

27K-3

8 7 6 5 4 3 2 1

| REVISIONS |      |   |           |          |
|-----------|------|---|-----------|----------|
| PART REV  | ZONE | DESCRIPTION                               | DATE      | APPROVED |
| P         | ---  | PREPRODUCTION RELEASE PER ORN 0093        | 30 SEP85  | R.W.M.   |
| A         | ---  | PRODUCTION RELEASE PER ECO 1449, DCN 0187 | 5 FEB 88  | R.W.M.   |
| B         | ---  | REVISED PER ECO 1516, DCN 0240            | 3-17-86   | R.W.M.   |
| C         | ---  | REVISED PER ECO 1778, DCN 0410            | 28JAN87   | R.W.M.   |
| C1        | ---  | REVISED PER ECO 1820, DCN 0550            | 21 MAY 88 | R.W.M.   |
| D         | ---  | REVISED PER ECO 2018, DCN 0550            | 21 MAY 88 | R.W.M.   |


| COMPONENT LAST USED BLOCK |           |   |
|---------------------------|-----------|---|
| COMPONENT                 | LAST USED | NOT USED  |
| CAPACITORS                | C253      | C7, C30, C54, C78, C104, C129, C154, C181, C207, C234 |
| RESISTORS                 | R30       | R3-R9, R11-R17  |
| RESISTOR PACKS            | RP19      | -----   |
| DIODES                    | CR9       | -----   |
| CRYSTALS                  | Y1        | -----   |
| SWITCHES                  | SW5       | -----   |
| LED NETWORKS              | CRP4      | -----   |
| JUMPERS                   | W2        | -----   |

| SPARE FUNCTIONS <sup>3</sup> |              |     |                |
|------------------------------|--------------|-----|----------------|
| LOCATION                     | TYPE         | QTY | SPARES         |
| RP1                          | 1K PULL-UP   | 1   | 5              |
| RP2                          | 330/390 TERM | 1   | 13             |
| RP7                          | 1K PULL-UP   | 2   | 12, 13         |
| RP10                         | 1K PULL-UP   | 1   | 13             |
| RF3                          | 330/390 TERM | 4   | 10, 11, 12, 13 |
|                              |              |     |                |

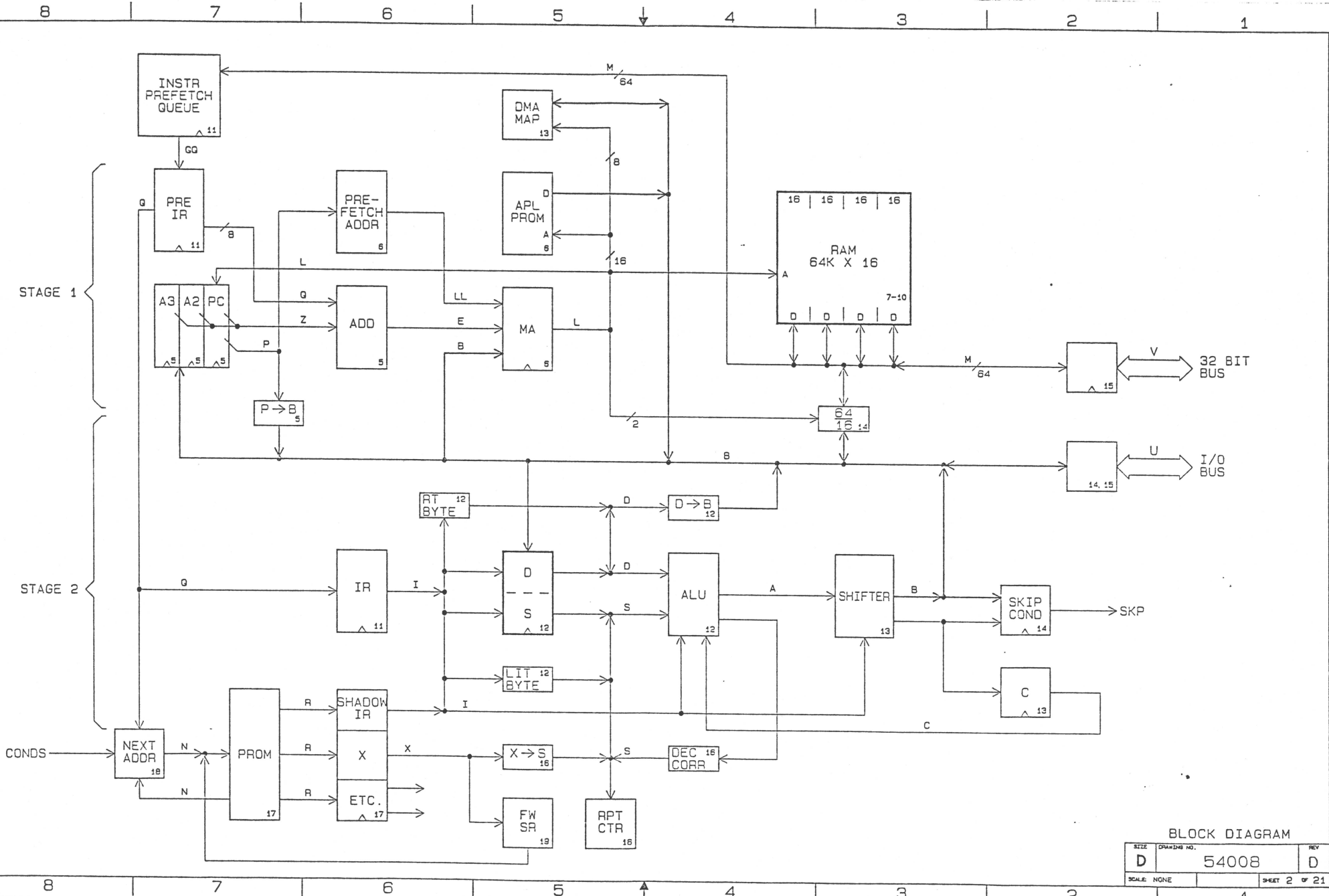
Mark 12

J  
C  
→  
B  
A

<sup>3</sup> FOR SPARE IC FUNCTIONS SEE CHIP MAP, SHEET 3.  
<sup>2</sup> CAPACITOR VALUES ARE IN FARADS, +80/-20%, 50V.  
<sup>1</sup> RESISTOR VALUES ARE IN OHMS, +/- 5%, 1/4W.  
 NOTES: UNLESS OTHERWISE SPECIFIED.

|  |   |                  |  |
|--|---|------------------|--|
| DIMENSIONS IN INCHES AND ANGLES AFTER PLATING REMOVE BURRS AND SHARP EDGES | DRAWN L. BAGGS  | DATE 9-13-85     |  TUSTIN, CALIFORNIA |
| TOLERANCE UNLESS SPECIFIED   | CHECKED R.W.M.  | DATE 30SEP85     |  |
| DECIMALS .XX = +/- .00 .XXX = +/- .010                                     | APPROVED H. WEINSTEIN   | DATE 8-30-85     |  |
| ANGLES +/- 0 DEG 30 MIN  | APPROVED W. ATWOOD  | DATE 9-30-85     |  |
| MATERIAL   | MODEL NO. MARK 12   | NEXT ASSY. 53008 | TITLE<br><b>SCHEMATIC, CPU BOARD</b>   |
| FINISH   | THIS DRAWING AND THE INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO POINT 4 DATA CORPORATION AND SHALL NOT BE REPRODUCED, COPIED, USED OR DISCLOSED TO OTHERS WITHOUT THE PRIOR WRITTEN CONSENT OF POINT 4 DATA CORPORATION. |                  |  |
| DO NOT SCALE DRAWING   | SCALE: NONE   | SHEET 1 OF 2     | SIZE D<br>DRAWING NO. 54008<br>REV D   |

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BLOCK DIAGRAM

|            |               |     |
|------------|---------------|-----|
| SIZE       | DRAWING NO.   | REV |
| D          | 54008         | D   |
| SCALE NONE | SHEET 2 OF 21 |     |

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

SW4 13 SW5 13

|   |       |       |       |       |       |       |       |       |       |       |        |        |       |       |         |                   |               |         |         |       |        |          |          |          |          |          |          |          |         |     |    |    |    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|---------|-------------------|---------------|---------|---------|-------|--------|----------|----------|----------|----------|----------|----------|----------|---------|-----|----|----|----|
|   | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11     | 12     | 13    | 14    | 15      | 16                | 17            | 18      | 19      | 20    | 21     | 22       | 23       | 24       | 25       | 26       | 27       | 28       | 29      |     |    |    |    |
| K | 11    | 11    | 11    | 11    | 11    | 11    | 11    | 11    | 11    | 11    | 11     | 19     | 11    | 11    | 20      | 20                | 5, 13, 14, 19 | 13, 20  | 19      | 18    | 18     | 20       | 20       | 18       | 11       | 18       | 19       | 17       | 17      | 17  | 17 |    |    |
|   | AS551 | AS551 | AS551 | AS551 | AS551 | AS551 | AS551 | AS551 | F374  | F175  | F175   | AS30   | F374  | F374  | LS279   | RP10              | RP11          | F240    | F20     | F240  | F240   | F244     | F253     | F257     | PAL16L8  | I27S19A  | I27S19A  | I27S19A  | I27S19A |     |    |    |    |
| J | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 6     | 14    | 12     | 12     | 12    | 12    | 12      | 12                | 12            | 16      | 16      | 19    | 18     | 18       | 19       | 18       | 17       | 17       | 17       | 17       | 17      |     |    |    |    |
|   | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | AS534 | F620  | 29705A | 29705A | F181  | F181  | F244    | F240              | F244          | F374    | F10     | F194  | F194   | I27S291A | I27S291A | I27S291A | I27S291A | I27S291A | I27S291A | I27S291A |         |     |    |    |    |
| H | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 6     | 14    | 13     | 13     | 13    | 13    | 16      | 16                | 16            | 16      | 16      | 16    | 16     | 13       | 16       | 17       | 17       | 17       | 17       | 17       | 17      |     |    |    |    |
|   | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | RP9   | F620  | F257   | F257   | F257  | F257  | AS804   | ALS240            | ALS240        | PAL16L8 | F02     | F64   | F64    | F64      | F74      | F157     | AS374    | F374     | F374     | F374     | F374    |     |    |    |    |
| G | 8     | 8     | 8     | 8     | 8     | 8     | 8     | 8     | 6     | 14    | 13     | 13     | 13    | 13    | 16      | 16                | 16            | 16      | 16      | 16    | 16     | 16       | 16       | 16       | 16       | 16       | 16       | 16       | 16      |     |    |    |    |
|   | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | RP8   | F620  | F257   | F257   | F257  | F257  | F151    | AS804             | AS804         | AS534   | F374    | F04   | Y1     | F00      | AS27     | F534     | F374     | F374     | F374     | F374     | SPARE   |     |    |    |    |
| F | 8     | 8     | 8     | 8     | 8     | 8     | 8     | 8     | 6     | 14    | 12     | 12     | 12    | 12    | 12      | 12                | 12            | 16      | 16      | 12    | 12     | 13       | 16       | 17       | 17       | 17       | 17       | 17       | 17      |     |    |    |    |
|   | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | AS534 | F620  | 29705A | 29705A | F181  | F181  | F257    | F257              | F240          | F169    | F374    | F244  | F182   | PAL16L8  | F244     | I27S291A | I27S291A | I27S291A | I27S291A | SPARE    | 24      |     |    |    |    |
| E | 9     | 9     | 9     | 9     | 9     | 9     | 9     | 9     | 6     | 14    | 6      | 6      | 5     | 5     | 6       | 6                 | 6             | 13      | 5       | 11    | 11     | 16       | 18       | 18       | 18       | 14, 17   | 18       | 17       | 11, 17  |     |    |    |    |
|   | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | AS534 | F620  | F258   | F258   | F181  | F181  | PAL16L8 | AS534             | 2764          | 93422   | F182    | AS204 | F64    | F244     | F251     | F251     | RP6      | F251     | F244     | RP7      |         |     |    |    |    |
| D | 9     | 9     | 9     | 9     | 9     | 9     | 9     | 9     | 6     | 14    | 14     | 14     | 5     | 5     | 5       | 5                 | 5             | 5       | 13      | 15    | 19     | 14       | 14       | 6        | 18       | 6        | 17       | 12       | 11      | 15  | 11 | 19 | 18 |
|   | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | RP5   | F620  | AS30   | F620   | AS534 | AS534 | F244    | F240              | F169          | F169    | 93422   | AS534 | F374   | AS651    | F138     | F00      | F00      | F20      | F175     | F00      | F00     | F20 |    |    |    |
| C | 10    | 10    | 10    | 10    | 10    | 10    | 10    | 10    | 6     | 14    | 14     | 14     | 5     | 5     | 5       | 5                 | 5             | 13      | 13      | 11    | 14     | 19       | 13       | 13       | 14       | 11       | 11       | 14       | 14      | 18  | 18 |    |    |
|   | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | RP4   | F620  | AS30   | F620   | AS534 | AS534 | F244    | F240              | F169          | F169    | 93422   | ALS04 | F74    | F32      | F138     | PAL16L8  | PAL16L8  | AS374    | F32      | F02      | F64     |     |    |    |    |
| B | 10    | 10    | 10    | 10    | 10    | 10    | 10    | 10    | 6     | 14    | 6      | 6      | 5     | 5     | 6       | 6                 | 6             | 13      | 14      | 5     | 13     | 19       | 19       | 19       | 19       | 11       | 17       | 14       | 11      | 18  | 18 |    |    |
|   | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | 2167  | AS534 | F620  | F258   | F258   | F181  | F181  | PAL16L8 | AS534             | 2764          | 93422   | AS551   | F04   | ALS151 | ALS04    | F374     | F10      | F151     | F04      | SPARE    | SPARE    |         |     |    |    |    |
| A | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 18    | 18    | 18     | 18     | 18    | 19    | 18      | 5, 11, 12, 19, 20 | 19            | 19      | 19      | 18    | 15     | 14, 15   | 15       | 14, 15   | 20       | 14       | 19       | 16       | 18      | 18  |    |    |    |
|   | AS551 | AS551 | AS551 | AS551 | AS551 | AS551 | AS551 | AS551 | F194  | AS804 | F08    | F157   | F139  | RP1   | ALS00   | AS534             | AS374         | FCM     | PAL16R8 | RP2   | F240   | RP3      | F08      | AS534    | SPARE    | F08      | PAL16L8  | F00      | SPARE   |     |    |    |    |

EDGE CONNECTOR A

EDGE CONNECTOR B

CHIP MAP

|       |      |               |       |     |   |
|-------|------|---------------|-------|-----|---|
| SIZE  | D    | DRAWING NO.   | 54008 | REV | D |
| SCALE | NONE | SHEET 3 OF 21 |       |     |   |

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

BACK PLANE INTERFACE

| A   |         |     |        |        |     |
|-----|---------|-----|--------|--------|-----|
| TOP |         |     | BOTTOM |        |     |
| PIN | SIGNAL  | SHT | PIN    | SIGNAL | SHT |
| 1   | GND     | 21  | 2      | GND    | 21  |
| 3   | +5V     | 21  | 4      | +5V    | 21  |
| 5   |         |     | 6      |        |     |
| 7   | PWRGON- | 19  | 8      | VO-    | 15  |
| 9   |         |     | 10     |        |     |
| 11  | PWRFF-  | 19  | 12     |        |     |
| 13  | V2-     | 15  | 14     | V3-    | 15  |
| 15  | V4-     | 15  | 16     | V5-    | 15  |
| 17  | V6-     | 15  | 18     | V7-    | 15  |
| 19  | V8-     | 15  | 20     | V9-    | 15  |
| 21  | V10-    | 15  | 22     | V11-   | 15  |
| 23  | V12-    | 15  | 24     | V13-   | 15  |
| 25  | V14-    | 15  | 26     | V15-   | 15  |
| 27  | V16-    | 15  | 28     | V17-   | 15  |
| 29  | V18-    | 15  | 30     | V19-   | 15  |
| 31  | V20-    | 15  | 32     | V1-    | 15  |
| 33  | GND     | 21  | 34     | GND    | 21  |
| 35  | V21-    | 15  | 36     | V22-   | 15  |
| 37  | V23-    | 15  | 38     | MSKO-  | 19  |
| 39  | V24-    | 15  | 40     | INTA+  | 19  |
| 41  | V25-    | 15  | 42     | DATIB+ | 19  |
| 43  | V26-    | 15  | 44     | DATIA+ | 19  |
| 45  | V27-    | 15  | 46     | DS3-   | 15  |
| 47  |         |     | 48     | DATOC+ | 19  |
| 49  |         |     | 50     | CLR+   | 19  |
| 51  | V28-    | 15  | 52     | STRT+  | 19  |
| 53  | V29-    | 15  | 54     | DATIC+ | 19  |
| 55  | V30-    | 15  | 56     | DATOB+ | 19  |
| 57  |         |     | 58     | DATOA+ | 19  |
| 59  |         |     | 60     | DCHA-  | 15  |
| 61  |         |     | 62     | DS4-   | 15  |
| 63  |         |     | 64     | DS5-   | 15  |
| 65  |         |     | 66     | DS2-   | 15  |
| 67  |         |     | 68     | DS1-   | 15  |
| 69  |         |     | 70     | IORST+ | 15  |
| 71  |         |     | 72     | DS0-   | 15  |
| 73  |         |     | 74     | IOPLS+ | 19  |
| 75  |         |     | 76     |        |     |
| 77  |         |     | 78     |        |     |
| 79  |         |     | 80     | SELD-  | 19  |
| 81  |         |     | 82     | SELS-  | 19  |
| 83  |         |     | 84     | PEL-   | 15  |
| 85  |         |     | 86     | RUNL-  | 15  |
| 87  |         |     | 88     | CL-    | 15  |
| 89  |         |     | 90     | CNT-   | 20  |
| 91  |         |     | 92     | STP-   | 20  |
| 93  | HISPDC+ | 15  | 94     |        |     |
| 95  | GND     | 21  | 96     |        |     |
| 97  | +5V     | 21  | 98     | +5V    | 21  |
| 99  | GND     | 21  | 100    | GND    | 21  |

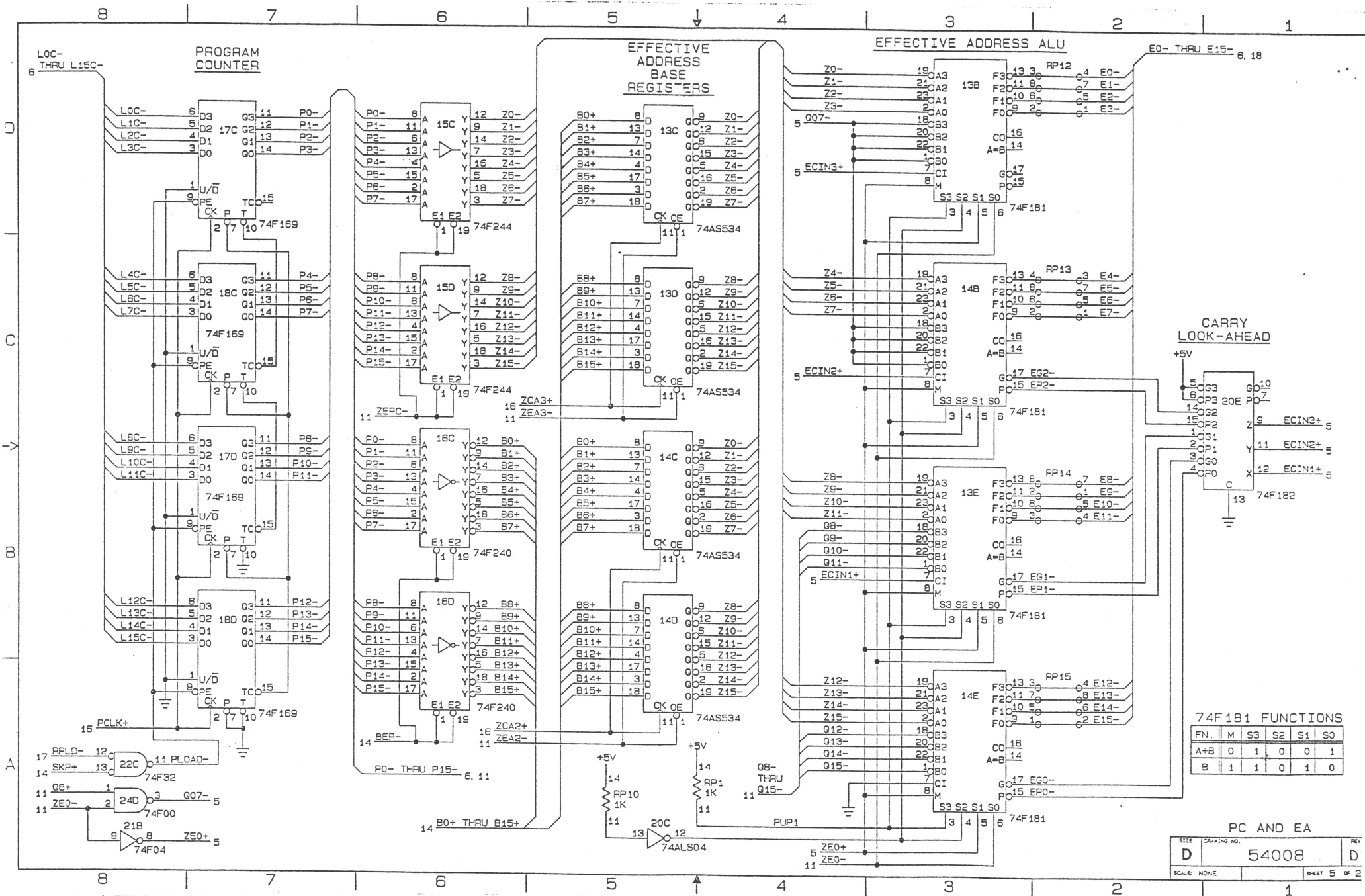
BACK PLANE INTERFACE

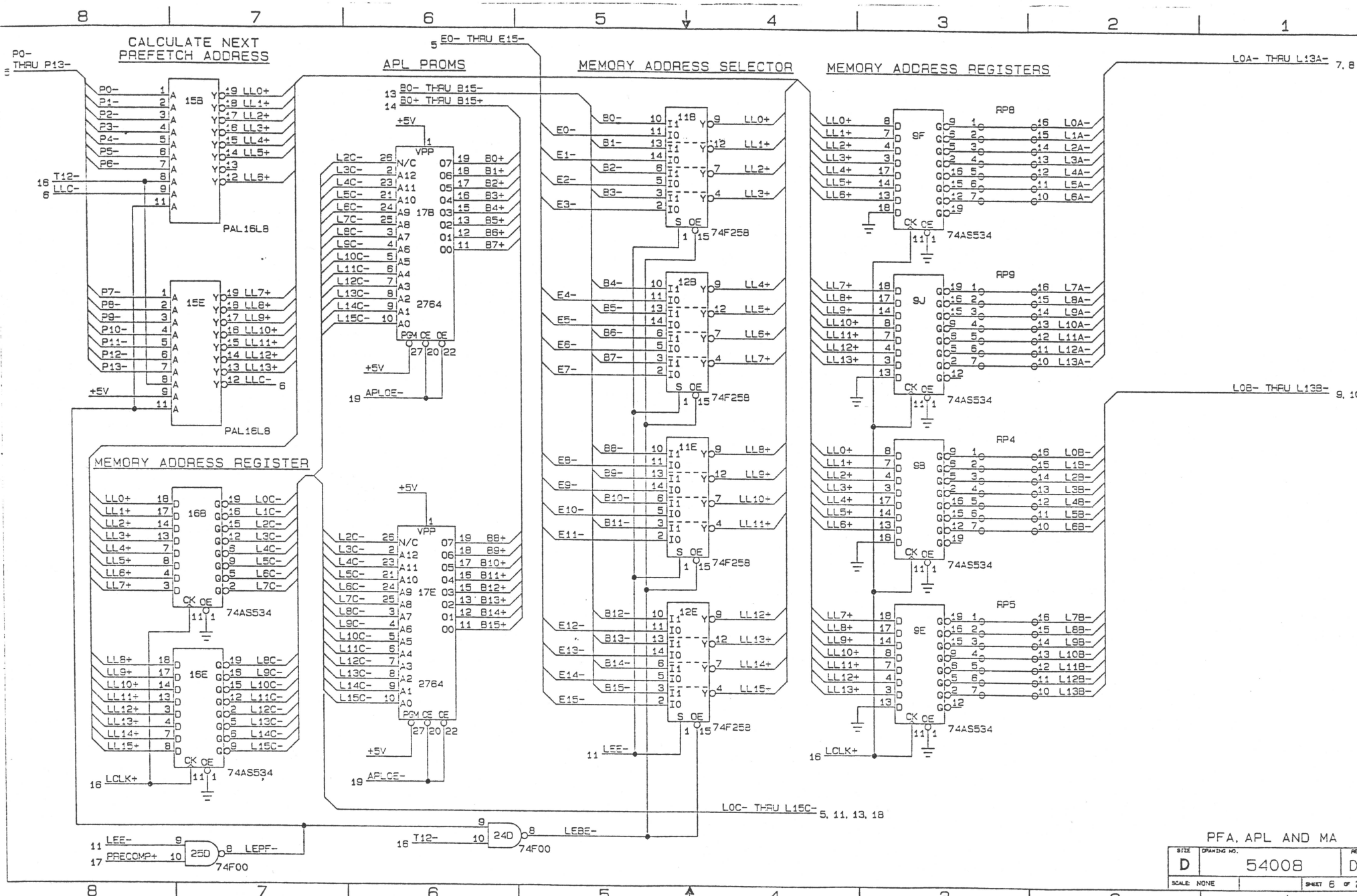
| B   |         |     |        |         |     |
|-----|---------|-----|--------|---------|-----|
| TOP |         |     | BOTTOM |         |     |
| PIN | SIGNAL  | SHT | PIN    | SIGNAL  | SHT |
| 1   | GND     | 21  | 2      | GND     | 21  |
| 3   | +5V     | 21  | 4      | +5V     | 21  |
| 5   | V31-    | 15  | 6      |         |     |
| 7   |         |     | 8      | WRITE-  | 19  |
| 9   | LWCRO-  | 19  | 10     |         |     |
| 11  |         |     | 12     | AS-     | 17  |
| 13  |         |     | 14     | DS-     | 17  |
| 15  |         |     | 16     |         |     |
| 17  | DCHMO-  | 15  | 18     | SYSCLK- | 15  |
| 19  |         |     | 20     |         |     |
| 21  |         |     | 22     |         |     |
| 23  |         |     | 24     |         |     |
| 25  |         |     | 26     | BBUSY-  | 15  |
| 27  |         |     | 28     | BERR-   | 15  |
| 29  | INTR-   | 19  | 30     | BERC-   | 15  |
| 31  |         |     | 32     | DTACK-  | 15  |
| 33  | DCHO+   | 19  | 34     |         |     |
| 35  | DCHR-   | 15  | 36     |         |     |
| 37  | DCHI+   | 15  | 38     |         |     |
| 39  |         |     | 40     |         |     |
| 41  | RGENB-  | 15  | 42     |         |     |
| 43  |         |     | 44     |         |     |
| 45  |         |     | 46     |         |     |
| 47  |         |     | 48     |         |     |
| 49  |         |     | 50     | GND     | 21  |
| 51  |         |     | 52     |         |     |
| 53  |         |     | 54     |         |     |
| 55  | DATA7-  | 14  | 56     | DATA14- | 14  |
| 57  | DATA5-  | 14  | 58     | DATA11- | 14  |
| 59  | DATA12- | 14  | 60     | DATA8-  | 14  |
| 61  | DATA4-  | 14  | 62     | DATA0-  | 14  |
| 63  | DATAS-  | 14  | 64     | DATA13- | 14  |
| 65  | DATA1-  | 14  | 66     | DATA15- | 14  |
| 67  |         |     | 68     |         |     |
| 69  |         |     | 70     |         |     |
| 71  |         |     | 72     |         |     |
| 73  | DATA3-  | 14  | 74     |         |     |
| 75  | DATA10- | 14  | 76     |         |     |
| 77  |         |     | 78     |         |     |
| 79  |         |     | 80     |         |     |
| 81  |         |     | 82     | DATA2-  | 14  |
| 83  |         |     | 84     |         |     |
| 85  |         |     | 86     |         |     |
| 87  |         |     | 88     |         |     |
| 89  |         |     | 90     |         |     |
| 91  |         |     | 92     | GND     | 21  |
| 93  |         |     | 94     |         |     |
| 95  | DATA6-  | 14  | 96     |         |     |
| 97  | +5V     | 21  | 98     | +5V     | 21  |
| 99  | GND     | 21  | 100    | GND     | 21  |

CONNECTOR INTERFACE

|             |               |     |
|-------------|---------------|-----|
| SIZE        | DRAWING NO.   | REV |
| D           | 54008         | D   |
| SCALE: NONE | SHEET 4 OF 21 |     |





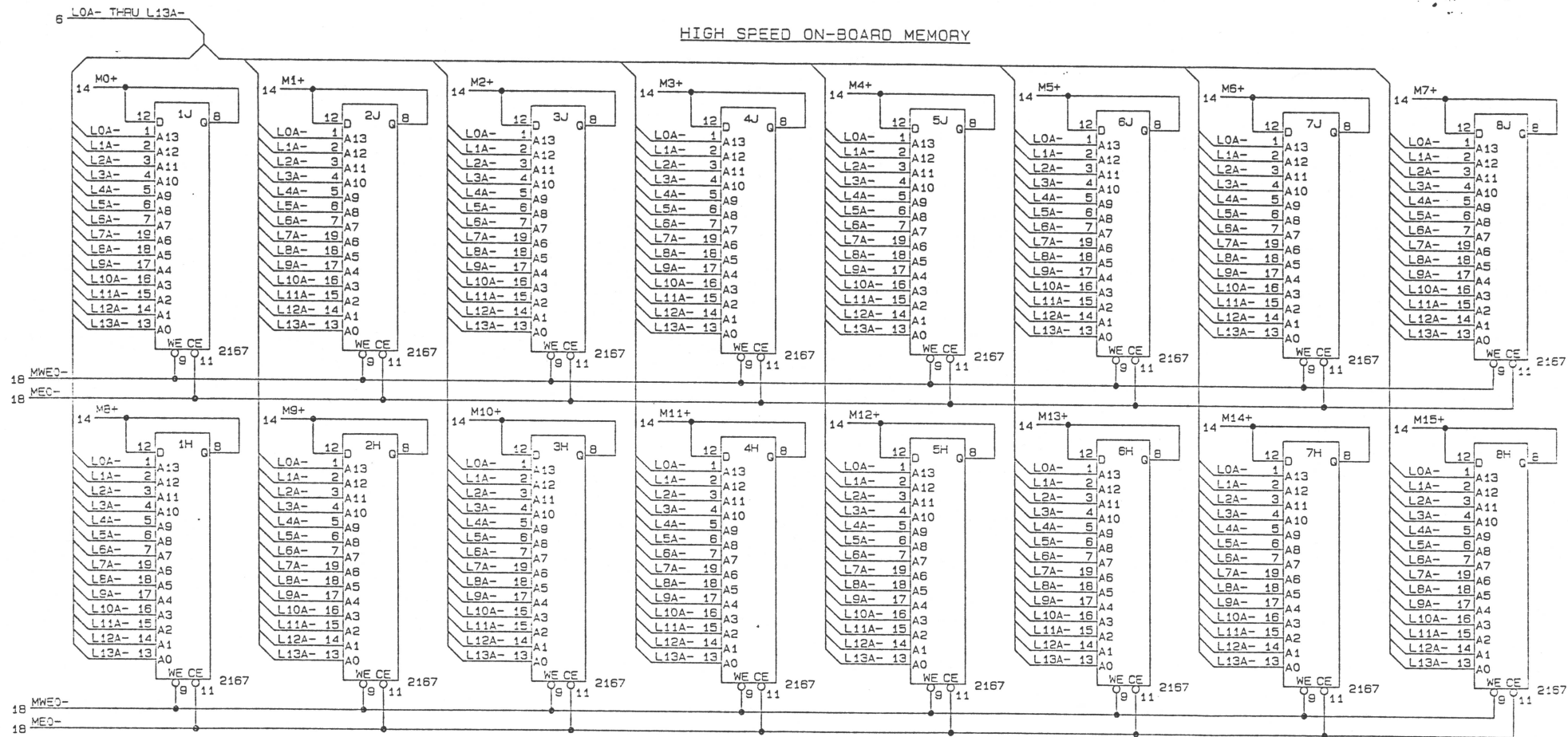


PFA, APL AND MA

| SIZE        | DRAWING NO. | REV           |
|-------------|-------------|---------------|
| D           | 54008       | D             |
| SCALE: NONE |             | SHEET 6 OF 21 |

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HIGH SPEED ON-BOARD MEMORY

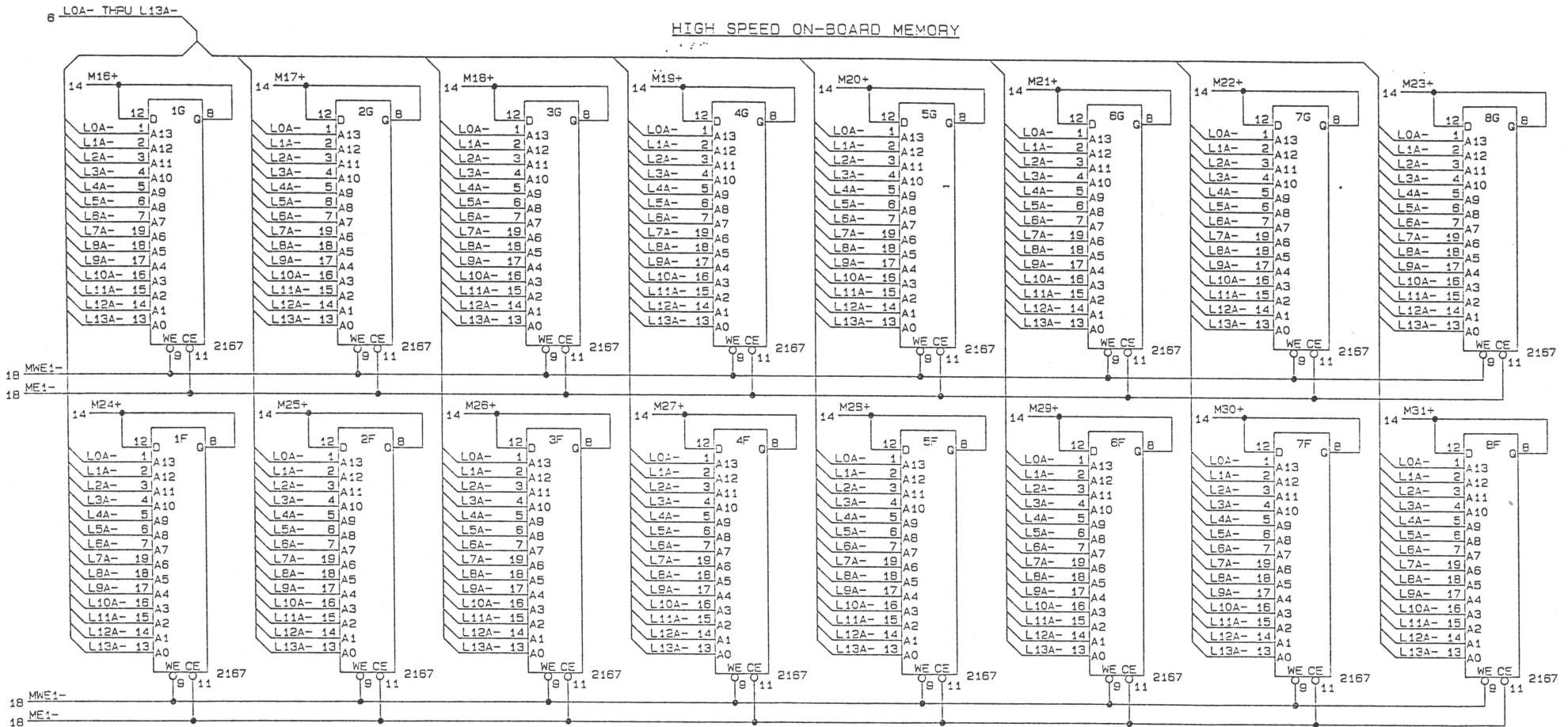


RAM

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|-------|-------------|---------------|
| SIZE  | DRAWING NO. | REV           |
| D     | 54008       | D             |
| SCALE | NONE        | SHEET 7 OF 21 |

8 7 6 5 4 3 2 1

HIGH SPEED ON-BOARD MEMORY



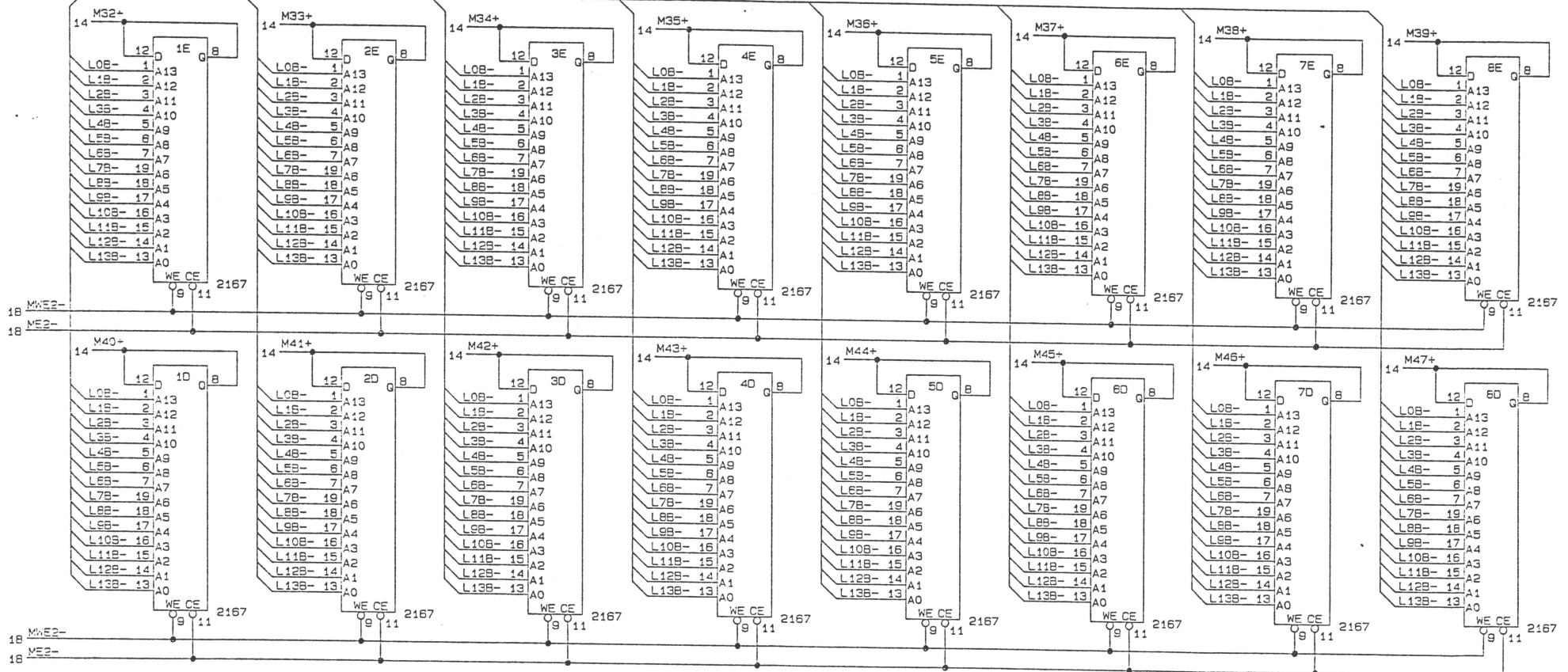
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| SIZE        | CHANGING NO. | REV           |
| D           | 54008        | D             |
| SCALE: NONE |              | SHEET 8 OF 21 |

RAM

8 7 6 5 4 3 2 1

HIGH SPEED ON-BOARD MEMORY

6 LOB- THRU L13B-



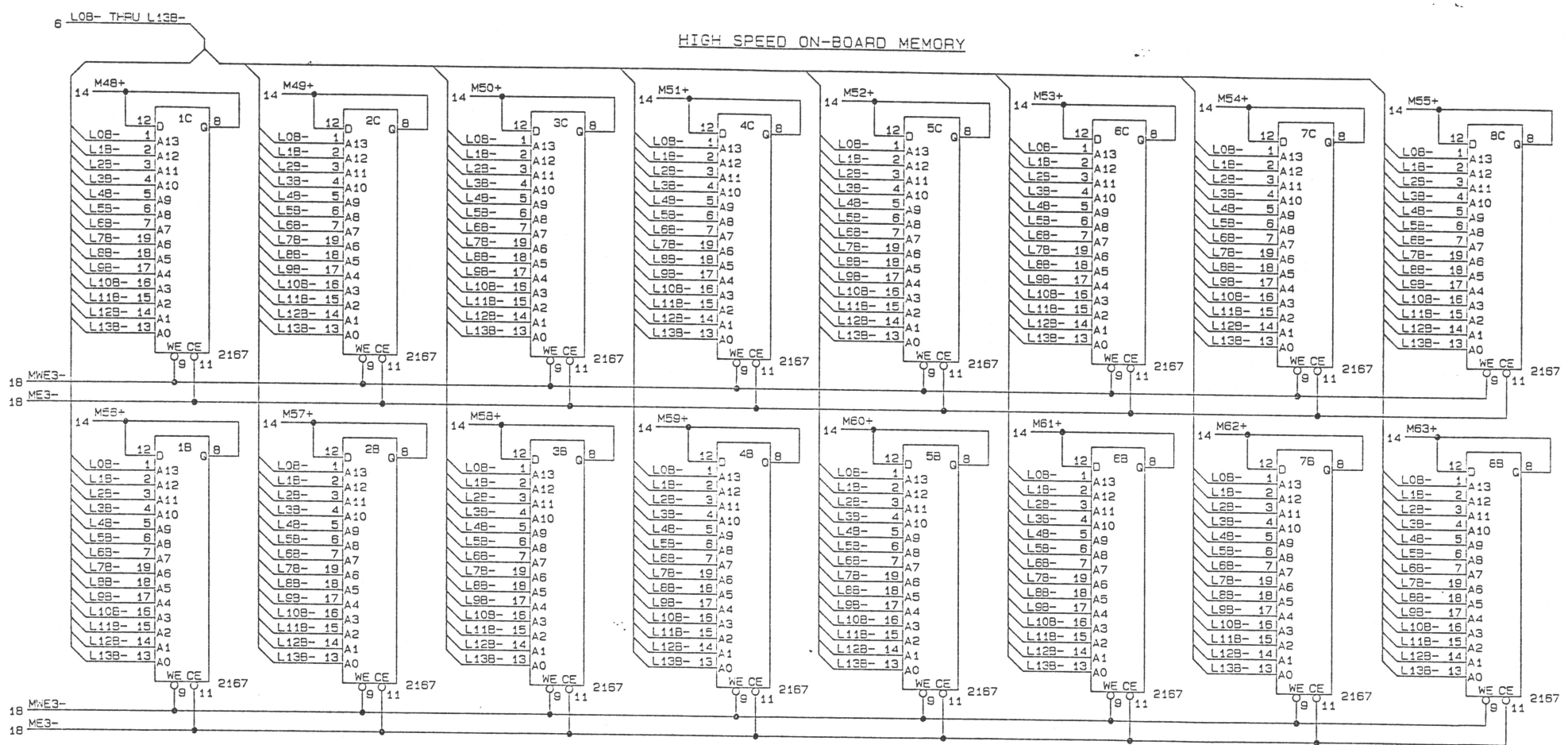
RAM

|             |               |     |
|-------------|---------------|-----|
| SIZE        | DRAWING NO.   | REV |
| D           | 54008         | D   |
| SCALE: NONE | SHEET 9 OF 21 |     |

8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

HIGH SPEED ON-BOARD MEMORY

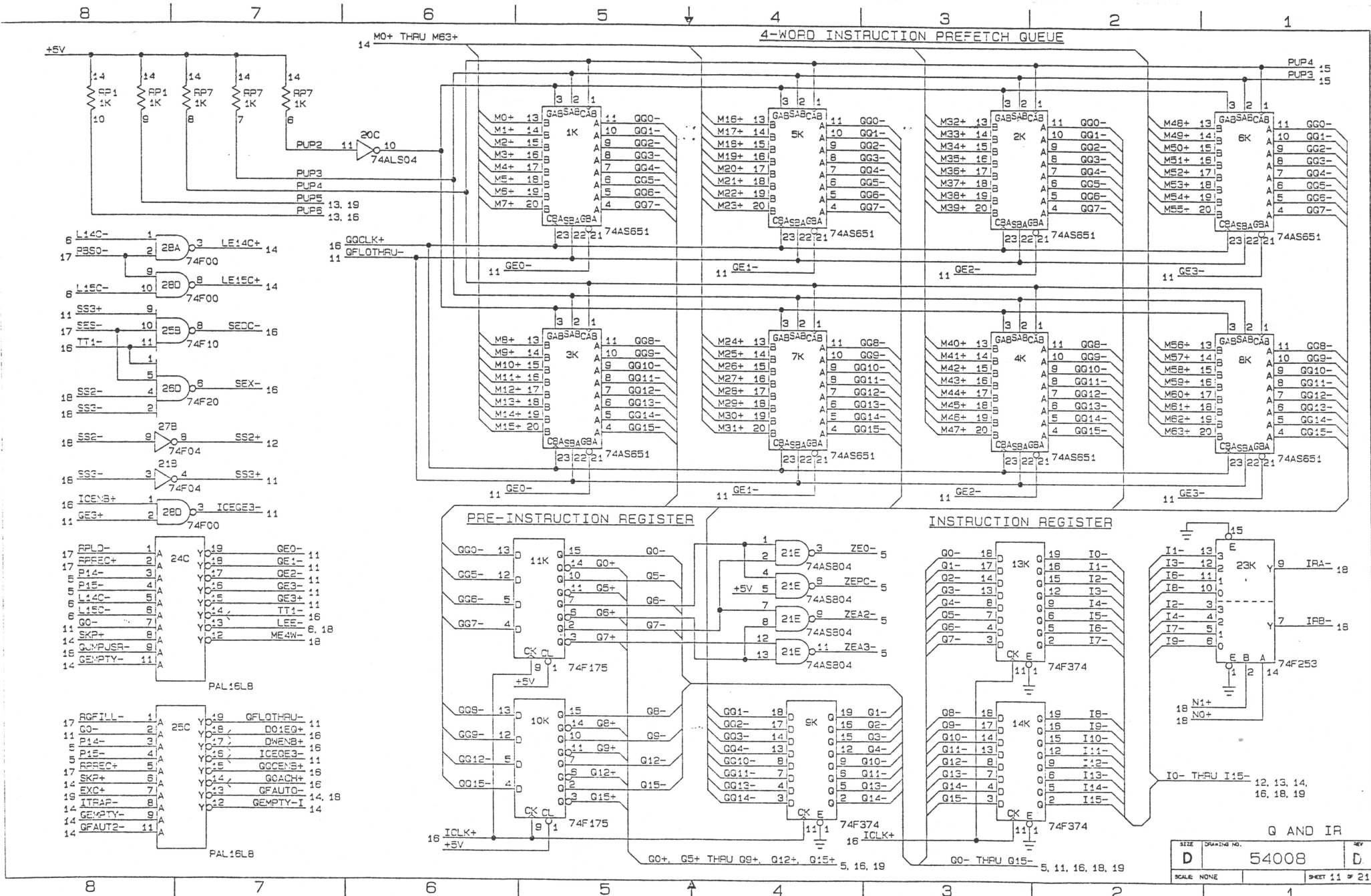


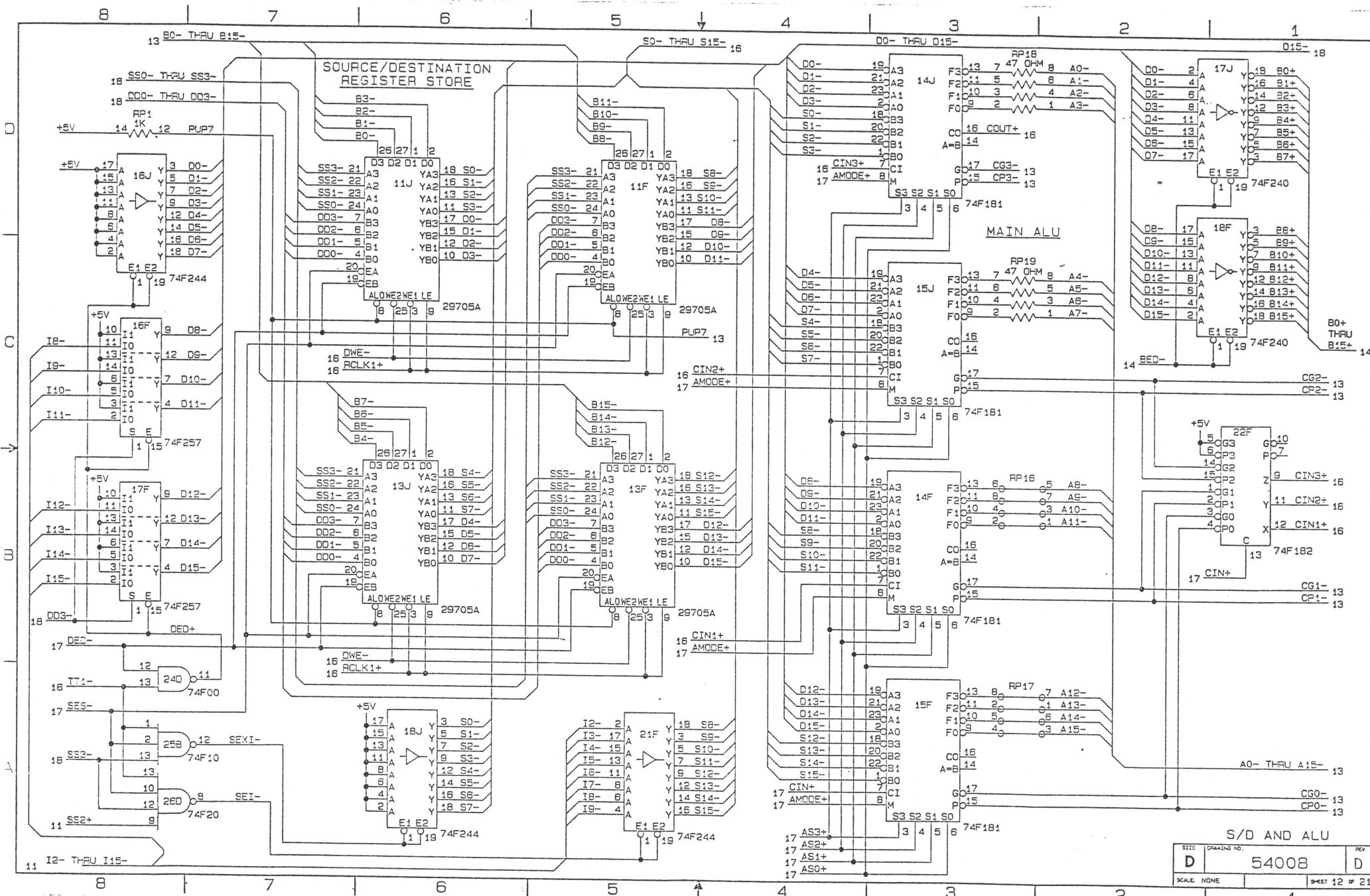
8 7 6 5 4 3 2 1

RAM

|             |                |     |
|-------------|----------------|-----|
| SIZE        | GRANDING NO.   | REV |
| D           | 54008          | D   |
| SCALE: NONE | SHEET 10 OF 21 |     |

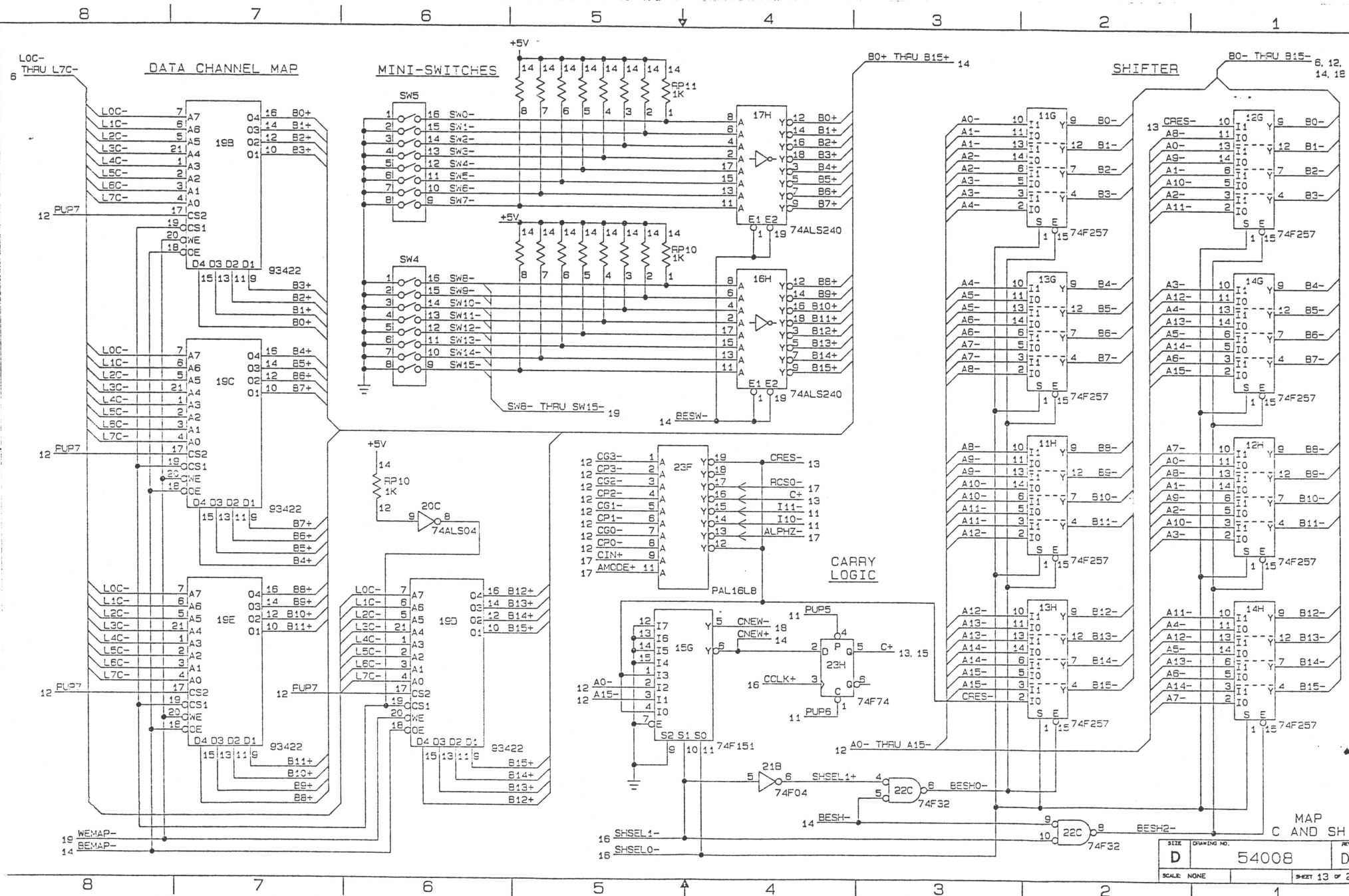






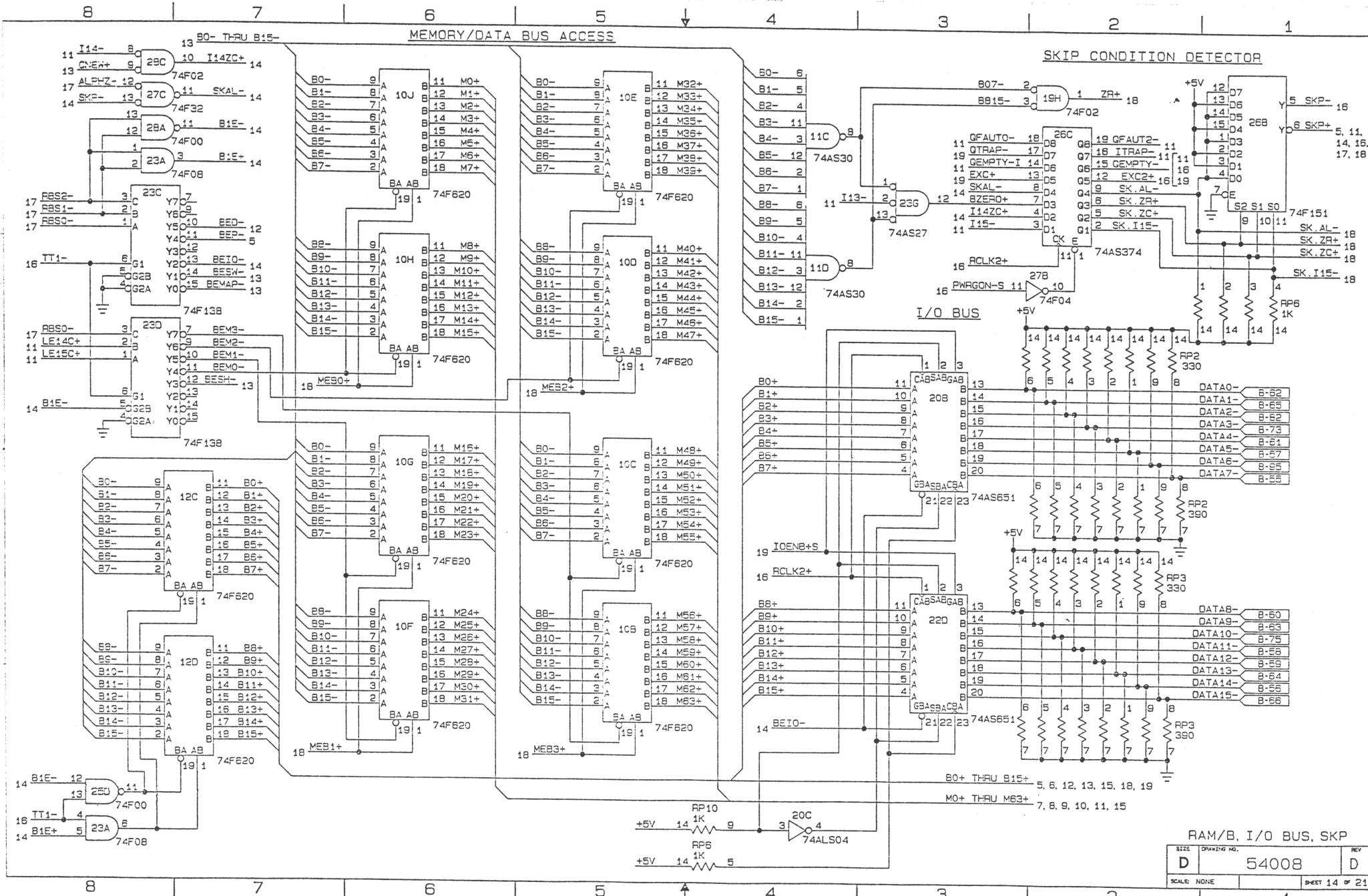
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|-------------|-------------|----------------|
| S/D AND ALU |             |                |
| SIZE        | DRAWING NO. | REV            |
| D           | 54008       | D              |
| SCALE       | NONE        | SHEET 12 OF 21 |

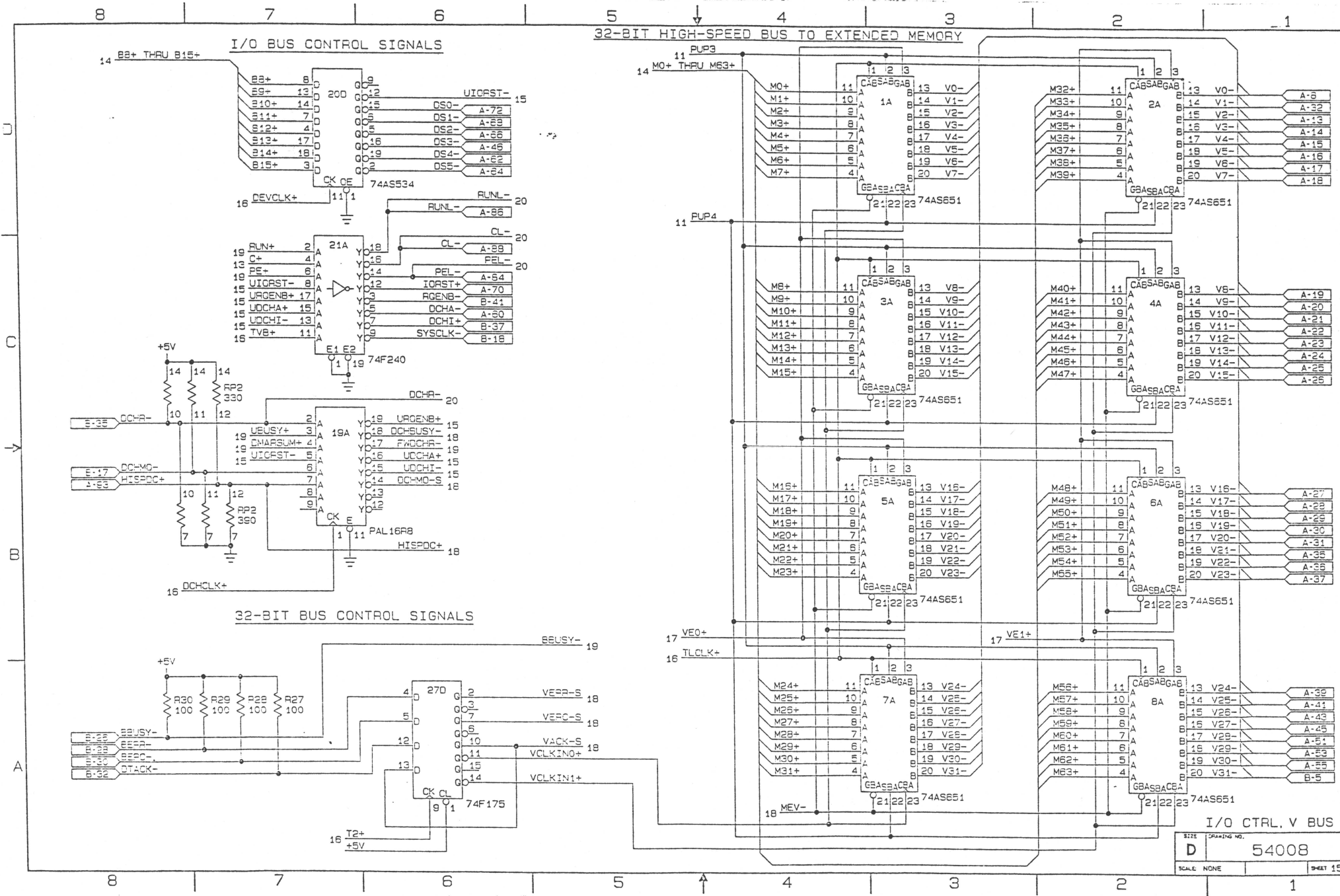


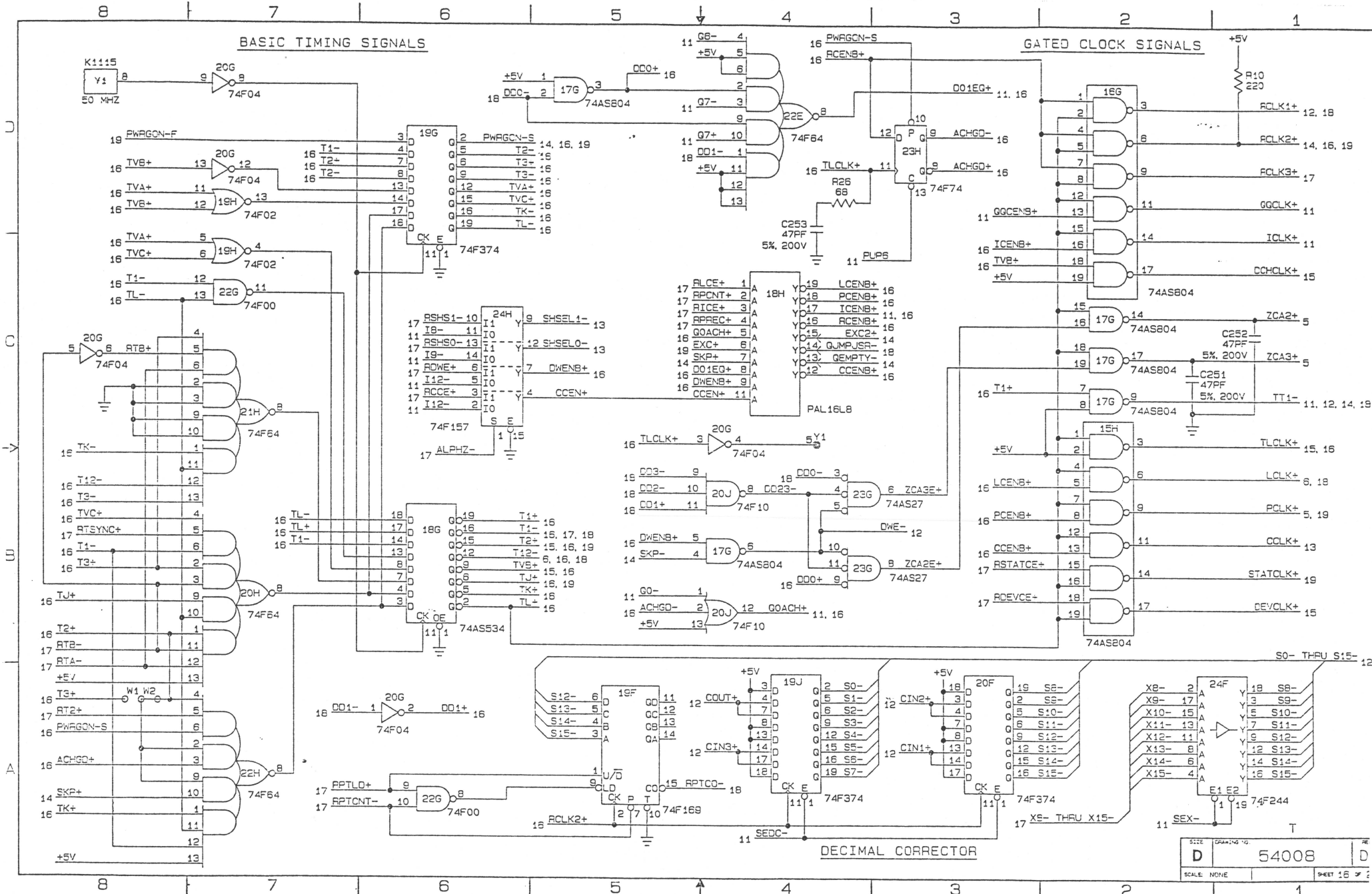


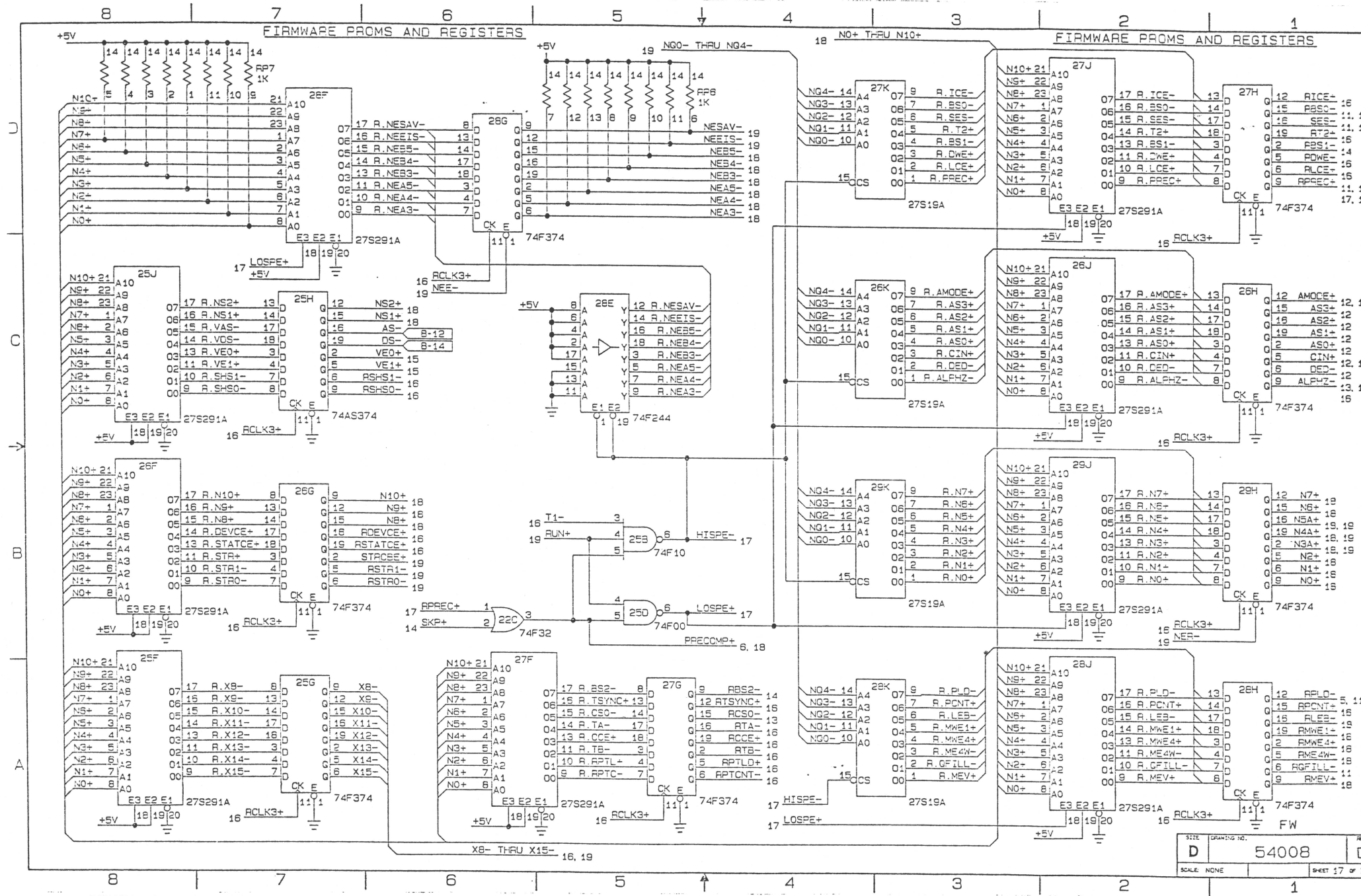
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| SIZE        | DRAWING NO.    | REV |
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| SCALE: NONE | SHEET 13 OF 21 |     |

MAP C AND SH



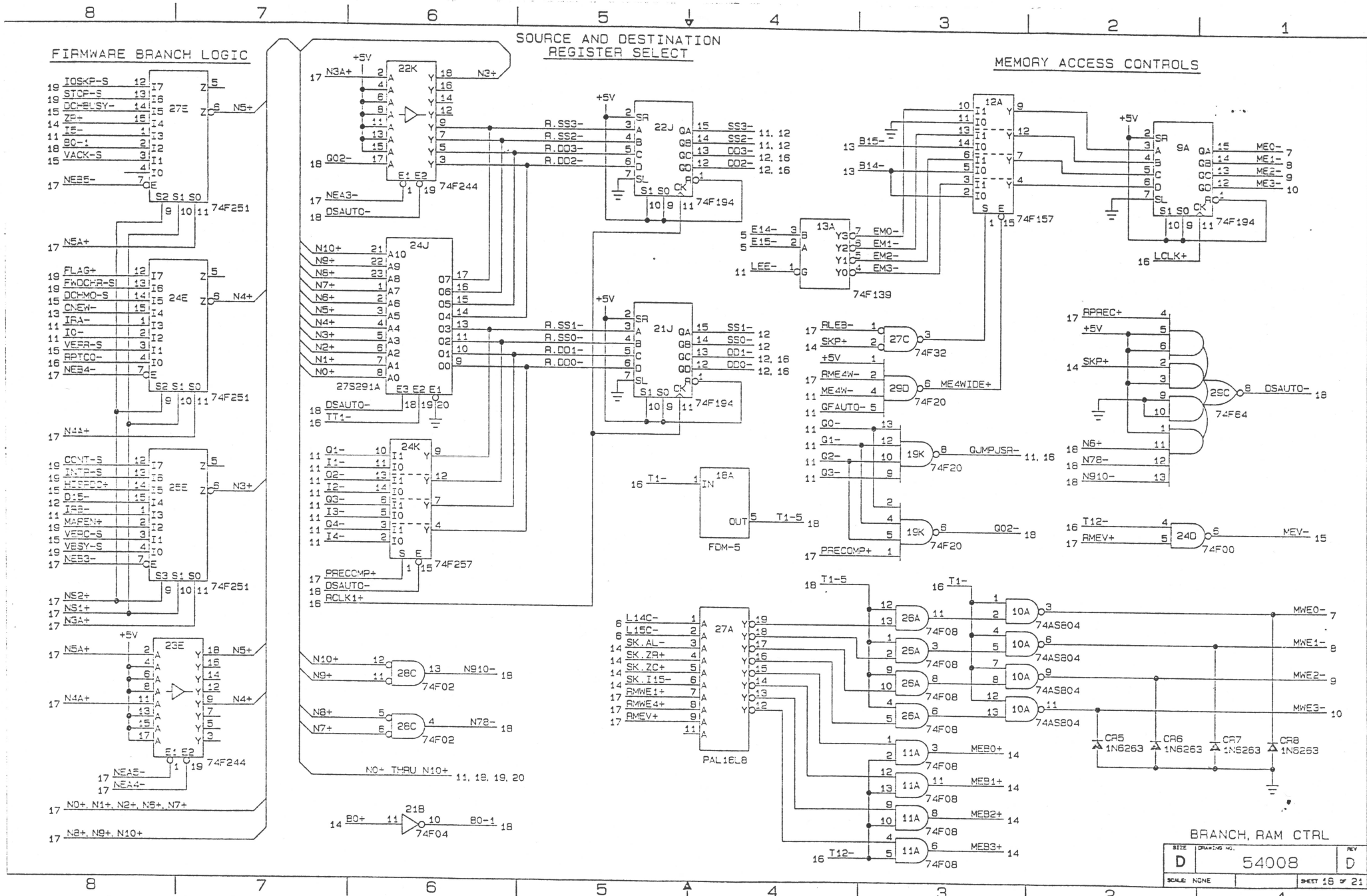






|       |             |          |
|-------|-------------|----------|
| SIZE  | DRAWING NO. | SHEET    |
| D     | 54008       | 17 OF 17 |
| SCALE | NONE        | FW       |





|       |             |                |
|-------|-------------|----------------|
| SIZE  | DRAWING NO. | REV            |
| D     | 54008       | D              |
| SCALE | NONE        | SHEET 18 OF 21 |



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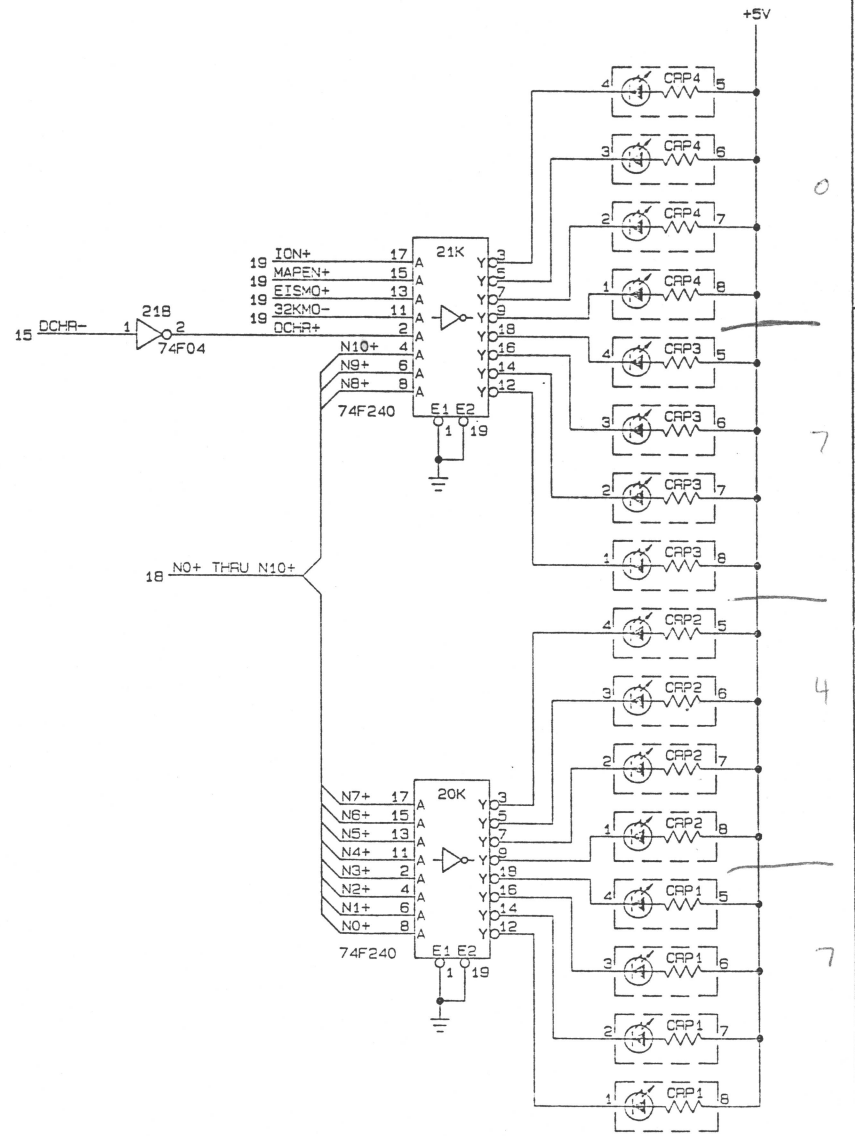
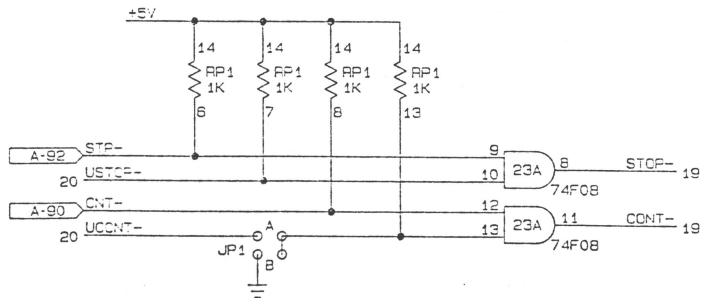
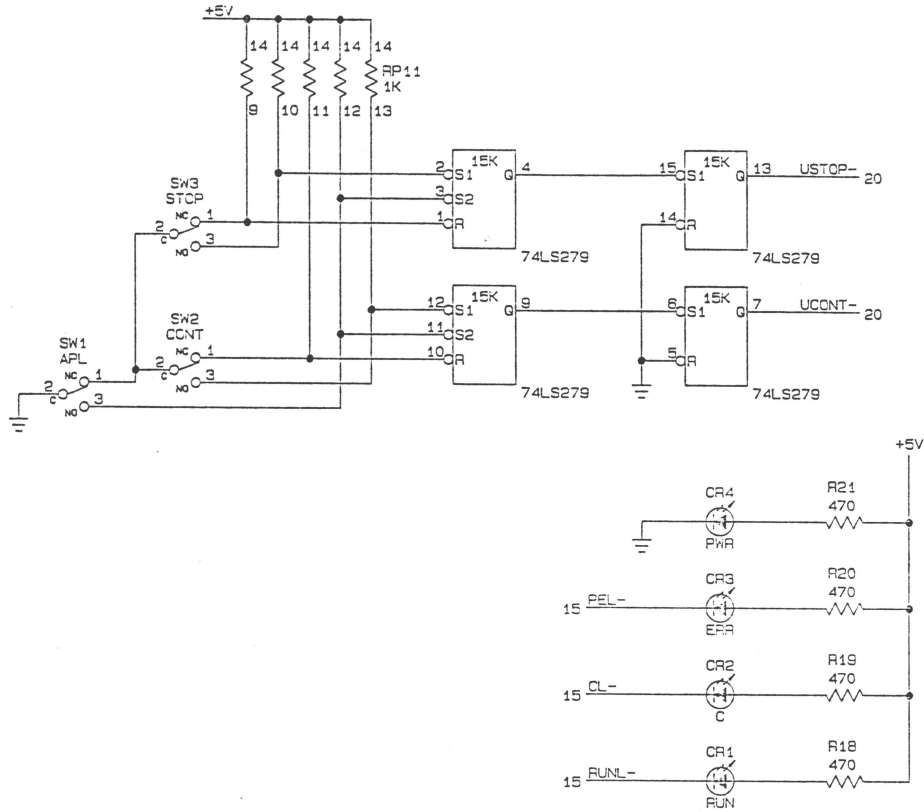
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### UNIVERSAL SWITCH/INDICATOR OPTION



### INDICATORS

|             |                |     |
|-------------|----------------|-----|
| SIZE        | DRAWING NO.    | REV |
| D           | 54008          | D   |
| SCALE: NONE | SHEET 20 OF 21 |     |

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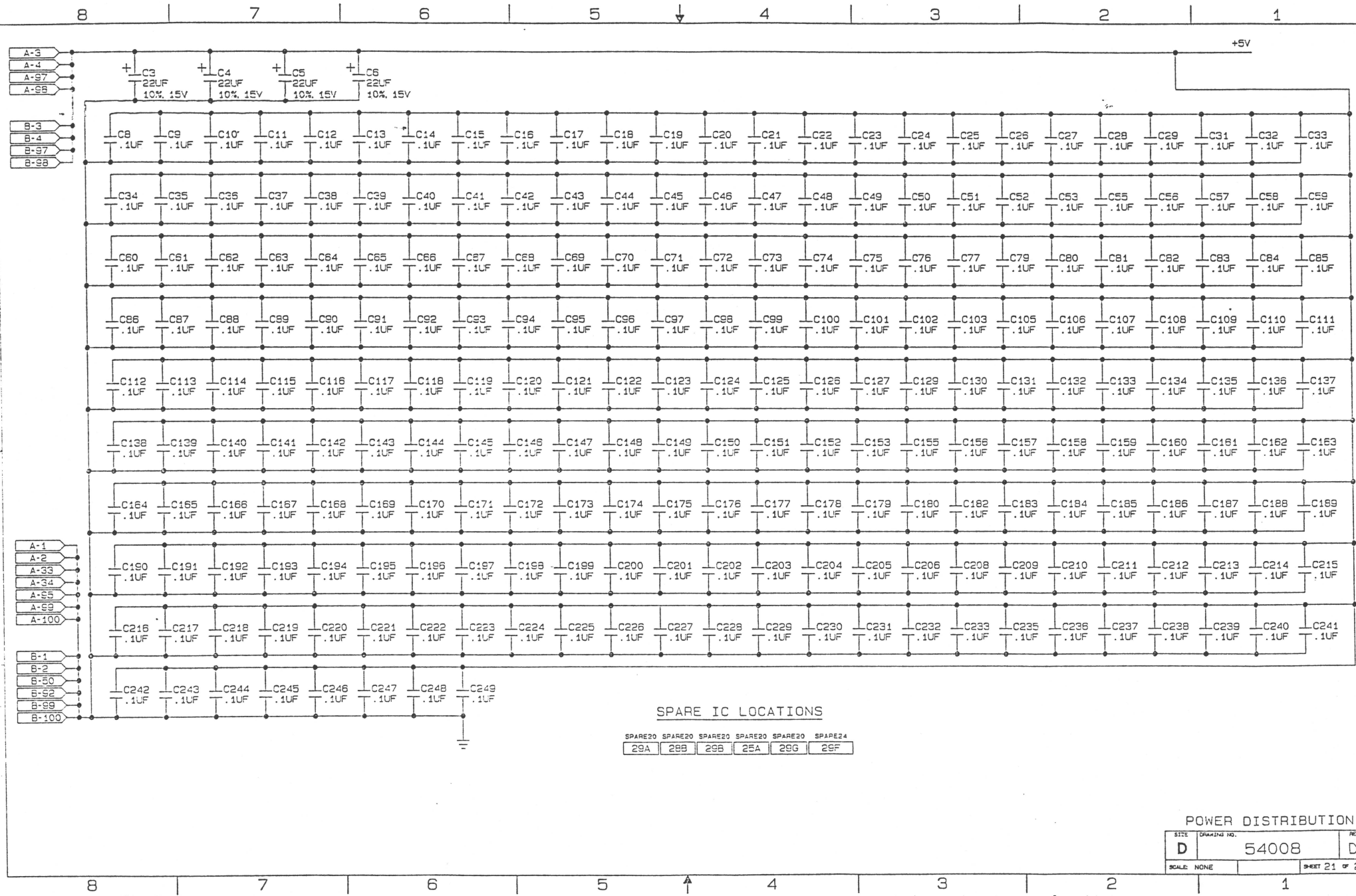
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POWER DISTRIBUTION

| SIZE        | DRAWING NO. | REV            |
|-------------|-------------|----------------|
| D           | 54008       | D              |
| SCALE: NONE |             | SHEET 21 OF 21 |