IBM

MACHINE LEVEL CONTROL RECORD

MACHINE TYPE 13SD SERIAL No. 13762 SUFFIX LEVEL ____ E/C 421057

B/M No.	E/C No.	D/A No.	DESCRIPTION	INSTALLED	
				DATE	INITIAL
2166560	415352		SLT Panel Rework	11-1	PEH
2166561	415368		Functional Interlock Change	11-1	"
2166562	415372		SLT Panel Rework	12-2	"
2166565	415374		Power Sequence Improvements	12-3	"
2167003	415388		Gate Assembly Revision	12-3	"
2166567	415408		Improved Read Amp. & Access Cards	12-29	"
2166568	415419		Transducer Rewiring	12-29	"
2167006	415407A		Replace Head Load Springs	12-29	"
2157007	415335A		Replace Preload Bearing	12-29	"
2167009	415398		Remove Interlock Handle Spring	1-11	"
2166565	415374A		Correct Errors in E/C 415374	3-9	"
2166569	415416		Replace ALD's & Supply 48 V Terminal	3-9	"
2167011	415393		Filter Assembly	4-5	"
2167008	415423		Head Load Plug Retainer	4-5	"
2167005	415386		Transducer Locking Block	4-6	"
2166570	415433		Tachometer Capacitor	5-27	"
2166570	415433B		SLT Panel Rework	7-14	"
2166572	415444		Access Logic SLT Card	7-14	"
2167024	415477		Replace Door Opener	7-22	"
2167102	421001A		Replace Defective Spindle	7-22	"
2166573	415447		Interlock Compatibility	8-5	"
2167027	421102A		Replace Disk Guide	8-10	"
2167023	415379C		Replace Card Retainer	9-26	"
2167031	421011A		Improve Lower Head Clamp	1-25	"
2166574	421016		Install Head Hold Circuit	10-30	"
2166575	421019		New Transducer SLT Card	12-10	"
	421025		SLT Panel Rework	1-19	LWH
	421025A		Change Disposition Only	3-1	"
2166577	421029		Install New Transducer Card	1-19	"
	421103		Ins. New Head & Arm Assembly	2-10	"
2166578	421032		Ins. Res. to CE Lines & SLT Panel Rwk.	4-1	"
2166580	421036		Update ILDS	6-27	"
	421013		Improved interlock and AC Box	11-30	"
	421013A		Revise Interlock and AC Box	11-30	"
2166582	421043		Rework cartridge unlock Light	11-30	"
2166584	421047		CE Manual Head oad	4-1	"
2166585	421057		Install RC Network K3 Relay	4-27	"

ANY SIGNIFICANT REPLACEMENT OR REMOVAL SHOULD BE NOTED AND DATED.

IBM

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2166565	415374		Power Sequence Improvements	12-3	"
2167003	415388		Gate Assembly Revision	12-3	"
2166567	415408		Improved Read Amp. & Access Cards	12-29	"
2166568	415419		Transducer Rewiring	12-29	"
2167006	415407A		Replace Head Load Springs	12-29	"
2157007	415335A		Replace Preload Bearing	12-29	"
2167009	415398		Remove Interlock Handle Spring	1-11	"
2166565	415374A		Correct Errors in E/C 415374	3-9	"
2166569	415416		Replace ALD's & Supply 48 V Terminal	3-9	"
2167011	415393		Filter Assembly	4-5	"
2167008	415423		Head Load Plug Retainer	4-5	"
2167005	415386		Transducer Locking Block	4-6	"
2166570	415433		Tachometer Capacitor	5-27	"
2166570	415433B		SLT Panel Rework	7-14	"
2166572	415444		Access Logic SLT Card	7-14	"
2167024	415477		Replace Door Opener	7-22	"
2167102	421001A		Replace Defective Spindle	7-22	"
2166573	415447		Interlock Compatibility	8-5	"
2167027	421102A		Replace Disk Guide	8-10	"
2167023	415379C		Replace Card Retainer	9-26	"
2167031	421011A		Improve Lower Head Clamp	1-25	"
2166574	421016		Install Head Hold Circuit	10-30	"
2166575	421019		New Transducer SLT Card	12-10	"
	421025		SLT Panel Rework	1-19	LWH
	421025A		Change Disposition Only	3-1	"
2166577	421029		Install New Transducer Card	1-19	"
	421103		Ins. New Head & Arm Assembly	2-10	"
2166578	421032		Ins. Res. to CE Lines & SLT Panel Rwk.	4-1	"
2166580	421036		Update ILDS	6-27	"
	421013		Improved interlock and AC Box	11-30	"
	421013A		Revise Interlock and AC Box	11-30	"
2166582	421043		Rework cartridge unlock Light	11-30	"
2166584	421047		CE Manual Head Load	4-1	"
2166585	421057		Install RC Network K3 Relay	4-27	"

ANY SIGNIFICANT REPLACEMENT OR REMOVAL SHOULD BE NOTED AND DATED.

P/N 2219161
SHEET 1 OF 5

IBM

FIELD ENGINEERING
INSTALLATION INSTRUCTIONS

MACHINE TYPE 13 SINGLE DISK FILE

ENGINEERING CHANGE HISTORY			
E/C NO.	DATE	SHEET	NO.
415416	12/30/65		
415438	23MAR66	1-4	
421028	17MAR67		
421046			
421053	5/28/70		

23 HOLE PUNCH FOR INSTALLATION BINDER

UNIT INSTALLATION INSTRUCTIONS

ENG. DATE CHANGE NO.	12/30/65 415416	23MAR66 415438	17MAR67 421028	10NOV67 421046		

NOTE: Do the following steps in the sequence given unless otherwise noted. For adjustment procedures consult the 13 single disk F.E. Maintenance Manual.

A. Unpacking

1. Remove packing. Check machines for possible shipping damage.
2. Inventory the parts in the CPU shipping group.
3. Remove shipping braces, head covers, etc.
4. Install the 13SD file inmounting brackets of host system.

B. Baseplate Grounding Check

1. Measure resistance between the base of the 13SD file and the frame of the host system. The reading should be 5 megohms or higher.

   (The baseplate is the large aluminum casting on which the access mechanism is mounted. It is normally grounded at the point only by means of a lead connected to the gate DC terminal.)

2. If no extra grounds exist, continue. Any shorts between 13SD baseplate and host system frames must be eliminated.
3. Repeat item B for all 13SD files being installed.
4. Install motor start/stop and indicator lamp cable from FCU. Plug into taper pin blocks TB3 and TB3A (XA101).
5. Install control cable between FCU and 13SD file. In the 13SD file, plug the control cable into SLT board position A1A2.

C. Cabling to CPU or FCU

1. Remove all AC power to CPU/FCU.
2. Install AC cable between CPU/FCU and 13SD file. Plugging one end into the FCU AC plug provided and connect the other end to AC terminal block TB-4.
3. Install DC cable between CPU/FCU. Connect to TB1. CAUTION: Incorrect wiring can destroy SLT board and cards.

D. Mechanical Checks

1. Check head load springs for proper seating against R/W heads. Check that arm clamps are snug.
2. Check the R/W head plugs for no loose connectors.
3. Check transducers for no loose connectors.
4. Check terminal voice coil and tachometer for no loose terminals or shorts.
5. Check motor drive belt for proper tension and tracking.

ENG. DATE CHANGE NO.	12/30/65 415416	23MAR66 415438	17MAR67 421028	10NOV67 421046		

6. Check that SLT cards and paddle cards are securely plugged in the gate.

7. Repeat steps D1 - D6 for all 13SD files being installed.

E. Power Check 13SD File

1. Check line voltage and cycle rating on all 13SD files being installed to insure they match the CPU or FCU. Line voltage and cycle ratings are located on spindle drive motor and blower motor nameplates.

2. Apply power and check the following voltages with AC power on FCU or CPU. Adjust if necessary to nominal voltages.

Voltage	TB1 Terminal No.	Source
+48	5	FCU/CPU
+ 6	3	" "
+ 3	1	" "
- 3	2	" "

3. Check the operation of the fan.

4. Repeat steps 2 and 3 on all 13SD files being installed.

F. Head-Disk Check (Power Off)

1. Inspect CE disk cartridge for shipping damage.

2. Vacuum entire base plate and clean if necessary.

3. When machine has been exposed to extreme shipping environments, check for rust and corrosion. Special attention should be given to detents, disk drive spindle, and disk cartridge door opener. Corrosion may be removed with 90% Isopropyl Alcohol.

4. Check R/W heads for damage.

5. Check the head unload mechanism.

6. Mount CE disk cartridge.

7. WARNING: Do not let heads load during this step. Carefully move carriage forward into disk cartridge.

8. Check closely for interference between heads, head cables, and disk. Move the carriage all the way to positive stop.

9. Restore the carriage to the fully retracted position.

10/ Repeat steps F2-9 on all 13SD files being installed.

ENG. DATE CHANGE NO.	12-30-65 415416	23MAR67 415438	17MAR67 421028	10NOV67 421046		

G. File motor and head loading check

1. Insert CE disk cartridge and turn on the motor file Start/Stop switch.

2. Check the following items:

   a. Disk cartridge drive motor starts.

   b. When heads are loaded use flashlight to check that head cables, etc., are clear of disks. Note: Head load delay circuit requires 90 to 125 seconds.

   c. Carriage is detented at track 000.

   d. Ready light is on. (in CPU)

H. Head Unloading Check

1. While watching the heads, turn the file.off. The heads should unload immediately.

2. If the heads do not unload at once, before the disks slow down appreciably, determine and eliminate the cause of this failure before proceeding. Then power up and repeat step 1 above.

3. Repeat Sections G and H above on all 13SD files being installed.

4. With all file motors on, turn system power off. All motors should turn off, all heads should unload.

I. Head Alignment Check

Notice: All heads must be checked and aligned at installation to insure interchangeability of disk cartridges.
(Note : Set scope and heads as if to align heads. Allow 15 minutes warm up time. The head amplitude must not vary more than 25% of the optimum level. See figure in 13SD F.E. Maintenance Manual, Section 4.6.3)

J. General Checks:

Run diagnostics to check the operation of files, FCU and meters.

ENG. DATE CHANGE NO.	12/30/65 415416	23MAR66 415438	17MAR67 421028	10NOV67 421046		

2	3	4	5	6	7

LISTING BY PAGE SEQ	PAGE TITLE	PAGE NO.	PAGE P/N	DATE	ENG CHNG.
XA000	1.44 MC OSC WRITE SELECT AND SAFETY	XA011	2199521	NOV 68	421063
XA001	ACCESS LOGIC AND CONTROLS	XA031	2199523	NOV 67	421047
XA011	BASEPLATE ELECTRONICS	XA101	2199575	NOV 68	421063
XA012	BLOCK DIAGRAM	XA110	2199580	NOV 67	421047
XA013	CPU INTERFACE	XA061	2199526	NOV 67	421047
XA021	INDEX PAGE	XA000	2199571	NOV 68	421063
XA031	INTERLOCK HEAD LOAD	XA052	2199567	NOV 68	421063
XA041	LINE DRIVERS AND TERMINATORS	XA062	2199566	NOV 67	421047
XA042	READ AMPLIFIER AND DATA SEPARATOR	XA021	2199522	NOV 67	421047
XA051	SOCKET LISTING	XA001	2199527	NOV 68	421063
XA052	SOCKET LOCATION AND CABLE GUIDE	XA081	2199573	NOV 67	421047
XA061	TACHOMETER AMP AND DETENT SELECT	XA041	2199524	NOV 68	421063
XA062	TRANSDUCER INTERLOCK	XA051	2199525	NOV 67	421047
XA081	VOICE COIL BRIDGE	XA042	2199565	NOV 67	421047
XA101	WRITE DRIVER AND HEADS	XA013	2199563	NOV 67	421047
XA110	WRITE TRIGGER AND SELECT	XA012	2199564	NOV 67	421047

A

B

C

D

E

DATE	EC NUMBER	DATE	EC NUMBER
SEE INDEX CARD		NOV 67	421047
DEC 66	421025	15JUL68	421057
JAN 67	421029	NOV 68	421063
FEB 67	421032		
AUG 67	421043		

INDEX PAGE

DATE	SEP 65	P/N	2199571
		TYPE	13SD

IBM XA000

XA000

A2 CONNECTOR
B02 XA101AA2
B03 XA021AM4
B04 XA061AB1
B05 XA011AT2
B07 XA031AL1
B08 XA011AF2
B09 XA021AL4
B10 XA061AE3
B12 XA051AG4
B13 XA061AE4
D02 XA021AS4
D04 XA031BN4
D05 XA011AS2
D06 XA051AH4
D07 XA061AE6
D09 XA061AE7
D10 XA061AE8
D11 XA061AE9
D12 XA101AA6
D13 XA052BK4

A3 CONNECTOR
B02 XA062AY4
B04 XA061AB1
B05 XA061AD2
B07 XA062AL4
B08 XA011AF2
B09 XA061AD3
B10 XA061AB3
B12 XA051AG4
B13 XA061AB4
D02 XA101AA6
D04 XA061AD6
D06 XA062AJ4
D07 XA061AB6
D09 XA061AB7
D10 XA061AB8
D11 XA061AB9
D12 XA062AK4
D13 XA052BK4

B2 SINGLE CARD 2310
5803758 3758

XA062 A1 A4 B1 B4 C1 C4
D1 D2 E1 E2 E3 E4
F1 F2 F3 F4 G1 G2
G3 G4

UNUSED PORTIONS

H

B4 CONNECTOR
A06 XA042AC4
B04 XA101AA3
B06 XA041AK4
C04 XA011AV4
C06 XA041AE2
D04 XA041AE4
E04 XA041AK2
E06 XA052BT2

C2 DOUBLE CARD SDS
C3 5807319 7319

XA021 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA

UNUSED PORTIONS

B C D

C4 CONNECTOR
A06 XA101AA6
B04 XA052BX2
B06 XA052BE4
C04 XA042AA4
C06 XA042AC4
D04 XA101AA5
F04 XA101AA2
E06 XA011AV4

D2 DOUBLE CARD
D3 5806298 6298

XA011 A1
XA021 A2 A3 A4 A5 A6 A7

D4 CONNECTOR
A04 XA041AW2
A06 XA041AW5
E04 XA011AV4
E06 XA051AB1

X E2 DOUBLE CARD
A E3 5804679 4679
O
O

XA012 A1 A2 A3 A4 A5 A6
A8 A9 AA AB AC AD
AE AF AG AH AL
XA013 AN AP AQ AR AS AT
XA012 AU
XA013 AW
XA021 AX
XA013 AY
XA012 AZ B1

E4 CONNECTOR
A04 XA011AV4
A06 XA011AV4
D04 XA051AA3
D06 XA051AA7

F2 DOUBLE CARD
F3 5807198 7198

XA041 A1 A2 A3 A4 A5 A6
A7 A8 A9 AA AB AC
AD AE AF AG AH AJ
AK

F4 CONNECTOR
A04 XA011AV4

G2 DOUBLE CARD
G3 5807234 7234

XA031 A1 A2 A3 A5 A6 A7
A8 AB AC AD AE AF
AG AH AJ AK AN AP
AQ AY

UNUSED PORTIONS

B

G4 CONNECTOR
E04 XA012AB2
E06 XA011AU4

H2 SINGLE CARD
5800764 0764

XA011 A1 A2 A7 A8 A9 AA
AB AC

H3 SINGLE CARD SDS
5803780 3780

XA011 A1 A2 A3 A4

H4 CONNECTOR
A06 XA011AU4
B04 XA031AB2
B06 XA011AU4
C04 XA041AA2
C06 XA052BX2
D04 XA101AA2
E04 XA101AA3
E06 XA011AV4

J2 DOUBLE CARD
J3 5807235 7235

XA051 02 05 06 07 09 14
15
XA052 17 18
XA051 20 21
XA052 22 23 25 26 27 29
30
XA051 31
XA052 32 33
XA051 34
XA052 AC
XA051 B1 C1 D1 D2 D3 D4

J4 CONNECTOR
A06 XA031AZ3
B04 XA031AY7
B06 XA042AA4
C04 XA031AX7
C06 XA061AB6
D04 XA012AB2
E04 XA041AA2
E06 XA031AE4

K2 DOUBLE CARD
K3 5807511 7511

XA051 A1 A2 A3 A4 A5 A6
A7 A8

UNUSED PORTIONS

B C

K4 CONNECTOR
A04 XA031AB2
A06 XA031AB1

L2 SINGLE CARD
5815

XA011 A2
XA052 B1
XA011 B3

M2 DOUBLE CARD
M3 5804613 4613

XA042 A1 A2 A3 A4
XA052 B1

N2 DOUBLE CARD
N3 5804673 4673

XA042 A1 A2 A3 A5 A6 A7
A8 A9 AA AB
XA031 AC
XA042 AD AE AF AG

PLUG LIST

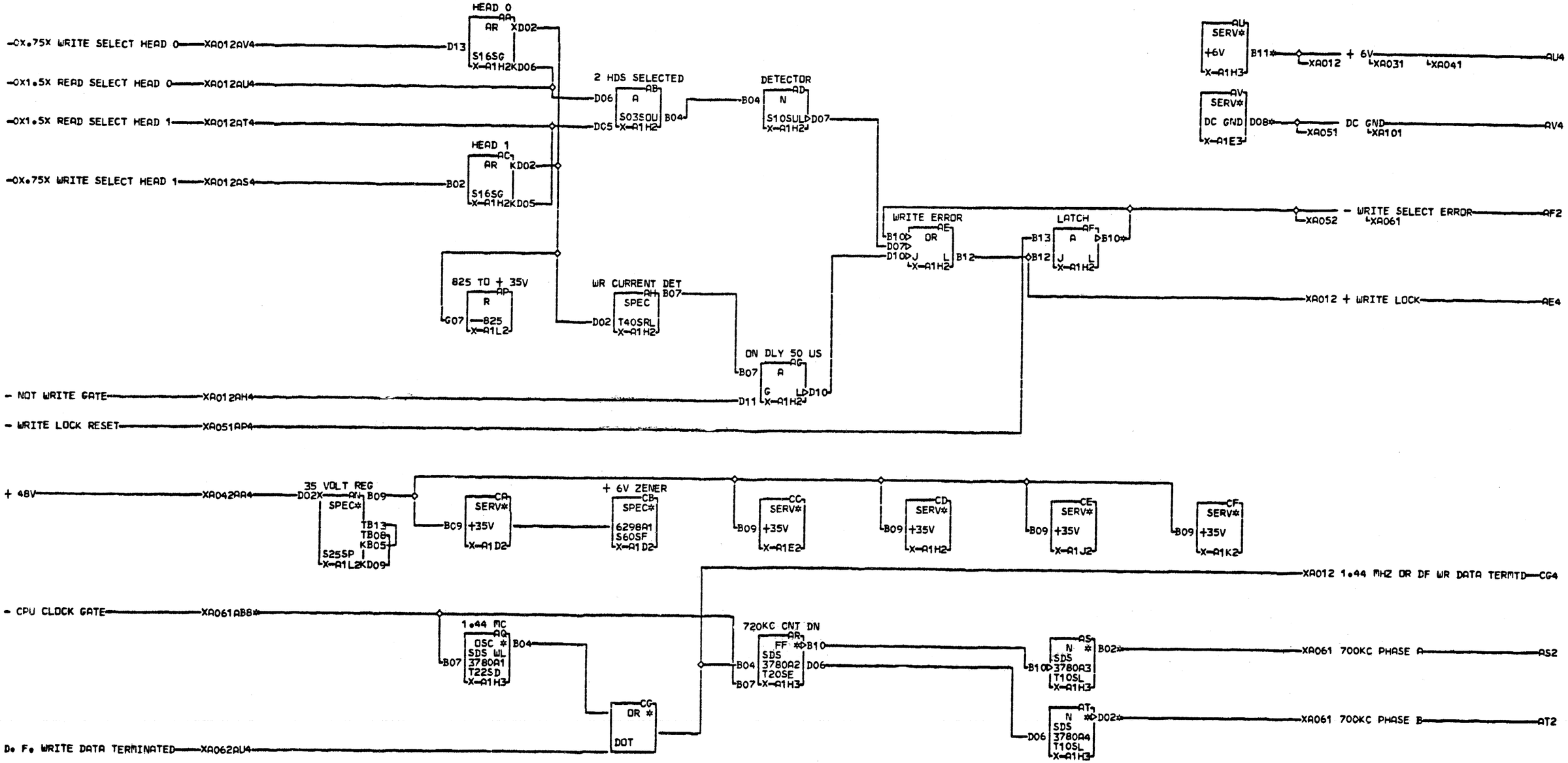
PART NO	ACC	TYPE	SOCKETS	TOTAL
5800764		0764	H2	01
5803758	2310	3758	B2	01
5803780	SDS	3780	H3	01
5804613		4613	M2	01
5804673		4673	N2	01
5804679		4679	E2	01
5806298		6298	D2	01
5807198		7198	F2	01
5807234		7234	G2	01
5807235		7235	J2	01
5807319	SDS	7319	C2	01
5807511		7511	K2	01
		5815	L2	01
		CONN	A2 A3 B4 C4 D4 E4 F4 G4 H4 J4 K4	11

SOCKET LISTING
DATE 11-26-68 MACH. 13SD

LOG 3322 BOARD 01X-A1
PREV. ENGR. 11-15-67 421047
PRES. ENGR. 11-26-68 421063
P.N. 2199527

IBM CORP. SDD BLK.

X A 0 0 0 1 000



NOTE. MAY USE 5804612 OR
5801352 IN PLACE OF 5805815
X ACC SDS USED
A IN SELF CONTAINED
0 VERSION WITHOUT
1 LINE DRIVERS AND
1 TERMINATORS

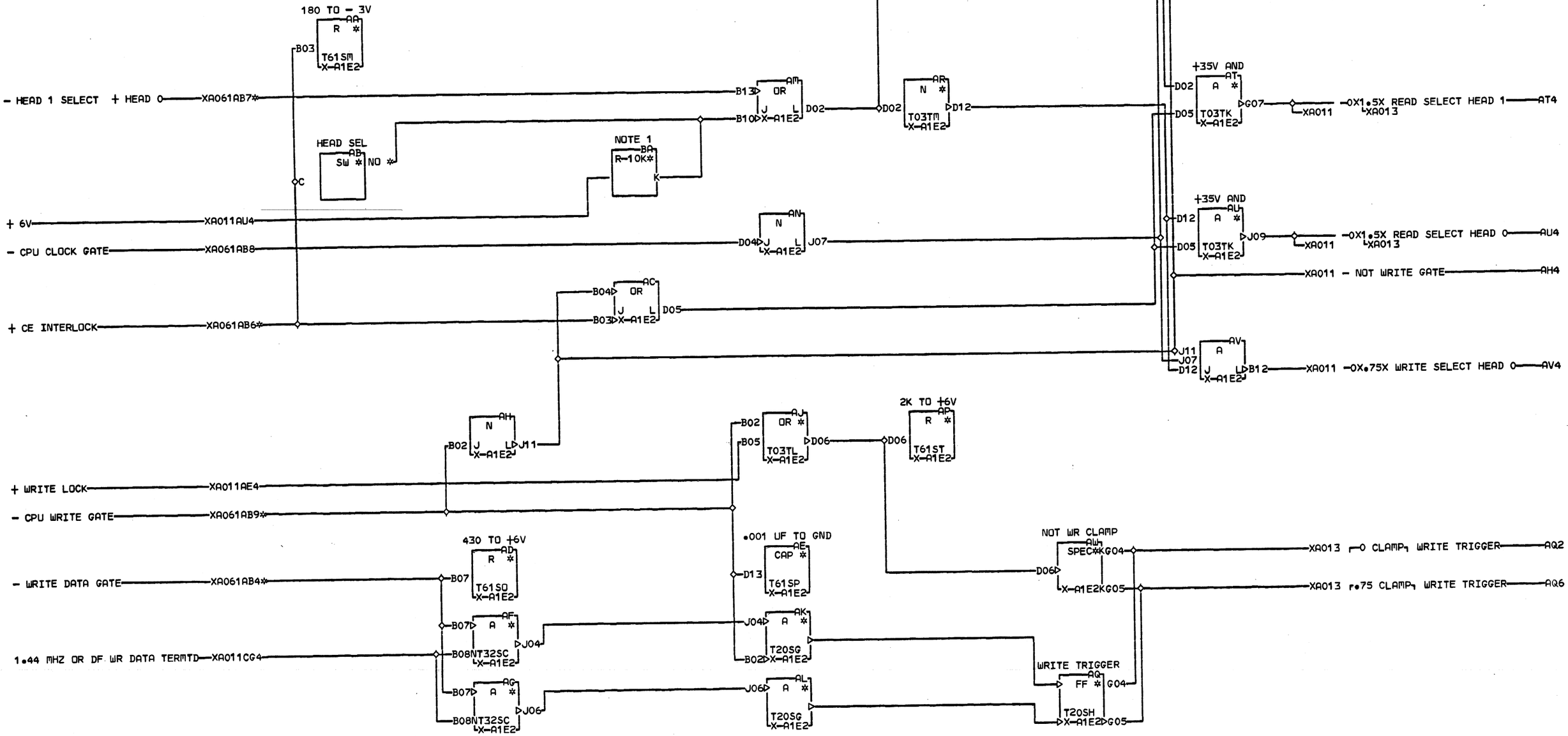
000

XA061AB8	01X-A1A2D10	01X-A1H4B06
	01X-A1A3D10	01X-A1D4E04
AF2 X-A1A2B08		01X-A1E4A06
	01X-A1A3B08	01X-A1C4E06
AS2 X-A1A2D05		01X-A1H4E06
AT2 X-A1A2B05		01X-A1B4C04
AU4 X-A1G4E06		01X-A1F4A04
	01X-A1H4A06	
AV4 X-A1E4A04		

LOC.	TYPE
X-A1D2	6298
X-A1H2	0764
X-A1H3	3780
X-A1L2	5815

1.44 MC OSC WRITE SELECT AND SAFETY

E.C.-HISTORY		MACH.13SD	X
415374	415444		A
415374A	421025	FRAME 01	0
415433	421032		1
415433B	421047	IBM CORP. SDD	1
DATE	LAST EC		000
11-26-68	421063	P.N. 2199521	



NOTE 1. RESISTOR LOCATED ON PADDLE X CARD OF CABLE IN A POS T7. SEE XA081.

000

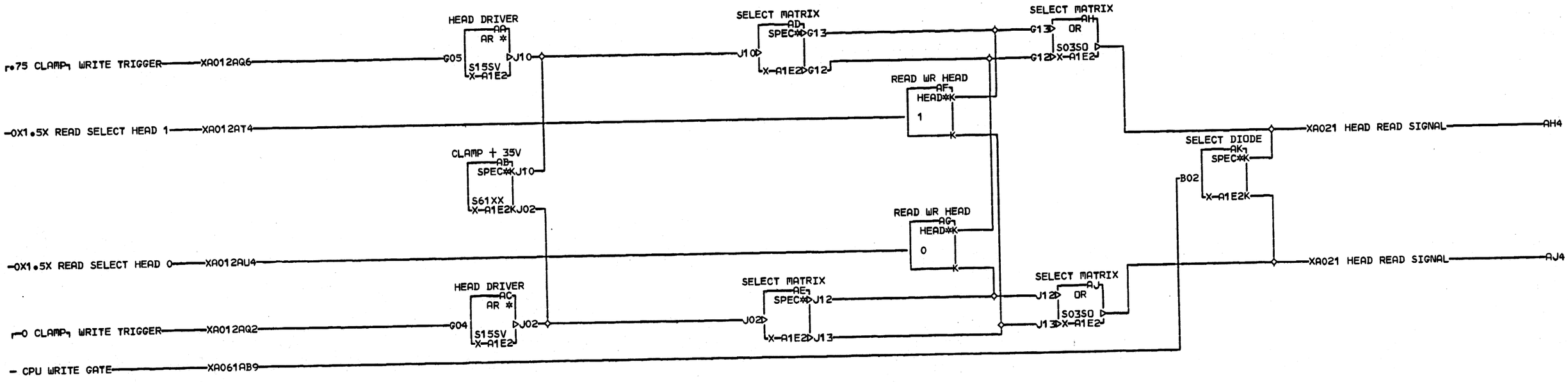
XA061AB4
01X-A1A2B13 XA061AB9
01X-A1A3B13 01X-A1A2D11
XA061AB6 01X-A1A3D11
01X-A1A2D07 AB2 X-A1J4D04
01X-A1A3D07 01X-A1G4E04
01X-A1J4C06
XA061AB7
01X-A1A2D09
01X-A1A3D09

LOC. TYPE
X-A1E2 4679

WRITE TRIGGER AND SELECT

E.C. HISTORY		MACH.13SD	
415412D	415433		
415411V	415433B	FRAME	01
415352	415444		
415374A	421032	IBM CORP. SDD	
DATE	LAST EC		
12-12-67	421047	P.N. 2199564	

XA012 000

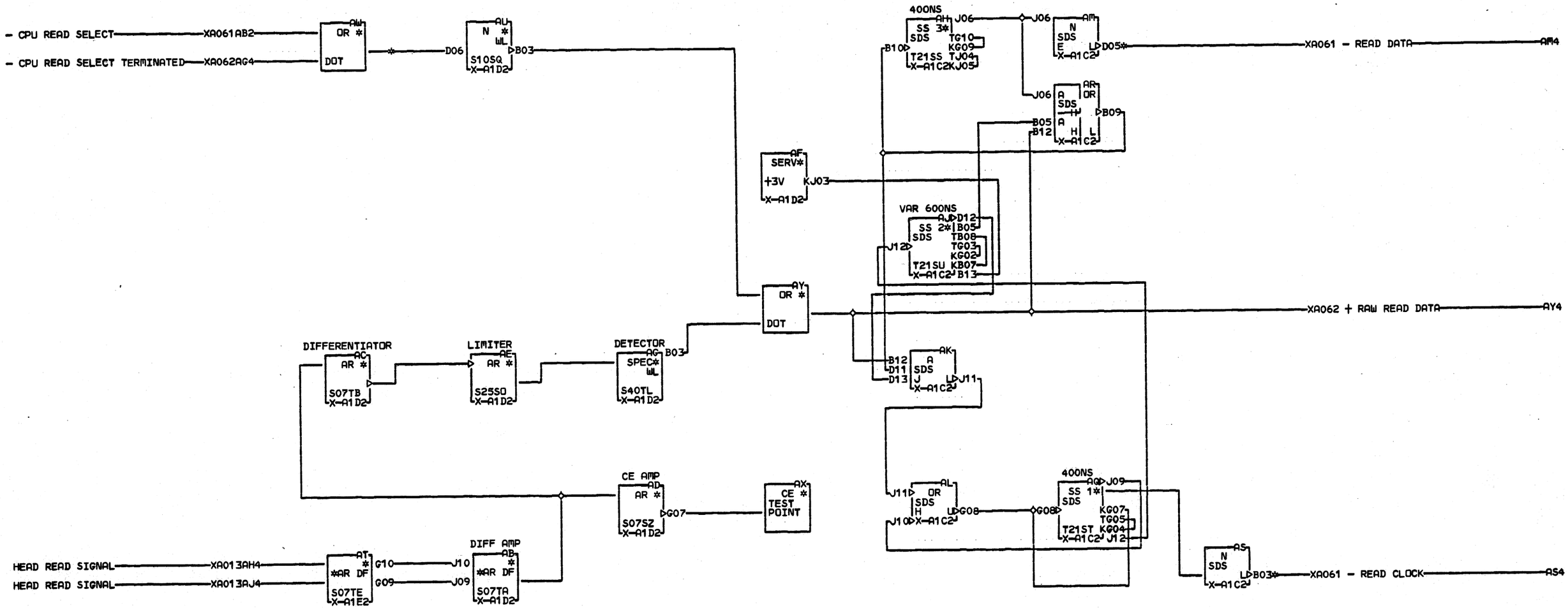


LOC. TYPE
X-A1E2 4679

WRITE DRIVER AND HEADS			
E.C. HISTORY		MACH.13SD	
415412D	415433B		
415411V	415444	FRAME	01
415374A			
415433		IBM CORP. SDD	
DATE	LAST EC		
11-13-67	421047	P.N. 2199563	

XA013 000

XA013 000



NOTE CARD CODE SDS
USED IN SELF CONTAINED
X VERSION WITHOUT LINE
A DRIVERS AND TERMINATORS
0
2 NOTE MAY USE 7319
1 INSTEAD OF 4665

000

AM4 X-A1A2B03
AS4 X-A1A2D02
AW4 X-A1A2B09

LOC. TYPE
X-A1C2 7319
X-A1D2 6298
X-A1E2 4679

READ AMPLIFIER AND
DATA SEPARATOR
MACH.13SD

E.C.-HISTORY

415410U	415433
415412D	415433B
415411V	415444
415408	415447

DATE LAST EC
12-12-67 421047

FRAME 01
IBM CORP. SDD
P.N. 2199522

X A 0 2 1 000

+ HOME DRIVE — XA051AY4 — D07 — A AA * — T32SF X-A1G2 — D10
D04, B13
D10, D13, D11 — OR AL — J U — B12, B03 X-A1G2
+ HEAD LOAD SWITCH — XA052BG4
- CPU DIRECTION REV + FWD — XA061AB1*
STEP DIRECTION — SW * AE — C CE PNL NC *
+ CE INTERLOCK — XA061AB6
B12 — A AK — H D0 LD J13 — D12 X-A1G2
+ HOME — XA051BB2
STEP CONTROL — SW * AB NO * NO * — C CE PNL
-0X1X GO LATCH RESET — XA041AX4
DIFF — SPEC* AF — T61SS X-A1G2 — G12
NOTE 1 — R-10K* BM — K
+ 6V — XA011AU4
N BD — J06 J U G08 X-A1G2
+ AND — CS * AH WL — D04, G08 T32SH X-A1G2 — G03
+ 48V — XA042AA4
- ACCESS GO — XA061AB5
- ACCESS GO TERMINATED — XA062AE4
OR * BN — DOT
GO LATCH — A AJ — B07, D04, B13 J LP D06 X-A1G2J
GO LATCH — OR AM — D10, D06 J U B07, G03 X-A1G2
DETENT TRIGGER — FF * BJ WL — T20SF X-A1G2 — J13, J11
- DETENT TRIGGER — XA041AP2 — B08N
OR BP — DOT
750 OHM TO +3V — R * BG — S61AA X-A1G2
B07 — A AQ — J LD J10 X-A1G2 — XA041 - ACCESS REVERSE — AQ4
B07, G05, B12
D13, D10 — CR AR — T61CF X-A1G2
B07, G05, D11 — A AT — J LD J12 X-A1G2 — XA041 - ACCESS FORWARD — AT4
2.6 MS NOTE 2 — SS * AL G05 — T21TV X-A1G2 — B07
DET SQUELCH — AR * AZ G05 — T15S0 X-A1G2 — B09*
XA101 +24X0X DETENT HOLD — AZ3
R * BC — S61T0 X-A1N2 — D05
+ ACCESS READY — XA061, XA062 — AW1
D06, J13 — A * AX K — T32SI X-A1G2 — D02X — B04* — XA101 -0X48X ODD DETENT — AX7
10 MS NOTE 2 — SS * AW D04* — T21TD X-A1G2K G02 — D06, G09
62 OHM TO +3V — R * BE — S61UL X-A1G2
D06, J11 — A * AY K — T32SI X-A1G2 — D02X — J02* — XA101 -0X48X EVEN DETENT — AY7

NOTE 1. RESISTOR LOCATED ON PADDLE X CARD OF CABLE IN A POS T7. SEE XA081.
NOTE 2. CARDS REWORKED INTO 0 3 5807234 FROM 5804674 MAY NOT 1 BE USED ON BOARDS ETCHED AT EC LEVEL 421047 AND LATER
000

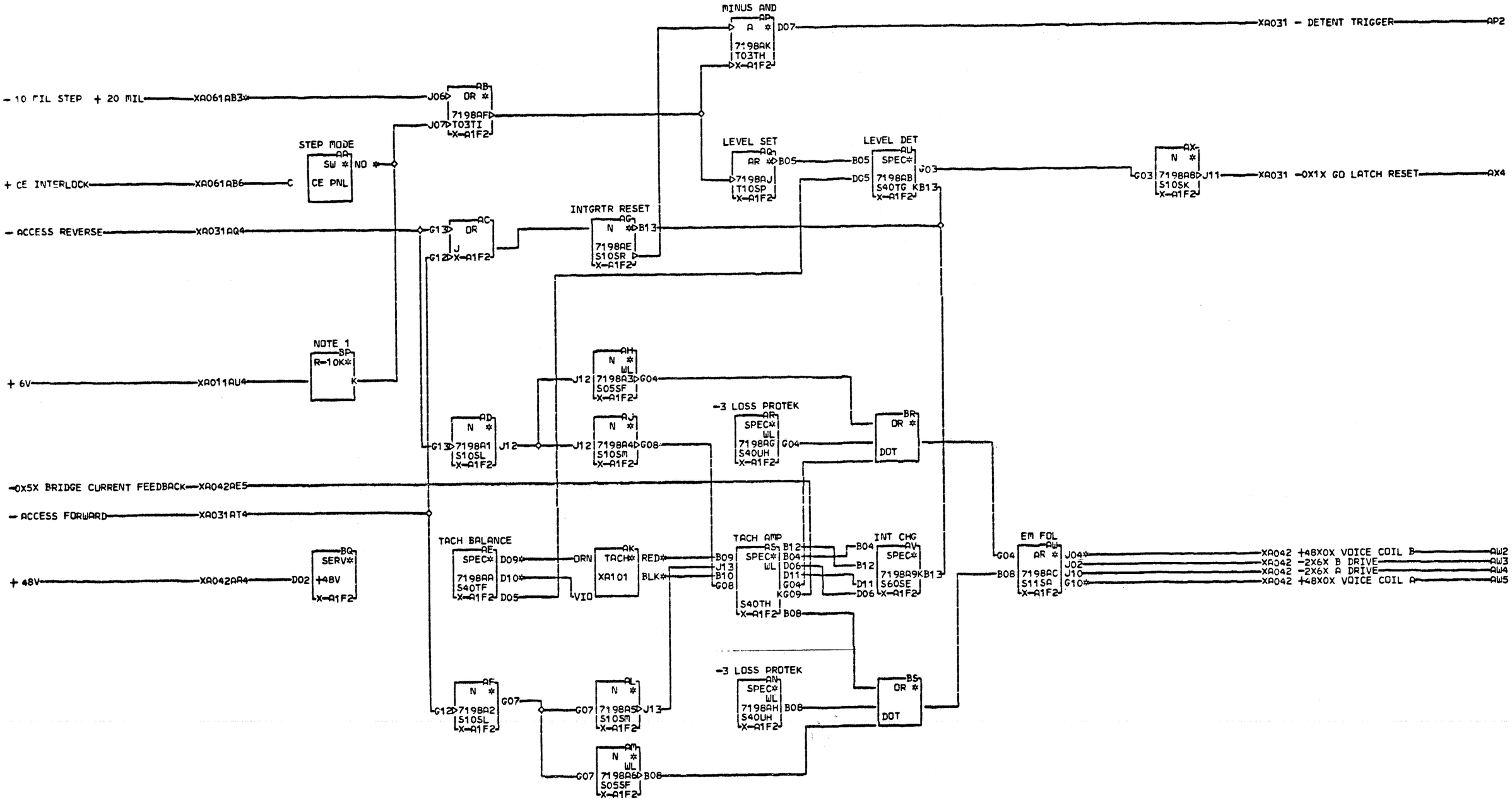
XA061AB1		AY7 X-A1J4B04
01	X-A1A2B04	AZ3 X-A1J4A06
01	X-A1A3B04	BN4 X-A1A2D04
AB1	X-A1K4A06	
AB2	X-A1K4A04	
01	X-A1H4B04	
AE4	X-A1J4E06	
AW1	X-A1A2B07	
AX7	X-A1J4C04	

LOC. TYPE
X-A1G2 7234
X-A1N2 4673

ACCESS LOGIC AND CONTROLS

E.C. HISTORY		MACH.13SD	
4153352	4154338		
4153374	4154444	FRAME	01
4153374A	4154447		
4154333	4210332	IBM CORP. SDD	
DATE	LAST EC		
12-12-67	421047	P.N. 2199523	

XA031 000



NOTE MAY USE
4667 INSTEAD OF
X 7198
A NOTE 1. RESISTOR
0 LOCATED ON PADDLE
4 CARD OF CABLE IN
1 POS T7. SEE XA081.

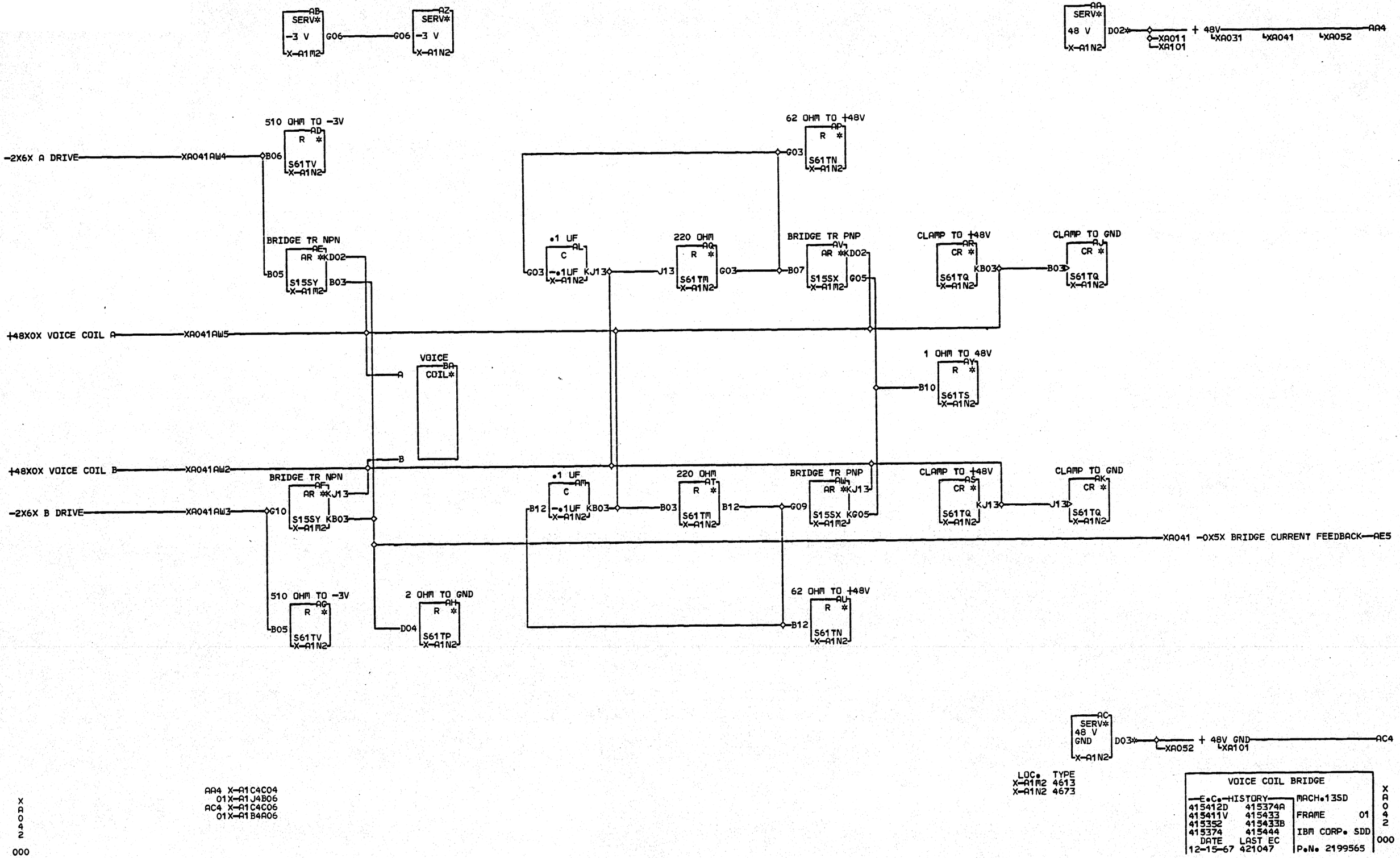
000

XA061AB3 AW2 X-A1D4A04
01X-A1A2B10 AW5 X-A1D4A06
01X-A1A3B10
AA2 X-A1J4E04
01X-A1H4C04
AE2 X-A1B4C06
AE4 X-A1B4D04
AK2 X-A1B4E04
AK4 X-A1B4B06

LOC. TYPE
X-A1F2 7198

TACH AMP AND DETENT SELECT

E.C.-HISTORY		MACH.13SD	X
415352	415433B		A
415374	415444	FRAME 01	0
415374A	421032		4
415433	421047	IBM CORP. SDD	1
DATE	LAST EC		000
11-26-68	421063	P.N. 2199524	



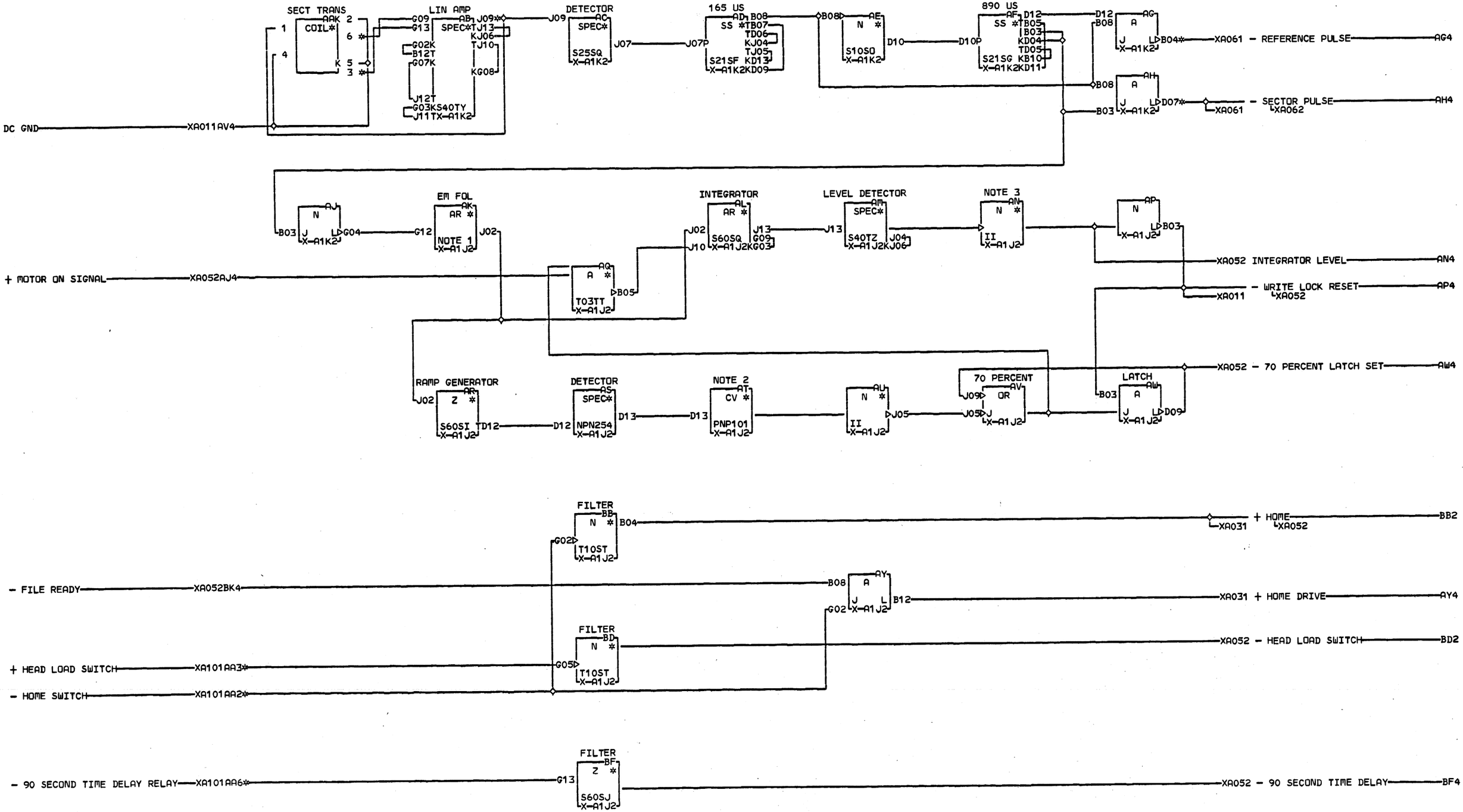
AA4 X-A1C4C04
01 X-A1J4B06
AC4 X-A1C4C06
01 X-A1B4A06

LOC. TYPE
X-A1M2 4613
X-A1N2 4673

VOICE COIL BRIDGE

E.C.-HISTORY-		MACH.13SD
4154120	4153740	
4154110	4154330	FRAME 01
4153520	4154330	
4153740	4154440	IBM CORP. SDD
DATE	LAST EC	
12-15-67	421047	P.N. 2199565

XA042 000



NOTE 1. PART OF S60SQ
NOTE 2. BLOCKS D1 TO D4 ARE CKT FLYER S60SI
NOTE 3. PART OF BLOCK AM CKT FLYER S40TZ

000

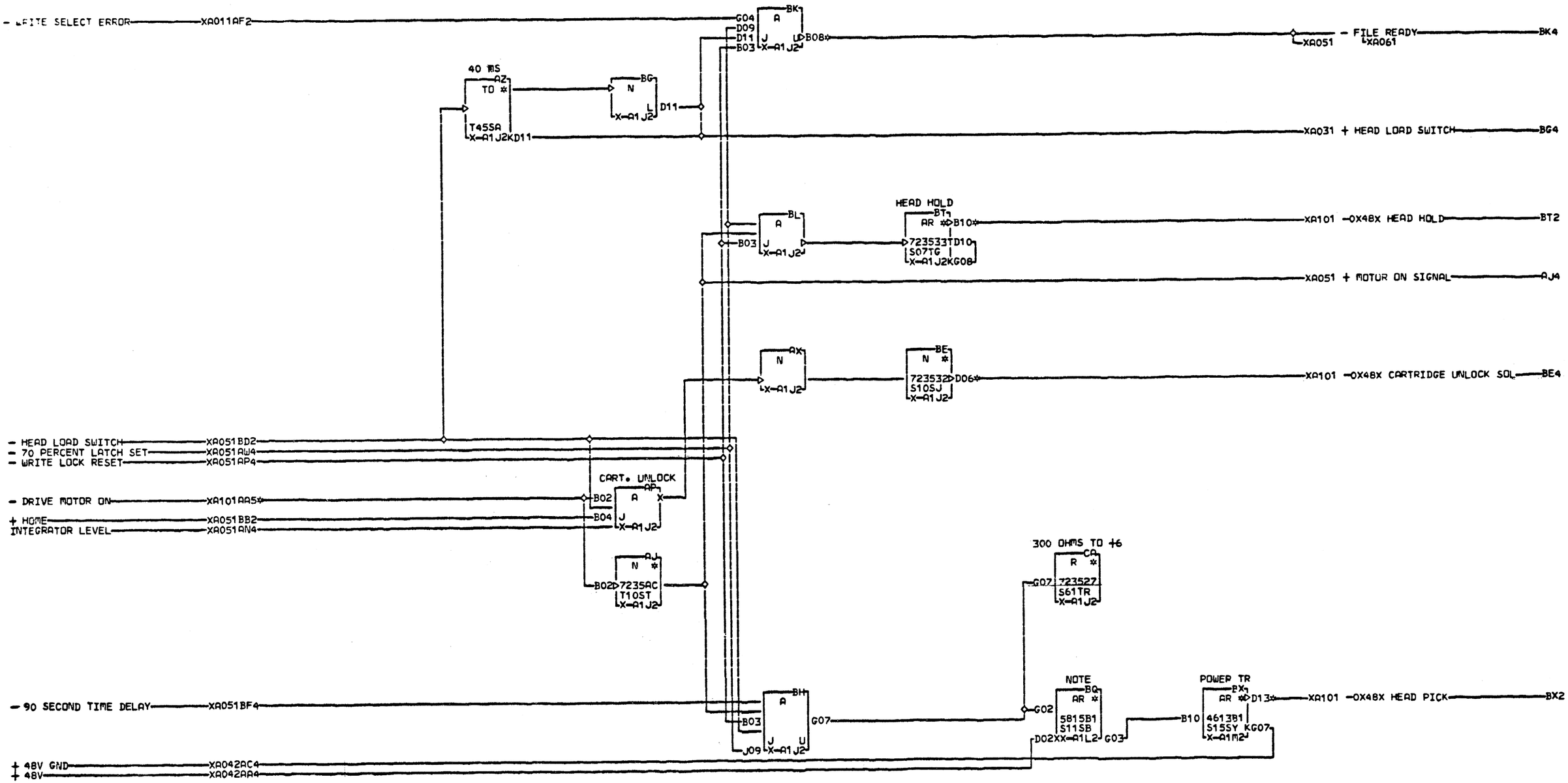
XA101AA2	01 X-A1A3D02		
	01 X-A1C4E04	01 X-A1A2D12	
	01 X-A1A2B02	AA3 X-A1E4D04	
	01 X-A1H4D04	AA7 X-A1E4D06	
XA101AA3		AB1 X-A1D4E06	
	01 X-A1H4E04	AG4 X-A1A2B12	
	01 X-A1B4B04	01 X-A1A3B12	
XA101AA6		AH4 X-A1A2D06	
	01 X-A1C4A06		

LOC. TYPE
X-A1J2 7235
X-A1K2 7511

TRANSDUCER INTERLOCK

E.C.-HISTORY		MACH.13SD
415419	415447	
415433	421019	FRAME 01
415433B	421029	
415444	421032	IBM CORP. SDD
DATE	LAST EC	
12-15-67	421047	P.N. 2199525

XA051 000



NOTE. MAY USE 5804612 OR 5801352 IN PLACE OF 5805815

XA052 000

XA101AA5
01 X-A1C4D04
BE4 X-A1C4B06
BK4 X-A1A2D13
01 X-A1A3D13
BT2 X-A1B4E06
BX2 X-A1H4C06
01 X-A1C4B04

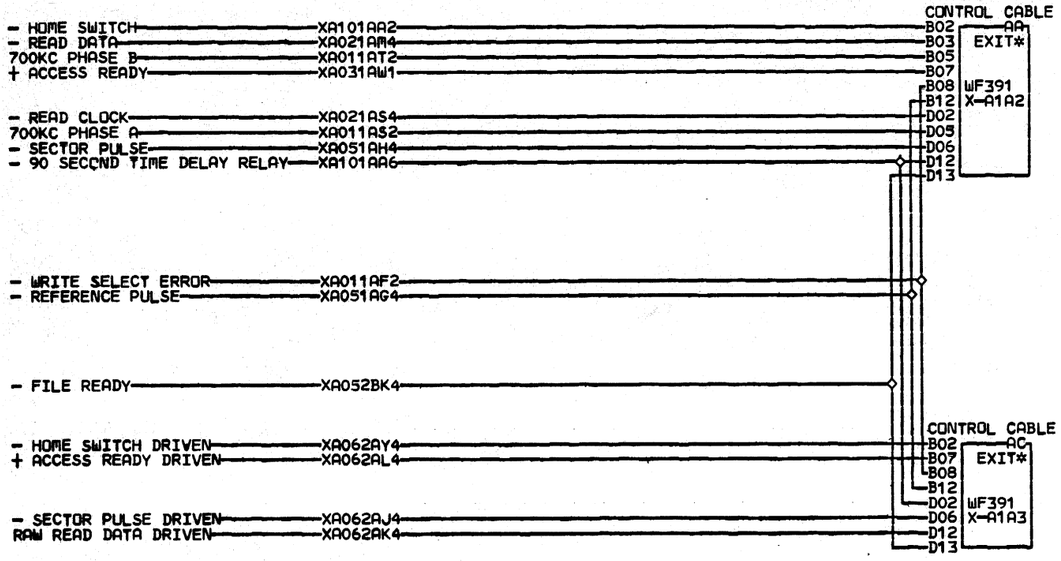
LOC. TYPE
X-A1J2 7235
X-A1L2 5815
X-A1M2 4613

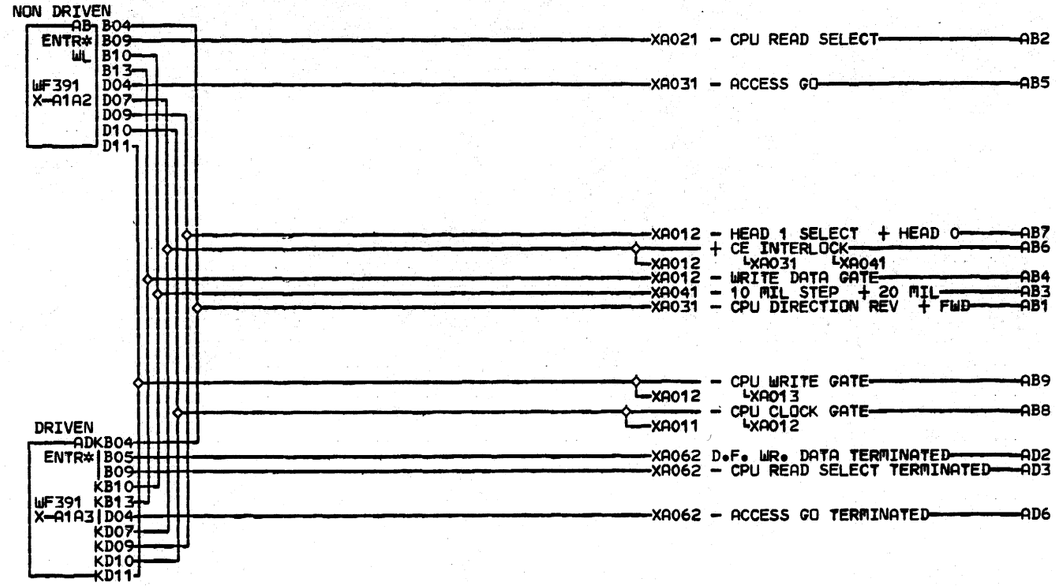
INTERLOCK HEAD LD.

E.C.	H-STORY	MACH. 13SD
415374A	415447	
415433	421016	FRAME 01
415433B	421032	
415444	421047	IBM CORP. SDD
DATE	LAST EC	
11-26-68	421063	P.N. 2199567

XA052 000

F
N





XA061
000

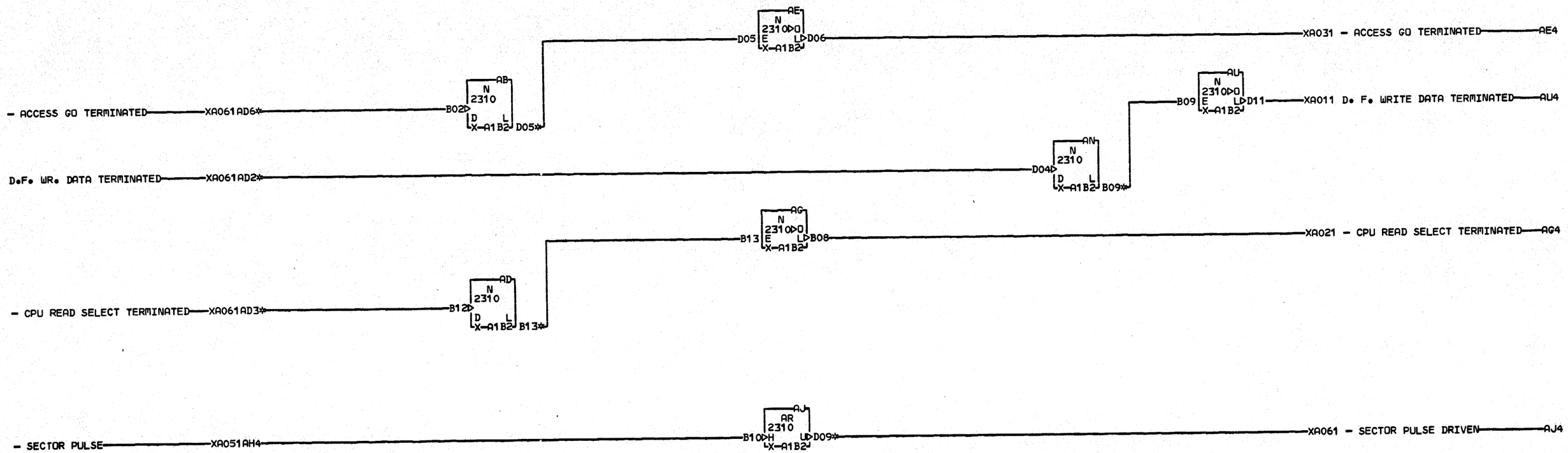
CPU INTERFACE

—E.C.—HISTORY—

MACH.13SD
FRAME 01
IBM CORP. SDD
P.N. 2199526

DATE LAST EC
11-16-67 421047

XA061
000



NOTE. ACC 2310 USED IN REMOTE VERSION WITHOUT WRITE OSC AND DATA SEPARATOR

X A 0 6 2

000

XA061AD2
01 X-A1A3B05 RESISTOR AB6 X-A1B2D04
XA061AD3
01 X-A1A3B09 RESISTOR AD6 X-A1B2B12
XA061AD6

01 X-A1A3D04 RESISTOR AK4 X-A1B2B02
X-A1B2B13
X-A1A3D06 RESISTOR AN6 X-A1B2B09

X-A1B2D09 AY4 X-A1A3D12 RESISTOR X-A1B2D05 AL4 X-A1A3B07 RESISTOR X-A1B2D02 RESISTOR X-A1B2B04 RESISTOR X-A1B2B03 RESISTOR X-A1B2D08 RESISTOR X-A1B2B01

X-A1B2D07

LOC. TYPE
X-A1B2 3758

2310-B LINE DRIVERS AND TERMINATORS

E.C. HISTORY		MACH.13SD
415411V	415433B	
415352	415444	FRAME 01
4153744A	415447	
415433	421032	IBM CORP. SDD
DATE	LAST EC	
11-22-67	421047	P.N. 2199566

X A 0 6 2 000

TERMINAL STRIPS, SWITCHES, RELAYS. COILS SOLENOIDS, AND DIODES

POINTS	TERMINAL BARRIER TB					
	1	2	3	3A	4	5
1	XA101	OPEN	XA101	XA101	XA101	OPEN
2	XA101	XA101	XA101	XA101	OPEN	OPEN
3	XA101	XA101	XA101	XA101	XA101	OPEN
4	XA101	XA101	XA101	XA101	XA101	OPEN
5	XA101	XA101	XA101	XA101	XA101	XA101
6	XA101	OPEN	XA101	XA101	XA101	XA101
7	-	XA101	XA101	XA101	XA101	XA101
8	-	XA101	XA101	XA101	XA101	XA101
9	-	-	-	-	XA101	-
10	-	-	-	-	XA101	-

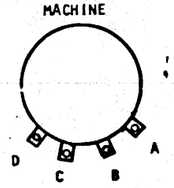
SWITCH	NO.	LOCATION
CART. IN PLACE	1	XA101
CART. UNLOCKED	2	XA101
HOME	3	XA101
HEAD LOAD	4	XA101
CE HEAD SEL	5	XA012
CE STEP MODE	6	XA041
CE DIRECTION	7	XA031
CE STEP CONTROL	8	XA031
MOTOR START	REF	XA101
MOTOR STOP	REF	XA101

RELAY	NO.	COIL	CONTACTS		
			1	2	3
START	K1	XA101	XA101	OPEN	XA101
TIMER	K2	XA101	XA101	OPEN	-
DR MOTOR	K3	XA101	XA101	-	-
BLOWER MTR	K4	XA101	XA101	-	-

COIL/SOL	LOCATION
R/W HEAD #0	XA013
R/W HEAD #1	XA013
TACHOMETER	XA041
TRANSDUCER	XA051
VOICE COIL	XA042
HEAD LOAD	XA101
ODD DETENT	XA101
EVEN DETENT	XA101
CART. UNLOCK	XA101

DIODES		LOCATION
DIODE	D1	XA101
DIODE	D2	XA101
DIODE	CR1	XA101

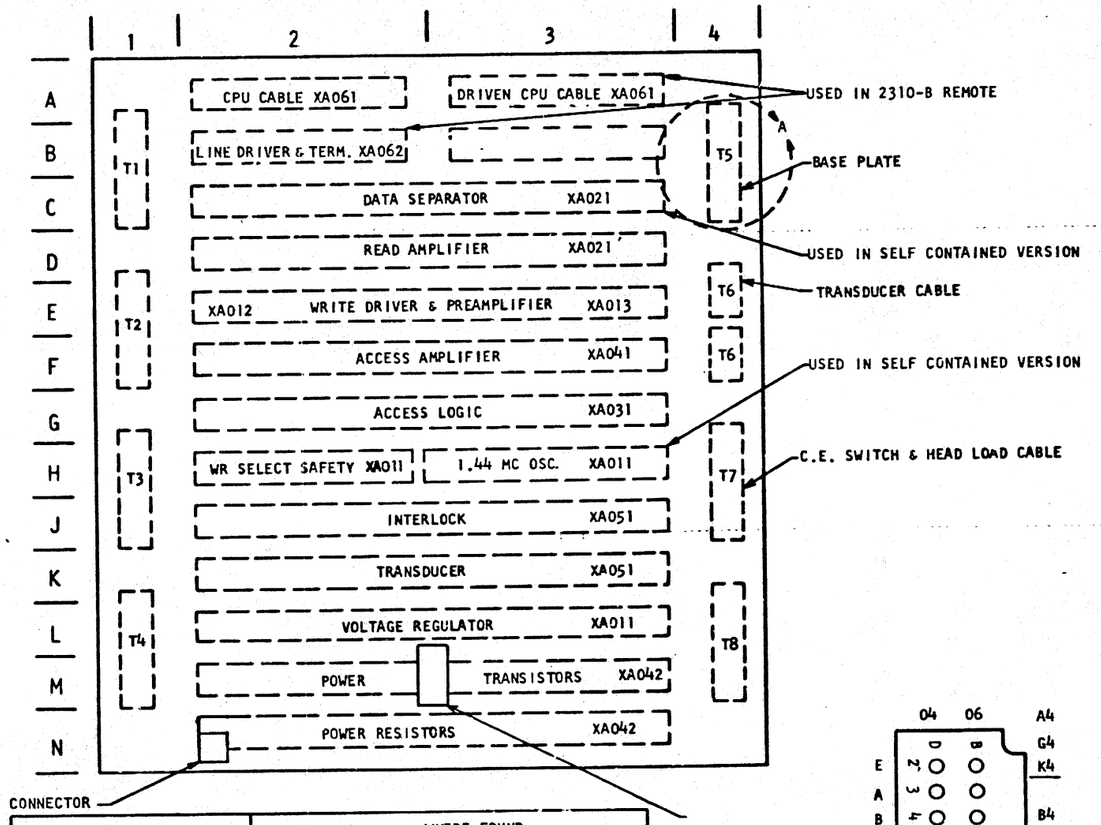
TACHOMETER CONNECTORS
VIEW FROM FRONT OF MACHINE



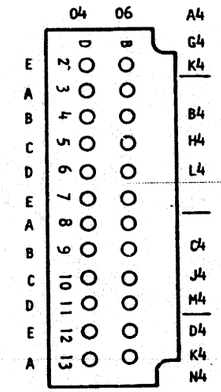
HEAD CABLE CONNECTIONS XA011

WIRE COLOR	0T	1B
GREY	E2 J12	E2 J13
RED	E2 J09	E2 G07
VIOLET	E2 G12	E2 G13
BLACK	D2 J08	E2 J08

LARGE CARD SOCKET ASSIGNMENTS & NOMENCLATURE. PIN SIDE SHOWN



VOLTAGE		WHERE FOUND
TB1-5	+48V	N2D02, G2D02, F2D02, L2B02, C4C04, J4B06
TB1-6	48V GND	N2D03, M3B07, B4A06, C4C06
	+35V REG	D2B09, E2B09, H2B09, J2B09, K2B09. L2B09
TB1-2	-3V	B06 SOCKETS B THRU M ROWS 2 AND 3, N3906
TB1-4	DC GND	D08 SOCKETS A THRU N ROWS 2 AND 3
TB1-1	+3V	D03 SOCKETS B THRU M ROWS 2 AND 3
TB1-3	+6V	B11 SOCKETS B THRU M ROWS 2 AND 3 G4E06, H4A06, H4B06



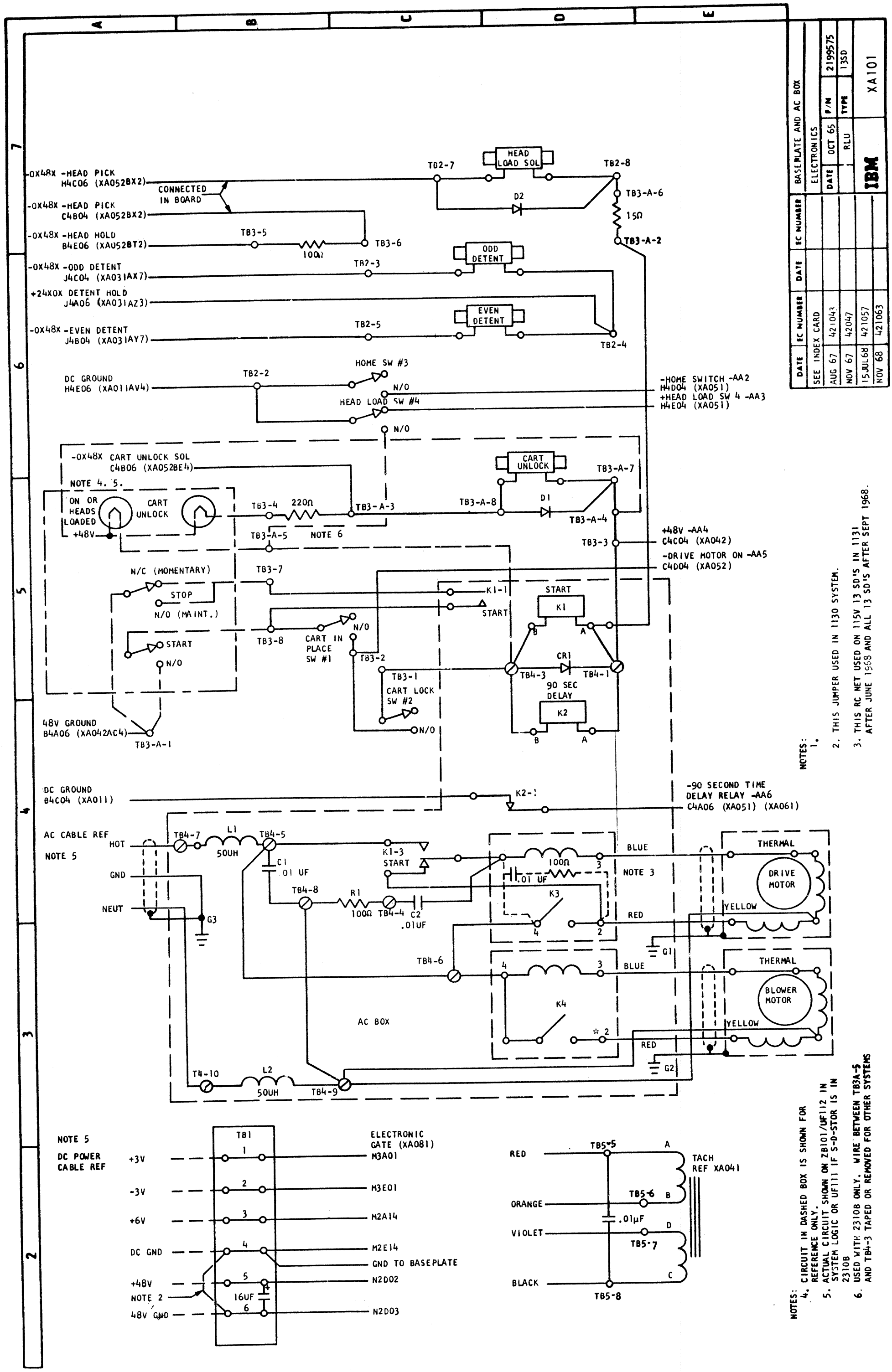
DETAIL A

DATE	EC NUMBER	DATE	EC NUMBER
SEPT65	415326	FEB 67	421032
NOV 65	415374	AUG 67	421043
DEC 65	415374A	NOV 67	421047
MAR 66	415433		
MAY 66	415444		

SOCKET LOCATION AND CABLE GUIDE

DATE	SEPT65	P/N	2199573
		TYPE	135D

IBM XA081



NOTES:
1.
2. THIS JUMPER USED IN 1130 SYSTEM.
3. THIS RC NET USED ON 115V 13 SD'S IN 1131 AFTER JUNE 1968 AND ALL 13 SD'S AFTER SEPT 1968.

NOTES:
4. CIRCUIT IN DASHED BOX IS SHOWN FOR REFERENCE ONLY.
5. ACTUAL CIRCUIT SHOWN ON ZB101/UF112 IN SYSTEM LOGIC OR UF111 IF S-D-STOR IS IN 2310B
6. USED WITH 2310B ONLY. WIRE BETWEEN TB3A-5 AND TB4-3 TAPED OR REMOVED FOR OTHER SYSTEMS

DATE	EC NUMBER
SEE INDEX CARD	
AUG 67	421043
NOV 67	42047
15JUL68	421057
NOV 68	421063

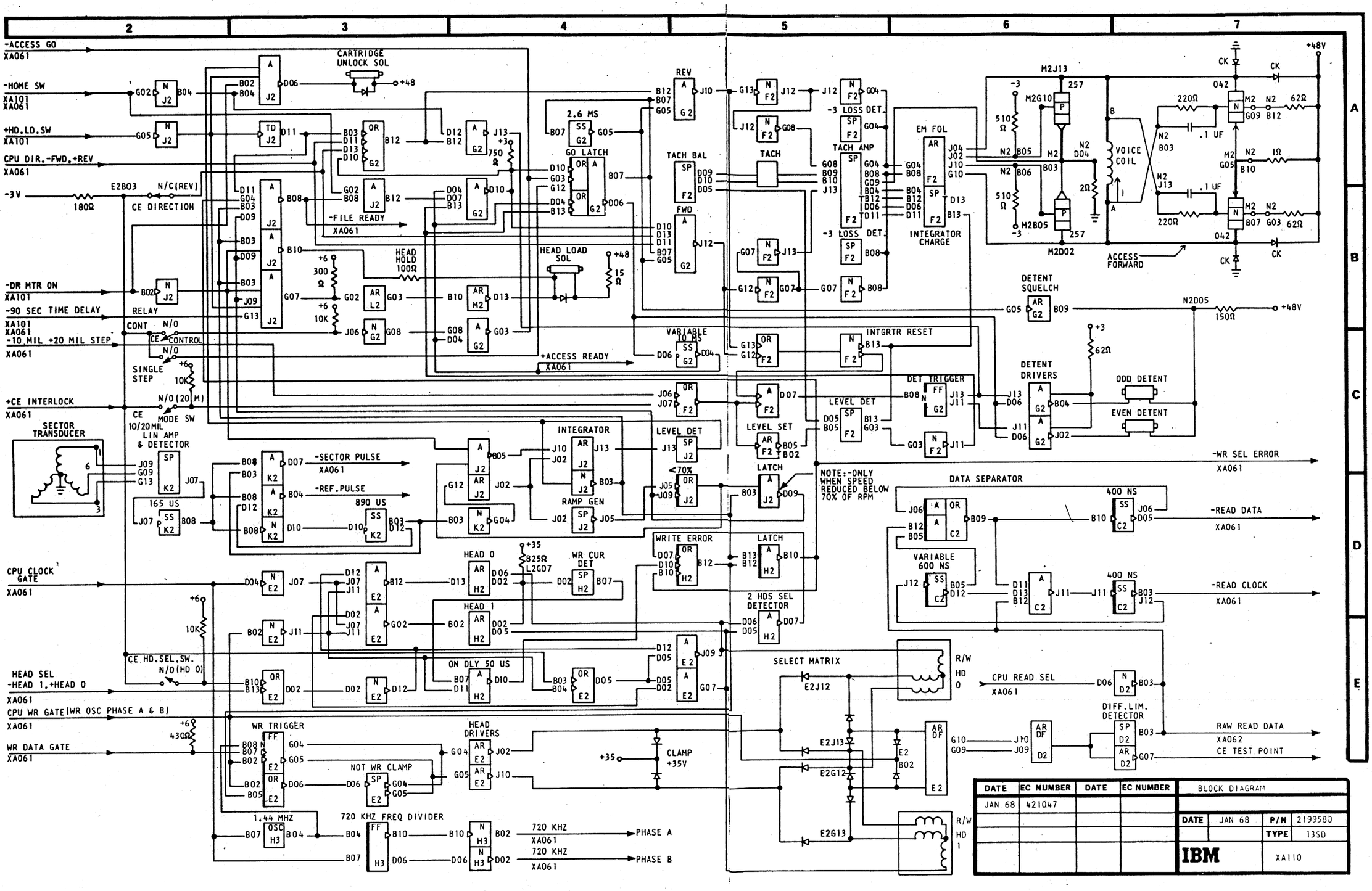
BASEPLATE AND AC BOX	DATE	EC NUMBER
ELECTRONICS		

DATE	OCT 65
	RLU

P/N	2199575
TYPE	13SD

IBM

XA101



DATE	EC NUMBER	DATE	EC NUMBER	BLOCK DIAGRAM			
JAN 68	421047						
				DATE	JAN 68	P/N	2199580
						TYPE	13SD
				IBM		XA110	

2207720

2207720

FORM O-2572-1 (10-66)

FIELD ENGINEERING DIAGRAM MANUAL

FOR

SINGLE DISK STORAGE (INCREMENTAL ACCESS)

MACHINE TYPE NUMBER, MODEL NUMBER (IF APPLICABLE) AND MACHINE NAME

CONSISTS OF THE FOLLOWING:

FORM NUMBER (BASE FEDM)*	Y26-4126-0
FORM NUMBER (FES)**	Y26-0613

NOTES

XI THE FEDM AND ITS FES'S INCLUDE A SYSTEM DATA FLOW DIAGRAM, UNIT DATA AND CONTROL DIAGRAM, I/O OPERATION DIAGRAMS, AND CONDENSED LOGIC FLOW CHARTS AS APPLICABLE TO THE UNIT(S) BEING SHIPPED.

XII WHEN A FEDM IS ORDERED FROM MECHANICSBURG, ALL APPLICABLE SUPPLEMENTS WILL BE AUTOMATICALLY SUPPLIED. SUPPLEMENTS CAN BE ORDERED SEPARATELY BY APPLICABLE FORM NUMBER.

* FIELD ENGINEERING DIAGRAM MANUAL

** FIELD ENGINEERING SUPPLEMENT

INTERNATIONAL BUSINESS MACHINES CORP.							DATE	CHANGE NO.	DATE	CHANGE NO.	NOTE	DEVELOPMENT NO.	
NAME	FEDM ID DWG						FEB 68	421047			X PRINT TO ENG. SPEC. NO.		2207720
							MAR 68	421047A					
DESIGN			MODEL										
DETAIL													
CHECK			DRAW										
APPRO			CHECK										