FIELD MAINTENANCE PRINT SET
TABLE OF CONTENTS

UNIT VARIATIONS
COVERED BY THIS
PRINT SET

MF20-LA
MF20-LB
MF20-LC
MF20-LD
MF20-E
MF20-LH
MF20-LJ
MF20-LK
MF20-LL
MF20-LM
MF20-LN
MF20-LP
MF20-LR
MF20-LS
MF20-LT
MF20-LU
MF20-LV
MF20-AC
MF20-AD

MF20
FIELD MAINTENANCE
PRINT SET

DIGITAL EQUIPMENT
CORPORATION

PRINT SET PART NO.
MP00622-00

	DRN.	DATE 20-OCT-82	ENG.	DATE	TITLE: MOS MEMORY MF20
	CHK'D.	DATE	BOARD LOCATION: N/A SHEET 1 OF 3		
DSK:MF20TC.T2P[4,566] 20-OCT-82 08:27			NEXT HIGHER ASSEMBLY:		SIZE D / CODE TC / NUMBER MF20-0-1 / REV. H
FIRST USED ON OPTION/MODEL: MF20			NONE		

DOCUMENT NUMBER	REV	DESCRIPTION
D-TC-MF20-0-1	E	TABLE OF CONTENTS
D-MU-MF20-0-15	*	MF20 MODULE UTILIZATION LIST
D-MU-MF20-0-CPMU	*	MODULE UTILIZATION

MODULE (C.S.) MOS MEMORY

D-DD-5412855-0	*	XBUS TERMINATOR SHEET 1
D-UA-5412855-0-0	A	XBUS TERMINATOR SHEET 1
D-CS-5412855-0-1	*	XBUS TERMINATOR BOARD
D-DD-5412851-0	B	ADDRESS TIMER SHEET 1
D-UA-5412851-0-0	D	ADDRESS TIMER SHEET 1
D-CS-5412851-0-OSC1	A	SELECT LOGIC
D-CS-5412851-0-OSC2	B	POWER SUPPLY
D-DD-M8572-0	A	CABLE BOARD SHEET 1
D-UA-M8572-0-0	B	CABLE BOARD SHEET 1
D-CS-M8572-0-XCD1	*	CLK SEL LOGIC
D-CS-M8572-0-XCD2	A	XBUS CABLE
D-CS-M8572-0-XCD3	*	POWER AND GND
D-DD-M8574-0	B	WRITE PATH SHEET 1
E-UA-M8574-0-0	B	WRITE PATH SHEET 1
D-CS-M8574-0-WRP0	A	DATA 00-15
D-CS-M8574-0-WRP1	*	DATA 16-PAR
D-CS-M8574-0-WRP2	*	MIX AND LATCH A
D-CS-M8574-0-WRP3	*	MIX AND LATCH B
D-CS-M8574-0-WRP4	*	MIX AND LATCH C
D-CS-M8574-0-WRP5	*	DATA BUFFER
D-CS-M8574-0-WRP6	*	ECC GENERATOR
D-CS-M8574-0-WRP7	*	ECC DIAG REG
D-CS-M8574-0-WRP8	*	SPARE BIT RAM
D-CS-M8574-0-WRP9	*	SPARE BIT MIXER
D-CS-M8574-0-WRPA	*	POWER. GND. CAPS.
D-CS-M8574-0-WRPB	*	POWER. GND. CAPS.
D-CS-M8574-0-RES	*	TERMINATORS

DOCUMENT NUMBER	REV	DESCRIPTION
D-DD-M8575-0	*	SYNDROME SHEET 1
E-UA-M8575-0-0	A	SYNDROME SHEET 1
D-CS-M8575-0-SYN0	*	BIT SUB DECODER
D-CS-M8575-0-SYN1	*	BIT SUB DATA
D-CS-M8575-0-SYN2	*	BIT SUB,ECC BITS
D-CS-M8575-0-SYN3	*	GENERATOR
D-CS-M8575-0-SYN4	*	CALCULATOR
D-CS-M8575-0-SYN5	*	CORRECTION DECODE
D-CS-M8575-0-SYN6	*	DATA CORRECTION
D-CS-M8575-0-SYN7	*	PORT ADDRESS
D-CS-M8575-0-SYN8	*	DIAG SELECTION
D-CS-M8575-0-SYN9	*	DIAG MIXER
D-CS-M8575-0-SYNA	*	POWER CONTROL
D-CS-M8575-0-SYNB	*	POWER. GND. CAPS.
D-CS-M8575-0-SYNC	*	POWER. GND. CAPS.
D-CS-M8575-0-RES	*	TERMINATORS
D-DD-M8576-0	A	MOS CONTROL SHEET 1
E-UA-M8576-0-0	B	MOS CONTROL SHEET 1
D-CS-M8576-0-CTL0	*	SBUS DRVR & RECVR
D-CS-M8576-0-CTL1	A	START LOGIC
D-CS-M8576-0-CTL2	A	CYCLE CONTROL
D-CS-M8576-0-CTL3	A	WRITE DATA MOVER
D-CS-M8576-0-CTL4	A	ERR REG & ACKN
D-CS-M8576-0-CTL5	*	READ DATA MOVER
D-CS-M8576-0-CTL6	*	DATA VALID
D-CS-M8576-0-CTL7	*	DIAGNOSTIC MOVER
D-CS-M8576-0-CTL8	A	DIAGNOSTIC CNTRL
D-CS-M8576-0-CTL9	*	SM PROM CONTROL
D-CS-M8576-0-CTLA	*	RAS & SEL DRVR
D-CS-M8576-0-CTLB	*	POWER. GND. CAPS.
D-CS-M8576-0-CTLC	*	POWER. GND. CAPS.
D-CS-M8576-0-RES	A	TERMINATORS
D-DD-M8577-0	B	ADDRESS AND TIME SHEET 1
E-UA-M8577-0-0	C	ADDRESS AND TIME SHEET 1
D-CS-M8577-0-ADT0	*	PORT ADR INTER
D-CS-M8577-0-ADT1	*	PORT ADR REG
D-CS-M8577-0-ADT2	*	PORT ADR MIXERS
D-CS-M8577-0-ADT3	*	REFRESH CYCLE
D-CS-M8577-0-ADT4	A	TIMING RAM
D-CS-M8577-0-ADT5	A	ARRAY TIME DRVRS
D-CS-M8577-0-ADT6	A	PHS COM CLOCK
D-CS-M8577-0-ADT7	*	ERR HANDLE LOGIC
D-CS-M8577-0-ADT8	*	DATA BUFFER
D-CS-M8577-0-ADT9	A	DIAGNOSTIC LOGIC
D-CS-M8577-0-ADTA	*	POWER. GND. CAPS.
D-CS-M8577-0-ADTB	*	POWER. GND. CAPS.
D-CS-M8577-0-RES	A	TERMINATORS

	DRN.	DATE 20-OCT-82	ENG.	DATE	TITLE: MOS MEMORY MF20
	CHK'D.	DATE	BOARD LOCATION: N/A		
			SHEET 2 OF 3		
DSK:MF20TC.T2P[4,566] 20-OCT-82 08:27			NEXT HIGHER ASSEMBLY:	SIZE D	CODE TC
FIRST USED ON OPTION/MODEL: MF20			NONE	NUMBER MF20-0-1	REV. H

DOCUMENT NUMBER	REV	DESCRIPTION
D-DD-M8579-0	A	MOS STORAGE SHEET 1
D-UA-M8579-0-0	C	MOS STORAGE SHEET 2
D-CS-M8579-0-SM00	*	ARRAY BIT[T+00]
D-CS-M8579-0-SM01	*	ARRAY BIT[T+01]
D-CS-M8579-0-SM02	*	ARRAY BIT[T+02]
D-CS-M8579-0-SM03	*	ARRAY BIT[T+03]
D-CS-M8579-0-SM04	*	ARRAY BIT[T+04]
D-CS-M8579-0-SM05	*	ARRAY BIT[T+05]
D-CS-M8579-0-SM06	*	ARRAY BIT[T+06]
D-CS-M8579-0-SM07	*	ARRAY BIT[T+07]
D-CS-M8579-0-SM08	*	ARRAY BIT[T+08]
D-CS-M8579-0-SM09	*	ARRAY BIT[T+09]
D-CS-M8579-0-SM10	*	ARRAY BIT[T+10]
D-CS-M8579-0-SM11	*	WR PULSE LOGIC
D-CS-M8579-0-SM12	*	ROW ADR STROBE
D-CS-M8579-0-SM13	*	COL ADR STROBE
D-CS-M8579-0-SM14	*	ADDRESS CONTROL
D-CS-M8579-0-SM15	*	SM TERMINATOR
D-CS-M8579-0-SM16	*	5V PWR DISTRIB
D-CS-M8579-0-SM17	*	5V PWR. CAP. GND.
D-CS-M8579-0-SM18	*	12V PWR. CAP. GND.
D-CS-M8579-0-SM19	*	-2V PWR. CAP. GND.
D-CS-M8579-0-SM20	*	-5V PWR. CAP. GND.
D-CS-M8579-0-SM21	*	-5V PWR. CAP. GND.
D-CS-M8579-0-RES	*	TERMINATORS
D-DD-M8580-0	*	DUAL TRANSLATOR SHEET 1
D-UA-M8580-0-0	A	DUAL TRANSLATOR SHEET 1
D-CS-M8580-0-DT01	*	DUAL TRANSLATOR
D-CS-M8580-0-DT02	*	DATA TRNCVR 0-5
D-CS-M8580-0-DT03	*	DATA TRNCVR 6-11
D-CS-M8580-0-DT04	*	DATA TRNCVR 12-17
D-CS-M8580-0-DT05	*	ADDRESS DRIVERS
D-CS-M8580-0-DT06	*	CTRL & REF VOLT
D-CS-M8580-0-DT07	*	MEM DATA DRVRS
D-CS-M8580-0-DT08	*	POWER. GND. CAPS.
D-CS-M8580-0-RES	*	TERMINATORS
D-DD-M8581-0	*	XBUS TRANSLATOR SHEET 1
D-UA-M8581-0-0	A	XBUS TRANSLATOR SHEET 1
D-CS-M8581-0-DX01	*	XBUS TRANSLATOR
D-CS-M8581-0-DX02	*	DATA TRNCVR 0-5
D-CS-M8581-0-DX03	*	DATA TRNCVR 6-11
D-CS-M8581-0-DX04	*	DATA TRNCVR 12-17
D-CS-M8581-0-DX05	*	ADDRESS DRIVERS
D-CS-M8581-0-DX06	*	CTRL & REF VOLT
D-CS-M8581-0-DX07	*	POWER. GND. CAPS.
D-CS-M8581-0-RES	*	TERMINATORS

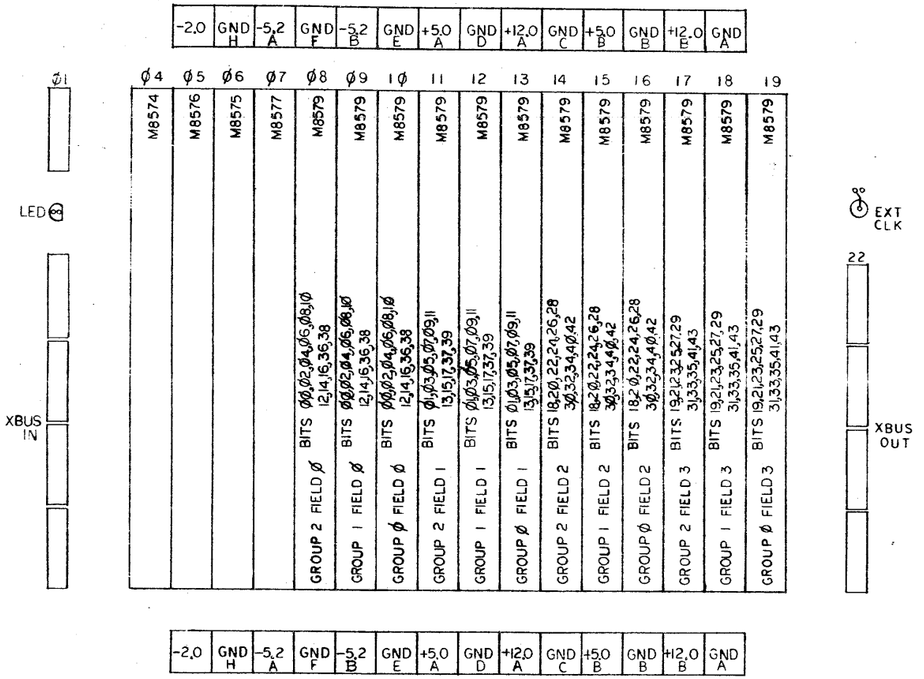
OPTION/ASSY MOS MEMORY

DOCUMENT NUMBER	REV	DESCRIPTION
D-IC-MF20-0-3	A	MF20 CABLE DIAGRAM
D-BD-MF20-0-4	*	MF20 BLOCK DIAGRAM
D-FD-MF20-0-5	*	MF20 READ CYCLE FLOW CHART
D-FD-MF20-0-6	*	MF20 REFRESH CYCLE FLOW CHART
D-FD-MF20-0-7	*	MF20 WRITE CYCLE FLOW CHART
D-TD-MF20-0-8	*	DIAGNOSTIC CYCLE TIMING DIAGRAM
D-TD-MF20-0-9	*	MF20 READ/REFRESH CYCLE TIMING DIAGRAM
D-TD-MF20-0-10	*	MF20 WRITE CYCLE TIMING DIAGRAM
D-TD-MF20-0-11	*	READ CYCLE TIMING DIAGRAM
D-TD-MF20-0-12	*	REFRESH CYCLE TIMING DIAGRAM
D-BD-MF20-0-13	*	BATTERY BOX BLOCK DIAGRAM
D-IC-MF20-0-14	*	POWER SUPPLY CONNECTOR DIAGRAM
D-BD-MF20-0-16	*	MASTER OSCILLATOR BLOCK DIAGRAM
D-TD-MF20-0-17	*	MF20 TIMING RAMS
D-BS-MF20-0-18	*	MF20 FIXED VALUED RAM CONTENTS
D-BS-MF20-0-19	*	MF20 BACKPLANE XBUS CONNECTIONS
D-CS-MF20-0-20	*	STORAGE ARRAY ORGANIZATION
D-CS-MF20-0-21	*	MF20M BLOCK DIAGRAM
A-SP-MF20-0-SYNC	*	MF20 XBUS CLOCK SYNCHRONIZATION
A-SP-MF20-0-2	B	INSTALLATION PROCEDURE
E-UA-MF20-0-0	D	MOS MEMORY
K-PL-MF20-0-DBP	D	MOS MEMORY (PL)
E-UA-KW20-0-0	B	MASTER OSCILLATOR
A-PL-KW20-0-0	B	MASTER OSCILLATOR (PL)
E-AD-7015075-0-0	B	BATTERY BOX ASSY
A-PL-7015075-0-0	B	BATTERY BOX ASSY (PL)
E-AD-7016018-0-0	B	CARD CAGE ASSY
B-PL-7016018-0-0	B	CARD CAGE ASSY (PL)
E-AD-7014358-0-0	*	WIRED ASSY MF20
K-WL-MF20-0-WL	C	WIRE LIST (MF20)
B-PL-MF20-0-SH	B	SHIP LIST

NOTE: A REVISION DESIGNATED AS "*" REPRESENTS THE INITIAL RELEASE REVISION OF A DOCUMENT IN THE CASE WHERE THE INITIAL RELEASE REVISION WAS "-", "*", OR WAS LEFT BLANK.

	DRN.	DATE 20-OCT-82	ENG.	DATE	TITLE: MOS MEMORY MF20
	CHK'D.	DATE	BOARD LOCATION: N/A SHEET 3 OF 3		
DSK:MF20TC.T2P[4,566] 20-OCT-82 08:27			NEXT HIGHER ASSEMBLY:	SIZE D	CODE TC / NUMBER MF20-0-1 / REV. H
FIRST USED ON OPTION/MODEL: MF20			NONE		

GROUP Ø IS FIRST 256K WORDS
GROUP 1 IS SECOND 256K
GROUP 2 IS THIRD 256K



REVISIONS	REV.
CHANGE NO.	
CHK	

DRN.		5-4-78
CHK'D		5-11-78
ENG.		5-30-78
PROJ. ENG.		5-30-78
PROD.		
NEXT HIGHER ASSY.		
B-DD-MF20-0		
SCALE	NONE	
SHEET	1 OF 1	

FIRST USED ON MF20

TITLE MF20 MODULE UTILIZATION LIST

SIZE	CODE	NUMBER	REV.
D	MU	MF20-0-15	

DIST.

DEC FORM NO. DEC 102-0

SEE NOTES 1 & 2 & 3 & 6 (slots 1, 2, 3)

SLOT	A–B	C–D	E–F
1	BC11A (M919)	BC2ØC (M9006)	BC2ØC (M9006)
2	BC2ØC (M9006) S BUS	BC2ØC (M9006)	SPARE
3	BC2ØC (M9006) S BUS	BC2ØC (M9006)	SPARE
4	E&C BUS TRAN	M8516	
5	E&C BUS TRAN	M8516	
6	E&C BUS TRAN	M8516	
7	X/S BUS TRAN	M8580 OR M8581	
8	X/S BUS TRAN	M8580 OR M8581	
9	CH	*	
10	CRC	*	
11	CCL	*	
12	CCW	*	
13		SPARE	
14	MB	M8517	
15	MB	M8517	
16	MB	M8517	
17	CHD	*	
19	CHD	*	
20	MBZ	M8537	
21	MBX	M8529	
22	MBC	M8531	
23	CSH	M8513	
24	CHD	*	
25	CHD	*	
26		SPARE	
27	CHA	*	
28	CHX	*	
29	PMA	M8518	
30	PAG	M852Ø	
31	PI	M8532	
32	CLK	M8526	
33	MTR	M8538	
34	APR	M8539	
35	CON	M8525	
36	C&L	M8527	
38	VMA	M8523	
39	EDP	M8512	
40	CRM	M8528	
41	EDP	M8512	
42	CRM	M8528	
43	EDP	M8512	
44	CRM	M8528	
45	CRA	M8511	
46	SH	M851Ø	
47	MCL	M853Ø	
48	IR	M8522	
49	EDP	M8512	
50	CRM	M8528	
51	EDP	M8512	
52	CRM	M8528	
53	EDP	M8512	
54	SCD	M8524	

SEE NOTE 4 & 5 (slots 7, 8)

REF. PIN SIDE
* SEE MODULE VARIATION TABLE

VARIATION MODULE LOCATION CHART

SLOT	MODULE/VARIATION: CACHE NO CHANNEL	CHANNEL NO CACHE	CACHE & CHANNEL
9	M8549-YA	M8533	M8533
10	NONE	M8535	M8535
11	M8549 YD	M8536	M8536
12	M8549 YB	M8534	M8534
17	M8521	M8549-YH	M8521
18	NONE	NONE	NONE
19	M8521	M8549-YH	M8521
24	M8521	M8549-YH	M8521
25	M8521	M8549-YH	M8521
27	M8514	M8549-YE	M8514
28	M8515	M8549-YF	M8515
	KLIØ AA, AB REF	KLIØ CA, CB REF	KLIØ BA, BB, BC, BD REF

NOTES:

1. SLOT 2 & 3 (SBUS) BC2ØC CABLES FROM INTERNAL MEMORY, OR DMA2Ø OR EMPTY
2. SLOT 1 (E AND C BUS) BC11A & BC2ØC CABLES FROM DTE
3. X BUS CABLE BOARD (ITEM #54) OF MF2Ø UNIT ASSY IS PLUGGED INTO SLOT 2 OF KLIØ-PV LOGIC ASSY.
4. INSTALL 2 M858Ø MODULES (ITEM #41) OF MF2Ø UNIT ASSY INTO SLOTS 7 AND 8 OF KLIØ PV LOGIC ASSY. IF SLOTS ARE PRESENTLY USED BY M8519 MODULES, REMOVE THEM AND INSTALL M858Ø MODULE (ITEM #41) OF MF2Ø UNIT ASS MF2Ø LA, LB, ONLY.
5. INSTALL 2 M8581 MODULES (ITEM #62) OF MF2Ø UNIT ASSY INTO SLOTS 7 AND 8 OF KLIØ-PV LOGIC ASS'Y. IF SLOTS ARE PRESENTLY USED BY M8580 MODULES, REMOVE THEM AND INSTALL 2 M8580 MODULES (ITEM #62) OF MF2Ø UNIT ASS'Y FOR MF2Ø-LH, LJ, LM, LN ONLY.
6. X BUS CABLE BOARD (ITEM #63) OF MF2Ø UNIT ASSY IS PLUGGED INTO SLOT 3 OF KLIØ PV LOGIC ASS'Y. FOR MF2Ø-LH, LJ, LM, LN ONLY.

DESCRIPTION	DWG./PART NO.	ITEM

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'

SURFACE QUALITY IN MICROINCHES

CLASS OF ACCURACY (CHECK ONE)	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
MEDIUM	±.004	±.008	±.012	±.016	±.024
PREFERRED ☑	±.012	±.016	±.025	±.04	±.063

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL —//—

FINISH —//—

DRN. [illegible signature] 10 Apr 78
CHK'D [illegible signature] 9 Aug 78
ENG. [illegible signature] 22 AUG 78
PROJ ENG. [illegible signature] 22 Aug 78
PROD. [illegible signature] 23 Aug 78

NEXT HIGHER ASSY. D-UA-MF2Ø-Ø-Ø

SCALE —//—

SHEET 1 OF 1

FIRST USED ON MF2Ø

digital

TITLE: MODULE UTILIZATION (CPU)

SIZE D CODE MU NUMBER MF2Ø-Ø-CPMU

DIST.

EC FORM NO. RD 100-C

8 7 6 5 4 3 2 1

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS
			FILE: ORIGINAL LAYOUT	
			ECO NUMBER	
			MODULE REVISION	A
D-UA-5412855-0-0	2		XBUS TERMINATOR	A
K-PL-5412855-0-0	1		PARTS LIST	A
D-CS-5412855-0-1	1		XBUS TERMINATOR BOARD	-
E-MD-5012854-0-0	2	5012854	DRILL & ETCH DRAWING	A
K-PC-5412855-0-DBC	-		ETCH CIRCUIT BOARD	B
			P.C. DESIGN DATA BASE	A

NOTES:

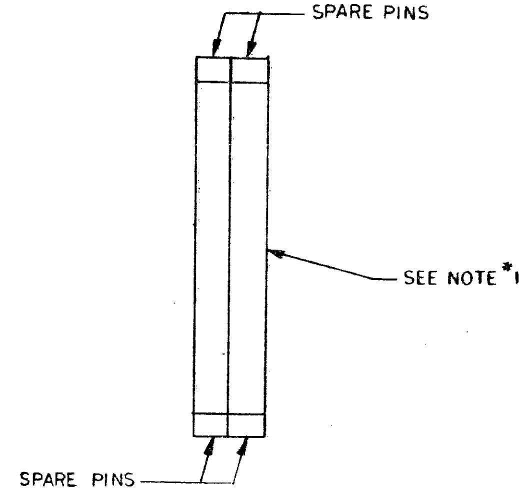
REVISIONS		
CHK	CHANGE NO.	REV

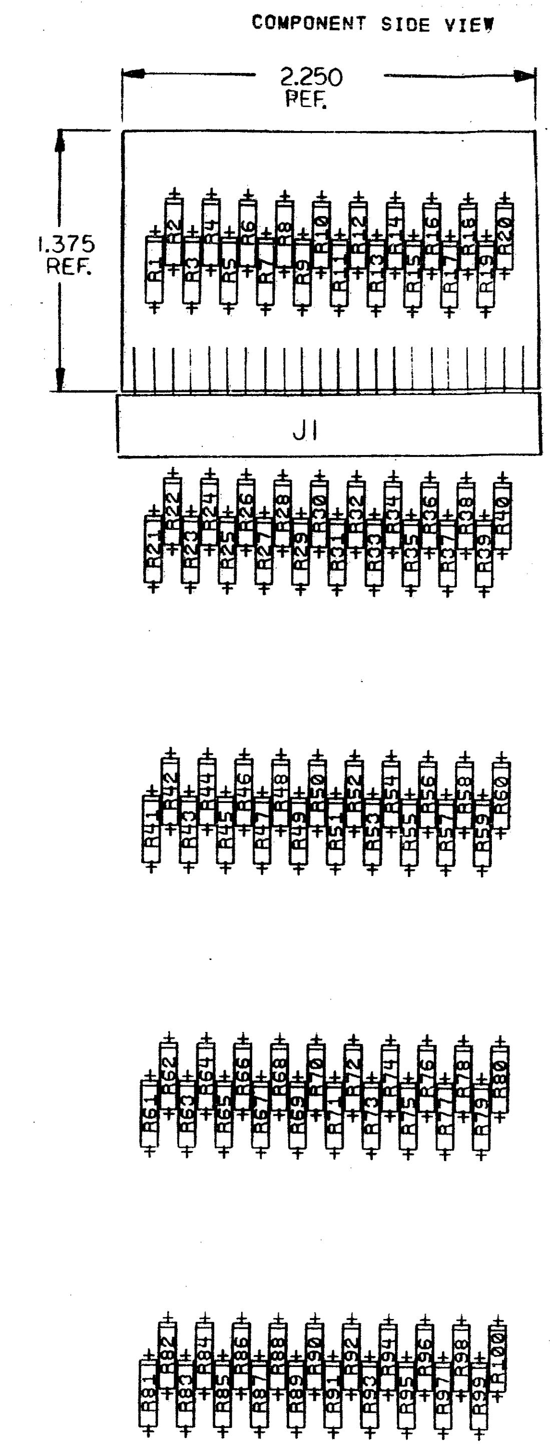
digital

TERMDD.TXT[4,662] 01-JAN-64 00:00

DRN P. Lucier	DATE 01-JAN-64	ENG John Hockenbury	DATE 1 May 78	TITLE: XBUS TERMINATOR	
CHK'D [illegible]	DATE [illegible]	BOARD LOCATION: N#A			
		SHEET 1 OF 1			
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: NONE		SIZE D / CODE DD / NUMBER 5412855-0	REV.

SIZE D | CODE DD | NUMBER 5412855-0 | REV.



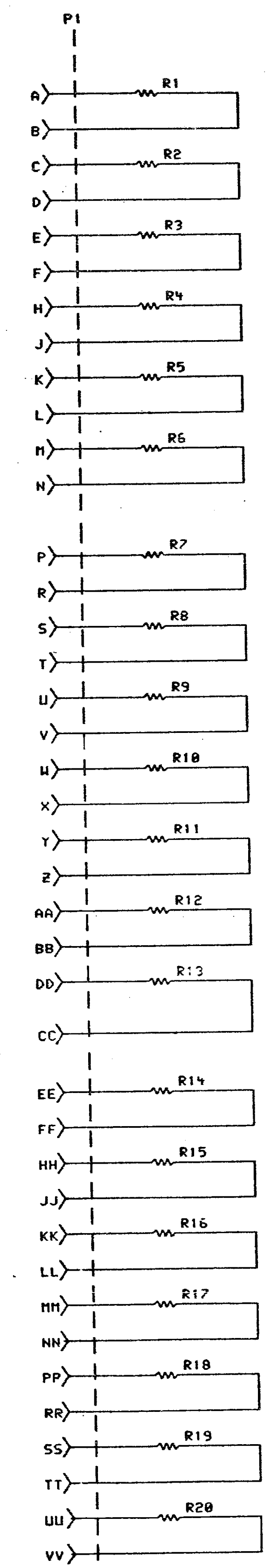


NOTES: 1. THE SPARE PINS SHOWN ARE ON THE CONNECTOR CARD ON BACKPLANE. THIS IS THE WRAP SIDE OF THE BACKPLANE.

CHK	CHANGE NO	REV

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

SIGNATURES	DATE	
DRN.		digital
CHK'D.		
ENG.		TITLE XBUS TERMINATOR
PROJ. ENG.		
PROD.		
SCALE 2:1		SIZE D, CODE UA, NUMBER 5412855-0-0
SHT. 1 OF 2		
NEXT HIGHER ASSY. D-DD-5412855-0		



SHEET 1 OF 1

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. P. Lucier	DATE 14-APR-78	ENG. John Hechenberg	DATE 1 May 78	TITLE: XBUS TERMINATOR BOARD		
CHK'D. M. Normand	DATE 1 May 78	BOARD LOCATION:				
		SHEET 1 OF 1		SIZE	CODE	NUMBER	REV.
TERMBD.DRW[4,662]	26-APR-78 15:29	NEXT HIGHER ASSEMBLY: D-DD-5412855-0		D	CS	5412855-0-1	
FIRST USED ON OPTION/MODEL: MF20						

MR

DRAWING NUMBER	PAGES	PART NO.	DESCRIPTION	REVISIONS		
			FILE: ORIGINAL LAYOUT			
			ECO NUMBER		1	2
			MODULE REVISION	A	B	C
D-UA-5412851-0-0	5		MASTER OSCILLATOR	B	C	D
K-PL-5412851-0-DBP	3		PARTS LIST	B	C	D
D-CS-5412851-0-OSC1	1		SELECT LOGIC	-	-	A
D-CS-5412851-0-OSC2	1		POWER SUPPLY	-	A	B
D-MD-5012850-0-0	7		DRILL & ETCH DRAWING	B	C	C
		5012850	ETCH CIRCUIT BOARD	C	D	D
K-PC-5412851-0-DBC	-		P.C. DESIGN DATA BASE	A	B	B

NOTES:

digital

DSK:MROSDD.T2P[4,550] 22-JAN-80 14:34

FIRST USED ON OPTION/MODEL: KW20

DATE 22-JAN-80

BOARD LOCATION: N/A

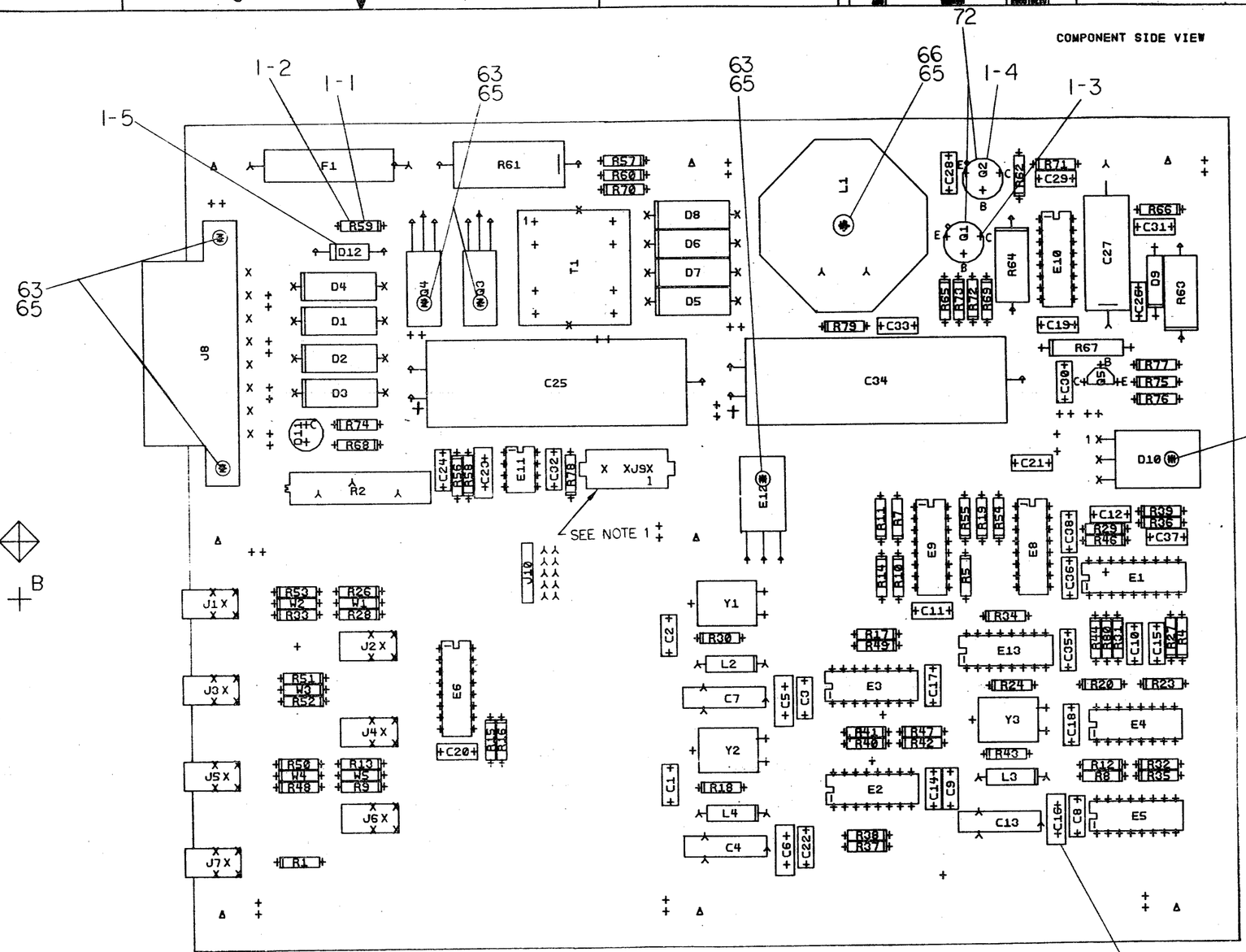
SHEET 1 OF 1

NEXT HIGHER ASSEMBLY: NONE

TITLE: MASTER OSCILLATOR

SIZE	CODE	NUMBER	REV.
D	DD	5412851-0	B

COMPONENT SIDE VIEW



NOTES: 1. ITEM *71 CONNECTS TO J9 ON BOARD

CHK	CHANGE NO	REV
	5412851-1	C
	C. LIU	
	MAY02 '79	D
	CHONG LIU	

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

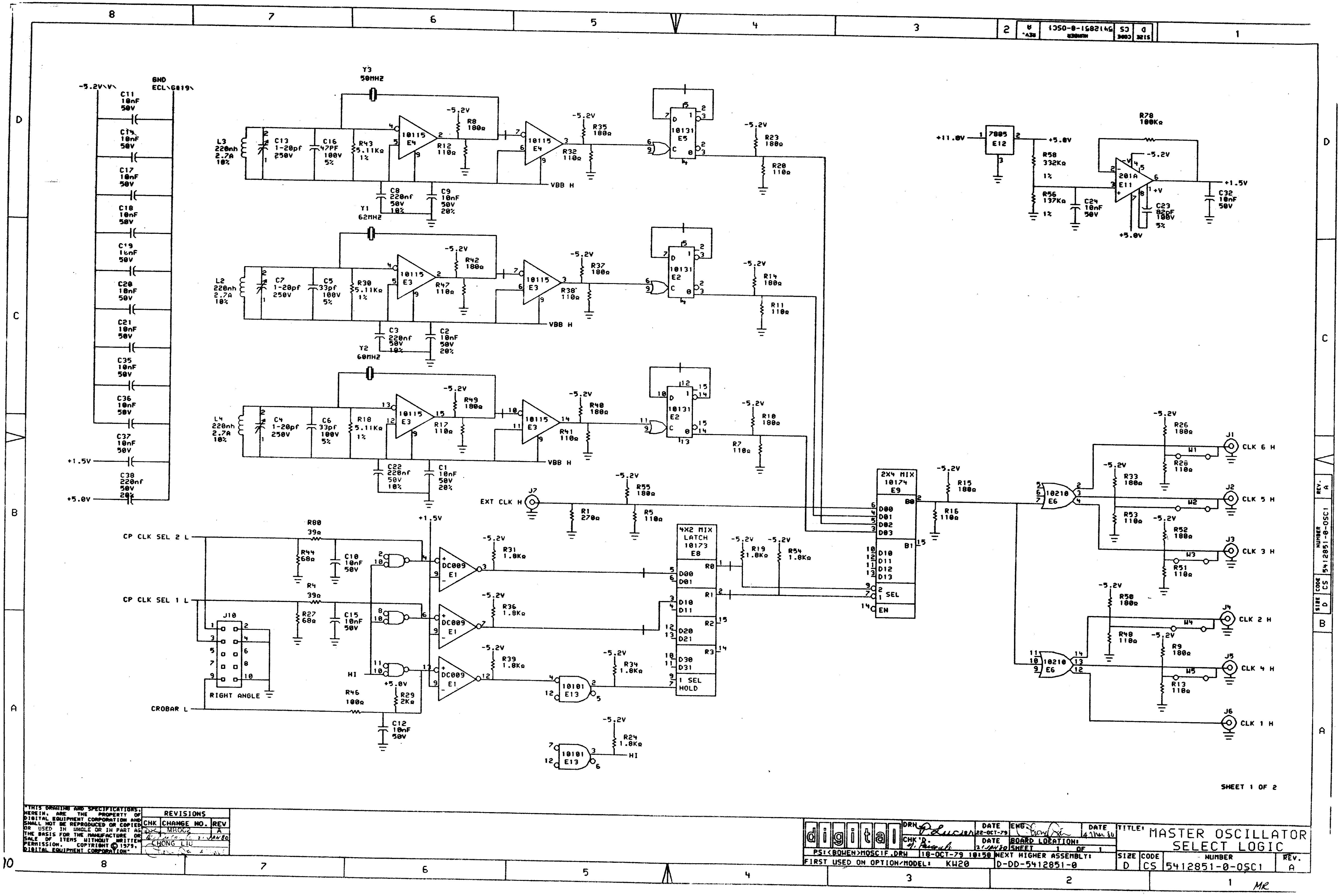
SIGNATURES	DATE
DRN. A. MacDonald	11/24/78
CHK'D. [illegible]	[illegible]
ENG. C. Liu	9-21-78
PROJ.ENG. D.W. Chen	5-2-78
PROD. W. Bishop	4-28-78
SCALE 2/1	
SHT. 1 OF 5	
NEXT HIGHER ASSY. 0-DD-5412851-C	

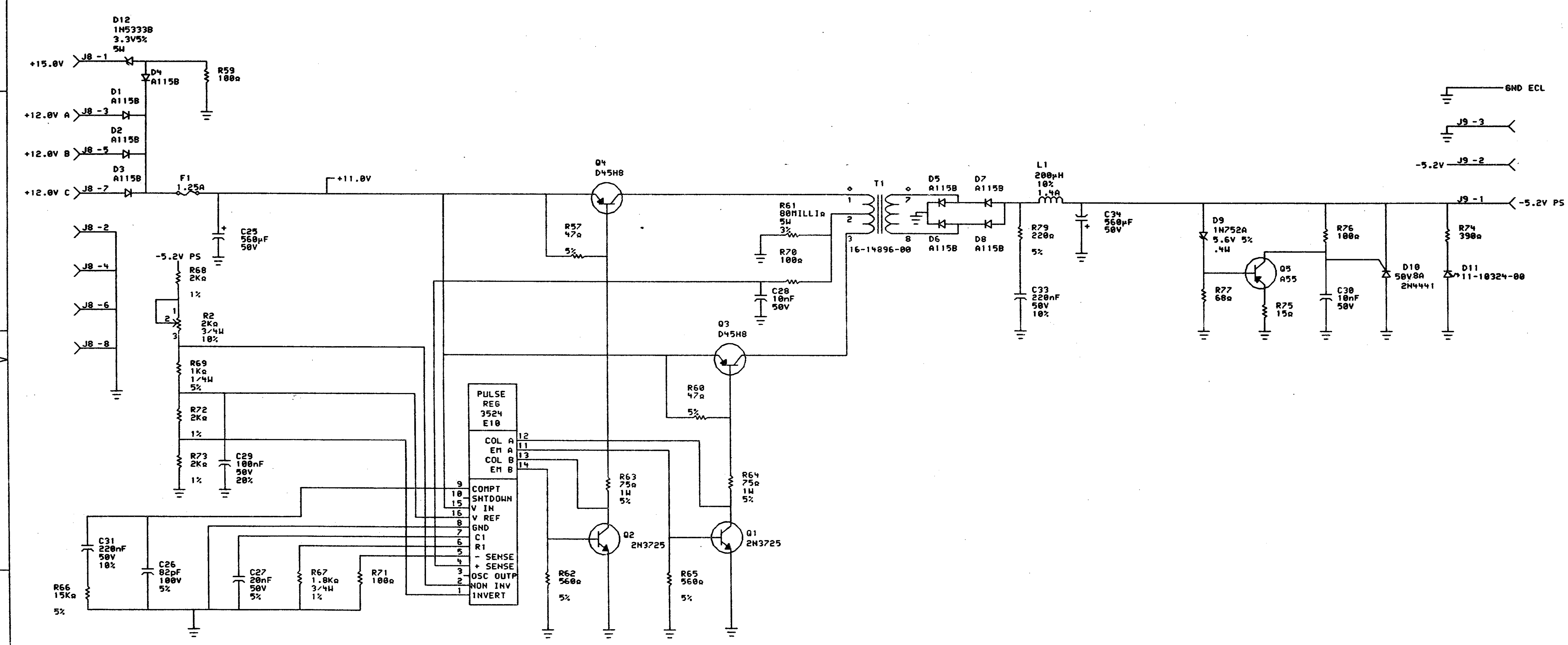
digital

TITLE: MASTER OSCILLATOR

SIZE	CODE	NUMBER	REV
D	UA	5412851-0-0	D

mr 1 MS# JQ4453C


MASTER OSCILLATOR
SELECT LOGIC
SHEET 1 OF 2
Y3 50MHZ
Y1 62MHZ
Y2 60MHZ
10115 E4
10115 E3
10131 E5
10131 E2
2X4 MIX 10174 E9
4X2 MIX LATCH 10173 E8
10210 E6
DC009 E1
10101 E13
7805 E12
201A E11
+11.0V
+5.0V
+1.5V
-5.2V
VBB H
EXT CLK H
CP CLK SEL 2 L
CP CLK SEL 1 L
CROBAR L
RIGHT ANGLE
J10
HI
CLK 6 H
CLK 5 H
CLK 3 H
CLK 2 H
CLK 4 H
CLK 1 H
GND ECL\G019\
-5.2V\V\
REVISIONS
CHK
CHANGE NO.
REV
A
DRN
CHK'D
DATE
22-OCT-79
ENG
BOARD LOCATION:
SHEET 1 OF 1
PS:<BOWEN>MOSCIF.DRW
18-OCT-79 10:50
NEXT HIGHER ASSEMBLY:
D-DD-5412851-0
FIRST USED ON OPTION/MODEL: KW20
SIZE D
CODE CS
NUMBER 5412851-0-OSC1
REV. A
"THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1979, DIGITAL EQUIPMENT CORPORATION"



SHEET 2 OF 2

REVISIONS

CHK	CHANGE NO.	REV
	MR002	B
	CHONG LIU	

digital

DRN / DATE 22-OCT-79 / ENG / DATE
CHK'D / DATE / BOARD LOCATION:
SHEET 1 OF 1
PS:<BOWEN>MOSC2F.DRW 18-OCT-79 18:59
NEXT HIGHER ASSEMBLY: D-DD-5412851-0
FIRST USED ON OPTION/MODEL: KW20

TITLE: MASTER OSCILLATOR POWER SUPPLY

SIZE	CODE	NUMBER	REV.
D	CS	5412851-0-OSC2	B

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS	
			FILE: ORIGINAL LAYOUT		
			ECO NUMBER		1
			MODULE REVISION	A	B
D-UA-M8572-0-0	5		CABLE BOARD	A	B
K-PL-M8572-0-DBP	1		PARTS LIST	A	B
K-PL-M8572-YA-DBP	1		PARTS LIST	A	A
D-CS-M8572-0-XCD1	1		CLK SEL LOGIC	-	-
D-CS-M8572-0-XCD2	1		XBUS CABLE	-	A
D-CS-M8572-0-XCD3	1		POWER AND GND	-	-
D-MD-5012820-0-0	5		DRILL & ETCH DRAWING	A	A
		5012820	ETCH CIRCUIT BOARD	D	D
K-PC-M8572-0-DBC	-		P.C. DESIGN DATA BASE	A	A

NOTES:

REVISIONS		
CHK	CHANGE NO.	REV
	M8572-MR001	A
	T. BOWEN 14 DEC 78	

digital

DRN. DATE 11-DEC-78 | ENG. C.SMITH DATE 27JUL78
CHK'D. M.NORMAND DATE 27JUL78 | BOARD LOCATION: | SHEET 1 OF 1
DSK:8572DD.T2P[4,550] 11-DEC-78 16:14 | NEXT HIGHER ASSEMBLY: NONE
FIRST USED ON OPTION/MODEL: MF20

TITLE: CABLE BOARD

SIZE	CODE	NUMBER	REV.
D	DD	M8572-0	A

13(QTY 12)

12

COMPONENT SIDE VIEW

J5

R2 R1 E2 +C1+ +C3+

R12 R11 R10 R9 E3 R8 R7 R6 E1 R5 R4 R3

R18 R17 R16 R15 +C4+ R14 R13 +C2+

U4 U3 U2 U1

C6 C5 C8 +C7+

F E D C B A

V U T S R P N M L K J H F E D C B A

NOTES:

CHK	CHANGE NO	REV
	M8572-MR001	B
	T BOWEN	

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

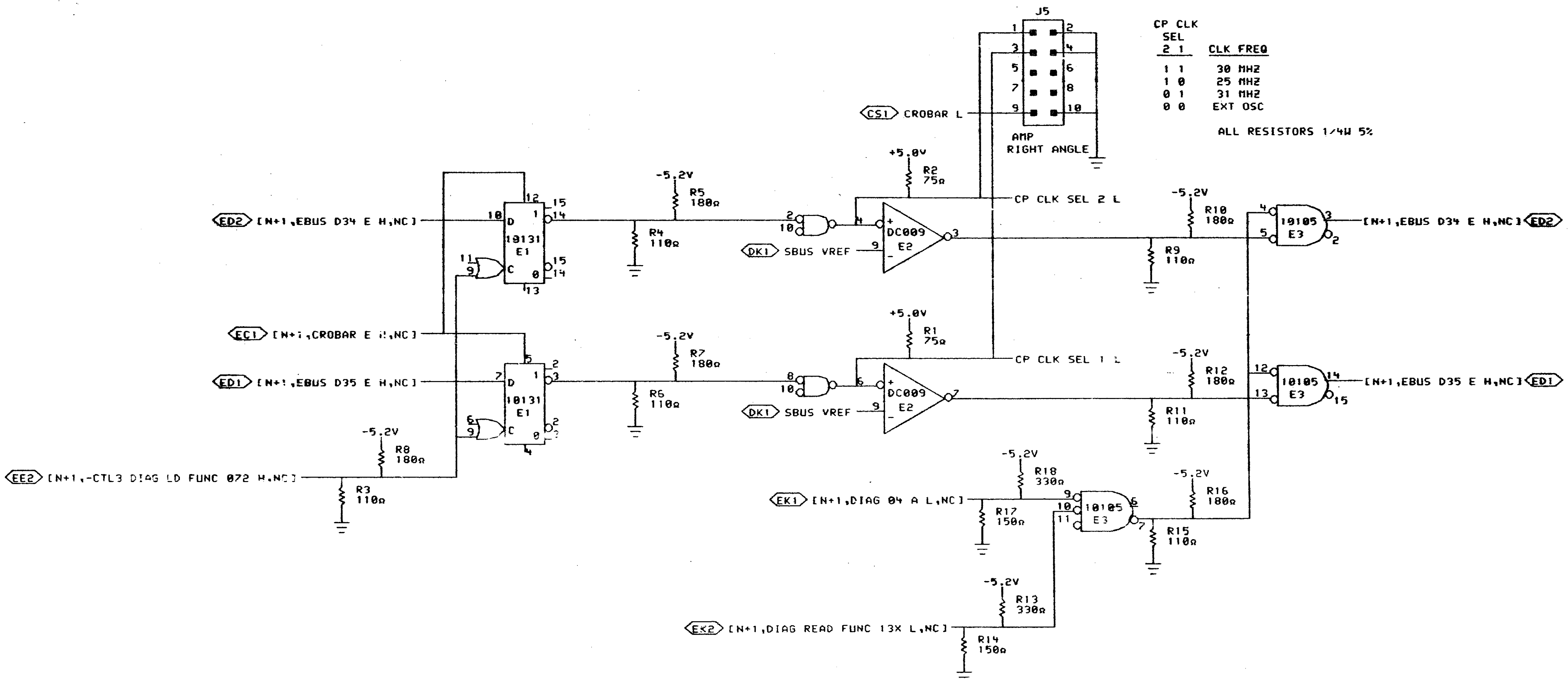
SIGNATURES	DATE
DRN.	5-29-72
CHK'D.	13-JUN-72
ENG.	
PROJ.ENG.	7-7-72
PROD.	
SCALE 2/1	
SHT. 1 OF 5	
NEXT HIGHER ASSY. B-DD-M8572-Ø	

digital

TITLE X-BUS CABLE BOARD

SIZE	CODE	NUMBER	REV
D	UA	M8572-Ø-Ø	B

mc 1 MS# 104448



SHEET 1 OF 3

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN.	DATE 26-JUL-78	ENG.	DATE
CHKD.	DATE	BOARD LOCATION:	
		SHEET 1 OF 1	

PUB:<M8572-MGS>XCD1EF.DRW 25-JUL-78 14:49

NEXT HIGHER ASSEMBLY: D-DD-M8572-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: CABLE BOARD CLK SEL LOGIC

SIZE	CODE	NUMBER	REV.
D	CS	M8572-0-XCD1	

J1

GND TTL	1	2	SBUS[N] D00 H (AC1)
GND TTL	3	4	SBUS[N] D18 H (AD1)
GND TTL	5	6	SBUS[N] D01 H (AE1)
GND TTL	7	8	SBUS[N] ADR 14 H (AE2)
GND TTL	9	10	SBUS[N] D19 H (AF1)
GND TTL	11	12	SBUS[N] ADR 15 H (AH2)
GND TTL	13	14	SBUS[N] D02 H (AJ1)
GND TTL	15	16	SBUS[N] ADR 16 H (AJ2)
GND TTL	17	18	SBUS[N] D20 H (AL1)
GND TTL	19	20	SBUS[N] ADR 17 H (AL2)
GND TTL	21	22	SBUS[N] D03 H (AM1)
GND TTL	23	24	SBUS[N] ADR 18 H (AM2)
GND TTL	25	26	SBUS[N] D21 H (AN1)
GND TTL	27	28	SBUS[N] ADR 19 H (AP2)
GND TTL	29	30	SBUS[N] ADR PAR ERR L (AR1)
GND TTL	31	32	SBUS[N] ADR 20 H (AR2)
GND TTL	33	34	SBUS [N] SEL L (AS1)
GND TTL	35	36	SBUS[N] ADR 21 H (AS2)
GND TTL	37	38	SBUS[N] ADR 22 H (AT2)
GND TTL	39	40	SBUS[N] ADR 23 H (AU2)

RIBBON
3'8"

AA1	[B,NC,GND TTL\G#18\]
AB1	[B,NC,GND TTL\G#18\]
AC1	SBUS[N] D00\C\ H
AD1	SBUS[N] D18\C\ H
AE1	SBUS[N] D01\C\ H
AF1	SBUS[N] D19\C\ H
AH1	GND TTL\G#18\
AJ1	SBUS[N] D02\C\ H
AK1	NC
AL1	SBUS[N] D20\C\ H
AM1	SBUS[N] D03\C\ H
AN1	SBUS[N] D21\C\ H
AP1	GND TTL\G#18\
AR1	SBUS[N] ADR PAR ERR\C\ L
AS1	SBUS [N] SEL\C\ L
AT1	GND TTL\G#18\
AU1	[B,NC,GND TTL\G#18\]
AV1	[B,NC,GND TTL\G#18\]
AA2	[B,NC,GND TTL\G#18\]
AB2	[B,NC,GND TTL\G#18\]
AC2	GND TTL\G#18\
AD2	GND TTL\G#18\
AE2	SBJS[N] ADR 14\C\ H
AF2	GND TTL\G#18\
AH2	SBUS[N] ADR 15\C\ H
AJ2	SBUS[N] ADR 16\C\ H
AK2	GND TTL\G#18\
AL2	SBUS[N] ADR 17\C\ H
AM2	SBUS[N] ADR 18\C\ H
AN2	GND TTL\G#18\
AP2	SBUS[N] ADR 19\C\ H
AR2	SBUS[N] ADR 20\C\ H
AS2	SBUS[N] ADR 21\C\ H
AT2	SBUS[N] ADR 22\C\ H
AU2	SBUS[N] ADR 23\C\ H
AV2	GND TTL\G#18\

J3

GND TTL	1	2	SBUS[N] MEM RESET L (CC1)
GND TTL	3	4	SBUS[N] D30 H (CD1)
GND TTL	5	6	SBUS[N] D09 H (CE1)
GND TTL	7	8	SBUS[N] ADR 34 H (CE2)
GND TTL	9	10	SBUS[N] D27 H (CF1)
GND TTL	11	12	SBUS[N] ADR 35 H (CH2)
GND TTL	13	14	SBUS[N] D10 H (CJ1)
GND TTL	15	16	SBUS[N] ADR PAR H (CJ2)
GND TTL	17	18	SBUS[N] D28 H (CL1)
GND TTL	19	20	SBUS[N] WR RQ H (CL2)
GND TTL	21	22	SBUS[N] D11 H (CM1)
GND TTL	23	24	SBUS[N] RD RQ H (CM2)
GND TTL	25	26	SBUS[N] D29 H (CN1)
GND TTL	27	28	SBUS[N] DATA PAR H (CP2)
GND TTL	29	30	SBUS[N] D12 H (CR1)
GND TTL	31	32	SBUS[N] CLK INT H (CR2)
GND TTL	33	34	CROBAR L (CS1)
GND TTL	35	36	SBUS[N] RQ 3 H (CS2)
GND TTL	37	38	SBUS[N] RQ 2 H (CT2)
GND TTL	39	40	SBUS VREF (DK1)

RIBBON
3'8"

CA1	[B,NC,GND TTL\G#18\]
CB1	[B,NC,GND TTL\G#18\]
CC1	SBUS[N] MEM RESET\C\ L
CD1	SBUS[N] D30\C\ H
CE1	SBUS[N] D09\C\ H
CF1	SBUS[N] D27\C\ H
CH1	GND TTL\G#18\
CJ1	SBUS[N] D10\C\ H
CK1	NC
CL1	SBUS[N] D28\C\ H
CM1	SBUS[N] D11\C\ H
CN1	SBUS[N] D29\C\ H
CP1	GND TTL\G#18\
CR1	SBUS[N] D12\C\ H
CS1	CROBAR\C\ L
CT1	GND TTL\G#18\
CU1	[B,NC,GND TTL\G#18\]
CV1	[B,NC,GND TTL\G#18\]
CA2	[B,NC,GND TTL\G#18\]
CB2	[B,NC,GND TTL\G#18\]
CC2	GND TTL\G#18\
CD2	GND TTL\G#18\
CE2	SBUS[N] ADR 34\C\ H
CF2	GND TTL\G#18\
CH2	SBUS[N] ADR 35\C\ H
CJ2	SBUS[N] ADR PAR\C\ H
CK2	GND TTL\G#18\
CL2	SBUS[N] WR RQ\C\ H
CM2	SBUS[N] RD RQ\C\ H
CN2	GND TTL\G#18\
CP2	SBUS[N] DATA PAR\C\ H
CR2	SBUS[N] CLK INT\C\ H
CS2	SBUS[N] RQ 3\C\ H
CT2	SBUS[N] RQ 2\C\ H
CU2	[B,NC,SBUS[N] CLK [N+1,SPARE\0400\,EXTI\C\ H]
CV2	GND TTL\G#18\

NOTE: SBUS1 CLK EXT (PIN CU2) IS NOT USED IN THE XBUS AND IS NOT CONNECTED ON THIS MODULE.

OPTION	CABLE LOCATION	VARIABLE
KL10	4AD02	W = 0
	4AD03	W = 1

J2

GND TTL	1	2	SBUS[N] D04 H (BC1)
GND TTL	3	4	SBUS[N] D22 H (BD1)
GND TTL	5	6	SBUS[N] D05 H (BE1)
GND TTL	7	8	SBUS[N] ADR 24 H (BE2)
GND TTL	9	10	SBUS[N] D23 H (BF1)
GND TTL	11	12	SBUS[N] ADR 25 H (BH2)
GND TTL	13	14	SBUS[N] D06 H (BJ1)
GND TTL	15	16	SBUS[N] ADR 26 H (BJ2)
GND TTL	17	18	SBUS[N] D24 H (BL1)
GND TTL	19	20	SBUS[N] ADR 27 H (BL2)
GND TTL	21	22	SBUS[N] D07 H (BM1)
GND TTL	23	24	SBUS[N] ADR 28 H (BM2)
GND TTL	25	26	SBUS[N] D25 H (BN1)
GND TTL	27	28	SBUS[N] ADR 29 H (BP2)
GND TTL	29	30	SBUS[N] D08 H (BR1)
GND TTL	31	32	SBUS[N] ADR 30 H (BR2)
GND TTL	33	34	SBUS[N] D26 H (BS1)
GND TTL	35	36	SBUS[N] ADR 31 H (BS2)
GND TTL	37	38	SBUS[N] ADR 32 H (BT2)
GND TTL	39	40	SBUS[N] ADR 33 H (BU2)

RIBBON
3'8"

BA1	[B,NC,GND TTL\G#18\]
BB1	[B,NC,GND TTL\G#18\]
BC1	SBUS[N] D04\C\ H
BD1	SBUS[N] D22\C\ H
BE1	SBUS[N] D05\C\ H
BF1	SBUS[N] D23\C\ H
BH1	GND TTL\G#18\
BJ1	SBUS[N] D06\C\ H
BK1	NC
BL1	SBUS[N] D24\C\ H
BM1	SBUS[N] D07\C\ H
BN1	SBUS[N] D25\C\ H
BP1	GND TTL\G#18\
BR1	SBUS[N] D08\C\ H
BS1	SBUS[N] D26\C\ H
BT1	GND TTL\G#18\
BU1	[B,NC,GND TTL\G#18\]
BV1	[B,NC,GND TTL\G#18\]
BA2	[B,NC,GND TTL\G#18\]
BB2	[B,NC,GND TTL\G#18\]
BC2	GND TTL\G#18\
BD2	GND TTL\G#18\
BE2	SBUS[N] ADR 24\C\ H
BF2	GND TTL\G#18\
BH2	SBUS[N] ADR 25\C\ H
BJ2	SBUS[N] ADR 26\C\ H
BK2	GND TTL\G#18\
BL2	SBUS[N] ADR 27\C\ H
BM2	SBUS[N] ADR 28\C\ H
BN2	GND TTL\G#18\
BP2	SBUS[N] ADR 29\C\ H
BR2	SBUS[N] ADR 30\C\ H
BS2	SBUS[N] ADR 31\C\ H
BT2	SBUS[N] ADR 32\C\ H
BU2	SBUS[N] ADR 33\C\ H
BV2	GND TTL\G#18\

J4

GND TTL	1	2	SBUS[N] D13 H (DC1)
GND TTL	3	4	SBUS[N] D31 H (DD1)
GND TTL	5	6	SBUS[N] D14 H (DE1)
GND TTL	7	8	SBUS[N] RQ 1 H (DE2)
GND TTL	9	10	SBUS[N] D32 H (DF1)
GND TTL	11	12	SBUS[N] RQ 0 H (DH2)
GND TTL	13	14	SBUS[N] D15 H (DJ1)
GND TTL	15	16	SBUS[N] ERROR L (DJ2)
GND TTL	17	18	SBUS[N] D33 H (DL1)
GND TTL	19	20	SBUS[N] DIAG L (DL2)
GND TTL	21	22	SBUS[N] D16 H (DM1)
GND TTL	23	24	SBUS[N] START A H (DM2)
GND TTL	25	26	SBUS[N] D34 H (DN1)
GND TTL	27	28	SBUS[N] START B H (DP2)
GND TTL	29	30	SBUS[N] D17 H (DR1)
GND TTL	31	32	SBUS[N] DATA VALID A L (DR2)
GND TTL	33	34	SBUS[N] D35 H (DS1)
GND TTL	35	36	SBUS[N] DATA VALID B L (DS2)
GND TTL	37	38	SBUS[N] ACKN B L (DT2)
GND TTL	39	40	SBUS[N] ACKN A L (DU2)

RIBBON
3'8"

DA1	[B,NC,GND TTL\G#18\]
DB1	[B,NC,GND TTL\G#18\]
DC1	SBUS[N] D13\C\ H
DD1	SBUS[N] D31\C\ H
DE1	SBUS[N] D14\C\ H
DF1	SBUS[N] D32\C\ H
DH1	GND TTL\G#18\
DJ1	SBUS[N] D15\C\ H
DK1	SBUS VREF
DL1	SBUS[N] D33\C\ H
DM1	SBUS[N] D16\C\ H
DN1	SBUS[N] D34\C\ H
DP1	GND TTL\G#18\
DR1	SBUS[N] D17\C\ H
DS1	SBUS[N] D35\C\ H
DT1	GND TTL\G#18\
DU1	[B,NC,GND TTL\G#18\]
DV1	[B,NC,GND TTL\G#18\]
DA2	[B,NC,GND TTL\G#18\]
DB2	[B,NC,GND TTL\G#18\]
DC2	GND TTL\G#18\
DD2	GND TTL\G#18\
DE2	SBUS[N] RQ 1\C\ H
DF2	GND TTL\G#18\
DH2	SBUS[N] RQ 0\C\ H
DJ2	SBUS[N] ERROR\C\ L
DK2	GND TTL\G#18\
DL2	SBUS[N] DIAG\C\ L
DM2	SBUS[N] START A\C\ H
DN2	GND TTL\G#18\
DP2	SBUS[N] START B\C\ H
DR2	SBUS[N] DATA VALID A\C\ L
DS2	SBUS[N] DATA VALID B\C\ L
DT2	SBUS[N] ACKN B\C\ L
DU2	SBUS[N] ACKN A\C\ L
DV2	GND TTL\G#18\

SHEET 2 OF 3

REVISIONS		
CHK	CHANGE NO.	REV
	M8572-MR001	A

T. BOWEN

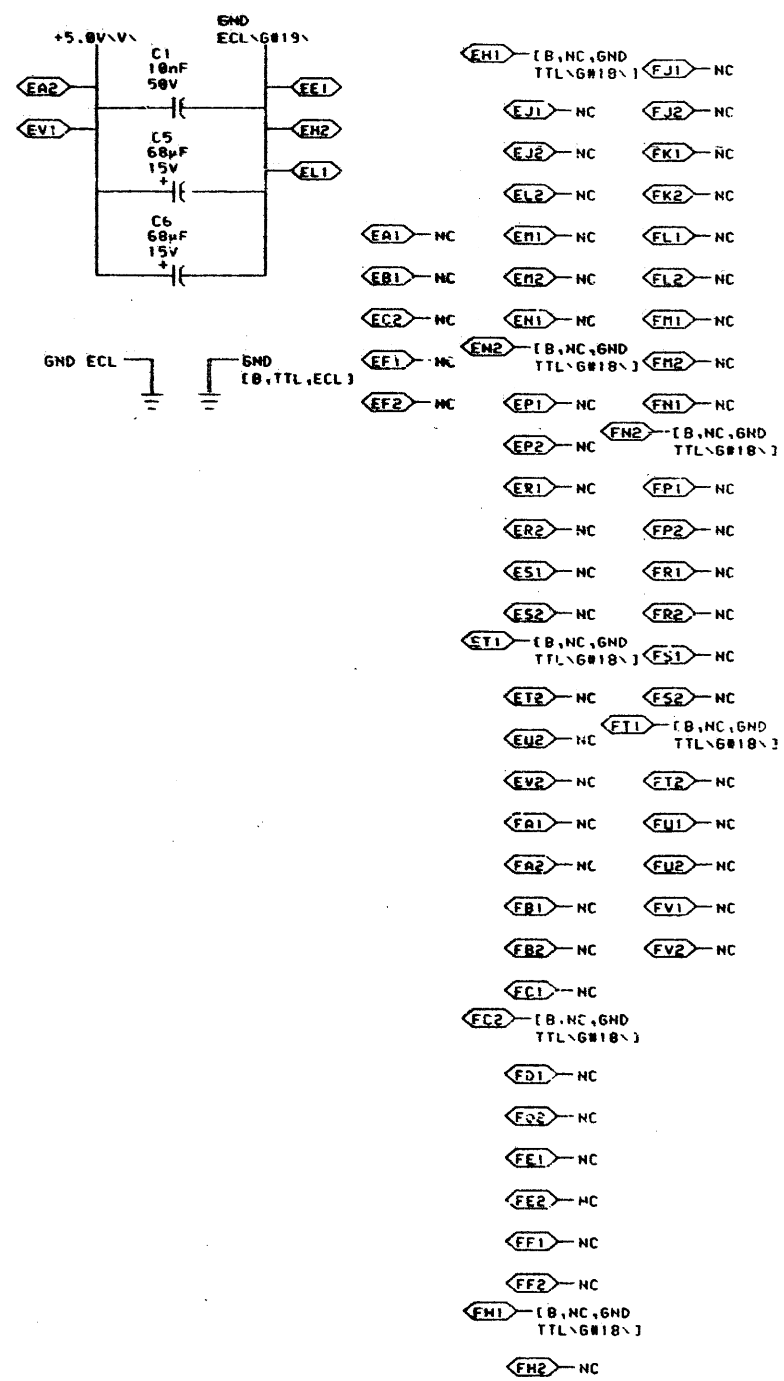
digital

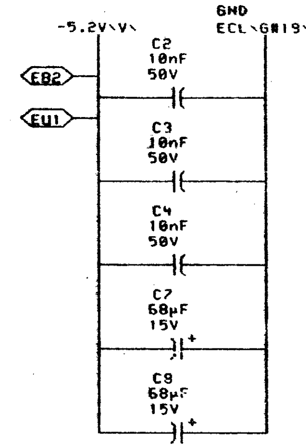
DRN P. Lucia	DATE 15-NOV-78	ENG. C. SMITH	DATE 27JUL78
CHK'D E. CALVO	DATE 7 JUL 78	BOARD LOCATION:	
PUB:<M8572-MOS>XCD2EF.DRW	15-NOV-78 14:03	SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8572-0	

TITLE: CABLE BOARD XBUS CABLE

SIZE	CODE	NUMBER	REV.
D	CS	M8572-0-XCD2	A

MR





NOTE:

1. ALL 74H SERIES LOGIC IS TO BE 1074H SERIES
2. UNLCSS OTHERWISE SPECIFIED THE FOLLOWING PIN NUMBERS APPLY:

GND	+5.0V	PACKAGE TYPE
8	16	16 PIN DIP
7	14	14 PIN DIP

3. THE FOLLOWING PIN NUMBERS APPLY TO ECL DIP PACKAGES

GND	-5.2	+5.0V	MANUFACTURES' PART NUMBER
1 16	8	NC	ALL 10,000 SERIES UNLESS OTHERWISE SPECIFIED
1 15 16	8	NC	10110 & 10210
16	8	9	10124 & 10125

THE FOLLOWING PIN NUMBERS APPLY TO DC009 DIP PACKAGES

GND	-5.2	+5.0V	MANUFACTURES' PART NUMBER
5 14	1	18	DC009

SHEET 3 OF 3

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. | DATE 26-JUL-78 | ENG. | DATE
CHK'D | DATE | BOARD LOCATION: | SHEET 1 OF 1

PUB:<M8572-MOS>XCD3EF.DRW 26-JUL-78 14:04

FIRST USED ON OPTION/MODEL: MF20

NEXT HIGHER ASSEMBLY: B-DD-M8572-0

TITLE: XBUS CABLE POWER AND GND

SIZE	CODE	NUMBER	REV.
D	CS	M8572-0-XCD3	

mr

16

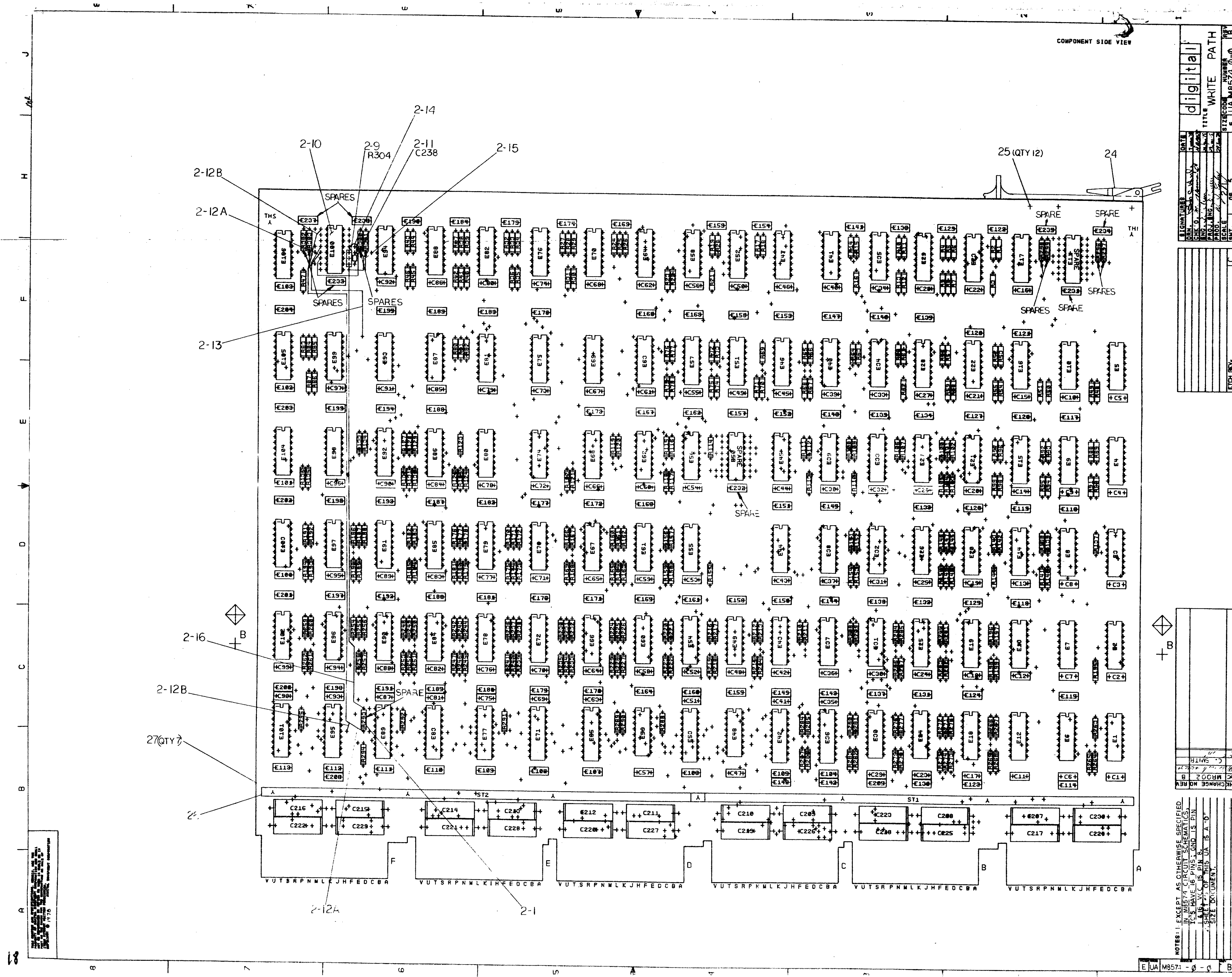
DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS		
			FILE: ORIGINAL LAYOUT			
			ECO NUMBER		1	2
			MODULE REVISION	A	A	B
E-UA-M8574-0-0	4		WRITE PATH	A	A	B
K-PL-M8574-0-DBP	2		PARTS LIST	A	A	B
D-CS-M8574-0-WRP0	1		DATA 00-15	-	-	A
D-CS-M8574-0-WRP1	1		DATA 16-PAR	-	-	-
D-CS-M8574-0-WRP2	1		MIX AND LATCH A	-	-	-
D-CS-M8574-0-WRP3	1		MIX AND LATCH B	-	-	-
D-CS-M8574-0-WRP4	1		MIX AND LATCH C	-	-	-
D-CS-M8574-0-WRP5	1		DATA BUFFER	-	-	-
D-CS-M8574-0-WRP6	1		ECC GENERATOR	-	-	-
D-CS-M8574-0-WRP7	1		ECC DIAG REG	-	-	-
D-CS-M8574-0-WRP8	1		SPARE BIT RAM	-	-	-
D-CS-M8574-0-WRP9	1		SPARE BIT MIXER	-	-	-
D-CS-M8574-0-WRPA	1		POWER. GND. CAPS.	-	-	-
D-CS-M8574-0-WRPB	1		POWER. GND. CAPS.	-	-	-
D-CS-M8574-0-RES	2		TERMINATORS	-	-	-
E-MD-5012898-0-0	5		DRILL & ETCH DRAWING	B	C	C
		5012898	ETCH CIRCUIT BOARD	C	C	C
K-PC-M8574-0-DBC	-		P.C. DESIGN DATA BASE	A	A	A
P00-M8574-00	-		PROCESS SHEET (REF ONLY)	-	-	-

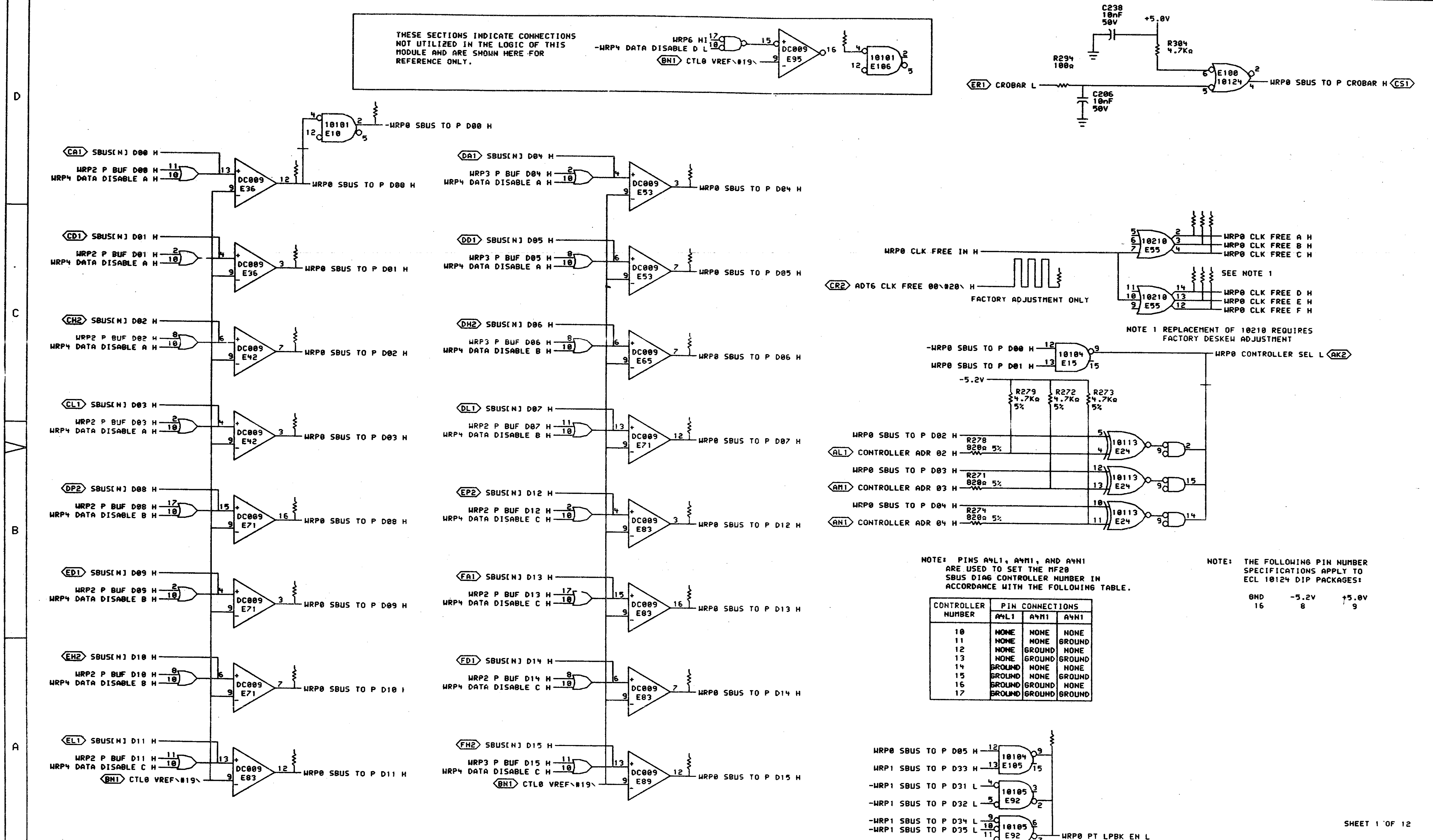
NOTES:

REVISIONS		
CHK	CHANGE NO.	REV
	8574-WFC2	B

digital

DRN.	DATE 31-AUG-79	ENG. C SMITH	DATE	TITLE: WRITE PATH
CHK'D.	DATE 4 DEC 79	BOARD LOCATION: 5AF04	SHEET 1 OF 1	
DSK:8574DD.T2P[4,550] 31-AUG-79 08:46		NEXT HIGHER ASSEMBLY: NONE		SIZE D · CODE DD · NUMBER M8574-0 · REV. B
FIRST USED ON OPTION/MODEL: MF20				


COMPONENT SIDE VIEW
2-14
2-10
2-9
R304
2-11
C238
2-15
2-12B
2-12A
2-13
SPARES
SPARE
25 (QTY 12)
24
2-16
2-12B
27 (QTY 7)
2-12A
2-1
ST2
ST1
digital
WRITE PATH
UA M8574 0-0
D-DD-M8574-0-0


THESE SECTIONS INDICATE CONNECTIONS NOT UTILIZED IN THE LOGIC OF THIS MODULE AND ARE SHOWN HERE FOR REFERENCE ONLY.
WRP6 HI
-WRP4 DATA DISABLE D L
BN1 CTL0 VREF\#19\
DC009 E95
10101 E106
C238 10nF 50V
+5.0V
R304 4.7Ka
R294 100a
ER1 CROBAR L
C206 10nF 50V
E100 10124
WRP0 SBUS TO P CROBAR H CS1
10101 E10
-WRP0 SBUS TO P D00 H
CA1 SBUS[N] D00 H
WRP2 P BUF D00 H
WRP4 DATA DISABLE A H
DC009 E36
WRP0 SBUS TO P D00 H
CD1 SBUS[N] D01 H
WRP2 P BUF D01 H
WRP4 DATA DISABLE A H
WRP0 SBUS TO P D01 H
CH2 SBUS[N] D02 H
WRP2 P BUF D02 H
WRP4 DATA DISABLE A H
DC009 E42
WRP0 SBUS TO P D02 H
CL1 SBUS[N] D03 H
WRP2 P BUF D03 H
WRP4 DATA DISABLE A H
WRP0 SBUS TO P D03 H
DP2 SBUS[N] D08 H
WRP2 P BUF D08 H
WRP4 DATA DISABLE B H
DC009 E71
WRP0 SBUS TO P D08 H
ED1 SBUS[N] D09 H
WRP2 P BUF D09 H
WRP4 DATA DISABLE B H
WRP0 SBUS TO P D09 H
EH2 SBUS[N] D10 H
WRP2 P BUF D10 H
WRP4 DATA DISABLE B H
WRP0 SBUS TO P D10 H
EL1 SBUS[N] D11 H
WRP2 P BUF D11 H
WRP4 DATA DISABLE C H
BN1 CTL0 VREF\#19\
DC009 E83
WRP0 SBUS TO P D11 H
DA1 SBUS[N] D04 H
WRP3 P BUF D04 H
WRP4 DATA DISABLE A H
DC009 E53
WRP0 SBUS TO P D04 H
DD1 SBUS[N] D05 H
WRP3 P BUF D05 H
WRP4 DATA DISABLE A H
WRP0 SBUS TO P D05 H
DH2 SBUS[N] D06 H
WRP3 P BUF D06 H
WRP4 DATA DISABLE B H
DC009 E65
WRP0 SBUS TO P D06 H
DL1 SBUS[N] D07 H
WRP2 P BUF D07 H
WRP4 DATA DISABLE B H
WRP0 SBUS TO P D07 H
EP2 SBUS[N] D12 H
WRP2 P BUF D12 H
WRP4 DATA DISABLE C H
WRP0 SBUS TO P D12 H
FA1 SBUS[N] D13 H
WRP2 P BUF D13 H
WRP4 DATA DISABLE C H
WRP0 SBUS TO P D13 H
FD1 SBUS[N] D14 H
WRP2 P BUF D14 H
WRP4 DATA DISABLE C H
WRP0 SBUS TO P D14 H
FH2 SBUS[N] D15 H
WRP3 P BUF D15 H
WRP4 DATA DISABLE C H
BN1 CTL0 VREF\#19\
DC009 E89
WRP0 SBUS TO P D15 H
WRP0 CLK FREE IN H
CR2 ADT6 CLK FREE 00\020\ H
FACTORY ADJUSTMENT ONLY
10210 E55
WRP0 CLK FREE A H
WRP0 CLK FREE B H
WRP0 CLK FREE C H
SEE NOTE 1
WRP0 CLK FREE D H
WRP0 CLK FREE E H
WRP0 CLK FREE F H
NOTE 1 REPLACEMENT OF 10210 REQUIRES FACTORY DESKEW ADJUSTMENT
-WRP0 SBUS TO P D00 H
WRP0 SBUS TO P D01 H
10104 E15
WRP0 CONTROLLER SEL L AK2
-5.2V
R279 4.7Ka 5%
R272 4.7Ka 5%
R273 4.7Ka 5%
WRP0 SBUS TO P D02 H
R278 820a 5%
AL1 CONTROLLER ADR 02 H
10113 E24
WRP0 SBUS TO P D03 H
R271 820a 5%
AM1 CONTROLLER ADR 03 H
WRP0 SBUS TO P D04 H
R274 820a 5%
AN1 CONTROLLER ADR 04 H
WRP0 SBUS TO P D05 H
WRP1 SBUS TO P D33 H
10104 E105
-WRP1 SBUS TO P D31 L
-WRP1 SBUS TO P D32 L
10105 E92
-WRP1 SBUS TO P D34 L
-WRP1 SBUS TO P D35 L
WRP0 PT LPBK EN L

NOTE: PINS A4L1, A4M1, AND A4N1 ARE USED TO SET THE MF20 SBUS DIAG CONTROLLER NUMBER IN ACCORDANCE WITH THE FOLLOWING TABLE.

CONTROLLER NUMBER	PIN CONNECTIONS A4L1	A4M1	A4N1
10	NONE	NONE	NONE
11	NONE	NONE	GROUND
12	NONE	GROUND	NONE
13	NONE	GROUND	GROUND
14	GROUND	NONE	NONE
15	GROUND	NONE	GROUND
16	GROUND	GROUND	NONE
17	GROUND	GROUND	GROUND

NOTE: THE FOLLOWING PIN NUMBER SPECIFICATIONS APPLY TO ECL 10124 DIP PACKAGES:

GND	-5.2V	+5.0V
16	8	9

SHEET 1 OF 12

REVISIONS		
CHK	CHANGE NO.	REV
	M8574 WR02	A
C.SMITH		

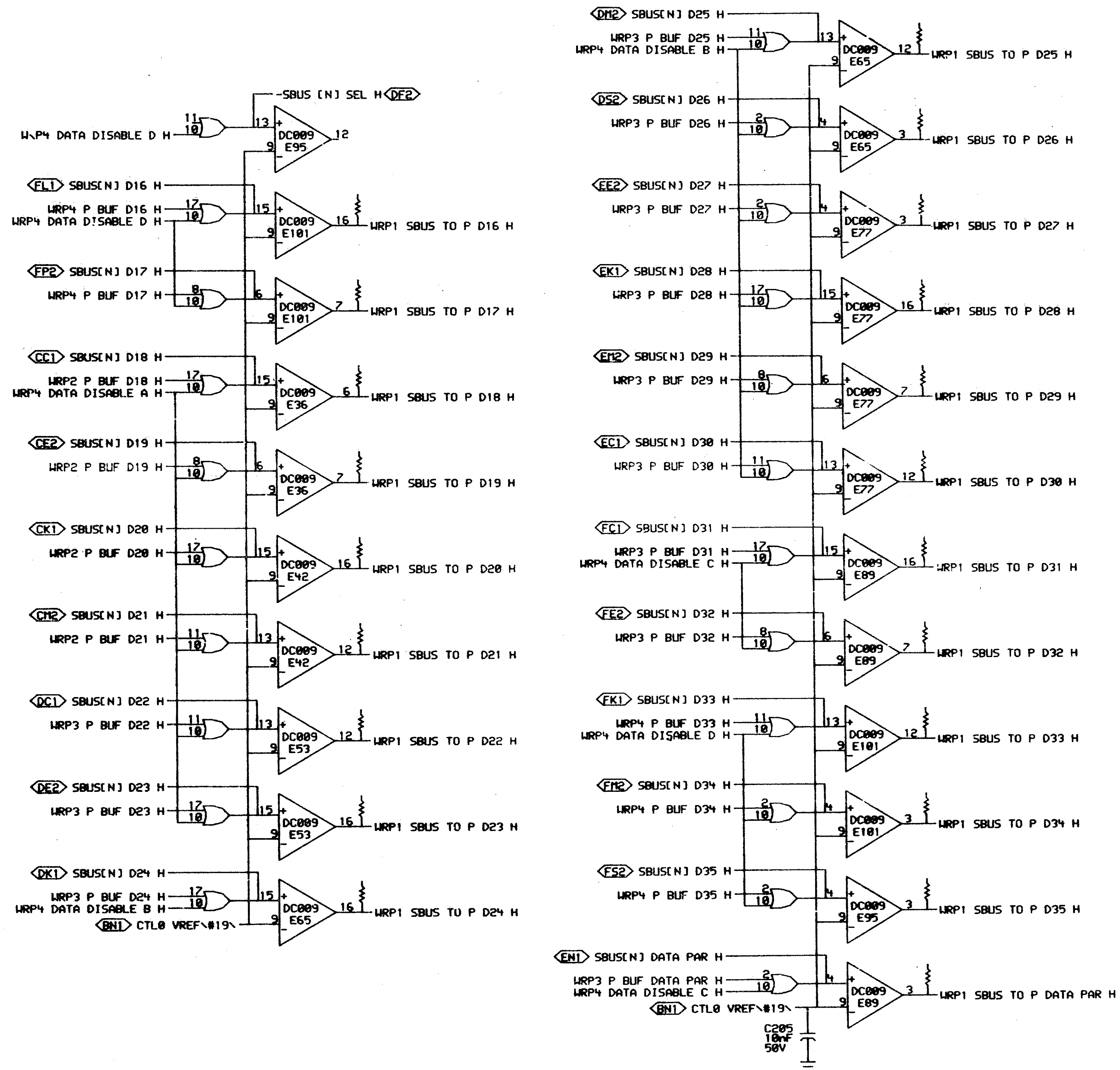
digital

DRN. P. Lucier	DATE 13-SEP-79	ENG. C SMITH	DATE
CHK'D M Paslack	DATE 14 DEC 79	BOARD LOCATION: 5AF4	SHEET 1 OF 1
PS:<BOWEN>WRP0A.DRW	13-SEP-79 13:09	NEXT HIGHER ASSEMBLY: D-DD-M8574-0	
FIRST USED ON OPTION/MODEL: MF20			

TITLE: WRITE PATH DATA 00-15

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-WRP0	A

MR



SHEET 2 OF 12

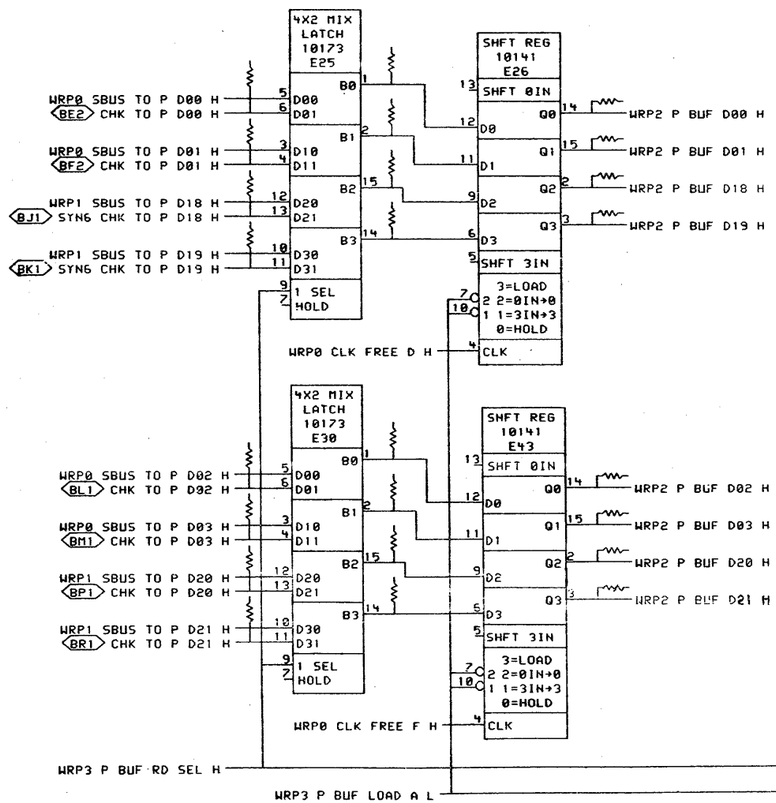
REVISIONS

CHK	CHANGE NO.	REV

digital

DRN	DATE 12-JUL-78	ENG. DJ Chien	DATE 7-18-78	TITLE: WRITE PATH DATA 16-PAR
CHKD	DATE	BOARD LOCATION: 5AF04		
PUB: <M8574-MOS>WRP1A.DRW 15-MAY-78 15:05		SHEET 1 OF 1		
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8574-0		SIZE D CODE CS NUMBER M8574-0-WRP1 REV.

20



SHEET 3 OF 12

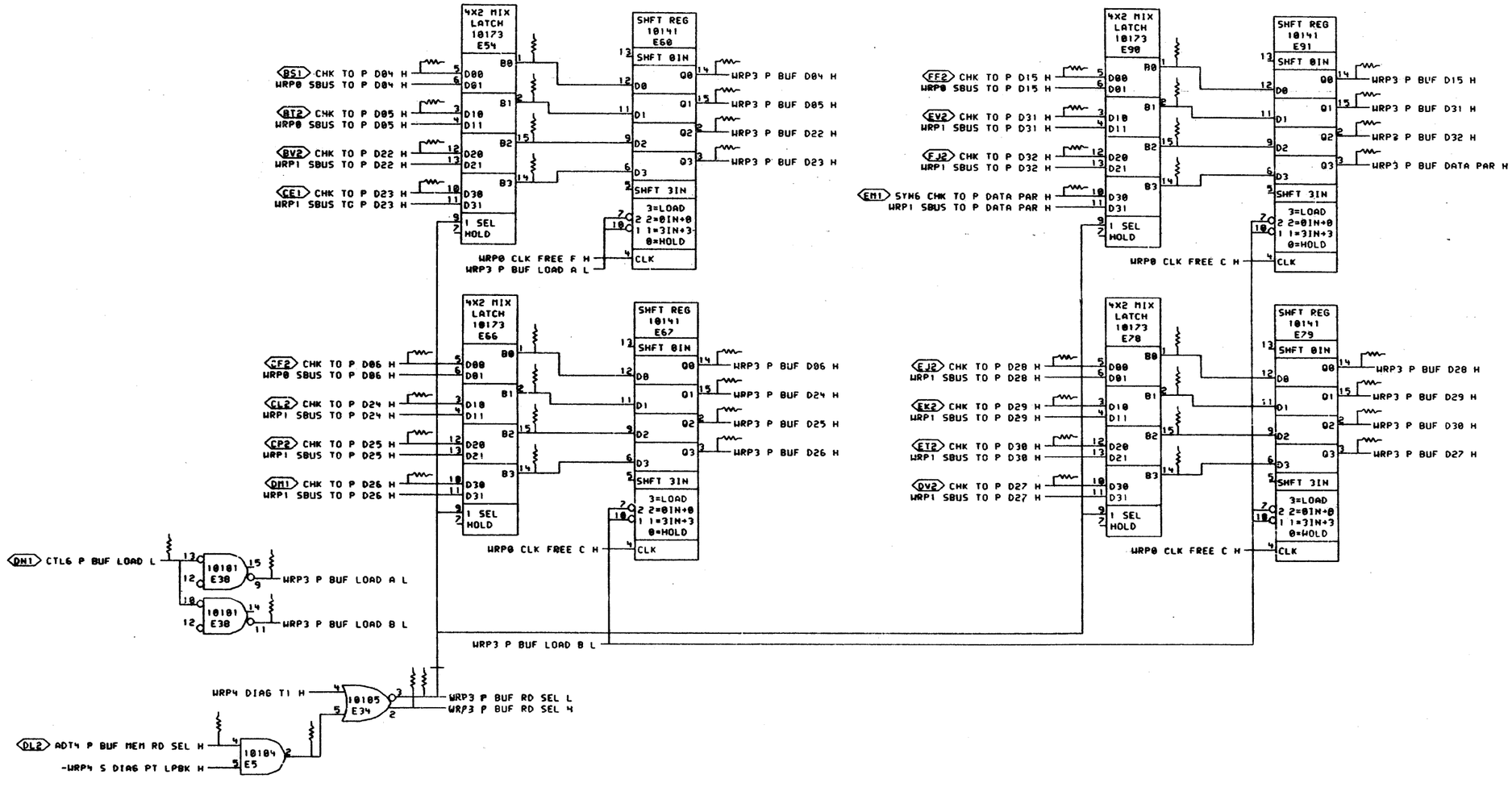
REVISIONS		
CHK	CHANGE NO.	REV

DRN P Lucier	DATE 26-MAY-78	ENG.	DATE
CHK'D P Lucier	DATE 27-Jun-78	BOARD LOCATION: 5AF04	SHEET 1 OF 1
WRP2A.DRW[4,664]	26-MAY-78 12:04	NEXT HIGHER ASSEMBLY:	
FIRST USED ON OPTION/MODEL: MF20		D-DD-M8574-0	

TITLE: WRITE PATH MIX AND LATCH A

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-WRP2	

MR



SHEET 4 OF 12

REVISIONS		
CHK	CHANGE NO.	REV

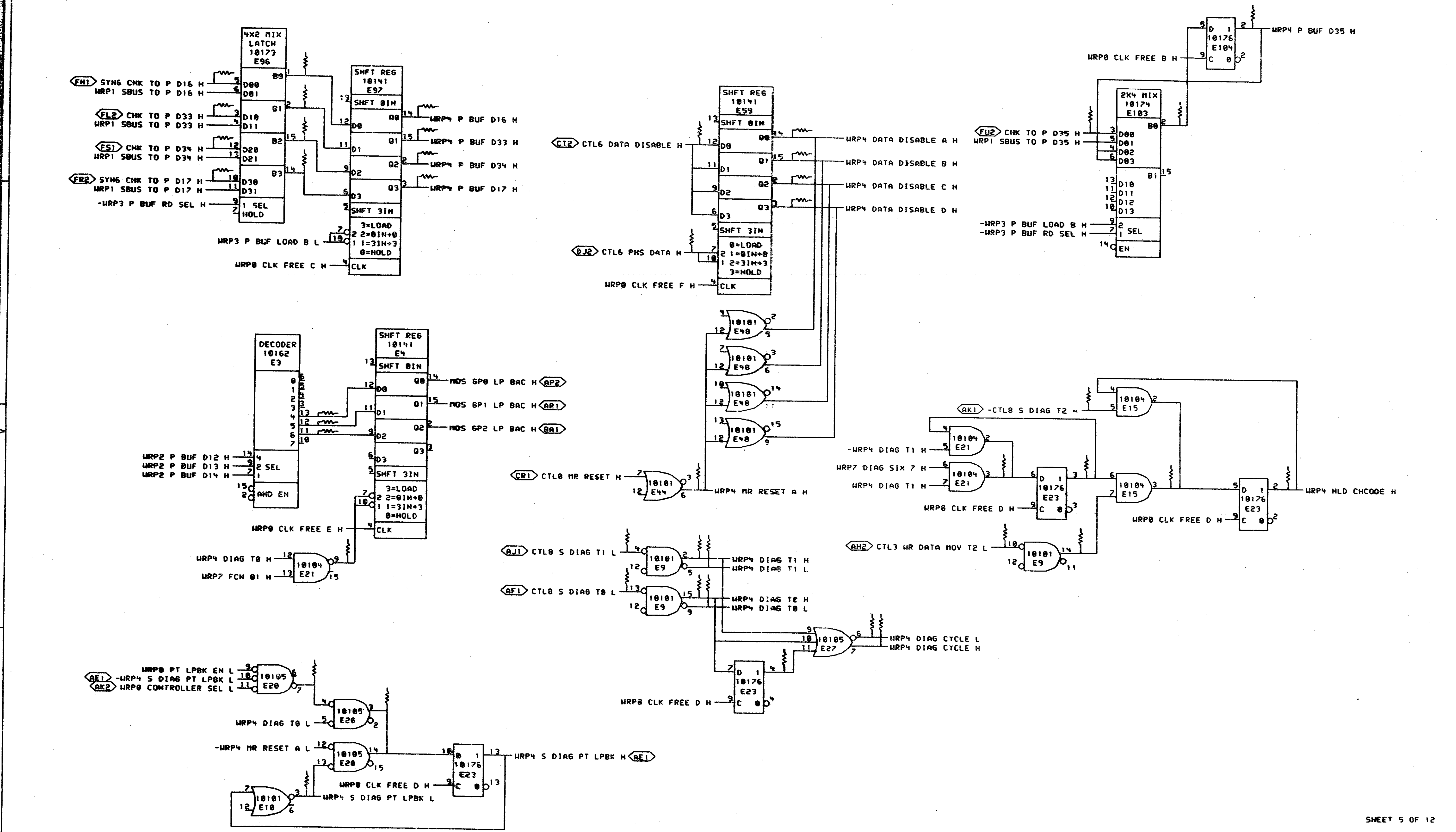
digital

DRN P. Lucier DATE 24-FEB-78 ENG. DATE
CHK D. Lucier DATE 22-Jun-78 BOARD LOCATION: 5AF04
WRP3A.DRW[4,664] 28-APR-78 0?:21 SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: MF20 NEXT HIGHER ASSEMBLY: D-DD-M8574-0

TITLE: WRITE PATH MIX AND LATCH B

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-WRP3	

22 MR



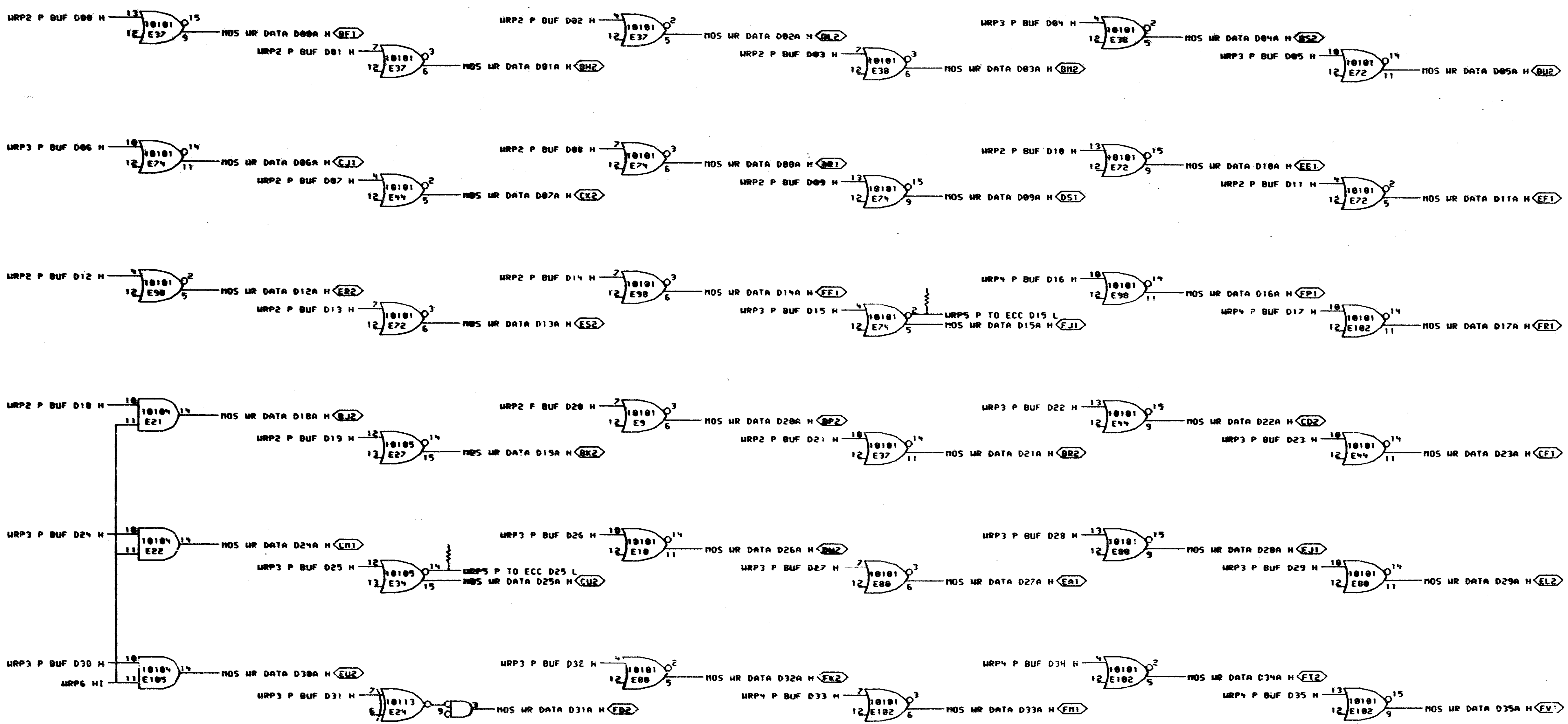
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN: P. Lucien — DATE 24-FEB-78
CHKD: P. Lucie — DATE 22-Jun-78
ENG. — DATE
BOARD LOCATION: 5AF04
SHEET 1 OF 1
WRP4A.DRW[4,664] 04-MAY-78 13:42
NEXT HIGHER ASSEMBLY: D-DD-M8574-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: WRITE PATH MIX AND LATCH C

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-WRP4	

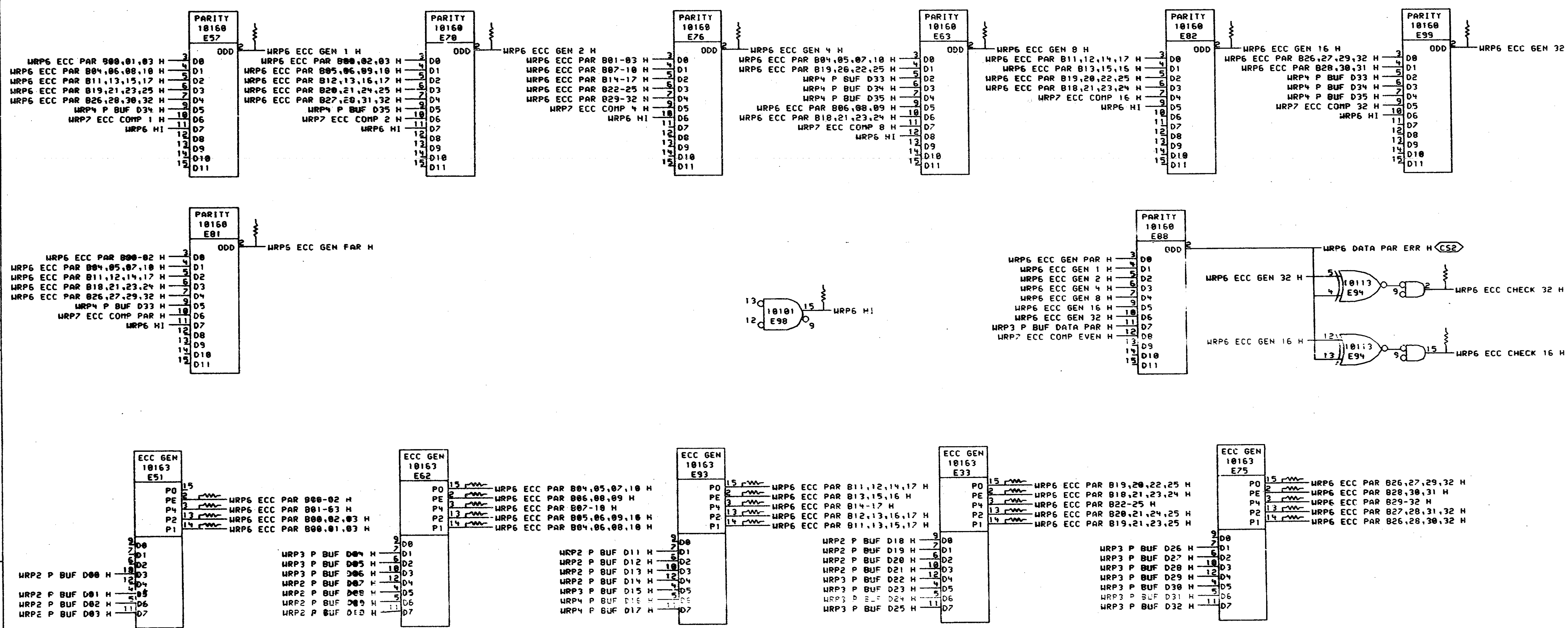

WRP2 P BUF D00 H
10101 E37
MOS WR DATA D00A H BF1
WRP2 P BUF D01 H
10101 E37
MOS WR DATA D01A H BH2
WRP2 P BUF D02 H
10101 E37
MOS WR DATA D02A H BL2
WRP2 P BUF D03 H
10101 E38
MOS WR DATA D03A H BM2
WRP3 P BUF D04 H
10101 E38
MOS WR DATA D04A H BS2
WRP3 P BUF D05 H
10101 E72
MOS WR DATA D05A H BU2
WRP3 P BUF D06 H
10101 E74
MOS WR DATA D06A H CJ1
WRP2 P BUF D07 H
10101 E44
MOS WR DATA D07A H CK2
WRP2 P BUF D08 H
10101 E74
MOS WR DATA D08A H DR1
WRP2 P BUF D09 H
10101 E74
MOS WR DATA D09A H DS1
WRP2 P BUF D10 H
10101 E72
MOS WR DATA D10A H EE1
WRP2 P BUF D11 H
10101 E72
MOS WR DATA D11A H EF1
WRP2 P BUF D12 H
10101 E98
MOS WR DATA D12A H ER2
WRP2 P BUF D13 H
10101 E72
MOS WR DATA D13A H ES2
WRP2 P BUF D14 H
10101 E98
MOS WR DATA D14A H FF1
WRP3 P BUF D15 H
10101 E74
WRP5 P TO ECC D15 L
MOS WR DATA D15A H FJ1
WRP4 P BUF D16 H
10101 E98
MOS WR DATA D16A H FP1
WRP4 P BUF D17 H
10101 E102
MOS WR DATA D17A H FR1
WRP2 P BUF D18 H
10104 E21
MOS WR DATA D18A H BJ2
WRP2 P BUF D19 H
10105 E27
MOS WR DATA D19A H BK2
WRP2 P BUF D20 H
10101 E9
MOS WR DATA D20A H BP2
WRP2 P BUF D21 H
10101 E37
MOS WR DATA D21A H BR2
WRP3 P BUF D22 H
10101 E44
MOS WR DATA D22A H CD2
WRP3 P BUF D23 H
10101 E44
MOS WR DATA D23A H CF1
WRP3 P BUF D24 H
10104 E22
MOS WR DATA D24A H CM1
WRP3 P BUF D25 H
10105 E34
WRP5 P TO ECC D25 L
MOS WR DATA D25A H CU2
WRP3 P BUF D26 H
10101 E10
MOS WR DATA D26A H DW2
WRP3 P BUF D27 H
10101 E80
MOS WR DATA D27A H EA1
WRP3 P BUF D28 H
10101 E80
MOS WR DATA D28A H EJ1
WRP3 P BUF D29 H
10101 E80
MOS WR DATA D29A H EL2
WRP3 P BUF D30 H
WRP6 HI
10104 E105
MOS WR DATA D30A H EU2
WRP3 P BUF D31 H
10113 E24
MOS WR DATA D31A H FD2
WRP3 P BUF D32 H
10101 E80
MOS WR DATA D32A H FK2
WRP4 P BUF D33 H
10101 E102
MOS WR DATA D33A H FM1
WRP4 P BUF D34 H
10101 E102
MOS WR DATA D34A H FT2
WRP4 P BUF D35 H
10101 E102
MOS WR DATA D35A H FV1

SHEET 6 OF 12

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN	DATE	ENG.	DATE	TITLE: WRITE PATH DATA BUFFER
CHK'D	DATE	BOARD LOCATION: SAF04		
WRP5A.DRW[4,664]	28-APR-78 07:21	NEXT HIGHER ASSEMBLY: D-DD-M8574-0		SIZE D / CODE CS / NUMBER M8574-0-WRP5 / REV.
FIRST USED ON OPTION/MODEL: MF26				


PARITY 10160 E57
WRP6 ECC PAR B00,01,03 H
WRP6 ECC PAR B04,06,08,10 H
WRP6 ECC PAR B11,13,15,17 H
WRP6 ECC PAR B19,21,23,25 H
WRP6 ECC PAR B26,28,30,32 H
WRP4 P BUF D34 H
WRP7 ECC COMP 1 H
WRP6 HI
WRP6 ECC GEN 1 H
PARITY 10160 E70
WRP6 ECC PAR B00,02,03 H
WRP6 ECC PAR B05,06,09,10 H
WRP6 ECC PAR B12,13,16,17 H
WRP6 ECC PAR B20,21,24,25 H
WRP6 ECC PAR B27,28,31,32 H
WRP4 P BUF D35 H
WRP7 ECC COMP 2 H
WRP6 HI
WRP6 ECC GEN 2 H
PARITY 10160 E76
WRP6 ECC PAR B01-03 H
WRP6 ECC PAR B07-10 H
WRP6 ECC PAR B14-17 H
WRP6 ECC PAR B22-25 H
WRP6 ECC PAR B29-32 H
WRP7 ECC COMP 4 H
WRP6 HI
WRP6 ECC GEN 4 H
PARITY 10160 E63
WRP6 ECC PAR B04,05,07,10 H
WRP6 ECC PAR B19,20,22,25 H
WRP4 P BUF D33 H
WRP4 P BUF D34 H
WRP4 P BUF D35 H
WRP6 ECC PAR B06,08,09 H
WRP6 ECC PAR B18,21,23,24 H
WRP7 ECC COMP 8 H
WRP6 HI
WRP6 ECC GEN 8 H
PARITY 10160 E82
WRP6 ECC PAR B11,12,14,17 H
WRP6 ECC PAR B13,15,16 H
WRP6 ECC PAR B19,20,22,25 H
WRP6 ECC PAR B18,21,23,24 H
WRP7 ECC COMP 16 H
WRP6 HI
WRP6 ECC GEN 16 H
PARITY 10160 E99
WRP6 ECC PAR B26,27,29,32 H
WRP6 ECC PAR B28,30,31 H
WRP4 P BUF D33 H
WRP4 P BUF D34 H
WRP4 P BUF D35 H
WRP7 ECC COMP 32 H
WRP6 HI
WRP6 ECC GEN 32 H
PARITY 10160 E81
WRP6 ECC PAR B00-02 H
WRP6 ECC PAR B04,05,07,10 H
WRP6 ECC PAR B11,12,14,17 H
WRP6 ECC PAR B18,21,23,24 H
WRP6 ECC PAR B26,27,29,32 H
WRP4 P BUF D33 H
WRP7 ECC COMP PAR H
WRP6 HI
WRP6 ECC GEN PAR H
10101 E98
WRP6 HI
PARITY 10160 E88
WRP6 ECC GEN PAR H
WRP6 ECC GEN 1 H
WRP6 ECC GEN 2 H
WRP6 ECC GEN 4 H
WRP6 ECC GEN 8 H
WRP6 ECC GEN 16 H
WRP6 ECC GEN 32 H
WRP3 P BUF DATA PAR H
WRP7 ECC COMP EVEN H
WRP6 DATA PAR ERR H (CS2)
10113 E94
WRP6 ECC GEN 32 H
WRP6 ECC CHECK 32 H
WRP6 ECC GEN 16 H
WRP6 ECC CHECK 16 H
ECC GEN 10163 E51
WRP6 ECC PAR B00-02 H
WRP6 ECC PAR B01-03 H
WRP6 ECC PAR B00,02,03 H
WRP6 ECC PAR B00,01,03 H
WRP2 P BUF D00 H
WRP2 P BUF D01 H
WRP2 P BUF D02 H
WRP2 P BUF D03 H
ECC GEN 10163 E62
WRP6 ECC PAR B04,05,07,10 H
WRP6 ECC PAR B06,08,09 H
WRP6 ECC PAR B07-10 H
WRP6 ECC PAR B05,06,09,10 H
WRP6 ECC PAR B04,06,08,10 H
WRP3 P BUF D04 H
WRP3 P BUF D05 H
WRP3 P BUF D06 H
WRP2 P BUF D07 H
WRP2 P BUF D08 H
WRP2 P BUF D09 H
WRP2 P BUF D10 H
ECC GEN 10163 E93
WRP6 ECC PAR B11,12,14,17 H
WRP6 ECC PAR B13,15,16 H
WRP6 ECC PAR B14-17 H
WRP6 ECC PAR B12,13,16,17 H
WRP6 ECC PAR B11,13,15,17 H
WRP2 P BUF D11 H
WRP2 P BUF D12 H
WRP2 P BUF D13 H
WRP2 P BUF D14 H
WRP3 P BUF D15 H
WRP4 P BUF D16 H
WRP4 P BUF D17 H
ECC GEN 10163 E33
WRP6 ECC PAR B19,20,22,25 H
WRP6 ECC PAR B18,21,23,24 H
WRP6 ECC PAR B22-25 H
WRP6 ECC PAR B20,21,24,25 H
WRP6 ECC PAR B19,21,23,25 H
WRP2 P BUF D18 H
WRP2 P BUF D19 H
WRP2 P BUF D20 H
WRP2 P BUF D21 H
WRP3 P BUF D22 H
WRP2 P BUF D23 H
WRP3 P BUF D24 H
WRP3 P BUF D25 H
ECC GEN 10163 E75
WRP6 ECC PAR B26,27,29,32 H
WRP6 ECC PAR B28,30,31 H
WRP6 ECC PAR B29-32 H
WRP6 ECC PAR B27,28,31,32 H
WRP6 ECC PAR B26,28,30,32 H
WRP3 P BUF D26 H
WRP3 P BUF D27 H
WRP3 P BUF D28 H
WRP3 P BUF D29 H
WRP3 P BUF D30 H
WRP3 P BUF D31 H
WRP3 P BUF D32 H

SHEET 7 OF 12

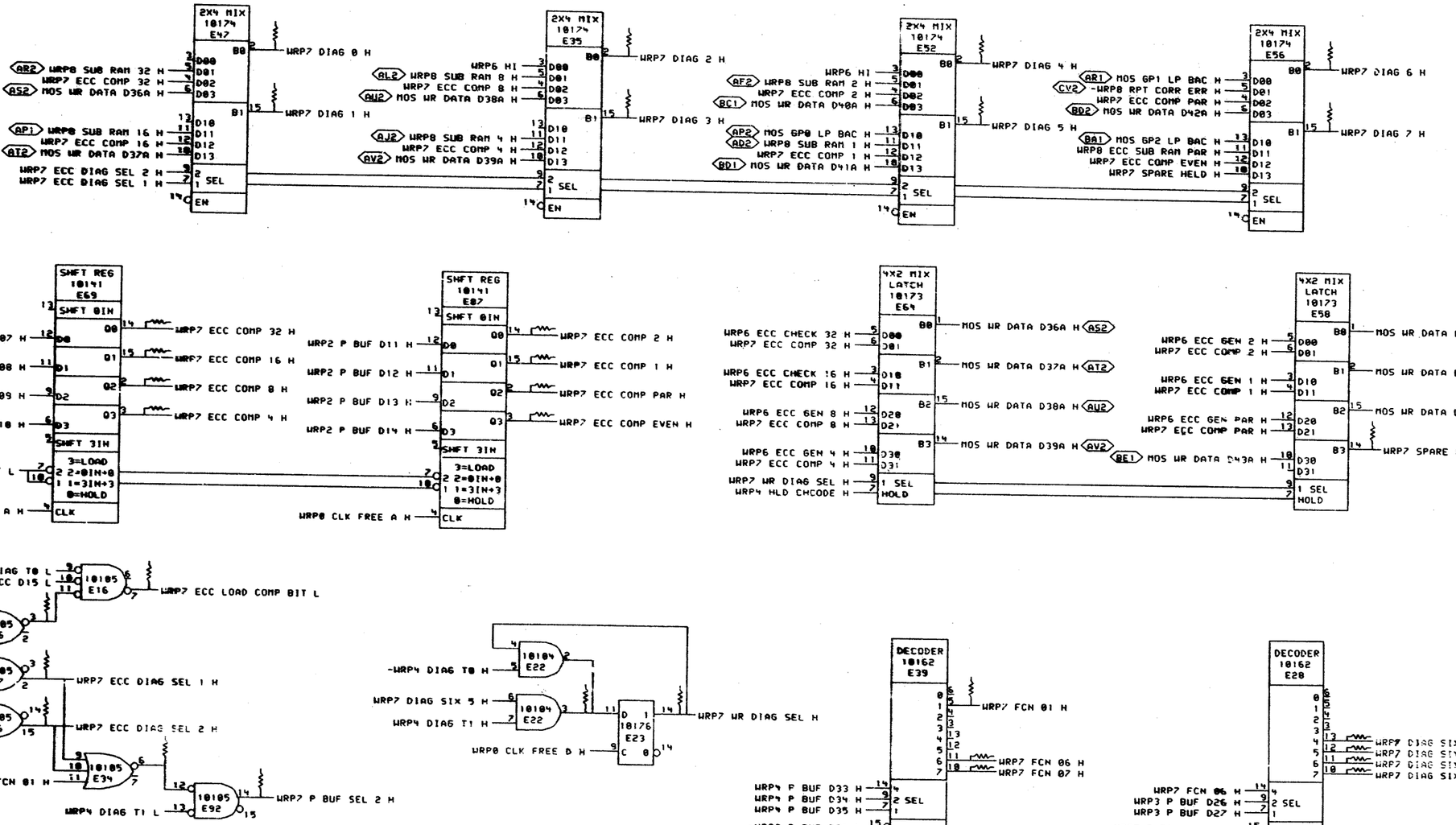
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier DATE 24-FEB-78
CHK P. Lucier DATE 22-Jun-78
WRP6A.DRW[4,664] 28-APR-78 07:22
FIRST USED ON OPTION/MODEL: MF20
ENG.
BOARD LOCATION: 5AF04
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8574-0

TITLE: WRITE PATH ECC GENERATOR

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-WRP6	



SHEET 8 OF 12

REVISIONS

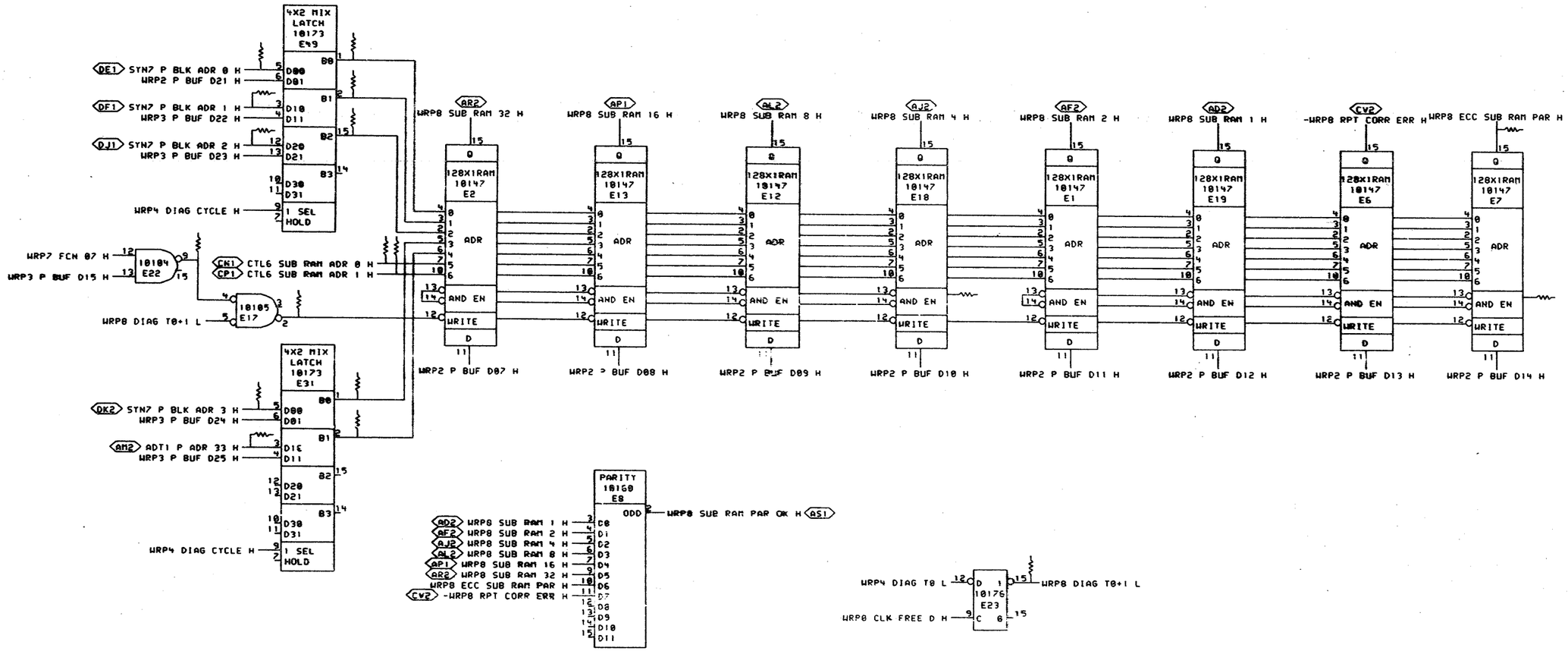
CHK	CHANGE NO.	REV

digital

DRN [illegible] DATE 24-FEB-78 ENG. [illegible] DATE [illegible]
CHK [illegible] DATE 22-Jun-78 BOARD LOCATION: 5AF04
WRP7A.DRW[4,664] 04-MAY-78 13:45 SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: MF20 NEXT HIGHER ASSEMBLY: D-DD-M8574-0

TITLE: WRITE PATH ECC DIAG REG

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-WRP7	



SHEET 9 OF 12

REVISIONS		
CHK	CHANGE NO.	REV

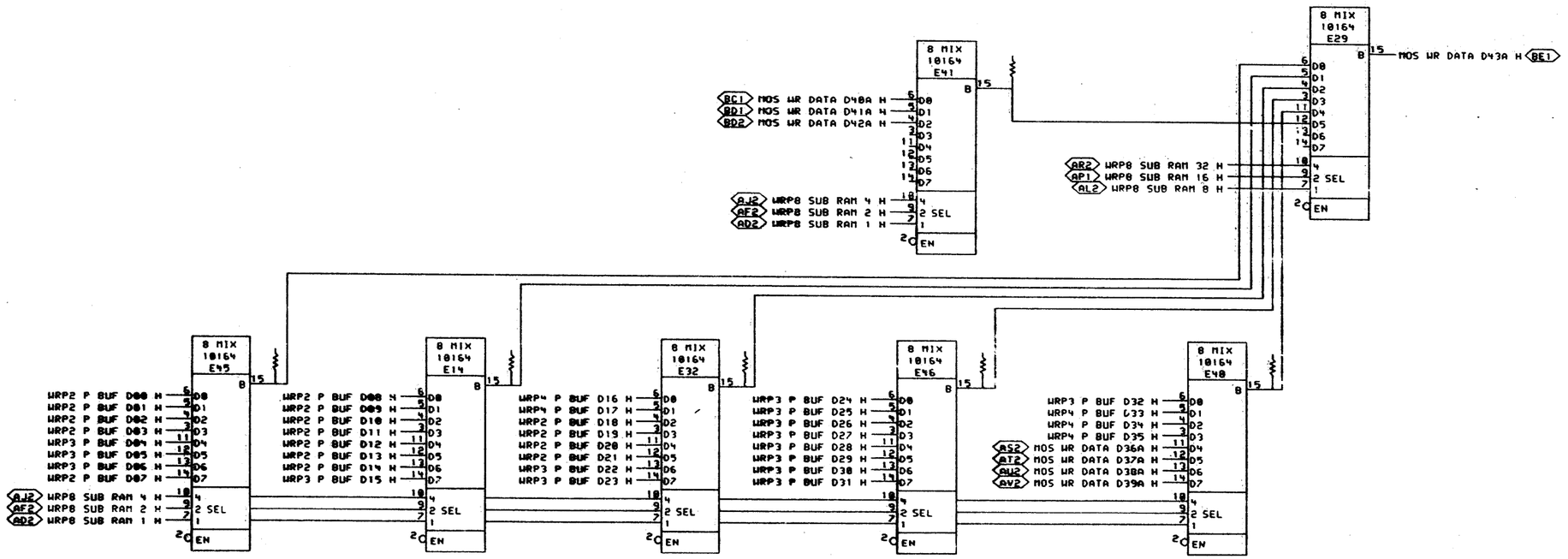
digital

DRN [illegible] DATE 24-FEB-78
CHK [illegible] DATE 22-Jun-78
ENG. [illegible] DATE [illegible]
WRP8A.DRU[4,664] 28-APR-78 07:22
BOARD LOCATION: 5AF04
SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: MF20
NEXT HIGHER ASSEMBLY: D-DD-M8574-0

TITLE: WRITE PATH SPARE BIT RAM

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-WRP8	MR

27



SHEET 10 OF 12

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P Lucier	DATE 31-MAY-78	ENG.	DATE
CHK P Lucier	DATE 22-Jun-78	BOARD LOCATION: 5AF04	
WRP9A.DRW[4,664] 31-MAY-78 11:30		SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8574-0	

TITLE: WRITE PATH
SPARE BIT MIXER

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-WRP9	

mr

+5.0V\V\ — GND ECL\G#19\

AA2	C104 10nF 50V	AC2
BA2	C105 10nF 50V	AH1
CA2		AH2
DA2	C106 10nF 50V	AT1
EA2		BC2
FA2	C107 10nF 50V	BH1
		BH2
	C108 10nF 50V	BT1
		CC2
	C109 10nF 50V	CH1
		CT1
	C110 10nF 50V	DC2
		DH1
	C111 10nF 50V	DH2
		DT1
	C112 10nF 50V	EC2
		EH1
	C113 10nF 50V	EH2
		ET1
	C207 180µF 15V +	FC2
		FH1
	C208 180µF 15V +	FH2
		FT1
	C209 180µF 15V +	
	C210 180µF 15V +	
	C211 180µF 15V +	
	C212 180µF 15V +	
	C213 180µF 15V +	
	C214 180µF 15V +	
	C215 180µF 15V +	
	C216 180µF 15V +	

-5.2V\V\ — GND ECL\G#19\

AB2	C1 10nF 50V	C23 10nF 50V
AV1	C2 10nF 50V	C24 10nF 50V
BB2		
BV1	C3 10nF 50V	C25 10nF 50V
CB2		
CV1	C4 10nF 50V	C26 10nF 50V
DB2		
DV1	C6 10nF 50V	C27 10nF 50V
EB2		
EV1	C7 10nF 50V	C28 10nF 50V
FB2		
FV1	C8 10nF 50V	C29 10nF 50V
	C9 10nF 50V	C30 10nF 50V
	C5 10nF 50V	C31 10nF 50V
	C11 10nF 50V	C32 10nF 50V
	C12 10nF 50V	C33 10nF 50V
	C13 10nF 50V	C34 10nF 50V
	C14 10nF 50V	C35 10nF 50V
	C15 10nF 50V	C36 10nF 50V
	C17 10nF 50V	C37 10nF 50V
	C18 10nF 50V	C38 10nF 50V
	C19 10nF 50V	C39 10nF 50V
	C20 10nF 50V	C40 10nF 50V
	C21 10nF 50V	C41 10nF 50V
	C22 10nF 50V	C42 10nF 50V

-5.2V\V\ — GND ECL\G#19\

C43 10nF 50V	C62 10nF 50V
C44 10nF 50V	C63 10nF 50V
C45 10nF 50V	C64 10nF 50V
C46 10nF 50V	C65 10nF 50V
C47 10nF 50V	C66 10nF 50V
C48 10nF 50V	C67 10nF 50V
C49 10nF 50V	C68 10nF 50V
C50 10nF 50V	C69 10nF 50V
C51 10nF 50V	C70 10nF 50V
C52 10nF 50V	C71 10nF 50V
C53 10nF 50V	C72 10nF 50V
C54 10nF 50V	C73 10nF 50V
C55 10nF 50V	C74 10nF 50V
C56 10nF 50V	C75 10nF 50V
C57 10nF 50V	C76 10nF 50V
C58 10nF 50V	C77 10nF 50V
C59 10nF 50V	C78 10nF 50V
C60 10nF 50V	C79 10nF 50V
C61 10nF 50V	C80 10nF 50V
	C81 10nF 50V

-5.2V\V\ — GND ECL\G#19\

C82 10nF 50V	C101 10nF 50V
C83 10nF 50V	C102 10nF 50V
C84 10nF 50V	C103 10nF 50V
C85 10nF 50V	C10 10nF 50V
C86 10nF 50V	C16 10nF 50V
C87 10nF 50V	C217 180µF 15V +
C88 10nF 50V	C218 180µF 15V +
C89 10nF 50V	C219 180µF 15V +
C90 10nF 50V	C220 180µF 15V +
C91 10nF 50V	C221 180µF 15V +
C92 10nF 50V	C222 180µF 15V +
C93 10nF 50V	C223 180µF 15V +
C94 10nF 50V	
C95 10nF 50V	
C96 10nF 50V	
C97 10nF 50V	
C98 10nF 50V	
C99 10nF 50V	
C100 10nF 50V	

CN2 — [B,GND ECL,GND CLK\G#20\]

NOTE: THE FOLLOWING SPARE PINS ARE NOT CONNECTED.

AA1	NC
AC1	NC
AD1	NC
AE2	NC
DD2	NC
DT2	NC

NOTE: THE FOLLOWING PINS ARE UNCONNECTED AND SHOULD NOT BE USED.

AV1	[B,NC,GND ECL\G#19\]
BV1	[B,NC,GND ECL\G#19\]
CV1	[B,NC,GND ECL\G#19\]
DV1	[B,NC,GND ECL\G#19\]
EV1	[B,NC,GND ECL\G#19\]
FV1	[B,NC,GND ECL\G#19\]

[B,GND ECL,GND]

SHEET 11 OF 12

REVISIONS		
CHK	CHANGE NO.	REV

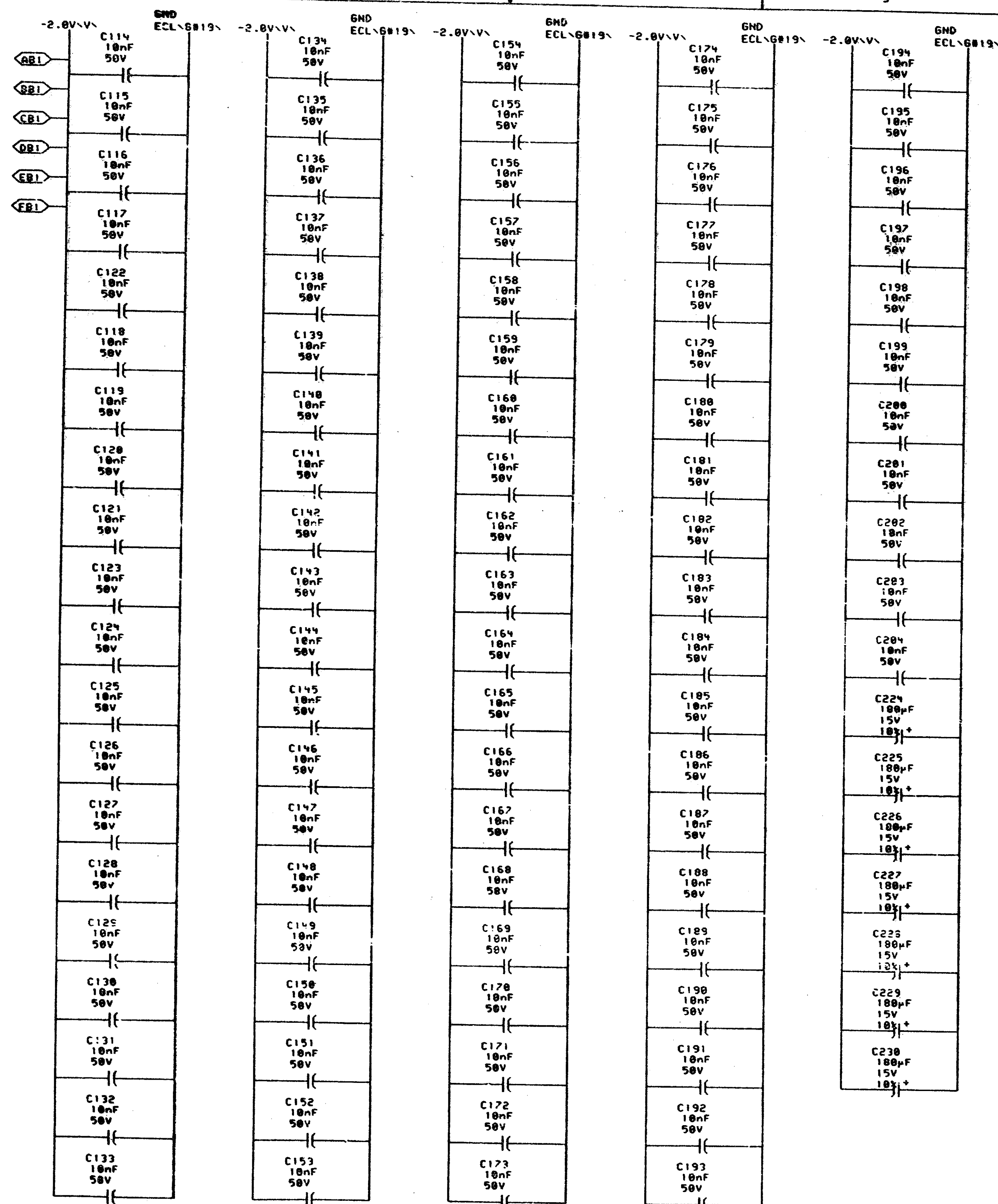
digital

DRN P. Lucier DATE 07-JUN-78
CHK P. Lucier DATE 22-Jun-78
WRPAA.DRW[4,664] 07-JUN-78 11:18
FIRST USED ON OPTION/MODEL: MF20

ENG. DATE
BOARD LOCATION: 5AF04
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8574-0

TITLE: WRITE PATH POWER. GND. CAPS.

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-WRPA	MR 1



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 & 10176
1 24	12	10181

THE FOLLOWING PIN NUMBERS APPLY TO DC009 DIP PACKAGES

GND	-5.2	+5.0V	MANUFACTURES' PART NUMBER
5 14	1	10	DC009

SHEET 12 OF 12

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier	DATE 07-JUN-78	ENG.	DATE
CHK P. Lucier	DATE	BOARD LOCATION: 5AF04	
WRPBA.DRW[4,664]	07-JUN-78 11:18	SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8574-0	

TITLE: WRITE PATH POWER, GND, CAPS.

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-WRPB	

MR

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R263(1)	WRP8	C1	68Ω	%E1(13)
R136(1)	WRP4	D2	68Ω	%E10(2)
R11(1)	WRP9	B6	68Ω	%E14(15)
R6(1)	WRP4	B2	68Ω	%E15(2)
R55(1)	WRP7	B7	68Ω	%E16(3)
R199(1)	WRP8	C7	68Ω	%E17(2)
R198(1)	WRP8	C4	68Ω	%E2(13)
R3(1)	WRP4	A6	68Ω	%E20(3)
R148(1)	WRP4	A7	68Ω	%E20(7)
R5(1)	WRP4	B3	68Ω	%E21(2)
R91(1)	WRP4	B7	68Ω	%E21(9)
R4(1)	WRP7	A5	68Ω	%E22(2)
R2(1)	WRP8	C7	68Ω	%E22(9)
R103(1)	WRP4	B3	68Ω	%E23(3)
R105(1)	WRP4	A4	68Ω	%E23(4)
R146(1)	WRP2	C6	68Ω	%E25(1)
R150(1)	WRP2	B6	68Ω	%E25(14)
R149(1)	WRP2	C6	68Ω	%E25(15)
R147(1)	WRP2	C6	68Ω	%E25(2)
R98(1)	WRP4	B7	68Ω	%E3(11)
R88(1)	WRP4	B7	68Ω	%E3(12)
R89(1)	WRP4	B7	68Ω	%E3(13)
R210(1)	WRP2	B6	68Ω	%E30(1)
R213(1)	WRP2	A6	68Ω	%E30(14)
R214(1)	WRP2	A6	68Ω	%E30(15)
R211(1)	WRP2	B6	68Ω	%E30(2)
R270(1)	WRP8	B6	68Ω	%E31(1)
R269(1)	WRP8	B6	68Ω	%E31(2)
R13(1)	WRP9	B5	68Ω	%E32(15)
R127(1)	WRP7	A7	68Ω	%E34(6)
R9(1)	WRP9	B3	68Ω	%E40(15)
R10(1)	WRP9	C4	68Ω	%E41(15)
R12(1)	WRP9	B7	68Ω	%E45(15)
R14(1)	WRP9	B4	68Ω	%E46(15)
R268(1)	WRP8	D6	68Ω	%E49(1)
R267(1)	WRP8	C6	68Ω	%E49(15)
R266(1)	WRP8	C6	68Ω	%E49(2)
R63(1)	WRP3	A6	68Ω	%E5(2)
R225(1)	WRP3	D5	68Ω	%E54(1)
R226(1)	WRP3	C5	68Ω	%E54(14)

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R228(1)	WRP3	C5	68Ω	%E54(15)
R227(1)	WRP3	D5	68Ω	%E54(2)
R120(1)	WRP2	D3	68Ω	%E61(15)
R119(1)	WRP2	D3	68Ω	%E61(2)
R160(1)	WRP3	C5	68Ω	%E66(1)
R167(1)	WRP3	B5	68Ω	%E66(14)
R164(1)	WRP3	B5	68Ω	%E66(15)
R165(1)	WRP3	C5	68Ω	%E66(2)
R121(1)	WRP2	C3	68Ω	%E73(15)
R122(1)	WRP2	C3	68Ω	%E73(2)
R170(1)	WRP3	C3	68Ω	%E78(1)
R179(1)	WRP3	B3	68Ω	%E78(14)
R174(1)	WRP3	B3	68Ω	%E78(15)
R175(1)	WRP3	C3	68Ω	%E78(2)
R130(1)	WRP2	A3	68Ω	%E84(15)
R126(1)	WRP2	B3	68Ω	%E84(2)
R124(1)	WRP2	B3	68Ω	%E85(15)
R123(1)	WRP2	B3	68Ω	%E85(2)
R104(1)	WRP4	B3	68Ω	%E9(14)
R182(1)	WRP3	D3	68Ω	%E96(1)
R187(1)	WRP3	C3	68Ω	%E98(14)
R184(1)	WRP3	C3	68Ω	%E98(15)
R185(1)	WRP3	D3	68Ω	%E98(2)
R47(1)	WRP8	D2	68Ω	%E95(16)
R186(1)	WRP4	D7	68Ω	%E96(1)
R192(1)	WRP4	D7	68Ω	%E96(14)
R189(1)	WRP4	D7	68Ω	%E96(15)
R198(1)	WRP4	D7	68Ω	%E96(2)
R208(1)	WRP8	B7	68Ω	ADT1 P ADR 33 H
R48(1)	WRP3	A7	68Ω	ADT4 P BUF MEM RD SEL H
R155(1)	WRP8	C3	68Ω	ADT6 CLK FREE 80\820\ H
R204(1)	WRP2	C6	68Ω	CHK TO P D00 H
R205(1)	WRP2	C6	68Ω	CHK TO P D01 H
R205(1)	WRP2	B6	68Ω	CHK TO P D02 H
R201(1)	WRP2	B6	68Ω	CHK TO P D03 H
R221(1)	WRP3	D6	68Ω	CHK TO P D04 H
R222(1)	WRP3	D6	68Ω	CHK TO P D05 H
R232(1)	WRP3	C6	68Ω	CHK TO P D06 H
R162(1)	WRP2	D4	68Ω	CHK TO P D07 H
R157(1)	WRP2	D4	68Ω	CHK TO P D08 H

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R172(1)	WRP2	C4	68Ω	CHK TO P D09 H
R168(1)	WRP2	C4	68Ω	CHK TO P D10 H
R176(1)	WRP2	B4	68Ω	CHK TO P D11 H
R188(1)	WRP2	B4	68Ω	CHK TO P D12 H
R250(1)	WRP2	B4	68Ω	CHK TO P D13 H
R245(1)	WRP2	A4	68Ω	CHK TO P D14 H
R256(1)	WRP3	D3	68Ω	CHK TO P D15 H
R206(1)	WRP2	A6	68Ω	CHK TO P D20 H
R280(1)	WRP2	A6	68Ω	CHK TO P D21 H
R216(1)	WRP3	C6	68Ω	CHK TO P D22 H
R219(1)	WRP3	C6	68Ω	CHK TO P D23 H
R230(1)	WRP3	B6	68Ω	CHK TO P D24 H
R224(1)	WRP3	B6	68Ω	CHK TO P D25 H
R229(1)	WRP3	B6	68Ω	CHK TO P D26 H
R241(1)	WRP3	B3	68Ω	CHK TO P D27 H
R244(1)	WRP3	C3	68Ω	CHK TO P D28 H
R246(1)	WRP3	B3	68Ω	CHK TO P D29 H
R236(1)	WRP3	B3	68Ω	CHK TO P D30 H
R252(1)	WRP3	D3	68Ω	CHK TO P D31 H
R258(1)	WRP3	C3	68Ω	CHK TO P D32 H
R254(1)	WRP4	D7	68Ω	CHK TO P D33 H
R259(1)	WRP4	D7	68Ω	CHK TO P D34 H
R191(1)	WRP4	D3	68Ω	CHK TO P D35 H
R94(1)	WRP4	B3	68Ω	-CTL3 WR DATA MOV T2 H
R289(1)	WRP4	D5	68Ω	CTL6 DATA DISABLE H
R151(1)	WRP3	B7	68Ω	-CTL6 P BUF LOAD H
R288(1)	WRP4	C5	68Ω	CTL6 PHS DATA H
R196(1)	WRP8	C6	68Ω	CTL6 SUB RAM ADR 0 H
R197(1)	WRP8	C6	68Ω	CTL6 SUB RAM ADR 1 H
R95(1)	WRP4	B5	68Ω	-CTL8 S DIAG T0 H
R92(1)	WRP4	B5	68Ω	-CTL8 S DIAG T1 H
R102(1)	WRP4	C3	68Ω	-CTL8 S DIAG T2 H
R260(1)	WRP4	D7	68Ω	SYN6 CHK TO P D16 H
R261(1)	WRP4	D7	68Ω	SYN6 CHK TO P D17 H
R201(1)	WRP2	B6	68Ω	SYN6 CHK TO P D18 H
R202(1)	WRP2	B6	68Ω	SYN6 CHK TO P D19 H
R253(1)	WRP3	C3	68Ω	SYN6 CHK TO P DATA PAR H
R217(1)	WRP8	D7	68Ω	SYN7 P BLK ADR 0 H
R218(1)	WRP8	C7	68Ω	SYN7 P BLK ADR 1 H
R212(1)	WRP8	C7	68Ω	SYN7 P BLK ADR 2 H

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R209(1)	WRP8	B7	68Ω	SYN7 P BLK ADR 3 H
R129(1)	WRP0	C2	68Ω	WRP0 CLK FREE A H
R135(1)	WRP0	C2	68Ω	WRP0 CLK FREE B H
R188(1)	WRP0	C2	68Ω	WRP0 CLK FREE C H
R8(1)	WRP0	C2	68Ω	WRP0 CLK FREE D H
R93(1)	WRP0	C2	68Ω	WRP0 CLK FREE E H
R290(1)	WRP0	C2	68Ω	WRP0 CLK FREE F H
R144(1)	WRP0	A2	68Ω	-WRP0 PT LPBK EN H
R58(1)	WRP0	D7	68Ω	WRP0 SBUS TO P D00 H
R96(1)	WRP0	D6	68Ω	-WRP0 SBUS TO P D00 H
R97(1)	WRP0	C7	68Ω	WRP0 SBUS TO P D01 H
R277(1)	WRP0	C7	68Ω	WRP0 SBUS TO P D02 H
R276(1)	WRP0	B7	68Ω	WRP0 SBUS TO P D03 H
R275(1)	WRP0	D5	68Ω	WRP0 SBUS TO P D04 H
R83(1)	WRP0	C5	68Ω	WRP0 SBUS TO P D05 H
R234(1)	WRP0	C5	68Ω	WRP0 SBUS TO P D06 H
R161(1)	WRP0	B5	68Ω	WRP0 SBUS TO P D07 H
R156(1)	WRP0	B7	68Ω	WRP0 SBUS TO P D08 H
R171(1)	WRP0	B7	68Ω	WRP0 SBUS TO P D09 H
R166(1)	WRP0	A7	68Ω	WRP0 SBUS TO P D10 H
R177(1)	WRP0	A7	68Ω	WRP0 SBUS TO P D11 H
R178(1)	WRP0	B5	68Ω	WRP0 SBUS TO P D12 H
R249(1)	WRP0	B5	68Ω	WRP0 SBUS TO P D13 H
R243(1)	WRP0	A5	68Ω	WRP0 SBUS TO P D14 H
R257(1)	WRP0	A5	68Ω	WRP0 SBUS TO P D15 H
R262(1)	WRP1	D5	68Ω	WRP1 SBUS TO P D16 H
R255(1)	WRP1	C5	68Ω	WRP1 SBUS TO P D17 H
R200(1)	WRP1	C5	68Ω	WRP1 SBUS TO P D18 H
R203(1)	WRP1	C5	68Ω	WRP1 SBUS TO P D19 H
R207(1)	WRP1	B5	68Ω	WRP1 SBUS TO P D20 H
R283(1)	WRP1	B5	68Ω	WRP1 SBUS TO P D21 H
R220(1)	WRP1	B5	68Ω	WRP1 SBUS TO P D22 H
R223(1)	WRP1	B5	68Ω	WRP1 SBUS TO P D23 H
R235(1)	WRP1	A5	68Ω	WRP1 SBUS TO P D24 H
R231(1)	WRP1	D3	68Ω	WRP1 SBUS TO P D25 H
R233(1)	WRP1	D3	68Ω	WRP1 SBUS TO P D26 H
R239(1)	WRP1	D3	68Ω	WRP1 SBUS TO P D27 H
R240(1)	WRP1	C3	68Ω	WRP1 SBUS TO P D28 H
R237(1)	WRP1	C3	68Ω	WRP1 SBUS TO P D29 H
R238(1)	WRP1	C3	68Ω	WRP1 SBUS TO P D30 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 07-JUN-78	ENG. [illegible] DATE [illegible]
	CHK'D [illegible]	DATE 22-Jun-78	BOARD LOCATION: SHEET 1 OF 2
E85741.DRW[4,664]	07-JUN-78 11:19	NEXT HIGHER ASSEMBLY:	
FIRST USED ON OPTION/MODEL: MF20		D-DD-M8574-0	

TITLE: WRITE PATH TERMINATORS

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-RES	

MR

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R133(1)	WRP1	B3	68Ω	WRP1 SBUS TO P D31 H
R134(1)	WRP1	B3	68Ω	WRP1 SBUS TO P D32 H
R87(1)	WRP1	B3	68Ω	WRP1 SBUS TO P D33 H
R131(1)	WRP1	B3	68Ω	WRP1 SBUS TO P D34 H
R132(1)	WRP1	A3	68Ω	WRP1 SBUS TO P D35 H
R248(1)	WRP1	A3	68Ω	WPP1 SBUS TO P DATA PAR H
R71(1)	WRP2	C5	68Ω	WRP2 P BUF D00 H
R74(1)	WRP2	C5	68Ω	WRP2 P BUF D01 H
R73(1)	WRP2	C5	68Ω	WRP2 P BUF D02 H
R70(1)	WRP2	B5	68Ω	WRP2 P BUF D03 H
R195(1)	WRP2	D2	68Ω	WRP2 P BUF D07 H
R14?(1)	WRP2	D2	68Ω	WRP2 P BUF D08 H
R140(1)	WRP2	C2	68Ω	WRP2 P BUF D09 H
R142(1)	WRP2	C2	68Ω	WRP2 P BUF D10 H
R264(1)	WRP2	B2	68Ω	WRP2 P BUF D11 H
R137(1)	WRP2	B2	68Ω	WRP2 P BUF D12 H
R265(1)	WRP2	B2	68Ω	WRP2 P BUF D13 H
R139(1)	WRP2	B2	68Ω	WRP2 P BUF D14 H
R284(1)	WRP2	C5	68Ω	WRP2 P BUF D18 H
R286(1)	WRP2	B5	68Ω	WRP2 P BUF D19 H
R98(1)	WRP2	A5	68Ω	WRP2 P BUF D20 H
R107(1)	WRP2	A5	68Ω	WRP2 P BUF D21 H
R154(1)	WRP3	D5	68Ω	WRP3 P BUF D04 H
R111(1)	WRP3	D5	68Ω	WRP3 P BUF D05 H
R112(1)	WRP3	C5	68Ω	WRP3 P BUF D06 H
R138(1)	WRP3	D2	68Ω	WRP3 P BUF D15 H
R106(1)	WRP3	C5	68Ω	WRP3 P BUF D22 H
R109(1)	WRP3	C5	68Ω	WRP3 P BUF D23 H
R59(1)	WRP3	C5	68Ω	WRP3 P BUF D24 H
R69(1)	WRP3	B5	68Ω	WRP3 P BUF D25 H
R49(1)	WRP3	B5	68Ω	WRP3 P BUF D26 H
R62(1)	WRP3	B2	68Ω	WRP3 P BUF D27 H
R68(1)	WRP3	C2	68Ω	WRP3 P BUF D28 H
R65(1)	WRP3	C2	68Ω	WRP3 P BUF D29 H
R66(1)	WRP3	B2	68Ω	WRP3 P BUF D30 H
R282(1)	WRP3	D2	68Ω	WRP3 P BUF D31 H
R67(1)	WRP3	C2	68Ω	WRP3 P BUF D32 H
R41(1)	WRP3	C2	68Ω	WRP3 P BUF DATA PAR H
R125(1)	WRP3	B7	68Ω	-WRP3 P BUF LOAD A H
R193(1)	WRP3	B7	68Ω	-WRP3 P BUF LOAD B H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R251(1)	WRP3	A6	68Ω	WRP3 P BUF RD SEL H
R194(1)	WRP3	A6	68Ω	-WRP3 P BUF RD SEL H
R287(1)	WRP4	D4	68Ω	WRP4 DATA DISABLE A H
R291(1)	WRP4	D4	68Ω	WRP4 DATA DISABLE B H
R292(1)	WRP4	D4	68Ω	WRP4 DATA DISABLE C H
R295(1)	WRP4	C4	68Ω	WRP4 DATA DISABLE D H
R215(1)	WRP4	B4	68Ω	WRP4 DIAG CYCLE H
R61(1)	WRP4	B4	68Ω	-WRP4 DIAG CYCLE H
R7(1)	WRP4	B5	68Ω	WRP4 DIAG T0 H
R51(1)	WRP4	B5	68Ω	-WRP4 DIAG T0 H
R64(1)	WRP4	B5	68Ω	WRP4 DIAG T1 H
R128(1)	WRP4	B5	68Ω	-WRP4 DIAG T1 H
R24(1)	WRP4	B2	68Ω	WRP4 HLD CHCODE H
R145(1)	WRP4	B5	68Ω	WRP4 MR RESET A H
R153(1)	WRP4	D6	68Ω	WRP4 P BUF D16 H
R152(1)	WRP4	DE	68Ω	WRP4 P BUF D17 H
R108(1)	WRP4	D6	68Ω	WRP4 P BUF D33 H
R110(1)	WRP4	D6	68Ω	WRP4 P BUF D34 H
R113(1)	WRP4	D2	68Ω	WRP4 P BUF D35 H
R143(1)	WRP4	A7	68Ω	-WRP4 S DIAG PT LPBK H
R54(1)	WRP5	C4	68Ω	-WRP5 P TO ECC D15 H
R60(1)	WRP5	B6	68Ω	-WRP5 P TO ECC D25 H
R25(1)	WRP6	B1	68Ω	WRP6 ECC CHECK 16 H
R26(1)	WRP6	C1	68Ω	WRP6 ECC CHECK 32 H
R43(1)	WRP6	D7	68Ω	WRP6 ECC GEN 1 H
R46(1)	WRP6	D2	68Ω	WRP6 ECC GEN 16 H
R44(1)	WRP6	D6	68Ω	WRP6 ECC GEN 2 H
R42(1)	WRP6	D1	68Ω	WRP6 ECC GEN 32 H
R23(1)	WRP6	D5	68Ω	WRP6 ECC GEN 4 H
R45(1)	WRP6	D4	68Ω	WRP6 ECC GEN 8 H
R19(1)	WRP6	C7	68Ω	WRP6 ECC GEN PAR H
R72(1)	WRP6	B7	68Ω	WRP6 ECC PAR B00,01,03 H
R27(1)	WRP6	B7	68Ω	WRP6 ECC PAR B00,02,03 H
R81(1)	WRP6	B7	68Ω	WRP6 ECC PAR B00-02 H
R32(1)	WRP6	B7	68Ω	WRP6 ECC PAR B01-03 H
R82(1)	WRP6	B6	68Ω	WRP6 ECC PAR B04,05,07,10 H
R75(1)	WRP6	B6	68Ω	WRP6 ECC PAR B04,06,08,10 H
R28(1)	WRP6	B6	68Ω	WRP6 ECC PAR B05,06,09,10 H
R79(1)	WRP6	B6	68Ω	WRP6 ECC PAR B06,08,09 H
R33(1)	WRP6	B6	68Ω	WRP6 ECC PAR B07-10 H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R37(1)	WRP6	B5	68Ω	WRP6 ECC PAR B11,12,14,17 H
R77(1)	WRP6	B5	68Ω	WRP6 ECC PAR B11,13,15,17 H
R29(1)	WRP6	B5	68Ω	WRP6 ECC PAR B12,13,16,17 H
R38(1)	WRP6	B5	68Ω	WRP6 ECC PAR B13,15,16 H
R34(1)	WRP6	B5	68Ω	WRP6 ECC PAR B14-17 H
R40(1)	WRP6	B3	68Ω	WRP6 ECC PAR B18,21,23,24 H
R39(1)	WRP6	B3	68Ω	WRP6 ECC PAR B19,20,22,25 H
R76(1)	WRP6	B3	58Ω	WRP6 ECC PAR B19,21,23,25 H
R31(1)	WRP6	B3	68Ω	WRP6 ECC PAR B20,21,24,25 H
R36(1)	WRP6	B3	68Ω	WRP6 ECC PAR B22-25 H
R84(1)	WRP6	B2	68Ω	WRP6 ECC PAR B26,27,29,32 H
R78(1)	WRP6	B2	68Ω	WRP6 ECC PAR B26,28,30,32 H
R30(1)	WRP6	B2	68Ω	WRP6 ECC PAR B27,28,31,32 H
R85(1)	WRP6	B2	68Ω	WRP6 ECC PAR B28,30,31 H
R35(1)	WRP6	32	68Ω	WRP6 ECC PAR B29-32 H
R99(1)	WRP6	C4	68Ω	WRP6 HI
R163(1)	WRP7	D6	68Ω	WRP7 DIAG 0 H
R159(1)	WRP7	D6	68Ω	WRP7 DIAG 1 H
R173(1)	WRP7	D5	68Ω	WRP7 DIAG 2 H
R169(1)	WRP7	D5	68Ω	WRP7 DIAG 3 H
R183(1)	WRP7	D3	68Ω	WRP7 DIAG 4 H
R181(1)	WRP7	D3	68Ω	WRP7 DIAG 5 H
R242(1)	WRP7	D2	68Ω	WRP7 DIAG 6 H
R247(1)	WRP7	D2	68Ω	WRP7 DIAG 7 H
R53(1)	WRP7	A1	68Ω	WRP7 DIAG SIX 4 H
R58(1)	WRP7	A1	68Ω	WRP7 DIAG SIX 5 H
R52(1)	WRP7	A1	68Ω	WRP7 DIAG SIX 6 H
R101(1)	WRP7	A1	68Ω	WRP7 DIAG SIX 7 H
R17(1)	WRP7	C5	68Ω	WRP7 ECC COMP 1 H
R18(1)	WRP7	C7	68Ω	WRP7 ECC COMP 16 H
R21(1)	WRP7	C5	68Ω	WRP7 ECC COMP 2 H
R86(1)	WRP7	C7	58Ω	WRP7 ECC COMP 32 H
R16(1)	WRP7	C7	68Ω	WRP7 ECC COMP 4 H
R15(1)	WRP7	C7	68Ω	WRP7 ECC COMP 8 H
R115(1)	WRP7	C5	68Ω	WRP7 ECC COMP EVEN H
R20(1)	WRP7	C5	68Ω	WRP7 ECC COMP PAR H
R117(1)	WRP7	B7	68Ω	WRP7 ECC DIAG SEL 1 H
R118(1)	WRP7	A7	68Ω	WRP7 ECC DIAG SEL 2 H
R80(1)	WRP7	B7	68Ω	-WRP7 ECC LOAD COMP BIT H
R100(1)	WRP7	B3	68Ω	WRP7 FCN 01 H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R56(1)	WRP7	A3	68Ω	WRP7 FCN 06 H
R57(1)	WRP7	A3	68Ω	WRP7 FCN 07 H
R158(1)	WRP7	A6	68Ω	WRP7 P BUF SEL 2 H
R114(1)	WRP7	B1	68Ω	WRP7 SPARE HELD H
R22(1)	WRP7	A4	68Ω	WRP7 WR DIAG SEL H
R1(1)	WRP8	B3	68Ω	-WRP8 DIAG T0+1 H
R116(1)	WRP8	C1	68Ω	WRP8 ECC SUB RAM PAR 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 07-JUN-78 | ENG. J Chun DATE 29 Jun 78
CHK'D. P Lucas DATE 27-Jun-78 | BOARD LOCATION:
SHEET 2 OF 2
E85742.DRW[4,664] 07-JUN-78 11:19 | NEXT HIGHER ASSEMBLY: D-DD-M8574-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: WRITE PATH TERMINATORS

SIZE	CODE	NUMBER	REV.
D	CS	M8574-0-RES	

mR

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION		REVISIONS
			FILE: ORIGINAL LAYOUT		
			ECO NUMBER		
			MODULE REVISION	A	
E-UA-M8575-0-0	4		SYNDROME	A	
D-UA-M8575-0-0	1		SYNDROME	A	
K-PL-M8575-0-DBP	2		PARTS LIST	A	
D-CS-M8575-0-SYN0	1		BIT SUB DECODER	-	
D-CS-M8575-0-SYN1	1		BIT SUB DATA	-	
D-CS-M8575-0-SYN2	1		BIT SUB,ECC BITS	-	
D-CS-M8575-0-SYN3	1		GENERATOR	-	
D-CS-M8575-0-SYN4	1		CALCULATOR	-	
D-CS-M8575-0-SYN5	1		CORRECTION DECODE	-	
D-CS-M8575-0-SYN6	1		DATA CORRECTION	-	
D-CS-M8575-0-SYN7	1		PORT ADDRESS	-	
D-CS-M8575-0-SYN8	1		DIAG SELECTION	-	
D-CS-M8575-0-SYN9	1		DIAG MIXER	-	
D-CS-M8575-0-SYNA	1		POWER CONTROL	-	
D-CS-M8575-0-SYNB	1		POWER. GND. CAPS.	-	
D-CS-M8575-0-SYNC	1		POWER. GND. CAPS.	-	
D-CS-M8575-0-RES	3		TERMINATORS	-	
E-MD-5012899-0-0	5		DRILL & ETCH DRAWING	B	
		5012899	ETCH CIRCUIT BOARD	C	
K-PC-M8575-0-DBC	-		P.C. DESIGN DATA BASE	A	
P00-M8575-00	-		PROCESS SHEET (REF ONLY)	-	

NOTES:

REVISIONS | CHK | CHANGE NO. | REV

PROD. 29 JUN 78

digital

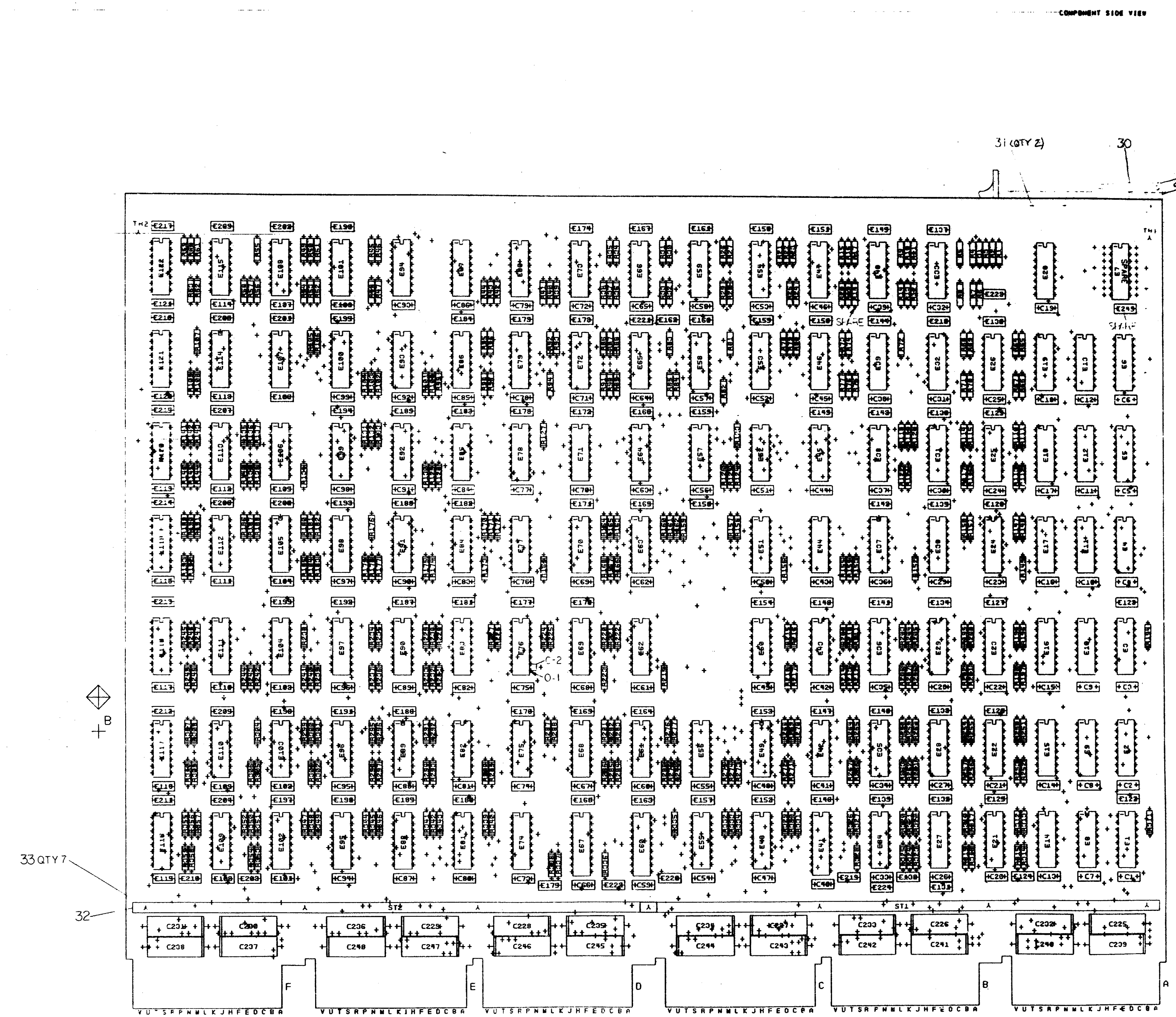
DRN. P. Lucier DATE 20-JUN-78 | ENG. DATE 29 JUN 78 | TITLE: SYNDROME

CHK'D. DATE 22-JUN-78 | BOARD LOCATION: 58F05 | SHEET 1 OF 1

DSK:8575DD.T2P[4,665] 20-JUN-78 15:35 | NEXT HIGHER ASSEMBLY: NONE

FIRST USED ON OPTION/MODEL: MF20

SIZE D | CODE DD | NUMBER M8575-0 | REV.



digital

TITLE SYNDROME

SIZE B CODE NUMBER UA-M8575-0-0 REV A

NEXT HIGHER ASSY. D-DD-M8575-0

SIGNATURES / DATE: DRN. / CHK. / ENG. / ENG. / PROJ. ENG. / PROD. / SCALE / SHT. OF

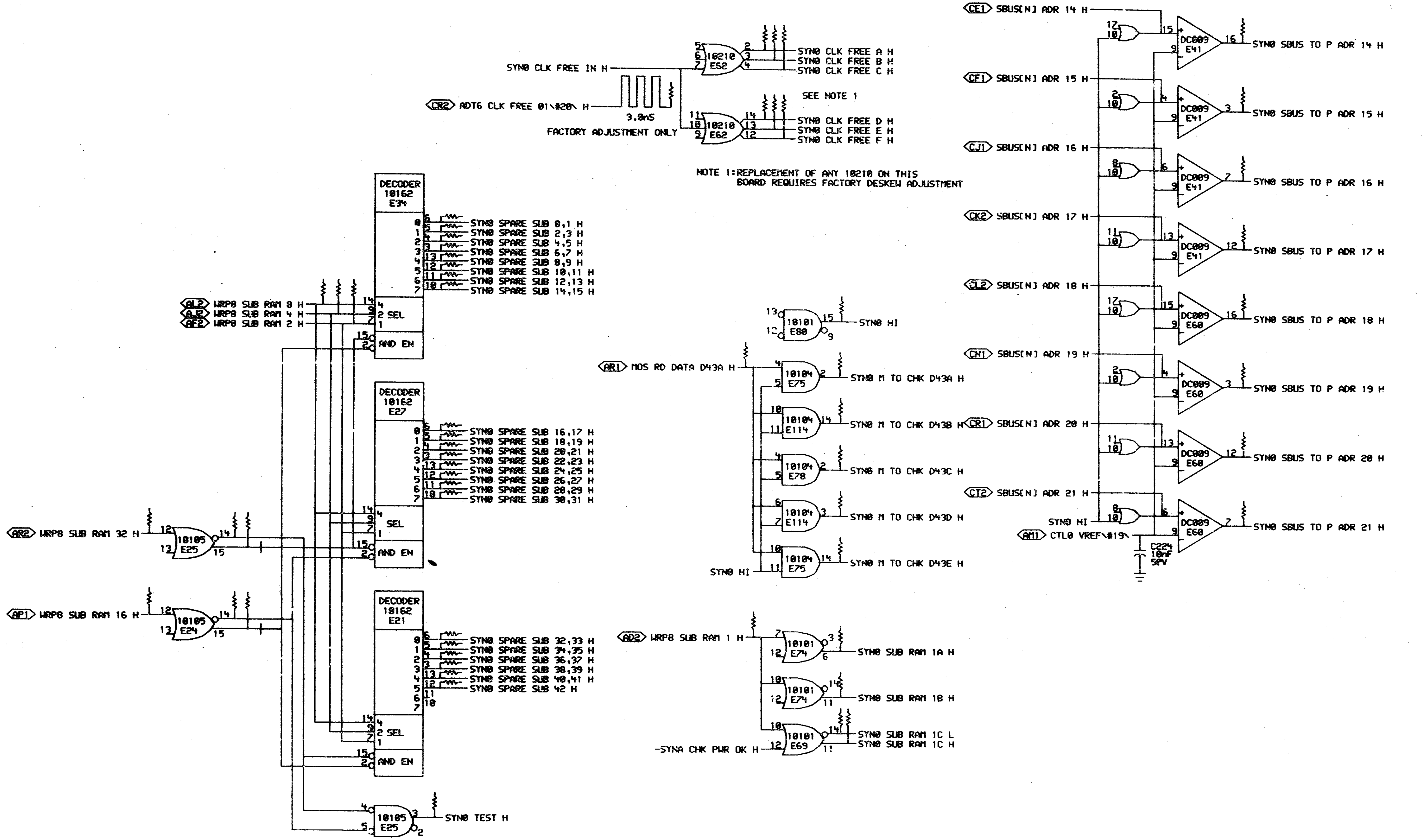
ETCH REV. / P.C. DESIGN DATA BASE REV.

NOTES: 1. CAUTION FOR REWORK INSTRUCTIONS SEE UA-M8575-0-0 SHEET 5

2. UNLESS OTHERWISE SPECIFIED ALL ICs ARE 16 PINS GND IS PIN 16, VCC IS PIN 8

REV | NO. | CHANGE | CHK

UA-M8575-0-0 A



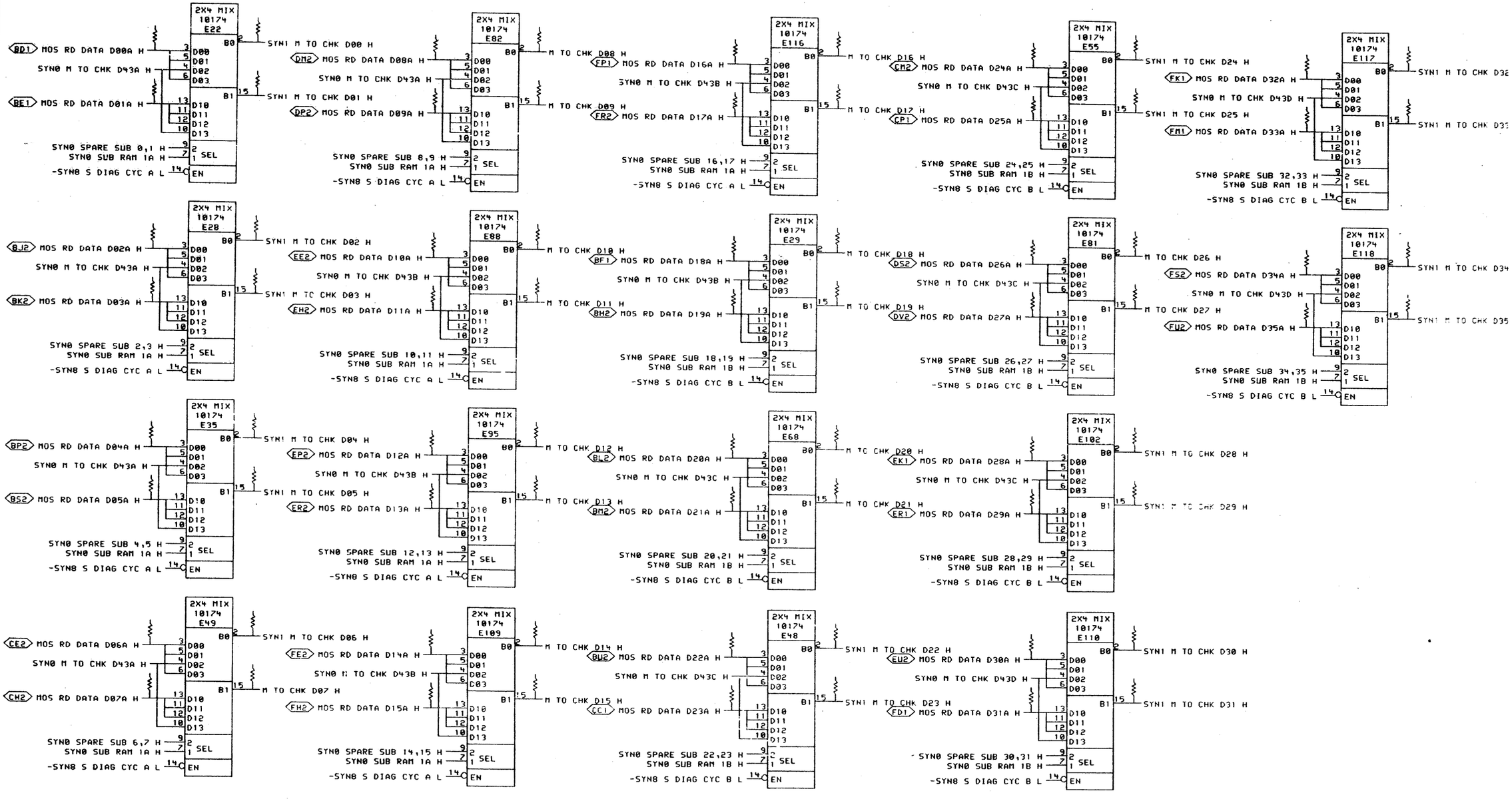
SHEET 1 OF 13

REVISIONS		
CHK	CHANGE NO.	REV

digital | DRN P. Lucus | DATE 13-JUL-78 | ENG. DJ Chin | DATE 7-18-78
CHK'D P. Lucus | DATE 18-JUL-78 | BOARD LOCATION: 5AF06 | SHEET 1 OF 1
PUB: <M8575-MOS>SYN00.DRW | 04-MAY-78 13:52 | NEXT HIGHER ASSEMBLY: D-DD-M8575-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: SYNDROME BIT SUB DECODER

SIZE D | CODE CS | NUMBER M8575-0-SYN0 | REV.



SHEET 2 OF 13

REVISIONS		
CHK	CHANGE NO.	REV

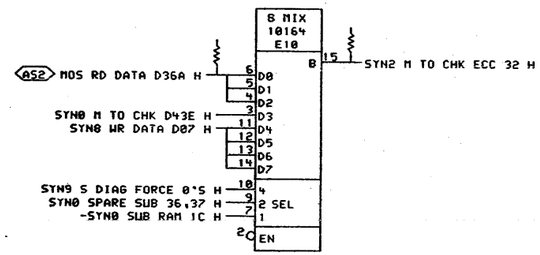
digital

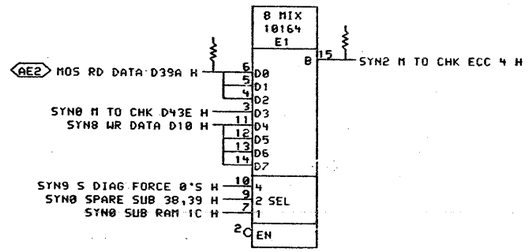
DRN P Lucier	DATE 19-APR-78	ENG.	DATE
CHK P Lucier	DATE 22-JUN-78	BOARD LOCATION: 5AF06	
SYN1B.DRW[4,665] 28-APR-78 08:22		SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8575-0	

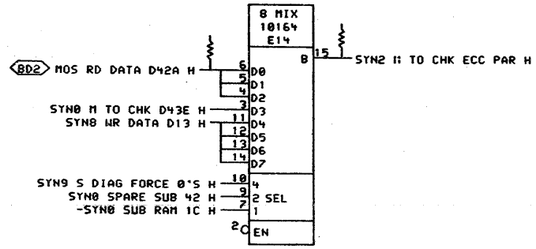
TITLE: SYNDROME BIT SUB DATA

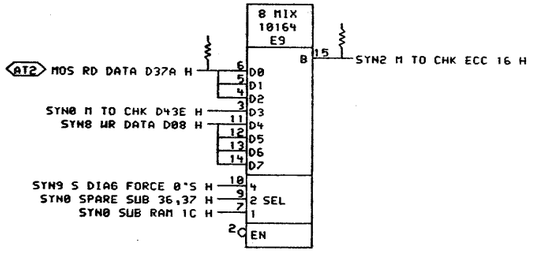
SIZE	CODE	NUMBER	REV
D	CS	M8575-0-SYN1	

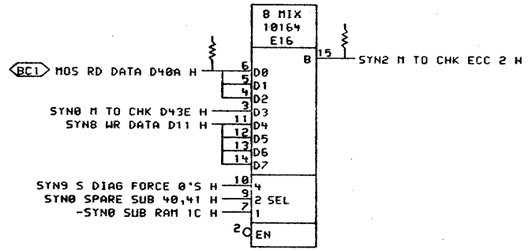
REV. | NUMBER M8575-0-SYN2 | CODE CS | SIZE D | mr

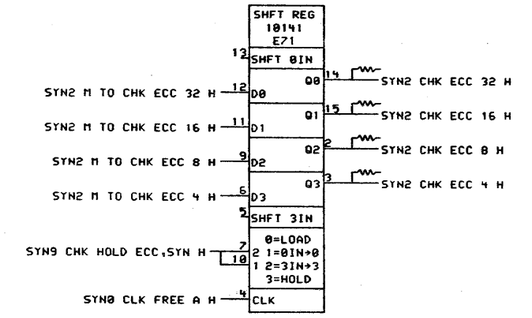


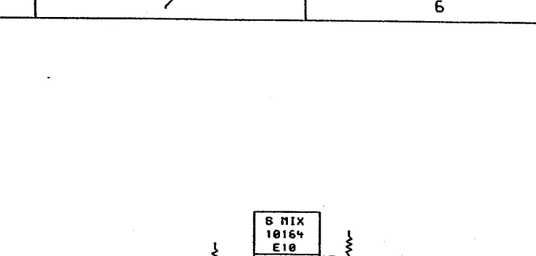


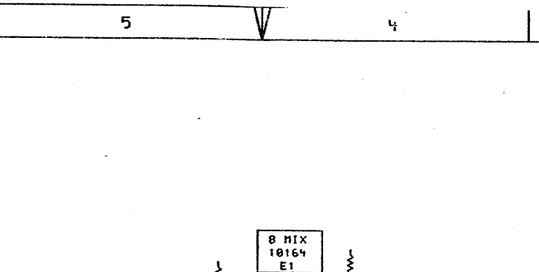


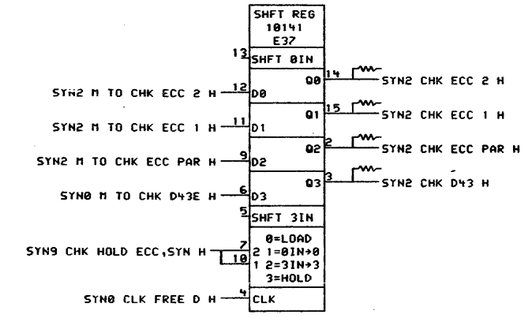












SHEET 3 OF 13

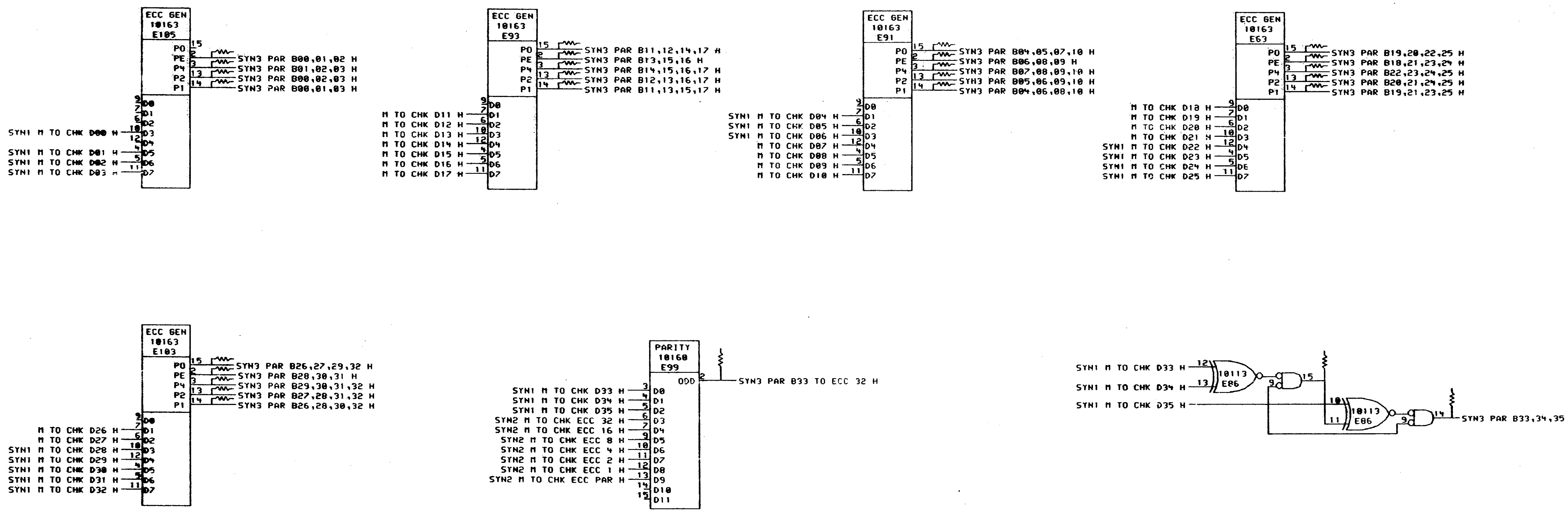
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P Lucier | DATE 19-APR-78 | ENG. J Chen | DATE 24Jun78
CHK P Lucier | DATE 22-Jun-78 | BOARD LOCATION: 5AF06
SYN2B.DRW[4,665] | 28-APR-78 08:22 | SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: MF20 | NEXT HIGHER ASSEMBLY: D-DD-M8575-0

TITLE: SYNDROME BIT SUB,ECC BITS

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-SYN2	mr



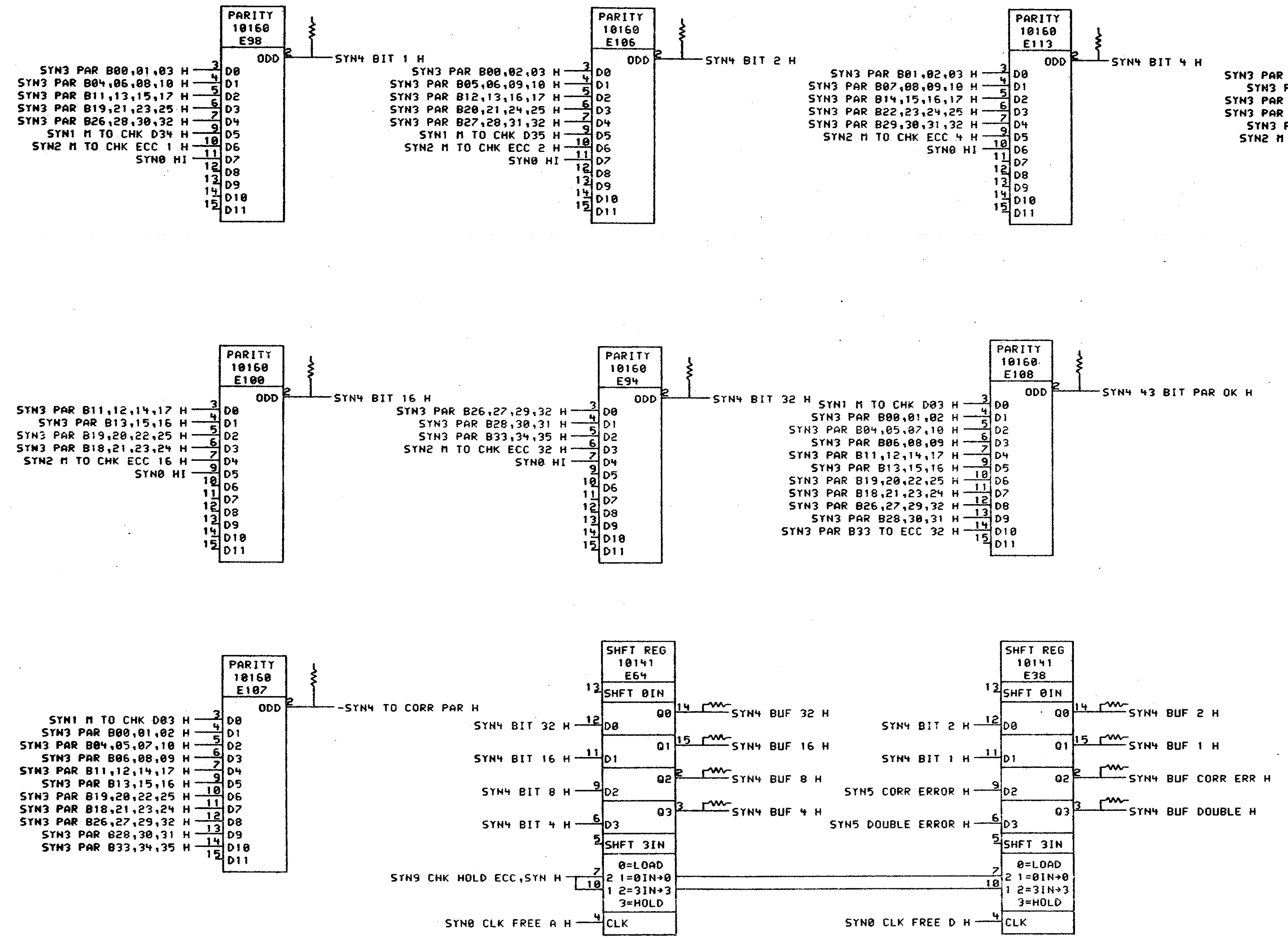
SHEET 4 OF 13

REVISIONS		
CHK	CHANGE NO.	REV

digital
DRN. P. Lucier DATE 19-APR-78
CHK'D P. Lucier DATE 22-Jun-78
ENG. D J Chen DATE 22 Jun 78
BOARD LOCATION: 5AF06
SHEET 1 OF 1
SYN3B.DRW[4,665] 28-APR-78 08:23
NEXT HIGHER ASSEMBLY: D-DD-M8F75-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: SYNDROME GENERATOR

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-SYN3	



SHEET 5 OF 13

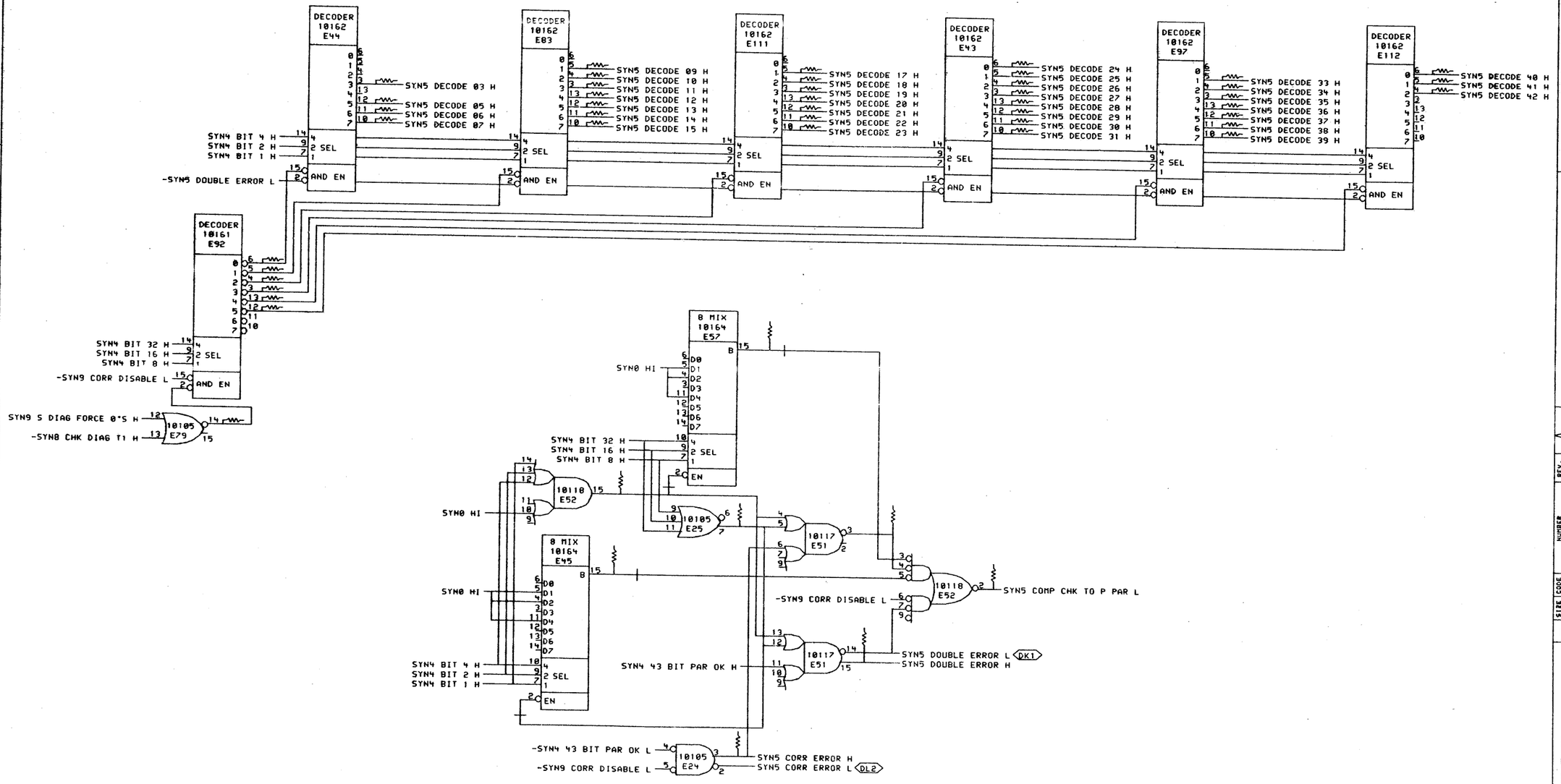
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier DATE 19-APR-78 — ENG. D J Chen DATE 29 Jun 78
CHK'D P. Lucier DATE 22-Jun-78 — BOARD LOCATION: 5AF06
SHEET 1 OF 1
SYN4B.DRW[4,665] 28-APR-78 08:23 — NEXT HIGHER ASSEMBLY: D-DD-M8575-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: SYNDROME CALCULATOR

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-SYN4	



SHEET 6 OF 13

REVISIONS		
CHK	CHANGE NO.	REV

DRN. P Lucier	DATE 19-APR-78	ENG. D J Chin	DATE 19-Jun-78
CHK'D [illegible]	DATE 22-Jun-78	BOARD LOCATION: 5AF05	
SYN5B.DRW[4,665]	28-APR-78 08:24	SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8575-0	

TITLE: SYNDROME CORRECTION DECODE

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-SYN5	

40

REV. | NUMBER M8575-0-SYN6 | CODE CS | SIZE D

10113 E23
SYN1 M TO CHK D00 H
SYN5 DECODE 07 H
M TO CHK D18 H
SYN5 DECODE 24 H
SYN1 M TO CHK D01 H
SYN5 DECODE 05 H
M TO CHK D19 H
SYN5 DECODE 25 H
AE1 -ADT7 BLANK DATA L
CHK TO P D00 H BE2
SYN6 CHK TO P D18 H BJ1
CHK TO P D01 H BF2
SYN6 CHK TO P D19 H BK1

10113 E36
SYN1 M TO CHK D02 H
SYN5 DECODE 26 H
M TO CHK D20 H
SYN5 DECODE 26 H
SYN1 M TO CHK D03 H
SYN5 DECODE 07 H
M TO CHK D21 H
SYN5 DECODE 27 H
CHK TO P D02 H BL1
CHK TO P D20 H BN1
CHK TO P D03 H BM1
CHK TO P D21 H BR1

10113 E50
SYN1 M TO CHK D04 H
SYN5 DECODE 09 H
SYN1 M TO CHK D22 H
SYN5 DECODE 28 H
SYN1 M TO CHK D05 H
SYN5 DECODE 10 H
SYN1 M TO CHK D23 H
SYN5 DECODE 29 H
CHK TO P D04 H BS1
CHK TO P D22 H BV2
CHK TO P D05 H BT2
CHK TO P D23 H CD1

10113 E56
SYN1 M TO CHK D06 H
SYN5 DECODE 11 H
SYN1 M TO CHK D24 H
SYN5 DECODE 30 H
M TO CHK D07 H
SYN5 DECODE 12 H
SYN1 M TO CHK D25 H
SYN5 DECODE 31 H
AE1 -ADT7 BLANK DATA L
CHK TO P D06 H CF2
CHK TO P D24 H CL1
CHK TO P D07 H CJ2
CHK TO P D25 H CP2

10113 E90
M TO CHK D08 H
SYN5 DECODE 13 H
M TO CHK D26 H
SYN5 DECODE 33 H
SYN1 M TO CHK D30 H
SYN5 DECODE 37 H
M TO CHK D09 H
SYN5 DECODE 14 H
CHK TO P D08 H DN1
CHK TO P D26 H DM1
CHK TO P D30 H FA1
CHK TO P D09 H DR1

10113 E89
M TO CHK D27 H
SYN5 DECODE 34 H
M TO CHK D10 H
SYN5 DECODE 15 H
SYN1 M TO CHK D28 H
SYN5 DECODE 35 H
M TO CHK D11 H
SYN5 DECODE 17 H
CHK TO P D27 H EL2
CHK TO P D10 H ED2
CHK TO P D28 H EL2
CHK TO P D11 H EF1

10113 E96
SYN1 M TO CHK D29 H
SYN5 DECODE 36 H
-SYN4 TO CORR PAR H
-SYN5 COMP CHK TO P PAR H
M TO CHK D12 H
SYN5 DECODE 18 H
M TO CHK D13 H
SYN5 DECODE 19 H
AE1 -ADT7 BLANK DATA L
CHK TO P D29 H EL2
SYN6 CHK TO P DATA PAR H EN1
CHK TO P D12 H EP1
CHK TO P D13 H ES2

10113 E104
SYN1 M TO CHK D31 H
SYN5 DECODE 38 H
M TO CHK D14 H
SYN5 DECODE 20 H
SYN1 M TO CHK D32 H
SYN5 DECODE 39 H
M TO CHK D15 H
SYN5 DECODE 21 H
CHK TO P D31 H FC1
CHK TO P D14 H FE1
CHK TO P D32 H FJ2
CHK TO P D15 H FF2

10113 E119
SYN1 M TO CHK D33 H
SYN5 DECODE 40 H
M TO CHK D16 H
SYN5 DECODE 22 H
SYN1 M TO CHK D34 H
SYN5 DECODE 41 H
M TO CHK D17 H
SYN5 DECODE 23 H
CHK TO P D33 H FL2
SYN6 CHK TO P D16 H FN1
CHK TO P D34 H FR1
SYN6 CHK TO P D17 H FP2

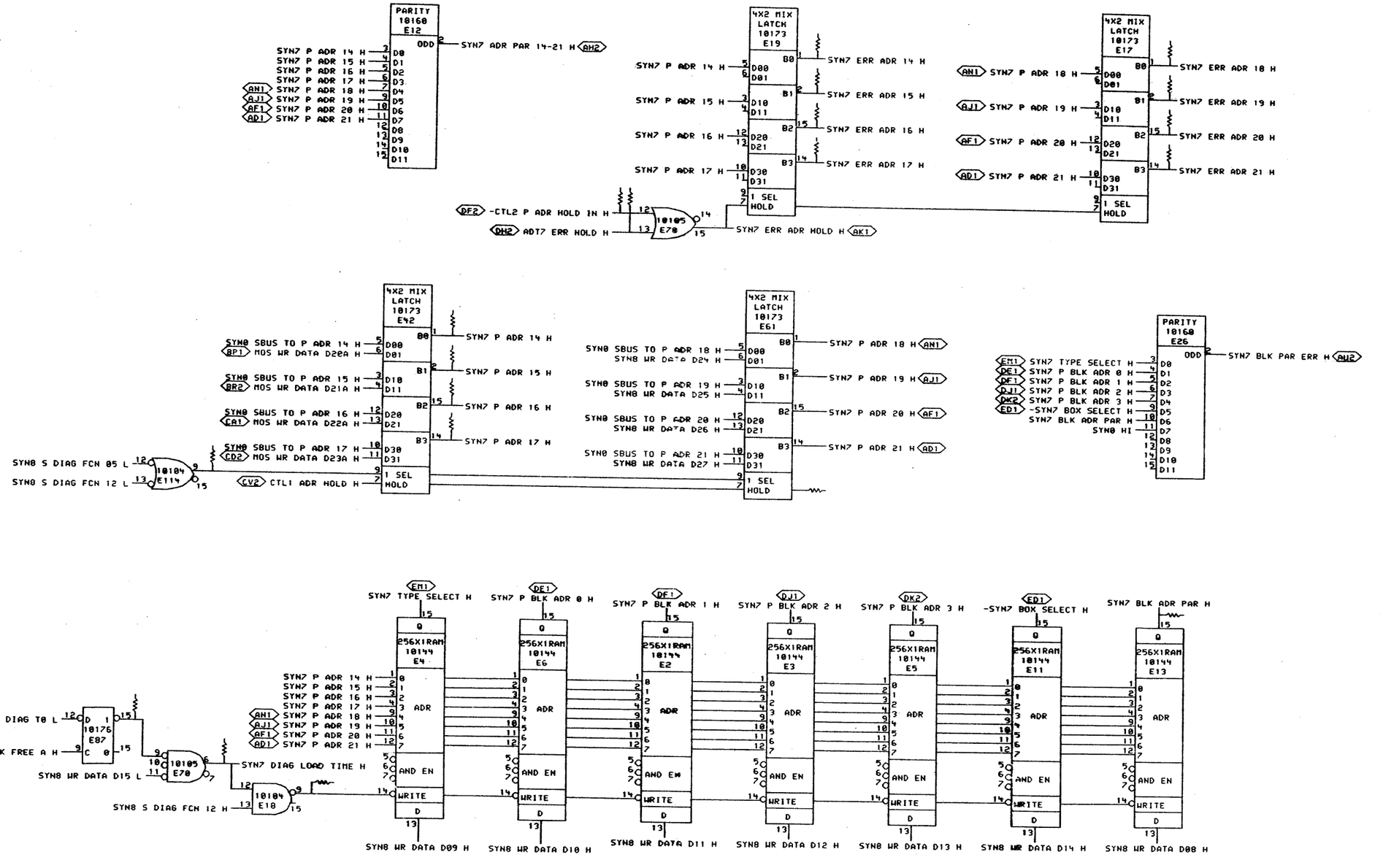
10113 E120
SYN1 M TO CHK D35 H
SYN5 DECODE 42 H
AE1 -ADT7 BLANK DATA L
CHK TO P D35 H FT2

SHEET 7 OF 13

REVISIONS
CHK | CHANGE NO. | REV

digital
DRN P Lucier 19-APR-78 | ENG. | DATE
CHKD P Lucier 19-APR-78 | DATE | BOARD LOCATION: 5AF06
SYN6B.DRW[4,565] 28-APR-78 08:24 | SHEET 1 OF 1 | NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION-MODEL: MF20 | D-DD-M8575-0

TITLE: SYNDROME DATA CORRECTION
SIZE D | CODE CS | NUMBER M8575-0-SYN6 | REV.



SHEET 8 OF 13

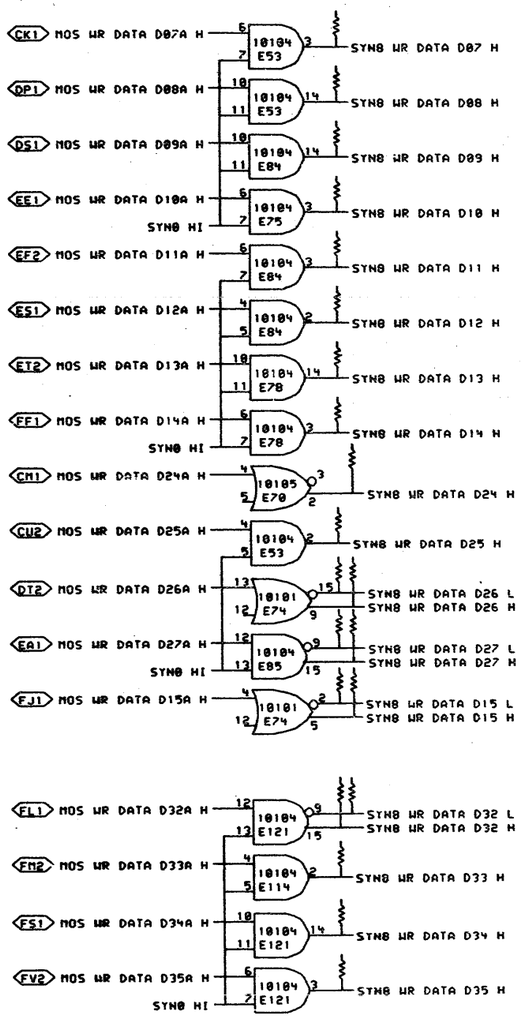
REVISIONS		
CHK	CHANGE NO.	REV

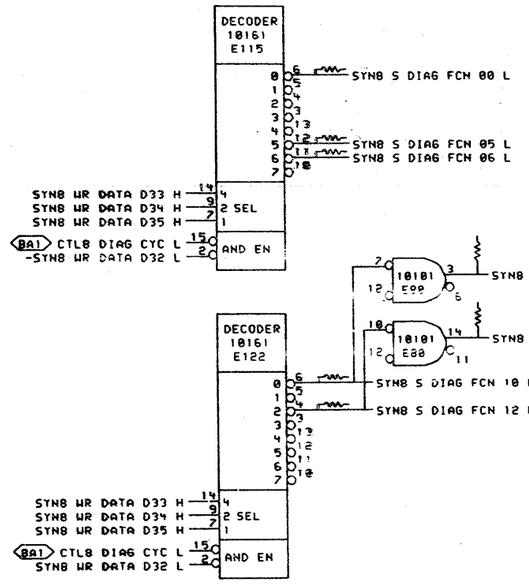
digital

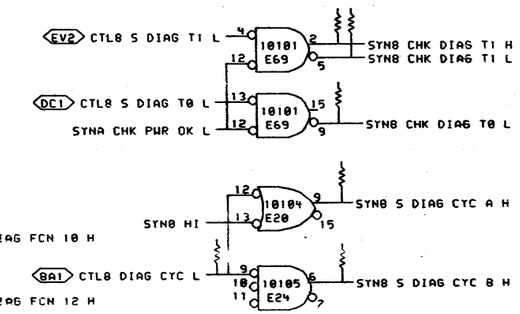
DRN P. Lucier — DATE 19-APR-78 — ENG. J. Chen — DATE 27-APR-78
CHK D. Lucier — DATE 22-MAY-78 — BOARD LOCATION: 5AF06
SYN78.DRW[4,665] 10-MAY-78 13:25 — SHEET 1 OF 1
FIRST USED ON OPTION-MODEL: MF20 — NEXT HIGHER ASSEMBLY: D-DD-M8575-0

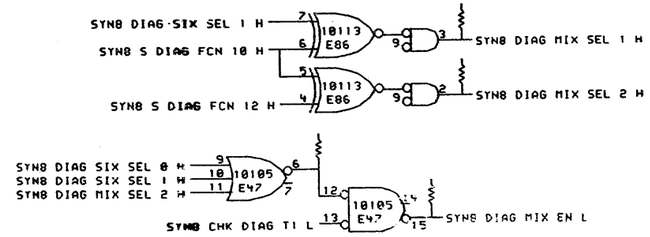
TITLE: SYNDROME PORT ADDRESS

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-SYN7	









SHEET 9 OF 13

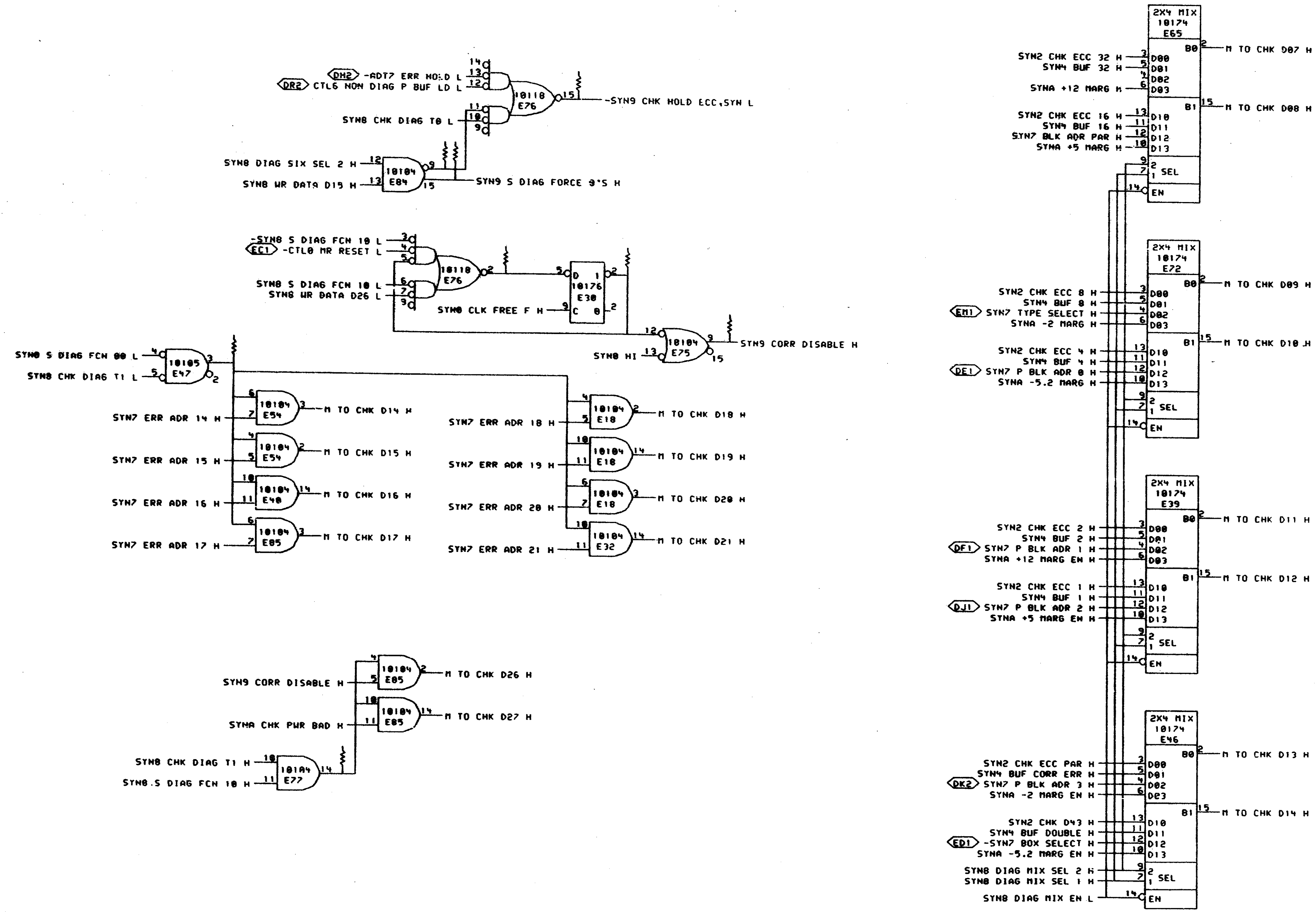
REVISIONS

CHK	CHANGE NO.	REV

DRN P.Lucier	DATE 19-APR-78	ENG.	DATE
CHK	DATE	BOARD LOCATION: 5AF06	
5TN8B.DRU[4,655]	28-APR-78 08:25	SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8575-0	

TITLE: SYNDROME DIAG SELECTION

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-SYN8	



SHEET 10 OF 13

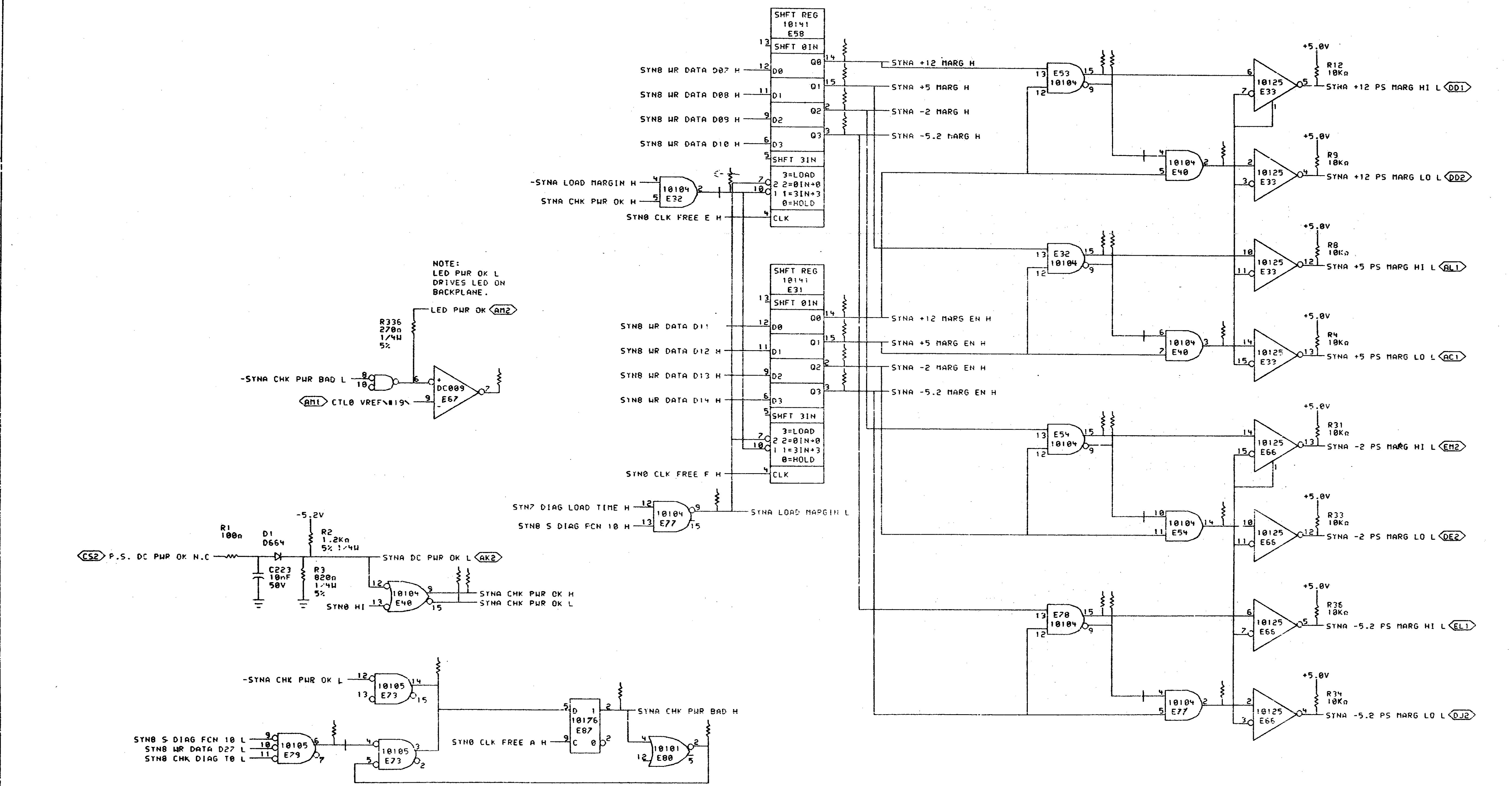
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN	DATE 09-JUN-78	ENG.	DATE
CHK	DATE	BOARD LOCATION: 5AF06	
SYN9B.DRW(4,665) 09-JUN-78 10:46		SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8575-0	

TITLE: SYNDROME DIAG MIXER

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-SYN9	


SHFT REG 10141 E58
SYN8 WR DATA D07 H
SYN8 WR DATA D08 H
SYN8 WR DATA D09 H
SYN8 WR DATA D10 H
-SYNA LOAD MARGIN H
SYNA CHK PWR OK H
SYN8 CLK FREE E H
SYNA +12 MARG H
SYNA +5 MARG H
SYNA -2 MARG H
SYNA -5.2 MARG H
3=LOAD 2=0IN+0 1=3IN+3 0=HOLD
NOTE: LED PWR OK L DRIVES LED ON BACKPLANE.
LED PWR OK
R336 270Ω 1/4W 5%
-SYNA CHK PWR BAD L
CTL0 VREF
DC009 E67
SHFT REG 10141 E31
SYN8 WR DATA D11
SYN8 WR DATA D12 H
SYN8 WR DATA D13 H
SYN8 WR DATA D14 H
SYNA +12 MARG EN H
SYNA +5 MARG EN H
SYNA -2 MARG EN H
SYNA -5.2 MARG EN H
SYN8 CLK FREE F H
SYN7 DIAG LOAD TIME H
SYN8 S DIAG FCN 10 H
SYNA LOAD MARGIN L
-5.2V
R1 100Ω
D1 D664
R2 1.2kΩ 5% 1/4W
P.S. DC PWR OK N.C
SYNA DC PWR OK L
C223 10nF 50V
R3 820Ω 1/4W 5%
SYN8 HI
SYNA CHK PWR OK H
SYNA CHK PWR OK L
-SYNA CHK PWR OK L
SYN8 S DIAG FCN 10 L
SYN8 WR DATA D27 L
SYN8 CHK DIAG T0 L
SYN8 CLK FREE A H
SYNA CHK PWR BAD H
+5.0V
SYNA +12 PS MARG HI L
SYNA +12 PS MARG LO L
SYNA +5 PS MARG HI L
SYNA +5 PS MARG LO L
SYNA -2 PS MARG HI L
SYNA -2 PS MARG LO L
SYNA -5.2 PS MARG HI L
SYNA -5.2 PS MARG LO L
SHEET 11 OF 13

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REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN D. Lucier DATE 19-APR-78 ENG. DATE
CHK D. Lucier DATE 22 Jun 76 BOARD LOCATION: 5AF06 SHEET 1 OF 1
SYNAB.DRW[4,665] 10-MAY-78 13:28 NEXT HIGHER ASSEMBLY: D-DD-M8575-0
FIRST USED ON OPTION/MODEL:

TITLE: SYNDROME POWER CONTROL

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-SYNA	

+5.0V\V\ GND ECL\G#19\ -5.2V\V\

C2.0 10nF 50V
C219 10nF 50V
C220 10nF 50V
C221 10nF 50V
C222 10nF 50V
C239 100µF 15V
C240 100µF 15V
C241 100µF 15V
C242 100µF 15V
C243 100µF 15V
C244 100µF 15V
C245 100µF 15V
C246 100µF 15V
C247 100µF 15V
C248 100µF 15V

AA2 BA2 CA2 DA2 EA2 FA2

AH1 AN2 AT1 BC2 BH1 BN2 BT1 CH1 CT1 DC2 DH1 DN2 DT1 EC2 EH1 EN2 ET1 FC2 FH1 FN2 FT1 EJ1 EK2

C1 10nF 50V
C2 10nF 50V
C3 10nF 50V
C4 10nF 50V
C5 10nF 50V
C6 10nF 50V
C7 10nF 50V
C8 10nF 50V
C9 10nF 50V
C10 10nF 50V
C11 10nF 50V
C12 10nF 50V
C13 10nF 50V
C14 10nF 50V
C15 10nF 50V
C16 10nF 50V
C17 10nF 50V
C18 10nF 50V
C19 10nF 50V
C20 10nF 50V

AB2 AU1 BB2 BU1 CB2 CU1 DB2 DU1 EB2 EU1 FB2 FU1

C21 10nF 50V
C22 10nF 50V
C23 10nF 50V
C24 10nF 50V
C25 10nF 50V
C26 10nF 50V
C27 10nF 50V
C28 10nF 50V
C29 10nF 50V
C30 10nF 50V
C31 10nF 50V
C32 10nF 50V
C33 10nF 50V
C34 10nF 50V
C35 10nF 50V
C36 10nF 50V
C37 10nF 50V
C38 10nF 50V
C39 10nF 50V
C40 10nF 50V

C41 10nF 50V
C42 10nF 50V
C43 10nF 50V
C44 10nF 50V
C45 10nF 50V
C46 10nF 50V
C47 10nF 50V
C48 10nF 50V
C49 10nF 50V
C50 10nF 50V
C51 10nF 50V
C52 10nF 50V
C53 10nF 50V
C54 10nF 50V
C55 10nF 50V
C56 10nF 50V
C57 10nF 50V
C58 10nF 50V
C59 10nF 50V
C60 10nF 50V

C61 10nF 50V
C62 10nF 50V
C63 10nF 50V
C64 10nF 50V
C65 10nF 50V
C66 10nF 50V
C67 10nF 50V
C68 10nF 50V
C69 10nF 50V
C70 10nF 50V
C71 10nF 50V
C72 10nF 50V
C73 10nF 50V
C74 10nF 50V
C75 10nF 50V
C76 10nF 50V
C77 10nF 50V
C78 10nF 50V
C79 10nF 50V
C80 10nF 50V

C81 10nF 50V
C82 10nF 50V
C83 10nF 50V
C84 10nF 50V
C85 10nF 50V
C86 10nF 50V
C87 10nF 50V
C88 10nF 50V
C89 10nF 50V
C90 10nF 50V
C91 10nF 50V
C92 10nF 50V
C93 10nF 50V
C94 10nF 50V
C95 10nF 50V
C96 10nF 50V
C97 10nF 50V
C98 10nF 50V
C99 10nF 50V
C100 10nF 50V

C101 10nF 50V
C102 10nF 50V
C103 10nF 50V
C104 10nF 50V
C105 10nF 50V
C106 10nF 50V
C107 10nF 50V
C108 10nF 50V
C109 10nF 50V
C110 10nF 50V
C111 10nF 50V
C112 10nF 50V
C113 10nF 50V
C114 10nF 50V
C115 10nF 50V
C116 10nF 50V
C117 10nF 50V
C118 10nF 50V
C119 10nF 50V
C120 10nF 50V

C121 10nF 50V
C232 100µF 15V
C233 100µF 15V
C234 100µF 15V
C235 100µF 15V
C236 100µF 15V
C237 100µF 15V
C238 100µF 15V

AC2 — [B,GND ECL,GND CLK\G#20\]
CC2 — [B,GND ECL,GND CLK\G#20\]
CN2 — [B,GND ECL,GND CLK\G#20\]

NOTE: THE FOLLOWING SPARE PINS ARE GROUNDED THROUGH PLATED THROUGH HOLES.

AA1 — [B,GND ECL,NC]
AP2 — [B,GND ECL,NC]
CS1 — [B,GND ECL,NC]
DA1 — [B,GND ECL,NC]
DL1 — [B,GND ECL,NC]
FK2 — [B,GND ECL,NC]
FD2 — [B,GND ECL,NC]

NOTE: THE FOLLOWING PINS ARE UNCONNECTED AND SHOULD NOT BE USED.

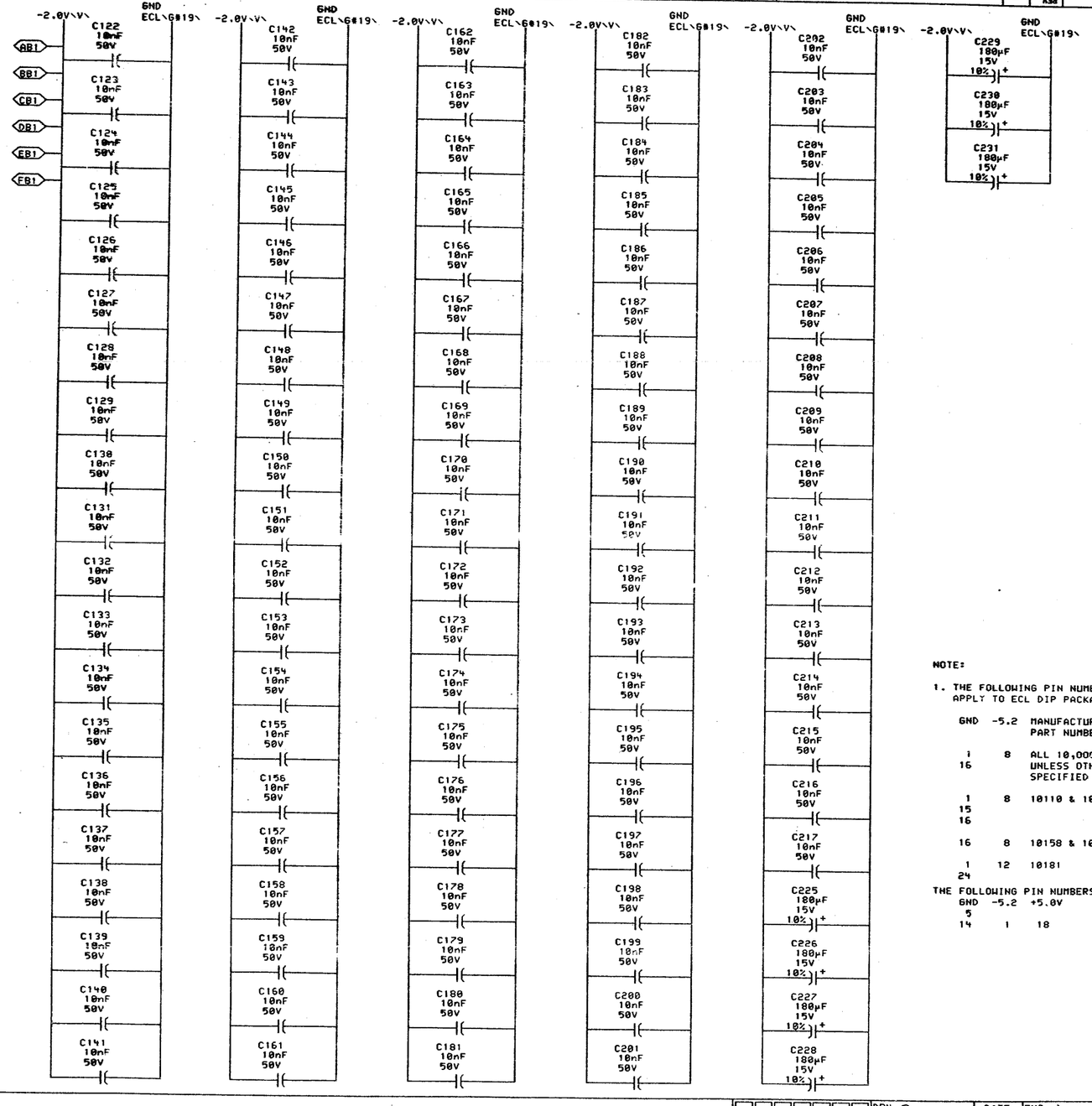
AV1 — [B,NC,GND ECL\G#19\]
BV1 — [B,NC,GND ECL\G#19\]
CV1 — [B,NC,GND ECL\G#19\]
DV1 — [B,NC,GND ECL\G#19\]
EV1 — [B,NC,GND ECL\G#19\]
FV1 — [B,NC,GND ECL\G#19\]

[B,GND ECL,GND]

SHEET 12 OF 13

REVISIONS		
CHK	CHANGE NO.	REV

digital	DRN [illegible]	DATE 30-MAY-78	ENG. [illegible]	DATE [illegible]	TITLE: SYNDROME POWER. GND. CAPS.
	CHK [illegible]	DATE 22-JUN-78	BOARD LOCATION: 5AF96		
SYNB8.DRWL4,665]	30-MAY-78 13:20	NEXT HIGHER ASSEMBLY:		SHEET 1 OF 1	SIZE D CODE CS NUMBER M8575-Ø-SYNB REV.
FIRST USED ON OPTION-MODEL: MF20		C-DD-M8575-0			



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

THE FOLLOWING PIN NUMBERS APPLY TO DC009 DIP PACKAGES

GND	-5.2	+5.0V	MANUFACTURES' PART NUMBER
5 14	1	18	DC009

SHEET 13 OF 13

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier 30-MAY-78
CHK'D P. Lucier 22-Jun-78
ENG. D.J. Clem 22-Jun-78
SYNCB.DRW[4,665] 30-MAY-78 13:22
BOARD LOCATION: 5AF06
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8575-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: SYNDROME POWER. GND. CAPS.

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-SYNC	

mr 1

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R266(1)	SYN7	B7	68Ω	%E114(9)
R64(1)	SYN7	A7	68Ω	%E10(9)
R321(1)	SYN8	B7	68Ω	%E24(14)
R326(1)	SYN8	B7	68Ω	%E24(15)
R322(1)	SYN8	B7	68Ω	%E25(14)
R320(1)	SYN8	B7	68Ω	%E25(15)
R158(1)	SYN5	B5	68Ω	%E25(7)
R287(1)	SYN9	C5	68Ω	%E30(2)
R6(1)	SYNA	C3	68Ω	%E32(15)
R82(1)	SYNA	C5	68Ω	%E32(2)
R10(1)	SYNA	C3	68Ω	%E32(9)
R11(1)	SYNA	D2	68Ω	%E40(2)
R5(1)	SYNA	C2	68Ω	%E40(3)
R124(1)	SYN5	B5	68Ω	%E45(15)
R128(1)	SYN9	C6	68Ω	%E47(3)
R15(1)	SYN8	A3	68Ω	%E47(6)
R123(1)	SYN5	B4	68Ω	%E51(3)
R156(1)	SYN5	B5	68Ω	%E52(15)
R7(1)	SYNA	D3	68Ω	%E53(15)
R17(1)	SYNA	D3	68Ω	%E53(9)
R32(1)	SYNA	B2	68Ω	%E54(14)
R30(1)	SYNA	B3	68Ω	%E54(15)
R24(1)	SYNA	B3	68Ω	%E54(9)
R126(1)	SYN5	C5	68Ω	%E57(15)
R337(1)	SYNA	C6	68Ω	%E67(7)
R42(1)	SYNA	A6	68Ω	%E73(3)
R152(1)	SYN9	C5	68Ω	%E76(2)
R129(1)	SYN9	A6	68Ω	%E77(14)
R35(1)	SYNA	A2	68Ω	%E77(2)
R37(1)	SYNA	B3	68Ω	%E78(15)
R172(1)	SYNA	B3	68Ω	%E78(9)
R133(1)	SYN5	B7	68Ω	%E79(14)
R40(1)	SYNA	A7	68Ω	%E79(6)
R39(1)	SYNA	A5	68Ω	%E80(2)
R224(1)	SYN9	D5	68Ω	%E84(9)
R98(1)	SYN3	B2	68Ω	%E86(15)
R167(1)	SYN7	A7	68Ω	%E87(15)
R186(1)	SYN5	C7	68Ω	%E92(12)
R234(1)	SYN5	C7	68Ω	%E92(13)
R209(1)	SYN5	C7	68Ω	%E92(3)

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R244(1)	SYN5	C7	68Ω	%E92(4)
R230(1)	SYN5	C7	68Ω	%E92(5)
R155(1)	SYN5	C7	68Ω	%E92(6)
R219(1)	SYN0	D5	68Ω	ADT6 CLK FREE 01\&20\ H
R109(1)	SYN6	A7	68Ω	ADT7 BLANK DATA H
R225(1)	SYN7	C5	68Ω	ADT7 ERR HOLD H
R271(1)	SYN7	B4	68Ω	CTL1 ADR HOLD H
R164(1)	SYN7	C5	68Ω	-CTL2 P ADR HOLD IN H
R59(1)	SYN8	C2	68Ω	-CTL8 DIAG CYC H
R179(1)	SYN1	A7	68Ω	M TO CHK D07 H
R236(1)	SYN1	D6	68Ω	M TO CHK D08 H
R176(1)	SYN1	D6	68Ω	M TO CHK D09 H
R175(1)	SYN1	C6	68Ω	M TO CHK D10 H
R104(1)	SYN1	C6	68Ω	M TO CHK D11 H
R102(1)	SYN1	B6	68Ω	M TO CHK D12 H
R100(1)	SYN1	B6	68Ω	M TO CHK D13 H
R352(1)	SYN1	A6	68Ω	M TO CHK D14 H
R238(1)	SYN1	A6	68Ω	M TO CHK D15 H
R103(1)	SYN1	D4	68Ω	M TO CHK D16 H
R101(1)	SYN1	D4	68Ω	M TO CHK D17 H
R166(1)	SYN1	C4	68Ω	M TO CHK D18 H
R165(1)	SYN1	C4	68Ω	M TO CHK D19 H
R213(1)	SYN1	B4	68Ω	M TO CHK D20 H
R159(1)	SYN1	B4	68Ω	M TO CHK D21 H
R228(1)	SYN1	C3	68Ω	M TO CHK D26 H
R304(1)	SYN1	C3	68Ω	M TO CHK D27 H
R254(1)	SYN1	D8	68Ω	MOS RD DATA D00A H
R255(1)	SYN1	D8	68Ω	MOS RD DATA D01A H
R259(1)	SYN1	C8	68Ω	MOS RD DATA D02A H
R260(1)	SYN1	C8	68Ω	MOS RD DATA D03A H
R265(1)	SYN1	B8	68Ω	MOS RD DATA D04A H
R258(1)	SYN1	B8	68Ω	MOS RD DATA D05A H
R273(1)	SYN1	A8	68Ω	MOS RD DATA D06A H
R268(1)	SYN1	A8	68Ω	MOS RD DATA D07A H
R292(1)	SYN1	D6	68Ω	MOS RD DATA D08A H
R289(1)	SYN1	D6	68Ω	MOS RD DATA D09A H
R346(1)	SYN1	C6	68Ω	MOS RD DATA D10A H
R341(1)	SYN1	C6	68Ω	MOS RD DATA D11A H
R349(1)	SYN1	B6	68Ω	MOS RD DATA D12A H
R344(1)	SYN1	B6	68Ω	MOS RD DATA D13A H

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R356(1)	SYN1	A6	68Ω	MOS RD DATA D14A H
R350(1)	SYN1	A6	68Ω	MOS RD DATA D15A H
R358(1)	SYN1	D5	68Ω	MOS RD DATA D16A H
R355(1)	SYN1	D5	68Ω	MOS RD DATA D17A H
R283(1)	SYN1	C5	68Ω	MOS RD DATA D18A H
R284(1)	SYN1	C5	68Ω	MOS RD DATA D19A H
R288(1)	SYN1	B5	68Ω	MOS RD DATA D20A H
R281(1)	SYN1	B5	68Ω	MOS RD DATA D21A H
R334(1)	SYN1	A5	68Ω	MOS RD DATA D22A H
R329(1)	SYN1	A5	68Ω	MOS RD DATA D23A H
R335(1)	SYN1	D3	68Ω	MOS RD DATA D24A H
R332(1)	SYN1	D3	68Ω	MOS RD DATA D25A H
R343(1)	SYN1	C3	68Ω	MOS RD DATA D26A H
R339(1)	SYN1	C3	68Ω	MOS RD DATA D27A H
R351(1)	SYN1	B3	68Ω	MOS RD DATA D28A H
R347(1)	SYN1	B3	68Ω	MOS RD DATA D29A H
R308(1)	SYN1	A3	68Ω	MOS RD DATA D30A H
R299(1)	SYN1	A3	68Ω	MOS RD DATA D31A H
R307(1)	SYN1	D2	68Ω	MOS RD DATA D32A H
R309(1)	SYN1	D2	68Ω	MOS RD DATA D33A H
R245(1)	SYN1	C2	68Ω	MOS RD DATA D34A H
R249(1)	SYN1	C2	68Ω	MOS RD DATA D35A H
R195(1)	SYN2	D7	68Ω	MOS RD DATA D36A H
R250(1)	SYN2	C7	68Ω	MOS RD DATA D37A H
R312(1)	SYN2	B7	68Ω	MOS RD DATA D38A H
R313(1)	SYN2	D5	68Ω	MOS RD DATA D39A H
R199(1)	SYN2	C5	68Ω	MOS RD DATA D40A H
R251(1)	SYN2	B5	68Ω	MOS RD DATA D41A H
R316(1)	SYN2	D3	68Ω	MOS RD DATA D42A H
R188(1)	SYN0	C4	68Ω	MOS RD DATA D43A H
R44(1)	SYN0	D4	68Ω	SYN0 CLK FREE A H
R221(1)	SYN0	D4	68Ω	SYN0 CLK FREE B H
R222(1)	SYN0	D4	68Ω	SYN0 CLK FREE C H
R118(1)	SYN0	D4	68Ω	SYN0 CLK FREE D H
R81(1)	SYN0	D4	68Ω	SYN0 CLK FREE E H
R120(1)	SYN0	D4	68Ω	SYN0 CLK FREE F H
R67(1)	SYN0	C4	68Ω	SYN0 HI
R256(1)	SYN0	C4	68Ω	SYN0 M TO CHK D43A H
R286(1)	SYN0	C4	68Ω	SYN0 M TO CHK D43B H
R331(1)	SYN0	B4	68Ω	SYN0 M TO CHK D43C H

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R306(1)	SYN0	B4	68Ω	SYN0 M TO CHK D43D H
R153(1)	SYN0	B4	68Ω	SYN0 M TO CHK D43E H
R270(1)	SYN0	D2	68Ω	SYN0 SBUS TO P ADR 14 H
R269(1)	SYN0	D2	68Ω	SYN0 SBUS TO P ADR 15 H
R264(1)	SYN0	D2	68Ω	SYN0 SBUS TO P ADR 16 H
R267(1)	SYN0	C2	68Ω	SYN0 SBUS TO P ADR 17 H
R285(1)	SYN0	C2	68Ω	SYN0 SBUS TO P ADR 18 H
R282(1)	SYN0	C2	68Ω	SYN0 SBUS TO P ADR 19 H
R276(1)	SYN0	B2	68Ω	SYN0 SBUS TO P ADR 20 H
R279(1)	SYN0	B2	68Ω	SYN0 SBUS TO P ADR 21 H
R257(1)	SYN0	C6	68Ω	SYN0 SPARE SUB 0,1 H
R342(1)	SYN0	C6	68Ω	SYN0 SPARE SUB 10,11 H
R345(1)	SYN0	C6	68Ω	SYN0 SPARE SUB 12,13 H
R354(1)	SYN0	C6	68Ω	SYN0 SPARE SUB 14,15 H
R359(1)	SYN0	B6	68Ω	SYN0 SPARE SUB 16,17 H
R207(1)	SYN0	B6	68Ω	SYN0 SPARE SUB 18,19 H
R261(1)	SYN0	C6	68Ω	SYN0 SPARE SUB 2,3 H
R286(1)	SYN0	B6	68Ω	SYN0 SPARE SUB 20,21 H
R338(1)	SYN0	B6	68Ω	SYN0 SPARE SUB 22,23 H
R333(1)	SYN0	B6	68Ω	SYN0 SPARE SUB 24,25 H
R340(1)	SYN0	B6	68Ω	SYN0 SPARE SUB 26,27 H
R348(1)	SYN0	B6	68Ω	SYN0 SPARE SUB 28,29 H
R305(1)	SYN0	B6	68Ω	SYN0 SPARE SUB 30,31 H
R310(1)	SYN0	B6	68Ω	SYN0 SPARE SUB 32,33 H
R248(1)	SYN0	B6	68Ω	SYN0 SPARE SUB 34,35 H
R198(1)	SYN0	B6	68Ω	SYN0 SPARE SUB 36,37 H
R314(1)	SYN0	A6	68Ω	SYN0 SPARE SUB 38,39 H
R263(1)	SYN0	C6	68Ω	SYN0 SPARE SUB 4,5 H
R197(1)	SYN0	A6	68Ω	SYN0 SPARE SUB 40,41 H
R323(1)	SYN0	A6	68Ω	SYN0 SPARE SUB 42 H
R272(1)	SYN0	C6	68Ω	SYN0 SPARE SUB 6,7 H
R290(1)	SYN0	C6	68Ω	SYN0 SPARE SUB 8,9 H
R262(1)	SYN0	B4	68Ω	SYN0 SUB RAM 1A H
R353(1)	SYN0	A4	68Ω	SYN0 SUB RAM 1B H
R315(1)	SYN0	A4	68Ω	SYN0 SUB RAM 1C H
R324(1)	SYN0	A4	68Ω	-SYN0 SUB RAM 1C H
R119(1)	SYN0	A6	68Ω	SYN0 TEST H
R185(1)	SYN1	D7	68Ω	SYN1 M TO CHK D00 H
R188(1)	SYN1	D7	68Ω	SYN1 M TO CHK D01 H
R187(1)	SYN1	C7	68Ω	SYN1 M TO CHK D02 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 07-JUN-78 ENG. D J Clancy DATE 9 Jun 78

D85751.DRW[4,665] 07-JUN-78 15:30 BOARD LOCATION: 22-Sep-78 SHEET 1 OF 3

NEXT HIGHER ASSEMBLY: D-DD-M8575-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: SYNDROME TERMINATORS

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-RES	

MF

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R55(1)	SYN1	C7	68Ω	SYN1 M TO CHK D03 H
R179(1)	SYN1	B7	68Ω	SYN1 M TO CHK D04 H
R177(1)	SYN1	B7	68Ω	SYN1 M TO CHK D05 H
R178(1)	SYN1	A7	68Ω	SYN1 M TO CHK D06 H
R160(1)	SYN1	A4	68Ω	SYN1 M TO CHK D22 H
R162(1)	SYN1	A4	68Ω	SYN1 M TO CHK D23 H
R163(1)	SYN1	D3	68Ω	SYN1 M TO CHK D24 H
R161(1)	SYN1	D3	68Ω	SYN1 M TO CHK D25 H
R291(1)	SYN1	B3	68Ω	SYN1 M TO CHK D28 H
R303(1)	SYN1	B3	68Ω	SYN1 M TO CHK D29 H
R229(1)	SYN1	A3	68Ω	SYN1 M TO CHK D30 H
R242(1)	SYN1	A3	68Ω	SYN1 M TO CHK D31 H
R239(1)	SYN1	D1	68Ω	SYN1 M TO CHK D32 H
R96(1)	SYN1	D1	68Ω	SYN1 M TO CHK D33 H
R95(1)	SYN1	C1	68Ω	SYN1 M TO CHK D34 H
R99(1)	SYN1	C1	68Ω	SYN1 M TO CHK D35 H
R77(1)	SYN2	B2	68Ω	SYN2 CHK D43 H
R72(1)	SYN2	B2	68Ω	SYN2 CHK ECC 1 H
R83(1)	SYN2	C2	68Ω	SYN2 CHK ECC 16 H
R73(1)	SYN2	B2	68Ω	SYN2 CHK ECC 2 H
R88(1)	SYN2	C2	68Ω	SYN2 CHK ECC 32 H
R86(1)	SYN2	C2	68Ω	SYN2 CHK ECC 4 H
R92(1)	SYN2	C2	68Ω	SYN2 CHK ECC 8 H
R78(1)	SYN2	B2	68Ω	SYN2 CHK ECC PAR H
R132(1)	SYN2	B4	68Ω	SYN2 M TO CHK ECC 1 H
R106(1)	SYN2	C6	68Ω	SYN2 M TO CHK ECC 16 H
R134(1)	SYN2	C4	68Ω	SYN2 M TO CHK ECC 2 H
R47(1)	SYN2	D6	68Ω	SYN2 M TO CHK ECC 32 H
R148(1)	SYN2	D4	68Ω	SYN2 M TO CHK ECC 4 H
R48(1)	SYN2	B6	68Ω	SYN2 M TO CHK ECC 8 H
R131(1)	SYN2	D2	68Ω	SYN2 M TO CHK ECC PAR H
R56(1)	SYN3	C7	68Ω	SYN3 PAR B00,01,02 H
R180(1)	SYN3	C7	68Ω	SYN3 PAR B00,01,03 H
R135(1)	SYN3	C7	68Ω	SYN3 PAR B00,02,03 H
R141(1)	SYN3	C7	68Ω	SYN3 PAR B01,02,03 H
R50(1)	SYN3	C4	68Ω	SYN3 PAR B04,05,07,10 H
R182(1)	SYN3	C4	68Ω	SYN3 PAR B04,06,08,10 H
R137(1)	SYN3	C4	68Ω	SYN3 PAR B05,06,09,10 H
R51(1)	SYN3	C4	68Ω	SYN3 PAR B06,08,09 H
R143(1)	SYN3	C4	68Ω	SYN3 PAR B07,08,09,10 H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R52(1)	SYN3	C6	68Ω	SYN3 PAR B11,12,14,17 H
R181(1)	SYN3	C6	68Ω	SYN3 PAR B11,13,15,17 H
R136(1)	SYN3	C6	68Ω	SYN3 PAR B12,13,16,17 H
R54(1)	SYN3	C6	68Ω	SYN3 PAR B13,15,16 H
R142(1)	SYN3	C6	68Ω	SYN3 PAR B14,15,16,17 H
R52(1)	SYN3	C2	68Ω	SYN3 PAR B18,21,23,24 H
R53(1)	SYN3	C2	68Ω	SYN3 PAR B19,20,22,25 H
R183(1)	SYN3	C2	68Ω	SYN3 PAR B19,21,23,25 H
R138(1)	SYN3	C2	68Ω	SYN3 PAR B20,21,24,25 H
R144(1)	SYN3	C2	68Ω	SYN3 PAR B22,23,24,25 H
R45(1)	SYN3	B7	68Ω	SYN3 PAR B26,27,29,32 H
R184(1)	SYN3	B7	68Ω	SYN3 PAR B26,28,30,32 H
R139(1)	SYN3	B7	68Ω	SYN3 PAR B27,28,31,32 H
R46(1)	SYN3	B7	68Ω	SYN3 PAR B28,30,31 H
R145(1)	SYN3	B7	68Ω	SYN3 PAR B29,30,31,32 H
R49(1)	SYN3	B5	68Ω	SYN3 PAR B33 TO ECC 32 H
R105(1)	SYN3	B1	68Ω	SYN3 PAR B33,34,35 H
R151(1)	SYN4	C3	68Ω	SYN4 43 BIT PAR OK H
R122(1)	SYN4	D6	68Ω	SYN4 BIT 1 H
R147(1)	SYN4	C6	68Ω	SYN4 BIT 16 H
R125(1)	SYN4	D5	68Ω	SYN4 BIT 2 H
R114(1)	SYN4	C5	68Ω	SYN4 BIT 32 H
R214(1)	SYN4	D3	68Ω	SYN4 BIT 4 H
R117(1)	SYN4	D2	68Ω	SYN4 BIT 8 H
R76(1)	SYN4	33	68Ω	SYN4 BUF 1 H
R85(1)	SYN4	B5	68Ω	SYN4 BUF 16 H
R74(1)	SYN4	B3	68Ω	SYN4 BUF 2 H
R90(1)	SYN4	B5	68Ω	SYN4 BUF 32 H
R91(1)	SYN4	A5	68Ω	SYN4 BUF 4 H
R93(1)	SYN4	B5	68Ω	SYN4 BUF 8 H
R79(1)	SYN4	B3	68Ω	SYN4 BUF CORR ERR H
R80(1)	SYN4	A3	68Ω	SYN4 BUF DOUBLE H
R301(1)	SYN4	B6	68Ω	-SYN4 TO CORR PAR H
R300(1)	SYN5	B3	68Ω	-SYN5 COMP CHK TO P PAR H
R157(1)	SYN5	A5	68Ω	SYN5 CORR ERROR H
R202(1)	SYN5	D7	68Ω	SYN5 DECODE 03 H
R200(1)	SYN5	D7	68Ω	SYN5 DECODE 05 H
R212(1)	SYN5	D7	68Ω	SYN5 DECODE 06 H
R210(1)	SYN5	D7	68Ω	SYN5 DECODE 07 H
R217(1)	SYN5	D5	68Ω	SYN5 DECODE 09 H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R215(1)	SYN5	D5	68Ω	SYN5 DECODE 10 H
R278(1)	SYN5	D5	68Ω	SYN5 DECODE 11 H
R274(1)	SYN5	D5	68Ω	SYN5 DECODE 12 H
R237(1)	SYN5	D5	68Ω	SYN5 DECODE 13 H
R233(1)	SYN5	D5	68Ω	SYN5 DECODE 14 H
R296(1)	SYN5	D5	68Ω	SYN5 DECODE 15 H
R294(1)	SYN5	D4	68Ω	SYN5 DECODE 17 H
R295(1)	SYN5	D4	68Ω	SYN5 DECODE 18 H
R298(1)	SYN5	D4	68Ω	SYN5 DECODE 19 H
R243(1)	SYN5	D4	68Ω	SYN5 DECODE 20 H
R241(1)	SYN5	D4	68Ω	SYN5 DECODE 21 H
R189(1)	SYN5	D4	68Ω	SYN5 DECODE 22 H
R192(1)	SYN5	D4	68Ω	SYN5 DECODE 23 H
R205(1)	SYN5	D3	68Ω	SYN5 DECODE 24 H
R201(1)	SYN5	D3	68Ω	SYN5 DECODE 25 H
R211(1)	SYN5	D3	68Ω	SYN5 DECODE 26 H
R208(1)	SYN5	D3	68Ω	SYN5 DECODE 27 H
R216(1)	SYN5	D3	68Ω	SYN5 DECODE 28 H
R218(1)	SYN5	D3	68Ω	SYN5 DECODE 29 H
R277(1)	SYN5	D3	68Ω	SYN5 DECODE 30 H
R275(1)	SYN5	D3	68Ω	SYN5 DECODE 31 H
R235(1)	SYN5	D2	68Ω	SYN5 DECODE 33 H
R297(1)	SYN5	D2	68Ω	SYN5 DECODE 34 H
R293(1)	SYN5	D2	68Ω	SYN5 DECODE 35 H
R302(1)	SYN5	D2	68Ω	SYN5 DECODE 36 H
R232(1)	SYN5	D2	68Ω	SYN5 DECODE 37 H
R247(1)	SYN5	D2	68Ω	SYN5 DECODE 38 H
R240(1)	SYN5	D2	68Ω	SYN5 DECODE 39 H
R190(1)	SYN5	D1	68Ω	SYN5 DECODE 40 H
R193(1)	SYN5	D1	68Ω	SYN5 DECODE 41 H
R146(1)	SYN5	D1	68Ω	SYN5 DECODE 42 H
R191(1)	SYN5	A4	68Ω	SYN5 DOUBLE ERROR H
R84(1)	SYN7	B2	68Ω	SYN7 BLK ADR PAR H
R113(1)	SYN7	A7	68Ω	SYN7 DIAG LOAD TIME H
R28(1)	SYN7	D4	68Ω	SYN7 ERR ADR 14 H
R27(1)	SYN7	D4	68Ω	SYN7 ERR ADR 15 H
R14(1)	SYN7	D4	68Ω	SYN7 ERR ADR 16 H
R138(1)	SYN7	D4	68Ω	SYN7 ERR ADR 17 H
R110(1)	SYN7	D2	68Ω	SYN7 ERR ADR 18 H
R112(1)	SYN7	D2	68Ω	SYN7 ERR ADR 19 H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R116(1)	SYN7	D2	68Ω	SYN7 ERR ADR 20 H
R71(1)	SYN7	D2	68Ω	SYN7 ERR ADR 21 H
R69(1)	SYN7	C6	68Ω	SYN7 P ADR 14 H
R68(1)	SYN7	C6	68Ω	SYN7 P ADR 15 H
R66(1)	SYN7	C6	68Ω	SYN7 P ADR 16 H
R65(1)	SYN7	B6	68Ω	SYN7 P ADR 17 H
R43(1)	SYN8	C2	68Ω	-SYN8 CHK DIAG T0 H
R169(1)	SYN8	D2	68Ω	SYN8 CHK DIAG T1 H
R22(1)	SYN8	D2	68Ω	-SYN8 CHK DIAG T1 H
R87(1)	SYN8	A2	68Ω	-SYN8 DIAG MIX EN H
R75(1)	SYN8	B2	68Ω	SYN8 DIAG MIX SEL 1 H
R20(1)	SYN8	A2	68Ω	SYN8 DIAG MIX SEL 2 H
R19(1)	SYN8	B3	68Ω	SYN8 DIAG SIX SEL 0 H
R97(1)	SYN8	B3	68Ω	SYN8 DIAG SIX SEL 1 H
R171(1)	SYN8	B3	68Ω	SYN8 DIAG SIX SEL 2 H
R357(1)	SYN8	C2	68Ω	SYN8 S DIAG CYC A H
R246(1)	SYN8	C2	68Ω	SYN8 S DIAG CYC B H
R23(1)	SYN8	D4	68Ω	-SYN8 S DIAG FCN 00 H
R107(1)	SYN8	C4	68Ω	-SYN8 S DIAG FCN 05 H
R26(1)	SYN8	C4	68Ω	-SYN8 S DIAG FCN 06 H
R227(1)	SYN8	C3	68Ω	SYN8 S DIAG FCN 10 H
R226(1)	SYN8	C4	68Ω	-SYN8 S DIAG FCN 10 H
R111(1)	SYN8	C3	68Ω	SYN8 S DIAG FCN 12 H
R41(1)	SYN8	C4	68Ω	-SYN8 S DIAG FCN 12 H
R194(1)	SYN8	D6	68Ω	SYN8 WR DATA D07 H
R252(1)	SYN8	D6	68Ω	SYN8 WR DATA D08 H
R318(1)	SYN8	D6	68Ω	SYN8 WR DATA D09 H
R311(1)	SYN8	C6	68Ω	SYN8 WR DATA D10 H
R253(1)	SYN8	C6	68Ω	SYN8 WR DATA D11 H
R196(1)	SYN8	C6	68Ω	SYN8 WR DATA D12 H
R319(1)	SYN8	C6	68Ω	SYN8 WR DATA D13 H
R149(1)	SYN8	C6	68Ω	SYN8 WR DATA D14 H
R170(1)	SYN8	B6	68Ω	SYN8 WR DATA D15 H
R168(1)	SYN8	B6	68Ω	-SYN8 WR DATA D15 H
R284(1)	SYN8	C6	68Ω	SYN8 WR DATA D24 H
R283(1)	SYN8	C6	68Ω	SYN8 WR DATA D25 H
R29(1)	SYN8	B6	68Ω	SYN8 WR DATA D26 H
R231(1)	SYN8	B6	68Ω	-SYN8 WR DATA D26 H
R280(1)	SYN8	B6	68Ω	SYN8 WR DATA D27 H
R94(1)	SYN8	B6	68Ω	-SYN8 WR DATA D27 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 07-JUN-78 | ENG. [illegible] DATE 28-Jun-78 | TITLE: SYNDROME TERMINATORS

CHK'D [illegible] DATE 28-Jun-78 | BOARD LOCATION:

D8A752.DRW[4,665] 07-JUN-78 15:38 | SHEET 2 OF 3 | NEXT HIGHER ASSEMBLY: D-DD-M8575-0

FIRST USED ON OPTION/MODEL: MF20

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-RES	

ME 1

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R61(1)	SYN8	B6	68Ω	SYN8 WR DATA D32 H
R60(1)	SYN8	B6	68Ω	-SYN8 WR DATA D32 H
R63(1)	SYN8	B6	68Ω	SYN8 WR DATA D33 H
R58(1)	SYN8	A6	68Ω	SYN8 WR DATA D34 H
R62(1)	SYN8	A6	68Ω	SYN8 WR DATA D35 H
R154(1)	SYN9	D5	68Ω	SYN9 CHK HOLD ECC.SYN H
R150(1)	SYN9	C4	68Ω	SYN9 CORR DISABLE H
R312(1)	SYN9	D5	68Ω	SYN9 S DIAG FORCE 0'S H
R89(1)	SYNA	D4	68Ω	SYNA +12 MARG H
R16(1)	SYNA	C4	68Ω	SYNA +12 MARG EN H
R70(1)	SYNA	D4	68Ω	SYNA +5 MARG H
R13(1)	SYNA	C4	68Ω	SYNA +5 MARG EN H
R21(1)	SYNA	D4	68Ω	SYNA -2 MARG H
R25(1)	SYNA	C4	68Ω	SYNA -2 MARG EN H
R127(1)	SYNA	D4	68Ω	SYNA -5.2 MARG H
R173(1)	SYNA	C4	68Ω	SYNA -5.2 MARG EN H
R338(1)	SYNA	A5	68Ω	SYNA CHK PWR BAD H
R38(1)	SYNA	B6	68Ω	SYNA CHK PWR OK H
R220(1)	SYNA	B6	68Ω	-SYNA CHK PWR OK H
R121(1)	SYNA	B5	68Ω	-SYNA LOAD MARGIN H
R223(1)	SYN0	B4	68Ω	WRP8 SUB RAM 1 H
R148(1)	SYN0	B7	68Ω	WRP8 SUB RAM 16 H
R328(1)	SYN0	C6	68Ω	WRP8 SUB RAM 2 H
R115(1)	SYN0	B7	68Ω	WRP8 SUB RAM 32 H
R325(1)	SYN0	C6	68Ω	WRP8 SUB RAM 4 H
R327(1)	SYN0	C6	68Ω	WRP8 SUB RAM 8 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 07-JUN-78 ENG. DATE
CHK'D DATE BOARD LOCATION:
D8575J.DRW[4,665] 07-JUN-78 15:26 SHEET 3 OF 3
FIRST USED ON OPTION/MODEL: MF20 NEXT HIGHER ASSEMBLY: D-DD-M8575-0

TITLE: SYNDROME TERMINATORS

SIZE	CODE	NUMBER	REV.
D	CS	M8575-0-RES	MR

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS	
			FILE: ORIGINAL LAYOUT		
			ECO NUMBER		1
			MODULE REVISION	A	B
E-UA-M8576-0-0	4		MOS CONTROL	A	B
D-UA-M8576-0-0	1		MOS CONTROL	A	B
K-PL-M8576-0-DBP	2		PARTS LIST	A	B
D-CS-M8576-0-CTL0	1		SBUS DRVR & RCVR	-	-
D-CS-M8576-0-CTL1	1		START LOGIC	-	A
D-CS-M8576-0-CTL2	1		CYCLE CONTROL	-	A
D-CS-M8576-0-CTL3	1		WRITE DATA MOVER	-	A
D-CS-M8576-0-CTL4	1		ERR REG & ACKN	-	A
D-CS-M8576-0-CTL5	1		READ DATA MIXER	-	-
D-CS-M8576-0-CTL6	1		DATA VALID	-	-
D-CS-M8576-0-CTL7	1		DIAGNOSTIC MOVER	-	-
D-CS-M8576-0-CTL8	1		DIAGNOSTIC CNTRL	-	A
D-CS-M8576-0-CTL9	1		SM PROM CONTROL	-	-
D-CS-M8576-0-CTLA	1		RAS & SEL DRVR	-	-
D-CS-M8576-0-CTLB	1		POWER. GND. CAPS.	-	-
D-CS-M8576-0-CTLC	1		POWER. GND. CAPS.	-	-
D-CS-M8576-0-RES	2		TERMINATORS	-	A
E-MD-5012900-0-0	6		DRILL & ETCH DRAWING	A	A
		5012900	ETCH CIRCUIT BOARD	D	D
K-PC-M8576-0-DBC	-		P.C. DESIGN DATA BASE	A	A
P00-M8576-00	-		PROCESS SHEET (REF ONLY)	-	-

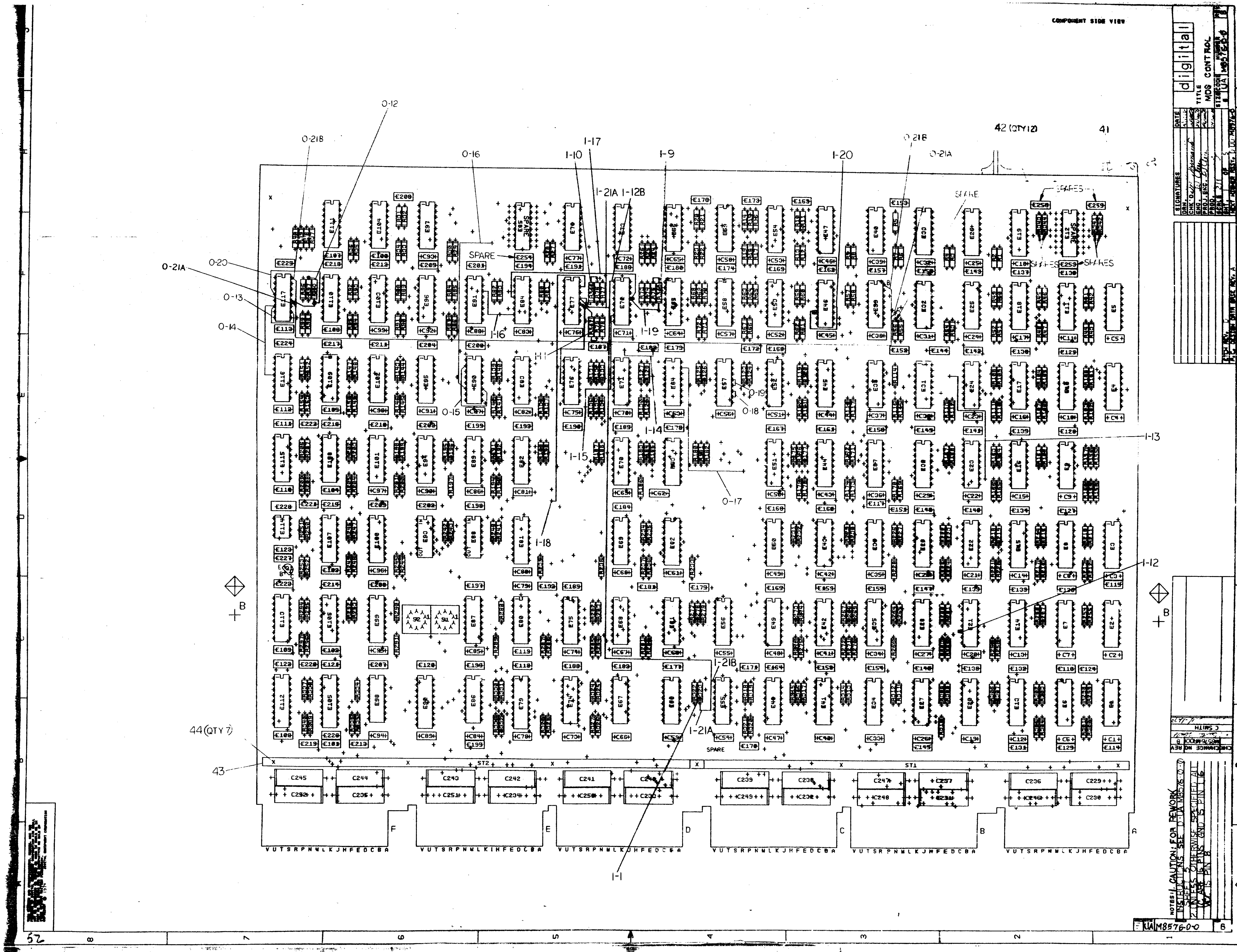
NOTES:

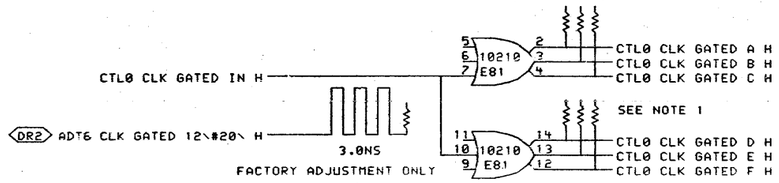
REVISIONS		
CHK	CHANGE NO.	REV
	M8576-MR001	A

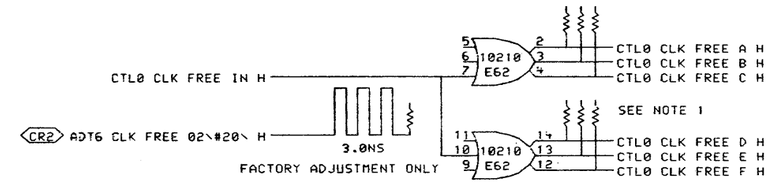
digital — DRN P. Lucier, DATE 20-OCT-78; CHK'D, DATE 19 Jan 79; ENG C. Smith, DATE 19 Jan 79; BOARD LOCATION: 5AF05; SHEET 1 OF 1; NEXT HIGHER ASSEMBLY: NONE; DSK:8576DD.T2P[4,666] 20-OCT-78 15:23; FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS CONTROL

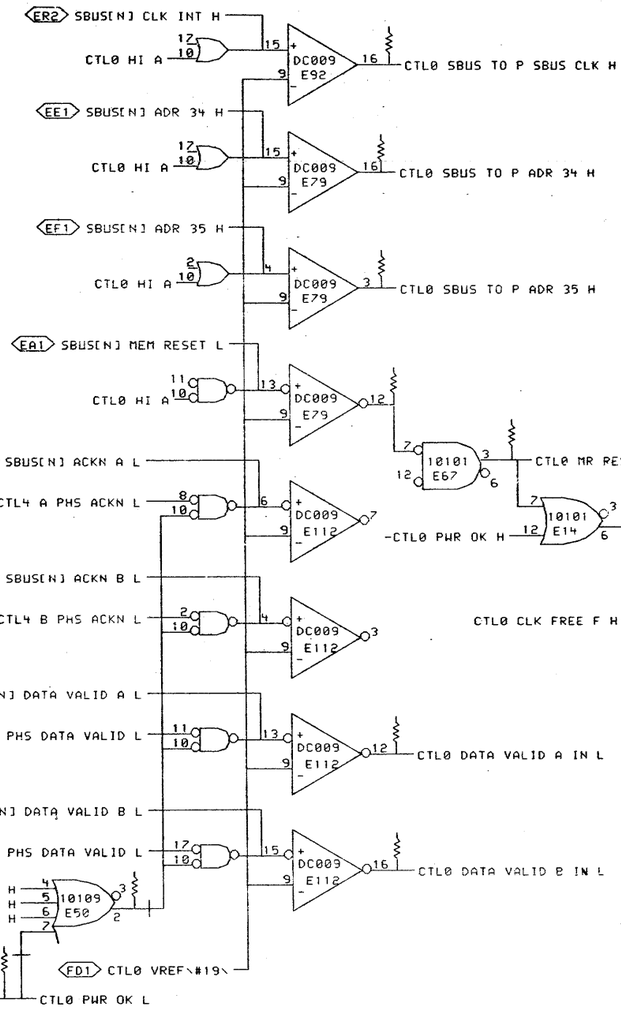
SIZE D | CODE DD | NUMBER M8576-0 | REV. A

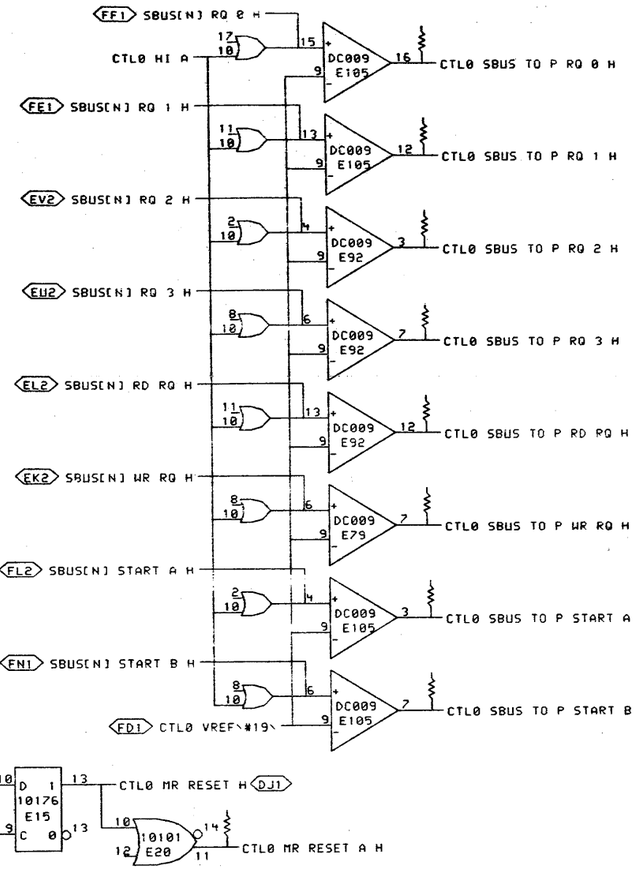

COMPONENT SIDE VIEW
digital
MOS CONTROL
M8576-0-0
SPARE
SPARES
42 (QTY 12)
41
44 (QTY 7)
43
ST1
ST2

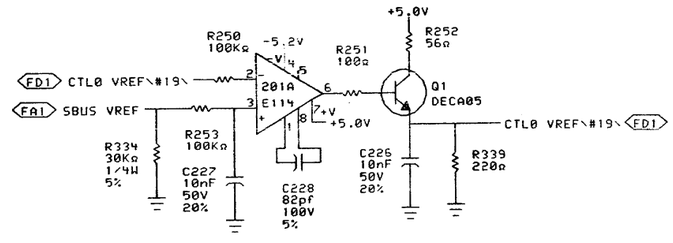




NOTE 1 REPLACEMENT OF ANY 10210 REQUIRES FACTORY DESKEW ADJUSTMENT.







SHEET 1 OF 13

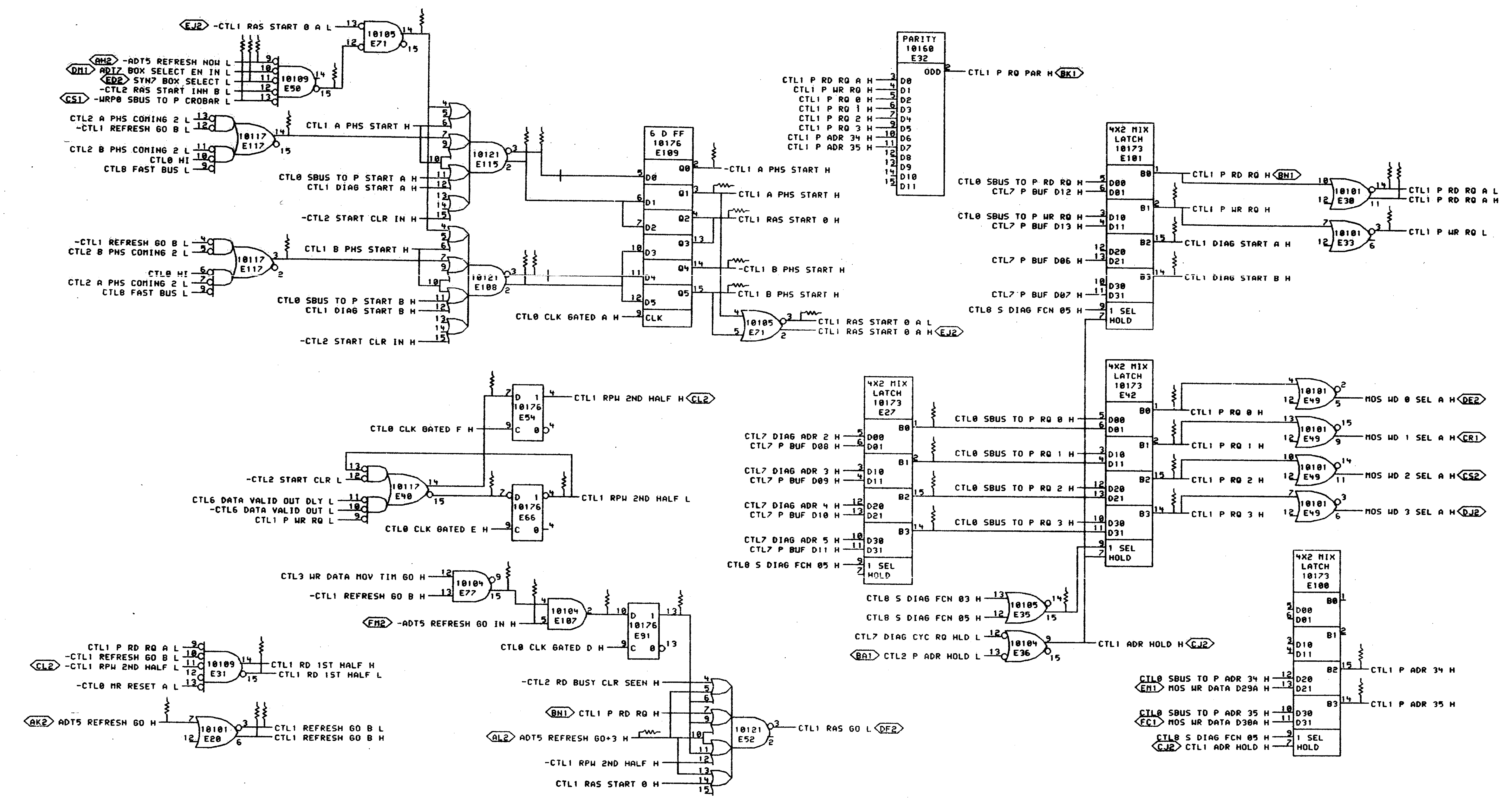
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier 18-JUL-78 | ENG. [illegible] DATE [illegible]
CHK D. [illegible] DATE 18-JUL-78 | BOARD LOCATION: 5AF05
PUB: <M8576-MOS>CTL0B.DRW 18-JUL-78 11:44 | SHEET 1 OF 1
FIRST USED ON OPTION\MODEL: MF20 | NEXT HIGHER ASSEMBLY: D-DD-M8576-0

TITLE: MOS CONTROL SBUS DRVR & RCVR

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-CTL0	



SHEET 2 OF 13

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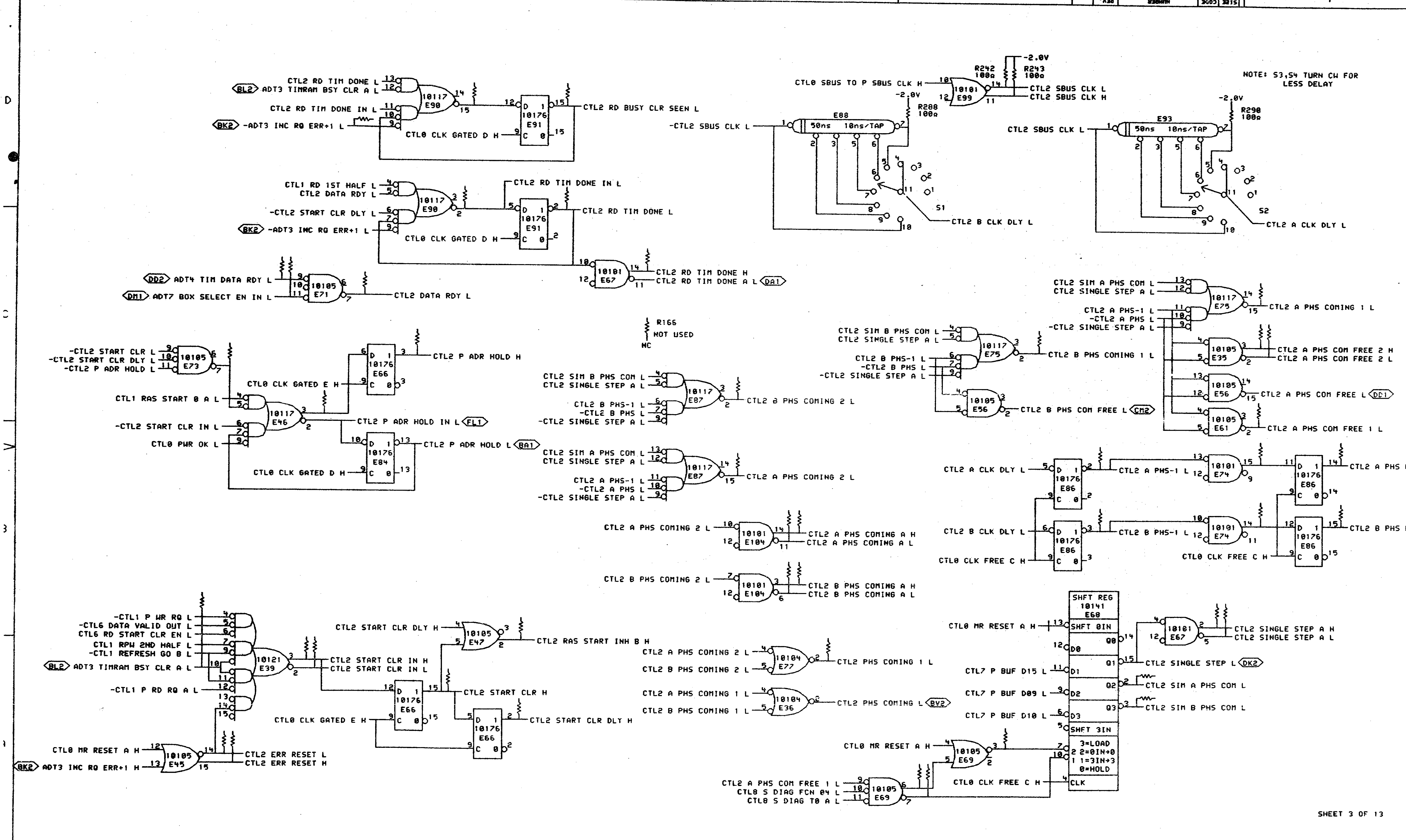
REVISIONS		
CHK	CHANGE NO.	REV
	M8576-MR0001	A
C. SMITH		

digital

DRN	P. Lucier	DATE 20-OCT-78	ENG	C. Smith	DATE 4 Jan 79
CHK'D	M. Normand	DATE 9 Jan 79	BOARD LOCATION: 5AE05		
PUB:<M8576-MOS>CTL1B.DRW	06-OCT-78 09:52		SHEET 1 OF 1		
FIRST USED ON OPTION/MODEL: MF20			NEXT HIGHER ASSEMBLY: D-DD-M8576-0		

TITLE: MOS CONTROL START LOGIC

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-CTL1	A



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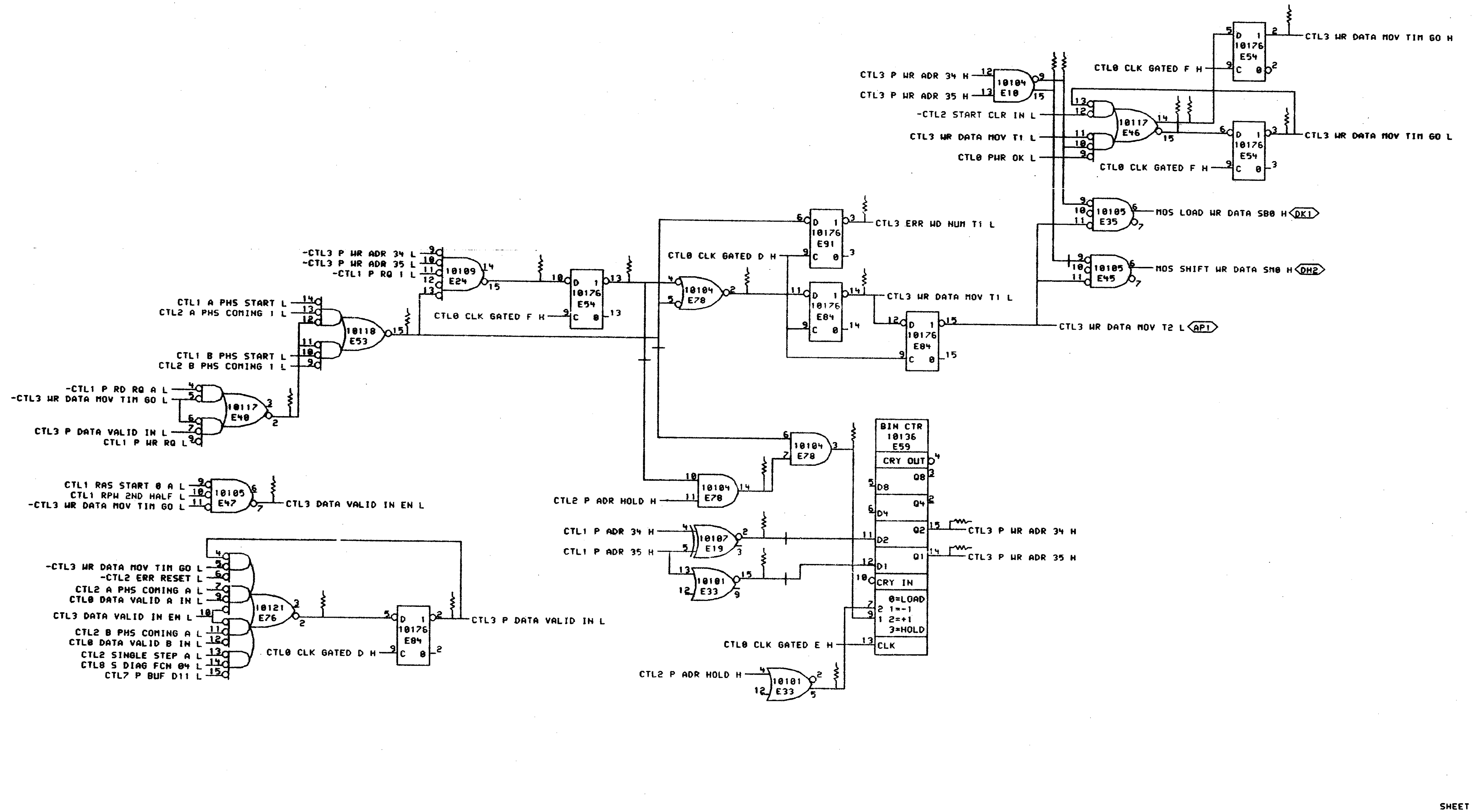
REVISIONS		
CHK	CHANGE NO.	REV
	M8576-MR001	A

digital

DRN: P. Lucien — DATE 09-NOV-78
CHK'D — DATE 19 Jan 79
ENG: C. Smith — DATE 19 Jan 79
BOARD LOCATION: 5AF05
SHEET 1 OF 1
PUB:<M8576-MOS>CTL2B.DRW 09-NOV-78 13:05
NEXT HIGHER ASSEMBLY: D-DD-M8576-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS CONTROL CYCLE CONTROL

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-CTL2	A



REVISIONS		
CHK	CHANGE NO.	REV
	M8576-MR001	A

C. SMITH

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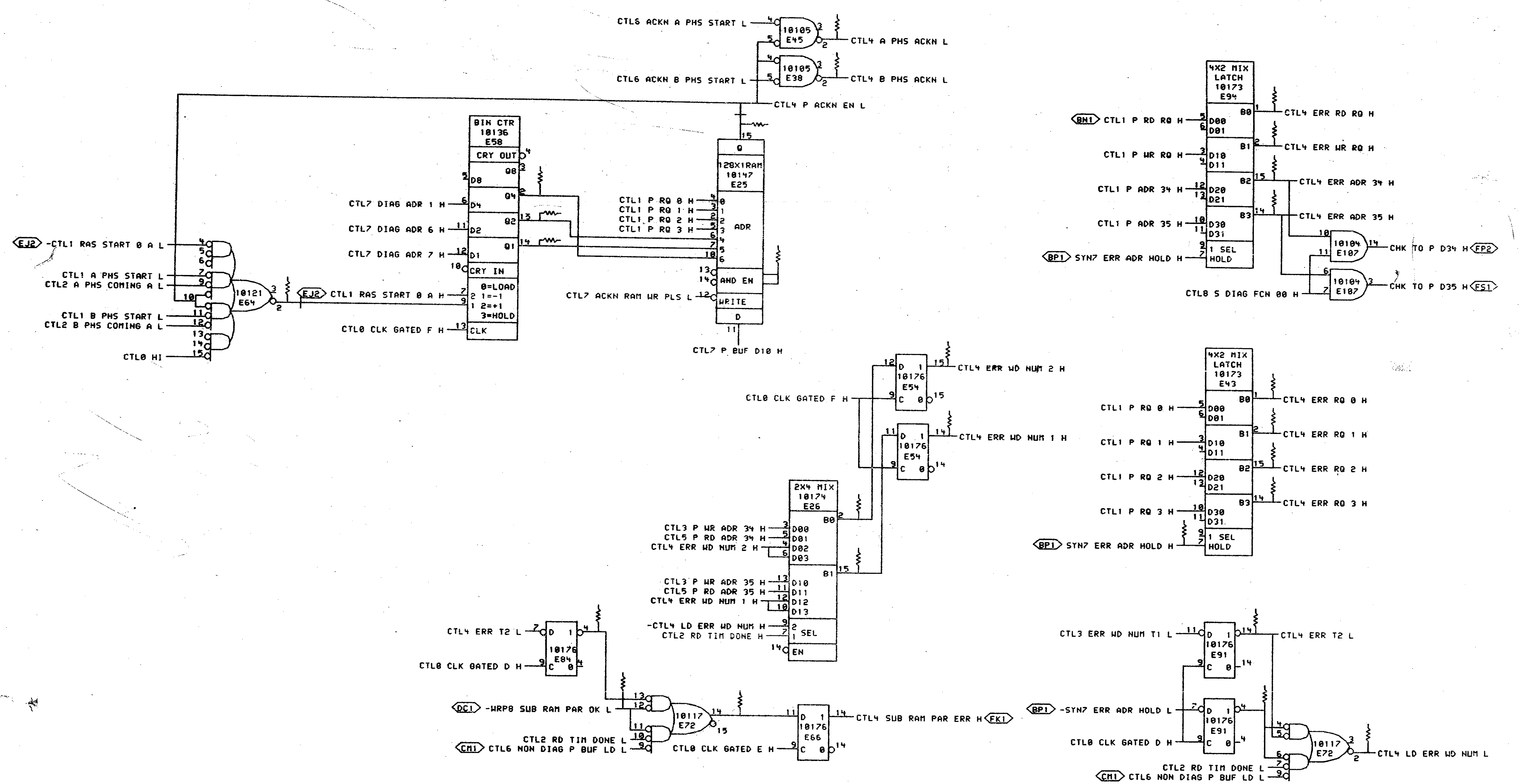
digital

DRN P. Lucier DATE 20-OCT-78 ENG C. Smith DATE 19 Jan 79
CHK'D M. Normand DATE
BOARD LOCATION: 5AF05
SHEET 1 OF 1
PUB:<M8576-MOS>CTL30.DRW 22-SEP-78 14:04
NEXT HIGHER ASSEMBLY: D-DD-M8576-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS CONTROL WRITE DATA MOVER

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-CTL3	A



SHEET 5 OF 13

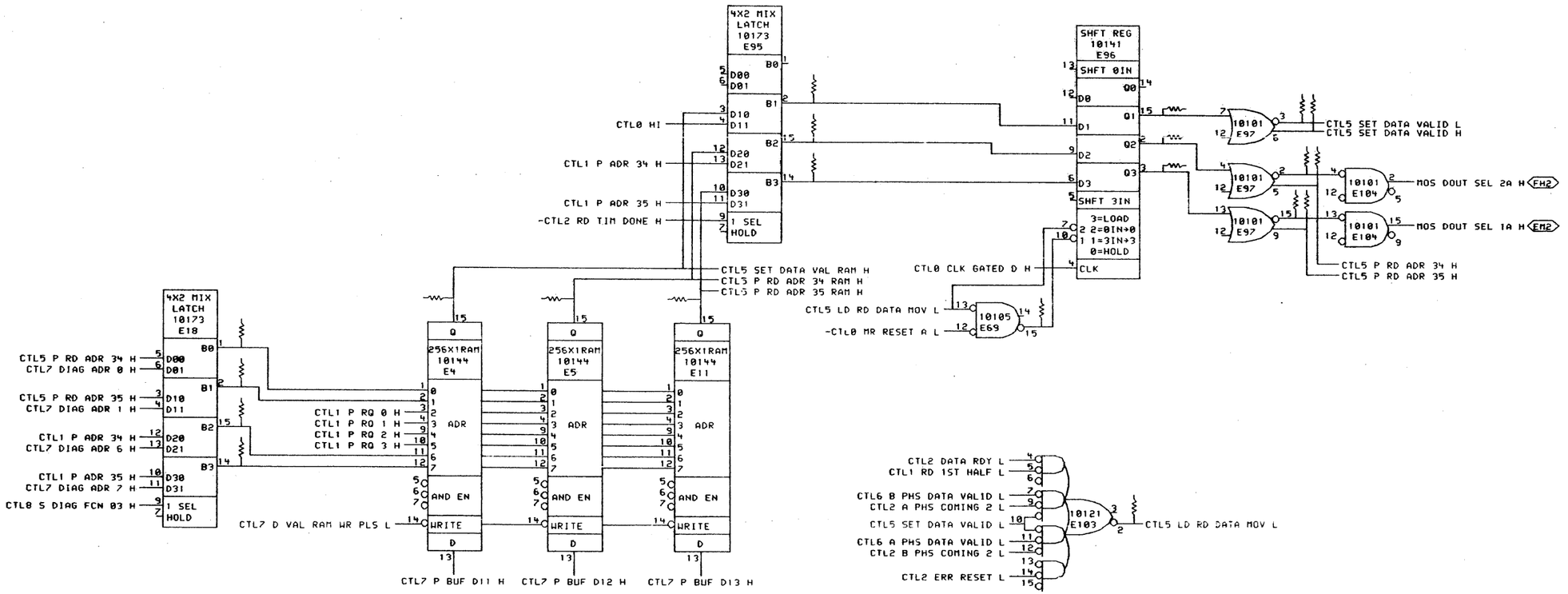
REVISIONS		
CHK	CHANGE NO.	REV
	M8576-MR001	A
	C. SMITH	

digital

DRN P. Lucier DATE 20-OCT-78 ENG C. Smith DATE 19 Jan 79
CHK'D M. Momand DATE 19 Jan 79 BOARD LOCATION: 5AF05
SHEET 1 OF 1
PUB: <M8576-MOS>CTL4B.DRW 06-OCT-78 10:24 NEXT HIGHER ASSEMBLY: D-DD-M8576-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS CONTROL ERR REG & ACKN

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-CTL4	A



SHEET 6 OF 13

REVISIONS		
CHK	CHANGE NO.	REV

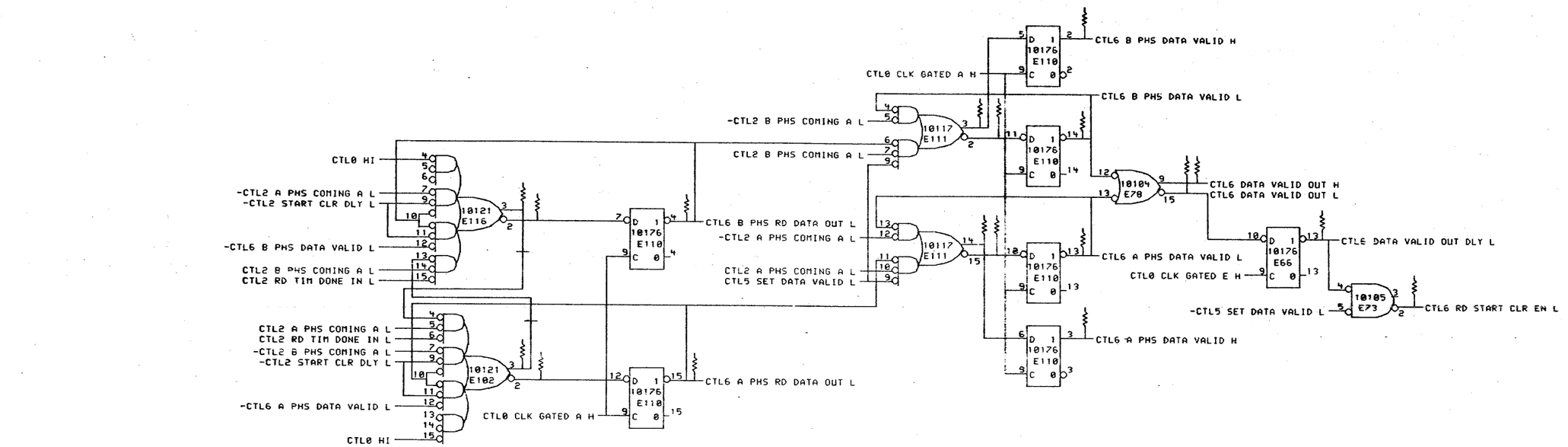
digital

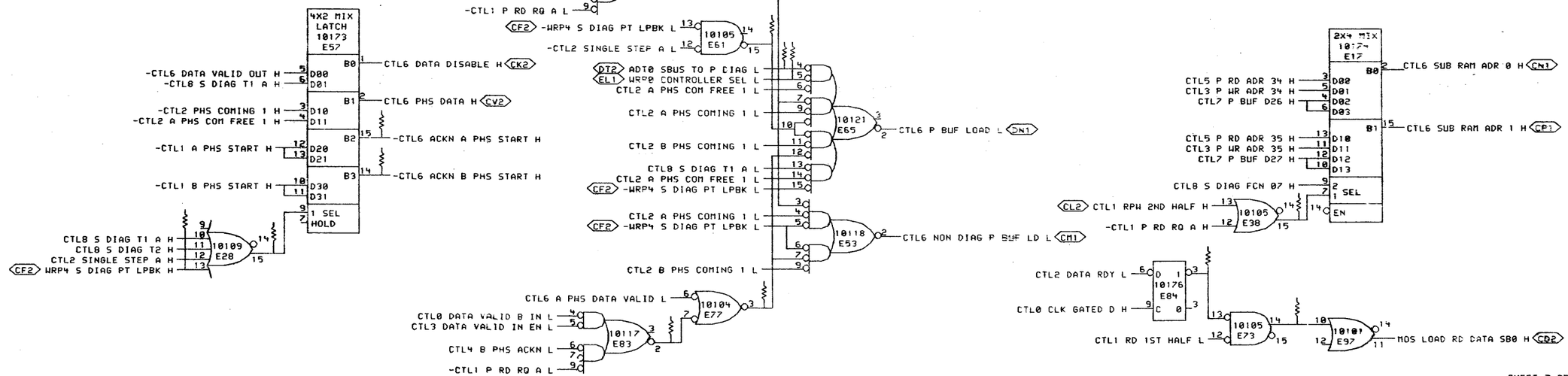
DRN. P Lucier DATE 24-MAR-78 ENG. D J Allen DATE 29/Mar/78
CHK'D. D Lucier DATE 27-Mar-78 BOARD LOCATION: 5AF05
CTL5B.DRW[4,666] 01-MAY-78 10:10 SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: MF20 NEXT HIGHER ASSEMBLY: D-DD-M8576-0

TITLE: MOS CONTROL
READ DATA MOVER

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-CTL5	

52 MR





SHEET 2 OF 13

REVISIONS

CHK	CHANGE NO.	REV

digital

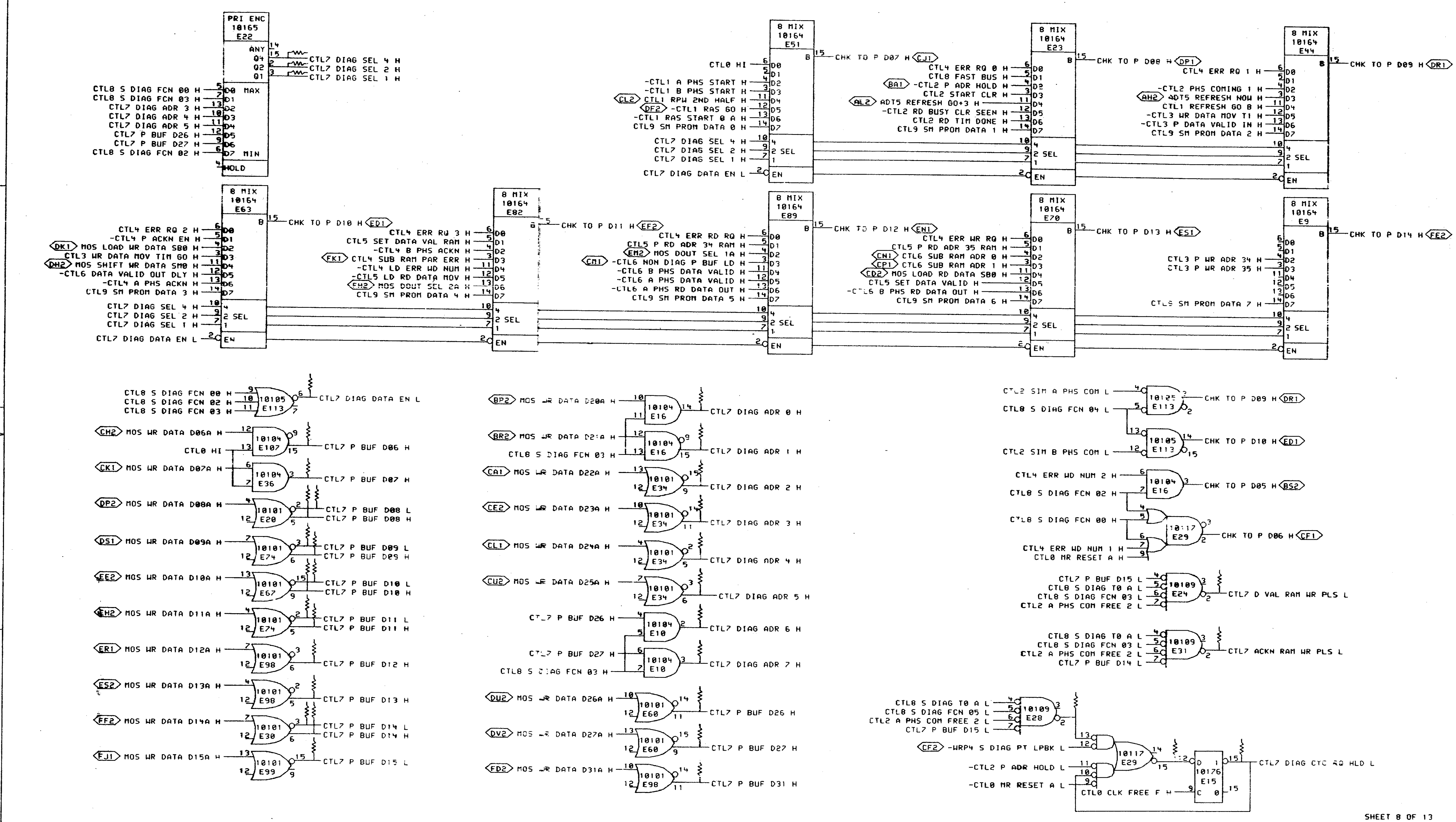
DRN P. Lucier | DATE 24-MAR-78 | ENG. DJ Chin | DATE 29 Mar 78
CHK P. Lucier | DATE 22-Jun-78 | BOARD LOCATION: 5AF05
CTL68.DRW[4,666] 01-MAY-78 10:12 | SHEET 1 OF 1 | NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: MF20 | D-DD-M8576-0

TITLE: MOS CONTROL DATA VALID

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-CTL6	

me

8 7 6 5 4 3 2 1



REVISIONS		
CHK	CHANGE NO.	REV

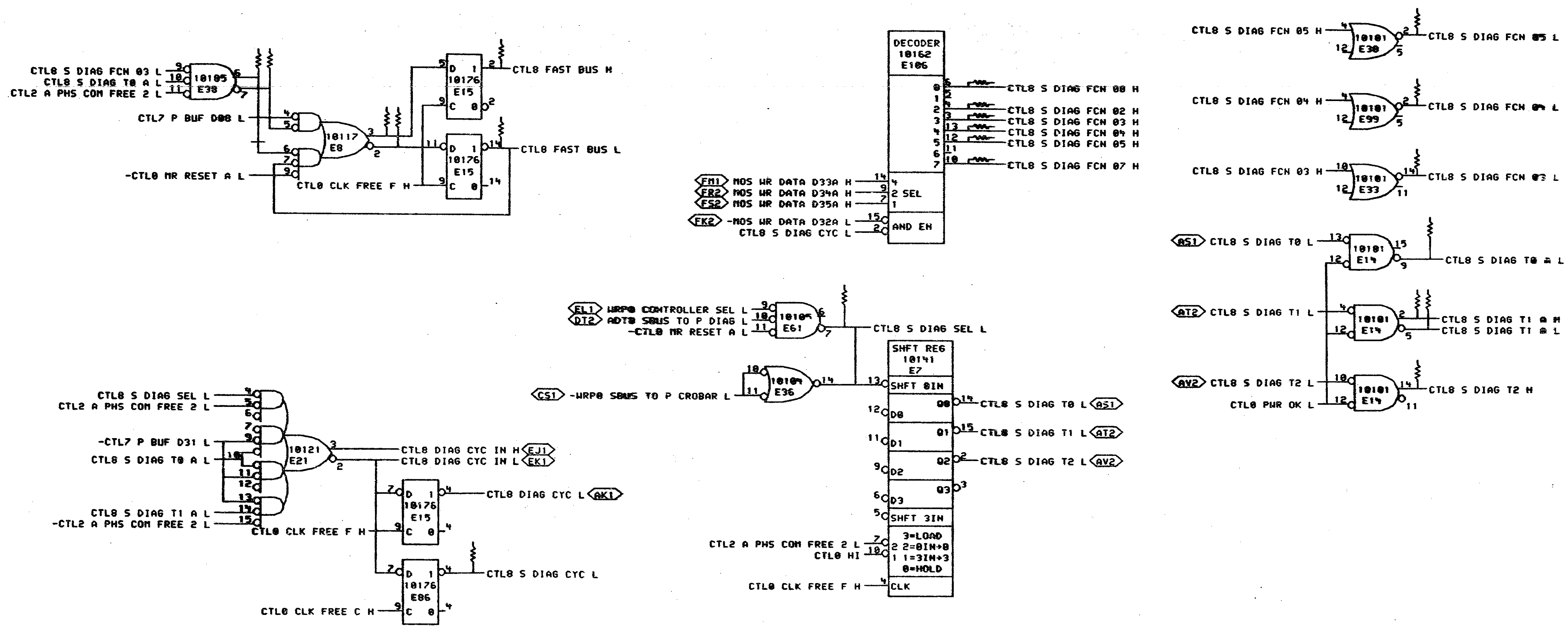
digital

DRN P. Lucier — DATE 11-MAY-78 — ENG. — DATE
CHK'D — DATE 22-Jun-78 — BOARD LOCATION: 5AF05 — SHEET 1 OF 1
CTL78.DRW[4,666] 10-MAY-78 14:42 — NEXT HIGHER ASSEMBLY: D-DD-M8576-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS CONTROL DIAGNOSTIC MIXER

SIZE D — CODE CS — NUMBER M8576-0-CTL7 — REV.

8 7 6 5 4 3 2 1



SHEET 9 OF 13

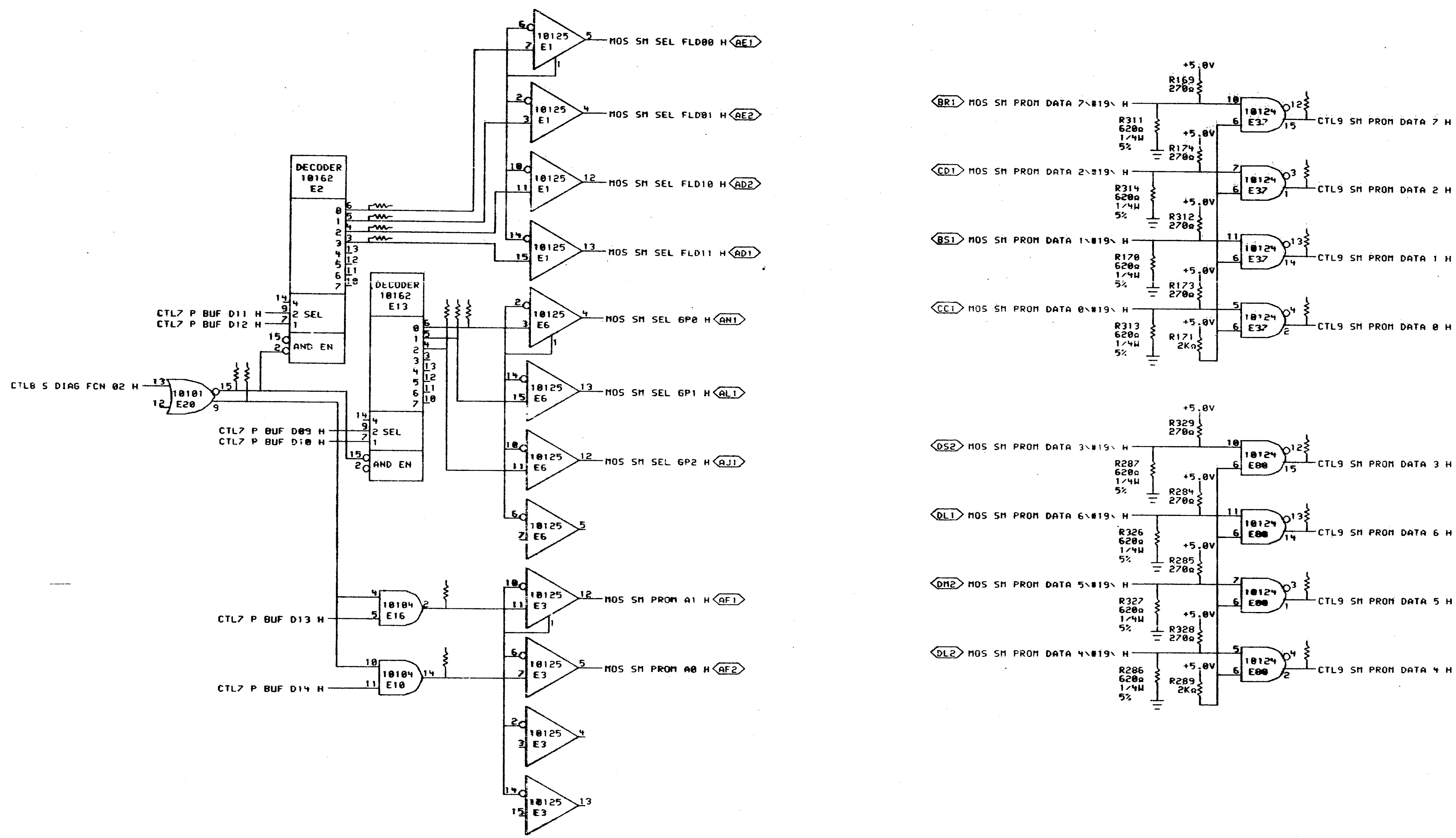
REVISIONS		
CHK	CHANGE NO.	REV
	M8576-MR001	A
	SMITH	

digital

DRN: P. Lucier DATE 20-OCT-78 | ENG: E. Smith DATE
CHK'D: DATE | BOARD LOCATION: | SHEET 1 OF 1
PWB: <M8576-MOS>CTL8.DRW 22-SEP-78 14:31 | NEXT HIGHER ASSEMBLY: D-DD-M8576-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS COTROL DIAGNOSTIC CNTRL

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-CTL8	A



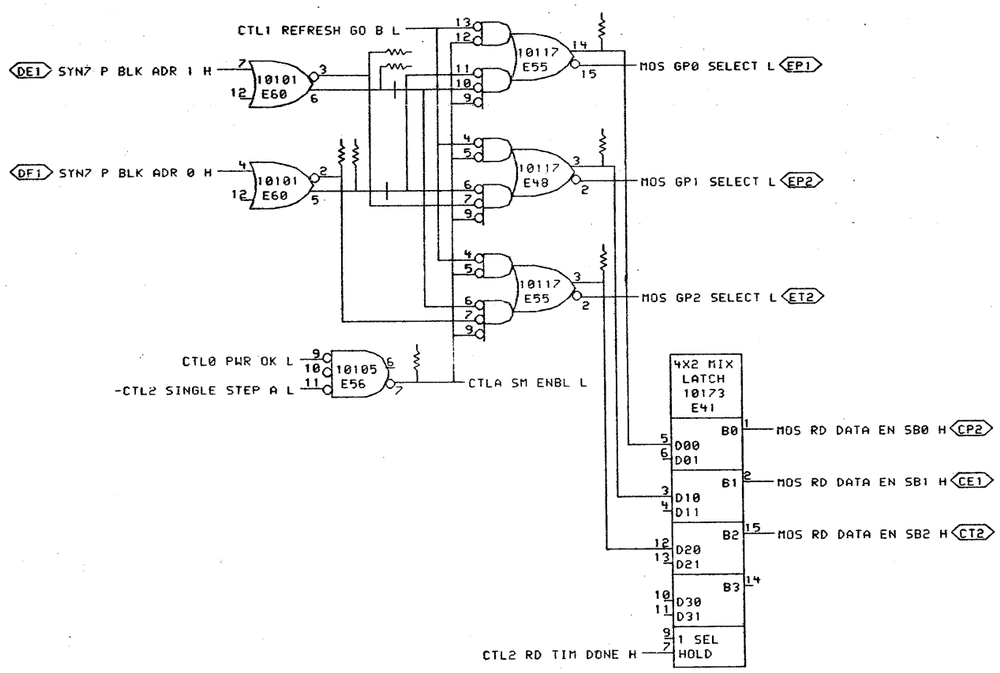
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier DATE 24-MAR-78 ENG. D. J. Chin DATE 29-Jun-78
CHK'D P. Lucier DATE 22-Jun-78 BOARD LOCATION: 5AF05 SHEET 1 OF 1
CTL9B.DRW[4,666] 01-MAY-78 10:15 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: MF20 D-DD-M8576-0

TITLE: MOS CONTROL SM PROM CONTROL

SIZE D CODE CS NUMBER M8576-0-CTL9 REV.



SHEET 11 OF 13

REVISIONS		
CHK	CHANGE NO.	REV

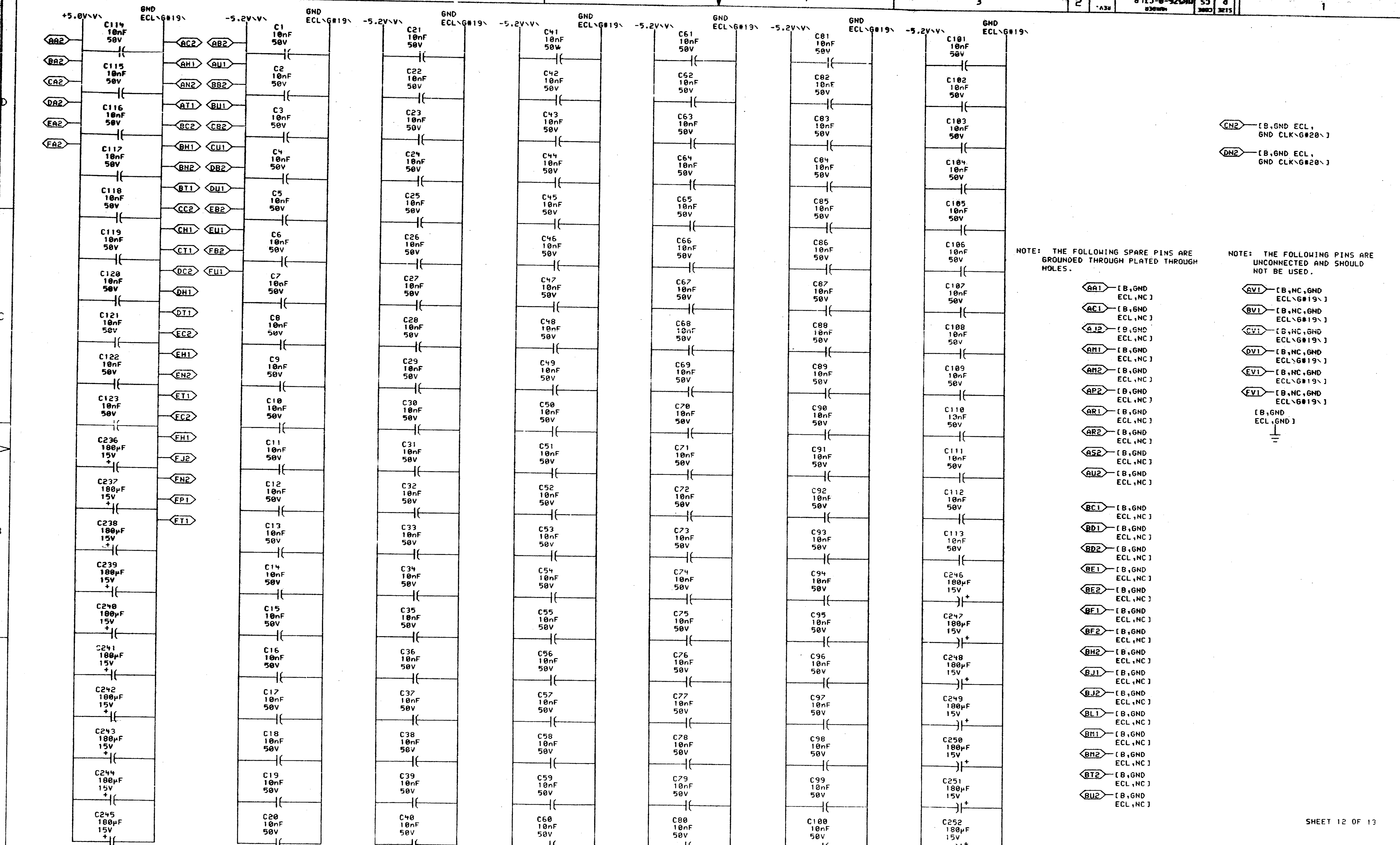
digital

DRN. P.Lucier 24-MAR-78
CHK D. Lucier 22-Jun-78
ENG. D J Clem 29/Jun/78
BOARD LOCATION: 5AF05
SHEET 1 OF 1
CTLAB.DRW[4,666] 01-MAY-78 10:16
NEXT HIGHER ASSEMBLY: D-DD-M8576-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS CONTROL RAS & SEL DRVR

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-CTLA	1

mr 63



REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier DATE 25-MAY-78 — ENG. D. Chen DATE 26-Jun-78
CHKD P. Lucier DATE 22-Jun-78 — BOARD LOCATION: 5AF05 — SHEET 1 OF 1
CTLBB.DRW[4,666] 25-MAY-78 09:06 — NEXT HIGHER ASSEMBLY: D-DD-M8576-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS CONTROL POWER. GND. CAPS.

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-CTLB	

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R212(1)	CTL9	B6	68Ω	%E10(14)
R118(1)	CTL3	D3	68Ω	%E10(15)
R266(1)	CTL3	D3	68Ω	%E10(9)
R92(1)	CTL6	C6	68Ω	%E102(2)
R98(1)	CTL6	C6	68Ω	%E102(3)
R139(1)	CTL1	B5	68Ω	%E107(2)
R147(1)	CTL1	C6	68Ω	%E108(2)
R150(1)	CTL1	C6	68Ω	%E108(3)
R38(1)	CTL6	C4	68Ω	%E111(14)
R95(1)	CTL6	C4	68Ω	%E111(15)
R93(1)	CTL6	D3	68Ω	%E111(2)
R37(1)	CTL6	D4	68Ω	%E111(3)
R153(1)	CTL1	D6	68Ω	%E115(2)
R148(1)	CTL1	D6	68Ω	%E115(3)
R97(1)	CTL6	D6	68Ω	%E116(2)
R143(1)	CTL6	D6	69Ω	%E116(3)
R209(1)	CTL1	D7	68Ω	%E117(14)
R205(1)	CTL1	C7	68Ω	%E117(3)
R302(1)	CTL9	C6	68Ω	%E13(4)
R304(1)	CTL9	C6	68Ω	%E13(5)
R303(1)	CTL9	C6	68Ω	%E13(6)
R220(1)	CTL0	B3	68Ω	%E14(6)
R217(1)	CTL0	B3	68Ω	%E15(3)
R213(1)	CTL9	B6	68Ω	%E16(2)
R43(1)	CTL5	B7	68Ω	%E18(1)
R102(1)	CTL5	B7	68Ω	%E18(14)
R160(1)	CTL5	B7	68Ω	%E18(15)
R44(1)	CTL5	B7	68Ω	%E18(2)
R19(1)	CTL3	B4	68Ω	%E19(2)
R298(1)	CTL9	C7	68Ω	%E2(3)
R301(1)	CTL9	C7	68Ω	%E2(4)
R299(1)	CTL9	C7	68Ω	%E2(5)
R300(1)	CTL9	C7	68Ω	%E2(6)
R255(1)	CTL9	C7	68Ω	%E20(15)
R106(1)	CTL9	C7	68Ω	%E20(9)
R13(1)	CTL3	C5	68Ω	%E24(15)
R50(1)	CTL4	C4	68Ω	%E25(13)
R11(1)	CTL4	B4	68Ω	%E26(15)
R10(1)	CTL4	B4	68Ω	%E26(2)
R275(1)	CTL1	B4	68Ω	%E27(1)

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R270(1)	CTL1	B4	68Ω	%E27(14)
R268(1)	CTL1	B4	68Ω	%E27(15)
R273(1)	CTL1	B4	68Ω	%E27(2)
R123(1)	CTL6	A7	68Ω	%E28(15)
R225(1)	CTL7	A3	68Ω	%E28(2)
R214(1)	CTL7	A2	68Ω	%E29(15)
R14(1)	CTL3	B4	68Ω	%E33(15)
R22(1)	CTL3	A4	68Ω	%E33(5)
R271(1)	CTL1	B3	68Ω	%E35(15)
R110(1)	CTL6	A2	68Ω	%E38(15)
R216(1)	CTL8	C7	68Ω	%E38(6)
R210(1)	CTL8	C7	68Ω	%E39(7)
R17(1)	CTL1	C6	68Ω	%E40(14)
R24(1)	CTL1	B6	68Ω	%E40(15)
R61(1)	CTL3	B7	68Ω	%E40(2)
R16(1)	CTL3	C2	68Ω	%E46(14)
R18(1)	CTL3	C2	68Ω	%E46(15)
R25(1)	CTL2	C7	68Ω	%E46(3)
R315(1)	CTLA	C4	68Ω	%E48(3)
R127(1)	CTL1	D7	68Ω	%E50(15)
R335(1)	CTL0	A5	68Ω	%E50(2)
R108(1)	CTL3	C6	68Ω	%E53(15)
R28(1)	CTL3	C5	68Ω	%E54(13)
R317(1)	CTLA	C4	68Ω	%E55(14)
R316(1)	CTLA	C4	68Ω	%E55(3)
R53(1)	CTL4	C6	68Ω	%E58(14)
R54(1)	CTL4	C6	68Ω	%E58(15)
R52(1)	CTL4	C6	68Ω	%E58(2)
R322(1)	CTLA	C5	68Ω	%E60(2)
R320(1)	CTLA	C5	68Ω	%E60(3)
R318(1)	CTLA	C5	68Ω	%E60(5)
R321(1)	CTLA	C5	68Ω	%E60(6)
R72(1)	CTL6	B5	68Ω	%E61(15)
R67(1)	CTL4	C7	68Ω	%E64(2)
R84(1)	CTL5	B3	68Ω	%E69(15)
R282(1)	CTL2	A3	68Ω	%E69(3)
R237(1)	CTL2	A3	68Ω	%E69(6)
R281(1)	CTL2	A3	68Ω	%E69(7)
R207(1)	CTL1	D6	68Ω	%E71(14)
R23(1)	CTL4	A5	68Ω	%E72(14)

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R30(1)	CTL6	A2	68Ω	%E73(14)
R60(1)	CTL2	C7	68Ω	%E73(7)
R330(1)	CTL2	B1	68Ω	%E74(14)
R331(1)	CTL2	B1	68Ω	%E74(15)
R81(1)	CTL3	A6	68Ω	%E76(2)
R65(1)	CTL6	B5	68Ω	%E77(14)
R247(1)	CTL1	B6	68Ω	%E77(15)
R66(1)	CTL6	A5	68Ω	%E77(3)
R27(1)	CTL3	B4	68Ω	%E78(14)
R80(1)	CTL3	C4	68Ω	%E78(2)
R21(1)	CTL3	B4	68Ω	%E78(3)
R325(1)	CTL8	C4	68Ω	%E79(12)
R215(1)	CTL8	C6	68Ω	%E8(2)
R219(1)	CTL8	C6	68Ω	%E8(3)
R76(1)	CTL6	B5	68Ω	%E83(15)
R79(1)	CTL6	A5	66Ω	%E83(2)
R26(1)	CTL6	A2	68Ω	%E84(3)
R345(1)	CTL4	B5	68Ω	%E84(4)
R82(1)	CTL2	D6	68Ω	%E90(15)
R122(1)	CTL1	B5	68Ω	%E91(13)
R78(1)	CTL4	A2	68Ω	%E91(4)
R90(1)	CTL5	C4	68Ω	%E95(14)
R87(1)	CTL5	C4	68Ω	%E95(15)
R85(1)	CTL5	C4	68Ω	%E95(2)
R33(1)	CTL5	C3	68Ω	%E96(15)
R32(1)	CTL5	C3	68Ω	%E96(2)
R29(1)	CTL5	C3	68Ω	%E96(3)
R31(1)	CTL5	C2	68Ω	%E97(15)
R34(1)	CTL5	C2	68Ω	%E97(2)
R74(1)	CTL6	B4	68Ω	-ADT0 SBUS TO P DIAG H
R142(1)	CTL2	D7	68Ω	ADT3 INC RQ ERR+1 H
R141(1)	CTL2	B7	68Ω	-ADT3 TIMRAM BSY CLR A H
R129(1)	CTL2	C7	68Ω	-ADT4 TIM DATA RDY H
R306(1)	CTL1	A8	68Ω	ADT5 REFRESH GO H
R248(1)	CTL1	B6	68Ω	-ADT5 REFRESH GO IN H
R124(1)	CTL1	A5	68Ω	ADT5 REFRESH GO+3 H
R176(1)	CTL1	D7	68Ω	ADT5 REFRESH NOW H
R233(1)	CTL0	B7	68Ω	ADT6 CLK FREE 02\#20\ H
R239(1)	CTL0	C7	68Ω	ADT6 CLK GATED 12\#20\ H
R130(1)	CTL2	C7	68Ω	-ADT7 BOX SELECT EN IN H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R234(1)	CTL0	C6	68Ω	CTL0 CLK FREE A H
R235(1)	CTL0	C6	68Ω	CTL0 CLK FREE B H
R333(1)	CTL0	C6	68Ω	CTL0 CLK FREE C H
R180(1)	CTL0	B6	68Ω	CTL0 CLK FREE D H
R181(1)	CTL0	B6	68Ω	CTL0 CLK FREE E H
R257(1)	CTL0	B6	68Ω	CTL0 CLK FREE F H
R94(1)	CTL0	C6	68Ω	CTL0 CLK GATED A H
R240(1)	CTL0	C6	68Ω	CTL0 CLK GATED B H
R241(1)	CTL0	C6	68Ω	CTL0 CLK GATED C H
R89(1)	CTL0	C6	68Ω	CTL0 CLK GATED D H
R15(1)	CTL0	C6	68Ω	CTL0 CLK GATED E H
R12(1)	CTL0	C6	68Ω	CTL0 CLK GATED F H
R134(1)	CTL0	B4	68Ω	-CTL0 DATA VALID A IN H
R131(1)	CTL0	A4	68Ω	-CTL0 DATA VALID B IN H
R246(1)	CTL0	A6	68Ω	CTL0 HI
R332(1)	CTL0	C6	68Ω	CTL0 HI A
R277(1)	CTL0	B2	68Ω	CTL0 MR RESET A H
R258(1)	CTL0	B4	68Ω	CTL0 MR RESET B H
R256(1)	CTL0	A5	68Ω	-CTL0 PWR CK H
R244(1)	CTL0	C4	68Ω	CTL0 SBUS TO P ADR 34 H
R245(1)	CTL0	C4	68Ω	CTL0 SBUS TO P ADR 35 H
R198(1)	CTL0	C1	68Ω	CTL0 SBUS TO P RD RQ H
R274(1)	CTL0	D1	68Ω	CTL0 SBUS TO P RQ 0 H
R276(1)	CTL0	D1	68Ω	CTL0 SBUS TO P RQ 1 H
R267(1)	CTL0	D1	68Ω	CTL0 SBUS TO P RQ 2 H
R272(1)	CTL0	C1	68Ω	CTL0 SBUS TO P RQ 3 H
R291(1)	CTL0	C4	68Ω	CTL0 SBUS TO P SBUS CLK H
R204(1)	CTL0	C1	68Ω	CTL0 SBUS TO P START A H
R203(1)	CTL0	B1	68Ω	CTL0 SBUS TO P START B H
R201(1)	CTL0	C1	68Ω	CTL0 SBUS TO P WR RQ H
R135(1)	CTL1	C5	68Ω	CTL1 A PHS START H
R59(1)	CTL1	D5	68Ω	-CTL1 A PHS START H
R133(1)	CTL1	C5	68Ω	CTL1 B PHS START H
R62(1)	CTL1	C5	68Ω	-CTL1 B PHS START H
R206(1)	CTL1	C2	68Ω	CTL1 DIAG START A H
R202(1)	CTL1	C2	68Ω	CTL1 DIAG START B H
R1(1)	CTL1	A2	68Ω	CTL1 P ADR 34 H
R48(1)	CTL1	A2	68Ω	CTL1 P ADR 35 H
R138(1)	CTL1	C1	68Ω	CTL1 P RD RQ A H
R114(1)	CTL1	C1	68Ω	-CTL1 P RD RQ A 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
	M8576-MR001	A
	C. SMITH	

digital

DRN. C. Smith DATE 20-OCT-78 ENG. C. Smith DATE 19 Jan 79
CHK'D M. Momand DATE 19 Jan 79 BOARD LOCATION:
SHEET 1 OF 2
PUB:<M8576-MOS>M85761.DRW 12-OCT-78 10:29
NEXT HIGHER ASSEMBLY: B-DD-M8576-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS CONTROL TERMINATORS

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-RES	A

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R100(1)	CTL1	C2	68Ω	CTL1 P RQ 0 H
R101(1)	CTL1	B2	68Ω	CTL1 P RQ 1 H
R158(1)	CTL1	B2	68Ω	CTL1 P RQ 2 H
R159(1)	CTL1	B2	68Ω	CTL1 P RQ 3 H
R6(1)	CTL1	C2	68Ω	CTL1 P WR RQ H
R7(1)	CTL1	C1	68Ω	-CTL1 P WR RQ H
R120(1)	CTL1	C5	68Ω	CTL1 RAS START 0 H
R9(1)	CTL1	C4	68Ω	-CTL1 RAS START 0 A H
R36(1)	CTL1	A7	68Ω	-CTL1 RD 1ST HALF H
R350(1)	CTL1	A7	68Ω	CTL1 REFRESH GO B H
R346(1)	CTL1	A7	68Ω	-CTL1 REFRESH GO B H
R119(1)	CTL1	B6	68Ω	-CTL1 RPW 2ND HALF H
R264(1)	CTL2	B1	68Ω	CTL2 A PHS H
R69(1)	CTL2	C1	68Ω	-CTL2 A PHS COM FREE 1 H
R261(1)	CTL2	C1	68Ω	CTL2 A PHS COM FREE 2 H
R116(1)	CTL2	C1	68Ω	-CTL2 A PHS COM FREE 2 H
R229(1)	CTL2	C1	68Ω	-CTL2 A PHS COMING 1 H
R40(1)	CTL2	B4	68Ω	-CTL2 A PHS COMING 2 H
R154(1)	CTL2	B4	68Ω	CTL2 A PHS COMING A H
R125(1)	CTL2	B4	68Ω	-CTL2 A PHS COMING A H
R269(1)	CTL2	B2	68Ω	-CTL2 A PHS-1 H
R270(1)	CTL2	B1	68Ω	CTL2 B PHS H
R230(1)	CTL2	C3	68Ω	-CTL2 B PHS COMING 1 H
R39(1)	CTL2	C4	68Ω	-CTL2 B PHS COMING 2 H
R149(1)	CTL2	B4	68Ω	CTL2 B PHS COMING A H
R128(1)	CTL2	B4	68Ω	-CTL2 B PHS COMING A H
R279(1)	CTL2	B2	68Ω	-CTL2 B PHS-1 H
R35(1)	CTL2	C6	68Ω	-CTL2 DATA RDY H
R137(1)	CTL2	A7	68Ω	CTL2 ERR RESET H
R88(1)	CTL2	A7	68Ω	-CTL2 ERR RESET H
R222(1)	CTL2	C6	68Ω	CTL2 P ADR HOLD H
R177(1)	CTL2	A4	68Ω	-CTL2 PHS COMING 1 H
R231(1)	CTL2	B6	68Ω	CTL2 RAS START INH B H
R163(1)	CTL2	D5	68Ω	-CTL2 RD BUSY CLR SEEN H
R3(1)	CTL2	C5	68Ω	CTL2 RD TIM DONE H
R324(1)	CTL2	D5	68Ω	-CTL2 RD TIM DONE H
R99(1)	CTL2	D6	68Ω	-CTL2 RD TIM DONE IN H
R297(1)	CTL2	A2	68Ω	-CTL2 SIM A PHS COM H
R294(1)	CTL2	A2	68Ω	-CTL2 SIM B PHS COM H
R260(1)	CTL2	B2	68Ω	CTL2 SINGLE STEP A H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R136(1)	CTL2	B2	68Ω	-CTL2 SINGLE STEP A H
R167(1)	CTL2	A6	68Ω	CTL2 START CLR H
R152(1)	CTL2	A6	68Ω	CTL2 START CLR DLY H
R20(1)	CTL2	A7	68Ω	CTL2 START CLR IN H
R208(1)	CTL2	A7	68Ω	-CTL2 START CLR IN H
R140(1)	CTL3	B7	68Ω	-CTL3 DATA VALID IN EN H
R83(1)	CTL3	C4	68Ω	-CTL3 ERR WD NUM T1 H
R8(1)	CTL3	A6	68Ω	-CTL3 P DATA VALID IN H
R155(1)	CTL3	B3	68Ω	CTL3 P WR ADR 34 H
R156(1)	CTL3	B3	68Ω	CTL3 P WR ADR 35 H
R179(1)	CTL3	C4	68Ω	-CTL3 WR DATA MOV T1 H
R347(1)	CTL3	D2	68Ω	CTL3 WR DATA MOV TIM GO H
R57(1)	CTL3	C2	68Ω	-CTL3 WR DATA MOV TIM GO H
R340(1)	CTL4	D4	68Ω	-CTL4 A PHS ACKN H
R337(1)	CTL4	D4	68Ω	-CTL4 B PHS ACKN H
R292(1)	CTL4	C2	68Ω	CTL4 ERR ADR 34 H
R249(1)	CTL4	C2	68Ω	CTL4 ERR ADR 35 H
R195(1)	CTL4	D2	68Ω	CTL4 ERR RD RQ H
R165(1)	CTL4	C2	68Ω	CTL4 ERR RQ 0 H
R178(1)	CTL4	B2	68Ω	CTL4 ERR RQ 1 H
R186(1)	CTL4	B2	68Ω	CTL4 ERR RQ 2 H
R189(1)	CTL4	B2	68Ω	CTL4 ERR RQ 3 H
R77(1)	CTL4	B2	68Ω	-CTL4 ERR T2 H
R227(1)	CTL4	B4	68Ω	CTL4 ERR WD NUM 1 H
R161(1)	CTL4	C4	68Ω	CTL4 ERR WD NUM 2 H
R188(1)	CTL4	D2	68Ω	CTL4 ERR WR RQ H
R2(1)	CTL4	A1	68Ω	-CTL4 LD ERR WD NUM H
R185(1)	CTL4	D5	68Ω	-CTL4 P ACKN EN H
R238(1)	CTL5	B3	68Ω	-CTL5 LD RD DATA MOV H
R109(1)	CTL5	C2	68Ω	CTL5 P RD ADR 34 H
R196(1)	CTL5	B5	68Ω	CTL5 P RD ADR 34 RAM H
R104(1)	CTL5	C2	68Ω	CTL5 P RD ADR 35 H
R145(1)	CTL5	B5	68Ω	CTL5 P RD ADR 35 RAM H
R144(1)	CTL5	B6	68Ω	CTL5 SET DATA VAL RAM H
R183(1)	CTL5	C2	68Ω	CTL5 SET DATA VALID H
R91(1)	CTL5	C2	68Ω	-CTL5 SET DATA VALID H
R146(1)	CTL6	C3	68Ω	CTL6 A PHS DATA VALID H
R336(1)	CTL6	C3	68Ω	-CTL6 A PHS DATA VALID H
R191(1)	CTL6	C5	68Ω	-CTL6 A PHS RD DATA OUT H
R121(1)	CTL6	B6	68Ω	-CTL6 ACKN A PHS START H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R117(1)	CTL6	B6	68Ω	-CTL6 ACKN B PHS START H
R151(1)	CTL6	D3	68Ω	CTL6 B PHS DATA VALID H
R338(1)	CTL6	D3	68Ω	-CTL6 B PHS DATA VALID H
R184(1)	CTL6	D5	68Ω	-CTL6 B PHS RD DATA OUT H
R55(1)	CTL6	D3	68Ω	CTL6 DATA VALID OUT H
R126(1)	CTL6	D3	68Ω	-CTL6 DATA VALID OUT H
R5(1)	CTL6	C2	68Ω	-CTL6 DATA VALID OUT DLY H
R58(1)	CTL6	C2	68Ω	-CTL6 RD START CLR EN H
R49(1)	CTL7	A2	68Ω	-CTL7 ACKN RAM WR PLS H
R41(1)	CTL7	B2	68Ω	-CTL7 D VAL RAM WR PLS H
R45(1)	CTL7	C5	68Ω	CTL7 DIAG ADR 0 H
R71(1)	CTL7	B5	68Ω	CTL7 DIAG ADR 1 H
R308(1)	CTL7	B5	68Ω	CTL7 DIAG ADR 2 H
R218(1)	CTL7	B5	68Ω	CTL7 DIAG ADR 3 H
R221(1)	CTL7	B5	68Ω	CTL7 DIAG ADR 4 H
R224(1)	CTL7	B5	68Ω	CTL7 DIAG ADR 5 H
R64(1)	CTL7	B5	68Ω	CTL7 DIAG ADR 6 H
R63(1)	CTL7	A5	68Ω	CTL7 DIAG ADR 7 H
R226(1)	CTL7	A2	68Ω	-CTL7 DIAG CYC RQ HLD H
R162(1)	CTL7	C7	68Ω	-CTL7 DIAG DATA EN H
R197(1)	CTL7	D7	68Ω	CTL7 DIAG SEL 1 H
R193(1)	CTL7	D7	68Ω	CTL7 DIAG SEL 2 H
R194(1)	CTL7	D7	68Ω	CTL7 DIAG SEL 4 H
R199(1)	CTL7	B7	68Ω	CTL7 P BUF D06 H
R200(1)	CTL7	B7	68Ω	CTL7 P BUF D07 H
R309(1)	CTL7	B7	68Ω	CTL7 P BUF D08 H
R211(1)	CTL7	B7	68Ω	-CTL7 P BUF D08 H
R305(1)	CTL7	B7	68Ω	CTL7 P BUF D09 H
R280(1)	CTL7	B7	68Ω	-CTL7 P BUF D09 H
R51(1)	CTL7	B7	68Ω	CTL7 P BUF D10 H
R283(1)	CTL7	B7	68Ω	-CTL7 P BUF D10 H
R103(1)	CTL7	B7	68Ω	CTL7 P BUF D11 H
R132(1)	CTL7	B7	68Ω	-CTL7 P BUF D11 H
R42(1)	CTL7	A7	68Ω	CTL7 P BUF D12 H
R46(1)	CTL7	A7	68Ω	CTL7 P BUF D13 H
R105(1)	CTL7	A7	68Ω	CTL7 P BUF D14 H
R113(1)	CTL7	A7	68Ω	-CTL7 P BUF D14 H
R112(1)	CTL7	A7	68Ω	-CTL7 P BUF D15 H
R47(1)	CTL7	A5	68Ω	CTL7 P BUF D26 H
R107(1)	CTL7	A5	68Ω	CTL7 P BUF D27 H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R259(1)	CTL7	A5	68Ω	CTL7 P BUF D31 H
R168(1)	CTL8	C6	68Ω	CTL8 FAST BUS H
R96(1)	CTL8	C6	68Ω	-CTL8 FAST BUS H
R295(1)	CTL8	B6	68Ω	-CTL8 S DIAG CYC H
R223(1)	CTL8	C4	68Ω	CTL8 S DIAG FCN 00 H
R307(1)	CTL8	C4	68Ω	CTL8 S DIAG FCN 02 H
R4(1)	CTL8	C4	68Ω	CTL8 S DIAG FCN 03 H
R115(1)	CTL8	C2	68Ω	-CTL8 S DIAG FCN 03 H
R293(1)	CTL8	C4	68Ω	CTL8 S DIAG FCN 04 H
R296(1)	CTL8	C2	68Ω	-CTL8 S DIAG FCN 04 H
R310(1)	CTL8	C4	68Ω	CTL8 S DIAG FCN 05 H
R265(1)	CTL8	C2	68Ω	-CTL8 S DIAG FCN 05 H
R111(1)	CTL8	C4	68Ω	CTL8 S DIAG FCN 07 H
R254(1)	CTL8	B4	68Ω	-CTL8 S DIAG SEL H
R236(1)	CTL8	C2	68Ω	-CTL8 S DIAG T0 A H
R263(1)	CTL8	B2	68Ω	CTL8 S DIAG T1 A H
R68(1)	CTL8	B2	68Ω	-CTL8 S DIAG T1 A H
R262(1)	CTL8	B2	68Ω	CTL8 S DIAG T2 H
R175(1)	CTL9	C3	68Ω	CTL9 SM PROM DATA 0 H
R164(1)	CTL9	C3	68Ω	CTL9 SM PROM DATA 1 H
R172(1)	CTL9	C3	68Ω	CTL9 SM PROM DATA 2 H
R182(1)	CTL9	B3	68Ω	CTL9 SM PROM DATA 3 H
R190(1)	CTL9	B3	68Ω	CTL9 SM PROM DATA 4 H
R192(1)	CTL9	B3	68Ω	CTL9 SM PROM DATA 5 H
R187(1)	CTL9	B3	68Ω	CTL9 SM PROM DATA 6 H
R157(1)	CTL9	D3	68Ω	CTL9 SM PROM DATA 7 H
R319(1)	CTLA	B5	68Ω	-CTLA SM ENBL H
R232(1)	CTL1	D7	68Ω	-SYN7 BOX SELECT H
R86(1)	CTL4	B6	68Ω	SYN7 ERR ADR HOLD H
R75(1)	CTL6	B4	68Ω	-WRP0 CONTROLLER SEL H
R228(1)	CTL1	D7	68Ω	WRP0 SBUS TO P CROBAR H
R70(1)	CTL6	A7	68Ω	WRP4 S DIAG PT LPBK H
R73(1)	CTL4	A5	68Ω	WRP8 SUB RAM PAR OK 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
	M8576-MR001	A

C SMITH

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DRN. C Smith — DATE 20-OCT-78 — ENG. C Smith — DATE 14 Jan 79

CHK'D M. Nomand — DATE 19 Jan 79 — BOARD LOCATION:

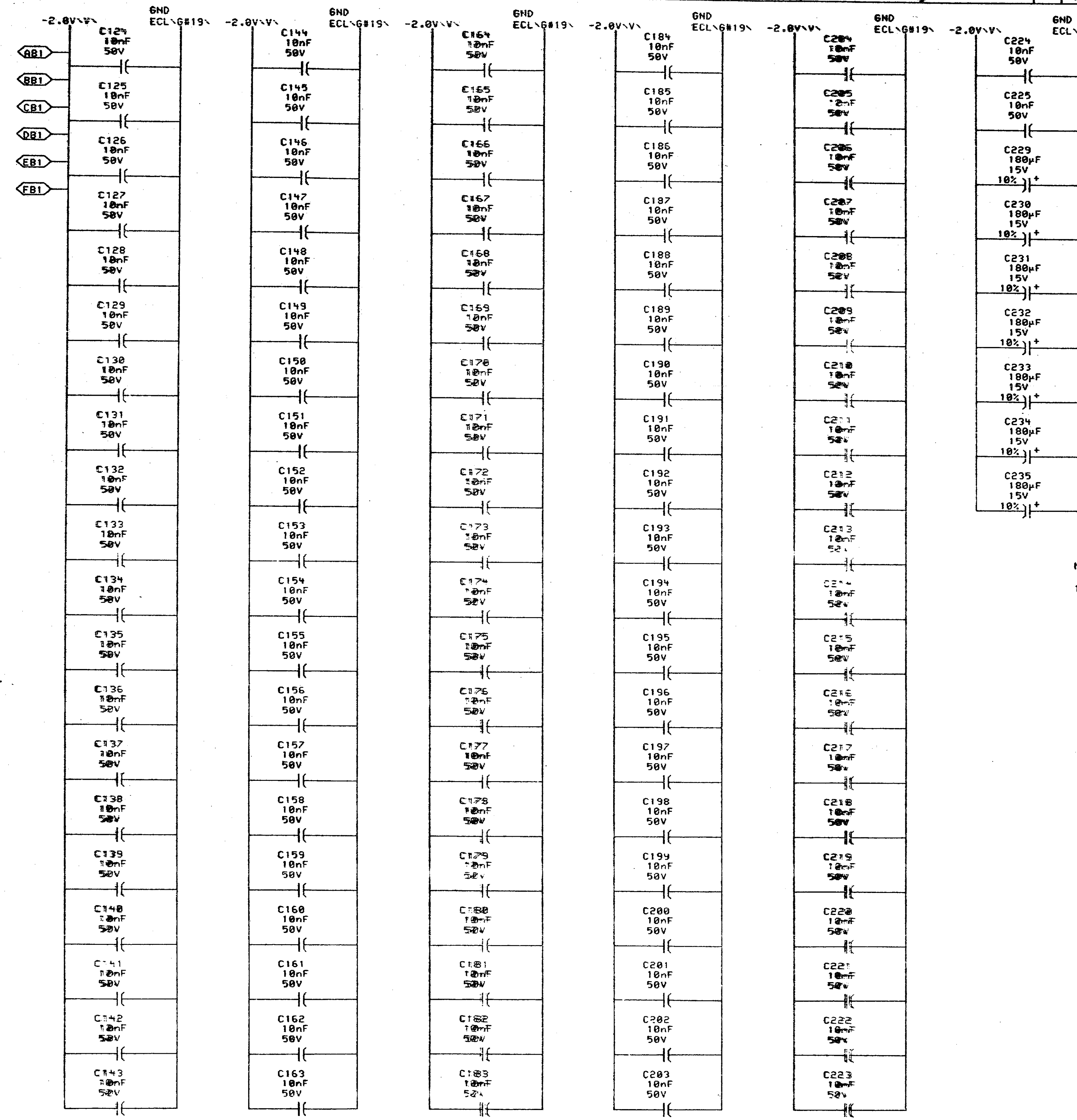
SHEET 2 OF 2

PUB:<M8576-MOS>M85762.DRW 12-OCT-78 10:44 — NEXT HIGHER ASSEMBLY: B-DD-M8576-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS CONTROL TERMINATORS

SIZE	CODE	NUMBER	REV.
D	CS	M8576-0-RES	A



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	10112 & 10210
16	8	10158 & 10173
1 24	12	10181

E85 PIN #1 NOT GROUNDED

SHEET 13 OF 13

CHK	CHANGE NO.	REV
	REVISIONS	

digital

DRN. P. Lucier DATE 25-MAY-78 ENG. J. Chen DATE

CHK'D P. Lucier DATE 27-Jun-78 BOARD LOCATION: 5AF05

SHEET 1 OF 1

CTLCB.DRW[4,666] 25-MAY-78 12:46 NEXT HIGHER ASSEMBLY: D-DD-M8576-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS CONTROL POWER. GND. CAPS.

SIZE D CODE CS NUMBER M8576-0-CTLC REV.

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION				REVISIONS
			FILE: ORIGINAL LAYOUT				
			ECO NUMBER		1	2	
			MODULE REVISION	A	B	C	
E-UA-M8577-0-0	4		ADDRESS AND TIME	A	B	C	
D-UA-M8577-0-0	1		ADDRESS AND TIME	A	B	C	
K-PL-M8577-0-DBP	2		PARTS LIST	A	B	C	
D-CS-M8577-0-ADT0	1		PORT ADR INTER	-	-	-	
D-CS-M8577-0-ADT1	1		PORT ADR REG	-	-	-	
D-CS-M8577-0-ADT2	1		PORT ADR MIXERS	-	-	-	
D-CS-M8577-0-ADT3	1		REFRESH CYCLE	-	-	-	
D-CS-M8577-0-ADT4	1		TIMING RAM	-	-	A	
D-CS-M8577-0-ADT5	1		ARRAY TIME DRVRS	-	-	A	
D-CS-M8577-0-ADT6	1		PHS COM CLOCK	-	-	A	
D-CS-M8577-0-ADT7	1		ERR HANDLE LOGIC	-	-	-	
D-CS-M8577-0-ADT8	1		DATA BUFFER	-	-	-	
D-CS-M8577-0-ADT9	1		DIAGNOSTIC LOGIC	-	-	A	
D-CS-M8577-0-ADTA	1		POWER. GND. CAPS.	-	-	-	
D-CS-M8577-0-ADTB	1		POWER. GND. CAPS.	-	-	-	
D-CS-M8577-0-RES	2		TERMINATORS	-	-	A	
E-MD-5012901-0-0	5		DRILL & ETCH DRAWING	B	B	B	
		5012901	ETCH CIRCUIT BOARD	C	C	C	
K-PC-M8577-0-DBC	-		P.C. DESIGN DATA BASE	A	A	A	
P00-M8577-00	-		PROCESS SHEET (REF ONLY)	-	-	-	

NOTES:

REVISIONS		
CHK	CHANGE NO.	REV
	M8577-MR002	B
C.SMITH		

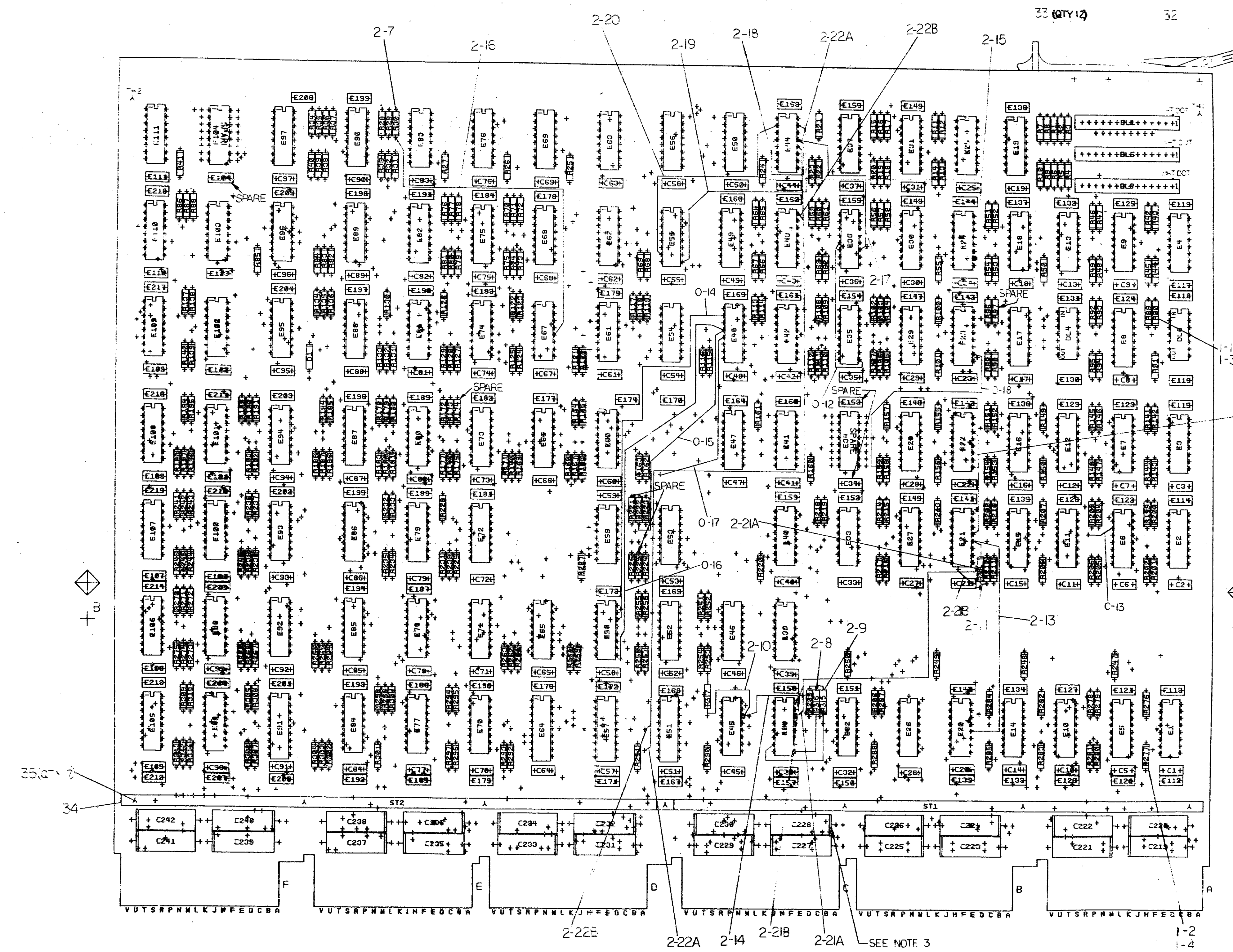
digital

DRN: P. Lucier DATE 29-DEC-78 ENG: C. Smith DATE 3 Apr 79
CHK'D: M. Normand DATE 28 Feb 79
BOARD LOCATION: 5AF07
SHEET 1 OF 1
DSK:8577DD,T2P[4,550] 29-DEC-78 11:27
NEXT HIGHER ASSEMBLY: NONE
FIRST USED ON OPTION/MODEL: MF20

TITLE: ADDRESS AND TIME

SIZE	CODE	NUMBER	REV.
D	DD	M8577-0	B

COMPONENT SIDE VIEW



digital

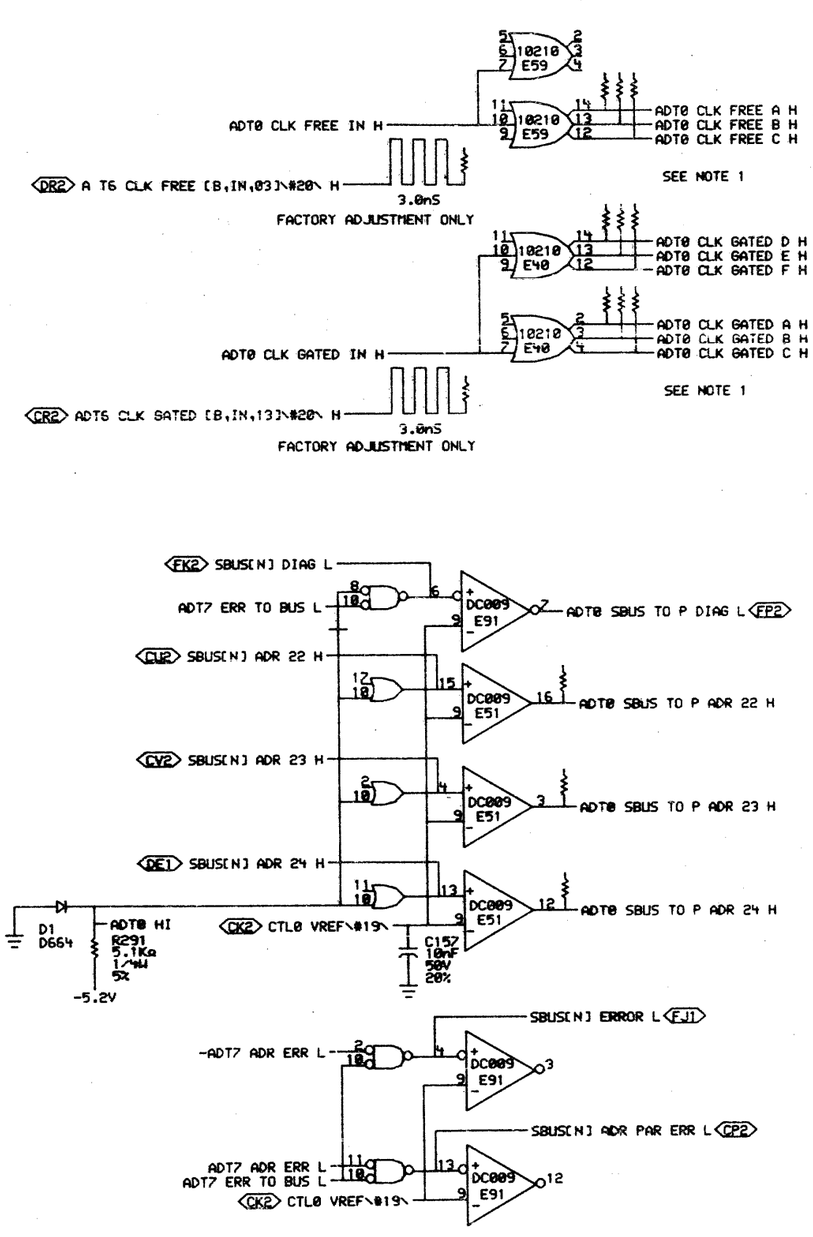
TITLE ADDRESS TIME

SIZE E CODE DD NUMBER M8577 REV C

NOTES: 1. CAUTION: FOR REWORK INSTRUCTIONS SEE D-UA-M8577-0-0

2. UNLESS OTHERWISE SPECIFIED ALL 16 PINS AND 14 PIN IC ARE ...

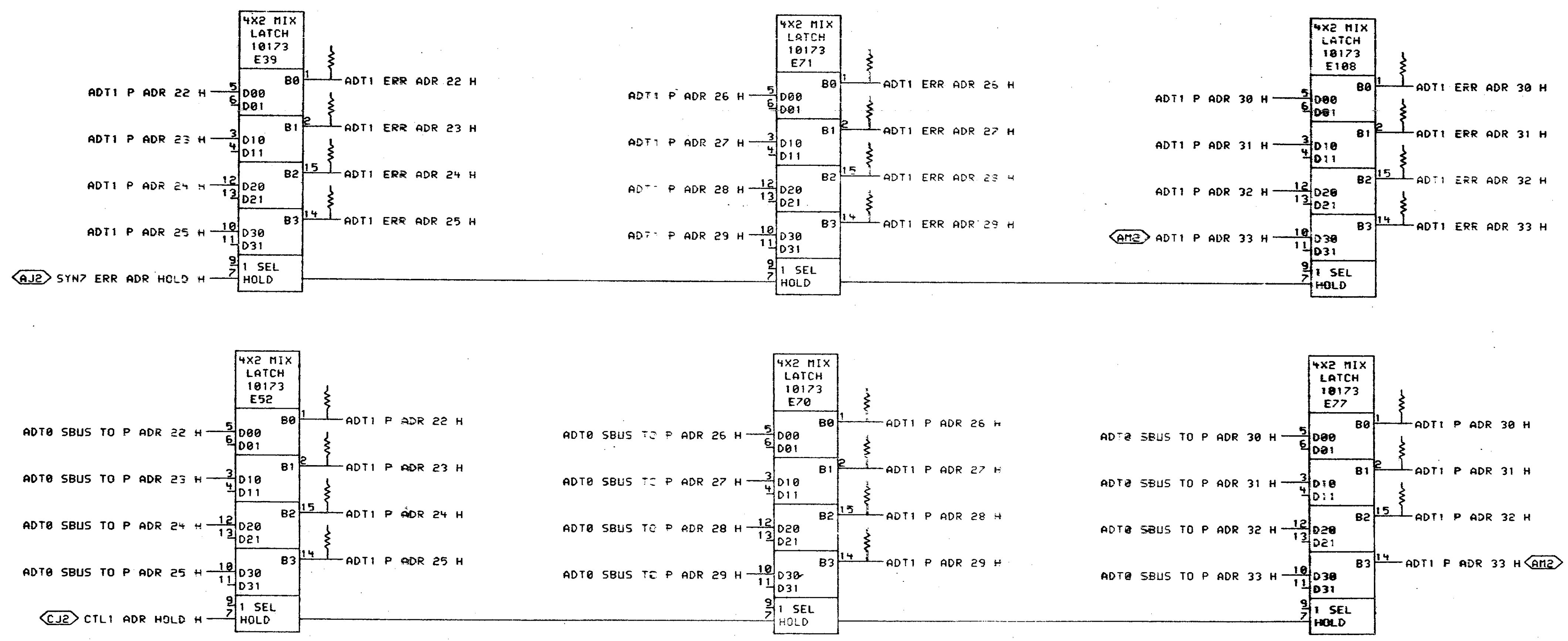
E UA M8577-0-0 C



SHEET 1 OF 12

REVISIONS		
CHK	CHANGE NO.	REV

DRN P Lucier	DATE 14-JUL-78	ENG. DJ Chin	DATE 7-18-78	TITLE: ADDRESS AND TIME PORT ADR INTER	
CHK P Lucier	DATE 18-Jul-78	BOARD LOCATION: 5AE02 SHEET 1 OF 1			
PUB:(M8577-MOS)ADT00.DRW 05-MAY-78 12:06		NEXT HIGHER ASSEMBLY: D-DD-M8577-0		SIZE D	CODE CS
FIRST USED ON OPTION/MODEL: MF20				NUMBER M8577-0-ADT0	REV.



SHEET 2 OF 12

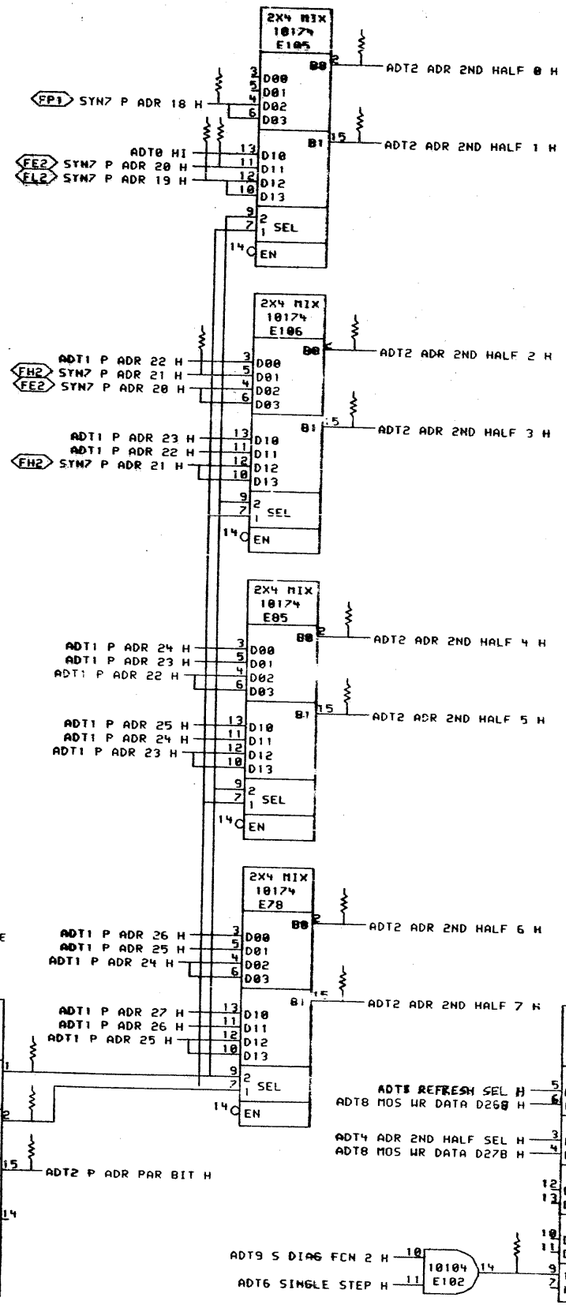
REVISIONS		
CHK	CHANGE NO.	REV

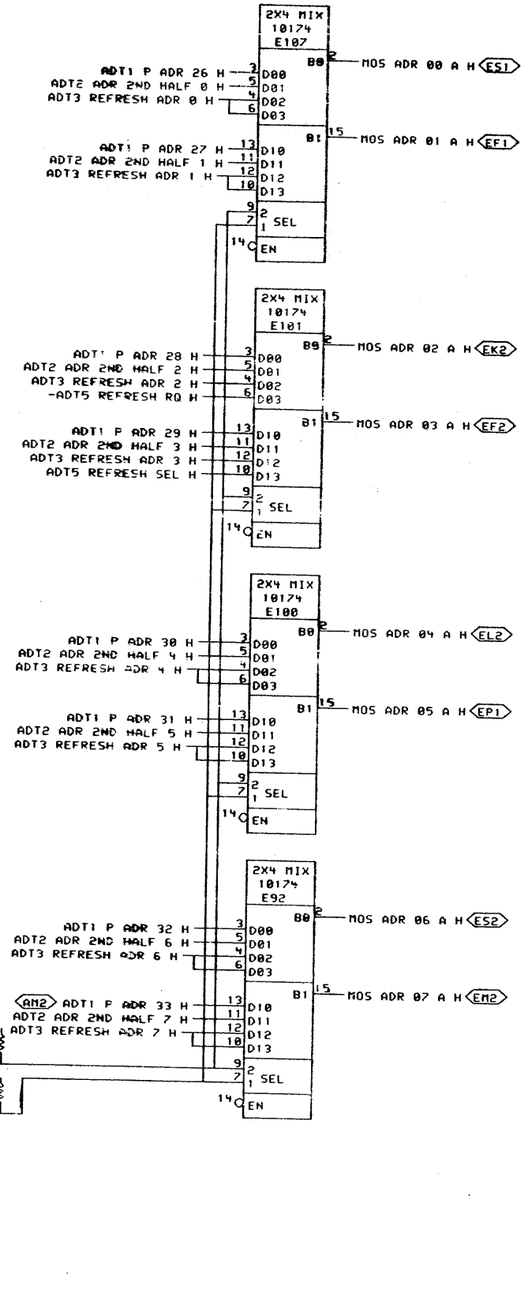
digital

DRN P. Lucier DATE 27-MAR-78
CHK'D P. Lucier DATE
ENG. D.J. Chen DATE
BOARD LOCATION: 5AF07
SHEET 1 OF 1
ADT1B.DRW[4,667] 05-MAY-78 07:08
NEXT HIGHER ASSEMBLY: D-DD-M8577-0
FIRST USED ON OPTION/MODEL: MF20

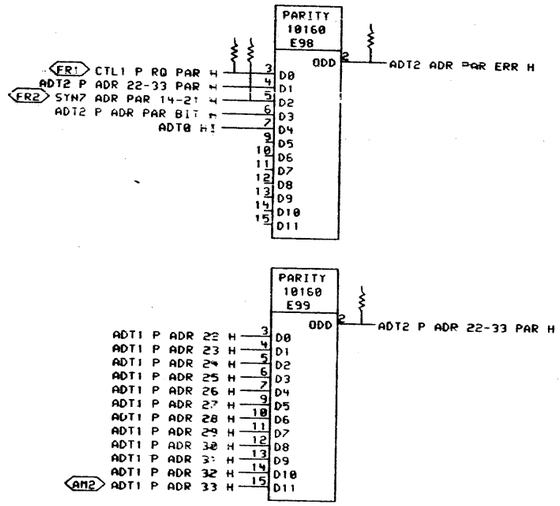
TITLE: ADDRESS AND TIME PORT ADR REG

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-ADT1	





CHIP SIZE	BLK ADR	ADR 1ST HALF	ADR 2ND HALF
4K	19-21	28-33	22-27
16K	17-19	27-33	20-26
32K	16-18	26-33	19-25
64K	15-17	26-33	18-25



SHEET 3 OF 12

REVISIONS		
CHK	CHANGE NO.	REV

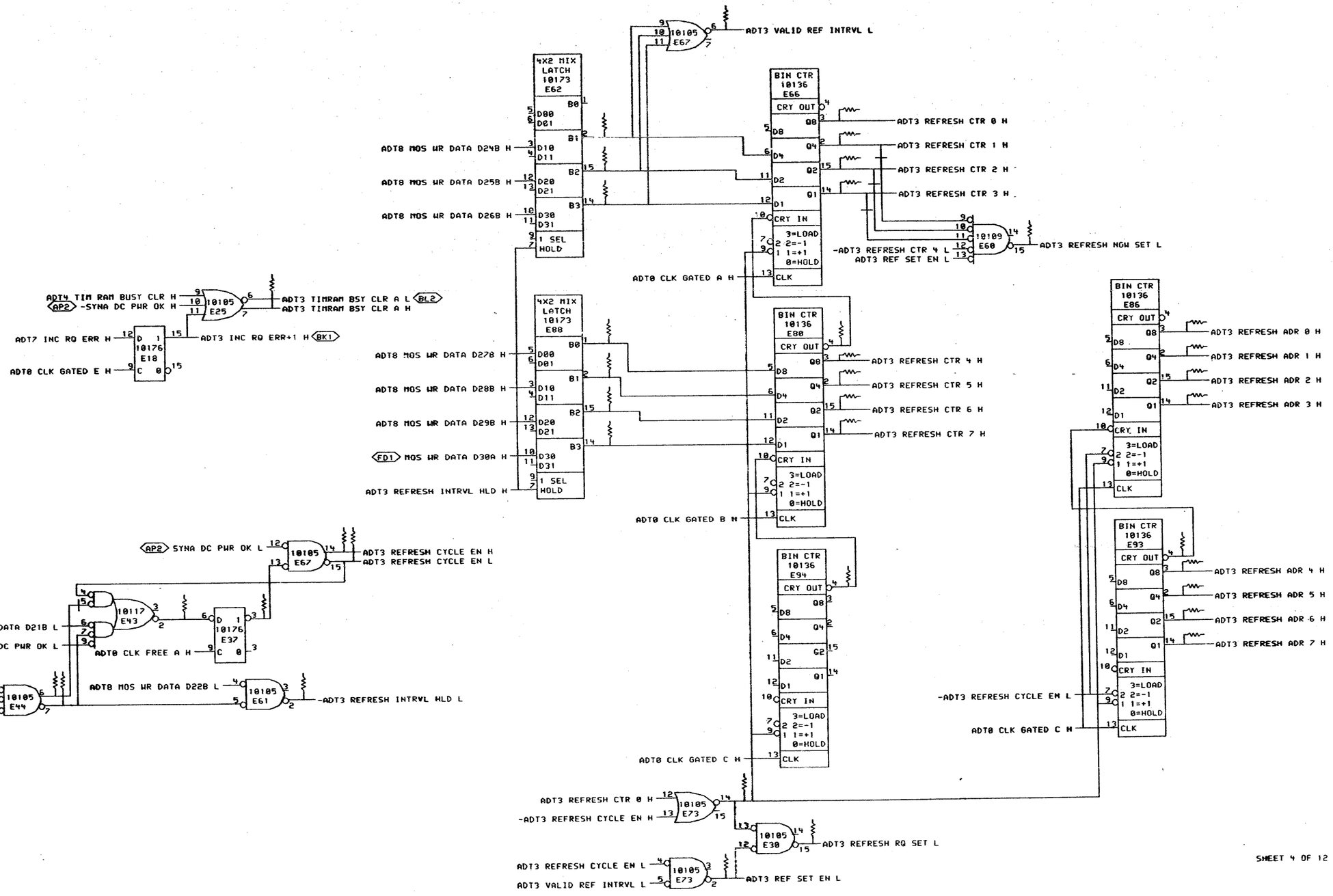
digital

DRN [illegible] DATE 15-MAY-78 ENG. [illegible] DATE [illegible]
CHK D. [illegible] DATE 23 JUN 78 BOARD LOCATION: SAF07
ADT2B.DRW[4,6672] 11-MAY-78 10:16 SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: MF20 NEXT HIGHER ASSEMBLY: D-DD-M8577-0

TITLE: ADDRESS AND TIME PORT ADR MIXERS

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-ADT2	

MR



REVISIONS		
CHK	CHANGE NO.	REV

digital

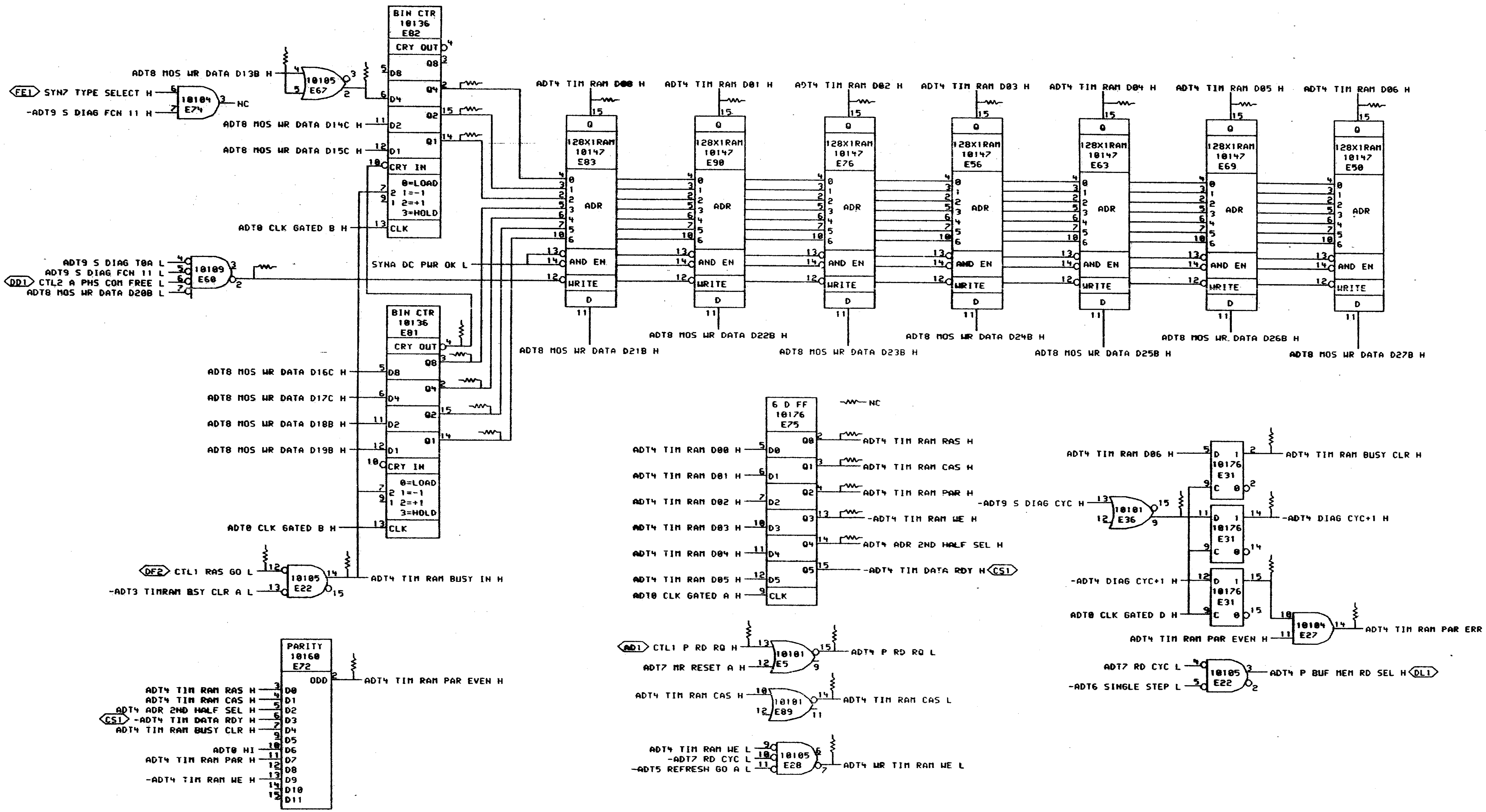
ADT3B.DRW[4,667] 05-MAY-78 07:38

DRN [illegible] DATE 27-MAR-78
CHK'D [illegible] DATE 25-Jun-78
ENG. [illegible] DATE 29-Jun-78
BOARD LOCATION: 5AF07
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8577-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: ADDRESS AND TIME REFRESH CYCLE

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-ADT3	


BIN CTR 10136 E82
CRY OUT
CRY IN
0=LOAD
1=-1
2=+1
3=HOLD
CLK
BIN CTR 10136 E81
ADT8 MOS WR DATA D13B H
10105 E67
FE1 SYN7 TYPE SELECT H
-ADT9 S DIAG FCN 11 H
10104 E74
NC
ADT8 MOS WR DATA D14C H
ADT8 MOS WR DATA D15C H
ADT8 CLK GATED B H
ADT9 S DIAG T0A L
ADT9 S DIAG FCN 11 L
DD1 CTL2 A PHS COM FREE L
ADT8 MOS WR DATA D20B L
10109 E60
SYNA DC PWR OK L
ADT8 MOS WR DATA D16C H
ADT8 MOS WR DATA D17C H
ADT8 MOS WR DATA D18B H
ADT8 MOS WR DATA D19B H
DF2 CTL1 RAS GO L
-ADT3 TIMRAM BSY CLR A L
10105 E22
ADT4 TIM RAM BUSY IN H
ADT4 TIM RAM D00 H
ADT4 TIM RAM D01 H
ADT4 TIM RAM D02 H
ADT4 TIM RAM D03 H
ADT4 TIM RAM D04 H
ADT4 TIM RAM D05 H
ADT4 TIM RAM D06 H
128X1RAM 10147 E83
128X1RAM 10147 E90
128X1RAM 10147 E76
128X1RAM 10147 E56
128X1RAM 10147 E63
128X1RAM 10147 E69
128X1RAM 10147 E50
ADR
AND EN
WRITE
ADT8 MOS WR DATA D21B H
ADT8 MOS WR DATA D22B H
ADT8 MOS WR DATA D23B H
ADT8 MOS WR DATA D24B H
ADT8 MOS WR DATA D25B H
ADT8 MOS WR DATA D26B H
ADT8 MOS WR DATA D27B H
6 D FF 10176 E75
ADT0 CLK GATED A H
ADT4 TIM RAM RAS H
ADT4 TIM RAM CAS H
ADT4 TIM RAM PAR H
-ADT4 TIM RAM WE H
ADT4 ADR 2ND HALF SEL H
-ADT4 TIM DATA RDY H CS1
ADT4 TIM RAM D06 H
10176 E31
ADT4 TIM RAM BUSY CLR H
-ADT9 S DIAG CYC H
10101 E36
-ADT4 DIAG CYC+1 H
ADT0 CLK GATED D H
ADT4 TIM RAM PAR EVEN H
10104 E27
ADT4 TIM RAM PAR ERR H
ADT7 RD CYC L
-ADT6 SINGLE STEP L
10105 E22
ADT4 P BUF MEM RD SEL H DL1
PARITY 10160 E72
ODD
ADT4 TIM RAM RAS H
ADT4 TIM RAM CAS H
ADT4 ADR 2ND HALF SEL H
CS1 -ADT4 TIM DATA RDY H
ADT4 TIM RAM BUSY CLR H
ADT0 HI
ADT4 TIM RAM PAR H
-ADT4 TIM RAM WE H
AD1 CTL1 P RD RQ H
ADT7 MR RESET A H
10101 E5
ADT4 P RD RQ L
ADT4 TIM RAM CAS H
10101 E89
ADT4 TIM RAM CAS L
ADT4 TIM RAM WE L
-ADT7 RD CYC L
-ADT5 REFRESH GO A L
10105 E28
ADT4 WR TIM RAM WE L

SHEET 5 OF 12

REVISIONS		
CHK	CHANGE NO.	REV
	M8577-MR002	A

digital

DRN P. Lucier DATE 12-DEC-78 — ENG E. Smith DATE 3 Apr 79

BOARD LOCATION: 5AF07 — SHEET 1 OF 1

NEXT HIGHER ASSEMBLY: D-DD-M8577-0

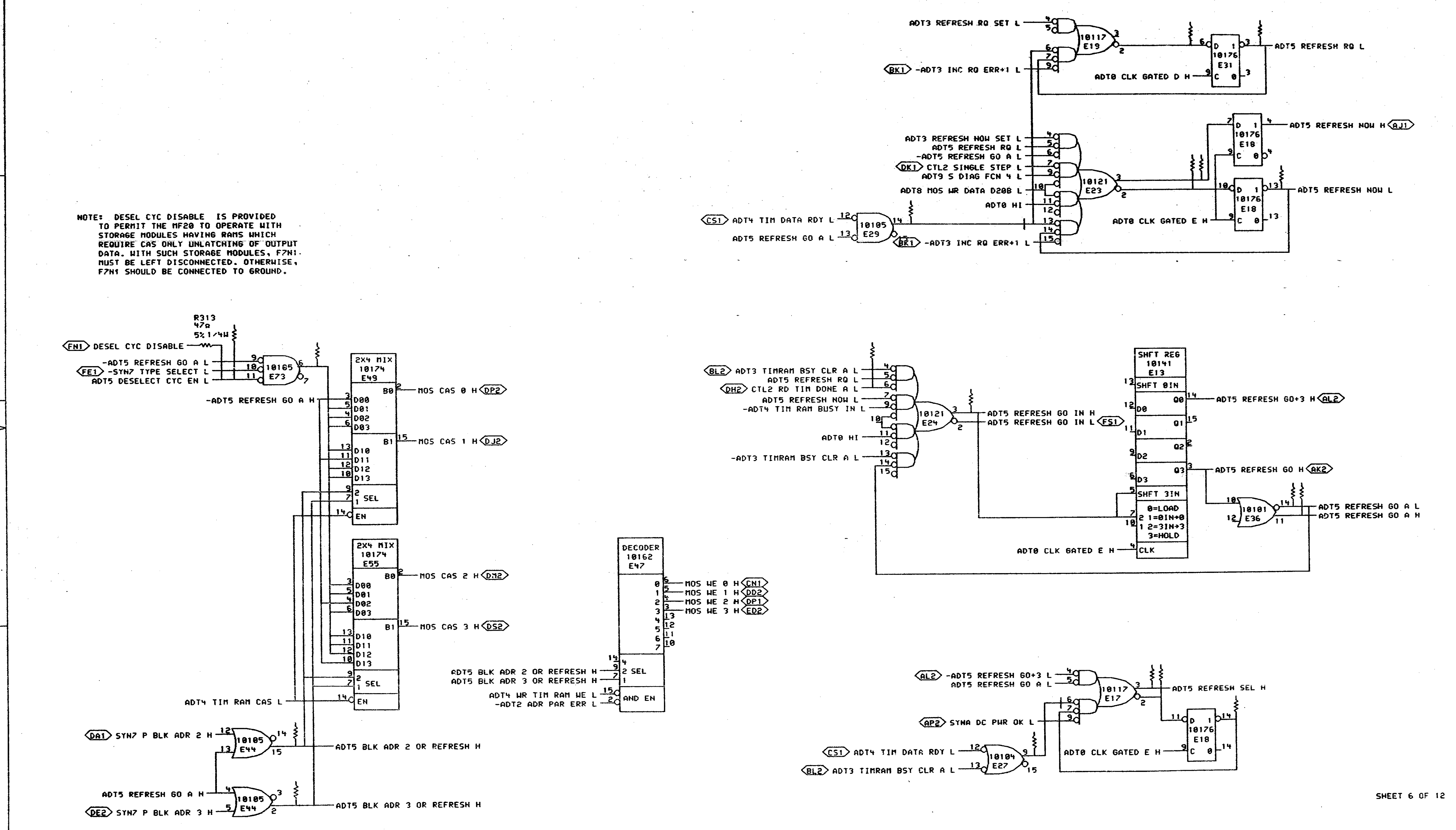
PLOT: <M8577-MOS>ADT4C.DRW 11-DEC-78 13:25

FIRST USED ON OPTION/MODEL: MF20

TITLE: ADDRESS AND TIME TIMING RAM

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-ADT4	A

NOTE: DESEL CYC DISABLE IS PROVIDED TO PERMIT THE MF20 TO OPERATE WITH STORAGE MODULES HAVING RAMS WHICH REQUIRE CAS ONLY UNLATCHING OF OUTPUT DATA. WITH SUCH STORAGE MODULES, F7N1 MUST BE LEFT DISCONNECTED. OTHERWISE, F7N1 SHOULD BE CONNECTED TO GROUND.



SHEET 6 OF 12

REVISIONS		
CHK	CHANGE NO.	REV
	M8577-MR002	A
CSMITH		

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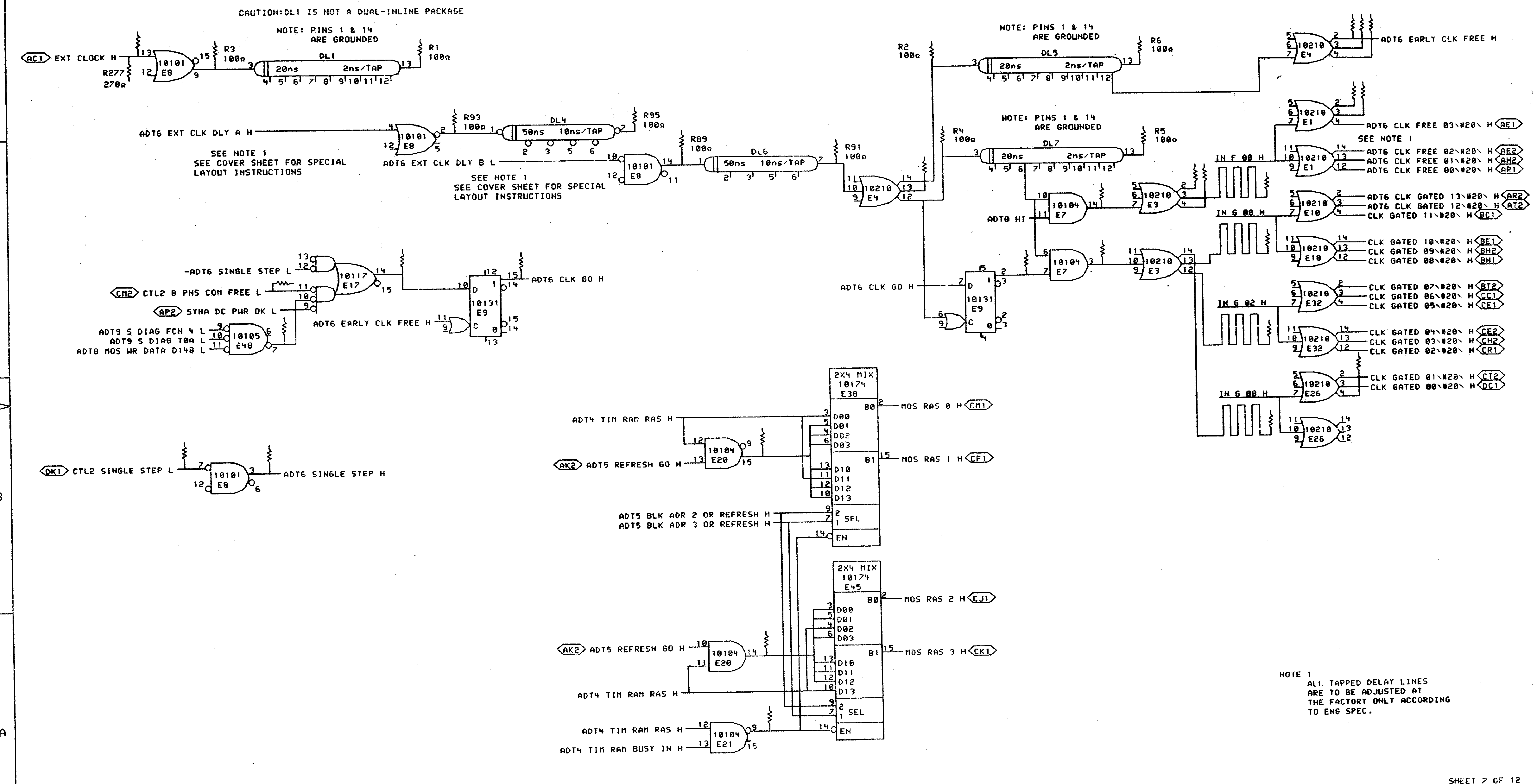
digital

DRN | DATE 18-DEC-78 | ENG | DATE 3Apr79
CHK'D | DATE | BOARD LOCATION: S4F07
PS:<BOWEN>ADT5C.DRW.2 18-DEC-78 14:34 | SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8577-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: ADDRESS AND TIME ARRAY TIME DRVRS

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-ADT5	A

75



CAUTION:DL1 IS NOT A DUAL-INLINE PACKAGE
NOTE: PINS 1 & 14 ARE GROUNDED
AC1 EXT CLOCK H
R277 270Ω
10101 E8
R3 100Ω
DL1 20ns 2ns/TAP
R1 100Ω
ADT6 EXT CLK DLY A H
SEE NOTE 1 SEE COVER SHEET FOR SPECIAL LAYOUT INSTRUCTIONS
R93 100Ω
DL4 50ns 10ns/TAP
R95 100Ω
ADT6 EXT CLK DLY B L
R89 100Ω
DL6 50ns 10ns/TAP
R91 100Ω
10210 E4
R2 100Ω
DL5 20ns 2ns/TAP
R6 100Ω
R4 100Ω
DL7 20ns 2ns/TAP
R5 100Ω
ADT6 EARLY CLK FREE H
ADT6 CLK FREE 03\#20\ H AE1
SEE NOTE 1
ADT6 CLK FREE 02\#20\ H AE2
ADT6 CLK FREE 01\#20\ H AH2
ADT6 CLK FREE 00\#20\ H AR1
IN F 00 H
IN G 08 H
IN G 02 H
IN G 00 H
ADT0 HI
10104 E7
10210 E3
10210 E1
10210 E10
10210 E32
10210 E26
ADT6 CLK GATED 13\#20\ H AR2
ADT6 CLK GATED 12\#20\ H AT2
CLK GATED 11\#20\ H BC1
CLK GATED 10\#20\ H BE1
CLK GATED 09\#20\ H BH2
CLK GATED 08\#20\ H BH1
CLK GATED 07\#20\ H BT2
CLK GATED 06\#20\ H CC1
CLK GATED 05\#20\ H CE1
CLK GATED 04\#20\ H CE2
CLK GATED 03\#20\ H CH2
CLK GATED 02\#20\ H CR1
CLK GATED 01\#20\ H CT2
CLK GATED 00\#20\ H DC1
-ADT6 SINGLE STEP L
CM2 CTL2 B PHS COM FREE L
AP2 SYNA DC PWR OK L
10117 E17
ADT6 CLK GO H
10131 E9
ADT6 EARLY CLK FREE H
ADT9 S DIAG FCN 4 L
ADT9 S DIAG T0A L
ADT8 MOS WR DATA D14B L
10105 E48
ADT6 CLK GO H
DK1 CTL2 SINGLE STEP L
ADT6 SINGLE STEP H
2X4 MIX 10174 E38
ADT4 TIM RAM RAS H
AK2 ADT5 REFRESH GO H
10104 E20
MOS RAS 0 H CM1
MOS RAS 1 H CF1
ADT5 BLK ADR 2 OR REFRESH H
ADT5 BLK ADR 3 OR REFRESH H
SEL
EN
2X4 MIX 10174 E45
MOS RAS 2 H CJ1
MOS RAS 3 H CK1
ADT4 TIM RAM RAS H
ADT4 TIM RAM BUSY IN H
10104 E21
NOTE 1 ALL TAPPED DELAY LINES ARE TO BE ADJUSTED AT THE FACTORY ONLY ACCORDING TO ENG SPEC.

SHEET 7 OF 12

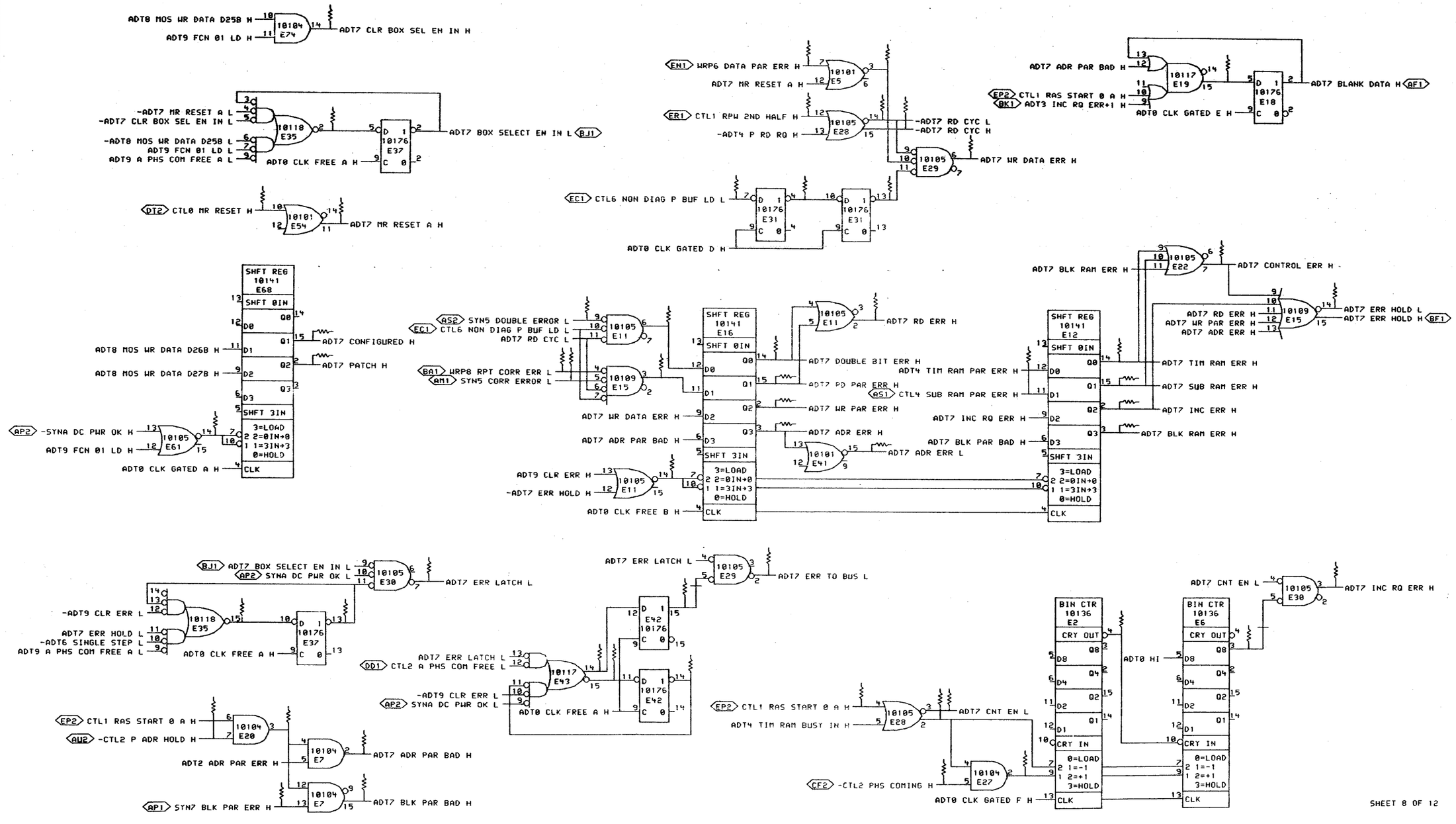
REVISIONS		
CHK	CHANGE NO.	REV
MM	M8577-MR002	A

digital

DRN P. Lucier DATE 12-DEC-78 | ENG C. Smith DATE 3 Apr 79
CHK'D M. Normand DATE 28 Feb 79 | BOARD LOCATION: 5AF07 | SHEET 1 OF 1
PUB:<M8577-MOS>ADT6C.DRW 06-DEC-78 14:41 | NEXT HIGHER ASSEMBLY: D-DD-M8577-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: ADDRESS AND TIME PHS COM CLOCK

SIZE	CODE	NUMBER	REV
D	CS	M8577-0-ADT6	A



REVISIONS		
CHK	CHANGE NO.	REV

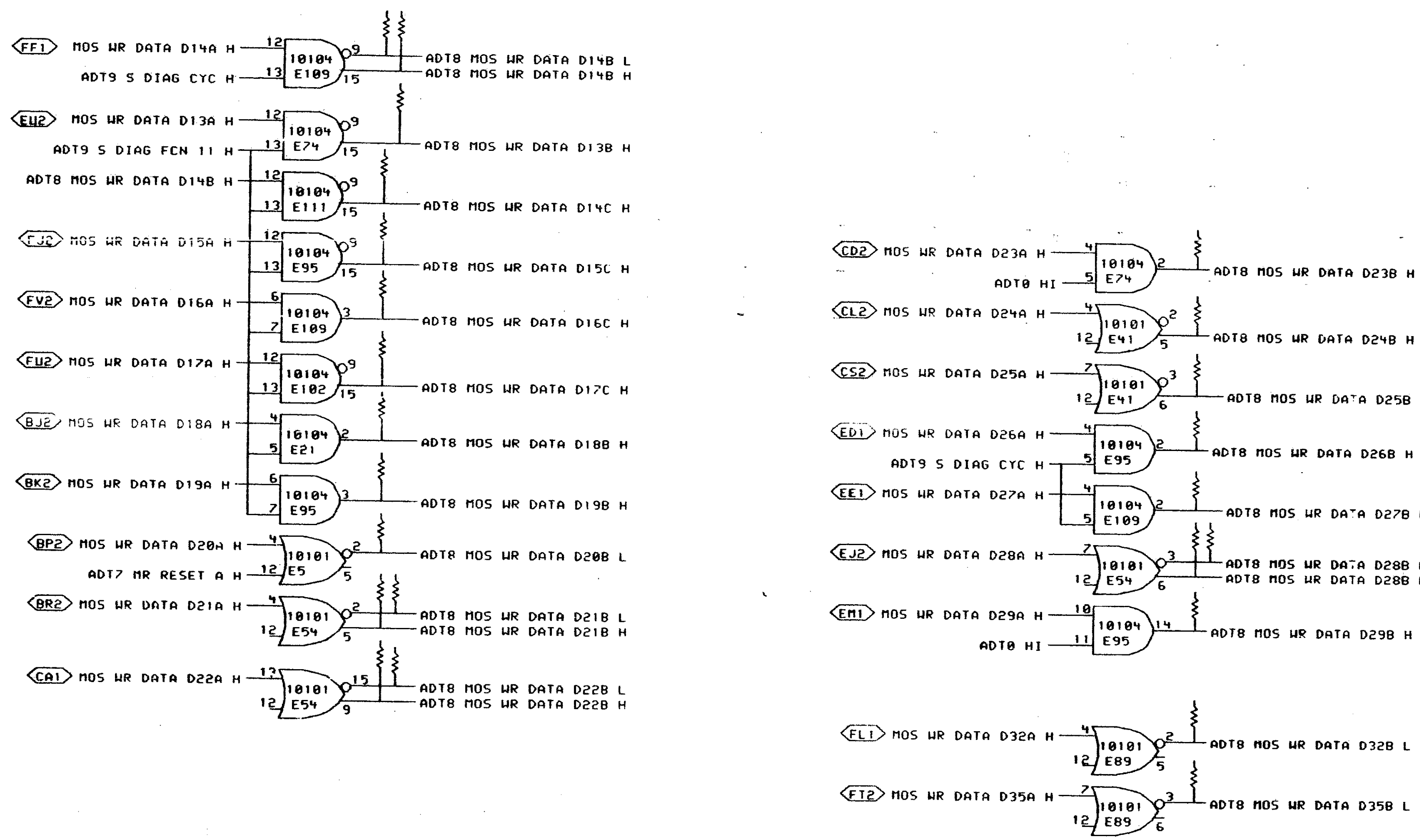
digital

DRN	DATE 27-MAR-78	ENG.	DATE 27-Jun-78
CHK	DATE 23-Jun-78	BOARD LOCATION: 5AE07	
ADT7B.DRW[4,667]	05-MAY-78 07:58	SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8577-0	

TITLE: ADDRESS AND TIME ERR HANDLE LOGIC

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-ADT7	

REV. | NUMBER M8577-0-ADT7 | CODE CS | SIZE D



SHEET 9 OF 12

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. P. Lucier | DATE 19-JUN-78 | ENG. D J Chun | DATE

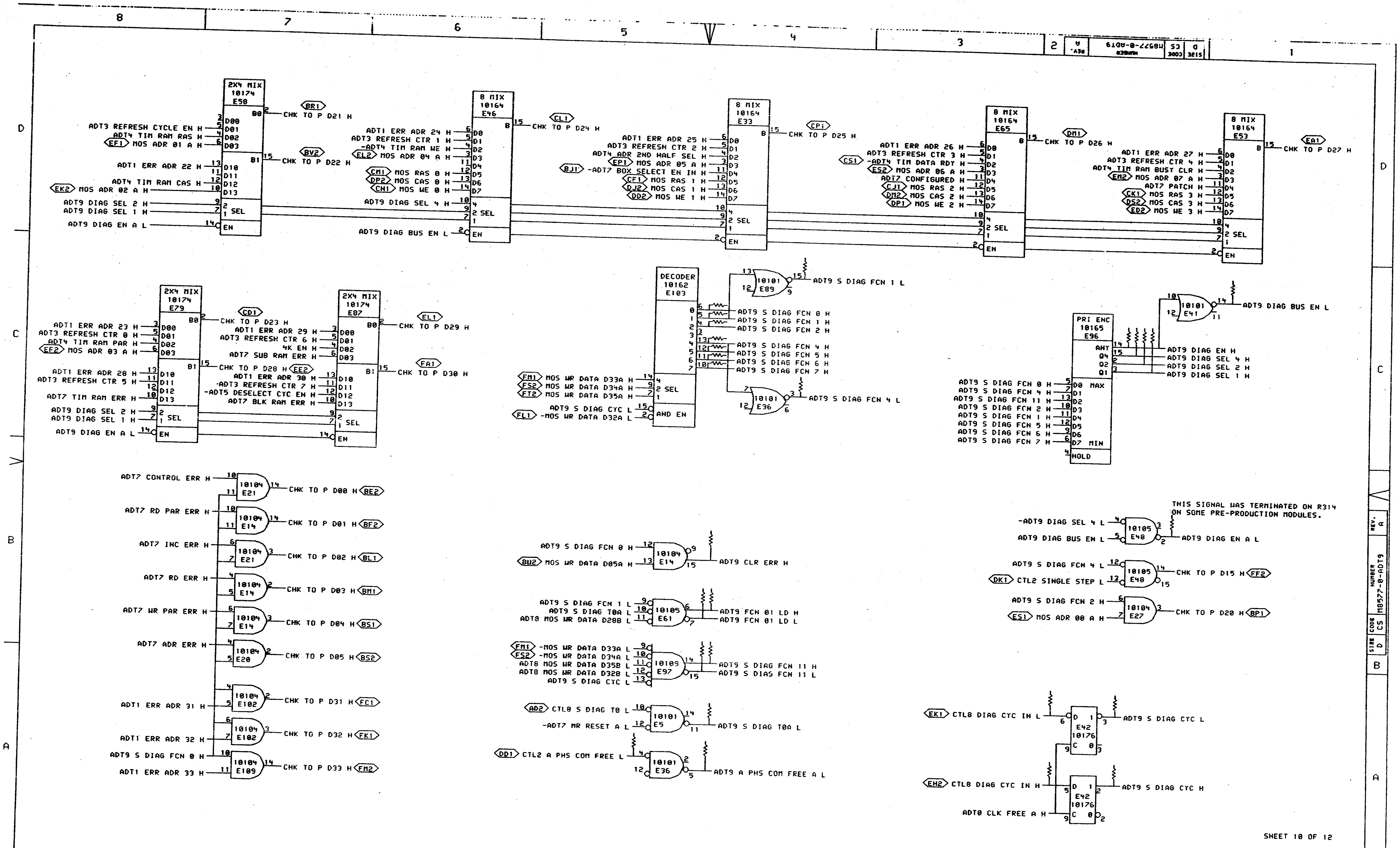
CHK. | DATE | BOARD LOCATION: 5AF07 | SHEET 1 OF 1

PUB: <M8577-MOS>ADT8B.DRW 19-JUN-78 10:12 | NEXT HIGHER ASSEMBLY: D-DD-M8577-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: ADDRESS AND TIME DATA BUFFER

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-ADT8	



SHEET 10 OF 12

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REVISIONS		
CHK	CHANGE NO.	REV
	M8577-MB002	A

digital

TITLE: ADDRESS AND TIME DIAGNOSTIC LOGIC

PUB:<M8577-MOS>ADT9C.DRW 02-JAN-79 16:49

FIRST USED ON OPTION/MODEL: MF20

DATE 02-JAN-79

BOARD LOCATION: 5AF97

SHEET 1 OF 1

NEXT HIGHER ASSEMBLY: D-DD-M8577-0

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-ADT9	A

CM2 — GND [B,ECL,CLK\G#20\]
DM2 — GND [B,ECL,CLK\G#20\]

AT1 — [B,GND ECL,GND CLK\G#20\]
AC2 — [B,GND ECL,GND CLK\G#20\]
AH1 — [B,GND ECL,GND CLK\G#20\]
AN2 — [B,GND ECL,GND CLK\G#20\]
BC2 — [B,GND ECL,GND CLK\G#20\]
BH1 — [B,GND ECL,GND CLK\G#20\]
BN2 — [B,GND ECL,GND CLK\G#20\]
BT1 — [B,GND ECL,GND CLK\G#20\]
CH1 — [B,GND ECL,GND CLK\G#20\]
CC2 — [B,GND ECL,GND CLK\G#20\]
CT1 — [B,GND ECL,GND CLK\G#20\]
DC2 — [B,GND ECL,GND CLK\G#20\]

AV1 — [B,NC,GND ECL\G#19\]
BV1 — [B,NC,GND ECL\G#19\]
CV1 — [B,NC,GND ECL\G#19\]
DV1 — [B,NC,GND ECL\G#19\]
EV1 — [B,NC,GND ECL\G#19\]
FV1 — [B,NC,GND ECL\G#19\]

[B,GND ECL,GND]

+5.8V\V\ — GND ECL\G#19\ — -5.2V\V\

AA2 AB2 AA1
BA2 AU1 AF2
CA2 BB2 AK1
DA2 BU1 AL1
EA2 CB2 AN1
FA2 CU1 AV2
DB2 BD2
DU1 BD1
EB2 BM2
EU1 ER2
FB2 ET2
FU1 FD2
DH1
DI1
EC2
EH1
EN2
ET1
FC2
FH1
FN2
FT1

C168 10nF 50V
C172 10nF 50V
C176 10nF 50V
C201 10nF 50V
C222 180µF 15V +
C224 180µF 15V +
C228 180µF 15V +
C230 180µF 15V +
C232 180µF 15V +
C234 180µF 15V +
C236 180µF 15V +
C240 180µF 15V +
C241 180µF 15V +
C242 180µF 15V +

C1 10nF 50V
C2 10nF 50V
C3 10nF 50V
C5 10nF 50V
C6 10nF 50V
C7 10nF 50V
C8 10nF 50V
C9 10nF 50V
C10 10nF 50V
C11 10nF 50V
C12 10nF 50V
C13 10nF 50V
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C82 10nF 50V
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C86 10nF 50V
C87 10nF 50V
C88 10nF 50V
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C91 10nF 50V
C92 10nF 50V
C93 10nF 50V
C94 10nF 50V
C95 10nF 50V
C96 10nF 50V
C97 10nF 50V
C98 10nF 50V
C99 10nF 50V
C100 10nF 50V
C101 10nF 50V

C102 10nF 50V
C103 10nF 50V
C105 10nF 50V
C106 10nF 50V
C107 10nF 50V
C108 10nF 50V
C109 10nF 50V
C110 10nF 50V
C111 10nF 50V
C117 10nF 50V
C162 10nF 50V
C221 180µF 15V +
C225 180µF 15V +
C226 180µF 15V +
C229 180µF 15V +
C233 180µF 15V +
C237 180µF 15V +
C238 180µF 15V +

SHEET 11 OF 12

REVISIONS		
CHK	CHANGE NO.	REV

digital

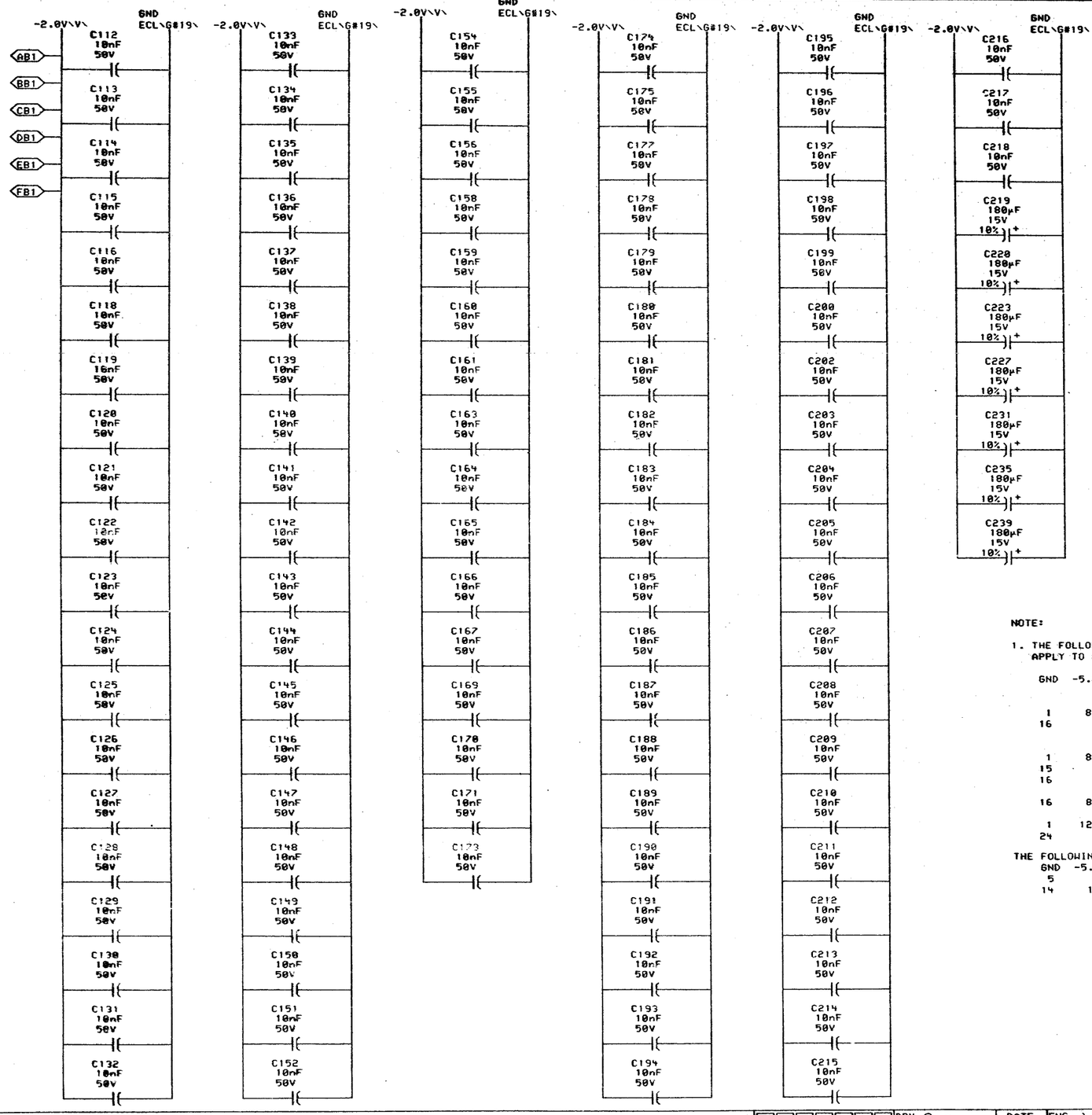
DRN [illegible] DATE 01-JUN-78
CHK [illegible] DATE 23-Jun-78
ENG: D J Clem DATE 23-Jun-78
BOARD LOCATION: 5AF07
SHEET 1 OF 1
ADTAB.DRW[4,667] 01-JUN-78 09:24
NEXT HIGHER ASSEMBLY: D-DD-M8577-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: ADDRESS AND TIME POWER. GND. CAPS.

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-ADTA	

SIZE D | CODE CS | NUMBER M8577-0-ADTA | REV.

80



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

THE FOLLOWING PIN NUMBERS APPLY TO DC009 DIP PACKAGES

GND	-5.2	+5.0V	MANUFACTURES* PART NUMBER
5 14	1	18	DC009

SHEET 12 OF 12

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier DATE 01-JUN-78
CHK D. P. Lucier DATE 02-JUN-78
ENG. J. Chin DATE 2JUN78
ADTBB.DRW[4,667] 01-JUN-78 09:59
BOARD LOCATION: 5AF07
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: MF20
D-DD-M8577-0

TITLE: ADDRESS AND TIME POWER. GND. CAPS.

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-ADTB	

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R1(1)	ADT6	D6	100Ω	%DL1(13)
R95(1)	ADT6	D5	100Ω	%DL4(7)
R6(1)	ADT6	D3	100Ω	%DL5(13)
R91(1)	ADT6	C4	100Ω	%DL6(7)
R5(1)	ADT6	C3	100Ω	%DL7(13)
R281(1)	ADT6	D2	68Ω	%E1(2)
R276(1)	ADT6	D1	68Ω	%E1(3)
R88(1)	ADT2	A5	68Ω	%E102(14)
R156(1)	ADT7	B5	68Ω	%E11(14)
R151(1)	ADT7	C5	68Ω	%E11(6)
R264(1)	ADT2	A5	68Ω	%E110(1)
R267(1)	ADT2	A5	68Ω	%E110(2)
R154(1)	ADT7	C5	68Ω	%E15(3)
R44(1)	ADT6	C6	68Ω	%E17(14)
R54(1)	ADT5	A2	68Ω	%E17(2)
R98(1)	ADT5	A2	68Ω	%E18(14)
R52(1)	ADT7	D2	68Ω	%E19(15)
R16(1)	ADT5	D2	68Ω	%E19(2)
R202(1)	ADT7	A2	68Ω	%E2(4)
R290(1)	ADT6	A5	68Ω	%E20(14)
R289(1)	ADT6	B5	68Ω	%E20(15)
R148(1)	ADT7	A7	68Ω	%E20(3)
R317(1)	ADT6	A5	68Ω	%E21(9)
R53(1)	ADT5	C2	68Ω	%E23(2)
R51(1)	ADT5	C2	68Ω	%E23(3)
R286(1)	ADT6	B2	68Ω	%E26(4)
R199(1)	ADT7	A3	68Ω	%E27(2)
R99(1)	ADT5	A3	68Ω	%E27(9)
R201(1)	ADT7	A3	68Ω	%E28(2)
R7(1)	ADT5	C4	68Ω	%E29(14)
R250(1)	ADT6	C2	68Ω	%E3(12)
R248(1)	ADT6	C2	68Ω	%E3(13)
R249(1)	ADT6	B2	68Ω	%E3(14)
R142(1)	ADT6	C2	68Ω	%E3(2)
R247(1)	ADT6	C2	68Ω	%E3(3)
R141(1)	ADT6	C2	68Ω	%E3(4)
R105(1)	ADT7	C4	68Ω	%E31(13)
R217(1)	ADT4	B2	68Ω	%E31(15)
R14(1)	ADT7	C4	68Ω	%E31(4)
R20(1)	ADT7	B7	68Ω	%E35(15)

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R21(1)	ADT7	D7	68Ω	%E35(2)
R12(1)	ADT4	B3	68Ω	%E36(9)
R102(1)	ADT7	B7	68Ω	%E37(13)
R121(1)	ADT3	B6	68Ω	%E37(3)
R4(1)	ADT6	C4	100Ω	%E4(12)
R42(1)	ADT6	C4	68Ω	%E4(13)
R2(1)	ADT6	D4	100Ω	%E4(14)
R43(1)	ADT6	D1	68Ω	%E4(3)
R49(1)	ADT6	D1	68Ω	%E4(4)
R61(1)	ADT7	A5	68Ω	%E42(14)
R104(1)	ADT7	B5	68Ω	%E42(15)
R108(1)	ADT7	A5	68Ω	%E43(14)
R112(1)	ADT7	A5	68Ω	%E43(15)
R15(1)	ADT3	B7	68Ω	%E43(2)
R65(1)	ADT3	A7	68Ω	%E44(6)
R120(1)	ADT3	A7	68Ω	%E44(7)
R92(1)	ADT6	C7	68Ω	%E48(7)
R106(1)	ADT7	D4	68Ω	%E5(3)
R56(1)	ADT7	A2	68Ω	%E6(3)
R29(1)	ADT4	C7	68Ω	%E60(2)
R73(1)	ADT7	B7	68Ω	%E61(14)
R167(1)	ADT3	D4	68Ω	%E62(14)
R168(1)	ADT3	D4	68Ω	%E62(15)
R169(1)	ADT3	D4	68Ω	%E62(2)
R76(1)	ADT4	D6	68Ω	%E67(2)
R122(1)	ADT4	D7	68Ω	%E67(5)
R143(1)	ADT6	C3	68Ω	%E7(14)
R144(1)	ADT6	C3	68Ω	%E7(3)
R176(1)	ADT3	A4	68Ω	%E73(14)
R67(1)	ADT5	C7	68Ω	%E73(6)
R89(1)	ADT6	C5	100Ω	%E8(14)
R93(1)	ADT6	D6	100Ω	%E8(2)
R3(1)	ADT6	D7	100Ω	%E8(9)
R164(1)	ADT3	C3	68Ω	%E80(4)
R31(1)	ADT4	B6	68Ω	%E81(14)
R33(1)	ADT4	C6	68Ω	%E81(15)
R38(1)	ADT4	C6	68Ω	%E81(2)
R28(1)	ADT4	C6	68Ω	%E81(3)
R80(1)	ADT4	C6	68Ω	%E81(4)
R35(1)	ADT4	D6	68Ω	%E82(14)

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R36(1)	ADT4	D6	68Ω	%E82(15)
R37(1)	ADT4	D6	68Ω	%E82(2)
R311(1)	ADT2	A7	68Ω	%E84(1)
R312(1)	ADT2	A7	68Ω	%E84(2)
R179(1)	ADT3	C4	68Ω	%E88(1)
R172(1)	ADT3	C4	68Ω	%E88(14)
R173(1)	ADT3	C4	68Ω	%E88(15)
R181(1)	ADT3	C4	68Ω	%E88(2)
R147(1)	ADT6	C3	68Ω	%E9(2)
R235(1)	ADT3	B1	68Ω	%E93(4)
R177(1)	ADT3	B3	68Ω	%E94(4)
R184(1)	ADT2	A7	68Ω	4K EN H
R19(1)	ADT0	D5	68Ω	ADT0 CLK FREE A H
R152(1)	ADT0	D5	68Ω	ADT0 CLK FREE B H
R226(1)	ADT0	D5	68Ω	ADT0 CLK FREE C H
R74(1)	ADT0	C5	68Ω	ADT0 CLK GATED A H
R77(1)	ADT0	C5	68Ω	ADT0 CLK GATED B H
R188(1)	ADT0	C5	68Ω	ADT0 CLK GATED C H
R13(1)	ADT0	D5	68Ω	ADT0 CLK GATED D H
R47(1)	ADT0	D5	68Ω	ADT0 CLK GATED E H
R200(1)	ADT0	D5	68Ω	ADT0 CLK GATED F H
R257(1)	ADT0	B5	68Ω	ADT0 SBUS TO P ADR 22 H
R256(1)	ADT0	B5	68Ω	ADT0 SBUS TO P ADR 23 H
R251(1)	ADT0	B5	68Ω	ADT0 SBUS TO P ADR 24 H
R254(1)	ADT0	D3	68Ω	ADT0 SBUS TO P ADR 25 H
R296(1)	ADT0	D3	68Ω	ADT0 SBUS TO P ADR 26 H
R295(1)	ADT0	C3	68Ω	ADT0 SBUS TO P ADR 27 H
R292(1)	ADT0	C3	68Ω	ADT0 SBUS TO P ADR 28 H
R293(1)	ADT0	C3	68Ω	ADT0 SBUS TO P ADR 29 H
R299(1)	ADT0	C3	68Ω	ADT0 SBUS TO P ADR 30 H
R300(1)	ADT0	B3	68Ω	ADT0 SBUS TO P ADR 31 H
R294(1)	ADT0	B3	68Ω	ADT0 SBUS TO P ADR 32 H
R297(1)	ADT0	B3	68Ω	ADT0 SBUS TO P ADR 33 H
R298(1)	ADT0	A3	68Ω	ADT0 SBUS TO P ADR PAR H
R255(1)	ADT1	C6	68Ω	ADT1 ERR ADR 22 H
R233(1)	ADT1	C6	68Ω	ADT1 ERR ADR 23 H
R253(1)	ADT1	C6	68Ω	ADT1 ERR ADR 24 H
R218(1)	ADT1	C6	68Ω	ADT1 ERR ADR 25 H
R262(1)	ADT1	C4	68Ω	ADT1 ERR ADR 26 H
R224(1)	ADT1	C4	68Ω	ADT1 ERR ADR 27 H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R228(1)	ADT1	C4	68Ω	ADT1 ERR ADR 28 H
R185(1)	ADT1	C4	68Ω	ADT1 ERR ADR 29 H
R180(1)	ADT1	C2	68Ω	ADT1 ERR ADR 30 H
R138(1)	ADT1	C2	68Ω	ADT1 ERR ADR 31 H
R139(1)	ADT1	C2	68Ω	ADT1 ERR ADR 32 H
R140(1)	ADT1	C2	68Ω	ADT1 ERR ADR 33 H
R275(1)	ADT1	B6	68Ω	ADT1 P ADR 22 H
R270(1)	ADT1	B6	68Ω	ADT1 P ADR 23 H
R274(1)	ADT1	B6	68Ω	ADT1 P ADR 24 H
R273(1)	ADT1	B6	68Ω	ADT1 P ADR 25 H
R241(1)	ADT1	B4	68Ω	ADT1 P ADR 26 H
R243(1)	ADT1	B4	68Ω	ADT1 P ADR 27 H
R195(1)	ADT1	B4	68Ω	ADT1 P ADR 28 H
R189(1)	ADT1	B4	68Ω	ADT1 P ADR 29 H
R198(1)	ADT1	B2	68Ω	ADT1 P ADR 30 H
R194(1)	ADT1	B2	68Ω	ADT1 P ADR 31 H
R197(1)	ADT1	B2	68Ω	ADT1 P ADR 32 H
R242(1)	ADT2	D6	68Ω	ADT2 ADR 2ND HALF 0 H
R244(1)	ADT2	D6	68Ω	ADT2 ADR 2ND HALF 1 H
R193(1)	ADT2	C6	68Ω	ADT2 ADR 2ND HALF 2 H
R191(1)	ADT2	C6	68Ω	ADT2 ADR 2ND HALF 3 H
R236(1)	ADT2	C6	68Ω	ADT2 ADR 2ND HALF 4 H
R239(1)	ADT2	B6	68Ω	ADT2 ADR 2ND HALF 5 H
R269(1)	ADT2	B6	68Ω	ADT2 ADR 2ND HALF 6 H
R266(1)	ADT2	B6	68Ω	ADT2 ADR 2ND HALF 7 H
R145(1)	ADT2	C1	68Ω	ADT2 ADR PAR ERR H
R305(1)	ADT2	B1	68Ω	ADT2 P ADR 22-33 PAR H
R308(1)	ADT2	A7	68Ω	ADT2 P ADR PAR BIT H
R58(1)	ADT3	A4	68Ω	-ADT3 REF SET EN H
R245(1)	ADT3	C1	68Ω	ADT3 REFRESH ADR 0 H
R246(1)	ADT3	C1	68Ω	ADT3 REFRESH ADR 1 H
R196(1)	ADT3	C1	68Ω	ADT3 REFRESH ADR 2 H
R190(1)	ADT3	C1	68Ω	ADT3 REFRESH ADR 3 H
R237(1)	ADT3	B1	68Ω	ADT3 REFRESH ADR 4 H
R240(1)	ADT3	B1	68Ω	ADT3 REFRESH ADR 5 H
R260(1)	ADT3	B1	68Ω	ADT3 REFRESH ADR 6 H
R265(1)	ADT3	B1	68Ω	ADT3 REFRESH ADR 7 H
R234(1)	ADT3	D3	68Ω	ADT3 REFRESH CTR 0 H
R252(1)	ADT3	D3	68Ω	ADT3 REFRESH CTR 1 H
R219(1)	ADT3	D3	68Ω	ADT3 REFRESH CTR 2 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
	M8577-W0002	A

digital

DRN: P. Lucier DATE 03-JAN-79 ENG DATE
CHK'D: M. Nahmad DATE 28 Feb 79 BOARD LOCATION: SHEET 1 OF 2
PS:<BOWEN>M85771.DRW 03-JAN-79 09:22 NEXT HIGHER ASSEMBLY: D-DD-M8577-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: RESISTOR DRAWING ADDRESS AND TIME

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-RES	A

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R263(1)	ADT3	D3	68Ω	ADT3 REFRESH CTR 3 H
R223(1)	ADT3	C3	68Ω	ADT3 REFRESH CTR 4 H
R230(1)	ADT3	C3	68Ω	ADT3 REFRESH CTR 5 H
R187(1)	ADT3	C3	68Ω	ADT3 REFRESH CTR 6 H
R183(1)	ADT3	C3	68Ω	ADT3 REFRESH CTR 7 H
R238(1)	ADT3	B6	68Ω	ADT3 REFRESH CYCLE EN H
R60(1)	ADT3	B6	68Ω	-ADT3 REFRESH CYCLE EN H
R135(1)	ADT3	A6	68Ω	ADT3 REFRESH INTRVL HLD H
R100(1)	ADT3	C2	68Ω	-ADT3 REFRESH NOW SET H
R8(1)	ADT3	A3	68Ω	-ADT3 REFRESH RQ SET H
R155(1)	ADT3	C6	68Ω	ADT3 TIMRAM BSY CLR A H
R175(1)	ADT3	D4	68Ω	-ADT3 VALID REF INTRVL H
R87(1)	ADT4	B4	68Ω	ADT4 ADR 2ND HALF SEL H
R11(1)	ADT4	B2	68Ω	-ADT4 DIAG CYC+1 H
R158(1)	ADT4	B4	68Ω	-ADT4 P RD RQ H
R229(1)	ADT4	B2	68Ω	ADT4 TIM RAM BUSY CLR H
R131(1)	ADT4	B7	68Ω	ADT4 TIM RAM BUSY IN H
R258(1)	ADT4	B4	68Ω	ADT4 TIM RAM CAS H
R64(1)	ADT4	A4	68Ω	-ADT4 TIM RAM CAS H
R70(1)	ADT4	D5	68Ω	ADT4 TIM RAM D00 H
R79(1)	ADT4	D5	68Ω	ADT4 TIM RAM D01 H
R126(1)	ADT4	D4	68Ω	ADT4 TIM RAM D02 H
R75(1)	ADT4	D4	68Ω	ADT4 TIM RAM D03 H
R72(1)	ADT4	D3	68Ω	ADT4 TIM RAM D04 H
R71(1)	ADT4	D2	68Ω	ADT4 TIM RAM D05 H
R17(1)	ADT4	D2	68Ω	ADT4 TIM RAM D06 H
R232(1)	ADT4	B4	68Ω	ADT4 TIM RAM PAR H
R204(1)	ADT4	B2	68Ω	ADT4 TIM RAM PAR ERR H
R216(1)	ADT4	A6	68Ω	ADT4 TIM RAM PAR EVEN H
R318(1)	ADT4	B4	68Ω	ADT4 TIM RAM RAS H
R159(1)	ADT4	B4	68Ω	-ADT4 TIM RAM WE H
R161(1)	ADT4	A4	68Ω	-ADT4 WR TIM RAM WE H
R315(1)	ADT5	A7	68Ω	ADT5 BLK ADR 2 OR REFRESH H
R316(1)	ADT5	A7	68Ω	ADT5 BLK ADR 3 OR REFRESH H
R171(1)	ADT5	C7	68Ω	-ADT5 DESELECT CYC EN H
R170(1)	ADT5	B1	68Ω	ADT5 REFRESH GO A H
R68(1)	ADT5	B2	68Ω	-ADT5 REFRESH GO A H
R46(1)	ADT5	B3	68Ω	ADT5 REFRESH GO IN H
R96(1)	ADT5	C2	68Ω	-ADT5 REFRESH NOW H
R192(1)	ADT5	D2	68Ω	-ADT5 REFRESH RQ H

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R86(1)	ADT5	A2	68Ω	ADT5 REFRESH SEL H
R227(1)	ADT6	D6	68Ω	ADT6 CLK FREE [B,IN,03]\#20\ H
R220(1)	ADT6	C6	68Ω	ADT6 CLK GATED [B,IN,13]\#20\ H
R48(1)	ADT6	C6	68Ω	ADT6 CLK GO H
R45(1)	ADT6	D2	68Ω	ADT6 EARLY CLK FREE H
R134(1)	ADT6	B7	68Ω	ADT6 SINGLE STEP H
R304(1)	ADT7	B4	68Ω	ADT7 ADR ERR H
R303(1)	ADT7	B4	68Ω	-ADT7 ADR ERR H
R10(1)	ADT7	A6	68Ω	ADT7 ADR PAR BAD H
R149(1)	ADT7	A6	68Ω	ADT7 BLK PAR BAD H
R182(1)	ADT7	B2	68Ω	ADT7 BLK RAM ERR H
R109(1)	ADT7	D7	68Ω	ADT7 CLR BOX SEL EN IN H
R57(1)	ADT7	A3	68Ω	-ADT7 CNT EN H
R260(1)	ADT7	C7	68Ω	ADT7 CONFIGURED H
R208(1)	ADT7	C2	68Ω	ADT7 CONTROL ERR H
R207(1)	ADT7	C4	68Ω	ADT7 DOUBLE BIT ERR H
R103(1)	ADT7	C1	68Ω	-ADT7 ERR HOLD H
R59(1)	ADT7	B6	68Ω	-ADT7 ERR LATCH H
R302(1)	ADT7	B4	68Ω	-ADT7 ERR TO BUS H
R212(1)	ADT7	B2	68Ω	ADT7 INC ERR H
R150(1)	ADT7	B1	68Ω	ADT7 INC RQ ERR H
R279(1)	ADT7	C7	68Ω	ADT7 MR RESET A H
R162(1)	ADT7	C7	68Ω	ADT7 PATCH H
R107(1)	ADT7	D4	68Ω	ADT7 RD CYC H
R206(1)	ADT7	D4	68Ω	-ADT7 RD CYC H
R284(1)	ADT7	C4	68Ω	ADT7 RD ERR H
R283(1)	ADT7	C4	68Ω	ADT7 RD PAR ERR H
R186(1)	ADT7	C2	68Ω	ADT7 SUB RAM ERR H
R231(1)	ADT7	C2	68Ω	ADT7 TIM RAM ERR H
R153(1)	ADT7	D3	68Ω	ADT7 WR DATA ERR H
R285(1)	ADT7	B4	68Ω	ADT7 WR PAR ERR H
R123(1)	ADT8	C6	68Ω	ADT8 MOS WR DATA D13B H
R41(1)	ADT8	D6	68Ω	ADT8 MOS WR DATA D14B H
R115(1)	ADT8	D6	68Ω	-ADT8 MOS WR DATA D14B H
R81(1)	ADT8	C6	68Ω	ADT8 MOS WR DATA D14C H
R78(1)	ADT8	C6	68Ω	ADT8 MOS WR DATA D15C H
R130(1)	ADT8	C6	68Ω	ADT8 MOS WR DATA D16C H
R132(1)	ADT8	C6	68Ω	ADT8 MOS WR DATA D17C H
R129(1)	ADT8	B6	68Ω	ADT8 MOS WR DATA D18B H
R128(1)	ADT8	B6	68Ω	ADT8 MOS WR DATA D19B H

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R166(1)	ADT8	B6	68Ω	-ADT8 MOS WR DATA D20B H
R27(1)	ADT8	B6	68Ω	ADT8 MOS WR DATA D21B H
R66(1)	ADT8	B6	68Ω	-ADT8 MOS WR DATA D21B H
R32(1)	ADT8	B6	68Ω	ADT8 MOS WR DATA D22B H
R117(1)	ADT8	B6	68Ω	-ADT8 MOS WR DATA D22B H
R26(1)	ADT8	C3	68Ω	ADT8 MOS WR DATA D23B H
R69(1)	ADT8	C3	68Ω	ADT8 MOS WR DATA D24B H
R124(1)	ADT8	C3	68Ω	ADT8 MOS WR DATA D25B H
R25(1)	ADT8	B3	68Ω	ADT8 MOS WR DATA D26B H
R24(1)	ADT8	B3	68Ω	ADT8 MOS WR DATA D27B H
R136(1)	ADT8	B3	68Ω	ADT8 MOS WR DATA D28B H
R118(1)	ADT8	B3	68Ω	-ADT8 MOS WR DATA D28B H
R133(1)	ADT8	B3	68Ω	ADT8 MOS WR DATA D29B H
R39(1)	ADT8	B3	68Ω	-ADT8 MOS WR DATA D32B H
R40(1)	ADT8	B3	68Ω	-ADT8 MOS WR DATA D35B H
R111(1)	ADT9	A4	68Ω	-ADT9 A PHS COM FREE A H
R63(1)	ADT9	B4	68Ω	ADT9 CLR ERR H
R163(1)	ADT9	C1	68Ω	-ADT9 DIAG BUS EN H
R160(1)	ADT9	C2	68Ω	ADT9 DIAG EN H
R178(1)	ADT9	B1	68Ω	-ADT9 DIAG EN A H
R26(1)	ADT9	C2	68Ω	ADT9 DIAG SEL 1 H
R259(1)	ADT9	C2	68Ω	ADT9 DIAG SEL 2 H
R222(1)	ADT9	C2	68Ω	ADT9 DIAG SEL 4 H
R125(1)	ADT9	B4	68Ω	ADT9 FCN 01 LD H
R110(1)	ADT9	B5	68Ω	-ADT9 FCN 01 LD H
R137(1)	ADT9	A2	68Ω	ADT9 S DIAG CYC H
R34(1)	ADT9	A2	68Ω	-ADT9 S DIAG CYC H
R282(1)	ADT9	C5	68Ω	ADT9 S DIAG FCN 0 H
R82(1)	ADT9	C5	68Ω	ADT9 S DIAG FCN 1 H
R115(1)	ADT9	C4	68Ω	-ADT9 S DIAG FCN 1 H
R211(1)	ADT9	B4	68Ω	ADT9 S DIAG FCN 11 H
R165(1)	ADT9	B5	68Ω	-ADT9 S DIAG FCN 11 H
R214(1)	ADT9	C5	68Ω	ADT9 S DIAG FCN 2 H
R62(1)	ADT9	C5	68Ω	ADT9 S DIAG FCN 4 H
R181(1)	ADT9	C4	68Ω	-ADT9 S DIAG FCN 4 H
R83(1)	ADT9	C5	68Ω	ADT9 S DIAG FCN 5 H
R84(1)	ADT9	C5	68Ω	ADT9 S DIAG FCN 6 H
R85(1)	ADT9	C5	68Ω	ADT9 S DIAG FCN 7 H
R22(1)	ADT9	A4	68Ω	-ADT9 S DIAG T0A H
R116(1)	ADT7	C7	68Ω	CTL0 MR RESET H

RESISTOR LOC(PIN)	SHOWN DRW#	ON REF	VALUE	TERMINATES SIGNAL
R278(1)	ADT4	B5	68Ω	CTL1 P RD RQ H
R306(1)	ADT2	C2	68Ω	CTL1 P RQ PAR H
R213(1)	ADT4	B7	68Ω	-CTL1 RAS GO H
R9(1)	ADT7	A4	68Ω	CTL1 RAS START 0 A H
R157(1)	ADT7	D4	68Ω	CTL1 RPW 2ND HALF H
R23(1)	ADT9	A5	68Ω	-CTL2 A PHS COM FREE H
R50(1)	ADT6	C7	68Ω	-CTL2 B PHS COM FREE H
R288(1)	ADT7	A7	68Ω	-CTL2 P ADR HOLD H
R215(1)	ADT7	A3	68Ω	-CTL2 PHS COMING H
R55(1)	ADT5	C4	68Ω	-CTL2 RD TIM DONE A H
R94(1)	ADT6	B8	68Ω	-CTL2 SINGLE STEP H
R283(1)	ADT7	C3	68Ω	CTL4 SUB RAM PAR ERR H
R18(1)	ADT7	C4	68Ω	-CTL6 NON DIAG P BUF LD H
R114(1)	ADT9	A2	68Ω	CTL8 DIAG CYC IN H
R113(1)	ADT9	A2	68Ω	-CTL8 DIAG CYC IN H
R90(1)	ADT6	D8	68Ω	EXT CLOCK H
R277(1)	ADT6	D8	270Ω	EXT CLOCK H
R287(1)	ADT4	C4	68Ω	NC
R209(1)	ADT7	C5	68Ω	-SYN5 CORR ERROR H
R205(1)	ADT7	C5	68Ω	-SYN5 DOUBLE ERROR H
R307(1)	ADT2	C2	68Ω	SYN7 ADR PAR 14-21 H
R146(1)	ADT7	A7	68Ω	SYN7 BLK PAR ERR H
R309(1)	ADT2	D6	68Ω	SYN7 P ADR 18 H
R310(1)	ADT2	D6	68Ω	SYN7 P ADR 19 H
R272(1)	ADT2	D6	68Ω	SYN7 P ADR 20 H
R271(1)	ADT2	C6	68Ω	SYN7 P ADR 21 H
R127(1)	ADT2	A7	68Ω	SYN7 TYPE SELECT H
R280(1)	ADT7	D4	68Ω	WRP6 DATA PAR ERR H
R210(1)	ADT7	C5	68Ω	-WRP8 RPT CORR ERR 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
	M8577-MR002	A
C SMITH		

digital

DRN P Lucier	DATE 03-JAN-79	ENG C Smith	DATE 3 Apr 79
CHK M Morand	DATE 26 Feb 79	BOARD LOCATION:	
PS:<BOWEN>M8772.DRW	03-JAN-79 09:22	SHEET 2 OF 2	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8577-0	

TITLE: RESISTOR DRAWING ADDRESS AND TIME

SIZE	CODE	NUMBER	REV.
D	CS	M8577-0-RES	A

mc

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS	
			FILE: ORIGINAL LAYOUT		
			ECO NUMBER		1
			MODULE REVISION	A	A
E-UA-M8579-0-0	5		MOS STORAGE	C	C
B-PL-M8579-0-0	2		PARTS LIST	C	C
D-CS-M8579-0-SM00	1		ARRAY BIT[T+00]	-	-
D-CS-M8579-0-SM01	1		ARRAY BIT[T+01]	-	-
D-CS-M8579-0-SM02	1		ARRAY BIT[T+02]	-	-
D-CS-M8579-0-SM03	1		ARRAY BIT[T+03]	-	-
D-CS-M8579-0-SM04	1		ARRAY BIT[T+04]	-	-
D-CS-M8579-0-SM05	1		ARRAY BIT[T+05]	-	-
D-CS-M8579-0-SM06	1		ARRAY BIT[T+06]	-	-
D-CS-M8579-0-SM07	1		ARRAY BIT[T+07]	-	-
D-CS-M8579-0-SM08	1		ARRAY BIT[T+08]	-	-
D-CS-M8579-0-SM09	1		ARRAY BIT[T+09]	-	-
D-CS-M8579-0-SM10	1		ARRAY BIT[T+10]	-	-
D-CS-M8579-0-SM11	1		WR PULSE LOGIC	-	-
D-CS-M8579-0-SM12	1		ROW ADR STROBE	-	-
D-CS-M8579-0-SM13	1		COL ADR STROBE	-	-
D-CS-M8579-0-SM14	1		ADRESS CONTROL	-	-
D-CS-M8579-0-SM15	1		SM TERMINATORS	-	-
D-CS-M8579-0-SM16	1		5V PWR DISTRIB	-	-
D-CS-M8579-0-SM17	1		5V PWR, CAP, GND	-	-
D-CS-M8579-0-SM18	1		12V PWR, CAP, GND	-	-
D-CS-M8579-0-SM19	1		-2V PWR, CAP, GND	-	-
D-CS-M8579-0-SM20	1		-5V PWR, CAP, GND	-	-
D-CS-M3579-0-SM21	1		-5V PWR, CAP, GND	-	-
D-CS-M8579-0-RES	1		TERMINATORS	-	-
E-MD-5011816-0-0	6		DRILL & ETCH DRAWING	C	D
		5011816	ETCH CIRCUIT BOARD	D	D
K-PC-M8579-0-DBC	-		P.C. DESIGN DATA BASE	A	A
A-SP-M8579-0-1			ENGINEERING SPEC (REF ONLY)		

REVISIONS: CHK | CHANGE NO. | REV — M8579-MR001 | A — B. HAMEL

digital — DATE 17-NOV-78 — ENG — DATE — BOARD LOCATION: N/A — SHEET 1 OF 1

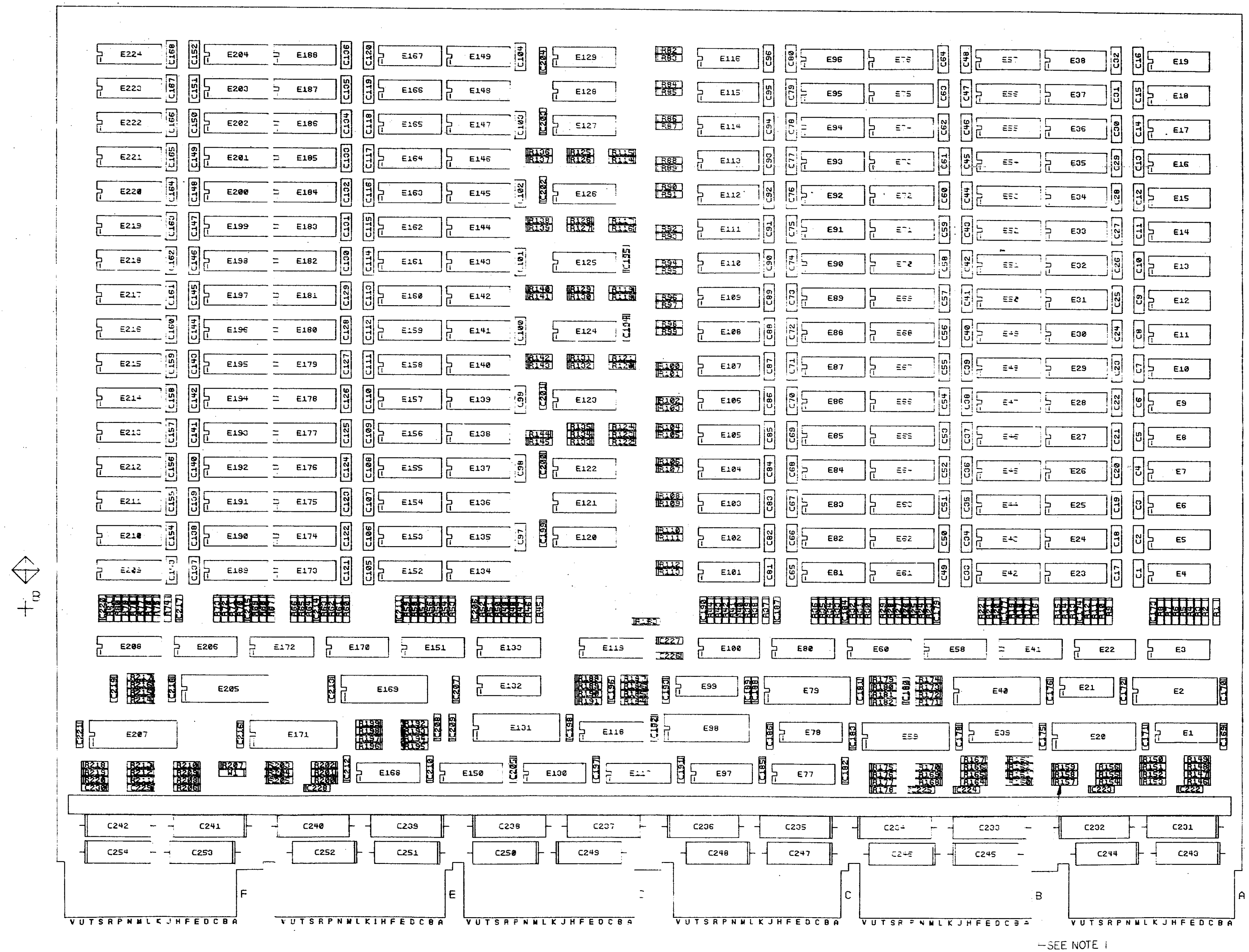
DSK1857900.T2PC(4,550) 17-NOV-78 14:44 — NEXT HIGHER ASSEMBLY: NONE

FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS STORAGE

SIZE D | CODE DD | NUMBER M8579-0 | REV. A

COMPONENT SIDE VIEW

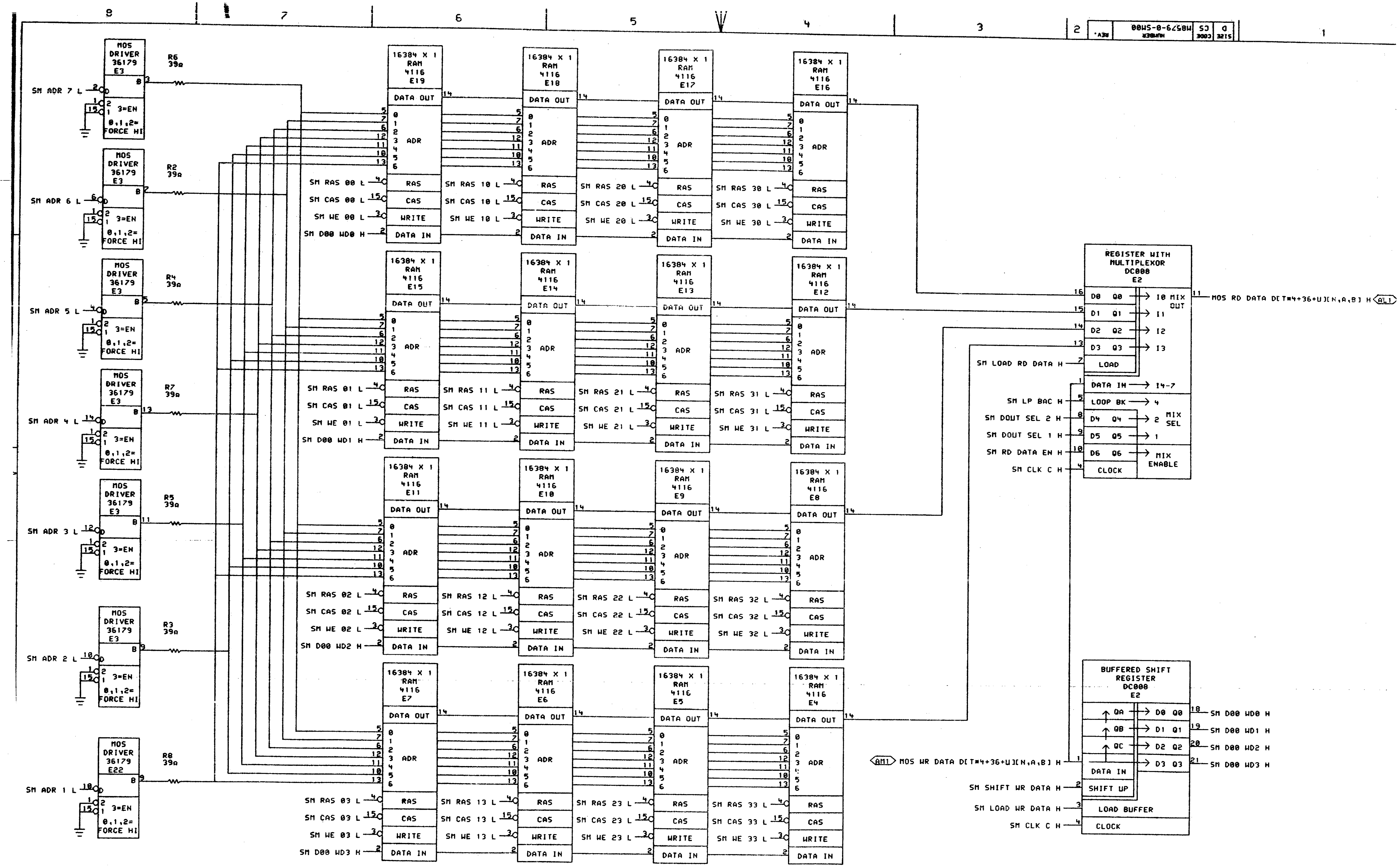


digital

TITLE MF20 MOS STORAGE BOARD

SIZE E CODE UA NUMBER M8579-0-0 REV C

NOTES: 1. ANY COMBINATION OF R152, R158 AND R159 MAY BE PRESENT OR ABSENT DEPENDENT ON STORAGE CHIP VENDOR. SEE B-PL-M8579-0-0 FOR APPLICABLE MODULE VARIATION.



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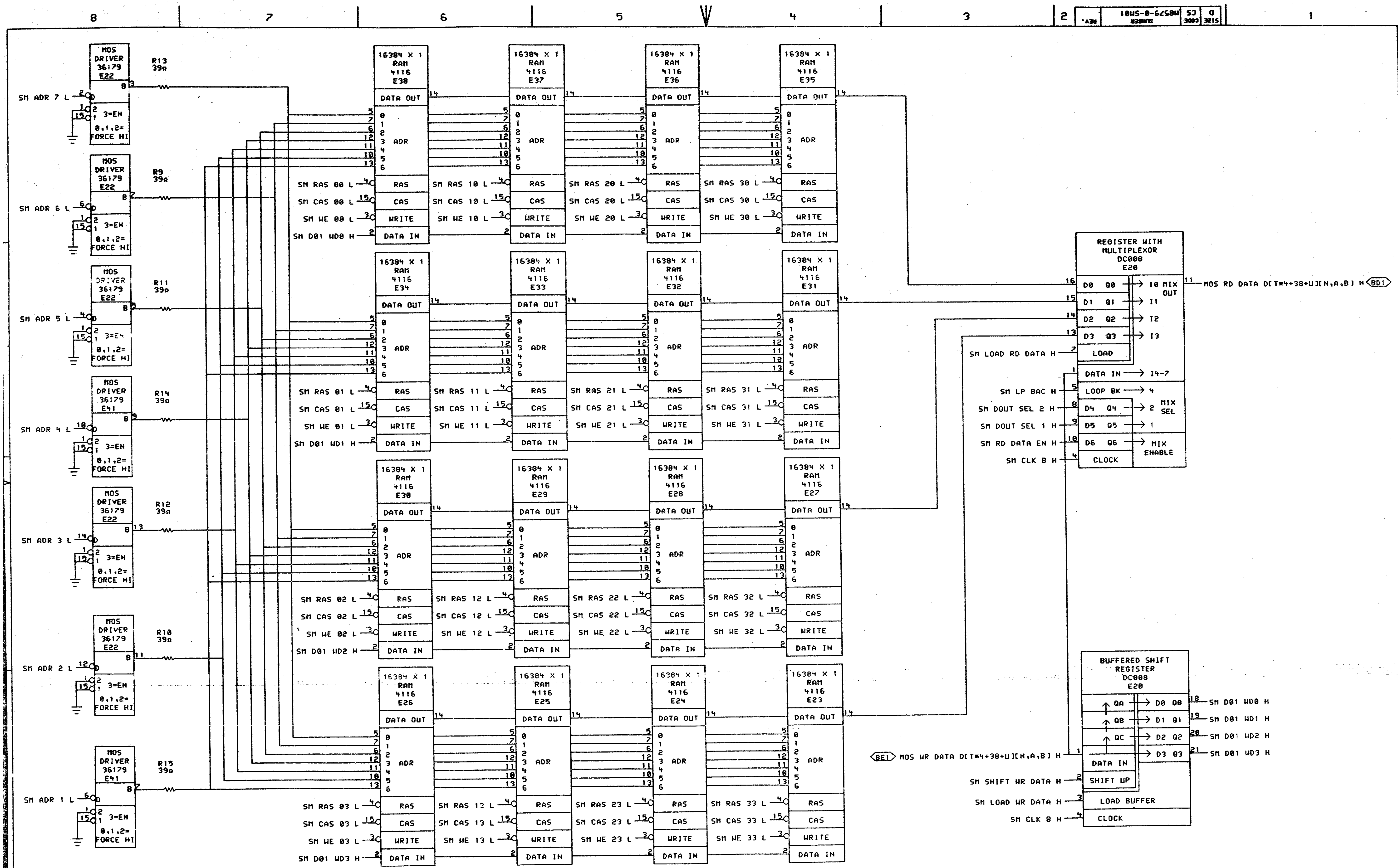
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN.	DATE 04-APR-78	ENG.	DATE 1 MAY 78	TITLE: MOS STORAGE ARRAY BIT[T+00]
CHK.	DATE 4/5/78	BOARD LOCATION: SHEET 1 OF 1		
SM00ED.DRW[4,671]	04-APR-78 14:51	NEXT HIGHER ASSEMBLY: D DD M8579-0		SIZE D CODE CS NUMBER M8579-0-SM00 REV
FIRST USED ON OPTION/MODEL: MF20				


MOS DRIVER 36179 E22
MOS DRIVER 36179 E41
3=EN
0,1,2= FORCE HI
R13 39Ω
R9 39Ω
R11 39Ω
R14 39Ω
R12 39Ω
R10 39Ω
R15 39Ω
SM ADR 7 L
SM ADR 6 L
SM ADR 5 L
SM ADR 4 L
SM ADR 3 L
SM ADR 2 L
SM ADR 1 L
16384 X 1 RAM 4116 E38
16384 X 1 RAM 4116 E37
16384 X 1 RAM 4116 E36
16384 X 1 RAM 4116 E35
16384 X 1 RAM 4116 E34
16384 X 1 RAM 4116 E33
16384 X 1 RAM 4116 E32
16384 X 1 RAM 4116 E31
16384 X 1 RAM 4116 E30
16384 X 1 RAM 4116 E29
16384 X 1 RAM 4116 E28
16384 X 1 RAM 4116 E27
16384 X 1 RAM 4116 E26
16384 X 1 RAM 4116 E25
16384 X 1 RAM 4116 E24
16384 X 1 RAM 4116 E23
DATA OUT
ADR
RAS
CAS
WRITE
DATA IN
SM RAS 00 L
SM CAS 00 L
SM WE 00 L
SM D01 WD0 H
SM RAS 10 L
SM CAS 10 L
SM WE 10 L
SM RAS 20 L
SM CAS 20 L
SM WE 20 L
SM RAS 30 L
SM CAS 30 L
SM WE 30 L
SM RAS 01 L
SM CAS 01 L
SM WE 01 L
SM D01 WD1 H
SM RAS 11 L
SM CAS 11 L
SM WE 11 L
SM RAS 21 L
SM CAS 21 L
SM WE 21 L
SM RAS 31 L
SM CAS 31 L
SM WE 31 L
SM RAS 02 L
SM CAS 02 L
SM WE 02 L
SM D01 WD2 H
SM RAS 12 L
SM CAS 12 L
SM WE 12 L
SM RAS 22 L
SM CAS 22 L
SM WE 22 L
SM RAS 32 L
SM CAS 32 L
SM WE 32 L
SM RAS 03 L
SM CAS 03 L
SM WE 03 L
SM D01 WD3 H
SM RAS 13 L
SM CAS 13 L
SM WE 13 L
SM RAS 23 L
SM CAS 23 L
SM WE 23 L
SM RAS 33 L
SM CAS 33 L
SM WE 33 L
REGISTER WITH MULTIPLEXOR DC008 E20
D0 Q0 I0 MIX OUT
D1 Q1 I1
D2 Q2 I2
D3 Q3 I3
LOAD
DATA IN I4-7
LOOP BK 4
D4 Q4 2 MIX SEL
D5 Q5 1
D6 Q6 MIX ENABLE
CLOCK
MOS RD DATA D[T*4+38+U][N,A,B] H
BD1
SM LOAD RD DATA H
SM LP BAC H
SM DOUT SEL 2 H
SM DOUT SEL 1 H
SM RD DATA EN H
SM CLK B H
BUFFERED SHIFT REGISTER DC008 E20
QA D0 Q0
QB D1 Q1
QC D2 Q2
DATA IN D3 Q3
SHIFT UP
LOAD BUFFER
CLOCK
SM D01 WD0 H
SM D01 WD1 H
SM D01 WD2 H
SM D01 WD3 H
BE1
MOS WR DATA D[T*4+38+U][N,A,B] H
SM SHIFT WR DATA H
SM LOAD WR DATA H
SM CLK B H
8
7
6
5
4
3
2
1

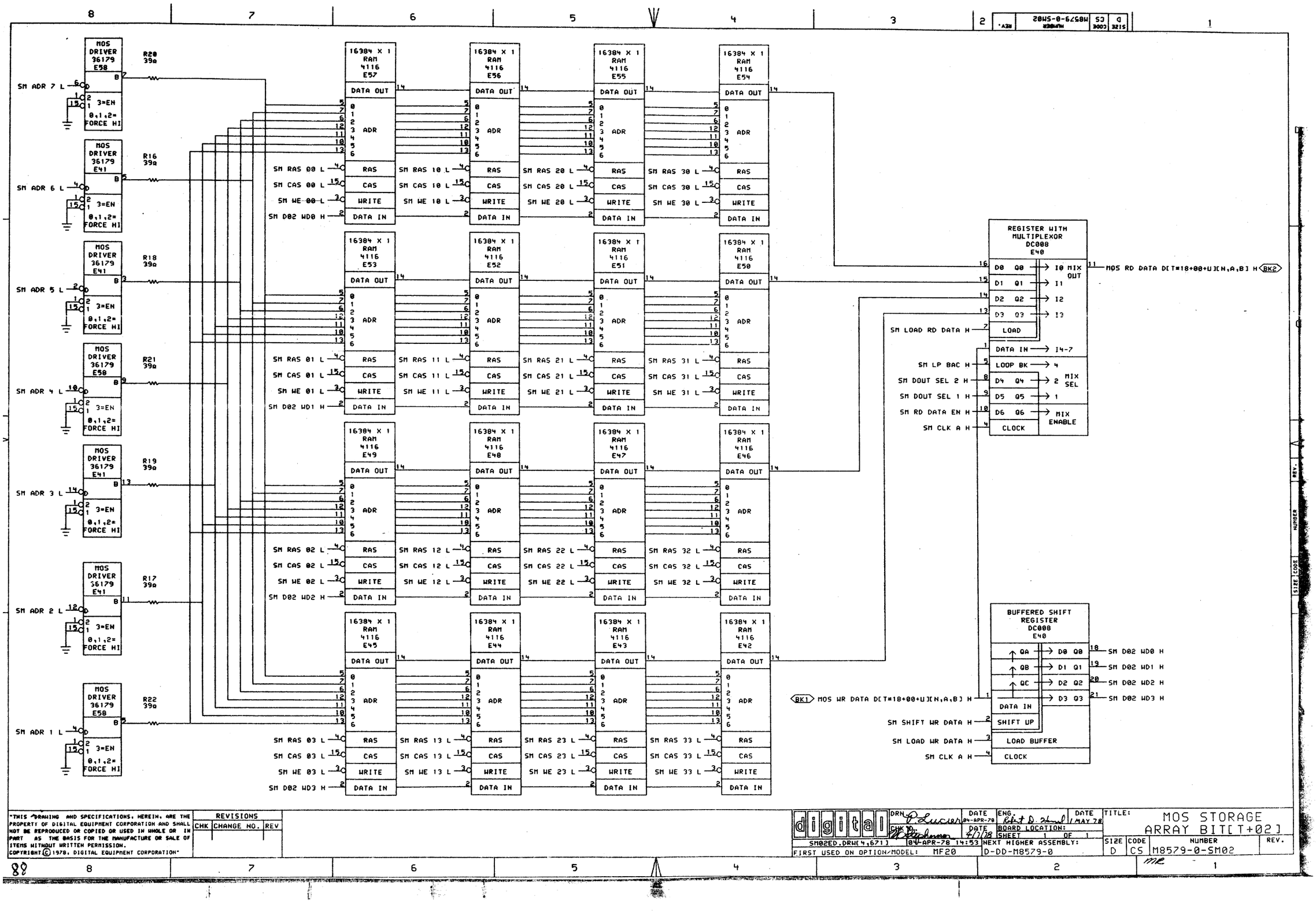
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier	DATE 04-APR-78	ENG	DATE 1 MAY 78
CHK'D	DATE	BOARD LOCATION:	
SM01ED.DRW[4,671]	04-APR-78 14:51	SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8579-0	

TITLE: MOS STORAGE ARRAY BIT[T+01]

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM01	

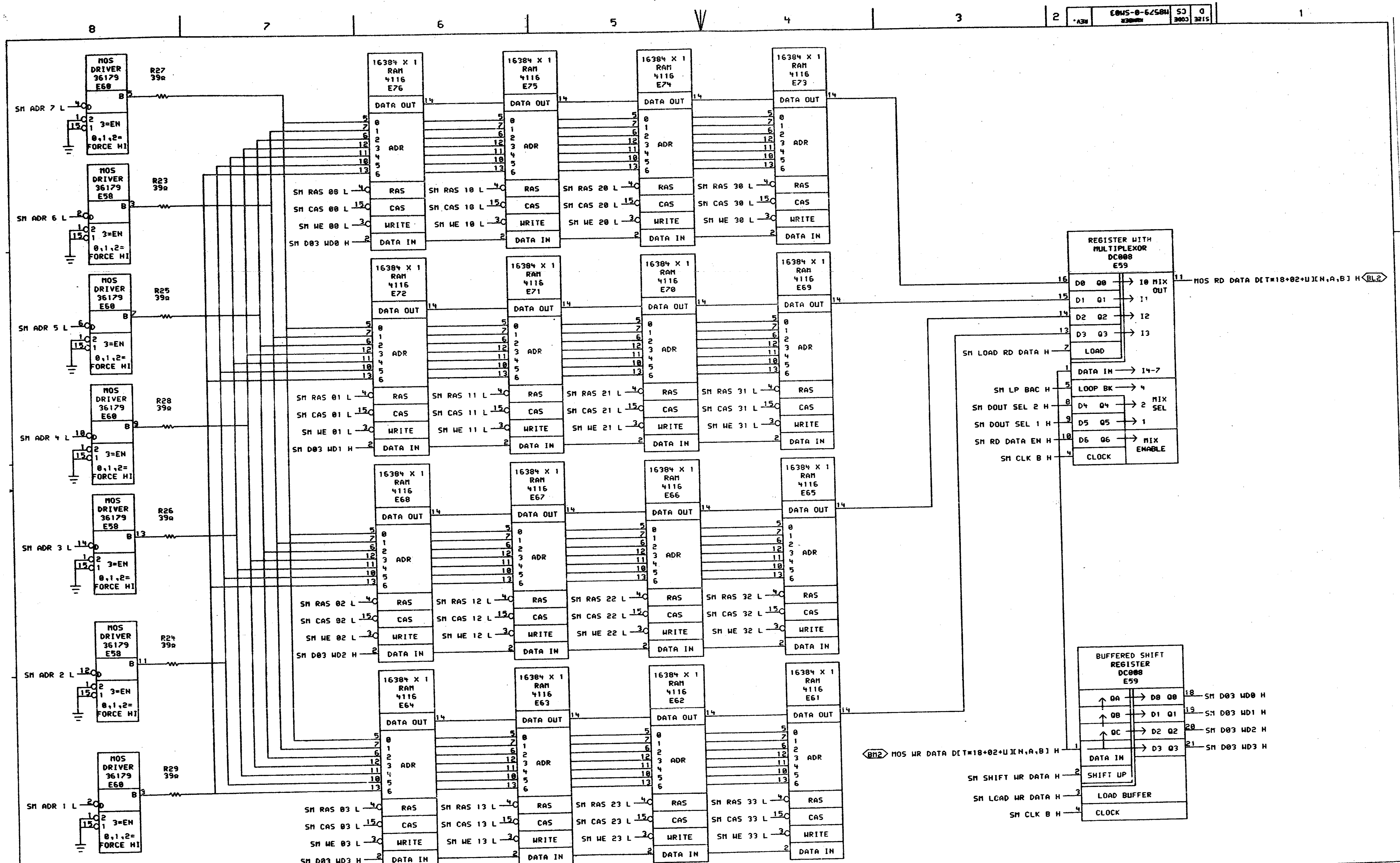


REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier	DATE 04-APR-78	ENG. Robert D. Zhul	DATE 1 MAY 78	TITLE: MOS STORAGE ARRAY BIT[T+02]	
CHK M. Stephenson	DATE 4/7/78	BOARD LOCATIONS: SHEET 1 OF 1			
SM02ED.DRW[4,671] 04-APR-78 14:53		NEXT HIGHER ASSEMBLY: D-DD-M8579-0		SIZE D	CODE CS	NUMBER M8579-0-SM02	REV.
FIRST USED ON OPTION/MODEL: MF20					

88 me


MOS DRIVER 36179 E60
MOS DRIVER 36179 E58
3=EN
0,1,2= FORCE HI
SM ADR 7 L
SM ADR 6 L
SM ADR 5 L
SM ADR 4 L
SM ADR 3 L
SM ADR 2 L
SM ADR 1 L
R27 39Ω
R23 39Ω
R25 39Ω
R28 39Ω
R26 39Ω
R24 39Ω
R29 39Ω
16384 X 1 RAM 4116 E76
16384 X 1 RAM 4116 E75
16384 X 1 RAM 4116 E74
16384 X 1 RAM 4116 E73
16384 X 1 RAM 4116 E72
16384 X 1 RAM 4116 E71
16384 X 1 RAM 4116 E70
16384 X 1 RAM 4116 E69
16384 X 1 RAM 4116 E68
16384 X 1 RAM 4116 E67
16384 X 1 RAM 4116 E66
16384 X 1 RAM 4116 E65
16384 X 1 RAM 4116 E64
16384 X 1 RAM 4116 E63
16384 X 1 RAM 4116 E62
16384 X 1 RAM 4116 E61
DATA OUT
ADR
RAS
CAS
WRITE
DATA IN
SM RAS 00 L
SM CAS 00 L
SM WE 00 L
SM D03 WD0 H
SM RAS 10 L
SM CAS 10 L
SM WE 10 L
SM RAS 20 L
SM CAS 20 L
SM WE 20 L
SM RAS 30 L
SM CAS 30 L
SM WE 30 L
SM RAS 01 L
SM CAS 01 L
SM WE 01 L
SM D03 WD1 H
SM RAS 11 L
SM CAS 11 L
SM WE 11 L
SM RAS 21 L
SM CAS 21 L
SM WE 21 L
SM RAS 31 L
SM CAS 31 L
SM WE 31 L
SM RAS 02 L
SM CAS 02 L
SM WE 02 L
SM D03 WD2 H
SM RAS 12 L
SM CAS 12 L
SM WE 12 L
SM RAS 22 L
SM CAS 22 L
SM WE 22 L
SM RAS 32 L
SM CAS 32 L
SM WE 32 L
SM RAS 03 L
SM CAS 03 L
SM WE 03 L
SM D03 WD3 H
SM RAS 13 L
SM CAS 13 L
SM WE 13 L
SM RAS 23 L
SM CAS 23 L
SM WE 23 L
SM RAS 33 L
SM CAS 33 L
SM WE 33 L
REGISTER WITH MULTIPLEXOR DC008 E59
D0 Q0
D1 Q1
D2 Q2
D3 Q3
LOAD
DATA IN
LOOP BK
D4 Q4
D5 Q5
D6 Q6
CLOCK
10 MIX OUT
MIX SEL
MIX ENABLE
MOS RD DATA D[T*18+02+U][N,A,B] H
BL2
SM LOAD RD DATA H
SM LP BAC H
SM DOUT SEL 2 H
SM DOUT SEL 1 H
SM RD DATA EN H
SM CLK B H
BUFFERED SHIFT REGISTER DC008 E59
QA
QB
QC
SHIFT UP
LOAD BUFFER
SM D03 WD0 H
SM D03 WD1 H
SM D03 WD2 H
SM D03 WD3 H
BM2
MOS WR DATA D[T*18+02+U][N,A,B] H
SM SHIFT WR DATA H
SM LOAD WR DATA H
SM CLK B H

REVISIONS

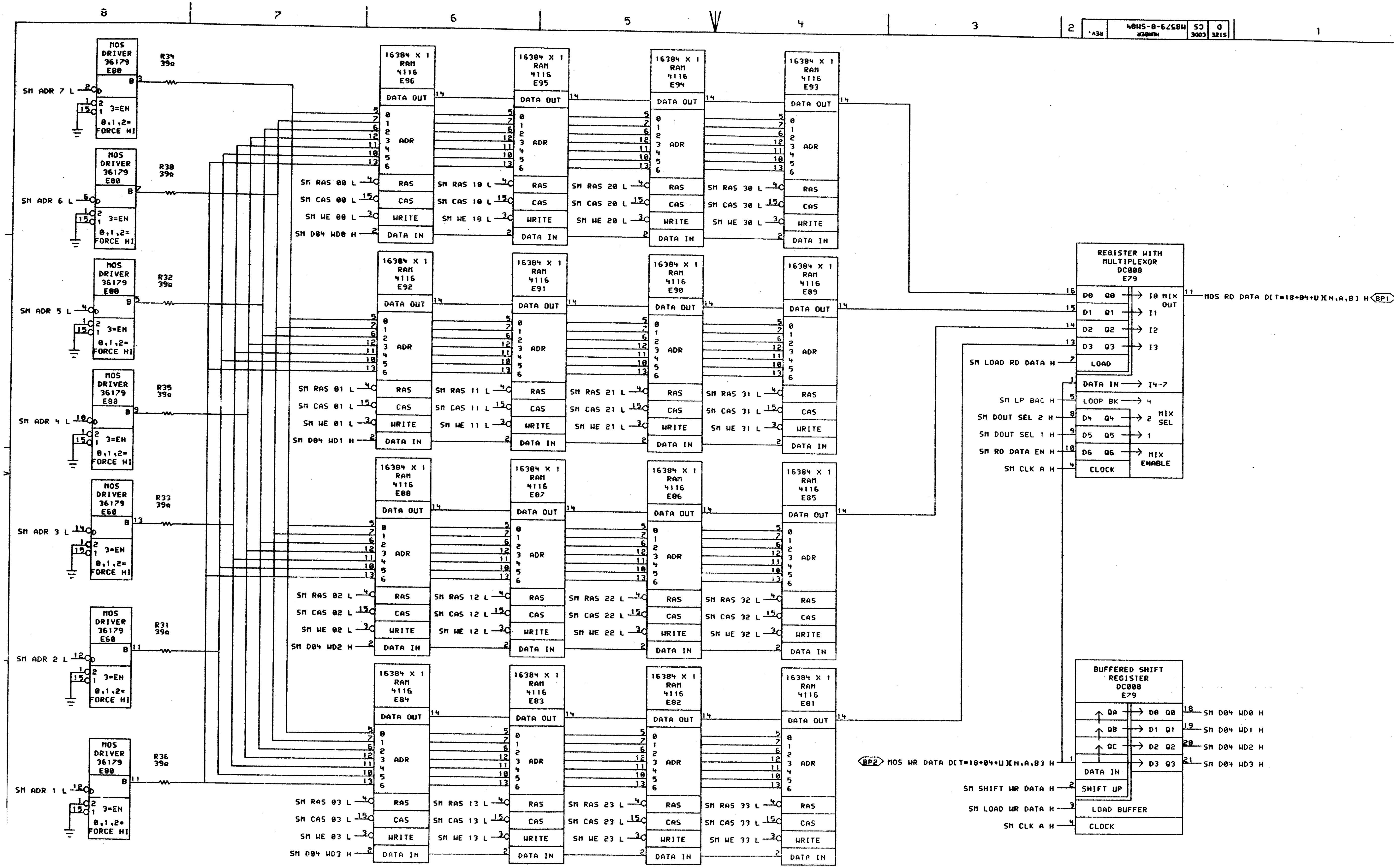
CHK	CHANGE NO.	REV

digital

DRN P. Lucier — DATE 04-APR-78
CHK — DATE 4/7/78
ENG Robert D. — DATE 1 MAY 78
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8579-0
SM03ED.DRW[4,671] 04-APR-78 14:54
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS STORAGE ARRAY BIT[T+03]

SIZE D CODE CS NUMBER M8579-0-SM03 REV.


MOS DRIVER 36179 E80
3=EN
0,1,2= FORCE HI
SM ADR 7 L
SM ADR 6 L
SM ADR 5 L
SM ADR 4 L
SM ADR 3 L
SM ADR 2 L
SM ADR 1 L
R34 39Ω
R30 39Ω
R32 39Ω
R35 39Ω
R33 39Ω
R31 39Ω
R36 39Ω
16384 X 1 RAM 4116 E96
16384 X 1 RAM 4116 E95
16384 X 1 RAM 4116 E94
16384 X 1 RAM 4116 E93
16384 X 1 RAM 4116 E92
16384 X 1 RAM 4116 E91
16384 X 1 RAM 4116 E90
16384 X 1 RAM 4116 E89
16384 X 1 RAM 4116 E88
16384 X 1 RAM 4116 E87
16384 X 1 RAM 4116 E86
16384 X 1 RAM 4116 E85
16384 X 1 RAM 4116 E84
16384 X 1 RAM 4116 E83
16384 X 1 RAM 4116 E82
16384 X 1 RAM 4116 E81
DATA OUT
ADR
RAS
CAS
WRITE
DATA IN
SM RAS 00 L
SM CAS 00 L
SM WE 00 L
SM D04 WD0 H
SM RAS 10 L
SM CAS 10 L
SM WE 10 L
SM RAS 20 L
SM CAS 20 L
SM WE 20 L
SM RAS 30 L
SM CAS 30 L
SM WE 30 L
SM RAS 01 L
SM CAS 01 L
SM WE 01 L
SM D04 WD1 H
SM RAS 11 L
SM CAS 11 L
SM WE 11 L
SM RAS 21 L
SM CAS 21 L
SM WE 21 L
SM RAS 31 L
SM CAS 31 L
SM WE 31 L
SM RAS 02 L
SM CAS 02 L
SM WE 02 L
SM D04 WD2 H
SM RAS 12 L
SM CAS 12 L
SM WE 12 L
SM RAS 22 L
SM CAS 22 L
SM WE 22 L
SM RAS 32 L
SM CAS 32 L
SM WE 32 L
SM RAS 03 L
SM CAS 03 L
SM WE 03 L
SM D04 WD3 H
SM RAS 13 L
SM CAS 13 L
SM WE 13 L
SM RAS 23 L
SM CAS 23 L
SM WE 23 L
SM RAS 33 L
SM CAS 33 L
SM WE 33 L
REGISTER WITH MULTIPLEXOR DC008 E79
D0 Q0
D1 Q1
D2 Q2
D3 Q3
LOAD
DATA IN
LOOP BK
D4 Q4
D5 Q5
D6 Q6
CLOCK
I0 MIX OUT
I1
I2
I3
I4-7
MIX SEL
MIX ENABLE
MOS RD DATA D[T=18+04+U][N,A,B] H
BP1
SM LOAD RD DATA H
SM LP BAC H
SM DOUT SEL 2 H
SM DOUT SEL 1 H
SM RD DATA EN H
SM CLK A H
BUFFERED SHIFT REGISTER DC008 E79
QA
QB
QC
DATA IN
SHIFT UP
LOAD BUFFER
CLOCK
BP2
MOS WR DATA D[T=18+04+U][N,A,B] H
SM SHIFT WR DATA H
SM LOAD WR DATA H
SM CLK A H
SM D04 WD0 H
SM D04 WD1 H
SM D04 WD2 H
SM D04 WD3 H

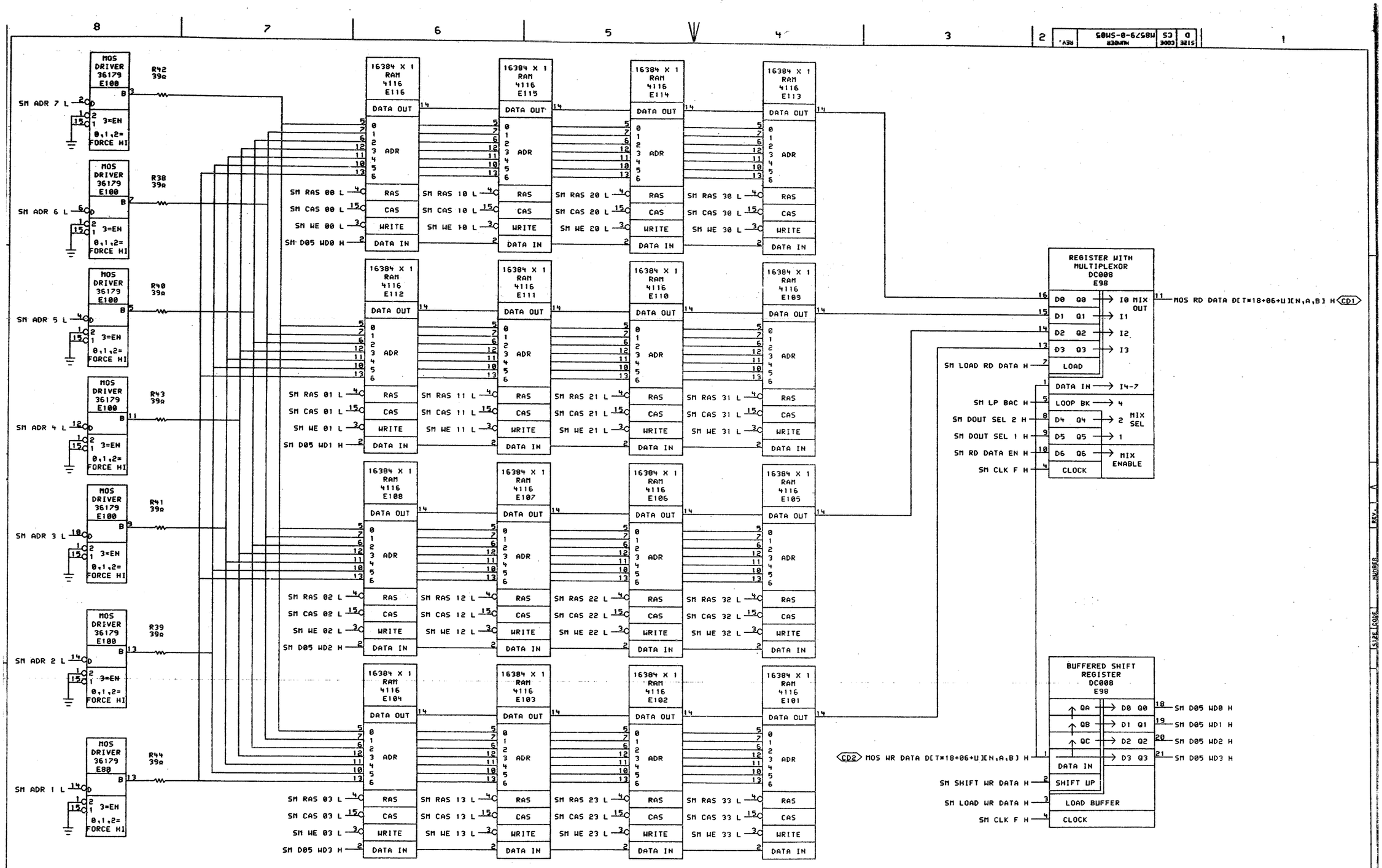
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier | DATE 04-APR-78
CHK D. Stephenson | DATE 4/7/78
ENG. | DATE 1 MAY 78
SM04ED.DRW[4,671] | 04-APR-78 14:50
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8579-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS STORAGE ARRAY BIT[T+04]

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM04	

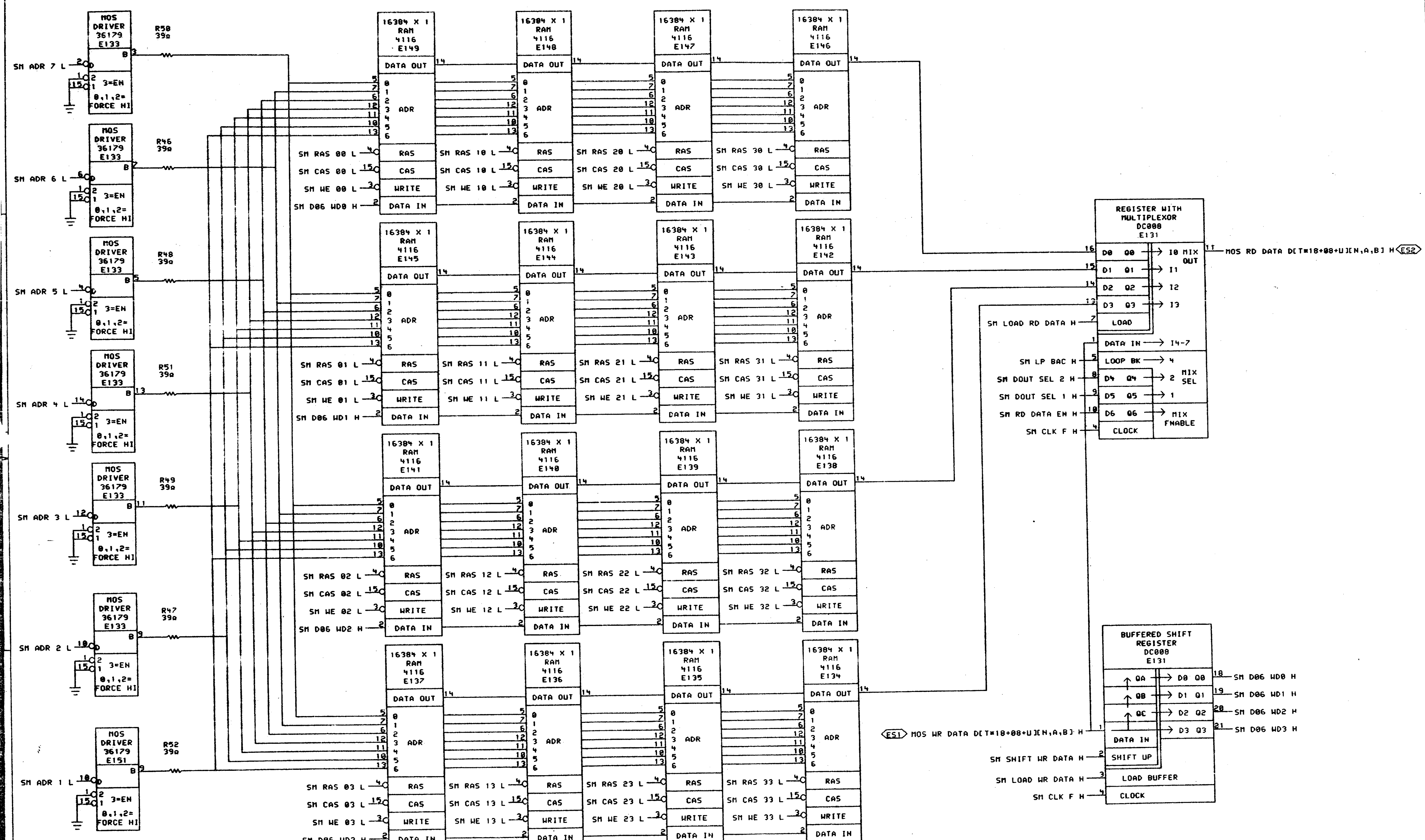


REVISIONS		
CHK	CHANGE NO.	REV

digital	DRW P. Lucier	DATE 04-APR-78	ENG. Robert D Hurd / DATE / MAY 78
	CHK D. Anderson	DATE 5/7/78	BOARD LOCATION: SHEET 1 OF 1
SM05ED.DRW[4,671]	04APR-78 14:55	NEXT HIGHER ASSEMBLY:	
FIRST USED ON OPTION/MODEL:	MF20	D-DD-M8579-0	

TITLE: MOS STORAGE ARRAY BIT[T+05]

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM05	


MOS DRIVER 36179 E133
MOS DRIVER 36179 E151
SM ADR 7 L
SM ADR 6 L
SM ADR 5 L
SM ADR 4 L
SM ADR 3 L
SM ADR 2 L
SM ADR 1 L
R50 39Ω
R46 39Ω
R48 39Ω
R51 39Ω
R49 39Ω
R47 39Ω
R52 39Ω
3=EN
0,1,2= FORCE HI
16384 X 1 RAM 4116 E149
16384 X 1 RAM 4116 E148
16384 X 1 RAM 4116 E147
16384 X 1 RAM 4116 E146
16384 X 1 RAM 4116 E145
16384 X 1 RAM 4116 E144
16384 X 1 RAM 4116 E143
16384 X 1 RAM 4116 E142
16384 X 1 RAM 4116 E141
16384 X 1 RAM 4116 E140
16384 X 1 RAM 4116 E139
16384 X 1 RAM 4116 E138
16384 X 1 RAM 4116 E137
16384 X 1 RAM 4116 E136
16384 X 1 RAM 4116 E135
16384 X 1 RAM 4116 E134
DATA OUT
ADR
RAS
CAS
WRITE
DATA IN
SM RAS 00 L
SM CAS 00 L
SM WE 00 L
SM D06 WD0 H
SM RAS 10 L
SM CAS 10 L
SM WE 10 L
SM RAS 20 L
SM CAS 20 L
SM WE 20 L
SM RAS 30 L
SM CAS 30 L
SM WE 30 L
SM RAS 01 L
SM CAS 01 L
SM WE 01 L
SM D06 WD1 H
SM RAS 11 L
SM CAS 11 L
SM WE 11 L
SM RAS 21 L
SM CAS 21 L
SM WE 21 L
SM RAS 31 L
SM CAS 31 L
SM WE 31 L
SM RAS 02 L
SM CAS 02 L
SM WE 02 L
SM D06 WD2 H
SM RAS 12 L
SM CAS 12 L
SM WE 12 L
SM RAS 22 L
SM CAS 22 L
SM WE 22 L
SM RAS 32 L
SM CAS 32 L
SM WE 32 L
SM RAS 03 L
SM CAS 03 L
SM WE 03 L
SM D06 WD3 H
SM RAS 13 L
SM CAS 13 L
SM WE 13 L
SM RAS 23 L
SM CAS 23 L
SM WE 23 L
SM RAS 33 L
SM CAS 33 L
SM WE 33 L
REGISTER WITH MULTIPLEXOR DC008 E131
MOS RD DATA D[T=18+08+U][N,A,B] H
ES2
SM LOAD RD DATA H
SM LP BAC H
SM DOUT SEL 2 H
SM DOUT SEL 1 H
SM RD DATA EN H
SM CLK F H
MIX OUT
MIX SEL
MIX FNABLE
LOAD
LOOP BK
CLOCK
BUFFERED SHIFT REGISTER DC008 E131
SM D06 WD0 H
SM D06 WD1 H
SM D06 WD2 H
SM D06 WD3 H
ES1
MOS WR DATA D[T=18+08+U][N,A,B] H
SM SHIFT WR DATA H
SM LOAD WR DATA H
SM CLK F H
SHIFT UP
LOAD BUFFER

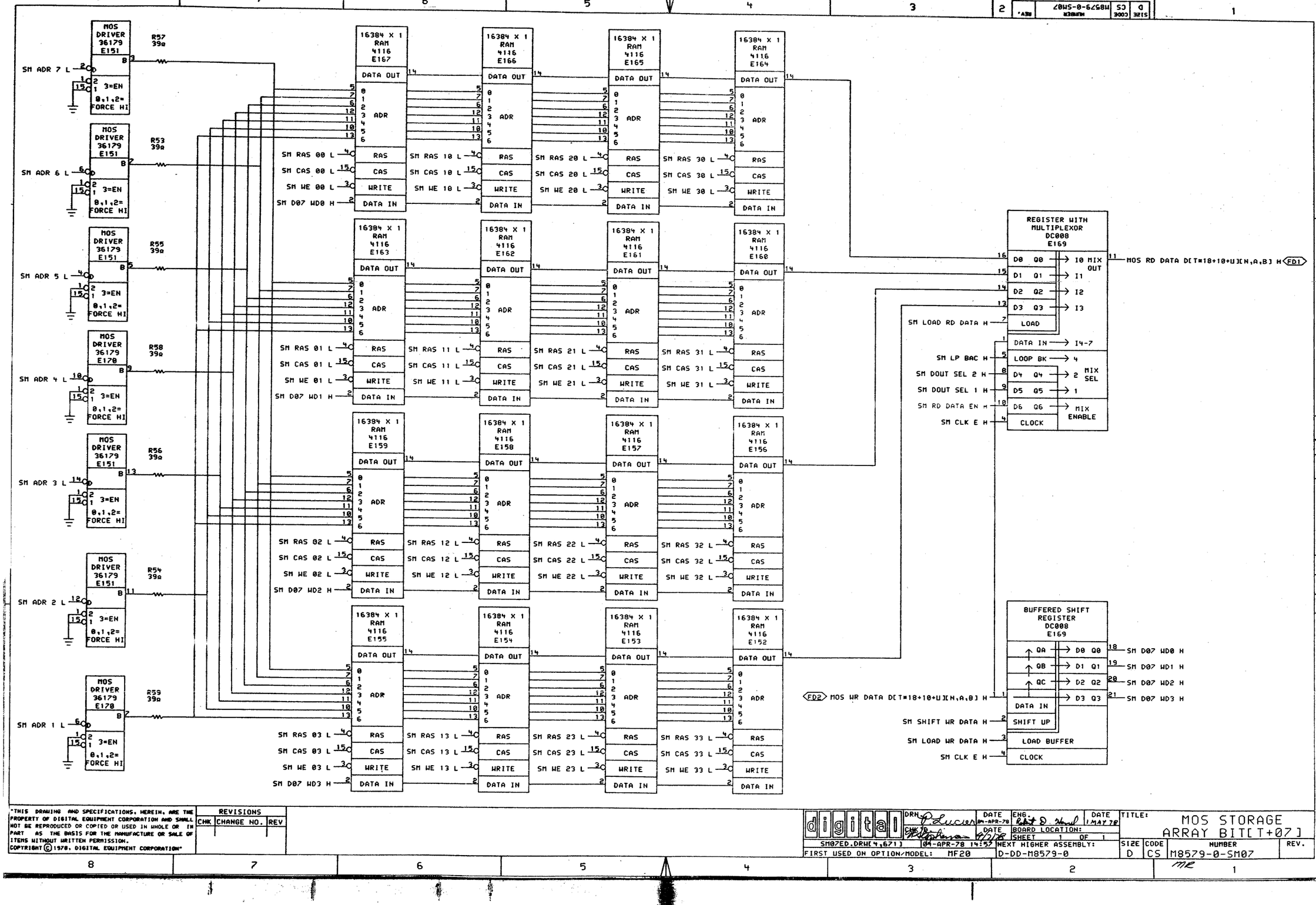
REVISIONS
CHK | CHANGE NO. | REV

digital

SM06ED.DRW[4,67] 04-APR-78 14:56
FIRST USED ON OPTION/MODEL: MF20
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8579-0

TITLE: MOS STORAGE ARRAY BIT[T+06]

SIZE D | CODE CS | NUMBER M8579-0-SM06 | REV.



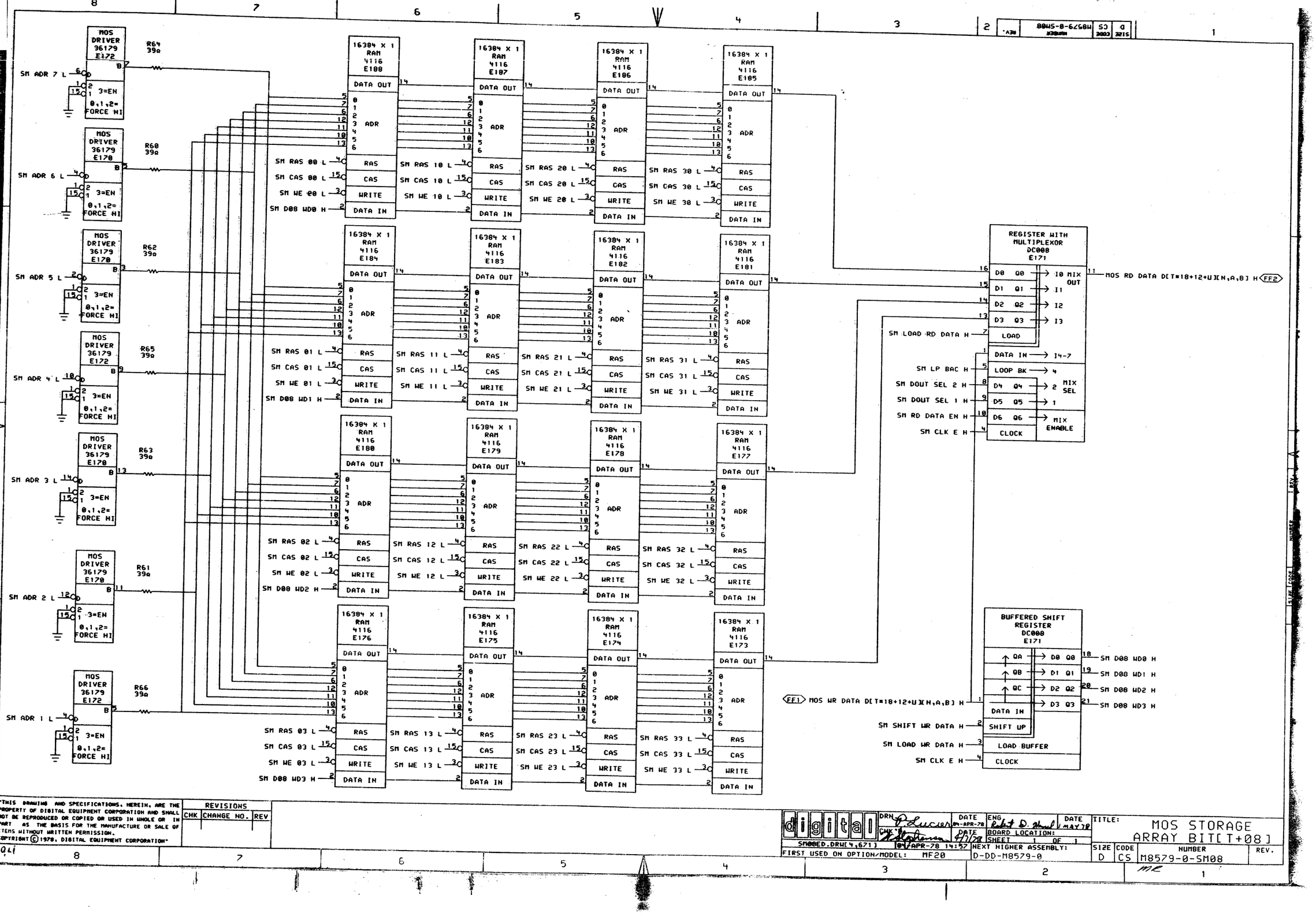
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier 04-APR-78
CHK [illegible] 4/7/78
ENG. [illegible] 1 MAY 78
SM07ED.DRW[4,671] 04-APR-78 14:57
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8579-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS STORAGE ARRAY BIT[T+07]

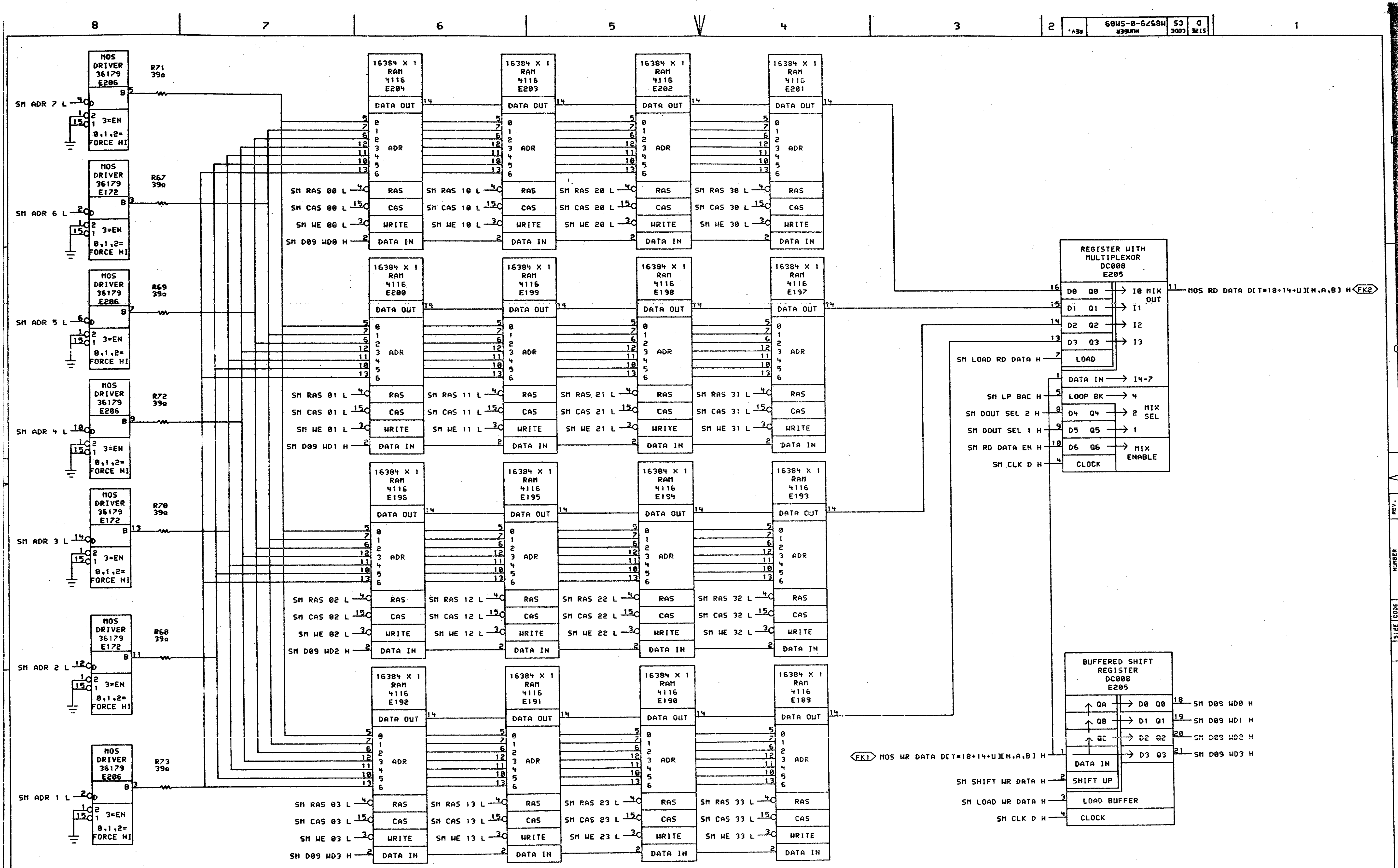
SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM07	



REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN	DATE	ENG	DATE	TITLE:	MOS STORAGE ARRAY BIT[T+08]
CHK	DATE	BOARD LOCATION:			
SM88ED.DRW[4,671] 04-APR-78 14:57		SHEET 1 OF 1			
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8579-0		SIZE D / CODE CS / NUMBER M8579-0-SM08	REV.



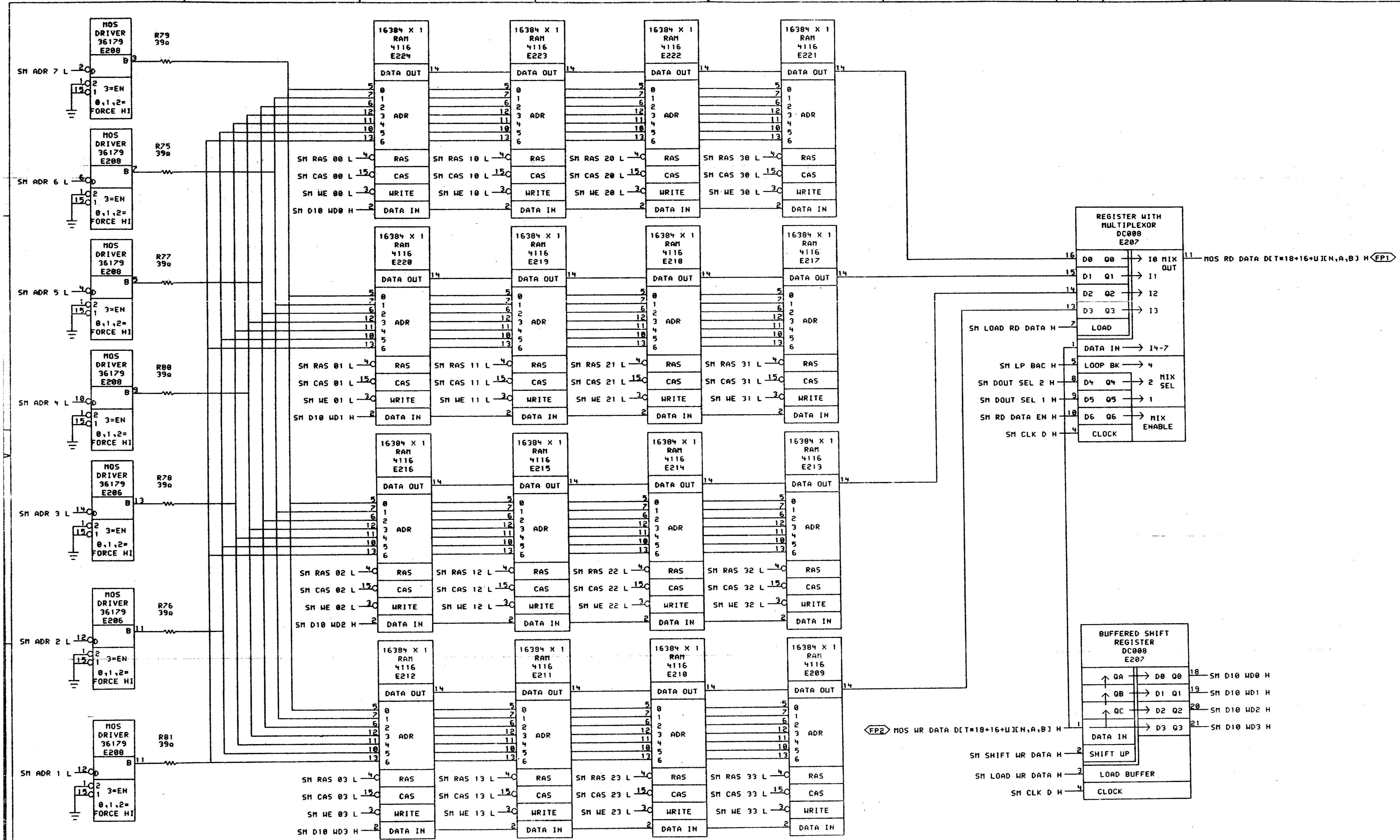
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier — DATE 04-APR-78
CHK'D — DATE 4/7/78
ENG — DATE 1 MAY 78
SM09ED.DRW[4,671] 04-APR-78 14:58
FIRST USED ON OPTION/MODEL: MF20
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8579-0

TITLE: MOS STORAGE ARRAY BIT[T+09]

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM09	

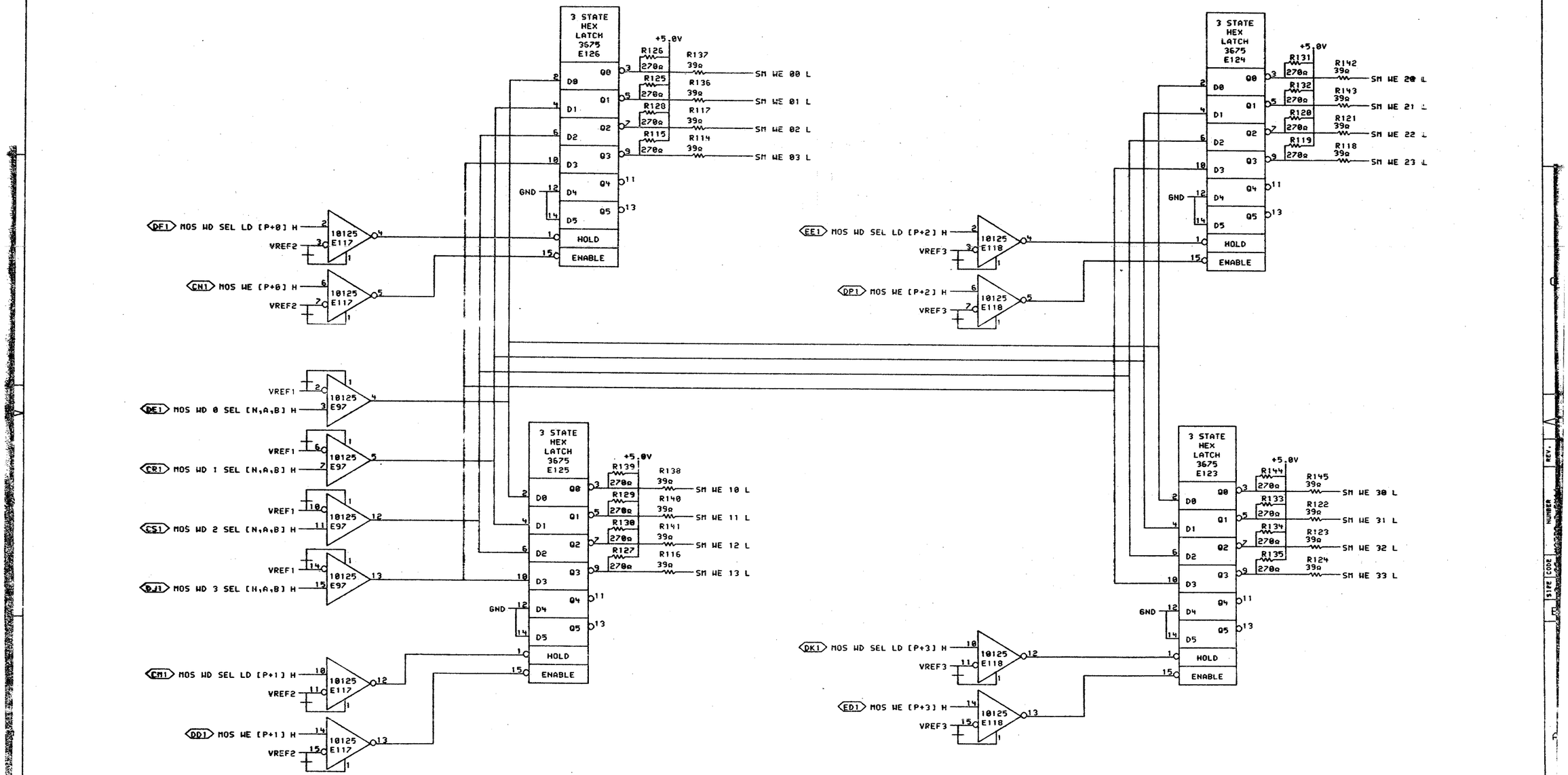


REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN	DATE 04-APR-78	ENG	DATE 1 MAY 78	TITLE: MOS STORAGE ARRAY BIT[T+10]
CHK	DATE 4/7/78	BOARD LOCATION:		
SM10ED.DRW[4,671]	04-APR-78 14:59	SHEET 1 OF 1		
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8579-0		

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM10	



REVISIONS		
CHK	CHANGE NO.	REV

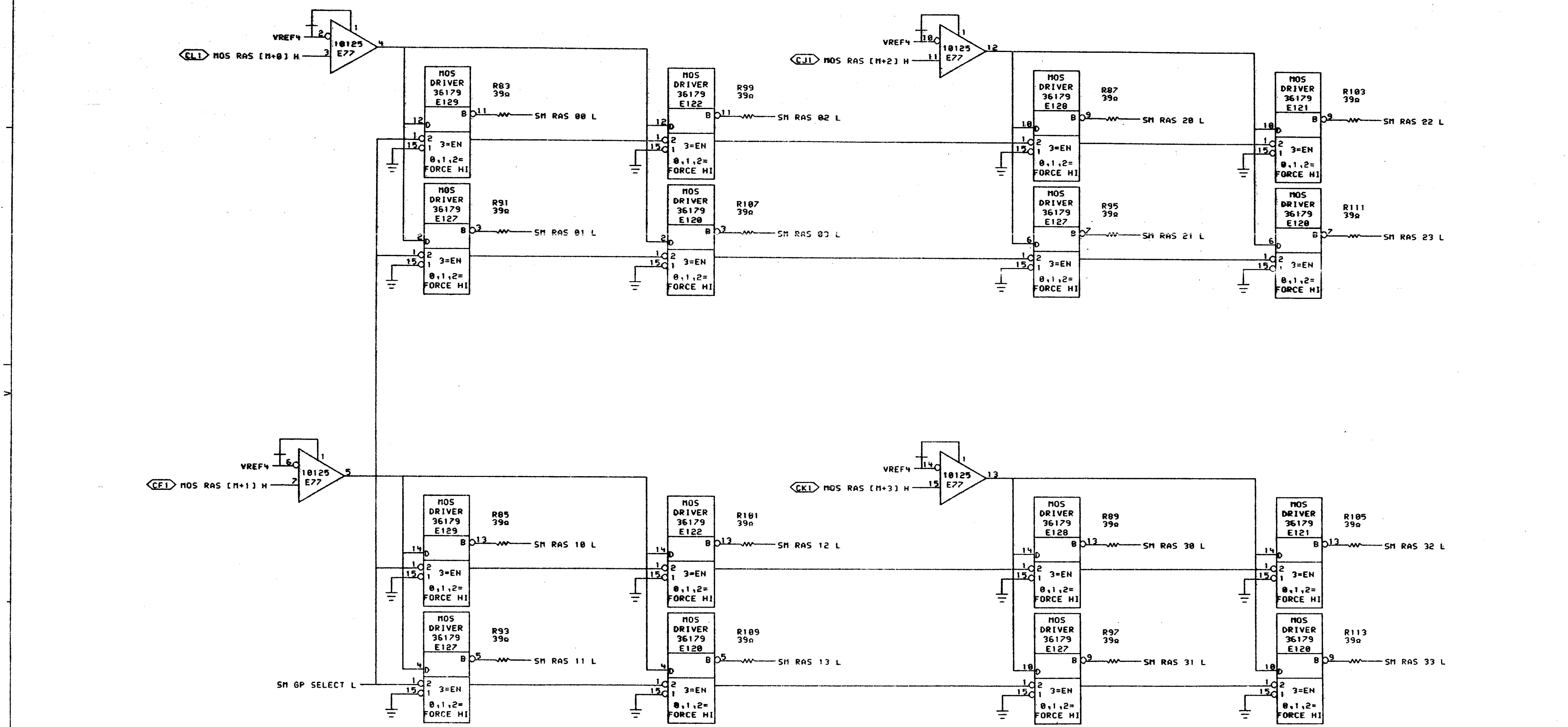
digital

DRN P. Lucier	DATE 04-APR-78	ENG Robert D. Hensel	DATE 1 MAY 78
CHK [illegible]	DATE 5/10	BOARD LOCATION:	
SM11ED.DRW[4,671] 04-APR-78 14:55		SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: D-DD-M8579-0	

TITLE: MOS STORAGE WRITE PULSE LOGIC

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM11	ME

97



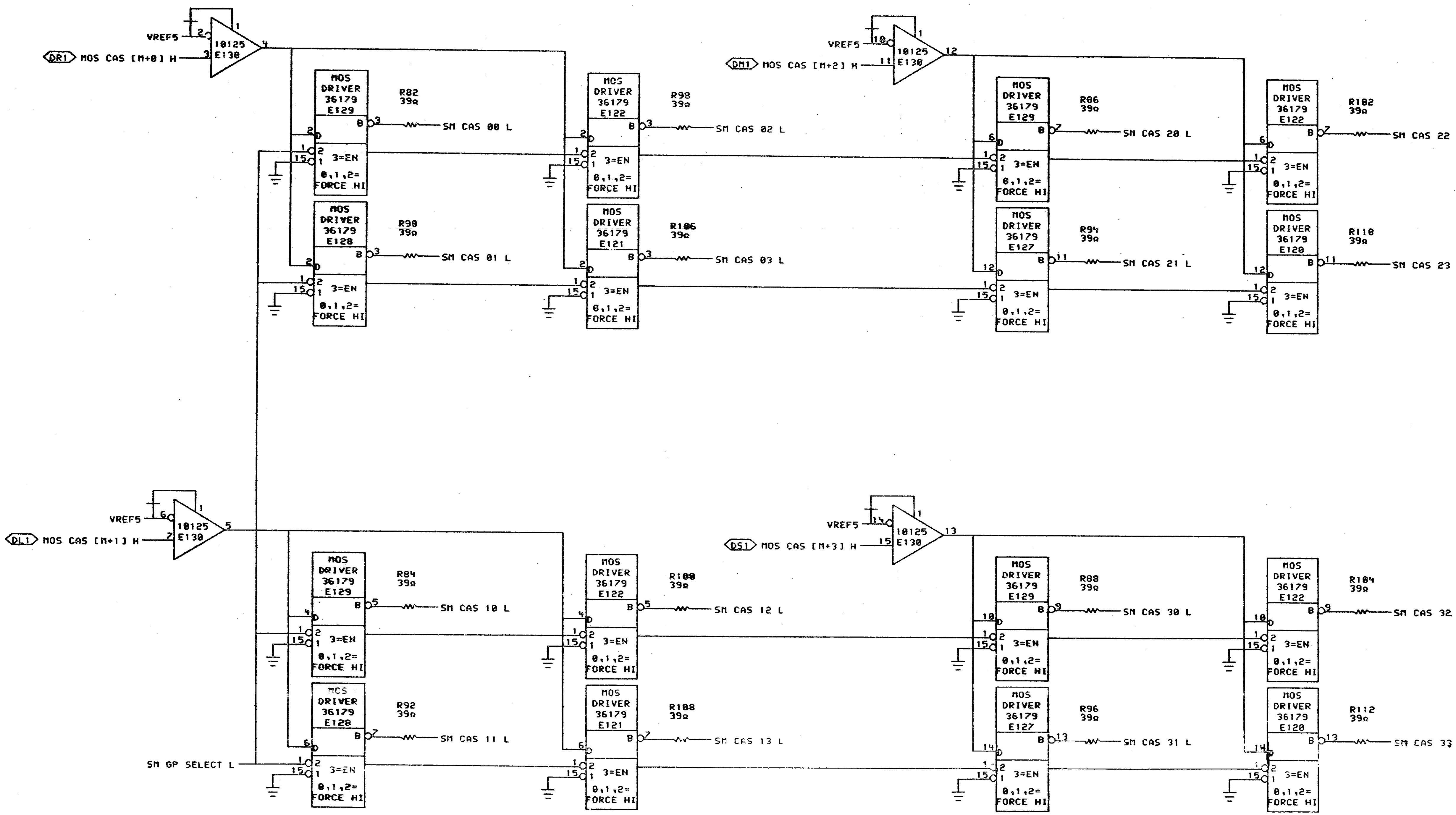
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier DATE 04-APR-78
CHKD DATE 4/7/78
ENG Robert D. ... DATE 1 MAY 78
BOARD LOCATION:
SHEET 1 OF 1
SM12ED.DRW[4,671] 04-APR-78 15:00
NEXT HIGHER ASSEMBLY: D-DD-M8579-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS STORAGE ROW ADDRESS STROBE

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM12	



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REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier — DATE 04-APR-78 — ENG. Robert D. — DATE 1 MAY 78

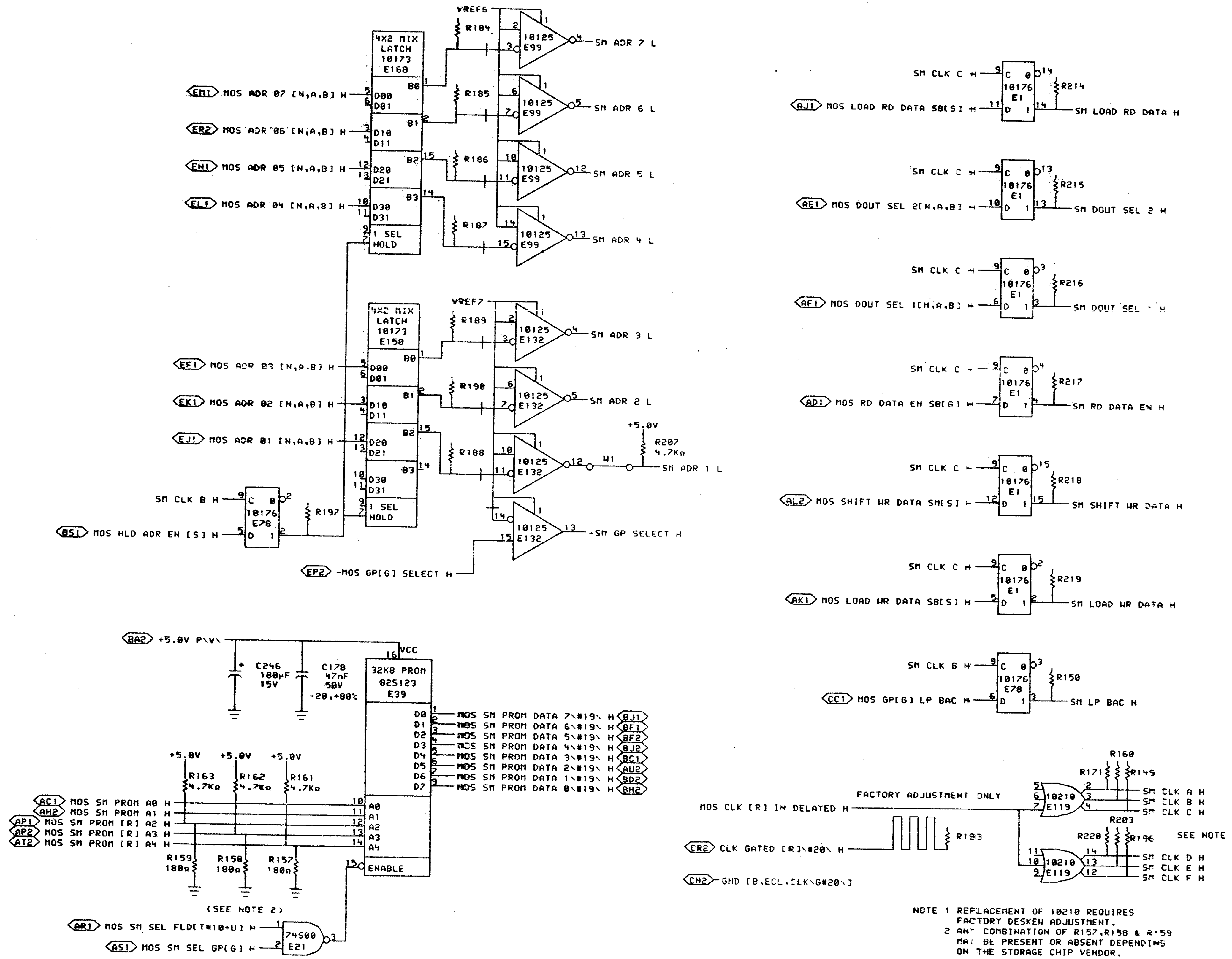
CHK'D — DATE — BOARD LOCATION:

SM13ED.DRW[4,671] 04-APR-78 15:00 — SHEET 1 OF 1

FIRST USED ON OPTION/MODEL: MF20 — NEXT HIGHER ASSEMBLY: D-DD-M8579-0

TITLE: MOS STORAGE COL ADDRESS STROBE

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM13	



NOTE 1 REPLACEMENT OF 10210 REQUIRES FACTORY DESKEW ADJUSTMENT.
2 ANY COMBINATION OF R157,R158 & R159 MAY BE PRESENT OR ABSENT DEPENDING ON THE STORAGE CHIP VENDOR.

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. DATE 04-APR-78 · ENG. DATE 1 MAY 78 · CHK'D DATE · BOARD LOCATION: · SHEET 1 OF 1

SM14ED.DRW[4,671] 13-APR-78 07:22 · NEXT HIGHER ASSEMBLY: D-DD-M8579-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS STORAGE ADDRESS CONTROL

SIZE D · CODE CS · NUMBER M8579 0-SM14 · REV.

Pin	Signal	Resistor
AD2	[R/9+1,NC,MOS RD DATA EN SB[G] H]	R146
AE2	[R/11+1,NC,MOS DOUT SEL 2[N,A,B] H]	R147
AF2	[R/11+1,NC,MOS DOUT SEL 1[N,A,B] H]	R148
AJ2	[R/11+1,NC,MOS LOAD RD DATA SB[S] H]	R151
AK2	[R/11+1,NC,MOS LOAD WR DATA SB[S] H]	R152
AM2	[R/11+1,NC,MOS SHIFT WR DATA SM[S] H]	R153
AN1	[G+1,MOS WR DATA D[T*4+36+U][N,A,B] H,NC,NC]	R156
AR2	SPARE TERM [R]0\#400\	R154
AS2	SPARE TERM [R]2\#400\	R155
BE2	[G+1,MOS WR DATA D[T*4+38+U][N,A,B] H,NC,NC]	R165
BL1	[G+1,MOS WR DATA D[T*18+0+U][N,A,B] H,NC,NC]	R164
BM1	[G+1,MOS WR DATA D[T*18+2+U][N,A,B] H,NC,NC]	R178
BR2	[G+1,MOS WR DATA D[T*18+4+U][N,A,B] H,NC,NC]	R166
BS2	[R/11+1,NC,MOS HLD ADR EN [S] H]	R167
CE1	[G+1,MOS WR DATA D[T*18+6+U][N,A,B] H,NC,NC]	R168
CE2	[R/9+1,NC,MOS GP[G] LP BAC H]	R169
CF2	[R/11+1,NC,MOS RAS [M+1] H]	R170
CJ2	[R/11+1,NC,MOS RAS [M+2] H]	R172
CK2	[R/11+1,NC,MOS RAS [M+3] H]	R173
CL2	[R/11+1,NC,MOS RAS [M+0] H]	R174
CM2	[R/11+1,NC,MOS WD SEL LD [M+1] H]	R182
CP1	[R/11+1,NC,MOS WE [M+0] H]	R180
CP2	[R/11+1,NC,MOS WD 1 SEL [N,A,B] H]	R181
CS2	[R/11+1,NC,MOS WD 2 SEL [N,A,B] H]	R179

Pin	Signal	Resistor
DD2	[R/11+1,NC,MOS WE [M+1] H]	R177
DE2	[R/11+1,NC,MOS WD 0 SEL [N,A,B] H]	R176
DF2	[R/11+1,NC,MOS WD SEL LD [M+0] H]	R175
DJ2	[R/11+1,NC,MOS WD 3 SEL [N,A,B] H]	R191
DK2	[R/11+1,NC,MOS WD SEL LD [M+3] H]	R192
DL2	[R/11+1,NC,MOS CAS [M+1] H]	R193
DM2	[R/[illegible]+1,NC,MOS CAS [M+2] H]	R194
DP2	[R/11+1,NC,MOS WE [M+2] H]	R195
DR2	[R/11+1,NC,MOS CAS [M+0] H]	R199
DS2	[R/11+1,NC,MOS CAS [M+3] H]	R198
ED2	[R/11+1,NC,MOS WE [M+3] H]	R204
EE2	[R/11+1,NC,MOS WD SEL LD [M+2] H]	R205
EF2	[R/8-R/9+R/11+1,NC,MOS ADR [R/11+4] [N,A,B] H]	R206
EJ2	[R/8-R/9+R/11+1,NC,MOS ADR [R/11+6] [N,A,B] H]	R208
EK2	[R/8-R/9+R/11+1,NC,MOS ADR [R/11+0] [N,A,B] H]	R209
EL2	[R/8-R/9+R/11+1,NC,MOS ADR [R/11+2] [N,A,B] H]	R202
EM2	[G+1,MOS WR DATA D[T*18+8+U][N,A,B] H,NC,NC]	R201
EP1	[R/9+1,NC,MOS GP[G] SELECT L]	R200
FE2	[G+1,MOS WR DATA D[T*18+10+U][N,A,B] H,NC,NC]	R210
FH2	[G+1,MOS WR DATA D[T*18+12+U][N,A,B] H,NC,NC]	R211
FL1	[G+1,MOS WR DATA D[T*18+14+U][N,A,B] H,NC,NC]	R212
FR2	[G+1,MOS WR DATA D[T*18+16+U][N,A,B] H,NC,NC]	R213

REVISIONS

CHK	CHANGE NO.	REV

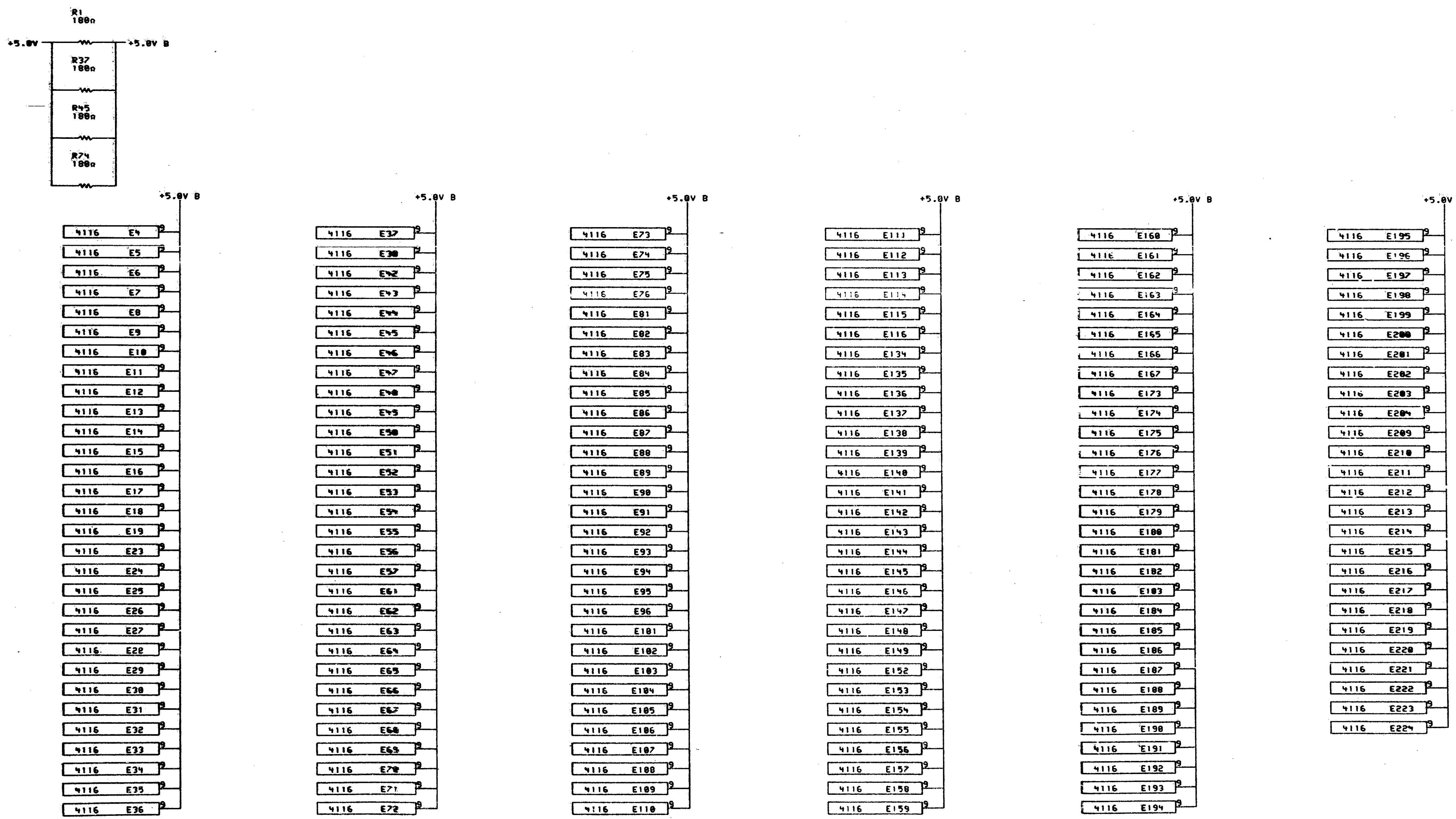
digital

DRN. P. Lucier DATE 04-APR-78
CHK'D W. Stephenson DATE 9/2/78
ENG Robert D. Hamel DATE 1 MAY 78
BOARD LOCATION:
SHEET 1 OF 1
SM15ED.DRW[4,671] 04-APR-78 15:01
NEXT HIGHER ASSEMBLY: D-DD-M8579-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS STORAGE SM TERMINATORS

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM15	

MR


R1 180Ω
+5.0V
+5.0V B
R37 180Ω
R45 180Ω
R74 180Ω
4116 E4
4116 E5
4116 E6
4116 E7
4116 E8
4116 E9
4116 E10
4116 E11
4116 E12
4116 E13
4116 E14
4116 E15
4116 E16
4116 E17
4116 E18
4116 E19
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4116 E220
4116 E221
4116 E222
4116 E223
4116 E224

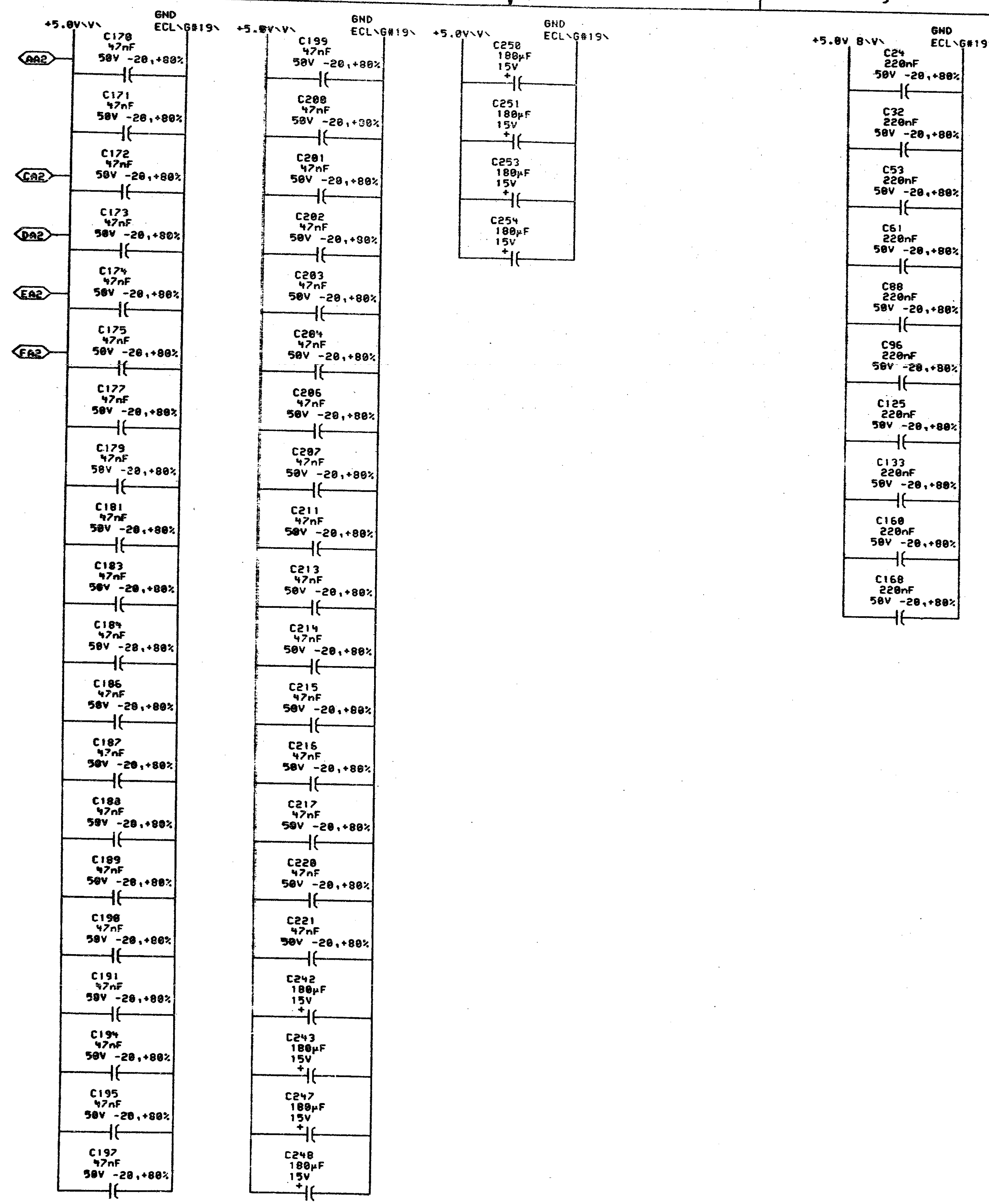
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN: P. Lucier DATE 24-APR-78 | ENG. DATE 1 MAY 78
CHK DATE 5/12/78
BOARD LOCATION:
SHEET 1 OF 1
SM16ED.DRW[4,6713] 24-APR-78 15:01
NEXT HIGHER ASSEMBLY: D-DD-M8579-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS STORAGE 5V PWR DISTRIB

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM16	

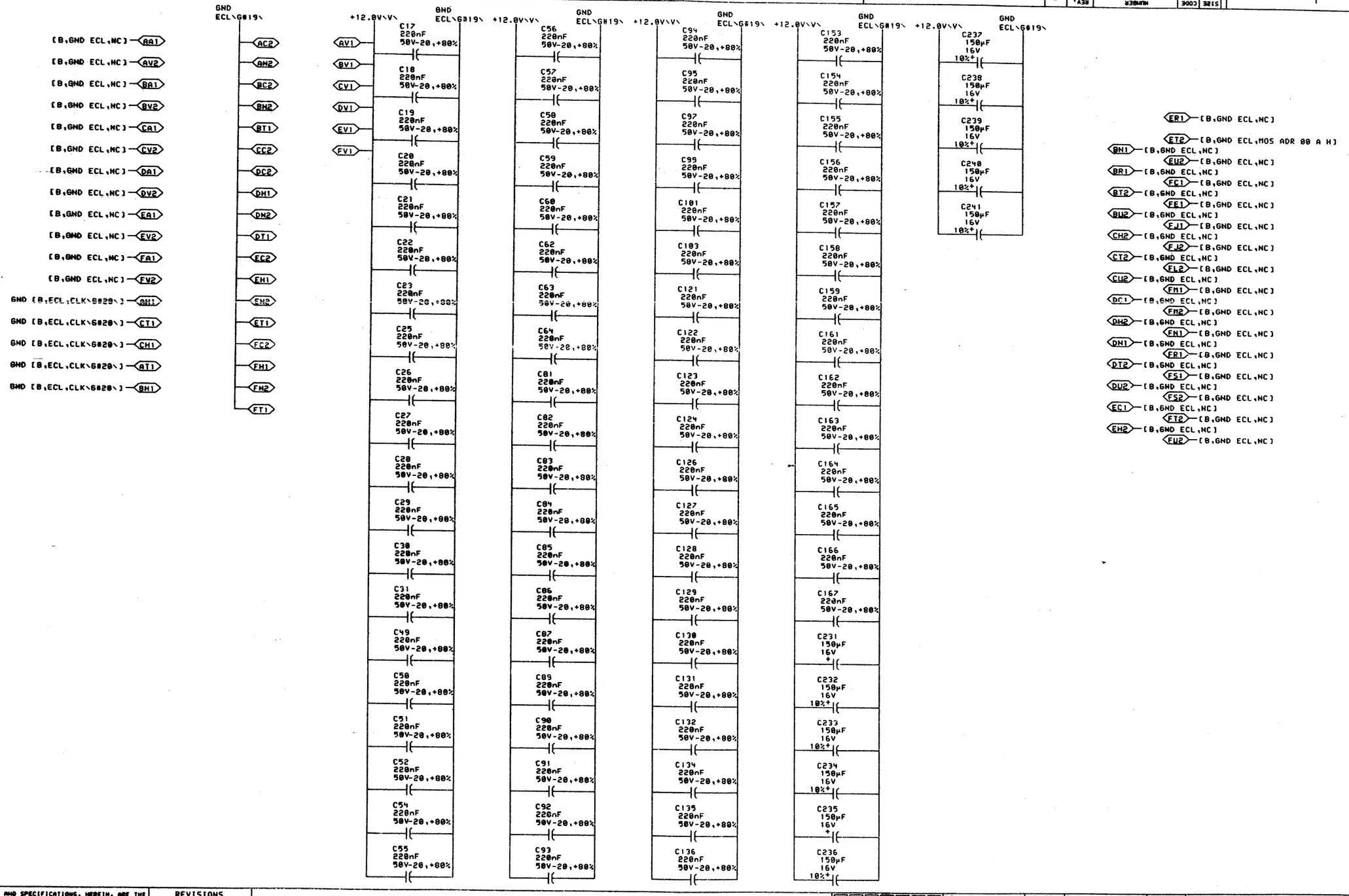


REVISIONS		
CHK	CHANGE NO.	REV

digital	DRN P. Lucier	DATE 04-APR-78	ENG. Robert D. [illegible] — DATE 1 MAY 78
	CHK'D [illegible]	DATE 4/7/78	BOARD LOCATION:
SM17ED.DRW[4,671]	04-APR-78 15:02		SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: MF20			NEXT HIGHER ASSEMBLY: D-DD-M8579-0

TITLE: MOS STORAGE 5V PWR, CAP, GND

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM17	



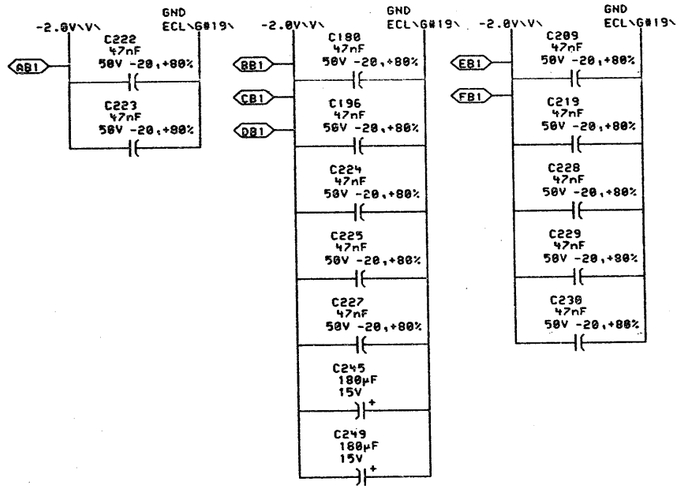
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier 04-APR-78
CHK R. Thomson 4/7/78
ENG Robert D. Hurd 1 MAY 78
BOARD LOCATION:
SHEET 1 OF 1
SMIBED,DRUL4,671] 04-APR-78 15:03
NEXT HIGHER ASSEMBLY: D-DD-M8579-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS STORAGE 12V PWR, CAP, GND

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM18	



REVISIONS		
CHK	CHANGE NO.	REV

digital

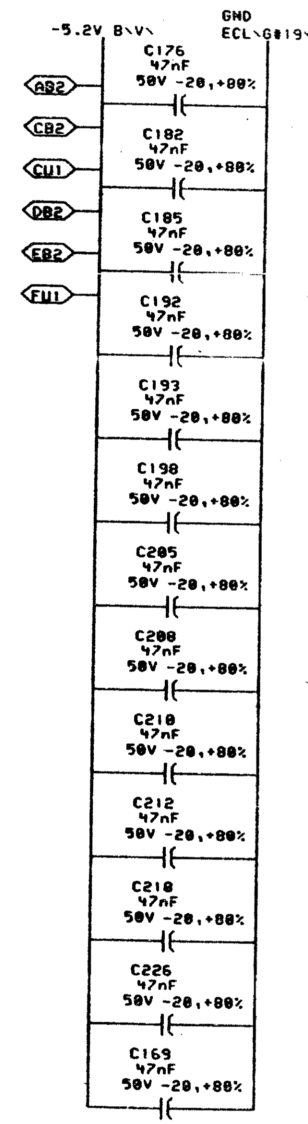
DRN P.Lucier 04-APR-78
CHK'D W.Stephenson 4/7/78
SM19ED.DRW[4,671] 04-APR-78 15:04
FIRST USED ON OPTION/MODEL: MF20

ENG. Robert D. Mead DATE 1 MAY 78
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8579-0

TITLE: MOS STORAGE -2V PWR, CAP, GND

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM19	

ME 1



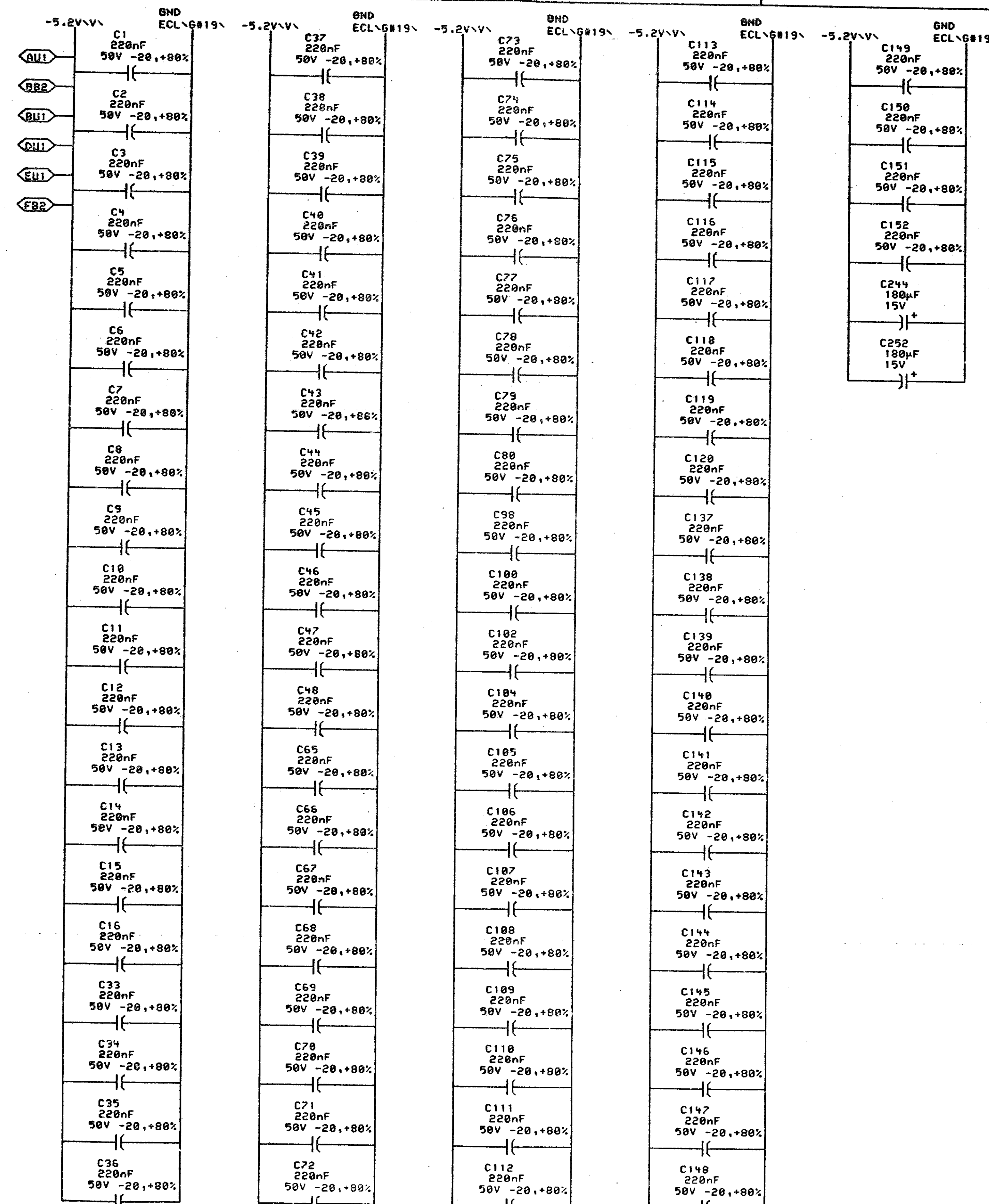
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. P. Lucier — DATE 04-APR-78
CHK'D — DATE 4/7/78
ENG. — DATE 1 MAY 78
BOARD LOCATION:
SHEET 1 OF 1
SM20ED.DRW(4,671) 04-APR-78 15:05
NEXT HIGHER ASSEMBLY: D-DD-M8579 0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS STORAGE -5V PWR1, CAP, GND

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM20	


-5.2V\V\
GND ECL\G#19\
AU1
BB2
BU1
DU1
EU1
FB2
C1 220nF 50V -20,+80%
C2 220nF 50V -20,+80%
C3 220nF 50V -20,+80%
C4 220nF 50V -20,+80%
C5 220nF 50V -20,+80%
C6 220nF 50V -20,+80%
C7 220nF 50V -20,+80%
C8 220nF 50V -20,+80%
C9 220nF 50V -20,+80%
C10 220nF 50V -20,+80%
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C150 220nF 50V -20,+80%
C151 220nF 50V -20,+80%
C152 220nF 50V -20,+80%
C244 180µF 15V
C252 180µF 15V

REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN: | DATE 04-APR-78 | ENG: Robert D. Hamel | DATE 1 MAY 78
CHK'D: | DATE | BOARD LOCATION: | SHEET 1 OF 1
SM21ED.DRW[4,671] 04-APR-78 15:08 | NEXT HIGHER ASSEMBLY: D-DD-M8579-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MOS STORAGE -5V PWR2, CAP, GND

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-SM21	

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R189(1)	SM14	C5	68Ω	%E150(1)
R188(1)	SM14	C5	68Ω	%E150(15)
R190(1)	SM14	C5	68Ω	%E150(2)
R184(1)	SM14	D5	68Ω	%E168(1)
R187(1)	SM14	C5	68Ω	%E168(14)
R186(1)	SM14	D5	68Ω	%E168(15)
R185(1)	SM14	D5	68Ω	%E168(2)
R197(1)	SM14	B6	68Ω	%E78(2)
R183(1)	SM14	A3	68Ω	CLK GATED [R]\@20\ H
R171(1)	SM14	A2	68Ω	SM CLK A H
R160(1)	SM14	A2	68Ω	SM CLK B H
R149(1)	SM14	A2	68Ω	SM CLK C H
R220(1)	SM14	A2	68Ω	SM CLK D H
R203(1)	SM14	A2	68Ω	SM CLK E H
R196(1)	SM14	A2	68Ω	SM CLK F H
R216(1)	SM14	C3	68Ω	SM DOUT SEL 1 H
R215(1)	SM14	D3	68Ω	SM DOUT SEL 2 H
R214(1)	SM14	D3	68Ω	SM LOAD RD DATA H
R219(1)	SM14	B3	68Ω	SM LOAD WR DATA H
R150(1)	SM14	B3	68Ω	SM LP BAC H
R217(1)	SM14	C3	68Ω	SM RD DATA EN H
R218(1)	SM14	B3	68Ω	SM SHIFT WR DATA H
R154(1)	SM15	C5	68Ω	SPARE TERM [R]0\@400\
R155(1)	SM15	C5	68Ω	SPARE TERM [R]2\@400\
R164(1)	SM15	C5	68Ω	[6+1,MOS WR DATA DET=18+0+U][N,A,B] H,NC,NC]
R210(1)	SM15	B3	68Ω	[6+1,MOS WR DATA DET=18+10+U][N,A,B] H,NC,NC]
R211(1)	SM15	B3	68Ω	[6+1,MOS WR DATA DET=18+12+U][N,A,B] H,NC,NC]
R212(1)	SM15	B3	68Ω	[6+1,MOS WR DATA DET=18+14+U][N,A,B] H,NC,NC]
R213(1)	SM15	B3	68Ω	[6+1,MOS WR DATA DET=18+16+U][N,A,B] H,NC,NC]
R178(1)	SM15	C5	68Ω	[6+1,MOS WR DATA DET=18+2+U][N,A,B] H,NC,NC]
R166(1)	SM15	B5	68Ω	[6+1,MOS WR DATA DET=18+4+U][N,A,B] H,NC,NC]
R168(1)	SM15	B5	68Ω	[6+1,MOS WR DATA DET=18+6+U][N,A,B] H,NC,NC]
R201(1)	SM15	B3	68Ω	[6+1,MOS WR DATA DET=18+8+U][N,A,B] H,NC,NC]
R156(1)	SM15	C5	68Ω	[6+1,MOS WR DATA DET=4+36+U][N,A,B] H,NC,NC]
R165(1)	SM15	C5	68Ω	[6+1,MOS WR DATA DET=4+38+U][N,A,B] H,NC,NC]
R199(1)	SM15	C3	68Ω	[R/11+1,NC,MOS CAS [M+0] H]
R193(1)	SM15	C3	68Ω	[R/11+1,NC,MOS CAS [M+1] H]
R194(1)	SM15	C3	68Ω	[R/11+1,NC,MOS CAS [M+2] H]
R198(1)	SM15	C3	68Ω	[R/11+1,NC,MOS CAS [M+3] H]
R148(1)	SM15	C5	68Ω	[R/11+1,NC,MOS DOUT SEL 1[N,A,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

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R147(1)	SM15	C5	68Ω	[R/11+1,NC,MOS DOUT SEL 2[N,A,B] H]
R167(1)	SM15	B5	68Ω	[R/11+1,NC,MOS HLD ADR EN [S] H]
R151(1)	SM15	C5	68Ω	[R/11+1,NC,MOS LOAD RD DATA SB[S] H]
R152(1)	SM15	C5	68Ω	[R/11+1,NC,MOS LOAD WR DATA SB[S] H]
R174(1)	SM15	B5	68Ω	[R/11+1,NC,MOS RAS [M+0] H]
R170(1)	SM15	B5	68Ω	[R/11+1,NC,MOS RAS [M+1] H]
R172(1)	SM15	B5	68Ω	[R/11+1,NC,MOS RAS [M+2] H]
R173(1)	SM15	B5	68Ω	[R/11+1,NC,MOS RAS [M+3] H]
R153(1)	SM15	C5	68Ω	[R/11+1,NC,MOS SHIFT WR DATA SM[S] H]
R176(1)	SM15	C3	68Ω	[R/11+1,NC,MOS WD 0 SEL [N,A,B] H]
R181(1)	SM15	B5	68Ω	[R/11+1,NC,MOS WD 1 SEL [N,A,B] H]
R179(1)	SM15	B5	68Ω	[R/11+1,NC,MOS WD 2 SEL [N,A,B] H]
R191(1)	SM15	C3	68Ω	[R/11+1,NC,MOS WD 3 SEL [N,A,B] H]
R175(1)	SM15	C3	68Ω	[R/11+1,NC,MOS WD SEL LD [M+0] H]
R182(1)	SM15	B5	68Ω	[R/11+1,NC,MOS WD SEL LD [M+1] H]
R205(1)	SM15	C3	68Ω	[R/11+1,NC,MOS WD SEL LD [M+2] H]
R192(1)	SM15	C3	68Ω	[R/11+1,NC,MOS WD SEL LD [M+3] H]
R180(1)	SM15	B5	68Ω	[R/11+1,NC,MOS WE [M+0] H]
R177(1)	SM15	C3	68Ω	[R/11+1,NC,MOS WE [M+1] H]
R195(1)	SM15	C3	68Ω	[R/11+1,NC,MOS WE [M+2] H]
R204(1)	SM15	C3	68Ω	[R/11+1,NC,MOS WE [M+3] H]
R209(1)	SM15	B3	68Ω	[R/8-R/9+R/11+1,NC,MOS ADR [R/11+0] [N,A,B] H]
R202(1)	SM15	B3	68Ω	[R/8-R/9+R/11+1,NC,MOS ADR [R/11+2] [N,A,B] H]
R206(1)	SM15	B3	68Ω	[R/8-R/9+R/11+1,NC,MOS ADR [R/11+4] [N,A,B] H]
R208(1)	SM15	B3	68Ω	[R/8-R/9+R/11+1,NC,MOS ADR [R/11+6] [N,A,B] H]
R169(1)	SM15	B5	68Ω	[R/9+1,NC,MOS GP[6] LP BAC H]
R200(1)	SM15	B3	68Ω	[R/9+1,NC,MOS GP[6] SELECT L]
R146(1)	SM15	C5	68Ω	[R/9+1,NC,MOS RD DATA EN SB[6] H]

REVISIONS		
CHK	CHANGE NO.	REV

DRN. C Smith	DATE 14-MAR-78	ENG Robert D. Hurd	DATE 1 MAY 78
CHK'D [illegible]	DATE 7 APR 78	BOARD LOCATION:	
D8579I.DRW[4,671]	06-APR-78 13:59	SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: MF20		NEXT HIGHER ASSEMBLY: B-DD-M8579-0	

TITLE: MOS STORAGE RESISTOR DRAWING

SIZE	CODE	NUMBER	REV.
D	CS	M8579-0-RES	

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS
			FILE: ORIGINAL LAYOUT	
			ECO NUMBER	
			MODULE REVISION	A
D-UA-M8580-0-0	4		DUAL TRANSLATOR	A
K-PL-M8580-0-DBP	2		DUAL TRANSLATOR	A
D-CS-M8580-0-DT01	1		DUAL TRANSLATOR	-
D-CS-M8580-0-DT02	1		DATA TRNCVR 0-5	-
D-CS-M8580-0-DT03	1		DATA TRNCVR 6-11	-
D-CS-M8580-0-DT04	1		DATA TRNCVR 12-17	-
D-CS-M8580-0-DT05	1		ADDRESS DRIVERS	-
D-CS-M8580-0-DT06	1		CTRL & REF VOLT	-
D-CS-M8580-0-DT07	1		MEM DATA DRVRS	-
D-CS-M8580-0-DT08	1		POWER. GND. CAPS.	-
D-CS-M8580-0-RES	1		TERMINATORS	-
D-MD-5012771-0-0	5		DRILL & ETCH DRAWING	A
		5012771	ETCH CIRCUIT BOARD	B
K-PC-M8580-0-DBC	-		P.C. DESIGN DATA BASE	A
POO-M8580-00	-		PROCESS SHEET (REF ONLY)	-

NOTES:

REVISIONS		
CHK	CHANGE NO.	REV

PROD. Bill S... 18 JUL 78

digital

DRN. P. Lucien DATE 14-JUL-78 · ENG. DJ Chin DATE 7-19-78

CHK'D P. Lucien · BOARD LOCATION: N/A · SHEET 1 OF 1

FIRST USED ON OPTION/MODEL: MF20 · NEXT HIGHER ASSEMBLY: NONE

TITLE: DUAL TRANSLATOR

SIZE D · CODE DD · NUMBER M8580-0 · REV.

SPARES

SPARE ES9

R23

NOTES: 1. FOR POWER & GND PINS REFER TO: D-CS-M8580-0-DT08

CHK	CHANGE NO	REV

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

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

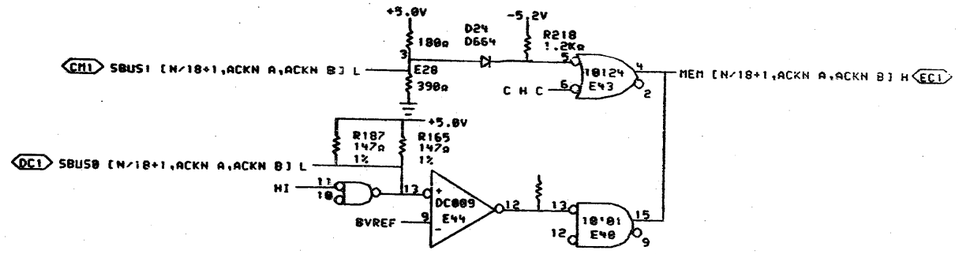
digital

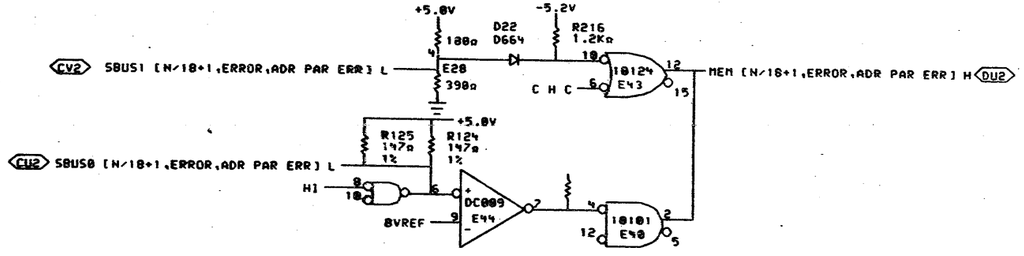
TITLE: DUAL TRANSLATOR

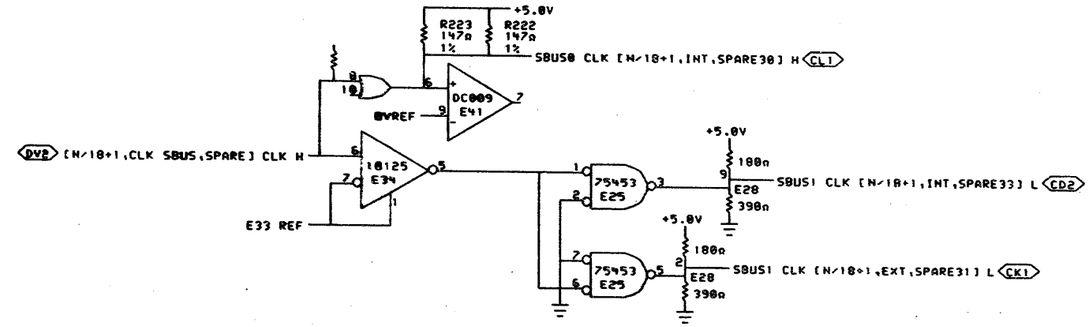
SCALE	SIZE	CODE	NUMBER	REV
SHT. 1 OF 4	D	UA	M8580-0-0	A

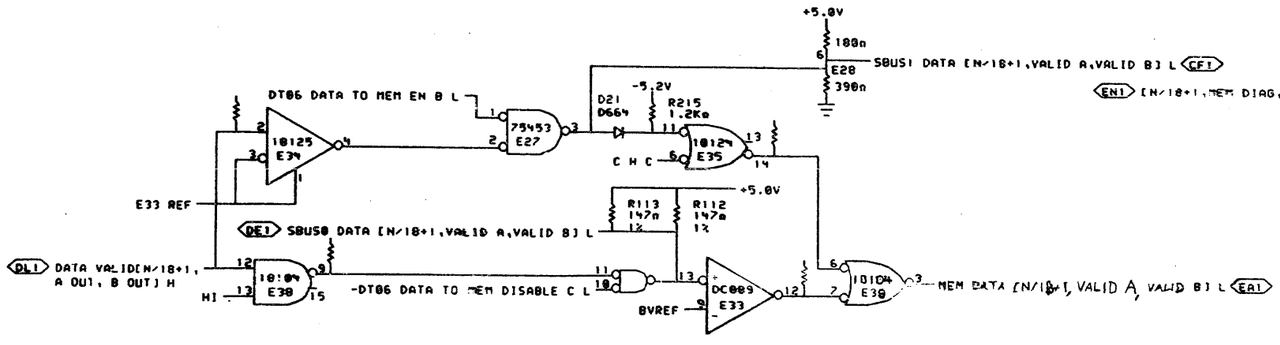
NEXT HIGHER ASSY. D-DC-M8580-0

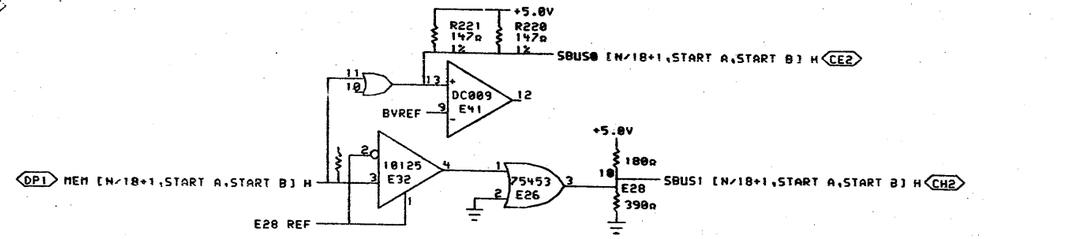
1 MS# 104423B

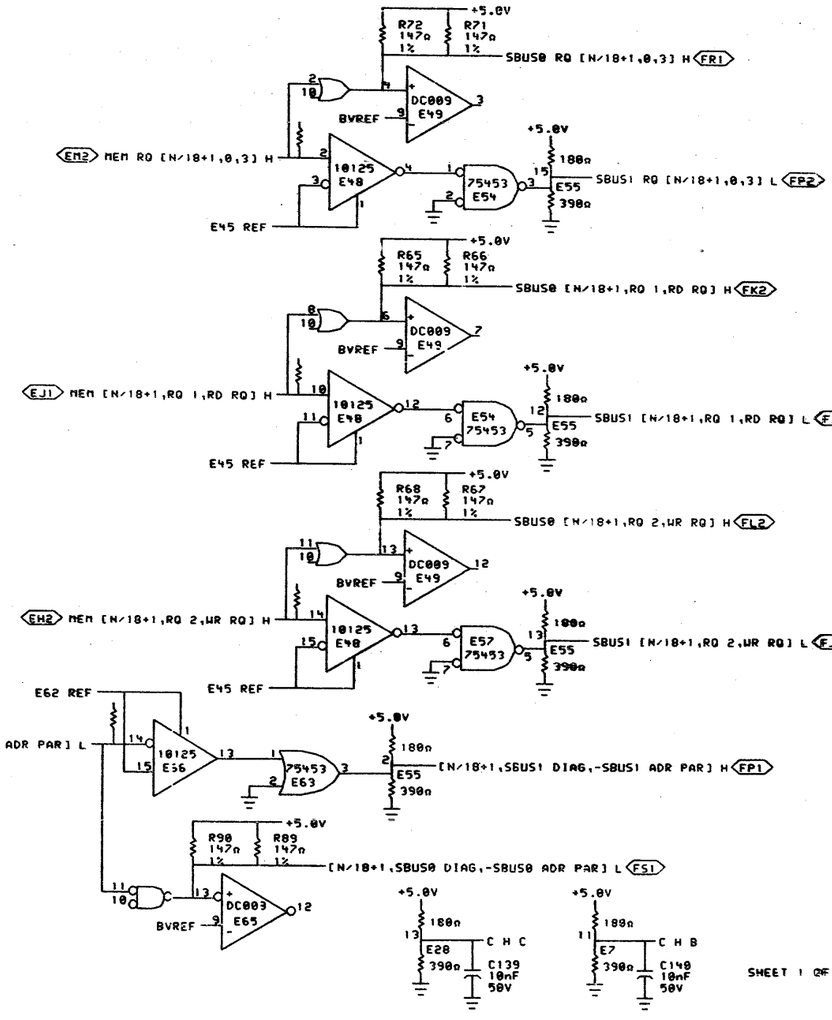












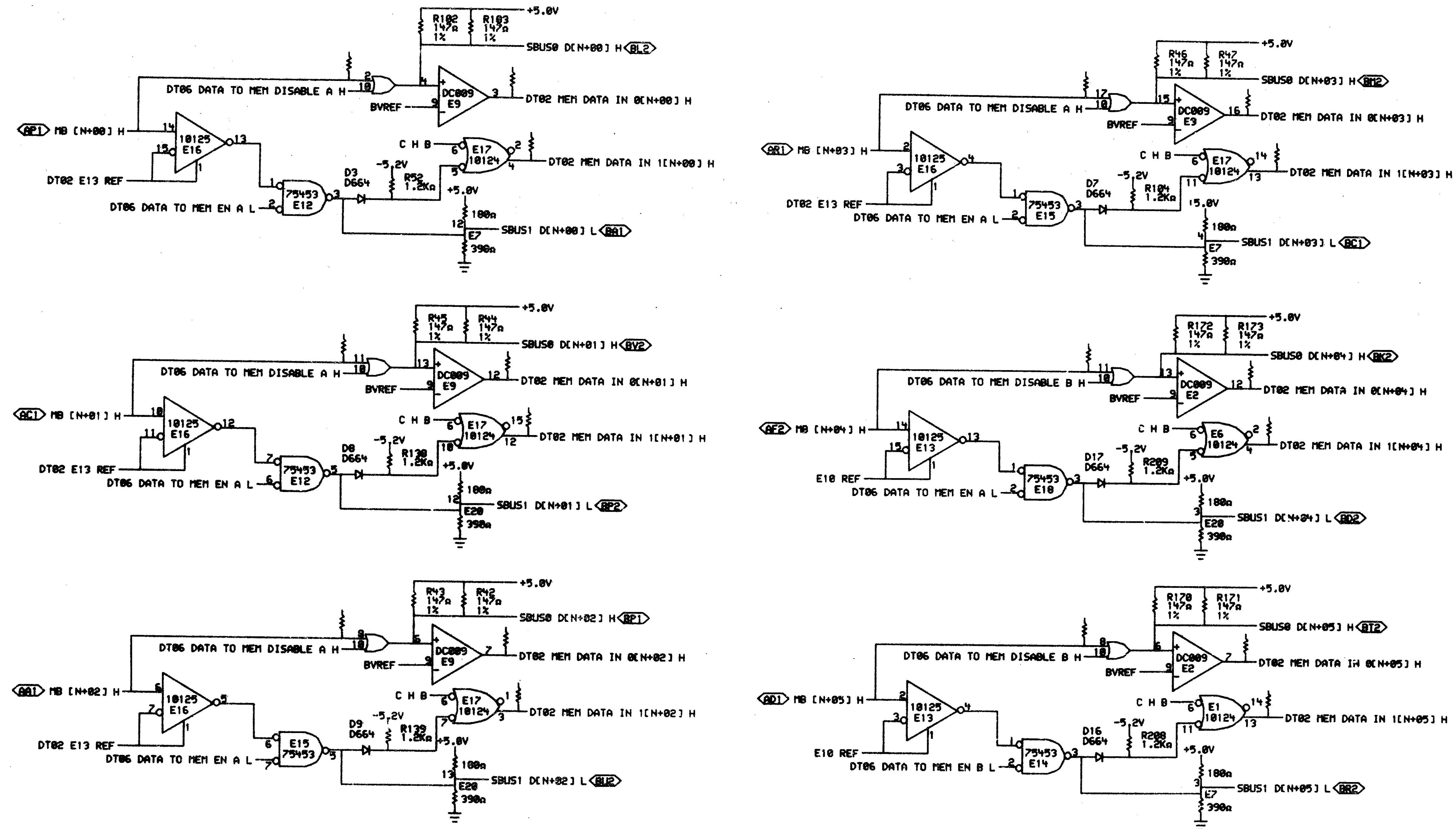
REVISIONS		
CHK	CHANGE NO.	REV

digital	DRN. C Smith	DATE 18-JUL-78	ENG. [illegible] DATE 19-JUL-78
	CHK'D. [illegible]	DATE 18 JUL 78	BOARD LOCATION:
PUB:(M8580-MOS)DT01EF.DRW 18-JUL-78 11:35			SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: MF20			NEXT HIGHER ASSEMBLY: D-DD-M8580-0

TITLE: DUAL TRANSLATOR

SIZE	CODE	NUMBER	REV.
D	CS	M8580-0-DT01	me

532



SHEET 2 OF 8

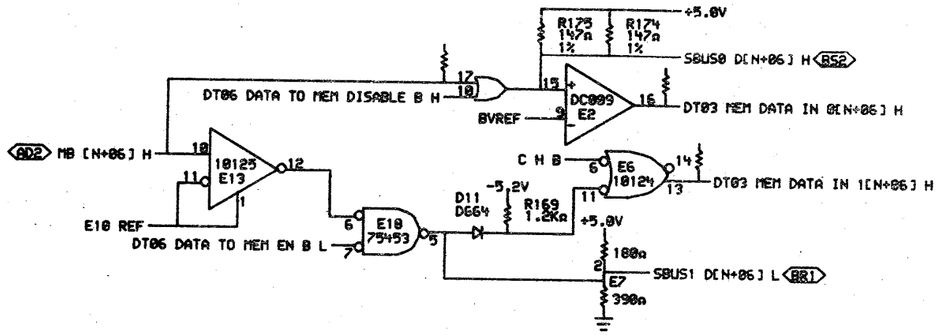
REVISIONS		
CHK	CHANGE NO.	REV

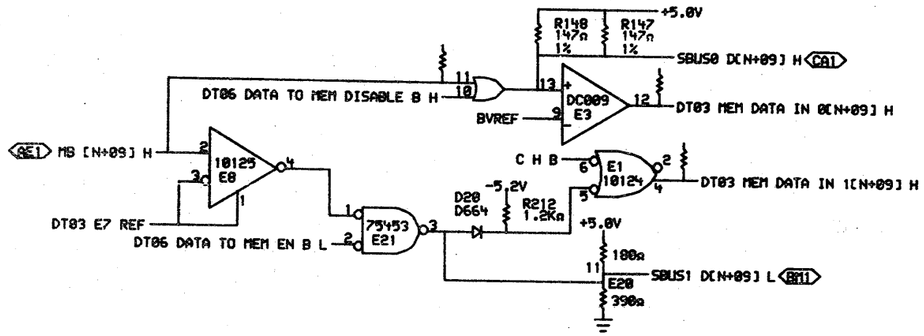
digital

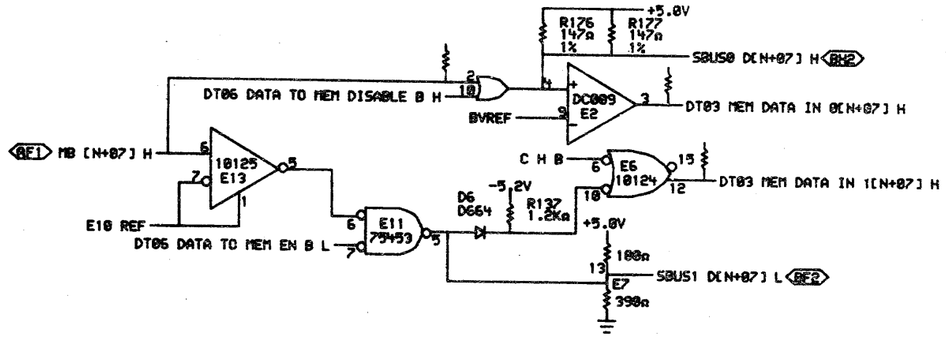
DRN. Smith DATE 14-JUL-78
ENG. D J Chin DATE 7-18-78
CHKD. DATE
BOARD LOCATION:
PUB: M8580-MOS DT02EF.DRW 06-JUN-78 10:33
NEXT HIGHER ASSEMBLY: D-DD-M8580-0
FIRST USED ON OPTION/MODEL: MF20

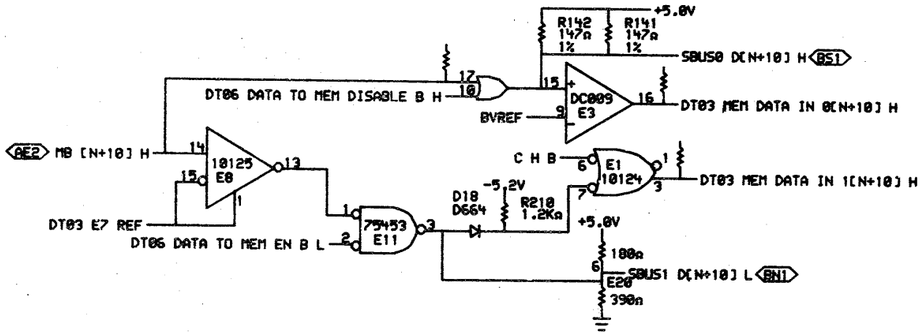
TITLE: DUAL TRANSLATOR DATA TRNCVR 0-5

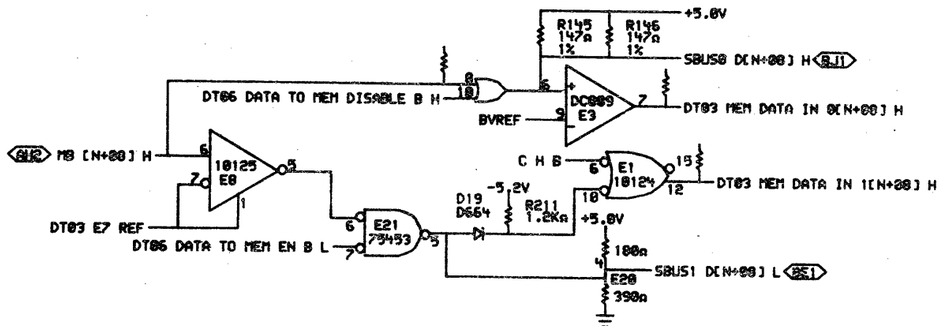
SIZE D CODE CS NUMBER M8580-0-DT02 REV.

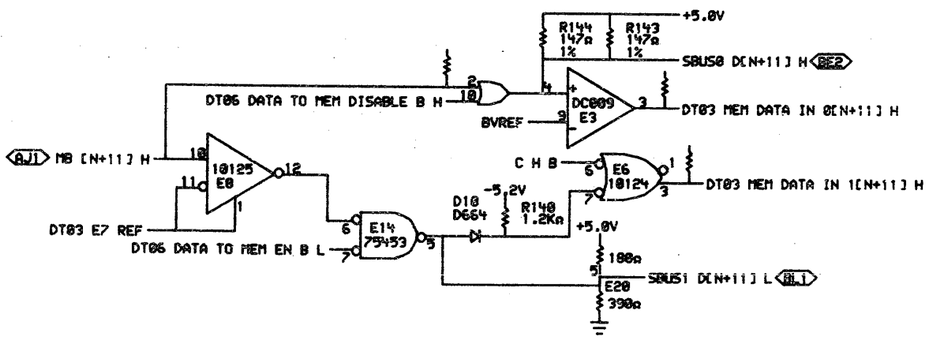












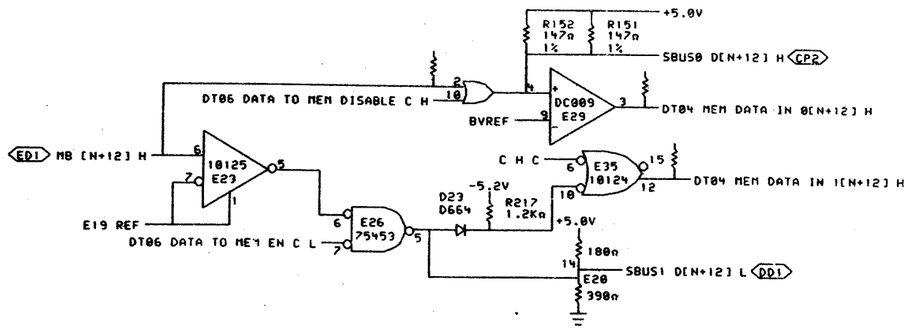
SHEET 3 OF 8

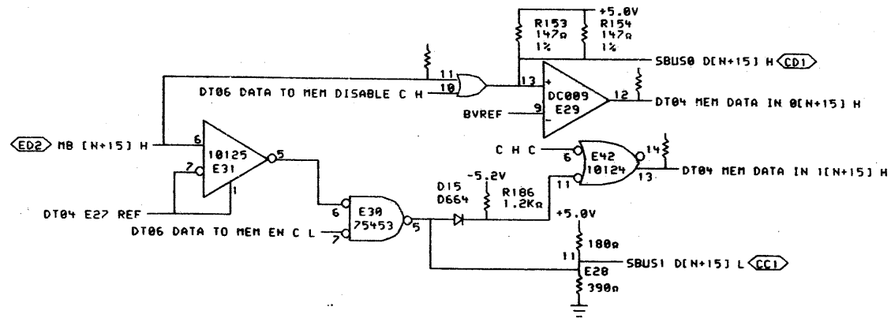
REVISIONS		
CHK	CHANGE NO.	REV

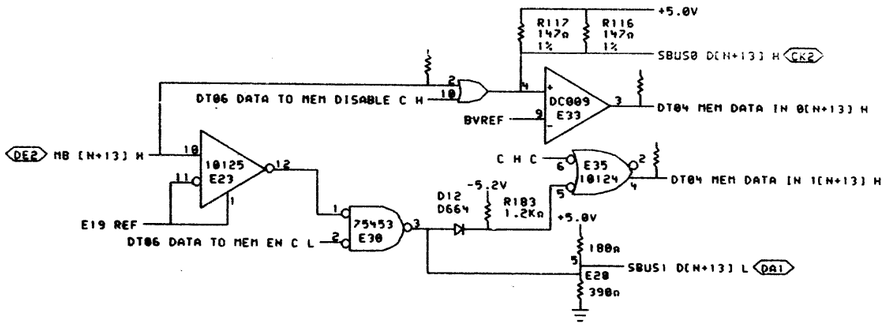
DRN. C Smith	DATE 14-JUL-78	ENG. D J Chin	DATE 7-18-78
CHK P. Lucier	DATE 18-Jul-78	BOARD LOCATION: SHEET 1 OF 1	
PLOT: [M8580-MOS]DT03RF.DRN 06-JUN-78 10:24		NEXT HIGHER ASSEMBLY: D-DD-M8580-0	
FIRST USED ON OPTION/MODEL: MF20			

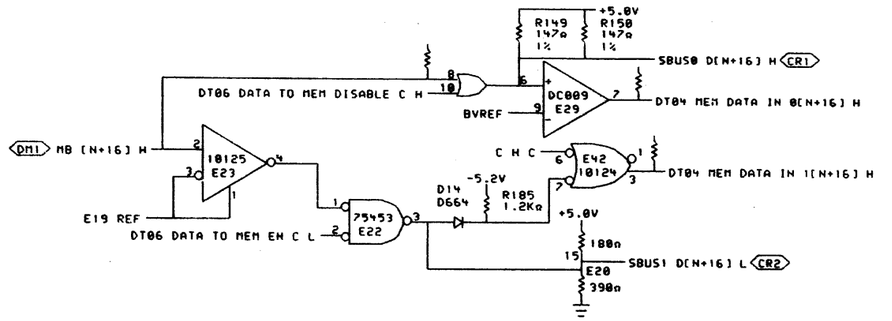
TITLE: DUAL TRANSLATOR DATA TRNCVR 6-11

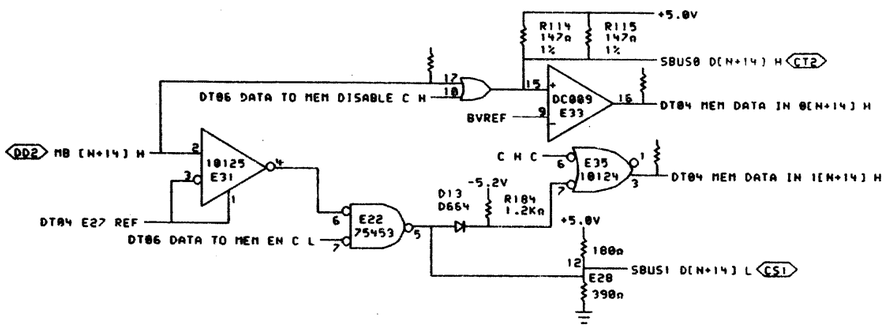
SIZE	CODE	NUMBER	REV.
D	CS	M8580-0-DT03	

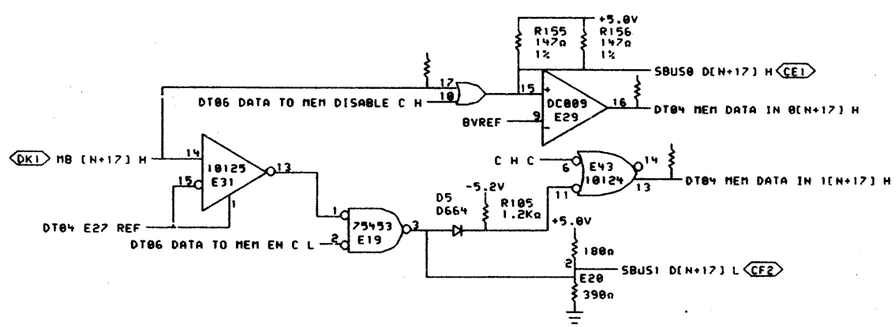












SHEET 4 OF 8

REVISIONS		
CHK	CHANGE NO.	REV

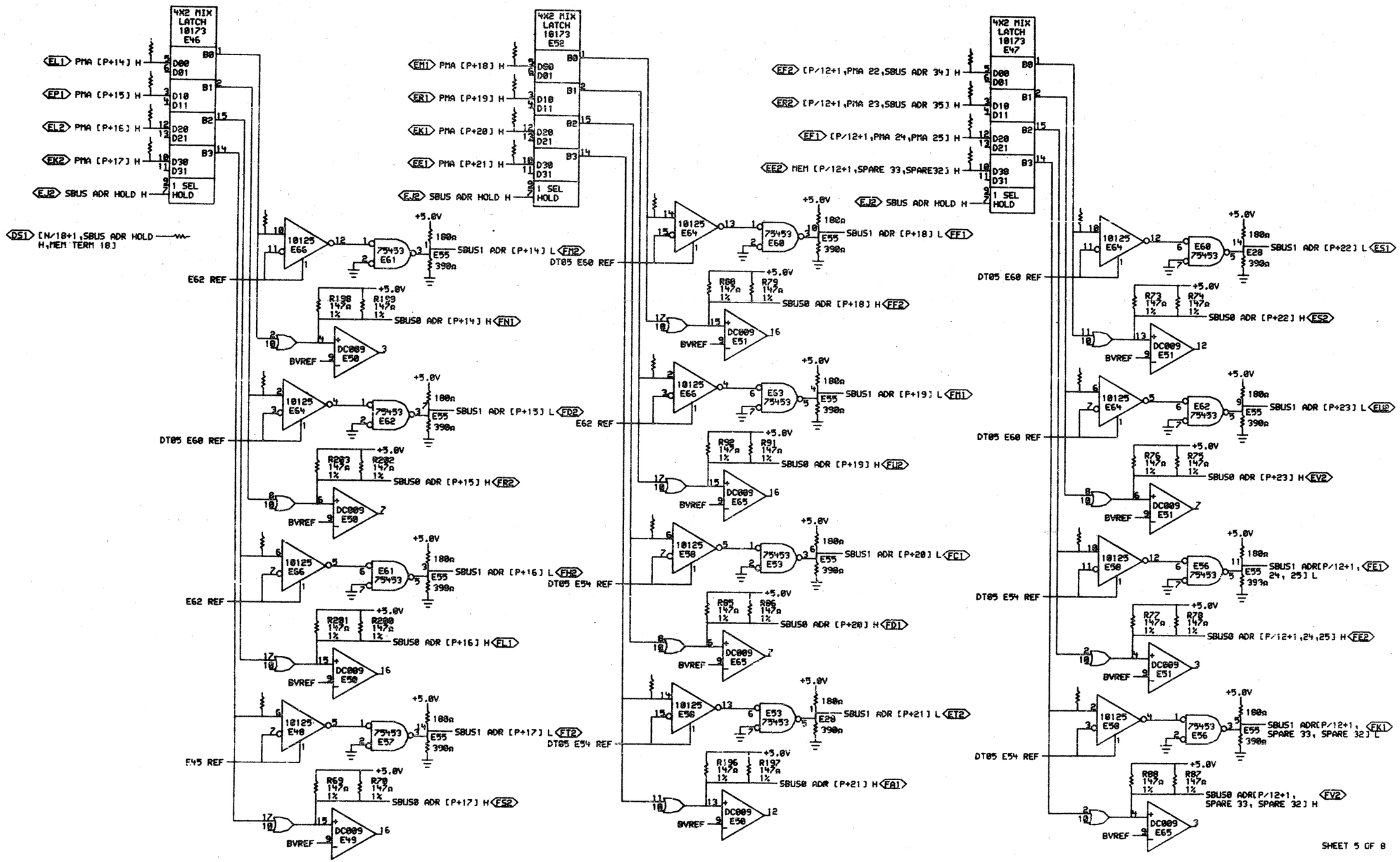
digital	DRN. C Smith	DATE 18-JUL-78	ENG. [illegible] DATE 17-Jul-78
	CHK. [illegible]	DATE 16 Jul 78	BOARD LOCATION:
PUB:<M8580-MOS>DT04EF.DRW 18-JUL-78 11:38			SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: MF20			NEXT HIGHER ASSEMBLY: D-DD-M8580-0

TITLE: DUAL TRANSLATOR DATA TRNCVR 12-17

SIZE	CODE	NUMBER	REV.
D	CS	M8580-0-DT04	

5,35

114



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REVISIONS		
CHK	CHANGE NO.	REV

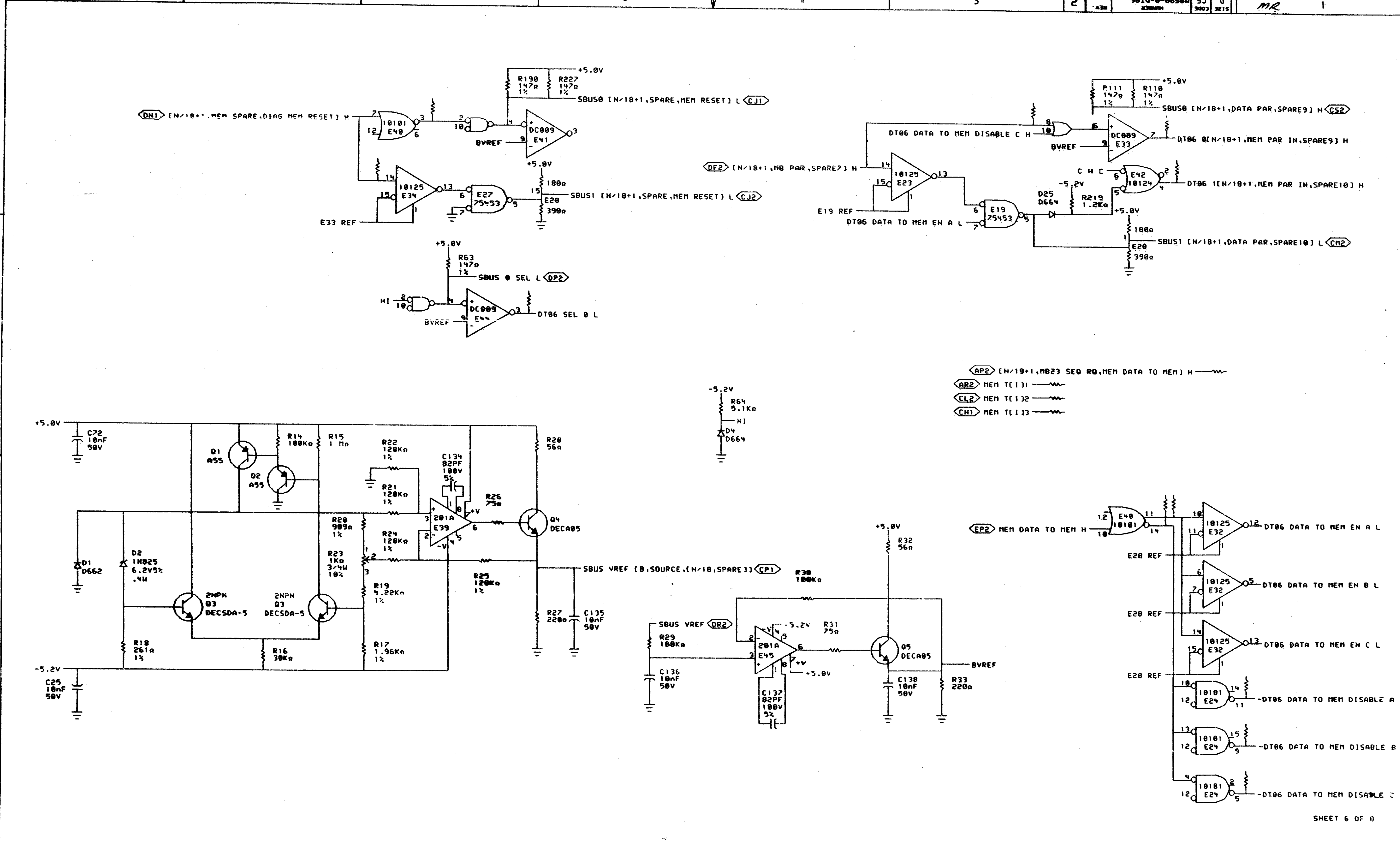
digital

DRN. E Smith — DATE 14-JUL-78 — ENG. SJ Chin — DATE 7-18-78
CHK P Lacey — DATE 18-Jul-78 — BOARD LOCATION: — SHEET 1 OF 1
PLOT:(M8580-MOS)DT05EF.DRW 05-JUN-78 10:36 — NEXT HIGHER ASSEMBLY: D-DD-M8580-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: DUAL TRANSLATOR ADDRESS DRIVERS

SIZE	CODE	NUMBER	REV.
D	CS	M8580-0-DT05	

115



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REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN. C. Smith DATE 18-JUL-78 | ENG E. Cox DATE 19-JUL-78
CHK'D P. Lucas DATE 18-JUL-78 | BOARD LOCATION:
PUB:(M8580-MOS)DT06EF.DRW 18-JUL-78 11:30 | SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: MF20 | NEXT HIGHER ASSEMBLY: D-DD-M8580-0

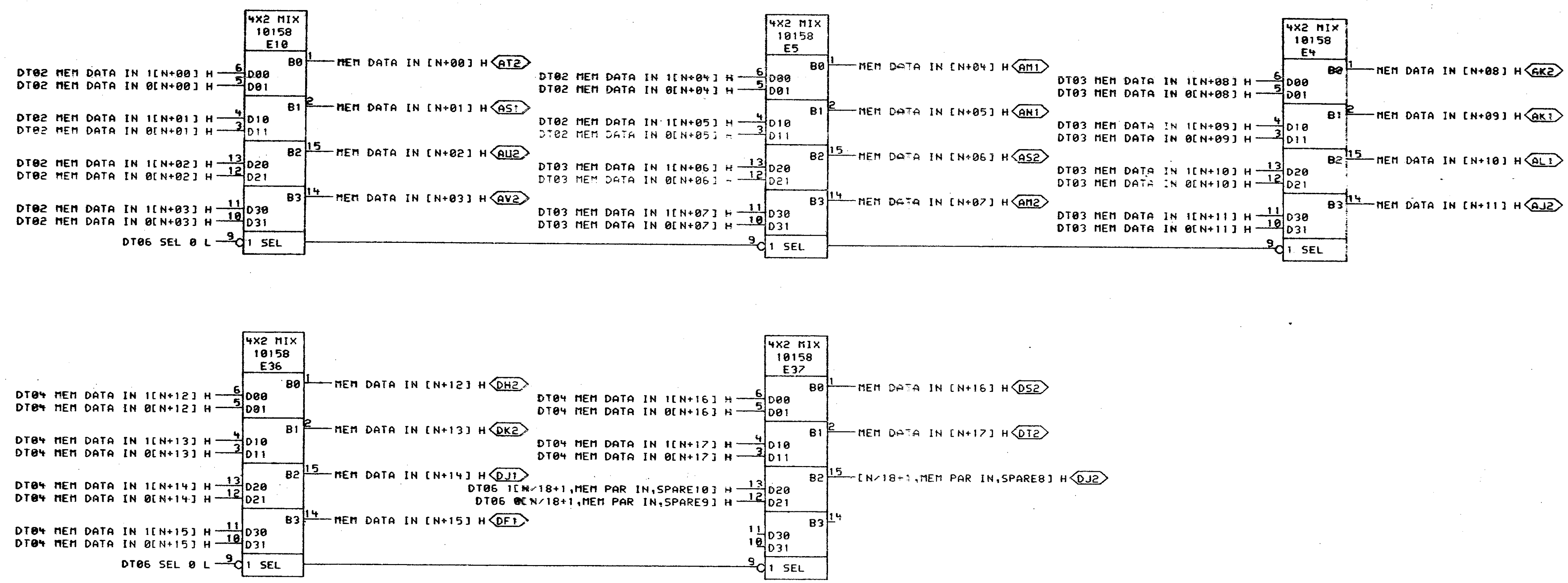
TITLE: DUAL TRANSLATOR CTRL & REF VOLT

SIZE	CODE	NUMBER	REV.
D	CS	M8580-0-DT06	

116

537

CS M8580-0-DT07



SHEET 7 OF 8

REVISIONS		
CHK	CHANGE NO.	REV

digital — DRN. C Smith, DATE 06-JUN-78; CHK. D. Lucius, DATE 18 Jul 78; ENG. DJ Chan, DATE 13 Jun 78

DT07EF.DRW[4,672] 05-JUN-78 16:53

BOARD LOCATION:

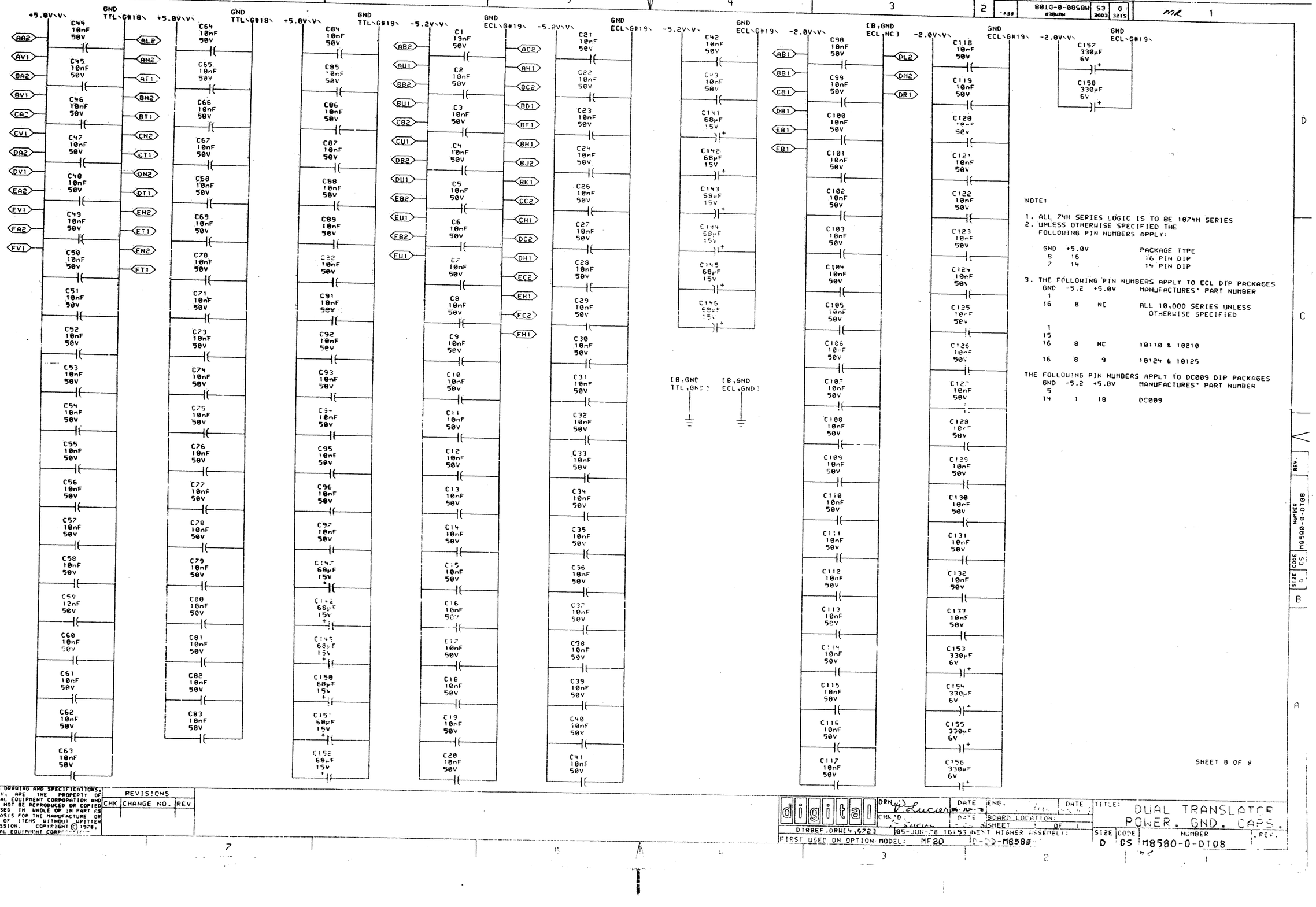
SHEET 1 OF 1

NEXT HIGHER ASSEMBLY: D-DD-M8580-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: BUS SELECT MEM DATA DRVRS

SIZE D CODE CS NUMBER M8580-0-DT07 REV.


+5.0V
GND TTL (G#18)
-5.2V
GND ECL (G#19)
-2.0V
GND ECL (NC)
AA2
AV1
BA2
BV1
CA2
CV1
DA2
DV1
EA2
EV1
FA2
FV1
AL2
AN2
AT1
BN2
BT1
CN2
CT1
DN2
DT1
EN2
ET1
FN2
FT1
AB2
AU1
BB2
BU1
CB2
CU1
DB2
DU1
EB2
EU1
FB2
FU1
AC2
AH1
BC2
BD1
BF1
BH1
BJ2
BK1
CC2
CH1
DC2
DH1
EC2
EH1
FC2
FH1
AB1
BB1
CB1
DB1
EB1
FB1
DL2
DM2
DR1
C44 10nF 50V
C45 10nF 50V
C46 10nF 50V
C47 10nF 50V
C48 10nF 50V
C49 10nF 50V
C50 10nF 50V
C51 10nF 50V
C52 10nF 50V
C53 10nF 50V
C54 10nF 50V
C55 10nF 50V
C56 10nF 50V
C57 10nF 50V
C58 10nF 50V
C59 10nF 50V
C60 10nF 50V
C61 10nF 50V
C62 10nF 50V
C63 10nF 50V
C64 10nF 50V
C65 10nF 50V
C66 10nF 50V
C67 10nF 50V
C68 10nF 50V
C69 10nF 50V
C70 10nF 50V
C71 10nF 50V
C73 10nF 50V
C74 10nF 50V
C75 10nF 50V
C76 10nF 50V
C77 10nF 50V
C78 10nF 50V
C79 10nF 50V
C80 10nF 50V
C81 10nF 50V
C82 10nF 50V
C83 10nF 50V
C84 10nF 50V
C85 10nF 50V
C86 10nF 50V
C87 10nF 50V
C88 10nF 50V
C89 10nF 50V
C90 10nF 50V
C91 10nF 50V
C92 10nF 50V
C93 10nF 50V
C94 10nF 50V
C95 10nF 50V
C96 10nF 50V
C97 10nF 50V
C147 68µF 15V
C148 68µF 15V
C149 68µF 15V
C150 68µF 15V
C151 68µF 15V
C152 68µF 15V
C1 10nF 50V
C2 10nF 50V
C3 10nF 50V
C4 10nF 50V
C5 10nF 50V
C6 10nF 50V
C7 10nF 50V
C8 10nF 50V
C9 10nF 50V
C10 10nF 50V
C11 10nF 50V
C12 10nF 50V
C13 10nF 50V
C14 10nF 50V
C15 10nF 50V
C16 10nF 50V
C17 10nF 50V
C18 10nF 50V
C19 10nF 50V
C20 10nF 50V
C21 10nF 50V
C22 10nF 50V
C23 10nF 50V
C24 10nF 50V
C25 10nF 50V
C27 10nF 50V
C28 10nF 50V
C29 10nF 50V
C30 10nF 50V
C31 10nF 50V
C32 10nF 50V
C33 10nF 50V
C34 10nF 50V
C35 10nF 50V
C36 10nF 50V
C37 10nF 50V
C38 10nF 50V
C39 10nF 50V
C40 10nF 50V
C41 10nF 50V
C42 10nF 50V
C43 10nF 50V
C141 68µF 15V
C142 68µF 15V
C143 68µF 15V
C144 68µF 15V
C145 68µF 15V
C146 68µF 15V
C98 10nF 50V
C99 10nF 50V
C100 10nF 50V
C101 10nF 50V
C102 10nF 50V
C103 10nF 50V
C104 10nF 50V
C105 10nF 50V
C106 10nF 50V
C107 10nF 50V
C108 10nF 50V
C109 10nF 50V
C110 10nF 50V
C111 10nF 50V
C112 10nF 50V
C113 10nF 50V
C114 10nF 50V
C115 10nF 50V
C116 10nF 50V
C117 10nF 50V
C118 10nF 50V
C119 10nF 50V
C120 10nF 50V
C121 10nF 50V
C122 10nF 50V
C123 10nF 50V
C124 10nF 50V
C125 10nF 50V
C126 10nF 50V
C127 10nF 50V
C128 10nF 50V
C129 10nF 50V
C130 10nF 50V
C131 10nF 50V
C132 10nF 50V
C133 10nF 50V
C153 330µF 6V
C154 330µF 6V
C155 330µF 6V
C156 330µF 6V
C157 330µF 6V
C158 330µF 6V
[B,GND TTL,GND]
[B,GND ECL,GND]
NOTE:
1. ALL 74H SERIES LOGIC IS TO BE 1074H SERIES
2. UNLESS OTHERWISE SPECIFIED THE FOLLOWING PIN NUMBERS APPLY:
GND +5.0V PACKAGE TYPE
8 16 16 PIN DIP
7 14 14 PIN DIP
3. THE FOLLOWING PIN NUMBERS APPLY TO ECL DIP PACKAGES
GND -5.2 +5.0V MANUFACTURES' PART NUMBER
1 16 8 NC ALL 10,000 SERIES UNLESS OTHERWISE SPECIFIED
1 15 16 8 NC 10110 & 10210
16 8 9 10124 & 10125
THE FOLLOWING PIN NUMBERS APPLY TO DC009 DIP PACKAGES
GND -5.2 +5.0V MANUFACTURES' PART NUMBER
5 14 1 18 DC009
SHEET 8 OF 8
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REVISIONS
CHK CHANGE NO. REV
digital
DRN
CHK'D
DATE
ENG.
BOARD LOCATION:
SHEET OF
DT08EF.DRA[4,672] 05-JUN-78 16:53 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION MODEL: MF20
TITLE: DUAL TRANSLATOR POWER, GND, CAPS.
SIZE D CODE CS NUMBER M8580-0-DT08 REV.
REV. 1
SIZE D CODE CS NUMBER M8580-0-DT08

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R61(1)	DT01	A6	68Ω	%E33(12)
R62(1)	DT01	A6	68Ω	%E35(14)
R109(1)	DT01	A7	68Ω	%E38(9)
R58(1)	DT06	B2	68Ω	%E40(11)
R13(1)	DT06	B2	68Ω	%E40(14)
R188(1)	DT06	D6	68Ω	%E40(3)
R228(1)	DT01	D6	68Ω	%E44(12)
R224(1)	DT01	C6	68Ω	%E44(7)
R97(1)	DT05	C7	68Ω	%E46(1)
R128(1)	DT05	A7	68Ω	%E46(14)
R94(1)	DT05	B7	68Ω	%E46(15)
R205(1)	DT05	C7	68Ω	%E46(2)
R167(1)	DT05	C2	68Ω	%E47(1)
R131(1)	DT05	A2	68Ω	%E47(14)
R130(1)	DT05	B2	68Ω	%E47(15)
R204(1)	DT05	C2	68Ω	%E47(2)
R166(1)	DT05	C5	68Ω	%E52(1)
R232(1)	DT05	A5	68Ω	%E52(14)
R93(1)	DT05	B5	68Ω	%E52(15)
R95(1)	DT05	C5	68Ω	%E52(2)
R60(1)	DT01	A8	68Ω	DATA VALID[N/18+1, A OUT, B OUT] H
R49(1)	DT02	D5	68Ω	DT02 MEM DATA IN 0[N+00] H
R51(1)	DT02	C5	68Ω	DT02 MEM DATA IN 0[N+01] H
R8(1)	DT02	B5	68Ω	DT02 MEM DATA IN 0[N+02] H
R6(1)	DT02	D2	68Ω	DT02 MEM DATA IN 0[N+03] H
R39(1)	DT02	C2	68Ω	DT02 MEM DATA IN 0[N+04] H
R41(1)	DT02	B2	68Ω	DT02 MEM DATA IN 0[N+05] H
R48(1)	DT02	C5	68Ω	DT02 MEM DATA IN 1[N+00] H
R50(1)	DT02	B5	68Ω	DT02 MEM DATA IN 1[N+01] H
R10(1)	DT02	A5	68Ω	DT02 MEM DATA IN 1[N+02] H
R7(1)	DT02	C2	68Ω	DT02 MEM DATA IN 1[N+03] H
R38(1)	DT02	B2	68Ω	DT02 MEM DATA IN 1[N+04] H
R40(1)	DT02	A2	68Ω	DT02 MEM DATA IN 1[N+05] H
R1(1)	DT03	D5	68Ω	DT03 MEM DATA IN 0[N+06] H
R3(1)	DT03	C5	68Ω	DT03 MEM DATA IN 0[N+07] H
R100(1)	DT03	B5	68Ω	DT03 MEM DATA IN 0[N+08] H
R132(1)	DT03	D2	68Ω	DT03 MEM DATA IN 0[N+09] H
R35(1)	DT03	C2	68Ω	DT03 MEM DATA IN 0[N+10] H
R37(1)	DT03	B2	68Ω	DT03 MEM DATA IN 0[N+11] H
R5(1)	DT03	D5	68Ω	DT03 MEM DATA IN 1[N+06] H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R2(1)	DT03	B5	68Ω	DT03 MEM DATA IN 1[N+07] H
R99(1)	DT03	A5	68Ω	DT03 MEM DATA IN 1[N+08] H
R101(1)	DT03	D2	68Ω	DT03 MEM DATA IN 1[N+09] H
R34(1)	DT03	B2	68Ω	DT03 MEM DATA IN 1[N+10] H
R36(1)	DT03	A2	68Ω	DT03 MEM DATA IN 1[N+11] H
R162(1)	DT04	D5	68Ω	DT04 MEM DATA IN 0[N+12] H
R164(1)	DT04	C5	68Ω	DT04 MEM DATA IN 0[N+13] H
R158(1)	DT04	B5	68Ω	DT04 MEM DATA IN 0[N+14] H
R159(1)	DT04	D2	68Ω	DT04 MEM DATA IN 0[N+15] H
R119(1)	DT04	C2	68Ω	DT04 MEM DATA IN 0[N+16] H
R121(1)	DT04	B2	68Ω	DT04 MEM DATA IN 0[N+17] H
R161(1)	DT04	D5	68Ω	DT04 MEM DATA IN 1[N+12] H
R163(1)	DT04	B5	68Ω	DT04 MEM DATA IN 1[N+13] H
R157(1)	DT04	A5	68Ω	DT04 MEM DATA IN 1[N+14] H
R160(1)	DT04	D2	68Ω	DT04 MEM DATA IN 1[N+15] H
R118(1)	DT04	B2	68Ω	DT04 MEM DATA IN 1[N+16] H
R120(1)	DT04	A2	68Ω	DT04 MEM DATA IN 1[N+17] H
R122(1)	DT06	D2	68Ω	DT06 0[N/18+1,MEM PAR IN,SPARE9] H
R123(1)	DT06	D2	68Ω	DT06 1[N/18+1,MEM PAR IN,SPARE10] H
R98(1)	DT06	A1	68Ω	DT06 DATA TO MEM DISABLE A H
R168(1)	DT06	A1	68Ω	DT06 DATA TO MEM DISABLE B H
R182(1)	DT06	A1	68Ω	DT06 DATA TO MEM DISABLE C H
R4(1)	DT06	C6	68Ω	-DT06 SEL 0 H
R12(1)	DT02	D6	68Ω	MB [N+00] H
R9(1)	DT02	C6	68Ω	MB [N+01] H
R54(1)	DT02	B6	68Ω	MB [N+02] H
R55(1)	DT02	D3	68Ω	MB [N+03] H
R180(1)	DT02	C3	68Ω	MB [N+04] H
R179(1)	DT02	B3	58Ω	MB [N+05] H
R181(1)	DT03	D6	68Ω	MB [N+06] H
R178(1)	DT03	C6	68Ω	MB [N+07] H
R134(1)	DT03	B6	68Ω	MB [N+08] H
R133(1)	DT03	D3	68Ω	MB [N+09] H
R135(1)	DT03	C3	68Ω	MB [N+10] H
R136(1)	DT03	B3	68Ω	MB [N+11] H
R57(1)	DT04	D6	68Ω	MB [N+12] H
R11(1)	DT04	C6	68Ω	MB [N+13] H
R107(1)	DT04	B6	68Ω	MB [N+14] H
R106(1)	DT04	D3	68Ω	MB [N+15] H
R53(1)	DT04	C3	68Ω	MB [N+16] H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R108(1)	DT04	B3	68Ω	MB [N+17] H
R129(1)	DT01	C3	68Ω	MEM RQ [N/18+1,0,3] H
R206(1)	DT06	C3	68Ω	MEM T[1]1
R214(1)	DT06	C3	68Ω	MEM T[1]2
R213(1)	DT06	C3	68Ω	MEM T[1]3
R126(1)	DT01	B3	68Ω	MEM [N/18+1,RQ 1,RD RQ] H
R127(1)	DT01	B3	68Ω	MEM [N/18+1,RQ 2,WR RQ] H
R56(1)	DT01	D3	68Ω	MEM [N/18+1,START A,START B] H
R195(1)	DT05	D3	68Ω	MEM [P/12+1,SPARE 33,SPARE32] H
R230(1)	DT05	D7	68Ω	PMA [P+14] H
R231(1)	DT05	D7	68Ω	PMA [P+15] H
R191(1)	DT05	D7	68Ω	PMA [P+16] H
R229(1)	DT05	D7	68Ω	PMA [P+17] H
R82(1)	DT05	D5	68Ω	PMA [P+18] H
R81(1)	DT05	D5	68Ω	PMA [P+19] H
R83(1)	DT05	D5	68Ω	PMA [P+20] H
R84(1)	DT05	D5	68Ω	PMA [P+21] H
R189(1)	DT01	B7	68Ω	[N/18+1,CLK SBUS,SPARE] CLK H
R59(1)	DT06	D3	68Ω	[N/18+1,MB PAR,SPARE7] H
R207(1)	DT06	C2	68Ω	[N/18+1,MB23 SEQ RQ,MEM DATA TO MEM] H
R96(1)	DT01	A3	68Ω	-[N/18+1,MEM DIAG,-MEM ADR PAR] H
R225(1)	DT06	D6	68Ω	[N/18+1,MEM SPARE,DIAG MEM RESET] H
R226(1)	DT05	C7	68Ω	[N/18+1,SBUS ADR HOLD H,MEM TERM 18]
R192(1)	DT05	D3	68Ω	[P/12+1,PMA 22,SBUS ADR 34] H
R193(1)	DT05	D3	68Ω	[P/12+1,PMA 23,SBUS ADR 35] H
R194(1)	DT05	D3	68Ω	[P/12+1,PMA 24,PMA 25] 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 09-JUN-78 — ENG. J. Chin, DATE 29 Jun 78 — CHK'D. P. Lucia, DATE 15 Jul 78 — BOARD LOCATION: — SHEET 1 OF 1

F85801.DRW[4,672] 09-JUN-78 09:11 — NEXT HIGHER ASSEMBLY: D-DD-M8580-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: DUAL TRANSLATOR TERMINATORS

SIZE D CODE CS NUMBER M8580-0-RES REV.

DRAWING NUMBER	PAGE	PART NO.	DESCRIPTION	REVISIONS
			FILE: ORIGINAL LAYOUT	
			ECO NUMBER	
			MODULE REVISION	A
D-UA-M8581-0-0	5		XBUS TRANSLATOR	A
K-PL-M8581-0-DBP	2		XBUS TRANSLATOR	A
D-CS-M8581-0-DX01	1		XBUS TRANSLATOR	-
D-CS-M8581-0-DX02	1		DATA TRNCVR 0-5	-
D-CS-M8581-0-DX03	1		DATA TRNCVR 6-11	-
D-CS-M8581-0-DX04	1		DATA TRNCVR 12-17	-
D-CS-M8581-0-DX05	1		ADDRESS DRIVERS	-
D-CS-M8581-0-DX06	1		CTRL & REF VOLT	-
D-CS-M8581-0-DX07	1		POWER. GND. CAPS.	-
D-CS-M8581-0-RES	1		TERMINATORS	-
D-MD-5013219-0-0	5		DRILL & ETCH DRAWING	A
		5013219	ETCH CIRCUIT BOARD	B
K-PC-M8581-0-DBC	-		P.C. DESIGN DATA BASE	A
P00-M8581-00	-		PROCESS SHEET (REF ONLY)	-

NOTES:

REVISIONS: CHK | CHANGE NO. | REV

digital

DRN: P. Lucier DATE 16-AUG-78
CHK'D: M. Morand
BOARD LOCATION: N/A
SHEET 1 OF 1
DSK:8581DD.T2P[4,673] 16-AUG-78 13:58
FIRST USED ON OPTION/MODEL: MF20
NEXT HIGHER ASSEMBLY: NONE

TITLE: XBUS TRANSLATOR

SIZE D | CODE DD | NUMBER M8581-0 | REV.

34 (QTY 12) COMPONENT SIDE VIEW 33

SPARES

SPARE E45

SPARE E14

SPARE E9

SPARE

NOTES:

CHK	CHANGE NO	REV

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

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

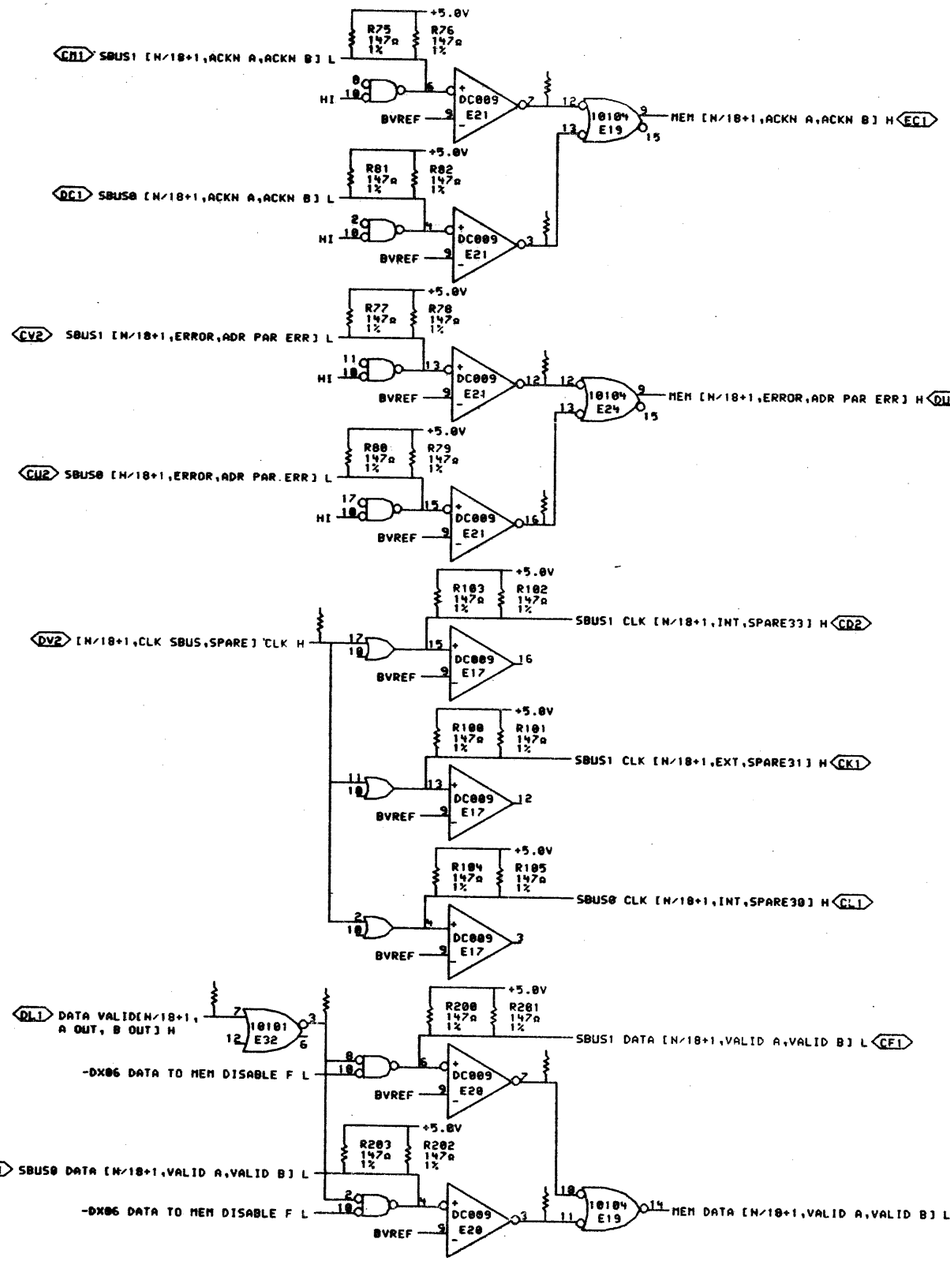
digital

TITLE XBUS TRANSLATOR

SCALE 2/1
SHT. 1 OF 5
NEXT HIGHER ASSY. D-DD-M8581-0

SIZE	CODE	NUMBER	REV
D	UA	M8581-0	A

1 MS#



SHEET 1 OF 7

REVISIONS		
CHK	CHANGE NO.	REV

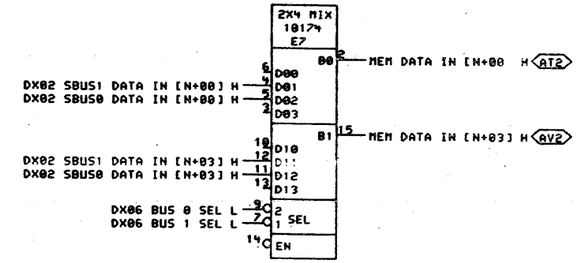
digital

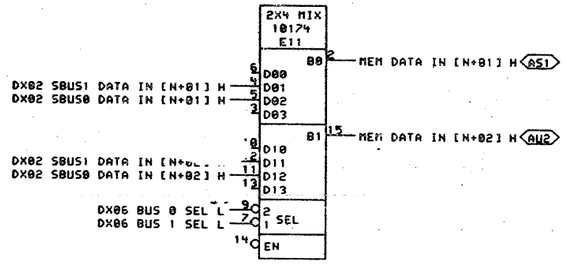
DRN [illegible] DATE 26-JUL-78 ENG [illegible] DATE [illegible]
CHK [illegible] DATE [illegible]
PUB:<M8581-MOS>DX01B.DRW 26-JUL-78 [illegible]
FIRST USED ON OPTION/MODEL: MF20

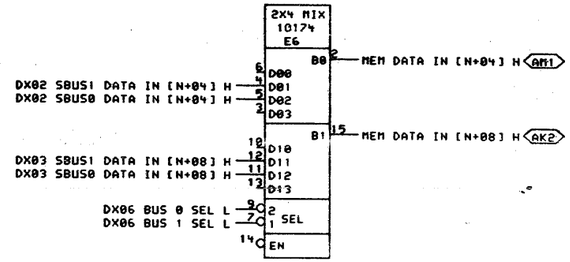
TITLE: XBUS TRANSLATOR
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8581-0

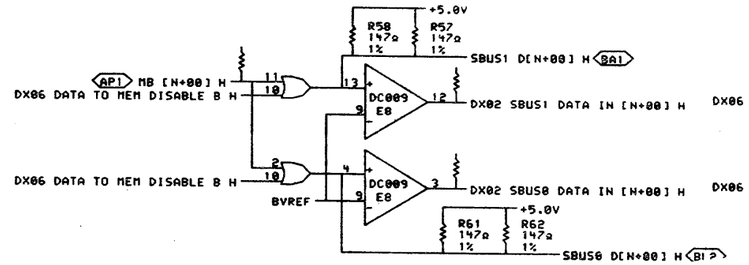
SIZE	CODE	NUMBER	REV.
D	CS	M8581-0-DX01	

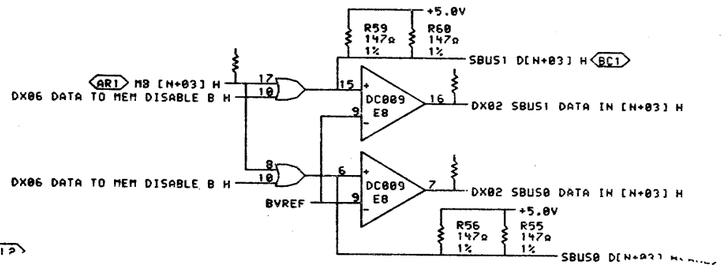
me

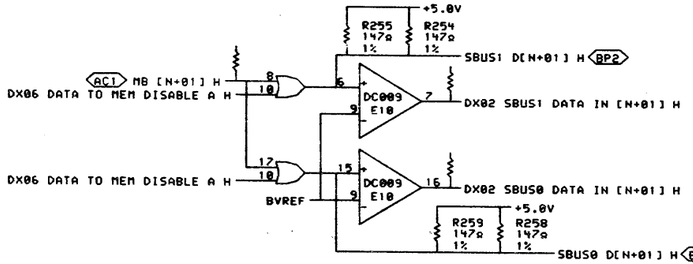


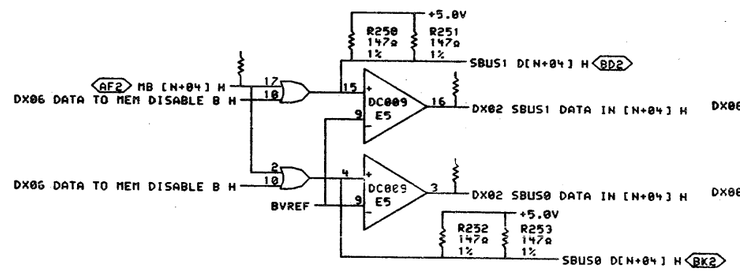


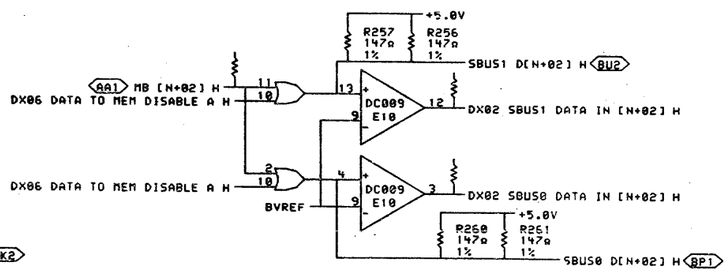


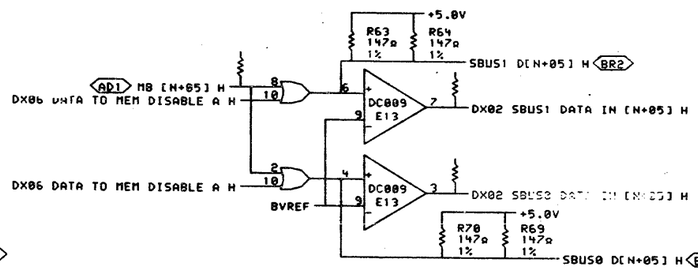












SHEET 2 OF 7

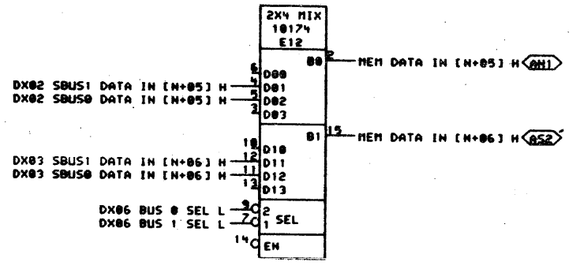
REVISIONS		
CHK	CHANGE NO.	REV

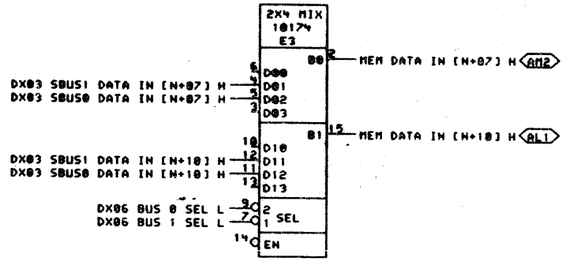
digital

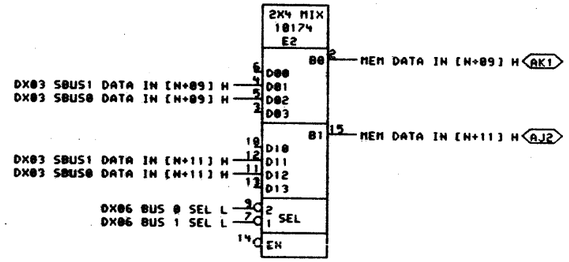
DRN D.Lucier DATE 25-JUL-78 ENG. DATE
CHK'D DATE BOARD LOCATION:
PUB:<M8581-MOS>DX028.DRW 26-JUL-78 08:06 SHEET 1 OF 1
FIRST USED ON OPTION/MODEL: MF20 NEXT HIGHER ASSEMBLY: D-DD-M8581-0

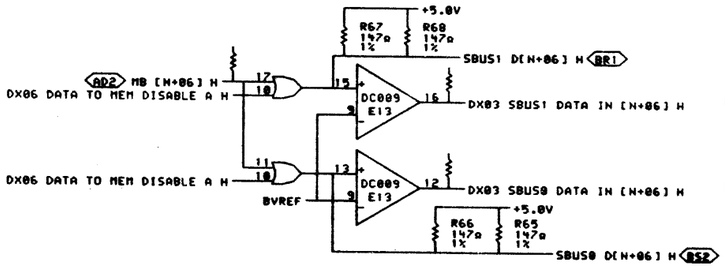
TITLE: XBUS TRANSLATOR DATA TRNCVR 0-5

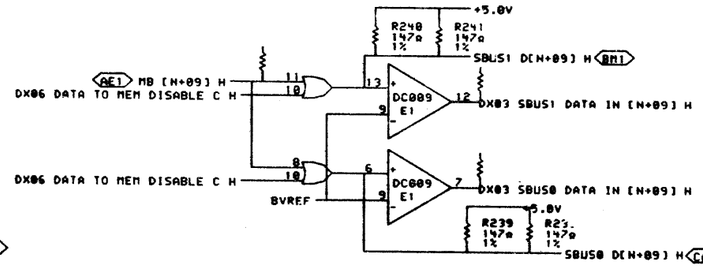
SIZE	CODE	NUMBER	REV.
D	CS	M8581-0-DX02	

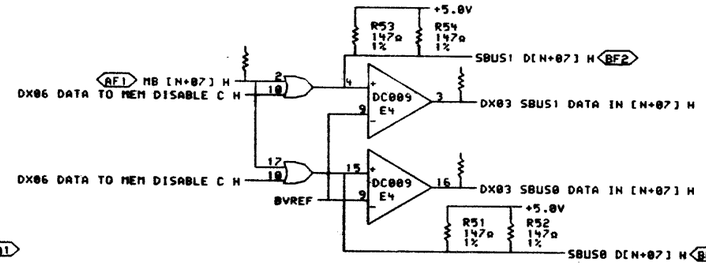


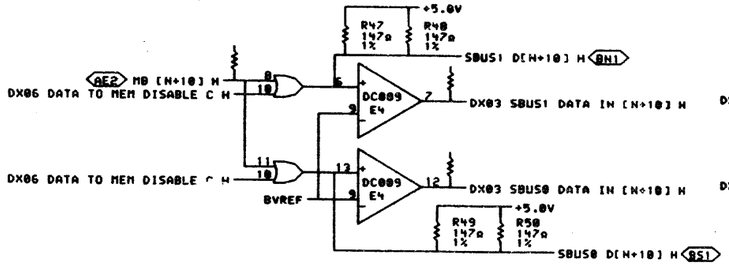


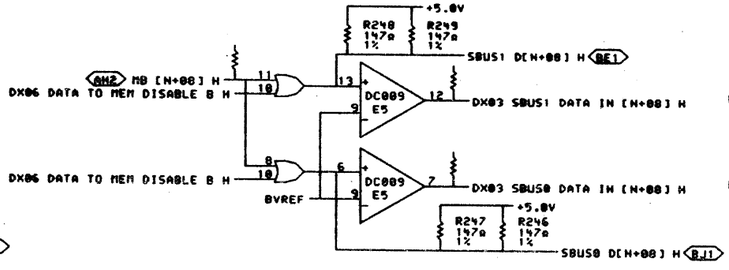


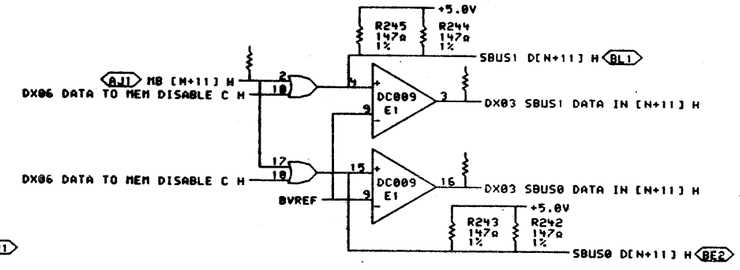












SHEET 3 OF 7

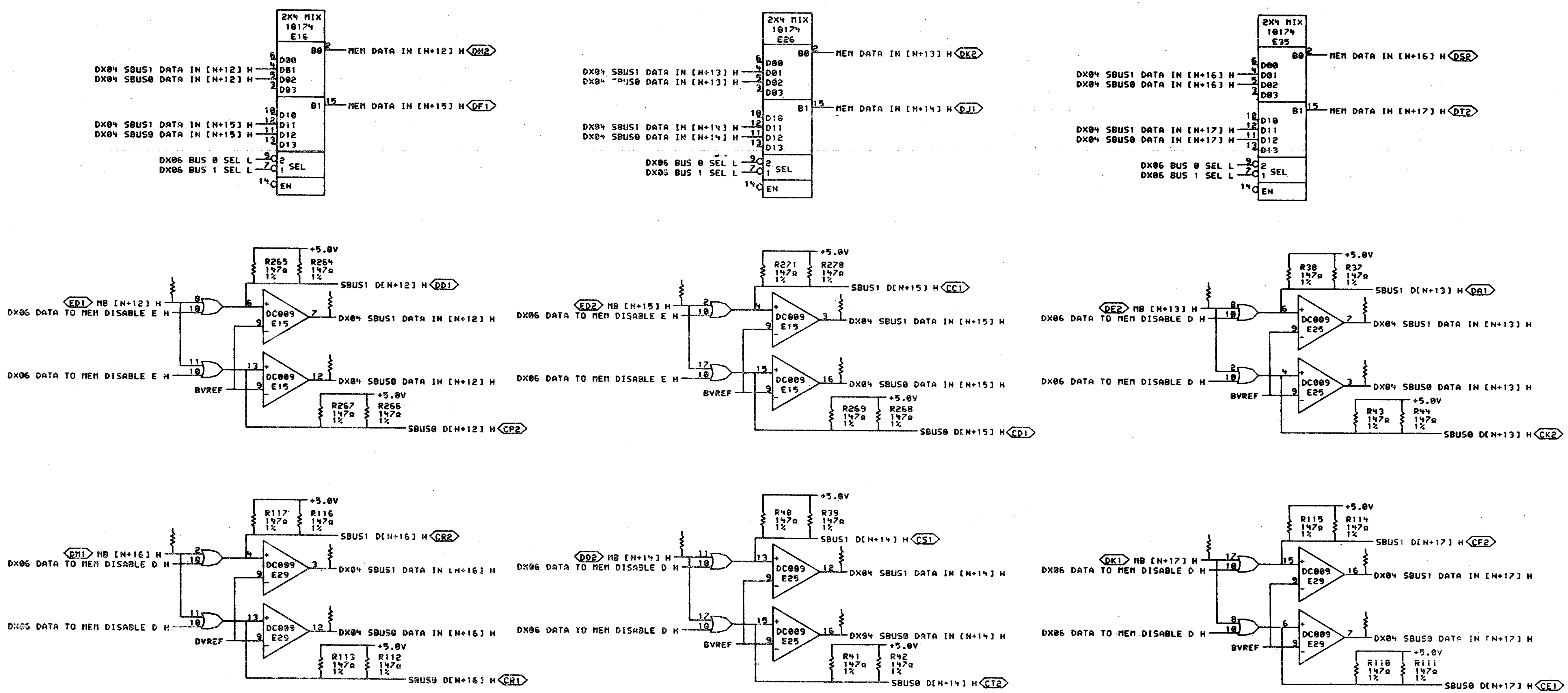
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN [illegible] DATE 26-JUL-78
CHK'D [illegible] DATE 26-JUL-78
ENG [illegible] DATE [illegible]
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: D-DD-M8581-0
FIRST USED ON OPTION/MODEL: MF20
PW8:<M8581-MOS>DX03B.DRW 26-JUL-78 08:13

TITLE: XBUS TRANSLATOR DATA TRNCVR 6-11

SIZE	CODE	NUMBER	REV.
D	CS	M8581-0-DX03	



SHEET 4 OF 7

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REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN DATE 26-JUL-78 ENG DATE

BOARD LOCATION:

SHEET 1 OF 1

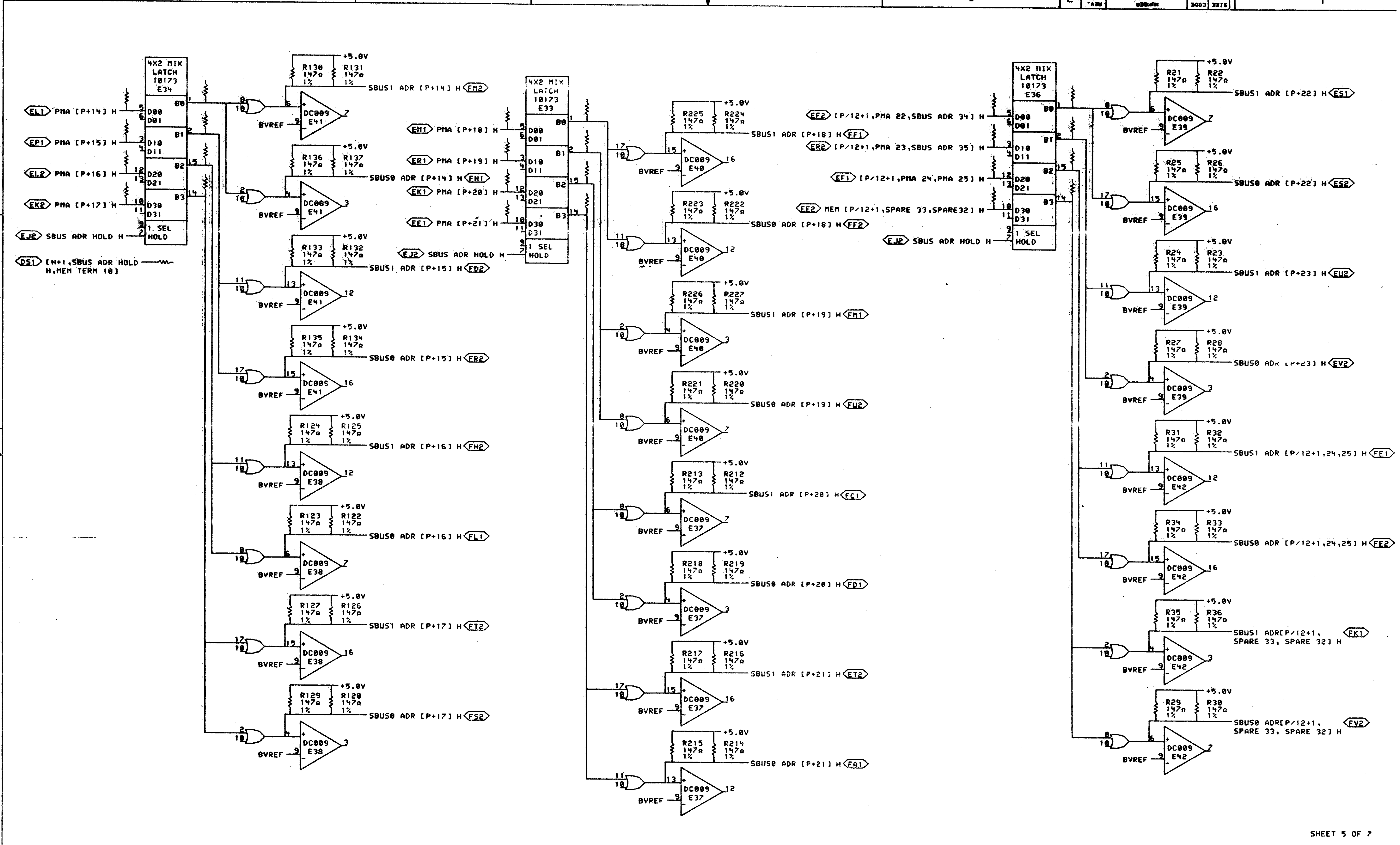
PUB:<M8581-MOS>DX040.DRW 26-JUL-78 08:10

NEXT HIGHER ASSEMBLY: D-DD-M8581-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: XBUS TRANSLATOR DATA TRNCVR 12-17

SIZE	CODE	NUMBER	REV.
D	CS	M8581-0-DX04	



SHEET 5 OF 7

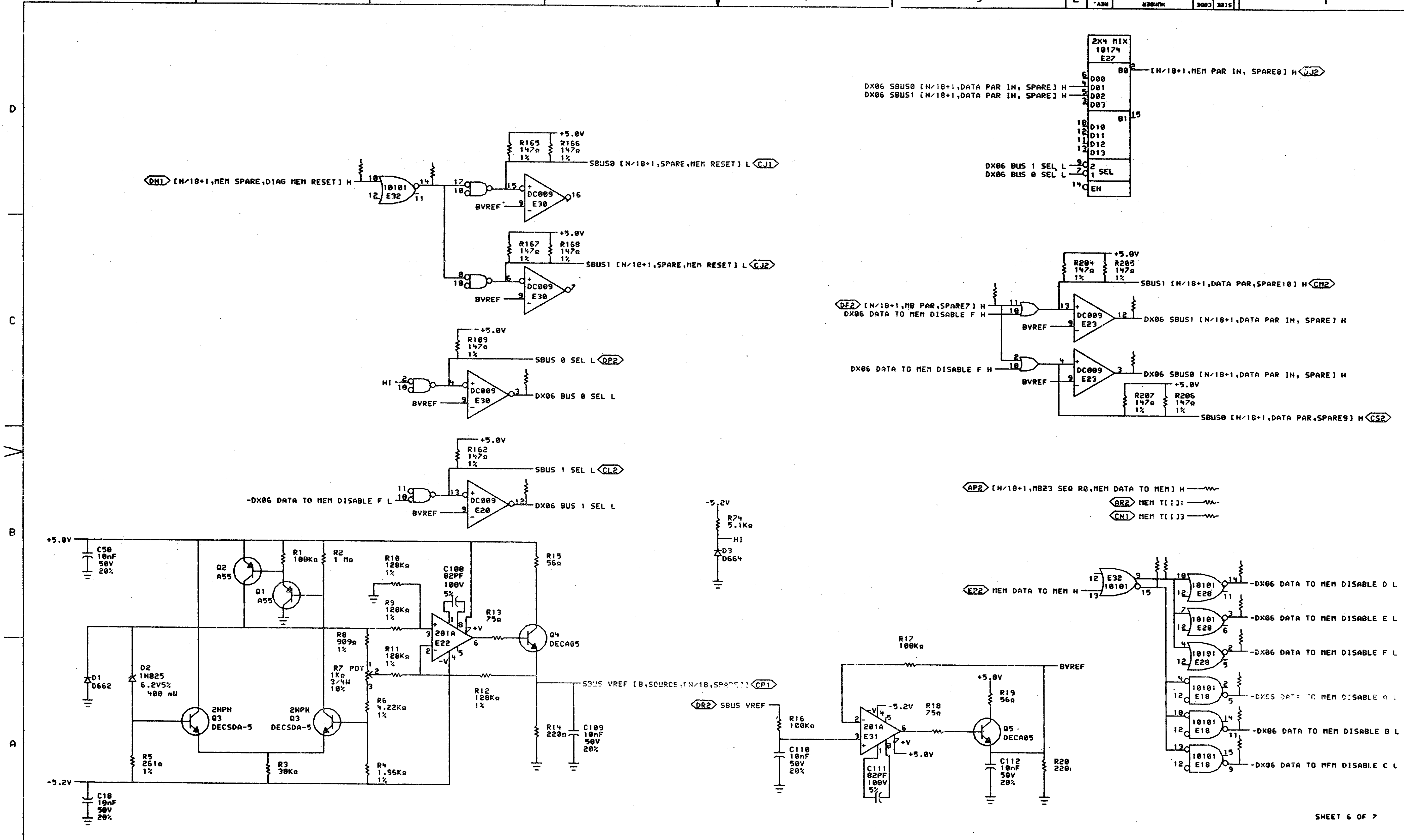
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN: [signature] DATE 26-JUL-78
ENG: [signature] DATE
CHK'D: [signature] DATE
BOARD LOCATION:
SHEET 1 OF 1
PUB: <M8581-MOS>DX05B.DRW 26-JUL-78 00:12
NEXT HIGHER ASSEMBLY: D-DD-M8581-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: XBUS TRANSLATOR ADDRESS DRIVERS

SIZE	CODE	NUMBER	REV.
D	CS	M8581-0-DX05	



SHEET 6 OF 7

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REVISIONS		
CHK	CHANGE NO.	REV

digital

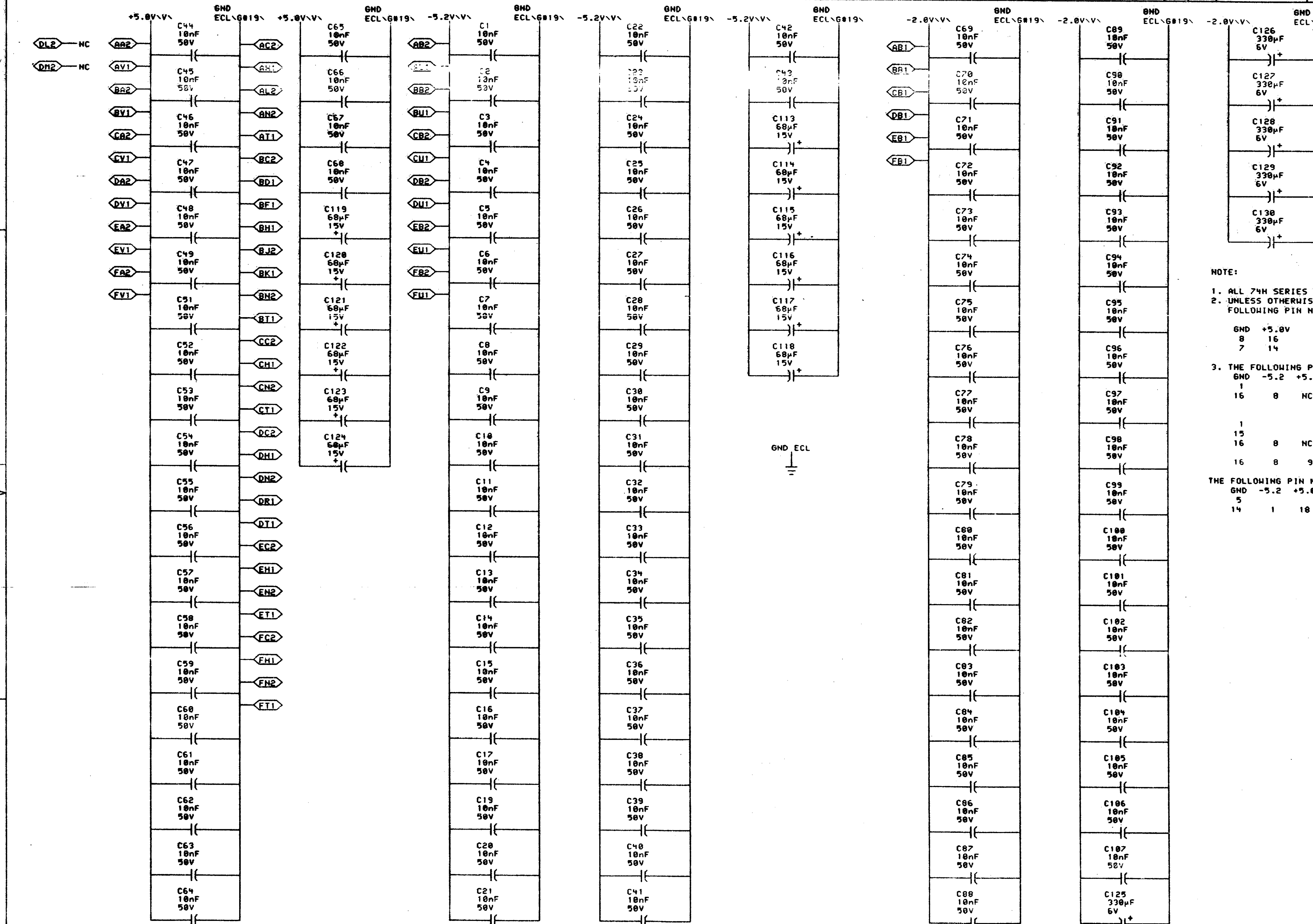
DRN DATE 17-AUG-78 | ENG DATE | CHK'D DATE | BOARD LOCATION: | SHEET 1 OF 1

PUB:<M8581-MOS>DX06B.DRW 17-AUG-78 09:16 | NEXT HIGHER ASSEMBLY: D-DD-M8581-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: XBUS TRANSLATOR CTRL & REF VOLT

SIZE	CODE	NUMBER	REV.
D	CS	M8581-0-DX06	



NOTE:

1. ALL 74H SERIES LOGIC IS TO BE 1074H SERIES
2. UNLESS OTHERWISE SPECIFIED THE FOLLOWING PIN NUMBERS APPLY:

GND	+5.0V	PACKAGE TYPE
8	16	16 PIN DIP
7	14	14 PIN DIP

3. THE FOLLOWING PIN NUMBERS APPLY TO ECL DIP PACKAGES

GND	-5.2	+5.0V	MANUFACTURES' PART NUMBER
1 16	8	NC	ALL 10,000 SERIES UNLESS OTHERWISE SPECIFIED
1 15 16	8	NC	10110 & 10210
16	8	9	10124 & 10125

THE FOLLOWING PIN NUMBERS APPLY TO DC009 DIP PACKAGES

GND	-5.2	+5.0V	MANUFACTURES' PART NUMBER
5 14	1	18	DC009

SHEET 7 OF 7

REVISIONS

CHK	CHANGE NO.	REV

digital

DRN	DATE 17-AUG-78	ENG	DATE
CHK'D	DATE	BOARD LOCATION:	
		SHEET 1 OF 1	

PUB:<M8581-MOS>DX07B.DRW 17-AUG-78 08:43 NEXT HIGHER ASSEMBLY: D-DD-M8581-0

FIRST USED ON OPTION/MODEL: MF20

TITLE: XBUS TRANSLATOR POWER. GND. CAPS.

SIZE	CODE	NUMBER	REV.
D	CS	M8581-0-DX07	

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R273(1)	DX01	A6	68Ω	%E20(3)
R274(1)	DX01	A6	68Ω	%E20(7)
R170(1)	DX01	C6	68Ω	%E21(12)
R169(1)	DX01	C6	68Ω	%E21(16)
R198(1)	DX01	D6	68Ω	%E21(3)
R272(1)	DX01	D6	68Ω	%E21(7)
R87(1)	DX06	D6	68Ω	%E32(14)
R71(1)	DX06	B2	68Ω	%E32(15)
R197(1)	DX01	A7	68Ω	%E32(3)
R171(1)	DX06	B2	68Ω	%E32(9)
R297(1)	DX05	D5	68Ω	%E33(1)
R295(1)	DX05	D5	68Ω	%E33(14)
R296(1)	DX05	D5	68Ω	%E33(15)
R298(1)	DX05	D5	68Ω	%E33(2)
R178(1)	DX05	D7	68Ω	%E34(1)
R180(1)	DX05	D7	68Ω	%E34(14)
R179(1)	DX05	D7	68Ω	%E34(15)
R181(1)	DX05	D7	68Ω	%E34(2)
R92(1)	DX05	D2	68Ω	%E36(1)
R95(1)	DX05	D2	68Ω	%E36(14)
R94(1)	DX05	D2	68Ω	%E36(15)
R93(1)	DX05	D2	68Ω	%E36(2)
R292(1)	DX01	A7	68Ω	DATA VALID[N/18+1, A OUT, B OUT] H
R152(1)	DX02	B7	68Ω	DX02 SBUS0 DATA IN [N+00] H
R194(1)	DX02	B2	68Ω	DX02 SBUS0 DATA IN [N+01] H
R192(1)	DX02	A4	68Ω	DX02 SBUS0 DATA IN [N+02] H
R154(1)	DX02	B4	68Ω	DX02 SBUS0 DATA IN [N+03] H
R190(1)	DX02	A7	68Ω	DX02 SBUS0 DATA IN [N+04] H
R156(1)	DX02	A2	68Ω	DX02 SBUS0 DATA IN [N+05] H
R153(1)	DX02	C7	68Ω	DX02 SBUS1 DATA IN [N+00] H
R195(1)	DX02	C2	68Ω	DX02 SBUS1 DATA IN [N+01] H
R193(1)	DX02	B4	68Ω	DX02 SBUS1 DATA IN [N+02] H
R155(1)	DX02	C4	68Ω	DX02 SBUS1 DATA IN [N+03] H
R191(1)	DX02	B7	68Ω	DX02 SBUS1 DATA IN [N+04] H
R157(1)	DX02	B2	68Ω	DX02 SBUS1 DATA IN [N+05] H
R158(1)	DX03	B7	68Ω	DX03 SBUS0 DATA IN [N+06] H
R146(1)	DX03	B2	68Ω	DX03 SBUS0 DATA IN [N+07] H
R189(1)	DX03	A4	68Ω	DX03 SBUS0 DATA IN [N+08] H
R185(1)	DX03	B4	68Ω	DX03 SBUS0 DATA IN [N+09] H
R148(1)	DX03	A7	68Ω	DX03 SBUS0 DATA IN [N+10] 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

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R187(1)	DX03	A2	68Ω	DX03 SBUS0 DATA IN [N+11] H
R159(1)	DX03	C7	68Ω	DX03 SBUS1 DATA IN [N+06] H
R147(1)	DX03	C2	68Ω	DX03 SBUS1 DATA IN [N+07] H
R188(1)	DX03	B4	68Ω	DX03 SBUS1 DATA IN [N+08] H
R186(1)	DX03	C4	68Ω	DX03 SBUS1 DATA IN [N+09] H
R149(1)	DX03	B7	68Ω	DX03 SBUS1 DATA IN [N+10] H
R184(1)	DX03	B2	68Ω	DX03 SBUS1 DATA IN [N+11] H
R286(1)	DX04	B7	68Ω	DX04 SBUS0 DATA IN [N+12] H
R84(1)	DX04	B2	68Ω	DX04 SBUS0 DATA IN [N+13] H
R85(1)	DX04	A4	68Ω	DX04 SBUS0 DATA IN [N+14] H
R287(1)	DX04	B4	68Ω	DX04 SBUS0 DATA IN [N+15] H
R119(1)	DX04	A7	68Ω	DX04 SBUS0 DATA IN [N+16] H
R121(1)	DX04	A2	68Ω	DX04 SBUS0 DATA IN [N+17] H
R285(1)	DX04	C7	68Ω	DX04 SBUS1 DATA IN [N+12] H
R83(1)	DX04	C2	68Ω	DX04 SBUS1 DATA IN [N+13] H
R86(1)	DX04	B4	68Ω	DX04 SBUS1 DATA IN [N+14] H
R288(1)	DX04	C4	68Ω	DX04 SBUS1 DATA IN [N+15] H
R118(1)	DX04	B7	68Ω	DX04 SBUS1 DATA IN [N+16] H
R120(1)	DX04	B2	68Ω	DX04 SBUS1 DATA IN [N+17] H
R150(1)	DX06	C6	68Ω	-DX06 BUS 0 SEL H
R151(1)	DX06	B6	68Ω	-DX06 BUS 1 SEL H
R282(1)	DX06	A1	68Ω	DX06 DATA TO MEM DISABLE A H
R279(1)	DX06	A1	68Ω	DX06 DATA TO MEM DISABLE B H
R237(1)	DX06	A1	68Ω	DX06 DATA TO MEM DISABLE C H
R106(1)	DX06	B1	68Ω	DX06 DATA TO MEM DISABLE D H
R262(1)	DX06	B1	68Ω	DX06 DATA TO MEM DISABLE E H
R196(1)	DX06	A1	68Ω	DX06 DATA TO MEM DISABLE F H
R290(1)	DX06	C2	68Ω	DX06 SBUS0 [N/18+1,DATA PAR IN, SPARE] H
R291(1)	DX06	C2	68Ω	DX06 SBUS1 [N/18+1,DATA PAR IN, SPARE] H
R97(1)	DX02	C7	68Ω	MB [N+00] H
R263(1)	DX02	C3	68Ω	MB [N+01] H
R284(1)	DX02	B5	68Ω	MB [N+02] H
R96(1)	DX02	C5	68Ω	MB [N+03] H
R281(1)	DX02	B7	68Ω	MB [N+04] H
R72(1)	DX02	B3	68Ω	MB [N+05] H
R73(1)	DX03	C7	68Ω	MB [N+06] H
R45(1)	DX03	C3	68Ω	MB [N+07] H
R280(1)	DX03	B5	68Ω	MB [N+08] H
R236(1)	DX03	C5	68Ω	MB [N+09] H
R46(1)	DX03	B7	68Ω	MB [N+10] H

RESISTOR LOC(PIN)	SHOWN ON DRW#	REF	VALUE	TERMINATES SIGNAL
R278(1)	DX03	B3	68Ω	MB [N+11] H
R283(1)	DX04	C7	68Ω	MB [N+12] H
R108(1)	DX04	C3	68Ω	MB [N+13] H
R107(1)	DX04	B5	68Ω	MB [N+14] H
R275(1)	DX04	C5	68Ω	MB [N+15] H
R172(1)	DX04	B7	68Ω	MB [N+16] H
R173(1)	DX04	B3	68Ω	MB [N+17] H
R183(1)	DX01	C3	68Ω	MEM RQ [N/18+1,0,3] H
R276(1)	DX06	B2	68Ω	MEM T[I]1
R289(1)	DX06	B2	68Ω	MEM T[I]3
R300(1)	DX01	C3	68Ω	MEM [N/18+1,RQ 1,RD RQ] H
R299(1)	DX01	B3	68Ω	MEM [N/18+1,RQ 2,WR RQ] H
R161(1)	DX01	D3	68Ω	MEM [N/18+1,START A,START B] H
R91(1)	DX05	D3	68Ω	MEM [P/12+1,SPARE 33,SPARE32] H
R176(1)	DX05	D8	68Ω	PMA [P+14] H
R177(1)	DX05	D8	68Ω	PMA [P+15] H
R175(1)	DX05	D8	68Ω	PMA [P+16] H
R174(1)	DX05	D8	68Ω	PMA [P+17] H
R209(1)	DX05	D6	68Ω	PMA [P+18] H
R208(1)	DX05	D6	68Ω	PMA [P+19] H
R211(1)	DX05	D6	68Ω	PMA [P+20] H
R210(1)	DX05	C6	68Ω	PMA [P+21] H
R293(1)	DX05	C8	68Ω	[N+1,SBUS ADR HOLD H,MEM TERM 18]
R160(1)	DX01	B7	68Ω	[N/18+1,CLK SBUS,SPARE] CLK H
R199(1)	DX06	C3	68Ω	[N/18+1,MB PAR,SPARE7] H
R277(1)	DX06	B2	68Ω	[N/18+1,MB23 SEQ RQ,MEM DATA TO MEM] H
R182(1)	DX01	A3	68Ω	-[N/18+1,MEM DIAG,-MEM ADR PAR] H
R294(1)	DX06	D7	68Ω	[N/18+1,MEM SPARE,DIAG MEM RESET] H
R88(1)	DX05	D3	68Ω	[P/12+1,PMA 22,SBUS ADR 34] H
R89(1)	DX05	D3	68Ω	[P/12+1,PMA 23,SBUS ADR 35] H
R90(1)	DX05	D3	68Ω	[P/12+1,PMA 24,PMA 25] H

REVISIONS

CHK	CHANGE NO.	REV

digital

DRN. C. Smith DATE 16-AUG-78 ENG P. Lawrence DATE Aug 78
CHK'D M. Mourad DATE Aug 78
BOARD LOCATION:
SHEET 1 OF 1
PUB:<M8581-MOS>M85811.DRW 16-AUG-78 13:47
FIRST USED ON OPTION/MODEL: MF20
NEXT HIGHER ASSEMBLY: D-DD-M8581-0

TITLE: TERMINATORS

SIZE	CODE	NUMBER	REV.
D	CS	M8581-0-RES	

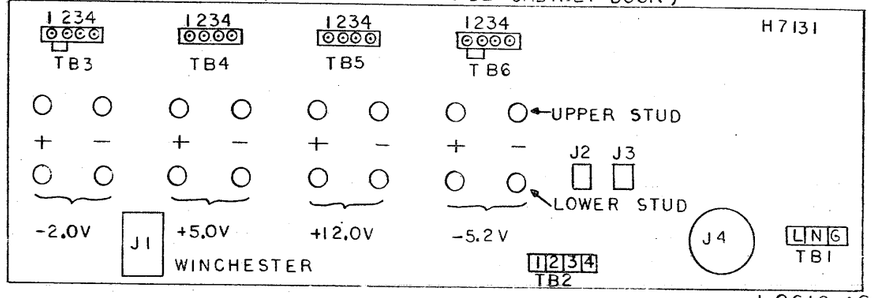
SLOT 2
CPU LOGIC ASSY
M8572
COAX CONN
J1
7015524-0-0 CLOCK SELECT CABLE
KW2Ø MASTER OSCILLATOR
J2 J1Ø J8 J1 J2 J4 J6 J3 J5 J7
7015448-0-0 MASTER OSC AC FAN HARNESS
7015471-0-0 MASTER OSC. DC PWR HARNESS
P1
17-00100-0-0 BLACK COAX CABLE
CPU H7420 #3
H77Ø
XBUS CABLE ASSY MF2Ø LA/LB,LU/LV (INCLUDES XBUS CABLES AND M8572)
UPPER POWER BLOCK
J1 PAØ1 COAX CONN J1
MF2Ø LA/LB, LU/LV LOGIC ASSY
SW
PCØ1 PC22
PDØ1 PD22
PEØ1 PE22
PFØ1 LOWER POWER BLOCK PF22
SW2 SW1
FAN1 FAN2
J4 J3 J2 J1
17-00101-0-0 (QTY 4) XBUS JUMPER CABLE
UPPER POWER BLOCK
J1 PAØ1 COAX CONN J1
MF2Ø LC/LD LOGIC ASSY
J2
PCØ1 PC22
PDØ1 PD22
PEØ1 PE22
PFØ1 LOWER POWER BLOCK PF22
SW2 SW1
FAN1 FAN2
J4 J3 J2 J1
5412855 XBUS TERMINATOR (QTY 4)
7011639 SWITCH PANEL
J4
P1
7015477-0-0 VANE SWITCH HARNESS
P5 J5
PRESENT CONNECTORS ON SYSTEM FAULT HARNESS
J3
7015453-0-0 DOOR SWITCH HARNESS
7015189-0-0 LOGIC DC PWR HARNESS FOR MF2Ø LC/LD
7015222-0-0 LOGIC AC FAN HARNESS
TB3 TB4 TB5 TB6 TB2
+ − + − + − + −
-2.0V +5.0V +12.0V -5.2V
MF2Ø LA/LB, LU/LV POWER SUPPLY
TB1
7015222-0-0 LOGIC AC FAN HARNESS
7015190-0-0 MARGIN/SENSE CABLE
TB3 TB4 TB5 TB6 TB2
-2.0V +5.0V +12.0V -5.2V
MF2Ø LC/LD POWER SUPPLY
TB1
7015190-0-0 MARGIN/SENSE CABLE
J1 P1 J2 P2 J3 P1 J4 J9
BATTERY BOX
BATTERY BOX
B63 POWER CONTROL
J24 J26
7015450-0-0 AC POWER CORD, 60 HZ
7015449-0-0 AC POWER CORD, 50 HZ
70-08288-15 DEC REMOTE PWR BUS CABLE
70-08288-3F DEC REMOTE PWR BUS CABLE

REVISIONS		
CHK	CHANGE NO.	REV.
MF2Ø MR006		A
P. LAWRENCE		

DRN. E. Wilson	18 MAY 78	FIRST USED ON MF2Ø
CHK'D P. Lawrence	30 May 78	TITLE MF2Ø
ENG. DJ Chin	7-30-78	CABLE DIAGRAM
PROJ. ENG. DJ Chin	7-27-78	
PROD.		
NEXT HIGHER ASSY.		
B-DD-MF2Ø-Ø		SIZE D CODE IC NUMBER MF2Ø-Ø-3 REV. A
SCALE NONE		
SHEET 1 OF 6		DIST.

CHART NOS REFER TO DRAWING E-UA-MF2Ø-Ø-Ø, SHEETS 4-9

MF2Ø POWER SUPPLY (VIEWED FROM INSIDE CABINET DOOR)



POWER SUPPLY H7131 → LOGIC ASSY BACK PANEL

UPPER POS TERM -2.0V	GND HU
UPPER NEG TERM -2.0V	-2.0VU
LOWER POS TERM -2.0V	GND HL
LOWER NEG TERM -2.0V	-2.0VL
UPPER POS TERM +5.0V	+5.0VAU
UPPER NEG TERM +5.0V	GND DU
UPPER POS TERM +5.0V	+5.0VBU
UPPER NEG TERM +5.0V	GND BU
LOWER POS TERM +5.0V	+5.0VAL
LOWER NEG TERM +5.0V	GND DL
LOWER POS TERM +5.0V	+5.0VBL
LOWER NEG TERM +5.0V	GND BL
UPPER POS TERM +12.0V	+12.0VAU
UPPER NEG TERM +12.0V	GND CU
UPPER POS TERM +12.0V	+12.0VBU
UPPER NEG TERM +12.0V	GND AU
LOWER POS TERM +12.0V	+12.0VAL
LOWER NEG TERM +12.0V	GND CL
LOWER POS TERM +12.0V	+12.0VBL
LOWER NEG TERM +12.0V	GND AL
UPPER POS TERM -5.2V	GND FU
UPPER NEG TERM -5.2V	-5.2VAU
UPPER POS TERM -5.2V	GND EU
UPPER NEG TERM -5.2V	-5.2VBU
LOWER POS TERM -5.2V	GND FL
LOWER NEG TERM -5.2V	-5.2VAL
LOWER POS TERM -5.2V	GND EL
LOWER POS TERM -5.2V	-5.2VBL

POWER SUPPLY H7131 → LOGIC ASSY BACK PLANE

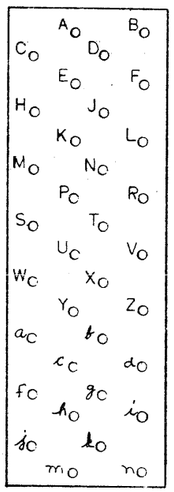
POS SENSE / NEG SENSE	-2.0V	TB3-2 / TB3-3	6 / 26
POS SENSE / NEG SENSE	+5.0V	TB4-2 / TB4-3	24 / 4
POS SENSE / NEG SENSE	+12.0V	TB5-2 / TB5-3	27 / 7
POS SENSE / NEG SENSE	-5.2V	TB6-2 / TB6-3	5 / 25

CHART #9,1Ø

	J1	P1	J1	BACK PLANE
-2.0V MARG LO		aC	33	D Ø 6 E 2
-2.0V MARG LO RTN		FC	13	
-2.0V MARG HI		YC	37	E Ø 6 M 2
-2.0V MARG HI RTN		WC	17	
+12.0V MARG LO		bC	32	D Ø 6 D 2
+12.0V MARG LO RTN	C	xC	12	
+12.0V MARG HI	C	zC	31	D Ø 6 D 1
+12.0V MARG HI RTN	C	vC	11	
-5.2V MARG LO	C	fC	34	D Ø 6 J 2
-5.2V MARG LO RTN	C	hC	14	
-5.2V MARG HI		cC	36	E Ø 6 L 1
-5.2V MARG HI RTN	C	mC	16	
+5.0V MARG LO		gC	21	A Ø 6 C 1
+5.0V MARG LO RTN	C	kC	1	
+5.0V MARG HI		dC	22	A Ø 6 L 1
+5.0V MARG HI RTN		iC	2	
DC PWR OK NC		JC	35	C Ø 6 S 2
DC PWR OK C		KC	15	GND LAYER

WINCHESTER — J1 — P1 — J1 — PAØ1

LOGIC ASSY BACK PLANE
- -2.0V POWER LAYER
- +5.0V POWER LAYER
- B14V1(+12.0V POWER PIN)
- -5.2V POWER LAYER



VIEW OF WINCHESTER CONNECTOR ON POWER SUPPLY

UPPER TERMINAL BLOCK

-2.0V	GND H	-5.2VA	GND F	-5.2VB	GND E	+5.0VA	GND D	+12.0VA	GND C	+5.0VB	GND B	+12.0VB	GND A						
GRN	BLK	BLU	BLK	BLU	BLK	RED	BLK	ORN	BLK	RED	BLK	ORN	BLK						

MF20 BACK PANEL
PIN SIDE VIEW

GRN	BLK	BLU	BLK	BLU	BLK	RED	BLK	ORN	BLK	RED	BLK	ORN	BLK						
-2.0V	GND H	-5.2VA	GND F	-5.2VB	GND E	+5.0VA	GND D	+12.0VA	GND C	+5.0VB	GND B	+12.0VB	GND A						

LOWER TERMINAL BLOCK

PIN SIDE VIEW OF PAØ1 ON BACK PANEL

1	21
2	22
3	23
4	24
5	25
6	26
7	27
8	28
9	29
10	30
11	31
12	32
13	33
14	34
15	35
16	36
17	37
18	38
19	39
20	40

REVISIONS

CHK	CHANGE NO.	REV.

TITLE MF2Ø CABLE DIAGRAM
SIZE D CODE IC NUMBER MF2Ø-Ø-3 REV. A
SCALE — SHEET 2 OF 6 DIST.

CPU H7420 #3 { GND, +15V } J13 (0, 6, 0, 3) — CHART #13 — P1 — J8 (02 GND, 01 +15V IN, 04 GND, 03 +12V IN, 06 GND, 05 +12V IN) — MASTER OSCILLATOR KW2Ø

H770

MF2Ø LA/LB { GND AU, +12.0VBU } BACK PANEL — CHART #13

MF2Ø LC/LD { GND AU, +12.0VBU } BACK PANEL — CHART #14

END VIEW OF J2

2	● ●	1
4	● ●	3
6	● ○	5
8	○ ○	7
10	● ●	9

KW20 MSTR OSC.

- J6 — CHART #5 — CPU BACKPANEL COAX CONN
- J1 — CHART #5 — MF2Ø LA/LB,LU/LV BACKPANEL COAX CONN
- J3 — CHART #6 — MF2Ø LC/LD BACKPANEL COAX CONN

P5 OF EXISTING CPU FAULT HARNESS — P5 J5 (C1, C2, C3, C4) — BLK, ORN, YEL — CHART #7,8

BLK, ORN, YEL — CHART #7,8

MF2Ø LA/LB, LU/LV:
- G (GND)(-) — VANE P (+15V) SW#2 — L (LOGIC)
- G — VANE SW#1 (CLOSER TO BACK PANEL) — P — L

MF2Ø LC/LD:
- G — VANE SW#2 — P — L
- G — VANE SW#1 — P — L

M8572 IN CPU SLOT — J5 J1 — CHART #4 — J2 J1Ø (01, 02, 03, C4, 09, 010) — POLARIZING PIN IS ON PIN 6

- CP CLK SEL 2 L
- CP CLK SEL 1 L
- CROBAR L

MASTER OSCILLATOR

MF2Ø LA/LB,LU/LV POWER SUPPLY TB1 — LINE (L) BRN, NEUT (N) LT BLUE, GND (G) GRN/YEL — CHART #15,17 — P1 — NEUTRAL — 115VAC OR 240 VAC LINE — J26 863 POWER CONTROL

CHART #3 — RED J1, WHT J2 — KW20 MASTER OSCILLATOR FAN (1, 2)

7011639 SWITCH PANEL — J4 (01, 02, 03) — CHART #21, — J2 POWER SUPPLY MF2Ø LA/LB,LU/LV POWER RQ, SHUTDOWN — J3

MF2Ø LA/LB,LU/LV POWER SUPPLY TB2 — 115 VAC — CHART #1 — RED J1, WHT J2 — RED J3, WHT J4 — FAN 2, FAN 1 — LOGIC FANS — MF2Ø LA/LB,LU/LV

FOR 115 VAC OPERATION, JUMPER TB2-1 TO TB2-2 AND TB2-3 TO TB2-4
FOR 240 VAC OPERATION JUMPER TB2-2 TO TB2-3

CHART #22 — J2 POWER SUPPLY MF20 LC/LD — J3

MF2Ø LC/LD LINE (L) BRN, POWER SUPPLY NEUT (N) BLU, TB1 GND (G) GRN/YEL — CHART #16,18 — P1 — NEUTRAL — 115 VAC OR 240 VAC LINE — J24 863 POWER CONTROL

J3 OF EXISTING CPU FAULT HARNESS — J3 (01, 03) — CHART #19, #20 — J1 (01, 03), J2 (01, 03)

- 1 — NO — C — NC — 3 — MF2Ø LA/LB,LU/LV DOOR SWITCH
- 1 — NO — C — NC — 3 — MF2Ø LC/LD DOOR SWITCH

J9 — P1, P2, P3, P4 — GRN/YEL — CB2 — BLU (01) + 48V, − (02), BRN (06) + 48V, − — P5, P6, P7, P8 — BLK — CB1 (07) — BATTERY CABLE

MF2Ø LC/LD POWER SUPPLY TB2 — 115 VAC — CHART #12 — RED J1, WHT J2 — RED J3, WHT J4 — FAN 2 (CLOSER TO BACK DOOR), FAN 1 — LOGIC FANS — MF2Ø LC/LD

REVISIONS

CHK	CHANGE NO.	REV.

TITLE: MF2Ø CABLE DIAGRAM		SIZE D	CODE IC	NUMBER MF2Ø-Ø-3 REV. A
SCALE	SHEET 3 OF 6	DIST.		

mr MF

CPU LOGIC ASSY
SLOT 3
M8572 -YA
J1
COAX CONN

7016207-0-0 MASTER OSC. DC PWR HARNESS
KW2Ø MASTER OSCILLATOR
J10 J2 J4 J6 J1 J3 J5 J7 J8 P1

17-00100-0-0 BLACK COAX CABLE

UPPER POWER BLOCK
COAX CONN J11
PAØ1 MF2Ø LH/LJ, LM/LN LP/LR, LS/LT LOGIC ASSY
PCØ1 PC22
PDØ1 PD22
PEØ1 PE22
LOWER POWER BLOCK
PFØ1 PF22
SW1 SW2
FAN 1 FAN 2
J1 J2 J3 J4

7015671-0-0 LOGIC DC PWR HARNESS FOR MF2Ø LA/LB
P3 J5

7016211-0-0 VANE SWITCH HARNESS
PRESENT CONNECTORS ON SYSTEM FAULT HARNESS AT CORE MEMORY LOCATION
J1

7016212-0-0 DOOR SWITCH HARNESS

7015190-0-0 MARGIN/SENSE CABLE

TB3 TB4 TB5 TB6 TB2 TB1
+ − + − + − + −
-2.0V +5.0V +12.0V -5.2V
MF2Ø LH/LJ, LM/LN, LP/LR, LS/LT POWER SUPPLY
J1 J2 J3 J4 P1 P2 P1 J9

7015222-0-0 LOGIC AC FAN HARNESS

7015189-0-0 LOGIC DC PWR HARNESS FOR MF2Ø LC/LD

17-00010-0-0 (QTY 4) XBUS JUMPER CABLE

7015190-0-0 MARGIN/SENSE CABLE

BATTERY BOX

70-08288-3F DEC REMOTE PWR BUS CABLE

UPPER POWER BLOCK
COAX CONN J11
PAØ1 MF2Ø LK/LL LOGIC ASSY
PCØ1 PC22
PDØ1 PD22
PEØ1 PE22
LOWER POWER BLOCK
PFØ1 PF22
SW1 SW2
FAN 1 FAN 2
J1 J2 J3 J4

5412855 XBUS TERMINATOR (QTY 4)

TB3 TB4 TB5 TB6 TB2 TB1
+ − + − + − + −
-2.0V +5.0V +12.0V -5.2V
MF2Ø LK/LL POWER SUPPLY
J1 J2 J3 J4 P1 P2 J9

7075222-0-0 LOGIC AC FAN HARNESS

EXTERNAL MEM CABINET REAR
FLUSHING FANS
FAN 3 J1 J2
FAN 4 J3 J4
7016210-0-0

CPU CABINET BOTTOM REAR DOOR AREA
J1 P1 J5 P1

BATTERY BOX
7015450-0-0 AC POWER CORD, 60 HZ
7015449-0-0 AC POWER CORD, 50 HZ
PI

863 POWER CONTROL
J4 J25 J32
9107673-09 AC POWER CORD, 60 HZ
7011432-03 AC POWER CORD, 50 HZ

CONNECTOR ON INTERNAL MF2Ø LC/LD
J3 P1 70-08288-15 DEC REMOTE PWR BUS CABLE FOR MF2Ø LH/LJ, LM/LN
7Ø11639 FRONT END PANEL
J4 P1 7Ø-Ø8288-25 DEC REMOTE PWR BUS CABLE FOR MF2Ø LP/LR, LS/LT

REVISIONS
REV. | CHANGE NO. | CHK

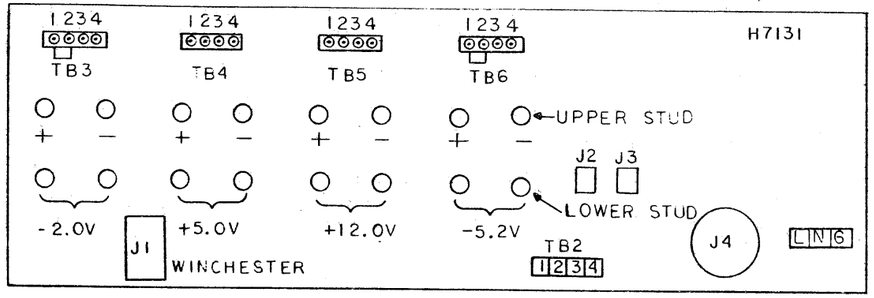
EXTERNAL

DRN.	FIRST USED ON MF2Ø	digital	A
CHK'D			
ENG.			
PROJ. ENG.	TITLE MF2Ø		
MNGR.			
NEXT HIGHER ASSY.	CABLE DIAGRAM		
B-DD-MF2Ø-Ø			
SCALE NONE	SIZE D / CODE 1C / NUMBER MF2Ø-Ø-3	REV. A	
SHEET 4 OF 6	DIST.		

D 1C MF2Ø-Ø-3 A

CHART NCS REFER TO DRAWING E-UA-MF2Ø-Ø-Ø, SHEETS 4-9

(MF20 POWER SUPPLY VIEWED FROM INSIDE CABINET DOOR)



POWER SUPPLY H7131

LOGIC ASSY BACK PANEL

UPPER POS TERM -2.0V	GND HU
UPPER NEG TERM -2.0V	-2.0VU
LOWER POS TERM -2.0V	GND HL
LOWER NEG TERM -2.0V	-2.0VL
UPPER POS TERM +5.0V	+5.0VAU
UPPER NEG TERM +5.0V	GND DU
UPPER POS TERM +5.0V	+5.0VBU
UPPER NEG TERM +5.0V	GND BU
LOWER POS TERM +5.0V	+5.0VAL
LOWER NEG TERM +5.0V	GND DL
LOWER POS TERM +5.0V	+5.0VBL
LOWER NEG TERM +5.0V	GND BL
LOWER POS TERM +12.0V	+12.0VAU
LOWER NEG TERM +12.0V	GND CU
UPPER POS TERM +12.0V	+12.0VBU
UPPER NEG TERM +12.0V	GND AU
LOWER POS TERM +12.0V	+12.0VAL
LOWER NEG TERM +12.0V	GND CL
LOWER POS TERM +12.0V	+12.0VBL
LOWER NEG TERM +12.0V	GND AL
UPPER POS TERM -5.2V	GND FU
UPPER NEG TERM -5.2V	-5.2VAU
UPPER POS TERM -5.2V	GND EU
UPPER NEG TERM -5.2V	-5.2VBU
LOWER POS TERM -5.2V	GND FL
LOWER NEG TERM -5.2V	-5.2VAL
LOWER POS TERM -5.2V	GND EL
LOWER POS TERM -5.2V	-5.2VBL

POWER SUPPLY H7131

POS SENSE / NEG SENSE	-2.0V	TB3-2 / TB3-3
POS SENSE / NEG SENSE	+5.0V	TB4-2 / TB4-3
POS SENSE / NEG SENSE	+12.0V	TB5-2 / TB5-3
POS SENSE / NEG SENSE	-5.2V	TB6-2 / TB6-3

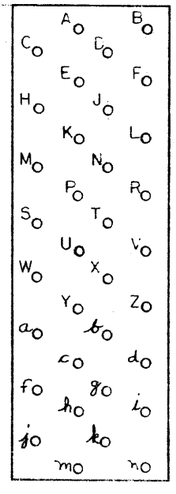
LOGIC ASSY BACK PLANE

J1	P1		
-2.0V MARG LO	a	33	-2.0V POWER LAYER
-2.0V MARG LO RTN	F	13	
-2.0V MARG HI	Y	37	+5.0V POWER LAYER
-2.0V MARG HI RTN	W	17	
+12.0V MARG HI LO	k	32	B14V1(+12 CV POWER PIN)
+12.0V MARG LO RTN	X	12	
+12.0V MARG HI	Z	31	
+12.0V MARG HI RTN	V	11	-5.2V POWER LAYER
-5.2V MARG LO	f	34	DØ6E2
-5.2V MARG LO RTN	h	14	
-5.2V MARG HI	c	36	EØ6M2
-5.2V MARG HI RTN	m	16	DØ6D2
+5.0V MARG LO	g	21	
+5.0V MARG LO RTN	k	1	DØ6D1
+5.0V MARG HI	d	22	
+5.0V MARG HI RTN	i	2	DØ6J2
DC PWR OK NC	J	35	
DC PWR OK C	K	15	EØ6L1
			AØ6C1
			AØ6L1
			CØ6S2
			GND LAYER

CHART #29, #30

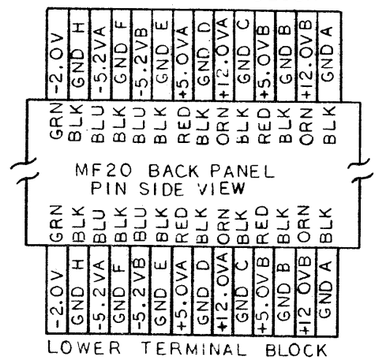
WINCHESTER

J1 PAØ1



VIEW OF WINCHESTER CONNECTOR ON POWER SUPPLY

UPPER TERMINAL BLOCK



LOWER TERMINAL BLOCK

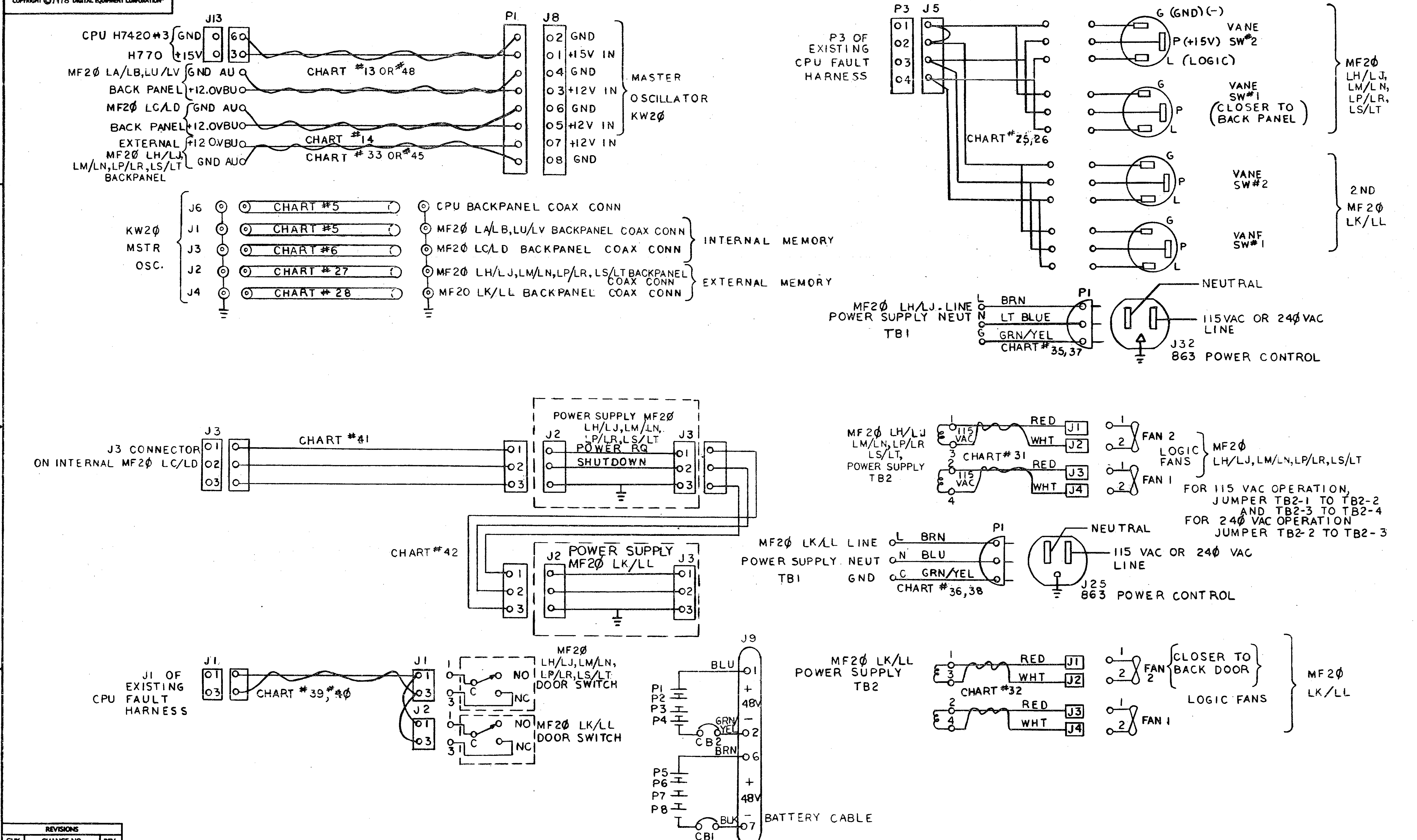
PIN SIDE VIEW OF PAØ1 ON BACK PANEL

1	21
2	22
3	23
4	24
5	25
6	26
7	27
8	28
9	29
10	30
11	31
12	32
13	33
14	34
15	35
16	36
17	37
18	38
19	39
20	40

REVISIONS

CHK	CHANGE NO.	REV.

TITLE	MF2Ø CABLE DIAGRAM		
SCALE		SHEET 5 OF 6	DIST.
SIZE	CODE	NUMBER	REV.
D	IC	MF2Ø-Ø-3	A


CPU H7420 #3
H770
J13
GND
+15V
MF2Ø LA/LB,LU/LV BACK PANEL
GND AU
+12.0VBU
CHART #13 OR #48
MF2Ø LC/LD BACK PANEL
EXTERNAL MF2Ø LH/LJ LM/LN,LP/LR,LS/LT BACKPANEL
CHART #14
CHART # 33 OR #45
P1
J8
GND
+15V IN
GND
+12V IN
GND
+12V IN
+12V IN
GND
MASTER OSCILLATOR KW2Ø
KW2Ø MSTR OSC.
J6
J1
J3
J2
J4
CHART #5
CHART #5
CHART #6
CHART # 27
CHART # 28
CPU BACKPANEL COAX CONN
MF2Ø LA/LB,LU/LV BACKPANEL COAX CONN
MF2Ø LC/LD BACKPANEL COAX CONN
INTERNAL MEMORY
MF2Ø LH/LJ,LM/LN,LP/LR, LS/LT BACKPANEL COAX CONN
MF20 LK/LL BACKPANEL COAX CONN
EXTERNAL MEMORY
P3
J5
P3 OF EXISTING CPU FAULT HARNESS
CHART #25,26
G (GND)(-)
P (+15V)
L (LOGIC)
VANE SW#2
VANE SW#1
(CLOSER TO BACK PANEL)
MF2Ø LH/LJ, LM/LN, LP/LR, LS/LT
VANE SW#2
VANE SW#1
2ND MF2Ø LK/LL
MF2Ø LH/LJ LINE POWER SUPPLY NEUT TB1
BRN
LT BLUE
GRN/YEL
CHART #35,37
NEUTRAL
115VAC OR 24Ø VAC LINE
J32 863 POWER CONTROL
J3
J3 CONNECTOR ON INTERNAL MF2Ø LC/LD
CHART #41
POWER SUPPLY MF2Ø LH/LJ,LM/LN, LP/LR,LS/LT
POWER RQ
SHUTDOWN
CHART #42
POWER SUPPLY MF2Ø LK/LL
MF2Ø LH/LJ LM/LN,LP/LR LS/LT, POWER SUPPLY TB2
115 VAC
CHART #31
RED
WHT
FAN 2
FAN 1
LOGIC FANS
MF2Ø LH/LJ,LM/LN,LP/LR,LS/LT
FOR 115 VAC OPERATION, JUMPER TB2-1 TO TB2-2 AND TB2-3 TO TB2-4
FOR 24Ø VAC OPERATION JUMPER TB2-2 TO TB2-3
MF2Ø LK/LL LINE POWER SUPPLY NEUT TB1 GND
BRN
BLU
GRN/YEL
CHART #36,38
NEUTRAL
115 VAC OR 24Ø VAC LINE
J25 863 POWER CONTROL
J1 OF EXISTING CPU FAULT HARNESS
CHART #39,#40
NO
NC
MF2Ø LH/LJ,LM/LN, LP/LR,LS/LT DOOR SWITCH
MF2Ø LK/LL DOOR SWITCH
J9
BLU
GRN/YEL
BRN
BLK
48V
CB2
CB1
BATTERY CABLE
MF2Ø LK/LL POWER SUPPLY TB2
CHART #32
FAN 2
FAN 1
CLOSER TO BACK DOOR
LOGIC FANS
MF2Ø LK/LL

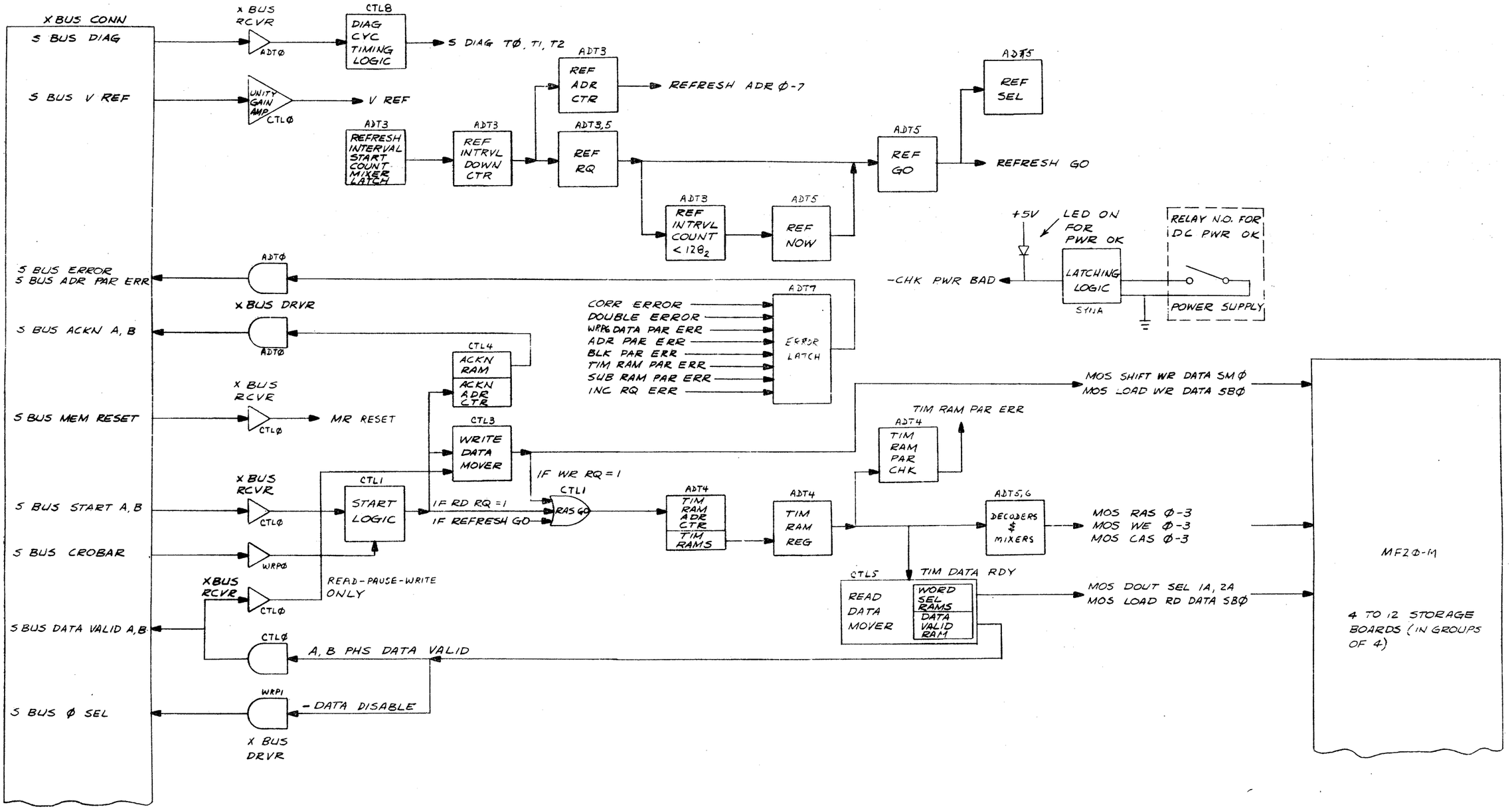
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE MF2Ø CABLE DIAGRAM

SIZE	CODE	NUMBER	REV.
D	IC	MF2Ø-Ø-3	A

SCALE — SHEET 6 OF 6 DIST.

MR



REVISIONS		
REV.	CHANGE NO.	CHK

DRN	4 APR 78	FIRST USED ON MF2Ø
CHK'D	5 Jun 78	TITLE MF2Ø BLOCK DIAGRAM
ENG. DJ Chin	6-5-78	
PROJ. ENG. DJ Chin	7-27-78	
PROD.		
NEXT HIGHER ASSY.		
B-DD-MF2Ø-Ø		SIZE D CODE BD NUMBER MF2Ø-Ø-4
SCALE		
SHEET 1 OF 2		DIST.

DEC FORM NO. 12[illegible]

S BUS ADR 14-35, PAR
S BUS RD, RQ, WR, RQ
S BUS RQ Ø-3

S BUS CLK INT

X BUS CONN

X BUS RCVR — SYNC CTL6 ADT0

X BUS RCVR — CTL0 — CTL2 — SWITCH SELECTABLE

CTL2 — CLOCK PHASE LOGIC → A, B PHS COM FREE; A, B PHS COMING

EXT CLK (FROM MSTR OSC) — ADT6 FACTORY ADJUSTED — ADT6 CLOCK DRIVERS → CLK FREE ØØ-Ø3; CLK GATED ØØ-13

XBUS DRVR — WRPØ,1

S BUS DØØ-D35, PAR ← XBUS DRVR — WRPØ,1

PORT DATA MIXER — WRP2,3,4 → PORT DATA REG — WRP2,3,4

SYN7 CTL1 ADT1 — ADR AND RQ MIXER LATCH

SYN7 CTØ4 ADT1 — ERROR ADR AND RQ LATCH

SYN7 — BLK ADR PAR CHK → BLK PAR ERR

SYN7 — BOX SEL TYPE SEL BLK ADR RAMS

CTLA — REFRESH GO → MOS GPØ, 1, 2 SELECT; MOS RD DATA EN SBØ, 1, 2

MOS WD Ø-3 SEL A

ADT2 — MOS ADR MIXER

REFRESH ADR Ø-7

ADR 2ND HALF MIXER — ADT2

MOS ADR ØØ-Ø7 A

CLK GATED ØØ-11

ADR AND RQ PAR CHK — ADT2 → ADR PAR ERR

WRITE DATA PAR CHECK — WRP6 → WP DATA PAR ERR

CHK BIT COMPL REG — WRP7

CHK BIT GEN — WRP6

CHK BIT MIXER LATCH — WRP7 → MOS WR DATA D36A - D42A

DATA BUFFER — WRP5 → MOS WR DATA DØØA-D35A

SPARE BIT SUB LOGIC — WRP9 → MOS WR DATA D43A

SYNA — POWER SUPPLY MARGIN REG → PS MARG INTF DRIVERS → TO PWR SPY

SUB RAM ADR MIXER LATCH — WRP8

SUB RAMS — WRP8

SUB RAM PAR CHK — WRP8 → SUB RAM PAR ERR

SYN9 — 4 X 1 MIX

SYN4 — SYN BUFFER REG — BLK ADR RAMS

SYN2 — ECC CHK REG

SYN1, 2 — BIT SUB LOGIC
- 36 DATA BITS → MOS RD DATA DØØA-D43A
- 7 ECC BITS
- BIT 43

SYN6 — DATA CORR LOGIC

PER B.T

SYN5 — CORR DECODE LOGIC

SYN5 — PAR FIXUP AND DATA ERROR DETECTION LOGIC

SYN 3,4 — SYN CALC LOGIC
- 43 BIT PAR CHK
- 36 BIT PAR CHK

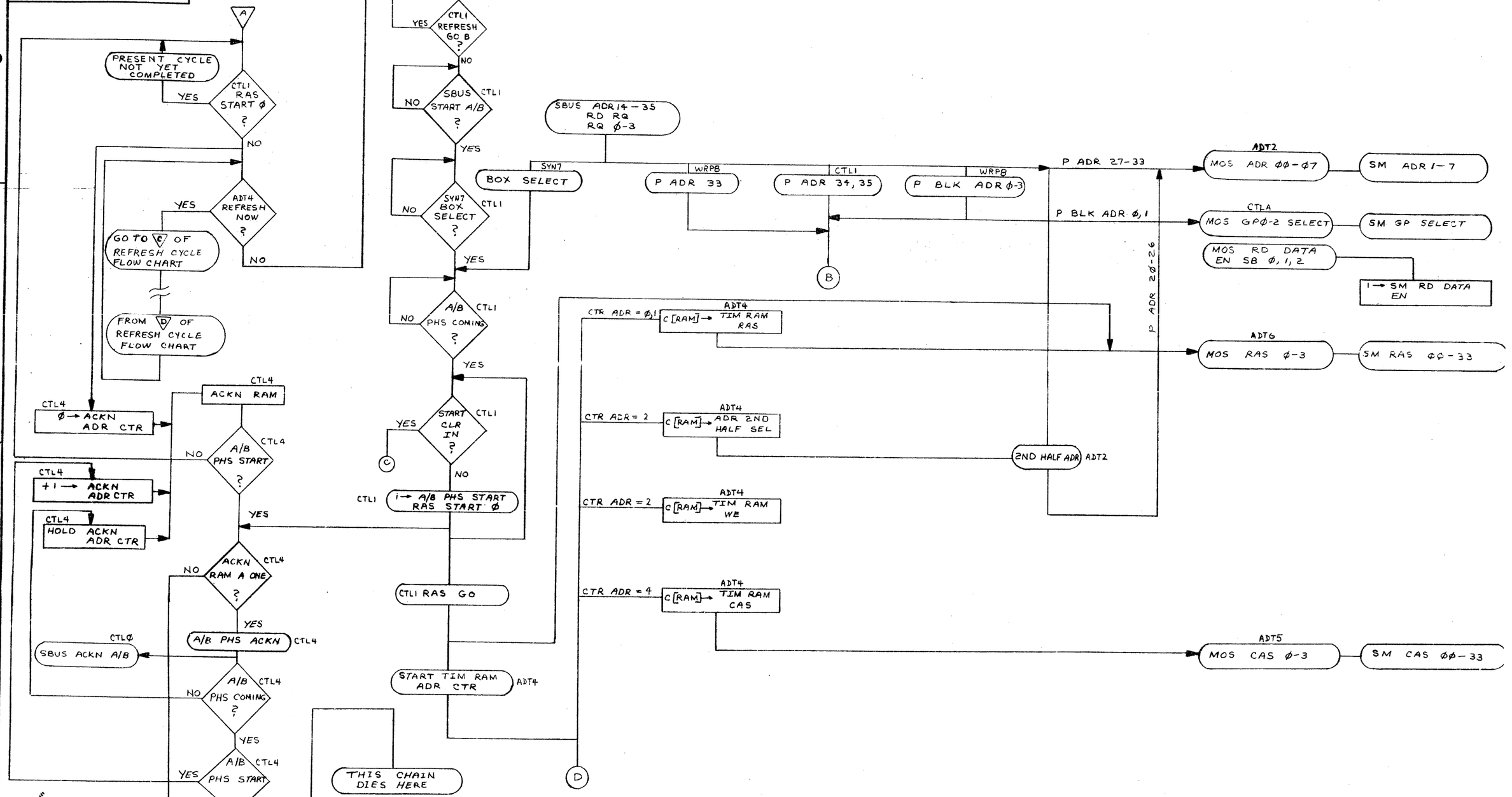
CORR ERROR
DOUBLE ERROR

MF20-M

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	MF20 BLOCK DIAGRAM		
SCALE	NONE	SHEET 2 OF 2	
SIZE	CODE	NUMBER	REV.
D	BD	MF20-Ø-4	
DIST.			

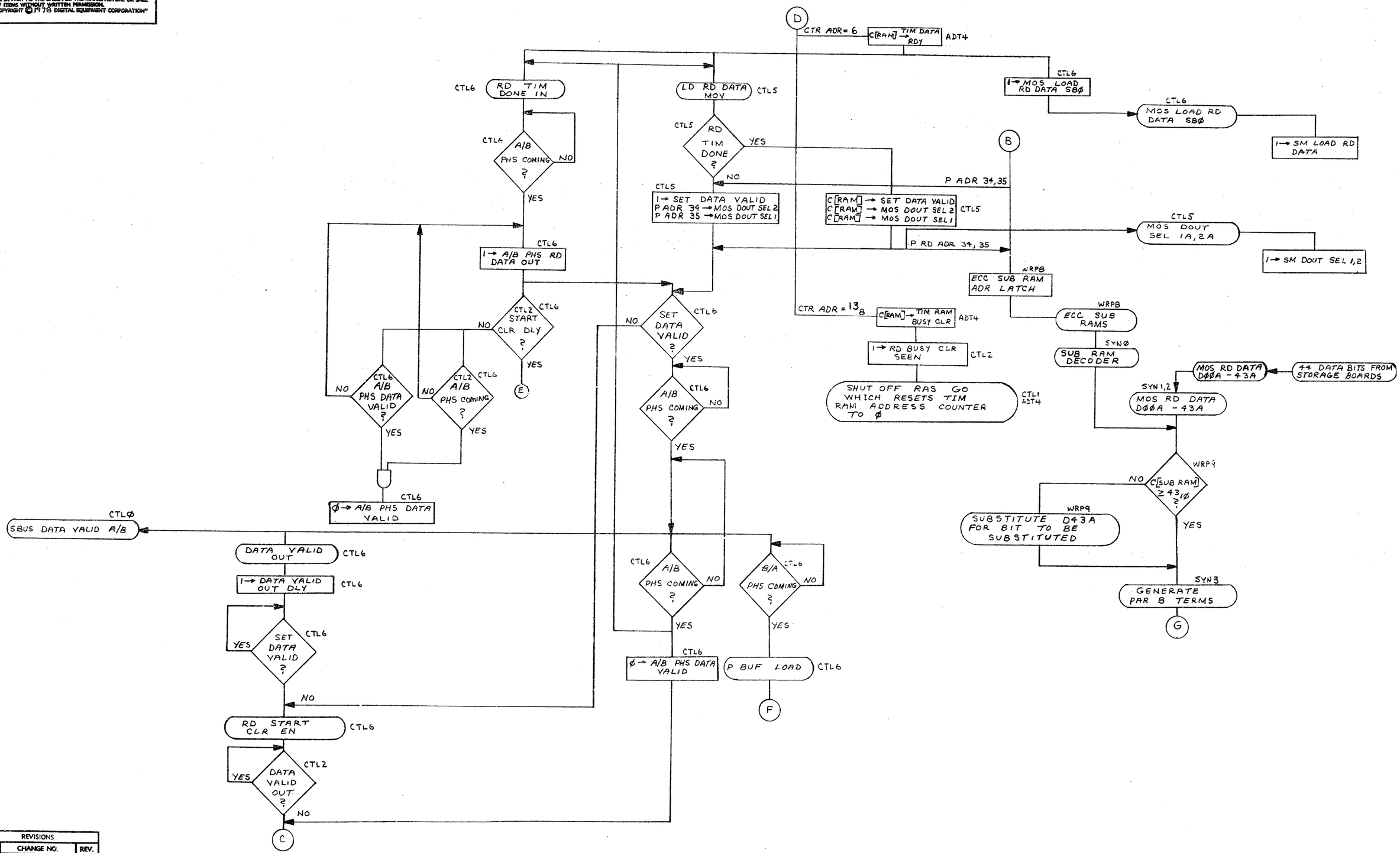
DEC FORM NO. DPD 138



REVISIONS		
CHK	CHANGE NO.	REV.

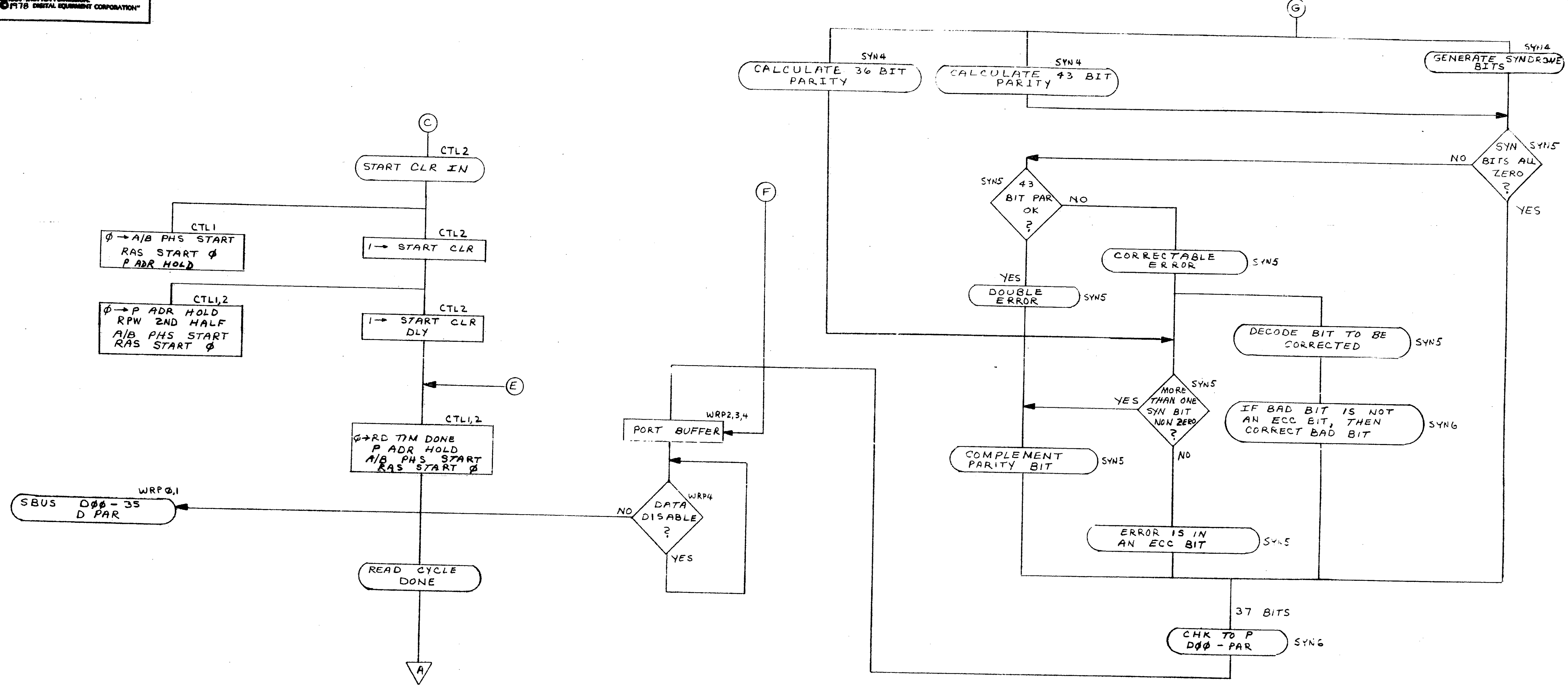
DRN. E. Wilson	7APR78	FIRST USED ON MF20
CHK'D R.W. Counter	30MAY78	TITLE MF20 READ CYCLE FLOW CHART
ENG. D.J. Chin	5-30-78	
PROJ. ENG. D.J. Chin	7-27-78	
PROD.		
NEXT HIGHER ASSY. B-DD-MF20-Ø		SIZE D CODE FD NUMBER MF20-Ø-5
SCALE NONE		DIST.
SHEET 1 OF 3		

DEC FORM NO. DATA 102-0



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
MF20 READ CYCLE FLOW CHART	D	FD	MF20-0-5	
SCALE	SHEET 2 OF 3	DIST.		

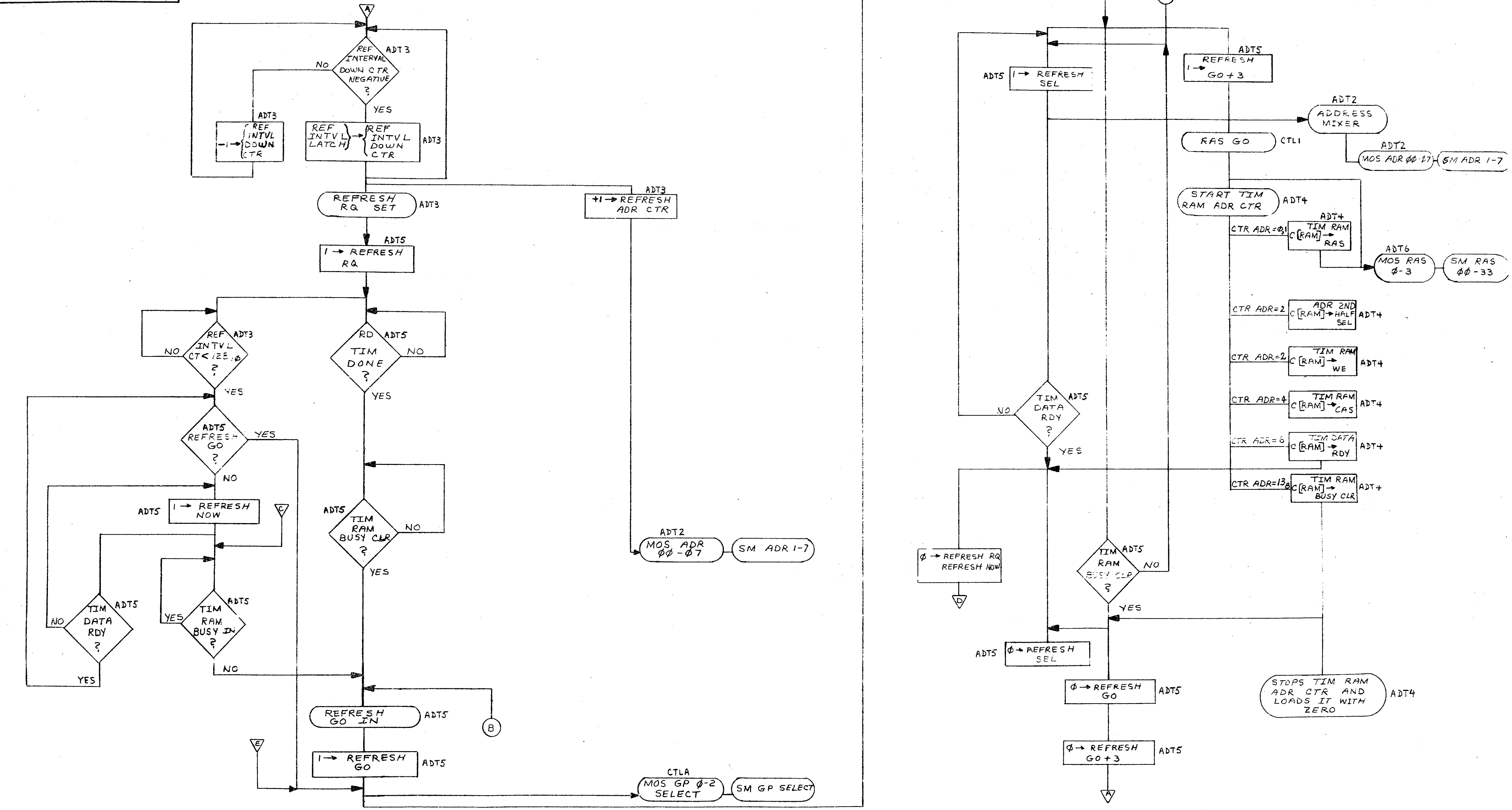


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE MF2Ø READ CYCLE FLOW CHART

SIZE D | CODE FD | NUMBER MF2Ø-Ø-5

SHEET 3 OF 5



DRN	F. W. Caruder	30 May 78
CHK'D	F. W. Caruder	30 May 78
ENG.	D. J. Chin	5-30-78
PROJ. ENG.	D. J. Chin	7-27-78
PROD.		

NEXT HIGHER ASSY. B-DD-MF2Ø-Ø

SCALE NONE

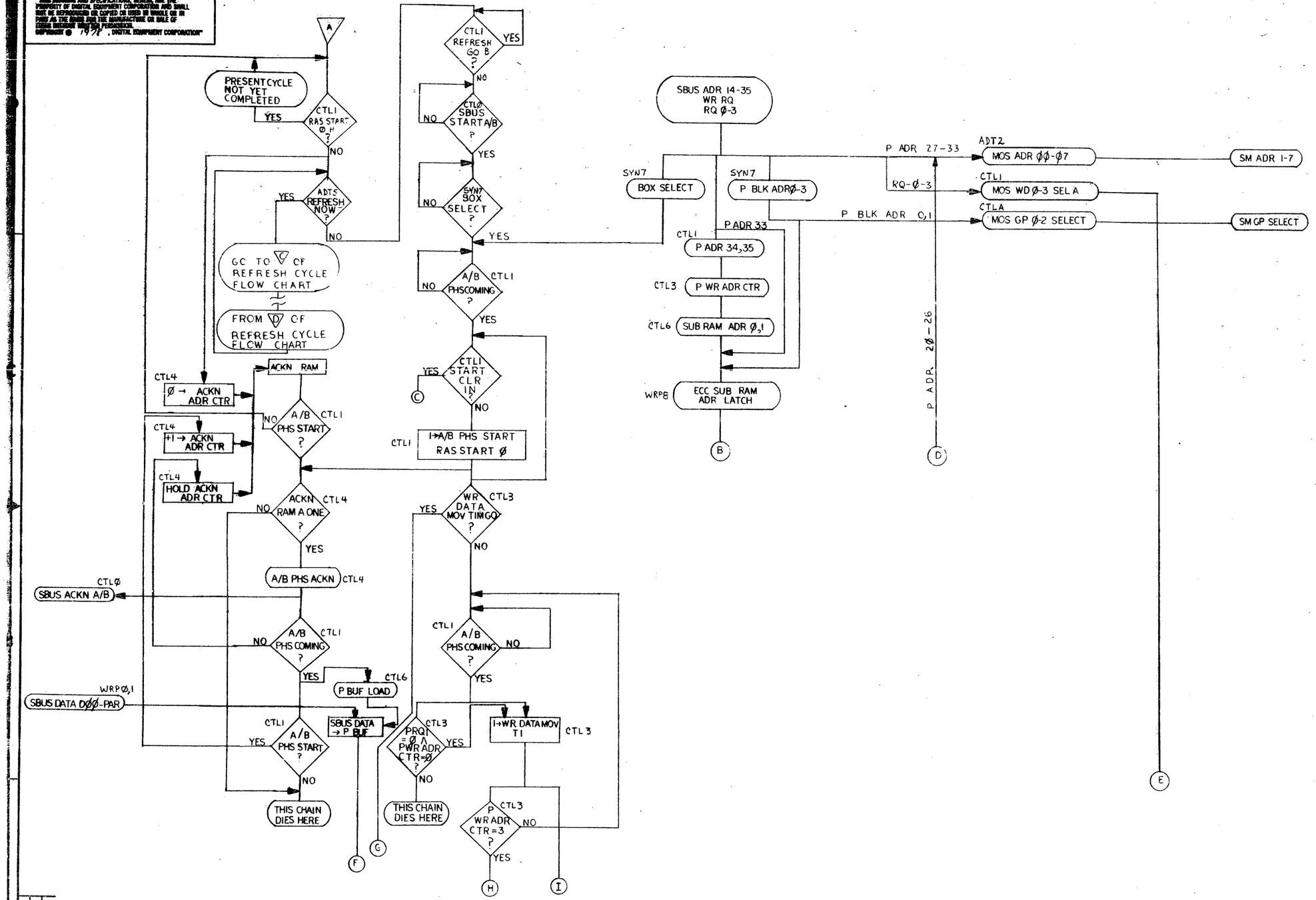
SHEET 1 OF 1

FIRST USED ON MF2Ø

digital

TITLE MF2Ø REFRESH CYCLE FLOW CHART

SIZE D CODE FD NUMBER MF2Ø-Ø-6 REV



REVISIONS	REV.	CHANGE NO.	CHK

DRN.		4 MAY 78
CHK'D		30 May 78
ENG.	DJ Chen	5-30-78
PROJ. ENG.	DJ Chen	7-27-78
PROD.		
NEXT HIGHER ASSY.		
B-DD-MF2Ø-Ø		
SCALE	NONE	
SHEET	1 OF 3	

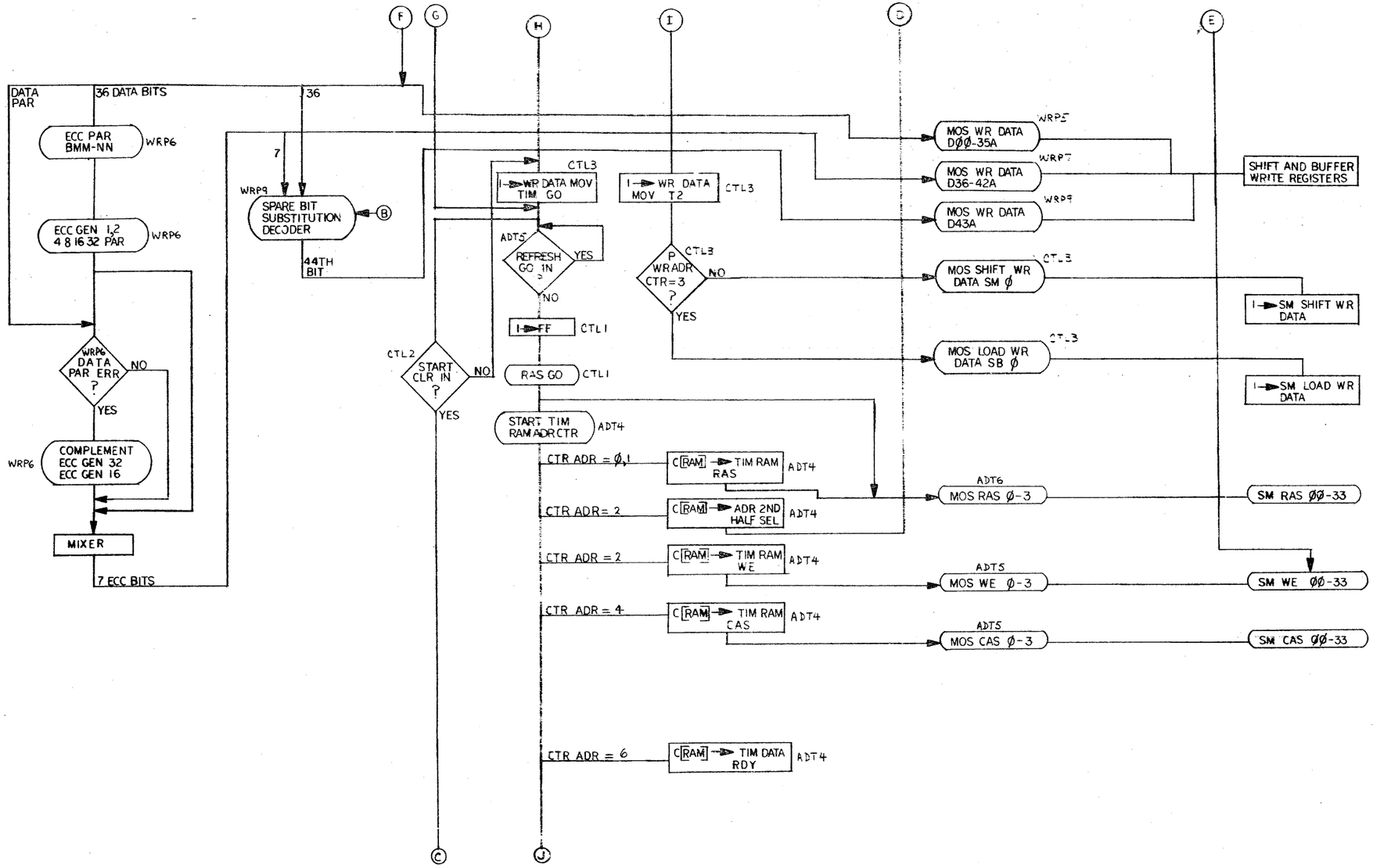
FIRST USED ON MF2Ø

TITLE MF2Ø
WRITE CYCLE FLOW CHART

SIZE	CODE	NUMBER	REV
D	FD	MF2Ø-Ø-7	

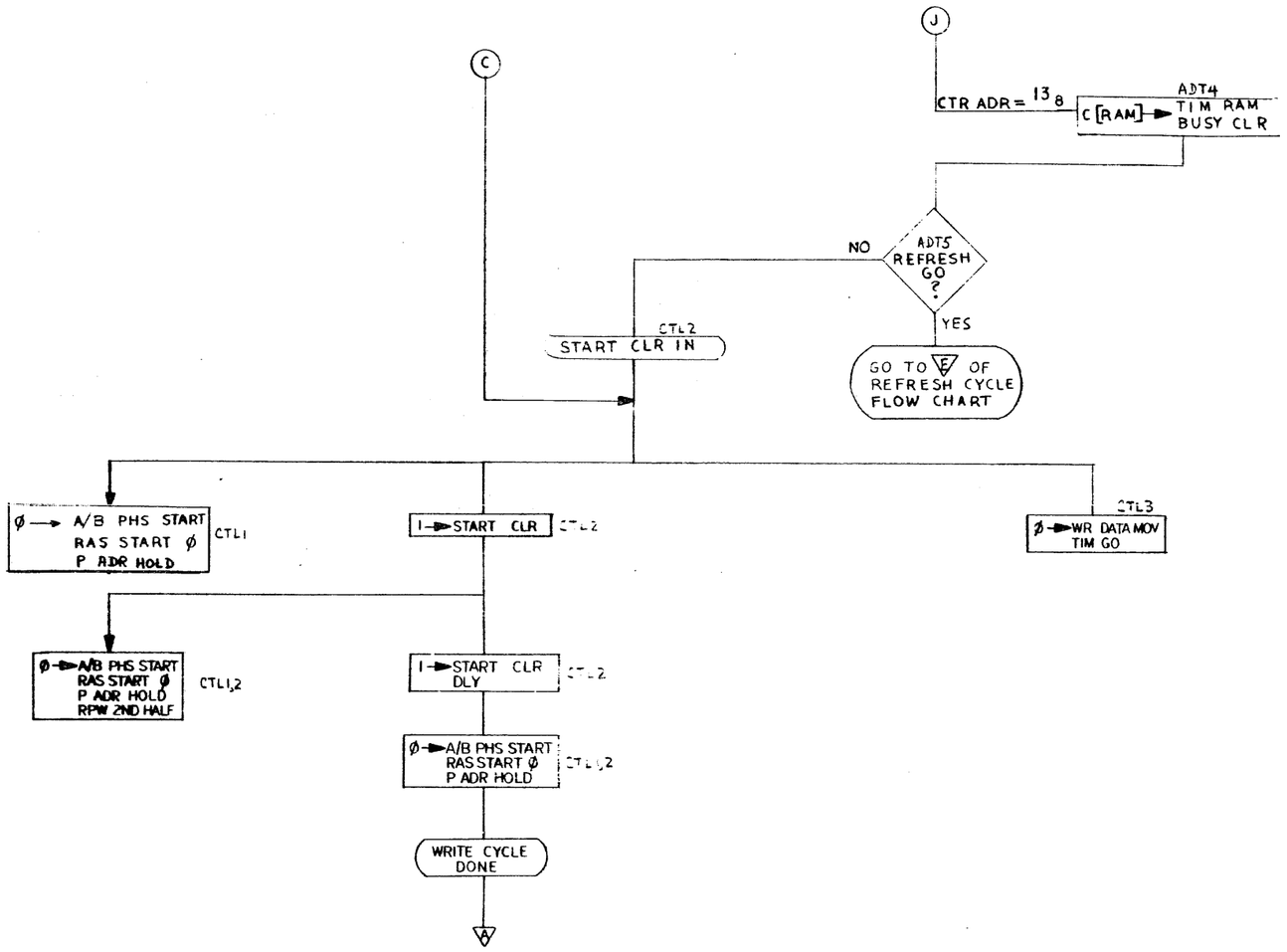
DIST.

DEC FORM NO. DRD 102-0



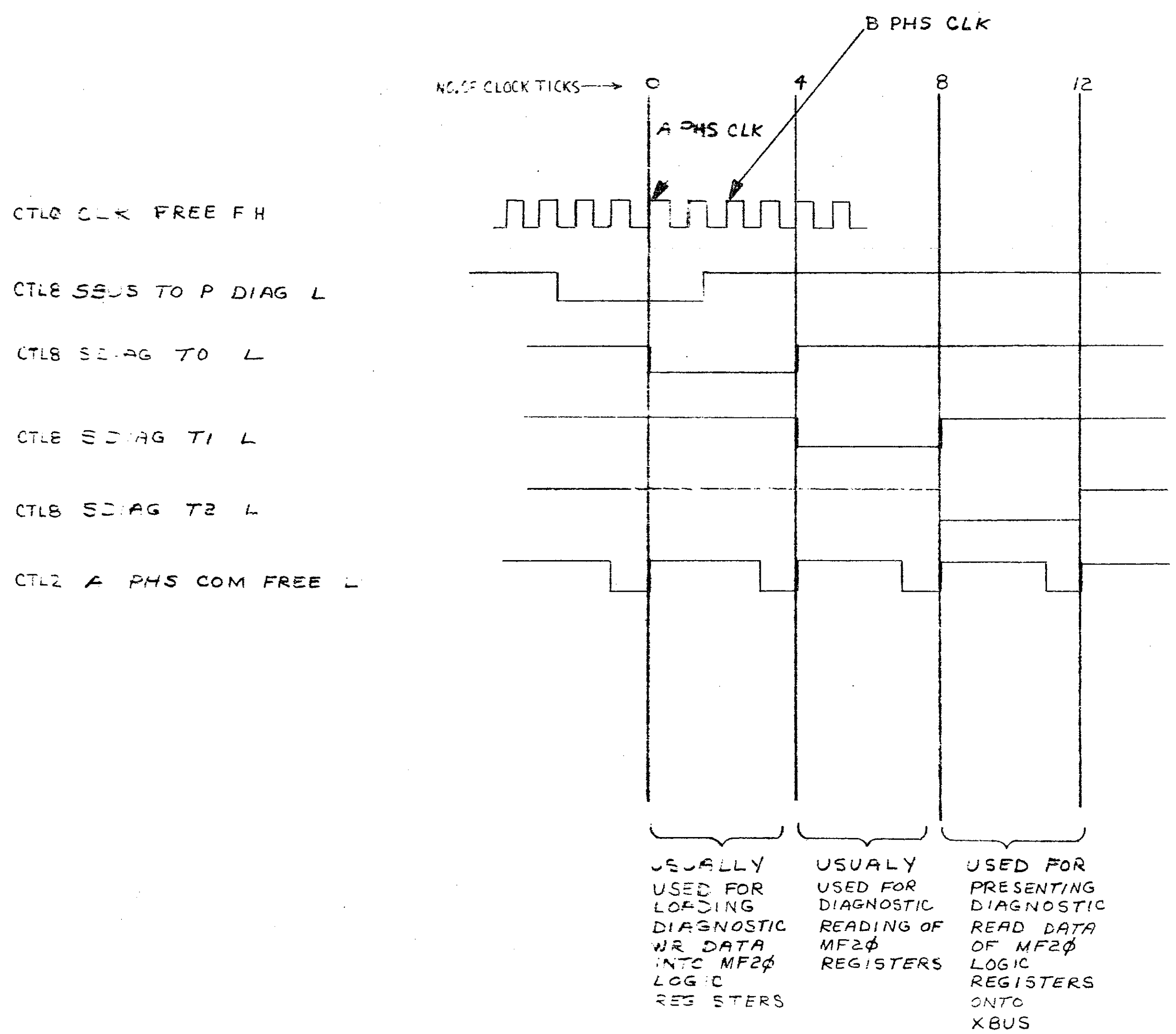
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	MF20 WRITE CYCLE FLOW CHART	SIZE / CODE	D / FD
SCALE	NONE	SHEET	2 OF 3
NUMBER	MF20-0-7	REV	
DIST.			

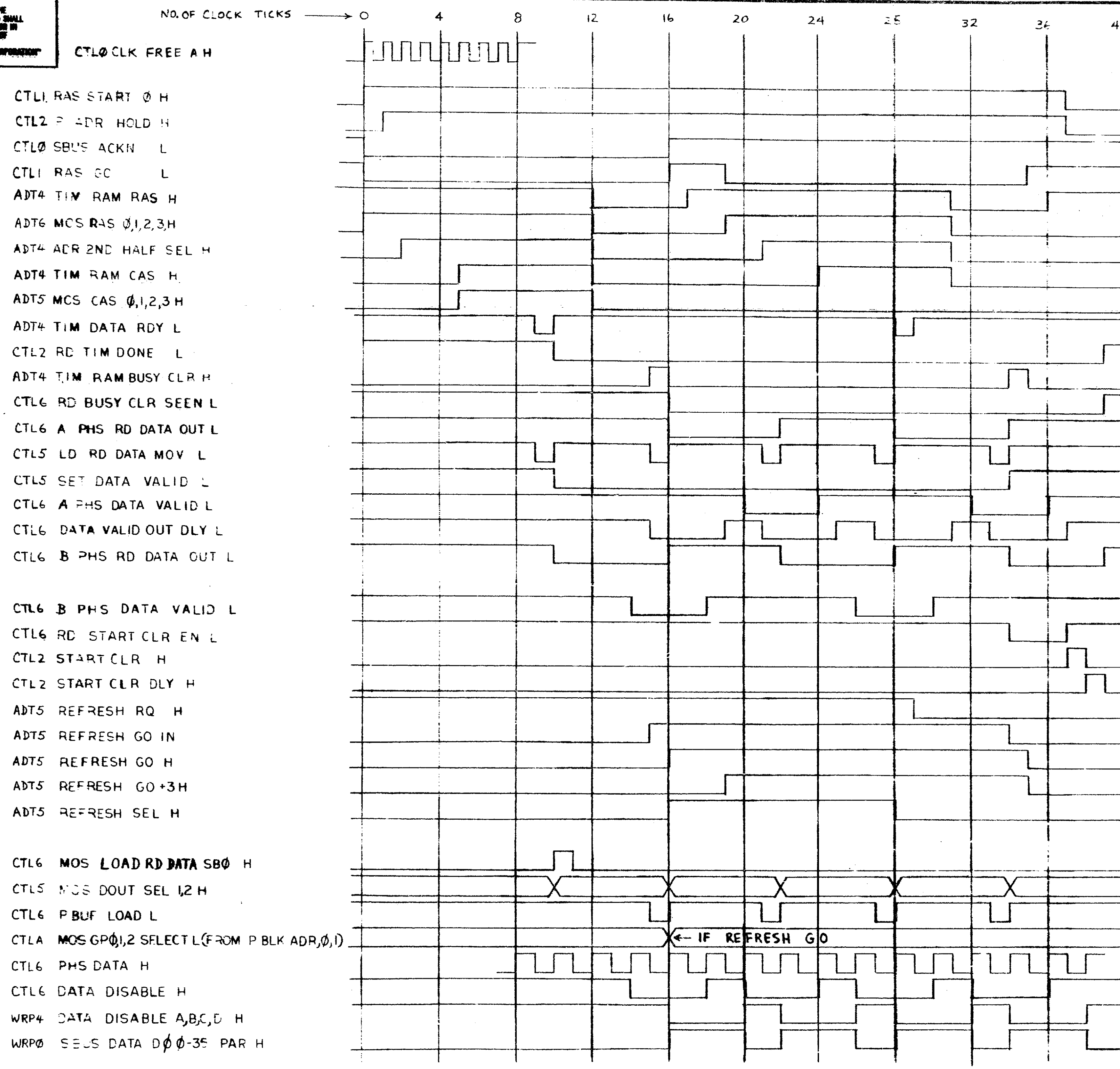


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	MF20 WRITE CYCLE FLOW CHART	
SIZE	CODE	NUMBER
D	FD	MF20-0-7
SCALE	NONE	SHEET 3 OF 3
DIST.		

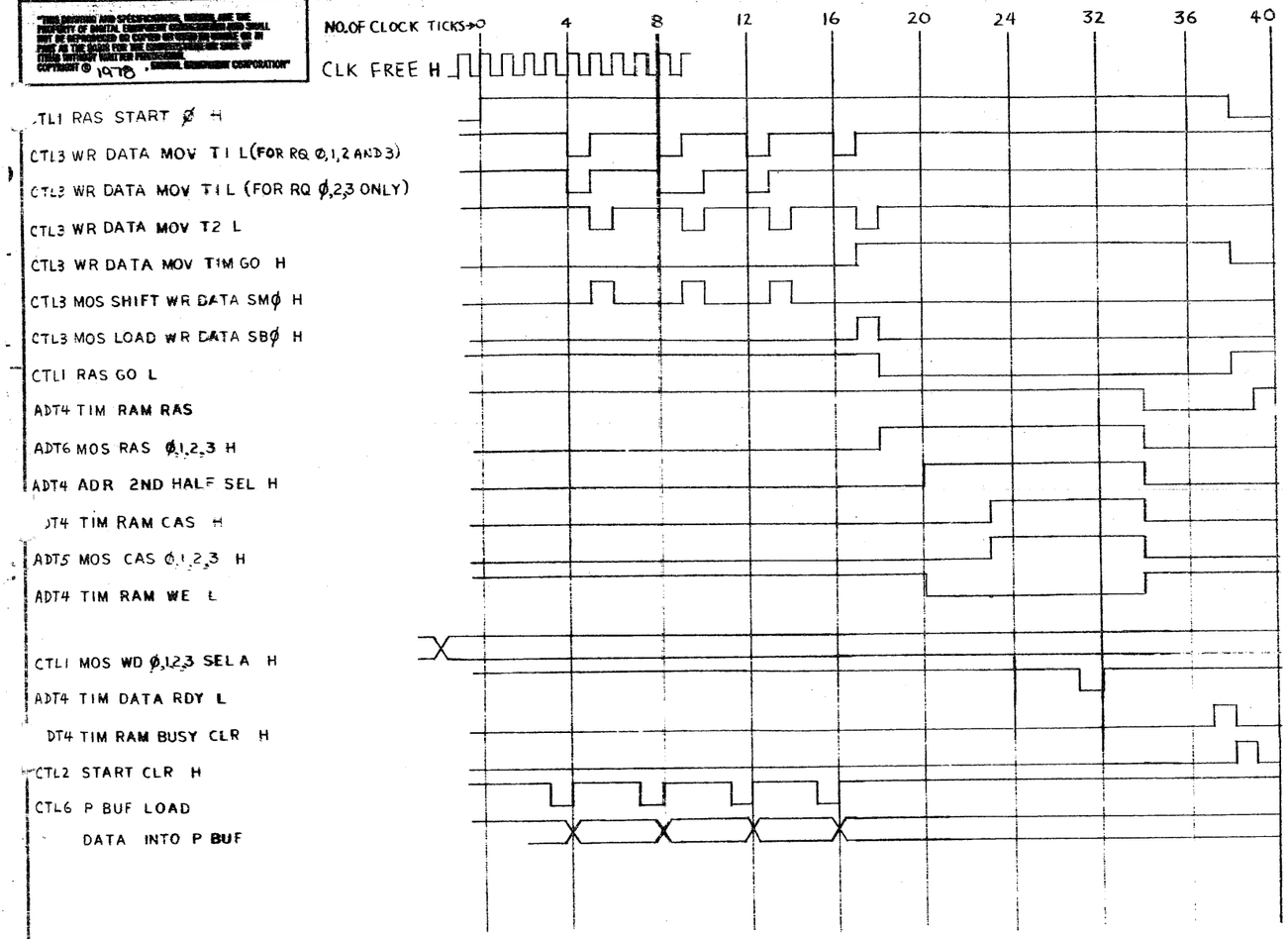


DRN. E Wilson	14 APR 78	FIRST USED ON MF2Ø	digital
CHK'D R W Carter	30 MAY 78	TITLE DIAGNOSTIC CYCLE TIMING DIAGRAM	
ENG. DJ Chin	5-30-78		
PROJ. ENG. DJ Chin	5-30-78		
PROD.			
NEXT HIGHER ASSY. B-DD-MF2Ø-Ø		SIZE D	CODE TD
SCALE NONE		NUMBER MF2Ø-0-8	REV.
SHEET 1 OF 1		DIST.	



FOUR WORD TRANSFER
RAS START Ø SHOWN BEING SET ON A PHS CLOCK. IT CAN ALSO BE SET ON B PHS CLOCK

DRN R. Caulder	2 Jun 78	FIRST USED ON MF2Ø	digit
CHK'D R. Caulder	2 Jun 78	TITLE MF2Ø READ/REFRESH CYCLE TIMING DIAGRAM	
ENG. DJ Chin	6-2-78		
PROJ. ENG. DJ Chin	7-27-78		
PROD.			
NEXT HIGHER ASSY. B-DD-MF2Ø-Ø		SIZE D	CODE TD NUMBER MF2Ø-Ø-9
SCALE NONE			
SHEET 1 OF 1		DIST.	



FOUR WORD TRANSFER

REVISIONS	CHANGE NO.	CHK	REV.

DRN.		7/31/78
CHK'D		8-2-78
ENG.		6-2-78
PROJ. ENG.		7-27-78
PROD.		
NEXT HIGHER ASSY.		
8-DD-MF20-0		
SCALE NONE		
SHEET OF		

FIRST USED ON MF20 digital

TITLE MF20
WRITE CYCLE
TIMING DIAGRAM

SIZE D | CODE TD | NUMBER MF20-0-10 | REV

DIST.

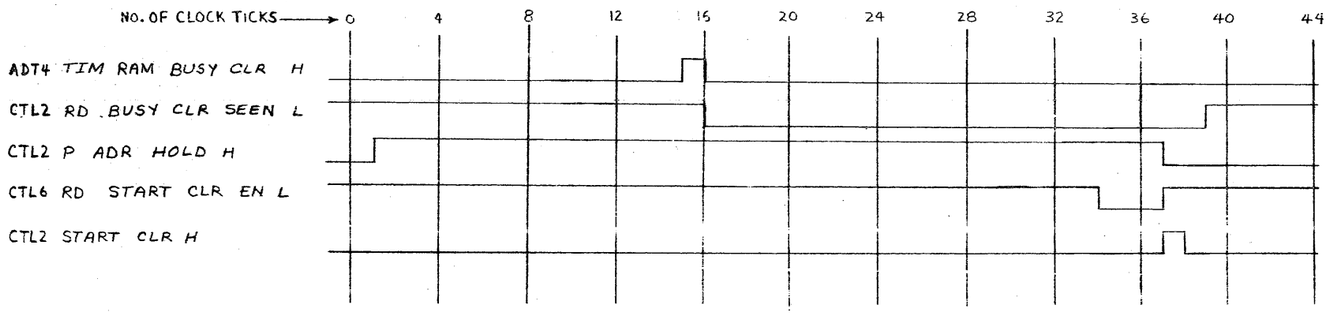
NO. OF CLOCK TICKS → 0 4 8 12 16 20 24 28 32 36 40 44

CTLØ CLK FREE C H
CTL2 A PHS COM FREE H
CTL2 B PHS COM FREE H
CTL2 START CLR DLY H
CTL1 SBUS START A H
CTL1 RAS START Ø H
CTL4 P ACKN EN L
CTLØ SBUS ACKN A L
CTL1 RAS GO L
ADT4 TIM RAM RAS H
ADT6 MOS RAS Ø,1,2,3, H
ADT4 ADR 2ND HALF SEL H
ADT2 MOS ADR ØØ-Ø7 H
ADT4 TIM RAM CAS H
ADT5 MOS CAS Ø,1,2,3 H
ADT4 TIM DATA RDY L
CTL2 RD TIM DONE L
CTL5 LD RD DATA MOV L
CTL5 SET DATA VALID L
CTL6 MOS LOAD RD DATA SBØ H
CTL5 MOS DOUT SEL 1,2 H
CTL6 A PHS RD DATA OUT L
CTL6 A PHS DATA VALID L
CTL6 B PHS RD DATA OUT L
CTL6 B PHS DATA VALID L
CTL6 DATA VALID OUT DLY L
CTL6 DATA DISABLE H
CTL6 PHS DATA H
WRP4 DATA DISABLE A,B,C,D H
CTL6 P BUF LOAD L
WRPØ SBUS DATA DØØ-35, PAR H

FOUR WORD TRANSFER
RAS START Ø SHOULD BEING SET ON A PHS CLOCK. IT CAN ALSO BE SET ON B PHS CLOCK

REVISIONS		
DWK	CHANGE NO.	REV.

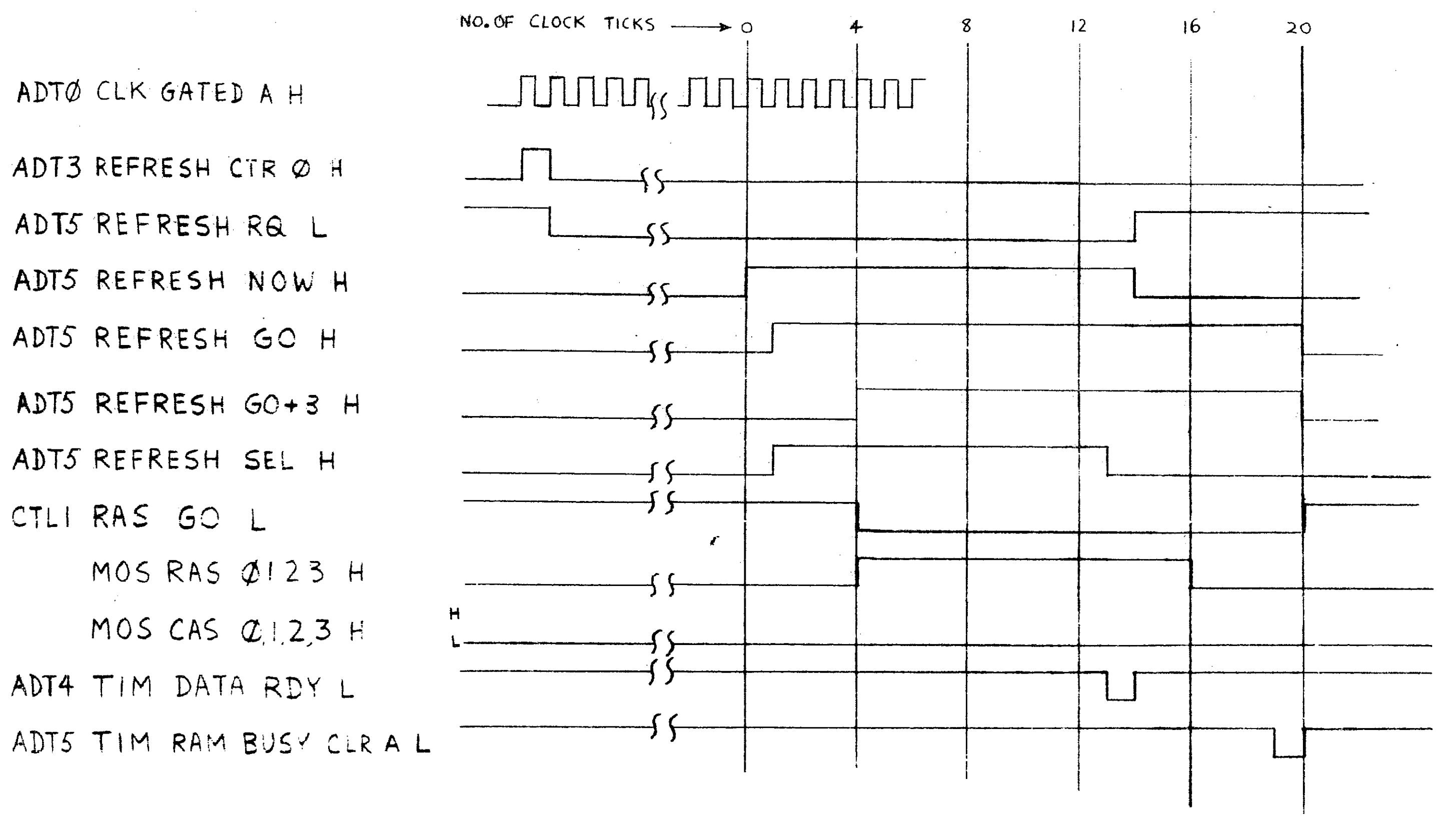
DRN. L. Wilson	31 MAY 78	FIRST USED ON MF20
CHK'D D.W. Counter	2 JUN 78	TITLE MF20 READ CYCLE TIMING DIAGRAM
ENG. D.J. Chen	6-2-78	
PROJ. ENG. D.J. Chen	7-27-78	
PROD.		
NEXT HIGHER ASSY.		
8-DD-MF20-Ø		SIZE D CODE TD NUMBER MF2Ø-Ø-11
SCALE NONE		
SHEET 1 OF 2		DIST.



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	MF20 READ CYCLE TIMING DIAGRAM	SIZE / CODE	NUMBER / REV
SCALE	SHEET 2 OF 2	D / TD	MF20-0-11
		DIST.	

MR 2



REFRESH NOW IS SET IF REFRESH INTERVAL DOWN CTR IS $\leq 128_{10}$
AND REFRESH GO IS NOT YET SET

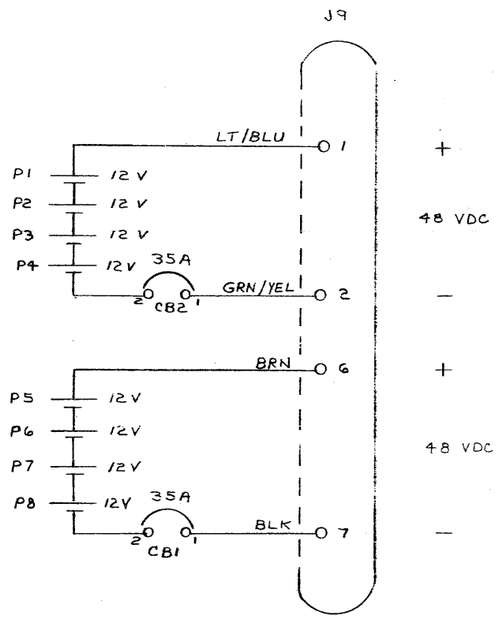
DRN. E Wilson	19APR78
CHK'D	
ENG. DJ Chin	6-1-78
PROJ. ENG. DJ Chin	7-27-78
PROD.	
NEXT HIGHER ASSY. B-DD-MF2Ø-Ø	
SCALE NONE	
SHEET 1 OF 1	

FIRST USED ON MF2Ø

TITLE REFRESH CYCLE TIMING DIAGRAM

SIZE D CODE TD NUMBER MF2Ø-Ø-12

REV. CHANGE NO. CHK REVISIONS



DRN. E. Wilson	12/19/78
CHK. D. Maurer	5-30-79
ENG. D. Chen	5-30-79
PROJ. ENG. D. Chen	5-30-79
PROD.	
NEXT HIGHER ASSY.	B-DD-MF20-0
SCALE NONE	
SHEET 1 OF 1	

FIRST USED ON MF20

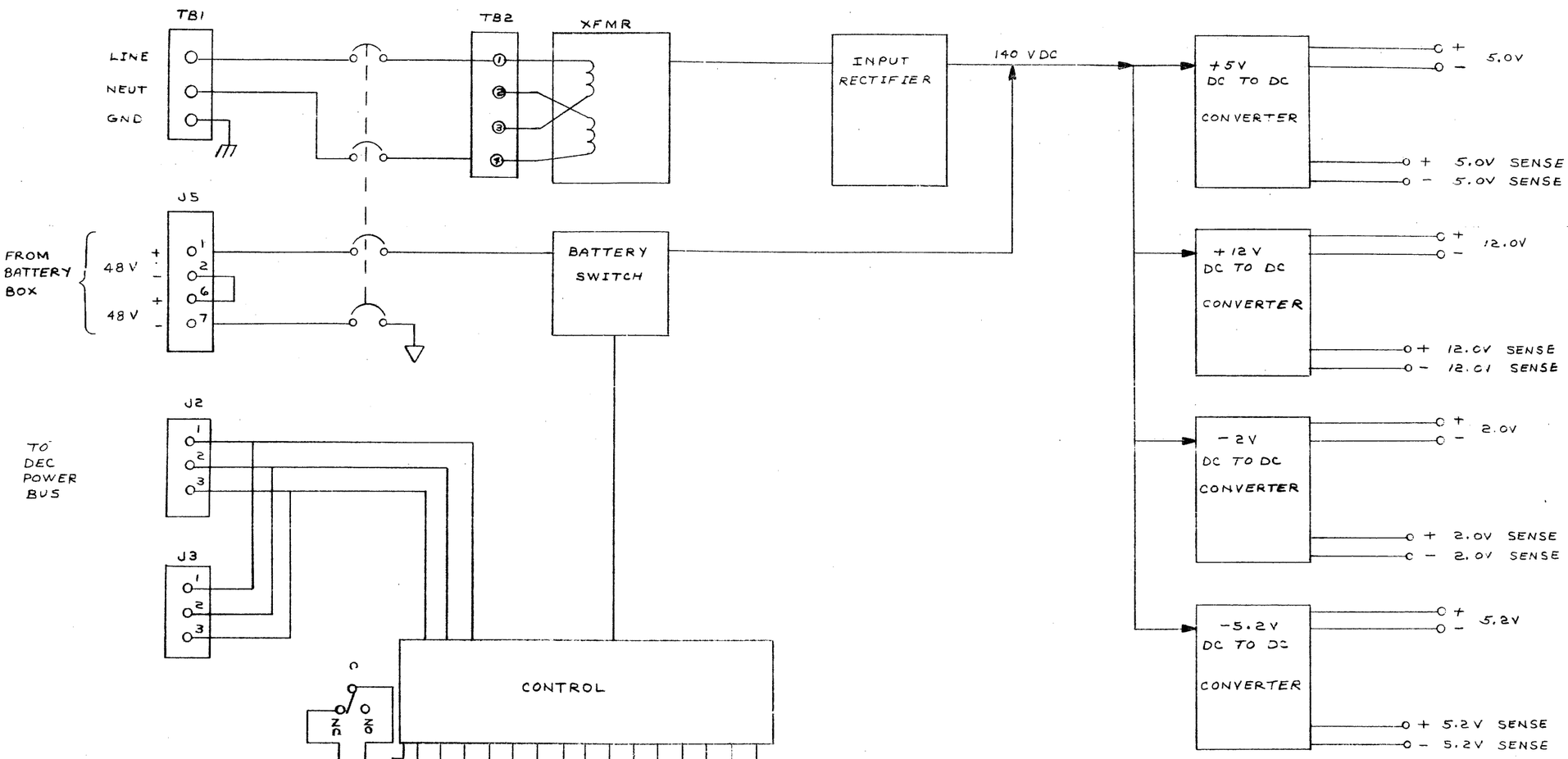
TITLE
BATTERY BOX
BLOCK DIAGRAM

SIZE D | CODE 80 | NUMBER MF20-0-13 | REV.

DIST.

REVISIONS | REV. | CHANGE NO. | CHK

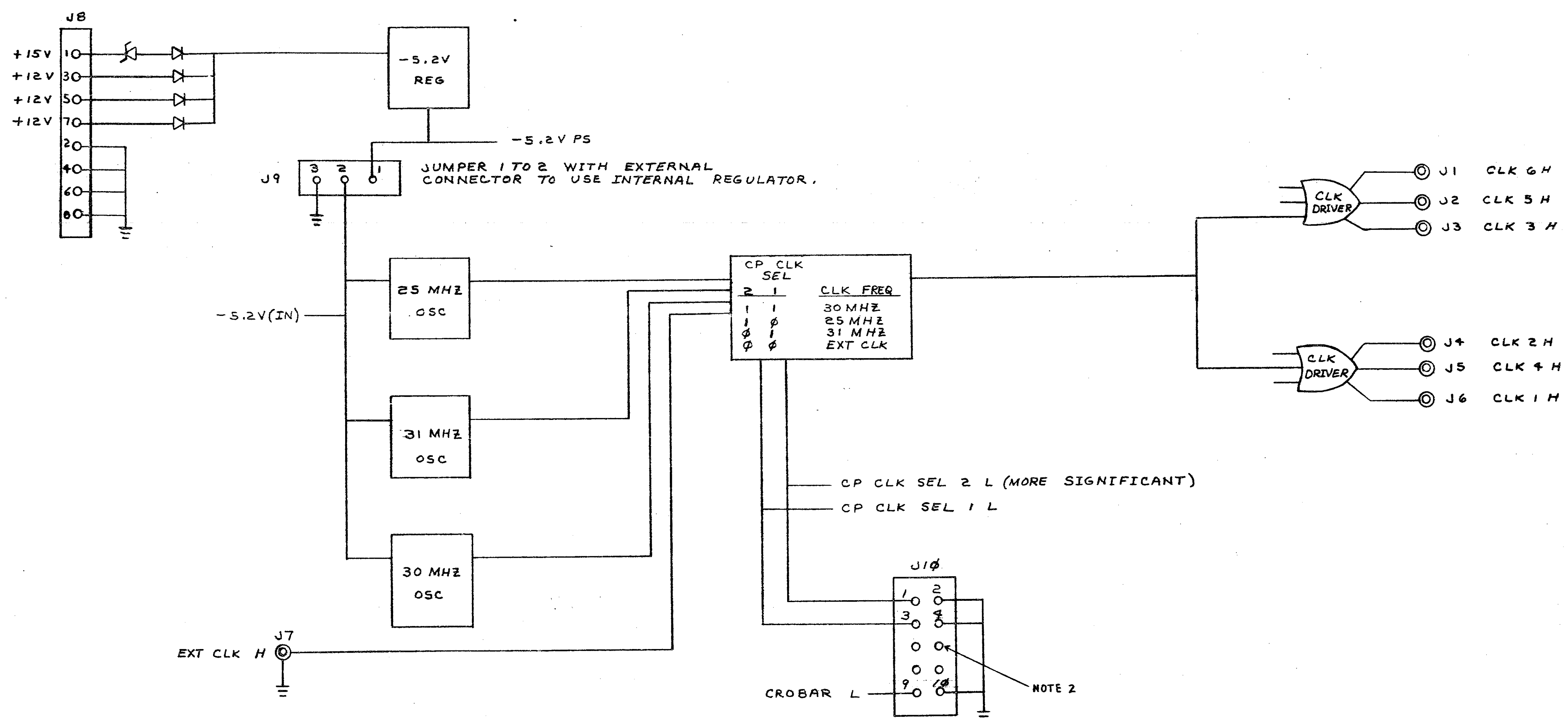
DEC FORM NO. DRD 102-0



REVISIONS		
CHK	CHANGE NO.	REV.

DRN. E Wilson	13APR78	FIRST USED ON MF20
CHK'D D Counter	5-30-78	
ENG. D J Chen	5-30-78	TITLE POWER SUPPLY CONNECTOR DIAGRAM
PROJ. ENG. D J Chen	5-30-78	
PROD.		
NEXT HIGHER ASSY. B-DD-MF20-0		SIZE D CODE IC NUMBER MF20-0-14 REV.
SCALE NONE		
SHEET 1 OF 1		DIST.

NOTE:
1. J1-J5 ARE INTERNALLY TERMINATED. WHEN J1-J5 ARE USED, CORRESPONDING JUMPERS W1-W5 MUST BE CUT. J6 IS NOT INTERNALLY TERMINATED.
2. PIN 6 MUST BE ABSENT TO ACCOMODATE POLARIZING PIN ON MATING CONNECTOR.



DRN.	L Wilson 13APR78
ENG.	DJ Chin 5-30-78
PROJ. ENG.	DJ Chin 5-30-78
FIRST USED ON	MF20
TITLE	MASTER OSCILLATOR BLOCK DIAGRAM
NEXT HIGHER ASSY.	B-DD-MF20-0
SCALE	NONE
SHEET	1 OF 1
SIZE / CODE / NUMBER	D BD MF20-0-16

TIM RAM ADDRESS

REPEAT FOR 100 → 177 →

RAMS CONTENTS

		Ø	1	2	3	4	5	6	7	1Ø	11	12	13	14	15	16	17	2Ø	21	→ 177
RAS	DØØ	1	1	1	1	1	1	1	1	1	1	1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
CAS	DØ1	Ø	Ø	Ø	Ø	1	1	1	1	1	1	1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
PARITY	DØ2	Ø	Ø	Ø	Ø	1	1	1	1	Ø	1	1	1	1	1	Ø	1	Ø	Ø	Ø
WE(L)	DØ3	1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	1	1	1	1	1	1	1
2NDHALF	DØ4	Ø	1	1	1	1	1	1	1	1	1	1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
DATARDY(L)	DØ5	1	1	1	1	1	1	1	1	Ø	1	1	1	1	1	1	1	1	1	1
BUSYCLR	DØ6	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	1	Ø	Ø	Ø	Ø

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	6/28
CHK'D R W Counter	2-Jun-78
ENG. J J Clem	6-2-78
PROJ. ENG. J J Clem	6-2-78
PROD.	
NEXT HIGHER ASSY.	B-DD-MF2Ø-Ø
SCALE NONE	
SHEET 1 OF 1	

FIRST USED ON MF2Ø

TITLE MF2Ø
TIMING RAMS

SIZE	CODE	NUMBER	REV.
D	TD	MF2Ø-Ø-17	

DIST.

CTL7 DIAG ADR 1	CTL1 P RQ 0	CTL1 P RQ 1																	
			0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	CTL1 P RQ 2
			0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	CTL1 P RQ 3
			0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	CTL7 DIAG ADR 6
			0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	CTL7 DIAG ADR 7
0	0	0	1	1	1	1	0	1	1	1	0	1	1	1	0	0	1	1	
0	0	1	0	1	1	1	0	0	1	1	0	0	1	1	0	0	0	1	
0	1	0	0	1	1	1	0	0	1	1	0	0	1	1	0	0	0	1	
0	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	0	0	
1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

ACKN RAM CONTENTS

Φ = ACKN ENABLED

CTL7 DIAG ADR Φ	CTL7 DIAG ADR 1	CTL1 P RQ Φ	CTL1 P RQ 1																	
				0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	CTL1 P RQ 2
				0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	CTL1 P RQ 3
				0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	CTL7 DIAG ADR 6
				0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	CTL7 DIAG ADR 7
0	0	0	0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
0	0	0	1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
0	0	1	0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 1	0 0 0	0 0 0	0 0 0	1 1 0	0 0 0	0 0 0	0 0 0	1 1 0	0 0 0	0 0 0	1 1 0	
0	0	1	1	1 0 1	0 0 0	0 0 0	0 0 0	1 0 1	0 0 0	0 0 0	1 0 1	1 0 1	0 0 0	1 0 1	0 0 0	1 0 1	0 0 0	1 0 1	1 0 1	
0	1	0	0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
0	1	0	1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 1	0 0 0	0 0 0	0 0 0	1 1 0	0 0 0	0 0 0	0 0 0	1 1 0	0 0 0	1 1 0	
0	1	1	0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
0	1	1	1	0 0 0	1 0 0	0 0 0	0 0 0	1 1 1	1 1 1	0 0 0	0 0 0	1 1 0	1 1 0	0 0 0	0 0 0	1 1 0	1 1 0	0 0 0	1 1 0	
1	0	0	0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 1	0 0 0	
1	0	0	1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 1	0 0 0	0 0 0	1 1 1	1 1 1	0 0 0	
1	0	1	0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 0	0 0 0	1 1 1	0 0 0	1 1 1	0 0 0	
1	0	1	1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 0	1 0 0	0 0 0	1 1 1	1 1 1	1 1 1	0 0 0	
1	1	0	0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0	
1	1	0	1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 1	1 0 1	
1	1	1	0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 0	1 0 0	
1	1	1	1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 0	0 0 0	1 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 0	1 0 0	1 0 0	

} REPRESENTS FIRST DATA WORD (CTL1 P RQ 2, CTL1 P RQ 3, CTL7 DIAG ADR 6, CTL7 DIAG ADR 7)

REPRESENTS PRESENT WORD

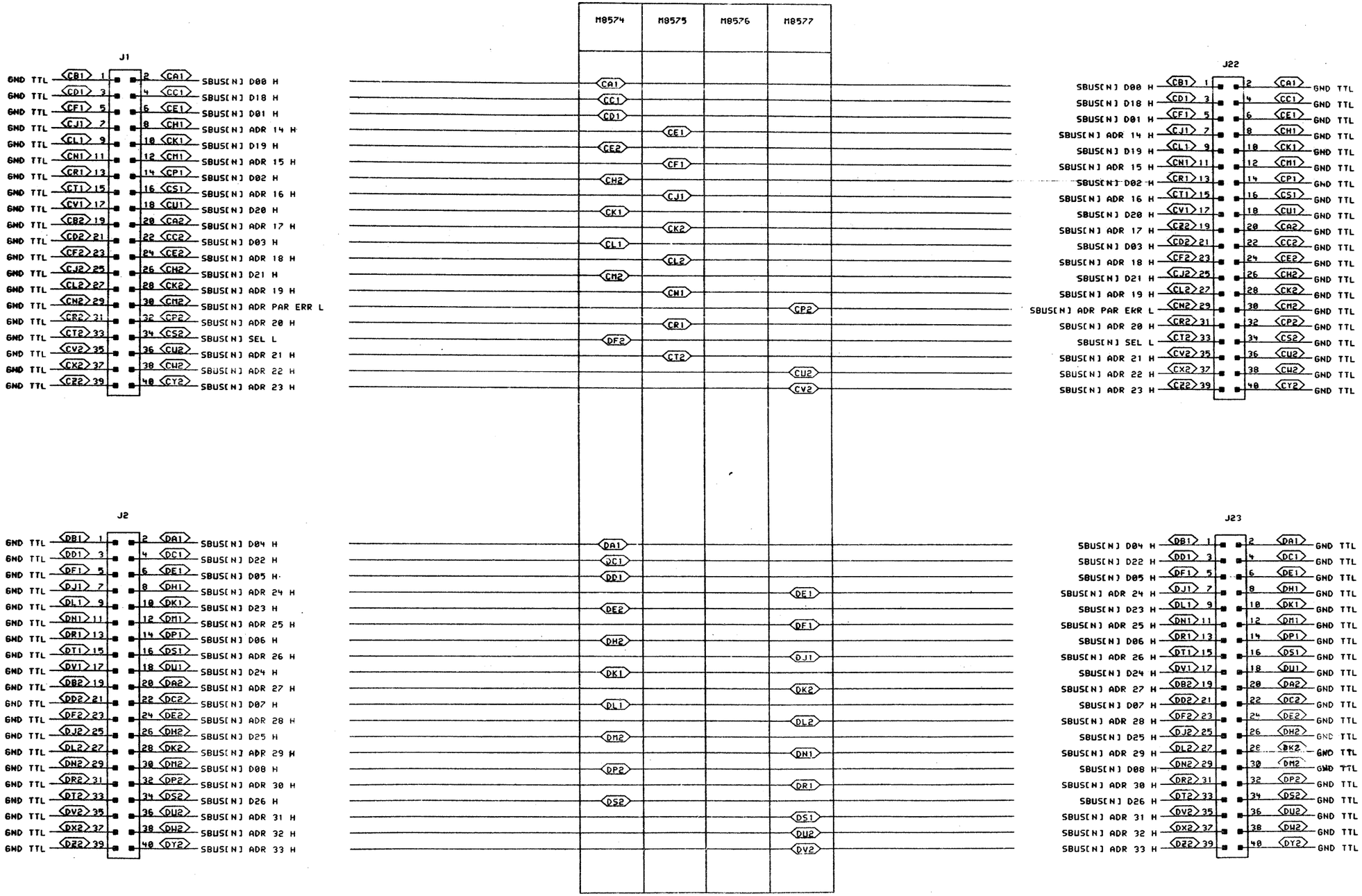
SET DATA VALID (D11)
RD ADR 34 (D12)
RD ADR 35 (D13)

CONTENTS OF
SET DATA VALID
RD ADR 34 AND
RD ADR 35
RAMS
1 = ASSERTED

DRN. W. Cavender		FIRST USED ON	MF2Ø
CHK'D		TITLE	MF2Ø FIXED VALUED RAMS
ENG. DJ Chu	6-16-78		
PROJ. ENG. DJ Chu	7-27-78		
PROD.			
NEXT HIGHER ASSY. B-DD-MF2Ø-Ø		SIZE D CODE BS	NUMBER MF2Ø-Ø-18 REV.
SCALE			
SHEET 1 OF 1		DIST.	

digital

REVISIONS: CHK | CHANGE NO. | REV.



REVISIONS		
CHK	CHANGE NO.	REV

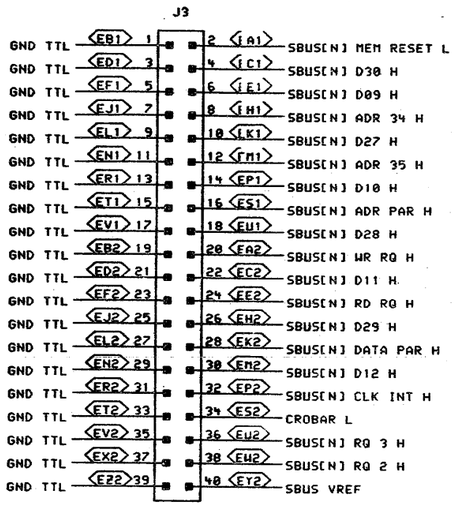
digital

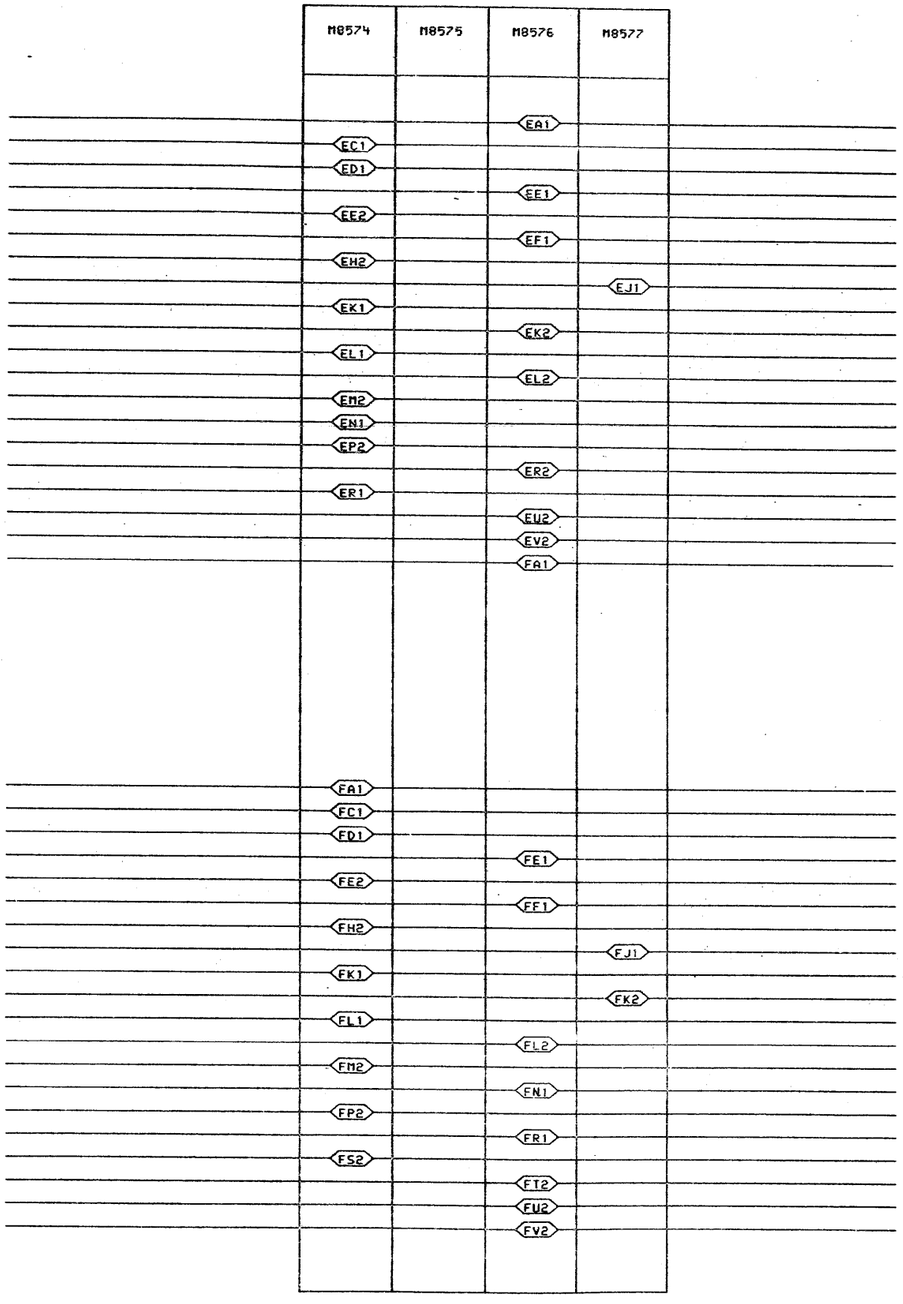
DRN D.Lucier 03-AUG-78 | ENG. DJ Clem 8-3-78
CHK'D DJ Clem 8-3-78 | BOARD LOCATION:
PUB:<M8572-MOS>BACK.DRW 03-AUG-78 09:23 | SHEET 1 OF 2 | NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: MF20 | MF20-0

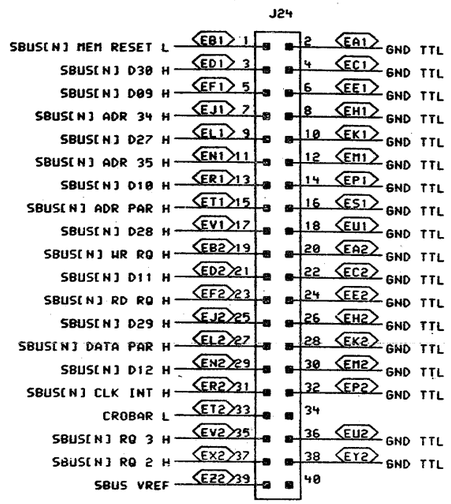
TITLE: MF20 BACKPLANE XBUS CONNECTIONS

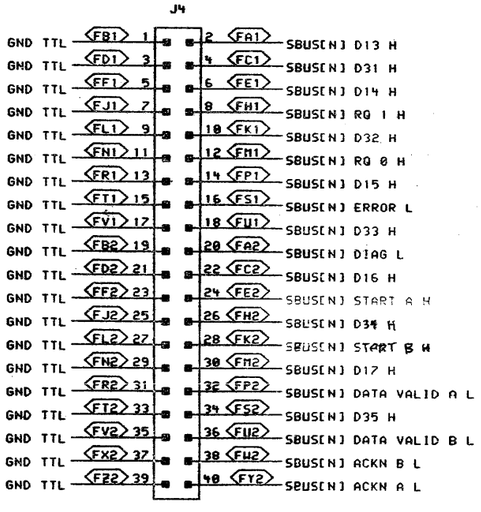
SIZE	CODE	NUMBER	REV.
D	BS	MF20-0-19	

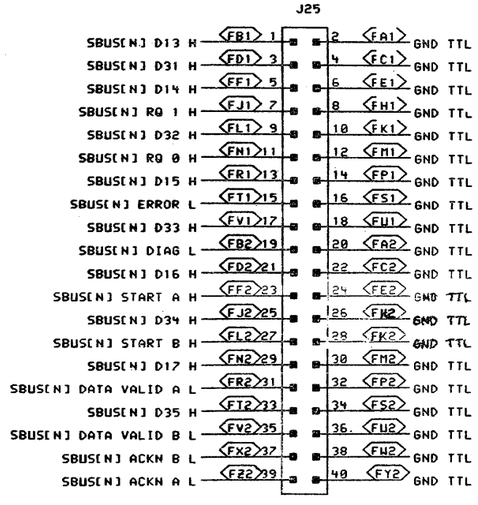
156











REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P.Lucier 03-AUG-78 | ENG. DJ Chin 8-3-78
CHK D. DJ Chin 8-3-78 | BOARD LOCATION: | SHEET 2 OF 2
PUB:<M8572-MOS>BACK1.DRW 03-AUG-78 09:44 | NEXT HIGHER ASSEMBLY: MF20-0
FIRST USED ON OPTION/MODEL: MF20

TITLE: MF20 BACKPLANE XBUS CONNECTION

SIZE	CODE	NUMBER	REV.
D	BS	MF20-0-19	

MR

157

MF20 "GROUP" 00

FIELD 0 (BITS) 00,02,04,06 08,10,12,14 16,36,38	FIELD 1 (BITS) 01,03,05,07 09,11,13,15 17,37,39	FIELD 2 (BITS) 18,20,22,24 26,28,30,32 34,40,42	FIELD 3 (BITS) 19,21,23,25 27,29,31,33 35,41,43	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 0 0-64K *
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 1 64K-128K
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 2 128K-192K
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 3 192K-256K
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	

MF20 "GROUP" 01

FIELD 0 (BITS) 00,02,04,06 08,10,12,14 16,36,38	FIELD 1 (BITS) 01,00,05,07 09,11,13,15 17,37,39	FIELD 2 (BITS) 18,20,22,24 26,28,30,32 34,40,42	FIELD 3 (BITS) 19,21,23,25 27,29,31,33 35,41,43	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 4 256K-320K
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 5 320K-384K
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 6 384K-448K
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 7 448K-512K
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	

MF20 "GROUP" 02

FIELD 0 (BITS) 00,02,04,06 08,10,12,14 16,36,38	FIELD 1 (BITS) 01,03,05,07 09,11,13,15 17,37,39	FIELD 2 (BITS) 18,20,22,24 26,28,30,32 34,40,42	FIELD 3 (BITS) 19,21,23,25 27,29,31,33 35,41,43	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 10 512K-576K
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 11 576K-640K
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 12 640K-704K
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	
SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	SUB-BLOCK 0	BLOCK 13 704K-768K
SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	SUB-BLOCK 1	
SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	SUB-BLOCK 2	
SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	SUB-BLOCK 3	

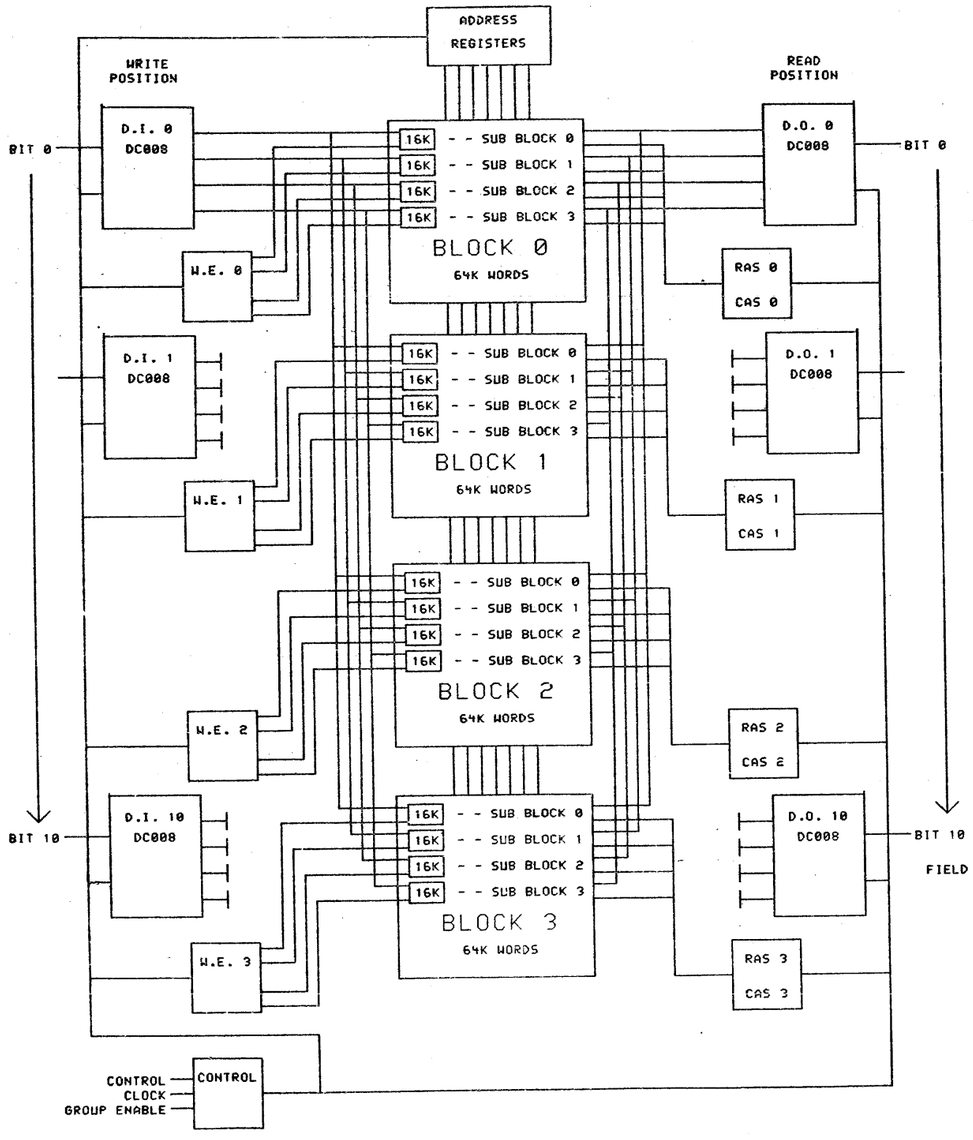
* ALL BLOCK SIZES SHOWN ARE FOR 16K CHIP ONLY

REVISIONS		
CHK	CHANGE NO.	REV

digital	DRN P. Lucier	DATE 03-AUG-78	ENG. DJ Clem	DATE 8-3-78	TITLE: STORAGE ARRAY ORGANIZATION
	CHK D. DJ Clem	DATE 8-3-78	BOARD LOCATION: SHEET 1 OF 1		
PUB:<M8572-MOS>ORG.DRW 03-AUG-78 09:21			NEXT HIGHER ASSEMBLY: MF20-0		SIZE D / CODE CS / NUMBER MF20-0-20 / REV.
FIRST USED ON OPTION/MODEL: MF20					

MR

(256K - 11 BITS)



REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN P. Lucier DATE 03-AUG-78
CHK'D. D.J.Chin DATE 8-3-78
ENG. D.J.Chin DATE 8-3-78
PUB:<M8572-MOS>79FLO.DRW 03-AUG-78 09:45
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: MF20 MF20-0

TITLE: MF20M BLOCK DIAGRAM

SIZE	CODE	NUMBER	REV.
D	CS	MF20-0-21	

MR

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 5/21/78

TITLE MF20 Sbus Clock Synchronization

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	APPD	SIZE	CODE	NUMBER	REV
25-May-78 Chuck Smith		A	SP	MF20-0-SYNC	

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE MF20 Sbus Clock Synchronization

	SIZE	CODE	NUMBER	REV
	A	SP	MF20-0-SYNC	

1.0 Intention of this document

This specification is intended to provide a method for synchronizing the bus operation of each MF20 controller with that of the KL10PV central processor. Also information is provided concerning the environment required to perform the adjustment and situations requiring the adjustment to be performed.

2.0 Test equipment required

a. DECsystem2060

b. Voltmeter: digital voltmeter
(2 and 1/2 digits or more)

c. Scope: TEKTRONIX 475 or better
200MHZ BW, 1.8NS RISE TIME
(2 channels and viewable external sync or
3 or more channels)

d. Probes: quantity three (3) probes,
volts times ten (x10),
of equal length for above scope.

e. Dip clip

f. Extender module: W9025, 12 inch

g. Screwdriver: Flat blade, 1/8 inch

3.0 Diagnostics required for testing

a. kldcp.all

b. ub.ram

4.0 Voltage specifications

Verify that the following conditions exist before proceding to perform the adjustment.

a. DC voltages

1. +12.0 volts dc +/-5%

2. +5.0 volts dc +/-5%

3. -2.0 volts dc +/-5%

4. -5.2 volts dc +/-5%

b. SIGNAL voltages

1. Vref 1.39 to 1.41 volts dc

a. Corrective measures:
replace M8580 module in slot 7 of CPU.

5.0 Adjustments

the following actions require the adjustment to be performed.

a. replacement of M8576 MOS CONTROL

b. replacement of M8572 XBUS CABLE

***** Note: Particularly if lengths are different *****

c. replacment of M8526 in CPU

6.0 adjustment procedure

a. POWER DOWN THE MF20 AND PLACE THE M8576 ON THE EXTENDER. ROTATE THE TWO SWITCHES ALL THE WAY CLOCKWISE. RESTORE POWER AND LOAD THE KL10 UCODE. MASTER RESET THE MACHINE (MR), SELECT FULL CLOCK RATE (CR0), AND SOURCE THE CLOCK FROM THE MASTER OSCILLATOR AT 30MHZ (FW72/3,CS2). NOW START THE UCODE (SM).

b. PLACE THE PROBE FOR THE VIEWABLE EXTERNAL SYNC ON PIN E22F2 IN CPU BAY (SIGNAL "A CHANGE COMING L") AND PLACE THE GROUND CLIP ON A GND PIN.

c. SYNC NEGATIVE EXTERNAL.

d. PUT THE DIP CLIP ON E86 OF THE M8576 AND PLACE PROBE 2 ON E86 PIN 5 (CT A CLK DLY L). PLACE THE GROUND CLIP ON PIN 1.

e. PLACE PROBE 1 ON E86 PIN 9 OF THE M8576 (CLK FREE) AND GND CLIP ON PIN 16.

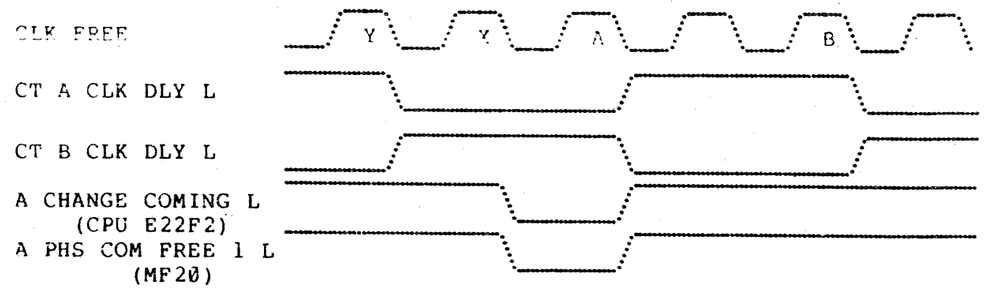
f. VIEW EXTERNAL SYNC AND LOCATE "A PHASE" TICK OF CLK FREE (PROBE 1). IT IS THE FIRST POSITIVE GOING PULSE AFTER THE CPU SIGNAL "A CHANGE COMING L" GOES LOW.

g. HAVING LOCATED THE "A TICK" OF CLK FREE, WE DEFINE THE POSITIVE PULSE BEFORE "A TICK" TO BE "X TICK". WE NOW DEFINE THE POSITIVE PULSE BEFORE "X TICK" TO BE "Y TICK" (SEE 7.0 TIMING DIAGRAM ON NEXT PAGE) .

h. ROTATE THE BOTTOM SWITCH TO ALIGN THE NEGATIVE GOING EDGE OF "CT A CLK DLY L" (PROBE 2) WITH THE NEGATIVE GOING EDGE OF "Y TICK" (PROBE 1). IF THIS OPTIMAL SETTING IS NOT POSSIBLE YOU MUST ALIGN THE NEGATIVE GOING EDGE OF "CT A CLK DLY L" WITHIN THE FOLLOWING RANGE: AFTER THE POSITIVE GOING EDGE OF "Y TICK" AND BEFORE THE POSITIVE GOING EDGE OF "X TICK".

i. MOVE PROBE 2 FROM E86 PIN 5 TO E86 PIN 6. ROTATE THE UPPER SWITCH TO ALIGN THE NEGATIVE GOING EDGE OF "CT B CLK DLY L" (PROBE 2) WITH THE NEGATIVE GOING EDGE OF "A TICK" (PROBE 1). IF THIS OPTIMAL SETTING IS NOT POSSIBLE, YOU MUST ALIGN THE NEGATIVE GOING EDGE OF "CT B CLK DLY L" WITHIN THE FOLLOWING RANGE: AFTER THE POSITIVE GOING EDGE OF "A TICK" AND BEFORE THE POSITIVE GOING EDGE OF THE PULSE FOLLOWING " A TICK".

7.0 Timing diagram



8.0 Verification

a. SEMI-FINAL CHECK:
REMOVE PROBE 1 FROM PIN 9 OF E86 AND PLACE IT ON PIN 5. THE WAVEFORMS OBSERVED ON CHAN 1 AND 2 SHOULD BE THE LOGICAL OPPOSITE OF ONE ANOTHER.

B. FINAL CHECK:
AT THE SCOPE, MOVE THE PROBE MONITORING "A CHANGE COMING L" FROM THE "EXT SYNC" TO "CHANNEL 1" . SYNC INTERNAL ON CHAN 1. NOW REMOVE THE PROBES ATTACHED TO THE DIP CLIP AND PLACE THE DIP CLIP ON E61. PUT CHANNEL 2 PROBE ON E61 PIN 2 (SIGNAL "A PHS COM FREE 1 L" IN MF20) AND PLACE THE GROUND CLIP ON E61 PIN 16. THESE SIGNALS SHOULD BE IDENTICAL.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION DATE 5 March 1979

TITLE MF 20 INSTALLATION PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	REVISED	MF20-MR005	J.MCELROY	5 JUN 80	[signature]	7/3/80
B	REVISED	MF20 MR006	R.SCOTT	22 JULY 80	[signature]	8-7-80

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ENG	APPD	SIZE	CODE	NUMBER	REV
[signature]	[signature]	A	SP	MF 20-0-2	B

EN-10788-16-R873-(392)
DRA 107A

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ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE MF20 Installation Procedure

MF20 ADD ON INSTALLATION, CHECKOUT AND ACCEPTANCE PROCEDURE

The MF20 add-on installation should be very straight-forward if you take care in following each step outlined in this procedure. However, there may be some tasks which must be completed ahead of actual MF20 installation time.

The complexity of the installation will depend on the state of the system at the customer's site. The first area of concern is the CPU cabinet rear equipment mounting door. All cabinets being built today have mounting holes and rivnuts on the CPU rear equipment mounting door to accept the MF20 power supplies (or H7420 power supplies for MA/MB20).

These holes were added to the cabinet with the introduction of the MA/MB20 add-on. However, systems built before that time do not have these holes and some of the systems built during the transition have these holes in the wrong place.

Check CPU rear door against Figure #1 to determine if these holes must be added.

Also, all cabinets being built today have mounting holes and rivnuts on the CPU cabinet rear equipment mounting door to accept the MF20 battery box. However, again all systems built before the time of this option do not have these holes. Check CPU rear door against Figure #1 to determine if these holes must be added. If holes must be added, acquire the mounting hole installation kit from your branch office (kit contains electric drill, rivnut gun, etc.) and follow the procedure at section 5.0 to drill holes before starting the MF20 installation.

Next, a pre-installation (skidded) checkout procedure is part of this document. The purpose of this skidded checkout is to determine if there is any reason why the delivered memory unit should not be mounted in the customer's system. At this point, you should be looking for "castastropic" problems, not logic problems.

Next, in some systems the MF20 will be replacing an existing MA or MB20. If this is the case, follow the removal procedure starting with section 7.0 before starting MF20 installation. NOTE: however, that skidded checkout of MF20 should be completed before removal of MA/MB20 is started.

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Finally, before beginning the installation, read through the entire procedure and familiarize yourself with all diagrams and required parts. Make certain you have all the required parts.

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1.0 INSTALLATION OVERVIEW

To help eliminate possible confusion in the installation, this overview is provided to give you a brief outline of all steps necessary to successfully install this option. These steps are listed in the order in which they must be performed. Any attempt to alter this sequence of events will create problems at your customer site. You should also be warned that this outline is just a brief description of the steps to help firm up the order and scope of the installation in your mind. The in-depth description of the procedure in Sections 5.0 - 13.0 must be followed when the installation is in process.

The installation should follow these steps:

1.1

Determine if mounting holes must be added to CPU cabinet rear equipment mounting door. Add if necessary.

1.2

Determine if the processor is a KL10-E complete to Rev 4 with the appropriate diagnostic software if not, obtain the ECO and install it.

1.3

If and only if the installation is an external cabinet, then the rear card cage door assy (D-AD-7016755-0-0), the hanger bracket (D-[redacted]-0-0) must be installed prior to installation. If the MF20 is an internal box then this is not necessary.

1.4

System operation must be verified if wire adds are installed.

NOTE: Steps 1.1 - 1.4 should be done prior to the scheduled installation date.

1.5

Appropriate CPU modules must be swapped.

1.6

Connections must be made between skidded equipment and the CPU.

1.7

Pre-installation (skidded) checkout must be performed.

1.8

Connections between the skidded equipment and the CPU must be removed.

1.9

If MA or MB20 is present on rear equipment mounting door it must be removed.

1.10

Master Oscillator (if necessary), MF20, power supply and battery box must be mounted.

1.11

All necessary cables must be installed and connections made.

1.12

Final checkout and field acceptance must be run.

At this point, the installation is complete and another satisfied customer has use of a properly installed and functioning MF20.

2.0 MF20 ADD-ON PARTS LIST

Item	Part Number	Description	Qty
1	MF20	Memory Complete	1
2	9007796	Tinnerman Nuts 10-32	16
3	9007892	Riv Nuts 10-32	22
4	9006074-03	Screws 10-32 X .62	43
5	9006635	Lock Washer #10	39
6	9007651	Lock Washer #10	11
7	9006565	Kep Nut 10-32	12
8	9007880	Tie Wraps	40
9	9008264	Stick Mounts	25
10	9007032	Tie Wraps	40
11	9006071-03	Screw 10-32 X .38	6
12	9008203	Kep Nut 1/4-20	1
13	9006724	Lock Washer 1/4 in	1

(Items 11, 12, 13 are used only on ext MF20 cab.)

3.0 APPLICABLE DOCUMENTS AND DIAGNOSTICS

3.1

Documentation:

1. MF20 Maintenance Print Set
2. MOS Memory Subsystem Technical Manual (EK-0MF20-TM-0)
3. MF20 SBUS Clock Sync (A-SP-0MF20-SYNC)

3.2

Diagnostics:

1. KLDCP.BIN
2. DIAGB.RAM
3. DHKBA.A11
4. DHKBF.A11
5. DHKBG.A11
6. UB.RAM
7. MEMCON.A11
8. DFMMH.A10
9. SUBKL.A10

4.0 REQUIRED TOOLS

4.1

Standard Tools and Test Equipment

1. Scope: Tektronix 475 or equiv.
2. Digital Volt Meter
3. DIP clip
4. Philips screwdrivers (#2 and #3)
5. Dykes
6. Blade screwdriver
7. Adjustable wrench

8. Trim pot "tweeker"

9. 3/8 inch electric drill

10. Drill Bits (5/32 and 1/4 inch)

11. Center punch

12. W9025 extender module

13. Torque wrench (not necessary for normal installation, just for replacing bad power supplies).

4.2

Special Tools Included In MF20 Controlled Distribution "kit".

1. M8572-YA (with 13 ft. xbus cable)

2. Riv-nut tool

3. 3/4" box wrench

4.3

Special Tools Shipped with MF20

1. Battery box mounting template.

5.0 MOUNTING HOLE CHECK AND INSTALLATION

5.1

Check CPU cabinet rear equipment mounting door for holes and rivnuts in the short member of the door frame as seen Figure #1. These are the ten (10) mounting holes (2 sets of 5 holes each) on the inside of the door member.

Hint: If the system presently has H7420 power supplies mounted in this position for an MA/MB20 add-on, these holes are already present.

5.2

Check CPU cabinet rear equipment mounting door for holes and rivnuts in the members to accept the battery box as seen in Figure #1. These are the holes to be installed by the template shown in Figure #2.

5.3

If any holes must be added, contact the office and acquire the mounting hole installation kit.

5.4

If holes for mounting the power supplies must be added, contact Product Support in Marlboro, phone number (617) 481-9511, extension 6903.

A template can be provided to help locate these holes also. This template will not be provided with each kit due to the extremely limited number of machines produced without these holes.

5.5

A significant number systems were built without the battery box mounting holes. Therefore, a template to locate these holes will be supplied with every MF20 - LA/LB shipped to the field.

5.6

Using Figure #1 as a reference, place the template in place with the template bottom flange on top of door bottom member and the side flanges outside the two vertical members.

5.7

Using a 5/32 inch drill, drill out all necessary pilot holes.

5.8

Remove the template.

5.9

Using a 1/4 inch drill, enlarge all necessary holes.

5.10

Using a rivnut tool install rivnuts (item #3) in all necessary holes.

5.10.1 To use the rivnut tool (figure #2A). Place rivnut (item #3) on pull up stud until the first thread becomes exposed at the end of the rivnut as seen in figure #2B.

5.10.2 Rotate the hex nut (body) counter clockwise until the anvil makes contact with the shoulder of the rivnut as seen in figure #2C.

5.10.3 Insert rivnut in hole (with rivnut tool attached), place 3/4 inch wrench over body hex nut (box end of wrench is preferred) and place the hex wrench in the hex wrench socket.

5.10.4 Holding tool stationary by the hex wrench, turn the body hex nut counter clockwise one to one and one half (1-1 1/2) turns with the 3/4 inch wrench. Resistance to turning after about one full run will indicate that compression is complete.

5.10.5 Turn body hex nut 1/2 turn in the clockwise direction to loosen the tool. Remove the wrenches and remove the rivnut tool by turning the hex wrench socket counter clockwise.

5.11

Repack mounting hole installation kit and return to the branch office so that others may be able to use it.

6.0 MF20 PREINSTALLATION (SKIDDED) CHECKOUT

6.1

Run BB.CMD to verify that the system is operational.

6.2

Power down the system.

6.3

Check to see that the backplane is a KL10PV model B backplane. A quick check is to look at the connector for the external clock input below slot 9. It must be the threaded type.

6.4

Make sure the processor is a KL10-E at Rev 4 with appropriate software if not, it must be updated first.

6.5

Power the system back up and run BB.CMD again to verify that system runs with the update added.

NOTE: Steps 1 thru 5 should be done prior to scheduled installation date.

6.6

Power down the system.

6.7

Remove the outer cabinet doors from the front left I/O bay and from the rear of both the I/O bay and CPU bay.

6.8

Remove the orange front top panel (grill) from the I/O bay. (Also: Remove the UL screen if present.)

6.9

Place the shipping skid with MF20, power supply, battery box, etc. still mounted (cardboard box and plastic bag removed) as close to the rear of the I/O cabinet as possible (with I/O cabinet rear doors open and the power supply end towards the I/O bay). If access to the rear of the cabinet is limited place the skidded memory in front of the cabinet as close as possible with the power supply towards the I/O bay.

6.10

Replace M8519 modules in CPU slots 7 & 8 with M8580 modules.

6.11

Remove any SBUS cables from slots 2 & 3 in CPU.

6.12

Install clock select harness in M8572-YA by plugging either end into J5 on M8572-YA.

6.13

Install M8572-YA in slot 2 of CPU. (It is sometimes helpful to use a sheet of plastic from a listing cover to put between the M8572-YA and the E-BUS and C-BUS cables to prevent snagging).

6.14

Replace SBUS cables from MA/MB 20 below CPU in slot 3.

6.15

Plug XBUS into MF20 backplane. Top cable on M8572-YA board goes to the jack below the led on the MF20 (bottom to bottom, etc.). Make sure the cables are installed in the left side of the MF20, looking from the front (pin side).

6.16

Place strain relief over cables on side of MF20 card cage.

6.17

To facilitate the skidded checkout the master oscillator must be installed in the system. This unit in no way interferes with the existing system and may be left installed (but unplugged) if for some reason the system is to be operated between the skidded checkout phase and the final installation. This would eliminate unnecessary dismounting and remounting the same equipment.

6.18

Disconnect all cables connected to the master oscillator.

6.19

Add Tinnerman Nuts (item 2) to rails in I/O cabinet as seen in drawing E-UA-MF20-0-0 sheet #3 in holes #12 and 17 in the left hand rail (as seen from front) and holes #12 and 17 in the right hand rail, counting from the top down.

6.20

Remove mounting screws securing the master oscillator to the shipping skid.

6.21

Install the master oscillator in the I/O cabinet from the front as seen in drawing E-UA-MF20-0-0 sheet #3 using screws (item 4) and lock washers (item 5). ALSO: Add option jumper for Master Oscillator to CPU backplane from pin 4D43E1 to 4D44E1. (APR ID JUMPER) Also add option jumpers to MF20 backplanes per chart on sheet 9 of drawing E-UA-MF20-0-0 so that each controller will have a unique number. Install "DESEL CYC DISABLE" jumper per same drawing.

6.22

See D-IC-MF20-0-3, MF20 cable diagram.

Connect black coax cables as shown

Connect Master Oscillator DC power harness as shown

Connect Master Oscillator AC fan harness as shown

Connect clock select cable to the Master Oscillator

NOTE: Make sure the jumper is cut in the Master Oscillator for each coax connector occupied. If not, do so. (J1 cut W1, J2 cut W2, etc.)

6.23

Open the MF20 logic door and unplug all the modules moving them back about one inch so that no electrical connection is made to backplane.

6.24

Plug the MF20 power supply AC power cord into the 863 socket J24, by means of disconnecting H7420 power cord and replacing it with MF20 power supply cord.

Both H7420's should be unplugged and replaced with MF20 power supply. The SBUS cables should be unplugged and "bagged", and J5 should be unplugged from vane switch below MA/MB. This will allow the memory to just hang on the door, dead to the world.

(NOTE: These H7420's are located on the CPU rear equipment mounting door).

6.25

Connect cable 7008288-15 from J2 on one power supply to J4 of the rear of the switch panel that houses the on/off switch for the system.

6.26

Power up the system and power up the MF20 power supply.

6.27

Check the power supply voltages at the MF20 backplane terminal block (from left to right) -2V, gnd, -5.2V, gnd, -5.2V, gnd, +5V, gnd, +12V, gnd, +5V, gnd, +12V and gnd. Voltages should be + or - 10% at this point.

6.28

Power down the MF20 and plug all of the modules back in and power it up back up.

6.29

Check the voltages at the MF20 backplane again as above only this time the voltages should be + or - 2%.

6.30

Check S-BUS "VREF" by placing D.V.M. on pin F5A1 on MF20 it should read +1.40 +/-.02 volts. If "VREF" is not within specifications, replace the M8580 or M8581 in slot 7 of the CPU backplane. HINT: If a new board is not available, switch the boards in slot 7 & 8 to obtain the same results. Also check "VREF" on MF20 pin F5D1. If this is bad, replace the M8576.

6.31

Check the X-BUS clock sync with a scope using the following quick check.

Boot strap load KLDCP.

Set X-BUS sync as follows:

NOTE: The nominal setting of the 2 switches on the M8576 for XBUS deskew ADJ. is as follows:

13 ft. XBUS cable: turn each switch all the way clockwise and back off 1 click.

3 ft. 8 in. XBUS cable: turn each switch all the way clockwise and back off 2 clicks.

6.32

Set scope to 1V/DIV for both chan 1 and chan 2. Set sweep rate to 20NSEC/DIV. Load the KL10 microcode. Select full clock rate and source the clock from the master oscillator at 30MHZ. Start the microcode. (CR0, FW72/3, CS2, SM).

6.33

Place probe 1 on pin E22F2 in the CPU bay (signal "A change coming L") and place the clip on a ground pin. Place probe 2 on pin D5D1 in MF20 (signal "CTL2 a PHS COM FREE L") and place the clip on a ground pin. Synchronize internal on chan 1. These signals must be identical.

6.34

Move probe 1 from CPU bay to MF20 at pin C5M2 (signal "CTL2 B PHS COM FREE L") and place the clip on a ground pin. Set the scope to add channel 1 with channel 2. The waveform observed must be perfectly symmetrical with respect to on/off time.

6.35

If the sync does not check the X-bus must be synchronized by following drawing A-SP-MF20-SYNC. If the sync does check then proceed.

6.36

Run diagnostics DHKBA.A11 & DHKBF.A11

6.37

Power system down. At this point the skidded checkout is complete and it should be determined which of three possible steps is to come next.

6.37.1 If you are going to proceed with the installation and a rear door mounted MA/MB20 is to be removed, skip the remainder of this section and go to section 7.0 and continue.

6.37.2 If you are going to proceed with the installation and there is no memory to be removed, skip the remainder of this section and go to section 8.0 and continue.

6.37.3 If you are going to abort the installation and the system is to be made operational at this point, complete this section. (6.0)

6.38

Unplug the MF20 X-bus cable (m8572) from the CPU.

6.39

Disconnect the clock select harness from the M8572 module.

6.40

Disconnect the master oscillator external clock cable from the external clock fixture below slot 9 of the CPU.

6.41

Disconnect all cables from the master oscillator. Remove Master Oscillator option bit APR ID (Pin 4D43A1 to 4D44E1).

6.42

Reconnect the internal memory power supplies and S-BUS (if present).

6.43

Reconnect the MA/MB20 vain switches. (J5)

6.44

Remove the M8580 modules from the CPU slots 7 & 8 and replace the M8519.

6.45

Replace the external cabinet doors and front grill removed in steps 7 and 8 of this section.

6.46

Move skidded memory away from system.

6.47

Power up system and run BB.CMD again to verify system operation.

7.0 MA/MB20 REMOVAL

7.1

If the system has an MA20 or an MB20 installed on the I/O cabinet rear equipment mounting door, it must be removed before installation of the MF20 can begin. (To avoid embarrassment make certain MF20 has passed skidded checkout before removing MA/MB20.)

7.2

Power system down.

7.3

Remove the logic doors from the CPU logic housing and MA/MB20 logic housing and disconnect and remove the S-Bus cable, then replace the logic doors on the memory. The CPU logic doors may be left off until the MF20 is installed and cabled.

7.4

Unplug the two (2) H7420 power supplies from the extension cords that plug into the 863 power controller at J24 and J26. These cords may be used for the MF20 later.

7.5

Disconnect any ground straps from the H7420 power supplies.

7.6

Disconnect the Mate-N-Lock at the memory door switch and cut tie wraps to free up door switch wires.

7.7

Disconnect the Mate-N-Lock at the memory vane switch assembly and cut tie wraps necessary to free up this section of fault harness.

7.8

Disconnect the red and white twisted pair from the memory blower and cut tie wraps necessary to free wire back to the H7420. Disconnect AC to the fans of the H7420.

7.9

Disconnect the Mate-N-Lock connectors at the H7420 power supplies and cut necessary tie wraps to free up D.C. harness to allow it to hang free at the memory.

7.10

Remove H744 and H754 regulators from the H7420 power supplies and set them aside.

7.11

Remove mounting screws and dismount the H7420 power supplies and set them aside. Save removed hardware for later use.

7.12

Remove the air duct assembly from the memory and set it aside. Save removed hardware for later use.

DO NOT ATTEMPT THE NEXT STEP WITH LESS THAN TWO PEOPLE

7.13

Remove mounting screws and carefully lift out the MA/MB20 memory and set it aside. Save removed hardware for later use.

7.14

At this time proceed with the MF20 installation in Section 8.0. After installation is complete, mount the MA/MB20 memory on the empty MF20 shipping skid using saved hardware.

7.15

Mount the H7420 power supplies on the skid using saved hardware.

7.16

Replace the H744 and H754 regulators in the H7420 power supplies.

7.17

Replace the air duct on the memory logic assembly.

7.18

Package all remaining MA/MB20 parts and equipment for shipment back to Marlboro.

8.0 MF20 #1 MOUNTING PROCEDURE

8.1

Power system down.

8.2

Remove the outer cabinet doors from the front left I/O bay and from the rear of both I/O bay and CPU bay.

8.3

Remove the orange front top panel (grill) from the I/O bay. (If not done previously).

8.4

Remove the M8519 modules from slots 7 & 8 and replace them with M8580.

8.5

Disconnect the DC and sense harnesses from the MF20 back plane.

8.6

Check to see that the CPU cabinet rear equipment mounting door has tinnerman nuts (Item 2) in holes #2,4,11, and 13 as seen in drawing E-UA-MF20-0-0 sheet #2. If not, add them.

** NOTE: If system has cabinet locking feature added, the door locking bracket on the I/O cabinet rear equipment mounting door should be removed and all hardware saved for re-installation after the MF20 installation is complete.

8.7

Remove the mounting screws securing the MF20 power supply to the shipping skid and remove the power supply and set it aside.

8.8

Remove the power supply mounting bracket from the shipping skid.

8.9

Install the power supply mounting bracket on the CPU cabinet rear equipment mounting door using screws (item #4) and lock washers (item #5) as seen in print E-UA-MF20-0-0 sheet #3 (view section A-A).

8.10

Install the power supply in the bottom position of the CPU cabinet rear equipment mounting door as seen in drawing E-UA-MF20-0-0 sheet #2. (You may need 2 people for this step).

8.11

Remove the mounting screws securing the MF20 battery box to the shipping skid.

8.12

Install the battery box in the CPU cabinet rear equipment mounting door as seen in drawing E-UA-MF20-0-0 sheet #2 using screws (Item 4) and lock washers (Item 5).

8.13

Move cables out of the way to avoid damage and close the CPU cabinet rear doors and open the I/O cabinet rear doors and equipment mounting door.

8.14

Add tinnerman nuts (item 2) to holes #5,6,36, and 37 in both the left and right hand top equipment mounting rails of the I/O cabinet rear equipment mounting door as seen in drawing E-UA-MF20-0-0 sheet #2.

8.15

Remove the mounting screws securing the MF20 logic to the horizontal mounting bars, and remove the MF20 logic from from the shipping skid. Set this logic aside for the moment making certain that the logic is set on the floor on its back side (rear logic door down, back plane and logic pins up).

8.16

Remove the mounting screws securing the horizontal mounting bars to the shipping skid.

8.17

Install the horizontal mounting bars in the I/O cabinet rear equipment mounting door as seen in drawing E-UA-MF20-0-0 sheet #2 using screws (Item 4) and lock washers (Item 5).

8.18

Remove the intake bezel from the MF20 housing.

8.19

Install the Mf20 logic assembly to the horizontal mounting bars with screws (item #4), lock washers (item #5) and kep nuts (items #7), two screws and lock washers for each corner except the lower left hand corner as seen in drawing E-UA-MF20-0-0 sheet #2. (You may need 2 people for this step).

NOTE: MF20 #1 (MF20LA or MF20LB) will always be mounted on the hinge side of the equipment mounting door.

8.20

Replace the intake bezel on the MF20 housing.

8.21

Secure the lower left hand corner of the MF20 with screw (item #4) and two (2) lock washers (item #6) also securing one end of the ground strap (item #8). Installation should be such that the screw goes through one lock washer then the ground strap then the second lock washer then the mounting bar.

8.22

Secure the other end of the ground strap to the mounting rail at hole #14 with a screw (item #4), two (2) lock washers (item #6), and a kep nut (item #7) as seen in print E-UA-MF20-0-0 sheet #2.

8.23

If removed above, replace the rear door locking bracket on the I/O cabinet rear equipment mounting door.

8.24

Replace external cabinet doors removed in step 8.2 above. Also: cut the foam on the rear doors so as not to block the air ducts which contain their own filter.

8.25

Replace the orange front top panel (grill) on the I/O bay.

8.26

Proceed to section 10.0 for cabling of unit.

9.0 MF20 #2 MOUNTING PROCEDURE

Perform skidded checkout section 6.0 before proceeding with this section, by unplugging the X-BUS cable board from MF20 #1 and replacing it with the 13 ft. X-BUS cable board for the skidded checkout.

9.1

Disconnect DC and sense harnesses from the MF20 back plane.

9.2

Check to see that the CPU cabinet rear equipment mounting door has tinnerman nuts (item #2) in holes #19,21,28 and 30 as seen in drawing E-UA-MF20-0-0 sheet #2, if not add them.

9.3

Remove mounting screws securing the power supply to the shipping skid and set it aside.

9.4

Remove the power supply mounting bracket from the shipping skid.

9.5

Install the power supply mounting bracket on the CPU cabinet rear equipment mounting door using screws (item 4) and lock washers (item 5) as seen in print E-UA-MF20-0-0 sheet #3 (view section A-A).

9.6

Install the power supply in the CPU cabinet rear equipment mounting door above the MF20 #1 power supply using screws (item 4) and lock washers (item 5) as seen in print E-UA-MF20-0-0 sheet #2.

9.7

Remove the Battery Box from the shipping skid.

9.8

Install the battery box in the CPU cabinet rear equipment mounting door as seen in print E-UA-MF20-0-0 sheet #2 using screws (item 4) and lock washers (item 5).

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9.3

Remove mounting screws securing the power supply to the shipping skid and set it aside.

9.4

Remove the power supply mounting bracket from the shipping skid.

9.5

Install the power supply mounting bracket on the CPU cabinet rear equipment mounting door using screws (item 4) and lock washers (item 5) as seen in print E-UA-MF20-0-0 sheet #3 (view section A-A).

9.6

Install the power supply in the CPU cabinet rear equipment mounting door above the MF20 #1 power supply using screws (item 4) and lock washers (item 5) as seen in print E-UA-MF20-0-0 sheet #2.

9.7

Remove the Battery Box from the shipping skid.

9.8

Install the battery box in the CPU cabinet rear equipment mounting door as seen in print E-UA-MF20-0-0 sheet #2 using screws (item 4) and lock washers (item 5).

9.9

Close CPU cabinet rear doors and open I/O cabinet rear doors.

9.10

Remove the mounting screws securing the MF20 logic to the horizontal mounting bars of the shipping skid.

9.11

Remove the intake bezel from the MF20 housing.

9.12

Install the MF20 logic in the I/O cabinet rear equipment mounting door next to mem unit #1 securing it at three (3) corners with screws (item 4) and washers (item 5) and kep nuts (item #7)as seen in drawing E-UA-MF20-0-0 sheet #2. Do not secure lower right hand corner.

9.13

Replace the intake bezel on the MF20 housing.

9.14

Secure the lower right hand corner of the MF20 with a screw (item 4) and two (2) lock washers (item 6) also securing one end of the ground strap (item 3). Installation should be such that the screw goes through one lock washer then through the ground strap then the second lock washer then the mounting bar.

9.15

Secure the other end of the ground strap to the mounting rail at hole #14 with a screw (item 4), two (2) lock washers (item 6) and kep nut (item 7) as seen in print E-UA-MF20-0-0 sheet #2.

9.16

Proceed to section 10.2 for cabling of unit.

10.0 CABLING AND WIRING PROCEDURE

10.1

FOR MF20 #1

NOTE: All cables and harnesses to be routed as seen on SHEETS 4,5 & 6 OF PRINT E-UA-MF20-0-0

10.1.1 Connect the D.C. power harness #1 (7015471-0-0) to the MF20 back plane at terminal strips along the top and bottom as seen in chart #1 on sheet #2 of print E-UA-MF20-0-0. (Reference drawing D-IC-MF20-0-3 also)

10.1.2 Connect the Master Oscillator DC power harness (7015471-0-0) to the Master Oscillator by the 3 pin mat-n-lock. Connect the yellow and black twisted pair to the H770 in the H7420 and the orange and black twisted pair to the MF20 backplane as seen in chart #13 on sheet 2 of print E-UA-MF20-0-0. Use tie wraps (item #9) to tie off the orange and black twisted pair for MF20 #2. (After taping ends with electrical tape).

10.1.3 Connect the Master Oscillator Clock select cable (7015524-0-0) to the MR572 X-BUS cable board (3 ft. 8 in. long) as seen in chart #4 on sheet 4 of print E-UA-MF20-0-0.

10.1.4 Plug the X-BUS cable board (MR572) into slot 2 of the CPU. Plug the other ends into MF20 backplane (top to connector just below L.E.D, bottom to bottom, etc.)

10.1.5 Connect the Clock Coax Cable (1700100-0) to the external clock connector below slot 9 of the CPU backplane. Connect the other end to the Master Oscillator. Also, connect coax cable to MF20 from Master Oscillator (see chart #5 SHEET 4 OF PRINT E-UA-MF20-0-0).

10.1.6 Connect the Margin Sense Cable (7015198-0-0) to the connector on the MF20 backplane as seen in chart #9 on sheet 6 of print E-UA-MF20-0-0.

10.1.7 Connect the Master Oscillator A.C. Power harness (7015448-0-0) to the Master Oscillator and to the MF20 power supply as seen in chart #3 on sheet #5 of print E-UA-MF20-0-0.

10.1.8 Connect the MF20 AC power harness (7015222-0-0) from the MF20 power supply to the MF20 fans as seen in chart #11 on sheet 5 of print E-UA-MF20-0-0.

10.1.9 Plug the AC power cord into an extension and into the 863 power control in location J24.

10.1.10 Plug Door Switch Interlock Harness (7015453-0-0) on to the door switch and connect to the fault harness as seen in chart #19 on sheet 8 of print E-UA-MF20-0-0.

10.1.11 Plug the Vane Switch Harness (7015447-0-0) on to the vane switches and connect to the fault harness as seen in chart #7 on sheet 8 of print E-UA-MF20-0-0.

10.1.12 Plug in the Battery Box Harness (7015223-0-0) in to the MF20 power supply, but do not turn them on at this time.

10.1.13 Connect the DEC remote power bus (7300298-15) from power supply to rear of switch panel drawing E-UA-MF20-0-0 sheet 7 chart #21.

10.1.14 Proceed to section 12.0 for preliminary electrical checkout.

10.2

FOR MF20 #2

NOTE: All cables and harnesses to be routed as seen on SHEETS 7,8,9 OF PRINT E-UA-MF20-0-0.

10.2.1 Connect the DC Power Harness for MF20 #2 (7015189) to the terminal strips along the top and bottom of the MF20 backplane as seen in chart #2 on sheet 7 of print E-UA-MF20-0-0.

10.2.2 Cut tie wraps to free the end of the Master Oscillator DC Power Harness and connect it to the MF20 backplane as seen in chart #14 on sheet 9 of print E-UA-MF20-0-0.

10.2.3 Remove the X-BUS terminators from MF20 #1 and relocate them on MF20 #2.

10.2.4 Install the 1 foot X-BUS jumper between MF20 #1 and MF20 #2.

10.2.5 Install the AC Power Harness between the MF20 #2 fans and the MF20 #2 power supply.

10.2.6 Plug the AC power cord into an extension cord and into the 863 power control in location J26.

10.2.7 Cut tie wraps necessary to free up section of Door Switch Interlock Harness and plug into MF20 #2 door switch.

10.2.8 Cut tie wraps necessary to free up section of Vane Switch Harness and plug in vane switches for MF20 #2.

10.2.9 Plug the battery Box Harness into the MF20 #2 power supply, but do not turn it on at this time.

10.2.10 Connect DC power bus cable (7009200-3F) from P/S 0. to P/S #2 per drawing E-UA-MF20-0-0, chart #22, SHEET #8.

10.2.11 Connect clock coax from backplane to master oscillator per drawing E-UA-MF20-0-0, chart #6, SHEET #4.

10.2.12 Proceed to section 12.0 for preliminary electrical checkout.

11.0 MF20 EXTERNAL CABINET ADD-ON

11.1

Pre-installation check-out

11.1.1 Remove end panel from the right hand side (CPU cabinet) of the system. (Top cover must be removed first.)

11.1.2 Roll cabinet up to the system where the end panel was removed. Remove the gray back doors from the external cabinet and the left rear door from the CPU cabinet.

11.1.3 Attach the ground strap located on external cabinet to the system using the hardware that held the ground strap from the end panel, and the stud adjacent to the stud it is already attached to. (There may not be a stud present in this location on older cabinets, but there will be an available stud or hole where it can be attached nearby.)

11.1.4 See drawing D-UA-MF20-0-0 SHEETS 4-9 for routing of cables to be hooked up. Do not tie the cables down at this point.

11.1.5 There is a total of 8 cables to be hooked up, but before this can be done, the MA/MB20 (located under the CPU) must be disconnected.

11.1.6 To disconnect the MA/MB20:

11.1.6.1 Unplug the H7420 power supplies from their extension cords located at the bottom of the CPU cabinet.

11.1.6.2 Unplug the vene switch harness from it's location at the bottom of the MA/MB20.

11.1.6.3 Unplug the door switch interlock cable alsq at the bottom of the MA/MB20.

11.1.6.4 Unplug the S-bus cables from slot 3 of the CPU backplane.

11.1.6.5 Replace the two M8580 modules with the two M8581 modules. (Slots 7 & 8, CPU backplane.)

11.1.7 The 8 cables that have to be connected are:

11.1.7.1 The A.C. power cord from the power supply (this will plug into the extension cord that the MA/MB20 power supply was plugged into.) Chart #35, SHEET #4.

11.1.7.2 The vane switch harness (this will plug into the MA/MB20 vane switch harness). CHART #25, SHEET #6. (Harness P/N 7016211-0-0 BLK, ORN, YEL)

11.1.7.3 The door switch interlock harness (this will also plug into the MA/MB20 fault harness) Chart #39, SHEET #6. (HARNESS P/N 7016212-0-0 BLU, BLK)

11.1.7.4 The black coax cable from the backplane will plug into the Master Oscillator. Chart #27, SHEET #8.

11.1.7.5 The remote turn on cable will go from the MF20 power supply to the top power supply of the internal MF20. (Harness P/N 700P288-15-0 GRAY) Chart #41, SHEET # 9.

11.1.7.6 The black and orange cable will go from the MF20 backplane terminal strip to the Master Oscillator. Chart #33, SHEET #7. (HARNESS P/N 7016207-0-0)

11.1.7.7 The A.C. power harness from the 2 cab flushing fans will plug into both halves of the connection for 2 cab flushing fans located in the CPU cabinet. (Harness P/N 7016210-0-0 RED, WHT)

(This connection is located at the same place that the MA/MB power supplies should have been disconnected.)

CHART #34, SHEET #7. (The flushing fans must be checked to see if they are operating after power up.)

11.1.7.8 The X-BUS cable board (M8572-YA) will go from the CPU backplane to the MF20 backplane. (NOTE: The exact location of the cable connections will appear in drawing D-UA-MF20-0-0 sheet 5.

11.1.8 After all the cable connections are made, open the MF20 rear door and slide all the modules out about one inch so that there will be no electrical connection. Replace CPU rear door and put system in over-ride. Power up system.

11.1.8.1 Check the power supply voltages at the MF20 backplane terminal block (from left to right) -2V, gnd, -5.2V, gnd, -5.2V, gnd, +5V, gnd, +12V, gnd, +12V and gnd. Voltages should be + or - 10% at this point.

11.1.8.2 Power down the MF20 and plug all of the modules back in and power it back .

11.1.8.3 Check the voltages at the MF20 backplane again as above only this time should be + or - 2%.

11.1.8.4 Check S-BUS "VREF" by placing D.V.M. on pin F5A1 on MF20 it should read +1.40 +/-.02 volts. If "VREF" is not within spec, replace M8580 or M8581 in slot 7 of CPU. (If new module is not available, swap modules in slots 7 & 8, to obtain same results. "Check VREF" on pin F5D1. If it is bad, replace the M8576 board.

11.1.8.5 Check the X-BUS sync with a scope using the following quick check.

Boot strap load KLDCP.

Set X-BUS sync as follows:

NOTE: The nominal setting of the 2 switches on the M8576 for XBUS deskew ADJ. is as follows:

13 ft. XBUS cable: turn each switch all the way clockwise and back off 1 click.

3 ft. 8 in. XBUS cable: turn each switch all the way clockwise and back off 2 clicks.

11.1.8.6 Set scope to 1V/DIV for both chan 1 and chan 2. Set sweep rate to 20NSEC/DIV. Load the KL10 microcode. Select full clock rate and source the clock from the master oscillator at 30MHZ. Start the microcode, (CR0, FW72/3, CS2, SM).

11.1.8.7 Place probe 1 on pin E22F2 in the CPU bay (signal "A change coming L") and place the clip on a ground pin. Place probe 2 on pin D5D1 in MF20 (signal "CTL2 A PHS COM FREE L") and place the clip on a ground pin. Synchronize internal on chan 1. These signals must be identical.

11.1.8.8 Move probe 1 from CPU bay to MF20 at pin C5M2 (signal "CTL2 B PHS COM FREE L") and place the clip on a ground pin. Set the scope to add channel 1 with channel 2. The waveform observed must be perfectly symmetrical with respect to on/off time.

11.1.8.9 If the sync does not check the XBUS must be synchronized by following drawing A-SP-MF20-SYNC. If the sync does check, then proceed.

11.1.8.10 Run diagnostics DHKBA.A11 & DHKBF.A11.

11.1.8.11 Power system down. At this point the pre-installation checkout is complete.

11.1.9 At this point you have 2 choices of what to do next.

11.1.9.1 If you are going to proceed with the installation of the MF20, complete the rest of this section. (11.0)

11.1.9.2 If for some reason you are not going to proceed, follow this section in reverse to get the system back to the condition it was in before you started.

11.1.10 Removal Of MA/MB20 (if Neccesary). -

11.1.10.1 Power the system down.

11.1.10.2 Disconnect the A.C. power to the blower on top of the cooling assembly, (red and white twp), and cut the tie wraps all the way back to the power supplies.

11.1.10.3 Disconnect the d.c. power harness at both ends, cut the tie wraps and remove the harness.

11.1.10.4 Remove the sbus cables going from the MA/MB20 to the CPU.

11.1.10.5 Remove the eight screws holding the MA/MB20 in place, and remove the memory assembly. (This is a 2 person job).

11.1.10.6 Remove the hardware holding the 2 H7420 power supplies and remove them also. (two people if neccesary.)

11.2

Installation of the external MF20 cabinet.

11.2.1 All there is to hooking up the external MF20 cabinet is bolting the cabs together, and making all the connections made in paragraph 11.1.7 permanent. To do this, you must first install the cable routing basket and the cable basket mounting brackets. See drawing D-UA-MF20-0-0 sheet 6. (section F-F) The 4 holes needed to mount brackets may have to be punched out if you have an older cabinet. If so, locations of these holes can be found in Figure 3. The holes must be punched with a Roper Whitney No. 5 jr. punchset (1/4 in. size bit) or equivalent.

NOTE: Removal of the X-BUS cables and the black coax cables is neccesary for the installation of the basket and brackets.

11.2.2 Remove the two filler strips (D-IA-7011838-0-0) front and back, and the filler strip (top) D-MD-7414403-0-0, to allow the bolting together of the two cabinet assemblies.

11.2.3 Bolt the two cabinet assemblies together using the six bolts P/N 9006241-09 and the six kepnuts P/N 9008203 (supplied with the cabinet assy. These must be removed from the cabinet assy then replaced after the cabinets are rolled together.) NOTE: It may be helpful to use the leveler feet to get the holes to line up.

11.2.4 Put the three filler strips back in place after bolting the two cabinets together, using existing screws and washers plus 6 screws (9006071-03) and 6 washers (9007651) supplied with the installation kit. See drawing E-AD-7016035-0-0 section "T" for installing the filler strips.

NOTE: The top covers must be removed on the MF20 and CPU cabinets before the top filler strip can be installed.

While the top cover is still off the ext cabinet place the end panel removed from the DECSYSTEM-20 on the end of the ext cab using the hardware that was holding it on the DECSYSTEM-20. Also, attach the ground strap from the end panel to the ext cab gnd stud with items 12 & 13.

11.2.5 Replace the X-BUS and coax cables but run them through the strain relief assy on the side of the CPU card cage and up through the cable routing basket first.

11.2.6 Tie all the cables down per drawing D-UA-MF20-0-0 SHEETS 4-9, USING tie wraps item 8 (9007880) and item 10 (9007032), wherever neccesary.

11.2.7 Take the end panel and it's hardware and move it to the end of the MF20 cabinet.

11.3

Installation of second box of MF20 in external cabinet.

11.3.1 This assembly will come to you on a shipping skid just like the internal MF20 did. Because it will not be replacing an existing memory, and the difficulty of giving this memory a skidded checkout, it will be installed and then checked-out.

11.3.2 To install the second memory:

11.3.2.1 Disconnect DC and sense harnesses from the MF20 backplane.

11.3.2.2 Check to see that the external MF20 cabinet rear equipment mounting door has tinnerman nuts (item #2) in holes #19, 21, 28 and 30 as seen in drawing E-UA-MF20-0-0 sheet #2, if not add them.

11.3.2.3 Remove mounting screws securing the power supply to the shipping skid and set it aside.

11.3.2.4 Remove the power supply mounting bracket from the shipping skid.

11.3.2.5 Install the power supply mounting bracket on the external MF20 rear equipment mounting door using screws (item #4) and lock washers (item #5) as seen in print E-UA-MF20-0-0 sheet #3 (view section A-A).

11.3.2.6 Install the power supply on the external MF20 cabinet rear equipment mounting door above the MF20 #1 power supply using screws (item #3) and lock washers (item #5) as seen in print E-UA-MF20-0-0 sheet #2.

11.3.2.7 Remove the Battery Box from the shipping skid.

11.3.2.8 Install the battery box on the external MF20 cabinet rear equipment mounting door as seen in print E-UA-MF20-0-0 sheet #2 using screws (item #4) and lock washers (item #5).

11.3.2.9 Remove the mounting screws securing the MF20 logic to the horizontal mounting bars of the shipping skid.

11.3.2.10 Install the MF20 logic in the external MF20 next to mem unit #1 securing it at three (3) corners with screws (item #4) and washers (item #5) and kep nuts (item #7) as seen in drawing E-UA-MF20-0-0 sheet #2. Do not secure lower right hand corner.

11.3.2.11 Secure the lower right hand corner of the MF20 with a screw (item #4) and two (2) lock washers (item #6) also securing one end of the ground strap (item #8). Installation should be such that the screw goes through the ground strap then the second lock washer then the mounting bar.

11.3.2.12 Secure the other end of the ground strap to the mounting rail at hole #48 with a screw (item #4) two (2) lock washers (item #6) and kep nut (item #7) as seen in print E-UA-MF20-0-0 sheet #11.

11.3.3 Cabling: The cables to be hooked up are:

11.3.3.1 The 1 foot X-bus jumper cables must be installed between MF20 #1 and #2 (remove terminators from #1 and replace them in #2).

11.3.3.2 Take section of door switch interlock cable left from MF20 #1 installation and hook it up to MF20 #2 per drawing E-UA-MF20-0-0 sheet 6, chart #40.

11.3.3.3 Take the section of the vane switch harness left over from MF20 #1 installation and hook it up to MF20 #2 vane switches per chart #26, SHEET#6.

11.3.3.4 Hook up the coax cable from the MF20 #2 backplane to the master oscillator per chart #28, SHEET#8.

11.3.3.5 Hook up the A.C.power to the MF20 fans from the P/S per chart #32, SHEET#7. (RED/WHITE)

11.3.3.6 Hook the remote cable jumper between the two power supplies per chart #42, SHEET#9.

11.3.3.7 Hook up the D.C. power harness from the power supply to the backplane per chart #24, SHEET#4.

11.3.3.8 Hook up the margin sense harness from the power supply to the backplane per chart #30, SHEET#8.

11.3.3.9 The A.C. power cord from P/S chart #36, SHEET#4.

11.3.3.10 The battery back-up harness (7011523-0-0).

NOTE: Routing of these cables is described in drawing E-UA-MF20-0-0, SHEETS 4-9.

12.0 PRELIMINARY ELECTRICAL CHECKOUT

12.1

Open memory logic doors and unplug all modules and pull them out about 1 inch so that no electrical connection is made.

12.2

Power up the MF20 and check voltages at terminal strip along the top of the backplane (from left to right) -2V, gnd, -5.2V, gnd, -5.2V, gnd, +5V, gnd, +12V, gnd, +5V, gnd, +12V, gnd. Voltages should be + or - 10% at this point.

12.3

Power down the MF20 and plug all the modules back in and power it up again.

12.4

Check voltages again as above. At this point voltages should be + or - 2%.

12.5

Check "VREF" to be +1.40 +/-.02 volts at pin F05D1 of the MF20 backplane.

12.6

X-BUS clock sync must now be adjusted per drawing A-SP-MF20-SYNC.

12.6.1 Check The Function Of The Vane Switches As Follows: -

12.6.1.1 Disconnect the AC from one fan (with system down) on the MF20 cooling assy.

12.6.1.2 Power system back up

12.6.1.3 System should shut down within 30 seconds with an "airflow MEM 1" fault for external MF20 and an "airflow MEM 2" fault for internal memory.

12.6.1.4 Repeat steps 12.6.3.1 - 12.6.3.3 for each of the MF20 cooling assy fans

12.6.1.5 Be sure to replace the A.C. wires when you are through.

12.6.2 Turn on all battery back-up.

13.0 CHECKOUT AND ACCEPTANCE PROCEDURE

A-SP-MF20-FATP shall be performed and the system shall meet the "Biannual criteria" contained within the document.

14.0 External memory add-on (MF20-LP/LR, LS/LT ONLY)

14.1 Pre-installation check out.
(SECTIONS 1-5 should be reviewed prior to completion of this section).

14.1.1 Remove top cover from the CPU cabinet of the 20 system. Remove the end panel from the CPU cabinet also.

14.1.2 Roll the MF20 external cabinet up to the system where the end panel was removed. Remove the gray rear doors from the external MF20 cabinet and the CPU cabinet.

14.1.3 Attach the ground strap located on the MF20 external cabinet to the 20 system using the hardware that held the end panel ground strap. This ground strap will be attached to the same place that the other one (There may not be a stud present in some older cabinets and therefore attach to any holes available nearby).

14.1.4 Remove the master oscillator from the external cabinet and install it into the 20 system per drawing D-UA-MF20-0-0 (sheets 1 and 3) using same hardware. Also add an option jumper from pin 4D43E1 to pin 4D44E1 (APR ID Jumper) plus the option jumpers per chart on sheet 9 of same drawing.

14.1.5 See drawing D-UA-MF20-0-0 sheets 4-9 to cable up the system. All the cables hanging loose in the external MF20 cabinet must be connected.

14.1.5.1 Replace the M8519 boards in slots 7 & 8 of the CPU with the two M8580 dual translator boards supplied with the MF20-LP/LR, LS/LT.

14.1.6 The cables that need to be connected are:

14.1.6.1 The A.C. power cord from the MF20 power supply will plug into a fifteen foot extension cord (supplied with the external cabinet) and then it will plug into J27 of the 863 (Front end cabinet of 20 system) chart # 43 or # 44.

14.1.6.2 The vane switch harness. P/N 7016211 (BLK, ORN, YEL). The existing harness which plugs into the MB20 vane switch assembly must be unplugged, and the harness which comes from the external MF20 cabinet will plug into it. There is a length of wire with a mate n lock on it which will then plug into the MB20 where the existing harness used to be plugged in. See chart # 25.

14.1.6.3 The door switch interlock harness P/N 7016212-0-0 (Blu, Blk) will plug into the existing fault harness also. Remove mate n lock from MB20 door switch, plug two connectors from external cabinet harness into this mate n lock, wrap with electrical tape, plug external cabinet harness mate n lock into the MB20 door switch. Chart # 39.

14.1.6.4 The black coax wire from the MF20 backplane will plug into the master oscillator. Chart # 27.

14.1.6.5 The other black coax wire will go from the master oscillator. To the coax connector on the front of the CPU backplane. Chart # 5.

14.1.6.6 The remote turn on Cable P/N 7008288-25 (Gray) will go from the MF20 power supply to J4 in the front end cabinet. Chart # 47.

14.1.6.7 The +12V supply from the external cabinet to the master oscillator and the H7420 +15V supply to the master oscillator will be installed per chart #45 (blk/orn, blk/yel) P/N 7017511.

14.1.6.8 The a.c. power harness from the external cabinet flushing fans will plug into both halves of the connection for the 2 cab flushing fans located in the CPU cabinet P/N 7016210 (Red/wht) Chart # 34.

14.1.6.9 The X-Bus cable board (M8572-YA) will go from the CPU backplane to the MF20 backplane jacks under the led. The slot location in the CPU will be found in drawing D-MU-MF20-0-CPMU. The routing for this cable will be found on sheet 5 of drawing D-UA-MF20-0-0.

14.1.6.10 All cable connection charts called out in previous sections can be found on sheets 4-9 of drawing D-UA-MF20-0-0.

14.1.6.11 Replace existing s-Bus cables with a dual s-bus cable P/N BC20V-09.

14.1.6.12 Replace the (2) M8519 modules in CPU slots 7 & 8 with (2) M8580's.

14.1.7 After all the cable connections are made, open the MF20 rear card cage door and slide all the modules out about 1 inch so there will be no electrical connection between the modules and the backplane. Replace CPU card cage rear door and put the system in over-ride. Power up the system.

14.1.7.1 Check the power supply voltages at the MF20 backplane terminal block (from left to right) -2V, gnd, -5.2V, gnd, -5.2V, gnd, +5V, gnd, +12V, gnd, +5V, gnd, +12V, gnd. Voltages should be + or - 10% at this point.

14.1.7.2 If everything is o.k., power down the system and plug all the MF20 modules back into the backplane and power the system up again.

14.1.7.3 Check the voltages at the MF20 backplane again as above only this time the voltages should be within a + or - 2% margin at this time.

14.1.7.4 Check S-Bus "VREF" by placing D.V.M. on pin F05A1 of the MF20 backplane. It should read +1.40 + or - .02 volts. If "VREF" is not within spec replace the M8580 in slot 7 of the CPU backplane (If a new module is not available, swap the modules in slots 7 & 8). Check "VREF" on pin F05D1. It should be the same as above, if it is not replace the M8576 board.

14.1.7.5 Check the X-Bus sync with a scope using the following procedure:

Boot strap load KLDCP.
The nominal setting for the two switches on the M8576 for XBus deskew adjustments is one click counterclockwise from the extreme clockwise position for a 13FT M8572-YA or two clicks counter clockwise from the extreme clockwise position for a 3 ft 8 in M8572.

14.1.7.6 Set scope to 1V/div for both chan 1 and chan 2.
Set sweep rate to 20Nsec/div.
Load the KL10 microcode.
Select the full clock rate and source the clock from the master oscillator at 30 MHZ.
Start the microcode (CR0, FW 72/3, CS2, SM).

14.1.7.7 Place probe 1 on pin E22F2 of the CPU backplane, and place the clip on a ground pin.
Place probe 2 on pin D05D1 of the MF20 backplane, and place the clip on a ground pin.
Synchronize internal on channel 1. These signals should be identical.

14.1.7.8 Move probe 1 from the CPU backplane to the MF20 backplane at pin C05M2 and place the clip on a ground pin.
Set the scope to add channel 1 with channel 2. The waveform observed must be perfectly symmetrical with respect to on/off time.

14.1.7.9 If the sync does not check, the X-Bus must be synchronized by following drawing A-SP-MF20-0-SYNC.
If the sync does check, then proceed.

14.1.7.10 Verify and adjust the MB20 deskew, if necessary, with the new BC20V-09 cable in place, and interfaced to both MB20 boxes. Reference the MB20 deskew procedure (D-BS-MB20-0-INS in MB20 printset) but disregard step 1 of the on-line procedure. Select the clock source and rate as in par. 14.1.7.6 above.

14.1.7.11 Run diagnostics DHKBA.All and DHKBF.All.

14.1.7.12 Run diagnostics DHKBB.All to verify the MB20's.

14.1.7.13 Power system down. At this point the pre-installation checkout is complete.

14.1.8 At this point you have two choices of what to do next.

14.1.8.1 If you are going to proceed with the installation of the MF20, complete the rest of this section.
If for some reason you are not going to proceed, follow this section in reverse from this point to get the system back into the condition it was in when you began.

14.2 Installation of the external cabinet (permanent).

14.2.1 All there is to hooking up the external MF20 cabinet is bolting the cabinets together, and making all the connections made in paragraph 14.1.6 permanent. To do this, you must first install the cable routing basket and the cable basket mounting brackets. See drawing D-UA-MF20-0-0 sheet 10 (Section F-F). The four holes needed to mount the brackets may have to be punched because some old cabinets can be found in Figure 3 of this document. The holes must be punched with a Roper Whitney No. 5 jr. punchset (1/4 in size bit) or equivalent.

Note: Removal of the X-Bus cables and the black coax cables is necessary for the installation of the basket and the brackets.

14.2.2 Remove the two filler strip (D-IA-7011838-0-0) front and back, and the top filler strip (D-MD-7414403-0-0) from the external MF20 cabinet to allow the bolting together of the two cabinets.

14.2.3 Bolt the two cabinet assemblies together using the six bolts P/N 9006241-09 and the six kepnuts P/N 9008203 (supplied with the cabinet assy). These must be removed from the cabinet assy and replaced after the cabinets are pushed together.

Note: It may be helpful to use the leveler feet to get the holes to line up.

14.2.4 Put the three filler strips back in place after bolting the two cabinets together, using existing screws and washers plus six screws (9006071-03) and six washers (9007651) supplied with the installation kit. See drawing E-AD-7016035-0-0 section "1" for installing the filler strips.

14.2.5 While the top cover is still off of the external cabinet put the end panel and its hardware from the Dec System 20 onto the external cabinet. Also attach the ground strap from the end panel to the external cabinet using items 12 & 13.

14.2.6 Replace the X-Bus and coax cables but run them through the strain relief assembly on the side of the CPU card cage and up through the wire basket first.

14.2.7 Tie all the cables down per drawing D-UA-MF20-0-0 sheets 4-9, using tie wraps, item 8 P/N 9007880, and tie wraps, item 10 P/N 9007032, wherever necessary.

PROCEED BACK TO SECTION 12.0 FOR ELECTRICAL CHECKOUT, AND 13.0 FOR CHECKOUT AND ACCEPTANCE.

15.0 Internal memory (MF20-LU/LV only).

15.1 Before proceeding with this section, sections 1-5 should be read and any prior work should be done according to such sections.

15.2 A pre-installation check-out should be performed before the MF20 is actually installed.

15.2.1 Power down the system.

15.2.2 Place the shipping skid with the MF20 on it next to the system as close to the rear of the I/O cabinet as possible (with the I/O Bays doors removed).

15.2.3 Replace the M8580's in slots 7 & 8 of the CPU backplane with M8581's supplied with the MF20-LU/LV.

15.2.4 Remove the BC20V-09 board in slot 3 of CPU.

15.2.5 Move 13 ft X-Bus board from slot 2 to slot 3 of CPU so that the 13 ft X-Bus cable board supplied to test the skidded MF20 can go into slot 2. Also remove the clock select cable from the 13 ft X Bus board in the system and install onto the new 13 ft one.

15.2.6 Insert the X-Bus cable board from the skid into slot 2 of the CPU.

15.2.7 Plug the other end of the X-Bus cable board into the MF20 backplane on the skid. (Bottom cable to bottom connector, top to top etc. as they come out of the CPU.

15.2.8 Place the strain relief assembly over the cables coming out of the CPU and clamp them in.

15.2.9 See drawing D-UA-MF20-0-0 sheets 4-9 and temporarily hook up all the cables so you can perform the skidded checkout.

15.2.10 The only cables in this case that have to be hooked up are the coax cable from the master osc. to the MF20 backplane, the ac power cord which plugs into one of the extension cords from the existing MB20 on the back door of the I/O cabinet, the door switch and vane switch harnesses which also plug into the existing cabling of the MB20, and +12V supply to the master oscillator which plugs into J8 of the master oscillator.
Note: Before hooking up these cables disconnect the MB20's ac to the blowers, fault wiring, and power supply ac lines.

15.2.11 Hook up the remote turn on cable from the MF20 power supply (J2) to the upper power supply of the external MF20 cabinet (J3) per harness chart #41.

15.2.12 Open the MF20 rear card cage door and slide all the modules out about 1 inch so that there is no electrical connection between the MF20 and the modules.

15.2.13 Power up the system and power on the MF20 power supply.

15.2.14 Check the voltages on the MF20 terminal block (from left to right) -2V gnd, -5.2V, gnd, -5.2V, gnd, +5V, gnd, +12V, gnd, +5V, gnd, +12V and gnd. Voltages should be + or - 10% at this point.

15.2.15 Power down the MF20, plug all the modules back in and power it back-up again.

15.2.16 Check the voltages again. They should be + or -2% at this time.

15.2.17 Check the S-Bus "VREF" by placing a D.V.M. on pin F05A1 of the MF20. It should read +1.40 volts + or -0.2V. If the "VREF" is not within spec, replace the M8581 board in slot 7 of CPU backplanes. If a new board is not available, swap the M8581's in slots 7 & 8 to obtain the same results. Also check "VREF" on MF20 pin F05D1. If this is bad, replace the M8576 module.

15.2.18 Check the X-Bus clock sync with a scope using the following procedure:

boot strap load KLDCP
Set X-Bus sync as follows:
13 ft (M8572) cable, turn each switch all the way clockwise and back off 1 click.
3 ft 8 in (M8572) cable, turn each switch all the way clockwise and back off 2 clicks.

15.2.19 Set the scope to 1V/DIV for both channel 1 & 2.
Set the sweep rate to 20N SEC/DIV.
Load the KL1C microcode.
Select the full clock rate and source the clock from the master oscillator at 30 MHZ.
Start the microcode. (CRO, FW72/3, CS2, SM)

15.2.20 Place probe 1 on pin E22F2 in the CPU bay and place the clip on a ground pin. Place probe 2 on pin D05D1 of the MF20 and place that ground clip on a ground pin also. Synchronize internal on channel 1. These signals must be identical.

15.2.21 Move probe 1 from the CPU to pin C05M2 of the MF20 and place the clip on a ground pin. Set the scope to add channel 1 with channel 2. The waveform observed must be perfectly symmetrical with respect to on/off time.

15.2.22 If the sync does not check, the X-Bus must be synchronized by following drawing A-SP-MF20-0-SYNC. If the sync does check, proceed.

15.2.23 Run diagnostics DHKBA.A11 & DHKBF.A11

15.2.24 Power down the system. At this point the skidded checkout is complete and it should be determined

which of three possible steps is to come next.

15.2.25 If you are going to proceed with the installation and a rear door MA/MB20 is to be removed, complete section 7.0 before continuing this section.

15.2.26 If you are going to proceed with the installation of the MF20 and there is no MA/MB20 to be removed, proceed with the rest of this section.

15.2.27 If you are going to abort the installation for any reason, perform this section in reverse to get the system back into the same condition it was in when you began.

15.2.28 Unplug the x-bus cable (M8572) from the CPU.

15.2.28.1 Disconnect the clock select cable from M8572 module.

15.2.28.2 Disconnect all the cables from the skidded MF20 to the system.

15.2.29 Disconnect the DC power harnesses from the MF20 backplane.

15.2.30 Install tinnerman nuts (item 2) in holes 2,4,11 and 13 as seen in drawing D-UA-MF20-0-0 sheet 2.

Note: If the system has the cabinet locking feature, it must be removed and all the hardware must be saved for later reinstallation.

15.2.31 Remove the mounting screws securing the MF20 power supply to the shipping skid, remove the power supply and set it to the side for the time being.

15.2.32 Remove the power supply mounting bracket from the shipping skid and install it on the CPU rear equipment mounting door using screws (item 4) and washers (item 5) as seen in print D-UA-MF20-0-0 sheet # 3. (section A-A)

15.2.33 Install the power supply in the bottom position on the CPU cabinet rear equipment mounting door as seen in drawing D-UA-MF20-0-0 sheet #2. (You may need 2 people for the step).

15.2.34 Remove the mounting screws securing the MF20 battery box to the shipping skid and install it on the CPU rear equipment mounting door next to the power supply as seen in drawing D-UA-MF20-0-0 sheet 2.

15.2.35 Move the cables out of the way to avoid damage and close the CPU door. Open the I/O door.

15.2.36 Add tinnerman nuts (item 2) to holes 5,6,36 and 37 if rear I/O door as seen in drawing D-UA-MF20-0-0 sheet 2.

15.2.37 Remove the mounting screws securing the MF20 card cage assembly to the horizontal mounting bars, remove the MF20 from the skid and set it aside.

15.2.38 Remove the mounting bars from the skid and install it in the system as seen in drawing D-UA-MF20-0-0 sheet 2.

15.2.39 Remove the intake bezel from the MF20 duct. Just loosen the 4 screws and it will slide off.

15.2.40 Install the MF20 on to the horizontal mounting bars with screws (item 4), lockwashers (item 5) and kep nuts (item 7), two screws and lockwashers for each corner except the lower left hand corner as seen in drawing E-UA-MF20-0-0 sheet 2. (You may need two people for this step.

Note: MF20-LU/LV will always be mounted nearest to the door pivot point.

15.2.41 Replace the intake bezel on the MF20 duct and tighten the 4 screws.

15.2.42 Secure the lower left hand corner of the MF20 with screw (item 4) and 2 lockwashers (item 5), also securing the ground strap (item 8). Installation should be such that the screw goes through one washer, the ground strap, the other washer, the horizontal mounting rail, and finally the kepnut.

15.2.43 Secure the other end of the ground strap to the equipment mounting door rail at hole #14 with the same hardware used above. See E-UA-MF20-0-0 sheet 2.

15.2.44 If removed above, replace the rear door locking bracket on the I/O cabinet rear equipment mounting door.

15.2.45 Replace the external cabinet doors and grills.

15.2.46 Cut the foam on the back door around the air duct so that it will not restrict the airflow.

15.3 Cabling of the MF20 shall be done as follows:

15.3.1 All cables harnesses to be routed as shown in drawing E-UA-MF20-0-0, sheets 4-9

15.3.2 Connect the d.c. power harness (7015671) to the MF20 backplane at terminal strips along the top and bottom as seen in chart # 1 on sheet 6 of drawing E-UA-MF20-0-0. Make sure the cable is routed properly before attaching.

15.3.3 Connect the +12vdc cable (7016207-01) to the master oscillator 8 pin mate n lock per chart #48 of drawing E-UA-MF20-0-0.

15.3.4 Connect the master oscillator clock select cable (7015524) to the M8572 X-Bus cable board (The short one) as seen in chart # 4 on sheet #4 of print E-UA-MF20-0-0.

15.3.5 Plug the x-bus cable board (M8572-00) into slot 2 of the CPU backplane. The other end plugs into the MF20 backplane, top to top, bottom to bottom etc as they come out of the CPU backplane.

15.3.6 Connect the margin sense cable (7015190) to the connector on the MF20 backplane as seen in chart # 9 on sheet # 6 of drawing E-UA-MF20-0-0.

15.3.7 Connect the MF20 AC power harness (7015222) from the MF20 power supply to the MF20 fans as seen in chart # 11 on sheet # 6 of drawing E-UA-MF20-0-0.

15.3.8 Plug the AC power cord from the MF20 power supply into one of the extension cords from the MA/MB 20 and then into J24 of the 863 power control.

15.3.9 Plug the door interlock harness (7015453) into the door switch of the MF20 and the other end into the existing fault harness where the MA/MB 20 was plugged in.

15.3.10 Plug the vane switch harness (7015447) on to the vane switches of the MF20 as seen in chart #7 on sheet 6 of drawing E-UA-MF20-0-0. The other end plugs into the existing fault harness where the MA/MB 20 was plugged into.

15.3.11 Plug the battery box harness (70 15223) into the MF20 power supply, but do not turn it on at this time.

15.3.12 Remove the Dec remote turn on cable that runs from the external MF20 power supply to the front end panel (J4). Replace this with one remote turn on cable from the internal power supply to J4 of the front end panel and another one from the internal MF20 power supply (J3) to the external MF20 Power Supply (J2). Shown in chart # 21 and # 41 of drawing E-UA-MF20-0-0.

15.3.13 Make sure all these cables installed are securely fastened in place with supplied tie wraps. NEATLY!!

15.4 Proceed back to Sections 12 and 13 for electrical checkout and acceptance.

CPU CABINET REAR EQUIPMENT MTG DOOR

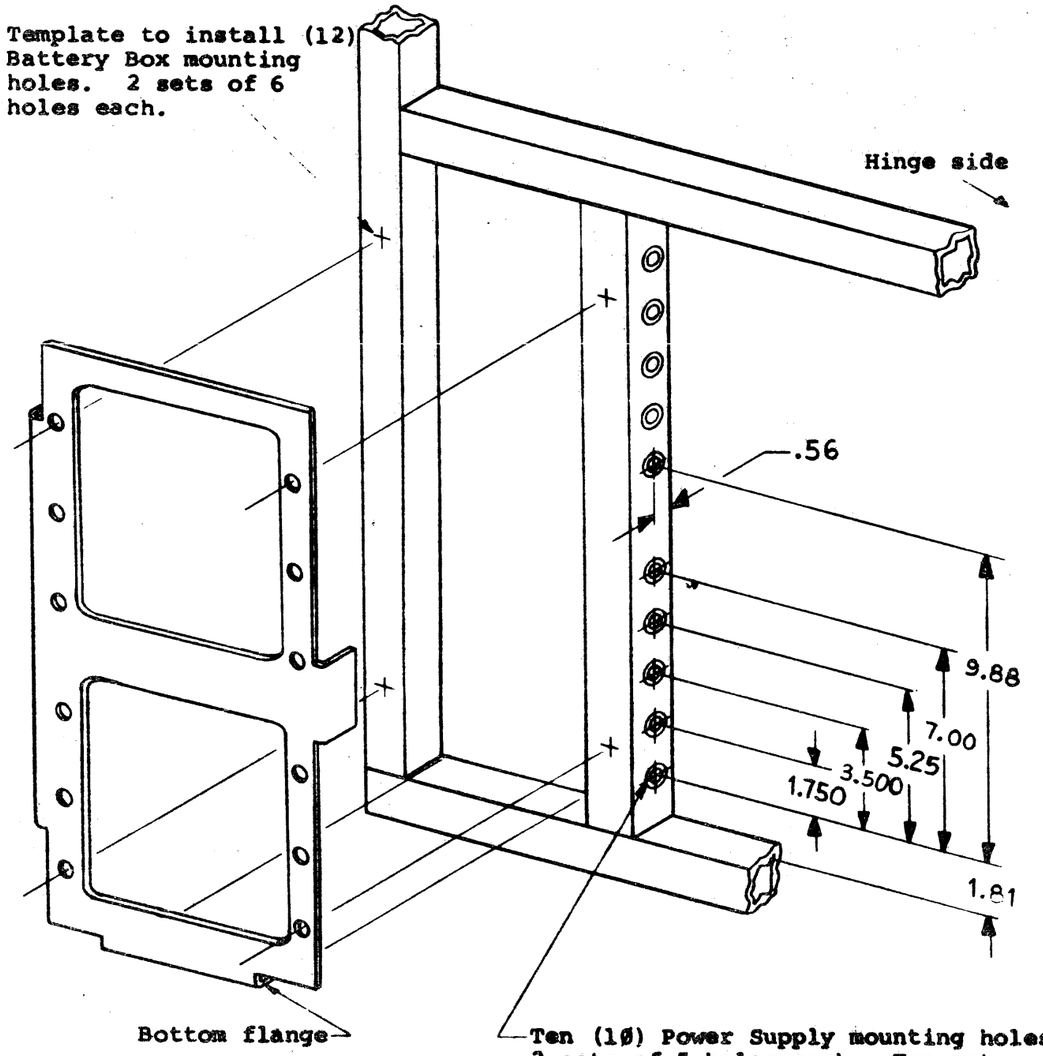


FIGURE #1

FIGURE #2A

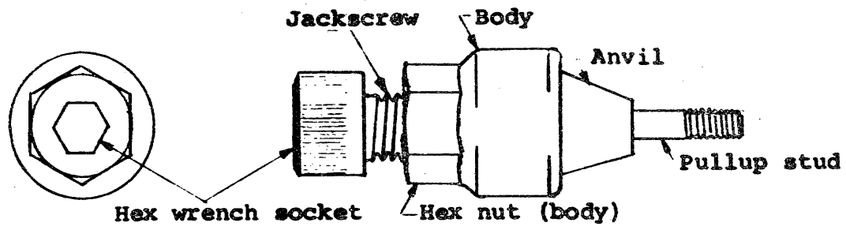


FIGURE #2B

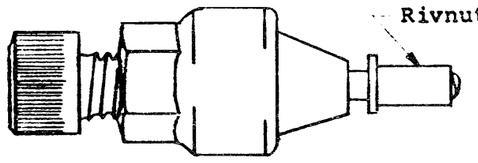
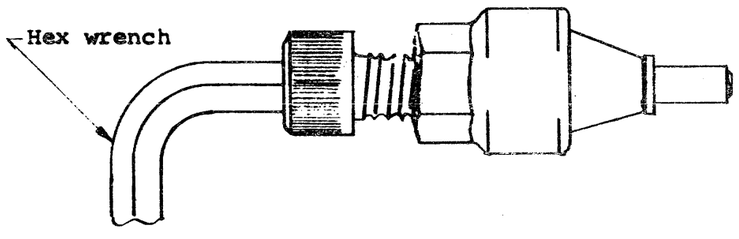
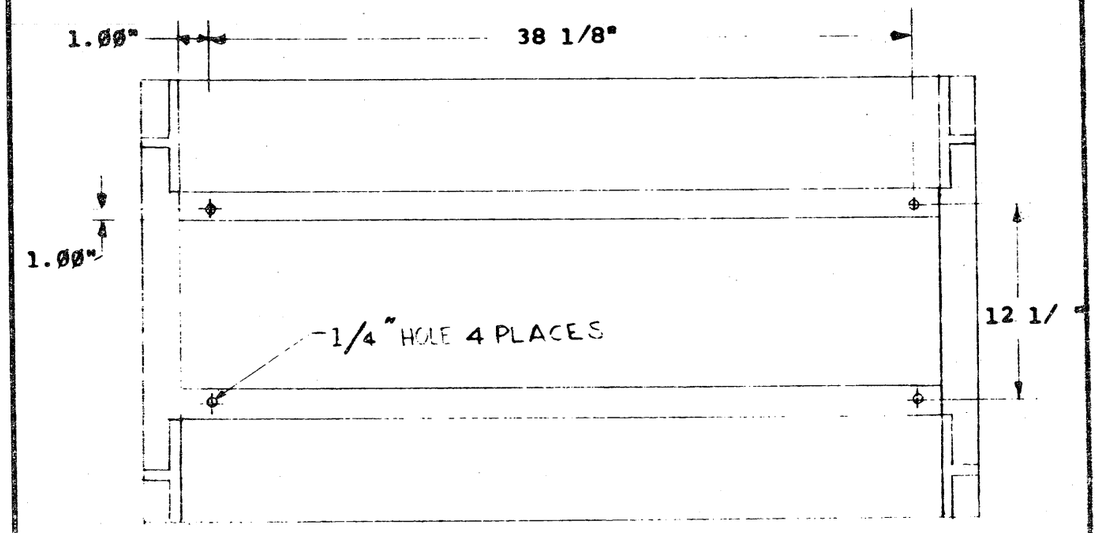


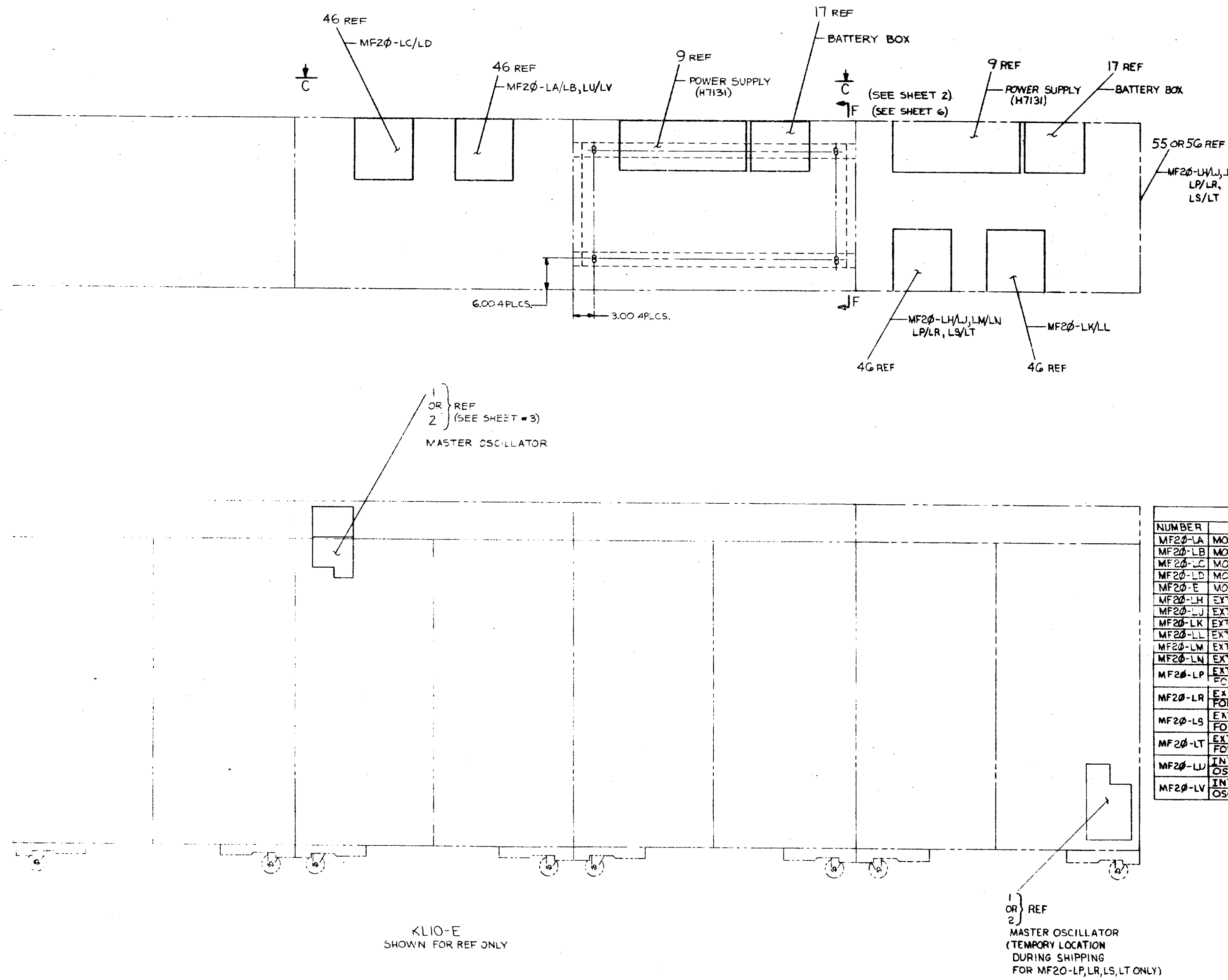
Figure #2C





REAR OF CABINET

FIGURE 3
(TOP VIEW OF CPU CAB)



NOTES:

1. X BUS CABLE BOARD (ITEM #29) IS PLUGGED INTO SLOT 2 OF KL10-PV LOGIC ASSY. SEE D-MU-MF2Ø-Ø-CPMU.MF2Ø-LA/LB ONLY.
2. INSTALL 2 M858Ø MODULES (ITEM #41) INTO SLOTS 7 AND 8 OF KL10-PV LOGIC ASSY. IF SLOTS ARE PRESENTLY USED BY M8519 MODULES, REMOVE THEM AND INSTALL M858Ø MODULE (ITEM #41) SEE D-MU-MF2Ø-Ø-CPMU.MF2Ø-LA/LB ONLY.
3. STUD TORQUE REQUIREMENT: 28 INCH POUNDS.
4. REWORK FOAM IN REAR DOORS OF KLIØ-E I/O CAB TO DIM'S SHOWN.
5. MF2Ø-LA/LB,LH/LJ,LM/LN,LP/LR,LS/LT
   INSTALL X BUS TERMINATOR BOARDS IN LOCATIONS PC22, PD22, PE22 AND PF22 OF THE BACKPANEL.
   MF2Ø-LC/LD,LK/LL
   REMOVE X BUS TERMINATOR BOARDS FROM FIRST INSTALLED MF2Ø BACKPANEL AND INSTALL IN THE SAME LOCATIONS ON THE BACKPANEL FOR MF2Ø-LC/LD,LK/LL
6. AT ALL GROUND LUG LOCATIONS APPLY GROUND LABEL (ITEM #54) AS CLOSE AS POSSIBLE TO GROUND LUGS
7. X BUS CABLE BOARD (ITEM 63) IS PLUGGED INTO SLOT 3 OF KLIØ-PV LOGIC ASSY. SEE D-MU-MF2Ø-Ø-CPMU. FOR MF2Ø-LH/LJ,LM/LN ONLY.
8. INSTALL 2 M8581 MODULES (ITEM 62) INTO SLOTS 7 AND 8 OF KLIØ-PV LOGIC ASSY. IF SLOTS ARE PRESENTLY USED BY M858Ø MODULES, REMOVE THEM AND INSTALL THE M8581 MODULES (ITEM 62) SEE D-MU-MF2Ø-Ø-CPMU. FOR MF2Ø-LH/LJ, LM/LN ONLY.
9. USE CABLE TIES (ITEM #68) WHERE NECESSARY.

LEGEND

NUMBER	VARIATION
MF2Ø-LA	MOS MEMORY 6Ø HZ W/MASTER OSCILLATOR
MF2Ø-LB	MOS MEMORY 5Ø HZ W/MASTER OSCILLATOR
MF2Ø-LC	MOS MEMORY 6Ø HZ W/O MASTER OSCILLATOR
MF2Ø-LD	MOS MEMORY 5Ø HZ W/O MASTER OSCILLATOR
MF2Ø-E	MOS MEMORY (STORAGE MODULES)
MF2Ø-LH	EXTERNAL MOS MEMORY 6Ø HZ W/CABINET (ORN)
MF2Ø-LJ	EXTERNAL MOS MEMORY 5Ø HZ W/CABINET (ORN)
MF2Ø-LK	EXTERNAL MOS MEMORY 6Ø HZ W/O CABINET
MF2Ø-LL	EXTERNAL MOS MEMORY 5Ø HZ W/O CABINET
MF2Ø-LM	EXTERNAL MOS MEMORY 6Ø HZ W/CABINET (BLUE)
MF2Ø-LN	EXTERNAL MOS MEMORY 5Ø HZ W/CABINET (BLUE)
MF2Ø-LP	EXTERNAL MOS MEMORY 6Ø HZ W/CABINET (ORN) FOR USE WITH INTERNAL CORE MEMORY
MF2Ø-LR	EXTERNAL MOS MEMORY 5Ø HZ W/CABINET (ORN) FOR USE WITH INTERNAL CORE MEMORY
MF2Ø-LS	EXTERNAL MOS MEMORY 6Ø HZ W/CABINET (BLU) FOR USE WITH INTERNAL CORE MEMORY
MF2Ø-LT	EXTERNAL MOS MEMORY 5Ø HZ W/CABINET (BLU) FOR USE WITH INTERNAL CORE MEMORY
MF2Ø-LU	INTERNAL MOS MEMORY 6Ø HZ W/O MASTER OSCILLATOR (FOR USE WITH MF2Ø-LP/LS ONLY)
MF2Ø-LV	INTERNAL MOS MEMORY 5Ø HZ W/O MASTER OSCILLATOR (FOR USE WITH MF2Ø LR/LT ONLY)

CAUTION:
OFFSHEET PARTS LIST EXISTS. SEE K-PL-MF2Ø-Ø-D8P.

MF2Ø

MOS MEMORY

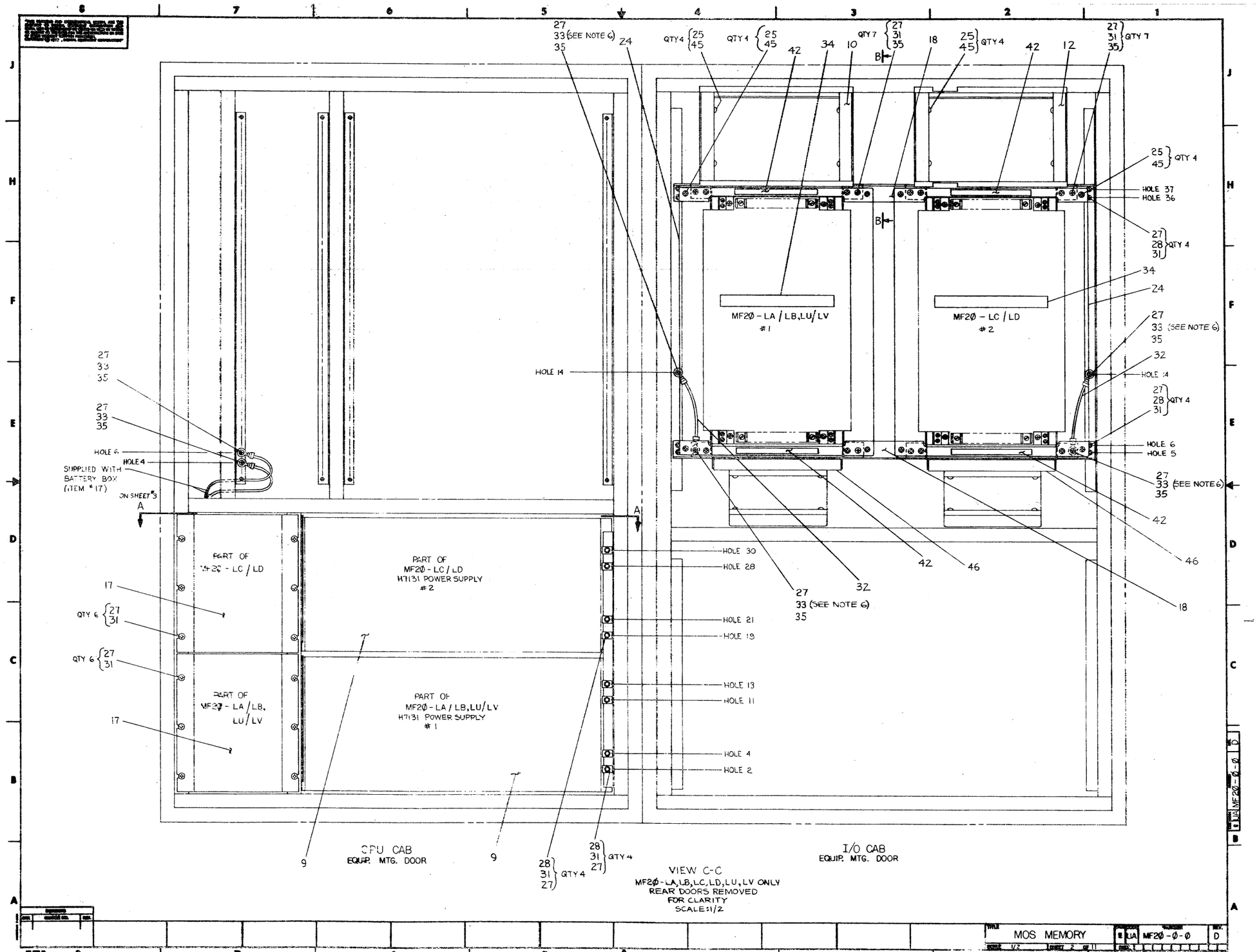
SEE PARTS LIST

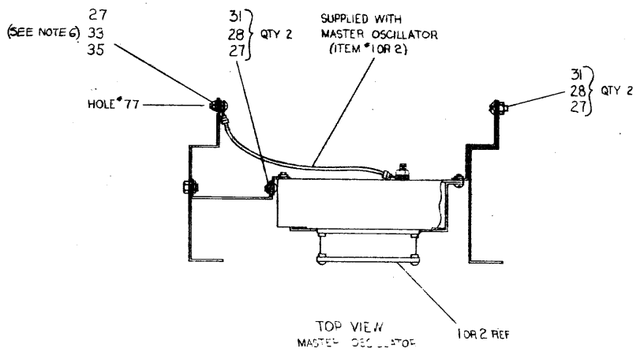
NONE

B-DD-MF2Ø-Ø

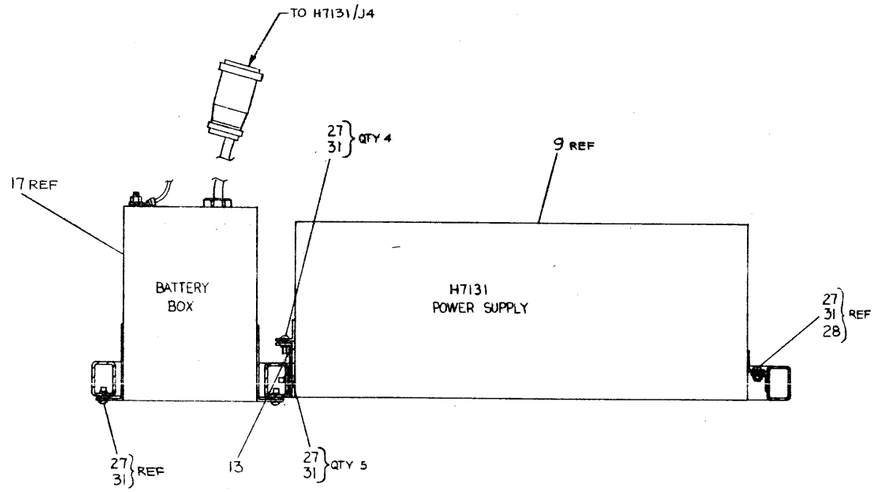
UA MF2Ø-Ø-Ø

D

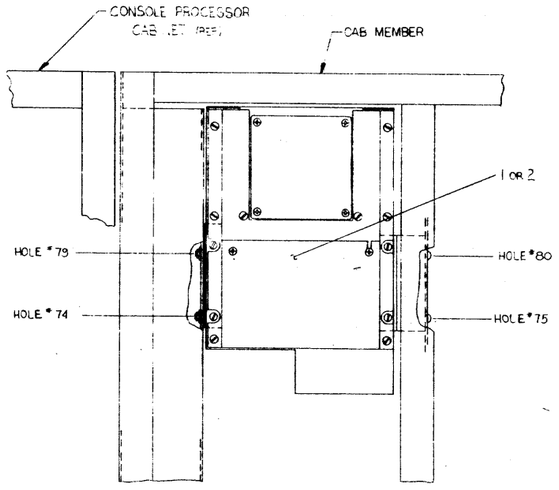

27
33 (SEE NOTE 6)
35
24
QTY 4 25 45
QTY 1 25 45
42
34
10
QTY 7 27 31 35
B
18
25 45 QTY 4
42
12
27 31 35 QTY 7
25 45 QTY 4
HOLE 37
HOLE 36
27 28 31 QTY 4
34
24
MF2Ø - LA / LB,LU/LV
#1
MF2Ø - LC / LD
#2
27 33 (SEE NOTE 6) 35
32
HOLE 14
27 28 31 QTY 4
HOLE 6
HOLE 5
27 33 (SEE NOTE 6) 35
42
46
18
27 33 35
HOLE 14
HOLE 4
SUPPLIED WITH BATTERY BOX (ITEM #17)
ON SHEET 3
A
A
PART OF MF2Ø - LC / LD
PART OF MF2Ø - LC / LD H7131 POWER SUPPLY #2
17
QTY 6 27 31
QTY 6 27 31
PART OF MF2Ø - LA / LB, LU / LV
PART OF MF2Ø - LA / LB,LU/LV H7131 POWER SUPPLY #1
17
HOLE 30
HOLE 28
HOLE 21
HOLE 19
HOLE 13
HOLE 11
HOLE 4
HOLE 2
9
9
28 31 27 QTY 4
28 31 27 QTY 4
CPU CAB
EQUIP. MTG. DOOR
I/O CAB
EQUIP. MTG. DOOR
VIEW C-C
MF2Ø-LA,LB,LC,LD,LU,LV ONLY
REAR DOORS REMOVED
FOR CLARITY
SCALE: 1/2
MOS MEMORY
E UA MF2Ø-Ø-Ø
D



TOP VIEW
MASTER OSCILLATOR



SECTION A-A
SCALE: 1/2
(SEE SHEET 2 & 7)
TYP PWR SUPPLY & BATTERY BOX MTG



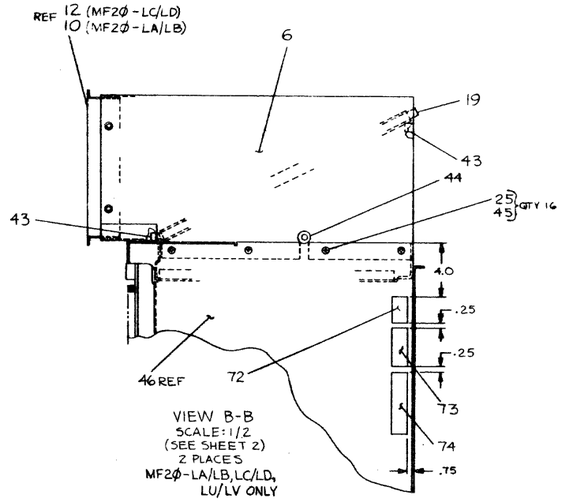
I/O CAB FRONT
INSTALLATION OF MASTER OSCILLATOR
ITEM # 1 OR # 2
GRILL & FRONT DOOR REMOVED
FOR CLARITY
SCALE: 1/2
MF20 -LA/LB, LP/LR, LS/LT ONLY

4	M8574 (ALL VARIATIONS EXCEPT MF20-E)
5	M8576 (ALL VARIATIONS EXCEPT MF20-E)
6	M8575 (ALL VARIATIONS EXCEPT MF20-E)
7	M8577 (ALL VARIATIONS EXCEPT MF-20-E)
8	MF20-M, M8579 (MF20-E) 2ND EXPANSION
9	MF20-M, M8579 (MF20-E) 1ST EXPANSION
10	MF20-M, M8579 (ALL VARIATIONS EXCEPT MF-20-E)
11	MF20-M, M8579 (MF20-E) 2ND EXPANSION
12	MF20-M, M8579 (ME20-E) 1ST EXPANSION
13	MF20-M, M8579 (ALL VARIATIONS EXEPT MF-20-E)
14	MF20-M, M8579 (MF20-E) 2ND EXPASION
15	MF20-M, M8579 (MF20-E) 1ST EXPANSION
16	MF20-M, M8579 (ALL VARIATIONS EXCEPT MF-20-E)
17	MF20-M, M8579 (MF20-E) 2ND EXPANSION
18	MF20-M, M8579 (MF20-E) 1ST EXPANSION
19	MF20-M, M8579 (ALL VARIATIONS EXCEPT MF20-E)

A
B
C
D
E
F

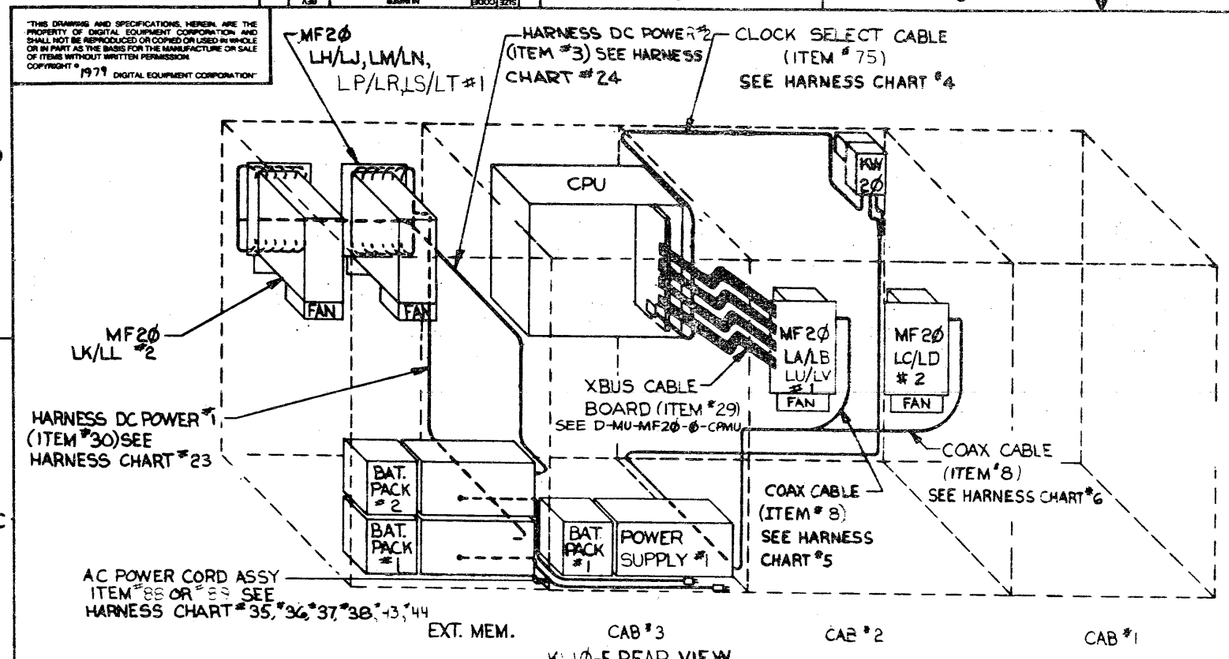
SHOWN FROM PIN SIDE

MF20 MODULE UTILIZATION
SEE D-MU-MF20-0-15 FOR MODULE GROUPING



VIEW B-B
SCALE: 1/2
(SEE SHEET 2)
2 PLACES
MF20-LA/LB, LC/LD,
LU/LV ONLY

MOS MEMORY
SCALE NONE
B UA MF20-0-0 D



KLIØ-E REAR VIEW

MF2Ø LA/LB, LP/LR, LS/LT

HARNESS CONNECTION CHART #4

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
75		J1	CPU #1 M8572	
75		J2	KW2Ø/J1Ø	

MF2Ø LA/LB, LP/LR, LS/LT

HARNESS CONNECTION CHART #5

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
8		CPU #1 (COAX CORD)	KW2Ø/J6	
8		MF2Ø #1 (BACKPLANE)	KW2Ø/J1	

MF2Ø LC/LD

HARNESS CONNECTION CHART #6

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
8		MF2Ø #2 (BACKPLANE)	KW2Ø/J3	

MF2Ø LJ LN

HARNESS CONNECTION CHART #35

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
70		P1	863/J32	
70	1		H7131 #1/TB 1-GND-	
70	3		H7131 #1/TB 1-NEUT	
70	2		H7131 #1/TB 1-LINE	

MF2Ø LL

HARNESS CONNECTION CHART #36

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
88		P1	863/J25	
88	1		H7131 #2/TB 1-GND	
88	3		H7131 #2/TB 1-NEUT	
88	2		H7131 #2/TB 1-LINE	

MF2Ø LN, LM

HARNESS CONNECTION CHART #37

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
71		P1	863/J32	
71	1		H7131 #1/TB 1-GND	
71	3		H7131 #1/TB 1-NEUT	
71	2		H7131 #1/TB 1-LINE	

MF2Ø LR

HARNESS CONNECTION CHART #38

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
89		P1	863/J25	
89	1		H7131 #2/TB 1-GND	
89	3		H7131 #2/TB 1-NEUT	
89	2		H7131 #2/TB 1-LINE	

MF2Ø LH/LJ, LM/LN, LP/LR, LS/LT

HARNESS CONNECTION CHART #23

ITEM NO.	HARNESS TERM PC-WT	HARNESS TERM CONNECTION	CONNECTION	WITH
30	1		H7131 #1/-5.2V(-)L	
	2		H7131 #1/-5.2V(+)L	
	3		H7131 #1/-5.2V(-)L	
	4		H7131 #1/-5.2V(+)L	
	5		H7131 #1/-5.2V(-)U	
	6		H7131 #1/-5.2V(+)U	
	7		H7131 #1/-5.2V(-)U	
	8		H7131 #1/-5.2V(+)U	
	9		MF2Ø #1/GNDA U	
	10		MF2Ø #1/+12B U	
	11		MF2Ø #1/GNDB U	
	12		MF2Ø #1/+5B U	
	13		MF2Ø #1/GNDC U	
	14		MF2Ø #1/ 12A U	
	15		MF2Ø #1/GNDD U	
	16		MF2Ø #1/ 5A U	
	17		MF2Ø #1/GNDE U	
	18		MF2Ø #1/-5.2B U	
	19		MF2Ø #1/GNDF U	
	20		MF2Ø #1/-5.2A U	
	21		MF2Ø #1/GNDH U	
	22		MF2Ø #1/-2 U	
	23		MF2Ø #1/-2 L	
	24		MF2Ø #1/GNDH L	
	25		MF2Ø #1/-5.2A L	
	26		MF2Ø #1/GNDF L	
	27		MF2Ø #1/-5.2B L	
	28		MF2Ø #1/GNDE L	
	29		MF2Ø #1/-5A L	
	30		MF2Ø #1/GNDD L	
	31		MF2Ø #1/+12A L	
	32		MF2Ø #1/GNDC L	
	33		MF2Ø #1/+5B L	
	34		MF2Ø #1/GNDB L	
	35		MF2Ø #1/+12B L	
	36		MF2Ø #1/GNDA L	
	37		H7131 #1/-2.0V(-)L	
	38		H7131 #1/-2.0V(+)L	
	39		H7131 #1/-2.0V(-)U	
	40		H7131 #1/-2.0V(+)U	
	41		H7131 #1/+5.0V(+)L	
	42		H7131 #1/+5.0V(-)L	
	43		H7131 #1/+5.0V(+)L	
	44		H7131 #1/+5.0V(-)L	
	45		H7131 #1/+5.0V(+)U	
	46		H7131 #1/+5.0V(-)U	
	47		H7131 #1/+5.0V(+)U	
	48		H7131 #1/+5.0V(-)U	
	49		H7131 #1/+12.0V(+)L	
	50		H7131 #1/+12.0V(-)L	
	51		H7131 #1/+12.0V(+)L	
	52		H7131 #1/+12.0V(-)L	
	53		H7131 #1/+12.0V(+)U	
	54		H7131 #1/+12.0V(-)U	
	55		H7131 #1/+12.0V(+)U	
30	56		H7131 #1/+12.0V(-)U	

MF2Ø LK/LL

HARNESS CONNECTION CHART #24

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
3	1		H7131 #2/-5.2V(-)L	
	2		H7131 #2/-5.2V(+)L	
	3		H7131 #2/-5.2V(-)L	
	4		H7131 #2/-5.2V(+)L	
	5		H7131 #2/-5.2V(-)U	
	6		H7131 #2/-5.2V(+)U	
	7		H7131 #2/-5.2V(-)U	
	8		H7131 #2/-5.2V(+)U	
	9		MF2Ø #2/-2 L	
	10		MF2Ø #2/GNDH L	
	11		MF2Ø #2/-5.2A L	
	12		MF2Ø #2/GNDF L	
	13		MF2Ø #2/-5.2B L	
	14		MF2Ø #2/GNDE L	
	15		MF2Ø #2/+5A L	
	16		MF2Ø #2/GNDD L	
	17		MF2Ø #2/+12A L	
	18		MF2Ø #2/GNDC L	
	19		MF2Ø #2/+5B L	
	20		MF2Ø #2/GNDB L	
	21		MF2Ø #2/+12B L	
	22		MF2Ø #2/GNDA L	
	23		MF2Ø #2/GNDA U	
	24		MF2Ø #2/+12B U	
	25		MF2Ø #2/GNDB U	
	26		MF2Ø #2/+5B U	
	27		MF2Ø #2/GNDC U	
	28		MF2Ø #2/+12A U	
	29		MF2Ø #2/GNDD U	
	30		MF2Ø #2/+5A U	
	31		MF2Ø #2/GNDE U	
	32		MF2Ø #2/-5.2B U	
	33		MF2Ø #2/GNDF U	
	34		MF2Ø #2/-5.2A U	
	35		MF2Ø #2/GNDH U	
	36		MF2Ø #2/-2 U	
	37		H7131 #2/-2.0V(-)L	
	38		H7131 #2/-2.0V(+)L	
	39		H7131 #2/-2.0V(-)U	
	40		H7131 #2/-2.0V(+)U	
	41		H7131 #2/+5.0V(+)L	
	42		H7131 #2/+5.0V(-)L	
	43		H7131 #2/+5.0V(+)L	
	44		H7131 #2/+5.0V(-)L	
	45		H7131 #2/+5.0V(+)U	
	46		H7131 #2/+5.0V(-)U	
	47		H7131 #2/+5.0V(+)U	
	48		H7131 #2/+5.0V(-)U	
	49		H7131 #2/+12.0V(+)L	
	50		H7131 #2/+12.0V(-)L	
	51		H7131 #2/+12.0V(+)L	
	52		H7131 #2/+12.0V(-)L	
	53		H7131 #2/+12.0V(+)U	
	54		H7131 #2/+12.0V(-)U	
	55		H7131 #2/+12.0V(+)U	
3	56		H7131 #2/+12.0V(-)U	

REVISION HISTORY		
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TITLE: MOS MEMORY

DOCUMENT NUMBER: SIZE D | CODE UA | NUMBER MF2Ø-Ø-Ø | REV D

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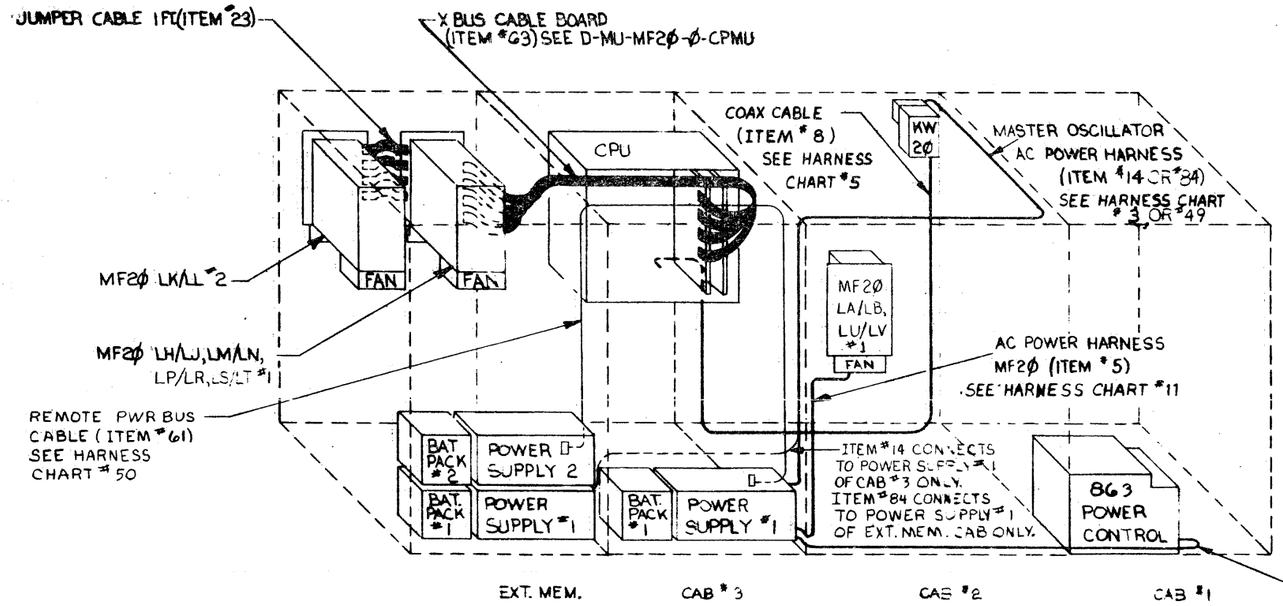

KLIØ-E REAR VIEW

MF2Ø LU/LV

HARNESS CONNECTION CHART #5Ø				
ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
61		P 2	H7131 #1/J2	
61		P 1	H7131 #2/J2 (EXT)	

MF2Ø LA/LB

HARNESS CONNECTION CHART #3				
ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
14		J1	KW2Ø/F1-1	
14		J2	KW2Ø/F1-2	
14	3		H7131 #1/TBS1-NEUT	
14	4		H7131 #1/TBS1-LINE	

MF2Ø LA/LB, LU/LV

HARNESS CONNECTION CHART #11				
ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
5		J1	MF2Ø #1 FAN 2-1	
		J2	MF2Ø #1 FAN 2-2	
		J3	MF2Ø #1 FAN 1-1	
		J4	MF2Ø #1 FAN 1-2	
	5		H7131 #1/TB2 -1	
	6		H7131 #1/TB2 -2	
	7		H7131 #1/TB2 -3	
5	8		H7131 #1/TB2 -4	

MF2Ø LB, LV

HARNESS CONNECTION CHART #15				
ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
88		P1	863/J26	
88	1		H7131 #2/TB 1-GND	
88	3		H7131 #1/TB 1-NEUT	
88	2		H7131 #1/TB 1-LINE	

MF2Ø LA/LB, LU/LV

HARNESS CONNECTION CHART #5				
ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
8		CPU #1 (COAX CONN)	KW2Ø/J8	
8		MF2Ø #1 (BACKPLANE)	KW2Ø/J1	

MF2Ø LP/LR, LS/LT

HARNESS CONNECTION CHART #45				
ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
84		J1	KW2Ø/F1-1	
84		J2	KW2Ø/F1-2	
84	3		H7131 #1/TBS1-NEUT	
84	4		H7131 #1/TBS1-LINE	

MF2Ø LA, LB

HARNESS CONNECTION CHART #17				
ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
89		P1	863/J26	
89	1		H7131 #1/TB 1-GND	
89	3		H7131 #1/TB 1-NEUT	
89	2		H7131 #1/TB 1-LINE	

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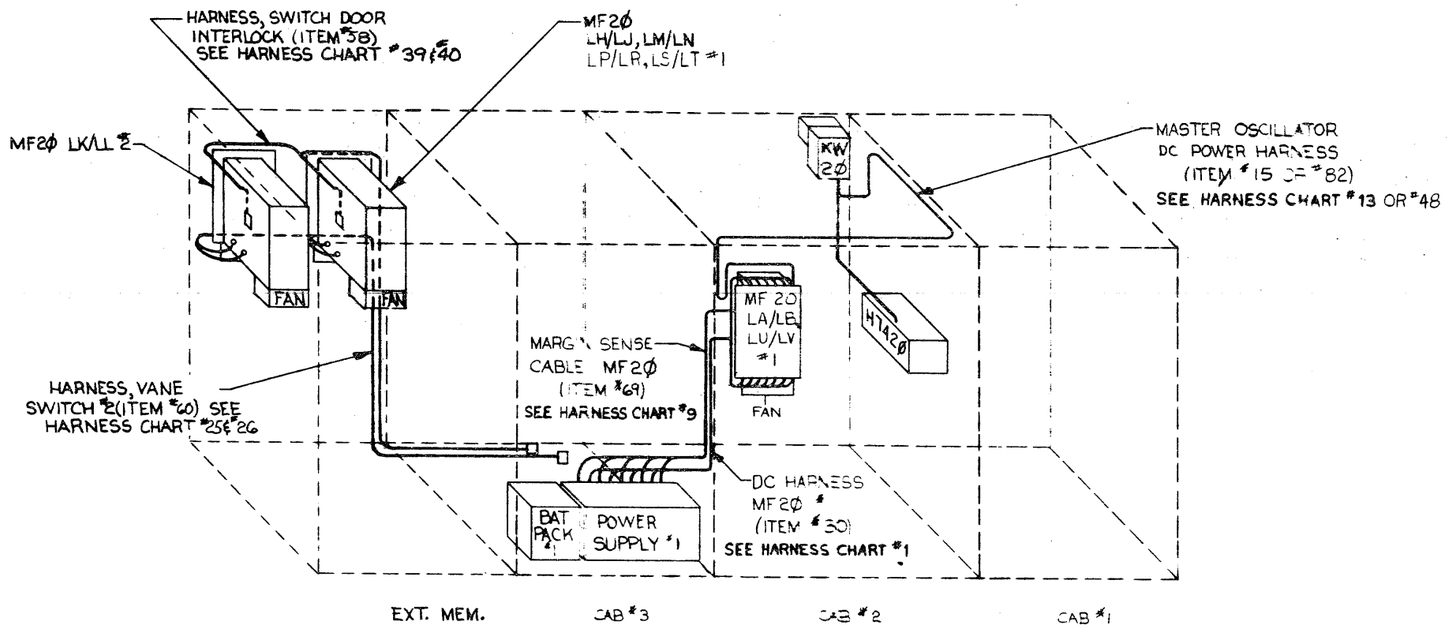

KLIØ-E REAR VIEW

MF2Ø LA/LB, LU/LV

HARNESS CONNECTION CHART #8

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
69		J1	MF2Ø #1/PA#1	
	8		H7131 #1/TB6-2	
	7		H7131 #1/TB6-3	
	6		H7131 #1/TB5-3	
	5		H7131 #1/TB5-2	
	4		H7131 #1/TB4-3	
	3		H7131 #1/TB4-2	
	2		H7131 #1/TB3-2	
	1		H7131 #1/TB3-3	
69		P1	H7131 #1/J1	

MF2Ø LA/LB

HARNESS CONNECTION CHART #13

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
15		P1	KW26/J8	
15	7		H742Ø #3/J13-6	
15	8		H742Ø #3/J13-3	
15	9		MF2Ø #1/GNDA U	
15	10		MF2Ø #1/ +12B U	

MF2Ø LH/LJ, LM/LN, LP/LR, LS/LT

HARNESS CONNECTION CHART #25

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
60	1,2		MF2Ø #1/SW2 (-)	
	3,4		MF2Ø #1/SW2 (L)	
	5,6		MF2Ø #1 SW2 (+)	
		J5	FAULT HARNESS /P3	
	24		MF2Ø #1 SW1 (-)	
	26		MF2Ø #1/SW1 (-)	
	27		MF2Ø #1 SW (-)	
	28		MF2Ø #1 SW1 (L)	
	29		MF2Ø #1 SW1 (+)	
	30		MF2Ø #1 SW1 (+)	
60		P1	MB20 PANE	

MF2Ø LH/LJ, LM/LN, LP/LR, LS/LT

HARNESS CONNECTION CHART #39

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
58		J1	MF2Ø #1 DOOR SWITCH	
58	5,6		FAULT HARNESS J1-1	
58	7,8		FAULT HARNESS J1-3	
58		J3	MB20 DOOR SW	

MF2Ø LK LL

HARNESS CONNECTION CHART #26

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
60	16		MF2Ø #2 SW2(-)	
	17		MF2Ø #2 SW2(L)	
	18		MF2Ø #2 SW2(+)	
	19		MF2Ø #2 SW1(-)	
	20		MF2Ø #2 SW1(-)	
	21		MF2Ø #2 SW1(L)	
	22		MF2Ø #2 SW1(L)	
	23		MF2Ø #2 SW1(+)	
60	24		MF2Ø #2 SW1(+)	

MF2Ø LK LL

HARNESS CONNECTION CHART #46

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
58		J2	MF2Ø #2 DOOR SWITCH	

MF2Ø LA/LB, LU/LV

HARNESS CONNECTION CHART #1

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
30	1		H7131 #1/-5.2V(-)L	
	2		H7131 #1/-5.2V(+)L	
	3		H7131 #1/-5.2V(-)L	
	4		H7131 #1/-5.2V(+)L	
	5		H7131 #1/-5.2V(-)U	
	6		H7131 #1/-5.2V(+)U	
	7		H7131 #1/-5.2V(-)U	
	8		H7131 #1/-5.2V(+)U	
	9		MF2Ø #1/GNDA U	
	10		MF2Ø #1/+12B U	
	11		MF2Ø #1/GNDB U	
	12		MF2Ø #1/+5B U	
	13		MF2Ø #1/GNDC U	
	14		MF2Ø #1/ 12A U	
	15		MF2Ø #1/GNDD U	
	16		MF2Ø #1/ 5A U	
	17		MF2Ø #1/GNDE U	
	18		MF2Ø #1/-5.2B U	
	19		MF2Ø #1/GNDF U	
	20		MF2Ø #1/-5.2A U	
	21		MF2Ø #1/GNDH U	
	22		MF2Ø #1/-2 U	
	23		MF2Ø #1/-2 L	
	24		MF2Ø #1/GNDH L	
	25		MF2Ø #1/-5.2A L	
	26		MF2Ø #1/GNDF L	
	27		MF2Ø #1/-5.2B L	
	28		MF2Ø #1/GNDE L	
	29		MF2Ø #1/+5A L	
	30		MF2Ø #1/GNDD L	
	31		MF2Ø #1/+12A L	
	32		MF2Ø #1/GNDC L	
	33		MF2Ø #1/+5B L	
	34		MF2Ø #1/GNDB L	
	35		MF2Ø #1/+12B L	
	36		MF2Ø #1/GNDA L	
	37		H7131 #1/-2.0V(-)L	
	38		H7131 #1/-2.0V(+)L	
	39		H7131 #1/-2.0V(-)U	
	40		H7131 #1/-2.0V(+)U	
	41		H7131 #1/+5.0V(+)L	
	42		H7131 #1/+5.0V(-)L	
	43		H7131 #1/+5.0V(+)L	
	44		H7131 #1/+5.0V(-)L	
	45		H7131 #1/+5.0V(+)U	
	46		H7131 #1/+5.0V(-)U	
	47		H7131 #1/+5.0V(+)U	
	48		H7131 #1/+5.0V(-)U	
	49		H7131 #1/+12.0V(+)L	
	50		H7131 #1/+12.0V(-)L	
	51		H7131 #1/+12.0V(+)L	
	52		H7131 #1/+12.0V(-)L	
	53		H7131 #1/+12.0V(+)U	
	54		H7131 #1/+12.0V(-)U	
	55		H7131 #1/+12.0V(+)U	
30	56		H7131 #1/+12.0V(-)U	

REVISION HISTORY

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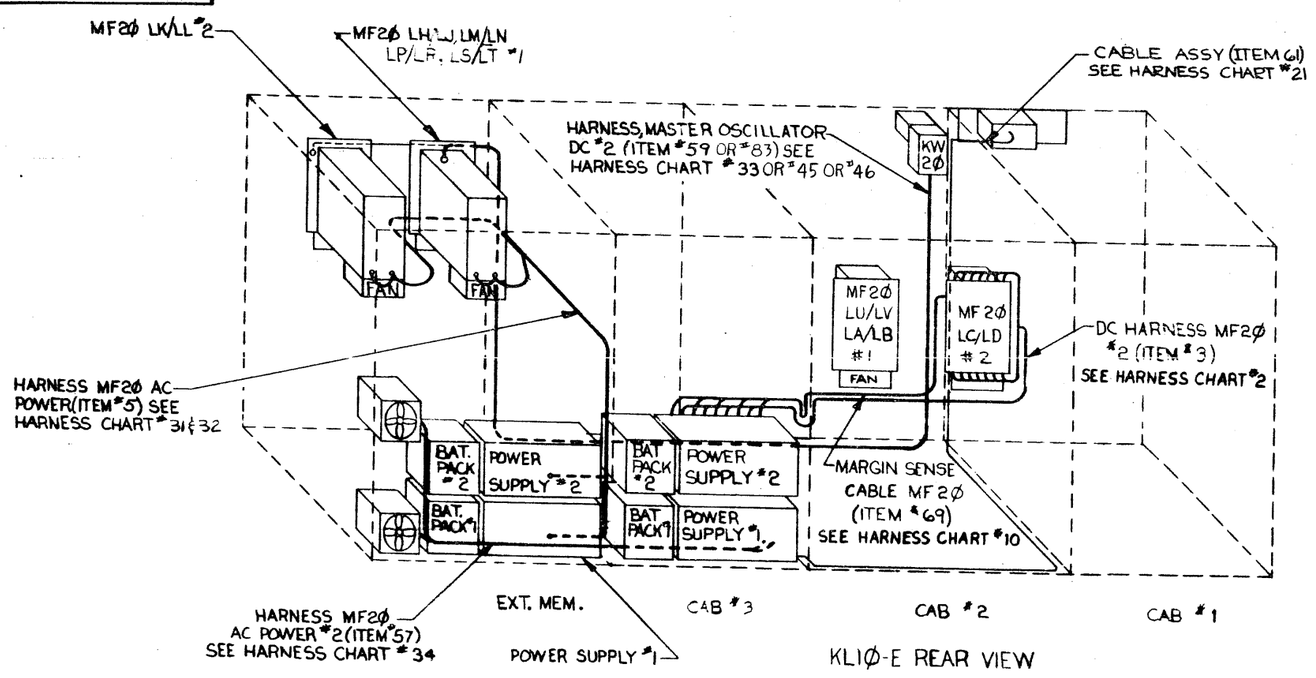

MF2Ø LC/LD

HARNESS CONNECTION CHART #10

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
69		J1	MF2Ø #2/PA#1	
	8		H7131 #2/TB6-2	
	7		H7131 #2/TB6-3	
	8		H7131 #2/TB5-3	
	5		H7131 #2/TB5-2	
	4		H7131 #2/TB4-3	
	3		H7131 #2/TB4-2	
	2		H7131 #2/TB3-2	
	1		H7131 #2/TB3-3	
69		P1	H7131 #2/J1	

MF2Ø LA/LB, LC, LD

HARNESS CONNECTION CHART #21

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
61		P2	H7131 #1/J2	
61		P1	7011639 (F/E) J4	

MF2Ø LH/LJ, LM/LN, LP/LR, LS/LT

HARNESS CONNECTION CHART #31

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
5		J1	MF2Ø #1 FAN 2-1	
		J2	MF2Ø #1 FAN 2-2	
		J3	MF2Ø #1 FAN 1-1	
		J4	MF2Ø #1 FAN 1-2	
	5		H7131 #1/TB2-1	
	6		H7131 #1/TB2-2	
	7		H7131 #1/TB2-3	
5	8		H7131 #1/TB2-4	

MF2Ø LH/LJ, LM/LN

HARNESS CONNECTION CHART #33

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
59	1		MF2Ø #1/GNDA U	
59	2		MF2Ø #1/ 12B U	
59	3		KW2Ø/J8/P1-6	
59	4		KW2Ø/J8/P1-7	

MF2Ø LK/LL

HARNESS CONNECTION CHART #32

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
5		J1	MF2Ø #2 FAN 2-1	
		J2	MF2Ø #2 FAN 2-2	
		J3	MF2Ø #2 FAN 1-1	
		J4	MF2Ø #2 FAN 1-2	
	5		H7131 #2/TB2-1	
	6		H7131 #2/TB2-2	
	7		H7131 #2/TB2-3	
5	8		H7131 #2/TB2-4	

MF2Ø LM/LJ, LM/LN, LP/LR, LS/LT

HARNESS CONNECTION CHART #34

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
57		J1	FAN 3-1	
57		J2	FAN 3-2	
57		J3	FAN 4-1	
57		J4	FAN 4-2	
57		P1	CPU CAB F1/F2-J1	
57		J5	P1°	

MF2Ø LC/LD

HARNESS CONNECTION CHART #2

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
3	1		H7131 #2/-5.2V(-)L	
	2		H7131 #2/-5.2V(+)L	
	3		H7131 #2/-5.2V(-)L	
	4		H7131 #2/-5.2V(+)L	
	5		H7131 #2/-5 2V(-)U	
	6		H7131 #2/-5.2V(+)U	
	7		H7131 #2/-5.2V(-)U	
	8		H7131 #2/-5.2V(+)U	
	9		MF2Ø #2/-2 L	
	10		MF2Ø #2/GNDH L	
	11		MF2Ø #2/-5.2A L	
	12		MF2Ø #2/GNDF L	
	13		MF2Ø #2/-5.2B L	
	14		MF2Ø #2/GNDE L	
	15		MF2Ø #2/+5A L	
	16		MF2Ø #2/GNDD L	
	17		MF2Ø #2/+12A L	
	18		MF2Ø #2/GNDC L	
	19		MF2Ø #2/+5B L	
	20		MF2Ø #2/GNDB L	
	21		MF2Ø #2/+12B L	
	22		MF2Ø #2/GNDA L	
	23		MF2Ø #2/GNDA U	
	24		MF2Ø #2/+12B U	
	25		MF2Ø #2/GNDB U	
	26		MF2Ø #2/+5B U	
	27		MF2Ø #2/GNDC U	
	28		MF2Ø #2/+12A U	
	29		MF2Ø #2/GNDD U	
	30		MF2Ø #2/+5A U	
	31		MF2Ø #2/GNDE U	
	32		MF2Ø #2/-5.2B U	
	33		MF2Ø #2/GNDF U	
	34		MF2Ø #2/-5.2A U	
	35		MF2Ø #2/GNDH U	
	36		MF2Ø #2/-2 U	
	37		H7131 #2/-2.0V(-)L	
	38		H7131 #2/-2.0V(+) L	
	39		H7131 #2/-2.0V(-)U	
	40		H7131 #2/-2.0V(+)U	
	41		H7131 #2/+5.0V(+)L	
	42		H7131 #2/+5.0V(-)L	
	43		H7131 #2/+5.0V(+)L	
	44		H7131 #2/+5.0V(-)L	
	45		H7131 #2/+5.0V(+)U	
	46		H7131 #2/+5.0V(-)U	
	47		H7131 #2/+5.0V(+)U	
	48		H7131 #2/+5.0V(-)U	
	49		H7131 #2/+12.0V(+)L	
	50		H7131 #2/+12.0V(-)L	
	51		H7131 #2/+12.0V(+)L	
	52		H7131 #2/+12.0V(-)L	
	53		H7131 #2/+12.0V(+)U	
	54		H7131 #2/+12.0V(-)U	
	55		H7131 #2/+12.0V(+)U	
3	56		H7131 #2/+12.0V(-)U	

REVISION HISTORY

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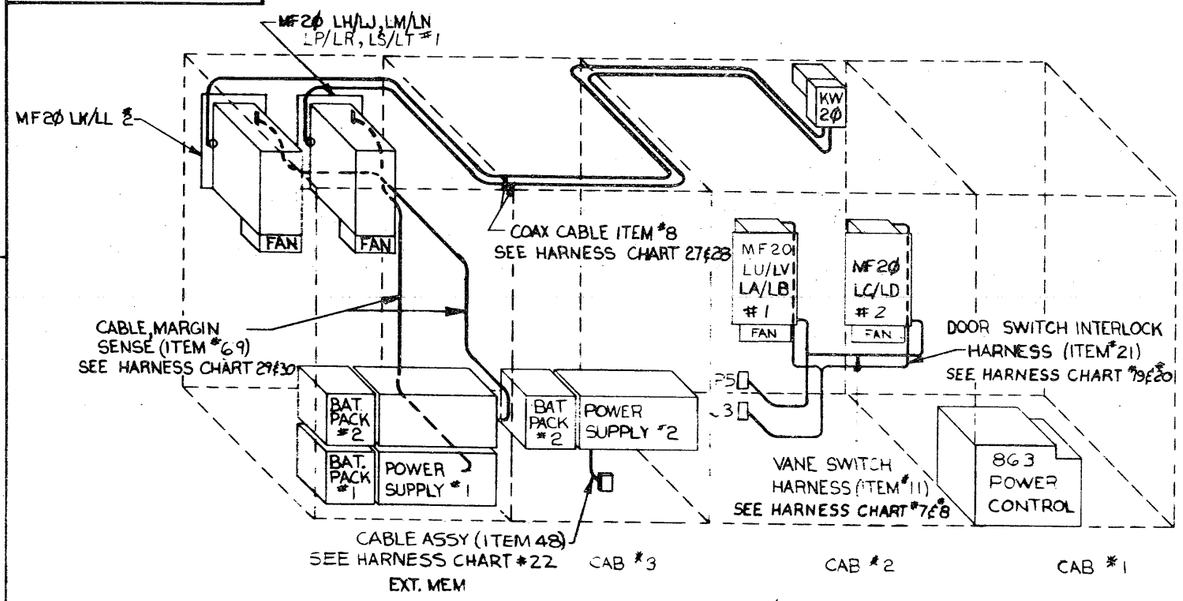


KLIØ-E REAR VIEW

MF2Ø LC/LD

HARNESS CONNECTION CHART #22

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
48		P2	H7131 #2/J2	
48		P1	H7131 #1/J3	

MF2Ø LH/LJ,LM/LN,LP/LR,LS/LT

HARNESS CONNECTION CHART #29

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
69		J1	MF2Ø #1/PAB1	
	8		H7131 #1/TB6-2	
	7		H7131 #1/TB6-3	
	6		H7131 #1/TB5-3	
	5		H7131 #1/TB5-2	
	4		H7131 #1/TB4-3	
	3		H7131 #1/TB4-2	
	2		H7131 #1/TB3-2	
	1		H7131 #1/TB3-3	
69		P1	H7131 #1/J1	

MF2Ø LK/LL

HARNESS CONNECTION CHART #30

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
69		J1	MF2Ø #2/PAB1	
	8		H7131 #2/TB6-2	
	7		H7131 #2/TB6-3	
	6		H7131 #2/TB5-3	
	5		H7131 #2/TB5-2	
	4		H7131 #2/TB4-3	
	3		H7131 #2/TB4-2	
	2		H7131 #2/TB3-2	
	1		H7131 #2/TB3-3	
69		P1	H7131 #2/J1	

MF2Ø LH/LJ,LM/LN,LP/LR,LS/LT

HARNESS CONNECTION CHART #27

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
8		MF2Ø #1 (BACKPLANE)	KW2Ø/J2	

MF2Ø LK/LL

HARNESS CONNECTION CHART #28

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
8		MF2Ø #2 (BACKPLANE)	KW2Ø/J4	

MF2Ø LA/LB, LU/LV

HARNESS CONNECTION CHART #7

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
11	1		MF2Ø #1/SW2(—)	
	2		MF2Ø #1/SW2(L)	
	3		MF2Ø #1/SW2(+)	
		J5	FAULT HARNESS/P5	
	21		MF2Ø #1/SW1(—)	
	22		MF2Ø #1/SW1(—)	
	23		MF2Ø #1/SW1(L)	
	24		MF2Ø #1/SW1(L)	
	25		MF2Ø #1/SW1(+)	
11	26		MF2Ø #1/SW1(+)	

MF2Ø LC/LD

HARNESS CONNECTION CHART #8

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
11	12		MF2Ø #2/SW2 (—)	
	13		MF2Ø #2/SW2 (L)	
	14		MF2Ø #2/SW2 (+)	
	15		MF2Ø #2/SW1 (—)	
	16		MF2Ø #2/SW1 (—)	
	17		MF2Ø #2/SW1 (L)	
	18		MF2Ø #2/SW1 (L)	
	19		MF2Ø #2/SW1 (+)	
11	20		MF2Ø #2/SW1 (+)	

MF2Ø LP/LS

HARNESS CONNECTION CHART #43

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
88		P1	863/J27	
88	1		H7131#1/TBI-GND	
88	2		H7131#1/TBI-NEUT	
88	3		H7131#1/TBI-LINE	

MF2Ø LR/LT

HARNESS CONNECTION CHART #44

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
88		P1	863/J27	
88	1		H7131#1/TBI-GND	
88	3		H7131#1/TBI-NEUT	
88	2		H7131#1/TBI-LINE	

MF2Ø LP/LR,LS/LT

HARNESS CONNECTION CHART #45

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
89		P1	KW2Ø/JB	
89	7		H7-2Ø#3/J13-6	
89	8		H742Ø#3/J13-6	
89	9		MF2Ø#1 GNDA U	
89	10		MF2Ø#1 12B U	

MF2Ø LK/LL(ONLY IF MF20 LP/LR,LS/LT IS PRESENT)

HARNESS CONNECTION CHART #45

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
89	11		MF2Ø#2/GNDA U*	
89	12		MF2Ø#2/12B U*	
	PART OF HARNESS USED FOR LP/LR,LS/LT			

MF2Ø LP/LR,LS/LT

HARNESS CONNECTION CHART #49

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
82		P1	MF2Ø-LP/LR H7131 J2	
82		P2	7011639(F/E) J4	

MF2Ø LU/LV

HARNESS CONNECTION CHART #48

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
82	1		MF2Ø#1/GNDA U	
82	2		MF2Ø#1/12B U	
83	3		P1-4 MASTER OSC	
84	4		P1-3 MASTER OSC	

MF2Ø LA/LB, LU/LV

HARNESS CONNECTION CHART #19

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
21		J1	MF2Ø #1/DOOR SWITCH	
21	5		FAULT HARNESS/J3-1	
21	6		FAULT HARNESS/J3-3	

MF2Ø LC/LD

HARNESS CONNECTION CHART #20

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
21		J2	MF2Ø #2/DOOR SWITCH	

} PART OF HARNESS USED FOR MF2Ø-LA/LB

REVISION HISTORY

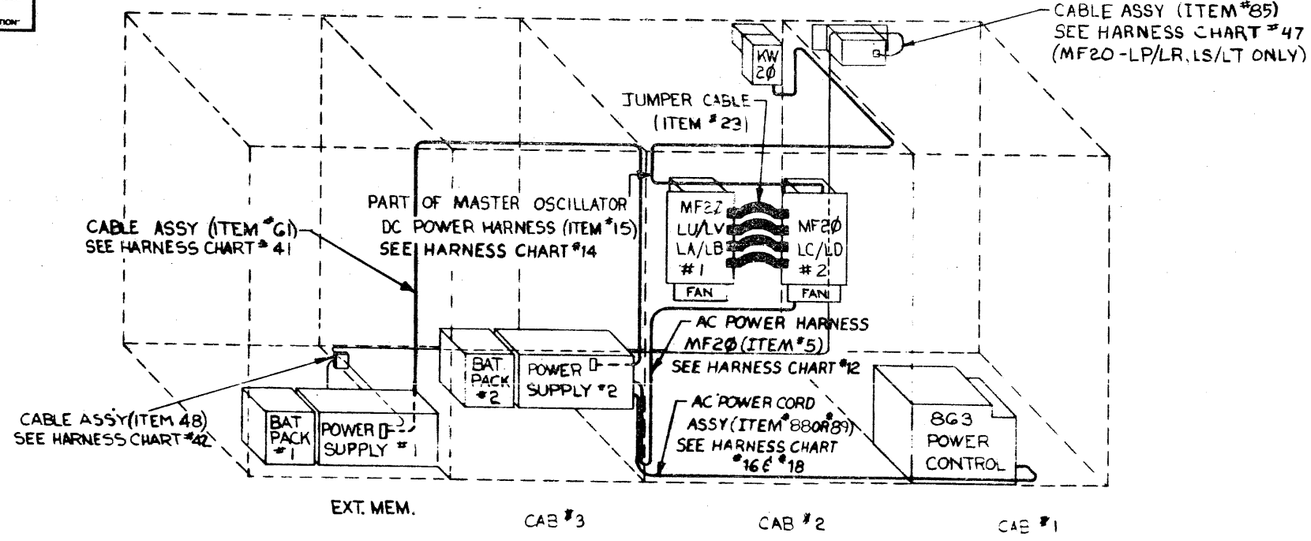
DATE	ECO NUMBER	REV.

TITLE: MOS MEMORY

DOCUMENT NUMBER: SIZE D | CODE DUA | NUMBER MF2Ø-Ø-Ø | REV D

SCALE NONE | SHEET 8 OF 11

DRD 137A



KL10-E REAR VIEW

MISC BACKPANEL JUMPERS FOR ALL MF20'S

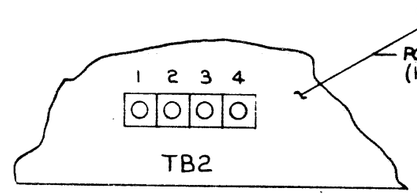
SIGNAL	JUMPER
DESEL CYC DISABLE	F7N1 TO GND

CONTROLLER NUMBER CONFIGURATION

NOTE: PINS A4L1, A4N1, AND A1N1 ARE USED TO SET THE MF20 SBUS DIAGNOSTIC CONTROLLER NUMBER IN ACCORDANCE WITH THE FOLLOWING TABLE

CONTROLLER NUMBER	PIN TO GND JUMPER CONNECTIONS		
	A4L1	A4N1	A4N1
10	NONE	NONE	NONE
11	NONE	NONE	GROUND
12	NONE	GROUND	NONE
13	NONE	GROUND	GROUND
14	GROUND	NONE	NONE
15	GROUND	NONE	GROUND
16	GROUND	GROUND	NONE
17	GROUND	GROUND	GROUND

FIRST CONTROLLER IS USUALLY ASSIGNED NUMBER 10; I.E. NO JUMPERS TO GROUND CONTROLLER 11 REQUIRED JUMPING A4N1 TO GROUND, USING ITEM NO. 64.



FOR 115 VAC OPERATION JUMPER TB2-1 TO TB2-2 AND TB2-3 TO TB2-4

FOR 240 VAC OPERATION JUMPER TB2-2 TO TB2-3 JUMPER SUPPLIED WITH POWER SUPPLY (ITEM #8).

MF20 LC/LD

HARNESS CONNECTION CHART #12

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
5		J1	MF20 #2 FAN 2-1	
		J2	MF20 #2 FAN 2-2	
		J3	MF20 #2 FAN 1-1	
		J4	MF20 #2 FAN 1-2	
	5		H7131 #2/TB2 -1	
	6		H7131 #2/TB2 -2	
	7		H7131 #2/TB2-3	
5	8		H7131 #2/TB2 -4	

MF20 LC/LD

HARNESS CONNECTION CHART #14

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
15	11		MF20 #2/GNDA U	
15	12		MF20 #2/ 120 U	

} PART OF HARNESS USED FOR MF20-LA/LB

MF20 LH/LJ, LM/LN

HARNESS CONNECTION CHART #41

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
61		P2	H7131 #1/J2	
61		P1	MF20-LC, LD H7131 #2/J3	

MF20 LD

HARNESS CONNECTION CHART #10

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
88		P1	BA03/J24	
88	1		H7131 #2/TB 1-GND	
88	3		H7131 #2/TB 1-NEUT	
88	2		H7131 #2/TB 1-LINE	

MF20 LC

HARNESS CONNECTION CHART #10

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
89		P1	BA03/J24	
89	1		H7131 #2/TB 1-GND	
89	3		H7131 #2/TB 1-NEUT	
89	2		H7131 #2/TB 1-LINE	

MF20 LL/LK

HARNESS CONNECTION CHART #42

ITEM NO.	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
48		P2	H7131 #2/J2	
48		P1	H7131 #1/J3	

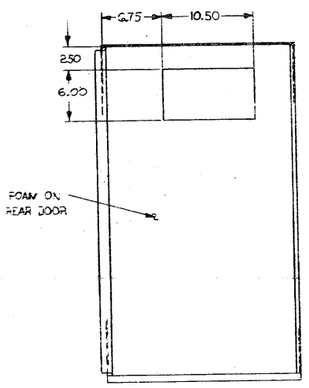
REVISION HISTORY

DATE	ECO NUMBER	REV.

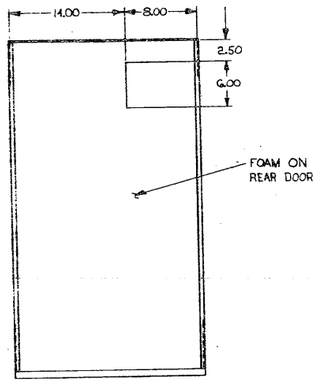
TITLE: MOS MEMORY

DOCUMENT NUMBER: SIZE D | CODE DUA | NUMBER MF20-0-0 | REV D

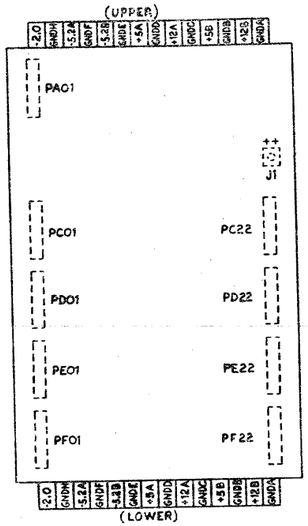
SCALE NONE | SHEET 9 OF 11



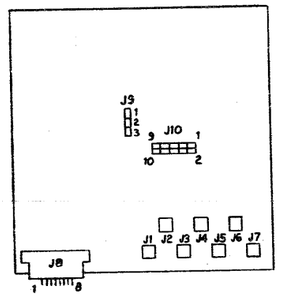
I/O CAB LEFT REAR DOOR
INSIDE VIEW
SEE NOTE 4
MF2Ø-LA/LB, LU/LV ONLY



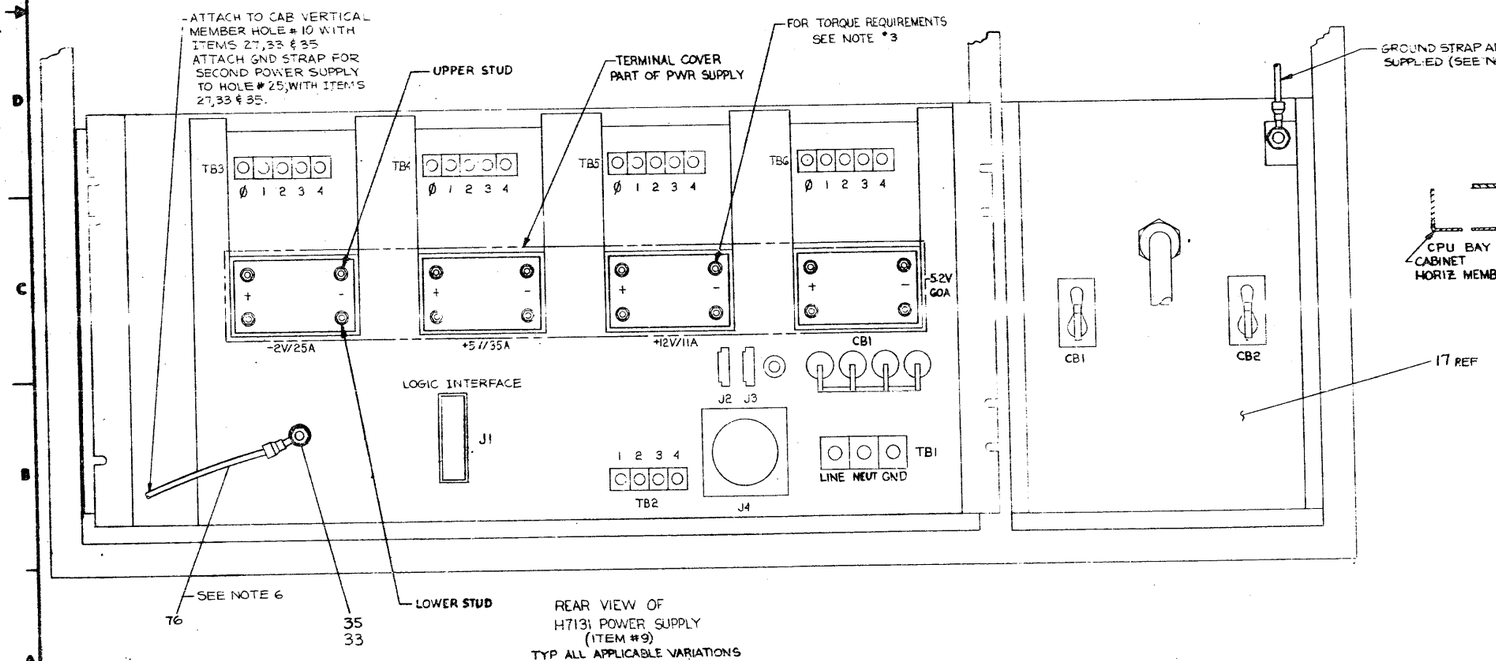
I/O CAB RIGHT REAR DOOR
INSIDE VIEW
SEE NOTE 4
MF2Ø-LC/LD ONLY



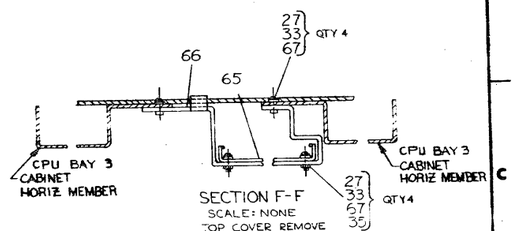
MF2Ø WIRED ASSEMBLY
VIEW FROM PIN SIDE
SCALE: NONE



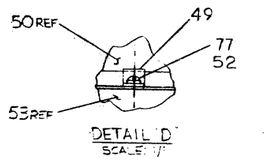
MASTER OSCILLATOR (ITEM #1 OR #2)
BOARD CONFIGURATION SHOWN FROM
FRONT OF UNIT
SCALE: NONE



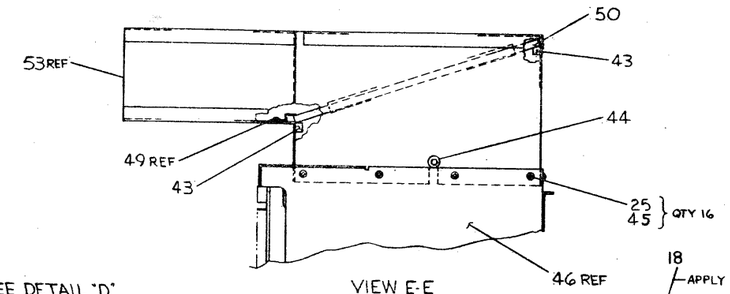
REAR VIEW OF
H7131 POWER SUPPLY
(ITEM #9)
TYP ALL APPLICABLE VARIATIONS



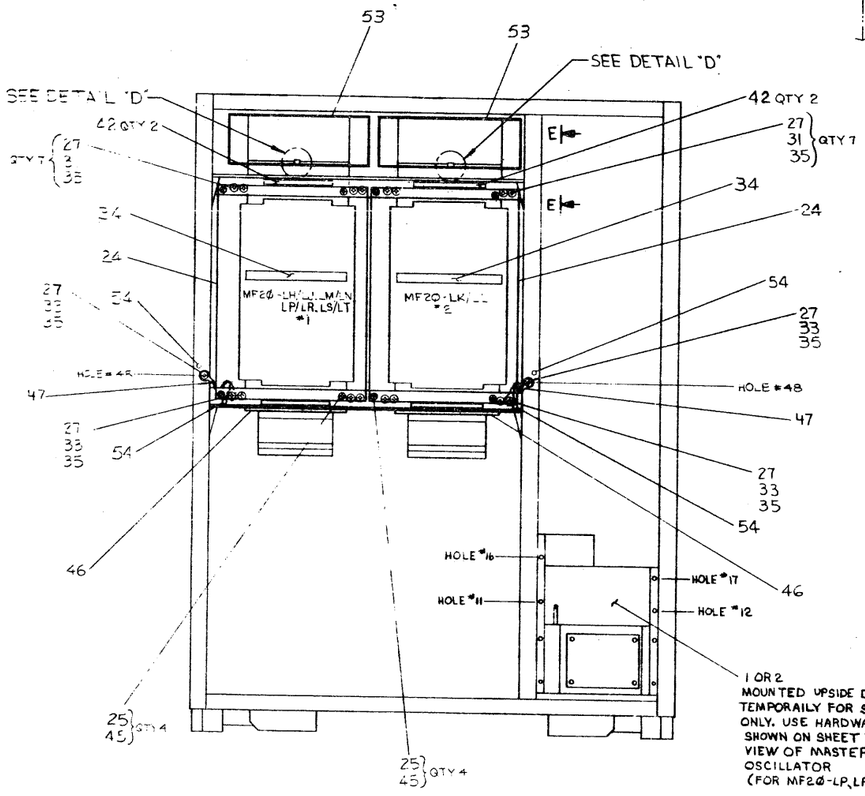
		MOS MEMORY		JA MF2Ø-Ø-Ø	D
		SCALE NONE		SHEET 1	



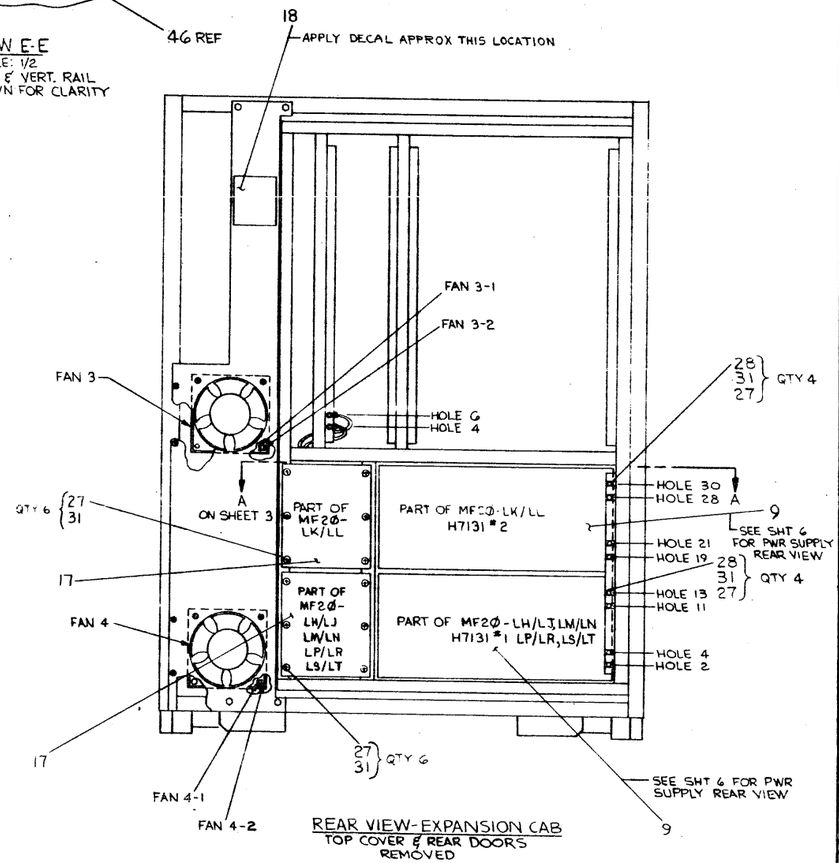
DETAIL 'D'
SCALE: 1"



VIEW E-E
SCALE: 1/2
MTG BRKT & VERT. RAIL
NOT SHOWN FOR CLARITY



FRONT VIEW - EXPANSION CAB
TOP COVER & FRONT DOORS
REMOVED



REAR VIEW - EXPANSION CAB
TOP COVER & REAR DOORS
REMOVED

MF2Ø-LH, LJ, LK, LL, LM, LN, LP, LR, LS, LT

AUTOMATED BY PRTLST,3P(44) — P A R T S L I S T — SHEET A1 OF A3

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION LA	LB	LC	LD	E	LH	LJ	LK	LL	LM	LN	LP
1	1	E-UA-KW20-0-0	OKW20-A	OSCILLATOR ASSY MASTER 60HZ	1	-	-	-	-	-	-	-	-	-	-	1
2	2	E-UA-KW20-0-0	OKW20-B	OSCILLATOR ASSY MASTER 50HZ	-	1	-	-	-	-	-	-	-	-	-	-
3	3	J-IA-7015189-0-0	7015189-00	HARNESS DC POW 2ND MF20	-	-	1	1	-	-	-	1	1	-	-	-
4	4	E-IA-7015190-0-0	7015190-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-	-	-	-	-	-	-	-
5	5	E-IA-7015222-0-0	7015222-00	HARNESS MF20 AC POWER	1	1	1	1	-	1	1	1	1	1	1	1
6	6	E-IA-7014470-0-0	7014470-00	WELDMENT,TOP DUCT	1	1	1	1	-	-	-	-	-	-	-	-
7	7	D-UA-5412855-0-0	5412855-00	XBUS TERMINATOR	4	4	-	-	-	4	4	-	-	4	4	4
8	8		1700100-00	CABLE,COAX,ASSY W/CONN	2	2	1	1	-	1	1	1	1	1	1	2
9	9	A-PS-3014903-0-0	3014903-00	POWER SUPPLY, MULTIPLE OUTPUT	1	1	1	1	-	1	1	1	1	1	1	1
10	10	D-IA-7015104-0-0	7015104-01	WELDMENT AIR DUCT EX	1	1	-	-	-	-	-	-	-	-	-	-
11	11	D-IA-7015447-0-0	7015447-00	HARNESS VANE SWITCH	1	1	-	-	-	-	-	-	-	-	-	-
12	12	D-IA-7015104-0-0	7015104-00	WELDMENT AIR DUCT EX	-	-	1	1	-	-	-	-	-	-	-	-
13	13	D-IA-7419818-0-0	7419818-00	BRACKET PWR SUPPLY	1	1	1	1	-	1	1	1	1	1	1	1
14	14	D-IA-7015446-0-0	7015446-00	HARNESS MASTER OSC AC POWER MF20	1	1	-	-	-	-	-	-	-	-	-	-
15	15	D-IA-7015471-0-0	7015471-00	HARNESS DC MASTER OSC	1	1	-	-	-	-	-	-	-	-	-	-
16	16	D-IA-7015449-0-0	7015449-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-	-	-	-	-	-	-	-
17	17	E-AD-7015075-0-0	7015075-00	BATTERY BOX ASSY	1	1	1	1	-	1	1	1	1	1	1	1
18	18	D-MD-7419341-0-0	7419341-00	MOUNT RAIL MF20	2	2	-	-	-	-	-	-	-	-	-	-
19	19		1214045-02	FILTER,AIR,8-5/16 X 13	1	1	1	1	-	-	-	-	-	-	-	-
20	20	D-IA-7015450-0-0	7015450-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-	-	-	-	-	-	-	-
21	21	D-IA-7015453-0-0	7015453-00	HARNESS DOOR INTERLOCK SWITCH	1	1	-	-	-	-	-	-	-	-	-	-
22	22	D-IA-7015524-0-0	7015524-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-	-	-	-	-	-	-	-
23	23		1700101-00	CABLE,COAX,ASSY, 1 FT W/CONN	-	-	4	4	-	-	-	4	4	-	-	-
24	24	C-MD-7420656-0-0	7420656-00	SHIELD BACKPLANE	1	1	1	1	-	1	1	1	1	1	1	1
25	25		9006037-03	SCREW,TRUS,PHIL, 8-32X 3/8	24	24	24	24	-	20	20	20	20	20	20	20
26	26	C-IA-7008288-0-0	7008288-10	*** THIS ITEM IS NOT USED ***	-	-	-	-	-	-	-	-	-	-	-	-
27	27		9006074-03	SCREW,TRUS,PHIL, 10-32X 5/8	43	43	29	29	-	37	37	29	29	37	37	41
28	28		9007786-00	RETAINER, U-NUT, 10-32	16	16	12	12	-	4	4	4	4	4	4	8
29	29	D-UA-M8572-0-0	M8572-00	MULTIPLE S-BUS TRANSLATOR, 4 LAY	1	1	-	-	-	-	-	-	-	-	-	-
30	30	J-IA-7015671-0-0	7015671-00	HARNESS DC MAIN NO 1 MF20	1	1	-	-	-	1	1	-	-	1	1	1

REVISION HISTORY			BASIC PART NO: 0MF20					
ENG	ECO NUMBER	REV	SECTION A OF B	DRN: BOB PELLERIN	DATE: 12 JUN 78		DIGITAL	
BW	MF20-MR008	D	SECTION, VARIATION INDEX	CHK'D: G. FLANDERS	DATE: 12 JUN 78	TITLE	PARTS LIST	
			[A] LA,LB,LC,LD,E ,LH, LJ,LK,LL,LM,LN,LP				MOS MEMORY	
			[B] LR,LS,LT,LU,LV	DES.ENG.: P. GILDEA	DATE: 24 AUG 78			
			[C]			DOCUMENT NUMBER		
				RESP.ENG.: D. J. CLEIN	DATE: 23 AUG 78	SIZE	CODE	NUMBER / REV
			[D]					
			[E]	MFG.ENG.: L. QUARLES	DATE: 23 AUG 78	K	PL	MF20-0-DSP / D
			[F]	ASSEMBLY NUMBER: E-UA-MF20-0-0	TOP DOCUMENT NUMBER: 5-DD-MF20-0		FILE NAME: Z3149D.PLS	EDIT #: 11

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION LA	LB	LC	LD	E	LH	LJ	LK	LL	LM	LN	LP
31	31		9006835-00	WASHER,LOCK,INT,.310OD X .200ID	39	39	27	27	-	26	26	26	26	26	26	26
32	32	C-IA-7013059-0-0	7013059-02	GROUND STRAP	1	1	1	1	-	-	-	-	-	-	-	-
33	33		9007881-00	WASHER, LOCK, EXTERNAL TOOTH #10	5	5	4	4	-	12	12	4	4	12	12	16
34	34	A-SP-3615087-0-0	3615087-02	LABEL,"DANGER-HIGH CURRENT"	1	1	1	1	-	1	1	1	1	1	1	1
35	35		9006865-00	NUT,KEP 10-32X 3/8 AF	12	12	11	11	-	15	15	11	11	15	15	15
36	36	B-PL-MF20-M-0	MF20-M	ARRAY CARD	4	4	4	4	4	4	4	4	4	4	4	4
37	37	E-UA-M8574-0-0	M8574-00	WRITE PATH	1	1	1	1	-	1	1	1	1	1	1	1
38	38	E-UA-M8575-0-0	M8575-00	SYNDROME MF20	1	1	1	1	-	1	1	1	1	1	1	1
39	39	E-UA-M8576-0-0	M8576-00	MOS CONTROL	1	1	1	1	-	1	1	1	1	1	1	1
40	40	E-UA-M8577-0-0	M8577-00	ADDRESS + TIME MF20	1	1	1	1	-	1	1	1	1	1	1	1
41	41	D-UA-M8580-0-0	M8580-00	TRANSLATOR DUAL MF20	2	2	-	-	-	-	-	-	-	-	-	2
42	42	A-DC-7420961-0-0	7420961-00	DECAL BACKPLANE	2	2	2	2	-	2	2	2	2	2	2	2
43	43		9008274-00	FOAM, TAPE 3/8" X 3/8" BLACK	A/R	A/R	A/R	A/R	-	A/R	A/R	A/R	A/R	A/R	A/R	A/R
44	44		9007017-00	GROMMET, RUBBER	1	1	1	1	-	1	1	1	1	1	1	1
45	45		9006834-00	WASHER,LOCK,INT,.230OD X .172ID	24	24	24	24	-	20	20	20	20	20	20	20
46	46	E-AD-7016018-0-0	7016018-00	CARD CAGE ASSY	1	1	1	1	-	1	1	1	1	1	1	1
47	47	C-IA-7013059-0-0	7013059-05	GROUND STRAP	-	-	-	-	-	1	1	1	1	1	1	1
48	48	C-IA-7008288-0-0	7008288-3F	CABLE ASSY	-	-	1	1	-	-	-	1	1	-	-	-
49	49	C-MD-7421409-0-0	7421409-00	LOCK,FILTER	-	-	-	-	-	1	1	1	1	1	1	1
50	50		1214045-03	FILTER,AIR,8-5/16 X 12-3/8	-	-	-	-	-	1	1	1	1	1	1	1
51	51		9006025-03	(** THIS ITEM IS NOT USED ***	-	-	-	-	-	-	-	-	-	-	-	-
52	52		9006833-00	WASHER,LOCK,INT,.280OD X .146ID	-	-	-	-	-	1	1	1	1	1	1	1
53	53	E-IA-7016034-0-0	7016034-00	WELD,DUCT	-	-	-	-	-	1	1	1	1	1	1	1
54	54		3613272-00	LABEL,ADH BACK,MYLAR CAP	4	4	4	4	-	4	4	4	4	4	4	4
55	55	E-AD-7016035-0-0	7016035-00	CABINET ASSY-MF20	-	-	-	-	-	1	1	-	-	-	-	1
56	56	E-AD-7016033-0-0	7016035-01	CABINET ASSY-MF20	-	-	-	-	-	-	-	-	-	1	1	-
57	57	E-IA-7016210-0-0	7016210-00	HARNESS AC 2	-	-	-	-	-	1	1	1	1	1	1	1
58	58	D-IA-7016212-0-0	7016212-00	HARNESS DOOR INTLOCK SW 2	-	-	-	-	-	1	1	-	-	1	1	1
59	59	D-IA-7016207-0-0	7016207-00	HARNESS MASTER OSC DC 2	-	-	-	-	-	1	1	-	-	1	1	1
60	60	D-IA-7016211-0-0	7016211-00	HARNESS VANE SWITCH 2	-	-	-	-	-	1	1	-	-	1	1	1
61	61	C-IA-7008288-0-0	7008288-15	CABLE ASSY	1	1	-	-	-	1	1	-	-	1	1	-
62	62	D-UA-M8581-0-0	M8581-00	XBUS TRANSLATOR	-	-	-	-	-	2	2	-	-	2	2	-
63	63	D-UA-M8572-0-0	M8572-YA	M8572 EXCEPT 13FT CABLES	-	-	-	-	-	1	1	-	-	1	1	1
64	64	B-UA-913-0-0	00915-03	JUMPER CORD	4	4	4	4	-	4	4	4	4	4	4	4
65	65	D-IA-7011223-0-0	7011223-01	BASKET WIRE CABLE 2 BAY	-	-	-	-	-	1	1	-	-	1	1	1
66	66	D-IA-7421891-0-0	7421891-00	HANGER, BASKET	-	-	-	-	-	2	2	-	-	2	2	2
67	67		9005024-00	WASHER, FLAT, .562 O.D. X .203 I	-	-	-	-	-	8	8	-	-	8	8	8
68	68		9007033-00	TIE,CABLE BUNDL,DIA 0-1-3/4"-101	A/R	A/R	A/R	A/R	-	A/R	A/R	A/R	A/R	A/R	A/R	A/R
69	69	E-IA-7015190-0-0	7015190-7M	CABLE MARGIN SENSE MF20	1	1	1	1	-	1	1	1	1	1	1	1
70	70	D-IA-7015449-0-0	7015449-YA	*** THIS ITEM IS NOT USED ***	-	-	-	-	-	-	-	-	-	-	-	-
71	71	D-IA-7015450-0-0	7015450-YA	*** THIS ITEM IS NOT USED ***	-	-	-	-	-	-	-	-	-	-	-	-
72	72	A-PS-3613211-0-0	3613211-00	DECAL,CLEAR PREPRINTED CSA 1-1/4	REF	REF	REF	REF	-	REF	REF	REF	REF	REF	REF	REF
73	73	A-PS-3612449-0-0	3612449-00	LABEL, UL, FOIL VINYL, ADH BACK,	REF	REF	REF	REF	-	REF	REF	REF	REF	REF	REF	REF
74	74	A-PS-3615180-0-0	3615180-00	/REPLACED BY 36-17674-00	1	1	1	1	-	1	1	1	1	1	1	1
75	75	D-IA-7015524-0-0	7015524-8F	CABLE CLOCK SELECT	1	1	-	-	-	-	-	-	-	-	-	1
76	76	C-IA-7013059-0-0	7013059-06	GROUND STRIP	1	1	1	1	-	1	1	1	1	1	1	1
77	77		9006022-03	SCREW,TRUS,PHIL, 6-32X 3/8 S	-	-	-	-	-	1	1	1	1	1	1	1
78	78	A-SP-3700241-0-0	3700241-00	OBSLETE 6-8-79	-	-	-	-	-	REF	REF	-	-	REF	REF	REF

D	I	G	I	T	A	L	TITLE	SECTION A OF B	SIZE	CODE	DOCUMENT NUMBER	REV
							MOS MEMORY		K	PL	MF20-0-DBP	D

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION LA	LB	LC	LD	LE	LH	LJ	LK	LL	LM	LN	LP
79	79	A=SP=3700483=0=0	3700483=00	PKG MODULE MF20 EXTERNAL	=	=	=	=	=	REF	REF	=	=	REF	REF	REF
80	80	S=PL=MF20=0=SH		FOR MFG PLANNING	REF	REF	REF	REF	=	REF	REF	REF	REF	REF	REF	REF
81	81	A=DC=7415449=0=0	7415449=00	CAUTION DECAL	=	=	=	=	=	1	1	=	=	1	1	1
82	82	D=IA=7016207=0=0	7016207=01	*** THIS ITEM IS NOT USED ***	=	=	=	=	=	=	=	=	=	=	=	=
83	83	D=IA=7017571=0=0	7017571=00	DC HARNESS MASTER OSCILLATOR NO,	=	=	=	=	=	=	=	=	=	=	=	1
84	84	D=IA=7015448=0=0	7015448=01	MASTER OSC AC POWER HARNESS	=	=	=	=	=	=	=	=	=	=	=	1
85	85	C=IA=7008208=0=0	7008208=25	CABLE ASSY 25FT	=	=	=	=	=	=	=	=	=	=	=	1
86	86	D=IA=BC20V=09=0	BC20V=09	3 M9006 DAISY CHAINED W 3M 40WIR	=	=	=	=	=	=	=	=	=	=	=	2
87	87	A=SP=3700258=0=0	3700258=00	INSTR PKG MA20=AC	REF	REF	REF	REF	=	REF	REF	REF	REF	REF	REF	REF
88	88	D=IA=7015449=0=0	7015449=YB	POWER CORD ASSY AC 50HZ 12 1/2 F	=	1	=	1	=	=	1	=	1	=	1	=
89	89	D=IA=7015450=0=0	7015450=YB	POWER CORD ASSY AC 60HZ 12 1/2 F	1	=	1	=	=	1	=	1	=	1	=	1

DIGITAL	TITLE: MOS MEMORY	SECTION A OF B	SIZE: K / CODE: PL / DOCUMENT NUMBER: MF20=0=DRP / REV: D

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION LR	LS	LT	LU	LV
1	1	E-UA-KW20-0-0	6KW20-A	OSCILLATOR ASSY MASTER 60HZ	-	1	-	-	-
2	2	E-UA-KW20-0-0	6KW20-B	OSCILLATOR ASSY MASTER 50HZ	1	-	1	-	-
3	3	J-IA-7015189-0-0	7015189-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
4	4	E-IA-7015190-0-0	7015190-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
5	5	E-IA-7015222-0-0	7015222-00	HARNESS MF20 AC POWER	1	1	1	1	1
6	6	E-IA-7014470-0-0	7014470-00	WELDMENT,TOP DUCT	-	-	-	1	1
7	7	D-UA-5412855-0-0	5412855-00	XBUS TERMINATOR	4	4	4	4	4
8	8		1700100-00	CABLE,COAX,ASSY W/CONN	2	2	2	1	1
9	9	A-PS-3014903-0-0	3014903-00	POWER SUPPLY, MULTIPLE OUTPUT	1	1	1	1	1
10	10	D-IA-7015104-0-0	7015104-01	WELLMENT AIR DUCT EX	-	-	-	1	1
11	11	D-IA-7015447-0-0	7015447-00	HARNESS VANE SWITCH	-	-	-	1	1
12	12	D-IA-7015104-0-0	7015104-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
13	13	D-IA-7419518-0-0	7419518-00	BRACKET PWR SUPPLY	1	1	1	1	1
14	14	D-IA-7015448-0-0	7015448-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
15	15	D-IA-7015471-0-0	7015471-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
16	16	D-IA-7015449-0-0	7015449-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
17	17	E-AD-7015075-0-0	7015075-00	BATTERY BOX ASSY	1	1	1	1	1
18	18	D-MD-7419341-0-0	7419341-00	MOUNT RAIL MF20	-	-	-	2	2
19	19		1214045-02	FILTER,AIR,8-3/16 X 13	-	-	-	1	1
20	20	D-IA-7015450-0-0	7015450-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
21	21	D-IA-7015453-0-0	7015453-00	HARNESS DOOR INTERLOCK SWITCH	-	-	-	1	1
22	22	D-IA-7015524-0-0	7015524-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
23	23		1700101-00	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
24	24	C-MD-7420656-0-0	7420656-00	SHIELD BACKPLANE	1	1	1	1	1
25	25		9006037-03	SCREW,TRUS,PHIL, 8-32X 3/8	20	20	20	24	24
26	26	C-IA-7008288-0-0	7008288-10	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
27	27		9006074-03	SCREW,TRUS,PHIL, 10-32X 5/8	41	41	41	43	43
28	28		9007786-00	RETAINER, C-NUT, 10-32	8	8	8	16	16
29	29	D-UA-M8572-0-0	M8572-00	MULTIPLE S-BUS TRANSLATOR, 4 LAY	-	-	-	1	1
30	30	J-IA-7015671-0-0	7015671-00	HARNESS DC MAIN NO 1 MF20	1	1	1	1	1

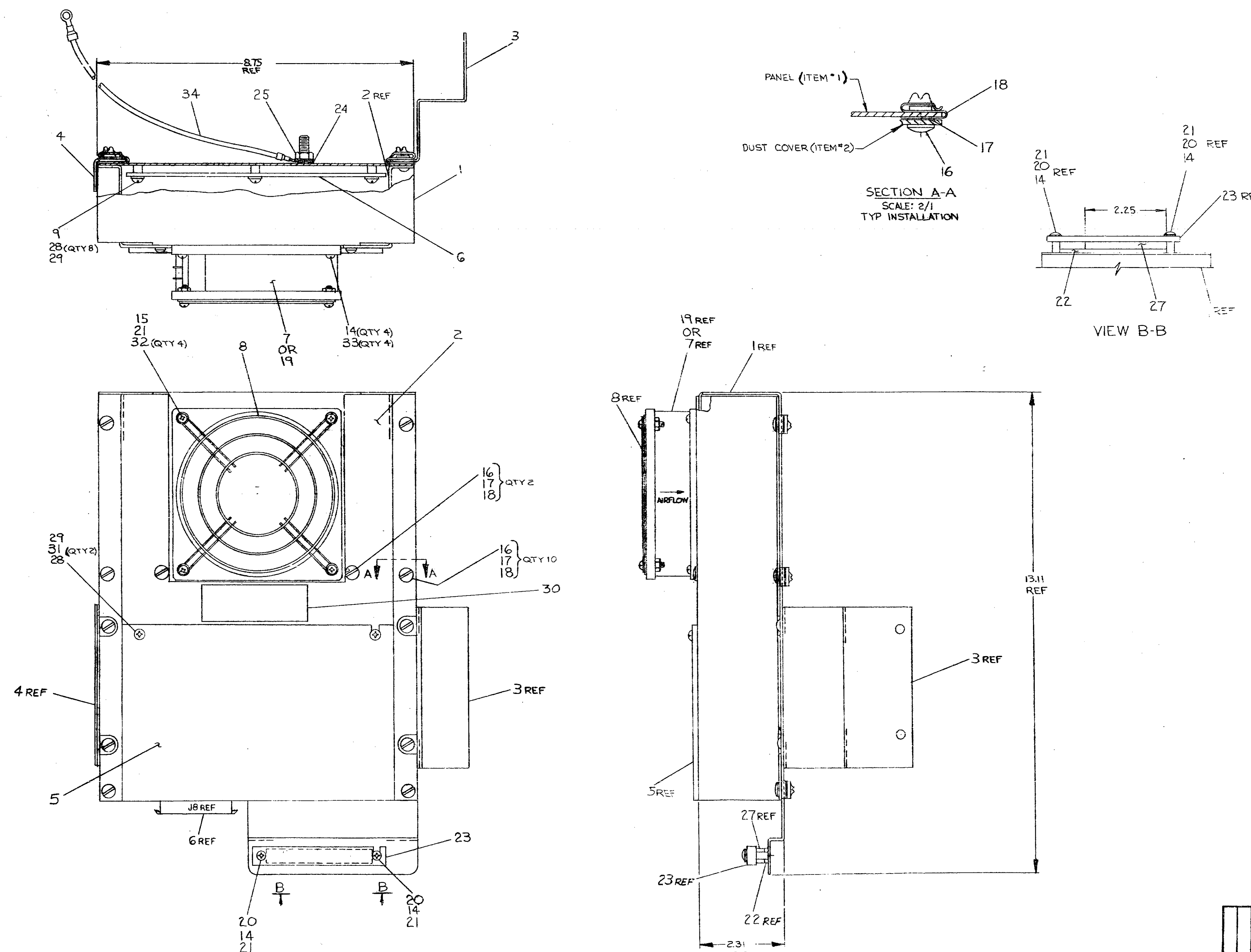
REVISION HISTORY			BASIC PART NO: QMF20											
ENG	ECO NUMBER	REV	SECTION B OF B	DRN: BOB PELLERIN	DATE: 12 JUN 78		D	I	G	I	T	A	L
SW	MF20-MR008	D	SECTION, VARIATION INDEX [A] LA,LB,LC,LD,LE,LM, LJ,LK,LL,LM,LN,LP [B] LR,LS,LT,LU,LV [C] [D] [E] [F]	CHK'D: G. FLANDERS	DATE: 12 JUN 78	TITLE: PARTS LIST MOS MEMORY							
				DES.ENG.: P. GILDEA	DATE: 24 AUG 78								
				RESP.ENG.: D. J. CLEIN	DATE: 23 AUG 78	DOCUMENT NUMBER							
				MFG.ENG.: L. QUARLES	DATE: 23 AUG 78	SIZE: K	CODE: PL	NUMBER: MF20-0-DBP				REV: D	
				ASSEMBLY NUMBER: E-UA-MF20-0-0	TOP DOCUMENT NUMBER: 9B-DD-MF20-0			FILE NAME: Z3148D.PLS				EDIT #: 11	

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION LR	LS	LT	LU	LV
31	31		9006835-00	WASHER,LOCK,INT,.310OD X .200ID	26	26	26	39	39
32	32	C-IA-7013059-0-0	7013059-02	GROUND STRAP	-	-	-	1	1
33	33		9007651-00	WASHER, LOCK, EXTERNAL TOOTH #10	16	16	16	8	8
34	34	A-SP-3615087-0-0	3615087-02	LABEL,"DANGER-HIGH CURRENT"	1	1	1	1	1
35	35		9006885-00	NUT,KEP 10-32X 3/8 AF	15	15	15	12	12
36	36	B-PL-MF20-M-0	ONF20-M	ARRAY CARD	4	4	4	4	4
37	37	E-UA-M8574-0-0	M8574-00	WRITE PATH	1	1	1	1	1
38	38	E-UA-M8575-0-0	M8575-00	SYNDROME MF20	1	1	1	1	1
39	39	E-UA-M8576-0-0	M8576-00	MOS CONTROL	1	1	1	1	1
40	40	E-UA-M8577-0-0	M8577-00	ADDRESS + TIME MF20	1	1	1	1	1
41	41	D-UA-M8580-0-0	M8580-00	TRANSLATOR DUAL MF20	2	2	2	-	-
42	42	A-DC-7420961-0-0	7420961-00	DECAL BACKPLANE	3	3	2	2	2
43	43		9008274-00	FOAM, TAPE 3/8" X 3/8" BLACK	A/R	A/R	A/R	A/R	A/R
44	44		9007017-00	GROMMET, RUBBER	1	1	1	1	1
45	45		9006834-00	WASHER,LOCK,INT,.230OD X .172ID	20	20	20	24	24
46	46	E-AD-7016018-0-0	7016018-00	CARD CAGE ASSY	1	1	1	1	1
47	47	C-IA-7013059-0-0	7013059-02	GROUND STRAP	1	1	1	-	-
48	48	C-IA-7008288-0-0	7009288-3F	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
49	49	C-MD-7421409-0-0	7421409-00	LOCK,FILTER	1	1	1	-	-
50	50		1214045-03	FILTER,AIR,8-5/16 X 12-3/8	1	1	1	-	-
51	51		9006035-03	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
52	52		9006833-00	WASHER,LOCK,INT,.260OD X .146ID	1	1	1	-	-
53	53	E-IA-7016034-0-0	7016034-00	WELD,DUCT	1	1	1	-	-
54	54		3613272-00	LABEL,ADH BACK,MYLAR CAP	4	4	4	4	4
55	55	E-AD-7016035-0-0	7016035-00	CABINET ASSY-MF20	1	-	-	-	-
56	56	E-AD-7016035-0-0	7016035-01	CABINET ASSY-MF20	-	1	1	-	-
57	57	E-IA-7016210-0-0	7016210-00	HARNESS AC 2	1	1	1	-	-
58	58	D-IA-7016212-0-0	7016212-00	HARNESS DOOR INTLOCK SW 2	1	1	1	-	-
59	59	D-IA-7016207-0-0	7016207-00	HARNESS MASTER OSC DC 2	1	1	1	-	-
60	60	D-IA-7016211-0-0	7016211-00	HARNESS VANE SWITCH 2	1	1	1	-	-
61	61	C-IA-7008288-0-0	7008288-15	CABLE ASSY	-	-	-	2	2
62	62	D-UA-M8581-0-0	M8581-00	XBUS TRANSLATOR	-	-	-	2	2
63	63	D-UA-M8572-0-0	M8572-YA	M8572 EXCEPT 13FT CABLES	1	1	1	-	-
64	64	B-UA-915-0-0	00915-03	JUMPER CORD	4	4	4	4	4
65	65	D-IA-7011223-0-0	7011223-01	BASKET WIRE CABLE 2 BAY	1	1	1	-	-
66	66	D-IA-7421891-0-0	7421891-00	HANGER, BASKET	2	2	2	-	-
67	67		2009024-00	WASHER, FLAT, .562 O.D. X .203 I	8	8	8	-	-
68	68		9007033-00	TIE,CABLE BUNDL,DIA 0-1-3/4"-101	A/R	A/R	A/R	A/R	A/R
69	69	E-IA-7015190-0-0	7015190-7M	CABLE MARGIN SENSE MF20	1	1	1	1	1
70	70	D-IA-7015449-0-0	7015449-YA	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
71	71	D-IA-7015450-0-0	7015450-YA	*** THIS ITEM IS NOT USED ***	-	-	-	-	-
72	72	A-PS-3613211-0-0	3613211-00	DECAL,CLEAR PREPRINTED CSA 1-1/4	REF	REF	REF	REF	REF
73	73	A-PS-3612449-0-0	3612449-00	LABEL, UL, FOIL VINYL, ADH BACK,	REF	REF	REF	REF	REF
74	74	A-PS-3615180-0-0	3615180-00	/REPLACED BY 36-17674-00	1	1	1	1	1
75	75	D-IA-7015524-0-0	7015524-3F	CABLE CLOCK SELECT	1	1	1	-	-
76	76	C-IA-7013059-0-0	7013059-06	GROUND STRIP	1	1	1	1	1
77	77		9006022-03	SCREW,TRUS,PHIL, 6-32X 3/8 S	1	1	1	-	-
78	78	A-SP-3700241-0-0	3700241-06	OBSLETE 6-8-79	REF	REF	REF	-	-

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION LR	LS	LT	LU	LV
79	79	A-SP-3700483-0-0	3700483-00	PKG MODULE MP20 EXTERNAL	REF	REF	REF	-	-
80	80	B-PL-MP20-0-SH		FOR MFG PLANNING	REF	REF	REF	REF	REF
81	81	A-DC-7415449-0-0	7415449-00	CAUTION DECAL	1	1	1	-	-
82	82	D-IA-7016207-0-0	7016207-01	HARNESS,MASTER OSCILLATOR,DC NO.	-	-	-	1	1
83	83	D-IA-7017571-0-0	7017571-00	DC HARNESS MASTER OSCILLATOR NO.	1	1	1	-	-
84	84	D-IA-7015448-0-0	7015448-01	MASTER OSC AC POWER HARNESS	1	1	1	-	-
85	85	C-IA-7008288-0-0	7008288-25	CABLE ASSY 25FT	1	1	1	-	-
86	86	D-IA-BC20V-09-0	BC20V-09	3 M9006 DAISY CHAINED W 3M 40WIR	2	2	2	-	-
87	87	A-SP-3700258-0-0	3700258-00	INSTR PKG MA20-AC	REF	REF	REF	REF	REF
88	88	D-IA-7015449-0-0	7015449-Y8	POWER CORD ASSY AC 50HZ 12 1/2 F	1	-	1	-	1
89	89	D-IA-7015450-0-0	7015450-Y8	POWER CORD ASSY AC 60HZ 12 1/2 F	-	1	-	1	-

DIGITAL	TITLE MOS MEMORY	SECTION B OF B	SIZE K / CODE PL / DOCUMENT NUMBER MP20-0-DBP / REV D

LEGEND	
NUMBER	VARIATION
KW20-A	115 VAC 60 HZ.
KW20-B	230 VAC 50 HZ.



CAUTION: OFF SHEET PARTS LIST EXISTS SEE: A-PL-KW20-0-0

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FIRST USED ON: KW20

digital

TITLE: MASTER OSCILLATOR ASSY

NEXT HIGHER ASSY: B-DD-KW20-0

SIZE: E | CODE: UA | NUMBER: KW20-0-0 | REV.: B

SCALE: 1/1

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY [signature] DATE 3 JAN 78 | CHECKED [signature] DATE 3 JAN 78 | SECTION 1
ENG P. Gilden DATE 27 JULY 78 | PROD L. Quarles DATE 27 JULY 78 | ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY VARIATION KW2Ø-A	KW2Ø-B
1	D-UA-7419342-0-0	BRKT, OSCILLATOR PANEL	1	1
2	D-IA-7419340-0-0	COVER, DUST	1	1
3	D-IA-7419343-0-0	BRACKET MOUNTING RT	1	1
4	C-IA-7419345-0-0	BRACKET MTG LEFT	1	1
5	C-MD-7419344-0-0	COVER ACCESS	1	1
6	D-UA-5412851-0-0	MASTER OSCILLATER	1	1
7	1209403-02	FAN, 115 VAC 50/60 HZ	1	-
8	1210263-00	GUARD FINGER MUF FAN	1	1
9	9006035-01	SCREW, PAN, PHIL, 8-32 x .25 SS/PAS	8	8
~~10~~	~~9008151-00~~	~~WASHER, LOCK EXT. TOOTH #8~~	~~10~~	~~10~~
~~11~~	~~9006039-01~~	~~SCREW, PAN, PHIL, 8-32 x .50 SS/PAS~~	~~2~~	~~2~~
~~12~~	~~9006713-00~~	~~WASHER, NYLON, FLAT #8 .4370.D.X.032 THK~~	~~8~~	~~8~~
~~13~~	~~9007793-01~~	~~SCREW, PAN, PHIL, 6-32 x .56 SS/PAS~~	~~8~~	~~8~~
14	9007649-00	WASHER, LOCK, EXTERNAL TOOTH #6	6	6
15	9006560-00	NUT, KEP, 6-32 x .31 AF	4	4
16	9008198-00	FASTENER STUD, ¼ TURN, OVAL HD	12	12
17	9008200-00	RETAINER	12	12
18	9009151-00	RECEPTACLE CLIP-ON	12	12
19	1210930-02	FAN, 23ØV, 5ØHZ/6ØHZ	-	1
20	9006022-01	SCREW, PAN, PHIL, 6-32 x .38 SS/PAS	2	2
21	9006653-00	WASHER, FLAT, .375 O.D.x.156I.D.x.036	6	6
22	9008894-02	TAPE	A/R	A/R

TITLE: MASTER OSCILLATOR ASSY KW2Ø | ASSY NO. E-UA-KW2Ø-Ø-Ø | SIZE A | CODE PL | NUMBER KW2Ø-Ø-Ø | REV B | ECO NO. KW2Ø-MRØØ2
SHEET 1 OF 2 | DIST

DEC FORM DRA 110

MR

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY [signature] DATE 3 JAN 78 | CHECKED [signature] DATE 3 JAN 78 | SECTION 1
ENG P. Gilden DATE 27 JULY 78 | PROD L. Quarles DATE 27 JULY 78 | ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY VARIATION KW2Ø-A	KW2Ø-B
23	B-MD-7419825-0-0	STRAIN RELIEF COAX CONN	1	1
24	9006724	WASHER, LOCK, EXT. TOOTH .25	1	1
25	9008203	NUT, KEP. ¼-20	1	1
~~26~~	~~7013059-6~~	~~STRAP, GROUND~~	~~1~~	~~1~~
27	9008274	TAPE .38 X.38	A/R	A/R
28	9006690-00	WASHER, LOCK, S.S. # 8	10	10
29	9006660-00	WASHER, FLAT .375 O.D. X .187 I.D. X.036 THK	10	10
30	9009255-00	LABEL, P.S. 2 15/16 X 1	1	1
31	9006037-01	SCREW, PAN PHIL 8-32 x.38 SS/PAS	2	2
32	9006026-01	SCREW, PAN PHIL 6-32 x.75 SS/PAS	4	4
33	9006025-01	SCREW, PAN PHIL 6-32 x.62 SS/PAS	4	4
34	7013059-4	STRAP GROUND	1	1

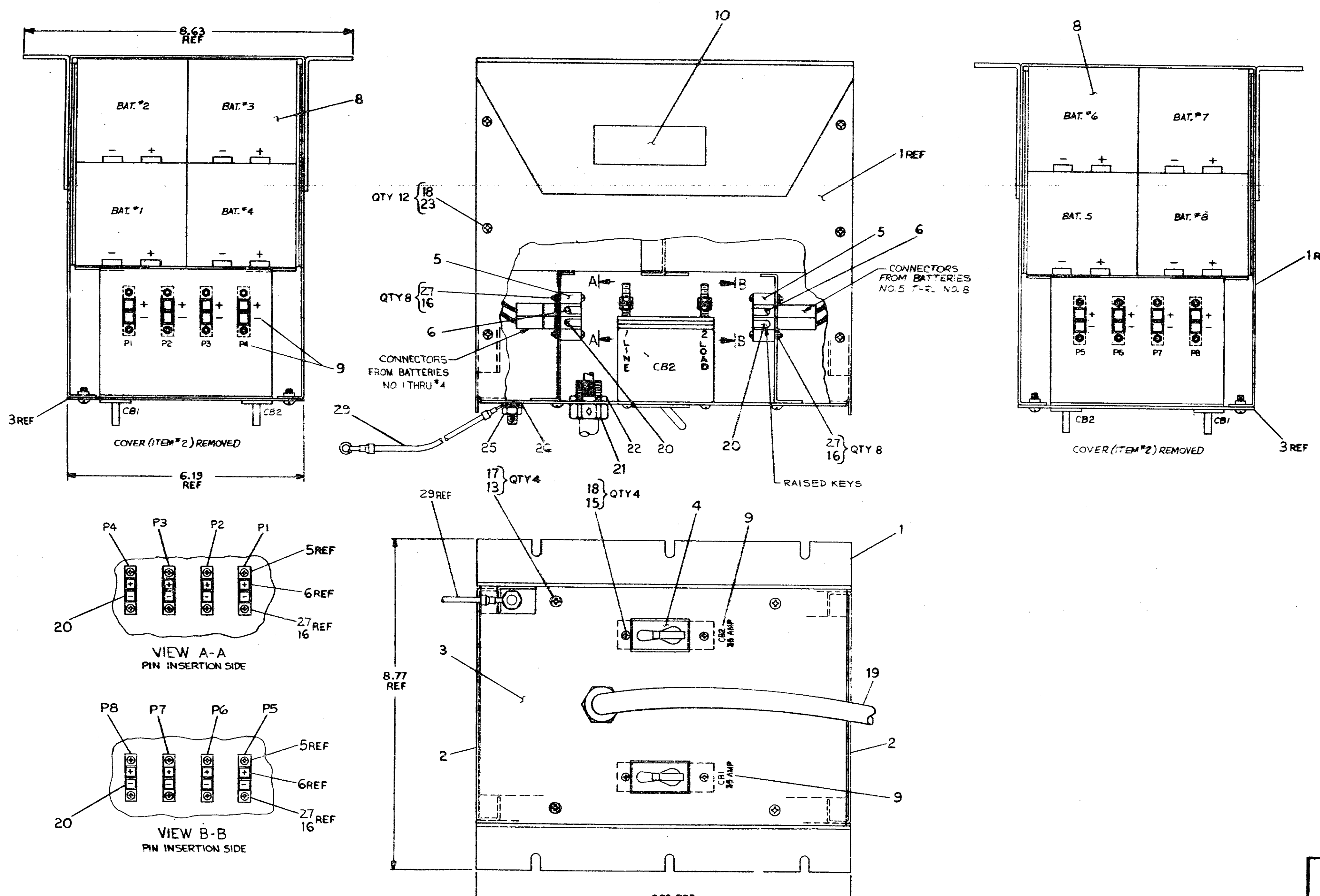
TITLE: MASTER OSCILLATOR ASSY KW2Ø | ASSY NO. E-UA-KW2Ø-Ø-Ø | SIZE A | CODE PL | NUMBER KW2Ø-Ø-Ø | REV B | ECO NO. KW2Ø-MRØØ2
SHEET 2 OF 2 | DIST

WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM TERM	TO CONNECTION	TO TERM	WIRE LENGTH
11	12	WHT	P1-(-)	ITEM #7	P2-(+)	ITEM #7	3.25 IN
			P2-(-)		P3-(+)	ITEM #7	
			P3-(-)		P4-(+)	ITEM #7	
			P4-(-)		CB2-2	ITEM #12	
			P5-(-)		P6-(+)	ITEM #7	
			P6-(-)		P7-(+)	ITEM #7	
			P7-(-)		P8-(+)	ITEM #7	
11	12	WHT	P8-(-)	ITEM #7	CB1-2	ITEM #12	3.25 IN
8	—	—	BAT #1	—	P1	—	
	—	—	BAT #2 (-)	—	P2	—	
	—	—	BAT #3	—	P3	—	
	—	—	BAT #4	—	P4	—	
	—	—	BAT #5	—	P5	—	
	—	—	BAT #6	—	P6	—	
	—	—	BAT #7	—	P7	—	
8	—	—	BAT #8	—	P8	—	

HARNESS CONNECTION CHART

ITEM NO	HARNESS TERM POINT	HARNESS TERM CONNECTION	CONNECTION	WITH
19	1	—	P5-(+)	—
	4	—	P1-(+)	—
	2	—	CB1-1	—
	3	—	CB2-1	—



CAUTION: OFF SHEET PARTS LIST EXISTS A-PL-7015075-0-0

FIRST USED ON	MF20
TITLE	BATTERY BOX ASSY
NEXT HIGHER ASSY.	E-UA-MF20-0-0
MATERIAL	SEE PARTS LIST
FINISH	NONE
SCALE	1/1
SHEET	1 OF 1
SIZE	E
CODE	AD
NUMBER	7015075-0-0
REV.	B

7015075-MR001 A
JIM MCELROY
MF20-MR005 B
J. MCELROY

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY [signature] DATE 12 JAN 78 — CHECKED [signature] DATE 14 MAR 78 — SECTION 1
ENG P. Griffin DATE 27 JULY 78 — PROD L. Quarles DATE 27 JULY 78 — ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY VARIATION 7015075-0
1	D-IA-7014466-0-0	WELDMENT BATTERY BOX	1
2	D-IA-7014467-0-0	WELDMENT TOP COVER	2
3	D-IA-7014468-0-0	REAR COVER WELDMENT	1
4	1211498-00	CKT BKR 35.0 A 5ØV 1P	2
5	1214958-00	MOUNTING ADAPTER RED	16
6	1214944-01	CONN HOUSING, PWR LOCK 3ØA (RED)	8
7	1214949-00	CONTACT	14
8	1214997-00	BATTERY	8
9	A-DC-7420230-0-0	DECAL BATTERY BOX	1
10	9009255-00	LABEL, POWER SUPPLY, 2-15/16" LG x 1" WID	1
11	9107380-99	WIRE, STRND, 12AWG, (WHT)	A/R
12	9007926-01	TERM RING	2
13	9006036-01	SCREW, PAN, PHIL, 8-32 x .31	4
~~14~~	~~9006016-01~~	~~SCREW, PAN, PHIL, 4-40 x .88~~	~~16~~
15	9006020-01	SCREW, PAN, PHIL, 6-32 x .25	4
16	9006557-00	NUT, KEP, 4-40	16
17	9006634-00	WASHER, LOCK, INT,.23ØODx.172IDx.025THK	4
18	9006633-00	WASHER, LOCK, INT,.28ØODx.146IDx.018THK	16
19	D-IA-7015223-0-0	HARNESS BATTERY BOX	1
20	1214944-00	CONN HOUSING, PWER LOCK 3ØA (BLK)	8
21	1211198-02	STRAIN RELIEF POWER CORD	1
22	9009309-01	LOCK NUT	1

TITLE: BATTERY BOX ASSY MF2Ø — ASSY NO. E-AD-7015075-0-0 — SIZE A — CODE PL — NUMBER 7015075-0-0 — REV B — ECO NO. MF20-MR005
SHEET 1 OF 2 — DIST

DEC FORM DRA 110

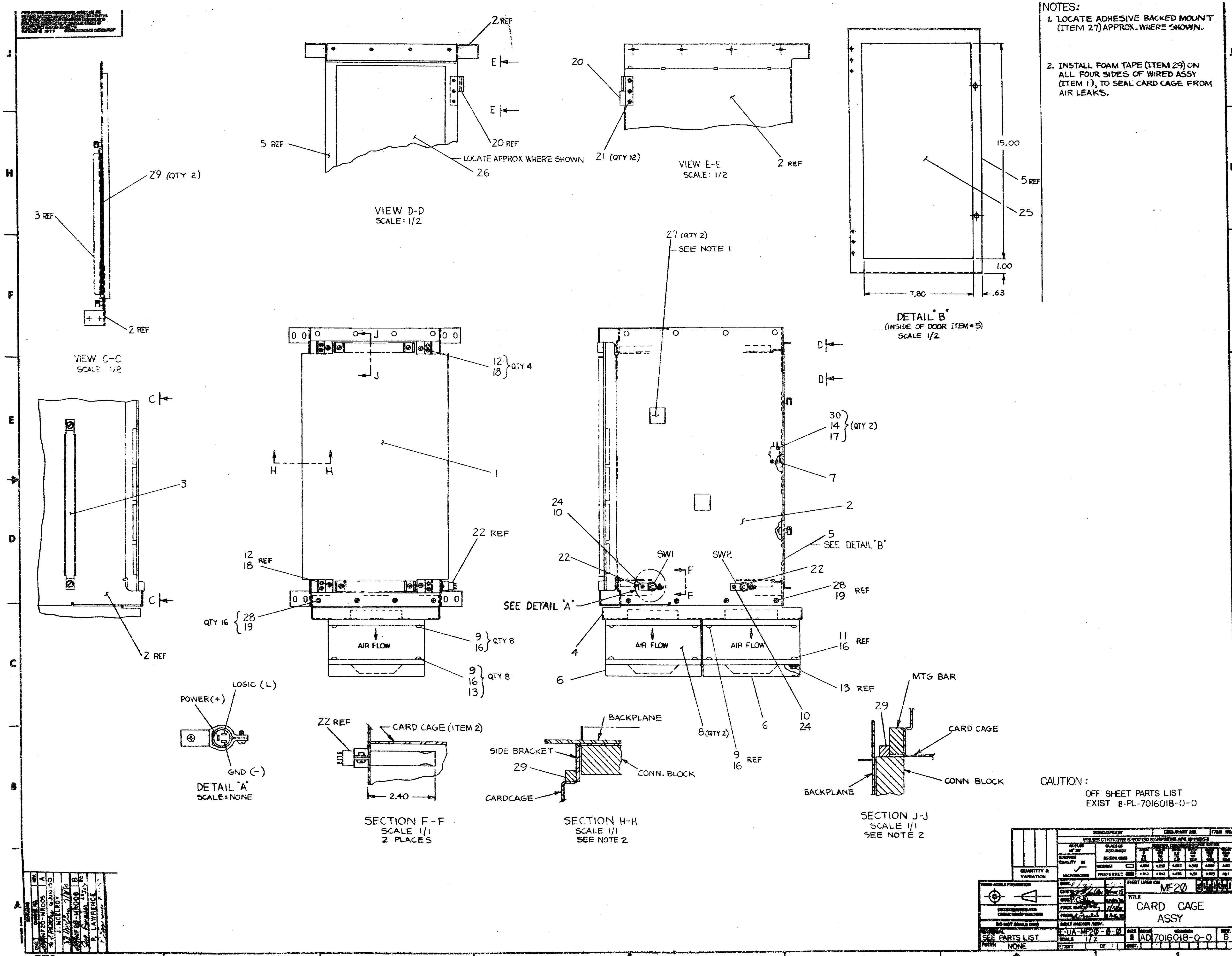
MR

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY [signature] DATE 12 JAN 78 — CHECKED [signature] DATE 14 MAR 78 — SECTION 1
ENG P. Griffin DATE 27 JULY 78 — PROD L. Quarles DATE 27 JULY 78 — ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY VARIATION 7015075-0
23	9006021-01	SCR PHC PAN HD #6-32 x .31	12
~~24~~	~~7013059-6~~	~~STRAP, GROUND~~	~~1~~
25	9008203	NUT, KEP ¼-20	1
26	9006724	WASHER, EXT. TOOTH LOCK	1
27	9006015-01	SCR, PHIL. PAN HD. #4-40 x .75	16
~~28~~	~~7013059-4~~	~~STRAP, GROUND~~	~~1~~
29	7013059-8	STRAP, GROUND	1

TITLE: BATTERY BOX ASSY MF2Ø — ASSY NO. E-AD-7015075-0-0 — SIZE A — CODE PL — NUMBER 7015075-0-0 — REV B — ECO NO.
SHEET 2 OF 2 — DIST



VIEW C-C
SCALE 1/2
3 REF
29 (QTY 2)
2 REF
VIEW D-D
SCALE: 1/2
2 REF
E
5 REF
20 REF
LOCATE APPROX WHERE SHOWN
26
VIEW E-E
SCALE: 1/2
20
21 (QTY 12)
2 REF
DETAIL "B"
(INSIDE OF DOOR ITEM #5)
SCALE 1/2
15.00
5 REF
25
1.00
7.80
.63
27 (QTY 2)
SEE NOTE 1
12
18 QTY 4
J
H
1
3
22 REF
12
18 REF
QTY 16 28 19
9 16 QTY 8
9 16 13 QTY 8
AIR FLOW
D
30 14 17 (QTY 2)
7
2
24 10
5
SEE DETAIL "B"
SW1
SW2
22
F
28 19 REF
SEE DETAIL "A"
4
6
11 16 REF
13 REF
8 (QTY 2)
9 16 REF
10 24
DETAIL "A"
SCALE: NONE
LOGIC (L)
POWER (+)
GND (-)
SECTION F-F
SCALE 1/1
2 PLACES
22 REF
CARD CAGE (ITEM 2)
2.40
SECTION H-H
SCALE 1/1
SEE NOTE 2
BACKPLANE
SIDE BRACKET
29
CONN. BLOCK
CARDCAGE
SECTION J-J
SCALE 1/1
SEE NOTE 2
MTG BAR
CARD CAGE
CONN BLOCK
BACKPLANE

NOTES:

1. LOCATE ADHESIVE BACKED MOUNT (ITEM 27) APPROX. WHERE SHOWN.
2. INSTALL FOAM TAPE (ITEM 29) ON ALL FOUR SIDES OF WIRED ASSY (ITEM 1), TO SEAL CARD CAGE FROM AIR LEAKS.

CAUTION:
OFF SHEET PARTS LIST EXIST B-PL-7016018-0-0

MF20

CARD CAGE ASSY

E-UA-MF20-0-0

SEE PARTS LIST

NONE

SCALE 1/2

E AD 7016018-0-0 REV. B

J. MCELROY

P. LAWRENCE

DIGITAL EQUIPMENT CORPORATION
PARTS LIST

MADE BY Bob Pellerin DATE 13 JUN 78	CHECKED [illegible] DATE	SECTION 1	
ENG J. McElroy DATE 8/14/78	PROD S. Quarles DATE 11 AUG 78	ISSUED SECTION 1	

NOTES:

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY / VARIATION 7016018-0	REF DESIGNATION
1	E-AD-7014358-0-0	7014358-0	WIRED ASSY	1	
2	E-IA-7014127-0-0	7014127-0	WELDMENT CARD CAGE	1	
3	C-IA-7419820-0-0	7419820-0	CLAMP, CABLE	1	
4	D-IA-7420668-0-0	7420668-0	MOUNT FAN	1	
5	D-IA-7419083-0-0	7419083-0	PANEL, FRONT DOOR	1	
6	D-IA-7012686-0-0	7012686-0	GUARD FINGER ASSY	2	
7		1210755-00	SW, LEVER	1	
8		1211747-00	FAN, AXIAL FLOW 250 CFM 115V 50/60HZ	2	
9		9006075-01	SCREW, PAN, PHIL 10-32 x .75	16	
10		9006022-01	SCREW, PAN PHIL 6-32 x .38	2	
~~11~~		~~9006074-01~~	~~SCREW, PAN, PHIL 10-32 x .62~~	~~8~~	
12		9006074-03	SCREW, TRUSS, PHIL 10-32 x .62	4	
13		9007786-00	RETAINER, U-NUT, 10-32	8	
14		9006557-00	NUT, KEP, 4-40	2	
~~15~~		~~9006013-01~~	~~SCREW, PAN, PHIL, 4-40 x .50~~	~~2~~	
16		9006635-00	WASHER,LOCK,INT,.310ODx.200IDx.018 THK	16	
17		9006632-00	WASHER,LOCK,INT,.260ODx.120IDx.015 THK	2	
18		9007651-00	WASHER,LOCK,EXTERNAL #10	4	
19		9006634-00	WASHER,LOCK,INT,.230ODx.172IDx.025 THK	16	

E.C.O. NO. MF20-[illegible] MF00[illegible]

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.
CARD CAGE ASSY	E-AD-7016018-0-0	B	PL	7016018-0-0	B
	SHEET 1 OF 2	INSERTION PARTS LIST DATA BASE REV			

DRB 125

MR

DIGITAL EQUIPMENT CORPORATION
PARTS LIST

MADE BY Bob Pellerin DATE 13 JUN 78	CHECKED [illegible] DATE 13 JUN 78	SECTION 1
ENG [illegible] DATE 6/14/78	PROD S. Quarles DATE 11 AUG 78	ISSUED SECTION 1

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY / VARIATION 7016018-0	REF DESIGNATION
20	B-MD-7420769-0-0	7420769-0	HINGE R.H. BRASS SLIP	2	
21		9006458-00	RIVET, BLIND	12	
22		1215413-00	SW, SOLID STATE VANE	2	
~~23~~		~~9007834-00~~	~~TAPE, DOUBLE SIDED .50 W X .03 THK~~	~~A/R~~	
24		9006633	WASHER LOCK INT. .280 O.D X .146 I.D X .018 THK	2	
25		9008479-01	FOAM PAD	A/R	
26		3615747	DECAL	1	
27		9008264-00	ADHESIVE BACKED MOUNT	2	
28		9006037-03	SCREW, TRUSS PHL 8-32 x .38	16	
29		9008274-00	FOAM TAPE .38 x .38	A/R	
30		9006014-01	SCREW, PHL PAN HD 4-40 x .62	2	

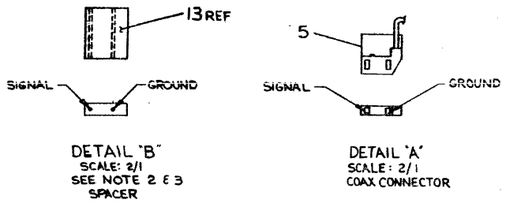
NOTES:

E.C.O. NO.

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.
CARD CAGE ASSY	E-AD-7016018-0-0	B	PL	7016018-0-0	B
	SHEET 2 OF 2	INSERTION PARTS LIST DATA BASE REV			

DRB 125

MR



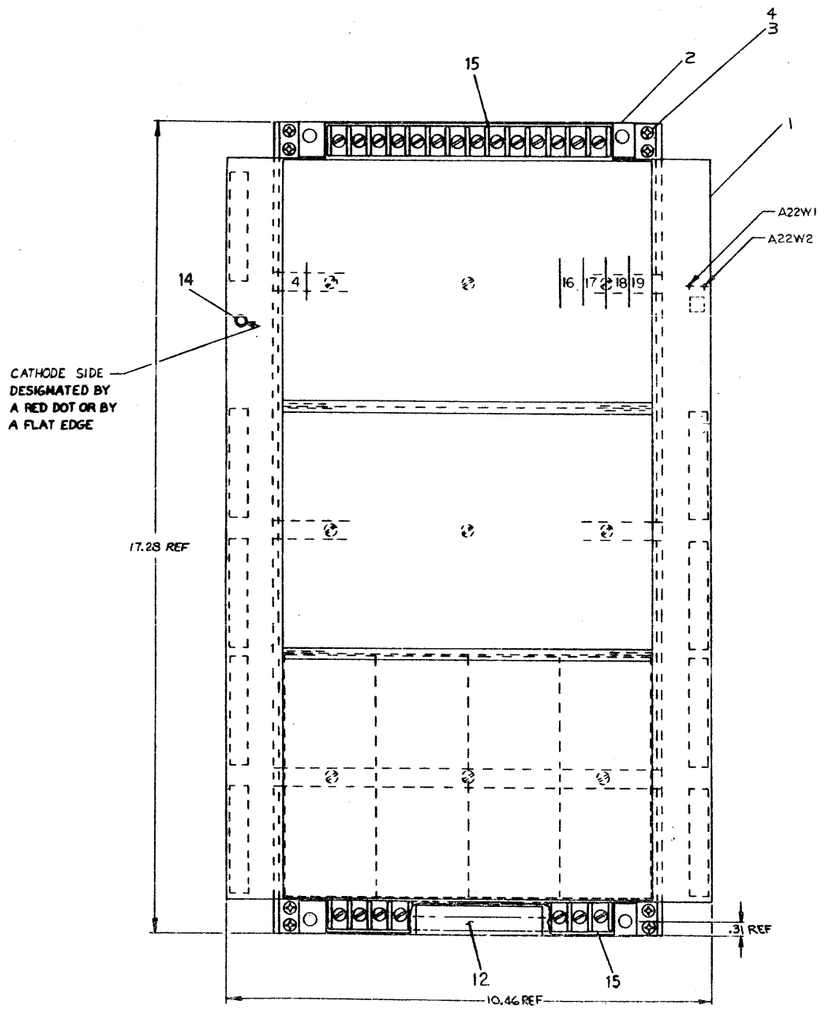
DETAIL "B"
SCALE: 2/1
SEE NOTE 2 & 3
SPACER

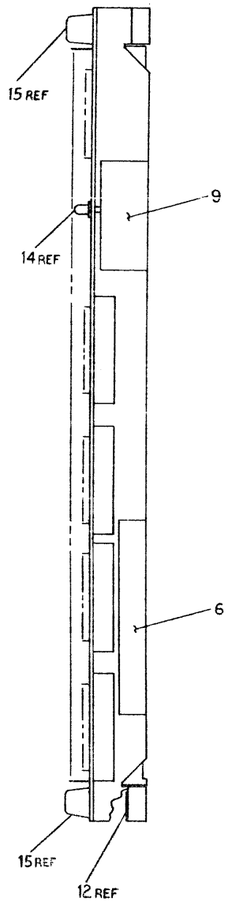
DETAIL "A"
SCALE: 2/1
COAX CONNECTOR

COAX JUMPER TABLE

ITEM NO	FROM SIGNAL	FROM GND	TO SIGNAL	TO GND	REMARKS
5	A07R1	A07T1	C04R2	C04N2	
6	A07H2	A08H1	C06R2	C06N2	
	A07E2	A07C2	C05R2	C05N2	
	A07E1	A07H1	D07R2	D07N2	
	D07C1	D07C2	C08R2	C08N2	
	C07T2	C08T1	C09R2	C09N2	
	C07R1	C07T1	C10R2	C10N2	
	C07H2	C08H1	C11R2	C11N2	
	C07E2	C07C2	C12R2	C12N2	
	A07C1	A06C2	A22W1	A22W2	SEE DRAWING
	C07E1	C07H1	C13R2	C13N2	
	C07C1	C06C2	C14R2	C14N2	
	B07T2	B07T1	C15R2	C15N2	
	B07N1	B07N2	C16R2	C16N2	
	B07H2	B08H1	C17R2	C17N2	
	B07E1	B07H1	C18R2	C18N2	
	B07C1	B07C2	C19R2	C19N2	
1	A07T2	A08T1	D05R2	D05N2	
5	A07R2	A07N2	C07R2	C07N2	

NOTES:
1. FOR N.C. WIRE WRAPPING USE PALLET 9606588-0-0
2. INSTALL SPACERS (ITEM #13) IN PLACE OF COAX JUMPERS (ITEM #5) BEFORE WIRE WRAP, ACCORDING TO COAX JUMPER TABLE. SPACERS TO BE INSTALLED WITH SIGNAL AND GROUND POSITIONS AS SHOWN IN DETAIL "B"
3. AFTER WIRE WRAP, BEFORE AWT, REPLACE SPACER (ITEM #13), ADDED PER NOTE 2, WITH COAX JUMPERS (ITEM #5), SEE DETAIL "A" FOR SIGNAL & GROUND POSITIONS.
4. AFTER INSTALLATION OF COAX JUMPERS (ITEM #5) DRESS WIRES DOWN BETWEEN BACKPLANE PINS.
5. ITEM #15 (TERMINAL BLOCK) AND ITEM #14 (LED) ARE TO BE INSTALLED AFTER FINAL AWT.





QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	PACKAGING, INSTRUCTIONS	A-PI-3700040-0-0	16
2	TERM BL 14POS	12148557	15
1	L.E.D.	1110324	14
REF	SPACER, CONN BLOCK	C-MD-7417282-0-0	13
1	LABEL, ALUMINUM	9008141-01	12
A/R	WIRE, MS SOLID 28AWG (GRY)	9107749-88	11
A/R	WIRE, MS SOLID 28AWG (WHT)	9107768-37	10
1	LABEL, ADHESIVE BACK	9009255	9
REF	WIRE LIST	K-WL-MF20-0-WL	8
REF	AWT REV STATUS	A-WT-7014358-0	7
1	DECAL, LOGIC ASSY REVISION	A-DC-7411881-1-0	6
19	COAX JUMPER	1700039	5
8	WASHER, LOCK INT TOOTH #8	9004634	4
8	SCR, PHL PAN HD #8-32X.50	9004039-1	3
2	BAR, TOP & BOTTOM	C-MD-7418840-0-0	2
1	BACKPLANE ASSY MF20	C-MD-7014359-0-0	1

PARTS LIST

MF20

SEE PARTS LIST

digital

TITLE: WIRED ASSY MF20

E-UA-MF20-0-0

SIZE E | CODE AD | NUMBER 7014358-0-0 | REV.

SCALE 1/1 | SHEET 1 OF 1

7014358-0-0

DESCRIPTION	DWG./PART NO.	ITEM NO.

QUANTITY & VARIATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	OVER 0 TO .5	OVER .5 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

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL —

FINISH —

DRN		27 Jul 78
CHK'D		7/27/78
ENG.	D J Chin	7-27-78
PROJ. ENG.	D J Chin	7-27-78
PROD.	L. Tuarla	7-27-78
NEXT HIGHER ASSY.		
E-AD-7014358-0-0		

SCALE —

SHEET 1 OF 1

FIRST USED ON MF20

digital

TITLE
MF20
WIRE LIST

SIZE	CODE	NUMBER	REV.
K	WL	MF20-0-WL	C

DIST.

REVISIONS

REV.	CHANGE NO.	CHK

DRB 100A

MR

DIGITAL EQUIPMENT CORPORATION
PARTS LIST

MADE BY [illegible] DATE 1 AUG 78	CHECKED [illegible] DATE 2 AUG 78	SECTION 1
ENG DJ Clem DATE 23 AUG 78	PROD L. Quarles DATE 23 Aug 78	ISSUED SECTION 1

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY / VARIATION											
				MF2Ø-LA	MF2Ø-LB	MF2Ø-LC	MF2Ø-LD	MF2Ø-E	MF2Ø-LH	MF2Ø-LJ	MF2Ø-LK	MF2Ø-LL	MF2Ø-LM	MF2Ø-LN	
1	D-TC-MF2Ø-Ø-1	MPØØ622	MF2Ø PRINT SET	1	1	1	1	-	1	1	1	1	1	1	
2		EK-ØMF2Ø-TM	MF2Ø MAINTENANCE MANUAL	1	1	1	1	-	1	1	1	1	1	1	
3	B-PL-7016252-0-0	7016252-0	INSTALLATION KIT MF2Ø	1	1	-	-	-	-	-	-	-	-	-	
4	B-PL-7016252-0-0	7016252-1	INSTALLATION KIT MF2Ø	-	-	1	1	-	-	-	-	-	-	-	
5	B-PL-7016252-0-0	7016252-2	INSTALLATION KIT MF2Ø	-	-	-	-	-	1	1	-	-	1	1	
6	B-PL-7016252-0-0	7016252-3	INSTALLATION KIT MF2Ø	-	-	-	-	-	-	-	1	1	-	-	
7	D-MD-7419341-0-0	7419341-00	RAIL, MOUNTING	-	-	2	2	-	-	-	2	2	-	-	

NOTES:

REF DESIGNATION

E.C.O. NO. MR006

DRB 125

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.
SHIP LIST MF2Ø	—	B	PL	MF2Ø-Ø-SH	B
	SHEET 1 OF 2	INSERTION PARTS LIST DATA BASE REV			

MR

DIGITAL EQUIPMENT CORPORATION
PARTS LIST

MADE BY V. SOUZA DATE 1 AUG 78	CHECKED G. FLANDERS DATE 2 AUG 78	SECTION 1
ENG D.J. CHIN DATE 23 AUG 78	PROD L.QUARLES DATE 23 AUG 78	ISSUED SECTION 1

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY / VARIATION												NOTES: / REF DESIGNATION
				MF2Ø-LP	MF2Ø-LR	MF2Ø-LS	MF2Ø-LT	MF2Ø-LU	MF2Ø-LV							
1	D-TC-MF2Ø-Ø-1	MPØØ622	MF2Ø PRINT SET	1	1	1	1	1	1							
2		EK-ØMF2Ø-TM	MF2Ø MAINTENANCE MANUAL	1	1	1	1	1	1							
3	B-PL-7016252-0-0	7016252-0	INSTALLATION KIT MF2Ø	-	-	-	-	1	1							
4	B-PL-7016252-0-0	7016252-1	INSTALLATION KIT MF2Ø	-	-	-	-	-	-							
5	B-PL-7016252-0-0	7016252-2	INSTALLATION KIT MF2Ø	1	1	1	1	-	-							
6	B-PL-7016252-0-0	7016252-3	INSTALLATION KIT MF2Ø	-	-	-	-	-	-							
7	D-MD-7419341-0-0	7419341-00	RAIL, MOUNTING	-	-	-	-	-	-							

E.C.O. NO.

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.
SHIP LIST MF2Ø		B	PL	MF2Ø-Ø-SH	B
	SHEET 2 OF 2	INSERTION PARTS LIST DATA BASE REV			

DRB 125

MR