SEE NOTE

+ M BIT 3 — RB131BJ2 — B02 A OR — B07 T03AB D02 3016A1 — B03 B=B1F2 2A=AC — OR DOT 3A=AG
- FILE ADDR 3 — MB201AA4
+ M BIT 7 — RB171BJ2
- FILE ADDR 7 — MB201AE4

B03 A OR — B12 T03AB D11 3016A5 — B07 B=B1F2 5A=AQ — OR DOT 6A=AV — WZ021 = STORAGE ADDRESS 7 — AV4
WZ021 = STURAGE ADDRESS 3 — AG4

+ M BIT 4 — RB141BJ2 — B03 A OR — B10 T03AB D05 3016A2 — B07 B=B1F2 2C=AD — OR DOT 3C=AH
- FILE ADDR 4 — MB201AB4
+ M BIT 8 — RB201BJ2
- FILE ADDR 8 — MB201AF4
- CS LEVEL 5 — KM211AU4

B03 A OR — B05 T03AB D04 3016A6 — B07 B=B1F2 5C=AR — OR DOT 6C=AU — WZ021 = STORAGE ADDRESS 8 — AW4
WZ021 = STORAGE ADDRESS 4 — AH4

+ M BIT 5 — RB151BJ2 — B03 A OR — B04 T03AB D06 3016A3 — B07 B=B1F2 2E=AE — OR DOT 3E=AJ
- FILE ADDR 5 — MB201AC4
+ M BIT 9 — RB211BJ2
- FILE ADDR 9 — MB201AG4

B03 A OR — B13 T03AB D13 3016A7 — B07 B=B1F2 5E=AS — OR DOT 6E=AX — WZ021 = STORAGE ADDRESS 9 — AX4
WZ021 = STORAGE ADDRESS 5 — AJ4

+ M BIT 6 — RB161BJ2 — B03 A OR — B09 T03AB D09 3016A4 — B07 B=B1F2 2G=AF — OR DOT 3G=AK
- FILE ADDR 6 — MB201AD4
+ M BIT 10 — RB221BJ2
- PR ADDR 10 — MB201AP4
- FILE ADDR 10 — MB201AH4

B03 A OR — D12 T03AB D10 3016A8 — B07 B=B1F2 5G=AT — OR DOT 6G=AY — WZ021 = STORAGE ADDRESS 10 — AY4
WZ021 = STORAGE ADDRESS 6 — AK4

- FILE ADDR 11 — MB201AJ4

B03 A OR — B08 T03AB D07 3016A9 — B07 B=B1F2 5J=AU — OR DOT 6J=AZ — WZ021 = STORAGE ADDRESS 11 — AZ4

+ M BIT 11 — RB231BJ2
+ M BIT 13 — RB251BJ2
- IX ADDR SAR 14 — KU301AU4

- M BIT 15 — RB271BJ6 — D07 OR T03AJ D05 0533C1 B=B1G2 1K=AA — D04 N T03AJ B02 0533D1 B=B1G2 2K=AB — B12 A OR — D12 T03AB B10 0533A1 B=B1G2 3K=AL — D11 — OR DDT 3K=AN
- DBL WORD ODD ADDR — RN111AT6 — B09

B07 A OR — B08 T03AB D08 0533B1 B=B1G2 6K=BA — B03 — OR DDT 7K=BC — WZ021 = STORAGE ADDRESS 12 — BC4
WZ021 = STORAGE ADDRESS 14 — AN4
ZL101 + M. ODD — AA4

+ M BIT 14 — RB261BJ2
+ M BIT 12 — RB241BJ2
+ IX ADDR INHIBIT SAR — KU301AT2
- PR ADDR 14 — MB201AR4
- FILE ADDR 14 — MB201AM4
- FILE ADDR 15 — MB201AN4
- PR ADDR 15 — MB201AS4
- PR ADDR 13 — MB201AQ4
- FILE ADDR 13 — MB201AL4
- IX ADDR INHIBIT SAR — KU301AT6
- FILE ADDR 12 — MB201AK4
- DBW ODD ADDR SAR 15 — KU301AW4
- IX ADDR SAR 15 — KU301AV4

WZ021 = STORAGE ADDRESS 15 — AP4

D13 A OR — B13 T03AB D10 0533A2 B=B1G2 3N=AM — D11 — OR DDT 4N=AP

B04 A OR — B05 T03AB D02 0533B2 B=B1G2 6N=BB — B03 — OR DDT 7N=BD — WZ021 = STORAGE ADDRESS 13 — BD4

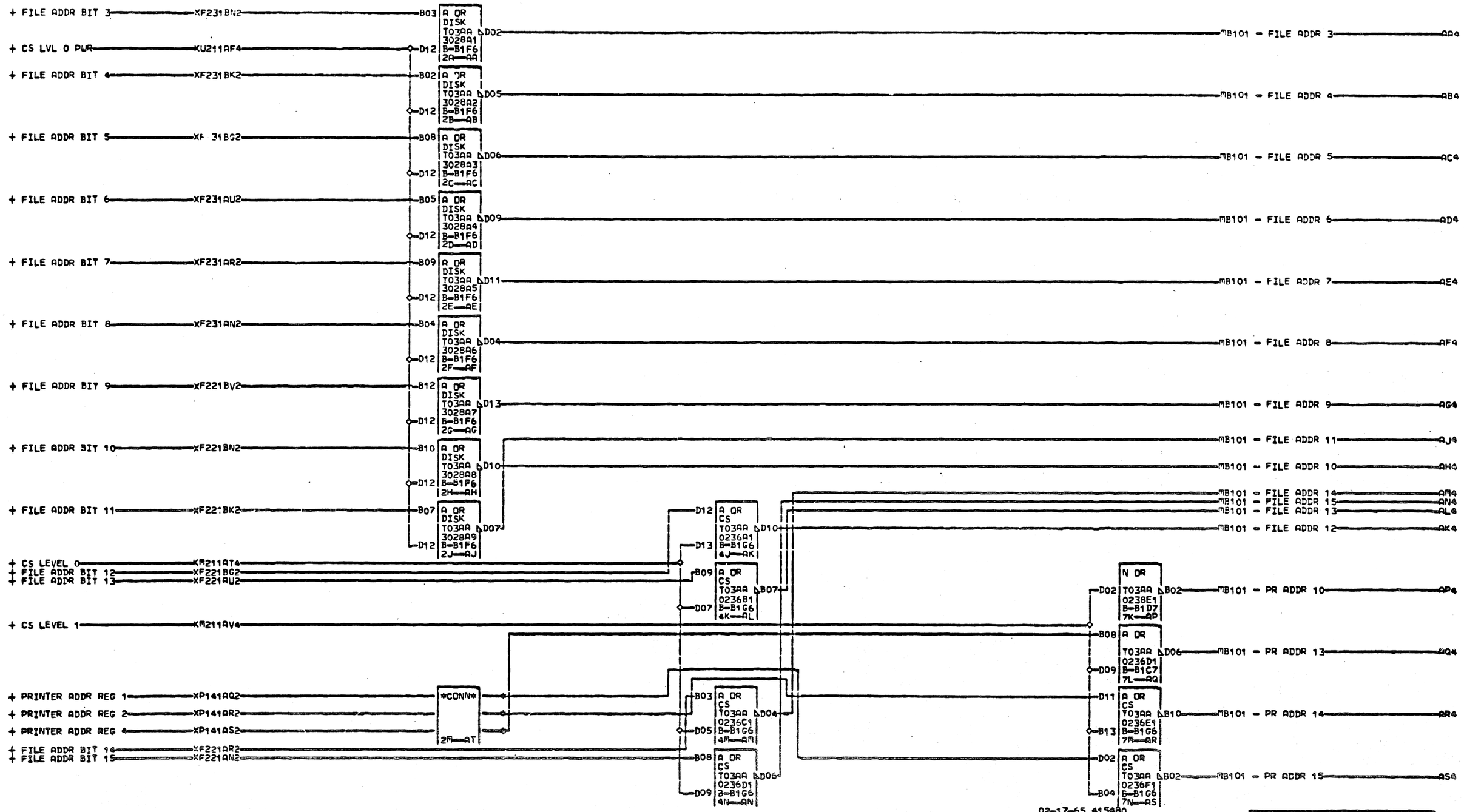
+ R BIT 15 — RB271BJ2

08-26-65 415483
02-24-67 419633

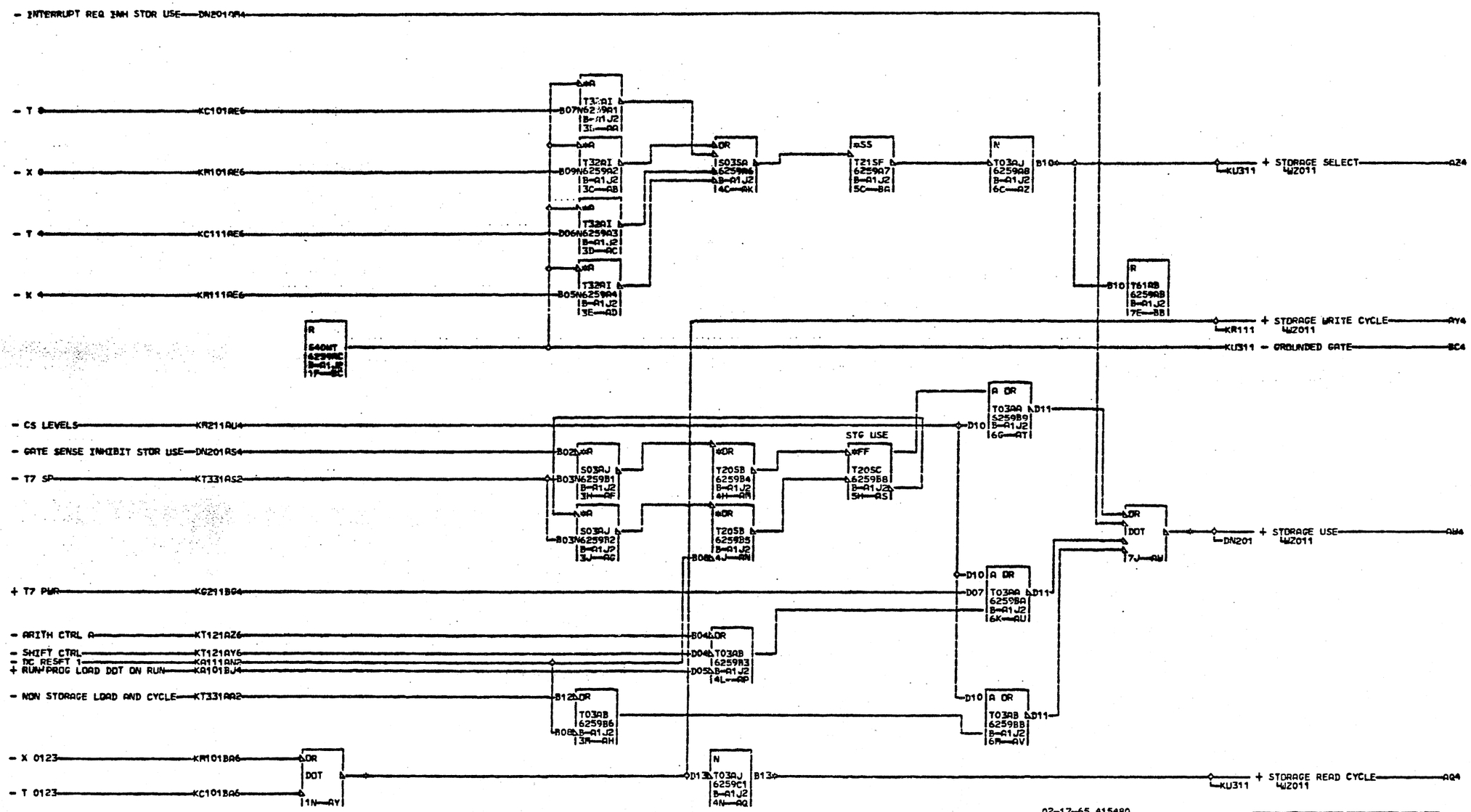
NOTE: BLOCKS DRIVING DOT WILL BE DISCONNECTED ON MACHINES WITH 4K CORE STORAGE

AA4 B=B1M2D10	AK4 B=B1H1C11	01B=C1K1A09	01B=C1J1A11
AG4 B=B1H1A09	01B=C1H1C11	AV4 B=B1H1C09	01B=C1J1D11
01B=B1G1E09	AN4 B=A1G1A11	01B=C1H1C09	AZ4 B=B1J1D09
01B=C1G1E09	01B=B1G1A11	AW4 B=B1J1C11	01B=C1J1D09
01B=C1H1A09	01B=B1K1A11	01B=C1J1C11	BC4 B=B1J1E11
AH4 B=B1H1B11	01B=C1K1A11	AX4 B=B1J1C09	01B=C1J1E11
01B=C1H1B11	AP4 B=A1G1A09	01B=C1J1C09	BD4 B=B1J1E09
AJ4 B=B1H1B09	01B=B1G1A09	AY4 B=B1J1D11	01B=C1J1E09
01B=C1H1B09	01B=B1K1A09	01B=B1J1A11	

STORAGE ADDR BUS		R B 1 0 1 000
DATE 03-09-67	MACH= 1131	
LOG 047F	FRAME 01	
	P=N= 2201059	
IBM CORP=	GPD BLK= BE	


+ FILE ADDR BIT 3 XF231BN2 B03 A OR DISK T03AA D02 3028A1 B=B1F6 2A=AA MB101 = FILE ADDR 3 AA4
+ CS LVL 0 PWR KU211AF4 D12
+ FILE ADDR BIT 4 XF231BK2 B02 A OR DISK T03AA D05 3028A2 B=B1F6 2B=AB MB101 = FILE ADDR 4 AB4
D12
+ FILE ADDR BIT 5 XF231BG2 B08 A OR DISK T03AA D06 3028A3 B=B1F6 2C=AC MB101 = FILE ADDR 5 AC4
D12
+ FILE ADDR BIT 6 XF231AU2 B05 A OR DISK T03AA D09 3028A4 B=B1F6 2D=AD MB101 = FILE ADDR 6 AD4
D12
+ FILE ADDR BIT 7 XF231AR2 B09 A OR DISK T03AA D11 3028A5 B=B1F6 2E=AE MB101 = FILE ADDR 7 AE4
D12
+ FILE ADDR BIT 8 XF231AN2 B04 A OR DISK T03AA D04 3028A6 B=B1F6 2F=AF MB101 = FILE ADDR 8 AF4
D12
+ FILE ADDR BIT 9 XF221BV2 B12 A OR DISK T03AA D13 3028A7 B=B1F6 2G=AG MB101 = FILE ADDR 9 AG4
D12
+ FILE ADDR BIT 10 XF221BN2 B10 A OR DISK T03AA D10 3028A8 B=B1F6 2H=AH MB101 = FILE ADDR 11 AJ4
D12 MB101 = FILE ADDR 10 AH4
+ FILE ADDR BIT 11 XF221BK2 B07 A OR DISK T03AA D07 3028A9 B=B1F6 2J=AJ MB101 = FILE ADDR 14 AM4
D12 MB101 = FILE ADDR 15 AN4
MB101 = FILE ADDR 13 AL4
MB101 = FILE ADDR 12 AK4
D12 A OR CS T03AA D10 0236A1 B=B1G6 4J=AK
+ CS LEVEL 0 KM211AT4 D13
+ FILE ADDR BIT 12 XF221BG2 B09 A OR CS T03AA B07 0236B1 B=B1G6 4K=AL
+ FILE ADDR BIT 13 XF221AU2 D07
N OR T03AA B02 0238E1 B=B1D7 7K=AP MB101 = PR ADDR 10 AP4
+ CS LEVEL 1 KM211AV4 B08 A OR T03AA D06 0236D1 B=B1C7 7L=AQ MB101 = PR ADDR 13 AQ4
D09
+ PRINTER ADDR REG 1 XP141AQ2 *CONN* B03 A OR CS T03AA D04 0236C1 B=B1G6 4M=AM D11 A OR CS T03AA B10 0236E1 B=B1G6 7R=AR MB101 = PR ADDR 14 AR4
+ PRINTER ADDR REG 2 XP141AR2 D05 B13
+ PRINTER ADDR REG 4 XP141AS2 2M=AT
+ FILE ADDR BIT 14 XF221AR2 B08 A OR CS T03AA D06 0236D1 B=B1G6 4N=AN D02 A OR CS T03AA B02 0236F1 B=B1G6 7N=AS MB101 = PR ADDR 15 AS4
+ FILE ADDR BIT 15 XF221AN2 D09 B04
AT2 B=B1B7B02
AT4 B=B1B7B03
AT6 B=B1B7B04
02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633
FILE/PRINTER ADDR BUS
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201060
IBM CORP. GPD BLK. AU
R B2 0 1 000
R B2 0 1 000

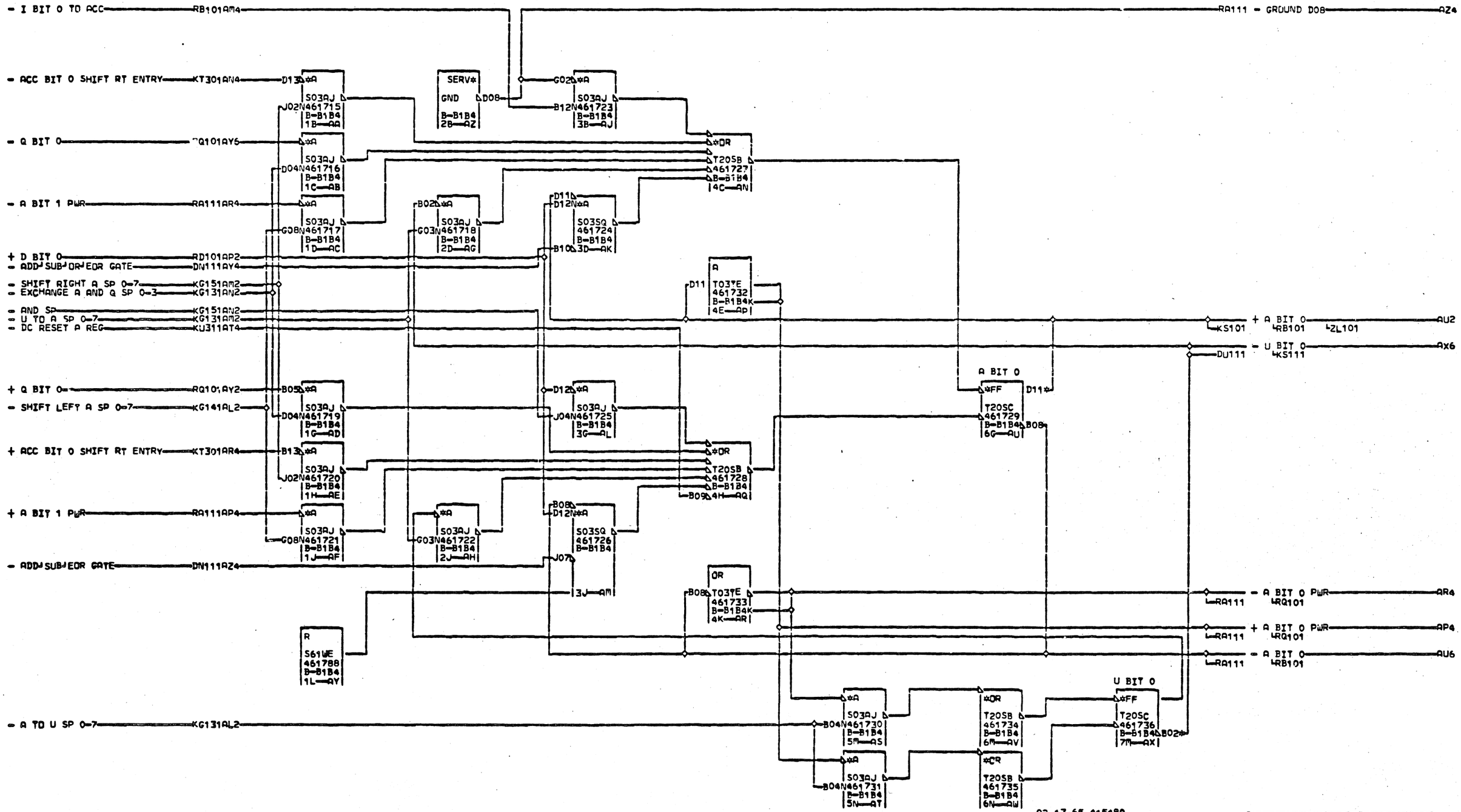
000 RC101



AQ4 B-A1E1E11	01B-A1D1E11	01B-B1J1B09	
01B-B1E1E11	01B-B1D1E11	01B-C1J1B09	
01B-B1H1E11	01B-B1E1D11		
01B-C1H1E11	01B-B1H1D11		
AW4 B-A1F1B11	01B-B1G1E11		
01B-B1F1B11	01B-C1G1E11		
01B-B1J1B11	01B-C1H1D11		
01B-C1J1B11	AZ4 B-A1F1B09		
AY4 B-A1E1D11	01B-B1F1B09		

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
05-09-66 419608

STORAGE READ-WRITE CYCLES
STORAGE SELECT AND USE
DATE 05-03-66 MACH. 1131
LOG 123H FRAME 01
P.No. 2201061
IBM CORP. GPD BLK. BD



AU2	B-B1F2B10
	01B-B1A5B06
	01B-A1N5B06
AX6	B-A1N5B10
	01B-B1A5B10
	01B-B1B6B02
	01A-C1N3B02

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTERS BIT 0	
DATE 03-09-67 MACH= 1131	
LOG 047F FRAME	01
P.N. 2201062	
IBM CORP. GPD BLK.	BA

R A 1 0 1 000

- I BIT 1 TO ACC — RB111AM4
- GROUND D08 — RA101AZ4
- A BIT 0 — RA101AU6
- Q BIT 1 — RQ101AX6
- A BIT 0 PWR — RA101AR4
- A BIT 2 — RA121AU6
+ D BIT 1 — RD101AQ2
- ADD SUB OR EOR GATE — DN111AY4
- EXCHANGE A AND Q SP 0-3 — KG131AN2
- AND SP — KG151AN2
- U TO A SP 0-7 — KG131AM2
- DC RESET A REG — KU311AT4
- SHIFT RIGHT A SP 0-7 — KG151AM2
+ Q BIT 1 — RQ101AX2
- SHIFT LEFT A SP 0-7 — KG141AL2
+ A BIT 0 PWR — RA101AP4
+ A BIT 2 — RA121AU2
- ADD SUB EOR GATE — DN111AZ4
- A TO U SP 0-7 — KG131AL2

B07 *A S03AJ D04 N461741 B-B1B4 1G-AD
G02 *A S03AJ G04 N461745 B-B1B4 3B-AJ
J02 N461738 B-B1B4 1C-AB
J09 *A S03AJ G08 N461739 B-B1B4 1D-AC
D06 *A S03AJ G03 N461740 B-B1B4 2D-AG
J05 J06N *A S03SQ 461746 B-B1B4 3D-AK
B10
J06 *A S03AJ J04 N461747 B-B1B4 3G-AL
J02 N461742 B-B1B4 1H-AE
G10 *A S03AJ G08 N461743 B-B1B4 1J-AF
*A S03AJ G03 N461744 B-B1B4 2J-AH
G05 J06N *A S03SQ 461748 B-B1B4
J07 3J-AM
R S61WE 461789 B-B1B4 1L-AZ

*DR T20SB 461749 B-B1B4 4C-AN
*DR T20SB 461750 B-B1B4 4H-AQ
B09
DR T03TE 461755 B-B1B4K 4K-AR
G05

A T03TE 461754 B-B1B4K 4E-AP
J05

B08 DR DR S03SA 461787 G09 — KU101 — A BIT 0 OR 1 — AY4
G05 B-B1B4 7B-AY
KT301 — A BIT 1 — AU6 (RA121 RB111 RD101)

A BIT 1 *FF T20SC 461751 B-B1B4 6G-AU J05*
G05*

DU111 — U BIT 1 — AX6

RA121 — + A BIT 1 — AU2 (RB111 RD101 ZL101)

RA101 — - A BIT 1 PWR — AR4 (RQ101)
RA101 — + A BIT 1 PWR — AP4 (RQ101)

U BIT 1 *FF T20SC 461758 B-B1B4 D06* 7M-AX

*A S03AJ B04 N461752 B-B1B4 5M-AS T20SB 461756 B-B1B4 6M-AV *DR
*A S03AJ B04 N461753 B-B1B4 5N-AT T20SB 461757 B-B1B4 6N-AW *DR

AU2 B-B1R2D11
AU6 B-B1A5D07
01B-C1N5D07
AX6 B-B1B6D02
01A-C1N3D02

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTER BIT 1
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.No. 2201063
IBM CORP. GPD BLK. BA

RA111 000

- I BIT 2 TO ACC — RB121AM4
RA131 - GROUND D08 — AZ4
- A BIT 1 — RA111AU6 — D13 *A — S03AJ — J02 N461715 B-B1C3 1B—AA
SERV* GND D08 B-B1C4 2B—AZ
C02 *A — S03AJ — B12 N461723 B-B1C4 3B—AJ
- Q BIT 2 — RQ111AY6 — *A — S03AJ — D04 N461716 B-B1C4 1C—AB
*OR
T20SB 461727 B-B1C4 4C—AN
- A BIT 3 PWR — RA131AR4 — *A — S03AJ — G08 N461717 B-B1C4 1D—AC
B02 *A — S03AJ — G03 N461718 B-B1C4 2D—AG
D11 D12 N *A — S03SQ 461724 B-B1C4 3D—AK
+ D BIT 2 — RD111AP2
- ADD/SUB/OR/EOR GATE — DN111AY4
- SHIFT RIGHT A SP 0-7 — KG151AM2
- EXCHANGE A AND Q SP 0-3 — KG131AN2
- DC RESET A REG — KU311AT4
- U TO A SP 0-7 — KG131AM2
- AND SP — KG151AN2
A
D11 T03TE 461732 B-B1C4K 4E—AP
+ A BIT 2 — AU2
RA111 RB121 RD101 ZL101
DU111 - U BIT 2 — AX6
+ Q BIT 2 — RQ111AY2 — B05 *A — S03AJ — D04 N461719 B-B1C4 1G—AD
D12 *A — S03AJ — J04 N461725 B-B1C4 3G—AL
A BIT 2
FF D11
T20SC 461729 B-B1C4 B08 6G—AU
- SHIFT LEFT A SP 0-7 — KG141AL2
+ A BIT 1 — RA111AU2 — B13 *A — S03AJ — J02 N461720 B-B1C4 1H—AE
*OR
T20SB 461728 B-B1C4 B09 4H—AQ
+ A BIT 3 PWR — RA131AP4 — *A — S03AJ — G09 N461721 B-B1C4 1J—AF
*A — S03AJ — G03 N461722 B-B1C4 2J—AH
B08 D12 N *A — S03SQ 461726 B-B1C4 J07 3J—AM
- ADD/SUB/EOR GATE — DN111AZ4
OR
B08 T03TE 461733 B-B1C4K 4K—AR
- A BIT 2 PWR — AR4
RA131 RQ111
+ A BIT 2 PWR — AP4
RA131 RQ111
- A BIT 2 — AU6
RA111 RA131 RB121 RD101
R
S61WE 461788 B-B1C4 1L—AY
U BIT 2
*FF
T20SC 461736 B-B1C4 B02 7M—AX
- A TO U SP 0-7 — KG131AL2
*A — S03AJ — B04 N461730 B-B1C4 5M—AS
*OR
T20SB 461734 B-B1C4 6M—AV
*A — S03AJ — B04 N461731 B-B1C4 5N—AT
*OR
T20SB 461735 B-B1C4 6N—AW

AU2 B-B1M2B12
AX6 B-B1B6B03
01A-C1N3B03

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTERS BIT 2			
DATE	03-09-67 MACH. 1131		
LOG	047F FRAME	01	
	P.N.	2201064	
IBM CORP.	GPD BLK.	BA	

RA121 000

- I BIT 3 TO ACC — RB131AM4
- GROUND D08 — RA121AZ4
- A BIT 2 — RA121AU6
- G BIT 3 — RQ111AX6
- A BIT 2 PWR — RA121AR4
- A BIT 4 — RA141AU6
+ D BIT 3 — RD111AQ2
- ADD/SUB/OR/EOR GATE — DN111AY4
- EXCHANGE A AND Q SP 0-3 — KG131AN2
- AND SP — KG151AN2
- U TO A SP 0-7 — KG131AM2
- DC RESET A REG — KU311AT4
- SHIFT RIGHT A SP 0-7 — KG151AM2
+ Q BIT 3 — RQ111AX2
- SHIFT LEFT A SP 0-7 — KG141AL2
+ A BIT 2 PWR — RA121AP4
+ A BIT 4 — RA141AU2
- ADD/SUB/EOR GATE — DN111AZ4
- A TO U SP 0-7 — KG131AL2

B08 OR OR
S03SA 461787 B-B1C4 7B-AY
G09 — KU101 - A BIT 2 OR 3 — AY4
G05 — RA141 - A BIT 3 (RB131 RD111) — AU6

G02 *A
S03AJ G04N461745 B-B1C4 3B-AJ

*OR
T20SB 461749 B-B1C4 4C-AN

J05 J06N *A
S03SQ 461746 B-B1C4 3D-AK
B10

A
T03TE 461754 B-B1C4K 4E-AP
J05

RA141 + A BIT 3 (RB131 RD111 ZL101) — AU2
DU111 - U BIT 3 — AX6

A BIT 3
FF J05
T20SC 461751 B-B1C4 6G-AU
G05

B07 *A
S03AJ D04N461741 B-B1C4 1G-AD

J05 *A
S03AJ J04N461747 B-B1C4 3G-AL

*OR
T20SB 461750 B-B1C4 4H-AQ
B09

J02 *A
S03AJ J02N461742 B-B1C4 1H-AE

G10 *A
S03AJ G08N461743 B-B1C4 1J-AF

*A
S03AJ G03N461744 B-B1C4 2J-AH

G05 J06N *A
S03SQ 461748 B-B1C4
J07

OR
G05 T03TE 461755 B-B1C4K 4K-AR

3J-AM

R
S61WE 461789 B-B1C4 1L-AZ

RA121 - A BIT 3 PWR (RQ111) — AR4
RA121 + A BIT 3 PWR (RQ111) — AP4

U BIT 3
*FF
T20SC 461758 B-B1C4 7A-AX
D06*

*A
S03AJ B04N461752 B-B1C4 5M-AS

*OR
T20SB 461756 B-B1C4 6M-AV

*A
S03AJ B04N461753 B-B1C4 5N-AT

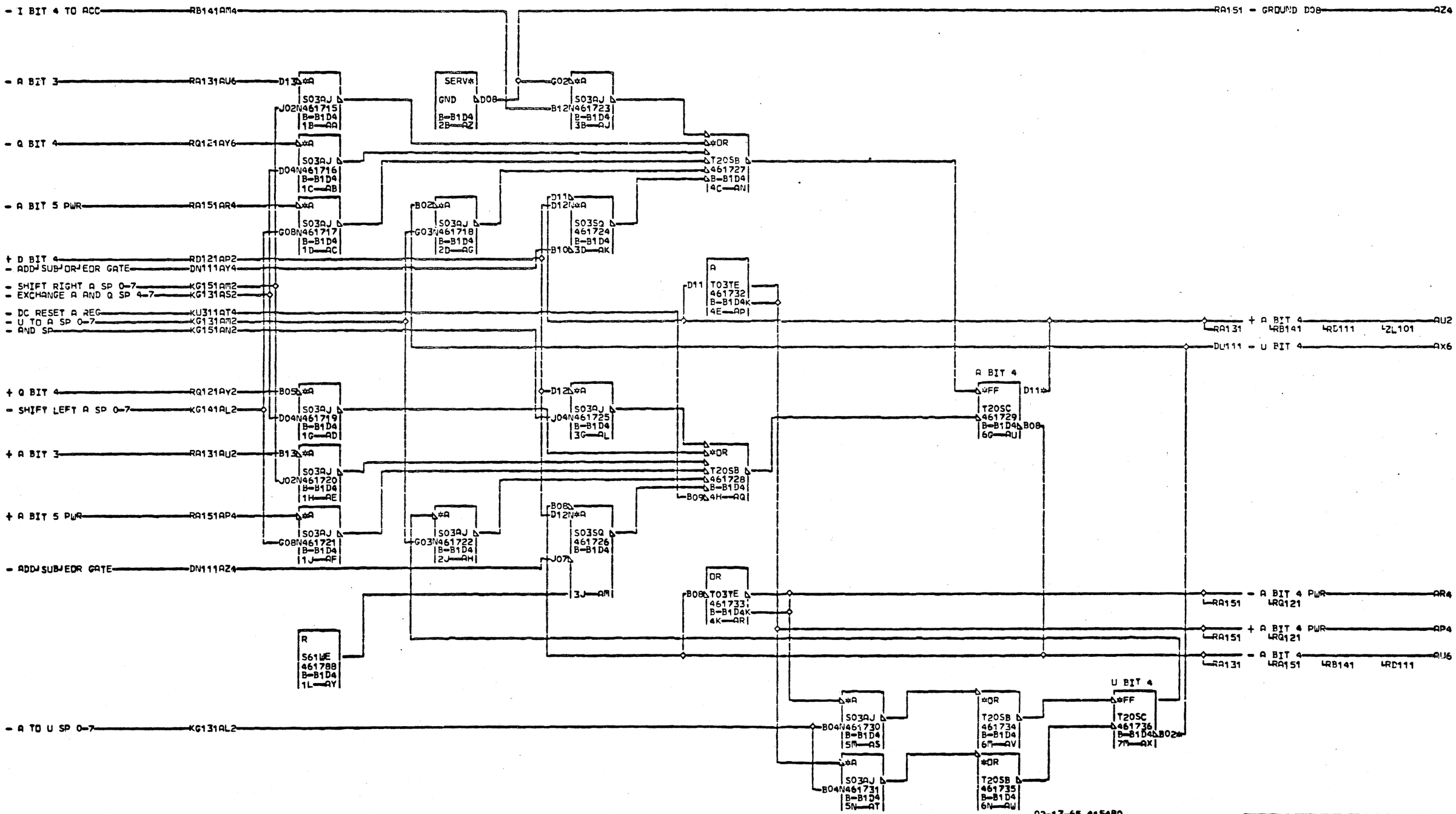
*OR
T20SB 461757 B-B1C4 6N-AW

AU2 B-B1R2D12
AX6 B-B1B6D04
01A-C1N3D04

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTER BIT 3
DATE 03-09-67 RACH- 1131
LOG 047F FRAME 01
P-N- 2201065
IBM CORP- GPD BLK- BA

RA131 000



AU2 B-B1N2B10
AX6 B-B1B6B04
01A-C1N3B04

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-23-65 415483
02-24-67 419633

A AND U REGISTERS BIT 4			
DATE	03-09-67 MACH. 1131		
LOG	047F FRAME	01	
	P.N. 2201066		
IBM CORP.	GPD BLK.	BA	

R A 1 4 1 000

R A 1 4 1 000

= I BIT 5 TO ACC — RB151AM4
= GROUND DOB — RA141AZ4
= A BIT 4 — RA141AU6
= Q BIT 5 — RQ121AX6
= A BIT 4 PWR — RA141AR4
= A BIT 6 — RA161AU6
+ D BIT 5 — RD121AQ2
= ADD/SUB/OR/EOR GATE — DN111AY4
= EXCHANGE A AND Q SP 4-7 — KG131AS2
= AND SP — KG151AN2
= U TO A SP 0-7 — KG131AM2
= DC RESET F REG — KU311AT4
= SHIFT RIGHT A SP 0-7 — KG151AM2
+ Q BIT 5 — RQ121AX2
= SHIFT LEFT A SP 0-7 — KG141AL2
+ A BIT 4 PWR — RA141AP4
+ A BIT 6 — RA161AU2
= ADD/SUB/EOR GATE — DN111AZ4
= A TO U SP 0-7 — KG131AL2

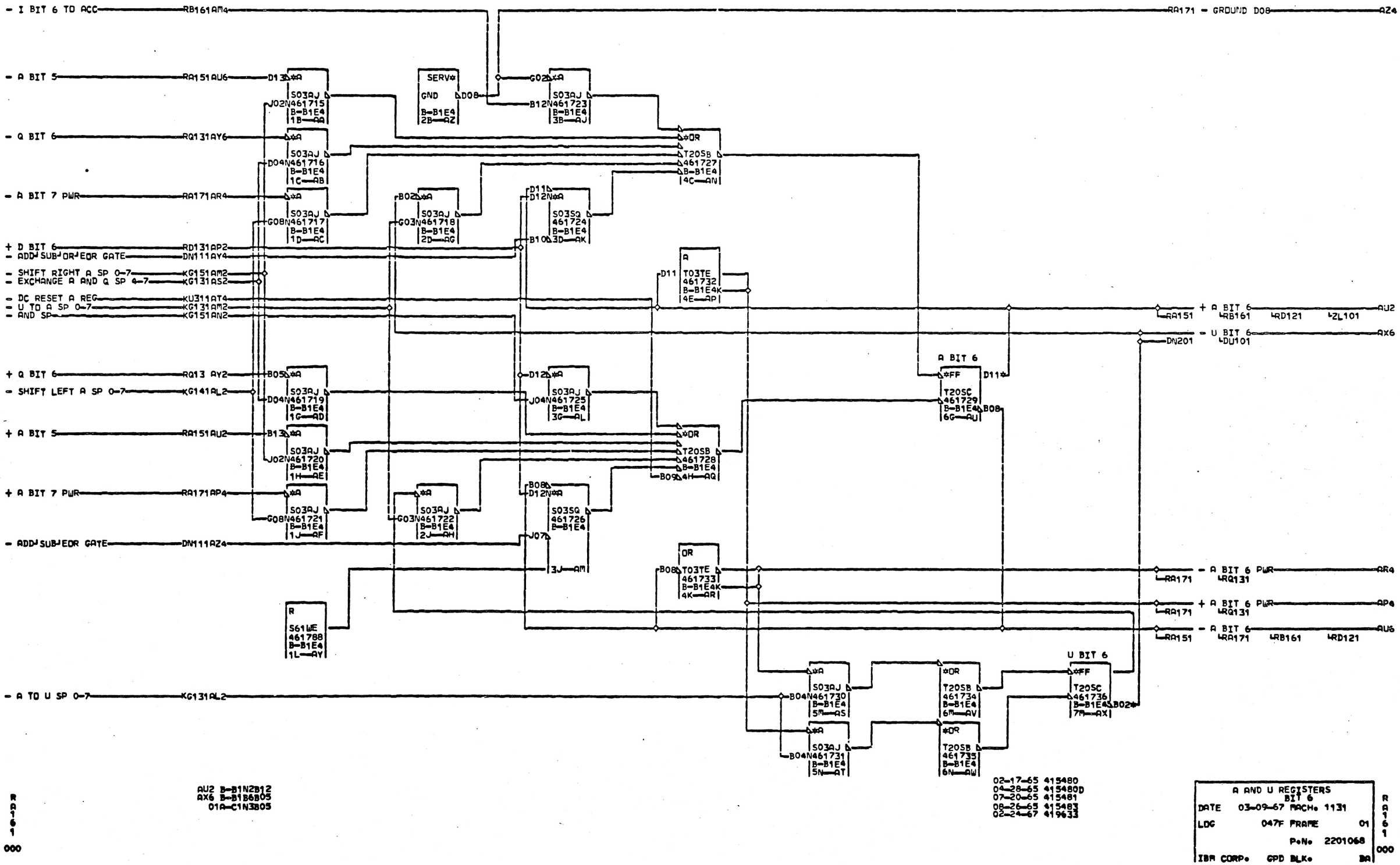
B07 *A S03AJ D04 N461761 B=B1D4 1G=AD
G02 *A S03AJ G04 N461745 B=B1D4 3B=AJ
B08 OR OR S03SA G09 461787 B=B1D4 7B=AY — KU101 = A BIT 4 OR 5 — AY4
G05 B=B1D4 7B=AY
*OR T20SB 461749 B=B1D4 4C=AN
J02 N461738 B=B1D4 1C=AB
J09 *A S03AJ G08 N461739 B=B1D4 1D=AC
D06 *A S03AJ G03 N461740 B=B1D4 2D=AG
J05 J06 *A S03SQ 461746 B=B1D4 B10 3D=AK
A T03TE 461754 B=B1D4K 4E=AP | J05
RA161 = A BIT 5 — AU6 (RB151 RD121)
RA161 + A BIT 5 — AU2 (RB151 RD121 ZL101)
DN201 = U BIT 5 — AX6 (DU101)
A BIT 5 *FF T20SC 461751 B=B1D4 6G=AU | J05* G05
B07 *A S03AJ D04 N461761 B=B1D4 1G=AD
J06 *A S03AJ J04 N461747 B=B1D4 3G=AL
*OR T20SB 461750 B=B1D4
B09 4H=AQ
J02 N461742 B=B1D4 1H=AE
G10 *A S03AJ G08 N461743 B=B1D4 1J=AF
*A S03AJ G03 N461744 B=B1D4 2J=AH
G05 J06 *A S03SQ 461748 B=B1D4
J07 3J=AM
R S61WE 461789 B=B1D4 1L=AZ
OR T03TE 461755 B=B1D4K 4K=AR | G05
RA141 = A BIT 5 PWR — AR4 (RQ121)
RA141 + A BIT 5 PWR — AP4 (RQ121)
U BIT 5 *FF T20SC 461758 B=B1D4 7M=AX | D06*
*A S03AJ B04 N461752 B=B1D4 5M=AS
*OR T20SB 461756 B=B1D4 6M=AV
*A S03AJ B04 N461753 B=B1D4 5N=AT
*OR T20SB 461757 B=B1D4 6N=AW

AU2 B=B1N2D11
AX6 B=A1N5B13
01B=B1A5B13
01B=B1B6D05
01A=C1N3D05

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTER BIT 5
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.No. 2201067
IBM CORP. GPD BLK. 8A

RA151 000



AU2 B-B1N2B12
AX6 B-B1B6B05
01A-C1N3B05

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTERS BIT 6	
DATE 03-09-67 MACH. 1131	
LOG 047F FRAME 01	
P.N. 2201068	
IBM CORP. GPD BLK. BA	

RA161 000

000 RA171

- I BIT 7 TO ACC — RB171AM4
- GROUND D08 — RA161AZ4
- A BIT 6 — RA161AU6
- Q BIT 7 — RQ131AX6
- A BIT 6 PWR — RA161AR4
- A BIT 8 — RA201AU6
+ D BIT 7 — RD131AQ2
- ADD SUB OR EOR GATE — DN111AY4
- EXCHANGE A AND Q SP 4-7 — KG131AS2
- AND SP — KG151AN2
- U TO A SP 0-7 — KG131AM2
- DC RESET A REG — KU311AT4
- SHIFT RIGHT A SP 0-7 — KG151AM2
+ Q BIT 7 — RQ131AX2
- SHIFT LEFT A SP 0-7 — KG141AL2
+ A BIT 6 PWR — RA161AP4
+ A BIT 8 — RA201AU2
- ADD SUB EOR GATE — DN111AZ4
- A TO U SP 0-7 — KG131AL2

S03AJ D04N461737 B-B1E4 1B-AA
S03AJ G02*A G04N461745 3B-AJ
S03AJ J02N461738 B-B1E4 1C-AB
S03AJ J09*A G08N461739 B-B1E4 1D-AC
S03AJ D06*A G03N461740 B-B1E4 2D-AG
S03SQ J05 J06N*A 461746 B-B1E4 B10 3D-AK
S03AJ B07*A D04N461741 B-B1E4 1G-AD
S03AJ J06*A J04N461747 B-B1E4 3G-AL
S03AJ J02N461742 B-B1E4 1H-AE
S03AJ G10*A G08N461743 B-B1E4 1J-AF
S03AJ *A G03N461744 B-B1E4 2J-AH
S03SQ G05 J06N*A 461748 B-B1E4
S61WE R 461789 B-B1E4 1L-A2
T20SB *OR 461749 B-B1E4 4C-AN
T20SB *OR 461750 B-B1E4 B09 4H-AQ
T03TE OR G05 461755 B-B1E4K 4K-AR
T03TE A J05 461754 B-B1E4K 4E-AP
T20SC *FF J05* 461751 B-B1E4 G05 6G-AU
T20SB *OR 461756 B-B1E4 6M-AV
T20SB *OR 461757 B-B1E4 6N-AW
S03AJ *A B04N461752 B-B1E4 5M-AS
S03AJ *A D04N461753 B-B1E4 5N-AT
T20SC *FF 461758 B-B1E4 D06* 7M-AX
S03SA B08 OR OR 461787 B-B1E4 G05 7B-AY

A BIT 7
U BIT 7

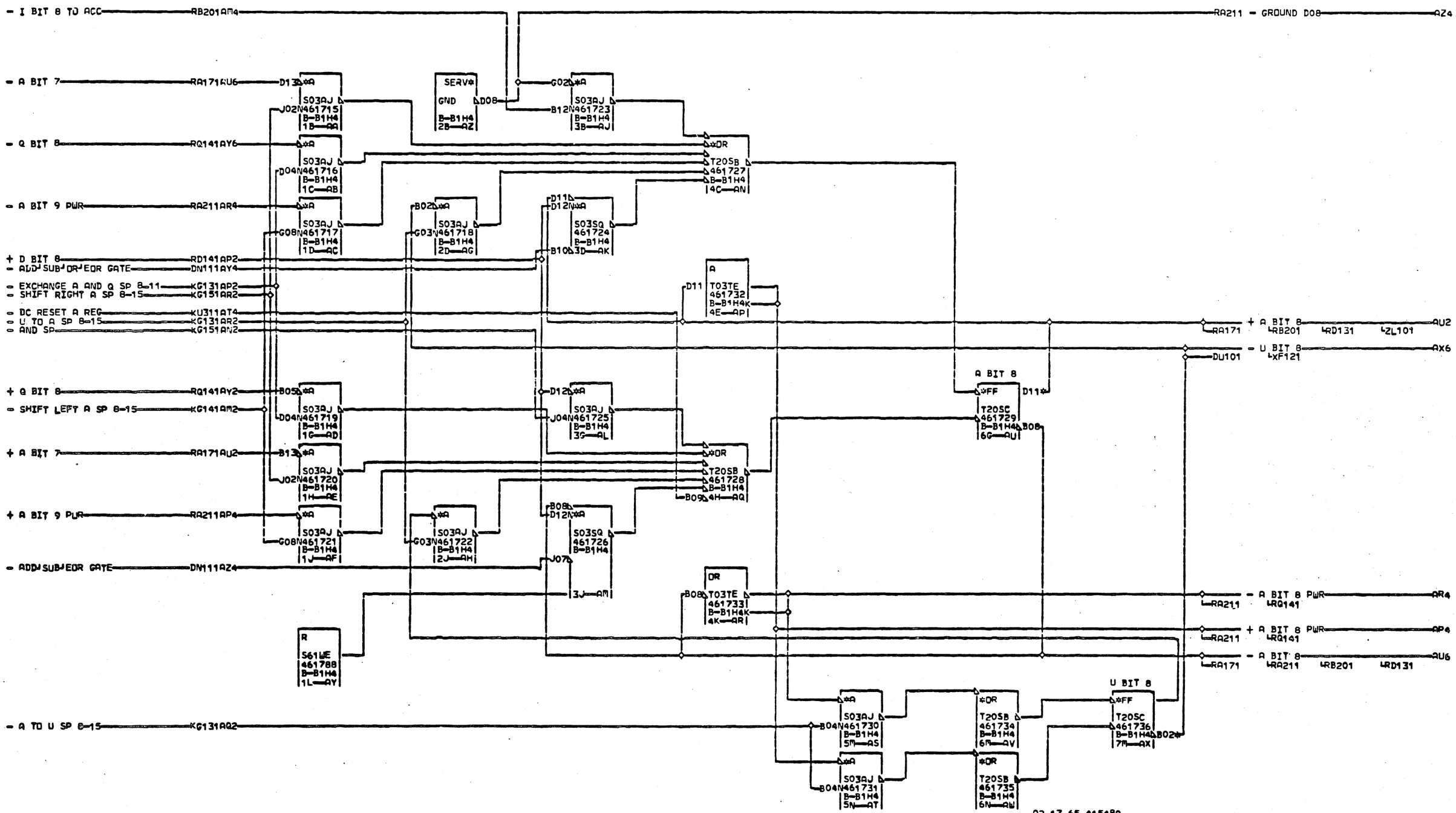
- KU101 — A BIT 6 OR 7 — AY4
- RA201 — A BIT 7 — AU6 (RB171 RD131)
- RA201 — + A BIT 7 — AU2 (RB171 RD131 ZL101)
- DN201 — U BIT 7 — AX6 (DU101)
- RA161 — A BIT 7 PWR — AR4 (RQ131)
- RA161 — + A BIT 7 PWR — AP4 (RQ131)

AU2 B-B1N2D12
AX6 B-A1N5D13
01B-B1A5D13
01B-B1B6D06
01A-C1N3D06

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTER BIT 7
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201069
IBM CORP. GPD BLK. BA

R A171 1 000



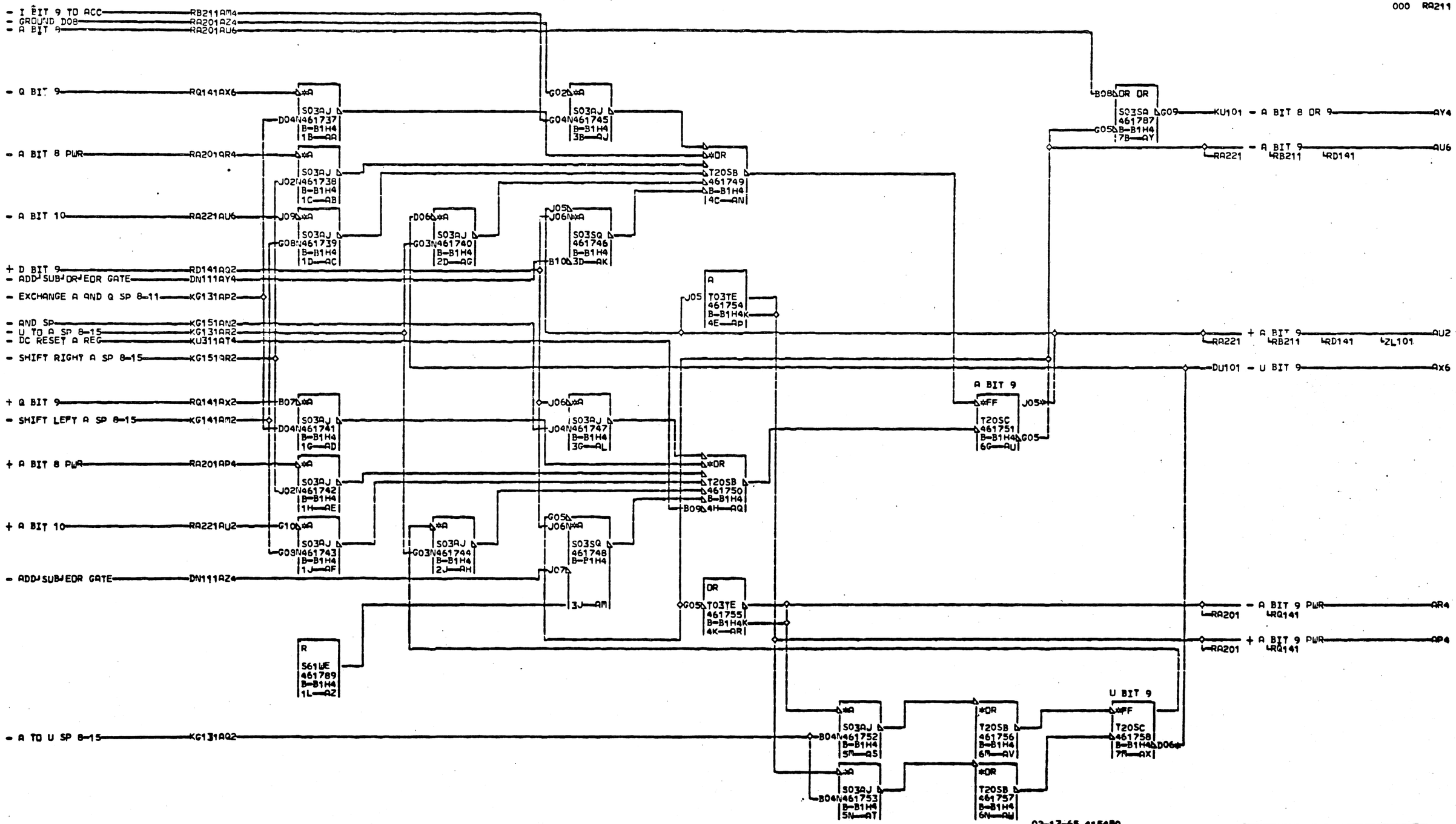
AU2 B-B1M3B12
AX6 B-B1B6B07
01A-C1N3B07

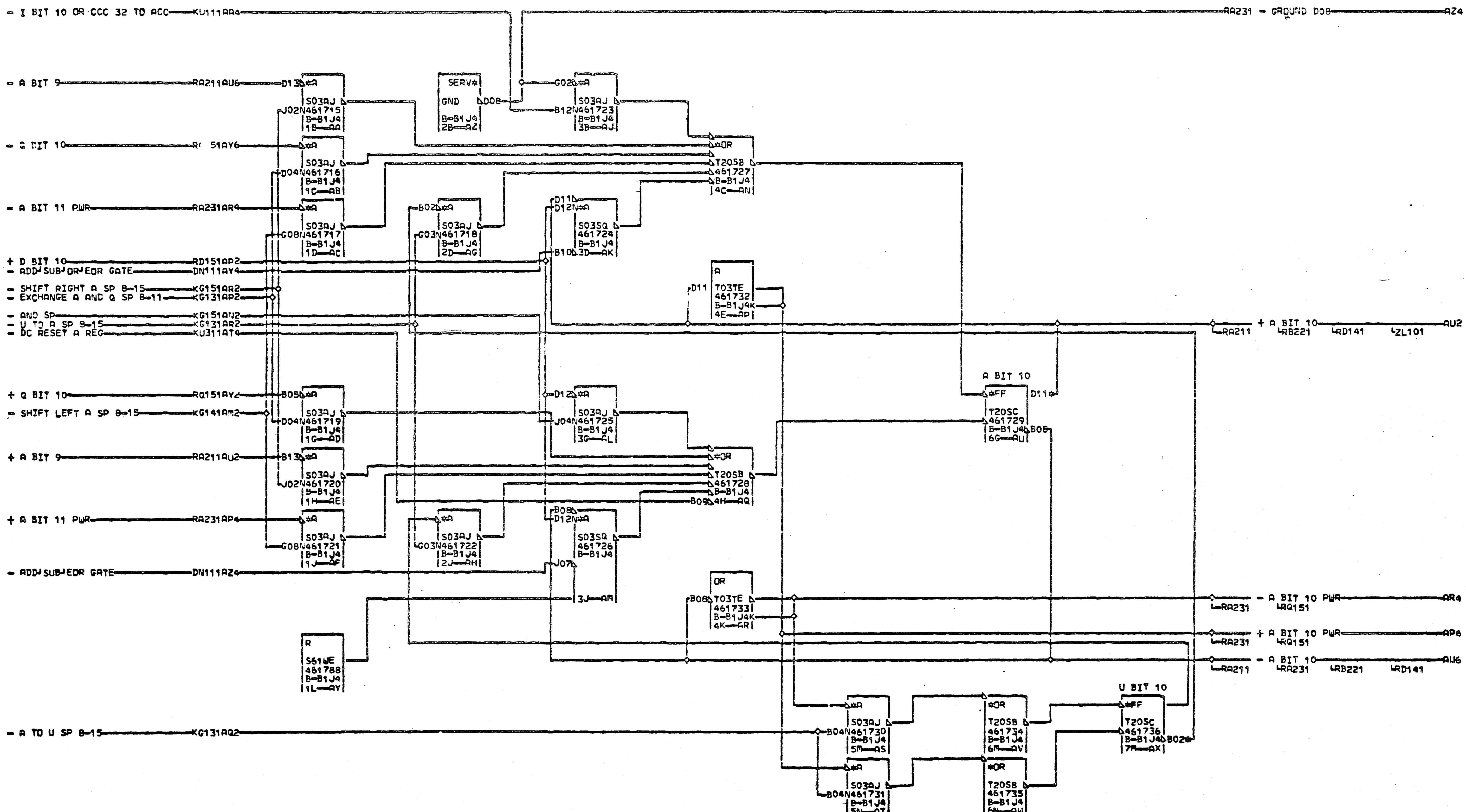
02-17-65 415480
04-28-65 415480D
07-20-65 415481
09-26-65 415483
02-24-67 419633

A AND U REGISTERS BIT 8			
DATE	03-09-67	MACH.	1131
LOG	047F	FRAME	01
		PeNo	2201070
IBM CORP.	GPD BLK.		BA

R A 2 0 1 000

R A 2 0 1 000

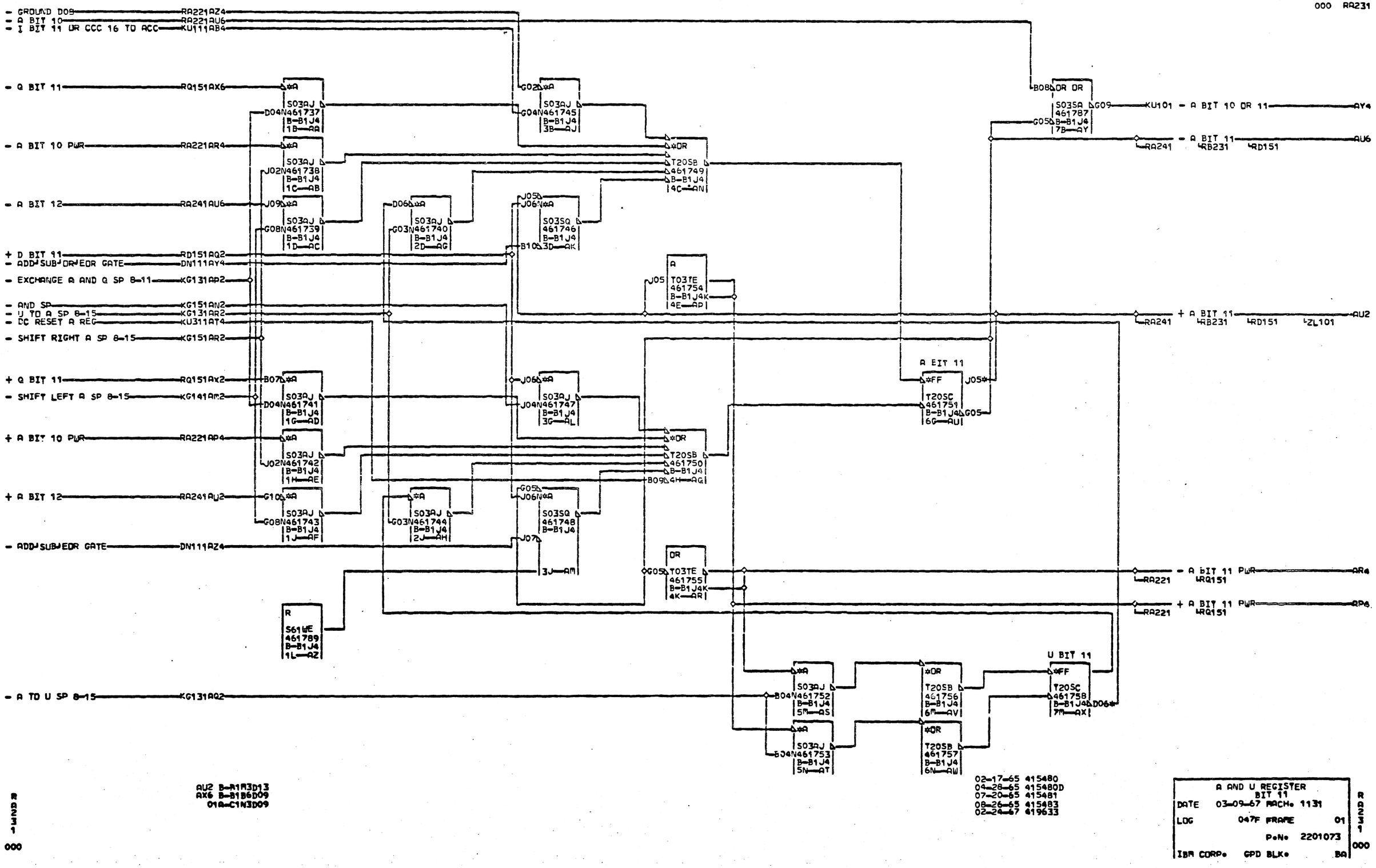

- I BIT 9 TO ACC — RB211AM4
- GROUND D08 — RA201AZ4
- A BIT 9 — RA201AU6
- Q BIT 9 — RQ141AX6
- A BIT 8 PWR — RA201AR4
- A BIT 10 — RA221AU6
+ D BIT 9 — RD141AQ2
- ADD/SUB/OR/EOR GATE — DN111AY4
- EXCHANGE A AND Q SP 8-11 — KG131AP2
- AND SP — KG151AN2
- U TO A SP 8-15 — KG131AR2
- DC RESET A REG — KU311AT4
- SHIFT RIGHT A SP 8-15 — KG151AR2
+ Q BIT 9 — RQ141AX2
- SHIFT LEFT A SP 8-15 — KG141AM2
+ A BIT 8 PWR — RA201AP4
+ A BIT 10 — RA221AU2
- ADD/SUB/EOR GATE — DN111AZ4
- A TO U SP 8-15 — KG131AQ2
- A BIT 8 OR 9 — KU101 — AY4
- A BIT 9 — RA221 — RB211 — RD141 — AU6
+ A BIT 9 — RA221 — RB211 — RD141 — ZL101 — AU2
- U BIT 9 — DU101 — Ax6
- A BIT 9 PWR — RA201 — RQ141 — AR4
+ A BIT 9 PWR — RA201 — RQ141 — AP4
A BIT 9
U BIT 9
AU2 B-B1M3D12
AX6 B-B1B6D07
01A-C1N3D07
02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633
A AND U REGISTER BIT 9
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201071
IBM CORP. GPD BLK. BA
RG211 000



AU2 B-B1A3B13
AX6 B-B1B6B08
01A-C1N3B08

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTERS BIT 10	
DATE 03-09-67 MACH. 1131	
LOG 047F FRAME	01
P.N. 2201072	
IBM CORP. GPD BLK.	BA

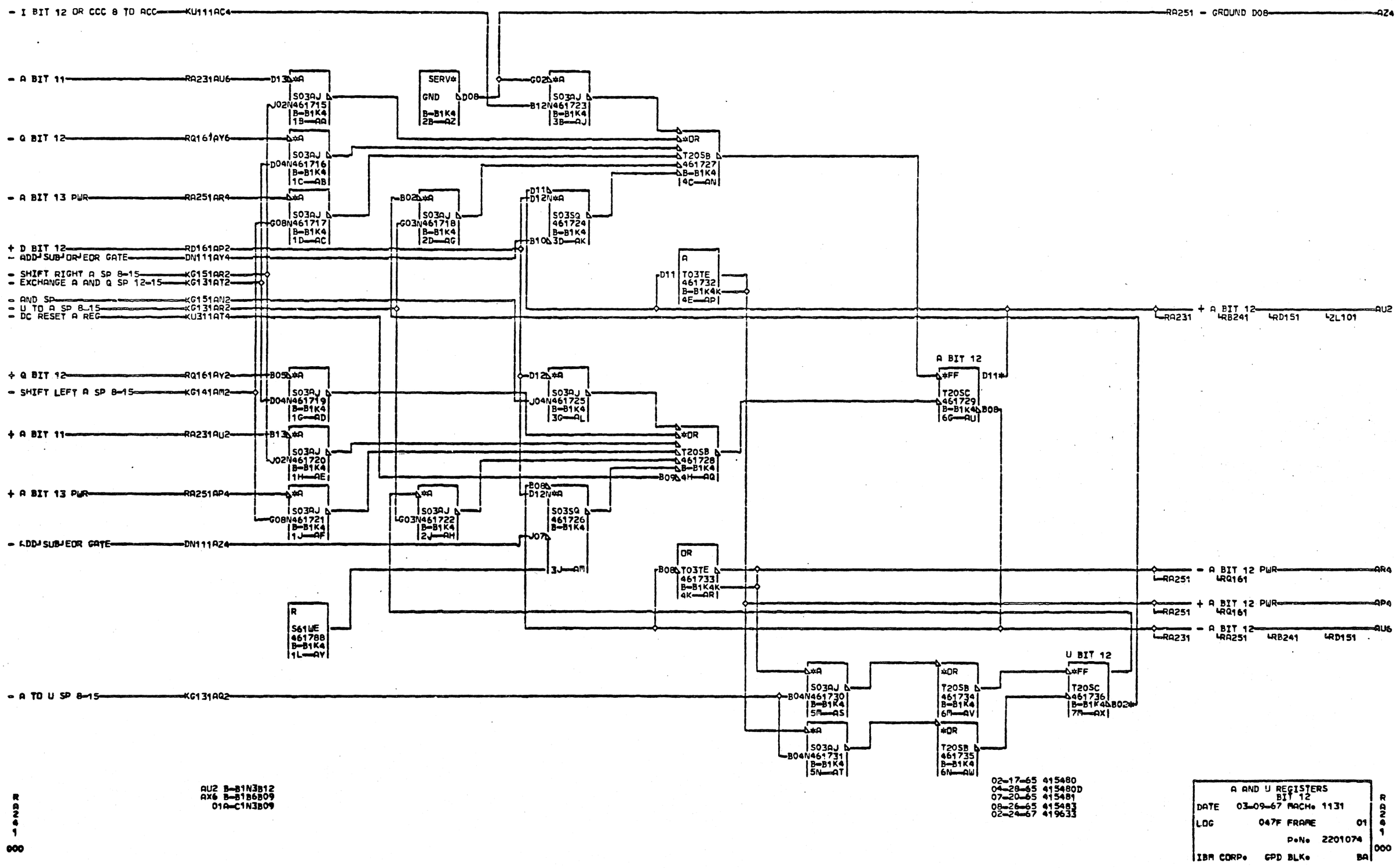


AU2 B-R1R3D13
AX6 B-B1B6D09
01A-C1N3D09

02-17-65 415480
04-28-65 4154800
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTER
BIT 11
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201073
IBM CORP. GPD BLK. BA

RA231 1 000



AU2 B-B1N3B12
AX6 B-B1B6B09
01A-C1N3B09

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTERS BIT 12	
DATE 03-09-67 MACH. 1131	
LOG 047F FRAME 01	
P.N. 2201074	
IBM CORP. GPD BLK. BA	

RA241 000

000 RA251

- GROUND D08 — RA241AZ4
- A BIT 12 — RA241AU6
- I BIT 13 OR CCC & TO ACC — KU111AD4
- Q BIT 13 — RQ161AX6
- A BIT 12 PWR — RC 41AR4
- A BIT 14 — RA261AU6
+ D BIT 13 — RD161AQ2
- ADD SUB OR EOR GATE — DN111AY4
- EXCHANGE A AND Q SP 12-15 — KG131AT2
- AND SP — KG151AN2
- U TO A SP 8-15 — KG131AR2
- DC RESET A REG — KU311AT4
- SHIFT RIGHT A SP 8-15 — KG151AR2
+ Q BIT 13 — RQ161AX2
- SHIFT LEFT A SP 8-15 — KG141AM2
+ A BIT 12 PWR — RA241AP4
+ A BIT 14 — RA261AU2
- ADD SUB EOR GATE — DN111AZ4
- A TO U SP 8-15 — KG131AQ2

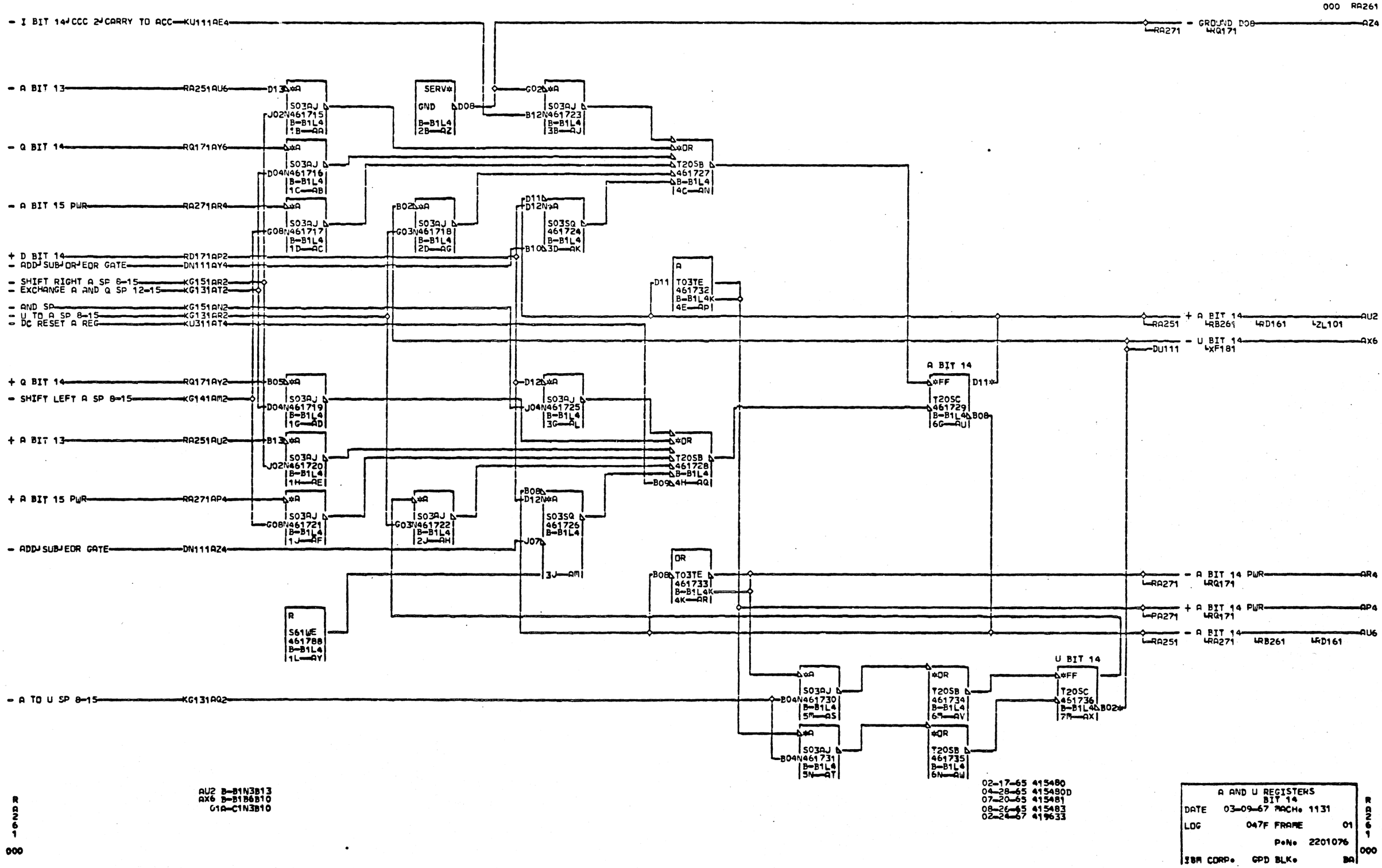
B07 *A S03AJ D04 N461741 B-B1K4 1G-AD
B08 OR OR S03SQ 461787 B-B1K4 7B-AY G05
G09 — KU101 — - A BIT 12 OR 13 — AY4
- A BIT 13 — AU6 — RA261 RB251 RD161
G02 *A S03AJ G04 N461745 B-B1K4 3B-AJ
*OR T20SB 461749 B-B1K4 4C-AN
D02 *A S03AJ J02 N461738 B-B1K4 1C-AB
J09 *A S03AJ G08 N461739 B-B1K4 1D-AC
D06 *A S03AJ G03 N461740 B-B1K4 2D-AG
J05 J06 N*A S03SQ 461746 B-B1K4 3D-AK B10
A J05 T03TE 461754 B-B1K4K 4E-AP
+ A BIT 13 — AU2 — RA261 RB251 RD161 ZL101
- U BIT 13 — AX6 — DU111 XF191
A BIT 13 *FF T20SC 461751 B-B1K4 6G-AU J05 G05
J06 *A S03AJ J04 N461747 B-B1K4 3G-AL
*OR T20SB 461750 B-B1K4 4H-AQ B09
J07 3J-AM
G05 J06 N*A S03SQ 461748 B-B1K4
R S61WE 461789 B-B1K4 1L-AZ
OR G05 T03TE 461755 B-B1K4K 4K-AR
- A BIT 13 PWR — AR4 — RA241 RQ161
+ A BIT 13 PWR — AP4 — RA241 RQ161
U BIT 13 *FF T20SC 461758 B-B1K4 7M-AX D06
*OR T20SB 461756 B-B1K4 6M-AV
B04 *A S03AJ N461752 B-B1K4 5M-AS
B04 *A S03AJ N461753 B-B1K4 5N-AT
*OR T20SB 461757 B-B1K4 6N-AW

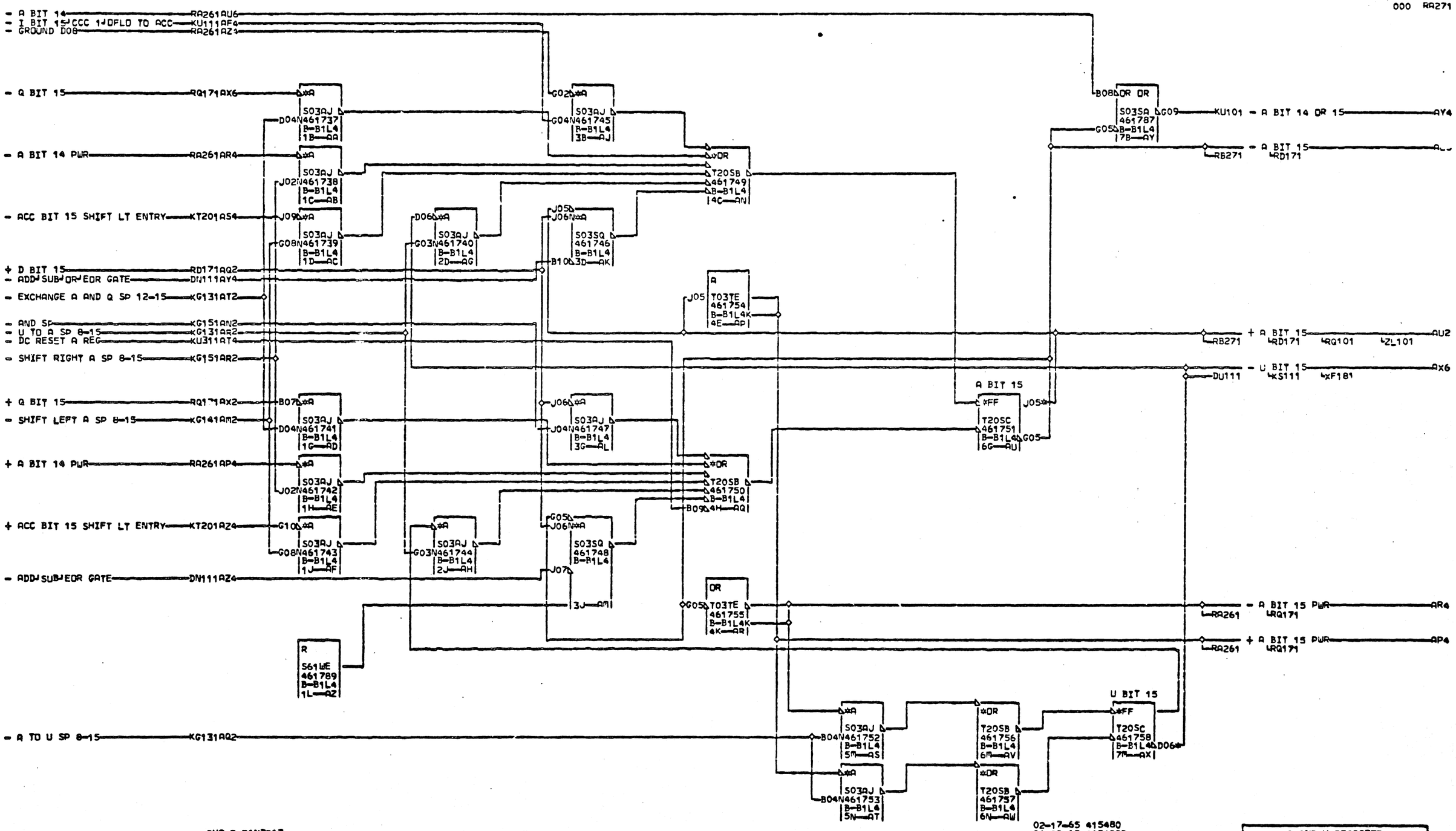
AU2 B-B1N3D12
AX6 B-B1B6D10
01A-C1N3D10

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTER
BIT 13
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201075
IBM CORP. GPD BLK. BA

R2S1 000


- I BIT 14 CCC 2 CARRY TO ACC KU111AE4
- GROUND D08 AZ4
RA271
WQ171
- A BIT 13 RA251AU6
Q BIT 14 RQ171AY6
A BIT 15 PWR RA271AR4
+ D BIT 14 RD171AP2
- ADD SUB OR EOR GATE DN111AY4
- SHIFT RIGHT A SP 8-15 KG151AR2
- EXCHANGE A AND Q SP 12-15 KG131AT2
- AND SP KG151AN2
- U TO A SP 8-15 KG131AR2
- DC RESET A REG KU311AT4
+ A BIT 14 AU2
RB261 RD161 ZL101
- U BIT 14 AX6
DU111 XF181
+ Q BIT 14 RQ171AY2
- SHIFT LEFT A SP 8-15 KG141AM2
+ A BIT 13 RA251AU2
+ A BIT 15 PWR RA271AP4
- ADD SUB EOR GATE DN111AZ4
A BIT 14
U BIT 14
- A BIT 14 PWR AR4
RQ171
+ A BIT 14 PWR AP4
RQ171
- A BIT 14 AU6
RA271 RB261 RD161
- A TO U SP 8-15 KG131AQ2
SERV*
GND
S03AJ
S03SQ
T20SB
T20SC
T03TE
S61WE
461715
461716
461717
461718
461719
461720
461721
461722
461723
461724
461725
461726
461727
461728
461729
461730
461731
461732
461733
461734
461735
461736
461788
AU2 B-B1N3B13
AX6 B-B1B6B10
G1A-C1N3B10
02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633
A AND U REGISTERS BIT 14
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201076
IBM CORP. GPD BLK. BA
R2261 000



AU2 B-B1N3D13
AX6 B-A1N5D10
01B-B1A5D10
01B-B1B6D11
01A-C1N3D11

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

A AND U REGISTER BIT 15			
DATE	03-09-67	PAGE	1131
LOG	047F	FRAME	01
		P.N.	2201077
IBM CORP.	GPD	BLK.	BA

RA271 000

+ GATE B TO D 0-7 — KG231AK4
+ GT B BITS 0 TO 9 TO OP REG — KD101AZ4
- SENSE AMP BIT 0 — WZ051AA4
+ A BIT 0 — RA101AU2
- IO BIT 0 — BB101AA4
- I/O TO B SP 0-7 — KG121AL2
- A TO B SP 0-7 — KG121AJ2
- I TO B SP 0-7 — KG121AK2
- A BIT 0 — RA101AU6
+ I BIT 1 — RB111AQ2
- IAR 0-7 INCR GT — KG211AX4
- B TO I SP 0-7 — KG111AJ2
- A TO I SP 0-7 — KG111AL2
- DC RESET IAR — KU311AU4
+ GATE I TO A 0-7 — KG231BA4
- I TO A SP 0-7 — KG101AL2
- A TO A SP 0-7 — KG101AJ2
- DC RESET B 0-7 — KU311AR4

+ B BIT 0 — BH2 — RB301 — ZL101
- RN101 = B BIT 0 GATED — BF4
- B BIT 0 TO D — BG4 — KG251 — RD101
- WZ031 = B BIT 0 — BH6
RA101 = I BIT 0 TO ACC — AR4

R B1 0 1 000

BF4 B=B1A2B09
01B=A1N2B09
BG4 B=B1A4B03
01B=A1N4B03
BH2 B=B1A3B02
BH6 B=B1B1A09
01B=B1A1E09
01B=C1A1E09
01B=C1B1A09

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND A REGISTERS
BIT 0
DATE 03-09-67 RACH. 1131
LOG 047F FRAME 01
P.N. 2201078
IBM CORP. GPD BLK. BL

R B1 0 1 000

+ GATE B TO D 0-7 — KG231AK4
+ GT B BITS 0 TO 9 TO DP REG — KD101AZ4

- SENSE AMP BIT 1 — WZ051AB4
+ A BIT 1 — RA111AU2
- IO BIT 1 — BB101AB
- I/O TO B SP 0-7 — KG121AL2
- A TO B SP 0-7 — KG121AJ2
- I TO B SP 0-7 — KG121AK2

+ B BIT 1 — BH2
RB301
ZL101

D10 R U61AG 461927 B-B1B2 1C—AA
J07 R S61SB 461918 B-B1B2 2C—AD
J07 N S05AH 461917 B-B1B2 3C—AJ
J07 *A S03AJ 461920 B-B1B2 4B—AR
G05N
*A S03AJ 461921 B-B1B2 4C—AS
G03N
B13N *A
D08
A T03TE 461915 B-B1B2K 3D—AN
S03SQ 461922 B-B1B2 4D—AT
*OR T20SB 461928 B-B1B2 6D—BB
D10

D12 A T03AB 461931 B-B1B2 7B—BF
B12* — RN101 - B BIT 1 GATED — BF4
G13
D12 A T03AB 461933 B-B1B2 7C—BG
B09 — RD101 - B BIT 1 TO D — BG4
B10
R S61SB 461970 B-B1B2 7D—BK
KD12

- A BIT 1 — RA111AU6
B08

+ I BIT 2 — RB121AQ2
J04
B03N *A S03SQ 461944 B-B1B2 2E—AE
G10
*A S03AJ 461945 B-B1B2 2F—AF
D09
G12N
*OR T20SB 461950 B-B1B2 3G—AK

- IAR 0-7 INCR GT — KG211AX4

A T03TE 461919 B-B1B2K 4F—AP
D07
B13N *A
D08
*A S03AJ 461923 B-B1B2 5E—AU
G05N
J04 *A S03AJ 461924 B-B1B2 5F—AV
G03N
S03SQ 461925 B-B1B2 5G—AW
*OR T20SB 461929 B-B1B2 6G—BC
D11

B BIT 1
FF D12
T20SC 461932 B-B1B2 7F—BH
D09* — WZ031 - B BIT 1 — BH6

B04 *A S03AJ 461946 B-B1B2 1G—AB
D02N

I BIT 1
*FF J04
T20SC 461954 B-B1B2 4H—AQ

RB101 + I BIT 1 — AQ2

- B TO I SP 0-7 — KG111AJ2
B03N *A S03SQ 461947 B-B1B2 2H—AG
G10

D12 *A S03AJ 461948 B-B1B2 1J—AH
G12N
- A TO I SP 0-7 — KG111AL2

D06N *A
D08
S03SQ 461959 B-B1B2 5J—AX
*A S03AJ 461960 B-B2N 5K—AY
B02N
*OR T20SB 461965 B-B1B2 6K—BD

- DC RESET IAR — KU311AU4
J02

A BIT 1
*FF B07
T20SC 461968 B-B1B2 7L—BJ
B04

B07 *A S03AJ 461949 B-B1B2 1L—AC
D02N

D06N *A
D08
S03SQ 461961 B-B1B2 4L—AZ
J04 A T03AB 461953 B-B1B2 2M—AM
B05
J04 *A S03AJ 461962 B-B2N 4M—BA
B02N
*OR T20SB 461966 B-B1B2 6M—BE

+ GATE I TO A 0-7 — KG231BA4
D04

- I TO A SP 0-7 — KG101AL2
- A TO A SP 0-7 — KG101AJ2
- DC RESET B 0-7 — KU311AR4

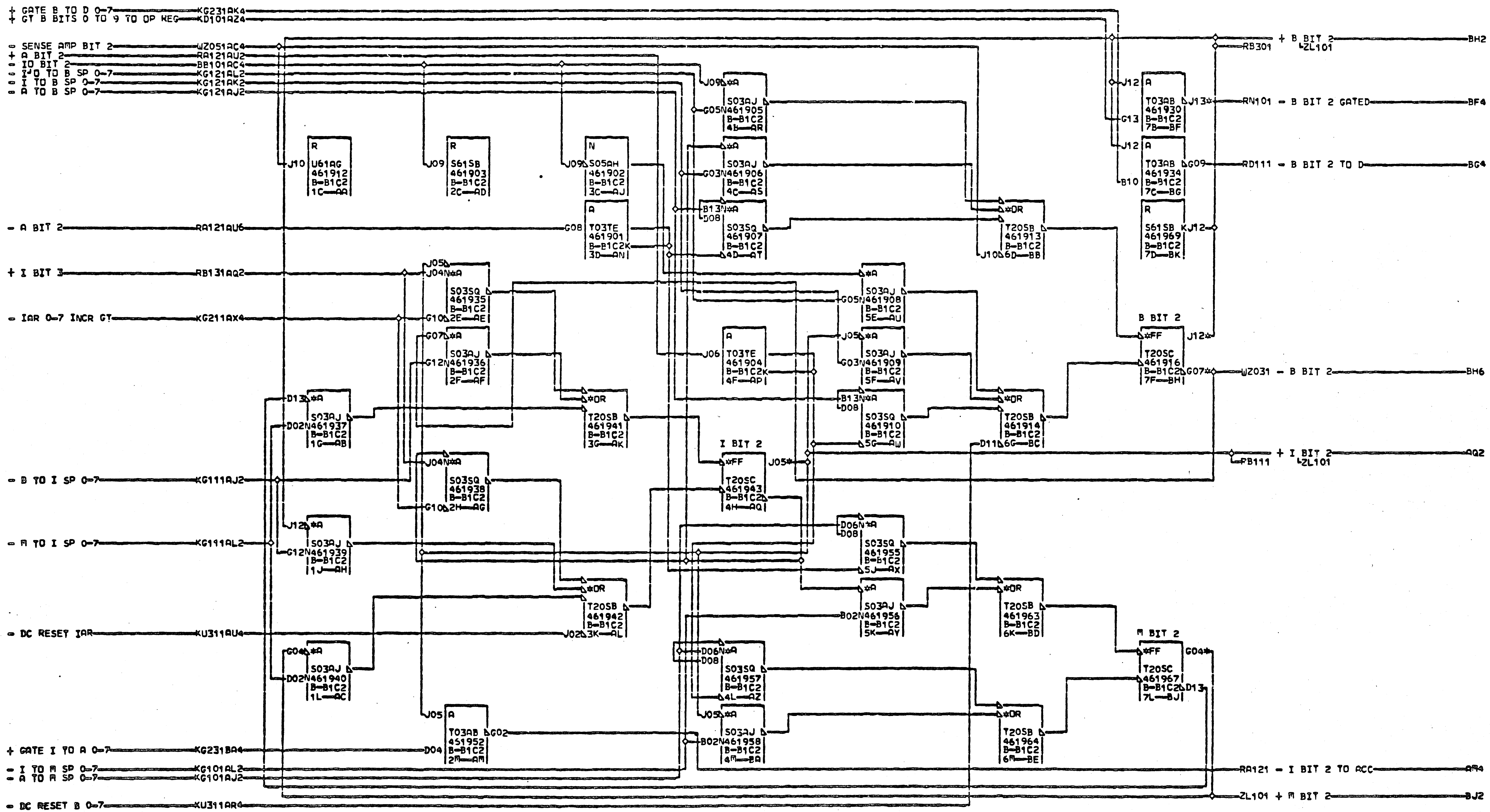
RA111 - I BIT 1 TO ACC — AR4

BF4 B-B1A2B10
01B-A1N2B10
BH2 B-B1K3D02
BH6 B-B1B1B09
01B-C1B1B09

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND A REGISTERS
BIT 1
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201079
IBM CORP. GPD BLK. BL

R B 1 1 1 000



AQ2 B-B1N2B02
BF4 B-B1A2B11
01 B-A1N2B11
BH2 B-B1M3B03
BH6 B-B1B1C09
01 B-C1B1C09
BJ2 B-B1M2B02

R B 1 2 1
000

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND M REGISTERS BIT 2		R B 1 2 1
DATE 03-09-67	MACH. 1131	
LOG 047F	FRAME 01	
	P.N. 2201080	000
IBM CORP. GPD	BLK. BL	

+ GATE B TO D 0-7 — KG231AK4
+ GT B BITS 0 TO 9 TO OP REG — KD101AZ4
= SENSE AMP BIT 3 — WZ051AD4
+ A BIT 3 — RA131AU2
= ID BIT 3 — BB111AA4
= I-O TO B SP 0-7 — KG121AL2
= I TO B SP 0-7 — KG121AK2
= A TO B SP 0-7 — KG121AJ2
= A BIT 3 — RA131AU6
= INCR 3 SAMPLE — KG201AF4
= IAR 0-7 INCR GT — KG211AX4
= B TO I SP 0-7 — KG111AJ2
= M TO I SP 0-7 — KG111AL2
= DC RESET IAR — KU311AU4
+ GATE I TO A 0-7 — KG231BA4
= I TO A SP 0-7 — KG101AL2
= A TO A SP 0-7 — KG101AJ2
= DC RESET B 0-7 — KU311AR4

+ B BIT 3 — BH2 (RB301, ZL101)
RN101 = B BIT 3 GATED — BF4
RD111 = B BIT 3 TO D — BG4
WZ031 = B BIT 3 — BH6
+ I BIT 3 — AQ2 (RB121, ZL101)
RA131 = I BIT 3 TO ACC — AR4
+ M BIT 3 — BJ2 (MB101, ZL101)

B BIT 3
I BIT 3
M BIT 3

AQ2 B-B1N2D02
BF4 B-B1A2B12
01 B-A1N2B12
BH2 B-B1R3D04
BH6 B-B1B1D09
01 B-C1B1D09
BJ2 B-B1A2D02

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND M REGISTERS BIT 3	
DATE 03-09-67 MACH. 1131	
LOG 047F FRAME	01
P.N. 2201081	
IBM CORP. GPD BLK.	BL

RB131 000

+ GATE B TO D 0-7 — KG231AK4
+ GT B BITS 0 TO 9 TO OP REG — KD101AZ4
- SENSE AMP BIT 4 — WZ051AE4
+ A BIT 4 — RA141AU2
- IO BIT 4 — BB111AB4
- I/O TO B SP 0-7 — KG121AL2
- I TO B SP 0-7 — KG121AK2
- A TO B SP 0-7 — KG121AJ2

J10 R U61AG 461912 B-B1D2 1C-AA
J09 R S61SB 461903 B-B1D2 2C-AD
J09 N S05AH 461902 B-B1D2 3C-AJ
J09 *A S03AJ G05N 461905 B-B1D2 4B-AR
*A S03AJ G03N 461906 B-B1D2 4C-AS
B13N *A D08 S03SQ 461907 B-B1D2 4D-AT
A T03TE 461901 B-B1D2K 3D-AN
G08

- A BIT 4 — RA141AU6

*OR T20SB 461913 B-B1D2 J10 6D-BB

J12 A T03AB 461930 B-B1D2 7B-BF J13*
G13
J12 A T03AB 461934 B-B1D2 7C-BG G09
B10
R S61SB 461969 B-B1D2 7D-BK J12*

+ B BIT 4 — BH2
RB301 — ZL101
RN101 - B BIT 4 GATED — BF4
RD121 - B BIT 4 TO D — BG4

+ I BIT 5 — RB151AQ2
J05 J04N *A S03SQ 461935 B-B1D2 2E-AE G10
- IAR 0-7 INCR GT — KG211AX4
G07 *A S03AJ G12N 461936 B-B1D2 2F-AF
J06 A T03TE 461904 B-B1D2K 4F-AP
*A S03AJ G05N 461908 B-B1D2 5E-AU
J05 *A S03AJ G03N 461909 B-B1D2 5F-AV
B13N *A D08 S03SQ 461910 B-B1D2 5G-AW
*OR T20SB 461914 B-B1D2 6G-BC D11
D13 *A S03AJ D02N 461937 B-B1D2 1G-AB
*OR T20SB 461941 B-B1D2 3G-AK

B BIT 4
FF T20SC 461916 B-B1D2 7F-EH G07
J12*
WZ031 - B BIT 4 — BH6

I BIT 4
FF T20SC 461943 B-B1D2 4H-AQ J05
J04N *A S03SQ 461938 B-B1D2 2H-AG G10
- B TO I SP 0-7 — KG111AJ2
J12 *A S03AJ G12N 461939 B-B1D2 1J-AH
- A TO I SP 0-7 — KG111AL2
D06N *A D08 S03SQ 461955 B-B1D2 5J-AX
*A S03AJ B02N 461956 B-B1D2 5K-AY
*OR T20SB 461963 B-B1D2 6K-BD
*OR T20SB 461942 B-B1D2 3K-AL J02
- DC RESET IAR — KU311AU4
G04 *A S03AJ D02N 461940 B-B1D2 1L-AC

A BIT 4
FF T20SC 461967 B-B1D2 7L-BJ G04
D13
D06N *A D08 S03SQ 461957 B-B1D2 4L-AZ
J05 A T03AB 451952 B-B1D2 2M-AM G02
J05 *A S03AJ B02N 461958 B-B1D2 4M-BA
*OR T20SB 461964 B-B1D2 6M-BE
+ GATE I TO A 0-7 — KG231BA4
D04
- I TO A SP 0-7 — KG101AL2
- A TO A SP 0-7 — KG101AJ2
- DC RESET B 0-7 — KU311AR4

RA141 - I BIT 4 TO ACC — AR4

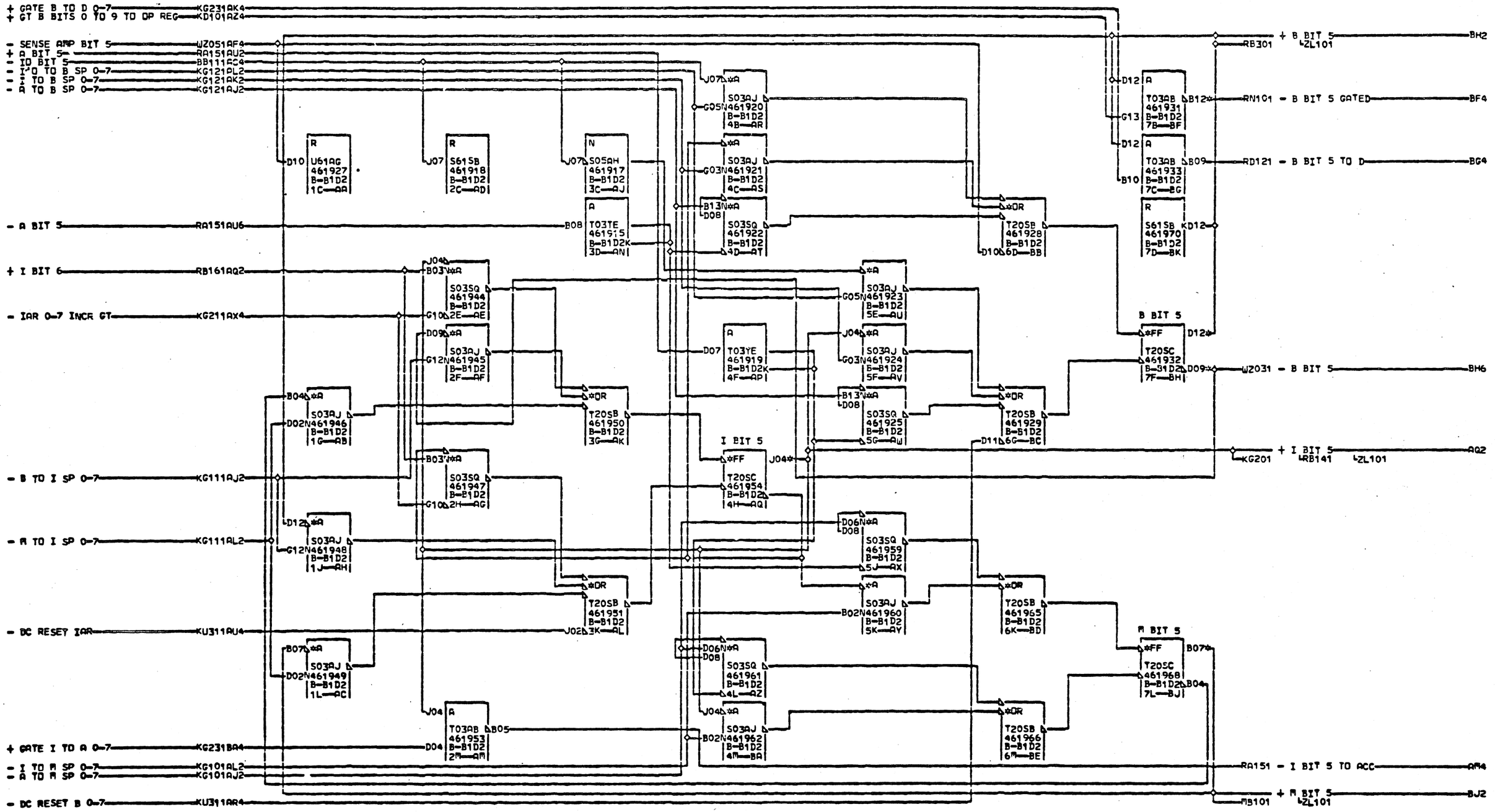
+ I BIT 4 — AQ2
KG201 — ZL101
+ A BIT 4 — BJ2
MB101 — ZL101

AQ2 B-B1N2B03
BF4 B-B1A2B13
01 B-A1N2B13
BH2 B-B1M3B04
BH6 B-B1B1E09
01 B-C1B1E09
BJ2 B-B1A2B03

02-17-65 415480
03-04-65 415480A
04-28-65 4154801
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND A REGISTERS BIT 4
DATE 03-09-67 MACH. 1131
LDG 047F FRAME 01
P.N. 2201082
IBM CORP. TPD BLK. BL

RB141 000



AQ2 B-B1N2D04
BF4 B-B1A2D09
01B-A1N2D09
BH2 B-B1M3D05
BH6 B-B1C1B09
01B-C1C1B09
BJ2 B-B1R2D04

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND M REGISTERS
BIT 5
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.No. 2201083
IBM CORP. GPD BLK. BL

000

+ GATE B TO D 0-7 — KG231AK4
+ GT B BITS 0 TO 9 TO OP REG — KD101AZ4
= SENSE AMP BIT 6 — WZ051AG4
+ A BIT 6 — RA161AU2
= IO BIT 6 — BB121AA4
= I TO B SP 0-7 — KG121AL2
= I TO B SP 0-7 — KG121AK2
= A TO B SP 0-7 — KG121AJ2
= A BIT 6 — RA161AU6
+ I BIT 7 — RB171AQ2
= IAR 0-7 INCR GT — KG211AX4
+ GATE I TO A 0-7 — KG231BA4
= I TO A SP 0-7 — KG101AL2
= A TO A SP 0-7 — KG101AJ2
= DC RESET IAR — KU311AU4
= B TO I SP 0-7 — KG111AJ2
= A TO I SP 0-7 — KG111AL2
= DC RESET B 0-7 — KU311AR4

+ B BIT 6 — BH2 — RB301 — ZL101 — DN201
RN101 = B BIT 6 GATED — BF4
RD131 = B BIT 6 TO D — BG4
B BIT 6 — WZ031 = B BIT 6 — BH6
I BIT 6 — + I BIT 6 — AQ2 — KG201 — RB151 — ZL101
A BIT 6 — + A BIT 6 — BJ2 — RB101 — ZL101
RA161 = I BIT 6 TO ACC — AR4

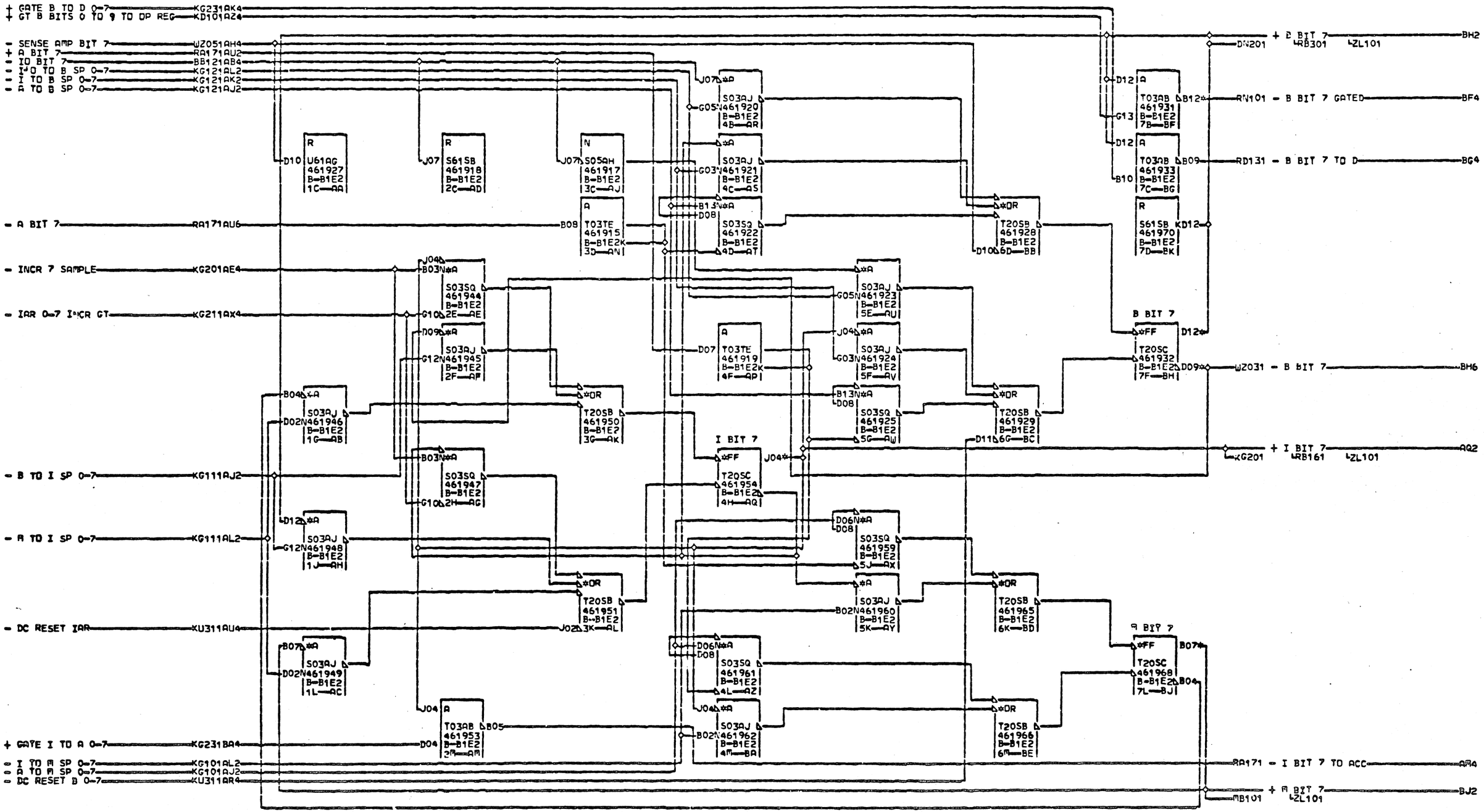
AQ2	B=21N2B04
BF4	B=B1A2D10
	01B=A1N2D10
BH2	B=B1A3B05
	01B=B1A5B11
	01B=A1N5B11
BH6	B=B1C1C09
	01B=C1C1C09
BJ2	B=B1A2B04

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND A REGISTERS BIT 6
DATE 03-09-67 MACH. 1131
LDG 047F FRAME 01
P.N. 2201084
IBM CORP. GPD BLK. BL

RB161 000

000 RB171

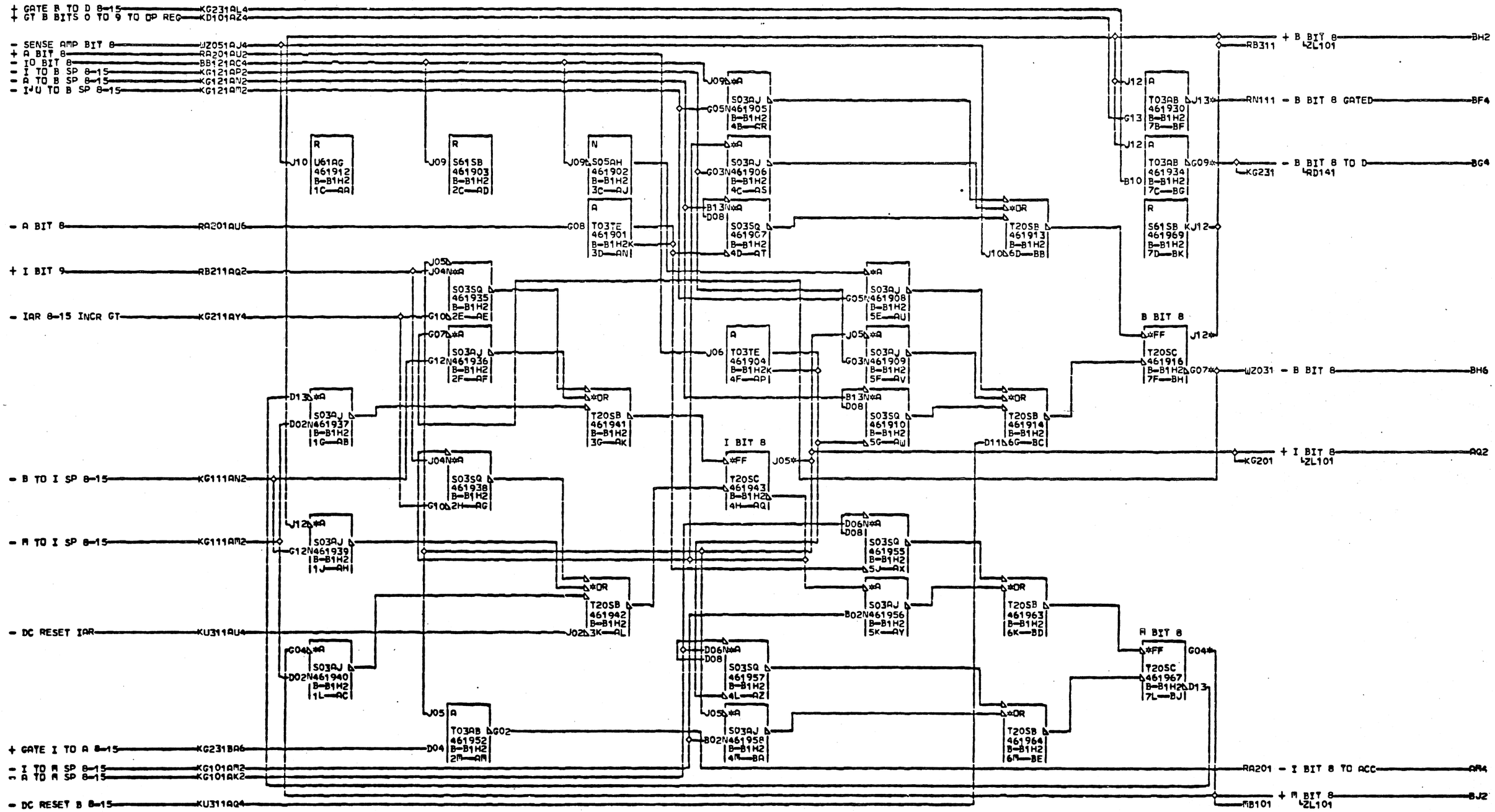


AQ2 B-B1N2D05
BF4 B-B1A2D11
01B-A1N2D11
BH2 B-B1N3D06
01B-B1A5D11
01B-A1N5D11
BH6 B-B1C1D09
01B-C1C1D39
BJ2 B-B1A2D05

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND A REGISTERS BIT 7
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201085
IBM CORP. GPD BLK. BL

R B 1 7 1 000



R
S
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AQ2 B-B1N2B05
BF4 B-B1E1A11
01B-A1E1A11
BG4 B-B1A4D03
01B-A1A4D03
BH2 B-B1A3B07
BH6 B-B1C1E09
01B-C1C1E09
BJ2 B-B1A2B05

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND A REGISTERS
BIT 8
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201086
IBM CORP. GPD BLK. BL

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+ GATE B TO D 8-15 — KG231AL4
+ GT B BITS 0 TO 9 TO UP REG — KD101AZ4
- SENSE AMP BIT 9 — WZ061AA4
+ A BIT 9 — RA211AU2
- IO BIT 9 — BB131AA4
- I TO B SP 8-15 — KG121AP2
- A TO B SP 8-15 — KG121AN2
- I+O TO B SP 8-15 — KG121AM2
- A BIT 9 — RA211AU6
+ I BIT 10 — RB221AQ2
- IAR 8-15 INCR GT — KG211AY4
- B TO I SP 8-15 — KG111AN2
- A TO I SP 8-15 — KG111AM2
- DC RESET IAR — KU311AU4
+ GATE I TO A 8-15 — KG231BA6
- I TO M SP 8-15 — KG101AM2
- A TO M SP 8-15 — KG101AK2
- DC RESET B 8-15 — KU311AQ4

+ B BIT 9 — BH2 — RB311 — ZL101
RN111 - B BIT 9 GATED — BF4
RD141 - B BIT 9 TO D — BG4
WZ041 - B BIT 9 — BH6
+ I BIT 9 — AQ2 — KG201 — RB201 — ZL101
RA211 - I BIT 9 TO ACC — AM4
+ M BIT 9 — BJ2 — MB101 — ZL101

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AQ2 B-B1N2D06
BF4 B-B1E1B11
01B-A1E1B11
BH2 B-B1A3D07
BH6 B-B1D1A09
01B-C1D1A09
BJ2 B-B1N2D06

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND M REGISTERS
BIT 9
DATE 03-09-67 MACH= 1131
LDG 047F FRAME 01
PeNo 2201087
IBM CORP= GPD BLK= BL

R
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V
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1
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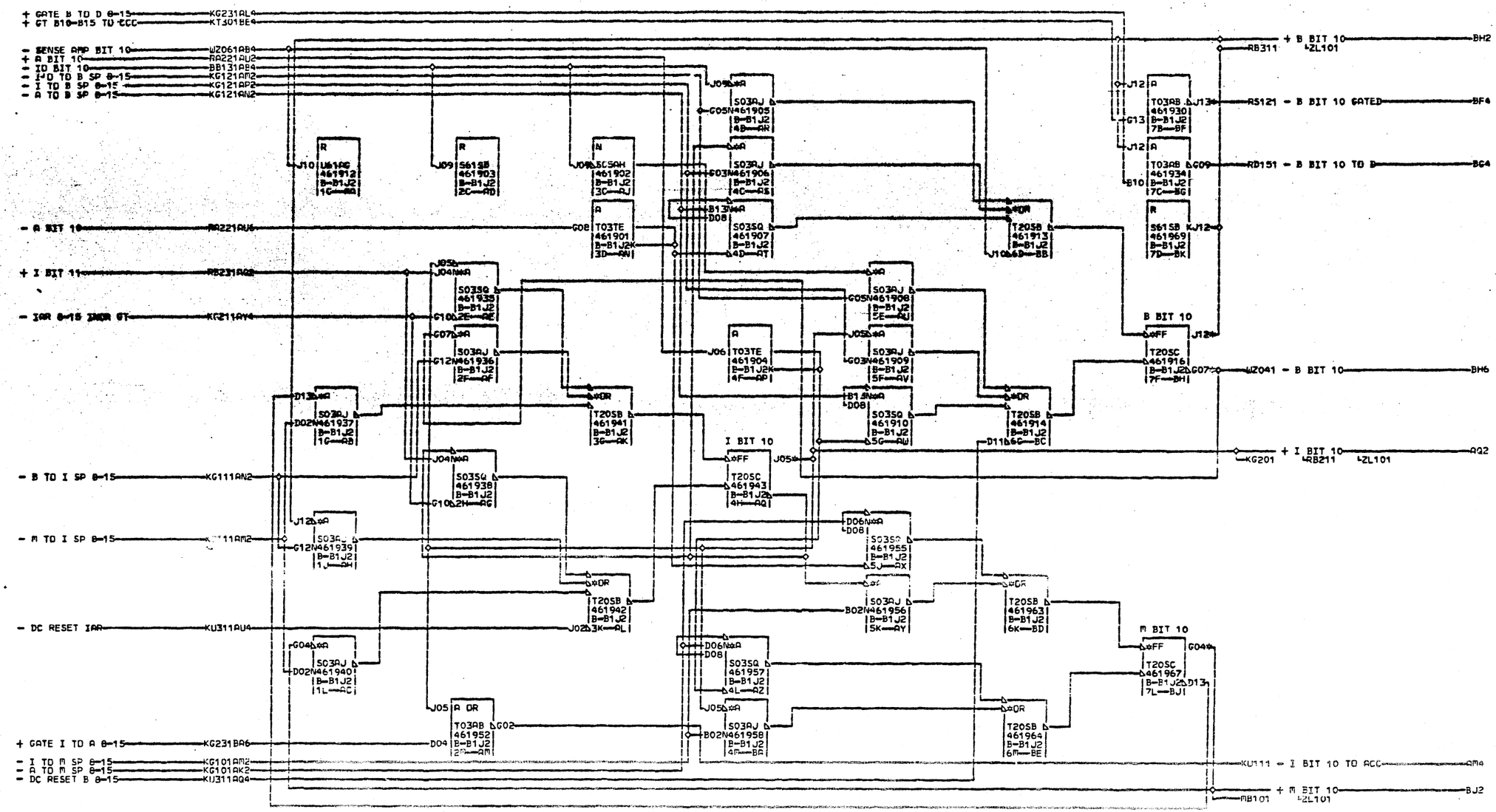
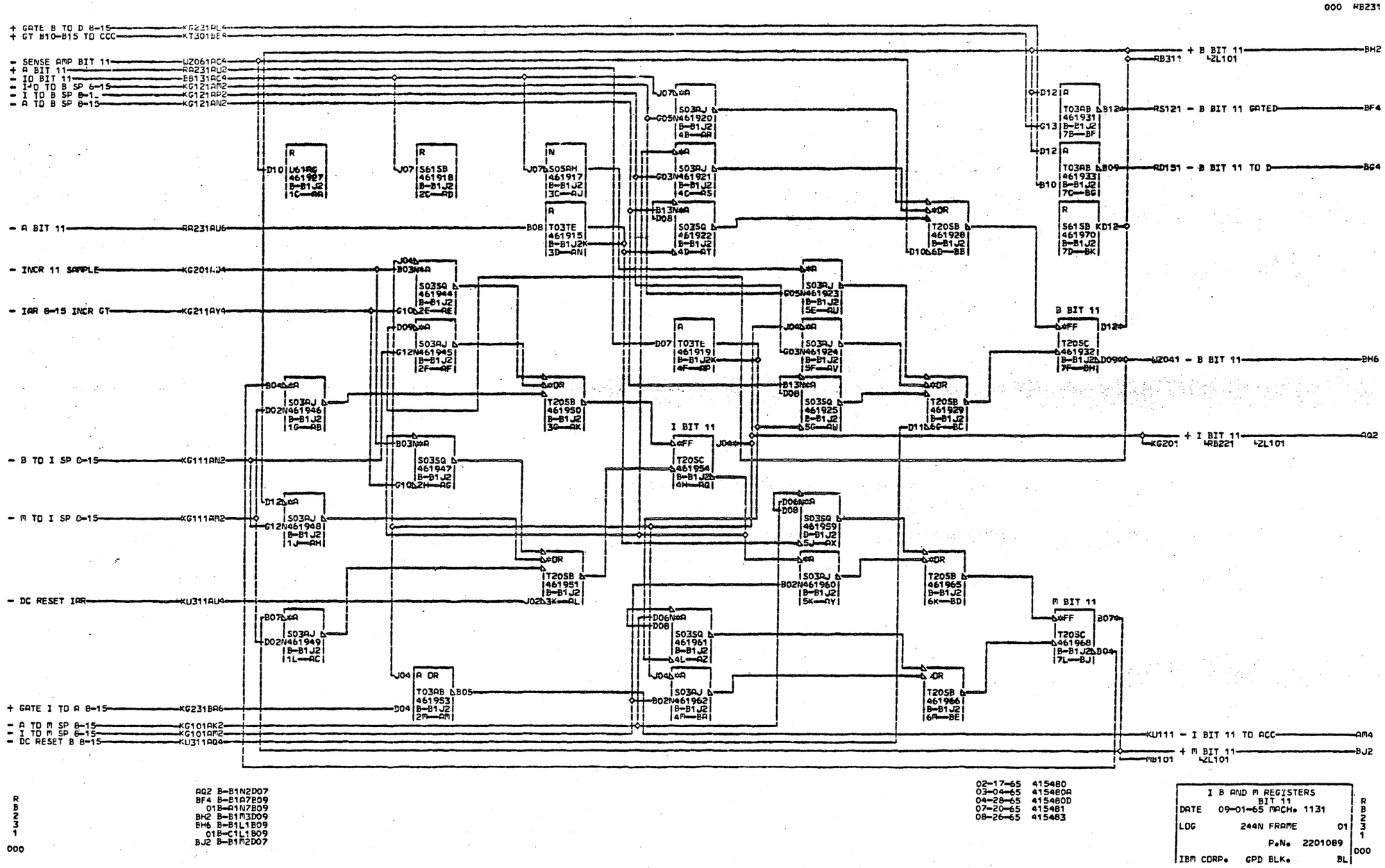


AQ2 B-B1N2B07
BF4 B-B1D1E09
01B-A1D1E09
BH2 B-B1M3B08
BH6 B-B1L1F09
01B-B1K1E09
01B-C1K1E09
01B-C1L1A09
BJ2 B-B1M2B07

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483

I B AND M REGISTERS
BIT 10
DATE 09-01-65 MACH. 1131
LDG 244N FRAME 01
P.N. 2201088
IBM CORP. BLK. BL

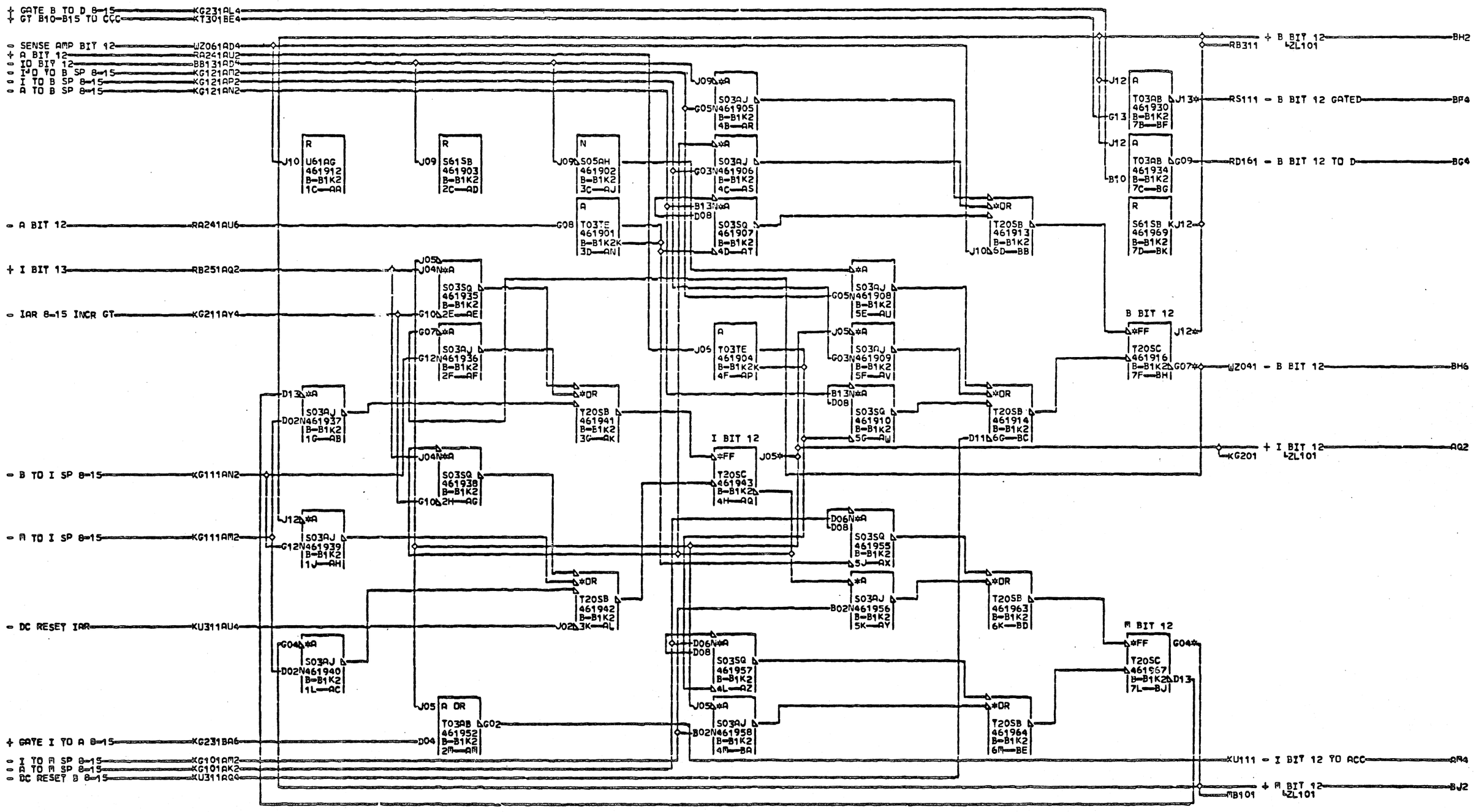
000 RB231



AQ2 B-B1N2D07
BF4 B-B1A7B09
01B-A1N7B09
BH2 B-B1M3D09
BH6 B-B1L1B09
01B-C1L1B09
BJ2 B-B1M2D07

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483

I B AND M REGISTERS
BIT 11
DATE 09-01-65 MACH. 1131
LOG 244N FRAME 01
P.N. 2201089
IBM CORP. GPD BLK. BL

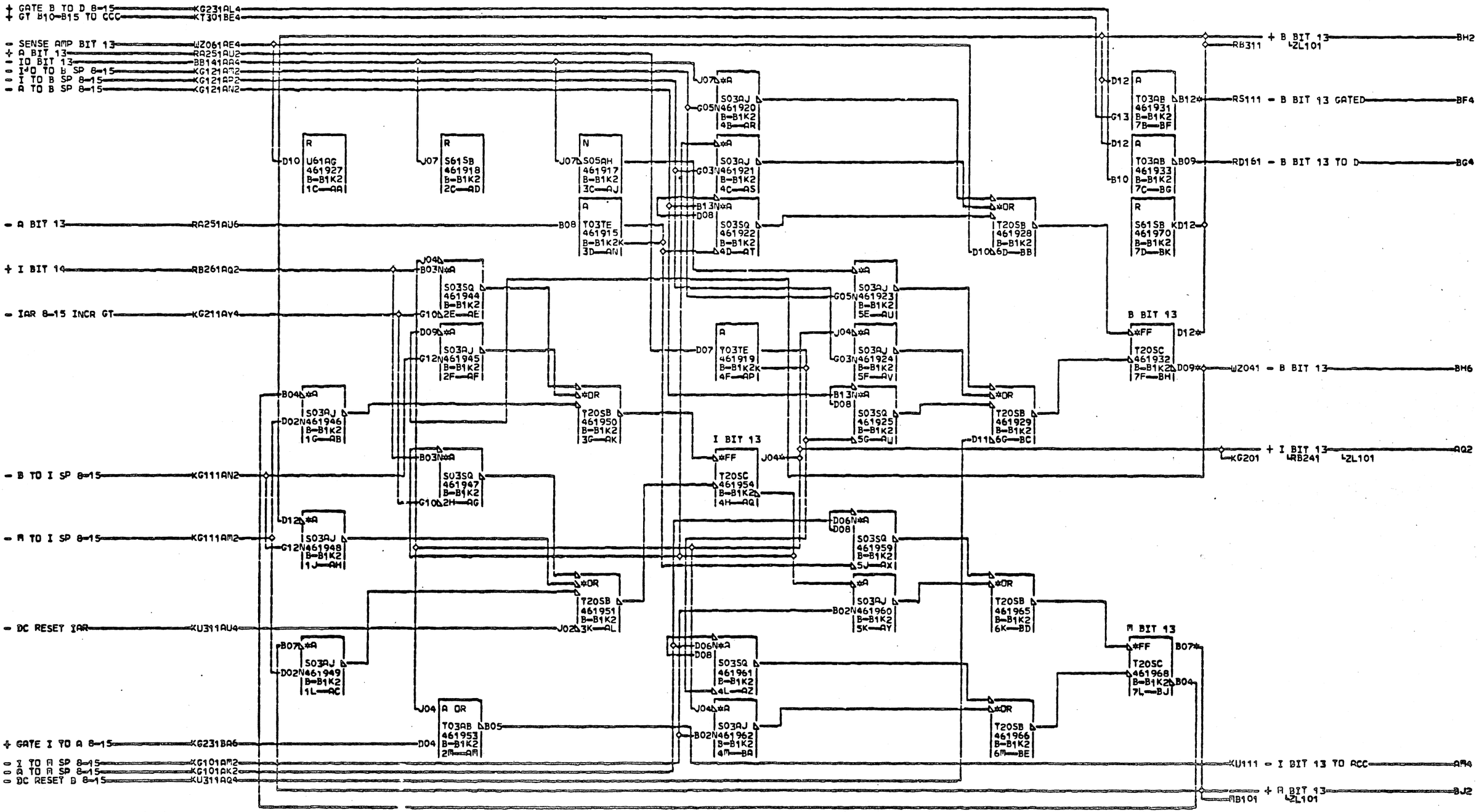


AQ2 B-B1N2B08
BF4 B-B1E1B09
01B-A1E1B09
BH2 B-B1M1B09
BH6 B-B1L1C09
01B-C1L1C09
BJ2 B-B1M2B08

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND A REGISTERS
BIT 12
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201090
IBM CORP. GPD BLK. BL

R 2 4 1 000



AQ2 B-B1N2D09
BF4 B-B1E1C09
01B-A1E1C09
BH2 B-B1N3D10
BH6 B-B1L1D09
01B-C1L1D09
BJ2 B-B1R2D09

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND A REGISTERS BIT 13
DATE 03-09-67 MACH. 1131
LOC 047F FRAME 01
P.N. 2201091
IBM CORP. GPD BLK. BL

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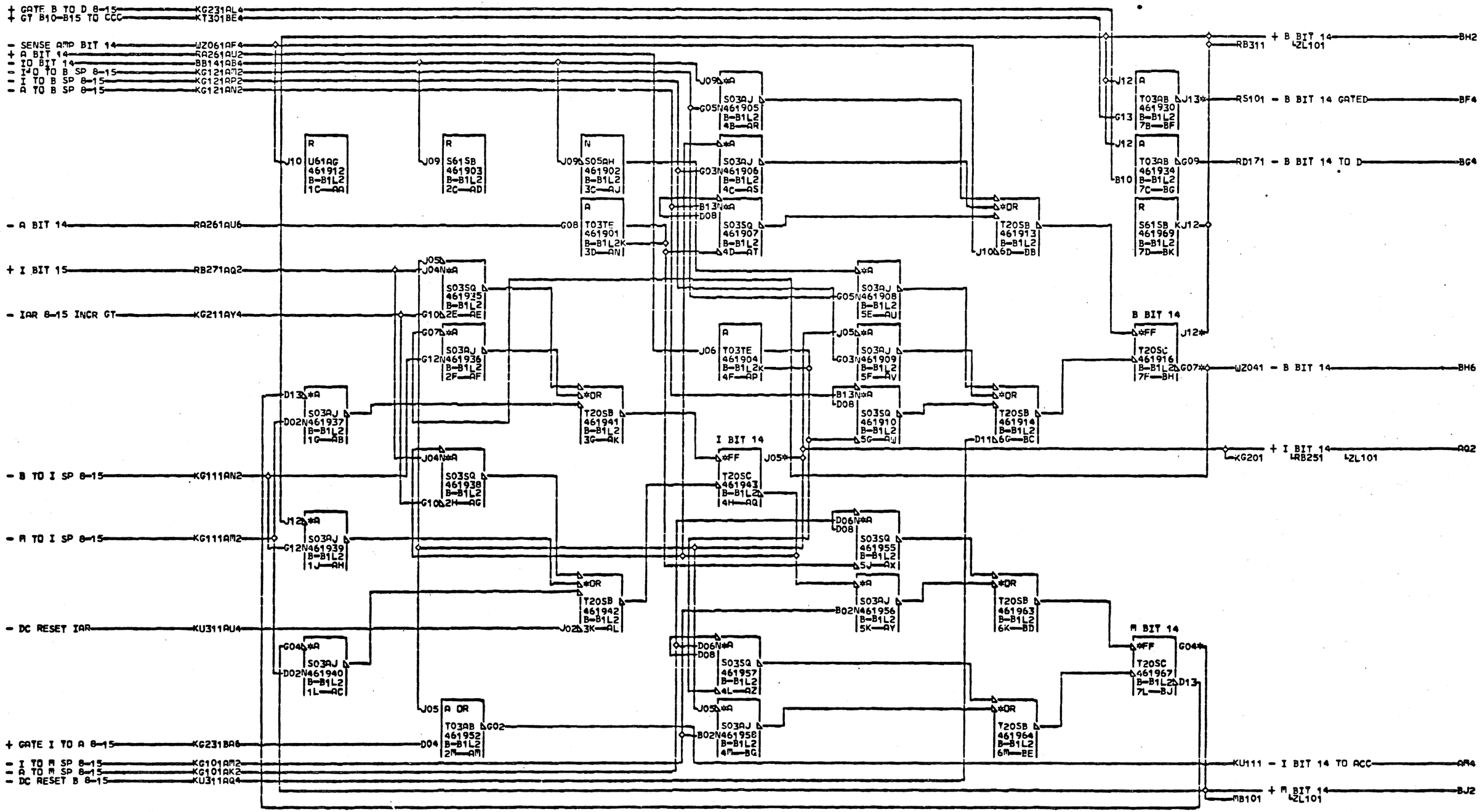


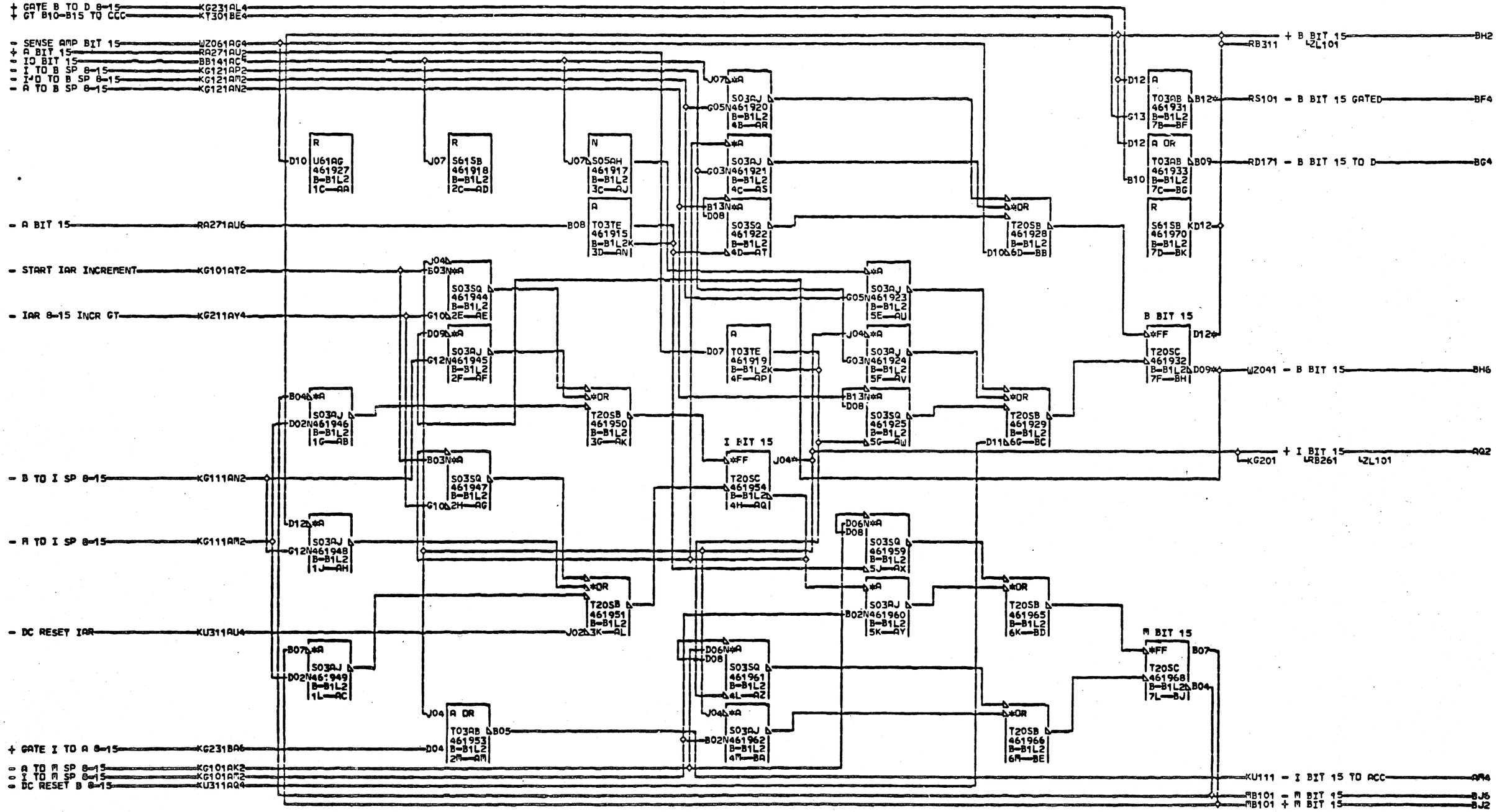
R B2 6 1 000

AQ2 B-B1N2B09
BF4 B-B1E1D09
01B-A1E1D09
BH2 B-B1A3B10
BH6 B-B1L1E09
01B-C1L1E09
BJ2 B-B1A2B09

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND M REGISTERS
BIT 14
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201092
IPM CORP. GPD BLK. BR

R B2 6 1 000



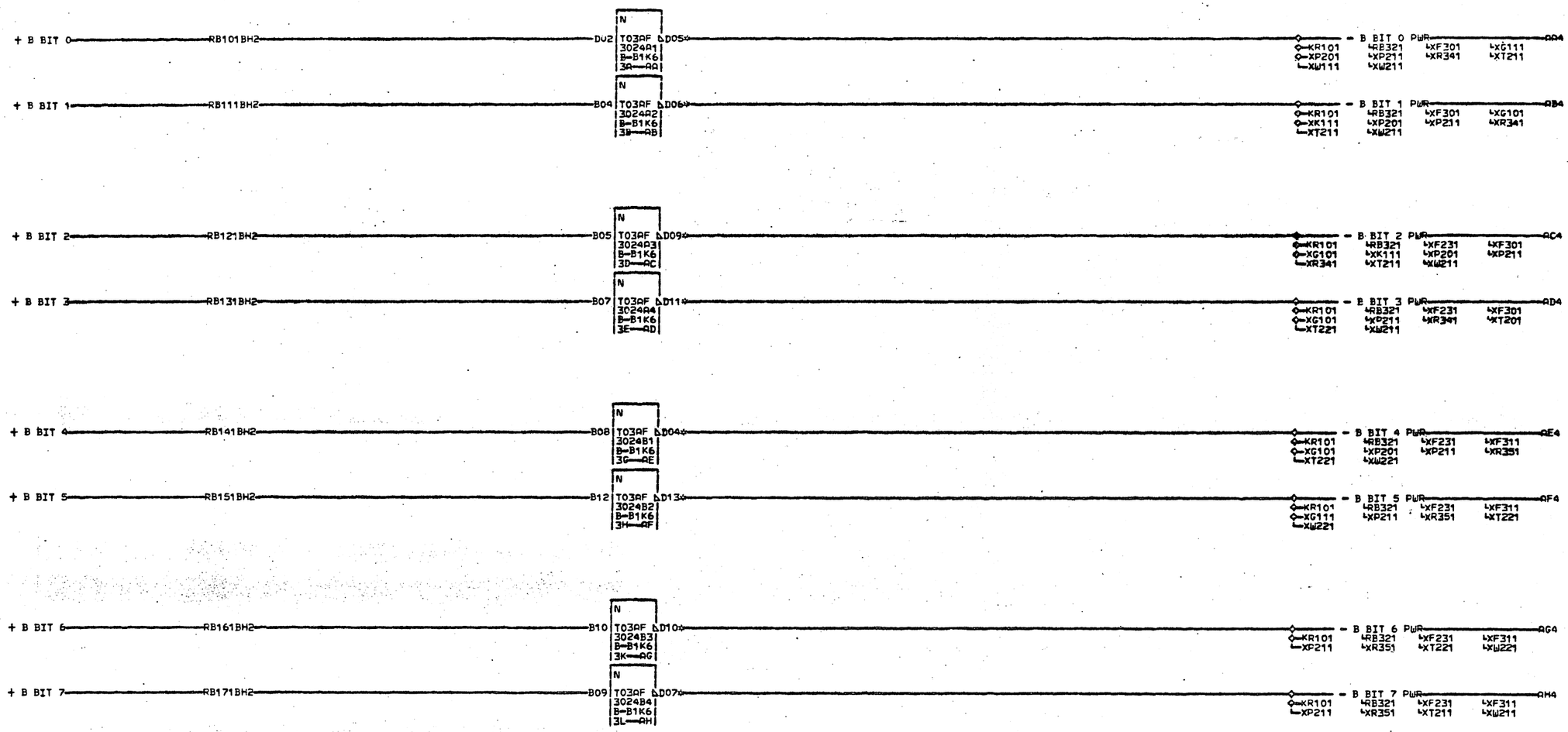
AQ2 B-B1N2D10
BF4 B-B1E1E09
01B-A1E1E09
BH2 B-B1R3D11
BH6 B-B1R1B09
01B-C1R1B09

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

I B AND M REGISTERS BIT 15
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201093
IBM CORP. GPD BLK. SR

000

000 RB301



R
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AA4 B-B1N6B02 01A-B1N6D02 AD4 B-B1N6D04 01A-B1N6B05 AG4 B-B1N6B05 01A-B1N6D05
01A-C1B6B02 01A-A1N3D02 01A-C1B6D04 01A-A1N3B04 01A-C1B6B05 01A-A1N3D06
01A-C1A6B03 01A-A1M3D02 01A-C1A6D03 01A-A1M3B04 01A-C1A6B06 01A-A1M3D06
01A-B1N6B03 AC4 B-B1N6B03 01A-B1N6D03 AF4 B-B1N6D05 01A-B1N6B06
01A-A1N3B02 01A-C1B6B03 01A-A1N3D04 01A-C1B6D05 01A-A1N3B05
01A-A1M3E02 01A-C1A6E04 01A-A1M3D04 01A-C1A6D04 01A-A1M3B05
AB4 B-B1N6D02 01A-B1N6B04 AE4 B-B1N6B04 01A-B1N6D04 AH4 B-B1N6D06
01A-L1B6D02 01A-A1N3B03 01A-C1B6B04 01A-A1N3D05 01A-L1B6D06
01A-C1A6D02 01A-A1M3B03 01A-C1A6B05 01A-A1M3D05 01A-C1A6D05

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483

B REGISTER POWERING
BITS 0-7
DATE 09-01-65 MACH. 1131
LDG 244N FRAME 01
P.N. 2201094
IBM CORP. GPD BLK. AT

R
B
3
0
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+ B BIT 8 — RB201BH2 — B02 — T03AF 3024A1 B-B1L6 3A—AA — D02 — D05* — KR101 XF321 — B BIT 8 PWR — RB321 XP221 — XF111 XR361 — XF231 — AA4

+ B BIT 9 — RB211BH2 — B04 — T03AF 3024A2 B-B1L6 3B—AB — D04 — D06* — KR101 XF321 — B BIT 9 PWR — RB321 XP221 — XF111 XR361 — XF231 — AB4

+ B BIT 10 — RB221BH2 — B05 — T03AF 3024A3 B-B1L6 3D—AC — D09* — KR101 XF321 — B BIT 10 PWR — RB321 XP221 — XF111 XR361 — XF221 — AC4

+ B BIT 11 — RB231BH2 — B07 — T03AF 3024A4 B-B1L6 3E—AD — D11* — KR101 XF321 — B BIT 11 PWR — RB321 XP221 — XF111 XR361 — XF221 — AD4

+ B BIT 12 — RB241BH2 — B08 — T03AF 3024B1 B-B1L6 3G—AE — D04* — KR101 XF331 — B BIT 12 PWR — RB321 XP221 — XF111 XR251 — XF221 — AE4

+ B BIT 13 — RB251BH2 — B12 — T03AF 3024B2 B-B1L6 3H—AF — D13* — KR101 XF331 — B BIT 13 PWR — RB321 XP221 — XF111 — XF221 — AF4

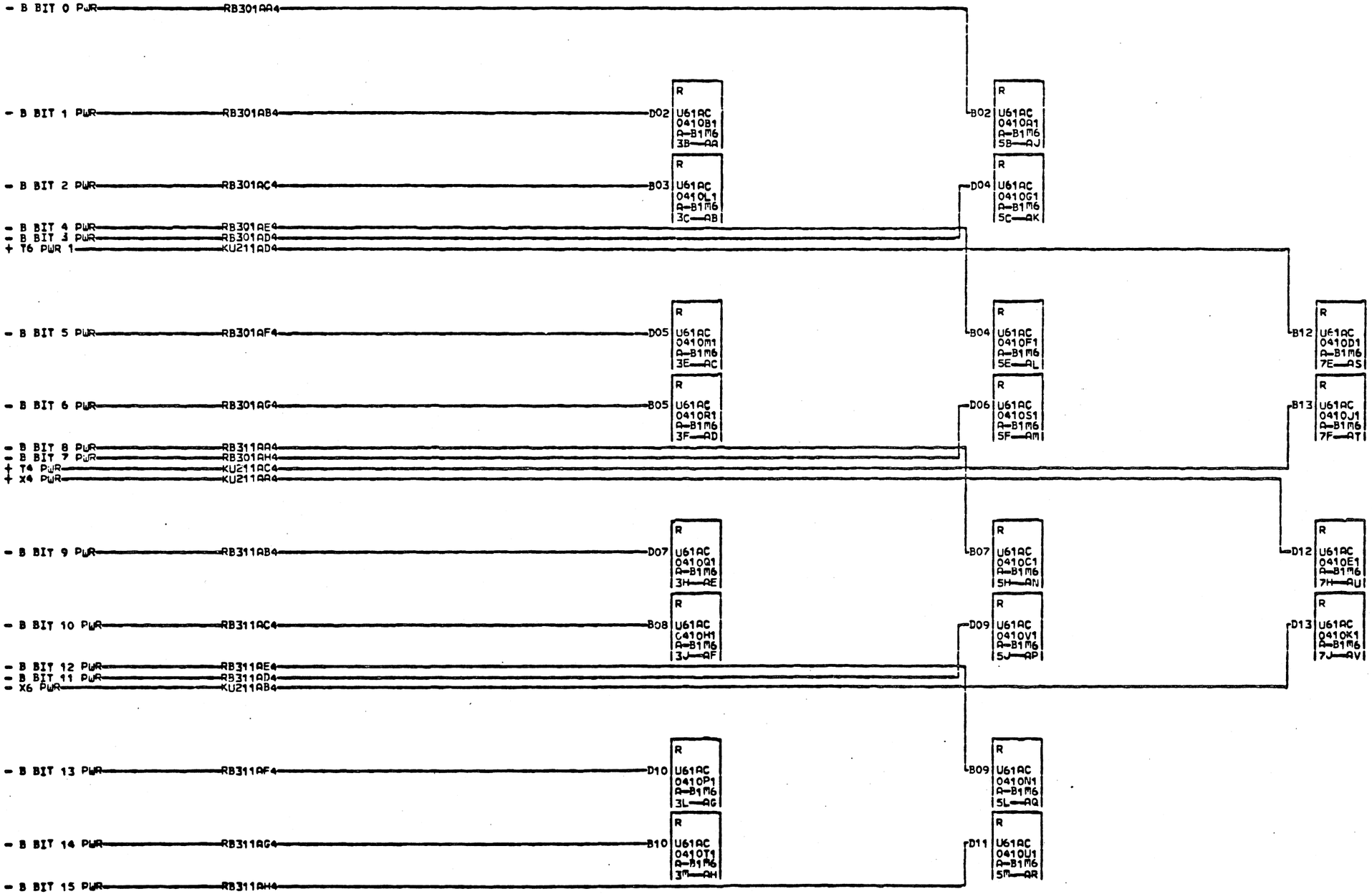
+ B BIT 14 — RB261BH2 — B10 — T03AF 3024B3 B-B1L6 3K—AG — D10* — KR101 XF331 — B BIT 14 PWR — RB321 XP221 — XF111 — XF221 — AG4

+ B BIT 15 — RB271BH2 — B09 — T03AF 3024B4 B-B1L6 3L—AH — D07* — KR101 XF331 — B BIT 15 PWR — RB321 XP201 XP221 — XF111 — XF221 — AH4

AA4 B-B1N6B07	01A-B1N6D06	AD4 B-B1N6D09	01A-B1N6B09	AG4 B-B1N6B10	01A-B1N6D10	
01A-C1B6B07	01A-A1N3D07	C1A-C1B6D09	01A-A1N3B09	01A-C1B6B10	01A-A1N3D11	
01A-C1A6B07	01A-A1M3D07	01A-C1A6D07	01A-A1M3B09	01A-C1A6B10	01A-A1M3D11	
01A-B1N6B07	AC4 B-B1N6B08	01A-B1N6D07	AF4 B-B1N6D10	01A-B1N6B10		
01A-A1N3B07	01A-C1B6B08	01A-A1N3D09	01A-C1B6D10	01A-A1N3B10		
01A-A1M3B07	01A-C1A6B08	01A-A1M3D09	01A-C1A6D09	01A-A1M3B10		
AB4 B-B1N6D07	01A-B1N6B08	AE4 B-B1N6B09	01A-B1N6D09	AH4 B-B1N6D11		
01A-C1B6D07	01A-A1N3B08	01A-C1B6B09	01A-A1N3D10	01A-C1B6D11		
01A-C1A6D06	01A-A1M3B08	01A-C1A6B09	01A-A1M3D10	01A-C1A6D10		

03-04-65 415480A
04-28-65 415480D
08-26-65 415483
02-24-67 419633

B REGISTER POWERING
BITS 8-15
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.No. 2201050
IBM CORP. GPD BLK. AJ



NOTE. THE LOCATION SPECIFIED ABOVE FOR THE 0410 CARD IS FOR 1130 SYSTEMS WITHOUT AN 1132. IF THE SYSTEM INCLUDES AN 1132O THE CARD WILL BE FOUND AT 01A-A1A3.

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03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

-B POWER TERMINATORS			
DATE 03-09-67 MACH. 1131			
LOG	047F FRAME		01
	P.N. 2201216		
IBM CORP.	GPD BLK.	AW	000

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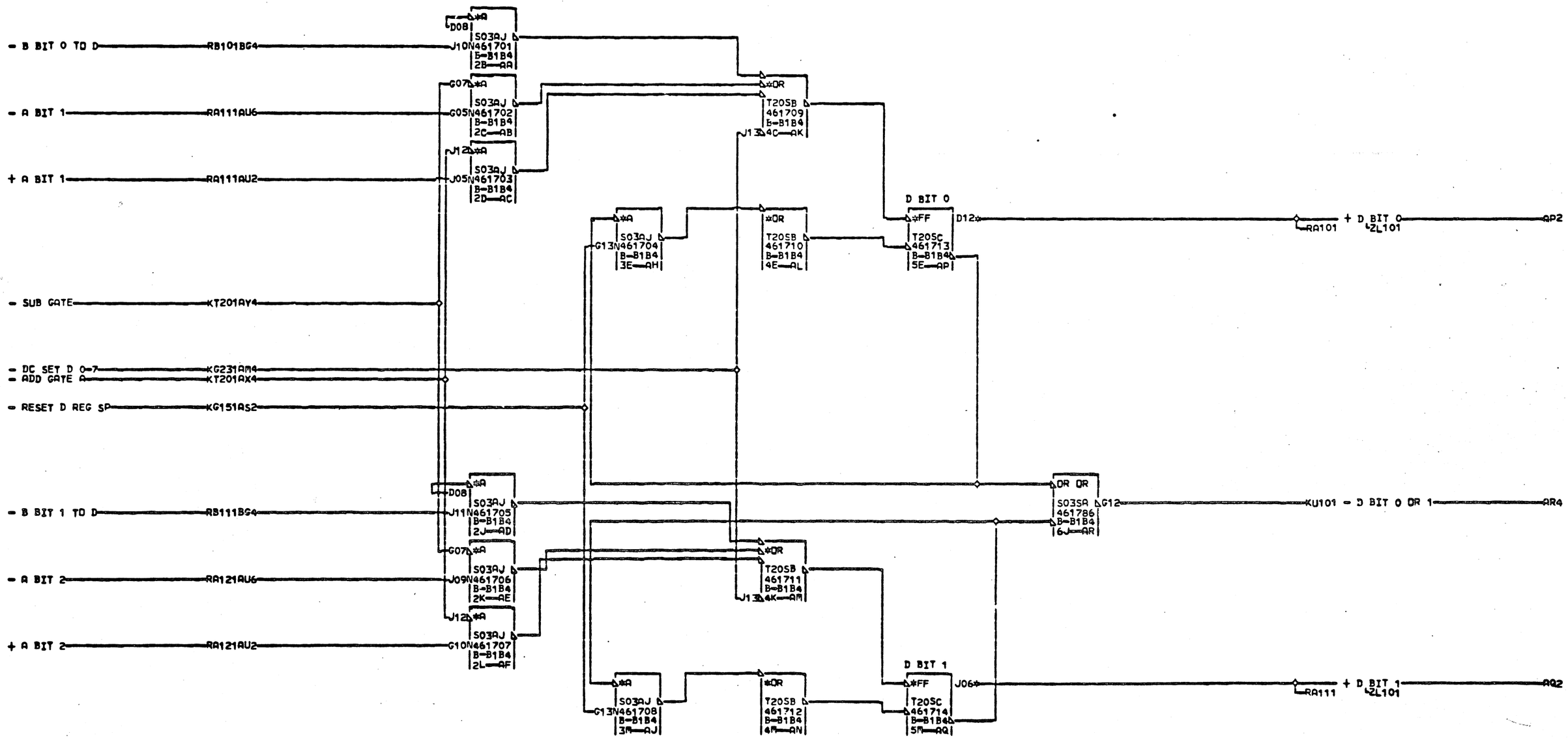
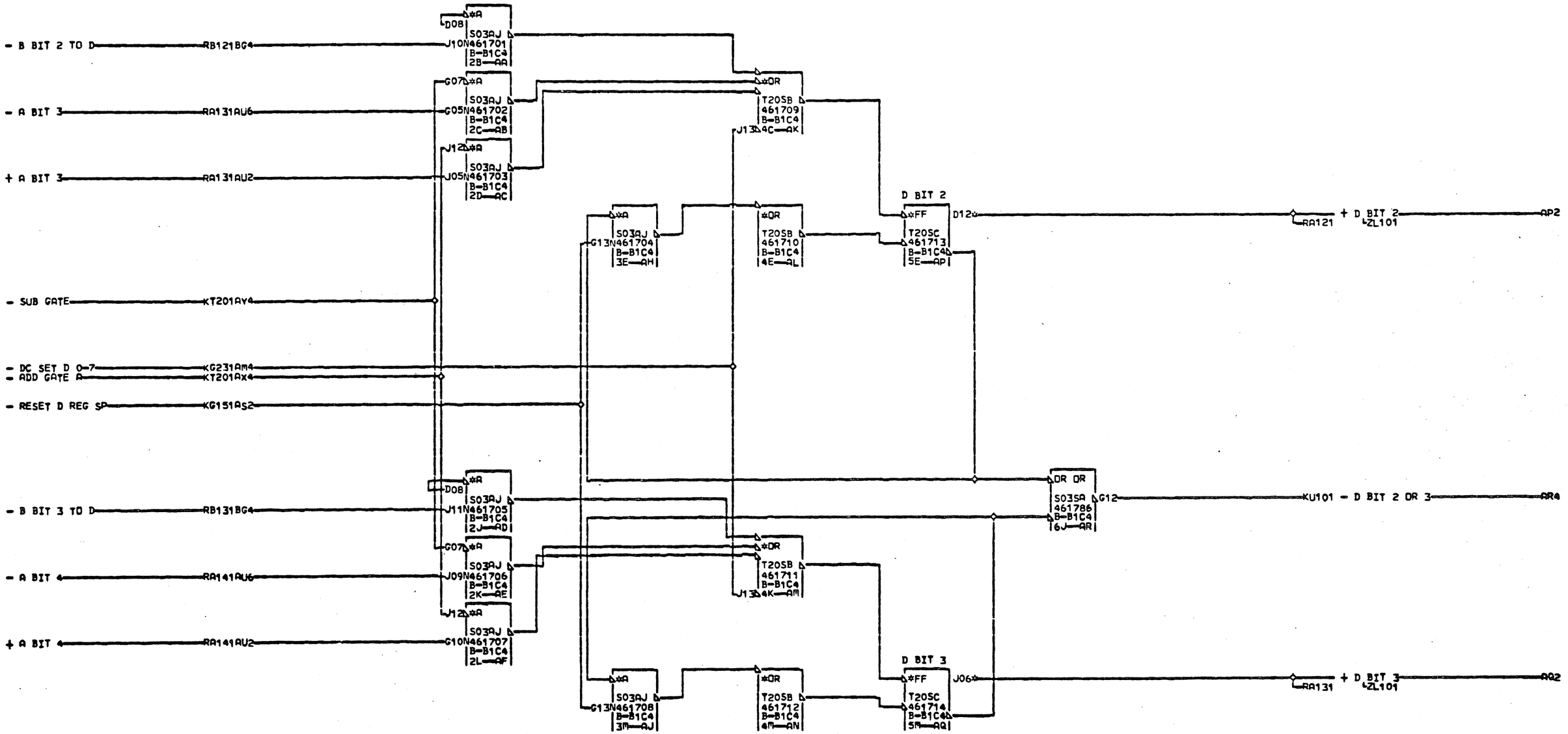


AP2 B-B1N4B02
AQ2 B-B1N4D02

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

D REGISTER
BITS 0 AND 1
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.No. 2201095
IBM CORP. GPD BLK. AS

RD101 000



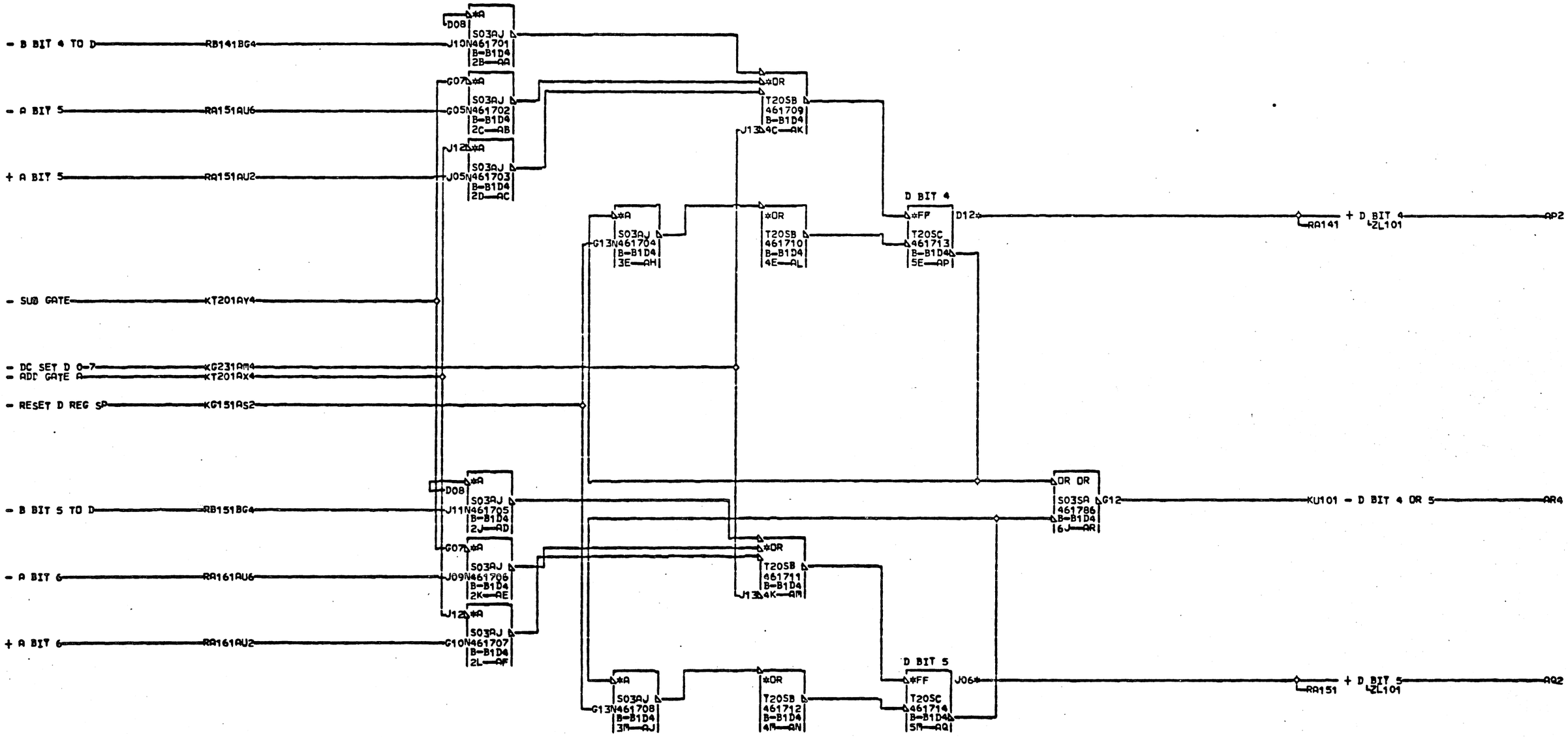
AP2 B-B1N4B03
AQ2 B-B1N4D04

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

D REGISTER
BITS 2 AND 3

DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201096
IBM CORP. GPD BLK. AS

RD111 000

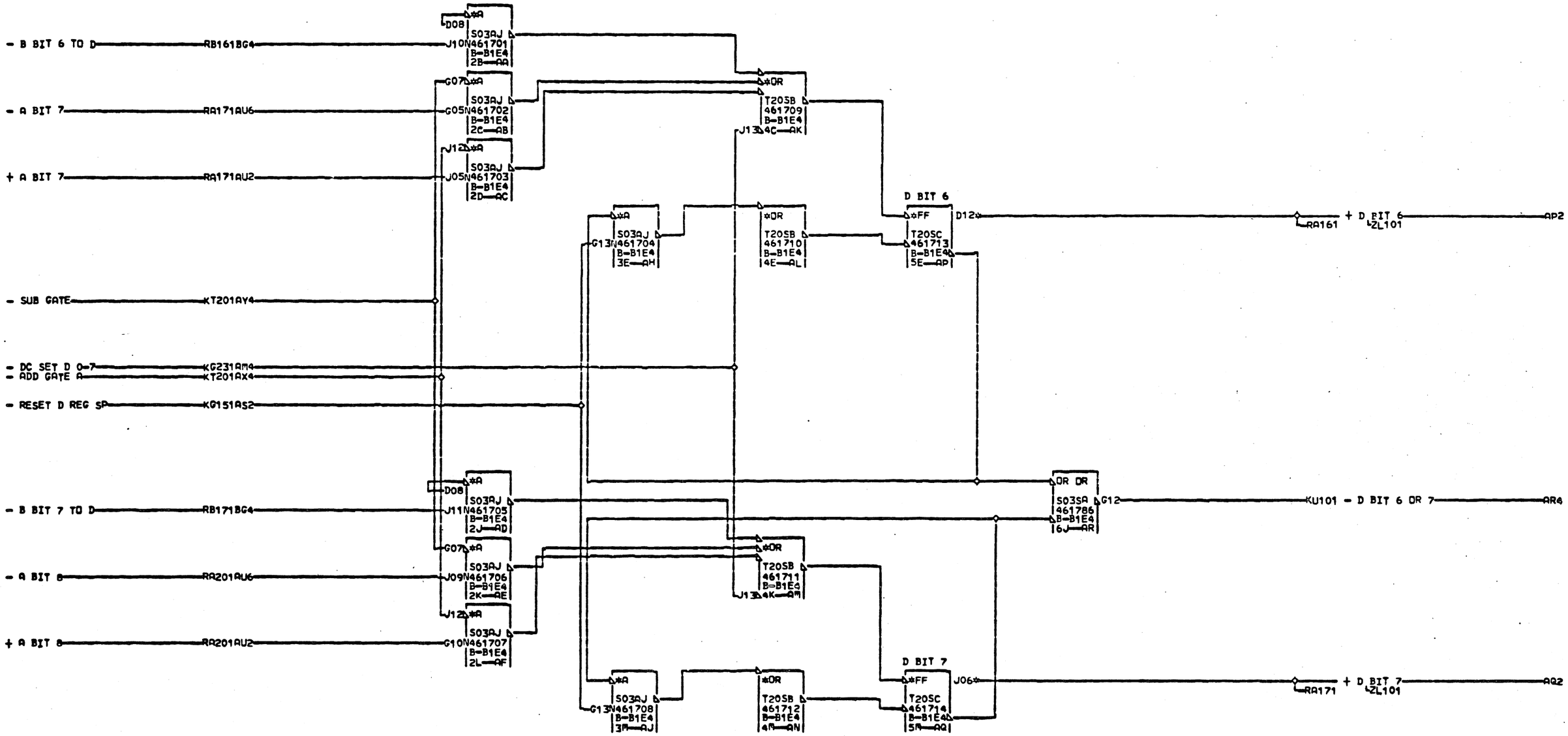


AP2 B-B1N4B04
AQ2 B-B1N4D05

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

D REGISTER
BITS 4 AND 5
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201097
IBM CORP. GPD BLK. AS

RD121 000



AP2 B-B1N4B05
AQ2 B-B1N4D06

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

D REGISTER
BITS 6 AND 7

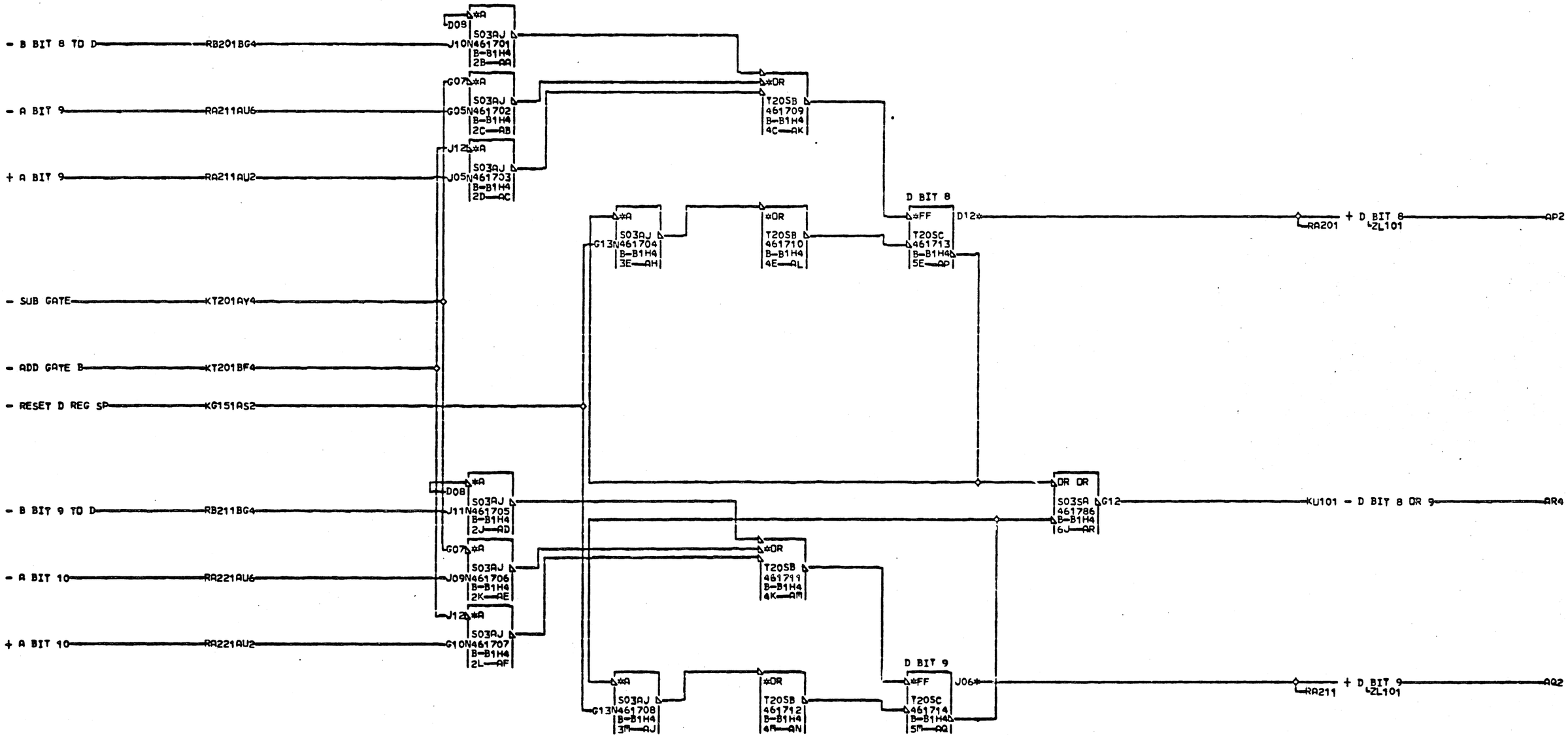
DATE 03-09-67 MACH. 1131

LOG 047P FRAME 01

P.N. 2201098

IBM CORP. GPD BLK. AS

RD131 000



AP2 B-B1N4B07
AQ2 B-B1N4D07

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

D REGISTER
BITS 8 AND 9

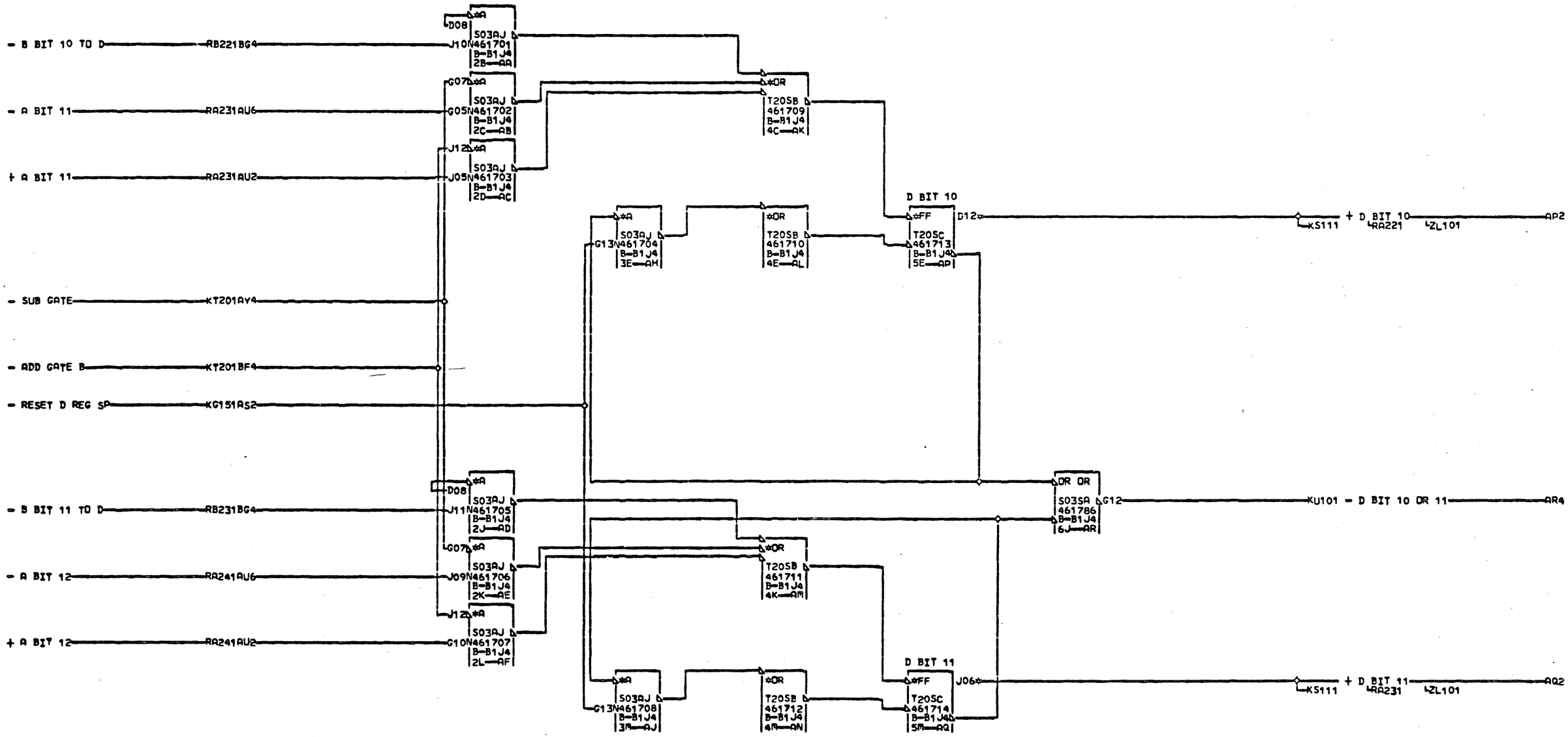
DATE 03-09-67 MACH. 1131

LDG 047F FRAME 01

P.N. 2201099

IBM CORP. GPD BLK. AS

RD41 000



R D 1 5 1 000

AP2 B-B1N4B08
01B-B1A5B03
01B-A1N5B03
AQ2 B-B1N4D09
01B-B1A5D03
01B-A1N5D03

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

D REGISTER
BITS 10 AND 11

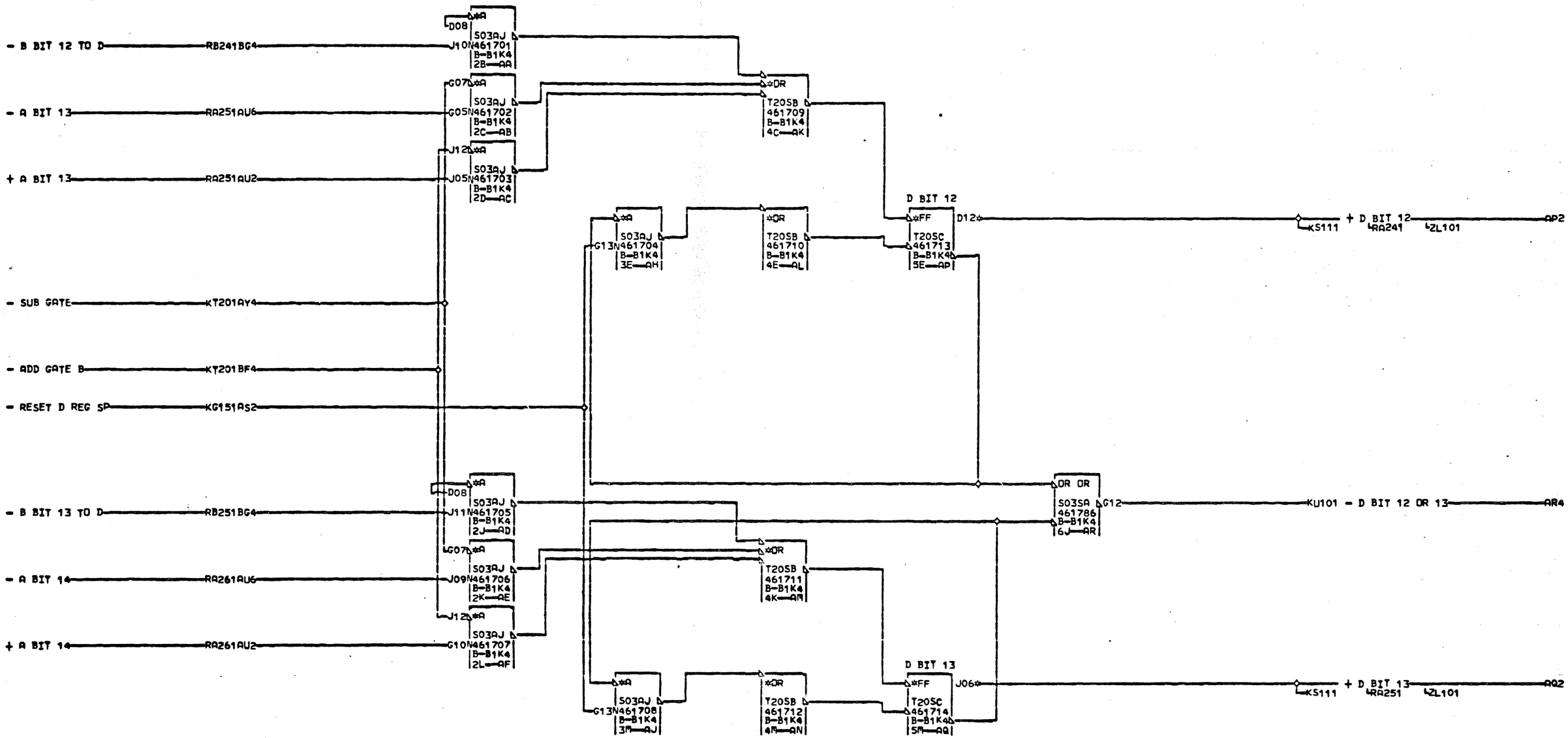
DATE 03-09-67 MACH. 1131

LOG 047F FRAME 01

P.No. 2201100

IBM CORP. GPD BLK. AS

R D 1 5 1 000



AP2 B-B1N4B09
01B-B1A5B04
01B-A1N5B04
AQ2 B-B1N4D10
01B-B1A5D04
C1B-A1N5D04

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

D REGISTER
BITS 12 AND 13

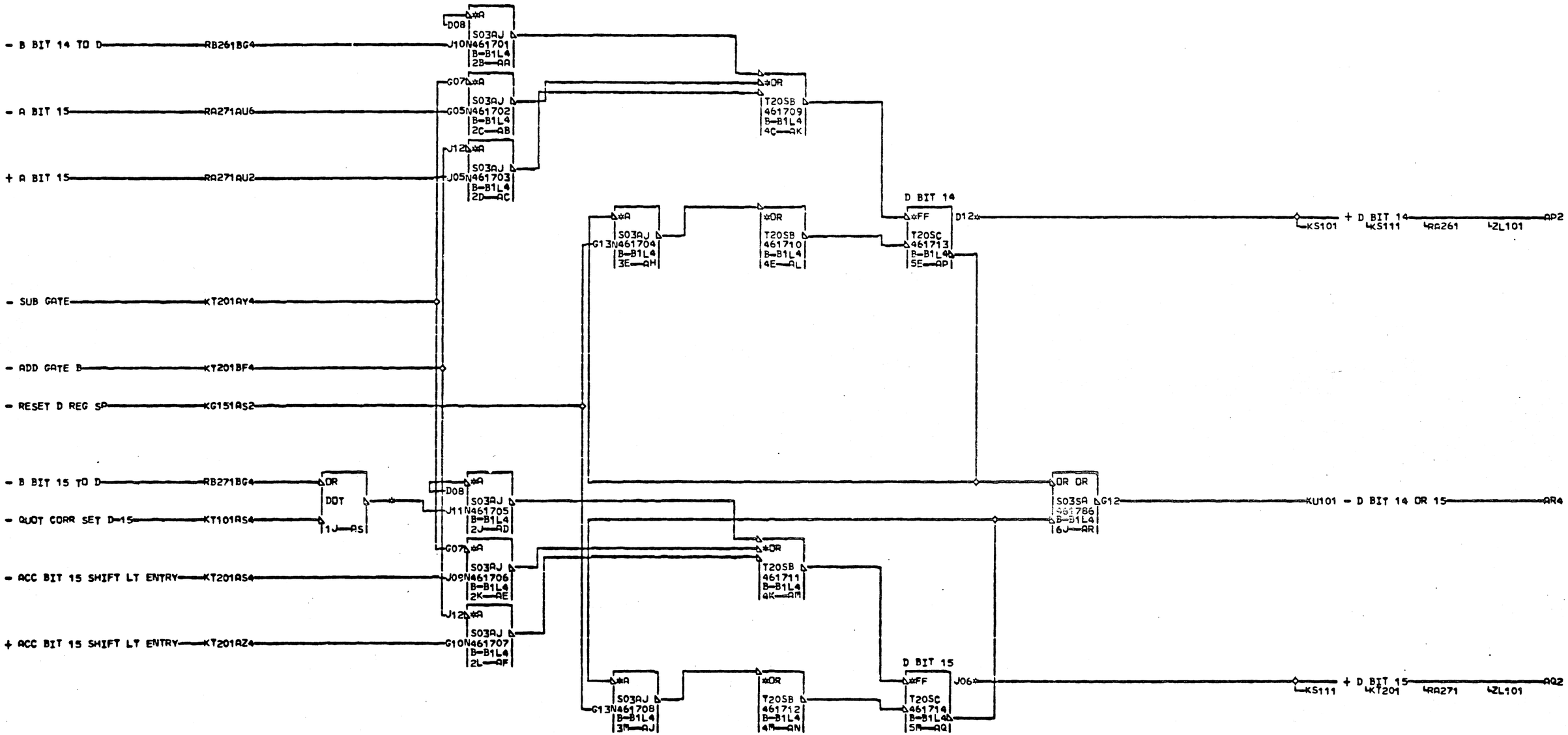
DATE 03-09-67 MACH. 1131

LOG 047F FRAME 01

P.N. 2201101

IBM CORP. GPD BLK. AS

RD161 000



RD171 000

AP2 B-B1N4B10
01B-B1A5B05
01B-A1N5B05
AQ2 B-B1N4D11
01B-B1A5D05
01B-A1N5D05
AS4 B-B1E1C11
01B-A1E1C11

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

D REGISTER
BITS 14 AND 15
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201102
IBM CORP. GPD BLK. AT

RD171 000

- DC RESET OP REG AND OP FLAGS—KU311AS4
- B BIT 0 GATED—RB101BF4
- B BIT 1 GATED—RB111BF4
- B BIT 2 GATED—RB121BF4
- B BIT 3 GATED—RB131BF4
- B BIT 4 GATED—RB141BF4
- B BIT 5 GATED—RB151BF4
- B BIT 6 GATED—RB161BF4
- B BIT 7 GATED—RB171BF4

OP BIT 0 — OP BIT 1 — OP BIT 2 — OP BIT 3 — OP BIT 4 — FORMAT 5 — TAG 6 — TAG 7

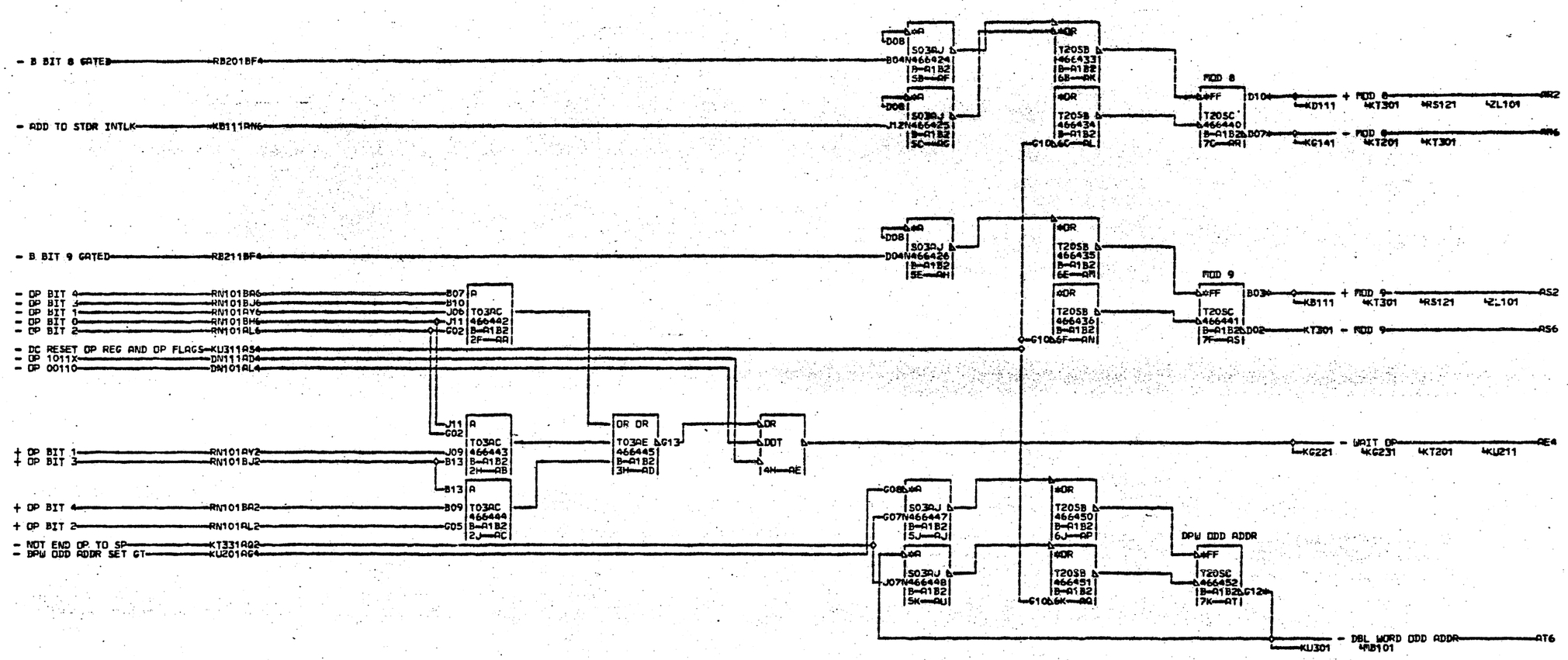
AL2 B—A1A2B04
AN2 B—A1A2D02
AQ2 B—A1A2D05
AY2 B—A1A2B03
BA2 B—A1A2B07
BB2 B—A1A2D04
BH2 B—A1A2B02
BJ2 B—A1A2B05

02—17—65 415480
03—04—65 415480A
04—28—65 415480D
08—26—65 415483
02—24—67 419633

OP—FORMAT—TAG REGISTER
DATE 03—09—67 MACH. 1131
LOG 047F FRAME 01
P.No. 2201103
IBM CORP. GPD BLK. BL

RN101 000

000 RN111

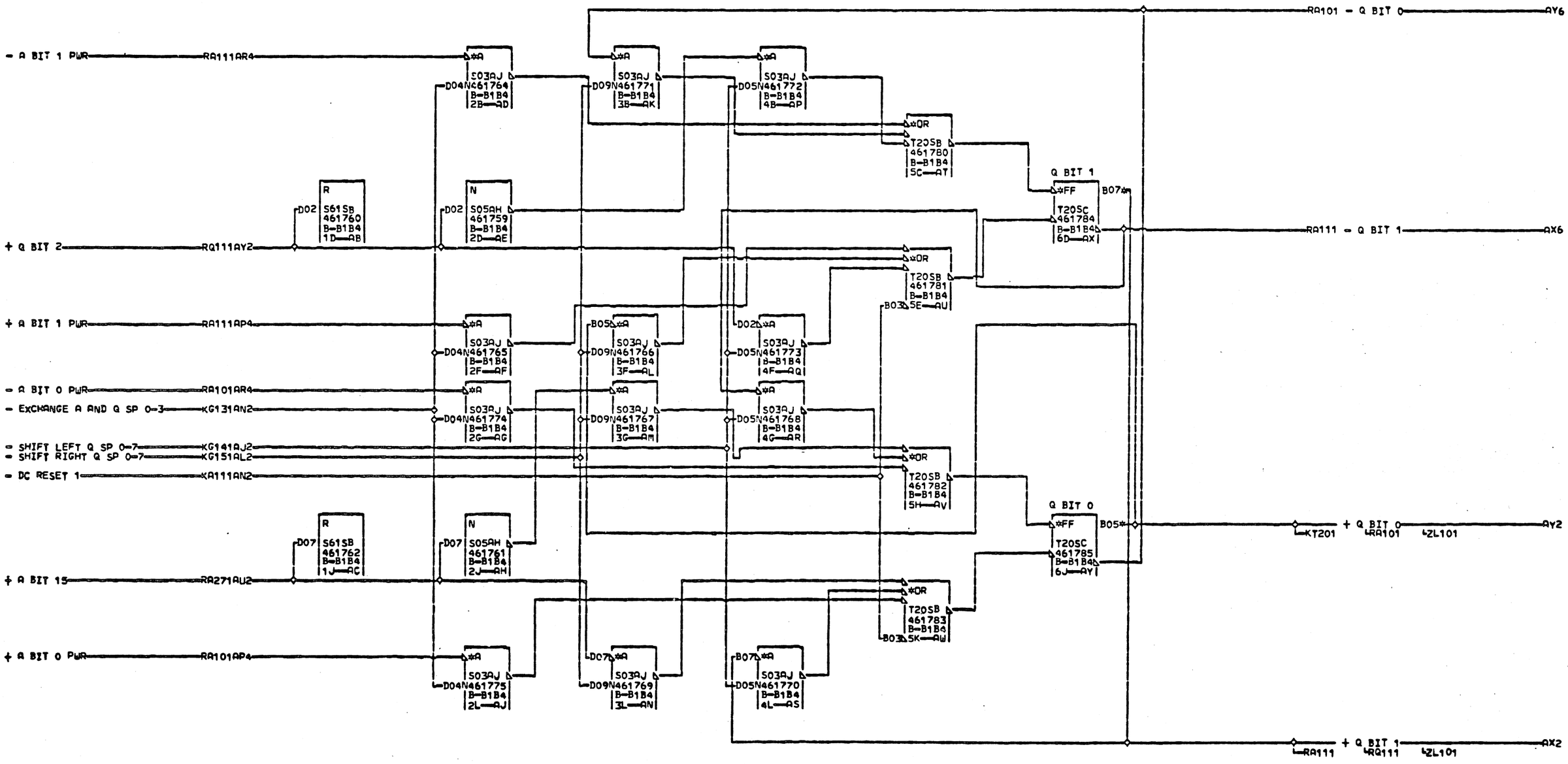


R	AR2 B=A1A2D06
N	AR6 B=A1N3B09
1	01B=B1A3B09
1	AS2 B=A1A2D07
1	AT6 B=A1N7D07
	01B=B1A7D07

000

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
08-26-65 415483

MOD 8 MOD 9 WAIT OP DBL WORD ODD ADDR	R
DATE 09-01-65 MACH. 1131	N
	1
LOG 244N FRAME 01	1
	1
P.N. 2201104	
IBM CORP. GPD BLK. AV	000



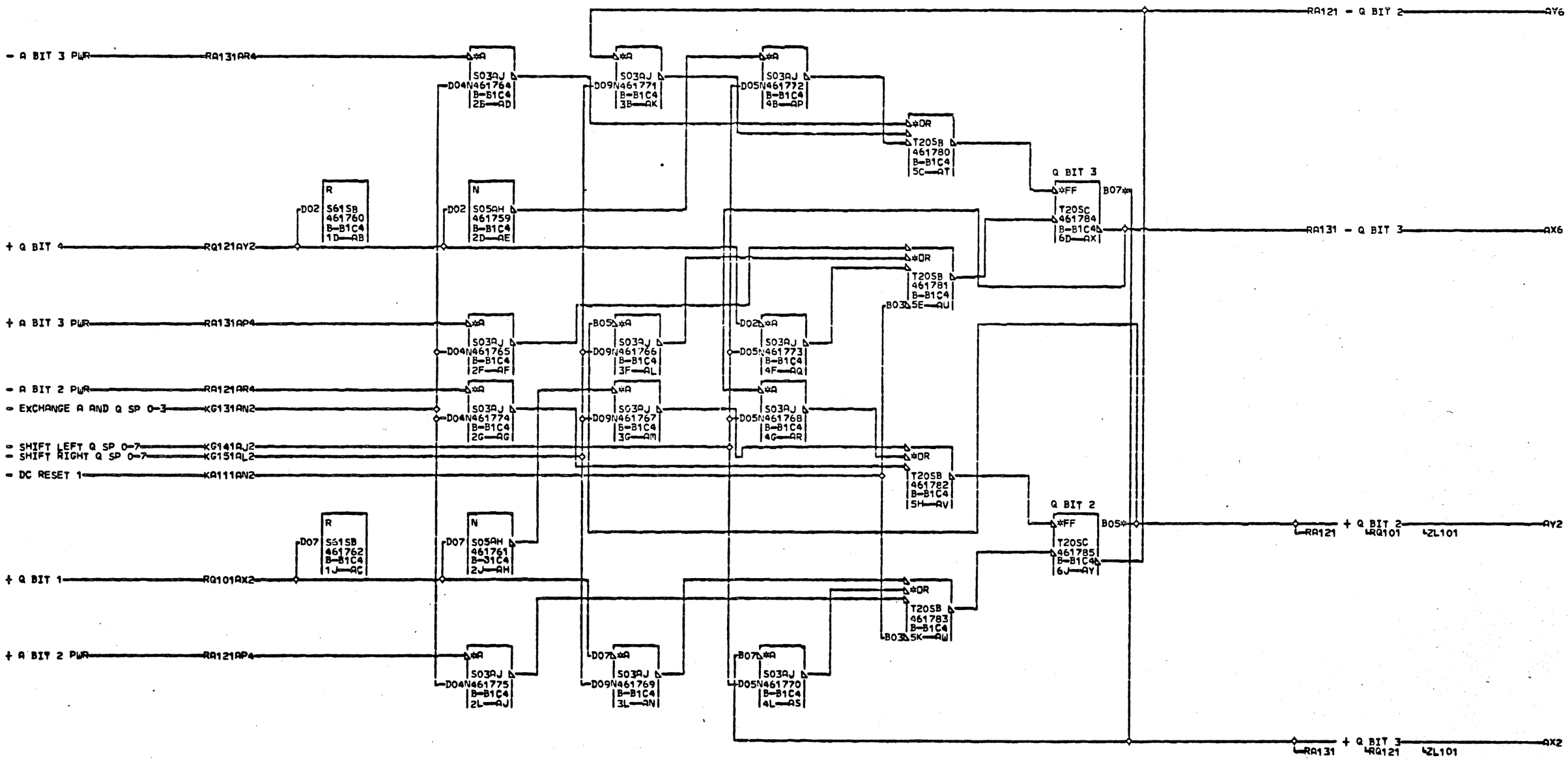
RQ101 000

AX2 B=B1N3D02
AY2 B=B1N3B02
01B=B1A5B08
01B=A1N5B08

02-17-65 415480
04-28-65 415480D
08-26-65 415483
02-24-67 419633

Q REGISTER
BITS 0 AND 1
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201105
IBM CORP. GPD BLK. AZ

RQ101 000

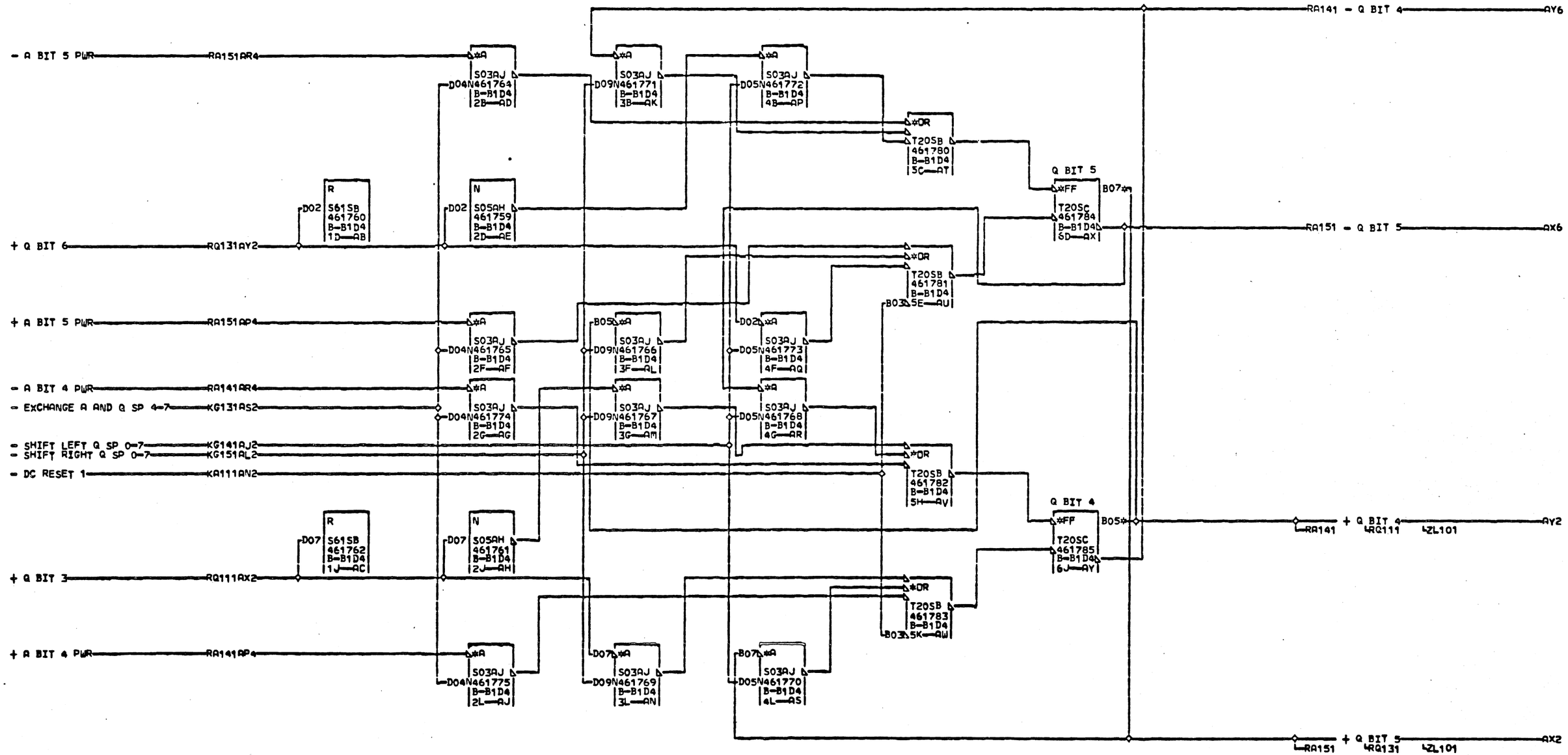


AX2 B-B1N3D06
AY2 B-B1N3B03

02-17-65 415480
04-28-65 415480D
08-26-65 415483
02-24-67 419633

Q REGISTER
BITS 2 AND 3
DATE 03-09-67 RACH. 1131
LDC 047F FRAME 01
P.No. 2201106
IBM CORP. SPD BLK. AZ

RQ111 000



AX2 B-B1N3D05
AY2 B-B1N3B04

02-17-65 415480
04-28-65 415480D
08-26-65 415483
02-24-67 419633

Q REGISTER
BITS 4 AND 5

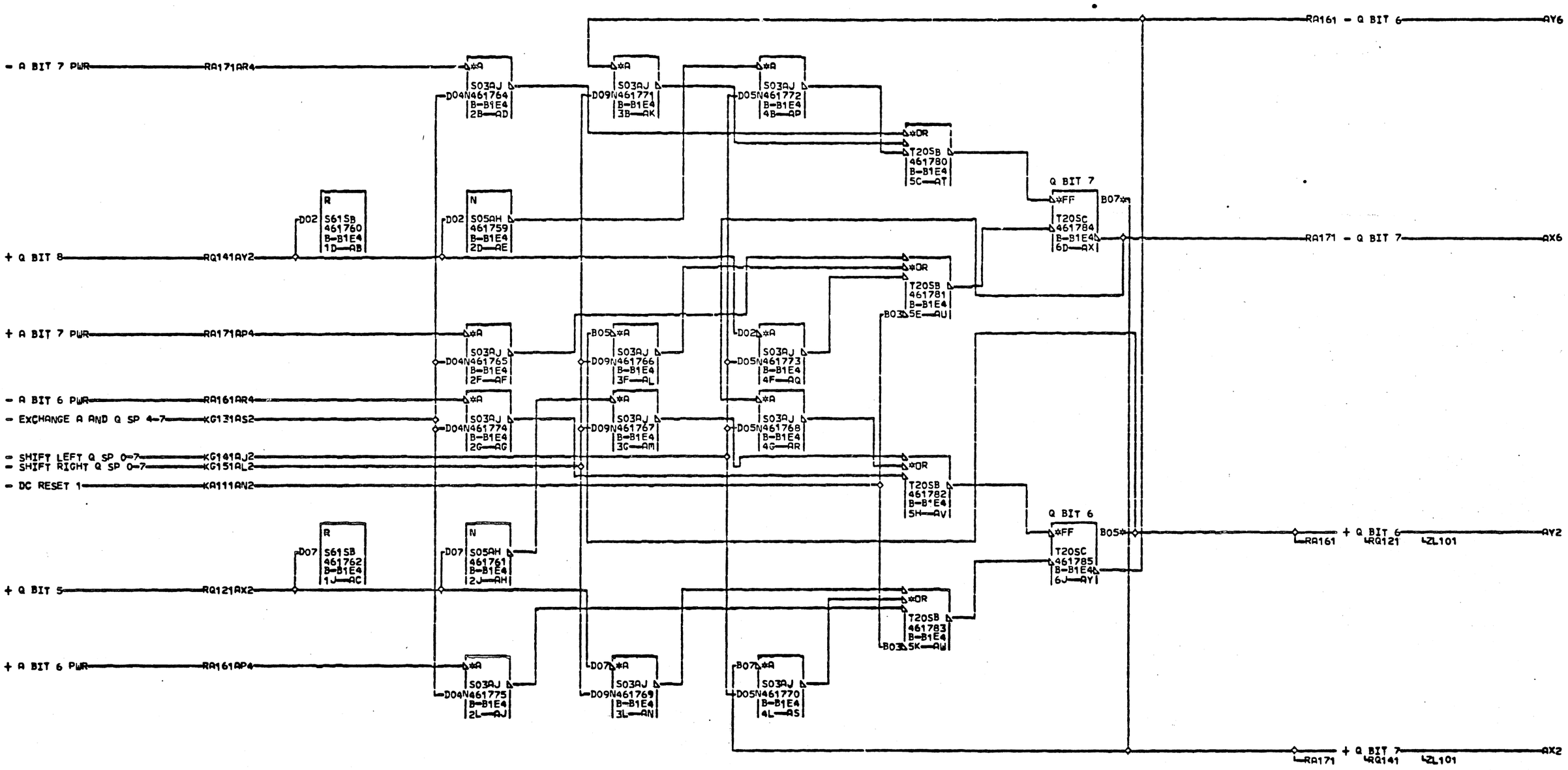
DATE 03-09-67 MACH. 1131

LOG 047F FRAME 01

P.No. 2201107

IBM CORP. GPD BLK. AZ

RQ121 000

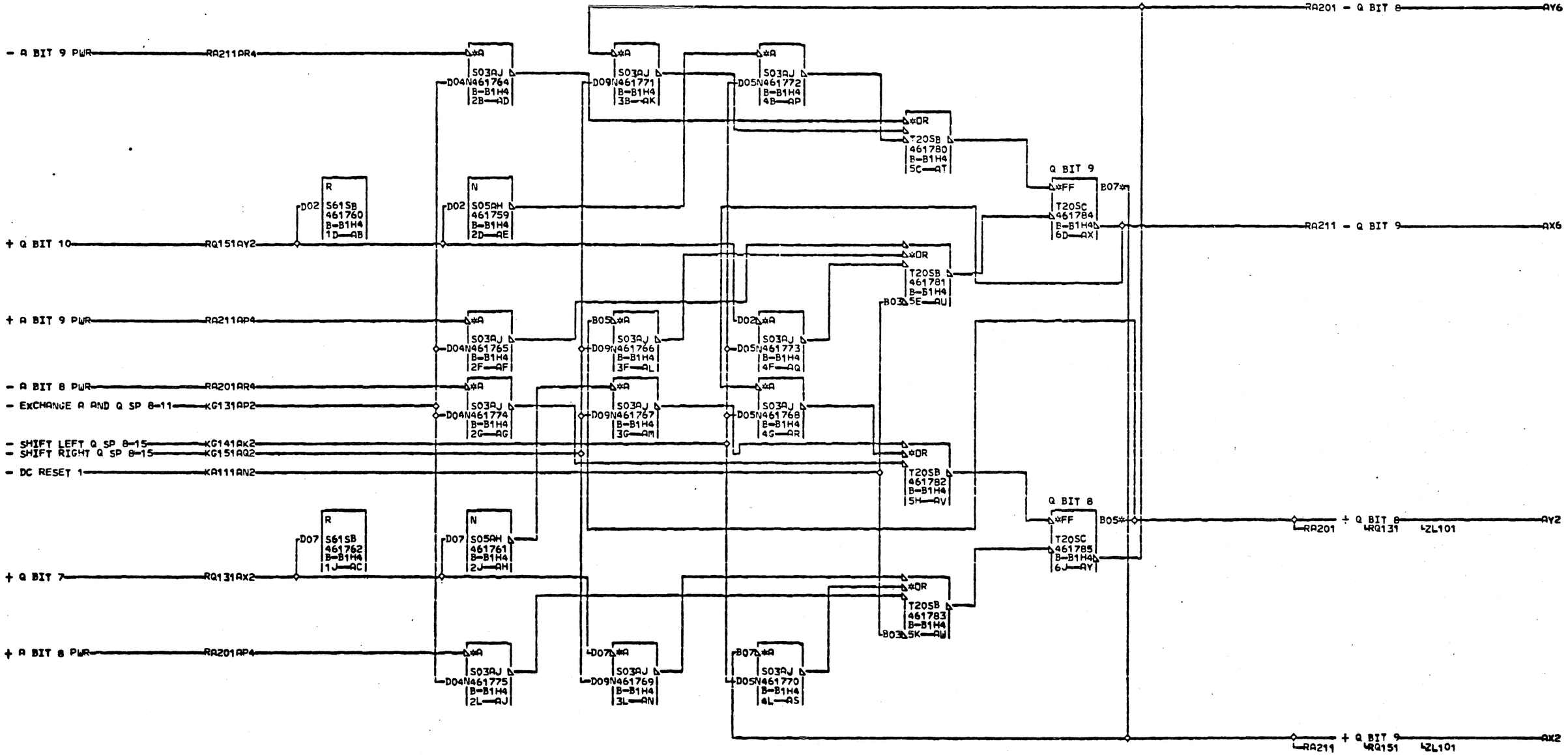


AX2 B-B1N3D06
AY2 B-B1N3B05

02-17-65 415480
04-28-65 415480D
08-26-65 415483
02-24-67 419633

Q REGISTER
BITS 6 AND 7
DATE 03-09-67 RACM# 1131
LOG 047F FRAME 01
P#N# 2201108
IBM CORP# GPD BLK# AZ

RQ131 000

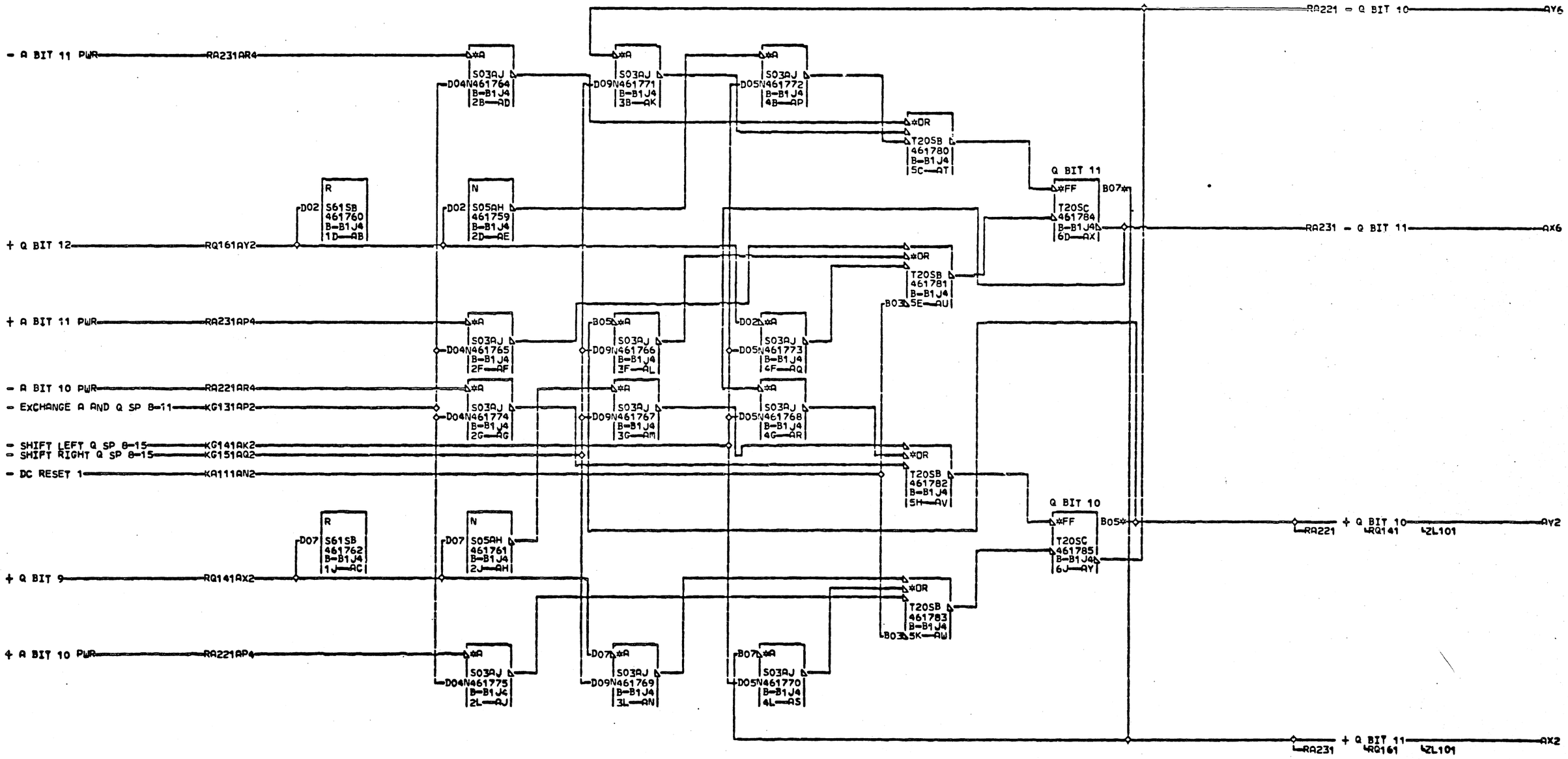


AX2 B-B1N3D07
AY2 B-B1N3B07

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
08-26-65 415483
02-24-67 419633

Q REGISTER BITS 8 AND 9			
DATE 03-09-67 MACH. 1131			
LOG 047F	FRAME 01		
	P.N. 2201109		
TBR CORP.	CPD BLK.	AZ	

RQ141 000

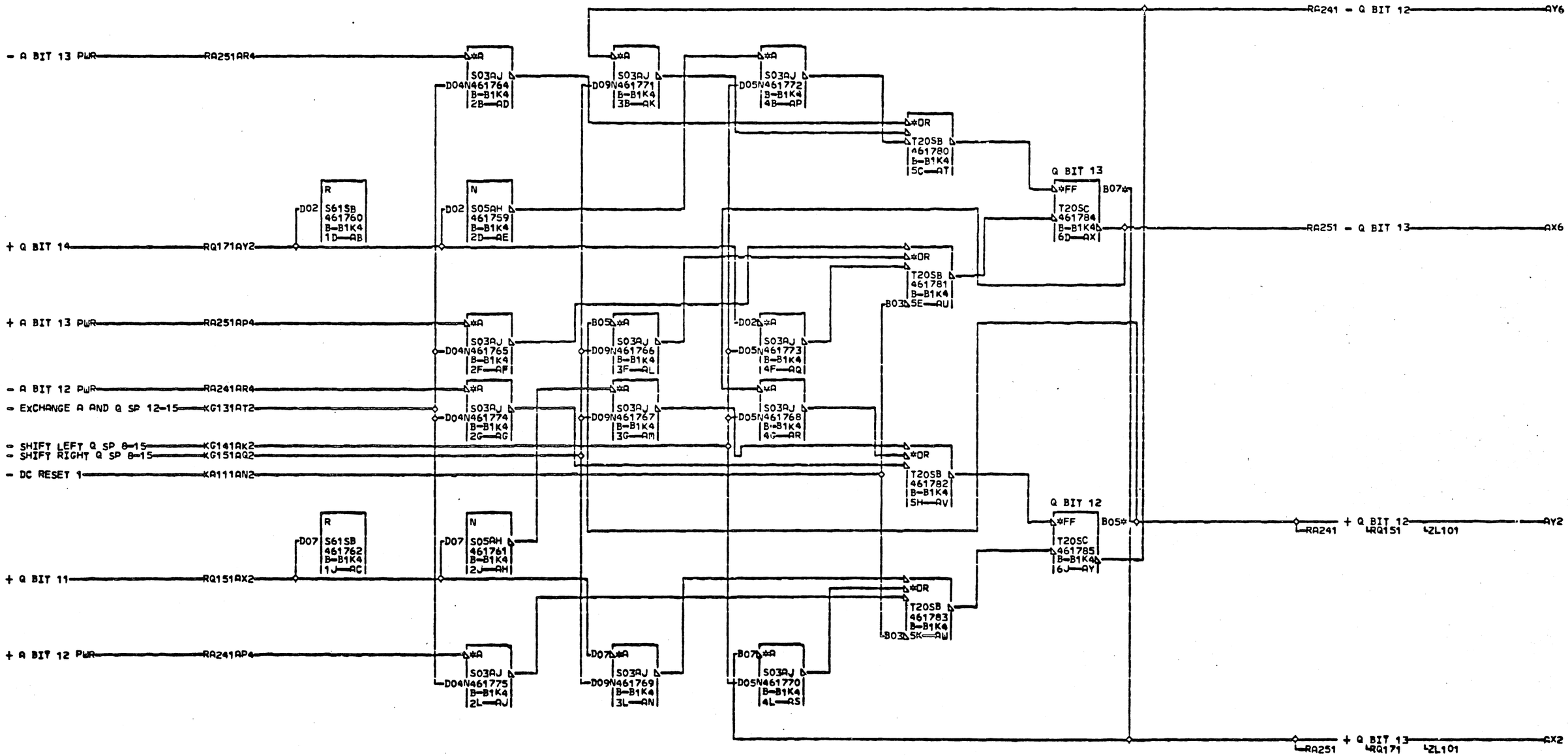


AX2 B-B1N3D09
AY2 B-B1N3B08

02-17-65 415480
04-28-65 415480D
08-26-65 415483
02-24-67 419633

Q REGISTER BITS 10 AND 11	
DATE 03-09-67 MACH. 1131	
LOG 047F FRAME 01	
P.N. 2201110	
IBM CORP. GPD BLK. AZ	

RQ151 000

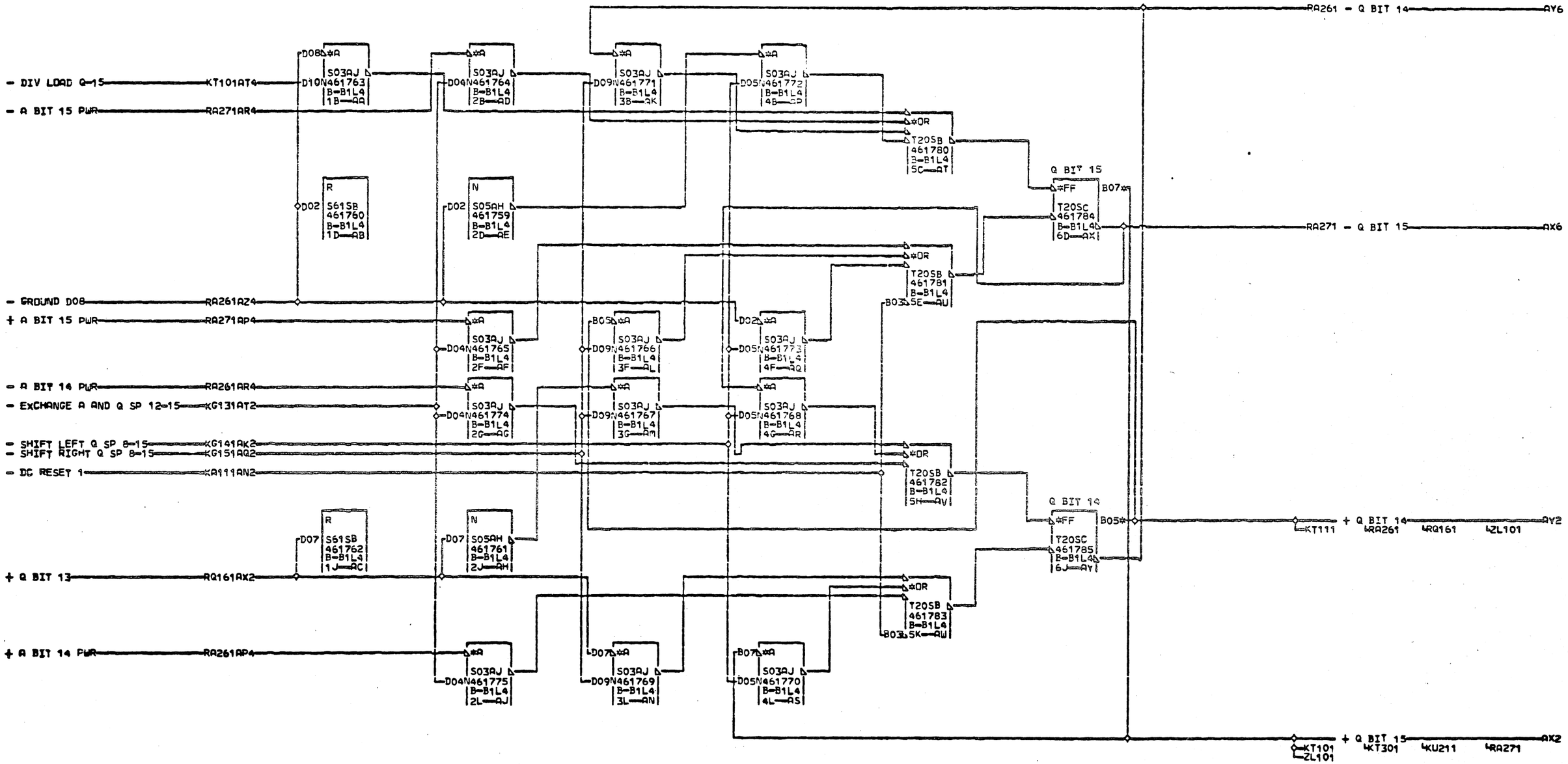


AX2 B-B1N3D10
AY2 B-B1N3B09

02-17-65 415480
04-28-65 415480D
08-26-65 415483
02-24-67 419633

Q REGISTER BITS 12 AND 13		
DATE 03-09-67 MACH. 1131		
LOG 047F FRAME	01	
P.N. 2201111		
IBM CORP. GPD BLK.	AZ	

RQ161 000



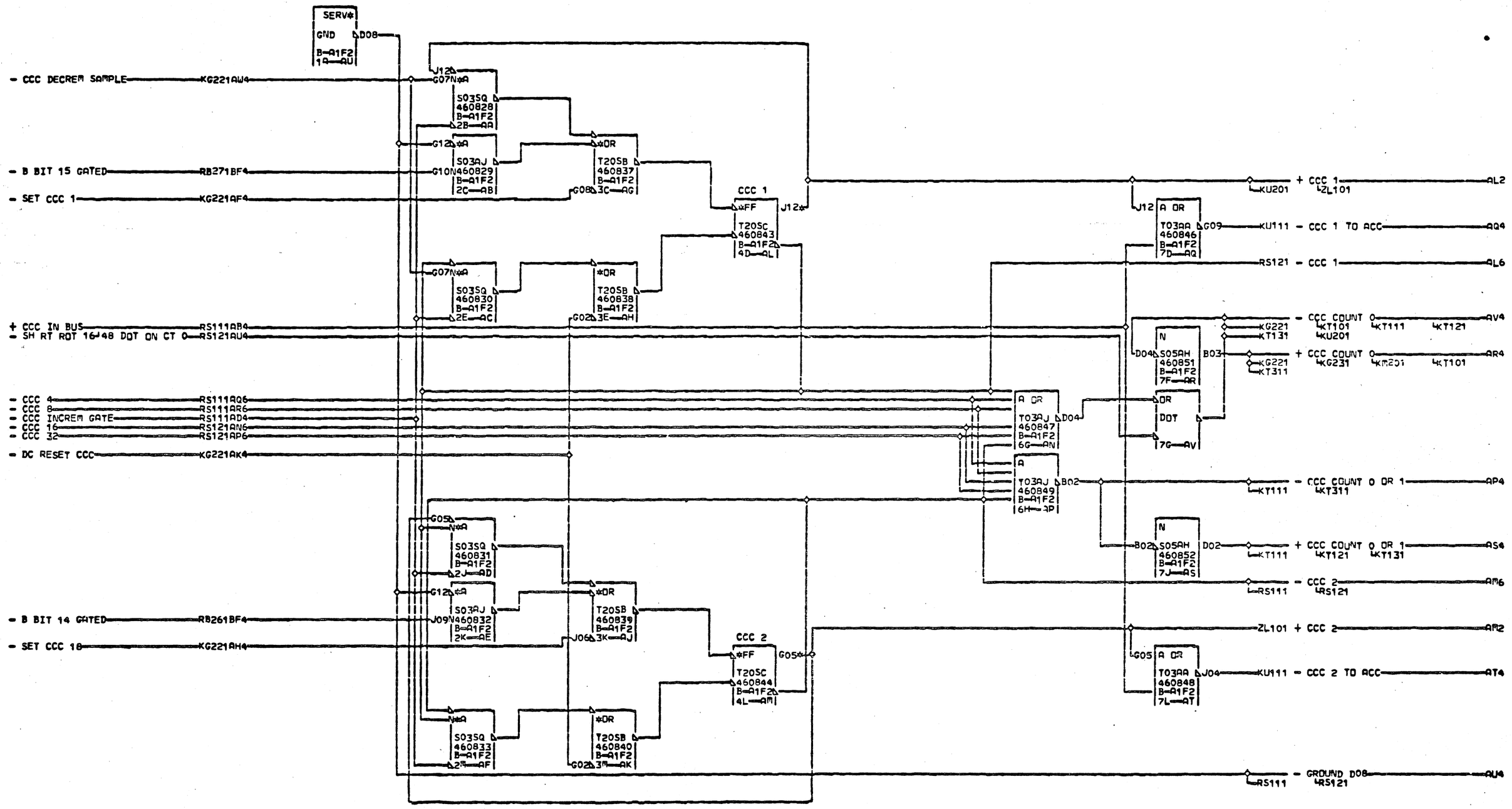
R
Q
1
7
1
000

AX2 B=B1N3D11
01B=B1A5D09
01B=A1N5D09
AY2 B=B1N3B10
01B=B1A5B09
01B=A1N5B09

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

Q REGISTER
BITS 14 AND 15
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201112
IBM CORP. GPD BLK. A2

R
Q
1
7
1
000



AL2 B-A1A2B08
AM2 B-A1A2B09

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

CYCLE CONTROL COUNTER 1 - 2	
DATE 03-09-67 MACH. 1131	
LOG 047F FRAME 01	
PeNo 2201113	
IBM CORP. GPD BLK. AW	

RS101 000

- CCC INCREM GATE — AD4
RS101 RS121

- CCC 2 — RS101AM6

G13 N*A S03SQ 460834 B-A1F2 3B-AE

G12 *A S03AJ N460835 B-A1F2 3C-AF

*OR T20SB 460841 B-A1F2 4C-AL

- B BIT 13 GATED — RB251BF4

G04

ZL101 + CCC 4 — AQ2

CCC 4 *FF T20SC 460845 B-A1F2 5D-AQ

G13*

G13 A OR T03AA J13 — KU111 - CCC 4 TO ACC — AS4 460850 B-A1F2 7D-AS

- GROUND D08 — RS101AU4

N*A S03SQ 460836 B-A1F2 3E-AG

*OR T20SB 460842 B-A1F2 4E-AM

G02

- GATE CCC TO A10-A15 — KT301AZ4

J05 R S61SB 460854 B-A1F2 1F-AA

- CCC 4 — AQ6
RS101 RS121

J05 N S05AH 460827 B-A1F2 1G-AB

+ CCC IN BUS — AB4
RS101 RS121

+ SHIFT CTRL — KT121AY2 — J10

J11 A T03AB 460826 B-A1F2 1H-AC

OR T03TE 460853 B-A1F2 2H-AD

J07

- T3 SP — KU311AP4

- E CYCLES — KD111AZ6

B13 N*A S03SQ 460804 B-A1F2 3J-AH

G12 *A S03AJ D13N460855 B-A1F2 3K-AJ

*OR T20SB 460812 B-A1F2 4K-AN

- B BIT 12 GATED — RB241BF4

- DC RESET CCC — KG221AK4

CCC 8 *FF T20SC 460818 B-A1F2 5L-AR

B13*

ZL101 + CCC 8 — AR2

B13 A OR T03AA G03 — KU111 - CCC 8 TO ACC — AT4 460821 B-A1F2 7L-AT

N*A S03SQ 460805 B-A1F2 3M-AK

*OR T20SB 460813 B-A1F2 4M-AP

G02

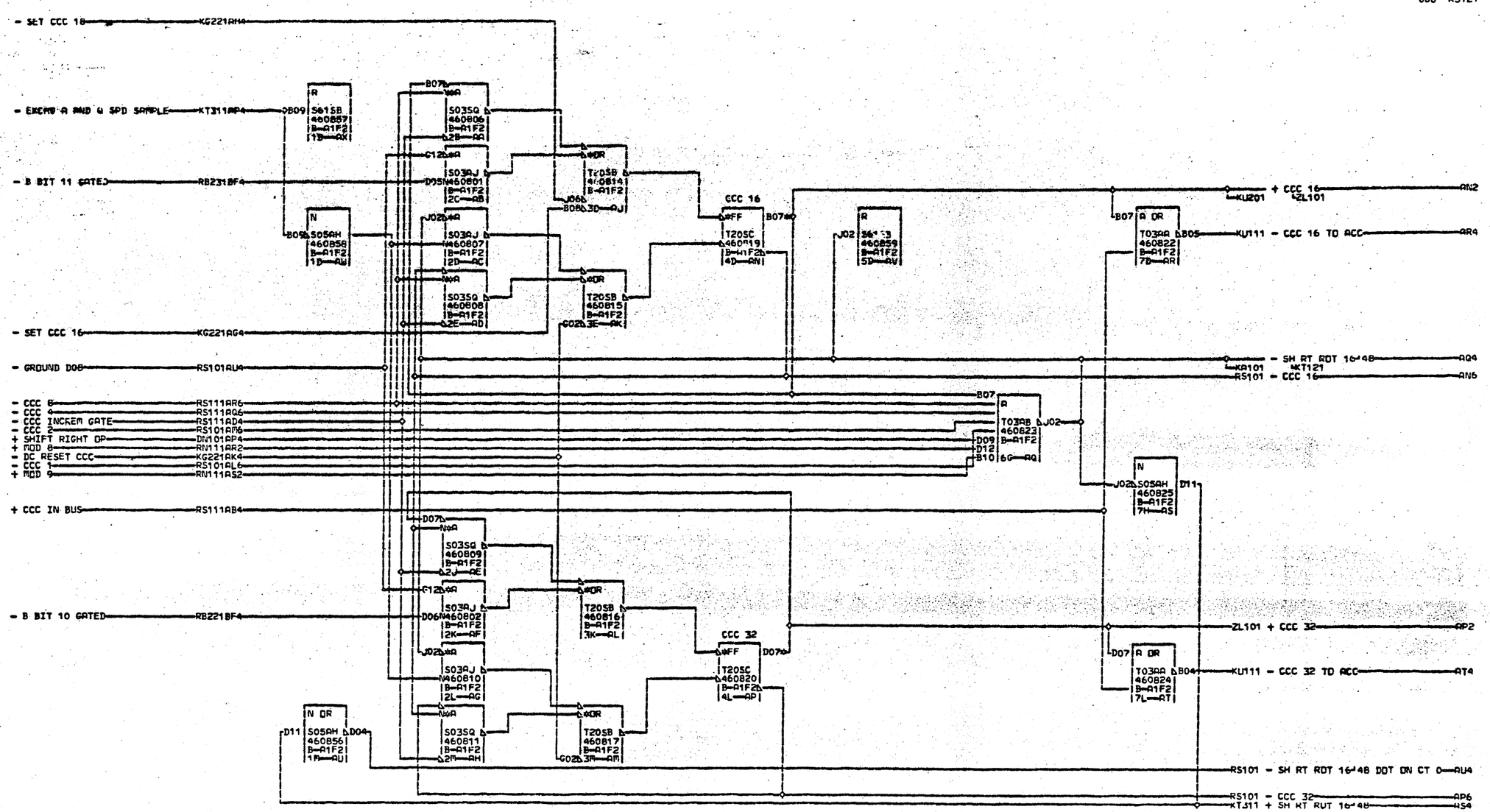
- CCC 8 — AR6
RS101 RS121

AG2 B-A1A2B10
AR2 B-A1A2D09

02-17-65 415480
04-28-65 415480D
07-20-65 415481
08-26-65 415483
02-24-67 419633

CYCLE CONTROL COUNTER 4 - 8
DATE 03-09-67 MACH. 1131
LOG 047F FRAME 01
P.N. 2201114
IBM CORP. GPD BLK. AU

R S 1 1 1 000



AN2 B-A1A2D10
AP2 B-A1A2D11

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483

CYCLE CONTROL COUNTER 16 - 32	
DATE 09-01-65 MACH. 1131	
LOG 244N FRAME 01	
P.N. 2201115	
IBM CORP. GPD BLK. AY	

RS121
000

S/N: 42392

TABLE OF CONTENTS VOL FOR 9005SJ4 MODE- NEW MACHINES 04AUG6

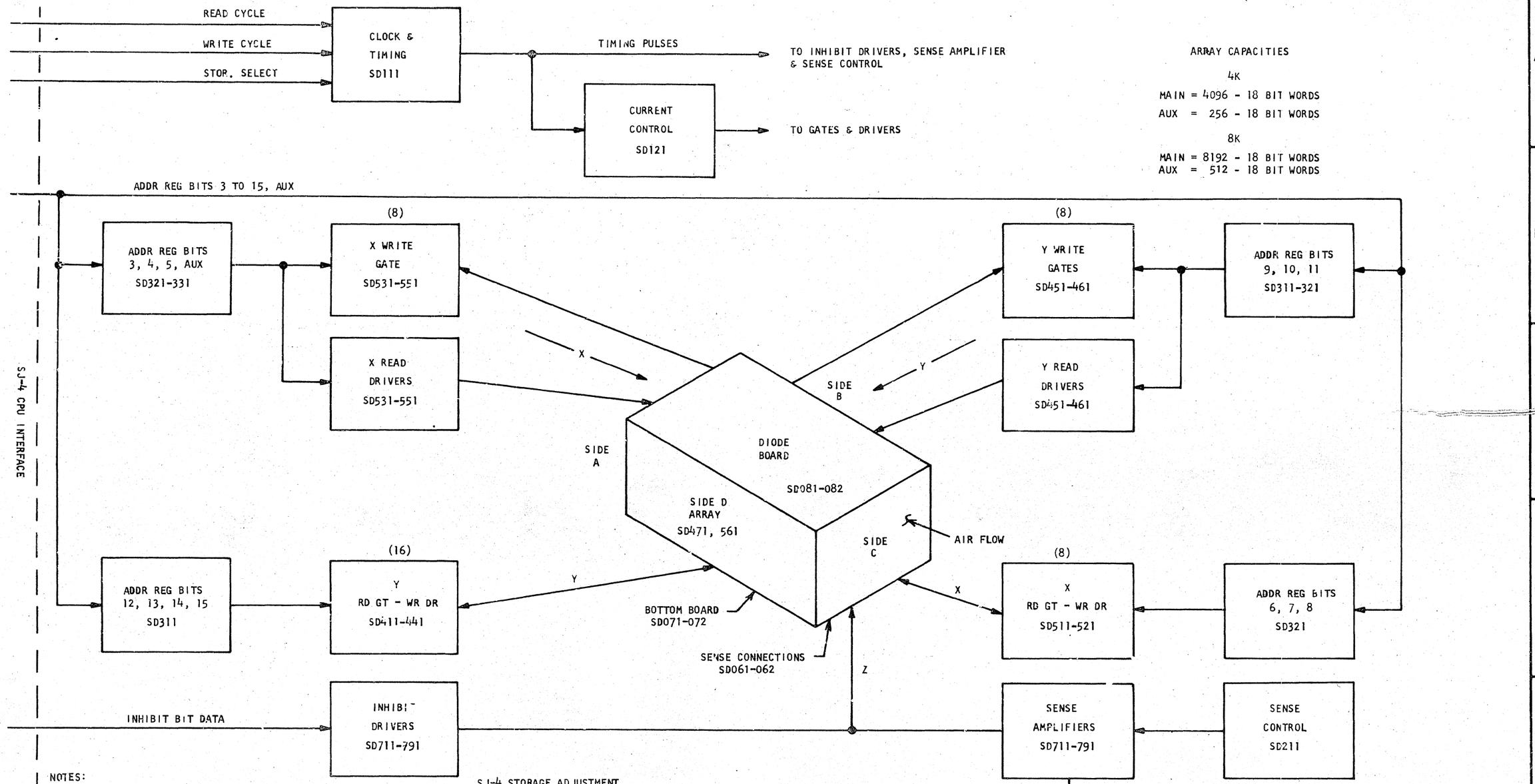
LOGIC NO	DESCRIPTION	PART NO	EC NO	SEQ #	REA	SF B/M
SLT BOARDS						
AA1	CUSTOMIZED BOARD	2192750	414308	E0009		219274C

TABLE OF CONTENTS VOL 1 FOR 9005SJ4 MODE- NEW MACHINES 04AUG

LOGIC NO	DESCRIPTION	PART NO	EC NO	SEQ #	REA	SF B/
SYSTEMS DIAGRAMS						
SD011	BLOCK DIAGRAM - STORAGE ADJ	2196980	414308	E0009		219274
SD012	PERSPECTIVE DIAGRAM	2196981	414308	E0009		219274
SD021	REF PLUG CHART	2196982	414308	E0009		219274
SD031	TIMING	2196983	414308	E0009		219274
SD041	8K ARRAY ADDRESSING	2196984	414308	E0009		219274
SD043	X-Y DRIVE READ	2196986	414308	E0009		219274
SD044	X-Y DRIVE WRITE	2196987	414308	E0009		219274
SD061	SENSE CONNECTIONS 8K	2196989	414308	E0009		219274
SD071	8K BOTTOM BOARD SCHEMATIC	2196991	414308	E0009		219274
SD081	8K DIODE BOARD SCHEMATIC	2196993	414308	E0009		219274
SD101	SLDA CHART	2196995	414308	E0009		219274
SD111	CONTROL CLOCK	2196650	414308	E0009		219274
SD121	XY CURRENT CONTROL	2196651	414308	E0009		219274
SD211	VOLTAGE REFERENCE	2196652	414308	E0009		219274
SD221	VOLTAGE DISTRIBUTION	2196653	414302	E0005		219274
SD311	MAR INVERTERS 1 OF 3	2196654	414308	E0009		219274
SD321	MAR INVERTERS 2 OF 3	2196655	414302	E0005		219274
SD331	MAR INVERTERS 3 OF 3	2196656	414308	E0009		219274
SD411	Y READ GATE WRITE DRIVER	2196657	414308	E0009		219274
SD421	Y READ GATE WRITE DRIVER	2196658	414308	E0009		219274
SD431	Y READ GATE WRITE DRIVER	2196659	414308	E0009		219274
SD441	Y READ GATE WRITE DRIVER	2196660	414308	E0009		219274
SD451	Y WRITE GATE READ DRIVER	2196661	414308	E0009		219274
SD461	Y WRITE GATE READ DRIVER	2196662	414308	E0009		219274
SD471	X Y DRIVE ARRAY CONN Y DIM	2196668	414308	E0009		219274
SD511	X READ GATE WRITE DRIVER	2196663	414308	E0009		219274
SD521	X READ GATE WRITE DRIVER	2196664	414308	E0009		219274
SD531	X WRITE GATE READ DRIVER	2196665	414308	E0009		219274
SD541	X WRITE GATE READ DRIVER	2196666	414308	E0009		219274
SD551	X AUX WRITE GATE READ DRIVER	2196667	414308	E0009		219274
SD561	X Y DRIVE ARRAY CONN X DIM	2196669	414308	E0009		219274
SD611	DATA INPUT	2196670	414308	E0009		219274
SD621	DATA INPUT	2196671	414308	E0009		219274
SD631	INHIBIT INPUT LESS THAN 4K	2196672	414308	E0009		219274
SD641	INHIBIT INPUT MORE THAN 4K	2196673	414308	E0009		219274

TABLE OF CONTENTS VOL 1 FOR 9005SJ4 MODE- NEW MACHINES 04AUG6

LOGIC NO	DESCRIPTION	PART NO	EC NO	SEQ #	REA	SF B/M
SYSTEMS DIAGRAMS						
SD651	INHIBIT INPUT LESS THAN 4K	2196674	414308	E0009		219274C
SD661	INHIBIT INPUT MORE THAN 4K	2196675	414308	E0009		219274C
SD711	INHIBIT SENSE BIT 0 AND 1	2196676	414308	E0009		219274C
SD721	INHIBIT SENSE BIT 2 AND 3	2196677	414308	E0009		219274C
SD731	INHIBIT SENSE BIT 4 AND 5	2196678	414308	E0009		219274C
SD741	INHIBIT SENSE BIT 6 AND 7	2196679	414308	E0009		219274C
SD751	INHIBIT SENSE BIT 8 AND 9	2196680	414308	E0009		219274C
SD761	INHIBIT SENSE BIT 10 AND 11	2196681	414308	E0009		219274C
SD771	INHIBIT SENSE BIT 12 AND 13	2196682	414308	E0009		219274C
SD781	INHIBIT SENSE BIT 14 AND 15	2196683	414308	E0009		219274C
SD791	INHIBIT SENSE BIT 16 AND 17	2196684	414308	E0009		219274C



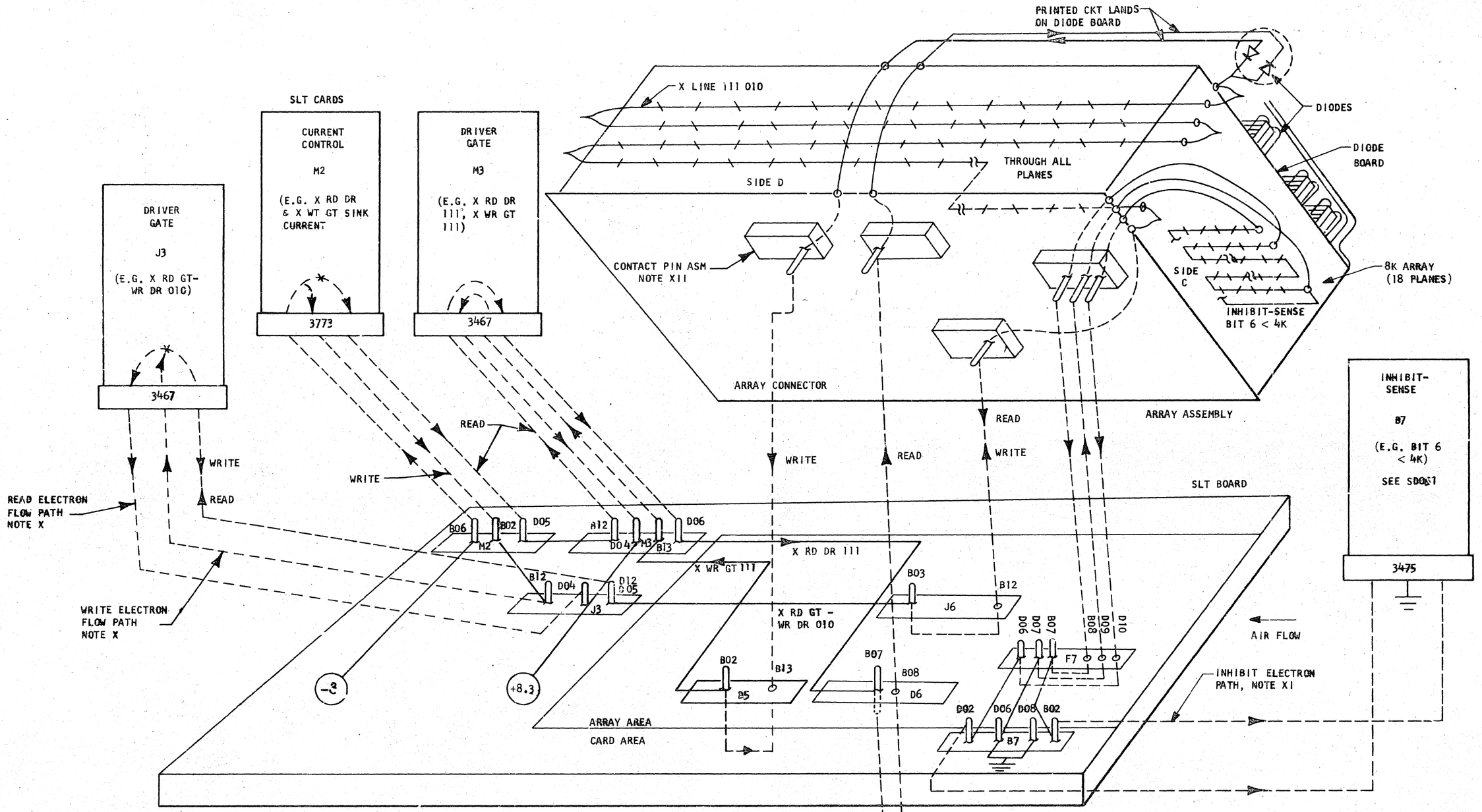
NOTES:

SJ-4 STORAGE ADJUSTMENT

STORAGE ADJUSTMENT SHOULD NOT BE MADE UNLESS A CARD HAVING A POTENTIOMETER IS REPLACED OR THERE IS A CLEAR INDICATION THAT THE STORAGE IS NOT ADJUSTED PROPERLY. IF ADJUSTMENT MUST BE MADE, USE THE FOLLOWING STEPS:

1. SET STORAGE BOARD VOLTAGES -3V (G2B06), +3V (G2D03), +6V (G2B11), AND +12V (AT VOLTAGE BUS) TO WITHIN 1% OF THEIR NOMINAL VALUES.
2. SET PERIOD BETWEEN THE RISE OF "+SHORT TIME"(N2B13) AND THE RISE OF THE STROBE PULSE(N2B05)TO 400 ±20 NANOSECONDS BY ADJUSTING THE POTENTIOMETER ON CARD IN POSITION N2.
3. SET THE REFERENCE VOLTAGE, V-REF,(G2B02) REFERENCED TO -3V(G2B06) TO 1.9V BY ADJUSTING THE V-REF 2K POTENTIOMETER ON CARD IN POSITION G2. THIS IS A PRELIMINARY ADJUSTMENT.
4. WHILE RUNNING ANY PATTERN CONTAINING ABOUT 50% "ZEROS," DECREASE THE "SENSE CONTROL VOLTAGE" (G2B07) REFERENCE TO THE "OFFSET VOLTAGE" (G2B09) UNTIL A PARITY ERROR OCCURS BY ADJUSTING THE V-SA 1K POTENTIOMETER ON CARD IN POSITION G2. THEN SET THE "SENSE CONTROL VOLTAGE" TO 0.1 ±0.01 VOLT ABOVE THE VALUE RECORDED AS THE FAILURE POINT.
5. WHILE RUNNING A WORSE-CASE PATTERN (e.g. STORAGE DIAGNOSTIC PROGRAM), DETERMINE THE STORAGE OPERATING LIMITS AS A FUNCTION OF THE REFERENCE VOLTAGE, V-REF,(G2B02) REFERENCED TO -3V (G2B06) BY ADJUSTING THE V-REF 2K POTENTIOMETER ON CARD IN POSITION G2. SET THE REFERENCE VOLTAGE TO THE MIDPOINT BETWEEN V-REF FAILURE POINTS AS INDICATED BY PARITY ERRORS. NOTE: THE V-REF SETTING TRACKS WITH TEMPERATURE.

DATE	EC NUMBER	DATE	EC NUMBER	SJ-4 BLOCK DIAGRAM & STORAGE ADJUSTMENT			
19AUG65	414308			DATE	19AUG65	P/N	2196980
						TYPE	
				IBM		SD011	



NOTES:

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

XI 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.

* SD043 & SD044 FOR CIRCUITRY IN J3, M2, AND M3.

DATE	EC NUMBER	DATE	EC NUMBER
19AUG65	414308		

SJ-4 PERSPECTIVE DIAGRAM

DATE 19AUG65 P/N 2196981

TYPE

IBM SD012

SJ-4 STORAGE ADJUSTMENT (SUMMARY)

I VOLTAGE ADJUSTMENT

1. SET STORAGE BOARD LOGIC VOLTAGES TO WITHIN 1% OF NOMINAL.
2. SPECIAL VOLTAGE (+12V) SHOULD BE WITHIN 11.16V TO 12.84V (A2D09).
3. THE "+8.3V GATE VOLTAGE" SHOULD BE WITHIN 8.0 TO 8.8V(A2D13).
4. MEASURE INTAKE TEMPERATURE AND RECORD TEMPERATURE ON THE LABEL.
5. SET V-REF TO WITHIN ±0.03V OF THE VALUE GIVEN IN FIGURE 1 (G2B02 REFERENCED TO G2B06). V-REF IS OPTIMIZED FOR THE SPECIFIC UNIT UNDER THE "V-REF ADJUSTMENT" SECTION.

II SENSE CONTROL ADJUSTMENT

1. STOP CLOCK. "EMITTER STROBE" SHOULD BE AT ITS -3V LEVEL.
2. ADJUST -3V TO GIVE -2.70V BETWEEN "EMITTER STROBE" AND GROUND: (G2B12 TO G2D08).
3. ADJUST "SENSE CONTROL VOLTAGE" TO 2.14V REFERENCED TO THE "OFFSET VOLTAGE (G2B07 TO G2B09).
4. RESTORE -3V TO NORMAL (G2B06 TO G2D08).
5. "SENSE CONTROL VOLTAGE" RANGE IS 2.24V ± 0.05V (G2B07 TO G2B09). RECORD ON LABEL.

III STROBE ADJUSTMENT

1. OBSERVE ONES ENVELOPE (E.G. BIT 6 LESS THAN 4K: B7B02 & B7D02).
2. SHORT N2B05 TO N2D08 AND PLACE PEAK OF READ ONES ENVELOPE ON CENTER VERTICAL LINE.
3. REMOVE SHORT AND COMPARE "+ STROBE LESS THAN 4K (H2B09) WITH "+ STROBE MORE THAN 4K" (H2B08).
4. SET LEADING EDGE OF STROBE AT THE 0.5V LEVEL 10 NANOSECONDS AFTER PEAK OF ONES ENVELOPE (H2B09).*
5. RECORD ON LABEL THE INTERVAL BETWEEN THE PEAK OF THE ONES ENVELOPE AND THE LEADING EDGE OF THE STROBE. (B7B02 & B7D02 TO H2B09).
6. RECORD ACCESS TIME ON LABEL (E1E11 TO C1C11 OR B7B04).

IV V-REF ADJUSTMENT

1. SET V-Z TO 6.36V OR 6.24V IF CPU CANNOT OPERATE OUTSIDE ±4% (G2B11 TO G2D08).
2. DETERMINE THE UPPER AND LOWER OPERATING LIMITS OF V-REF (G2B02 TO G2B06).
3. SET V-Z TO 5.64V OR 5.76V IF CPU CANNOT OPERATE OUTSIDE ±4% (G2B11 TO G2D08).
4. DETERMINE THE UPPER AND LOWER OPERATING LIMITS OF V-REF (G2B02 TO G2B06).
5. SET V-REF TO THE OPTIMUM OPERATING POINT. (SEE FIGURE 5), AND RECORD V-REF VALUE.
6. DETERMINE V-REF OPERATING RANGE (%) AND INSURE THAT THE REQUIREMENTS LISTED IN THE TABLE ARE MET, RECORD V-REF LIMITS AND PERCENTAGE ON LABEL.

SUMMARY OF TEST POINTS, VOLTAGE REFERENCE POINTS AND POTENTIOMETER LOCATIONS

NET NAME	LOCATION OR PIN	COMMENTS OR LEVEL
-3V LOGIC VOLTAGE	G2B06	-3.00V, ±0.03V (A), ±0.12V (B).
+3V LOGIC VOLTAGE	G2D03	+3.00V, ±0.03V (A), ±0.12V (B).
+6V LOGIC VOLTAGE	G2B11	+6.00V, ±0.06V (A), ±0.24V (B), ±0.36V (C).
BOARD LOGIC GROUND	G2D08	GROUND
+12V SPECIAL VOLTAGE	A2D09	+12.00 ±0.84V
+8.3V GATE VOLTAGE	A2D13	+8.3V -0.3V, +0.5V
VREF POTENTIOMETER	G2	(UPPER POT)
VREF	G2B02	(REFERENCE TO -3V)
-3V (0.7V) EMITTER STROBE	G2B12	(REFERENCE TO GND)
SENSE CONTROL POTENTIOMETER	G2	(LOWER POT)
SENSE CONTROL VOLTAGE (VSA)	G2B07	(REFERENCE TO OFFSET VOLTAGE)
OFFSET VOLTAGE	G2B09	0.8V±0.2V
+ READ CYCLE	E1E11	(TO SYNCHRONIZE SCOPE)
+ STROBE LESS THAN 4K	H2B09	(REFERENCE POINT)
+ STROBE MORE THAN 4K	H2B08	(REFERENCE POINT)
STROBE POTENTIOMETER	N2	(ONLY POT)
X CURRENT REFERENCE VOLTAGE	M2B09	(TEST POINT)
Y CURRENT REFERENCE VOLTAGE	B2B09	(TEST POINT)
- SENSE BIT 6	C1C11 OR B7B04	(ACCESS REFERENCE)
+ SHORT TIME	N2B13	(REFERENCE POINT)

A WESTON 901 (1/4%) OR EQUIVALENT METER IS REQUIRED FOR ALL VOLTAGE ADJUSTMENTS. TIME MEASUREMENTS ARE TO BE WITHIN ± 10 NS. ABSOLUTE TIME MEASUREMENTS SHALL BE MADE WITH A CALIBRATED SCOPE. IN THE FIELD THIS CALIBRATION CAN BE DONE WITH THE CRYSTAL OSCILLATOR TIMING OUTPUT OF THE HOST MACHINE. GROUNDED PROBES MUST BE USED FOR MAKING TIME MEASUREMENTS.

TOLERANCE NOTES

(A) - ADJUSTMENT SETTING TOLERANCE - APPLIES TO THE ADJUSTMENT PROCEDURE ONLY
(B) - NORMAL OPERATING SUPPLY VARIATION MEASURED AT THE STORAGE UNIT BOARD PINS LISTED ABOVE.
(C) - STORAGE OPERATING LIMITS HOWEVER, THE CPU MAY NOT OPERATE OUTSIDE OF ±4%, ie. 6.00V±0.24V.
* - THESE ARE TO BE WITHIN 10 NS OF EACH OTHER.

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NAME	SJ-4 STORAGE ADJUSTMENT				21FEB67	256302			X PRINT TO ENG. SPEC. NO.	
DESIGN	LER	2DJUN67	MODEL	A11	11JUN67	731503A				
DETAIL										
CHECK			DRAW	KE 11JUN67						
APPRO			CHECK							SD013

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SJ-4 STORAGE ADJUSTMENT (DETAILED)

STORAGE ADJUSTMENT SHOULD NOT BE MADE UNLESS A CARD IN A2, B2, G2, M2, OR N2 IS REPLACED OR THERE IS A CLEAR INDICATION THAT THE STORAGE IS NOT ADJUSTED PROPERLY. A COMPLETE ADJUSTMENT INCLUDES 1) VOLTAGE ADJUSTMENT, 2) SENSE CONTROL ADJUSTMENT, 3) STROBE ADJUSTMENT, AND 4) VREF ADJUSTMENT.

IF THE CARD IN LOCATION N2 IS REPLACED, THE "STROBE ADJUSTMENT" SECTION MUST BE FOLLOWED. IF A CARD IN A2, B2, G2, OR M2 IS REPLACED, A COMPLETE ADJUSTMENT MUST BE MADE.

UPDATE "ADJUSTMENT SETTINGS" LABEL WHENEVER THE STORAGE IS READJUSTED.

I. VOLTAGE ADJUSTMENT

ALL VOLTAGES ARE MEASURED WITH RESPECT TO STORAGE UNIT GROUND EXCEPT WHERE NOTED OTHERWISE. A WESTON 901 (1/4%) OR EQUIVALENT METER IS REQUIRED FOR ALL VOLTAGE ADJUSTMENTS.

1. SET STORAGE BOARD LOGIC VOLTAGES AS FOLLOWS, MEASURED WITH RESPECT TO BOARD GROUND.

-3.00V ±0.03V	G2B06
+3.00V ±0.03V	G2D03
*+6.00V ±0.06V	G2B11
GROUND	G2D08

*NOTE: +6 IS ALSO V_Z

2. SPECIAL VOLTAGE (+12V), MEASURED AT A2D09, SHOULD BE WITHIN 11.16V TO 12.84V

+12.0V±0.84V A2D09

3. THE "+8.3V GATE VOLTAGE" SHOULD BE WITHIN 8.0V TO 8.8V.

+8.3V GATE VOLTAGE: A2D13
(+8.3V-0.3V, +0.5V)

4. MEASURE THE TEMPERATURE OF THE INCOMING AIR AND RECORD THE TEMPERATURE ON THE LABEL.

THERMOMETER: P/N 5392366 (OR EQUIVALENT)

5. SET V-REF (MEASURED WITH RESPECT TO -3V) TO WITHIN ±0.03V OF THE VALUE GIVEN IN FIGURE 1. THIS IS AN INITIAL ADJUSTMENT. V-REF IS A TEMPERATURE TRACKING VOLTAGE. ONCE V-REF HAS BEEN SET IT WILL TRACK A LINE PARALLEL TO THAT SHOWN IN FIGURE 1. THIS LINE REPRESENTS THOSE SETTINGS OF V-REF AT WHICH THE STORAGE CAN BE EXPECTED TO OPERATE WITHOUT ERROR. IT DOES NOT REPRESENT OPTIMUM SETTINGS OF V-REF FOR A SPECIFIC STORAGE UNIT. THE ACTUAL TRACKING LINE MAY HAVE A SLOPE OF (-0.013V±0.002V)/°C

VREF POT: G2(UPPER POT)
VREF: G2B02
-3V: G2B06

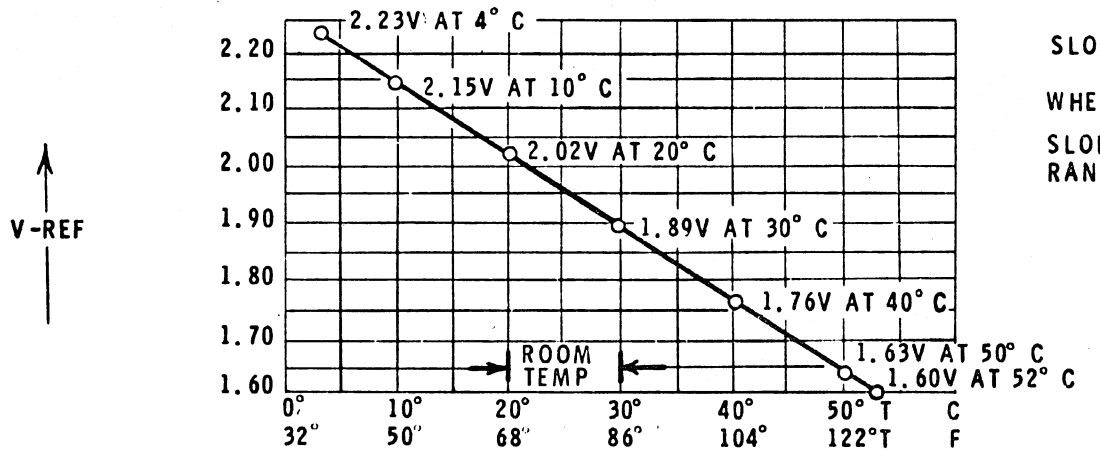

FIGURE 1: VREF VS TEMPERATURE (T)

$$\text{SLOPE} = \frac{\text{V-REF AT } T_1 - \text{V-REF AT } T_2}{\text{TEMPERATURE } T_1 - \text{TEMPERATURE } T_2}$$

WHERE: $T_1 - T_2$ MUST BE AT LEAST 10° C.

SLOPE RANGE: -0.011V/°C TO -0.015V/°C.

II. SENSE CONTROL ADJUSTMENT

1. STOP THE CLOCK. THE "-3V (0.7V) EMITTER STROBE" SHOULD BE AT ITS -3V LEVEL. THE TWO VOLTAGES (-3V & 0.7V) DEFINE THE SIGNAL LEVELS OF THIS NET.

2. ADJUST -3V TO GIVE -2.70V BETWEEN "-3V (0.7V) EMITTER STROBE" AND GROUND.

-3V (0.7V) EMITTER STROBE:	G2B12
GROUND:	G2D08

3. ADJUST THE LOWER POTENTIOMETER ON CARD G2 TO SET THE "SENSE CONTROL VOLTAGE" TO 2.14V REFERENCED TO THE "OFFSET VOLTAGE"

SENSE CONTROL POT:	G2(LOWER POT)
SENSE CONTROL VOLTAGE:	G2B07
OFFSET VOLTAGE:	G2B09

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				12JUN67	731503A				
DESIGN	LER 20JUN67	MODEL							
DETAIL									
CHECK		DRAW	KE 12JUN67						SD013
APPRO		CHECK							

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SHEET 2 OF 5

C. B CO., NO. 64-011

4. RESTORE -3V TO NOMINAL.

-3V G2B06

5. RESTORING -3V TO NOMINAL WILL CAUSE THE "SENSE CONTROL VOLTAGE" REFERENCED TO THE "OFFSET VOLTAGE" TO RISE TO 2.24V ±0.05V AT ROOM TEMPERATURE. THIS VOLTAGE CHANGES AT THE RATE OF +0.01V/10°C. NOTICE THE 2.24V±0.05V IS THE RANGE, BUT THAT THE CORRECT SETTING IS OBTAINED BY FOLLOWING STEPS 1 TO 4. RECORD THE FINAL VALUE OF "SENSE CONTROL VOLTAGE" REFERENCED TO THE OFFSET VOLTAGE" ON THE LABEL. TOLERANCE FROM FINAL VALUE IS ±0.02V-0.01V/°C.

III. STROBE ADJUSTMENT

SYNCHRONIZE ON TO OR "+ READ CYCLE" (E1E11). THE BASIC REQUIREMENT TO BE MET IS THAT THE LEADING EDGE OF THE STROBE, H2B09 (MEASURED AT THE 0.5V LEVEL WITH RESPECT TO ITS BASELINE) MUST BE WITHIN 0 TO 30 NANOSECONDS (WITH A NOMINAL SETTING OF 10 NS) AFTER THE PEAK OF THE ONES ENVELOPE. THE UNIT SHOULD OPERATE AT NOMINAL VOLTAGES ON ALL PATTERNS WHEN THE STROBE IS DELAYED AT LEAST 30 NANOSECONDS FROM ITS FINAL SETTING.

NOTE: THE CLOCK CARD (5804683) IN N2 MAY BE OF A, B, OR C LEVEL, ie. HAVE A 1K POTENTIOMETER. IN THIS CASE, IT MAY NOT BE POSSIBLE TO DELAY THE STROBE SUFFICIENTLY. IF THE STROBE CANNOT BE DELAYED AT LEAST 20 NS LATER THAN THE "FINAL" SETTING, THE CARD SHOULD BE REPLACED BY ONE HAVING A 2K POTENTIOMETER, ie. A D (OR LATER) LEVEL CARD. THE FINAL SETTING MUST BE AT LEAST ONE FULL TURN FROM ITS MAXIMUM DELAYED POSITION.

1. WHILE RUNNING AN ALL ONES PATTERN IN ALL ADDRESSES, OBSERVE THE ONES ENVELOPE FOR A LESS THAN 4K BIT, e.g. BIT 6<4K, B7B02 AND B7D02, USING DIFFERENTIAL SCOPE LEADS (OR ALTERNATE) TO DIFFERENTIAL INPUTS OF SCOPE SUCH AS A 561S, 647, OR 453. A SCOPE HAVING A BANDWIDTH OF AT LEAST 20 MC IS REQUIRED, AND SCOPE SETTINGS OF 50 NS AND 20 MV PER CM ARE RECOMMENDED.

CABLE ASSEMBLY--DIFFERENTIAL SCOPE LEADS (PN 2182907).

ALTERNATE: DIRECT TWISTED PAIR TERMINATED ON EACH LINE BY A 150 OHM RESISTOR TO SCOPE GROUND.

e.g. - BIT 6<4K: B7B02 AND B7D02

2. SHORT N2B05 TO N2D08 TO REMOVE STROBE REFLECTION, THEN ADJUST THE CENTER OF THE ONES ENVELOPE AT READ TIME TO THE CENTER VERTICAL LINE. CENTER MAY BE DETERMINED BY ADJUSTING THE SCOPE TO PLACE THE RISE AND FALL OF THE ONES ENVELOPE AT ±50 NS ON THE SAME HORIZONTAL LINE. SEE FIGURE 2. AT LEAST TWO BITS SHOULD BE OBSERVED TO DETERMINE THE AVERAGE TIME FOR THE CENTERS, e. g. BIT 6 < 4K: B7B02 AND B7D02 (4K), BIT 6>4K: A7B02 AND A7D02 (8K) OR BIT 14<4K: M7B02 AND M7D02 (4K) AND BOTH POSITIVE AND NEGATIVE CENTERS SHOULD BE OBSERVED.

BIT 6<4K: B7B02 AND B7D02
BIT 6>4K: A7B02 AND A7D02
BIT 14<4K: M7B02 AND M7D02.

N2B05 SHORTED TO N2D08

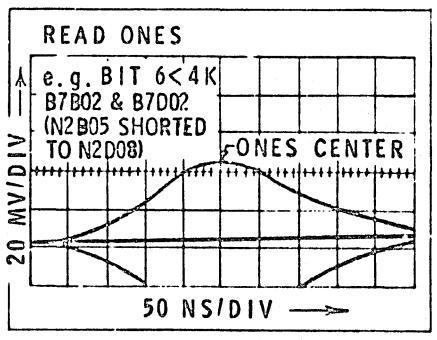

FIGURE 2

3. REMOVE THE SHORT OF STEP 2 AND COMPARE (ON 8K UNITS) "+ STROBE LESS THAN 4K." WITH "+ STROBE MORE THAN 4K." THE LEADING EDGES OF THE STROBES (MEASURED AT THE 0.5V LEVEL) MUST BE WITHIN 10 NANOSECONDS. A 10-TO-1 PROBE SHOULD BE USED FOR THESE MEASUREMENTS.

+ STROBE LESS THAN 4K: H2B09
+ STROBE MORE THAN 4K: H2B08

4. ADJUST THE POTENTIOMETER ON CARD N2 TO PLACE THE LEADING EDGE OF THE "+ STROBE LESS THAN 4K" (MEASURED AT THE 0.5V LEVEL WITH RESPECT TO ITS BASELINE) 10 NANOSECONDS LATER THAN THE THE ONES ENVELOPE. SEE FIGURE 3.

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DESIGN	LER 20JUN67		MODEL								
DETAIL											
CHECK			DRAW	KE 12JUN67						SD103	
APPRO			CHECK								

STROBE POT: N2

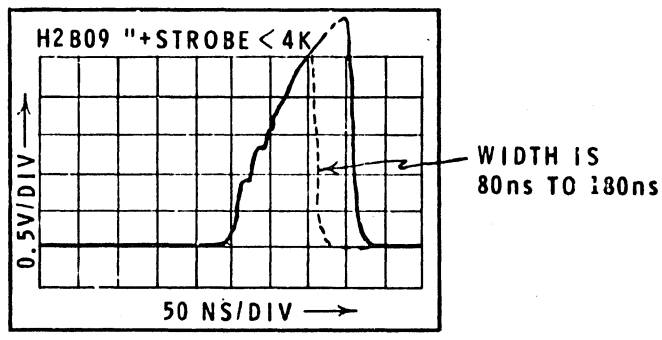


FIGURE 3

5. RECORD ON THE LABEL THE INTERVAL BETWEEN THE CENTERS OF THE ONES ENVELOPE (FIGURE 2) AND THE LEADING EDGE OF THE STROBE (MEASURED AT THE 0.5V LEVEL WITH RESPECT TO ITS BASELINE - FIGURE 3).

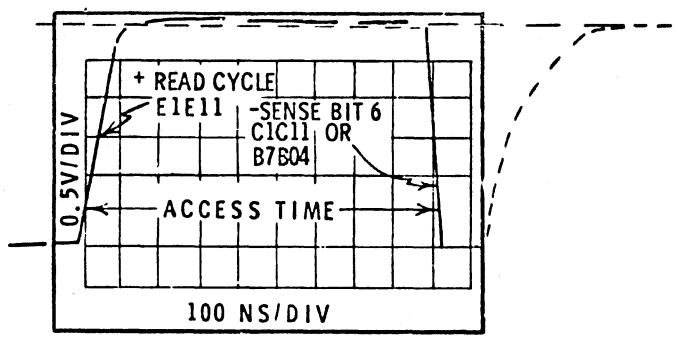
6. MEASURE THE INTERVAL BETWEEN THE RISE OF "+ READ CYCLE" (E1E11) AND THE FALL OF "-SENSE BIT 6" (C1C11 OR B7B04) AT THE 0.5V LEVEL WITH RESPECT TO BASELINES. SEE FIGURE 4. RECORD THIS INTERVAL AS "ACCESS TIME" ON THE LABEL.

+ READ CYCLE: E1E11

- SENSE BIT 6: C1C11 OR B7B04

ACCESS TIME: 700 NS TO 950 NS (SPECIFICATION)
910 NS±30 NS (TYPICAL 8K) 880 NS±30 NS (TYPICAL 4K)

FIGURE 4



IV. VREF ADJUSTMENT

VREF OPERATING LIMITS ARE DETERMINED BY RUNNING WORST CASE PATTERNS THROUGH ALL ADDRESSES. THESE PATTERNS ARE SET UP BY A TESTER OR BY STORAGE ADJUSTMENT PROGRAMS PROVIDED BY THE USING SYSTEM. FAILURE POINTS WILL BE DETECTED BY COMPARISON CIRCUITRY OR PARITY ERROR INDICATION. A VREF $-V_Z$ OPERATING RECTANGLE IS FORMED BY DEFINING THE UPPER AND LOWER BOUNDARIES AS $+6\pm0.36V$ (V_Z). THE LEFT AND RIGHT BOUNDARIES ARE DETERMINED BY THE TWO INNERMOST V-REF LIMITS V_A AND V_B ON THE $+6V\pm0.36V$ (V-Z) LINES. THE OPTIMUM (V-REF) OPERATING POINT IS THE POINT WHERE THE DIAGONALS OF THE RECTANGLE INTERSECT.

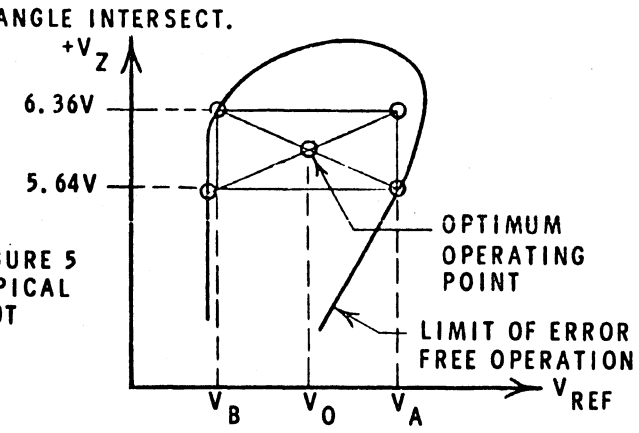


FIGURE 5
TYPICAL
PLOT

1. SET V_Z TO 6.36V. (6.24V IF CPU CANNOT OPERATE OUTSIDE ±4% TOLERANCE ON +6V SUPPLY)

V_Z (LOGIC +6V): G2B11

2. DETERMINE THE UPPER AND LOWER VREF OPERATING LIMITS BY ADJUSTING THE UPPER POTENTIOMFTER ON CARD G2. MEASURE VREF WITH RESPECT TO -3V.

VREF POT: G2(UPPER POT)
VREF: G2B02
-3V: G2B06

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CHECK			DRAW	KE 12JUN67						SD013
APPRO			CHECK							

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3. SET V_Z TO 5.64 V. (5.76V IF CPU CANNOT OPERATE OUTSIDE ±4% TOLERANCE ON +6V SUPPLY)

V_Z (LOGIC +6V): G2B11

4. DETERMINE THE UPPER AND LOWER VREF OPERATING LIMITS BY ADJUSTING THE UPPER POTENTIOMETER ON CARD G2. MEASURE VREF WITH RESPECT TO -3V.

VREF POT: G2(UPPER POT)
VREF: G2B02
-3V: G2B06

5. SET VREF TO OPTIMUM OPERATING POINT, SEE FIGURE 5 ABOVE, AND RECORD THE VALUE DETERMINED ON THE LABEL.

VREF: OPTIMUM OPERATING POINT

6. DETERMINE THE V-REF OPERATING RANGE (%). THE REQUIREMENTS ARE LISTED IN THE TABLE BELOW AND THE RANGE IS FOUND FROM:

a) FOR "OPTIMUM" CONDITION:- $\pm R_O = \pm \left\{ \frac{V_A - V_B}{V_A - V_B} \right\} X\ 100.$ (R_O IS THE LIMIT PERCENTAGE FROM OPTIMUM OPERATING POINT.)

SEE FIGURE 5 FOR DEFINITIONS OF V_A AND V_B

b) FOR "TRACKING" CONDITION:- $\pm R_T = \pm \left\{ \frac{|V_N - V_T|}{V_T} \times 100 \right\}$. ($R_T$ IS THE PERCENTAGE FROM V-REF TRACKING POINT.)

VT IS THE VREF TRACKING POINT AND VN IS THE VALUE OF V_A OR V_B NEAREST TO V_T. RECORD THE V-REF LIMITS AND PERCENTAGE ON LABEL.

ENVIRONMENT		REQUIRED LIMITS OF ERROR FREE OPERATION	
CLASSIFICATION	TEMPERATURE RANGE	VREF	Vz
ROOM TEMP	20° C TO 30° C	OPTIMUM VALUE ±10%	NOMINAL ± 6%
CLASS C	10° C TO 43.3° C	TRACKING POINT VALUE ±6%	NOMINAL ± 6%
ABOVE AND BELOW CLASS C	4 °C TO 10° C AND 43.3° C TO 52° C	TRACKING POINT VALUE ±4%	NOMINAL ± 6%

* NOTE: FOR "CLASS C" AND "ABOVE AND BELOW CLASS C" THE LIMITS APPLY OVER THE TEMPERATURE RANGE SHOWN FOR ANY COMBINATION OF V-REF AND V_Z (ie. - VREF +6% & V_Z -6%).

THE ± 10% VREF VALUE APPLIES ONLY FOR THE SPECIFIC ROOM TEMPERATURE AT WHICH V-REF IS OPTIMIZED. THUS, IF THE UNIT IS ADJUSTED AND TESTED AT A ROOM TEMPERATURE ONLY (ie. A TEMPERATURE WITHIN 20° C TO 30° C) THE UNIT MUST OPERATE ERROR FREE WHEN V-REF IS VARIED ±10% FROM ITS OPTIMUM OPERATING POINT AND WHEN V_Z IS VARIED IN ANY COMBINATION (e.g. V-REF +10% AND V_Z -6%).

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NAME	SJ-4 STORAGE ADJUSTMENT				21FEB67	256302			X PRINT TO ENG. SPEC. NO.	
DESIGN	LER	20JUN67	MODEL		9JUN67	731503A				
DETAIL										
CHECK			DRAW	KE 9JUN67						SD013
APPRO			CHECK							

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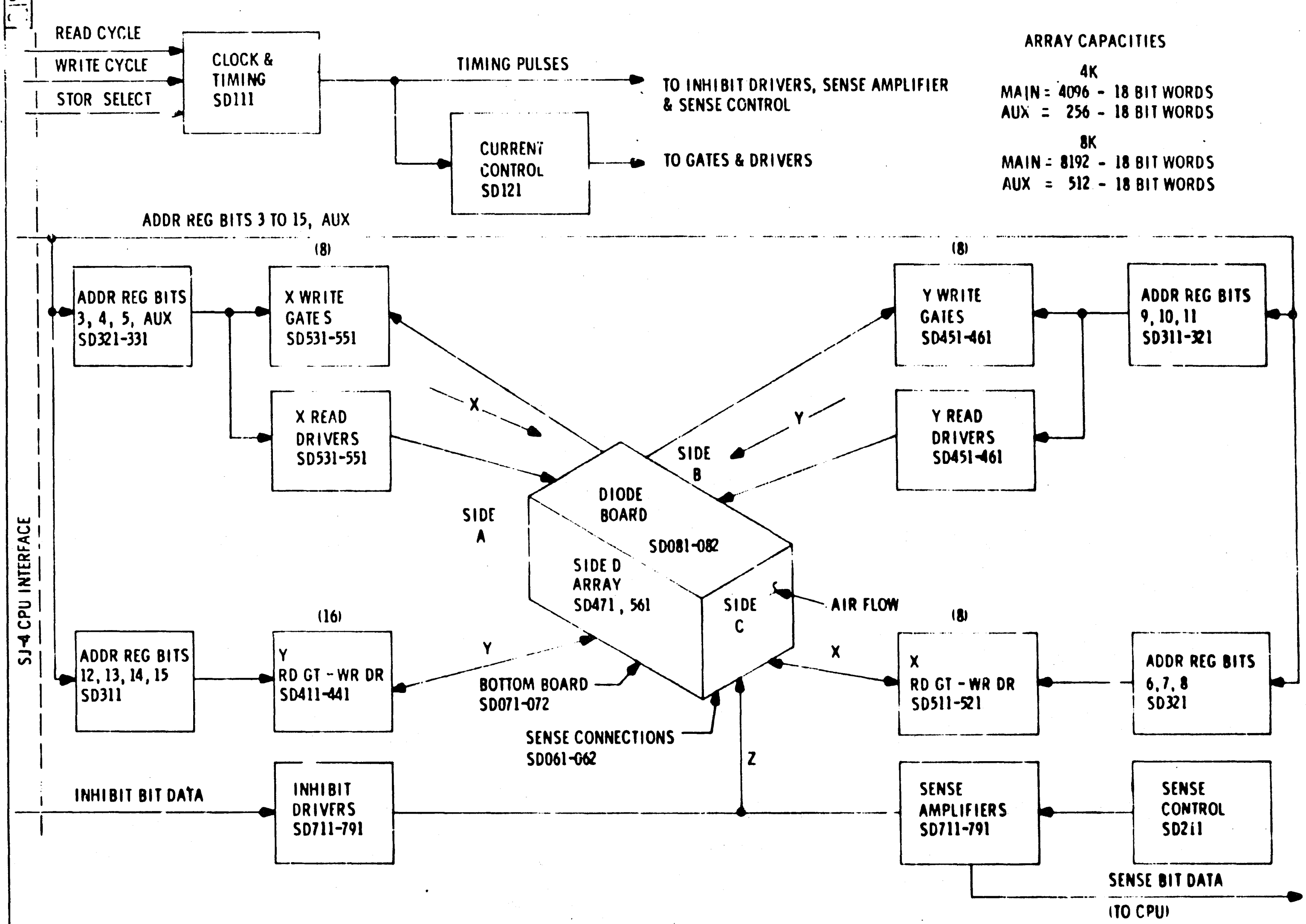
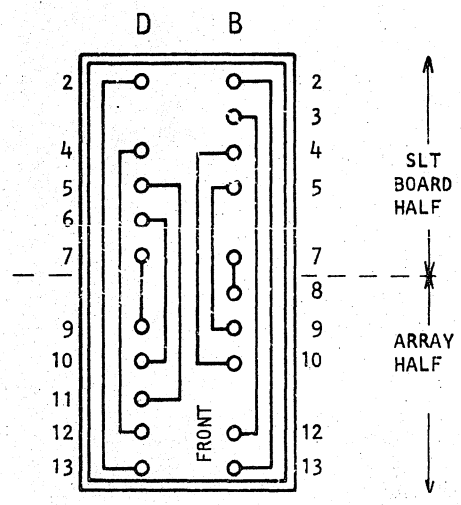


INTERNATIONAL BUSINESS MACHINES CORP.	DATE	CHANGE NO	DATE	CHANGE NO	NOTE	DEVELOPMENT NO.
NAME: SJ-4 BLOCK DIAGRAM	19 AUG 65	414308			X PRINT TO ENG. SPEC. NO.	
MODEL: SD011	15FEB67	256302				
	11MAY67	731503				
DRAW: KE 8 AUG66						
CHECK: MH 8AUG66						

STORAGE ADDRESS REGISTER

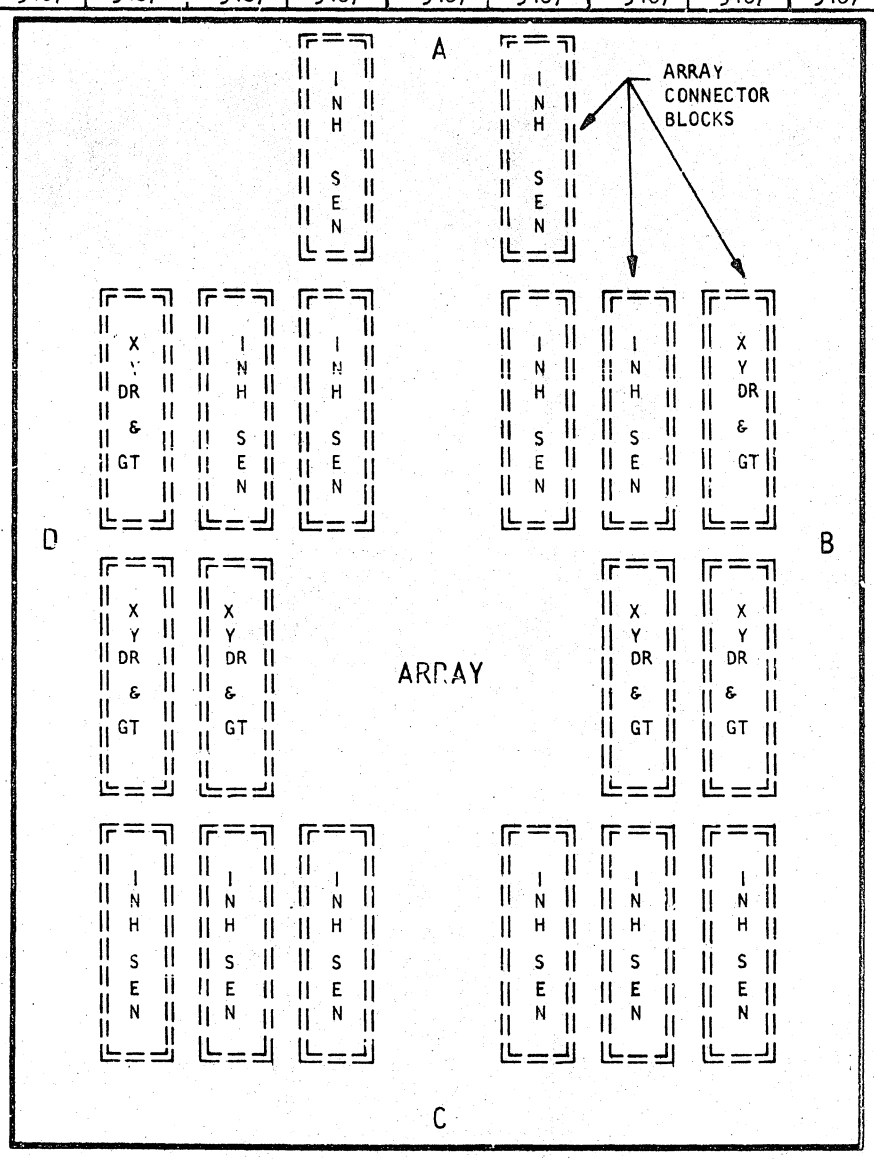
X						Y						
HIGH ORDER			LOW ORDER			HIGH ORDER			LOW ORDER			
3	4	5	6	7	8	9	10	11	12	13	14	15
RD DR , WR GT			RD GT - WR DR			RD DR , WR GT			RD GT - WR DR			

ARRAY CONNECTOR BLOCK



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	VOLTAGE REGULATOR 3484	Y CURRENT CONTROL 3773	API & 9 AI INH BITS 0-8 * 3466	API & 9 AI INH BITS 0-8 3466	3466	ADDR REG BITS INV 6-15 3132	V REF & SEN CTRL POT POT 3491	LOGIC & ADDR REG BITS INV 3,4,5 0525	AUX RD DR & WR GT ** 3467	API & 9 AI INH BITS 9-17 3466	API & 9 AI INH BITS 9-17 * 3466	X CURRENT CONTROL 3773	CLOCK STROBE POT 4683
3	INH SEN BITS 7&9 * 3475	INH SEN BITS 7&9 3475	Y RD GT - WR DR 0000 0001 0010 0011 3467	0100 0101 0110 0111 3467	1000 1001 1010 1011 3467	1100 1101 1110 1111 3467	Y RD DR, WR GT 000 001 010 011 3467	100 101 110 111 3467	X RD GT-WR DR 000 001 010 011 3467	100 101 110 111 3467	X RD DR, WR GT 000 001 010 011 3467	100 101 110 111 * 3467	
4	INH SEN BITS 1&5 * 3475	INH SEN BITS 1&5 3475										INH SEN BITS 11&17 3475	INH SEN BITS 11&17 * 3475
5	INH SEN BITS 2&3 * 3475	INH SEN BITS 2&3 3475										INH SEN BITS 13&15 3475	INH SEN BITS 13&15 * 3475
6	INH SEN BITS 4&8 * 3475	INH SEN BITS 4&8 3475										INH SEN BITS 10&12 3475	INH SEN BITS 10&12 * 3475
7	INH SEN BITS 0&6 * 3475	INH SEN BITS 0&6 3475										INH SEN BITS 14&16 3475	INH SEN BITS 14&16 * 3475
8													



AIR FLOW

* 8K ONLY

** AUX FEATURE ONLY

DATE	EC NUMBER	DATE	EC NUMBER	SJ-4 REFERENCE
19AUG65	414308			

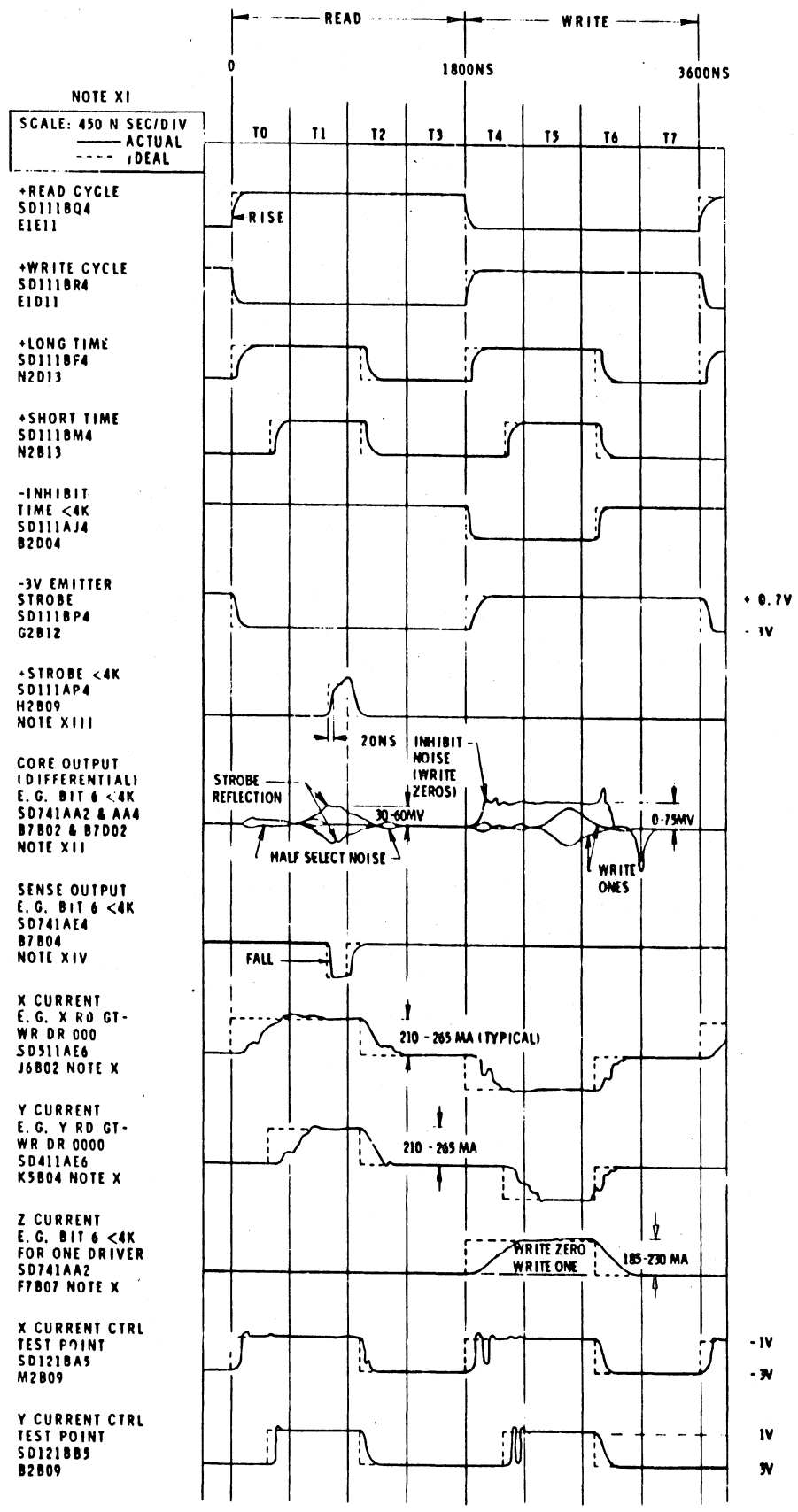
PLUGGING CHART

DATE	P/N	TYPE
19AUG65	2196982	

IBM SD021

2196983

SD031



NOTES

X CURRENTS MAY BE MEASURED BY REPLACING THE APPROPRIATE ARRAY CONNECTOR BLOCK WITH A JUMPER ASSEMBLY P/N 2182906 OR A CARD OFFSET P/N 452530, TEN 4.00 (101.6) JUMPERS P/N 452655 SHOULD BE USED ON THE CARD OFFSET IN A LAYOUT MATCHING THE CONNECTOR BLOCK LAYOUT ARRAY CONNECTOR BLOCKS SHOULD BE REMOVED WITH BLOCK TOOL ASM P/N 2108860

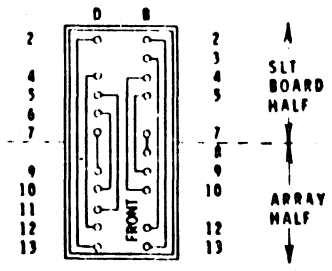
XI SYNC POINT +READ CYCLE (N2J06)

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

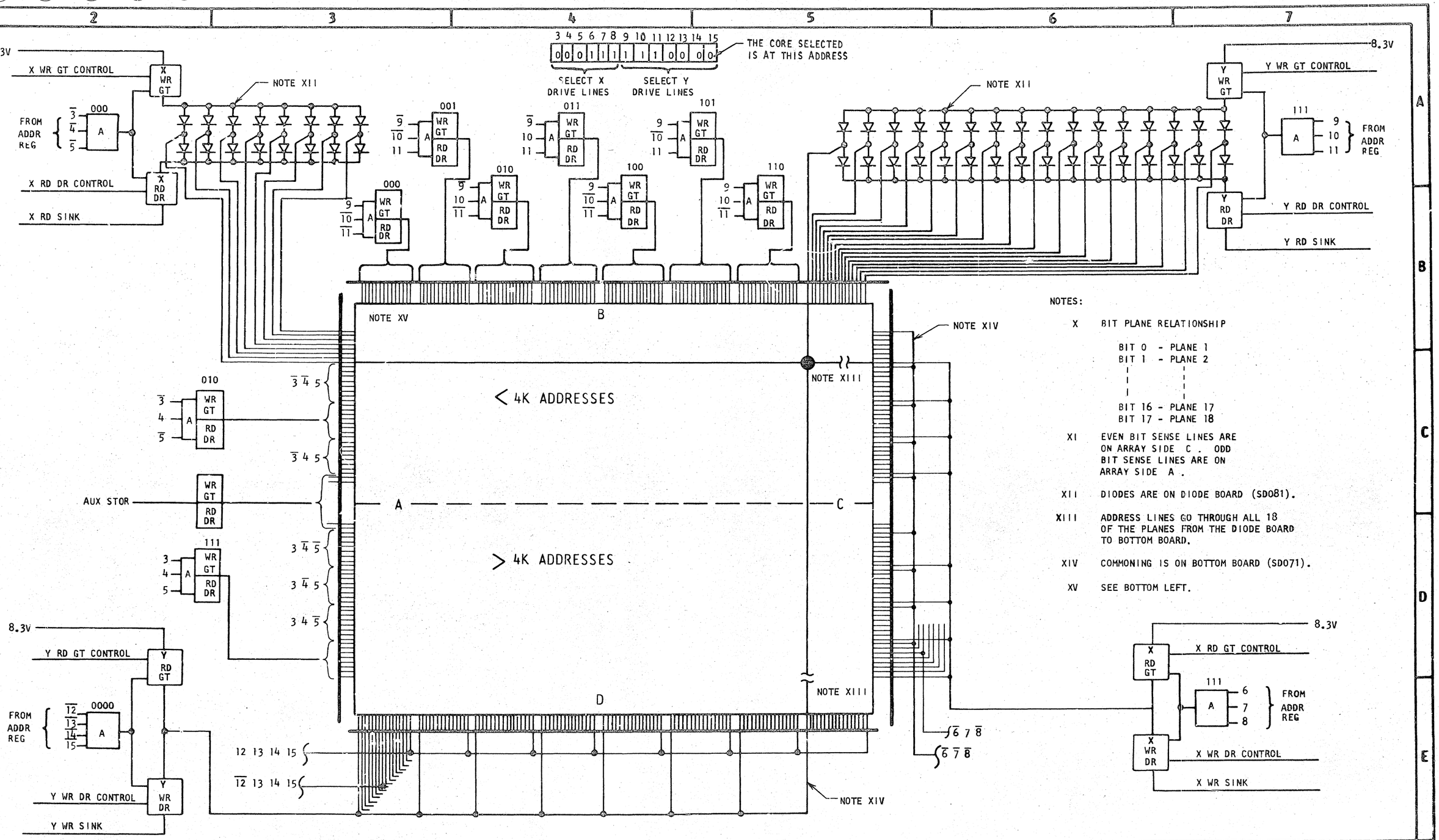
XIII STROBE OPTIMUM OCCURS WITH KNEE OF STROBE 20 NANOSECONDS PAST PEAK OF ONES PACK

XIV TYPICAL "ACCESS" TIME FROM READ CYCLE RISE (POSITIVE GOING) AND SENSE OUTPUT FALL (NEGATIVE GOING) IS 860 NS FOR 4K AND 900 NS FOR 8K MEASURED AT THE 1 VOLT LEVEL.

ARRAY CONNECTOR BLOCK



IBM			DATE	CHANGE NO.	DATE	CHANGE NO	NOTE	DEVELOPMENT NO.	2196983
NAME	SJ-1 TIMING AND WAVEFORMS		19 AUG 65	414308			X PRINT TO ENG SPEC NO		
DESIGN		MODEL	21 FEB 67	256302					
DETAIL	LD 21FEB67		11 MAY 67	731503					
CHECK		DRAW						SD031	
APPRO		CHECK							



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 (SD081).

XIII ADDRESS LINES GO THROUGH ALL 18 OF THE PLANES FROM THE DIODE BOARD TO BOTTOM BOARD.

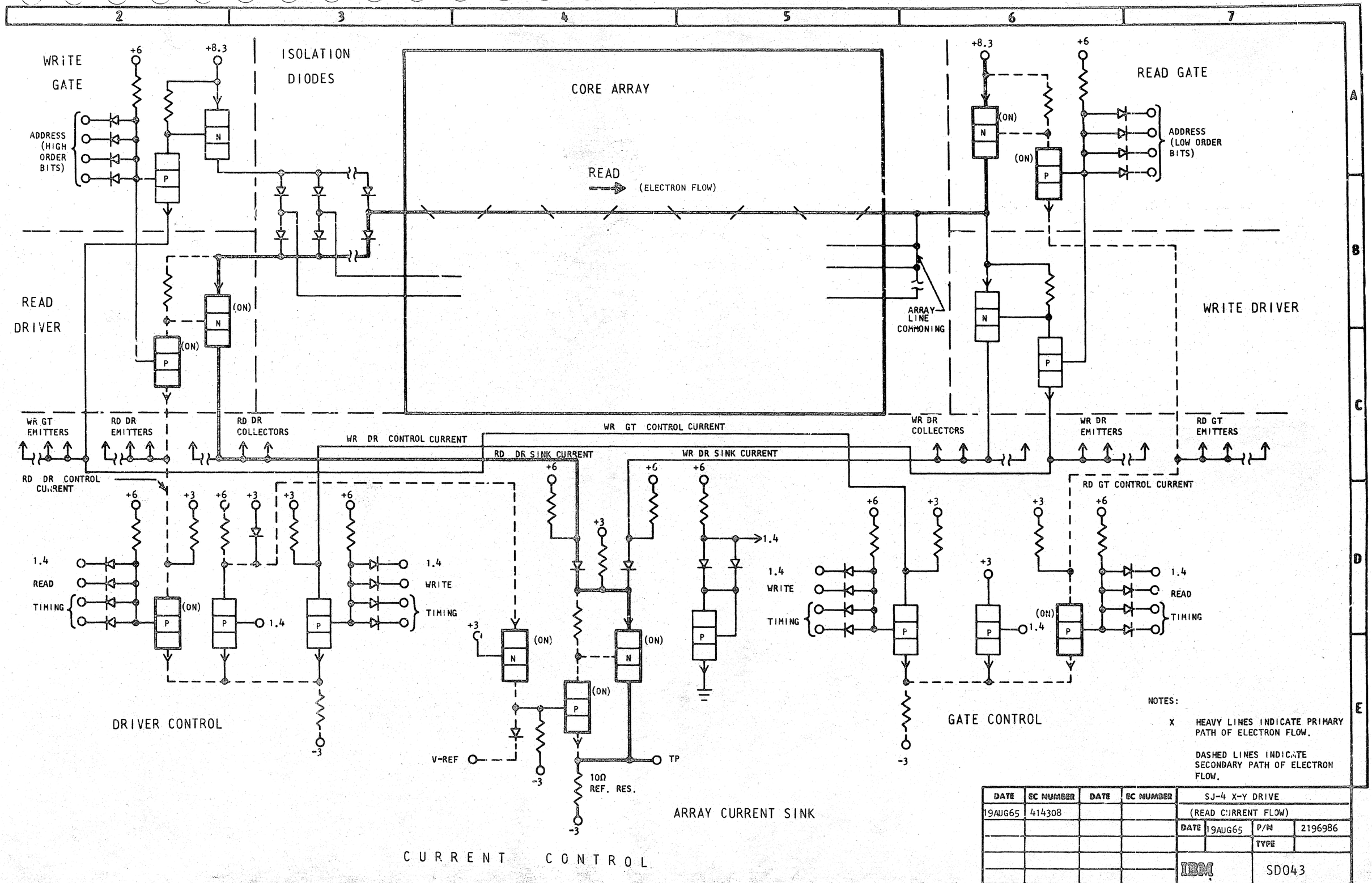
XIV COMMONING IS ON BOTTOM BOARD (SD071).

XV SEE BOTTOM LEFT.

NOTES (CONTINUED):

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-4 3K ARRAY ADDRESSING			
19AUG65	414308						
				DATE	19AUG65	P/N	2196984
						TYPE	
				IBM		SD041	

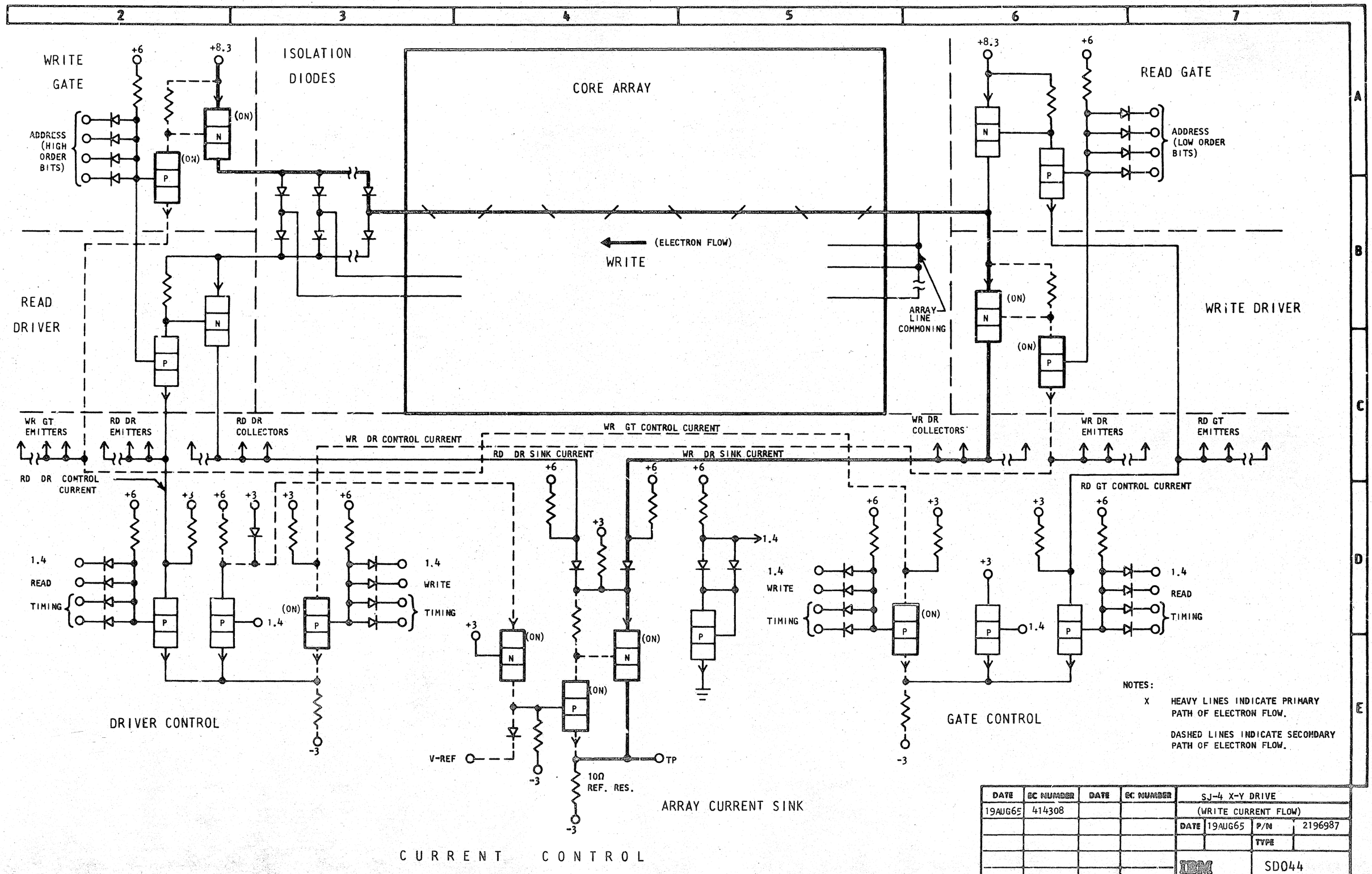


NOTES:

X HEAVY LINES INDICATE PRIMARY PATH OF ELECTRON FLOW.

DASHED LINES INDICATE SECONDARY PATH OF ELECTRON FLOW.

DATE	EC NUMBER	DATE	EC NUMBER	SJ-4 X-Y DRIVE			
19AUG65	414308			(READ CURRENT FLOW)			
				DATE	19AUG65	P/N	2196986
						TYPE	
				IBM		SD043	



DATE	EC NUMBER	DATE	EC NUMBER
19AUG65	414308		

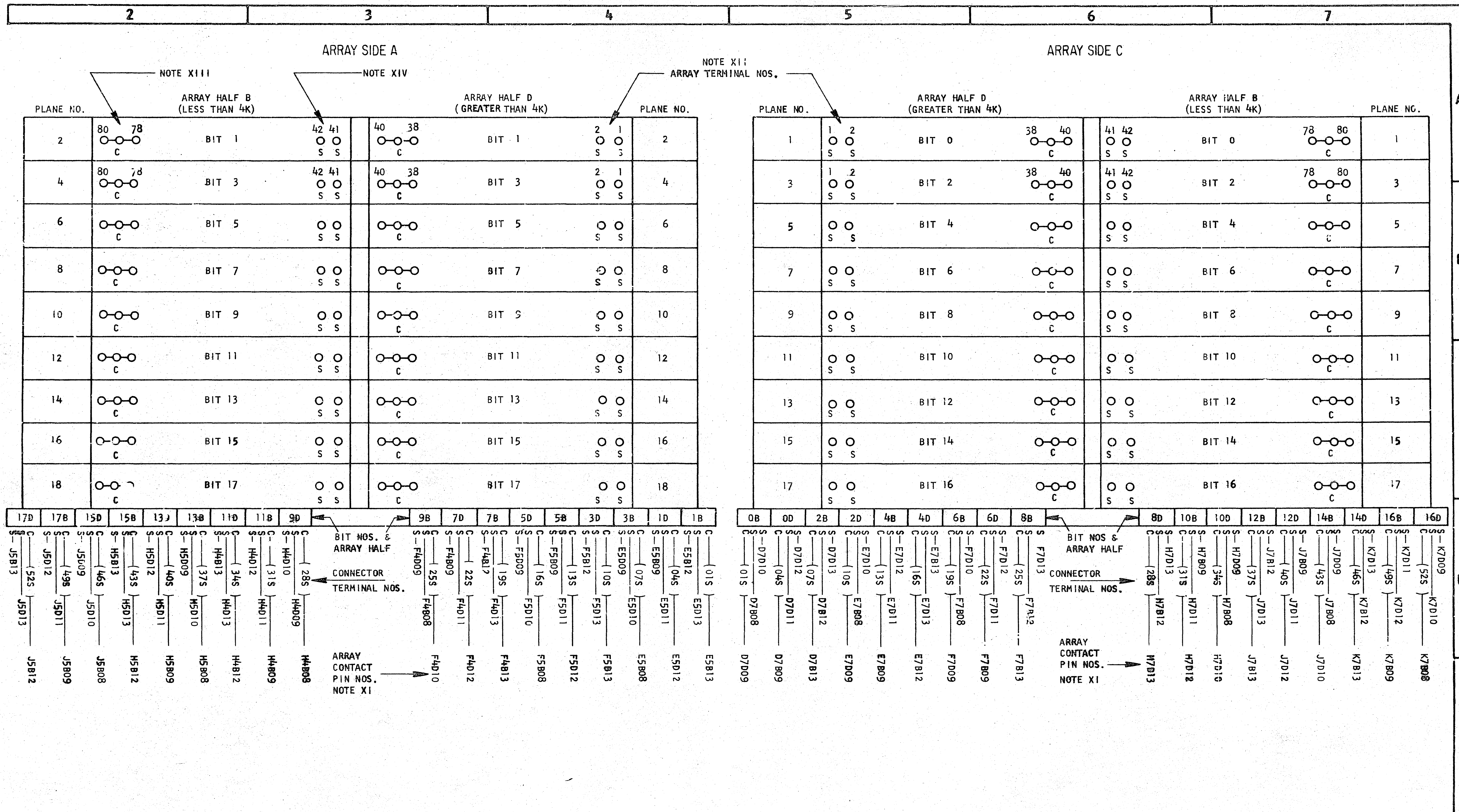
SJ-4 X-Y DRIVE

(WRITE CURRENT FLOW)

DATE 19AUG65 P/N 2196987

TYPE

IBM SD044



NOTES:

XI EACH ARRAY CONTACT PIN IS JUMPERED TO A CONNECTOR TERMINAL VIA A ~~PRINTED CIRCUIT~~ (SEE SD012)

XII EACH CONNECTOR TERMINAL IS JUMPERED TO AN ARRAY TERMINAL VIA A DISCRETE WIRE (SEE ~~SD012.) THE WIRES ARE COUPED IN TWISTED TRIPLETS.~~

XIII ARRAY TERMINALS MARKED C ARE COMMONED, E.G. 38-40 OR 78-80

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	414308		

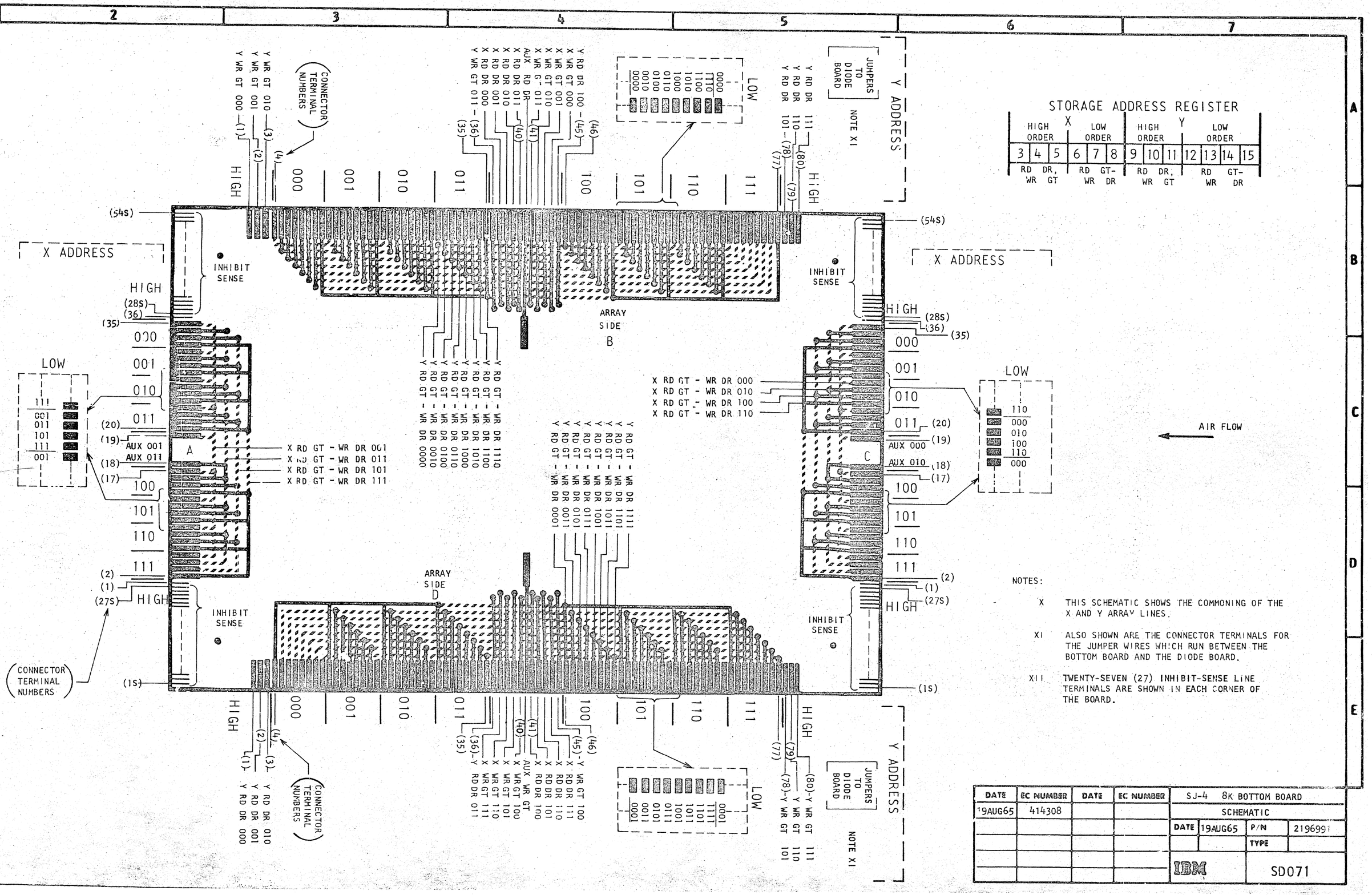
SJ-4 8K

SENSE CONNECTIONS

DATE AUG 65 P/N 2196989

TYPE

IBM SD061



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
RD WR	DR, GT		RD WR	GT- DR		RD WR	DR, GT		RD WR	GT- DR		

NOTES:

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

X1 ALSO SHOWN ARE THE CONNECTOR TERMINALS FOR THE JUMPER WIRES WHICH RUN BETWEEN THE BOTTOM BOARD AND THE DIODE BOARD.

X11 TWENTY-SEVEN (27) INHIBIT-SENSE LINE TERMINALS ARE SHOWN IN EACH CORNER OF THE BOARD.

DATE	EC NUMBER	DATE	EC NUMBER
19AUG65	414308		

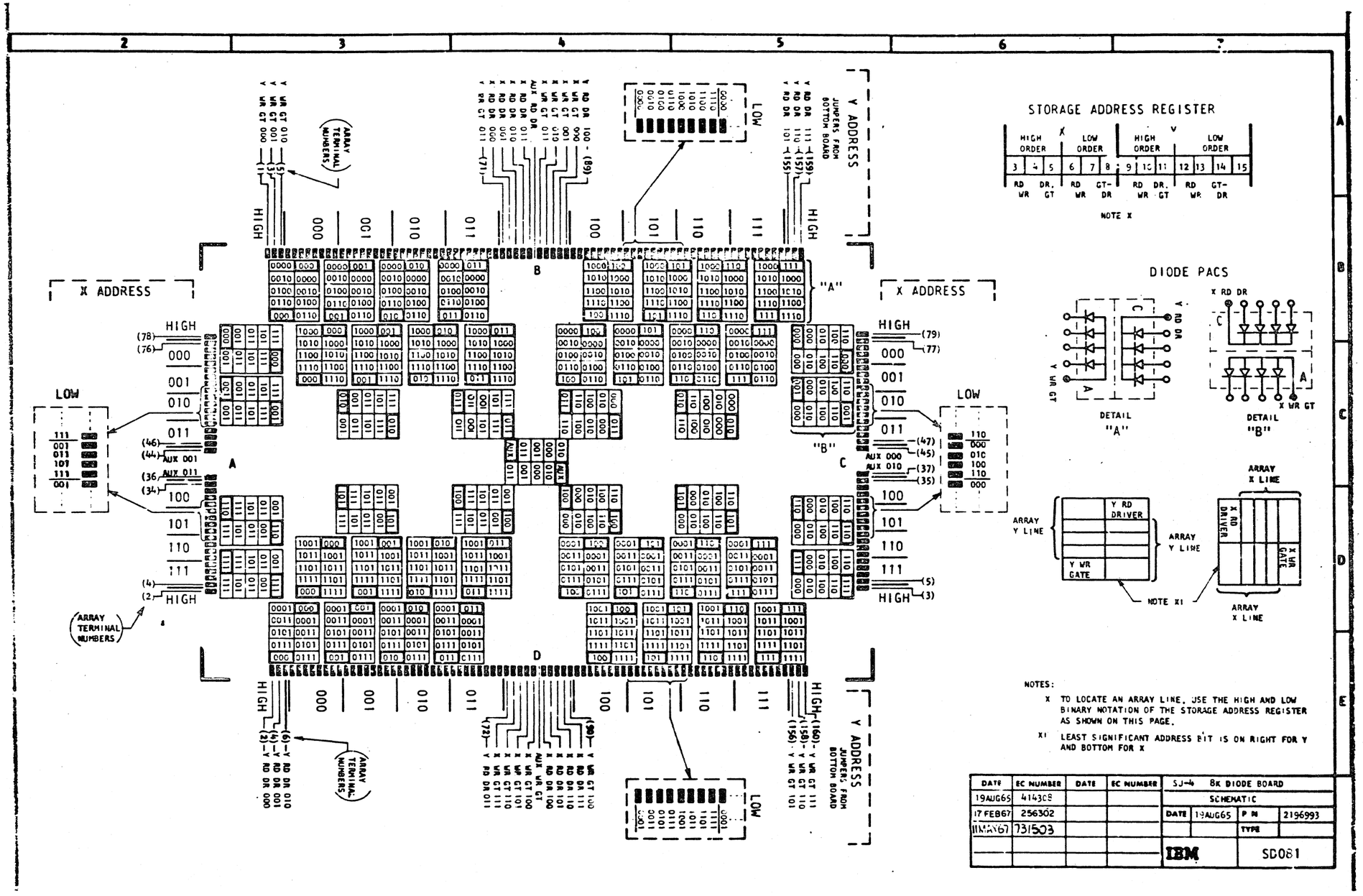
SJ-4 8K BOTTOM BOARD

SCHEMATIC

DATE 19AUG65 P/N 2196991

TYPE

IBM SD071



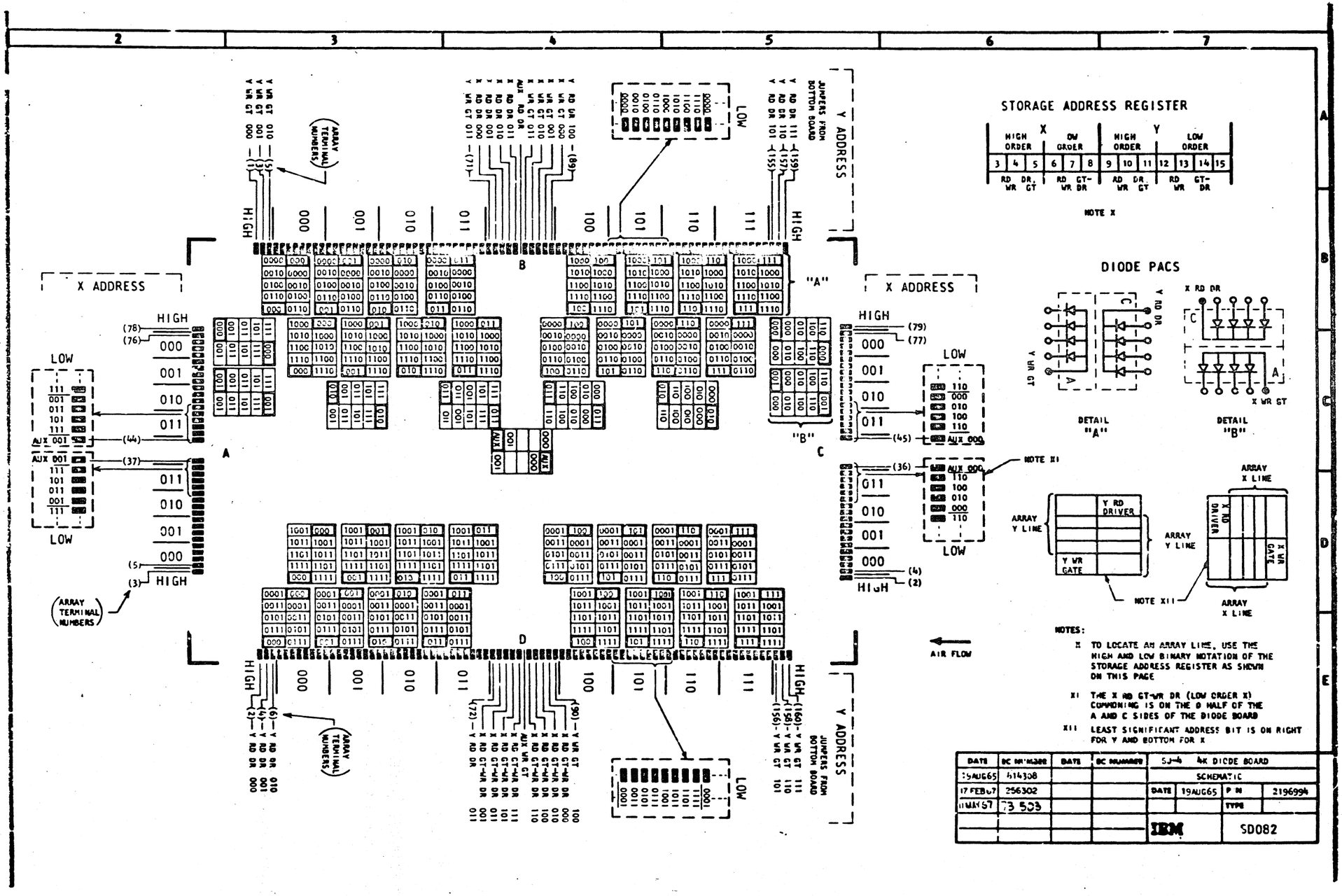
NOTES:

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

X1 LEAST SIGNIFICANT ADDRESS BIT IS ON RIGHT FOR Y AND BOTTOM FOR X

DATE	EC NUMBER	DATE	EC NUMBER
19AUG65	414308		
17FEB67	256302		
11MAY67	731503		

SJ-4 8K DIODE BOARD
SCHEMATIC
DATE 19AUG65 P N 2196993
TYPE
IBM SD081


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
RD WR DR GT
RD WR GT-DR
RD WR DR GT
RD WR GT-DR
NOTE X
DIODE PACS
DETAIL "A"
DETAIL "B"
X ADDRESS
Y ADDRESS
HIGH
LOW
ARRAY TERMINAL NUMBERS
JUMPERS FROM BOTTOM BOARD
"A"
"B"
C
D
AUX
NOTE XI
ARRAY Y LINE
ARRAY X LINE
Y RD DRIVER
Y WR GATE
X RD DRIVER
X WR GATE
NOTE XII
AIR FLOW
NOTES:
X TO LOCATE AN ARRAY LINE, USE THE HIGH AND LOW BINARY NOTATION OF THE STORAGE ADDRESS REGISTER AS SHOWN ON THIS PAGE
XI THE X RD GT-WR DR (LOW ORDER X) COMMONING IS ON THE B HALF OF THE A AND C SIDES OF THE DIODE BOARD
XII LEAST SIGNIFICANT ADDRESS BIT IS ON RIGHT FOR Y AND BOTTOM FOR X
DATE
BC NUMBER
5J-4 4K DIODE BOARD
SCHEMATIC
19AUG65
414308
17 FEB 67
256302
11 MAY 67
73 503
DATE 19AUG65
P N 2196994
TYPE
IBM
SD082

A1 CONNECTOR
E09 SD611AA4
E11 SD721AK4

A2 SINGLE CARD
5803484 3484
SD221 A4

A3 SINGLE CARD 8K
5803475 3475
SD751 A1 A2
SD741 A3 A4

A4 SINGLE CARD 8K
5803475 3475
SD731 A1 A2
SD711 A3 A4

A5 SINGLE CARD 8K
5803475 3475
SD721 A1 A2 A3 A4

A6 SINGLE CARD 8K
5803475 3475
SD751 A1 A2
SD731 A3 A4

A7 SINGLE CARD 8K
5803475 3475
SD711 A1 A2
SD741 A3 A4

B1 CONNECTOR
A09 SD611AA4
A11 SD711AJ4
B09 SD611AB4
B11 SD711AK4
C09 SD611AC4
C11 SD721AJ4
D09 SD611AD4
D11 SD721AK4
E09 SD611AE4
E11 SD731AJ4

B2 SINGLE CARD
5803773 3773
SD121 AA AB AC AD AE AF
AG AH AJ AK AL AM
SD111 BA

B3 SINGLE CARD
5803475 3475
SD751 A1 A2
SD741 A3 A4

B4 SINGLE CARD
5803475 3475
SD731 A1 A2
SD711 A3 A4

B5 SINGLE CARD
5803475 3475
SD721 A1 A2 A3 A4

B6 SINGLE CARD
5803475 3475
SD751 A1 A2
SD731 A3 A4

B7 SINGLE CARD
5803475 3475
SD711 A1 A2
SD741 A3 A4

C1 CONNECTOR
A11 SD741AK4
B09 SD611AF4
B11 SD731AK4
C09 SD611AG4
C11 SD741AJ4
D09 SD611AH4
D11 SD741AK4
E09 SD611AJ4
E11 SD751AJ4

C2 SD641 AA AB AC AD AE AF
AG AH AJ AK

C3 SINGLE CARD
5803467 3467
SD411 AA AB AC AD AE AF
AG AH AJ AK AL AM

D1 CONNECTOR
A09 SD621AA4
A11 SD751AK4
E09 SD331AA4
E11 SD111BA4

D2 SINGLE CARD
5803466 3466
SD631 AA AB AC AD AE AF
AG AH AJ AK

D3 SINGLE CARD
5803467 3467
SD421 AA AB AC AD AE AF
AG AH AJ AK AL AM

D5 SINGLE CARD
CORE
SD561

D6 SINGLE CARD
CORE
SD561

D7 SINGLE CARD
CORE
SD721

E1 CONNECTOR
A09 SD331AA4
A11 SD331AP4
B09 SD321AJ4
B11 SD321AL4
C09 SD321AE4
C11 SD321AG4
D09 SD331AF4
D11 SD111BR4
E11 SD111BQ4

E3 SINGLE CARD
5803467 3467
SD431 AA AB AC AD AE AF
AG AH AJ AK AL AM

E5 SINGLE CARD
CORE
SD721

E6 SINGLE CARD
CORE
SD561

E7 SINGLE CARD
CORE
SD731

F1 CONNECTOR
A11 SD311AL4
B11 SD111BS4
C09 SD321AA4
C11 SD321AC4
D09 SD311AJ4
D11 SD311AL4
E09 SD311AE4
E11 SD311AG4

F2 SINGLE CARD
5803132 3132
SD311 A1 B1 C1 D1 E1 F1
SD321 G1 H1 J1 K1

F3 SINGLE CARD
5803467 3467
SD441 AA AB AC AD AE AF
AG AH AJ AK AL AM

F4 SINGLE CARD
CORE
SD731

F5 SINGLE CARD
CORE
SD731

F7 SINGLE CARD
CORE
SD751

G1 CONNECTOR
A09 SD311AA4
A11 SD311AC4
E09 SD331AA4
E11 SD111BA4

G2 SINGLE CARD
5803491 3491
SD221 A1
SD121 B1
SD111 C1 C2

G3 SINGLE CARD
5803467 3467
SD451 AA AB AC AD AE AF
AG AH AJ AK AL AM

H1 CONNECTOR
A09 SD331AA4
A11 SD331AP4
B09 SD321AJ4
B11 SD321AL4
C09 SD321AE4
C11 SD321AG4
D09 SD331AF4
D11 SD111BR4
E11 SD111BQ4

H2 SINGLE CARD
5800323 0525
SD111 A1 A2 A3 B1 B2 B3
C1
SD331 D1 E1
SD321 F1 G1

H3 SINGLE CARD
5803467 3467
SD461 AA AB AC AD AE AF
AG AH AJ AK AL AM

H4 SINGLE CARD
CORE
SD761

H5 SINGLE CARD
CORE
SD781

H7 SINGLE CARD
CORE
SD761

J1 CONNECTOR
A11 SD311AL4
B11 SD111BS4
C09 SD321AA4
C11 SD321AC4
D09 SD311AJ4
D11 SD311AL4
E09 SD311AE4
E11 SD311AG4

J2 SINGLE CARD AUX
5803467 3467
SD551 AA AB AC AD AE AF
AG AH AJ AK AL AM

J3 SINGLE CARD
5803467 3467
SD511 AA AB AC AD AE AF
AG AH AJ AK AL AM

J5 SINGLE CARD
CORE
SD781

J6 SINGLE CARD
CORE
SD561

J7 SINGLE CARD
CORE
SD781

K1 CONNECTOR
A09 SD311AA4
A11 SD311AC4
E09 SD621AB4
E11 SD771AK4

K2 SINGLE CARD
5803466 3466
SD651 AA AB AC AD AE AF
AG AH AJ AK

K3 SINGLE CARD
5803467 3467
SD521 AA AB AC AD AE AF
AG AH AJ AK AL AM

K5 SINGLE CARD
CORE
SD561

K6 SINGLE CARD
CORE
SD561

K7 SINGLE CARD
CORE
SD791

L1 CONNECTOR
A09 SD621AB4
A11 SD761AJ4
B09 SD621AC4
B11 SD761AK4
C09 SD621AD4
C11 SD771AJ4
D09 SD621AE4
D11 SD771AK4
E09 SD621AF4
E11 SD781AJ4

L2 SINGLE CARD 8K
5803466 3466
SD661 AA AB AC AD AE AF
AG AH AJ AK

L3 SINGLE CARD
5803467 3467
SD531 AA AB AC AD AE AF
AG AH AJ AK AL AM

M1 CONNECTOR
A11 SD791AK4
B09 SD621AG4
B11 SD781AK4
C09 SD621AH4
C11 SD791AJ4
D09 SD621AJ4
D11 SD791AK4
E09 SD331AH4
E11 SD331AQ4

M2 SINGLE CARD
5803773 3773
SD121 AA AB AC AD AE AF
AG AH AJ AK AL AM
SD111 BA

M3 SINGLE CARD 8K
5803467 3467
SD541 AA AB AC AD AE AF
AG AH AJ AK AL AM

M4 SINGLE CARD
5803475 3475
SD791 A1 A2
SD761 A3 A4

M5 SINGLE CARD
5803475 3475
SD771 A1 A2
SD781 A3 A4

M6 SINGLE CARD
5803475 3475
SD791 A1 A2
SD781 A3 A4

M7 SINGLE CARD
5803475 3475
SD791 A1 A2
SD781 A3 A4

N1 CONNECTOR
A09 SD331AK4
A11 SD331AR4

N2 DOUBLE CARD
N3 5804683 4683
SD111 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC
AD AE B1 B2 B3

N4 SINGLE CARD 8K
5803475 3475
SD791 A1 A2
SD761 A3 A4

N5 SINGLE CARD 8K
5803475 3475
SD771 A1 A2
SD781 A3 A4

N6 SINGLE CARD 8K
5803475 3475
SD771 A1 A2
SD761 A3 A4

N7 SINGLE CARD 8K
5803475 3475
SD791 A1 A2
SD781 A3 A4

PLUG LIST

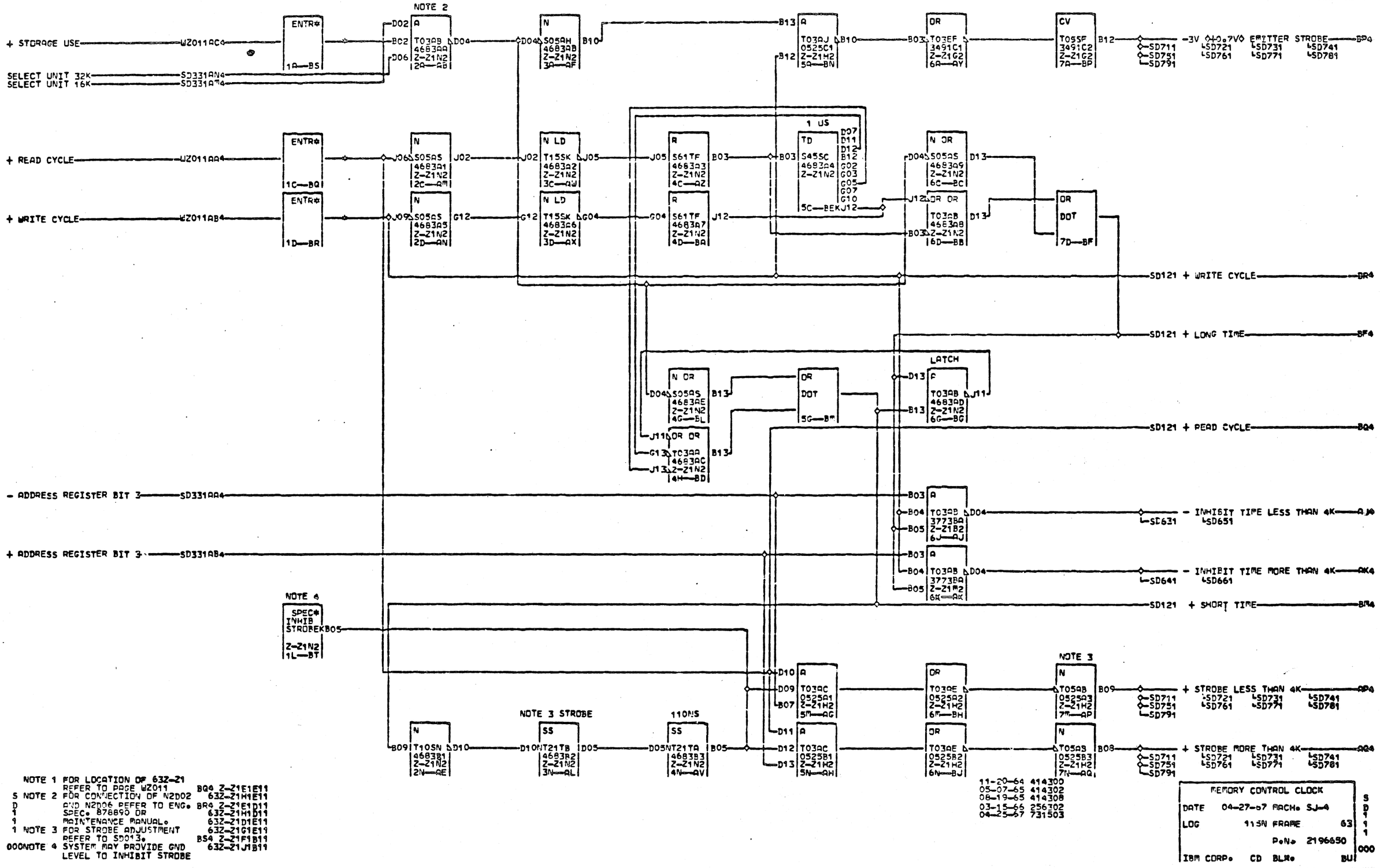
PART NO	ACC	TYPE	SOCKETS				TOTAL
5800525		0525	H2				01
5803132		3132	F2				01
5803466		3466	D2	K2			02
5803466	8K	3466	C2	L2			02
5803467		3467	C3	D3	E3	F3	08
			G3	H3	J3	K3	
			L3	M3			
5803467	8K	3467	M3				01
5803467	AUX	3467	J2				01
5803475		3475	B3	B4	B5	B6	09
			B7	M4	M5	M6	
			M7				
5803475	8K	3475	A3	A4	A5	A6	09
			A7	N4	N5	N6	
			N7				
5803484		3484	A2				01
5803491		3491	G2				01
5803773		3773	B2	M2			02
5804683		4683	N2	N3			01
		CONN	A1	B1	C1	D1	13
			E1	F1	G1	H1	
			J1	K1	L1	M1	
			N1				
		CORE	D3	D6	D7	E5	18
			E6	E7	F4	F5	
			F7	H4	H5	H7	
			J5	J6	J7	K5	
			K6	K7			

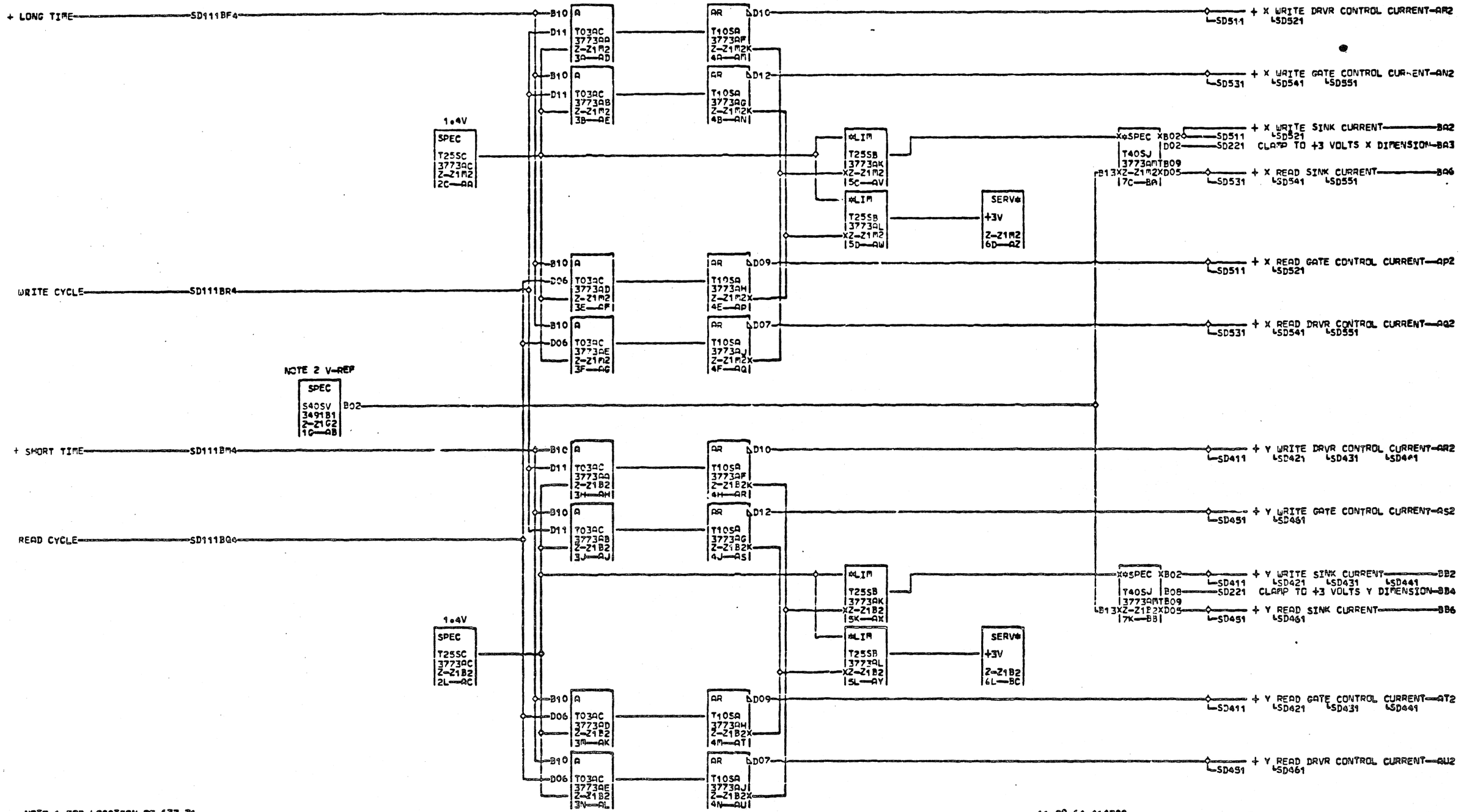
SOCKET LISTING
DATE 04-26-67 MACH. SJ-4

LOG 116A BOARD 632-21
PREV. ENGR. 03-15-67 256302
PRES. ENGR. 04-25-67 731503
P.N. 2196645 SDD

IBM CORP. SDD BLK.

SD 1 0 1 000


NOTE 2
+ STORAGE USE
WZ011AC4
SELECT UNIT 32K
SD331AN4
SELECT UNIT 16K
SD331AM4
ENTR*
1A—BS
+ READ CYCLE
WZ011AA4
1C—BQ
+ WRITE CYCLE
WZ011AB4
1D—BR
T03AB 4683AA Z-Z1N2 2A—AB
S05AH 4683AB Z-Z1N2 3A—AF
T03AJ 0525C1 Z-Z1M2 5A—BN
T03EF 3491C1 Z-Z1G2 6A—AY
T05SF 3491C2 Z-Z1G2 7A—BP
-3V +10.7V EMITTER STROBE BP4
SD711 SD721 SD731 SD741
SD751 SD761 SD771 SD781
SD791
S05AS 4683A1 Z-Z1N2 2C—AM
T15SK 4683A2 Z-Z1N2 3C—AW
S61TF 4683A3 Z-Z1N2 4C—AZ
1 US
S45SC 4683A4 Z-Z1N2
5C—BEK
S05AS 4683A5 Z-Z1N2 2D—AN
T15SK 4683A6 Z-Z1N2 3D—AX
S61TF 4683A7 Z-Z1N2 4D—BA
S05AS 4683A9 Z-Z1N2 6C—BC
T03AB 4683A8 Z-Z1N2 6D—BB
7D—BF
SD121 + WRITE CYCLE BR4
SD121 + LONG TIME BF4
LATCH
S05AS 4683AE Z-Z1N2 4G—BL
T03AB 4683AD Z-Z1N2 6G—BG
SD121 + READ CYCLE BQ4
T03AA 4683AC Z-Z1N2 4H—BD
- ADDRESS REGISTER BIT 3
SD331AA4
T03AB 3773BA Z-Z1B2 6J—AJ
- INHIBIT TIME LESS THAN 4K AJ4
SD631 SD651
+ ADDRESS REGISTER BIT 3
SD331AB4
T03AB 3773BA Z-Z1M2 6K—AK
- INHIBIT TIME MORE THAN 4K AK4
SD641 SD661
NOTE 4
SPEC* INHIB STROBE
Z-Z1N2 1L—BT
SD121 + SHORT TIME BR4
NOTE 3
T10SN 4683B1 Z-Z1N2 2N—AE
NOTE 3 STROBE
SS
T10NT21TB 4683B2 Z-Z1N2 3N—AL
110NS
T10NT21TA 4683B3 Z-Z1N2 4N—AV
T03AC 0525A1 Z-Z1H2 5M—AG
T03AE 0525A2 Z-Z1H2 6M—BH
T05AB 0525A3 Z-Z1H2 7M—AP
+ STROBE LESS THAN 4K AP4
T03AC 0525B1 Z-Z1H2 5N—AH
T03AE 0525B2 Z-Z1H2 6N—BJ
T05AB 0525B3 Z-Z1H2 7N—AQ
+ STROBE MORE THAN 4K AQ4
11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503
NOTE 1 FOR LOCATION OF 63Z-Z1 REFER TO PAGE WZ011 BQ4 Z-Z1E1E11
NOTE 2 FOR CONNECTION OF N2D02 AND N2D06 REFER TO ENG. SPEC. 876890 OR MAINTENANCE MANUAL. 63Z-Z1H1E11 BR4 Z-Z1E1D11 63Z-Z1H1D11 63Z-Z1D1E11
NOTE 3 FOR STROBE ADJUSTMENT REFER TO SD013. 63Z-Z1G1E11 BS4 Z-Z1F1B11
NOTE 4 SYSTEM MAY PROVIDE GND LEVEL TO INHIBIT STROBE 63Z-Z1J1B11
MEMORY CONTROL CLOCK
DATE 04-27-67 MACH. SJ-4
LOG 115N FRAME 63
P.N. 2196650
IBM CORP. CD BLR. BU
SD111 000

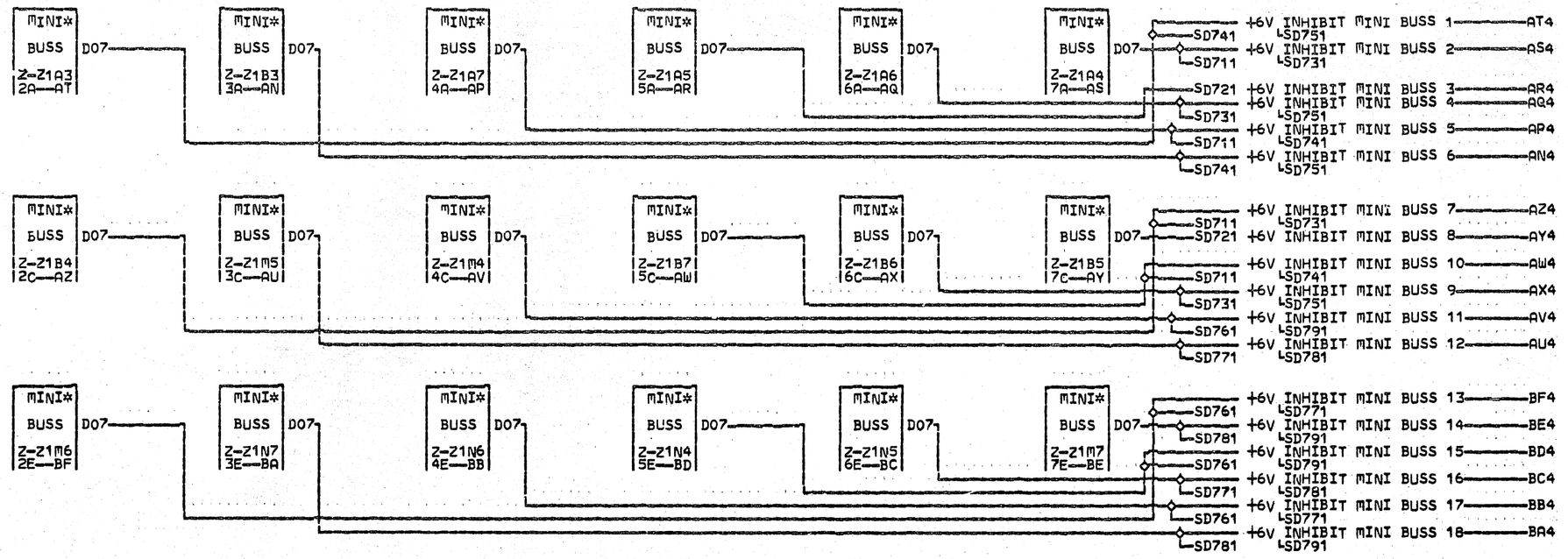


NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE WZ011
NOTE 2 FOR V-REF ADJUSTMENT
REFER TO SD013.

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

X Y CURRENT CONTROL			
DATE 04-27-67	MACH. SJ-4		
LOG 115N	PAGE	63	
	P.N. 2196891		
IBM CORP. CD	BLK.	BL	

SD121 000



NOTE 1 FOR LOCATION OF 63Z-Z1 REFER TO PAGE WZ011
S NOTE 2 FOR SENSE CONTROL
D VOLTAGE ADJUSTMENT
2 REFER TO ENG. SPEC.
1 878890 OR MAINTENANCE
1 MANUAL.

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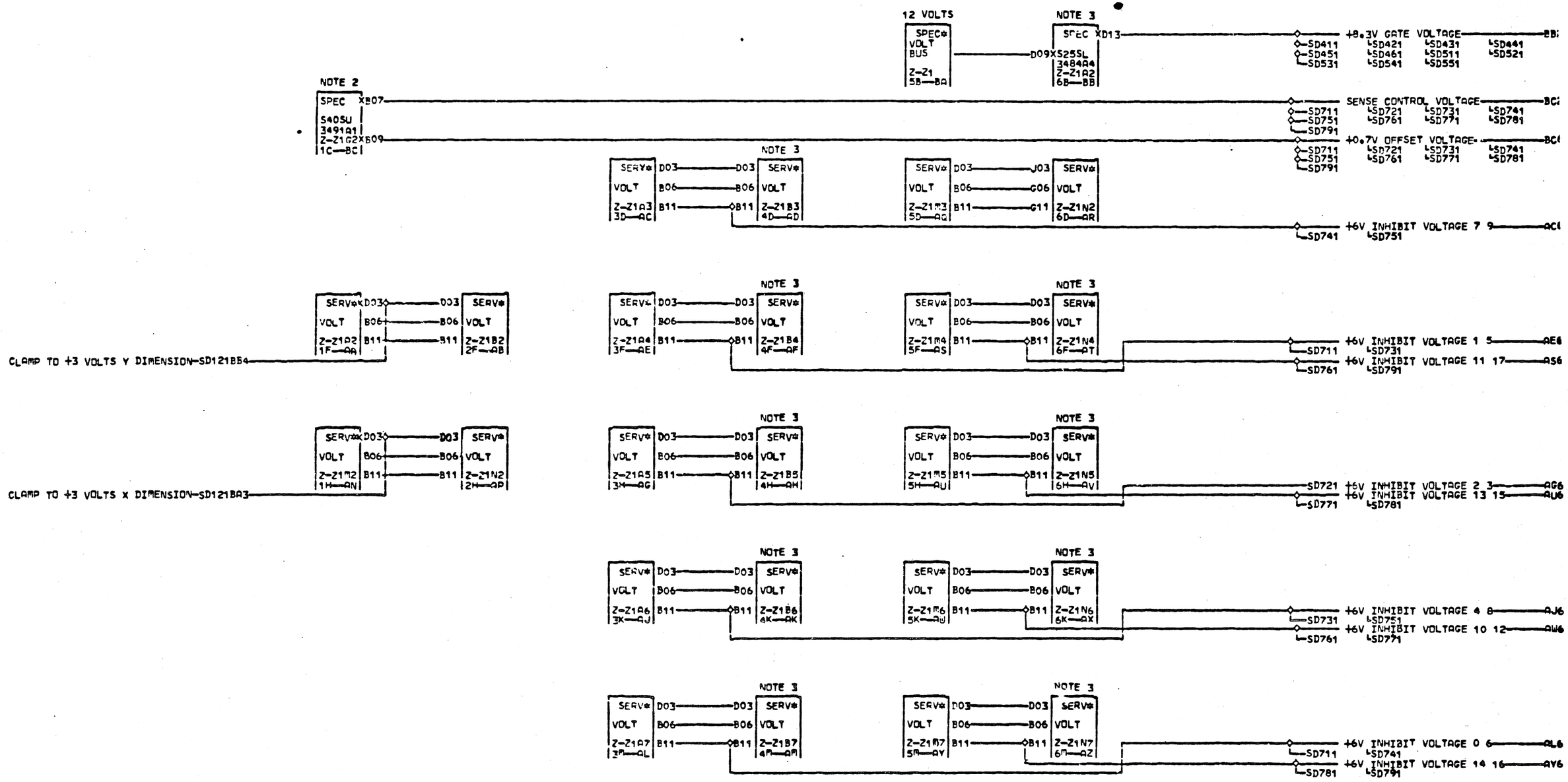
11-20-64 414300
05-07-65 414302
08-19-65 414308

VOLTAGE REFERENCE

DATE	07-12-66 MACH. SJ-4	S
LOG	266N FRAME 63	D
	P.N. 2196652	2
IBM CORP.	CD BLK. BS	1
		1
		000



NOTE 1 FOR LOCATION OF 63Z-Z1 REFER TO PAGE WZ011

S NOTE 2 FOR SENSE CONTROL VOLTAGE ADJUSTMENT REFER TO SD013

D

2

2 NOTE 3 DISTRIBUTION MAY BE BY

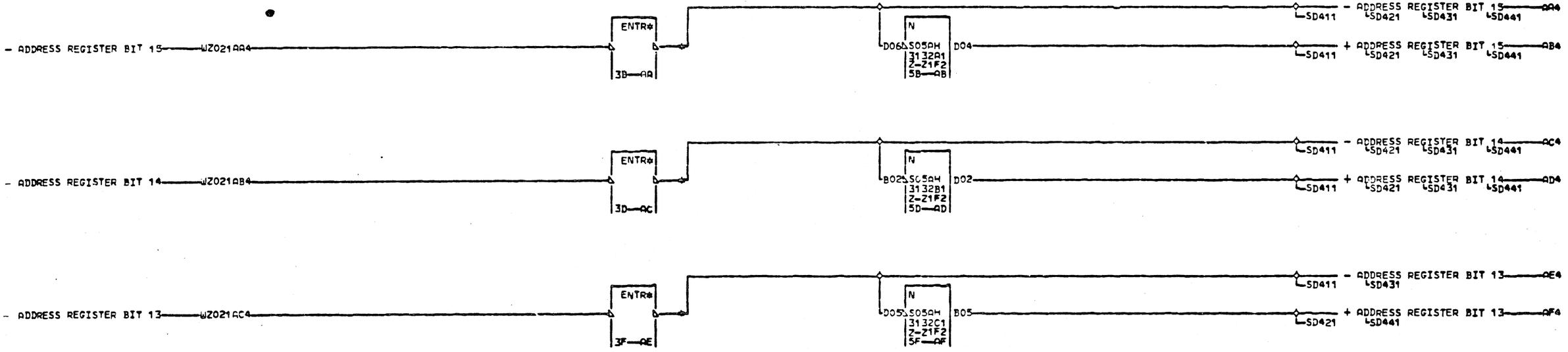
1 MINI-BUS OR BY PRINTED OR YELLOW WIRE ON THE

000 BOARD.

11-20-64 414300
05-07-65 414302
03-15-66 256302
04-15-67 731503

LOGIC VOLTAGE DISTRIBUTION					
DATE	04-27-67	MACH.	SJ-4		
LOC	117W	FRAME	63		
		P.N.	2196653		
IBM CORP.	CD	BLK.	BD		

SD221 000



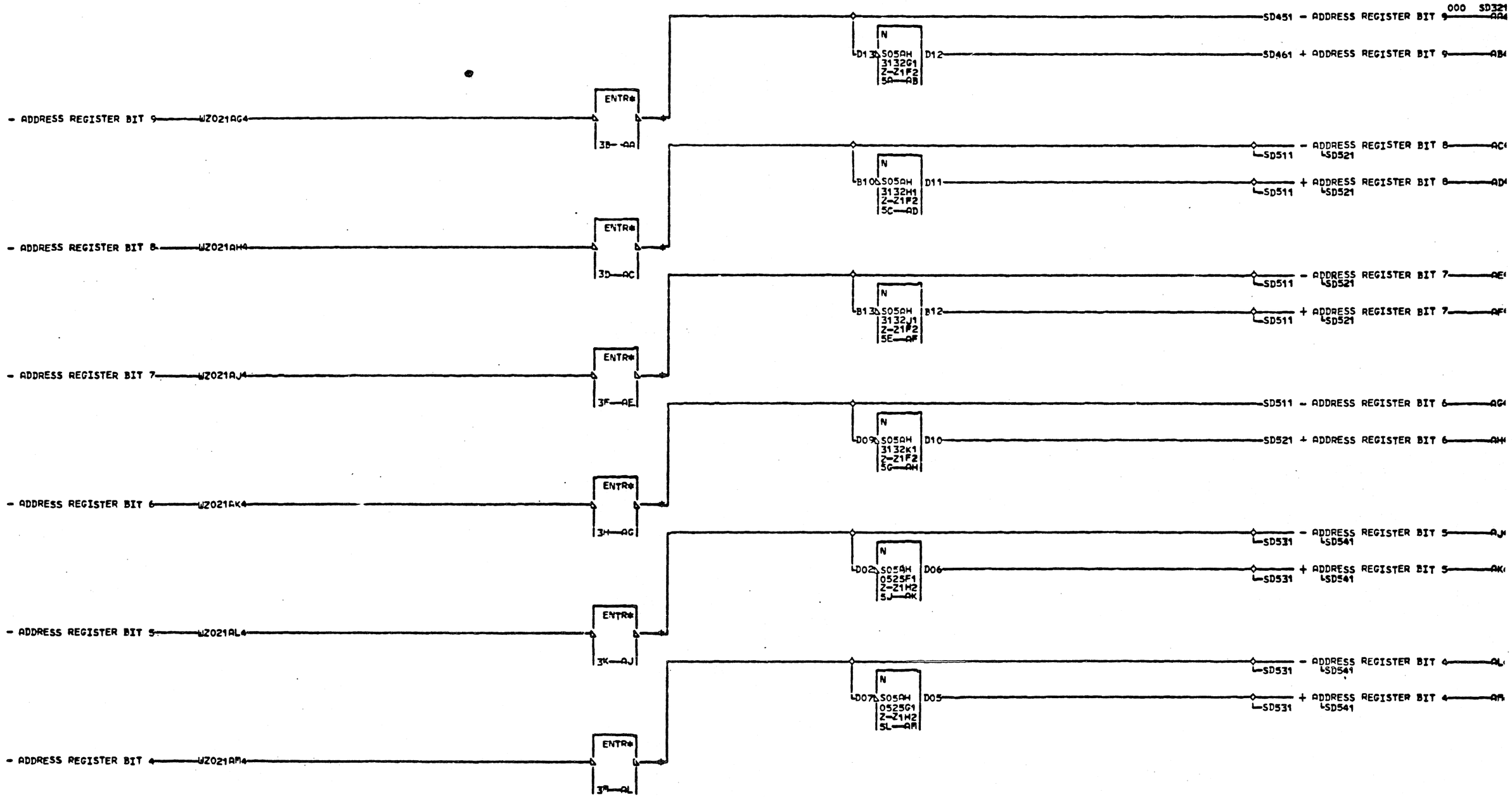
NOTE 1 FOR LOCATION OF 63Z-Z1 REFER TO PAGE WZ011

AA4 Z-Z1G1A09	63Z-Z1K1A09	63Z-Z1J1D09
AL4 Z-Z1F1D11	AC4 Z-Z1G1A11	63Z-Z1K1A11
63Z-Z1J1D11	63Z-Z1F1A11	AE4 Z-Z1F1E09
63Z-Z1J1A11	63Z-Z1J1E09	AG4 Z-Z1F1E11
63Z-Z1J1E11	AJ4 Z-Z1F1D09	

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256702
04-25-67 731503

MAR INVERTERS 1 OF 3
DATE 04-27-67 MACH. SJ-4
LOG 115N FRAME 63
P.No. 2196654
IBM CORP. CD BLK. AP

SD311 000



NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE WZ011

AA4 Z-Z1F1C09	63Z-Z1M1B09	
63Z-Z1J1C09	AL4 Z-Z1E1B11	
AC4 Z-Z1F1C11	63Z-Z1M1B11	
63Z-Z1J1C11		
AE4 Z-Z1E1C09		
63Z-Z1M1C09		
AG4 Z-Z1E1C11		
63Z-Z1M1C11		
AJ4 Z-Z1E1B09		

11-20-64 414300
05-07-65 414302
03-15-66 256302
04-25-67 731503

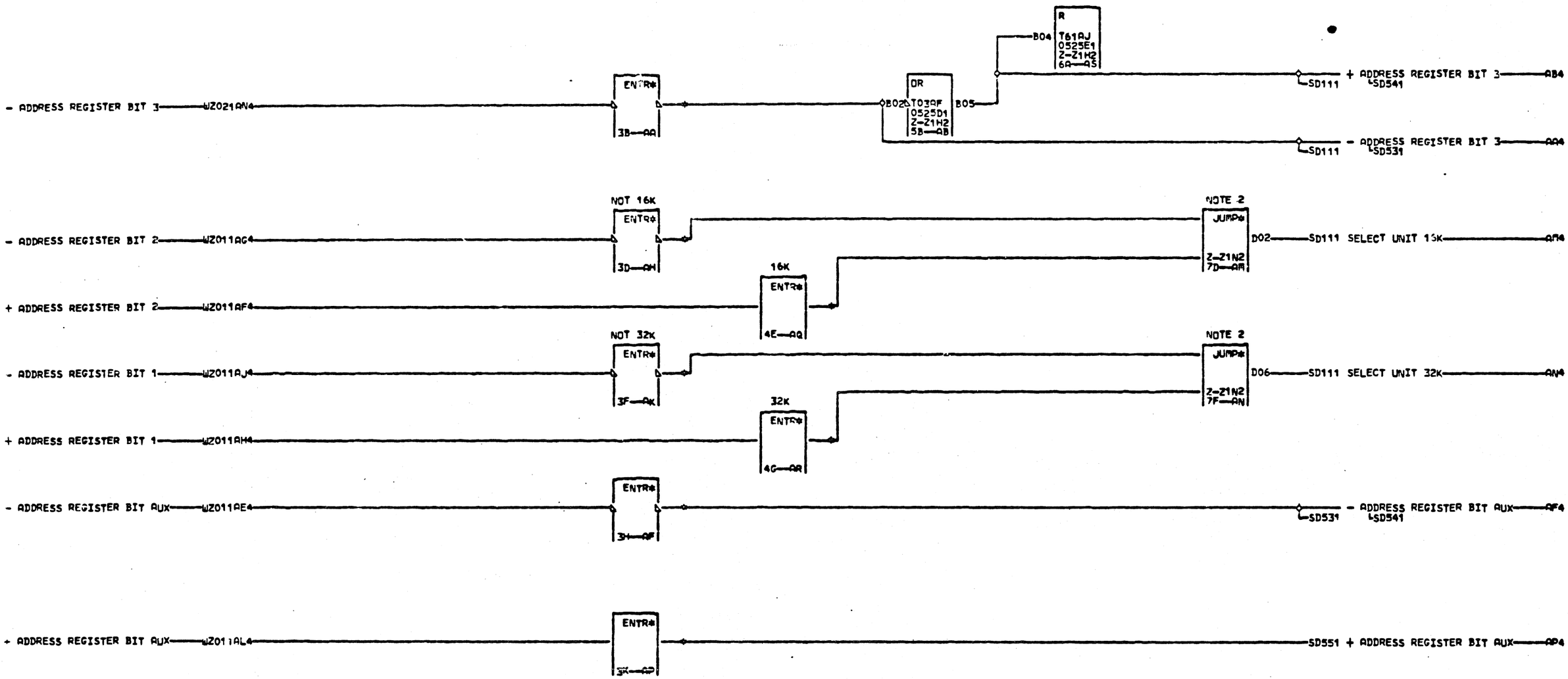
MAR INVERTERS 2 OF 3

DATE 04-27-67 MACH. SJ-4

LOG 115N FRAME 63

P.N. 2196655

IBM CORP. CD BLK. AN



NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE WZ011
$ NOTE 2 FOR CONNECTIONS REFER
TO PAGE WZ011.

AA4 Z-Z1E1A09 63Z-Z1M1A11
63Z-Z1M1A09 AQ4 Z-Z1M1E11
63Z-Z1D1E09 AR4 Z-Z1N1A11
63Z-Z1G1E09
AF4 Z-Z1E1D09
63Z-Z1H1D09
AH4 Z-Z1M1E09
AK4 Z-Z1N1A09
AP4 Z-Z1E1A11

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

MAR INVERTERS 3 OF 3
DATE 04-27-67 MACH. SJ-4
LOG 115N FRAME 63
P.N. 2196656
IBM CORP. CD BLK. AT

SD331
1
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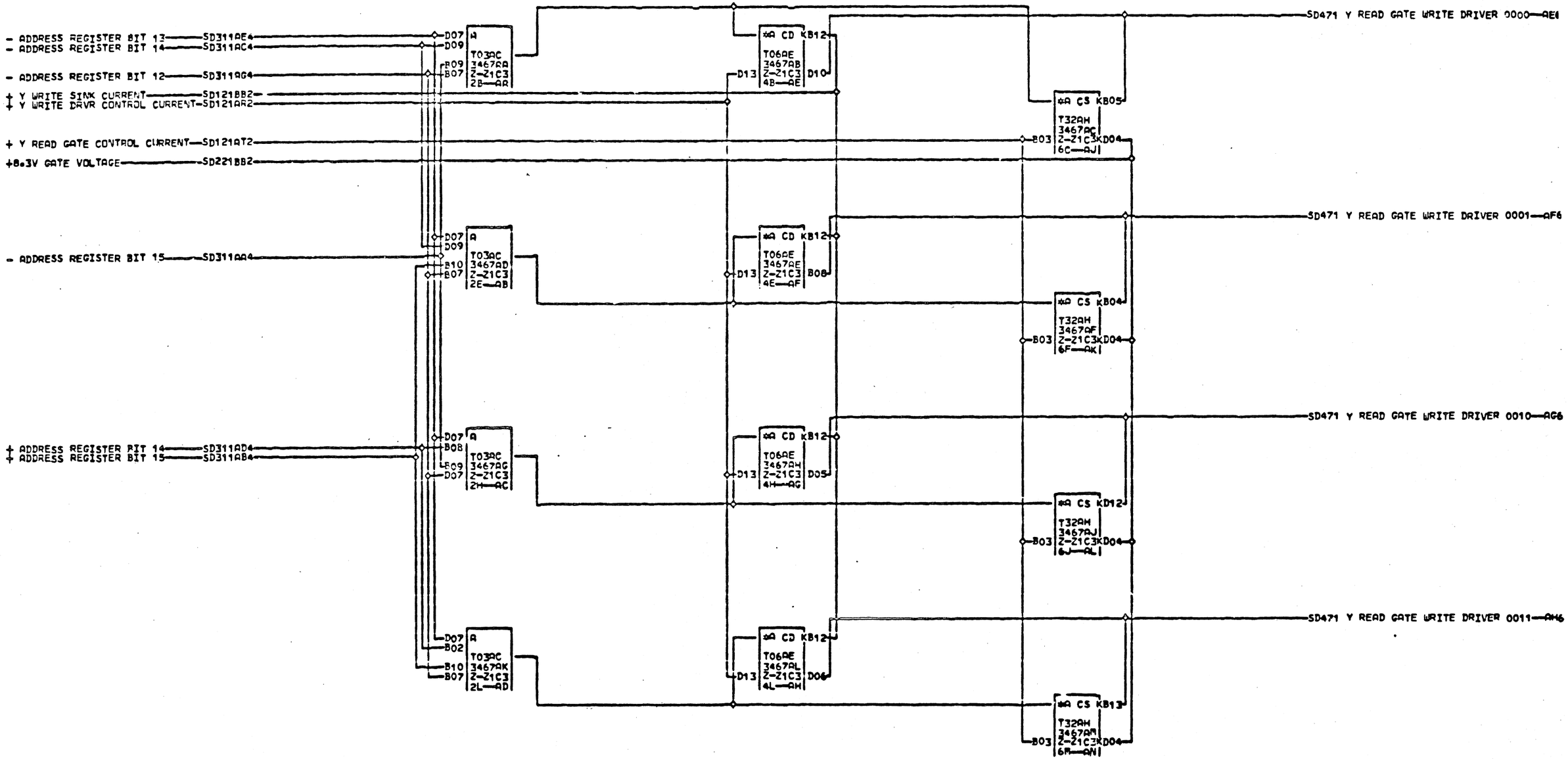
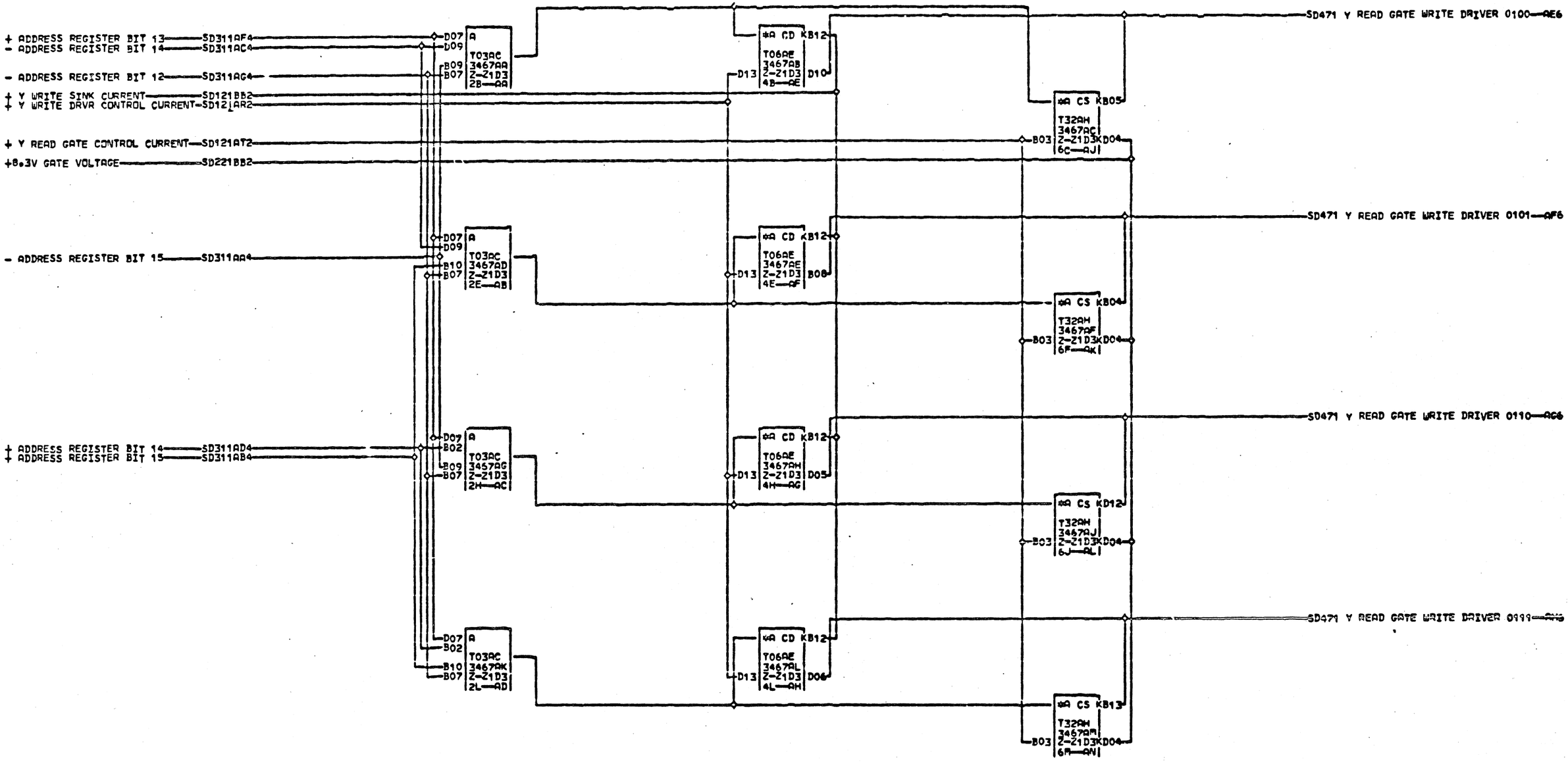


NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE WZ011
NOTE 2 Y LOW 0000 TO 0011

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

Y READ GATE WRITE DRIVER
LOW ORDER 1 OF 4
DATE 04-27-67 MACH. SJ-4
LOG 115N FRAME 63
P.N. 2196657
IBM CORP. CD BLK. AP

SD411
000

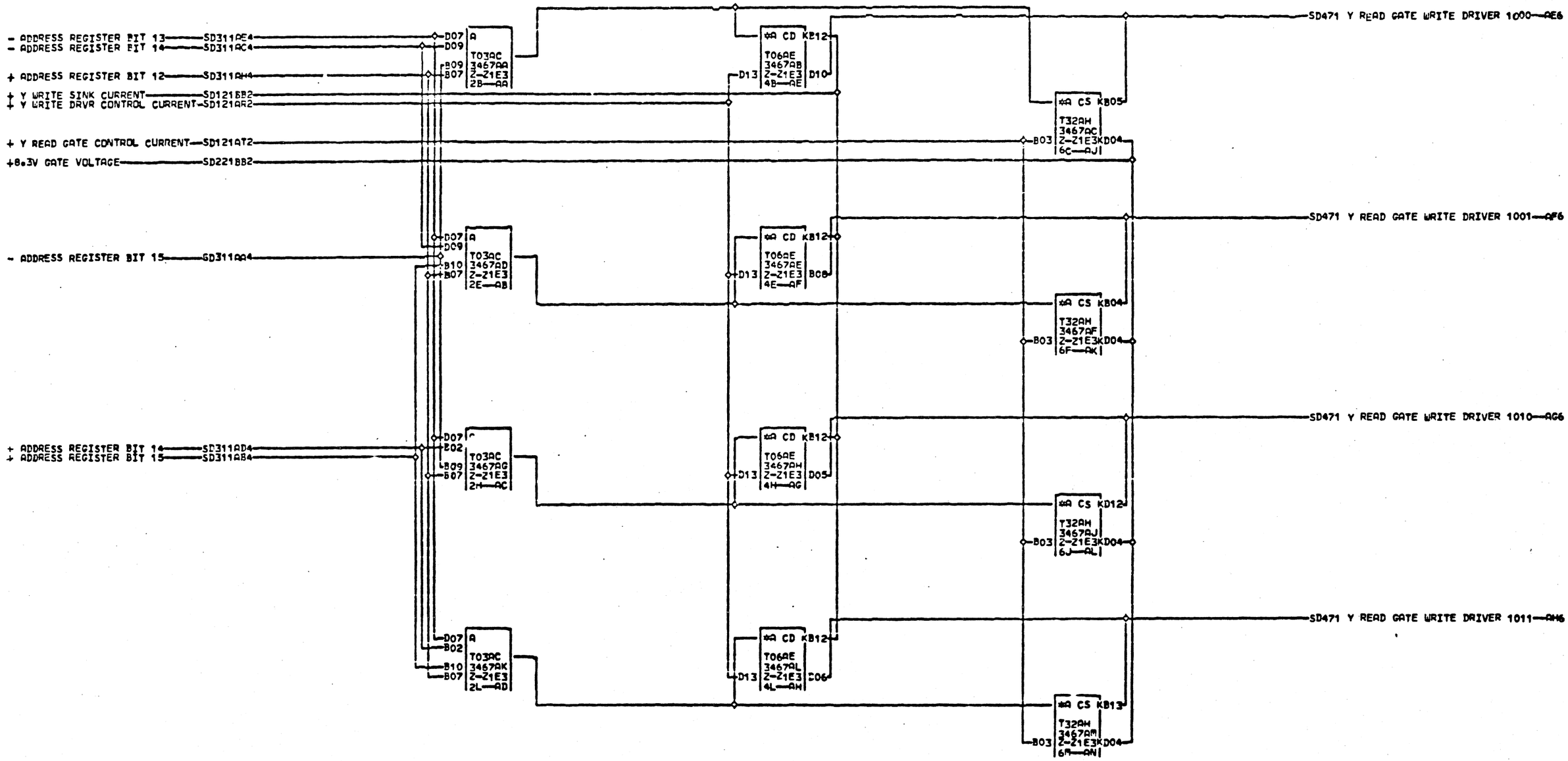


NOTE 1 FOR LOCATION OF 632-21
REFER TO PAGE WZ011
S NOTE 2 Y LOW 0100 TO 0111
D
4
2
1
000

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

Y READ GATE WRITE DRIVER
LOW ORDER 2 OF 4
DATE 04-27-67 FACH. SJ-4
LOG 115N FRAME 63
P.N. 2196658
IBM CORP. CD BLK. AP

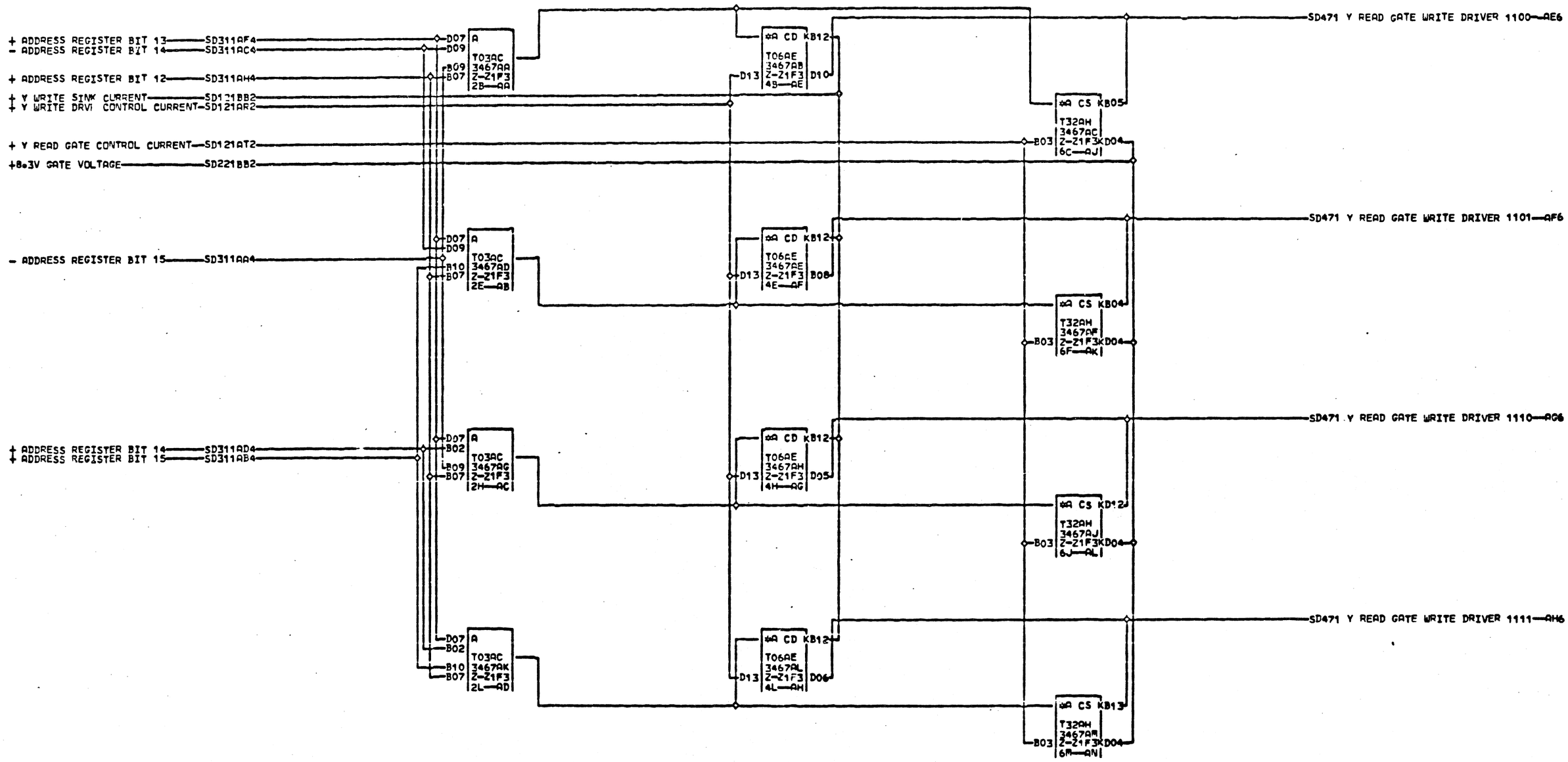
S D 4 2 1 000



NOTE 1 FOR LOCATION OF 632-Z1
REFER TO PAGE WZ011
S NOTE 2 Y LOW 1000 TO 1011
D
4
3
1
000

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

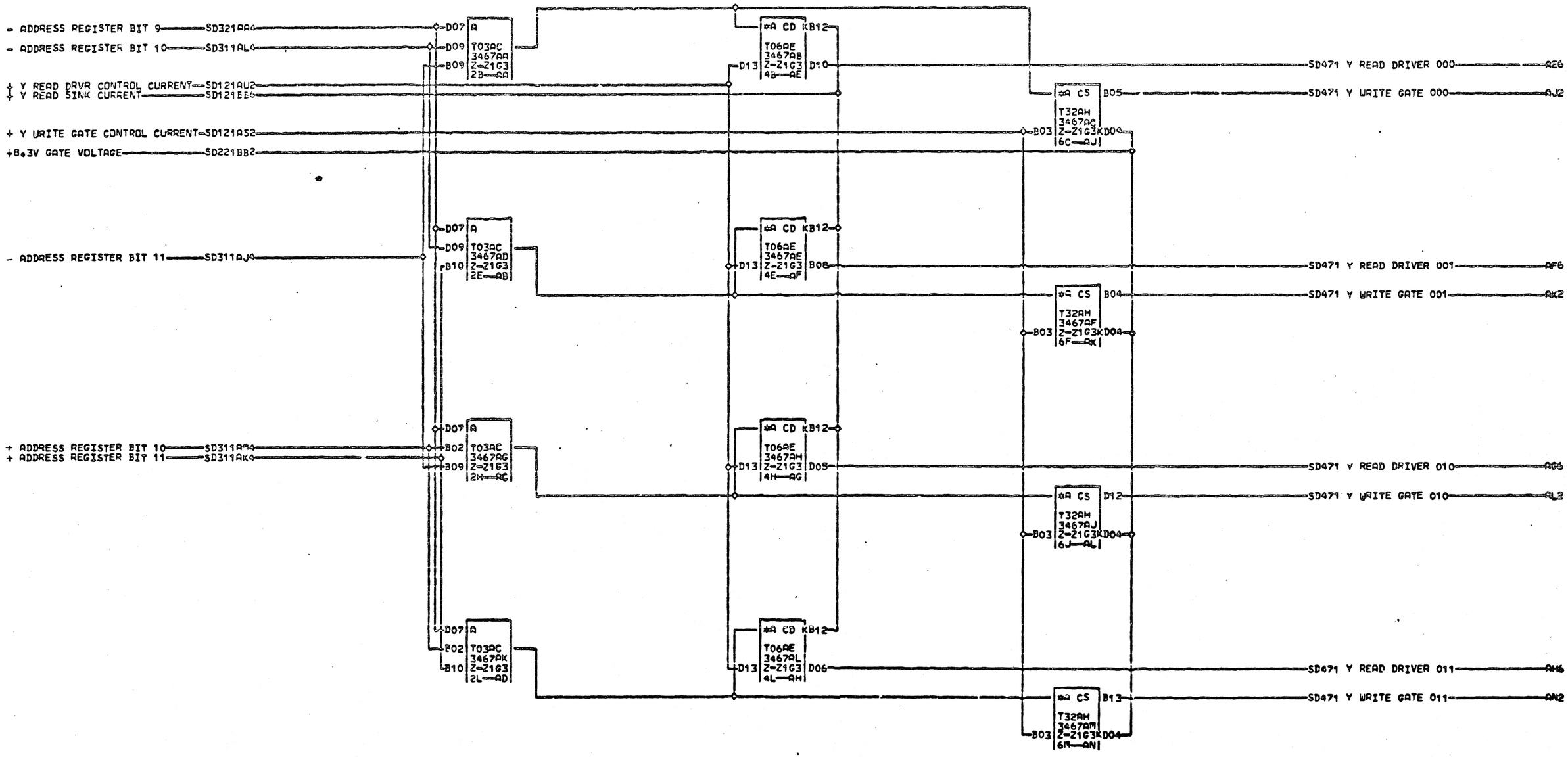
Y READ GATE WRITE DRIVER LOW ORDER 3 OF 4			
DATE 04-27-67 MACH. SJ-4			S
LOG 115N FRAME	63		D
P.N. 2198659			4
IBM CORP. CD BLK.	AP		3
			1
			000



NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE WZ011
NOTE 2 Y LOW 1100 TO 1111

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

Y READ GATE WRITE DRIVER LOW ORDER 4 OF 4		SD441 000
DATE 04-27-67 MACH. SJ-4		
LOG 115N FRAME	63	
P.No. 2196660		
IBM CORP. CD BLK.	AP	



NOTE 1 FOR LOCATION OF 632-21
REFER TO PAGE WZ011
S NOTE 2 Y HI 000 TO 011
D
4
5
1
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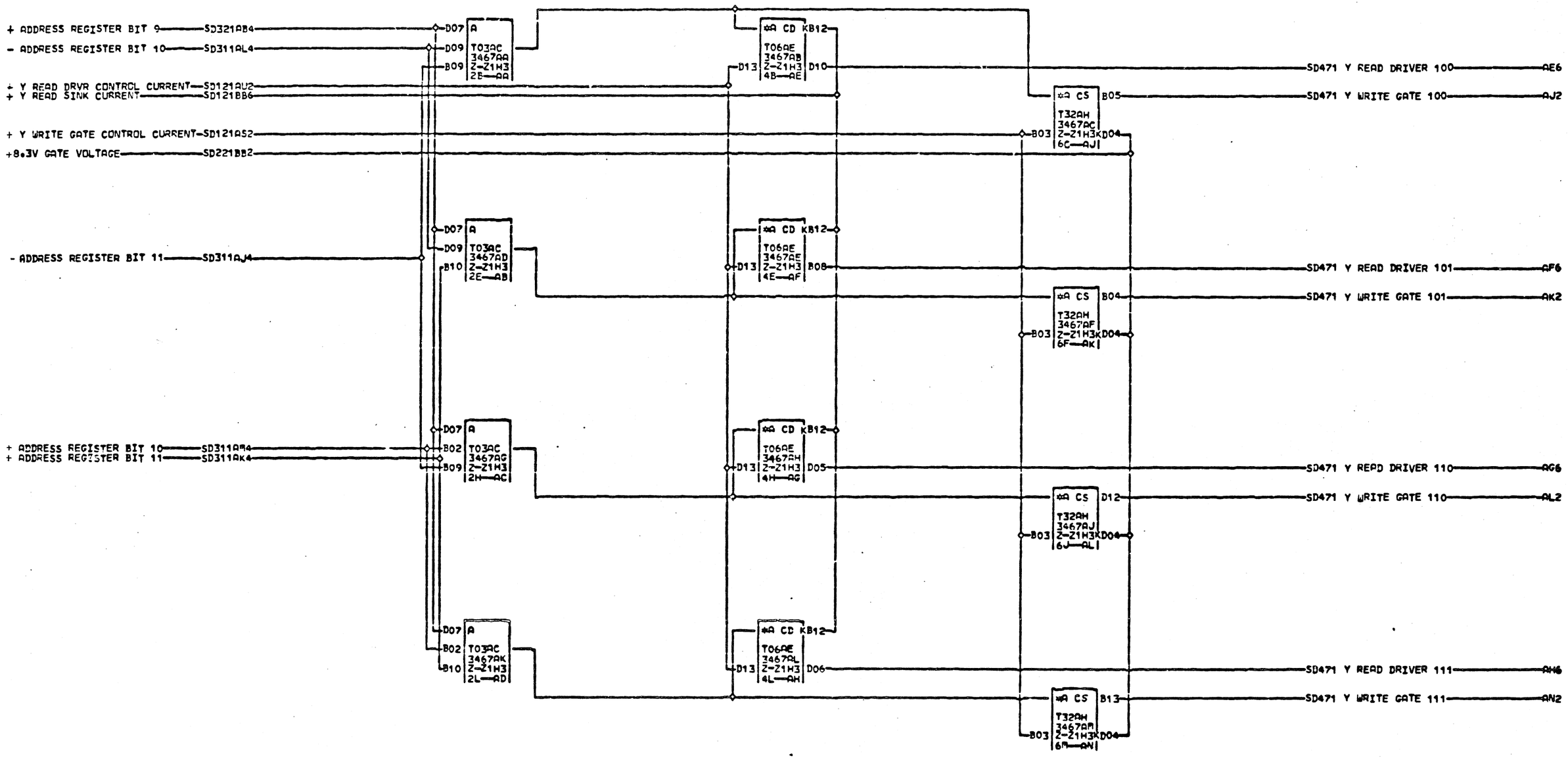
11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

Y WRITE GATE AND READ DRIVER
HIGH ORDER 1 OF 2
DATE 04-27-67 PROG SJ-4
LOG 115N FRAME 63
PeNo 2196661
IBM CORP. CD BLK. AP

S D 4 5 1 000



NOTE 1 FOR LOCATION OF 632-21
REFER TO PAGE WZ011
S NOTE 2 Y HI 100 TO 111
D
4
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11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

Y WRITE GATE AND READ DRIVER
HIGH ORDER 2 OF 2
DATE 04-27-67 MACH. SJ-4
LOG 115N FRAME 63
P.N. 2196662
IBM CORP. CD BLK. AP

S
D
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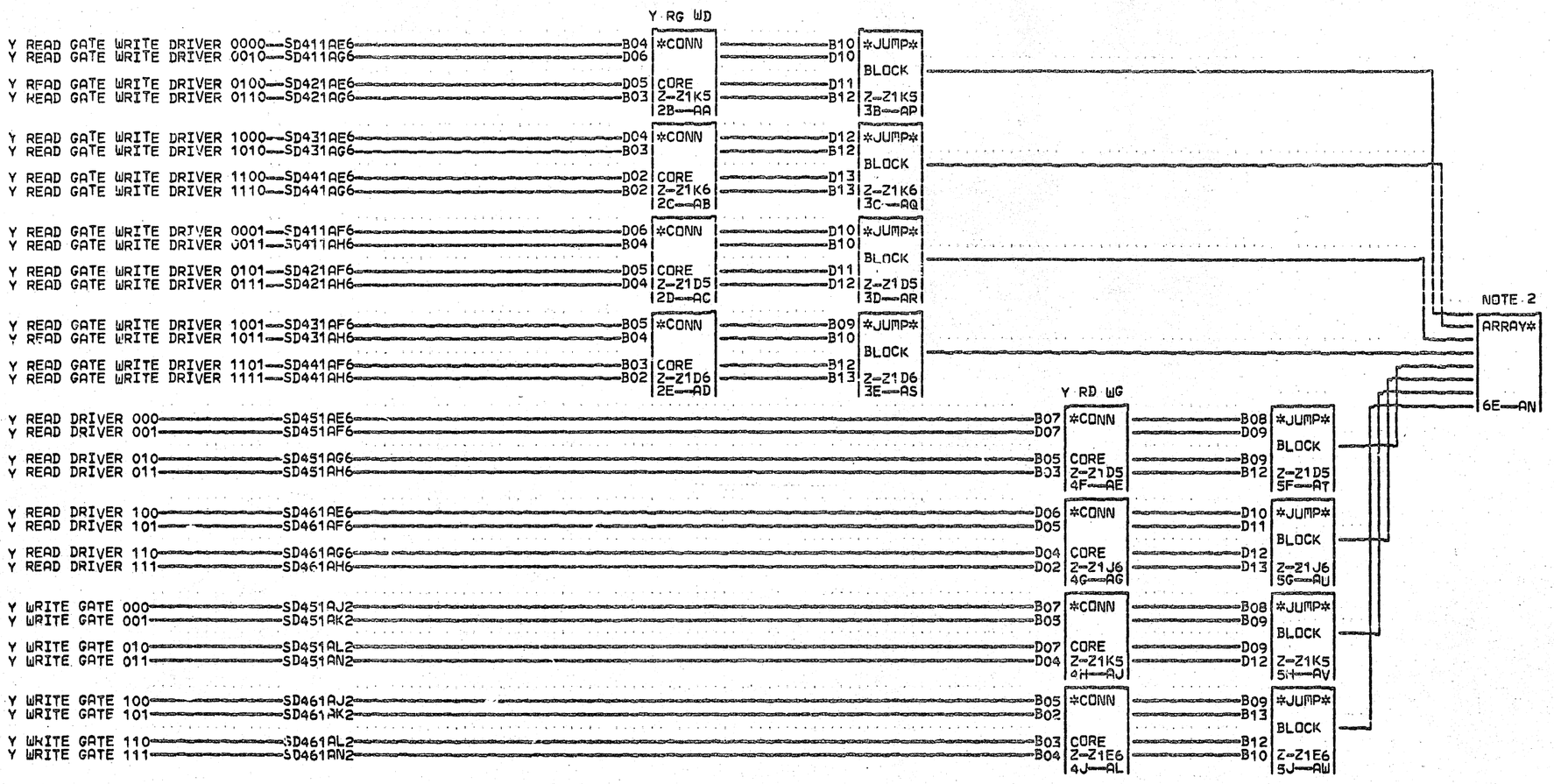

NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE WZ011

S NOTE 2 REFER TO SD071◇ SD072◇
D SD081◇ AND SD082 FOR
4 CONNECTIONS TO ARRAY
7 BOTTOM AND DIODE BOARDS
1

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11-20-64 414300
05-07-65 414302
08-19-65 414308

X Y DRIVE ARRAY CONNECTOR
Y DIMENSION

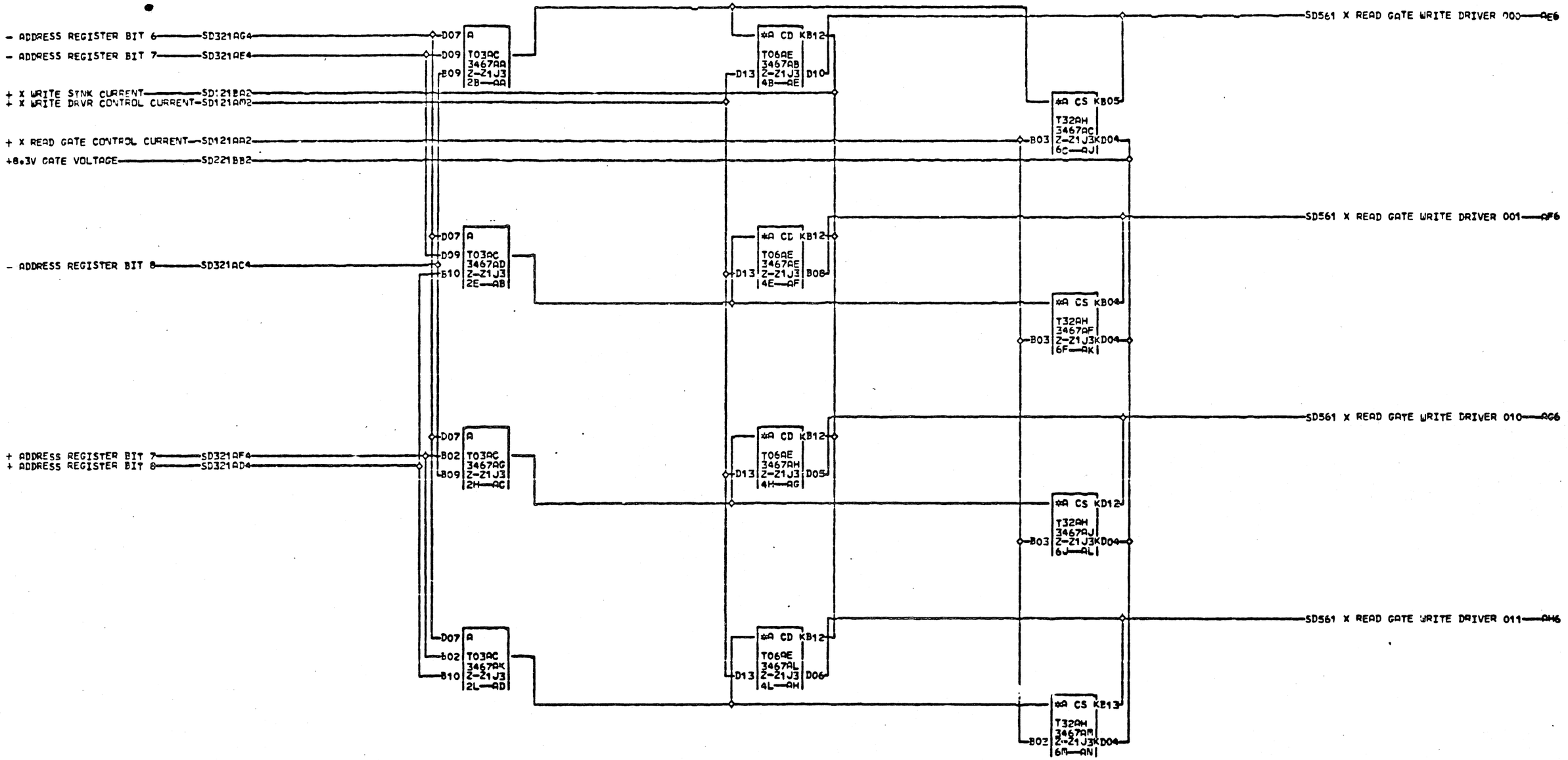
DATE 07-12-66 MACH. SJ-4

LOG 277F FRAME 63

P.N. 2196668

IBM CORP. CD BLK. AX

S D 4 7 1 000



NOTE 1 FOR LOCATION OF 632-21
REFER TO PAGE WZ011
S NOTE 2 X LOW 000 011
D
S
1
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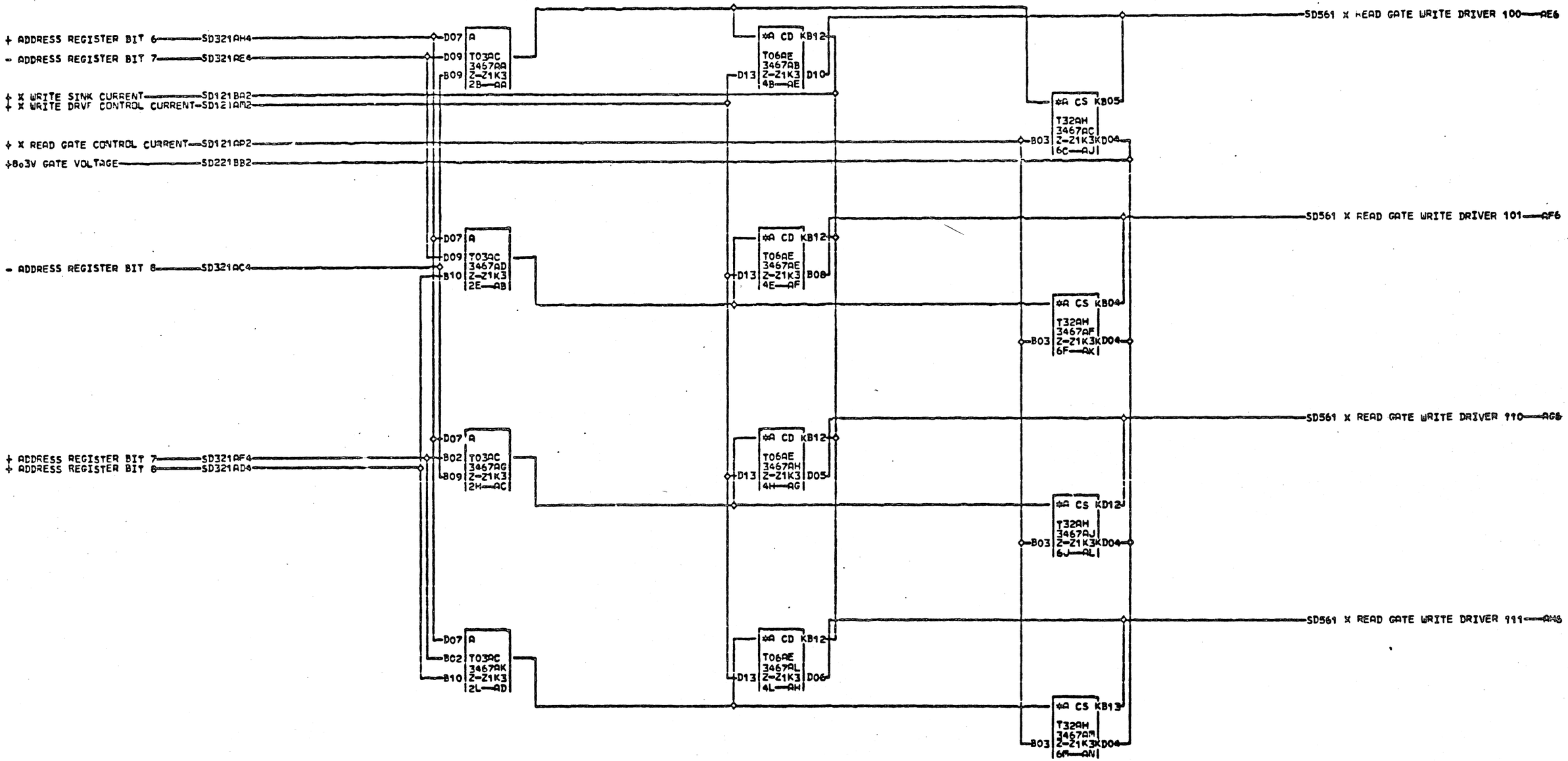
11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

X READ GATE WRITE DRIVER
LOW ORDER 1 OF 2
DATE 04-27-67 MACH. SJ-4
LOG 115N FRAME 63
P.N. 2196663
IBM CORP. CD BLK. AP

S SD 1 1 000



NOTE 1 FOR LOCATION OF 632-21
REFER TO PAGE W2011
S NOTE 2 X LOW 100 TO 111
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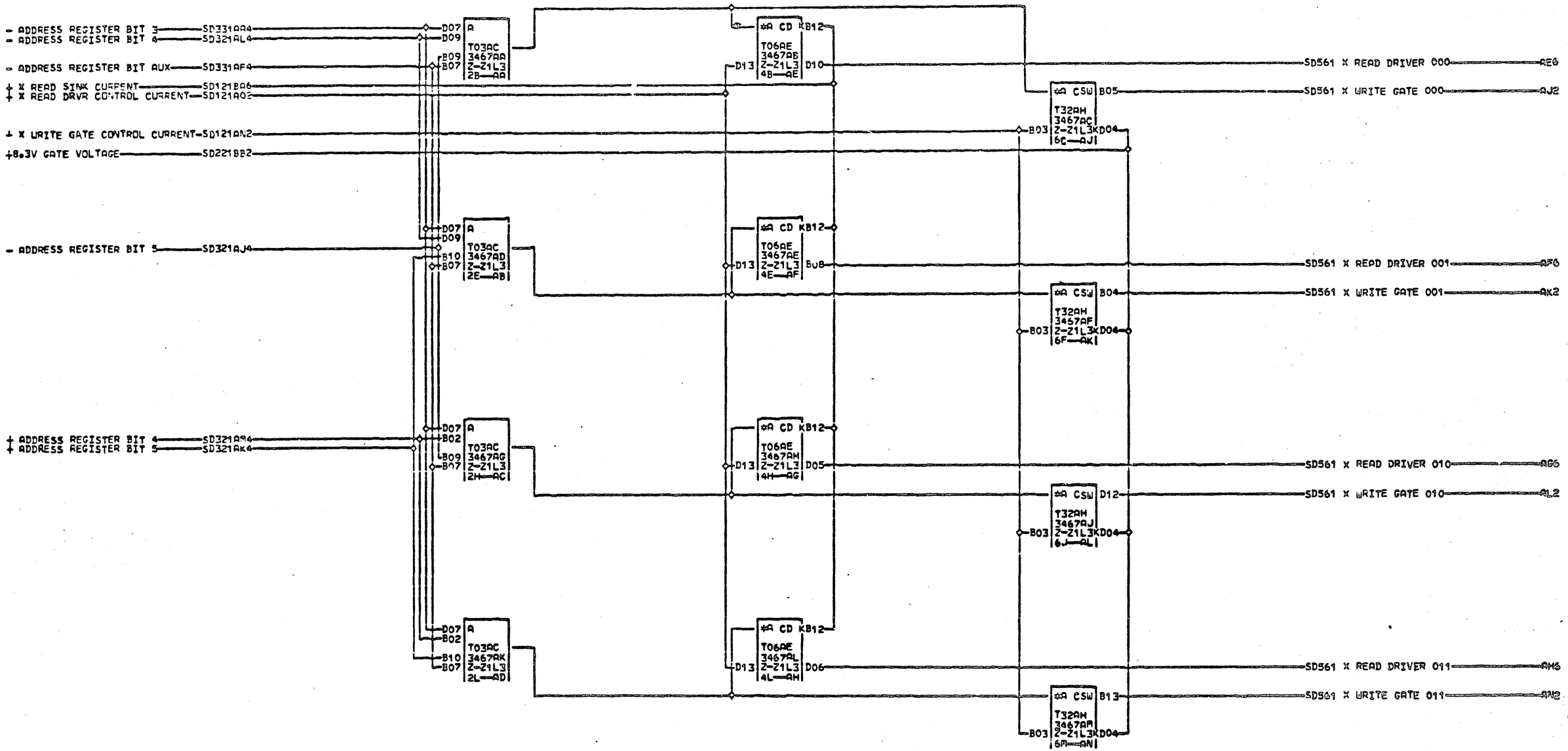
11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

X READ GATE WRITE DRIVER
LOW ORDER 2 OF 2
DATE 04-27-67 PROM. SJ-4
LOG 115N FRAME 63
PcNo. 2196664
IBM CORP. CD PLK. AP

S 3 2 1 000



NOTE 1 FOR LOCATION OF 632-21
REFER TO PAGE U2011
NOTE 2 X HI 000 TO 011

11-20-84 414300
05-07-85 414302
08-19-85 414308
03-19-86 256302
04-25-87 731503

X WRITE GATE AND READ DRIVER
HIGH ORDER 1 OF 2
DATE 04-27-87 PACHO SJ-1
LOG 119N PRARZ 83
PONO 2106665
IBM CORP. ED DLKO 6P

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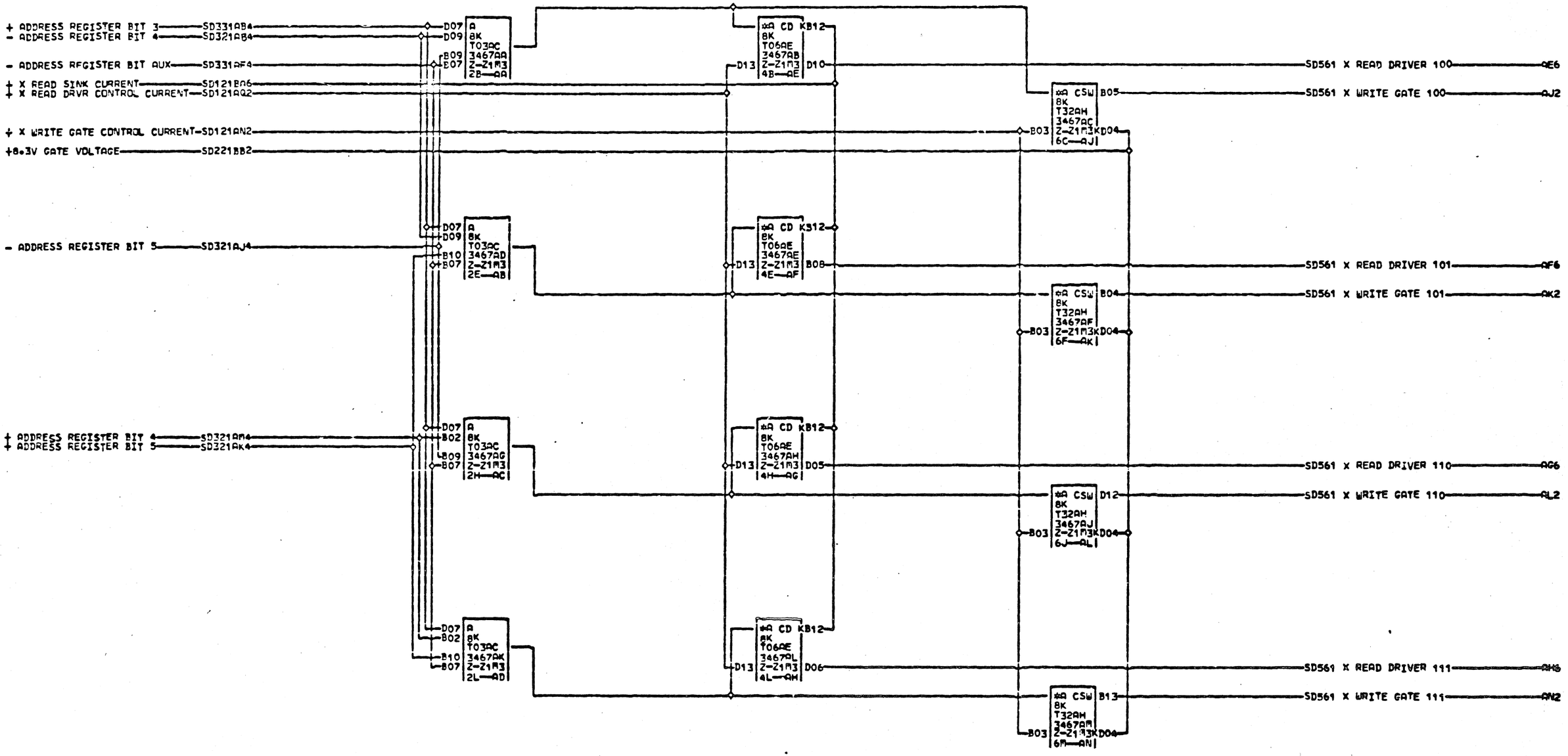

NOTE 1 FOR LOCATION OF 632-21
REFER TO PAGE WZ011
S NOTE 2 X HI 100 TO 111
D
5
4
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11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

X WRITE GATE AND READ DRIVER
HIGH ORDER 2 OF 2
DATE 04-27-67 MACH. SJ-4
LOG 115N FRAME 63
P.N. 2196666
IBM CORP. CD BLK. AP

S
D
5
4
1
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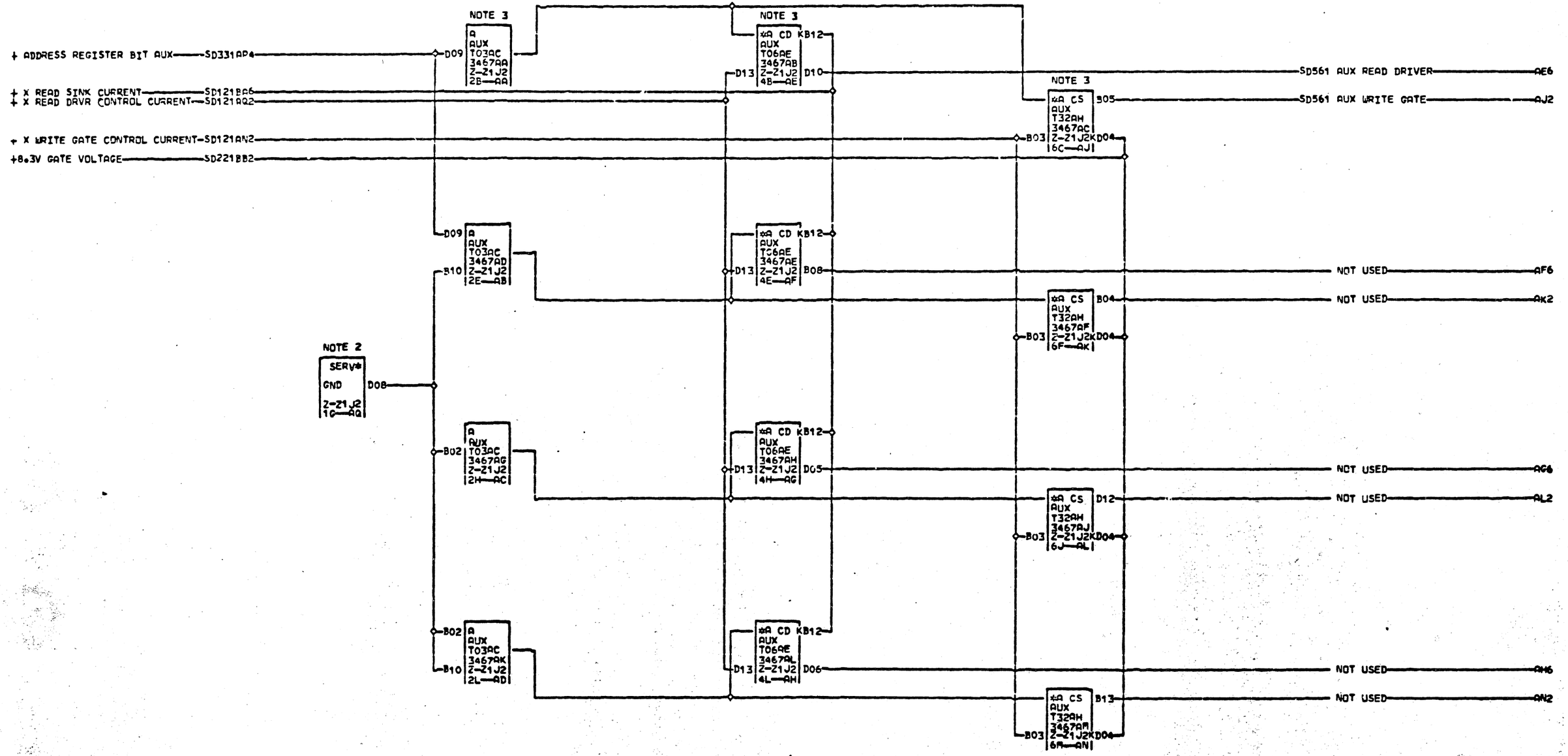


NOTE 1 FOR LOCATION 632-21
REFER TO PAGE WZ011
NOTE 2 UNUSED CIRCUIT TIE DOWN
NOTE 3 THIS CARD PRESENT FOR
AUX STORAGE ONLY
NOTE 4 AUX IS X HI ORDER

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

X AUX WRITE GATE READ DRIVER

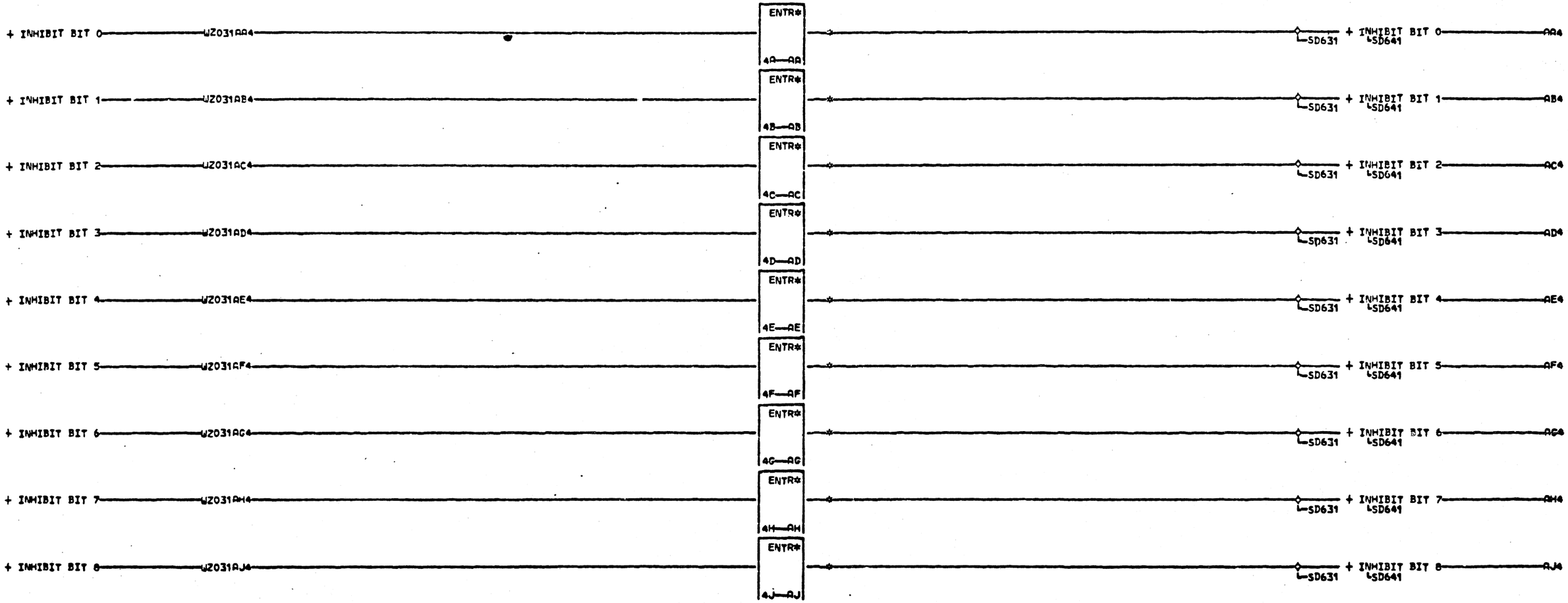
DATE 04-27-67 MACH. SJ-4

LOG 115N FRAME 63

P.N. 2196667

IBM CORP. CD BLK. AR

SDS1 000



NOTE 1 FOR LOCATION OF 632-Z1
REFER TO PAGE WZ011
S NOTE 2 + TO WRITE ZERO
D
6
1
1
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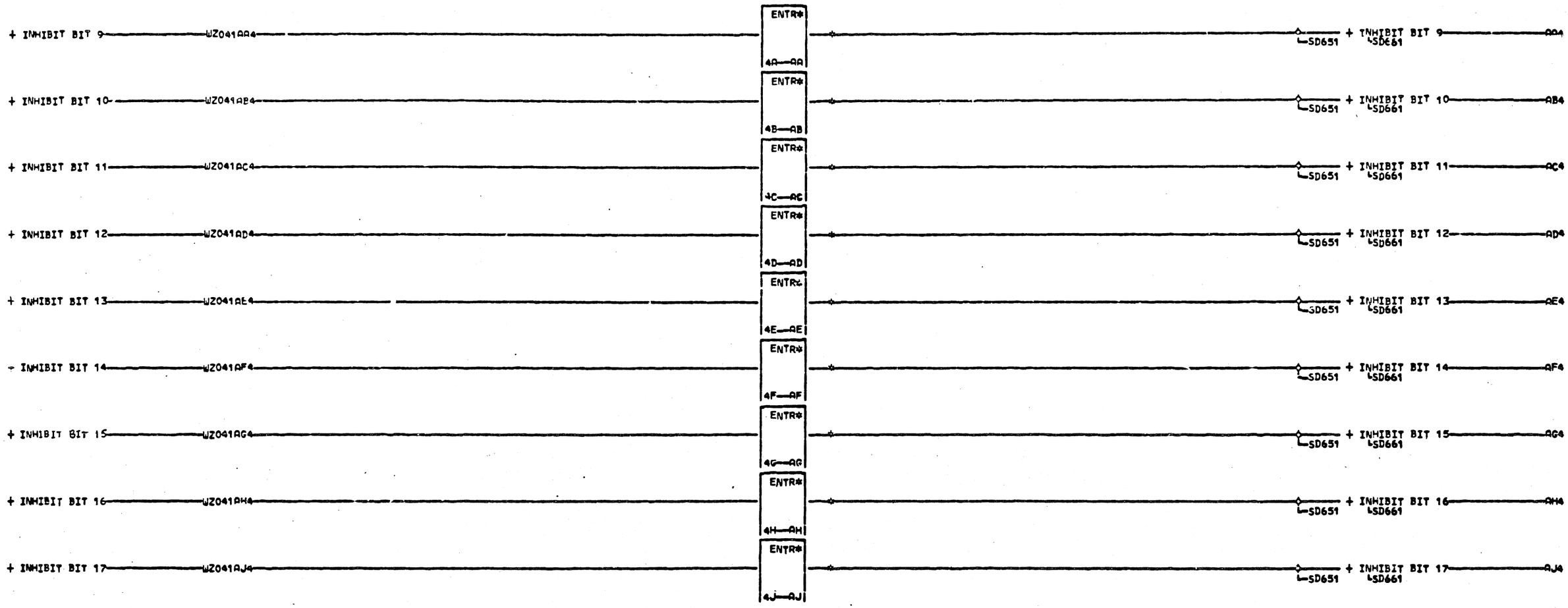
AA4 Z-Z1B1A09 AJ4 Z-Z1C1E09
632-Z1A1EC9
AB4 Z-Z1B1B09
AC4 Z-Z1B1C09
AD4 Z-Z1B1D09
AE4 Z-Z1B1E09
AF4 Z-Z1C1B09
AG4 Z-Z1C1C09
AH4 Z-Z1C1D09

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

DATA INPUT
1 OF 2
DATE 04-27-67 MACH. SJ-4
LOG 115N FRAME 63
P.N. 2196670
IBM CORP. CD BLK. AK

S D 6 1 1 000



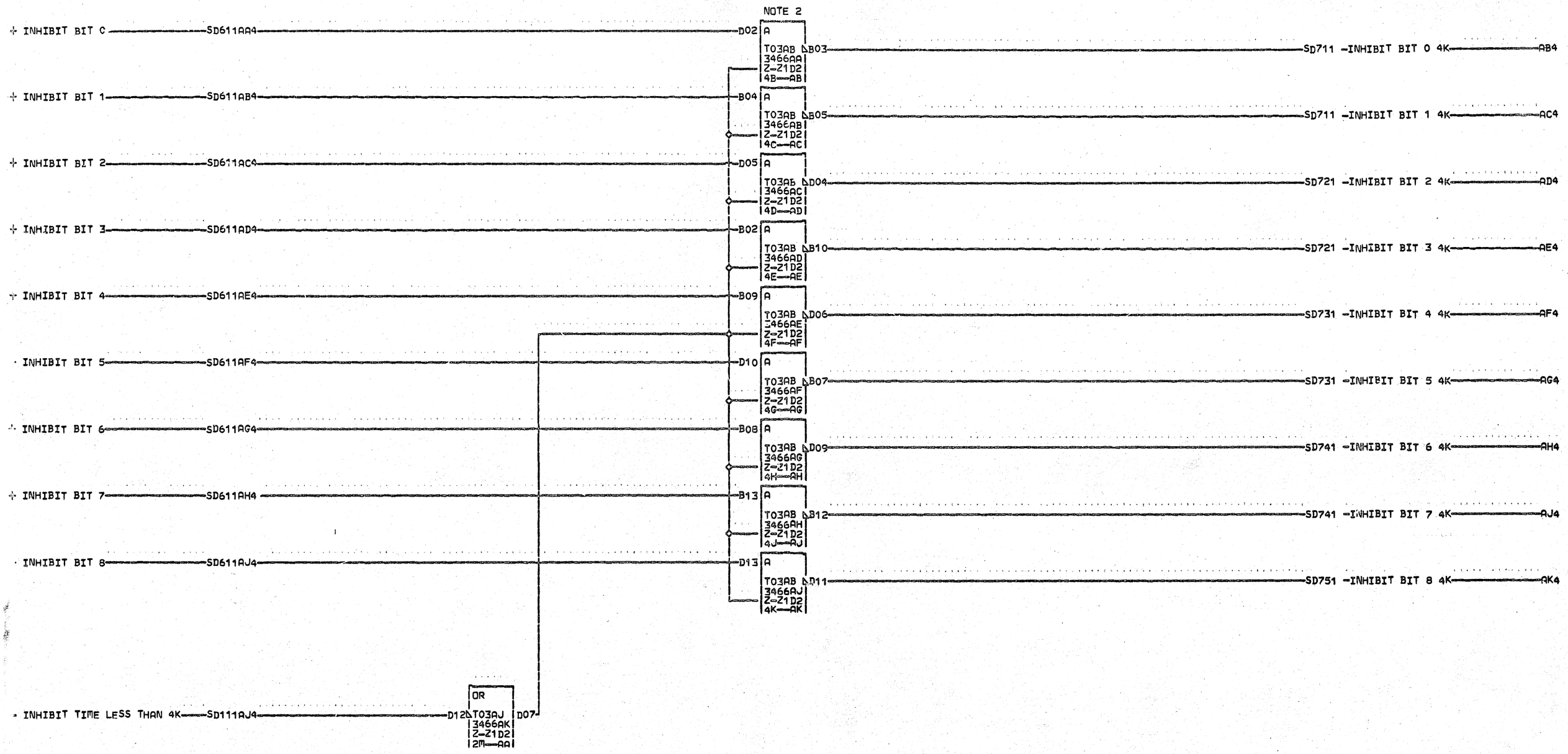
NOTE 1 FOR LOCATION OF 632-Z1
REFER TO PAGE WZ011
S NOTE 2 + TO WRITE ZERO

AA4 Z-Z1D1A09 AJ4 Z-Z1M1D09
AB4 Z-Z1L1A09
63Z-Z1K1E09
AC4 Z-Z1L1B09
AD4 Z-Z1L1C09
AE4 Z-Z1L1D09
AF4 Z-Z1L1E09
AG4 Z-Z1M1B09
AH4 Z-Z1M1C09

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

DATA INPUT
2 OF 2
DATE 04-27-67 MACH. SJ-4
LOG 115N FRAME 63
P.N. 2196671
IBM CORP. CD BLK. AL

SD621 000



NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE W2011

NOTE 2 THE -INHIBIT BIT LEVELS ARE APPROX. 0 AND +0.7V

SD631

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11-20-64 414300
05-07-65 414302
08-19-65 414308

INHIBIT INPUT BIT 0-8
LESS THAN 4K
DATE 07-12-66 MACH. SJ-4
LOG 277F FRAME 63
P.N. 2196672
IBM CORP. CD BLK. AL

SD631

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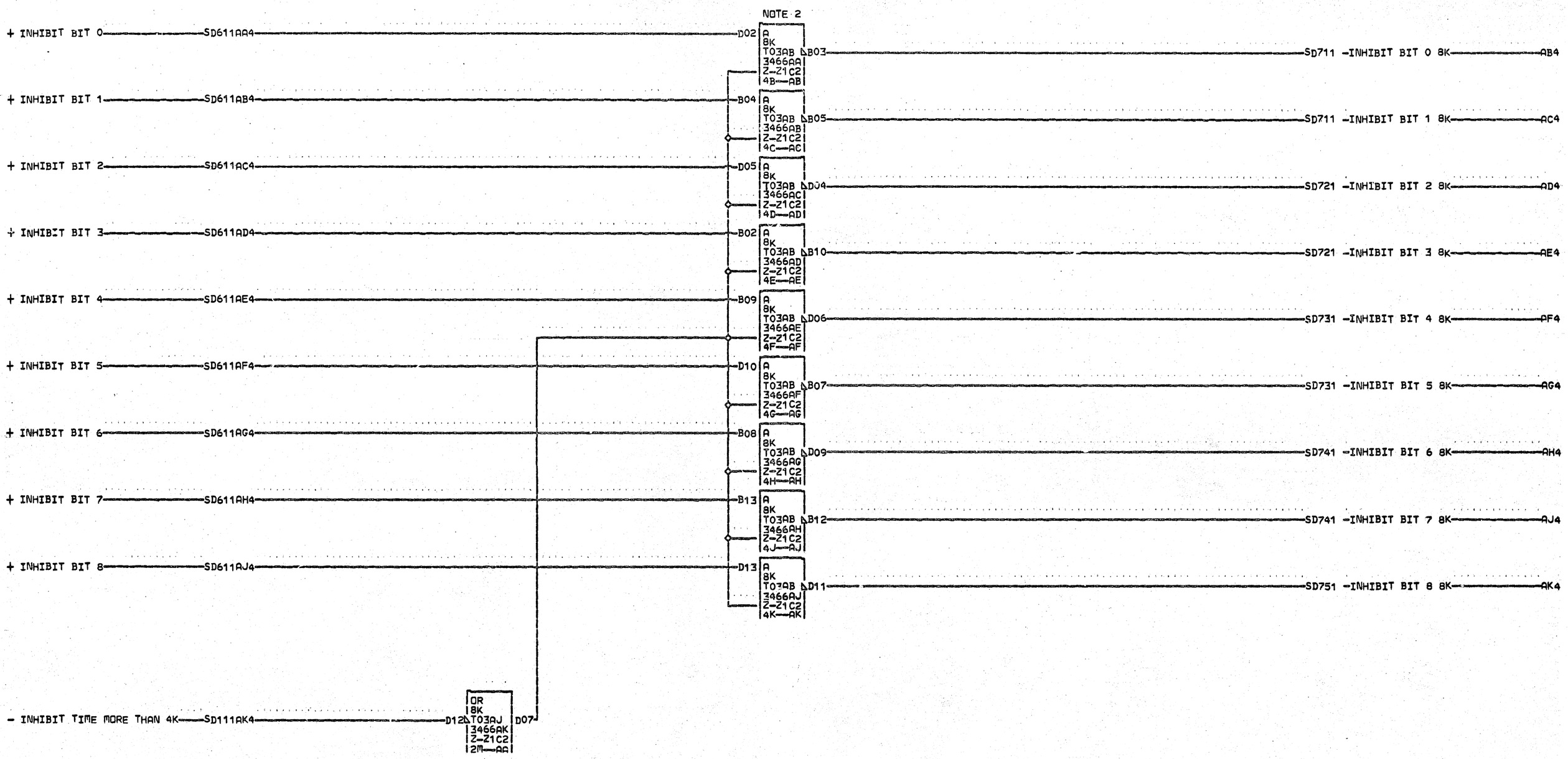

NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE WZ011

S NOTE 2 THE -INHIBIT BIT LEVELS
D ARE APPROX. 0 AND +0.7V
6
4
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11-20-64 414300
05-07-65 414302
08-19-65 414308

INHIBIT INPUT BIT 0-8
MORE THAN 4K

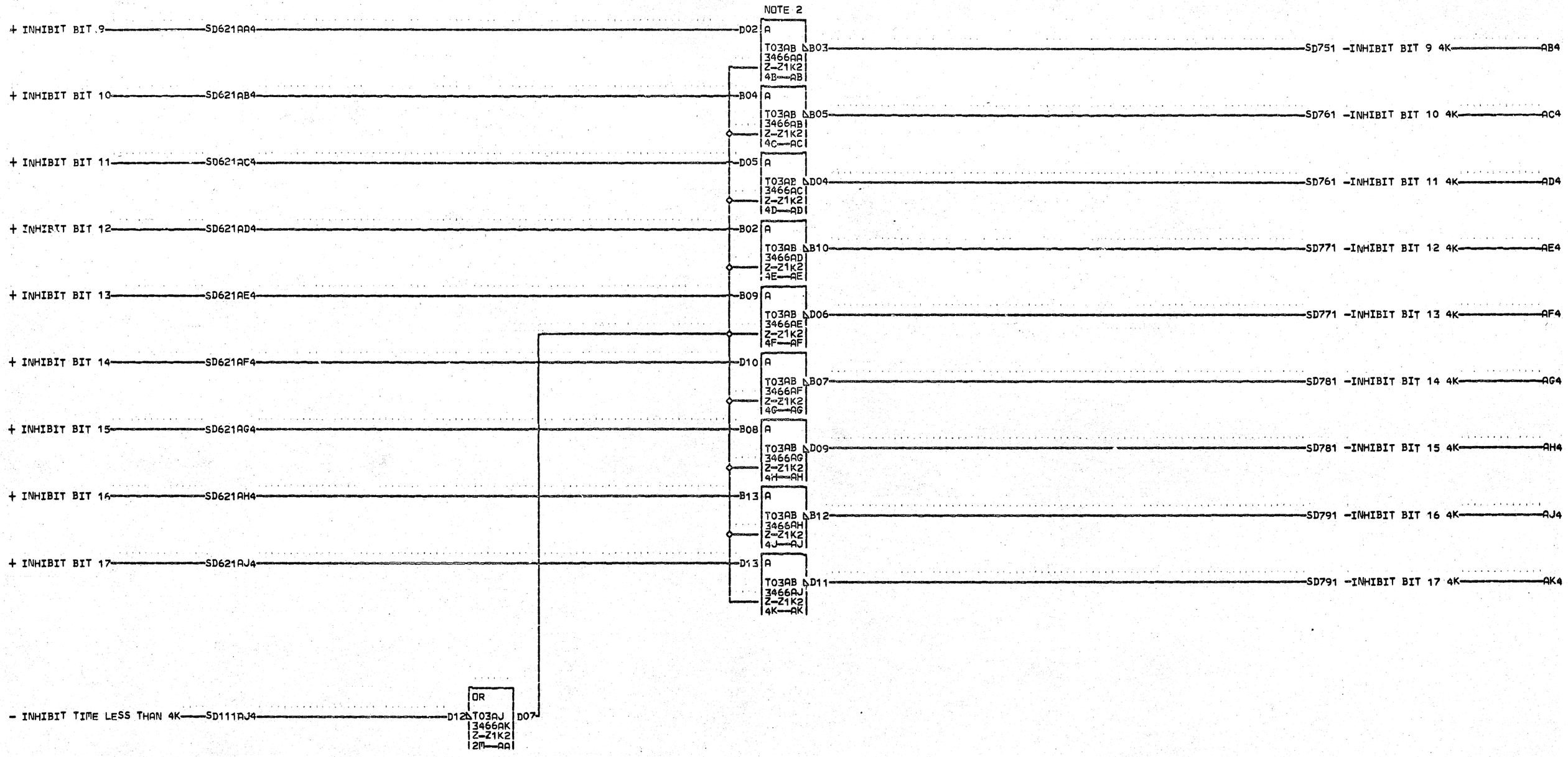
DATE 07-12-66 MACH. SJ-4

LOG 277F FRAME 63

P.N. 2196673

IDM CORP. CD BLK. AL

S D 6 4 1 000



NOTE 1 FOR LOCATION OF 632-Z1
REFER TO PAGE W2011

S NOTE 2 THE -INHIBIT BIT LEVELS
D ARE APPROX. 0 AND +0.7V
6
5
1

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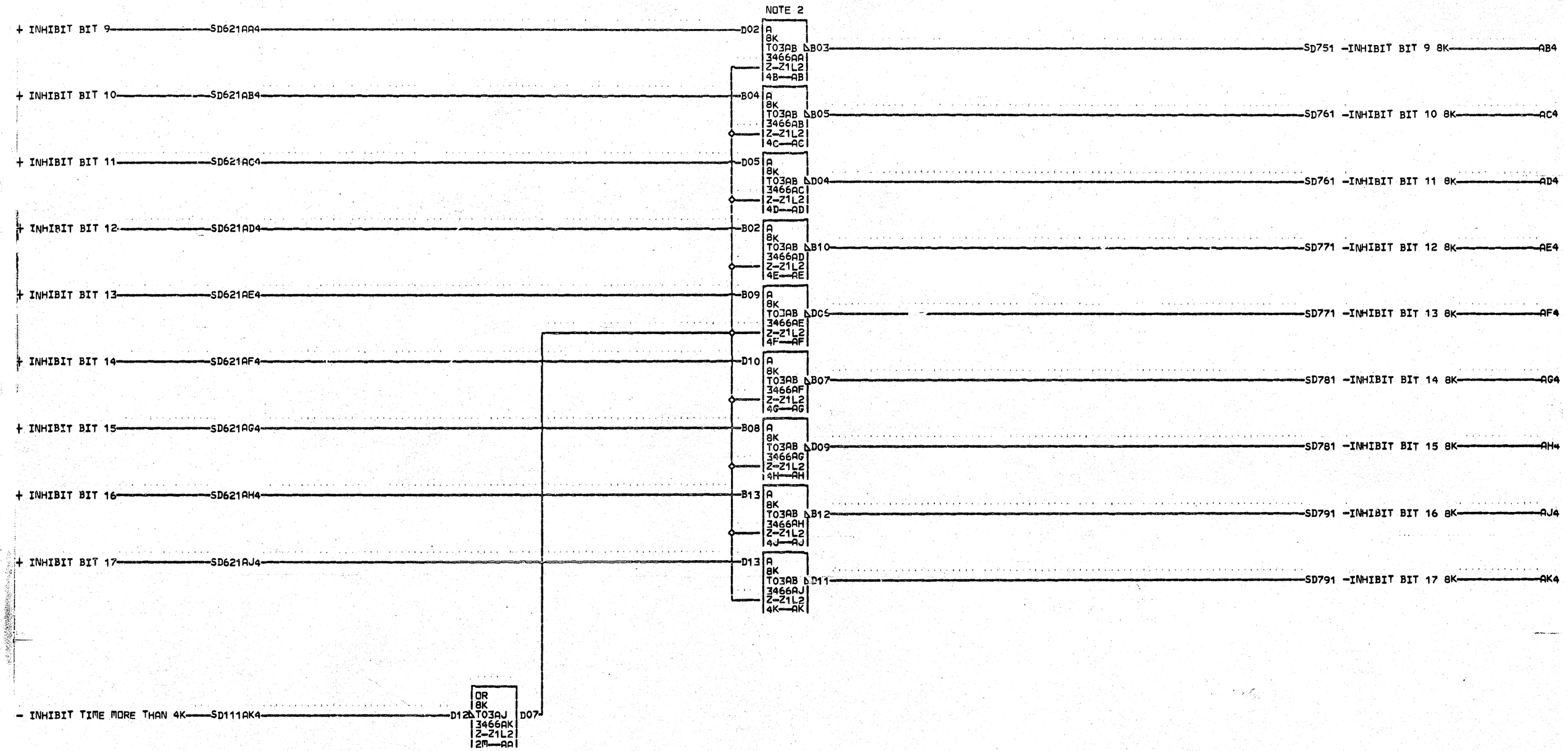
11-20-64 414300
05-07-65 414302
08-19-65 414308

INHIBIT INPUT BIT 9-17
LESS THAN 4K
DATE 07-12-66 MACH. SJ-4
LOG 277F FRAME 63
P.N. 2196674
IBM CORP. CD BLK. AL

S D 6 5 1 000



NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE W2011

S NOTE 2 THE -INHIBIT BIT LEVELS
D ARE APPROX. 0 AND +0.7V
6
6
1

000

11-20-64 414300
05-07-65 414302
08-19-65 414308

INHIBIT INPUT BIT 9-17
MORE THAN 4K

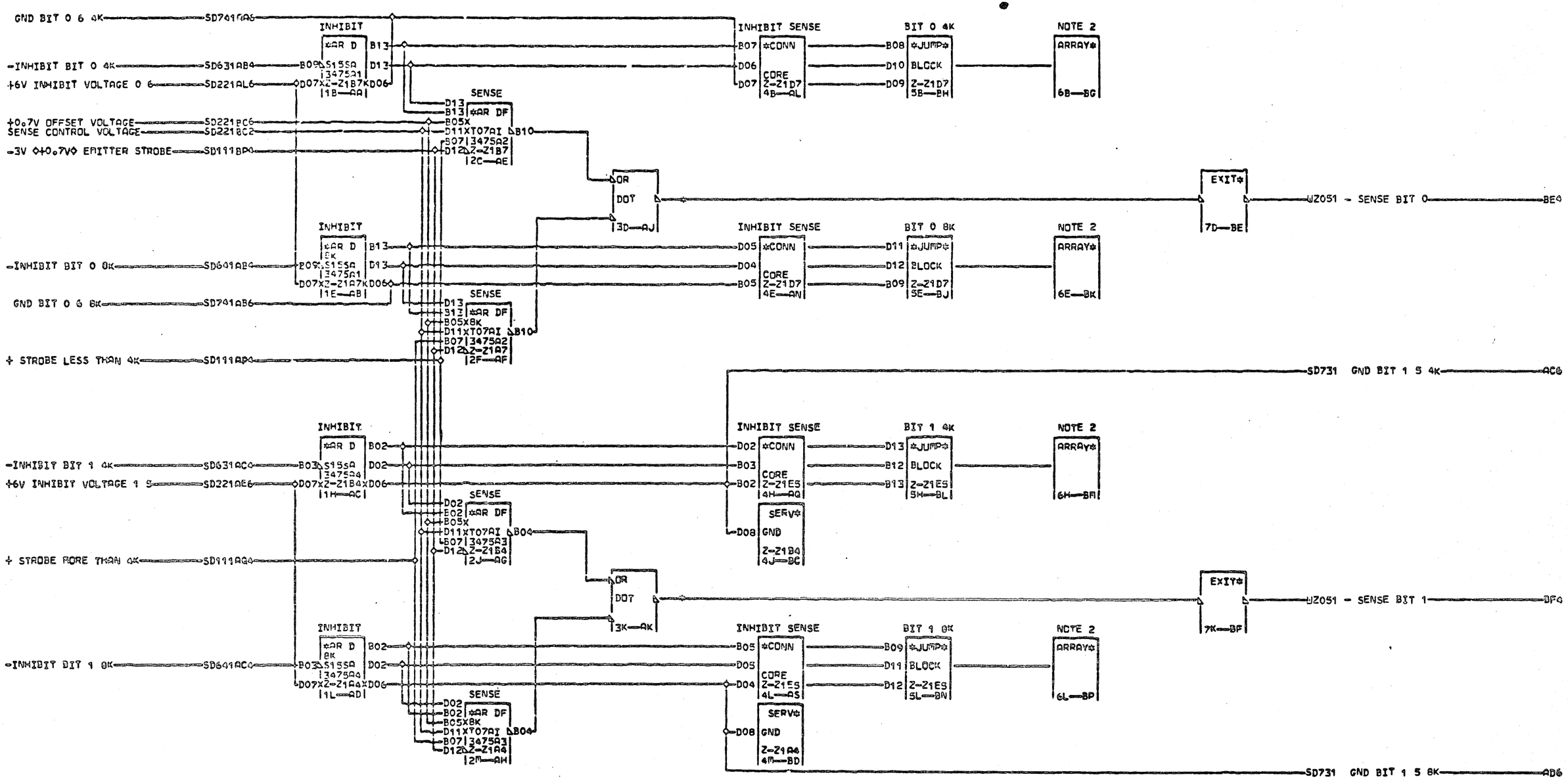
DATE 07-12-66 MACH. SJ-4

LOG 277F FRAME 63

P.N. 2196675

IBM CORP. CD BLK. AL

SD661 000



NOTE 1 FOR LOCATION OF 632-34
REFER TO PAGE UZ011 AJ4 Z-Z1B1A11
S NOTE 2 REFER TO SD061 AND AK4 Z-Z1B1B11
D SD062 FOR LOGIC TO
9 ARRAY CONNECTIONS.
1
1

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11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

INHIBIT SENSE BIT 0 AND 1

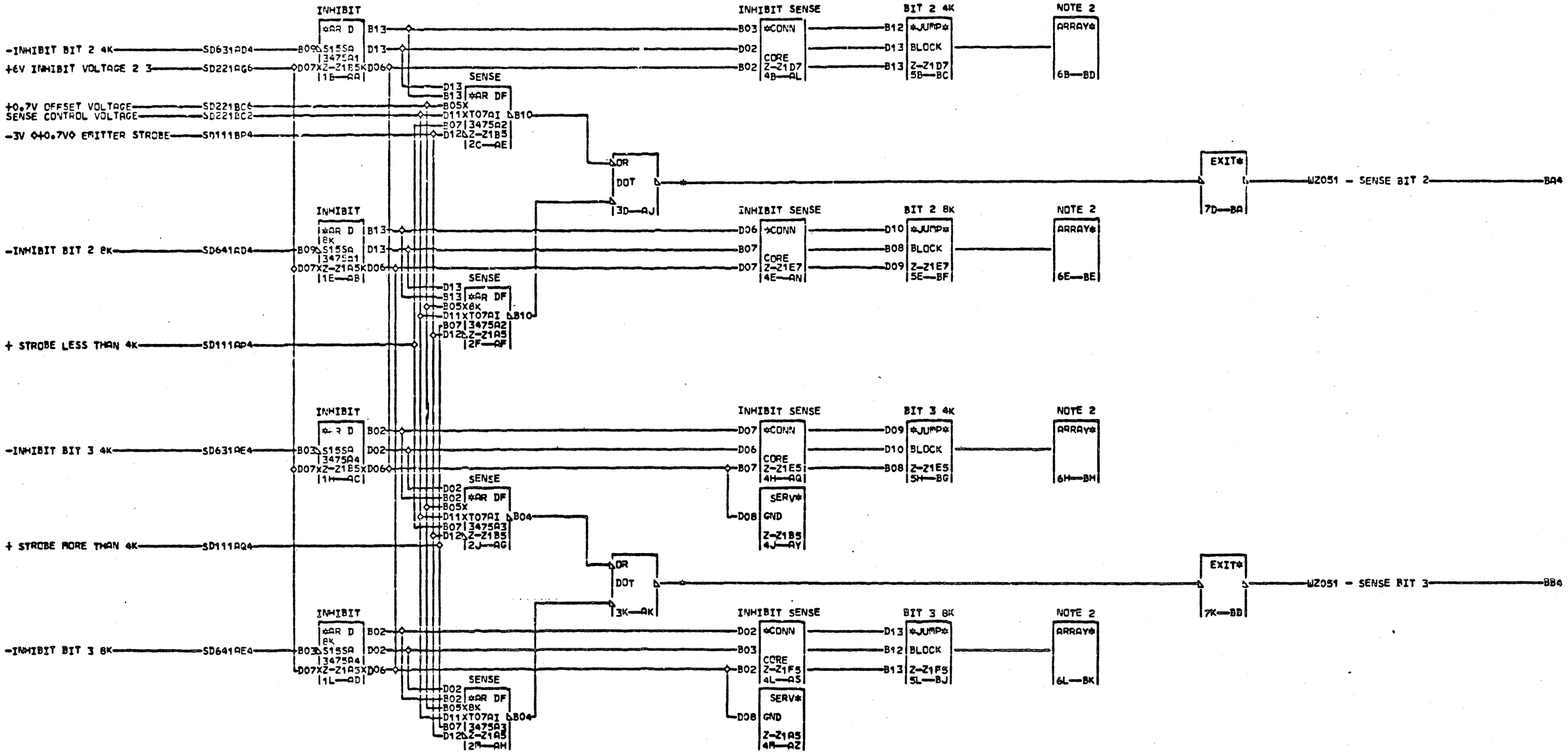
DATE 04-27-67 MACH. SJ-4

LOC 115N FRAME 63

P.N. 2196676

IBM CORP. CD BLK. BQ

S D 9 1 1 000



NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE WZ011 AJ4 Z-Z1B1C11
S NOTE 2 REFER TO SD061 AND AK4 Z-Z1B1D11
D SD062 FOR LOGIC TO ○3Z-Z1A1E11
7 ARRAY CONNECTIONS.
2
1

000

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

INHIBIT SENSE BIT 2 AND 3

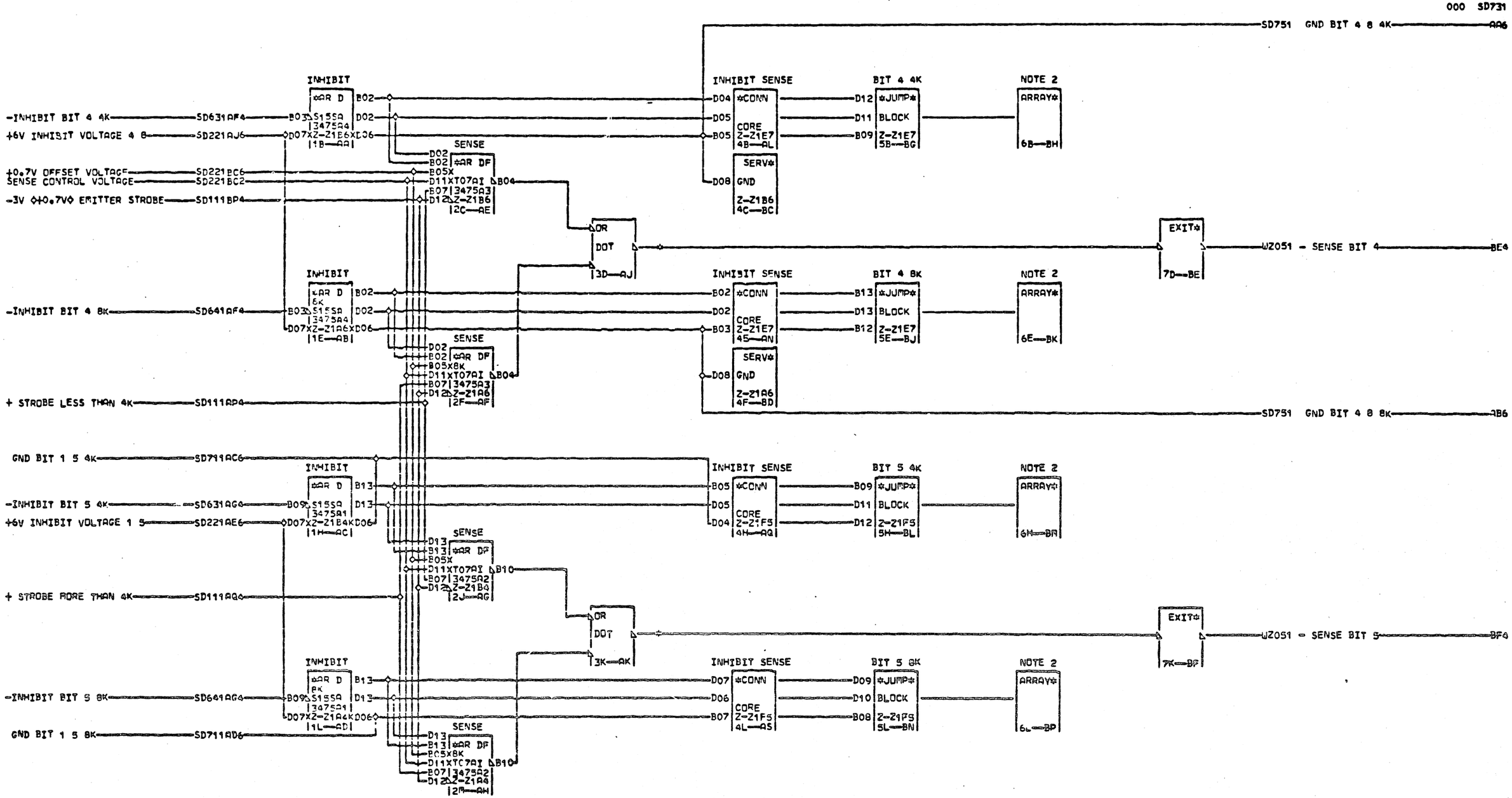
DATE 04-27-67 MACH. SJ-4

LOG 115N FRAME 63

P.No. 2196677

IBM CORP. CD BLK. BL

S D 7 2 1 000



NOTE 1 FOR LOCATION OF 632-Z1
REFER TO PAGE WZ011 AJ4 Z-Z1B1E11
S NOTE 2 REFER TO SD061 AND AK4 Z-Z1C1B11
D SD062 FOR LOGIC TO
7 ARRAY CONNECTIONS.
3
1

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11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

INHIBIT SENSE BIT 4 AND 5

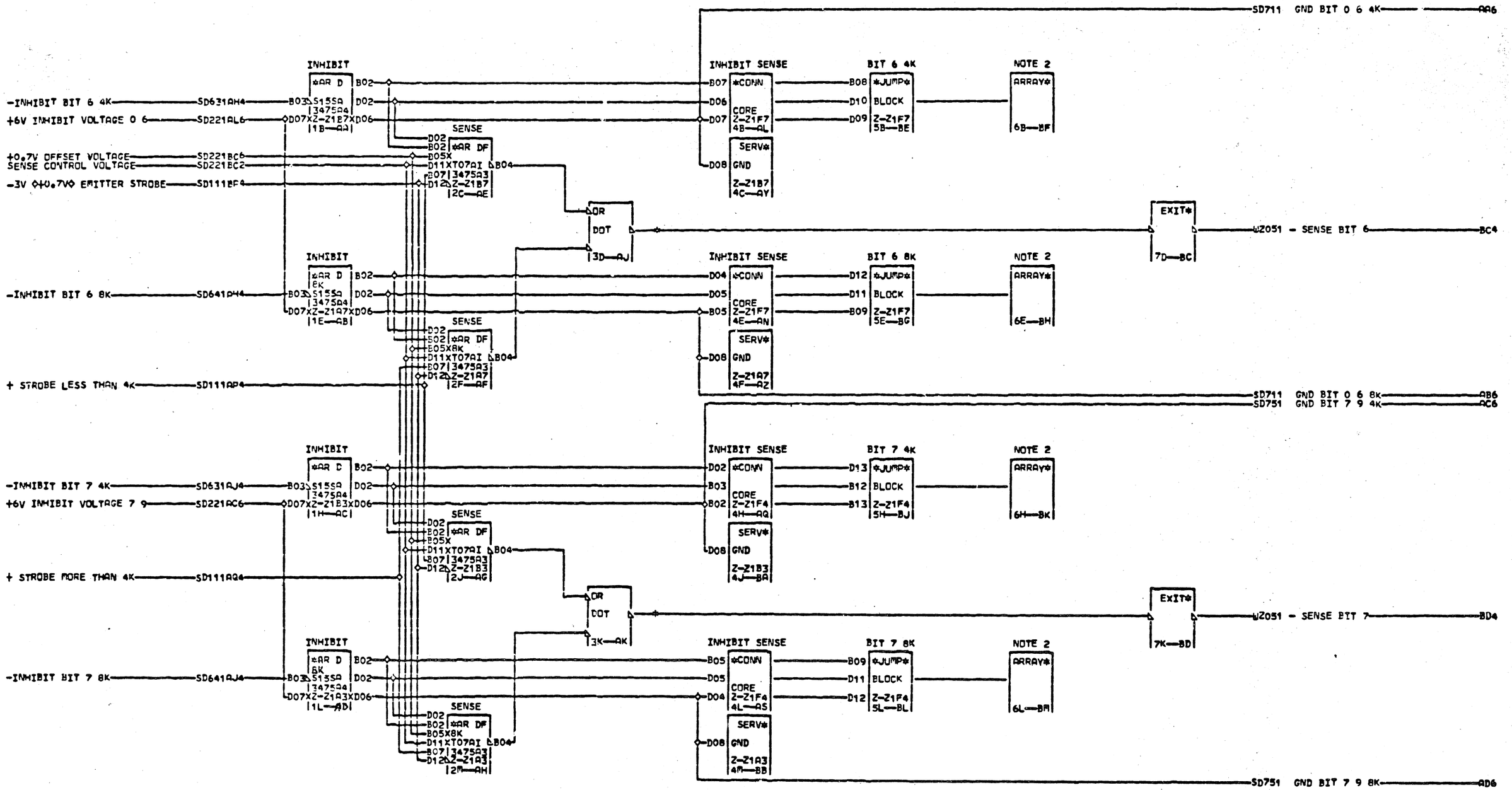
DATE 04-27-67 RACM. SJ-4

LOG 115N PRAFF 63

PoNo 2196678

IBM CORP. CD BLK. BQ

S 3 1 000



NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE WZ011 AJ4 Z-Z1C1C11
NOTE 2 REFER TO SD061 AND AK4 Z-Z1C1D11
SD062 FOR LOGIC TO 63Z-Z1C1A11
ARRAY CONNECTIONS.

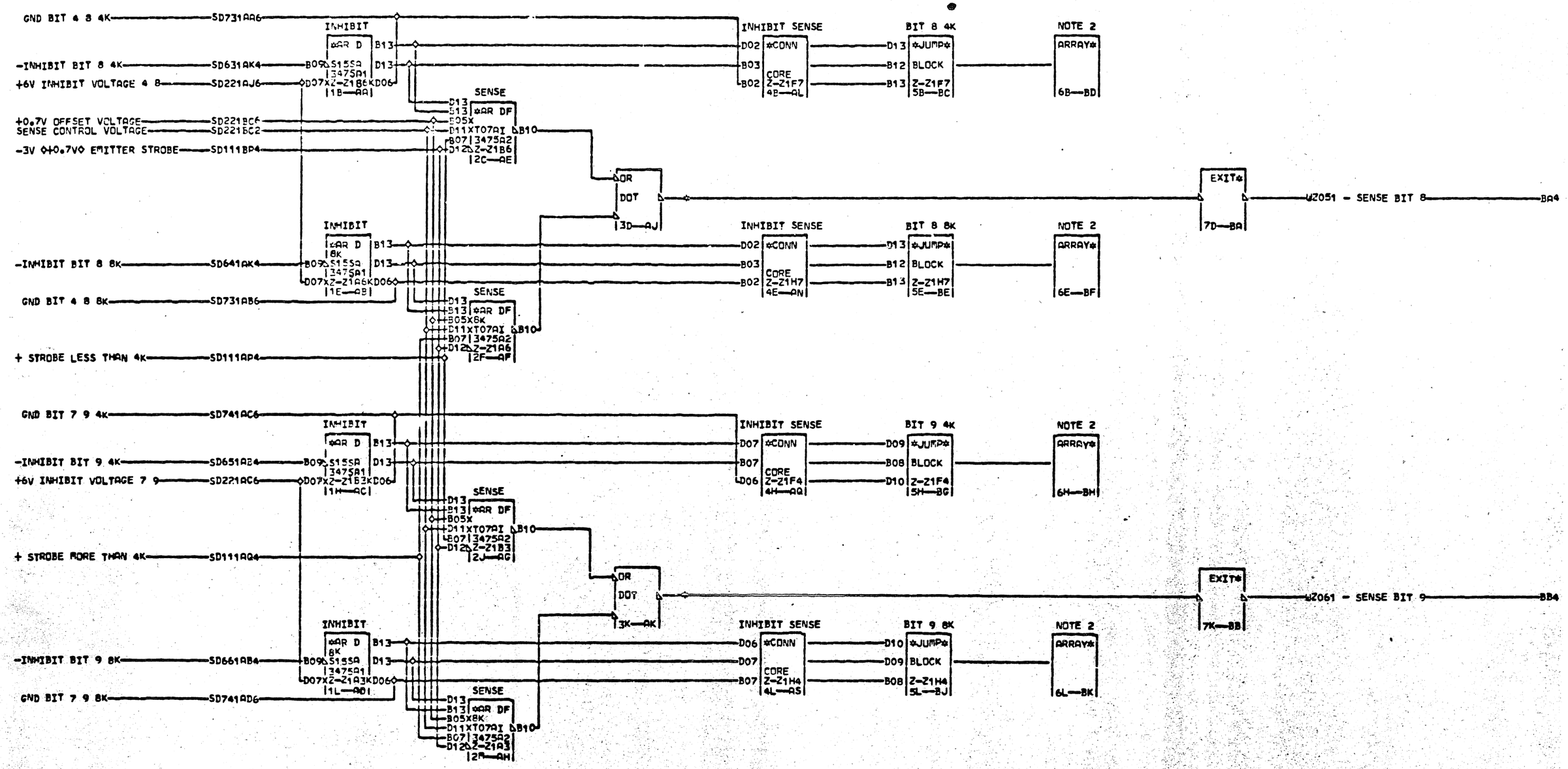
S D 7 4 1 000

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

INHIBIT SENSE BIT 6 AND 7

DATE 04-27-67 MACH. SJ-4
LOG 115A FRAME 63
P.N. 2196679
IBM CORP. CD BLK. BN

S D 7 4 1 000



NOTE 1 FOR LOCATION OF 632-Z1
REFER TO PAGE WZ011 AJ4 Z-Z1C1E11

S NOTE 2 REFER TO SD061 AND AK4 Z-Z1D1A11
D SD062 FOR LOGIC TO
7 ARRAY CONNECTIONS.
.5
1

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11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

INHIBIT SENSE BIT 8 AND 9

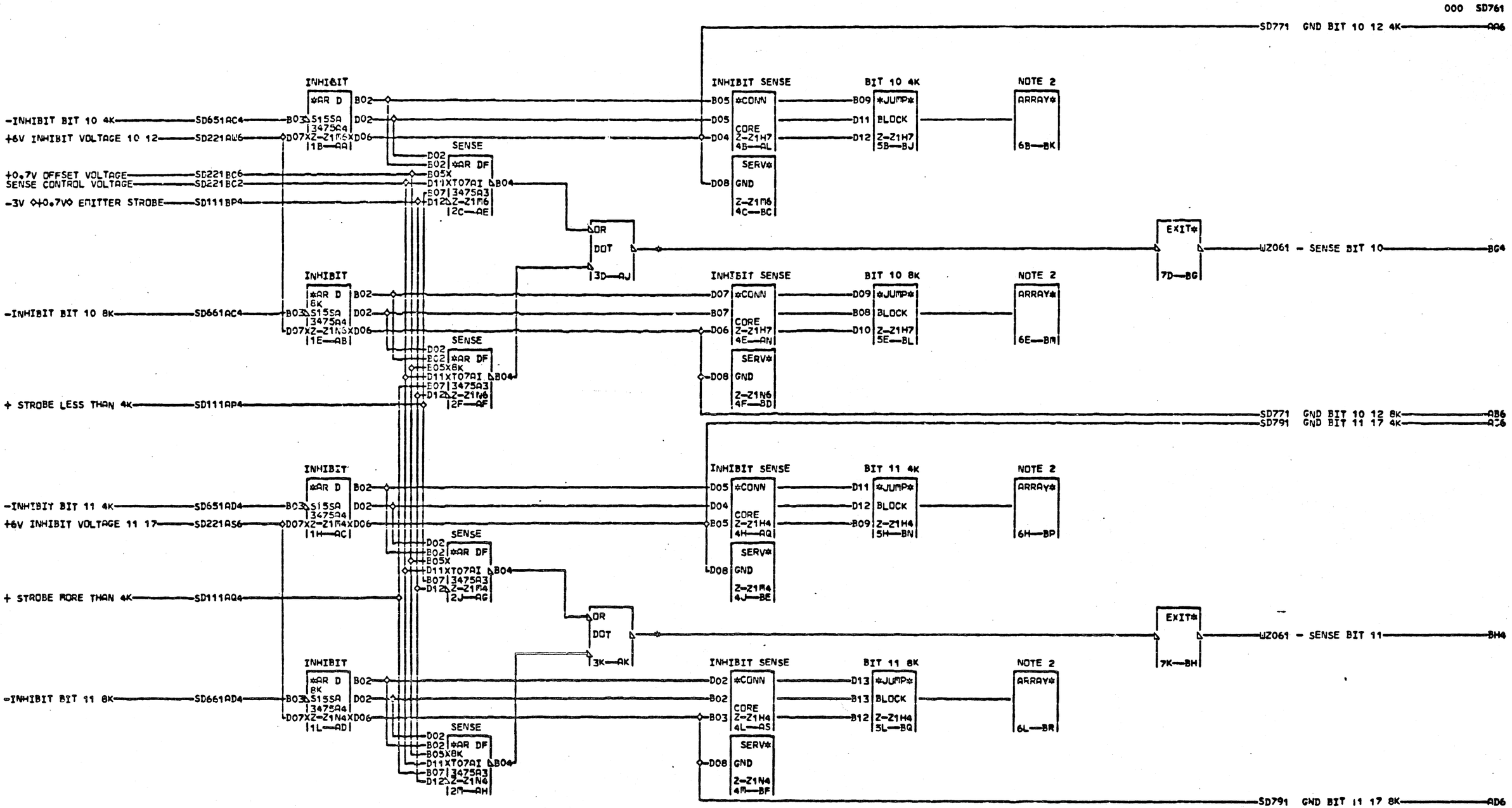
DATE 04-27-67 MACH. SJ-4

LDG 1159 FRAME 63

P.No. 2196680

IBM CORP. CD BLK. BL

S D 7 5 1 000



NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE WZ011 AJ4 Z-Z1L1A11
S NOTE 2 REFER TO SD061 AND AK4 Z-Z1L1B11
D SD062 FOR LOGIC TO
7 ARRAY CONNECTIONS.
6
1

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11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

INHIBIT SENSE BIT 10 AND 11

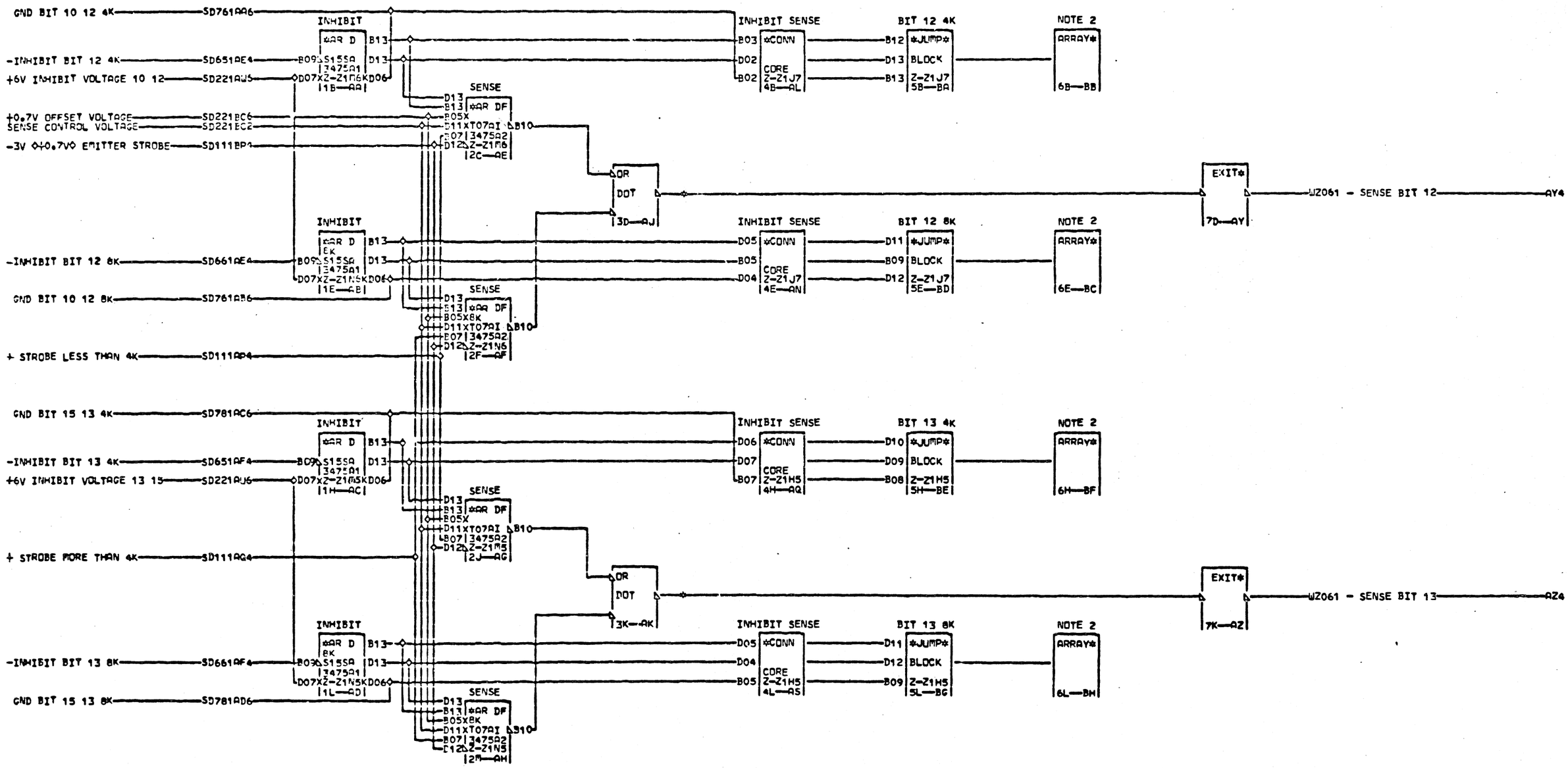
DATE 04-27-67 MACH. SJ-4

LOG 115N FRAME 63

P.N. 2196681

IBM CORP. CD BLK. BS

S D 7 6 1 000



NOTE 1 FOR LOCATION OF 63Z-Z1 REFER TO PAGE WZ011

$ NOTE 2 REFER TO SD061 AND SD062 FOR LOGIC TO ARRAY CONNECTIONS.

AJ4 Z-Z1L1C11
AK4 Z-Z1L1D11
63Z-Z1K1E11

000

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

INHIBIT SENSE BIT 12 AND 13

DATE 04-27-67 MACH. SJ-4

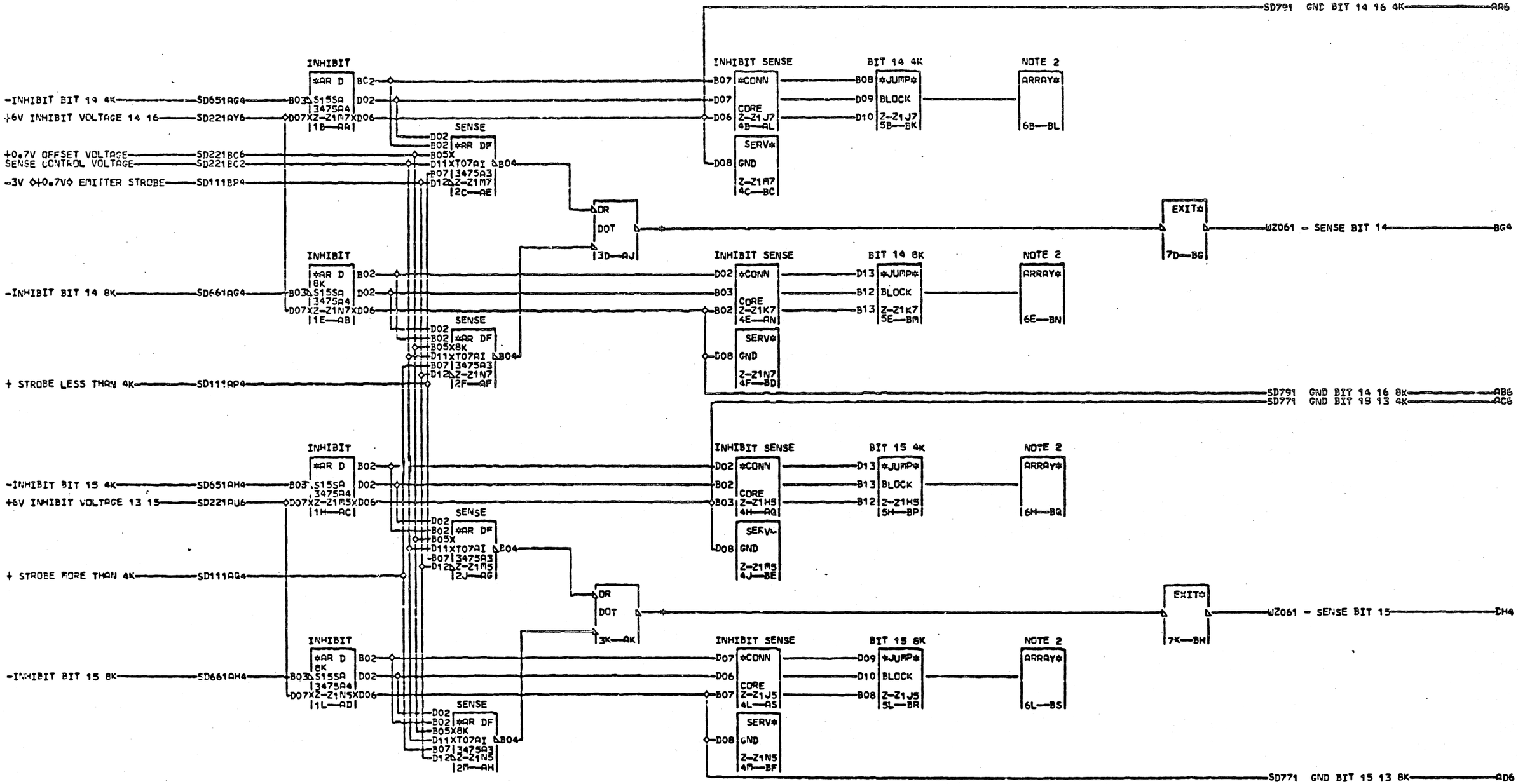
LOG 115N FRAME 63

P.N. 2196682

IBM CORP. CD BLK. BJ

SD771 000

000 SD781



NOTE 1 FOR LOCATION OF 63Z-Z1
REFER TO PAGE WZ011
AJ4 Z-Z1L1E11
NOTE 2 REFER TO SD061 AND SD062 FOR LOGIC TO ARRAY CONNECTIONS.
AK4 Z-Z1R1B11

S D 7 8 1

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11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

INHIBIT SENSE BIT 14 AND 15

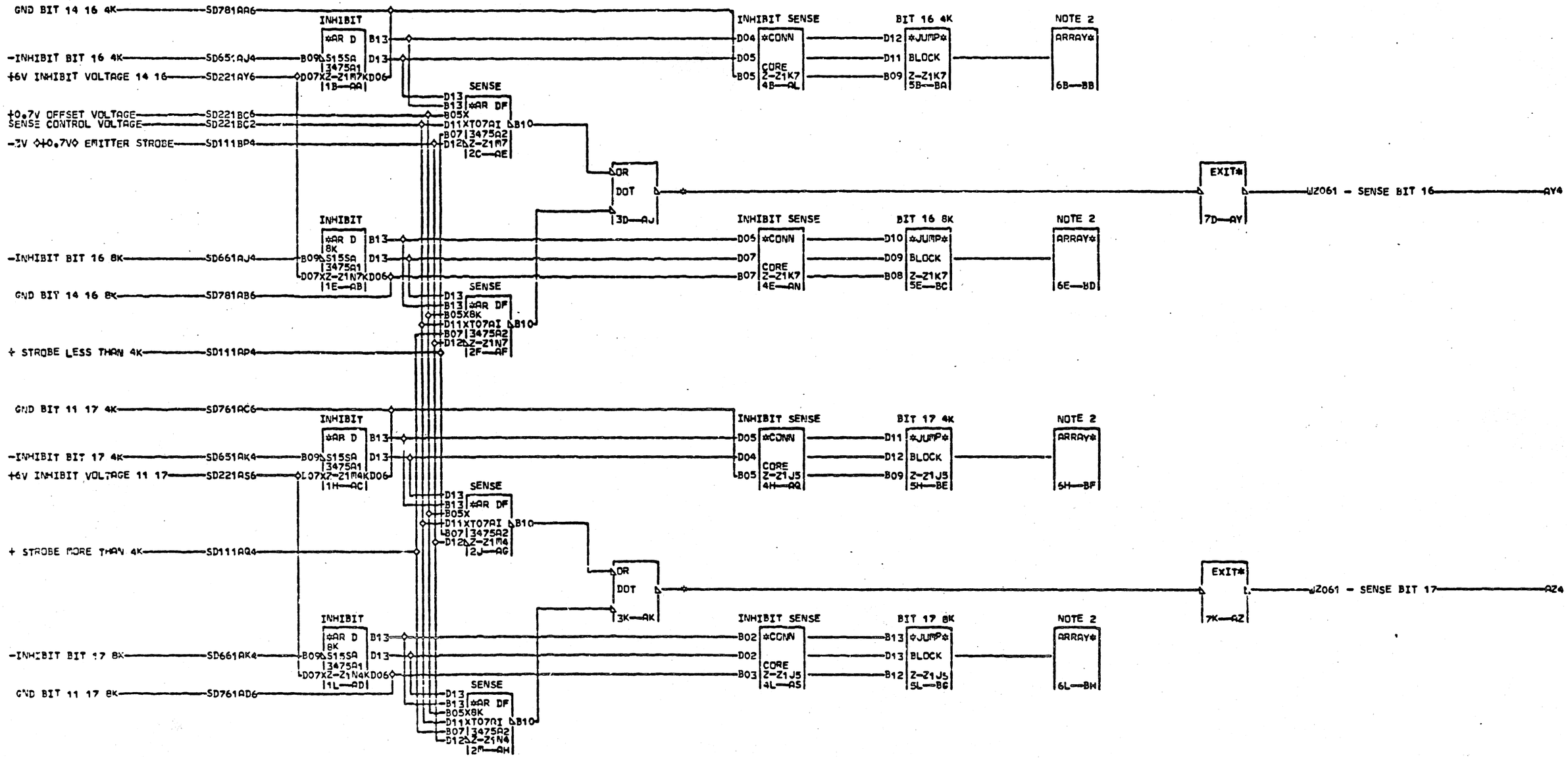
DATE 04-27-67 MACH. SJ-4

LOG 115N FRAME 63

Pgm. 2196683

IBM CORP. CD BLK. BT

S D 7 8 1 000



NOTE 1 FOR LOCATION OF 63Z-Z1 REFER TO PAGE WZ011
NOTE 2 REFER TO SD061 AND SD062 FOR LOGIC TO ARRAY CONNECTIONS.
NOTE 3 SYSTEM MAY REMOVE N4B10 TO M1D11. REFER TO WZ061

AJ4 Z-Z1M1C11
AK4 Z-Z1M1D11
63Z-Z1M1A11

11-20-64 414300
05-07-65 414302
08-19-65 414308
03-15-66 256302
04-25-67 731503

INHIBIT SENSE BIT 16 AND 17	
DATE 04-27-67 PROG. SJ-4	
LOG 115N FRAME 63	
P.N. 2196684	
IBM CORP. CD BLK. BJ	

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WRITE CLOCK PHASE A	XA061A32	ENTR* FROM FILE TO CPU 4B—AA		- WRITE CLOCK PHASE A	AA2
WRITE CLOCK PHASE B	XA061A36			- WRITE CLOCK PHASE B (XF141, WF161)	AA6
- READ DATA	XA061AA2	ENTR* FROM FILE TO CPU 4C—AB		XF141 - READ DATA	AB2
- READ CLOCK	XA061AA6			XF141 - READ CLOCK	AB6
+ ACCESS READY	XA061AD2	ENTR* FROM FILE TO CPU 4D—AC		XF171 + ACCESS READY	AC2
- SECTOR PULSE	XA061AE2			XF111 - EIGHT SECTOR PULSES	AC6
- REFERENCE PULSE	XA061AD6	ENTR* FROM FILE TO CPU 4E—AD		- INDEX PULSE (XF111, XF181)	AD2
- FILE READY	XA061AC6			- FILE READY (XF131, XF191)	AD6
- HOME	XA061AE6	*ENTR* FROM FILE TO CPU 4F—AE		XF171 + CARRIAGE HOME SW N*O	AE2
- WRITE SELECT ERROR	XA061AC2			XF111 - WRITE SELECT ERROR	AE6

- HEAD SELECT	XF191AL2	EXIT* FROM CPU TO FILE 4H—AF		XA061 CPU HEAD SELECT - HD 1	AF4
+ C E INTERLOCK	XF191AA4	EXIT* FROM CPU TO FILE 4J—AG		XA061 + CE INTERLOCK	AG2
- READ SELECT	XF141BF4			XA061 - CPU READ SELECT	AG6
- WRITE DATA GATE	XF161AR4	EXIT* FROM CPU TO FILE 4A—AH		XA061 - WRITE DATA	AH2
- ACCESS DIRECTION	XF191AS4			XA061 CPU DIRECTION + FOR	AH6
- ACCESS DRIVE	XF171BB4	EXIT* FROM CPU TO FILE 4L—AJ		XA061 - ACCESS GO	AJ2
- STEP MODE	XF201AG2			XA061 10 20 MIL STEP - 10 MIL	AJ6
- WRITE SELECT LATCH	XF121BP4	*EXIT* FROM CPU TO FILE 4P—AK		XA061 - CPU CLOCK GATE	AK2
				XA061 - CPU WRITE GATE	AK6

WF 3 3 9 1 000

AA2 A—C1N7D05 AE6 A—C1N7B08
AA6 A—C1N7B05
AB2 A—C1N7B03
AB6 A—C1N7D02
AC2 A—C1N7B07
AC6 A—C1N7D06
AD2 A—C1N7B12
AD6 A—C1N7D13
AE2 A—C1N7B02

02-17-65 415480
03-04-65 415480A
04-28-65 415480D
07-20-65 415481
08-26-65 415483
09-30-65 415488
10-27-65 415491

FILE - PROCESSOR INTERFACE

DATE 10-28-65 MACH. 1131

LOG 301N FRAME 01

P.N. 2201144

IBM CORP. GPD BLK. AL

WF 3 3 9 1 000

+ STORAGE READ CYCLE	MC101AQ4	001	EXIT* TO STOR 4G—AA	SD111 + READ CYCLE — AA4
+ STORAGE WRITE CYCLE	MC101AY4	002	EXIT* TO STOR 4B—AB	SD111 + WRITE CYCLE — AB4
+ STORAGE USE	MC101AW4	003	EXIT* TO STOR 4C—AC	SD111 + STORAGE USE — AC4
+ STORAGE SELECT	MC101AZ4	004	EXIT* TO STOR 4D—AD	NOT USED — AD4
NOT SUPPLIED		001	EXIT* TO STOR 4E—AL	SD331 + ADDRESS REGISTER BIT AUX — AL4
NOT SUPPLIED		002	EXIT* TO STOR 4F—AE	SD331 - ADDRESS REGISTER BIT AUX — AE4
NOT SUPPLIED		003	EXIT* TO STOR 4G—AH	SD331 + ADDRESS REGISTER BIT 1 — AH4
NOT SUPPLIED		004	EXIT* TO STOR 4H—AJ	SD331 - ADDRESS REGISTER BIT 1 — AJ4
NOT SUPPLIED		005	EXIT* TO STOR 4J—AF	SD331 + ADDRESS REGISTER BIT 2 — AF4
NOT SUPPLIED		006	EXIT* TO STOR 4K—AG	SD331 - ADDRESS REGISTER BIT 2 — AG4
		007	ENTR* FROM STOR 4P—AK	NOT USED — AK4
		008	ENTR* FROM STOR 4N—AR	NOT USED — AR4

NOTE. THE ACTUAL LOCATION OF THE CORE STORAGE BOARD IS 01B-C1

07-20-65 415481
08-26-65 415483
02-24-67 419633

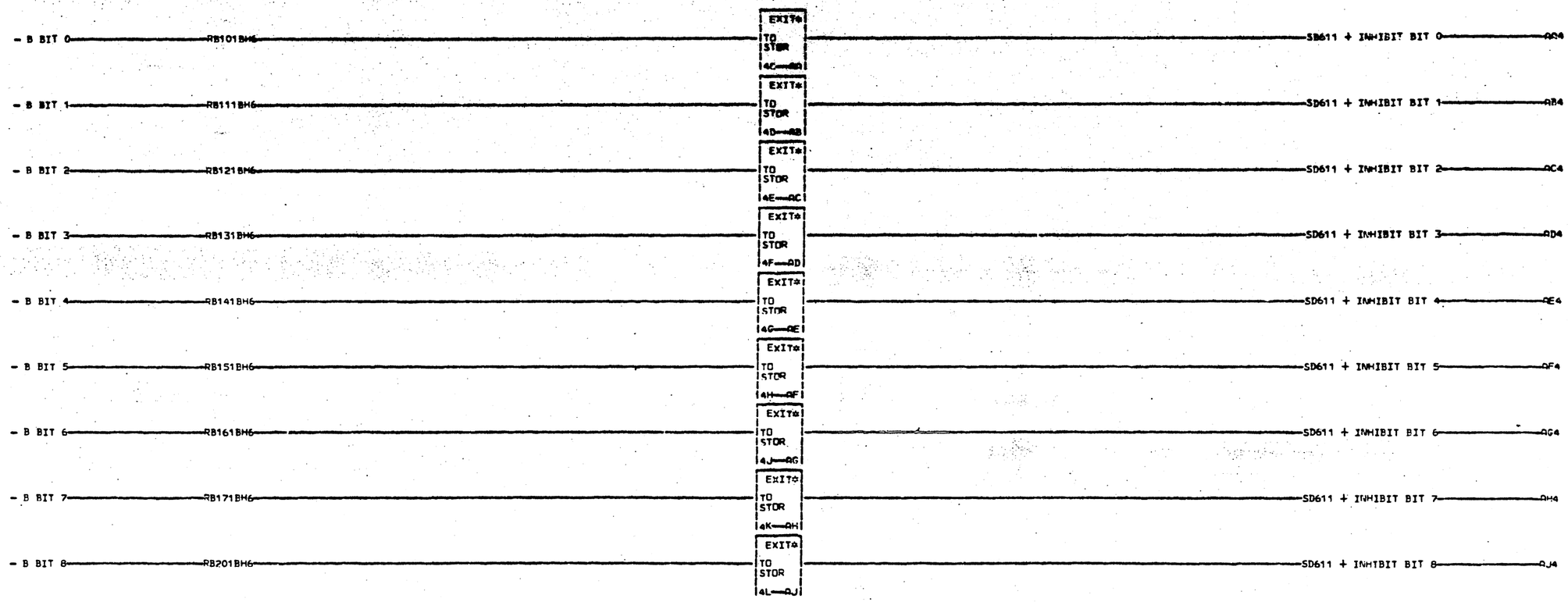
SJ-4 STORAGE INTERFACE	
DATE 03-09-67 MACH. 1131	
LOG 047F FRAME 01	
P.N. 2201278	
IBM CORP. GPD BLK. AN	

STORAGE ADDRESS 15	MB101AP4	EXIT* TO STOR 4A—AA	SD311	ADDRESS REGISTER BIT 15 — AA4
STORAGE ADDRESS 14	MB101AN4	EXIT* TO STOR 4B—AB	SD311	ADDRESS REGISTER BIT 14 — AB4
STORAGE ADDRESS 13	MB101BD4	EXIT* TO STOR 4C—AC	SD311	ADDRESS REGISTER BIT 13 — AC4
STORAGE ADDRESS 12	MB101BC4	EXIT* TO STOR 4D—AD	SD311	ADDRESS REGISTER BIT 12 — AD4
STORAGE ADDRESS 11	MB101AZ4	EXIT* TO STOR 4E—AE	SD311	ADDRESS REGISTER BIT 11 — AE4
STORAGE ADDRESS 10	MB101AY4	EXIT* TO STOR 4F—AF	SD311	ADDRESS REGISTER BIT 10 — AF4
STORAGE ADDRESS 9	MB101AX4	EXIT* TO STOR 4G—AG	SD321	ADDRESS REGISTER BIT 9 — AG4
STORAGE ADDRESS 8	MB101AW4	EXIT* TO STOR 4H—AH	SD321	ADDRESS REGISTER BIT 8 — AH4
STORAGE ADDRESS 7	MB101AV4	EXIT* TO STOR 4J—AJ	SD321	ADDRESS REGISTER BIT 7 — AJ4
STORAGE ADDRESS 6	MB101AK4	EXIT* TO STOR 4K—AK	SD321	ADDRESS REGISTER BIT 6 — AK4
STORAGE ADDRESS 5	MB101AJ4	EXIT* TO STOR 4L—AL	SD321	ADDRESS REGISTER BIT 5 — AL4
STORAGE ADDRESS 4	MB101AH4	EXIT* TO STOR 4M—AM	SD321	ADDRESS REGISTER BIT 4 — AM4
STORAGE ADDRESS 3	MB101AG4	EXIT* TO STOR 4N—AN	SD331	ADDRESS REGISTER BIT 3 — AN4

07-20-65 415481
08-26-65 415483
02-24-67 419633

SJ-4 STORAGE INTERFACE		
DATE 03-09-67	MACH# 1131	
LOG 047F	FRAME	01
	P#N# 2201279	
IBM CORP# GPD	BLK#	AP

ZONE 1
000

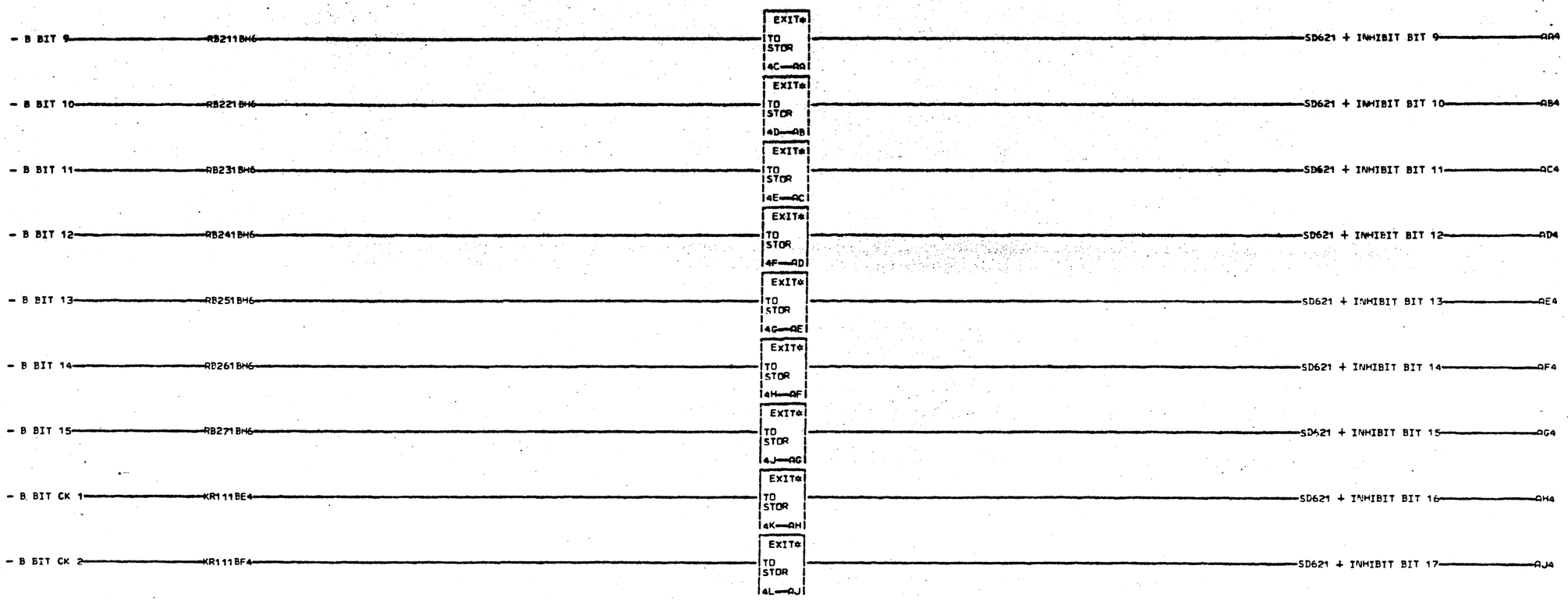


07-20-65 415481
08-26-65 415483
11-18-65 415495

SJ-4 STORAGE INTERFACE			
DATE 11-18-65	MACH. 1131		
LOG	323C FRAME	01	
	P.N. 2201280		
IBM CORP. GPD BLK.		AK	

WZ031
000

000 WZ041



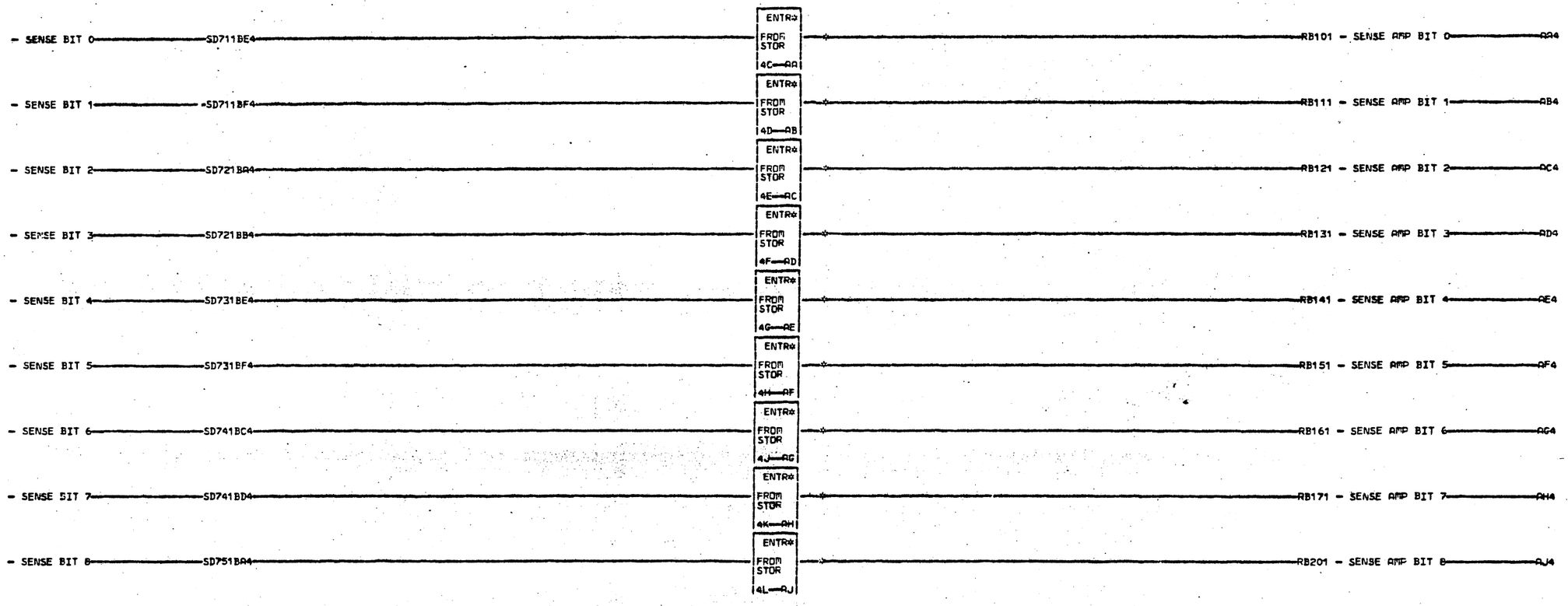
07-20-65 415481
08-26-65 415483
11-18-65 415495

WZ041
000

SJ-4 STORAGE INTERFACE
DATE 11-18-65 MACH. 1131
LOG 3230 FRAME
PAT. 2201241
IBM CORP. GPD BLK.

WZ041
000

000 WZ051

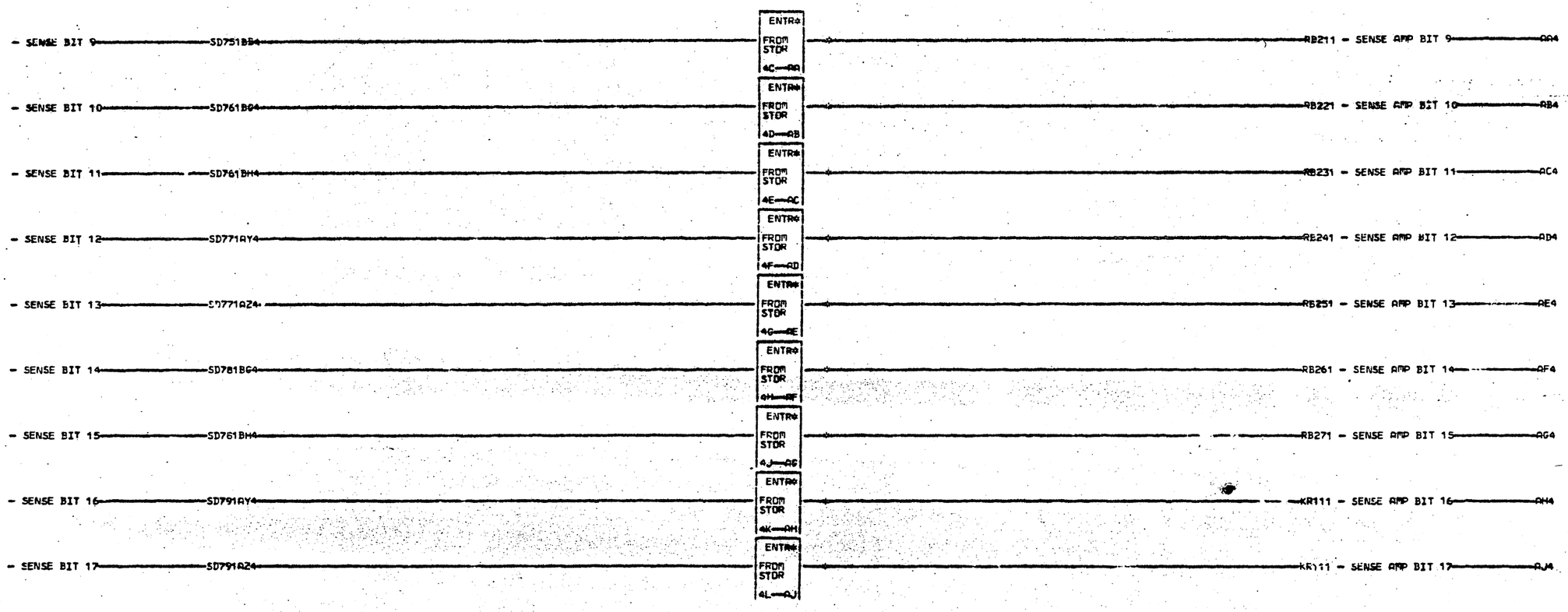


WZ051
000

```
AA4 B-C1B1A11   01B-B1B1D11   01B-B1C1A11
  01B-B1B1A11 AE4 B-C1B1E11   01B-B1C1D11
AB4 B-C1B1B11   01B-B1B1E11 AJ4 B-C1C1E11
  01B-B1B1B11 AF4 B-C1C1B11   01B-B1C1E11
AC4 B-C1B1C11   01B-B1C1B11
  01B-B1B1C11 AG4 B-C1C1C11
AD4 B-C1B1D11   01B-B1C1C11
  01B-C1A1E11 AH4 B-C1C1D11
  01B-B1A1E11   01B-C1C1A11
```

07-20-65 415481
08-26-65 415483

SJ-4 STORAGE INTERFACE			
DATE	09-01-65	MACH. 1131	
LOG	244N	FRAME	01
		P.N.	2201282
IBM CORP.	GPD BLK.		AK



NE 0 6 1 000

AA4 B=C1D1A11 01B=C1K1E11 01B=B1F1C11
01B=B1D1A11 01B=B1K1E11 01B=A1F1C11
AB4 B=C1L1A11 01B=B1L1D11 AJ4 B=C1M1D11
01B=B1L1A11 AF4 B=C1L1E11 01B=C1M1A11
AC4 B=C1L1B11 01B=B1L1E11 01B=B1M1A11
01B=B1L1B11 AG4 B=C1M1E11 01B=B1M1D11
AD4 B=C1L1C11 01B=B1M1B11 01B=B1A7B13
01B=B1L1C11 AH4 B=C1M1C11 01B=A1N7B13
AE4 B=C1L1D11 01B=B1M1C11

07-20-65 415481
08-26-65 415483

SJ-4 STORAGE INTERFACE
DATE 09-01-65 MACH. 1131
LOG 244P FRAME 01
P.N. 2201283
IBM CORP. GPD BLK. AK

NE 0 6 1 000