| Logic No. | Description | Part No. | EC No. |
|---|---|---|---|
| SLT Boards | | | |
| AA1 | Customized Board | 2510234 | 731505 |

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Table of Contents - Vol. 1 for 9004SJ2 00004 Mode

| Logic No. | Description | Part No. | EC No. |
|---|---|---|---|
| SA111 | Time Entr and Capacity Select | 2196725 | 258899 |
| SA121 | Address Register Entry | 2510237 | 731505 |
| SA131 | Data Bit Entry | 2510238 | 731505 |
| SA211 | Inhibit Voltage Distribution | 2196728 | 731506 |
| SA221 | Voltage Distribution | 2196732 | 731506 |
| SA311 | Timing | 2196729 | 731506 |
| SA321 | Address Register Inversion | 2196730 | 414258 |
| SA411 | Current Source and Sink | 2196731 | 731506 |
| SA421 | Y Half Low Order Driver | 2196733 | 730246 |
| SA426 | Y Half Low Order Driver | 2196734 | 730246 |
| SA431 | Y Half Low Order Driver | 2196735 | 730246 |
| SA436 | Y Half Low Order Driver | 2196736 | 730246 |
| SA441 | Y Half High Order Driver | 2196737 | 414258 |
| SA446 | Y Half High Order Driver | 2196738 | 414258 |
| SA451 | X Half Low Order Driver | 2196739 | 730246 |
| SA456 | X Half Low Order Driver | 2196740 | 730246 |
| SA461 | X Half Low Order Driver | 2196741 | 414258 |
| SA466 | X Half Low Order Driver | 2196742 | 731506 |
| SA511 | Sense Controls Inhibit Timing | 2196743 | 731506 |
| SA521 | Inhibit Invtrs Bits 0-8 4K | 2196744 | 256308 |
| SA526 | Inhibit Invtrs Bits 9-17 J5 | 2196745 | 256308 |
| SA531 | Inhibit Invtrs Bits 0-8 8K | 2196746 | 256308 |
| SA536 | Inhibit Invtrs Bits 9-17 8K | 2196747 | 256308 |
| SA541 | Inhibit Sense Bits 0-1-2 | 2196748 | 731506 |
| SA546 | Inhibit Sense Bits 3-4-5 | 2196749 | 731506 |
| SA551 | Inhibit Sense Bits 6-7-8 | 2196750 | 731506 |
| SA556 | Inhibit Sense Bits 9-10-11 | 2196751 | 731506 |
| SA561 | Inhibit Sense Bits 12-13-14 | 2196752 | 731506 |
| SA566 | Inhibit Sense Bits 15-16-17 | 2510236 | 731505 |

A1 CONNECTOR
F09 SA131AG4
F11 SA546BA4

A2 SINGLE CARD 8K
5803803 3803
SA531 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB

A3 SINGLE CARD
8205 8K
SA551 A1
SA556 A2
SA551 A4
SA556 A5
SA551 A6
SA556 A7

A4 SINGLE CARD
8205 8K
SA541 A1
SA546 A2
SA541 A4
SA546 A5
SA541 A6
SA546 A7

A5 SINGLE CARD
8205 8K
SA546 A1
SA541 A2
SA546 A4
SA541 A5
SA546 A6
SA541 A7

A6 SINGLE CARD
8205 8K
SA546 A1
SA551 A2
SA546 A4
SA551 A5
SA546 A6
SA551 A7

A7 SINGLE CARD
8205 8K
SA551 A1
SA541 A2
SA551 A4
SA541 A5
SA551 A6
SA541 A7

B1 CONNECTOR
A09 SA131AA4
A11 SA541BA4
B09 SA131AB4
B11 SA541BB4
C09 SA131AC4
C11 SA541BC4
D09 SA131AD4
D11 SA546BA4
E09 SA131AF4
E11 SA546EB4

B2 SINGLE CARD
5803803 3803
SA521 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB

B3 SINGLE CARD
8205
SA551 A1
SA556 A2
SA551 A4
SA556 A5
SA551 A6
SA556 A7

B4 SINGLE CARD
8205
SA541 A1
SA546 A2
S SA541 A4
A SA546 A5
O SA541 A6
O SA546 A7
S

B5 SINGLE CARD
8205
SA546 A1
SA541 A2
SA546 A4
SA541 A5
SA546 A6
SA541 A7

B6 SINGLE CARD
8205
SA546 A1
SA551 A2
SA546 A4
SA551 A5
SA546 A6
SA551 A7

B7 SINGLE CARD
8205
SA551 A1
SA541 A2
SA551 A4
SA541 A5
SA551 A6
SA541 A7

C1 CONNECTOR
A11 SA551BB4
B09 SA131AF4
B11 SA546EC4
C09 SA131AG4
C11 SA551BA4
D09 SA131AH4
D11 SA551BB4
E09 SA131AJ4
E11 SA551EC4

C3 SINGLE CARD
3803802 3802
SA436 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC

D1 CONNECTOR
A09 SA131AK4
A11 SA556BA4
E09 SA121AN4
E11 SA111AB4

D2 SINGLE CARD
5803801 3801
SA511 A1 A3 A4 A5 A6 A7
SA321 A8
SA511 A9 AA
SA111 E1
UNUSED PORTIONS
B C D

D3 SINGLE CARD
5803802 3802
SA431 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC

D5 SINGLE CARD
CORE
SA466

D6 SINGLE CARD
CORE
SA466

D7 SINGLE CARD
CORE
SA541

E1 CONNECTOR
A09 SA121AN4
A11 SA111AX4
B09 SA121AL4
B11 SA121AM4
C09 SA121AJ4
C11 SA121AK4
D09 SA111AE4
D11 SA111AB4
E09 SA111BA4
E11 SA111AA4

E2 SINGLE CARD
5803772 3772
SA511 A1
SA321 B1 C1 D1 F1 F1 G1

F3 SINGLE CARD
5803802 3802
SA426 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC

E5 SINGLE CARD
CORE
SA546

E6 SINGLE CARD
CORE
SA466

E7 SINGLE CARD
CORE
SA546

F1 CONNECTOR
A11 SA121AF4
B09 SA111AC4
B11 SA111BC4
C09 SA121AG4
C11 SA121AH4
D09 SA121AE4
D11 SA121AF4
E09 SA121AC4
E11 SA121AD4

F2 SINGLE CARD
8204
SA511 A1 A2 A3 A4
SA466 B1 B2 B3

F3 SINGLE CARD
5803802 3802
SA421 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC

F4 SINGLE CARD
CORE
SA556

F5 SINGLE CARD
CORE
SA546

F7 SINGLE CARD
CORE
SA551

G1 CONNECTOR
A09 SA121AA4
A11 SA121AB4
E09 SA121AN4
E11 SA111AB4

G2 SINGLE CARD
5803783 3783
SA111 A1
SA411 A2
SA111 A3
SA411 B1
SA321 C1 D1 E1 F1 G1 H1
UNUSED PORTIONS
J

G3 SINGLE CARD
5803802 3802
SA446 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC

H1 CONNECTOR
A09 SA121AN4
A11 SA111AX4
B09 SA121AL4
B11 SA121AM4
C09 SA121AJ4
C11 SA121AK4
D09 SA111AE4
D11 SA111AF4
E09 SA111BA4
E11 SA111AA4

H2 SINGLE CARD
8196
SA411 A1 A2

H3 SINGLE CARD
5803802 3802
SA441 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC

H4 SINGLE CARD
CORE
SA556

H5 SINGLE CARD
CORE
SA566

H7 SINGLE CARD
CORE
SA556

J1 CONNECTOR
A11 SA121AF4
E09 SA111AC4
B11 SA111EC4
C09 SA121AG4
C11 SA121AH4
D09 SA121AE4
D11 SA121AF4
E09 SA121AC4
E11 SA121AD4

J2 SINGLE CARD
8196
SA411 A1 A2

J3 SINGLE CARD 8K
5803802 3802
SA466 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC

J5 SINGLE CARD
CORE
SA566

J6 SINGLE CARD
CORE
SA461

J7 SINGLE CARD
CORE
SA561

K1 CONNECTOR
A09 SA121AA4
A11 SA121AB4
E09 SA131AL4
E11 SA561BB4

K2 SINGLE CARD
5803768 3768
SA411 A1 A2 A3 A4
SA311 A5 A6 A7
SA411 B1

K3 SINGLE CARD
5803802 3802
SA461 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC

K5 SINGLE CARD
CORE
SA461

K6 SINGLE CARD
CORE
SA466

K7 SINGLE CARD
CORE
SA566

L1 CONNECTOR
A09 SA131AL4
A11 SA556BB4
B09 SA131AM4
B11 SA556BC4
C09 SA131AN4
C11 SA561BA4
D09 SA131AP4
D11 SA561BB4
E09 SA131AQ4
E11 SA561BC4

L2 SINGLE CARD
5803803 3803
SA526 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB

L3 SINGLE CARD
5803802 3802
SA456 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC

M1 CONNECTOR
A11 SA566BC4
B09 SA131AR4
B11 SA566BA4
C09 SA131AS4
C11 SA566BB4
D09 SA131AT4
D11 SA566BC4
E09 SA111AG4
E11 SA111AF4

M2 SINGLE CARD 8K
5803803 3803
SA536 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB

M3 SINGLE CARD
5803802 3802
SA451 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC

M4 SINGLE CARD
8205
SA556 A1
SA566 A2
SA556 A4
SA566 A5
SA556 A6
SA566 A7

M5 SINGLE CARD
8205
SA566 A1
SA561 A2
SA566 A4
SA561 A5
SA566 A6
SA561 A7

M6 SINGLE CARD
8205
SA556 A1
SA561 A2
SA556 A4
SA561 A5
SA556 A6
SA561 A7

M7 SINGLE CARD
8205
SA561 A1
SA566 A2
SA561 A4
SA566 A5
SA561 A6
SA566 A7

N1 CONNECTOR
A09 SA111AJ4
A11 SA111AH4

N2 DOUBLE CARD

N3 5806206 6206
SA311 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC
AD AE AF AG AH AJ
B1 B2

N4 SINGLE CARD
8205 8K
SA556 A1
SA566 A2
SA556 A4
SA566 A5
SA556 A6
SA566 A7

N5 SINGLE CARD
8205 8K
SA566 A1
SA561 A2
SA566 A4
SA561 A5
SA566 A6
SA561 A7

N6 SINGLE CARD
8205 8K
SA556 A1
SA561 A2
SA556 A4
SA561 A5
SA556 A6
SA561 A7

N7 SINGLE CARD
8205 8K
SA561 A1
SA566 A2
SA561 A4
SA566 A5
SA561 A6
SA566 A7

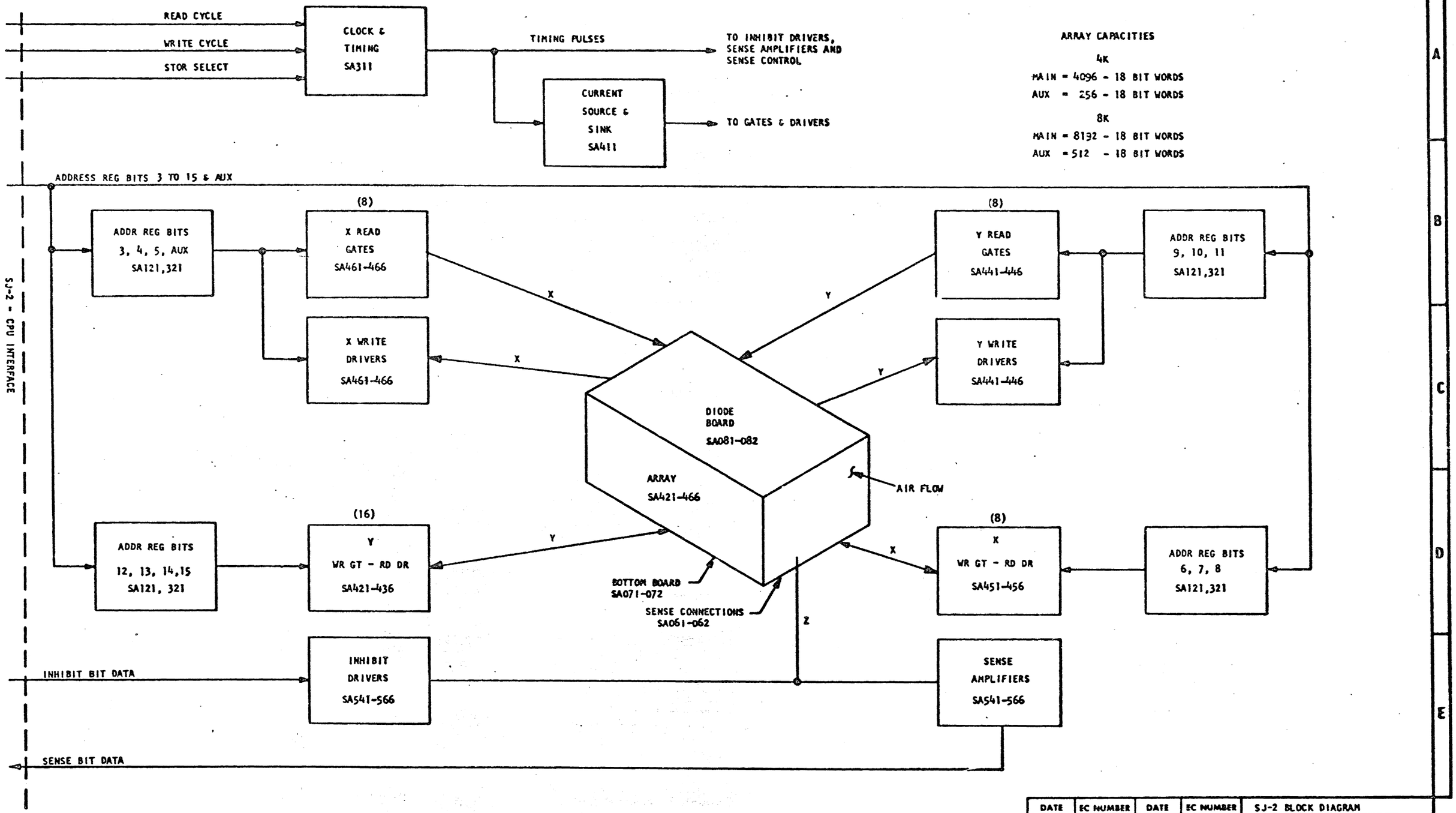
## PLUG LIST

| PART NO | ACC | TYPE | SOCKETS | TOTAL | |
|---|---|---|---|---|---|
| 5803768 | | 3768 | K2 | | 01 |
| 5803772 | | 3772 | F2 | | 01 |
| 5803783 | | 3783 | G2 | | 01 |
| 5803801 | | 3801 | D2 | | 01 |
| 5803802 | | 3802 | C3 D3 F3 F3 G3 H3 K3 L3 M3 | | 09 |
| 5803802 | 8K | 3802 | J3 | | 01 |
| 5803803 | | 3803 | B2 L2 | | 02 |
| 5803803 | 8K | 3803 | A2 F2 | | 02 |
| 5806206 | | 6206 | N2 | | 01 |
| | | 8196 | H2 J2 | | 02 |
| | | 8204 | F2 | | 01 |
| | | 8205 | B3 B4 B5 B6 B7 M4 M5 M6 M7 | | 09 |
| | | CONN | A1 B1 C1 D1 E1 F1 G1 H1 J1 K1 L1 M1 N1 | | 13 |
| | | CORE | D5 D6 D7 E5 E6 E7 F4 F5 F7 H4 H5 H7 J5 J6 J7 K5 K6 K7 | | 18 |
| | 8K | 8205 | A3 A4 A5 A6 A7 N4 N5 N6 N7 | | 09 |

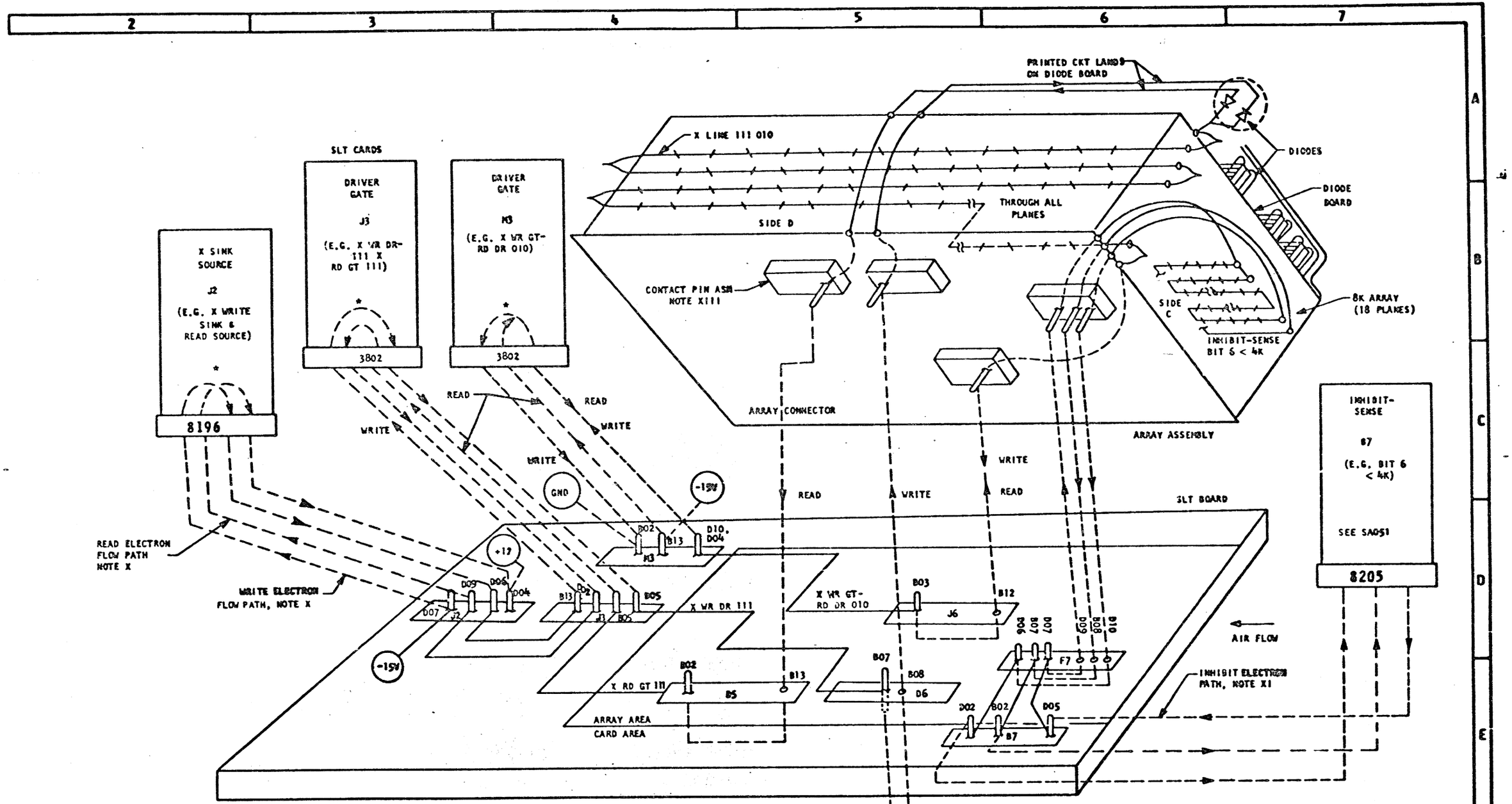
SOCKET LISTING
DATE 09-05-67 MACH. SJ-2

LOG 248R BOARD 63Z-21
PREV. ENGR. 12-22-66 730246
PRES. ENGR. 09-05-67 731506
P.N. 2196755

IBM CORP. SDD BLK




| DATE | EC NUMBER | DATE | EC NUMBER | SJ-2 BLOCK DIAGRAM | | | |
|---|---|---|---|---|---|---|---|
| 19AUG65 | 414258 | | | | | | |
| | | | | DATE | 19AUG65 | P/N | 2196960 |
| | | | | | | TYPE | |
| | | | | IBM | | SA011 | |




NOTES:

X ELECTRON FLOW PATHS ARE SHOWN FOR READ AND WRITE THROUGH X LINE 111 010.

X1 INHIBIT ELECTRON FLOW PATH IS SHOWN FOR INHIBIT-SENSE LINE BIT 6 LESS THAN 4K.

XII DRAWING IS NOT TO SCALE

XIII ONLY 4 OF 18 CONTACT PIN ASM ARE SHOWN.

* SEE SA043 FOR CIRCUITRY IN J2, J3, AND M3.

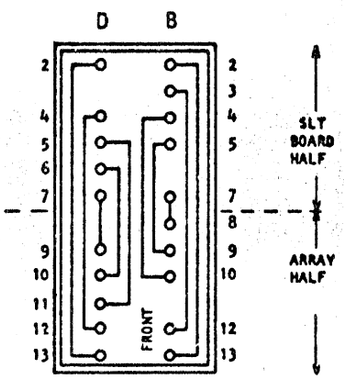
| DATE | EC NUMBER | DATE | EC NUMBER |
|---|---|---|---|
| 19AUG65 | 414258 | | |
| 18JAN67 | 730246 | | |
| 7SEP67 | 731506 | | |
| FEB 69 | 258899 | | |
| | | | |

| SJ-2 PERSPECTIVE DIAGRAM | | | |
|---|---|---|---|
| DATE | 19AUG65 | P/N | 2196961 |
| | | TYPE | |
| IBM | | SA012 | |

| SJ-2 REFERENCE PLUGGING CHART | | | |
|---|---|---|---|
| DATE | 19AUG65 | P N | 2196962 |
| | | TYPE | |
| | | IBM | SA021 |

| DATE | EC NUMBER |
|---|---|
| 19AUG65 | 414258 |
| 18JAN67 | 730246 |
| 7SEP67 | 731506 |
| 15NOV67 | 731517 |
| FEB69 | 258899 |

## ARRAY CONNECTOR BLOCK

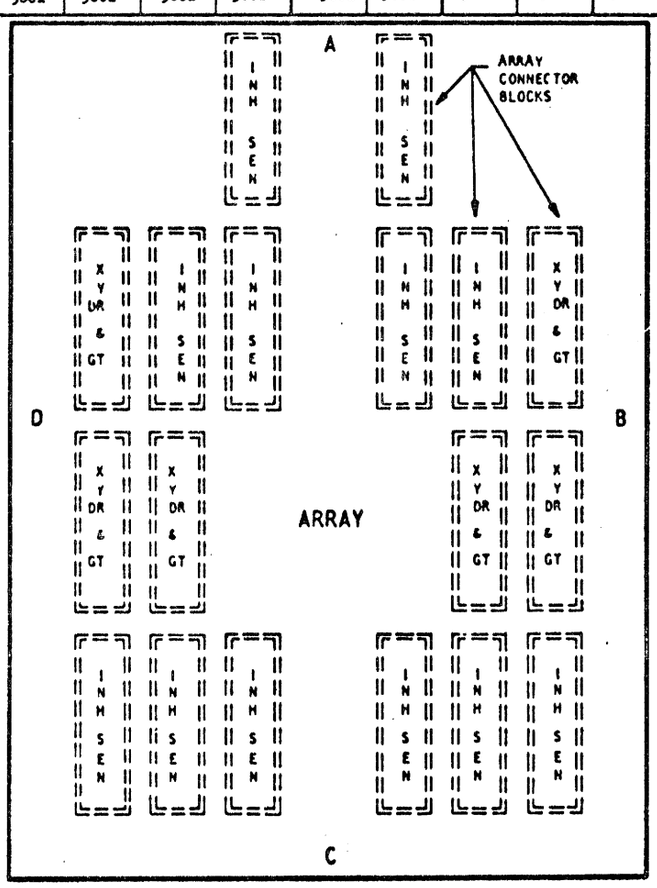



## STORAGE ADDRESS REGISTER

| X | | | | | | Y | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HIGH ORDER | | | LOW ORDER | | | HIGH ORDER | | | LOW ORDER | | |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| WR DR, RD GT | | | WR GT - RD DR | | | WR DR, RD GT | | | WR GT - RD DR | | |

SLT BOARD
(CARD SIDE)

| | A | B | C | D | E | F | G | H | J | K | L | M | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONNECTOR 1 | | | CONNECTOR 2 | | | | CONNECTOR 3 | | | CONNECTOR 4 | | |
| 2 | INHIBIT INVERTERS 0-8 * 3803 | INHIBIT INVERTERS 0-8 3803 | | 6 BIT TIMING 3801 | $V_{SA}$ & SAR INV 3772 | SA GATE DRIVER & AUX DR-GT 8204 | POT $V_{REF}$ & SAR INV 3783 | SINK SOURCE Y 8196 | SINK SOURCE X 8196 | SINK SOURCE DECODE 3768 | INHIBIT INVERTERS 9-17 3803 | INHIBIT INVERTERS 9-17 * 3803 | POT DELAY LINE TIMING |
| 3 | INH SEN BITS 769 * 8205 | INH SEN BITS 769 8205 | | Y WR GT - RD DR 1100 1101 1110 1111 1000 1001 1010 1011 3802 3802 | 0100 0101 0110 0111 3802 | 0000 0001 0010 0011 3802 | | Y WR DR, RD GT 100 101 110 111 000 001 010 011 3802 3802 | X WR DR, RD GT 100 101 110 111 * 3802 | 000 001 010 011 3802 | X WR GT-RD DR 100 101 110 111 3802 | 000 001 010 011 3802 | 6206 |
| 4 | INH SEN BITS 165 * 8205 | INH SEN BITS 165 8205 | | | | | | | | | | INH SEN BITS 11617 8205 | INH SEN BITS 11617 * 8205 |
| 5 | INH SEN BITS 263 * 8205 | INH SEN BITS 263 8205 | | | | | | | | | | INH SEN BITS 13615 8205 | INH SEN BITS 13615 * 8205 |
| 6 | INH SEN BITS 468 * 8205 | INH SEN BITS 468 8205 | | | | | | | | | | INH SEN BITS 10612 8205 | INH SEN BITS 10612 * 8205 |
| 7 | INH SEN BITS 066 * 8205 | INH SEN BITS 066 8205 | | | | | | | | | | INH SEN BITS 14616 8205 | INH SEN BITS 14616 * 8205 |
| 8 | | | | | | | | | | | | | |




AIR FLOW

* 8K ONLY

# SJ-2 STORAGE ADJUSTMENT PROCEDURE

REFER TO WZ001 ( IF PROVIDED BY USING SYSTEM ) FOR ADDITIONAL INFORMATION BEFORE BEGINNING STORAGE ADJUSTMENTS.

## I RECOMMENDED TEST EQUIPMENT

| | |
|---|---|
| VOLTMETER: | WESTON 901 ( 1/4 % ) |
| CABLE ASSEMBLY ( DIFFERENTIAL SCOPE LEADS ) | P/N 2182907 |
| SCOPE: | TEKTRONIX 453, 561A OR 647 |
| TWO 10: 1 VOLTAGE PROBES ( WITH GROUNDING CLIPS ): | TEKTRONIX 6006 |
| THERMOMETER: | P/N 5392366 ( $\pm$ 1/4°F) |

NOTE:
AN EQUIVALENT MAY BE SUBSTITUTED FOR ANY OF THE ABOVE PIECES OF TEST EQUIPMENT
FOR ALL TIME MEASUREMENTS USE SCOPE LEADS WITH SAME LENGTH AND GROUNDING CLIPS

## II SJ-2 STORAGE ADJUSTMENT

IF PROBLEMS ARE EXPERIENCED DURING ADJUSTMENT OF STORAGE OR IF STORAGE IS NOT WORKING CORRECTLY AFTER COMPLETION OF THIS PROCEDURE, REFER TO MAINTENANCE MANUAL OF USING SYSTEM.

STORAGE ADJUSTMENT SHOULD BE MADE IF:

1. CARD G2 ( VREF ) OR N2 ( STROBE ) IS REPLACED. OR IF
2. THERE ARE INDICATIONS THAT THE STORAGE IS NOT ADJUSTED PROPERLY

COMPLETE ADJUSTMENT INCLUDES:

A. VOLTAGE ADJUSTMENT
B. STROBE ADJUSTMENT
C. V-REF ADJUSTMENT

### A. VOLTAGE ADJUSTMENT

ALL VOLTAGES ARE MEASURED WITH RESPECT TO STORAGE UNIT GROUND EXCEPT WHERE NOTED OTHERWISE.

IN SYSTEMS WITH BUILT-IN METER, ALL VOLTAGE POINTS REQUIRED FOR STORAGE ADJUSTMENT ARE ALREADY WIRED TO METER

RUN PROGRAM WITH APPROXIMATELY 50 % ONES IN ALL ADDRESSES, WHEN ADJUSTING VOLTAGES. ( E.G. STORAGE FILL, CORE ADJUST)

1. SET LOGIC VOLTAGES TO NOMINAL WHEN MEASURED AT STORAGE UNIT BOARD

| | |
|---|---|
| -3.00 V | C2B06 (-3) TO C2D08 (GND) |
| +3.00 V | C2D03 (+3) TO C2D08 (GND) |
| +6.00 V | C2B11 (+6) TO C2D08 (GND) |

2. SET SPECIAL VOLTAGES TO NOMINAL WHEN MEASURED AT STORAGE UNIT BOARD

| | |
|---|---|
| +12.00 V | H2D04 (+12) TO H2D08 (GND) |
| -15.00 V | H2D07 (-15) TO H2D08 (GND) |

3. MEASURE TEMPERATURE OF INCOMING AIR AT THE BOTTOM EDGE OF STORAGE UNIT BOARD. STORAGE COVER MUST BE CLOSED
4. SET V-REF TO "NOMINAL" FOR TEMPERATURE MEASURED IN "A3" ACCORDING TO CURVE OF FIGURE 1A. STORAGE COVER MUST BE CLOSED

| | |
|---|---|
| V-REF | G2B12 (VREF) TO H2D04 (+12V) |
| V-REF POT | G2 |

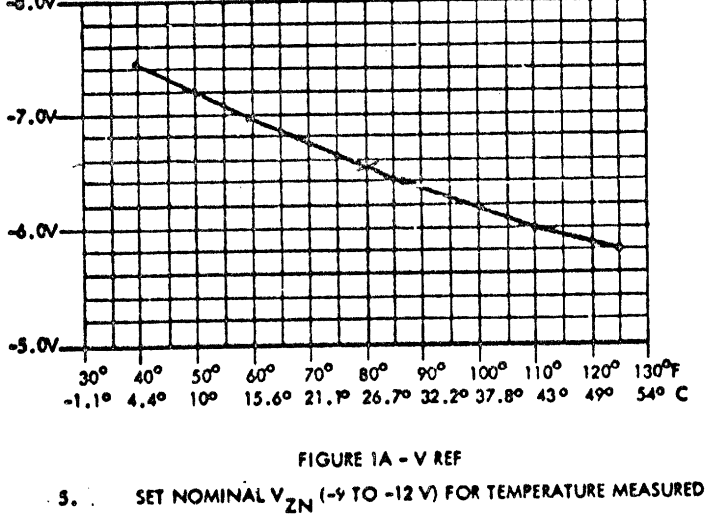



FIGURE 1A - V REF

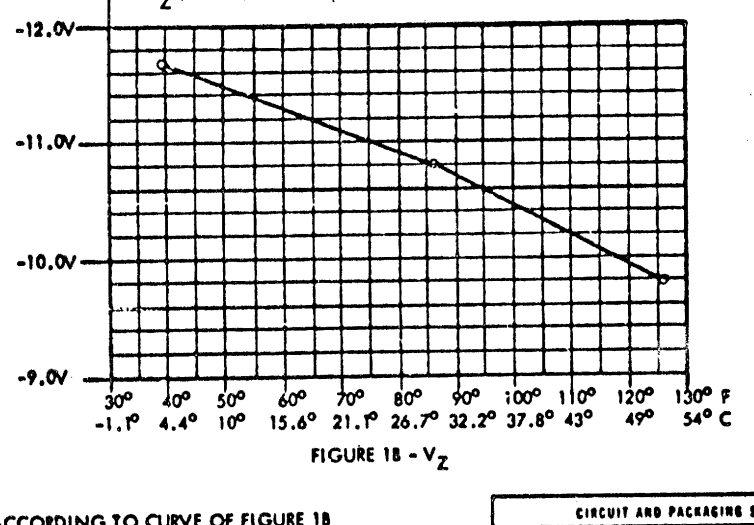



FIGURE 1B - $V_Z$

5. SET NOMINAL $V_{ZN}$ (-9 TO -12 V) FOR TEMPERATURE MEASURED IN "A3" ACCORDING TO CURVE OF FIGURE 1B

$V_Z$ = -10.9

A7D09 (-$V_Z$) TO A7D08 (GND)

NOTES

II PRINT TO ENG SPEC 895291

| CIRCUIT AND PACKAGING STANDARD | |
|---|---|
| APPROVAL | DATE |
| | |

| INTERNATIONAL BUSINESS MACHINES CORP. | | | | | | DATE | CHANGE NO. | APPROVAL | DATE | CHANGE NO. | APPROVAL | DEVELOPMENT NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAME | SYSTEMS DIAGRAM | | | | | 15EP67 | 731506A | | | | | |
| SJ-2 ADJUSTMENT PROCEDURE | | | | | | 8SEP67 | 731506B | | | | | |
| DESIGN | LER | 2JUL67 | MODEL | | | 17OCT67 | 731506C | | | | | |
| DETAIL | LJ | 2JUL67 | SCALE | | | 24FEB69 | 258899 | | | | | SA022 |
| CHECK | GRM | 31AUG67 | DRAW | 101 | 2AUG68 | | | | | | | |
| APPRO | | | CHECK | | | | | | | | | |

2196975

C

II STORAGE ADJUSTMENT PROCEDURE (CONTINUED)

B. STROBE ADJUSTMENT

IF STROBE IS RECORDED WITH RESPECT TO "SHORT TIME" (FIGURE 2A) USE "BA". IF STROBE IS RECORDED WITH RESPECT TO "PEAK OF ONES" (FIGURE 2B), OR IF VERIFICATION OF "SHORT TIME" IS DESIRED, USE "BB". USE PROGRAM WITH ALL ONES (OR MAXIMUM NUMBER OF ONES POSSIBLE IN ALL ADDRESSES ( E G STORAGE FILL )

PN _____ EC _____
SIZE _____
UNIT SN _____ ARRAY SN _____
DATE: _____
AMBIENT TEMP: _____ °F _____ °C
STROBE(D2B02) _____ NSEC AFTER 1 VOLT LEVEL OF SHORT TIME N2G03

2A (NEW)

FIGURE 2
ADJUSTMENT
LABEL

PN _____ EC _____
SIZE _____
UNIT SN _____ ARRAY SN _____
DATE: _____
AMBIENT TEMP: _____ °F _____ °C
STROBE (D2B02): _____ NSEC AFTER CENTER OF "ONES" ENVELOPE (B7B02 AND B7D02)

2B (OLD)

BA "SHORT TIME" ADJUSTMENT (FOR USE WITH NEW (FIGURE 2A) ADJUSTMENT LABEL ONLY)

NOTE: DO NOT PERFORM STEP 1 FOR 4K STORAGE UNITS

1A. SCOPE SET-UP

| | |
|---|---|
| CHANNEL 1: | +SENSE STROBE 4K PIN D2B02 |
| CHANNEL 2: | +SENSE STROBE 8K PIN D2D02 |
| SYNC EXTERN: | +READ CYCLE PIN N2J12 |
| TIME: | 0.2 μ S/DIV |
| MAGNIFIER: | 10 X MAGNIFICATION |
| VOLTAGE: | 0.05 V/DIV |
| MODE SWITCH: | ALTER |

1B. THE DIFFERENCE BETWEEN THE LEADING EDGES OF THE STROBES MEASURED AT THE 0.5 VOLT LEVEL WITH RESPECT TO THEIR BASELINES, SHOULD BE LESS THAN 10 NS, (FIGURE 3) OTHERWISE REPLACE CARD D2

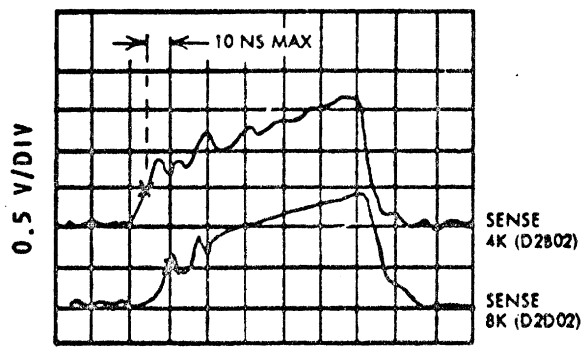



FIGURE 3

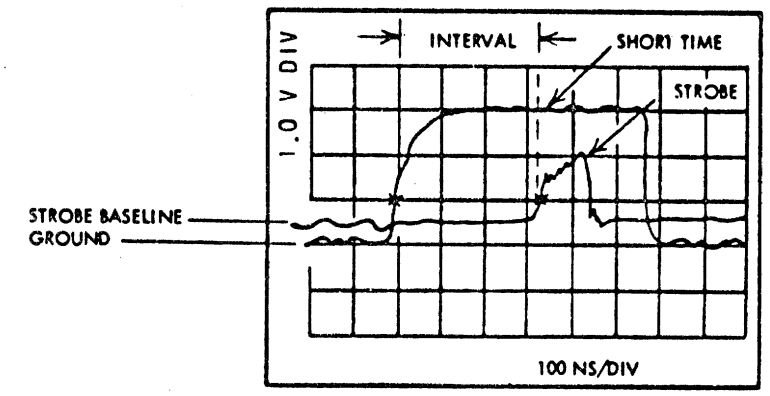



FIGURE 4

2A. SCOPE SET-UP

| | | | |
|---|---|---|---|
| CHANNEL 1: | SHORT TIME | | N2G03 |
| CHANNEL 2: | +SENSE STROBE 4K | | D2B02 |
| SYNC: | +READ CYCLE | | N2J12 |
| TIME: | 100 NS/DIV | BOTH CHANNELS | |
| VOLTAGE: | 0.1 V/DIV | | |
| MODE SWITCH: | ALTER | | |

2B. ADJUST POTENTIOMETER ON CARD N2 SO THAT INTERVAL BETWEEN LEADING EDGES OF SHORT TIME (MEASURED AT 1 VOLT LEVEL WITH RESPECT TO GROUND) AND "+SENSE STROBE 4K" (MEASURED AT 0.5 VOLT LEVEL WITH RESPECT TO BASELINE FIGURE 4) IS THE SAME AS THAT ON ADJUSTMENT LABEL.

| CIRCUIT AND PACKAGING STANDARD | |
|---|---|
| APPROVAL | DATE |
| | |

| INTERNATIONAL BUSINESS MACHINES CORP. | | | | | | DATE | CHANGE NO. | APPROVAL | DATE | CHANGE NO. | APPROVAL | DEVELOPMENT NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAME | SYSTEMS DIAGRAM | | | | | 1SEP67 | 731506A | | | | | |
| | SJ-2 ADJUSTMENT PROCEDURE | | | | | 8SEP67 | 7315068 | | | | | |
| DESIGN | LER | 2JUL 67 | MODEL | | | 17OCT67 | 731506C | | | | | |
| DETAIL | LJ | 2JUL 67 | SCALE | | | DEC 68 | 258899 | | | | | SA022 |
| CHECK | GRM | 31AUG67 | DRAW | IDI | 26NOV68 | | | | | | | |
| APPRO | | | CHECK | | | | | | | | | |

2196975

C

II STORAGE ADJUSTMENT PROCEDURE (CONTINUED)

BB. PEAK-OF-ONES ADJUSTMENT USE WITH (FIGURE 2B) LABEL (OR FOR VERIFICATION OF "SHORT TIME.")

NOTE: DO NOT PERFORM STEP 1 FOR 4K STORAGE UNITS

1A. SCOPE SET-UP

| | | |
|---|---|---|
| CHANNEL 1: | +SENSE STROBE 4K PIN D2B02 | |
| CHANNEL 2: | +SENSE STROBE 8K PIN D2D02 | |
| SYNC EXTERN: | +READ CYCLE PIN N2J12 | |
| TIME: | 0.2 μS/DIV AND 10X MAGNIFICATION | BOTH CHANNELS |
| VOLTAGE: | 0.05 V/DIV | |
| MODE SWITCH: | ALTER | |

B. THE DIFFERENCE BETWEEN THE LEADING EDGE OF THE STROBES MEASURED AT 0.5 VOLT LEVEL WITH RESPECT TO BASELINES SHOULD BE LESS THAN 10 NS (FIGURE 3). OTHERWISE, REPLACE CARD D2

2A. SCOPE SET-UP USE DIFFERENTIAL SCOPE LEAD (P/N 2182907)

| | | |
|---|---|---|
| CHANNEL 1: | BIT 6 SENSE LINE B7B02 | |
| CHANNEL 2: | BIT 6 SENSE LINE B7D02 | |
| CHANNEL 2: | INVERTED MODE | |
| SYNC: | +READ CYCLE PIN N2J12 | |
| TIME: | 0.5 μ S/DIV AND 10 X MAGNIFICATION | BOTH CHANNELS |
| VOLTAGE: | 0.02 V/DIV | |
| MODE SWITCH: | ADD | |

B. SHORT N2B08 TO N2D08 TO REMOVE STROBE REFLECTION

C. ADJUST SCOPE SO THAT THE AVERAGE PEAK OF ONES ENVELOPE AT READ TIME IS AT THE CENTER VERTICAL LINE OF THE SCREEN (FIGURE 5)

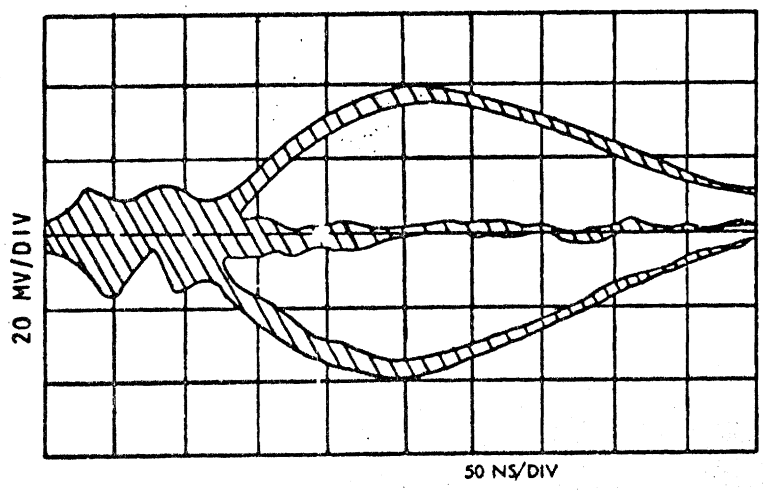



FIGURE 5

D. REMOVE SHORT BETWEEN N2B08 AND N2D08

E. REMOVE DIFFERENTIAL SCOPE LEAD. CONNECT CHANNEL 1 TO "+SENSE STROBE 4K" D2B02

F. CHANGE CHANNEL 1 SETTING TO 0.05 V/DIV, AND MODE TO CHANNEL 1

G. ADJUST POTENTIOMETER ON CARD N2 SO THAT THE LEADING EDGE OF "+SENSE STROBE 4K" (MEASURED AT 0.5 V LEVEL WITH RESPECT TO BASELINE) IS FROM 0 TO 10 NS AFTER THE CENTER VERTICAL LINE ON THE SCREEN

3. REPLACE OLD ADJUSTMENT LABEL (FIGURE 2B) WITH NEW LABEL (FIGURE 2A)

4A. SCOPE SET-UP

| | | |
|---|---|---|
| CHANNEL 1: | SHORT TIME PIN N2G03 | |
| CHANNEL 2: | +SENSE STROBE 4K PIN D2B02 | |
| SYNC: | +READ CYCLE PIN N2J12 | |
| TIME: | 100 NS/DIV | BOTH CHANNELS |
| VOLTAGE: | 0.1 V/DIV | |
| MODE SWITCH: | ALTER | |

B. MEASURE INTERVAL BETWEEN LEADING EDGES OF SHORT TIME N2G03 (AT 1 VOLT LEVEL WITH RESPECT TO GROUND) AND STROBE D2B02 (AT 0.5 V LEVEL WITH RESPECT TO BASELINE) (FIGURE 4)

C. RECORD INTERVAL ON NEW ADJUSTMENT LABEL

D. RECORD OTHER DATA FROM OLD LABEL TO NEW LABEL (EXCEPT VREF, VZ, AND TEMPERATURE INFORMATION)

| CIRCUIT AND PACKAGING STANDARD | |
|---|---|
| APPROVAL | DATE |
| | |

| INTERNATIONAL BUSINESS MACHINES CORP. | | | | | | DATE | CHANGE NO. | APPROVAL | DATE | CHANGE NO. | APPROVAL | DEVELOPMENT NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAME | SYSTEMS DIAGRAM | | | | | 1SEP67 | 731506A | | | | | |
| | SJ-2 ADJUSTMENT PROCEDURE | | | | | 8SEP67 | 7315068 | | | | | |
| DESIGN | LER | 2JUL67 | MODEL | | | 17OCT67 | 731506C | | | | | |
| DETAIL | LJ | 2JUL67 | SCALE | | | 24FEB69 | 258899 | | | | | SA022 |
| CHECK | GRM | 31AUG67 | DRAW | 101 | 26NOV68 | | | | | | | |
| APPRO | | | CHECK | | | | | | | | | |

2196975

C

II. STORAGE ADJUSTMENT PROCEDURE (CONTINUED)

C. VREF ADJUSTMENT

1. RUN WORST CASE PATTERNS OR STORAGE ADJUST PROGRAMS PROVIDED BY SYSTEM OR TESTER. KEEP STORAGE COVER CLOSED

2. MEASURE TEMPERATURE OF INCOMING AIR AT THE BOTTOM EDGE OF STORAGE UNIT BOARD WITH COVER CLOSED

3. SET NOMINAL $V_{ZN}$ (-9V TO -12V) FOR TEMPERATURE MEASURED IN "C2" ACCORDING TO CURVE OF FIGURE 1B.

$V_Z$: A7D09 ($-V_Z$) TO A7D08 (GND)

4. RECORD TEMPERATURE AND NOMINAL $V_{ZN}$ ON ADJUSTMENT LABEL

NOTE:

SYSTEMS (E G 360-20) WITH A CLASS B MAXIMUM TEMPERATURE LIMIT (32° C/90° F) USE SHORT PROCEDURE "5A"

SYSTEMS (E G 1800) WITH MORE SEVERE TEMPERATURE REQUIREMENTS USE PROCEDURE "5B"

5A. V-REF ADJUSTMENT (SHORT PROCEDURE)

1. DETERMINE OPERATING LIMITS BY SLOWLY ADJUSTING VREF TO UPPER (VREF UPPER) AND LOWER (VREF LOWER) FAILURE POINTS

V-REF: G2B12 (VREF) TO H2D04 (+12 V)

V-REF POT: G2

2. SET V-REF 0.1 VOLT BELOW MID POINT OF UPPER AND LOWER FAILURE POINTS. RECORD SETTING AND LIMITS ON ADJUSTMENT LABEL

3. V-REF SET IN "5 A 2" SHOULD BE EQUAL TO OR GREATER THAN VREF LOWER MULTIPLIED BY 1.0%

5B. V-REF ADJUSTMENT (LONG PROCEDURE)

1. SET $V_Z$ (-9 TO -12 V) TO 6 % BELOW NOMINAL $V_{ZN}$ FROM C3 ($V_Z = 0.94\ V_{ZN}$)

VZ A7D09 ($-V_Z$) TO A7D08 (GND)

2. DETERMINE UPPER AND LOWER VREF OPERATING LIMITS BY SLOWLY ADJUSTING VREF POTENTIOMETER ON CARD G2. RECORD VREF OPERATING LIMITS ON ADJUSTMENT LABEL

VREF: G2B12 (VREF) TO H2D04 (+12 V)

V-REF POT: G2

3. SET $V_Z$ TO 6 % ABOVE NOMINAL ($V_Z = 1.06\ V_{ZN}$)

$V_Z$ A7D09 ($-V_Z$) TO A7D08 (GND)

4. DETERMINE UPPER AND LOWER V REF OPERATING LIMITS BY SLOWLY ADJUSTING POTENTIOMETER ON CARD G2. RECORD ON ADJUSTMENT LABEL

5. $V_O$ IS MIDPOINT BETWEEN $V_A$ AND $V_B$ (FIGURE 7). SET VREF 0.15 VOLTS BELOW $V_O$ IF TEMPERATURE IN "C2" IS BELOW 106° F; OTHERWISE SET TO $V_O$.

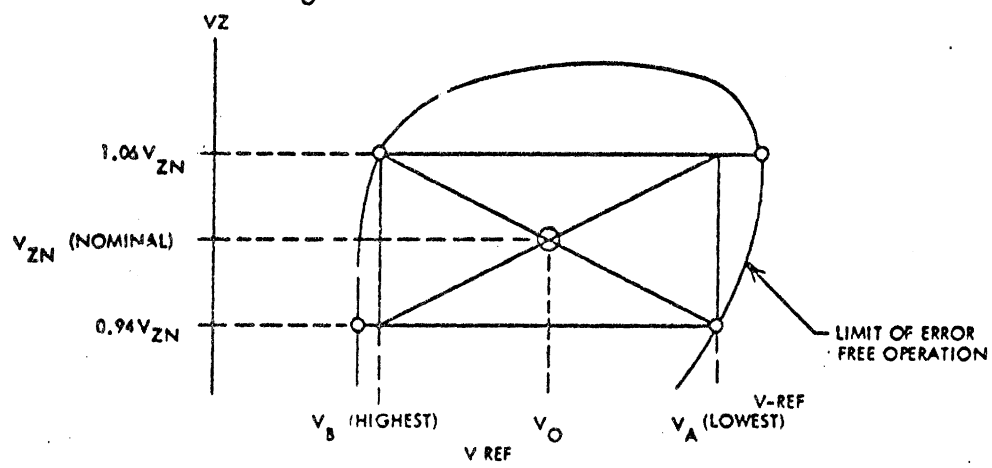



FIGURE 7

6. RESTORE $-V_Z$ TO NOMINAL ($V_{ZN}$ SET IN "C3")

7. DETERMINE THE V-REF OPERATING RANGE. V REF SET MUST BE GREATER THAN 1.06 TIMES LOWER FAILURE POINT ($V_B$)

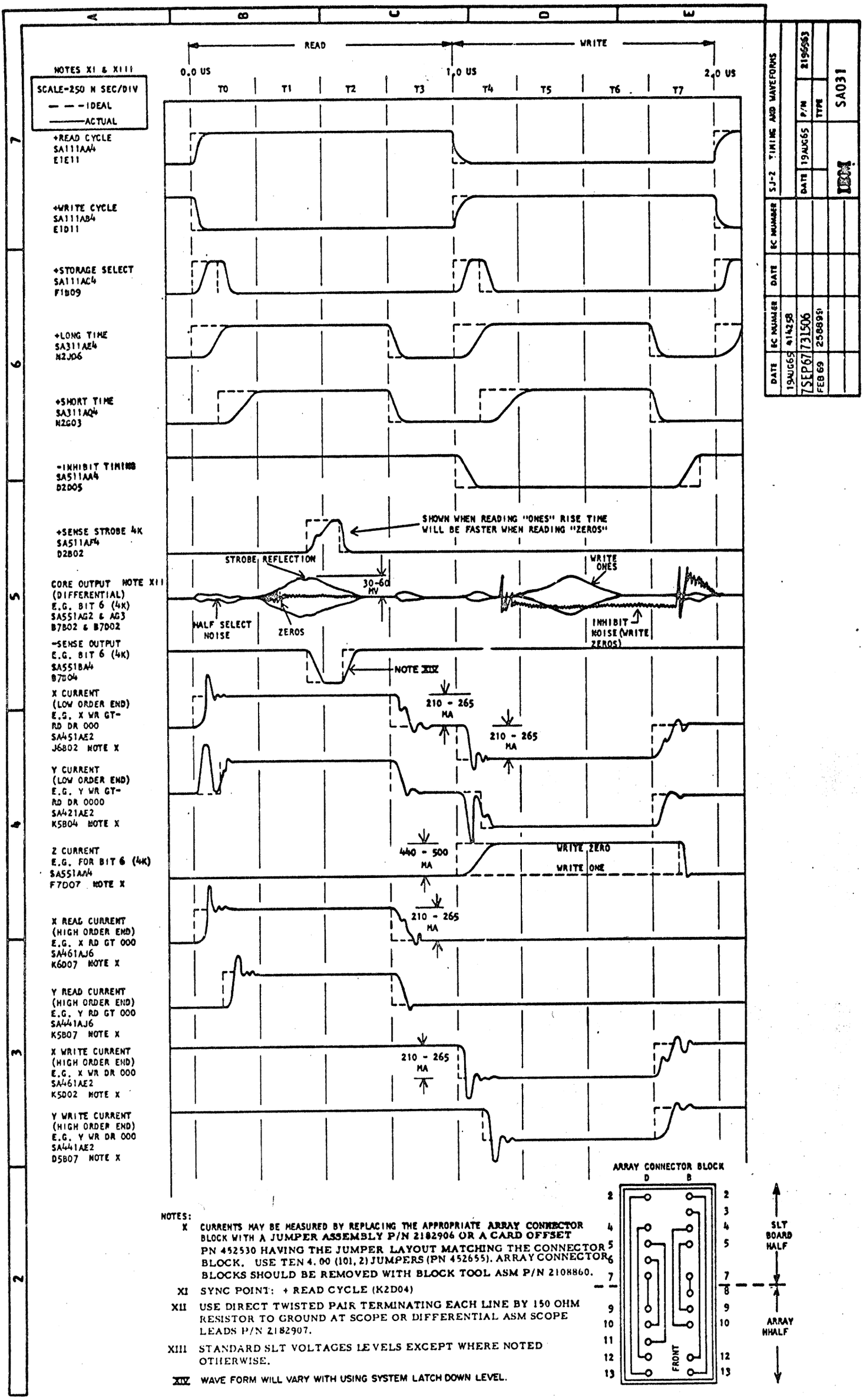
8. RECORD V-REF SET AND LIMITS ON ADJUSTMENT LABEL

| CIRCUIT AND PACKAGING STANDARD | |
|---|---|
| APPROVAL | DATE |
| | |

| INTERNATIONAL BUSINESS MACHINES CORP. | | | | | | DATE | CHANGE NO. | APPROVAL | DATE | CHANGE NO. | APPROVAL | DEVELOPMENT NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAME | SYSTEMS DIAGRAM | | | | | 15SEP67 | 731506A | | | | | |
| | SJ-2 ADJUSTMENT PROCEDURE | | | | | 8SEP67 | 731506B | | | | | |
| DESIGN | LER | 2JUL67 | MODEL | | | 17OCT67 | 731506C | | | | | |
| DETAIL | LJ | 2JUL67 | SCALE | | | 24FEB69 | 258899 | | | | | SA022 |
| CHECK | GRM | 31AUG67 | DRAW | IDI | 26NOV68 | | | | | | | |
| APPRO | | | CHECK | | | | | | | | | |

2196975

C




| DATE | EC NUMBER |
|---|---|
| 19AUG65 | 414258 |
| 7SEP67 | 731506 |
| FEB 69 | 258895 |

SJ-2 TIMING AND WAVEFORMS

| DATE | 19AUG65 |
|---|---|
| P/N | 2196563 |
| TYPE | |

IBM

SA031

NOTES:

X CURRENTS MAY BE MEASURED BY REPLACING THE APPROPRIATE ARRAY CONNECTOR BLOCK WITH A JUMPER ASSEMBLY P/N 2182906 OR A CARD OFFSET PN 452530 HAVING THE JUMPER LAYOUT MATCHING THE CONNECTOR BLOCK. USE TEN 4.00 (101.2) JUMPERS (PN 452655). ARRAY CONNECTOR BLOCKS SHOULD BE REMOVED WITH BLOCK TOOL ASM P/N 2108860.

XI SYNC POINT: + READ CYCLE (K2D04)

XII USE DIRECT TWISTED PAIR TERMINATING EACH LINE BY 150 OHM RESISTOR TO GROUND AT SCOPE OR DIFFERENTIAL ASM SCOPE LEADS P/N 2182907.

XIII STANDARD SLT VOLTAGES LEVELS EXCEPT WHERE NOTED OTHERWISE.

XIV WAVE FORM WILL VARY WITH USING SYSTEM LATCH DOWN LEVEL.

| 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|

3 4 5 6 7 8 9 10 11 12 13 14 15 — THE CORE SELECTED IS AT THIS ADDRESS

0 0 0 1 1 1 1 1 1 0 0 0 0

SELECT X DRIVE LINES — SELECT Y DRIVE LINES

X RD SOURCE
X RD GT TIME
X WR DR TIME
X WR SINK
FROM ADDR REG
NOTE XII
NOTE XV
NOTE XIV
NOTE XIII
< 4K ADDRESSES
> 4K ADDRESSES
AUX STOR
Y RD SOURCE
Y RD GT TIME
Y WR DR TIME
Y WR SINK
Y WR GT TIME
Y RD DR TIME
-15V
X WR GT TIME
X RD DR TIME

NOTES:

X BIT PLANE RELATIONSHIP

BIT 0 - PLANE 1
BIT 1 - PLANE 2
BIT 16 - PLANE 17
BIT 17 - PLANE 18

XI EVEN BIT SENSE LINES ARE ON ARRAY SIDE C . ODD BIT SENSE LINES ARE ON ARRAY SIDE A .

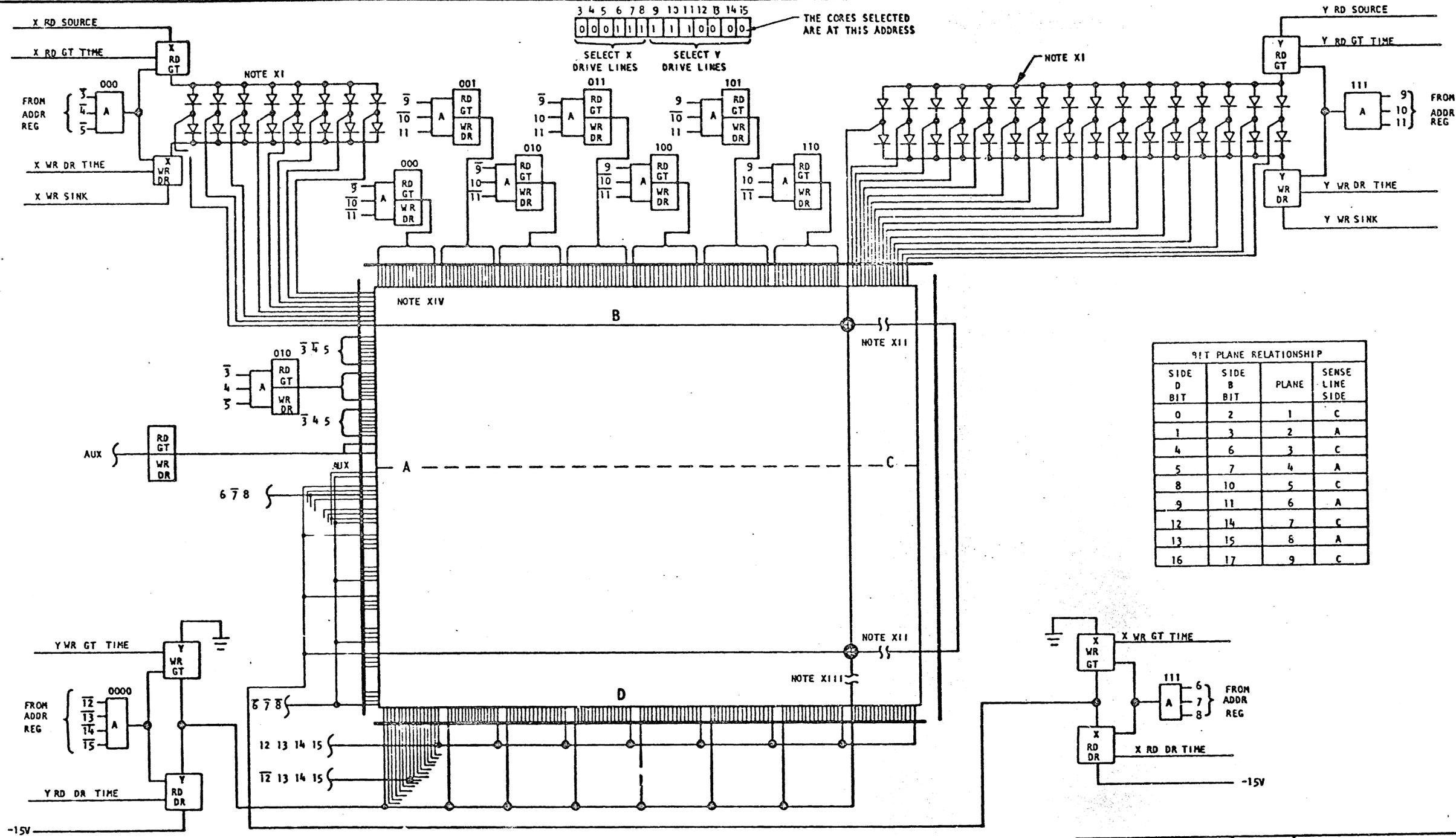
XII DIODES ARE ON DIODE BOARD (SA081)

XIII ADDRESS LINES GO THROUGH 18 PLANES FROM DIODE BOARD TO BOTTOM BOARD

XIV COMMONING IS ON BOTTOM BOARD (SA071)

XV THE CONNECTIONS BETWEEN DIODE BOARD AND ARRAY (OR ARRAY AND BOTTOM BOARD) ARE ACTUALLY ON ALTERNATE SIDES FOR ANY TWO ADJACENT ARRAY LINES.

| DATE | EC NUMBER | DATE | EC NUMBER | SJ-2 8K ARRAY ADDRESSING | | | |
|---|---|---|---|---|---|---|---|
| 19AUG65 | 414258 | | | | | | |
| | | | | DATE | 19AUG65 | P/N | 2196964 |
| | | | | | | TYPE | |
| | | | | IBM | | SA041 | |




| BIT PLANE RELATIONSHIP | | | |
|---|---|---|---|
| SIDE D BIT | SIDE B BIT | PLANE | SENSE LINE SIDE |
| 0 | 2 | 1 | C |
| 1 | 3 | 2 | A |
| 4 | 6 | 3 | C |
| 5 | 7 | 4 | A |
| 8 | 10 | 5 | C |
| 9 | 11 | 6 | A |
| 12 | 14 | 7 | C |
| 13 | 15 | 8 | A |
| 16 | 17 | 9 | C |

NOTES:

XI DIODES ARE ON DIODE BOARD (SA082).

XII X ADDRESS LINES FROM DIODE BOARD GO THROUGH THE ARRAY ON SIDE B, JUMPER ACROSS AT BOTTOM BOARD (SAC72), AND RETURN VIA SIDE D TO DIODE BOARD FOR X COMMONING (SA082)

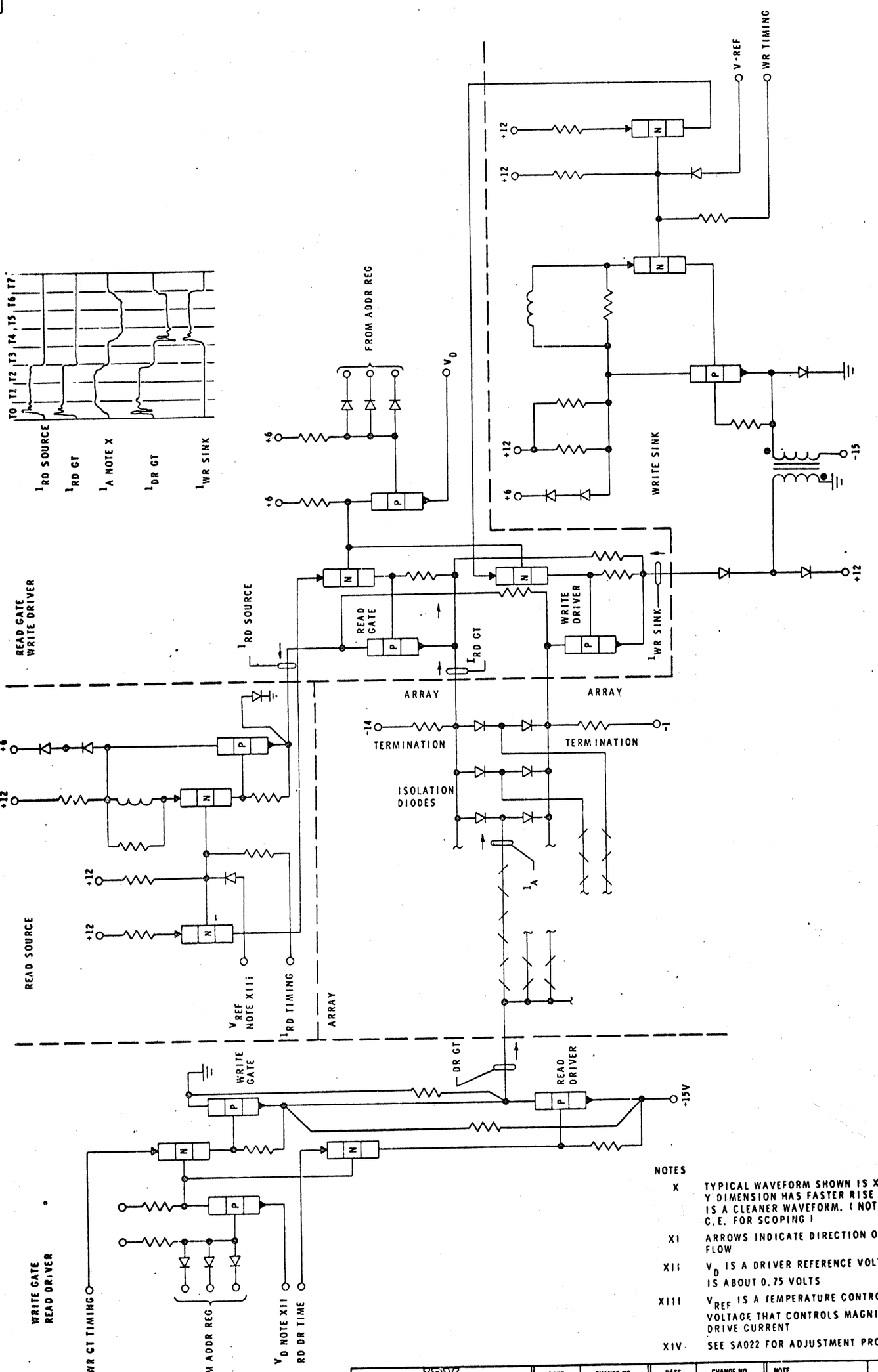
XIII Y ADDRESS LINES GO THROUGH THE ARRAY FROM DIODE BOARD AND ARE COMMONED ON THE BOTTOM BOARD (SA072)

XIV THE CONNECTIONS BETWEEN DIODE BOARD AND ARRAY (OR ARRAY AND BOTTOM BOARD) ARE ACTUALLY ON ALTERNATE SIDES FOR ANY TWO ADJACENT ARRAY LINES.

| DATE | EC NUMBER | DATE | EC NUMBER | SJ-2 4K ARRAY ADDRESSING | | | |
|---|---|---|---|---|---|---|---|
| 19AUG65 | 414258 | | | | | | |
| | | | | DATE | 19AUG65 | P/N | 2196965 |
| | | | | | | TYPE | |
| | | | | IBM | | SA042 | |

2196366

SA043




NOTES

X TYPICAL WAVEFORM SHOWN IS X DIMENSION. Y DIMENSION HAS FASTER RISE TIME AND IS A CLEANER WAVEFORM. ( NOT AVAILABLE TO C.E. FOR SCOPING )

XI ARROWS INDICATE DIRECTION OF ELECTRON FLOW

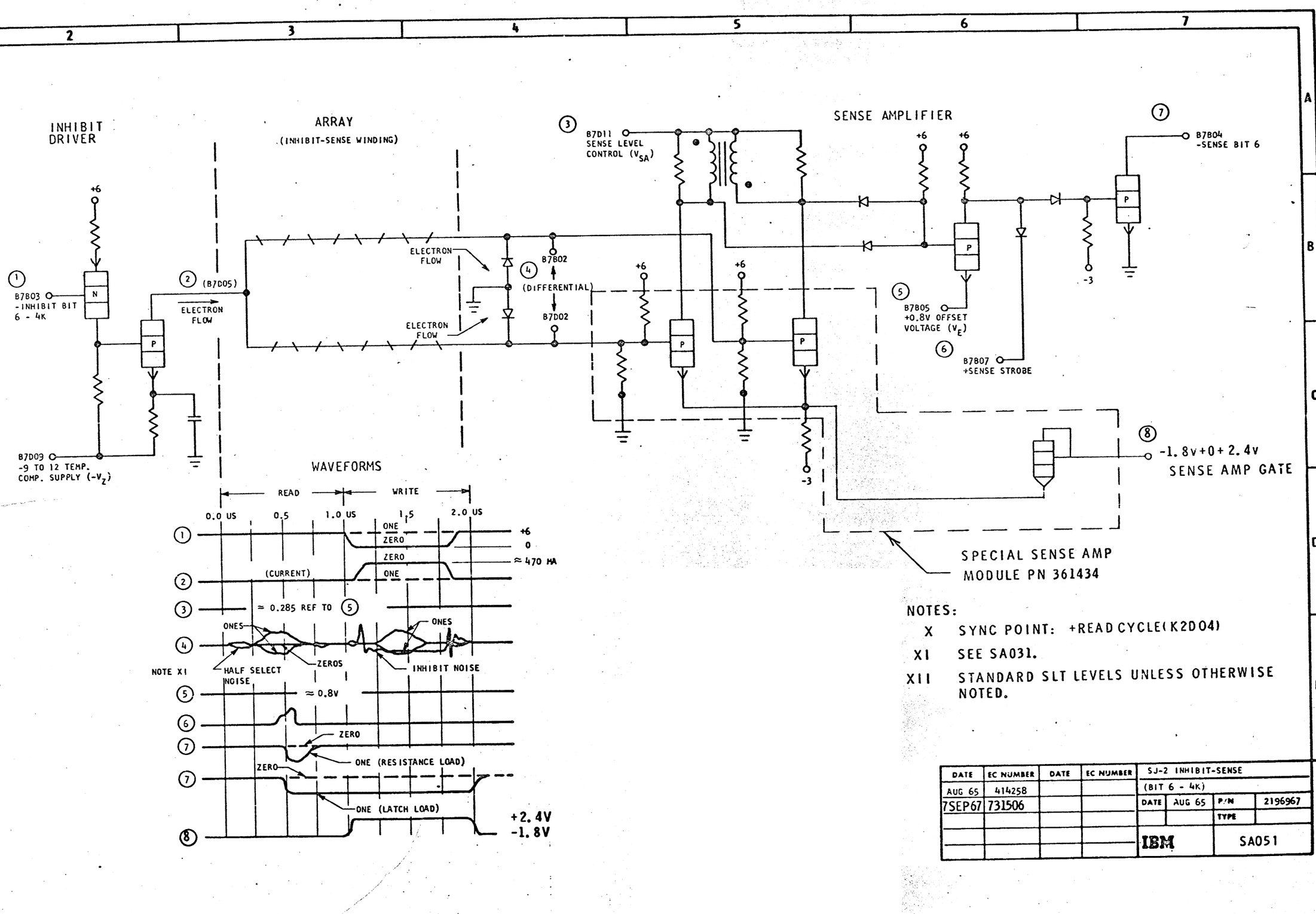
XII $V_D$ IS A DRIVER REFERENCE VOLTAGE AND IS ABOUT 0.75 VOLTS

XIII $V_{REF}$ IS A TEMPERATURE CONTROLLED VOLTAGE THAT CONTROLS MAGNITUDE OF DRIVE CURRENT

XIV SEE SA022 FOR ADJUSTMENT PROCEDURE

| IBM | | | | DATE | CHANGE NO. | DATE | CHANGE NO. | NOTE | DEVELOPMENT NO. |
|---|---|---|---|---|---|---|---|---|---|
| NAME SJ-2 READ-WRITE | | | | 6SEP67 | 731506 | | | X PRINT TO ENG. SPEC. NO. | |
| SCHEMATIC CARD | | | | | | | | | SA043 |
| DESIGN | | MODEL | | | | | | | |
| DETAIL | | | | | | | | | |
| CHECK | | DRAW KE 11AUG67 | | | | | | | |
| APPRO | | CHECK HH 16AUG67 | | | | | | | |

2196366




NOTES:

X SYNC POINT: +READ CYCLE(K2D04)

X1 SEE SA031.

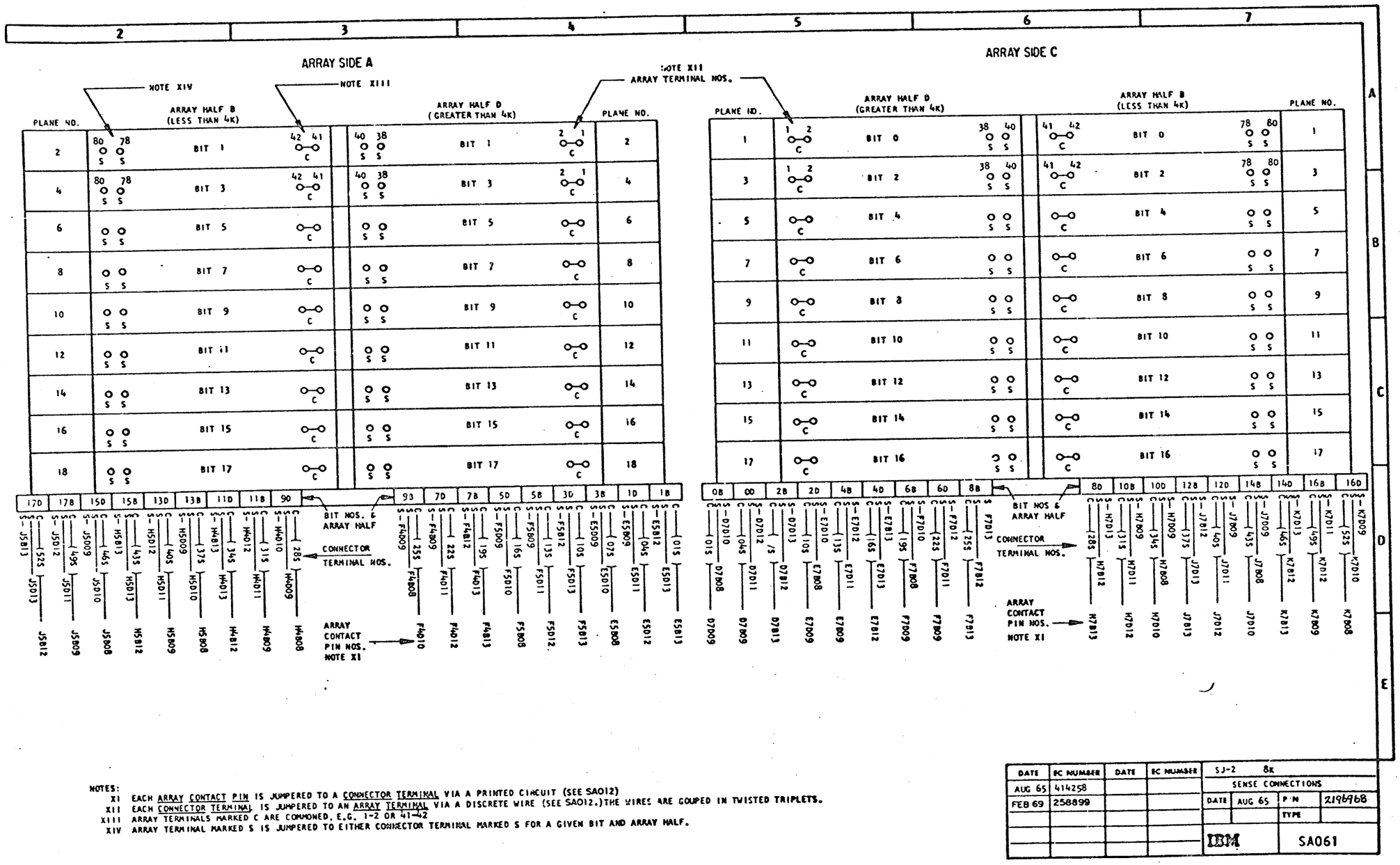
X11 STANDARD SLT LEVELS UNLESS OTHERWISE NOTED.

| DATE | EC NUMBER | DATE | EC NUMBER |
|---|---|---|---|
| AUG 65 | 414258 | | |
| 7SEP67 | 731506 | | |
| | | | |
| | | | |
| | | | |

SJ-2 INHIBIT-SENSE
(BIT 6 - 4K)

| DATE | AUG 65 | P/N | 2196967 |
|---|---|---|---|
| | | TYPE | |

IBM SA051




NOTES:
- XI EACH ARRAY CONTACT PIN IS JUMPERED TO A CONNECTOR TERMINAL VIA A PRINTED CIRCUIT (SEE SA012)
- XII EACH CONNECTOR TERMINAL IS JUMPERED TO AN ARRAY TERMINAL VIA A DISCRETE WIRE (SEE SA012.)THE WIRES ARE GOUPED IN TWISTED TRIPLETS.
- XIII ARRAY TERMINALS MARKED C ARE COMMONED, E.G. 1-2 OR 41-42
- XIV ARRAY TERMINAL MARKED S IS JUMPERED TO EITHER CONNECTOR TERMINAL MARKED S FOR A GIVEN BIT AND ARRAY HALF.

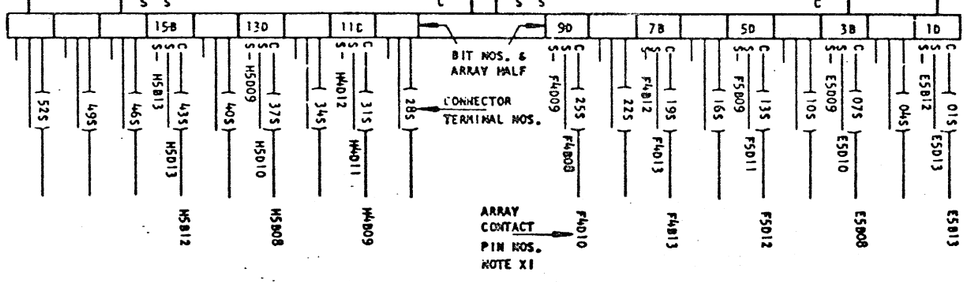
| DATE | EC NUMBER | DATE | EC NUMBER |
|---|---|---|---|
| AUG 65 | 414258 | | |
| FEB 69 | 258899 | | |
| | | | |
| | | | |

SJ-2 8K
SENSE CONNECTIONS
DATE AUG 65 P/N 2196968
TYPE
IBM SA061

## ARRAY SIDE A

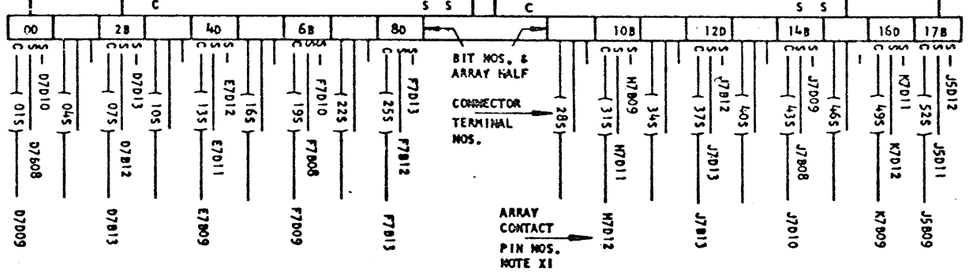
NOTE XIV — NOTE XIII — NOTE XII ARRAY TERMINAL NOS.

| PLANE NO. | ARRAY HALF B | | | ARRAY HALF D | | | PLANE NO. |
|---|---|---|---|---|---|---|---|
| 2 | 80 78 S S | BIT 3 | 42 41 C | 40 38 S S | BIT 1 | 2 1 C | 2 |
| 4 | 80 78 S S | BIT 7 | 42 41 C | 40 38 S S | BIT 5 | 2 1 C | 4 |
| 6 | S S | BIT 11 | C | S S | BIT 9 | C | 6 |
| 8 | S S | BIT 15 | C | S S | BIT 13 | C | 8 |




## ARRAY SIDE C

| PLANE NO. | ARRAY HALF D | | | ARRAY HALF B | | | PLANE NO. |
|---|---|---|---|---|---|---|---|
| 1 | 1 2 C | BIT 0 | 38 40 S S | 41 42 C | BIT 2 | 78 80 S S | 1 |
| 3 | 1 2 C | BIT 4 | 38 40 S S | 41 42 C | BIT 6 | 17 80 S S | 3 |
| 5 | C | BIT 8 | S S | C | BIT 10 | S S | 5 |
| 7 | C | BIT 12 | S S | C | BIT 14 | S S | 7 |
| 9 | C | BIT 16 | S S | C | BIT 17 | S S | 9 |




NOTES:
- XI EACH ARRAY CONTACT PIN IS JUMPERED TO A CONNECTOR TERMINAL VIA A PRINTED CIRCUIT (SEE SA012).
- XII EACH CONNECTOR TERMINAL IS JUMPERED TO AN ARRAY TERMINAL VIA A DISCRETE WIRE (SEE SA012.) THE WIRES ARE GROUPED IN TWISTED TRIPLETS.
- XIII ARRAY TERMINALS MARKED C ARE COMMONED, E.G. 1-2 OR 41-42
- XIV ARRAY TERMINAL MARKED S IS JUMPERED TO EITHER CONNECTOR TERMINAL MARKED S FOR A GIVEN BIT AND ARRAY HALF.

| DATE | EC NUMBER | DATE | EC NUMBER |
|---|---|---|---|
| AUG 65 | 414258 | | |
| FEB 69 | 258899 | | |
| | | | |
| | | | |

SJ-2 4K
SENSE CONNECTIONS
DATE AUG 65 P N 2196969
TYPE
IBM SA062

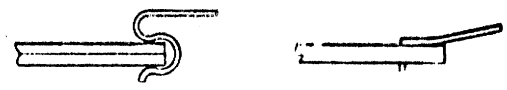
2196970

SA071

SHEET 1 OF 2

STORAGE ADDRESS REGISTER

| X HIGH ORDER | | | X LOW ORDER | | | Y HIGH ORDER | | | Y LOW ORDER | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| WR RD | | DR, GT | WR RD | | GT-DR | WR RD | | DR, GT | WR RD | | | GT-DR |




BOARD TERMINAL PROFILES - REFERENCE

AIR FLOW

LOW 110 000 010 100 110 000

X ADDRESS (54S) (28S) (36) (35) (20) (19) (18) (17) (2) (27S) (1) (15)

HIGH 000 001 010 011 AUX 000 AUX 010 100 101 110 111

Y ADDRESS JUMPERS TO DIODE BOARD NOTE X11

INHIBIT SENSE

-14V -1V

Y WR DR 111
Y WR DR 110 (79)
Y WR DR 101
(77)

LOW 0000 1110 1100 1010 1000 0110 0100 0010 0000

111 110 101 100 011 010 001 000

X WR GT - RD DR 000
X WR GT - RD DR 010
X WR GT - RD DR 100
X WR GT - RD DR 110

ARRAY SIDE B

Y WR GT - RD DR 1111
Y WR GT - RD DR 1101
Y WR GT - RD DR 1011
Y WR GT - RD DR 1001
Y WR GT - RD DR 0111
Y WR GT - RD DR 0101
Y WR GT - RD DR 0011
Y WR GT - RD DR 0001

Y ADDRESS JUMPERS TO DIODE BOARD NOTE X11

HIGH
(80) Y RD GT 111
(79) Y RD GT 110
(78) Y RD GT 101
(77)

LOW 0001 1111 1101 1011 1001 0111 0101 0011 0001

(46) (45) Y WR DR 100
X RD GT 000
X RD GT 001
X RD GT 010
X RD GT 011 (41)
AUX WR DR
X WR DR 011 (40)
X WR DR 010
X WR DR 001
X WR DR 000
Y RD GT 011 (36)
(35)

Y WR GT - RD DR 1110
Y WR GT - RD DR 1100
Y WR GT - RD DR 1010
Y WR GT - RD DR 1000
Y WR GT - RD DR 0110
Y WR GT - RD DR 0100
Y WR GT - RD DR 0010
Y WR GT - RD DR 0000

ARRAY SIDE D

(46) (45) Y RD GT 100
X WR DR 111
X WR DR 110
X WR DR 101
(41) X WR DR 100
AUX RD GT
(40) X RD GT 100
X RD GT 101
X RD GT 110
X RD GT 111
(36) Y WR DR 011
(35)

CONNECTOR TERMINAL NUMBERS (4)
Y RD GT 010 (3)
Y RD GT 001 (2)
Y RD GT 000 (1)

CONNECTOR TERMINAL NUMBERS (4)
(3) Y WR DR 010
(2) Y WR DR 001
(1) Y WR DR 000

X WR GT - RD DR 001
X WR GT - RD DR 011
X WR GT - RD DR 101
X WR GT - RD DR 111

HIGH

A

(545) X ADDRESS (28S) (36) (35) (20) (19) (18) (17) (2) (1) (27S) (15)

HIGH 000 001 010 011 AUX 001 AUX 011 100 101 110 111

LOW 111 001 011 101 111 001

CONNECTOR TERMINAL NUMBERS

NOTES

X I THIS SCHEMATIC SHOWS THE COMMONING OF THE X AND Y ARRAY LINES

X II ALSO SHOWN ARE THE CONNECTOR TERMINALS FOR THE JUMPER WIRES WHICH RUN BETWEEN THE BOTTOM BOARD AND THE DIODE BOARD

X III TWENTY-SEVEN (27) INHIBIT-SENSE LINE TERMINALS ARE SHOWN IN EACH CORNER OF THE BOARD

X IV REFER TO SHEET 2 OF 2 FOR BOARDS NOT HAVING "S" CLIPS

| IBM | | | | DATE | CHANGE NO. | DATE | CHANGE NO. | NOTE | DEVELOPMENT NO. |
|---|---|---|---|---|---|---|---|---|---|
| NAME | SJ-2 8K BOTTOM BOARD | | | 19JG67 | 414258 | | | X PRINT TO ENG. SPEC. NO. | |
| SCHEMATIC | | | | 16NOV67 | 731517 | | | | |
| DESIGN | | MODEL | | 9FEB68 | 731675 | | | | |
| DETAIL | LD 16NOV67 | | | | | | | | SA071 |
| CHECK | | DRAW | | | | | | | |
| APPRO | | CHECK | | | | | | | |

2196970

2196970

SA071

SHEET 2 OF 2

STORAGE ADDRESS REGISTER

| X HIGH ORDER | | | X LOW ORDER | | | Y HIGH ORDER | | | Y LOW ORDER | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| WR RD | | DR, GT | WR RD | | GT-DR | WR RD | | DR, GT | WR RD | | GT-DR | |

AIR FLOW

NUMBERING SEQUENCE FOR SENSE CONNECTIONS

DETAIL B

DETAIL A

X ADDRESS (54S) (28S) (36) (35) HIGH 000 001 010 011 AUX 000 AUX 010 100 101 110 111 (20) (19) (18) (17) (2) (1) (27S) (15)

LOW 110 000 010 100 110 000

Y ADDRESS

JUMPERS TO DIODE BOARD

NOTE XII

HIGH

AUX WR DR (81)
Y WR DR 111 (80)
Y WR DR 110 (79)
Y WR DR 101 (77)

LOW

0000 1110 1100 1010 1000 0110 0100 0010 0000

111 110 101 100 011 010 001 000

(46) (45) (41) (40) (36) (35)

Y WR DR 100
X RD GT 000
X RD GT 001
X RD GT 010
X RD GT 011
X WR DR 011
X WR DR 010
X WR DR 001
X WR DR 000
Y RD GT 011

INHIBIT SENSE DETAIL B

-14V

-1V

X WR GT- RD DR 000
X WR GT- RD DR 010
X WR GT- RD DR 100
X WR GT- RD DR 110

ARRAY SIDE B

Y WR GT- RD DR 1110
Y WR GT- RD DR 1100
Y WR GT- RD DR 1010
Y WR GT- RD DR 1000
Y WR GT- RD DR 0110
Y WR GT- RD DR 0100
Y WR GT- RD DR 0010
Y WR GT- RD DR 0000

X WR GT- RD DR 001
X WR GT- RD DR 011
X WR GT- RD DR 101
X WR GT- RD DR 111

(CONNECTOR TERMINAL NUMBERS)

(4)

Y RD GT 010 (3)
Y RD GT 001 (2)
Y RD GT 000 (1)

HIGH

INHIBIT SENSE DETAIL A

-1V

-14V

ARRAY SIDE D

Y WR GT- RD DR 1111
Y WR GT- RD DR 1101
Y WR GT- RD DR 1011
Y WR GT- RD DR 1001
Y WR GT- RD DR 0111
Y WR GT- RD DR 0101
Y WR GT- RD DR 0011
Y WR GT- RD DR 0001

Y ADDRESS

JUMPERS TO DIODE BOARD

NOTE XII

HIGH

(81) Y RD GT 111
(80) Y RD GT 110
(79) Y RD GT 101
(78)

LOW

0001 1111 1101 1011 1001 0111 0101 0011 0001

111 110 101 100 011 010 001 000

(47) (46) Y RD GT 100
X WR DR 111
X WR DR 110
X WR DR 101
(42) X WR DR 100
(41) X RD GT 100
X RD GT 101
X RD GT 110
X RD GT 111
(37) Y WR DR 011
(36)

(CONNECTOR TERMINAL NUMBERS)

(5)
(4) Y WR DR 010
(3) Y WR DR 001
(2) Y WR DR 000
(1) AUX RD GT

HIGH

X ADDRESS (54S) (28S) (36) (35) HIGH 000 001 010 011 AUX 001 AUX 011 100 101 110 111 (20) (19) (18) (17) (2) (1) (27S) (15)

LOW 111 001 011 101 111 001

(CONNECTOR TERMINAL NUMBERS)

| IBM | | | | DATE | CHANGE NO. | DATE | CHANGE NO. |
|---|---|---|---|---|---|---|---|
| NAME | SJ-2 8K BOTTOM BOARD | | | 19AUG67 | 414258 | | |
| | SCHEMATIC | | | 15NOV67 | 731517 | | |
| DESIGN | | | MODEL | 9FEB68 | 731675 | | |
| DETAIL | LD | 8NOV67 | | | | | |
| CHECK | PG | 9Nov67 | DRAW | | | | |
| APPRO | ABW | 9Nov 7 | CHECK | | | | |

NOTE
X PRINT TO ENG. SPEC. NO.

DEVELOPMENT NO.

SA071

2196970

SA072

2196971

"S" CLIP

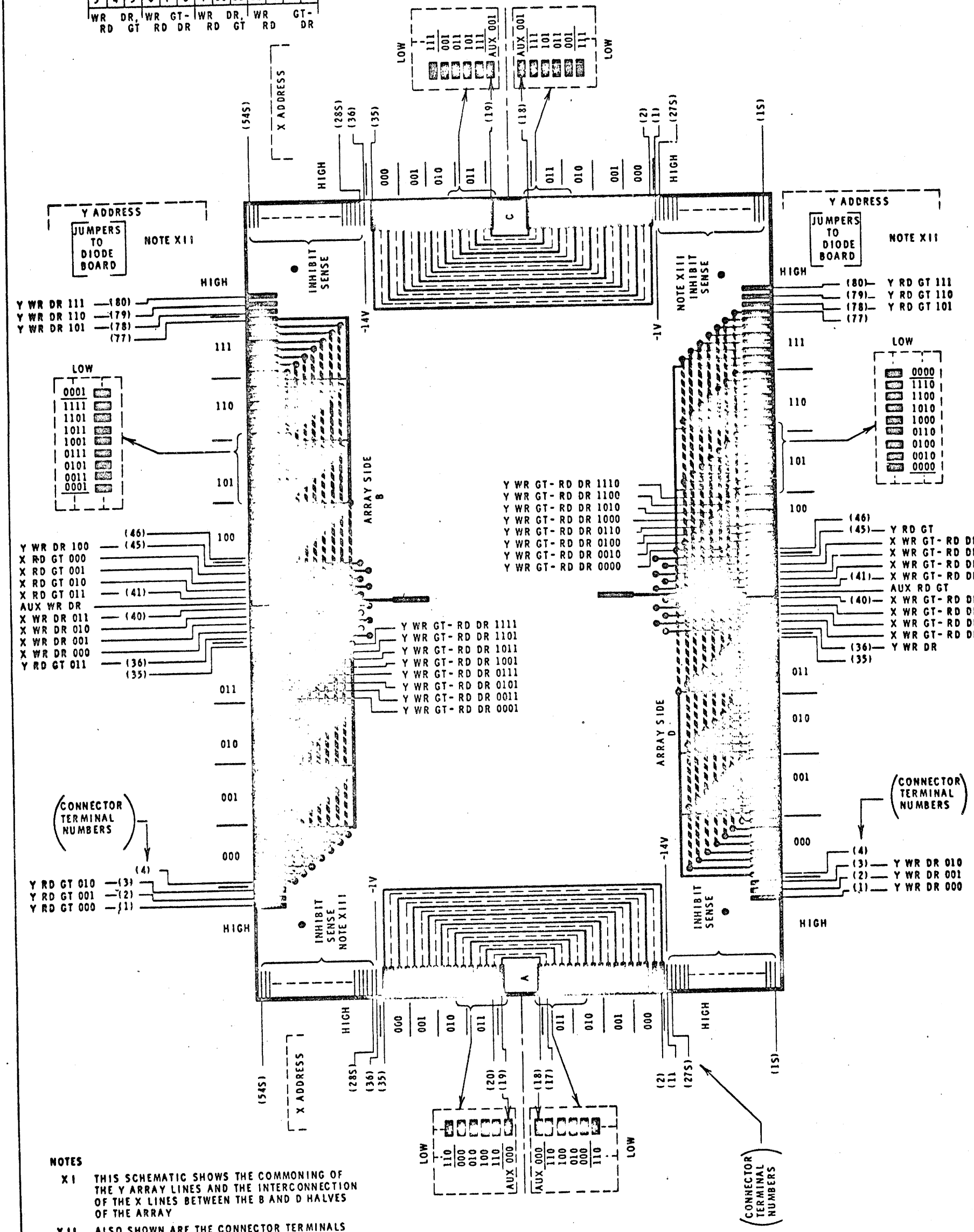
"L" CLIP

BOARD TERMINAL PROFILES REFERENCE

AIR FLOW

STORAGE ADDRESS REGISTER

| HIGH ORDER X | | | LOW ORDER | | | HIGH ORDER Y | | | LOW ORDER | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| WR RD | DR, GT | | WR RD | GT-DR | | WR RD | DR, GT | | WR RD | | GT-DR | |




NOTES

X I THIS SCHEMATIC SHOWS THE COMMONING OF THE Y ARRAY LINES AND THE INTERCONNECTION OF THE X LINES BETWEEN THE B AND D HALVES OF THE ARRAY

X II ALSO SHOWN ARE THE CONNECTOR TERMINALS FOR THE JUMPER WIRES WHICH RUN BETWEEN THE BOTTOM BOARD AND THE DIODE BOARD

X III TWENTY-FOUR (24) INHIBIT-SENSE LINE TERMINALS ARE ACTIVE ON SIDE A AND 30 ON SIDE C

X IV REFER TO SHEET 2 OF 2 FOR BOARDS NOT HAVING "S" CLIPS

| IBM | | | | | | | |
|---|---|---|---|---|---|---|---|
| NAME | SJ-2 4K BOTTOM BOARD | | | | | | |
| SCHEMATIC | | | | | | | |
| DESIGN | | | MODEL | | | | |
| DETAIL | LD | 12FEB68 | | | | | |
| CHECK | | | DRAW | | | | |
| APPRO | | | CHECK | | | | |

| DATE | CHANGE NO. | DATE | CHANGE NO. |
|---|---|---|---|
| 19AUG65 | 414258 | | |
| 12FEB68 | 731675 | | |
| | | | |
| | | | |
| | | | |

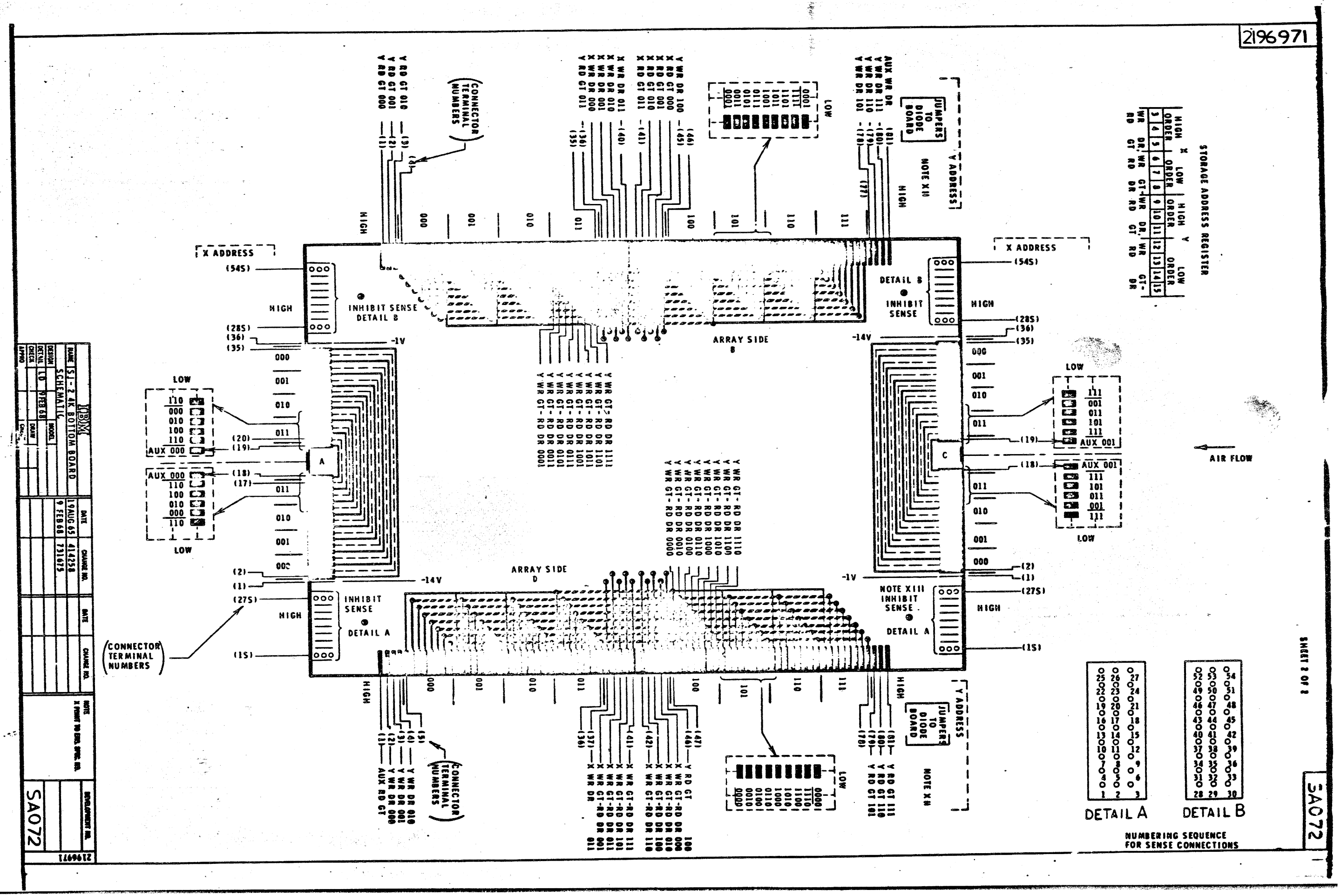
NOTE
X PRINT TO ENG. SPEC. NO.

DEVELOPMENT NO.

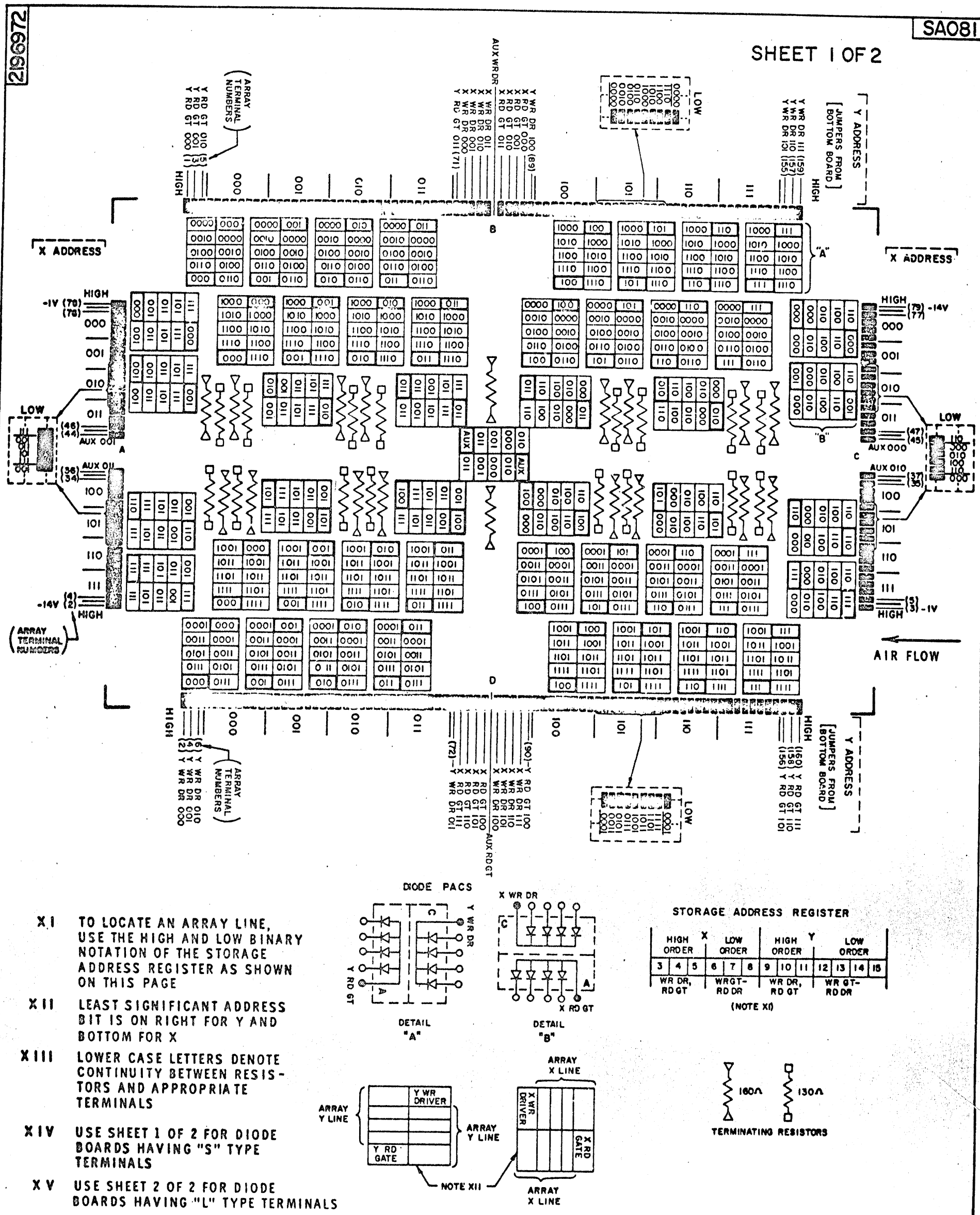
SA072

2196971

2196971


STORAGE ADDRESS REGISTER
HIGH ORDER | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | LOW ORDER
X: WR DR RD GT RD DR RD GT RD DR
Y: WR DR GT-WR DR WR GT-
X ADDRESS
(545)
HIGH
(285)
(36)
(35)
INHIBIT SENSE DETAIL B
-1V
-14V
ARRAY SIDE B
ARRAY SIDE D
DETAIL B
INHIBIT SENSE
LOW
HIGH
Y ADDRESS
JUMPERS TO DIODE BOARD
NOTE XII
AUX WR DR
Y WR DR 111 (180)
Y WR DR 110 (179)
Y WR DR 101 (178)
(177)
Y WR DR 100 (145)
X WR DR 011 (140)
X WR DR 010
X WR DR 001
Y RD GT 010 (9)
Y RD GT 001 (2)
Y RD GT 000 (1)
(8)
CONNECTOR TERMINAL NUMBERS
X WR DR 000 (136)
Y RD GT 101 (135)
X RD GT 011 (141)
X RD GT 010
X RD GT 001
Y WR DR 100 (146)
Y WR DR 011 (181)
Y WR DR 010
Y WR DR 001
Y WR DR 000
Y RD GT 111 (181)
Y RD GT 110 (179)
Y RD GT 101 (178)
X RD GT 111 (147)
X RD GT 110 (142)
X RD GT 101 (141)
X WR DR 111 (137)
X WR DR 110 (136)
Y RD GT (146)
X WR GT-RD DR 000
X WR GT-RD DR 001
X WR GT-RD DR 010
X WR GT-RD DR 011
X WR GT-RD DR 100
X WR GT-RD DR 101
X WR GT-RD DR 110
X WR GT-RD DR 111
Y WR GT-RD DR 0000
Y WR GT-RD DR 0001
Y WR GT-RD DR 0010
Y WR GT-RD DR 0011
Y WR GT-RD DR 0100
Y WR GT-RD DR 0101
Y WR GT-RD DR 0110
Y WR GT-RD DR 0111
Y WR GT-RD DR 1000
Y WR GT-RD DR 1001
Y WR GT-RD DR 1010
Y WR GT-RD DR 1011
Y WR GT-RD DR 1100
Y WR GT-RD DR 1101
Y WR GT-RD DR 1110
Y WR GT-RD DR 1111
A
B
C
AUX 000
AUX 001
(20)
(19)
(18)
(17)
(2)
(1)
(27S)
(1S)
INHIBIT SENSE DETAIL A
NOTE XIII INHIBIT SENSE DETAIL A
CONNECTOR TERMINAL NUMBERS
AUX RD GT
Y WR DR 000
Y WR DR 001
Y WR DR 010
(5)
(4)
(3)
(2)
(1)
AIR FLOW
DETAIL A
DETAIL B
NUMBERING SEQUENCE FOR SENSE CONNECTIONS
SHEET 2 OF 2
SA072
NAME SJ-24K BOTTOM BOARD
SCHEMATIC
MODEL
DRAWN
DATE 19AUG65 9 FEB 68
CHANGE NO. 414258 731675
NOTE X PRINT NO ENGL SPEC. REQ.
DEVELOPMENT NO.
2196971

SHEET 1 OF 2




X I TO LOCATE AN ARRAY LINE, USE THE HIGH AND LOW BINARY NOTATION OF THE STORAGE ADDRESS REGISTER AS SHOWN ON THIS PAGE

X II LEAST SIGNIFICANT ADDRESS BIT IS ON RIGHT FOR Y AND BOTTOM FOR X

X III LOWER CASE LETTERS DENOTE CONTINUITY BETWEEN RESISTORS AND APPROPRIATE TERMINALS

X IV USE SHEET 1 OF 2 FOR DIODE BOARDS HAVING "S" TYPE TERMINALS

X V USE SHEET 2 OF 2 FOR DIODE BOARDS HAVING "L" TYPE TERMINALS

DIODE PACS




STORAGE ADDRESS REGISTER

| X HIGH ORDER | | | X LOW ORDER | | | Y HIGH ORDER | | | Y LOW ORDER | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| WR DR, RD GT | | | WR GT-RD DR | | | WR DR, RD GT | | | WR GT-RD DR | | | |

(NOTE XI)



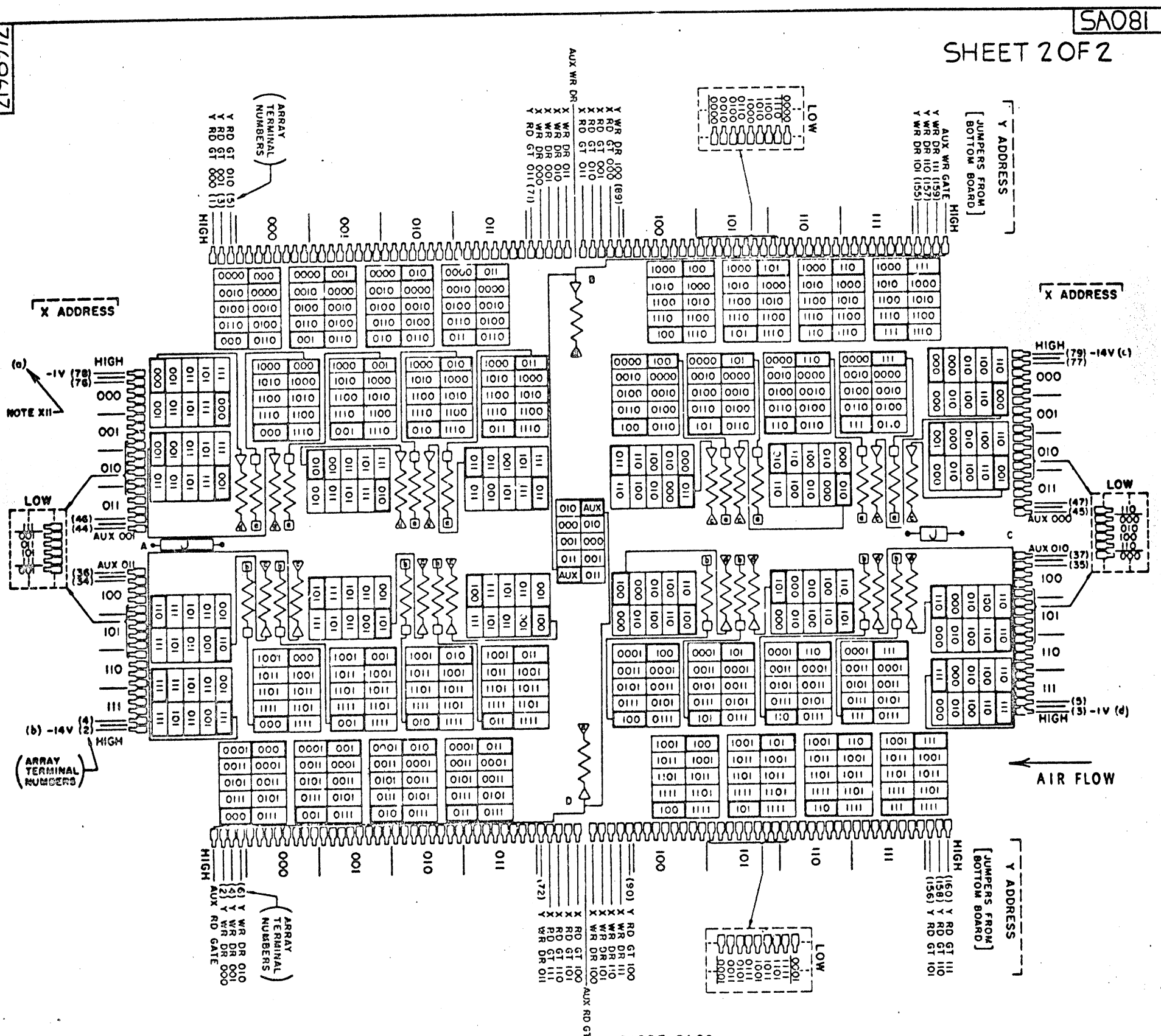




TERMINATING RESISTORS

| INTERNATIONAL BUSINESS MACHINES CORP. | | | | DATE | CHANGE NO. | DATE | CHANGE NO. | NOTE | DEVELOPMENT NO. |
|---|---|---|---|---|---|---|---|---|---|
| NAME | SJ-2 6K DIODE BOARD SCHEMATIC | | | 19AUG65 | 414258 | | | X PRINT TO ENG. SPEC. NO. | |
| DESIGN | | | MODEL | 18JAN67 | 730246 | | | | |
| DETAIL | LD | 1JUN67 | | 20FEB67 | 730723 | | | | |
| CHECK | | | DRAW | 19OCT67 | 730727 | | | | SA081 |
| APPRO | | | CHECK | 8FEB68 | 731675 | | | | |

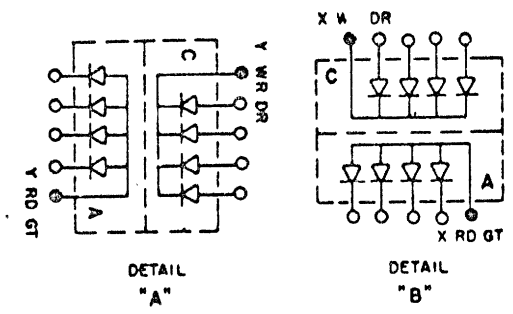
2196972

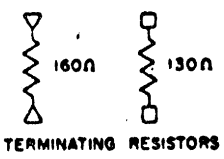


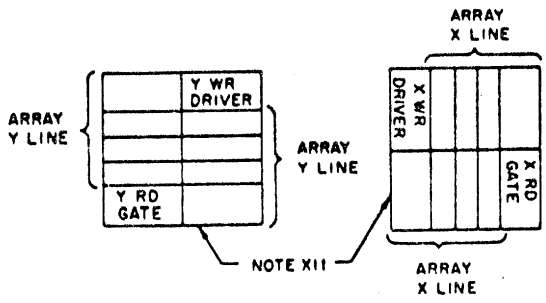

## STORAGE ADDRESS REGISTER

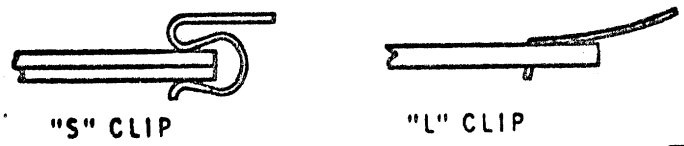
| X | | | | | | Y | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HIGH ORDER | | | LOW ORDER | | | HIGH ORDER | | | LOW ORDER | | |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| WR DR, RD GT | | | WR GT- RD DR | | | WR DR, RD GT | | | WR GT- RD DR | | | |

(NOTE XI)




BOARD TERMINAL PROFILES - REF

| INTERNATIONAL BUSINESS MACHINES CORP. | | | | | | DATE | CHANGE NO. | DATE | CHANGE NO. | NOTE | DEVELOPMENT NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NAME SJ-2 8K DIODE BOARD SCHEMATIC | | | | | | 19AUG65 | 414258 | | | X PRINT TO ENG. SPEC. NO. | |
| DESIGN | | | MODEL | | | 18JAN67 | 730246 | | | | |
| DETAIL | | | | | | 20FEB67 | 730723 | | | | |
| CHECK | | | DRAW | KE | 29NOV67 | 18OCT67 | 730727 | | | | SA081 |
| APPRO | | | CHECK | | | 8FEB68 | 731675 | | | | |

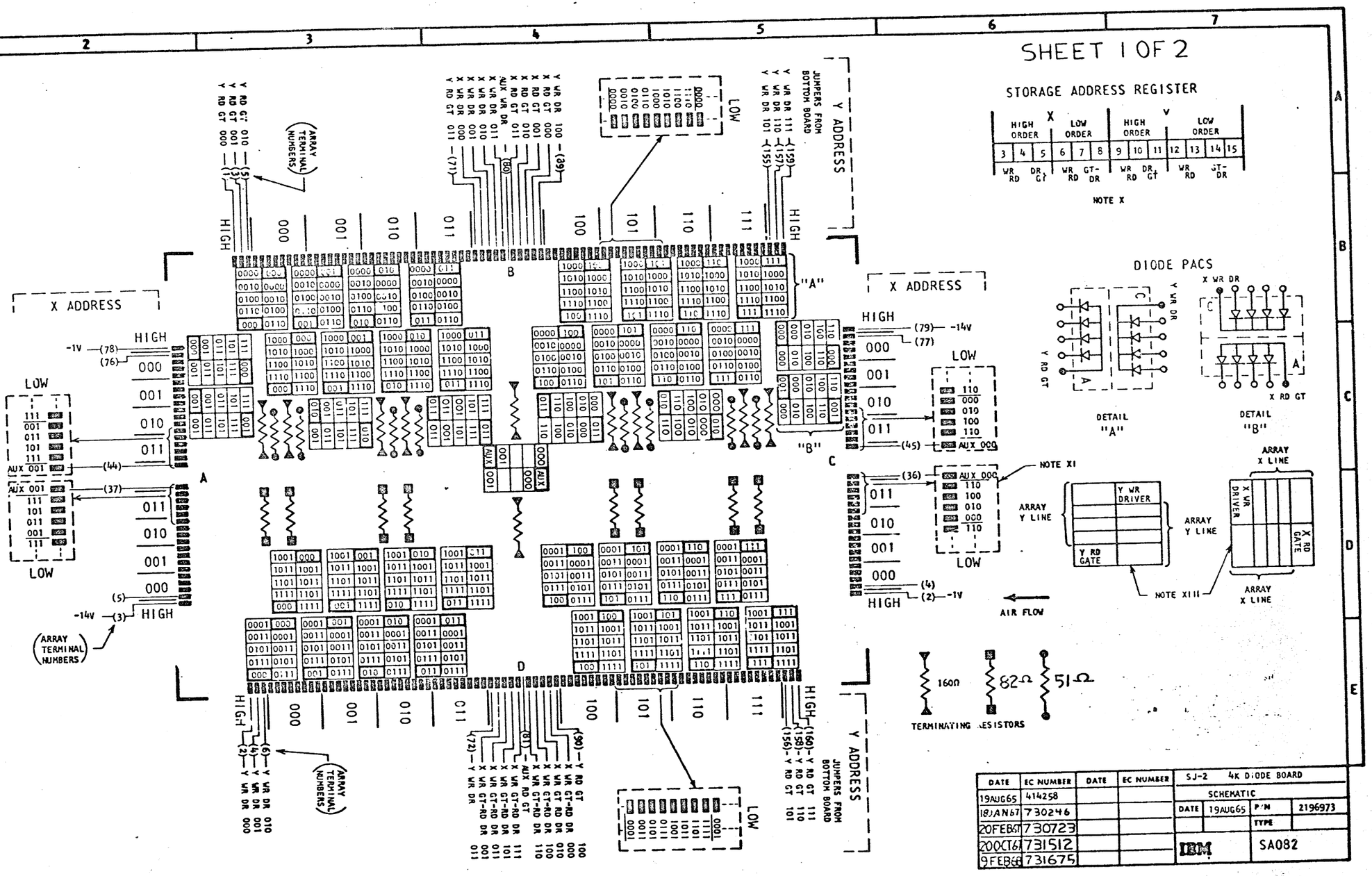
2196972

SHEET 1 OF 2

STORAGE ADDRESS REGISTER

| X | | | | | | Y | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HIGH ORDER | | | LOW ORDER | | | HIGH ORDER | | | LOW ORDER | | |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| WR RD | DR GT | | WR RD | GT-DR | | WR RD | DR GT | | WR RD | GT-DR | | |

NOTE X




| DATE | EC NUMBER | DATE | EC NUMBER |
|---|---|---|---|
| 19AUG65 | 414258 | | |
| 18JAN67 | 730246 | | |
| 20FEB67 | 730723 | | |
| 20OCT67 | 731512 | | |
| 9FEB68 | 731675 | | |

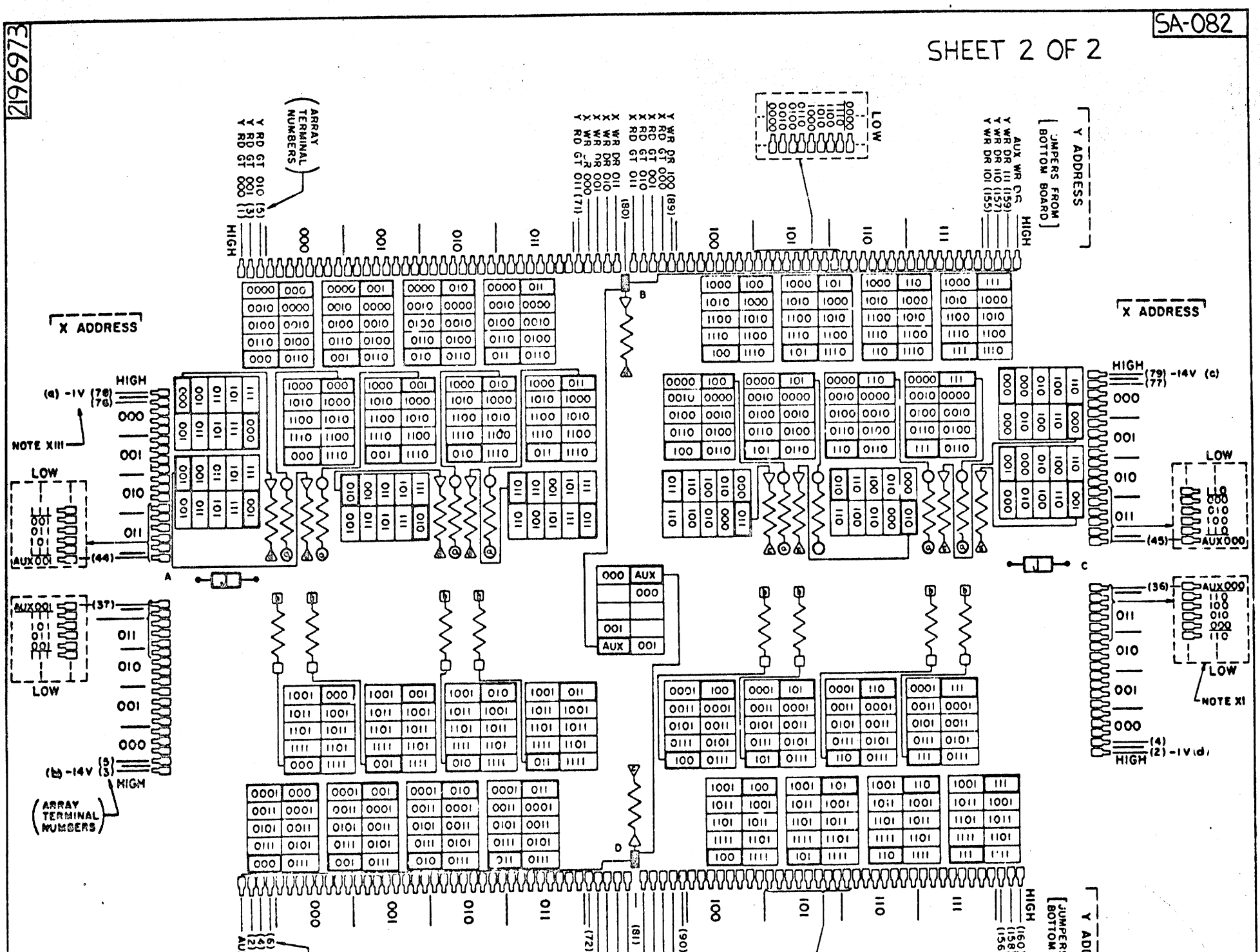
SJ-2 4K DIODE BOARD

SCHEMATIC

DATE 19AUG65 P/N 2196973

TYPE

IBM SA082

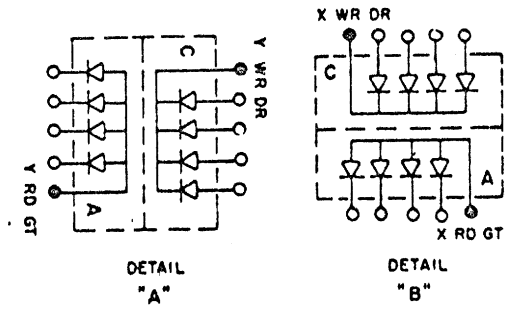



## STORAGE ADDRESS REGISTER

| X | | | | | | Y | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HIGH ORDER | | | LOW ORDER | | | HIGH ORDER | | | LOW ORDER | | |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| WR OR, RD GT | | | WR GT-RD DR | | | WR OR, RD GT | | | WR GT-RD DR | | | |

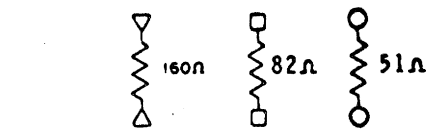
(NOTE X)

## DIODE PACS

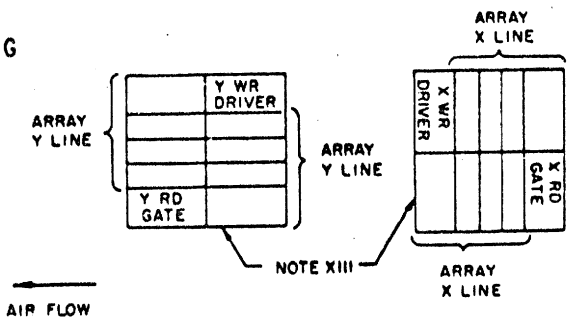


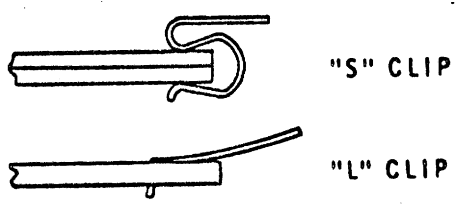

DETAIL "A"

DETAIL "B"




TERMINATING RESISTORS




BOARD TERMINAL PROFILES - REF

AIR FLOW

## NOTES

- XI TO LOCATE AN ARRAY LINE, USE THE HIGH AND LOW BINARY NOTATION OF THE STORAGE ADDRESS REGISTER AS SHOWN ON THIS PAGE
- XII THE X WR GT-RD DR (LOW ORDER X) COMMONING IS ON THE D HALF OF THE A AND C SIDES OF THE DIODE BOARD
- XIII LEAST SIGNIFICATN ADDRESS BIT IS ON RIGHT FOR Y AND BOTTOM FOR X
- XIV LOWER CASE LETTERS DENOTE CONTINUITY BETWEEN RESISTORS AND APPROPRIATE TERM.
- XV USE SHEET 1 OF 2 FOR DIODE BOARDS HAVING "S" TYPE TERMINALS
- XVI USE SHEET 2 OF 2 FOR DIODE BOARDS HAVING "L" TYPE TERMINALS

| INTERNATIONAL BUSINESS MACHINES CORP. | | | | | |
|---|---|---|---|---|---|
| NAME | SJ-2 4K DIODE BOARD SCHEMATIC | | | | |
| DESIGN | RG | | MODEL | | |
| DETAIL | | | | | |
| CHECK | | | DRAW | KE 28MAR67 | |
| APPRO | | | CHECK | | |

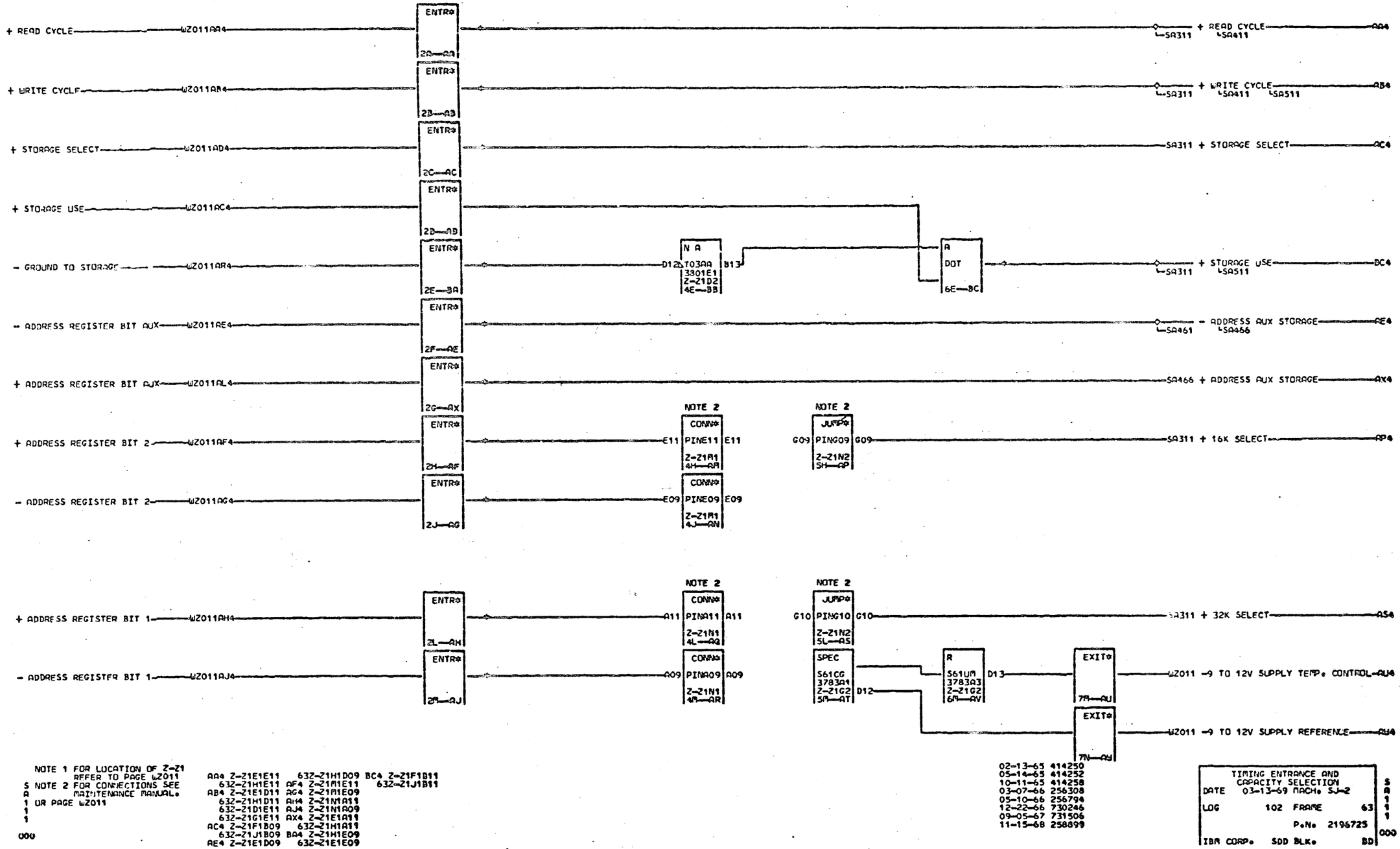
| DATE | CHANGE NO. | DATE | CHANGE NO. |
|---|---|---|---|
| 19AUG65 | 414258 | | |
| 18JAN67 | 730246 | | |
| 20FEB67 | 730723 | | |
| 19OCT67 | 731512 | | |
| 8FEB68 | 731675 | | |

NOTE: X PRINT TO ENG. SPEC. NO.

DEVELOPMENT NO.

SA-082

2196973



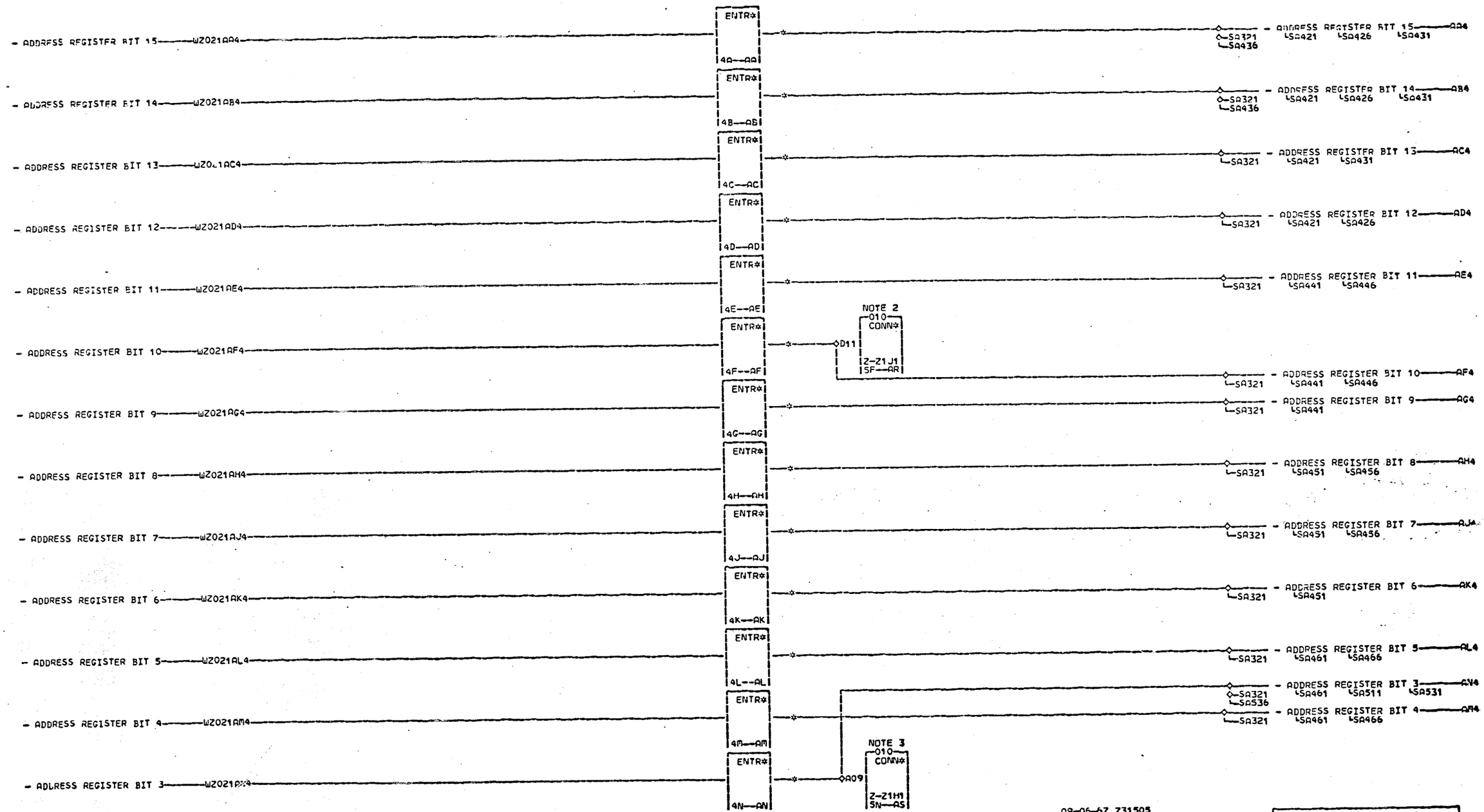

NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011
NOTE 2 FOR CONNECTIONS SEE MAINTENANCE MANUAL.
OR PAGE WZ011

AA4 Z-Z1E1E11 63Z-Z1H1D09 BC4 Z-Z1F1B11
63Z-Z1H1E11 AF4 Z-Z1M1E11 63Z-Z1J1B11
AB4 Z-Z1E1D11 AG4 Z-Z1M1E09
63Z-Z1H1D11 AH4 Z-Z1M1A11
63Z-Z1D1E11 AJ4 Z-Z1M1A09
63Z-Z1G1E11 AX4 Z-Z1E1A11
AC4 Z-Z1F1B09 63Z-Z1H1A11
63Z-Z1J1B09 BA4 Z-Z1H1E09
AE4 Z-Z1E1D09 63Z-Z1E1E09

02-13-65 414250
05-14-65 414252
10-11-65 414258
03-07-66 256308
05-10-66 256794
12-22-66 730246
09-05-67 731506
11-15-68 258899

TIMING ENTRANCE AND CAPACITY SELECTION
DATE 03-13-69 MACH. SJ-2
LOG 102 FRAME 63
P.N. 2196725
IBM CORP. SDD BLK. BD

SAA1 000




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011

NOTE 2 SYSTEM MAY REMOVE H3E07 TO J1D11 REFER TO WZ021

NOTE 3 SYSTEM MAY REMOVE K3E02 TO H1A09 REFER TO WZ021

| | | | | |
|---|---|---|---|---|
| AA4 Z-Z1G1A09 | 63Z-Z1J1D09 | AJ4 Z-Z1E1C09 | 63Z-Z1D1E09 | |
| AB4 Z-Z1G1A11 | 63Z-Z1K1A09 | AF4 Z-Z1F1D11 | 63Z-Z1M1C09 | 63Z-Z1G1E09 |
| AC4 Z-Z1F1E09 | 63Z-Z1K1A11 | 63Z-Z1J1A11 | 63Z-Z1M1C11 | 63Z-Z1H1A09 |
| AD4 Z-Z1F1E11 | 63Z-Z1J1E09 | AG4 Z-Z1F1C09 | 63Z-Z1M1B09 | |
| AE4 Z-Z1F1D09 | 63Z-Z1J1E11 | AH4 Z-Z1F1C11 | 63Z-Z1M1B11 | |
| | 63Z-Z1J1C09 | AM4 Z-Z1E1B11 | | |
| | 63Z-Z1J1C11 | AN4 Z-Z1E1A09 | | |

010
SIM TO PN 2196720 EC 731506

09-06-67 731505

ADDRESS REGISTER ENTRY

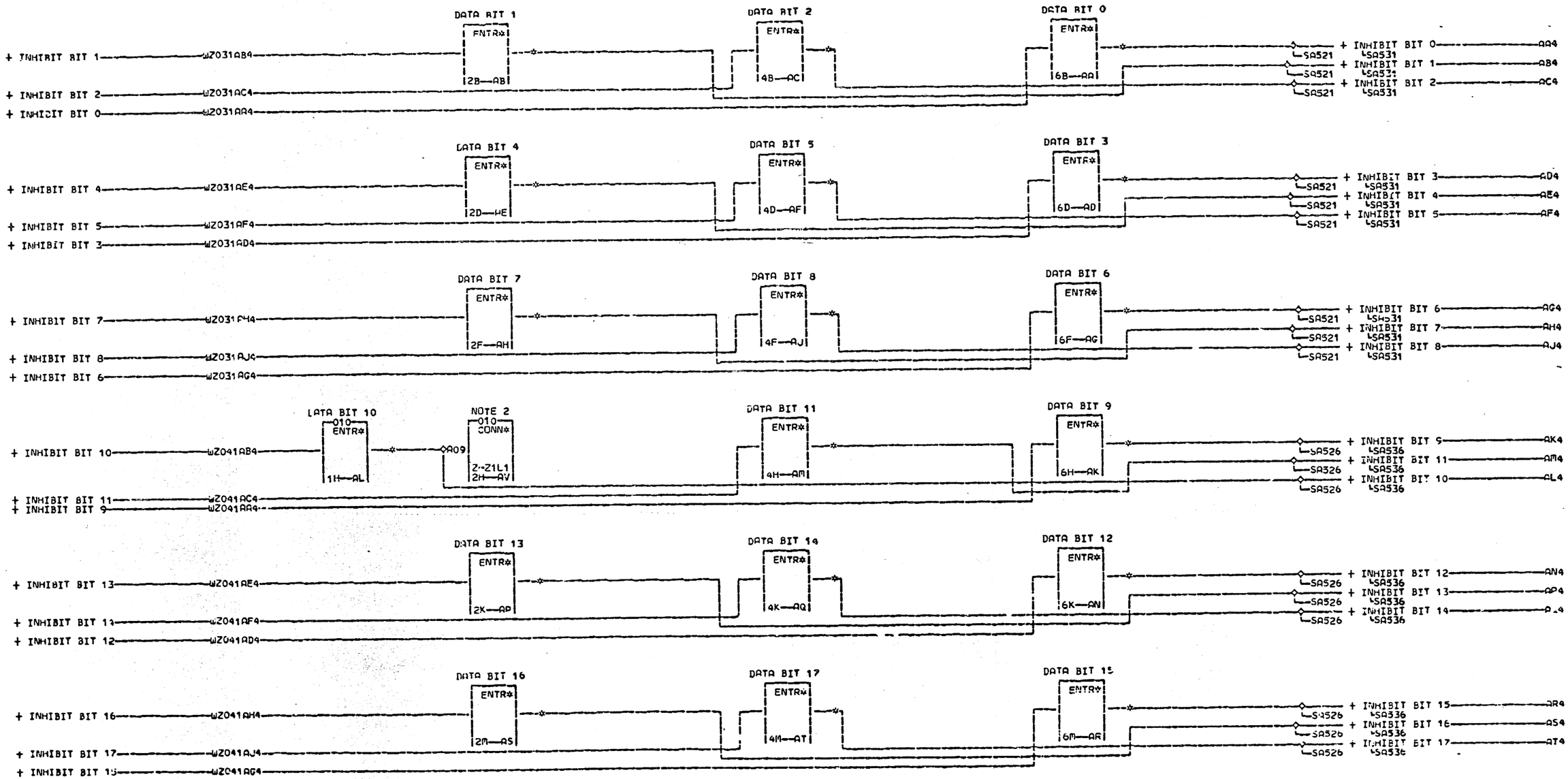
DATE 09-06-67 MACH. SJ-2

LOG 249R FPARE 63

P.No. 2510237

IBM CORP. SDD BLK. SA

SA121 010




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011

S NOTE 2 SYSTEM MAY REMOVE L*A09 TO M2D10 REFER TO WZ041

A 1 3 1

010

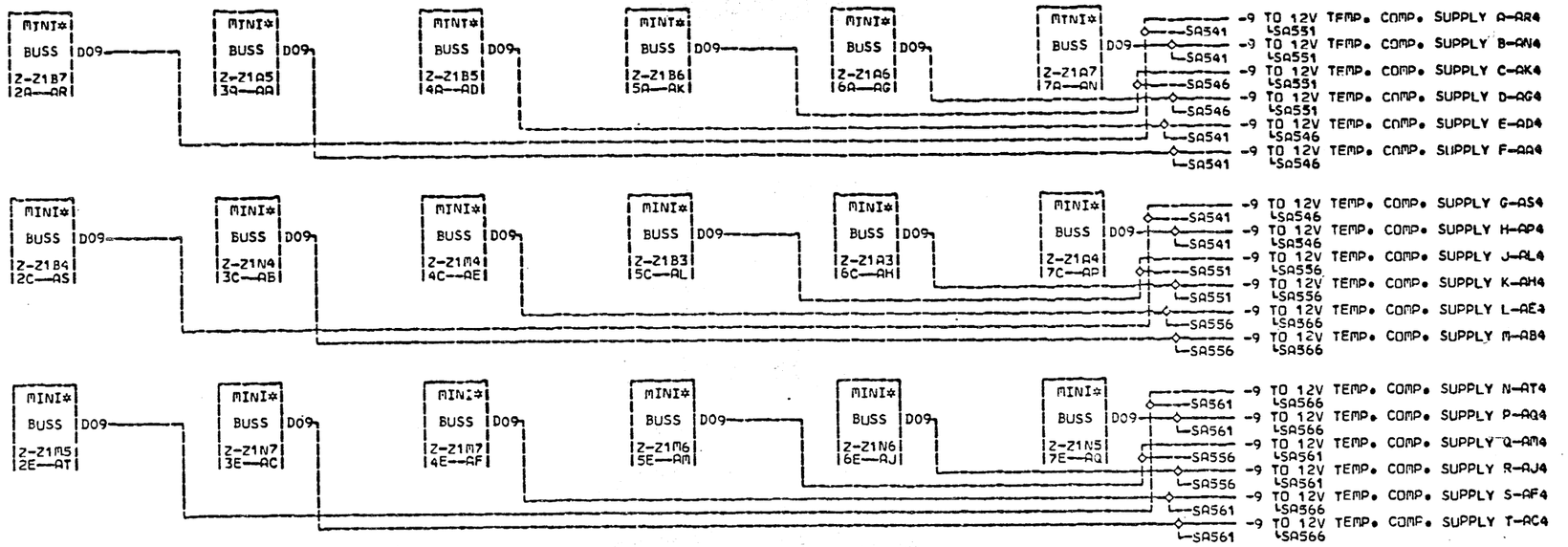
SIM TO FN 2196727 EC 73150c

| | | | | | |
|---|---|---|---|---|---|
| AA4 | Z-Z1B1A09 | AJ4 | Z-Z1C1E09 | AS4 | Z-Z1M1C09 |
| 63Z | Z-Z1A1E09 | AK4 | Z-Z1D1A09 | AT4 | Z-Z1M1D09 |
| AB4 | Z-Z1B1B09 | AL4 | Z-Z1K1E09 | | |
| AC4 | Z-Z1B1C09 | 63Z | Z-Z1L1A09 | | |
| AD4 | Z-Z1B1D09 | AM4 | Z-Z1L1B09 | | |
| AE4 | Z-Z1B1E09 | AN4 | Z-Z1L1C09 | | |
| AF4 | Z-Z1C1B09 | AP4 | Z-Z1L1D09 | | |
| AG4 | Z-Z1C1C09 | AQ4 | Z-Z1L1E09 | | |
| AH4 | Z-Z1C1D09 | AR4 | Z-Z1M1B09 | | |

09-06-67 731505

26

| DATA BIT ENTRY | | | |
|---|---|---|---|
| DATE 09-06-67 MACH. SJ-2 | | | S A 1 3 1 |
| LOG 2498 FRAME 53 | | | |
| P.N. 2510238 | | | |
| IBM CORP. SDD BLK. | | SA | 010 |

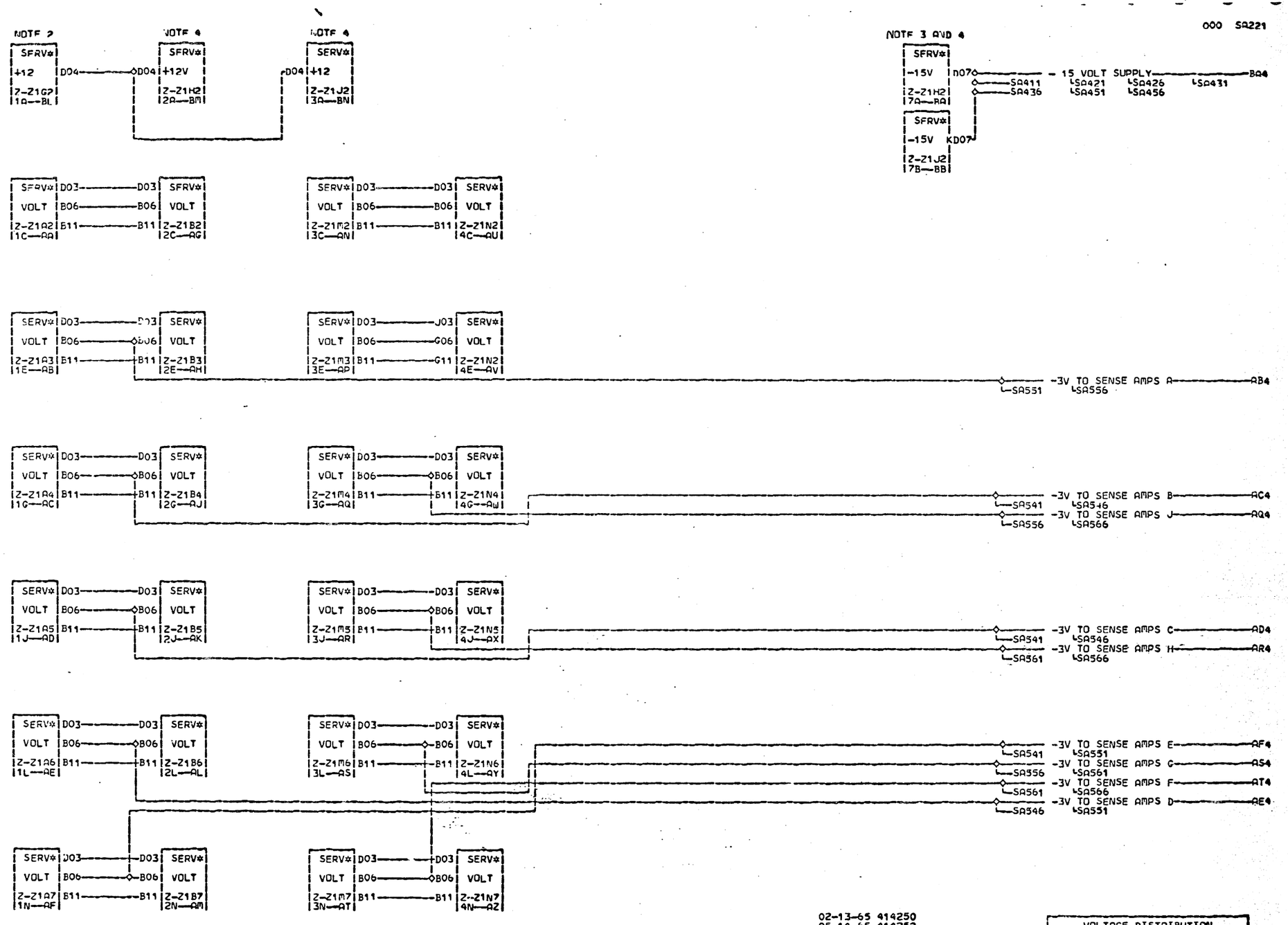



NOTE 1 FOR LOCATION OF Z-Z1
REFER TO PAGE WZ011

SA211T 000

02-13-65 414250
05-14-65 414252
09-05-67 731506

| INHIBIT VOLTAGE DISTRIBUTION | SA211 |
|---|---|
| DATE 09-12-67 MACH. SJ-2 | |
| LOG 248Q FRAME 63 | |
| P.N. 2196728 | 000 |
| IBM CORP. SDD BLK. CC | |




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ019

S NOTE 2 +12V ENTERS AT G2D04 OR J2D04

A

2 NOTE 3 -15V ENTERS AT C3B13 OR M3B13.

2

1 NOTE 4 EARLIER LEVELS MAY HAVE MINI-BUSSES INSTEAD OF WIRE.

000

02-13-65 414250
05-14-65 414252
12-22-66 730246
07-18-67 731506

VOLTAGE DISTRIBUTION

DATE 09-12-67 MACH. SJ-2

LOG 199F FRAME 63

P.N. 2196732

IBM CORP. SDD BLK. BP

S A 2 2 1 000

000 SA311

+ READ CYCLE — SA111AR4

+ 16K SELECT — SA111AP4

+ 32K SELECT — SA111AS4

+ WRITE CYCLE — SA111AB4

+ STORAGE SELECT — SA111AC4

+ STORAGE USE — SA111BC4

SA411 + LONG TIME — AE4

SA511 + INHIBIT LATCH — AX4

SA411 + SHORT TIME — AQ4

SA511 + STROBE POINT — AP4

SA511 - SENSE AMP GATE OFF — AF0

X WRITE GATE TIME — SA456 — AR2

X READ DRIVER TIME — SA456 — AR6

Y WRITE GATE TIME — SA426 SA431 SA436 — AT2

Y READ DRIVER TIME — SA426 SA431 SA436 — AT6

LONG TIME

LATCH

INHIBIT TIME

LATCH

SHORT TIME

LATCH

1 US

NOTE 2

NOTE 2

1000HM TERM

NOTE 3

NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011

NOTE 2 FOR STROBE ADJUSTMENT REFER TO SA022.

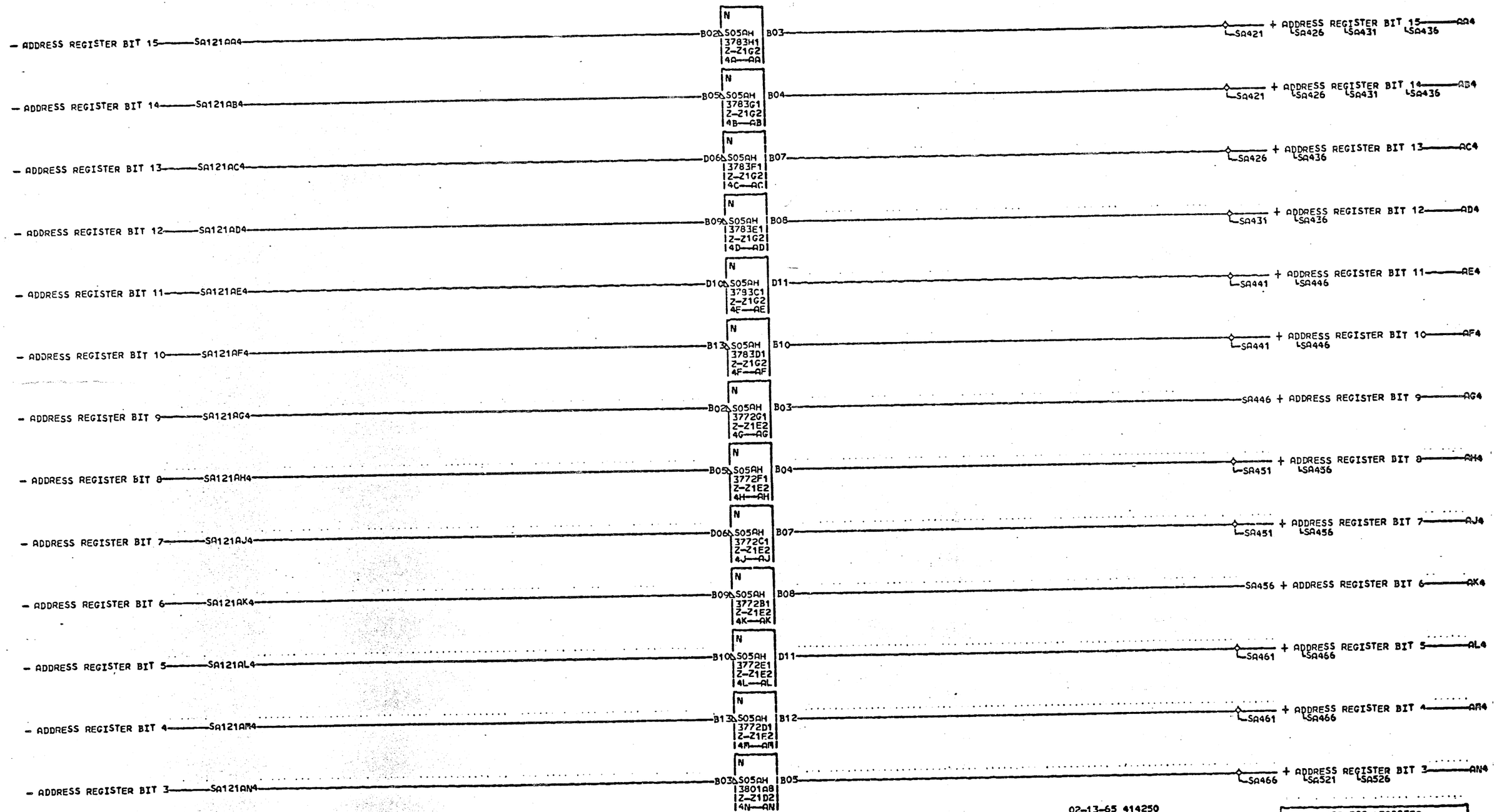
NOTE 3 SYSTEM MAY PROVIDE GROUND LEVEL TO INHIBIT STROBE REFER TO WZ011

000

02-13-65 414250
05-14-65 414252
10-11-65 414258
05-10-66 256794
12-22-66 730246
09-05-67 731506

29

| TIMING | | |
|---|---|---|
| DATE | 09-12-67 MACH. SJ-2 | SA311 |
| LOG | 2480 FRAME | +3 |
| | P.N. 2196729 | 000 |
| IBM CORP. | SDD BL. | BC |




NOTE. FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011

02-13-65 414250
05-14-65 414252
10-11-65 414258

ADDRESS REGISTER INVERSION
DATE 07-12-66 MACH. SJ-2
LOG 287K FRAME 63
P.N. 2196730
IBM CORP. SDD BLK. AP

SA321 000

SPEC
T25SD XD02 — +.8 DRIVER-GATE VOLTAGE — AA4
378331 — SA421 SA426 SA431 SA436
Z-Z1G2 — SA441 SA446 SA451 SA456
7A—AA — SA461 SA466

+ READ CYCLE — SA111AA4 — D04 — T03AF ΔB07 — 3768A3 Z-Z1K2 3C—AG — B03 *SPEC XB10 — SA461 — X READ GATE TIME — SA466 — AR2
S40UC XD09 — SA461 — X READ SOURCE — SA466 — AB4
B02X8196A1 Z-Z1J2 6C—AB

+ LONG TIME — SA311AE4 — B12 — T03AF ΔD13 — 3768A4 Z-Z1K2 3D—AH — D02 *SPEC XB12 — SA461 — X WRITE DRIVER TIME — SA466 — AC2
S40LL XD05 — SA461 — X WRITE SINK — SA466 — AC4
B02X8196A2 Z-Z1J2 6D—AC

+ WRITE CYCLE — SA111AE4 — B10

NOTE 2 V-REF
SPEC
D07XS40WE XB12
3763A2 Z-Z1G2 5E—AF

D04 — T03AF ΔD02 — 3768A1 Z-Z1K2 3F—AJ — B03 *SPEC XB10 — SA441 — Y READ GATE TIME — SA446 — AD2
S40UC XD09 — SA441 — Y READ SOURCE — SA446 — AD4
B02X8196A1 Z-Z1H2 6F—AD

+ SHORT TIME — SA311AQ4 — B04

E04 — T03AF ΔB02 — 3768A2 Z-Z1K2 3G—AK — D02 *SPEC XB12 — SA441 — Y WRITE DRIVER TIME — SA446 — AE2
S40LL XD06 — SA441 — Y WRITE SINK — SA446 — AE4
B10 B02X8196A2 Z-Z1H2 6G—AE

— 15 VOLT SUPPLY — SA221BA4

X TERM. -14V
*CONN
B04 — CORE Z-Z1F4 3J—AL — E10 *JUMP* BLOCK Z-Z1F4 5J—AR

X TERM. -1V
*CONN
B04 — CORE Z-Z1H4 4K—AM — B10 *JUMP* BLOCK Z-Z1H4 5K—AS

LIM XD06
D07XS25SN 3768B1 Z-Z1K2XE09 2L—AQ

Y TERM. -14V
*CONN
B04 — CORE Z-Z1H7 3M—AN — B10 *JUMP* BLOCK Z-Z1H7 5M—AT

Y TERM. -1V
*CONN
B04 — CORE Z-Z1F7 4N—AP — B10 *JUMP* BLOCK Z-Z1F7 5N—AU

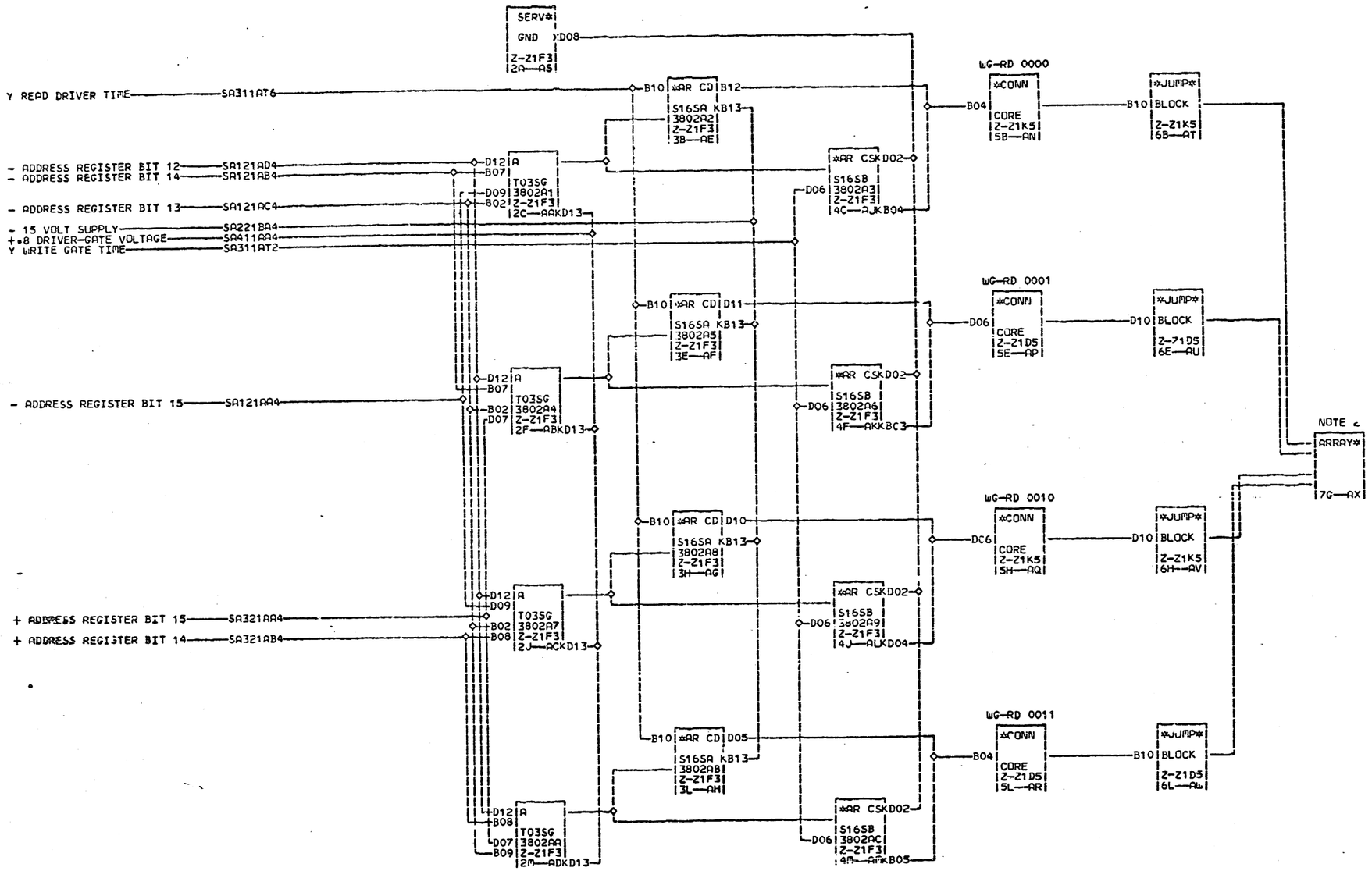
ARRAY*
6L—AV

NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011
NOTE 2 FOR V-REF ADJUSTMENT REFER TO SA022.

02-13-65 414250
05-14-65 414252
10-11-65 414258
12-22-66 730245
09-05-67 731506

CURRENT SOURCE AND SINK
DATE 09-12-67 MACH. SY-2
LOG 248W FRAME 63
P.N. 2196731
IBM CORP. SDD BLK. AW

S 0 4 1 1 000




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ01?
NOTE 2 REFER TO SA0710 SA0720 SA0810 AND SA092 FOR CONNECTIONS TO ARRAY BOTTOM AND DIODE BOARDS.

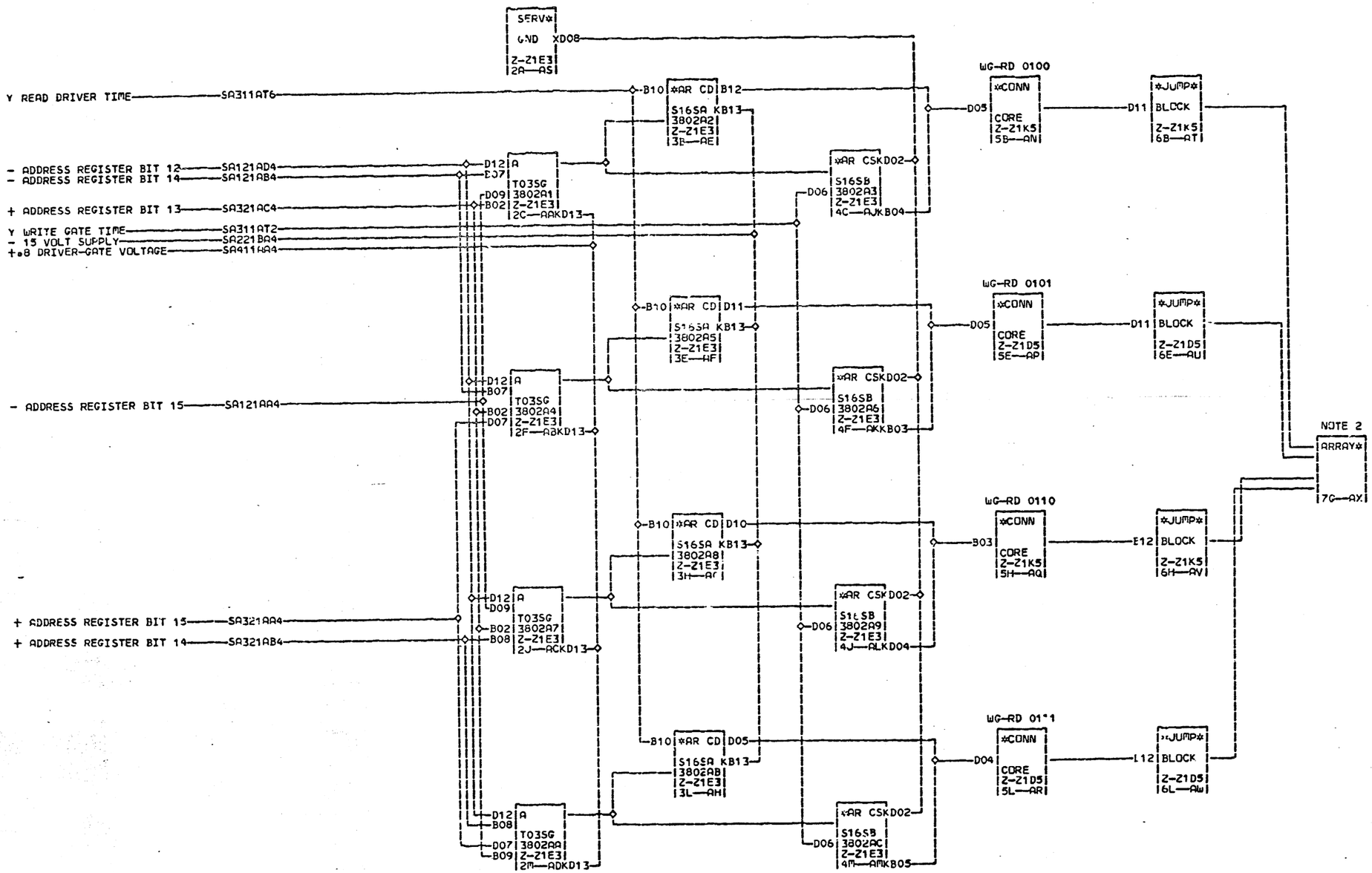
000

02-13-65 414250
05-14-65 414252
10-11-65 414238
12-22-66 730245

32

Y HALF SELECT DRIVE LOW ORDER WRITE GATE AND READ DRIVER
DATE 01-20-67 MACH. SJ-2
LOG 002 FRAME 63
P.N. 2196733
IBM CORP. SDD BLK. AV

SA421 000



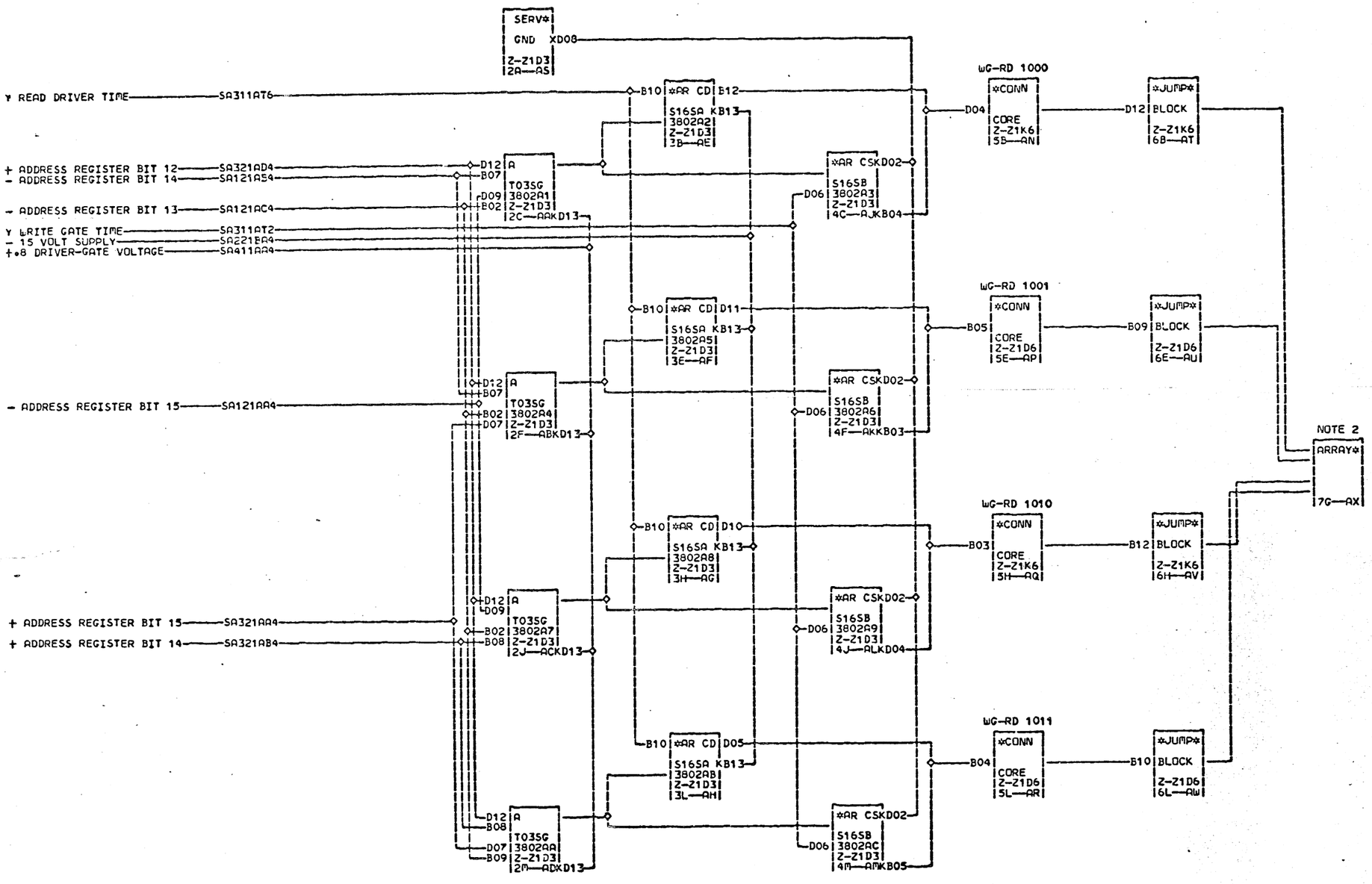

NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE ZZ011

SNOTE 2 REFER TO SA071◊ SA072◊ SA081◊ AND SA082 FOR CONNECTIONS TO ARRAY BOTTOM AND DIODE BOARDS.

000

02-13-65 414250
05-14-65 414252
10-11-65 414258
12-22-66 730246

| | |
|---|---|
| Y HALF SELECT DRIVE LOW ORDER WRITE GATE AND READ DRIVER | S A 4 2 6 |
| DATE 01-20-67 MACH. SD-2 | |
| LOG 002 FRAME 63 | |
| P.N. 2196734 | 000 |
| IBM CORP. SDD BLK. AY | |




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011

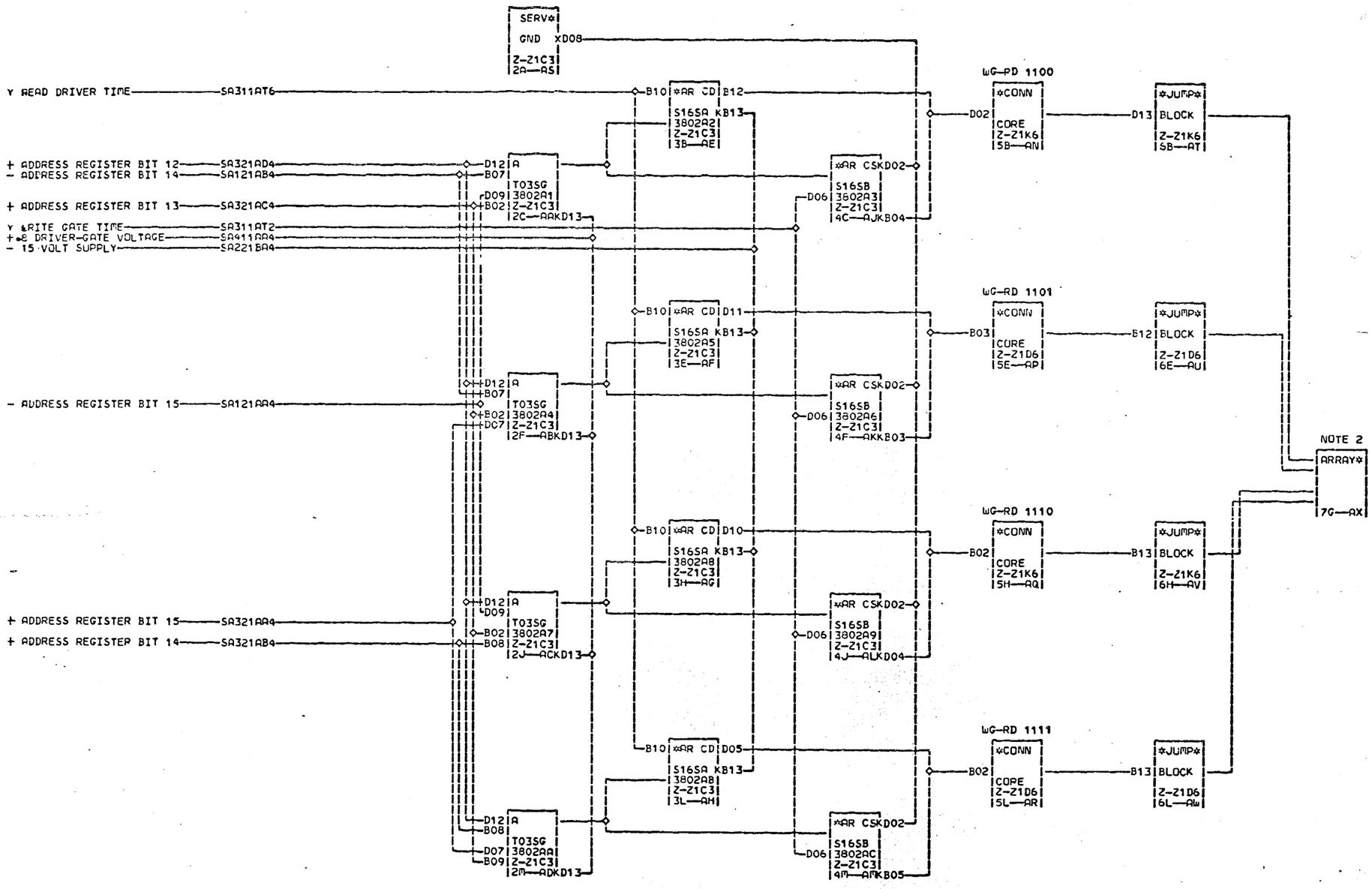
NOTE 2 REFER TO SA0710 SA0720 SA0810 AND SA082 FOR CONNECTIONS TO ARRAY BOTTOM AND DIODE BOARDS.

02-13-65 414250
05-14-65 414252
10-11-65 414258
12-22-66 730246

Y HALF SELECT DRIVE LOW ORDER
WRITE GATE READ DRIVER
DATE 01-20-67 MACH. SJ-2
LOG 002 FRAME 63
P.N. 2196735
IBM CORP. SDD BLK. AY

SA431 000

600

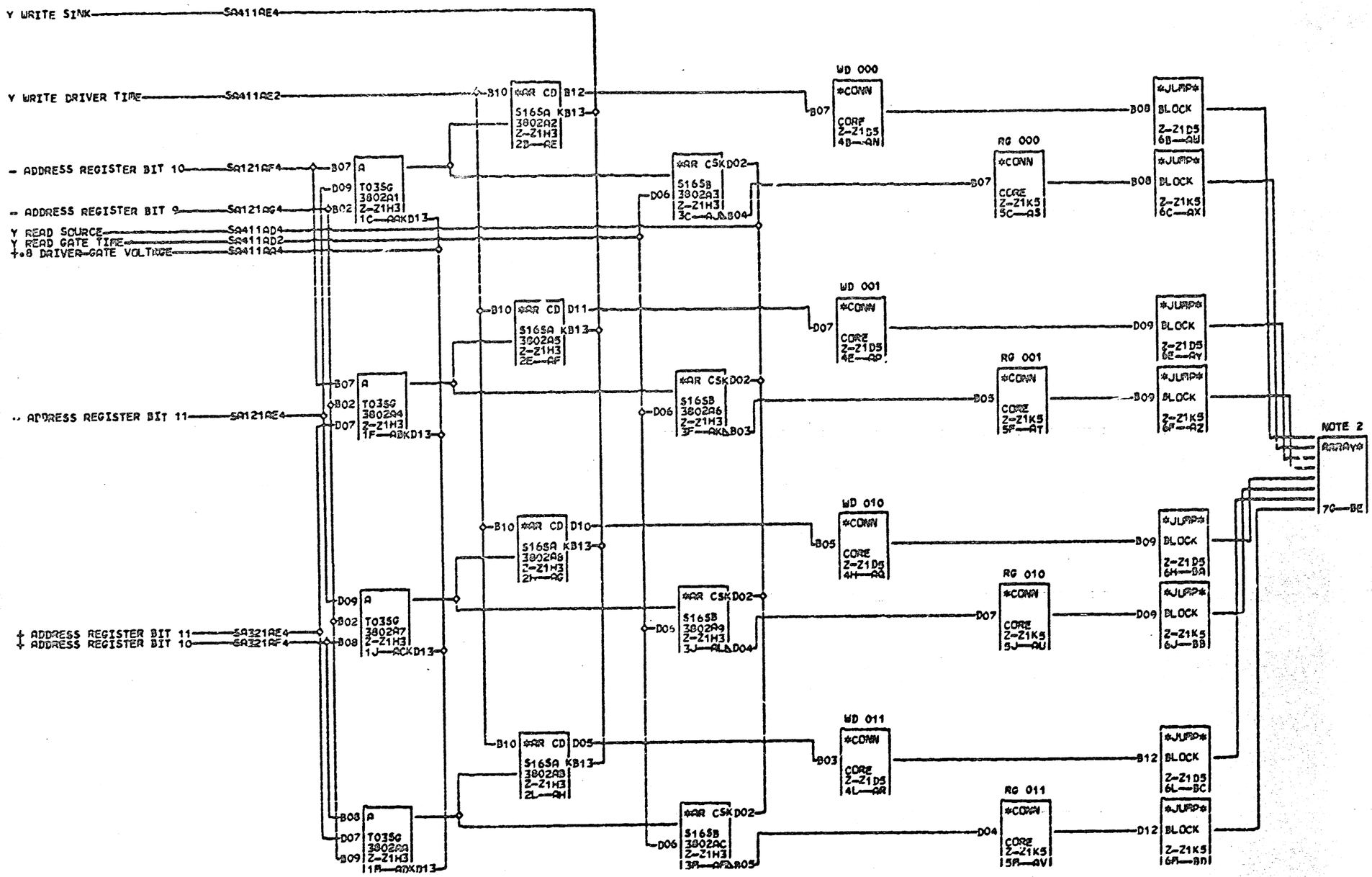



NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE W2011

NOTE 2 REFER TO SA0710 SA0720 SA0810 AND SA082 FOR CONNECTIONS TO ARRAY BOTTOM AND DIODE BOARDS.

02-13-65 414250
05-14-65 414252
10-11-65 414258
12-22-66 730246

| | |
|---|---|
| Y HALF SELECT DRIVE LOW ORDER WRITE GATE READ DRIVER | SA436 |
| DATE 01-20-67 MACH. SJ-2 | |
| LOG 002 FRAME 63 | |
| P.N. 2196736 | 000 |
| IBM CORP. SDD BLK. AY | |




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE 42011

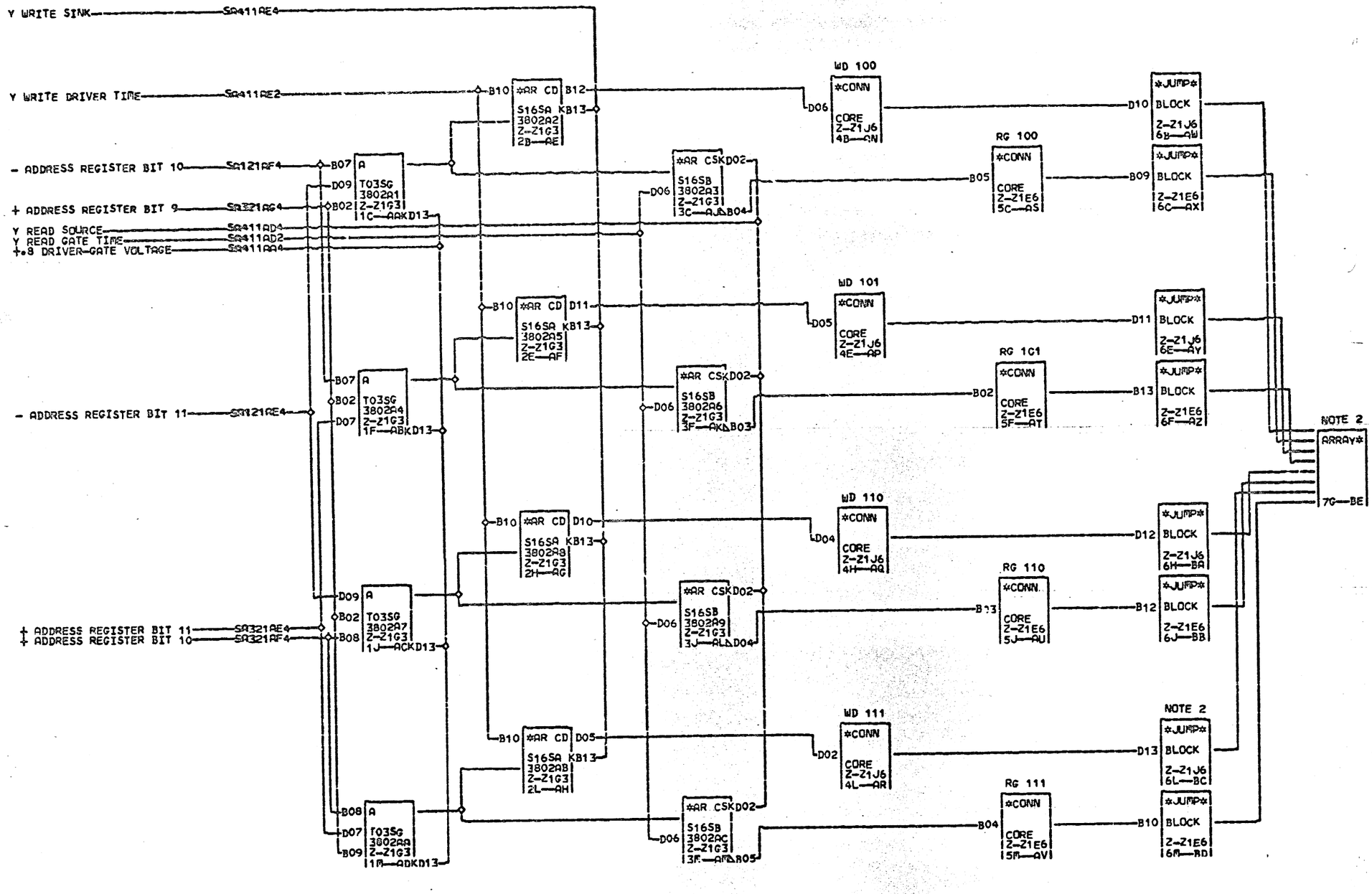
S NOTE 2 REFER TO SA0710 SA0720 A SA0810 AND SA0820 FOR 4 CONNECTIONS TO ARRAY 4 BOTTOM AND DIODE 1 BOARDS.

009

02-13-65 414250
05-14-65 414252
10-11-65 414258

36

| | | |
|---|---|---|
| Y HALF SELECT DRIVE HIGH ORDER READ GATE WRITE DRIVER | | S A 4 4 1 |
| DATE 07-12-66 MACH. SJ-2 | | |
| LOG 2948 FRAME | 63 | |
| P.N. 2196737 | | 000 |
| IBM CORP. SDD BLK. | BF | |




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011

S NOTE 2 REFER TO SA071◇ SA072◇
A SA081◇ AND SA082 FOR
4 CONNECTIONS TO ARRAY
4 BOTTOM AND DIODE
6 BOARDS.

000

02-13-65 414250
05-14-65 414252
10-11-65 414258

37

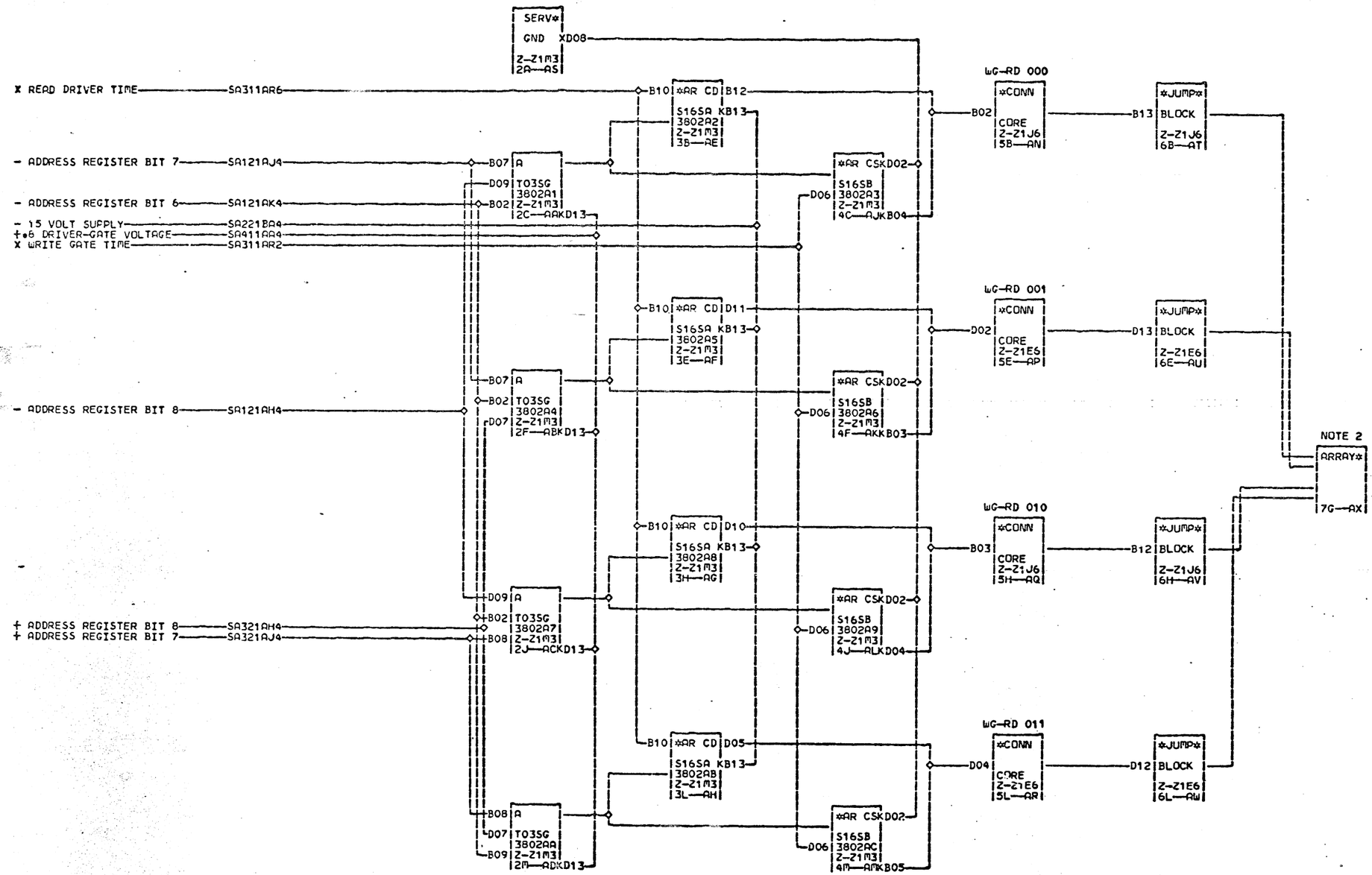
Y HALF SELECT DRIVE HIGH ORDER
READ GATE WRITE DRIVER
DATE 07-12-66 MACH. SJ-2

LOG 2948 FRAME 63

P.N. 2196738

IBM CORP. SDD BLK. 3F

S A 4 4 6 000




NOTE 1 FOR LOCATION OF Z-Z1
REFER TO PAGE WZ011

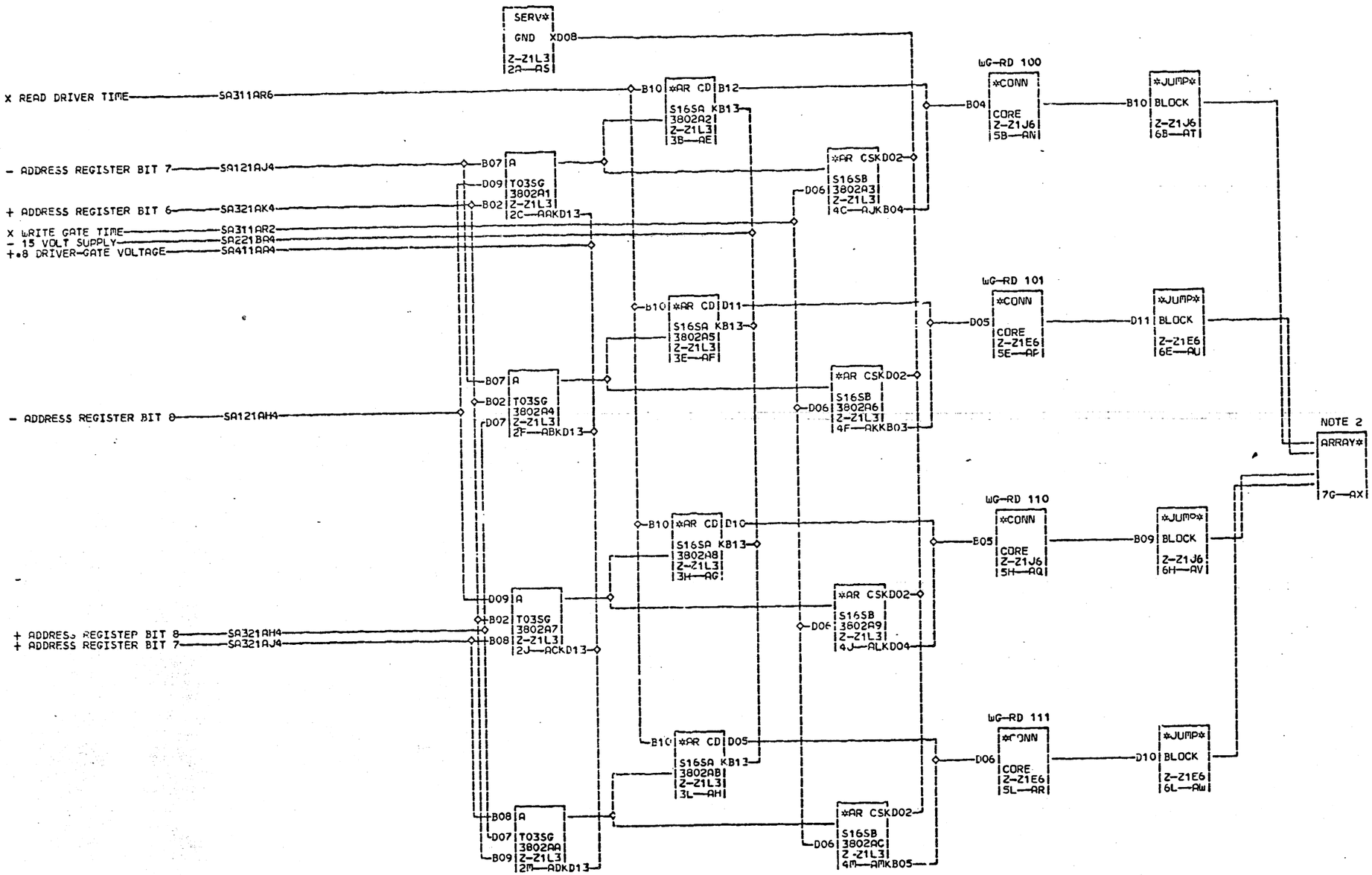
S NOTE 2 REFER TO SA071◊ SA072◊
A SA081◊ AND SA082 FOR
4 CONNECTIONS TO ARRAY
5 BOTTOM AND DIODE
1 BOARDS.

000

02-13-65 414250
05-14-65 414252
10-11-65 414258
12-22-66 730246

X HALF SELECT DRIVE LOW ORDER WRITE GATE AND READ DRIVER
DATE 01-20-67 MACH. SJ-2
LOG 002 FRAME 63
P.N. 2196739
IBM CORP. SDD BLK. AY

S A 4 5 1 000




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ01!

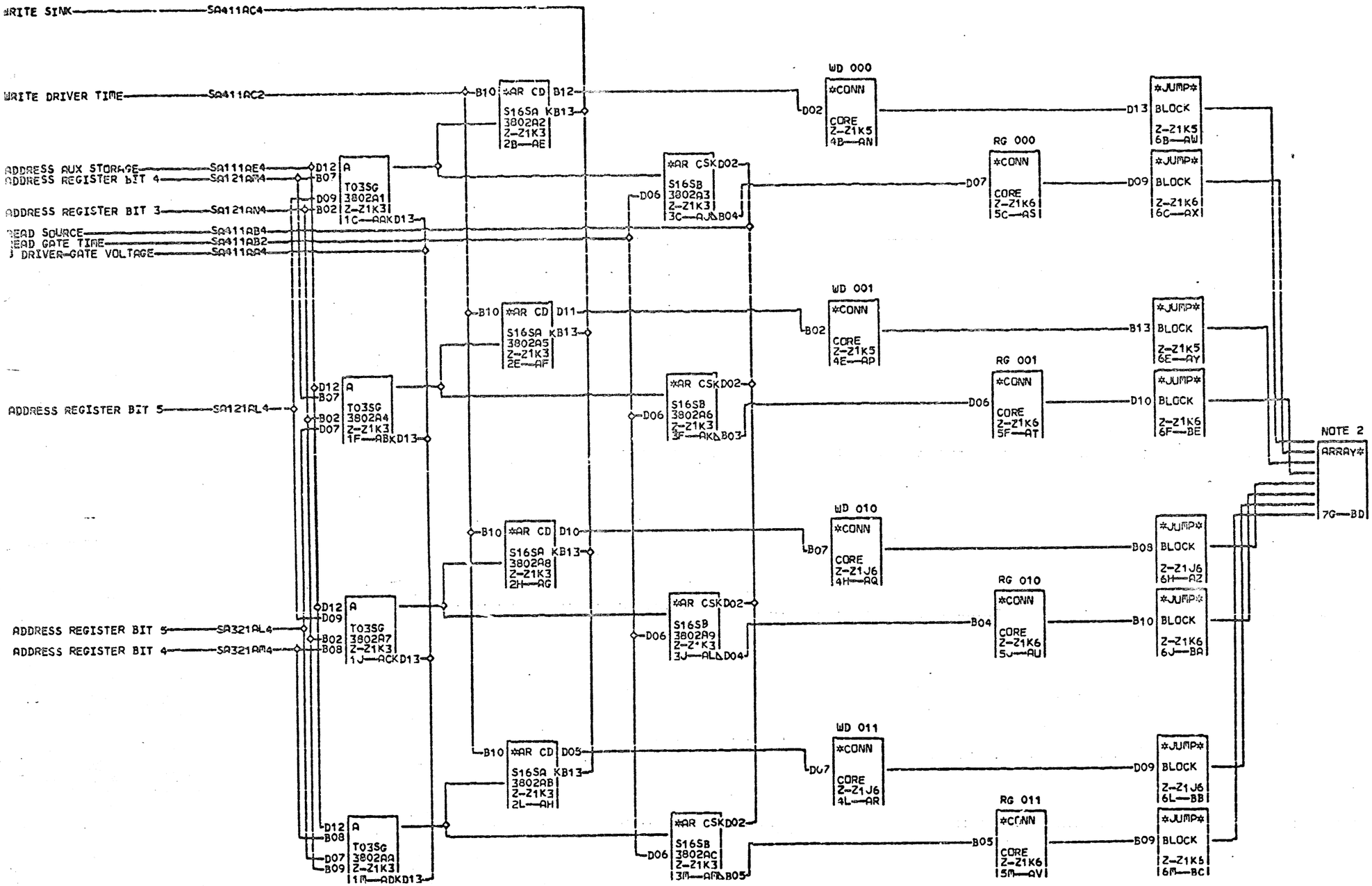
NOTE 2 REFER TO SA0710 SA0720 SA0810 AND SA082 FOR CONNECTIONS TO ARRAY BOTTOM AND DIODE BOARDS.

000

02-13-65 414250
05-14-65 414252
10-11-65 414258
12-22-66 730246

39

| | | | |
|---|---|---|---|
| X HALF SELECT DRIVE LOW DRVER WRITE GATE AND READ DRIVER | | | 5 A 4 5 6 GGO |
| DATE 01-20-67 MACH. SJ-2 | | | |
| LOG | 002 | FRAME 63 | |
| | | P.N. 2196740 | |
| IBM CORP. | SWD BLK. | | AV |




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011

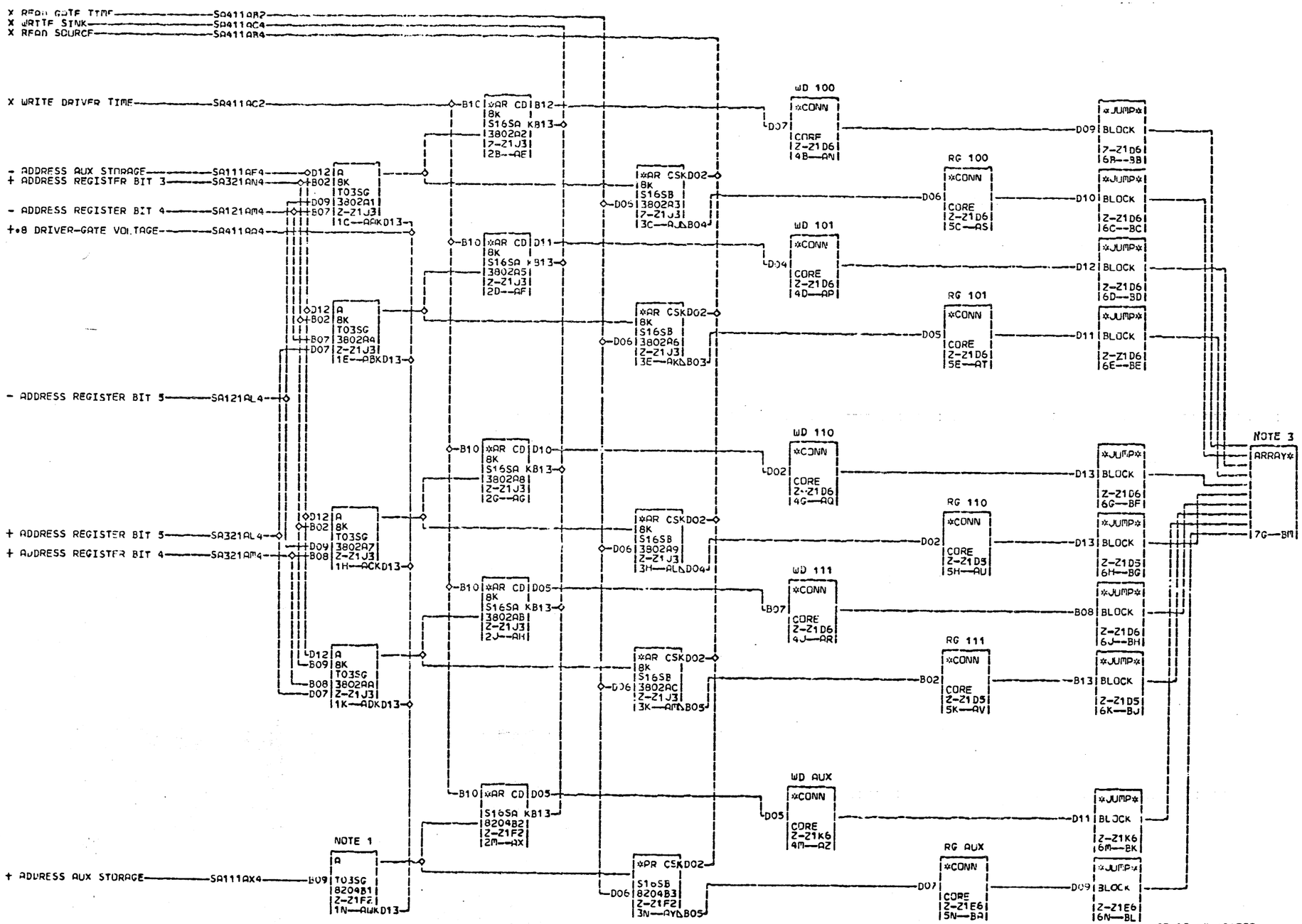
NOTE 2 REFER TO SA071◊ SA072◊ SA081◊ AND SA082 FOR CONNECTIONS TO ARRAY BOTTOM AND DIODE BOARDS.

02-13-65 414250
05-14-65 414252
10-11-65 414258

40

| | | | |
|---|---|---|---|
| X HALF SELECT DRIVE HIGH ORDER READ GATE AND WRITE DRIVER | | | 5 A 4 6 1 000 |
| DATE 07-12-66 MACH. SJ-2 | | | |
| LOG | 295D FRAME | 63 | |
| | P.N. 2196741 | | |
| IBM CORP. | SDD BLK. | BF | |

11

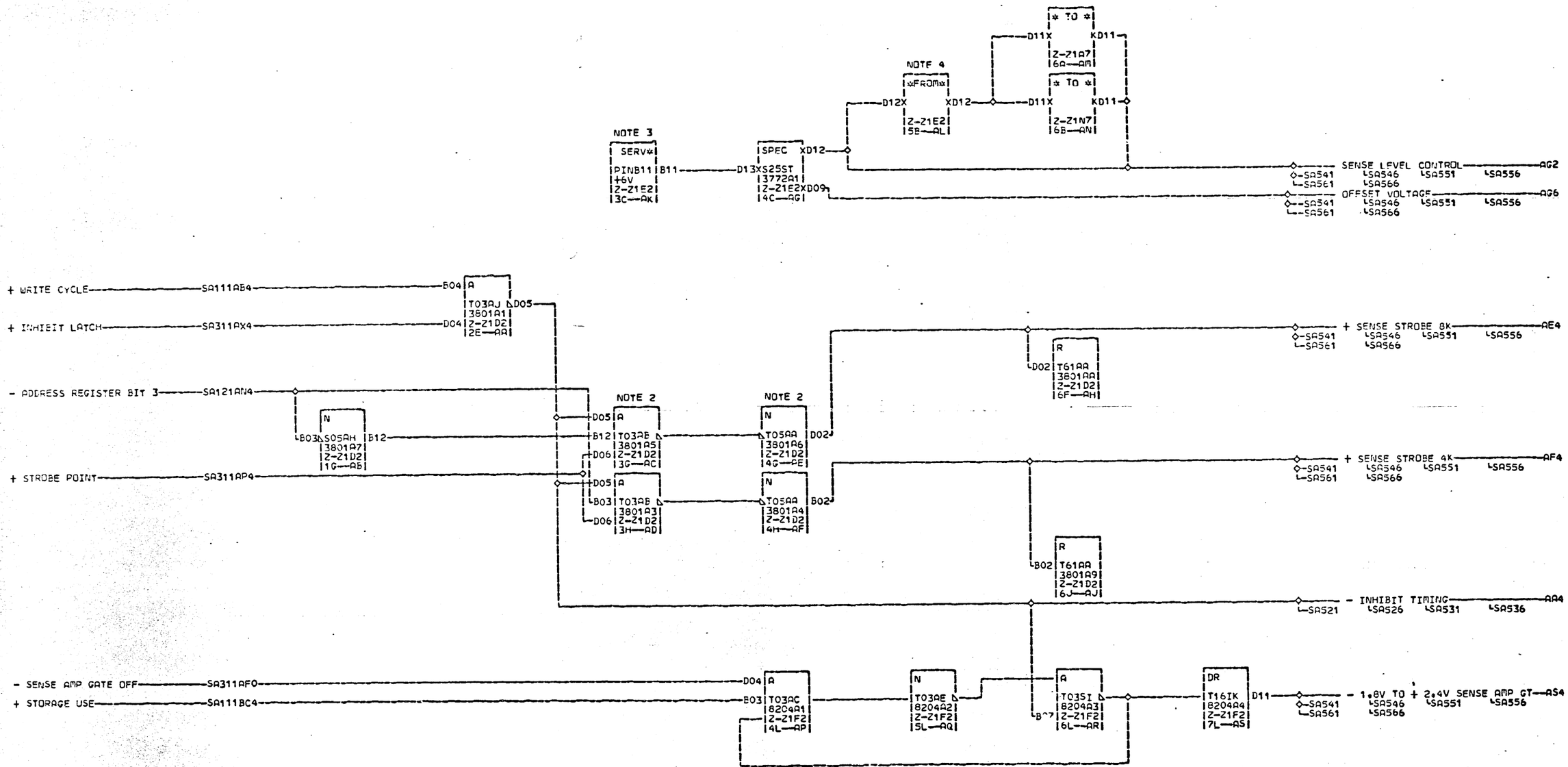



S NOTE 1 FOR LOCATION OF Z-Z1
A REFER TO PAGE W2011
4 NOTE 2 REFER TO SA0710 SA0720
6 SA0810 AND SA0820 FOR
F CONNECTIONS TO ARRAY
BOTTOM AND DIODE
000 BOARDS.

02-13-65 414250
05-14-65 414252
10-11-65 414258
09-05-67 731506

41

| | | |
|---|---|---|
| X HALF SELECT DRIVE HIGH ORDER READ GATE AND WRITE DRIVER | | S A 4 6 6 |
| DATE 09-12-67 MACH. SJ-2 | | |
| LOG 2480 FRAME | 63 | |
| P.N. 2196742 | | 000 |
| IBM CORP. SDD BLK. | BN | |



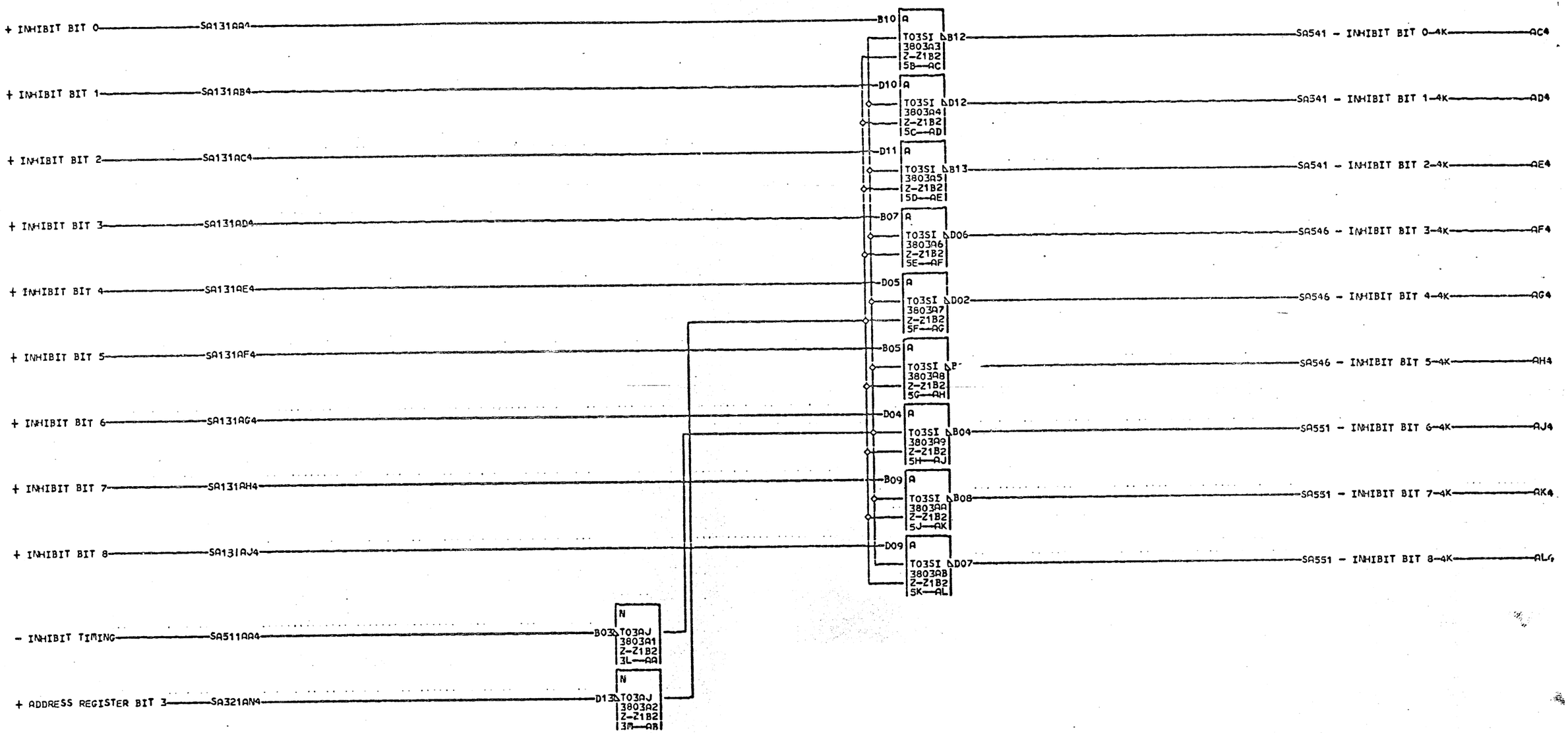

NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE W2011

S NOTE 2 FOR STROBE ADJUSTMENT
A REFER TO SA022.
S
1 NOTE 3 REMOVE E2D13 TO E2B11
1 FOR 4K OPERATION.
NOTE 4 THESE JUMPERS ARE
J00 ADDED TO REDUCE VOLTAGE DROP.

02-13-65 414250
05-14-65 414252
10-11-65 414258
12-22-66 730246
09-05-67 731506

SENSE CONTROLS AND INHIBIT TIMING
DATE 09-12-67 MACH. SJ-2
LOG 256E FRAME 63
P.N. 2196743
IBM CORP. SDD BLK. AT

S A S 1 1 000



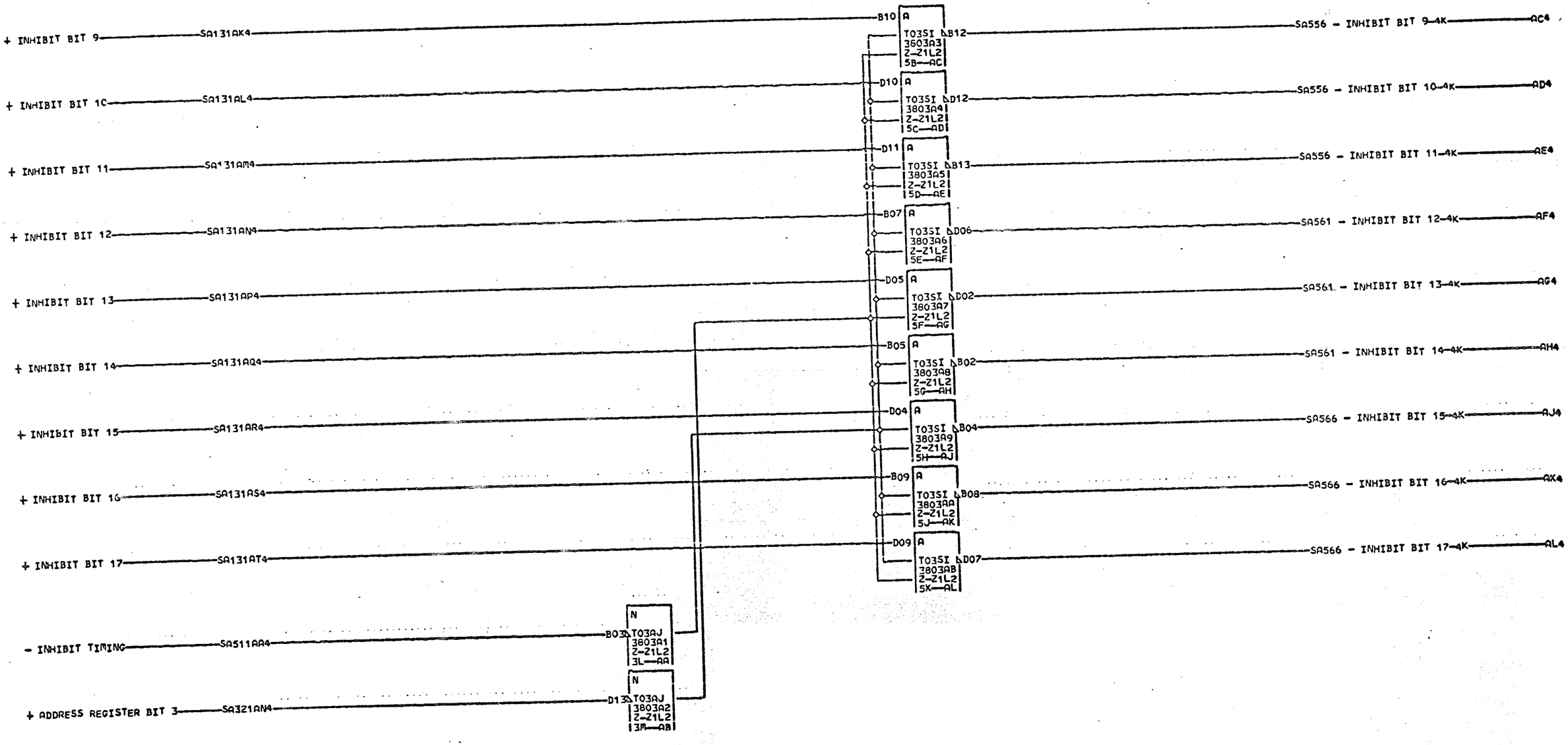

NOTE. FOR LOCATION OF Z-Z1
REFER TO PAGE 82011

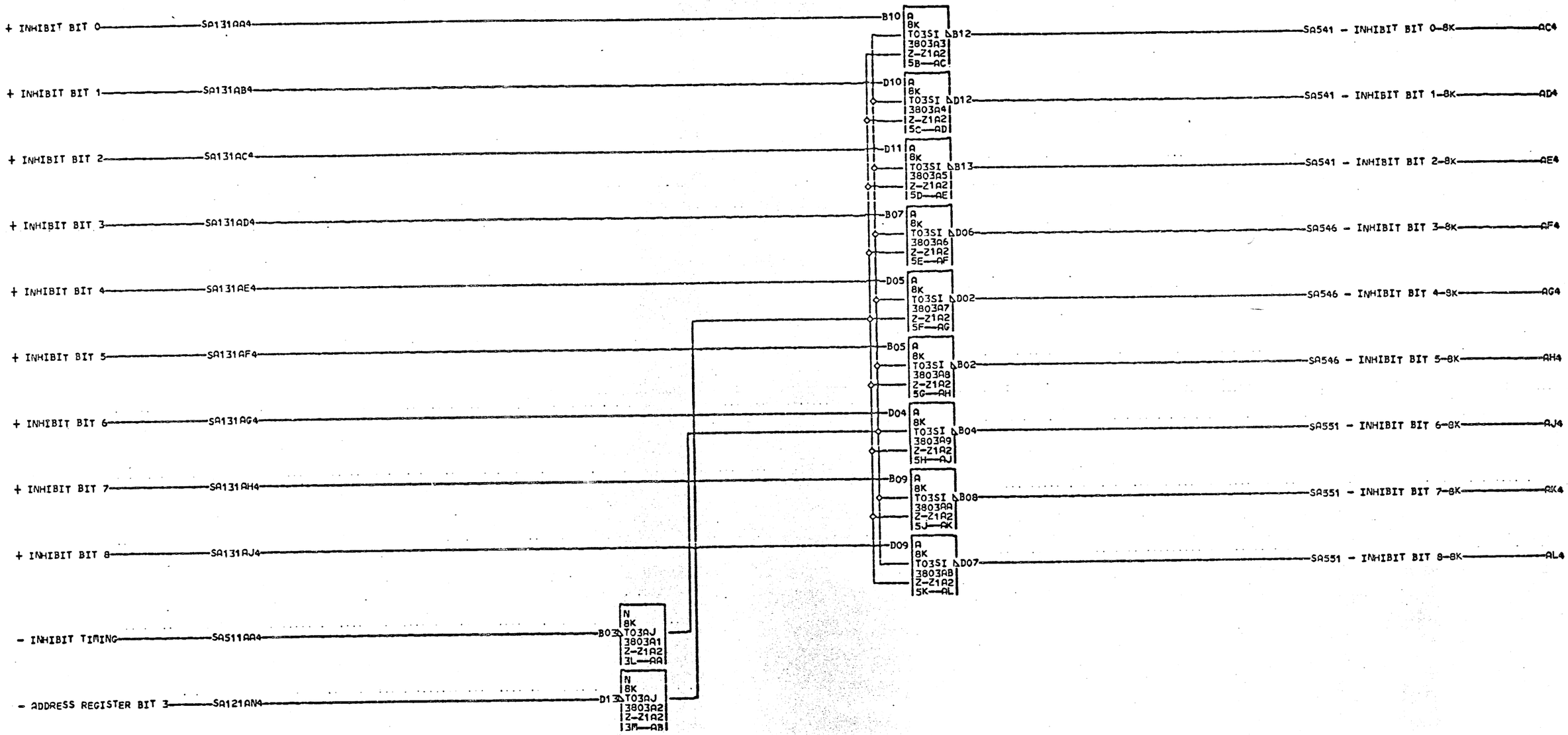
SA521
000

02-13-65 414250
05-14-65 414252
10-11-65 414258
03-07-66 256308

INHIBIT INVERTERS
BITS 0 TO 8 4K
DATE 07-12-66 FACH. SJ-2
LOG 102 FRAME 63
P.N. 2196744
IBM CORP. SDD BLK. AR

SA521
000


+ INHIBIT BIT 9
SA131AK4
B10
A
T03SI
3603A3
Z-Z1L2
5B—AC
SA556 - INHIBIT BIT 9-4K
AC4
+ INHIBIT BIT 10
SA131AL4
D10
A
T03SI
3803A4
Z-Z1L2
5C—AD
SA556 - INHIBIT BIT 10-4K
AD4
+ INHIBIT BIT 11
SA131AM4
D11
A
T03SI
3803A5
Z-Z1L2
5D—AE
SA556 - INHIBIT BIT 11-4K
AE4
+ INHIBIT BIT 12
SA131AN4
B07
A
T03SI
3803A6
Z-Z1L2
5E—AF
SA561 - INHIBIT BIT 12-4K
AF4
+ INHIBIT BIT 13
SA131AP4
D05
A
T03SI
3803A7
Z-Z1L2
5F—AG
SA561 - INHIBIT BIT 13-4K
AG4
+ INHIBIT BIT 14
SA131AQ4
B05
A
T03SI
3803A8
Z-Z1L2
5G—AH
SA561 - INHIBIT BIT 14-4K
AH4
+ INHIBIT BIT 15
SA131AR4
D04
A
T03SI
3803A9
Z-Z1L2
5H—AJ
SA566 - INHIBIT BIT 15-4K
AJ4
+ INHIBIT BIT 16
SA131AS4
B09
A
T03SI
3803AA
Z-Z1L2
5J—AK
SA566 - INHIBIT BIT 16-4K
AK4
+ INHIBIT BIT 17
SA131AT4
D09
A
T03SI
3803AB
Z-Z1L2
5K—AL
SA566 - INHIBIT BIT 17-4K
AL4
- INHIBIT TIMING
SA511AA4
B03
N
T03AJ
3803A1
Z-Z1L2
3L—AA
+ ADDRESS REGISTER BIT 3
SA321AN4
D13
N
T03AJ
3803A2
Z-Z1L2
3M—AB
NOTE. FOR LOCATION OF Z-Z1
REFER TO PAGE WZ011
02-13-65 414250
05-14-65 414252
10-11-65 256308
INHIBIT INVERTERS
BITS 9 TO 17 4K
DATE 07-12-66 MACH. SJ-2
LOG 102 FRAME 53
P.N. 2196745
IBM CORP. SDD BLK. A3
SA5269
000



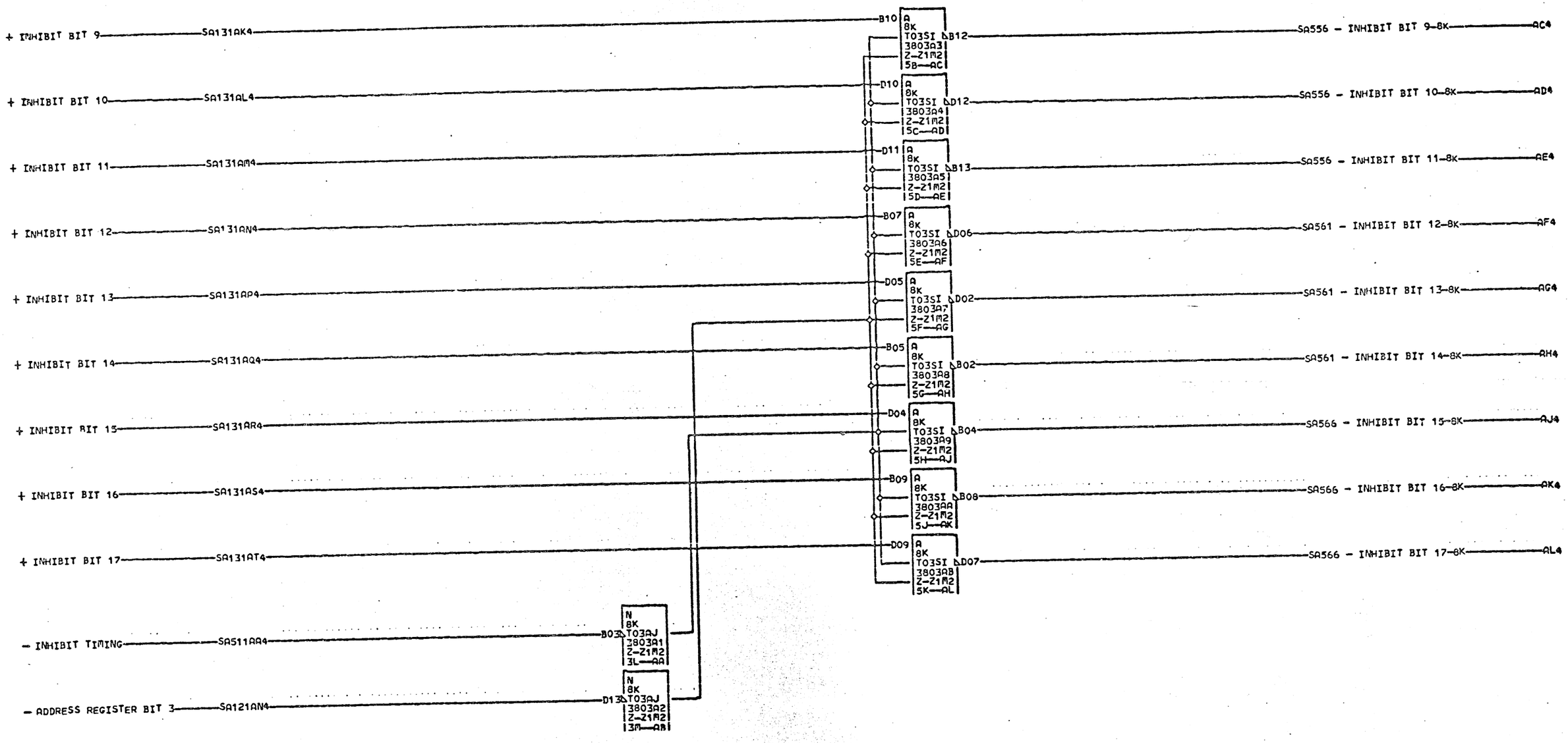

NOTE. FOR LOCATION OF Z-Z1
REFER TO PAGE WZ011

SA5511 000

02-13-65 414250
05-14-65 414252
10-11-65 414258
03-07-66 256308

INHIBIT INVERTERS
BITS 0 TO 8 8K
DATE 07-12-66 MACH. SJ-2
LOG 102 FRAME 63
P.N. 2196746
IBM CORP. SDD BLK. AA

SA5511 000

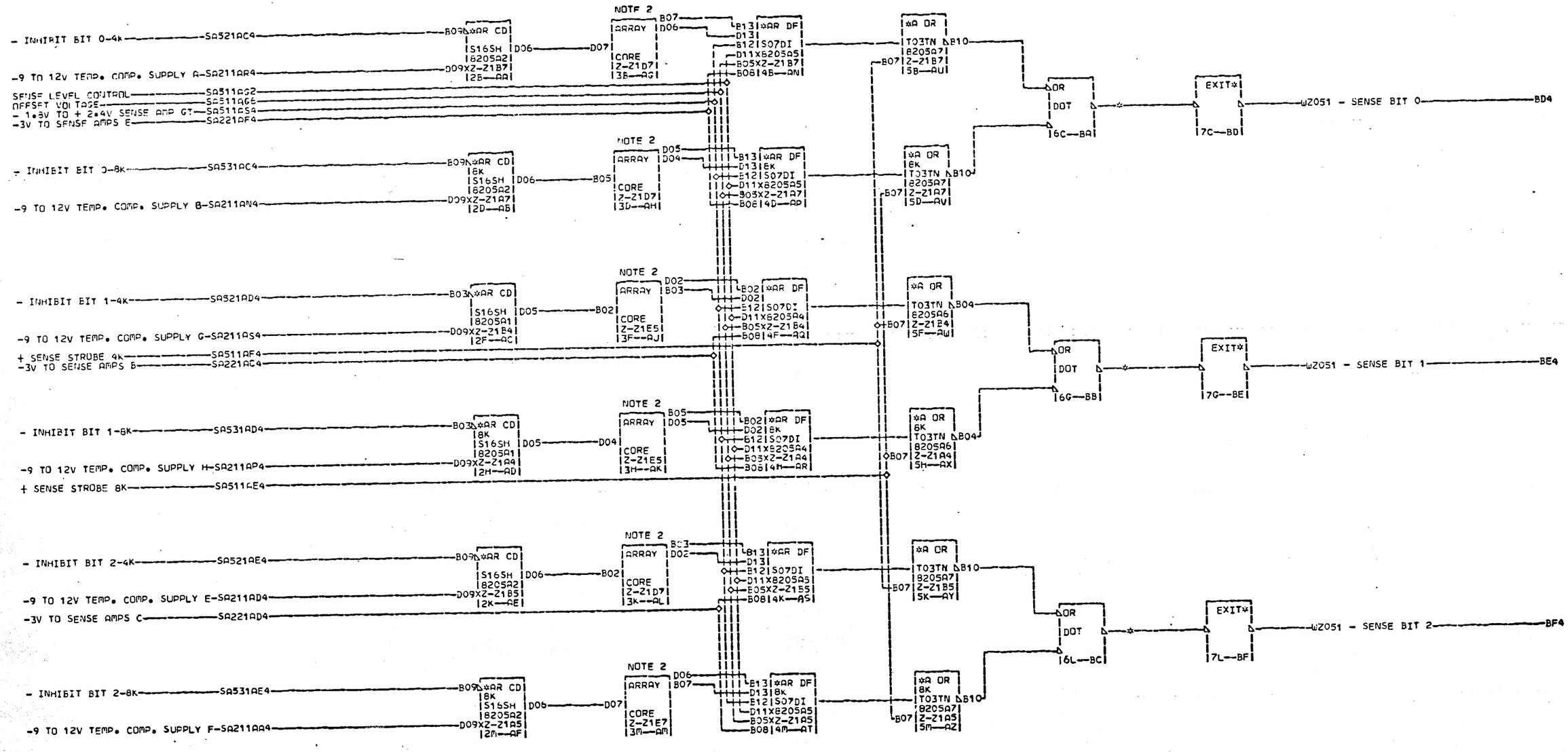



NOTE. FOR LOCATION OF Z-Z1
REFER TO PAGE WZ011

02-13-65 414250
05-14-65 414252
10-11-65 414258
03-07-66 256303

INHIBIT INVERTERS
BITS 9 TO 17 8K
DATE 07-12-66 MACH. SJ-2
LOG 102 FRAME 63
P.N. 2196747
IBM CORP. SDD BLK. AR

SYSTEM/360
000




NOTE 1 FOR LOCATION OF Z-Z1
REFER TO PAGE WZ011

S NOTE 2 REFER TO SA061 AND SA062 FOR LOGIC TO ARRAY CONNECTIONS.

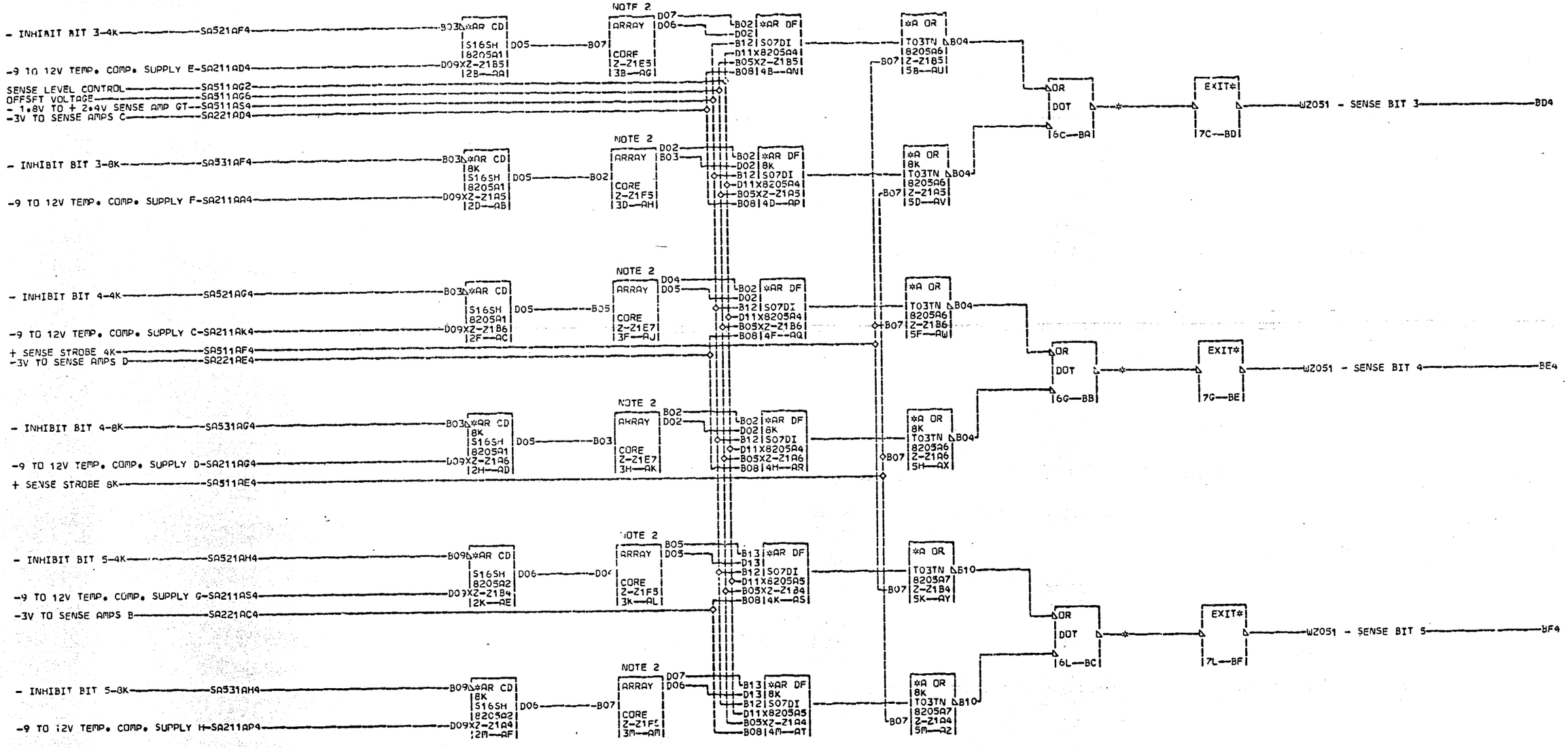
| | |
|---|---|
| BA4 | Z-Z1B1A11 |
| BB4 | Z-Z1B1B11 |
| BC4 | Z-Z1B1C11 |

SA541
000

02-13-65 414250
05-14-65 414252
10-11-65 414258
03-07-66 256308
12-22-66 730246
09-05-67 731506

INHIBIT-SENSE
BITS 0-1-2
DATE 09-12-67 MACH. SJ-2
LOG 2480 FRAME 63
P.N. 2196748
IBM CORP. SDD BLK. BG

SA541 000




48

NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011
NOTE 2 REFER TO SAQ61 AND SAQ62 FOR LOGIC TO ARRAY CONNECTIONS.

BA4 Z-Z1B1D11
63Z-Z1A1E11
BB4 Z-Z1B1E11
BC4 Z-Z1C1B11

000

| | |
|---|---|
| 02-13-65 | 414250 |
| 05-14-65 | 414252 |
| 10-11-65 | 414258 |
| 03-07-66 | 256308 |
| 12-22-66 | 730246 |
| 09-05-67 | 731506 |

INHIBIT-SENSE BITS 3-4-5

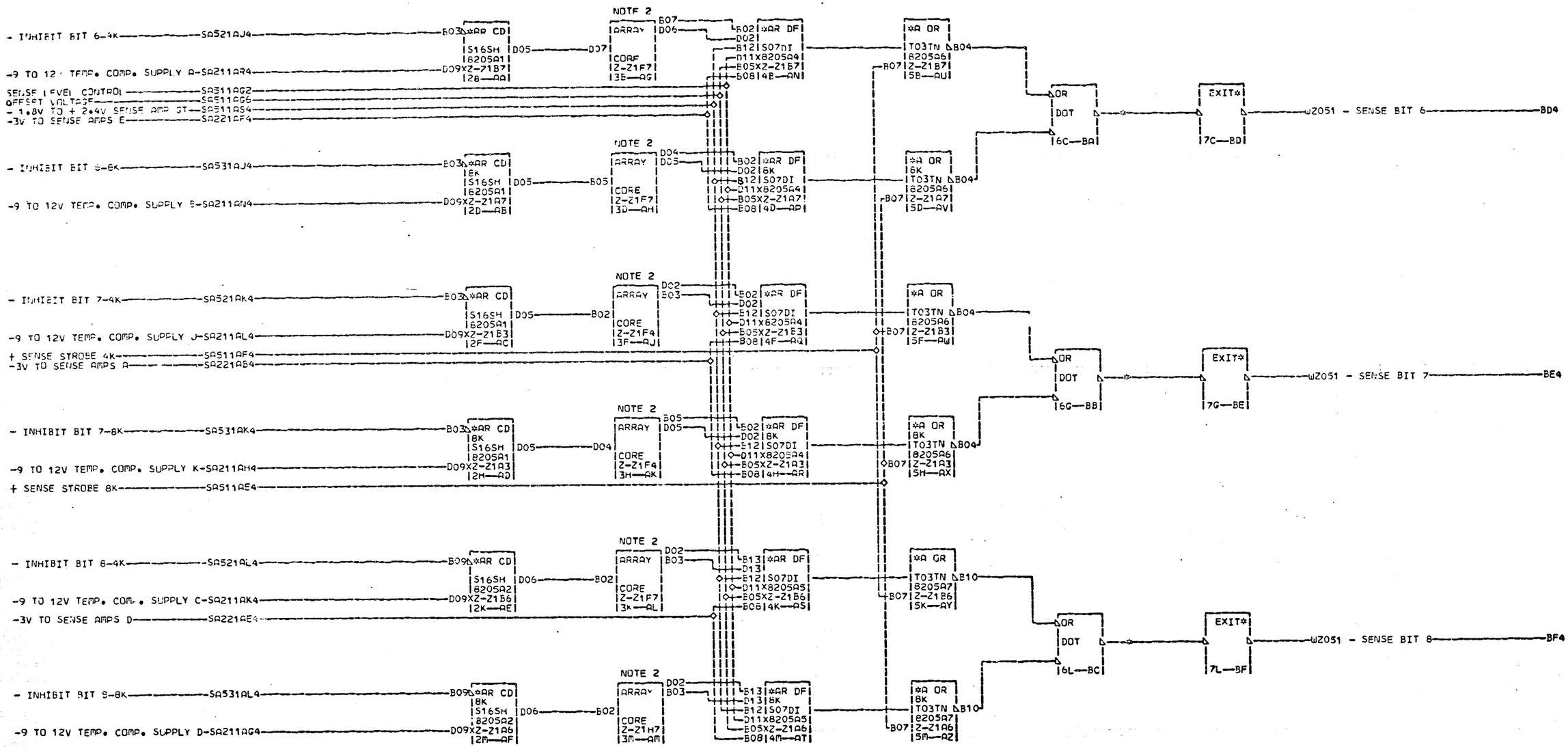
DATE 09-12-67 MACH. SJ-2

LOG 248Q FRAME 63

P.N 2196749

IBM CORP. SDD BLK. BG

SA546 000




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011

NOTE 2 REFER TO SA061 AND SA062 FOR LOGIC TO ARRAY CONNECTIONS.

| | |
|---|---|
| BA4 | Z-Z1C1C11 |
| BB4 | Z-Z1C1D11 |
| 63Z | Z-Z1C1A11 |
| BC4 | Z-Z1C1E11 |

S SA55
A 5
5 5
5 1
1 000

000

02-13-65 414250
05-14-65 414252
10-11-65 414256
03-07-66 256308
12-22-66 730246
09-05-67 731506

INHIBIT-SENSE BITS 6-7-8

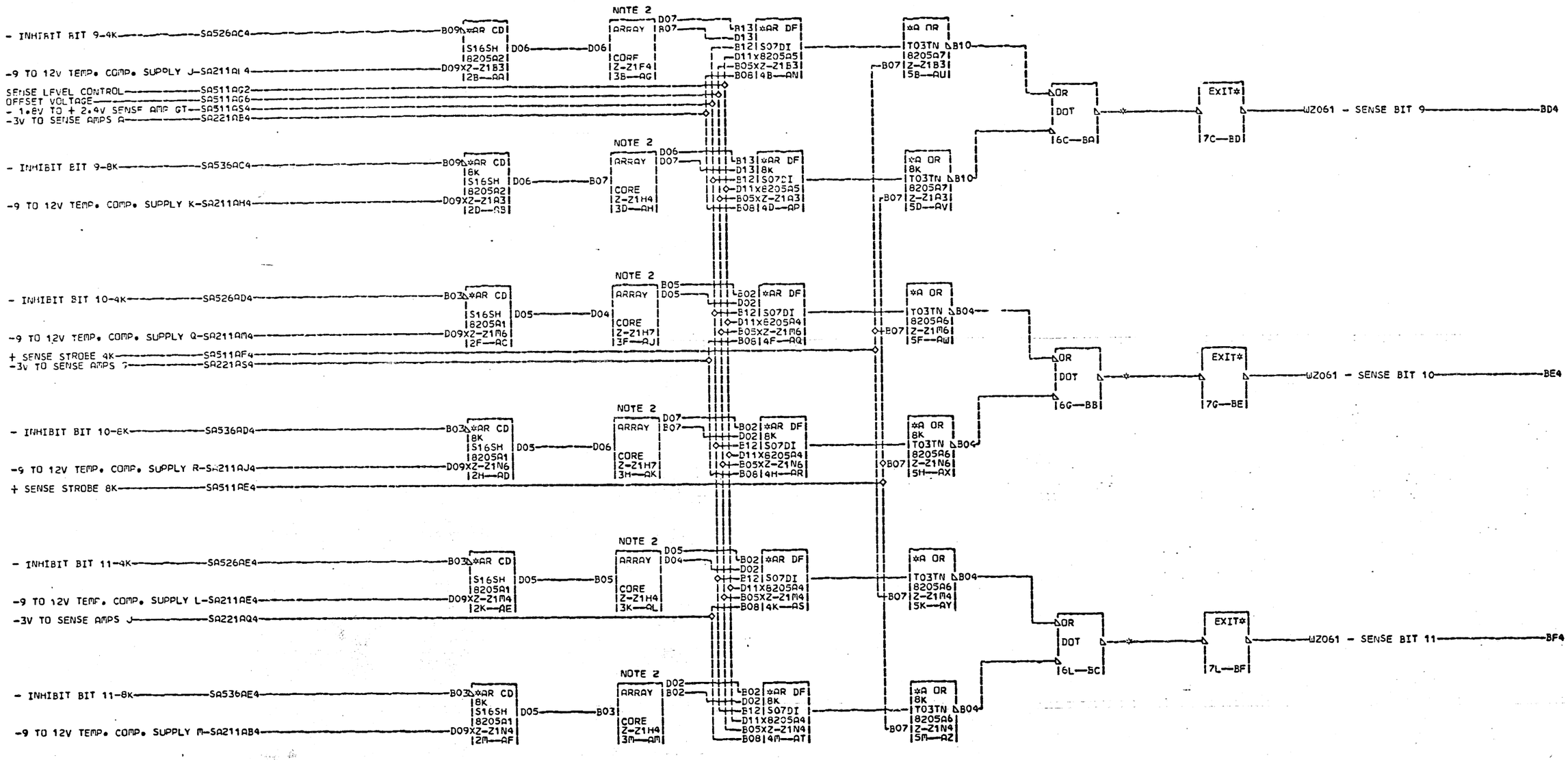
DATE 09-12-67 MACH. SJ-2

LOG 248Q FRAME 63

P.N. 2196750

IBM CORP. SDD BLK. BG

S SA55
A 5
5 5
5 1
1 000




NOTE 1 FOR LOCATION OF Z-Z[illegible] REFER TO PAGE WZ011

NOTE 2 REFER TO SA061 AND SA062 FOR LOGIC TO ARRAY CONNECTIONS.

BA4 Z-Z1D1A11
BB4 Z-Z1L1A11
BC4 Z-Z1L1B11

S A 5 5 6

000

02-13-65 414250
05-14-65 414252
10-11-65 414258
03-07-66 256308
12-22-66 730246
09-05-67 731506

INHIBIT-SENSE
BITS 9-1C-11

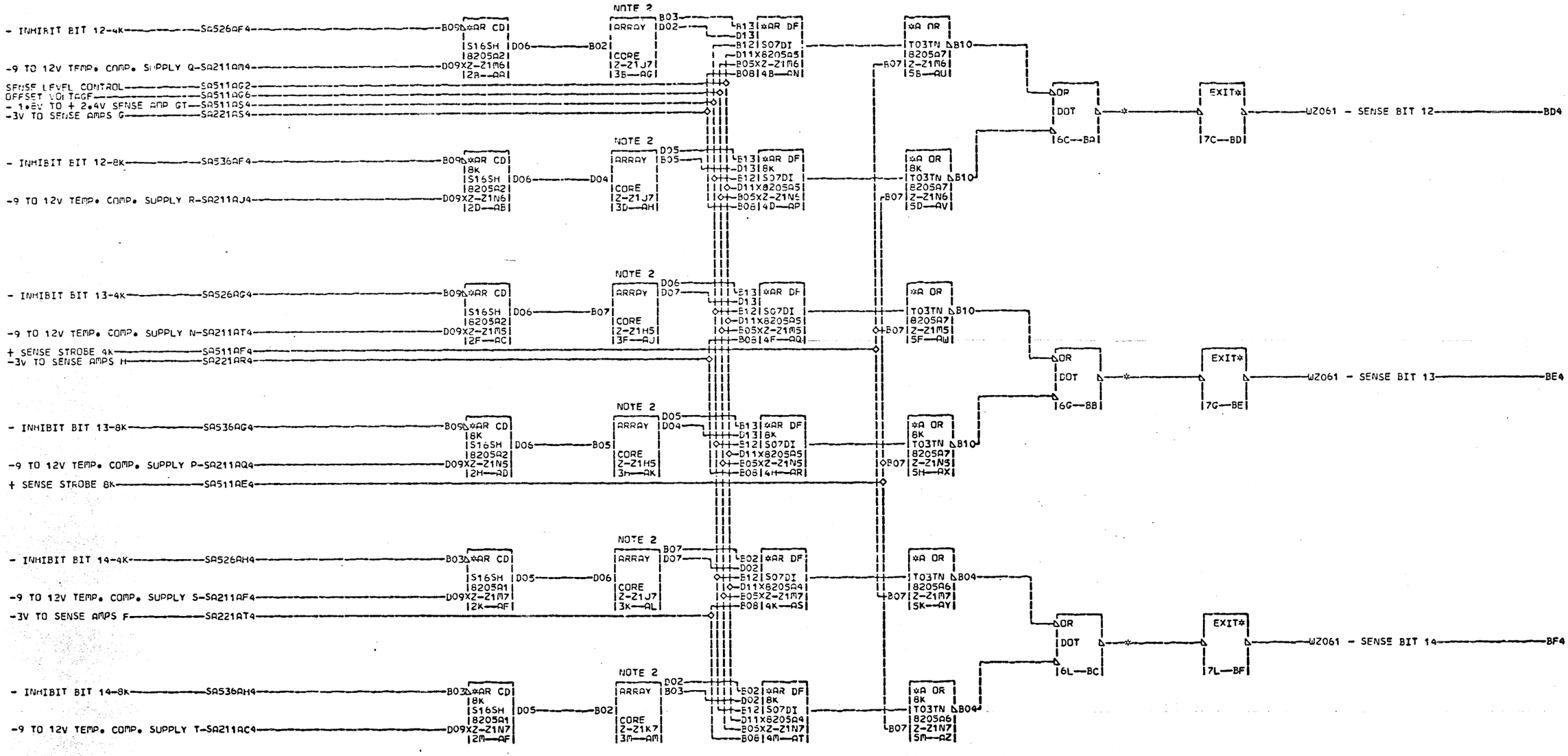
DATE 09-12-67 MACH. SJ-2

LOG 2480 FRAME 63

P.No. 2196751

IBM CORP. SDD BLK. BG

S A 5 5 6 000




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011

S NOTE 2 REFER TO SA061 AND SA062 FOR LOGIC TO ARRAY CONNECTIONS.

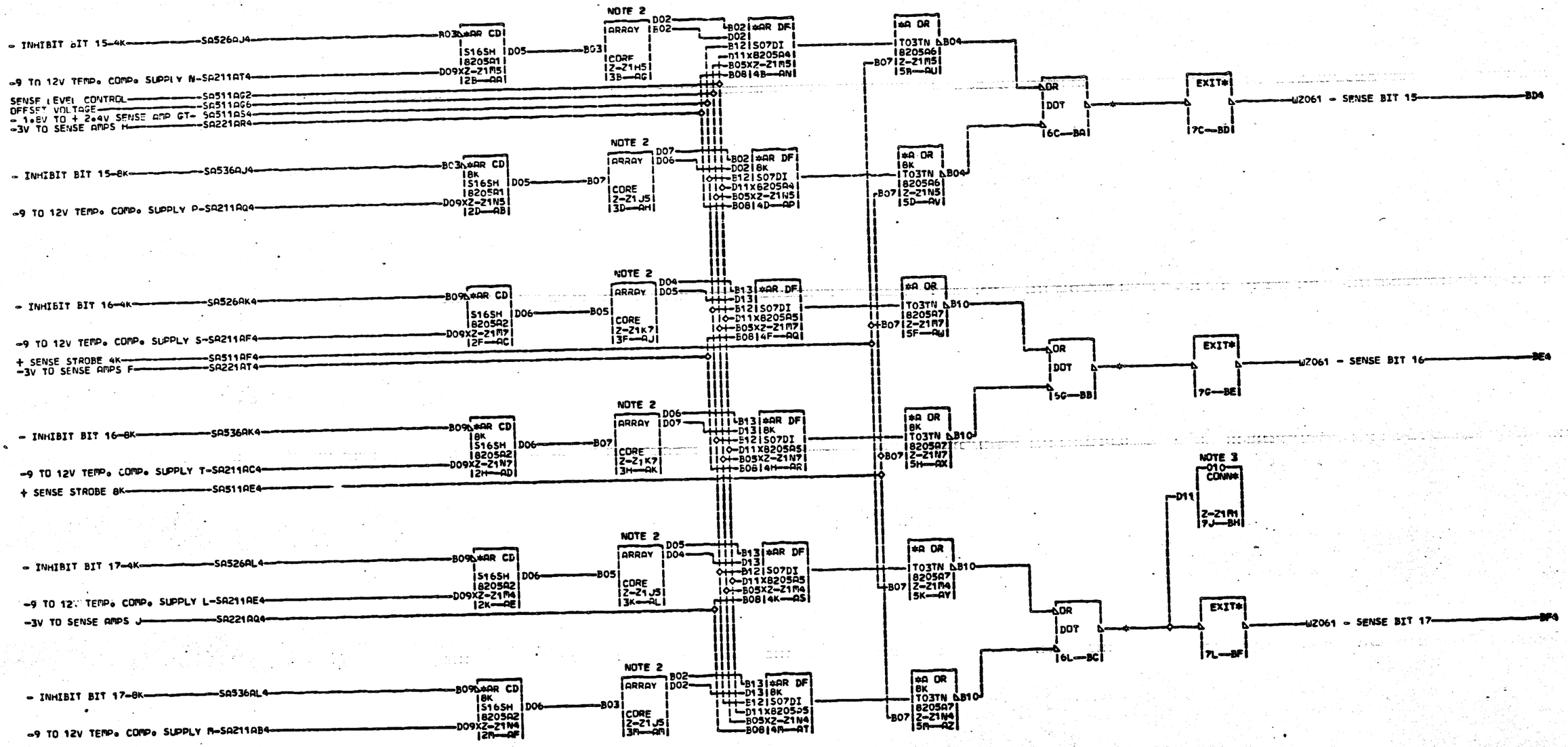
| | |
|---|---|
| BA4 | Z-Z1L1C11 |
| BB4 | Z-Z1L1D11 |
| 63Z | -Z1K1E11 |
| BC4 | Z-Z1L1E11 |

S A S 6 6 1 000

02-13-65 414250
05-14-65 414252
10-11-65 414258
03-07-66 256308
12-22-66 730246
09-05-67 731506

INHIBIT-SENSE BITS 12-13-14
DATE 09-12-67 MACH. SJ-2
LOG 248Q FRAME 63
P.N. 2196752
IBM CORP. SDD BLK. BG

S A S 6 6 1 000




NOTE 1 FOR LOCATION OF Z-Z1 REFER TO PAGE WZ011

NOTE 2 REFER TO SA061 AND SA062 FOR LOGIC TO ARRAY CONNECTIONS.

NOTE 3 SYSTEM MAY REMOVE M4B10 TO M1D11 REFER TO WZ061

BA4 Z-Z1M1B11
BB4 Z-Z1M1C11
BC4 Z-Z1M1A11
632-Z1M1D11

010 SIM TO PN 2196753 EC 731506

09-05-67 731505

INHIBIT-SENSE BITS 15-16-17
DATE 09-06-67 MACH. SJ-2
LOG 249R FRAME 63
P.N. 2910236
IBM CORP. SMD BLK. SA

SA566 010