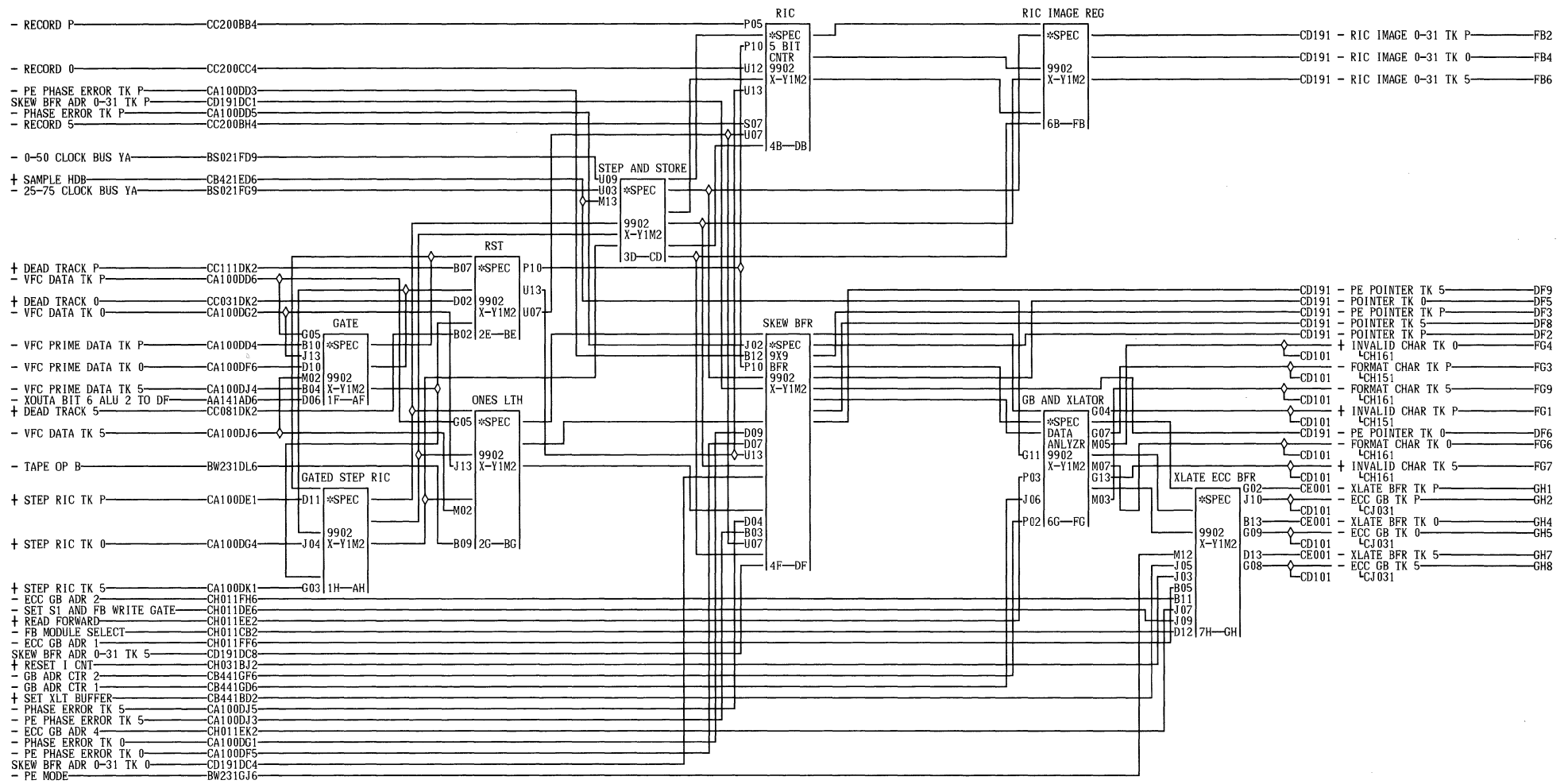


07-17-73 734098

C  
D  
1  
0  
1  
000

| LOAD RESISTORS |          |       |         |
|----------------|----------|-------|---------|
| ZONE 1         |          |       |         |
| DATE           | 08-08-73 | MACH. | 3803-2  |
| LOG            | 0052     | FRAME | 01      |
|                |          | P.N.  | 2736289 |
| IBM CORP.      | CO       | BLK.  | GN      |

C  
D  
1  
0  
1  
000

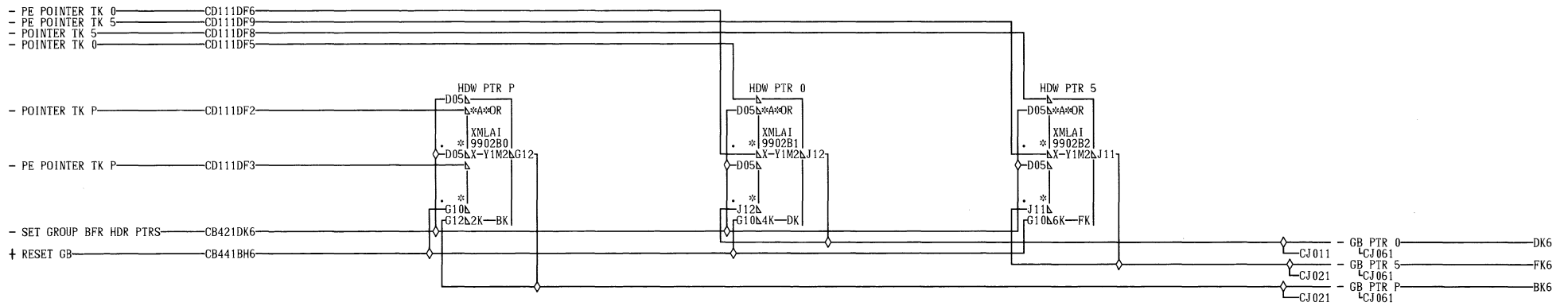
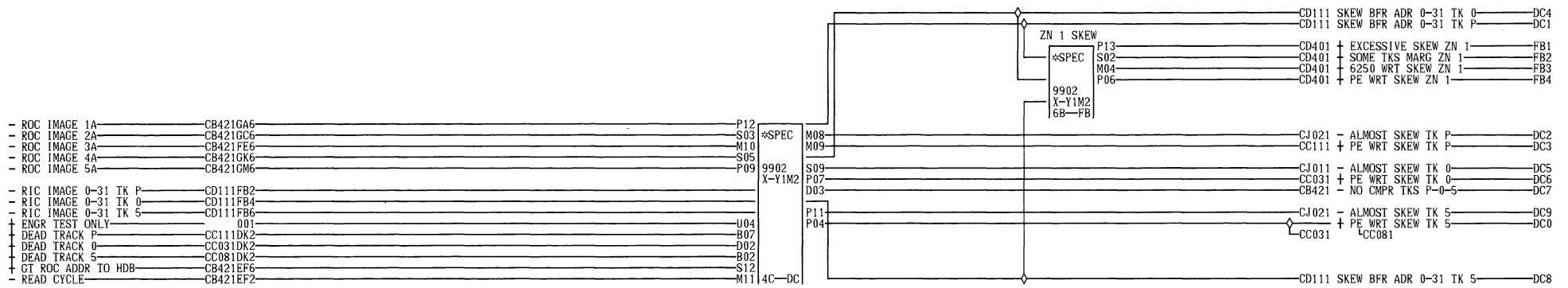


07-17-73 734098

C  
D  
1  
1  
1  
000

|                        |          |       |         |
|------------------------|----------|-------|---------|
| SKEW BFR GB XLATER AND |          |       |         |
| ECC GB ZN 1            |          |       |         |
| DATE                   | 08-08-73 | MACH. | 3803-2  |
| LOG                    | 0052     | FRAME | 01      |
|                        |          | P.N.  | 2736290 |
| IBM CORP.              | BLK.     | GP    |         |

C  
D  
1  
1  
1  
000

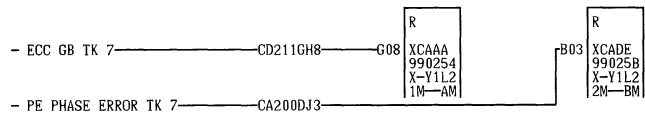
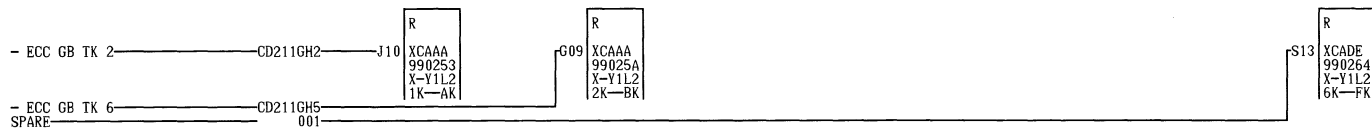
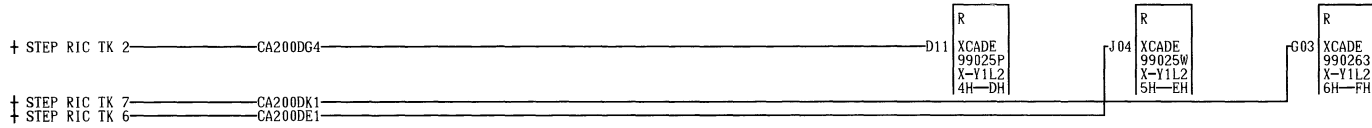
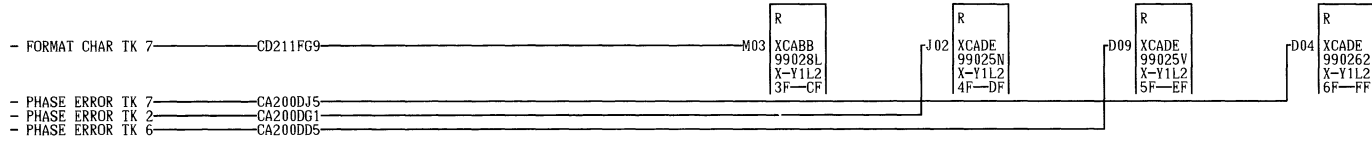
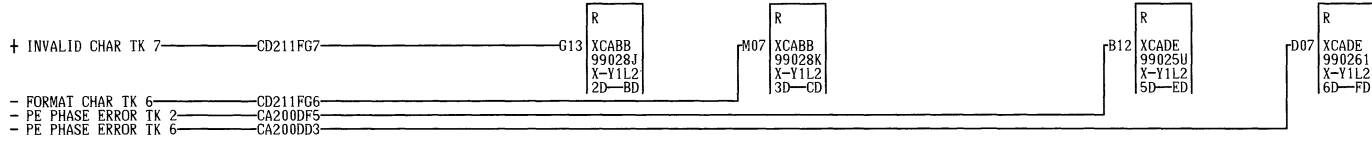
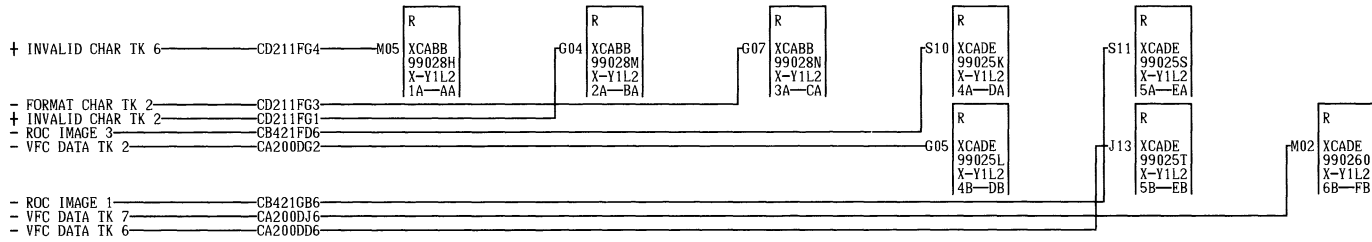


07-17-73 734098

C  
D  
1  
9  
1  
000

| PTR ZONE 1 |          |       |         |
|------------|----------|-------|---------|
| DATE       | 08-08-73 | MACH. | 3803-2  |
| LOG        | 0051     | FRAME | 01      |
|            |          | P.N.  | 2736291 |
| IBM CORP.  | CO       | BLK.  | GM      |

C  
D  
1  
9  
1  
000

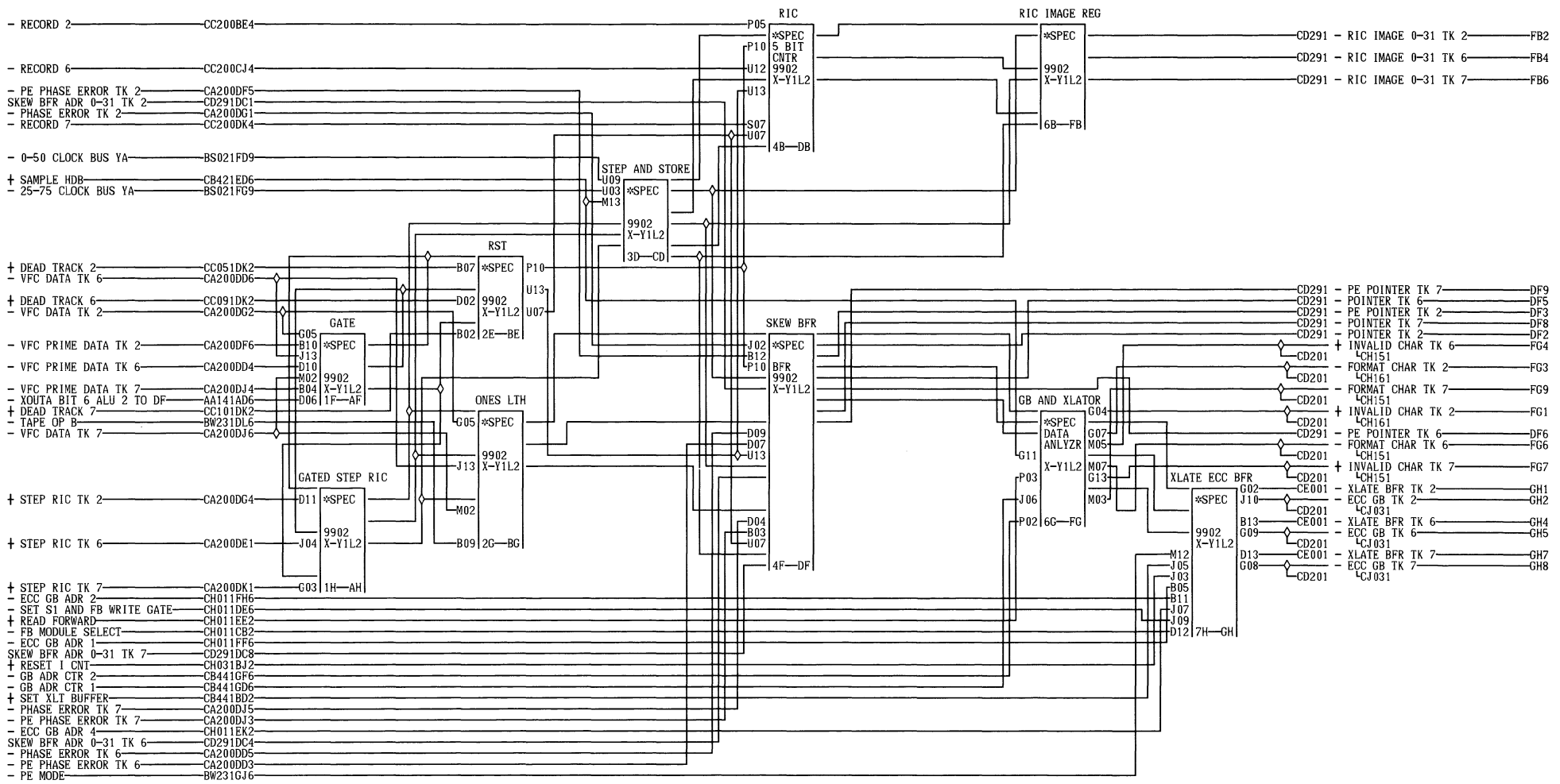


C  
D  
2  
0  
1  
000

07-17-73 734098

|           |          |       |         |
|-----------|----------|-------|---------|
| ZONE 2    |          |       |         |
| DATE      | 08-08-73 | MACH. | 3803-2  |
| LOG       | 0052     | FRAME | 01      |
|           |          | P.N.  | 2736292 |
| IBM CORP. | CO       | BLK.  | GN      |

C  
D  
2  
0  
1  
000

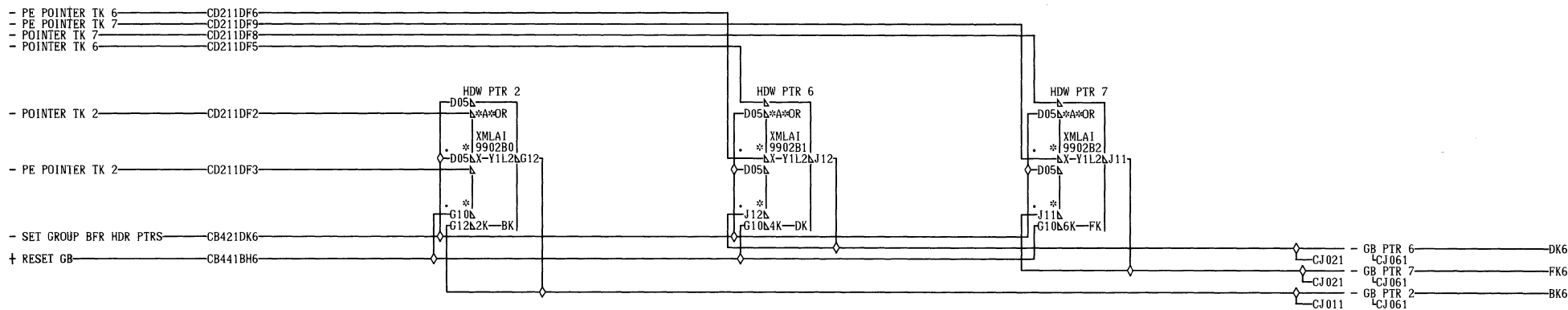
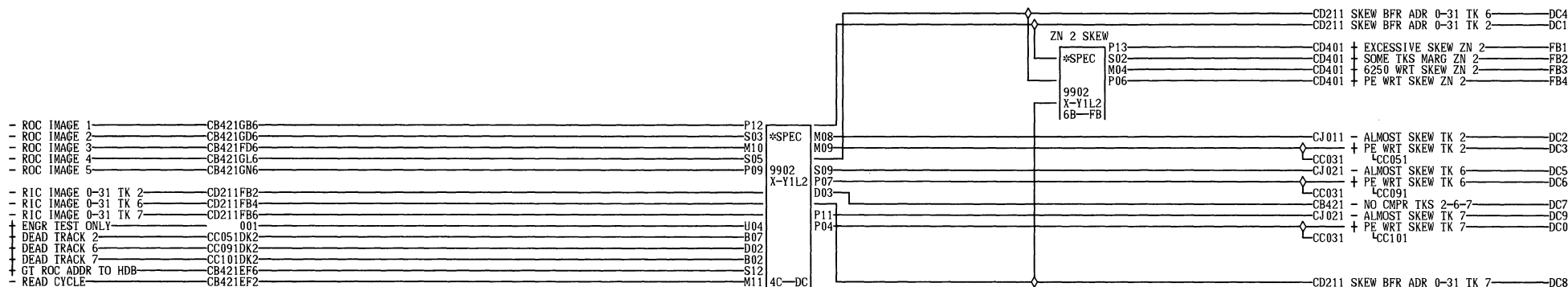


07-17-73 734098

|                        |          |       |         |
|------------------------|----------|-------|---------|
| SKEW BFR GB XLATOR AND |          |       |         |
| ECC GB ZN 2            |          |       |         |
| DATE                   | 08-14-73 | MACH. | 3803-2  |
| LOG                    | 0052     | FRAME | 01      |
|                        |          | P.N.  | 2736293 |
| IBM CORP.              | BLK.     | GP    |         |

C  
D  
2  
1  
1  
000

C  
D  
2  
1  
1  
000



07-17-73 734098

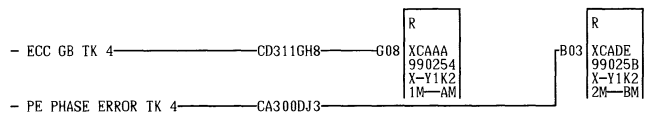
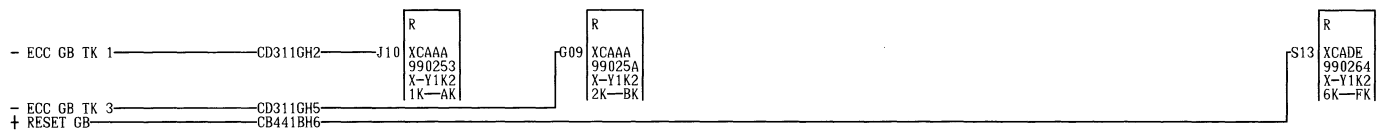
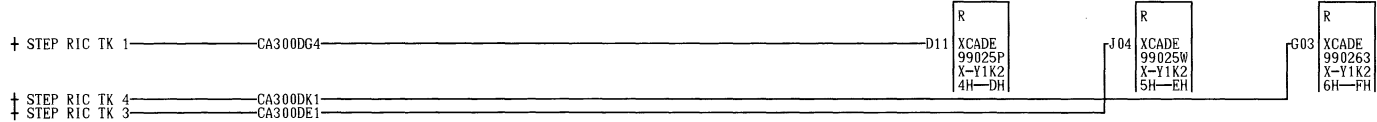
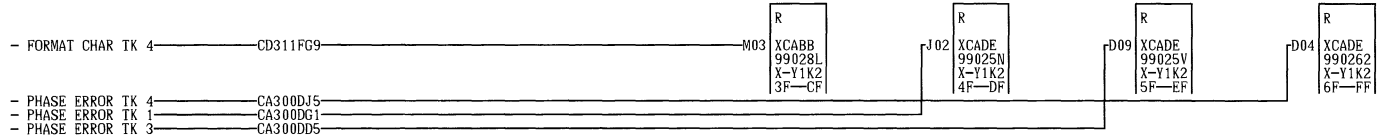
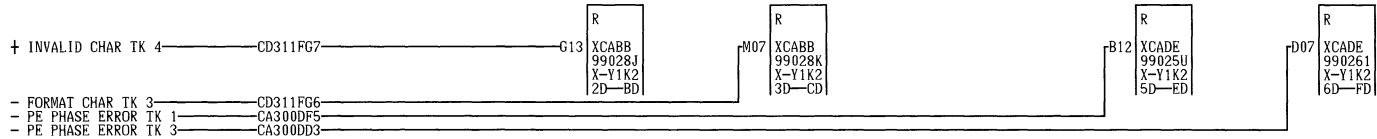
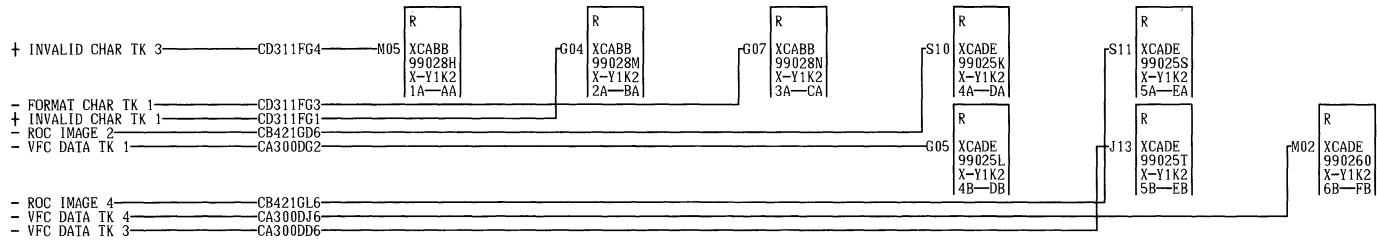
C  
D  
2  
9  
1

000

| PTR ZONE 2 |          |       |         |
|------------|----------|-------|---------|
| DATE       | 08-08-73 | MACH. | 3803-2  |
| LOG        | 0051     | FRAME | 01      |
|            |          | P.N.  | 2736294 |
| IBM CORP.  | CO       | BLK.  | GM      |

C  
D  
2  
9  
1

000

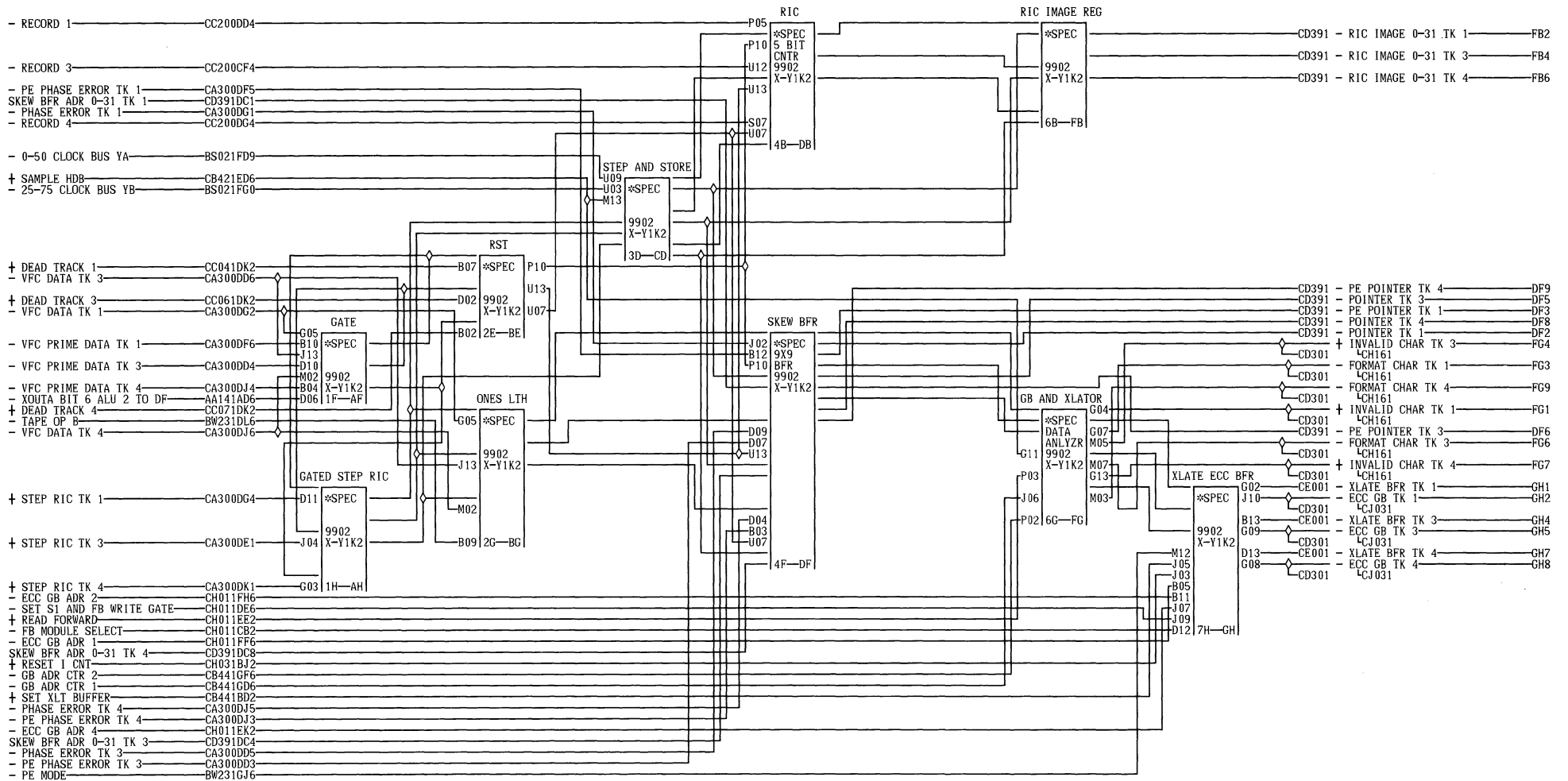


07-17-73 734098

C  
D  
3  
0  
1  
000

| LOAD RESISTORS |          |              |    |
|----------------|----------|--------------|----|
| ZONE 3         |          |              |    |
| DATE           | 08-08-73 | MACH. 3803-2 |    |
| LOG            | 0066     | FRAME 01     |    |
|                |          | P.N. 2736295 |    |
| IBM CORP.      | CO       | BLK.         | CN |

C  
D  
3  
0  
1  
000



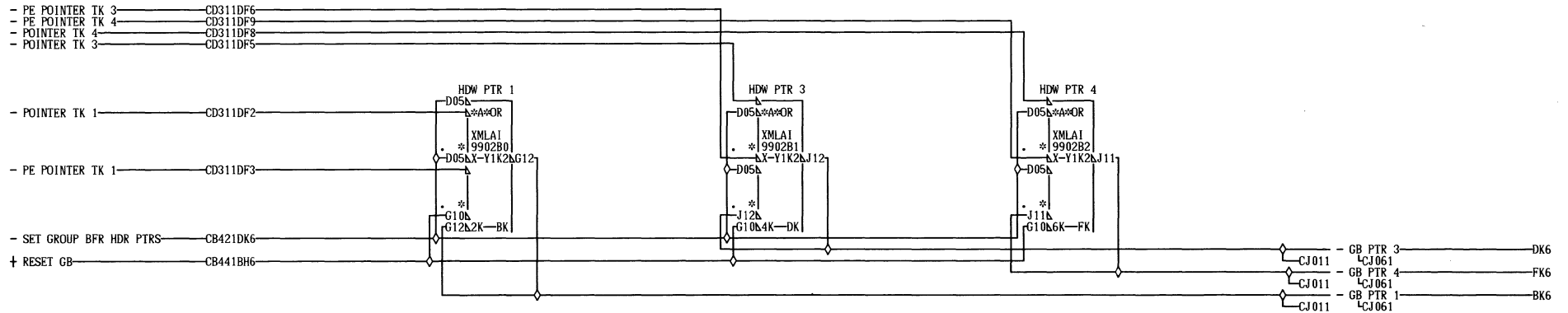
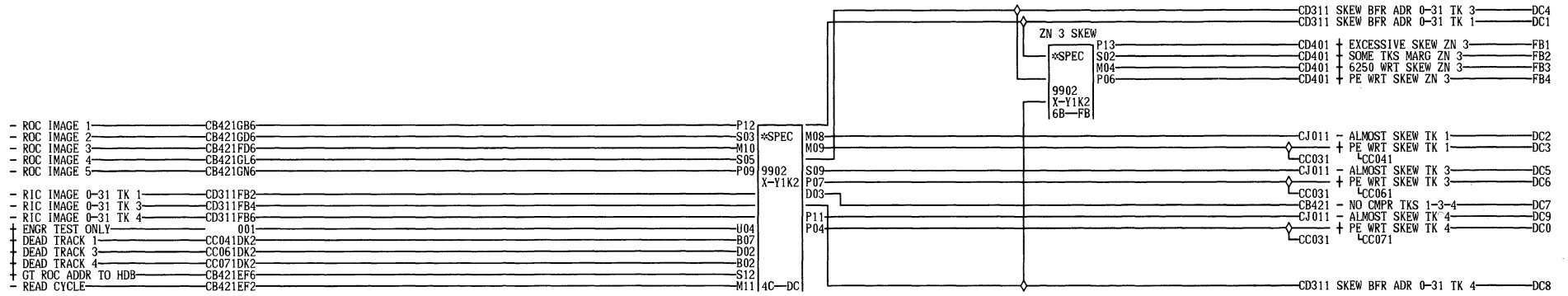
07-17-73 734098

C  
D  
3  
1  
1

|                        |          |       |        |
|------------------------|----------|-------|--------|
| SKEW BFR GB XLATOR AND |          |       |        |
| ECC GB ZN 3            |          |       |        |
| DATE                   | 08-14-73 | MACH. | 3803-2 |
| LOG                    | 0066     | FRAME | 01     |
| P.N. 2736296           |          |       |        |
| IBM CORP.              | BLK.     | CP    |        |

C  
D  
3  
1  
1





07-17-73 734098

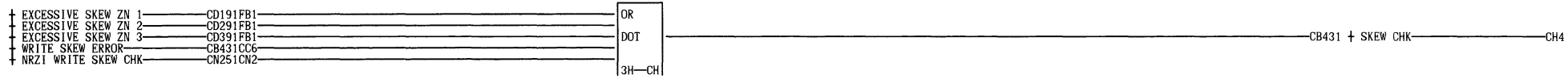
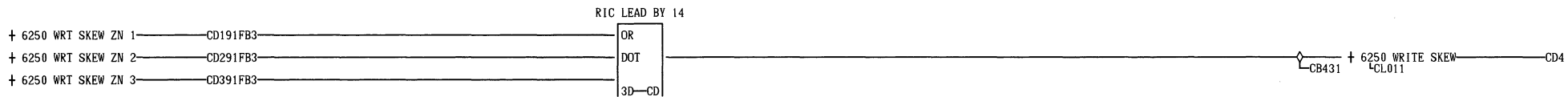
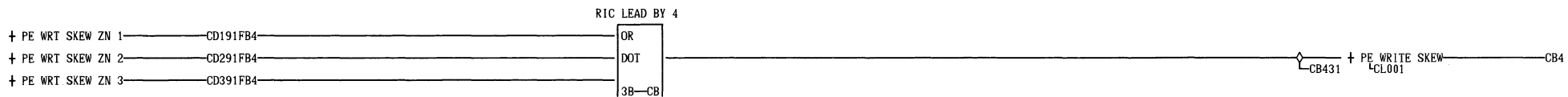
C  
D  
3  
9  
1

000

| PTR ZONE 3 |          |              |
|------------|----------|--------------|
| DATE       | 08-21-81 | MACH. 3803-2 |
| LOG        | 0051     | FRAME 01     |
| P.N.       |          | 2736297      |
| IBM CORP.  | CO BLK.  | CM           |

C  
D  
3  
9  
1

000



C  
 D  
 4  
 0  
 1

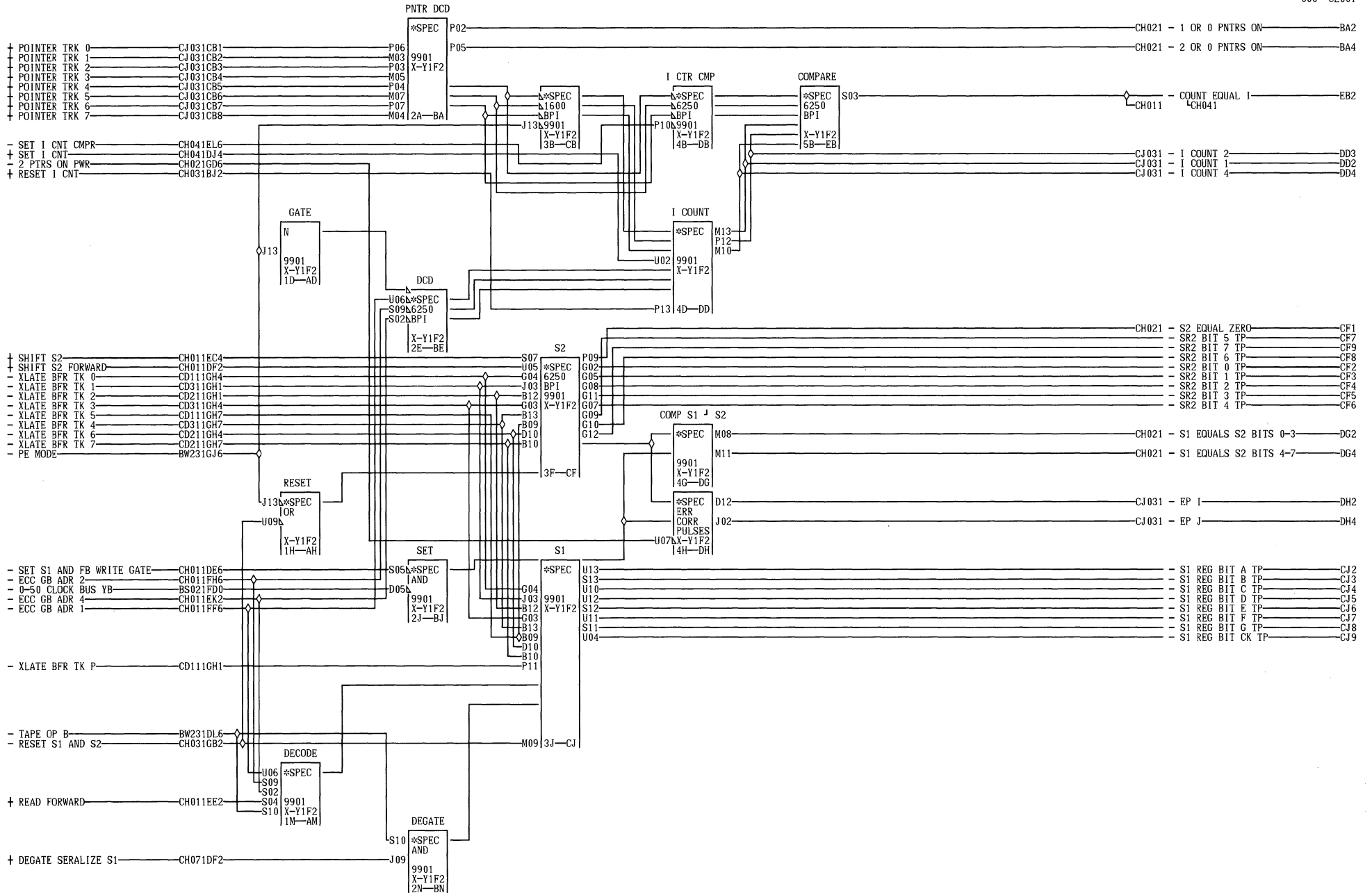
000

07-17-73 734098

| SKEW CHECK DOT ORING |          |       |         |    |
|----------------------|----------|-------|---------|----|
| DATE                 | 08-08-73 | MACH. | 3803-2  |    |
| LOG                  | 0051     | FRAME | 01      |    |
|                      |          | P.N.  | 2736298 |    |
| IBM CORP.            |          | BLK.  |         | CJ |

C  
 D  
 4  
 0  
 1

000



THIS CARD IS USED ON 1600 AND 6250 ERROR CORR ONLY. THE C SPEC BLOCKS LABELED 1600 AND E 6250 ARE USED ONLY DURING 0 THOSE MODES. UNLABELED BLKS 0 ARE USED FOR BOTH MODES. 1 REFER TO CE011 FOR EXPLANATION OF INPUT AND 000OUTPUT LINES USING +SHIFT S2 FOR SYNC.

07-17-73 734098

| S1 S2 AND I COUNT |          |       |         |
|-------------------|----------|-------|---------|
| DATE              | 08-08-73 | MACH. | 3803-2  |
| LOG               | 0051     | FRAME | 01      |
|                   |          | P.N.  | 2736299 |
| IBM CORP.         | BLK.     |       | EC      |

C  
E  
0  
1  
1  
000

**ERROR CORRECTION NECESSARY OUTPUTS  
(CE002)**

Certain basic outputs from this card are necessary for proper error correction. These reference pages identify these necessary outputs.

**Note:** This card is used only for 1600 and 6250 BPI operation.

**1600 Bits Per Inch**

To do error correction in 1600 BPI, two basic outputs are necessary from this card. They are the binary value of I Count and the -EP I pulse. The binary value of I Count is decoded to determine the failing track. The EP I pulse is the correcting signal for the failing track.

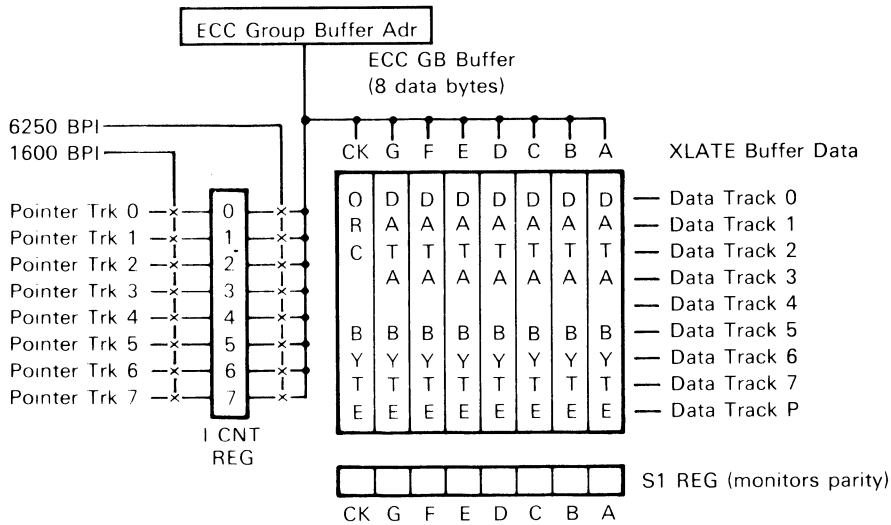
**Single Error Correction, 6250 BPI**

Same as 1600 BPI.

**Double Error Correction, 1600 BPI**

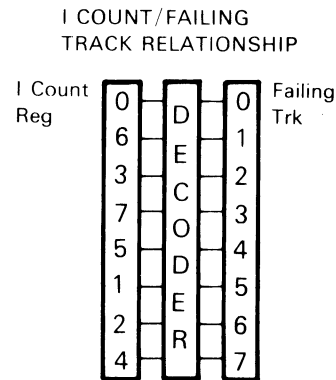
The two failing tracks are designated as tracks I and J. EP I and EP J are the error pattern correction pulses for tracks I and J. The outputs from this card that are necessary for correcting track I are the binary value of I Count and EP I.

The one output from this card necessary for correcting track J is EP J. Other signals necessary for correcting track J come from other sources.



As the data is inserted into the ECC Group Buffer the S1 register monitors the parity of each byte. A parity error in any byte of the ECC Group Buffer sets the corresponding bit in the S1 register.

In 1600 BPI the pointers are gated into the I Count register. In 6250 BPI the ECC Group Buffer address is gated into the I Count register. The binary value of the I Count register is decoded and the resulting code is the failing track.



P/N 2736660  
**OUTPUTS**  
**(CE003)**

**I/O**  
**PINS**

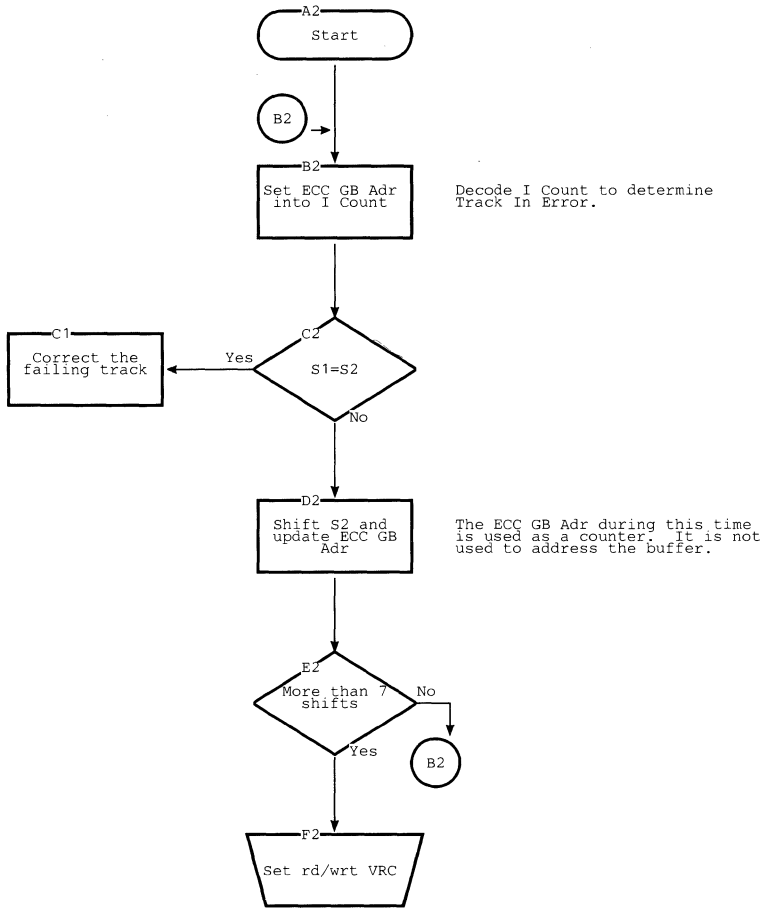
**1600 BPI**

3803-2  
**6250 BPI**  
**S=Single Error**  
**D=Double Error**

|  |                            |  |   |
|--|----------------------------|--|---|
| -1 or 0 PNTRS ON   | P02                        | Minus if no pointers are active or only one pointer is active.                                   | Same as 1600 BPI  |
| -2 or 0 PNTRS ON   | P05                        | Minus if no pointers are active or only 2 pointers are active.                                   | Same as 1600 BPI  |
| -1 COUNT 1<br>-1 COUNT 2<br>-1 COUNT 4                           | M13<br>P12<br>M10          | Binary value of I Count decoded to determine the failing track. (See chart below.)               | S=Same as 1600 BPI<br>D=Defines the low order track to correct (EP-1).  |
| -COUNT EQUAL I   | S03                        | Not used but output can change.  | S=Not used on single error correction but could go active.<br>D=Active after S2 is shifted enough times to determine TRK 1 (shifts=I CNT).  |
| -S2 EQUAL ZERO   | P09                        | Always minus (-).  | This line is data sensitive but the important part of it occurs at B4 Time. It goes active at B4 Time if no error occurs, or if P TRK is the only failure.  |
| -S1 EQUALS S2 BITS 4-7   | M11                        | Active on read backward or LWR if no parity error in XLATE bits.                                 | S=The output will go minus if there is no error at the end of B Time, or if the single track error is correctable.  |
| -S1 EQUALS S2 BITS 0-3   | M08                        | Active on read forward and write if no parity error in XLATE byte during data time.              | D=The output will go minus if there is no error at the end of B Time. If double track errors occur, this output is unused and unpredictable.  |
| -EP I  | D12                        | Active only on correctable parity errors of XLATE (requires pointer).                            | S=Active pulse during ABC Cycle for every byte with parity error.<br>D=This pulse will go active when correction is required, as defined by the low-order pointer (goes active during format, but should be ignored). |
| -EP J  | J02                        | Always plus (+).   | S=Always plus on single track failure<br>D=This pulse will go active when correction is required, as defined by high-order pointer.   |
| -S1 REG BIT A<br>-S1 REG BIT B<br>-S1 REG BIT C<br>-S1 REG BIT D | TPU13<br>S13<br>U10<br>U12 | Always plus (+).<br>Always plus (+).<br>Always plus (+).<br>Minus on parity error bkwd (or LWR). | Any S1 register bit active indicates a parity error occurred. The specific line defines the byte within the ECC group that had the parity error (goes active during format but should be ignored).                    |
| -S1 REG BIT E  | S12                        | Minus on parity error fwd.   |   |
| -S1 REG BIT F<br>-S1 REG BIT GG<br>-S1 REG BIT CHK               | U11<br>S11<br>U04          | Always plus (+).<br>Always plus (+).<br>Always plus (+).   |   |

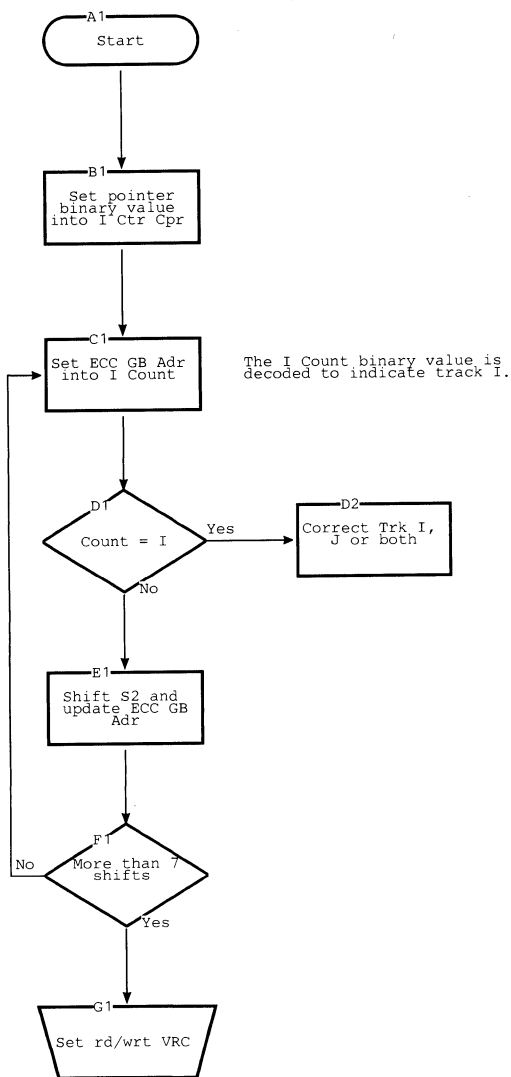
| Signal Name                                     | I/O Pin           | 1600 BPI Description  | 6250 BPI Description   |
|---|-------------------|---|--|
| +PNTR TRACKS 0-7                                |                   | Any pointer line active indicates a marginal condition that may or may not require correction.                    | Same as 1600 BPI   |
| -SET I CTR CMPR                                 | P10               | Not used and inactive.  | Gates the pointer decode register output into a special module early in the A B Cycle. Retained for comparing with I Count Register.   |
| +SET I COUNT                                    | U02               | Sets decoded putput of pointer decode register into I COUNT register (Blk 4D) (at A4 Time if error cond. exists). | Sets decoded output of ECC GB ADD1, 2, and 4 into the I Count register (Blk 4D) when S1=S2. This pulse is inactive for the rest of that ECC GROUP.   |
| -PE MODE  | J13               | Gates pointer decode register.  | Gates ECC GB address lines.  |
| -ECC GB ADR 1<br>-ECC GB ADR 2<br>-ECC GB ADR 4 | U06<br>S04<br>S02 | Not used but must be at following state Not 1, Not 2 and 4 during data time (A Time).                             | Contains GB address during A and B Cycles (Blk 2E). It is used as a shift cntr during A B cycles (Blk 1M).   |
| +RST I COUNT                                    | P13               | Active at A7 Time   | Reset I Count register at B5.  |
| +SHIFT S2                                       | S07               | 800 nanosecond pulses starting with beginning All Ones Marker and the postamble.                                  | S2 is shifted every time a byte is inserted into the ECC GB. During a correction cycle (AB), S2 is shifted until S2=S1 for single error correction, or until Count=I(Blk 5B) becomes active for double track correction. |
| +SHIFT S2 FWD                                   | U05               | Not used, but active at A Time during a forward read and write (inactive on LWR).                                 | Active during A & B Time of forward read and write.  |
| -XLATE BITS 0-7 (feeding 3F)                    |                   | Not used - see XLATE BITS feeding Blk 3J.   | Data bits feeding correction logic.  |
| -RESET S2                                       | U09               | Not used, but active at 07 Time and A7 Time (see -RESET S1).  | Active at 07, C7 time. Same for -RESET S1.   |
| -2 PNTRS ON PWR                                 | U07               | Not used.   | Used to gate -EP-J output. (Blk 4H) on double error correction, but may be active for all cycles (A,B,AB,ABC).   |
| -SET S1   | S05               | Four 50 nsec pulses/ECC byte.   | Active 8 times/ECC Group. Four times during A Cycle, four times during B Cycle   |
| CLK 0-50  | D05               | 50 nsec pulses every 100 nsec gated by TAPE OP.   | Same as 1600 BPI   |
| -XLATE BITS P-0-7                               |                   | Data bits to correction logic (each byte repeated 4 times).   | All XLATE storage bytes to correction logic.   |
| +RD FWD   | S04               | Inverts the decode out of Blk 1M on Read Backward and LWR Mode.   | Controls shift direction of S2 on AB Cycles and inverts the decode out of Blk 1M on Read Bkwd.   |
| -TAPE OP  | S10               | Active during tape motion and gates decode module (Blk 1M).   | Same as 1600 BPI   |
| +DEGATE S1                                      | J09               | Active with recognition of Ending All Ones to inhibit correction of postamble.                                    | Not used and inactive except in Diagnostic Mode.   |
| -RESET S1                                       | M09               | Same as -RESET S2 but is used to reset S1.  | Same as -RESET S2.   |

SINGLE ERROR CORRECTION FLOW



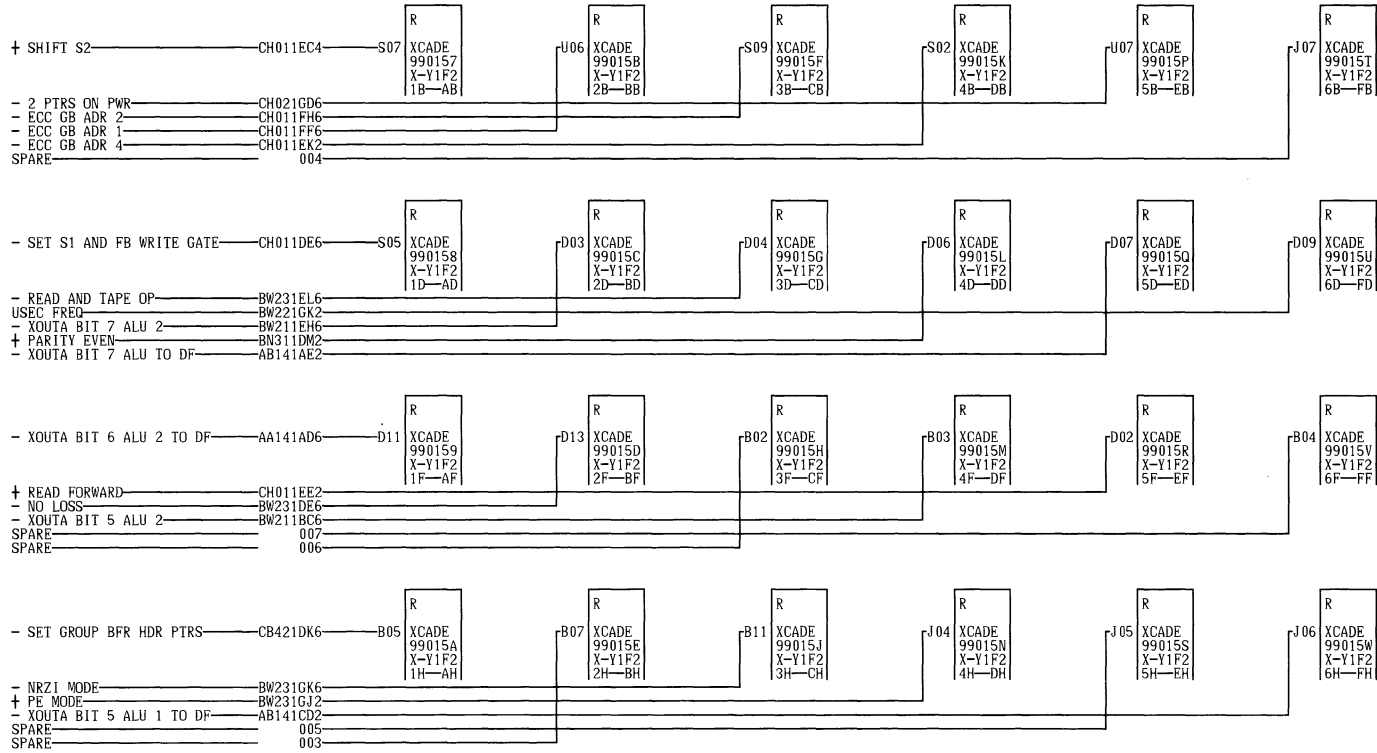
| Date      | EC Number | Date | EC Number | SINGLE ERROR    |
|-----------|-----------|------|-----------|-----------------|
| 03 Aug 73 | 734098    |      |           | CORRECTION FLOW |
|           |           |      |           | PAGE CE005      |
|           |           |      |           | IBM Part Page   |
|           |           |      |           | 2736662 CE005   |

# DOUBLE ERROR CORRECTION FLOW



| Date      | EC Number | Date | EC Number | DOUBLE ERROR    |
|-----------|-----------|------|-----------|-----------------|
| 02 Aug 73 | 734098    |      |           | CORRECTION FLOW |
|           |           |      |           | PAGE CE006      |
|           |           |      |           |                 |
|           |           |      |           | IBM Part Page   |
|           |           |      |           | 2736663 CE006   |





07-17-73 734098

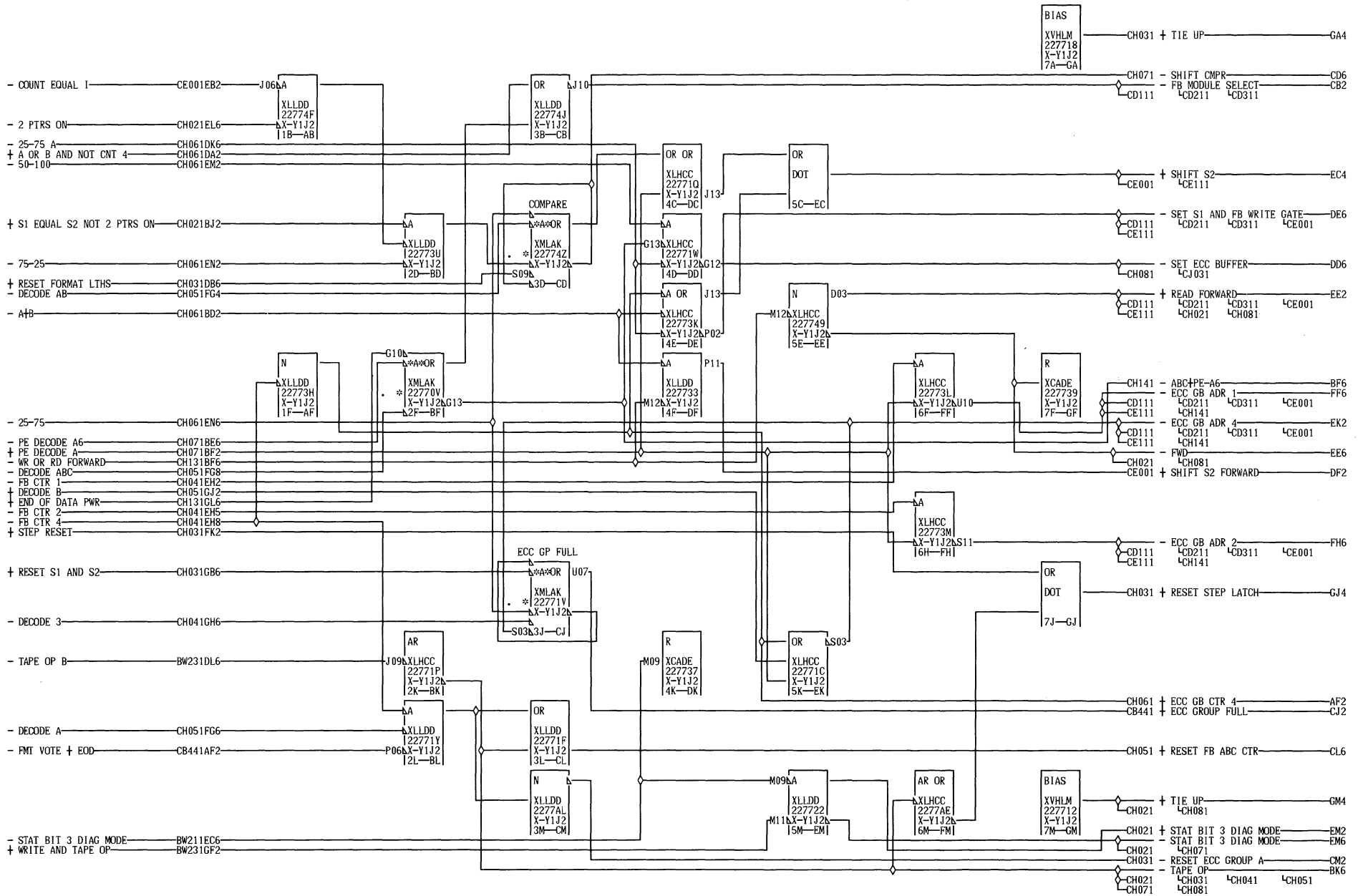
C  
E  
1  
1  
1

000

| LOAD REGISTERS |          |       |         |
|----------------|----------|-------|---------|
| DATE           | 08-08-73 | MACH. | 3803-2  |
| LOG            | 0051     | FRAME | 01      |
|                |          | P.N.  | 2736300 |
| IBM CORP.      | CO       | BLK.  | FJ      |

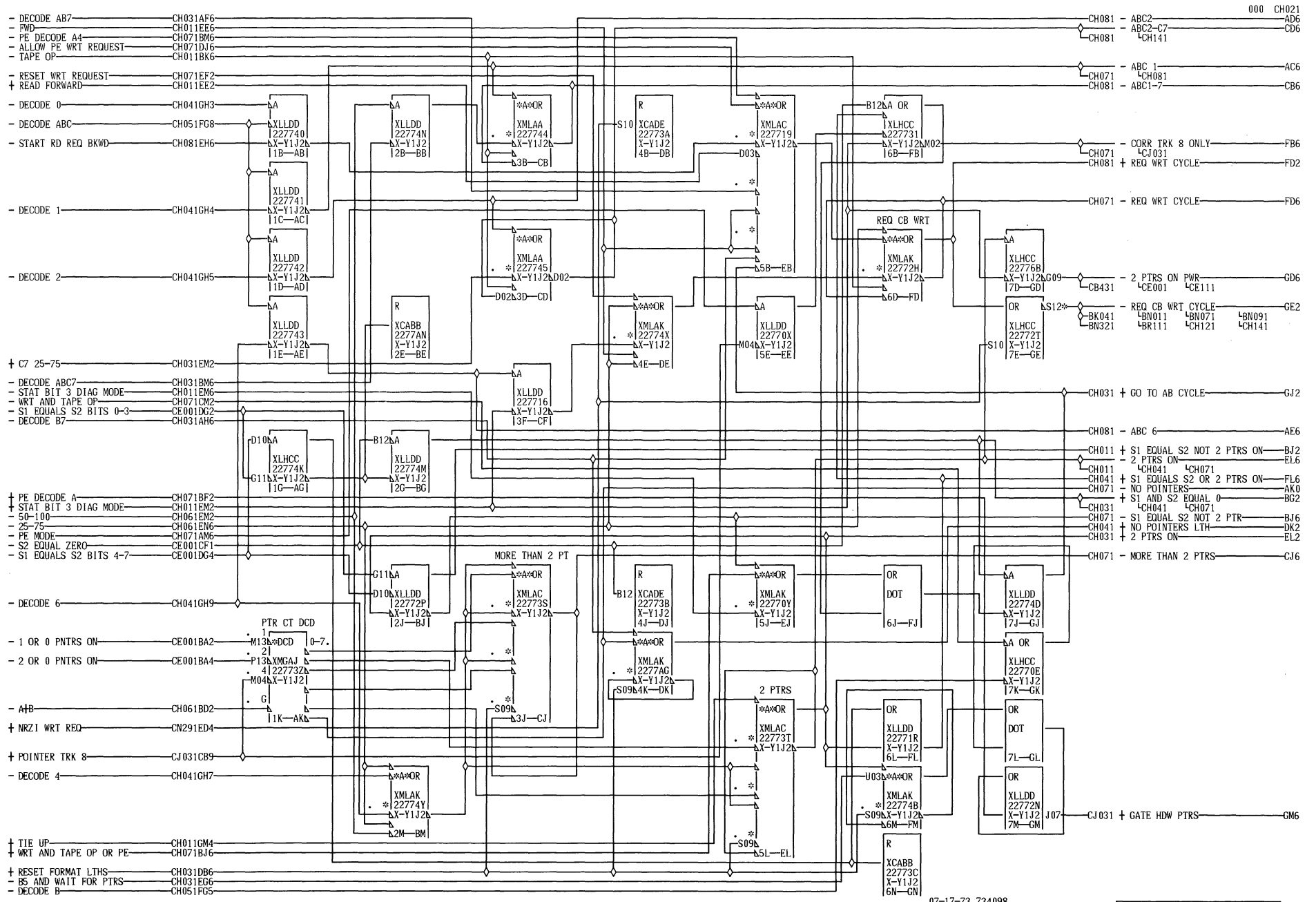
C  
E  
1  
1  
1

000



07-17-73 734098  
02-22-79 846276

| ECC GROUP BUFFER CONTROLS |          |       |         |
|---------------------------|----------|-------|---------|
| DATE                      | 08-21-81 | MACH. | 3803-2  |
| LOG                       | 1836     | FRAME | 01      |
|                           |          | P.N.  | 2736301 |
| IBM CORP.                 | CO       | BLK.  | GN      |



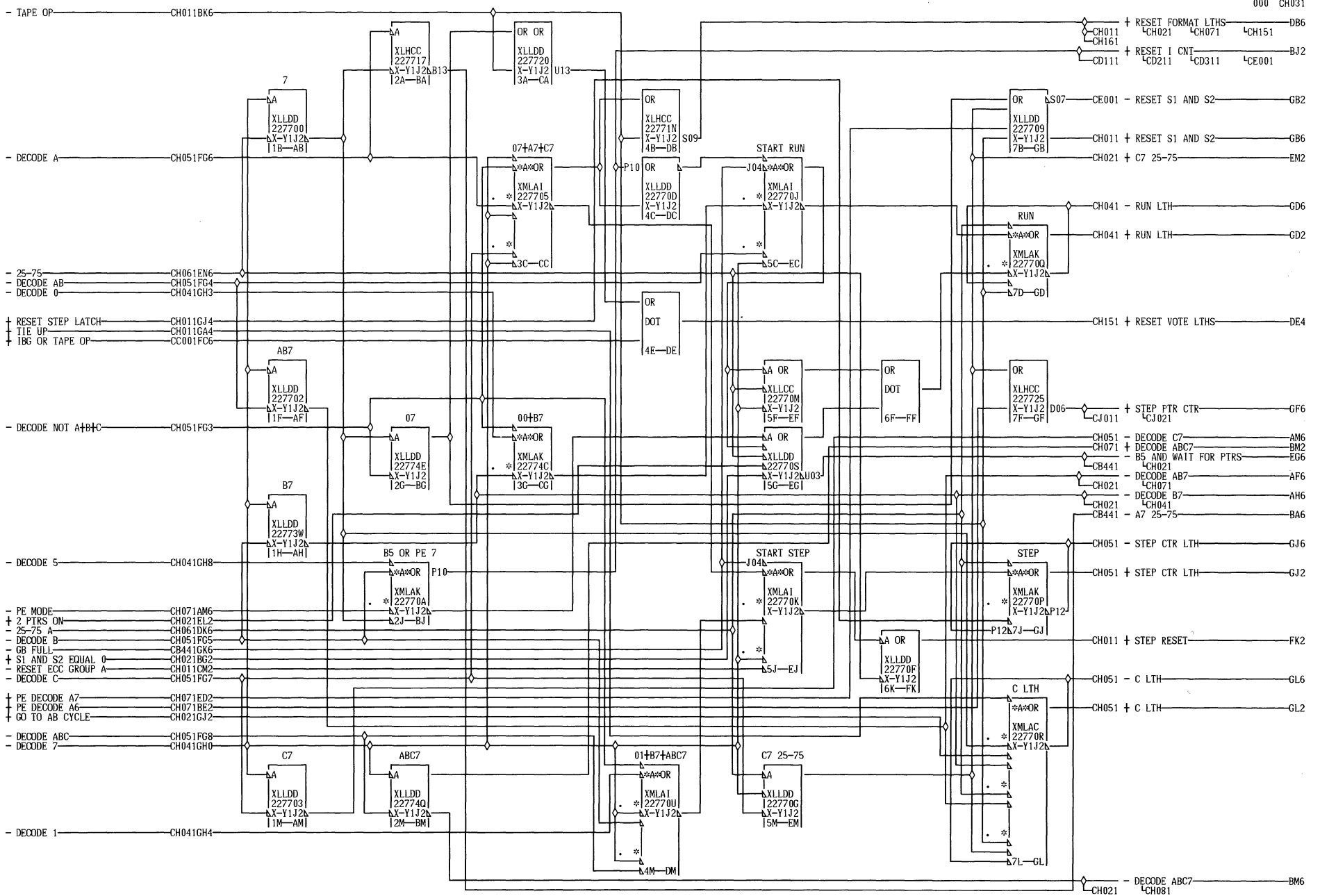
C  
H  
0  
2  
1  
1  
000

GE2 X-Y1V2D02  
01A-A1A2D02

07-17-73 734098  
02-22-79 846276

|                           |          |       |         |
|---------------------------|----------|-------|---------|
| FIND TRACK 1 AND POINTERS |          |       |         |
| DATE                      | 08-21-81 | MACH. | 3803-2  |
| LOG                       | 1836     | FRAME | 01      |
|                           |          | P.N.  | 2736302 |
| IBM CORP.                 | CO       | BLK.  | GP      |

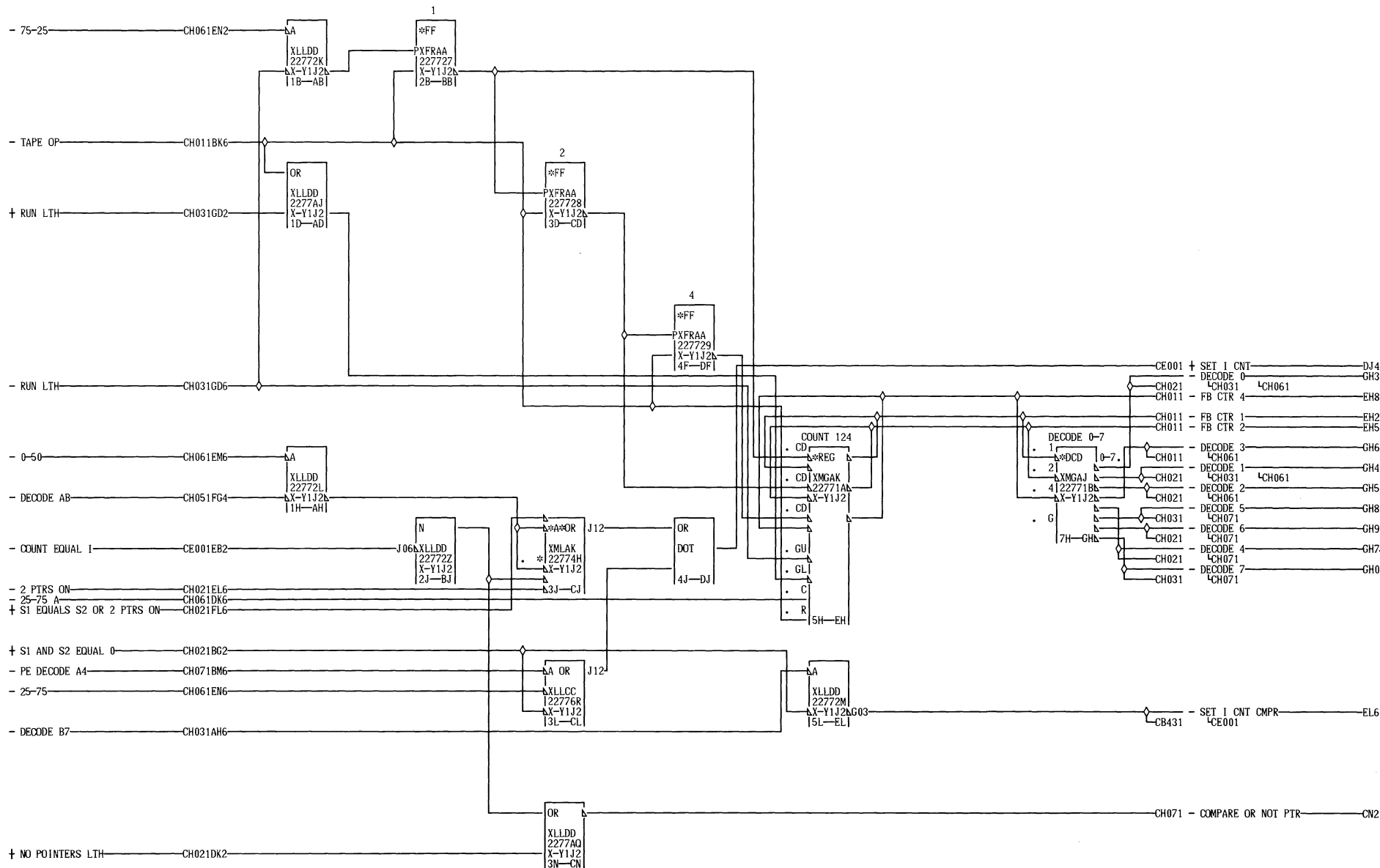
C  
H  
0  
2  
1  
000



07-17-73 734098  
02-22-79 846276

|                             |          |              |     |
|-----------------------------|----------|--------------|-----|
| FRAME BUFFER FORMAT AND CTR |          |              | C   |
| CTRLS                       |          |              | H   |
| DATE                        | 08-21-81 | MACH. 3803-2 | 0   |
| LOG                         | 1836     | FRAME 01     | 3   |
| P.N. 2736303                |          |              | 1   |
| IBM CORP. CO BLK.           |          |              | 000 |
|                             |          |              | GM  |

C  
H  
0  
3  
1  
  
000

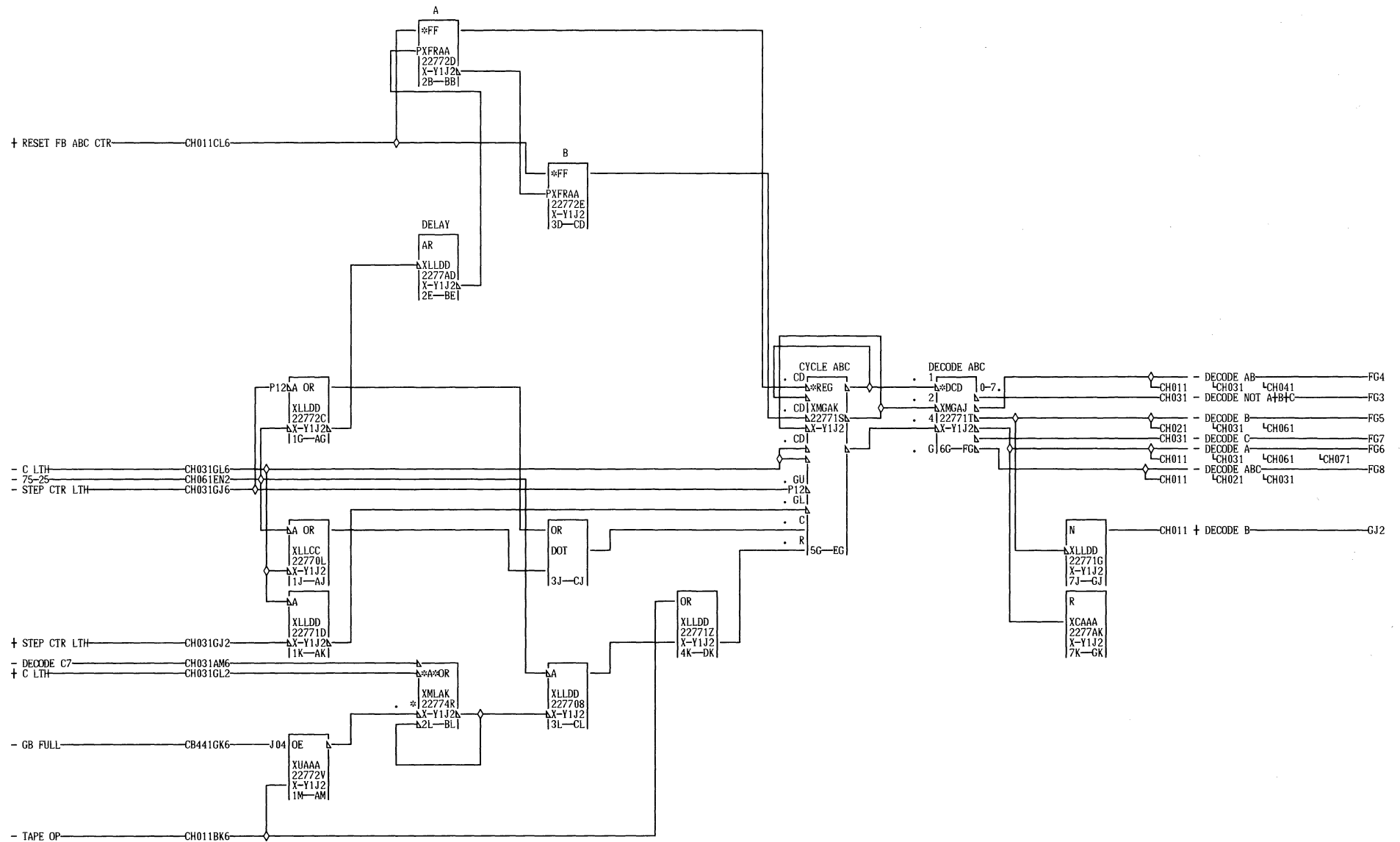


07-17-73 734098  
02-22-79 846276

| FRAME BUFFER COUNTER |          |       |         |
|----------------------|----------|-------|---------|
| DATE                 | 08-21-81 | MACH. | 3803-2  |
| LOG                  | 1836     | FRAME | 01      |
|                      |          | P.N.  | 2736304 |
| IBM CORP.            | CO       | BLK.  | GN      |

C  
H  
0  
4  
1  
000

C  
H  
0  
4  
1  
000

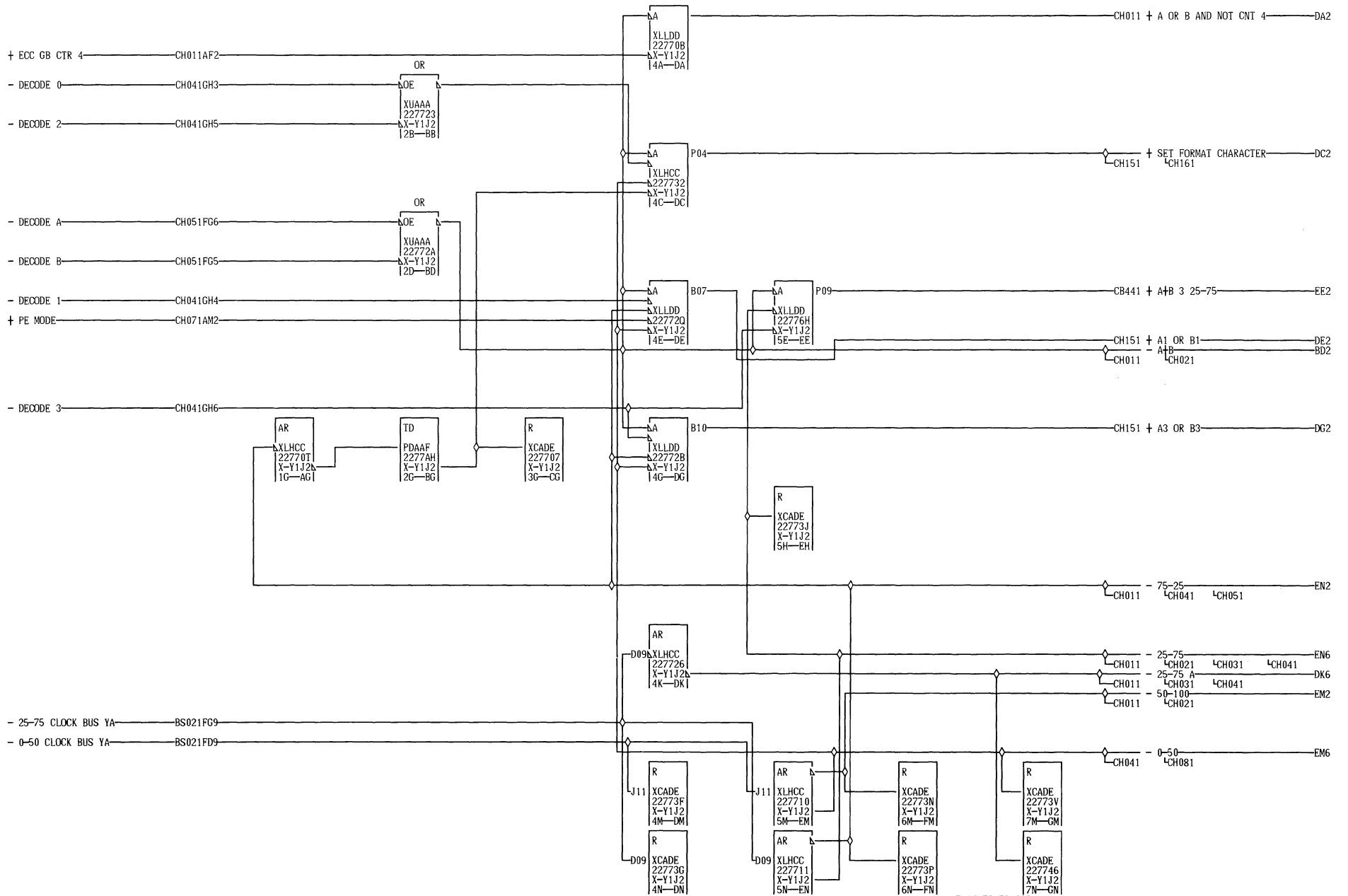


07-17-73 734098  
02-22-79 846276

C  
H  
0  
5  
1  
  
000

| FRAME BUFFER FORMAT COUNTER |          |       |         |
|-----------------------------|----------|-------|---------|
| DATE                        | 08-21-81 | MACH. | 3803-2  |
| LOG                         | 1836     | FRAME | 01      |
|                             |          | P.N.  | 2736305 |
| IBM CORP.                   | CO       | BLK.  | GL      |

C  
H  
0  
5  
1  
  
000

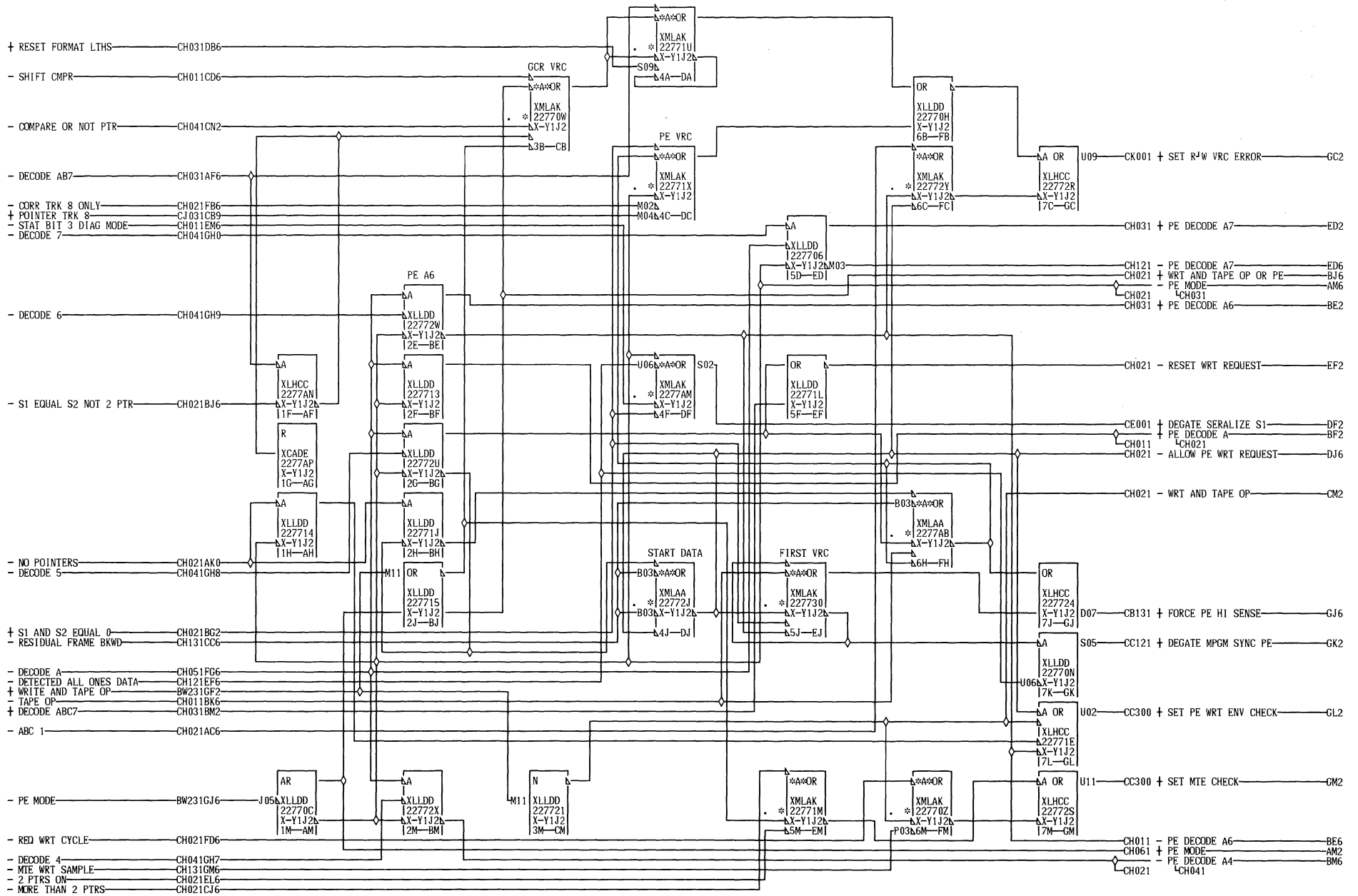


07-17-73 734098  
02-22-79 846276

| FORMAT CHARACTER CLKS |          |       |         |
|-----------------------|----------|-------|---------|
| DATE                  | 08-21-81 | MACH. | 3803-2  |
| LOG                   | 1836     | FRAME | 01      |
|                       |          | P.N.  | 2736306 |
| IBM CORP.             | CO       | BLK.  | GP      |

C  
H  
0  
6  
1  
  
000

C  
H  
0  
6  
1  
  
000



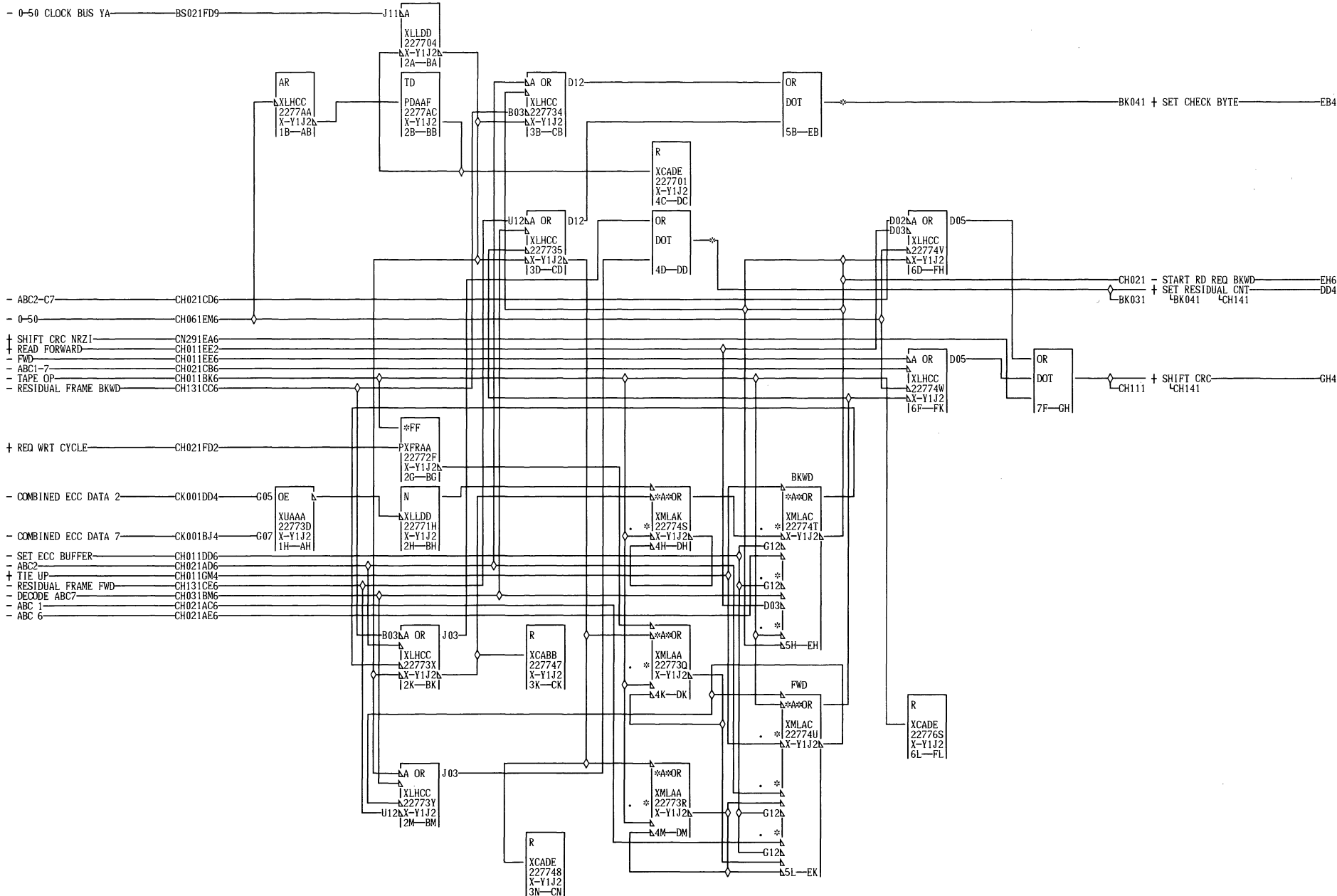
C  
H  
0  
7  
1  
000

07-17-73 734098  
03-18-74 736699  
05-13-74 736701  
08-22-74 737145  
02-22-79 846276

| PE ERROR DETECTION AND CONTROL |          |       |         |
|--------------------------------|----------|-------|---------|
| DATE                           | 08-21-81 | MACH. | 3803-2  |
| LOG                            | 1836     | FRAME | 01      |
|                                |          | P.N.  | 2736307 |
| IBM CORP.                      | CO       | BLK.  | GN      |

C  
H  
0  
7  
1  
000





C  
H  
0  
8  
1

000

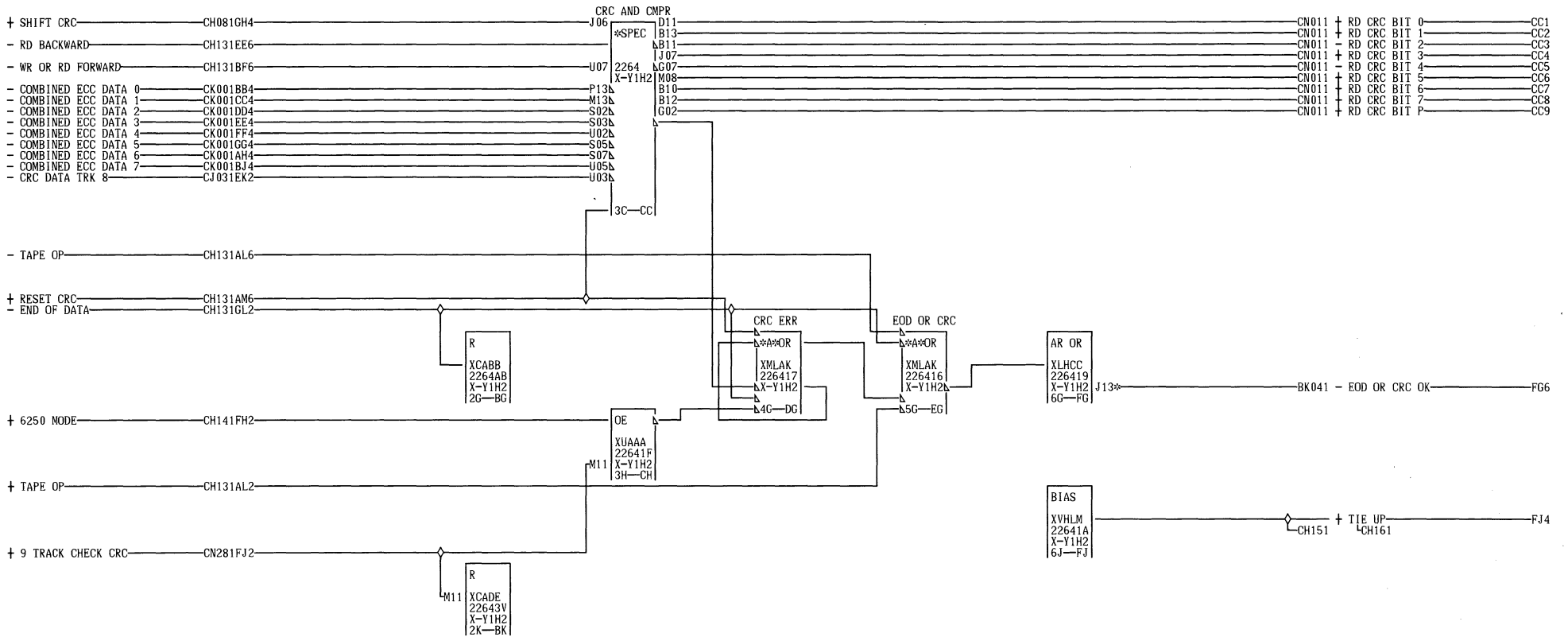
DD4 X-Y1V4B12  
01A-A1B4B12  
EB4 X-Y1T6D04  
01A-A1E1C13

07-17-73 734098  
02-22-79 846276

| RESIDUAL FRAME CONTROLS |          |       |         |
|-------------------------|----------|-------|---------|
| DATE                    | 08-21-81 | MACH. | 3803-2  |
| LOG                     | 1836     | FRAME | 01      |
|                         |          | P.N.  | 2736308 |
| IBM CORP.               | CO       | BLK.  | GL      |

C  
H  
0  
8  
1

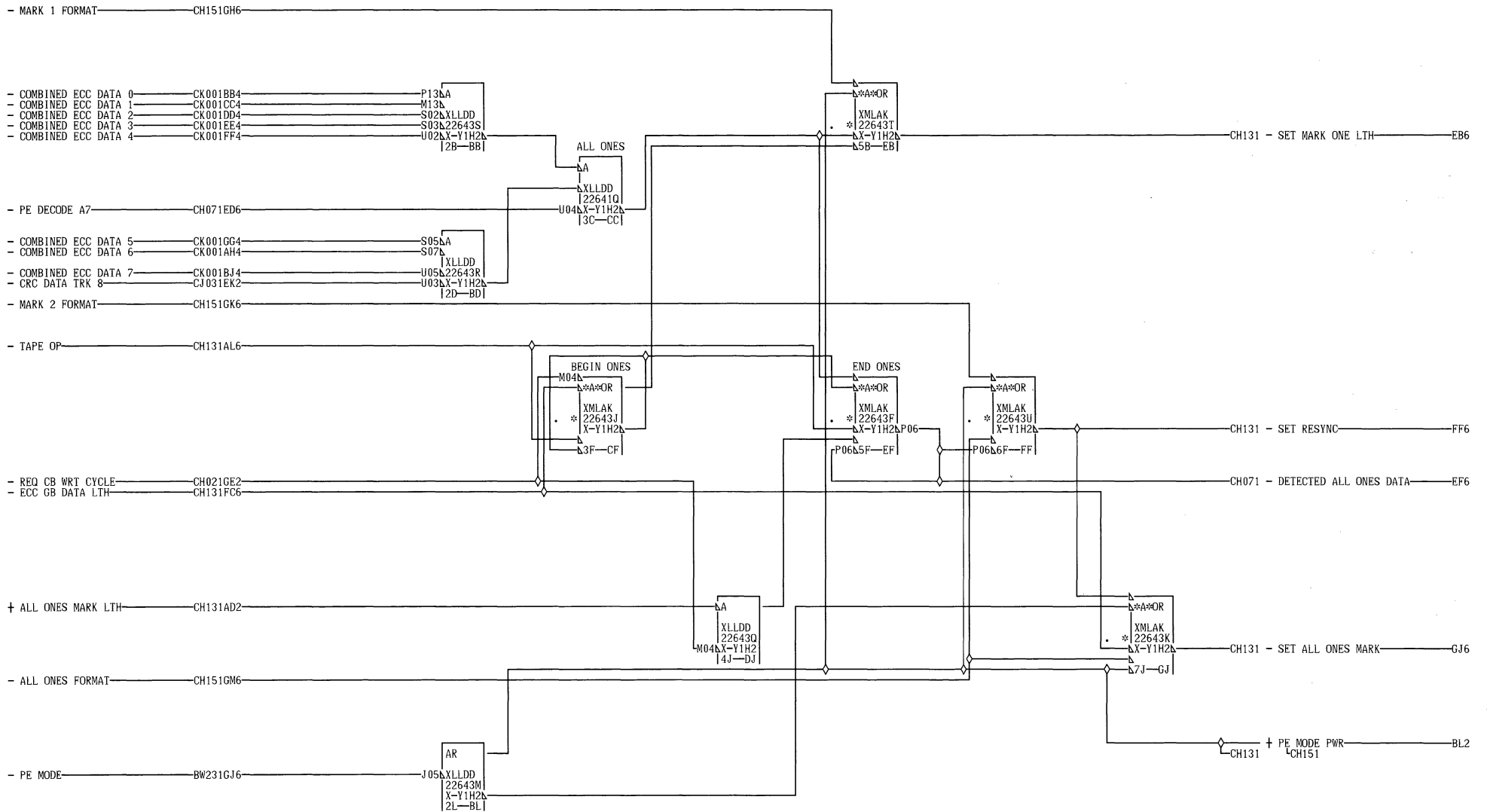
000



FG6 X-Y1V2D06  
01A-A1A2D06

07-17-73 734098

| READ CRC GEN AND CMPR |          |       |         |
|-----------------------|----------|-------|---------|
| DATE                  | 08-08-73 | MACH. | 3803-2  |
| LOG                   | 0051     | FRAME | 01      |
|                       |          | P.N.  | 2736309 |
| IBM CORP.             |          | BLK.  | GN      |



07-17-73 734098

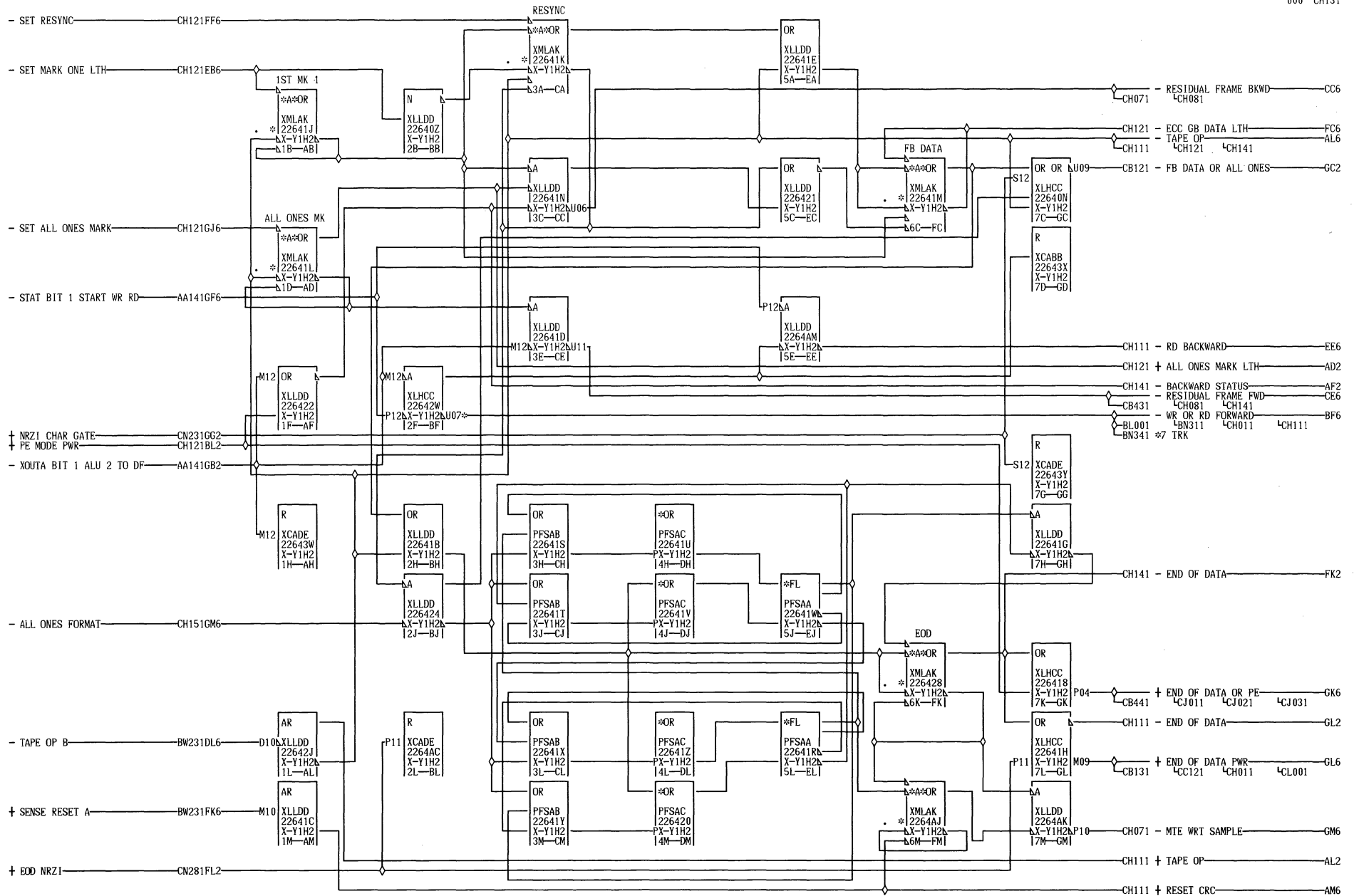
C  
H  
1  
2  
1

000

| PHASE ENCODED DATA FORMAT CONTROLS |          |       |         |
|------------------------------------|----------|-------|---------|
| DATE                               | 08-08-73 | MACH. | 3803-2  |
| LOG                                | 0051     | FRAME | 01      |
|                                    |          | P.N.  | 2736310 |
| IBM CORP.                          | CO       | BLK.  | GK      |

C  
H  
1  
2  
1

000

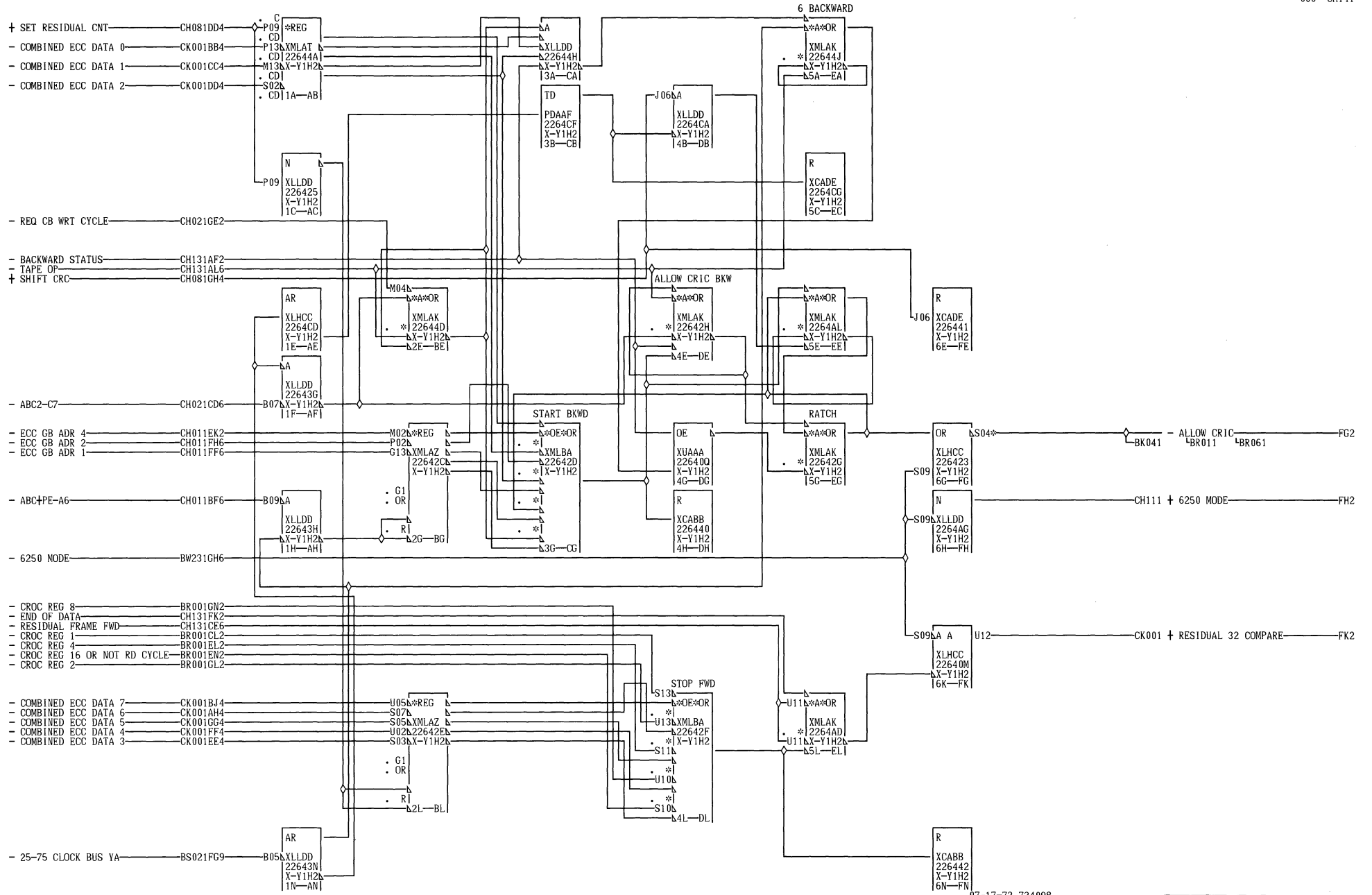


BF6 X-Y1U6B04  
01A-A1F1A13

07-17-73 734098  
02-22-79 846276

|                                       |          |       |         |
|---------------------------------------|----------|-------|---------|
| RESYNC - RESIDUAL FRAME - END OF DATA |          |       |         |
| DATE                                  | 08-21-81 | MACH. | 3803-2  |
| LOG                                   | 6829     | FRAME | 01      |
|                                       |          | P.N.  | 2736311 |
| IBM CORP.                             | CO       | BLK.  | CN      |

C  
H  
1  
3  
1  
  
000



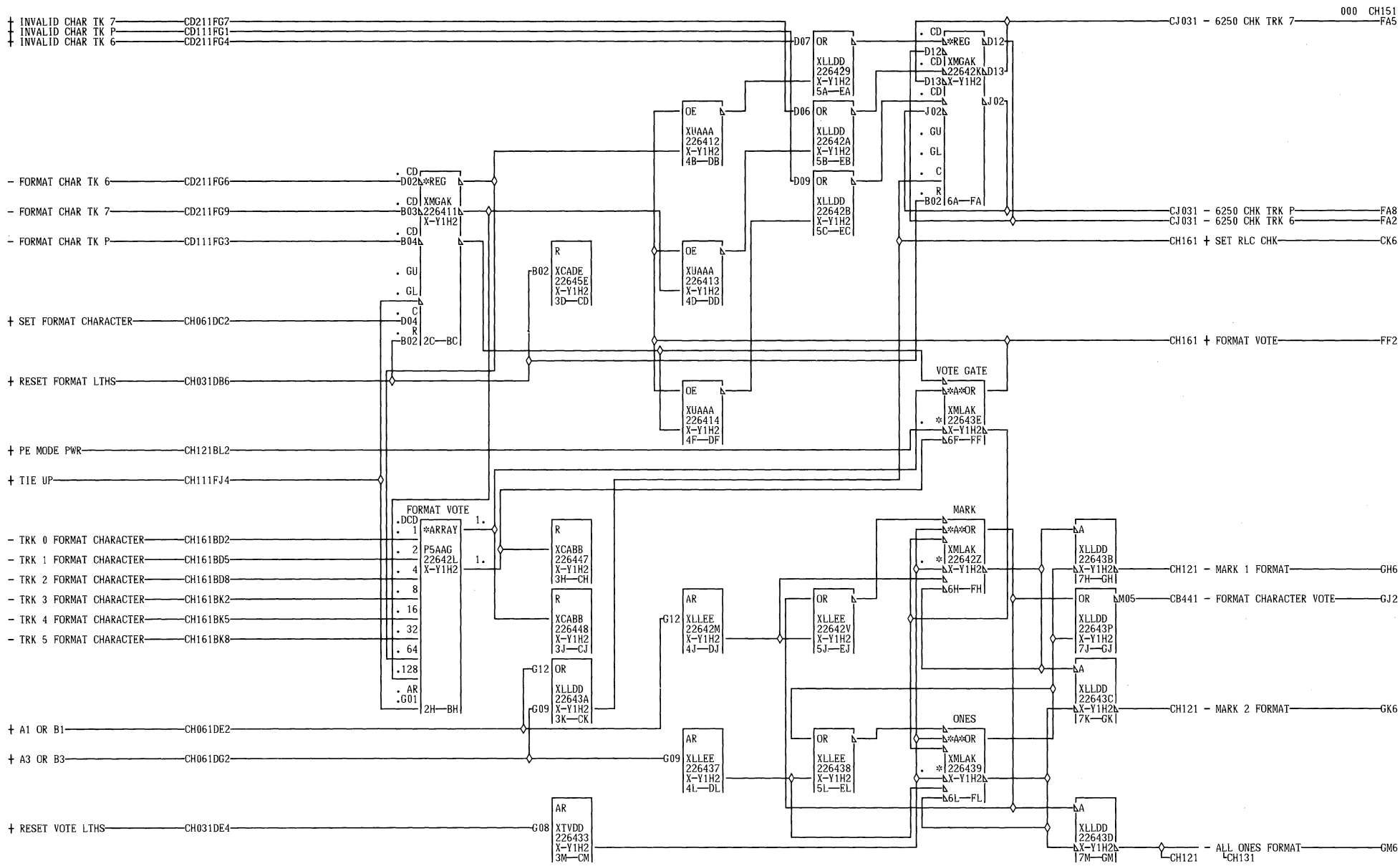
FG2 X-11V2D03  
01A-A1A2D03

07-17-73 734098

|                           |          |       |         |
|---------------------------|----------|-------|---------|
| MODULAR 7 RESIDUE COMPARE |          |       |         |
| EQUAL                     |          |       |         |
| DATE                      | 08-08-73 | MACH. | 3803-2  |
| LOG                       | 0051     | FRAME | 01      |
|                           |          | P.N.  | 2736312 |
| IBM CORP.                 | CO       | BLK.  | GN      |

C  
H  
1  
4  
1  
000

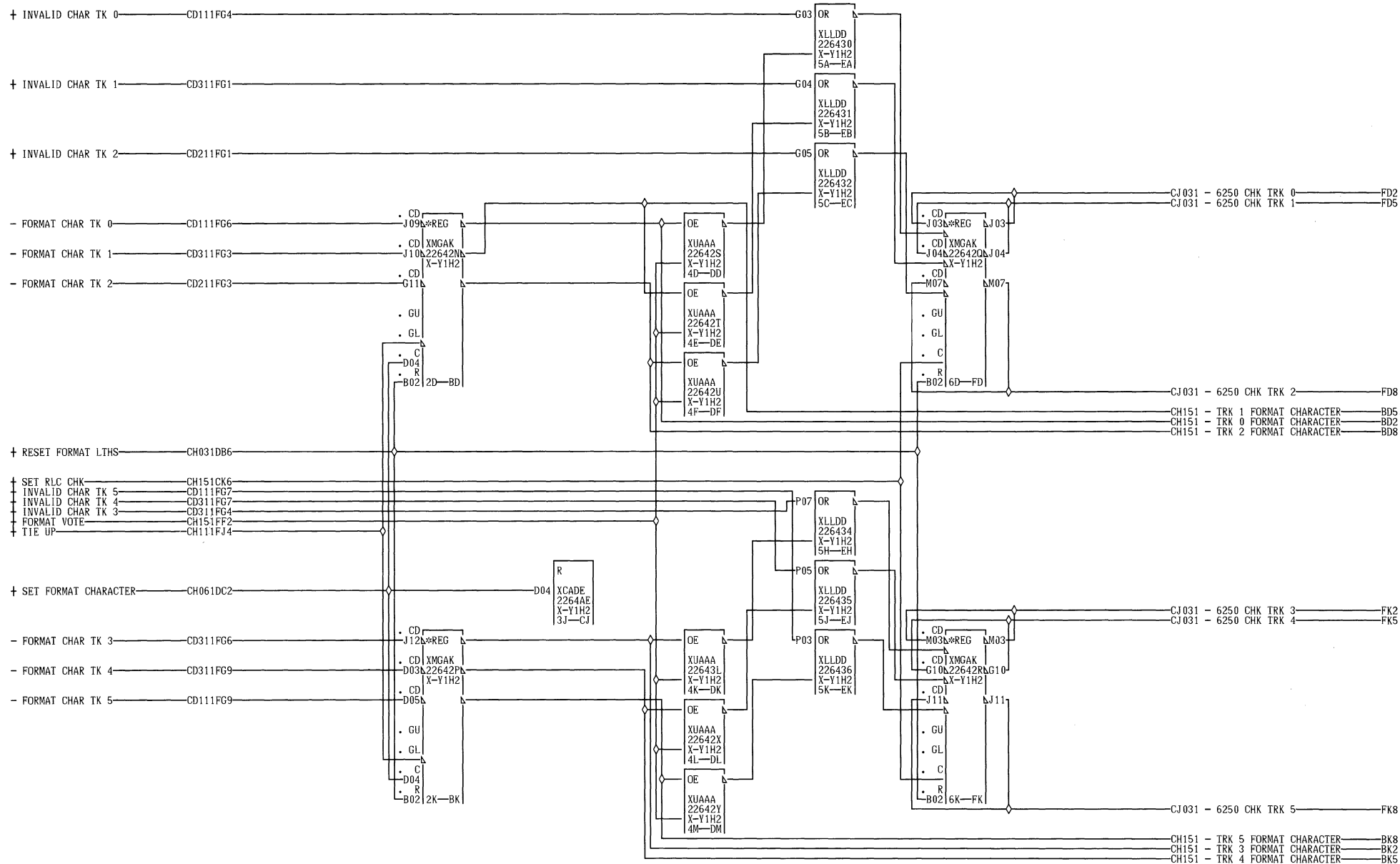
C  
H  
1  
4  
1  
000



C  
1  
5  
1  
000

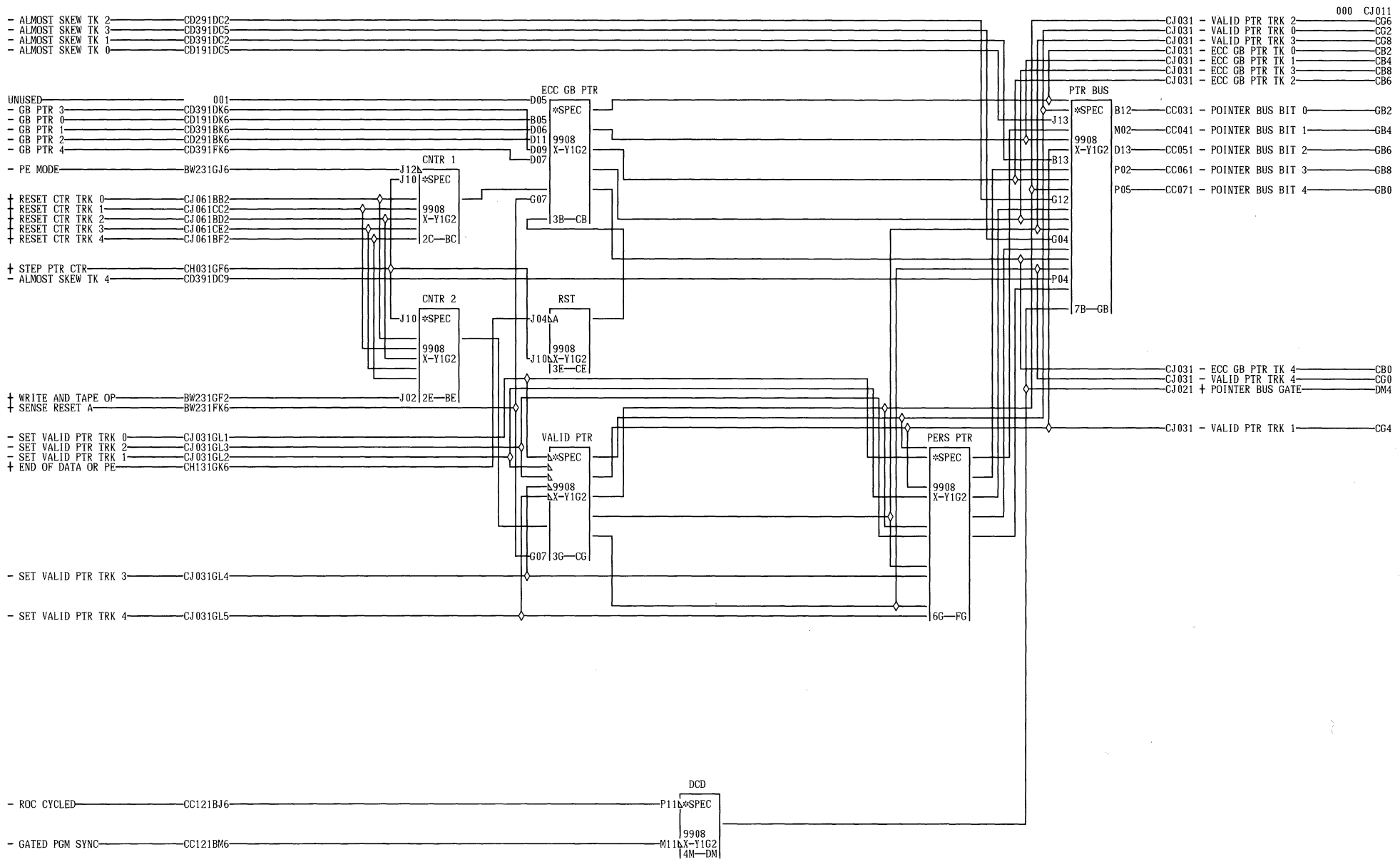
07-17-73 734098

|  |      |       |           |            |
|--|------|-------|-----------|------------|
| FORMAT CHARACTER AND 6250<br>ERROR DETECTION |      |       |           | C          |
| DATE 08-08-73 MACH. 3803-2                   |      |       |           | H          |
| LOG  | 0051 | FRAME | 01        | 5          |
|  |      |       | P.N.      | 2736313    |
|  |      |       | IBM CORP. | CO BLK. GN |



07-17-73 734098

|  |          |       |         |
|--|----------|-------|---------|
| FORMAT CHARACTER AND 6250<br>DETECTION |          |       |         |
| DATE                                   | 08-08-73 | MACH. | 3803-2  |
| LOG                                    | 0051     | FRAME | 01      |
|  |          | P.N.  | 2736314 |
| IBM CORP.                              | CO       | BLK.  | FL      |



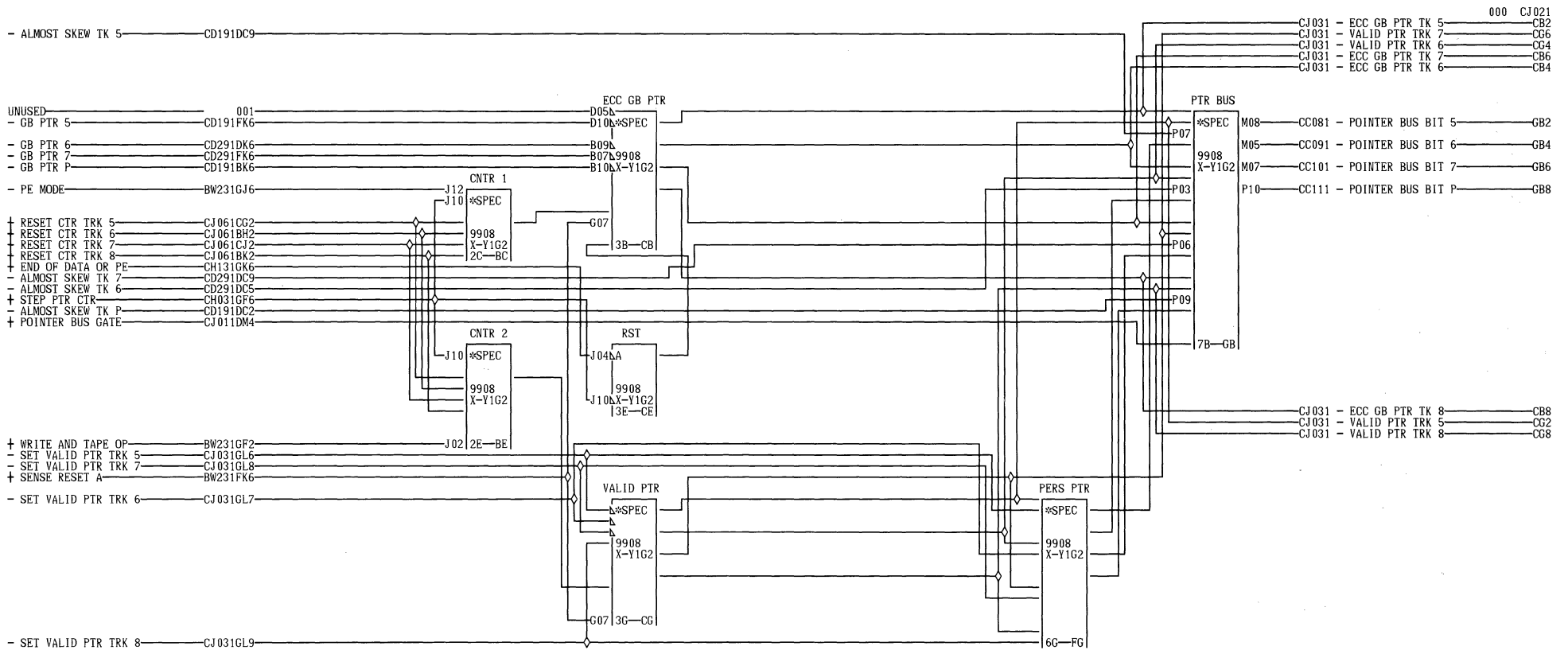
07-17-73 734098

C  
J  
0  
1  
1  
000

| POINTERS AND POINTER BUS<br>TRACKS 0-4 |          |       |         |
|--|----------|-------|---------|
| DATE                                   | 08-08-73 | MACH. | 3803-2  |
| LOG                                    | 0051     | FRAME | 01      |
|  |          | P.N.  | 2736315 |
| IBM CORP.                              |          | BLK.  | GC      |

C  
J  
0  
1  
1  
000





C  
1  
0  
2  
1  
000

07-17-73 734098

|                          |          |       |         |
|--------------------------|----------|-------|---------|
| POINTERS AND POINTER BUS |          |       |         |
| TRACKS 5-P               |          |       |         |
| DATE                     | 08-08-73 | MACH. | 3803-2  |
| LOG                      | 0051     | FRAME | 01      |
|                          |          | P.N.  | 2736316 |
| IBM CORP.                |          | BLK.  | GL      |

C  
1  
0  
2  
1  
000

P/N 2736655  
Output Lines  
(CJ011 & CJ021)

I/O  
Pins

3803-2  
Function During 1600 BPI  
Mode

Function During 6250 BPI  
Mode

-EC GB Pointer  
Tracks 0-P

N/A

Active after a phase error.  
Stays active for a minimum  
of 8 bytes. Resets when  
counter 1 counts to 8 or  
when Sense RESET is active.

Active after a phase error.  
Resets every C7 time.

-Pointer Bus  
Bit 0-P

B12  
Track 0

Active state indicates 4  
possible conditions which  
depend on the output of the  
decode block at the bottom  
of the page (Block DM).

Same as 1600 BPI Mode

DECODE Contents of Pointer Bus

0 ECC GB Pointers  
1 Valid Pointers  
2 Almost Skew  
3 Persistent Ptrs.

-Valid Pointer 0-8

N/A

Active after a track cor-  
rection. Once active, it  
remains active during Write  
OP. During Read OP it re-  
mains active for a minimum  
of 8 ECC groups. It resets  
on Read OP when counter 2  
counts to 8 or at the end  
of the record at SENSE  
RESET time.

Active state indicates 2  
possible conditions:  
1. Error correction made  
on a track. (Same as  
1600 BPI Mode).  
2. An invalid character  
detected by the trans-  
lator.  
This line remains active  
and resets similar to 1600  
BPI Mode.

+Pointer Bus Gate

N/A

Active state represents 1  
of 4 possible conditions:  
Active state (0-3) gates  
the pointer bus. See  
-Pointer Bus Bit 0-P above  
for details.

Same as 1600 BPI Mode.

P/N 2736656  
**Input Lines  
 (CJ011 & CJ021)**

Unused

-GB Pointer 0-P

-PE Mode

+Step Pointer  
 Counter

+Reset Counter

+End of Data or PE

+Sense Reset

+Wrt and Tape Op

-Almost Skew  
 Track 0-P

-Set Valid pointer  
 Track 0-P

-ROC Cycled

-Gated Program  
 Sync

**I/O  
 Pins**

D05

B05  
 (Track 0)

J12

J10

N/A  
 (Track 0-8)

J04

G07

J02

J13  
 Track 0

P11

M11

**Function During 1600 BPI  
 Mode**

Gates the GB pointers into  
 the ECC GB pointer latches.  
 Always Active.

A phase error occurred.

Gates counter 1.

Steps counter 1 & 2 at A7  
 time.

This line is active on  
 first error indication.  
 Counter 1 & 2 reset to 0  
 on first error. -SET VALID  
 POINTER TRACK X or -GB  
 POINTER X lines are active.  
 The counters start counting  
 and are reset with each  
 error. When counters 1 & 2  
 reach a count of 8, the ECC  
 GB pointer latches and valid  
 pointer latches are reset.

Blocks the reset to ECC GB  
 pointer latches.

Resets everything at end  
 of record.

De-gates counter 2.

Active with ALMOST SKEW  
 condition (14 bytes).

See page CJ034.

Active with first readout  
 cycle from skew buffers.

Active during data. Not  
 active after "FF" charac-  
 ter if an error occurs.

3803-2  
**Function During 6250 BPI  
 Mode**

Same as 1600 BPI Mode.

Same as 1600 BPI Mode.

Inactive.

Steps counter 2 at C7 time  
 and resets ECC GB pointer  
 latches during data.

Same as 1600 BPI Mode.

Gates the reset to the ECC  
 GB pointer latches during  
 data.

Same as 1600 BPI Mode.

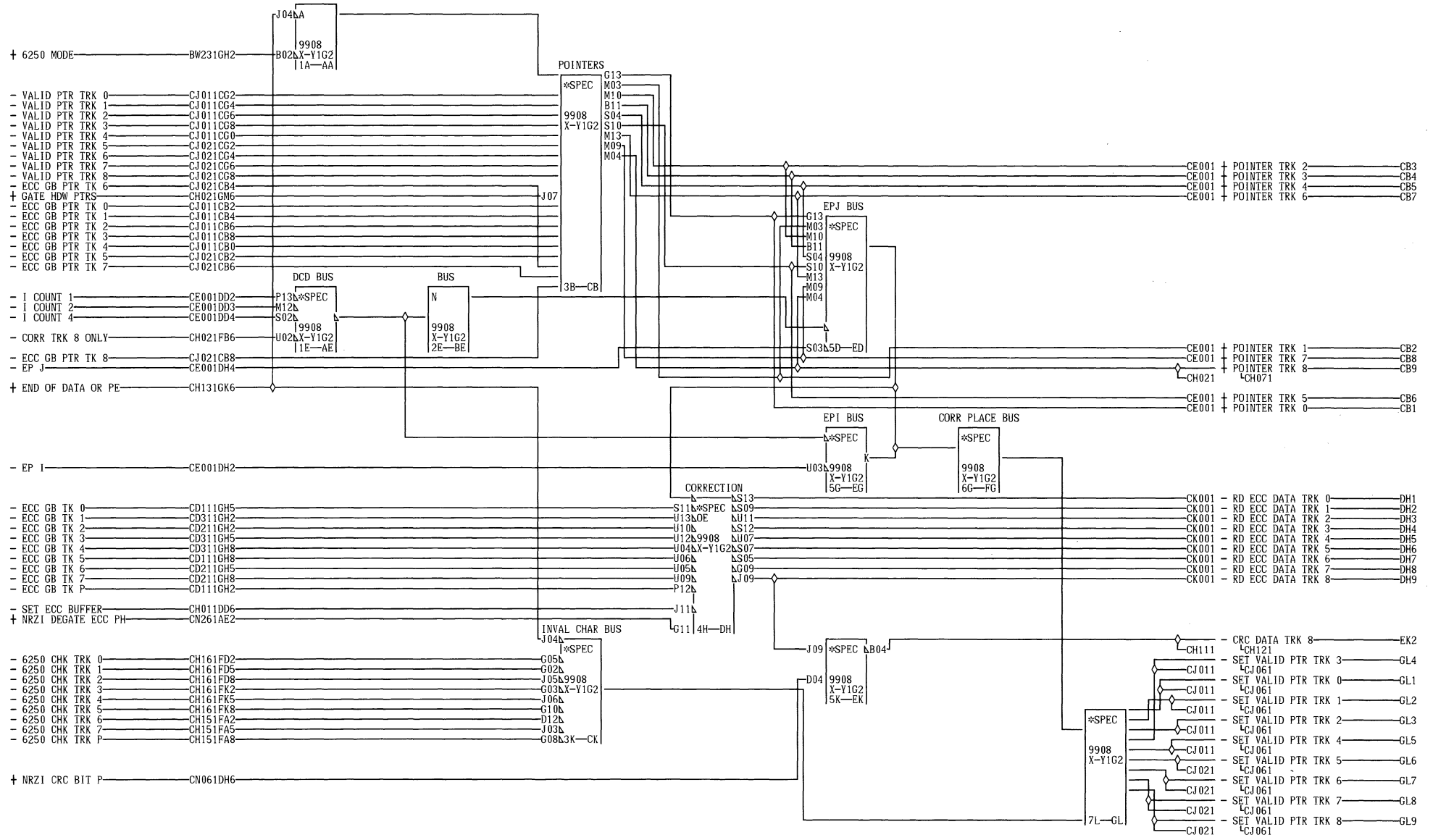
Same as 1600 BPI Mode.

Active with ALMOST SKEW  
 condition (28 bytes).

See page CJ034.

Same as 1600 BPI Mode.

Active during PREAMBLE  
 and RESYNC bursts.



ALL THE BUSES SHOWN HERE  
ARE NINE LINES ONE  
PER TRACK.  
C  
J  
0  
3  
1  
000

07-17-73 734098

| CORRECTION AND CORRECTED DATA |          |       |         |
|-------------------------------|----------|-------|---------|
| DATE                          | 08-08-73 | MACH. | 3803-2  |
| LOG                           | 0051     | FRAME | 01      |
|                               |          | P.N.  | 2736317 |
| IBM CORP.                     | BLK.     |       | GM      |

|                           |                   |  |   |
|---------------------------|-------------------|--|---|
| +End of Data or PE        | J04               | Active during EOD or PE Mode. Gates the valid pointers to the pointer latches (Blk CB). This is the gate for the top half inputs of Blk CB.  | The inactive state of this line gates the "6250 CHKS" (invalid characters) to the invalid character latches (Blk CK).                             |
| +6250 Mode                | B02               | Inactive.  | Active during 6250 BPI Mode. Gates the valid pointers to the pointer latches.   |
| -Valid Pointer Track 0-8  | N/A               | See logic page CJ022 for description.  | See logic page CJ022 for description.   |
| +Gate Hdw Pointers        | J07               | Active during every "A" cycle. Gates the lower half inputs to Blk CB.  | Active during B5 time and not two pointers on, or during every "B" cycle of a write op.   |
| -ECC GB Pointer Track 0-8 | N/A               | See logic page CJ022 for description.  | See logic page CJ022 for description.   |
| -I Count 1<br>2<br>4      | P13<br>M12<br>S02 | See logic page CE003 for description.  | See logic page CE003 for description.   |
| -Correct Trk 8 Only       | U02               | Active only when P track is in error.  | Same as 1600 BPI.   |
| -EP J                     | S03               | See logic page CE003 for description.  | See logic page CE003 for description.   |
| -EP I                     | U03               | See logic page CE003 for description.  | See logic page CE003 for description.   |
| -ECC GB Track 0-8         | S11<br>(Track 0)  | Data from the ECC group buffer.  | Same as 1600 BPI.   |
| -Set ECC                  | J11               | Active for 25 nsec during A6 time. Gates the ECC GB data to the correction module. This correction module performs "Exclusive OR" operation with the pulses from EPI & EPJ Bus and correct any track in error. | Active during ABC cycle for 25 nsec. Gates the ECC GB data to the correction module. Correction of data is done the same way as in 1600 BPI Mode. |
| +NRZI Degate ECC PH       | G11               | Active during NRZI Mode only. The active state forces all outputs from correction module to (-) level.   | Same as 1600 BPI.   |
| +NRZI CRC Bit P           | D04               | Active only during NRZI Mode, if the CRC contains a P Bit.   | Same as 1600 BPI.   |
| +End of Data or PE        | J04               | Active during EOD or PE Mode. The active state degates the inputs (6250 CHKS) to the invalid character latches (Blk CK).   | This line is inactive during 6250 mode. It gates the 6250 CHKS to the invalid character latches.  |
| -6250 Chk Track 0-P       | G05<br>(Track 0)  | Not used and always (+).   | Active state means that the translator detected the invalid character.  |

+Pointer Track 0-8

N/A

Active line means that a valid pointer or ECC GB pointer existed. This is only a marginal condition indicator and the track may or may not require correction.

The pointers are used on logic page CJ031 for double track correction. Four signals needed are:  
1. Pointers (two)  
2. EP I  
3. EP J  
4. I Count

-Rd ECC Data  
Track 0-8

S13  
(Track 0)

This is the corrected data going to the Channel Buffer.

Same as 1600 BPI.

-CRC Data Track 8

B04

CRC character Bit P

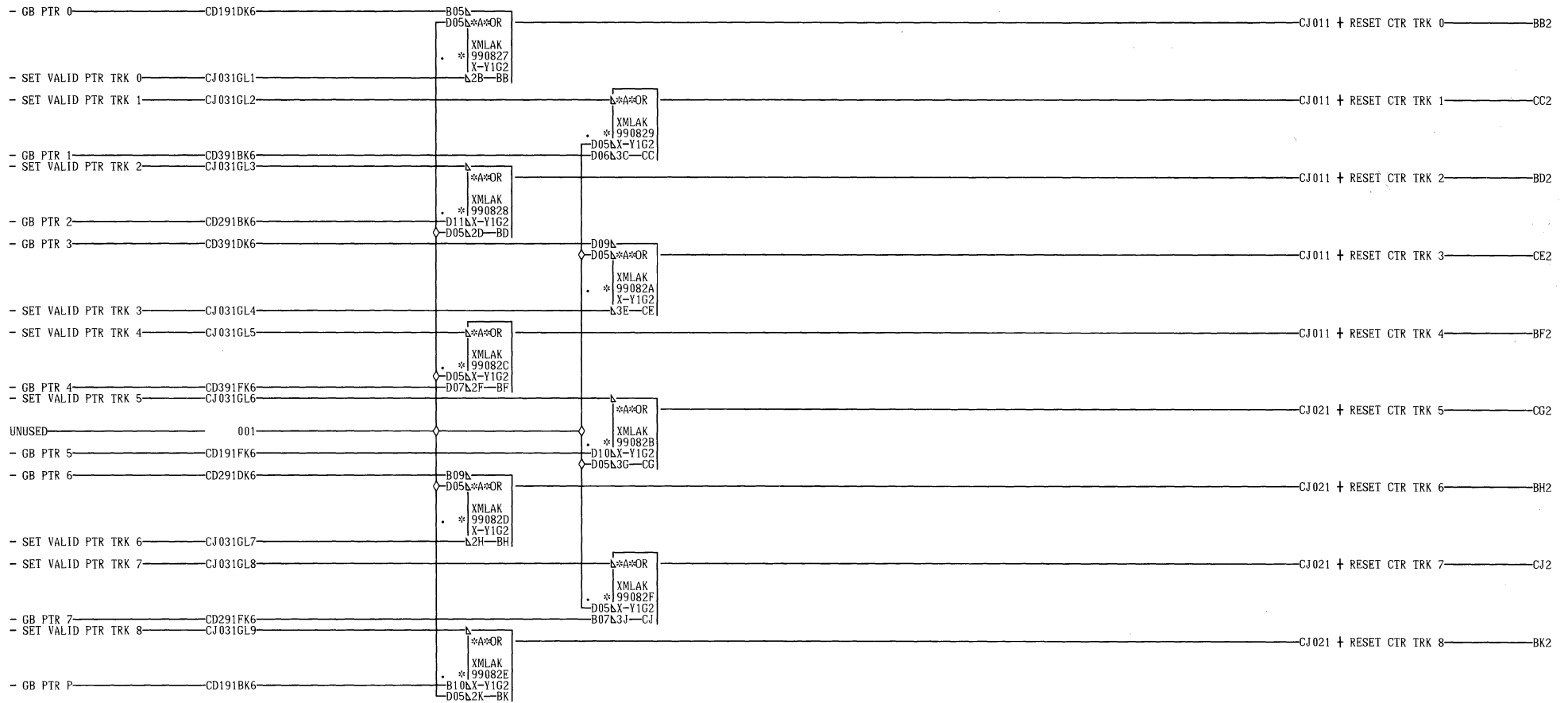
Same as 1600 BPI.

-Set Valid Pointer  
Track 0-8

N/A

Active state indicates that correction took place. This line sets the valid pointer latch on logic page CJ011.

Active state indicates:  
1. Some correction took place.  
2. The translator detected an invalid character. This line (or lines) set the valid pointer latches on logic page CJ011.

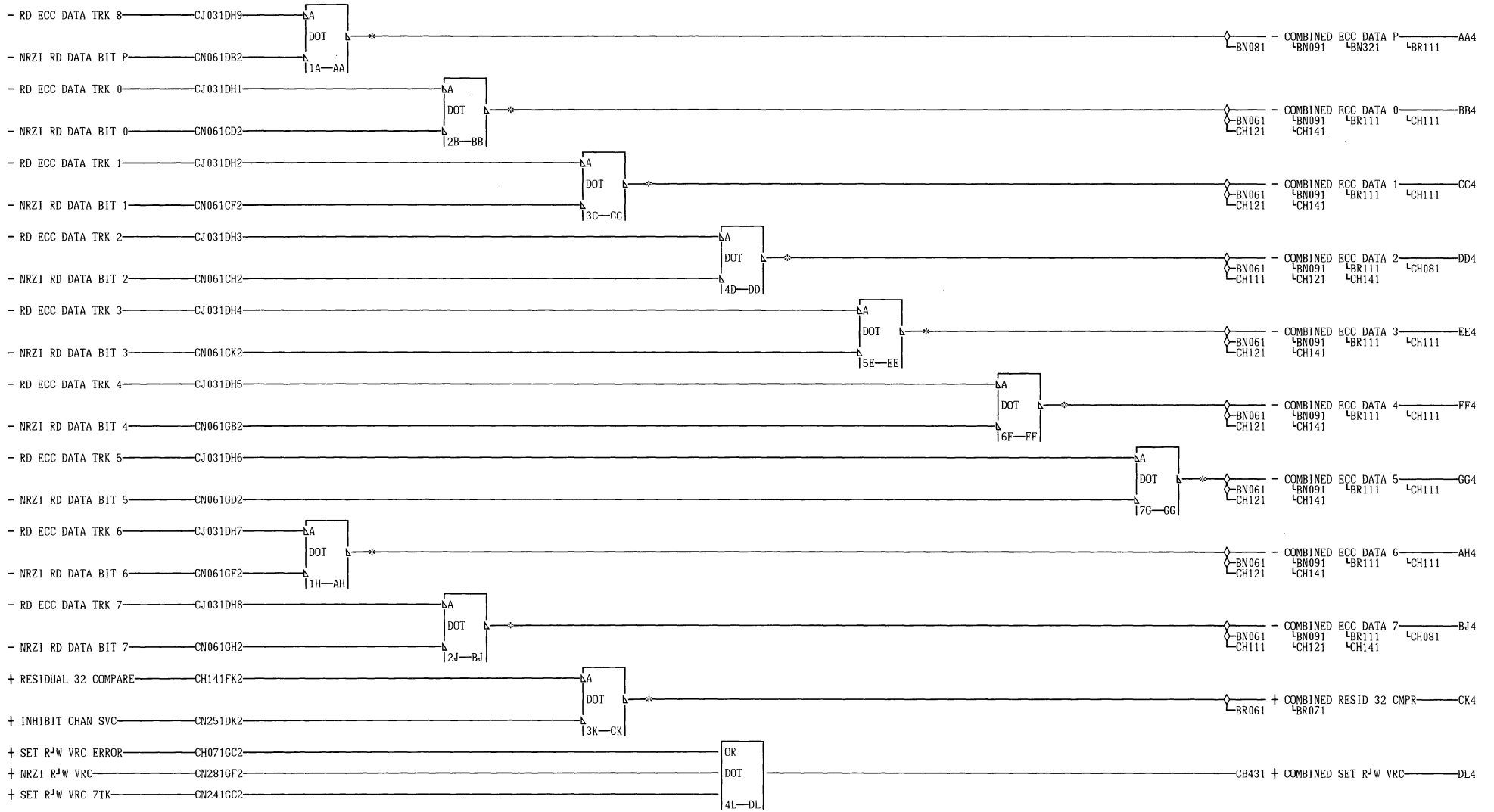


C  
J  
0  
6  
1  
000

07-17-73 734098

| COUNTER RESETS |          |       |         |  |
|----------------|----------|-------|---------|--|
| DATE           | 08-08-73 | MACH. | 3803-2  |  |
| LOG            | 0051     | FRAME | 01      |  |
|                |          | P.N.  | 2736318 |  |
| IBM CORP.      | CO       | BLK.  | FJ      |  |

C  
J  
0  
6  
1  
000



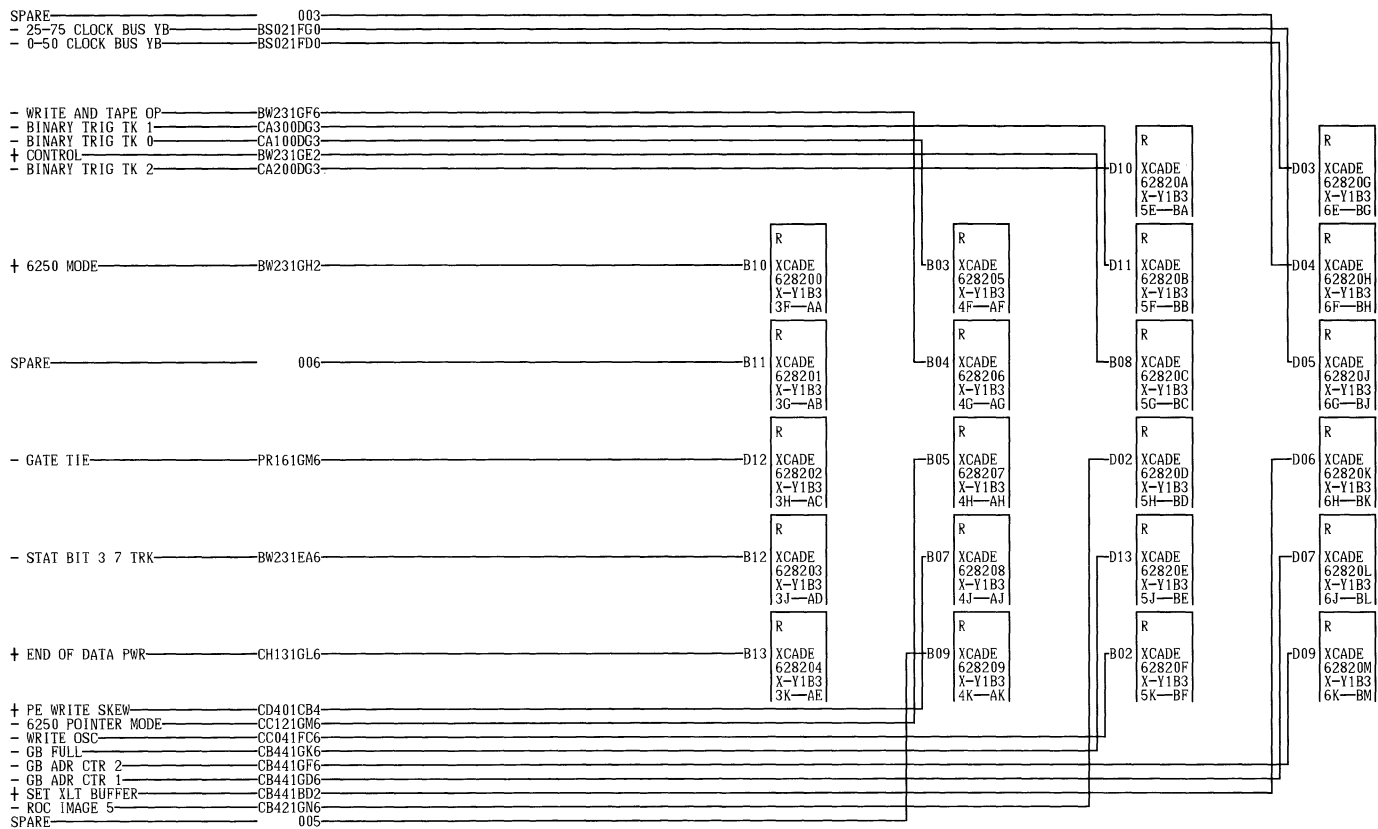
C  
K  
0  
0  
1  
000

AA4 X-Y1V2B02 01A-A1A2B05 GC4 X-Y1V2B10  
 01A-A1A2B02 CK4 X-Y1U6A02 01A-A1A2B10  
 AH4 X-Y1V2B12 01A-A1E1E11  
 01A-A1A2B12 DD4 X-Y1V2B06  
 BB4 X-Y1V2B04 01A-A1A2B06  
 01A-A1A2B04 EE4 X-Y1V2B08  
 BJ4 X-Y1V2B13 01A-A1A2B08  
 01A-A1A2B13 FF4 X-Y1V2B09  
 CC4 X-Y1V2B05 01A-A1A2B09

07-17-73 734098

|                      |          |       |         |
|----------------------|----------|-------|---------|
| 6250-NRZI DATA ORING |          |       |         |
| DATE                 | 08-08-73 | MACH. | 3803-2  |
| LOG                  | 0051     | FRAME | 01      |
|                      |          |       | 0       |
|                      |          |       | 1       |
|                      |          |       | 000     |
| P.N.                 |          |       | 2736319 |
| IBM CORP.            | CO       | BLK.  | GH      |



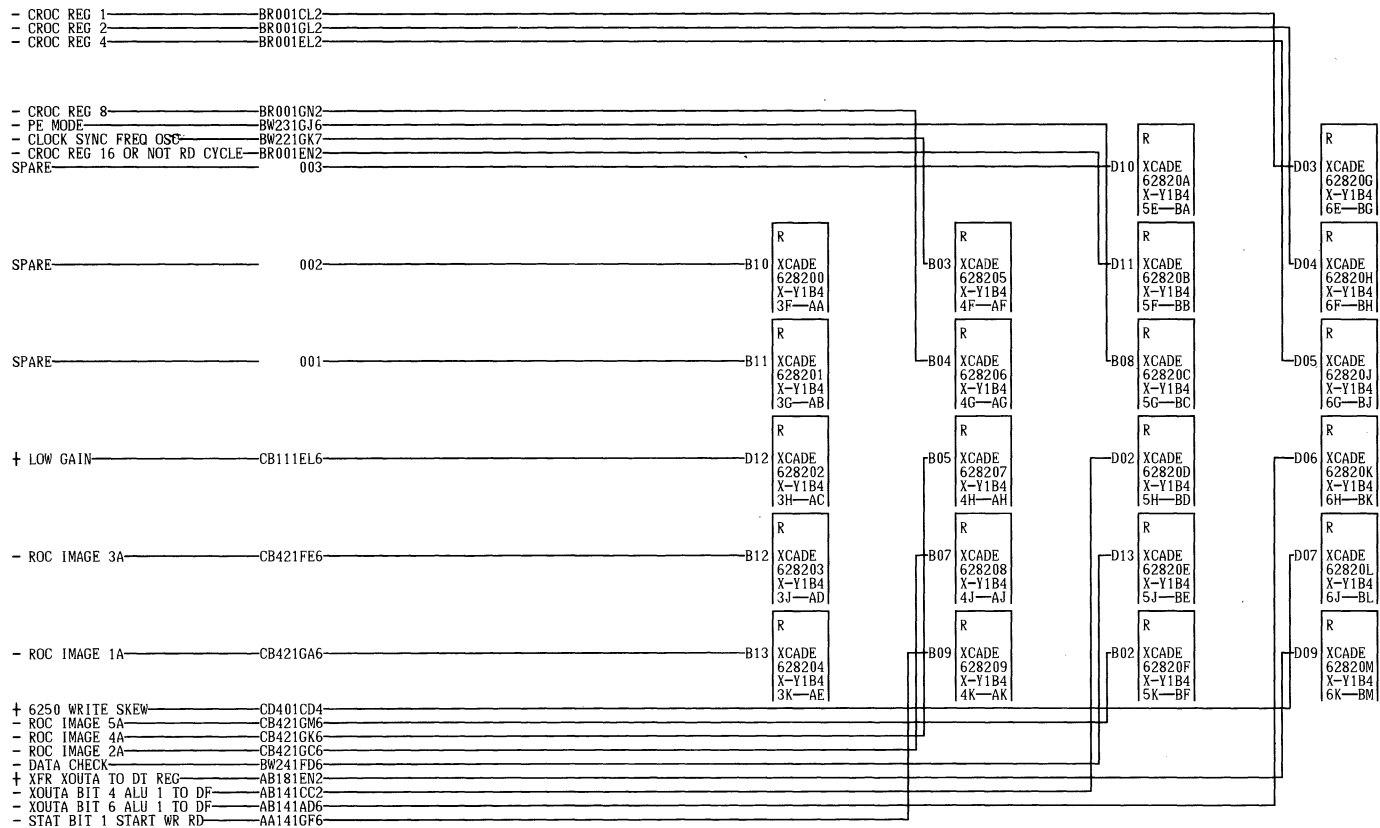


07-17-73 734098

| TLD TERMINATOR CARD |          |       |         |
|---------------------|----------|-------|---------|
| DATE                | 08-08-73 | MACH. | 3803-2  |
| LOG                 | 0051     | FRAME | 01      |
|                     |          | P.N.  | 2736320 |
| IBM CORP.           | SDD BLK. |       | BN      |

C  
L  
0  
0  
1  
000

C  
L  
0  
0  
1  
000

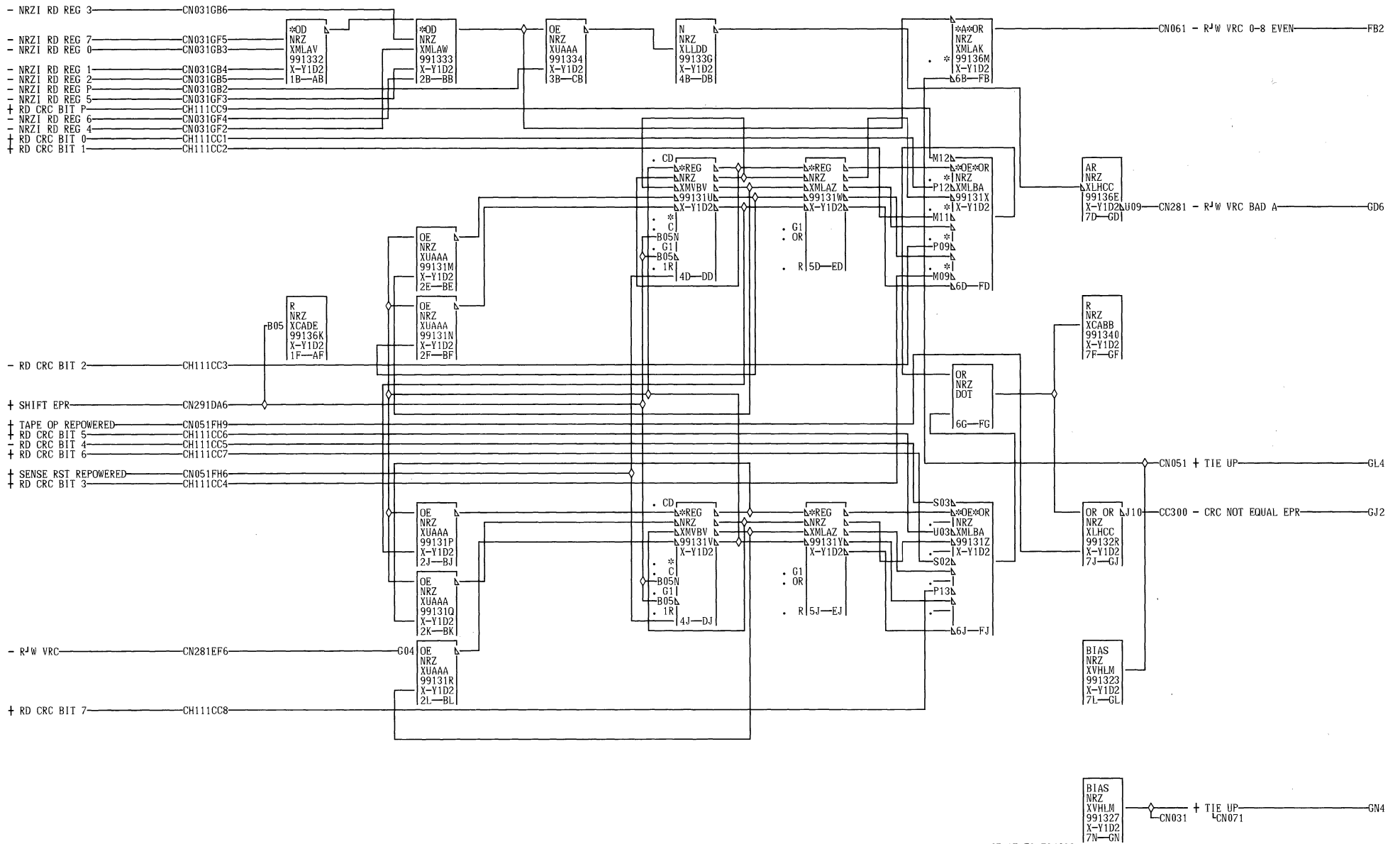


07-17-73 734098

CL011  
000

| TLD TERMINATOR CARD |          |       |         |
|---------------------|----------|-------|---------|
| DATE                | 08-08-73 | MACH. | 3803-2  |
| LOG                 | 0051     | FRAME | 01      |
|                     |          | P.N.  | 2736321 |
| IBM CORP.           | SDD      | BLK.  | BN      |

CL011  
000

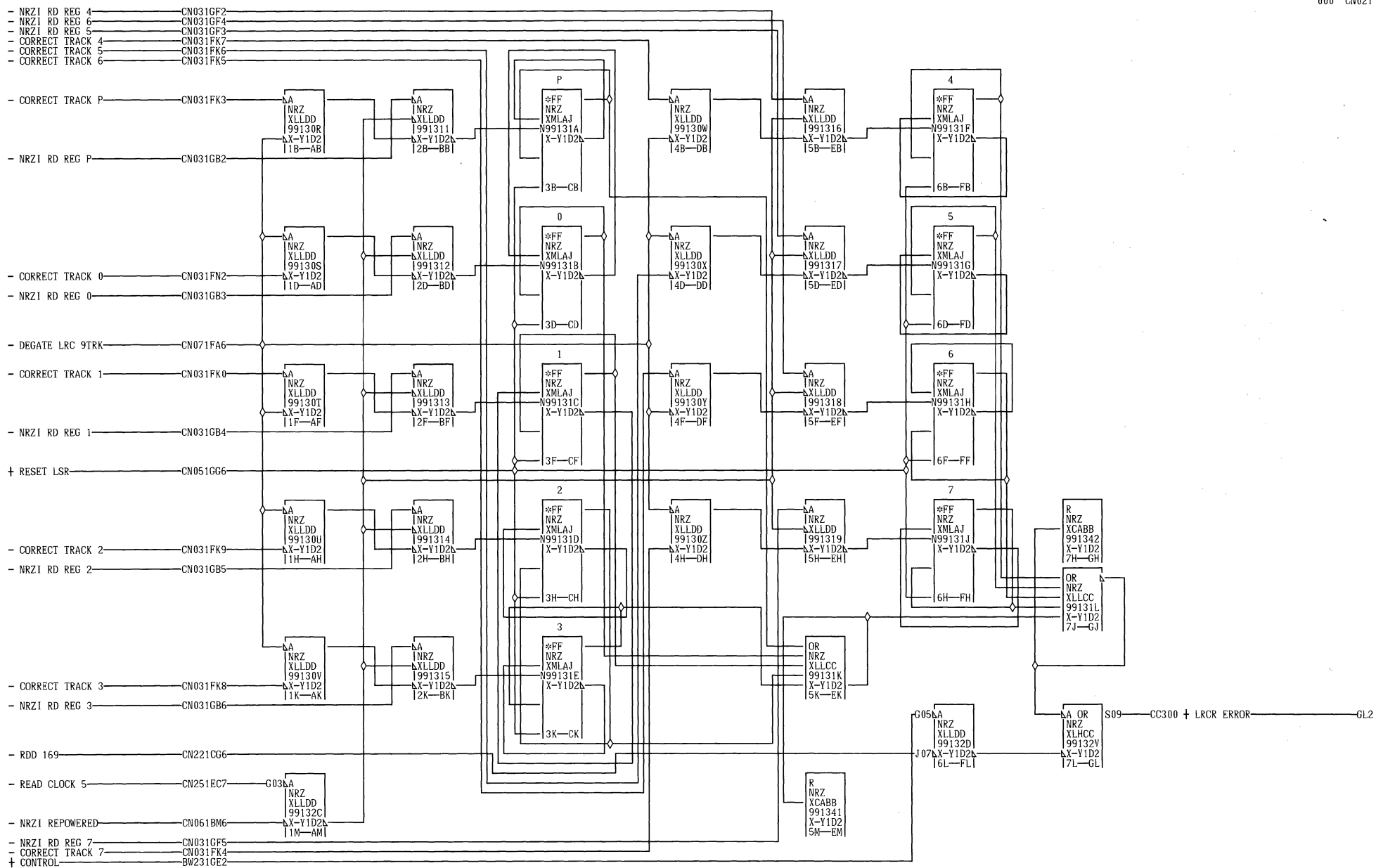


07-17-73 734098

| ERROR PATTERN REGISTER |          |       |         |
|------------------------|----------|-------|---------|
| DATE                   | 08-08-73 | MACH. | 3803-2  |
| LOG                    | 0051     | FRAME | 01      |
|                        |          | P.N.  | 2736322 |
| IBM CORP.              | CO       | BLK.  | GP      |

C  
N  
0  
1  
1  
000

C  
N  
0  
1  
1  
000



C  
N  
0  
2  
1

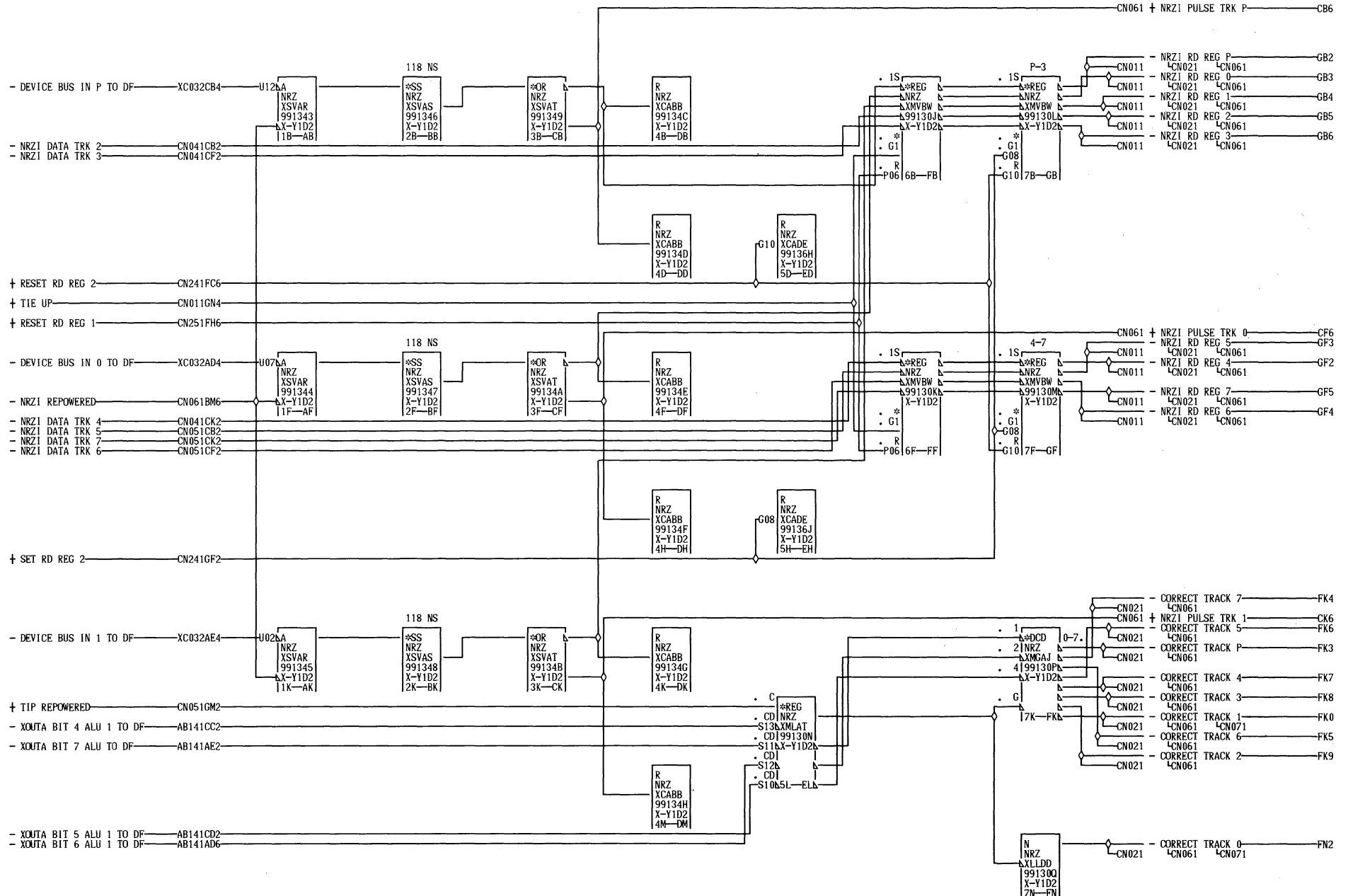
000

07-17-73 734098

| LRCR REGISTER |          |       |         |
|---------------|----------|-------|---------|
| DATE          | 08-08-73 | MACH. | 3803-2  |
| LOG           | 0051     | FRAME | 01      |
|               |          | P.N.  | 2736323 |
| IBM CORP.     | CO       | BLK.  | GM      |

C  
N  
0  
2  
1

000

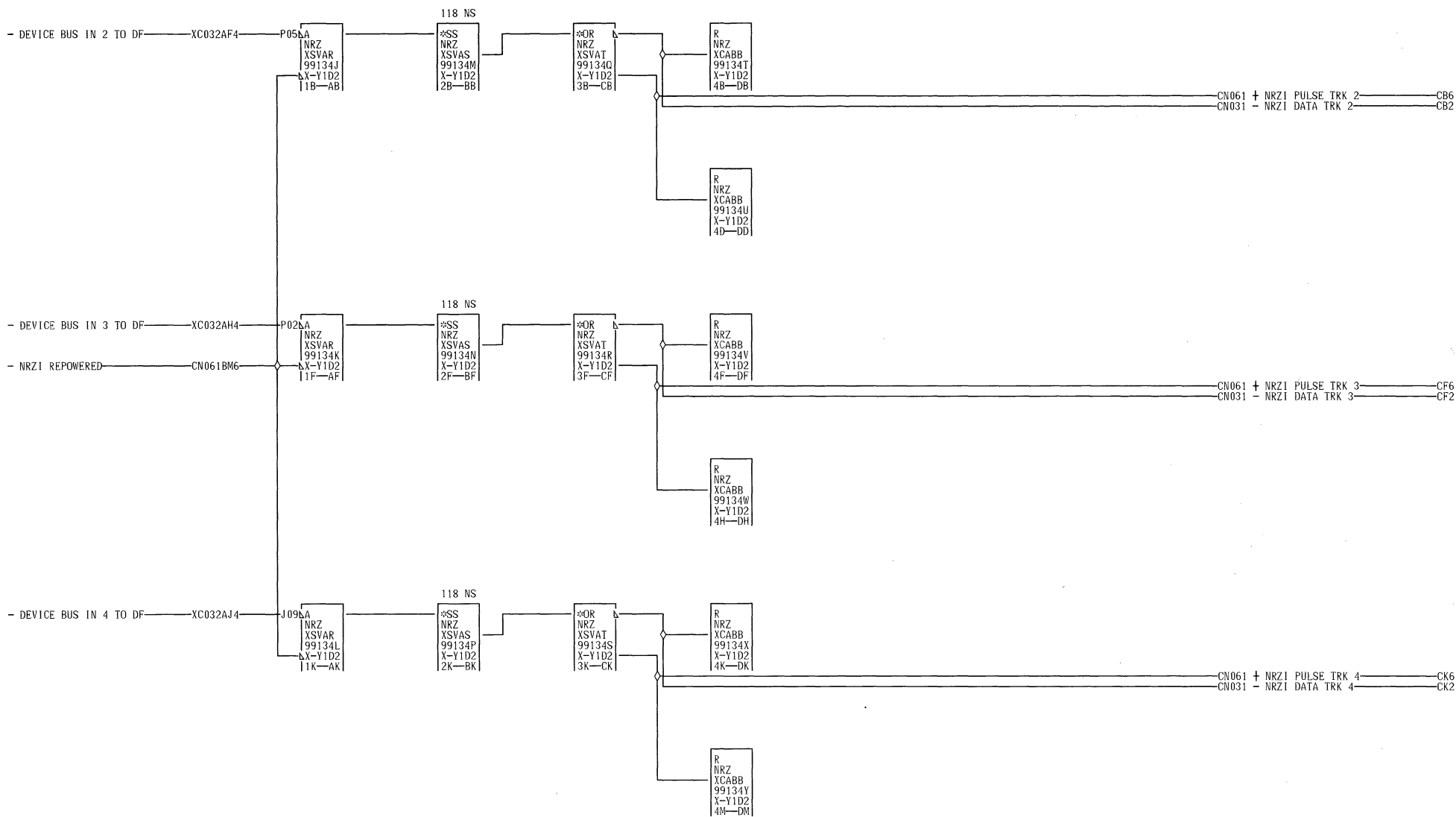


07-17-73 734098  
01-06-75 733226

|                             |          |       |         |
|-----------------------------|----------|-------|---------|
| NRZI DETECTION TRACKS P 0 1 |          |       |         |
| DATE                        | 08-18-81 | MACH. | 3803-2  |
| LOG                         | 0025     | PAGE  | 01      |
|                             |          | P.N.  | 2736324 |
| IBM CORP.                   | CO       | BLK.  | GG      |

C  
N  
0  
3  
1  
  
000

C  
N  
0  
3  
1  
  
000

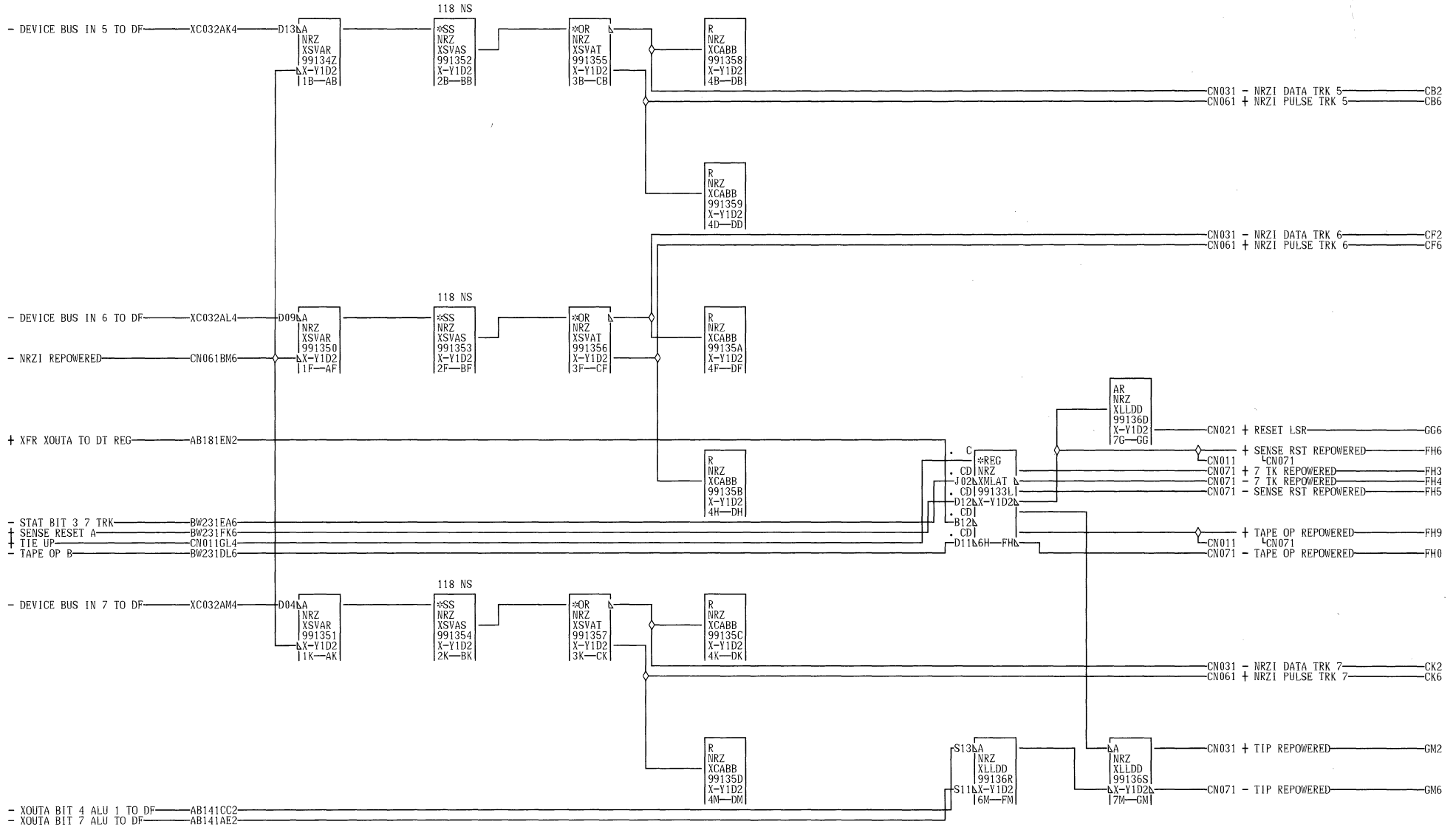


C  
N  
0  
4  
1  
000

07-17-73 734098

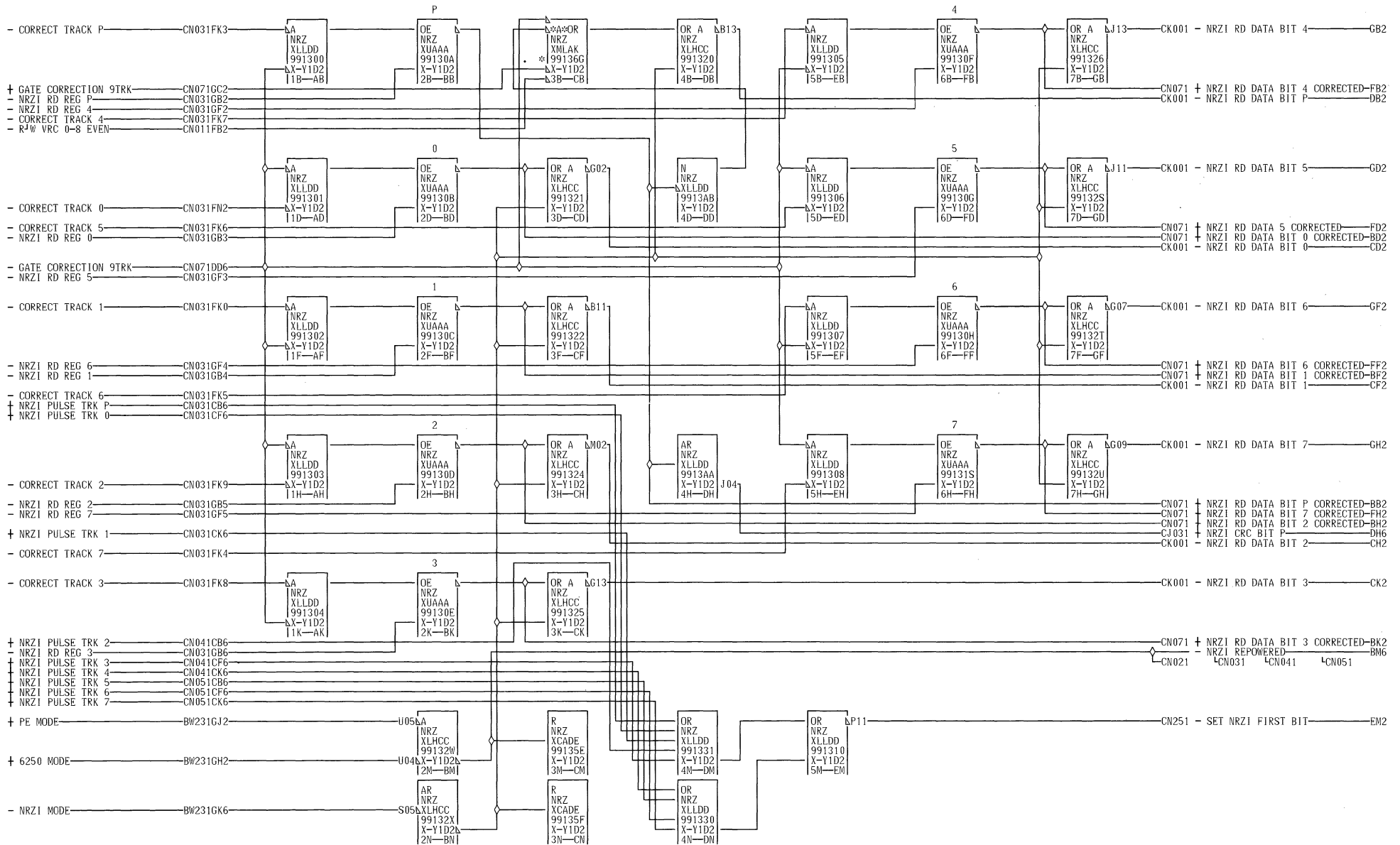
|                             |          |       |         |
|-----------------------------|----------|-------|---------|
| NRZI DETECTION TRACKS 2 3 4 |          |       |         |
| DATE                        | 08-08-73 | MACH. | 3803-2  |
| LOG                         | 0051     | FRAME | 01      |
|                             |          | P.N.  | 2736325 |
| IBM CORP.                   | CO       | BLK.  | DN      |

C  
N  
0  
4  
1  
000



07-17-73 734098  
01-06-75 733226

|                             |                       |
|-----------------------------|-----------------------|
| NRZI DETECTION TRACKS 5 6 7 |                       |
| DATE                        | 01-08-75 MACH. 3803-2 |
| LOG                         | 0025 FRAME 01         |
|                             | P.N. 2736326          |
| IBM CORP. CO BLK.           | GN                    |



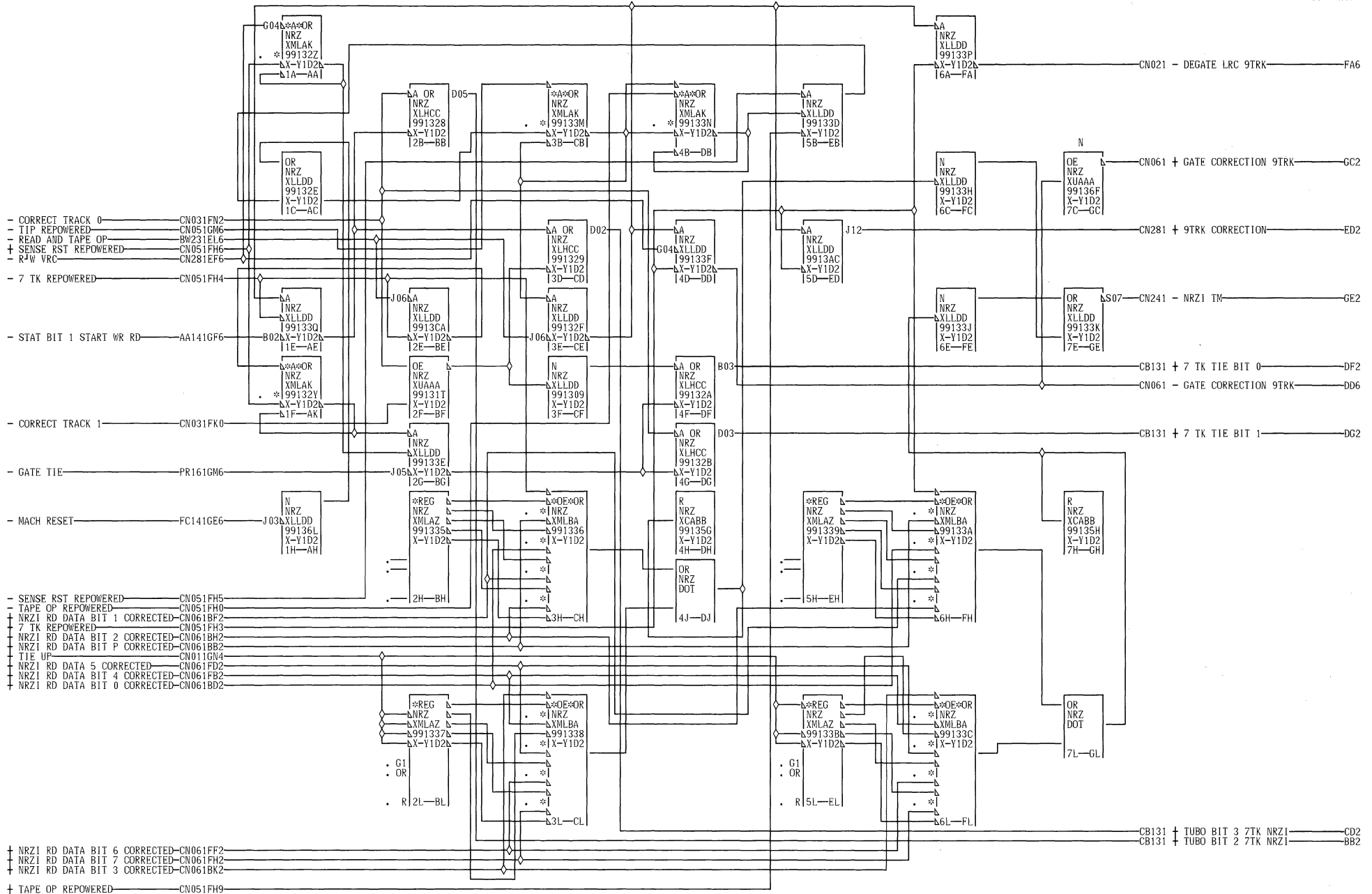
07-17-73 734098

C  
N  
0  
6  
1  
000

| NRZI RD DATA |          |       |         |
|--------------|----------|-------|---------|
| DATE         | 08-08-73 | MACH. | 3803-2  |
| LOG          | 0051     | FRAME | 01      |
|              |          | P.N.  | 2736327 |
| IBM CORP.    | CO       | BLK.  | GJ      |

C  
N  
0  
6  
1  
000



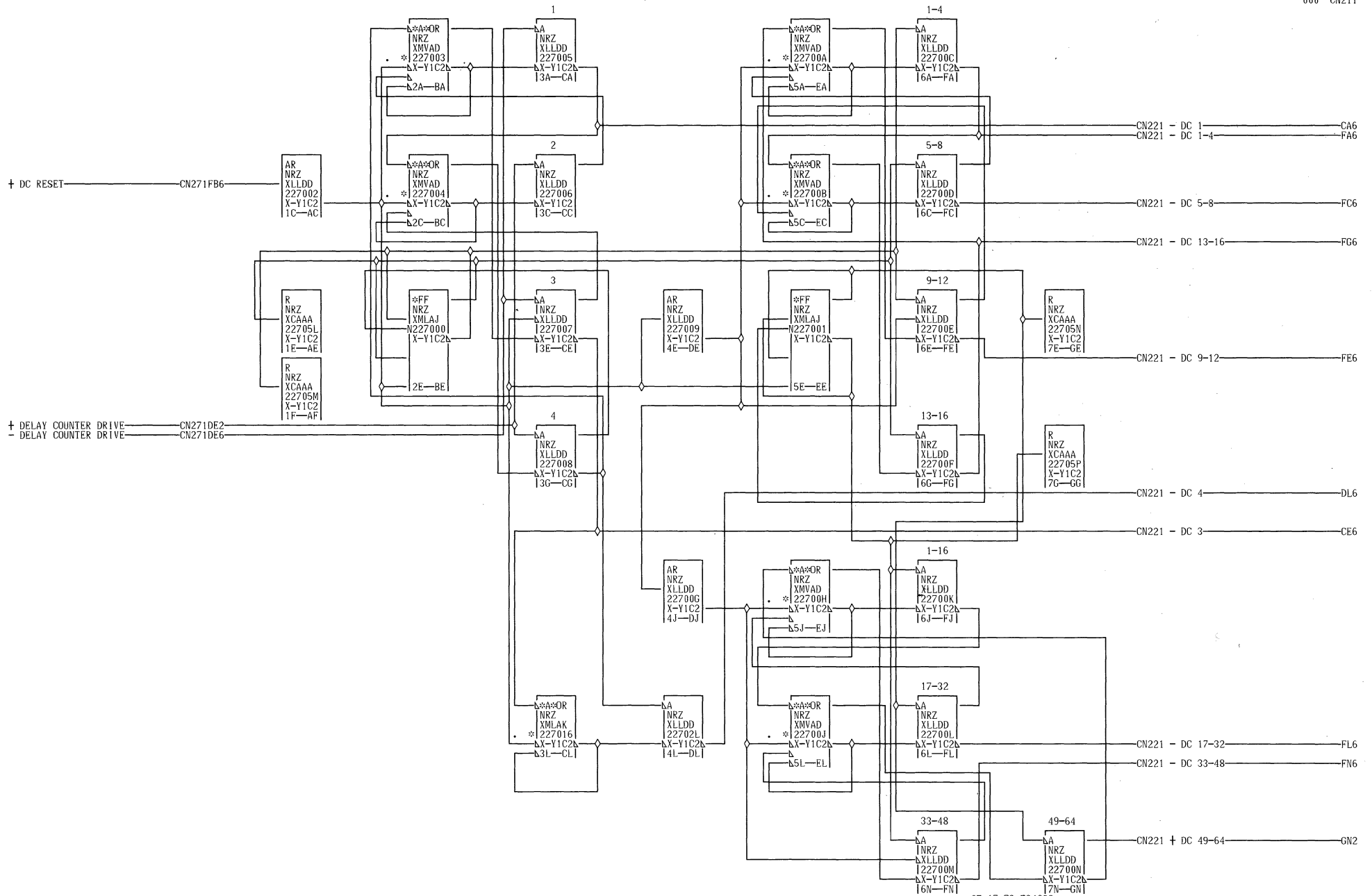


07-17-73 734098  
01-06-75 733226

| 7 TK CLIP LEVEL |          |       |         |
|-----------------|----------|-------|---------|
| DATE            | 01-08-75 | MACH. | 3803-2  |
| LOG             | 0025     | FRAME | 01      |
|                 |          | P.N.  | 2736328 |
| IBM CORP.       | CO       | BLK.  | GM      |

C  
N  
0  
7  
1

C  
N  
0  
7  
1



07-17-73 734098

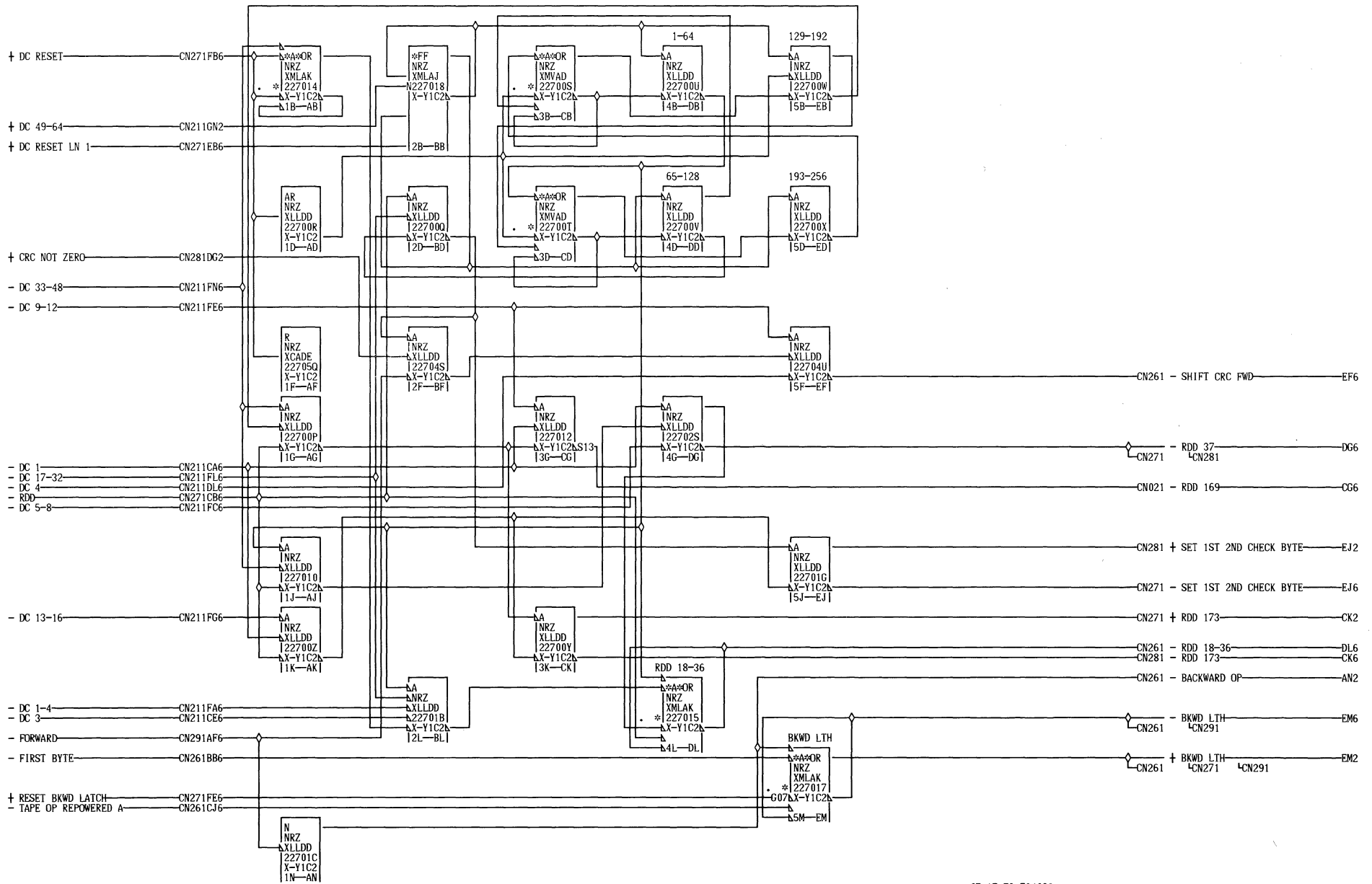
| DELAY COUNTER |          |              |
|---------------|----------|--------------|
| DATE          | 08-08-73 | MACH. 3803-2 |
| LOG           | 0051     | FRAME 01     |
|               |          | P.N. 2736329 |
| IBM CORP.     | CO       | BLK. GP      |

CN211

000

CN211

000

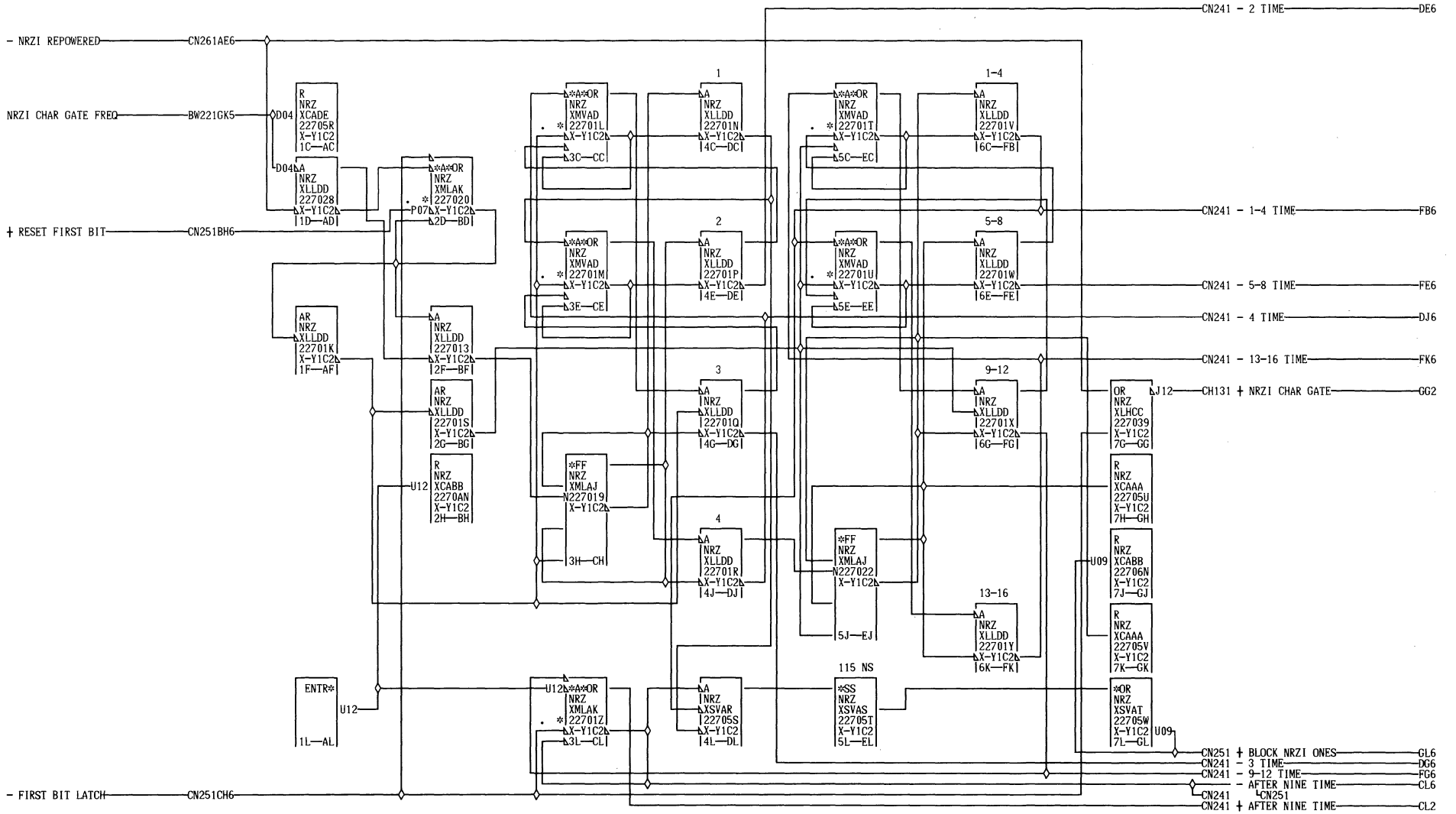


07-17-73 734098

C  
N  
2  
2  
1  
000

| DELAY COUNTER GATING |          |       |         |
|----------------------|----------|-------|---------|
| DATE                 | 08-18-81 | MACH. | 3803-2  |
| LOG                  | 0051     | FRAME | 01      |
|                      |          | P.N.  | 2736330 |
| IBM CORP.            | CO       | BLK.  | GC      |

C  
N  
2  
2  
1  
000

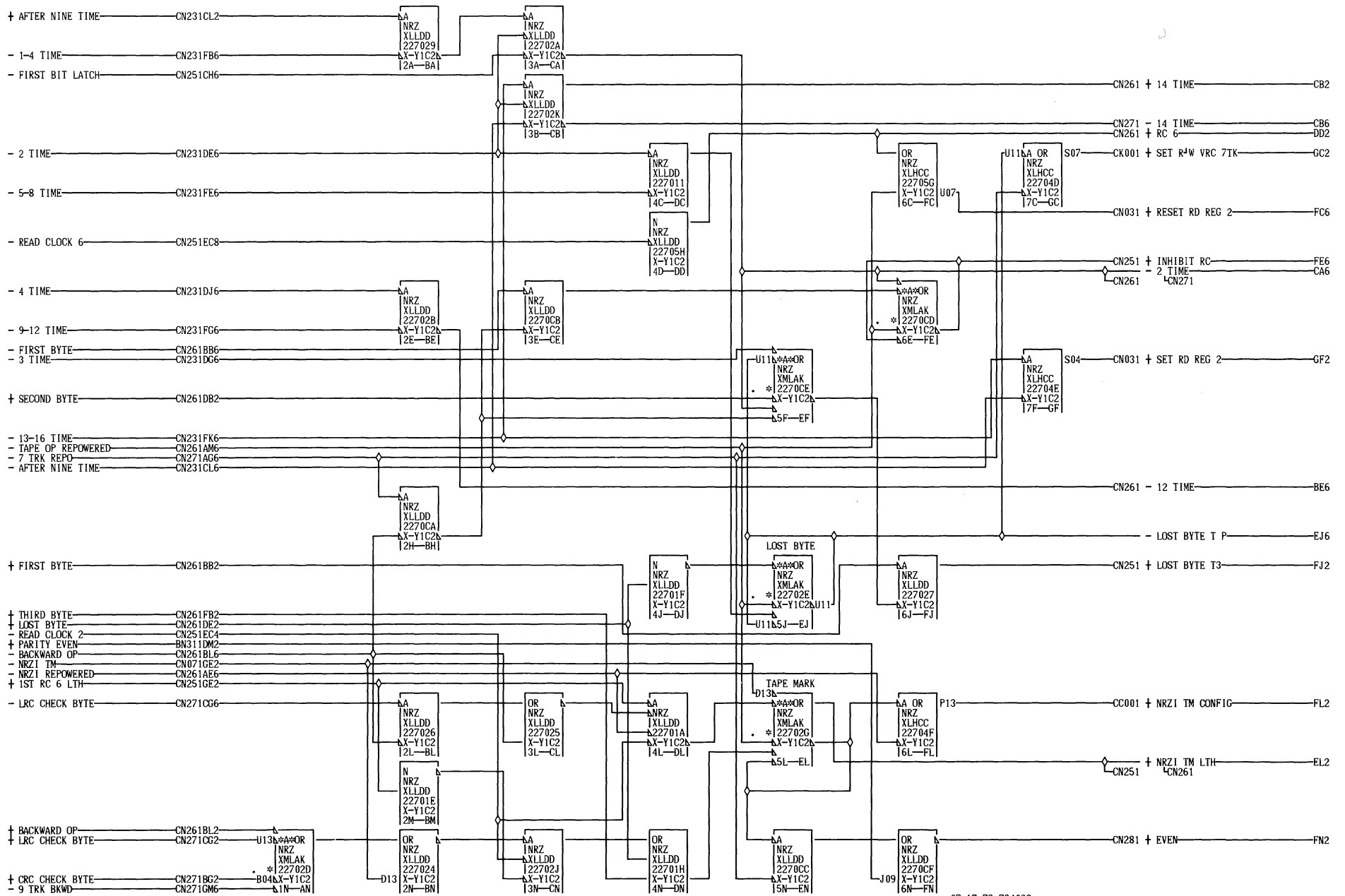


07-17-73 734098

| NRZI CHAR GATE |          |       |         |
|----------------|----------|-------|---------|
| DATE           | 08-18-81 | MACH. | 3803-2  |
| LOG            | 0051     | FRAME | 01      |
|                |          | P.N.  | 2736331 |
| IBM CORP.      | CO       | BLK.  | GP      |

C  
N  
2  
3  
1  
000

C  
N  
2  
3  
1  
000

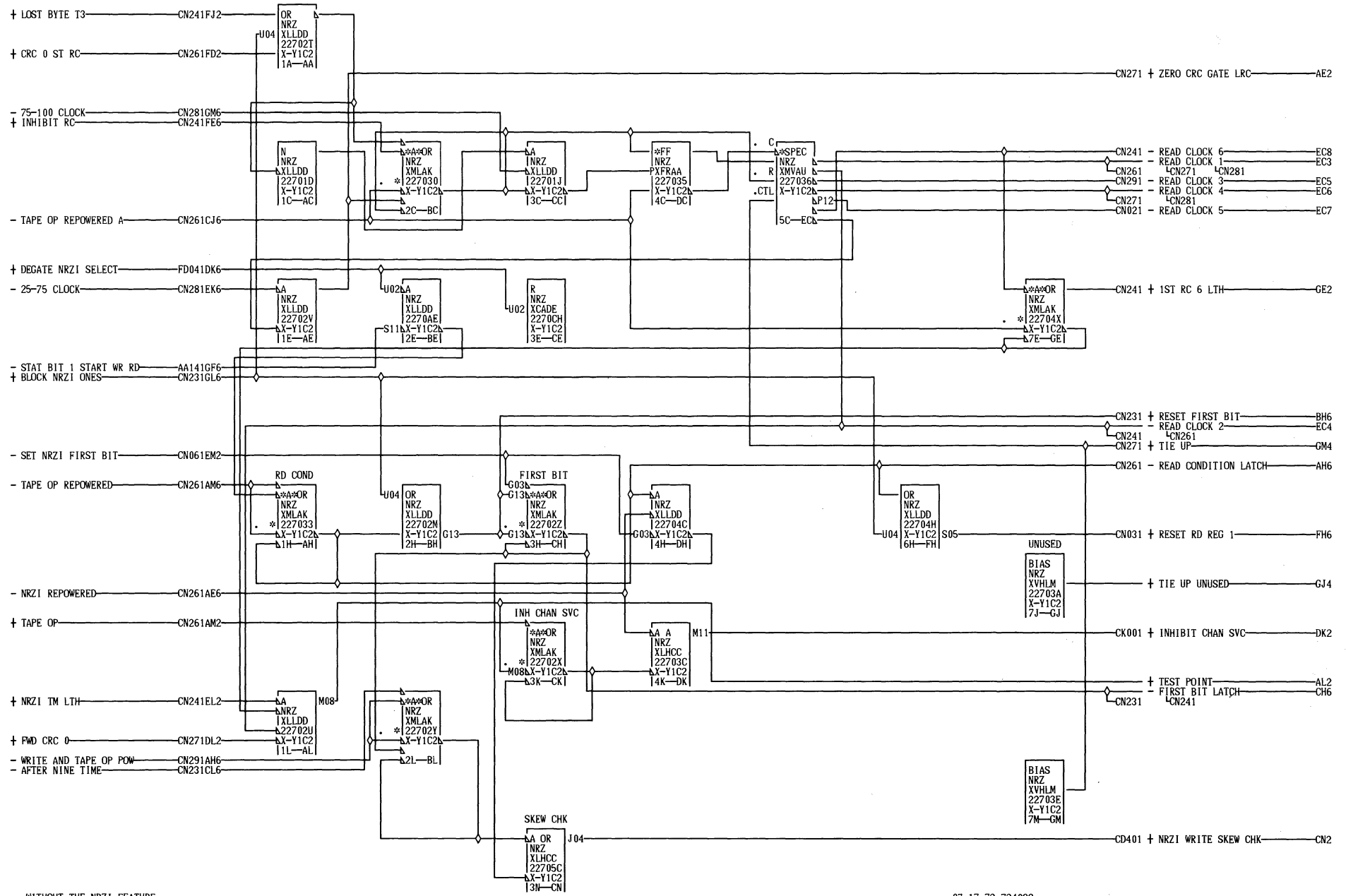


07-17-73 734098

C  
N  
2  
4  
1  
000

| TAPEMARK AND LOST BYTE |          |       |         |
|------------------------|----------|-------|---------|
| DATE                   | 08-18-81 | MACH. | 3803-2  |
| LOG                    | 0051     | FRAME | 01      |
|                        |          | P.N.  | 2736332 |
| IBM CORP.              | CO       | BLK.  | GG      |

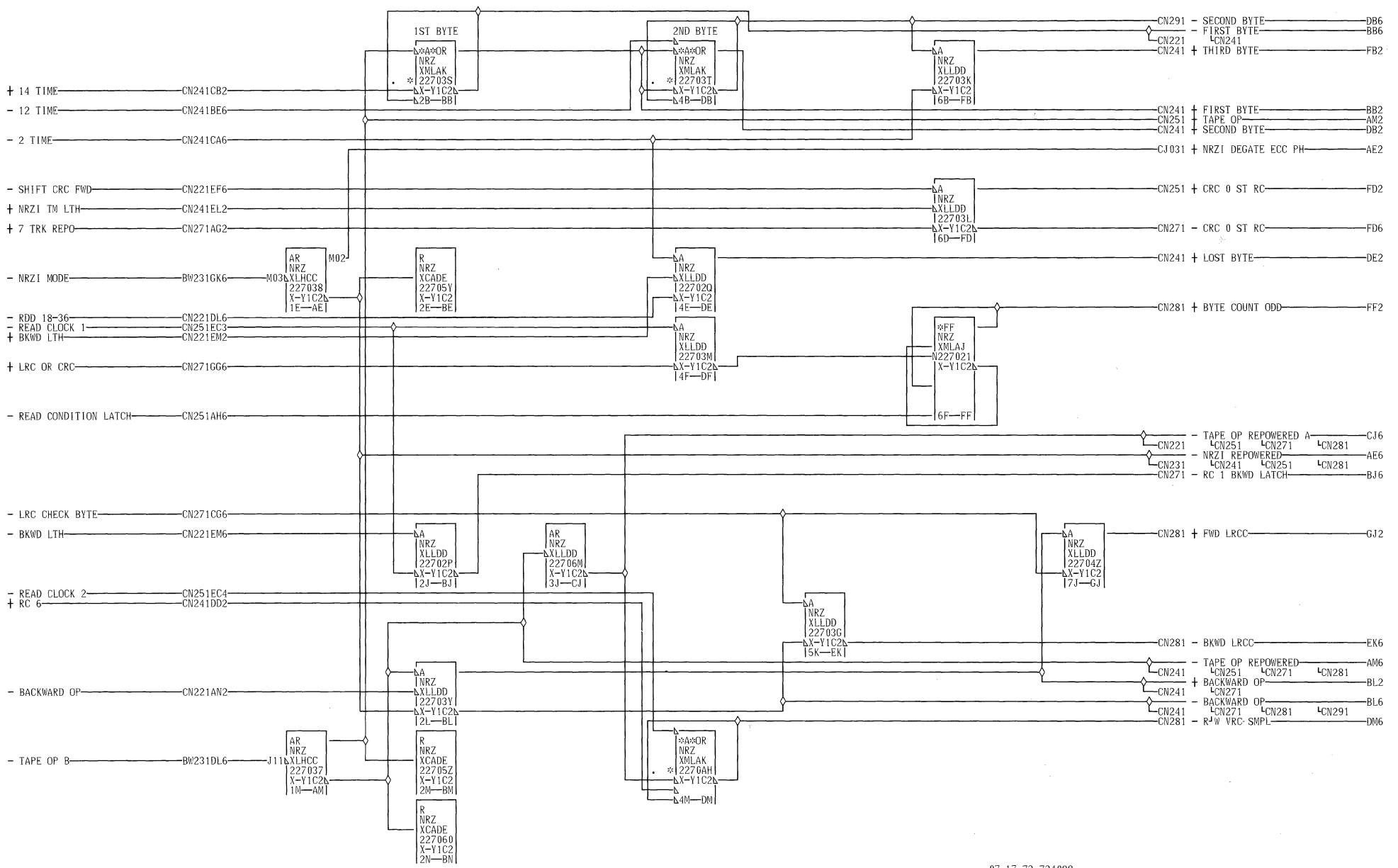
C  
N  
2  
4  
1  
000



WITHOUT THE NRZI FEATURE  
 INSTALLED X-Y1C2U02 IS TIED  
 C DOWN TO X-Y1C2S06 WITH  
 N IN 2520942  
 2  
 5  
 1  
 000

07-17-73 734098  
 03-18-74 736699

| FIRST BIT AND RESTART |          |       |         |
|-----------------------|----------|-------|---------|
| DATE                  | 08-18-81 | MACH. | 3803-2  |
| LOG                   | 0J20     | FRAME | 01      |
|                       |          | P.N.  | 2736333 |
| IBM CORP.             | CO       | BLK.  | GN      |



C  
N  
2  
6  
1

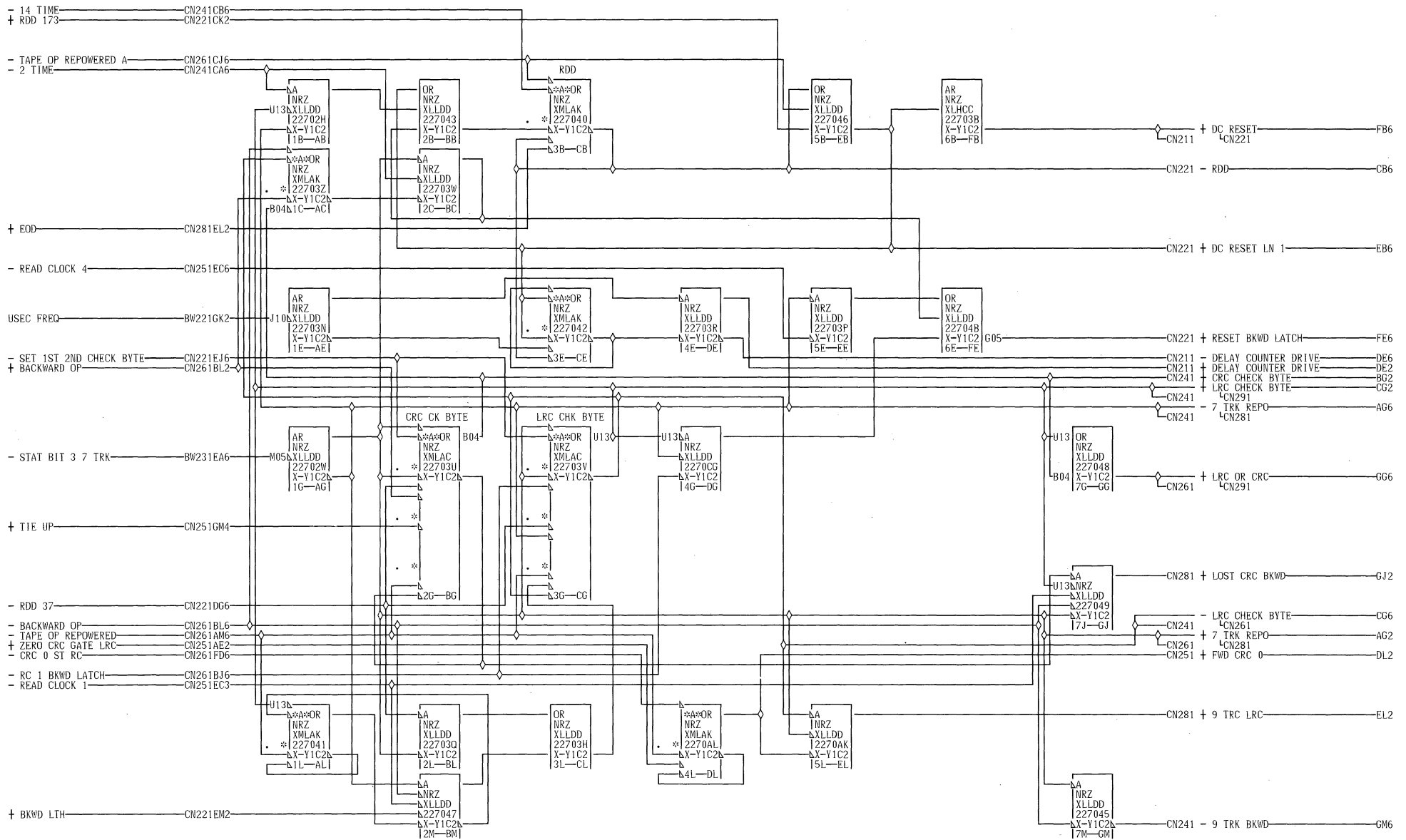
000

07-17-73 734098

| 1ST AND 2ND BYTE LATCHES |          |       |         |
|--------------------------|----------|-------|---------|
| DATE                     | 08-08-73 | MACH. | 3803-2  |
| LOG                      | 0051     | FRAME | 01      |
|                          |          | P.N.  | 2736334 |
| IBM CORP.                | CO       | BLK.  | GK      |

C  
N  
2  
6  
1

000



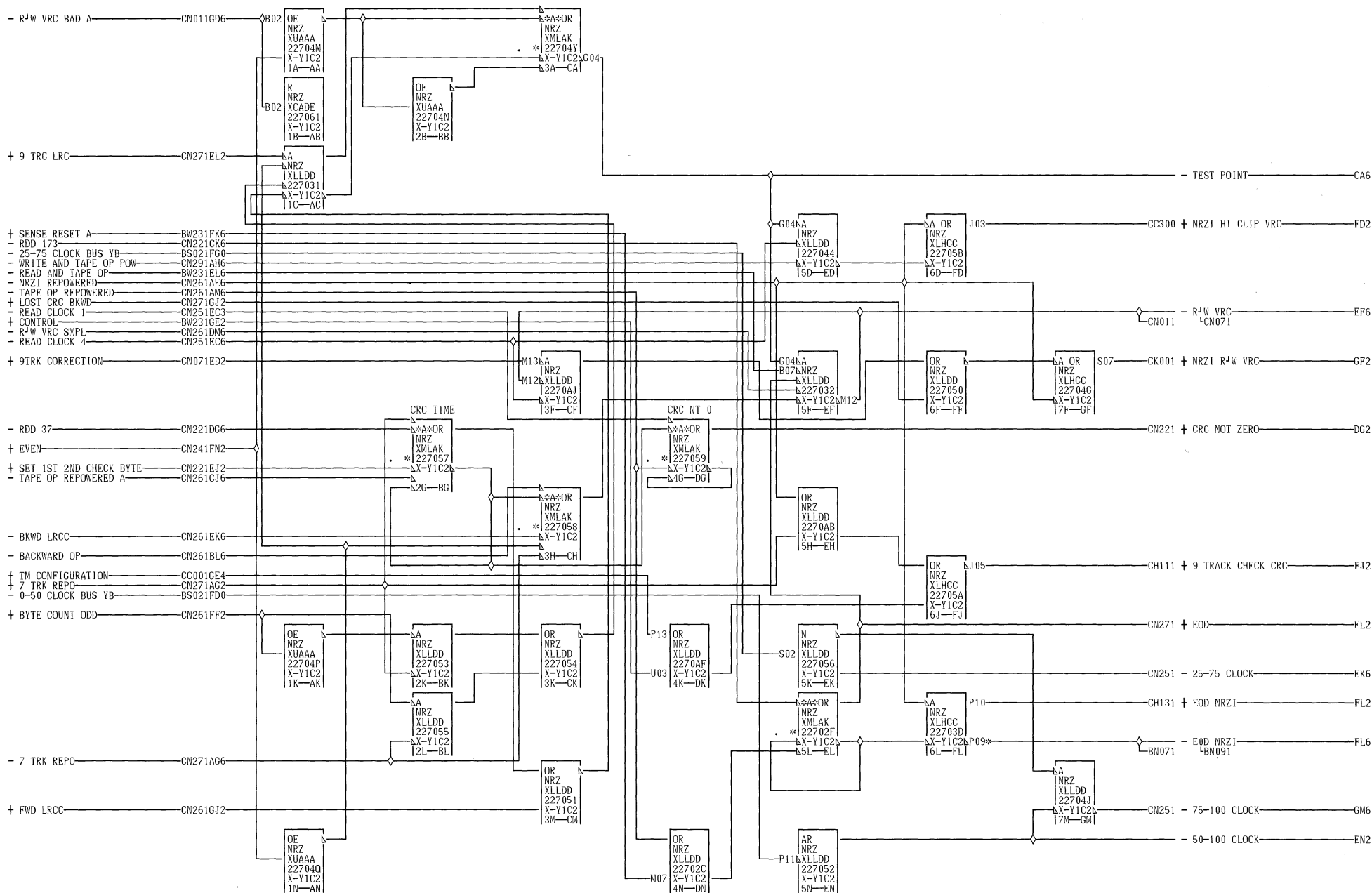
07-17-73 734098

C  
N  
2  
7  
1  
  
000

| CHECK BYTE LATCHES AND RDD |          |       |         |
|----------------------------|----------|-------|---------|
| DATE                       | 08-08-73 | MACH. | 3803-2  |
| LOG                        | 0051     | FRAME | 01      |
|                            |          | P.N.  | 2736335 |
| IBM CORP.                  | CO       | BLK.  | GN      |

C  
N  
2  
7  
1  
  
000





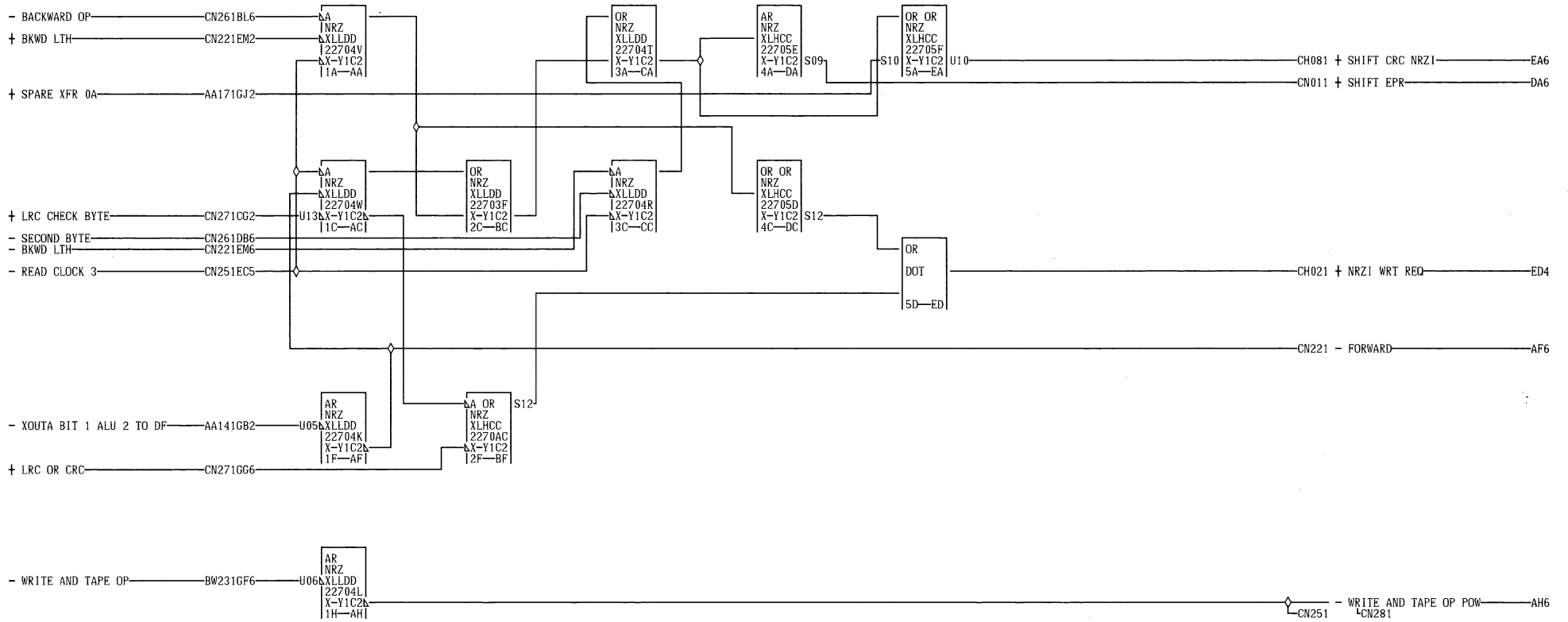
FL6 X-Y1U1E11  
01A-A1C1C11

07-17-73 734098

|                           |                       |     |
|---------------------------|-----------------------|-----|
| NRZ1 HD CLIP AND READ VRC |                       | C   |
| DATE                      | 08-08-73 MACH. 3803-2 | N   |
| LOG                       | 0051 FRAME 01         | 2   |
|                           | P.N. 2736336          | 8   |
|                           |                       | 1   |
| IBM CORP.                 | CO BLK.               | 000 |

C  
N  
2  
8  
1

000



C  
N  
2  
9  
1

000

07-17-73 734098

| SHIFT CRC EPR CONTROL |          |              |         |
|-----------------------|----------|--------------|---------|
| DATE                  | 08-14-73 | MACH. 3803-2 |         |
| LOG                   | 0051     | FRAME        | 01      |
|                       |          | P.N.         | 2736337 |
| IBM CORP.             | CO       | BLK.         | EE      |

C  
N  
2  
9  
1

000