SIZE	CODE	NUMBER	REV.
B	DD	M8545-Ø	

DRAWING NO.	NO. OF SHTS	PART NO.	DESCRIPTION	REVISIONS
			MODULE REVISION	A
D-UA-M8545-Ø-Ø	5		APR BOARD	-
D-CS-M8545-Ø-APR1	1		APR BOARD APR REGISTER A	-
D-CS-M8545-Ø-APR2	1		APR BOARD APR REGISTER B	-
D-CS-M8545-Ø-APR3	1		APR BOARD I/O CONTROL	-
D-CS-M8545-Ø-APR4	1		APR BOARD FAST MEM ADDRESS	-
D-CS-M8545-Ø-APR5	1		APR BOARD FAST MEM BLOCK	-
D-CS-M8545-Ø-APR6	1		APR BOARD DIAGNOSTICS	-
D-CS-M8545-Ø-APR7	1		APR BOARD POWER, GND, CAPS	-
D-CS-M8545-Ø-RES	1		APR BOARD TERMINATORS	-
D-AH-M8545-Ø-5	4		APR BOARD	-
		5011890	ETCHED CIRCUIT BOARD	C
M8545-Ø-L	-		P.C. DESIGN DATA BASE	REF
M8545-Ø-PL	-		INSERTION P/L DATA BASE	REF
POO-M8545-ØØ	-		PROCESS SHEETS	REF

NOTES:

REVISIONS	DATE	CHG NO.	REV

digital

USED ON OPTION/MODEL	
KL1Ø	

DRN	Richard T.	10/NOV/76
CHK'D	[illegible]	10 NOV 76
ENG	Tom Spera	12 Nov 76
PROD.	W. Embley	12 NOV 76

TITLE: APR MODULE

SIZE	CODE	NUMBER	REV.
B	DD	M8545-Ø	

SHEET 1 OF 1

MR

25(QTY 12)

24

SPARES

SPARES

NOTES:

CHK	CHANGE NO	REV

ETCH REV. C
P.C. DESIGN DATA BASE REV. C

SIGNATURES	DATE
DRN. R.W. Counter	12MAY76
CHK'D.	17NOV76
ENG. Tim Tyce	5NOV76
PROJ.ENG. Tim Tyce	5NOV76
PROD. W. Epley	12NOV76

digital

TITLE: APR BOARD

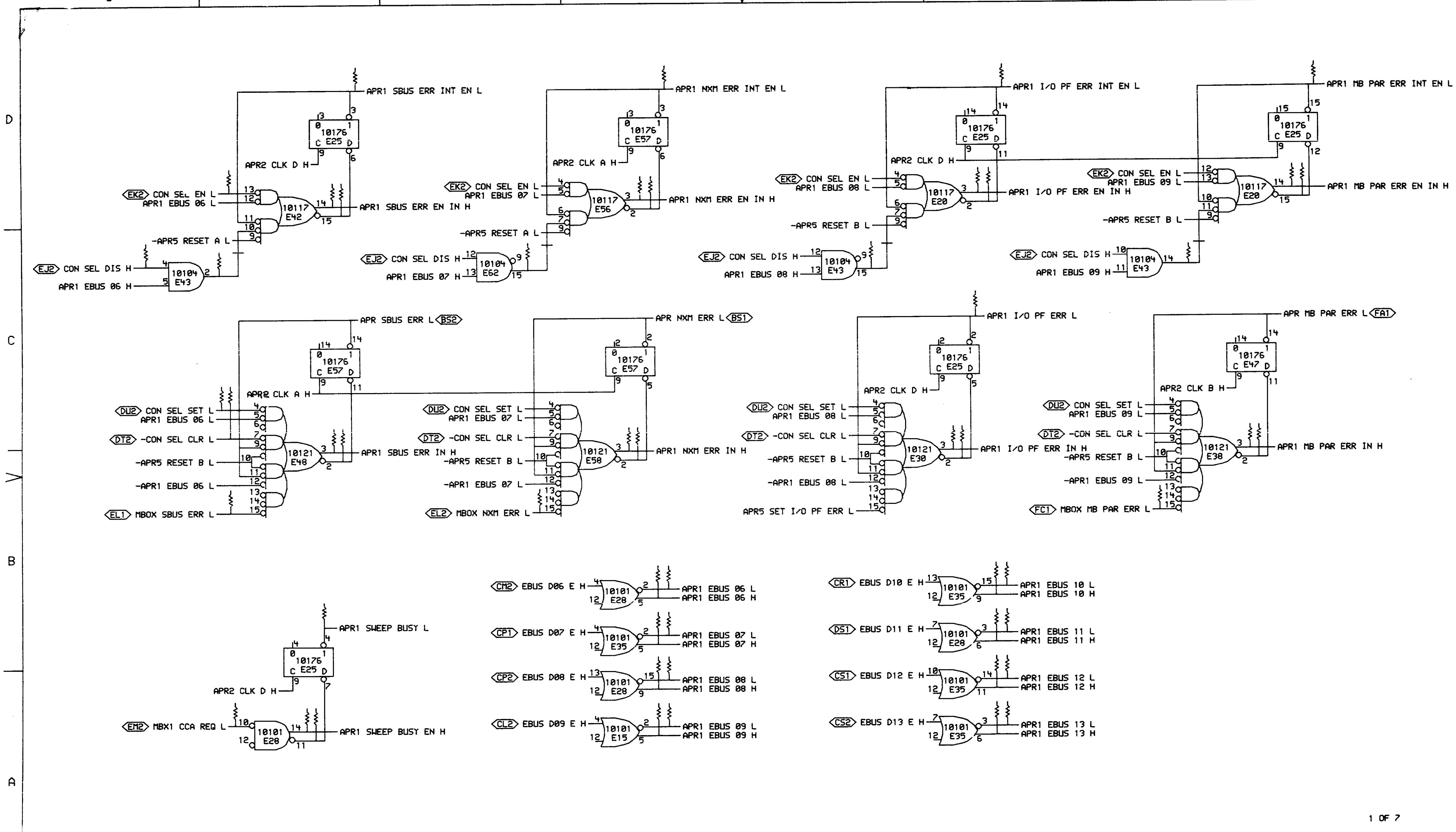
SCALE 2/1
SHT. 2 OF 5

SIZE	CODE	NUMBER	REV
D	UA	M8545-Ø-Ø	

NEXT HIGHER ASSY. B-DD-M8545-Ø

MR1 MS# 30195

383



1 OF 7

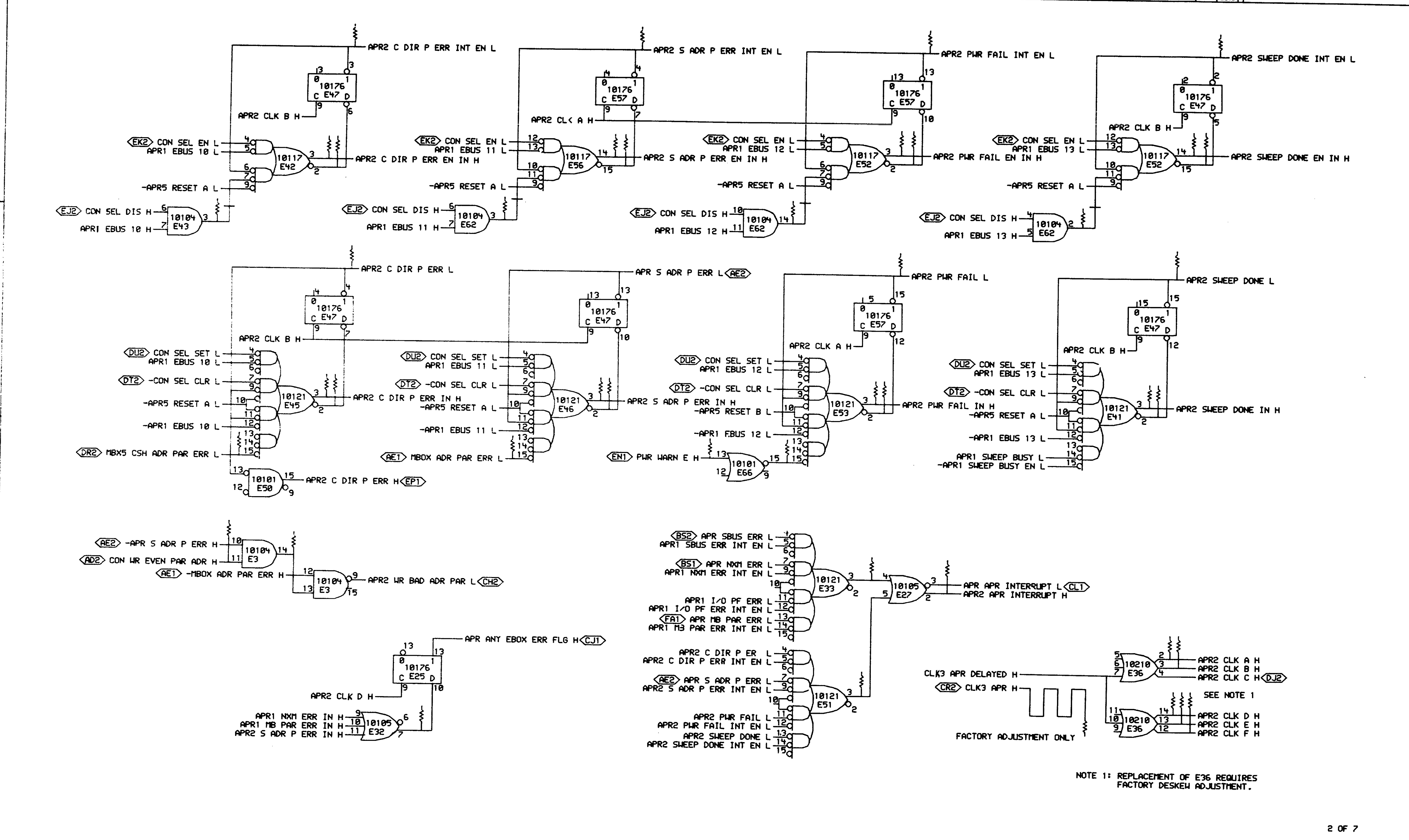
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. [signature] DATE 01-NOV-76 ENG. Tom Eggers DATE 3 Nov 76
CHK'D. Tom Eggers DATE 3 Nov 76 BOARD LOCATION: 4AF34 SHEET 1 OF 1
APR1EC.RLS[4,161] 30-OCT-76 20:45 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: KL10 B-DD-M8545-0

TITLE: APR BOARD
APR REGISTER A

SIZE D CODE CS NUMBER M8545-0-APR1 REV.



REVISIONS		
CHK	CHANGE NO.	REV

digital

DATE 01-NOV-76 · DATE 3 Nov 76 · BOARD LOCATION: 4AF34 · SHEET 1 OF 1

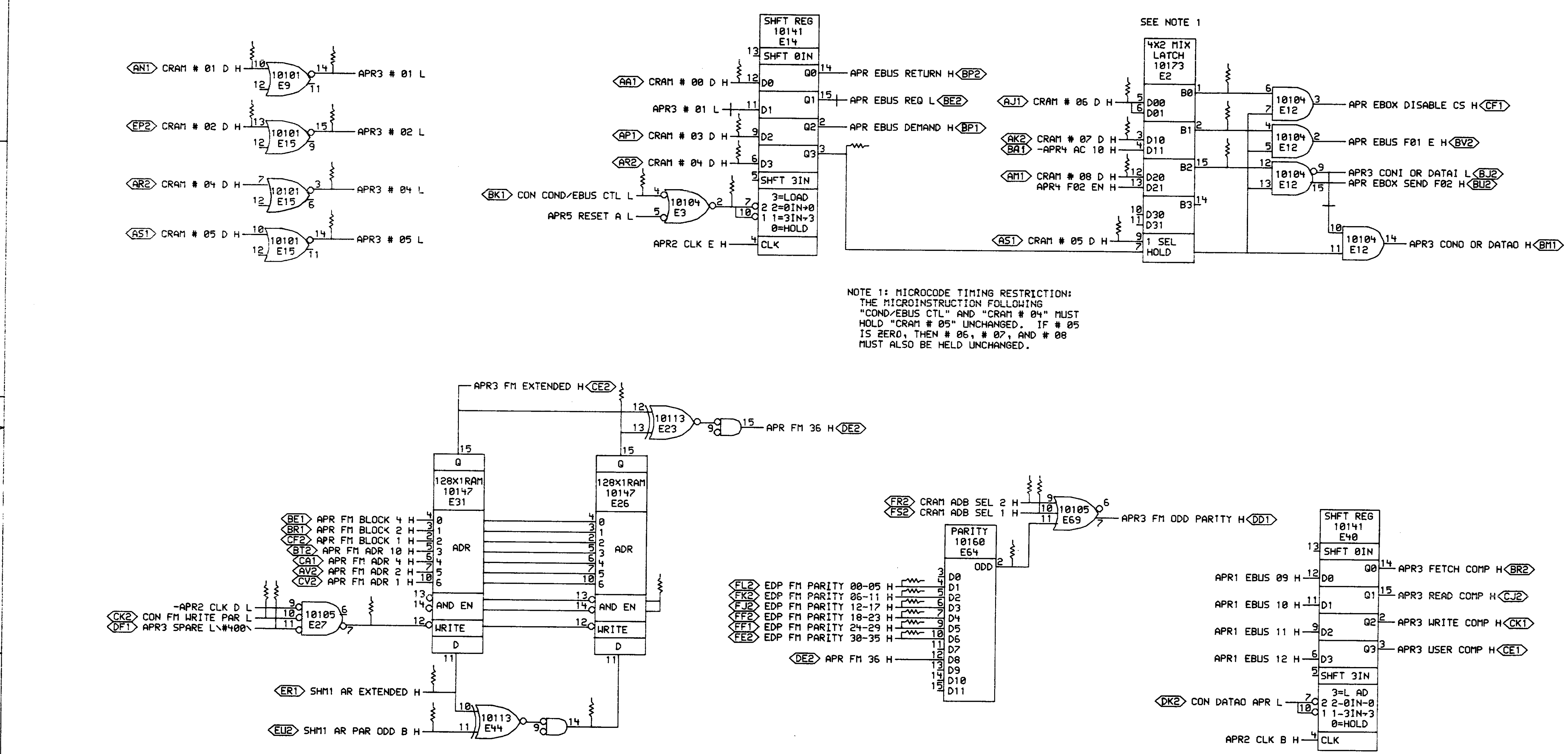
APR2EC.RLS[4,161] 30-OCT-76 20:46 · NEXT HIGHER ASSEMBLY: B-DD-M8545-0

FIRST USED ON OPTION/MODEL: KL10

TITLE: APR BOARD
APR REGISTER B

SIZE	CODE	NUMBER	REV.
D	CS	M8545-0-APR2	

385



NOTE 1: MICROCODE TIMING RESTRICTION: THE MICROINSTRUCTION FOLLOWING "COND/EBUS CTL" AND "CRAM # 04" MUST HOLD "CRAM # 05" UNCHANGED. IF # 05 IS ZERO, THEN # 06, # 07, AND # 08 MUST ALSO BE HELD UNCHANGED.

3 OF 7

REVISIONS		
CHK	CHANGE NO.	REV

digital

APR3EC.RLS[4,161] 04-NOV-76 11:37

FIRST USED ON OPTION/MODEL: KL10

DATE 05-NOV-76 | ENG. Tom Eggers | DATE 5 Nov 76

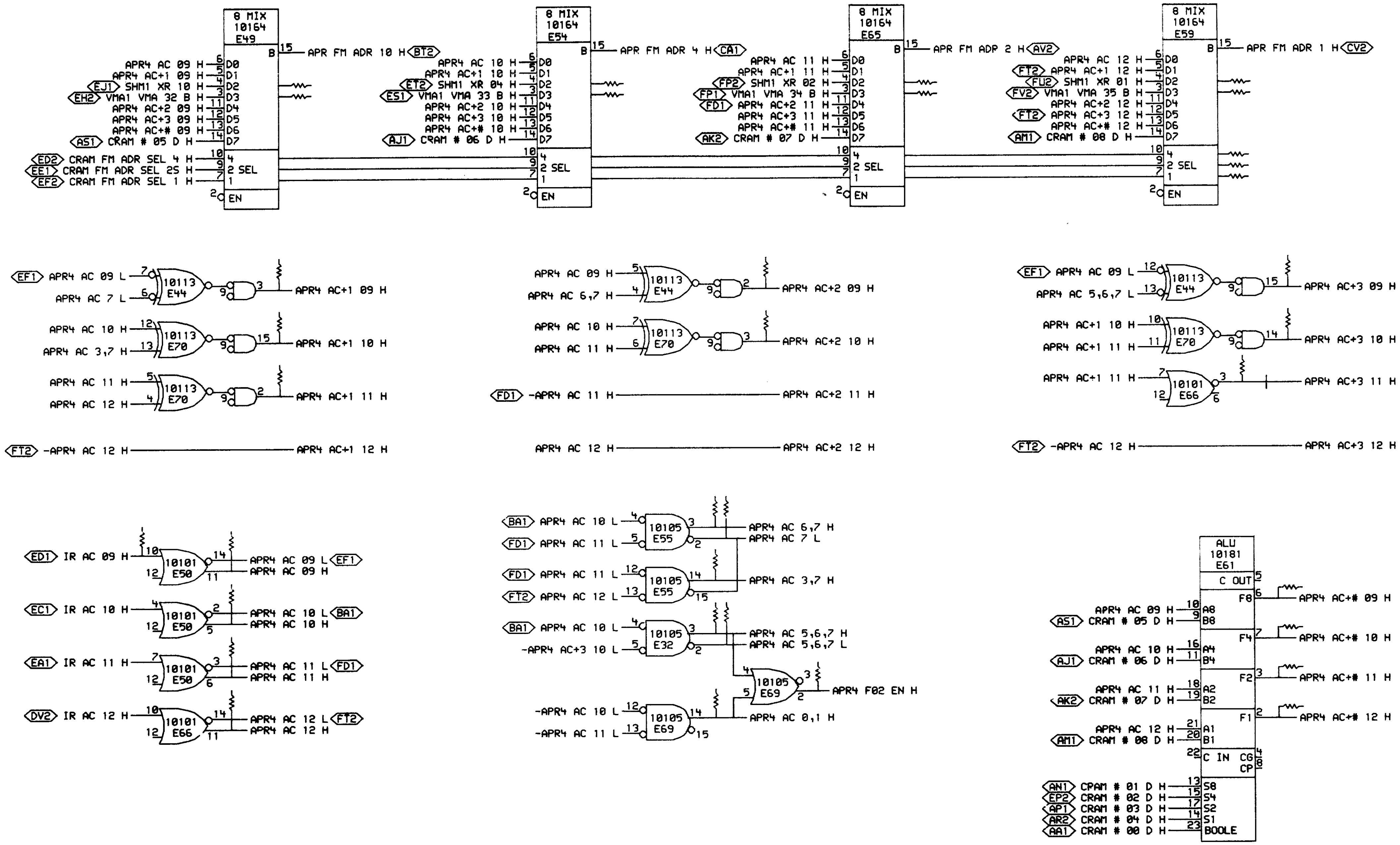
BOARD LOCATION: 4AF34

SHEET 1 OF 1

NEXT HIGHER ASSEMBLY: B-DD-M8545-0

TITLE: APR BOARD I/O CONTROL

SIZE	CODE	NUMBER	REV.
D	CS	M8545-0-APR3	



4 OF 7

REVISIONS		
CHK	CHANGE NO.	REV

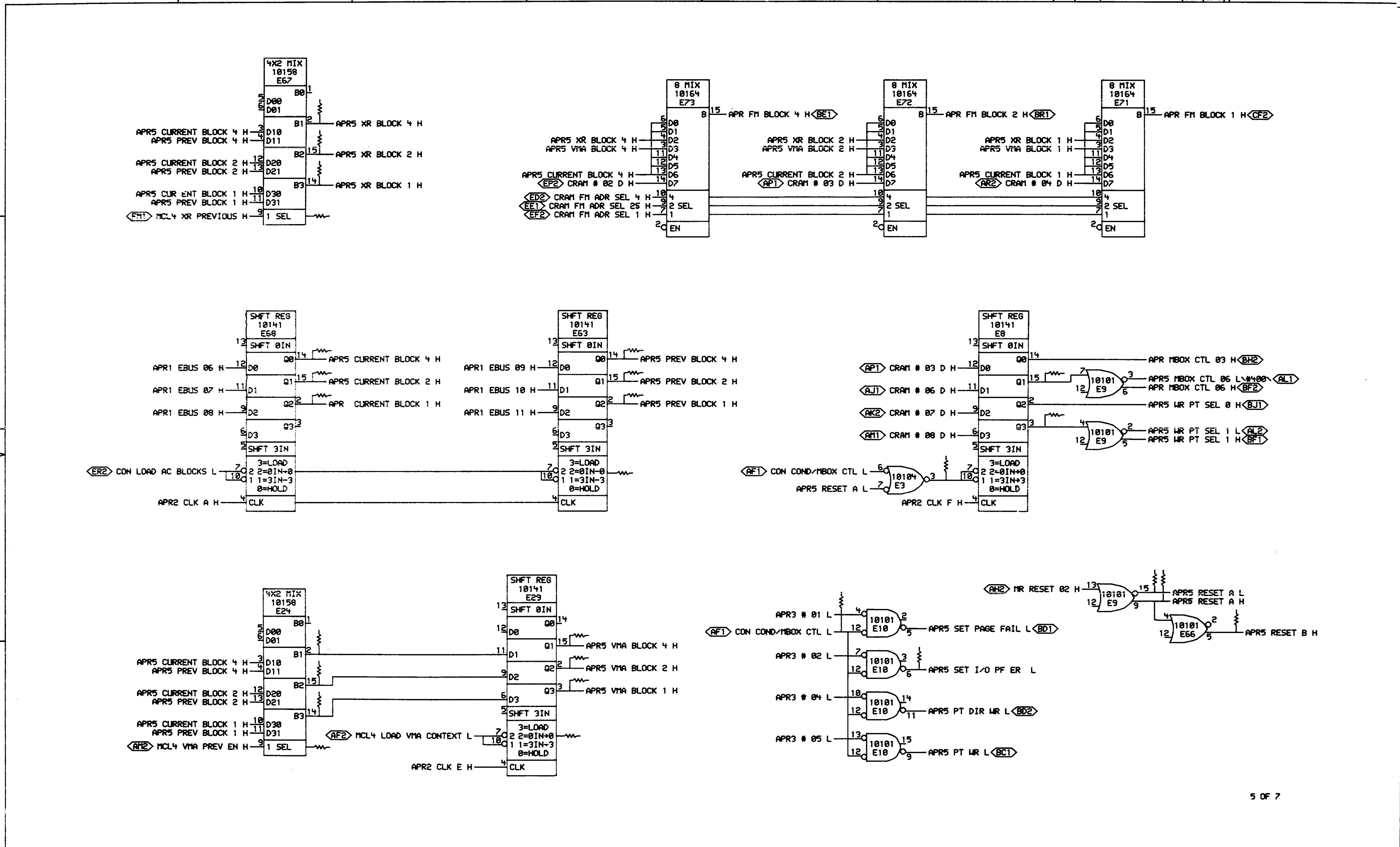
digital

DRN.	DATE 01-NOV-76	ENG. Tom Eggers	DATE 3 Nov 76
CHK'D. Tom Eggers	DATE 3 Nov 76	BOARD LOCATION: 4AF34	SHEET 1 OF 1
APR4EC.RLS[4,161]	30-OCT-76 20:47	NEXT HIGHER ASSEMBLY: B-DD-M8545-0	
FIRST USED ON OPTION/MODEL: KL10			

TITLE: APR BOARD FAST MEM ADDRESS

SIZE	CODE	NUMBER	REV.
D	CS	M8545-0-APR4	

397



REVISIONS		
CHK	CHANGE NO.	REV

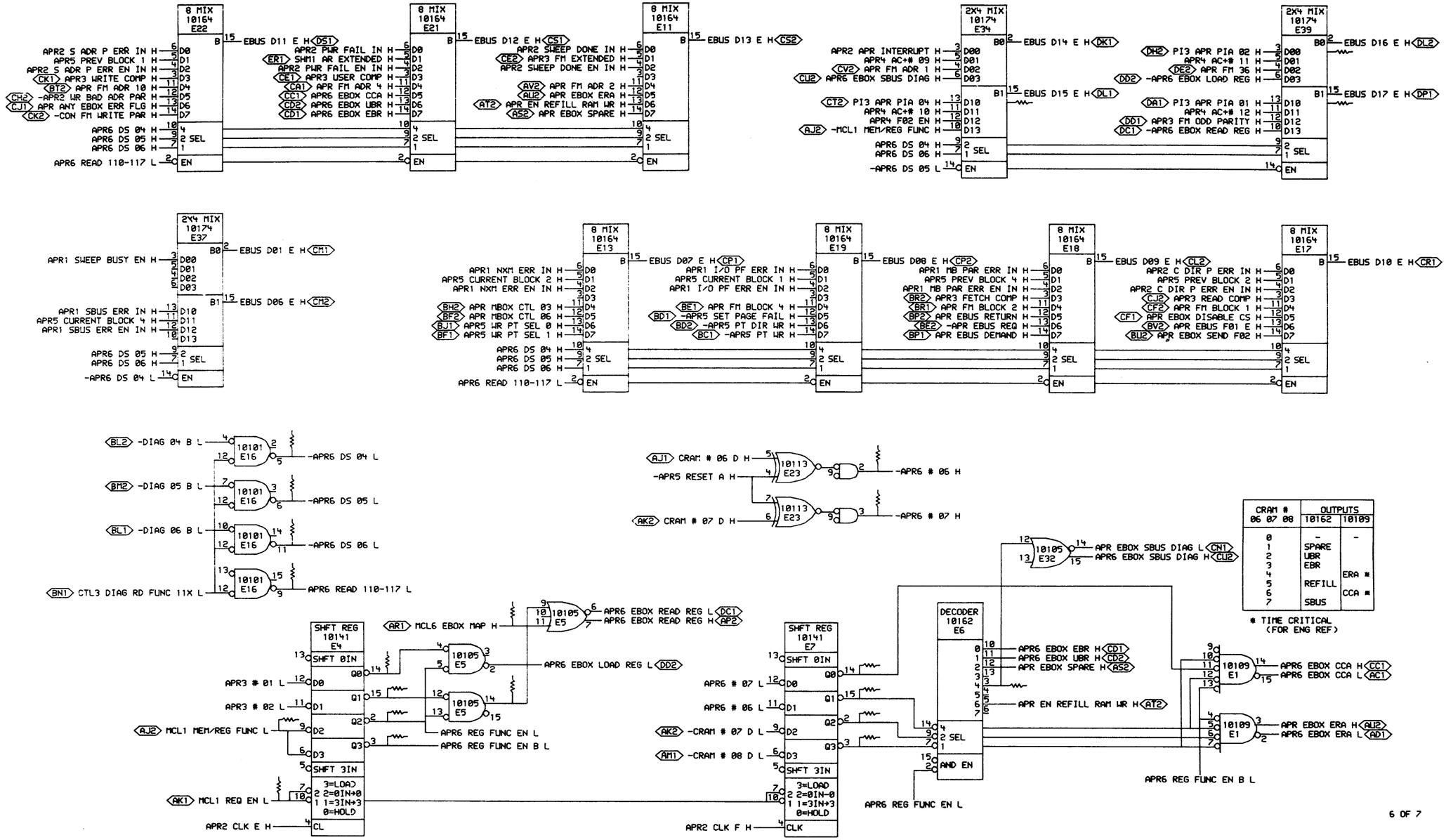
digital

DR	DATE 01-NOV-76	ENG	DATE 3 Nov 76
CHK'D	DATE 3 Nov 76	BOARD LOCATION: 4AF34	
		SHEET 1 OF 1	
APR*EC.RLS[4,161] 30-OCT-76 20:47		NEXT HIGHER ASSEMBLY: B-DD-M8545-0	
FIRST USED ON OPTION/MODEL: KL10			

TITLE: APR BOARD FAST MEM BLOCK

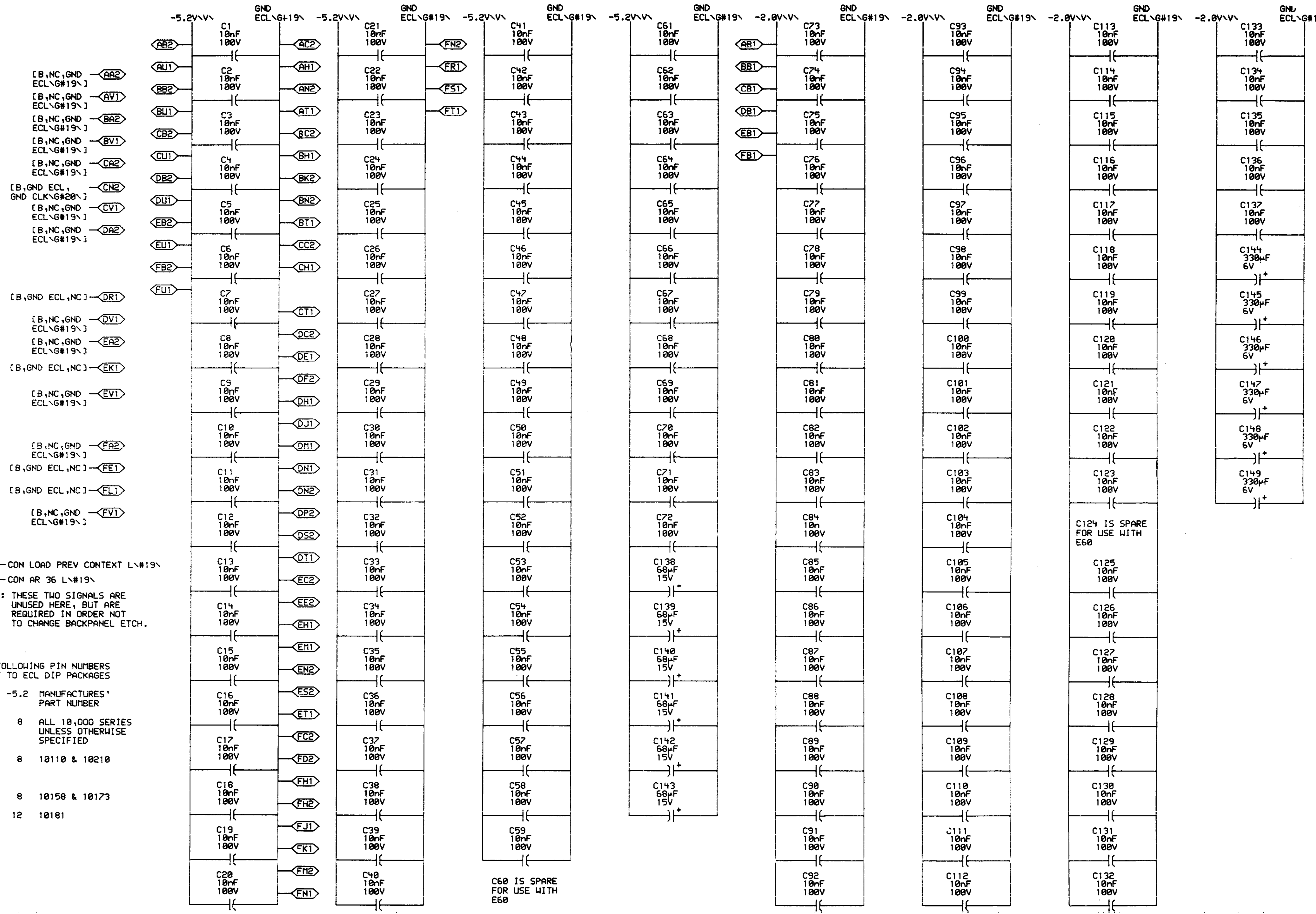
SIZE	CODE	NUMBER	REV.
D	CS	M8545-0-APR5	

308



REVISIONS		
CHK	CHANGE NO.	REV

digital	DRN. J. Toomey	DATE 01-NOV-76	ENG. Tom Eggen	DATE 3 Nov 76	TITLE: APR BOARD DIAGNOSTICS
	CHK'D. Tom Eggen	DATE 3 Nov 76	BOARD LOCATION: 4AF34		
APRSEC.RLS[4,161]	30-OCT-76 20:48	NEXT HIGHER ASSEMBLY:	SHEET 1 OF 1		
FIRST USED ON OPTION/MODEL: KL10		B-DD-M8545-0	SIZE D	CODE CS	NUMBER M8545-0-APR6 REV.



DR2 — CON LOAD PREV CONTEXT L\#19\
EV2 — CON AR 36 L\#19\

NOTE: THESE TWO SIGNALS ARE UNUSED HERE, BUT ARE REQUIRED IN ORDER NOT TO CHANGE BACKPANEL ETCH.

NOTE:

1. THE FOLLOWING PIN NUMBERS APPLY TO ECL DIP PACKAGES

GND	-5.2	MANUFACTURES' PART NUMBER
1 16	8	ALL 10,000 SERIES UNLESS OTHERWISE SPECIFIED
1 15 16	8	10110 & 10210
16	8	10158 & 10173
1 24	12	10181

7 OF 7

REVISIONS: CHK | CHANGE NO. | REV

digital

DRN: [signature] DATE 03-NOV-76 | ENG: [signature] DATE 3 Nov 76
CHK: [signature] DATE 11/3/76 | BOARD LOCATION: 4HF34 | SHEET 1 OF 1
APR7EC.RLS[4,161] 07-NOV-76 12:22 | NEXT HIGHER ASSEMBLY: B-DD-M8545-0
FIRST USED ON OPTION/MODEL: KL10

TITLE: APR BOARD POWER, GND, CAPS

SIZE D | CODE CS | NUMBER M8545-0-APR7 | REV.

390

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R130(1)	APR3	D4	68Ω	%E14(3)
R136(1)	APR3	D3	68Ω	%E2(1)
R132(1)	APR3	D3	68Ω	%E2(15)
R137(1)	APR3	D3	68Ω	%E2(2)
R17(1)	APR1	D1	68Ω	%E20(15)
R10(1)	APR1	D3	68Ω	%E20(2)
R65(1)	APR5	A7	68Ω	%E24(14)
R62(1)	APR5	A7	68Ω	%E24(15)
R61(1)	APR5	A7	68Ω	%E24(2)
R174(1)	APR3	B5	68Ω	%E26(13)
R105(1)	APR3	B6	68Ω	%E26(15)
R173(1)	APR3	B7	68Ω	%E27(7)
R19(1)	APR1	A7	68Ω	%E28(11)
R95(1)	APR2	B7	68Ω	%E3(14)
R56(1)	APR3	C5	68Ω	%E3(2)
R94(1)	APR5	B3	68Ω	%E3(3)
R18(1)	APR1	C3	68Ω	%E30(2)
R20(1)	APR2	A6	68Ω	%E32(7)
R147(1)	APR2	B4	68Ω	%E33(3)
R71(1)	APR1	C2	68Ω	%E38(2)
R1(1)	APR6	A6	68Ω	%E4(14)
R2(1)	APR6	A6	68Ω	%E4(15)
R70(1)	APR2	C2	68Ω	%E41(2)
R22(1)	APR1	D7	68Ω	%E42(15)
R74(1)	APR2	D7	68Ω	%E42(2)
R15(1)	APR1	C2	68Ω	%E43(14)
R13(1)	APR1	C4	68Ω	%E43(15)
R69(1)	APR1	C7	68Ω	%E43(2)
R73(1)	APR2	C7	68Ω	%E43(3)
R172(1)	APR3	A6	68Ω	%E44(14)
R76(1)	APR2	C7	68Ω	%E45(2)
R77(1)	APR2	C5	68Ω	%E46(2)
R81(1)	APR1	C7	68Ω	%E48(2)
R3(1)	APR6	A6	68Ω	%E5(14)
R148(1)	APR2	A4	68Ω	%E51(3)
R78(1)	APR2	D2	68Ω	%E52(15)
R84(1)	APR2	D3	68Ω	%E52(2)
R80(1)	APR2	C3	68Ω	%E53(2)
R85(1)	APR2	D5	68Ω	%E56(15)
R86(1)	APR1	D5	68Ω	%E56(2)
R87(1)	APR1	C5	68Ω	%E58(2)
R146(1)	APR6	A3	68Ω	%E6(3)
R83(1)	APR2	C4	68Ω	%E62(14)
R118(1)	APR1	C6	68Ω	%E62(15)
R82(1)	APR2	C2	68Ω	%E62(2)
R117(1)	APR2	C6	68Ω	%E62(3)
R210(1)	APR3	B4	68Ω	%E64(2)
R35(1)	APR2	B4	68Ω	%E66(15)
R164(1)	APR6	A4	68Ω	%E7(14)
R162(1)	APR6	A4	68Ω	%E7(15)

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R165(1)	APR6	A4	68Ω	%E7(2)
R163(1)	APR6	A4	68Ω	%E7(3)
R55(1)	APR5	C3	68Ω	%E8(15)
R54(1)	APR5	C3	68Ω	%E8(3)
R44(1)	APR1	B5	68Ω	APR1 EBUS 06 H
R32(1)	APR1	B5	68Ω	-APR1 EBUS 06 H
R39(1)	APR1	B5	68Ω	APR1 EBUS 07 H
R40(1)	APR1	B5	68Ω	-APR1 EBUS 07 H
R43(1)	APR1	B5	68Ω	APR1 EBUS 08 H
R12(1)	APR1	B5	68Ω	-APR1 EBUS 08 H
R37(1)	APR1	A5	68Ω	APR1 EBUS 09 H
R30(1)	APR1	A5	68Ω	-APR1 EBUS 09 H
R38(1)	APR1	B3	68Ω	APR1 EBUS 10 H
R72(1)	APR1	B3	68Ω	-APR1 EBUS 10 H
R41(1)	APR1	B3	68Ω	APR1 EBUS 11 H
R119(1)	APR1	B3	68Ω	-APR1 EBUS 11 H
R88(1)	APR1	B3	68Ω	APR1 EBUS 12 H
R36(1)	APR1	B3	68Ω	-APR1 EBUS 12 H
R89(1)	APR1	A3	68Ω	APR1 EBUS 13 H
R79(1)	APR1	A3	68Ω	-APR1 EBUS 13 H
R27(1)	APR1	C3	68Ω	-APR1 I/O PF ERR H
R59(1)	APR1	D3	68Ω	APR1 I/O PF ERR EN IN H
R58(1)	APR1	C3	68Ω	APR1 I/O PF ERR IN H
R23(1)	APR1	D3	68Ω	-APR1 I/O PF ERR INT EN H
R102(1)	APR1	D1	68Ω	APR1 MB PAR ERR EN IN H
R101(1)	APR1	C2	68Ω	APR1 MB PAR ERR IN H
R24(1)	APR1	D1	68Ω	-APR1 MB PAR ERR INT EN H
R99(1)	APR1	D5	68Ω	APR1 NXM ERR EN IN H
R98(1)	APR1	C5	68Ω	APR1 NXM ERR IN H
R28(1)	APR1	D5	68Ω	-APR1 NXM ERR INT EN H
R66(1)	APR1	D7	68Ω	APR1 SBUS ERR EN IN H
R67(1)	APR1	C7	68Ω	APR1 SBUS ERR IN H
R68(1)	APR1	D7	68Ω	-APR1 SBUS ERR INT EN H
R109(1)	APR1	B7	68Ω	-APR1 SWEEP BUSY H
R110(1)	APR1	A7	68Ω	APR1 SWEEP BUSY EN H
R170(1)	APR2	B3	68Ω	APR2 APR INTERRUPT H
R152(1)	APR2	C6	68Ω	-APR2 C DIR P ERR H
R140(1)	APR2	D7	68Ω	APR2 C DIR P ERR EN IN H
R138(1)	APR2	C7	68Ω	APR2 C DIR P ERR IN H
R116(1)	APR2	D6	68Ω	-APR2 C DIR P ERR INT EN H
R42(1)	APR2	A2	68Ω	APR2 CLK A H
R75(1)	APR2	A2	68Ω	APR2 CLK B H
R21(1)	APR2	A2	68Ω	APR2 CLK D H
R51(1)	APR2	A2	68Ω	APR2 CLK E H
R133(1)	APR2	A2	68Ω	APR2 CLK F H
R115(1)	APR2	C3	68Ω	-APR2 PWR FAIL H
R169(1)	APR2	D3	68Ω	APR2 PWR FAIL EN IN H
R171(1)	APR2	C4	68Ω	APR2 PWR FAIL IN H
R111(1)	APR2	D3	68Ω	-APR2 PWR FAIL INT EN H
R144(1)	APR2	D5	68Ω	APR2 S ADR P ERR EN IN H
R142(1)	APR2	C5	68Ω	APR2 S ADR P ERR IN H
R114(1)	APR2	D5	68Ω	-APR2 S ADR P ERR INT EN H
R108(1)	APR2	C2	68Ω	-APR2 SWEEP DONE H
R168(1)	APR2	D2	68Ω	APR2 SWEEP DONE EN IN H
R167(1)	APR2	C2	68Ω	APR2 SWEEP DONE IN H

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R112(1)	APR2	D2	68Ω	-APR2 SWEEP DONE INT EN H
R7(1)	APR3	D7	68Ω	-APR3 # 01 H
R53(1)	APR3	D7	68Ω	-APR3 # 02 H
R8(1)	APR3	C7	68Ω	-APR3 # 04 H
R6(1)	APR3	C7	68Ω	-APR3 # 05 H
R149(1)	APR3	B7	68Ω	APR3 SPARE L\#400\
R214(1)	APR4	B4	68Ω	APR4 AC 0,1 H
R125(1)	APR4	B7	68Ω	APR4 AC 09 H
R160(1)	APR4	B7	68Ω	APR4 AC 10 H
R208(1)	APR4	B7	68Ω	APR4 AC 11 H
R159(1)	APR4	B7	68Ω	APR4 AC 12 H
R156(1)	APR4	B4	68Ω	APR4 AC 3,7 H
R209(1)	APR4	B4	68Ω	APR4 AC 5,6,7 H
R183(1)	APR4	B4	68Ω	-APR4 AC 5,6,7 H
R190(1)	APR4	B4	68Ω	APR4 AC 6,7 H
R191(1)	APR4	B4	68Ω	-APR4 AC 7 H
R179(1)	APR4	B2	68Ω	APR4 AC+0 09 H
R180(1)	APR4	B2	68Ω	APR4 AC+0 10 H
R185(1)	APR4	B2	68Ω	APR4 AC+0 11 H
R187(1)	APR4	B2	68Ω	APR4 AC+0 12 H
R194(1)	APR4	C6	68Ω	APR4 AC+1 09 H
R199(1)	APR4	C6	68Ω	APR4 AC+1 10 H
R129(1)	APR4	C6	68Ω	APR4 AC+1 11 H
R189(1)	APR4	C4	68Ω	APR4 AC+2 09 H
R196(1)	APR4	C4	68Ω	APR4 AC+2 10 H
R188(1)	APR4	C2	68Ω	APR4 AC+3 09 H
R150(1)	APR4	C2	68Ω	APR4 AC+3 10 H
R154(1)	APR4	C2	68Ω	APR4 AC+3 11 H
R131(1)	APR4	B4	68Ω	APR4 F02 EN H
R60(1)	APR5	C7	68Ω	APR5 CURRENT BLOCK 1 H
R100(1)	APR5	C7	68Ω	APR5 CURRENT BLOCK 2 H
R63(1)	APR5	C7	68Ω	APR5 CURRENT BLOCK 4 H
R145(1)	APR5	C5	68Ω	APR5 PREV BLOCK 1 H
R141(1)	APR5	C5	68Ω	APR5 PREV BLOCK 2 H
R103(1)	APR5	C5	68Ω	APR5 PREV BLOCK 4 H
R123(1)	APR5	B2	68Ω	APR5 RESET A H
R106(1)	APR5	B2	68Ω	-APR5 RESET A H
R14(1)	APR5	B1	68Ω	APR5 RESET B H
R16(1)	APR5	A3	68Ω	-APR5 SET I/O PF ERR H
R120(1)	APR5	A5	68Ω	APR5 VMA BLOCK 1 H
R92(1)	APR5	A5	68Ω	APR5 VMA BLOCK 2 H
R45(1)	APR5	B5	68Ω	APR5 VMA BLOCK 4 H
R127(1)	APR5	D7	68Ω	APR5 XR BLOCK 1 H
R90(1)	APR5	D7	68Ω	APR5 XR BLOCK 2 H
R46(1)	APR5	D7	68Ω	APR5 XR BLOCK 4 H
R134(1)	APR6	B4	68Ω	-APR6 # 06 H
R135(1)	APR6	B4	68Ω	-APR6 # 07 H
R181(1)	APR6	B7	68Ω	APR6 DS 04 H
R177(1)	APR6	B7	68Ω	APR6 DS 05 H
R186(1)	APR6	B7	68Ω	APR6 DS 06 H
R139(1)	APR6	B7	68Ω	-APR6 READ 110-117 H
R166(1)	APR6	A6	68Ω	-APR6 REG FUNC EN H
R161(1)	APR6	A6	68Ω	-APR6 REG FUNC EN B H
R107(1)	APR2	A2	68Ω	CLK3 APR H
R96(1)	APR3	C5	68Ω	-CON COND/EBUS CTL H

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R9(1)	APR5	B4	68Ω	-CON COND/MBOX CTL H
R143(1)	APR3	B7	68Ω	-CON FM WRITE PAR H
R47(1)	APR5	B5	68Ω	-CON LOAD AC BLOCKS H
R26(1)	APR1	C7	68Ω	CON SEL CLR H
R33(1)	APR1	C8	68Ω	CON SEL DIS H
R11(1)	APR1	D7	68Ω	-CON SEL EN H
R25(1)	APR1	C7	68Ω	-CON SEL SET H
R97(1)	APR2	B7	68Ω	CON WR EVEN PAR ADR H
R120(1)	APR3	D5	68Ω	CRAM # 00 D H
R121(1)	APR3	D7	68Ω	CRAM # 01 D H
R5(1)	APR3	D7	68Ω	CRAM # 02 D H
R93(1)	APR3	D5	68Ω	CRAM # 03 D H
R126(1)	APR3	D5	68Ω	CRAM # 04 D H
R124(1)	APR3	C3	68Ω	CRAM # 05 D H
R198(1)	APR3	D3	68Ω	CRAM # 06 D H
R155(1)	APR3	D3	68Ω	CRAM # 07 D H
R201(1)	APR3	D3	68Ω	CRAM # 08 D H
R215(1)	APR3	B4	68Ω	CRAM ADB SEL 1 H
R213(1)	APR3	B4	68Ω	CRAM ADB SEL 2 H
R49(1)	APR4	D2	68Ω	CRAM FM ADR SEL 1 H
R48(1)	APR4	D2	68Ω	CRAM FM ADR SEL 2S H
R50(1)	APR4	D2	68Ω	CRAM FM ADR SEL 4 H
R202(1)	APR3	B4	68Ω	EDP FM PARITY 00-05 H
R211(1)	APR3	B4	68Ω	EDP FM PARITY 06-11 H
R212(1)	APR3	B4	68Ω	EDP FM PARITY 12-17 H
R206(1)	APR3	B4	68Ω	EDP FM PARITY 18-23 H
R205(1)	APR3	B4	68Ω	EDP FM PARITY 24-29 H
R207(1)	APR3	A4	68Ω	EDP FM PARITY 30-35 H
R153(1)	APR4	B7	68Ω	IR AC 09 H
R113(1)	APR2	B6	68Ω	-MBOX ADR PAR ERR H
R29(1)	APR1	B2	68Ω	-MBOX MB PAR ERR H
R34(1)	APR1	B6	68Ω	-MBOX NXM ERR H
R31(1)	APR1	B7	68Ω	-MBOX SBUS ERR H
R104(1)	APR1	A7	68Ω	-MBX1 CCA REQ H
R151(1)	APR2	B7	68Ω	-MBX5 CSH ADR PAR ERR H
R175(1)	APR6	A7	68Ω	-MCL1 MEM/REG FUNC H
R52(1)	APR6	A7	68Ω	-MCL1 REQ EN H
R64(1)	APR5	A5	68Ω	-MCL4 LOAD VMA CONTEXT H
R57(1)	APR5	A7	68Ω	MCL4 VMA PREV EN H
R91(1)	APR5	C7	68Ω	MCL4 XR PREVIOUS H
R4(1)	APR6	B6	68Ω	MCL6 EBOX MAP H
R182(1)	APR6	D1	68Ω	PI3 APR PIA 01 H
R184(1)	APR6	D1	68Ω	PI3 APR PIA 02 H
R176(1)	APR6	D3	68Ω	PI3 APR PIA 04 H
R122(1)	APR2	B4	68Ω	PWR WARN E H
R178(1)	APR3	A6	68Ω	SHM1 AR EXTENDED H
R192(1)	APR3	A6	68Ω	SHM1 AR PAR ODD B H
R204(1)	APR4	D2	68Ω	SHM1 XR 01 H
R158(1)	APR4	D4	68Ω	SHM1 XR 02 H
R197(1)	APR4	D5	68Ω	SHM1 XR 04 H
R195(1)	APR4	D6	68Ω	SHM1 XR 10 H
R193(1)	APR4	D6	68Ω	VMA1 VMA 32 B H
R200(1)	APR4	D5	68Ω	VMA1 VMA 33 B H
R157(1)	APR4	D4	68Ω	VMA1 VMA 34 B H
R203(1)	APR4	D2	68Ω	VMA1 VMA 35 B H

NOTE:

1. ALL TERMINATORS HAVE PIN TWO CONNECTED TO -2.0V AND ARE 5% 1/4WATT UNLESS OTHERWISE SPECIFIED
2. ENTRIES ARE SORTED BY SIGNAL NAME
3. % INDICATES OUTPUT OF DIP LOC AND ( ) INDICATES PIN NUMBER

REVISIONS — CHK | CHANGE NO. | REV

digital — DRN. C. Smith, DATE 31-OCT-76; CHK, DATE 3 Nov 76; ENG, DATE 3 Nov 76; BOARD LOCATION:; SHEET 1 OF 1

M8545I.RLS(4,161) 31-OCT-76 12:45 — NEXT HIGHER ASSEMBLY:

FIRST USED ON OPTION/MODEL: KL10 — B-DD-M8545-0

TITLE: APR BOARD TERMINATOR

SIZE D — CODE CS — NUMBER M8545-0-RES