

SERVICE MANUAL

Matrix-12

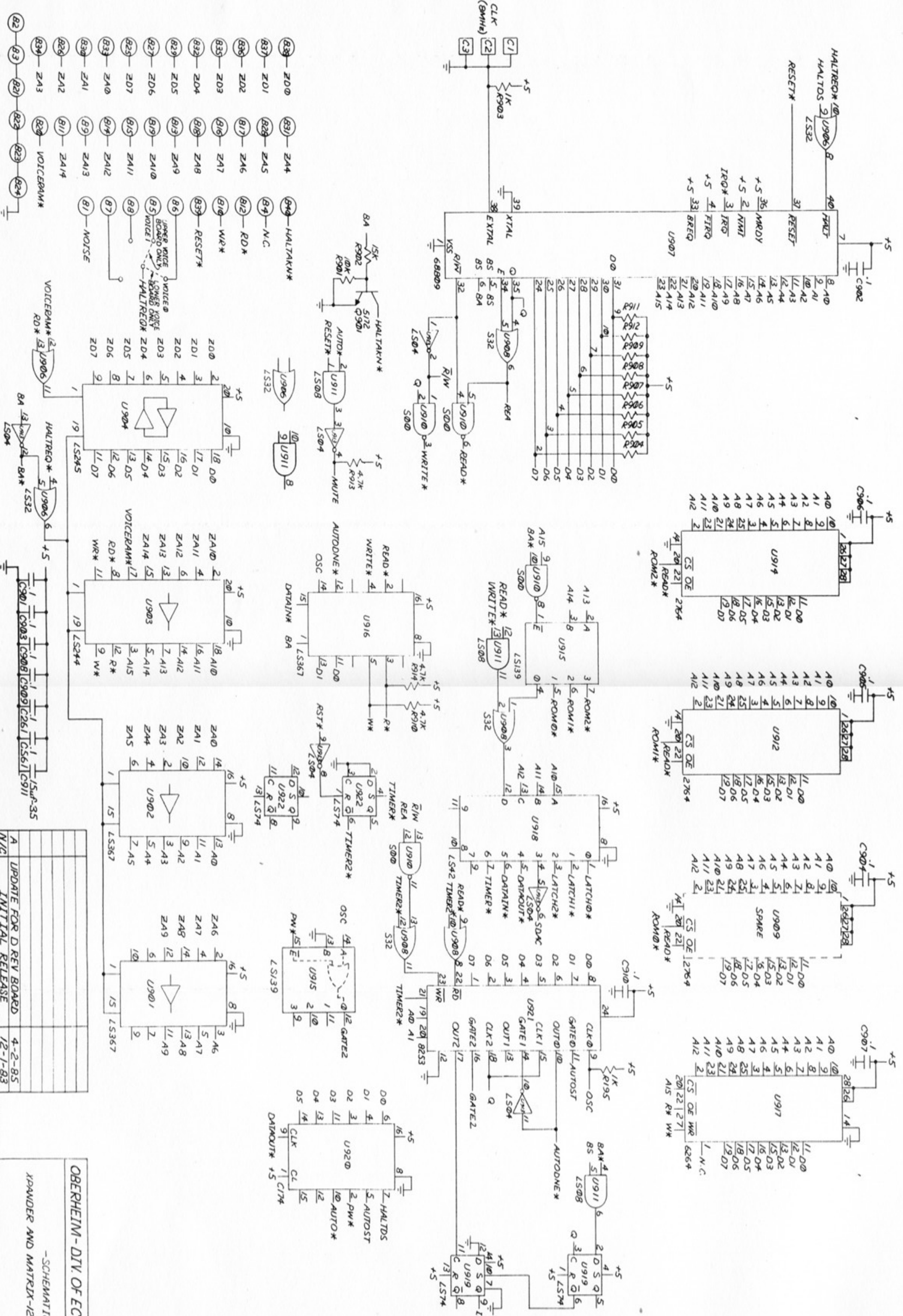


OBERHEIM

A Division of ECC Development Corporation

Preliminary Edition





- (B39) ZD0 - HALTAKN*
- (B37) ZD1 - N.C.
- (B38) ZD2 - RD*
- (B35) ZD3 - WR*
- (B32) ZD4 - RESCT*
- (B29) ZD5 - JIGGER VOICE BOARD ONLY
- (B27) ZD6 - JIGGER VOICE BOARD ONLY
- (B25) ZD7 - HALTREQ
- (B33) ZA0 - NOISE
- (B30) ZA1 - NOISE
- (B28) ZA2 - NOISE
- (B34) ZA3 - VOICEBAM*
- (B26) ZA4 - VOICEBAM*
- (B23) ZA5 - VOICEBAM*
- (B24) ZA6 - VOICEBAM*

- (B40) ZA7 - HALTAKN*
- (B41) ZA8 - N.C.
- (B42) ZA9 - RD*
- (B39) ZA10 - WR*
- (B36) ZA11 - RESCT*
- (B34) ZA12 - JIGGER VOICE BOARD ONLY
- (B32) ZA13 - JIGGER VOICE BOARD ONLY
- (B30) ZA14 - HALTREQ
- (B28) ZA15 - NOISE
- (B26) ZA16 - NOISE
- (B24) ZA17 - NOISE
- (B21) ZA18 - VOICEBAM*
- (B22) ZA19 - VOICEBAM*
- (B23) ZA20 - VOICEBAM*
- (B24) ZA21 - VOICEBAM*

- (B43) ZA22 - HALTAKN*
- (B44) ZA23 - N.C.
- (B45) ZA24 - RD*
- (B42) ZA25 - WR*
- (B39) ZA26 - RESCT*
- (B37) ZA27 - JIGGER VOICE BOARD ONLY
- (B35) ZA28 - JIGGER VOICE BOARD ONLY
- (B33) ZA29 - HALTREQ
- (B31) ZA30 - NOISE
- (B29) ZA31 - NOISE
- (B27) ZA32 - NOISE
- (B24) ZA33 - VOICEBAM*
- (B25) ZA34 - VOICEBAM*
- (B26) ZA35 - VOICEBAM*
- (B27) ZA36 - VOICEBAM*

- (B46) ZA37 - HALTAKN*
- (B47) ZA38 - N.C.
- (B48) ZA39 - RD*
- (B45) ZA40 - WR*
- (B42) ZA41 - RESCT*
- (B40) ZA42 - JIGGER VOICE BOARD ONLY
- (B38) ZA43 - JIGGER VOICE BOARD ONLY
- (B36) ZA44 - HALTREQ
- (B34) ZA45 - NOISE
- (B32) ZA46 - NOISE
- (B30) ZA47 - NOISE
- (B27) ZA48 - VOICEBAM*
- (B28) ZA49 - VOICEBAM*
- (B29) ZA50 - VOICEBAM*
- (B30) ZA51 - VOICEBAM*

- (B49) ZA52 - HALTAKN*
- (B50) ZA53 - N.C.
- (B51) ZA54 - RD*
- (B48) ZA55 - WR*
- (B45) ZA56 - RESCT*
- (B43) ZA57 - JIGGER VOICE BOARD ONLY
- (B41) ZA58 - JIGGER VOICE BOARD ONLY
- (B39) ZA59 - HALTREQ
- (B37) ZA60 - NOISE
- (B35) ZA61 - NOISE
- (B33) ZA62 - NOISE
- (B30) ZA63 - VOICEBAM*
- (B31) ZA64 - VOICEBAM*
- (B32) ZA65 - VOICEBAM*
- (B33) ZA66 - VOICEBAM*

- (B52) ZA67 - HALTAKN*
- (B53) ZA68 - N.C.
- (B54) ZA69 - RD*
- (B51) ZA70 - WR*
- (B48) ZA71 - RESCT*
- (B46) ZA72 - JIGGER VOICE BOARD ONLY
- (B44) ZA73 - JIGGER VOICE BOARD ONLY
- (B42) ZA74 - HALTREQ
- (B40) ZA75 - NOISE
- (B38) ZA76 - NOISE
- (B36) ZA77 - NOISE
- (B33) ZA78 - VOICEBAM*
- (B34) ZA79 - VOICEBAM*
- (B35) ZA80 - VOICEBAM*
- (B36) ZA81 - VOICEBAM*

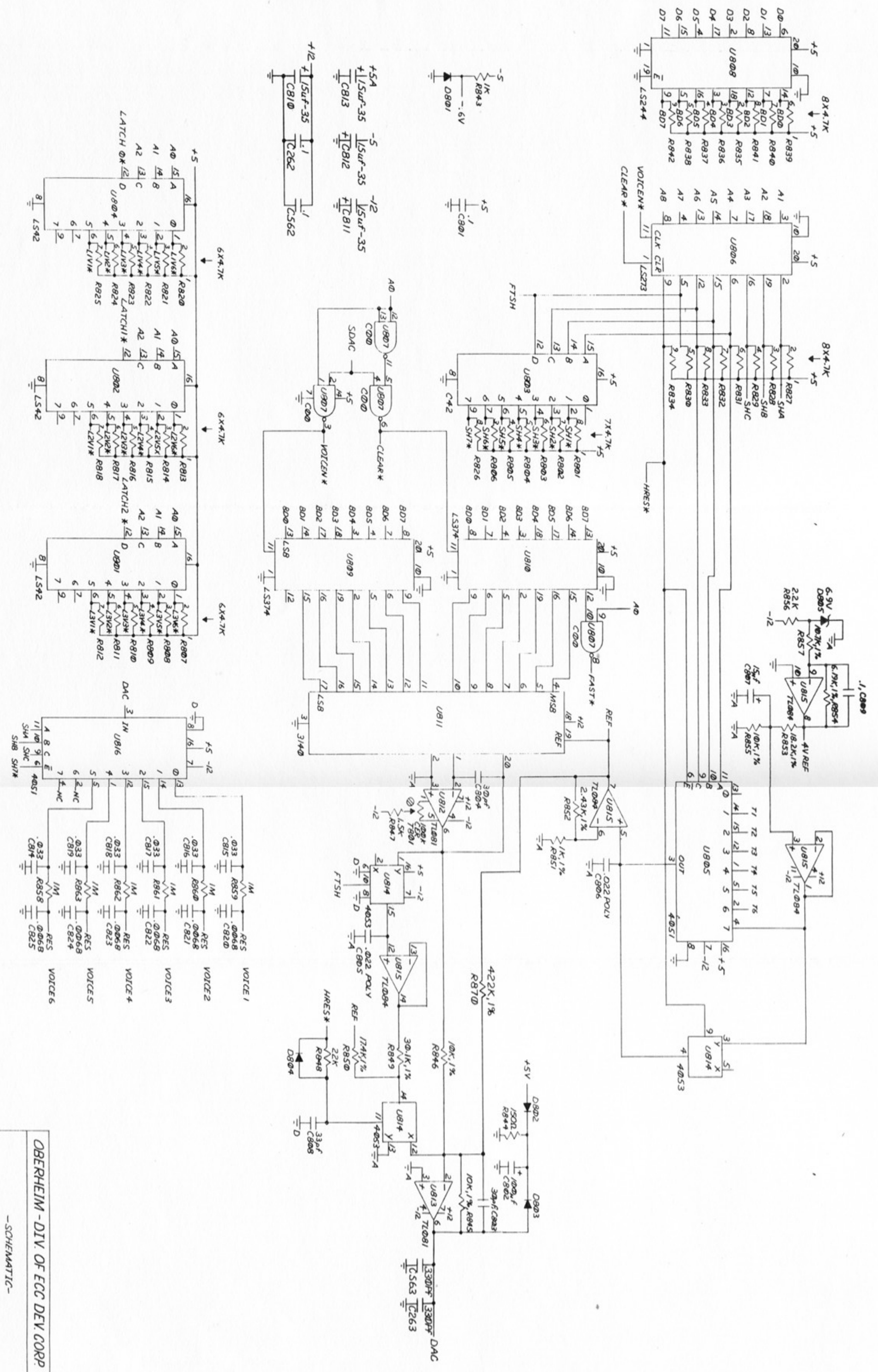
REV	DESCRIPTION	DATE	SHEET
A	UPDATE FOR D REV BOARD	4-2-85	1 OF 4
N/C	INITIAL RELEASE	12-1-83	
LTR	REVISION		

OBERHEIM - DIV. OF ECC DEV. CORP.

-SCHEMATIC-
XPANDER AND MATRIX-12 VOICE BOARD

J.R.

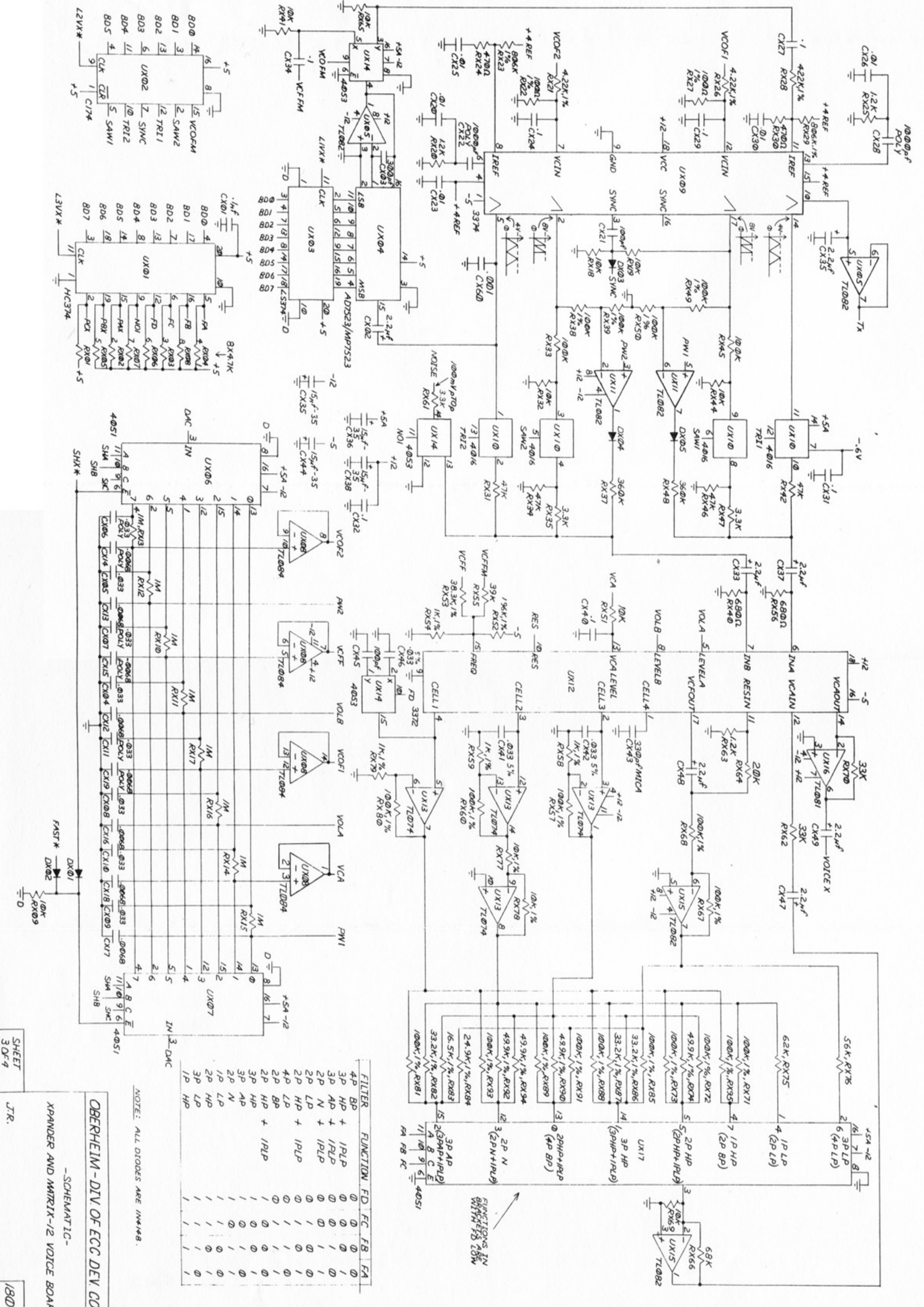
1808A



OBERHEIM - DIV. OF ECC DEV. CORP.

-SCHEMATIC-

EXPANDER AND MATRIX-2 VOICE BOARD

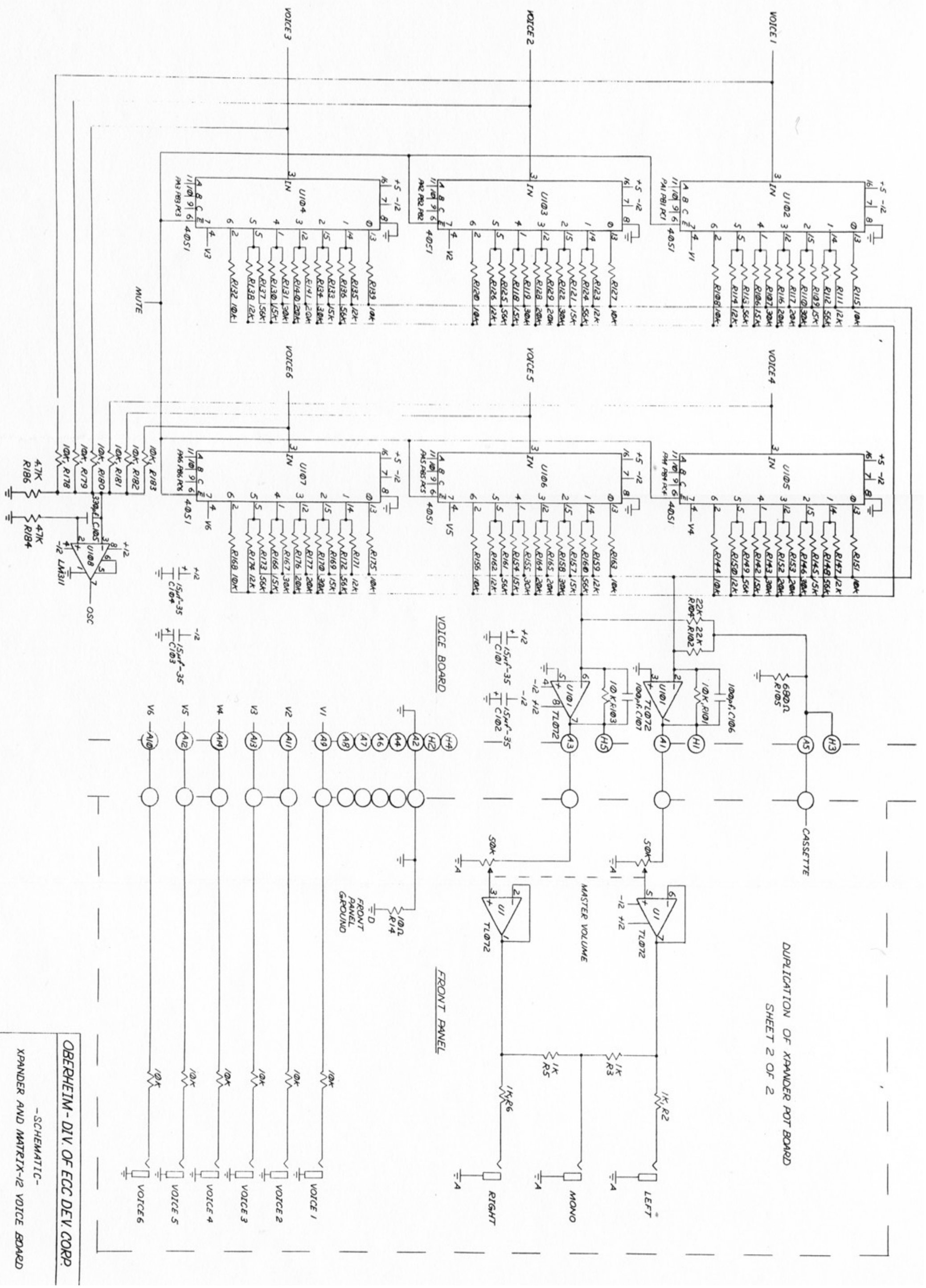


SHEET 3 OF 4
 J.R.
 1808A

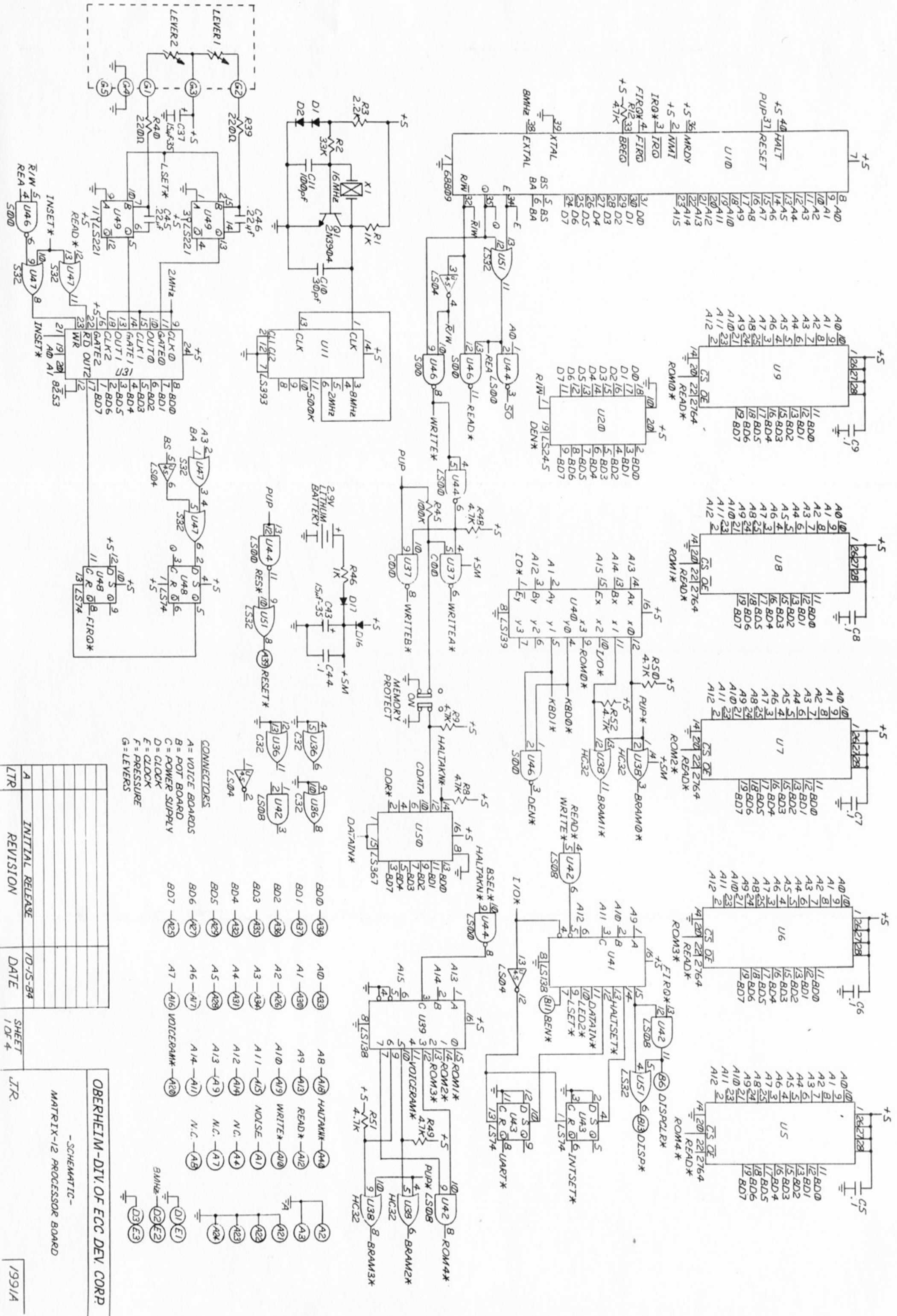
OBERTHEIM - DIV OF ECC DEV CORP.
 SPANDER AND MATRIX-12 VOICE BOARD

-SCHEMATIC-
 NOTE: ALL DIODES ARE 1N4148.

FILTER	FUNCTION	FD	FC	FB	FA
4P BP					
3P HP +	1PLP				
3P AP +	1PLP				
2P N +	1PLP				
2P LP					
2P HP +	1PLP				
4P LP					
2P HP +	1PLP				
3P HP					
3P AP					
2P N					
1P LP					
2P HP					
3P LP					
1P HP					



DUPPLICATION OF XRAMDER POT BOARD
SHEET 2 OF 2

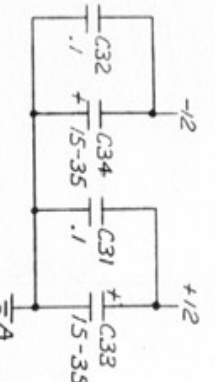
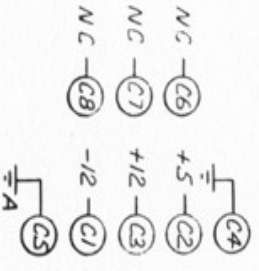
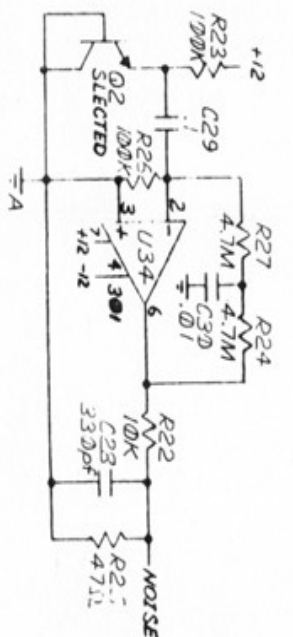
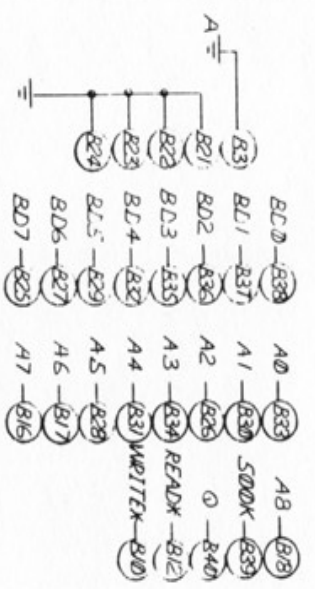
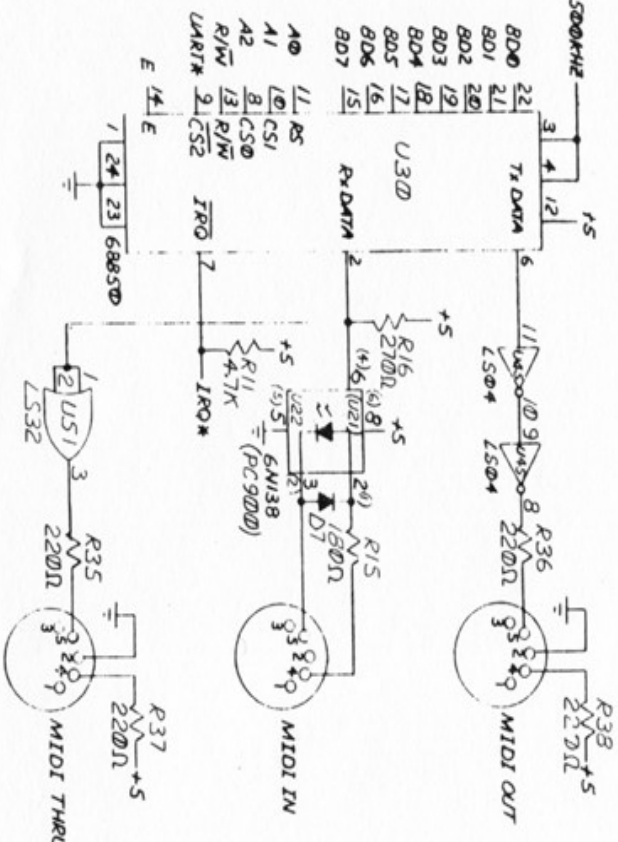
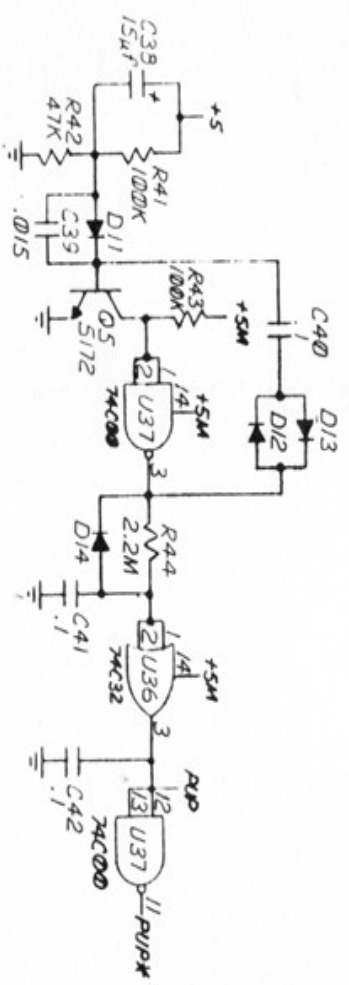
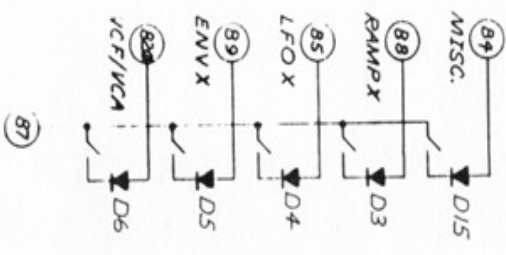
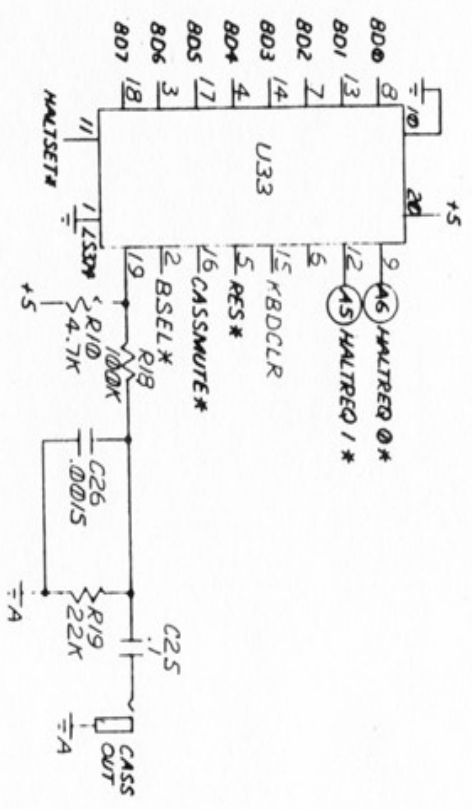
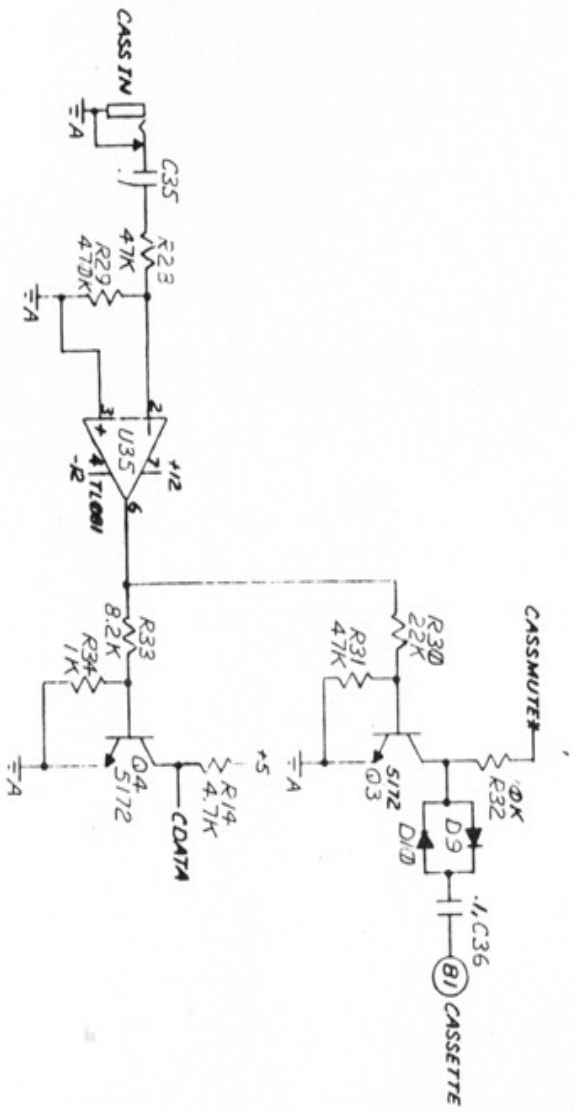
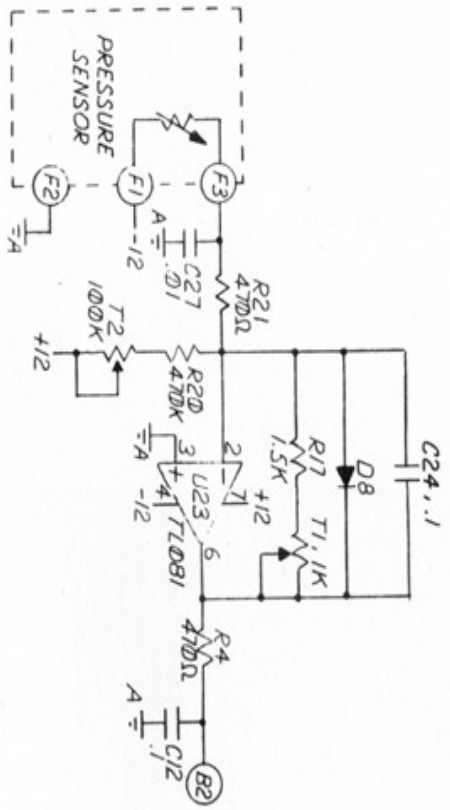
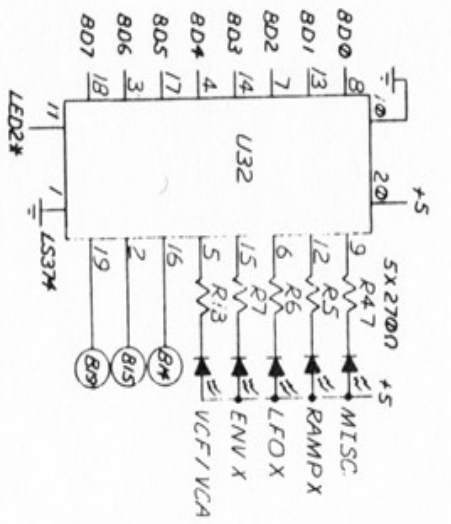


CONNECTORS

A	VOICE BOARDS	BD0	(A38)	AD	(A33)	AB	(A10)	HALTAKN	(A44)
B	POT BOARD	BD1	(A37)	A1	(A30)	A9	(A13)	READ*	(A12)
C	POWER SUPPLY	BD2	(A36)	A2	(A26)	A10	(A19)	WRITE*	(A10)
D	CLOCK	BD3	(A35)	A3	(A34)	A11	(A15)	NOISE	(A1)
E	CLOCK	BD4	(A32)	A4	(A31)	A12	(A14)	N.C.	(A4)
F	PRESSURE	BD5	(A29)	A5	(A28)	A13	(A9)	N.C.	(A7)
G	LEVERS	BD6	(A27)	A6	(A17)	A14	(A11)	N.C.	(A8)
		BD7	(A25)	A7	(A16)	VOICEPARAM	(A20)		

A2	(A2)	(A21)	(A22)	(A23)	(A24)	(A25)	(A26)	(A27)	(A28)	(A29)	(A30)	(A31)	(A32)	(A33)	(A34)	(A35)	(A36)	(A37)	(A38)	(A39)	(A40)	(A41)	(A42)	(A43)	(A44)	(A45)	(A46)	(A47)	(A48)	(A49)	(A50)	(A51)	(A52)	(A53)	(A54)	(A55)	(A56)	(A57)	(A58)	(A59)	(A60)	(A61)	(A62)	(A63)	(A64)	(A65)	(A66)	(A67)	(A68)	(A69)	(A70)	(A71)	(A72)	(A73)	(A74)	(A75)	(A76)	(A77)	(A78)	(A79)	(A80)	(A81)	(A82)	(A83)	(A84)	(A85)	(A86)	(A87)	(A88)	(A89)	(A90)	(A91)	(A92)	(A93)	(A94)	(A95)	(A96)	(A97)	(A98)	(A99)	(A100)
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OBERHEIM-DIV. OF ECC DEV. CORP.
 -SCHEMATIC-
 MATRIX-12 PROCESSOR BOARD
 J.T.R.
 SHEET 1 OF 4
 DATE 10-5-84
 INITIAL RELEASE
 LTR



OBERHEIM-DIV. OF ECC DEV. CORP.

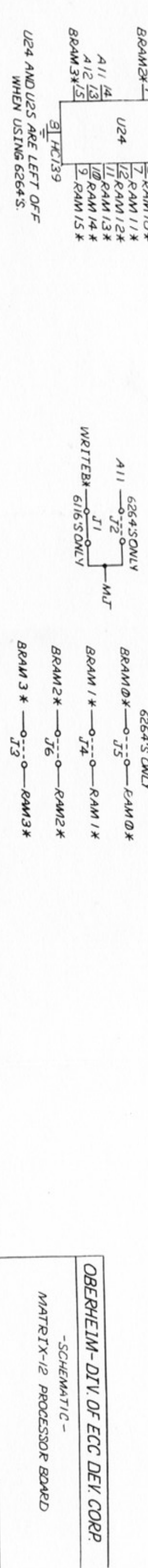
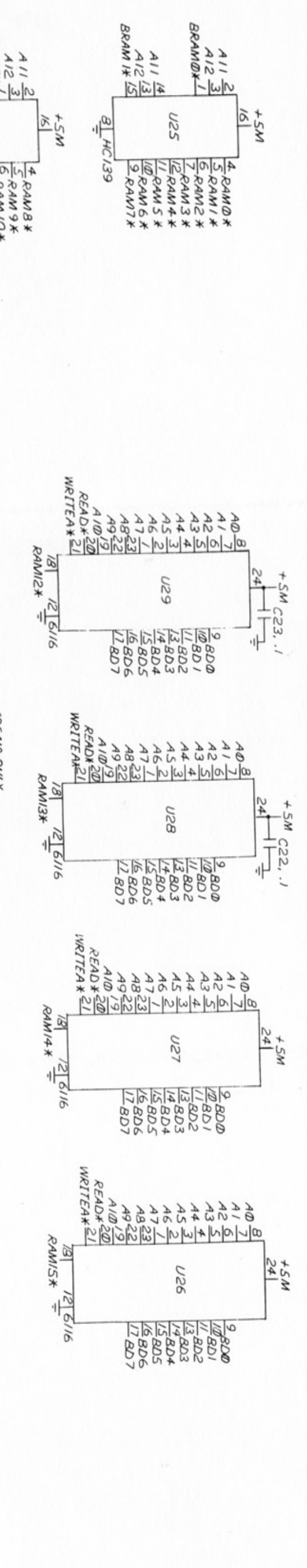
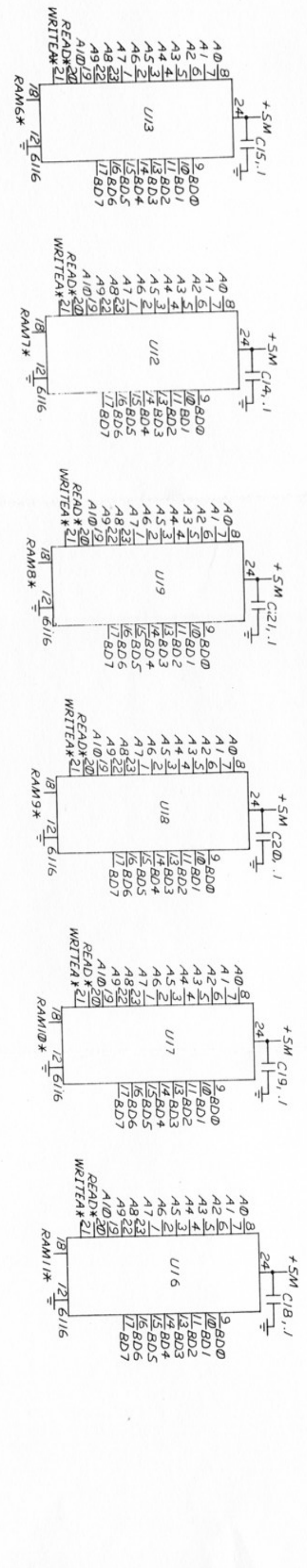
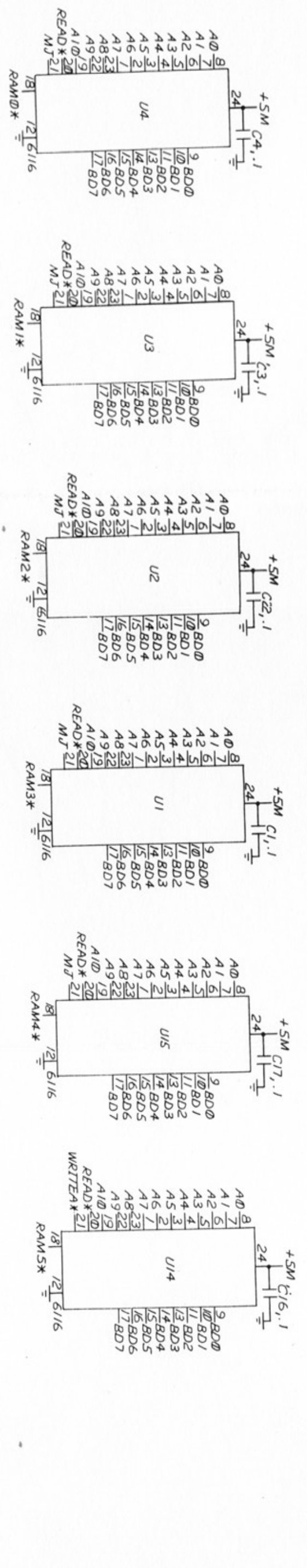
-SCHEMATIC-

MATRIX-12 PROCESSOR BOARD

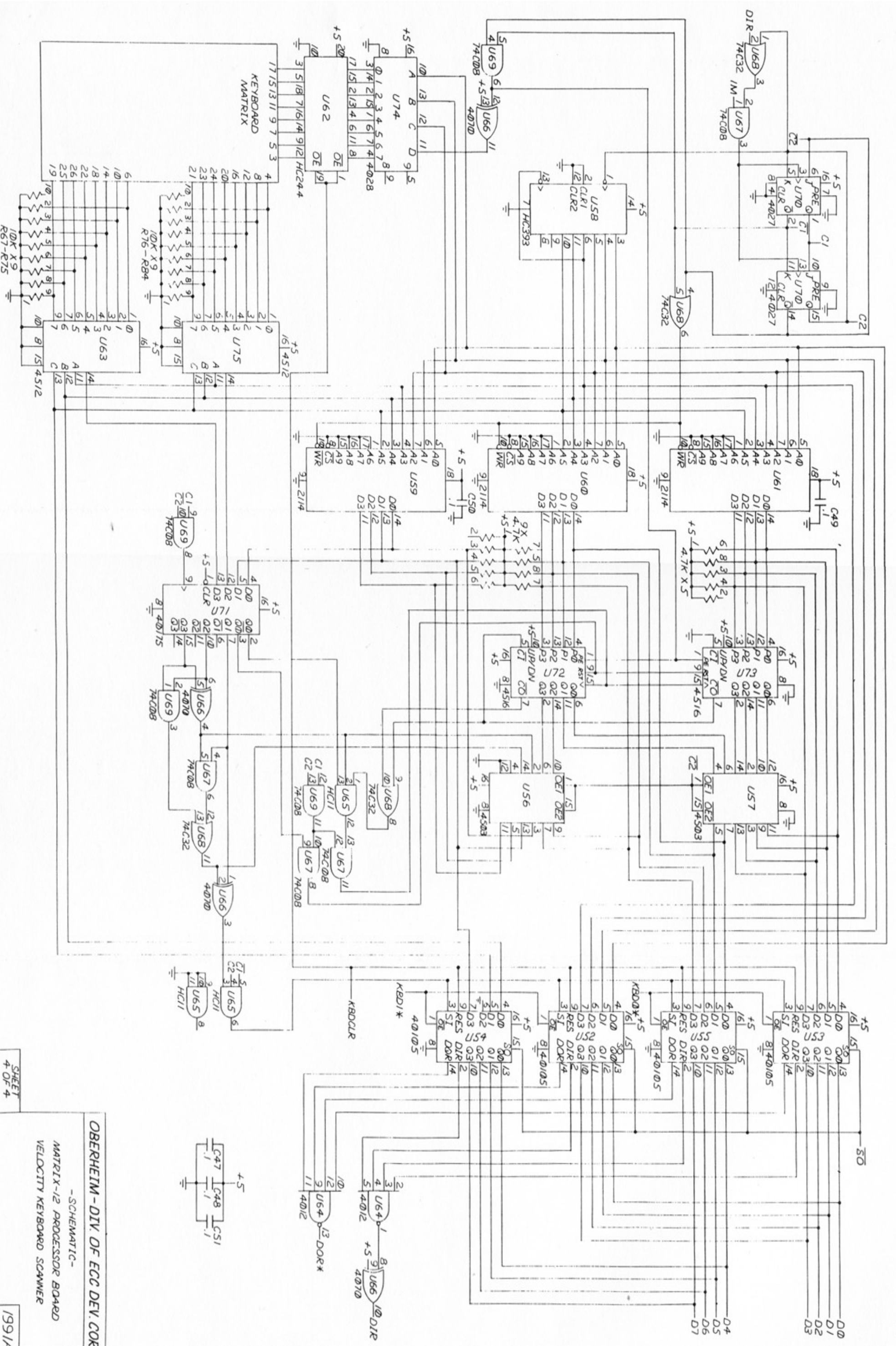
SAFETY

J.R.

1/91A



OBERHEIM-DIV. OF ECC DEV. CORP.
-SCHEMATIC-
MATRIX-12 PROCESSOR BOARD

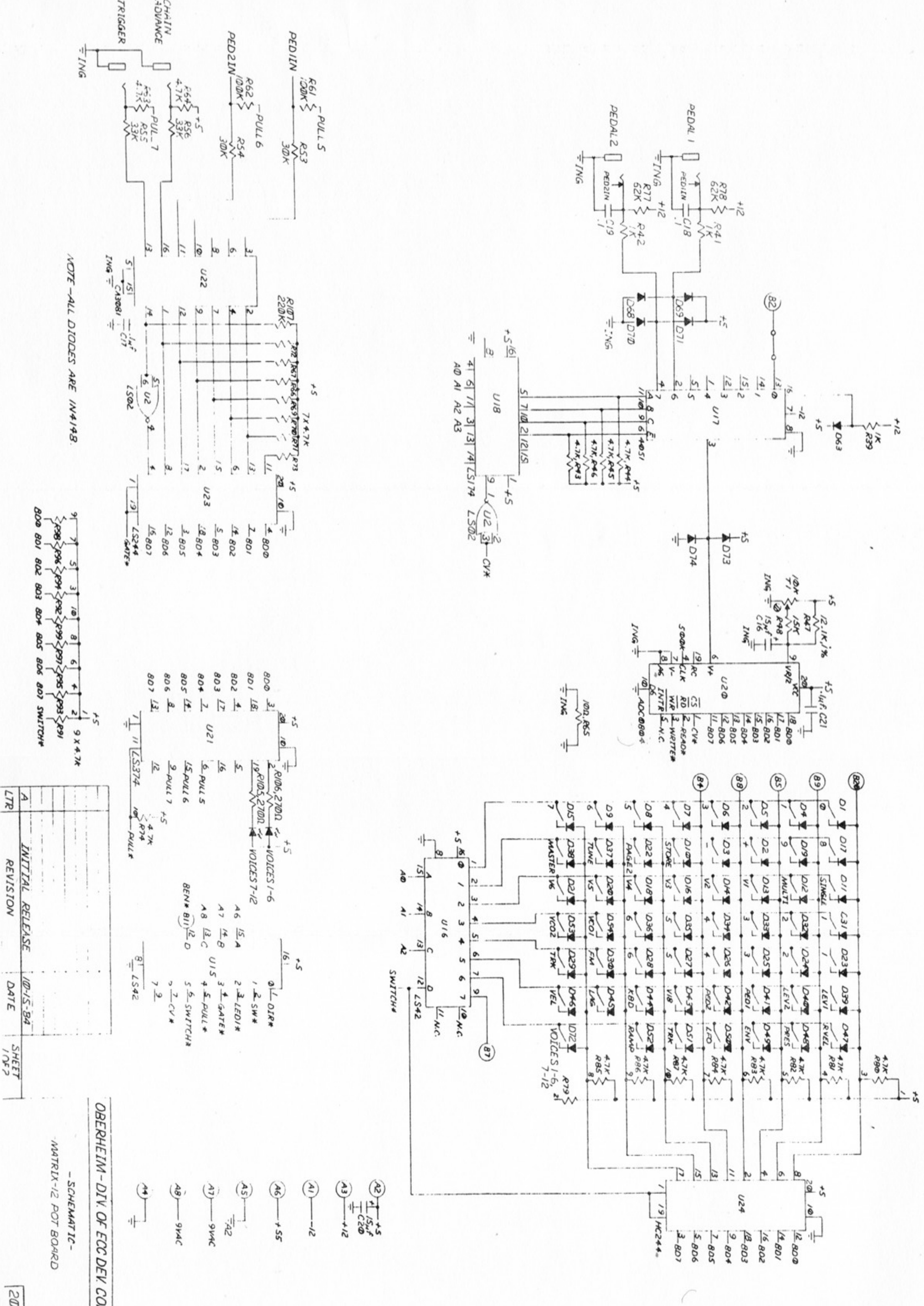


OBERHEIM-DIV. OF ECC DEV. CORP.

-SCHEMATIC-
MATRIX-12 PROCESSOR BOARD
VELOCITY KEYBOARD SCANNER

SHEET
4 OF 4

1/991A



NOTE - ALL DIODES ARE IN4148.

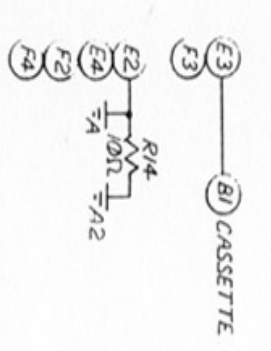
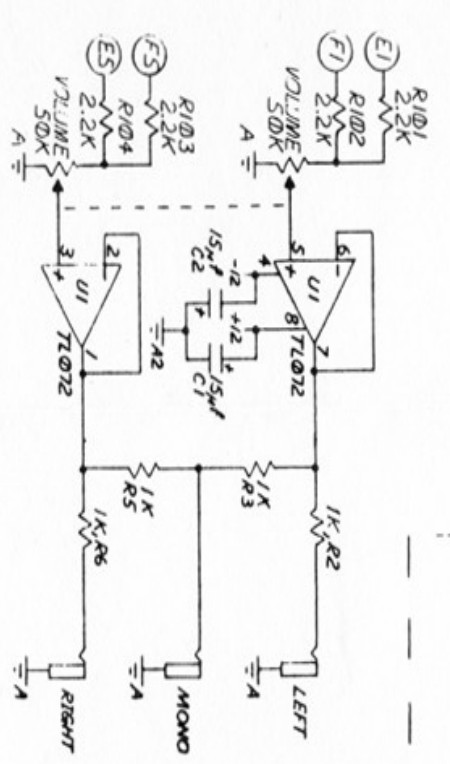
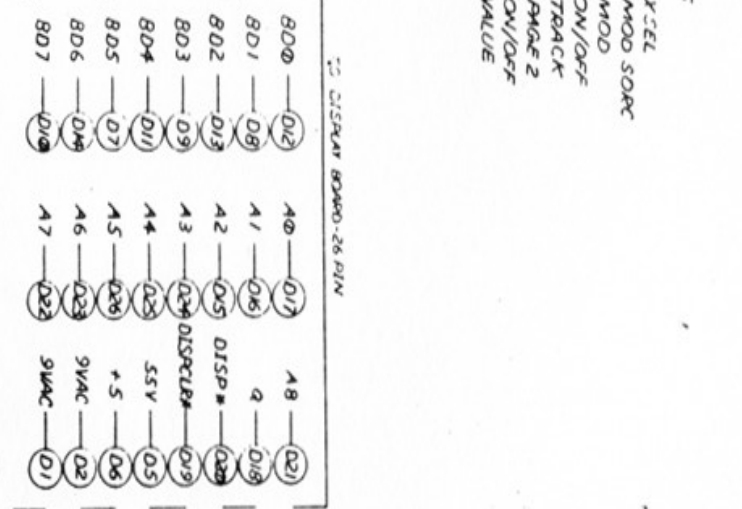
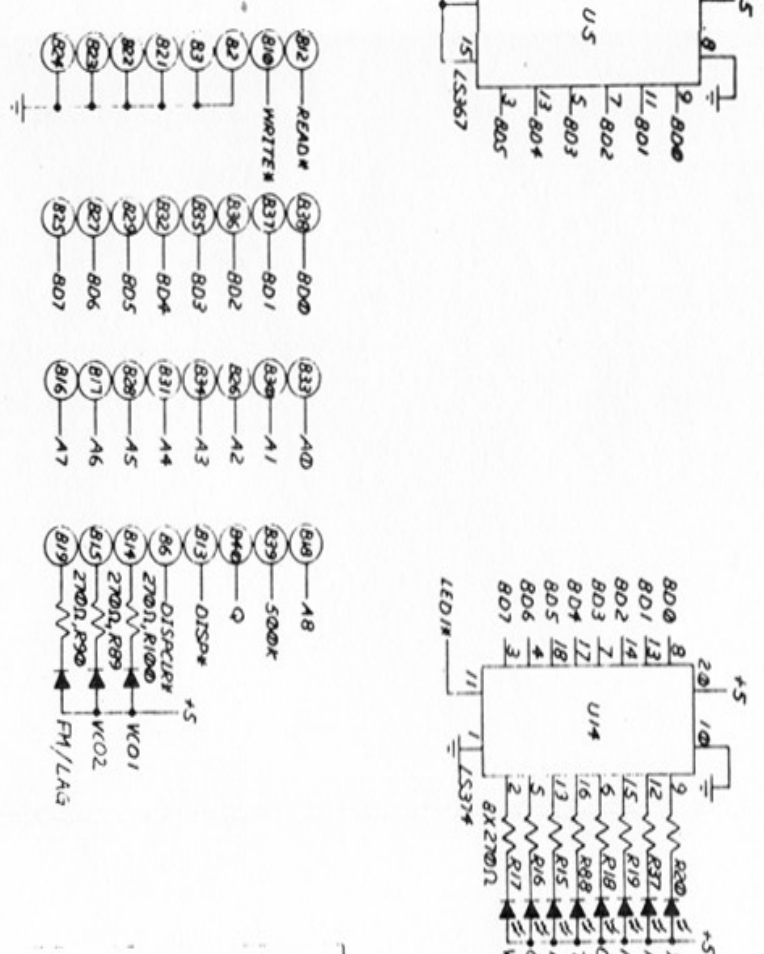
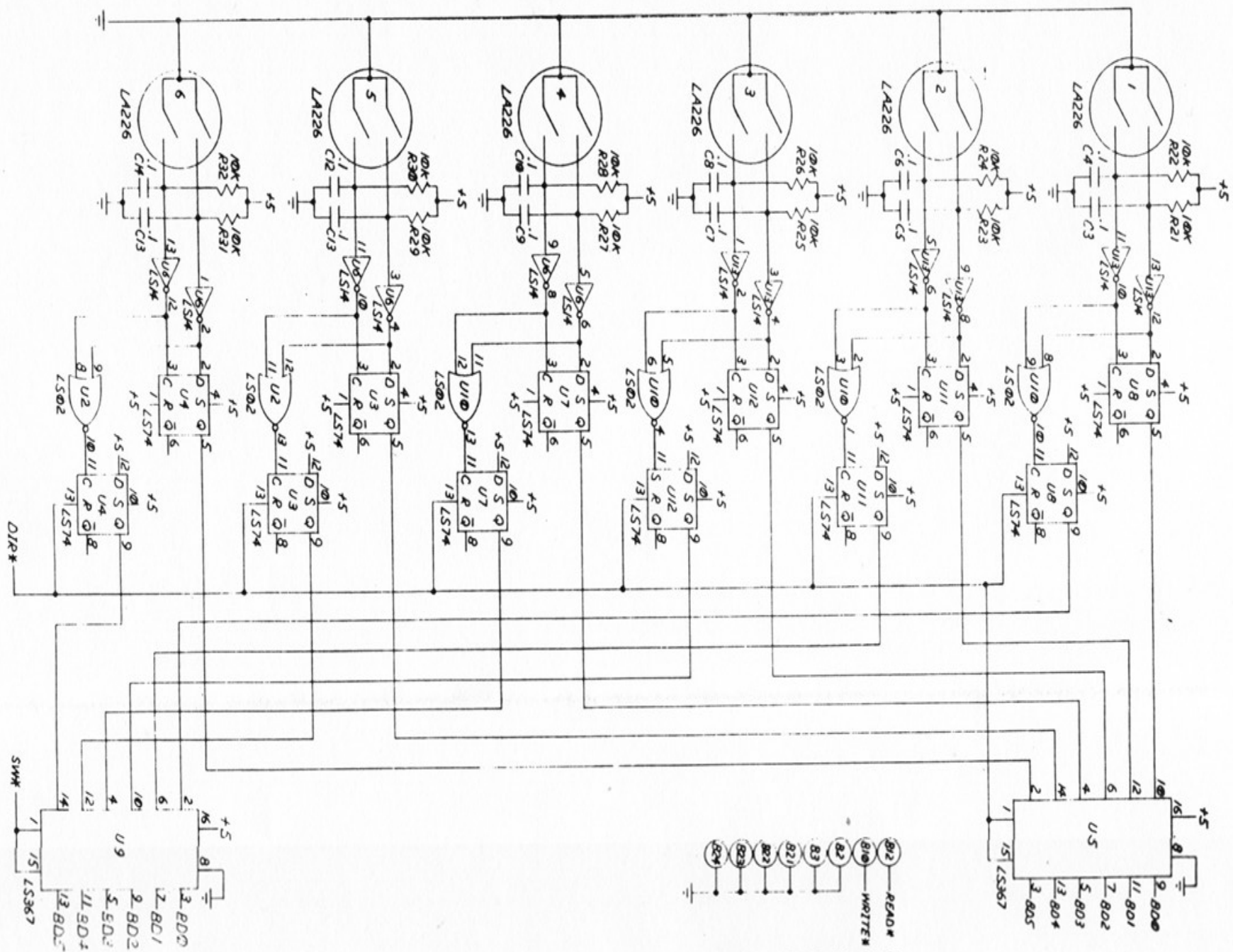
OBERHEIM - DIV. OF ECC DEV. CORP.

- SCHEMATIC -

MATRIX-12 POT BOARD

LTR	INITIAL RELEASE	DATE	SHEET
A		10-15-84	1 OF 2
REVISION			

2056A



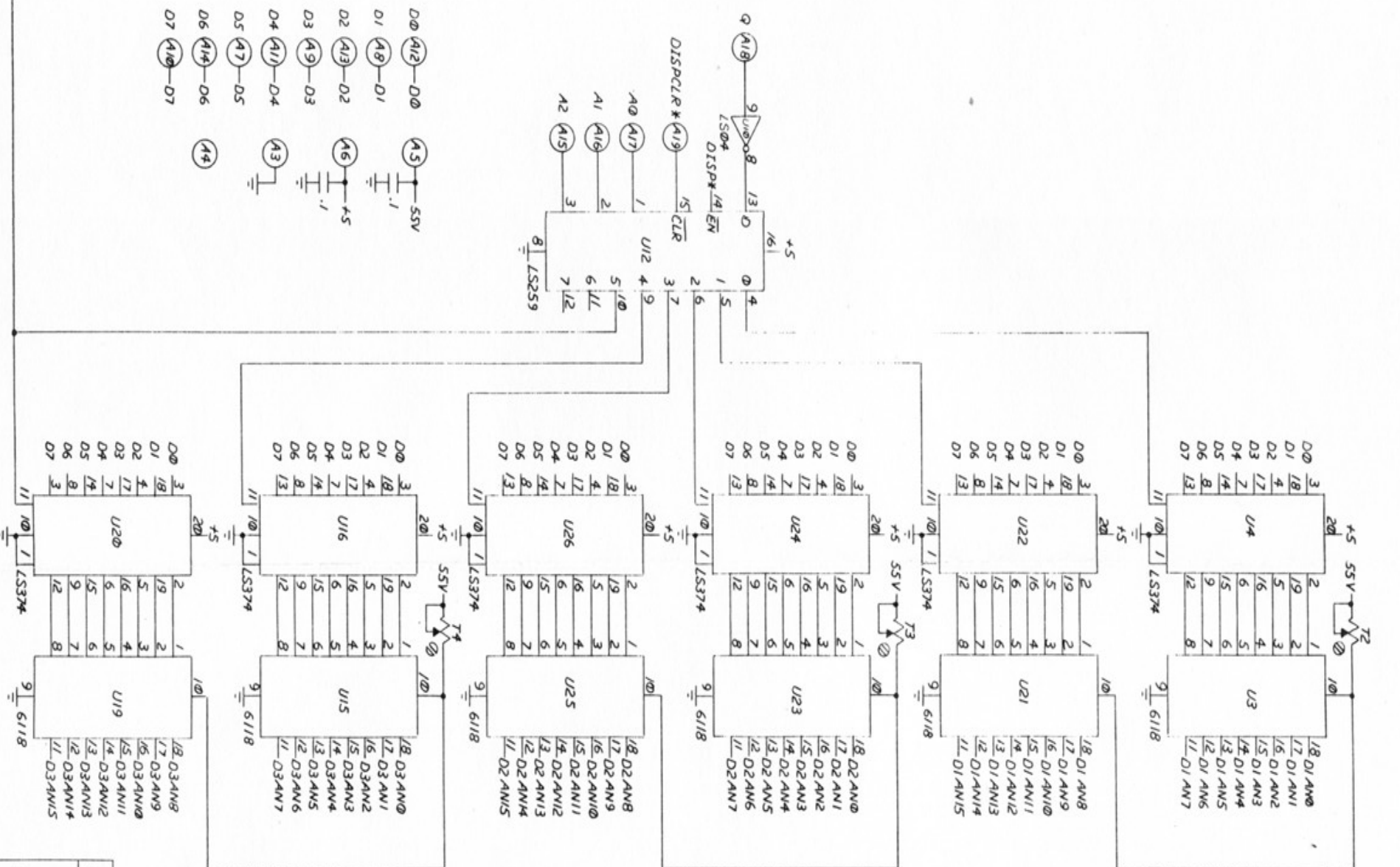
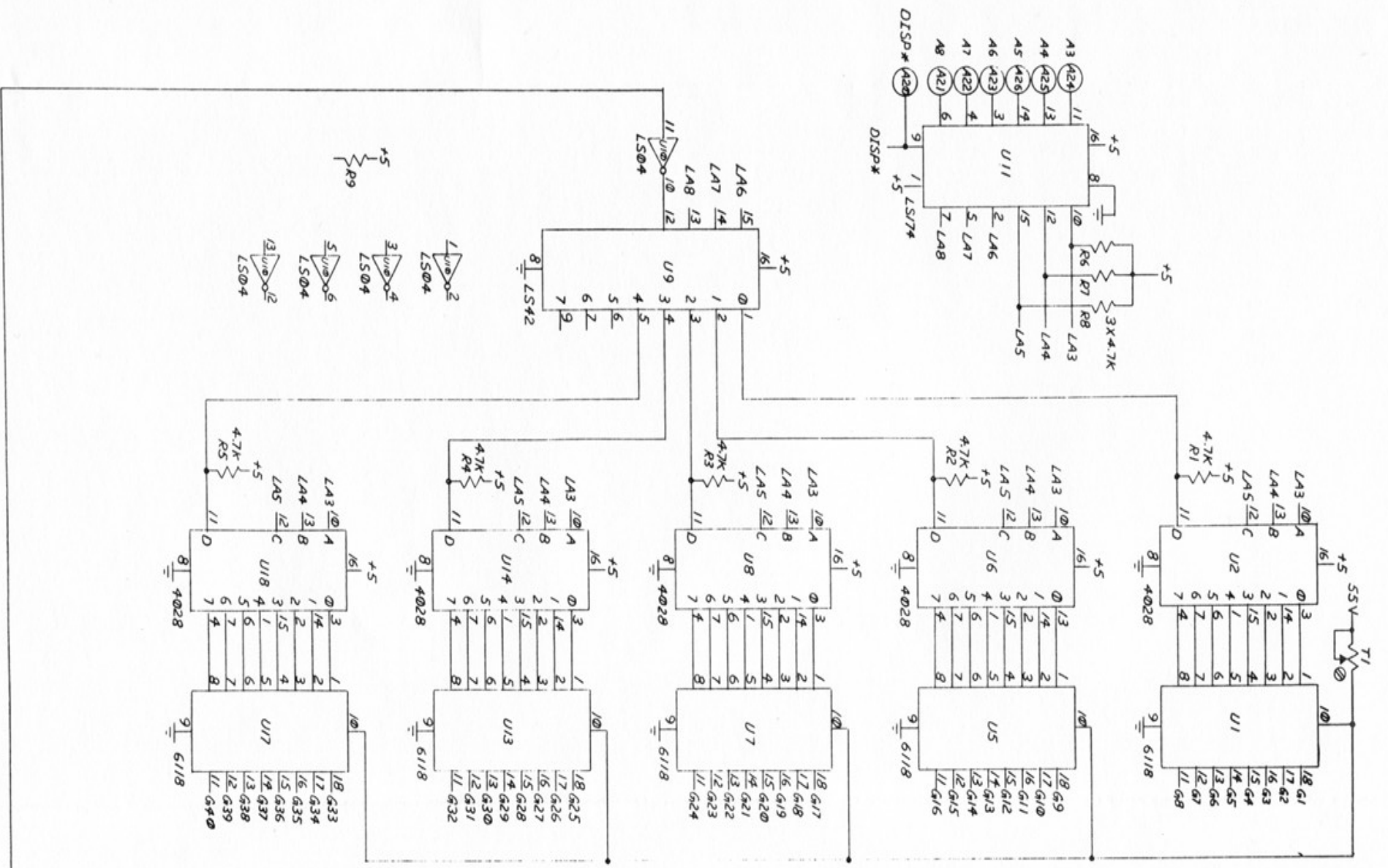
OBERHEIM-DIV. OF ECC DEV. CORP.

-SCHEMATIC-
MATRIX-12 POT BOARD

SHEET
2 OF 2

JR

2056A



- D0 (A12) - D0 (A5)
- D1 (A8) - D1 (A1)
- D2 (A13) - D2 (A6)
- D3 (A9) - D3 (A3)
- D4 (A11) - D4 (A4)
- D5 (A7) - D5 (A7)
- D6 (A14) - D6 (A14)
- D7 (A10) - D7 (A10)

OBERHEIM-DIV. OF ECC DEV. CORP.

- SCHEMATIC -

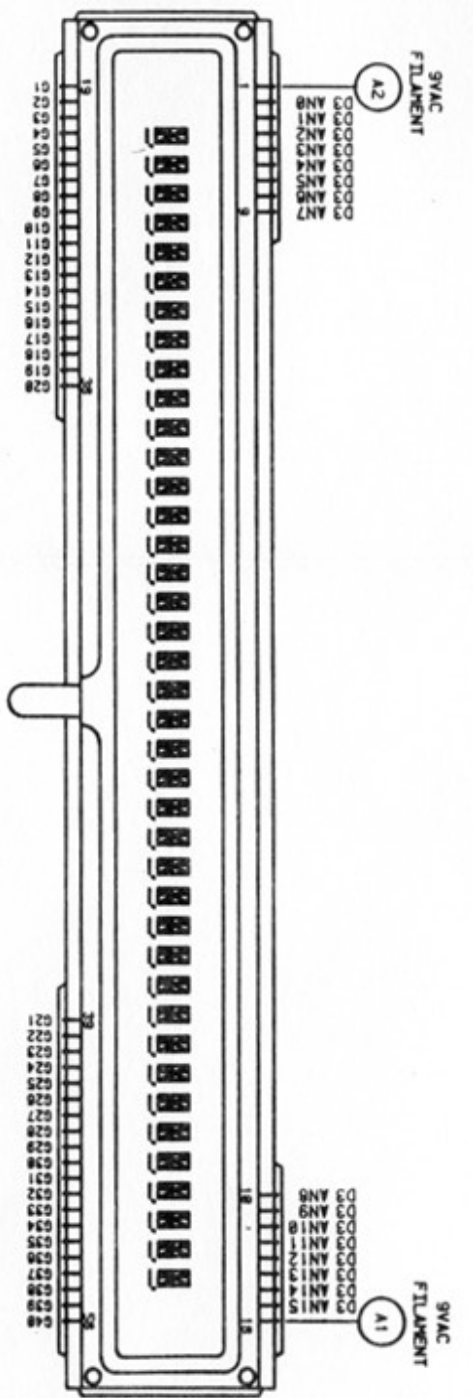
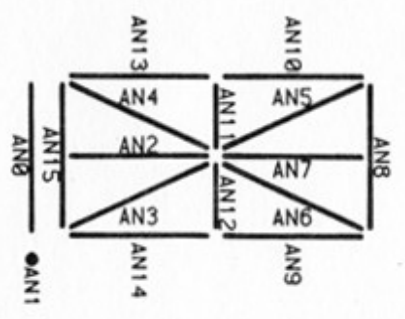
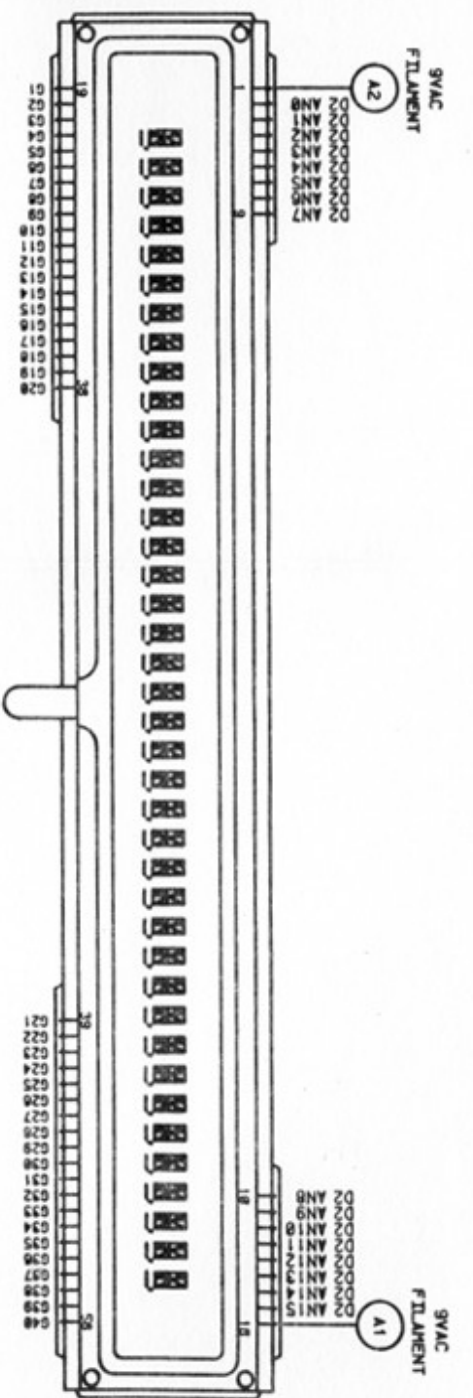
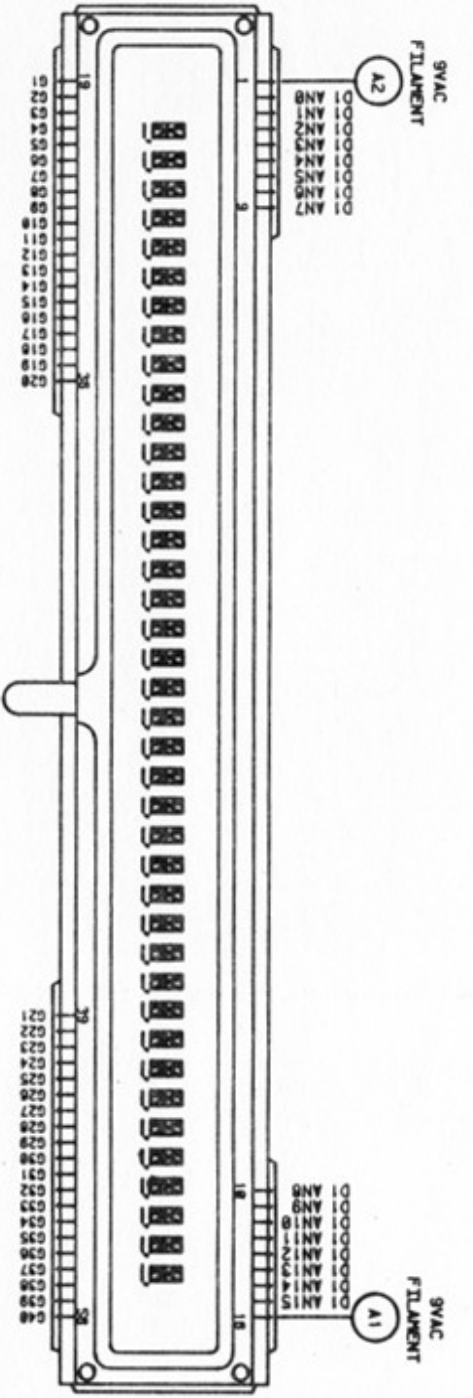
MATRIX-12 AND XPANDER DISPLAY BOARD

SHEET

1 OF 2

J.R.

1841



LTR	REVISION	DATE

OBERHEIM - DIV. OF ECC DEV. CORP.

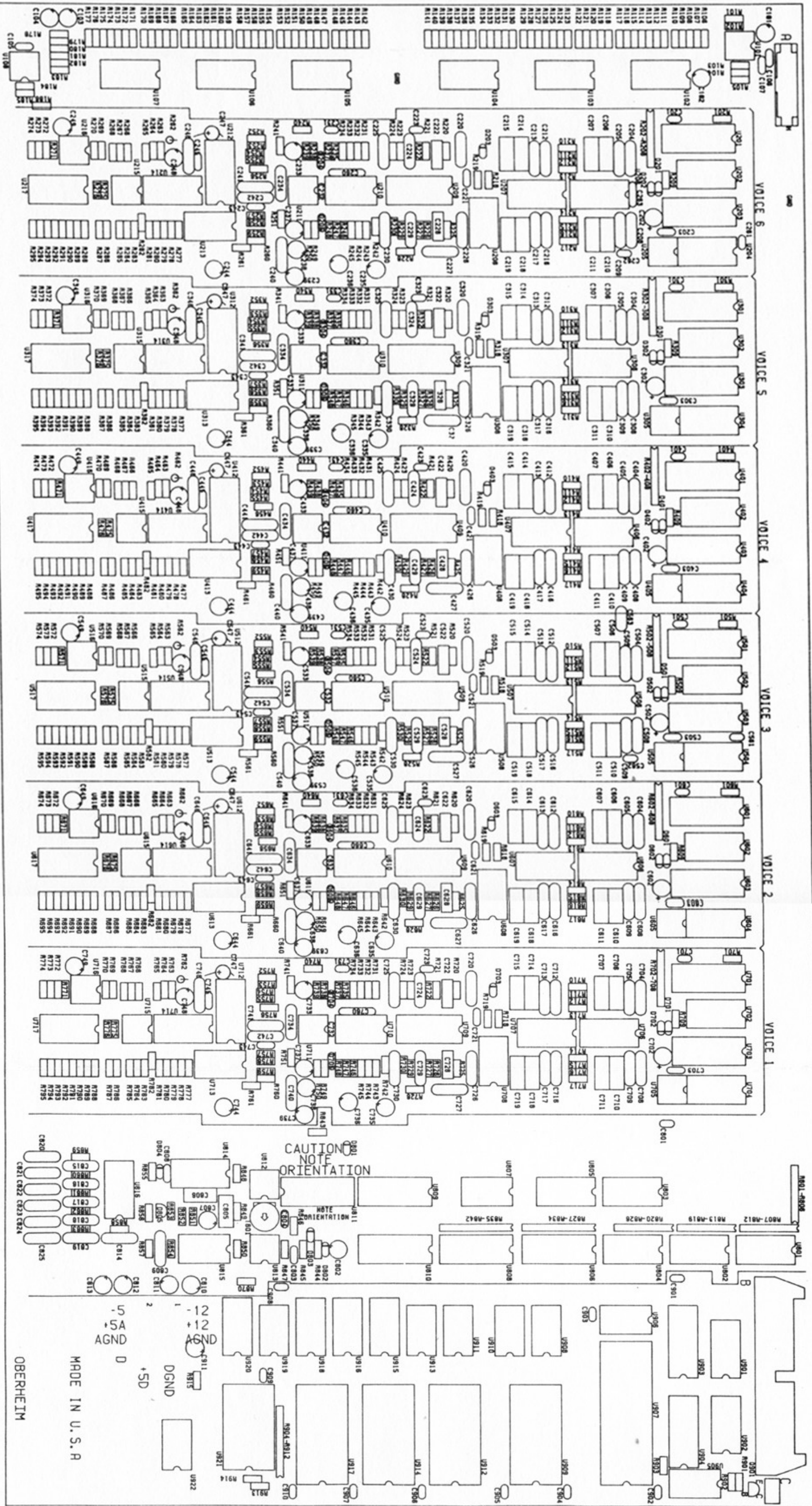
- SCHEMATIC -

MATRIX-12 AND XPANDER DISPLAY BOARD

J. R.

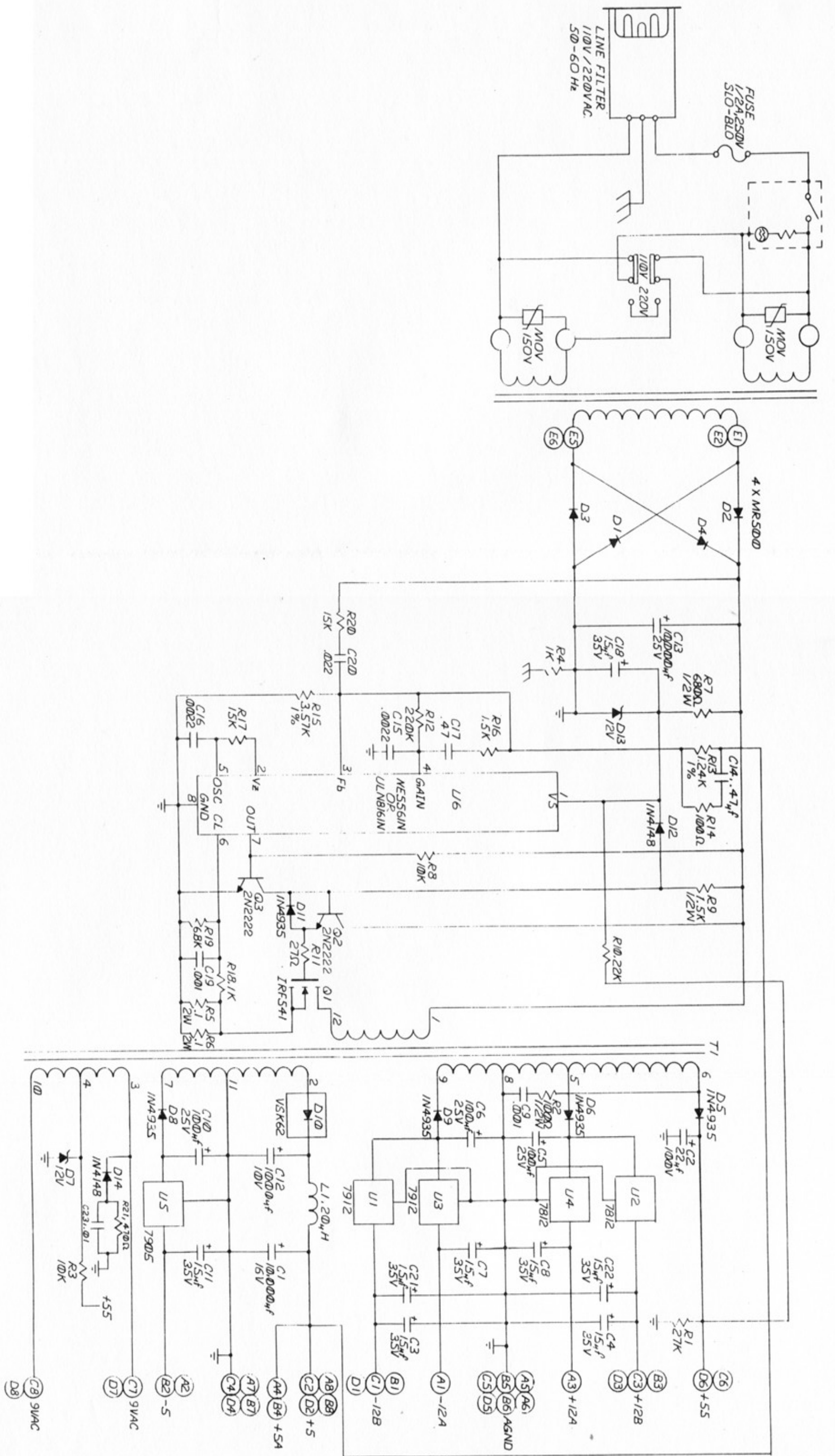
SHEET 2 OF 2

1841



OBERHEIM - DIV. OF ECC DEV. CORP.

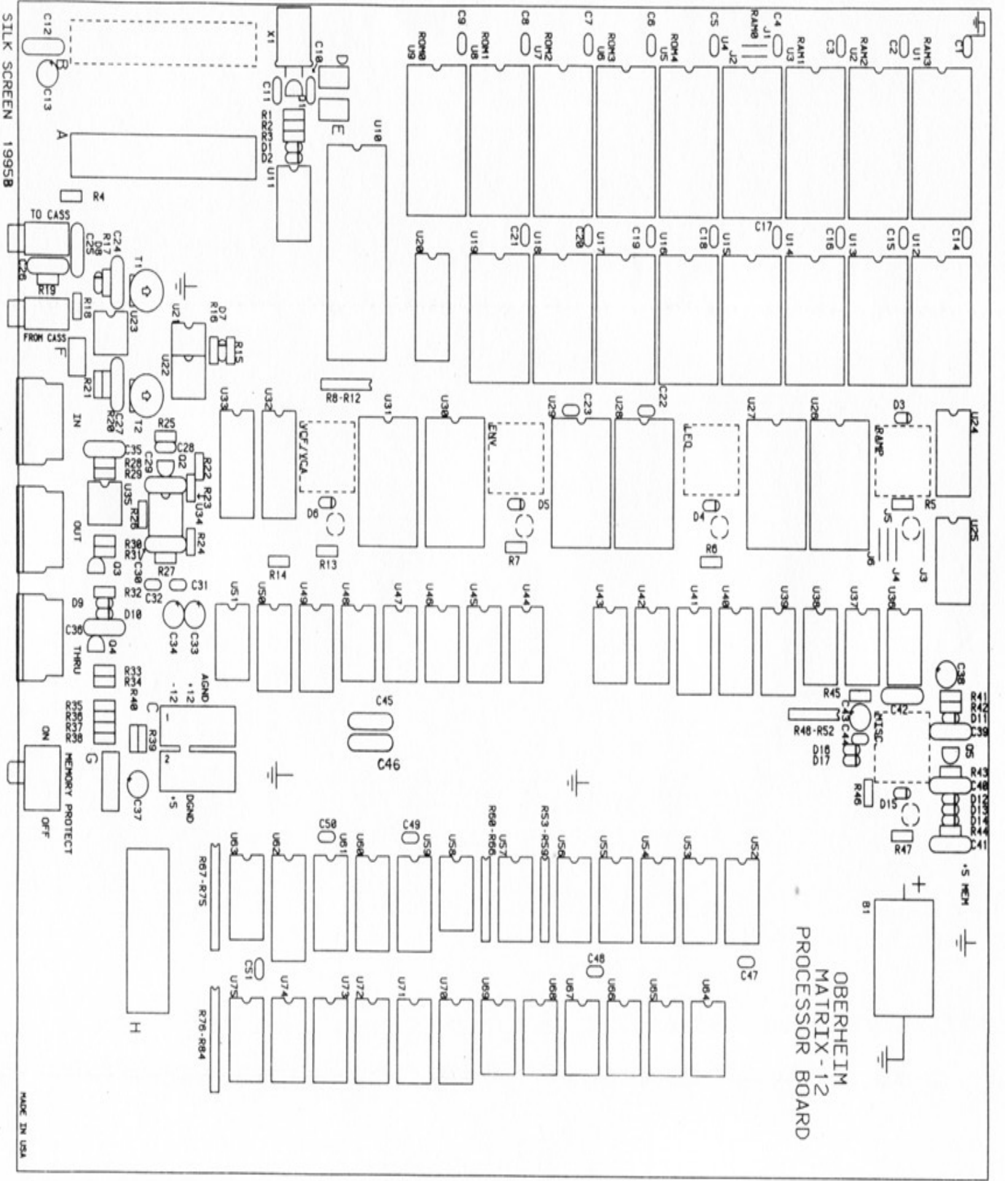
-PARTS LAYOUT-
MATRIX-12 VOICE BOARD



U6
Q3
R21
L1
D14
C23
LAST COMPONENT #'S USED

A
INITIAL RELEASE
REVISION
DATE
LTR

OBERHEIM - DIV. OF ECC DEV. CORP.
 - SCHEMATIC -
 MATRIX-12 POWER SUPPLY
 1925A



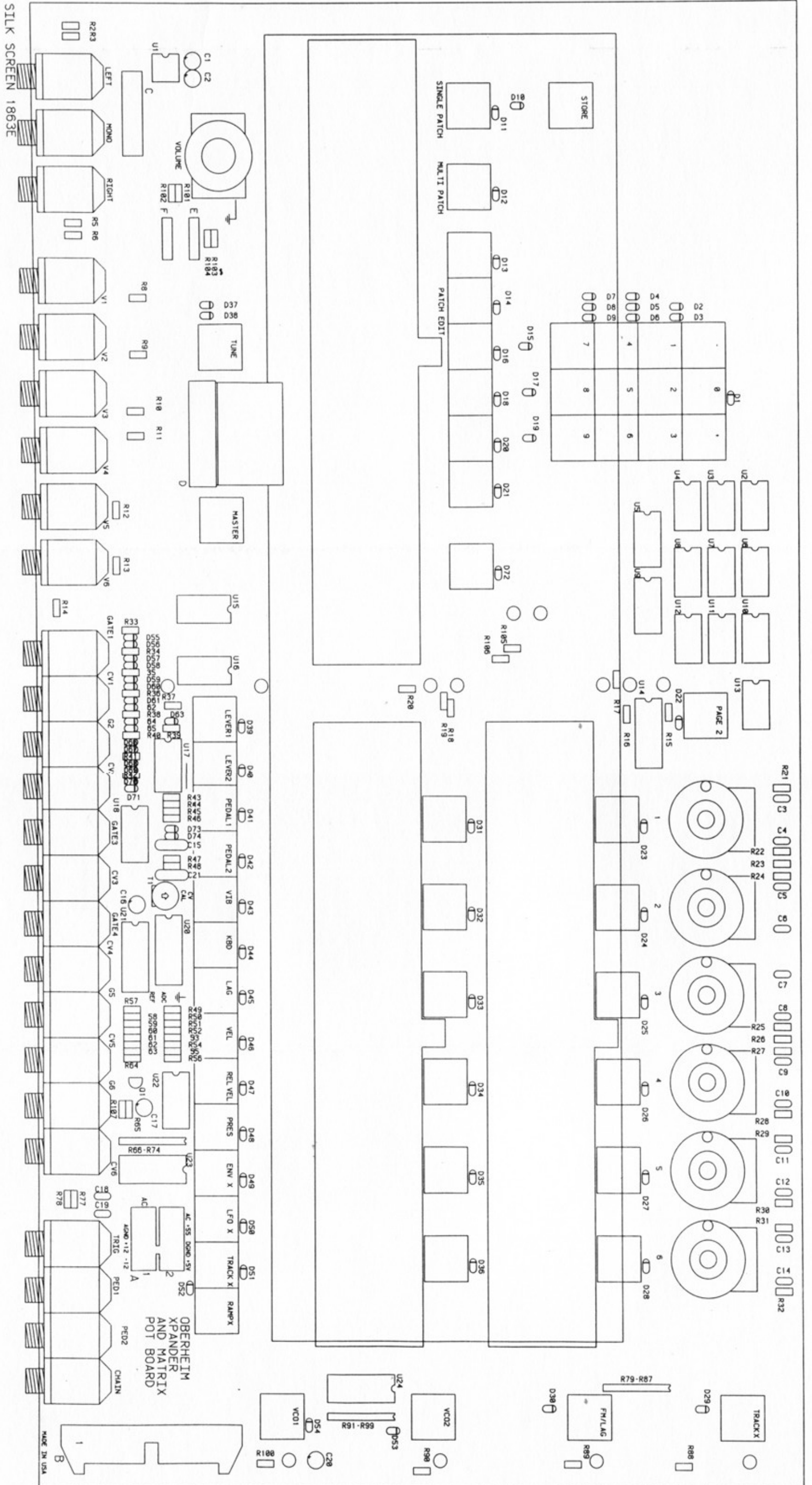
OBERHEIM
MATRIX-12
PROCESSOR BOARD

SILK SCREEN 1995B

MADE IN USA

OBERHEIM - DIV. OF ECC DEV. CORP.
-PARTS LAYOUT-
MATRIX-12 PROCESSOR BOARD

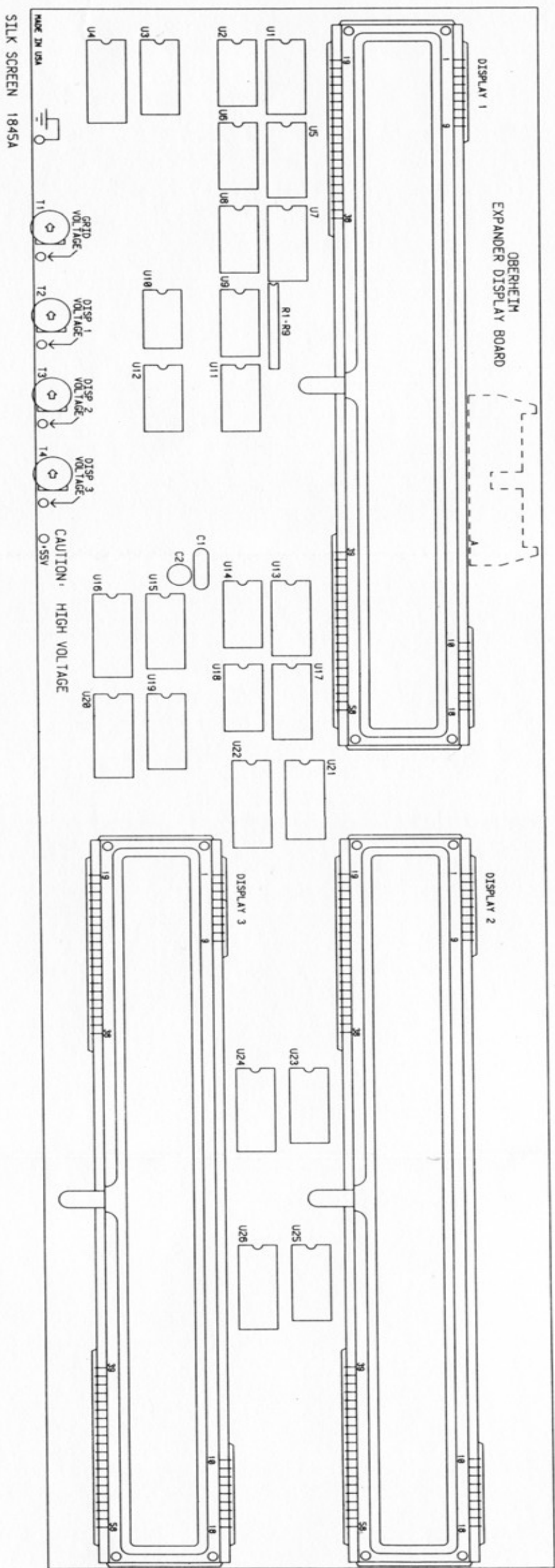
1998B



OBERHEIM-DIV OF ECC DEV CORP

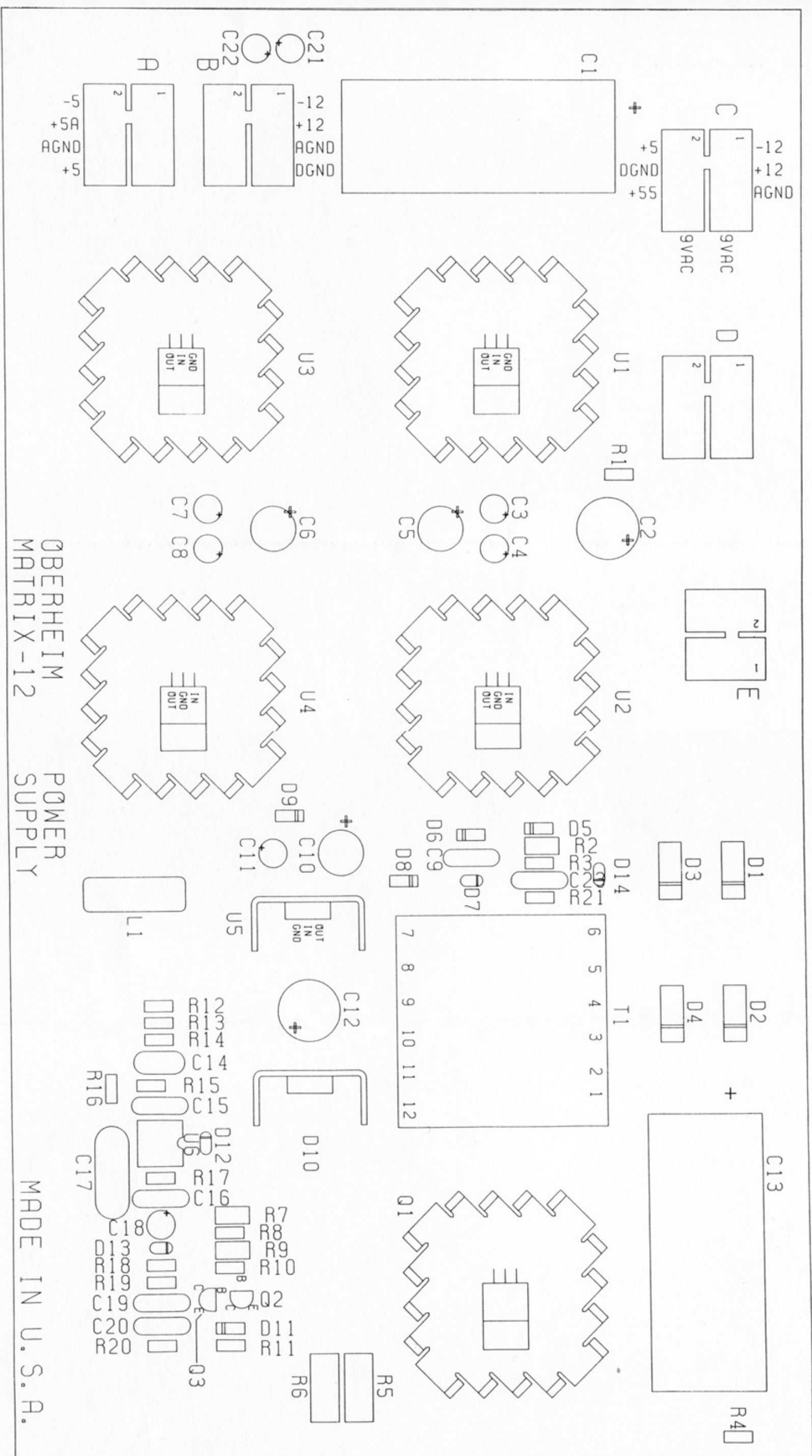
-PARTS LAYOUT-
MATRIX-12 POT BOARD

1860F



OBERHEIM - DIV. OF ECC DEV. CORP.
-PARTS LAYOUT-
MATRIX-12 DISPLAY BOARD

1848A



OBERHEIM
MATRIX-12
POWER
SUPPLY

MADE IN U. S. A.

OBERHEIM - DIV. OF ECC DEV. CORP.

-PARTS LAYOUT-
MATRIX-12 POWER SUPPLY

1/932C

ENGINEERING CHANGE ORDER

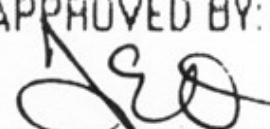
PRODUCT AFFECTED: MATRIX-12	DRAWINGS AFFECTED: NONE	ECO No. 801
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AFFECTIVITY:

AS REQUIRED IN TEST
 FUTURE PRODUCTION
 RETROFIT PRODUCTION & INVENTORY
 RETROFIT IN FIELD AS NEEDED
 DRAWING CORRECTION ONLY

REASON FOR CHANGE:

1. IMPROVE VCO 1 PULSE WIDTH TUNING.
2. ELIMINATE SMALL GLITCH IN MIDDLE OF RANDOM LFO WAVEFORMS.
3. IMPROVE VOICE BOARD REVISION RECOGNITION RELIABILITY.

WRITTEN BY: MARCUS RYLE	DATE: 3-8-85	APPROVED BY: 	DATE: 3-8-85
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DESCRIPTION OF CHANGE:

ON EACH VOICE BOARD (2):
REPLACE 2764 EPROM AT LOCATION U912 LABELED CA 1.3 0 WITH CA 1.4 0.
REPLACE 2764 EPROM AT LOCATION U914 LABELED CA 1.3 1 WITH CA 1.4 1.



ENGINEERING CHANGE ORDER

PRODUCT AFFECTED:
MATRIX-12

DRAWINGS AFFECTED:
NONE

ECO No.
802

AFFECTIVITY:

- AS REQUIRED IN TEST
 FUTURE PRODUCTION
 RETROFIT PRODUCTION & INVENTORY
 RETROFIT IN FIELD AS NEEDED
 DRAWING CORRECTION ONLY

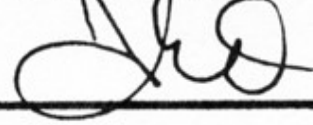
REASON FOR CHANGE:

TO ELIMINATE THE POSSIBILITY OF THE CLOCK CABLES BECOMING DISCONNECTED FROM THE PROCESSOR BOARD WHILE IN TRANSIT.

WRITTEN BY:
MARCUS RYLE

DATE:
4/3/85

APPROVED BY:



DATE:
4/3/85

DESCRIPTION OF CHANGE:

- 1. MODIFY TWO CABLE ASSEMBLIES #4 (OBERHEIM PART #750185-0) BY REMOVING ONE OF THE TWO 3 PIN MOLEX CONNECTORS ON EACH SO THAT THERE IS A CONNECTOR ON ONLY ONE END OF EACH CABLE .**
- 2. REMOVE THE 3 PIN MALE MOLEX CONNECTORS (OBERHEIM PART #219340) ON THE MATRIX-12 PROCESSOR BOARD (720102) AT CONNECTOR LOCATIONS D AND E.**
- 3. SOLDER THE BARE WIRE END OF CABLE ASSEMBLIES TO THE PROCESSOR BOARD AT LOCATIONS D AND E. THE SHIELD OF ONE OF THE CABLES SHOULD BE SOLDERED TO PIN 1 OF CONNECTOR D, AND THE CENTER CONDUCTOR OF THE SAME CABLE SHOULD BE SOLDERED TO PIN 2 OF CONNECTOR D. THE OTHER CABLE SHOULD BE CONNECTED IN THE SAME MANNER TO CONNECTOR E.**

