IBM Field Engineering
Maintenance Diagrams

Restricted Distribution

Single Disk Storage [Incremental Access]

PREFACE

This manual contains flow charts, timing charts, and special-purpose diagrams to assist in the maintenance activity on the IBM Single Disk Storage [Incremental Access].

Simplified drawings have been prepared for functions which are not readily perceptible in the system diagrams, or for which the logic requires multiple pages.

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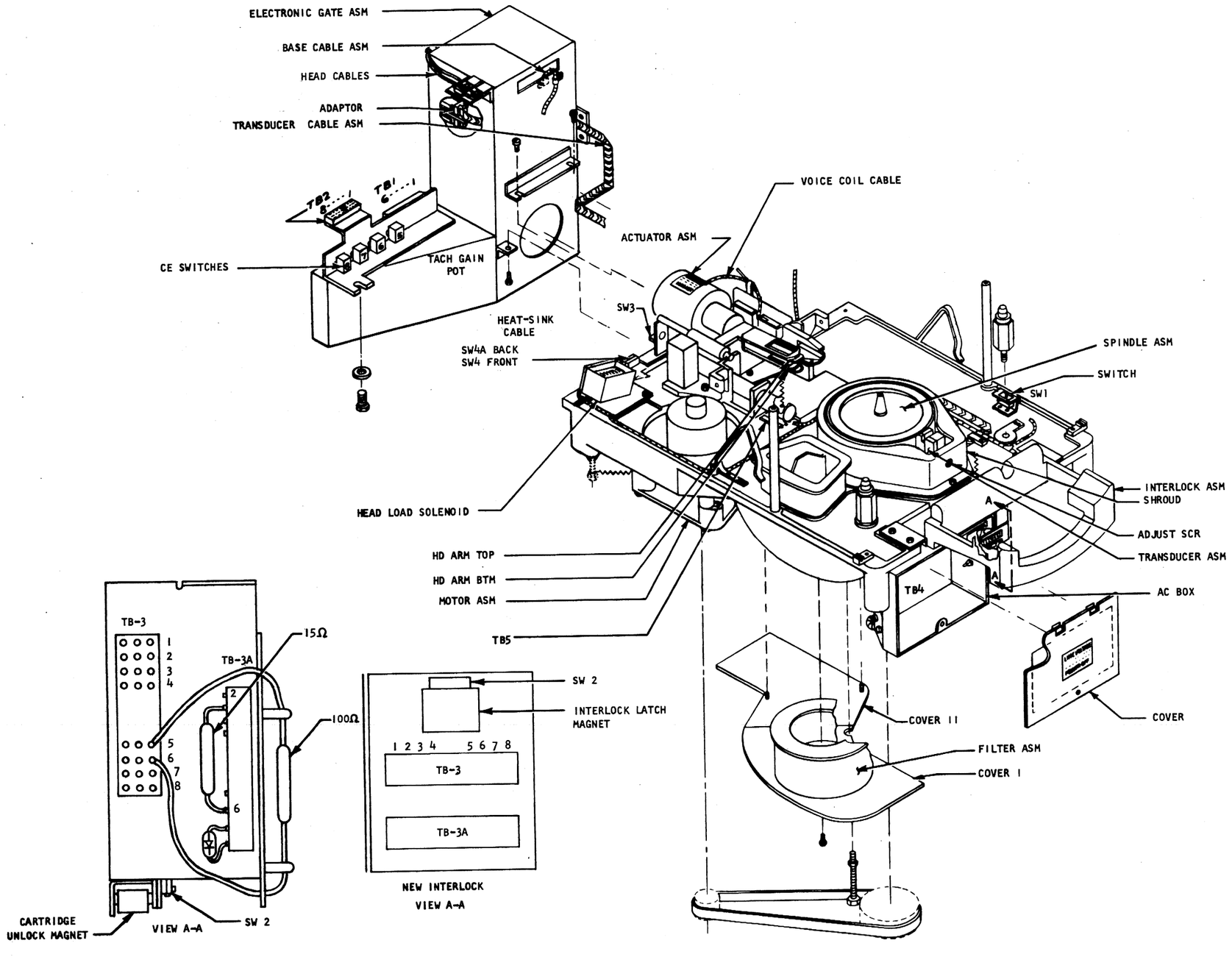
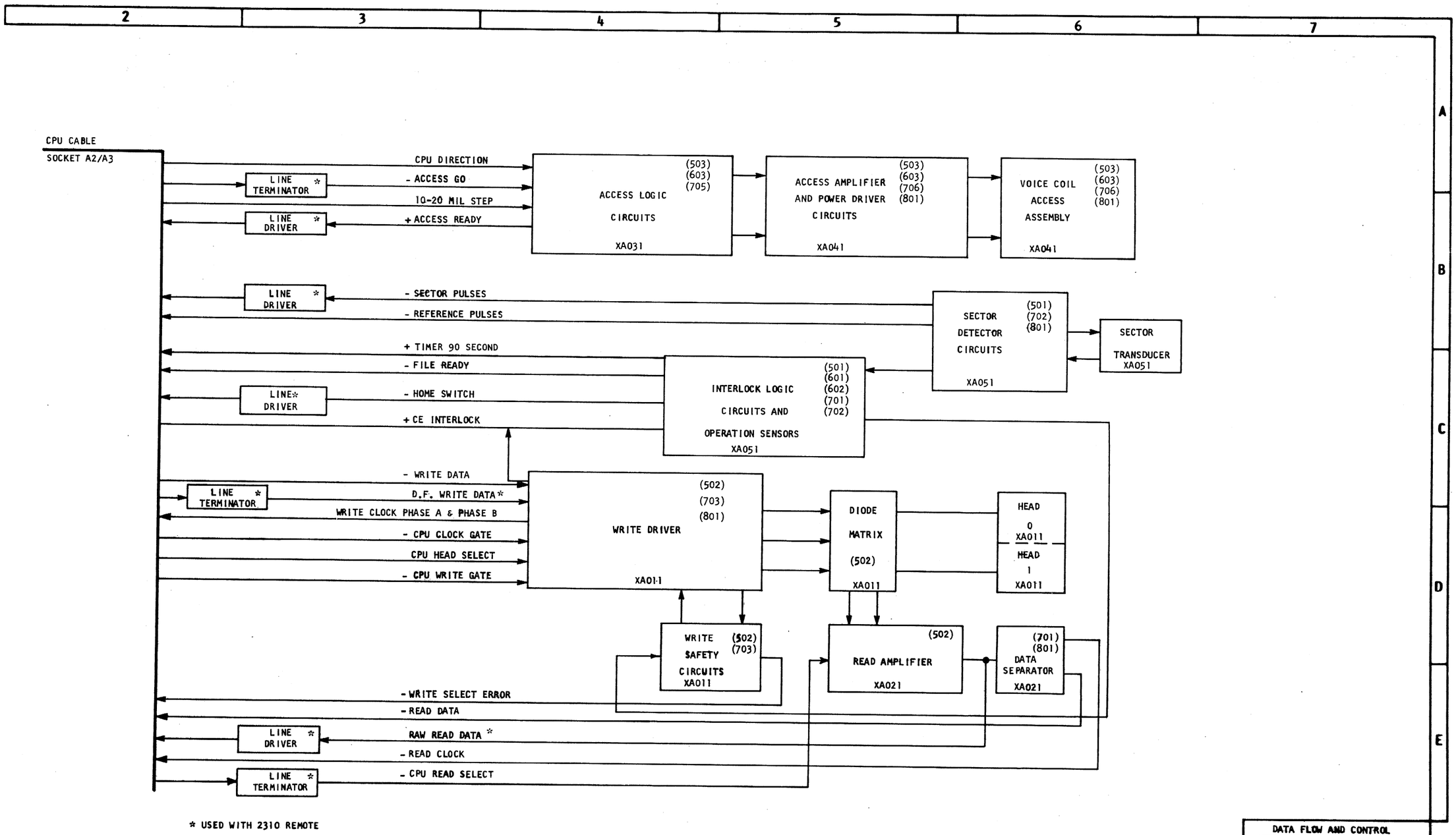


SWITCHES

SW 1	CARTRIDGE IN-PLACE
SW 2	INTERLOCK
SW 3	HOME
SW 4	HEAD LOAD
SW 4A	HEAD LOAD
SW 5	CE HEAD SELECT
SW 6	CE STEP MODE
SW 7	CE DIRECTION
SW 8	CE STEP CONTROL

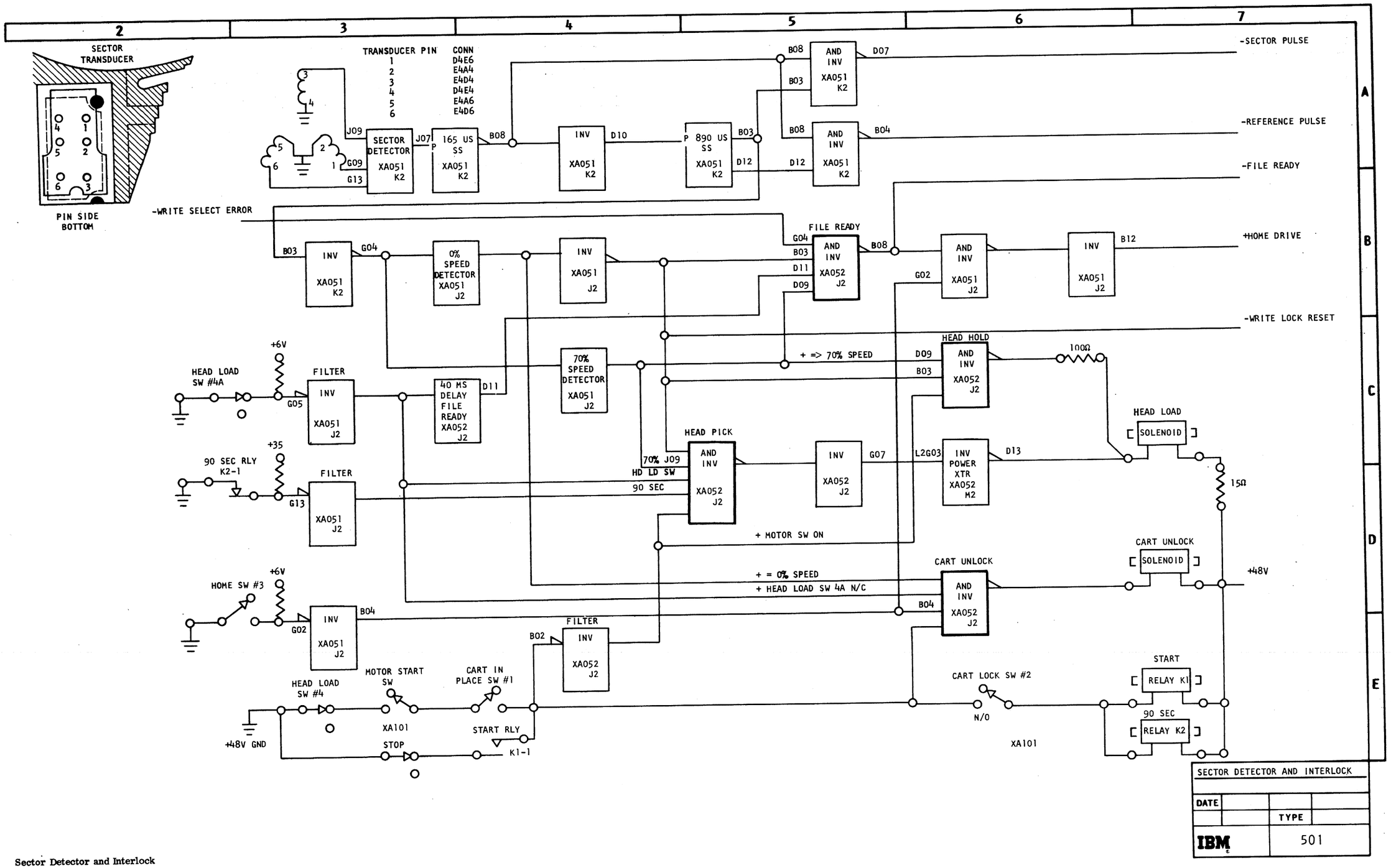
LOCATION OF COMPONENTS

DATE	APR67		
		TYPE	
IBM		002	

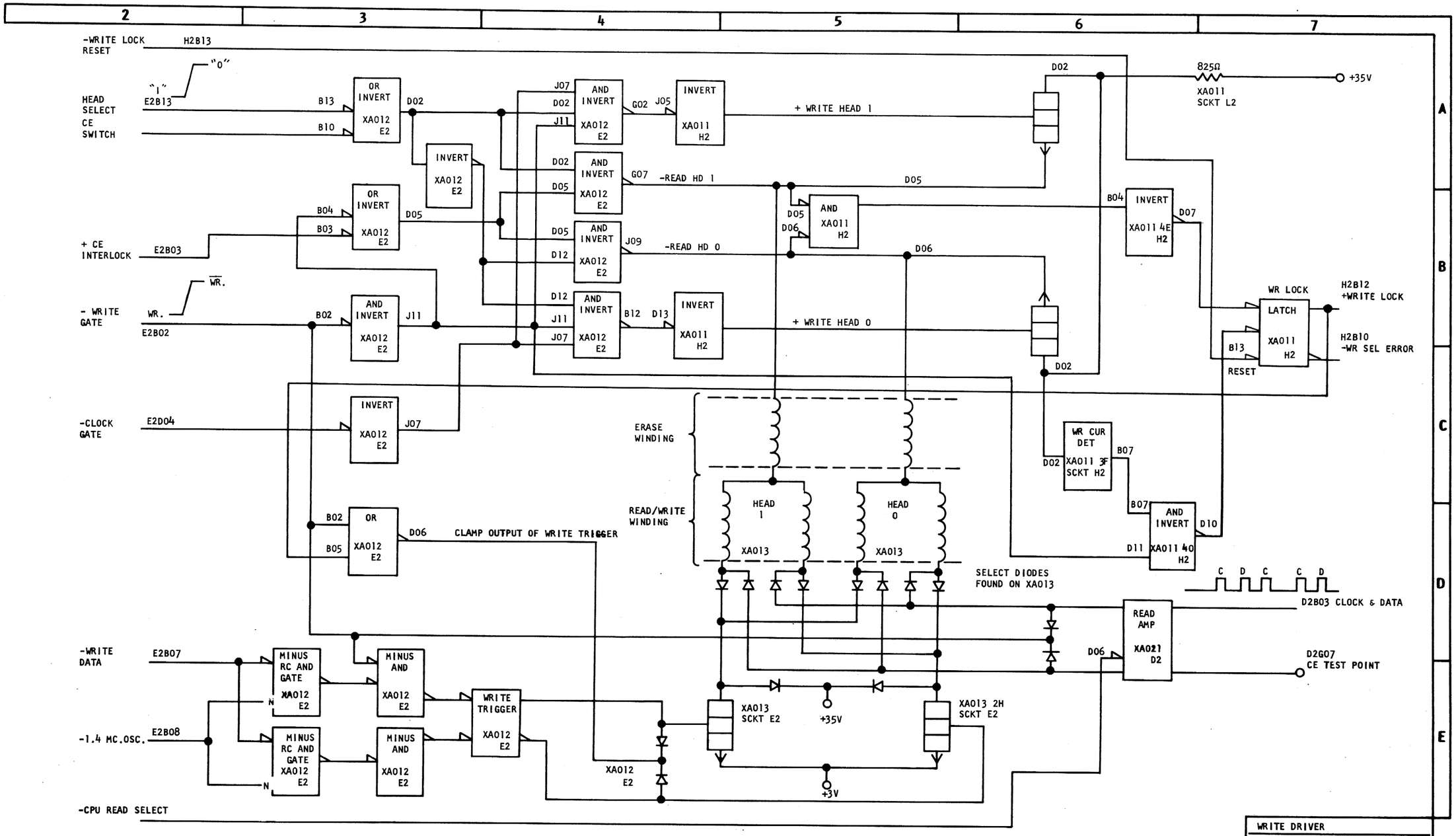


* USED WITH 2310 REMOTE

DATA FLOW AND CONTROL			
DATE			
		TYPE	
IBM	102		



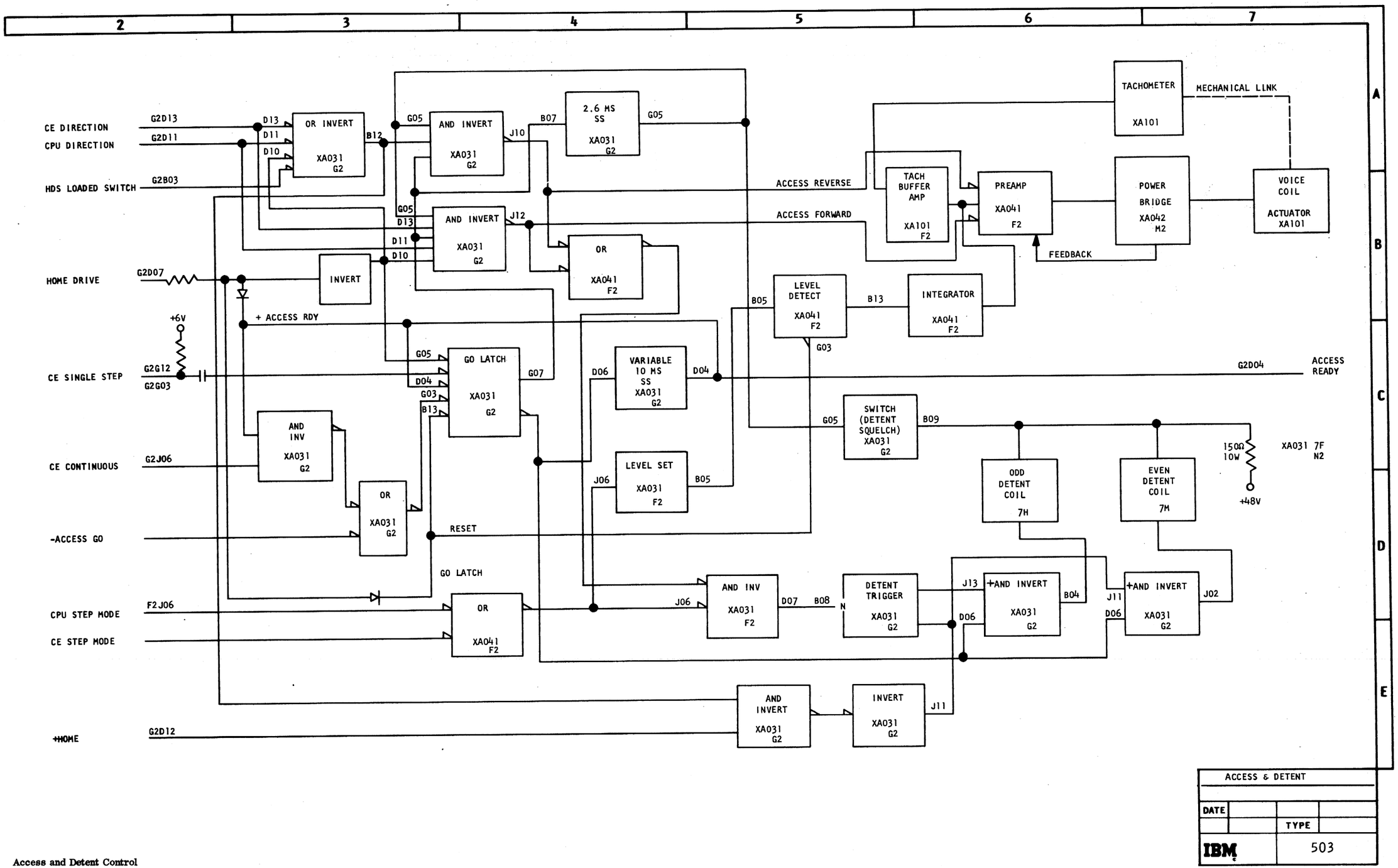
Sector Detector and Interlock



WRITE DRIVER

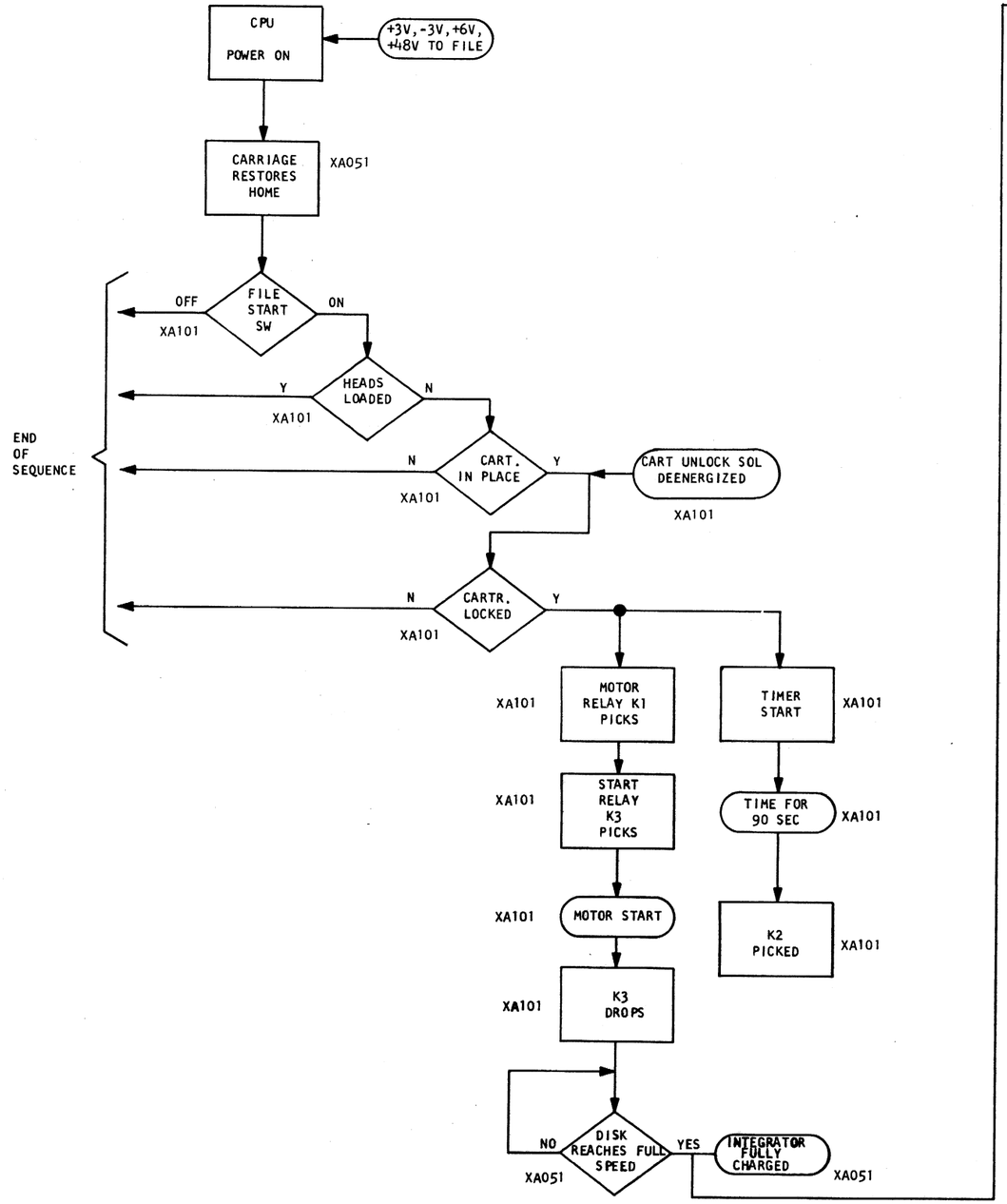
DATE			
		TYPE	
IBM	502		

Write Driver Control



ACCESS & DETENT			
DATE			
		TYPE	
IBM		503	

Access and Detent Control



File Start Sequence

FILE START SEQUENCE

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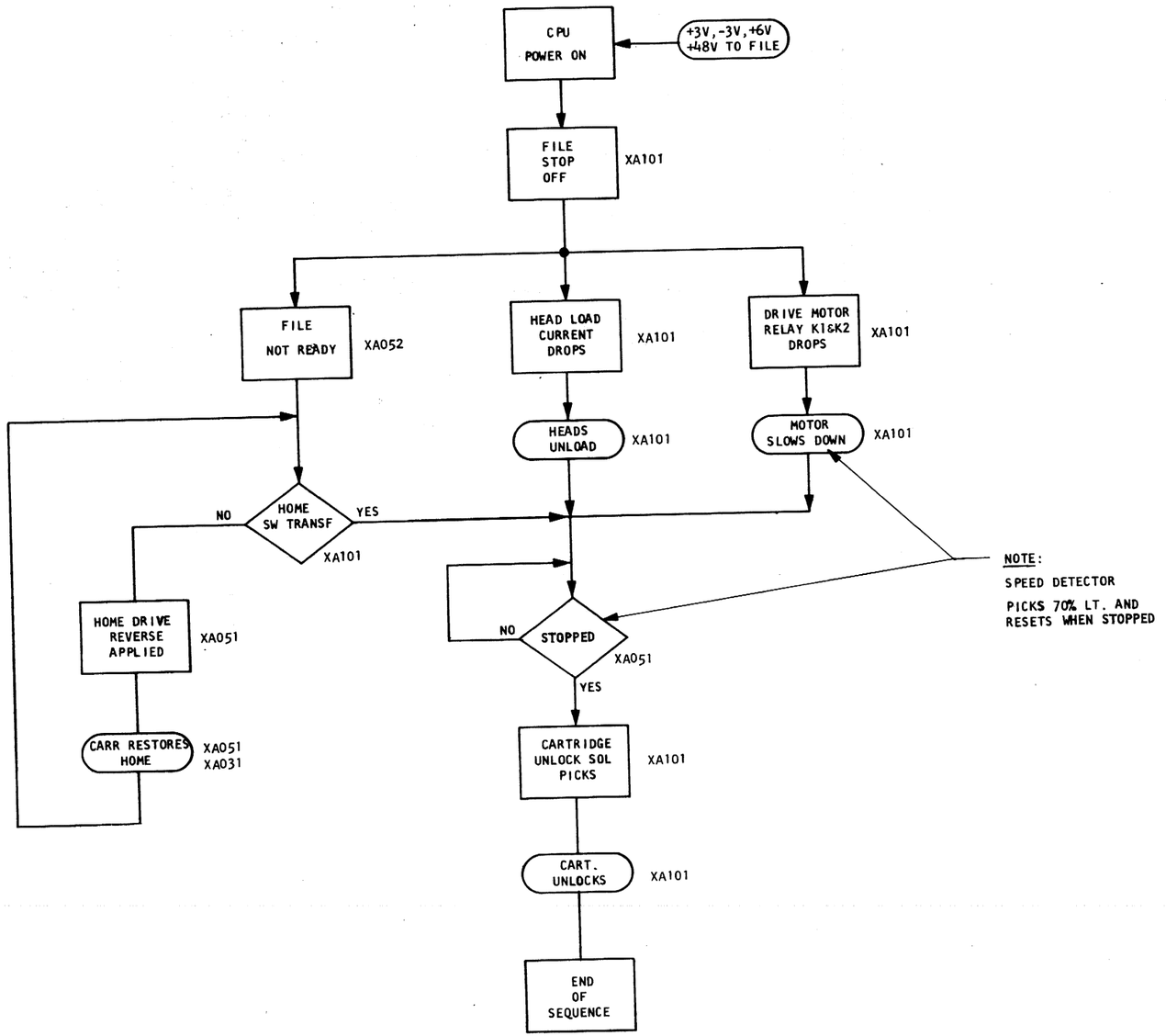
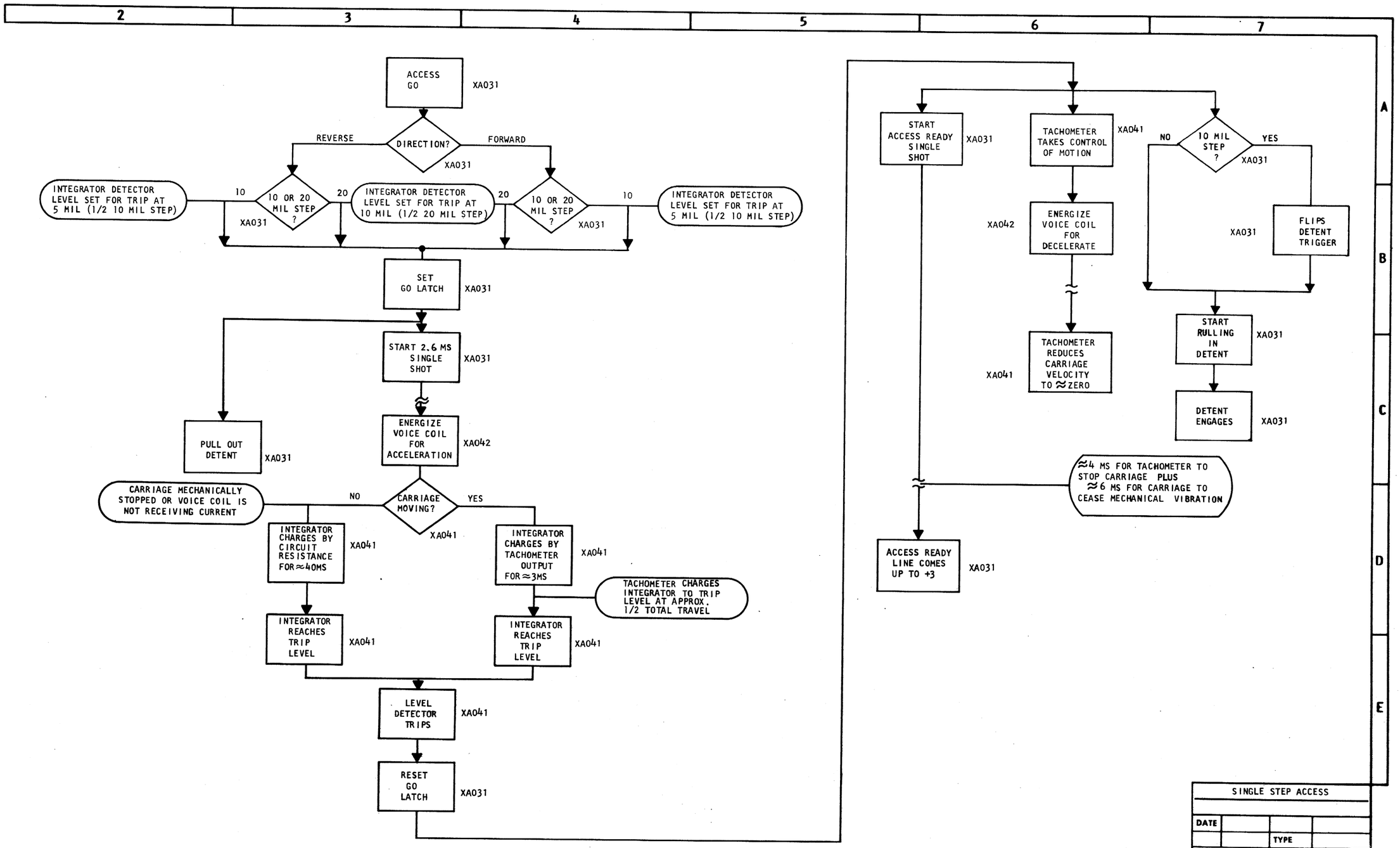
IBM		601	



FILE STOP SEQUENCE

DATE			
		TYPE	
IBM		602	

File Stop Sequence

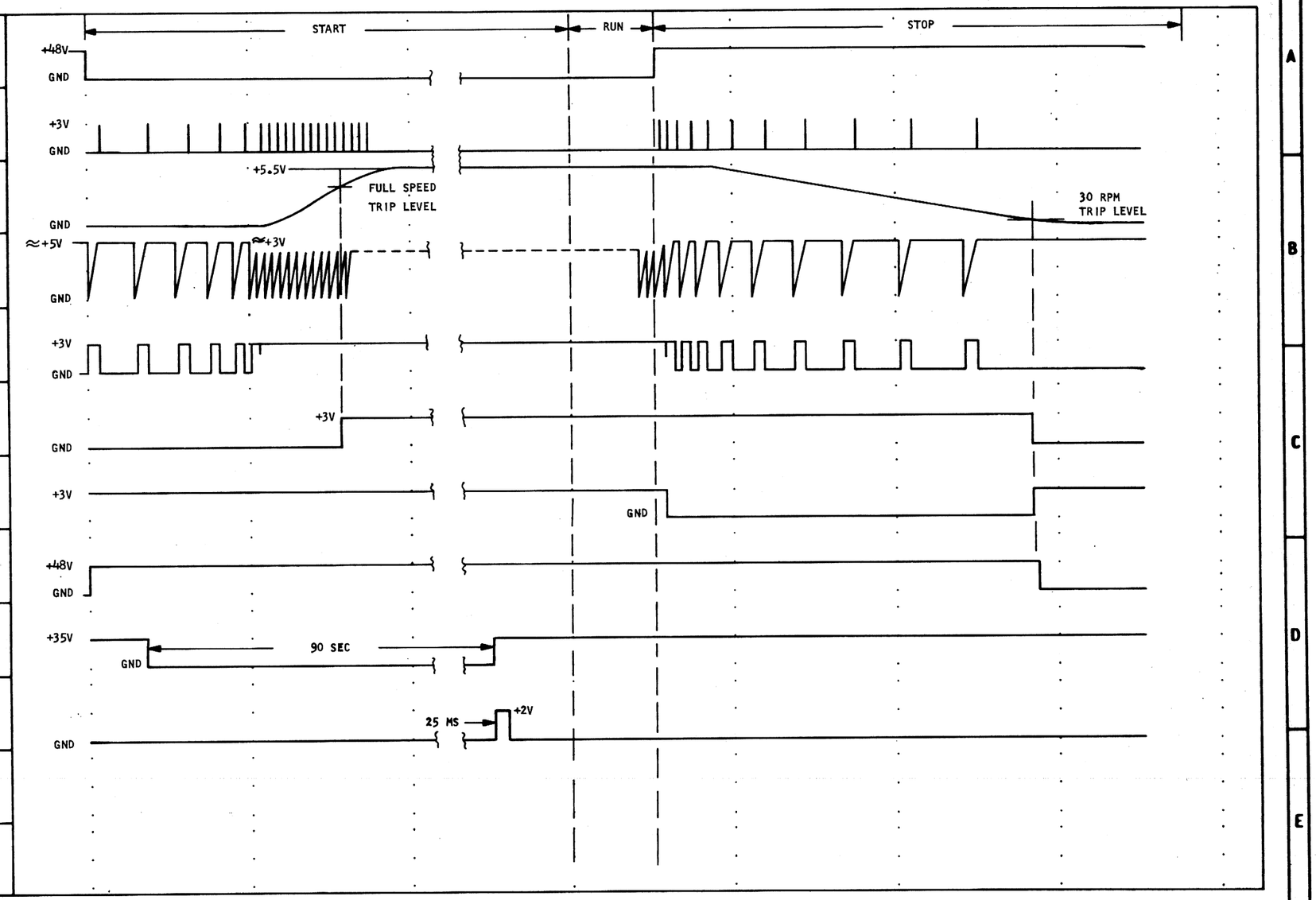


SINGLE STEP ACCESS

DATE			
		TYPE	
IBM	603		

Single Step Access

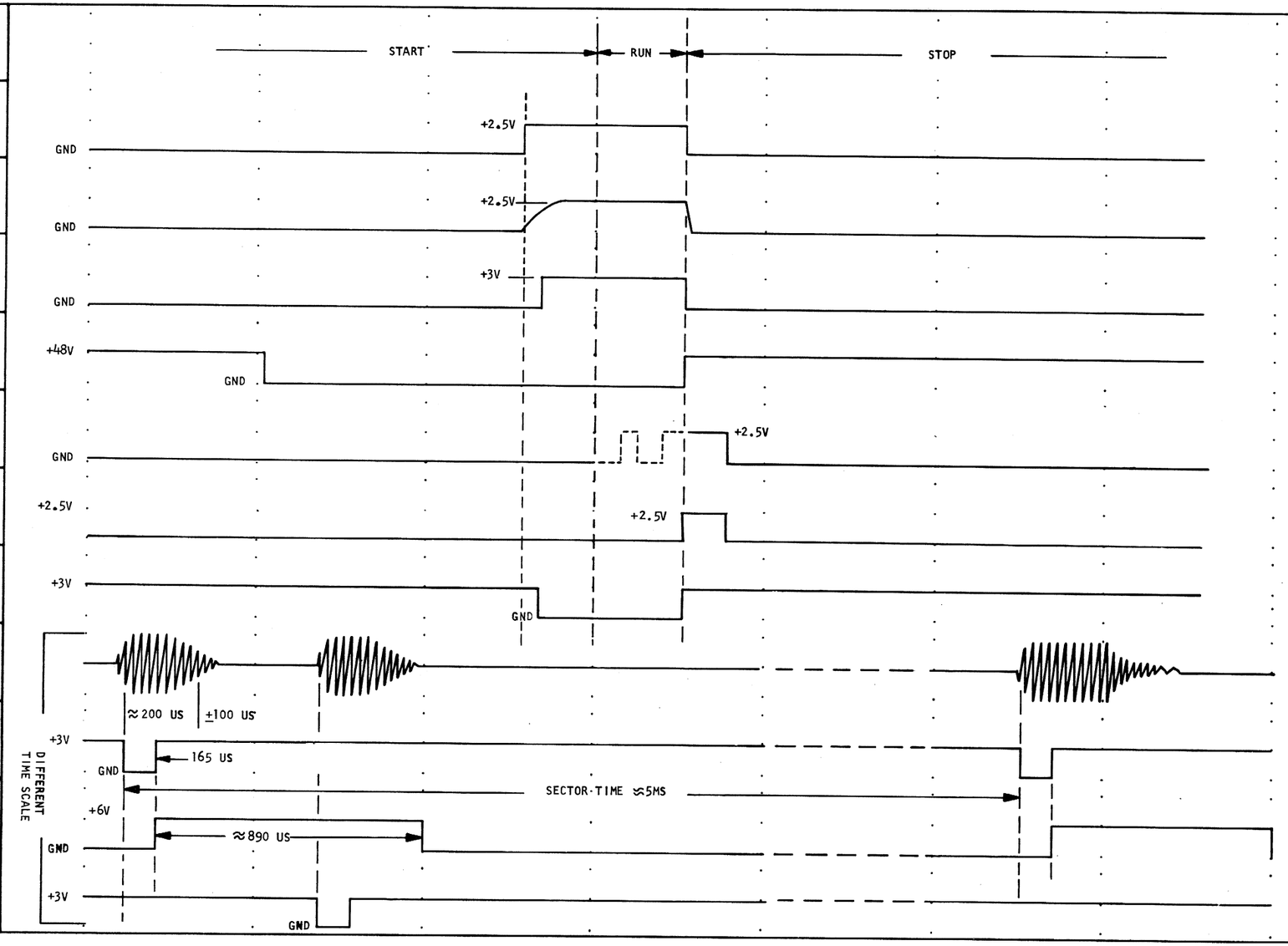
XA052	J2B02	DRIVE MOTOR ON
XA051	J2G12	REFERENCE PULSE GATE
XA051	J2J13	INTEGRATOR
XA051	J2D12	70% RAMP
XA051	J2J05	SET 70% LATCH
XA051	J2B03	WRITE LOCK RESET
XA051	J2D09	70% LATCH
XA052	J2D06	CARTRIDGE LOCK
XA051	J2G13	90 SECOND DELAY
XA052	J2G07	HEAD PICK SIGNAL



Sector Detector and Interlock (Part 1 of 2)

SECTOR DETECTOR AND INTERLOCK	
DATE	TYPE
IBM	701

XA051	J2G05	HEAD LOAD SWITCH
XA052	-	FILE READY DELAY
XA052	J2D11	FILE READY DELAY
XA052	J2B10	HEAD HOLD
XA051	J2G02	HOME SWITCH
XA051	J2B12	HOME DRIVE
XA052	J2B08	FILE READY
XA051	K2J09	DRIVE COIL
XA051	K2D07	SECTOR PULSE
XA051	K2G04	REFERENCE GATE
XA051	K2B04	REFERENCE PULSE



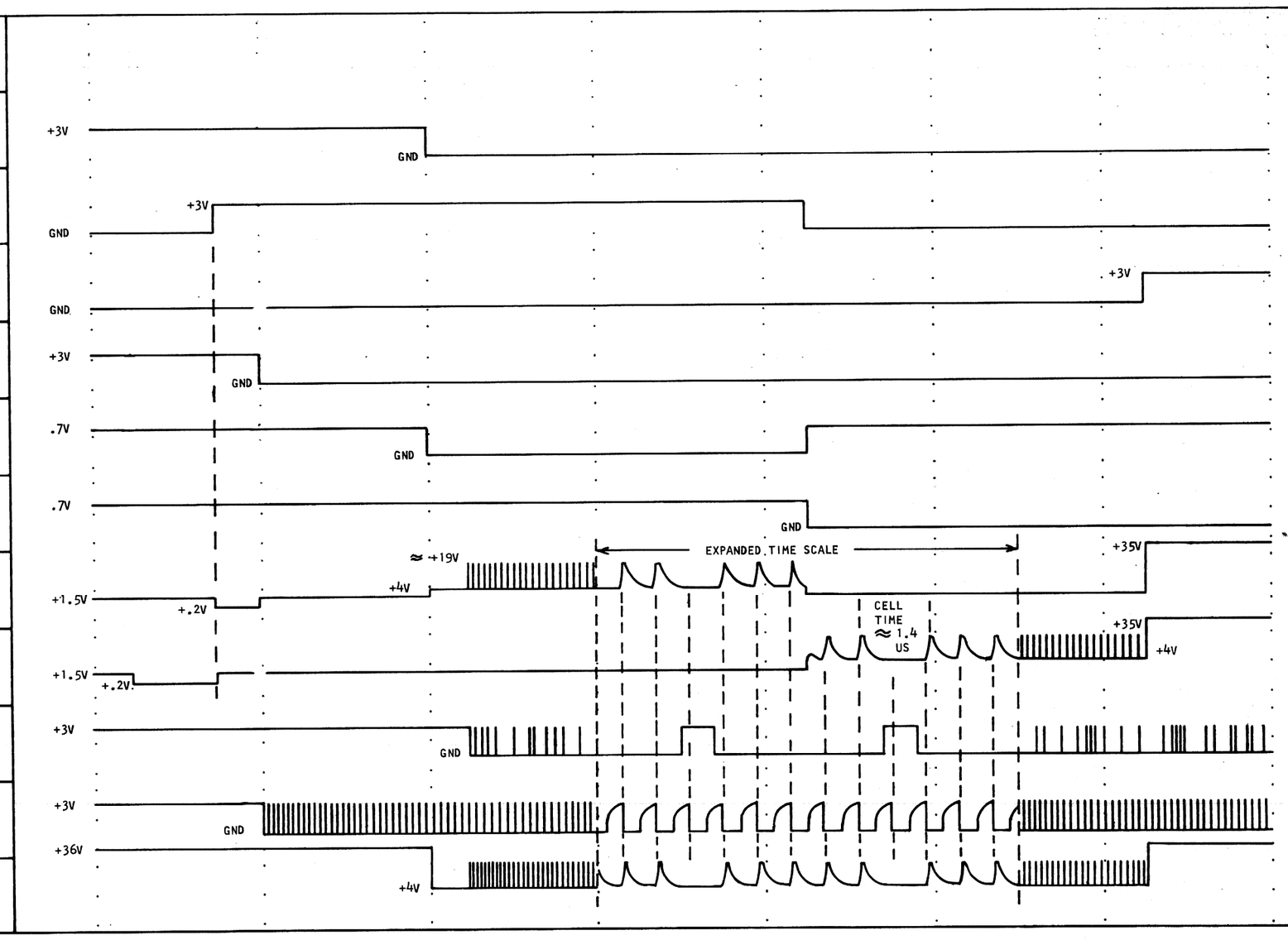
SECTOR DETECTOR AND INTERLOCK

DATE | TYPE

IBM 702

Sector Detector and Interlock (Part 2 of 2)

XA012	D2D06	READ SELECT
XA012	E2B02	WRITE GATE
XA012	E2B13	HEAD SELECT
XA011	H2B12	WRITE LOCK
XA011	H3B07	CLOCK GATE
XA012	E2B12	WRITE SEL HEAD 0
XA012	E2G02	WRITE SEL HEAD 1
XA012	E2J09	HEAD 0 ERASE
XA012	E2G07	HEAD 1 ERASE
XA012	E2B07	WRITE DATA
XA012	E2B08	WRITE OSCILLATOR
XA011	H2D02	WRITE RESISTOR

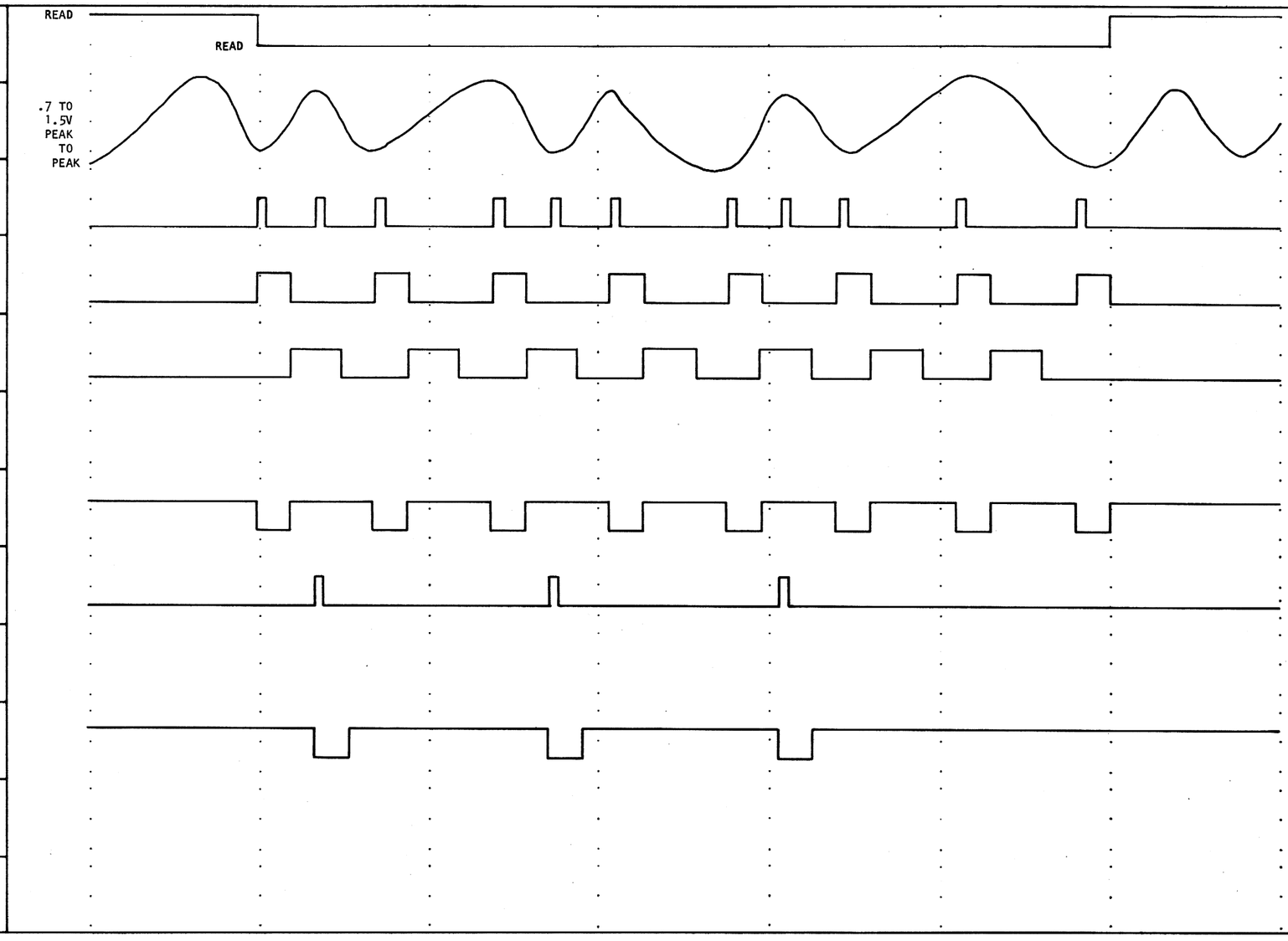


READ WRITE SELECT AND WRITE DRIVER

DATE			
		TYPE	
IBM		703	

Read Write Select and Write Driver

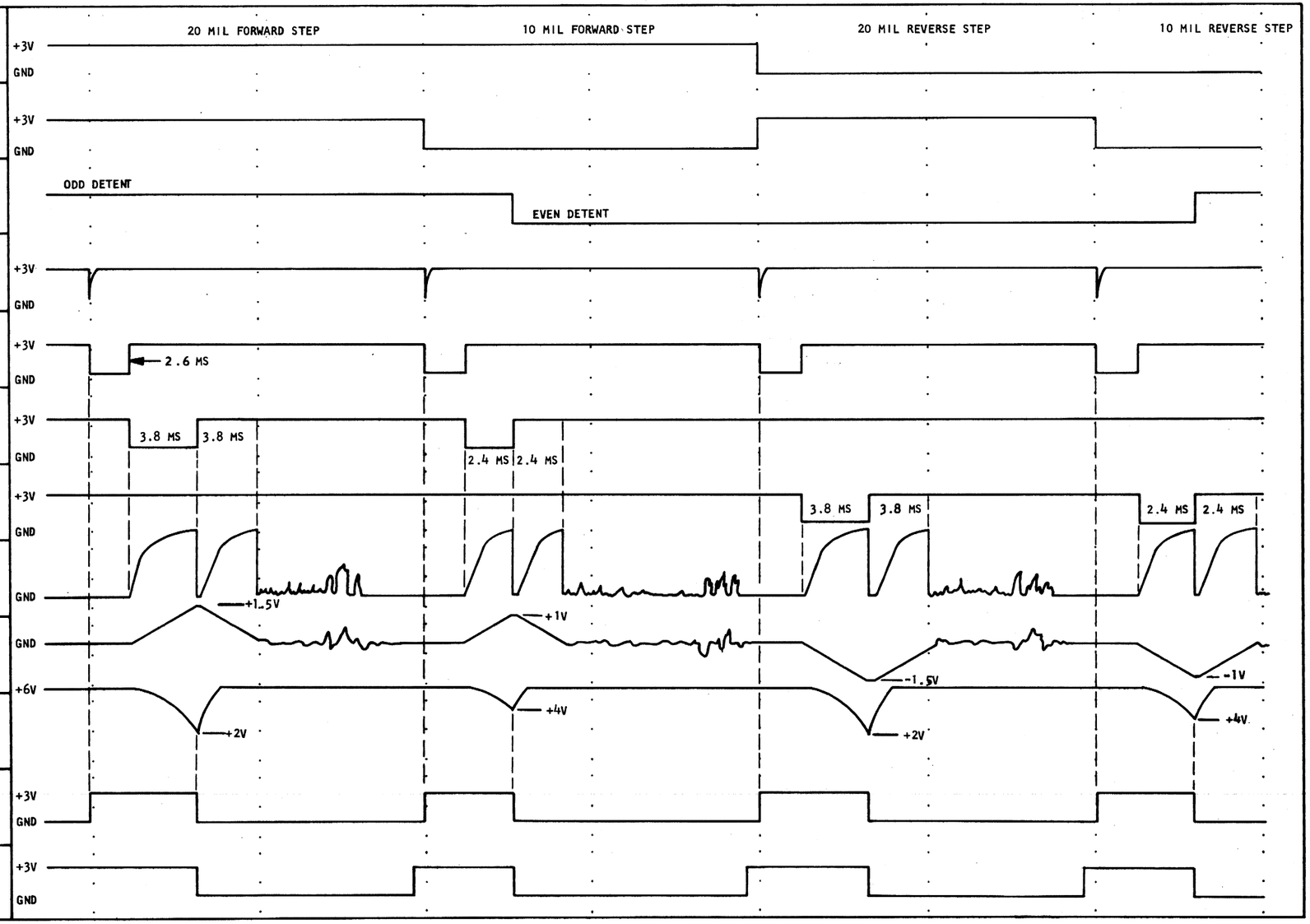
XA021	D2D06	CPU READ SELECT
XA021	D2G07	CE TEST POINT (AFTER DIFFERENTIATION)
XA021	C2B12	DETECTED READ SIGNAL
XA021	C2J12	INVERTED CLOCK
XA021	C2B05	600 ns WINDOW
XA021	C2B03	CLOCK OUTPUT
XA021	-	SELECTED DATA BIT
XA021	C2D05	DATA OUTPUT



READ AMPLIFIER AND DATA SEPARATOR TIMING	
DATE	TYPE
IBM	704

Read Amplifier and Data Separator Timing

XA031	G2D011	DIRECTION LINE
XA041	F2J06	10-20 MIL LINE
XA031	G2J13	DETENT FLIP-FLOP
XA031	G2G03	ACCESS GO PULSE
XA031	G2G05	2.6 MS DELAY SINGLE SHOT
XA031	G2J12	ACCESS FORWARD
XA031	G2J10	ACCESS REVERSE
XA041	F2G09	BRIDGE CURRENT FEEDBACK (2Ω FEEDBACK VOLTAGE)
XA041	F2B12	TACHOMETER VOLTAGE
XA041	F2B13	INTEGRATOR CHARGE
XA031	G2D06	GO LATCH
XA031	G2D04	ACCESS READY



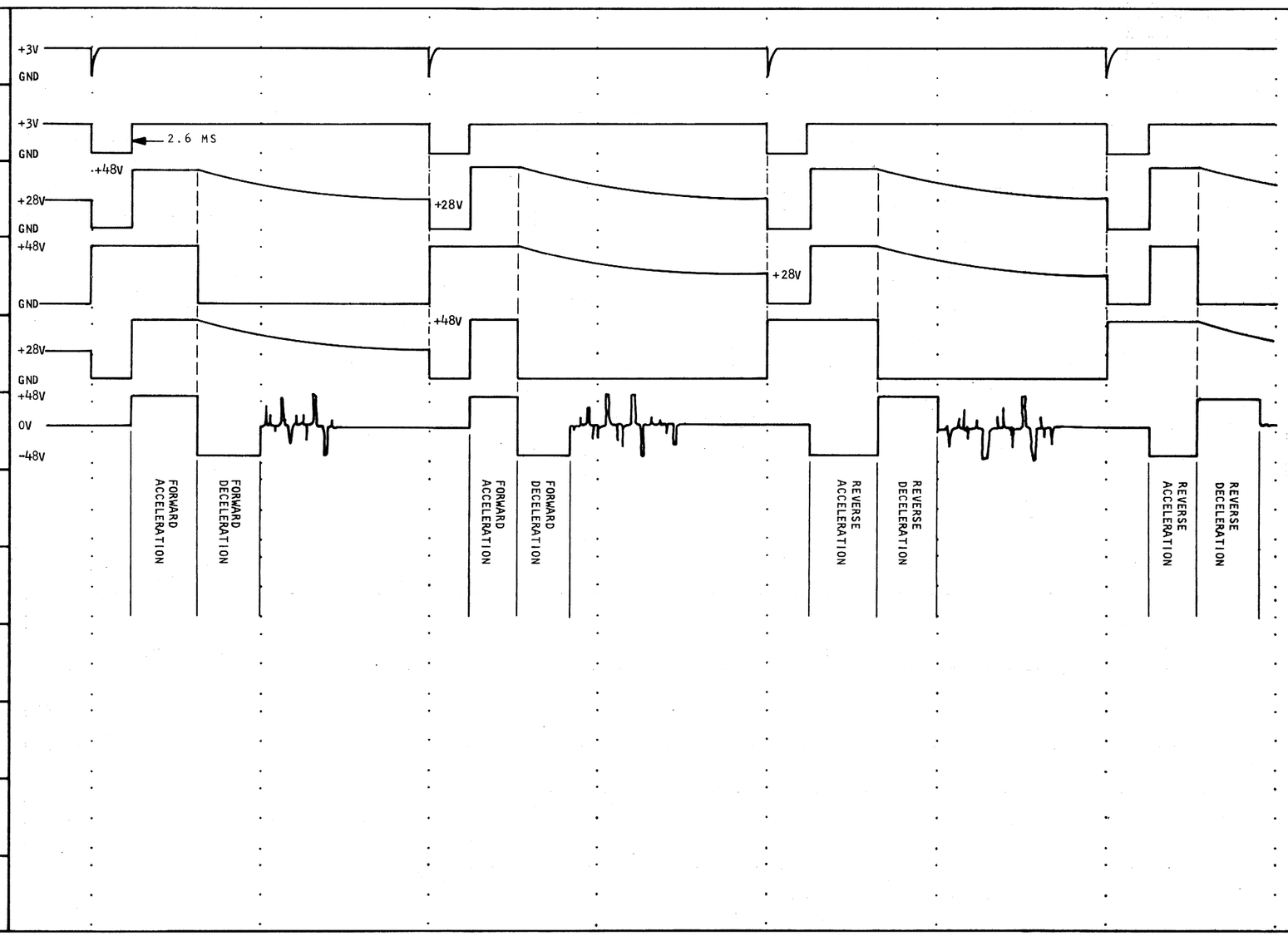
ACCESS TIMING

DATE | TYPE

IBM 705

Access Timing (Part 1 of 2)

			2	3	4	5	6	7	
XA031	G2G03	ACCESS GO PULSE							A
XA031	G2G05	2.6 MS DELAY SINGLE SHOT							B
XA031	G2B09	DETENT SQUELCH VOLTAGE							C
XA031	G2B04	ODD DETENT VOLTAGE							
XA031	G2J02	EVEN DETENT VOLTAGE							D
——	——	VOLTAGE ACROSS MOTOR							
									E

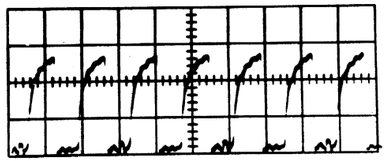


ACCESS TIMING

DATE			
		TYPE	
IBM		706	

Access Timing (Part 2 of 2)

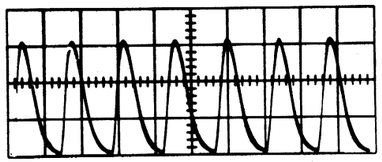
1V/CM



.5 µS/CM

E2B08
WRITE OSC. (XA012)
OUTPUT
(SEE ACC NOTE PG XA012)

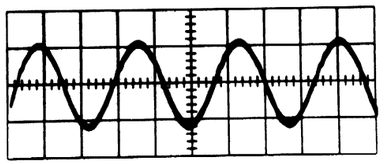
5V/CM



.5 µS/CM

H2D02
WRITE RESISTOR (XA011)
ALL 1^S PATTERN

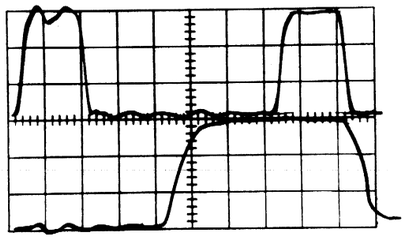
.5V/CM



.5 µS/CM

D2G07
READ SIGNAL (XA021)
AT CE TP
ALL 1^S PATTERN

1V/CM

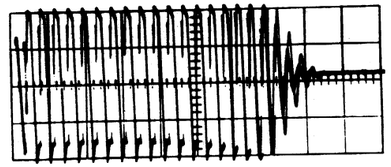


.1 µS/CM

C2B12
DATA SEPARATOR (XA021)
(SEE ACC NOTE PG XA021)

C2B05

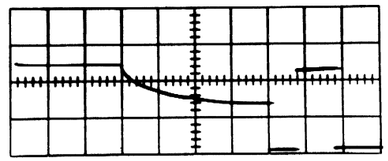
2V/CM



20 µS/CM

K2J09
TRANSDUCER (XA051)
DRIVE COIL

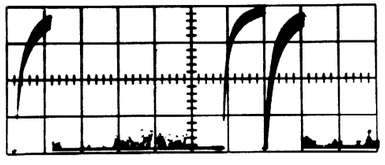
20V/CM



2 MS/CH

G2B04
DETENT COIL (XA031)

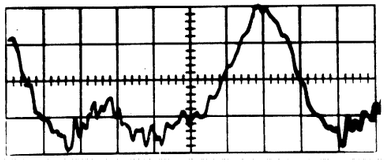
1V/CM



2 MS/CM

F2G09
BRIDGE CURRENT (XA041)
FEEDBACK

.5V/CM



2 MS/CM

F2B09
TACH SIGNAL (XA041)

A
B
C
D
E

X-Y RECORDINGS

DATE			
		TYPE	
IBM		801	

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Well illustrated?	☐	☐
Written for your technical level?	☐	☐

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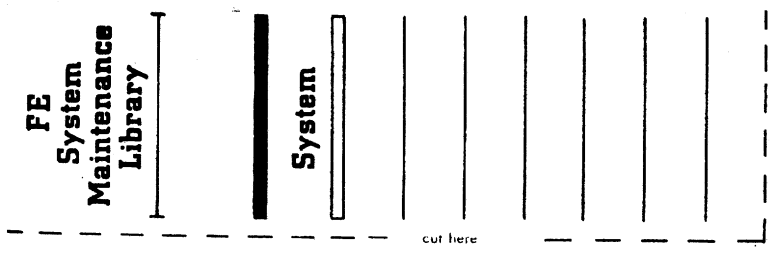

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IBM

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IBM **FE Supplement**

System/Unit Single Disk Storage (Incr. Access)

Re: Form No. Y26-4126-0

This Supplement No. Y26-0613

Date January 3, 1968

Previous Supplement Nos. Y26-0612 Obsolete

This supplement revises the Single Disk Storage (Incr. Access) FE Maintenance Diagram manual, Form Y26-4126-0 or Single Disk Storage logic manual part number 2199570.

If you have Form Y26-4126-0:

The Title and ii page supplied with this supplement is not required; discard the page.
Remove old page 002 and 102.
Insert new page 002 and 102.
Remove old page 501 and 502.
Insert new page 501 and 502.
Remove old page 503 and 601.
Insert new page 503 and 601.

If you have a Single Disk Storage logic manual part number 2199570:

Place the Title and ii, and page iii and blank page in front of the maintenance diagrams.
Remove old page 002 and 102.
Insert new page 002 and 102.
Remove old page 501 and 502.
Insert new page 501 and 502.
Remove old page 503 and 601.
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Discard all removed pages.

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This supplement (Y26-0613) obsoletes supplement Y26-0612.

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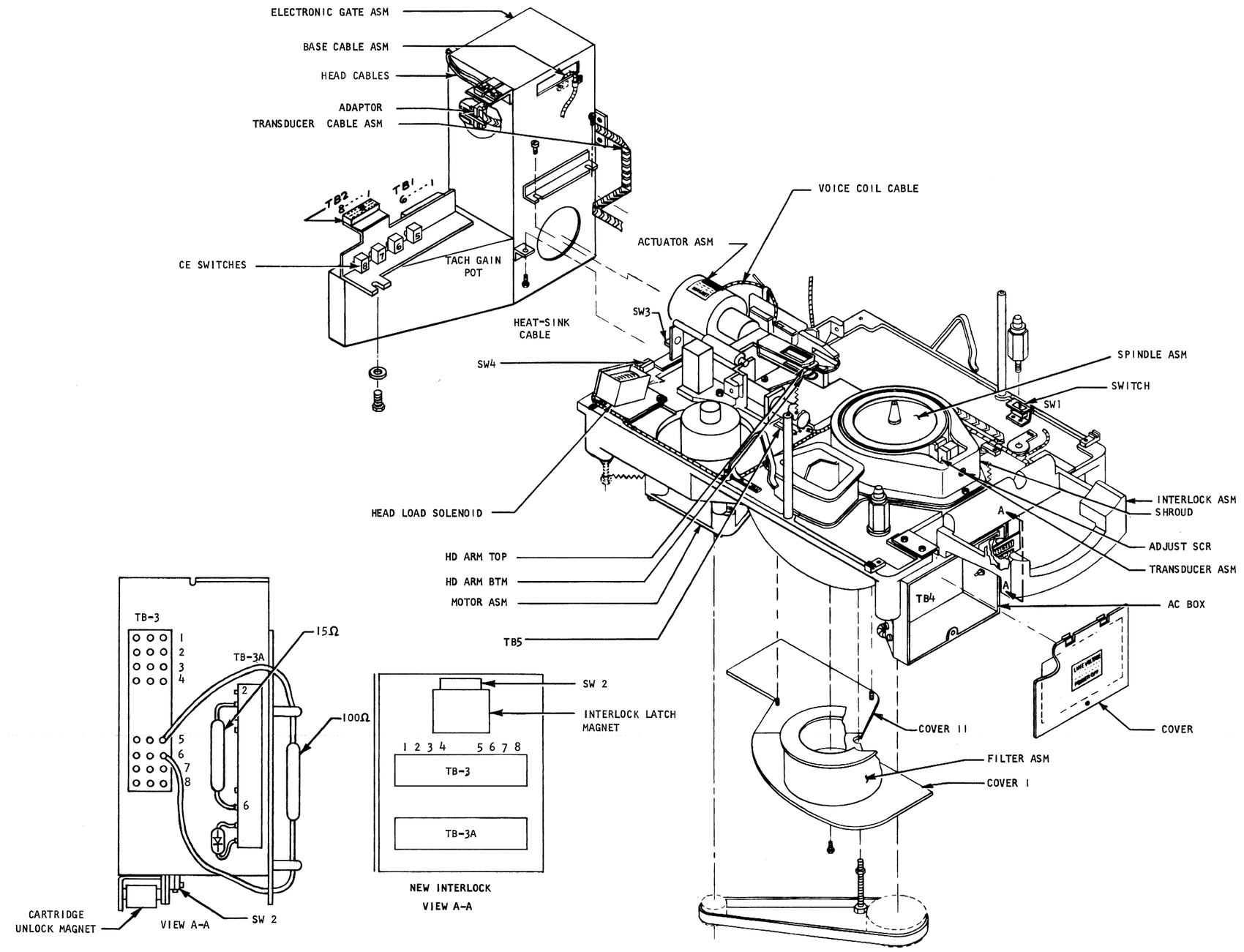

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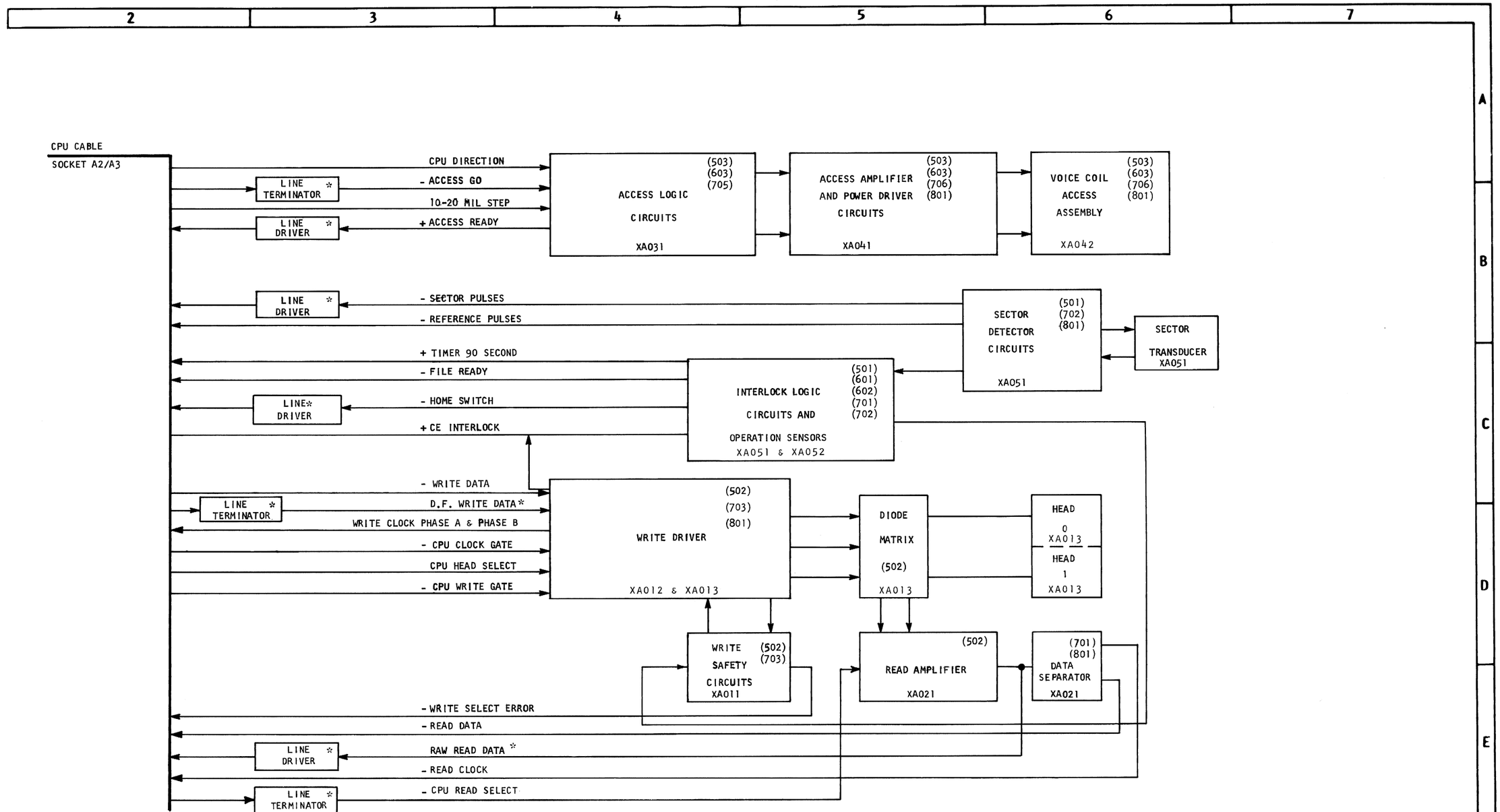
LOCATION OF COMPONENTS

DATE			
		TYPE	
IBM		002	

Location of Components

Form Y26-4126-0
FES Y26-0613



* USED WITH 2310 REMOTE

DATA FLOW AND CONTROL

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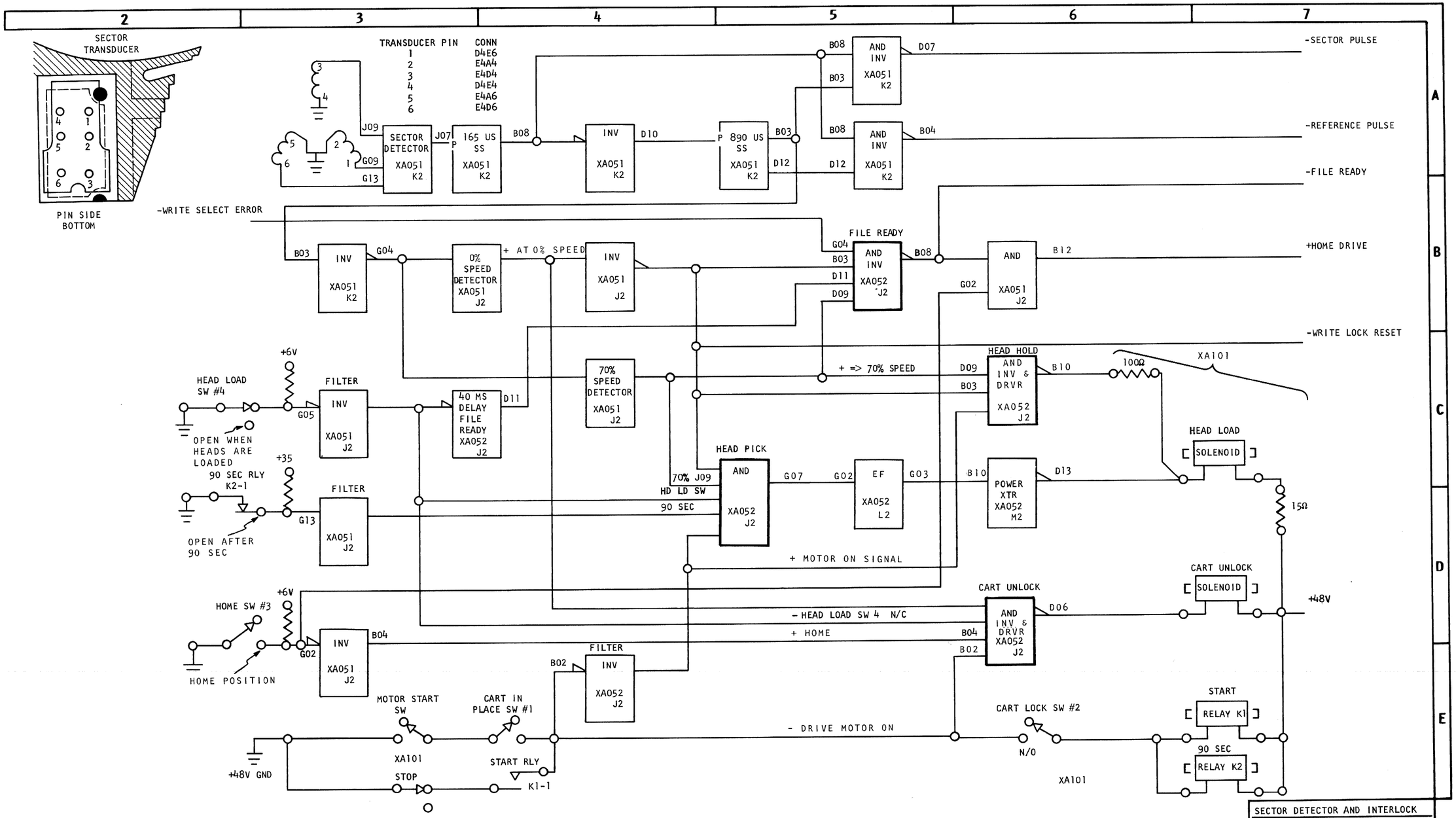
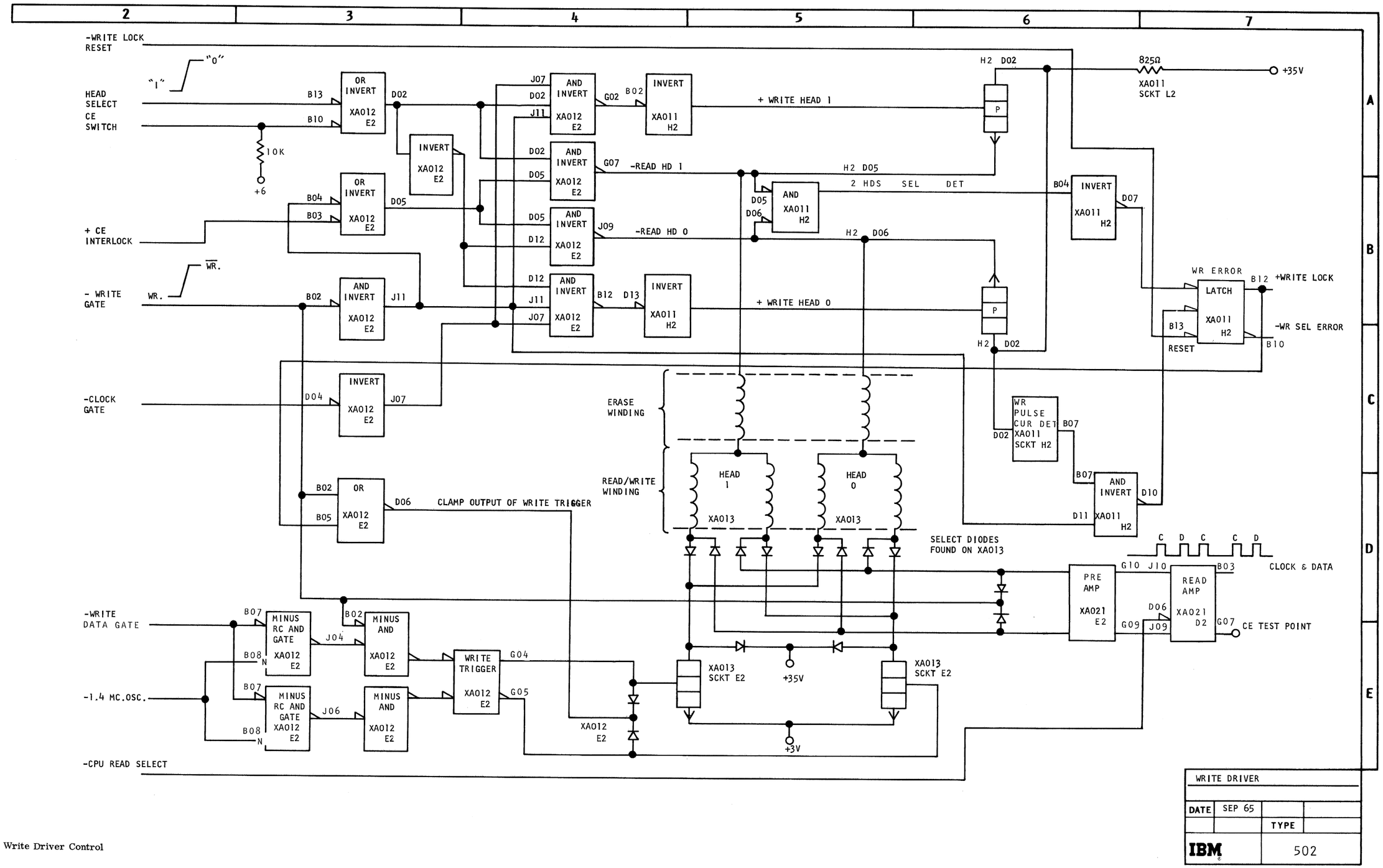
IBM		102	



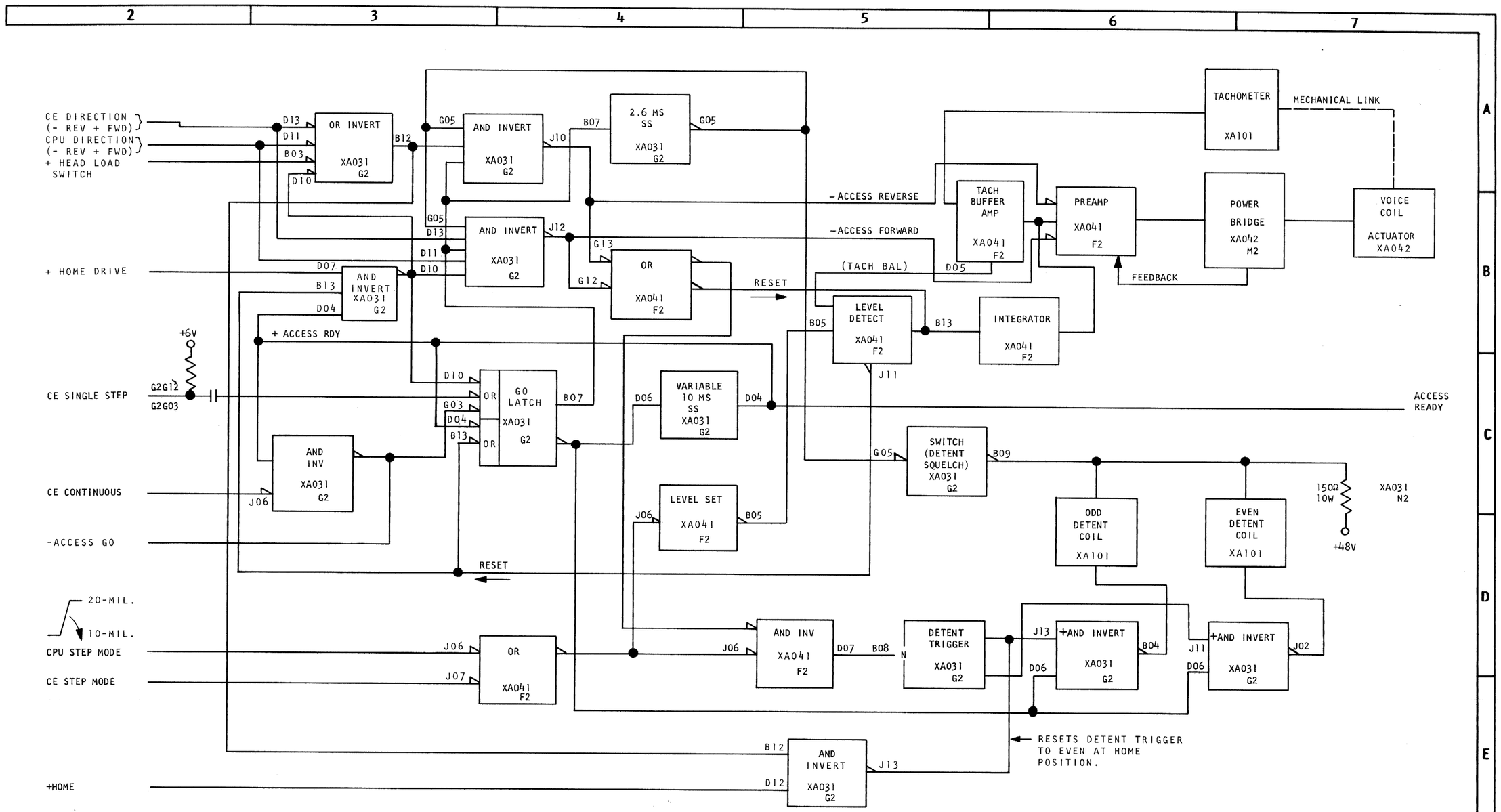
Sector Detector and Interlock

Form Y26-4126-0
FES Y26-0613

Form Y26-4126-0
FES Y26-0613



Write Driver Control



ACCESS & DETENT

DATE	SEP 65		
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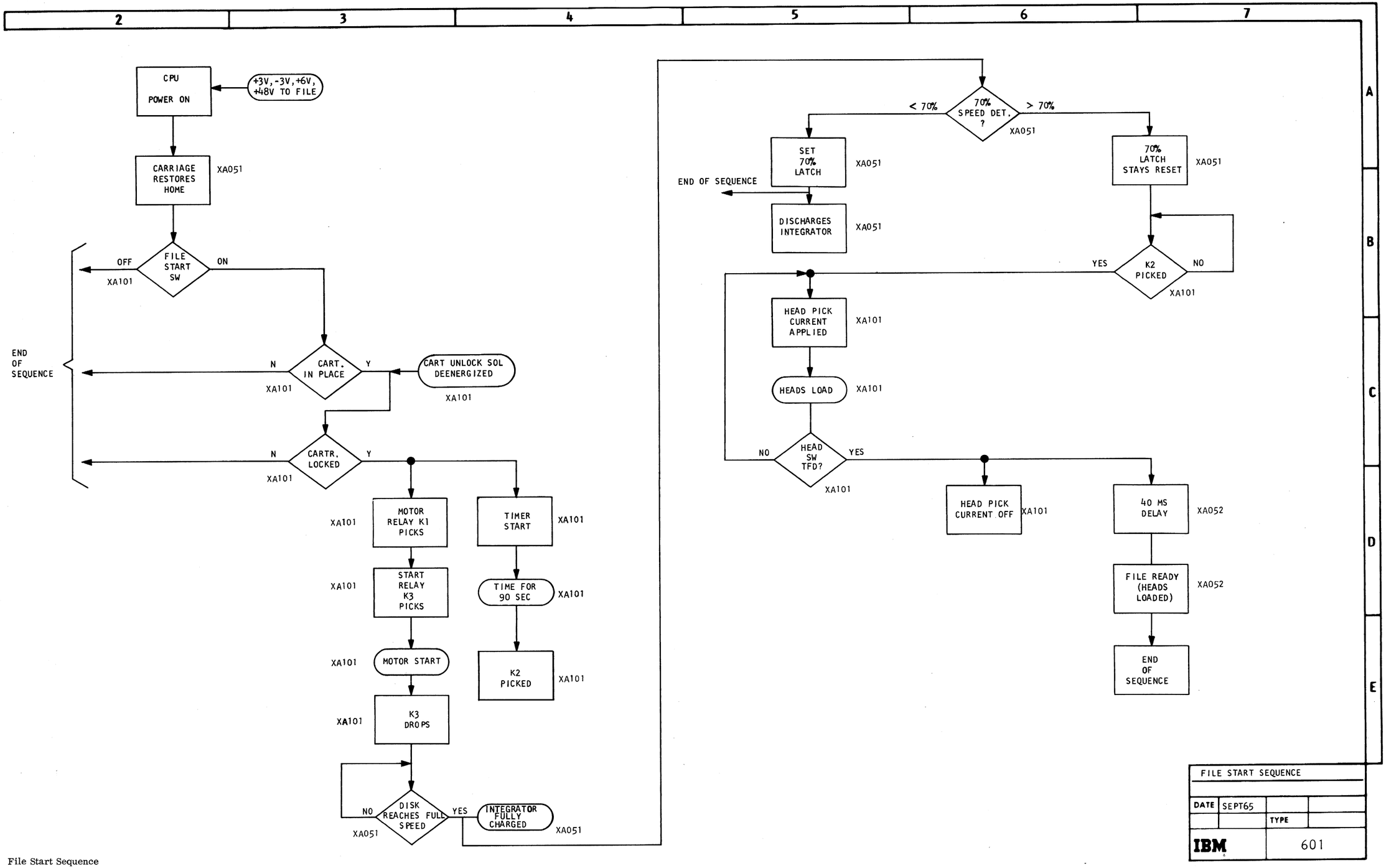
IBM		503	

Form Y26-4126-0
FES Y26-0613



File Start Sequence