





**NOTES:**

**NOTES:**

- ADJUST R14 SO THAT THE CPU FREQUENCY MEASURED AT E57 PIN 8 IS 2.5 MHz MIN. TO 2.63MHz MAX. THE MODULE MAY BE OPERATED AT OTHER FREQUENCIES FOR TEST PURPOSE ONLY, SEE SHEET (K-9).
- ADJUST R15 SO THAT THE REFRESH FREQUENCY MEASURED AT E70 PIN 8 IS 625 KHz ± 5 KHz. SEE SHEET (K-9).
- TIME DELAY FROM FALLING EDGE ON E51 PIN 9 TO FALLING EDGE ON E70 PIN 4 SHOULD BE 110 TO 140 NS. R7 MAY BE REMOVED TO INCREASE THE DELAY SLIGHTLY IF LESS THAN 110 NS IS MEASURED. SEE SHEET (K-9).
- JUMPER FUNCTIONS AND CONFIGURATION ARE AS FOLLOWS:

| JUMPER SELECT FEATURES |                                    |         |                                      |
|------------------------|------------------------------------|---------|--------------------------------------|
| JUMPER                 | SELECTION WHEN INSTALLED           | OPT: ON | SHIPPING STATUS<br>(M7264 REV E) -YA |
| W1                     | RESIDENT MEMORY BANK 1             | C.O.    | R R                                  |
| W2                     | RESIDENT MEMORY BANK 0             | C.O.    | Z R                                  |
| W3                     | DISABLE EVENT LINE                 | C.O.    | R R                                  |
| W4                     | DISABLE MEMORY REFRESH             | C.O.    | R I                                  |
| W5                     | POWER UP MODE SELECT               | C.O.    | R R                                  |
| W6                     | POWER UP MODE SELECT               | C.O.    | R R                                  |
| W7                     | BIASING VOLTAGE VDATA = VPM        | F.O.    | Z I                                  |
| W8                     | BIASING VOLTAGE VCTL = VPM         | F.O.    | Z I                                  |
| W9                     | DISABLE REPLY FROM RESIDENT MEMORY | F.O.    | R I                                  |
| W10                    | DISABLE REPLY DURING REFRESH       | C.O.    | R R                                  |
| W11                    | ENABLE ON BOARD MEMORY SELECT      | C.O.    | Z R                                  |

\* INSTALLED IF RESIDENT RAM IS NOT THE SLOWEST REPLY IN THE SYSTEM.

| POWER-UP MODES |        |  |
|----------------|--------|--|
| MODE           | JUMPER | MODE SELECT                                      |
| 0              | R R    | PC AT 24 AND PS AT 20, ON BALLY MODE             |
| 1              | R Z    | OUT MICROCODE                                    |
| 2              | Z R    | PC AT 17000 FOR USER BOOT STRAP                  |
| 3              | Z Z    | SPECIAL PROCESSOR MICROCODE<br>(not implemented) |

Z: INSTALLED  
R: REMOVED  
C.O.: CUSTOMER OPTION  
F.O.: FACTORY OPTION

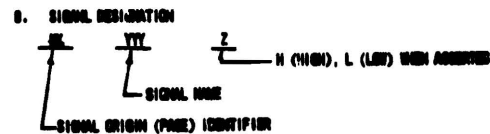
| 4K RAM     | 16 | 9  | 8 |
|------------|----|----|---|
| DEC M7264  | 3  |    |   |
| DEC 75322  | 7  | 14 |   |
| DEC 7497   | 8  | 16 |   |
| DEC 8641   | 8  | 16 |   |
| DEC 743257 | 8  | 16 |   |
| DEC 743174 | 8  | 16 |   |
| DEC 743140 | 7  | 14 |   |
| DEC 743139 | 8  | 16 |   |
| DEC 7475   | 12 | 5  |   |
| DEC 74574  | 7  | 14 |   |
| DEC 7474   | 7  | 14 |   |
| DEC 7442   | 8  | 16 |   |
| DEC 74511  | 7  | 14 |   |
| DEC 74510  | 7  | 14 |   |
| DEC 8037   | 8  | 16 |   |
| DEC 74605  | 7  | 14 |   |
| DEC 74504  | 7  | 14 |   |
| DEC 74500  | 7  | 14 |   |
| DEC 7400   | 7  | 14 |   |

END AND BY ARE USUALLY PIN 7 AND 14  
RESPECTIVELY UNLESS OTHERWISE NOTED ABOVE

10 PIN LOCATIONS

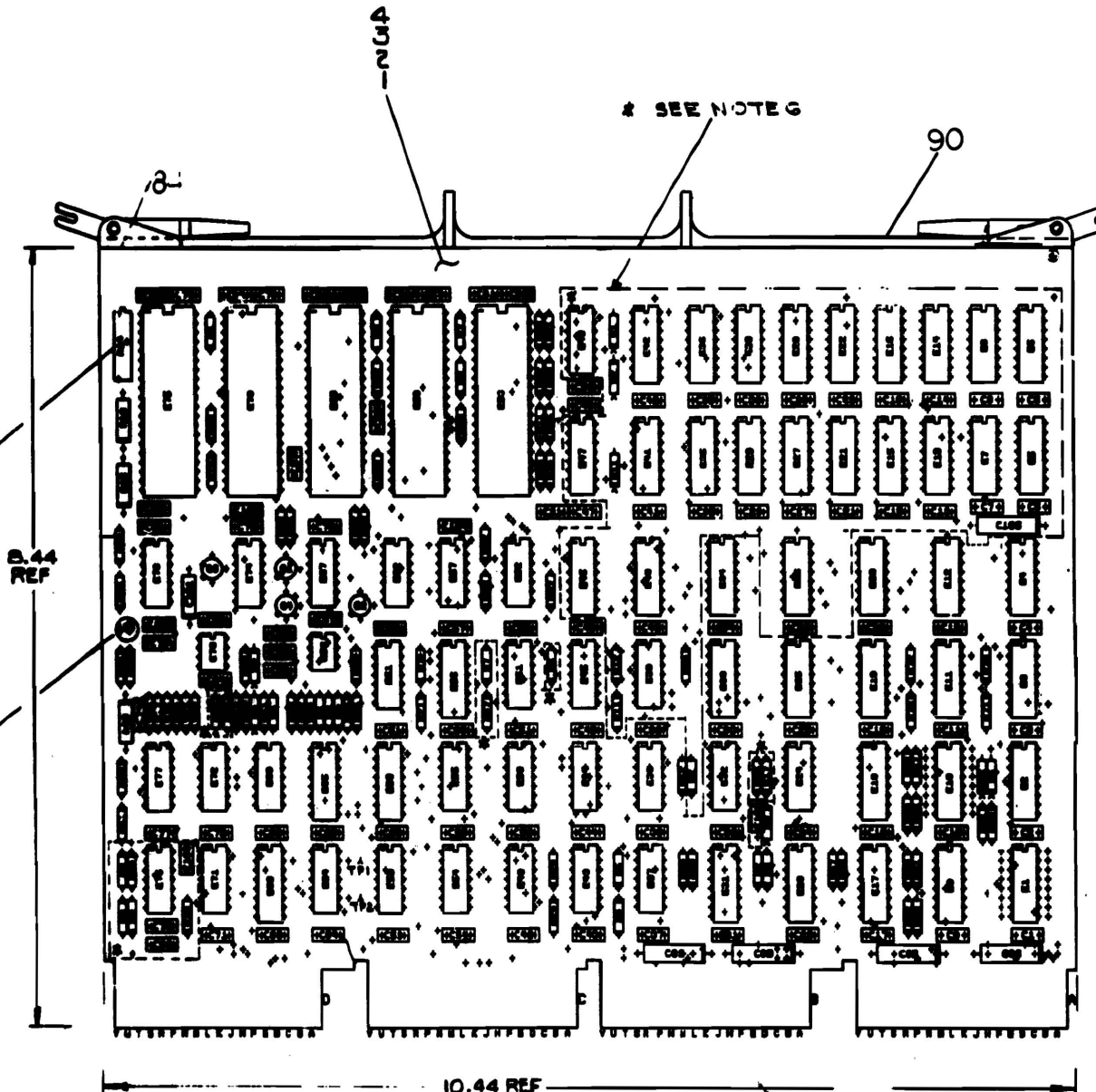
- COMPONENTS ARE NOT INSTALLED (RESERVED OPTION) UNLESS SPECIFICALLY INSTRUCTED.
- DELETED FOR M7264-YA VERSION

| ITEM#    | DESCRIPTION   |
|----------|---|
| M7264    | -0.0VDD FOR LSI CHIP SET, -0.0VDD FOR BUFFER 4E DSI |
| M7264-YA | -0.0VDD FOR LSI CHIP SET, NO ON-BOARD RAM           |
| M7264-00 | -0.0VDD FOR LSI CHIP SET, -0.0VDD FOR MODEL 4E DSI  |
| M7264-00 | SAME AS M7264 EXCEPT E50, 65, & 70                  |



| ALTERNATE PARTS CHART |               |                  |
|-----------------------|---------------|------------------|
| ITEM#                 | PREPARED PART | ALTERNATE PART   |
| 90                    | 1213113-01    | M7264-00 AND -01 |
| 9, 10                 | 100800-00     | 100800-01        |

- THE 23001C3 IS AN ALLOWABLE SUBSTITUTION FOR THE 23002C4 IN VARIATIONS M7264, M7264-00 AND M7264-YA. THE 23002C4 ONLY MUST BE USED IN THE M7264-00 AND M7264-YB.



SEE NOTE 2

SEE NOTE 1

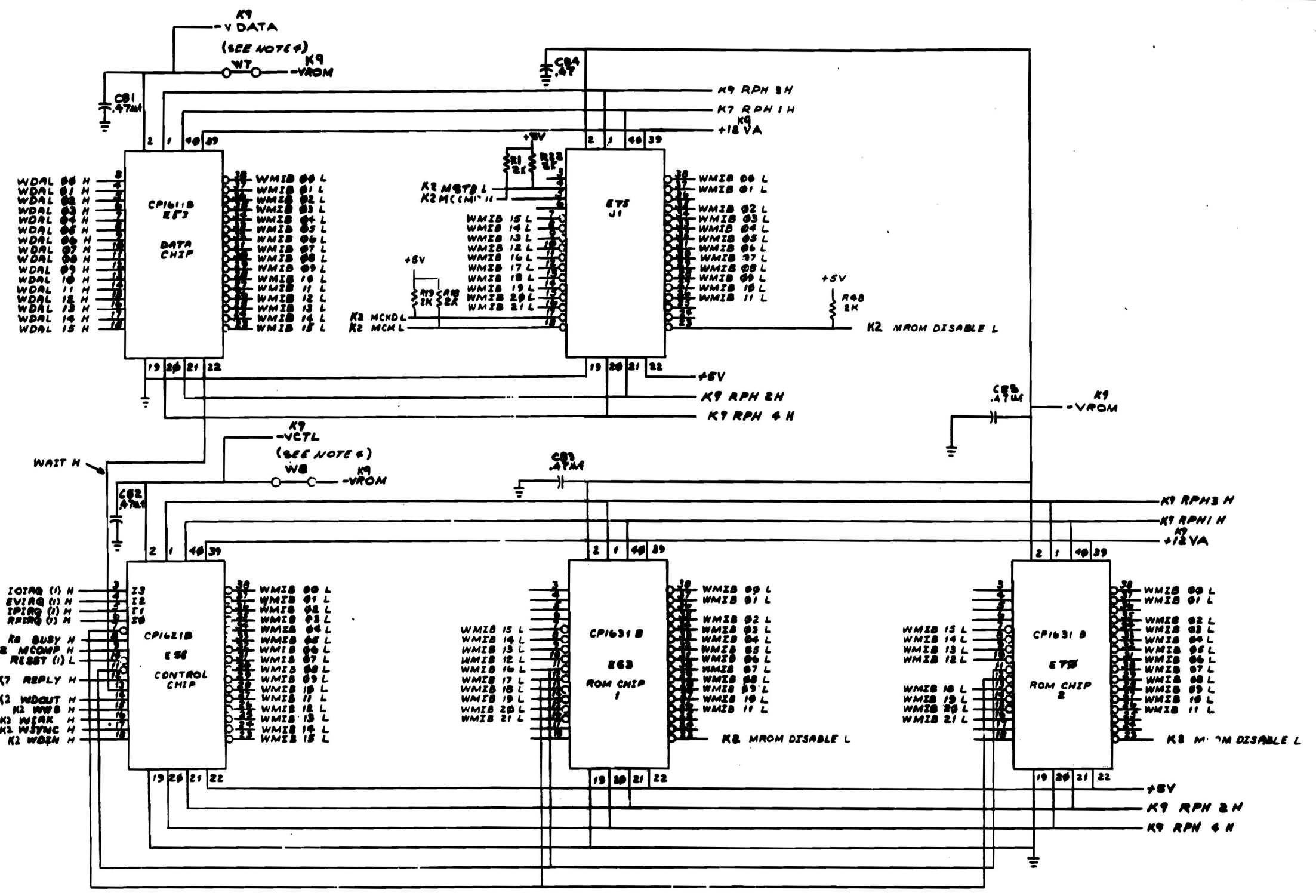
| QTY                            | REF. DESIGNATION | DESCRIPTION | PART NO. | ITEM NO. |
|--------------------------------|------------------|-------------|----------|----------|
| PARTS LIST                     |                  |             |          |          |
| ETCH BOARD REV. E              |                  |             |          |          |
| <b>digital</b>                 |                  |             |          |          |
| TITLE LSI-11 CPU MODULE        |                  |             |          |          |
| PART NUMBER ASSY               |                  |             |          |          |
| SEMICONDUCTOR CONVERSION CHART |                  |             |          |          |
| DEC NO.                        | EIA NO.          | DEC NO.     | EIA NO.  |          |
| D/C S M7264-0-1 V              |                  |             |          |          |

D/C S M7264-0-1 V



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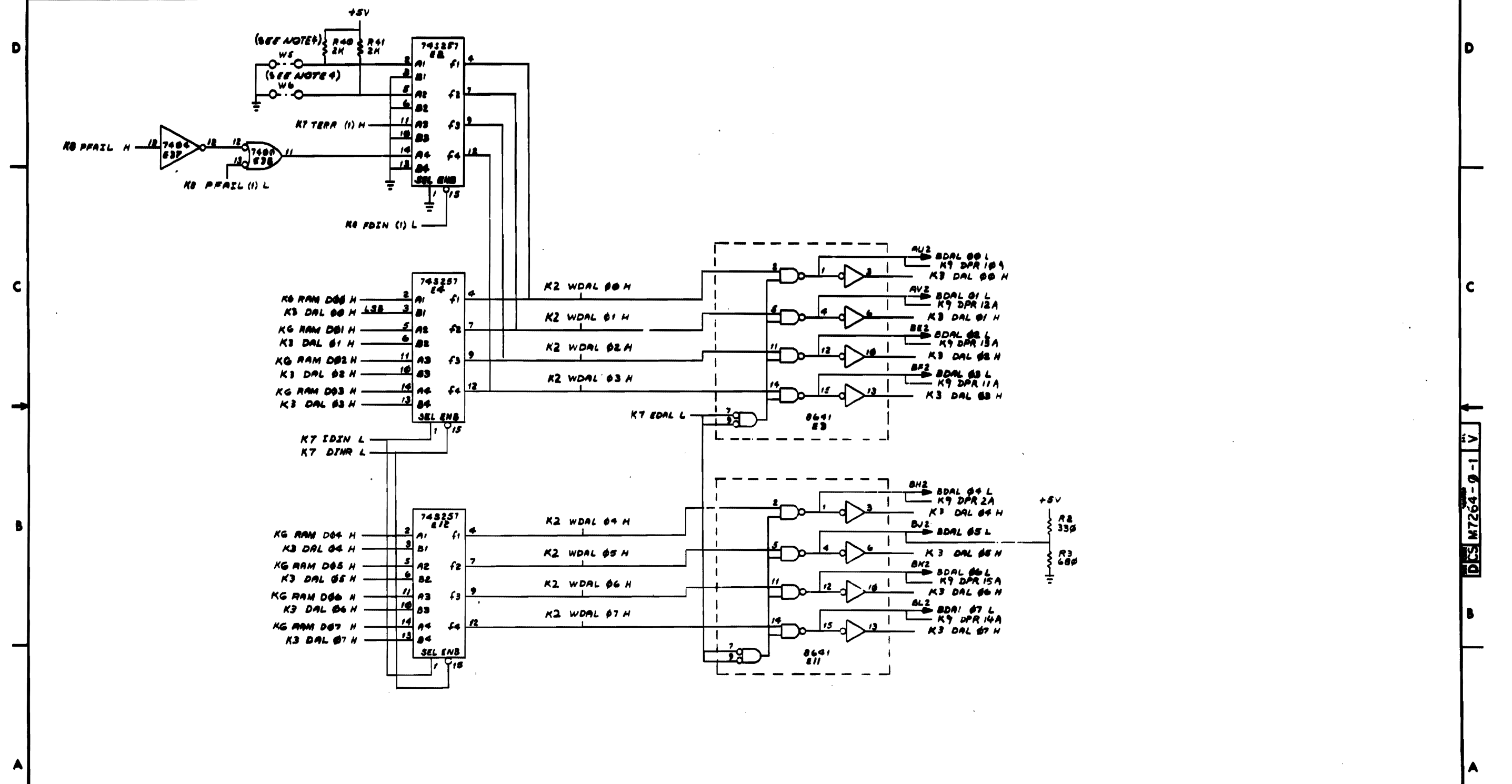
PREFIX "K2" APPLIES TO ALL WDAL WMIB SIGNALS



- K8 IOTAB (1) H
- K8 EVIAB (1) H
- K8 IPIAB (1) H
- K8 RPIAB (1) H
- K8 BUSY H
- K8 MCOMP H
- K8 RESET (1) L
- K7 REPLY H
- K2 WDOUT H
- K2 WSRB H
- K2 WSRK H
- K2 WSRAC H
- K2 WSRN H

| REVISED |            |      |
|---------|------------|------|
| CHK     | CHANGE NO. | REV. |
|         |            |      |

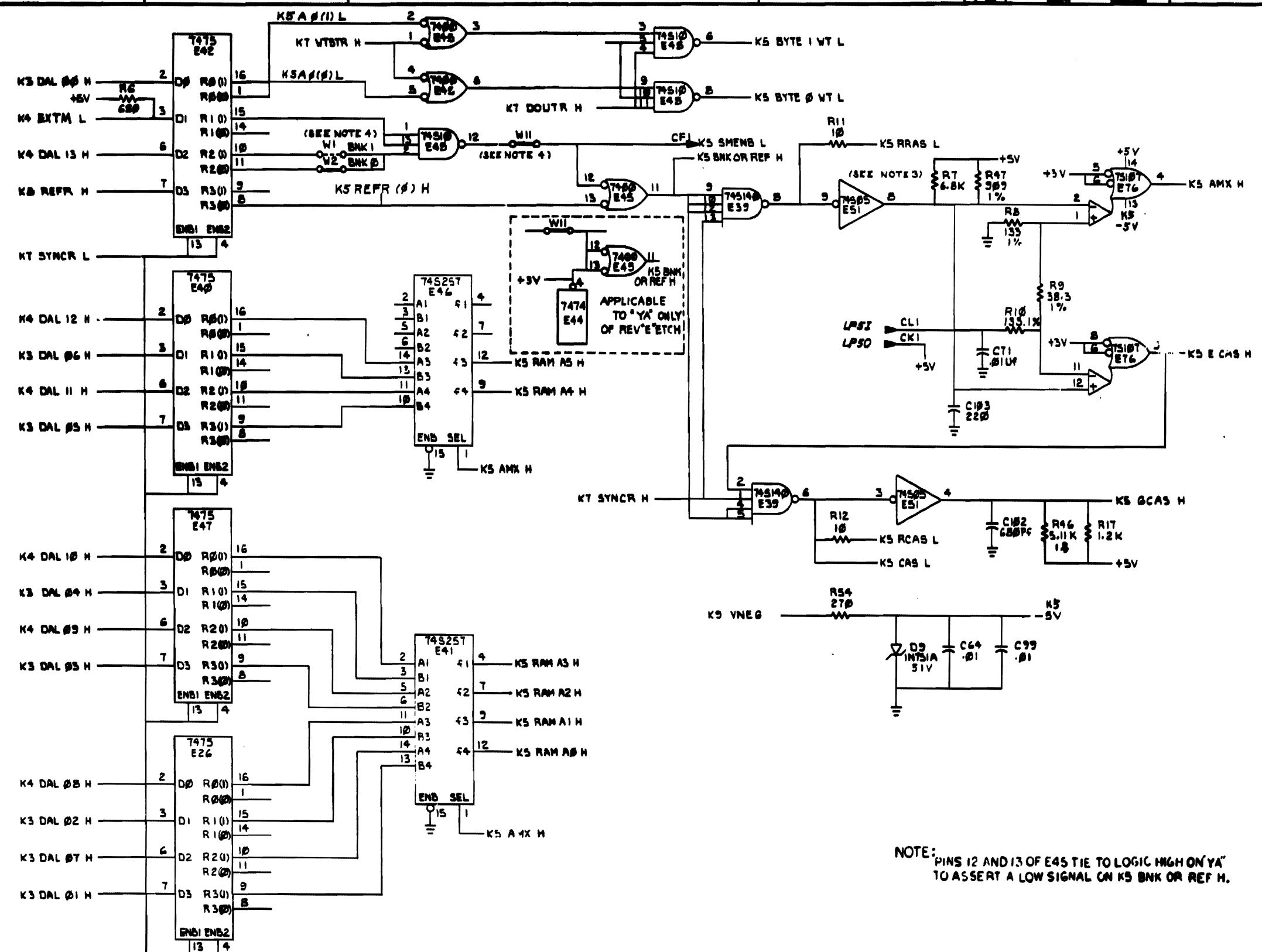
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 ONLY BY YOUR ORGANIZATION.



| REVISIONS |           |     |
|-----------|-----------|-----|
| CHK       | CHANGE NO | REV |
|           |           |     |
|           |           |     |

DCS M7264-0-1 V

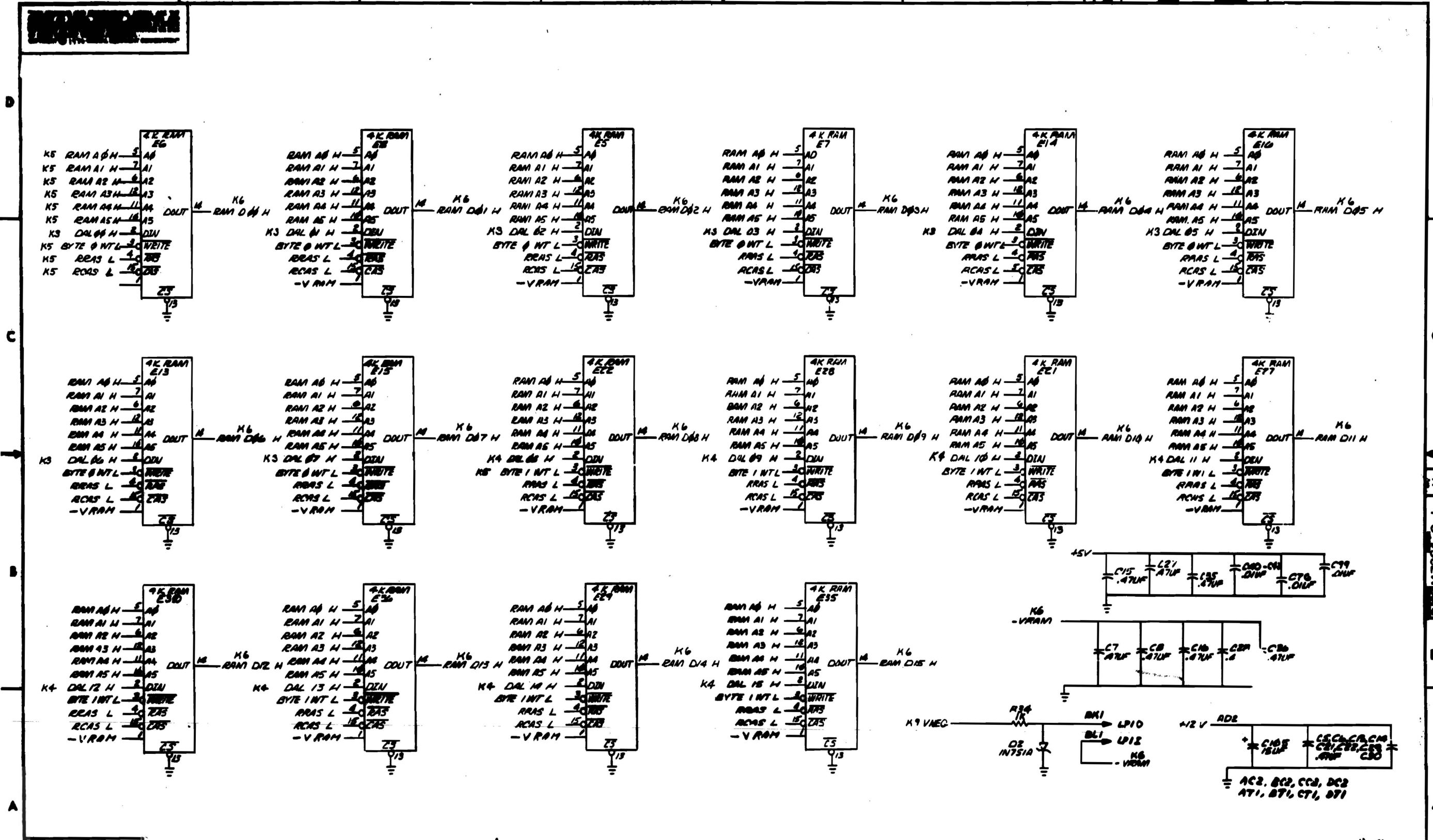




NOTE: PINS 12 AND 13 OF E45 TIE TO LOGIC HIGH ON "YA" TO ASSERT A LOW SIGNAL ON K5 BNK OR REF H.

CIRCUIT SCHEMATIC ON THIS SHEET IS DELETED FOR "YA" VERSION

|            |  |  |  |  |  |  |  |  |  |               |  |   |
|------------|--|--|--|--|--|--|--|--|--|---------------|--|---|
| CPU MODULE |  |  |  |  |  |  |  |  |  | DCS M7264-0-1 |  | V |
|------------|--|--|--|--|--|--|--|--|--|---------------|--|---|



CIRCUIT SCHEMATIC ON THIS SHEET IS DELETED FOR 'Y' VERSION







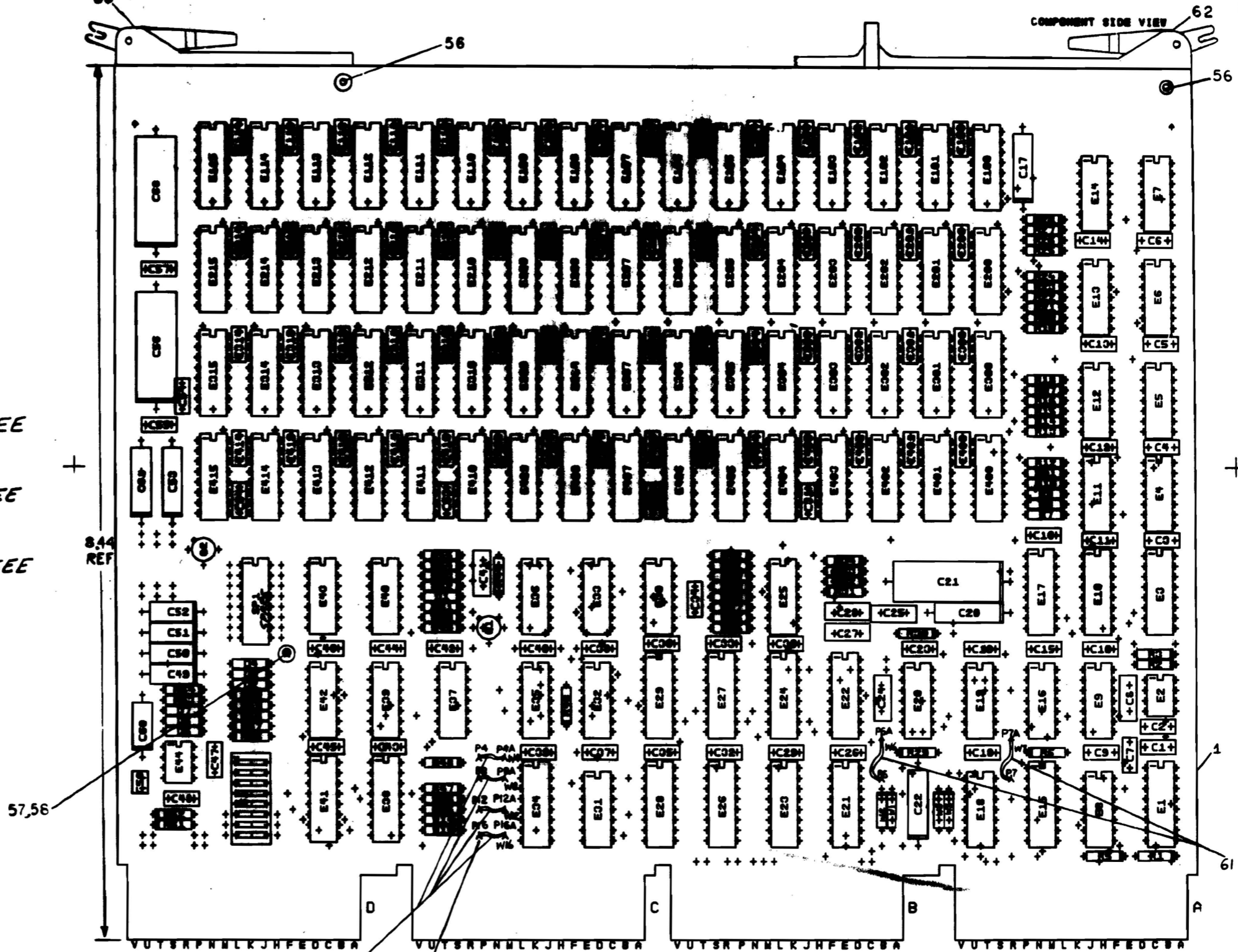






MODULE  
VARIATION:  
M7955-AD

NOTE: 1. FOR M7955-AC, SEE SHEET 2.  
2. FOR M7955-AB, SEE SHEET 3.  
3. FOR M7955-AA, SEE SHEET 4.



NOTES: 4. M7955-AD = M7955-YDEYL

FOR PL, SEE B-PL-M7955-0-0

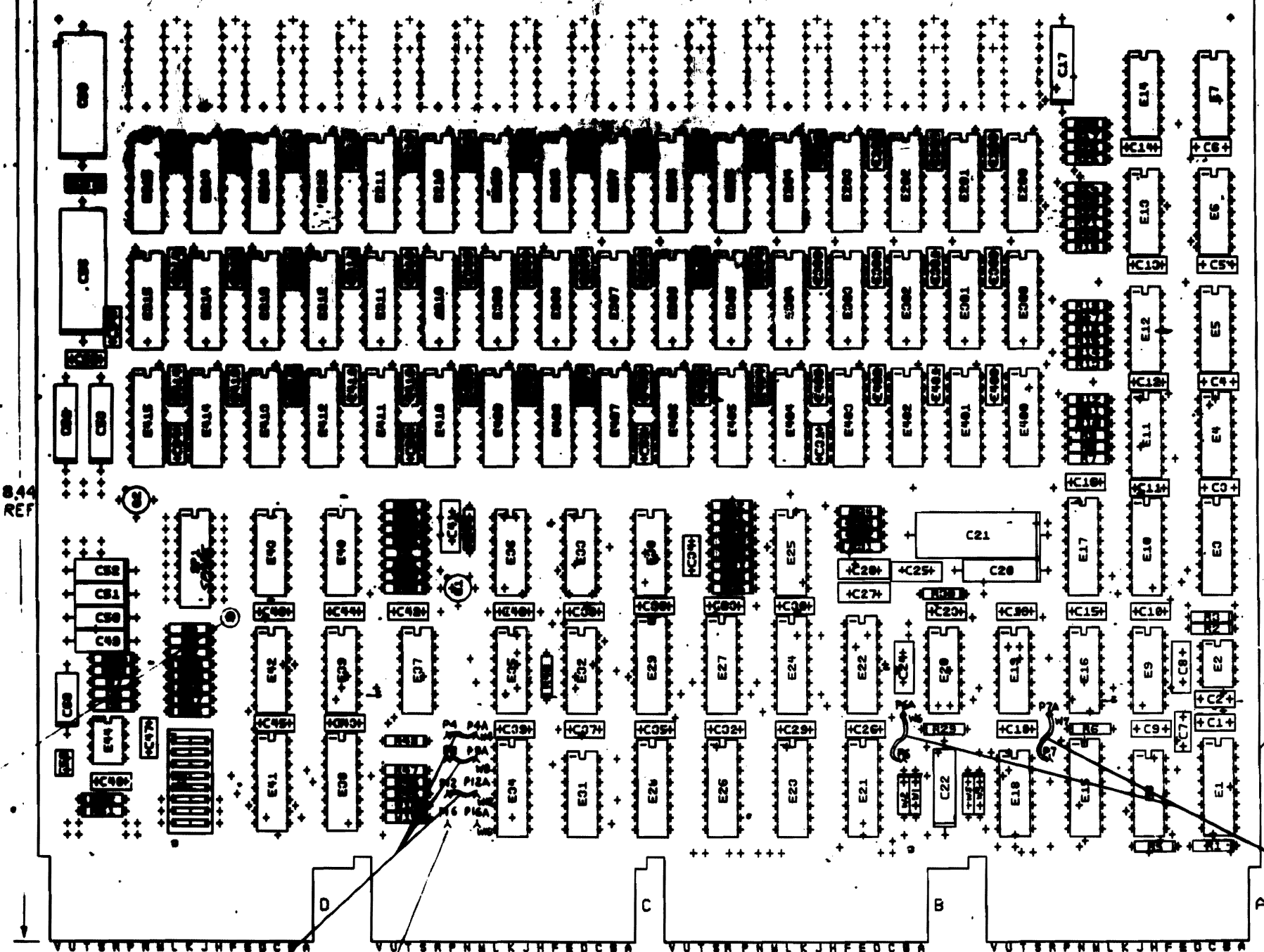
|                                     |
|-------------------------------------|
| ETDI REV. C                         |
| P.C. DESIGN DATA SHEET REV. CL / CM |

| SIGNATURES             | DATE     |
|------------------------|----------|
| DRN. R SULLIVAN        | 7-2-76   |
| CHK'D. [Signature]     | 8/2/76   |
| ENG. [Signature]       | 11/9/76  |
| PROJ. ENG. [Signature] | 11/22/76 |
| SCHEM. [Signature]     | 1/16/77  |
| INT. [Signature]       | 1/16/77  |

|                   |
|-------------------|
| digital           |
| TITLE MSVII-C LSI |
| MOS MEMORY        |
| SIZE CODE         |
| 0 U A M7955-0-0 B |

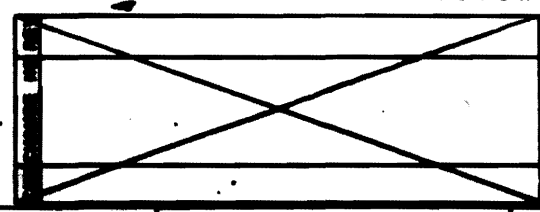
COMPONENT SIDE VIEW

MODULE VARIATION: M7955-AC



5758

NOTES: 1. M7955-AC & M7955-X & Y & Z



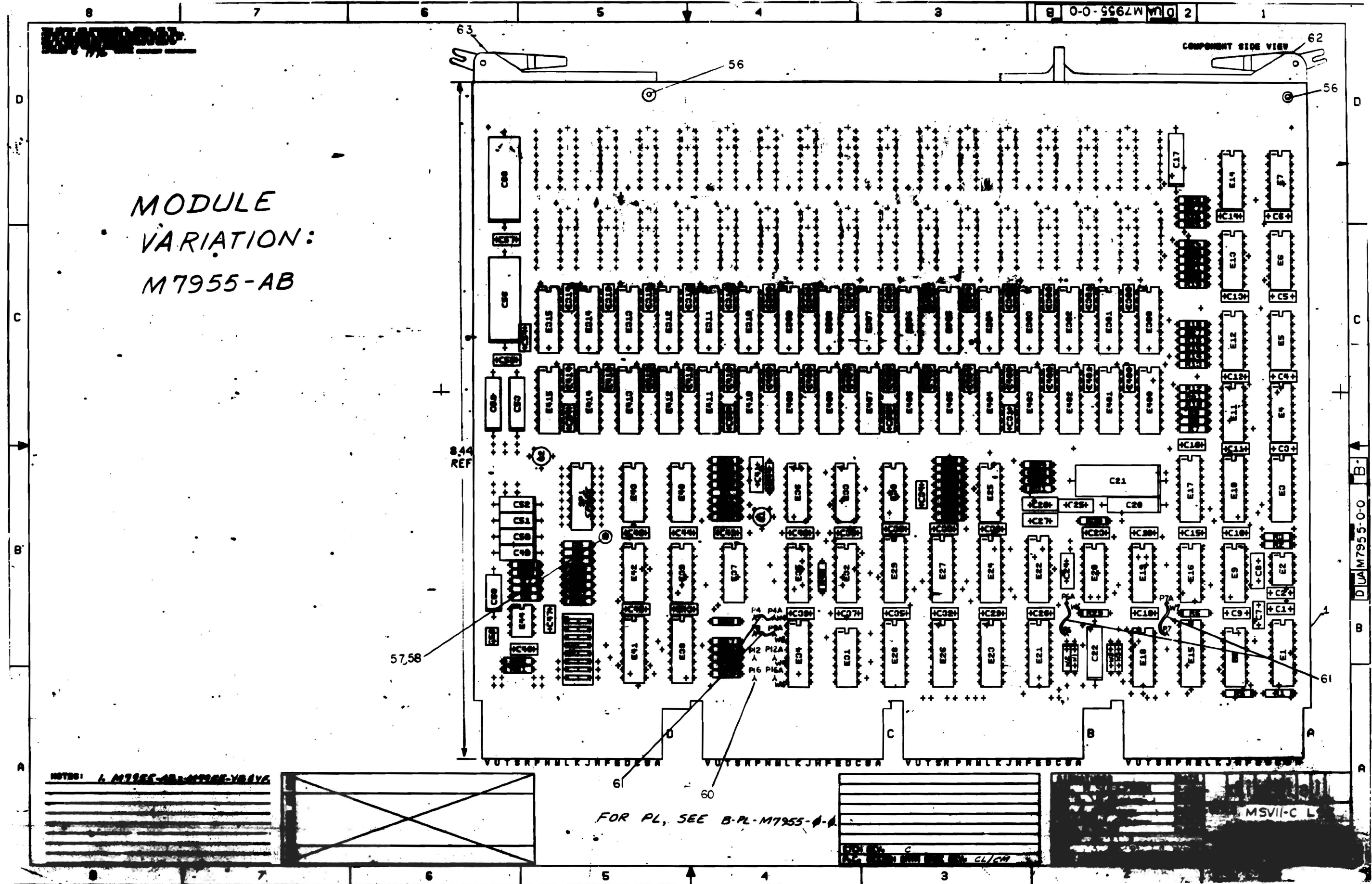
FOR PL, SEE B-PL-M7955-0-0

|                                  |
|----------------------------------|
| ETCH REV. C                      |
| P.C. DESIGN DATA DATE REV. 04/68 |

|                               |  |      |                   |
|-------------------------------|--|------|-------------------|
| SIGNATURES                    |  | DATE | digital           |
| DRN. R. SULLIVAN              |  |      |                   |
| CHK'D.                        |  |      | TITLE MSVII-C LSI |
| ENG.                          |  |      | MOS MEMORY        |
| PROJ. ENG.                    |  |      | SIZE CODE NUMBER  |
| SCALE                         |  |      | P UA M7955-0-0 B  |
| SHT. 2 OF 9                   |  |      |                   |
| NEXT DRAWING ASSY-BDD-M7955-0 |  |      |                   |

U A M7955-0-0 B

MODULE  
VARIATION:  
M7955-AB



NOTES: 1. M7955-AB-M7955-ABAY6

FOR PL, SEE B-PL-M7955-4-4

MSVII-C L



8

7

6

5

4

3

0-0-5564W M7955 2

1

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L1

LAYER 1

5012203C  
M001032  
M7055

D

CSMABCDEFGHIJKLMNRS

SIDE 1

E115 E114 E113 E112 E111 E110 E109 E108 E107 E106 E105 E104 E103 E102 E101 E100 MSV11-C LSI  
MOS MEMORY

C

B

A

D

C

B

A

DUA M7955-0-0 B

|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|

|       |         |       |   |      |    |        |           |      |   |
|-------|---------|-------|---|------|----|--------|-----------|------|---|
| TITLE | MSV11-C | SIZE  | D | CODE | UA | NUMBER | M7955-0-0 | REV. | B |
| SCALE | 2/1     | SHEET | 5 | OF   | 9  | DIST.  |           |      |   |

8

7

6

5

4

3

2

1

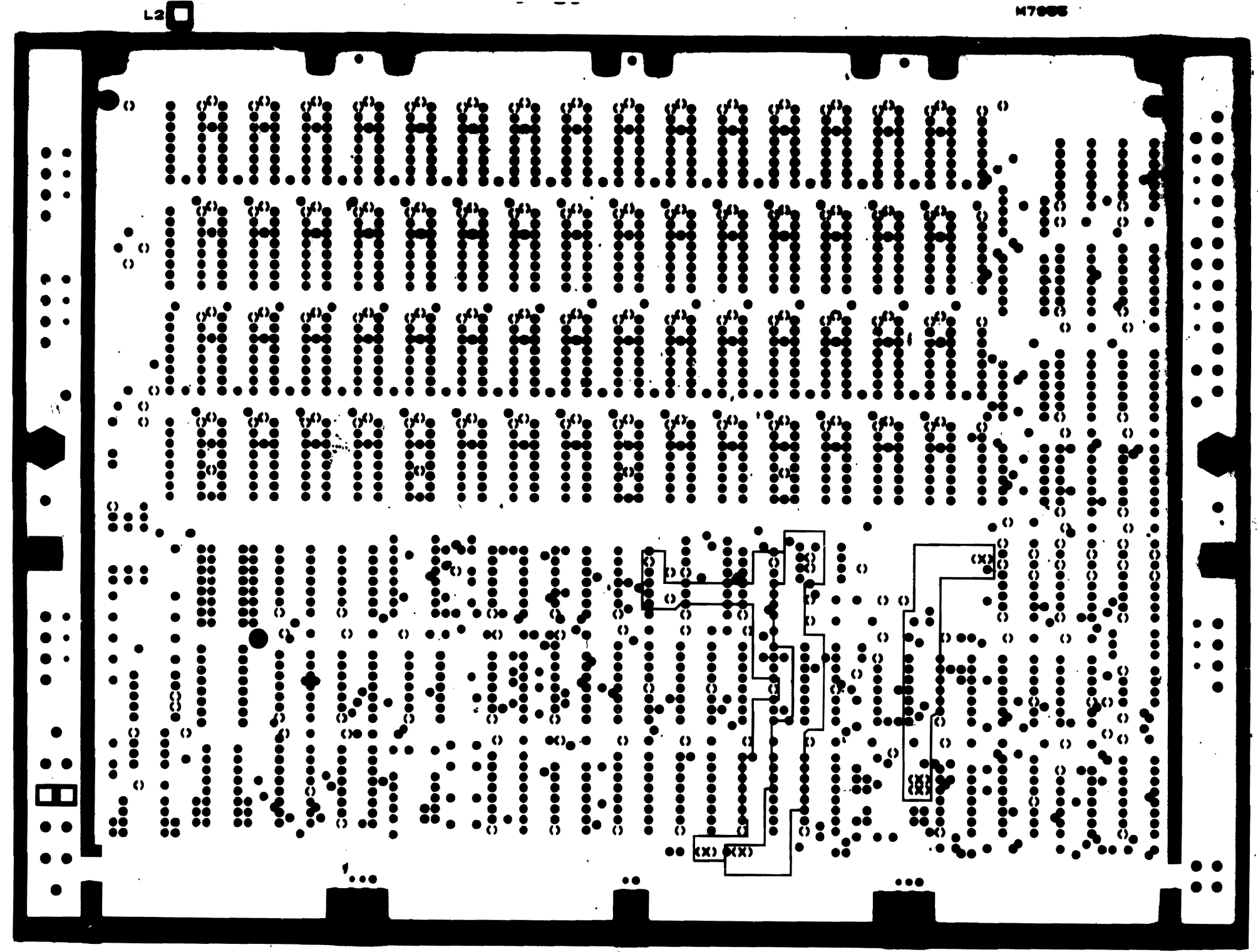
8 7 6 5 4 3 2 1

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9-0-5564W 2

D  
C  
B  
A

D  
C  
B  
A



|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |

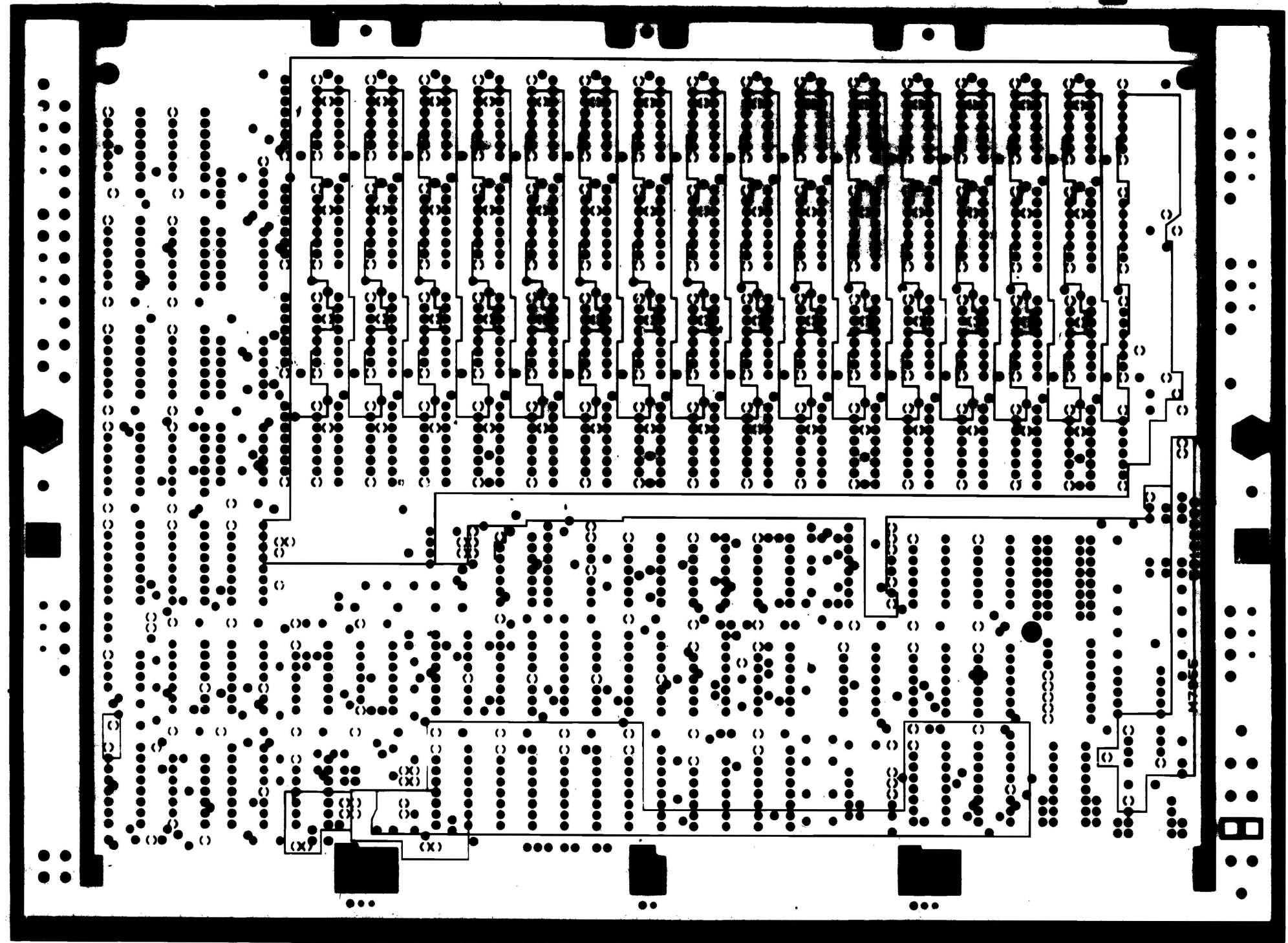
8 7 6 5 4 3 2 1

|       |                           |           |       |        |            |      |   |
|-------|---------------------------|-----------|-------|--------|------------|------|---|
| TITLE | MSVII-C LSI<br>MOS MEMORY | SIZE CODE | D U/A | NUMBER | M 7955-0-0 | REV. | B |
| SCALE | 2/1                       | SHEET     | 6     | OF     | 9          | DIST |   |

DVA M7955-0-0 B

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DIA M7955-0-0 2

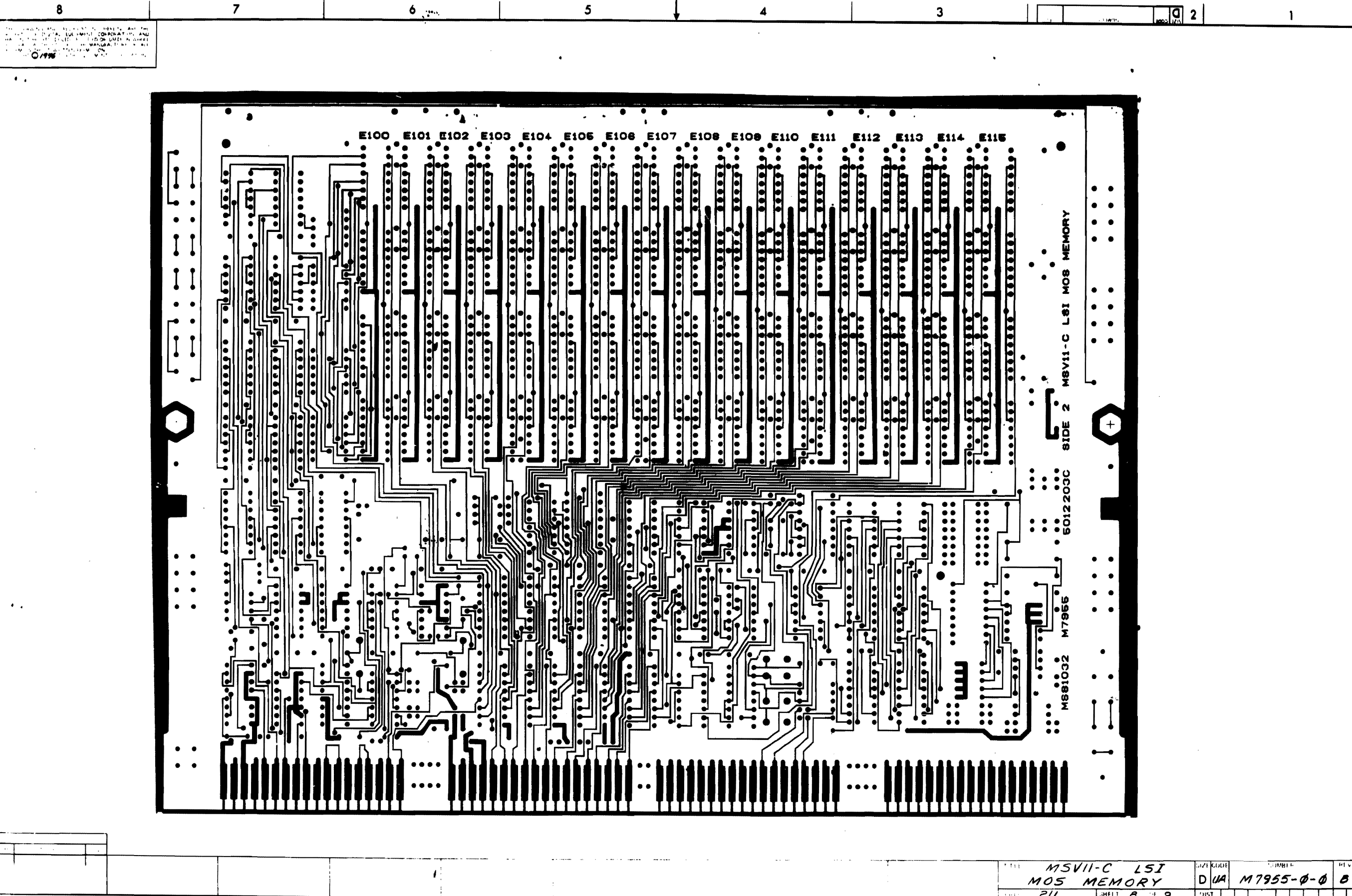


D  
C  
B  
A

D  
C  
B  
A

DIA M7955-0-0 B

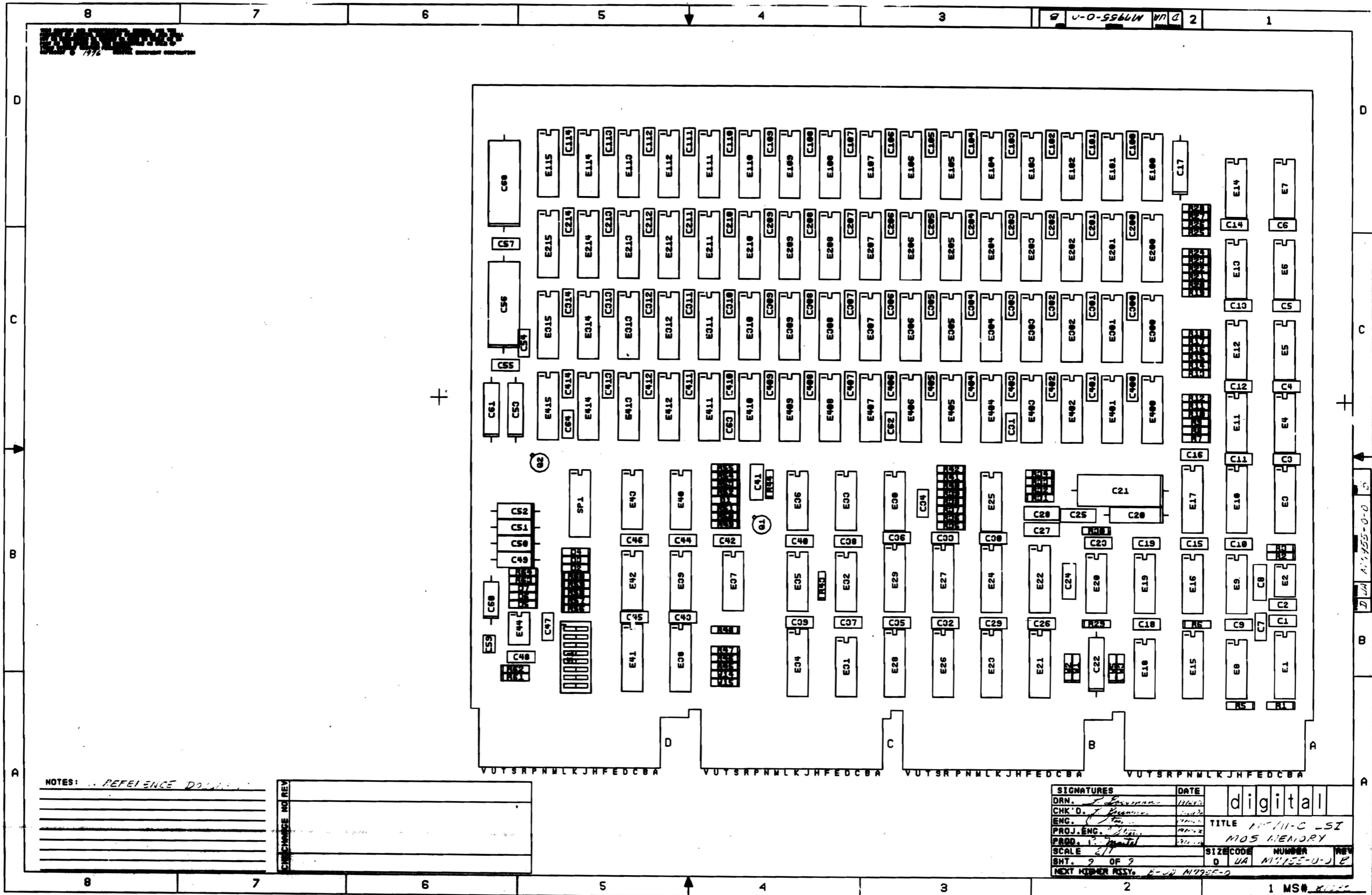
|             |              |           |           |      |
|-------------|--------------|-----------|-----------|------|
| MSV11-C LSI |              | SIZE CODE | NUMBER    | REV. |
| MOS MEMORY  |              | D UA      | M7955-0-0 | B    |
| 2/1         | SHEET 7 OF 9 | DATE      |           |      |



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 DATE 08-14-2011 BY 60322/UC/BAW/STP/MLP  
 C/198

|       |                           |           |      |        |           |     |   |
|-------|---------------------------|-----------|------|--------|-----------|-----|---|
| FILE  | MSVII-C LSI<br>MOS MEMORY | DATE CODE | D UA | NUMBER | M7955-0-0 | REV | 0 |
| SHEET | 2/1                       | SHEET     | 8    | 9      |           |     |   |

DUA M7955-0-0



NOTES: REFERENCE DRAWING

| CHANGE NO | REV |
|-----------|-----|
|           |     |
|           |     |
|           |     |
|           |     |
|           |     |

| SIGNATURES      |                       | DATE     | digital                            |
|-----------------|-----------------------|----------|------------------------------------|
| DRN.            | <i>[Signature]</i>    | 11/23/72 |                                    |
| CHK'D.          | <i>[Signature]</i>    | 11/23/72 |                                    |
| ENG.            | <i>[Signature]</i>    | 11/23/72 |                                    |
| PROJ. ENG.      | <i>[Signature]</i>    | 11/23/72 |                                    |
| PROD.           | <i>[Signature]</i>    | 11/23/72 |                                    |
| SCALE           | 1:1                   |          | TITLE <i>1111-C LSI MOS MEMORY</i> |
| SHT.            | 9 OF 9                |          | SIZE CODE 0                        |
| NEXT HIGH ASSY. | <i>B-1111-N1955-0</i> |          | NUMBER <i>UA N1955-0-0</i>         |

DUA A1955-0-0 5

DUA N1955-0-0 2

# DIGITAL EQUIPMENT CORPORATION

## PARTS LIST

MADE BY *S. BELTZER* CHECKED *J. H. Kelly* SECTION *1*  
 DATE *10 OCT 76* DATE *10/19/76*  
 ENG *J. Stearns* PROD *R. Mente* ISSUED SECTION *1*  
 DATE *11/18/76* DATE *11/19/76*

### QUANTITY / VARIATION

### NOTES:

\*M7955-AA = M7955-YA, OR M7955-YE  
 \*M7955-AB = M7955-YB, OR M7955-YF  
 \*M7955-AC = M7955-YC, OR M7955-YH  
 \*M7955-AD = M7955-YD, OR M7955-YJ

| ITEM NO. | DRAWING NO.      | PART NO.    | DESCRIPTION             | *M7955-AA |          | *M7955-AB |          | *M7955-AC |          | *M7955AD |          | REF DESIGNATION   |
|----------|------------------|-------------|-------------------------|-----------|----------|-----------|----------|-----------|----------|----------|----------|---|
|          |                  |             |                         | M7955-YA  | M7955-YE | M7955-YB  | M7955-YF | M7955-YC  | M7955-YH | M7955-YD | M7955-YJ |   |
|          | D-UA-M7955-0-0   |             | UNIT ASSY               | REF       | REF      | REF       | REF      | REF       | REF      | REF      | REF      |   |
|          | D-CS-M7955-0-1   |             | CIRCUIT SCHEMATIC       | REF       | REF      | REF       | REF      | REF       | REF      | REF      | REF      |   |
|          | B-ME-M7955-0-6   |             | MODULE HISTORY          | REF       | REF      | REF       | REF      | REF       | REF      | REF      | REF      |   |
| 1        | D-MD-5012203-0-0 | 5012203     | ETCHED CIRCUIT BOARD    | 1         | 1        | 1         | 1        | 1         | 1        | 1        | 1        |   |
| 2        |                  | 10-00016    | CAP 100 PF 100V 5% DM   | 2         | 2        | 2         | 2        | 2         | 2        | 2        | 2        | C25,C41   |
| 3        |                  | 10-01610-01 | CAP .01MF 100V DISC     | 28        | 28       | 28        | 28       | 28        | 28       | 28       | 28       | C2 Thru C7,C9 Thru C16, C18,C19,C23, C30,C33,C36 Thru C40,C42,C44,C46,C48   |
| 4        |                  | 10-02627    | CAP 2.2MF 20V 10% TANT  | 5         | 5        | 5         | 5        | 5         | 5        | 5        | 5        | C49,C50,C51,C52,C60   |
| 5        |                  | 10-10274    | CAP .22MF 50V CER       | .         | .        | .         | .        | .         | .        | 76       | 76       | C26,C29,C31,C32,C34,C35,C43,C45,C47,C54, C55,C57,C62 Thru C64,C100 Thru C114, C200 Thru C214,C300 Thru C314,C400 Thru C414,C1 |
|          |                  |             |                         | .         | .        | .         | .        | 61        | 61       | .        | .        | C26,C29,C31,C32,C34,C35,C43,C45,C47,C54, C55,C57,C62 Thru C64,C200 Thru C214, C300 Thru C314,C400 Thru C414,C1                |
|          |                  |             |                         | 46        | 46       | 46        | 46       | .         | .        | .        | .        | C26,C29,C31,C32,C34,C35,C43,C45,C47, C54,C55,C57,C62 Thru C64,C300 Thru C314, C400 Thru C414,C1                               |
| 6        |                  | 10-11740    | CAP 5600PF 50V, 10% CER | 1         | 1        | 1         | 1        | 1         | 1        | 1        | 1        | C59   |
| 7        |                  | 10-12084-01 | CAP 8MF 25V AL.EL.      | 5         | 5        | 5         | 5        | 5         | 5        | 5        | 5        | C17,C20,C22,C53,C61   |
| 8        |                  | 10-12121    | CAP 220PF 100V 1% DM    | 4         | 4        | 4         | 4        | 4         | 4        | 4        | 4        | C8,C24,C27,C28  |
| 9        |                  | 10-12219    | CAP 47MF 30V AL.EL.     | 3         | 3        | 3         | 3        | 3         | 3        | 3        | 3        | C21, C56,C68  |

E.C.O. NO. \_\_\_\_\_

|  |                                 |                            |                                      |            |                     |           |
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|  |                                 | SHEET 1 OF 5               | INSERTION PARTS LIST DATA BASE REV B |            |                     |           |

# DIGITAL EQUIPMENT CORPORATION

## PARTS LIST

MADE BY *S. BELTZER*  
 DATE *10 OCT 76*  
 ENG *J. S. Johnson*  
 DATE *11/18/76*

CHECKED *L. R. Jolly*  
 DATE *11/19/76*  
 PROD *R. Martel*  
 DATE *11/19/76*

SECTION *1*  
 ISSUED SECTION *1*

### QUANTITY / VARIATION

### NOTES:

\*M7955-BA = M7955-YA, or M7955-YE  
 \*M7955-BB = M7955-YB, or M7955-YF  
 \*M7955-BC = M7955-YC, or M7955-YH  
 \*M7955-AD, = M7955-YC, or M7955-YJ

| ITEM NO. | DRAWING NO. | PART NO.   | DESCRIPTION                | QUANTITY / VARIATION |          |          |          |          |          |          |          | REF DESIGNATION                      |
|----------|-------------|------------|----------------------------|----------------------|----------|----------|----------|----------|----------|----------|----------|--------------------------------------|
|          |             |            |                            | M7955-AA             | M7955-AB | M7955-AC | M7955-AD | M7955-BA | M7955-BB | M7955-BC | M7955-BD |                                      |
| 10       |             | 11-05275   | DIODE D672                 | 6                    | 6        | 6        | 6        | 6        | 6        | 6        | 6        | D1, D2, D3, D4, D5, D6               |
| 11       |             | 11-10994   | DIODE 1N751A 5.1V 5% ZENER | 1                    | 1        | 1        | 1        | 1        | 1        | 1        | 1        | D7                                   |
| 12       |             | 12-0164-04 | SWITCH 8 SPST DIP SWITCH   | 1                    | 1        | 1        | 1        | 1        | 1        | 1        | 1        | S1                                   |
| 13       |             | 13-00247   | RES. 120, 1/4W 5% CC       | 2                    | 2        | 2        | 2        | 2        | 2        | 2        | 2        | R63, R64                             |
| 14       |             | 13-00295   | RES. 330, 1/4W 5% CC       | 1                    | 1        | 1        | 1        | 1        | 1        | 1        | 1        | R51                                  |
| 15       |             | 13-00365   | RES. 1K, 1/4W 5% CC        | 5                    | 5        | 5        | 5        | 5        | 5        | 5        | 5        | R37, R42, R43, R49, R50              |
| 16       |             | 13-00447   | RES. 4.7K 1/4W 5% CC       | 11                   | 11       | 11       | 11       | 11       | 11       | 11       | 11       | R6, R29, R45, R46, R48, R56 Thru R60 |
| 17       |             | 13-00479   | RES. 10K, 1/4W 5% CC       | 2                    | 2        | 2        | 2        | 2        | 2        | 2        | 2        | R1, R5                               |
| 18       |             | 13-00271   | RES. 220, 1/4W 5% CC       | 1                    | 1        | 1        | 1        | 1        | 1        | 1        | 1        | R52                                  |
| 19       |             | 13-02124   | RES. 18, 1/4W 5% CC        | 26                   | 26       | 26       | 26       | 26       | 26       | 26       | 26       | R8, Thru R28, R30, R31, R44, R53     |
| 20       |             | 13-02644   | RES. 226, 1/4W 1% MF       | 1                    | 1        | 1        | 1        | 1        | 1        | 1        | 1        | R39                                  |
| 21       |             | 13-02871   | RES. 1.21K, 1/4W 1% MF     | 2                    | 2        | 2        | 2        | 2        | 2        | 2        | 2        | R32, R61                             |
| 22       |             | 13-02941   | RES. 14.7K 1/4W 1% MF      | 2                    | 2        | 2        | 2        | 2        | 2        | 2        | 2        | R33, R54                             |
| 23       |             | 13-02956   | RES. 196, 1/4W 1% MF       | 1                    | 1        | 1        | 1        | 1        | 1        | 1        | 1        | R41                                  |
| 24       |             | 13-02957   | RES. 121, 1/4W 1% MF       | 1                    | 1        | 1        | 1        | 1        | 1        | 1        | 1        | R35                                  |
| 25       |             | 13-03044   | RES. 100K, 1/4W 1% MF      | 1                    | 1        | 1        | 1        | 1        | 1        | 1        | 1        | R3                                   |
| 26       |             | 13-03064   | RES. 75.0 1/4W 1% MF       | 1                    | 1        | 1        | 1        | 1        | 1        | 1        | 1        | R40                                  |
| 27       |             | 13-03148   | RES. 31.6 1/4W 1% MF       | 1                    | 1        | 1        | 1        | 1        | 1        | 1        | 1        | R36                                  |

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TITLE  
**MSV1-C LSI MOS MEMORY**

ASSY NO.  
**D-UA-M7955-B-6**

|          |           |                  |          |
|----------|-----------|------------------|----------|
| SIZE     | CODE      | NUMBER           | REV.     |
| <b>B</b> | <b>PL</b> | <b>M7955-0-0</b> | <b>B</b> |

**DIGITAL EQUIPMENT CORPORATION**

**PARTS LIST**

MADE BY *S. Carter* CHECKED *J. A. Dwyer* SECTION *1*  
 DATE *10 Oct 76* DATE *11/18/76*  
 ENG *J. Stephens* PROD *R. Martel* ISSUED SECTION *1*  
 DATE *11/18/76* DATE *11/19/76*

**QUANTITY / VARIATION**

**NOTES:**

\*M7955-AA = M7955-YA, OR M7955-YB  
 \*M7955-AB = M7955-YB, OR M7955-YT  
 \*M7955-AC = M7955-YC, OR M7955-YE  
 \*M7955-AD = M7955-YD, OR M7955-YJ

| ITEM NO. | DRAWING NO. | PART NO.    | DESCRIPTION              | *M7955-AA |    | *M7955-AB |    | *M7955-AC |    | *M7955-AD |    | REF DESIGNATION       |
|----------|-------------|-------------|--------------------------|-----------|----|-----------|----|-----------|----|-----------|----|-----------------------|
|          |             |             |                          | YA        | YE | YB        | YT | YC        | YE | YD        | YJ |                       |
| 28       |             | 13-03303    | RES. 2.61K, 1/4W 1% MF   | 2         | 2  | 2         | 2  | 2         | 2  | 2         | 2  | R55, R62              |
| 29       |             | 13-03313    | RES. 12.1K, 1/4W 1% MF   | 1         | 1  | 1         | 1  | 1         | 1  | 1         | 1  | R2                    |
| 30       |             | 13-04863    | RES. 316, 1/4W 1% MF     | 1         | 1  | 1         | 1  | 1         | 1  | 1         | 1  | R38                   |
| 31       |             | 13-04870    | RES. 6.81K, 1/4W 1% MF   | 1         | 1  | 1         | 1  | 1         | 1  | 1         | 1  | R34                   |
| 32       |             |             |                          |           |    |           |    |           |    |           |    |                       |
| 33       |             | 15-03100    | TRANSISTOR DEC 3009B NPN | 1         | 1  | 1         | 1  | 1         | 1  | 1         | 1  | Q1                    |
| 34       |             | 15-03409-01 | TRANSISTOR DEC 6534B PNP | 1         | 1  | 1         | 1  | 1         | 1  | 1         | 1  | Q2                    |
| 35       |             | 19-09054    | IC 7493                  | 2         | 2  | 2         | 2  | 2         | 2  | 2         | 2  | E9, E16               |
| 36       |             | 19-09932-01 | IC 7483A                 | 1         | 1  | 1         | 1  | 1         | 1  | 1         | 1  | E41                   |
| 37       |             | 19-10268    | IC 75107                 | 2         | 2  | 2         | 2  | 2         | 2  | 2         | 2  | E25, E30              |
| 38       |             | 19-10532    | IC 74800                 | 5         | 5  | 5         | 5  | 5         | 5  | 5         | 5  | E4, E7, E18, E35, E42 |
| 39       |             | 19-10533    | IC 74803                 | 1         | 1  | 1         | 1  | 1         | 1  | 1         | 1  | E33                   |
| 40       |             | 19-10536    | IC 74810                 | 2         | 2  | 2         | 2  | 2         | 2  | 2         | 2  | E19, E37              |
| 41       |             | 19-10539    | IC 74820                 | 1         | 1  | 1         | 1  | 1         | 1  | 1         | 1  | E31                   |
| 42       |             | 19-10546    | IC 748140                | 1         | 1  | 1         | 1  | 1         | 1  | 1         | 1  | E14                   |
| 43       |             | 19-10547    | IC 748153                | 3         | 3  | 3         | 3  | 3         | 3  | 3         | 3  | E3, E10, E17          |
| 44       |             | 19-10544    | IC 74874                 | 3         | 3  | 3         | 3  | 3         | 3  | 3         | 3  | E32, E36, E40         |
| 45       |             | 19-11469    | IC 8640                  | 2         | 2  | 2         | 2  | 2         | 2  | 2         | 2  | E8, E20               |

ECO. NO. *7*

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TITLE: **MSVII-C LSI MOS MEMORY**

ASSY NO. **D-UA-M7955-β-φ**

SHEET **3** OF **5**

SIZE **B** CODE **PL** NUMBER **M7955-0-0** REV. **B**

EN-01140A-16-R276(325) DRB 125 INSERTION PARTS LIST DATA BASE REV B

# DIGITAL EQUIPMENT CORPORATION

## PARTS LIST

|                           |                            |                         |
|---------------------------|----------------------------|-------------------------|
| MADE BY <i>S. BELTNER</i> | CHECKED <i>John. Dwyer</i> | SECTION <i>1</i>        |
| DATE <i>10 Oct 76</i>     | DATE <i>11/10/76</i>       | ISSUED SECTION <i>1</i> |
| ENG <i>J. Stigman</i>     | PROG <i>R. Mar-Fal</i>     |                         |
| DATE <i>11/15/76</i>      | DATE <i>11/19/76</i>       |                         |

### QUANTITY / VARIATION

#### NOTES:

- \*M7955-AA = M7955-YA, OR M7955-YE
- \*M7955-AB = M7955-YB, OR M7955-YF
- \*M7955-AC = M7955-YC, OR M7955-YH
- \*M7955-AD = M7955-YD, OR M7955-YJ

| ITEM NO. | DRAWING NO. | PART NO.    | DESCRIPTION          | *M7955-AA |          | *M7955-AB |          | *M7955-AC |          | *M7955-AD |          | REF DESIGNATION  |
|----------|-------------|-------------|----------------------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|--|
|          |             |             |                      | M7955-YA  | M7955-YE | M7955-YB  | M7955-YF | M7955-YC  | M7955-YH | M7955-YD  | M7955-YJ |  |
| 46       |             | 19-11579    | IC 8641              | 5         | 5        | 5         | 5        | 5         | 5        | 5         | 5        | E1, E21, E23, E26, E28   |
| 47       |             | 19-11675    | IC 748138            | 1         | 1        | 1         | 1        | 1         | 1        | 1         | 1        | E30  |
| 48       |             | 19-11944    | IC LM555             | 2         | 2        | 2         | 2        | 2         | 2        | 2         | 2        | E2, E44  |
| 49       |             | 19-11983    | IC 748133            | 1         | 1        | 1         | 1        | 1         | 1        | 1         | 1        | E34  |
| 50       |             | 19-12068    | IC 74128             | 3         | 3        | 3         | 3        | 3         | 3        | 3         | 3        | E5, E12, E13   |
| 51       |             | 19-12388    | IC 74802             | 2         | 2        | 2         | 2        | 2         | 2        | 2         | 2        | E39, E43   |
| 52       |             | 19-12649    | IC 74LS75            | 5         | 5        | 5         | 5        | 5         | 5        | 5         | 5        | E15, E22, E24, E27, E29  |
| 53       |             | 19-12746    | IC 74S37             | 2         | 2        | 2         | 2        | 2         | 2        | 2         | 2        | E6, E11  |
| 54       |             | 21-12726-00 | IC MK4096 16 PIN RAM | .         | .        | .         | .        | .         | .        | 64        | .        | E100, thru E115, E200 thru 215, E300 thru E315, E400 thru E415 |
|          |             |             |                      | .         | .        | .         | .        | 48        | .        | .         | .        | E200 thru E215, E300 thru E315, E400 thru E415                 |
|          |             |             |                      | .         | .        | 32        | .        | .         | .        | .         | .        | E300 thru E315, E400 thru E415                                 |
|          |             |             |                      | 16        | .        | .         | .        | .         | .        | .         | .        | E400 thru E415   |
| 55       |             | 21-12959-01 | IC 4096 16 PIN RAM   | .         | .        | .         | .        | .         | .        | .         | 64       | SAME AS M7955-YD   |
|          |             |             |                      | .         | .        | .         | .        | 48        | .        | .         | .        | SAME AS M7955-YC   |
|          |             |             |                      | .         | .        | 32        | .        | .         | .        | .         | .        | SAME AS M7955-YB   |
|          |             |             |                      | .         | 16       | .         | .        | .         | .        | .         | .        | SAME AS M7955-YA   |

|   |  |                                   |                  |   |                            |                  |
|---|--|-----------------------------------|------------------|---|----------------------------|------------------|
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| EN-01140A-16-R278(32M) DRB 125  |  | SHEET <b>4</b> OF <b>5</b>        |                  | INSERTION PARTS LIST DATA BASE REV <b>B</b> |                            |                  |

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY *S. BELTEER* CHECKED *for R. Darby* SECTION *1*  
 DATE *10 OCT 96* DATE *11/18/96*  
 ENG *J. Stinson* PROD *R. Martel* ISSUED SECTION *1*  
 DATE *11/18/96* DATE *11/19/96*

QUANTITY / VARIATION

NOTES:

\*M7955-AA = M7955-YA, OR M7955-YE  
 \*M7955-AB = M7955-YB, OR M7955-YF  
 \*M7955-AC = M7955-YC, OR M7955-YH  
 \*M7955-AD = M7955-YD, OR M7955-YJ

| ITEM NO. | DRAWING NO. | PART NO.    | DESCRIPTION  | *M7955-AA |          | *M7955-AB |          | *M7955-AC |          | *M7955-AD |          | REF DESIGNATION          |
|----------|-------------|-------------|--|-----------|----------|-----------|----------|-----------|----------|-----------|----------|--------------------------|
|          |             |             |  | M7955-YA  | M7955-YE | M7955-YB  | M7955-YF | M7955-YC  | M7955-YH | M7955-YD  | M7955-YJ |                          |
| 56       |             | 90-06732-00 | EYELET, HANDLE   | 0         | 0        | 0         | 0        | 0         | 0        | 0         | 0        |                          |
| 57       |             | 90-08213-00 | STANDOFF SPACER  | 1         | 1        | 1         | 1        | 1         | 1        | 1         | 1        |                          |
| 58       |             | 90-09041-01 | SCREW NYLON 6-32 x .250  | 1         | 1        | 1         | 1        | 1         | 1        | 1         | 1        |                          |
| 59       |             | 90-09185-00 | JUMPER INSULATED   | 6         | 6        | 6         | 6        | 6         | 6        | 6         | 6        | W1, W3, W5, W14, W15, W2 |
| 60       |             | 90-09149-00 | WIRE WRAP PINS   | 12        | 12       | 12        | 12       | 12        | 12       | 12        | 12       |                          |
| 61       |             | 91-05740-55 | WIRE, GRN, INSULATED #30 AWG<br>(LENGTH AS REQUIRED) WITH 3/4" ± 1/8"<br>OF INSULATION.) | 3         | 3        | .         | .        | .         | .        | .         | .        | W6, W7, W4               |
|          |             |             |  | .         | .        | 4         | 4        | .         | .        | .         | .        | W6, W7, W4, W8           |
|          |             |             |  | .         | .        | .         | .        | 5         | 5        | .         | .        | W6, W7, W4, W12, W8      |
|          |             |             |  | .         | .        | .         | .        | .         | .        | 6         | 6        | W6, W7, W4, W8, W12, W16 |
| 62       |             | 74-13826-01 | HANDLE R.H.  | 1         | 1        | 1         | 1        | 1         | 1        | 1         | 1        |                          |
| 63       |             | 74-13826-00 | HANDLE L.H.  | 1         | 1        | 1         | 1        | 1         | 1        | 1         | 1        |                          |

E.C.O. NO. [Faint text]

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TITLE: **MSVII-C LSI MOS MEMORY**

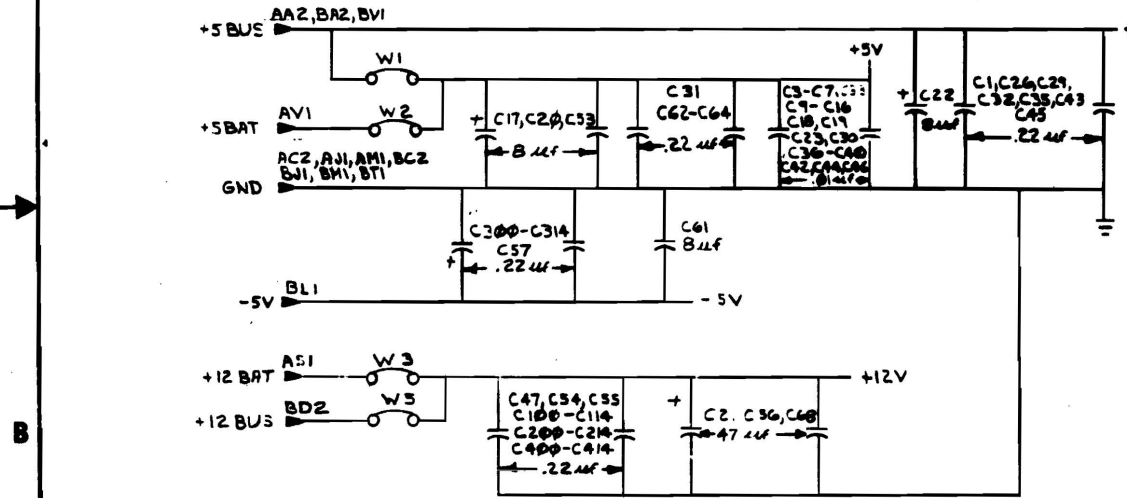
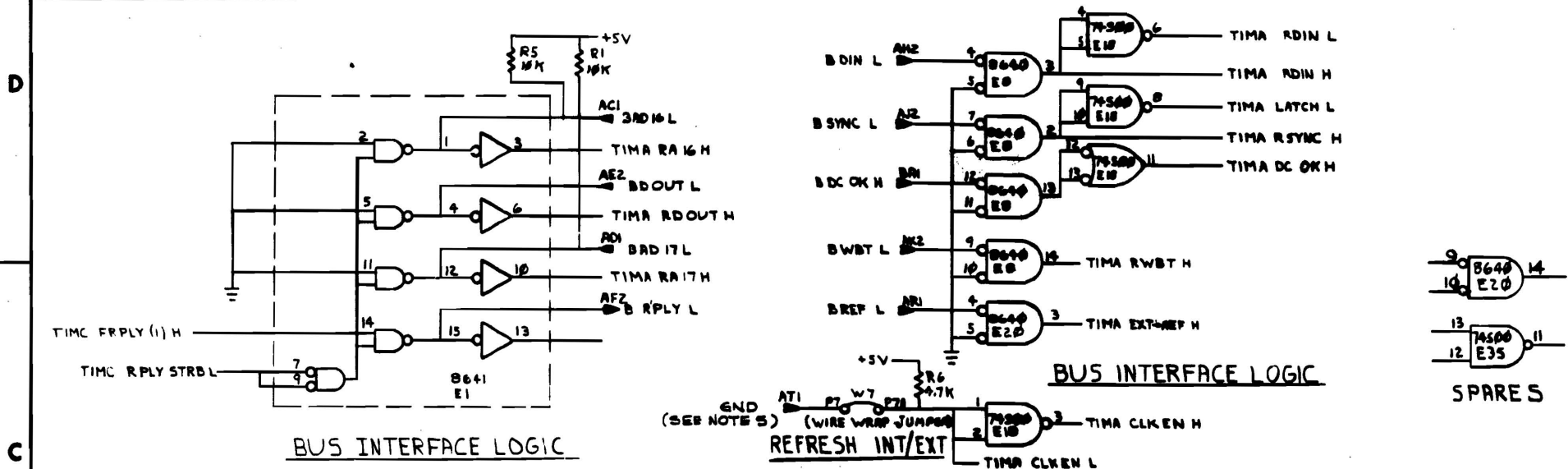
ASSY NO.: **D-UA-M7955-0-0**

SHEET **5** OF **5**

SIZE **B** CODE **PL** NUMBER **M7955-0-0** REV. **B**

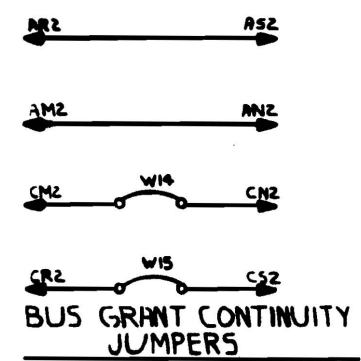
EN-01140A-16-R278(326) DRB 125 INSERTION PARTS LIST DATA BASE REV B

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- NOTES:**
- OPTION DESIGNATION:  
 M7955-AA=M7955-YA OR M7955-YE  
 M7955-AB=M7955-YB OR M7955-YF  
 M7955-AC=M7955-YC OR M7955-YH  
 M7955-AD=M7955-YD OR M7955-YJ
  - ALL 8641 BUS REC/DR PLUS 7483A ADDER AND 745138 DECODER ARE POWERED BY +5BUS. ALL OTHER CIRCUITS GO TO +5V AS SELECTED BY W1 & W2.
  - W1, W2, W3, W5, W14, W15 ARE MACHINE INSERTABLE JUMPERS. W4, W6, W7, W8, W12, W16 ARE WIRE WRAP JUMPERS.
  - ALL BDAL-XX CONNECTIONS ARE BI-DIRECTIONAL LINES
  - DURING MANUFACTURING TEST, GROUND MAY BE REMOVED

NOT USED REF D:  
 C100-C114, C200-C214 W4, W12, W16  
 C100-C114, C200-C214, W12, W16  
 C100-C114, W16



**W6 W7 REFRESH OPTIONS**

|     |     |                                 |
|-----|-----|---------------------------------|
| IN  | IN  | INTERNAL REFRESH WITH NO B RPLY |
| IN  | OUT | EXTERNAL REFRESH WITH NO B RPLY |
| OUT | IN  | ILLEGAL                         |
| OUT | OUT | EXTERNAL REFRESH WITH B RPLY    |

**REFRESH SELECTION**

**M7955 VARIATIONS JUMPERS -AA -AB -AC -AD**

|     |   |   |   |   |
|-----|---|---|---|---|
| W4  | 1 | 1 | 1 | 1 |
| W8  | 0 | 1 | 1 | 1 |
| W12 | 0 | 0 | 1 | 1 |
| W16 | 0 | 0 | 0 | 1 |

ALL JUMPERS NOTED AS 0 MUST NOT BE INSTALLED

**IC PIN LOCATIONS**

| IC TYPE              | END | +5 | +12 |
|----------------------|-----|----|-----|
| 555 @ E2             | 1   | B  | B   |
| 555 @ E44            | 1   | B  | B   |
| 7493                 | 10  | 5  |     |
| 7483A                | 12  | 5  |     |
| 74LS75               | 12  | 5  |     |
| 8640                 | 1   | B  |     |
| OTHER 16 PIN I.C.'S  | 8   | 16 |     |
| DT-ER, 14 PIN I.C.'S | 7   | 14 |     |

**STARTING ADDRESS SELECTION**

| STARTING ADDRESS | SWITCH S1 SETTINGS |    |    |    |
|------------------|--------------------|----|----|----|
|                  | -1                 | -2 | -3 | -4 |
| 0                | 1                  | 1  | 1  | 1  |
| 4K               | 0                  | 1  | 1  | 1  |
| 8K               | 1                  | 0  | 1  | 1  |
| 12K              | 0                  | 0  | 1  | 1  |
| 16K              | 1                  | 1  | 0  | 1  |
| 20K              | 0                  | 1  | 0  | 1  |
| 24K              | 1                  | 0  | 0  | 1  |
| 28K              | 0                  | 0  | 0  | 1  |
| 32K              | 1                  | 1  | 1  | 0  |
| 36K              | 0                  | 1  | 1  | 0  |
| 40K              | 1                  | 0  | 1  | 0  |
| 44K              | 0                  | 0  | 1  | 0  |
| 48K              | 1                  | 1  | 0  | 0  |
| 52K              | 0                  | 1  | 0  | 0  |
| 56K              | 1                  | 0  | 0  | 0  |
| 60K              | 0                  | 0  | 0  | 0  |
| 64K              | 1                  | 1  | 1  | 0  |
| 68K              | 0                  | 1  | 1  | 0  |
| 72K              | 1                  | 0  | 1  | 0  |
| 76K              | 0                  | 0  | 1  | 0  |
| 80K              | 1                  | 1  | 1  | 0  |
| 84K              | 0                  | 1  | 1  | 0  |
| 88K              | 1                  | 0  | 1  | 0  |
| 92K              | 0                  | 0  | 1  | 0  |
| 96K              | 1                  | 1  | 1  | 0  |
| 100K             | 0                  | 1  | 1  | 0  |
| 104K             | 1                  | 0  | 1  | 0  |
| 108K             | 0                  | 0  | 1  | 0  |
| 112K             | 1                  | 1  | 0  | 0  |
| 116K             | 0                  | 1  | 0  | 0  |
| 120K             | 1                  | 0  | 0  | 0  |
| 124K             | 0                  | 0  | 0  | 0  |

EXCEPT M7955-AD  
 EXCEPT M7955-AC & AD  
 EXCEPT M7955-AB, AC, & AD

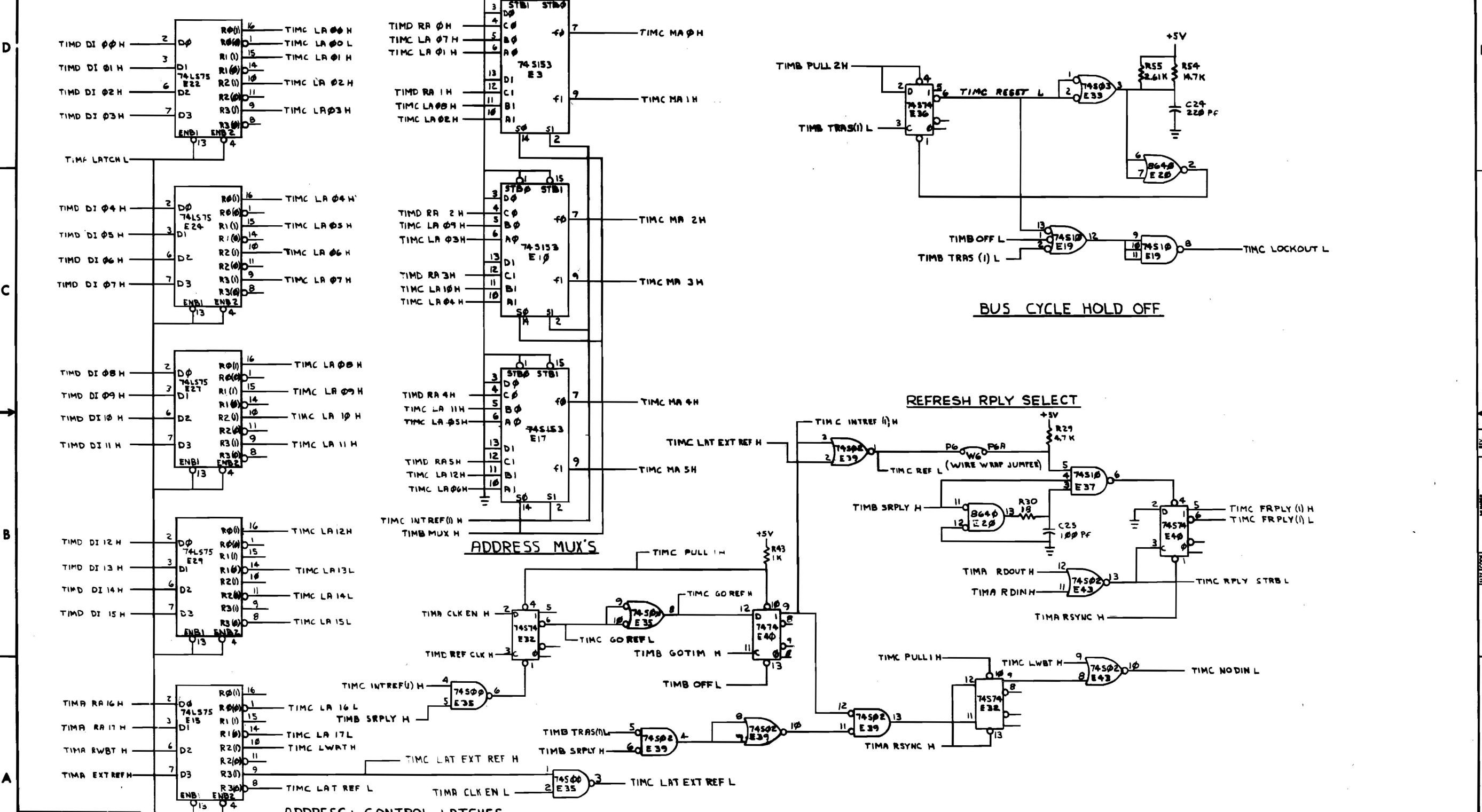
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|     |      |    |      |
|-----|------|----|------|
| REV | DATE | BY | CHKD |
|     |      |    |      |

|                   |          |               |                                |
|-------------------|----------|---------------|--------------------------------|
| DRN               | 11/10/76 | FIRST USED ON | MSV11-C                        |
| CHK'D             | 11/10/76 | TITLE         | MSV11-C MOS MEMORY, LSI (TIMA) |
| ENG.              | 11/10/76 | SIZE CODE     | D                              |
| PROD. ENG.        | 11/10/76 | NUMBER        | M7955-0-1                      |
| PROD. R.          | 11/10/76 | REV.          | B                              |
| NEXT HIGHER AUTH. |          | SCALE         |                                |
| B-DR-M7955-0      |          | SHEET         | 1 OF 8                         |



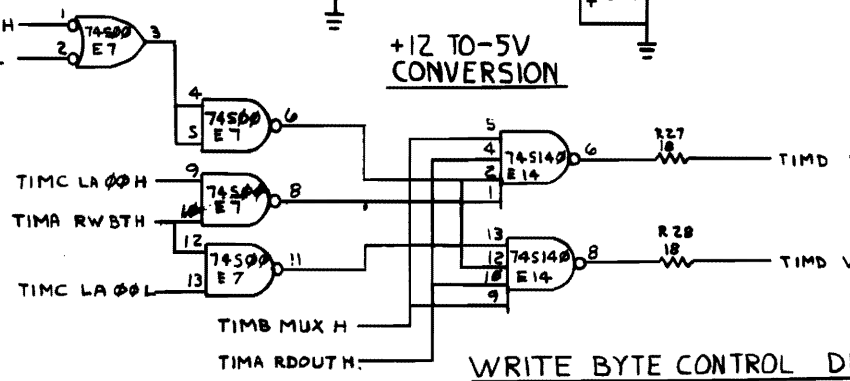
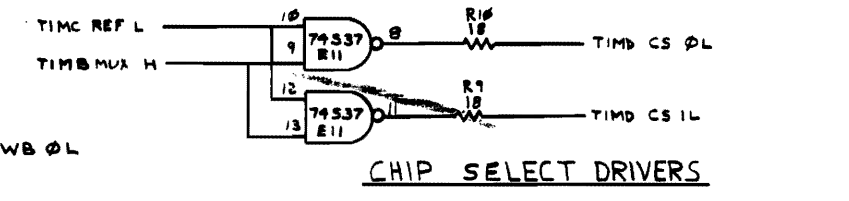
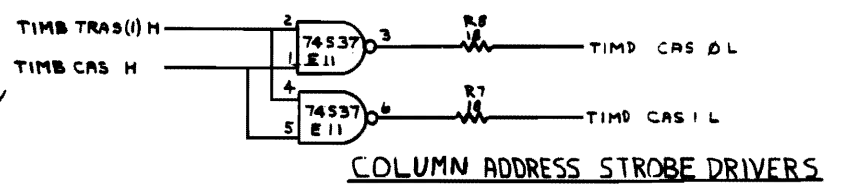
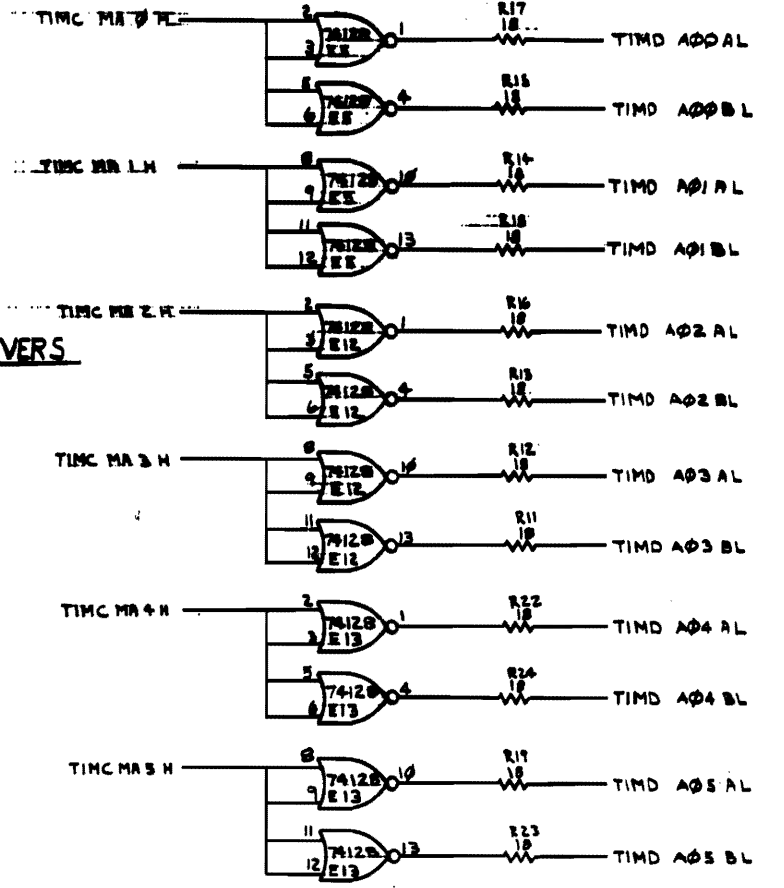
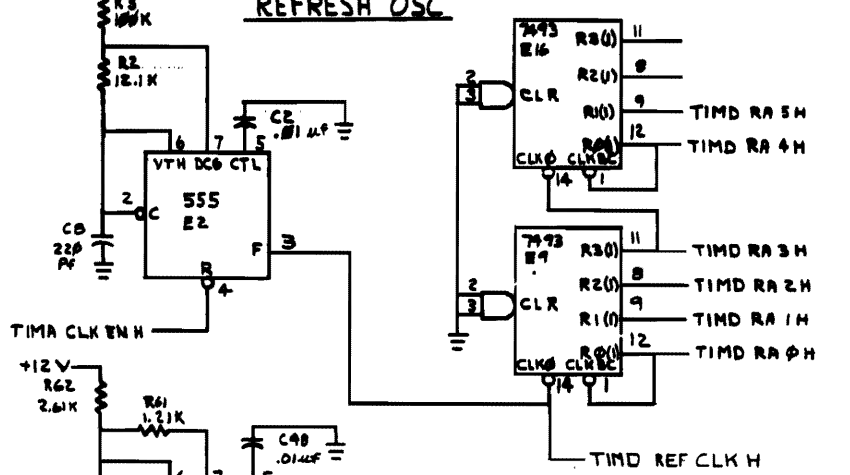
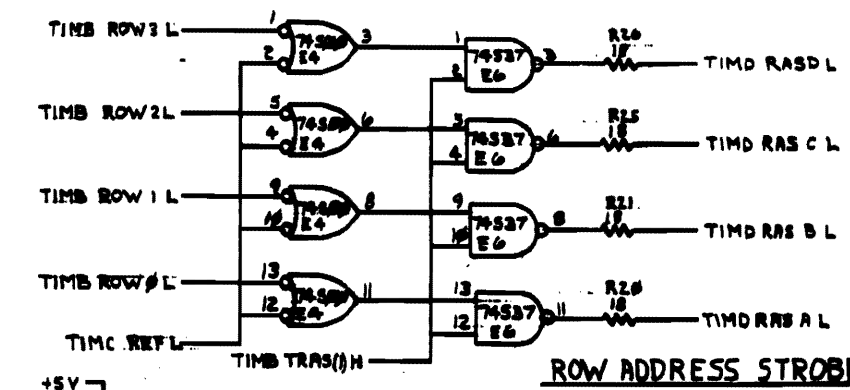
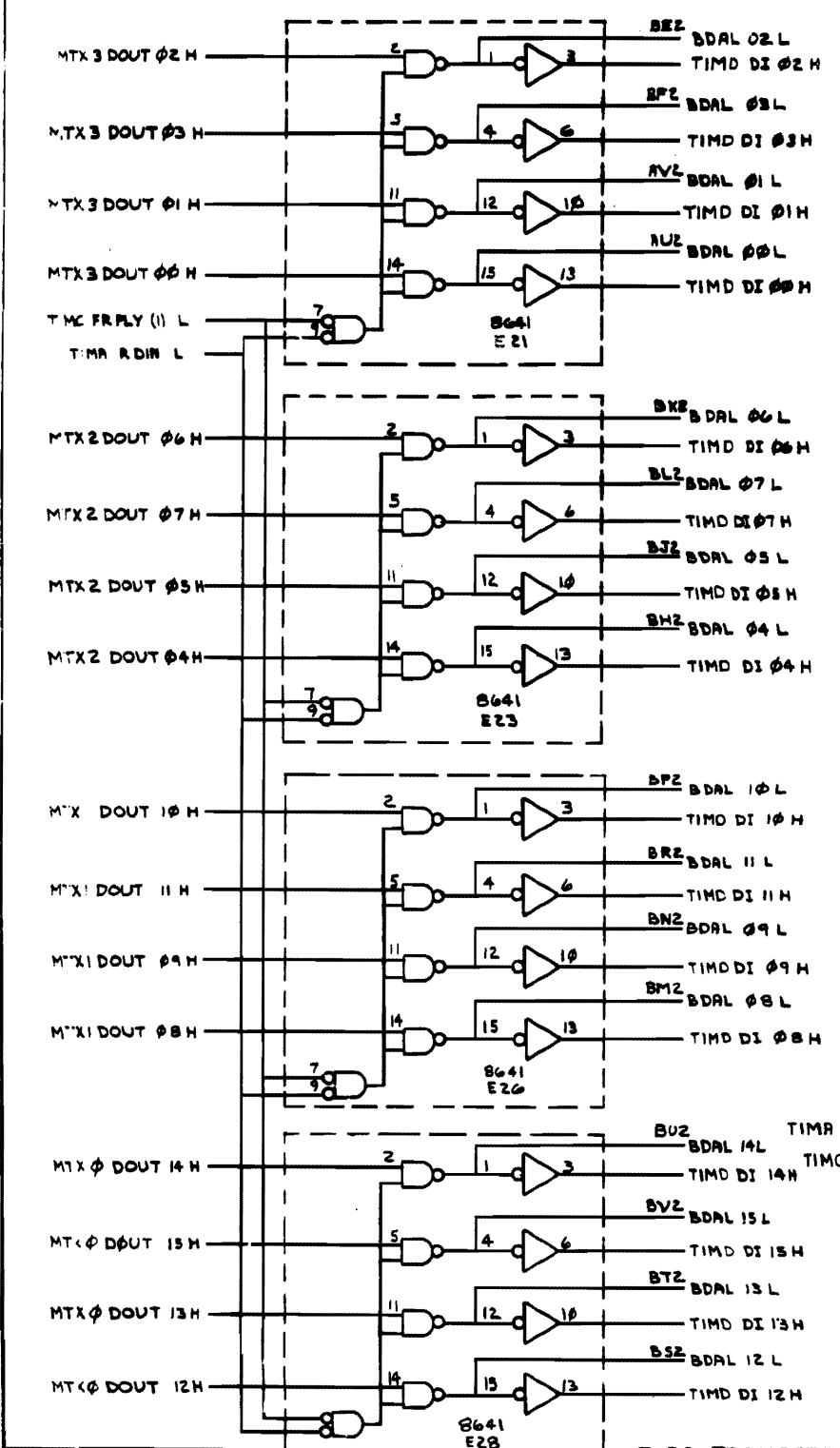
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| REVISIONS |            |      | TITLE                         |              | NUMBER |           | REV. |
|-----------|------------|------|-------------------------------|--------------|--------|-----------|------|
| CHK       | CHANGE NO. | REV. | (TIMC) MSVII-C MOS MEMORY LSI |              | DCS    | M7955-0-1 | B    |
|           |            |      | SCALE                         | SHEET 3 OF 8 | DIST.  |           |      |

REV. B  
NUMBER DCS M7955-0-1  
SHEET CODE

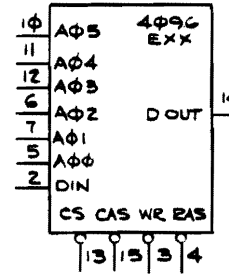
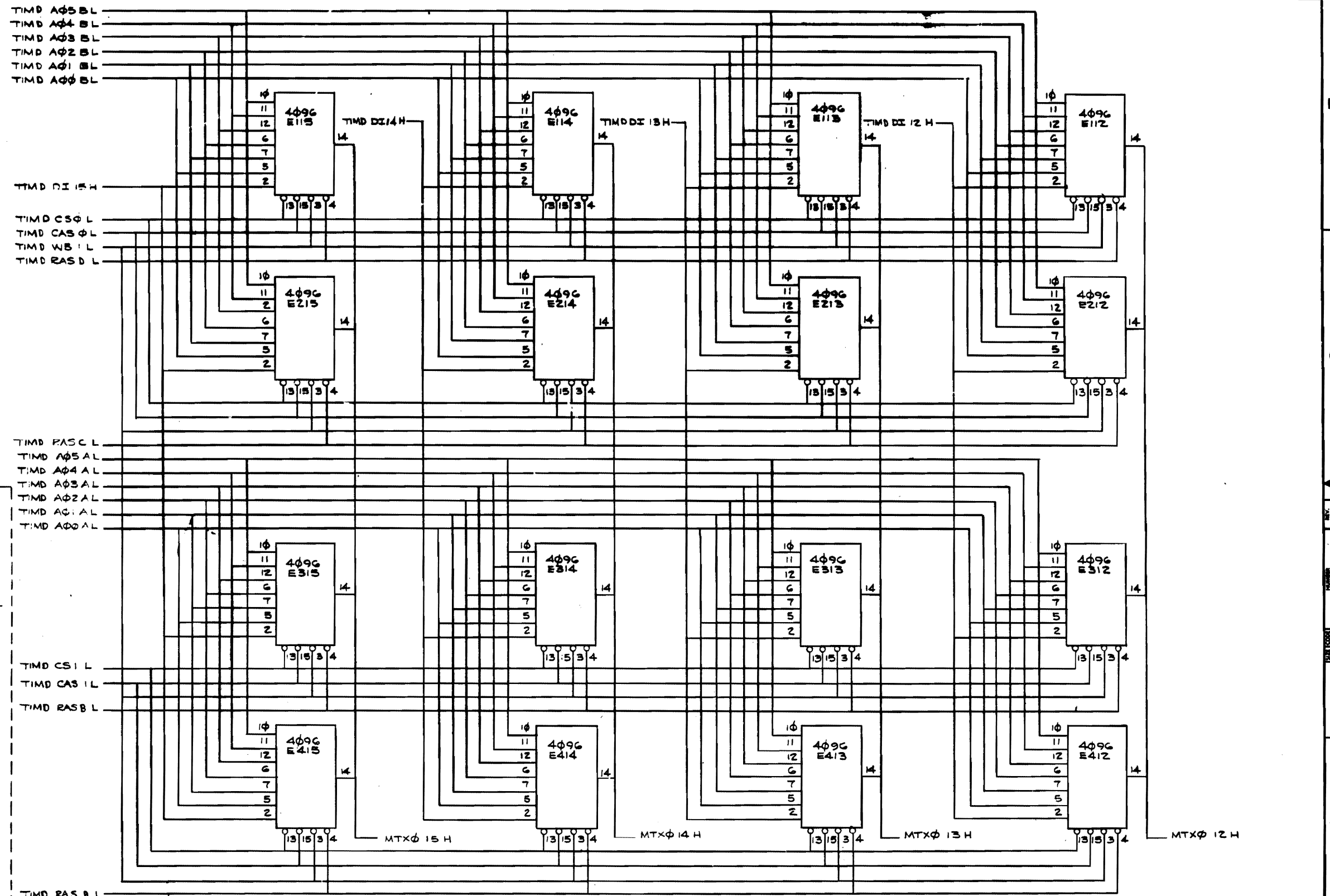
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| REVISIONS |            |      |
|-----------|------------|------|
| CHK       | CHANGE NO. | REV. |
|           |            |      |

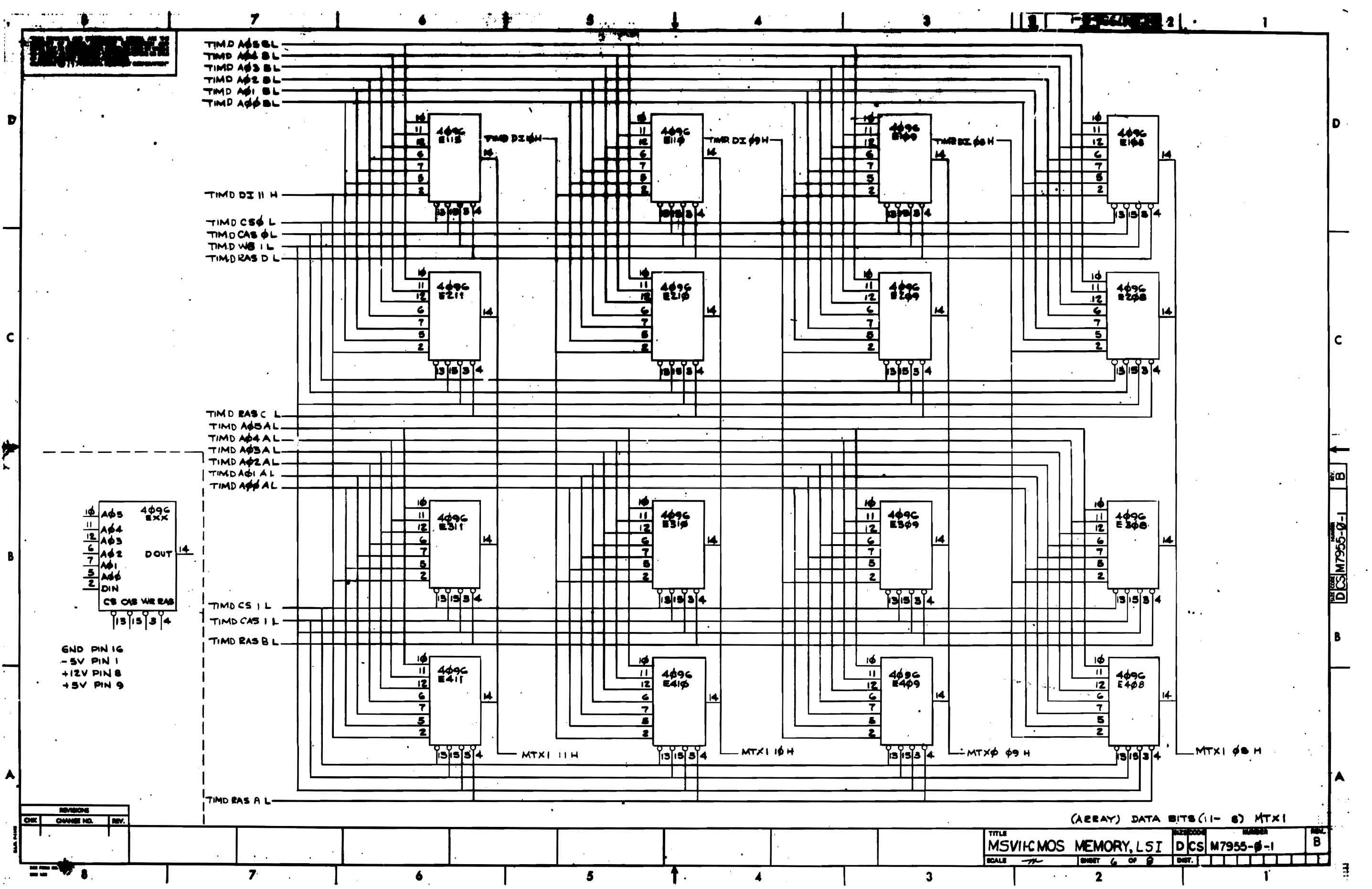
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| SCALE |                                 | SHEET     | 4    | OF     | 8        | DIST. |   |

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

| REVISIONS |            |      |
|-----------|------------|------|
| CHG.      | CHANGE NO. | REV. |
|           |            |      |



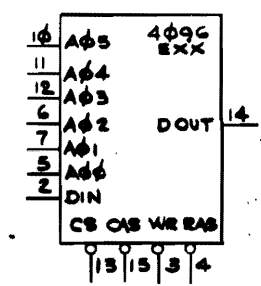
TIMD A55 BL  
 TIMD A54 BL  
 TIMD A53 BL  
 TIMD A52 BL  
 TIMD A51 BL  
 TIMD A50 BL

TIMD DZ 11 H  
 TIMD CS 0 L  
 TIMD CAS 0 L  
 TIMD WE 1 L  
 TIMD RAS D L

TIMD RAS C L  
 TIMD A55 AL  
 TIMD A54 AL  
 TIMD A53 AL  
 TIMD A52 AL  
 TIMD A51 AL  
 TIMD A50 AL

TIMD CS 1 L  
 TIMD CAS 1 L  
 TIMD RAS B L

TIMD RAS A L



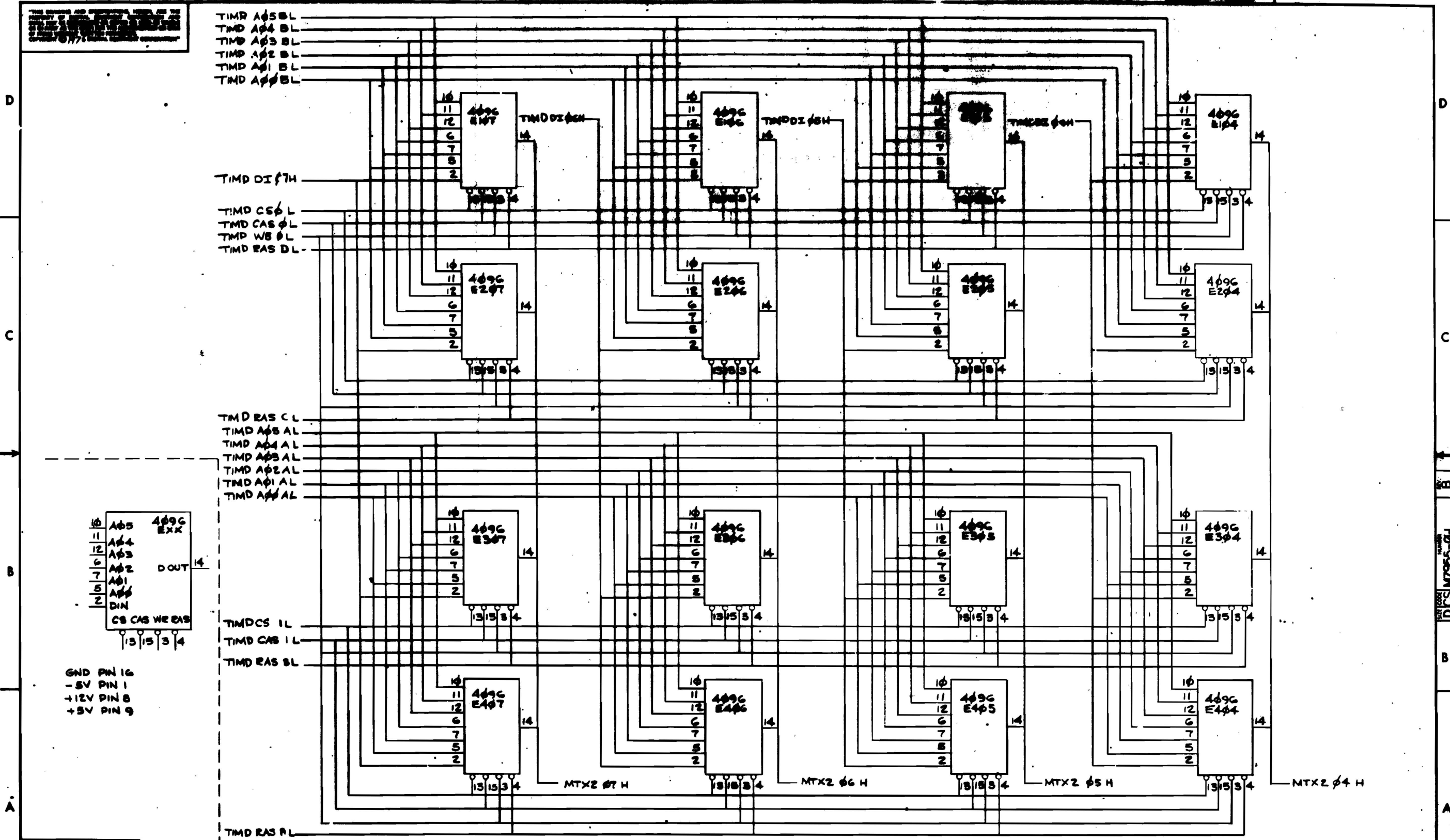
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 -5V PIN 1  
 +12V PIN 8  
 +5V PIN 9

| REVISIONS |            |      |
|-----------|------------|------|
| CHK       | CHANGE NO. | REV. |
|           |            |      |

(ARRAY) DATA BITS (11- 0) MTXI

|       |                      |           |     |        |           |       |   |
|-------|----------------------|-----------|-----|--------|-----------|-------|---|
| TITLE | MSV1CMOS MEMORY, LSI | SIZE CODE | DCS | NUMBER | M7955-0-1 | REV.  | B |
| SCALE | 1/1                  | SHEET     | 6   | OF     | 8         | DIST. |   |

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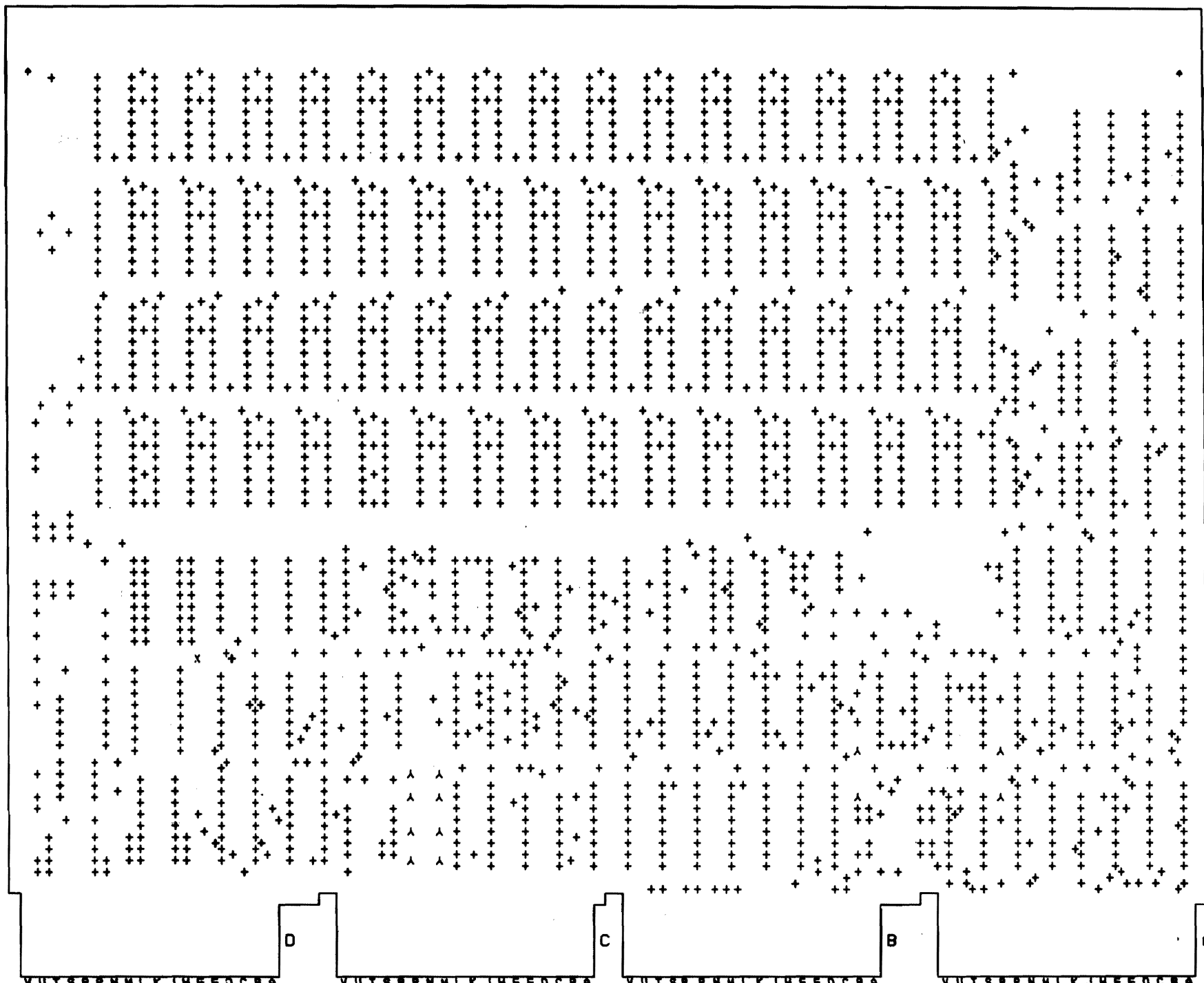


(ARRAY) DATA BITS (7-4) MTX2

D CS M 7955-0-1



COMPONENT SIDE VIEW



NOTES:

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|             |     |
|-------------|-----|
| EXCHANGE NO | REV |
|             |     |
|             |     |
|             |     |
|             |     |
|             |     |
|             |     |
|             |     |
|             |     |
|             |     |
|             |     |

| HOLE DATA     |                     |
|---------------|---------------------|
| SYMBOL        | + A X + Z M A B + * |
| FIN HOLE SIZE | .038 .038 .158 .128 |
| PLATED        | X X X X             |
| NON PLATED    |                     |
| PT.           | 2 1 2               |
| OFF GRD HLE   |                     |
| DRILL SIZE    |                     |

| BOARD FABRICATION INFORMATION |                       |
|-------------------------------|-----------------------|
| PANEL SIZE                    | 8.54 X 11.75          |
| PANEL DATA DWG.               | MULTILAYER            |
| PANEL MAT'L                   | 052 THK               |
| QTY. OF LAYERS                | 4                     |
| COPPER THICKNESS              | 1 OZ.                 |
| PTH.                          | X PRINT AND ETCH      |
| MODULE INSERTED               | 188 TIMES OR MORE N/A |

| SIGNATURES                                   |        | DATE      |
|--|--------|-----------|
| DRN. R. SULLIVAN                             |        | 8-2-76    |
| CHK'D. <i>[Signature]</i>                    |        | 10 Sep 76 |
| ENG. <i>[Signature]</i>                      |        | 7/15      |
| PROJ. ENGR. <i>[Signature]</i>               |        | 8/10/76   |
| PROD. <i>[Signature]</i>                     |        | 8/10/76   |
| SCALE  | 2:1    |           |
| SHT.   | 1 OF 5 |           |
| NEXT HIGHER ASSY. D-UZ-M7955-0-0 ETCH REV. C |        |           |

|                              |
|------------------------------|
| digital                      |
| TITLE DRILL AND ETCH DRAWING |
| SIZE CODE NUMBER REV         |
| 0 MD 5012203-00 B            |

8 7 6 5 4 3 2 1

0-0-502203 2

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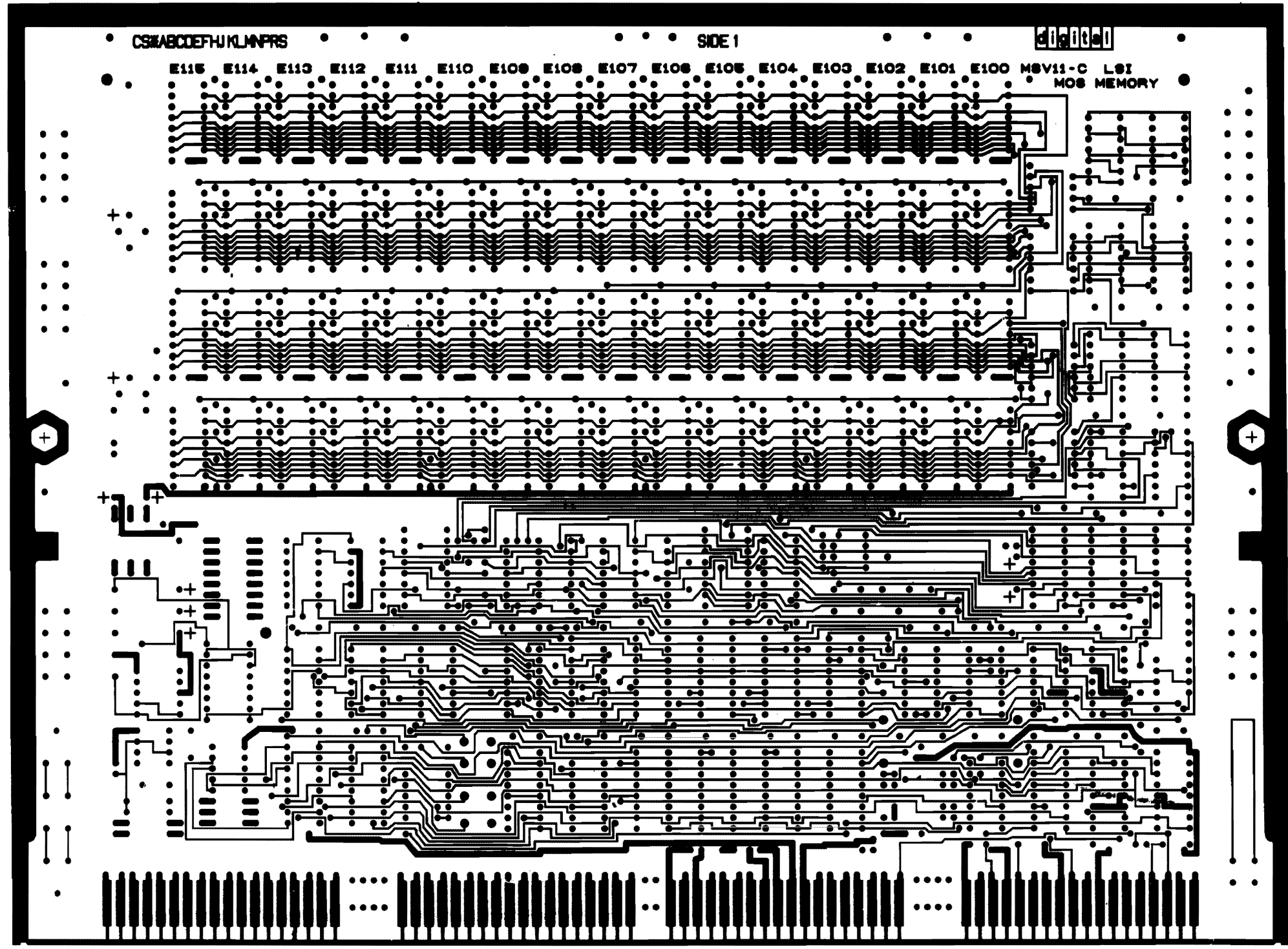
L1

LAYER 1

5012203C  
M881032  
M7866

D  
C  
B  
A

D  
C  
B  
A



| DATE | CHANGE NO. | REV. |
|------|------------|------|
|      |            |      |

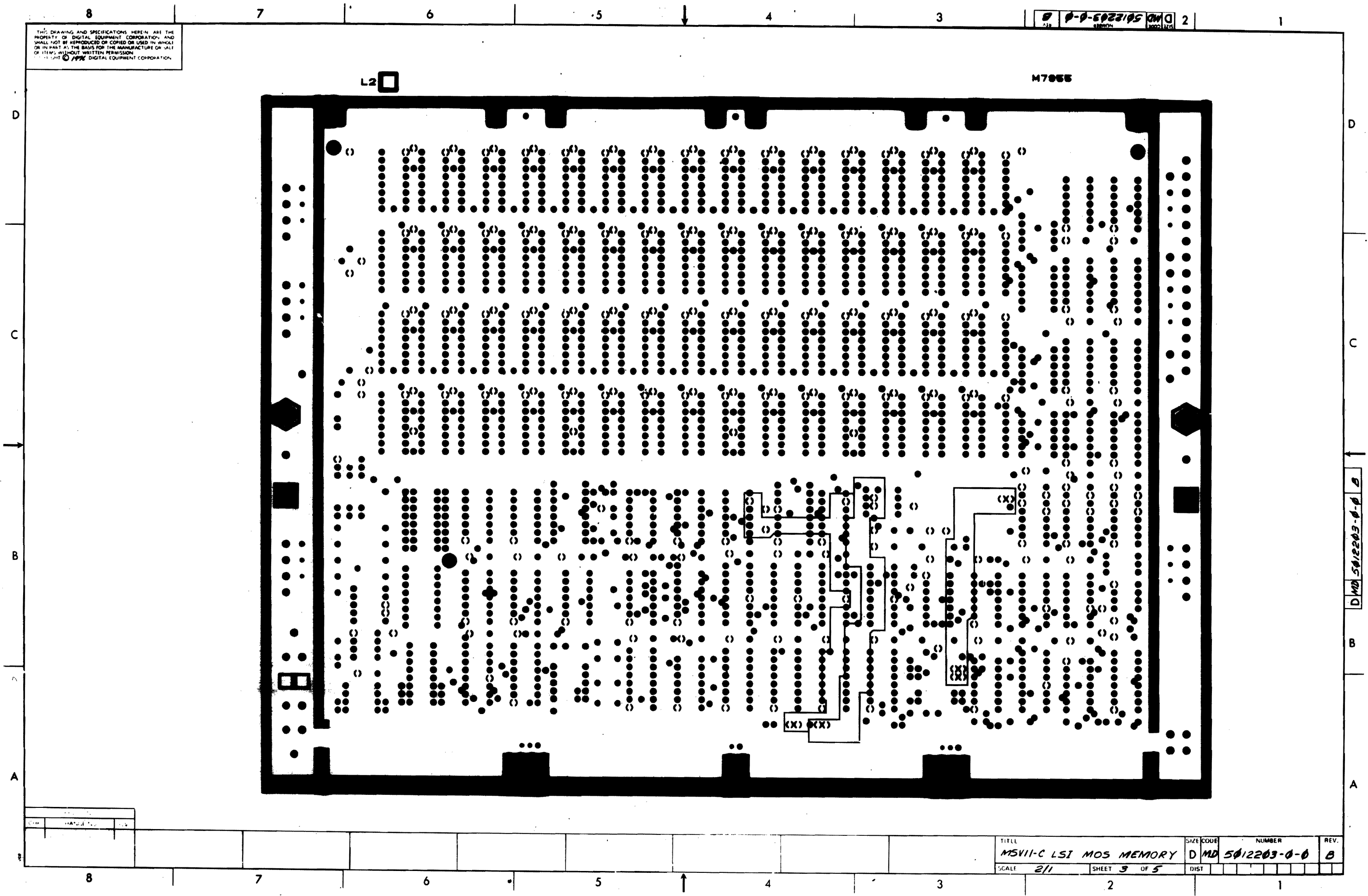
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| TITLE | MSV11-C LSI MOS MEMORY | SIZE CODE | D MD | NUMBER | 5012203-0-0 | REV. | B |
| SCALE | 2/1                    | SHEET     | 2    | OF     | 5           | DIST |   |

8 7 6 5 4 3 2 1

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DMD 5012203-0-0

1

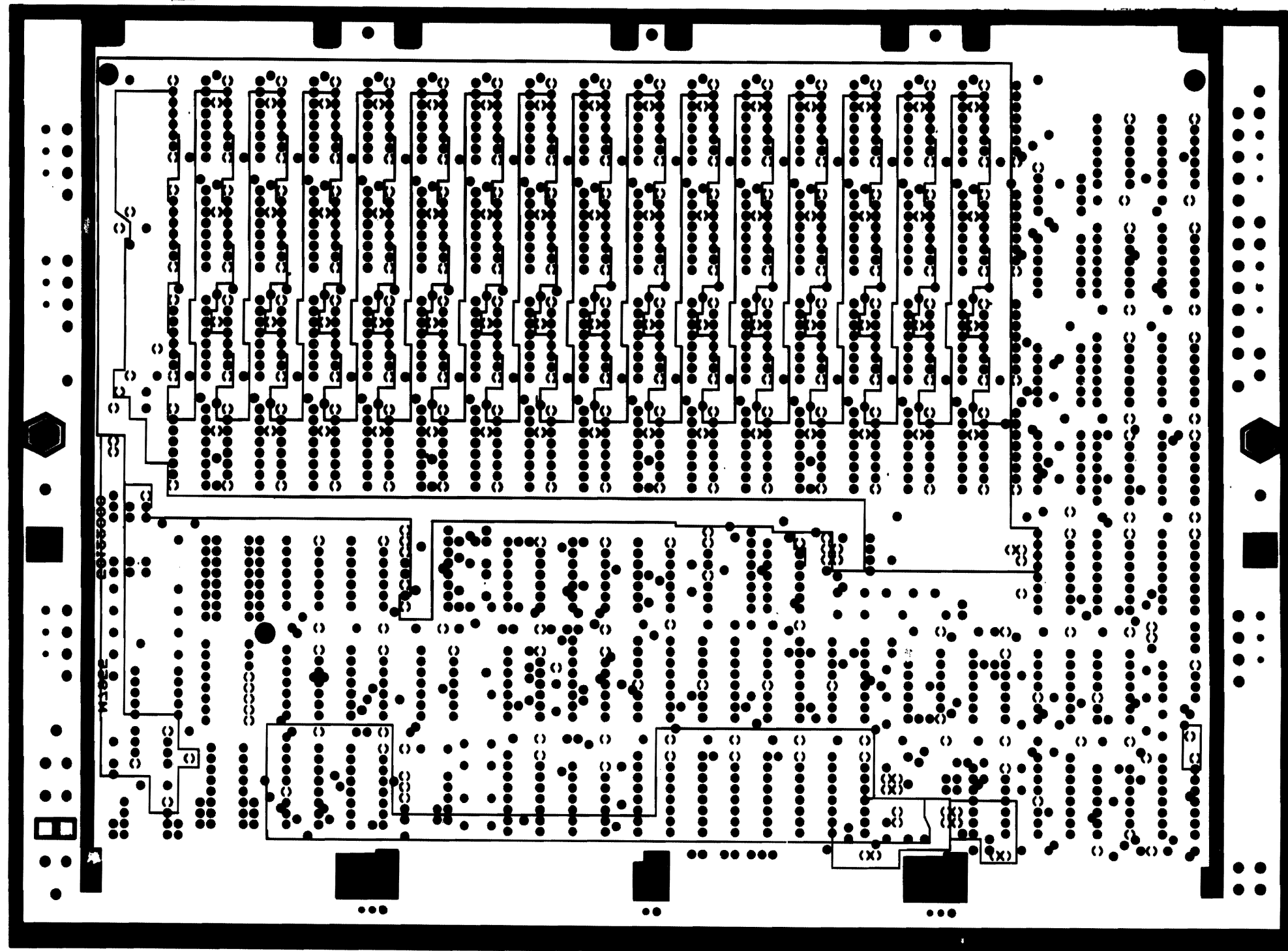


|      |      |      |
|------|------|------|
| DATE | DATE | DATE |
|      |      |      |

|       |                        |           |     |        |             |      |   |
|-------|------------------------|-----------|-----|--------|-------------|------|---|
| TITLE | MSVII-C LSI MOS MEMORY | SIZE CODE | DMD | NUMBER | 5012203-0-0 | REV. | B |
| SCALE | 2/1                    | SHEET     | 3   | OF     | 5           | DIST |   |

DMD 5012203-0-0 B

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D  
C  
B  
A

D  
C  
B  
A

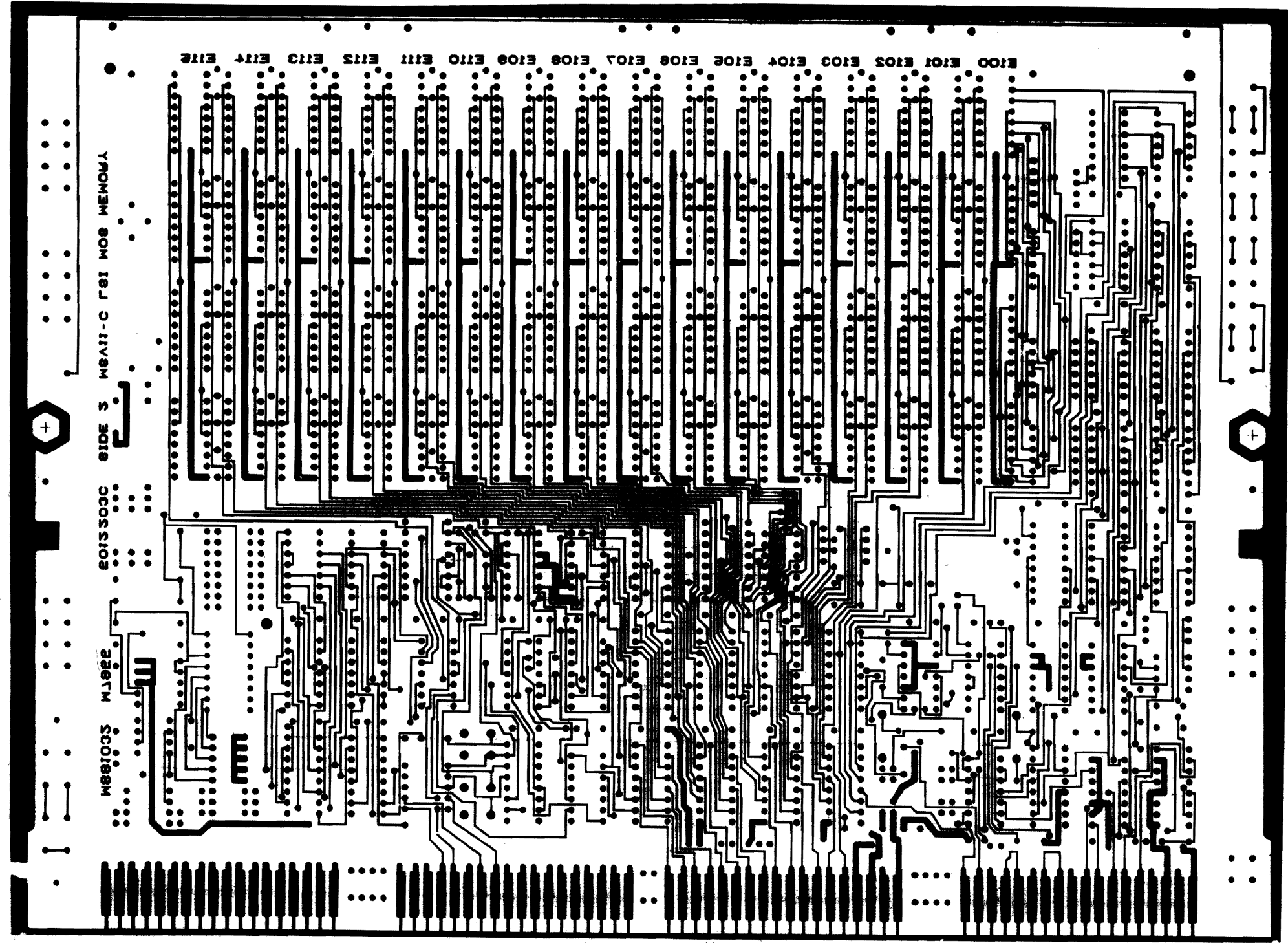
DMD 5012203-0-0 B

|     |      |    |
|-----|------|----|
| REV | DATE | BY |
|     |      |    |

|       |                        |           |      |        |             |       |   |
|-------|------------------------|-----------|------|--------|-------------|-------|---|
| TITLE | MSVII-C LSI MOS MEMORY | SIZE CODE | D MD | NUMBER | 5012203-0-0 | REV.  | B |
| SCALE | 2/1                    | SHEET     | 4    | OF     | 5           | DIST. |   |

8      7      6      5      4      3      2      1

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MSV11-C LSI MOS MEMORY SIDE 5

E100 E101 E102 E103 E104 E105 E106 E107 E108 E109 E110 E111 E112 E113 E114 E115 E116 E117 E118 E119 E120

A B C D

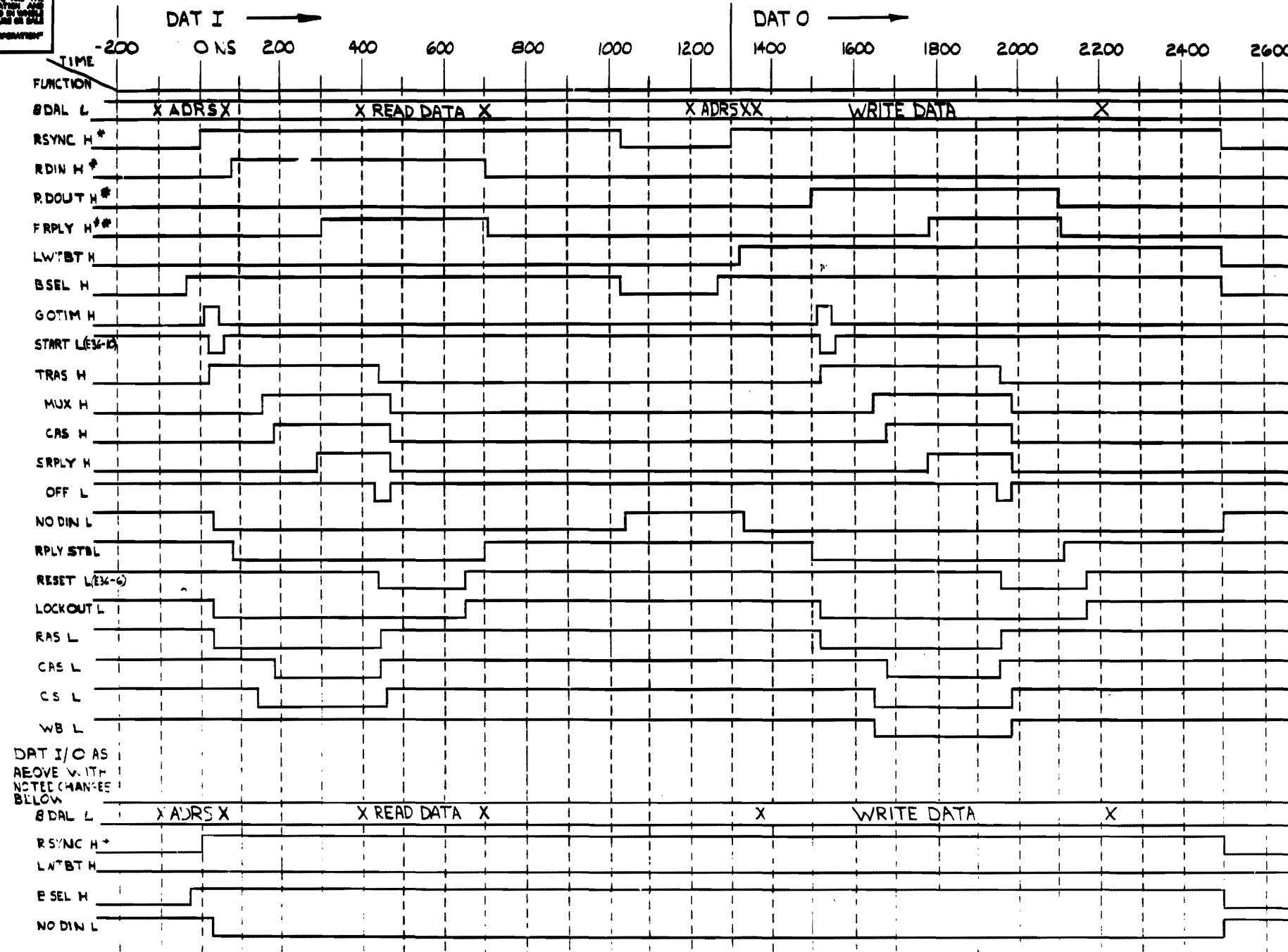
A B C D

|     |           |      |
|-----|-----------|------|
| CHK | CHANGE TO | REV. |
|     |           |      |

|       |                        |           |        |        |             |      |   |
|-------|------------------------|-----------|--------|--------|-------------|------|---|
| TITLE | MSV11-C LSI MOS MEMORY | SIZE CODE | DMD    | NUMBER | 5012203-0-0 | REV. | B |
| SCALE | 2/1                    | SHEET     | 5 OF 5 | DIST.  |             |      |   |

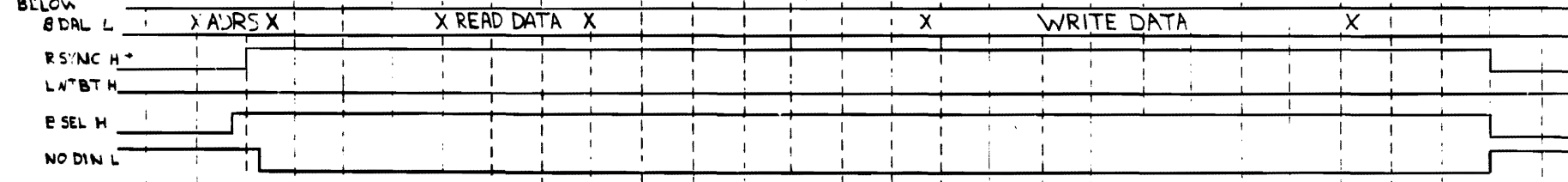
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REV. 2-0-2 M7955-0-2



**BDAL L:** BUFFERED BIDIRECTIONAL ADDRESS AND DATA BUS  
**RSYNCH:** BUFFERED BUS SIGNAL FROM MASTER THAT INITIATES BUS CYCLE AND LATCHES ADRS & DTBT  
**RDIN H:** BUFFERED BUS SIGNAL FROM MASTER THAT ENABLES DATA TO BE PUT ON THE BUS.  
**RDOUT H:** BUFFERED BUS SIGNAL FROM MASTER THAT INDICATES WRITE DATA IS ON THE BUS & STARTS DAT O.  
**FRPLY H:** FLOP DRIVING BRPLY L BUS SIGNAL AS A REPLY TO DIN & DONT.  
**LWTBTB H:** LATCHED SIGNAL SAYING THIS IS A DATO CYCLE.  
**BSEL H:** SIGNAL SAYING THAT I AM THE DEVICE REQUESTED BY THE MASTER.  
**GOTIM H:** SIGNAL THAT STARTS MEMORY TIMING.  
**START L:** START PULSE FOR MEMORY TIMING AFTER REFRESH SYNCHRONIZATION.  
**TRAS H:** SIGNAL USED FOR RAS AND TO START LOCKOUT.  
**MUX H:** SIGNAL USED TO SWITCH ADRS MUX AND SEND CS & WB  
**CAS H:** SIGNAL USED FOR CAS.  
**SRPLY H:** SIGNAL USED TO SET FRPLY H FLOP.  
**OFF L:** SIGNAL USED TO RESET MEMORY TIMING  
**NODIN L:** SIGNAL USED TO PREVENT MULTIPLE CYCLES AND TO WAIT FOR RDOUT H IN DATO CYCLES  
**RPLY STBL:** RESET FOR FRPLY H FLOP.  
**RESET L:** EXTENDS LOCKOUT SIGNAL TO ENSURE PROPER MEMORY TIMING.  
**LOCKOUT L:** SIGNAL TO PREVENT STARTING ANOTHER CYCLE TILL COMPLETING THE PRESENT CYCLE  
**RAS L:** MEMORY CHIP ROW ADDRESS STROBE.  
**CAS L:** MEMORY CHIP COLUMN ADDRESS STROBE  
**CS L:** MEMORY CHIP SELECT LINE  
**WB L:** MEMORY CHIP WRITE ENABLE

DAT I/C AS ABOVE V. IT- NOTED CHANGES BELOW



\* THE WIDTH OF RSYNC, RDIN, AND RDOUT IS DETERMINED BY THE MASTER DEVICE.  
 \*\* IF RDIN COMES AFTER FRPLY H IS SET, FRPLY M AND THE READ DATA WILL WAIT FOR THE RDIN.

REV. 2-0-2 M7955-0-2

|                               |          |               |                |
|-------------------------------|----------|---------------|----------------|
| DRN. <i>[Signature]</i>       | 11/18/76 | FIRST USED ON | MSVII-C        |
| CHK'D <i>[Signature]</i>      | 11/18/76 | TITLE         | MSVII-C TIMING |
| ENG. <i>[Signature]</i>       | 11/18/76 | SIZE          | D              |
| PROJ. ENG. <i>[Signature]</i> | 11/18/76 | NUMBER        | M7955-0-2      |
| PROD. <i>[Signature]</i>      | 11/18/76 | REV.          | A              |
| NEXT HIGHER ASSY.             |          | SCALE         |                |
| B-DD-MSVII-C                  |          | DIST.         |                |



