



IBM 5285 System Logic Manual

SY31-0632-1

5280

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Second Edition (December 1980)

This is a major revision of, and makes obsolete, SY31-0632-0. Because the changes and additions are extensive, this publication should be reviewed in its entirety. Changes are periodically made to the information herein; these changes will be reported in technical newsletters or in new editions of this publication.

Use this publication as an aid in servicing the IBM 5285 or as an aid in understanding the operation of the IBM 5285.

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**IBM 5285
System Logic Manual**

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This technical newsletter provides replacement pages for the subject publication. Pages to be inserted and/or removed are:

LD18

Summary of Amendments

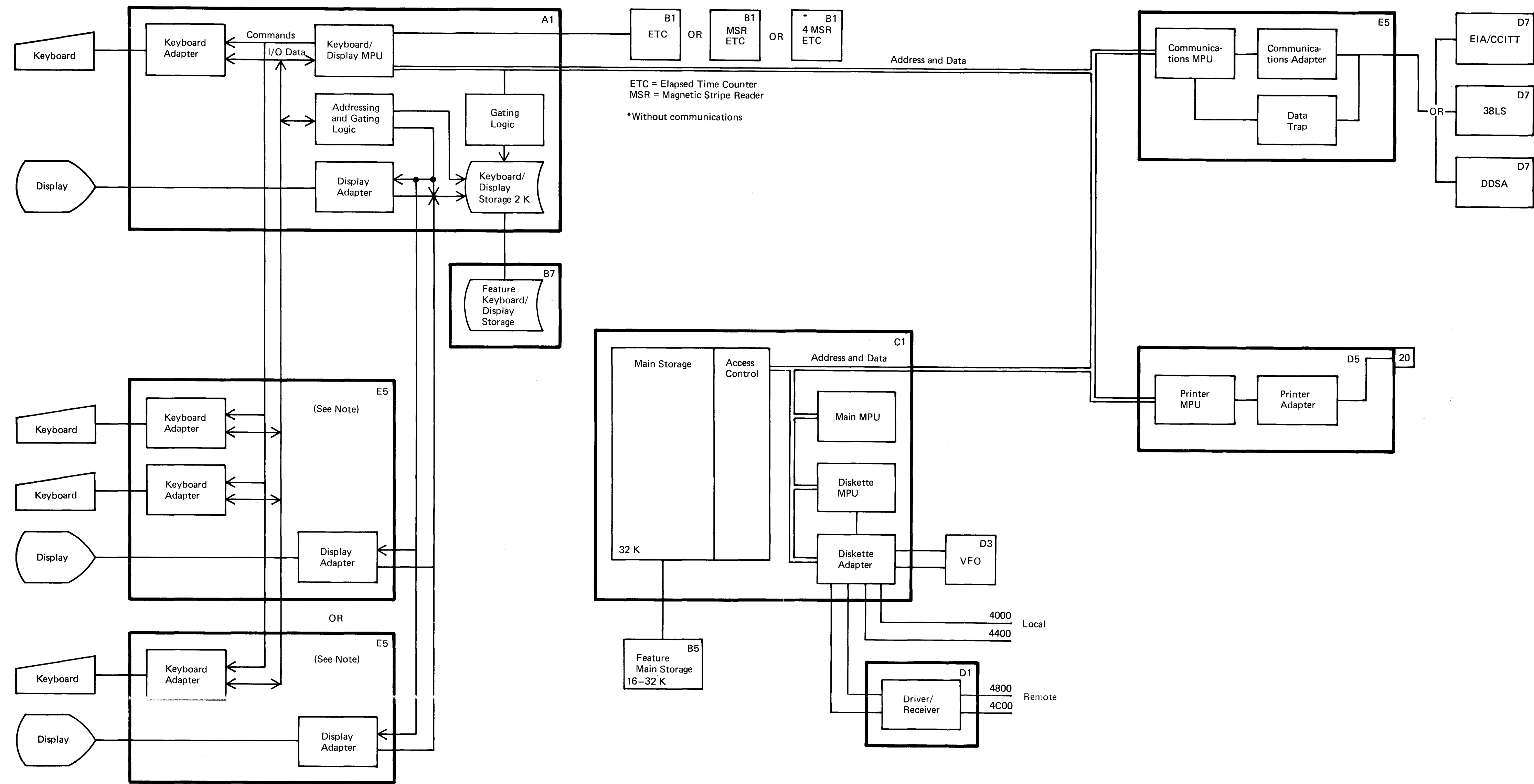
- Correction of pin numbering for printer cable connector

Note: Please file this cover letter at the back of the manual to provide a record of changes.

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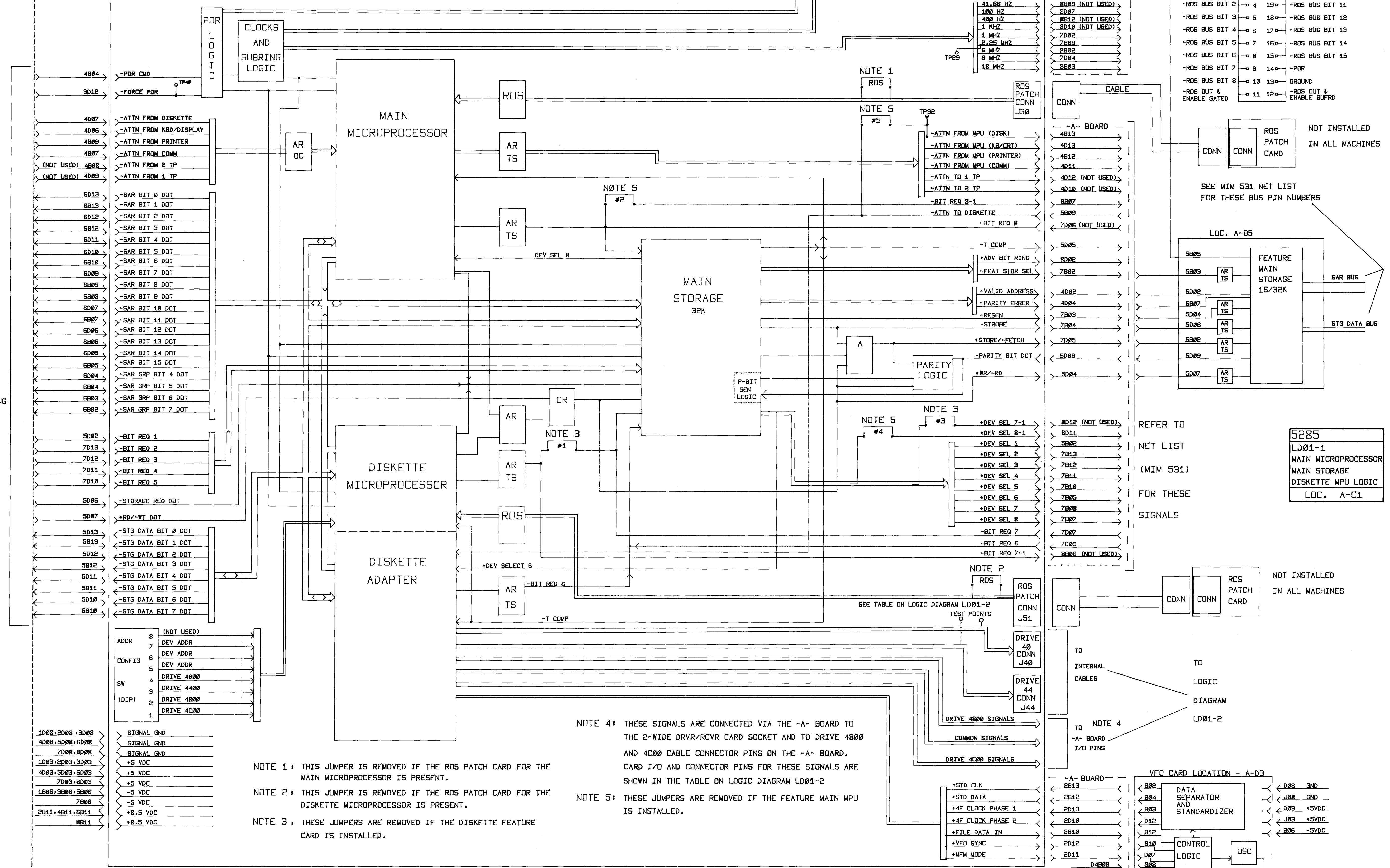
IBM Corporation, Information Design and Development, Department 997, 11400 Burnet Rd., Austin, Texas 78758

Printed in U.S.A.



Note: Either a single or a dual data station may be added if the communications feature is not installed.

DISKETTE/MAIN MPU LOGIC
CARD LOCATION A-C1



REFER TO
MIM 531
NET LISTING
FOR
THESE
SIGNALS

REFER TO
NET LIST
(MIM 531)
FOR THESE
SIGNALS

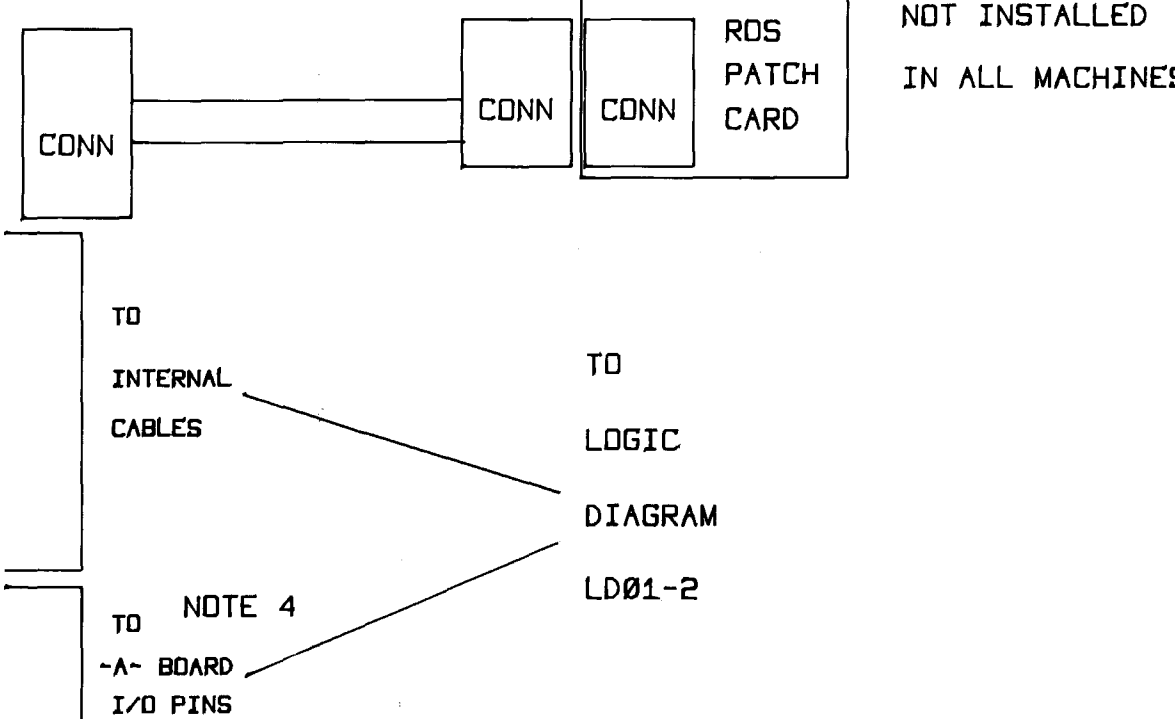
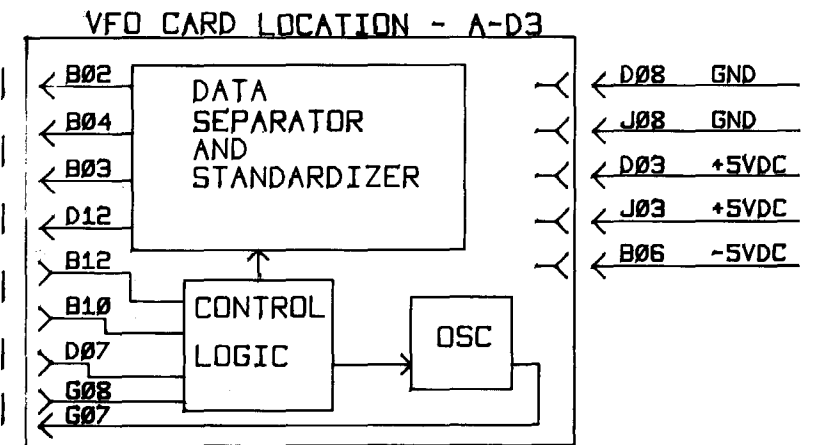
5285
LD01-1
MAIN MICROPROCESSOR
MAIN STORAGE
DISKETTE MPU LOGIC
LOC. A-C1

- NOTE 1: THIS JUMPER IS REMOVED IF THE RDS PATCH CARD FOR THE MAIN MICROPROCESSOR IS PRESENT.
- NOTE 2: THIS JUMPER IS REMOVED IF THE RDS PATCH CARD FOR THE DISKETTE MICROPROCESSOR IS PRESENT.
- NOTE 3: THESE JUMPERS ARE REMOVED IF THE DISKETTE FEATURE CARD IS INSTALLED.

- NOTE 4: THESE SIGNALS ARE CONNECTED VIA THE -A- BOARD TO THE 2-WIDE DRVR/RCLR CARD SOCKET AND TO DRIVE 4800 AND 4C00 CABLE CONNECTOR PINS ON THE -A- BOARD, CARD I/O AND CONNECTOR PINS FOR THESE SIGNALS ARE SHOWN IN THE TABLE ON LOGIC DIAGRAM LD01-2
- NOTE 5: THESE JUMPERS ARE REMOVED IF THE FEATURE MAIN MPU IS INSTALLED.

1D08, 2D08, 3D08	SIGNAL GND
4D08, 5D08, 6D08	SIGNAL GND
7D08, 8D08	SIGNAL GND
1D03, 2D03, 3D03	+5 VDC
4D03, 5D03, 6D03	+5 VDC
7D03, 8D03	+5 VDC
1B06, 3B06, 5B06	-5 VDC
7B06	-5 VDC
2B11, 4B11, 6B11	+8.5 VDC
8B11	+8.5 VDC

+STD CLK	2B13
+STD DATA	2B12
+4F CLOCK PHASE 1	2D13
+4F CLOCK PHASE 2	2D10
+FILE DATA IN	2B10
+VFO SYNC	2D12
+MFM MODE	2D11

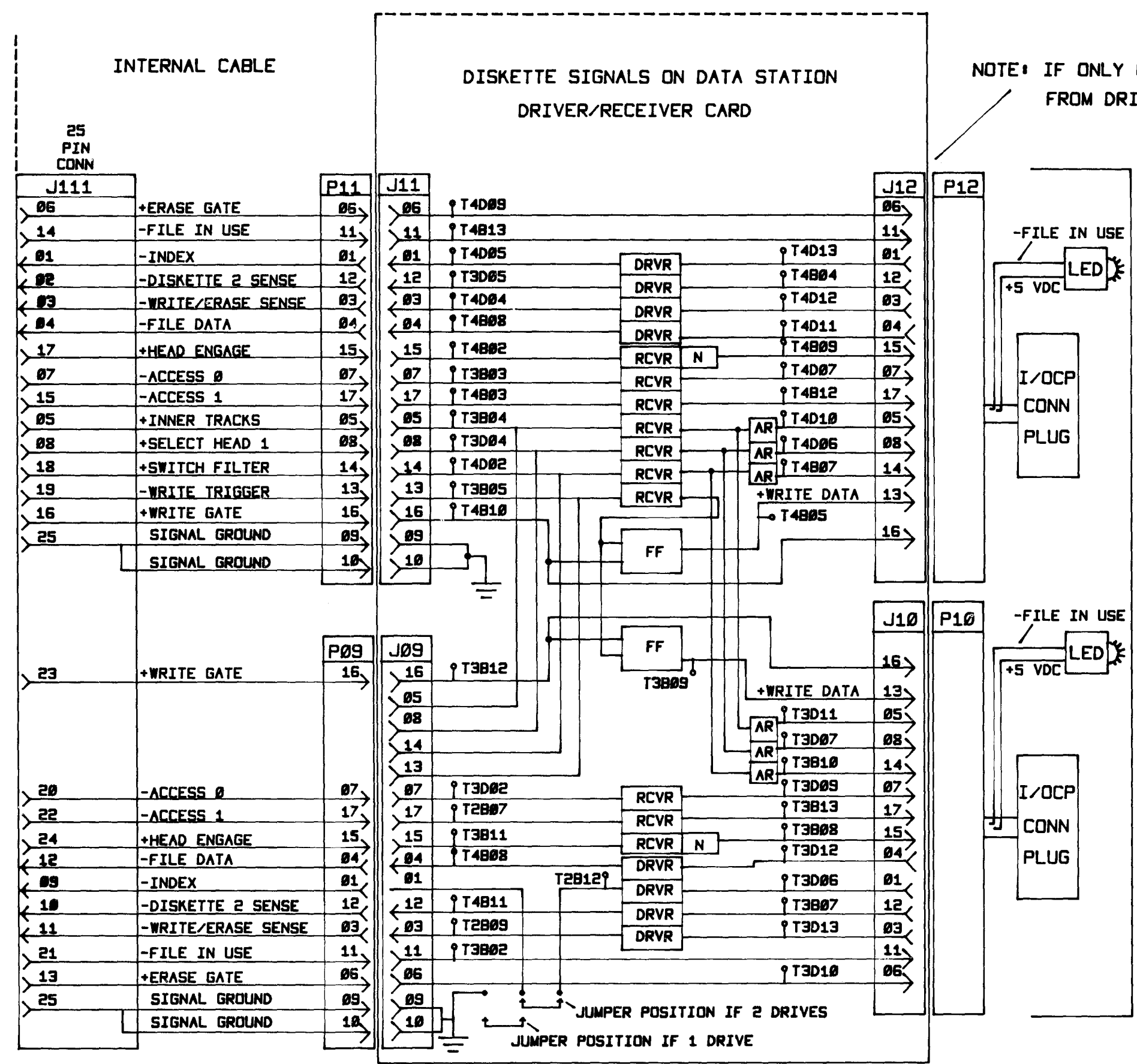


NOT INSTALLED
IN ALL MACHINES

NOT INSTALLED
IN ALL MACHINES

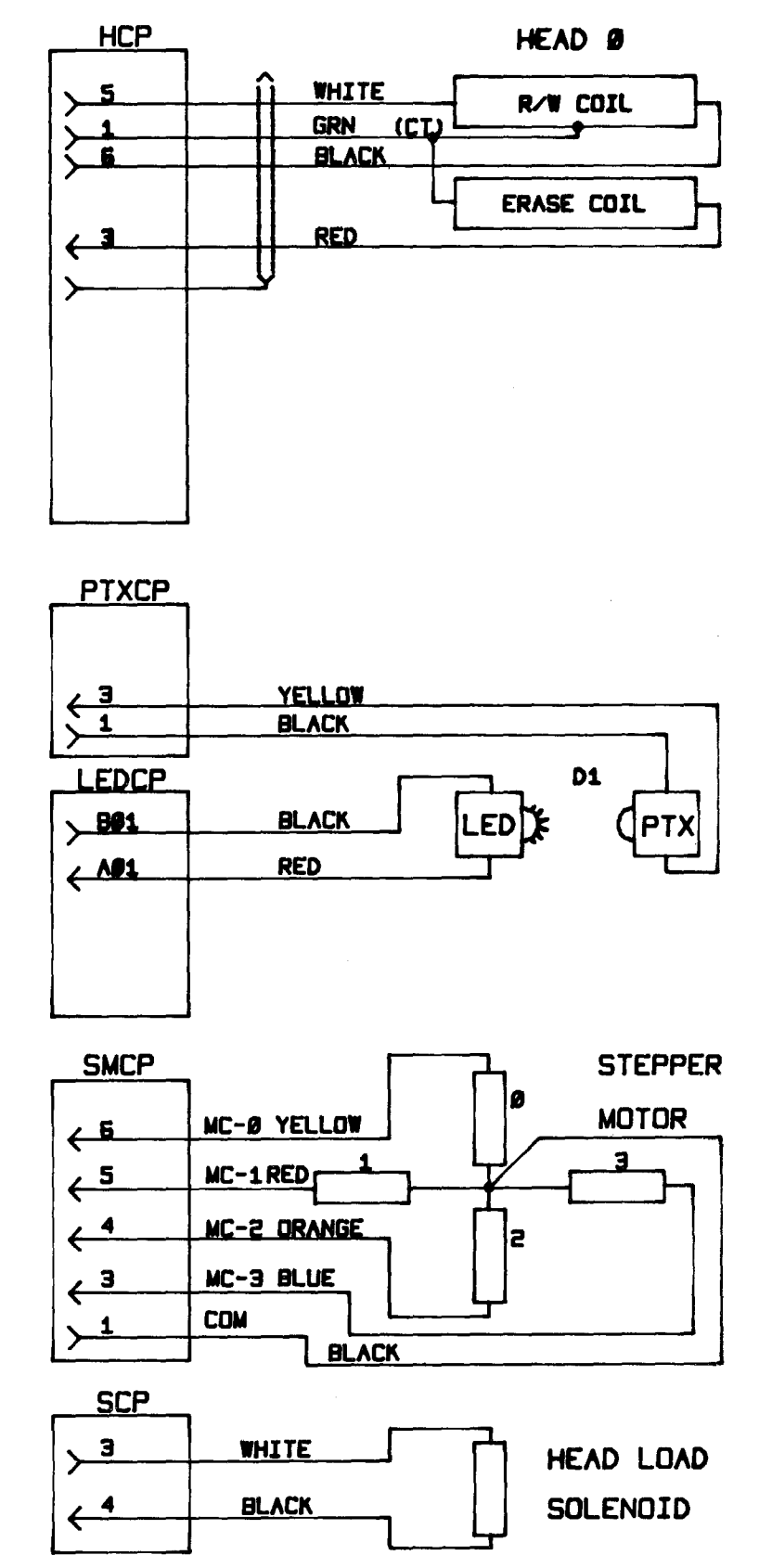
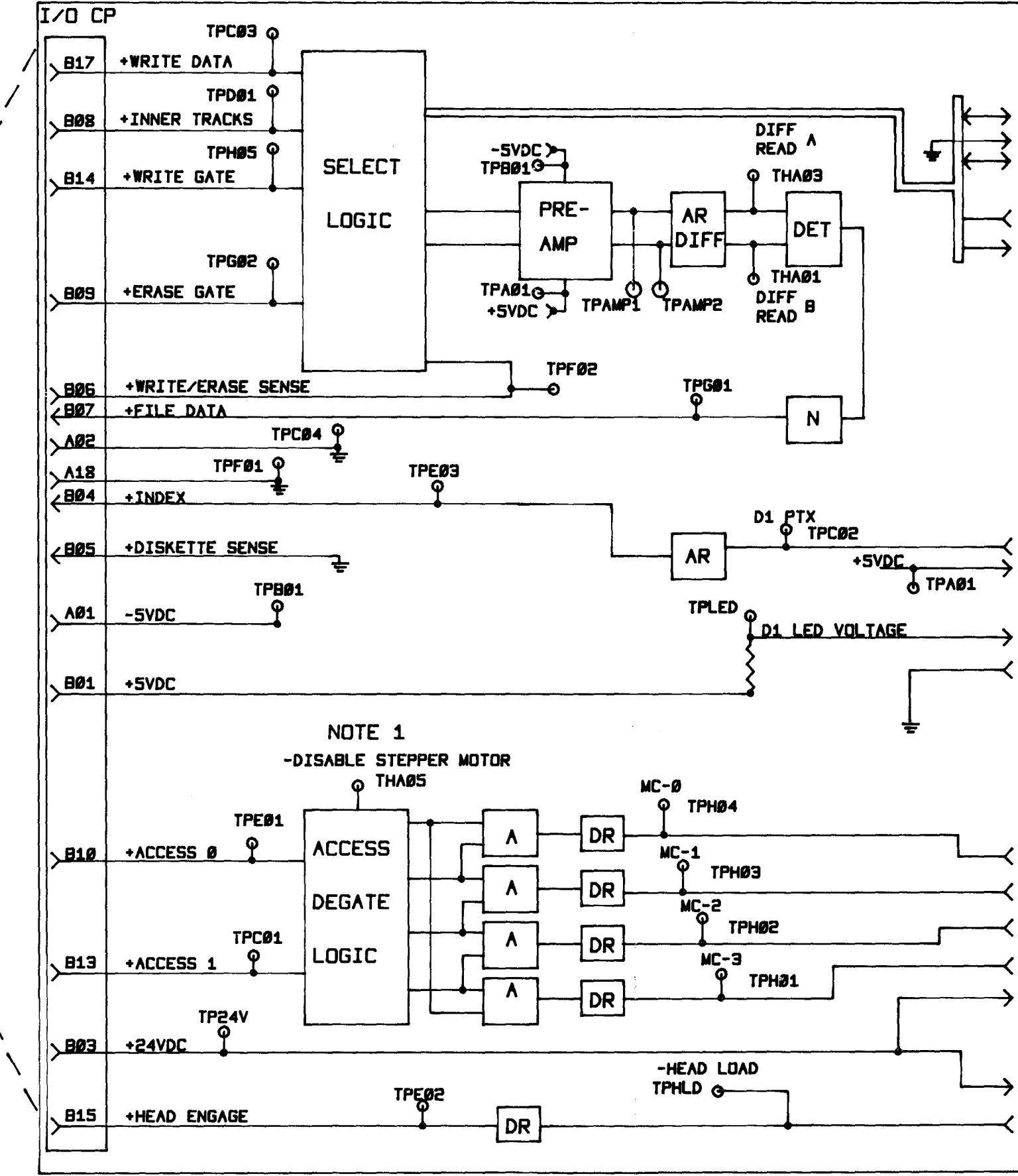
EXTERNAL CABLE FROM 5285 BELOW (SIGNALS FROM DISKETTE DRIVER/RECEIVER CARD) PLUGS TO THIS CONNECTOR

5281 DATA STATION
5282 DUAL DATA STATION



TO FILE CONTROL CARD CONNECTOR (I/OCP)

31SD
OR
51TD



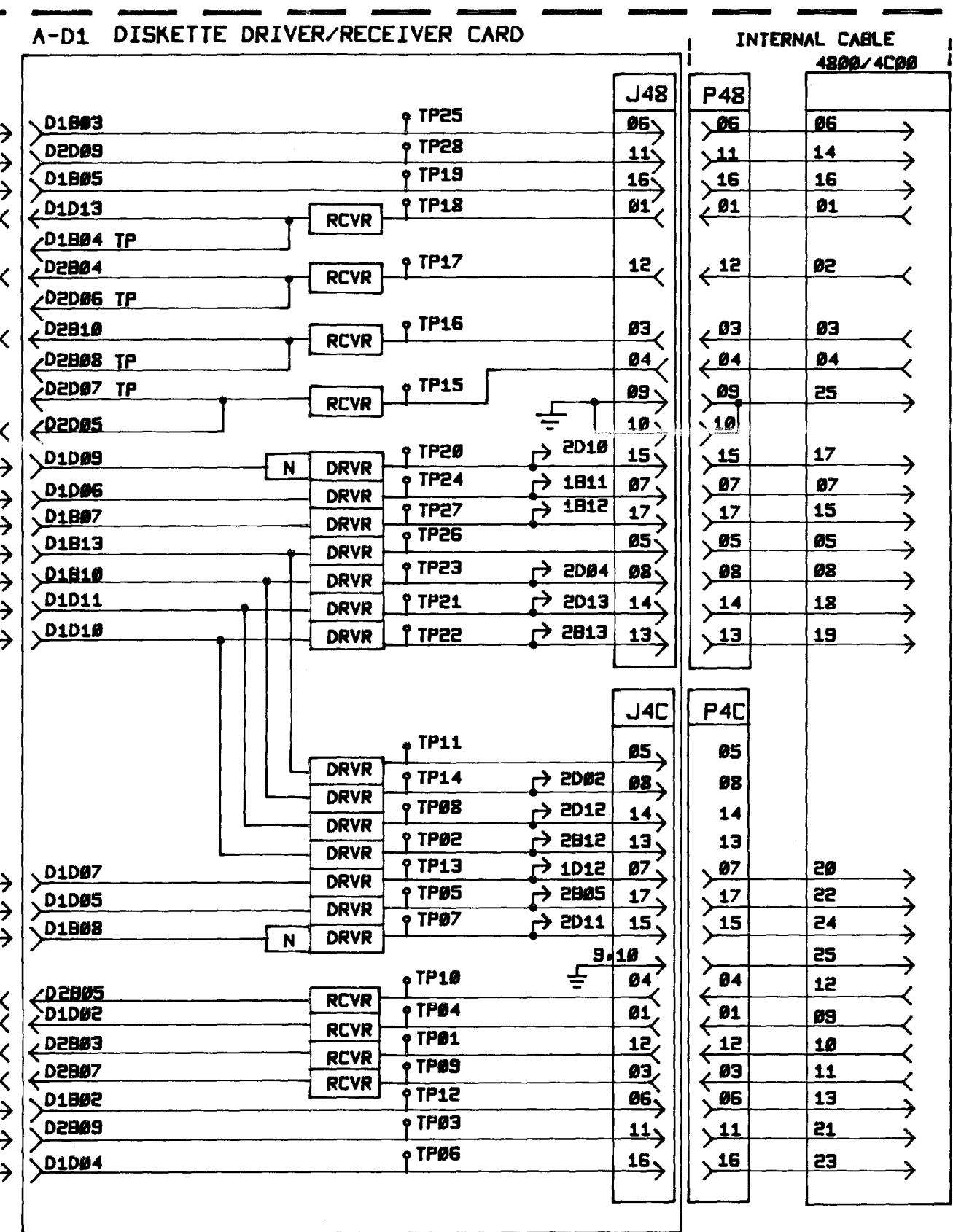
MACHINE BOUNDARY

5285 PROGRAMMABLE DATA STATION

FROM LOGIC DIAGRAM LD01-2
DRIVE 4800 SIGNALS

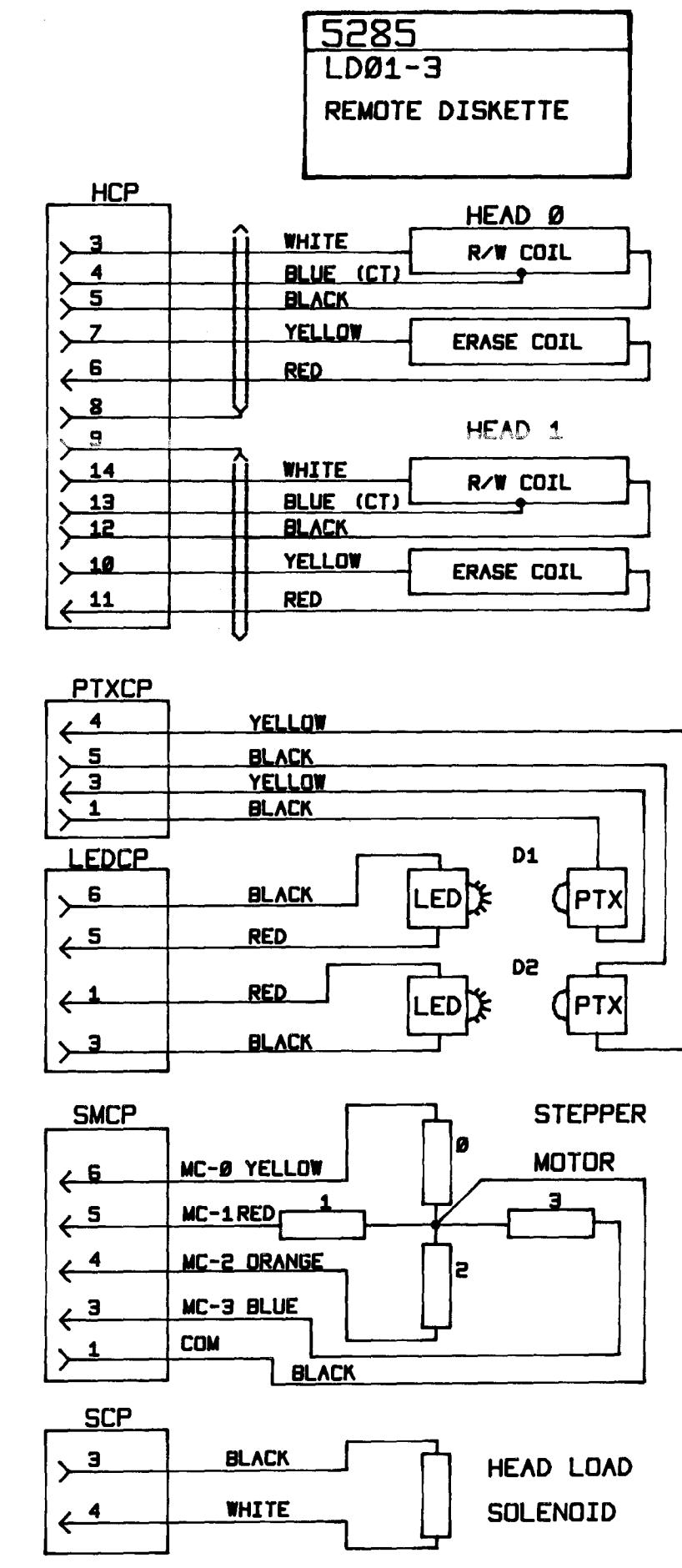
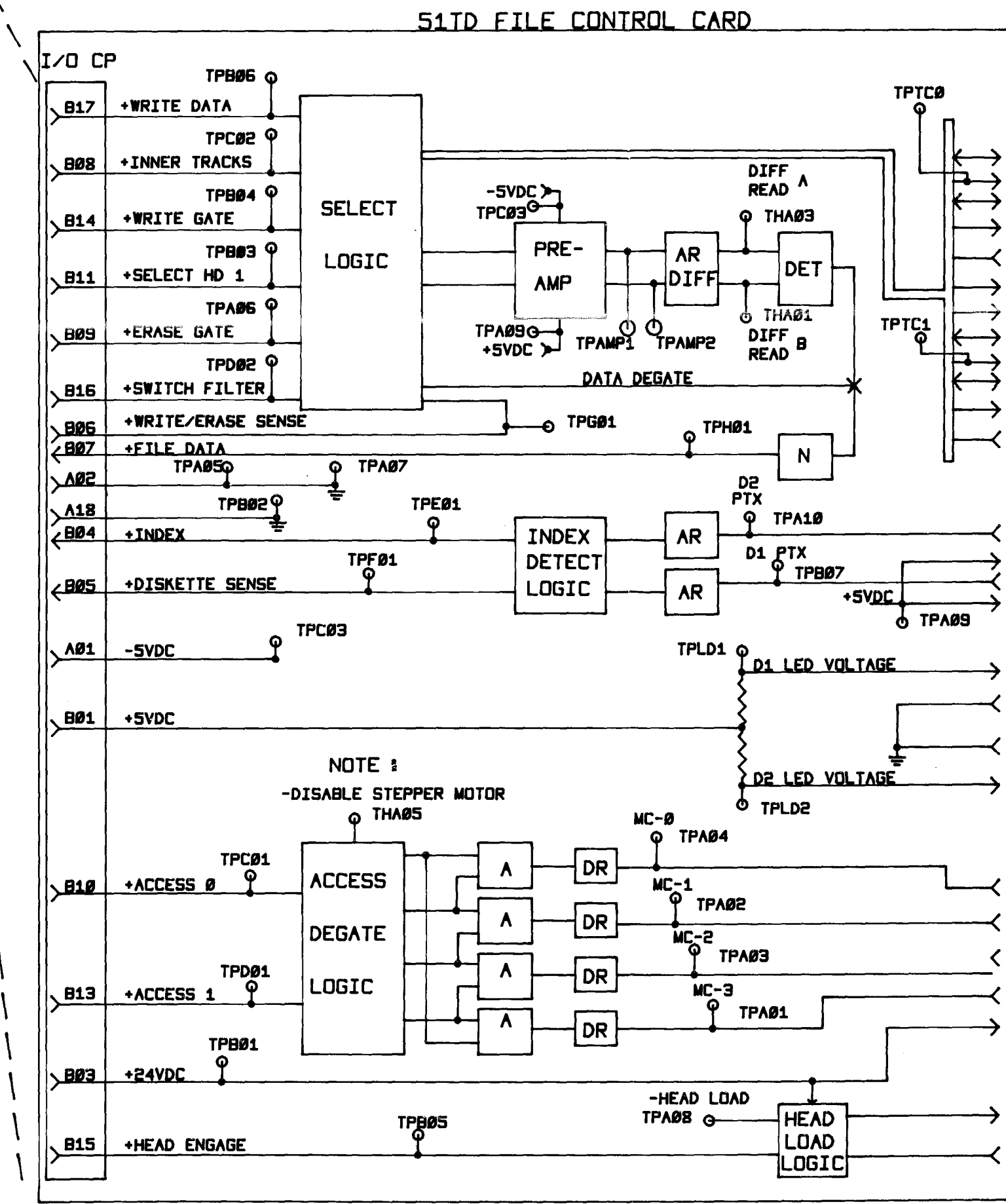
COMMON SIGNALS

DRIVE 4C00 SIGNALS



EXTERNAL CABLE TO DATA STATION PLUGS TO THIS CONNECTOR

NOTE: A JUMPER FROM GROUND TO THA05 (TP) OVERRIDES ANY INPUT ACCESS LINES. THIS IS USED IN MAKING HEAD/STEPPER MOTOR ADJUSTMENTS.



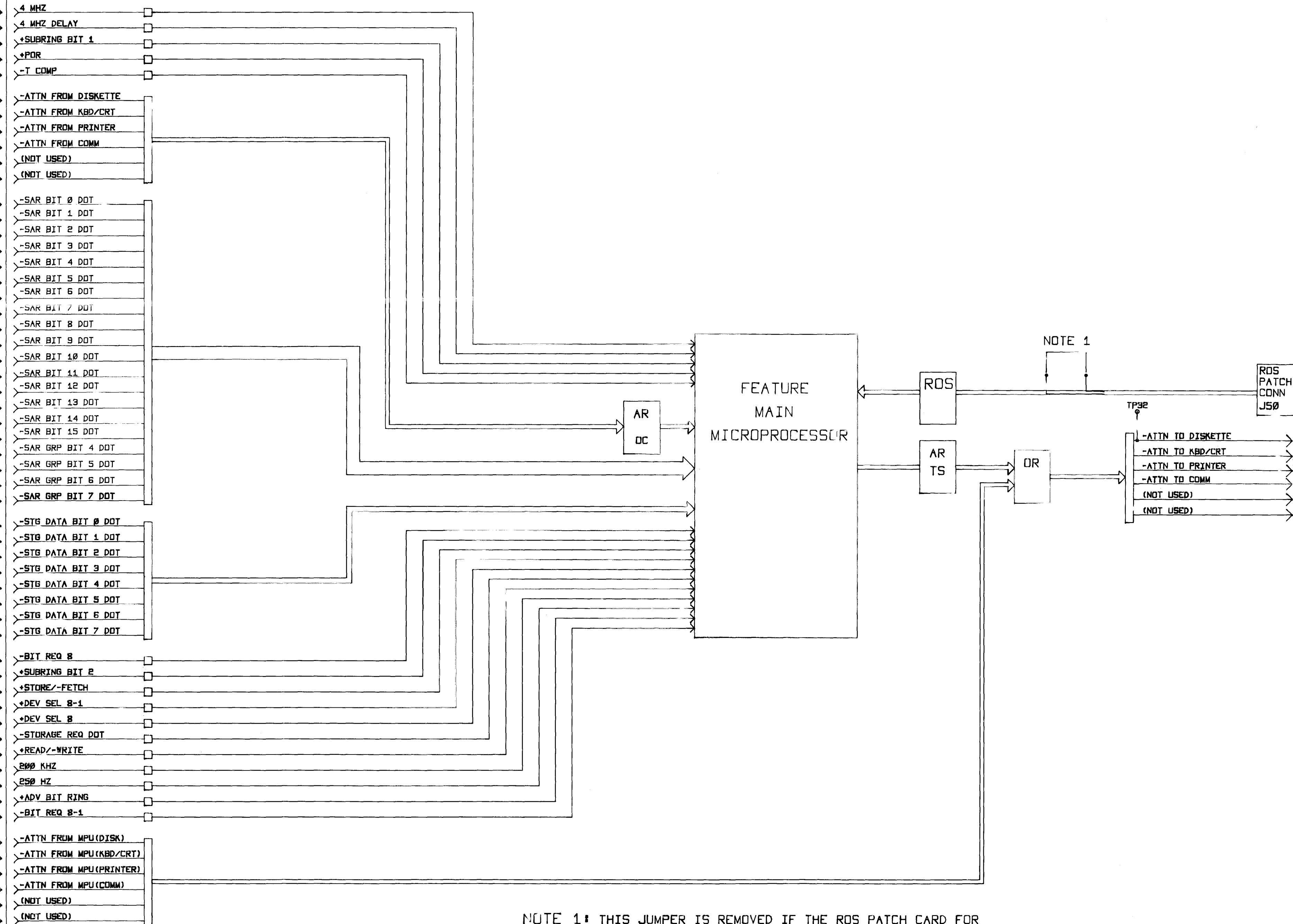
5285 LD01-3 REMOTE DISKETTE

FEATURE MAIN MPU LOGIC
CARD LOCATION A-E5

-A-
LOGIC BOARD

- 8B06 → 4 MHZ
- 7B13 → 4 MHZ DELAY
- 8B02 → +SUBRING BIT 1
- 5B03 → +POR
- 5B05 → -T COMP
- 7D07 → -ATTN FROM DISKETTE
- 7B07 → -ATTN FROM KBD/CRT
- 7B02 → -ATTN FROM PRINTER
- 7D04 → -ATTN FROM COMM
- 7D02 → (NOT USED)
- 7B03 → (NOT USED)
- 6D13 → -SAR BIT 0 DOT
- 6B13 → -SAR BIT 1 DOT
- 6D12 → -SAR BIT 2 DOT
- 6B12 → -SAR BIT 3 DOT
- 6D11 → -SAR BIT 4 DOT
- 6B10 → -SAR BIT 5 DOT
- 6B10 → -SAR BIT 6 DOT
- 6D09 → -SAR BIT 7 DOT
- 6B09 → -SAR BIT 8 DOT
- 6B08 → -SAR BIT 9 DOT
- 6D07 → -SAR BIT 10 DOT
- 6B07 → -SAR BIT 11 DOT
- 6D06 → -SAR BIT 12 DOT
- 6B06 → -SAR BIT 13 DOT
- 6D05 → -SAR BIT 14 DOT
- 6B05 → -SAR BIT 15 DOT
- 6D04 → -SAR GRP BIT 4 DOT
- 6B04 → -SAR GRP BIT 5 DOT
- 6B03 → -SAR GRP BIT 6 DOT
- 6B02 → -SAR GRP BIT 7 DOT
- 5D13 → -STG DATA BIT 0 DOT
- 5B13 → -STG DATA BIT 1 DOT
- 5D12 → -STG DATA BIT 2 DOT
- 5B12 → -STG DATA BIT 3 DOT
- 5D11 → -STG DATA BIT 4 DOT
- 5B11 → -STG DATA BIT 5 DOT
- 5D10 → -STG DATA BIT 6 DOT
- 5B10 → -STG DATA BIT 7 DOT
- 8B12 → -BIT REQ 8
- 6D02 → +SUBRING BIT 2
- 7D11 → +STORE/-FETCH
- 8D02 → +DEV SEL 8-1
- 8D12 → +DEV SEL 8
- 5D06 → -STORAGE REQ DOT
- 5D07 → +READ/-WRITE
- 8D10 → 800 KHZ
- 8B08 → 850 HZ
- 5B09 → +ADV BIT RING
- 7B09 → -BIT REQ 8-1
- 7D05 → -ATTN FROM MPU(DISK)
- 7D10 → -ATTN FROM MPU(KBD/CRT)
- 7B12 → -ATTN FROM MPU(PRINTER)
- 7D13 → -ATTN FROM MPU(COMM)
- 8B05 → (NOT USED)
- 8D06 → (NOT USED)
- 5D08, 6D08 → SIGNAL GROUND
- 7D08, 8D08 → SIGNAL GROUND
- 5D09, 6D09 → +5 VDC
- 7D09, 8D09 → +5 VDC
- 5B06 → -5 VDC
- 7B06 → -5 VDC
- 6B11 → +8.5 VDC
- 8B11 → +8.5 VDC

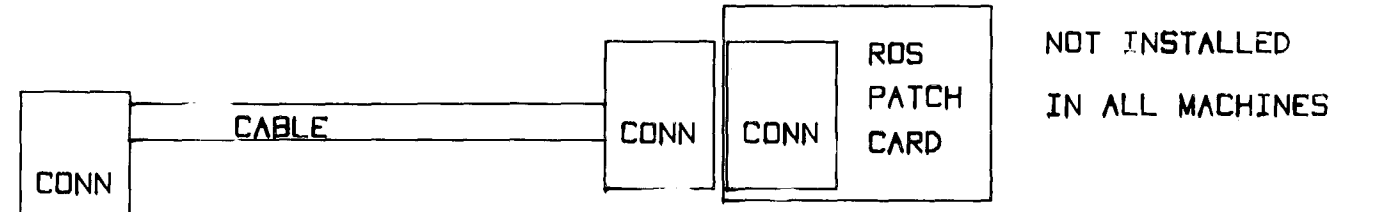
REFER TO
MIM 531
NET LISTING
FOR
THESE
SIGNALS



RDS PATCH CONNECTOR

+SET BUFDR	1	220	-CYCLE MODE
-RDS BUS BIT 0	2	210	-RDS BUS BIT 9
-RDS BUS BIT 1	3	200	-RDS BUS BIT 10
-RDS BUS BIT 2	4	190	-RDS BUS BIT 11
-RDS BUS BIT 3	5	180	-RDS BUS BIT 12
-RDS BUS BIT 4	6	170	-RDS BUS BIT 13
-RDS BUS BIT 5	7	160	-RDS BUS BIT 14
-RDS BUS BIT 6	8	150	-RDS BUS BIT 15
-RDS BUS BIT 7	9	140	-POR
-RDS BUS BIT 8	10	130	GROUND
-RDS OUT & ENABLE GATED	11	120	-RDS OUT & ENABLE BUFDR

NOTE 1



REFER TO
NET LIST
(MIM 531)
FOR THESE
SIGNALS

5285
LD01-4
FEATURE MAIN MPU
LOC. A-E5

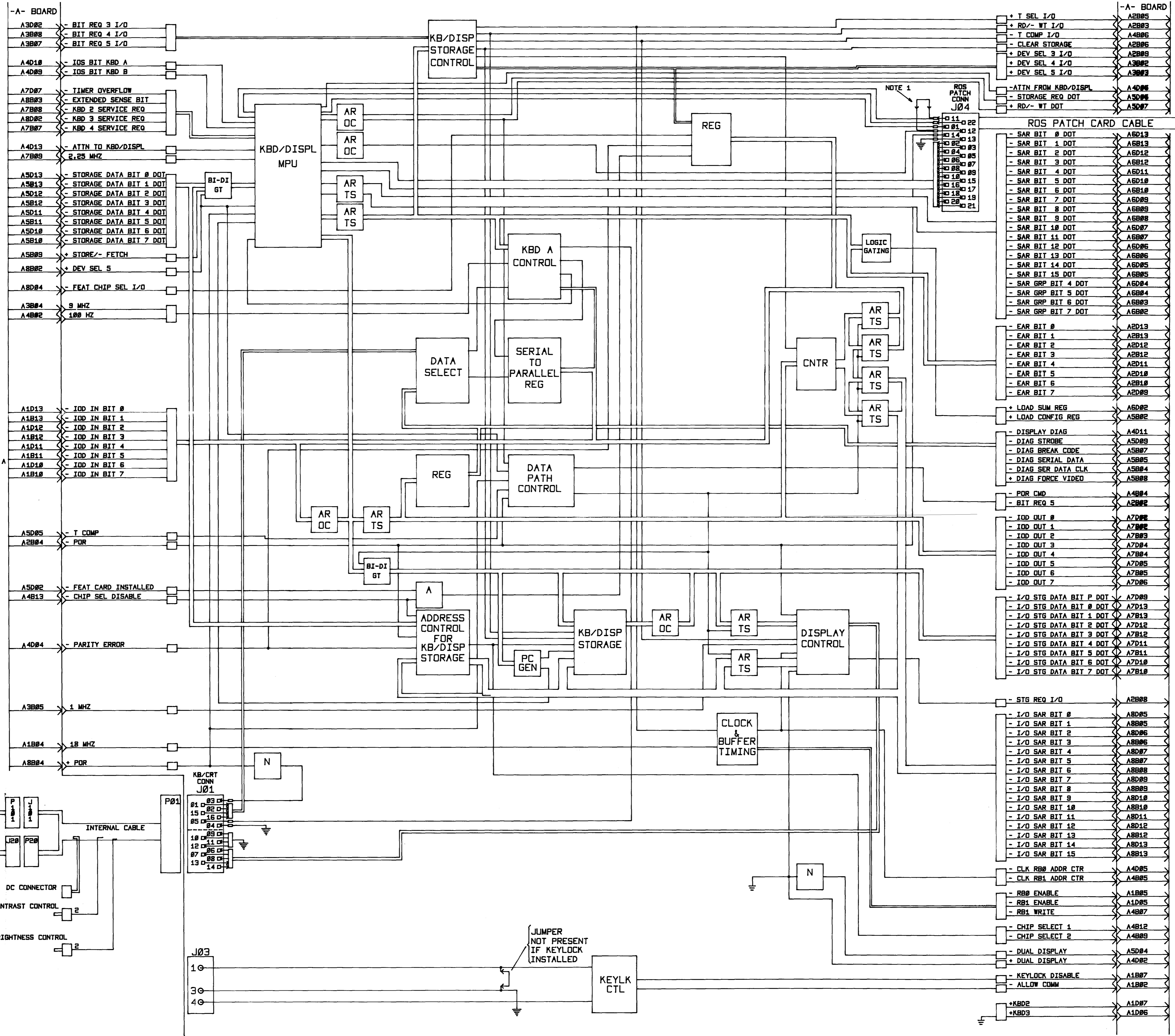
NOTE 1: THIS JUMPER IS REMOVED IF THE RDS PATCH CARD FOR THE FEATURE MAIN MICROPROCESSOR IS PRESENT.

NOTE 2: THE FOLLOWING JUMPERS ARE REMOVED FROM THE A1 BOARD IF THE FEATURE MAIN MICROPROCESSOR IS PRESENT:
7D09-7D10
7B11-7B12
7D12-7D13

- A-A1 TEST POINTS (TP)
- 1 - SERIAL DATA KB A
 - 2 - STROBE KB A
 - 3 - SER DATA CLK KB A
 - 4 - BREAK CODE KB A
 - 5 - NOT USED
 - 6 - CLICK KB A
 - 7 - NOT USED
 - 8 - NOT USED
 - 9 - NOT USED
 - 10 - VIDE DRIVE
 - 11 - CONTRAST CTL
 - 12 - BRIGHTNESS CTL
 - 13 - VERTICAL DRIVE
 - 14 - NOT USED
 - 15 - POR KB A
 - 16 - HORIZONTAL DRIVE
 - 17 - NOT USED
 - 18 - GROUND
 - 19 - NOT USED
 - 20 - NOT USED

- J01 KBD/CRT CONN
- SERIAL DATA KB A - 1 16
 - STROBE KB A - 2 15
 - POR KB A - 3 14
 - GROUND - 4 13
 - CLICK KB A - 5 12
 - +VIDED DRIVE - 6 11
 - +VERTICAL DRIVE - 7 10
 - +HORIZONTAL DRIVE - 8 9
 - SER DATA CLK KB A
 - +BREAK CODE KB A
 - BRIGHTNESS CTL
 - CONTRAST CTL
 - GROUND
 - GROUND
 - GROUND
 - GROUND
 - GROUND

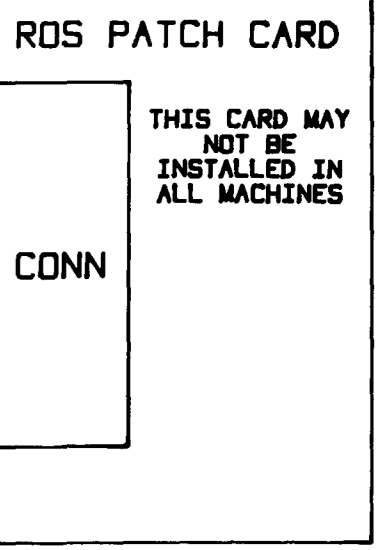
REFERENCE
MIM
217, 219



REFER TO NET LIST (MIM 531)

REFER TO NET LIST (MIM 531)

SEE MIM 561-567

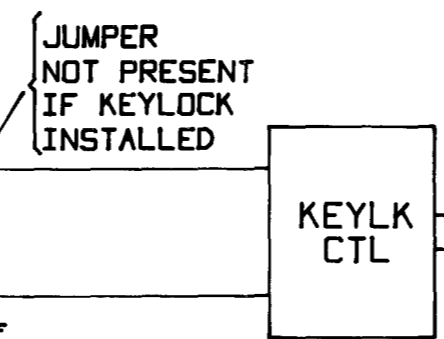


- ROS PATCH CARD CABLE
- SAR BIT 0 DOT A8D13
 - SAR BIT 1 DOT A8B13
 - SAR BIT 2 DOT A8D12
 - SAR BIT 3 DOT A8B12
 - SAR BIT 4 DOT A8D11
 - SAR BIT 5 DOT A8D10
 - SAR BIT 6 DOT A8B10
 - SAR BIT 7 DOT A8D09
 - SAR BIT 8 DOT A8B09
 - SAR BIT 9 DOT A8D08
 - SAR BIT 10 DOT A8D07
 - SAR BIT 11 DOT A8B07
 - SAR BIT 12 DOT A8D06
 - SAR BIT 13 DOT A8B06
 - SAR BIT 14 DOT A8D05
 - SAR BIT 15 DOT A8B05
 - SAR GRP BIT 4 DOT A8D04
 - SAR GRP BIT 5 DOT A8B04
 - SAR GRP BIT 6 DOT A8D03
 - SAR GRP BIT 7 DOT A8B02

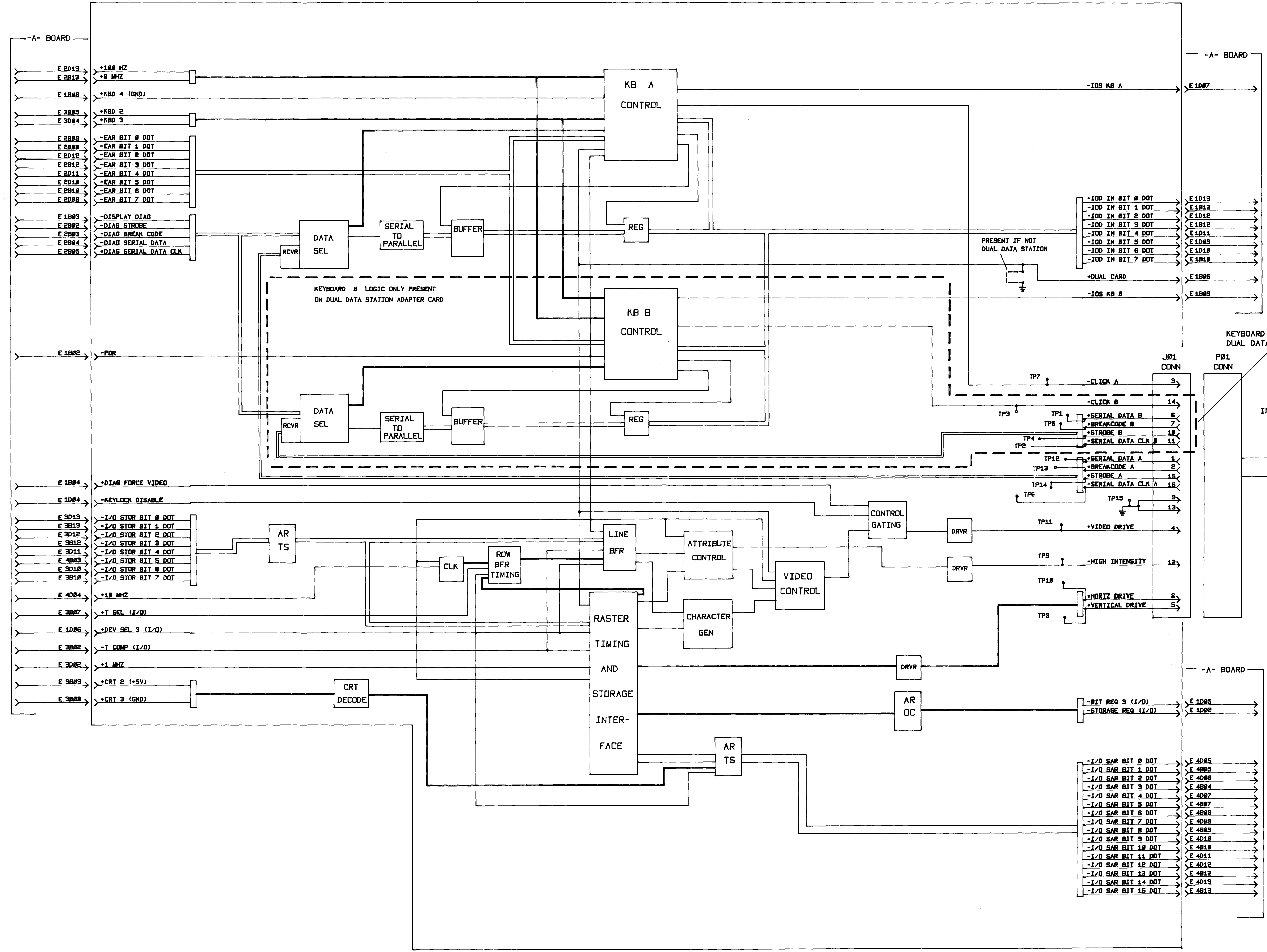
- J04 ON KBD/CRT CARD
- + SET BUFRO 1 22
 - ROS BUS BIT 0 2 21
 - ROS BUS BIT 1 3 20
 - ROS BUS BIT 2 4 19
 - ROS BUS BIT 3 5 18
 - ROS BUS BIT 4 6 17
 - ROS BUS BIT 5 7 16
 - ROS BUS BIT 6 8 15
 - ROS BUS BIT 7 9 14
 - ROS BUS BIT 8 10 13
 - ROS BUS BIT 9 11 12
 - ROS BUS BIT 10 12 11
 - ROS BUS BIT 11 13 10
 - ROS BUS BIT 12 14 9
 - ROS BUS BIT 13 15 8
 - ROS BUS BIT 14 16 7
 - ROS BUS BIT 15 17 6
 - ROS BUS BIT 16 18 5
 - ROS BUS BIT 17 19 4
 - ROS BUS BIT 18 20 3
 - ROS BUS BIT 19 21 2
 - ROS BUS BIT 20 22 1
 - OUTPUT 1 11
 - ENABLE GATED 12
 - CYCLE MODE
 - ROS BUS BIT 0
 - ROS BUS BIT 1
 - ROS BUS BIT 2
 - ROS BUS BIT 3
 - ROS BUS BIT 4
 - ROS BUS BIT 5
 - ROS BUS BIT 6
 - ROS BUS BIT 7
 - ROS BUS BIT 8
 - ROS BUS BIT 9
 - ROS BUS BIT 10
 - ROS BUS BIT 11
 - ROS BUS BIT 12
 - ROS BUS BIT 13
 - ROS BUS BIT 14
 - ROS BUS BIT 15
 - POR
 - GROUND
 - ROS OUT 1
 - ENABLE BUFRO

5285
LD05-1
KEYBOARD/DISPLAY
MPU
LOC. A-A1

NOTE #
THIS JUMPER IS REMOVED
IF THE ROS PATCH
CARD IS INSTALLED.



REFER TO NET LIST MIM 531



REFER TO NET LIST MIM 531

KEYBOARD B LOGIC ONLY PRESENT ON DUAL DATA STATION ADAPTER CARD.

REFER TO MIM 227

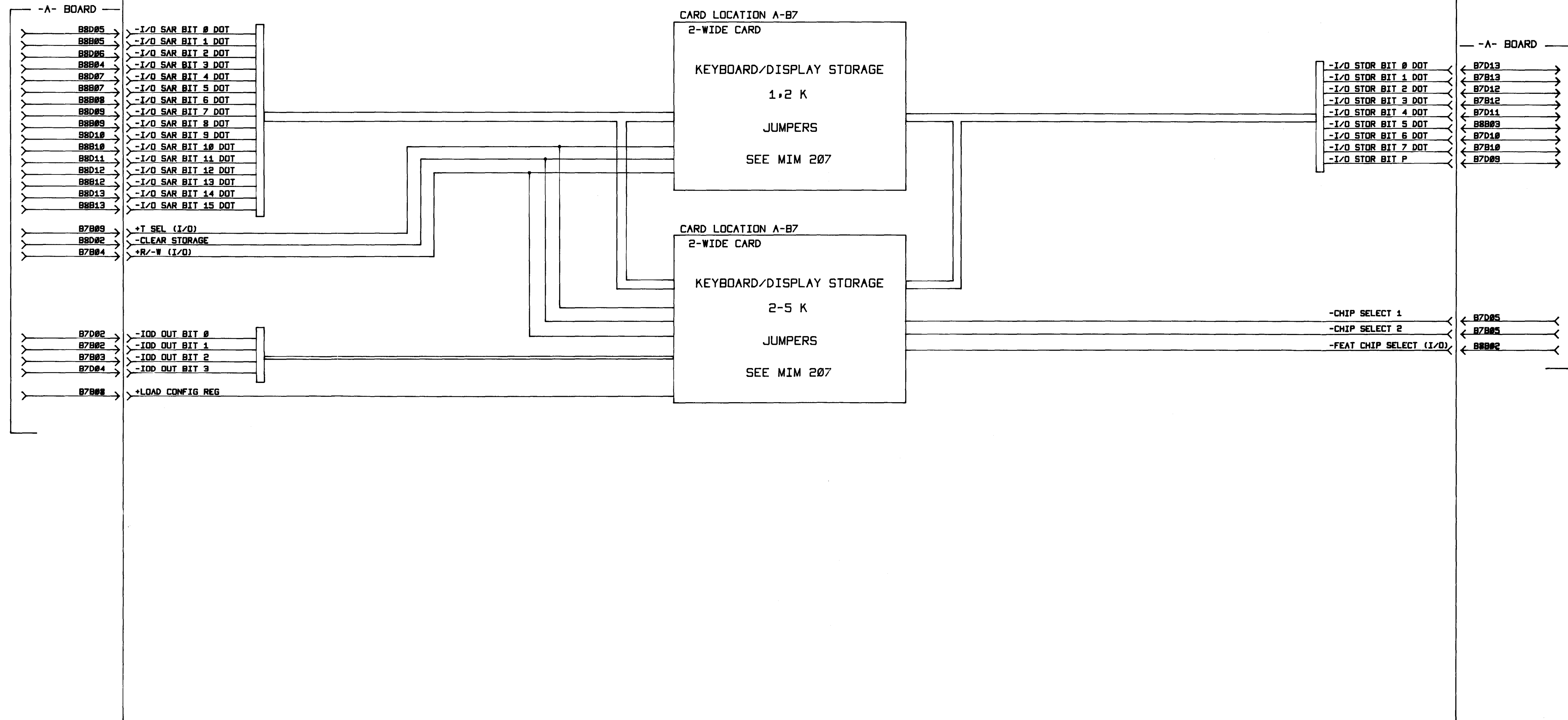
-TO- 5281 OR 5282

5285
LD05-2
DATA STATION/
DUAL DATA STATION
ADAPTER CARD
LOC. A-E1

REFER TO NET LIST MIM 531

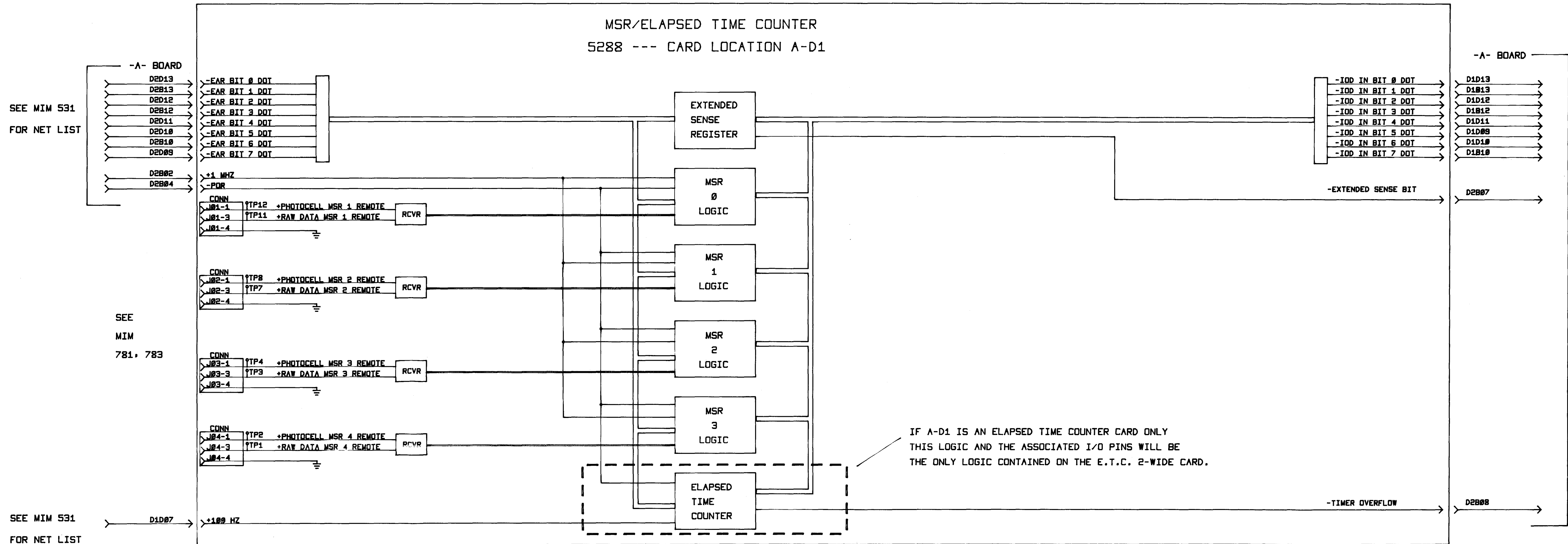
KEYBOARD/DISPLAY STORAGE - 5285

SEE NET LIST
MIM 531

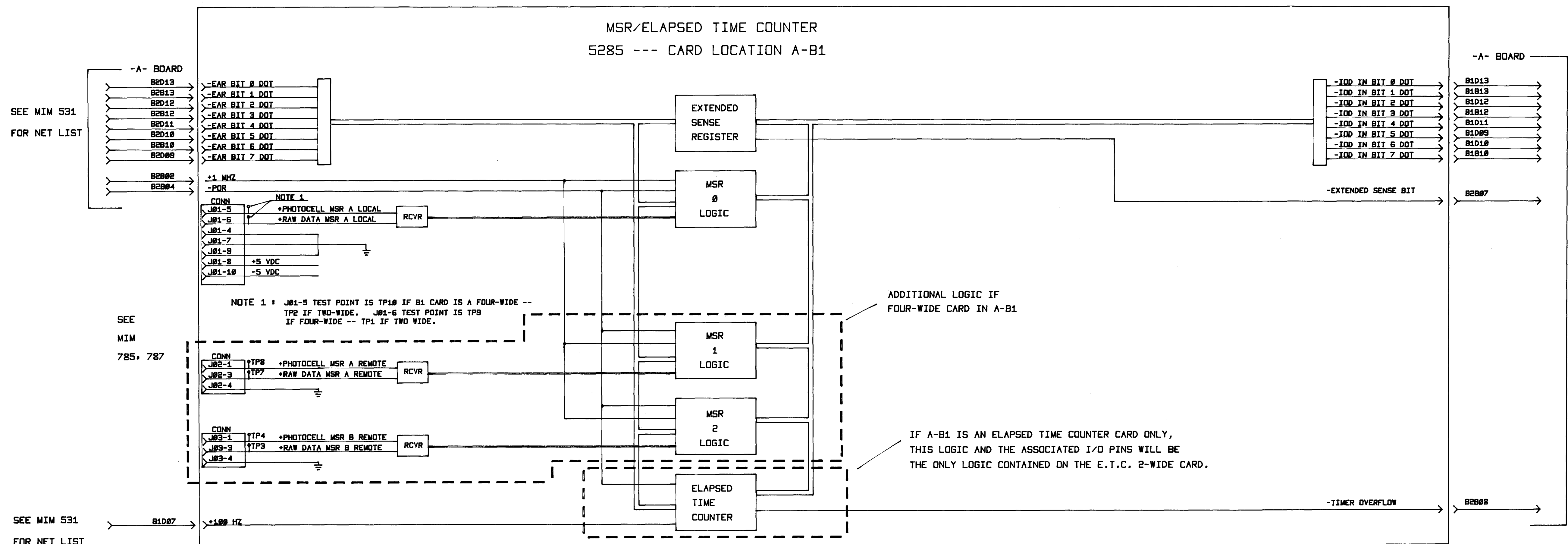


SEE NET LIST
MIM 531

5285
LD05-3
KEYBOARD/DISPLAY
STORAGE

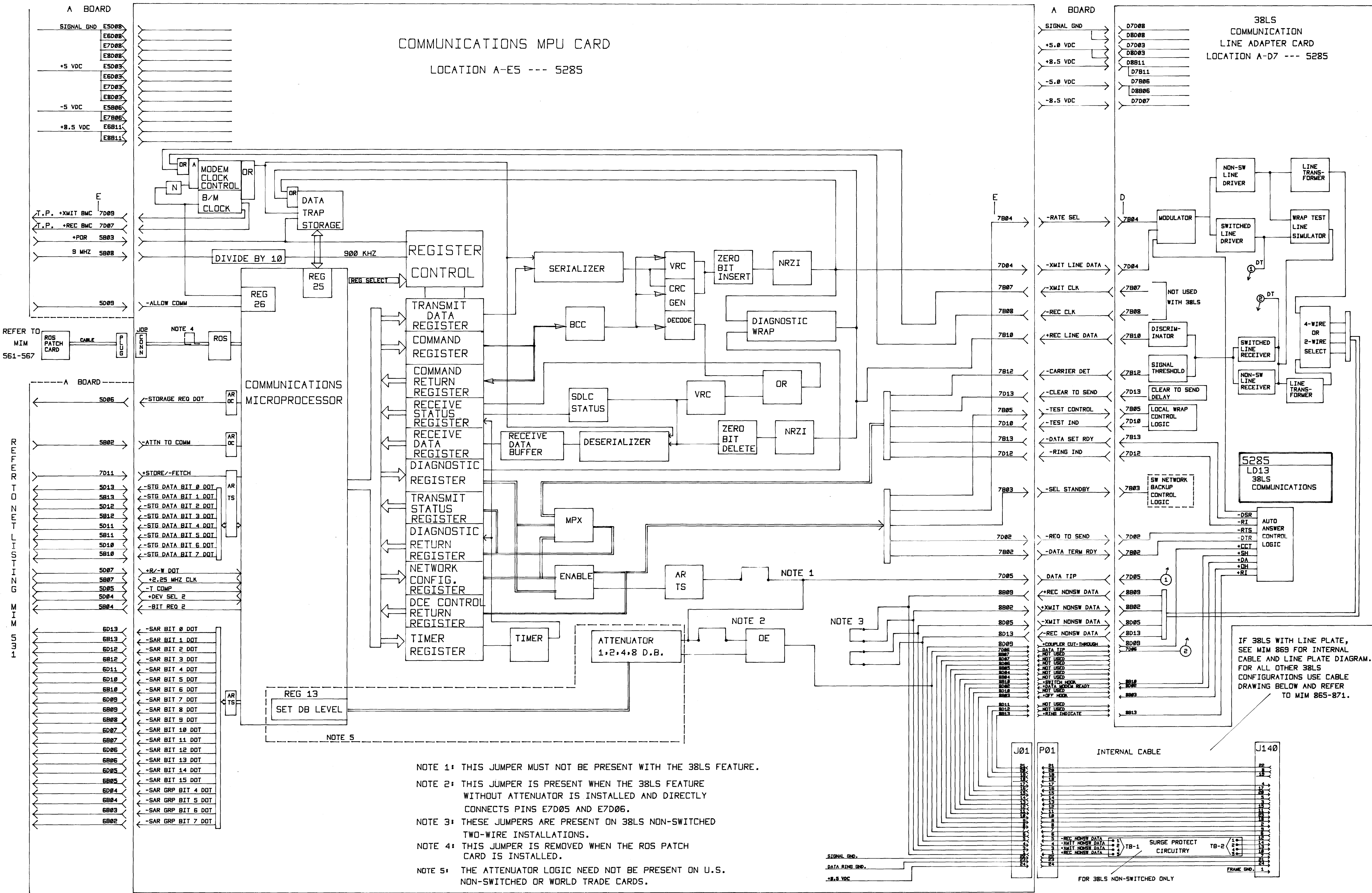


SEE MIM 531
FOR NET LIST



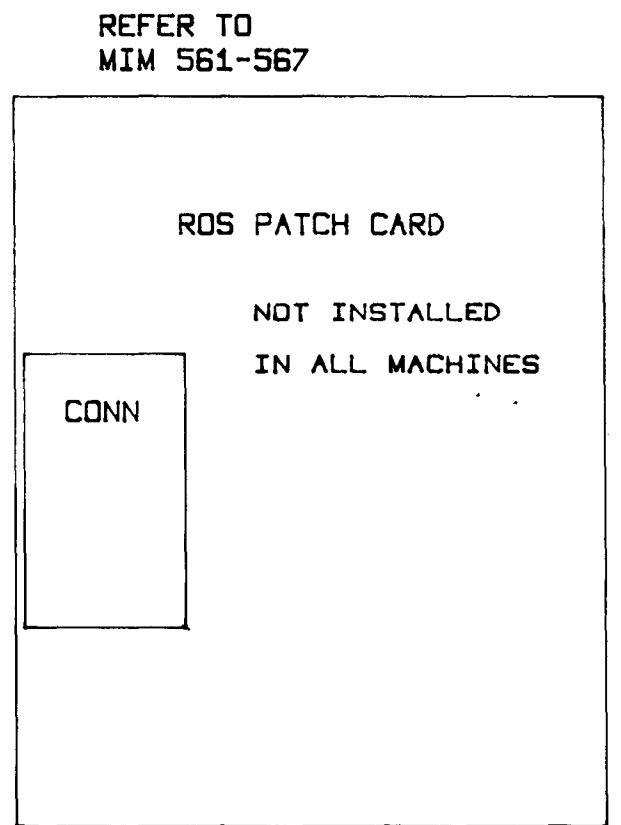
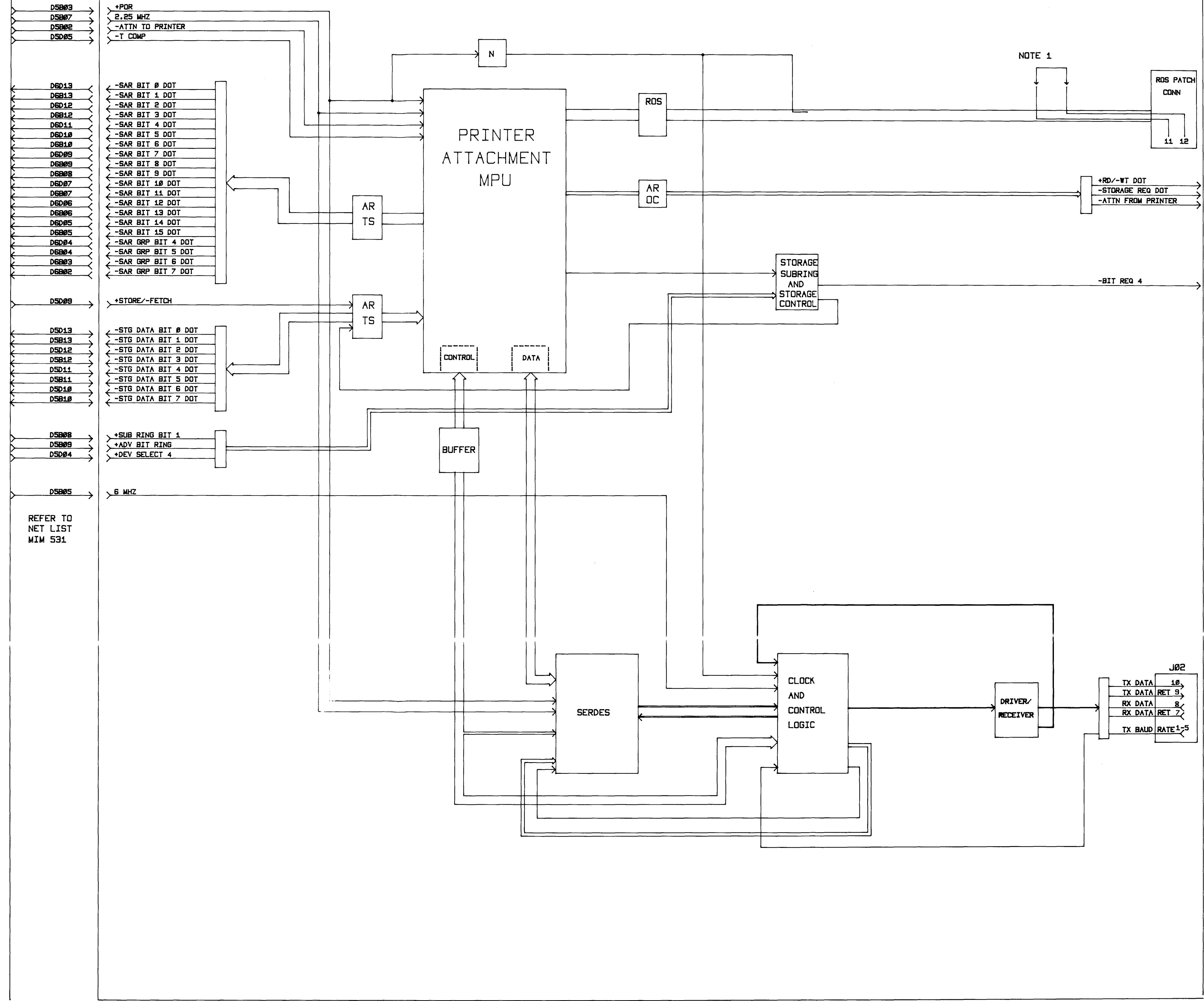
5288 AND 5285
LD09
MSR/ELAPSED TIME
COUNTER

SEE MIM 531
FOR NET LIST



-A- BOARD

PRINTER ATTACHMENT MPU CARD
LOCATION A-D5



ROS PATCH CONNECTOR

+SET BUFRO	1	22	-CYCLE MODE
-ROS BUS BIT 0	2	21	-ROS BUS BIT 9
-ROS BUS BIT 1	3	20	-ROS BUS BIT 10
-ROS BUS BIT 2	4	19	-ROS BUS BIT 11
-ROS BUS BIT 3	5	18	-ROS BUS BIT 12
-ROS BUS BIT 4	6	17	-ROS BUS BIT 13
-ROS BUS BIT 5	7	16	-ROS BUS BIT 14
-ROS BUS BIT 6	8	15	-ROS BUS BIT 15
-ROS BUS BIT 7	9	14	-POR
-ROS BUS BIT 8	10	13	GROUND
-ROS OUT & ENABLE GATED	11	12	-ROS OUT & ENABLE BUFRO

REFER TO NET LIST MIM 531

NOTE 1: THIS JUMPER IS REMOVED IF THE ROS PATCH CARD IS PRESENT.

5285
LD18
PRINTER MPU
CARD LOGIC
A-D5

Page of SY31-0632-1
As updated April 15, 1981
By TNL SN20-8558

REFER TO MIM 741,743

