

**INTELLEC® SERIES II
MICROCOMPUTER
DEVELOPMENT SYSTEM**

Manual Order Number: 9800554-04 Rev. D

**schematic
drawings**

intel®



INTELLEC® SERIES II MICROCOMPUTER DEVELOPMENT SYSTEM

Manual Order Number: 9800554-04 Rev. D

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- | | | |
|-------------|-----------------|-------------|
| i | iSBC | Multimodule |
| ICE | Library Manager | PROMPT |
| iCS | MCS | Promware |
| Insite | Megachassis | RMX |
| Intel | Micromap | UPI |
| Intelevison | Multibus | μScope |
| Inteltec | | |

and the combination of ICE, iCS, iSBC, MCS, or RMX and a numerical suffix.

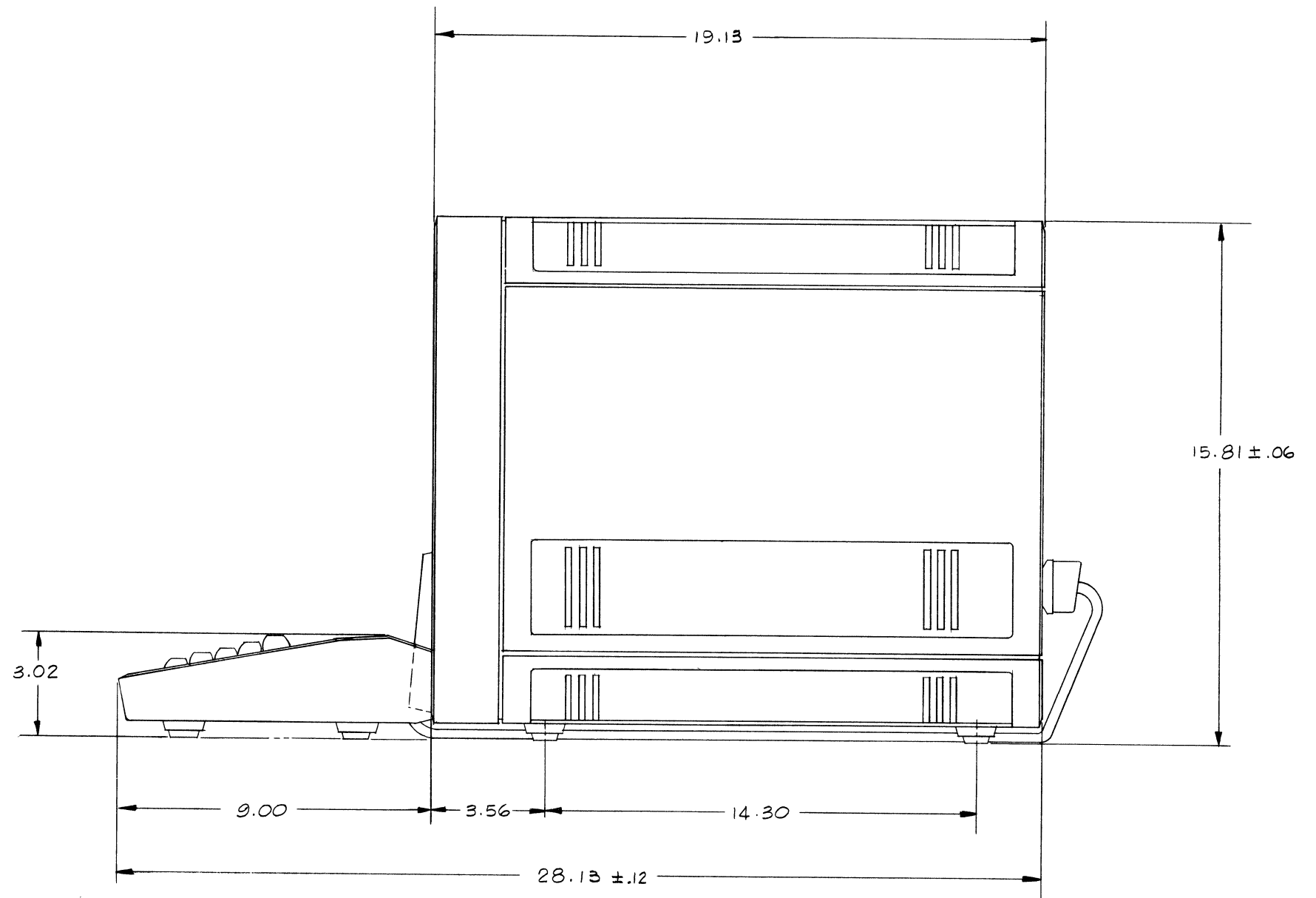
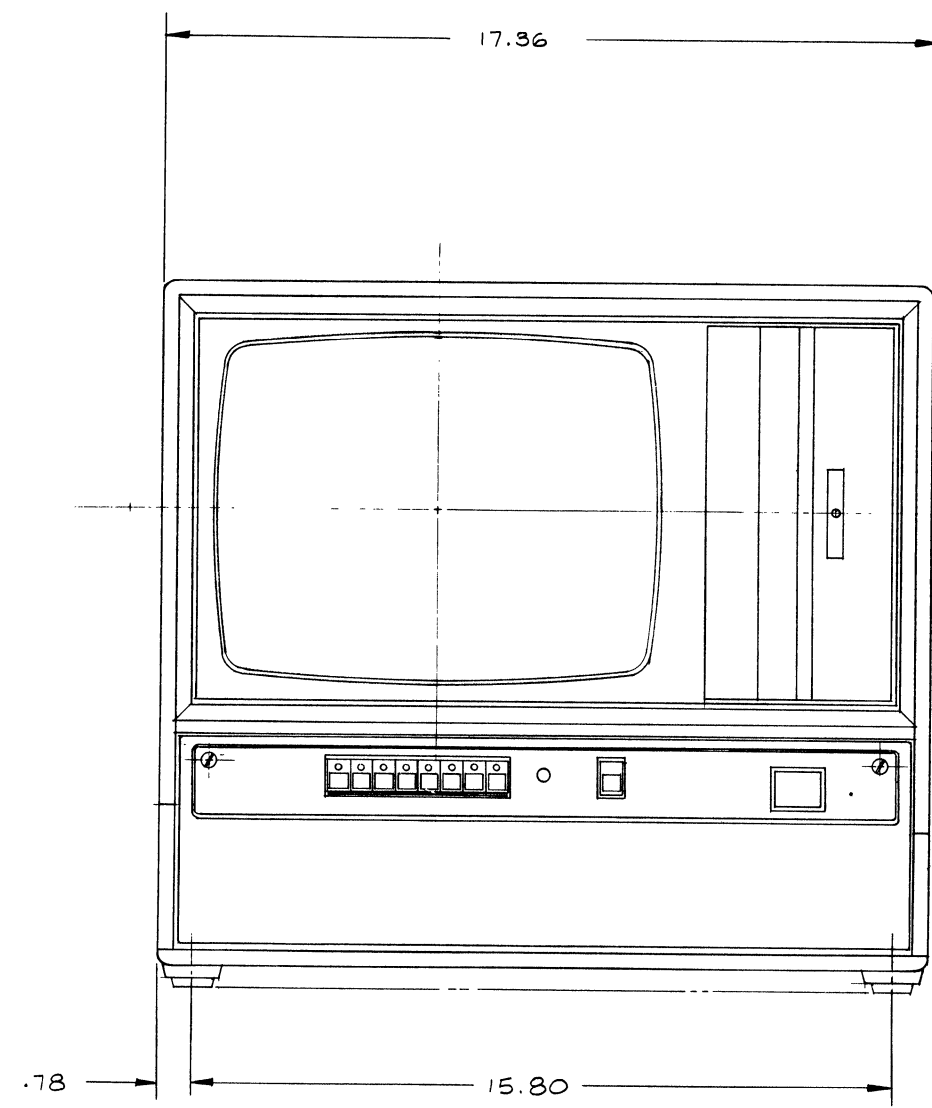
| TITLE | NUMBER |
|--|---------|
| Outline Drawing MDS-220 MDS-230 | 4301762 |
| Systems Interconnect MDS 220/221/222 (3 sheets) | 2002594 |
| Systems Interconnect MDS 230/231/232 (4 sheets) | 2002528 |
| Printed Wiring Assy Integrated Processor Bd. | 1002321 |
| Schematic IPB (10 sheets) | 2002738 |
| Printed Wiring Assembly Integrated Processor Card. | 1002494 |
| Schematic Integrated Processor Card (12 sheets) | 123189 |
| Printed Wiring Assembly I/O Controller | 1002104 |
| Schematic I/O Controller (12 sheets) | 123001 |
| Printed Wiring Assembly Front Control Panel | 1001200 |
| Schematic-Front Control Panel | 2001202 |
| Printed Wiring Assembly, 6 Slot Backplane (2 sheets) | 1002078 |
| Schematic, 6 Slot Backplane EMDS (4 sheets) | 2002679 |
| Key Board Schematic Micro-Switch/Keyboard Specification (2 sheets) | 4501240 |
| Schematic Diagram Power Supply CRT/Floppy Disk (4 sheets) | 2001254 |
| Schematic, Power Supply (3 sheets) | 2838* |
| Outline Drawing-MDS-EXP, MDS-210 | 4301761 |
| System Interconnect MDS-201/202 (3 sheets) | 2002530 |
| Printed Wiring Assy Expansion Backplane | 1002152 |
| Schematic Diagram Expansion Backplane (3 sheets) | 2002771 |
| Schematic Diagram-Exp. Chassis Power Supply (4 sheets) | 2001271 |

*Vendor supplied schematic.

8 7 6 5 4 3 2 1

D
C
B
A

D
C
B
A



REPRODUCTION/ACCESS
REORDER NO. 41800

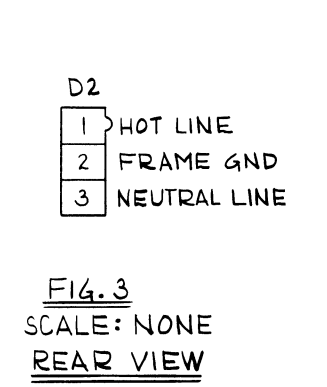
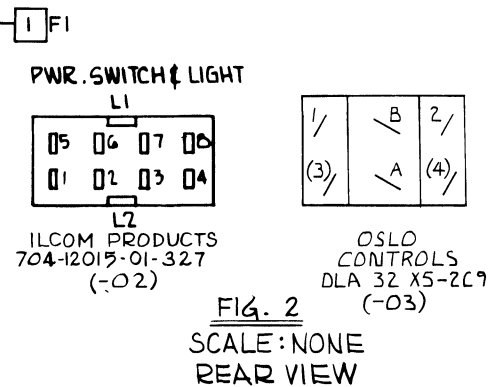
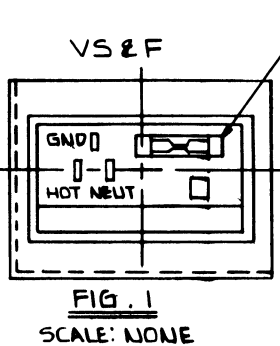
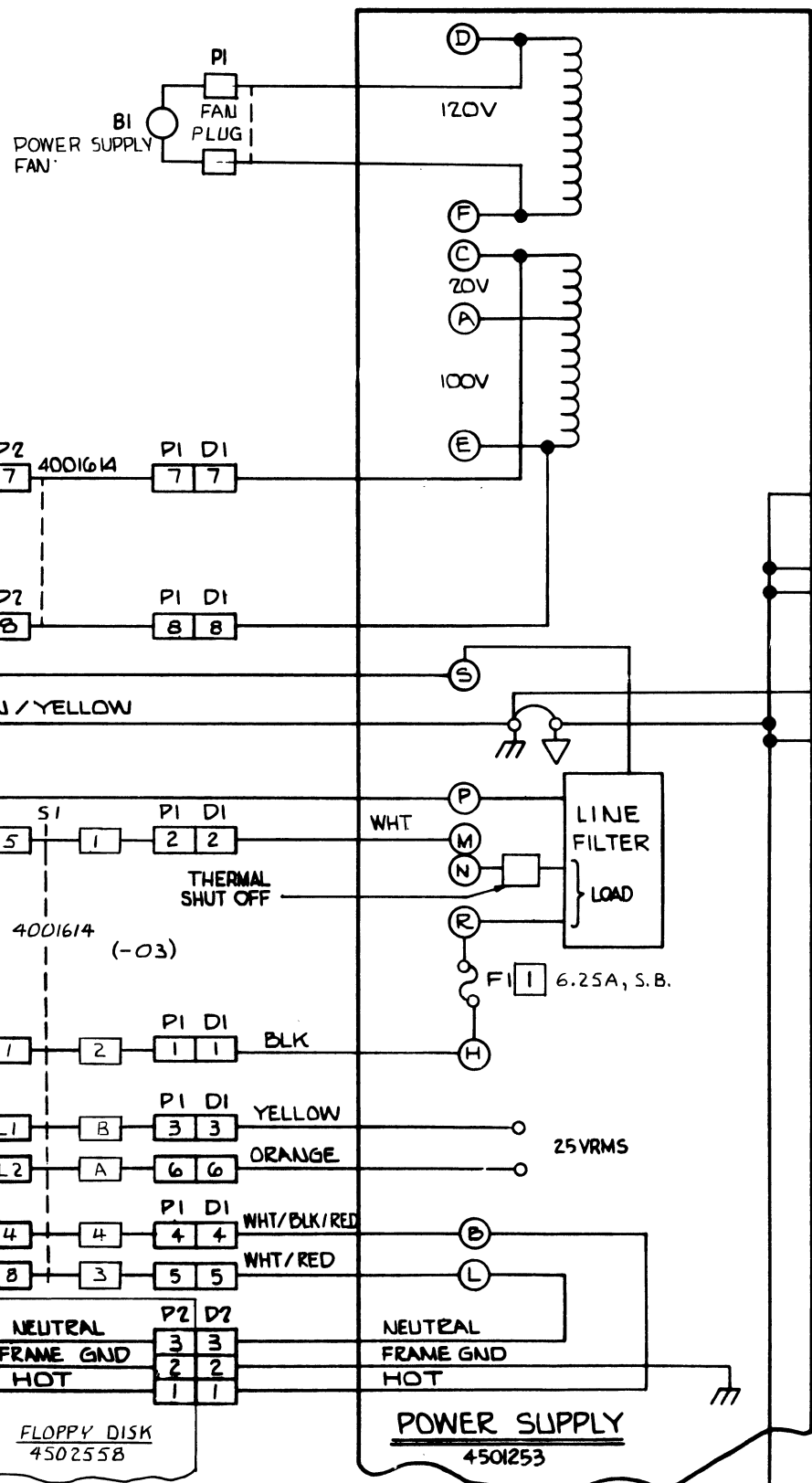
8 7 6 5 4 3 2 1

SHEET 1 OF 1

| | | | |
|---|-------------|---|----------|
| intel | | 3065 BOWERS AVE. SANTA CLARA CALIF. 95051 | |
| TITLE OUTLINE DRAWING MDS-220 MDS 230 | | | |
| SIZE D | DEPT MCD | DRAWING NO. P4301762 | REV A |

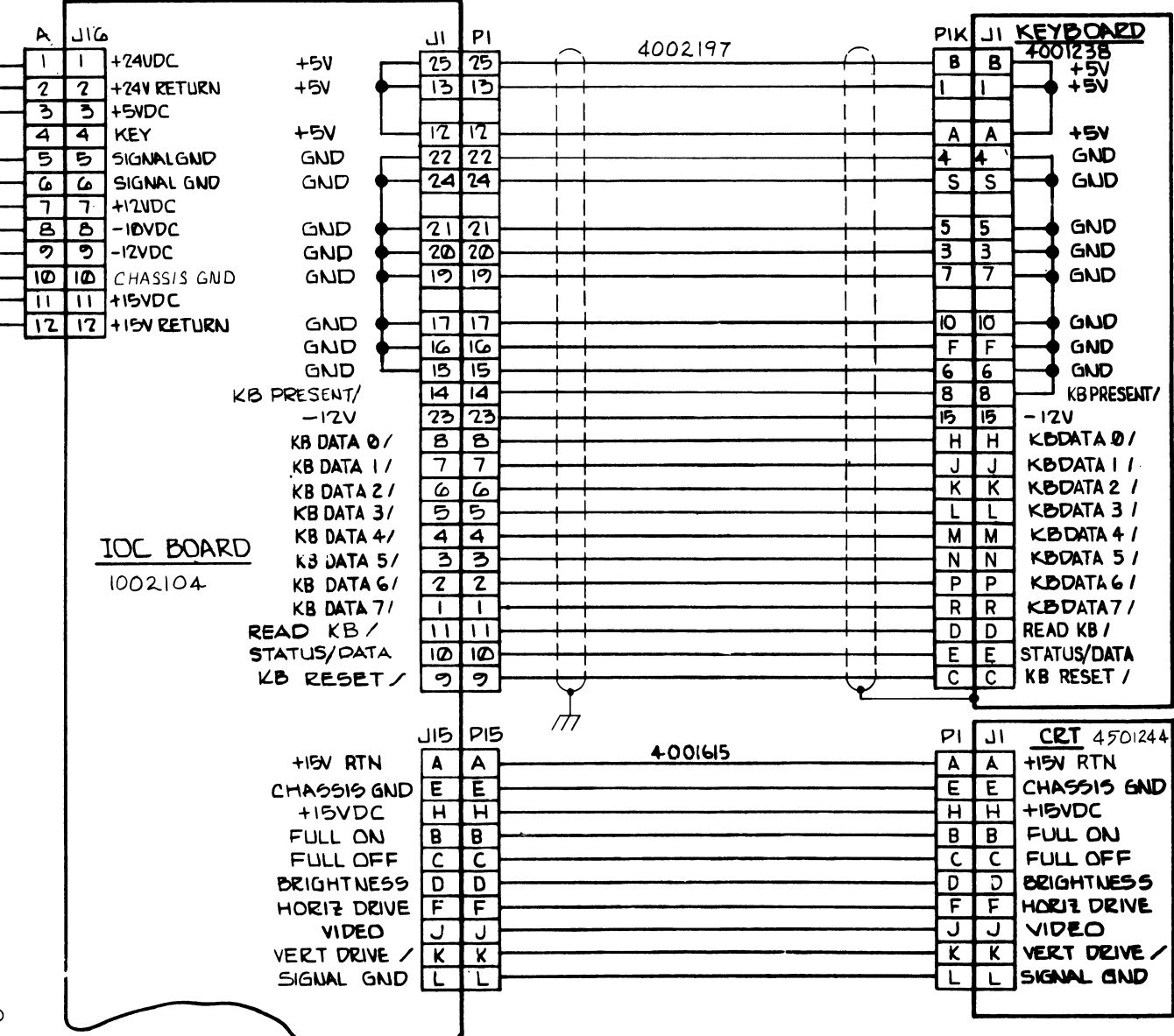
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FUSE REQUIREMENTS.
 110V - 6.25A, SLOW BLOW
 230V - 3A, SLOW BLOW
NOTES: UNLESS OTHERWISE SPECIFIED

FIG. 4
 SCALE: NONE
 REAR VIEW



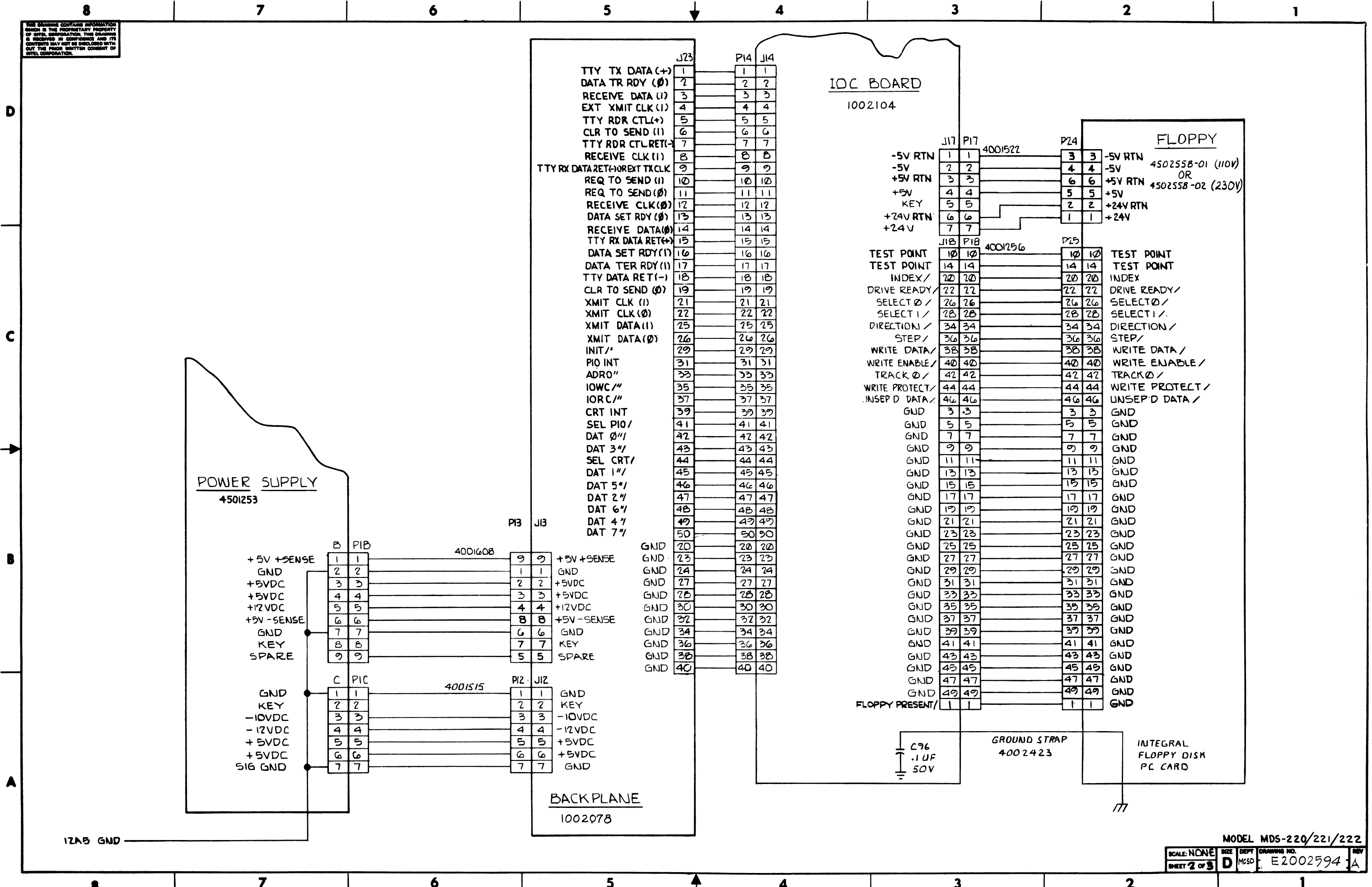
intel 3065 BOWEN AVE. SANTA CLARA CALIF. 95051

TITLE: SYSTEMS INTERCONNECT
 MDS 220/221/222

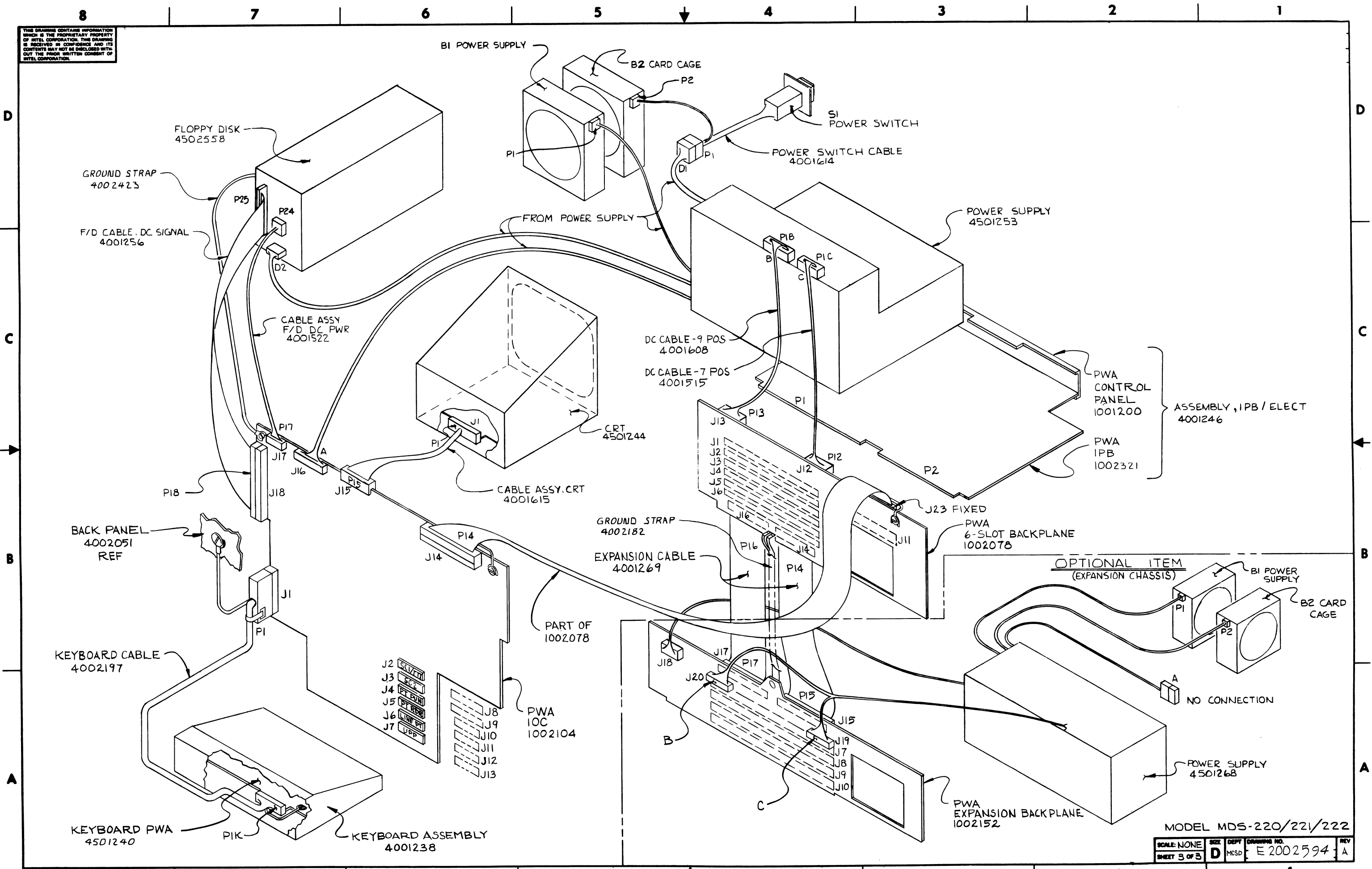
SIZE: D DEPT: MCDSD DRAWING NO: E2002594

CODE: SHEET 1 OF 3

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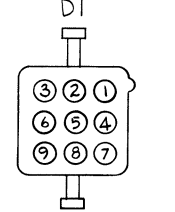
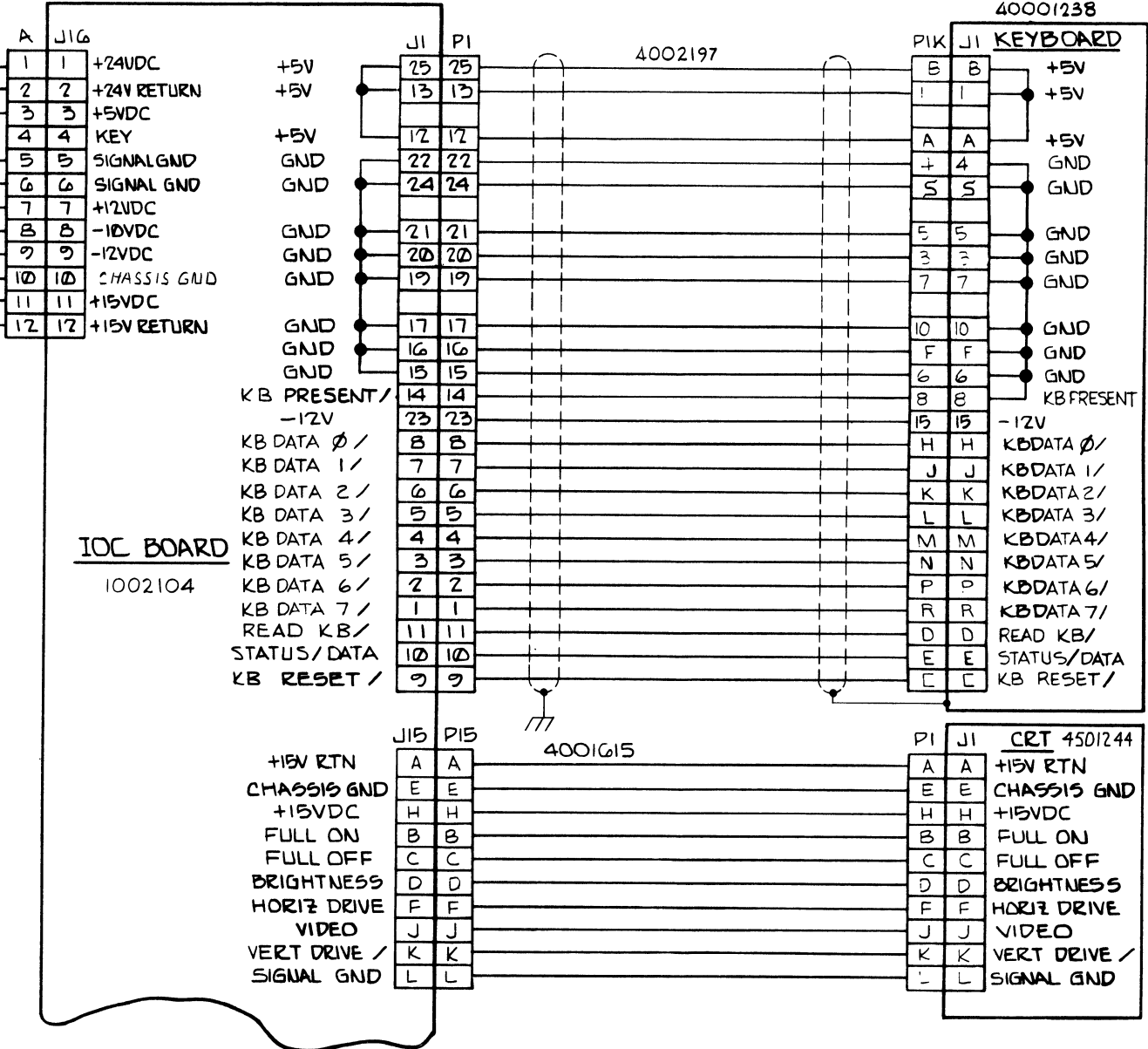
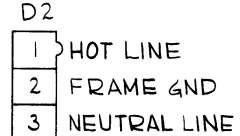
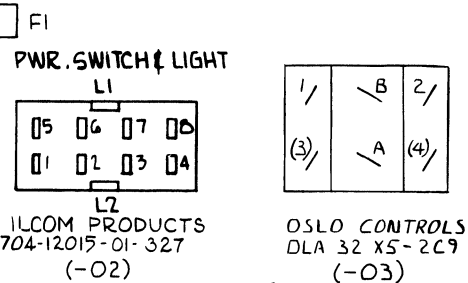
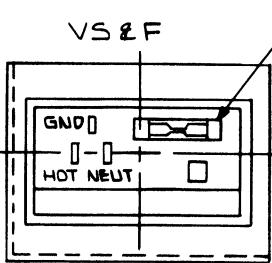
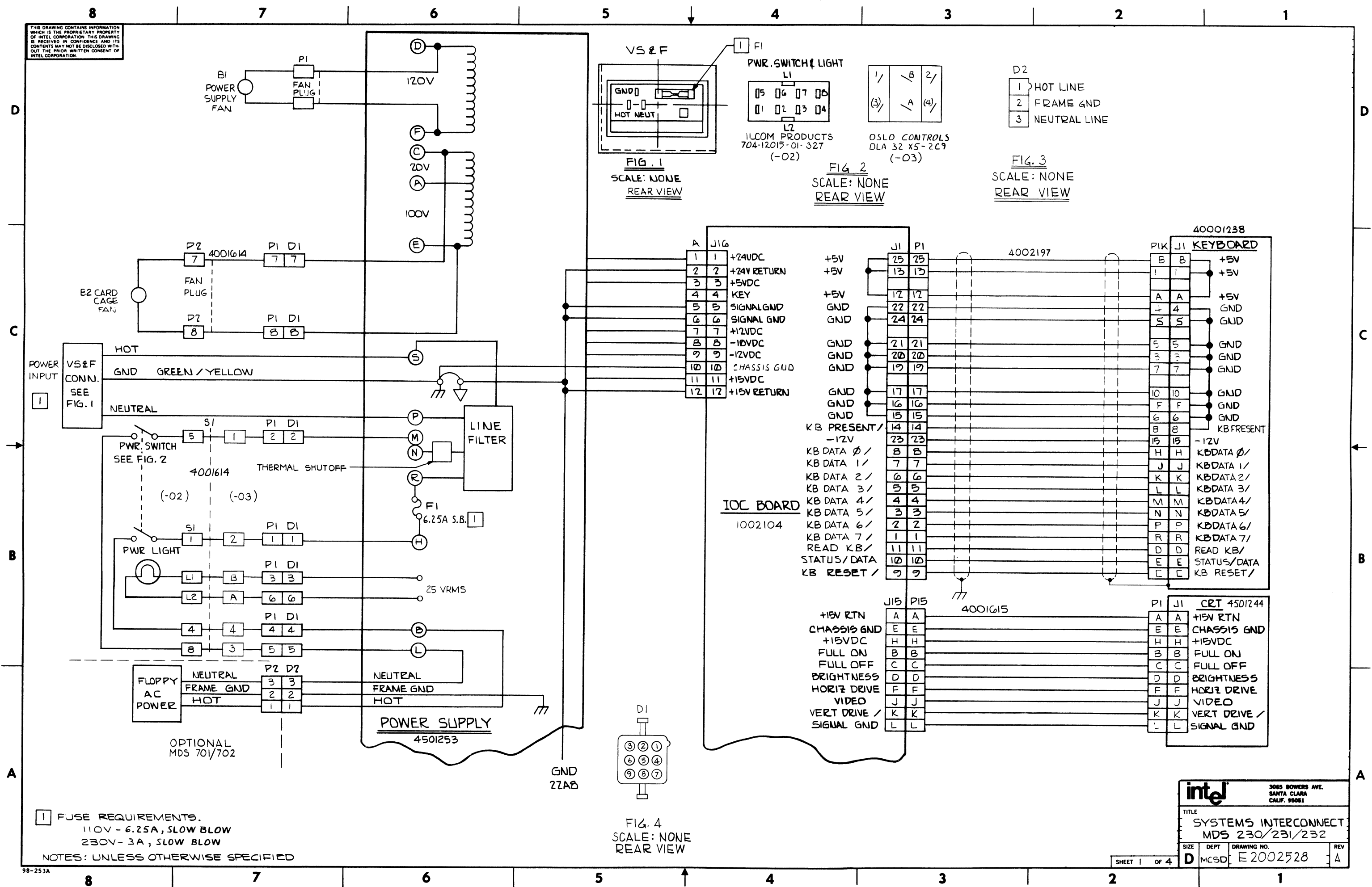
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MODEL MDS-220/221/222

| | | | | |
|--------------|---------|------------|-----------------------|--------|
| SCALE: NONE | SIZE: D | DEPT: MCSB | DRAWING NO. E 2002594 | REV: A |
| SHEET 3 OF 3 | | | | |

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1 FUSE REQUIREMENTS.
110V - 6.25A, SLOW BLOW
230V - 3A, SLOW BLOW
NOTES: UNLESS OTHERWISE SPECIFIED

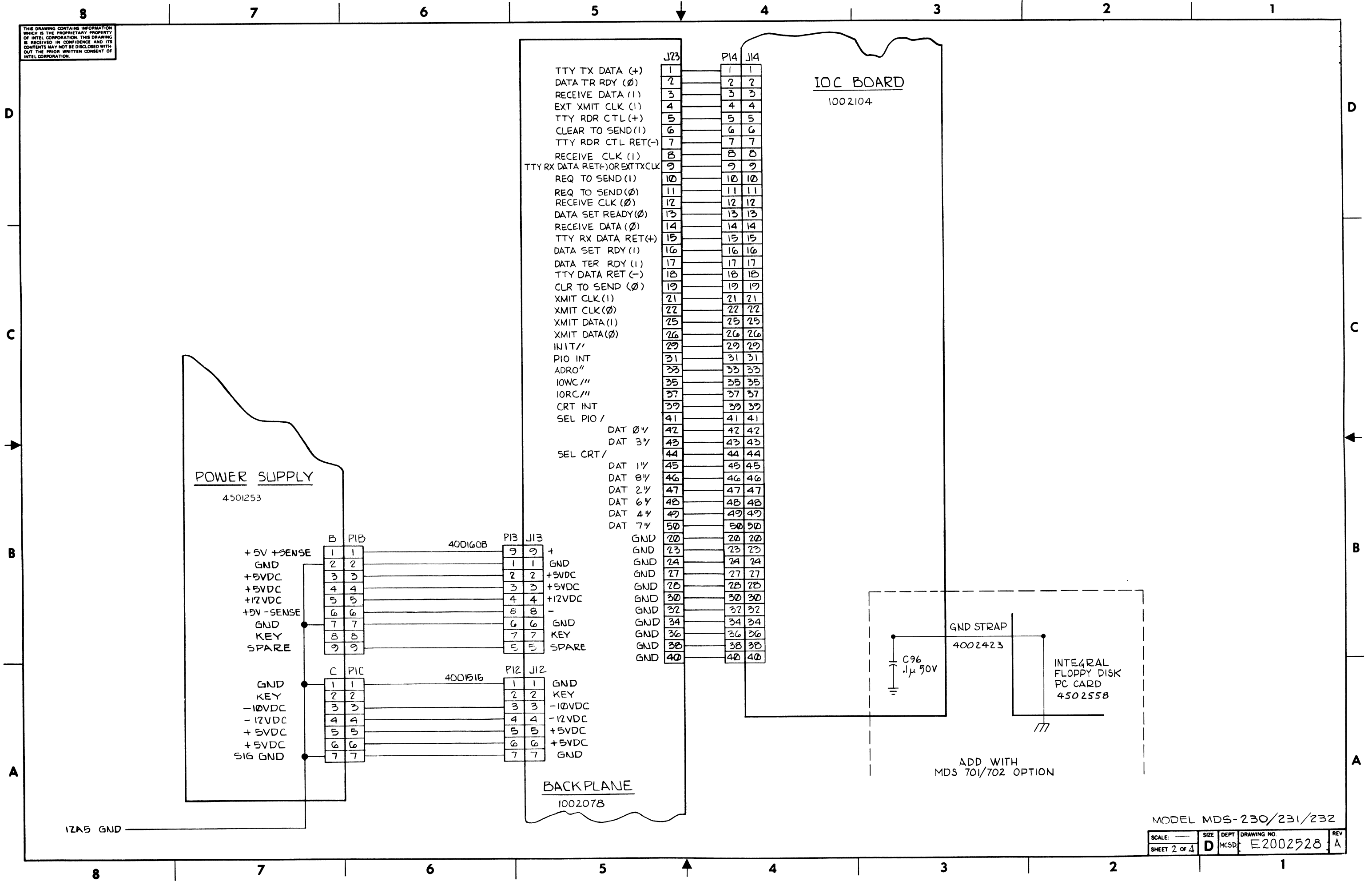
intel 3065 BOWERS AVE. SANTA CLARA CALIF. 95051

TITLE SYSTEMS INTERCONNECT MDS 230/231/232

| SIZE | DEPT | DRAWING NO. | REV |
|------|------|-------------|-----|
| D | MCSD | E2002528 | A |

SHEET 1 OF 4

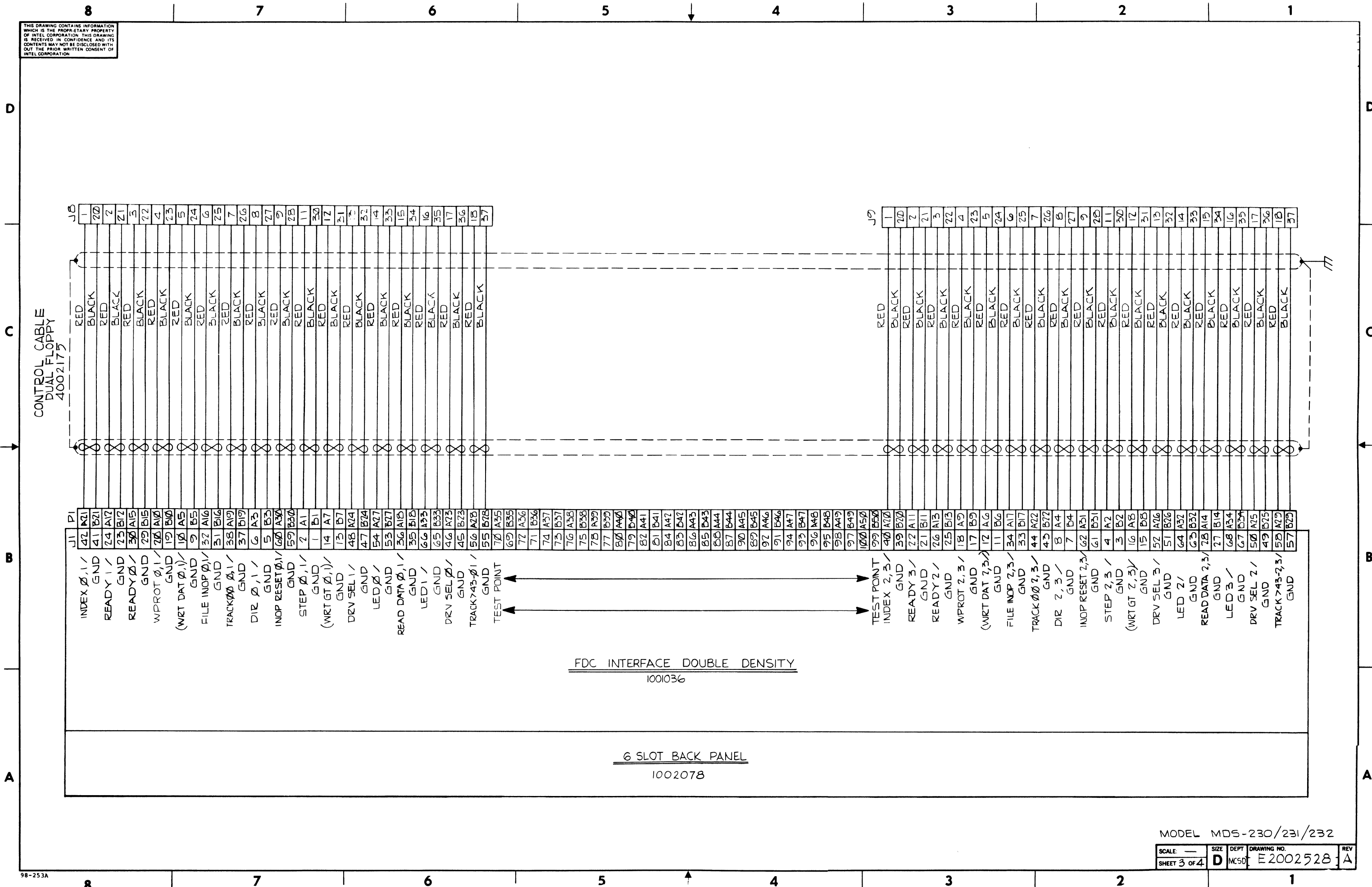
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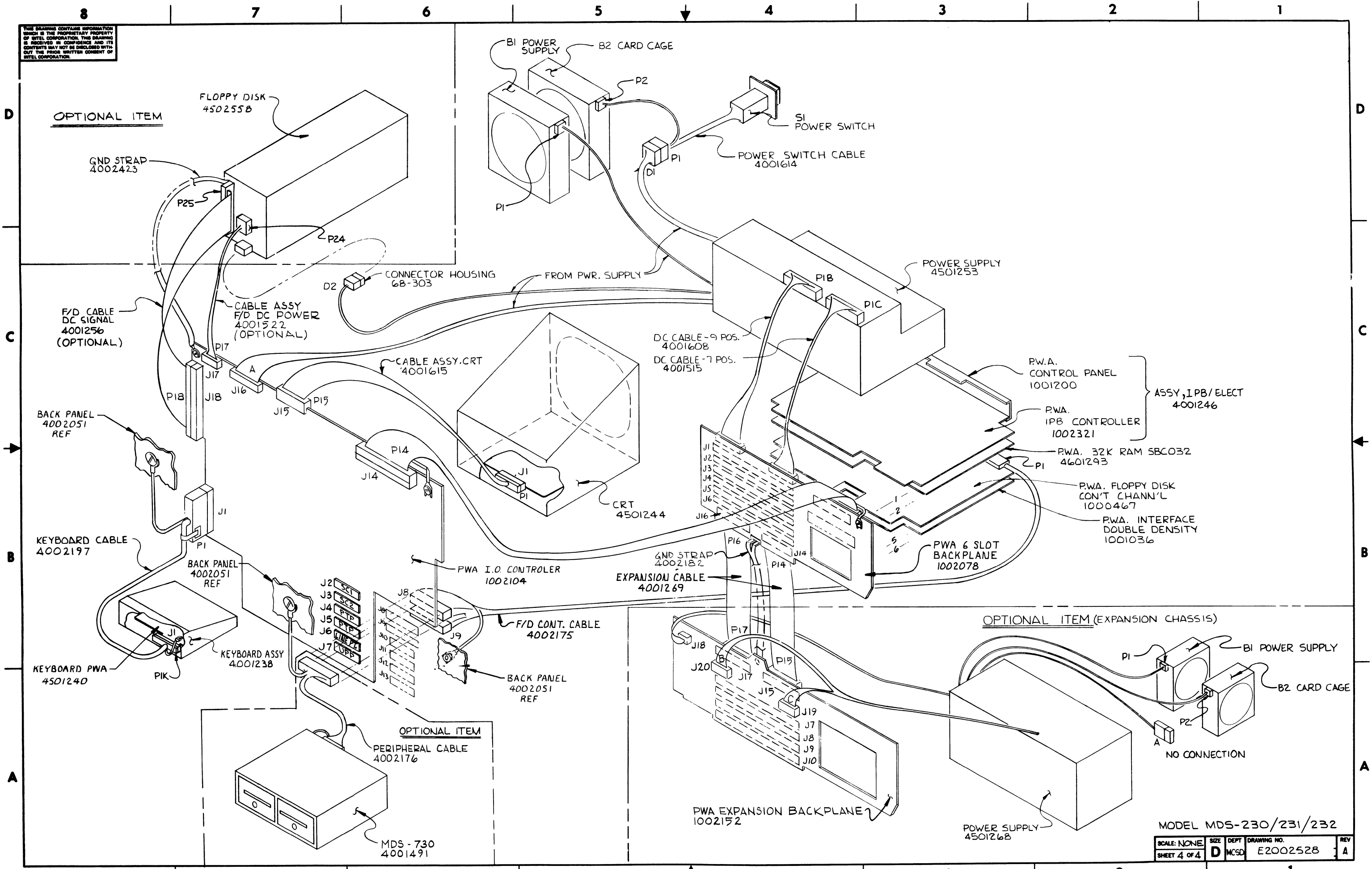
MODEL MDS-230/231/232

| | | | | |
|--------------|---------|------------|----------------------|--------|
| SCALE: — | SIZE: D | DEPT: MCSD | DRAWING NO: E2002528 | REV: A |
| SHEET 2 OF 4 | | | | |

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OPTIONAL ITEM

FLOPPY DISK
450255B

GND STRAP
4002423

F/D CABLE
DC SIGNAL
4001256
(OPTIONAL)

CABLE ASSY
F/D DC POWER
4001522
(OPTIONAL)

CONNECTOR HOUSING
68-303

CABLE ASSY.CRT
4001615

BACK PANEL
4002051
REF

KEYBOARD CABLE
4002197

BACK PANEL
4002051
REF

KEYBOARD PWA
4501240

KEYBOARD ASSY
4001238

J2 SC1
J3 SC2
J4 PTP
J5 PTP
J6 PTP
J7 UPP

F/D CONT. CABLE
4002175

BACK PANEL
4002051
REF

OPTIONAL ITEM
PERIPHERAL CABLE
4002176

MDS - 730
4001491

PWA I.O. CONTROLER
1002104

EXPANSION CABLE
4001269

CRT
4501244

GND STRAP
4002182

PWA EXPANSION BACKPLANE
1002152

BI POWER SUPPLY

B2 CARD CAGE

SI POWER SWITCH

POWER SWITCH CABLE
4001614

POWER SUPPLY
4501253

P.W.A.
CONTROL PANEL
1001200

ASSY, I/PB/ELECT
4001246

P.W.A.
IPB CONTROLLER
1002321

P.W.A. 32K RAM SBC032
4601293

P.W.A. FLOPPY DISK
CON'T CHANN'L
1000467

P.W.A. INTERFACE
DOUBLE DENSITY
1001036

PWA 6 SLOT
BACKPLANE
1002078

OPTIONAL ITEM (EXPANSION CHASSIS)

BI POWER SUPPLY

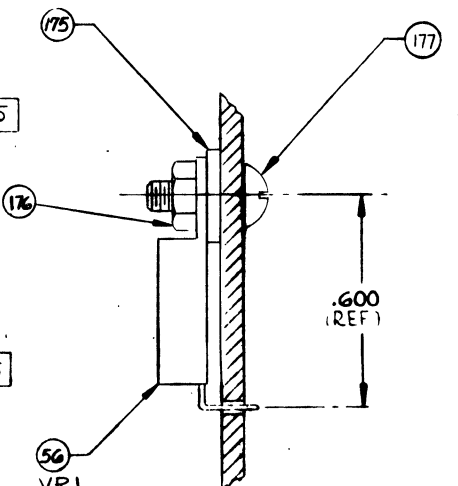
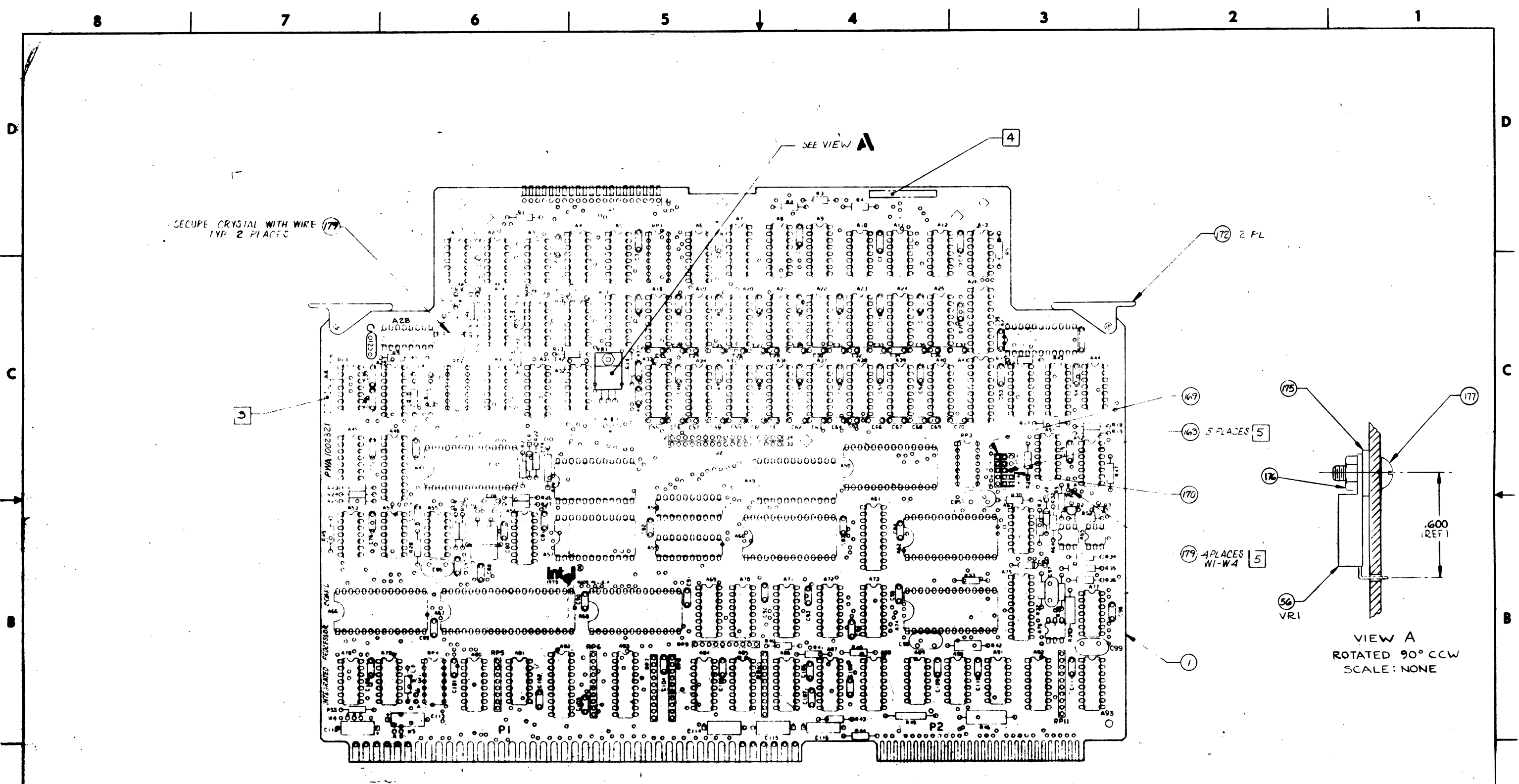
B2 CARD CAGE

NO CONNECTION

POWER SUPPLY
4501268

MODEL MDS-230/231/232

| | | | | |
|--------------|---------|------------|----------------------|--------|
| SCALE: NONE | SIZE: D | DEPT: MCSO | DRAWING NO. E2002528 | REV: A |
| SHEET 4 OF 4 | | | | |

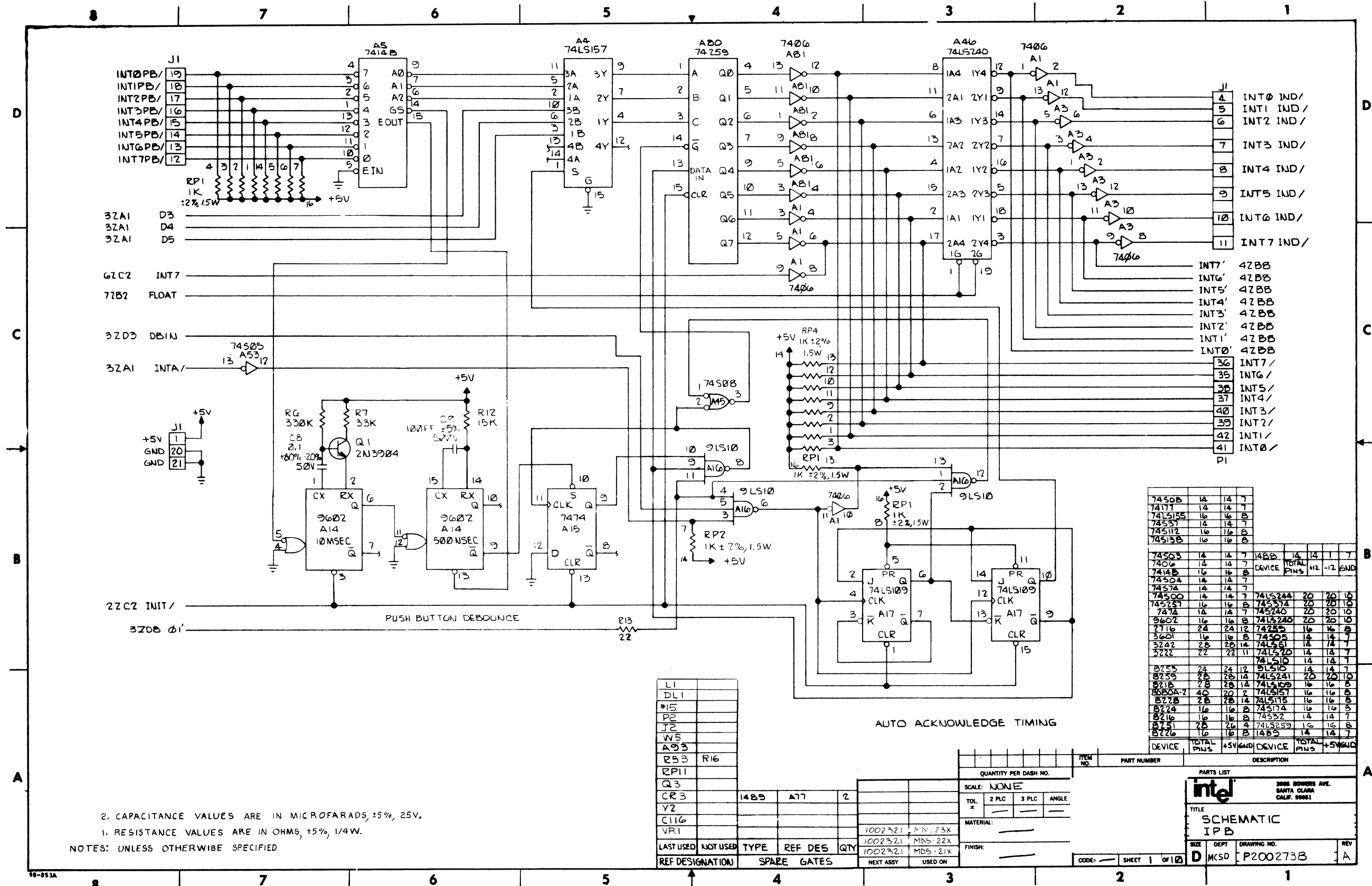


VIEW A
ROTATED 90° CCW
SCALE: NONE

- 5 SEE WIRE ROUTING LIST PL1002321 FOR WIRE JUMPER & JUMPER PLUG ASSIGNMENTS.
 - 4 MARK VENDOR ID WITH CONTRASTING PERM COLOR, NON-CONDUCTIVE, APPROX WHERE SHOWN.
 - 3 MARK PART NO. & REV LEVEL WITH CONTRASTING, NON-CONDUCTIVE PERM. COLOR, .121 HIGH, WHERE SHOWN.
2. WORKMANSHIP PER MCSD QAW 007.
 4. ASSY. PART NO. IS 1002321-02, ASSY AND PL ARE TRACKING DOCUMENTS.
- NOTES: UNLESS OTHERWISE SPECIFIED,

SEE SEPARATE PARTS LIST

| QUANTITY PER DASH NO. | | ITEM NO. | PART NUMBER | DESCRIPTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------|--|-------------|-------------|------------|-------|-------|-------|--|--|--|--|--|--|--|--|---------|---------|-----|------|-------------|---------|------------|---|------|----------|-----------|---------|-------|----|-----|--|--|--|--|---|
| SCALE: NONE | | <table border="1"> <tr> <td>TOL.</td> <td>2 PLC</td> <td>3 PLC</td> <td>ANGLE</td> </tr> <tr> <td>MATERIAL:</td> <td colspan="3"></td> </tr> <tr> <td>FINISH:</td> <td colspan="3"></td> </tr> </table> | | | TOL. | 2 PLC | 3 PLC | ANGLE | MATERIAL: | | | | FINISH: | | | | | | | | | | | | | | | | | | | | | | | |
| TOL. | 2 PLC | | | | 3 PLC | ANGLE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MATERIAL: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FINISH: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4001246 | MDS-23X | <table border="1"> <tr> <td colspan="2">PARTS LIST</td> <td colspan="2"> </td> </tr> <tr> <td colspan="4"> 3085 BOWEN AVE. SANTA CLARA CALIF. 95051 </td> </tr> <tr> <td colspan="4"> TITLE PRINTED WIRING ASSY INTEGRATED PROCESSOR BD. </td> </tr> <tr> <td>4001246</td> <td>MDS-22X</td> <td>DRG</td> <td>DEPT</td> <td>DRAWING NO.</td> </tr> <tr> <td>4001246</td> <td>MDS 210/21</td> <td>D</td> <td>MCSD</td> <td>E1002321</td> </tr> <tr> <td>NEXT ASSY</td> <td>USED ON</td> <td>SHEET</td> <td>OF</td> <td>REV</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>B</td> </tr> </table> | | | PARTS LIST | | | | 3085 BOWEN AVE. SANTA CLARA CALIF. 95051 | | | | TITLE PRINTED WIRING ASSY INTEGRATED PROCESSOR BD. | | | | 4001246 | MDS-22X | DRG | DEPT | DRAWING NO. | 4001246 | MDS 210/21 | D | MCSD | E1002321 | NEXT ASSY | USED ON | SHEET | OF | REV | | | | | B |
| PARTS LIST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3085 BOWEN AVE. SANTA CLARA CALIF. 95051 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TITLE PRINTED WIRING ASSY INTEGRATED PROCESSOR BD. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4001246 | MDS-22X | DRG | DEPT | DRAWING NO. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4001246 | MDS 210/21 | D | MCSD | E1002321 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEXT ASSY | USED ON | SHEET | OF | REV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



2. CAPACITANCE VALUES ARE IN MICROFARADS, ±5%, 25V.
 1. RESISTANCE VALUES ARE IN OHMS, ±5%, 1/4W.
 NOTES: UNLESS OTHERWISE SPECIFIED

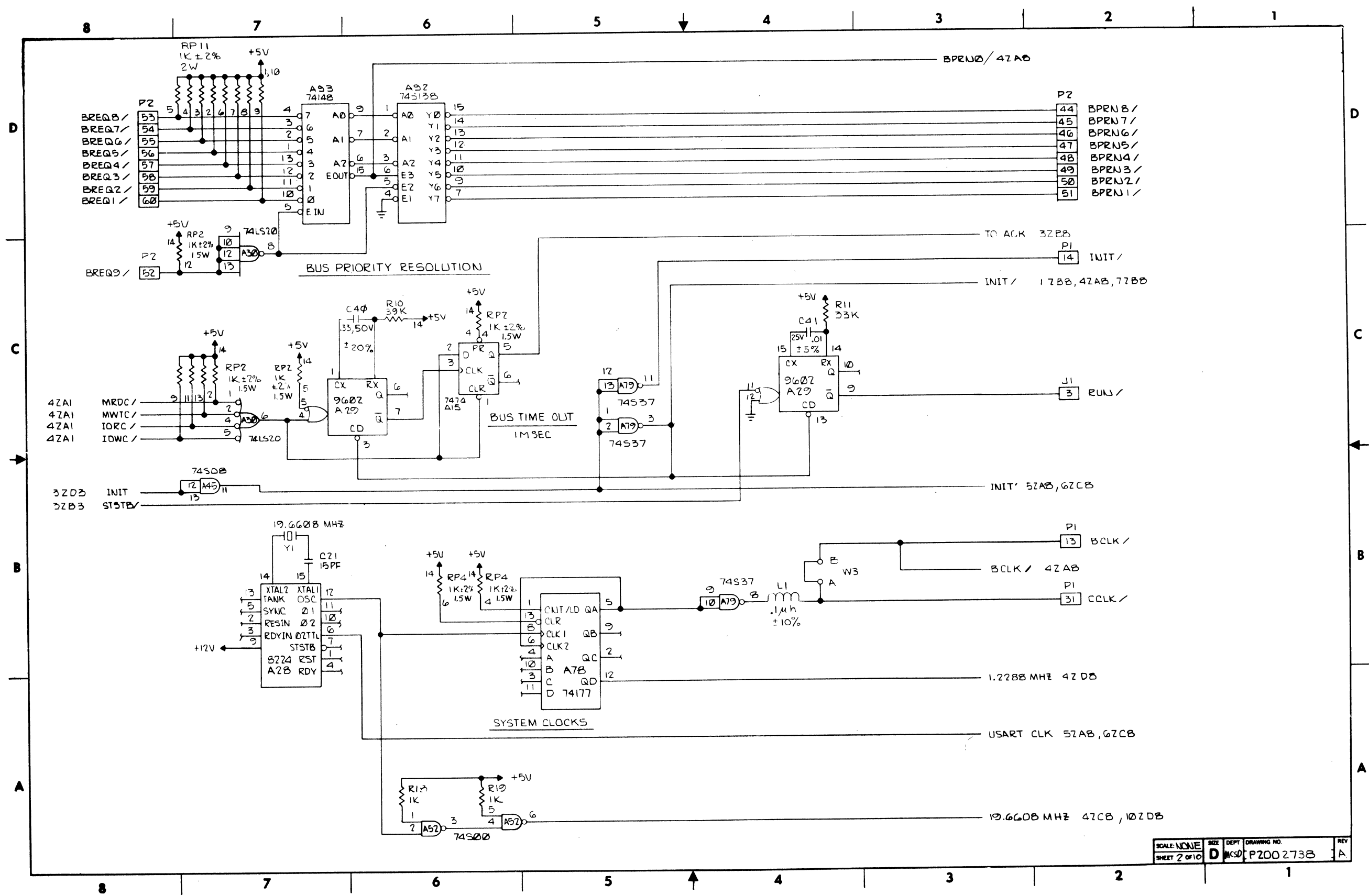
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|-----------------|-------------|------|---------|-----|--|
| L1 | | | | | |
| DL1 | | | | | |
| *15 | | | | | |
| P2 | | | | | |
| J2 | | | | | |
| W5 | | | | | |
| A93 | | | | | |
| R53 | | R16 | | | |
| RP11 | | | | | |
| Q3 | | | | | |
| CR3 | | 14B5 | A77 | 2 | |
| Y2 | | | | | |
| C116 | | | | | |
| VR1 | | | | | |
| LAST USED | NOT USED | TYPE | REF DES | QTY | |
| REF DESIGNATION | SPARE GATES | | | | |

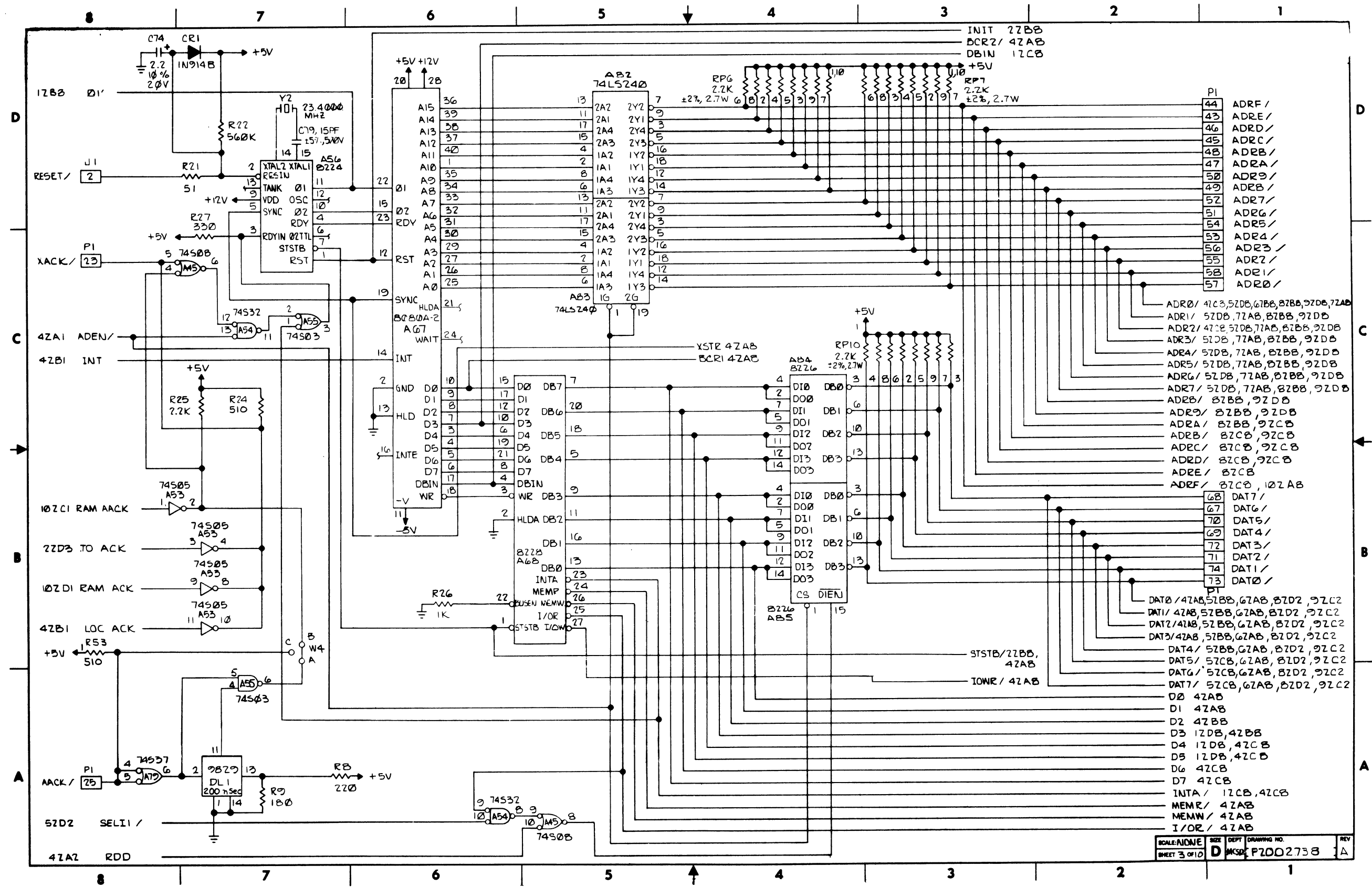
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|-----------------|-------------|--|--|--|--|
| 1002321 | MNS-23X | | | | |
| 1002321 | MNS-22X | | | | |
| 1002321 | MDS-21X | | | | |
| REF DESIGNATION | SPARE GATES | | | | |

| | | | | |
|-----------------------|-------|----------|-------------|-------------|
| QUANTITY PER DASH NO. | | ITEM NO. | PART NUMBER | DESCRIPTION |
| SCALE: NONE | | | | |
| TOL | 2 PLC | 3 PLC | ANGLE | |
| MATERIAL: | | | | |
| FINISH: | | | | |
| CODE | SHEET | 1 | OF 10 | |

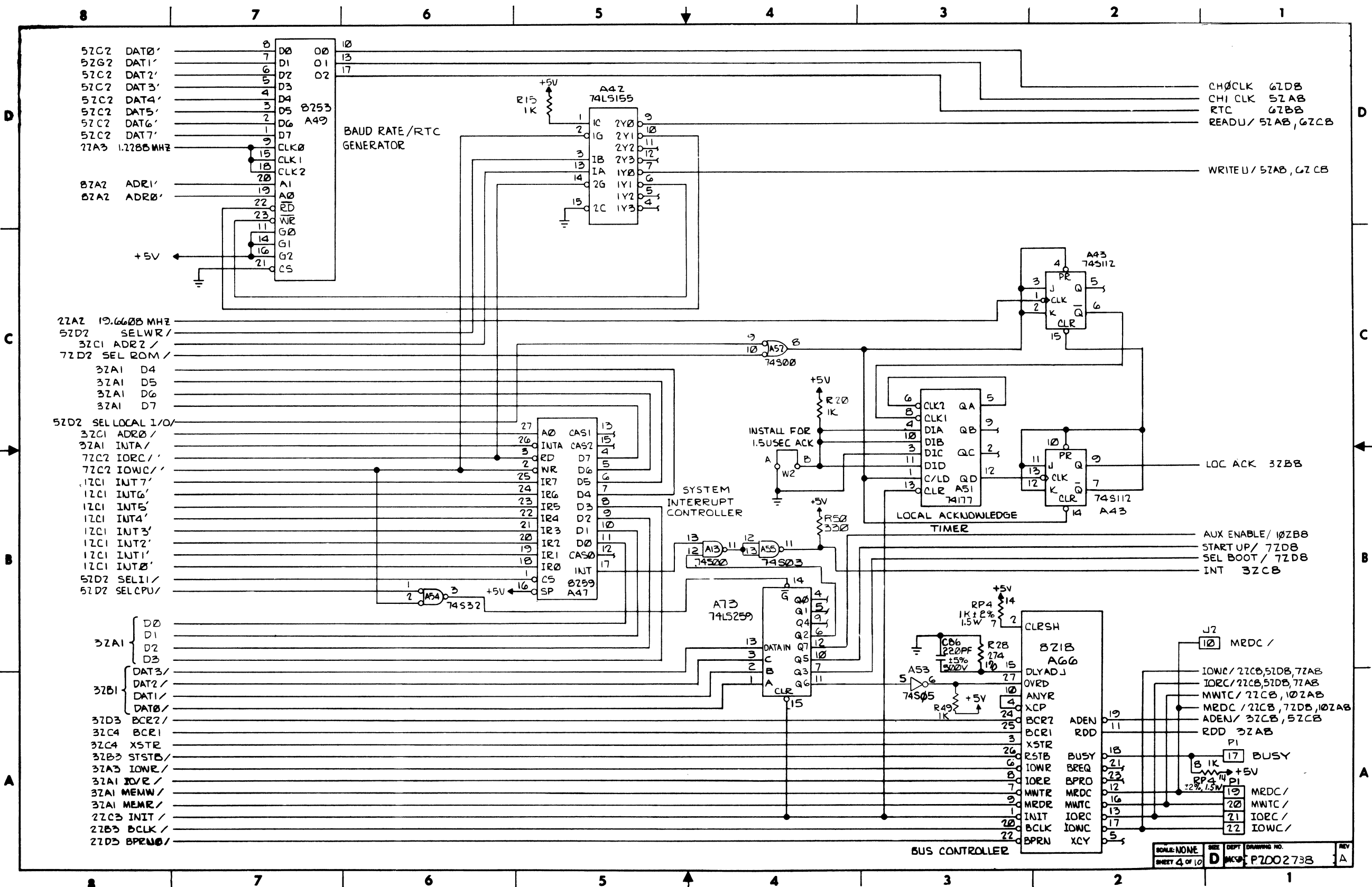
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|---------|------------|-----|-----|---------|------------|-----|-----|----|-----|
| 7450B | 1A | 14 | 7 | | | | | | |
| 74111 | 1A | 14 | 7 | | | | | | |
| 74LS155 | 16 | 16 | B | | | | | | |
| 74531 | 14 | 14 | 7 | | | | | | |
| 745112 | 16 | 16 | B | | | | | | |
| 74513B | 16 | 16 | B | | | | | | |
| 74503 | 14 | 14 | 7 | 14BB | 14 | 14 | 1 | 7 | |
| 7406 | 14 | 14 | 7 | DEVICE | TOTAL PINS | 14 | 14 | 12 | GND |
| 7414B | 16 | 16 | B | | | | | | |
| 74504 | 14 | 14 | 7 | | | | | | |
| 74500 | 14 | 14 | 7 | 74LS244 | 20 | 20 | 10 | | |
| 74521 | 14 | 14 | 7 | 74LS274 | 20 | 20 | 10 | | |
| 7474 | 14 | 14 | 7 | 74LS240 | 20 | 20 | 10 | | |
| 9602 | 16 | 16 | B | 74LS240 | 20 | 20 | 10 | | |
| 7116 | 24 | 24 | 12 | 74LS25 | 16 | 16 | B | | |
| 3601 | 16 | 16 | B | 74505 | 14 | 14 | 7 | | |
| 3242 | 28 | 28 | 14 | 74LS51 | 14 | 14 | 7 | | |
| 3222 | 22 | 22 | 11 | 74LS20 | 14 | 14 | 7 | | |
| 8255 | 24 | 24 | 12 | 9LS10 | 14 | 14 | 7 | | |
| 8259 | 28 | 28 | 14 | 74LS241 | 20 | 20 | 10 | | |
| 8218 | 28 | 28 | 14 | 74LS159 | 16 | 16 | B | | |
| 8280A-2 | 40 | 40 | 20 | 74LS157 | 16 | 16 | B | | |
| 8278 | 28 | 28 | 14 | 74LS15 | 16 | 16 | B | | |
| 8274 | 16 | 16 | B | 74LS174 | 16 | 16 | B | | |
| 8216 | 16 | 16 | B | 74532 | 14 | 14 | 7 | | |
| 8751 | 28 | 28 | 14 | 74LS259 | 16 | 16 | B | | |
| 8226 | 16 | 16 | B | 14B5 | 14 | 14 | 7 | | |
| DEVICE | TOTAL PINS | +5V | GND | DEVICE | TOTAL PINS | +5V | GND | | |

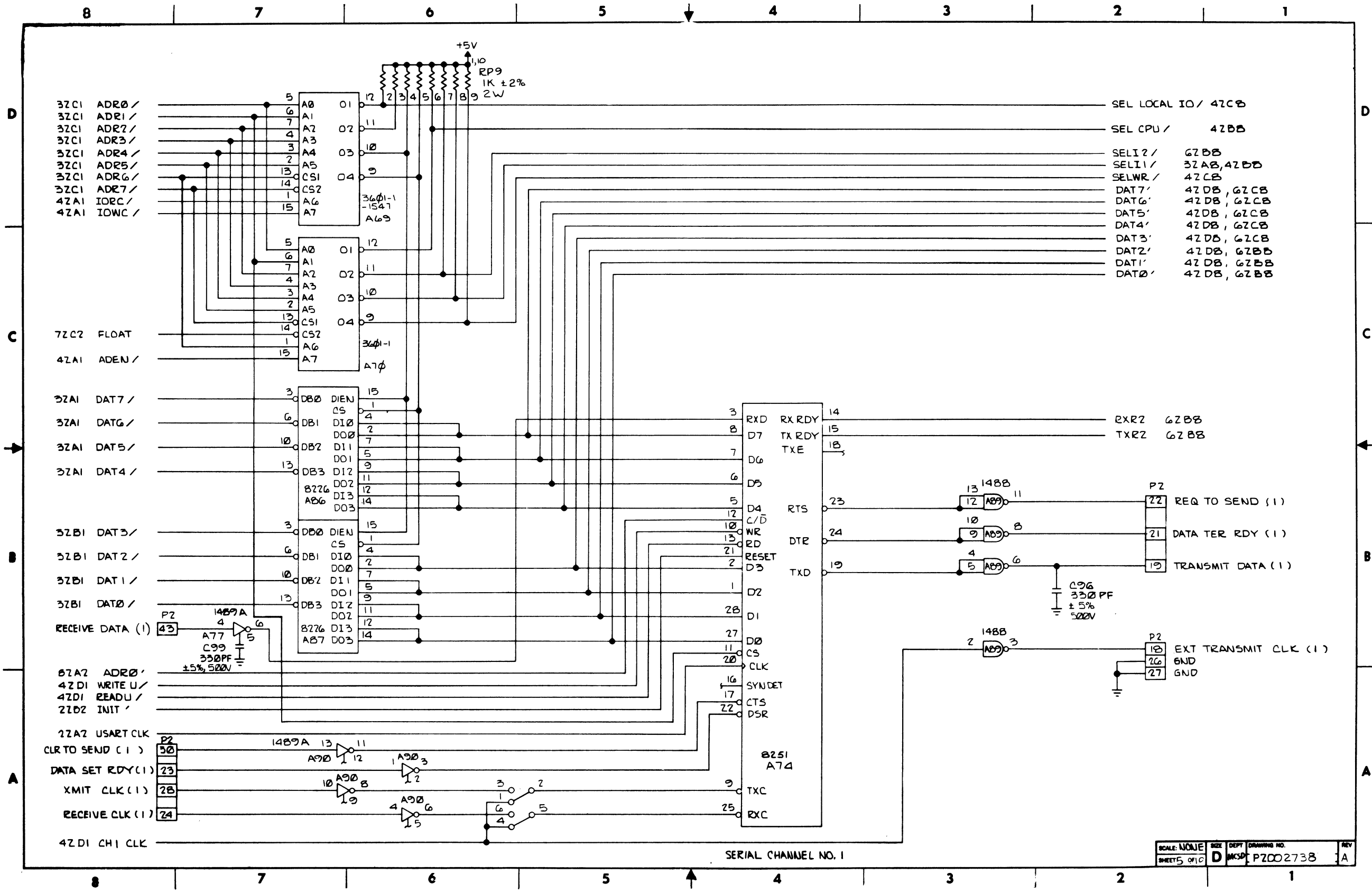
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|--------------------------|-------|-------------|-------|
| PARTS LIST | | DESCRIPTION | |
| SCALE: NONE | | | |
| TOL: 2 PLC, 3 PLC, ANGLE | | | |
| MATERIAL: | | | |
| FINISH: | | | |
| CODE | SHEET | 1 | OF 10 |
| TITLE | | SCHEMATIC | |
| DEPT | | MCS | |
| DRAWING NO. | | P2002738 | |
| REV | A | | |

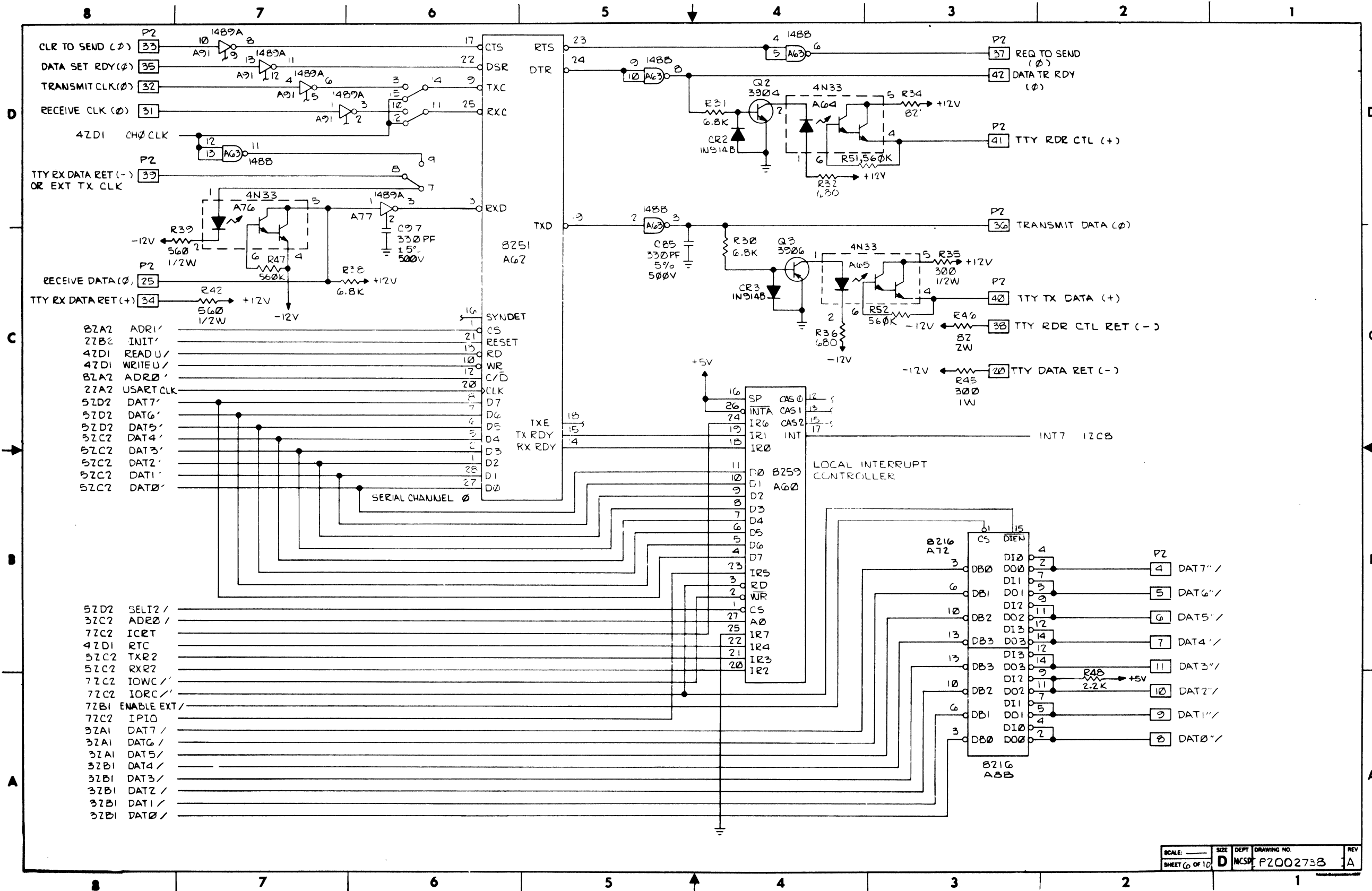


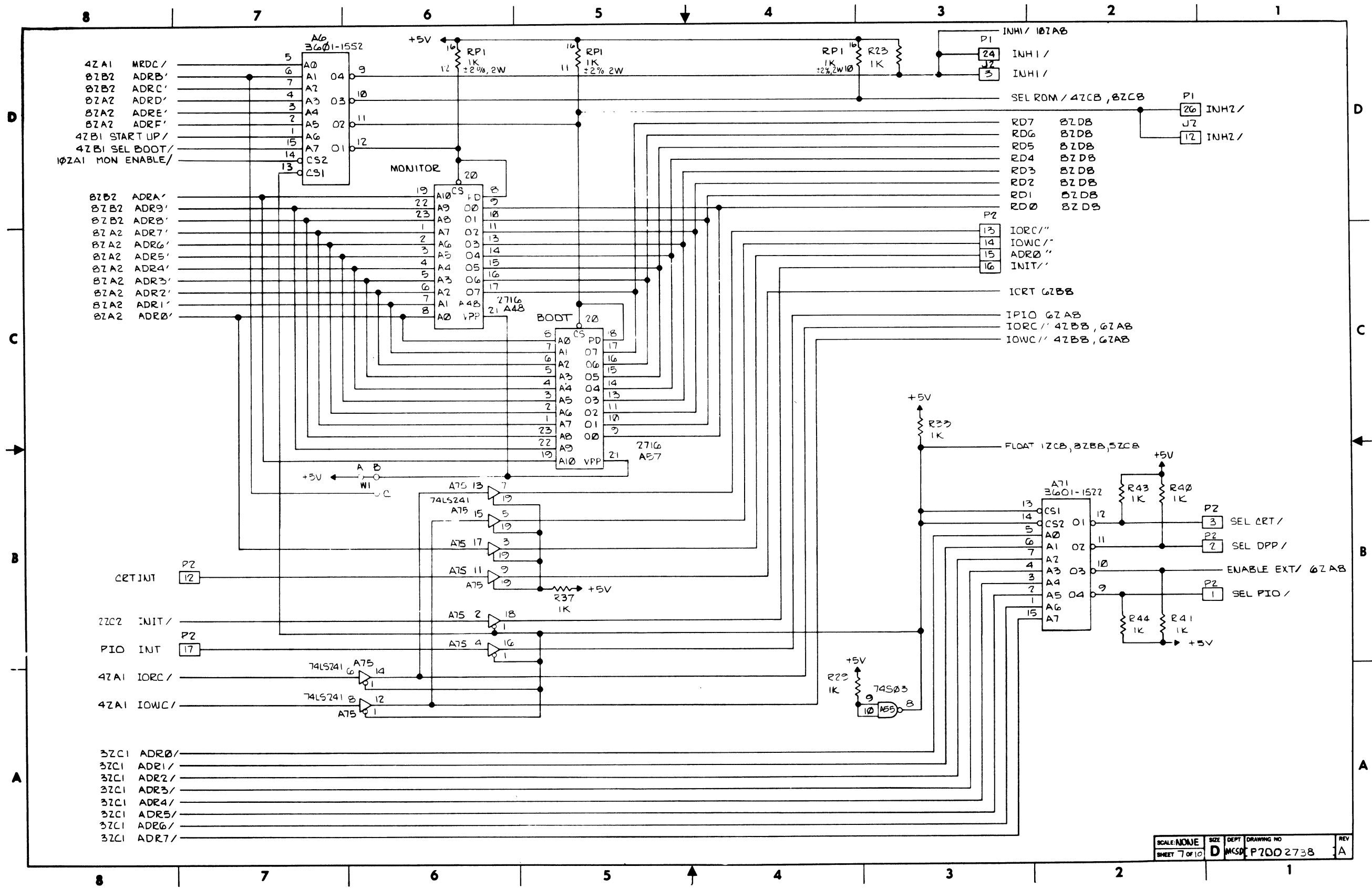


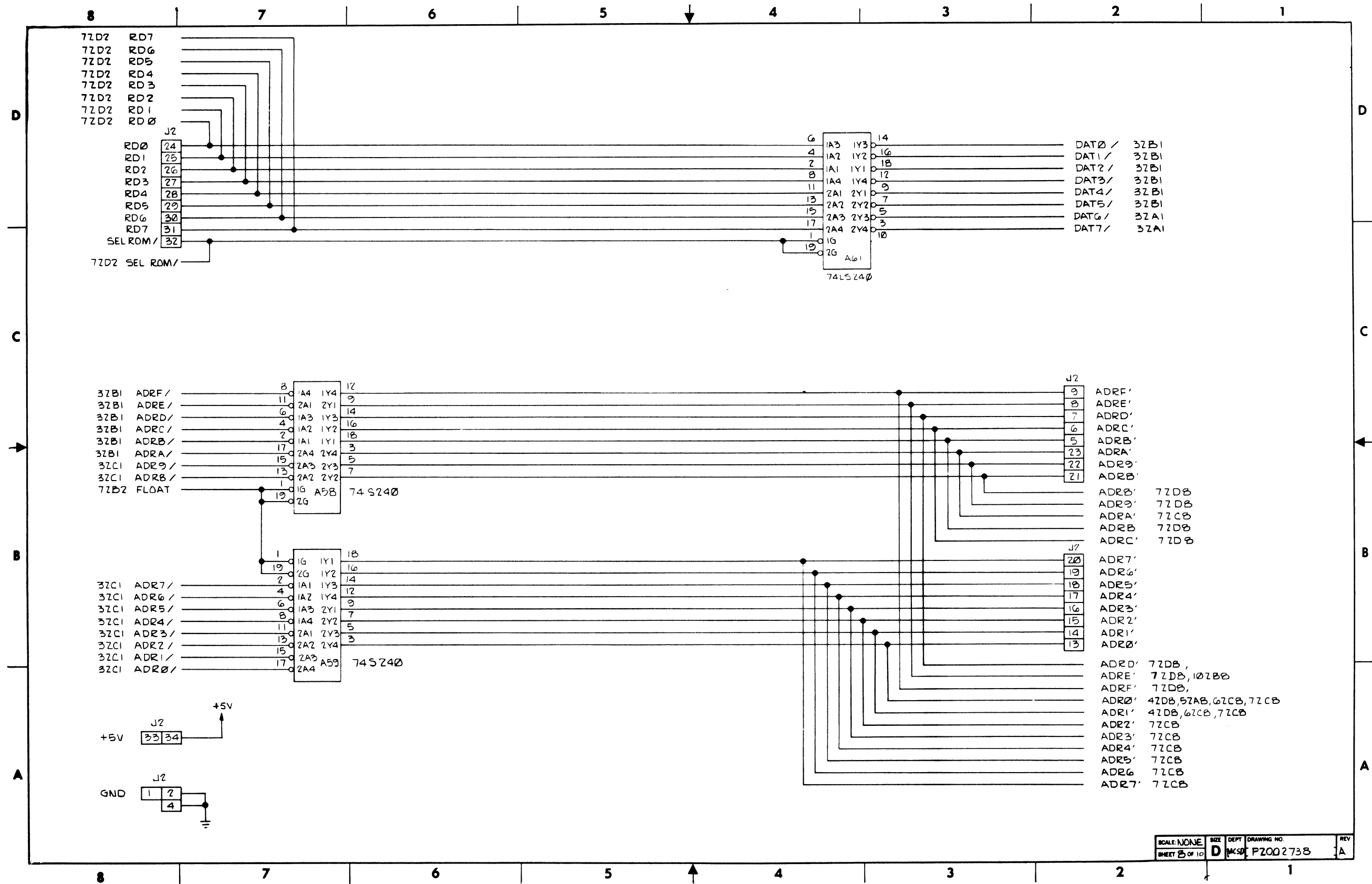
- INIT 27B8
- DCR2/ 4ZAB
- DBIN 12CB
- +5V
- R27 560K
- C79 15PF
- AS6 224
- Y2 23.4000 MHz
- AS5 224
- AS4 224
- AS3 224
- AS2 224
- AS1 224
- AS0 224
- AS7 224
- AS8 224
- AS9 224
- AS10 224
- AS11 224
- AS12 224
- AS13 224
- AS14 224
- AS15 224
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- AS70 224
- AS71 224
- AS72 224
- AS73 224
- AS74 224
- AS75 224
- AS76 224
- AS77 224
- AS78 224
- AS79 224
- AS80 224
- AS81 224
- AS82 224
- AS83 224
- AS84 224
- AS85 224
- AS86 224
- AS87 224
- AS88 224
- AS89 224
- AS90 224
- AS91 224
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- AS96 224
- AS97 224
- AS98 224
- AS99 224
- AS100 224

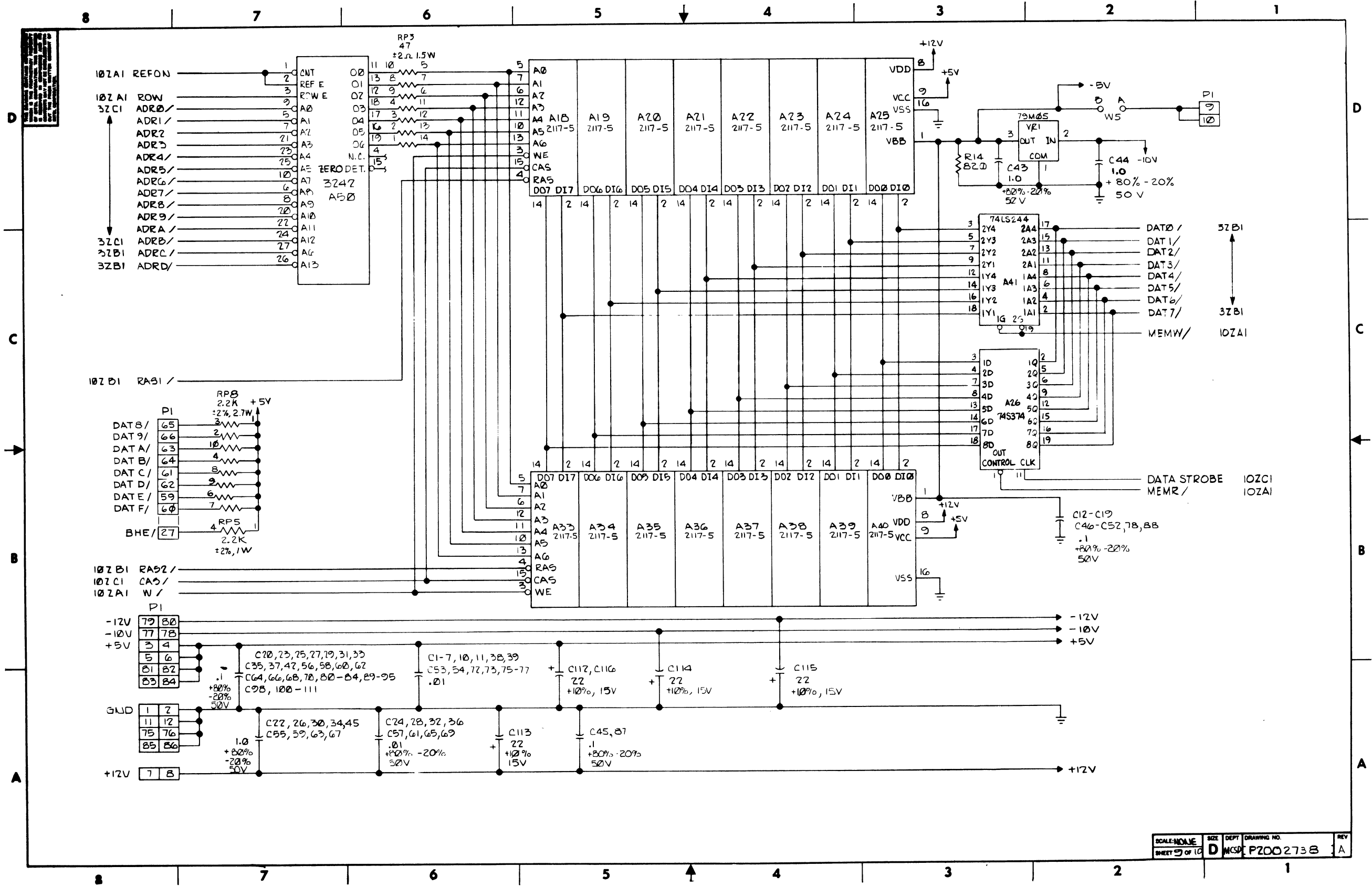




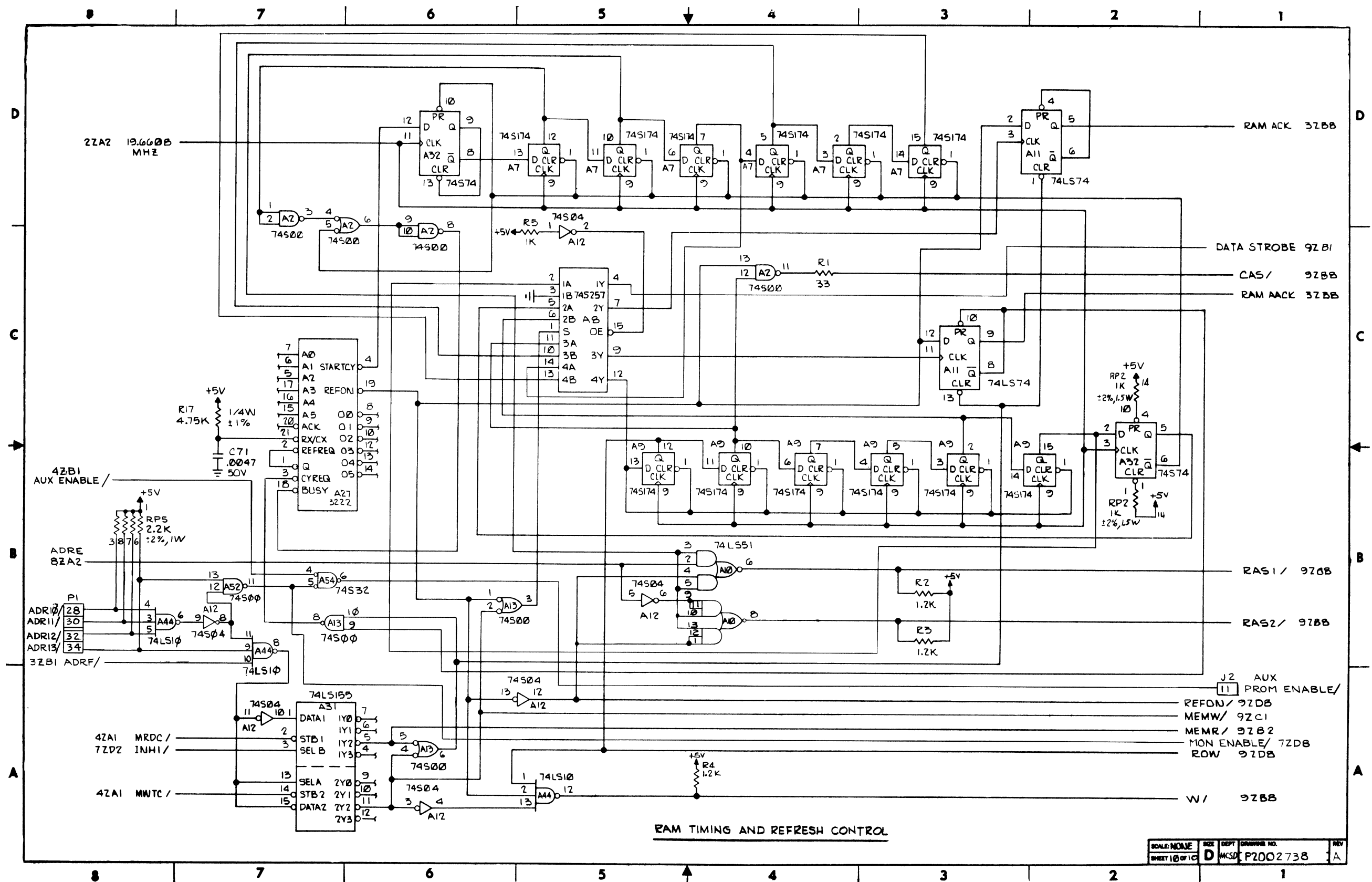






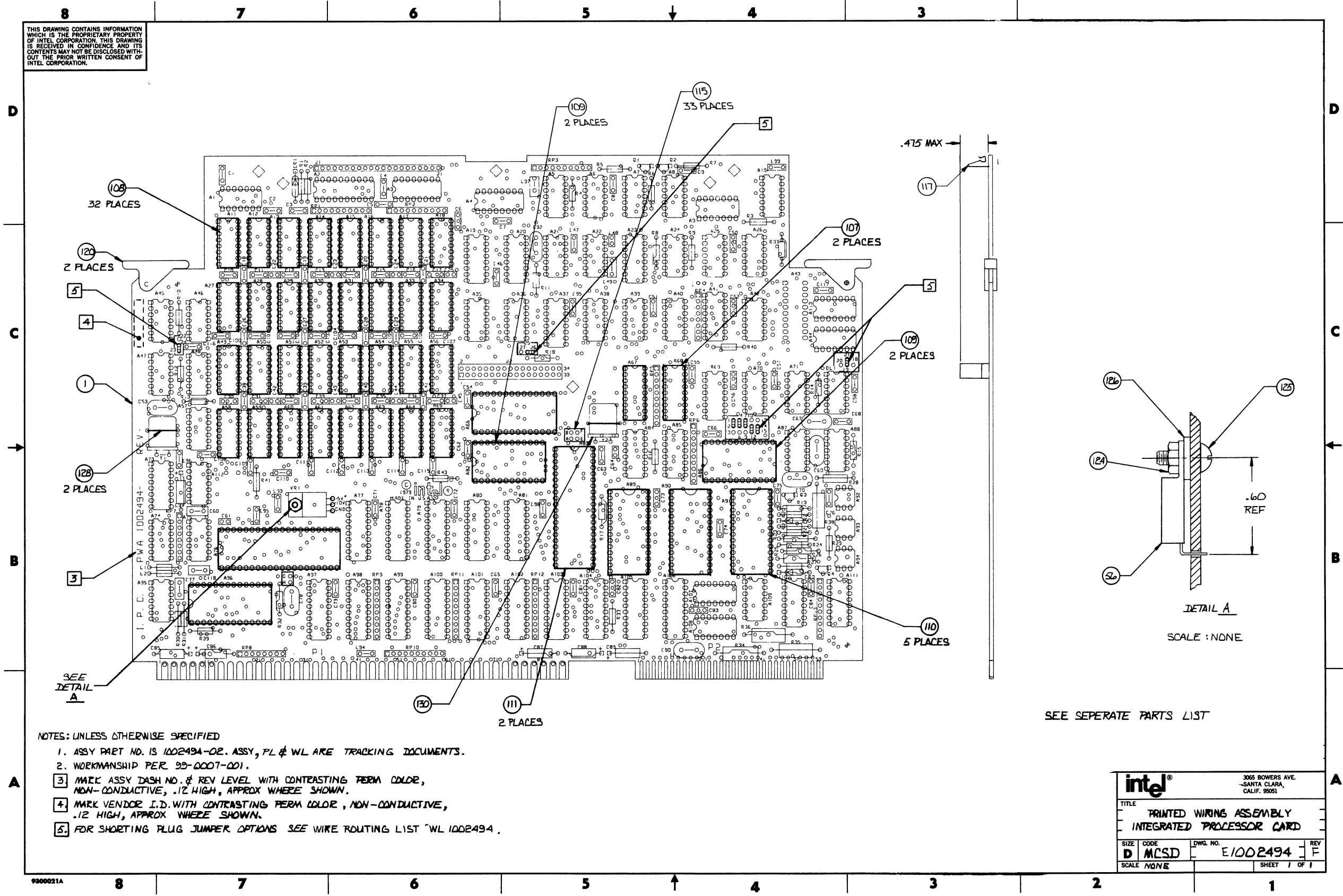


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RAM TIMING AND REFRESH CONTROL

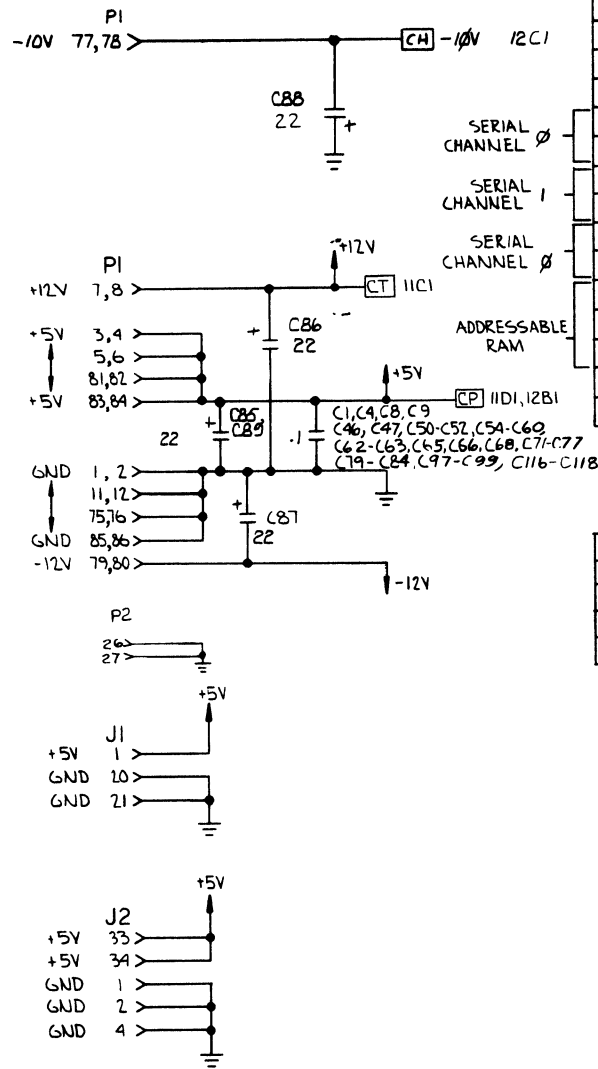
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- NOTES: UNLESS OTHERWISE SPECIFIED
1. ASSY PART NO. IS 1002494-02. ASSY, PL & WL ARE TRACKING DOCUMENTS.
 2. WORKMANSHIP PER 95-0007-001.
 3. MARK ASSY DASH NO. & REV LEVEL WITH CONTRASTING PERM COLOR, NON-CONDUCTIVE, .12 HIGH, APPROX WHERE SHOWN.
 4. MARK VENDOR I.D. WITH CONTRASTING PERM COLOR, NON-CONDUCTIVE, .12 HIGH, APPROX WHERE SHOWN.
 5. FOR SHORTING PLUG JUMPER OPTIONS SEE WIRE ROUTING LIST WL 1002494.

| | | | |
|------------|-------------|---|----------|
| intel® | | 3065 BOWERS AVE. SANTA CLARA, CALIF. 95051 | |
| | | TITLE PRINTED WIRING ASSEMBLY INTEGRATED PROCESSOR CARD | |
| SIZE D | CODE MCS | DWG. NO. E1002494 | REV F |
| SCALE NONE | | SHEET 1 OF 1 | |

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| USER SELECTABLE JUMPERS | | | |
|-------------------------|----|--------------|------|
| SIGNAL | SH | JUMPER | NOTE |
| LOC ACK/ 800ns | 5 | 22-24 | |
| LOC ACK/ 1.6us | 5 | 23-24 | [3] |
| SYNC | 9 | 10-11, 13-14 | |
| ASYNC | 9 | 11-12, 14-15 | [3] |
| SYNC | 9 | 2-3, 5-6 | |
| ASYNC | 9 | 1-2, 4-5 | [3] |
| RS232C | 9 | 8-9 | |
| TTY | 9 | 7-8 | [3] |
| 32K | 7 | 19-18 | |
| 48K | 7 | 19-20 | |
| 64K | 7 | 19-21 | [3] |
| OFF BD AACK/ | 5 | 27-26 | |
| NO OFF BD AACK/ | 5 | 25-26 | [3] |

| SPECIAL JUMPERS | | | |
|-----------------|----|----------|------|
| SIGNAL | SH | JUMPER | NOTE |
| CBRQ | 4 | C-D | |
| SOD/SID | 4 | A-E, B-F | |
| -5V SUPPLY | 12 | G-H | |

NOTES: UNLESS OTHERWISE SPECIFIED

- CAPACITANCE VALUES ARE IN MICROFARADS, +80%, -20%, 25V.
 - RESISTANCE VALUES ARE IN OHMS, 1/4 W, 5%.
- [3] JUMPER IS INSTALLED BY FACTORY.

| | |
|-----------|----------|
| DL2 | |
| Y2 | |
| YR1 | |
| RP13 | |
| R43 | |
| Q4 | |
| L1 | |
| CR3 | |
| C11B | |
| A114 | A43, A72 |
| LAST USED | NOT USED |
| REF DESIG | |

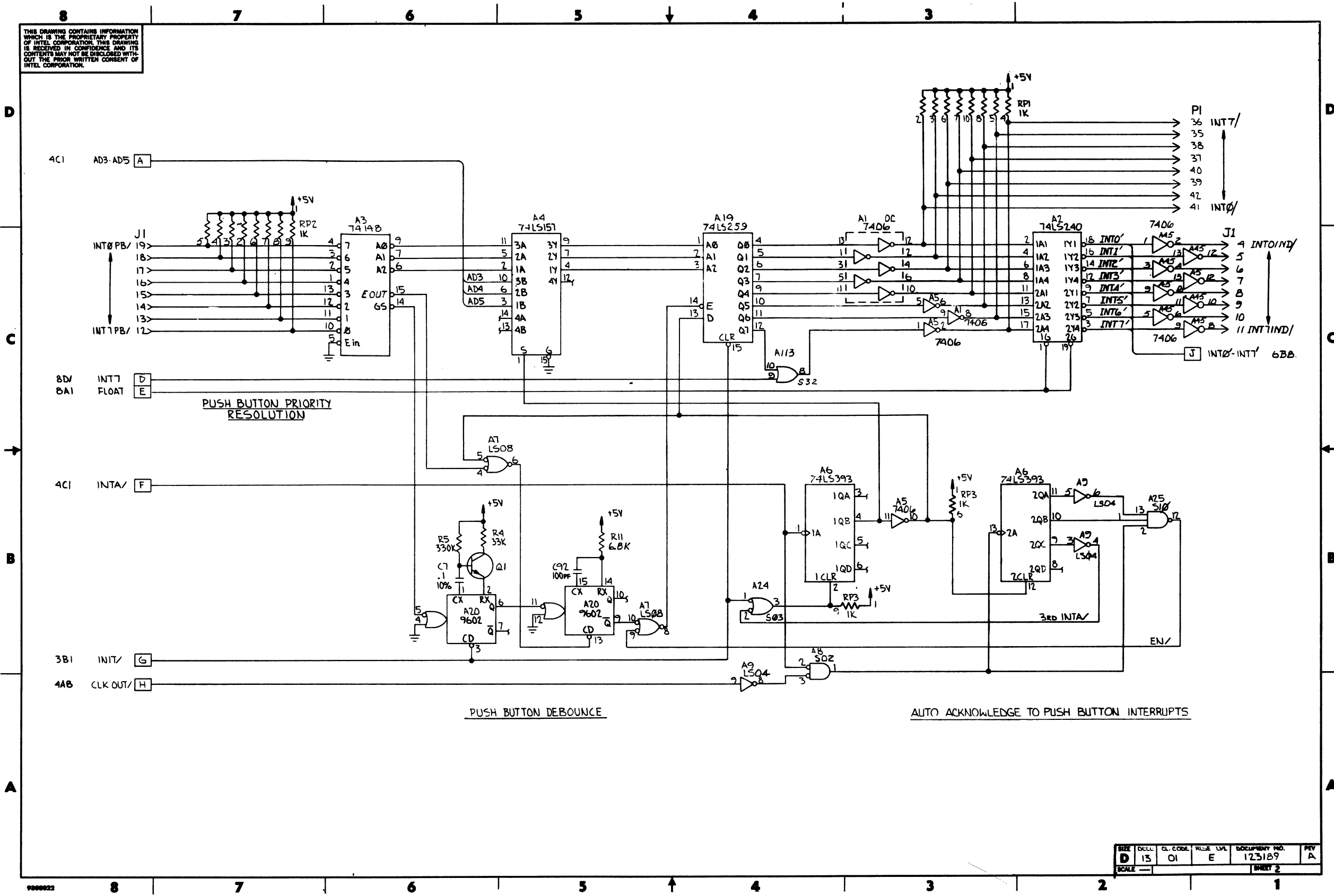
| PWR & GND LOCATOR CHART | | | | | | | |
|------------------------------------|-------------|------------|-----|-----|-----|-------------|-----|
| REF DESIG | DEVICE TYPE | POWER PINS | | | | SPARE GATES | |
| | | GND | VCC | -5V | +2V | REF DES | QTY |
| A0, 26, 44 | 74500 | 7 | 14 | | | A44 | 1 |
| A57 | 74300 | | | | | A57 | 2 |
| AB, A10, 21 | 74502 | | | | | A21 | 2 |
| A74 | 74503 | | | | | | |
| A90, A112 | 74504 | | | | | A112 | 2 |
| A9, A39, A46 | 74504 | | | | | | |
| A1, A5, A45 | 7406 | | | | | | |
| A38 | 74508 | | | | | | |
| A7 | 74508 | | | | | A7 | 1 |
| A25 | 74510 | | | | | A25 | 1 |
| A75 | 74520 | | | | | | |
| A113, A35 | | | | | | | |
| A42, A48 | 74532 | | | | | | |
| A71 | 74532 | | | | | | |
| A36, A95 | 74537 | | | | | A95 | 1 |
| A74 | 7438 | | | | | | |
| A22 | 74574 | 7 | 14 | | | | |
| A85 | 745112 | 8 | 16 | | | | |
| A37, A110 | 745138 | 8 | 16 | | | | |
| A3, A111 | 74-148 | 8 | 16 | | | | |
| A4 | 74LS157 | 8 | 16 | | | | |
| A77, A97 | 745240 | 10 | 20 | | | | |
| A103, A2 | 74LS240 | 10 | 20 | | | | |
| A78, A81 | | | | | | | |
| A101, A106 | 74LS244 | 10 | 20 | | | | |
| A69 | 74 5112 | 8 | 16 | | | | |
| A19, A84 | 74LS259 | 8 | 16 | | | | |
| A79, A80, A100 | 745373 | 10 | 20 | | | | |
| A6, A47 | 74LS393 | 7 | 14 | | | | |
| A87, A108 | 75188 | 7 | 14 | | | | |
| A88, A101, A109 | 75189A | 7 | 14 | | | | |
| A11-A18, A21-A34, A49-A56, A58-A65 | 2117-3 | 16 | 9 | 1 | 8 | | |
| A82 | 2732 | 12 | 24 | | | | |
| A67, A68 | 3625A | 9 | 18 | | | | |
| A83 | 8085A-2 | 20 | 40 | | | | |
| A41 | 74367 | 8 | 16 | | | | |
| A76 | 8202 | 20 | 40 | | | | |
| A96 | 8219 | 14 | 28 | | | | |
| A73 | 8224 | 8 | 16 | | | | |
| A90, A91 | 8251A | 4 | 26 | | | | |
| A86 | 8253 | 12 | 24 | | | | |
| A66, A89 | 8259A | 14 | 28 | | | | |
| A98, A99 | 8265 | 10 | 20 | | | | |
| A107, A105 | 8287 | 10 | 20 | | | | |
| A104 | 8304B | 10 | 20 | | | | |
| A20, A23 | 9602 | 8 | 16 | | | | |
| A114 | 74574 | 7 | 14 | | | | |
| A92, A94 | 4133 | | | | | | |

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TITLE SCHEMATIC
INTEGRATED PROCESSOR CARD

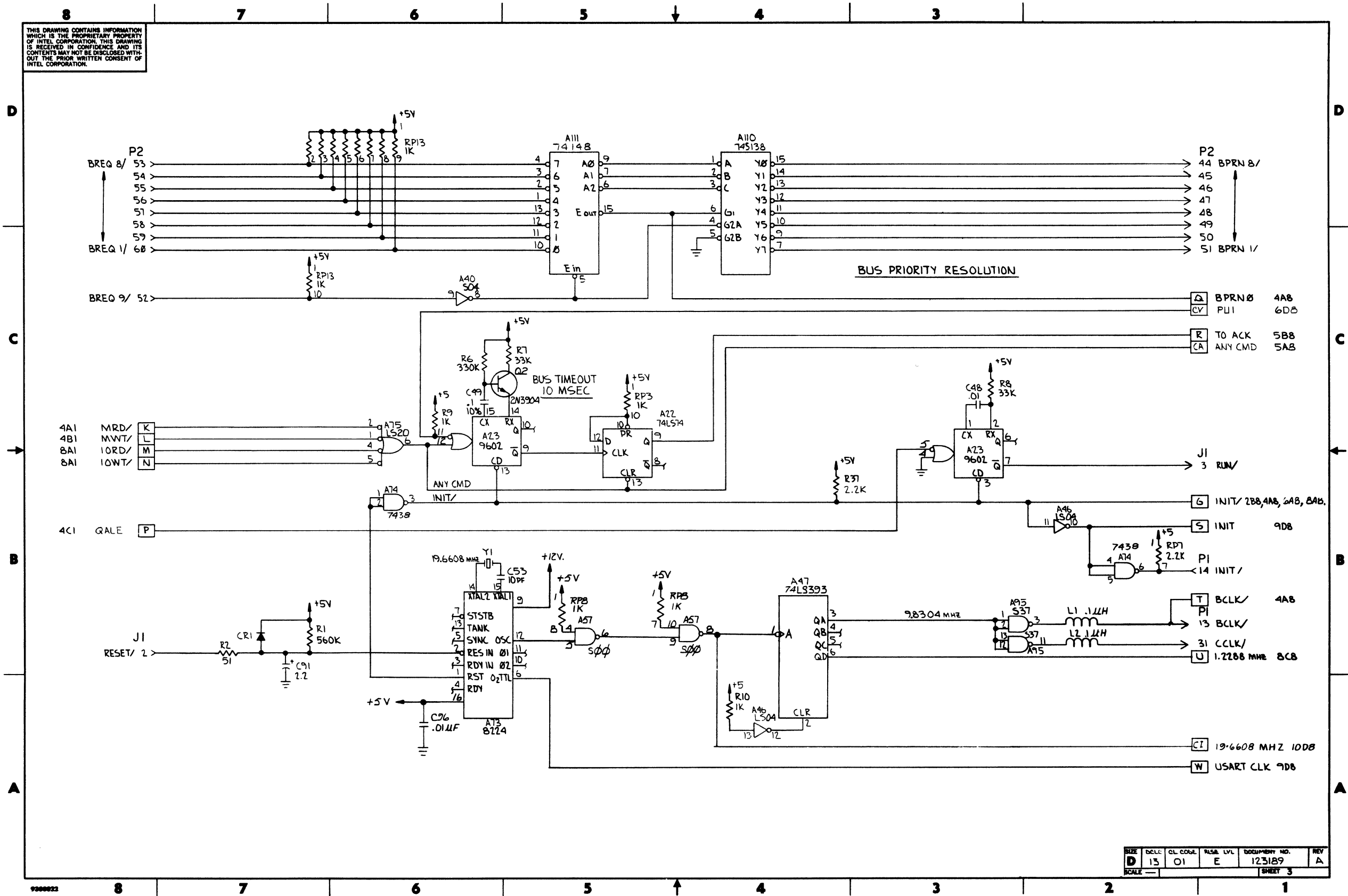
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| SCALE | SHEET 1 OF 12 | | | | |

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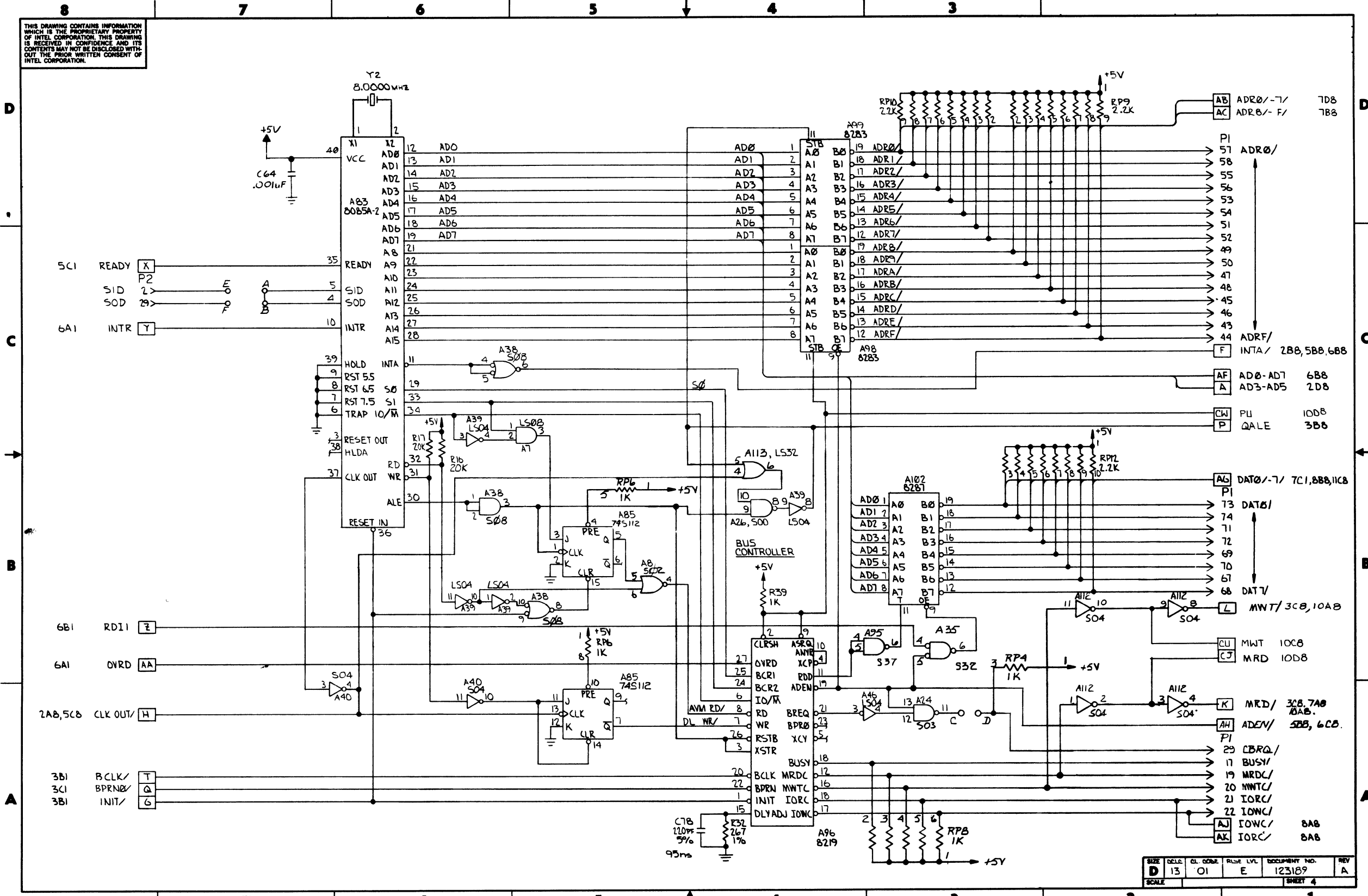
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| SCALE | 1 | | | | | | | | | | |

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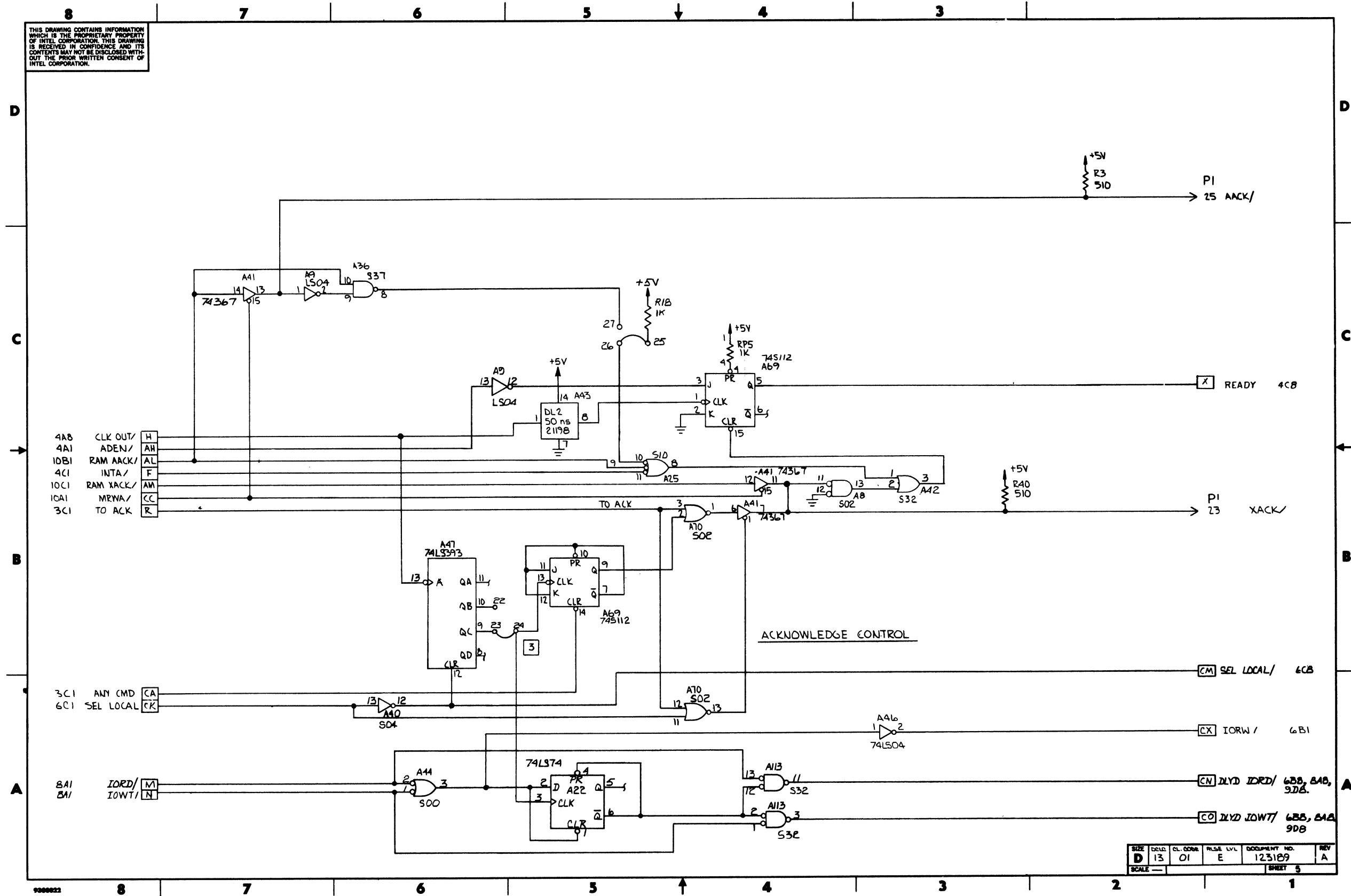
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| SCALE | | | | | SHEET 3 |

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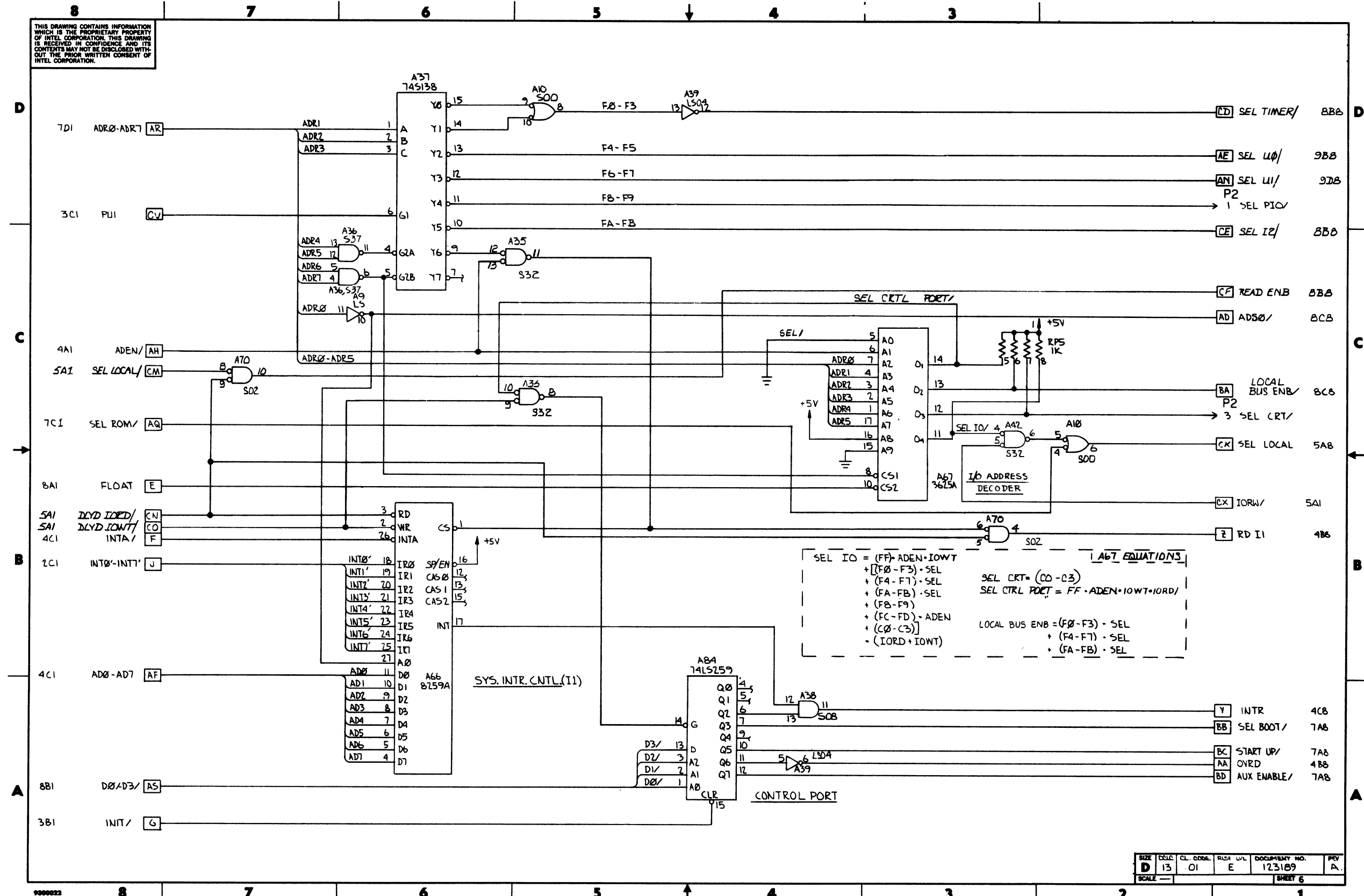
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| SCALE | SHEET 4 | | | | |

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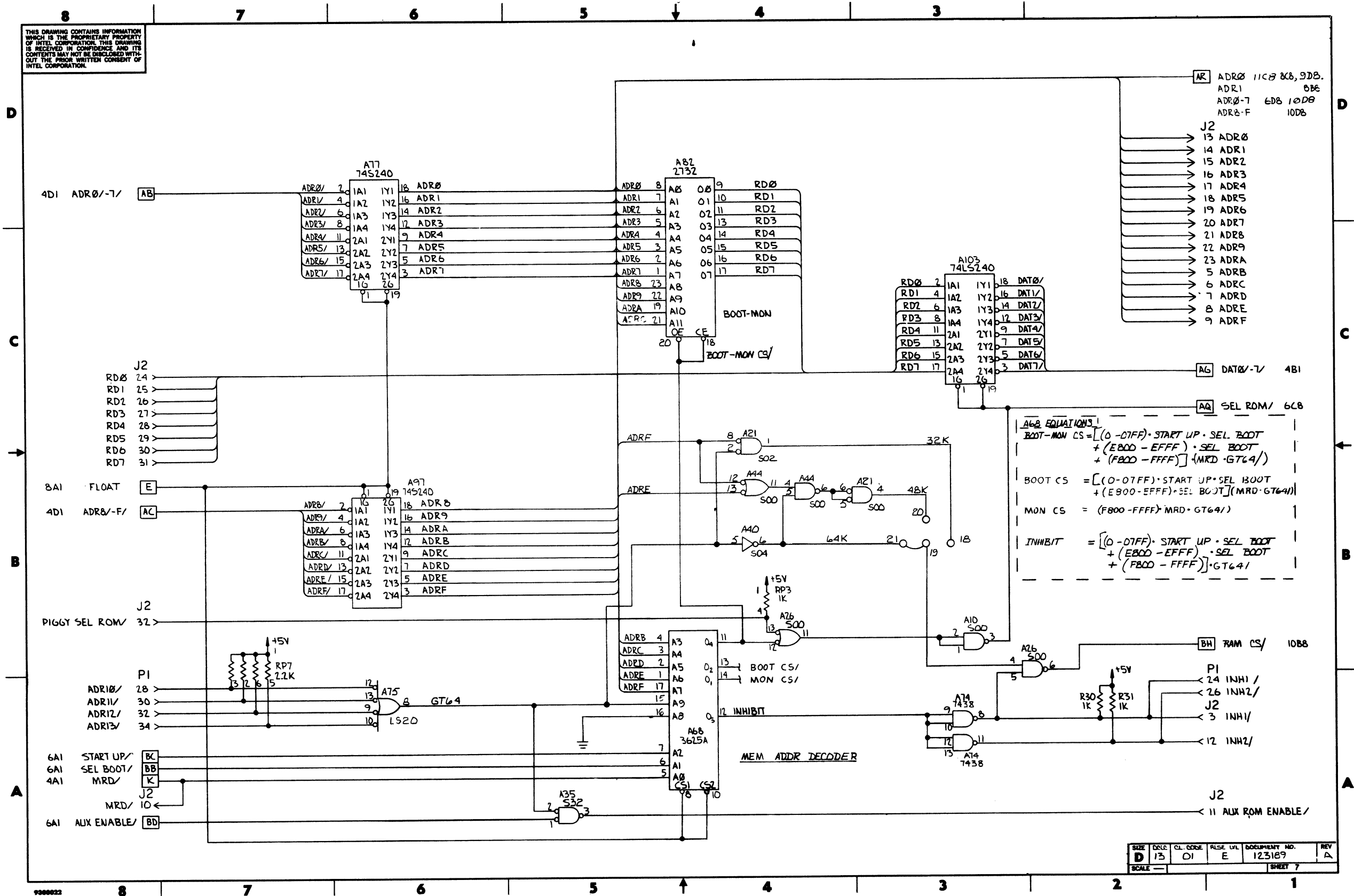
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| SCALE | SHEET 5 | | | | | | | | | | |

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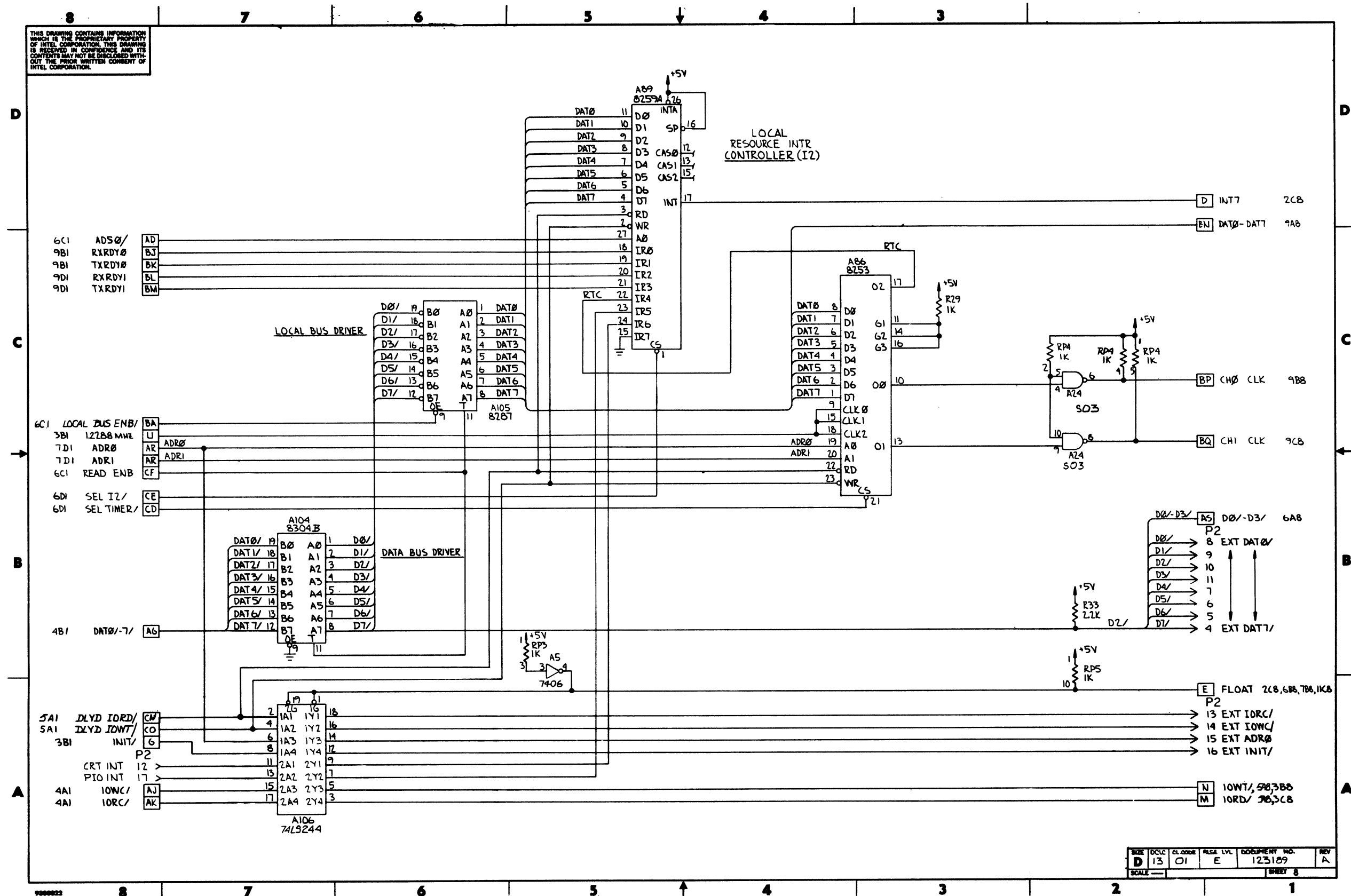
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| SCALE | SHEET 6 | | | | |

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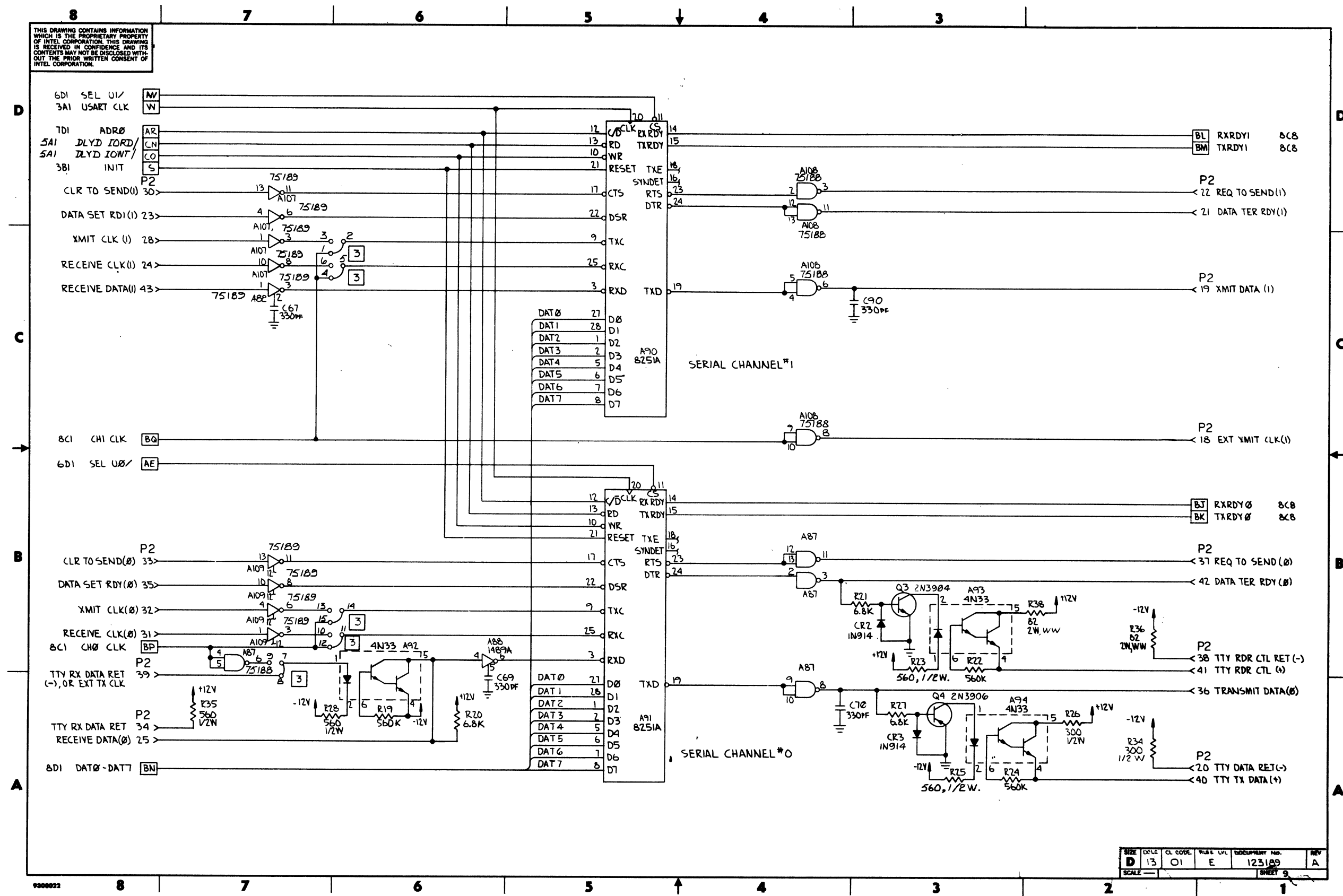
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| SCALE | SHEET 7 | | | | |

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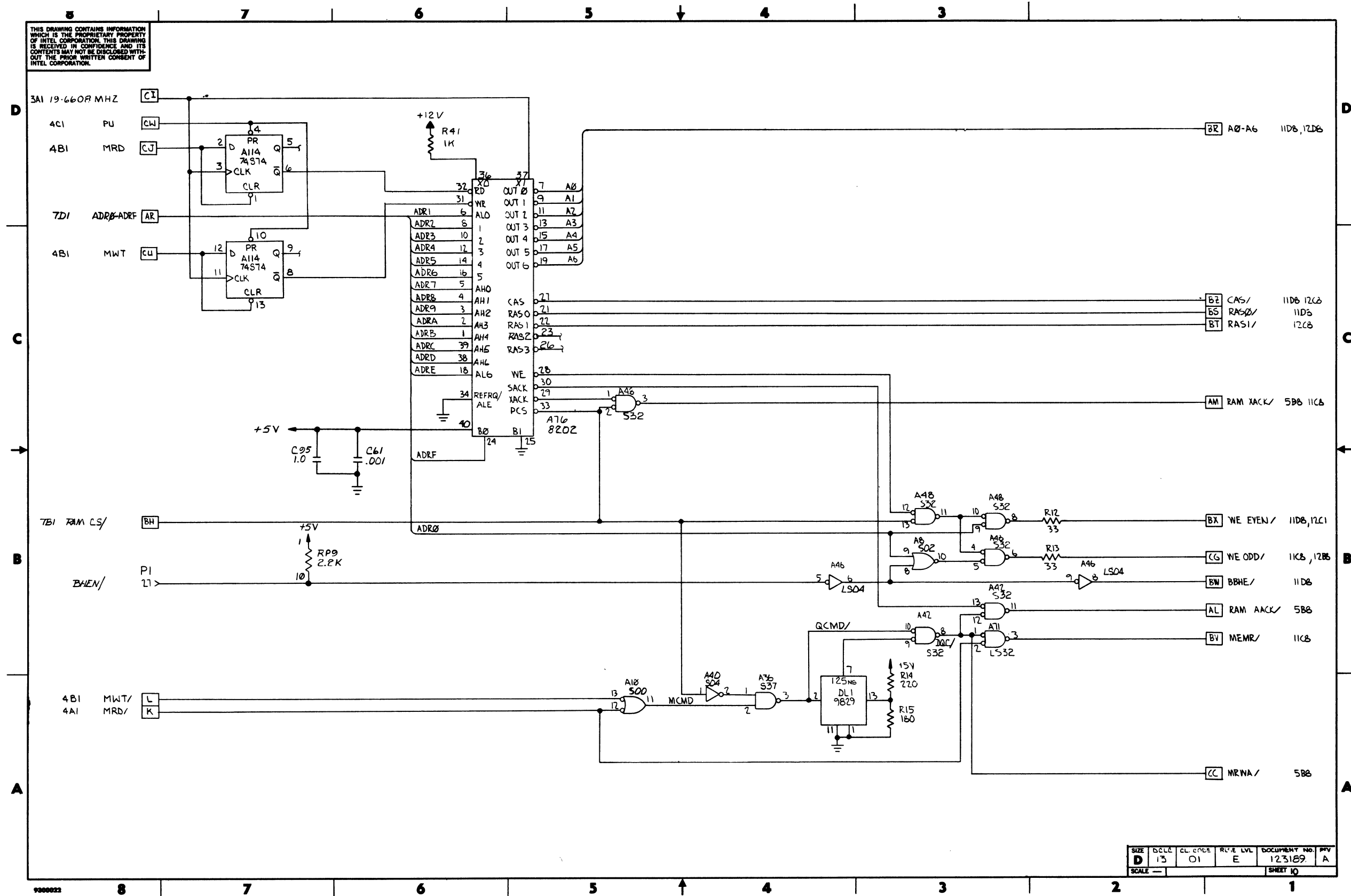
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| SCALE | | | | | | | | | | | |
| SHEET 8 | | | | | | | | | | | |

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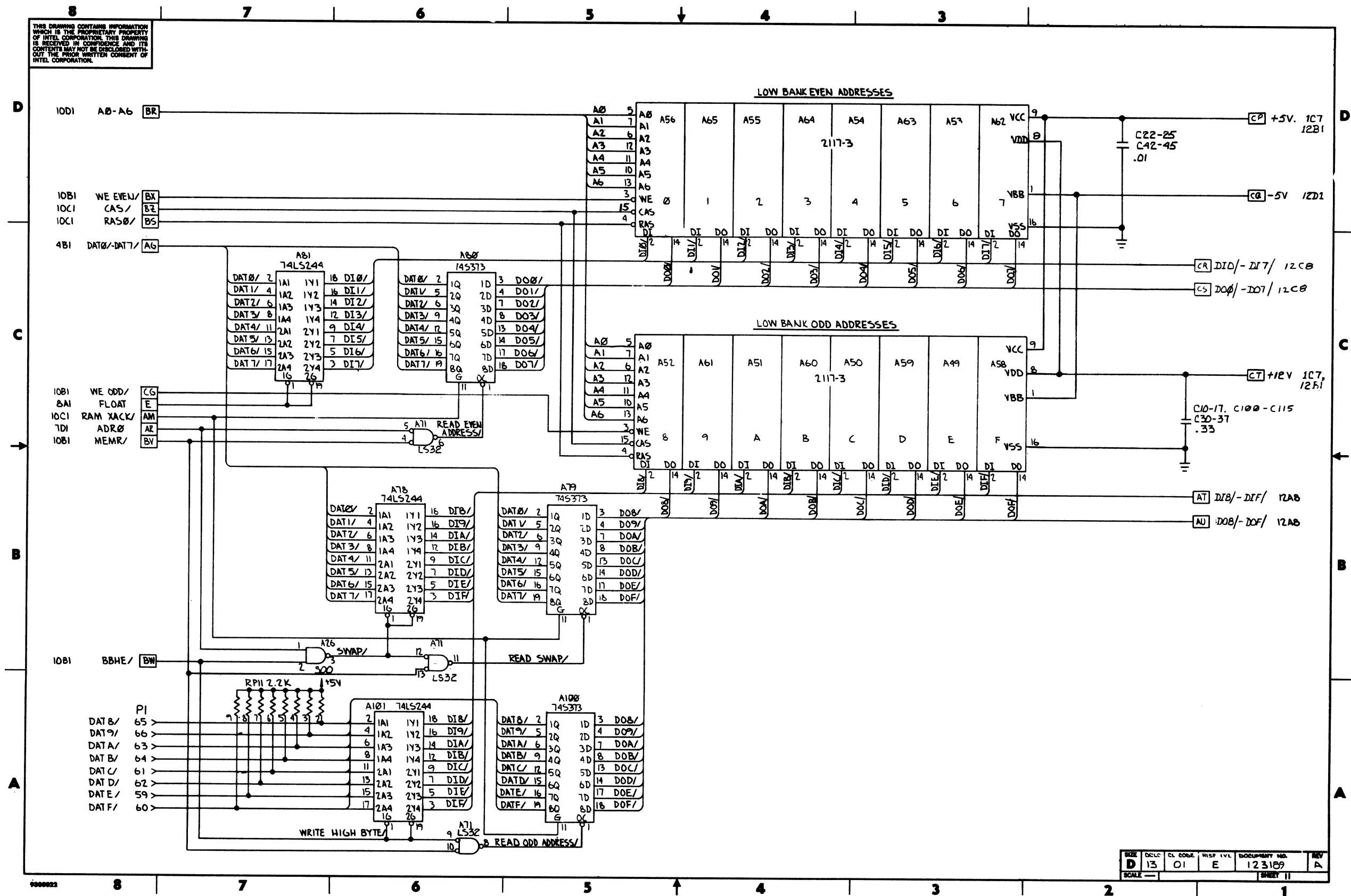
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| SCALE | | | | | SHEET 3 |

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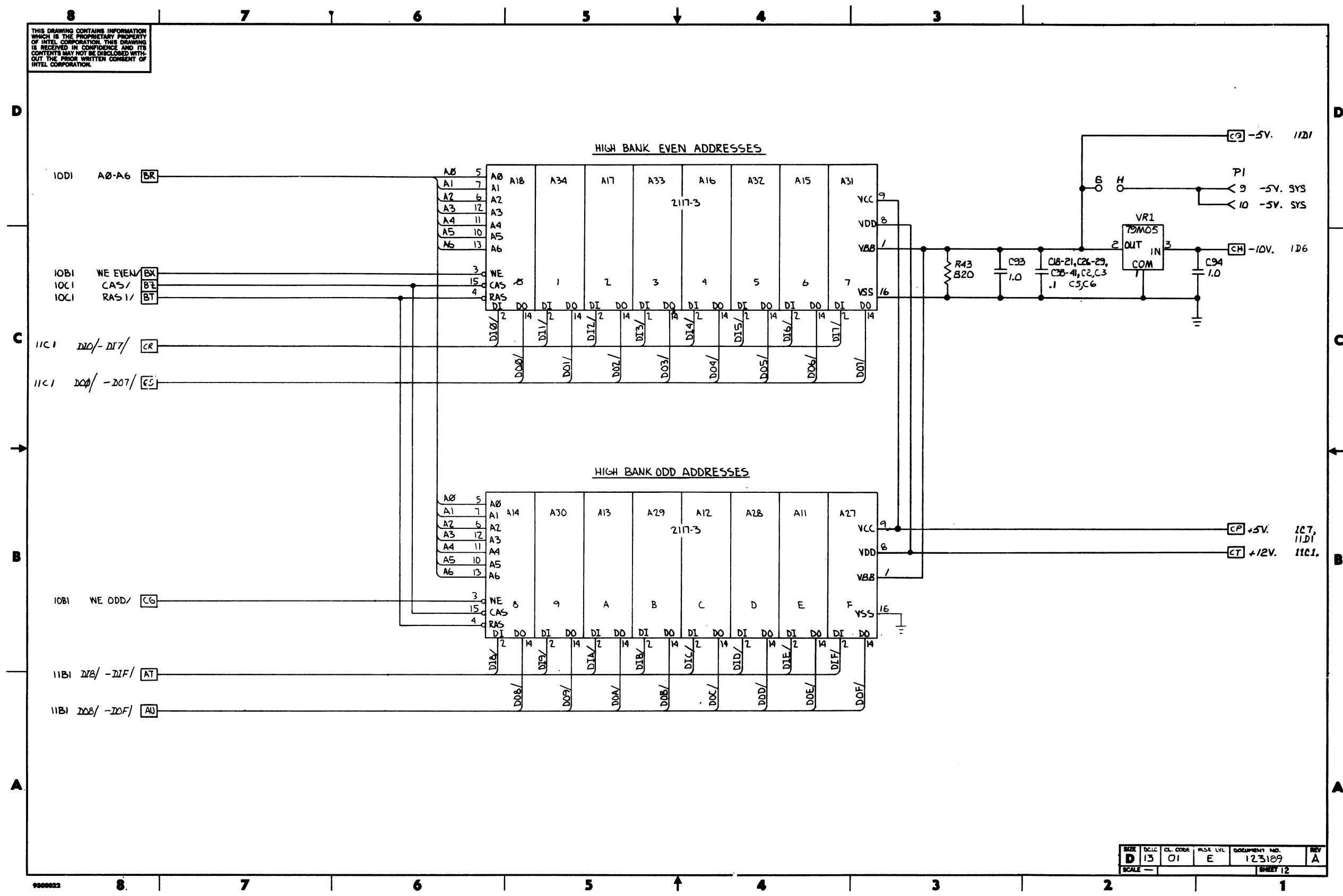
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| SCALE | SHEET 10 | | | | | | | | | | |

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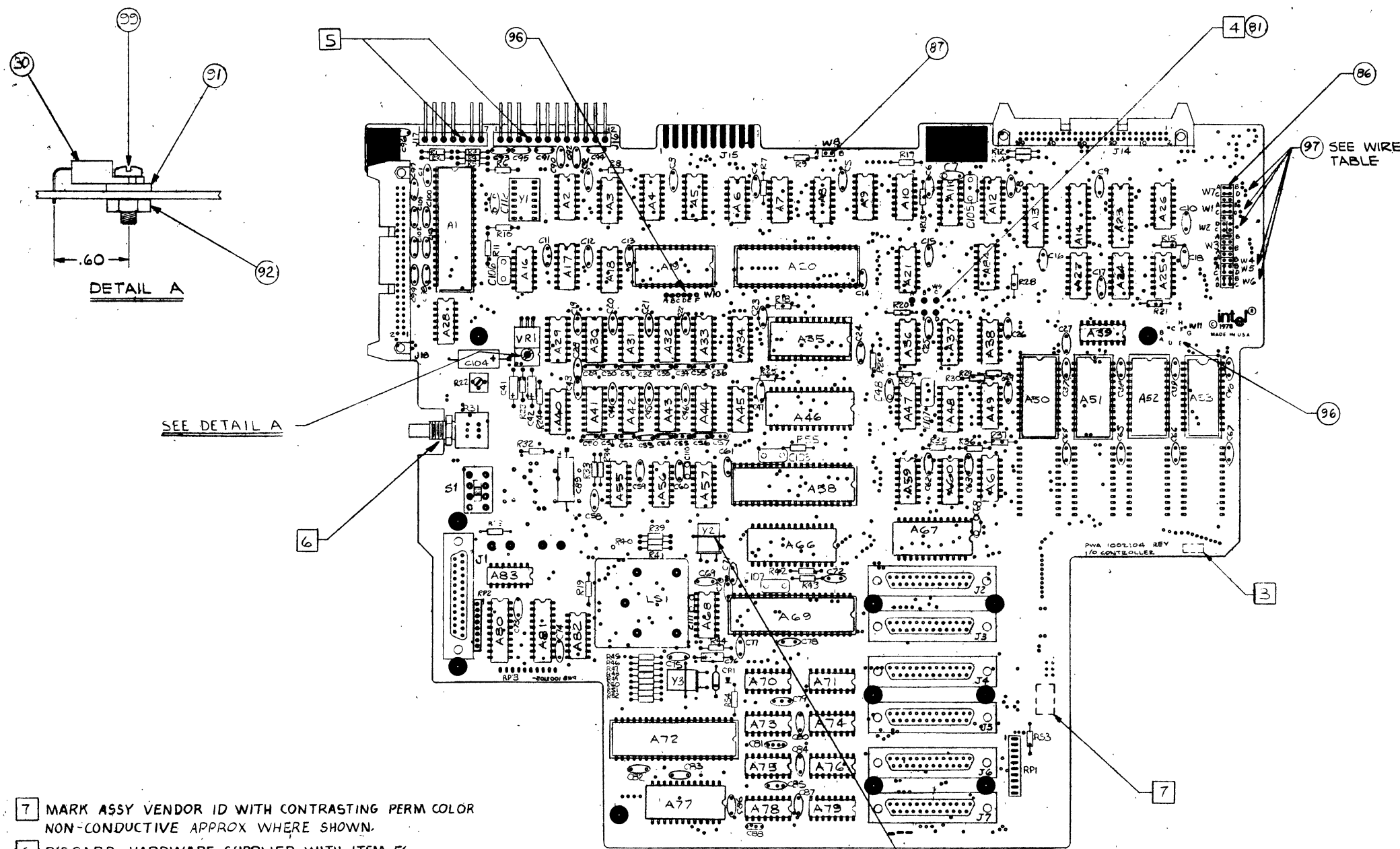


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| SCALE | | | | | SHEET 11 |

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|-------|----------|----------|----|----------|---|--------------|--------|-----|---|
| SIZE | D | CL. CODE | 01 | REV. LVL | E | DOCUMENT NO. | 123189 | REV | A |
| SCALE | SHEET 12 | | | | | | | | |



- 7 MARK ASSY VENDOR ID WITH CONTRASTING PERM COLOR NON-CONDUCTIVE APPROX WHERE SHOWN.
- 6 DISCARD HARDWARE SUPPLIED WITH ITEM 56 R31 BEFORE INSTALLING ITEM 56.
- 5 CONNECTOR PINS J17-5 AND J16-4 ARE TO BE CUT OFF FOR KEYING.
- 4 INTEL PART NO 52-187 2109-4H MAY BE SUBSTITUTED FOR ITEM 17, INTEL PART NO 52-186 IF THE FOLLOWING CONDITIONS ARE MET.
 - A) 52-186 & 52-187 SHALL NOT BE MIXED ON THE SAME ASSY AND
 - B) ASSY'S USING 52-187 MUST HAVE THE JUMPER PLUG W9B-W9E REMOVED & W9B-W9A ADDED

3 MARK DASH NO, AND REV LEVEL WITH CONTRASTING PERM COLOR, NON-CONDUCTIVE, .12 INCH APPROX WHERE SHOWN.

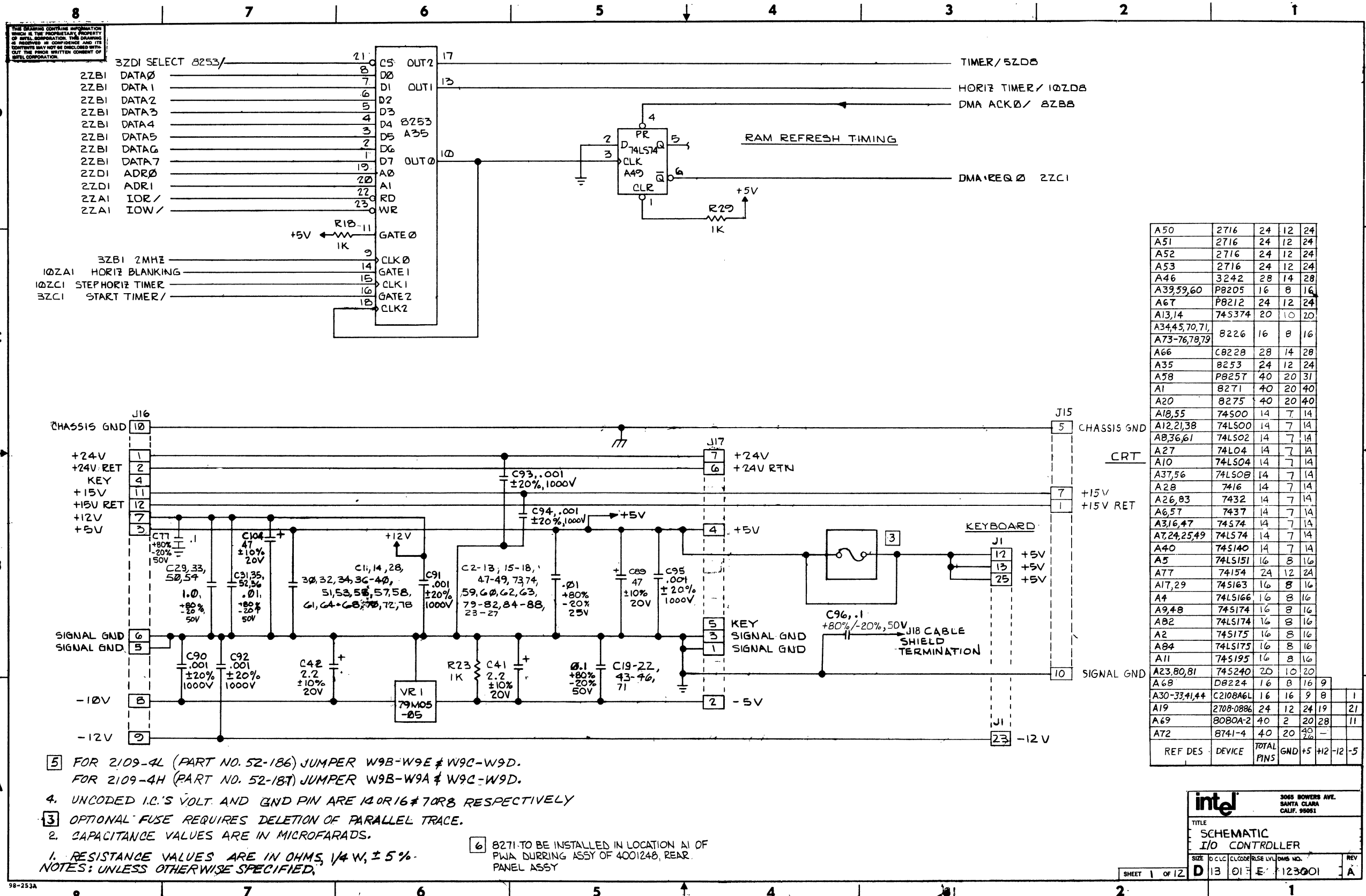
2. WORKMANSHIP FOR MCMC QAWS 99-0007-001.

1. ASSY PART NO. IS 1002104-02. ASSY AND P/L ARE TRACKING DOCUMENTS.

NOTE: UNLESS OTHERWISE SPECIFIED,

SEE SEPARATE PARTS LIST.

| QUANTITY | | ITEM NO | PART NUMBER | DESCRIPTION |
|--|-------|---|-------------|-------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| MATERIAL | | | | |
| FINISH | | | | |
| 400124B MDS-22x23x USED ON | | | | |
| PARTS LIST | | | | |
| intel | | 3065 BOWERS AVE. SANTA CLARA CALIF. 95051 | | |
| TITLE PRINTED WIRING ASSEMBLY I/O CONTROLLER | | | | |
| SIZE | DEPT. | DRAWING NO. | | |
| D | MCSO | E 1002104-02 | | |
| SHEET 1 OF 1 | | | | |



| | | | | |
|--------------|-----------|------------|-----|---------------|
| A50 | 2716 | 24 | 12 | 24 |
| A51 | 2716 | 24 | 12 | 24 |
| A52 | 2716 | 24 | 12 | 24 |
| A53 | 2716 | 24 | 12 | 24 |
| A46 | 3242 | 28 | 14 | 28 |
| A39,59,60 | P8205 | 16 | 8 | 16 |
| A6T | P8212 | 24 | 12 | 24 |
| A13,14 | 74S374 | 20 | 10 | 20 |
| A34,45,70,71 | | | | |
| A73-76,78,79 | 8226 | 16 | 8 | 16 |
| A66 | C8228 | 28 | 14 | 28 |
| A35 | 8253 | 24 | 12 | 24 |
| A58 | P825T | 40 | 20 | 31 |
| A1 | 8271 | 40 | 20 | 40 |
| A20 | 8275 | 40 | 20 | 40 |
| A18,55 | 74S00 | 14 | 7 | 14 |
| A12,21,38 | 74LS00 | 14 | 7 | 14 |
| A8,36,61 | 74LS02 | 14 | 7 | 14 |
| A27 | 74L04 | 14 | 7 | 14 |
| A10 | 74LS04 | 14 | 7 | 14 |
| A37,56 | 74LS08 | 14 | 7 | 14 |
| A28 | 7416 | 14 | 7 | 14 |
| A26,83 | 7432 | 14 | 7 | 14 |
| A6,57 | 7437 | 14 | 7 | 14 |
| A31,6,47 | 74S74 | 14 | 7 | 14 |
| A7,24,25,49 | 74LS74 | 14 | 7 | 14 |
| A40 | 74S140 | 14 | 7 | 14 |
| A5 | 74LS151 | 16 | 8 | 16 |
| A77 | 74154 | 24 | 12 | 24 |
| A17,29 | 74S163 | 16 | 8 | 16 |
| A4 | 74LS166 | 16 | 8 | 16 |
| A9,48 | 74S174 | 16 | 8 | 16 |
| A82 | 74LS174 | 16 | 8 | 16 |
| A2 | 74S175 | 16 | 8 | 16 |
| A84 | 74LS175 | 16 | 8 | 16 |
| A11 | 74S195 | 16 | 8 | 16 |
| A23,80,81 | 74S240 | 20 | 10 | 20 |
| A68 | D8224 | 16 | 8 | 16 |
| A30-33,41,44 | C2108A6L | 16 | 16 | 9 |
| A19 | 2708-0886 | 24 | 12 | 24 |
| A69 | 80B0A-2 | 40 | 2 | 20 |
| A72 | 8741-4 | 40 | 20 | 40 |
| REF DES | DEVICE | TOTAL PINS | GND | +5 +12 -12 -5 |

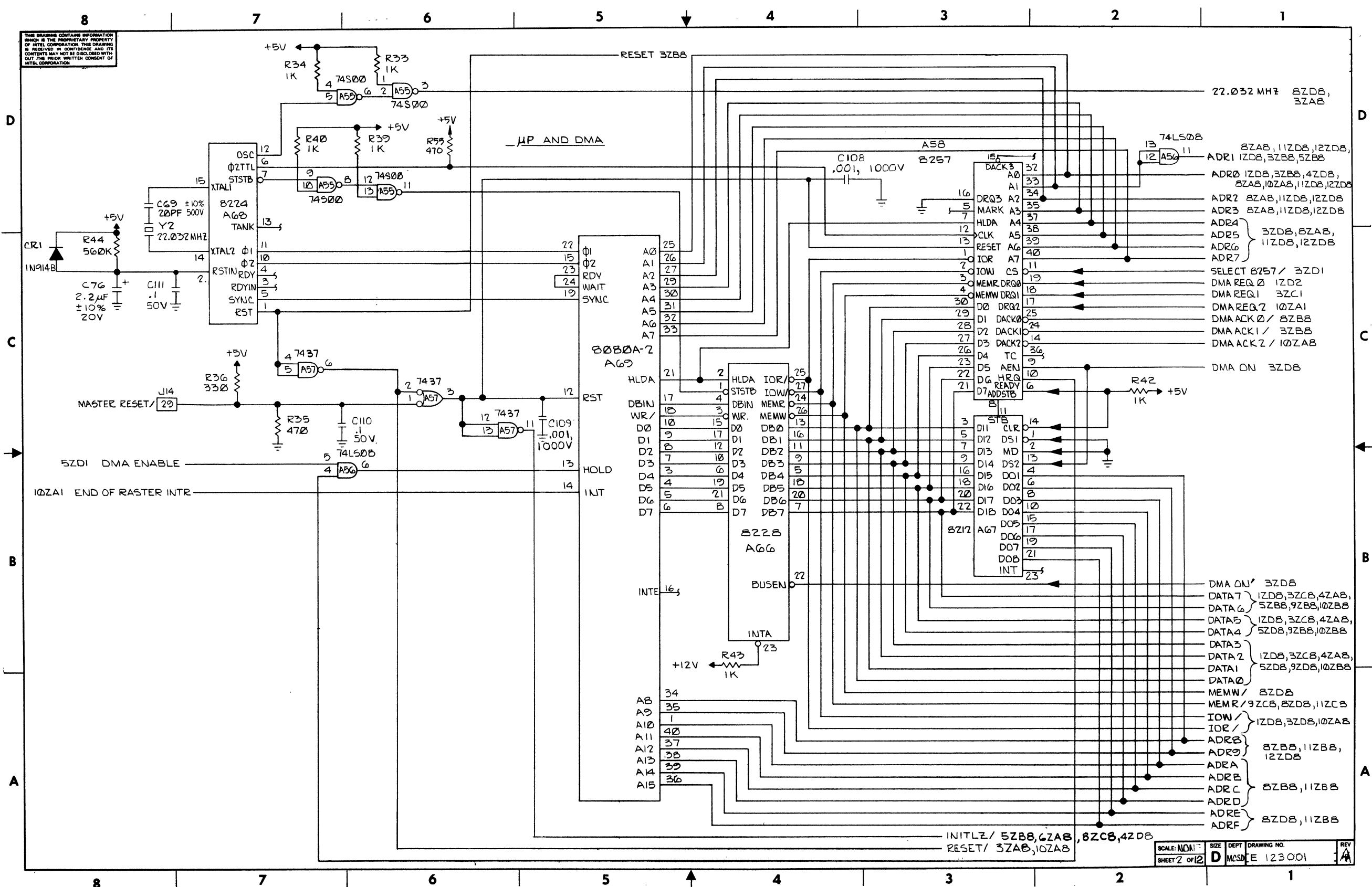
- [5] FOR 2109-4L (PART NO. 52-186) JUMPER W9B-W9E ≠ W9C-W9D.
FOR 2109-4H (PART NO. 52-187) JUMPER W9B-W9A ≠ W9C-W9D.
 - 4. UNCODED I.C.'S VOLT. AND GND PIN ARE 14OR16 ≠ 7OR8 RESPECTIVELY
 - [3] OPTIONAL FUSE REQUIRES DELETION OF PARALLEL TRACE.
 - 2. CAPACITANCE VALUES ARE IN MICROFARADS.
 - 1. RESISTANCE VALUES ARE IN OHMS, 1/4 W, ± 5%.
 - [6] 8271 TO BE INSTALLED IN LOCATION A1 OF PWA DURING ASSY OF 4001248, REAR PANEL ASSY
- NOTES: UNLESS OTHERWISE SPECIFIED.

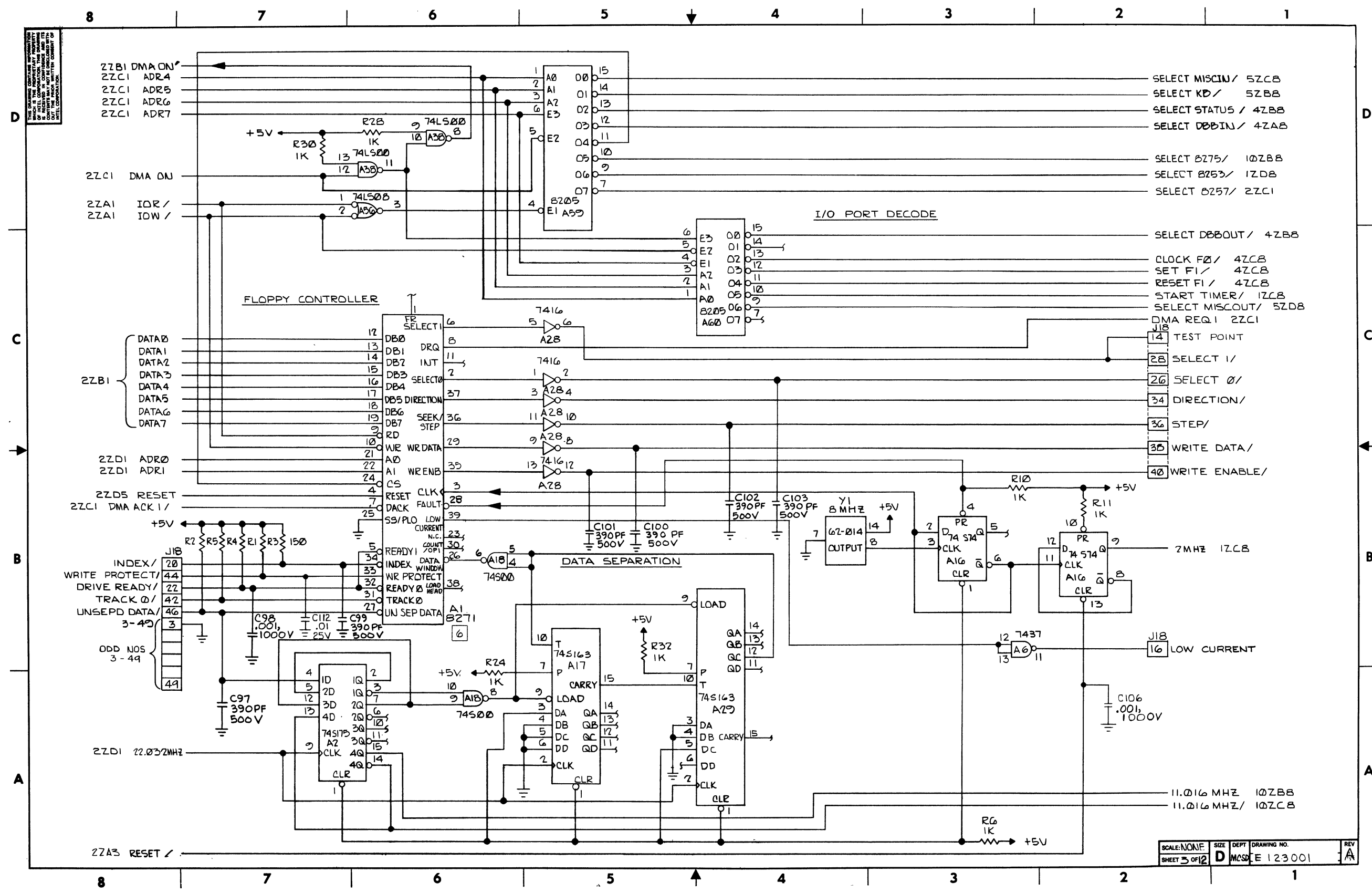
intel 3065 BOWERS AVE. SANTA CLARA CALIF. 95051

TITLE: SCHEMATIC I/O CONTROLLER

SIZE: D 13 01 E 123001 REV: A

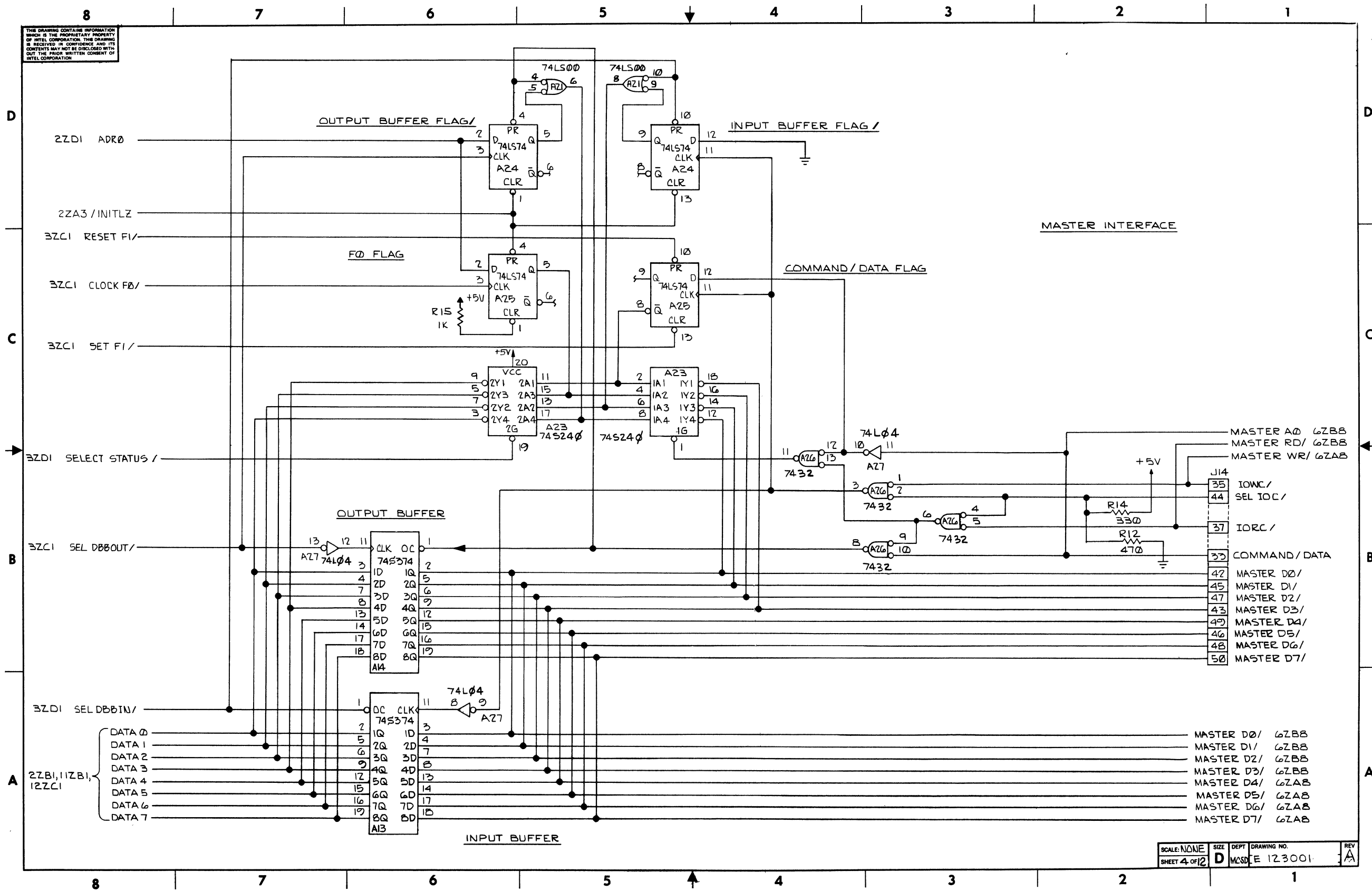
SHEET 1 OF 12

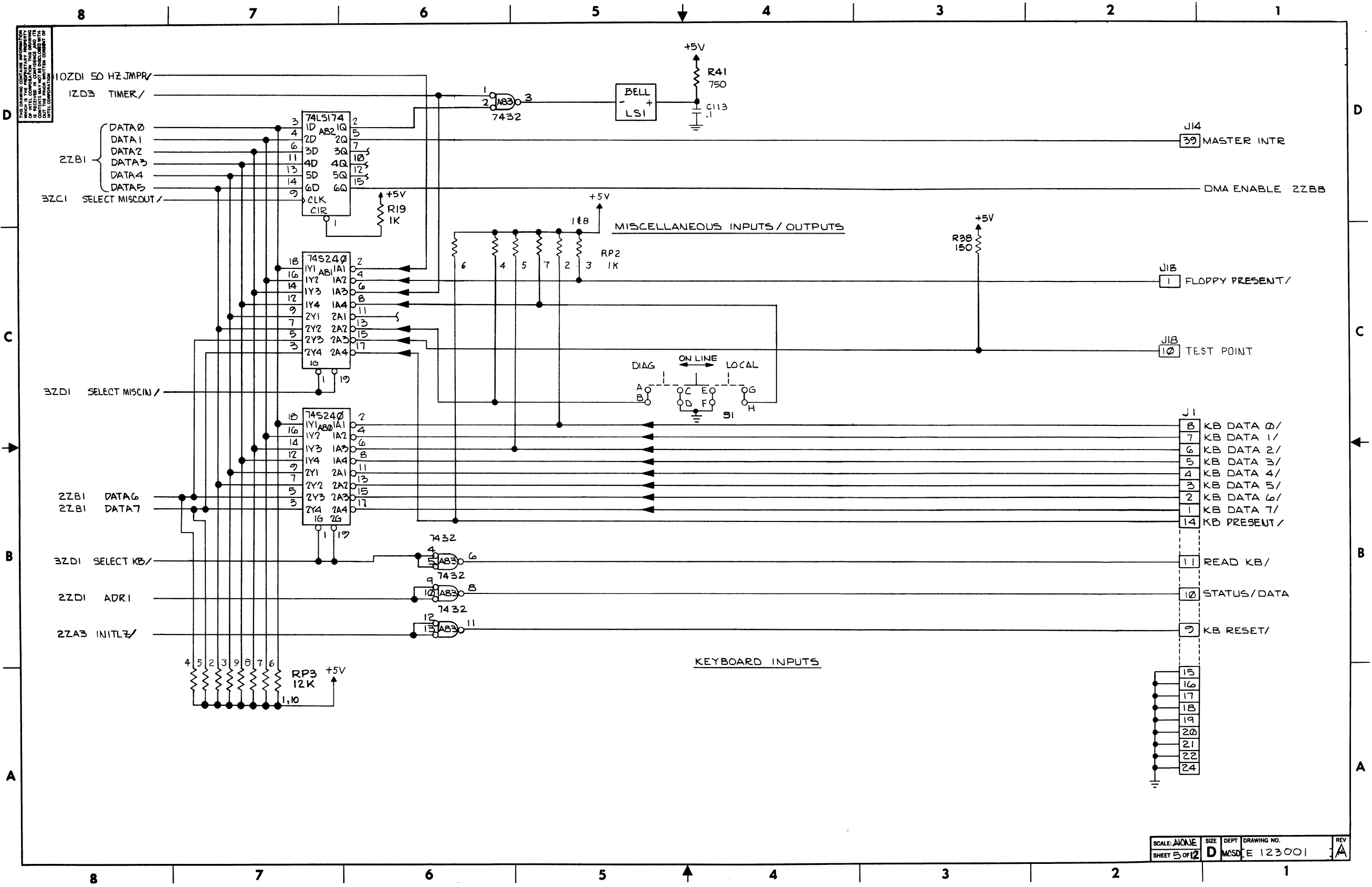




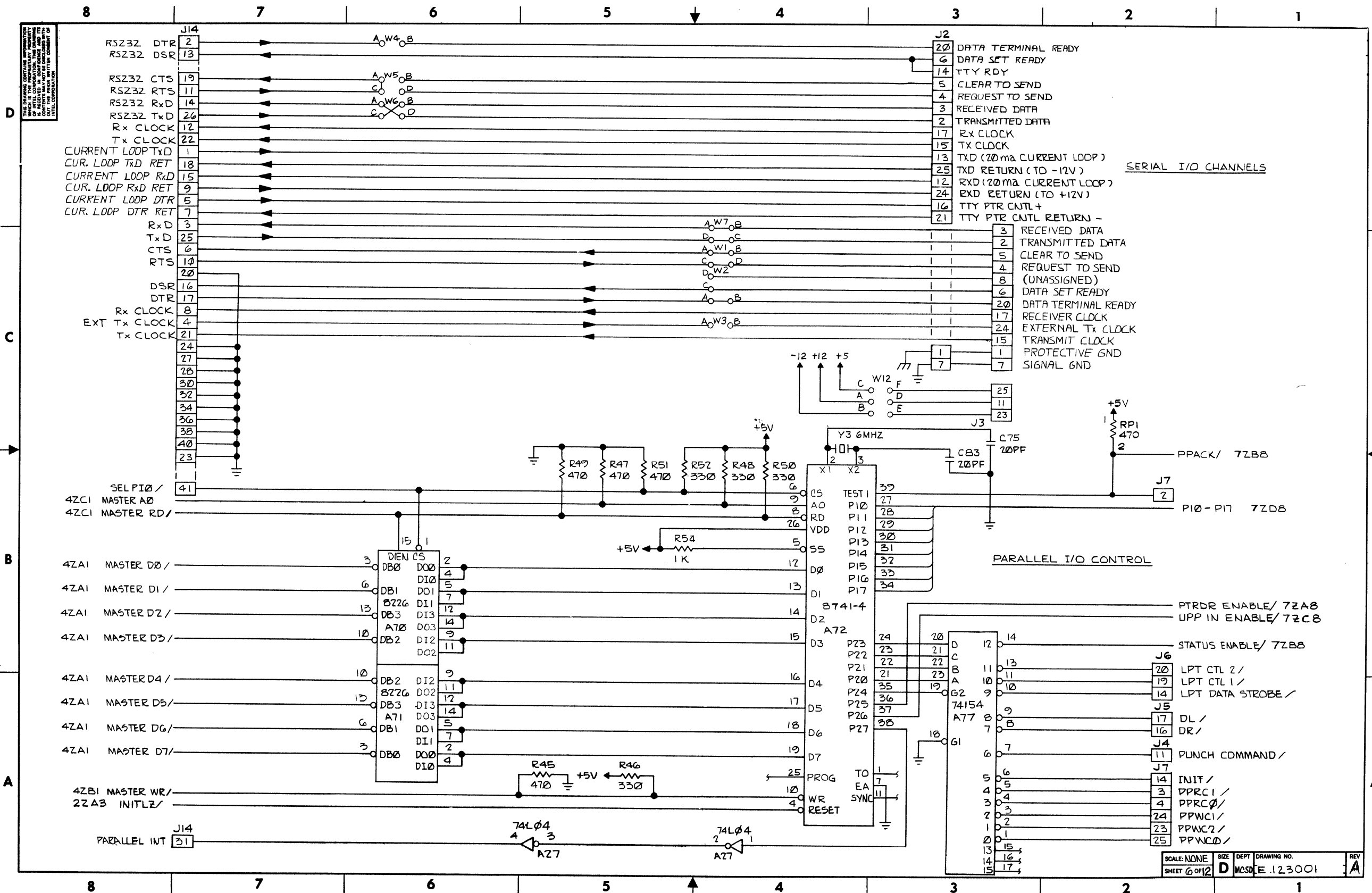
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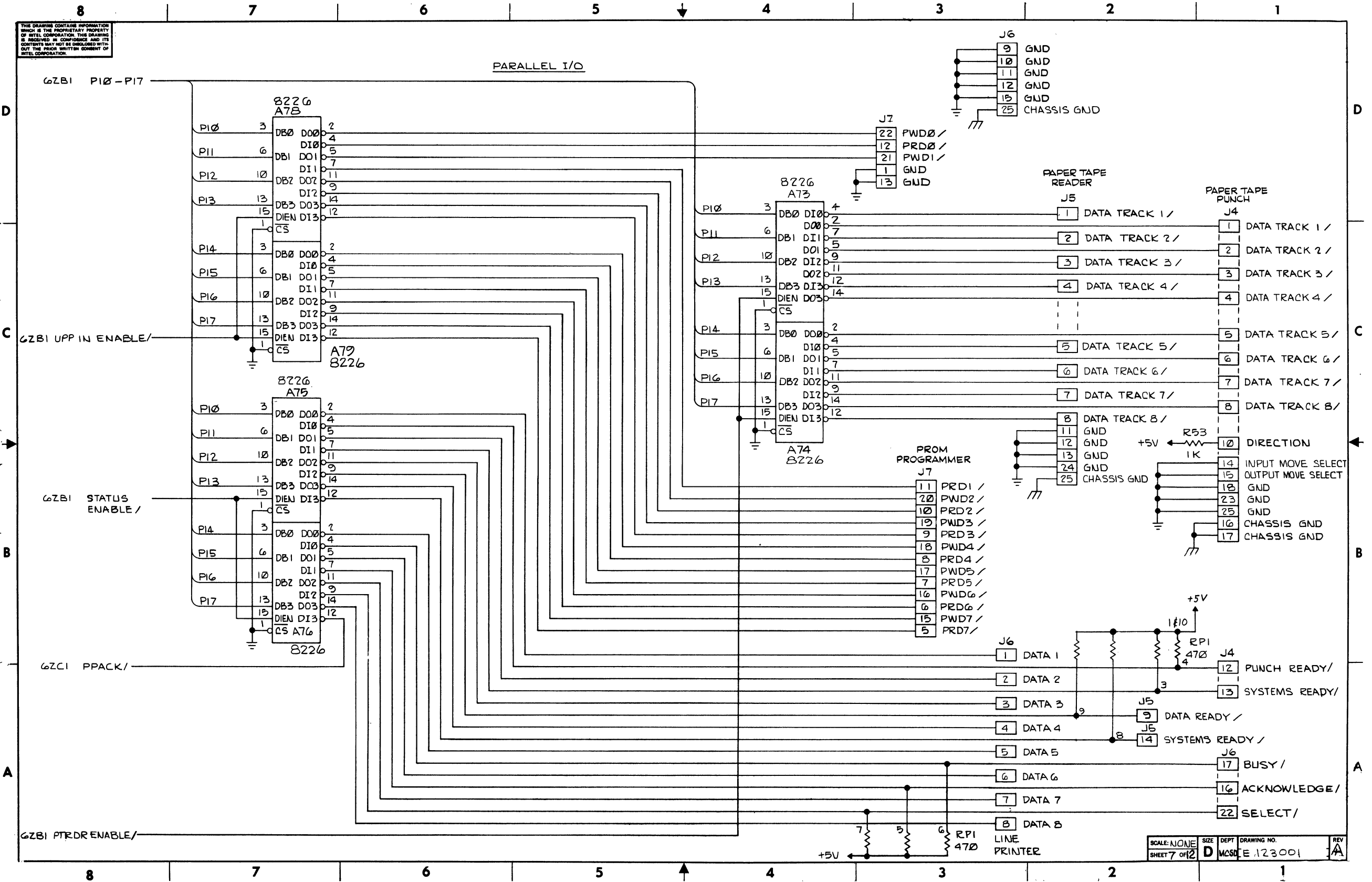
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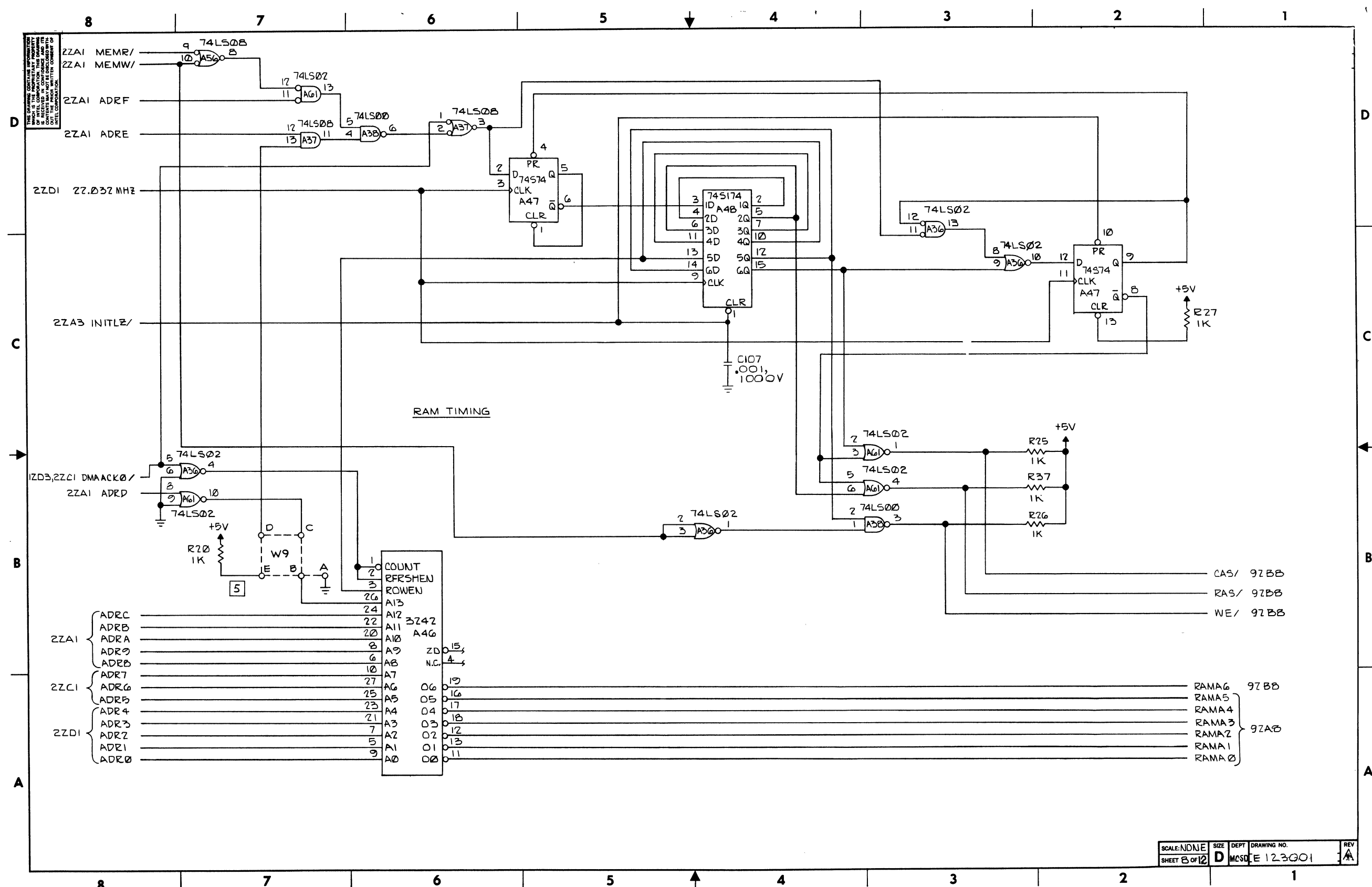
SERIAL I/O CHANNELS

PARALLEL I/O CONTROL

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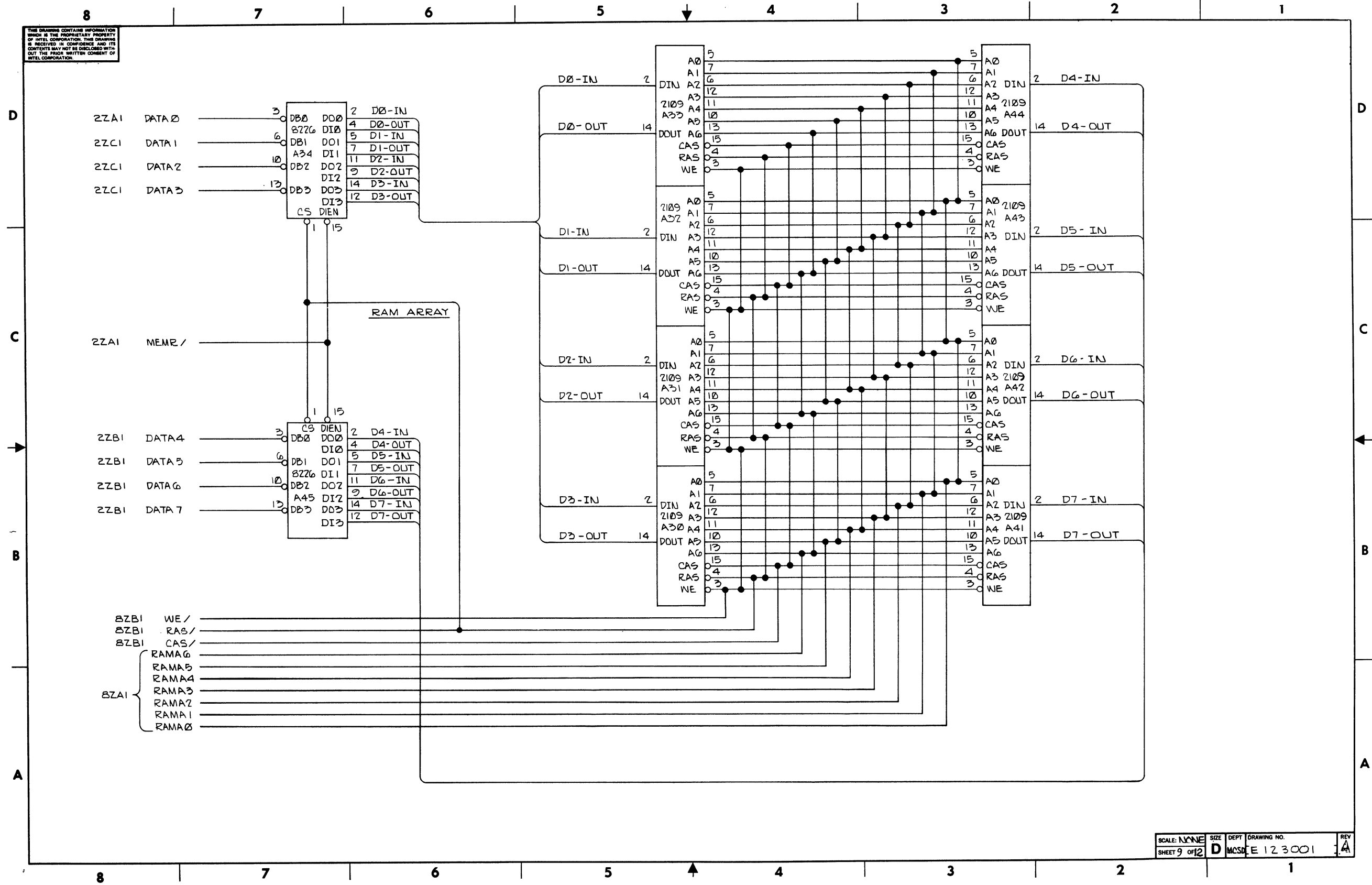
PARALLEL I/O



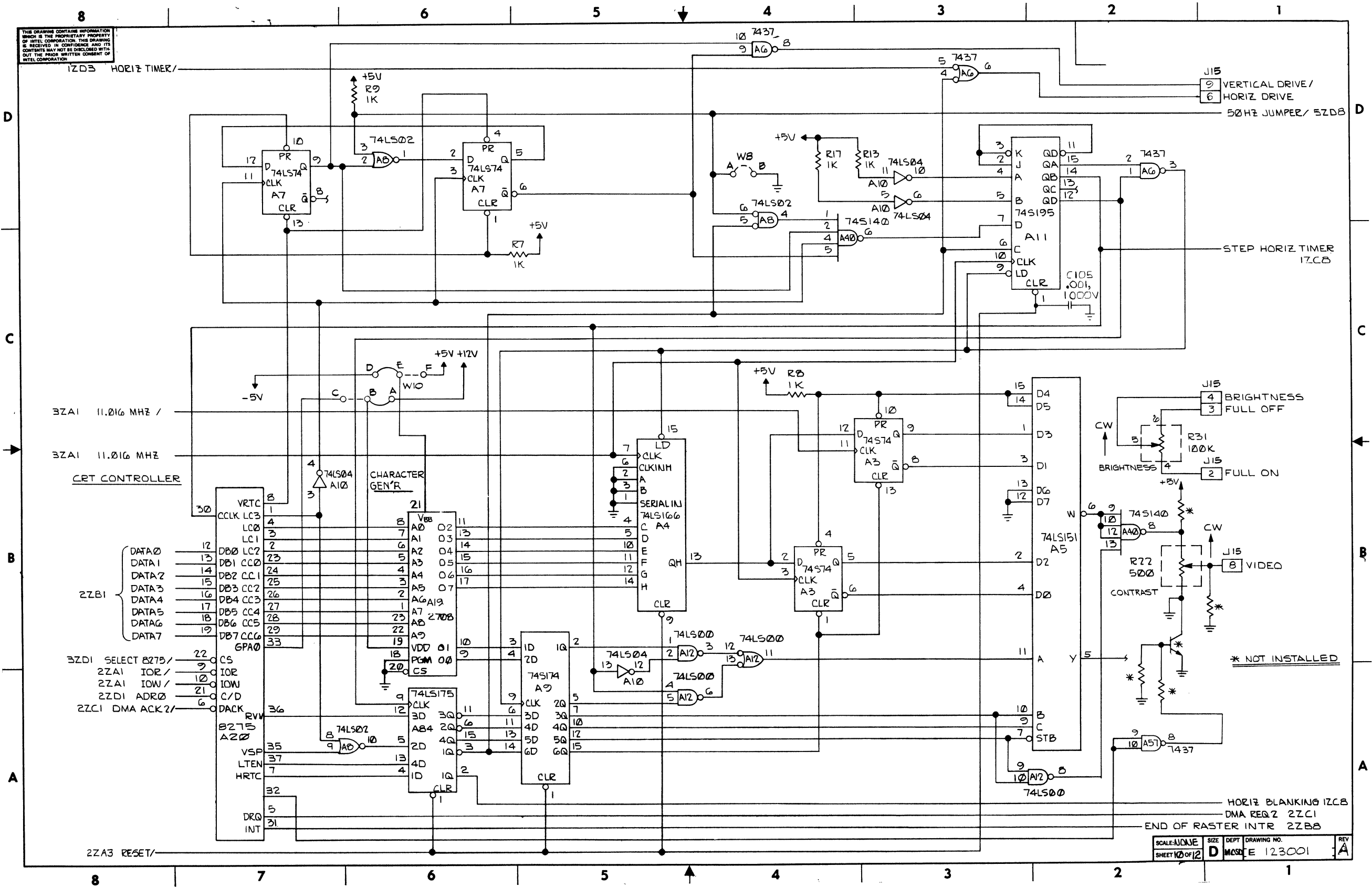


THESE DRAWINGS CONTAIN INFORMATION OF THE DESIGN AND CONSTRUCTION OF THE RAM COMPONENTS OF THE INTEL CORPORATION. THIS DRAWING IS UNCLASSIFIED AND THE CONTENTS MAY BE RELEASED BY THE INTEL CORPORATION.

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D
C
B
A

D
C
B
A

1ZD3 HORIZ TIMER/

3ZAI 11.016 MHz /

3ZAI 11.016 MHz

CRT CONTROLLER

2ZB1
DATA0
DATA1
DATA2
DATA3
DATA4
DATA5
DATA6
DATA7

3ZD1 SELECT B275/
2ZA1 IOR/
2ZA1 IOW/
2ZD1 ADDR0
2ZC1 DMA ACK2/

RVV B275 A20
VSP LTEN
HRTC
DRQ INT

2ZA3 RESET/

J15
5 VERTICAL DRIVE/
6 HORIZ DRIVE
50HZ JUMPER/ 5ZDB

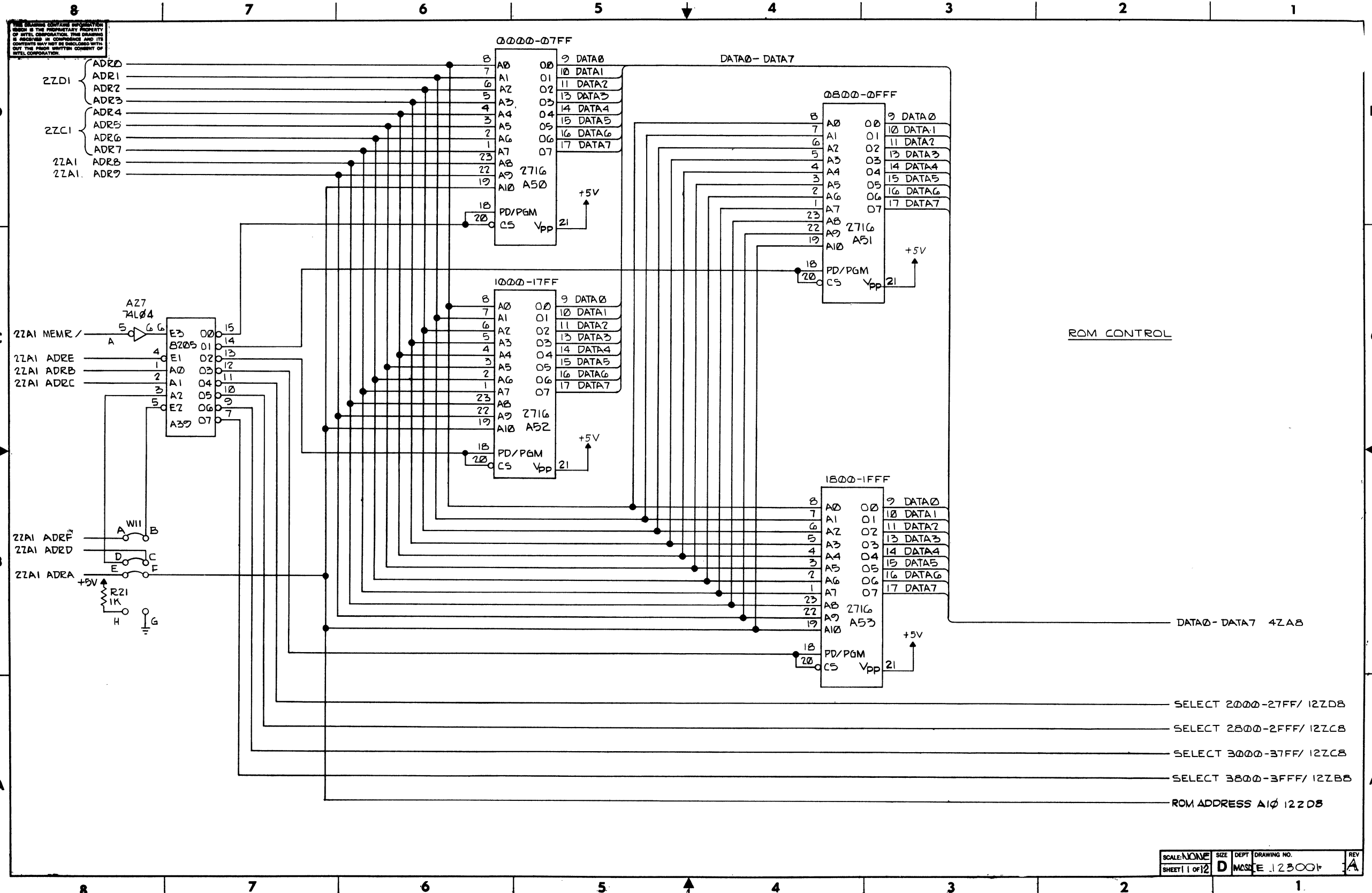
STEP HORIZ TIMER 1ZCB

J15
4 BRIGHTNESS
3 FULL OFF
2 FULL ON

J15
VIDEO
CONTRAST
R27 500

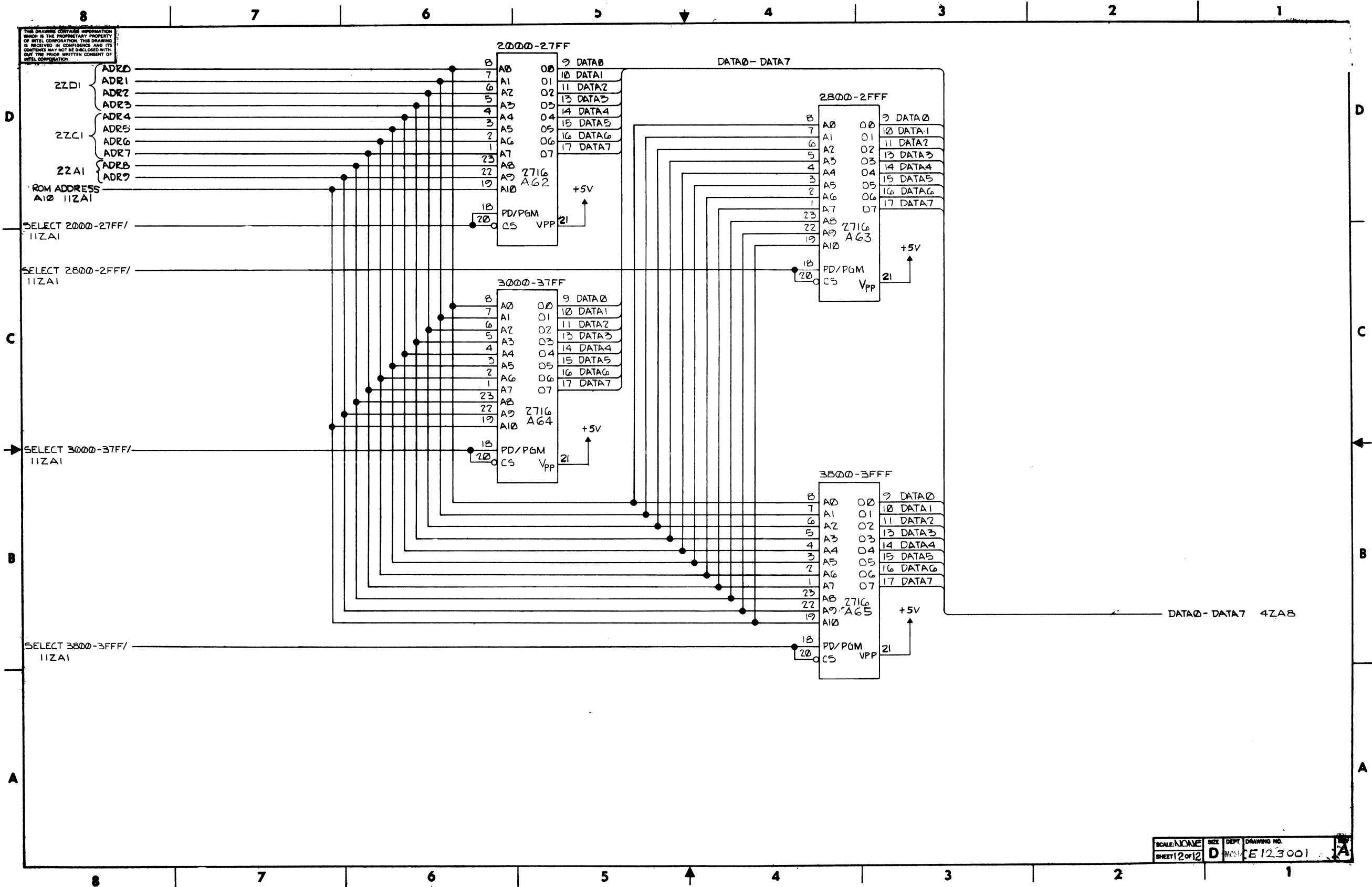
* NOT INSTALLED

HORIZ BLANKING 1ZCB
DMA REQ2 2ZC1
END OF RASTER INTR 2ZB8

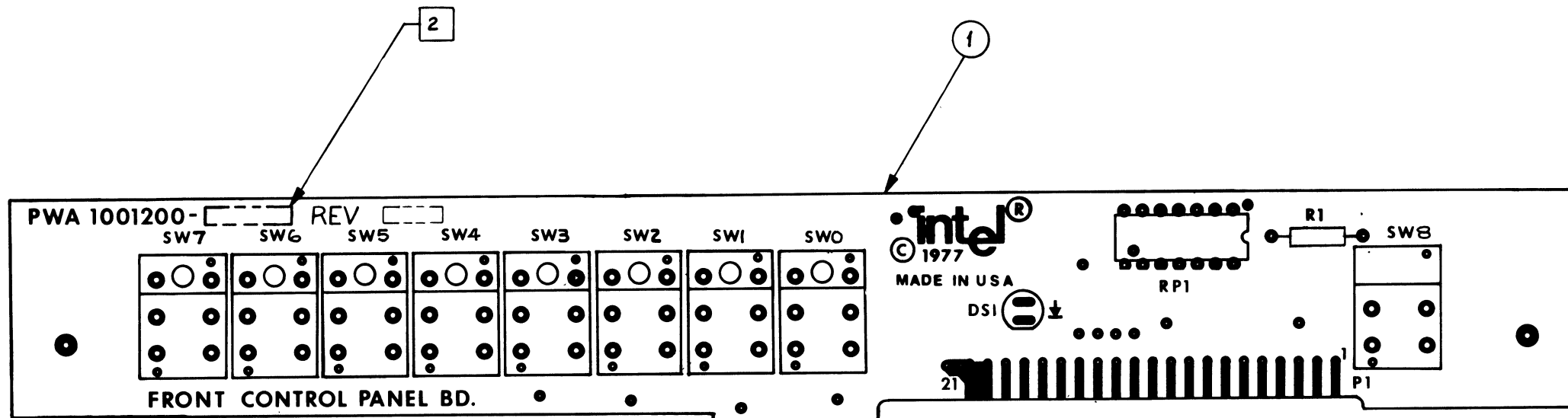


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SEE SEPARATE PARTS LIST

3 WORKMANSHIP PER MCSD QAWS 99-0007-001.

2 MARK ASSY DASH NO. AND REV LEVEL WITH CONTRASTING PERM COLOR, NON-CONDUCTIVE, .12 HIGH, APPROX WHERE SHOWN.

1. ASSY PART NO. IS 1001200-01. ASSY & PL ARE TRACKING DOCUMENTS.

NOTES: UNLESS OTHERWISE SPECIFIED

| ITEM NO. | PART NUMBER | DESCRIPTION |
|-----------------------|-------------|-------------|
| QUANTITY PER DASH NO. | | |
| SCALE: 2:1 | | |
| 4001246 | MDS-232 | |
| 4001246 | MDS-222 | |
| 4001246 | MDS-211 | |
| 4001246 | MDS-231 | |
| 4001246 | MDS-221 | |
| 4001246 | MDS-230 | |
| 4001246 | MDS-220 | |
| 4001246 | MDS-210 | |
| NEXT ASSY | USED ON | |

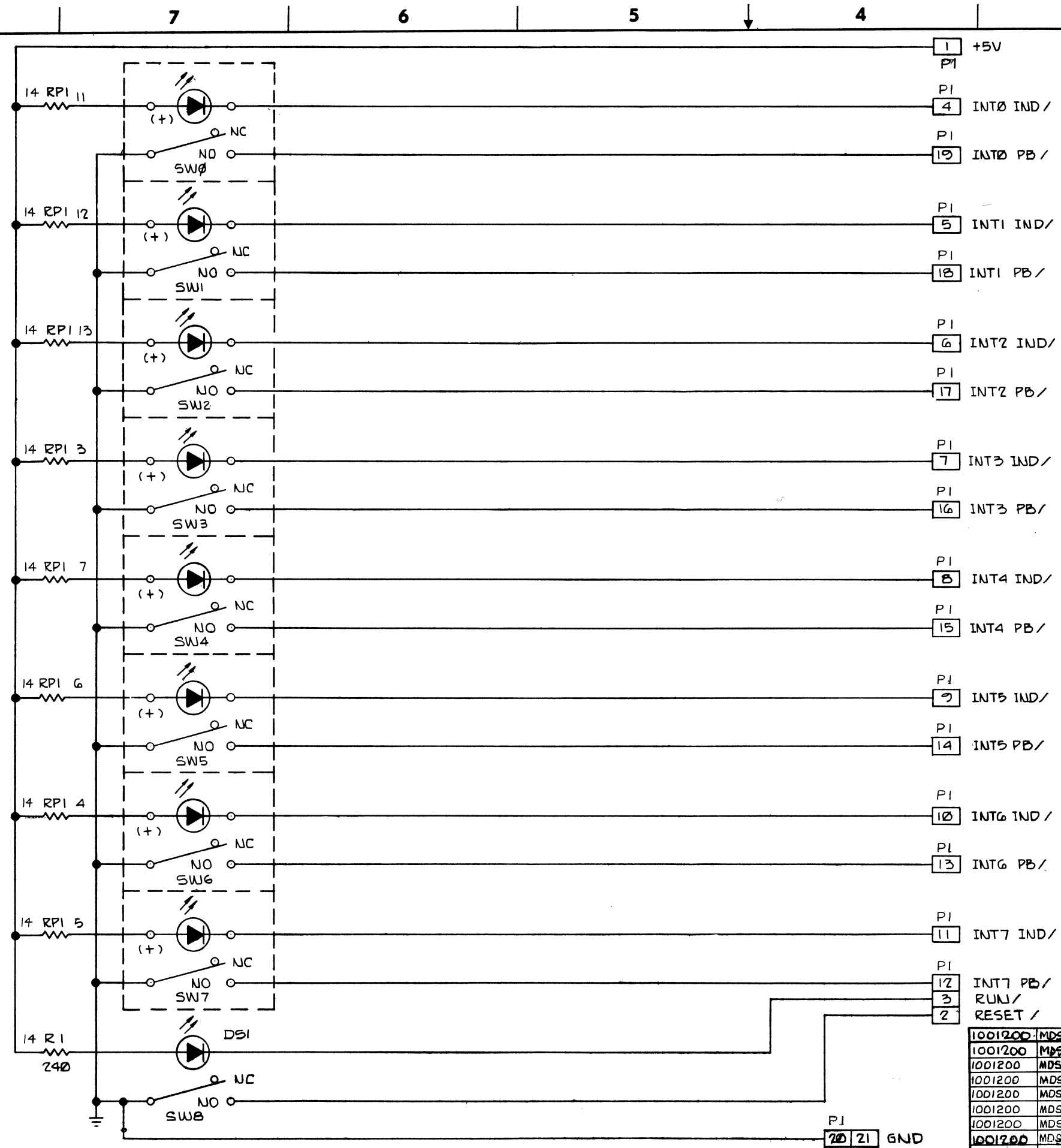
| | | | | |
|--------------|--|------------------|-------|-------|
| TOL. ± | | 2 PLC | 3 PLC | ANGLE |
| MATERIAL: | | | | |
| FINISH: | | | | |
| SHEET 1 OF 1 | | C MCD P1001200 B | | |

intel 3065 BOWERS AVE. SANTA CLARA CALIF. 95081

TITLE
PRINTED WIRING ASSEMBLY
FRONT CONTROL PANEL

SIZE DEPT DRAWING NO. REV
C MCD P1001200 B

THIS DRAWING CONTAINS INFORMATION WHICH IS THE PROPRIETARY PROPERTY OF INTEL CORPORATION. THIS DRAWING IS RECEIVED IN CONFIDENCE AND ITS CONTENTS MAY NOT BE DISCLOSED WITHOUT THE PRIOR WRITTEN CONSENT OF INTEL CORPORATION.



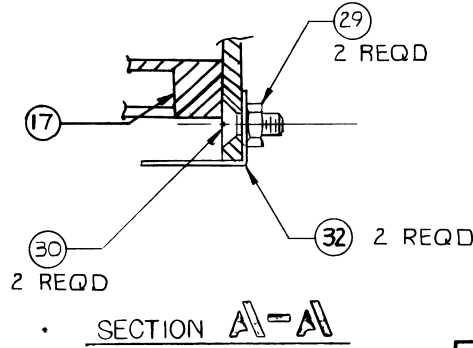
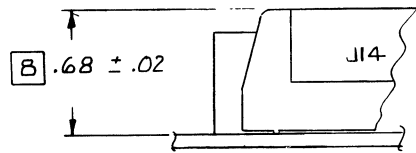
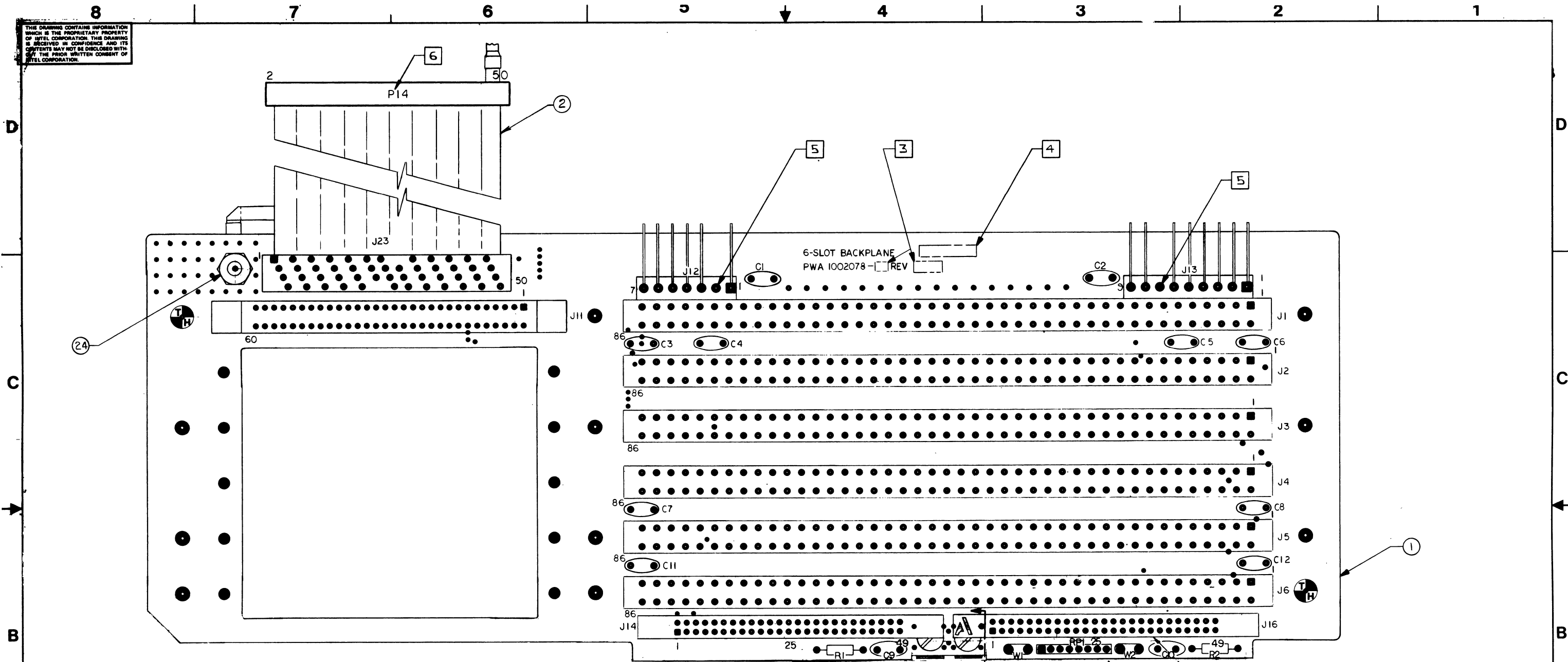
| | | |
|------------------|----------|--|
| RPI | PI | |
| R1 | | |
| DSI | | |
| SW0 | | |
| LAST USED | NOT USED | |
| REF DESIGNATIONS | | |

NOTES: UNLESS OTHERWISE SPECIFIED.
 1. RESISTANCE VALUES ARE IN OHMS, 1/4W, ±5%.
 2. RESISTOR PAK VALUES ARE IN OHMS, 1K, ±5%, 1.5W PER PAK.
 3. RESISTOR NETWORKS (DIP) ARE 14 PIN - PIN 14 IS +5V.

| ITEM NO. | PART NUMBER | DESCRIPTION |
|-----------|-------------|--------------------------|
| 1001200 | MDS-232 | QUANTITY PER DASH NO. |
| 1001200 | MDS-222 | SCALE: NONE |
| 1001200 | MDS-211 | TOL. = 2 PLC 3 PLC ANGLE |
| 1001200 | MDS-231 | MATERIAL: |
| 1001200 | MDS-230 | FINISH: |
| 1001200 | MDS-220 | |
| 1001200 | MDS-210 | |
| NEXT ASSY | USED ON | |

| | | | |
|------|------|-------------|-----|
| SIZE | DEPT | DRAWING NO. | REV |
| D | MCD | P2001202 | A |

THIS DRAWING CONTAINS INFORMATION WHICH IS THE PROPRIETARY PROPERTY OF INTEL CORPORATION. THIS DRAWING IS RECEIVED IN CONFIDENCE AND ITS CONTENTS MAY NOT BE DISCLOSED WITH-OUT THE PRIOR WRITTEN CONSENT OF INTEL CORPORATION.



MOUNT OPEN SIDE AT BOTTOM EDGE 2 PLACES, (J14, J16)

- 8 MAX. COMPONENT HEIGHT.
- 7 DIMENSIONS ARE IN INCHES.
- 6 MARK P14 WITH CONTRASTING PERM COLOR .12 HIGH APPROX. WHERE SHOWN.
- 5 REMOVE PIN 2 ON J12, (KEY), AND PIN 7 ON J13, (KEY).
- 4 MARK VENDOR ID WITH CONTRASTING PERM COLOR, NON-CONDUCTIVE, APPROX WHERE SHOWN.
- 3 MARK PART NO. AND REV LEVEL WITH CONTRASTING PERM COLOR, NON-CONDUCTIVE, .12-HIGH, APPROX WHERE SHOWN.
- 2. WORKMANSHIP PER MCSD QAWS 99-0007-001.
- 1. ASSY PART NO. IS 1002078-01. ASSY AND PL ARE TRACKING DOCUMENTS.

NOTES: UNLESS OTHERWISE SPECIFIED:

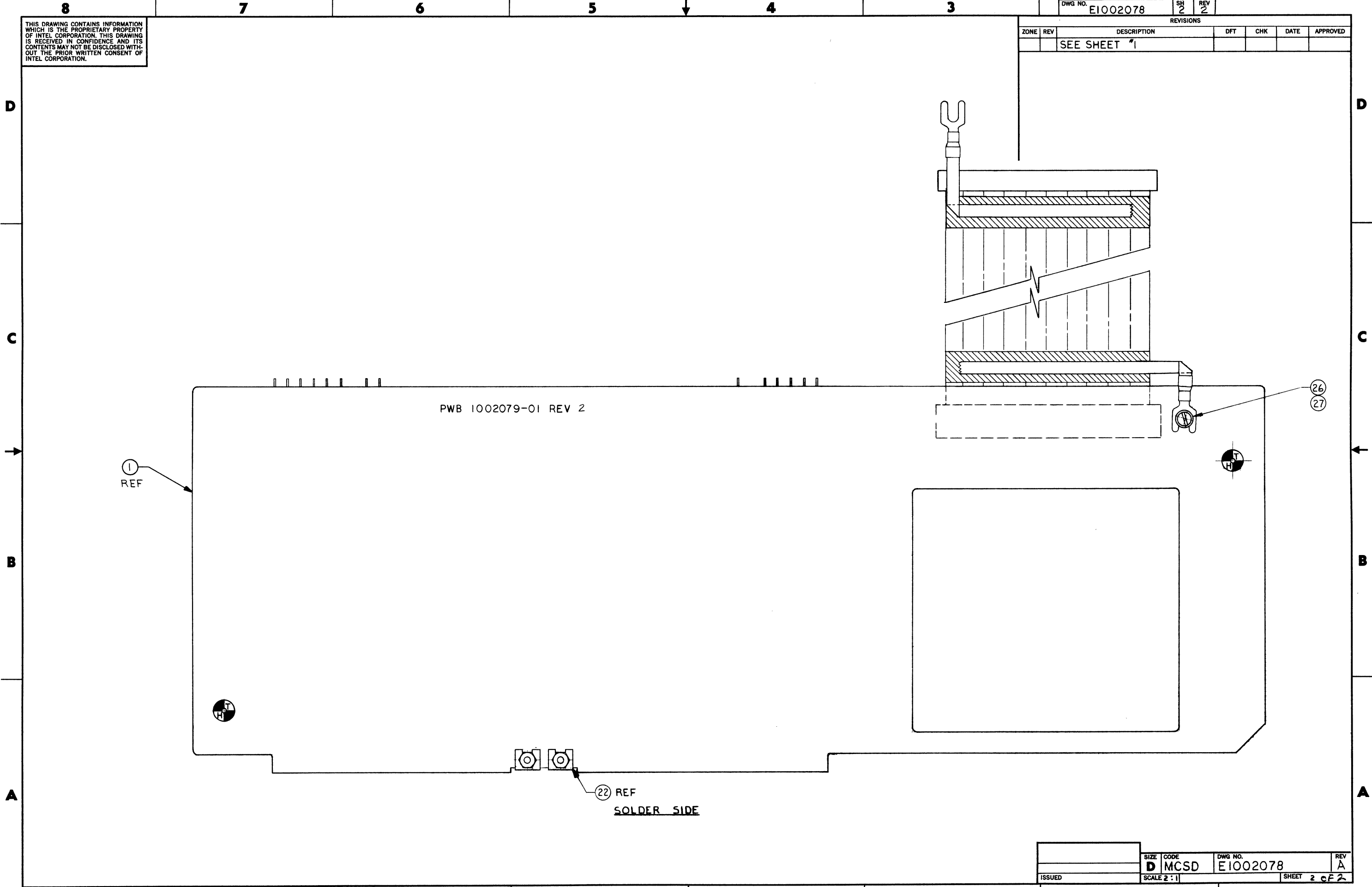
SEE SEPARATE PARTS LIST

| QUANTITY PER DASH NO. | | ITEM NO. | PART NUMBER | DESCRIPTION | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---------|--|-------------|-------------|------------------------|--|------------------|------|-------------------------|--|-------------|--|------------------|--|--------------|--|------|------|-------------|-----|---------|---------|----------|---|
| SCALE: 2:1 | | <table border="1"> <tr> <td colspan="2">TOL. 2 PLC 3 PLC ANGLE</td> </tr> <tr> <td>± .25</td> <td>.010</td> </tr> <tr> <td colspan="2">MATERIAL:</td> </tr> <tr> <td colspan="2">FINISH:</td> </tr> </table> | | | TOL. 2 PLC 3 PLC ANGLE | | ± .25 | .010 | MATERIAL: | | FINISH: | | | | | | | | | | | | | |
| TOL. 2 PLC 3 PLC ANGLE | | | | | | | | | | | | | | | | | | | | | | | | |
| ± .25 | .010 | | | | | | | | | | | | | | | | | | | | | | | |
| MATERIAL: | | | | | | | | | | | | | | | | | | | | | | | | |
| FINISH: | | | | | | | | | | | | | | | | | | | | | | | | |
| 4002146 | MDS 230 | <table border="1"> <tr> <td colspan="2">TITLE</td> <td colspan="2">3065 BOWERS AVE.</td> </tr> <tr> <td colspan="2">PRINTED WIRING ASSEMBLY</td> <td colspan="2">SANTA CLARA</td> </tr> <tr> <td colspan="2">6 SLOT BACKPLANE</td> <td colspan="2">CALIF. 95051</td> </tr> <tr> <td>SIZE</td> <td>DEPT</td> <td>DRAWING NO.</td> <td>REV</td> </tr> <tr> <td>4002143</td> <td>MDS 220</td> <td>E1002078</td> <td>A</td> </tr> </table> | | | TITLE | | 3065 BOWERS AVE. | | PRINTED WIRING ASSEMBLY | | SANTA CLARA | | 6 SLOT BACKPLANE | | CALIF. 95051 | | SIZE | DEPT | DRAWING NO. | REV | 4002143 | MDS 220 | E1002078 | A |
| TITLE | | | | | 3065 BOWERS AVE. | | | | | | | | | | | | | | | | | | | |
| PRINTED WIRING ASSEMBLY | | SANTA CLARA | | | | | | | | | | | | | | | | | | | | | | |
| 6 SLOT BACKPLANE | | CALIF. 95051 | | | | | | | | | | | | | | | | | | | | | | |
| SIZE | DEPT | DRAWING NO. | REV | | | | | | | | | | | | | | | | | | | | | |
| 4002143 | MDS 220 | E1002078 | A | | | | | | | | | | | | | | | | | | | | | |
| NEXT ASSY | USED ON | SHEET 1 OF 2 | | | | | | | | | | | | | | | | | | | | | | |

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DWG NO. E1002078 SH 2 REV 2

| ZONE | | REV | DESCRIPTION | DFT | CHK | DATE | APPROVED |
|------|--|-----|--------------|-----|-----|------|----------|
| | | | SEE SHEET #1 | | | | |



PWB 1002079-01 REV 2

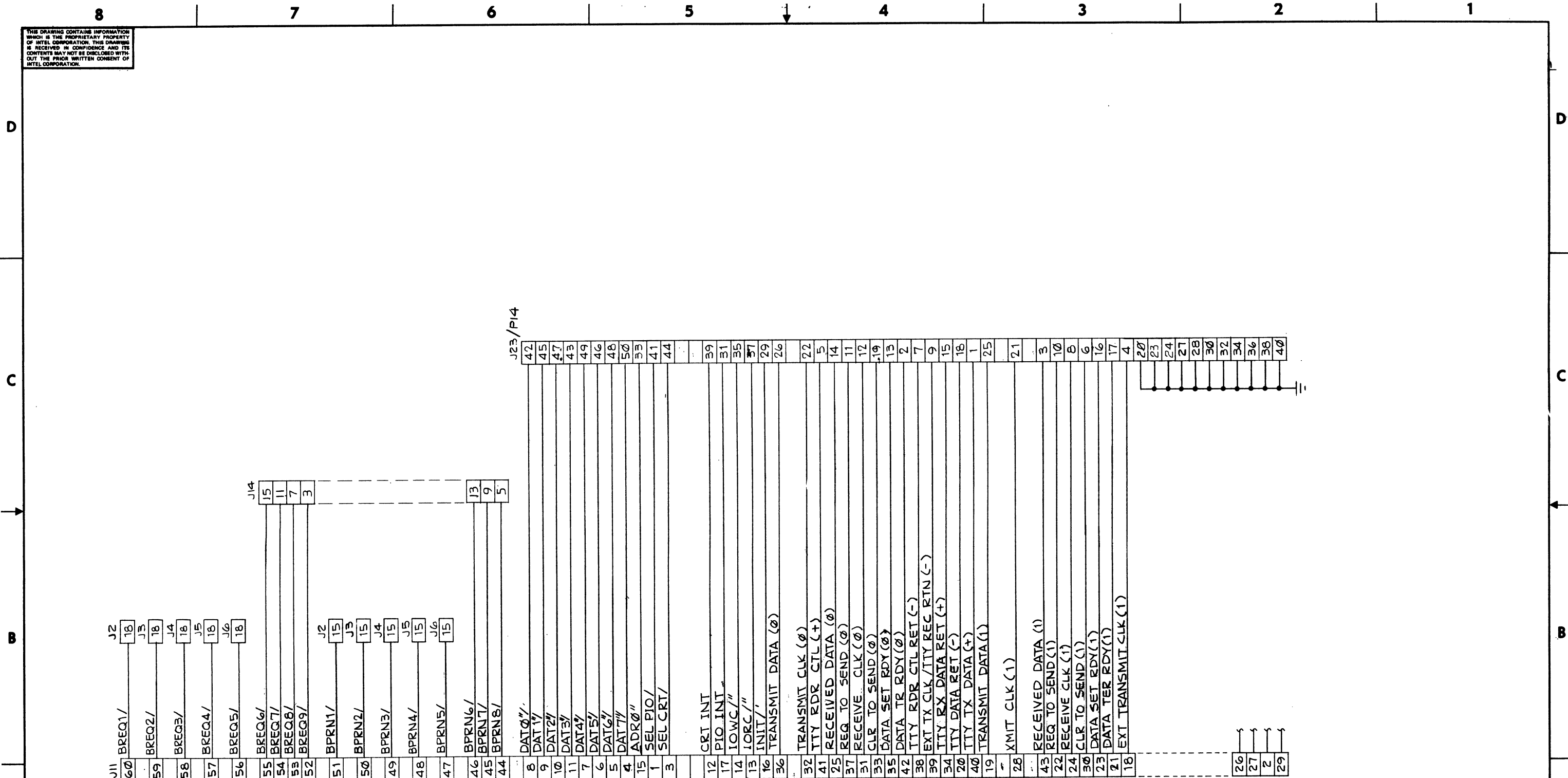
① REF

②② REF
SOLDER SIDE

②⑥
②⑦

| | | | |
|--------|----------------------------|---------------------|----------|
| ISSUED | SIZE CODE D MCSD | DWG NO. E1002078 | REV A |
| | SCALE 2:1 | SHEET 2 of 2 | |

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- NOTES: UNLESS OTHERWISE SPECIFIED
- PIN NUMBER SEQUENCE FOR J1, J2, J3, J4, J5, AND J6 ARE THE SAME.
 - ALL RESISTANCE VALUES IN OHMS, $\pm 5\%$, $1/4$ WATT.
 - ALL CAPACITANCE VALUES ARE IN MICROFARADS, $\pm 20\%$, 1KV.

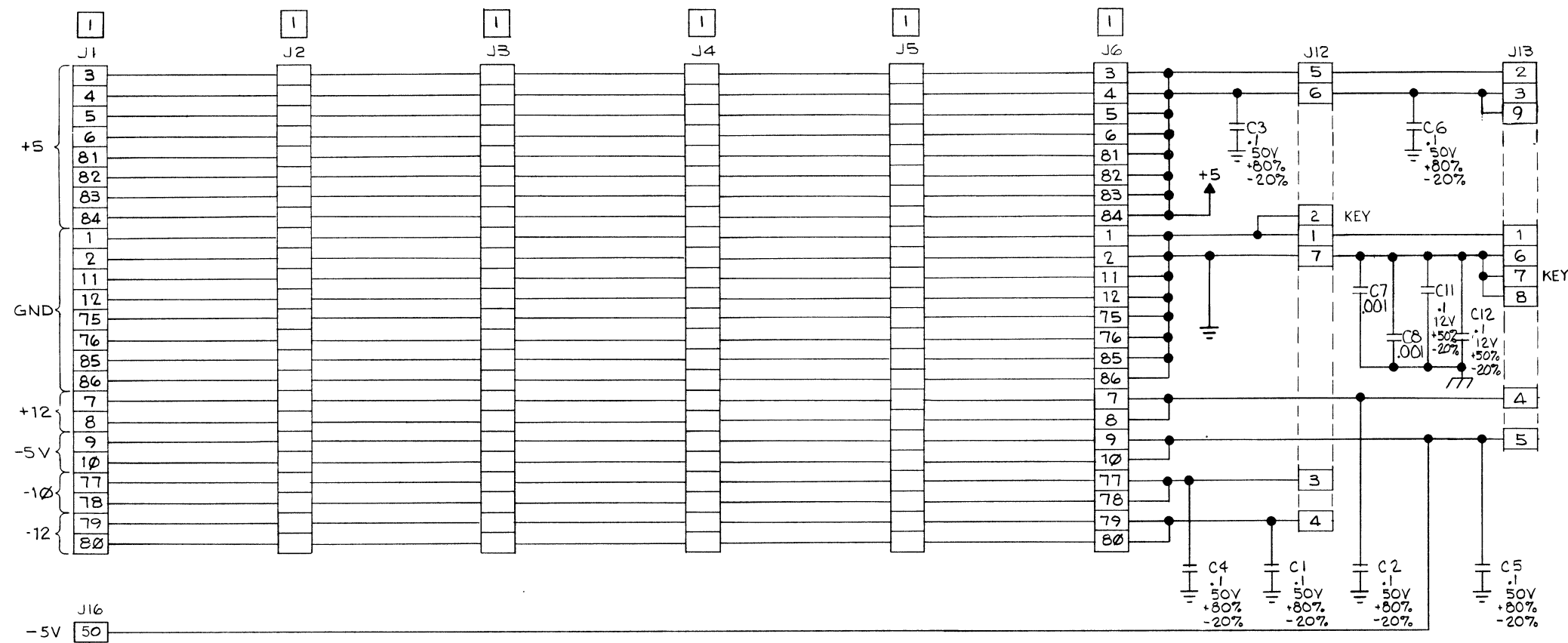
| ITEM NO. | PART NUMBER | DESCRIPTION |
|-----------------------|-------------|-------------|
| QUANTITY PER DASH NO. | | |
| SCALE: NONE | | |
| TOL # | 2 PLC | 3 PLC ANGLE |
| MATERIAL: | | |
| FINISH: | | |
| RPI | | |
| P14 | P1-13 | |
| J16 | J7-10,15 | |
| W2 | | |
| C12 | | |
| R6 | 1002078 | MDS-23X |
| LAST USED | NOT USED | 1002078 |
| REFERENCE DESIGNATION | NEXT ASSY | USED ON |

| SIZE | DEPT | DRAWING NO. | REV |
|------|------|-------------|-----|
| D | MCSD | E 2002679 | A |

| ITEM NO. | PART NUMBER | DESCRIPTION |
|---|-------------|-------------|
| PARTS LIST | | |
| intel 3065 BOWERS AVE. SANTA CLARA CALIF. 95061 | | |
| TITLE SCHEMATIC, 6 SLOT BACKPLANE EMDS | | |
| SHEET 1 OF 4 | | |

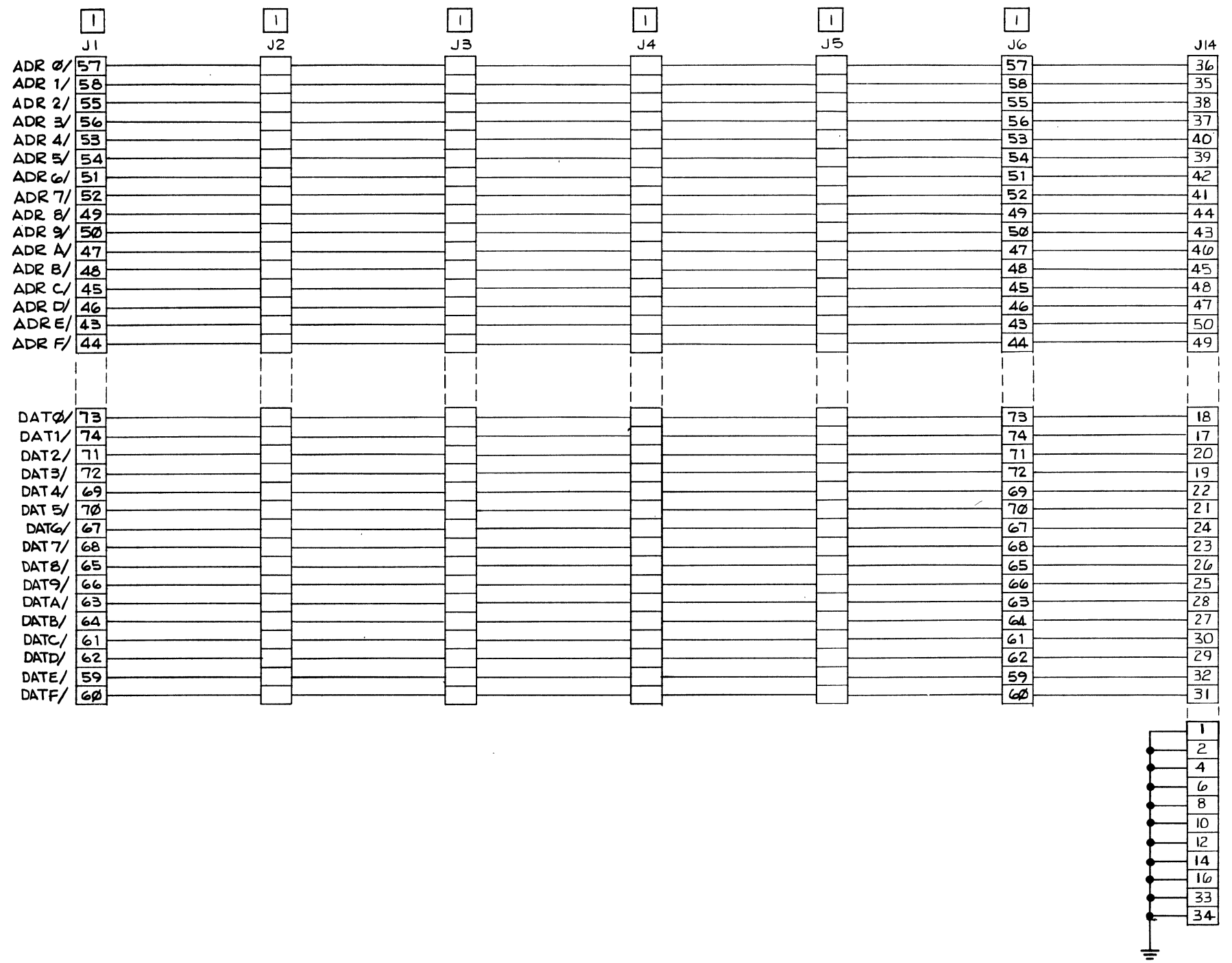
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| REVISIONS | | | | |
|-----------|-------------|-----|-----|------|
| LTR | DESCRIPTION | DFT | CHK | ENGR |
| - | SEE SHEET 1 | | | |



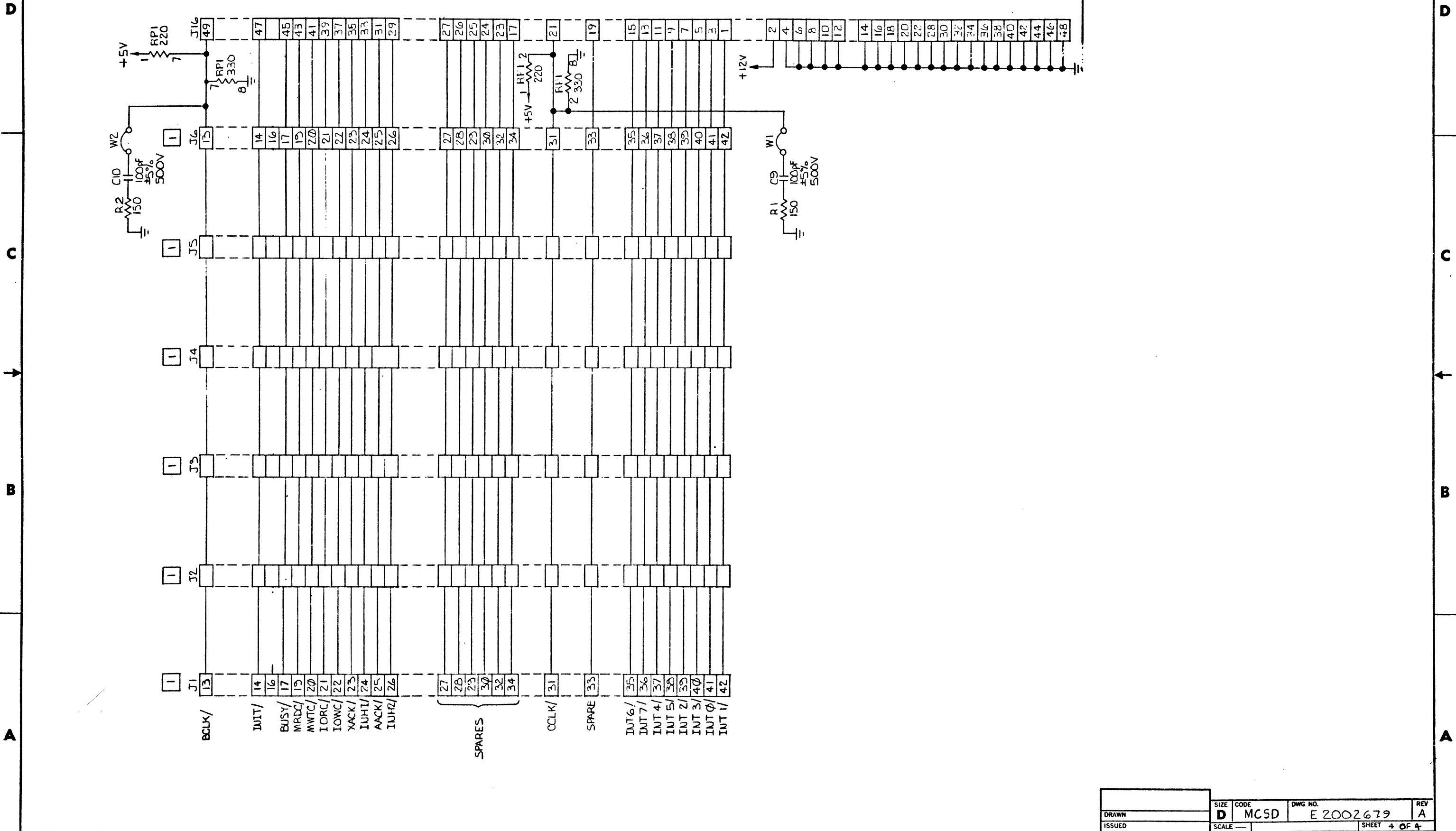
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| REVISIONS | | | | |
|-----------|-------------|-----|-----|------|
| LTR | DESCRIPTION | DFT | CHK | ENGR |
| - | SEE SHEET 1 | | | |

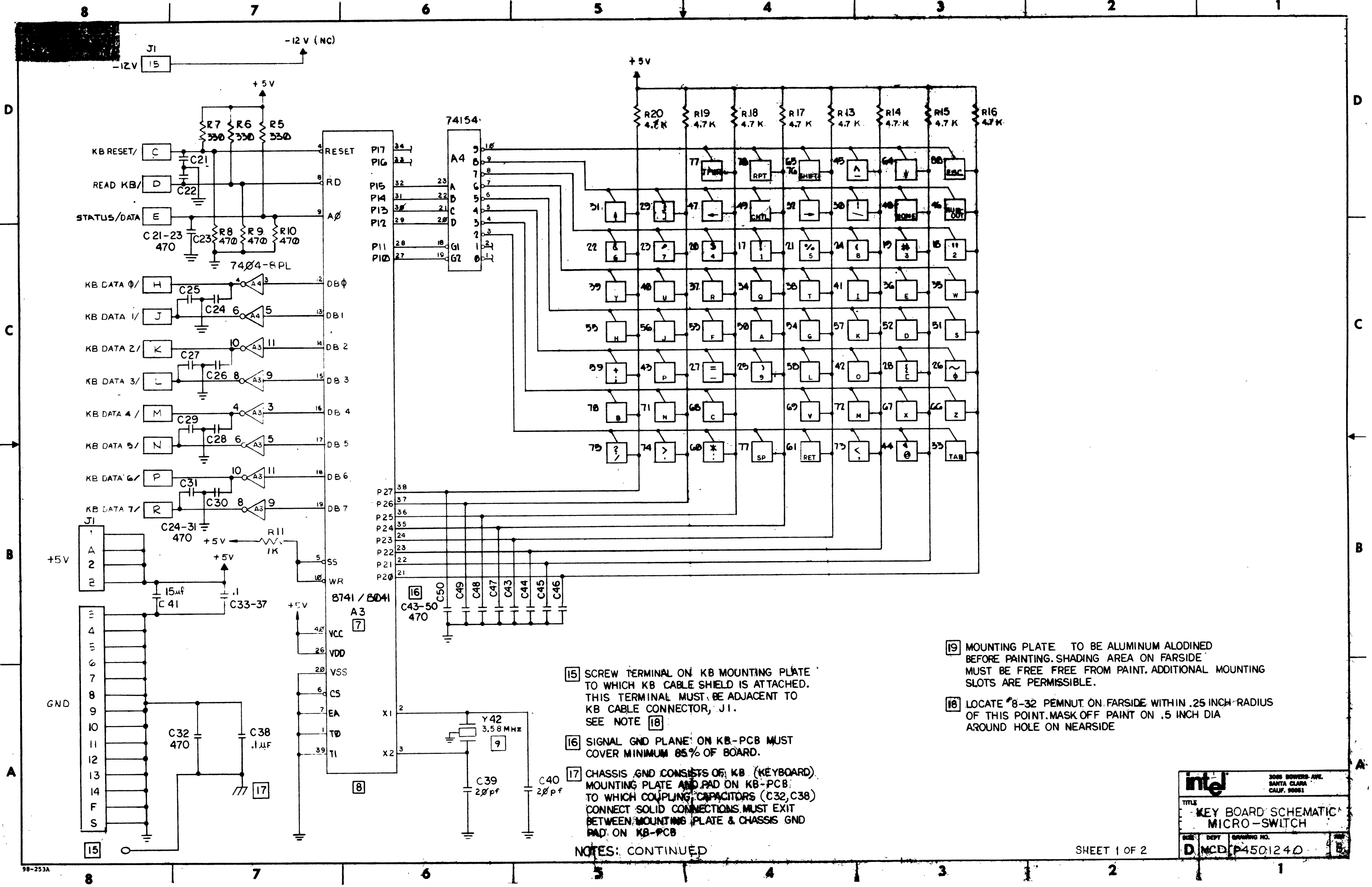


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| REVISIONS | | | | | | |
|-----------|-----|-------------|-----|-----|------|----------|
| ZONE | REV | DESCRIPTION | DFT | CHK | DATE | APPROVED |
| | - | SEE SHEET 1 | | | | |



| | | | | | |
|-------|--------|------|------|--------------|-----|
| DRAWN | ISSUED | SIZE | CODE | DWG NO. | REV |
| | | D | MCSD | E 2002679 | A |
| SCALE | | | | SHEET 4 OF 4 | |



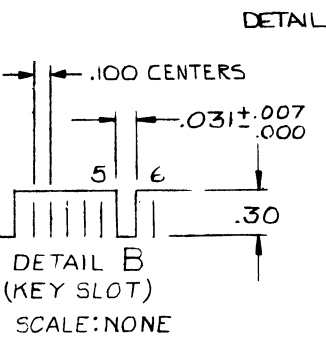
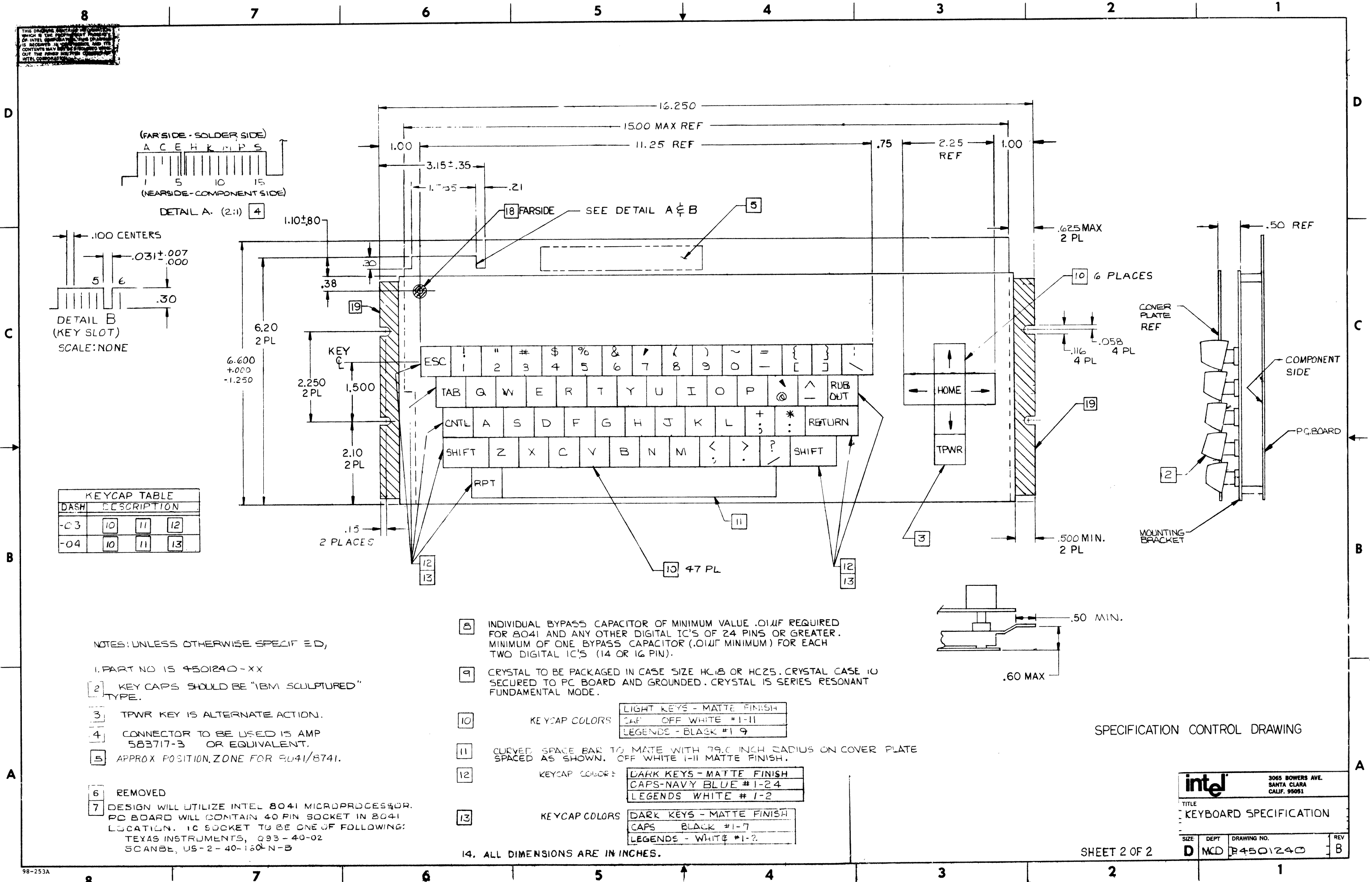
- [15] SCREW TERMINAL ON KB MOUNTING PLATE TO WHICH KB CABLE SHIELD IS ATTACHED. THIS TERMINAL MUST BE ADJACENT TO KB CABLE CONNECTOR, J1. SEE NOTE [18]
- [16] SIGNAL GND PLANE ON KB-PCB MUST COVER MINIMUM 85% OF BOARD.
- [17] CHASSIS GND CONSISTS OF KB (KEYBOARD) MOUNTING PLATE AND PAD ON KB-PCB TO WHICH COUPLING CAPACITORS (C32, C38) CONNECT SOLID CONNECTIONS. MUST EXIT BETWEEN MOUNTING PLATE & CHASSIS GND PAD ON KB-PCB

- [19] MOUNTING PLATE TO BE ALUMINUM ALODINED BEFORE PAINTING. SHADING AREA ON FARSIDE MUST BE FREE FROM PAINT. ADDITIONAL MOUNTING SLOTS ARE PERMISSIBLE.
- [18] LOCATE #8-32 PEMNUT ON FARSIDE WITHIN .25 INCH RADIUS OF THIS POINT. MASK OFF PAINT ON .5 INCH DIA AROUND HOLE ON NEARSIDE

NOTES: CONTINUED

| | | |
|--|------|-------------|
| Intel | | |
| 3065 BOWERS AVE. SANTA CLARA CALIF. 95051 | | |
| TITLE KEY BOARD SCHEMATIC MICRO-SWITCH | | |
| SIZE | DEPT | DRAWING NO. |
| D | MCD | P4501240 |

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| KEYCAP TABLE | | | |
|--------------|-------------|----|----|
| DASH | DESCRIPTION | | |
| -C3 | 10 | 11 | 12 |
| -O4 | 10 | 11 | 13 |

NOTES: UNLESS OTHERWISE SPECIFIED,

1. PART NO IS 4501240-XX

2. KEY CAPS SHOULD BE "IBM SCULPTURED" TYPE.

3. TPWR KEY IS ALTERNATE ACTION.

4. CONNECTOR TO BE USED IS AMP 583717-3 OR EQUIVALENT.

5. APPROX POSITION ZONE FOR 8041/8741.

6. REMOVED

7. DESIGN WILL UTILIZE INTEL 8041 MICROPROCESSOR. PC BOARD WILL CONTAIN 40 PIN SOCKET IN 8041 LOCATION. IC SOCKET TO BE ONE OF FOLLOWING: TEXAS INSTRUMENTS, Q93-40-02 SCANBE, US-2-40-160-N-B

8. INDIVIDUAL BYPASS CAPACITOR OF MINIMUM VALUE .01μF REQUIRED FOR 8041 AND ANY OTHER DIGITAL IC'S OF 24 PINS OR GREATER. MINIMUM OF ONE BYPASS CAPACITOR (.01μF MINIMUM) FOR EACH TWO DIGITAL IC'S (14 OR 16 PIN).

9. CRYSTAL TO BE PACKAGED IN CASE SIZE HC18 OR HC25. CRYSTAL CASE TO BE SECURED TO PC BOARD AND GROUNDED. CRYSTAL IS SERIES RESONANT FUNDAMENTAL MODE.

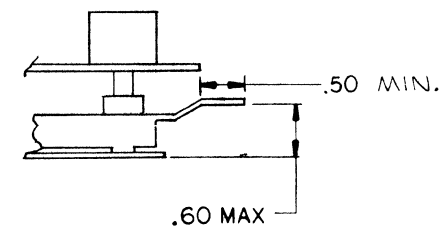
10. KEYCAP COLORS
 LIGHT KEYS - MATTE FINISH
 CAPS - OFF WHITE #1-11
 LEGENDS - BLACK #1-9

11. CURVED SPACE BAR TO MATE WITH .790 INCH RADIUS ON COVER PLATE SPACED AS SHOWN. OFF WHITE #1-11 MATTE FINISH.

12. KEYCAP COLORS
 DARK KEYS - MATTE FINISH
 CAPS - NAVY BLUE #1-24
 LEGENDS - WHITE #1-2

13. KEYCAP COLORS
 DARK KEYS - MATTE FINISH
 CAPS - BLACK #1-7
 LEGENDS - WHITE #1-2

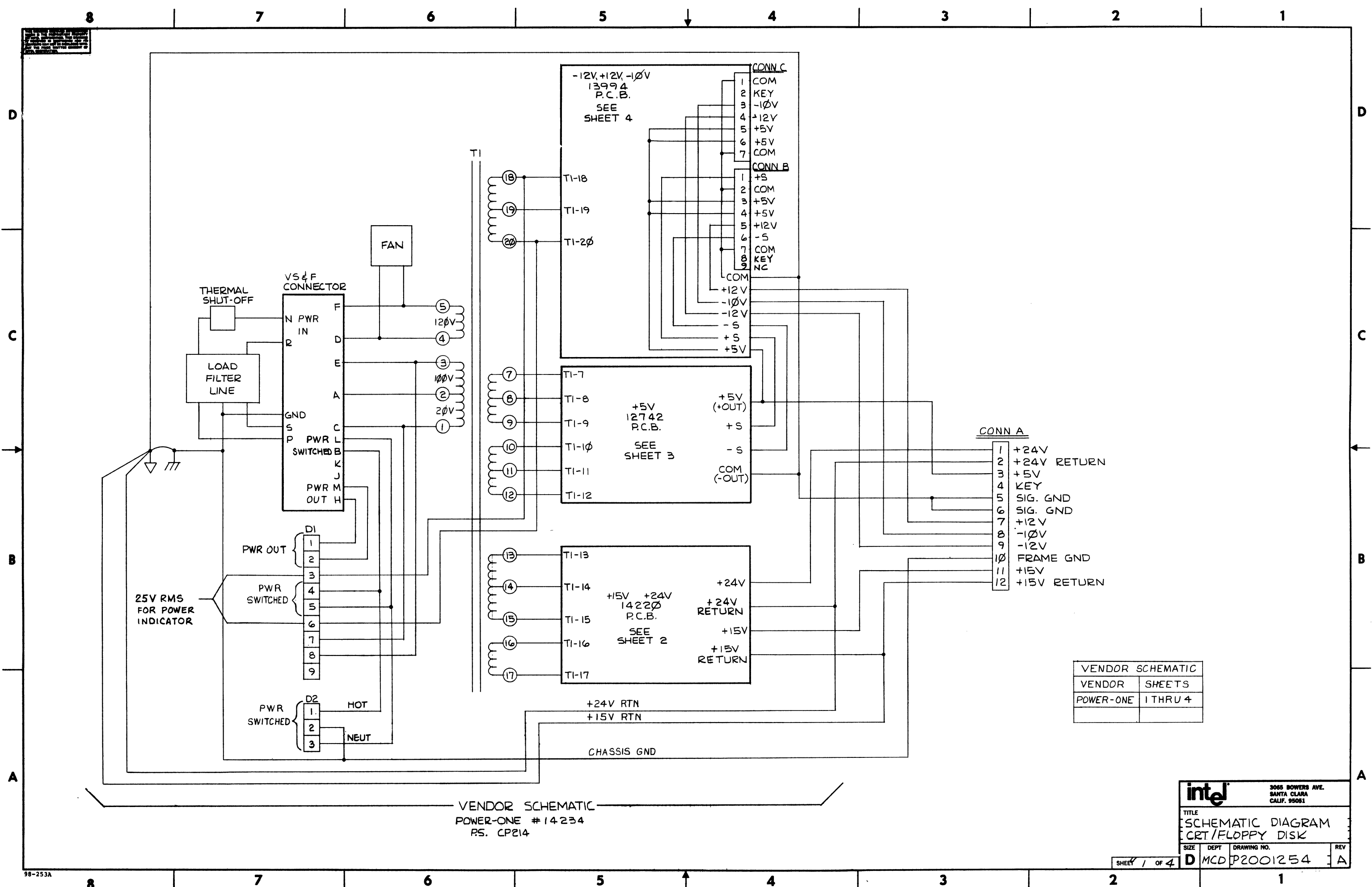
14. ALL DIMENSIONS ARE IN INCHES.



SPECIFICATION CONTROL DRAWING

| | | | | |
|---------------------------------|------|-------------|-----|---|
| intel | | | | 3065 BOWERS AVE. SANTA CLARA CALIF. 95051 |
| TITLE KEYBOARD SPECIFICATION | | | | |
| SIZE | DEPT | DRAWING NO. | REV | |
| D | MCD | R4501240 | B | |

SHEET 2 OF 2



25V RMS
FOR POWER
INDICATOR

THERMAL
SHUT-OFF

LOAD
FILTER
LINE

FAN

V5 & F
CONNECTOR

N PWR IN F
R IN D
GND S C
P PWR L A
SWITCHED B
PWR M J
OUT H

PWR OUT
1
2
3
4
5
6
7
8
9

PWR SWITCHED
1. HOT
2. NEUT
3.

-12V, +12V, -10V
13994
P.C.B.
SEE
SHEET 4

CONN C
1 COM
2 KEY
3 -10V
4 +12V
5 +5V
6 +5V
7 COM
8 COM
9 KEY
10 NC

TI-7
TI-8
TI-9
TI-10
TI-11
TI-12

+5V
12742
P.C.B.
SEE
SHEET 3

+5V (+OUT)
+S
-S
(COM (-OUT))

TI-13
TI-14
TI-15
TI-16
TI-17

+15V +24V
14220
P.C.B.
SEE
SHEET 2

+24V
+24V RETURN
+15V
+15V RETURN

CONN A
1 +24V
2 +24V RETURN
3 +5V
4 KEY
5 SIG. GND
6 SIG. GND
7 +12V
8 -10V
9 -12V
10 FRAME GND
11 +15V
12 +15V RETURN

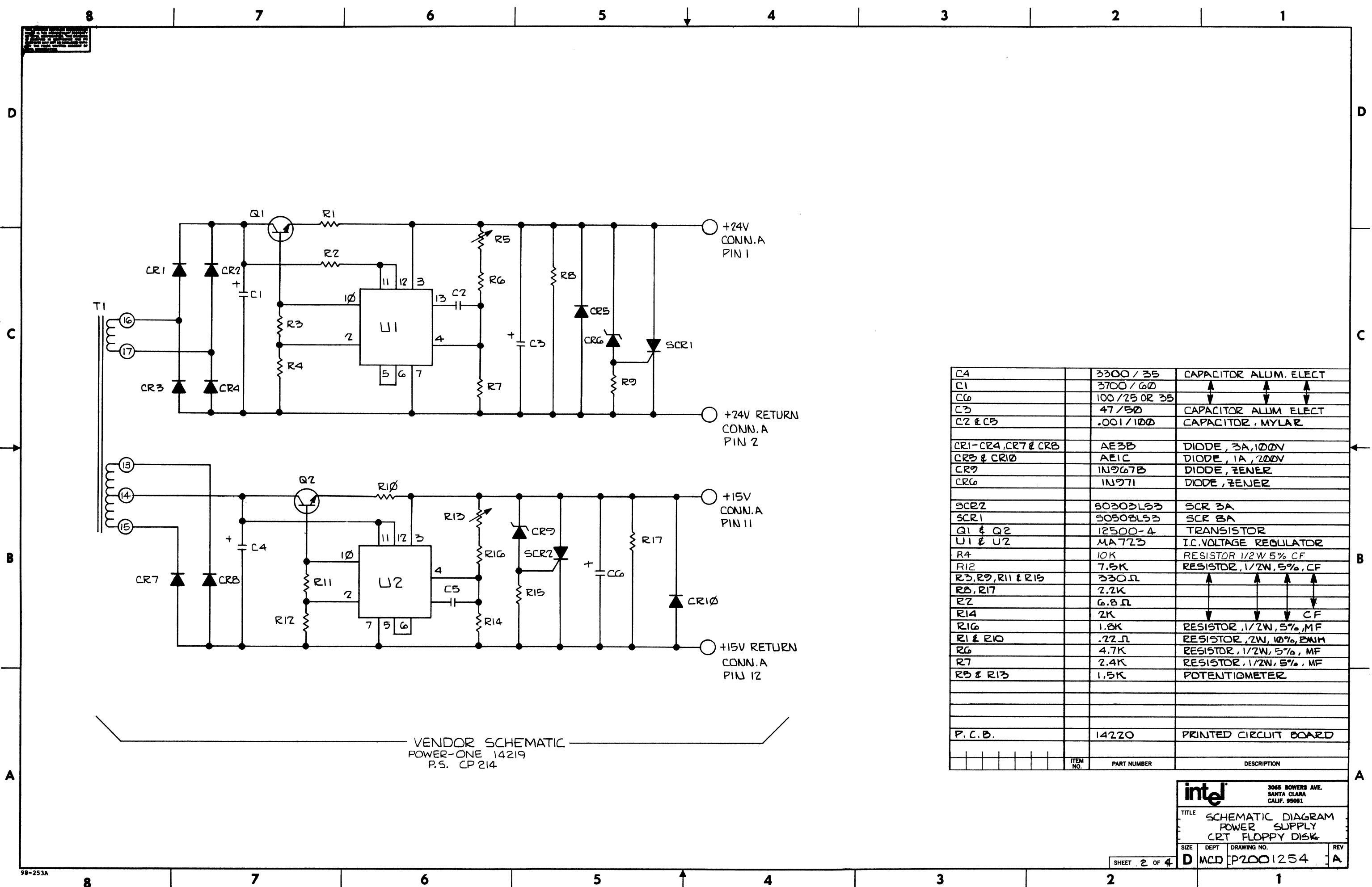
| | |
|------------------|----------|
| VENDOR SCHEMATIC | |
| VENDOR | SHEETS |
| POWER-ONE | 1 THRU 4 |
| | |

VENDOR SCHEMATIC
POWER-ONE #14234
PS. CP214

intel 3065 BOWERS AVE.
SANTA CLARA
CALIF. 95051

TITLE
SCHEMATIC DIAGRAM
CRT/FLOPPY DISK

| | | | |
|------|------|-------------|-----|
| SIZE | DEPT | DRAWING NO. | REV |
| D | MCD | P2001254 | A |



| | | |
|--------------------|----------------|------------------------|
| C4 | 3300 / 35 | CAPACITOR ALUM. ELECT |
| C1 | 3700 / 60 | |
| C6 | 100 / 25 OR 35 | |
| C3 | 47 / 50 | CAPACITOR ALUM. ELECT |
| C2 & C5 | .001 / 100 | CAPACITOR, MYLAR |
| CR1-CR4, CR7 & CR8 | AE3B | DIODE, 3A, 100V |
| CR5 & CR10 | AE1C | DIODE, 1A, 200V |
| CR9 | 1N967B | DIODE, ZENER |
| CR6 | 1N971 | DIODE, ZENER |
| SCR2 | 50303LS3 | SCR 3A |
| SCR1 | 50503LS3 | SCR 5A |
| Q1 & Q2 | 12500-4 | TRANSISTOR |
| U1 & U2 | MA723 | I.C. VOLTAGE REGULATOR |
| R4 | 10K | RESISTOR 1/2W 5% CF |
| R12 | 7.5K | RESISTOR, 1/2W, 5%, CF |
| R3, R9, R11 & R15 | 330Ω | |
| R5, R17 | 2.2K | |
| R2 | 6.8Ω | |
| R14 | 2K | |
| R16 | 1.8K | RESISTOR, 1/2W, 5%, MF |
| R1 & R10 | .22Ω | RESISTOR, 2W, 10%, ENH |
| R6 | 4.7K | RESISTOR, 1/2W, 5%, MF |
| R7 | 2.4K | RESISTOR, 1/2W, 5%, MF |
| R8 & R13 | 1.5K | POTENTIOMETER |
| P.C.B. | 14220 | PRINTED CIRCUIT BOARD |
| ITEM NO. | PART NUMBER | DESCRIPTION |

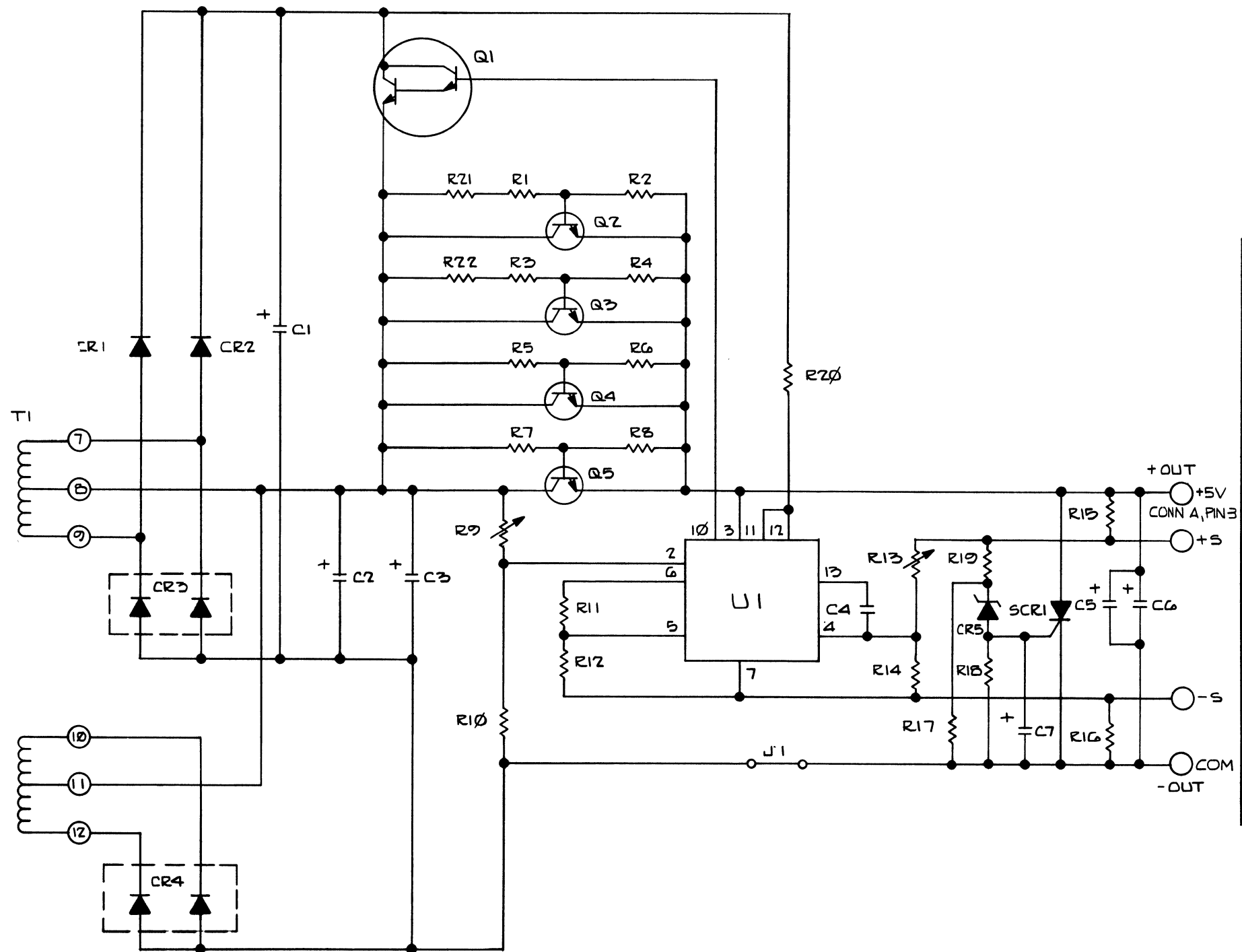
VENDOR SCHEMATIC
POWER-ONE 14219
P.S. CP214

intel 3065 BOWERS AVE.
SANTA CLARA
CALIF. 95051

TITLE SCHEMATIC DIAGRAM
POWER SUPPLY
CRT FLOPPY DISK

| | | | |
|------|------|-------------|-----|
| SIZE | DEPT | DRAWING NO. | REV |
| D | MCD | P2001254 | A |

VENDOR SCHEMATIC
POWER-ONE 14230
P.S. CP214

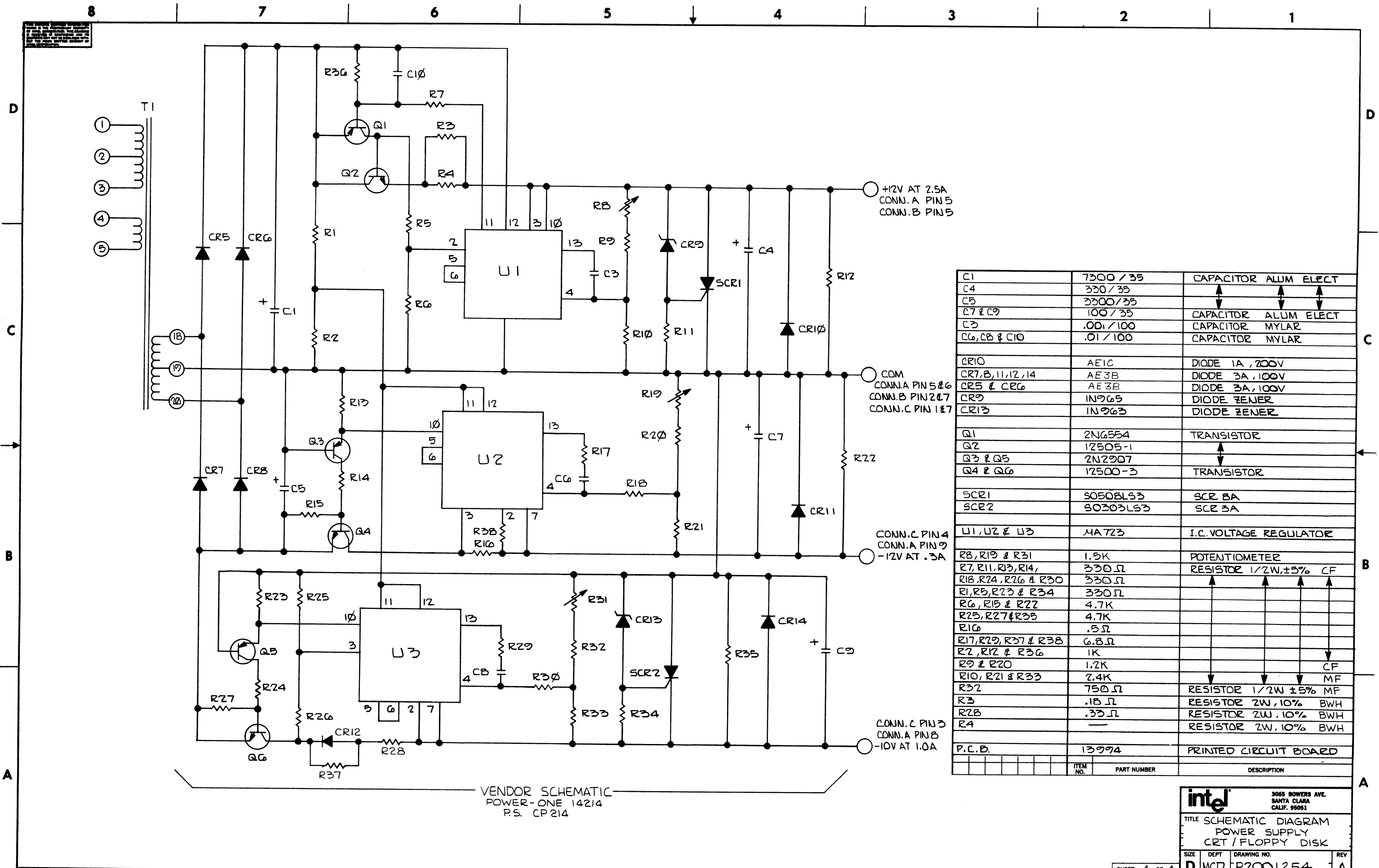


| | | |
|------------------------|-------------|------------------------|
| C1 | 2200 / 35 | CAPACITOR ALUM. ELECT. |
| C2 & C3 | 64000 / 15 | CAPACITOR ALUM. ELECT. |
| C5 & C6 | 1000 / 16 | CAPACITOR ALUM. ELECT. |
| C7 | 10 / 25 | CAPACITOR ALUM. ELECT. |
| C4 | .001 / 100 | CAPACITOR MYLAR |
| CR1 & CR2 | AE1C | DIODE 1A, 200V |
| CR3 & CR4 | R731A | DIODE |
| CR5 | 1N75Z | DIODE, ZENER |
| SCR1 | MR649P-1 | SCR |
| Q1 | 2N6155 | TRANSISTOR |
| Q2, Q3, Q4 & Q5 | 1251 -1 | TRANSISTOR |
| R9 & R13 | 1.5K | POTENTIOMETER |
| R2, R4, R6 & R8 | 22 Ω | RESISTOR, 1/2W, ±5% |
| R5, R7, R15, R16 & R19 | 6.8 Ω | |
| R12 | 3.3K | |
| R10 & R11 | 2.7K | |
| R17 | 220 Ω | |
| R18 & R20 | 47 Ω | |
| R21, R22, R1 & R3 | 2.7 Ω | |
| R14 | 2.7K | RESISTOR, 1/2W, ±5% |
| J1 | 14 GA. | WIRE, WHT., 7/32 |
| U1 | LM723 C | I.C. VOLTAGE REGULATOR |
| P.C.B. | 1274Z | PRINTED CIRCUIT BOARD |
| ITEM NO. | PART NUMBER | DESCRIPTION |

intel 3065 BOWERS AVE.
SANTA CLARA CALIF. 95051

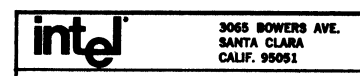
TITLE SCHEMATIC DIAGRAM
POWER SUPPLY
CRT/FLOPPY DISK

SIZE DEPT DRAWING NO. REV
D MCD P2001254 A



| | | |
|---------------------|-------------|------------------------|
| C1 | 7300 / 35 | CAPACITOR ALUM ELECT |
| C4 | 330 / 35 | ↑ |
| C5 | 3300 / 35 | ↑ |
| C7 & C9 | 100 / 35 | CAPACITOR ALUM ELECT |
| C3 | .001 / 100 | CAPACITOR MYLAR |
| C6, C8 & C10 | .01 / 100 | CAPACITOR MYLAR |
| CR10 | AE1C | DIODE 1A, 200V |
| CR7, 8, 11, 12, 14 | AE3B | DIODE 3A, 100V |
| CR5 & CR6 | AE3B | DIODE 3A, 100V |
| CR9 | IN965 | DIODE ZENER |
| CR13 | IN963 | DIODE ZENER |
| Q1 | 2N6554 | TRANSISTOR |
| Q2 | 12505-1 | ↑ |
| Q3 & Q5 | 2N2907 | ↓ |
| Q4 & Q6 | 12500-3 | TRANSISTOR |
| SCR1 | 50508L53 | SCR 8A |
| SCR2 | 50303L53 | SCR 3A |
| U1, U2 & U3 | 7473 | I.C. VOLTAGE REGULATOR |
| R8, R19 & R31 | 1.5K | POTENTIOMETER |
| R7, R11, R13, R14, | 330Ω | RESISTOR 1/2W, ±5% CF |
| R18, R24, R26 & R30 | 330Ω | ↑ |
| R1, R5, R23 & R34 | 330Ω | ↑ |
| R6, R15 & R22 | 4.7K | ↑ |
| R25, R27 & R35 | 4.7K | ↑ |
| R16 | .5Ω | ↑ |
| R17, R29, R37 & R38 | 6.8Ω | ↑ |
| R2, R12 & R36 | 1K | ↑ |
| R9 & R20 | 1.2K | ↑ |
| R10, R21 & R33 | 2.4K | ↑ |
| R32 | 750Ω | RESISTOR 1/2W, ±5% MF |
| R3 | .15Ω | RESISTOR 2W, 10% BWH |
| R28 | .33Ω | RESISTOR 2W, 10% BWH |
| R4 | — | RESISTOR 2W, 10% BWH |
| P.C.B. | 13994 | PRINTED CIRCUIT BOARD |
| ITEM NO. | PART NUMBER | DESCRIPTION |

VENDOR SCHEMATIC
POWER-ONE 14214
P.S. CP214



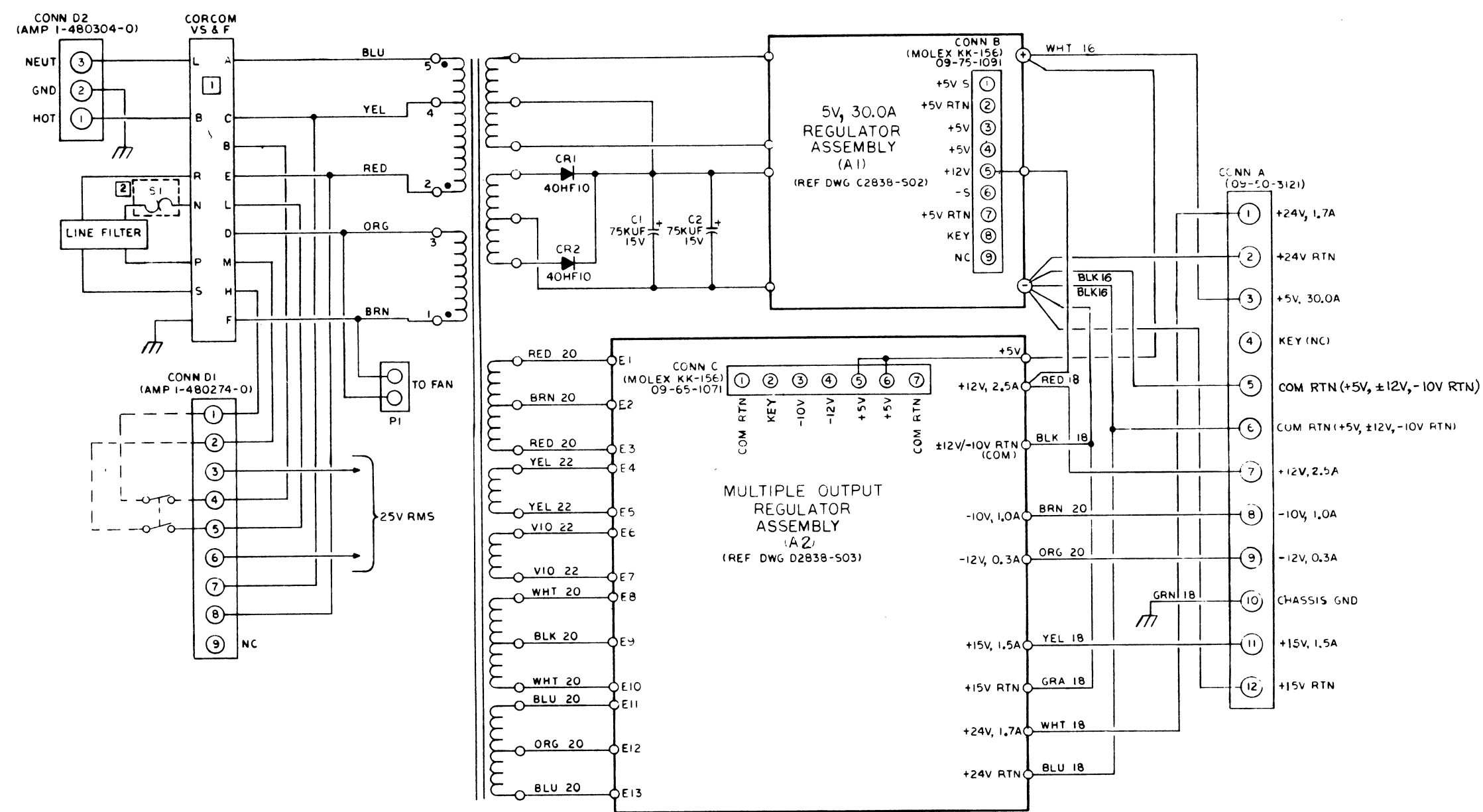
3065 BOWERS AVE.
SANTA CLARA
CALIF. 95051

TITLE SCHEMATIC DIAGRAM
POWER SUPPLY
CRT / FLOPPY DISK

| | | | |
|------|------|-------------|-----|
| SIZE | DEPT | DRAWING NO. | REV |
| D | MCD | P2001254 | A |

SHEET 4 OF 4

| REVISIONS | | |
|-----------|----|-------------|
| REV. | BY | DESCRIPTION |
| | | |



NOTES:

2 SI CONTAINED ON A1 ASSEMBLY.

1 CORCOM VS&F CONTAINS F1(8A-100/115VAC, 4A-220/240VAC).

PROPRIETARY NOTICE
 ALL PATENT OR OTHER PROPRIETARY RIGHTS PERTAINING TO THE ITEMS SOLD HEREUNDER SHALL REMAIN THE SOLE PROPERTY OF XENTEK INCORPORATED EXCEPT THAT THE PURCHASER SHALL HAVE THE RIGHT TO USE SUCH ITEMS FOR THEIR INTENDED PURPOSE.

DO NOT SCALE DWG.

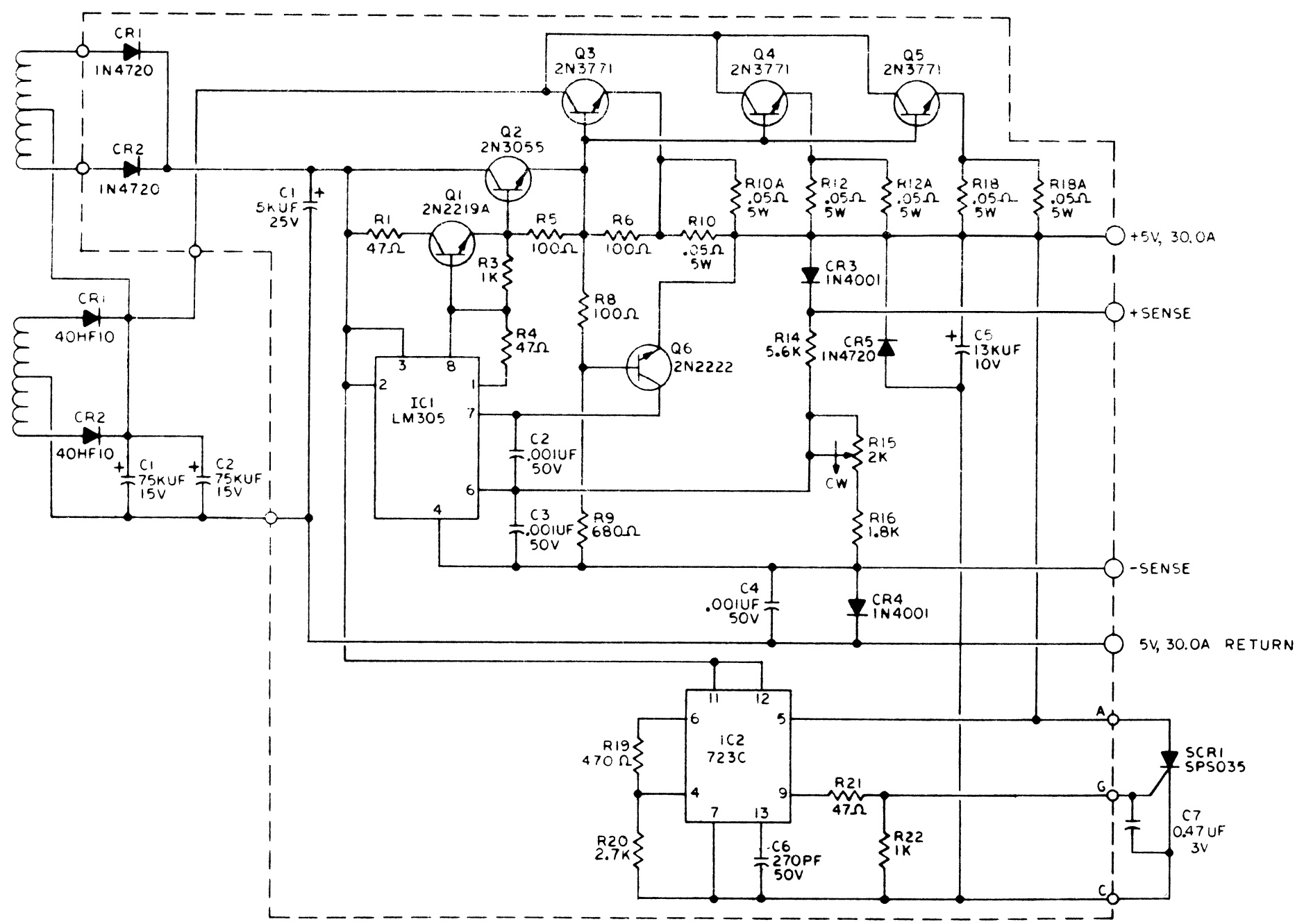
| | | | |
|------------|------|----------|------|
| CODE IDENT | SIZE | DWG. NO. | REV. |
| 53279 | D | 2838-S01 | EA |

SCALE: WEIGHT: SHEET OF

XENTEK INCORPORATED
 San Marcos, California

TITLE
 SCHEMATIC,
 POWER SUPPLY
 (INTEL)

| REVISIONS | | APPROV |
|-----------|-------------|--------|
| REV. BY | DESCRIPTION | |
| | | |

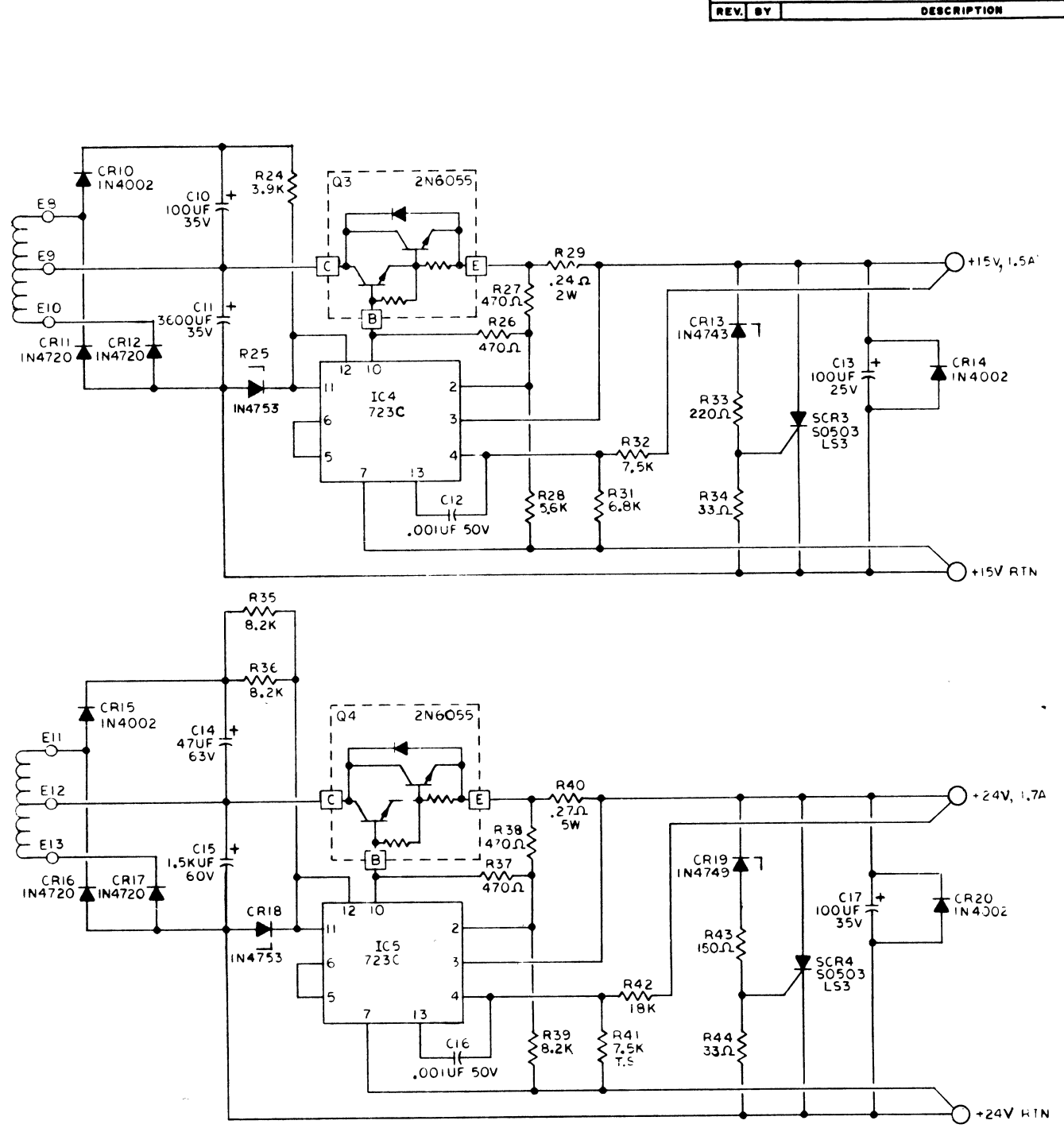
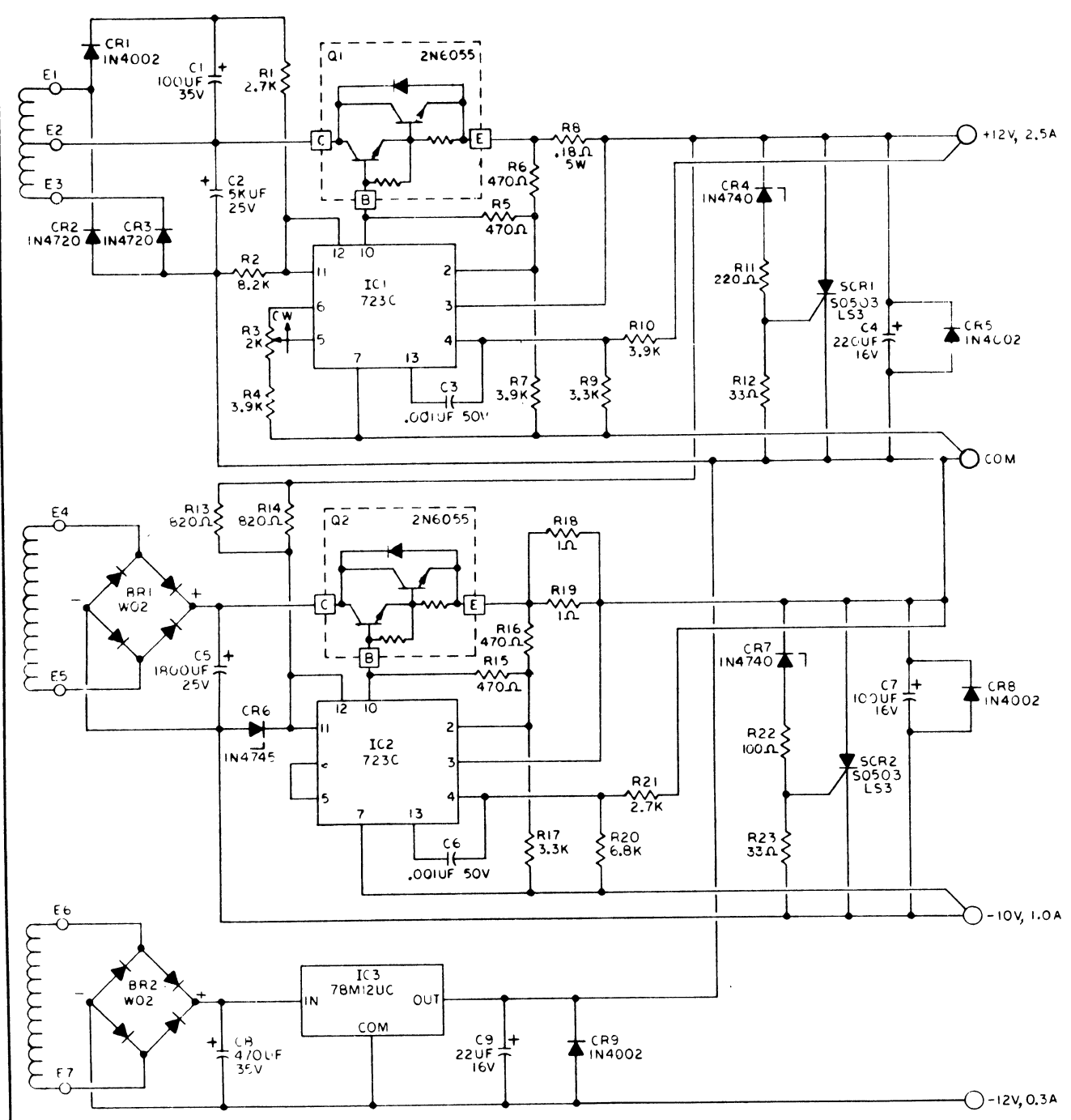


1. RESISTORS ARE 1/2W ±5% - CARBON FILM.
NOTES.

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DO NOT SCALE DWG.

| | | | |
|--|--------|----------|------|
| XENTEK INCORPORATED San Marcos, California | | | |
| TITLE SCHEMATIC, POWER SUPPLY (INTEL) | | | |
| CODE IDENT | SIZE | DWG. NO. | REV. |
| 53279 | D | 2838-S02 | B |
| SCALE | WEIGHT | SHEET OF | |

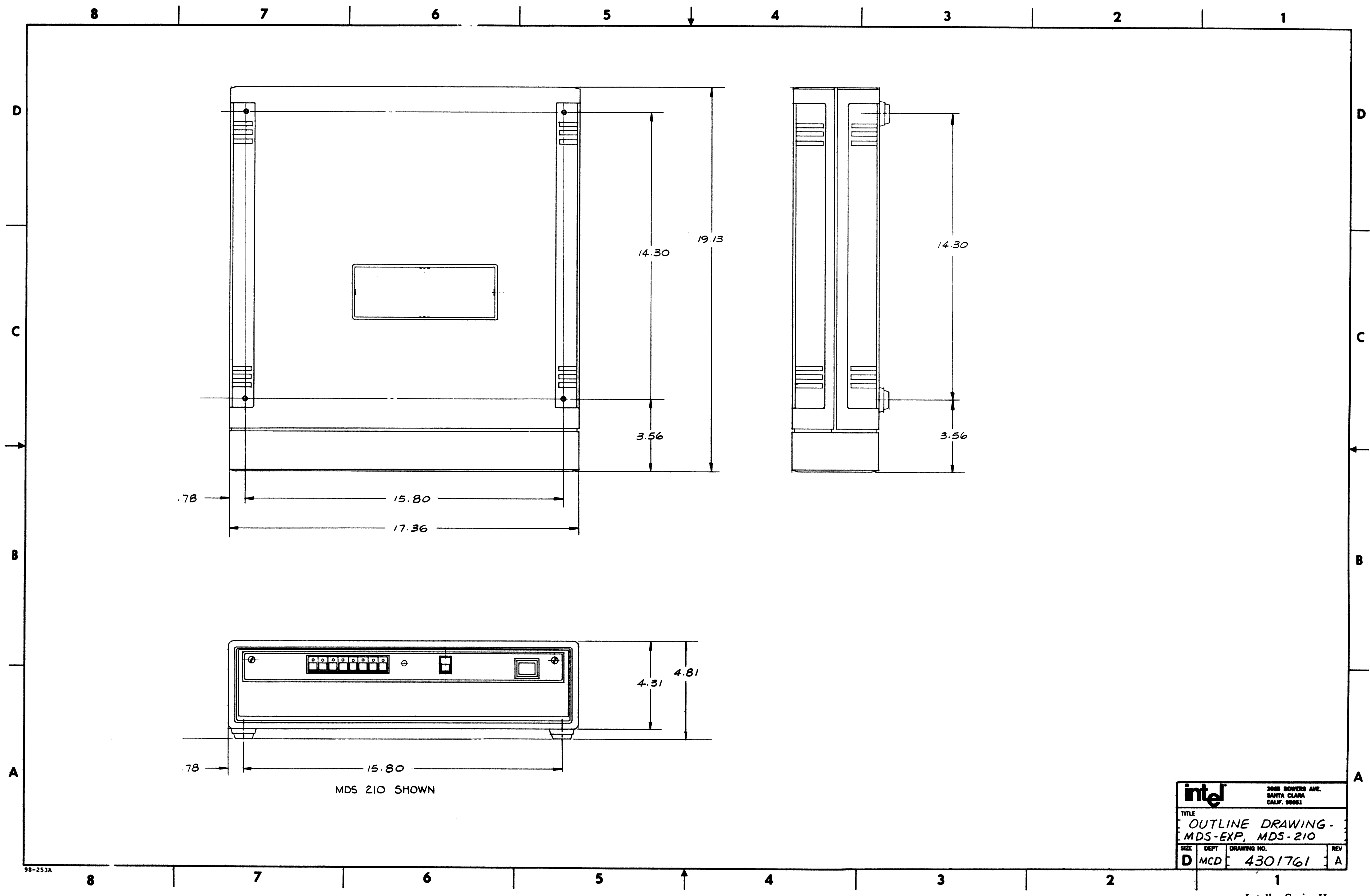
| REVISIONS | | |
|-----------|-------------|-----------|
| REV. BY | DESCRIPTION | APPR. DAT |
| | | |



1. RESISTORS ARE 1/2W ±5% - CARBON FILM.
NOTES:

PROPRIETARY NOTICE
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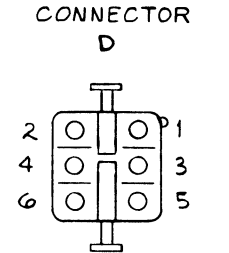
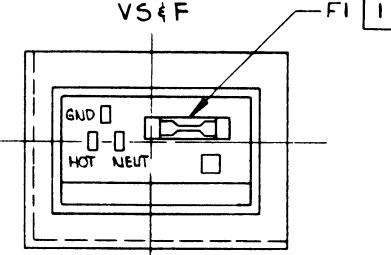
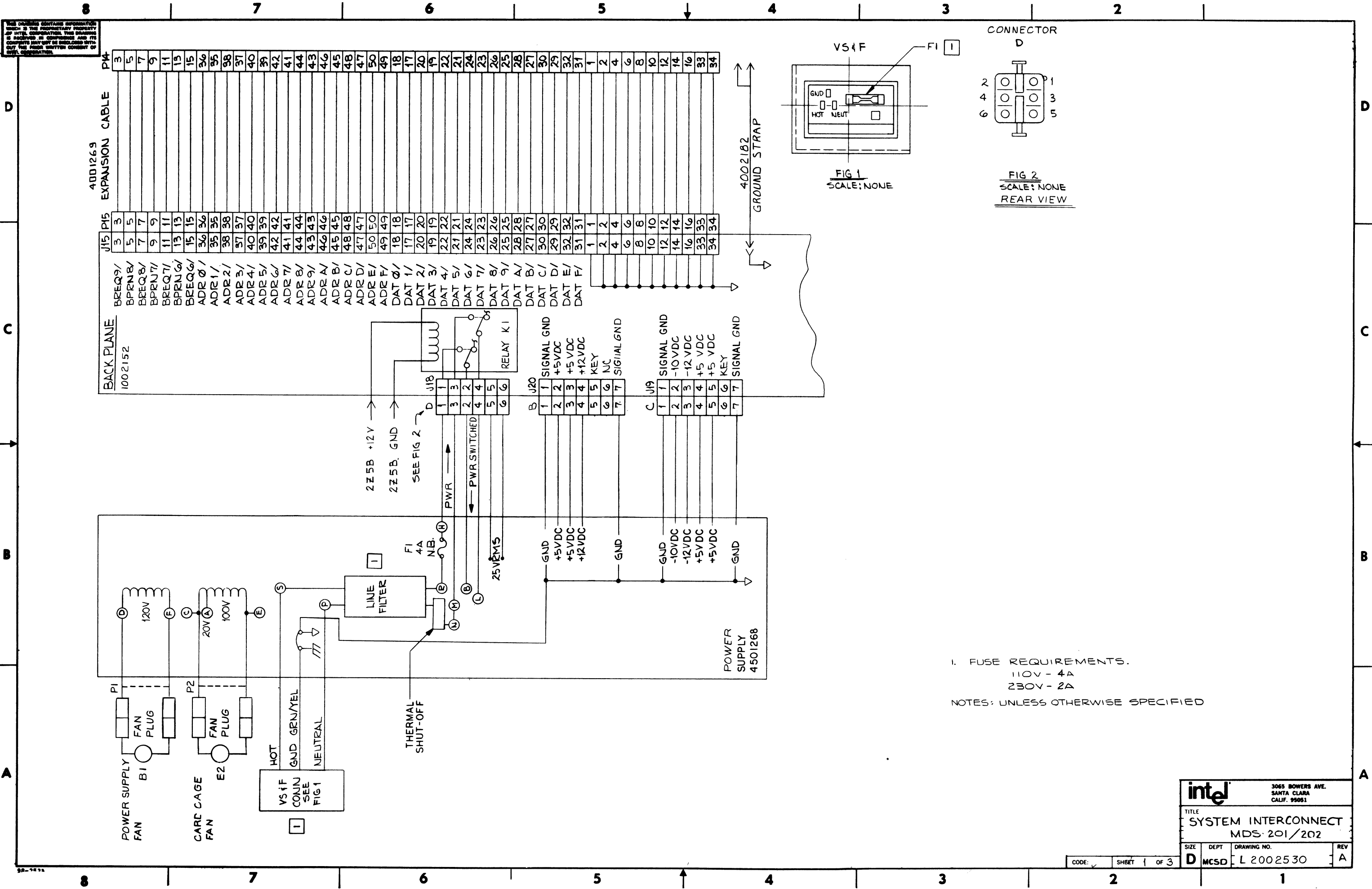
| | | | |
|--|------|----------|------------------|
| XENTEK INCORPORATED San Marcos, California | | | |
| TITLE SCHEMATIC, POWER SUPPLY (INTEL) | | | |
| CODE IDENT | SIZE | DWG. NO. | REV. |
| 53279 | D | 2838-S03 | EC |
| DO NOT SCALE DWG. | | SCALE: | WEIGHT: SHEET OF |



MDS 210 SHOWN

| | | | |
|--|------|---|-----|
| intel | | 3065 BOWERS AVE. SANTA CLARA CALIF. 95051 | |
| TITLE OUTLINE DRAWING - MDS-EXP, MDS-210 | | | |
| SIZE | DEPT | DRAWING NO. | REV |
| D | MCD | 4301761 | A |

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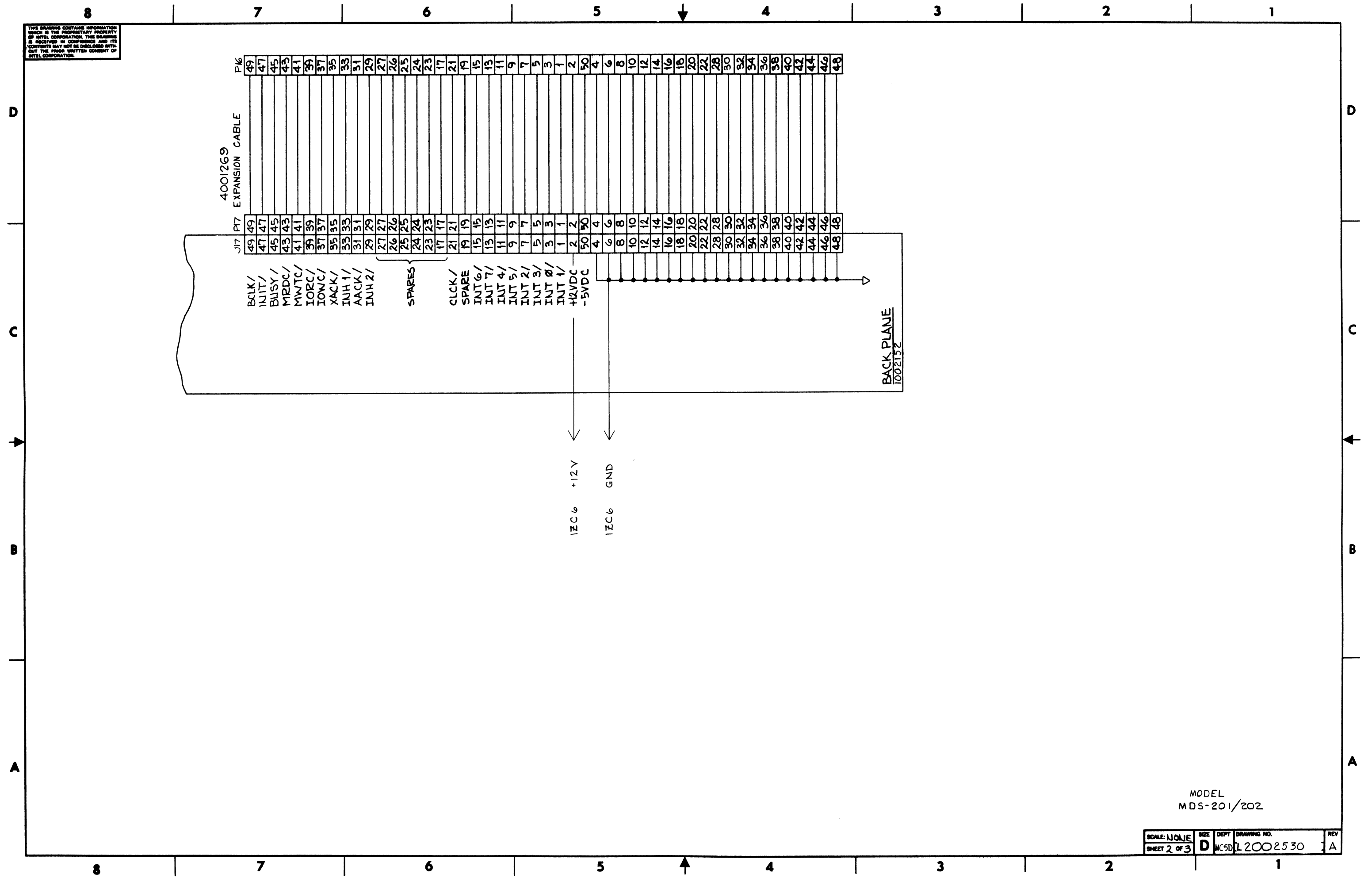


1. FUSE REQUIREMENTS.
110V - 4A
230V - 2A
NOTES: UNLESS OTHERWISE SPECIFIED

| | | | |
|---|------|---|-----|
| intel | | 3065 BOWERS AVE. SANTA CLARA CALIF. 95051 | |
| TITLE SYSTEM INTERCONNECT MDS 201/202 | | | |
| SIZE | DEPT | DRAWING NO. | REV |
| D | MCSO | L 2002530 | A |

CODE: SHBET 1 OF 3

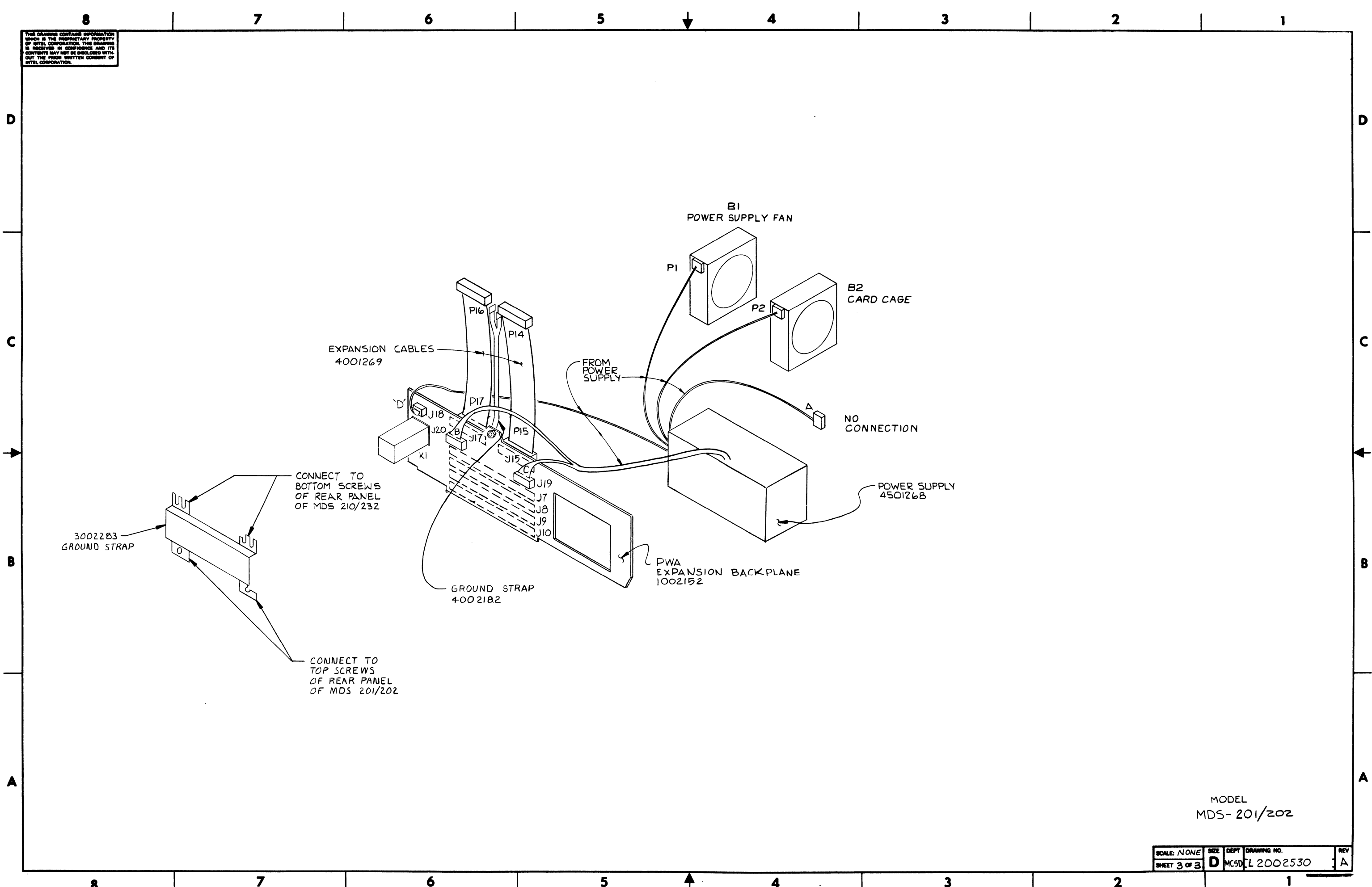
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MODEL
MDS-201/202

| | | | | |
|-----------------|---------|------------|-----------------------|--------|
| SCALE: 1/16"=1" | SIZE: D | DEPT: MCSD | DRAWING NO.: L2002530 | REV: A |
| SHEET 2 OF 3 | | | | |

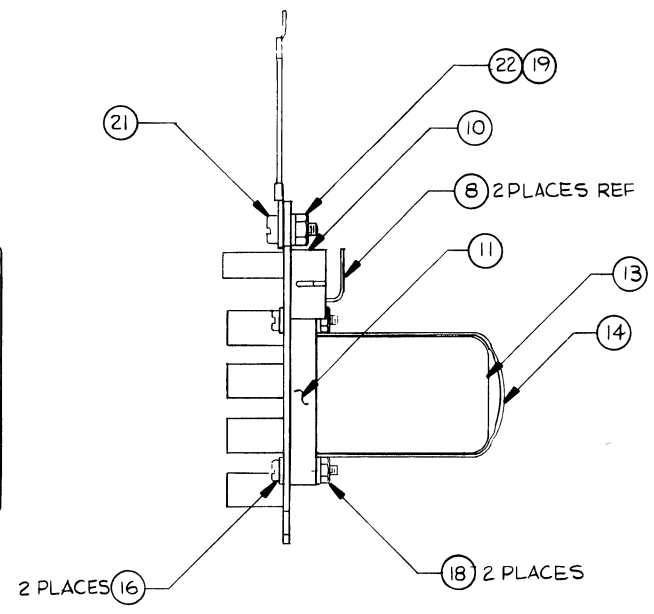
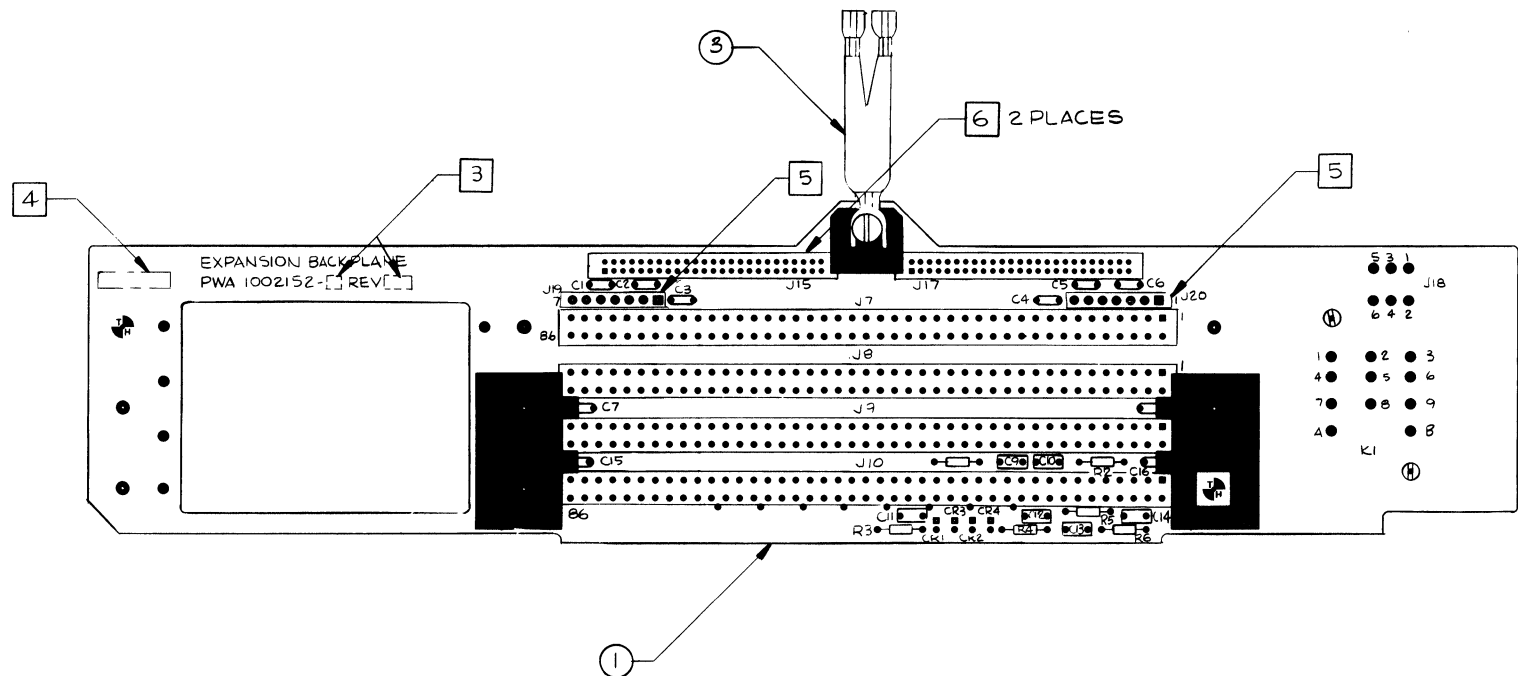
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MODEL
MDS-201/202

| | | | | |
|--------------|---------|-----------|------------------------|--------|
| SCALE: NONE | SIZE: D | DEPT: MCS | DRAWING NO.: L 2002530 | REV: A |
| SHEET 3 OF 3 | | | | |

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- 6 MOUNT OPEN SIDE AT THE TOP EDGE.
 - 5 REMOVE PIN 6(KEY) ON J19 & PIN 5(KEY) ON J20.
 - 4 MARK VENDOR I.D. WITH CONTRASTING PERM COLOR, NON-CONDUCTIVE, APPROX WHERE SHOWN.
 - 3 MARK DASH NO. AND REV LEVEL WITH CONTRASTING PERM COLOR, NON-CONDUCTIVE, .12 INCH HIGH APPROX WHERE SHOWN.
2. WORKMANSHIP PER MCSD QAWS 99-0007-001.
1. ASSY PART NO. IS 1002152-01. ASSY AND PL ARE TRACKING DOCUMENTS.

NOTES: UNLESS OTHERWISE SPECIFIED

SEE SEPARATE PARTS LIST

| QUANTITY PER DASH NO | | ITEM NO. | PART NUMBER | DESCRIPTION |
|----------------------|-----------|----------|-------------|-------------|
| 4002164 | MDS-202 | | | |
| 4002145 | MDS-201 | | | |
| | NEXT ASSY | | | USED ON |

| | | | | | | | |
|--------|-------|--------|--|-----------|--|---------|--|
| SCALE: | | TOL. ± | | MATERIAL: | | FINISH: | |
| 2 PLC | 3 PLC | ANGLE | | | | | |

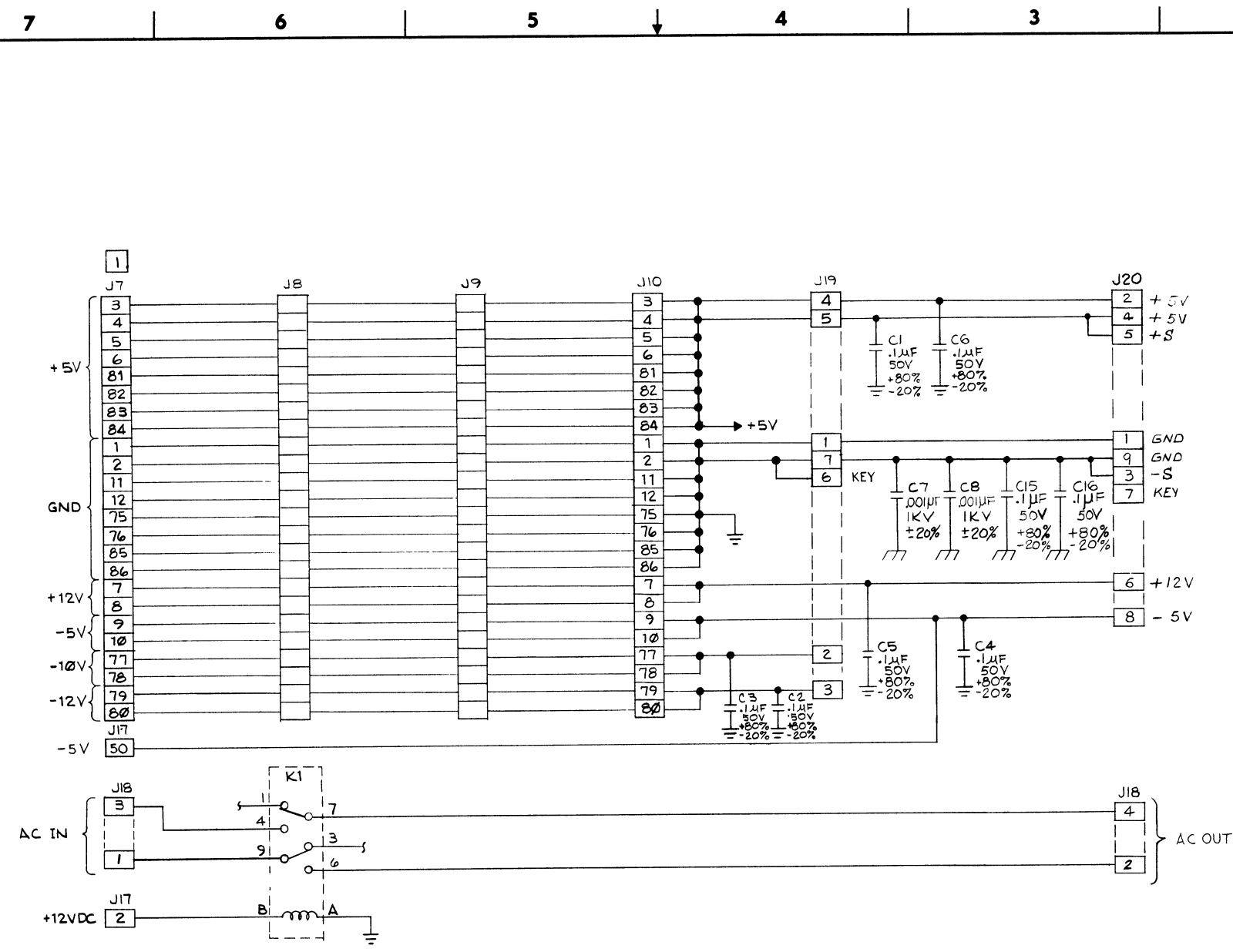
| | | | | | | | |
|-------|------|----|---------|------|------|-------------|-----|
| SHEET | | OF | | SIZE | DEPT | DRAWING NO. | REV |
| D | MCSD | E | 1002152 | A. | | | |

3065 BOWERS AVE.
SANTA CLARA
CALIF. 95051

intel

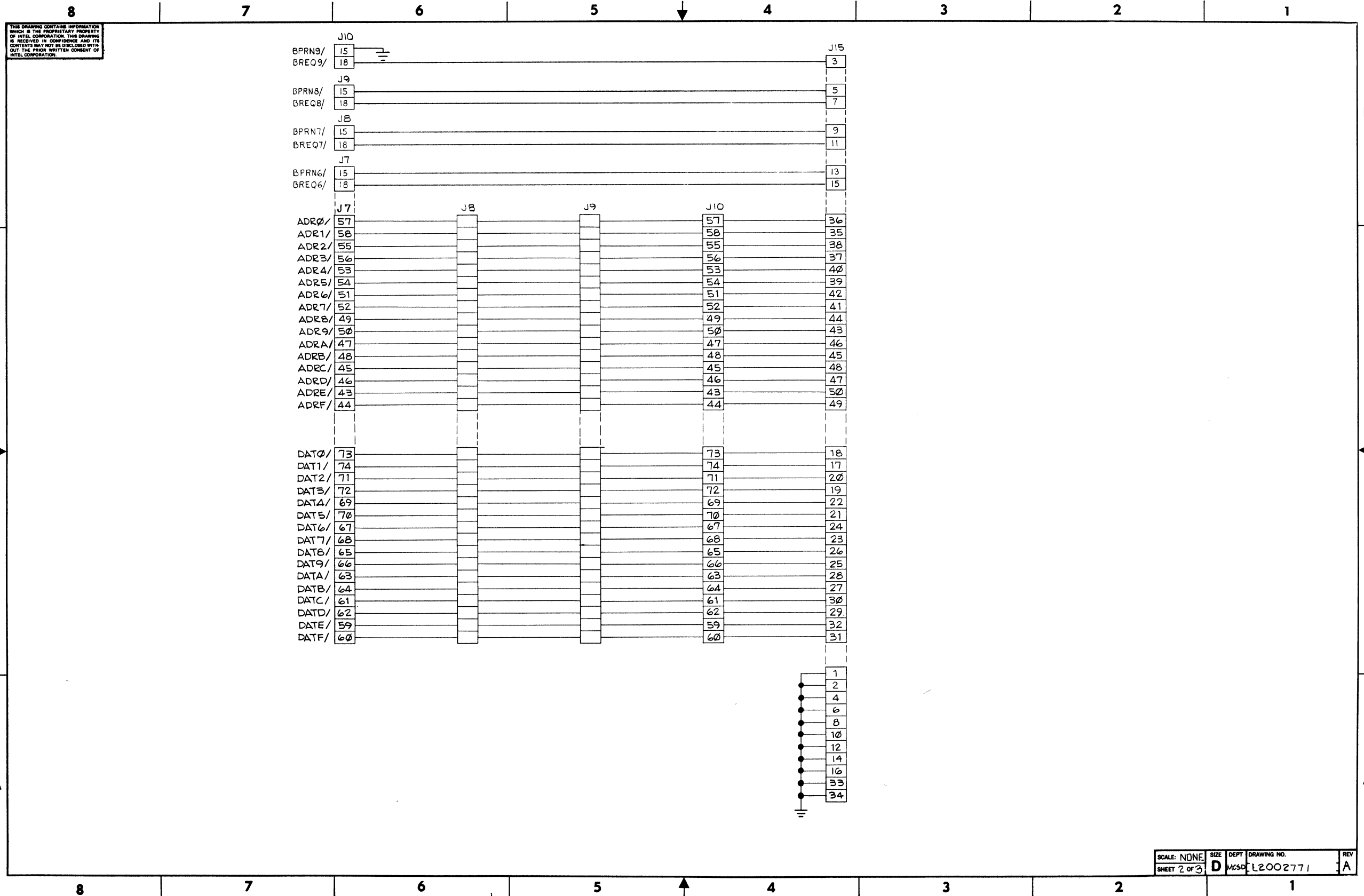
TITLE
PRINTED WIRING ASSY
EXPANSION BACKPLANE

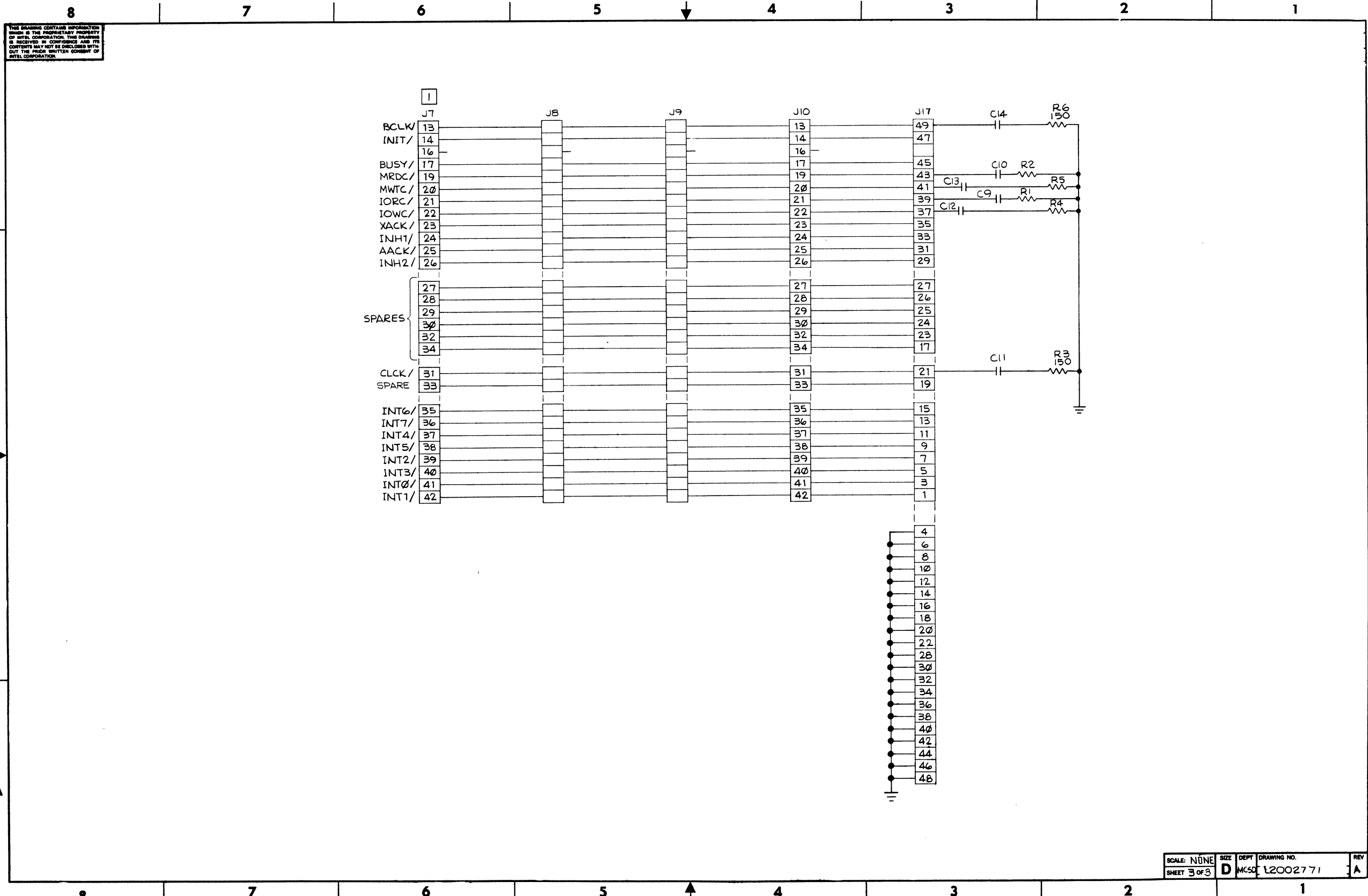
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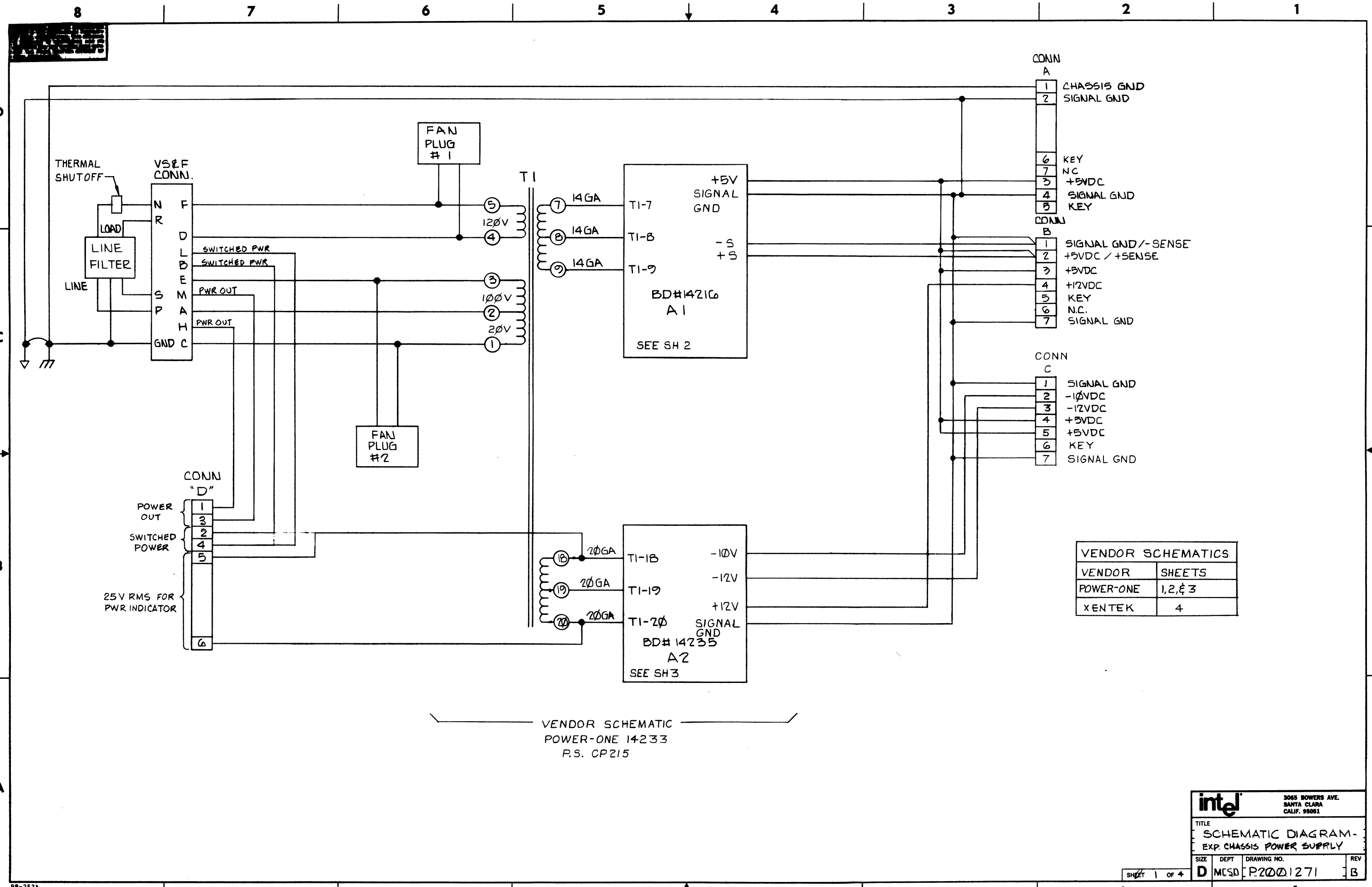


3. ALL RESISTOR VALUES ARE 33 OHMS, $\frac{1}{4}$ W, ±5%.
 2. ALL CAPACITORS ARE 100 PICOFARADS, 500V, ±5%
 1. PIN NUMBERS FOR J7, J8, J9 AND J10 ARE ALL THE SAME.
- NOTES: UNLESS OTHERWISE SPECIFIED

| | | | |
|---|------|---|-----|
| intel | | 3065 BOWERS AVE. SANTA CLARA CALIF. 95051 | |
| TITLE SCHEMATIC DIAGRAM EXPANSION BACKPLANE | | | |
| SIZE | DEPT | DRAWING NO. | REV |
| D | MCSD | L2002771 | A |







| VENDOR SCHEMATICS | |
|-------------------|-----------|
| VENDOR | SHEETS |
| POWER-ONE | 1, 2, & 3 |
| XENTEK | 4 |

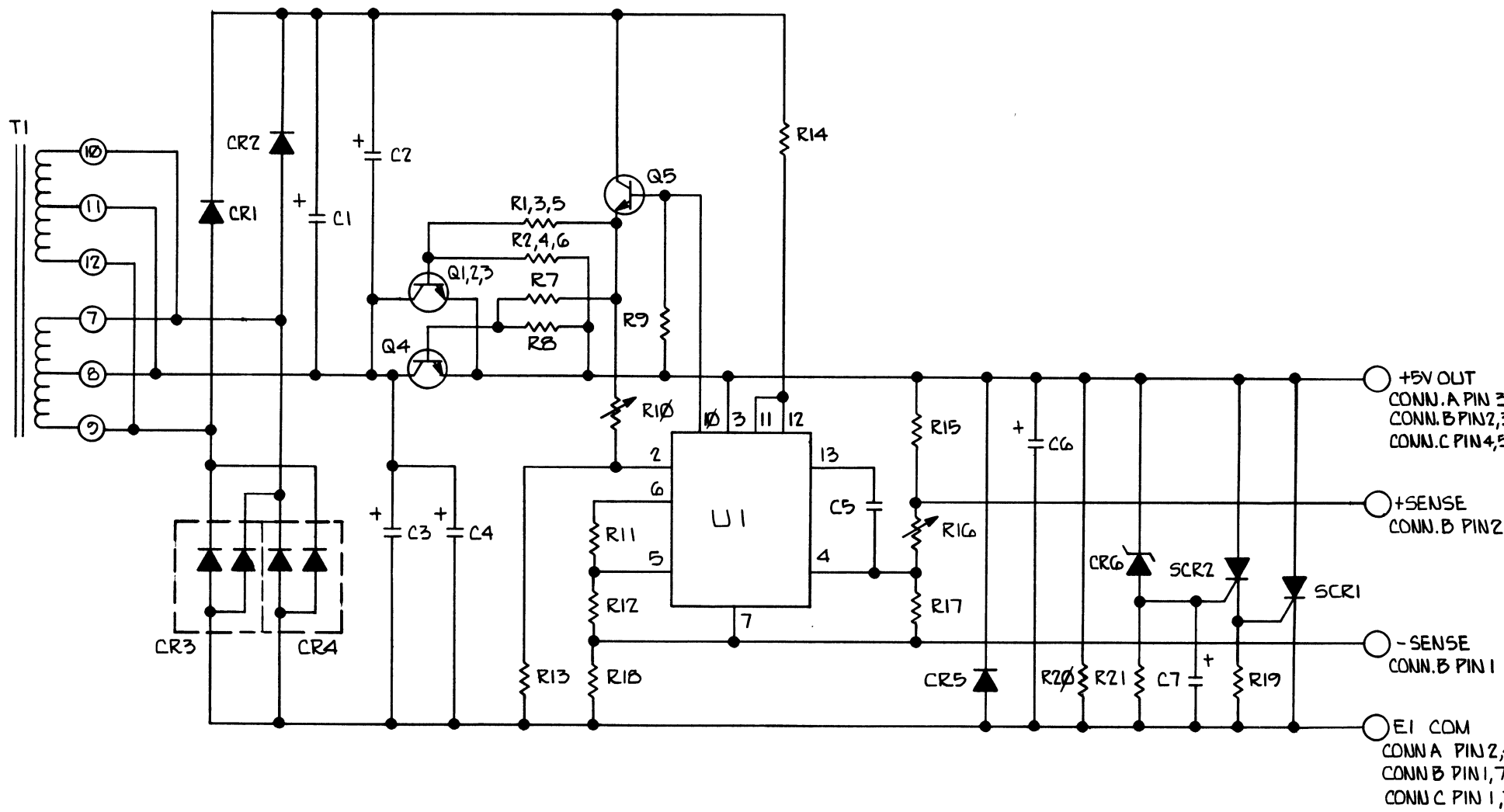
VENDOR SCHEMATIC
POWER-ONE 14233
P.S. CP215

| | | | |
|--|------|-------------|-----|
| | | | |
| 3065 BOWERS AVE. SANTA CLARA CALIF. 95051 | | | |
| TITLE SCHEMATIC DIAGRAM- EXP. CHASSIS POWER SUPPLY | | | |
| SIZE | DEPT | DRAWING NO. | REV |
| D | MCS | P2001271 | B |

SHEET 1 OF 4

8 7 6 5 4 3 2 1

D
C
B
A



| | | |
|---------------------|-------------|------------------------|
| C1, C2, C6 | 1000 / 16 | CAPACITOR ALUM ELECT |
| C3, C4 | 64.000 / 15 | CAPACITOR ALUM ELECT. |
| C5 | .001 / 100 | CAPACITOR MYLAR |
| C7 | 10 / 25 | CAPACITOR ALUM ELECT |
| CR1, CR2 | AE1C | DIODE 1A, 300V |
| CR3, CR4 | R71A | DIODE BRIDGE |
| CR5 | AE3B | DIODE 3A, 100V |
| CR6 | IN752A | DIODE, ZENER |
| SCR1 | MCR649P-1 | SCR 20A, 25V |
| SCR2 | 90303LS3 | SCR 3A, 30V |
| U1 | UA723 | IC VOLTAGE REGULATOR |
| Q1, Q2, Q3, Q4 | 12505-2 | TRANSISTOR POWER |
| Q5 | 12500-3 | TRANSISTOR POWER |
| R1, 3, 5, 7, 15, 18 | 6.8 Ω | RESISTOR, 1/2W, 5%, CF |
| R2, 4, 6, 8, 14 | 22 Ω | RESISTOR, 1/2W, 5%, CF |
| R9, 11, 12, 13 | 2.2K Ω | RESISTOR, 1/2W, 5%, CF |
| R10, R20, R21 | 82 Ω | RESISTOR, 1/2W, 5%, CF |
| R17 | 1.0K | RESISTOR, 1/2W, 2%, MF |
| R10, R16 | 1.5K | POTENTIOMETER |
| P.W.B. | 14216 | PRINTED CIRCUIT BOARD |
| ITEM NO. | PART NUMBER | DESCRIPTION |

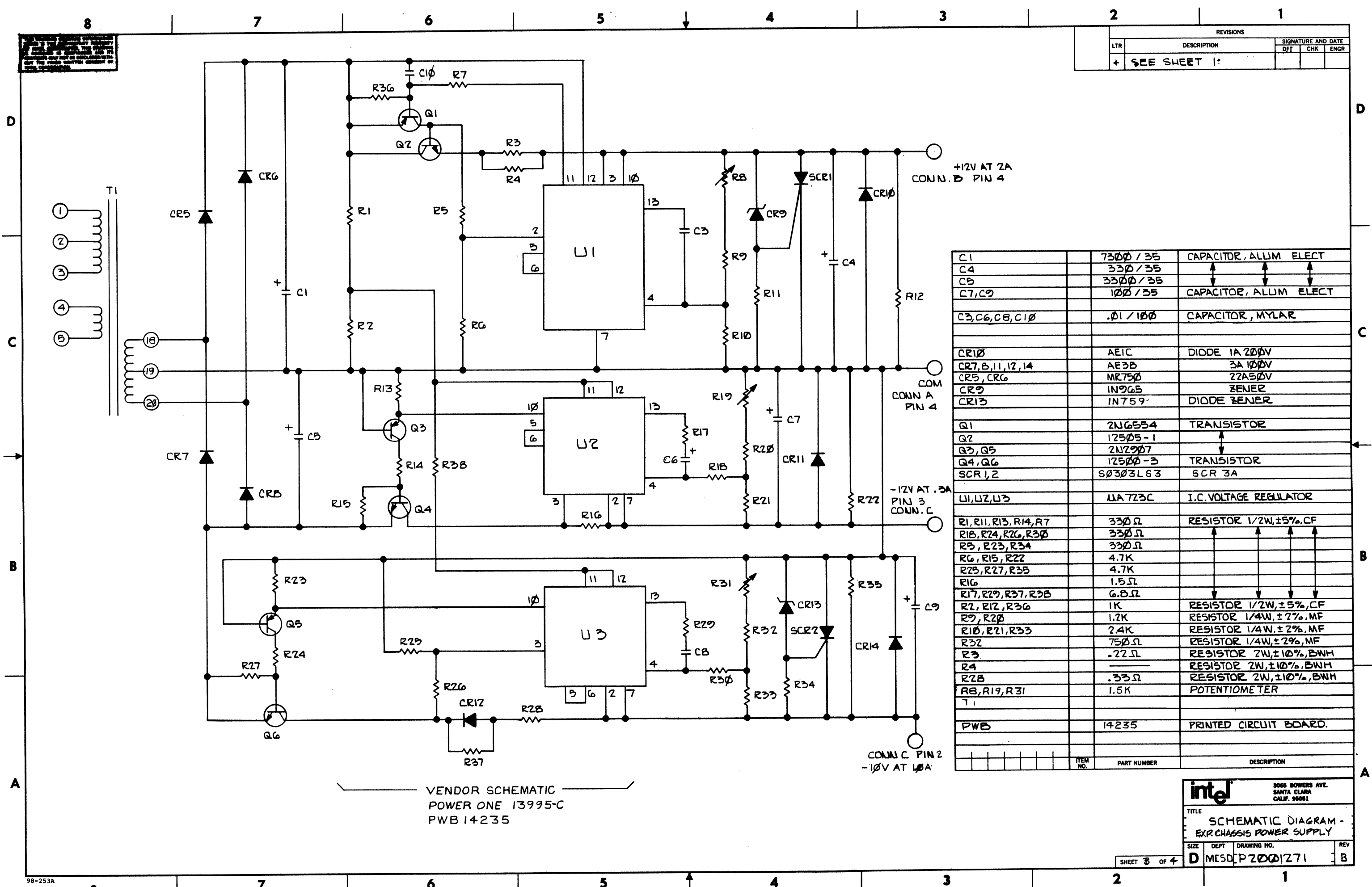
VENDOR SCHEMATIC
POWER-ONE 14215
P.S. CP215

intel 3065 BOWERS AVE.
SANTA CLARA CALIF. 95051

TITLE
SCHEMATIC DIAGRAM -
EXP. CHASSIS POWER SUPPLY

| | | | |
|------|------|-------------|-----|
| SIZE | DEPT | DRAWING NO. | REV |
| D | MESD | P2001271 | B |

SHEET 2 OF 4



| REVISIONS | | |
|-----------|--------------|--------------------|
| LTR | DESCRIPTION | SIGNATURE AND DATE |
| | | DFT CHK ENGR |
| + | SEE SHEET 1: | |

| | | |
|-----------------------|-------------|------------------------|
| C1 | 7300 / 35 | CAPACITOR, ALUM ELECT |
| C4 | 330 / 35 | ↑ ↑ ↑ |
| C5 | 3300 / 35 | ↑ ↑ ↑ |
| C7, C9 | 100 / 35 | CAPACITOR, ALUM ELECT |
| C3, C6, C8, C10 | .01 / 100 | CAPACITOR, MYLAR |
| CR10 | AE1C | DIODE 1A 200V |
| CR7, 8, 11, 12, 14 | AE3B | 3A 100V |
| CR5, CR6 | MR750 | 22A50V |
| CR9 | IN965 | ZENER |
| CR13 | IN759 | DIODE ZENER |
| Q1 | 2N6554 | TRANSISTOR |
| Q2 | 12505-1 | ↑ |
| Q3, Q5 | 2N2907 | ↑ |
| Q4, Q6 | 12500-3 | TRANSISTOR |
| SCR1, 2 | S0303L63 | SCR 3A |
| U1, U2, U3 | LA723C | I.C. VOLTAGE REGULATOR |
| R1, R11, R13, R14, R7 | 330 Ω | RESISTOR 1/2W, ±5%, CF |
| R18, R24, R26, R30 | 330 Ω | ↑ ↑ ↑ ↑ |
| R5, R23, R34 | 330 Ω | ↑ ↑ ↑ |
| R6, R15, R22 | 4.7K | ↑ ↑ ↑ |
| R25, R27, R35 | 4.7K | ↑ ↑ ↑ |
| R16 | 1.5 Ω | ↑ ↑ ↑ |
| R17, R29, R37, R38 | 6.8 Ω | ↑ ↑ ↑ ↑ |
| R2, R12, R36 | 1K | RESISTOR 1/2W, ±5%, CF |
| R9, R20 | 1.2K | RESISTOR 1/4W, ±2%, MF |
| R10, R21, R33 | 2.4K | RESISTOR 1/4W, ±2%, MF |
| R32 | 750 Ω | RESISTOR 1/4W, ±2%, MF |
| R3 | .22 Ω | RESISTOR 2W, ±10%, BWH |
| R4 | | RESISTOR 2W, ±10%, BWH |
| R28 | .33 Ω | RESISTOR 2W, ±10%, BWH |
| R8, R19, R31 | 1.5K | POTENTIOMETER |
| T1 | | |
| PWB | 14235 | PRINTED CIRCUIT BOARD. |
| ITEM NO. | PART NUMBER | DESCRIPTION |

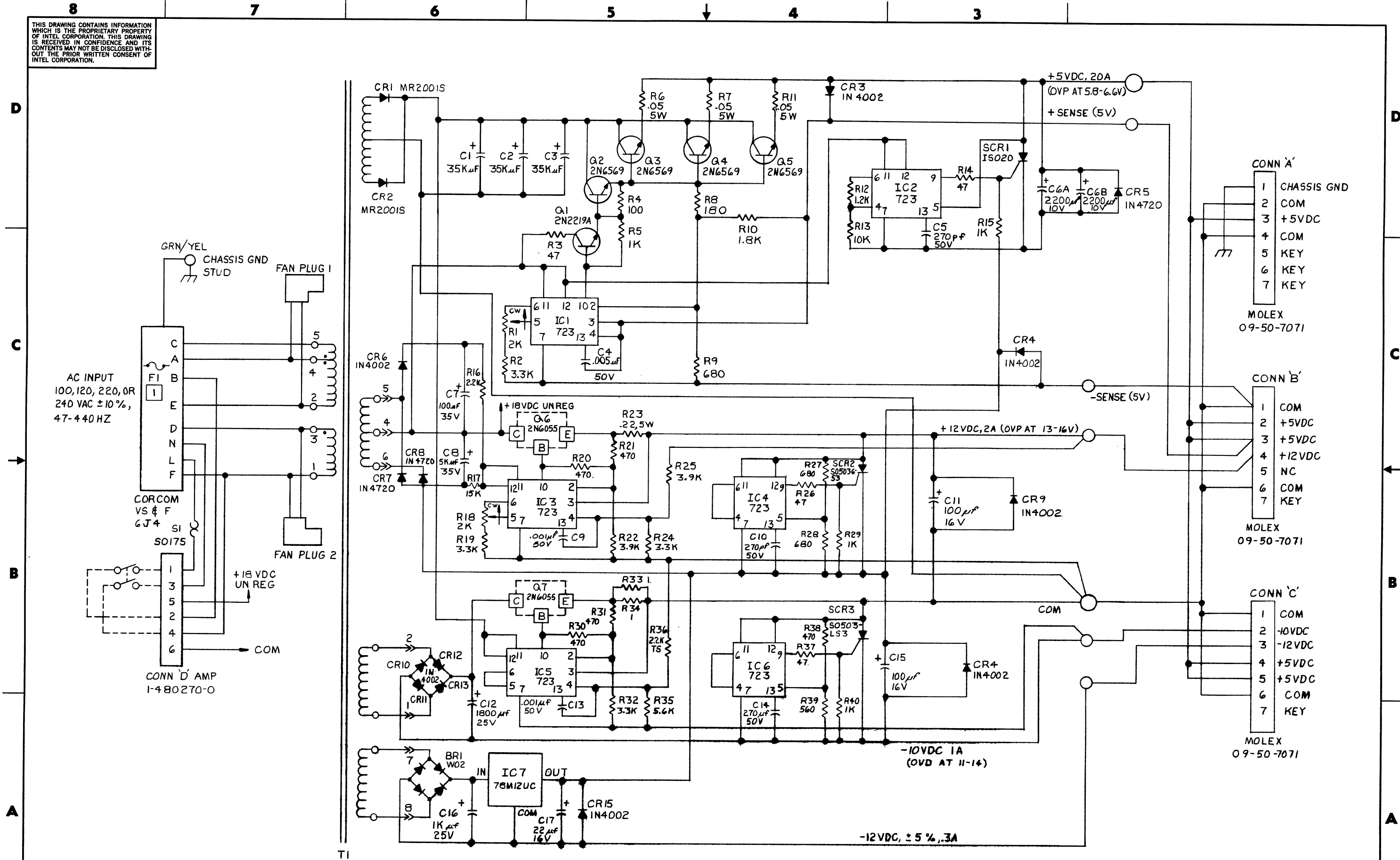
VENDOR SCHEMATIC
POWER ONE 13995-C
PWB 14235

intel 3065 BOWERS AVE.
SANTA CLARA CALIF. 95051

TITLE: SCHEMATIC DIAGRAM - EXP. CHASSIS POWER SUPPLY

| | | | |
|------|------|-------------|-----|
| SIZE | DEPT | DRAWING NO. | REV |
| D | MESD | P2000/271 | B |

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1 FI IS 6AMP FOR 100,120 OPERATION.
 FI IS 3AMP FOR 220,240 OPERATION.
 NOTES: UNLESS OTHERWISE SPECIFIED:

T1 A2837-T01

| | | | | |
|-----------------|---------------|------|---------------------------|--------------|
| DRAWN <i>JW</i> | SIZE D | CODE | DWG. NO. P 2001271 | REV B |
| ISSUED | SCALE | | SHEET 4 of 4 | |

Notes:



INTEL CORPORATION, 3065 Bowers Avenue, Santa Clara, California 95051 • (408) 987-8080