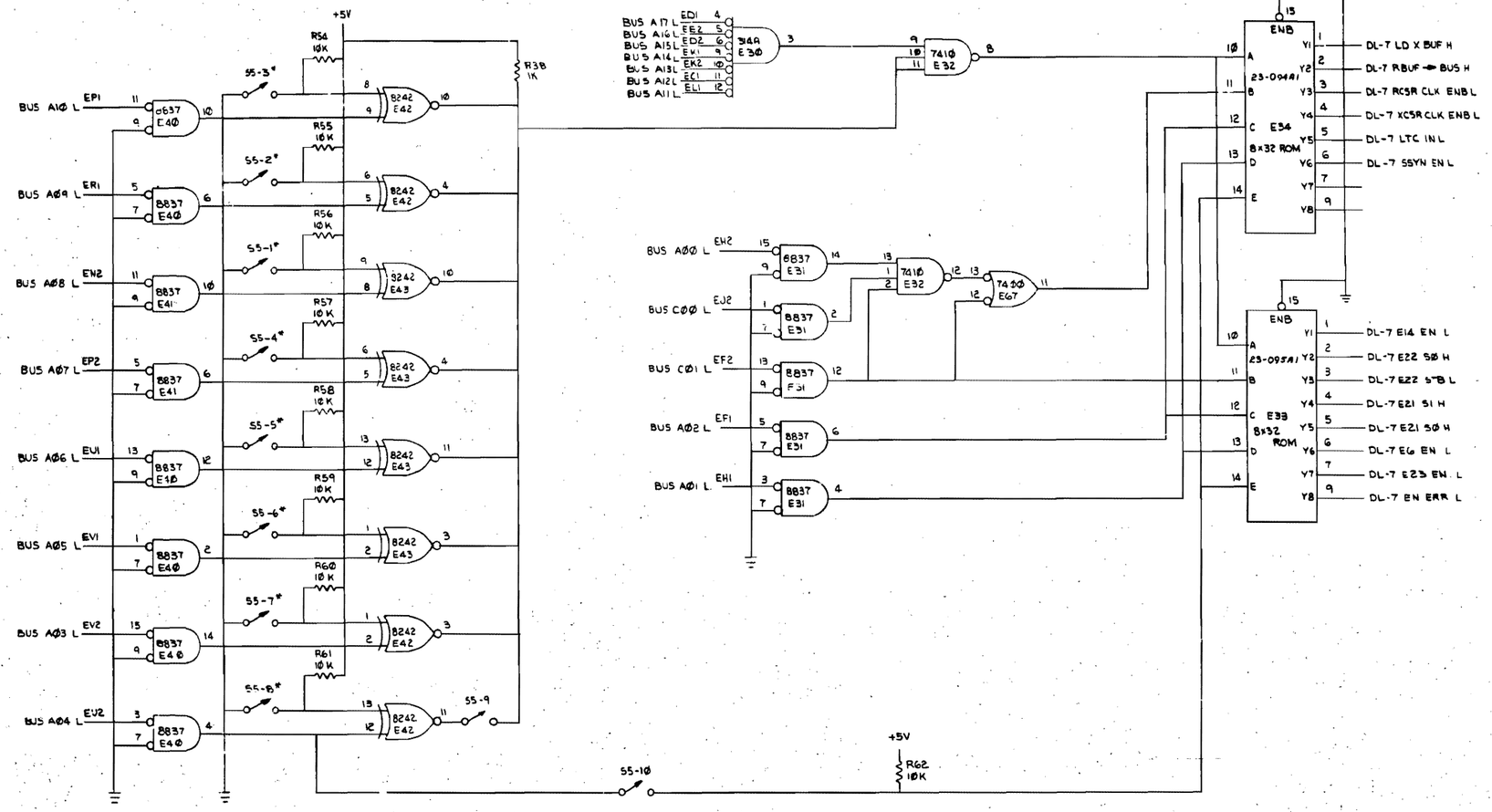
SHEET 7 OF 9



BAUD RATE	RCVR S3-2	RCVR S3-3	RCVR S3-5	XMIT S4-10	XMIT S3-1	XMIT S3-4
110	OFF	OFF	OFF	ON	ON	ON
150	ON	OFF	OFF	OFF	ON	ON
300	OFF	ON	ON	ON	OFF	OFF
600	OFF	ON	OFF	ON	OFF	ON
1200	OFF	OFF	ON	ON	ON	OFF
2400	ON	ON	ON	OFF	OFF	OFF
4800	ON	ON	OFF	OFF	OFF	ON
9600	ON	OFF	ON	OFF	ON	OFF

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-6)	D	CS	M7856-0-1	E

SCALE — SHEET 8 OF 9



*ADDRESS SELECTION SWITCHES - OFF=1 ON=Ø

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
SLU/RTC OPTION (DL-7)	D	DCS	M7856-Ø-1	E
SCALE —	SHEET 9 OF 9	DIST.		

DEC FORM NO. DRD 128

(FOR 23094A1-A07 & 23095A1-A07)

REVISIONS	REV.	CHANGE NO.	DATE

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					
		OVER 0 TO 0.2	OVER 0.2 TO 1.2	OVER 1.2 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 80.0
SURFACE QUALITY IN ✓ MICROINCHES	MEDIUM ☐	± .004	± .008	± .012	± .016	± .024	± .04
	PREFERRED ☐	± .012	± .016	± .025	± .04	± .063	± 0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL

FINISH

DRN. [illegible]

CHK'D [illegible]

ENG. [illegible]

PROJ. ENG. [illegible]

PROD. [illegible]

NEXT HIGHER ASSY. D-CS-M7856-0-1

SCALE

SHEET 1 OF 3

FIRST USED ON DL11-W

digital

TITLE
ROM LISTING

SIZE	CODE	NUMBER	REV.
K	CS	M7856-0-9	

DIST.

M7856-0-9 K CS

DEC PART NUMB: 23C94A1-A07
ORIGINATOR: BOB PRATT
DATE OF ORIGIN: 2/28/75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	00	00111100	074
1	01	00111100	074
2	02	00111100	074
3	03	00111100	074
4	04	00111100	074
5	05	00111100	074
6	06	00111100	074
7	07	00111100	074
8	10	00111100	074
9	11	00111100	074
10	12	00111100	074
11	13	00111100	074
12	14	00001100	014
13	15	00111100	074
14	16	00011100	034
15	17	00111100	074
16	20	00011000	030
17	21	00111100	074
18	22	00011100	034
19	23	00111100	074
20	24	00010100	024
21	25	00111100	074
22	26	00011100	034
23	27	00111100	074
24	30	00011100	034
25	31	00111100	074
26	32	00011110	036
27	33	00111100	074
28	34	00011101	035
29	35	00111100	074
30	36	00011100	034
31	37	00111100	074

DEC PART NUMB: 23-095A1-A07
ORIGINATOR: BOB PRATT
DATE OF ORIGIN: 2/28/75

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	00	11111111	377
1	01	11111111	377
2	02	11111111	377
3	03	11111111	377
4	04	11111111	377
5	05	11111111	377
6	06	11111111	377
7	07	11111111	377
8	10	11111111	377
9	11	11111111	377
10	12	11111111	377
11	13	11111111	377
12	14	11011111	337
13	15	11111111	377
14	16	11111111	377
15	17	11111111	377
16	20	10001111	217
17	21	11111111	377
18	22	11111111	377
19	23	11111111	377
20	24	11010001	321
21	25	11111111	377
22	26	11111111	377
23	27	11111111	377
24	30	01000010	102
25	31	11111111	377
26	32	11111111	377
27	33	11111111	377
28	34	11111111	377
29	35	11111111	377
30	36	11111111	377
31	37	11111111	377

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WIRE TABLE

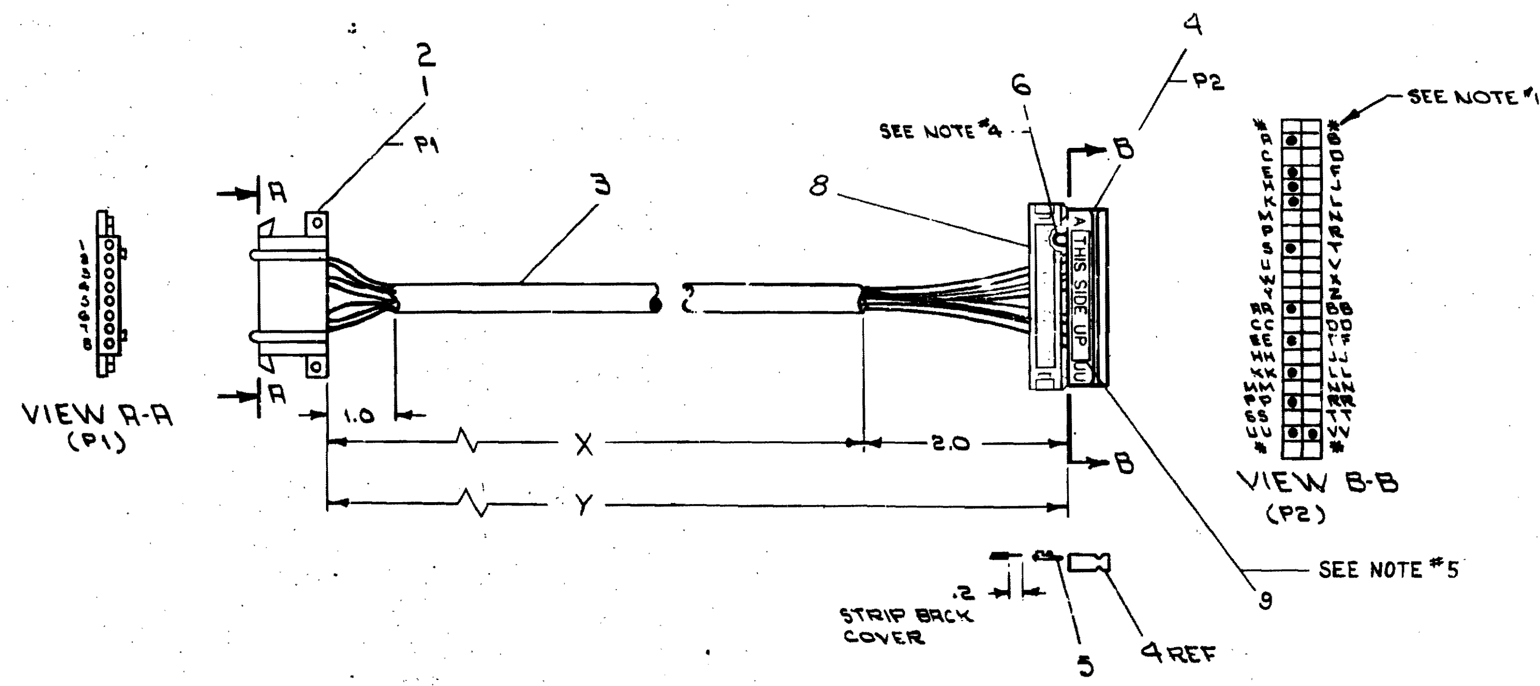
ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	PAIR NO.	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	22	BLK	1	P1-2	2	P2-KK	5
3	↕	RED	1	P1-3	2	P2-S	↕
3,7	↕	SHIELD	1	SEE NOTE #2	—	P2-R(NOTE #3)	↕
3	↕	BLK	2	P1-4	2	P2-EE	↕
3	↕	WHT	2	P1-5	2	P2-AR	↕
3,7	↕	SHIELD	2	SEE NOTE #2	—	P2-UU(NOTE #3)	↕
3	↕	BLK	3	P1-6	2	P2-PP	↕
3	↕	GRN	3	P1-7	2	P2-K	↕
3,7	↕	SHIELD	3	SEE NOTE #2	—	P2-VV(NOTE #3)	↕
6	22	BLK	—	P2-E	5	P2-H	5

LEGEND

VARIATION	LENGTH X	LENGTH Y
7008360-0	25IN±1.0	27IN±1.0
7008360-1	46IN±1.0	48IN±1.0
7008360-9	9FT±2IN	9FT2IN±2IN

NOTES:

1. * ASTERISKS INDICATE CAVITIES NOT USED OR DESIGNATED BY LETTERS.
2. DRAIN WIRES TO BE CUT BACK TO OUTER INSULATION ON P1 END OF CABLE ONLY. SHIELDS TO BE CUT BACK TO OUTER INSULATION ON BOTH ENDS OF CABLES.
3. DRAIN WIRES ON P2 END OF CABLE TO BE EACH ENCLOSED WITH ITEM #7 (TUBING) FROM END OF CABLE JACKET TO POINT WHERE THEY ENTER P2 CONNECTOR.
4. ITEM #6 (WIRE) TO BE APPROXIMATELY ONE(1) INCH LONG.
5. PLACE ITEM #9 ("THIS SIDE UP" STICKER) ON LETTERED SIDE OF ITEM #4 (BERG HOUSING) AS SHOWN.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	LABEL, THIS SIDE UP	3611567	9
1	STRAIN RELIEF	1166	8
A/R	TUB. #18 TEF. THINWALL NAT	9107278-11	7
A/R	WIRE #22 AWG STRD TEF BLK	9107350-00	6
11	SOCKET, CRIMP # 47216	1210089-07	5
1	HOUSING, BERG #65043-015	1210913-15	4
A/R	CABLE, BELDEN #8777-3PR SHLD	9107723-0	3
6	CONTACT MATE-N-LOCK (FEMALE)	1209379-03	2
1	CONN. MATE-N-LOCK (FEMALE)	1209340-00	1

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP-8E

DO NOT SCALE DRAWING. UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES. TOLERANCES. ANGLES ± 0°30'. FINAL SURFACE QUALITY. REMOVE BURRS AND BREAK SHARP CORNERS.

MATERIAL: SEE PARTS LIST

FINISH

DRN. DATE APR '71 · CHK'D. DATE 4-8-71 · ENG. DATE 4-4-71 · PROJ. ENG. DATE 4-5-71 · PROD. DATE 4/9/71

NEXT HIGHER ASSY: A-ML-KL8-E-0

SCALE: NONE · SHEET 1 OF 1

digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: CABLE ASSEMBLY (KL8E)

SIZE D · CODE IA · NUMBER 7008360-0-0 · REV. H

DIST.

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
1	26	BLU/WHT	P1-1 *	SOLDER	J1-VV	7
		WHT/BLU	P1-2		J1-F	
		ORN/WHT	P1-3		J1-J	
		WHT/ORN	P1-4		J1-V	
		GRN/WHT	P1-5		J1-T	
		WHT/GRN	P1-6		J1-Z	
		BRN/WHT	P1-7 **		J1-UU	
		WHT/BRN	P1-8		J1-BB	
		SLA/WHT	P1-9		J1-Y	
		WHT/SLA	P1-10		J1-W	
		BLU/RED	P1-11		J1-FF	
		RED/BLU	P1-12		J1-JJ	
		ORN/RED	P1-13		J1-D	
		SLA/RED	P1-14		J1-LL	
1	26	SLA/GRN	P1-15	SOLDER	J1-N	7
1	26	RED/BRN	P1-16	SOLDER	J1-NN	7
		SLA	P1-17		J1-R	
		RED/SLA	P1-18		J1-U	
		BLU/BLK	P1-19		J1-P	
		BLK/BLU	P1-20		J1-DD	
		ORN/BLK	P1-21		J1-MM	
		BLK/ORN	P1-22		J1-X	
		GRN/BLK	P1-23		J1-RR	
		BRN/RED	P1-24		J1-L	
		RED/ORN	P1-25		J1-C	
		SHIELD	P1-1 *		J1-A	
1		SHIELD	P1-7 **		J1-B	7
3		BLK	P1-1 *	SOLDER	P1-7 **	SOLDER
2	26	RED	J1-E	7	J1-M	7

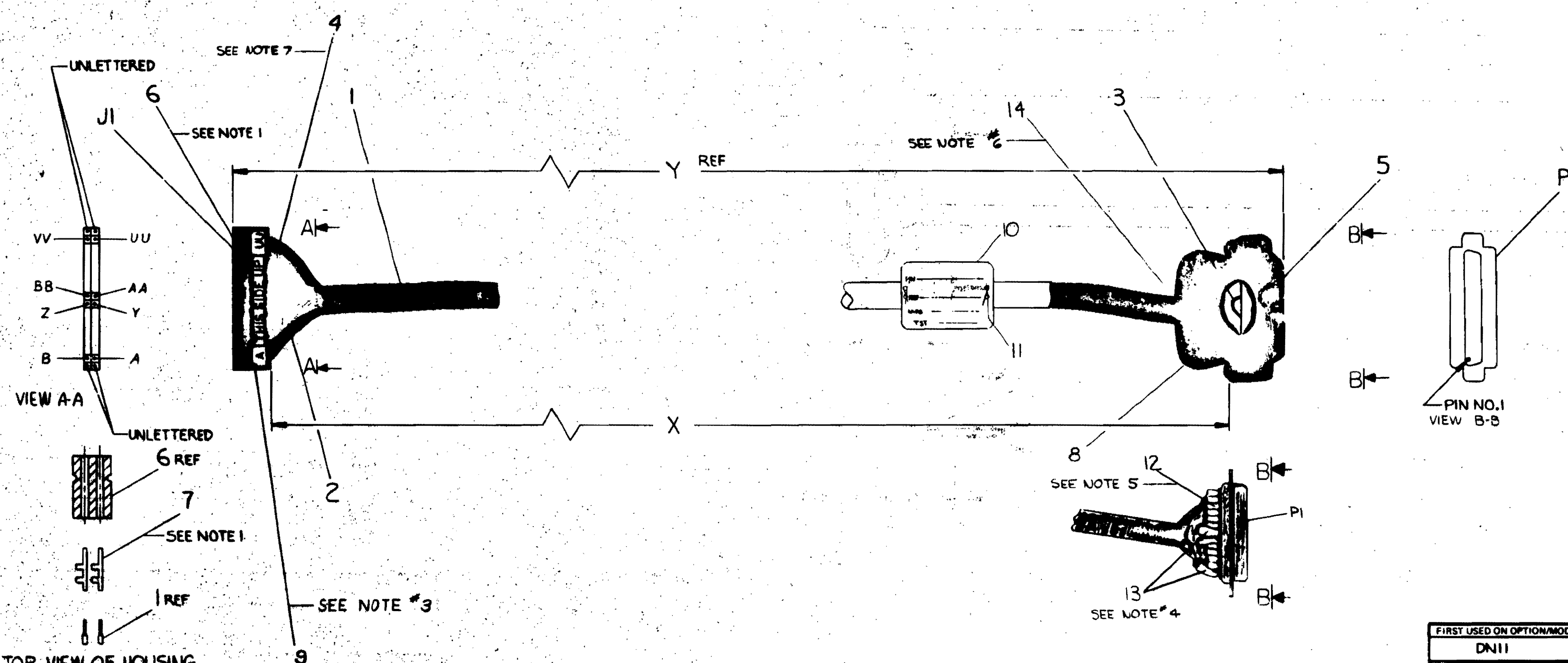
NB
* DENOTES THREE WIRES ARE SOLDERED INTO THE P1-1 SOLDER CUP
** DENOTES THREE WIRES ARE SOLDERED INTO THE P1-7 SOLDER CUP

LEGEND

NUMBER	VARIATION DIM X	VARIATION DIM Y (PRECUT)
BC05C-25	25'±3"	25'1.8"
BC05C-50	50'±2%	50'1.8"
BC05C-09	9'±3"	9'1.8"

NOTES:

1. MANUFACTURING SHOULD USE MACHINE CRIMPER TOOL FOR CRIMPING PINS (ITEM #7) MUST BE HT68 FROM BERG ELECT
2. ONLY DEC PART # 1210090-0-0 MAY BE USED AS J1.
3. PLACE ITEM #9 ("THIS SIDE UP" STICKER) ON LETTERED SIDE OF ITEM #6 (BERG HOUSING) AS SHOWN.
4. USE ITEM #13 (9107302-11) IN TWO PLACES (P1-1, P1-7) TO PREVENT SHORTING
5. USE ITEM #12 (9107295-11) ON ALL REMAINING SOLDER CUPS TO PREVENT SHORTING.
6. DUE TO ± TOLERANCES WITH DIFFERENT VENDORS THE HOOD (ITEM #8) MAY VARY IN OUTSIDE DIAMETER CAUSING POTENTIAL STRAIN RELIEF GRIPPING PROBLEM. SHOULD THIS CONDITION BE PRESENT USE ITEM #14 (9107834) AT JUNCTION OF CABLE AND HOOD.
7. PLACE ITEM #4 (9107256) OVER SHIELD WIRE J1-A, J1-B, P1-1, P1-7



PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.
A/R	TAPE, DOUBLE SIDED	9007834	14
A/R	TUBING, 10 AWG, CLEAR	9107302-11	13
A/R	TUBING, 14 AWG, CLEAR	9107295-11	12
2	TIE WRAPS	9007031	11
1	CABLE, LABEL	9009532	10
1	LABEL, THIS SIDE UP	3611567	9
1	HOOD, #DB51226-1 CINCH	1205885	8
29	SOCKET, #HT-68	1210089-5	7
1	HOUSING, #20383 BERG	1210090-0-0	6
1	PLUG, #DB-25P CINCH	1205886	5
A/R	TUBING, #22 AWG TEF BLK	9107256-00	4
A/R	WIRE, #26 AWG STRD TEF BLK	9107636-00	3
A/R	WIRE, #26 AWG STRD TEF RED	9107636-22	2
A/R	CABLE, 25 CONDUCTOR #26 AWG	9107736	1

FIRST USED ON OPTION/MODEL: DN11

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: —
NEXT HIGHER ASSY: —
SCALE: NONE
SHEET 1 OF 1

DRN: S Roberts DATE 11/3/71
CHK: R. Cook DATE 11/5/71
ENG: R. Smith DATE 11/5/71
PROJ ENG: R. Smith DATE 11/5/71
PROD: DATE 11/3/71

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CABLE, MODEM BC05C

SIZE: D CODE: UA NUMBER: BC05C-0-0 REV: 0

WIRE TABLE

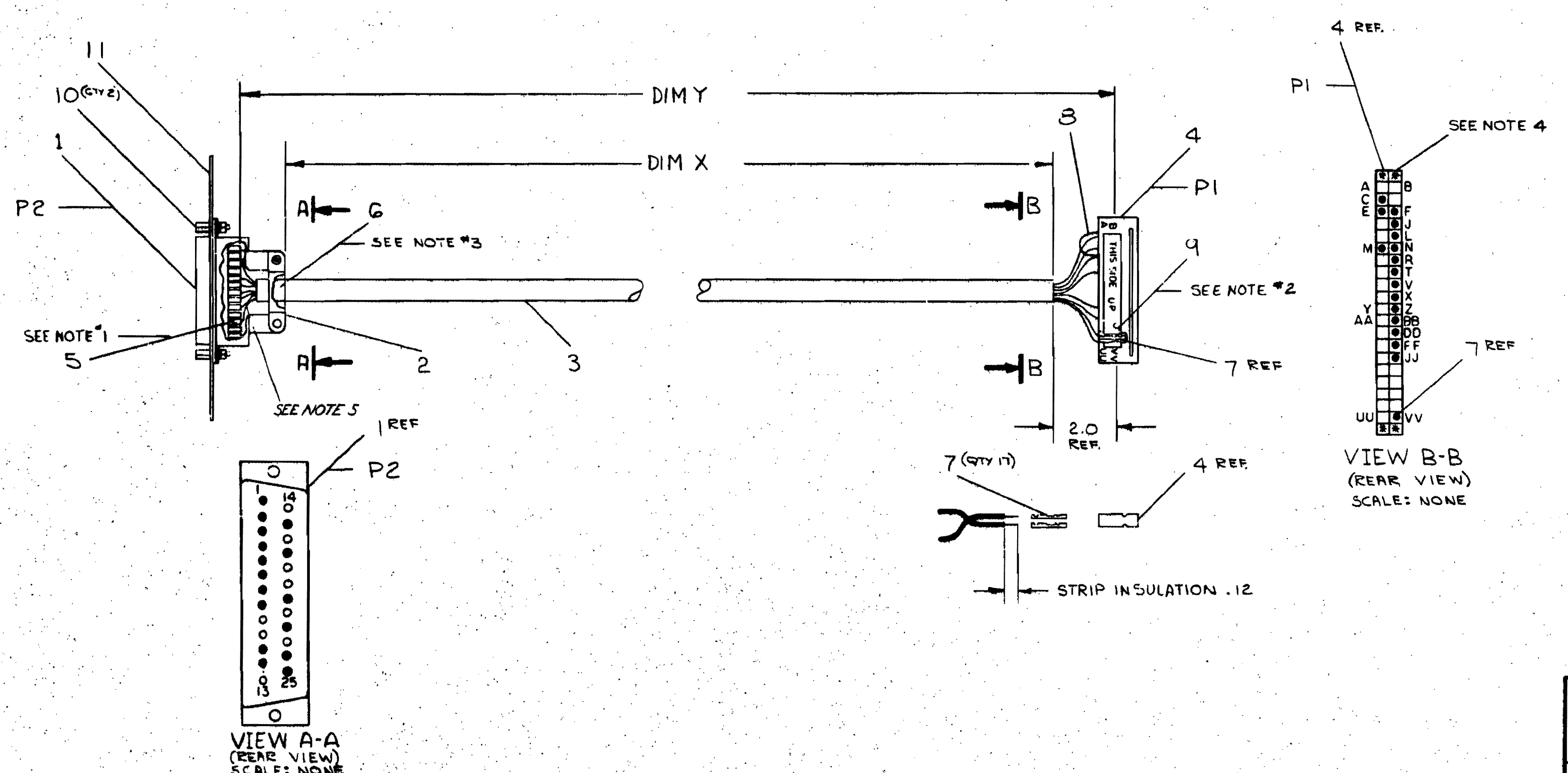
ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	22	BLK	P1-VV	7	P2-7	SOLDER
		GRN/WHT	P1-C		P2-25	
		GRN/BLK	P1-JJ		P2-12	
		ORN/BLK	P1-FF		P2-11	
		RED	P1-DD		P2-20	
		GRN	P1-BB		P2-8	
		BLU/WHT	P1-Z		P2-6	
		ORN	P1-X		P2-22	
		BLU	P1-V		P2-4	
		WHT	P1-T		P2-5	
		BLU/BLK	P1-R		P2-17	
		BLK/WHT	P1-N		P2-15	
		RED/WHT	P1-L		P2-24	
		WHT/BLK	P1-J		P2-3	
3		RED/BLK	P1-F		P2-2	SOLDER
8		BLK	P1-E	7	P1-M	7
8	22	BLK	P2-1	SOLDER	P2-7	SOLDER

LEGEND

NUMBER	VARIATION DIM "X"	DIM "Y" PRECUT
BCØ3L-1Ø	1ØFT ± 2IN	1ØFT, 5IN
BCØ3L-5	5FT ± 2IN	5FT, 5IN
BCØ3L-1K	1FT 9IN ± 1IN	2FT

NOTES

1. EACH SOLDERED CONN ON P2 SHALL BE INSULATED WITH A .25 PIECE OF SHRINK TUBING (ITEM #5)
2. PLACE ITEM #9 (THIS SIDE UP STICKER) ON LETTERED SIDE OF ITEM #4 (CONN HOUSING) AS SHOWN.
3. FOR STRAIN RELIEF WRAP 2 TURNS OF TAPE (ITEM #6) AROUND CABLE (ITEM #3) AS SHOWN.
4. PINS MARKED * IN VIEW B-B ARE NOT USEABLE
5. WIRES COMING FROM CENTER OF PLUG CONN. SHOULD BE 5/8 LG., ALL OTHERS SHOULD BE CONFINED INTO HOOD OF CONN. SO THAT THEY'RE NOT BUNCHED.



QTY	DESCRIPTION	DWG./PART NO.	ITEM NO.
1	PLATE, CONN. MTG.	B-MD-7414072-0-0	11
2	SCREW LOCK ASSY	9008951-00	10
1	LABEL (THIS SIDE UP)	3611567	9
3IN	WIRE, STRANDED #22AWG IPVC (BLK)	9107350-00	8
17	SOCKET, CRIMP	1210089-07	7
A/R	TAPE, DOUBLE SIDED .50 WD.	9007834	6
16	TUBING, HEAT SHRINK .12	9107255-09	5
1	CONN, 44 POS, HSG.	1210918-15	4
A/R	CABLE, 15 COND, 22 AWG.	9107672-00	3
1	HOOD, CONN.	1212516-00	2
1	CONNECTOR, PLUG	1205886-00	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

TITLE: CABLE ASSY BCØ3L

SIZE D | CODE UA | NUMBER BCØ3L-Ø-Ø | REV. C

SCALE 1/1

digital

REVISIONS: BCØ3L-00002 A; BCØ3L-00003 B, B. SAMPSON; BCØ3L-00004 C, M.E. LEWANDOWSKI, R. SAMPSON

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
KY11-LA

KY11-LA
Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØØ17

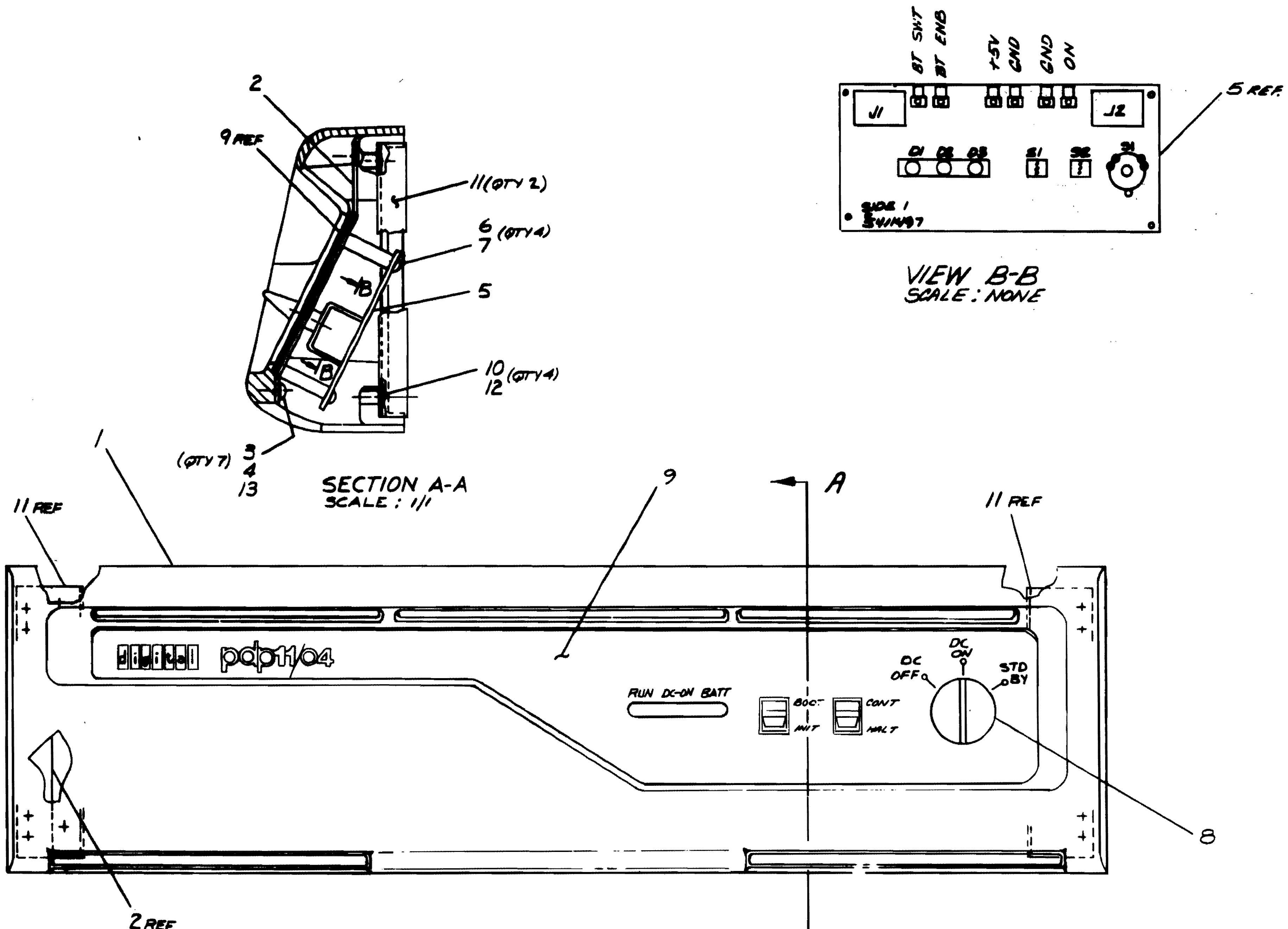
REV.	CHG. NO.	DATE

USED ON OPTION/MODEL	
11/04-AA	11/04-DC
11/04-AB	11/04-DD
11/04-AC	11/04-EC
11/04-AD	11/04-ED
11/04-BA	
11/04-BB	
11/04-BC	
11/04-BD	
SHEET 1 OF 1	

DRN. D. HEALY	DATE 9/29/75	TITLE: FIELD MAINTENANCE PRINT SET KY11-LA
CHK'D D. HEALY	DATE 9/29/75	
PROJ. ENG. R. Barry	DATE 10-22-75	SIZE B / CODE TC / NUMBER KY11-LA-1 / REV.
FIELD SERV.	DATE	DIST.

digital

DRB 134



QTY	DESCRIPTION	DWG./PART NO.	ITEM NO.
7	WASHER, FLAT .375×.187×.036	9006660	13
4	SPACER, HEX 1/4 X .38 LG	9006802	12
2	BRKT, FILTER SUPPORT	C-MD-74-11962-0-0	11
4	SCR, PHIL FL HD #8-32 X .62	9006040-2	10
1	PANEL, CONTROL, CONSOLE	D-IA-7413502-0-0	9
1	KNOB, ROTARY SWITCH	1212570	8
4	SCR PHIL HD PAN #8-32 X .38	9006022-1	7
4	SPACER #6-32 X .87	9006861	6
1	CIRCUIT ETCH BD KY11-LA	D-CS-5411497-0-1	5
7	SCR FILL HD PAN #8-32 X .31	9009799-06	4
7	WASHER, SPRING LOCK #8	9006690	3
1	SUPPORT, PANEL	D-MD-7413501-0-0	2
1	BEZEL 11/04	E-MD-7413657-1-0	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DO NOT SCALE DWG

FIRST USED ON: 11/04

TITLE: CONSOLE, OPER, ASSEMBLY

NEXT HIGHER ASSY: B-DD-KY11-LA

MATERIAL: SEE PARTS LIST

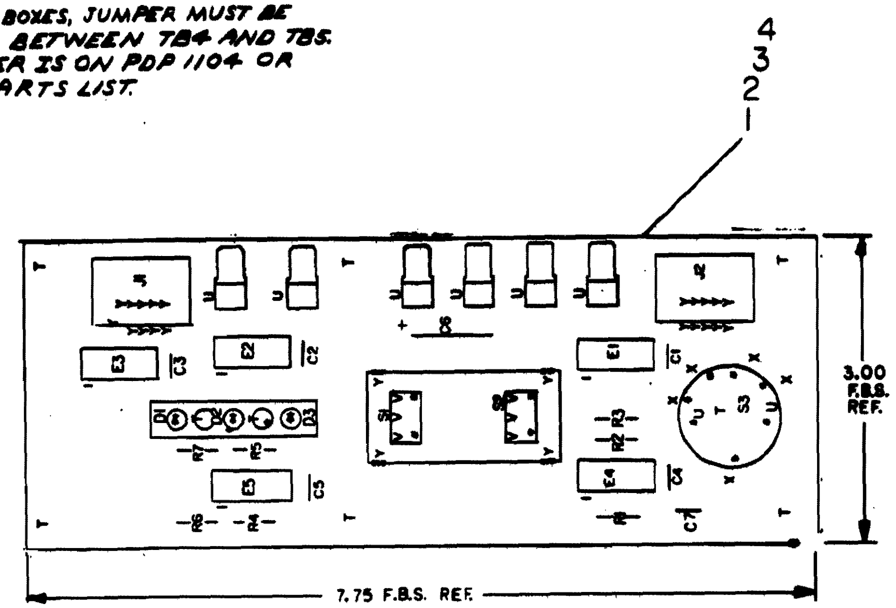
SCALE: FULL

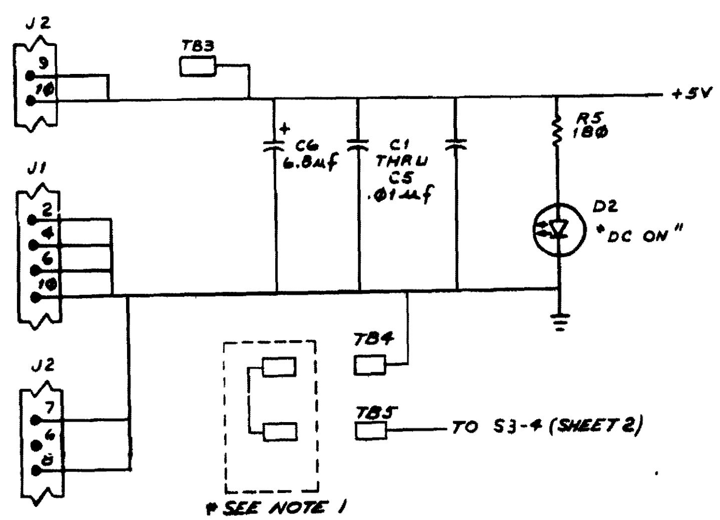
SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	UA	KY11-LA-Ø	A

NOTES:

1. IN BA11-L BOXES, JUMPER MUST BE INSTALLED BETWEEN TB4 AND TB5. THE JUMPER IS ON PDP 1104 OR PDP 1134 PARTS LIST.





I.C. DEC 8640	1	8	
IC TYPE	GND	+5V	

IC PIN LOCATIONS

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	[illegible]-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411497-0-[illegible]	2
REF		MODULE ECO HISTORY	[illegible]-5411497-0-[illegible]	3
1		ETCHED CIRCUIT BOARD	5011496	4
5	C1 THRU C5	CAPACITOR, .01uf, 100V	1001610-01	5
1	C6	CAPACITOR, 6.8uf, 35V, 10%	1005306	6
1	C7	CAPACITOR, 1000PF, 100V	1000042	7
3	D1, D2, D3	DIODE, LIGHT EMITTING	1110864	8
1	S2	SWITCH, TOGGLE	1210840	9
1	S1	SWITCH, MOMENTARY	1210841	10
1	S3	SWITCH, ROTARY	1212560	11
1		HOLDER, TRIPLE L.E.D.	1210940-02	12
2	J1, J2	CONNECTOR, 10 PIN	1209861-05	13
2	R4, R6	RESISTOR, 1K, 1/4W, 5%	1300865	14
3	R1, R5, R7	RESISTOR, 180Ω, 1/4W, 5%	1301322	15
1	E5	I.C. DEC 7474	1905547	16
1	E3	I.C. DEC 8640	1911469	17
2	E1, E2	I.C. DEC 8881	1909705	18
1	E4	I.C. DEC 7402	1909004	19
6		TERMINAL, QUICK DISCONNECT	9007112	20
6		EYELET	9009000	21
2		SCREW, SELF-TAPING, #4-40 X .31 LG	9009236	22
1		PLATE, SWITCH MTG.	7413505-0-0	23
2	(S1), (S2)	KNOB	1210786	24
				25
				26
2	R2, R3	RESISTOR 330, 1/4W, 5%	1300295	27
A/R		WIRE, BUS #20	9107560-02	28
A/R		TUBING, CLEAR #20	9107267-10	29

PARTS LIST

FIRST USED ON OPTION MODEL: 11/04

ETCH BOARD REV. E

SEMICONDUCTOR CONVERSION CHART

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

REV. E — CHANGE NO. 5411497-00001 — R. BARRY

digital

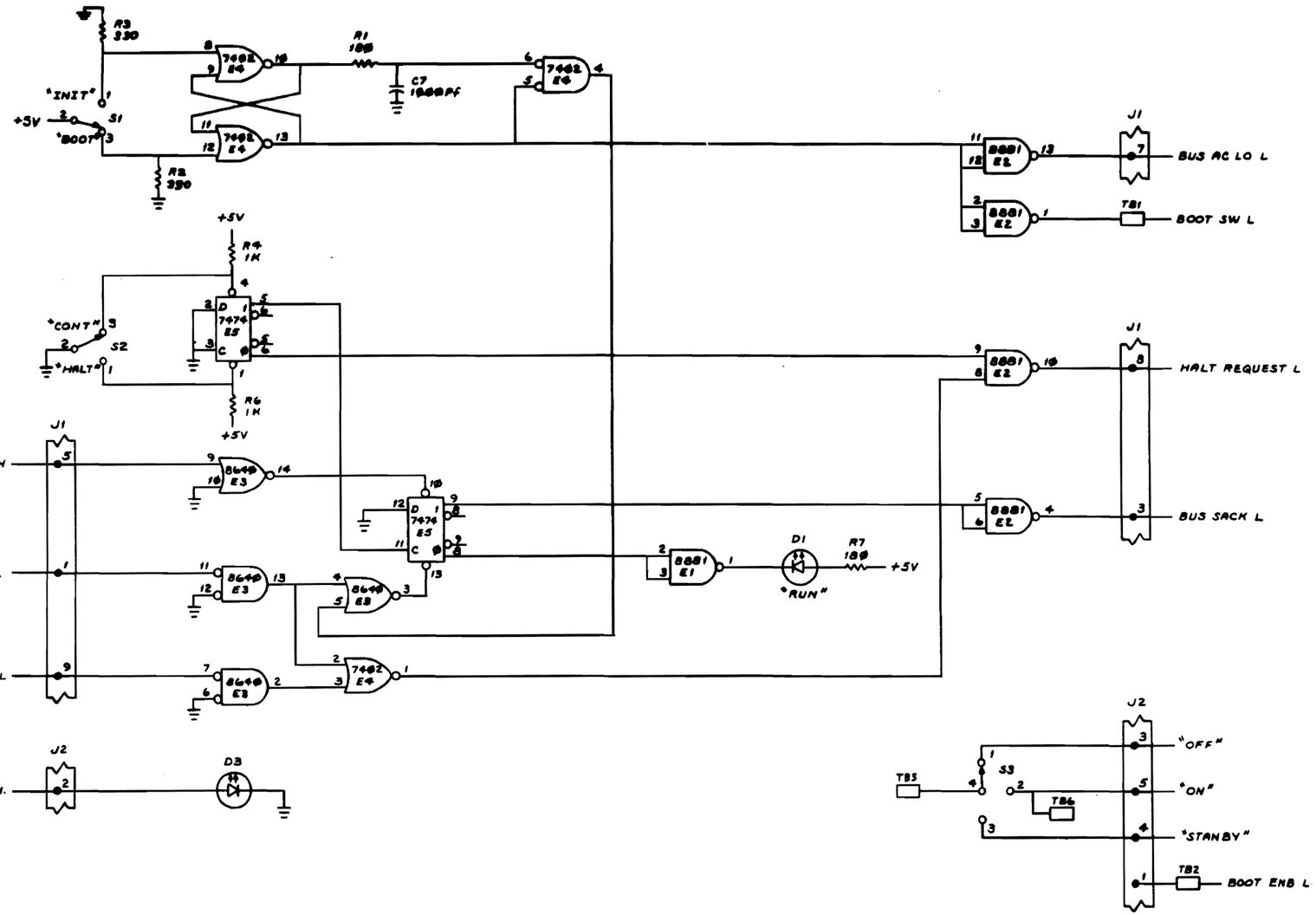
TITLE: KY11-LA

D CS 5411497-0-1 E

SCALE —

SHEET 1 OF 2

NEXT HIGHER ASSY



REVISIONS		
ENG	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
KY11-LA	D	CS	5411497-0-1	E
SCALE —	SHEET 2 OF 2		DWG.	

8 7 6 5 4 3 2 1

digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

DRAWING SEQUENCE		DRAWING SEQUENCE
DRAWING DIRECTORY (DD11-D)	B-DD-DD11-D	
BACK PLANE ASSY	C-AD-7011164-0-0	
BACK PLANE ASSY (DD11DF)	C-AD-7012306-0-0	
MODULE UTILIZATION (DD11-D)	D-MU-DD11-D-2	
POWER HARNESS (BA11-K, BA11-L)	D-IA-7011108-0-0	
POWER HARNESS (BA11-F, BA11-P)	D-IA-7011109-0-0	
CIRCUIT SCHEMATIC (DD11-D)	D-CS-5411414-0-1	
WIRE LIST (COMPLETE)	K-WL-DD11-D-1	

NOTE: DD11DK ASSEMBLIES ARE ELECTRICALLY INCOMPATIBLE WITH DD11DF ASSEMBLIES. A DD11DK WILL WORK IN BA11-L AND BA11-K BOXES ONLY. A DD11DF WILL WORK IN BA11-F AND BA11-P BOXES ONLY.

THIS IS PRINT SET

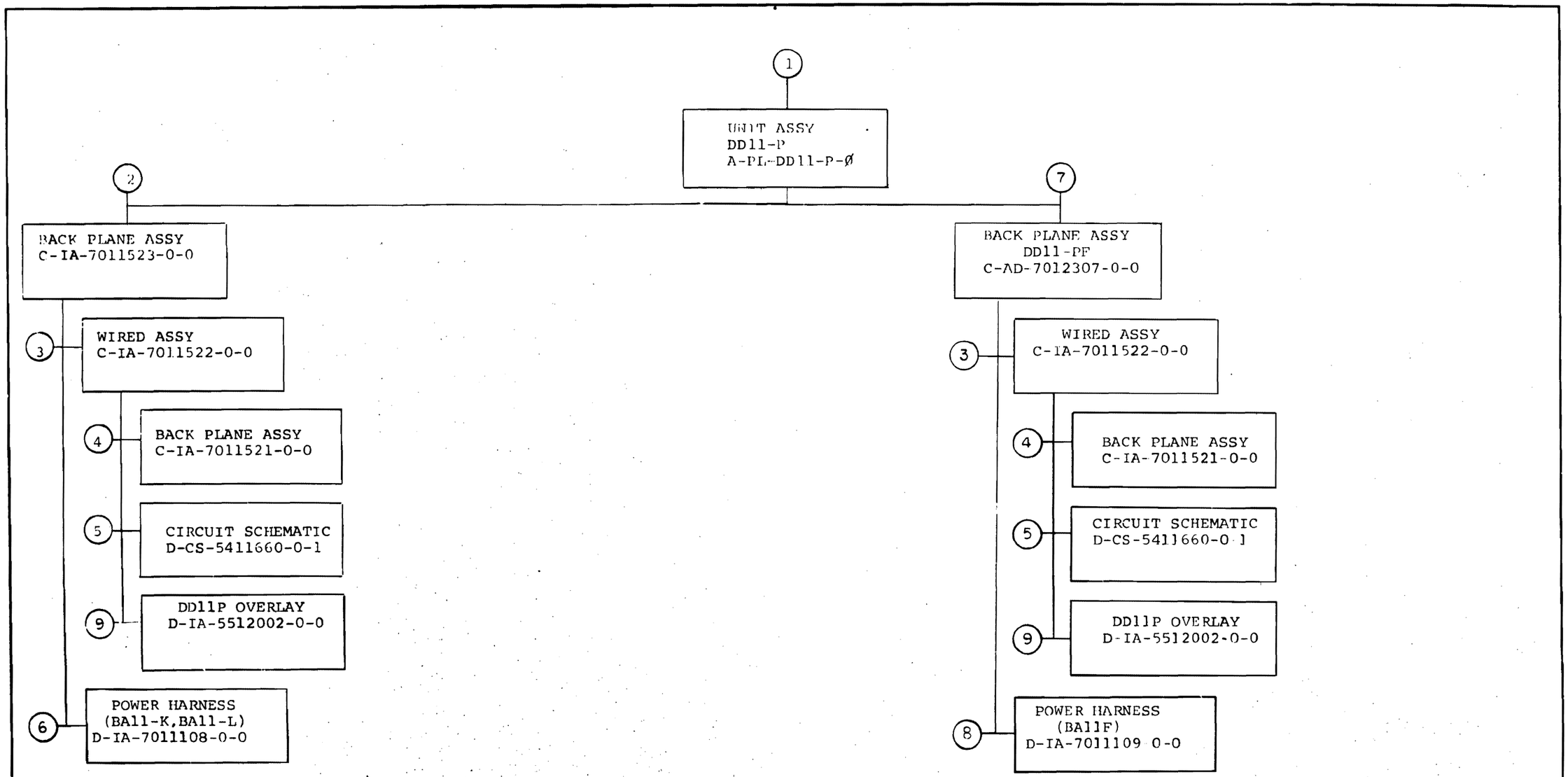
UNIT VARIATIONS		PRINT SET
VAR	TITLE	1
DD11-DK	BACK PLANE ASSY(BA11L BA11K)	X
DD11-DF	BACK PLANE ASSY (BA11F BA11P)	X

REVISIONS		
REV		A
CHG. NO.		DD11D-00001
DATE		2-76

USED ON OPTION/MODEL	
SHEET 1 OF 3	

DRN. M. BAPTISTE	DATE 5/12/75	TITLE DRAWING DIRECTORY DD11-D
CHK'D. D. HEALY	DATE 5/15/75	
PROJ ENG. Richard Ranny	DATE 5/26/75	
PROD. RK Peterson	DATE 6/17/75	SIZE B / CODE DD / NUMBER DD11-D / REV A
FIELD SERV. Cathy Moore	DATE 6-17-75	DIST

DRB 106 WM476



TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY DD11-P	SHEET 2 OF 3	B	DD	DD11-P	B

ELECTRICAL

CUSTOMER PRINT SET 1	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	A-PL-DD11-P-Ø		1	UNIT ASSY DD11-P	
X			D-MU-DD11-P-2		1	MODULE UTILIZATION	
X		2	C-IA-7011523-0-0		1	BACK PLANE ASSY DD11-PK	
		3	C-IA-7011522-0-0		1	WIRED ASSY	
X			K-WL-DD11-P-1	B	1	WIRE LIST	
			A-WT-7011522-0		1	AWT REV STATUS	
X		5	D-CS-5411660-0-1		1	CIRCUIT SCHEMATIC	
X		6	D-IA-7011108-0-0		1	POWER HARNESS (BA11-K,BA11-L)	
X		7	C-AD-7012307-0-0		1	BACK PLANE ASSY DD11-PF	
X		8	D-IA-7011109-0-0		1	POWER HARNESS(BA11-F,BA11-P)	

MECHANICAL

CUSTOMER PRINT SET 1	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		1	A-PL-DD11-P-Ø		1	UNIT ASSY DD11-P	
		2	C-IA-7011523-0-0		1	BACK PLANE ASSY DD11-PK	
		3	C-IA-7011522-0-0		1	WIRED ASSY	
			B-DC-5308753-0-0		1	DECAL 21 POINT (LTR)	
			A-DC-7411881-0-0		1	LABEL, AWT REV STATUS	
		4	D-IA-7011521-0-0		1	BACK PLANE ASSY	
		5	D-CS-5411660-0-1			CIRCUTI SCHEMATIC	
			D-AH-5411660-0-4			ASSY/DRILLING HOLE LAYOUT	
			K-CO-5411660-0-5			X-Y COORDINATE HOLE LOCATION	
			B-MH-5411660-0-6			MODULE ECO HISTORY	
			5011659			ETCH CIRCUIT BOARD	
		6	D-IA-7011108-0-0		1	POWER HARNESS (BA11-K,BA11-L)	
		7	C-AD-7012307-0-0		1	BACKPLANE ASSY DD11-PF	
		8	D-IA-7011109-0-0		1	POWER HARNESS(BA11-F,BA11-P)	
		9	D-IA-5512002-0-0		1	OVERLAY, WIRING	

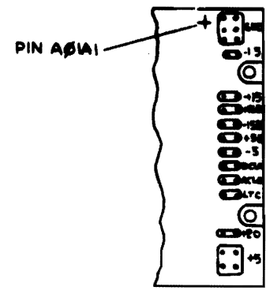
CUSTOMER PRINT SET CODES

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

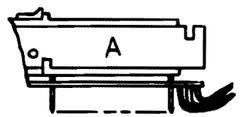
TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY DD11-P	SHEET 3 OF 3	B	DD	DD11-P	B

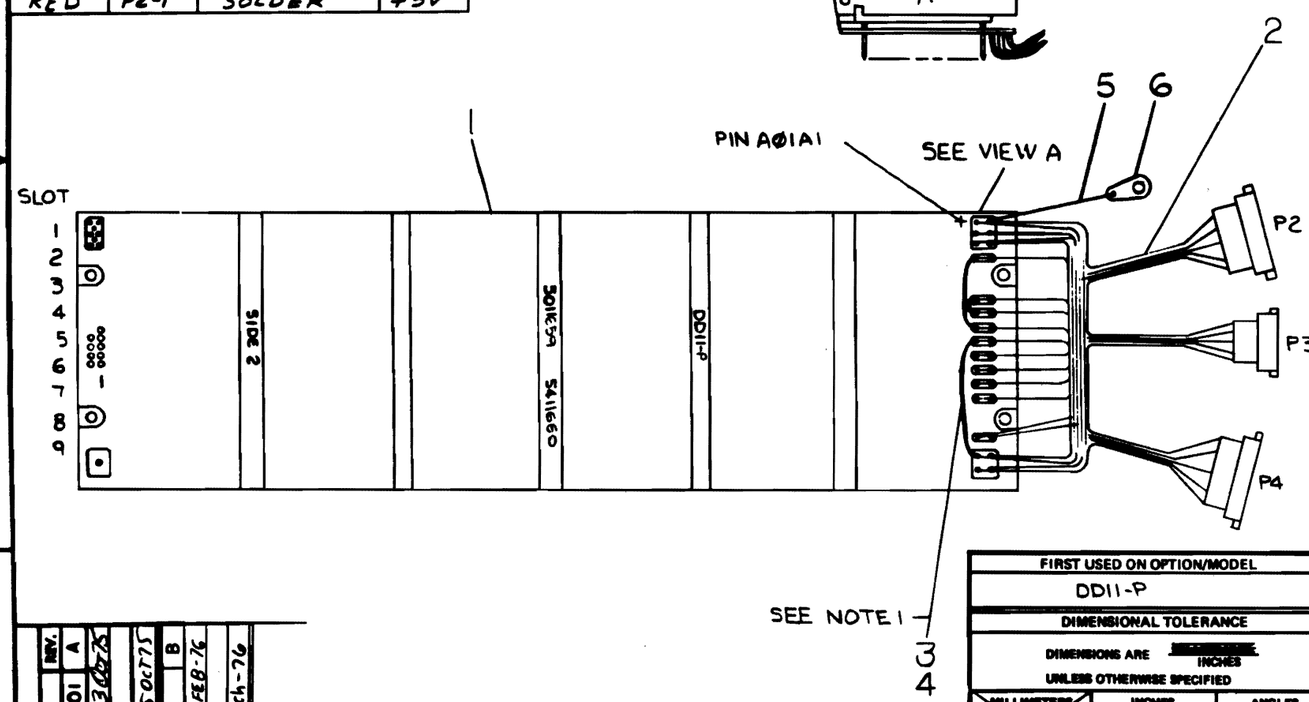
WIRE TABLE

FROM			TO	FROM			TO
COLOR	POINT	CONNECTION	SIGNAL	COLOR	POINT	CONNECTION	SIGNAL
BLUE	P4-13	SOLDER	-15V	BRN	P2-14	SOLDER	-5V
RED	P4-4		+5V	BLK	P2-8		GND
RED	P4-1		+5V	GRAY	P2-2		+15
BLK	P4-8		GND	ORG	P2-3		+20
ORG	P4-5		+20V	BLK	P2-9		GND
BLK	P4-9		GND	RED	P2-12	SOLDER	+5B
WHT	P4-6		+15B	ITEM 5	ITEM 6	SOLDER	GND
GRN	P4-15		-15B				
YEL	P3-4		ACLO				
BLK	P3-1		GND				
BRN	P3-2		LTC				
VIO	P3-3		DCLO				
RED	P2-4		+5V				
RED	P2-1	SOLDER	+5V				



VIEW A





NOTES:

1. WHEN THE DD11-PK15 USED WITH A BA11-K EXPANSION BOX WITHOUT BATTERY BACK UP, INSTALL THE THREE JUMPERS SHOWN:
   1) -15 TO -15B
   2) +15 TO +15B
   3) +5 TO +5B
   USE #22 SHIELDED BUS WIRE ON SIDE 2. THIS WILL PROVIDE POWER TO THE MOS MEMORY VOLTAGE RAILS.
2. INSTALL ITEM #6 UNDER LOGIC FRAME MOUNTING SCREW TO TIE LOGIC GROUND TO CHASSIS GROUND.

1	TERMINAL, SOLDER	9008150	6
2"	WIRE, BLK, STRD #14	9107370-00	5
6"	TUBING #22 (BLUE)	9107256-06	4
6"	WIRE BUS #22	9107560-01	3
1	POWER HARNESS (BA11-K, BA11-)	D-IA-7011108-0-0	2
1	WIRED ASSY DD11-P	C-IA-7011522-0-0	1
QTY.	DESCRIPTION	PART NO.	ITEM

PARTS LIST

REVISIONS			
CHK	CHANGE NO.	REV.	
R. Barry	7011523-00001	A	13OCT75
R. Barry	DD11P-00002	B	24-FEB-76
R. Barry			2-MARCH-76

FIRST USED ON OPTION/MODEL: DD11-P

DIMENSIONAL TOLERANCE
DIMENSIONS ARE MILLIMETERS / INCHES UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
X.XX ±0.10	XXX ±.005	±0° 30'
X.X ±0.5	XX ±.02	
X ±2	X ±.1	

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST

FINISH: + +

DRN. L. Nolan	DATE 5/20/75	
CHK'D J. Hoag	DATE 7/1/75	
ENG. R. Barry	DATE 7-2-75	
PROJ. ENG R. Barry	DATE 7-2-75	
PROD. R. Peterson	DATE 7/2/75	
NEXT HIGHER ASSY. A-PL-DD11-P-0		
SCALE FF		
SHEET 1 OF 1		

TITLE: BACKPLANE ASS'Y (DD11-PK)

SIZE	CODE	NUMBER	REV.
C	IA	7011523-0-0	B

DIST.

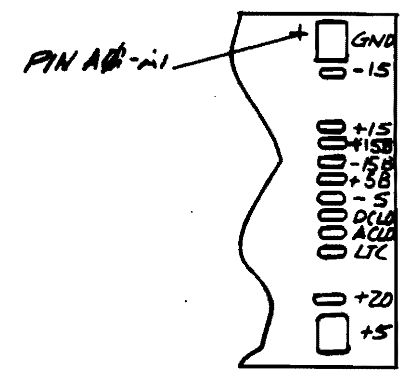
C IA 7011523-0-0 REV. B

WIRE TABLE

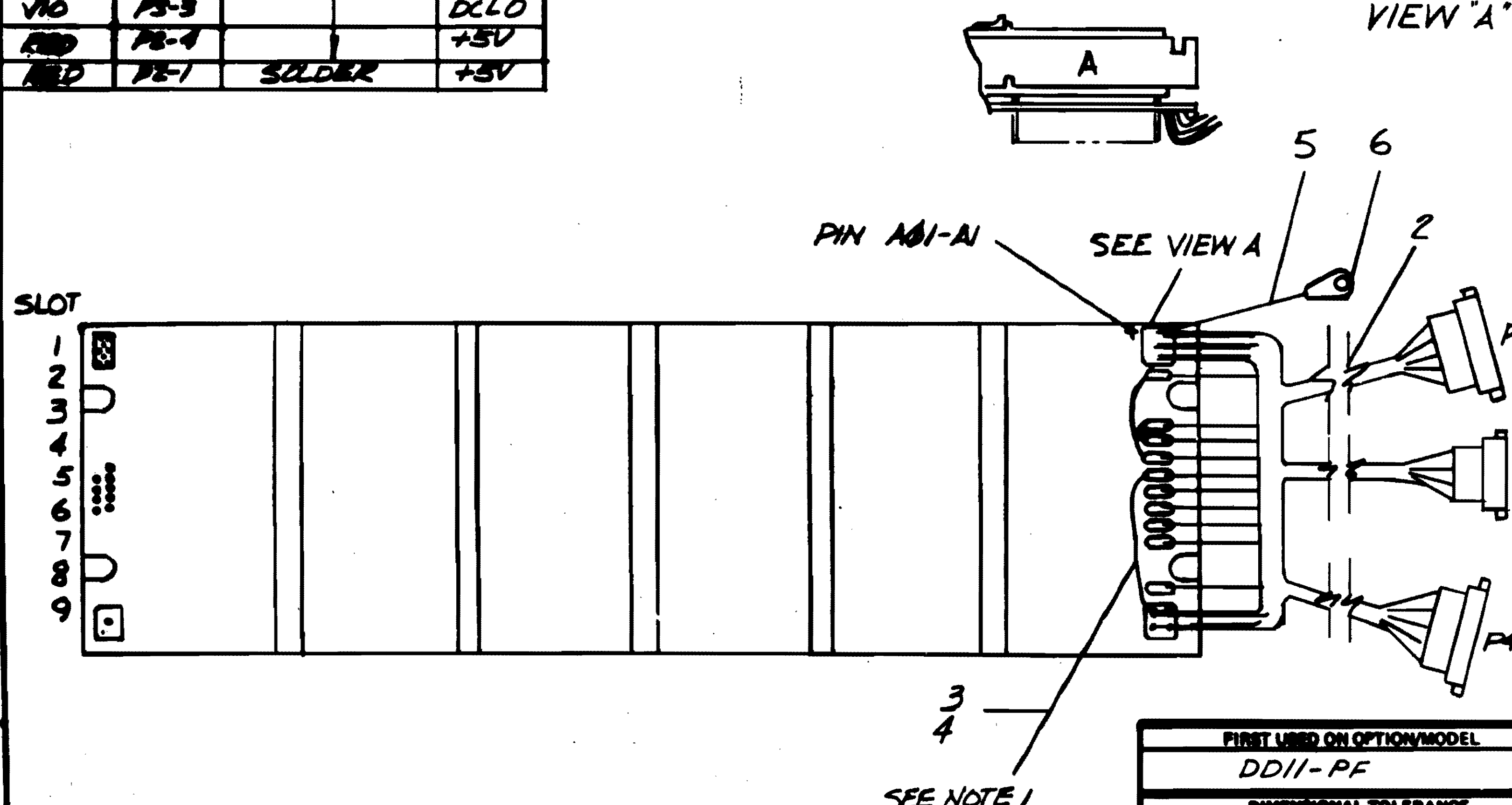
FROM			TO	FROM			TO
COLOR	POINT	CONNECTION	SIGNAL	COLOR	POINT	CONNECTION	SIGNAL
BLU	P4-13	SOLDER	-15V	BRN	P2-14	SOLDER	-5V
[illegible]	P4-4		+5V	BLK	P2-8		GND
[illegible]	P4-1		+5V	GRAY	P2-2		+15
BLK	[illegible]		GND	ORN	P2-3		+20
ORN	[illegible]		+20V	BLK	P2-9		GND
BLK	P4-9		GND	RED	P2-10	SOLDER	+5B
WHT	P4-6		+15B	ITEM #5	ITEM #6	SOLDER	GND
GRN	P4-15		-15B				
[illegible]	P3-4		ACLO				
BLK	P3-1		GND				
BRN	P3-2		LTC				
VIO	P3-3		DCLO				
RED	[illegible]		+5V				
RED	P2-1	SOLDER	+5V				

NOTES:

1. WHEN DD11-PF IS USED WITH A BA11-F EXP BOX WITHOUT BATTERY BACK UP INSTALL THE THREE JUMPERS SHOWN:
   1) -15 TO -15B
   2) +15 TO +15B
   3) +5 TO +5B
   USE #20 INSULATED BUS WIRE ON SIDE 2. THIS WILL PROVIDE POWER TO THE MOS MEM VOLTAGE RAILS.
2. INSTALL ITEM #6 UNDER LOGIC FRAME MOUNTING SCREW TO TIE LOGIC GROUND TO CHASSIS GROUND.



VIEW "A"



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	TERMINAL, SOLDER	9008150	6
A/R	WIRE, BLK STRD #14	9107370-00	5
A/R	TUBING, #20 (CLEAR)	9107267-10	4
A/R	WIRE, BUS #20	9107560-02	3
1	POWER HARNESS BA11-F	D-IA-7011109-0-0	2
1	WIRED ASSY DD11-P	C-IA-7011522 0-0	1

PARTS LIST

FIRST USED ON OPTION/MODEL: DD11-PF

DIMENSIONAL TOLERANCE
DIMENSIONS ARE MILLIMETERS / INCHES UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
X.XX ±0.10	.XXX ±.005	±0° 30'
X.X ±0.5	.XX ±.02	
X ±2	.X ±.1	

THIRD ANGLE PROJECTION
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL: SEE PARTS LIST
FINISH: —

		DATE
DRN	[illegible]	12/2/75
CHK'D	D. [illegible]	12/18/75
ENG.	[illegible]	[illegible]
PROJ. ENG.	[illegible]	[illegible]
PROD.	K C [illegible]	12-18-75

NEXT HIGHER ASSY.: A-PL-DD11-PF-Ø
SCALE: NONE
SHEET 1 OF 1

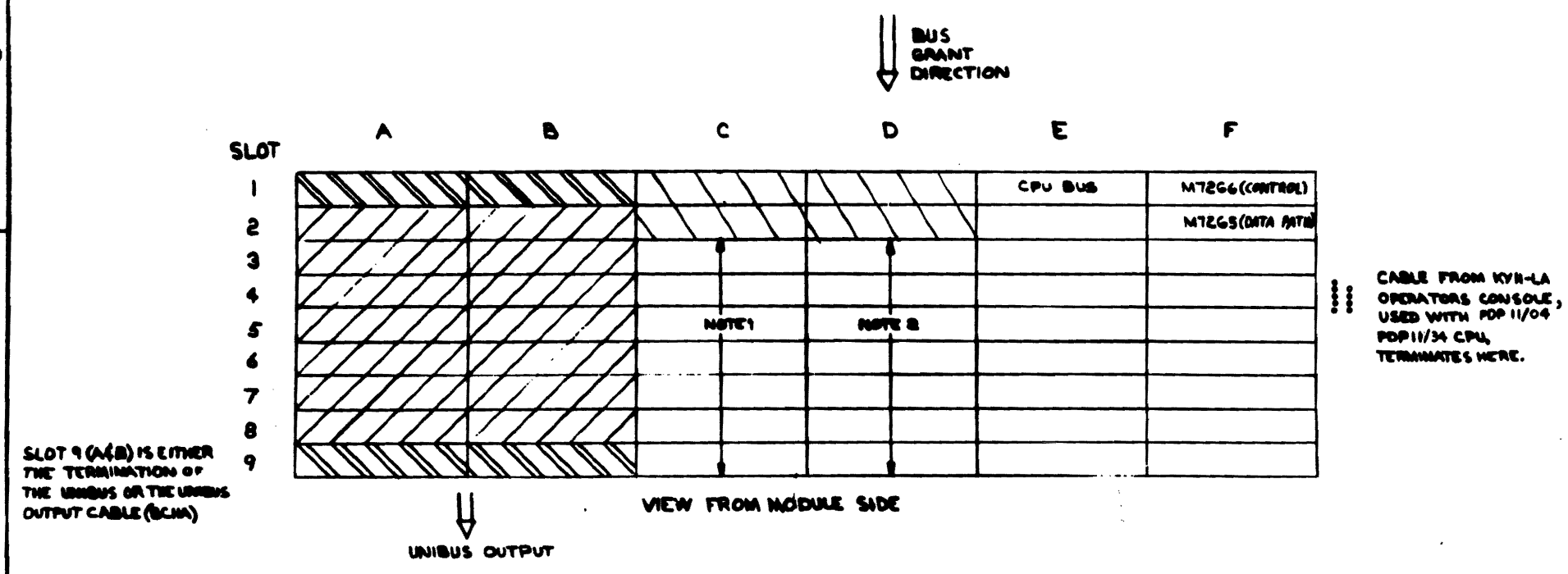
digital

TITLE: BACK PLANE ASSY (DD11-PF)

SIZE	CODE	NUMBER	REV.
C	AD	7012307-0-0	

DIST.

C AD 7012307-0-0



NOTES:

1. REMOVE CA1 TO CB1 WIRE WRAP JUMPER TO INSTALL AN NPR OPTION IN ANY SPC SLOT.
2. G727 REQUIRED IN ANY UNUSED SPC SLOT TO PROVIDE BUS GRANT CONTINUITY.
3. GRANT DIRECTION IS SLOT 1 TO SLOT 9.
4. USE H9282 TO INTERCONNECT SYSTEM UNITS INSTEAD OF H930. H9282 IS A 2 FT. UNIBUS JUMPER CABLE USED TO DISTRIBUTE UNIBUS LOADING.
5. H9302 (BACK/TERM) AND H930 (TERM) MUST NEVER BE INSTALLED IN ANY SLOT OTHER THAN SLOT 9 (A & B). POWER SUPPLY VOLTAGES WILL BE SHORTED OUT IF THESE TERMINATORS ARE MOUNTED IN THE MODIFIED UNIBUS SLOTS.
6. MODIFIED UNIBUS SECTION CARRIES CORE AND MOS MEMORY VOLTAGE RAILS AND MEMORY PARITY CONTROL SIGNALS INSTEAD OF BUS GRANT AND SOME END SIGNALS THAT ARE CONTAINED IN STANDARD UNIBUS SLOTS.

A B — STANDARD UNIBUS (SLOT 1-9)
DUAL MODULES WHICH PLUG INTO STANDARD UNIBUS SLOTS ONLY:
BC11A UNIBUS CABLE
H9302 BACK/TERM (H9IS)
H930 (NOTE 4)
H930 (NOTE 5)
H9202 (NOTE 4)

A B — MODIFIED UNIBUS (SLOT 2-8)
DUAL MODULES WHICH PLUG INTO THE MODIFIED UNIBUS ONLY:
H9301 BOOT/TERM.
H9306 TERM.
M7940 PARITY CONT.

C D E F — SMALL PERIPHERAL CONTROLLER (SLOT 3-9)
ANY S.P.C. OPTION

A B C D E F — HEX MODULE WITH MODIFIED UNIBUS SIGNALS (SLOTS 2-8)
HEX MODULES THAT PLUG INTO MODIFIED UNIBUS ONLY:
M7847 MOS MEMORY (M9II)
M7848 MOS MEMORY (M9II)

A B C D E F — HEX MODULE WITH STANDARD UNIBUS SIGNALS SLOT 1 ONLY
M7263 PDP11/04 CPU MODULE OR M7266 PDP 11/34 CONTROL MODULE

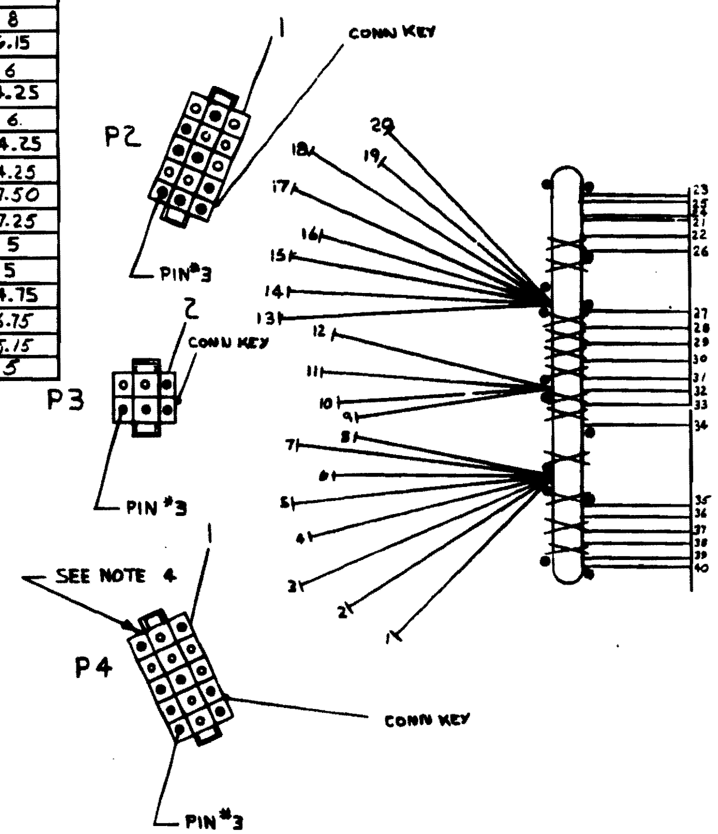
GENERAL
ANY HEX MODULE THAT MEETS THE FOLLOWING REQUIREMENTS CAN BE MOUNTED IN THESE SLOTS.
1.) THOSE PINNED TO TAKE SIGNALS FROM MODIFIED UNIBUS (A&B) WITH THE BUS GRANTS TAKEN FROM SPC SLOTS 10: ABOVE
2) THOSE PINNED TO TAKE SIGNALS FROM STANDARD SPC PINNING WITH THE EXCEPTION OF POWER FROM (A&B). 10: SPECIAL OPTIONS

MODULE UTILIZATION (DD11-P)
DD11-P-2

NOTES:
1. USE TIE WRAPS (X) ITEM 4 AT BREAKOUT POINTS SHOWN
2. DOT(•) INDICATES NAIL LOCATION FOR ASS'Y USE ONLY. COVER NAILS WITH SHINK TUBING TO PREVENT CUTTING HARNESS.
3. WIRE LENGTH TOLERANCES WILL BE +1/8, -0 INCHES.
4. ALL CONN. SHOWN FROM WIRING SIDE.

WIRING TABLE

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	TO CONNECTION	SIGNAL	LENGTH
9	#18	BLUE	1	P4-13	3	26	SOLDER	-15V	7
5	14	RED	2	P4-4	↑	37	↑	+5V	5
5	14	RED	3	P4-1		38		+5V	5
6	14	BLK	4	P4-8		21		GND	7.75
7	14	ORN	5	P4-3		35		+20V	5
6	14	BLK	6	P4-9		22		GND	8
13	18	WHT	7	P4-6		28		+15B	6.15
14	18	GRN	8	P4-15		29		-15B	6
12	18	YEL	9	P3-4		33		ACLO	4.25
6	14	BLK	10	P3-1		23		GND	6.
10	18	BRN	11	P3-2		34		LTC	4.25
11	18	VIO	12	P3-3		32		DCLO	4.25
5	14	RED	13	P2-4		39		+5V	7.50
5	14	RED	14	P2-1		40		+5V	7.25
10	18	BRN	15	P2-14		31		-5V	5
6	14	BLK	16	P2-8		24		GND	5
8	18	GREY	17	P2-2		27		+15	4.75
7	14	ORN	18	P2-3		36		+20	6.75
6	14	BLK	19	P2-9	↓	25	↓	GND	5.15
5	14	RED	20	P2-12	3	30	SOLDER	+5B	5



DO NOT REDUCE

SCALE

0 IN — 6 IN — 12 IN

FOR MANUFACTURING PURPOSES ONLY

FOR WIRE LENGTHS SEE WIRING TABLE

QTY	DESCRIPTION	DWG./PART NO.	ITEM NO.
A/R	WIRE #18 AWG, GRN	9107360-55	14
A/R	WIRE #18 AWG, WHT	9107360-99	13
A/R	WIRE #18 AWG, YEL	9107360-44	12
A/R	WIRE #18 AWG, VIO	9107360-77	11
A/R	WIRE #18 AWG, BRN	9107360-11	10
A/R	WIRE #18 AWG. BLUE	9107360-66	9
A/R	WIRE #18 AWG, GREY	9107360-88	8
A/R	WIRE #14 AWG, ORN	9107370-33	7
A/R	WIRE #14 AWG, BLK	9107370-00	6
A/R	WIRE #14 AWG, RED	9107370-22	5
12	TIE WRAP	9007031	4
20	PIN MALE	1209378-01	3
1	CONN. 6 PIN HOUSING	1209351-06	2
2	CONN. 15 PIN HOUSING	1209351-15	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

NEXT HIGHER ASSY: C-AD-7011164-0-0

SCALE 1/1

FIRST USED ON: DD11-D

TITLE: POWER HARNESS (BA11-K, BA11-L)

SIZE: D CODE: IA NUMBER: 7011108-0-0 REV: A

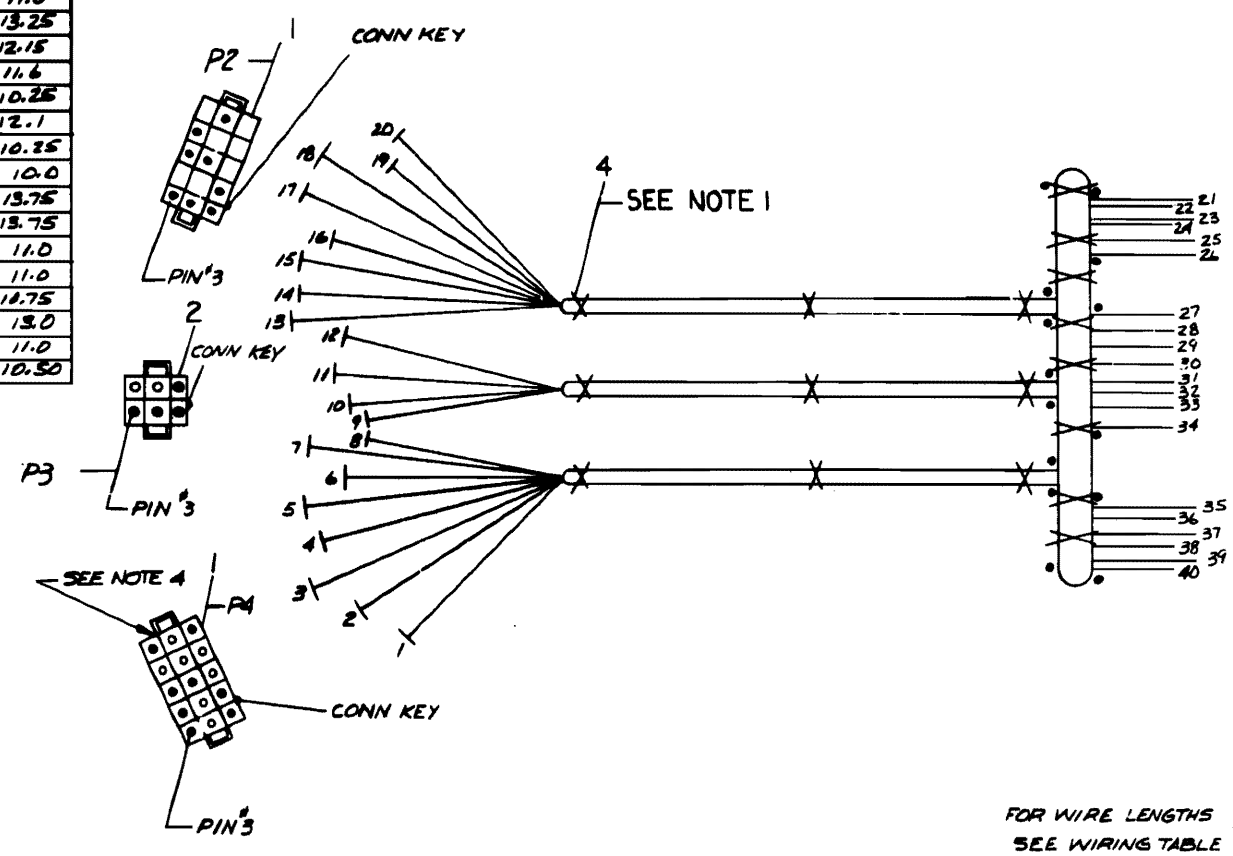
D. BARRY

NOTES:

1. USE TIE WRAPS (X) ITEM #4 AT BREAKOUT POINTS SHOWN.
2. DOT (•) INDICATES NAIL LOCATION FOR ASSY USE ONLY. COVER NAILS WITH SHRINK TUBING.
3. WIRE LENGTH TOL WILL BE ± .12 IN
4. ALL CONN SHOWN FROM WIRING SIDE.
5. STRIP 1/8" INSULATION FROM POINTS 21 THRU 40 AND FULL TIN POINTS 21 THRU 40.

WIRING TABLE

ITEM NO	DESCRIPTION		FROM			TO		SIGNAL	LENGTH
	AWG	COLOR	POINT	CONNECTION	WITH	POINT	CONNECTION		
9	18	BLU	1	P4-13	3	26	SOLDER	-15V	12.75
5	14	RED	2	P4-4	↑	37	↑	+5V	11
5	14	RED	3	P4-1		38		+5V	11.25
6	14	BLK	4	P4-8		21		GND	13.75
7	14	ORN	5	P4-3		35		+20V	11.0
6	14	BLK	6	P4-9		22		GND	13.25
13	18	WHT	7	P4-6		28		+15B	12.15
14	18	GRN	8	P4-15		29		-15B	11.6
12	18	YEL	9	P3-4		33		ACLO	10.25
6	14	BLK	10	P3-1		23		GND	12.1
10	18	BRN	11	P3-2		34		LTC	10.25
11	18	VIO	12	P3-3		32		DCLO	10.0
5	14	RED	13	P2-4		39		+5V	13.75
5	14	RED	14	P2-1		40		+5V	13.75
15	14	BRN	15	P2-14		31		-5V	11.0
6	14	BLK	16	P2-8		24		GND	11.0
8	18	GRY	17	P2-2		27		+15	10.75
7	14	ORN	18	P2-3		36		+20	13.0
6	14	BLK	19	P2-9	↓	25	↓	GND	11.0
5	14	RED	20	P2-10	3	30	SOLDER	+5B	10.50



DO NOT REDUCE

SCALE

0 IN — 6 IN — 12 IN

FOR MANUFACTURING PURPOSES ONLY

FOR WIRE LENGTHS SEE WIRING TABLE

QTY	DESCRIPTION	DWG./PART NO.	ITEM NO.
AIR	WIRE #14 AWG (BRN)	9107370-11	15
AIR	WIRE #18 AWG, (GRN)	9107360-55	14
AIR	WIRE #18 AWG, (WHT)	9107360-99	13
AIR	WIRE #18 AWG (YEL)	9107360-44	12
AIR	WIRE #18 AWG, (VIO)	9107360-77	11
AIR	WIRE #18 AWG, (BRN)	9107360-11	10
AIR	WIRE #18 AWG, (BLU)	9107360-66	9
AIR	WIRE #18 AWG, (GRY)	9107360-88	8
AIR	WIRE #14 AWG, (ORN)	9107370-33	7
AIR	WIRE #14 AWG, (BLK)	9107370-00	6
AIR	WIRE #14 AWG, (RED)	9107370-22	5
17	TIE WRAP	9007031	4
20	PIN MALE	1209378-01	3
1	CONN 6 PIN HOUSING	1209351-06	2
2	CONN 15 PIN HOUSING	1209351-15	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH: —

DRN 11/3/75 · CHK'D 12/9/75 · ENG 12/9/75 · PROJ. ENG 12/9/75 · PROD 12-12-75

NEXT HIGHER ASSY.: CAD-7012307-0-0

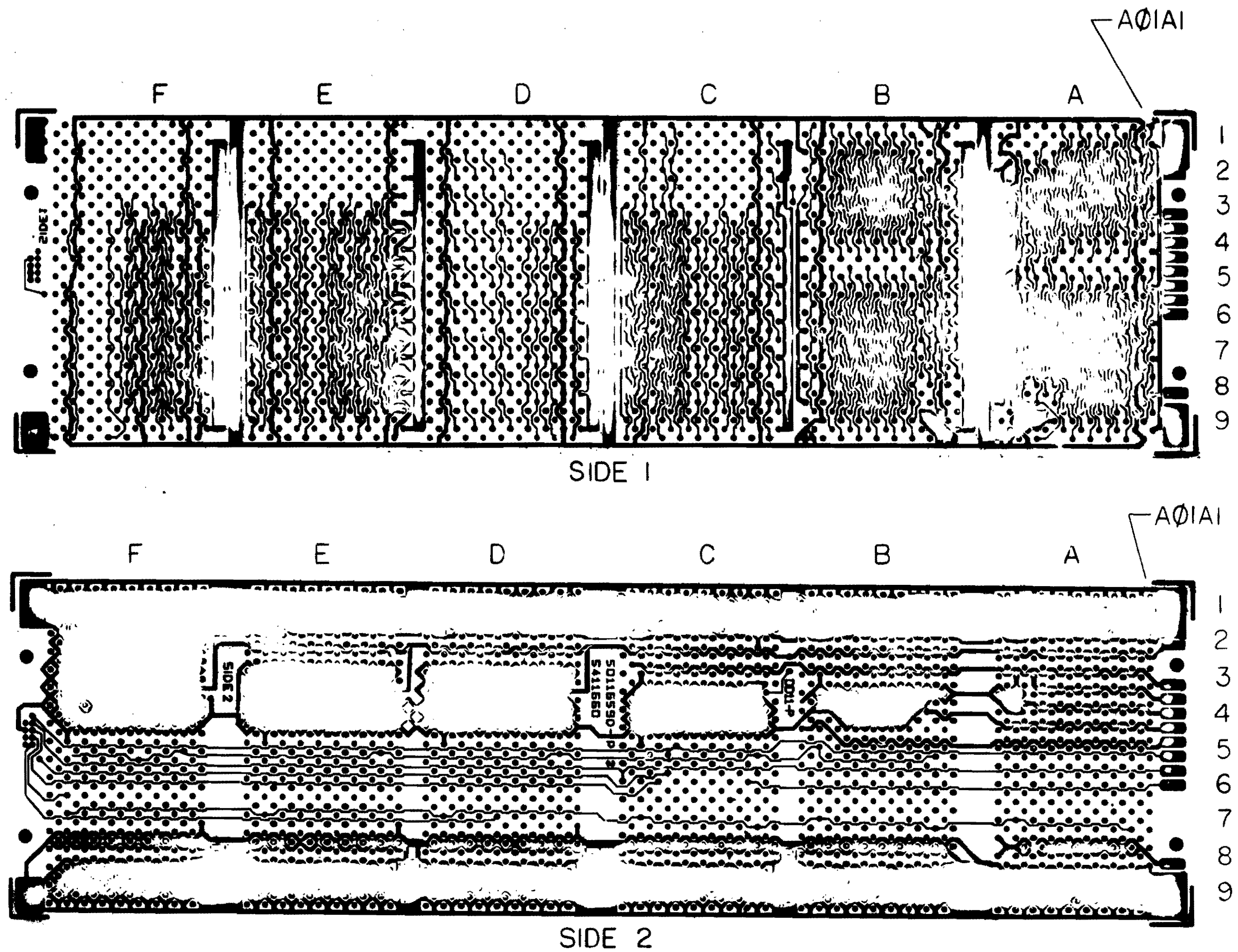
SCALE 1/1 · SHEET 1 OF 1

FIRST USED ON: DD11-DF, PF

TITLE: POWER HARNESS (BA11-F)

SIZE D · CODE IA · NUMBER 7011109-0-0 · REV.

NOTES:



IC TYPE	GND	+5V

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

IC PIN LOCATIONS

REV.	CHANGE NO.
E	5411660-00003
D	5411660 00002
C	5411660-00001

REVISIONS

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		AWT REV STATUS	A-WT-7011522-0	5
REF		MODULE ECO HISTORY	B-MH-5411660-0-6	4
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411660-0-5	3
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411660-0-4	2
1		ETCHED CIRCUIT BOARD	5011659	1

PARTS LIST

FIRST USED ON OPTION MODEL

ETCH BOARD REV. D

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

SEMICONDUCTOR CONVERSION CHART

DRN. DATE 6-20-75
CHK'D. DATE 7/1/75
ENG. R Barry DATE 7-2-75
PROJ. ENG. R Barry DATE 7-2-75
PROD. DATE

NEXT HIGHER ASSY C-IA-7011521-0-0

SCALE 1/1 SHEET 1 OF 1

digital

TITLE CIRCUIT SCHEMATIC

SIZE D CODE CS NUMBER 5411660-0-1 REV. E

DIGITAL EQUIP. CORP.

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DD11-P		PARTS LIST		

DRN.	DATE 6/30/75	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D	DATE 6/30/75	
ENG. R. Barry	DATE 7-2-75	
PROJ. ENG.	DATE 7/2/75	TITLE WIRE LIST DD11-P
PROD. R.F. Peterson	DATE 7/2/75	
NEXT HIGHER ASSEMBLY		
B-DD-DD11-P		SIZE K · CODE WL · NUMBER DD11-P-1 · REV. A
SCALE ff		DIST.
SHEET 1 OF 1		

REVISIONS	CHANGE NO.	CHK
A	DD11P-00001	KB

DEC FORM NO. DRB 109

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
+15/+8V		C03U1		1-01 *	P						2		1	1
+15/+8V		C04U1		1-02 *	P						1		0-4/8	1
+15/+8V		C05U1		1-03 *	P						2		0-4/8	1
+15/+8V		C06U1		1-04 *	P						1		0-4/8	1
+15/+8V		C07U1		1-05 *	P						2		0-4/8	1
+15/+8V		C08U1		1-06 *	P						1		0-4/8	1
+15/+8V		C09U1		1-07 *	P									1
+15/+8V				1									3-4/8	1
+20V		A02U1		1-01 *	P						1		0-1/8	2
+20V		A02V1		1-02 *	P						2		0-4/8	2
+20V		A02V2		1-03 *	P						1		0-1/8	2
+20V		A03U1		1-04 *	P						2		0-1/8	2
+20V		A03V1		1-05 *	P						1		0-4/8	2
+20V		A03V2		1-06 *	P						2		0-1/8	2
+20V		A04U1		1-07 *	P						1		0-1/8	2
+20V		A04V1		1-08 *	P						2		0-4/8	2
+20V		A04V2		1-09 *	P						1		0-1/8	2
+20V		A05U1		1-10 *	P						2		0-1/8	2
+20V		A05V1		1-11 *	P						1		0-2/8	2
+20V		A05V2		1-12 *	P						2		0-1/8	2
+20V		A06U1		1-13 *	P						1		0-1/8	2
+20V		A06V1		1-14 *	P						2		0-2/8	2
+20V		A06V2		1-15 *	P						1		0-1/8	2
+20V		A07U1		1-16 *	P						2		0-1/8	2
+20V		A07V1		1-17 *	P						1		0-2/8	2
+20V		A07V2		1-18 *	P						2		0-1/8	2
+20V		A08U1		1-19 *	P						1		0-1/8	2
+20V		A08V1		1-20 *	P						2		0-2/8	2
+20V		A08V2		1-21 *	P									2
+20V				1									4-1/8	2

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
+5V		A01A2		1-01 *	P						2		1	3
+5V		A02A2		1-02 *	P						1		1	3
+5V		A03A2		1-03 *	P						2		1	3
+5V		A04A2		1-04 *	P						1		0-4/8	3
+5V		A05A2		1-05 *	P						2		0-4/8	3
+5V		A06A2		1-06 *	P						1		0-4/8	3
+5V		A07A2		1-07 *	P						2		0-4/8	3
+5V		A08A2		1-08 *	P						1		0-4/8	3
+5V		A09A2		1-09 *	P						2		2-6/8	3
+5V		B09A2		1-10 *	P						1		0-4/8	3
+5V		B08A2		1-11 *	P						2		0-4/8	3
+5V		B07A2		1-12 *	P						1		0-4/8	3
+5V		B06A2		1-13 *	P						2		0-4/8	3
+5V		B05A2		1-14 *	P						1		0-4/8	3
+5V		B04A2		1-15 *	P						2		1	3
+5V		B03A2		1-16 *	P						1		1	3
+5V		B02A2		1-17 *	P						2		1	3
+5V		B01A2		1-18 *	P						1		3	3
+5V		C01A2		1-19 *	P						2		1	3
+5V		C02A2		1-20 *	P						1		1	3
+5V		C03A2		1-21 *	P						2		1	3
+5V		C04A2		1-22 *	P						1		0-4/8	3
+5V		C05A2		1-23 *	P						2		0-4/8	3
+5V		C06A2		1-24 *	P						1		0-4/8	3
+5V		C07A2		1-25 *	P						2		0-4/8	3
+5V		C08A2		1-26 *	P						1		0-4/8	3
+5V		C09A2		1-27 *	P						2		2-6/8	3
+5V		D09A2		1-28 *	P						1		0-4/8	3
+5V		D08A2		1-29 *	P						2		0-4/8	3
+5V		D07A2		1-30 *	P						1		0-4/8	3
+5V		D06A2		1-31 *	P						2		0-4/8	3
+5V		D05A2		1-32 *	P						1		0-4/8	3
+5V		D04A2		1-33 *	P						2		1	3
+5V		D03A2		1-34 *	P						1		1	3
+5V		D02A2		1-35 *	P						2		1	3
+5V		D01A2		1-36 *	P						1		3	3
+5V		E01A2		1-37 *	P						2		1	3
+5V		E02A2		1-38 *	P						1		1	3
+5V		F03A2		1-39 *	P						2		1	3
+5V		E04A2		1-40 *	P						1		0-4/8	3
+5V		E05A2		1-41 *	P						2		0-4/8	3
+5V		E06A2		1-42 *	P						1		0-4/8	3
+5V		E07A2		1-43 *	P						2		0-4/8	3
+5V		F08A2		1-44 *	P						1		0-4/8	3
+5V		E09A2		1-45 *	P						2		2-6/8	3
+5V		F09A2		1-46 *	P						1		0-4/8	3
+5V		F08A2		1-47 *	P						2		0-4/8	3
+5V		F07A2		1-48 *	P						1		0-4/8	3
+5V		F06A2		1-49 *	P						2		0-4/8	3
+5V		F05A2		1-50 *	P						1		0-4/8	3
+5V		F04A2		1-51 *	P						2		1	3
+5V		F03A2		1-52 *	P						1		1	3
+5V		F02A2		1-53 *	P						2		1	3
+5V		F01A2		1-54 *	P									3
+5V				1									47-2/8	3

RUN NAME	A/P	PIN NAME	ORDER PIN	PAY - ORDER		Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC	LENGTH EXCEPTIONS FLAG	RUN NUMBER
+15V		C03R2		1-01	*	P						2			1	4
+15V		C04B2		1-02	*	P						1			0-4/8	4
+15V		C05B2		1-03	*	P						2			0-4/8	4
+15V		C06B2		1-04	*	P						1			0-4/8	4
+15V		C07B2		1-05	*	P						2			0-4/8	4
+15V		C08B2		1-06	*	P						1			0-4/8	4
+15V		C09B2		1-07	*	P						2			2-6/8	4
+15V		D09B2		1-08	*	P						1			0-4/8	4
+15V		D08B2		1-09	*	P						2			0-4/8	4
+15V		D07B2		1-10	*	P						1			0-4/8	4
+15V		D06B2		1-11	*	P						2			0-4/8	4
+15V		D05B2		1-12	*	P						1			0-4/8	4
+15V		D04B2		1-13	*	P						2			1	4
+15V		D03B2		1-14	*	P						1			3	4
+15V		E03B2		1-15	*	P						2			1	4
+15V		E04B2		1-16	*	P						1			0-4/8	4
+15V		E05B2		1-17	*	P						2			0-4/8	4
+15V		E06B2		1-18	*	P						1			0-4/8	4
+15V		E07B2		1-19	*	P						2			0-4/8	4
+15V		E08B2		1-20	*	P						1			0-4/8	4
+15V		E09B2		1-21	*	P						2			2-6/8	4
+15V		F09B2		1-22	*	P						1			0-4/8	4
+15V		F08B2		1-23	*	P						2			0-4/8	4
+15V		F07B2		1-24	*	P						1			0-4/8	4
+15V		F06B2		1-25	*	P						2			0-4/8	4
+15V		F05B2		1-26	*	P						1			0-4/8	4
+15V		F04B2		1-27	*	P						2			1	4
+15V		F03B2		1-28	*	P										4
+15V				1											22-4/8	4
-5V		B02V2		1-01	*	P						2			1	5
-5V		B03V2		1-02	*	P						1			1	5
-5V		B04V2		1-03	*	P						2			0-4/8	5
-5V		B05V2		1-04	*	P						1			0-4/8	5
-5V		B06V2		1-05	*	P						2			0-4/8	5
-5V		B07V2		1-06	*	P						1			0-4/8	5
-5V		B08V2		1-07	*	P										5
-5V				1											4-8/8	5
AC LO L		B01F1		1-01	*	P						1			1	6
AC LO L		B02F1		1-02	*	P						2			1	6
AC LO L		B03F1		1-03	*	P						1			1	6
AC LO L		B04F1		1-04	*							2		N	4-7/8	6
AC LO L		C03V1		1-25	*	P						1			1	6
AC LO L		C04V1		1-26	*	P						2			0-4/8	6
AC LO L		C05V1		1-27	*	P						1			0-4/8	6
AC LO L		C06V1		1-28	*	P						2			0-4/8	6
AC LO L		C07V1		1-09	*	P						1			0-4/8	6
AC LO L		C08V1		1-10	*	P						2			0-4/8	6
AC LO L		C09V1		1-11	*	K						1			4-3/8	6
AC LO L		B05F1		1-12	*	P						2			0-4/8	6
AC LO L		B06F1		1-13	*	P						1			0-4/8	6
AC LO L		B07F1		1-14	*	P						2			0-4/8	6
AC LO L		B08F1		1-15	*	P						1			0-4/8	6
AC LO L		B09F1		1-16	*	P										6
AC LO L				1											17-6/8	6

RUN NAME	A/P	PIN NAME	ORDER PIN	PAY - ORDER		Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC	LENGTH EXCEPTIONS FLAG	RUN NUMBER
BB+15		A02R1		1-01	*	P						2			1	7
BB+15		A03R1		1-02	*	P						1			1	7
BB+15		A04R1		1-03	*	P						2			0-4/8	7
BB+15		A05R1		1-04	*	P						1			0-4/8	7
BB+15		A06R1		1-05	*	P						2			0-4/8	7
BB+15		A07R1		1-06	*	P						1			0-4/8	7
BB+15		A08R1		1-07	*	P										7
BB+15				1											4-8/8	7
BB+5		B02D1		1-01	*	P						2			1	8
BB+5		B03D1		1-02	*	P						1			1	8
BB+5		B04D1		1-03	*	P						2			0-4/8	8
BB+5		B05D1		1-04	*	P						1			0-4/8	8
BB+5		B06D1		1-05	*	P						2			0-4/8	8
BB+5		B07D1		1-06	*	P						1			0-4/8	8
BB+5		B08D1		1-07	*	P										8
BB+5				1											4-8/8	8
BB+15		A02S1		1-01	*	P						2			1	9
BB+15		A03S1		1-02	*	P						1			1	9
BB+15		A04S1		1-03	*	P						2			0-4/8	9
BB+15		A05S1		1-04	*	P						1			0-4/8	9
BB+15		A06S1		1-05	*	P						2			0-4/8	9
BB+15		A07S1		1-06	*	P						1			0-4/8	9
BB+15		A08S1		1-07	*	P										9
BB+15				1											4-8/8	9
BBSY L		A01P2		1-01	*	P						2			1	10
BBSY L		A02P2		1-02	*	P						1			1	10
BBSY L		A03P2		1-23	*	P						2			1	10
BBSY L		A24P2		1-24	*	H						1	TWP		13-1/8	10
BBSY L		F03D1		1-25	*	P						2			1	10
BBSY L		F04D1		1-26	*	H						1	2" TWP		0-4/8	10
BBSY L		F05D1		1-27	*	P						2			0-4/8	10
BBSY L		F06D1		1-28	*	P						1			0-4/8	10
BBSY L		F07D1		1-29	*	P						2			0-4/8	10
BBSY L		F08D1		1-10	*	P						1			0-4/8	10
BBSY L		F09D1		1-11	*	H						2	TWP		12-2/8	10
BBSY L		A05P2		1-12	*	P						1			0-4/8	10
BBSY L		A06P2		1-13	*	P						2			0-4/8	10
BBSY L		A07P2		1-14	*	P						1			0-4/8	10
BBSY L		A08P2		1-15	*	K						2			0-4/8	10
BBSY L		A09P2		1-16	*											10
BBSY L				1											33-7/8	10
BG4 A		F01F2		1-01	*	H						1	TWP		7	11
BG4 A		D01S2		1-02	*											11
BG4 A				1											7-8/8	11
BG4 B		D01T2		1-01	*	P						1			0-5/8	12
BG4 B		D02S2		1-02	*	P										12
BG4 B				1											0-5/8	12

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
BG4 C		D02T2		1-01 *	P						1		0-5/8		13
BG4 C		D03S2		1-02 *	P										13
BG4 C				1									0-5/8		13
BG4 D		D03T2		1-01 *	P						1		0-5/8		14
BG4 D		D04S2		1-02 *	P										14
BG4 D				1									0-5/8		14
BG4 E		D04T2		1-01 *	P						1		0-3/8		15
BG4 E		D05S2		1-02 *	P										15
BG4 E				1									0-3/8		15
BG4 F		D05T2		1-01 *	P						1		0-3/8		16
BG4 F		D06S2		1-02 *	P										16
BG4 F				1									0-3/8		16
BG4 H		D06T2		1-01 *	P						1		0-3/8		17
BG4 H		D07S2		1-02 *	P										17
BG4 H				1									0-3/8		17
BG4 J		D07T2		1-01 *	P						1		0-3/8		18
BG4 J		D08S2		1-02 *	P										18
BG4 J				1									0-3/8		18
BG4 K		D08T2		1-01 *	P						1		0-3/8		19
BG4 K		D09S2		1-02 *	P										19
BG4 K				1									0-3/8		19
BG4 L		B09E2		1-01 *	H						1	TWP	6-5/8		20
BG4 L		D09T2		1-02 *	X								H TO WHERE		20
BG4 L				1									6-5/8		20
BG5 A		B01B1		1-01 *	H						1	TWP	7-1/8		21
BG5 A		D01P2		1-02 *	X								H TO WHERE		21
BG5 A				1									7-1/8		21
BG5 B		D01R2		1-01 *	P						1		0-5/8		22
BG5 B		D02P2		1-02 *	P										22
BG5 B				1									0-5/8		22
BG5 C		D02R2		1-01 *	P						1		0-5/8		23
BG5 C		D03P2		1-02 *	P										23
BG5 C				1									0-5/8		23
BG5 D		D03R2		1-01 *	P						1		0-5/8		24
BG5 D		D04P2		1-02 *	P										24
BG5 D				1									0-5/8		24
BG5 E		D04R2		1-01 *	P						1		0-3/8		25
BG5 E		D05P2		1-02 *	P										25
BG5 E				1									0-3/8		25
BG5 F		D05R2		1-01 *	P						1		0-3/8		26
BG5 F		D06P2		1-02 *	P										26
BG5 F				1									0-3/8		26

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
BG5 H		D06R2		1-01 *	P						1		0-3/8		27
BG5 H		D07P2		1-02 *	P										27
BG5 H				1									0-3/8		27
BG5 J		D07R2		1-01 *	P						1		0-3/8		28
BG5 J		D08P2		1-02 *	P										28
BG5 J				1									0-3/8		28
BG5 K		D08R2		1-01 *	P						1		0-3/8		29
BG5 K		D09P2		1-02 *	P										29
BG5 K				1									0-3/8		29
BG5 L		B09R1		1-01 *	H						1	TWP	6-6/8		30
BG5 L		D09R2		1-02 *	X								H TO WHERE		30
BG5 L				1									6-6/8		30
BG6 A		B01A1		1-01 *	H						1	TWP	7-1/8		31
BG6 A		D01N2		1-02 *	X								H TO WHERE		31
BG6 A				1									7-1/8		31
BG6 A		D01A2		1-01 *	P						1		0-5/8		32
BG6 A		D02N2		1-02 *	P										32
BG6 A				1									0-5/8		32
BG6 C		D02A2		1-01 *	P						1		0-5/8		33
BG6 C		D03N2		1-02 *	P										33
BG6 C				1									0-5/8		33
BG6 D		D03A2		1-01 *	P						1		0-5/8		34
BG6 D		D04N2		1-02 *	P										34
BG6 D				1									0-5/8		34
BG6 E		D04A2		1-01 *	P						1		0-3/8		35
BG6 E		D05N2		1-02 *	P										35
BG6 E				1									0-3/8		35
BG6 F		D05A2		1-01 *	P						1		0-3/8		36
BG6 F		D06N2		1-02 *	P										36
BG6 F				1									0-3/8		36
BG6 H		D06A2		1-01 *	P						1		0-3/8		37
BG6 H		D07N2		1-02 *	P										37
BG6 H				1									0-3/8		37
BG6 J		D07A2		1-01 *	P						1		0-3/8		38
BG6 J		D08N2		1-02 *	P										38
BG6 J				1									0-3/8		38
BG6 K		D08A2		1-01 *	P						1		0-3/8		39
BG6 K		D09N2		1-02 *	P										39
BG6 K				1									0-3/8		39
BG6 L		B09A1		1-01 *	H						1	TWP	6-5/8		40
BG6 L		D09N2		1-02 *	X								H TO WHERE		40
BG6 L				1									6-5/8		40

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
BG7 A		A01V1		1-01 *	H						1	TWP		7-3/8		41
BG7 A		D01K2		1-02 *	X										H TO WHERE	41
BG7 A				1										7-3/8		41
BG7 B		D01L2		1-01 *	P						1			0-5/8		42
BG7 B		D02K2		1-02 *	P											42
BG7 B				1										0-5/8		42
BG7 C		D02L2		1-01 *	P						1			0-5/8		43
BG7 C		D03K2		1-02 *	P											43
BG7 C				1										0-5/8		43
BG7 D		D03L2		1-01 *	P						1			0-5/8		44
BG7 D		D04K2		1-02 *	P											44
BG7 D				1										0-5/8		44
BG7 E		D04L2		1-01 *	P						1			0-3/8		45
BG7 E		D05K2		1-02 *	P											45
BG7 E				1										0-3/8		45
BG7 F		D05L2		1-01 *	P						1			0-3/8		46
BG7 F		D06K2		1-02 *	P											46
BG7 F				1										0-3/8		46
BG7 H		D06L2		1-01 *	P						1			0-3/8		47
BG7 H		D07K2		1-02 *	X										H TO WHERE	47
BG7 H				1										0-3/8		47
BG7 J		D07L2		1-01 *	P						1			0-3/8		48
BG7 J		D08K2		1-02 *	P											48
BG7 J				1										0-3/8		48
BG7 K		D08L2		1-01 *	P						1			0-3/8		49
BG7 K		D09K2		1-02 *	P											49
BG7 K				1										0-3/8		49
BG7 L		A09V1		1-01 *	H						1	TWP		7		50
BG7 L		D09L2		1-02 *	X										H TO WHERE	50
BG7 L				1										7-0/8		50

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
BR4 L		B01D2		1-01 *							2		N	1		51
BR4 L		B02D2		1-02 *							1		N	1		51
BR4 L		B03D2		1-03 *							2		N	1		51
BR4 L		B04D2		1-04 *							1		N	6-5/8		51
BR4 L		D03H2		1-05 *	P						2			1		51
BR4 L		D04H2		1-06 *	P						1			0-4/8		51
BR4 L		D05H2		1-07 *	P						2			0-4/8		51
BR4 L		D06H2		1-08 *	P						1			0-4/8		51
BR4 L		D07H2		1-09 *	P						2			0-4/8		51
BR4 L		D08H2		1-10 *	P						1			0-4/8		51
BR4 L		D09H2		1-11 *	K						2			5-7/8		51
BR4 L		B05D2		1-12 *	K						1			0-4/8		51
BR4 L		B06D2		1-13 *	K						2			0-4/8		51
BR4 L		B07D2		1-14 *	K						1			0-4/8		51
BR4 L		B08D2		1-15 *	K						2			0-4/8		51
BR4 L		B09D2		1-16 *												51
BR4 L				1										21-0/8		51
BR5 L		B01C1		1-01 *	P						1			1		52
BR5 L		B02C1		1-02 *	P						2			1		52
BR5 L		B03C1		1-03 *	P						1			1		52
BR5 L		B04C1		1-04 *							2		N	6-1/8		52
BR5 L		D03F2		1-05 *	P						1			1		52
BR5 L		D04F2		1-06 *	P						2			0-4/8		52
BR5 L		D05F2		1-07 *	P						1			0-4/8		52
BR5 L		D06F2		1-08 *	P						2			0-4/8		52
BR5 L		D07F2		1-09 *	P						1			0-4/8		52
BR5 L		D08F2		1-10 *	P						2			0-4/8		52
BR5 L		D09F2		1-11 *	K						1			6		52
BR5 L		B05C1		1-12 *	P						2			0-4/8		52
BR5 L		B06C1		1-13 *	P						1			0-4/8		52
BR5 L		B07C1		1-14 *	P						2			0-4/8		52
BR5 L		B08C1		1-15 *	P						1			0-4/8		52
BR5 L		B09C1		1-16 *	P											52
BR5 L				1										20-5/8		52
BR6 L		A01U2		1-01 *							2		N	1		53
BR6 L		A02U2		1-02 *							1		N	1		53
BR6 L		A03U2		1-03 *							2		N	1		53
BR6 L		A04U2		1-04 *							1		N	7-3/8		53
BR6 L		D03E2		1-05 *	P						2			1		53
BR6 L		D04E2		1-06 *	P						1			0-4/8		53
BR6 L		D05E2		1-07 *	P						2			0-4/8		53
BR6 L		D06E2		1-08 *	P						1			0-4/8		53
BR6 L		D07E2		1-09 *	P						2			0-4/8		53
BR6 L		D08E2		1-10 *	P						1			0-4/8		53
BR6 L		D09E2		1-11 *	K						2			6-6/8		53
BR6 L		A05U2		1-12 *	K						1			0-4/8		53
BR6 L		A06U2		1-13 *	K						2			0-4/8		53
BR6 L		A07U2		1-14 *	K						1			0-4/8		53
BR6 L		A08U2		1-15 *	K						2			0-4/8		53
BR6 L		A09U2		1-16 *												53
BR6 L				1										22-5/8		53

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UN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
R7 L		A01T2		1-01 *	P				2			1	54
R7 L		A02T2		1-02 *	P				1			1	54
R7 L		A03T2		1-03 *	P				2			1	54
R7 L		A04T2		1-04 *					1		N	7-3/8	54
R7 L		D03D2		1-05 *	P				2			1	54
R7 L		D04D2		1-06 *	P				1			0-4/8	54
R7 L		D05D2		1-07 *	P				2			0-4/8	54
R7 L		D06D2		1-08 *	P				1			0-4/8	54
R7 L		D07D2		1-09 *	P				2			0-4/8	54
R7 L		D08D2		1-10 *	P				1			0-4/8	54
R7 L		D09D2		1-11 *	K				2			6-6/8	54
R7 L		A05T2		1-12 *	P				1			0-4/8	54
R7 L		A06T2		1-13 *	P				2			0-4/8	54
R7 L		A07T2		1-14 *	P				1			0-4/8	54
R7 L		A08T2		1-15 *	K				2			0-4/8	54
R7 L		A09T2		1-16 *									54
R7 L				1								22-5/8	54
S A00 L		B01H2		1-01 *	P				2			1	55
S A00 L		B02H2		1-02 *	P				1			1	55
S A00 L		B03H2		1-03 *	P				2			1	55
S A00 L		B04H2		1-04 *					1		N	0-5/8	55
S A00 L		E03H2		1-05 *					2		N	1	55
S A00 L		E04H2		1-06 *	K				1			0-4/8	55
S A00 L		E05H2		1-07 *	K				2			0-4/8	55
S A00 L		E06H2		1-08 *	K				1			0-4/8	55
S A00 L		F07H2		1-09 *	K				2			0-4/8	55
S A00 L		F08H2		1-10 *	K				1			0-4/8	55
S A00 L		E09H2		1-11 *	K				2			0	55
S A00 L		B05H2		1-12 *	P				1			0-4/8	55
S A00 L		B06H2		1-13 *	P				2			0-4/8	55
S A00 L		B07H2		1-14 *	P				1			0-4/8	55
S A00 L		B08H2		1-15 *	P				2			0-4/8	55
S A00 L		B09H2		1-16 *	P								55
S A00 L				1								25-1/8	55
S A01 L		B01H1		1-01 *	P				2			1	56
S A01 L		B02H1		1-02 *	P				1			1	56
S A01 L		B03H1		1-03 *	P				2			1	56
S A01 L		B04H1		1-04 *					1		N	0-5/8	56
S A01 L		E03H1		1-05 *	P				2			1	56
S A01 L		E04H1		1-06 *	P				1			0-4/8	56
S A01 L		E05H1		1-07 *	P				2			0-4/8	56
S A01 L		E06H1		1-08 *	P				1			0-4/8	56
S A01 L		E07H1		1-09 *	P				2			0-4/8	56
S A01 L		E08H1		1-10 *	P				1			0-4/8	56
S A01 L		E09H1		1-11 *	K				2			0	56
S A01 L		B05H1		1-12 *	P				1			0-4/8	56
S A01 L		B06H1		1-13 *	P				2			0-4/8	56
S A01 L		B07H1		1-14 *	P				1			0-4/8	56
S A01 L		B08H1		1-15 *	P				2			0-4/8	56
S A01 L		B09H1		1-16 *	P								56
S A01 L				1								25-1/8	56

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UN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV RG Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
S A02 L		B01J2		1-01 *	P				2			1	57
S A02 L		B02J2		1-02 *	P				1			1	57
S A02 L		B03J2		1-03 *	P				2			1	57
S A02 L		B04J2		1-04 *					1		N	0-5/8	57
S A02 L		E03F1		1-05 *	P				2			1	57
S A02 L		E04F1		1-06 *	P				1			0-4/8	57
S A02 L		F05F1		1-07 *	P				2			0-4/8	57
S A02 L		F06F1		1-08 *	P				1			0-4/8	57
S A02 L		E07F1		1-09 *	P				2			0-4/8	57
S A02 L		E08F1		1-10 *	P				1			0-4/8	57
S A02 L		F09F1		1-11 *	K				2			7-5/8	57
S A02 L		B05J2		1-12 *	P				1			0-4/8	57
S A02 L		B06J2		1-13 *	P				2			0-4/8	57
S A02 L		B07J2		1-14 *	P				1			0-4/8	57
S A02 L		B08J2		1-15 *	P				2			0-4/8	57
S A02 L		B09J2		1-16 *	P								57
S A02 L				1								24-6/8	57
S A03 L		B01J1		1-01 *	P				1			1	58
S A03 L		B02J1		1-02 *	P				2			1	58
S A03 L		B03J1		1-03 *	P				1			1	58
S A03 L		B04J1		1-04 *					2		N	9-5/8	58
S A03 L		E03V2		1-05 *	P				1			1	58
S A03 L		F04V2		1-06 *	P				2			0-4/8	58
S A03 L		E05V2		1-07 *	P				1			0-4/8	58
S A03 L		E06V2		1-08 *	P				2			0-4/8	58
S A03 L		E07V2		1-09 *	P				1			0-4/8	58
S A03 L		E08V2		1-10 *	P				2			0-4/8	58
S A03 L		E09V2		1-11 *	K				1			9-2/8	58
S A03 L		B05J1		1-12 *	P				2			0-4/8	58
S A03 L		B06J1		1-13 *	P				1			0-4/8	58
S A03 L		B07J1		1-14 *	P				2			0-4/8	58
S A03 L		B08J1		1-15 *	P				1			0-4/8	58
S A03 L		B09J1		1-16 *	P								58
S A03 L				1								27-3/8	58
S A04 L		B01K2		1-01 *	P				2			1	59
S A04 L		B02K2		1-02 *	P				1			1	59
S A04 L		B03K2		1-03 *	P				2			1	59
S A04 L		B04K2		1-04 *					1		N	9-5/8	59
S A04 L		E03U2		1-05 *	P				2			1	59
S A04 L		F04U2		1-06 *	P				1			0-4/8	59
S A04 L		E05U2		1-07 *	P				2			0-4/8	59
S A04 L		E06U2		1-08 *	P				1			0-4/8	59
S A04 L		E07U2		1-09 *	P				2			0-4/8	59
S A04 L		E08U2		1-10 *	P				1			0-4/8	59
S A04 L		E09U2		1-11 *	K				2			8-7/8	59
S A04 L		B05K2		1-12 *	P				1			0-4/8	59
S A04 L		F06K2		1-13 *	P				2			0-4/8	59
S A04 L		B07K2		1-14 *	P				1			0-4/8	59
S A04 L		B08K2		1-15 *	P				2			0-4/8	59
S A04 L		B09K2		1-16 *	P								59
S A04 L				1								27-0/8	59

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N NAME	A/P PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
$ A05 L	R01K1		1-01 *	P						1			1	60
$ A05 L	R02K1		1-02 *	P						2			1	60
$ A05 L	B03K1		1-03 *	P						1			1	60
$ A05 L	B04K1		1-04 *							2		N	9-5/8	60
$ A05 L	E03V1		1-05 *	P						1			1	60
$ A05 L	E04V1		1-06 *	P						2			0-4/8	60
$ A05 L	E05V1		1-07 *	P						1			0-4/8	60
$ A05 L	E06V1		1-08 *	P						2			0-4/8	60
$ A05 L	E07V1		1-09 *	P						1			0-4/8	60
$ A05 L	E08V1		1-10 *	P						2			0-4/8	60
$ A05 L	E09V1		1-11 *	K						1			9-1/8	60
$ A05 L	B05K1		1-12 *	P						2			0-4/8	60
$ A05 L	B06K1		1-13 *	P						1			0-4/8	60
$ A05 L	R07K1		1-14 *	P						2			0-4/8	60
$ A05 L	R08K1		1-15 *	P						1			0-4/8	60
$ A05 L	B09K1		1-16 *	P										60
$ A05 L			1										27-2/8	60
$ A06 L	B01L2		1-01 *	P						2			1	61
$ A06 L	B02L2		1-02 *	P						1			1	61
$ A06 L	B03L2		1-03 *	P						2			1	61
$ A06 L	B04L2		1-04 *							1		N	9-7/8	61
$ A06 L	E03U1		1-05 *	P						2			1	61
$ A06 L	E04U1		1-06 *	P						1			0-4/8	61
$ A06 L	E05U1		1-07 *	P						2			0-4/8	61
$ A06 L	E06U1		1-08 *	P						1			0-4/8	61
$ A06 L	E07U1		1-09 *	P						2			0-4/8	61
$ A06 L	E08U1		1-10 *	P						1			0-4/8	61
$ A06 L	E09U1		1-11 *	K						2			0-6/8	61
$ A06 L	B05L2		1-12 *	P						1			0-4/8	61
$ A06 L	B06L2		1-13 *	P						2			0-4/8	61
$ A06 L	B07L2		1-14 *	P						1			0-4/8	61
$ A06 L	B08L2		1-15 *	P						2			0-4/8	61
$ A06 L	B09L2		1-16 *	P										61
$ A06 L			1										27-1/8	61
$ A07 L	R01L1		1-01 *	P						1			1	62
$ A07 L	R02L1		1-02 *	P						2			1	62
$ A07 L	R03L1		1-03 *	P						1			1	62
$ A07 L	B04L1		1-04 *							2		N	8-7/8	62
$ A07 L	E03P2		1-05 *	P						1			1	62
$ A07 L	E04P2		1-06 *	P						2			0-4/8	62
$ A07 L	E05P2		1-07 *	P						1			0-4/8	62
$ A07 L	E06P2		1-08 *	P						2			0-4/8	62
$ A07 L	E07P2		1-09 *	P						1			0-4/8	62
$ A07 L	E08P2		1-10 *	P						2			0-4/8	62
$ A07 L	E09P2		1-11 *	K						1			0-3/8	62
$ A07 L	R05L1		1-12 *	P						2			0-4/8	62
$ A07 L	R06L1		1-13 *	P						1			0-4/8	62
$ A07 L	R07L1		1-14 *	P						2			0-4/8	62
$ A07 L	R08L1		1-15 *	P						1			0-4/8	62
$ A07 L	R09L1		1-16 *	P										62
$ A07 L			1										25-6/8	62

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N NAME	A/P PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
$ A28 L	R01M2		1-01 *	P						1			1	63
$ A28 L	R02M2		1-02 *	P						2			1	63
$ A28 L	R03M2		1-03 *	P						1			1	63
$ A28 L	B04M2		1-04 *							2		N	8-5/8	63
$ A28 L	E03N2		1-05 *	P						1			1	63
$ A28 L	E04N2		1-06 *	P						2			0-4/8	63
$ A28 L	E05N2		1-07 *	P						1			0-4/8	63
$ A28 L	E06N2		1-08 *	P						2			0-4/8	63
$ A28 L	E07N2		1-09 *	P						1			0-4/8	63
$ A28 L	E08N2		1-10 *	P						2			0-4/8	63
$ A28 L	E09N2		1-11 *	K						1			0-1/8	63
$ A28 L	R05M2		1-12 *	P						2			0-4/8	63
$ A28 L	R06M2		1-13 *	P						1			0-4/8	63
$ A28 L	R07M2		1-14 *	P						2			0-4/8	63
$ A28 L	R08M2		1-15 *	P						1			0-4/8	63
$ A28 L	R09M2		1-16 *	P										63
$ A28 L			1										25-2/8	63
$ A29 L	R01M1		1-01 *	P						1			1	64
$ A29 L	R02M1		1-02 *	P						2			1	64
$ A29 L	R03M1		1-03 *	P						1			1	64
$ A29 L	B04M1		1-04 *							2		N	8-7/8	64
$ A29 L	E03R1		1-05 *	P						1			1	64
$ A29 L	E04R1		1-06 *	P						2			0-4/8	64
$ A29 L	E05R1		1-07 *	P						1			0-4/8	64
$ A29 L	E06R1		1-08 *	P						2			0-4/8	64
$ A29 L	E07R1		1-09 *	P						1			0-4/8	64
$ A29 L	E08R1		1-10 *	P						2			0-4/8	64
$ A29 L	E09R1		1-11 *	K						1			0-3/8	64
$ A29 L	B05M1		1-12 *	P						2			0-4/8	64
$ A29 L	B06M1		1-13 *	P						1			0-4/8	64
$ A29 L	R07M1		1-14 *	P						2			0-4/8	64
$ A29 L	R08M1		1-15 *	P						1			0-4/8	64
$ A29 L	B09M1		1-16 *	P										64
$ A29 L			1										25-6/8	64
$ A10 L	R01N2		1-01 *	P						2			1	65
$ A10 L	R02N2		1-02 *	P						1			1	65
$ A10 L	R03N2		1-03 *	P						2			1	65
$ A10 L	B04N2		1-04 *							1		N	9-1/8	65
$ A10 L	E03P1		1-05 *	P						2			1	65
$ A10 L	E04P1		1-06 *	P						1			0-4/8	65
$ A10 L	F05P1		1-07 *	P						2			0-4/8	65
$ A10 L	E06P1		1-08 *	P						1			0-4/8	65
$ A10 L	E07P1		1-09 *	P						2			0-4/8	65
$ A10 L	E08P1		1-10 *	P						1			0-4/8	65
$ A10 L	E09P1		1-11 *	K						2			0	65
$ A10 L	R05N2		1-12 *	P						1			0-4/8	65
$ A10 L	R06N2		1-13 *	P						2			0-4/8	65
$ A10 L	R07N2		1-14 *	P						1			0-4/8	65
$ A10 L	B08N2		1-15 *	P						2			0-4/8	65
$ A10 L	B09N2		1-16 *	P										65
$ A10 L			1										25-5/8	65

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER		Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
BUS A11 L		B01N1		1-01	*	P						2			1	66
BUS A11 L		B02N1		1-02	*	P						1			1	66
BUS A11 L		B03N1		1-03	*	P						2			1	66
BUS A11 L		B04N1		1-04	*							1		N	8-3/8	66
BUS A11 L		E03L1		1-05	*	P						2			1	66
BUS A11 L		F04L1		1-06	*	P						1			8-4/8	66
BUS A11 L		E05L1		1-07	*	P						2			8-4/8	66
BUS A11 L		F06L1		1-08	*	P						1			8-4/8	66
BUS A11 L		F07L1		1-09	*	P						2			8-4/8	66
BUS A11 L		E08L1		1-10	*	P						1			8-4/8	66
BUS A11 L		F09L1		1-11	*	K						2			7-6/8	66
BUS A11 L		B05N1		1-12	*	P						1			8-4/8	66
BUS A11 L		B06N1		1-13	*	P						2			8-4/8	66
BUS A11 L		B07N1		1-14	*	P						1			8-4/8	66
BUS A11 L		B08N1		1-15	*	P						2			8-4/8	66
BUS A11 L		B09N1		1-16	*	P										66
BUS A11 L				1											24-5/8	66
BUS A12 L		B01P2		1-01	*	P						2			1	67
BUS A12 L		B02P2		1-02	*	P						1			1	67
BUS A12 L		B03P2		1-03	*	P						2			1	67
BUS A12 L		B04P2		1-04	*							1		N	7-5/8	67
BUS A12 L		E03C1		1-05	*	P						2			1	67
BUS A12 L		E04C1		1-06	*	P						1			8-4/8	67
BUS A12 L		E05C1		1-07	*	P						2			8-4/8	67
BUS A12 L		E06C1		1-08	*	P						1			8-4/8	67
BUS A12 L		E07C1		1-09	*	P						2			8-4/8	67
BUS A12 L		E08C1		1-10	*	P						1			8-4/8	67
BUS A12 L		F09C1		1-11	*	K						2			6-5/8	67
BUS A12 L		H05P2		1-12	*	P						1			8-4/8	67
BUS A12 L		H06P2		1-13	*	P						2			8-4/8	67
BUS A12 L		H07P2		1-14	*	P						1			8-4/8	67
BUS A12 L		B08P2		1-15	*	P						2			8-4/8	67
BUS A12 L		B09P2		1-16	*	P										67
BUS A12 L				1											22-6/8	67
BUS A13 L		B01F1		1-01	*	P						1			1	68
BUS A13 L		B02F1		1-02	*	P						2			1	68
BUS A13 L		B03F1		1-03	*	P						1			1	68
BUS A13 L		A04P1		1-04	*							2		N	7-7/8	68
BUS A13 L		F03K2		1-05	*	P						1			1	68
BUS A13 L		E04K2		1-06	*	P						2			8-4/8	68
BUS A13 L		E05K2		1-07	*	P						1			8-4/8	68
BUS A13 L		E06K2		1-08	*	P						2			8-4/8	68
BUS A13 L		E07K2		1-09	*	P						1			8-4/8	68
BUS A13 L		E08K2		1-10	*	P						2			8-4/8	68
BUS A13 L		F09K2		1-11	*	K						1			7-4/8	68
BUS A13 L		B05P1		1-12	*	P						2			8-4/8	68
BUS A13 L		B06P1		1-13	*	P						1			8-4/8	68
BUS A13 L		B07P1		1-14	*	P						2			8-4/8	68
BUS A13 L		B08P1		1-15	*	P						1			8-4/8	68
BUS A13 L		H09P1		1-16	*	P										68
BUS A13 L				1											23-7/8	68

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RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER		Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
BUS A14 L		B01H2		1-01	*	P						2			1	69
BUS A14 L		B02H2		1-02	*	P						1			1	69
BUS A14 L		B03H2		1-03	*	P						2			1	69
BUS A14 L		B04H2		1-04	*							1		N	8-3/8	69
BUS A14 L		F03K1		1-05	*	P						2			1	69
BUS A14 L		F04K1		1-06	*	P						1			8-4/8	69
BUS A14 L		F05K1		1-07	*	P						2			8-4/8	69
BUS A14 L		E06K1		1-08	*	P						1			8-4/8	69
BUS A14 L		F07K1		1-09	*	P						2			8-4/8	69
BUS A14 L		F08K1		1-10	*	P						1			8-4/8	69
BUS A14 L		F09K1		1-11	*	K						2			7-2/8	69
BUS A14 L		B05H2		1-12	*	P						1			8-4/8	69
BUS A14 L		B06H2		1-13	*	P						2			8-4/8	69
BUS A14 L		B07H2		1-14	*	P						1			8-4/8	69
BUS A14 L		B08H2		1-15	*	P						2			8-4/8	69
BUS A14 L		B09H2		1-16	*	P										69
BUS A14 L				1											24-1/8	69
BUS A15 L		B01R1		1-01	*	P						1			1	70
BUS A15 L		B02R1		1-02	*	P						2			1	70
BUS A15 L		B03R1		1-03	*	P						1			1	70
BUS A15 L		B04R1		1-04	*							2		N	7-1/8	70
BUS A15 L		F03D2		1-05	*							1		N	1	70
BUS A15 L		E04D2		1-06	*	K						2			8-4/8	70
BUS A15 L		F05D2		1-07	*	K						1			8-4/8	70
BUS A15 L		F06D2		1-08	*	K						2			8-4/8	70
BUS A15 L		E07D2		1-09	*	K						1			8-4/8	70
BUS A15 L		F08D2		1-10	*	K						2			8-4/8	70
BUS A15 L		F09D2		1-11	*	K						1			6-7/8	70
BUS A15 L		B05R1		1-12	*	P						2			8-4/8	70
BUS A15 L		B06R1		1-13	*	P						1			8-4/8	70
BUS A15 L		B07R1		1-14	*	P						2			8-4/8	70
BUS A15 L		B08R1		1-15	*	P						1			8-4/8	70
BUS A15 L		B09R1		1-16	*	P										70
BUS A15 L				1											22-4/8	70
BUS A16 L		B01S2		1-01	*	P						2			1	71
BUS A16 L		B02S2		1-02	*	P						1			1	71
BUS A16 L		B03S2		1-03	*	P						2			1	71
BUS A16 L		B04S2		1-04	*							1		N	7-3/8	71
BUS A16 L		F03F2		1-05	*	P						2			1	71
BUS A16 L		F04F2		1-06	*	P						1			8-4/8	71
BUS A16 L		E05F2		1-07	*	P						2			8-4/8	71
BUS A16 L		E06F2		1-08	*	P						1			8-4/8	71
BUS A16 L		E07E2		1-09	*	P						2			8-4/8	71
BUS A16 L		F08E2		1-10	*	P						1			8-4/8	71
BUS A16 L		E09F2		1-11	*	K						2			6-6/8	71
BUS A16 L		B05S2		1-12	*	P						1			8-4/8	71
BUS A16 L		B06S2		1-13	*	P						2			8-4/8	71
BUS A16 L		B07S2		1-14	*	P						1			8-4/8	71
BUS A16 L		B08S2		1-15	*	P						2			8-4/8	71
BUS A16 L		E09S2		1-16	*	P										71
BUS A16 L				1											22-5/8	71

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
BUS A17 L		B@1S1		1-01 *	P						1			1	72
BUS A17 L		B@2S1		1-02 *	P						2			1	72
BUS A17 L		B@3S1		1-03 *	P						1			1	72
BUS A17 L		B@4S1		1-04 *							2		N	7-1/8	72
BUS A17 L		E@3D1		1-05 *	P						1			1	72
BUS A17 L		E@4D1		1-06 *	P						2			0-4/8	72
BUS A17 L		E@5D1		1-07 *	P						1			0-4/8	72
BUS A17 L		E@6D1		1-08 *	P						2			0-4/8	72
BUS A17 L		E@7D1		1-09 *	P						1			0-4/8	72
BUS A17 L		E@8D1		1-10 *	P						2			0-4/8	72
BUS A17 L		E@9D1		1-11 *	K						1			6-5/8	72
BUS A17 L		B@5S1		1-12 *	P						2			0-4/8	72
BUS A17 L		B@6S1		1-13 *	P						1			0-4/8	72
BUS A17 L		B@7S1		1-14 *	P						2			0-4/8	72
BUS A17 L		B@8S1		1-15 *	P						1			0-4/8	72
BUS A17 L		B@9S1		1-16 *	P										72
BUS A17 L				1										22-2/8	72
BUS D@@ L		A@1C1		1-01 *	P						1			1	73
BUS D@@ L		A@2C1		1-02 *							2		N	1	73
BUS D@@ L		A@3C1		1-03 *							1		N	1	73
BUS D@@ L		A@4C1		1-04 *							2		N	7-3/8	73
BUS D@@ L		C@3S2		1-05 *							1		N	1	73
BUS D@@ L		C@4S2		1-06 *	K						2			0-4/8	73
BUS D@@ L		C@5S2		1-07 *	K						1			0-4/8	73
BUS D@@ L		C@6S2		1-08 *	K						2			0-4/8	73
BUS D@@ L		C@7S2		1-09 *	K						1			0-4/8	73
BUS D@@ L		C@8S2		1-10 *	K						2			0-4/8	73
BUS D@@ L		C@9S2		1-11 *	K						1			7	73
BUS D@@ L		A@5C1		1-12 *	K						2			0-4/8	73
BUS D@@ L		A@6C1		1-13 *	K						1			0-4/8	73
BUS D@@ L		A@7C1		1-14 *	K						2			0-4/8	73
BUS D@@ L		A@8C1		1-15 *	K						1			0-4/8	73
BUS D@@ L		A@9C1		1-16 *											73
BUS D@@ L				1										22-7/8	73
BUS D@1 L		A@1D2		1-01 *	P						2			1	74
BUS D@1 L		A@2D2		1-02 *	P						1			1	74
BUS D@1 L		A@3D2		1-03 *	P						2			1	74
BUS D@1 L		A@4D2		1-04 *							1		N	7-3/8	74
BUS D@1 L		C@3R2		1-05 *	P						2			1	74
BUS D@1 L		C@4R2		1-06 *	P						1			0-4/8	74
BUS D@1 L		C@5R2		1-07 *	P						2			0-4/8	74
BUS D@1 L		C@6R2		1-08 *	P						1			0-4/8	74
BUS D@1 L		C@7R2		1-09 *	P						2			0-4/8	74
BUS D@1 L		C@8R2		1-10 *	P						1			0-4/8	74
BUS D@1 L		C@9R2		1-11 *	K						2			6-6/8	74
BUS D@1 L		A@5D2		1-12 *	P						1			0-4/8	74
BUS D@1 L		A@6D2		1-13 *	P						2			0-4/8	74
BUS D@1 L		A@7D2		1-14 *	P						1			0-4/8	74
BUS D@1 L		A@8D2		1-15 *	P						2			0-4/8	74
BUS D@1 L		A@9D2		1-16 *	P										74
BUS D@1 L				1										22-5/8	74

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
BUS D@2 L		A@1D1		1-01 *	P						1			1	75
BUS D@2 L		A@2D1		1-02 *	P						2			1	75
BUS D@2 L		A@3D1		1-03 *	P						1			1	75
BUS D@2 L		A@4D1		1-04 *							2		N	7-5/8	75
BUS D@2 L		C@3U2		1-05 *	P						1			1	75
BUS D@2 L		C@4U2		1-06 *	P						2			0-4/8	75
BUS D@2 L		C@5U2		1-07 *	K						1			6-4/8	75
BUS D@2 L		F@5E2		1-08 *	P						1			1	75
BUS D@2 L		F@3F2		1-09 *	P						1			1	75
BUS D@2 L		F@4F2		1-10 *	P						2			1	75
BUS D@2 L		F@6F2		1-11 *	P						2			0-4/8	75
BUS D@2 L		F@7F2		1-12 *	P						1			0-4/8	75
BUS D@2 L		F@8F2		1-13 *	P						2			0-4/8	75
BUS D@2 L		F@9F2		1-14 *	K						1			6-5/8	75
BUS D@2 L		C@6U2		1-15 *	P						2			0-4/8	75
BUS D@2 L		C@7U2		1-16 *	P						1			0-4/8	75
BUS D@2 L		C@8U2		1-17 *	P						2			0-4/8	75
BUS D@2 L		C@9U2		1-18 *	K						1			7-1/8	75
BUS D@2 L		A@5D1		1-19 *	P						2			0-4/8	75
BUS D@2 L		A@6D1		1-20 *	P						1			0-4/8	75
BUS D@2 L		A@7D1		1-21 *	P						2			0-4/8	75
BUS D@2 L		A@8D1		1-22 *	P						1			0-4/8	75
BUS D@2 L		A@9D1		1-23 *											75
BUS D@2 L				1										40-3/8	75
BUS D@3 L		A@1F2		1-01 *	P						1			1	76
BUS D@3 L		A@2F2		1-02 *	P						2			1	76
BUS D@3 L		A@3F2		1-03 *	P						1			1	76
BUS D@3 L		A@4L2		1-04 *							2		N	7-3/8	76
BUS D@3 L		C@3T2		1-05 *	P						1			1	76
BUS D@3 L		C@4T2		1-06 *	P						2			0-4/8	76
BUS D@3 L		C@5T2		1-07 *	K						1			7-2/8	76
BUS D@3 L		F@5L1		1-08 *	P						1			1	76
BUS D@3 L		F@3L1		1-09 *	P						1			1	76
BUS D@3 L		F@4L1		1-10 *	P						2			1	76
BUS D@3 L		F@6L1		1-11 *	P						2			0-4/8	76
BUS D@3 L		F@7L1		1-12 *	P						1			0-4/8	76
BUS D@3 L		F@8L1		1-13 *	P						2			0-4/8	76
BUS D@3 L		F@9L1		1-14 *	K						1			7-2/8	76
BUS D@3 L		C@6T2		1-15 *	P						2			0-4/8	76
BUS D@3 L		C@7T2		1-16 *	P						1			0-4/8	76
BUS D@3 L		C@8T2		1-17 *	P						2			0-4/8	76
BUS D@3 L		C@9T2		1-18 *	K						1			6-7/8	76
BUS D@3 L		A@5E2		1-19 *	P						2			0-4/8	76
BUS D@3 L		A@6F2		1-20 *	P						1			0-4/8	76
BUS D@3 L		A@7E2		1-21 *	P						2			0-4/8	76
BUS D@3 L		A@8E2		1-22 *	P						1			0-4/8	76
BUS D@3 L		A@9E2		1-23 *											76
BUS D@3 L				1										41-2/8	76

UN	NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
US	D04 L		A01E1		1-01 *	P						1			1	77
US	D04 L		A02E1		1-02 *	P						2			1	77
US	D04 L		A03E1		1-03 *	P						1			1	77
US	D04 L		A04E1		1-04 *							2		N	6-5/8	77
US	D04 L		C03N2		1-05 *	P						1			1	77
US	D04 L		C04N2		1-06 *	P						2			8-4/8	77
US	D04 L		C05N2		1-07 *	K						1			8	77
US	D04 L		F05N2		1-08 *	P						1			1	77
US	D04 L		F03N2		1-09 *	P						1			1	77
US	D04 L		F04N2		1-10 *	P						2			1	77
US	D04 L		F06N2		1-11 *	P						2			8-4/8	77
US	D04 L		F07N2		1-12 *	P						1			8-4/8	77
US	D04 L		F08N2		1-13 *	P						2			8-4/8	77
US	D04 L		F09N2		1-14 *	K						1			8-1/8	77
US	D04 L		C06N2		1-15 *	P						2			8-4/8	77
US	D04 L		C07N2		1-16 *	P						1			8-4/8	77
US	D04 L		C08N2		1-17 *	P						2			8-4/8	77
US	D04 L		C09N2		1-18 *	K						1			6-4/8	77
US	D04 L		A05E1		1-19 *	P						2			8-4/8	77
US	D04 L		A06E1		1-20 *	P						1			8-4/8	77
US	D04 L		A07E1		1-21 *	P						2			8-4/8	77
US	D04 L		A08E1		1-22 *	P						1			8-4/8	77
US	D04 L		A09E1		1-23 *											77
US	D04 L				1										41-6/8	77
US	D05 L		A01F2		1-01 *	P						2			1	78
US	D05 L		A02F2		1-02 *	P						1			1	78
US	D05 L		A03F2		1-03 *	P						2			1	78
US	D05 L		A04F2		1-04 *							1		N	7-1/8	78
US	D05 L		C03P2		1-05 *	P						2			1	78
US	D05 L		C04P2		1-06 *	P						1			8-4/8	78
US	D05 L		C05P2		1-07 *	K						2			7-1/8	78
US	D05 L		F05F1		1-08 *	P						2			1	78
US	D05 L		F03F1		1-09 *	P						2			1	78
US	D05 L		F04F1		1-10 *	P						1			1	78
US	D05 L		F06F1		1-11 *	P						1			8-4/8	78
US	D05 L		F07F1		1-12 *	P						2			8-4/8	78
US	D05 L		F08F1		1-13 *	P						1			8-4/8	78
US	D05 L		F09F1		1-14 *	K						1			7-2/8	78
US	D05 L		C06P2		1-15 *	P						1			8-4/8	78
US	D05 L		C07P2		1-16 *	P						2			8-4/8	78
US	D05 L		C08P2		1-17 *	P						1			8-4/8	78
JS	D05 L		C09P2		1-18 *	K						2			6-3/8	78
JS	D05 L		A05F2		1-19 *	P						1			8-4/8	78
JS	D05 L		A06F2		1-20 *	P						2			8-4/8	78
US	D05 L		A07F2		1-21 *	P						1			8-4/8	78
JS	D05 L		A08F2		1-22 *	P						2			8-4/8	78
JS	D05 L		A09F2		1-23 *											78
JS	D05 L				1										40-3/8	78

UN	NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
JS	D06 L		A01F1		1-01 *	P						1			1	79
JS	D06 L		A02F1		1-02 *	P						2			1	79
JS	D06 L		A03F1		1-03 *	P						1			1	79
JS	D06 L		A04F1		1-04 *							2		N	7-3/8	79
JS	D06 L		C03V2		1-05 *	P						1			1	79
JS	D06 L		C04V2		1-06 *	P						2			8-4/8	79
JS	D06 L		C05V2		1-07 *	K						1			6-4/8	79
US	D06 L		F05F2		1-08 *	P						1			1	79
JS	D06 L		F03F2		1-09 *	P						1			1	79
US	D06 L		F04F2		1-10 *	P						2			1	79
US	D06 L		F06F2		1-11 *	P						2			8-4/8	79
US	D06 L		F07F2		1-12 *	P						1			8-4/8	79
US	D06 L		F08F2		1-13 *	P						2			8-4/8	79
US	D06 L		F09F2		1-14 *	K						1			6-5/8	79
US	D06 L		C06V2		1-15 *	P						2			8-4/8	79
US	D06 L		C07V2		1-16 *	P						1			8-4/8	79
US	D06 L		C08V2		1-17 *	P						2			8-4/8	79
US	D06 L		C09V2		1-18 *	K						1			7	79
US	D06 L		A05F1		1-19 *	P						2			8-4/8	79
US	D06 L		A06F1		1-20 *	P						1			8-4/8	79
US	D06 L		A07F1		1-21 *	P						2			8-4/8	79
US	D06 L		A08F1		1-22 *	P						1			8-4/8	79
US	D06 L		A09F1		1-23 *											79
US	D06 L				1										40-0/8	79
US	D07 L		A01H2		1-01 *	P						1			1	80
US	D07 L		A02H2		1-02 *	P						2			1	80
US	D07 L		A03H2		1-03 *	P						1			1	80
US	D07 L		A04H2		1-04 *							2		N	6-5/8	80
US	D07 L		C03V2		1-05 *	P						1			1	80
US	D07 L		C04V2		1-06 *	P						2			8-4/8	80
US	D07 L		C05V2		1-07 *	K						1			7-4/8	80
US	D07 L		F05H1		1-08 *	P						1			1	80
US	D07 L		F03H1		1-09 *	P						1			1	80
US	D07 L		F04H1		1-10 *	P						2			1	80
US	D07 L		F06H1		1-11 *	P						2			8-4/8	80
US	D07 L		F07H1		1-12 *	P						1			8-4/8	80
US	D07 L		F08H1		1-13 *	P						2			8-4/8	80
US	D07 L		F09H1		1-14 *	K						1			7-4/8	80
US	D07 L		C06V2		1-15 *	P						2			8-4/8	80
US	D07 L		C07V2		1-16 *	P						1			8-4/8	80
US	D07 L		C08V2		1-17 *	P						2			8-4/8	80
US	D07 L		C09V2		1-18 *	K						1			6	80
US	D07 L		A05H2		1-19 *	P						2			8-4/8	80
US	D07 L		A06H2		1-20 *	P						1			8-4/8	80
US	D07 L		A07H2		1-21 *	P						2			8-4/8	80
US	D07 L		A08H2		1-22 *	P						1			8-4/8	80
US	D07 L		A09H2		1-23 *											80
US	D07 L				1										40-1/8	80

UN	NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC	LENGTH EXCEPTIONS FLAG	RUN NUMBER
US	D08 L		A01H1		1-01 *	P						1			1	01
US	D08 L		A02H1		1-02 *	P						2			1	01
US	D08 L		A03H1		1-03 *	P						1			1	01
US	D08 L		A04H1		1-04 *							2		N	6-1/8	01
US	D08 L		C03L2		1-05 *	P						1			1	01
US	D08 L		C04L2		1-06 *	P						2			0-4/8	01
US	D08 L		C05L2		1-07 *	K						1			7-7/8	01
US	D08 L		F05K1		1-08 *	P						1			1	01
US	D09 L		F03K1		1-09 *	P						1			1	01
US	D08 L		F04K1		1-10 *	P						2			1	01
US	D08 L		F06K1		1-11 *	P						2			0-4/8	01
US	D08 L		F07K1		1-12 *	P						1			0-4/8	01
US	D08 L		F08K1		1-13 *	P						2			0-4/8	01
US	D08 L		F09K1		1-14 *	K						1			7-7/8	01
US	D08 L		C06L2		1-15 *	P						2			0-4/8	01
US	D09 L		C07L2		1-16 *	P						1			0-4/8	01
US	D09 L		C08L2		1-17 *	P						2			0-4/8	01
US	D08 L		C09L2		1-18 *	K						1			6	01
US	D08 L		A05H1		1-19 *	P						2			0-4/8	01
US	D08 L		A06H1		1-20 *	P						1			0-4/8	01
US	D08 L		A07H1		1-21 *	P						2			0-4/8	01
US	D08 L		A08H1		1-22 *	P						1			0-4/8	01
US	D08 L		A09H1		1-23 *											01
US	D08 L				1										40-3/8	01
US	D09 L		A01J2		1-01 *	P						2			1	02
US	D09 L		A02J2		1-02 *	P						1			1	02
US	D09 L		A03J2		1-03 *	P						2			1	02
US	D09 L		A04J2		1-04 *							1		N	6-3/8	02
US	D09 L		C03K2		1-05 *	P						2			1	02
US	D09 L		C04K2		1-06 *	P						1			0-4/8	02
US	D09 L		C05K2		1-07 *	P						2			0-4/8	02
US	D09 L		C06K2		1-08 *	P						1			0-4/8	02
US	D09 L		C07K2		1-09 *	P						2			0-4/8	02
US	D09 L		C08K2		1-10 *	P						1			0-4/8	02
US	D09 L		C09K2		1-11 *	K						2			5-5/8	02
US	D09 L		A05J2		1-12 *	P						1			0-4/8	02
US	D09 L		A06J2		1-13 *	P						2			0-4/8	02
US	D09 L		A07J2		1-14 *	P						1			0-4/8	02
US	D09 L		A08J2		1-15 *	P						2			0-4/8	02
US	D09 L		A09J2		1-16 *	P										02
US	D09 L				1										20-4/8	02

RUN	NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC	LENGTH EXCEPTIONS FLAG	RUN NUMBER
US	D10 L		A01J1		1-01 *	P						1			1	03
US	D10 L		A02J1		1-02 *	P						2			1	03
US	D10 L		A03J1		1-03 *	P						1			1	03
US	D10 L		A04J1		1-04 *							2		N	5-7/8	03
US	D10 L		C03J2		1-05 *	P						1			1	03
US	D10 L		C04J2		1-06 *	P						2			0-4/8	03
US	D10 L		C05J2		1-07 *	P						1			0-4/8	03
US	D10 L		C06J2		1-08 *	P						2			0-4/8	03
US	D10 L		C07J2		1-09 *	P						1			0-4/8	03
US	D10 L		C06J2		1-10 *	P						2			0-4/8	03
US	D10 L		C09J2		1-11 *	K						1			5-5/8	03
US	D10 L		A05J1		1-12 *	P						2			0-4/8	03
US	D10 L		A06J1		1-13 *	P						1			0-4/8	03
US	D10 L		A07J1		1-14 *	P						2			0-4/8	03
US	D10 L		A08J1		1-15 *	P						1			0-4/8	03
US	D10 L		A09J1		1-16 *	P										03
US	D10 L				1										20-0/8	03
US	D11 L		A01K2		1-01 *	P						2			1	04
US	D11 L		A02K2		1-02 *	P						1			1	04
US	D11 L		A03K2		1-03 *	P						2			1	04
US	D11 L		A04K2		1-04 *							1		N	6-1/8	04
US	D11 L		C03H1		1-05 *	P						2			1	04
US	D11 L		C04H1		1-06 *	P						1			0-4/8	04
US	D11 L		C05H1		1-07 *	P						2			0-4/8	04
US	D11 L		C06H1		1-08 *	P						1			0-4/8	04
US	D11 L		C07H1		1-09 *	P						2			0-4/8	04
US	D11 L		C08H1		1-10 *	P						1			0-4/8	04
US	D11 L		C09H1		1-11 *	K						2			5-2/8	04
US	D11 L		A05K2		1-12 *	P						1			0-4/8	04
US	D11 L		A06K2		1-13 *	P						2			0-4/8	04
US	D11 L		A07K2		1-14 *	P						1			0-4/8	04
US	D11 L		A08K2		1-15 *	P						2			0-4/8	04
US	D11 L		A09K2		1-16 *	P										04
US	D11 L				1										19-7/8	04
US	D12 L		A01K1		1-01 *	P						1			1	05
US	D12 L		A02K1		1-02 *	P						2			1	05
US	D12 L		A03K1		1-03 *	P						1			1	05
US	D12 L		A04K1		1-04 *							2		N	5-5/8	05
US	D12 L		C03H2		1-05 *	P						1			1	05
US	D12 L		C04H2		1-06 *	P						2			0-4/8	05
US	D12 L		C05H2		1-07 *	P						1			0-4/8	05
US	D12 L		C06H2		1-08 *	P						2			0-4/8	05
US	D12 L		C07H2		1-09 *	P						1			0-4/8	05
US	D12 L		C08H2		1-10 *	P						2			0-4/8	05
US	D12 L		C09H2		1-11 *	K						1			5-3/8	05
US	D12 L		A05K1		1-12 *	P						2			0-4/8	05
US	D12 L		A06K1		1-13 *	P						1			0-4/8	05
US	D12 L		A07K1		1-14 *	P						2			0-4/8	05
US	D12 L		A08K1		1-15 *	P						1			0-4/8	05
US	D12 L		A09K1		1-16 *	P										05
US	D12 L				1										19-4/8	05

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
BUS D13 L		A01L2		1-01 *	P						1			1	86
BUS D13 L		A02L2		1-02 *	P						2			1	86
BUS D13 L		A03L2		1-03 *	P						1			1	86
BUS D13 L		A04L2		1-04 *							2		N	5-5/8	86
BUS D13 L		C03F2		1-05 *	P						1			1	86
BUS D13 L		C04F2		1-06 *	P						2			0-4/8	86
BUS D13 L		C05F2		1-07 *	P						1			0-4/8	86
BUS D13 L		C06F2		1-08 *	P						2			0-4/8	86
BUS D13 L		C07F2		1-09 *	P						1			0-4/8	86
BUS D13 L		C09F2		1-10 *	P						2			0-4/8	86
BUS D13 L		C09F2		1-11 *	K						1			5-1/8	86
BUS D13 L		A05L2		1-12 *	P						2			0-4/8	86
BUS D13 L		A06L2		1-13 *	P						1			0-4/8	86
BUS D13 L		A07L2		1-14 *	P						2			0-4/8	86
BUS D13 L		A08L2		1-15 *	P						1			0-4/8	86
BUS D13 L		A09L2		1-16 *	P										86
BUS D13 L				1										19-2/8	86
BUS D14 L		A01L1		1-01 *	P						1			1	87
BUS D14 L		A02L1		1-02 *	P						2			1	87
BUS D14 L		A03L1		1-03 *	P						1			1	87
BUS D14 L		A04L1		1-04 *							2		N	5-3/8	87
BUS D14 L		C03E2		1-05 *	P						1			1	87
BUS D14 L		C04F2		1-06 *	P						2			0-4/8	87
BUS D14 L		C05E2		1-07 *	P						1			0-4/8	87
BUS D14 L		C06E2		1-08 *	P						2			0-4/8	87
BUS D14 L		C07E2		1-09 *	P						1			0-4/8	87
BUS D14 L		C09E2		1-10 *	P						2			0-4/8	87
BUS D14 L		C09E2		1-11 *	K						1			5	87
BUS D14 L		A05L1		1-12 *	P						2			0-4/8	87
BUS D14 L		A06L1		1-13 *	P						1			0-4/8	87
BUS D14 L		A07L1		1-14 *	P						2			0-4/8	87
BUS D14 L		A08L1		1-15 *	P						1			0-4/8	87
BUS D14 L		A09L1		1-16 *	P										87
BUS D14 L				1										18-7/8	87
BUS D15 L		A01*2		1-01 *	P						1			1	88
BUS D15 L		A02*2		1-02 *	P						2			1	88
BUS D15 L		A03*2		1-03 *	P						1			1	88
BUS D15 L		A04*2		1-04 *							2		N	5-1/8	88
BUS D15 L		C03D2		1-05 *							1		N	1	88
BUS D15 L		C04D2		1-06 *	K						2			0-4/8	88
BUS D15 L		C05D2		1-07 *	K						1			0-4/8	88
BUS D15 L		C06D2		1-08 *	K						2			0-4/8	88
BUS D15 L		C07D2		1-09 *	K						1			0-4/8	88
BUS D15 L		C08D2		1-10 *	K						2			0-4/8	88
BUS D15 L		C09D2		1-11 *	K						1			4-6/8	88
BUS D15 L		A05*2		1-12 *	P						2			0-4/8	88
BUS D15 L		A06*2		1-13 *	P						1			0-4/8	88
BUS D15 L		A07*2		1-14 *	P						2			0-4/8	88
BUS D15 L		A08*2		1-15 *	P						1			0-4/8	88
BUS D15 L		A09*2		1-16 *	P										88
BUS D15 L				1										18-3/8	88

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
C BG IN		D03U2		1-01 *							1		N	3-7/8	89
C BG IN		F03R1		1-02 *											89
C BG IN				1										3-7/8	89
C BG OUT		D03V2		1-01 *							1		N	3-7/8	90
C BG OUT		F03A1		1-02 *											90
C BG OUT				1										3-7/8	90
C BR OUT		D03J2		1-01 *							1		N	6-5/8	91
C BR OUT		F03F1		1-02 *							2		N	1	91
C BR OUT		F03U2		1-03 *											91
C BR OUT				1										7-5/8	91
C IN		D03H1		1-01 *							1		N	3-4/8	92
C IN		F03*1		1-02 *											92
C IN				1										3-4/8	92
C INT A		D03N1		1-01 *							1		N	6-3/8	93
C INT A		F03D1		1-02 *											93
C INT A				1										6-3/8	93
C INT A		C03J1		1-01 *							1		N	8-5/8	94
C INT A		F03A2		1-02 *											94
C INT A				1										8-5/8	94
C INT ENA A		D03P1		1-01 *							1		N	6-5/8	95
C INT ENA A		F03V1		1-02 *											95
C INT ENA A				1										6-5/8	95
C INT ENB B		C03L1		1-01 *							1		N	8-1/8	96
C INT ENB B		F03*2		1-02 *											96
C INT ENB B				1										8-1/8	96
C OUT HIGH		D03R1		1-01 *							1		N	3-3/8	97
C OUT HIGH		F03M2		1-02 *											97
C OUT HIGH				1										3-3/8	97
C OUT LOW		D03D1		1-01 *							1		N	4	98
C OUT LOW		F03M1		1-02 *											98
C OUT LOW				1										4-0/8	98
C SEL 0		D03F1		1-01 *							1		N	4-1/8	99
C SEL 0		E03S2		1-02 *											99
C SEL 0				1										4-1/8	99
C SEL 4		D03F1		1-01 *							1		N	4-3/8	100
C SEL 4		E03R2		1-02 *											100
C SEL 4				1										4-3/8	100
C SEL 6		D03C1		1-01 *							1		N	4-4/8	101
C SEL 6		F03S1		1-02 *											101
C SEL 6				1										4-4/8	101
C SEP 2		D03J1		1-01 *							1		N	4-1/8	102
C SEP 2		F03T2		1-02 *											102
C SEP 2				1										4-1/8	102

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
C SSYN IN H		D03V1		1-01 *							1		N	1	103
C SSYN IN H		E03B1		1-02 *											103
C SSYN IN H				1										1-0/8	103
C0 L		B01U2		1-01 *							1		N	1	104
C0 L		B02U2		1-02 *							2		N	1	104
C0 L		B03U2		1-03 *							1		N	1	104
C0 L		B04U2		1-04 *							2		N	7-3/8	104
C0 L		E03J2		1-05 *	P						1			1	104
C0 L		E04J2		1-06 *	P						2			0-4/8	104
C0 L		E05J2		1-07 *	P						1			0-4/8	104
C0 L		E06J2		1-08 *	P						2			0-4/8	104
C0 L		E07J2		1-09 *	P						1			0-4/8	104
C0 L		E08J2		1-10 *	P						2			0-4/8	104
C0 L		E09J2		1-11 *	K						1			0-7/8	104
C0 L		B05U2		1-12 *	K						2			0-4/8	104
C0 L		B06U2		1-13 *	K						1			0-4/8	104
C0 L		B07U2		1-14 *	K						2			0-4/8	104
C0 L		B08U2		1-15 *	K						1			0-4/8	104
C0 L		B09U2		1-16 *											104
C0 L				1										22-6/8	104
C1 L		B01T2		1-01 *							2		N	1	105
C1 L		B02T2		1-02 *							1		N	1	105
C1 L		B03T2		1-03 *							2		N	1	105
C1 L		B04T2		1-04 *							1		N	7-3/8	105
C1 L		E03F2		1-05 *	P						2			1	105
C1 L		E04F2		1-06 *	P						1			0-4/8	105
C1 L		E05F2		1-07 *	P						2			0-4/8	105
C1 L		E06F2		1-08 *	P						1			0-4/8	105
C1 L		E07F2		1-09 *	P						2			0-4/8	105
C1 L		E08F2		1-10 *	P						1			0-4/8	105
C1 L		F09F2		1-11 *	K						2			6-6/8	105
C1 L		B05T2		1-12 *	K						1			0-4/8	105
C1 L		B06T2		1-13 *	K						2			0-4/8	105
C1 L		B07T2		1-14 *	K						1			0-4/8	105
C1 L		B08T2		1-15 *	K						2			0-4/8	105
C1 L		B09T2		1-16 *											105
C1 L				1										22-5/8	105
D AG IN		D04U2		1-01 *							1		N	3-7/8	106
D AG IN		F04B1		1-02 *											106
D AG IN				1										3-7/8	106
D AG OUT		D04V2		1-01 *							1		N	3-7/8	107
D AG OUT		F04A1		1-02 *											107
D AG OUT				1										3-7/8	107
D BR OUT		D04J2		1-01 *							1		N	6-5/8	108
D BR OUT		F04P1		1-02 *							2		N	1	108
D BR OUT		F04U2		1-03 *											108
D BR OUT				1										7-5/8	108

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
D I		D04H1		1-01 *							1		N	3-4/8	109
D I		E04M1		1-02 *											109
D I				1										3-4/8	109
D INT A		D04K1		1-01 *							1		N	6-3/8	110
D INT A		F04U1		1-02 *											110
D INT A				1										6-3/8	110
D INT A		C04J1		1-01 *							1		N	8-5/8	111
D INT A		F04F2		1-02 *											111
D INT A				1										8-5/8	111
D INT ENB A		D04V1		1-01 *							1		N	6-5/8	112
D INT ENB A		F03V1		1-02 *											112
D INT ENB A				1										6-5/8	112
D INT ENB B		C04L1		1-01 *							1		N	8-1/8	113
D INT ENB B		F04H2		1-02 *											113
D INT ENB B				1										8-1/8	113
D OUT HIGH		D04K1		1-01 *							1		N	3-3/8	114
D OUT HIGH		E04M2		1-02 *											114
D OUT HIGH				1										3-3/8	114
D OUT LOW		D04D1		1-01 *							1		N	4	115
D OUT LOW		F04L1		1-02 *											115
D OUT LOW				1										4-0/8	115
D SEL 2		D04F1		1-01 *							1		N	4-1/8	116
D SEL 2		F04S2		1-02 *											116
D SEL 2				1										4-1/8	116
D SEL 4		D04E1		1-01 *							1		N	4-3/8	117
D SEL 4		E04H2		1-02 *											117
D SEL 4				1										4-3/8	117
D SEL 6		D04C1		1-01 *							1		N	4-4/8	118
D SEL 6		E04S1		1-02 *											118
D SEL 6				1										4-4/8	118
D SEP 2		D04J1		1-01 *							1		N	4-1/8	119
D SEP 2		F04T2		1-02 *											119
D SEP 2				1										4-1/8	119
D SSYN IN H		D04V1		1-01 *							1		N	1	120
D SSYN IN H		E04B1		1-02 *											120
D SSYN IN H				1										1-0/8	120

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
DC L		B01F2		1-01 *	P						2			1	121
DC L		B02F2		1-02 *	P						1			1	121
DC L		B03F2		1-03 *	P						2			1	121
DC L		B04F2		1-04 *							1		N	4-3/8	121
DC L		C03N1		1-05 *	P						2			1	121
DC L		C04N1		1-06 *	P						1			0-4/8	121
DC L		C05N1		1-07 *	P						2			0-4/8	121
DC L		C06N1		1-08 *	P						1			0-4/8	121
DC L		C07N1		1-09 *	P						2			0-4/8	121
DC L		C08N1		1-10 *	P						1			0-4/8	121
DC L		C09N1		1-11 *	K						2			3-5/8	121
DC L		B05F2		1-12 *	P						1			0-4/8	121
DC L		B06F2		1-13 *	P						2			0-4/8	121
DC L		B07F2		1-14 *	P						1			0-4/8	121
DC L		B08F2		1-15 *	P						2			0-4/8	121
DC L		B09F2		1-16 *	P										121
DC L				1										16-4/8	121
E BG IN		D05U2		1-01 *	K						1			3-3/8	122
E BG IN		F05B1		1-02 *											122
E BG IN				1										3-3/8	122
E BG OUT		D05V2		1-01 *	K						1			3-1/8	123
E BG OUT		F05A1		1-02 *											123
E BG OUT				1										3-1/8	123
E BR OUT		D05J2		1-01 *	K						1			5-7/8	124
E BR OUT		F05P1		1-02 *	K						2			0-4/8	124
E BR OUT		F05U2		1-03 *											124
E BR OUT				1										6-3/8	124
E IN		D05H1		1-01 *	K						1			3	125
E IN		F05M1		1-02 *											125
E IN				1										3-0/8	125
E INT A		D05N1		1-01 *	K						1			5-7/8	126
E INT A		F05U1		1-02 *											126
E INT A				1										5-7/8	126
E INT B		C05J1		1-01 *	K						1			8-1/8	127
E INT B		F05K2		1-02 *											127
E INT B				1										8-1/8	127
E INT ENB A		D05M1		1-01 *	K						1			6-1/8	128
E INT ENB A		F05V1		1-02 *											128
E INT ENB A				1										6-1/8	128
E INT ENB B		C05L1		1-01 *	K						1			7-5/8	129
E INT ENB B		F05M2		1-02 *											129
E INT ENB B				1										7-5/8	129
E OUT HIGH		D05K1		1-01 *	K						1			2-6/8	130
E OUT HIGH		E05M2		1-02 *											130
E OUT HIGH				1										2-6/8	130

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
E OUT LOW		D05D1		1-01 *	K						1			3-4/8	131
E OUT LOW		E05N1		1-02 *											131
E OUT LOW				1										3-4/8	131
E SEL 2		D05F1		1-01 *	K						1			3-5/8	132
E SEL 2		F05S2		1-02 *											132
E SEL 2				1										3-5/8	132
E SEL 4		D05E1		1-01 *	K						1			3-5/8	133
E SEL 4		F05P2		1-02 *											133
E SEL 4				1										3-5/8	133
E SEL 6		D05C1		1-01 *	K						1			4	134
E SEL 6		E05S1		1-02 *											134
E SEL 6				1										4-0/8	134
E SSYN 2		D05J1		1-01 *	K						1			3-4/8	135
E SSYN 2		E05T2		1-02 *											135
E SSYN 2				1										3-4/8	135
E SSYN IN H		D05V1		1-01 *	K						1			0-4/8	136
E SSYN IN H		F05R1		1-02 *											136
E SSYN IN H				1										0-4/8	136
F BG IN		D06U2		1-01 *	K						1			3-3/8	137
F BG IN		F06B1		1-02 *											137
F BG IN				1										3-3/8	137
F BG OUT		D06V2		1-01 *	K						1			3-1/8	138
F BG OUT		F06A1		1-02 *											138
F BG OUT				1										3-1/8	138
F BR OUT		D06J2		1-01 *	K						1			5-7/8	139
F BR OUT		F06P1		1-02 *	K						2			0-4/8	139
F BR OUT		F06U2		1-03 *											139
F BR OUT				1										6-3/8	139
F IN		D06H1		1-01 *	K						1			3	140
F IN		E06M1		1-02 *											140
F IN				1										3-0/8	140
F INT A		D06N1		1-01 *	K						1			5-7/8	141
F INT A		F06U1		1-02 *											141
F INT A				1										5-7/8	141
F INT B		C06J1		1-01 *	K						1			8-1/8	142
F INT B		F06K2		1-02 *											142
F INT B				1										8-1/8	142
F INT ENB A		D06M1		1-01 *	K						1			6-1/8	143
F INT ENB A		F06V1		1-02 *											143
F INT ENB A				1										6-1/8	143
F INT ENB B		C06L1		1-01 *	K						1			7-5/8	144
F INT ENB B		F06H2		1-02 *											144
F INT ENB B				1										7-5/8	144

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	O	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
F OUT HIGH		D06K1		1-01 *	K						1			2-6/8	145
F OUT HIGH		E06M2		1-02 *											145
F OUT HIGH				1										2-6/8	145
F OUT LOW		D06D1		1-01 *	K						1			3-4/8	146
F OUT LOW		E06N1		1-02 *											146
F OUT LOW				1										3-4/8	146
F SEL M		D06F1		1-01 *	K						1			3-5/8	147
F SEL M		E06S2		1-02 *											147
F SEL M				1										3-5/8	147
F SEL 4		D06E1		1-01 *	K						1			3-5/8	148
F SEL 4		E06R2		1-02 *											148
F SEL 4				1										3-5/8	148
F SEL 6		D06C1		1-01 *	K						1			4	149
F SEL 6		F06S1		1-02 *											149
F SEL 6				1										4-0/8	149
F SEP 2		D06J1		1-01 *	K						1			3-4/8	150
F SEP 2		E06T2		1-02 *											150
F SEP 2				1										3-4/8	150
F SSYN IN H		D06V1		1-01 *	K						1			0-4/8	151
F SSYN IN H		F06B1		1-02 *											151
F SSYN IN H				1										0-4/8	151
F03D2		F03D2		1-01 *							2		N	1-6/8	152
F03D2		F03R2		1-02 *							1		N	0-4/8	152
F03D2		F03N1		1-03 *											152
F03D2				1										2-2/8	152
F03E1		F03E1		1-01 *							1		N	2-3/8	153
F03E1		F03V2		1-02 *											153
F03E1				1										2-3/8	153
F03L2		F03L2		1-01 *							1		N	1	154
F03L2		F03R1		1-02 *											154
F03L2				1										1-0/8	154
F03M2		F03M2		1-01 *							1		N	1	155
F03M2		F03S1		1-02 *											155
F03M2				1										1-0/8	155
F03P2		F03P2		1-01 *							1		N	0-4/8	156
F03P2		F03S2		1-02 *											156
F03P2				1										0-4/8	156
F04D2		F04D2		1-01 *							2		N	1-6/8	157
F04D2		F04R2		1-02 *							1		N	0-4/8	157
F04D2		F04N1		1-03 *											157
F04D2				1										2-2/8	157

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	O	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
F04E1		F04E1		1-01 *							1		N	2-3/8	158
F04E1		F04V2		1-02 *											158
F04E1				1										2-3/8	158
F04L2		F04L2		1-01 *							1		N	1	159
F04L2		F04P1		1-02 *											159
F04L2				1										1-0/8	159
F04M2		F04M2		1-01 *							1		N	1	160
F04M2		F04S1		1-02 *											160
F04M2				1										1-0/8	160
F04P2		F04P2		1-01 *							1		N	0-4/8	161
F04P2		F04S2		1-02 *											161
F04P2				1										0-4/8	161
F05D2		F05D2		1-01 *	K						2			1-2/8	162
F05D2		F05R2		1-02 *	K						1			0-2/8	162
F05D2		F05N1		1-03 *											162
F05D2				1										1-4/8	162
F05E1		F05E1		1-01 *	K						1			1-5/8	163
F05E1		F05V2		1-02 *											163
F05E1				1										1-5/8	163
F05L2		F05L2		1-01 *	K						1			0-4/8	164
F05L2		F05P1		1-02 *											164
F05L2				1										0-4/8	164
F05M2		F05M2		1-01 *	K						1			0-4/8	165
F05M2		F05S1		1-02 *											165
F05M2				1										0-4/8	165
F05P2		F05P2		1-01 *	K						1			0-2/8	166
F05P2		F05S2		1-02 *											166
F05P2				1										0-2/8	166
F06D2		F06D2		1-01 *	K						2			1-2/8	167
F06D2		F06R2		1-02 *	K						1			0-2/8	167
F06D2		F06N1		1-03 *											167
F06D2				1										1-4/8	167
F06E1		F06E1		1-01 *	K						1			1-5/8	168
F06E1		F06V2		1-02 *											168
F06E1				1										1-5/8	168
F06L2		F06L2		1-01 *	K						1			0-4/8	169
F06L2		F06R1		1-02 *											169
F06L2				1										0-4/8	169
F06M2		F06M2		1-01 *	K						1			0-4/8	170
F06M2		F06S1		1-02 *											170
F06M2				1										0-4/8	170

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
F06P2		F06P2		1-01 *	K						1		0-2/8	171
F06P2		F06S2		1-02 *										171
F06P2				1									0-2/8	171
F07D2		F07D2		1-01 *	K						2		1-2/8	172
F07D2		F07P2		1-02 *	K						1		0-2/8	172
F07D2		F07N1		1-03 *										172
F07D2				1									1-4/8	172
F07E1		F07F1		1-01 *	K						1		1-5/8	173
F07E1		F07V2		1-02 *										173
F07E1				1									1-5/8	173
F07L2		F07L2		1-01 *	K						1		0-4/8	174
F07L2		F07R1		1-02 *										174
F07L2				1									0-4/8	174
F07M2		F07M2		1-01 *	K						1		0-4/8	175
F07M2		F07S1		1-02 *										175
F07M2				1									0-4/8	175
F07P2		F07P2		1-01 *	K						1		0-2/8	176
F07P2		F07S2		1-02 *										176
F07P2				1									0-2/8	176
F08D2		F08D2		1-01 *	K						2		1-2/8	177
F08D2		F08R2		1-02 *	K						1		0-2/8	177
F08D2		F08N1		1-03 *										177
F08D2				1									1-4/8	177
F08E1		F08E1		1-01 *	K						1		1-5/8	178
F08E1		F08V2		1-02 *										178
F08E1				1									1-5/8	178
F08L2		F08L2		1-01 *	K						1		0-4/8	179
F08L2		F08R1		1-02 *										179
F08L2				1									0-4/8	179
F08M2		F08M2		1-01 *	K						1		0-4/8	180
F08M2		F08S1		1-02 *										180
F08M2				1									0-4/8	180
F08P2		F08P2		1-01 *	K						1		0-2/8	181
F08P2		F08S2		1-02 *										181
F08P2				1									0-2/8	181
F09D2		F09D2		1-01 *	K						2		1-2/8	182
F09D2		F09P2		1-02 *	K						1		0-2/8	182
F09D2		F09N1		1-03 *										182
F09D2				1									1-4/8	182
F09E1		F09E1		1-01 *	K						1		1-5/8	183
F09E1		F09V2		1-02 *										183
F09E1				1									1-5/8	183

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
F09L2		F09L2		1-01 *	K						1		0-4/8	184
F09L2		F09R1		1-02 *										184
F09L2				1									0-4/8	184
F09M2		F09M2		1-01 *	K						1		0-4/8	185
F09M2		F09S1		1-02 *										185
F09M2				1									0-4/8	185
F09P2		F09P2		1-01 *	K						1		0-2/8	186
F09P2		F09S2		1-02 *										186
F09P2				1									0-2/8	186
GND (A1)		A01C2		1-01 *	P						1		1	187
GND (A1)		A02C2		1-02 *	P						2		1	187
GND (A1)		A03C2		1-03 *	P						1		1	187
GND (A1)		A04C2		1-04 *	P						2		0-4/8	187
GND (A1)		A05C2		1-05 *	P						1		0-4/8	187
GND (A1)		A06C2		1-06 *	P						2		0-4/8	187
GND (A1)		A07C2		1-07 *	P						1		0-4/8	187
GND (A1)		A08C2		1-08 *	P						2		0-4/8	187
GND (A1)		A09C2		1-09 *	P						1		1-5/8	187
GND (A1)		A09T1		1-10 *	P						2		0-4/8	187
GND (A1)		A08T1		1-11 *	P						1		0-4/8	187
GND (A1)		A07T1		1-12 *	P						2		0-4/8	187
GND (A1)		A06T1		1-13 *	P						1		0-4/8	187
GND (A1)		A05T1		1-14 *	P						2		0-4/8	187
GND (A1)		A04T1		1-15 *	P						1		1	187
GND (A1)		A03T1		1-16 *	P						2		1	187
GND (A1)		A02T1		1-17 *	P						1		1	187
GND (A1)		A01T1		1-18 *	P						2		1-5/8	187
GND (A1)		B01C2		1-19 *	P						1		1	187
GND (A1)		B02C2		1-20 *	P						2		1	187
GND (A1)		B03C2		1-21 *	P						1		1	187
GND (A1)		B04C2		1-22 *	P						2		0-4/8	187
GND (A1)		B05C2		1-23 *	P						1		0-4/8	187
GND (A1)		B06C2		1-24 *	P						2		0-4/8	187
GND (A1)		B07C2		1-25 *	P						1		0-4/8	187
GND (A1)		B08C2		1-26 *	P						2		0-4/8	187
GND (A1)		B09C2		1-27 *	P						1		1-5/8	187
GND (A1)		B09T1		1-28 *	P						2		0-4/8	187
GND (A1)		B08T1		1-29 *	P						1		0-4/8	187
GND (A1)		B07T1		1-30 *	P						2		0-4/8	187
GND (A1)		B06T1		1-31 *	P						1		0-4/8	187
GND (A1)		B05T1		1-32 *	P						2		0-4/8	187
GND (A1)		B04T1		1-33 *	P						1		1	187
GND (A1)		B03T1		1-34 *	P						2		1	187
GND (A1)		B02T1		1-35 *	P						1		1	187
GND (A1)		B01T1		1-36 *	P						2		1-3/8	187
GND (A1)		C01C2		1-37 *	P						1		1	187
GND (A1)		C02C2		1-38 *	P						2		1	187
GND (A1)		C03C2		1-39 *	P						1		1	187
GND (A1)		C04C2		1-40 *	P						2		0-4/8	187
GND (A1)		C05C2		1-41 *	P						1		0-4/8	187
GND (A1)		C06C2		1-42 *	P						2		0-4/8	187
GND (A1)		C07C2		1-43 *	P						1		0-4/8	187
GND (A1)		C08C2		1-44 *	P						2		0-4/8	187

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
GND (A1)		C09C2		1-45 *	P						1			1-5/8		107
GND (A1)		C09T1		1-46 *	P						2			0-4/8		107
GND (A1)		C08T1		1-47 *	P						1			0-4/8		107
GND (A1)		C07T1		1-48 *	P						2			0-4/8		107
GND (A1)		C06T1		1-49 *	P						1			0-4/8		107
GND (A1)		C05T1		1-50 *	P						2			0-4/8		107
GND (A1)		C04T1		1-51 *	P						1			1		107
GND (A1)		C03T1		1-52 *	P						2			1		107
GND (A1)		C02T1		1-53 *	P						1			1		107
GND (A1)		C01T1		1-54 *	P											107
GND (A1)				1										40-7/8		107
GND (A2)		D01C2		1-01 *	P						1			1		108
GND (A2)		D02C2		1-02 *	P						2			1		108
GND (A2)		D03C2		1-03 *	P						1			1		108
GND (A2)		D04C2		1-04 *	P						2			0-4/8		108
GND (A2)		D05C2		1-05 *	P						1			0-4/8		108
GND (A2)		D06C2		1-06 *	P						2			0-4/8		108
GND (A2)		D07C2		1-07 *	P						1			0-4/8		108
GND (A2)		D08C2		1-08 *	P						2			0-4/8		108
GND (A2)		D09C2		1-09 *	P						1			1-5/8		108
GND (A2)		D09T1		1-10 *	P						2			0-4/8		108
GND (A2)		D08T1		1-11 *	P						1			0-4/8		108
GND (A2)		D07T1		1-12 *	P						2			0-4/8		108
GND (A2)		D06T1		1-13 *	P						1			0-4/8		108
GND (A2)		D05T1		1-14 *	P						2			0-4/8		108
GND (A2)		D04T1		1-15 *	P						1			1		108
GND (A2)		D03T1		1-16 *	P						2			1		108
GND (A2)		D02T1		1-17 *	P						1			1		108
GND (A2)		D01T1		1-18 *	P						2			1-3/8		108
GND (A2)		E01C2		1-19 *	P						1			1		108
GND (A2)		E02C2		1-20 *	P						2			1		108
GND (A2)		E03C2		1-21 *	P						1			1		108
GND (A2)		E04C2		1-22 *	P						2			0-4/8		108
GND (A2)		E05C2		1-23 *	P						1			0-4/8		108
GND (A2)		E06C2		1-24 *	P						2			0-4/8		108
GND (A2)		E07C2		1-25 *	P						1			0-4/8		108
GND (A2)		E08C2		1-26 *	P						2			0-4/8		108
GND (A2)		E09C2		1-27 *	P						1			1-5/8		108
GND (A2)		E09T1		1-28 *	P						2			0-4/8		108
GND (A2)		E08T1		1-29 *	P						1			0-4/8		108
GND (A2)		E07T1		1-30 *	P						2			0-4/8		108
GND (A2)		E06T1		1-31 *	P						1			0-4/8		108
GND (A2)		E05T1		1-32 *	P						2			0-4/8		108
GND (A2)		E04T1		1-33 *	P						1			1		108
GND (A2)		E03T1		1-34 *	P						2			1		108
GND (A2)		E02T1		1-35 *	P						1			1		108
GND (A2)		E01T1		1-36 *	P						2			1-5/8		108
GND (A2)		F01C2		1-37 *	P						1			1		108
GND (A2)		F02C2		1-38 *	P						2			1		108
GND (A2)		F03C2		1-39 *	P						1			1		108
GND (A2)		F04C2		1-40 *	P						2			0-4/8		108
GND (A2)		F05C2		1-41 *	P						1			0-4/8		108
GND (A2)		F06C2		1-42 *	P						2			0-4/8		108
GND (A2)		F07C2		1-43 *	P						1			0-4/8		108
GND (A2)		F08C2		1-44 *	P						2			0-4/8		108

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
GND (A2)		F09C2		1-45 *	P						1			1-5/8		108
GND (A2)		F09T1		1-46 *	P						2			0-4/8		108
GND (A2)		F08T1		1-47 *	P						1			0-4/8		108
GND (A2)		F07T1		1-48 *	P						2			0-4/F		108
GND (A2)		F06T1		1-49 *	P						1			0-4/8		108
GND (A2)		F05T1		1-50 *	P						2			0-4/8		108
GND (A2)		F04T1		1-51 *	P						1			1		108
GND (A2)		F03T1		1-52 *	P						2			1		108
GND (A2)		F02T1		1-53 *	P						1			1		108
GND (A2)		F01T1		1-54 *	P											108
GND (A2)				1										40-7/8		108
GND (A3)		H09V2		1-01 *	P						2			1-5/8		109
GND (A3)		P09E1		1-02 *	P						1			0-1/8		109
GND (A3)		H09D1		1-03 *	P						2			0-2/8		109
GND (A3)		H09B2		1-04 *	P						1			0-6/8		109
GND (A3)		A09V2		1-05 *	P						2			0-4/8		109
GND (A3)		A09S1		1-06 *	P						1			0-1/8		109
GND (A3)		A09F1		1-07 *	P						2			0-1/8		109
GND (A3)		A09P1		1-08 *	P						1			0-1/8		109
GND (A3)		A09N1		1-09 *	P						2			1-2/8		109
GND (A3)		A09B2		1-10 *	P						1			4		109
GND (A3)		A01B2		1-11 *	P						2			1-7/8		109
GND (A3)		A01A1		1-12 *	P						1			0-1/8		109
GND (A3)		A01P1		1-13 *	P						2			0-1/8		109
GND (A3)		A01H1		1-14 *	P						1			0-1/8		109
GND (A3)		A01S1		1-15 *	P						2			0-5/8		109
GND (A3)		A01V2		1-16 *	P						1			1-2/8		109
GND (A3)		B01B2		1-17 *	P						2			0-4/8		109
GND (A3)		B01D1		1-18 *	P						1			0-1/8		109
GND (A3)		B01F1		1-19 *	P						2			2-3/8		109
GND (A3)		B01V2		1-20 *	P						1			6-5/8		109
GND (A3)		E03A1		1-21 *	P						2			1		109
GND (A3)		E04A1		1-22 *	P						1			0-4/8		109
GND (A3)		E05A1		1-23 *	P						2			0-4/8		109
GND (A3)		E06A1		1-24 *	P						1			0-4/8		109
GND (A3)		E07A1		1-25 *	P						2			0-4/8		109
GND (A3)		E08A1		1-26 *	P						1			0-4/8		109
GND (A3)		E09A1		1-27 *	P						2			3-5/8		109
GND (A3)		F09J2		1-28 *	P						1			0-4/8		109
GND (A3)		F08J2		1-29 *	P						2			0-4/8		109
GND (A3)		F07J2		1-30 *	P						1			0-4/8		109
GND (A3)		F06J2		1-31 *	P						2			0-4/8		109
GND (A3)		F05J2		1-32 *	P						1			0-4/8		109
GND (A3)		F04J2		1-33 *	P						2			1		109
GND (A3)		F03J2		1-34 *	P											109
GND (A3)				1										33-2/8		109
H BG IN		D07U2		1-01 *	K						1			3-3/8		190
H BG IN		F07H1		1-02 *												190
H BG IN				1										3-3/8		190
H BG OUT		D07V2		1-01 *	K						1			3-1/8		191
H BG OUT		F07A1		1-02 *												191
H BG OUT				1										3-1/8		191

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC	LENGTH EXCEPTIONS FLAG	RUN NUMBER
H BR OUI		DW7J2		1-01 *	K						1			5-7/8	192
H BP OUT		FW7P1		1-02 *	K						2			0-4/8	192
H BR OUT		FW7U2		1-03 *											192
H BR OUT				1										6-3/8	192
H I?		DW7M1		1-01 *	K						1			3	193
H I?		FW7M1		1-02 *											193
H I?				1										3-0/8	193
H INT A		DW7N1		1-01 *	K						1			5-7/8	194
H INT A		FW7U1		1-02 *											194
H INT A				1										5-7/8	194
H INT B		CW7J1		1-01 *	K						1			8-1/8	195
H INT B		FW7K2		1-02 *											195
H INT B				1										8-1/8	195
H INT ENB A		DW7M1		1-01 *	K						1			6-1/8	196
H INT ENB A		FW7V1		1-02 *											196
H INT ENB A				1										6-1/8	196
H INT ENB B		CW7L1		1-01 *	K						1			7-5/8	197
H INT ENB B		FW7M2		1-02 *											197
H INT ENB B				1										7-5/8	197
H OUT HIGH		DW7K1		1-01 *	K						1			2-6/8	198
H OUT HIGH		EW7M2		1-02 *											198
H OUT HIGH				1										2-6/8	198
H OUT LOW		DW7D1		1-01 *	F						1			3-4/8	199
H OUT LOW		EW7N1		1-02 *											199
H OUT LOW				1										3-4/8	199
H SEL P		DW7F1		1-01 *	K						1			3-5/8	200
H SEL P		FW7S2		1-02 *											200
H SEL P				1										3-5/8	200
H SEL 4		DW7E1		1-01 *	K						1			3-5/8	201
H SEL 4		FW7R2		1-02 *											201
H SEL 4				1										3-5/8	201
H SEL 6		DW7C1		1-01 *	K						1			4	202
H SEL 6		EW7S1		1-02 *											202
H SEL 6				1										4-0/8	202
H SEB 2		DW7J1		1-01 *	K						1			3-4/8	203
H SEB 2		EW7T2		1-02 *											203
H SEB 2				1										3-4/8	203
H SSYN IN P		DW7V1		1-01 *	K						1			0-4/8	204
H SSYN IN P		EW7S1		1-02 *											204
H SSYN IN H				1										0-4/8	204

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC	LENGTH EXCEPTIONS FLAG	RUN NUMBER
HALT GRANT		CW1P1		1-01 *	P						2			1	205
HALT GRANT		CW2R1		1-02 *	P						1			1	205
HALT GRANT		CW3R1		1-03 *	P						2			1	205
HALT GRANT		CW4R1		1-04 *	P						1			0-4/8	205
HALT GRANT		CW5R1		1-05 *	P						2			0-4/8	205
HALT GRANT		CW6R1		1-06 *	P						1			0-4/8	205
HALT GRANT		CW7R1		1-07 *	P						2			0-4/8	205
HALT GRANT		CW8R1		1-08 *	P						1			0-4/8	205
HALT GRANT		CW9R1		1-09 *	P										205
HALT GRANT				1										5-4/8	205
HALT REQ		CW1P1		1-01 *	P						2			1	206
HALT REQ		CW2P1		1-02 *	P						1			1	206
HALT REQ		CW3P1		1-03 *	P						2			1	206
HALT REQ		CW4P1		1-04 *	P						1			0-4/8	206
HALT REQ		CW5P1		1-05 *	P						2			0-4/8	206
HALT REQ		CW6P1		1-06 *	P						1			0-4/8	206
HALT REQ		CW7P1		1-07 *	P						2			0-4/8	206
HALT REQ		CW8P1		1-08 *	P						1			0-4/8	206
HALT REQ		CW9P1		1-09 *	P										206
HALT REQ				1										5-4/8	206
INIT L		AW1A1		1-01 *	P						1			1	207
INIT L		AW2A1		1-02 *	P						2			1	207
INIT L		AW3A1		1-03 *	P						1			1	207
INIT L		AW4A1		1-04 *							2		N	9-7/8	207
INIT L		DW3L1		1-05 *	P						1			1	207
INIT L		DW4L1		1-06 *	P						2			0-4/8	207
INIT L		DW5L1		1-07 *	P						1			0-4/8	207
INIT L		DW6L1		1-08 *	P						2			0-4/8	207
INIT L		DW7L1		1-09 *	P						1			0-4/8	207
INIT L		DW8L1		1-10 *	P						2			0-4/8	207
INIT L		DW9L1		1-11 *	K						1			9-2/8	207
INIT L		AW5A1		1-12 *	P						2			0-4/8	207
INIT L		AW6A1		1-13 *	P						1			0-4/8	207
INIT L		AW7A1		1-14 *	P						2			0-4/8	207
INIT L		AW8A1		1-15 *	P						1			0-4/8	207
INIT L		AW9A1		1-16 *	P										207
INIT L				1										27-5/8	207
INT SSYN		BW2E1		1-01 *	P						2			1	208
INT SSYN		BW3E1		1-02 *	P						1			1	208
INT SSYN		BW4E1		1-03 *	P						2			0-4/8	208
INT SSYN		BW5E1		1-04 *	P						1			0-4/8	208
INT SSYN		BW6E1		1-05 *	P						2			0-4/8	208
INT SSYN		BW7E1		1-06 *	P						1			0-4/8	208
INT SSYN		BW8E1		1-07 *	P										208
INT SSYN				1										4-0/8	208

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
INTR L		AM1R1		1-01 *	P						2		1	209
INTR L		AM2R1		1-02 *	P						1		1	209
INTR I		AM3R1		1-03 *	P						2		1	209
INTR I		A04B1		1-04 *							1		N 15-3/8	209
INTR I		FM1M1		1-05 *	P						2		1	209
INTR L		FM4M1		1-06 *	K						1		0-4/8	209
INTR L		FM5M1		1-07 *	P						2		0-4/8	209
INTR L		FM6M1		1-08 *	P						1		0-4/8	209
INTR L		FM7M1		1-09 *	P						2		0-4/8	209
INTR L		FM8M1		1-10 *	P						1		0-4/8	209
INTR L		FM9M1		1-11 *	K						2		14-3/8	209
INTR L		A05B1		1-12 *	P						1		0-4/8	209
INTR L		AM6B1		1-13 *	P						2		0-4/8	209
INTR L		A07R1		1-14 *	P						1		0-4/8	209
INTR L		A08R1		1-15 *	P						2		0-4/8	209
INTR L		A09R1		1-16 *	P									209
INTR I				1									38-2/8	209
J A IN		D08H1		1-01 *	K						1		3	210
J A IN		EM8M1		1-02 *										210
J A IN				1									3-0/8	210
J AC IN		D08U2		1-01 *	K						1		3-3/8	211
J AC IN		F08R1		1-02 *										211
J AC IN				1									3-3/8	211
J AC OUT		D08V2		1-01 *	K						1		3-1/8	212
J AC OUT		F08A1		1-02 *										212
J AC OUT				1									3-1/8	212
J AR OUT		D08J2		1-01 *	K						1		5-7/8	213
J AR OUT		F08P1		1-02 *	K						2		0-4/8	213
J AR OUT		F08U2		1-03 *										213
J AR OUT				1									6-3/8	213
J INT A		D08N1		1-01 *	K						1		5-7/8	214
J INT A		F08U1		1-02 *										214
J INT A				1									5-7/8	214
J INT B		C08J1		1-01 *	K						1		8-1/8	215
J INT B		F08K2		1-02 *										215
J INT B				1									8-1/8	215
J INT ENA A		D08M1		1-01 *	K						1		6-1/8	216
J INT ENA A		F08V1		1-02 *										216
J INT ENA A				1									6-1/8	216
J INT ENB B		C08L1		1-01 *	K						1		7-5/8	217
J INT ENB B		F08P2		1-02 *										217
J INT ENB B				1									7-5/8	217
J OUT HIGH		D08K1		1-01 *	K						1		2-6/8	218
J OUT HIGH		EM8M2		1-02 *										218
J OUT HIGH				1									2-6/8	218

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
J OUT LOW		D08Q1		1-01 *	K						1		3-4/8	219
J OUT LOW		F08R1		1-02 *										219
J OUT LOW				1									3-4/8	219
J SEL 2		D08F1		1-01 *	K						1		3-5/8	220
J SEL 2		EM8S2		1-02 *										220
J SEL 2				1									3-5/8	220
J SEL A		D08E1		1-01 *	K						1		3-5/8	221
J SEL A		F08R2		1-02 *										221
J SEL A				1									3-5/8	221
J SEL B		D08C1		1-01 *	K						1		4	222
J SEL B		F08S1		1-02 *										222
J SEL B				1									4-0/8	222
SEL 2		D09J1		1-01 *	K						1		3-4/8	223
SEL 2		EM8T2		1-02 *										223
SEL 2				1									3-4/8	223
SSYNC IN A		D08V1		1-01 *	K						1		0-4/8	224
SSYNC IN A		F08R1		1-02 *										224
SSYNC IN A				1									0-4/8	224
A IN		D09H1		1-01 *	K						1		3	225
A IN		F09M1		1-02 *										225
A IN				1									3-0/8	225
BG IN		D09U2		1-01 *	K						1		3-3/8	226
BG IN		F09R1		1-02 *										226
BG IN				1									3-3/8	226
BG OUT		D09V2		1-01 *	K						1		3-1/8	227
BG OUT		F09A1		1-02 *										227
BG OUT				1									3-1/8	227
BR OUT		D09J2		1-01 *	K						1		5-7/8	228
BR OUT		F09P1		1-02 *	K						2		0-4/8	228
BR OUT		F09U2		1-03 *										228
BR OUT				1									6-3/8	228
INT A		D09N1		1-01 *	K						1		5-7/8	229
INT A		F09U1		1-02 *										229
INT A				1									5-7/8	229
INT B		C09J1		1-01 *	K						1		8-1/8	230
INT B		F09K2		1-02 *										230
INT B				1									8-1/8	230
INT ENB A		D09M1		1-01 *	K						1		6-1/8	231
INT ENB A		F09V1		1-02 *										231
INT ENB A				1									6-1/8	231
INT ENB B		C09L1		1-01 *	K						1		7-5/8	232
INT ENB B		F09M2		1-02 *										232
INT ENB B				1									7-5/8	232

UN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
OUT HIGH		D09K1		1-01 *	K						1			2-6/8	233
OUT HIGH		E09M2		1-02 *											233
OUT HIGH				1										2-6/8	233
OUT LOW		D09D1		1-01 *	K						1			3-4/8	234
OUT LOW		E09N1		1-02 *											234
OUT LOW				1										3-4/8	234
SEL 0		D09F1		1-01 *	K						1			3-5/8	235
SEL 0		E09S2		1-02 *											235
SEL 0				1										3-5/8	235
SEL 4		D09E1		1-01 *	K						1			3-5/8	236
SEL 4		E09R2		1-02 *											236
SEL 4				1										3-5/8	236
SEL 6		D09C1		1-01 *	K						1			4	237
SEL 6		E09S1		1-02 *											237
SEL 6				1										4-0/8	237
SER 2		D09J1		1-01 *	K						1			3-4/8	238
SER 2		E09T2		1-02 *											238
SER 2				1										3-4/8	238
SSYN IN H		D09V1		1-01 *	K						1			0-4/8	239
SSYN IN H		E09R1		1-02 *											239
SSYN IN H				1										0-4/8	239
1-1 AEPG 00(1) H		D01N1		1-01							1		N	0-5/8	240
1-1 AEPG 00(1) H		D02M1		1-02											240
1-1 AEPG 00(1) H				1										0-5/8	240
1-1 AXPEG 00(1) H		C02U1		1-01							1		N	7-7/8	241
1-1 AXPEG 00(1) H		F01N1		1-02											241
1-1 AXPEG 00(1) H				1										7-7/8	241
1-1 AXPEG 01(1) H		D02F1		1-01							1		N	5-5/8	242
1-1 AXPEG 01(1) H		F01A1		1-02											242
1-1 AXPEG 01(1) H				1										5-5/8	242
1-1 CAIT(1) H		D01U2		1-01							1		N	0-5/8	243
1-1 CAIT(1) H		D02V1		1-02											243
1-1 CAIT(1) H				1										0-5/8	243
1-1 NAIT(1) H		D01L1		1-01							1		N	3-7/8	244
1-1 NAIT(1) H		E02P2		1-02											244
1-1 NAIT(1) H				1										3-7/8	244
1-1 SSMUX 00 H		E02S2		1-01							1		N	4-3/8	245
1-1 SSMUX 00 H		F01F1		1-02											245
1-1 SSMUX 00 H				1										4-3/8	245
1-1 SSMUX 01 H		D01H1		1-01							1		N	3-1/8	246
1-1 SSMUX 01 H		E02E1		1-02											246
1-1 SSMUX 01 H				1										3-1/8	246

UN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
1-1 SSMUX 02 H		F01N1		1-01							1		N	1-3/8	247
1-1 SSMUX 02 H		F02D2		1-02											247
1-1 SSMUX 02 H				1										1-3/8	247
1-1 SSMUX 03 H		D01E1		1-01							1		N	3-3/8	248
1-1 SSMUX 03 H		F02D1		1-02											248
1-1 SSMUX 03 H				1										3-3/8	248
1-1 VAIT(1) H		F01G1		1-01							1		N	2-5/8	249
1-1 VAIT(1) H		F02U2		1-02											249
1-1 VAIT(1) H				1										2-5/8	249
1-1 ZAIT(1) H		E02V1		1-01							1		N	1-7/8	250
1-1 ZAIT(1) H		F01F2		1-02											250
1-1 ZAIT(1) H				1										1-7/8	250
1-14 8-15=4 L		C01J2		1-01							1		N	9-3/8	251
1-14 8-15=4 L		F02N2		1-02											251
1-14 8-15=4 L				1										9-3/8	251
1-14 ASSERT SSYN H		F01M2		1-01							1		N	3-1/8	252
1-14 ASSERT SSYN H		F02F1		1-02											252
1-14 ASSERT SSYN H				1										3-1/8	252
1-14 CCN H		F01T2		1-01							1		N	1-7/8	253
1-14 CCN H		F02J2		1-02											253
1-14 CCN H				1										1-7/8	253
1-14 CCZ H		F01L1		1-01							1		N	2-7/8	254
1-14 CCZ H		F02R2		1-02											254
1-14 CCZ H				1										2-7/8	254
1-2 PSW 05(1) H		C01P2		1-01							1		N	6-5/8	255
1-2 PSW 05(1) H		E02T2		1-02											255
1-2 PSW 05(1) H				1										6-5/8	255
1-2 PSW 06(1) H		C01N2		1-01							1		N	6-5/8	256
1-2 PSW 06(1) H		F02U1		1-02											256
1-2 PSW 06(1) H				1										6-5/8	256
1-2 PSW 07(1) H		E02K2		1-01							1		N	3-3/8	257
1-2 PSW 07(1) H		F01H2		1-02											257
1-2 PSW 07(1) H				1										3-3/8	257
1-2 SSMUX 04 H		C02D1		1-01							1		N	3-7/8	258
1-2 SSMUX 04 H		D01H2		1-02											258
1-2 SSMUX 04 H				1										3-7/8	258
1-2 SSMUX 05 H		E01E1		1-01							1		N	1-3/8	259
1-2 SSMUX 05 H		E02H2		1-02											259
1-2 SSMUX 05 H				1										1-3/8	259
1-2 SSMUX 06 H		C02C1		1-01							1		N	6-7/8	260
1-2 SSMUX 06 H		E01K1		1-02											260
1-2 SSMUX 06 H				1										6-7/8	260

	NAME	PIN	ORDER	OPT			FLAG		NUMBER
C1-2 SSMUX 07 H	C02E2		1-01		1		N 3-7/8		261
C1-2 SSMUX 07 H	DW1J2		1-02						261
C1-2 SSMUX 07 H			1				3-7/8		261
C1-2 TRIT(1) H	D01F1		1-01		1		N 0-5/8		262
C1-2 TRIT(1) H	D02K1		1-02						262
C1-2 TRIT(1) H			1				0-5/8		262
C1-3 SSMUX 08 H	E01A2		1-01		1		N 0-4/8		263
C1-3 SSMUX 08 H	E02N1		1-02						263
C1-3 SSMUX 08 H			1				0-4/8		263
C1-3 SSMUX 09 H	CW2J2		1-01		1		N 6-5/8		264
C1-3 SSMUX 09 H	E01M2		1-02						264
C1-3 SSMUX 09 H			1				6-5/8		264
C1-3 SSMUX 10 H	CW2H2		1-01		1		N 5-1/8		265
C1-3 SSMUX 10 H	DW1V1		1-02						265
C1-3 SSMUX 10 H			1				5-1/8		265
C1-3 SSMUX 11 H	C02F2		1-01		1		N 5-7/8		266
C1-3 SSMUX 11 H	FW1A1		1-02						266
C1-3 SSMUX 11 H			1				5-7/8		266
C1-4 ALU COUT H	FF1V1		1-01		1		N 2-7/8		267
C1-4 ALU COUT H	F02L2		1-02						267
C1-4 ALU COUT H			1				2-7/8		267
C1-4 PSW 15(1) L	DW1J1		1-01		1		N 3-1/8		268
C1-4 PSW 15(1) L	EW2E2		1-02						268
C1-4 PSW 15(1) L			1				3-1/8		268
K1-4 SP15(1) H	CW2N1		1-01	H	1	TWP	0-1/8		269
K1-4 SP15(1) H	FW1E1		1-02	X		TWP		H TO WHERE	269
K1-4 SP15(1) H			1				0-1/8		269
K1-4 SSMUX 12 H	CW2J1		1-01		1		N 5-1/8		270
K1-4 SSMUX 12 H	EW1B2		1-02						270
K1-4 SSMUX 12 H			1				5-1/8		270
K1-4 SSMUX 13 H	C02C2		1-01		1		N 5-3/8		271
K1-4 SSMUX 13 H	DW1V2		1-02						271
K1-4 SSMUX 13 H			1				5-3/8		271
K1-4 SSMUX 14 H	C02H1		1-01		1		N 6-5/8		272
K1-4 SSMUX 14 H	FW1P2		1-02						272
K1-4 SSMUX 14 H			1				6-5/8		272
K1-4 SSMUX 15 H	CW1D1		1-01		1		N 1-3/8		273
K1-4 SSMUX 15 H	C02P2		1-02						273
K1-4 SSMUX 15 H			1				1-3/8		273
K1-5 ALLOW MSYN H	E01V2		1-01		1		N 1-1/8		274
K1-5 ALLOW MSYN H	F02A1		1-02						274
K1-5 ALLOW MSYN H			1				1-1/8		274

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
K1-5 MAN CLK ENAB L		FW1M1		1-01							1		N	1-3/8		275
K1-5 MAN CLK ENAB L		F02F1		1-02												275
K1-5 MAN CLK ENAB L				1										1-3/8		275
K1-5 MAN CLK L		F02S1		1-01							1		N	3-3/8		276
K1-5 MAN CLK L		FW1F1		1-02												276
K1-5 MAN CLK L				1										3-3/8		276
K1-5 PROC CLK H		E02J2		1-01	H						1	TWP		4-3/8		277
K1-5 PROC CLK H		FW1P2		1-02	X							TWP			H TO WHERE	277
K1-5 PROC CLK H				1										4-3/8		277
K1-5 PROC CLK L		F01F1		1-01							1		N	0-5/8		278
K1-5 PROC CLK L		F02M1		1-02												278
K1-5 PROC CLK L				1										0-5/8		278
K1-5 TAP 3W H		DW1E2		1-01	H						1	TWP		4-1/8		279
K1-5 TAP 3W H		FF2M2		1-02	X							TWP			H TO WHERE	279
K1-5 TAP 3W H				1										4-1/8		279
K1-6 PBA 00 H		C01L2		1-01							1		N	4-7/8		280
K1-6 PBA 00 H		FW2C1		1-02												280
K1-6 PBA 00 H				1										4-7/8		280
K1-6 PBA 01 H		C01H1		1-01							1		N	5-3/8		281
K1-6 PBA 01 H		D02V2		1-02												281
K1-6 PBA 01 H				1										5-3/8		281
K1-6 PBA 02 H		D02U2		1-01							1		N	1-7/8		282
K1-6 PBA 02 H		FW1K2		1-02												282
K1-6 PBA 02 H				1										1-7/8		282
K1-6 PBA 03 H		D01V1		1-01							1		N	2-3/8		283
K1-6 PBA 03 H		FW2R1		1-02												283
K1-6 PBA 03 H				1										2-3/8		283
K1-6 VBA 00(1) H		DW2H1		1-01							1		N	4-1/8		284
K1-6 VBA 00(1) H		E01T2		1-02												284
K1-6 VBA 00(1) H				1										4-1/8		284
K1-6 KT FAULT L		DW1D2		1-01							1		N	7-5/8		285
K1-6 KT FAULT L		FW2T2		1-02												285
K1-6 KT FAULT L				1										7-5/8		285
K2-1 CLK MSYN H		C01J1		1-01							1		N	10-3/8		286
K2-1 CLK MSYN H		FW2V2		1-02												286
K2-1 CLK MSYN H				1										10-3/8		286
K2-1 DISABLE WAIT L		D01F2		1-01							1		N	6-7/8		287
K2-1 DISABLE WAIT L		FW2S1		1-02												287
K2-1 DISABLE WAIT L				1										6-7/8		287
K2-1 ENAB ADDR5 L		D02E2		1-01							1		N	5-5/8		288
K2-1 ENAB ADDR5 L		F01M2		1-02												288
K2-1 ENAB ADDR5 L				1										5-5/8		288

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
K2-1 INT MSYN H		C01F2		1-01							1		N	2-7/8	289
K2-1 INT MSYN H		D02C1		1-02											289
K2-1 INT MSYN H				1										2-7/8	289
K2-1 KTE(1) H		C02M2		1-01							1		N	5-5/8	290
K2-1 KTE(1) H		F01J2		1-02											290
K2-1 KTE(1) H				1										5-5/8	290
K2-1 MSYN(1) L		C01H2		1-01							1		N	9-1/8	291
K2-1 MSYN(1) L		F02K2		1-02											291
K2-1 MSYN(1) L				1										9-1/8	291
K2-1 PE(1) H		C01T2		1-01							1		N	1	292
K2-1 PE(1) H		C02T2		1-02											292
K2-1 PE(1) H				1										1-0/8	292
K2-1 START TRAN L		C01N2		1-01							1		N	4-3/8	293
K2-1 START TRAN L		E02A1		1-02											293
K2-1 START TRAN L				1										4-3/8	293
K2-1 TRAN INH L		C01K2		1-01							1		N	7-7/8	294
K2-1 TRAN INH L		F02C1		1-02											294
K2-1 TRAN INH L				1										7-7/8	294
K2-1 UBUS C0(1) H		C01B2		1-01							1		N	4-1/8	295
K2-1 UBUS C0(1) H		D02H2		1-02											295
K2-1 UBUS C0(1) H				1										4-1/8	295
K2-1 UBUS C1(1) H		C01C1		1-01							1		N	4-3/8	296
K2-1 UBUS C1(1) H		D02J1		1-02											296
K2-1 UBUS C1(1) H				1										4-3/8	296
K2-2 BG INH L		F01K2		1-01							1		N	2-1/8	297
K2-2 BG INH L		F02B1		1-02											297
K2-2 BG INH L				1										2-1/8	297
K2-2 PROC INIT L		E01U1		1-01							1		N	1-7/8	298
K2-2 PROC INIT L		F02D2		1-02											298
K2-2 PROC INIT L				1										1-7/8	298
K2-2 RCD INIT L		C01E2		1-01							1		N	8-7/8	299
K2-2 RCD INIT L		F02E2		1-02											299
K2-2 RCD INIT L				1										8-7/8	299
K2-2 SACK RET(1) H		C01K2		1-01							1		N	5-3/8	300
K2-2 SACK RET(1) H		E02L1		1-02											300
K2-2 SACK RET(1) H				1										5-3/8	300
K2-3 C2 H		C02L1		1-01							1		N	2-3/8	301
K2-3 C2 H		D01B2		1-02											301
K2-3 C2 H				1										2-3/8	301
K2-3 C3 H		C01V1		1-01							1		N	0-5/8	302
K2-3 C3 H		C02S1		1-02											302
K2-3 C3 H				1										0-5/8	302

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
K2-3 C4 H		C01U1		1-01							1		N	1-5/8	303
K2-3 C4 H		C02N2		1-02											303
K2-3 C4 H				1										1-5/8	303
K2-3 INT VECTOR L		E01R1		1-01							1		N	7-1/8	304
K2-3 INT VECTOR L		F02U1		1-02											304
K2-3 INT VECTOR L				1										7-1/8	304
K2-3 INTR H		C01V2		1-01							1		N	7-1/8	305
K2-3 INTR H		F02N1		1-02											305
K2-3 INTR H				1										7-1/8	305
K2-4 SP WRITE L		E02F1		1-01							1		N	4-7/8	306
K2-4 SP WRITE L		E01V2		1-02											306
K2-4 SP WRITE L				1										4-7/8	306
K2-4 SPA A0 H		C01D2		1-01	H						1	TWP		3-7/8	307
K2-4 SPA A0 H		D02F2		1-02	X							TWP		H TO WHERE	307
K2-4 SPA A0 H				1										3-7/8	307
K2-4 SPA A1 H		C01C1		1-01	H						1	TWP		2-5/8	308
K2-4 SPA A1 H		D02F2		1-02	X							TWP		H TO WHERE	308
K2-4 SPA A1 H				1										2-5/8	308
K2-4 SPA A2 H		C01S1		1-01	H						1	TWP		3-1/8	309
K2-4 SPA A2 H		D02J1		1-02	X							TWP		H TO WHERE	309
K2-4 SPA A2 H				1										3-1/8	309
K2-4 SPA A3 H		C01U2		1-01	H						1	TWP		2	310
K2-4 SPA A3 H		D02D2		1-02	X							TWP		H TO WHERE	310
K2-4 SPA A3 H				1										2-0/8	310
K2-5 BYTE H		F01H2		1-01							1			3-7/8	311
K2-5 BYTE L		F02L1		1-02											311
K2-5 BYTE L				1										3-7/8	311
K2-5 CC CODE 00 H		F01S1		1-01							1		N	1-5/8	312
K2-5 CC CODE 00 H		F02J1		1-02											312
K2-5 CC CODE 00 H				1										1-5/8	312
K2-5 CC CODE 01 H		E01U2		1-01							1		N	2-3/8	313
K2-5 CC CODE 01 H		F02H2		1-02											313
K2-5 CC CODE 01 H				1										2-3/8	313
K2-5 CC CODE 02 H		E01C1		1-01							1		N	4-7/8	314
K2-5 CC CODE 02 H		F02F2		1-02											314
K2-5 CC CODE 02 H				1										4-7/8	314
K2-5 LOAD IR H		E01D2		1-01							1		N	4-5/8	315
K2-5 LOAD IR H		F02P2		1-02											315
K2-5 LOAD IR H				1										4-5/8	315
K2-5 ROT CBIT(1) H		F01R1		1-01							1		N	1-2/8	316
K2-5 ROT CBIT(1) H		F02K1		1-02											316
K2-5 ROT CBIT(1) H				1										1-2/8	316

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
K2-5 SERIAL SHIFT H		E01F2		1-01							1		N	4-1/8		317
K2-5 SERIAL SHIFT H		F02N1		1-02												317
K2-5 SERIAL SHIFT H				1										4-1/8		317
K2-6 DISAB LOAD PSW H		D01C1		1-01							1		N	7-7/8		318
K2-6 DISAB LOAD PSW H		F02S2		1-02												318
K2-6 DISAB LOAD PSW H				1										7-7/8		318
K2-7 LOAD CC L		F01N1		1-01							1		N	1-4/8		319
K2-7 LOAD CC L		F02F2		1-02												319
K2-7 LOAD CC L				1										1-4/8		319
K2-7 LOAD PSW L		F02N2		1-01							1		N	3-1/8		320
K2-7 LOAD PSW L		F01J2		1-02												320
K2-7 LOAD PSW L				1										3-1/8		320
K2-8 ALU CIN L		C02P2		1-01							1		N	7-7/8		321
K2-8 ALU CIN L		F01F2		1-02												321
K2-8 ALU CIN L				1										7-7/8		321
K2-8 ALU MODE H		C02K2		1-01							1		N	8-7/8		322
K2-8 ALU MODE H		F01J1		1-02												322
K2-8 ALU MODE H				1										8-7/8		322
K2-8 ALU SW H		C02V2		1-01							1		N	7-1/8		323
K2-8 ALU SW H		F01B1		1-02												323
K2-8 ALU SW H				1										7-1/8		323
K2-8 ALU S1 H		D02D1		1-01							1		N	3-7/8		324
K2-8 ALU S1 H		F01H1		1-02												324
K2-8 ALU S1 H				1										3-7/8		324
K2-8 ALU S2 H		F01F1		1-01							1		N	8-5/8		325
K2-8 ALU S2 H		F02H1		1-02												325
K2-8 ALU S2 H				1										8-5/8		325
K2-8 ALU S3 H		E01K2		1-01							1		N	1-7/8		326
K2-8 ALU S3 H		F02F2		1-02												326
K2-8 ALU S3 H				1										1-7/8		326
K2-9 AUX CONTROL(1) L		D01D1		1-01							1		N	4-5/8		327
K2-9 AUX CONTROL(1) L		E02R1		1-02												327
K2-9 AUX CONTROL(1) L				1										4-5/8		327
K2-8 BLEG 00 H		C02V1		1-01							1		N	7-1/8		328
K2-8 BLEG 00 H		F01C1		1-02												328
K2-8 BLEG 00 H				1										7-1/8		328
K2-8 BLEG 01 H		D02N1		1-01							1		N	5-7/8		329
K2-8 BLEG 01 H		F01M2		1-02												329
K2-8 BLEG 01 H				1										5-7/8		329
K2-8 BMODE 00 L		D02E1		1-01							1		N	6-3/8		330
K2-8 BMODE 00 L		F01I2		1-02												330
K2-8 BMODE 00 L				1										6-3/8		330

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
K2-8 BMODE 01 L		C02U2		1-01							1		N	8-7/8		331
K2-8 BMODE 01 L		F01U2		1-02												331
K2-8 BMODE 01 L				1										8-7/8		331
K2-8 BXMODE 00 L		E01S1		1-01							1		N	1-3/8		332
K2-8 BXMODE 00 L		F02R2		1-02												332
K2-8 BXMODE 00 L				1										1-3/8		332
K2-8 BXMODE 01 L		F02S2		1-01							1		N	3-1/8		333
K2-8 BXMODE 01 L		F01L1		1-02												333
K2-8 BXMODE 01 L				1										3-1/8		333
K2-8 DIS UPR START H		E01F1		1-01							1		N	3-7/8		334
K2-8 DIS UPR START H		F02K1		1-02												334
K2-8 DIS UPR START H				1										3-7/8		334
K2-8 DISABLE *SYN+1 L		C02S2		1-01							1		N	5-7/8		335
K2-8 DISABLE *SYN+1 L		F01V1		1-02												335
K2-8 DISABLE *SYN+1 L				1										5-7/8		335
K2-8 ENAB MAINT(1) H		F01S2		1-01							1		N	1		336
K2-8 ENAB MAINT(1) H		F02L2		1-02												336
K2-8 ENAB MAINT(1) H				1										1-0/8		336
K2-8 ENAB OVK L		E01M1		1-01							1		N	1-1/8		337
K2-8 ENAB OVK L		E02J1		1-02												337
K2-8 ENAB OVK L				1										1-1/8		337
K2-8 LOAD BA(1) H		F01D1		1-01							1		N	1		338
K2-8 LOAD BA(1) H		F02D1		1-02												338
K2-8 LOAD BA(1) H				1										1-0/8		338
K2-8 LONG CYCLE(1) L		F02V2		1-01							1		N	3-7/8		339
K2-8 LONG CYCLE(1) L		F01V1		1-02												339
K2-8 LONG CYCLE(1) L				1										3-7/8		339
K2-8 MODE 01 H		E02P1		1-01							1		N	3-1/8		340
K2-8 MODE 01 H		F01W2		1-02												340
K2-8 MODE 01 H				1										3-1/8		340
K2-8 SEX H		C02L2		1-01							1		N	6-1/8		341
K2-8 SEX H		E01J1		1-02												341
K2-8 SEX H				1										6-1/8		341
K2-8 SHIFT MUX 00 L		F01K2		1-01							1		N	0-4/8		342
K2-8 SHIFT MUX 00 L		F02M1		1-02												342
K2-8 SHIFT MUX 00 L				1										0-4/8		342
K2-8 SHIFT MUX 01 L		F01U1		1-01							1		N	1-1/8		343
K2-8 SHIFT MUX 01 L		F02P1		1-02												343
K2-8 SHIFT MUX 01 L				1										1-1/8		342
K2-8 SWAP H		C02P2		1-01							1		N	6-3/8		344
K2-8 SWAP H		F01S2		1-02												344
K2-8 SWAP H				1										6-3/8		344

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
K2-9 AMUX SW(1) L		F01D2		1-01							1		N	2-3/8	346
K2-9 AMUX SW(1) L		F02V1		1-02											346
K2-9 AMUX SW(1) L				1										2-3/8	346
K2-9 AMUX S1(1) L		F01H1		1-01							1		N	1-6/8	346
K2-9 AMUX S1(1) L		F02R2		1-02											346
K2-9 AMUX S1(1) L				1										1-6/8	346
K2-9 FORC KERNEL(1) H		C01L1		1-01							1		N	5-7/8	347
K2-9 FORC KERNEL(1) H		E02K1		1-02											347
K2-9 FORC KERNEL(1) H				1										5-7/8	347
K2-9 PREV MODE(1) L		C01S2		1-01							1		N	2-7/8	348
K2-9 PREV MODE(1) L		D02J2		1-02											348
K2-9 PREV MODE(1) L				1										2-7/8	348
LTC		C03D1		1-01	*	P					2			1	349
LTC		C04D1		1-02	*	P					1			0-4/8	349
LTC		C05D1		1-03	*	P					2			0-4/8	349
LTC		C06D1		1-04	*	P					1			0-4/8	349
LTC		C07D1		1-05	*	P					2			0-4/8	349
LTC		C08D1		1-06	*	P					1			0-4/8	349
LTC		C09D1		1-07	*	P									349
LTC				1										3-4/8	349
MSYN L (1)		F01V1		1-01	*						2		N	1	350
MSYN L (1)		B02V1		1-02	*						1		N	1	350
MSYN L (1)		B03V1		1-03	*						2		N	1	350
MSYN L (1)		B04V1		1-04	*	H					1	TWP		7-1/8	350
MSYN L (1)		F03F1		1-05	*	P					2			1	350
MSYN L (1)		F04E1		1-06	*	K					1			0-4/8	350
MSYN L (1)		E05E1		1-07	*	P					2			0-4/8	350
MSYN L (1)		E06E1		1-08	*	P					1			0-4/8	350
MSYN L (1)		E07E1		1-09	*	P					2			0-4/8	350
MSYN L (1)		F08E1		1-10	*	P									350
MSYN L (1)				1										13-1/8	350
MSYN L (2)		E09F1		1-01	*	H					1	TWP		6-3/8	351
MSYN L (2)		B05V1		1-02	*	K					2			0-4/8	351
MSYN L (2)		B06V1		1-03	*	K					1			0-4/8	351
MSYN L (2)		B07V1		1-04	*	K					2			0-4/8	351
MSYN L (2)		B08V1		1-05	*	K					1			0-4/8	351
MSYN L (2)		B09V1		1-06	*										351
MSYN L (2)				1										0-3/8	351
MSYN L JMP		E08F1		1-01	*	P					1			0-4/8	352
MSYN L JMP		E09E1		1-02	*										352
MSYN L JMP				1										0-4/8	352

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
NPG L		AV1U1		1-01	*						1		N	3-6/8	353
NPG L		C01A1		1-22	*						2		N	0-1/8	353
NPG L		C01F1		1-23	*	P					2			0-5/8	353
NPG L		C02A1		1-24	*						1		N	0-1/8	353
NPG L		C02F1		1-25	*	P					2			0-5/8	353
NPG L		C03J1		1-26	*						1		N	0-1/8	353
NPG L		C03B1		1-27	*	P					2			0-5/8	353
NPG L		C04A1		1-28	*						1		N	0-1/8	353
NPG L		C04B1		1-29	*	P					2			0-3/8	353
NPG L		C05A1		1-10	*	K					1			0-1/8	353
NPG L		C05F1		1-11	*	P					2			0-3/8	353
NPG L		C06A1		1-12	*	K					1			0-1/8	353
NPG L		C06B1		1-13	*	P					2			0-3/8	353
NPG L		C07A1		1-14	*	K					1			0-1/8	353
NPG L		C07H1		1-15	*	P					2			0-3/8	353
NPG L		C08A1		1-16	*	K					1			0-1/8	353
NPG L		C08H1		1-17	*	P					2			0-3/8	353
NPG L		C09A1		1-18	*	K					1			0-1/8	353
NPG L		C09P1		1-19	*	K					2			3-3/8	353
NPG L		AC9U1		1-20	*										353
NPG L				1										12-0/8	353
NPR L		AM1S2		1-01	*						2		N	1	354
NPR L		AM2S2		1-02	*						1		N	1	354
NPR L		AM3S2		1-03	*						2		N	1	354
NPR L		AM4S2		1-04	*						1		N	13-3/8	354
NPR L		F03J1		1-05	*	P					2			1	354
NPR L		F04J1		1-06	*	P					1			0-4/8	354
NPR L		F05J1		1-07	*	P					2			0-4/8	354
NPR L		F06J1		1-08	*	P					1			0-4/8	354
NPR L		F07J1		1-09	*	P					2			0-4/8	354
NPR L		F08J1		1-10	*	P					1			0-4/8	354
NPR L		F09J1		1-11	*	P					2			12-4/8	354
NPR L		AM5S2		1-12	*	K					1			0-4/8	354
NPR L		AM6S2		1-13	*	K					2			0-4/8	354
NPR L		AM7S2		1-14	*	K					1			0-4/8	354
NPR L		AM8S2		1-15	*	K					2			0-4/8	354
NPR L		AM9S2		1-16	*										354
NPR L				1										34-3/8	354

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
PA L		A01M1		1-01 *	P						1			1		355
PA L		A02M1		1-02 *	P						2			1		355
PA L		A03M1		1-03 *	P						1			1		355
PA L		A04M1		1-04 *							2		N	5-1/8		355
PA L		C03C1		1-05 *							1		N	1		355
PA L		C04C1		1-06 *	K						2			0-4/8		355
PA L		C05C1		1-07 *	K						1			0-4/8		355
PA L		C06C1		1-08 *	K						2			0-4/8		355
PA L		C07C1		1-09 *	K						1			0-4/8		355
PA L		C08C1		1-10 *	K						2			0-4/8		355
PA L		C09C1		1-11 *	K						1			4-5/8		355
PA L		A05M1		1-12 *	P						2			0-4/8		355
PA L		A06M1		1-13 *	P						1			0-4/8		355
PA L		A07M1		1-14 *	P						2			0-4/8		355
PA L		A08M1		1-15 *	P						1			0-4/8		355
PA L		A09M1		1-16 *	P											355
PA L				1										10-2/8		355
PAR DET		B02E2		1-01 *							2		N	1		356
PAR DET		B03E2		1-02 *							1		N	1		356
PAR DET		B04E2		1-03 *	K						2			0-4/8		356
PAR DET		B05E2		1-04 *	K						1			0-4/8		356
PAR DET		B06E2		1-05 *	K						2			0-4/8		356
PAR DET		B07E2		1-06 *	K						1			0-4/8		356
PAR DET		B08E2		1-07 *												356
PAR DET				1										4-0/8		356
PAR P2		A02P1		1-01 *	P						2			1		357
PAR P2		A03P1		1-02 *	P						1			1		357
PAR P2		A04P1		1-03 *	P						2			0-4/8		357
PAR P2		A05P1		1-04 *	P						1			0-4/8		357
PAR P2		A06P1		1-05 *	P						2			0-4/8		357
PAR P2		A07P1		1-06 *	P						1			0-4/8		357
PAR P2		A08P1		1-07 *	P											357
PAR P2				1										4-0/8		357
PAR P1		A02N1		1-01 *	P						2			1		358
PAR P1		A03N1		1-02 *	P						1			1		358
PAR P1		A04N1		1-03 *	P						2			0-4/8		358
PAR P1		A05N1		1-04 *	P						1			0-4/8		358
PAR P1		A06N1		1-05 *	P						2			0-4/8		358
PAR P1		A07N1		1-06 *	P						1			0-4/8		358
PAR P1		A08N1		1-07 *	P											358
PAR P1				1										4-0/8		358

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
PB L		A01N2		1-01 *	P						2			1		359
PB L		A02N2		1-02 *	P						1			1		359
PB L		A03N2		1-03 *	P						2			1		359
PB L		A04N2		1-04 *							1		N	6-7/8		359
PB L		C03S1		1-05 *	P						2			1		359
PB L		C04S1		1-06 *	P						1			0-4/8		359
PB L		C05S1		1-07 *	P						2			0-4/8		359
PB L		C06S1		1-08 *	P						1			0-4/8		359
PB L		C07S1		1-09 *	P						2			0-4/8		359
PB L		C08S1		1-10 *	P						1			0-4/8		359
PB L		C09S1		1-11 *	K						2			5-6/8		359
PB L		A05N2		1-12 *	P						1			0-4/8		359
PB L		A06N2		1-13 *	P						2			0-4/8		359
PB L		A07N2		1-14 *	P						1			0-4/8		359
PB L		A08N2		1-15 *	K						2			0-4/8		359
PB L		A09N2		1-16 *												359
PB L				1										21-1/8		359
RESERVED W BUS		B02A1		1-01 *	P						2			1		360
RESERVED W BUS		B03A1		1-02 *	P						1			1		360
RESERVED W BUS		B04A1		1-03 *	P						2			0-4/8		360
RESERVED W BUS		B05A1		1-04 *	P						1			0-4/8		360
RESERVED W BUS		B06A1		1-05 *	P						2			0-4/8		360
RESERVED W BUS		B07A1		1-06 *	P						1			0-4/8		360
RESERVED W BUS		B08A1		1-07 *	P											360
RESERVED W BUS				1										4-0/8		360
SACK L		A01R2		1-01 *	P						2			1		361
SACK L		A02R2		1-02 *	P						1			1		361
SACK L		A03R2		1-03 *	P						2			1		361
SACK L		A04R2		1-04 *							1		N	14-3/8		361
SACK L		FW3T2		1-05 *	P						2			1		361
SACK L		FW4T2		1-06 *	H						1	2" TWP		0-4/8		361
SACK L		FW5T2		1-07 *	P						2			0-4/8		361
SACK L		FW6T2		1-08 *	P						1			0-4/8		361
SACK L		FW7T2		1-09 *	P						2			0-4/8		361
SACK L		FW8T2		1-10 *	P						1			0-4/8		361
SACK L		FW9T2		1-11 *	K						2			13-5/8		361
SACK L		A05R2		1-12 *	P						1			0-4/8		361
SACK L		A06R2		1-13 *	P						2			0-4/8		361
SACK L		A07R2		1-14 *	P						1			0-4/8		361
SACK L		A08R2		1-15 *	P						2			0-4/8		361
SACK L		A09R2		1-16 *	P											361
SACK L				1										36-4/8		361
SSYN L (1)		BW1U1		1-21 *	P						1			1		362
SSYN L (1)		BW2U1		1-02 *	P						2			1		362
SSYN L (1)		BW3U1		1-03 *	P						1			1		362
SSYN L (1)		BW4U1		1-04 *	H						2	TWP		7-3/8		362
SSYN L (1)		FW3J1		1-05 *	P						1			1		362
SSYN L (1)		FW4J1		1-06 *							2		N	2-5/8		362
SSYN L (1)		FW4C1		1-07 *	P						2			1		362
SSYN L (1)		FW3C1		1-08 *	P											362
SSYN L (1)				1										15-0/8		362

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
SSYN L (2)		B09U1		1-01 *	P						1		0-4/8	363
SSYN L (2)		B08U1		1-02 *	P						1		0-4/8	363
SSYN L (2)		B07U1		1-03 *	P						2		0-4/8	363
SSYN L (2)		B06U1		1-04 *	P						1		0-4/8	363
SSYN L (2)		B05U1		1-05 *	H						2	TWP	6-7/8	363
SSYN L (2)		E09J1		1-06 *	P						1		0-4/8	363
SSYN L (2)		E08J1		1-07 *	P						2		0-4/8	363
SSYN L (2)		E07J1		1-08 *	P						1		0-4/8	363
SSYN L (2)		E06J1		1-09 *	P						2		0-4/8	363
SSYN L (2)		F05J1		1-10 *	K						1		2-1/8	363
SSYN L (2)		F05C1		1-11 *	P						1		0-4/8	363
SSYN L (2)		F06C1		1-12 *	P						2		0-4/8	363
SSYN L (2)		F07C1		1-13 *	P						1		0-4/8	363
SSYN L (2)		F08C1		1-14 *	P						2		0-4/8	363
SSYN L (2)		F09C1		1-15 *	P									363
SSYN L (2)				1									15-0/8	363
SSYN L JMP		F05C1		1-01 *	H						1	2" TWP	0-4/8	364
SSYN L JMP		F04C1		1-02 *										364
SSYN L JMP				1									0-4/8	364

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET	
BA11-LA	MANUFACTURING USE ONLY
BA11-LB	
BA11-LC	
BA11-LD	
BA11-LE	EXPANSION BOX
BA11-LF	
BA11-LH	
BA11-LJ	

BA11-L
Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØØ18

REVISIONS		
REV.	CHG. NO.	DATE
A	BA11-L-4	APR-76

USED ON OPTION/MODEL	
11/Ø4	
11/34	

SHEET I OF 1

DRN.	D. HEALY	DATE 9/30/75
CHK'D	D. HEALY	DATE 9/30/75
PROJ. ENG.	R. Barry	DATE 10-22-75
FIELD SERV.		DATE 10-22-75

digital

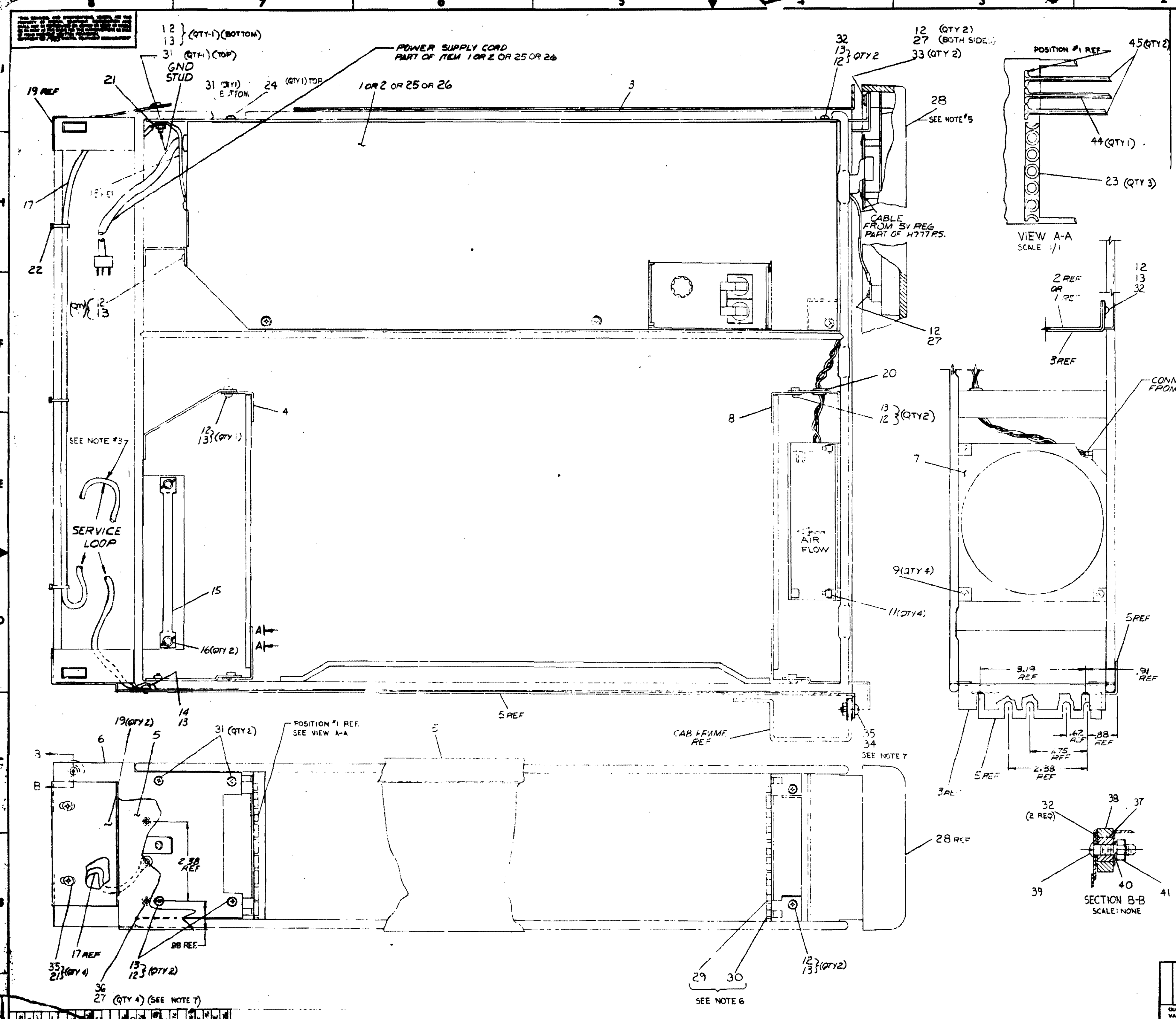
TITLE: FIELD MAINTENANCE PRINT SET
BA11-L

SIZE	CODE	NUMBER	REV.
B	TC	BA11-L-1	A

DIST.

EN-0112-16-M78-(227)

DRB 124



NOTES:

~~1. CUT ITEM 28 AS INDICATED BY VIEW A-A (ONE PIECE OF ITEM 28 WILL MAKE TWO PIECES) TYP 4 PLACES TWO ITEM 28 REQ'D.~~

~~2. USE ITEM 28 AS IS NO REWORK IS REQ'D TYPE ITEM 28 REQ'D.~~

3. ITEM #17 SERVICE LOOP SHOULD BE 24 INCHES.

4. BA11-LA 115V, BA11-LB 230V — CORE & MOS; BA11-LC 115V, BA11-LD 230V — MOS ONLY — MANUFACTURING USE ONLY
BA11-LE 115V, BA11-LF 230V — CORE & MOS; BA11-LH 115V, BA11-LJ 230V — MOS ONLY — BA11-L EXPANSION BOX

5. ADD CONSOLE FOR EXPANSION BOX ONLY.

6. ALTERNATE COLORS: POSITIONS 1,3,5,7,& 9 TO HAVE MAGENTA. POSITIONS 2,4,6,& 8 TO HAVE NATURAL.

7. HARDWARE FOR MOUNTING ITEM 5 (ENCLOSURE ASSEMBLY) TO CABINET.

LEGEND

PART NO.	VARIATION
BA11-LA	5.25 BOX + H777-AA 115V
BA11-LB	5.25 BOX + H777-AB 230V
BA11-LC	5.25 BOX + H777-BA 115V
BA11-LD	5.25 BOX + H777-BB 230V
BA11-LE	5.25 BOX + H777-AA 115V + CONSOLE AS
BA11-LF	5.25 BOX + H777-AB 230V + CONSOLE AS
BA11-LH	5.25 BOX + H777-BA 115V + CONSOLE ASSY
BA11-LJ	5.25 BOX + H777-BB 230V + CONSOLE ASSY

FOR PARTS LIST SEE A-PL-BA11-L-0

TITLE: BOX 5.25 BA11-L (230V/115V)

FIRST USED ON 11/04

SIZE E CODE DA NUMBER BA11-L-0

FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET	
H777-BA (MOS ONLY)	*PRINT SET
H777-BB (MOS ONLY)	*PRINT SET
H777-AA (CORE/MOS)	*PRINT SET
H777-AB (CORE/MOS)	*PRINT SET
H777-CA (CORE/MOS)	**PRINT SET
H777-CB (CORE/MOS)	**PRINT SET
H777-DA (MOS ONLY)	**PRINT SET
H777-DB (MOS ONLY)	**PRINT SET

H777-0
Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MPØØØ16

REVISIONS

REV.	CHG. NO.	DATE
A	H777-B-4	3-76
B	H777-B-5	3-76
C	H777-B-6	9-76

USED ON OPTION/MODEL
BA11-LA
BA11-LB
BA11-LC
BA11-LD
BA11-LE
BA11-LF
BA11-LH
BA11-LJ

SHEET 1 OF 1

DRN.	D. HEALY	DATE 9/30/75
CHK'D	D. HEALY	DATE 9/30/75
PROJ. ENG.	R Barry	DATE 10-22-75
FIELD SERV.		DATE 10-22-75

digital

TITLE: FIELD MAINTENANCE PRINT SET H777-0

SIZE	CODE	NUMBER	REV.
B	TC	H777-0 -1	C

DIST.

EN-01124 16-N878-(327)

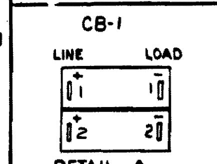
DRB 124

WIRE TABLE									
ITEM	DESCRIPTION		FROM		TO			REMARKS	
NO	AWG	COLOR	CONNECTION	WITH	ITEM	CONNECTION	WITH		
12 OR 13	14	BLK	—	—	3 OR 4	CB1-1(+) LINE	—		
	14	WHT	—	—	3 OR 4	CB1-2(+) LINE	—		
	14	GRN	—	—	1	GND CHASSIS	6		
4 OR 3	14 TRPL TW	BLU	T1-5	—	8	J1-7 (BD2)	—		
		BLU/BLK	T1-6	—	8	J1-6 (BD2)	—		
		BLU	T1-7	—	8	J1-8 (BD2)	—		
3 OR 4	18 TWP	GRY	—	—	8	J1-4 (BD1)	—		
		BLK	—	—	8	J1-5 (BD1)	—		
3 OR 4	18 TWP	WHT	—	—	4	FAN-1	—		
		BLK	—	—	4	FAN-2	—		
3 OR 4	14	GRN/YEL	EMI-3 (REF)	—	8	GND CHASSIS	6		
28	14	GRN/YEL	GND CHASSIS	6				CONSOLE GND	
27	14	GRN/YEL	GND CHASSIS	6				CHASSIS GND	
	14	BLK	ITEM # 29	—	8	J1-3 (BD2)	—	FROM CORE REG	H777-AA H777-AB ONLY
	14	ORN	ITEM # 29	—	8	J1-2 (BD2)	—	FROM CORE REG	
	14	BRN	ITEM # 29	—	8	J1-1 (BD2)	—	FROM CORE REG	

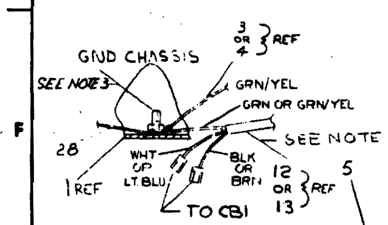
LEGEND	
PART NO	VARIATION
H777-BA	P.S. MOS ONLY 115V
H777-BB	P.S. MOS ONLY 230V
H777-AA	P.S. CORE/MOS 115V
H777-AB	P.S. CORE/MOS 230V

NOTES:

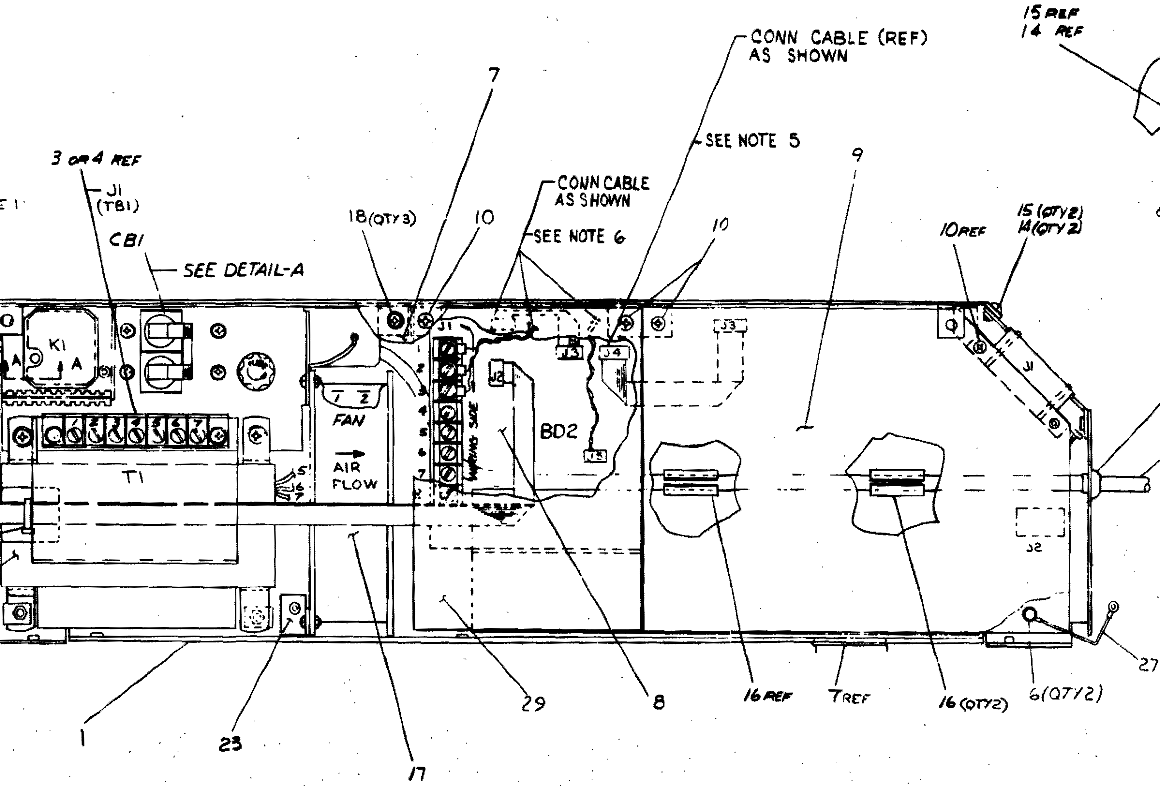
1. MAKE 5 INCH SERVICE LOOP AT HOOKUP END.
2. APPLY SELF STICK INS SHEET (ITEM # 24) TO UNDER SIDE OF POWER SUPPLY COVER IN AREA OF HEAT SINKS (CORE & MOS REGS).
3. APPLY SELF STICK ITEM 26 BESIDE THIS GND STUD.
4. ITEM 28 IS A GND CABLE TO GND THE FRONT PANEL CASTINGS FOR MOS AND CORE REGULATORS.
5. CABLE PART OF ITEM # 9.
6. CABLE & WIRES ARE PART OF ITEM # 29.

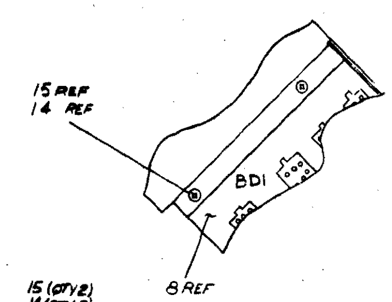


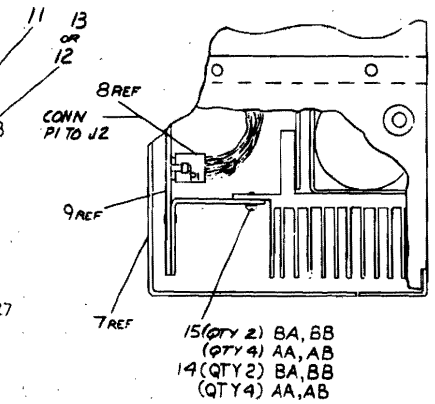
DETAIL - A
WIRING SIDE OF CKT BREAKER PART OF ITEM # 10

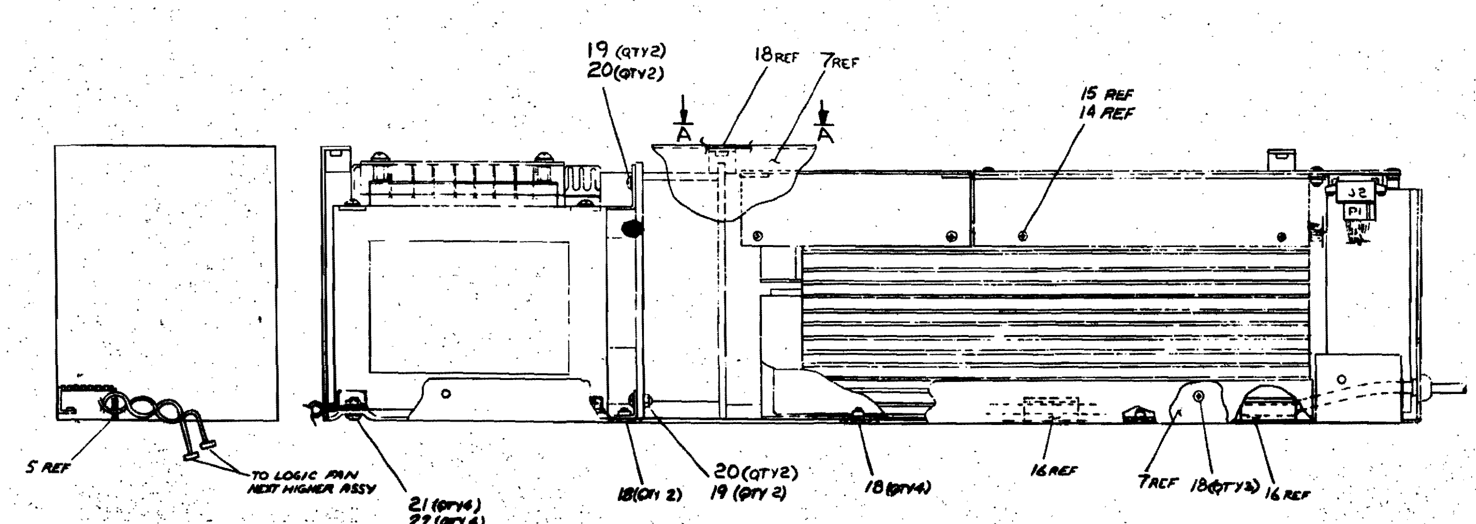


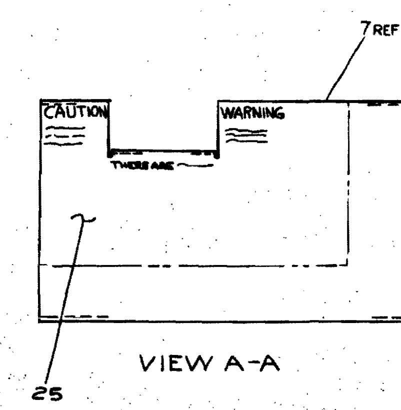
SECTION A-A











VIEW A-A

CAUTION:
UNIT ASSEMBLY FOR OPTIONS AA, AB, BA AND BB ONLY

SEE SHEET 2 FOR OPTIONS CA, CB, DA, AND DB

SEE APL-H777-0 FOR PARTS LIST

TITLE: POWER SUPPLY ASSY (H777)

H777-0-0 REV H

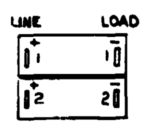
WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO ITEM	TO CONNECTION	TO WITH	REMARKS
12 OR 13	14	BLU	—	—	41	EMI LINE - 1	41	AC LINE CORD
	14	BRN	—	—	41	EMI LINE - 2	41	AC LINE CORD
	14	GRN/YEL	—	—	1	AC GND CHASSIS	—	AC LINE CORD
4 OR 3	14 TRPL TW	BLU	T1-5	—	8	J1- 7 (BD2)	—	SEC VOLTAGE
		BLU/BLK	T1-6	—	8	J1- 6 (BD2)	—	
		BLU	T1-7	—	8	J1- 8 (BD2)	—	
2 OR 4	18 TWP	GRY	—	—	8	J1 - 4 (BD1)	—	TO RELAY COIL
		BLK	—	—	8	J1- 6 (BD1)	—	
3 OR 4	18 TWP	WHT	—	—	4	FAN-1	—	POWER SUPPLY FAN POWER
		BLK	—	—	4	FAN-2	—	
28	14	GRN/YEL	GND CHASSIS 2	6	—	—	—	CONSOLE GND
27	14	GRN/YEL	GND CHASSIS 4	6	—	—	—	CHASSIS GND
	14	BLK	ITEM # 29	—	8	J1 - 3 (BD2)	—	FROM CORE REG
	14	ORN	ITEM # 29	—	8	J1 - 2 (BD2)	—	FROM CORE REG
	14	BRN	ITEM # 29	—	8	J1 - 1 (BD2)	—	FROM CORE REG
42	14 TWP	BRN	EMI-2 LOAD	41		CB1-2 LINE	41	
		BLU	EMI-1 LOAD	41		CB1-1 LINE	41	

FROM CORE REG rows: H777-CA, H777-CB ONLY

LEGEND

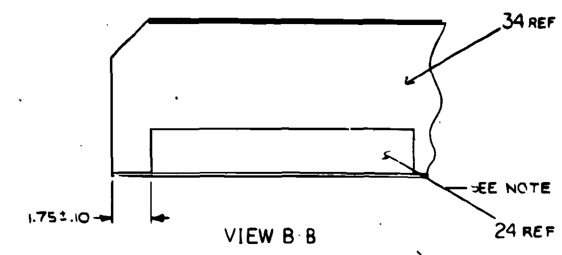
PART NO	VARIATION
H777-DA	P.S. MOS ONLY 115V
H777-DB	P.S. MOS ONLY 230V
H777-CA	P.S. CORE/MOS 115V
H777-CB	P.S. CORE/MOS 230V

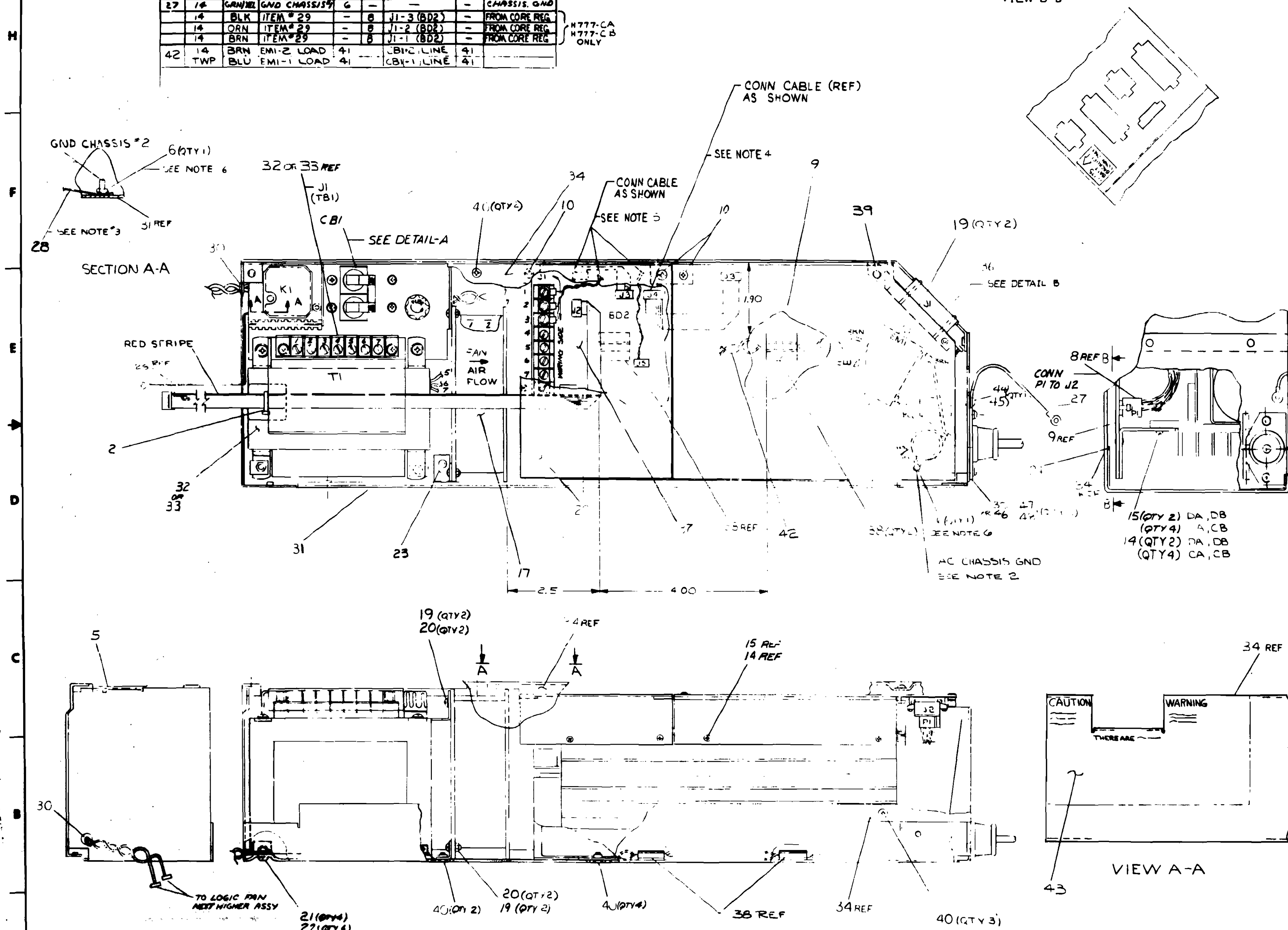


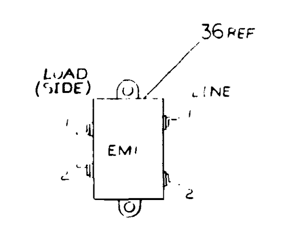
DETAIL - A
WIRING SIDE OF CKT BREAKER PART OF ITEM #10

NOTES:

1. APPLY SELF STICK INS SHEET (ITEM #24) TO UNDER SIDE OF POWER SUPPLY COVER IN AREA OF HEAT SINKS (CORE & MOS REGS).
2. APPLY SELF STICK ITEM 26 BESIDE THIS GND STUD.
3. ITEM 28 IS A GND CABLE TO GND THE FRONT PANEL CASTINGS FOR MOS AND CORE REGULATORS.
4. CABLE PART OF ITEM #9.
5. CABLE & WIRES ARE PART OF ITEM #29.
6. ITEM #6 (METRIC NUT M4) CAN BE USED AS A REPLACEMENT IN FIELD IF NECESSARY.







DETAIL B

CAUTION

UNIT ASSEMBLY FOR OPTIONS: CA, CB, DA, AND DB ONLY.

SEE SHEET 1 FOR OPTIONS AA, AB, BA, AND BB.

SEE SHEET PARTS LIST SEE: A-PL-H777-0-0

DESCRIPTION	
DWG/PART NO	
ITEM NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
QUANTITY & VARIATION	
THIRD ANGLE PROJECTION	
REMOVE BURRS AND BREAK SHARP CORNERS	
DO NOT SCALE DWG	
MATERIAL	SEE PARTS LIST
FIRST USED ON	BA11-L
TITLE	POWER SUPPLY ASSY (H777)
NEXT HIGHER ASSY	A-DD-H777-0
SCALE	NONE
SHEET	2 OF 2
SIZE	E
CODE	UA
NUMBER	H777-0-0

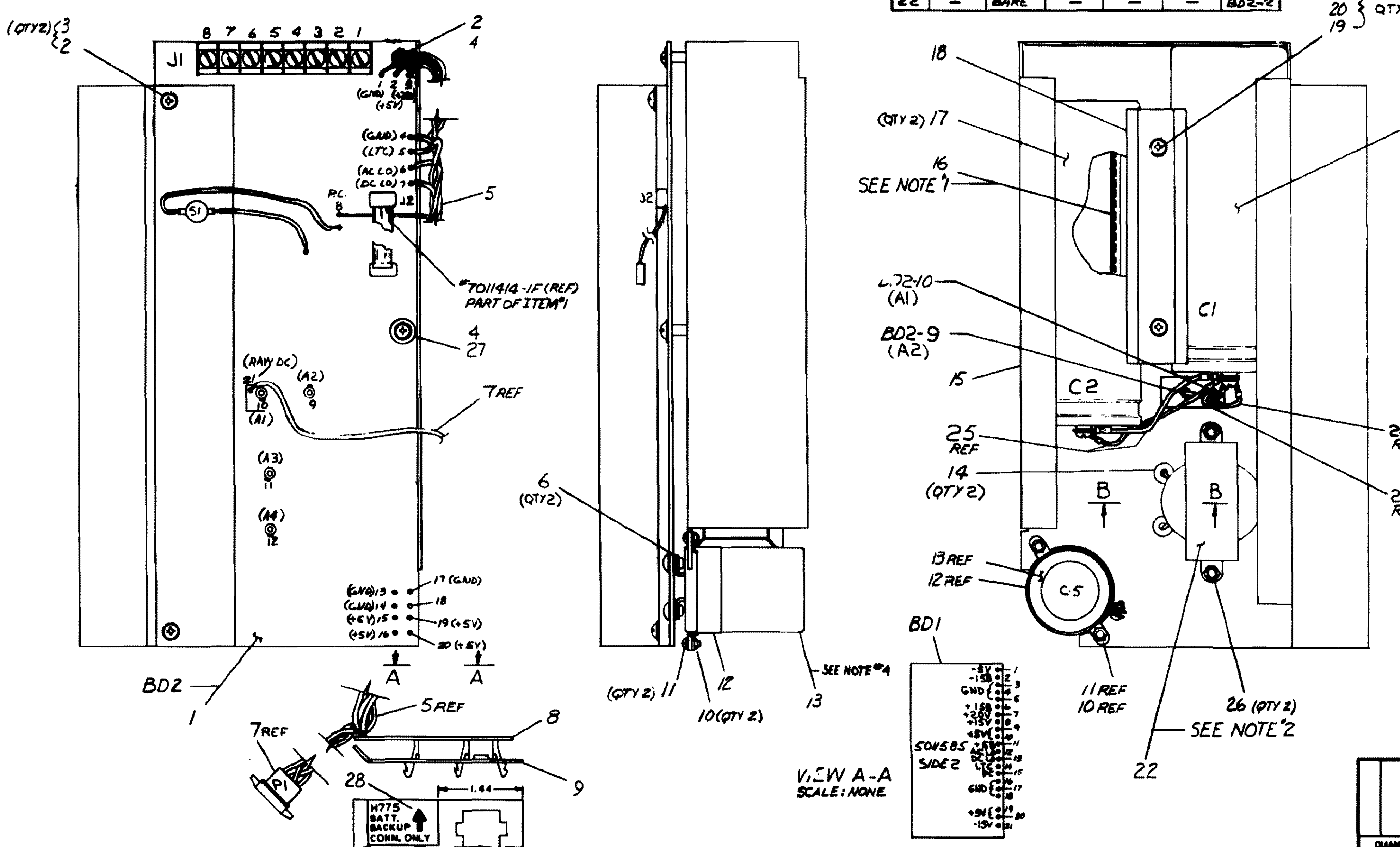
D AD 7011073-0-0 B

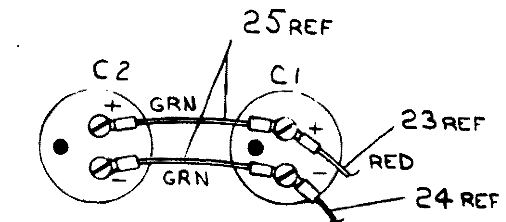
WIRE CHART

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM POINT NO	FROM CONN	TO POINT NO	TO CONN
5	20	WHT	1	BD2-8	18	BD1-15
	14	BRN	2	2	9	1
	14	BLK	3	1	12	5
	14	ORN	4	3	13	7
	20	BRN	5	5	19	14
	20	BLK	6	4	20	16
	20	YEL	7	6	16	12
	20	VIO	8	7	17	13
	14	BLK	30	BD2-17	10	BD1-3
5	14	BLK	28	BD2-13	11	BD1-4
		RED	29	15	14	9
		RED	26	19	15	10
		BLK	25	14	21	17
		RED	24	16	22	19
	14	RED	27	BD2-20	23	BD1-20
7	18	BLU	1	BD1-21	* 11	—
	14	BLK	2	BD1-18	* 8	—
	18	RED	3	BD1-11	* 14	—
7	18	GRY	4	BD1-8	* 9	—
	18	WHT	5	BD1-6	* 10	—
	14	RED	6	BD2-21	* 13	—
	18	GRN	7	BD1-2	12	—
25	14	GRN	—	C1(+)	—	C2(+)
25	14	GRN	—	C1(-)	—	C2(-)
23	14	RED	—	BD2-10	—	C1(+)
24	14	BLK	—	BD2-9	—	C1(-)
22	—	BARE	—	—	—	BD2-11
22	—	BARE	—	—	—	BD2-2

NOTES:

1. USE ITEM #16 (GROMMET) TO COVER RAW METAL EDGES UNDER CAPACITORS.
2. LEADS FROM ITEMS #22, 23 & 24 ARE TO BE CUT FLUSH WITH TOP OF CLAMPS ON ITEM #1. A1, A2, A3 & A4
3. * ASTERISK INDICATES THAT THESE CONN. ALREADY HAVE BEEN MADE ON PLUG P1 ON HARNESS D-IA-7011560-0-0 THEY ARE SHOW FOR REF ONLY.
4. ITEMS #17 & #13 ARE TO HAVE THEIR ELECTRICAL CONNECTIONS TORQUED TO 12 IN-LBS (-0, +1.0) IN-LBS.





VIEW B-B
SCALE: NONE
SEE NOTE 4

QTY	DESCRIPTION	DWG./PART NO.	ITEM NO.
1	DECAL	A-DC-7416911-0-0	28
1	WASHER NYLON #6	9006718	27
2	NUT KEPS #8-32	9006563	26
2	JUMPER (GRN)	B-IA-7011800-0-0	25
1	JUMPER (BLK)	B-IA-7011802-0-0	24
1	JUMPER (RED)	B-IA-7011801-0-0	23
1	CHOKE	1612584	22
2	SPACER HEX #6-32 × 1.38L	9008258	21
2	WASHER INT TOOTH LOCK #8	9006634	20
2	SCR PHIL HD PAN #8-32X.50L	9006039-1	19
1	CLAMP CAPACITOR	C-MD-7413021-0-0	18
2	CAPACITOR 24 KUF 50V	1010702	17
A/R	GROMMET CATERPILLAR	9007035	16
1	BRACKET CAPACITOR	E-[illegible]-7413743-0-0	15
2	GROMMET RUBBER	9007017	14
1	CAPACITOR 3900uf / 6.0V (25)	1012790	13
1	CLAMP CAPACITOR	9009052	12
2	SCR PHIL PAN HD #6-32X.25L	9006020-1	11
2	NUT KEPS #6-32	[illegible]	10
1	BRACKET CONN	D-IA-7413782-0-0	9
1	BOARD, PWR DISTR. H777	DCS-[illegible]-0-1	8
1	HARNESS BD NOS REG PWR DIST	D-IA-7011560-0-0	7
2	WASH, .637 O.D.X.218 I.D.X.06	9006664	6
1	HARNESS H777 +5V REG	D-IA-7011418-0-0	5
2	SCR PHIL HD PAN #6-32 X.31L	9006021-1	4
2	SCR PHIL HD PAN #6-32 X.60L	9006024-1	3
3	WASHER, INT TOOTH LOCK #6	9006633	2
1	H777+5V REGULATOR	DCS-5411597-0-1	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL —

FINISH —

NEXT HIGHER ASSY. D-MA-H777-0-0

SCALE —

SHEET 1 OF 1

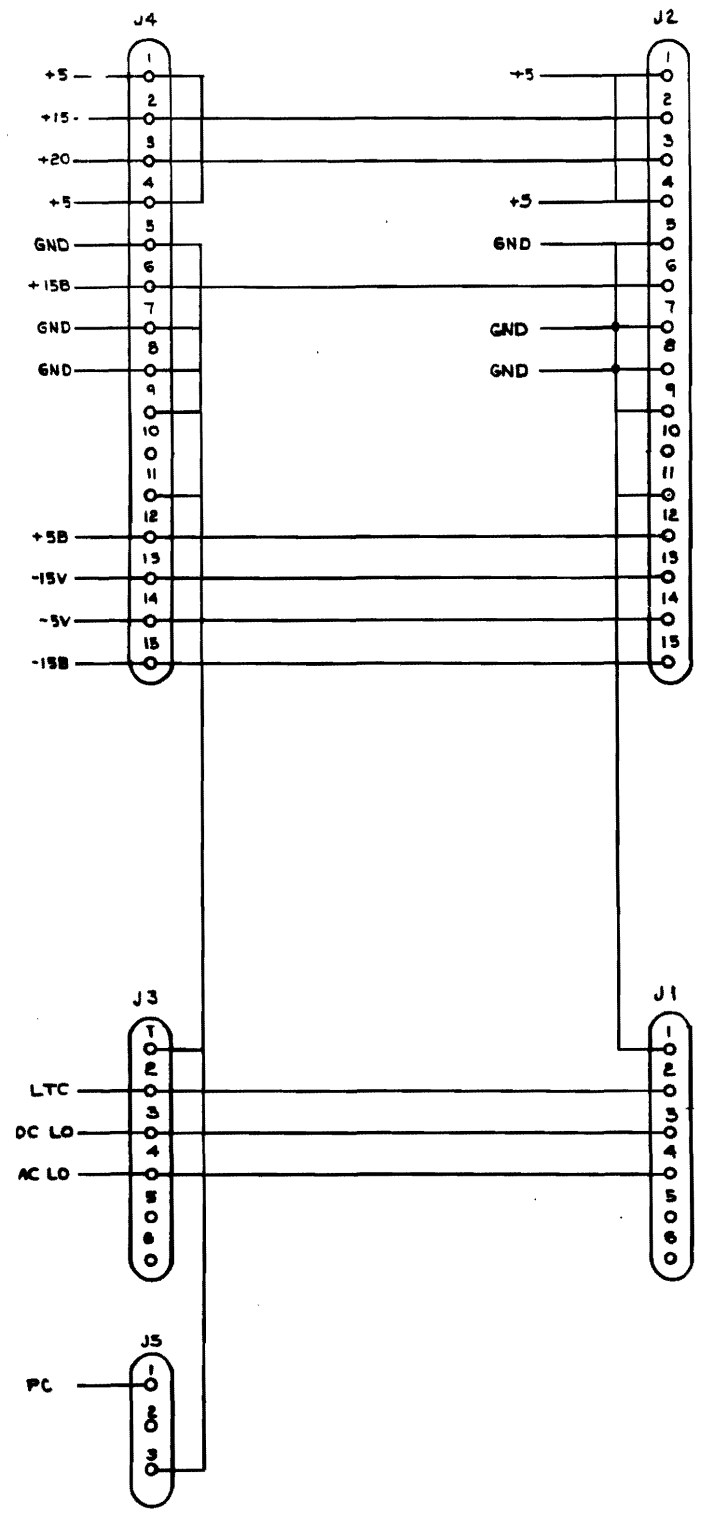
FIRST USED ON H777

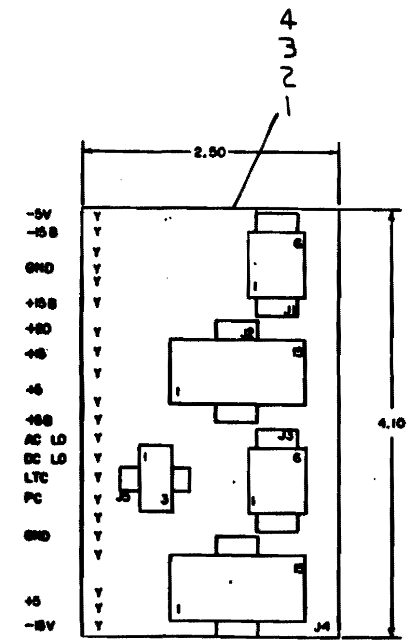
TITLE +5V REG ASSY

SIZE	CODE	NUMBER	REV.
D	AD	7011073-0-0	B

REV.	CHANGE NO.			
A	7011073-00001	R. BARRY	11-25-75	
B	7011073-00002	B. COURTEMANCHE	20 JULY 76	

NOTES:





QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411586-0-4	1
REF		ASSY DRILLING HOLE LAYOUT	D-AH-5411586-0-5	2
REF		MODULE ECO HISTORY	B-MH-5411586-0-6	3
1		ETCHED CIRCUIT BOARD	5011585	4
2	J2, J4	CONN., MATE-N-LOCK, 15 PIN HOUSING	1209350-15	5
2	J1, J3	CONN., MATE-N-LOCK, 6 PIN HOUSING	1209350-06	6
45		PIN, CONTACT, MATE-N-LOCK	1209456-01	7
1	J5	CONN., MATE-N-LOCK, 3 PIN HOUSING	1209350-03	8

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: 11Ø4 PWR SUPPLY

ETCH BOARD REV: D

DEC NO	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

REVISIONS — CHANGE NO. — REV — CHK

DRN	D Dillon — DATE 2/20/75
CHK'D	[illegible] — DATE 2-23-75
ENG	Barry — DATE 2-2-75
PROJ. ENG.	Barry — DATE 2-2-75
PROD.	DATE
NEXT HIGHER ASSY	
SCALE	NONE
SHEET	1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BOARD, POWER DISTRIBUTION H777

SIZE	CODE	NUMBER	REV.
D	CS	5411586-0-1	C

DIST.

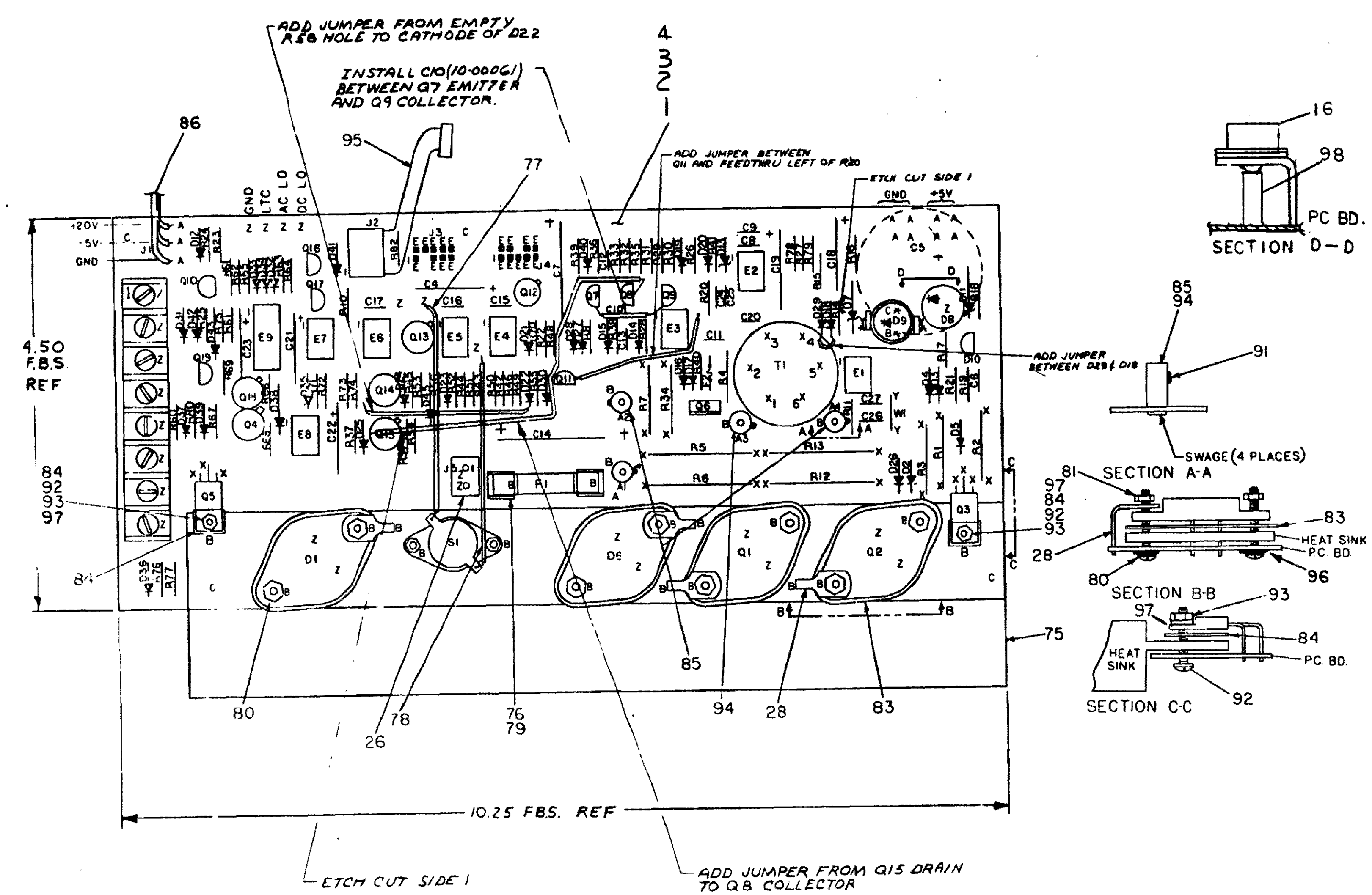
D CS 5411586-0-1 C

D CS 5411583-0-1 C

NOTES:

1. HARDWARE ON D1,Q1,Q2,D6,S1,C5 MUST BE TORQUED TO 12 IN-LBS (-Ø,+1)

QTY	REF. DESIGNATION	SUBSTITUTION LIST DESCRIPTION	PART NO.	ITEM NO.
1	C19	CAPACITOR, 1.5mf, 50V, POLYCARB	1010031-08	12
1	D1	DIODE	1112723-01	23



QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411597-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411597-0-5	2
REF		MODULE ECO HISTORY	B-MH-5411597-0-6	3
1		ETCHED CIRCUIT BOARD	5011598	4
1	C12	CAPACITOR, 100pf, 100V, 5% DM	1000016	5
1	C13	CAPACITOR, 470pf, 100V, 5% DM	1000024	6
1	C14	CAPACITOR, 50mf, 50V, AL.EL	1000080	7
8	C6,C9,C11,C20,C24-C27	CAPACITOR, .01mf, 100V DISC	1001610-01	8
2	C22,C23	CAPACITOR, 1mf, 35V, 10% TANT	1001776	9
3	C15,C16,C17	CAPACITOR, 5pf, 100V, 5% DM	1002425	10
				11
1	C19	CAPACITOR, 1.5mf, 35V, 10% TANT	1009725	12
2	C4,C18	CAPACITOR, 2.2mf, 20V, 10% TANT	1002627	13
2	C7, C21	CAPACITOR, 10mf, 20V, 10% TANT	1004813	14
1	D11	DIODE 1N752A	1102808	15
1	D8	DIODE MR1033B	1103341	16
28	D3,D4,D12,D14 THRU D20,D22 THRU D25,D27,D30 THRU D37 D40,D42,D5,D39,D28	DIODE D672	1105275	17
3	D21,D41,D29	DIODE 1N4004	1105796	18
1	D13	DIODE, ZENER, 5.1V, 2% IZT = 5ma	1110713	19
1	D6	DIODE, TO3	1110715	20
1	D10	DIODE 2N5062	1110968	21
3	D7,D43,D45	DIODE 1N751A	1110794	22
1	D1	DIODE, DUAL, TO3	1112723-00	23
2	D2,D26	DIODE A114B	1112595-01	24
1	D38	DIODE, ZENER 13V 1N964B	1109988	25
1	J5	CONNECTOR 2 PIN MATE-IN-LOC	1211312-[illegible]	26
1	J1	TERMINAL BOARD 8 STATION	1212464-01	27
4		SOLDER LUG	9009676	28
18		PINS, STAKING	9009149	29
1	F2	FUSE 5A	1209070	30
2	R18,R19	RESISTOR, 100, 1/4W, 5%	1300229	31
1	R10	RESISTOR, 150, 1/4W, 5%	1300250	32
1	R2	RESISTOR, 150, 1W, 5%	1300255	33
1	R34	RESISTOR, 220, 1W, 10%	1300277	34
2	R76,R[illegible]	RESISTOR, 390, 1/4W, 5%	1300309	35
2	R29 R16	RESISTOR, 470, 1/4W, 5%	1300316	36
7	R82,R28,R38,R50,R69,R52,R54	RESISTOR, 1K, 1/4W, 5%	1300365	37
2	R8, R66	RESISTOR 2.7K, 1/4W, 5%	1300426	38
7	R31,R60,R62,R65,R68,R15,R39	RESISTOR, 4.7K 1/4W, 5%	1300447	39
13	R63 R25,R32,R35,R36,R37,R80 R55 THRU R57,R67,R70,R77	RESISTOR, 10K, 1/4W, 5%	1300479	40
1	R24	RESISTOR, 12, 1/4W, 10%	1301430	41
1	R4	RESISTOR, 47, 1/2W, 5%	1301695	42
6	R11,R23,R48,R40,R64,R75	RESISTOR, 270, 1/4W, 5%	1301972	43
2	R72,R74	RESISTOR, 330K, 1/4W, 5%	1302396	44
2	R26,R61	RESISTOR, 2K, 1/4W, 5%	1302388	45
4	R22,R71,R41,R73	RESISTOR, 30K, 1/4W, 5%	1302394	46
3	R49,R51,R53	RESISTOR, 56K, 1/4W, 5%	1302395	47
1	R27	RESISTOR, 100K, 1/4W, 5%	1302466	48
2	R17,R21	RESISTOR, 30, 1/4W, 5%	1302751	49
2	R43,R44	RESISTOR, 1.21K, 1/4W, 1%	1302871	50
1	R46	RESISTOR, 1K, 1/4W, 1%	1303114	51
2	R33,R14	RESISTOR, 8.2K, 1/4W, 5%	1303179	52
1	R45	RESISTOR, 10K, 1/8W, 1%	1303312	53

PARTS LIST

FIRST USED ON OPTION MODEL

ETCH BOARD REV. E

IC TYPE	GND	+5V
IC 555	1	8

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

IC PIN LOCATIONS

CHK	CHANGE NO.	REV.
G. POTTER	5411597-00003	H
R. Barry 12-19-75	R. BARRY	
	5411597-0002	F
	5411597-00001	

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

SEMICONDUCTOR CONVERSION CHART

DRN. / DATE
CHK'D. / DATE
ENG. / DATE
PROD. ENG. / DATE
NEXT HIGHER ASSY

digital

TITLE H777 +5V REGULATOR

SIZE D CODE CS NUMBER 5411597-Ø-1 REV. H

SCALE —
SHEET 1 OF 4
DIST.

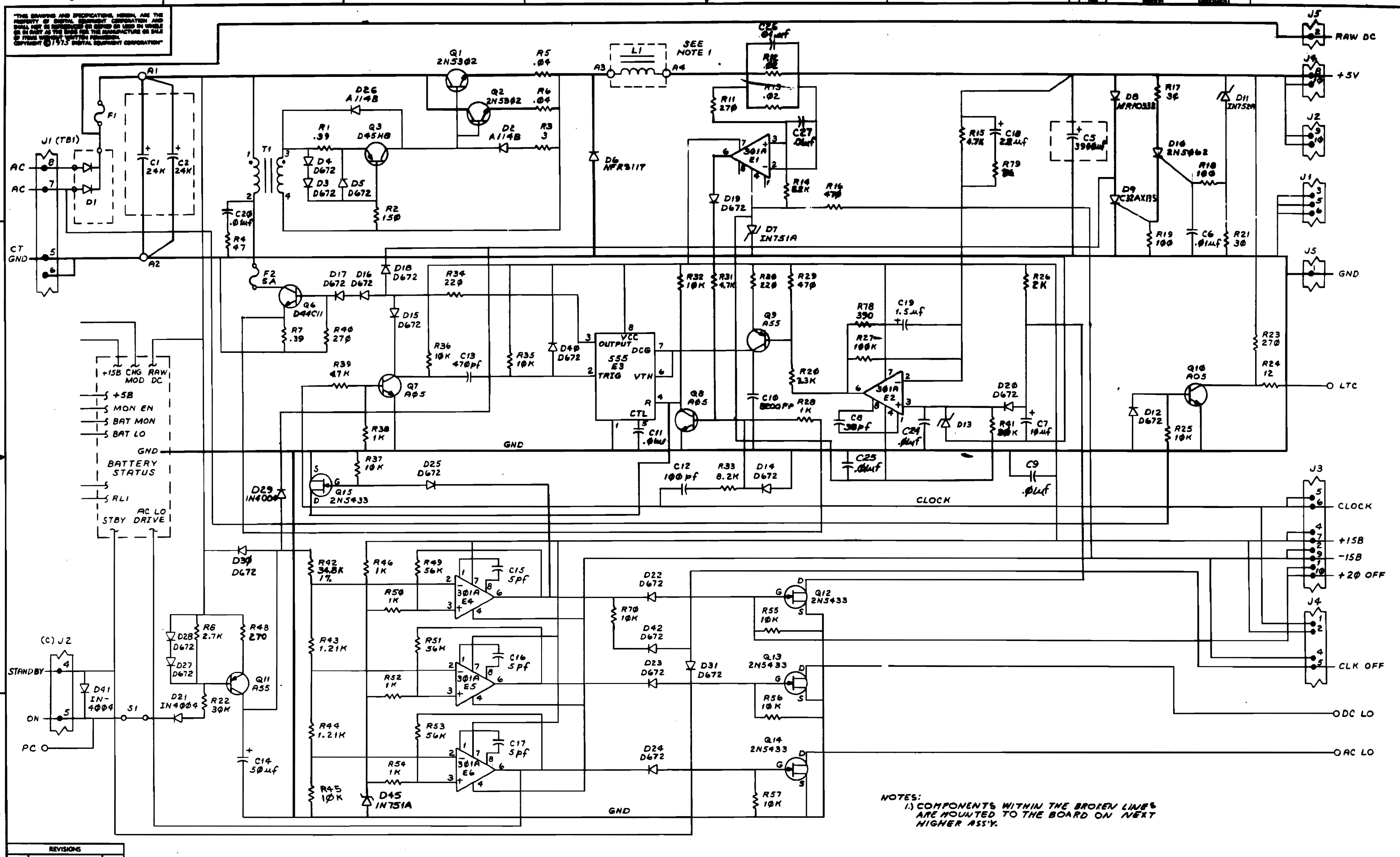
DEC FORM NO. LHO 136.8

1	R76	RESISTOR, 5.1, 1/4W, 5%	130[illegible]2	54
1	R19	RESISTOR, [illegible] 1/4W, 5%	13[illegible]	55
1	R42	RESISTOR, 34.8K, 1/4.W, 1%	1303156	56
2	R1,R7	RESISTOR, .39, 2W, 3%	1310080	57
2	R12,R13	RESISTOR, .02, 5W, 3%	1310076	58
2	R5,R6	RESISTOR, .04, 5W,	1311362	59
1	R3	RESISTOR, 3, 3W, 5%	1312682	60
2	Q1,Q2	TRANSISTOR, 2N5302	1510196	61
3	Q7,Q8,Q10	TRANSISTOR, A05	1510705	62
5	Q9,Q11,Q16,Q17,Q18	TRANSISTOR, A55	1510706	63
2	Q3,Q5	TRANSISTOR, D45H8	1510708	64
5	Q4,Q12 THRU Q15	TRANSISTOR, 2N5433	1511686	65
1	Q19	TRANSISTOR, 2N6028	1510677	66
1	Q6	TRANSISTOR, D44C11	1512790	67
1	D8	TRANSISTOR, C32AX135	1510928	68
1	T1	TRANSFORMER PULSE	1612592	69
1	E9	I.C. DEC 7410	1905576	70
5	E1,E2,E4,E5,E6	I.C. DEC 301A	1910262	71
3	E3,E7,E8	I.C. DEC LM555	1911944	72
1	F1	FUSE 15A, 32V	9007226	73
1	S1	THERMOSTAT (ELMWOOD)	1212787	74
1		HEAT SINK	7414238	75
2		EYELET	9009000	76
3		WIRE, #22 AWG STRANDED (WHITE)	9107350-99	77
3		WIRE, #22 AWG STRANDED (WHITE)	9107350-88	78
2		FUSECLIP	9007203	79
10		SCREW, #4-40 x 7/16 lg PHILLIPS HD	9006012-1	80
10		NUT,KEP #4-40	9008557	81
A/R		COMPOUND, THERMAL	9008268	82
4		INSULATOR, TO3	9008419	83
2		INSULATOR, THERMA-FILM	9009597	84
3	A1,A2,A4	STANDOFF	7414048-0-	85
REF		ASSY, HARNESS	7011415-0-0	86
A/R	W1	WIRE #18 AWG	9107360-99	87
1	C10	CAPACITOR 8200 PF 100V MYLAR	1000061	88
1	C8	CAPACITOR, 33 PF, 100V, 5% D.M.	1000009	89
				90
4		SET SCREW #6-32 X 1/8 LG.	9006290-10	91
2		SCREW NYLON #4-40 X 1/2 LG.	9006402-4	92
2		NUT NYLON #4-40	9007992	93
1	A3	STANDOFF	7414048-1	94
1	J2	CONTROL CABLE (CONSOLE)	7011414-1F	95
8		WASHER,FLAT	9008172	96
2		WASHER,INT,LOK #4	9006632	97
1		SPACER,INSULATOR	9007615	98
1	R30	RES 220 ,1/4W, 5%	1300271	99
1	R20	RES 3.3K, 1/4W, 5%	1300439	100

SIZE D CODE DCS 5411597-0-1 REV H

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	H777+5V REGULATOR	SIZE CODE	NUMBER	REV.
SCALE	SHEET 2 OF 4	D CS	5411597-0-1	H
		DIST.		


J5 RAW DC
J4 +5V
J2
J1
J5 GND
LTC
J3 CLOCK
+15B
-15B
+20 OFF
J4 CLK OFF
DC LO
AC LO
J1 (TB1)
AC
AC
CT GND
F1
C1 24K
C2 24K
D1
A1
A2
T1
F2 5A
Q1 2N5302
Q2 2N5302
Q3 D45H8
Q4 D44C11
D26 A114B
D2 A114B
R5 .04
R6 .04
R3 3
R1 .39
R2 150
D4 D672
D3 D672
D5 D672
L1
SEE NOTE 1
A3
A4
D6 MR3117
C26 .01uf
R11 270
R13 .02
C27 .01uf
301A E1
D19 D672
D7 1N751A
R14 8.2K
R16 470
R15 4.7K
C18 2.2uf
C5 3900uf
D8 MR1033B
R17 36
D11 1N752A
D10 2N5062
D9 C122AX135
R18 100
R19 100
C6 .01uf
R21 30
C20 .01uf
R4 47
D17 D672
D16 D672
D18 D672
R34 220
R7 .39
R40 270
D15 D672
R36 10K
C13 470pf
R35 10K
D40 D672
555 E3
VCC
OUTPUT
DCG
TRIG
VTH
CTL
R39 47K
Q7 A05
R38 1K
R37 10K
D25 D672
Q15 2N5433
D29 1N4004
C11 .01uf
R32 10K
R31 4.7K
R30 220
R29 470
Q9 A55
Q8 A05
C10 8200pf
R28 1K
R20 3.3K
R78 390
R27 100K
C19 1.5uf
301A E2
C8 30pf
C24 .01uf
D13
D20 D672
R41
C7 10uf
R26 2K
R23 270
R24 12
Q10 A05
D12 D672
R25 10K
C12 100pf
R33 8.2K
D14 D672
C25 .01uf
C9 .01uf
CLOCK
GND
+15B CHG MOD RAW DC
+5B
MON EN
BAT MON
BAT LO
GND
BATTERY STATUS
RLI
STBY
AC LO DRIVE
D30 D672
R42 34.8K 1%
R46 1K
R49 56K
C15 5pf
301A E4
R50 1K
R43 1.21K
R51 56K
C16 5pf
301A E5
R52 1K
R44 1.21K
R53 56K
C17 5pf
301A E6
R54 1K
R45 10K
D45 1N751A
D22 D672
R70 10K
D42 D672
D23 D672
D31 D672
D24 D672
Q12 2N5433
Q13 2N5433
Q14 2N5433
R55 10K
R56 10K
R57 10K
(C) J2
STANDBY
ON
PC
D41 IN-4004
S1
D21 1N4004
D28 D672
D27 D672
R6 2.7K
R48 270
Q11 A55
R22 30K
C14 50uf
GND

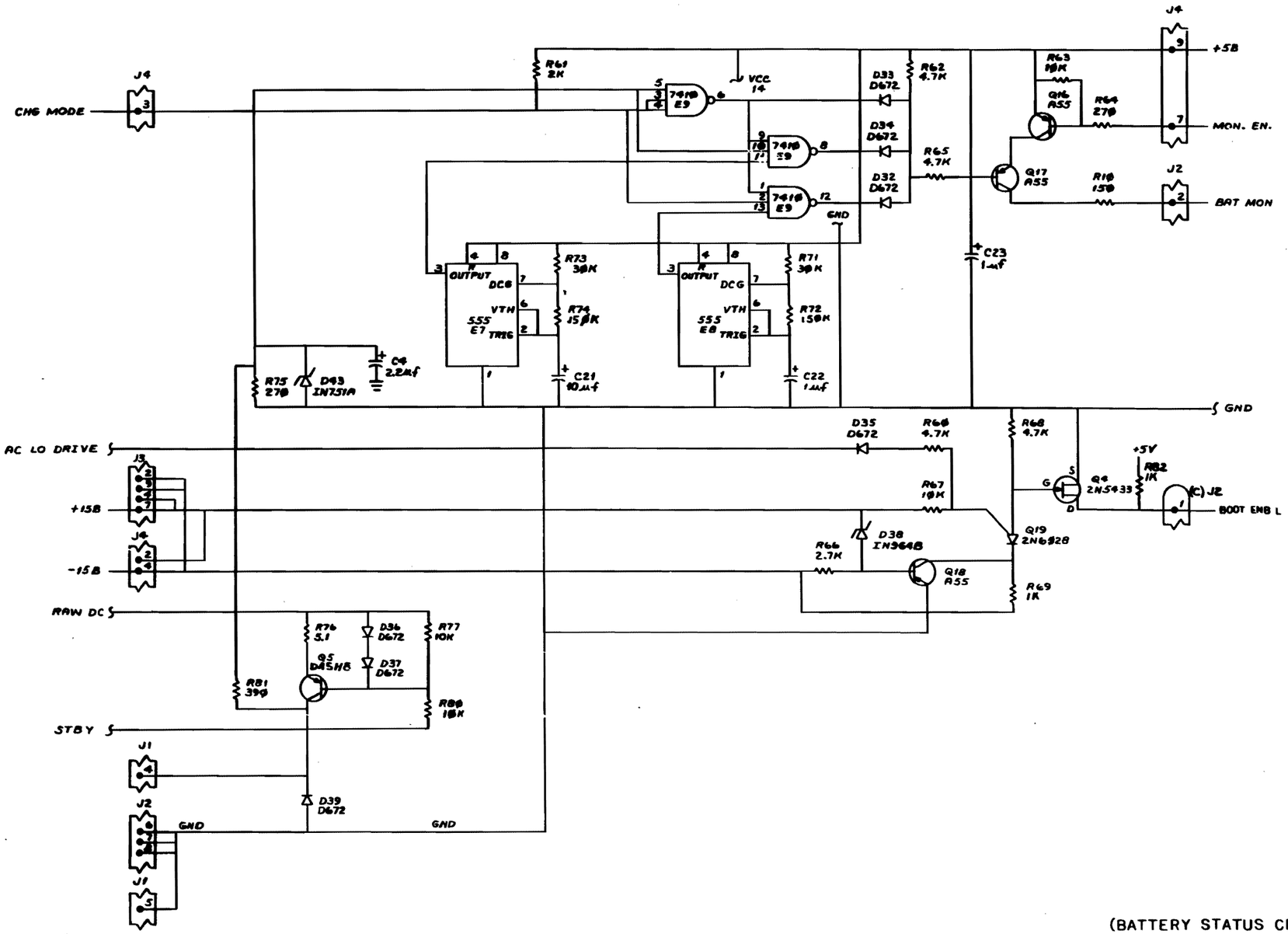
NOTES:
1.) COMPONENTS WITHIN THE BROKEN LINES ARE MOUNTED TO THE BOARD ON NEXT HIGHER ASS'Y.

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: H777 +5V REGULATOR

SIZE: D | CODE: CS | NUMBER: 5411597-0-1 | REV. H

SCALE: —/— | SHEET 3 OF 4



(BATTERY STATUS CRKT'S)

REVISIONS		
ZONE	CHANGE NO.	REV.

TITLE	H777 +5V REGULATOR		
SIZE	CODE	NUMBER	REV.
D	CS	5411597-Ø-1	H
SCALE	SHEET – OF 4	DIST.	

DCS 5411597-Ø-1 H

LEGEND	
PART NO	VARIATION
7011075-0	120 V
7011075-1	230 V

WIRE CHART

ITEM NO	DESCRP AWG	COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
22	18	WHT	K1-4	SOLID	*TB2-4 S	SOLD	5 1/2"L
23	18	BLK	K1-6	↓	*TB2-1S	SOLD	5"L
24	18	BRN	K1-7		TB2-5H	25,43	6 1/2"L
26	18	BLU	K1-9		TB2-6H	25,43	7 1/2"L
27	18 GRY / TWP BLK		K1-8	SOLID	—	2S	
24	18	BLU	G2	SOLD	◇TB2-6S	SOLD	6"L
23	18	BLK	F1-1	SOLID	◇TB2-1S	SOLD	6"L
15	18 BRN / TWP BLU		EMI-2 LOAD	—	◇TB2-4S	SOLD	6"L
			EMI-1 LOAD	—	◇TB2-6S	SOLD	6"L
22	18	WHT	EMI-2	SOLID	CBI-2 LOAD	28,41	5"L
26	18	BLK	EMI-1	SOLID	CBI-1 LOAD	28,41	5"L
45	18 WHT / TWP BLK		◇TB2-6S	SOLD	J2-1	30,32	6 1/2"L
			◇TB2-2S	SOLD	J2-2	30,32	6 1/2"L
45	18 WHT / TWP BLK		◇TB2-2S	SOLD	J3-1	30,32	15 1/2"L
			◇TB2-6S	SOLD	J3-2	30,32	15 1/2"L

SEE NOTE 2 / SEE NOTE 1 & 2 / SEE DETAIL 'C'

ITEM NO	DESCRP AWG	COLOR	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
1	14 BLK / TWP BRN/WHT		T1	43	TB2-1H	—	—
	14 RED / TWP RED/WHT		T1		TB2-3H	—	—
					TB2-2H	—	—
					TB2-4H	—	—
23	18	BLK	G3	SOLD	F1-2	SOLD,S2	4"L
34	14	GRN/YEL	EMI-3	SOLID,S1	—	42	8"L
25	18	BLK	TB2-1H	—	TB2-2H	—	120V
24	18	WHT	TB2-3H	—	TB2-4H	—	120V
25	18	BLK	TB2-2H	—	TB2-3H	—	230V
13	22	BARE	R1-A	—	G3	SOLD,S3	
13	22	BARE	R1-B	—	G2	SOLD,S3	

7011075-0	120V
7011075-1	230V

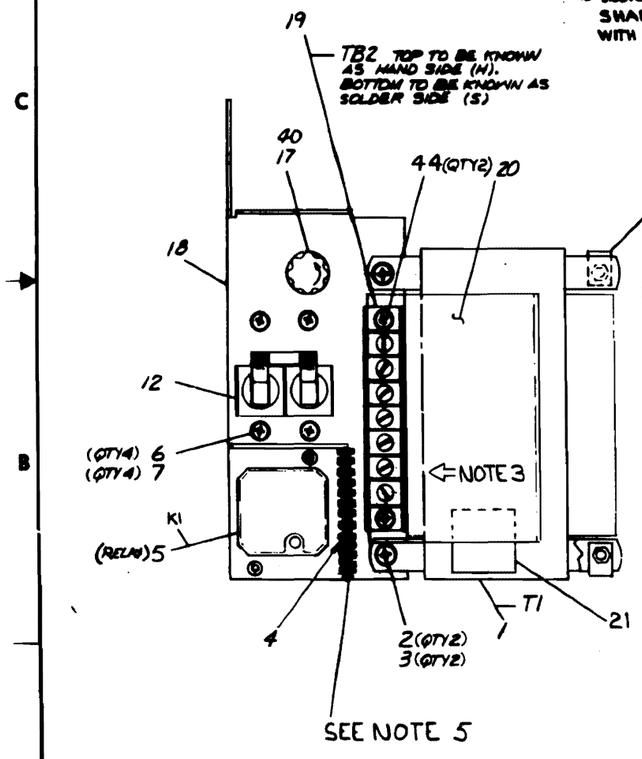
* INDICATES SOLDER CONN. SHARED WITH OTHER CONN. WITH SAME COMMON CONN.

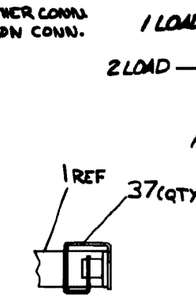
NOTES:

1. SECOND SOURCE FOR ITEM 16 (LINE FILTER) WILL HAVE WHT & BLK LEADS. SUBSTITUTE WHT FOR BRN AND BLK FOR BLU.
2. TWISTED PAIR WIRE TO HAVE A MIN OF 4 TWIST PER INCH AS PER WIRE CHART.
3. ALL CONNECTIONS TO TB2 ARE TO BE MADE FROM SIDE INDICATED BY ARROW.
4. USE TIE WRAPS (ITEM 38) AS NEEDED.
5. T1 PRIMARY WIRES TO TB2 MUST BE ROUTED BY ITEM 4
6. COVER, ITEM 2A WITH ITEM 41 TO COVER EXPOSED PART OF TERMINAL.

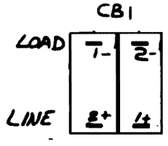
CONT. ON SHEET 2 of 2

		DESCRIPTION	DWG/PART NO.	ITEM NO.
—	1	JUMPER ASSY (WHT 2")	B-M-7011798-0-0	36
1	1	JUMPER ASSY (BLK 2")	B-M-7011797-0-0	35
AR	AR	WIRE 18 AWG TRACER (GRN/YEL)	3107777-54	34
AR	AR	TUBING MS (RED)	9107278-02	33
4	4	HOUSING SOCKET FASTAB	12/0920-1	32
AR	AR	TUBING SHRINK (RED)	9107305-02	31
4	4	HOUSING TERM FASTAB	12/0820-2	30
1	—	CIRCUIT BREAKER, 5A	2/0191-1	29
2	2	CONN FASTON (RED INS)	9007917	28
AR	AR	WIRE 18 AWG INS (GRY/BLK)	9107430-08	27
AR	AR	WIRE 18 AWG INS (BLU)	9107360-66	26
2	2	RING CRIMP (RED INS)	9007929	25
AR	AR	WIRE 18 AWG INS (BRN)	9107360-11	24
AR	AR	WIRE 18 AWG INS (BLK)	9107360-00	23
AR	AR	WIRE 18 AWG INS (WHT)	9107360-99	22
1	1	MOUNT TIE WRAP	9008264	21
1	1	SHIELD TERM	C-IA-7414743	20
1	1	TERMINAL 7 POS	12/2788	19
1	1	BRACKET COMPONENT	D-IA-7413769-0-0	18
1	1	HOLDER, FUSE	9007242-0	17
2	2	NUT KEPS #6-32	900 9243	16
1	1	FILTER LINE (EMI)	12/2748	15
2	2	TERMINAL TURRET INS	9006966	14
1	1	RESISTOR 10Ω, 10W	1300173	13
—	1	CIRCUIT BREAKER, 10A	1210191-0	12
1	1	SOCKET, RELAY	1212789	11
2	2	SCR PHIL HD PAN #6-32 X .25	9006021-01	10
2	2	SCR PHIL HD PAN #6-32 X .62	9006026-01	9
2	2	SPACER HEX #6-32 X .13	9006842	8
8	8	WASHER INT TOOTH LOCK #6	9006633	7
4	4	SCR PHIL HD PAN #6-32 X .19	9006020-01	6
1	1	RELAY 6E 12V 3P 10A	1210683	5
AR	AR	GROMMET CATERPILLAR	9007035	4
2	2	WASHER INT TOOTH LOCK #8	9006634	3
2	2	SCR PHIL PAN HD #8-32 X .44	9006038 1	2
1	1	TRANSFORMER ASSY	C-IA-7011805-0-0	1

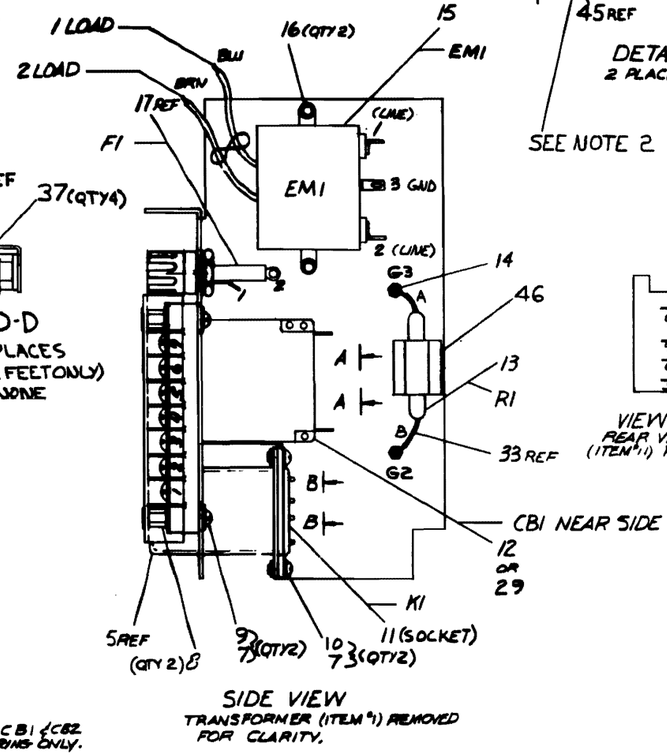




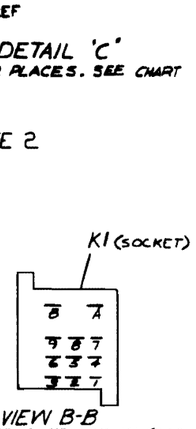
VIEW D-D
TYP-4 PLACES (BOTTOM FEET ONLY)
SCALE: NONE



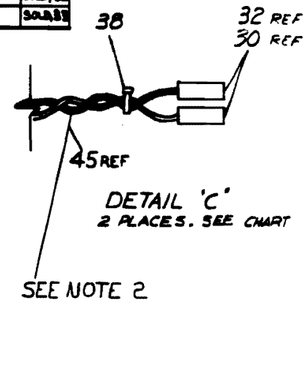
VIEW A-A
REAR VIEW OF CB1 & CB2 (ITEM 42) FOR WIRING ONLY.



SIDE VIEW
TRANSFORMER (ITEM 1) REMOVED FOR CLARITY.



VIEW B-B
REAR VIEW OF K1 (SOCKET) (ITEM 11) FOR WIRING ONLY.



DETAIL 'C'
2 PLACES. SEE CHART

SEE NOTE 2

QUANTITY & VARIATION	7011075-1	7011075-0
SURFACE QUALITY IN MICROINCHES		
PLACE OF ACCUMULATION (CHECK ONE)		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL —

FINISH —

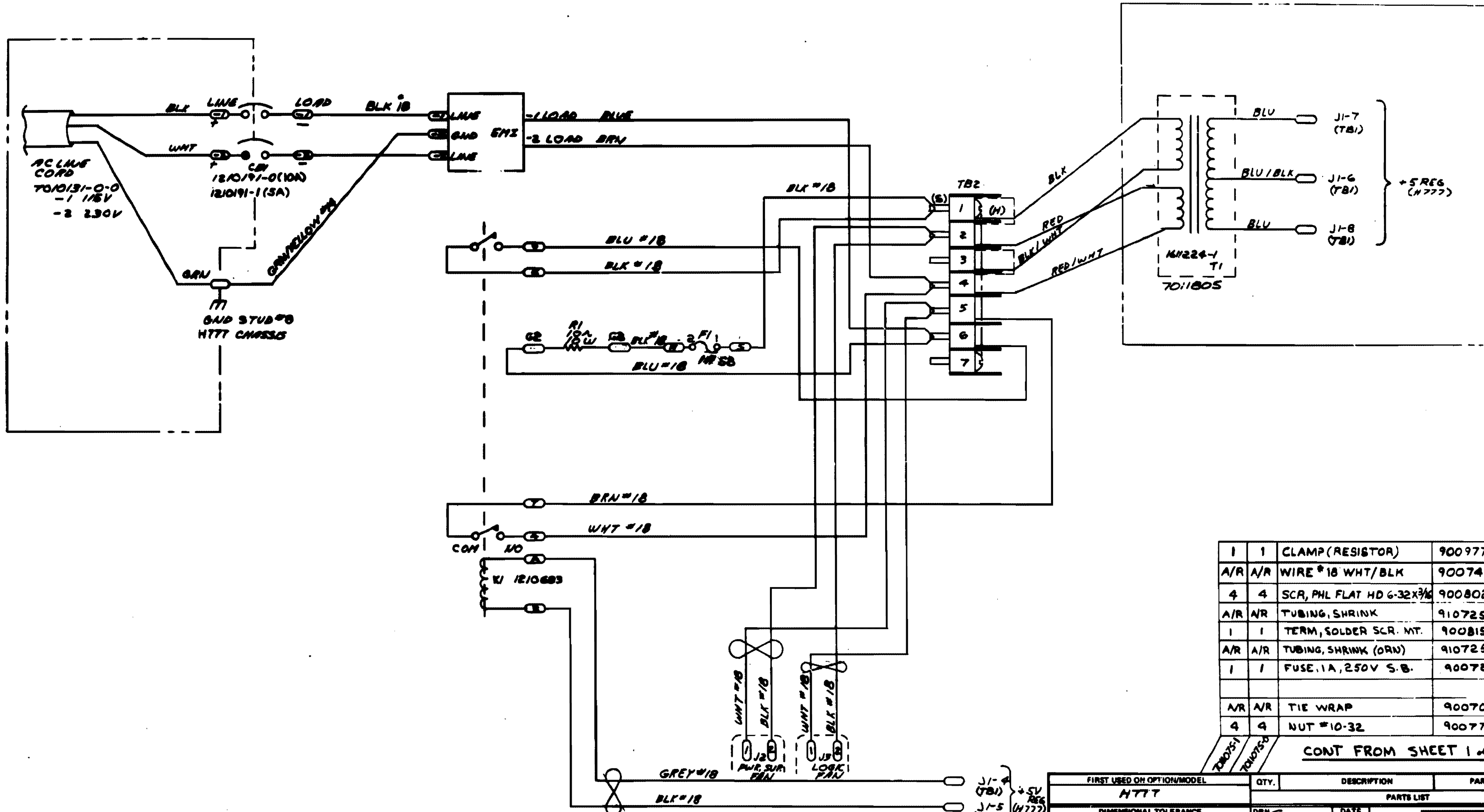
DRAWN		
CHK'D		
ENGR		12-26-75
PROJ. ENGR		12-26-75
PROD.		12-26-75
NEXT HIGHER ASSY.	D-IA-H777-0-0	
SCALE	1/1	
SHEET	1 OF 2	

FIRST USED ON: H777

TITLE: A/C INPUT ASSY (120V/230V)

SIZE	CODE	NUMBER	REV.
D	AD	7011075-0-0	B
DIST.			

7011075-0-0 B



1	1	CLAMP (RESISTOR)	9009771-2	46
A/R	A/R	WIRE #18 WHT/BLK	9007430-09	45
4	4	SCR, PHL FLAT HD 6-32X3/16	9008020-02	44
A/R	A/R	TUBING, SHRINK	9107254-9	43
1	1	TERM, SOLDER SCR. MT.	9008150	42
A/R	A/R	TUBING, SHRINK (ORN)	9107254-02	41
1	1	FUSE, 1A, 250V S.B.	9007212	40
A/R	A/R	TIE WRAP	9007031	38
4	4	NUT #10-32	9007786	37
7010751	7010750	CONT FROM SHEET 1 of 2		
QTY.		DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: H777

DIMENSIONAL TOLERANCE
DIMENSIONS ARE [redacted] INCHES UNLESS OTHERWISE SPECIFIED

THIRD ANGLE PROJECTION
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —
FINISH —

DRN. DATE
CHKD. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

NEXT HIGHER ASSY. —

SCALE —
SHEET 2 OF 2

digital

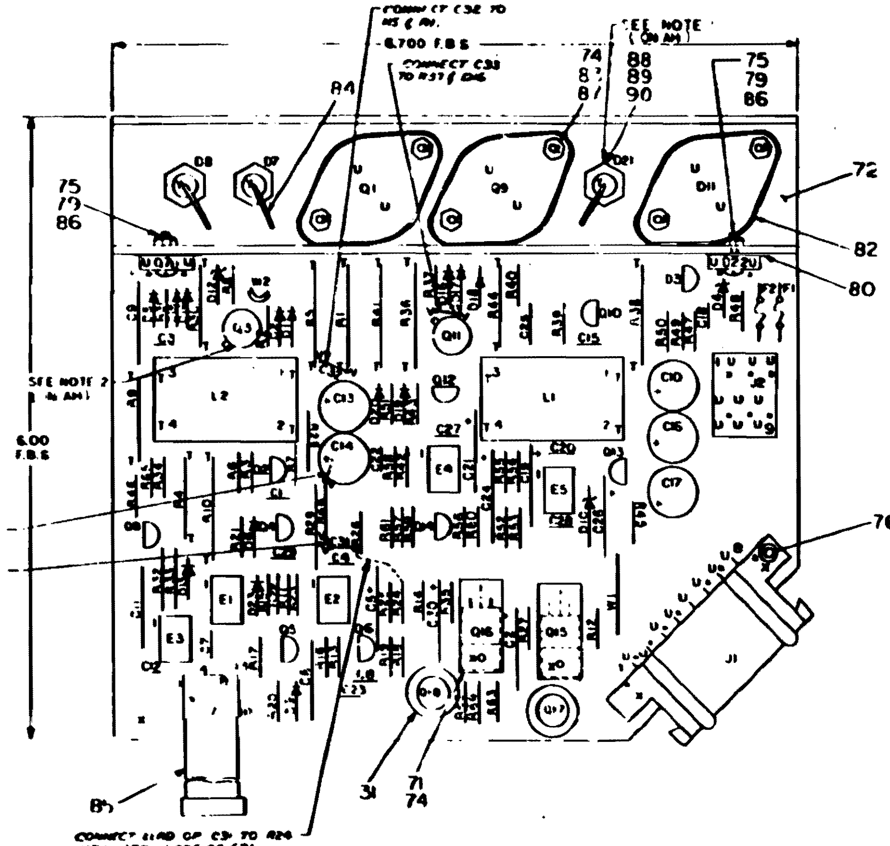
TITLE
A/C INPUT ASSY
(120V/230V)

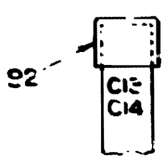
SIZE	CODE	NUMBER	REV.
D	AD	7011075-0-0	B

DIST.

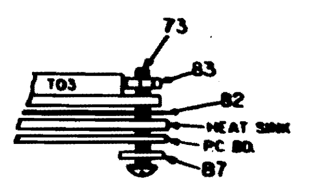
NOTES:

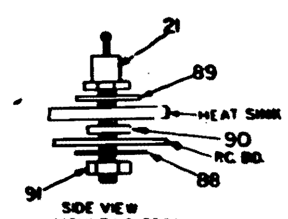
1. ITEMS 88,89,90 & 91 ARE PACKAGED WITH THE DIODES. SUBSTITUTE PACKAGED WASHER FOR ITEM #88.
3. TORQUE Q1, Q9, D7, D8, D11, & D21 HARDWARE TO 12 IN-LBS





SIDE VIEW C13 & C14
APPLY ITEM 92 WITH SUITABLE ADHESIVE





SIDE VIEW MOUNTING D7, D8, AND D21

IC TYPE	GND	+5V

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

IC PIN LOCATIONS

PARTS LIST

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CD-5411601-0-4	1
REF		ASSY DRILLING HOLE LAYOUT	D-AM-5411601-0-5	2
REF		MODULE ECO HISTORY	D-MH-5411601-0-6	3
1		ETCHED CIRCUIT BOARD	5011600	4
2	C20, C4	CAPACITOR, 33pf, 100V, 5	1000009	5
1	C8	CAPACITOR, 100pf, 100V, 5	1000016	6
3	C7, C22, C23	CAPACITOR, 220pf, 100V, 5	1000021	7
1	C25	CAPACITOR, 1nf, 100V, 20 DISC	1000030	8
9	C1, C3, C12, C15, C18, C27, C28, C32, C33	CAPACITOR, .01mf, 100V, DISC	1001F10 01	9
6	C2, C5, C9, C19, C26, C30	CAPACITOR, 1mf, 35V, 10	1001776	10
2	C29, C31	CAPACITOR, 47mf, 25V, 20%	1010279	11
1	C24	CAPACITOR, 19mf, 20V, 10	1004013	12
2	C6, C21	CAPACITOR, .01mf, 100V, 10, MYLAR	1005704	13
1	C11	CAPACITOR, .015mf, 50V, 2, POLYC	1010646	14
2	C13 C14	CAPACITOR, 560mf 20V	1012607	15
1	C17	CAPACITOR, 1200mf, 6.3V	1012607-01	16
2	C10, C16	CAPACITOR, 100mf, 50V	1012607-02	17
1	D4	DIODE 1N752A	1102000	18
11	D1, D2, D6, D13 THRU D17, D19, D20, D23	DIODE D672	1105275	19
1	D9	DIODE 1N4004	1105796	20
3	D7, D8, D21	DIODE 1N3880	1109440	21
1	D12	DIODE 1N4742	1109502	22
1	D18	DIODE 1z1 5ma 5.1V 2	1110713	23
1	D3	DIODE 2N5062	1110980	24
2	D5, D10	DIODE A1140	1112595-01	25
1	D11	DIODE DUAL	1112723-00	26
2	F1, F2	FUSE 5A	1209070	27
1	J1	CONN 9 PIN MATE-N-LOC	1209340-00	28
1	J2	CONN 9 PIN MATE-N-LOC	1209350-09	29
17		PINS	1209456-01	30
1		HEAT SINK	1210001	31
5	R2, R3, R37, R47, R50	RESISTOR, 33, 1/4W, 5	1300197	32
2	R12, R14	RESISTOR, 47, 1/4W, 5	1300202	33
8	R6, R27, R35, R39, R48, R49, R63, R64	RESISTOR, 100, 1/4W, 5%	1300229	34
2	R9, R44	RESISTOR, 100, 1W, 5	1300232	35
1	R52	RESISTOR, 390, 1/4W, 5%	1300309	36
7	R19, R20, R54, R59, R60, R62, R25	RESISTOR, 1K, 1/4W, 5%	1300365	37
1	R45	RESISTOR, 1.5K, 1/4W, 5%	1300391	38
1	R29	RESISTOR, 2.49K, 3/4W, 1%	1300424	39
3	R11, R43, R61	RESISTOR, 2.7K, 1/4W, 5%	1300426	40
2	R7, R65	RESISTOR, 4.7K, 1/4W, 5%	1300447	41
2	R23, R56	RESISTOR, 5.62K, 1/4W, 1%	1305128	42
11	R13, R15, R16, R17, R21, R22, R42, R46, R51, R57, R58	RESISTOR, 10K, 1/4W, 5%	1300479	43
2	R53, R24	RESISTOR, 100K, 1/4W, 5%	1302466	44
3	R8, R31, R40	RESISTOR, 10, 1/4W, 5%	1301317	45
2	R10, R41	RESISTOR, 330, 2W, 10%	1301961	46
2	R26, R34	RESISTOR, 2K, 1/4W, 5%	1302300	47
1	R66	RESISTOR, 180, 1/4W, 5%	1301322	48
1	R4	RESISTOR, 1.2K, 1W, 10%	1302950	49
1	R38	RESISTOR, 1.0K, 1W, 5%	1303122	50
1	R18	RESISTOR, 8.2K, 1/4W, 5	1303179	51
1	R28	RESISTOR, 4.99K, 1/4W, 1 MF	1305324	52
2	R1, R36	RESISTOR, 1, 2W, 5% WW	1305428	53
1	R55	RESISTOR, 5.1, 1/4W, 5%	1309422	54
2	R5, R30	RESISTOR, 15, 2W, 10	1310147	55
2	R32, R33	RESISTOR, 2.21K, 1/4W, 1	1310631	56
1	D22	DIODE 2N4441 SCR	1505067	57
3	Q3, Q11, Q17	TRANSISTOR, 2N4036	1509700	58
1	Q18	TRANSISTOR, DEC 3734	1510062	59
1	Q7	TRANSISTOR, MJE3055	1510555	60
7	Q4, Q5, Q6, Q8, Q12 THRU Q14	TRANSISTOR, XA05	1510705	61
2	Q2, Q16	TRANSISTOR, XA55	1510706	62
1	Q10	TRANSISTOR, D45H	1510700	63
2	Q1, Q9	TRANSISTOR, 2N5038	1510969	64
1	Q15	TRANSISTOR, D44H5	1512722	65
2	L1, L2	INDUCTOR, 500uh	1612593	66
2	E2, E5	I.C. LM 301A	1910202	67
3	E1, E3, E4	I.C. LM 555	1911944	68
2		HEAT SINK	7414765	71
1		HEAT SINK	7413042	72
2		SCREW #4-40 x 5/16 LG	9006010-1	73
8		SCREW #4-40 x 7/16 LG.	9006012-1	74
2		SCREW, NYLON #4/40 x 1/2 LG.	9006402-4	75
1		EYELET	9006745	76
2		TRANSIPAD	9007201	77
A/R		TUBING	9107267-09	78
2		NUT, NYLON #4/40	9007992	79
2		WASHER, THERMAFILM	9008225	80
A/R		THERMAL COMPOUND	9008290	81
3		INSULATOR	9008419	82
8		NUT, KEP #4/40	9006557	83
A/R		WIRE #20 AWG STRANDED	9107460-05	84
1		CONTROL CABLE	7014[illegible]	85
2		WASHER, LOCK INTERNAL T[illegible] #4	[illegible]6[illegible]2	86
[illegible]		WASHER, FLAT	9008172	87
[illegible]		WASHER FLAT	9006660	88
[illegible]		WASHER THERMAFILM	9008424	89
[illegible]		BUSHING, NYLON	9006711	90
[illegible]		NUT HEX #10-32	9009005	91
[illegible]		INSULATOR, CAPACITOR	9009731-03	92
AR	W1, W2	WIRE #20 AWG. SOLID	9107560-02	93

ETCH BOARD REV. D

FIRST USED ON OPTION MODEL

SEMICONDUCTOR CONVERSION CHART

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

REV.	CHANGE NO.	
E	5411601 00001	RICHARD BARRY 12-10-75
F	5411601-00002	G. POTTER 6/1/76
H	5411601-00003	G. POTTER

DRN. B. B[illegible] DATE 8-20-75

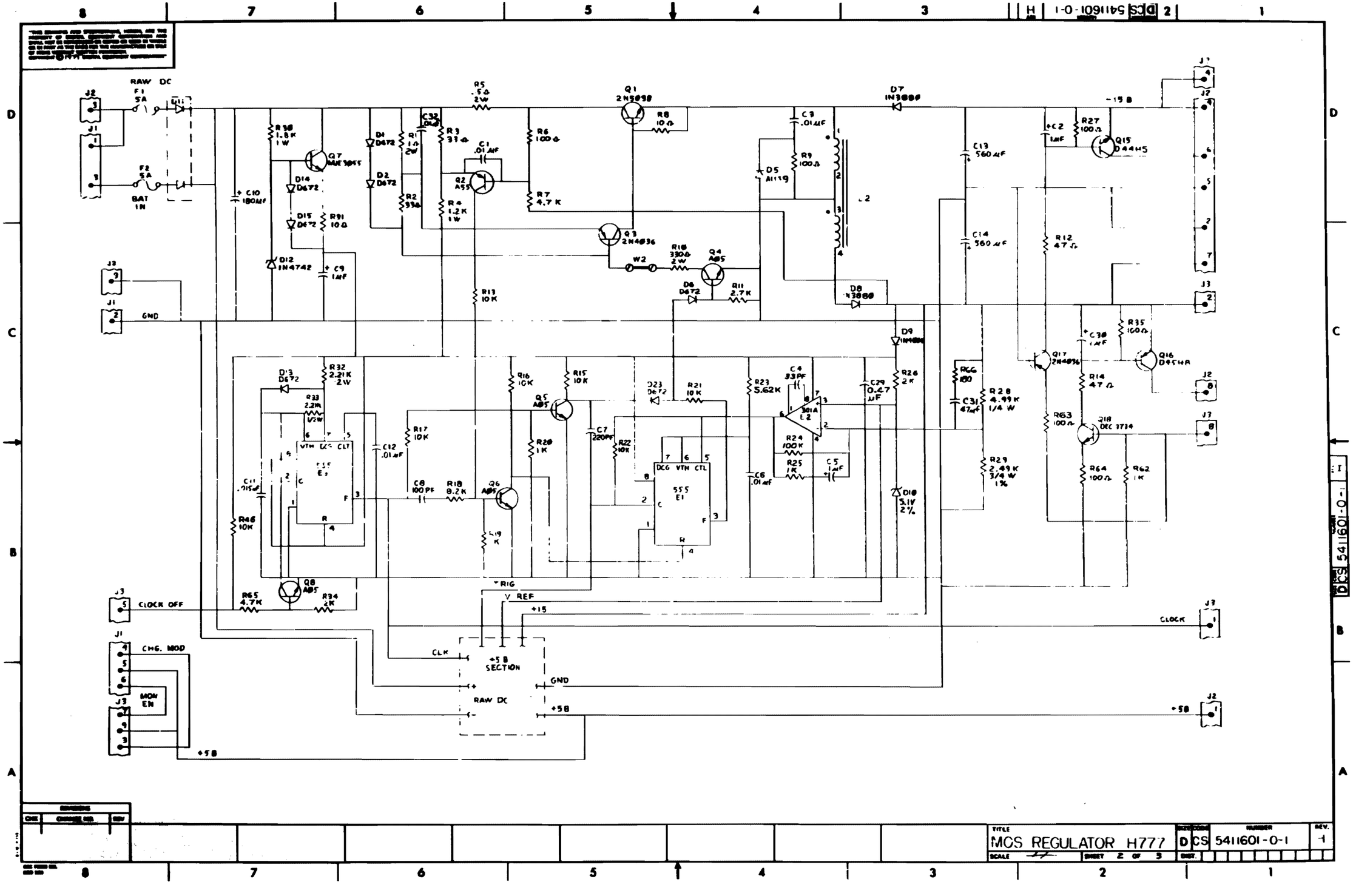
NEXT HIGHER ASSY

digital

TITLE MOS REGULATOR H777

SIZE D CODE CS NUMBER 5411601-0-1 REV. H

SCALE — SHEET 1 OF 3



REVISIONS		
ZONE	CHANGE NO.	REV

TITLE: MCS REGULATOR H777			
SCALE	SHEET 2 OF 5	DWG CODE: DCS	NUMBER: 5411601-0-1 REV. 1

5411601-0-1 DCS

+ RAW DC
+5B
GND
+15V
TRIG
CLOCK
V REF

L1
Q9 2N5838
Q10 A85
Q11 2N4036
Q12 A85
Q19 A85
Q14 A85
R38 .15Ω 2W
R39 100Ω
R40 10Ω
R41 230Ω 2W
R42 10K
R43 2.7K
R44 100Ω 1W
R45 1.5K
R47 39Ω
R48 100Ω
R49 100Ω
R50 10K
R51 10K
R52 390Ω
R53 100K
R54 1K
R55 5.1Ω
R56 5.62K
R57 10K
R59 1K
R60 1K
R61 2.7K
C15 .01μF
C16 180μF
C17 1200μF
C18 .01μF
C19 1μF
C21 .01μF
C22 220PF
C23 220PF
C24 10μF
C25 .1μF
C26 1μF
C27 .01μF
C28 .01μF
C35 .01μF
D16 D672
D17 D672
D18 A114B
D19 D672
D20 D672
D21 1N3889
D22 2N4441
D8 2N5862
D4 1N752A
301A
555 E4
CTL VTH DCG

NOTES:

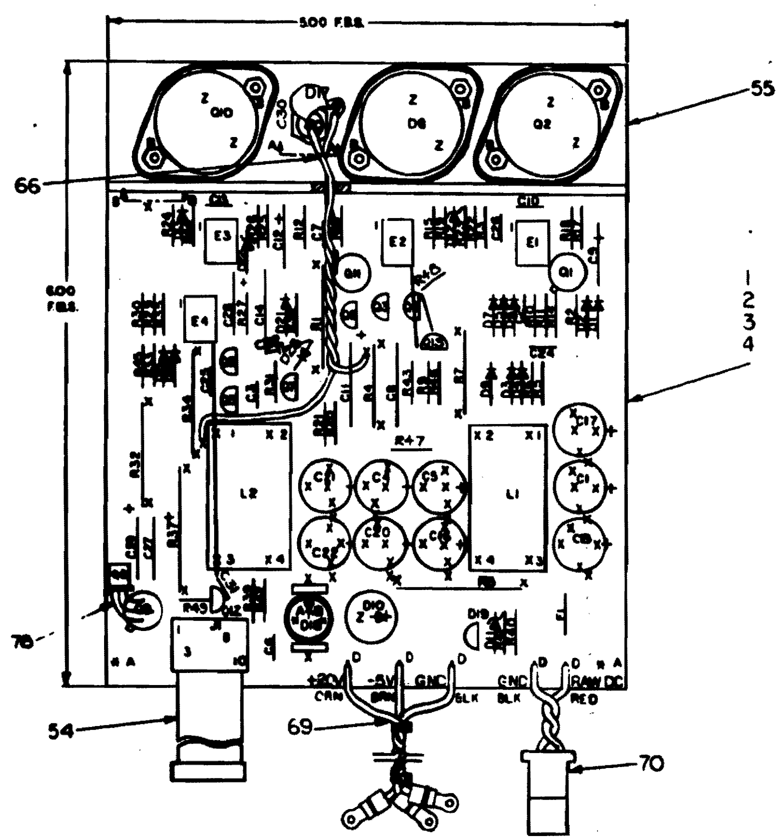
QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
7		GRIPLET	1210244	78
2		GRIPLET	9006756	76
1	C32	CAPACITOR, 1uf 50V, CER.	1010274-02	77
AR		TUBING, INSULATING	9107256-11	78

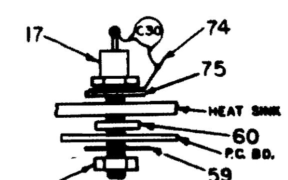
QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1		HEAT SINK	7416236-0-0	55
8		SCREW, #4-40 x 1/2 lg PH HD	9006013-1	56
8		NUT, KEP #4-40	9006557	57
1		NUT, HEX #10-32	9006584	58
1		WASHER, FLAT	9006062	59
1		BUSHING, NYLON	9006440	60
8		WASHER, FLAT	9006172	61
A/R		COMPOUND, THERMAL	9006200	62
3		INSULATOR, TO 3	1213071-01	63
~~[illegible]~~		~~[illegible]~~	~~[illegible]~~	~~64~~
1		TRANSIPAD	9007201	65
A/R		WIRE #18 AWG, TWISTED PAIR	9107300-99	66
1	C29	CAPACITOR 2.2UF 20V	1002627	67
1	R47	RESISTOR 200, 1/4W, 5% (RETRO-FIT)	1311522	68
1		HARNESS (THREE WIRE)	C-IA 7012547-0-0	69
1		HARNESS (TWO WIRE)	C-IA 7012546-0-0	70
1	C12	CAPACITOR, 10uf, 20V, 10%, TANT	1004813	71
1	DZ3	DIODE, IN753A	1102421	72
1	C26	CAPACITOR, .47uf, 25V, 20%, CER	1010279	73
1		SOLDER, TERM., SCREW MTG.	90C7815	74
1		SIL PAD .500 .190 I.D	1213071-05	75

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	E-CD-5411599-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411599-0-5	2
REF		MODULE ECO HISTORY	D-MH-5411599-0-0	3
1		ETCHED CIRCUIT BOARD	5011599	4
1	C7	CAPACITOR, 100PF,100V, 5%.	1000016	5
6	C2,C3,C8,C30,C24,C25	CAPACITOR, .01uf, 100V DISC	1001610-01	6
3	C9, C27,C28	CAPACITOR, 1uf, 35V, 10% TANT	1001776	7
2	C10,C13	CAPACITOR, 33pf, 100V	1000009	8
1	C11	CAPACITOR, 1.5uf, 35V, 10% TANT	1008725	9
2	C6,C14	CAPACITOR, .01uf, 100V, 10% MYLAR	1005704	10
1	C31	CAPACITOR, 220pf, 100V, 5%	1000021	11
2	C5,C16	CAPACITOR, 1200uf, 63V	1012007-01	12
7	C1,C17,C18,C4,C20,C21,C22	CAPACITOR, 100uf, 50V	1012007-02	13
1	D22	DIODE, IN 4742	1109502	14
1	D10	DIODE, MR1033B	1103341	15
10	D1 THRU D7, D14,D15, D21	DIODE, D672	1105275	16
1	D17	DIODE, IN3000	1109440	17
2	D12,D13	DIODE, Izt 5 ma 5.1V 2%	1110713	18
1	D8	DIODE	1110715	19
1	D11	DIODE, IN970B	1110056	20
1	D19	DIODE, 2N5062	1110900	21
1	D9,	DIODE, A114B	1112995-01	22
1	F1	FUSE, 15A, PICO	1210929	23
1	R46	RESISTOR, 18K, 1/4w, 5%	1302465	24
6	R9,R39,R40,R41,R43,R49	RESISTOR, 100, 1/4W, 5%	1300229	25
1	R7,	RESISTOR, 100, 1W, 5%	1300232	26
3	R11 ,R2,R33	RESISTOR, 390, 1/4W, 5%	1300309	27
6	R6,R12,R23,R31,R17, R48	RESISTOR, 1K, 1/4W, 5%	1300305	28
3	R10, ,R14, ,R30	RESISTOR, 2.7K, 1/4W, 5%	1300420	29
4	R42,R44, R15,R27	RESISTOR, 4.7K, 1/4W, 5%	1300447	30
1	R4	RESISTOR 1K, 1W, 5%	1300368	31
3	R16, ,R29,R38,	RESISTOR, 10K, 1/4W, 5%	1300479	32
2	R3,R35	RESISTOR, 10, 1/4W, 5%	1301317	33
1	,R45	RESISTOR, 470, 1/4W, 5%	1300316	34
1	R5	RESISTOR, 27, 1/4W, 5%	1301522	35
1	,R34	RESISTOR, 330, 2W, 10%	1301981	36
1	R19	RESISTOR, 2K, 1/4W, 5%	1302300	37
2	R18,R26	RESISTOR, 100K, 1/4W, 5%	1302400	38
1	R22	RESISTOR, 2.74K, 1/4W, 1%	1304000	39
2	R1,R32	RESISTOR, 1, 2W, 5% WW	1305420	40
2	R24, R25	RESISTOR, 1.5K, 1/4W 5%	1300391	41
1	R21	RESISTOR, 8.25K, 1/4W, 1%	1309420	42
2	R8,R37	RESISTOR, .08, 5W, 3% WW	1311003	43
1	R20	RESISTOR, 56, 1/4 W, 5%	1302602	44
2	Q1,Q8	TRANSISTOR, 2N4036	1509700	45
7	Q3,Q5,Q6,Q7,Q9,Q12,Q13	TRANSISTOR, XA85	1510705	46
1	Q4	TRANSISTOR, XA55	1510708	47
1	D18	TRANSISTOR, C32AX135	1510920	48
2	Q2,Q10	TRANSISTOR, 2N5038	1510909	49
1	Q11	TRANSISTOR, 2N5433	1511000	50
2	L1,L2	INDUCTOR, 500uh	1612003	51
2	E1,E3	I.C. DEC 301A	1910202	52
2	E2,E4	I.C. DEC 555	1911044	53
1	J1	CABLE ASSY	7011414 -0E	54

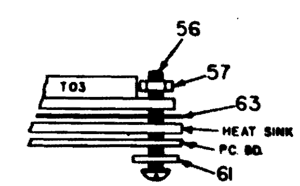
PARTS LIST

ETCH BOARD REV. C





SECTION A-A



SECTION B-B

IC TYPE	GND	+5V

IC PIN LOCATIONS

FIRST USED ON OPTION MODEL

G. POTTER 7 SEP 76

6 AUG 76

5411599-0-01 F

SEMICONDUCTOR CONVERSION CHART

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

DATE 11/7/75

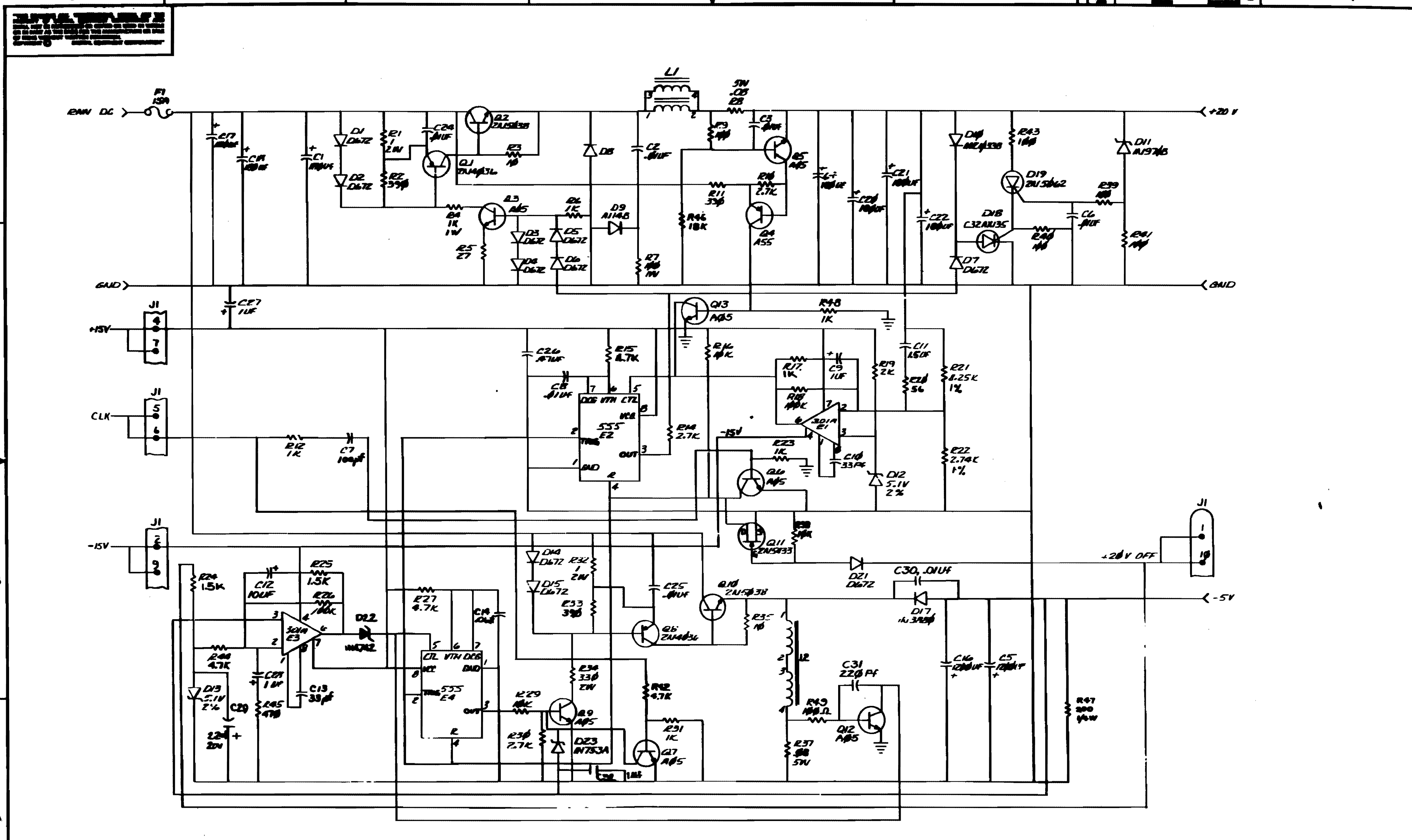
SCALE

SHEET OF 2

digital

TITLE +20V REGULATOR/H777

D CS 5411599-0-1 F



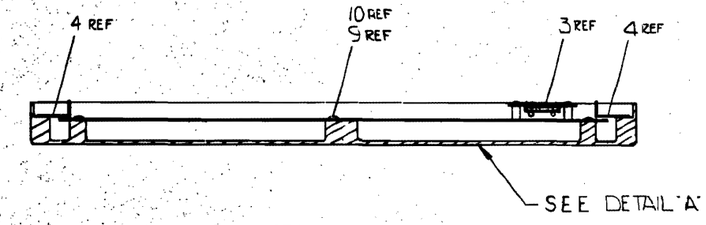
TITLE +20V REGULATOR/H777

D CS 5411599-0-1 REV. F

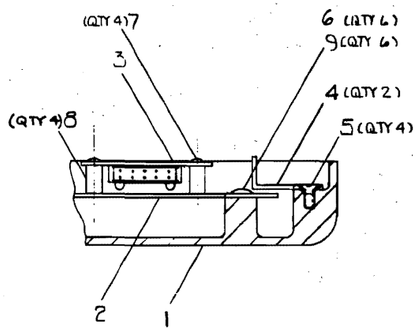
SHEET 2 OF 2

NOTES:

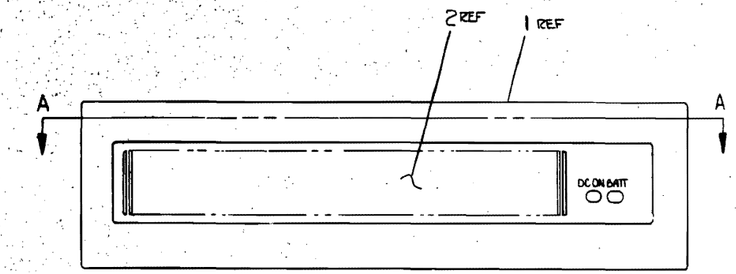
1. TO SELECT STAND BY/MODE, ON MODE OR OFF MODE SEE D-CS-5411501-0-1.



SECTION A-A



DETAIL 'A'
SCALE 1/1



6	SCREW, PAN HD. PHIL #8-32 x .31 LG	9006036-1	9
4	SPACER, .25 O.D. x 8-32 x .44 LG	9008835	8
4	SCREW, PAN HD. PHIL 6-32 x 1/9 LG	9008020-1	7
6	WASHER, INT. TOOTH #8	9006834	6
4	SCR FLAT HD PHIL #8-32 x .38	9006037-2	5
2	BRACKET SUPPORT FILTER	C-MD-7414962-1-0	4
1	CONT. EXP. BOX (BAII-L)	D-UMSAII501-0-0	3
1	PANEL, EXPANDER BOX	B-IA-7012321-0-0	2
1	BEZEL	E-MD-7416747-0-0	1
	DESCRIPTION	DWG./PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE LISTED					
		OVER 0 TO 3	OVER 3 TO 6	OVER 6 TO 30	OVER 30 TO 120	OVER 120 TO 315	OVER 315 TO 1000
SURFACE QUALITY IN MICROINCHES ✓	MEDIUM ☐	±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED ☐	±.012	±.016	±.020	±.03	±.078	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH

DRAWN

CHECKED

ENGR APPR.

MFG APPR.

Q.A.

COMMENTS

SCALE 1/2

SHEET 1 OF 1

FIRST USED ON 1104

TITLE: CONSOLE ASSY EXPANDER BOX

SIZE D | CODE IDENT | NUMBER AD 7012540-0-0 | REV.

DIST.

REV.	DESCRIPTION	CHANGE NO.	DATE

AD 7012540-0-0

digital

DDII-D

Engineering Drawings

Digital Equipment Corporation

DRAWING DIRECTORY

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE
DRAWING DIRECTORY (DD11-P)	B-DD-DD11-P
BACK PLANE ASSY (DD11PK)	C-AD-7011523-0-0
BACK PLANE ASSY (DD11PF)	C-AD-7012307-0-0
MODULE UTILIZATION (DD11-P)	D-MU-DD11-P-2
POWER HARNESS (BA11-K,BA11-L)	D-IA-7011108-0-0
POWER HARNESS (BA11F,BA11-P)	D-IA-7011109-0-0
CIRCUIT SCHEMATIC (DD11-P)	D-CS-5411660-0-1
WIRE LIST (COMPLETE)	K-WL-DD11-P-1

NOTE: DD11PK ASSEMBLIES ARE ELECTRALLY INCOMPATIBLE WITH DD11PF ASSEMBLIES. A DD11PK WILL WORK IN BA11-L AND BA11-K BOXES ONLY. A DD11PF WILL WORK IN BA11-F AND BA11-P BOXES ONLY

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1			
DD11-PK	BACK PLANE ASSY (BA11L, BA11K)	X			
DD11-PF	BACK PLANE ASSY (BA11F, BA11P)	X			

REVISIONS

REV	CHG. NO.	DATE
A	DD11P-2	2-76
	R. Barry	3-3-76
B	DD11P-3	9-76

USED ON OPTION/MODEL	
SHEET 1	OF 1

		DATE
DRN.	D. HEALY	6/19/7?
CHK'D.	[illegible]	6/3/?
PROJ ENG.	R Barry	7-2-75
PROD.	[illegible]	7/2/7?
FIELD SERV.	[illegible]	7-3-7?

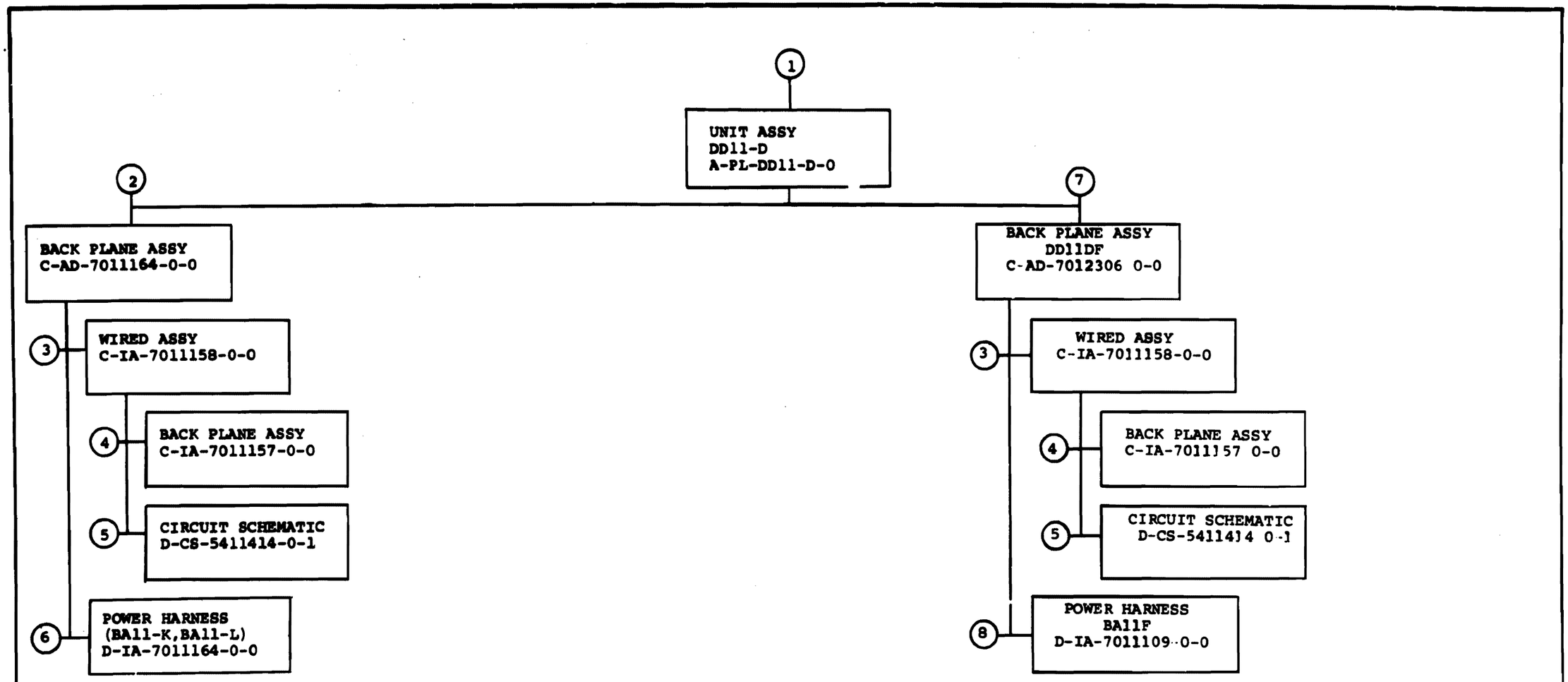
TITLE: DRAWING DIRECTORY DD11-P

SIZE	CODE	NUMBER	REV
B	DD	DD11-P	B

DIST

DEC 16-(325)-1062-N-A072

DRB 106



TITLE		SIZE	CODE	NUMBER	REV
DRAWING DIRECTORY DD11-D	SHEET 2 OF 3	B	DD	DD11-D	A

ELECTRICAL

CUSTOMER PRINT SET 1				MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
					1	A-PL-7011164-0-0		1	UNIT ASSY DD11-D	
X						D-MU-DD11-D-2		1	MODULE UTILIZATION	
X					2	C-AD-7011164-0-0		1	BACK PLANE ASSY DD11-DK	
					3	C-IA-7011158-0-0		1	WIRED ASSY	
X						K-WL-DD11-D-1		1	WIRE LIST	
						A-WT-7011158-0		1	AWT REV STATUS	
X					5	D-CS-5411414-0-1			CIRCUIT SCHEMATIC	
X					6	D-IA-7011108-0-0		1	POWER HARNESS (BA11-K, BA11-L)	
X					7	C-AD-7012306-0-0		1	BACK PLANE ASSY DD11-DF	
X					8	D-IA-7011109-0-0		1	POWER HARNESS (BA11-F, BA11-P)	

MECHANICAL

CUSTOMER PRINT SET 1				MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
					1	A-PL-7011164-0-0		1	UNIT ASSY DD11-D	
					2	C-AD-7011164-0-0		1	BACK PLANE ASSY DD11-DK	
					3	C-IA-7011158-0-0		1	WIRED ASSY	
						B-DC-5308753-0-0		1	DECAL 21 POINT (LTR)	
						A-DC-7411881-0-0		1	LABEL, AWT REV STATUS	
					4	D-IA-7011157-0-0		1	BACK PLANE ASSY	
					5	D-CS-5411414-0-1			CIRCUIT SCHEMATIC	
						D-AH-5411414-0-4			ASSY/DRILLING HOLE LAYOUT	
						K-CO-5411414-0-5			X-Y COORDINATE HOLE LOCATION	
						B-MH-5411414-0-6			MODULE ECO HISTORY	
						5011413			ETCH CIRCUTI BOARD	
					6	D-IA-7011108-0-0		1	POWER HARNESS (BA11-K, BA11-L)	
X					7	C-AD-7012306-0-0		1	BACK PLANE ASSY DD11-DF	
X					8	D-IA-7011109-0-0		1	POWER HARNESS (BA11-F, BA11-P)	

CUSTOMER PRINT SET CODES

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

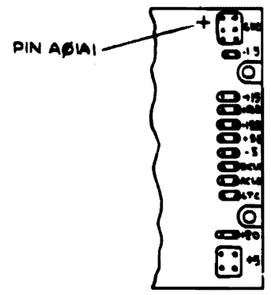
TITLE: DRAWING DIRECTORY DD11-D

SHEET 3 OF 3 | SIZE: B | CODE: DD | NUMBER: DD11-D | REV: A

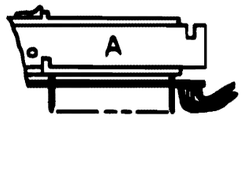
WIRE TABLE

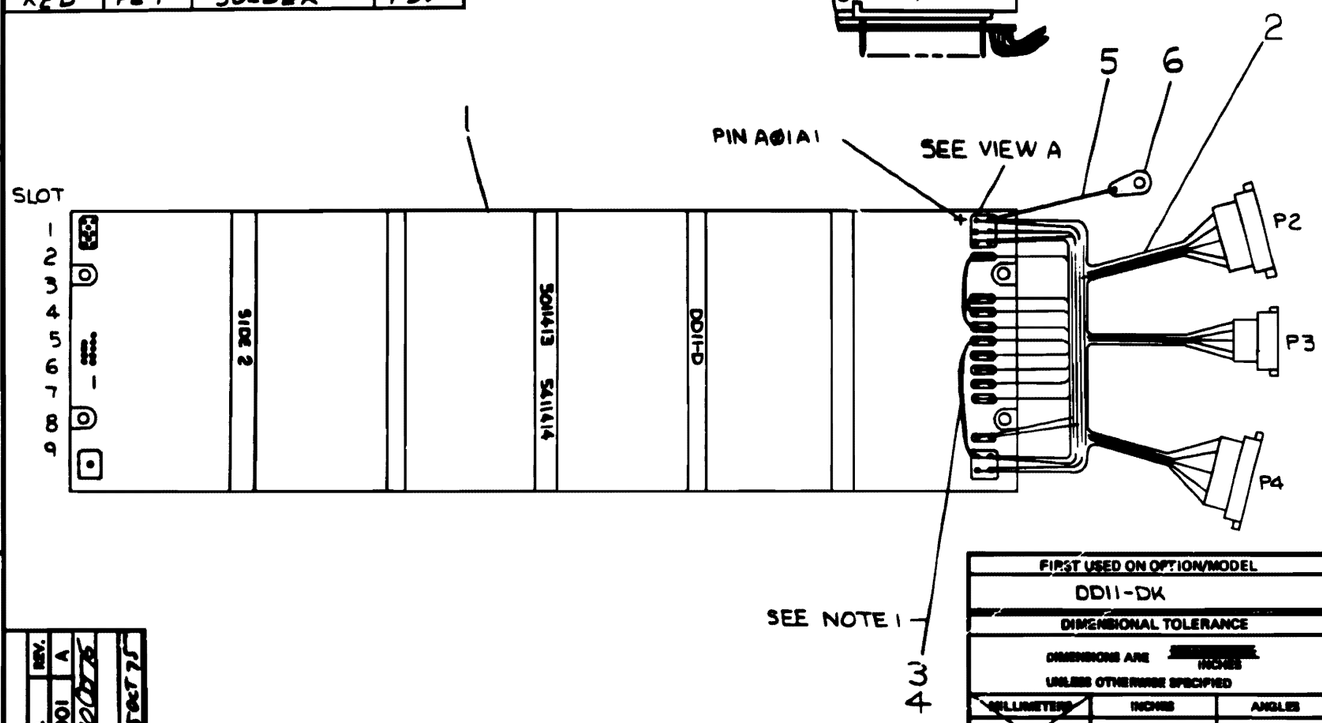
FROM			TO	FROM			TO
COLOR	POINT	CONNECTION	SIGNAL	COLOR	POINT	CONNECTION	SIGNAL
BLUE	P4-13	SOLDER	-15V	BRN	P2-14	SOLDER	-5V
RED	P4-4		+5V	BLK	P2-8		GND
RED	P4-1		+5V	GRAY	P2-2		+15
BLK	P4-8		GND	ORG	P2-3		+20
ORG	P4-3		+20V	BLK	P2-9		GND
BLK	P4-9		GND	RED	P2-12	SOLDER	+5B
WHT	P4-6		+15B	ITEM 5	ITEM 6	SOLDER	GND
GRN	P4-15		-15B				
YEL	P3-4		ACLO				
BLK	P3-1		GND				
BRN	P3-2		LTC				
VIO	P3-3		DCLO				
RED	P2-4		+5V				
RED	P2-1	SOLDER	+5V				

NOTES:
1. WHEN THE DD11-DK IS USED WITH A BA11-K EXPANSION BOX WITHOUT BATTERY BACK UP, INSTALL THE THREE JUMPERS SHOWN:
   1) -15 TO -15B
   2) +15 TO +15B
   3) +5 TO +5B
   USE #20 SHIELDED BUS WIRE ON SIDE 2. THIS WILL PROVIDE POWER TO THE MOS MEMORY VOLTAGE RAILS.
2. INSTALL ITEM #6 UNDER LOGIC FRAME MOUNTING SCREW TO TIE LOGIC GROUND TO CHASSIS GROUND.



VIEW A





QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	TERMINAL, SOLDER	9008150	6
2"	WIRE, BLK STRD #14	9107370-00	5
6"	TUBING, #20 (CLEAR)	9107267-10	4
6"	WIRE, BUS # 20	9107560-02	3
1	POWER HARNESS (BA11-K, BA11-L)	D-IA-7011108-0-0	2
1	WIRED ASSY DD11-D	C-IA-7011158-0-0	1

PARTS LIST

FIRST USED ON OPTION/MODEL: DD11-DK

DIMENSIONAL TOLERANCE: DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
XXX ±0.10	XXX ±.005	±0° 30'
XX ±0.5	XX ±.02	
X ±2.5	X ±.1	

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST

FINISH: + —

DRN		DATE 5/20/75
CHK'D		DATE 5/21/75
ENG.		DATE
PROJ. ENG.		DATE 6/4/75
PROD.		DATE 6/6/75

NEXT HIGHER ASSY.: A-PL-DD11-D-0

SCALE: ++

SHEET 1 OF 1

digital

TITLE: BACKPLANE ASS'Y (DD11-DK)

SIZE	CODE	NUMBER	REV.
C	AD	7011164-0-0	A

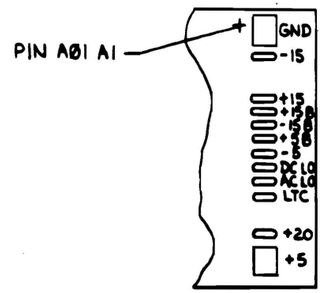
DIST.

REVISIONS			
REV.	CHANGE NO.	CHK	
A	7011164-00001	R. BARRY	12/05/75

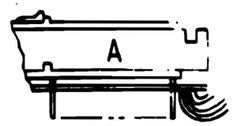
7011164-0-0 REV. A

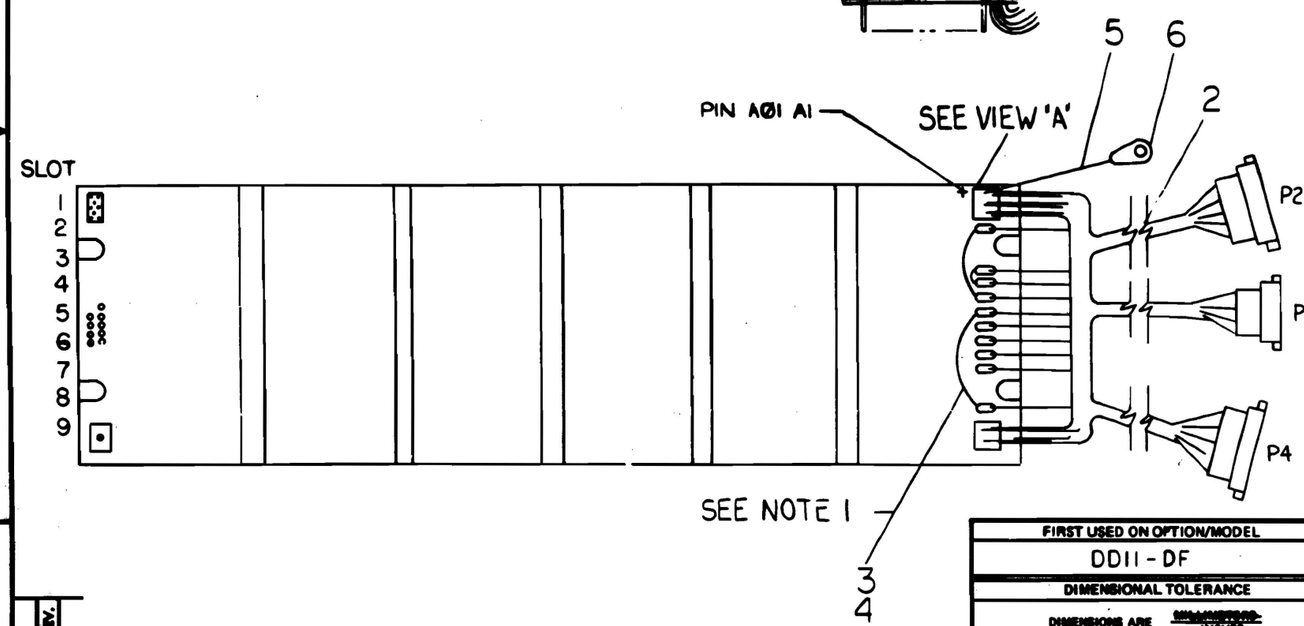
WIRE TABLE

FROM			TO	FROM			TO
COLOR	POINT	CONNECTION	SIGNAL	COLOR	POINT	CONNECTION	SIGNAL
BLU	P4-13	SOLDER	-15 V	BRN	P2-14	SOLDER	-5V
RED	P4-4	↓	+5V	BLK	P2-8	↓	GND
RED	P4-1	↓	+5V	GRY	P2-2	↓	+15
BLK	P4-8	↓	GND	ORN	P2-3	↓	+20
ORN	P4-3	↓	+20V	BLK	P2-9	↓	GND
BLK	P4-9	↓	GND	RED	P2-10	SOLDER	+5 B
WHT	P4-6	↓	+15 B	ITEM #5	ITEM #6	SOLDER	GND
GRN	P4-15	↓	-15 B				
YEL	P3-4	↓	AC LO				
BLK	P3-1	↓	GND				
BRN	P3-2	↓	LTC				
VIO	P3-3	↓	DC LO				
RED	P2-4	↓	+5V				
RED	P2-1	SOLDER	+5V				



VIEW "A"





NOTES:

1. WHEN DD11-DF IS USED WITH A BA11-F EXP. BOX WITHOUT BATTERY BACK UP INSTALL THE THREE JUMPERS SHOWN:
   1) -15 TO -15 B
   2) +15 TO +15 B
   3) +5 TO +5 B
   USE #20 INSULATED BUS WIRE ON SIDE 2. THIS WILL PROVIDE POWER TO THE MOS MEM VOLTAGE RAILS.
2. INSTALL ITEM #6 UNDER LOGIC FRAME MTG. SCREW TO TIE LOGIC GROUND TO CHASSIS GROUND.
3. THE BA11-F POWER HARNESS ITEM #2 IS NOT ELECTRICALLY COMPATIABLE WITH THE BA11-L OR BA11-K MOUNTING BOX.

QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	TERMINAL, SOLDER	9008150	6
AIR	WIRE, BLK STRD #14	9107370-00	5
AIR	TUBING, #20 (CLEAR)	9107267-10	4
AIR	WIRE, BUS # 20	9107560-03	3
1	POWER HARNESS BA11-F	D-IA-7011109-0-0	2
1	WIRED ASSY DD11-D	C-IA-7011158-0-0	1

PARTS LIST

FIRST USED ON OPTION/MODEL: DD11-DF

DIMENSIONAL TOLERANCE
DIMENSIONS ARE ~~MILLIMETERS~~ INCHES
UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
XXX = ±0.10	.XXX = ±.005	±0° 30'
XX = ±0.5	.XX = ±.02	
X = ±1	.X = ±.1	

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST
FINISH:

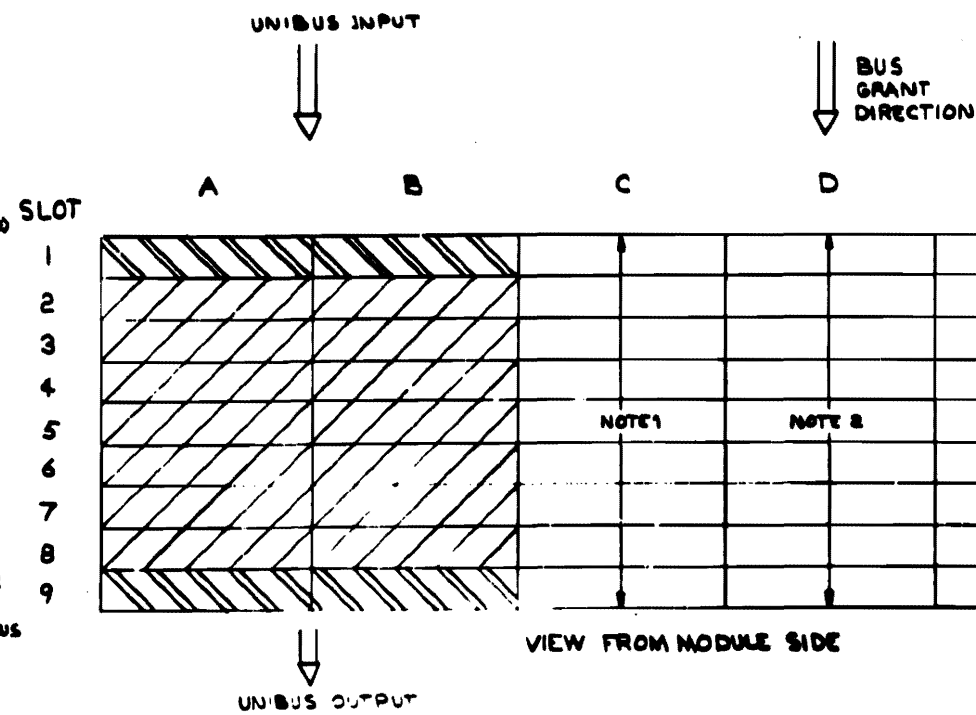
DRN. R Beasley	DATE 12-18-75	digital
CHK'D	DATE 12-18-75	
ENG. Richard Beasley	DATE 3-10-76	TITLE: BACK PLANE ASSY (DD11-DF)
PROJ. ENG. Richard Beasley	DATE 3-10-76	
PROD.	DATE 3-16-76	
NEXT HIGHER ASSY.	A-PL-DD11-DF-0	
SCALE		SIZE C CODE AD NUMBER 7012306-0-0 REV.
SHEET 1 OF 1		DIST.

CAD 7012306-0-0 REV. B

REVISIONS: REV. / CHANGE NO. / CHK

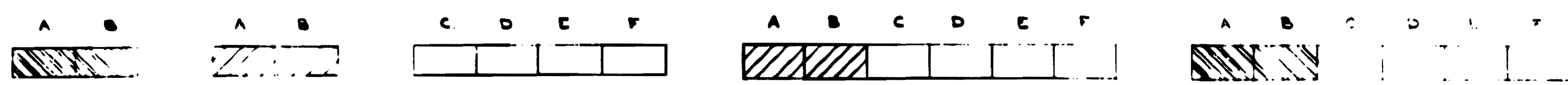
SLOT 1 (A&B) IS EITHER THE BEGINING OF THE UNIBUS (M7263 CPU MODULE OR THE UNIBUS CABLE INPUT (BC11A)

SLOT 9 (A&B) IS EITHER THE TERMINATION OF THE UNIBUS OR THE UNIBUS OUTPUT CABLE (BC11A)



VIEW FROM MODULE SIDE

CABLE FROM KY11-LA OPERATORS CONSOLE, USED WITH (M7263) PDP1104 CPU MODULE ONLY, TERMINATES HERE.



STANDARD UNIBUS (SLOT 1-9)
DUAL MODULES WHICH PLUG INTO STANDARD UNIBUS SLOTS ONLY:
BC11A UNIBUS CABLE
M9302 SACK/TERM (NOTE 5)
M920 (NOTE 4)
M930 (NOTE 5)
M9202 (NOTE 4)

MODIFIED UNIBUS (SLOT 2-8)
DUAL MODULES WHICH PLUG INTO THE MODIFIED UNIBUS ONLY:
M9301 BOOT/TERM.
M9306 TERM.
M7860 PARITY CONT.

SMALL PERIPHERAL CONTROLLER (SLOT 1-9)
ANY S.P.C. OPTION

HEX MODULE WITH MODIFIED UNIBUS SIGNALS (SLOTS 2-8)
HEX MODULES THAT PLUG INTO MODIFIED UNIBUS ONLY:
M7847 MOS MEMORY (MS11)
M7848 MOS MEMORY (MS11)

HEX MODULE WITH STANDARD UNIBUS SIGNALS
SLOT 1 ONLY
M7263 PDP1104 CPU MODULE

GENERAL
ANY HEX MODULE THAT MEETS THE FOLLOWING REQUIREMENTS CAN BE MOUNTED IN THESE SLOTS.
1.) THOSE PINNED TO TAKE SIGNALS FROM MODIFIED UNIBUS (A&B) WITH THE BUS GRANTS TAKEN FROM SPC SLOTS IE: ABOVE
2) THOSE PINNED TO TAKE SIGNALS FROM STANDARD SPC PINNING WITH THE EXCEPTION OF POWER FROM (A&B). IE: SPECIAL OPTIONS

NOTES:

1. REMOVE CA1 TO CB1 WIRE WRAP JUMPER TO INSTALL AN NPR OPTION IN ANY SPC SLOT.
2. G727 REQUIRED IN ANY UNUSED SPC SLOT TO PROVIDE BUS GRANT CONTINUITY
3. GRANT DIRECTION IS SLOT 1 TO SLOT 9.
4. USE M9202 TO INTERCONNECT SYSTEM UNITS INSTEAD OF M920. M9202 IS A 2 FT UNIBUS JUMPER CABLE USED TO DISTRIBUTE UNIBUS LOADING.
5. M9302 (SACK/TERM) AND M930 (TERM) MUST NEVER BE INSTALLED IN ANY SLOT OTHER THAN SLOT 9 (A & B). POWER SUPPLY VOLTAGES WILL BE SHORTED OUT IF THESE TERMINATORS ARE MOUNTED IN THE MODIFIED UNIBUS SLOTS.
6. MODIFIED UNIBUS SECTION CARRIES CORE AND MOS MEMORY VOLTAGE RAILS AND MEMORY PARITY CONTROL SIGNALS INSTEAD OF BUS GRANT AND SOME GND SIGNALS THAT ARE CONTAINED IN STANDARD UNIBUS SLOTS.

MODULE UTILIZATION (DD11-D)

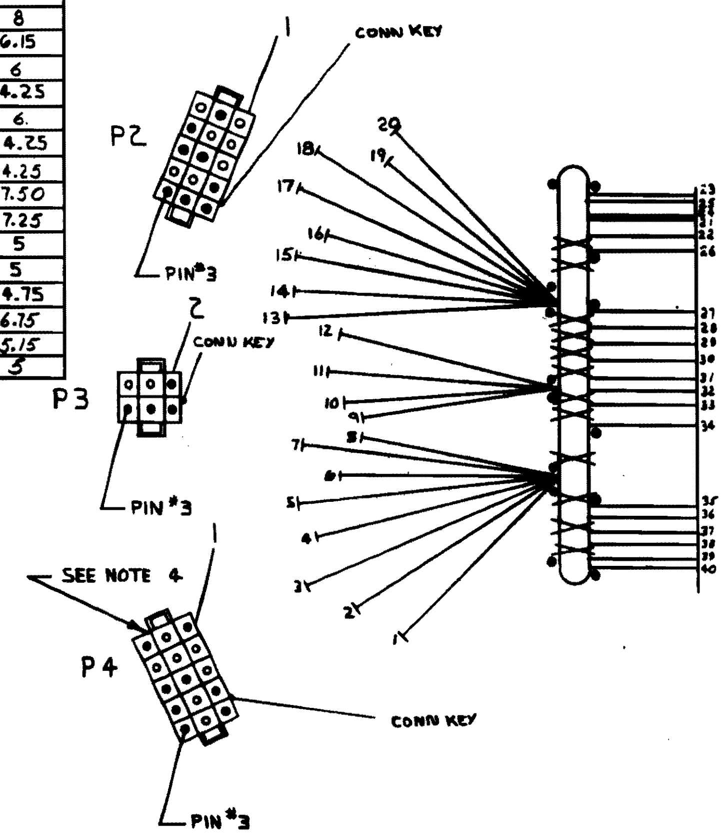
D MU DD11-D-2

SHEET 1 OF 1

WIRING TABLE

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	TO CONNECTION	SIGNAL	LENGTH
9	#18	BLUE	1	P4-13	3	26	SOLDER	-15V	7
5	14	RED	2	P4-4	↑	37	↑	+5V	5
5	14	RED	3	P4-1		38		+5V	5
6	14	BLK	4	P4-8		21		GND	7.75
7	14	ORN	5	P4-3		35		+20V	5
6	14	BLK	6	P4-9		22		GND	8
13	18	WHT	7	P4-6		23		+15B	6.15
14	18	GRN	8	P4-15		29		-15B	6
12	18	YEL	9	P3-4		33		ACLO	4.25
6	14	BLK	10	P3-1		23		GND	6.
10	18	BRN	11	P3-2		34		LTC	4.25
11	18	VIO	12	P3-3		32		DCLO	4.25
5	14	RED	13	P2-4		39		+5V	7.50
5	14	RED	14	P2-1		40		+5V	7.25
10	18	BRN	15	P2-14		31		-5V	5
6	14	BLK	16	P2-8		24		GND	5
8	18	GREY	17	P2-2		27		+15	4.75
7	14	ORN	18	P2-3		36		+20	6.75
6	14	BLK	19	P2-9	↓	25	↓	GND	5.15
5	14	RED	20	P2-12	3	30	SOLDER	+5B	5

NOTES:
1. USE TIE WRAPS (X) ITEM#4 AT BREAKOUT POINTS SHOWN
2. DOT(•) INDICATES NAIL LOCATION FOR ASS'Y USE ONLY. COVER NAILS WITH SHINK TUBING TO PREVENT CUTTING HARNESS.
3. WIRE LENGTH TOLERANCES WILL BE +1/8, -0 INCHES.
4. ALL CONN. SHOWN FROM WIRING SIDE.



DO NOT REDUCE

SCALE

0 IN — 6 IN — 12 IN

FOR MANUFACTURING PURPOSES ONLY

FOR WIRE LENGTHS SEE WIRING TABLE

QTY	DESCRIPTION	DWG./PART NO.	ITEM NO.
A/R	WIRE #18 AWG, GRN	9107360-55	14
A/R	WIRE #18 AWG, WHT	9107360-99	13
A/R	WIRE #18 AWG, YEL	9107360-44	12
A/R	WIRE #18 AWG, VIO	9107360-77	11
A/R	WIRE #18 AWG, BRN	9107360-11	10
A/R	WIRE #18 AWG, BLUE	9107360-66	9
A/R	WIRE #18 AWG, GREY	9107360-88	8
A/R	WIRE #14 AWG, ORN	9107370-33	7
A/R	WIRE #14 AWG, BLK	9107370-00	6
A/R	WIRE #14 AWG, RED	9107370-22	5
12	TIE WRAP	9007031	4
20	PIN MALE	1209378-01	3
1	CONN. 6 PIN HOUSING	1209351-06	2
2	CONN. 15 PIN HOUSING	1209351-15	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FIRST USED ON DD11-D

TITLE POWER HARNESS (BA11-K, BA11-L)

NEXT HIGHER ASSY. C-AD-7011164-0-0

SCALE 1/1 — SHEET 1 OF 1

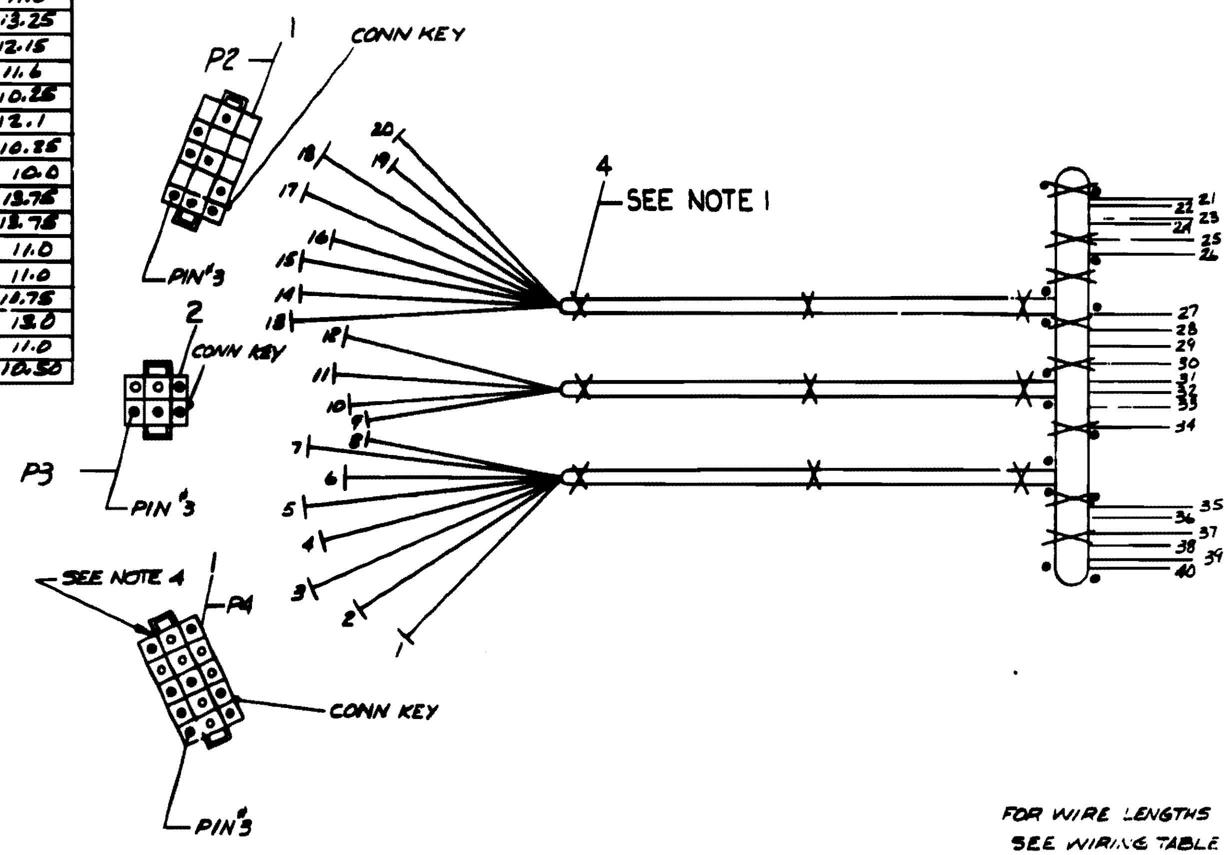
SIZE D — CODE IA — NUMBER 7011108-0-0 — REV. A

WIRING TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM POINT	FROM CONNECTION	FROM WITH	TO POINT	TO CONNECTION	SIGNAL	LENGTH
9	18	BLU	1	P4-13	3	26	SOLDER	-15V	12.75
5	14	RED	2	P4-4		37		+5V	11
5	14	RED	3	P4-1		38		+5V	11.25
6	14	BLK	4	P4-8		21		GND	13.75
7	14	ORN	5	P4-3		35		+20V	11.0
6	14	BLK	6	P4-9		22		GND	13.25
13	18	WHT	7	P4-6		28		+15B	12.15
14	18	GRN	8	P4-15		29		-15B	11.6
12	18	YEL	9	P3-4		33		ACLO	10.25
6	14	BLK	10	P3-1		23		GND	12.1
10	18	BRN	11	P3-2		34		LTC	10.85
11	18	VIO	12	P3-3		32		DCLO	10.0
5	14	RED	13	P2-4		39		+5V	13.75
5	14	RED	14	P2-1		40		+5V	13.75
15	14	BRN	15	P2-14		31		-5V	11.0
6	14	BLK	16	P2-8		24		GND	11.0
8	18	GRY	17	P2-2		27		+15	11.75
7	14	ORN	18	P2-3		36		+20	13.0
6	14	BLK	19	P2-9		25		GND	11.0
5	14	RED	20	P2-10	3	30	SOLDER	+5B	10.50

NOTES:

1. USE TIE WRAPS (x) ITEM #4 AT BREAKOUT POINTS SHOWN.
2. DOT (•) INDICATES NAIL LOCATION FOR ASSY USE ONLY. COVER NAILS WITH SHRINK TUBING.
3. WIRE LENGTH TOL WILL BE ± .12 IN
4. ALL CONN SHOWN FROM WIRING SIDE.
5. STRIP 1/8" INSULATION FROM POINTS 21 THRU 40 AND FULL TIN POINTS 21 THRU 40.



DO NOT REDUCE

SCALE

0 IN — 6 IN — 12 IN

FOR MANUFACTURING PURPOSES ONLY

FOR WIRE LENGTHS SEE WIRING TABLE

QTY	DESCRIPTION	DWG./PART NO.	ITEM NO.
AR	WIRE #14 AWG (BRN)	9107370-11	15
AIR	WIRE #18 AWG, (GRN)	9107360-55	14
AIR	WIRE #18 AWG, (WHT)	9107360-99	13
AIR	WIRE #18 AWG (YEL)	9107360-44	12
AIR	WIRE #18 AWG, (VIO)	9107360-77	11
AIR	WIRE #18 AWG, (BRN)	9107360-11	10
AIR	WIRE #18 AWG, (BLU)	9107360-66	9
AIR	WIRE #18 AWG, (GRY)	9107360-88	8
AIR	WIRE #14 AWG, (ORN)	9107370-33	7
AIR	WIRE #14 AWG, (BLK)	9107370-00	6
AIR	WIRE #14 AWG, (RED)	9107370-22	5
17	TIE WRAP	9007031	4
20	PIN MALE	1209378-C1	3
1	CONN 6 PIN HOUSING	1209351-06	2
2	CONN 15 PIN HOUSING	1209351-15	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH: —

DRN: 11/3/75
CHK'D: 12/…/75
ENG: 12/…/75
PROJ. ENG: 12/…/75
PROD: 12-12-75

NEXT HIGHER ASSY: C-AD-7012307-0-0

SCALE: 1/1

SHEET 1 OF 1

FIRST USED ON: DD11-DF, PF

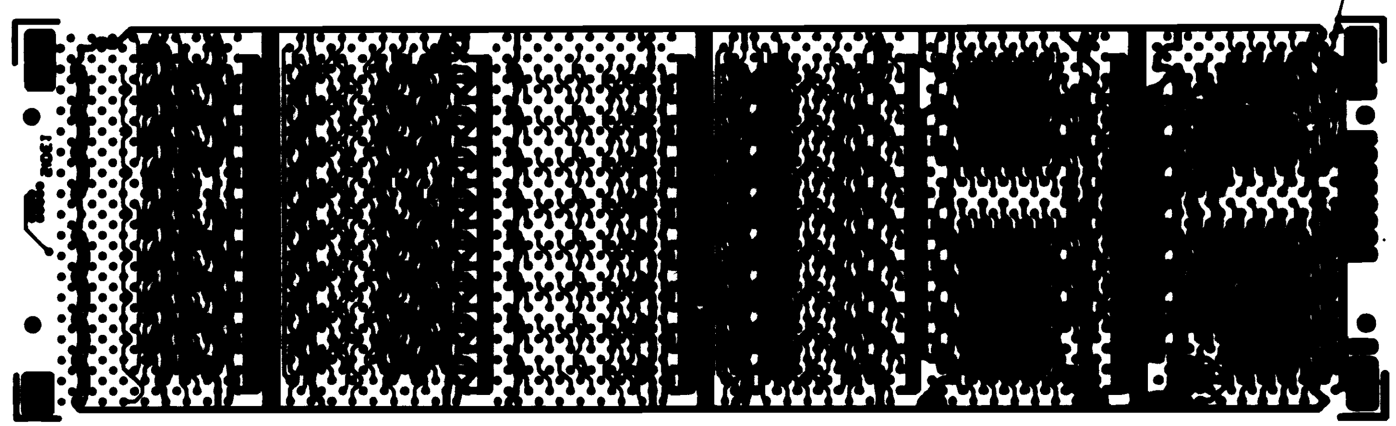
digital

TITLE: POWER HARNESS (BA11-F)

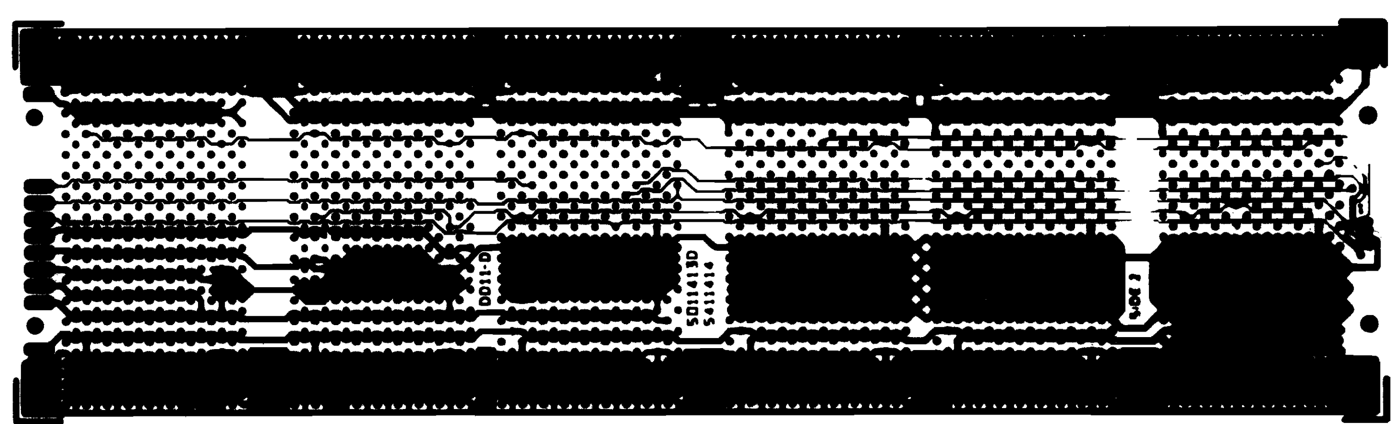
SIZE	CODE	NUMBER	REV.
D	IA	7011109-0-0	

DIST.

NOTES:



SIDE 1



SIDE 2

IC PIN LOCATIONS

IC TYPE	GND	+5V

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

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		AWT REV STATUS	A-WT-7011158-0	5
REF		MODULE ECO HISTORY	B-MH-5411414-0-6	4
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5411414-0-5	3
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5411414-0-4	2
1		ETCHED CIRCUIT BOARD	5011413	1

PARTS LIST

FIRST USED ON OPTION MODEL: DD11-D

ETCH BOARD REV: D

REV	CHANGE NO	CHK
D	5411414-G0001	

D. BARRY

SEMICONDUCTOR CONVERSION CHART

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

DRN. DATE 5/16/75
CHK'D. DATE 5/21/75
ENG. DATE 5/26/75
PROJ. ENG. DATE 5/26/75
PROD. DATE

NEXT HIGHER ASSY: C-IA-7011157-0-0

SCALE 1/1
SHEET 1 OF 1

digital

TITLE: CIRCUIT SCHEMATIC

SIZE	CODE	NUMBER	REV.
D	CS	5411414-Ø-1	D

DIST.

DIGITAL EQUIP. CORP.

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DDII-D		PARTS LIST		

DRN. D Ballen	DATE 5/21/75	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D.	DATE 5/27		
ENG. Richard Barry	DATE 5/25/75	TITLE WIRE LIST DDII-D	
PROJ. ENG. Richard Barry	DATE 5/28/75		
MOD. P.K Peterson	DATE 5/27/75		
NEXT HIGHER ASSEMBLY B-CC-DDII-D		SIZE K / CODE WL / NUMBER DDII-D-1	REV.
SCALE			
SHEET / OF /		DIST.	

REVISIONS	CHANGE NO.	REV.

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
+15/+8V		C01U1		1-01 *	H						2		P	HAND WIRE	1
+15/+8V		C02U1		1-02 *	H						1		P	HAND WIRE	1
+15/+8V		C03U1		1-03 *	H						2		P	HAND WIRE	1
+15/+8V		C04U1		1-04 *	H						1		P	HAND WIRE	1
+15/+8V		C05U1		1-05 *	H						2		P	HAND WIRE	1
+15/+8V		C06U1		1-06 *	H						1		P	HAND WIRE	1
+15/+8V		C07U1		1-07 *	H						2		P	HAND WIRE	1
+15/+8V		C08U1		1-08 *	H						1		P	HAND WIRE	1
+15/+8V		C09U1		1-09 *	H								P	H TO WHERE	1
+15/+8V				1									22-W/8		1
+20V		A02U1		1-01 *	H						1		P	HAND WIRE	2
+20V		A02V1		1-02 *	H						2		P	HAND WIRE	2
+20V		A02V2		1-03 *	H						1		P	HAND WIRE	2
+20V		A03U1		1-04 *	H						2		P	HAND WIRE	2
+20V		A03V1		1-05 *	H						1		P	HAND WIRE	2
+20V		A03V2		1-06 *	H						2		P	HAND WIRE	2
+20V		A04U1		1-07 *	H						1		P	HAND WIRE	2
+20V		A04V1		1-08 *	H						2		P	HAND WIRE	2
+20V		A04V2		1-09 *	H						1		P	HAND WIRE	2
+20V		A05U1		1-10 *	H						2		P	HAND WIRE	2
+20V		A05V1		1-11 *	H						1		P	HAND WIRE	2
+20V		A05V2		1-12 *	H						2		P	HAND WIRE	2
+20V		A06U1		1-13 *	H						1		P	HAND WIRE	2
+20V		A06V1		1-14 *	H						2		P	HAND WIRE	2
+20V		A06V2		1-15 *	H						1		P	HAND WIRE	2
+20V		A07U1		1-16 *	H						2		P	HAND WIRE	2
+20V		A07V1		1-17 *	H						1		P	HAND WIRE	2
+20V		A07V2		1-18 *	H						2		P	HAND WIRE	2
+20V		A08U1		1-19 *	H						1		P	HAND WIRE	2
+20V		A08V1		1-20 *	H						2		P	HAND WIRE	2
+20V		A08V2		1-21 *	H								P	H TO WHERE	2
+20V				1									5W-W/8		2

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
+5V		A01A2		1-01 *	H			2		P	HAND WIRE	3
+5V		A02A2		1-02 *	H			1		P	HAND WIRE	3
+5V		A03A2		1-03 *	H			2		P	HAND WIRE	3
+5V		A04A2		1-04 *	H			1		P	HAND WIRE	3
+5V		A05A2		1-05 *	H			2		P	HAND WIRE	3
+5V		A06A2		1-06 *	H			1		P	HAND WIRE	3
+5V		A07A2		1-07 *	H			2		P	HAND WIRE	3
+5V		A08A2		1-08 *	H			1		P	HAND WIRE	3
+5V		A09A2		1-09 *	H			2		P	HAND WIRE	3
+5V		B09A2		1-10 *	H			1		P	HAND WIRE	3
+5V		B08A2		1-11 *	H			2		P	HAND WIRE	3
+5V		B07A2		1-12 *	H			1		P	HAND WIRE	3
+5V		B06A2		1-13 *	H			2		P	HAND WIRE	3
+5V		B05A2		1-14 *	H			1		P	HAND WIRE	3
+5V		B04A2		1-15 *	H			2		P	HAND WIRE	3
+5V		B03A2		1-16 *	H			1		P	HAND WIRE	3
+5V		B02A2		1-17 *	H			2		P	HAND WIRE	3
+5V		B01A2		1-18 *	H			1		P	HAND WIRE	3
+5V		C01A2		1-19 *	H			2		P	HAND WIRE	3
+5V		C02A2		1-20 *	H			1		P	HAND WIRE	3
+5V		C03A2		1-21 *	H			2		P	HAND WIRE	3
+5V		C04A2		1-22 *	H			1		P	HAND WIRE	3
+5V		C05A2		1-23 *	H			2		P	HAND WIRE	3
+5V		C06A2		1-24 *	H			1		P	HAND WIRE	3
+5V		C07A2		1-25 *	H			2		P	HAND WIRE	3
+5V		C08A2		1-26 *	H			1		P	HAND WIRE	3
+5V		C09A2		1-27 *	H			2		P	HAND WIRE	3
+5V		D09A2		1-28 *	H			1		P	HAND WIRE	3
+5V		D08A2		1-29 *	H			2		P	HAND WIRE	3
+5V		D07A2		1-30 *	H			1		P	HAND WIRE	3
+5V		D06A2		1-31 *	H			2		P	HAND WIRE	3
+5V		D05A2		1-32 *	H			1		P	HAND WIRE	3
+5V		D04A2		1-33 *	H			2		P	HAND WIRE	3
+5V		D03A2		1-34 *	H			1		P	HAND WIRE	3
+5V		D02A2		1-35 *	H			2		P	HAND WIRE	3
+5V		D01A2		1-36 *	H			1		P	HAND WIRE	3
+5V		E01A2		1-37 *	H			2		P	HAND WIRE	3
+5V		E02A2		1-38 *	H			1		P	HAND WIRE	3
+5V		E03A2		1-39 *	H			2		P	HAND WIRE	3
+5V		E04A2		1-40 *	H			1		P	HAND WIRE	3
+5V		E05A2		1-41 *	H			2		P	HAND WIRE	3
+5V		E06A2		1-42 *	H			1		P	HAND WIRE	3
+5V		E07A2		1-43 *	H			2		P	HAND WIRE	3
+5V		E08A2		1-44 *	H			1		P	HAND WIRE	3
+5V		E09A2		1-45 *	H			2		P	HAND WIRE	3
+5V		F09A2		1-46 *	H			1		P	HAND WIRE	3
+5V		F08A2		1-47 *	H			2		P	HAND WIRE	3
+5V		F07A2		1-48 *	H			1		P	HAND WIRE	3
+5V		F06A2		1-49 *	H			2		P	HAND WIRE	3
+5V		F05A2		1-50 *	H			1		P	HAND WIRE	3
+5V		F04A2		1-51 *	H			2		P	HAND WIRE	3
+5V		F03A2		1-52 *	H			1		P	HAND WIRE	3
+5V		F02A2		1-53 *	H			2		P	HAND WIRE	3
+5V		F01A2		1-54 *	H					P	M TO WHERE	3
+5V				1						156-4/8		3

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
-15V		C01B2		1-01 *	H			2		P	HAND WIRE	4
-15V		C02B2		1-02 *	H			1		P	HAND WIRE	4
-15V		C03B2		1-03 *	H			2		P	HAND WIRE	4
-15V		C04B2		1-04 *	H			1		P	HAND WIRE	4
-15V		C05B2		1-05 *	H			2		P	HAND WIRE	4
-15V		C06B2		1-06 *	H			1		P	HAND WIRE	4
-15V		C07B2		1-07 *	H			2		P	HAND WIRE	4
-15V		C08B2		1-08 *	H			1		P	HAND WIRE	4
-15V		C09B2		1-09 *	H			2		P	HAND WIRE	4
-15V		D09B2		1-10 *	H			1		P	HAND WIRE	4
-15V		D08B2		1-11 *	H			2		P	HAND WIRE	4
-15V		D07B2		1-12 *	H			1		P	HAND WIRE	4
-15V		D06B2		1-13 *	H			2		P	HAND WIRE	4
-15V		D05B2		1-14 *	H			1		P	HAND WIRE	4
-15V		D04B2		1-15 *	H			2		P	HAND WIRE	4
-15V		D03B2		1-16 *	H			1		P	HAND WIRE	4
-15V		D02B2		1-17 *	H			2		P	HAND WIRE	4
-15V		D01B2		1-18 *	H			1		P	HAND WIRE	4
-15V		E01B2		1-19 *	H			2		P	HAND WIRE	4
-15V		E02B2		1-20 *	H			1		P	HAND WIRE	4
-15V		E03B2		1-21 *	H			2		P	HAND WIRE	4
-15V		F04B2		1-22 *	H			1		P	HAND WIRE	4
-15V		E05B2		1-23 *	H			2		P	HAND WIRE	4
-15V		E06B2		1-24 *	H			1		P	HAND WIRE	4
-15V		F07B2		1-25 *	H			2		P	HAND WIRE	4
-15V		E08B2		1-26 *	H			1		F	HAND WIRE	4
-15V		E09B2		1-27 *	H			2		P	HAND WIRE	4
-15V		F09B2		1-28 *	H			1		P	HAND WIRE	4
-15V		F08B2		1-29 *	H			2		P	HAND WIRE	4
-15V		F07B2		1-30 *	H			1		P	HAND WIRE	4
-15V		F06B2		1-31 *	H			2		P	HAND WIRE	4
-15V		F05B2		1-32 *	H			1		P	HAND WIRE	4
-15V		F04B2		1-33 *	H			2		P	HAND WIRE	4
-15V		F03B2		1-34 *	H			1		P	HAND WIRE	4
-15V		F02B2		1-35 *	H			2		P	HAND WIRE	4
-15V		F01B2		1-36 *	H					P	M TO WHERE	4
-15V				1						102-6/8		4
-5V		A02V2		1-01 *	H			2		P	HAND WIRE	5
-5V		A03V2		1-02 *	H			1		P	HAND WIRE	5
-5V		A04V2		1-03 *	H			2		P	HAND WIRE	5
-5V		A05V2		1-04 *	H			1		P	HAND WIRE	5
-5V		A06V2		1-05 *	H			2		P	HAND WIRE	5
-5V		A07V2		1-06 *	H			1		P	HAND WIRE	5
-5V		B08V2		1-07 *	H					P	M TO WHERE	5
-5V				1						16-4/8		5

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
A BG IN		D01U2		1-01 *							1				6
A BG IN		F01B1		1-02 *											6
A BG IN				1									5-6/8		6
A BG OUT		D01V2		1-01 *							1				7
A BG OUT		F01A1		1-02 *											7
A BG OUT				1									5-6/8		7
A BR OUT		D01J2		1-01 *							1				8
A BR OUT		F01P1		1-02 *							2				8
A BR OUT		F01U2		1-03 *											8
A BR OUT				1									11-4/8		8
A IN		D01H1		1-01 *							1				9
A IN		E01H1		1-02 *											9
A IN				1									5-2/8		9
A INT A		D01N1		1-01 *							1				10
A INT A		F01U1		1-02 *											10
A INT A				1									8-2/8		10
A INT B		C01J1		1-01 *							1				11
A INT B		F01F2		1-02 *											11
A INT B				1									13-4/8		11
A INT ENB A		D01M1		1-01 *							1				12
A INT ENB A		F01V1		1-02 *											12
A INT ENB A				1									8-4/8		12
A INT ENB B		C01L1		1-01 *							1				13
A INT ENB B		F01M2		1-02 *											13
A INT ENB B				1									10-0/8		13
A OUT HIGH		D01K1		1-01 *							1				14
A OUT HIGH		E01M2		1-02 *											14
A OUT HIGH				1									5-2/8		14
A OUT LOW		D01D1		1-01 *							1				15
A OUT LOW		E01M1		1-02 *											15
A OUT LOW				1									5-6/8		15
A SEL 0		D01F1		1-01 *							1				16
A SEL 0		E01S2		1-02 *											16
A SEL 0				1									8-0/8		16

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
A SEL 4		D01E1		1-01 *							1				17
A SEL 4		E01R2		1-02 *											17
A SEL 4				1									6-2/8		17
A SEL 6		D01C1		1-01 *							1				18
A SEL 6		F01S1		1-02 *											18
A SEL 6				1									6-2/8		18
A SEP 2		D01J1		1-01 *							1				19
A SEP 2		F01T2		1-02 *											19
A SEP 2				1									6-0/8		19
A SSYN IN H		D01V1		1-01 *							1				20
A SSYN IN H		F01B1		1-02 *											20
A SSYN IN H				1									2-6/8		20
AC LO L		F01F1		1-01 *	H						1	P		HAND WIRE	21
AC LO L		B02F1		1-02 *	H						2	P		HAND WIRE	21
AC LO L		B03F1		1-03 *	H						1	P		HAND WIRE	21
AC LO L		B04F1		1-04 *							2			TO HERE	21
AC LO L		C01V1		1-05 *	H						1	P		HAND WIRE	21
AC LO L		C02V1		1-06 *	H						2	P		HAND WIRE	21
AC LO L		C03V1		1-07 *	H						1	P		HAND WIRE	21
AC LO L		C04V1		1-08 *	H						2	P		HAND WIRE	21
AC LO L		C05V1		1-09 *	H						1	P		HAND WIRE	21
AC LO L		C06V1		1-10 *	H						2	P		HAND WIRE	21
AC LO L		C07V1		1-11 *	H						1	P		HAND WIRE	21
AC LO L		C08V1		1-12 *	H						2	P		HAND WIRE	21
AC LO L		C09V1		1-13 *							1			TO HERE	21
AC LO L		B05F1		1-14 *	H						2	P		HAND WIRE	21
AC LO L		B06F1		1-15 *	H						1	P		HAND WIRE	21
AC LO L		B07F1		1-16 *	H						2	P		HAND WIRE	21
AC LO L		B08F1		1-17 *	H						1	P		HAND WIRE	21
AC LO L		F09F1		1-18 *	H							P		H TO WHERE	21
AC LO L				1									55-4/8		21
B BG IN		D02U2		1-01 *							1				22
B BG IN		F02B1		1-02 *											22
B BG IN				1									5-4/8		22
B BG OUT		D02V2		1-01 *							1				23
B BG OUT		F02A1		1-02 *											23
B BG OUT				1									4-6/8		23

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
B BR OUT	D02J2		1-01 *				1				24
B BR OUT	F02P1		1-02 *				2				24
B BR OUT	F02U2		1-03 *								24
B BR OUT			1						11-4/8		24
B IN	D02H1		1-01 *				1				25
B IN	E02M1		1-02 *								25
B IN			1						5-2/8		25
B INT A	D02N1		1-01 *				1				26
B INT A	F02U1		1-02 *								26
B INT A			1						8-2/8		26
B INT B	C02J1		1-01 *				1				27
B INT B	F02K2		1-02 *								27
B INT B			1						10-4/8		27
B INT ENB A	D02M1		1-01 *				1				28
B INT ENB A	F02V1		1-02 *								28
B INT ENB A			1						8-4/8		28
B INT ENB B	CF2L1		1-01 *				1				29
B INT ENB B	F02H2		1-02 *								29
B INT ENB B			1						10-8/8		29
B OUT HIGH	D02A1		1-01 *				1				30
B OUT HIGH	E02M2		1-02 *								30
B OUT HIGH			1						5-2/8		30
B OUT LOW	D02D1		1-01 *				1				31
B OUT LOW	E02N1		1-02 *								31
B OUT LOW			1						5-6/8		31
B SEL 0	D02F1		1-01 *				1				32
B SEL 0	E02S2		1-02 *								32
B SEL 0			1						6-0/8		32
B SEL 4	D02E1		1-01 *				1				33
B SEL 4	E02R2		1-02 *								33
B SEL 4			1						6-2/8		33
B SEL 6	D02C1		1-01 *				1				34
B SEL 6	E02S1		1-02 *								34
B SEL 6			1						6-2/8		34

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
B SEL 2	D02J1		1-01 *				1				35
B SEL 2	E02T2		1-02 *								35
B SEL 2			1						6-0/8		35
B SSYN IN H	D02V1		1-01 *				1				36
B SSYN IN H	E02B1		1-02 *								36
B SSYN IN H			1						2-6/8		36
BB*15	A02F1		1-01 * H				2	P	HAND WIRE		37
BB*15	A03F1		1-02 * H				1	P	HAND WIRE		37
BB*15	A04R1		1-03 * H				2	P	HAND WIRE		37
BB*15	A05R1		1-04 * H				1	P	HAND WIRE		37
BB*15	A06R1		1-05 * H				2	P	HAND WIRE		37
BB*15	A07R1		1-06 * H				1	P	HAND WIRE		37
BB*15	A08R1		1-07 * H					P	H TO WHERE		37
BB*15			1						16-4/8		37
BB*5	B02D1		1-01 * H				2	P	HAND WIRE		38
BB*5	B03D1		1-02 * H				1	P	HAND WIRE		38
BB*5	B04D1		1-03 * H				2	P	HAND WIRE		38
BB*5	B05D1		1-04 * H				1	P	HAND WIRE		38
BB*5	B06D1		1-05 * H				2	P	HAND WIRE		38
BB*5	B07D1		1-06 * H				1	P	HAND WIRE		38
BB*5	B08D1		1-07 * H					P	H TO WHERE		38
BB*5			1						16-4/8		38
BB-15	A02S1		1-01 * H				2	P	HAND WIRE		39
BB-15	A03S1		1-02 * H				1	P	HAND WIRE		39
BB-15	A04S1		1-03 * H				2	P	HAND WIRE		39
BB-15	A05S1		1-04 * H				1	P	HAND WIRE		39
BB-15	A06S1		1-05 * H				2	P	HAND WIRE		39
BB-15	A07S1		1-06 * H				1	P	HAND WIRE		39
BB-15	A08S1		1-07 * H					P	H TO WHERE		39
BB-15			1						16-4/8		39

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BB8Y L		A01P2		1-01 *	H			2		P	HAND WIRE	40
BB8Y L		A02P2		1-02 *	H			1		P	HAND WIRE	40
BB8Y L		A03P2		1-03 *	H			2		P	HAND WIRE	40
BB8Y L		A04P2		1-04 *	H			1	TWP		HAND WIRE	40
BB8Y L		F01D1		1-05 *	H			2		P	HAND WIRE	40
BB8Y L		F02D1		1-06 *	H			1		P	HAND WIRE	40
BB8Y L		F03D1		1-07 *	H			2		P	HAND WIRE	40
BB8Y L		F04D1		1-08 *	H			1	2FTTWP		HAND WIRE	40
BB8Y L		F05D1		1-09 *	H			2		P	HAND WIRE	40
BB8Y L		F06D1		1-10 *	H			1		P	HAND WIRE	40
BB8Y L		F07D1		1-11 *	H			2		P	HAND WIRE	40
BB8Y L		F08D1		1-12 *	H			1		P	HAND WIRE	40
BB8Y L		F09D1		1-13 *	H			2	TWP		HAND WIRE	40
BB8Y L		A05P2		1-14 *	H			1		P	HAND WIRE	40
BB8Y L		A06P2		1-15 *	H			2		P	HAND WIRE	40
BB8Y L		A07P2		1-16 *	H			1		P	HAND WIRE	40
BB8Y L		A08P2		1-17 *				2			TO HERE	40
BB8Y L		A09P2		1-18 *								40
BB8Y L				1						71-0/8		40
BG4 A		B01E2		1-01 *	H			1	TWP		HAND WIRE	41
BG4 A		D01S2		1-02 *							TO HERE	41
BG4 A				1						8-0/8		41
BG4 B		D01T2		1-01 *	H			1		P	HAND WIRE	42
BG4 B		D02S2		1-02 *	H					P	H TO WHERE	42
BG4 B				1						2-0/8		42
BG4 C		D02T2		1-01 *	H			1		P	HAND WIRE	43
BG4 C		D03S2		1-02 *	H					P	H TO WHERE	43
BG4 C				1						2-0/8		43
BG4 D		D03T2		1-01 *	H			1		P	HAND WIRE	44
BG4 D		D04S2		1-02 *	H					P	H TO WHERE	44
BG4 D				1						2-0/8		44
BG4 E		D04T2		1-01 *	H			1		P	HAND WIRE	45
BG4 E		D05S2		1-02 *	H					P	H TO WHERE	45
BG4 E				1						2-0/8		45
BG4 F		D05T2		1-01 *	H			1		P	HAND WIRE	46
BG4 F		D06S2		1-02 *	H					P	H TO WHERE	46
BG4 F				1						2-0/8		46
BG4 H		D06T2		1-01 *	H			1		P	HAND WIRE	47
BG4 H		D07S2		1-02 *	H					P	H TO WHERE	47
BG4 H				1						2-0/8		47

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BG4 J		D07T2		1-01 *	H			1		P	HAND WIRE	48
BG4 J		D08S2		1-02 *	H					P	H TO WHERE	48
BG4 J				1						2-0/8		48
BG4 K		D08T2		1-01 *	H			1		P	HAND WIRE	49
BG4 K		D09S2		1-02 *	H					P	H TO WHERE	49
BG4 K				1						2-0/8		49
BG4 L		B09E2		1-01 *	H			1	TWP		HAND WIRE	50
BG4 L		D09T2		1-02 *	H						H TO WHERE	50
BG4 L				1						9-0/8		50
BG5 A		A01R1		1-01 *	H			1	TWP		HAND WIRE	51
BG5 A		D01P2		1-02 *	H						H TO WHERE	51
BG5 A				1						9-0/8		51
BG5 B		D01R2		1-01 *	H			1		P	HAND WIRE	52
BG5 B		D02P2		1-02 *	H					P	H TO WHERE	52
BG5 B				1						2-0/8		52
BG5 C		D02R2		1-01 *	H			1		P	HAND WIRE	53
BG5 C		D03P2		1-02 *	H					P	H TO WHERE	53
BG5 C				1						2-0/8		53
BG5 D		D23H2		1-01 *	H			1		P	HAND WIRE	54
BG5 D		D04P2		1-02 *	H					P	H TO WHERE	54
BG5 D				1						2-0/8		54
BG5 E		D04R2		1-01 *	H			1		P	HAND WIRE	55
BG5 E		D05P2		1-02 *	H					P	H TO WHERE	55
BG5 E				1						2-0/8		55
BG5 F		D05R2		1-01 *	H			1		P	HAND WIRE	56
BG5 F		D06P2		1-02 *	H					P	H TO WHERE	56
BG5 F				1						2-0/8		56
BG5 H		D06R2		1-01 *	H			1		P	HAND WIRE	57
BG5 H		D07P2		1-02 *	H					P	H TO WHERE	57
BG5 H				1						2-0/8		57
BG5 J		D07R2		1-01 *	H			1		P	HAND WIRE	58
BG5 J		D08P2		1-02 *	H					P	H TO WHERE	58
BG5 J				1						2-0/8		58
BG5 K		D08R2		1-01 *	H							

A/P	PIN NAME	ORDER PIN	BAY - ORDER	O	DRAW RV PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BG6 L	B09B1		1-01 *	M				1	TWP		HAND WIRE	60
BG6 L	D09R2		1-02 *	M							M TO WHERE	60
BG6 L			1							9-2/8		60
BG6 A	B01A1		1-01 *	M				1	TWP		HAND WIRE	61
BG6 A	D01M2		1-02 *	M							M TO WHERE	61
BG6 A			1							9-8/8		61
BG6 B	D01N2		1-01 *	M				1		P	HAND WIRE	62
BG6 B	D02M2		1-02 *	M						P	M TO WHERE	62
BG6 B			1							2-6/8		62
BG6 C	D02N2		1-01 *	M				1		P	HAND WIRE	63
BG6 C	D03M2		1-02 *	M						P	M TO WHERE	63
BG6 C			1							2-6/8		63
BG6 D	D03N2		1-01 *	M				1		P	HAND WIRE	64
BG6 D	D04M2		1-02 *	M						P	M TO WHERE	64
BG6 D			1							2-6/8		64
BG6 E	D04N2		1-01 *	M				1		P	HAND WIRE	65
BG6 E	D05M2		1-02 *	M						P	M TO WHERE	65
BG6 E			1							2-6/8		65
BG6 F	D05N2		1-01 *	M				1		P	HAND WIRE	66
BG6 F	D06M2		1-02 *	M						P	M TO WHERE	66
BG6 F			1							2-6/8		66
BG6 H	D06N2		1-01 *	M				1		P	HAN WIRE	67
BG6 H	D07M2		1-02 *	M						P	M TO WHERE	67
BG6 H			1							2-6/8		67
BG6 J	D07N2		1-01 *	M				1		P	HAND WIRE	68
BG6 J	D08M2		1-02 *	M						P	M TO WHERE	68
BG6 J			1							2-6/8		68
BG6 K	D08N2		1-01 *	M				1		P	HAND WIRE	69
BG6 K	D09M2		1-02 *	M						P	M TO WHERE	69
BG6 K			1							2-6/8		69
BG6 L	A09A1		1-01 *	M				1	TWP		HAND WIRE	70
BG6 L	D09N2		1-02 *	M							M TO WHERE	70
BG6 L			1							9-2/8		70
BG7 A	A01V1		1-01 *	M				1	TWP		HAND WIRE	71
BG7 A	D01K2		1-02 *	M							M TO WHERE	71
BG7 A			1							9-2/8		71

A/P	PIN NAME	ORDER PIN	BAY - ORDER	O	DRAW RV PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BG7 A	D01L2		1-01 *	M				1		P	HAND WIRE	72
BG7 A	D02K2		1-02 *	M						P	M TO WHERE	72
BG7 A			1							2-6/8		72
BG7 C	D02L2		1-01 *	M				1		P	HAND WIRE	73
BG7 C	D03K2		1-02 *	M						P	M TO WHERE	73
BG7 C			1							2-6/8		73
BG7 D	D03L2		1-01 *	M				1		P	HAND WIRE	74
BG7 D	D04K2		1-02 *	M						P	M TO WHERE	74
BG7 D			1							2-6/8		74
BG7 E	D04L2		1-01 *	M				1		P	HAND WIRE	75
BG7 E	D05K2		1-02 *	M						P	M TO WHERE	75
BG7 E			1							2-6/8		75
BG7 F	D05L2		1-01 *	M				1		P	HAND WIRE	76
BG7 F	D06K2		1-02 *	M						P	M TO WHERE	76
BG7 F			1							2-6/8		76
BG7 H	D06L2		1-01 *	M				1		P	HAND WIRE	77
BG7 H	D07K2		1-02 *	M							M TO WHERE	77
BG7 H			1							2-6/8		77
BG7 J	D07L2		1-01 *	M				1		P	HAND WIRE	78
BG7 J	D08K2		1-02 *	M						P	M TO WHERE	78
BG7 J			1							2-6/8		78
BG7 K	D08L2		1-01 *	M				1		P	HAND WIRE	79
BG7 K	D09K2		1-02 *	M						P	M TO WHERE	79
BG7 K			1							2-6/8		79
BG7 L	A09V1		1-01 *	M				1	TWP		HAND WIRE	80
BG7 L	D09L2		1-02 *	M							M TO WHERE	80
BG7 L			1							9-4/8		80

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BR4 L		B01D2		1-01 *				2				01
BR4 L		B02D2		1-02 *				1				01
BR4 L		B03D2		1-03 *				2				01
BR4 L		B04D2		1-04 *				1				01
BR4 L		D01M2		1-05 *	M			2		P	HAND WIRE	01
BR4 L		D02M2		1-06 *	M			1		P	HAND WIRE	01
BR4 L		D03M2		1-07 *	M			2		P	HAND WIRE	01
BR4 L		D04M2		1-08 *	M			1		P	HAND WIRE	01
BR4 L		D05M2		1-09 *	M			2		P	HAND WIRE	01
BR4 L		D06M2		1-10 *	M			1		P	HAND WIRE	01
BR4 L		D07M2		1-11 *	M			2		P	HAND WIRE	01
BR4 L		D08M2		1-12 *	M			1		P	HAND WIRE	01
BR4 L		D09M2		1-13 *				2			TO HERE	01
BR4 L		B05D2		1-14 *				1				01
BR4 L		B06D2		1-15 *				2				01
BR4 L		B07D2		1-16 *				1				01
BR4 L		B08D2		1-17 *				2				01
BR4 L		B09D2		1-18 *								01
BR4 L				1						58-6/8		01
BR5 L		B01C1		1-01 *	M			1		P	HAND WIRE	02
BR5 L		B02C1		1-02 *	M			2		P	HAND WIRE	02
BR5 L		B03C1		1-03 *	M			1		P	HAND WIRE	02
BR5 L		B04C1		1-04 *				2			TO HERE	02
BR5 L		D01F2		1-05 *	M			1		P	HAND WIRE	02
BR5 L		D02F2		1-06 *	M			2		P	HAND WIRE	02
BR5 L		D03F2		1-07 *	M			1		P	HAND WIRE	02
BR5 L		D04F2		1-08 *	M			2		P	HAND WIRE	02
BR5 L		D05F2		1-09 *	M			1		P	HAND WIRE	02
BR5 L		D06F2		1-10 *	M			2		P	HAND WIRE	02
BR5 L		D07F2		1-11 *	M			1		P	HAND WIRE	02
BR5 L		D08F2		1-12 *	M			2		P	HAND WIRE	02
BR5 L		D09F2		1-13 *				1			TO HERE	02
BR5 L		B05C1		1-14 *	M			2		P	HAND WIRE	02
BR5 L		B06C1		1-15 *	M			1		P	HAND WIRE	02
BR5 L		B07C1		1-16 *	M			2		P	HAND WIRE	02
BR5 L		B08C1		1-17 *	M			1		P	HAND WIRE	02
BR5 L		B09C1		1-18 *	M					P	H TO WHERE	02
BR5 L				1						58-6/8		02

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BR6 L		A01U2		1-01 *				2				03
BR6 L		A02U2		1-02 *				1				03
BR6 L		A03U2		1-03 *				2				03
BR6 L		A04U2		1-04 *				1				03
BR6 L		D01E2		1-05 *	M			2		P	HAND WIRE	03
BR6 L		D02E2		1-06 *	M			1		P	HAND WIRE	03
BR6 L		D03E2		1-07 *	M			2		P	HAND WIRE	03
BR6 L		D04E2		1-08 *	M			1		P	HAND WIRE	03
BR6 L		D05E2		1-09 *	M			2		P	HAND WIRE	03
BR6 L		D06E2		1-10 *	M			1		P	HAND WIRE	03
BR6 L		D07E2		1-11 *	M			2		P	HAND WIRE	03
BR6 L		D08E2		1-12 *	M			1		P	HAND WIRE	03
BR6 L		D09E2		1-13 *				2			TO HERE	03
BR6 L		A05U2		1-14 *				1				03
BR6 L		A06U2		1-15 *				2				03
BR6 L		A07U2		1-16 *				1				03
BR6 L		A08U2		1-17 *				2				03
BR6 L		A09U2		1-18 *								03
BR6 L				1						60-4/8		03
BR7 L		A01T2		1-01 *	M			2		P	HAND WIRE	04
BR7 L		A02T2		1-02 *	M			1		P	HAND WIRE	04
BR7 L		A03T2		1-03 *	M			2		P	HAND WIRE	04
BR7 L		A04T2		1-04 *				1			TO HERE	04
BR7 L		D01D2		1-05 *	M			2		P	HAND WIRE	04
BR7 L		D02D2		1-06 *	M			1		P	HAND WIRE	04
BR7 L		D03D2		1-07 *	M			2		P	HAND WIRE	04
BR7 L		D04D2		1-08 *	M			1		P	HAND WIRE	04
BR7 L		D05D2		1-09 *	M			2		P	HAND WIRE	04
BR7 L		D06D2		1-10 *	M			1		P	HAND WIRE	04
BR7 L		D07D2		1-11 *	M			2		P	HAND WIRE	04
BR7 L		D08D2		1-12 *	M			1		P	HAND WIRE	04
BR7 L		D09D2		1-13 *				2			TO HERE	04
BR7 L		A05T2		1-14 *	M			1		P	HAND WIRE	04
BR7 L		A06T2		1-15 *	M			2		P	HAND WIRE	04
BR7 L		A07T2		1-16 *	M			1		P	HAND WIRE	04
BR7 L		A08T2		1-17 *				2			TO HERE	04
BR7 L		A09T2		1-18 *								04
BR7 L				1						60-4/8		04

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A00 L	B01N2		1-01 *	H			2		P	HAND WIRE	05
BUS A00 L	B02N2		1-02 *	H			1		P	HAND WIRE	05
BUS A00 L	B03N2		1-03 *	H			2		P	HAND WIRE	05
BUS A00 L	B04N2		1-04 *				1			TO HERE	05
BUS A00 L	E01N2		1-05 *				2				05
BUS A00 L	E02N2		1-06 *				1				05
BUS A00 L	E03N2		1-07 *				2				05
BUS A00 L	E04N2		1-08 *				1				05
BUS A00 L	E05N2		1-09 *				2				05
BUS A00 L	E06N2		1-10 *				1				05
BUS A00 L	E07N2		1-11 *				2				05
BUS A00 L	E08N2		1-12 *				1				05
BUS A00 L	E09N2		1-13 *				2				05
BUS A00 L	B05N2		1-14 *	H			1		P	HAND WIRE	05
BUS A00 L	B06N2		1-15 *	H			2		P	HAND WIRE	05
BUS A00 L	B07N2		1-16 *	H			1		P	HAND WIRE	05
BUS A00 L	B08N2		1-17 *	H			2		P	HAND WIRE	05
BUS A00 L	B09N2		1-18 *	H					P	H TO WHERE	05
BUS A00 L			1						63-0/8		05
BUS A01 L	B01M1		1-01 *	H			2		P	HAND WIRE	06
BUS A01 L	B02M1		1-02 *	H			1		P	HAND WIRE	06
BUS A01 L	B03M1		1-03 *	H			2		P	HAND WIRE	06
BUS A01 L	B04M1		1-04 *				1			TO HERE	06
BUS A01 L	E01M1		1-05 *	H			2		P	HAND WIRE	06
BUS A01 L	E02M1		1-06 *	H			1		P	HAND WIRE	06
BUS A01 L	E03M1		1-07 *	H			2		P	HAND WIRE	06
BUS A01 L	E04M1		1-08 *	H			1		P	HAND WIRE	06
BUS A01 L	E05M1		1-09 *	H			2		P	HAND WIRE	06
BUS A01 L	E06M1		1-10 *	H			1		P	HAND WIRE	06
BUS A01 L	E07M1		1-11 *	H			2		P	HAND WIRE	06
BUS A01 L	E08M1		1-12 *	H			1		P	HAND WIRE	06
BUS A01 L	E09M1		1-13 *				2			TO HERE	06
BUS A01 L	B05M1		1-14 *	H			1		P	HAND WIRE	06
BUS A01 L	B06M1		1-15 *	H			2		P	HAND WIRE	06
BUS A01 L	B07M1		1-16 *	H			1		P	HAND WIRE	06
BUS A01 L	B08M1		1-17 *	H			2		P	HAND WIRE	06
BUS A01 L	B09M1		1-18 *	H					P	H TO WHERE	06
BUS A01 L			1						63-0/8		06

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A02 L	B01J2		1-01 *	H			2		P	HAND WIRE	07
BUS A02 L	B02J2		1-02 *	H			1		P	HAND WIRE	07
BUS A02 L	B03J2		1-03 *	H			2		P	HAND WIRE	07
BUS A02 L	B04J2		1-04 *				1			TO HERE	07
BUS A02 L	E01F1		1-05 *	H			2		P	HAND WIRE	07
BUS A02 L	E02F1		1-06 *	H			1		P	HAND WIRE	07
BUS A02 L	E03F1		1-07 *	H			2		P	HAND WIRE	07
BUS A02 L	E04F1		1-08 *	H			1		P	HAND WIRE	07
BUS A02 L	E05F1		1-09 *	H			2		P	HAND WIRE	07
BUS A02 L	E06F1		1-10 *	H			1		P	HAND WIRE	07
BUS A02 L	E07F1		1-11 *	H			2		P	HAND WIRE	07
BUS A02 L	E08F1		1-12 *	H			1		P	HAND WIRE	07
BUS A02 L	E09F1		1-13 *				2			TO HERE	07
BUS A02 L	B05J2		1-14 *	H			1		P	HAND WIRE	07
BUS A02 L	B06J2		1-15 *	H			2		P	HAND WIRE	07
BUS A02 L	B07J2		1-16 *	H			1		P	HAND WIRE	07
BUS A02 L	B08J2		1-17 *	H			2		P	HAND WIRE	07
BUS A02 L	B09J2		1-18 *	H					P	H TO WHERE	07
BUS A02 L			1						62-2/8		07
BUS A03 L	B01J1		1-21 *	H			1		P	HAND WIRE	08
BUS A03 L	B02J1		1-22 *	H			2		P	HAND WIRE	08
BUS A03 L	B03J1		1-23 *	H			1		P	HAND WIRE	08
BUS A03 L	B04J1		1-24 *				2			TO HERE	08
BUS A03 L	E01V2		1-25 *	H			1		P	HAND WIRE	08
BUS A03 L	E02V2		1-26 *	H			2		P	HAND WIRE	08
BUS A03 L	E03V2		1-27 *	H			1		P	HAND WIRE	08
BUS A03 L	E04V2		1-28 *	H			2		P	HAND WIRE	08
BUS A03 L	E05V2		1-29 *	H			1		P	HAND WIRE	08
BUS A03 L	E06V2		1-10 *	H			2		P	HAND WIRE	08
BUS A03 L	E07V2		1-11 *	H			1		P	HAND WIRE	08
BUS A03 L	E08V2		1-12 *	H			2		P	HAND WIRE	08
BUS A03 L	E09V2		1-13 *				1			TO HERE	08
BUS A03 L	B05J1		1-14 *	H			2		P	HAND WIRE	08
BUS A03 L	B06J1		1-15 *	H			1		P	HAND WIRE	08
BUS A03 L	B07J1		1-16 *	H			2		P	HAND WIRE	08
BUS A03 L	B08J1		1-17 *	H			1		P	HAND WIRE	08
BUS A03 L	B09J1		1-18 *	H					P	H TO WHERE	08
BUS A03 L			1						63-4/8		08

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A04 L		B01K2		1-01 *	H						2		P	HAND WIRE	89
BUS A04 L		B02K2		1-02 *	H						1		P	HAND WIRE	89
BUS A04 L		B03K2		1-03 *	H						2		P	HAND WIRE	89
BUS A04 L		B04K2		1-04 *							1			TO HERE	89
BUS A04 L		E01U2		1-05 *	H						2		P	HAND WIRE	89
BUS A04 L		E02U2		1-06 *	H						1		P	HAND WIRE	89
BUS A04 L		E03U2		1-07 *	H						2		P	HAND WIRE	89
BUS A04 L		E04U2		1-08 *	H						1		P	HAND WIRE	89
BUS A04 L		E05U2		1-09 *	H						2		P	HAND WIRE	89
BUS A04 L		F06U2		1-10 *	H						1		P	HAND WIRE	89
BUS A04 L		E07U2		1-11 *	H						2		P	HAND WIRE	89
BUS A04 L		E08U2		1-12 *	H						1		P	HAND WIRE	89
BUS A04 L		E09U2		1-13 *							2			TO HERE	89
BUS A04 L		B05K2		1-14 *	H						1		P	HAND WIRE	89
BUS A04 L		B06K2		1-15 *	H						2		P	HAND WIRE	89
BUS A04 L		B07K2		1-16 *	H						1		P	HAND WIRE	89
BUS A04 L		B08K2		1-17 *	H						2		P	HAND WIRE	89
BUS A04 L		B09K2		1-18 *	H								P	H TO WHERE	89
BUS A04 L				1											89
BUS A05 L		B01K1		1-01 *	H						1		P	HAND WIRE	90
BUS A05 L		B02K1		1-02 *	H						2		P	HAND WIRE	90
BUS A05 L		B03K1		1-03 *	H						1		P	HAND WIRE	90
BUS A05 L		B04K1		1-04 *							2			TO HERE	90
BUS A05 L		E01V1		1-05 *	H						1		P	HAND WIRE	90
BUS A05 L		E02V1		1-06 *	H						2		P	HAND WIRE	90
BUS A05 L		E03V1		1-07 *	H						1		P	HAND WIRE	90
BUS A05 L		E04V1		1-08 *	H						2		P	HAND WIRE	90
BUS A05 L		E05V1		1-09 *	H						1		P	HAND WIRE	90
BUS A05 L		E06V1		1-10 *	H						2		P	HAND WIRE	90
BUS A05 L		E07V1		1-11 *	H						1		P	HAND WIRE	90
BUS A05 L		E08V1		1-12 *	H						2		P	HAND WIRE	90
BUS A05 L		E09V1		1-13 *							1			TO HERE	90
BUS A05 L		B05K1		1-14 *	H						2		P	HAND WIRE	90
BUS A05 L		B06K1		1-15 *	H						1		P	HAND WIRE	90
BUS A05 L		B07K1		1-16 *	H						2		P	HAND WIRE	90
BUS A05 L		B08K1		1-17 *	H						1		P	HAND WIRE	90
BUS A05 L		B09K1		1-18 *	H								P	H TO WHERE	90
BUS A05 L				1											90

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A06 L		B01L2		1-01 *	H						2		P	HAND WIRE	91
BUS A06 L		B02L2		1-02 *	H						1		P	HAND WIRE	91
BUS A06 L		B03L2		1-03 *	H						2		P	HAND WIRE	91
BUS A06 L		B04L2		1-04 *							1			TO HERE	91
BUS A06 L		E01U1		1-05 *	H						2		P	HAND WIR	91
BUS A06 L		E02U1		1-06 *	H						1		P	HAND WIR	91
BUS A06 L		E03U1		1-07 *	H						2		P	HAND WIR	91
BUS A06 L		E04U1		1-08 *	H						1		P	HAND WIR	91
BUS A06 L		E05U1		1-09 *	H						2		P	HAND WIR	91
BUS A06 L		E06U1		1-10 *	H						1		P	HAND WIR	91
BUS A06 L		E07U1		1-11 *	H						2		P	HAND WIR	91
BUS A06 L		E08U1		1-12 *	H						1		P	HAND WIR	91
BUS A06 L		E09U1		1-13 *							2			TO HERE	91
BUS A06 L		B05L2		1-14 *	H						1		P	HAND WIR	91
BUS A06 L		B06L2		1-15 *	H						2		P	HAND WIR	91
BUS A06 L		B07L2		1-16 *	H						1		P	HAND WIR	91
BUS A06 L		B08L2		1-17 *	H						2		P	HAND WIR	91
BUS A06 L		B09L2		1-18 *	H								P	H TO WHERE	91
BUS A06 L				1											91
BUS A07 L		B01L1		1-31 *	H						1		P	HAND WIRE	92
BUS A07 L		B02L1		1-32 *	H						2		P	HAND WIR	92
BUS A07 L		B03L1		1-33 *	H						1		P	HAND WIR	92
BUS A07 L		B04L1		1-04 *							2			TO HERE	92
BUS A07 L		E01P2		1-05 *	H						1		P	HAND WIR	92
BUS A07 L		E02P2		1-06 *	H						2		P	HAND WIRE	92
BUS A07 L		E03P2		1-07 *	H						1		P	HAND WIRE	92
BUS A07 L		E04P2		1-08 *	H						2		P	HAND WIRE	92
BUS A07 L		E05P2		1-09 *	H						1		P	HAND WIRE	92
BUS A07 L		E06P2		1-10 *	H						2		P	HAND WIRE	92
BUS A07 L		E07P2		1-11 *	H						1		P	HAND WIRE	92
BUS A07 L		E08P2		1-12 *	H						2		P	HAND WIRE	92
BUS A07 L		F09P2		1-13 *							1			TO HERE	92
BUS A07 L		B05L1		1-14 *	H						2		P	HAND WIRE	92
BUS A07 L		B06L1		1-15 *	H						1		P	HAND WIRE	92
BUS A07 L		B07L1		1-16 *	H						2		P	HAND WIRE	92
BUS A07 L		B08L1		1-17 *	H						1		P	HAND WIRE	92
BUS A07 L		B09L1		1-18 *	H								P	H TO WHERE	92
BUS A07 L				1											92

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A08 L	B01N2		1-01 *	H						1		P	HAND WIRE	93
BUS A08 L	B02N2		1-02 *	H						2		P	HAND WIRE	93
BUS A08 L	B03N2		1-03 *	H						1		P	HAND WIRE	93
BUS A08 L	B04N2		1-04 *							2			TO HERE	93
BUS A08 L	E01N2		1-05 *	H						1		P	HAND WIRE	93
BUS A08 L	E02N2		1-06 *	H						2		P	HAND WIRE	93
BUS A08 L	E03N2		1-07 *	H						1		P	HAND WIRE	93
BUS A08 L	E04N2		1-08 *	H						2		P	HAND WIRE	93
BUS A08 L	E05N2		1-09 *	H						1		P	HAND WIRE	93
BUS A08 L	E06N2		1-10 *	H						2		P	HAND WIRE	93
BUS A08 L	E07N2		1-11 *	H						1		P	HAND WIRE	93
BUS A08 L	E08N2		1-12 *	H						2		P	HAND WIRE	93
BUS A08 L	E09N2		1-13 *							1			TO HERE	93
BUS A08 L	B05N2		1-14 *	H						2		P	HAND WIRE	93
BUS A08 L	B06N2		1-15 *	H						1		P	HAND WIRE	93
BUS A08 L	B07N2		1-16 *	H						2		P	HAND WIRE	93
BUS A08 L	B08N2		1-17 *	H						1		P	HAND WIRE	93
BUS A08 L	B09N2		1-18 *	H								P	H TO WHERE	93
BUS A08 L			1									63-2/8		93
BUS A09 L	B01N1		1-01 *	H						1		P	HAND WIRE	94
BUS A09 L	B02N1		1-02 *	H						2		P	HAND WIRE	94
BUS A09 L	B03N1		1-03 *	H						1		P	HAND WIRE	94
BUS A09 L	B04N1		1-04 *							2			TO HERE	94
BUS A09 L	E01P1		1-05 *	H						1		P	HAND WIRE	94
BUS A09 L	E02P1		1-06 *	H						2		P	HAND WIRE	94
BUS A09 L	E03P1		1-07 *	H						1		P	HAND WIRE	94
BUS A09 L	E04P1		1-08 *	H						2		P	HAND WIRE	94
BUS A09 L	E05P1		1-09 *	H						1		P	HAND WIRE	94
BUS A09 L	E06P1		1-10 *	H						2		P	HAND WIRE	94
BUS A09 L	E07P1		1-11 *	H						1		P	HAND WIRE	94
BUS A09 L	E08P1		1-12 *	H						2		P	HAND WIRE	94
BUS A09 L	E09P1		1-13 *							1			TO HERE	94
BUS A09 L	B05N1		1-14 *	H						2		P	HAND WIRE	94
BUS A09 L	B06N1		1-15 *	H						1		P	HAND WIRE	94
BUS A09 L	B07N1		1-16 *	H						2		P	HAND WIRE	94
BUS A09 L	B08N1		1-17 *	H						1		P	HAND WIRE	94
BUS A09 L	B09N1		1-18 *	H								P	H TO WHERE	94
BUS A09 L			1									63-6/8		94

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A10 L	A01N2		1-01 *	H						2		P	HAND WIRE	95
BUS A10 L	A02N2		1-02 *	H						1		P	HAND WIRE	95
BUS A10 L	A03N2		1-03 *	H						2		P	HAND WIRE	95
BUS A10 L	A04N2		1-04 *							1			TO HERE	95
BUS A10 L	E01P1		1-05 *	H						2		P	HAND WIRE	95
BUS A10 L	E02P1		1-06 *	H						1		P	HAND WIRE	95
BUS A10 L	E03P1		1-07 *	H						2		P	HAND WIRE	95
BUS A10 L	E04P1		1-08 *	H						1		P	HAND WIRE	95
BUS A10 L	E05P1		1-09 *	H						2		P	HAND WIRE	95
BUS A10 L	E06P1		1-10 *	H						1		P	HAND WIRE	95
BUS A10 L	E07P1		1-11 *	H						2		P	HAND WIRE	95
BUS A10 L	E08P1		1-12 *	H						1		P	HAND WIRE	95
BUS A10 L	E09P1		1-13 *							2			TO HERE	95
BUS A10 L	A05N2		1-14 *	H						1		P	HAND WIRE	95
BUS A10 L	A06N2		1-15 *	H						2		P	HAND WIRE	95
BUS A10 L	A07N2		1-16 *	H						1		P	HAND WIRE	95
BUS A10 L	A08N2		1-17 *	H						2		P	HAND WIRE	95
BUS A10 L	A09N2		1-18 *	H								P	H TO WHERE	95
BUS A10 L			1									63-2/8		95
BUS A11 L	A01N1		1-01 *	H						2		P	HAND WIRE	96
BUS A11 L	A02N1		1-02 *	H						1		P	HAND WIRE	96
BUS A11 L	A03N1		1-03 *	H						2		P	HAND WIRE	96
BUS A11 L	A04N1		1-04 *							1			TO HERE	96
BUS A11 L	E01L1		1-05 *	H						2		P	HAND WIRE	96
BUS A11 L	E02L1		1-06 *	H						1		P	HAND WIRE	96
BUS A11 L	E03L1		1-07 *	H						2		P	HAND WIRE	96
BUS A11 L	E04L1		1-08 *	H						1		P	HAND WIRE	96
BUS A11 L	E05L1		1-09 *	H						2		P	HAND WIRE	96
BUS A11 L	E06L1		1-10 *	H						1		P	HAND WIRE	96
BUS A11 L	E07L1		1-11 *	H						2		P	HAND WIRE	96
BUS A11 L	E08L1		1-12 *	H						1		P	HAND WIRE	96
BUS A11 L	E09L1		1-13 *							2			TO HERE	96
BUS A11 L	A05N1		1-14 *	H						1		P	HAND WIRE	96
BUS A11 L	A06N1		1-15 *	H						2		P	HAND WIRE	96
BUS A11 L	A07N1		1-16 *	H						1		P	HAND WIRE	96
BUS A11 L	A08N1		1-17 *	H						2		P	HAND WIRE	96
BUS A11 L	A09N1		1-18 *	H								P	H TO WHERE	96
BUS A11 L			1									62-4/8		96

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A12 L	B01P2		1-01 *	H			2		P	HAND WIRE	97
BUS A12 L	B02P2		1-02 *	H			1		P	HAND WIRE	97
BUS A12 L	B03P2		1-03 *	H			2		P	HAND WIRE	97
BUS A12 L	B04P2		1-04 *				1			TO HERE	97
BUS A12 L	E01C1		1-05 *	H			2		P	HAND WIRE	97
BUS A12 L	E02C1		1-06 *	H			1		P	HAND WIRE	97
BUS A12 L	E03C1		1-07 *	H			2		P	HAND WIRE	97
BUS A12 L	E04C1		1-08 *	H			1		P	HAND WIRE	97
BUS A12 L	E05C1		1-09 *	H			2		P	HAND WIRE	97
BUS A12 L	E06C1		1-10 *	H			1		P	HAND WIRE	97
BUS A12 L	E07C1		1-11 *	H			2		P	HAND WIRE	97
BUS A12 L	E08C1		1-12 *	H			1		P	HAND WIRE	97
BUS A12 L	E09C1		1-13 *				2			TO HERE	97
BUS A12 L	B05P2		1-14 *	H			1		P	HAND WIRE	97
BUS A12 L	B06P2		1-15 *	H			2		P	HAND WIRE	97
BUS A12 L	B07P2		1-16 *	H			1		P	HAND WIRE	97
BUS A12 L	B08P2		1-17 *	H			2		P	HAND WIRE	97
BUS A12 L	B09P2		1-18 *	H					P	H TO WHERE	97
BUS A12 L			1						60-2/8		97
BUS A13 L	B01P1		1-01 *	H			1		P	HAND WIRE	98
BUS A13 L	B02P1		1-02 *	H			2		P	HAND WIRE	98
BUS A13 L	B03P1		1-03 *	H			1		P	HAND WIRE	98
BUS A13 L	B04P1		1-04 *				2			TO HERE	98
BUS A13 L	E01K2		1-05 *	H			1		P	HAND WIRE	98
BUS A13 L	E02K2		1-06 *	H			2		P	HAND WIRE	98
BUS A13 L	E03K2		1-07 *	H			1		P	HAND WIRE	98
BUS A13 L	E04K2		1-08 *	H			2		P	HAND WIRE	98
BUS A13 L	E05K2		1-09 *	H			1		P	HAND WIRE	98
BUS A13 L	E06K2		1-10 *	H			2		P	HAND WIRE	98
BUS A13 L	E07K2		1-11 *	H			1		P	HAND WIRE	98
BUS A13 L	E08K2		1-12 *	H			2		P	HAND WIRE	98
BUS A13 L	E09K2		1-13 *				1			TO HERE	98
BUS A13 L	B05P1		1-14 *	H			2		P	HAND WIRE	98
BUS A13 L	B06P1		1-15 *	H			1		P	HAND WIRE	98
BUS A13 L	B07P1		1-16 *	H			2		P	HAND WIRE	98
BUS A13 L	B08P1		1-17 *	H			1		P	HAND WIRE	98
BUS A13 L	B09P1		1-18 *	H					P	H TO WHERE	98
BUS A13 L			1						62-0/8		98

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A14 L	A01R2		1-01 *	H			2		P	HAND WIRE	99
BUS A14 L	A02P2		1-02 *	H			1		P	HAND WIRE	99
BUS A14 L	B03R2		1-03 *	H			2		P	HAND WIRE	99
BUS A14 L	A04P2		1-04 *				1			TO HERE	99
BUS A14 L	F01K1		1-05 *	H			2		P	HAND WIRE	99
BUS A14 L	E02K1		1-06 *	H			1		P	HAND WIRE	99
BUS A14 L	E03K1		1-07 *	H			2		P	HAND WIRE	99
BUS A14 L	F04K1		1-08 *	H			1		P	HAND WIRE	99
BUS A14 L	F05K1		1-09 *	H			2		P	HAND WIRE	99
BUS A14 L	E06K1		1-10 *	H			1		P	HAND WIRE	99
BUS A14 L	E07K1		1-11 *	H			2		P	HAND WIRE	99
BUS A14 L	F08K1		1-12 *	H			1		P	HAND WIRE	99
BUS A14 L	E09K1		1-13 *				2			TO HERE	99
BUS A14 L	A05R2		1-14 *	H			1		P	HAND WIRE	99
BUS A14 L	B06R2		1-15 *	H			2		P	HAND WIRE	99
BUS A14 L	A07R2		1-16 *	H			1		P	HAND WIRE	99
BUS A14 L	B08R2		1-17 *	H			2		P	HAND WIRE	99
BUS A14 L	B09F2		1-18 *	H					P	H TO WHERE	99
BUS A14 L			1						61-6/8		99
BUS A15 L	BA1R1		1-01 *	H			1		P	HAND WIRE	100
BUS A15 L	A02R1		1-02 *	H			2		P	HAND WIRE	100
BUS A15 L	B03R1		1-03 *	H			1		P	HAND WIRE	100
BUS A15 L	F04R1		1-04 *				2			TO HERE	100
BUS A15 L	EA1D2		1-05 *				1				100
BUS A15 L	EA2D2		1-06 *				2				100
BUS A15 L	EA3D2		1-07 *				1				100
BUS A15 L	EA4D2		1-08 *				2				100
BUS A15 L	EA5D2		1-09 *				1				100
BUS A15 L	E06D2		1-10 *				2				100
BUS A15 L	E07D2		1-11 *				1				100
BUS A15 L	EA8D2		1-12 *				2				100
BUS A15 L	E09D2		1-13 *				1				100
BUS A15 L	B05R1		1-14 *	H			2		P	HAND WIRE	100
BUS A15 L	B06R1		1-15 *	H			1		P	HAND WIRE	100
BUS A15 L	B07R1		1-16 *	H			2		P	HAND WIRE	100
BUS A15 L	B08R1		1-17 *	H			1		P	HAND WIRE	100
BUS A15 L	A09R1		1-18 *	H					P	H TO WHERE	100
BUS A15 L			1						62-4/8		100

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS A16 L		B0182		1-01	H			2		P	HAND WIRE	101
BUS A16 L		B0282		1-02	H			1		P	HAND WIRE	101
BUS A16 L		B0382		1-03	H			2		P	HAND WIRE	101
BUS A16 L		B0482		1-04				1			TO HERE	101
BUS A16 L		E01E2		1-05	H			2		P	HAND WIRE	101
BUS A16 L		E02E2		1-06	H			1		P	HAND WIRE	101
BUS A16 L		E03E2		1-07	H			2		P	HAND WIRE	101
BUS A16 L		E04E2		1-08	H			1		P	HAND WIRE	101
BUS A16 L		E05E2		1-09	H			2		P	HAND WIRE	101
BUS A16 L		E06E2		1-10	H			1		P	HAND WIRE	101
BUS A16 L		E07E2		1-11	H			2		P	HAND WIRE	101
BUS A16 L		E08E2		1-12	H			1		P	HAND WIRE	101
BUS A16 L		E09E2		1-13				2			TO HERE	101
BUS A16 L		B0582		1-14	H			1		P	HAND WIRE	101
BUS A16 L		B0682		1-15	H			2		P	HAND WIRE	101
BUS A16 L		B0782		1-16	H			1		P	HAND WIRE	101
BUS A16 L		B0882		1-17	H			2		P	HAND WIRE	101
BUS A16 L		B0982		1-18	H					P	H TO WHERE	101
BUS A16 L				1						60-4/8		101
BUS A17 L		B0181		1-01	H			1		P	HAND WIRE	102
BUS A17 L		B0281		1-02	H			2		P	HAND WIRE	102
BUS A17 L		B0381		1-03	H			1		P	HAND WIRE	102
BUS A17 L		B0481		1-04				2			TO HERE	102
BUS A17 L		E01D1		1-05	H			1		P	HAND WIRE	102
BUS A17 L		E02D1		1-06	H			2		P	HAND WIRE	102
BUS A17 L		E03D1		1-07	H			1		P	HAND WIRE	102
BUS A17 L		E04D1		1-08	H			2		P	HAND WIRE	102
BUS A17 L		E05D1		1-09	H			1		P	HAND WIRE	102
BUS A17 L		E06D1		1-10	H			2		P	HAND WIRE	102
BUS A17 L		E07D1		1-11	H			1		P	HAND WIRE	102
BUS A17 L		E08D1		1-12	H			2		P	HAND WIRE	102
BUS A17 L		E09D1		1-13				1			TO HERE	102
BUS A17 L		B0581		1-14	H			2		P	HAND WIRE	102
BUS A17 L		B0681		1-15	H			1		P	HAND WIRE	102
BUS A17 L		B0781		1-16	H			2		P	HAND WIRE	102
BUS A17 L		B0881		1-17	H			1		P	HAND WIRE	102
BUS A17 L		B0981		1-18	H					P	H TO WHERE	102
BUS A17 L				1						60-2/8		102

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D00 L		A01C1		1-01	H			1		P	HAND WIRE	103
BUS D00 L		A02C1		1-02				2			TO HERE	103
BUS D00 L		A03C1		1-03				1				103
BUS D00 L		A04C1		1-04				2				103
BUS D00 L		C0182		1-05				1				103
BUS D00 L		C0282		1-06				2				103
BUS D00 L		C0382		1-07				1				103
BUS D00 L		C0482		1-08				2				103
BUS D00 L		C0582		1-09				1				103
BUS D00 L		C0682		1-10				2				103
BUS D00 L		C0782		1-11				1				103
BUS D00 L		C0882		1-12				2				103
BUS D00 L		C0982		1-13				1				103
BUS D00 L		A05C1		1-14				2				103
BUS D00 L		A06C1		1-15				1				103
BUS D00 L		A07C1		1-16				2				103
BUS D00 L		A08C1		1-17				1				103
BUS D00 L		A09C1		1-18								103
BUS D00 L				1						61-0/8		103
BUS D01 L		A01D2		1-01	H			2		P	HAND WIRE	104
BUS D01 L		A02D2		1-02	H			1		P	HAND WIRE	104
BUS D01 L		A03D2		1-03	H			2		P	HAND WIRE	104
BUS D01 L		A04D2		1-04				1			TO HERE	104
BUS D01 L		C01P2		1-05	H			2		P	HAND WIRE	104
BUS D01 L		C02P2		1-06	H			1		P	HAND WIRE	104
BUS D01 L		C03P2		1-07	H			2		P	HAND WIRE	104
BUS D01 L		C04P2		1-08	H			1		P	HAND WIRE	104
BUS D01 L		C05P2		1-09	H			2		P	HAND WIRE	104
BUS D01 L		C06P2		1-10	H			1		P	HAND WIRE	104
BUS D01 L		C07P2		1-11	H			2		P	HAND WIRE	104
BUS D01 L		C08P2		1-12	H			1		P	HAND WIRE	104
BUS D01 L		C09P2		1-13				2			TO HERE	104
BUS D01 L		A05D2		1-14	H			1		P	HAND WIRE	104
BUS D01 L		A06D2		1-15	H			2		P	HAND WIRE	104
BUS D01 L		A07D2		1-16	H			1		P	HAND WIRE	104
BUS D01 L		A08D2		1-17	H			2		P	HAND WIRE	104
BUS D01 L		A09D2		1-18	H					P	H TO WHERE	104
BUS D01 L				1						60-4/8		104

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D02 L		A01D1		1-01 *	H						1		P	HAND WIRE	105
BUS D02 L		A02D1		1-02 *	H						2		P	HAND WIRE	105
BUS D02 L		A03D1		1-03 *	H						1		P	HAND WIRE	105
BUS D02 L		A04D1		1-04 *							2			TO HERE	105
BUS D02 L		C01U2		1-05 *	H						1		P	HAND WIRE	105
BUS D02 L		C02U2		1-06 *	H						2		P	HAND WIRE	105
BUS D02 L		C03U2		1-07 *	H						1		P	HAND WIRE	105
BUS D02 L		C04U2		1-08 *	H						2		P	HAND WIRE	105
BUS D02 L		C05U2		1-09 *							1			TO HERE	105
BUS D02 L		F05E2		1-10 *	H						2		P	HAND WIRE	105
BUS D02 L		F01E2		1-11 *	H						1		P	HAND WIRE	105
BUS D02 L		F02E2		1-12 *	H						2		P	HAND WIRE	105
BUS D02 L		F03E2		1-13 *	H						1		P	HAND WIRE	105
BUS D02 L		F04E2		1-14 *	H						2		P	HAND WIRE	105
BUS D02 L		F06E2		1-15 *	H						1		P	HAND WIRE	105
BUS D02 L		F07E2		1-16 *	H						2		P	HAND WIRE	105
BUS D02 L		F08E2		1-17 *	H						1		P	HAND WIRE	105
BUS D02 L		F09E2		1-18 *	H						2			HAND WIRE	105
BUS D02 L		C06U2		1-19 *	H						1		P	HAND WIRE	105
BUS D02 L		C07U2		1-20 *	H						2		P	HAND WIRE	105
BUS D02 L		C08U2		1-21 *	H						1		P	HAND WIRE	105
BUS D02 L		C09U2		1-22 *							2			TO HERE	105
BUS D02 L		A05D1		1-23 *	H						1		P	HAND WIRE	105
BUS D02 L		A06D1		1-24 *	H						2		P	HAND WIRE	105
BUS D02 L		A07D1		1-25 *	H						1		P	HAND WIRE	105
BUS D02 L		A08D1		1-26 *	H						2		P	HAND WIRE	105
BUS D02 L		A09D1		1-27 *										TO HERE	105
BUS D02 L				1								100-0/0			105

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D03 L		A01E2		1-01 *	H						1		P	HAND WIRE	106
BUS D03 L		A02E2		1-02 *	H						2		P	HAND WIRE	106
BUS D03 L		A03E2		1-03 *	H						1		P	HAND WIRE	106
BUS D03 L		A04E2		1-04 *							2			TO HERE	106
BUS D03 L		C01T2		1-05 *	H						1		P	HAND WIRE	106
BUS D03 L		C02T2		1-06 *	H						2		P	HAND WIRE	106
BUS D03 L		C03T2		1-07 *	H						1		P	HAND WIRE	106
BUS D03 L		C04T2		1-08 *	H						2		P	HAND WIRE	106
BUS D03 L		C05T2		1-09 *							1			TO HERE	106
BUS D03 L		F05L1		1-10 *	H						2		P	HAND WIRE	106
BUS D03 L		F01L1		1-11 *	H						1		P	HAND WIRE	106
BUS D03 L		F02L1		1-12 *	H						2		P	HAND WIRE	106
BUS D03 L		F03L1		1-13 *	H						1		P	HAND WIRE	106
BUS D03 L		F04L1		1-14 *	H						2		P	HAND WIRE	106
BUS D03 L		F06L1		1-15 *	H						1		P	HAND WIRE	106
BUS D03 L		F07L1		1-16 *	H						2		P	HAND WIRE	106
BUS D03 L		F08L1		1-17 *	H						1		P	HAND WIRE	106
BUS D03 L		F09L1		1-18 *	H						2			HAND WIRE	106
BUS D03 L		C06T2		1-19 *	H						1		P	HAND WIRE	106
BUS D03 L		C07T2		1-20 *	H						2		P	HAND WIRE	106
BUS D03 L		C08T2		1-21 *	H						1		P	HAND WIRE	106
BUS D03 L		C09T2		1-22 *							2			TO HERE	106
BUS D03 L		A05E2		1-23 *	H						1		P	HAND WIRE	106
BUS D03 L		A06E2		1-24 *	H						2		P	HAND WIRE	106
BUS D03 L		A07E2		1-25 *	H						1		P	HAND WIRE	106
BUS D03 L		A08E2		1-26 *	H						2		P	HAND WIRE	106
BUS D03 L		A09E2		1-27 *										TO HERE	106
BUS D03 L				1								102-0/0			106

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS	D04 L		A01E1	1-01	*	M				1		P	HAND WIRE	107
BUS	D04 L		A02E1	1-02	*	M				2		P	HAND WIRE	107
BUS	D04 L		A03E1	1-03	*	M				1		P	HAND WIRE	107
BUS	D04 L		A04E1	1-04	*					2			TO HERE	107
BUS	D04 L		C01M2	1-05	*	M				1		P	HAND WIRE	107
BUS	D04 L		C02M2	1-06	*	M				2		P	HAND WIRE	107
BUS	D04 L		C03M2	1-07	*	M				1		P	HAND WIRE	107
BUS	D04 L		C04M2	1-08	*	M				2		P	HAND WIRE	107
BUS	D04 L		C05M2	1-09	*					1			TO HERE	107
BUS	D04 L		F05M2	1-10	*	M				2		P	HAND WIRE	107
BUS	D04 L		F01M2	1-11	*	M				1		P	HAND WIRE	107
BUS	D04 L		F02M2	1-12	*	M				2		P	HAND WIRE	107
BUS	D04 L		F03M2	1-13	*	M				1		P	HAND WIRE	107
BUS	D04 L		F04M2	1-14	*	M				2		P	HAND WIRE	107
BUS	D04 L		F06M2	1-15	*	M				1		P	HAND WIRE	107
BUS	D04 L		F07M2	1-16	*	M				2		P	HAND WIRE	107
BUS	D04 L		F08M2	1-17	*	M				1		P	HAND WIRE	107
BUS	D04 L		F09M2	1-18	*	M				2			HAND WIRE	107
BUS	D04 L		C06M2	1-19	*	M				1		P	HAND WIRE	107
BUS	D04 L		C07M2	1-20	*	M				2		P	HAND WIRE	107
BUS	D04 L		C08M2	1-21	*	M				1		P	HAND WIRE	107
BUS	D04 L		C09M2	1-22	*					2			TO HERE	107
BUS	D04 L		A05E1	1-23	*	M				1		P	HAND WIRE	107
BUS	D04 L		A06E1	1-24	*	M				2		P	HAND WIRE	107
BUS	D04 L		A07E1	1-25	*	M				1		P	HAND WIRE	107
BUS	D04 L		A08E1	1-26	*	M				2		P	HAND WIRE	107
BUS	D04 L		A09E1	1-27	*								TO HERE	107
BUS	D04 L			1								102-2/8		107

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS	D05 L		A01F2	1-01	*	H				2		P	HAND WIRE	108
BUS	D05 L		A02F2	1-02	*	H				1		P	HAND WIRE	108
BUS	D05 L		A03F2	1-03	*	H				2		P	HAND WIRE	108
BUS	D05 L		A04F2	1-04	*					1			TO HERE	108
BUS	D05 L		C01P2	1-05	*	H				2		P	HAND WIRE	108
BUS	D05 L		C02P2	1-06	*	H				1		P	HAND WIRE	108
BUS	D05 L		C03P2	1-07	*	H				2		P	HAND WIRE	108
BUS	D05 L		C04P2	1-08	*	H				1		P	HAND WIRE	108
BUS	D05 L		C05P2	1-09	*					2			TO HERE	108
BUS	D05 L		F05F1	1-10	*	H				1		P	HAND WIRE	108
BUS	D05 L		F01F1	1-11	*	H				2		P	HAND WIRE	108
BUS	D05 L		F02F1	1-12	*	H				1		P	HAND WIRE	108
BUS	D05 L		F03F1	1-13	*	H				2		P	HAND WIRE	108
BUS	D05 L		F04F1	1-14	*	H				1		P	HAND WIRE	108
BUS	D05 L		F06F1	1-15	*	H				2		P	HAND WIRE	108
BUS	D05 L		F07F1	1-16	*	H				1		P	HAND WIRE	108
BUS	D05 L		F08F1	1-17	*	H				2		P	HAND WIRE	108
BUS	D05 L		F09F1	1-18	*	H				1			HAND WIRE	108
BUS	D05 L		C06P2	1-19	*	H				2		P	HAND WIRE	108
BUS	D05 L		C07P2	1-20	*	H				1		P	HAND WIRE	108
BUS	D05 L		C08P2	1-21	*	H				2		P	HAND WIRE	108
BUS	D05 L		C09P2	1-22	*					1			TO HERE	108
BUS	D05 L		A05F2	1-23	*	H				2		P	HAND WIRE	108
BUS	D05 L		A06F2	1-24	*	H				1		P	HAND WIRE	108
BUS	D05 L		A07F2	1-25	*	H				2		P	HAND WIRE	108
BUS	D05 L		A08F2	1-26	*	H				1		P	HAND WIRE	108
BUS	D05 L		A09F2	1-27	*								TO HERE	108
BUS	D05 L			1								103-4/8		108

A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D06 L	A01F1		1-01 •	M						1		P	HAND WIRE	109
BUS D06 L	A02F1		1-02 •	M						2		P	HAND WIRE	109
BUS D06 L	A03F1		1-03 •	M						1		P	HAND WIRE	109
BUS D06 L	A04F1		1-04 •							2			TO HERE	109
BUS D06 L	C01V2		1-05 •	M						1		P	HAND WIRE	109
BUS D06 L	C02V2		1-06 •	M						2		P	HAND WIRE	109
BUS D06 L	C03V2		1-07 •	M						1		P	HAND WIRE	109
BUS D06 L	C04V2		1-08 •	M						2		P	HAND WIRE	109
BUS D06 L	C05V2		1-09 •							1			TO HERE	109
BUS D06 L	F05F2		1-10 •	M						2		P	HAND WIRE	109
BUS D06 L	F01F2		1-11 •	M						1		P	HAND WIRE	109
BUS D06 L	F02F2		1-12 •	M						2		P	HAND WIRE	109
BUS D06 L	F03F2		1-13 •	M						1		P	HAND WIRE	109
BUS D06 L	F04F2		1-14 •	M						2		P	HAND WIRE	109
BUS D06 L	F06F2		1-15 •	M						1		P	HAND WIRE	109
BUS D06 L	F07F2		1-16 •	M						2		P	HAND WIRE	109
BUS D06 L	F08F2		1-17 •	M						1		P	HAND WIRE	109
BUS D06 L	F09F2		1-18 •	M						2			HAND WIRE	109
BUS D06 L	C06V2		1-19 •	M						1		P	HAND WIRE	109
BUS D06 L	C07V2		1-20 •	M						2		P	HAND WIRE	109
BUS D06 L	C08V2		1-21 •	M						1		P	HAND WIRE	109
BUS D06 L	C09V2		1-22 •							2			TO HERE	109
BUS D06 L	A05F1		1-23 •	M						1		P	HAND WIRE	109
BUS D06 L	A06F1		1-24 •	M						2		P	HAND WIRE	109
BUS D06 L	A07F1		1-25 •	M						1		P	HAND WIRE	109
BUS D06 L	A08F1		1-26 •	M						2		P	HAND WIRE	109
BUS D06 L	A09F1		1-27 •										TO HERE	109
BUS D06 L			1									100-6/8		109

A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D07 L	A01H2		1-01 •	M						1		P	HAND WIRE	110
BUS D07 L	A02H2		1-02 •	M						2		P	HAND WIRE	110
BUS D07 L	A03H2		1-03 •	M						1		P	HAND WIRE	110
BUS D07 L	A04H2		1-04 •							2			TO HERE	110
BUS D07 L	C01H2		1-05 •	M						1		P	HAND WIRE	110
BUS D07 L	C02H2		1-06 •	M						2		P	HAND WIRE	110
BUS D07 L	C03H2		1-07 •	M						1		P	HAND WIRE	110
BUS D07 L	C04H2		1-08 •	M						2		P	HAND WIRE	110
BUS D07 L	C05H2		1-09 •							1			TO HERE	110
BUS D07 L	F05H1		1-10 •	M						2		P	HAND WIRE	110
BUS D07 L	F01H1		1-11 •	M						1		P	HAND WIRE	110
BUS D07 L	F02H1		1-12 •	M						2		P	HAND WIRE	110
BUS D07 L	F03H1		1-13 •	M						1		P	HAND WIRE	110
BUS D07 L	F04H1		1-14 •	M						2		P	HAND WIRE	110
BUS D07 L	F06H1		1-15 •	M						1		P	HAND WIRE	110
BUS D07 L	F07H1		1-16 •	M						2		P	HAND WIRE	110
BUS D07 L	F08H1		1-17 •	M						1		P	HAND WIRE	110
BUS D07 L	F09H1		1-18 •	M						2			HAND WIRE	110
BUS D07 L	C06H2		1-19 •	M						1		P	HAND WIRE	110
BUS D07 L	C07H2		1-20 •	M						2		P	HAND WIRE	110
BUS D07 L	C08H2		1-21 •	M						1		P	HAND WIRE	110
BUS D07 L	C09H2		1-22 •							2			TO HERE	110
BUS D07 L	A05H2		1-23 •	M						1		P	HAND WIRE	110
BUS D07 L	A06H2		1-24 •	M						2		P	HAND WIRE	110
BUS D07 L	A07H2		1-25 •	M						1		P	HAND WIRE	110
BUS D07 L	A08H2		1-26 •	M						2		P	HAND WIRE	110
BUS D07 L	A09H2		1-27 •										TO HERE	110
BUS D07 L			1									100-6/8		110

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D00 L	A01H1		1-01 *	H						1		P	HAND WIRE	111
BUS D00 L	A02H1		1-02 *	H						2		P	HAND WIRE	111
BUS D00 L	A03H1		1-03 *	H						1		P	HAND WIRE	111
BUS D00 L	A04H1		1-04 *							2			TO HERE	111
BUS D00 L	C01L2		1-05 *	H						1		P	HAND WIRE	111
BUS D00 L	C02L2		1-06 *	H						2		P	HAND WIRE	111
BUS D00 L	C03L2		1-07 *	H						1		P	HAND WIRE	111
BUS D00 L	C04L2		1-08 *	H						2		P	HAND WIRE	111
BUS D00 L	C05L2		1-09 *							1			TO HERE	111
BUS D00 L	F05K1		1-10 *	H						2		P	HAND WIRE	111
BUS D00 L	F01K1		1-11 *	H						1		P	HAND WIRE	111
BUS D00 L	F02K1		1-12 *	H						2		P	HAND WIRE	111
BUS D00 L	F03K1		1-13 *	H						1		P	HAND WIRE	111
BUS D00 L	F04K1		1-14 *	H						2		P	HAND WIRE	111
BUS D00 L	F06K1		1-15 *	H						1		P	HAND WIRE	111
BUS D00 L	F07K1		1-16 *	H						2		P	HAND WIRE	111
BUS D00 L	F08K1		1-17 *	H						1		P	HAND WIRE	111
BUS D00 L	F09K1		1-18 *	H						2			HAND WIRE	111
BUS D00 L	C06L2		1-19 *	H						1		P	HAND WIRE	111
BUS D00 L	C07L2		1-20 *	H						2		P	HAND WIRE	111
BUS D00 L	C08L2		1-21 *	H						1		P	HAND WIRE	111
BUS D00 L	C09L2		1-22 *							2			TO HERE	111
BUS D00 L	A05H1		1-23 *	H						1		P	HAND WIRE	111
BUS D00 L	A06H1		1-24 *	H						2		P	HAND WIRE	111
BUS D00 L	A07H1		1-25 *	H						1		P	HAND WIRE	111
BUS D00 L	A08H1		1-26 *	H						2		P	HAND WIRE	111
BUS D00 L	A09H1		1-27 *										TO HERE	111
BUS D00 L			1									101-2/8		111

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D09 L	A01J2		1-01 *	H						2		P	HAND WIRE	114
BUS D09 L	A02J2		1-02 *	H						1		P	HAND WIRE	114
BUS D09 L	A03J2		1-03 *	H						2		P	HAND WIRE	114
BUS D09 L	A04J2		1-04 *							1			TO HERE	112
BUS D09 L	C01K2		1-05 *	H						2		P	HAND WIRE	112
BUS D09 L	C02K2		1-06 *	H						1		P	HAND WIRE	112
BUS D09 L	C03K2		1-07 *	H						2		P	HAND WIRE	112
BUS D09 L	C04K2		1-08 *	H						1		P	HAND WIRE	112
BUS D09 L	C05K2		1-09 *	H						2		P	HAND WIRE	112
BUS D09 L	C06K2		1-10 *	H						1		P	HAND WIRE	112
BUS D09 L	C07K2		1-11 *	H						2		P	HAND WIRE	112
BUS D09 L	C08K2		1-12 *	H						1		P	HAND WIRE	112
BUS D09 L	C09K2		1-13 *							2			TO HERE	112
BUS D09 L	A05J2		1-14 *	H						1		P	HAND WIRE	112
BUS D09 L	A06J2		1-15 *	H						2		P	HAND WIRE	112
BUS D09 L	A07J2		1-16 *	H						1		P	HAND WIRE	112
BUS D09 L	A08J2		1-17 *	H						2		P	HAND WIRE	112
BUS D09 L	A09J2		1-18 *	H								P	H TO WHERE	112
BUS D09 L			1									58-2/8		112
BUS D10 L	A01J1		1-01 *	H						1		P	HAND WIRE	113
BUS D10 L	A02J1		1-02 *	H						2		P	HAND WIRE	113
BUS D10 L	A03J1		1-03 *	H						1		P	HAND WIRE	113
BUS D10 L	A04J1		1-04 *							2			TO HERE	113
BUS D10 L	C01J2		1-05 *	H						1		P	HAND WIRE	113
BUS D10 L	C02J2		1-06 *	H						2		P	HAND WIRE	113
BUS D10 L	C03J2		1-07 *	H						1		P	HAND WIRE	113
BUS D10 L	C04J2		1-08 *	H						2		P	HAND WIRE	113
BUS D10 L	C05J2		1-09 *	H						1		P	HAND WIRE	113
BUS D10 L	C06J2		1-10 *	H						2		P	HAND WIRE	113
BUS D10 L	C07J2		1-11 *	H						1		P	HAND WIRE	113
BUS D10 L	C08J2		1-12 *	H						2		P	HAND WIRE	113
BUS D10 L	C09J2		1-13 *							1			TO HERE	113
BUS D10 L	A05J1		1-14 *	H						2		P	HAND WIRE	113
BUS D10 L	A06J1		1-15 *	H						1		P	HAND WIRE	113
BUS D10 L	A07J1		1-16 *	H						2		P	HAND WIRE	113
BUS D10 L	A08J1		1-17 *	H						1		P	HAND WIRE	113
BUS D10 L	A09J1		1-18 *	H								P	H TO WHERE	113
BUS D10 L			1									58-0/8		113

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D11 L		A01K2		1-01	*	H					2		P	HAND WIRE	114
BUS D11 L		A02K2		1-02	*	H					1		P	HAND WIRE	114
BUS D11 L		A03K2		1-03	*	H					2		P	HAND WIRE	114
BUS D11 L		A04K2		1-04	*						1			TO HERE	114
BUS D11 L		C01H1		1-05	*	H					2		P	HAND WIRE	114
BUS D11 L		C02H1		1-06	*	H					1		P	HAND WIRE	114
BUS D11 L		C03H1		1-07	*	H					2		P	HAND WIRE	114
BUS D11 L		C04H1		1-08	*	H					1		P	HAND WIRE	114
BUS D11 L		C05H1		1-09	*	H					2		P	HAND WIRE	114
BUS D11 L		C06H1		1-10	*	H					1		P	HAND WIRE	114
BUS D11 L		C07H1		1-11	*	H					2		P	HAND WIRE	114
BUS D11 L		C08H1		1-12	*	H					1		P	HAND WIRE	114
BUS D11 L		C09H1		1-13	*						2			TO HERE	114
BUS D11 L		A05K2		1-14	*	H					1		P	HAND WIRE	114
BUS D11 L		A06K2		1-15	*	H					2		P	HAND WIRE	114
BUS D11 L		A07K2		1-16	*	H					1		P	HAND WIRE	114
BUS D11 L		A08K2		1-17	*	H					2		P	HAND WIRE	114
BUS D11 L		A09K2		1-18	*	H							P	H TO WHERE	114
BUS D11 L				1										57-2/8	114
BUS D12 L		A01K1		1-01	*	H					1		P	HAND WIRE	115
BUS D12 L		A02K1		1-02	*	H					2		P	HAND WIRE	115
BUS D12 L		A03K1		1-03	*	H					1		P	HAND WIRE	115
BUS D12 L		A04K1		1-04	*						2			TO HERE	115
BUS D12 L		C01H2		1-05	*	H					1		P	HAND WIRE	115
BUS D12 L		C02H2		1-06	*	H					2		P	HAND WIRE	115
BUS D12 L		C03H2		1-07	*	H					1		P	HAND WIRE	115
BUS D12 L		C04H2		1-08	*	H					2		P	HAND WIRE	115
BUS D12 L		C05H2		1-09	*	H					1		P	HAND WIRE	115
BUS D12 L		C06H2		1-10	*	H					2		P	HAND WIRE	115
BUS D12 L		C07H2		1-11	*	H					1		P	HAND WIRE	115
BUS D12 L		C08H2		1-12	*	H					2		P	HAND WIRE	115
BUS D12 L		C09H2		1-13	*						1			TO HERE	115
BUS D12 L		A05K1		1-14	*	H					2		P	HAND WIRE	115
BUS D12 L		A06K1		1-15	*	H					1		P	HAND WIRE	115
BUS D12 L		A07K1		1-16	*	H					2		P	HAND WIRE	115
BUS D12 L		A08K1		1-17	*	H					1		P	HAND WIRE	115
BUS D12 L		A09K1		1-18	*	H							P	H TO WHERE	115
BUS D12 L				1										57-4/8	115

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D13 L		A01L2		1-01	*	H					1		P	HAND WIRE	116
BUS D13 L		A02L2		1-02	*	H					2		P	HAND WIRE	116
BUS D13 L		A03L2		1-03	*	H					1		P	HAND WIRE	116
BUS D13 L		A04L2		1-04	*						2			TO HERE	116
BUS D13 L		C01F2		1-05	*	H					1		P	HAND WIRE	116
BUS D13 L		C02F2		1-06	*	H					2		P	HAND WIRE	116
BUS D13 L		C03F2		1-07	*	H					1		P	HAND WIRE	116
BUS D13 L		C04F2		1-08	*	H					2		P	HAND WIRE	116
BUS D13 L		C05F2		1-09	*	H					1		P	HAND WIRE	116
BUS D13 L		C06F2		1-10	*	H					2		P	HAND WIRE	116
BUS D13 L		C07F2		1-11	*	H					1		P	HAND WIRE	116
BUS D13 L		C08F2		1-12	*	H					2		P	HAND WIRE	116
BUS D13 L		C09F2		1-13	*						1			TO HERE	116
BUS D13 L		A05L2		1-14	*	H					2		P	HAND WIRE	116
BUS D13 L		A06L2		1-15	*	H					1		P	HAND WIRE	116
BUS D13 L		A07L2		1-16	*	H					2		P	HAND WIRE	116
BUS D13 L		A08L2		1-17	*	H					1		P	HAND WIRE	116
BUS D13 L		A09L2		1-18	*	H							P	H TO WHERE	116
BUS D13 L				1										57-6/8	116
BUS D14 L		A01L1		1-01	*	H					1		P	HAND WIRE	117
BUS D14 L		A02L1		1-02	*	H					2		P	HAND WIRE	117
BUS D14 L		A03L1		1-03	*	H					1		P	HAND WIRE	117
BUS D14 L		A04L1		1-04	*						2			TO HERE	117
BUS D14 L		C01E2		1-05	*	H					1		P	HAND WIRE	117
BUS D14 L		C02E2		1-06	*	H					2		P	HAND WIRE	117
BUS D14 L		C03E2		1-07	*	H					1		P	HAND WIRE	117
BUS D14 L		C04E2		1-08	*	H					2		P	HAND WIRE	117
BUS D14 L		C05E2		1-09	*	H					1		P	HAND WIRE	117
BUS D14 L		C06E2		1-10	*	H					2		P	HAND WIRE	117
BUS D14 L		C07E2		1-11	*	H					1		P	HAND WIRE	117
BUS D14 L		C08E2		1-12	*	H					2		P	HAND WIRE	117
BUS D14 L		C09E2		1-13	*						1			TO HERE	117
BUS D14 L		A05L1		1-14	*	H					2		P	HAND WIRE	117
BUS D14 L		A06L1		1-15	*	H					1		P	HAND WIRE	117
BUS D14 L		A07L1		1-16	*	H					2		P	HAND WIRE	117
BUS D14 L		A08L1		1-17	*	H					1		P	HAND WIRE	117
BUS D14 L		A09L1		1-18	*	H							P	H TO WHERE	117
BUS D14 L				1										56-6/8	117

A/P	PIN NAME	ORDER PIN	BAY - ORDER		Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
BUS D15 L	A01N2		1-01	*	H			1		P	HAND WIRE	118
BUS D15 L	A02N2		1-02	*	H			2		P	HAND WIRE	118
BUS D15 L	A03N2		1-03	*	H			1		P	HAND WIRE	118
BUS D15 L	A04N2		1-04	*				2			TO HERE	118
BUS D15 L	C01D2		1-05	*				1				118
BUS D15 L	C02D2		1-06	*				2				118
BUS D15 L	C03D2		1-07	*				1				118
BUS D15 L	C04D2		1-08	*				2				118
BUS D15 L	C05D2		1-09	*				1				118
BUS D15 L	C06D2		1-10	*				2				118
BUS D15 L	C07D2		1-11	*				1				118
BUS D15 L	C08D2		1-12	*				2				118
BUS D15 L	C09D2		1-13	*				1				118
BUS D15 L	A05N2		1-14	*	H			2		P	HAND WIRE	118
BUS D15 L	A06N2		1-15	*	H			1		P	HAND WIRE	118
BUS D15 L	A07N2		1-16	*	H			2		P	HAND WIRE	118
BUS D15 L	A08N2		1-17	*	H			1		P	HAND WIRE	118
BUS D15 L	A09N2		1-18	*	H					P	H TO WHERE	118
BUS D15 L			1							50-2/8		118
C BG IN	D03U2		1-01	*				1				119
C BG IN	F03R1		1-02	*								119
C BG IN			1							5-6/8		119
C BG OUT	D03V2		1-01	*				1				120
C BG OUT	F03A1		1-02	*								120
C BG OUT			1							5-6/8		120
C BR OUT	D03J2		1-01	*				1				121
C BR OUT	F03P1		1-02	*				2				121
C BR OUT	F03U2		1-03	*								121
C BR OUT			1							11-4/8		121
C IN	D03H1		1-01	*				1				122
C IN	E03M1		1-02	*								122
C IN			1							5-2/8		122
C INT A	D03N1		1-01	*				1				123
C INT A	F03U1		1-02	*								123
C INT A			1							8-2/8		123
C INT B	C03J1		1-01	*				1				124
C INT B	F03K2		1-02	*								124
C INT B			1							10-4/8		124

A/P	PIN NAME	ORDER PIN	BAY - ORDER		Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
C INT ENB A	D03M1		1-01	*				1				125
C INT ENB A	F03V1		1-02	*								125
C INT ENB A			1							8-4/8		125
C INT ENB B	C03L1		1-01	*				1				126
C INT ENB B	F03N2		1-02	*								126
C INT ENB B			1							10-8/8		126
C OUT HIGH	D03K1		1-01	*				1				127
C OUT HIGH	E03M2		1-02	*								127
C OUT HIGH			1							5-2/8		127
C OUT LOW	D03D1		1-01	*				1				128
C OUT LOW	E03N1		1-02	*								128
C OUT LOW			1							5-6/8		128
C SEL 0	D03F1		1-01	*				1				129
C SEL 0	E03S2		1-02	*								129
C SEL 0			1							6-0/8		129
C SEL 4	D03E1		1-01	*				1				130
C SEL 4	E03R2		1-02	*								130
C SEL 4			1							6-2/8		130
C SEL 6	D03C1		1-01	*				1				131
C SEL 6	E03S1		1-02	*								131
C SEL 6			1							6-2/8		131
C SEP 2	D03J1		1-01	*				1				132
C SEP 2	E03T2		1-02	*								132
C SEP 2			1							6-0/8		132
C SSYN IN H	D03V1		1-01	*				1				133
C SSYN IN H	E03B1		1-02	*								133
C SSYN IN H			1							2-6/8		133

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
C0 L		D01U2		1-01 •				1				134
C0 L		D02U2		1-02 •				2				134
C0 L		D03U2		1-03 •				1				134
C0 L		D04U2		1-04 •				2				134
C0 L		E01J2		1-05 •	N			1		P	WAND WIRE	134
C0 L		E02J2		1-06 •	N			2		P	WAND WIRE	134
C0 L		E03J2		1-07 •	N			1		P	WAND WIRE	134
C0 L		E04J2		1-08 •	N			2		P	WAND WIRE	134
C0 L		E05J2		1-09 •	N			1		P	WAND WIRE	134
C0 L		E06J2		1-10 •	N			2		P	WAND WIRE	134
C0 L		E07J2		1-11 •	N			1		P	WAND WIRE	134
C0 L		E08J2		1-12 •	N			2		P	WAND WIRE	134
C0 L		E09J2		1-13 •				1			TO HERE	134
C0 L		D05U2		1-14 •				2				134
C0 L		D06U2		1-15 •				1				134
C0 L		D07U2		1-16 •				2				134
C0 L		D08U2		1-17 •				1				134
C0 L		D09U2		1-18 •								134
C0 L				1						60-6/8		134
C1 L		D01T2		1-01 •				2				135
C1 L		D02T2		1-02 •				1				135
C1 L		D03T2		1-03 •				2				135
C1 L		D04T2		1-04 •				1				135
C1 L		E01F2		1-05 •	N			2		P	WAND WIRE	135
C1 L		E02F2		1-06 •	N			1		P	WAND WIRE	135
C1 L		E03F2		1-07 •	N			2		P	WAND WIRE	135
C1 L		E04F2		1-08 •	N			1		P	WAND WIRE	135
C1 L		E05F2		1-09 •	N			2		P	WAND WIRE	135
C1 L		E06F2		1-10 •	N			1		P	WAND WIRE	135
C1 L		E07F2		1-11 •	N			2		P	WAND WIRE	135
C1 L		E08F2		1-12 •	N			1		P	WAND WIRE	135
C1 L		E09F2		1-13 •				2			TO HERE	135
C1 L		D05T2		1-14 •				1				135
C1 L		D06T2		1-15 •				2				135
C1 L		D07T2		1-16 •				1				135
C1 L		D08T2		1-17 •				2				135
C1 L		D09T2		1-18 •								135
C1 L				1						60-6/8		135
D BG IN		D04U2		1-01 •				1				136
D BG IN		F04B1		1-02 •								136
D BG IN				1						5-6/8		136
D BG OUT		D04V2		1-01 •				1				137
D BG OUT		F04A1		1-02 •								137
D BG OUT				1						5-6/8		137

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
D BR OUT		D04J2		1-01 •				1				138
D BR OUT		F04P1		1-02 •				2				138
D BR OUT		F04U2		1-03 •								138
D BR OUT				1						11-6/8		138
D IN		D04H1		1-01 •				1				139
D IN		F04M1		1-02 •								139
D IN				1						5-2/8		139
D INT A		D04N1		1-01 •				1				140
D INT A		F04U1		1-02 •								140
D INT A				1						8-2/8		140
D INT B		C04J1		1-01 •				1				141
D INT B		F04R2		1-02 •								141
D INT B				1						10-6/8		141
D INT ENB A		D04M1		1-01 •				1				142
D INT ENB A		F04V1		1-02 •								142
D INT ENB A				1						8-6/8		142
D INT ENB B		CF4L1		1-01 •				1				143
D INT ENB B		F04H2		1-02 •								143
D INT ENB B				1						14-6/8		143
D OUT HIGH		D04K1		1-01 •				1				144
D OUT HIGH		E04M2		1-02 •								144
D OUT HIGH				1						5-2/8		144
D OUT LOW		DF4D1		1-01 •				1				145
D OUT LOW		F04N1		1-02 •								145
D OUT LOW				1						5-6/8		145
D SEL 0		D04F1		1-01 •				1				146
D SEL 0		E04S2		1-02 •								146
D SEL 0				1						6-6/8		146
D SEL 4		DF4E1		1-01 •				1				147
D SEL 4		E04R2		1-02 •								147
D SEL 4				1						6-2/8		147
D SEL 6		DF4C1		1-01 •				1				148
D SEL 6		E04S1		1-02 •								148
D SEL 6				1						6-2/8		148

D SER 2		D04J1	1-01 •					1					149
D SER 2		E04T2	1-02 •										149
D SER 2			1								0-0/8		149
D SSYN IN H		D04V1	1-01 •					1					150
D SSYN IN H		E04B1	1-02 •										150
D SSYN IN H			1								2-0/8		150
DC L		B01F2	1-01 •	H				2		P		HAND WIRE	151
DC L		B02F2	1-02 •	H				1		P		HAND WIRE	151
DC L		B03F2	1-03 •	H				2		P		HAND WIRE	151
DC L		B04F2	1-04 •					1				TO HERE	151
DC L		C01N1	1-05 •	H				2		P		HAND WIRE	151
DC L		C02N1	1-06 •	H				1		P		HAND WIRE	151
DC L		C03N1	1-07 •	H				2		P		HAND WIRE	151
DC L		C04N1	1-08 •	H				1		P		HAND WIRE	151
DC L		C05N1	1-09 •	H				2		P		HAND WIRE	151
DC L		C06N1	1-10 •	H				1		P		HAND WIRE	151
DC L		C07N1	1-11 •	H				2		P		HAND WIRE	151
DC L		C08N1	1-12 •	H				1		P		HAND WIRE	151
DC L		C09N1	1-13 •					2				TO HERE	151
DC L		B05F2	1-14 •	H				1		P		HAND WIRE	151
DC L		B06F2	1-15 •	H				2		P		HAND WIRE	151
DC L		B07F2	1-16 •	H				1		P		HAND WIRE	151
DC L		B08F2	1-17 •	H				2		P		HAND WIRE	151
DC L		B09F2	1-18 •	H						P		H TO WHERE	151
DC L			1								53-6/8		151
E BG IN		D05U2	1-01 •					1					152
E BG IN		F05B1	1-02 •										152
E BG IN			1								5-6/8		152
E BG OUT		D05V2	1-01 •					1					153
E BG OUT		F05A1	1-02 •										153
E BG OUT			1								5-6/8		153
E BR OUT		D05J2	1-01 •					1					154
E BR OUT		F05P1	1-02 •					2					154
E BR OUT		F05U2	1-03 •										154
E BR OUT			1								11-4/8		154
E IN		D05H1	1-01 •					1					155
E IN		E05M1	1-02 •										155
E IN			1								5-2/8		155

E INT A		D05N1	1-01 •					1					156
E INT A		F05U1	1-02 •										156
E INT A			1								8-2/8		156
E INT B		C05J1	1-01 •					1					157
E INT B		F05F2	1-02 •										157
E INT B			1								10-4/8		157
E INT ENB A		D05M1	1-01 •					1					158
E INT ENB A		F05V1	1-02 •										158
E INT ENB A			1								8-4/8		158
E INT ENB B		C05L1	1-01 •					1					159
E INT ENB B		F05H2	1-02 •										159
E INT ENB B			1								10-0/8		159
E OUT HIGH		D05K1	1-01 •					1					160
E OUT HIGH		E05M2	1-02 •										160
E OUT HIGH			1								5-2/8		160
E OUT LOW		D05D1	1-01 •					1					161
E OUT LOW		E05N1	1-02 •										161
E OUT LOW			1								5-6/8		161
E SEL 0		D05F1	1-01 •					1					162
E SEL 0		E05S2	1-02 •										162
E SEL 0			1								6-0/8		162
E SEL 4		D05K1	1-01 •					1					163
E SEL 4		E05R2	1-02 •										163
E SEL 4			1								6-2/8		163
E SEL 6		D05C1	1-01 •					1					164
E SEL 6		E05S1	1-02 •										164
E SEL 6			1								6-2/8		164
E SER 2		D05J1	1-01 •					1					165
E SER 2		E05T2	1-02 •										165
E SER 2			1								6-0/8		165
E SSYN IN H		D05V1	1-01 •					1					166
E SSYN IN H		E05B1	1-02 •										166
E SSYN IN H			1								2-0/8		166
F BG IN		D06U2	1-01 •					1					167
F BG IN		F06B1	1-02 •										167
F BG IN			1								5-6/8		167

A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
F BG OUT	D06V2		1-01 *				1				168
F BG OUT	F06A1		1-02 *								168
F BG OUT			1						5-6/8		168
F BR OUT	D06J2		1-01 *				1				169
F BR OUT	F06P1		1-02 *				2				169
F BR OUT	F06U2		1-03 *								169
F BR OUT			1						11-4/8		169
F IN	D06H1		1-01 *				1				170
F IN	E06M1		1-02 *								170
F IN			1						5-2/8		170
F INT A	D06N1		1-01 *				1				171
F INT A	F06U1		1-02 *								171
F INT A			1						8-2/8		171
F INT B	C06J1		1-01 *				1				172
F INT B	F06K2		1-02 *								172
F INT B			1						10-4/8		172
F INT END A	D06M1		1-01 *				1				173
F INT END A	F06V1		1-02 *								173
F INT END A			1						8-4/8		173
F INT END B	C06L1		1-01 *				1				174
F INT END B	F06H2		1-02 *								174
F INT END B			1						10-0/8		174
F OUT HIGH	D06K1		1-01 *				1				175
F OUT HIGH	E06N2		1-02 *								175
F OUT HIGH			1						5-2/8		175
F OUT LOW	D06D1		1-01 *				1				176
F OUT LOW	L06N1		1-02 *								176
F OUT LOW			1						5-6/8		176
F SEL 0	D06F1		1-01 *				1				177
F SEL 0	E06S2		1-02 *								177
F SEL 0			1						6-0/8		177
F SEL 4	D06E1		1-01 *				1				178
F SEL 4	E06R2		1-02 *								178
F SEL 4			1						6-2/8		178

A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
F SEL 6	D06C1		1-01 *				1				179
F SEL 6	E06S1		1-02 *								179
F SEL 6			1						6-2/8		179
F SER 2	D06J1		1-01 *				1				180
F SER 2	E06T2		1-02 *								180
F SER 2			1						6-0/8		180
F SSYN IN H	D06V1		1-01 *				1				181
F SSYN IN H	E06S1		1-02 *								181
F SSYN IN H			1						2-6/8		181
F01D2	F01D2		1-01 *				2				182
F01D2	F01P2		1-02 *				1				182
F01D2	F01N1		1-03 *								182
F01D2			1						6-2/8		182
F01E1	F01F1		1-01 *				1				183
F01E1	F01V2		1-02 *								183
F01E1			1						4-2/8		183
F01L2	F01L2		1-01 *				1				184
F01L2	F01R1		1-02 *								184
F01L2			1						3-0/8		184
F01N2	F01N2		1-01 *				1				185
F01N2	F01S1		1-02 *								185
F01N2			1						3-0/8		185
F01P2	F01P2		1-01 *				1				186
F01P2	F01S2		1-02 *								186
F01P2			1						2-4/8		186
F02D2	F02D2		1-01 *				2				187
F02D2	F02P2		1-02 *				1				187
F02D2	F02N1		1-03 *								187
F02D2			1						6-2/8		187
F02E1	F02E1		1-01 *				1				188
F02E1	F02V2		1-02 *								188
F02E1			1						4-2/8		188
F02L2	F02L2		1-01 *				1				189
F02L2	F02R1		1-02 *								189
F02L2			1						3-0/8		189

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
F02N2		F02N2		1-01 *							1				190
F02N2		F0281		1-02 *											190
F02N2				1									3-0/8		190
F02P2		F02P2		1-01 *							1				191
F02P2		F0282		1-02 *											191
F02P2				1									2-4/8		191
F03D2		F03D2		1-01 *							2				192
F03D2		F03P2		1-02 *							1				192
F03D2		F03N1		1-03 *											192
F03D2				1									6-2/8		192
F03E1		F03E1		1-01 *							1				193
F03E1		F03V2		1-02 *											193
F03E1				1									4-2/8		193
F03L2		F03L2		1-01 *							1				194
F03L2		F03R1		1-02 *											194
F03L2				1									3-0/8		194
F03N2		F03N2		1-01 *							1				195
F03N2		F0381		1-02 *											195
F03N2				1									3-0/8		195
F03P2		F03P2		1-01 *							1				196
F03P2		F0382		1-02 *											196
F03P2				1									2-4/8		196
F04D2		F04D2		1-01 *							2				197
F04D2		F04R2		1-02 *							1				197
F04D2		F04N1		1-03 *											197
F04D2				1									6-2/8		197
F04E1		F04E1		1-01 *							1				198
F04E1		F04V2		1-02 *											198
F04E1				1									4-2/8		198
F04L2		F04L2		1-01 *							1				199
F04L2		F04R1		1-02 *											199
F04L2				1									3-0/8		199
F04N2		F04N2		1-01 *							1				200
F04N2		F0481		1-02 *											200
F04N2				1									3-0/8		200

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW	RV	PG	Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
F04P2		F04P2		1-01 *							1				201
F04P2		F0482		1-02 *											201
F04P2				1									2-4/8		201
F05D2		F05D2		1-01 *							2				202
F05D2		F05R2		1-02 *							1				202
F05D2		F05N1		1-03 *											202
F05D2				1									6-2/8		202
F05E1		F05E1		1-01 *							1				203
F05E1		F05V2		1-02 *											203
F05E1				1									4-2/8		203
F05L2		F05L2		1-01 *							1				204
F05L2		F05R1		1-02 *											204
F05L2				1									3-0/8		204
F05N2		F05N2		1-01 *							1				205
F05N2		F05S1		1-02 *											205
F05N2				1									3-0/8		205
F05P2		F05P2		1-01 *							1				206
F05P2		F05S2		1-02 *											206
F05P2				1									2-4/8		206
F06D2		F06D2		1-01 *							2				207
F06D2		F06R2		1-02 *							1				207
F06D2		F06N1		1-03 *											207
F06D2				1									6-2/8		207
F06E1		F06E1		1-01 *							1				208
F06E1		F06V2		1-02 *											208
F06E1				1									4-2/8		208
F06L2		F06L2		1-01 *							1				209
F06L2		F06R1		1-02 *											209
F06L2				1									3-0/8		209
F06N2		F06N2		1-01 *							1				210
F06N2		F06S1		1-02 *											210
F06N2				1									3-0/8		210
F06P2		F06P2		1-01 *							1				211
F06P2		F06S2		1-02 *											211
F06P2				1									2-4/8		211

A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
	F07D2		1-01 *				2				212
	F07R2		1-02 *				1				212
	F07M1		1-03 *								212
			1						6-2/8		212
	F07E1		1-01 *				1				213
	F07V2		1-02 *								213
			1						6-2/8		213
	F07L2		1-01 *				1				214
	F07R1		1-02 *								214
			1						3-0/8		214
	FF7M2		1-01 *				1				215
	F07S1		1-02 *								215
			1						3-0/8		215
	F07P2		1-01 *				1				216
	F07S2		1-02 *								216
			1						2-4/8		216
	F08D2		1-01 *				2				217
	F08R2		1-02 *				1				217
	F08M1		1-03 *								217
			1						6-2/8		217
	F08E1		1-01 *				1				218
	F08V2		1-02 *								218
			1						4-2/8		218
	F08L2		1-01 *				1				219
	F08R1		1-02 *								219
			1						3-0/8		219
	F08M2		1-01 *				1				220
	F08S1		1-02 *								220
			1						3-0/8		220
	F08P2		1-01 *				1				221
	F0852		1-02 *								221
			1						2-4/8		221
	F09D2		1-01 *				2				222
	F09R2		1-02 *				1				222
	F09M1		1-03 *								222
			1						6-2/8		222

A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
	F09E1		1-01 *				1				223
	F09V2		1-02 *								223
			1						4-2/8		223
	F09L2		1-01 *				1				224
	F09R1		1-02 *								224
			1						3-0/8		224
	F0942		1-01 *				1				225
	F0951		1-02 *								225
			1						3-0/8		225
	F09P2		1-01 *				1				226
	F0952		1-02 *								226
			1						2-4/8		226
GND	(01)	A01C2	1-01 *	H			1	P	HAND WIRE		227
GND	(01)	A02C2	1-02 *	H			2	P	HAND WIRE		227
GND	(01)	A03C2	1-03 *	H			1	P	HAND WIRE		227
GND	(01)	A04C2	1-04 *	H			2	P	HAND WIRE		227
GND	(01)	A05C2	1-05 *	H			1	P	HAND WIRE		227
GND	(01)	A06C2	1-06 *	H			2	P	HAND WIRE		227
GND	(01)	A07C2	1-07 *	H			1	P	HAND WIRE		227
GND	(01)	A08C2	1-08 *	H			2	P	HAND WIRE		227
GND	(01)	A09C2	1-09 *	H			1	P	HAND WIRE		227
GND	(01)	A09T1	1-10 *	H			2	P	HAND WIRE		227
GND	(01)	A08T1	1-11 *	H			1	P	HAND WIRE		227
GND	(01)	A07T1	1-12 *	H			2	P	HAND WIRE		227
GND	(01)	A06T1	1-13 *	H			1	P	HAND WIRE		227
GND	(01)	A05T1	1-14 *	H			2	P	HAND WIRE		227
GND	(01)	A04T1	1-15 *	H			1	P	HAND WIRE		227
GND	(01)	A03T1	1-16 *	H			2	P	HAND WIRE		227
GND	(01)	A02T1	1-17 *	H			1	P	HAND WIRE		227
GND	(01)	A01T1	1-18 *	H			2	P	HAND WIRE		227
GND	(01)	B01C2	1-19 *	H			1	P	HAND WIRE		227
GND	(01)	B02C2	1-20 *	H			2	P	HAND WIRE		227
GND	(01)	B03C2	1-21 *	H			1	P	HAND WIRE		227
GND	(01)	B04C2	1-22 *	H			2	P	HAND WIRE		227
GND	(01)	B05C2	1-23 *	H			1	P	HAND WIRE		227
GND	(01)	B06C2	1-24 *	H			2	P	HAND WIRE		227
GND	(01)	B07C2	1-25 *	H			1	P	HAND WIRE		227
GND	(01)	B08C2	1-26 *	H			2	P	HAND WIRE		227
GND	(01)	B09C2	1-27 *	H			1	P	HAND WIRE		227
GND	(01)	B09T1	1-28 *	H			2	P	HAND WIRE		227
GND	(01)	B08T1	1-29 *	H			1	P	HAND WIRE		227
GND	(01)	B07T1	1-30 *	H			2	P	HAND WIRE		227
GND	(01)	B06T1	1-31 *	H			1	P	HAND WIRE		227
GND	(01)	B05T1	1-32 *	H			2	P	HAND WIRE		227
GND	(01)	B04T1	1-33 *	H			1	P	HAND WIRE		227
GND	(01)	B03T1	1-34 *	H			2	P	HAND WIRE		227
GND	(01)	B02T1	1-35 *	H			1	P	HAND WIRE		227
GND	(01)	B01T1	1-36 *	H			2	P	HAND WIRE		227
GND	(01)	C01C2	1-37 *	H			1	P	HAND WIRE		227
GND	(01)	C02C2	1-38 *	H			2	P	HAND WIRE		227
GND	(01)	C03C2	1-39 *	H			1	P	HAND WIRE		227
GND	(01)	C04C2	1-40 *	H			2	P	HAND WIRE		227

A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
GND (01)	C05C2		1-41	M			1		P	HAND WIRE	227
GND (01)	C06C2		1-42	M			2		P	HAND WIRE	227
GND (01)	C07C2		1-43	M			1		P	HAND WIRE	227
GND (01)	C08C2		1-44	M			2		P	HAND WIRE	227
GND (01)	C09C2		1-45	M			1		P	HAND WIRE	227
GND (01)	C09T1		1-46	M			2		P	HAND WIRE	227
GND (01)	C08T1		1-47	M			1		P	HAND WIRE	227
GND (01)	C07T1		1-48	M			2		P	HAND WIRE	227
GND (01)	C06T1		1-49	M			1		P	HAND WIRE	227
GND (01)	C05T1		1-50	M			2		P	HAND WIRE	227
GND (01)	C04T1		1-51	M			1		P	HAND WIRE	227
GND (01)	C03T1		1-52	M			2		P	HAND WIRE	227
GND (01)	C02T1		1-53	M			1		P	HAND WIRE	227
GND (01)	C01T1		1-54	M					P	M TO WHERE	227
GND (01)			1						150-0/0		227
GND (02)	D01C2		1-01	M			1		P	HAND WIRE	228
GND (02)	D02C2		1-02	M			2		P	HAND WIRE	228
GND (02)	D03C2		1-03	M			1		P	HAND WIRE	228
GND (02)	D04C2		1-04	M			2		P	HAND WIRE	228
GND (02)	D05C2		1-05	M			1		P	HAND WIRE	228
GND (02)	D06C2		1-06	M			2		P	HAND WIRE	228
GND (02)	D07C2		1-07	M			1		P	HAND WIRE	228
GND (02)	D08C2		1-08	M			2		P	HAND WIRE	228
GND (02)	D09C2		1-09	M			1		P	HAND WIRE	228
GND (02)	D09T1		1-10	M			2		P	HAND WIRE	228
GND (02)	D08T1		1-11	M			1		P	HAND WIRE	228
GND (02)	D07T1		1-12	M			2		P	HAND WIRE	228
GND (02)	D06T1		1-13	M			1		P	HAND WIRE	228
GND (02)	D05T1		1-14	M			2		P	HAND WIRE	228
GND (02)	D04T1		1-15	M			1		P	HAND WIRE	228
GND (02)	D03T1		1-16	M			2		P	HAND WIRE	228
GND (02)	D02T1		1-17	M			1		P	HAND WIRE	228
GND (02)	D01T1		1-18	M			2		P	HAND WIRE	228
GND (02)	E01C2		1-19	M			1		P	HAND WIRE	228
GND (02)	E02C2		1-20	M			2		P	HAND WIRE	228
GND (02)	E03C2		1-21	M			1		P	HAND WIRE	228
GND (02)	E04C2		1-22	M			2		P	HAND WIRE	228
GND (02)	E05C2		1-23	M			1		P	HAND WIRE	228
GND (02)	E06C2		1-24	M			2		P	HAND WIRE	228
GND (02)	E07C2		1-25	M			1		P	HAND WIRE	228
GND (02)	E08C2		1-26	M			2		P	HAND WIRE	228
GND (02)	E09C2		1-27	M			1		P	HAND WIRE	228
GND (02)	E09T1		1-28	M			2		P	HAND WIRE	228
GND (02)	E08T1		1-29	M			1		P	HAND WIRE	228
GND (02)	E07T1		1-30	M			2		P	HAND WIRE	228
GND (02)	E06T1		1-31	M			1		P	HAND WIRE	228
GND (02)	E05T1		1-32	M			2		P	HAND WIRE	228
GND (02)	E04T1		1-33	M			1		P	HAND WIRE	228
GND (02)	E03T1		1-34	M			2		P	HAND WIRE	228
GND (02)	E02T1		1-35	M			1		P	HAND WIRE	228
GND (02)	E01T1		1-36	M			2		P	HAND WIRE	228
GND (02)	F01C2		1-37	M			1		P	HAND WIRE	228
GND (02)	F02C2		1-38	M			2		P	HAND WIRE	228
GND (02)	F03C2		1-39	M			1		P	HAND WIRE	228
GND (02)	F04C2		1-40	M			2		P	HAND WIRE	228

A/P	PIN NAME	ORDER PIN	BAY - ORDER	G	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
GND (02)	F05C2		1-41	M			1		P	HAND WIRE	228
GND (02)	F06C2		1-42	M			2		P	HAND WIRE	228
GND (02)	F07C2		1-43	M			1		P	HAND WIRE	228
GND (02)	F08C2		1-44	M			2		P	HAND WIRE	228
GND (02)	F09C2		1-45	M			1		P	HAND WIRE	228
GND (02)	F09T1		1-46	M			2		P	HAND WIRE	228
GND (02)	F08T1		1-47	M			1		P	HAND WIRE	228
GND (02)	F07T1		1-48	M			2		P	HAND WIRE	228
GND (02)	F06T1		1-49	M			1		P	HAND WIRE	228
GND (02)	F05T1		1-50	M			2		P	HAND WIRE	228
GND (02)	F04T1		1-51	M			1		P	HAND WIRE	228
GND (02)	F03T1		1-52	M			2		P	HAND WIRE	228
GND (02)	F02T1		1-53	M			1		P	HAND WIRE	228
GND (02)	F01T1		1-54	M					P	M TO WHERE	228
GND (02)			1						150-0/0		228
GND (03)	B09V2		1-01	M			2		P	HAND WIRE	229
GND (03)	A09E1		1-02	M			1		P	HAND WIRE	229
GND (03)	A09D1		1-03	M			2		P	HAND WIRE	229
GND (03)	A09B2		1-04	M			1		P	HAND WIRE	229
GND (03)	A09V2		1-05	M			2		P	HAND WIRE	229
GND (03)	A09S1		1-06	M			1		P	HAND WIRE	229
GND (03)	A09R1		1-07	M			2		P	HAND WIRE	229
GND (03)	A09P1		1-08	M			1		P	HAND WIRE	229
GND (03)	A09N1		1-09	M			2		P	HAND WIRE	229
GND (03)	A09B2		1-10	M			1		P	HAND WIRE	229
GND (03)	A01B2		1-11	M			2		P	HAND WIRE	229
GND (03)	A01N1		1-12	M			1		P	HAND WIRE	229
GND (03)	A01P1		1-13	M			2		P	HAND WIRE	229
GND (03)	A01R1		1-14	M			1		P	HAND WIRE	229
GND (03)	A01S1		1-15	M			2		P	HAND WIRE	229
GND (03)	A01V2		1-16	M			1		P	HAND WIRE	229
GND (03)	B01B2		1-17	M			2		P	HAND WIRE	229
GND (03)	B01D1		1-18	M			1		P	HAND WIRE	229
GND (03)	B01E1		1-19	M			2		P	HAND WIRE	229
GND (03)	B01V2		1-20	M			1		P	HAND WIRE	229
GND (03)	E01A1		1-21	M			2		P	HAND WIRE	229
GND (03)	E02A1		1-22	M			1		P	HAND WIRE	229
GND (03)	E03A1		1-23	M			2		P	HAND WIRE	229
GND (03)	E04A1		1-24	M			1		P	HAND WIRE	229
GND (03)	E05A1		1-25	M			2		P	HAND WIRE	229
GND (03)	E06A1		1-26	M			1		P	HAND WIRE	229
GND (03)	E07A1		1-27	M			2		P	HAND WIRE	229
GND (03)	F08A1		1-28	M			1		P	HAND WIRE	229
GND (03)	F09A1		1-29	M			2		P	HAND WIRE	229
GND (03)	F09J2		1-30	M			1		P	HAND WIRE	229
GND (03)	F08J2		1-31	M			2		P	HAND WIRE	229
GND (03)	F07J2		1-32	M			1		P	HAND WIRE	229
GND (03)	F06J2		1-33	M			2		P	HAND WIRE	229
GND (03)	F05J2		1-34	M			1		P	HAND WIRE	229
GND (03)	F04J2		1-35	M			2		P	HAND WIRE	229
GND (03)	F03J2		1-36	M			1		P	HAND WIRE	229
GND (03)	F02J2		1-37	M			2		P	HAND WIRE	229
GND (03)	F01J2		1-38	M					P	M TO WHERE	229
GND (03)			1						110-2/8		229

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
H BG IN	D07U2		1-01 •				1				230
H BG IN	F07B1		1-02 •								230
H BG IN			1						5-6/8		230
H BG OUT	D07V2		1-01 •				1				231
H BG OUT	F07A1		1-02 •								231
H BG OUT			1						5-6/8		231
H BR OUT	D07J2		1-01 •				1				232
H BR OUT	F07P1		1-02 •				2				232
H BR OUT	F07U2		1-03 •								232
H BR OUT			1						11-4/8		232
H IN	D07N1		1-01 •				1				233
H IN	E07N1		1-02 •								233
H IN			1						5-2/8		233
H INT A	D07B1		1-01 •				1				234
H INT A	F07U1		1-02 •								234
H INT A			1						8-2/8		234
H INT B	C07J1		1-01 •				1				235
H INT B	F07K2		1-02 •								235
H INT B			1						10-4/8		235
H INT ENB A	D07N1		1-01 •				1				236
H INT ENB A	F07V1		1-02 •								236
H INT ENB A			1						8-4/8		236
H INT ENB B	C07L1		1-01 •				1				237
H INT ENB B	F07N2		1-02 •								237
H INT ENB B			1						10-0/8		237
H OUT HIGH	D07K1		1-01 •				1				238
H OUT HIGH	E07N2		1-02 •								238
H OUT HIGH			1						5-2/8		238
H OUT LOW	D07D1		1-01 •				1				239
H OUT LOW	E07A1		1-02 •								239
H OUT LOW			1						5-6/8		239
H SEL 0	D07F1		1-01 •				1				240
H SEL 0	E07B2		1-02 •								240
H SEL 0			1						6-0/8		240

A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
H SEL 4	D07E1		1-01 •				1				241
H SEL 4	E07A2		1-02 •								241
H SEL 4			1						6-2/8		241
H SEL 6	D07C1		1-01 •				1				242
H SEL 6	E07B1		1-02 •								242
H SEL 6			1						6-2/8		242
H SER 2	D07J1		1-01 •				1				243
H SER 2	F07T2		1-02 •								243
H SER 2			1						6-0/8		243
H SSYN IN H	F07J1		1-01 •				1				244
H SSYN IN H	E07A1		1-02 •								244
H SSYN IN H			1						2-6/8		244
HALT GRANT	C01R1		1-01 •	H			2	P		HAND WIRE	245
HALT GRANT	C02R1		1-02 •	H			1	P		HAND WIRE	245
HALT GRANT	C03M1		1-03 •	H			2	P		HAND WIRE	245
HALT GRANT	C04P1		1-04 •	H			1	P		HAND WIRE	245
HALT GRANT	C05R1		1-05 •	H			2	P		HAND WIRE	245
HALT GRANT	C06R1		1-06 •	H			1	P		HAND WIRE	245
HALT GRANT	C07R1		1-07 •	H			2	P		HAND WIRE	245
HALT GRANT	C08R1		1-08 •	H			1	P		HAND WIRE	245
HALT GRANT	C09R1		1-09 •	H				P		H TO WHERE	245
HALT GRANT			1						22-0/8		245
HALT REQ	C01P1		1-01 •	H			2	P		HAND WIRE	246
HALT REQ	C02P1		1-02 •	H			1	P		HAND WIRE	246
HALT REQ	C03P1		1-03 •	H			2	P		HAND WIRE	246
HALT REQ	C04P1		1-04 •	H			1	P		HAND WIRE	246
HALT REQ	C05P1		1-05 •	H			2	P		HAND WIRE	246
HALT REQ	C06P1		1-06 •	H			1	P		HAND WIRE	246
HALT REQ	C07P1		1-07 •	H			2	P		HAND WIRE	246
HALT REQ	C08P1		1-08 •	H			1	P		HAND WIRE	246
HALT REQ	C09P1		1-09 •	H				P		H TO WHERE	246
HALT REQ			1						22-0/8		246

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
INIT L		A01A1		1-01 •	H			1		P	HAND WIRE	247
INIT L		A02A1		1-02 •	H			2		P	HAND WIRE	247
INIT L		A03A1		1-03 •	H			1		P	HAND WIRE	247
INIT L		A04A1		1-04 •				2			TO HERE	247
INIT L		D01L1		1-05 •	H			1		P	HAND WIRE	247
INIT L		D02L1		1-06 •	H			2		P	HAND WIRE	247
INIT L		D03L1		1-07 •	H			1		P	HAND WIRE	247
INIT L		D04L1		1-08 •	H			2		P	HAND WIRE	247
INIT L		D05L1		1-09 •	H			1		P	HAND WIRE	247
INIT L		D06L1		1-10 •	H			2		P	HAND WIRE	247
INIT L		D07L1		1-11 •	H			1		P	HAND WIRE	247
INIT L		D08L1		1-12 •	H			2		P	HAND WIRE	247
INIT L		D09L1		1-13 •				1			TO HERE	247
INIT L		A05A1		1-14 •	H			2		P	HAND WIRE	247
INIT L		A06A1		1-15 •	H			1		P	HAND WIRE	247
INIT L		A07A1		1-16 •	H			2		P	HAND WIRE	247
INIT L		A08A1		1-17 •	H			1		P	HAND WIRE	247
INIT L		A09A1		1-18 •	H					P	H TO WHERE	247
INIT L				1						65-6/8		247
INT 80IN		B02E1		1-01 •	H			2		P	HAND WIRE	248
INT 80IN		B03E1		1-02 •	H			1		P	HAND WIRE	248
INT 80IN		B04E1		1-03 •	H			2		P	HAND WIRE	248
INT 80IN		B05E1		1-04 •	H			1		P	HAND WIRE	248
INT 80IN		B06E1		1-05 •	H			2		P	HAND WIRE	248
INT 80IN		B07E1		1-06 •	H			1		P	HAND WIRE	248
INT 80IN		B08E1		1-07 •	H					P	H TO WHERE	248
INT 80IN				1						10-4/8		248

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
INTA L		A01B1		1-01 •	H			2		P	HAND WIRE	249
INTA L		A02B1		1-02 •	H			1		P	HAND WIRE	249
INTA L		A03B1		1-03 •	H			2		P	HAND WIRE	249
INTA L		A04B1		1-04 •				1			TO HERE	249
INTA L		F01P1		1-05 •	H			2		P	HAND WIRE	249
INTA L		F02P1		1-06 •	H			1		P	HAND WIRE	249
INTA L		F03P1		1-07 •	H			2		P	HAND WIRE	249
INTA L		F04P1		1-08 •				1			TO HERE	249
INTA L		F05P1		1-09 •	H			2		P	HAND WIRE	249
INTA L		F06P1		1-10 •	H			1		P	HAND WIRE	249
INTA L		F07P1		1-11 •	H			2		P	HAND WIRE	249
INTA L		F08P1		1-12 •	H			1		P	HAND WIRE	249
INTA L		F09P1		1-13 •				2			TO HERE	249
INTA L		A05B1		1-14 •	H			1		P	HAND WIRE	249
INTA L		A06B1		1-15 •	H			2		P	HAND WIRE	249
INTA L		A07B1		1-16 •	H			1		P	HAND WIRE	249
INTA L		A08B1		1-17 •	H			2		P	HAND WIRE	249
INTA L		A09B1		1-18 •	H					P	H TO WHERE	249
INTA L				1						76-2/8		249
J A IN		D08H1		1-01 •				1				250
J A IN		F08M1		1-02 •								250
J A IN				1						5-2/8		250
J BG IN		D05U2		1-01 •				1				251
J BG IN		F08E1		1-02 •								251
J BG IN				1						5-6/8		251
J BG OUT		D08V2		1-01 •				1				252
J BG OUT		F08A1		1-02 •								252
J BG OUT				1						5-6/8		252
J BR OUT		D08J2		1-01 •				1				253
J BR OUT		F08P1		1-02 •				2				253
J BR OUT		F08U2		1-03 •								253
J BR OUT				1						11-4/8		253
J INT A		D08K1		1-01 •				1				254
J INT A		F08U1		1-02 •								254
J INT A				1						8-2/8		254
J INT B		C08J1		1-01 •				1				255
J INT B		F08K2		1-02 •								255
J INT B				1						10-4/8		255

A/P	PIN NAME	ORDER PIN	BAY - ORDER	@	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
J INT ENB A	D08N1		1-01 •				1				256
J INT ENB A	F08V1		1-02 •								256
J INT ENB A			1						8-4/8		256
J INT ENB B	C08L1		1-01 •				1				257
J INT ENB B	F08N2		1-02 •								257
J INT ENB B			1						10-0/8		257
J OUT HIGH	L08A1		1-01 •				1				258
J OUT HIGH	E08N2		1-02 •								258
J OUT HIGH			1						5-2/8		258
J OUT LOW	D08D1		1-01 •				1				259
J OUT LOW	E08N1		1-02 •								259
J OUT LOW			1						5-6/8		259
J SEL 0	D08F1		1-01 •				1				260
J SEL 0	E0882		1-02 •								260
J SEL 0			1						6-0/8		260
J SEL 4	D08E1		1-01 •				1				261
J SEL 4	E08R2		1-02 •								261
J SEL 4			1						6-2/8		261
J SEL 6	D08C1		1-01 •				1				262
J SEL 6	E0881		1-02 •								262
J SEL 6			1						6-2/8		262
J SER 2	D08J1		1-01 •				1				263
J SER 2	F08T2		1-02 •								263
J SER 2			1						6-0/8		263
J SSYN IN N	D08V1		1-01 •				1				264
J SSYN IN N	E0881		1-02 •								264
J SSYN IN N			1						2-6/8		264
K A IN	D09N1		1-01 •				1				265
K A IN	E09N1		1-02 •								265
K A IN			1						5-2/8		265
K BG IN	D09U2		1-01 •				1				266
K BG IN	F0981		1-02 •								266
K BG IN			1						5-6/8		266
K BG OUT	D09V2		1-01 •				1				267
K BG OUT	F09A1		1-02 •								267
K BG OUT			1						5-0/8		267

A/P	PIN NAME	ORDER PIN	BAY - ORDER	@	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
K BR OUT	D09J2		1-01 •				1				268
K BR OUT	F09P1		1-02 •				2				268
K BR OUT	F09U2		1-03 •								268
K BR OUT			1						11-4/8		268
K INT A	D09A1		1-01 •				1				269
K INT A	F09U1		1-02 •								269
K INT A			1						6-2/8		269
K INT A	C09J1		1-01 •				1				270
K INT A	F09K2		1-02 •								270
K INT A			1						10-4/8		270
K INT ENB A	D09N1		1-01 •				1				271
K INT ENB A	F09V1		1-02 •								271
K INT ENB A			1						8-4/8		271
K INT ENB B	C09L1		1-01 •				1				272
K INT ENB B	F09N2		1-02 •								272
K INT ENB B			1						10-0/8		272
K OUT HIGH	D09A1		1-01 •				1				273
K OUT HIGH	E09-2		1-02 •								273
K OUT HIGH			1						5-2/8		273
K OUT LOW	D09D1		1-01 •				1				274
K OUT LOW	F09A1		1-02 •								274
K OUT LOW			1						5-6/8		274
K SEL 0	D09F1		1-01 •				1				275
K SEL 0	E0982		1-02 •								275
K SEL 0			1						6-0/8		275
K SEL 4	D09E1		1-01 •				1				276
K SEL 4	E09R2		1-02 •								276
K SEL 4			1						6-2/8		276
K SEL 6	D09C1		1-01 •				1				277
K SEL 6	E0981		1-02 •								277
K SEL 6			1						6-2/8		277
K SER 2	D09J1		1-01 •				1				278
K SER 2	E09T2		1-02 •								278
K SER 2			1						6-0/8		278

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
K SSYN IN H		D09V1		1-01 *				1				279
K SSYN IN H		E09B1		1-02 *								279
K SSYN IN H				1						2-6/8		279
LTC		C01D1		1-01 *	H			2		P	HAND WIRE	280
LTC		C02D1		1-02 *	H			1		P	HAND WIRE	280
LTC		C03D1		1-03 *	H			2		P	HAND WIRE	280
LTC		C04D1		1-04 *	H			1		P	HAND WIRE	280
LTC		C05D1		1-05 *	H			2		P	HAND WIRE	280
LTC		C06D1		1-06 *	H			1		P	HAND WIRE	280
LTC		C07D1		1-07 *	H			2		P	HAND WIRE	280
LTC		C08D1		1-08 *	H			1		P	HAND WIRE	280
LTC		C09D1		1-09 *	H					P	H TO WHERE	280
LTC				1						22-0/8		280
MSYN L (1)		A01V1		1-01 *				2				281
MSYN L (1)		B02V1		1-02 *				1				281
MSYN L (1)		B03V1		1-03 *				2				281
MSYN L (1)		A04V1		1-04 *	H			1	TWP		HAND WIRE	281
MSYN L (1)		E01E1		1-05 *	H			2		P	HAND WIRE	281
MSYN L (1)		F02E1		1-06 *	H			1		P	HAND WIRE	281
MSYN L (1)		E03E1		1-07 *	H			2		P	HAND WIRE	281
MSYN L (1)		E04E1		1-08 *				1			TO HERE	281
MSYN L (1)		E05E1		1-09 *	H			2		P	HAND WIRE	281
MSYN L (1)		E06E1		1-10 *	H			1		P	HAND WIRE	281
MSYN L (1)		F07E1		1-11 *	H			2		P	HAND WIRE	281
MSYN L (1)		E08E1		1-12 *	H					P	H TO WHERE	281
MSYN L (1)				1						36-6/8		281
MSYN L (2)		F09E1		1-01 *	H			1	TWP		HAND WIRE	282
MSYN L (2)		F05V1		1-02 *				2			TO HERE	282
MSYN L (2)		F06V1		1-03 *				1				282
MSYN L (2)		B07V1		1-04 *				2				282
MSYN L (2)		B08V1		1-05 *				1				282
MSYN L (2)		B09V1		1-06 *								282
MSYN L (2)				1						20-2/8		282
MSYN L (JMP)		E08E1		1-01 *	H			1		P	HAND WIRE	283
MSYN L (JMP)		E09E1		1-02 *							TO HERE	283
MSYN L (JMP)				1						2-6/8		283

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
NPG L		A01M1		1-01 *				1				284
NPG L		C01A1		1-02 *				2				284
NPG L		C01M1		1-03 *	H			1		P	HAND WIRE	284
NPG L		C02A1		1-04 *				2			TO HERE	284
NPG L		C02M1		1-05 *	H			1		P	HAND WIRE	284
NPG L		C03A1		1-06 *				2			TO HERE	284
NPG L		C03B1		1-07 *	H			1		P	HAND WIRE	284
NPG L		C04A1		1-08 *				2			TO HERE	284
NPG L		C04M1		1-09 *	H			1		P	HAND WIRE	284
NPG L		C05A1		1-10 *				2			TO HERE	284
NPG L		C05B1		1-11 *	H			1		P	HAND WIRE	284
NPG L		C06A1		1-12 *				2			TO HERE	284
NPG L		C06M1		1-13 *	H			1		P	HAND WIRE	284
NPG L		C07A1		1-14 *				2			TO HERE	284
NPG L		C07M1		1-15 *	H			1		P	HAND WIRE	284
NPG L		C08A1		1-16 *				2			TO HERE	284
NPG L		C08M1		1-17 *	H			1		P	HAND WIRE	284
NPG L		C09A1		1-18 *				2			TO HERE	284
NPG L		C09M1		1-19 *				1				284
NPG L		A09J1		1-20 *								284
NPG L				1						55-6/8		284
NPR L		A01S2		1-01 *				2				285
NPR L		A02S2		1-02 *				1				285
NPR L		A03S2		1-03 *				2				285
NPR L		A04S2		1-04 *				1				285
NPR L		F01J1		1-05 *	H			2		P	HAND WIRE	285
NPR L		F02J1		1-06 *	H			1		P	HAND WIRE	285
NPR L		F03J1		1-07 *	H			2		P	HAND WIRE	285
NPR L		F04J1		1-08 *	H			1		P	HAND WIRE	285
NPR L		F05J1		1-09 *	H			2		P	HAND WIRE	285
NPR L		F06J1		1-10 *	H			1		P	HAND WIRE	285
NPR L		F07J1		1-11 *	H			2		P	HAND WIRE	285
NPR L		F08J1		1-12 *	H			1		P	HAND WIRE	285
NPR L		F09J1		1-13 *				2			TO HERE	285
NPR L		A05S2		1-14 *				1				285
NPR L		A06S2		1-15 *				2				285
NPR L		A07S2		1-16 *				1				285
NPR L		A08S2		1-17 *				2				285
NPR L		A09S2		1-18 *								285
NPR L				1						72-2/8		285

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
PA L		A01P1		1-01 •	M			1		P	HAND WIRE	286
PA L		A02N1		1-02 •	M			2		P	HAND WIRE	286
PA L		A03N1		1-03 •	M			1		P	HAND WIRE	286
PA L		A04N1		1-04 •				2			TO HERE	286
PA L		C01C1		1-05 •	M			1		P	HAND WIRE	286
PA L		C02C1		1-06 •				2			TO HERE	286
PA L		C03C1		1-07 •				1				286
PA L		C04C1		1-08 •				2				286
PA L		C05C1		1-09 •				1				286
PA L		C06C1		1-10 •				2				286
PA L		C07C1		1-11 •				1				286
PA L		C08C1		1-12 •				2				286
PA L		C09C1		1-13 •				1				286
PA L		A05N1		1-14 •	M			2		P	HAND WIRE	286
PA L		A06N1		1-15 •	M			1		P	HAND WIRE	286
PA L		A07N1		1-16 •	M			2		P	HAND WIRE	286
PA L		A08N1		1-17 •	M			1		P	HAND WIRE	286
PA L		A09N1		1-18 •	M					P	H TO WHERE	286
PA L				1						56-8/8		286
PAR DET		B02E2		1-01 •				2				287
PAR DET		B03E2		1-02 •				1				287
PAR DET		B04E2		1-03 •				2				287
PAR DET		B05E2		1-04 •				1				287
PAR DET		B06E2		1-05 •				2				287
PAR DET		B07E2		1-06 •				1				287
PAR DET		B08E2		1-07 •								287
PAR DET				1						16-4/8		287
PAR P0		A02P1		1-01 •	M			2		P	HAND WIRE	288
PAR P0		A03P1		1-02 •	M			1		P	HAND WIRE	288
PAR P0		A04P1		1-03 •	M			2		P	HAND WIRE	288
PAR P0		A05P1		1-04 •	M			1		P	HAND WIRE	288
PAR P0		A06P1		1-05 •	M			2		P	HAND WIRE	288
PAR P0		A07P1		1-06 •	M			1		P	HAND WIRE	288
PAR P0		A08P1		1-07 •	M					P	H TO WHERE	288
PAR P0				1						16-4/8		288
PAR P1		A02N1		1-01 •	M			2		P	HAND WIRE	289
PAR P1		A03N1		1-02 •	M			1		P	HAND WIRE	289
PAR P1		A04N1		1-03 •	M			2		P	HAND WIRE	289
PAR P1		A05N1		1-04 •	M			1		P	HAND WIRE	289
PAR P1		A06N1		1-05 •	M			2		P	HAND WIRE	289
PAR P1		A07N1		1-06 •	M			1		P	HAND WIRE	289
PAR P1		A08N1		1-07 •	M					P	H TO WHERE	289
PAR P1				1						16-4/8		289

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
PB L		A01N2		1-01 •	M			2		P	HAND WIRE	290
PA L		A02N2		1-02 •	M			1		P	HAND WIRE	290
PB L		A03N2		1-03 •	M			2		P	HAND WIRE	290
PA L		A04N2		1-04 •				1			TO HERE	290
PA L		C01S1		1-05 •	M			2		P	HAND WIRE	290
PA L		C02S1		1-06 •	M			1		P	HAND WIRE	290
PA L		C03S1		1-07 •	M			2		P	HAND WIRE	290
PA L		C04S1		1-08 •	M			1		P	HAND WIRE	290
PA L		C05S1		1-09 •	M			2		P	HAND WIRE	290
PA L		C06S1		1-10 •	M			1		P	HAND WIRE	290
PA L		C07S1		1-11 •	M			2		P	HAND WIRE	290
PA L		C08S1		1-12 •	M			1		P	HAND WIRE	290
PA L		C09S1		1-13 •				2			TO HERE	290
PA L		A05N2		1-14 •	M			1		P	HAND WIRE	290
PA L		A06N2		1-15 •	M			2		P	HAND WIRE	290
PB L		A07N2		1-16 •	M			1		P	HAND WIRE	290
PA L		A08N2		1-17 •				2			TO HERE	290
PB L		A09N2		1-18 •								290
PB L				1						56-6/8		290
RESERVED N BUS		B02A1		1-01 •	M			2		P	HAND WIRE	291
RESERVED N BUS		B03A1		1-02 •	M			1		P	HAND WIRE	291
RESERVED N BUS		B04A1		1-03 •	M			2		P	HAND WIRE	291
RESERVED N BUS		B05A1		1-04 •	M			1		P	HAND WIRE	291
RESERVED N BUS		B06A1		1-05 •	M			2		P	HAND WIRE	291
RESERVED N BUS		B07A1		1-06 •	M			1		P	HAND WIRE	291
RESERVED N BUS		B08A1		1-07 •	M					P	H TO WHERE	291
RESERVED N BUS				1						16-4/8		291

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
SACK L		A01R2		1-01 *	M			2		P	HAND WIRE	292
SACK L		A02R2		1-02 *	M			1		P	HAND WIRE	292
SACK L		A03R2		1-03 *	M			2		P	HAND WIRE	292
SACK L		A04R2		1-04 *				1			TO HERE	292
SACK L		FJ1T2		1-05 *	M			2		P	HAND WIRE	292
SACK L		FJ2I2		1-06 *	M			1		P	HAND WIRE	292
SACK L		F03T2		1-07 *	M			2		P	HAND WIRE	292
SACK L		F04T2		1-08 *	M			1	2FITWP		HAND WIRE	292
SACK L		F05T2		1-09 *	M			2		P	HAND WIRE	292
SACK L		F06T2		1-10 *	M			1		P	HAND WIRE	292
SACK L		F07T2		1-11 *	M			2		P	HAND WIRE	292
SACK L		F08T2		1-12 *	M			1		P	HAND WIRE	292
SACK L		F09T2		1-13 *				2			TO HERE	292
SACK L		A05R2		1-14 *	M			1		P	HAND WIRE	292
SACK L		A06R2		1-15 *	M			2		P	HAND WIRE	292
SACK L		A07R2		1-16 *	M			1		P	HAND WIRE	292
SACK L		A08R2		1-17 *	M			2		P	HAND WIRE	292
SACK L		A09R2		1-18 *	M					P	H TO WHERE	292
SACK L				1						74-4/6		292
SSYN L (1)		B01U1		1-01 *	M			1		P	HAND WIRE	293
SSYN L (1)		B02U1		1-02 *	M			2		P	HAND WIRE	293
SSYN L (1)		B03U1		1-03 *	M			1		P	HAND WIRE	293
SSYN L (1)		B04U1		1-04 *	M			2	TWP		HAND WIRE	293
SSYN L (1)		E01J1		1-05 *	M			1		P	HAND WIRE	293
SSYN L (1)		E02J1		1-06 *	M			2		P	HAND WIRE	293
SSYN L (1)		E03J1		1-07 *	M			1		P	HAND WIRE	293
SSYN L (1)		E04J1		1-08 *				2			TO HERE	293
SSYN L (1)		F04C1		1-09 *	M			1		P	HAND WIRE	293
SSYN L (1)		F03C1		1-10 *	M			2		P	HAND WIRE	293
SSYN L (1)		F02C1		1-11 *	M			1		P	HAND WIRE	293
SSYN L (1)		F01C1		1-12 *							TO HERE	293
SSYN L (1)				1						38-6/8		293

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW RV PG Y	X	Z	REMARKS	LENGTH	EXCEPTIONS	RUN NUMBER
SSYN L (2)		B09U1		1-01 *	M			1		P	HAND WIRE	294
SSYN L (2)		B08U1		1-02 *	M			2		P	HAND WIRE	294
SSYN L (2)		B07U1		1-03 *	M			1		P	HAND WIRE	294
SSYN L (2)		B06U1		1-04 *	M			2		P	HAND WIRE	294
SSYN L (2)		B05U1		1-05 *	M			1	IWP		HAND WIRE	294
SSYN L (2)		E09J1		1-06 *	M			2		P	HAND WIRE	294
SSYN L (2)		E08J1		1-07 *	M			1		P	HAND WIRE	294
SSYN L (2)		E07J1		1-08 *	M			2		P	HAND WIRE	294
SSYN L (2)		F06J1		1-09 *	M			1		P	HAND WIRE	294
SSYN L (2)		E05J1		1-10 *				2			TO HERE	294
SSYN L (2)		F05C1		1-11 *	M			1		P	HAND WIRE	294
SSYN L (2)		F06C1		1-12 *	M			2		P	HAND WIRE	294
SSYN L (2)		F07C1		1-13 *	M			1		P	HAND WIRE	294
SSYN L (2)		F08C1		1-14 *	M			2		P	HAND WIRE	294
SSYN L (2)		F09C1		1-15 *	M					P	H TO WHERE	294
SSYN L (2)				1						47-4/8		294
SSYN L JMP		F05C1		1-01 *	M			1	2FITWP		HAND WIRE	295
SSYN L JMP		F04C1		1-02 *							TO HERE	295
SSYN L JMP				1						2-6/6		295

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY D. Healy	CHECKED D. Healy	SECTION 1
DATE 12 May 76	DATE 12 May 76	
ENG Richard Barry	PROD R.B. Kane	ISSUED SECT. 1
DATE MAY 17, 1976	DATE MAY 17, 1976	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION DD,DC,LC,LD	HC,HD,MC,MD
	EK-11Ø34-OP-PRE	USERS MANUAL	1	1
	ZJØ1Ø-RB	SOFTWARE LIB KIT (PAPER TAPE KIT)	1	1
	MPØØØ44	PRINT SET 11/34 VOL.1	1	1
	EK-KD11E-TM-PRE	KD11-E TECHNICAL MANUAL *	1	1
	EK-MS11E-MM-ØØ1	MS11-E-J MAINTENANCE MANUAL *	1	-
	EK-MM11D-TM-PRE	MM11-D,DP TECHNICAL MANUAL *	-	1
	EK-BA11L-MM-PRE	BA11-L MAINTENANCE MANUAL *	1	1
	EK-M785Ø-MM-PRE	M785Ø MAINTENANCE MANUAL *	1	1
	EK-DL11W-MM-PRE	DL11-W MAINTENANCE MANUAL *	-	-
	EK-M93Ø1-MM-PRE	M93Ø1 MAINTENANCE MANUAL *	1	1
	7008360-1	CABLE ASSY (20 MA) (DL11-WA)	1	1
	BCØ5C-25	CABLE MODEM (EIA) (DL11-WB)	-	-
		* Do not ship to OEM customers.		

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
SHIPPING LIST 11/34 (5 1/4" BA11-L)	NONE	A	PL	11/34-Ø-3		
	SHEET 1 OF 1	DIST.				

DEC FORM DEC 16 (325) 1031 N870
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

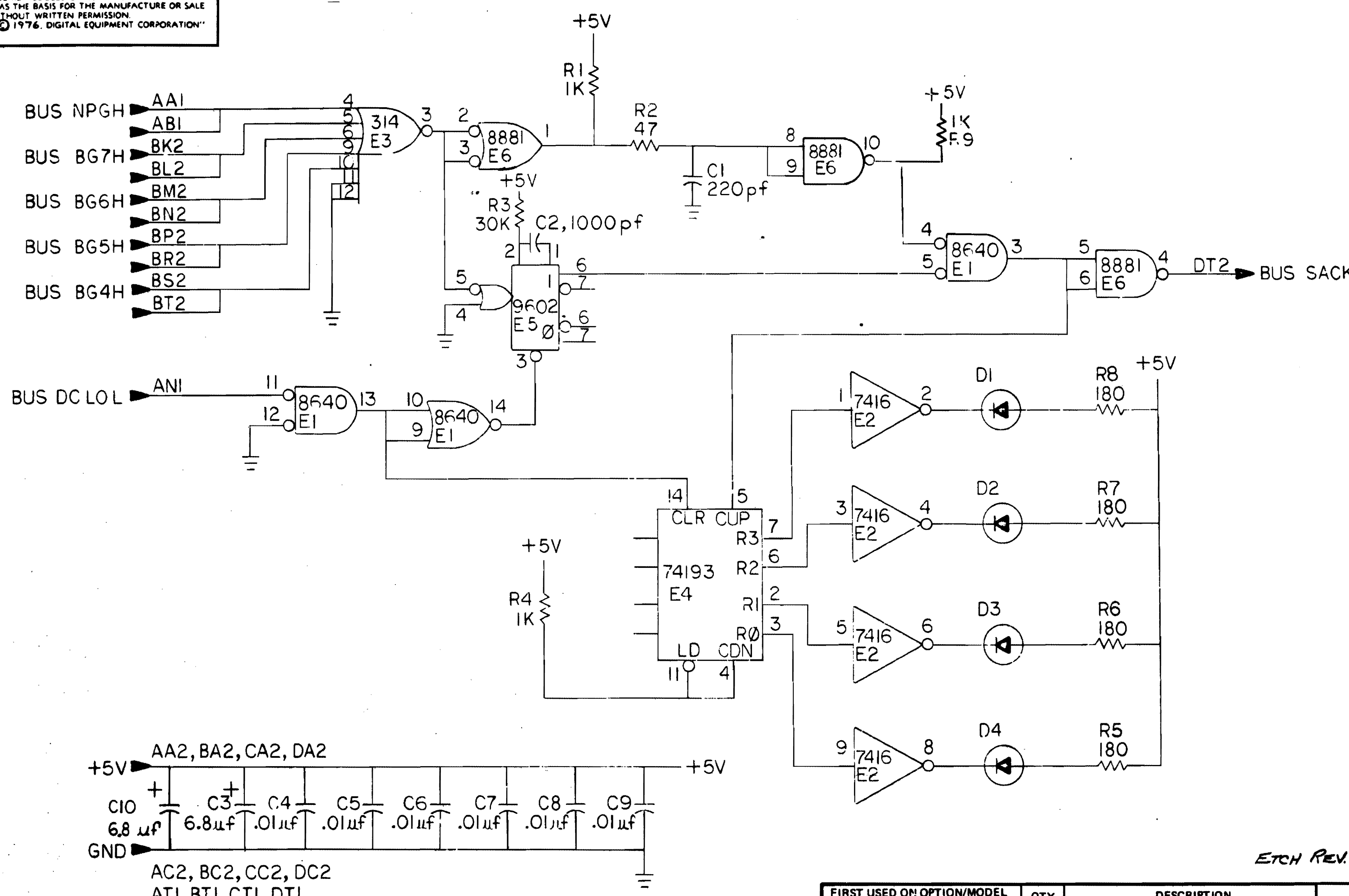
PARTS LIST

MADE BY	D. Healy	CHECKED	D. Healy	SECTION	1
DATE	12 May 76	DATE	12 May 76		
ENG	Richard Barry	PROD	R.E. King	ISSUED SECT.	1
DATE	MAY 17, 1976	DATE	May 17, 1976		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION DH,DJ,LH,LJ	DM,DN,LM,LN	HH,HJ,MH,MJ	HM,HN,MM,MN
	EK-11/Ø34-OP-PRE	USERS MANUAL	1	1	1	1
	ZJØ1Ø-RB	SOFTWARE LIB KIT (PAPER TAPE KIT)	1	1	1	1
	MPØØØ82	PRINT SET 11/34 VOL. 2	1	1	1	1
	EK-KD11-E-TM-PRE	KD11-E TECHNICAL MANUAL *	1	1	1	1
	EK-MS11E-MM-ØØ1	MS11-E-J MAINTENANCE MANUAL *	1	1	-	-
	EK-MM11D-TM-PRE	MM11-D,DP TECHNICAL MANUAL *	-	-	1	1
	EK-BA11K-MM-ØØ2	BA11-K MAINTENANCE MANUAL *	1	1	1	1
	EK-M785Ø-MM-PRE	M785Ø MAINTENANCE MANUAL *	1	1	1	1
	EK-DL11W-MM-PRE	DL11-W MAINTENANCE MANUAL *	-	1	-	1
	EK-M93Ø1-MM-PRE	M93Ø1 MAINTENANCE MANUAL *	1	1	1	1
	7008360-1	CABLE ASSY (20 MA) DL11-WA	-	1	-	1
	BCØ5C-25	CABLE MODEM (EIA) DL11-WB	-	-	-	-
	1211825	CHASSIS TRACKS & MTG HDW.	1	1	1	1
	7010059	SHIPPING BRACKET	1	1	1	1
		* Do not ship to OEM customers.				

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
SHIPPING LIST 11/34 (10 1/2" BA11-K)	NONE	A	PL	11/34-Ø-4		
	SHEET 1 OF 1	DIST.				

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



ETCH REV. B

NOTES:
1. ALL DIODES ARE 1110324 DEC NUMBER
2. E7, E8, ARE SPARE IC LOCATIONS

REVISIONS	CHANGE NO.	REV.	CHK

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

		DATE
DRN.	Paul Hufon	7/3/76
CHK'D	[signature]	8-12-76
ENG.	Bill Bunte	8-12-76
PROJ. ENG.	Bill Bunte	8-12-76
PROD.	[signature]	8-12-76

NEXT HIGHER ASSY.

SCALE — / /

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE

NO SACK TIMEOUT MODULE

SIZE	CODE	NUMBER	REV.
C	CS	M8264-0-1	A

DIST.

DEC FORM NO. DRC 111