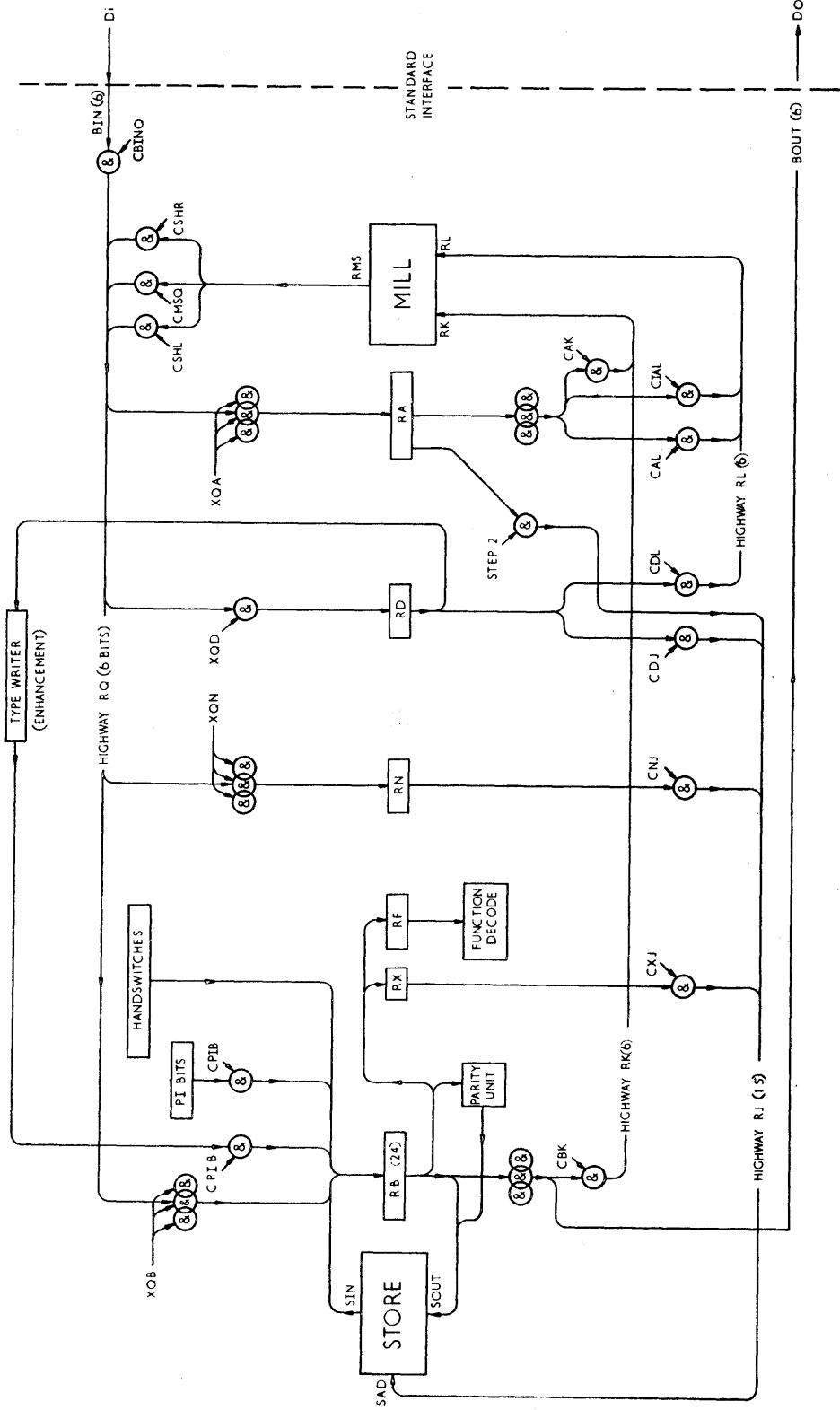


# BLOCK SCHEMATIC 1901 COMPUTER.



## CHANGES

4	XC 252-103	REDRAWN	3-66
5	2431-27		3-66
	8480	4-66	Handk

3 INTERFACES BASIC PLUS 3 ENHANCEMENT

STANDARD INTERFACE



1901 COMPUTER LOGIC DIAGRAM

5013073 / 5

ISSUE SHEET 5

CAT. D

ISSUE SHEET

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

DRAWN BY S. B. Hilly

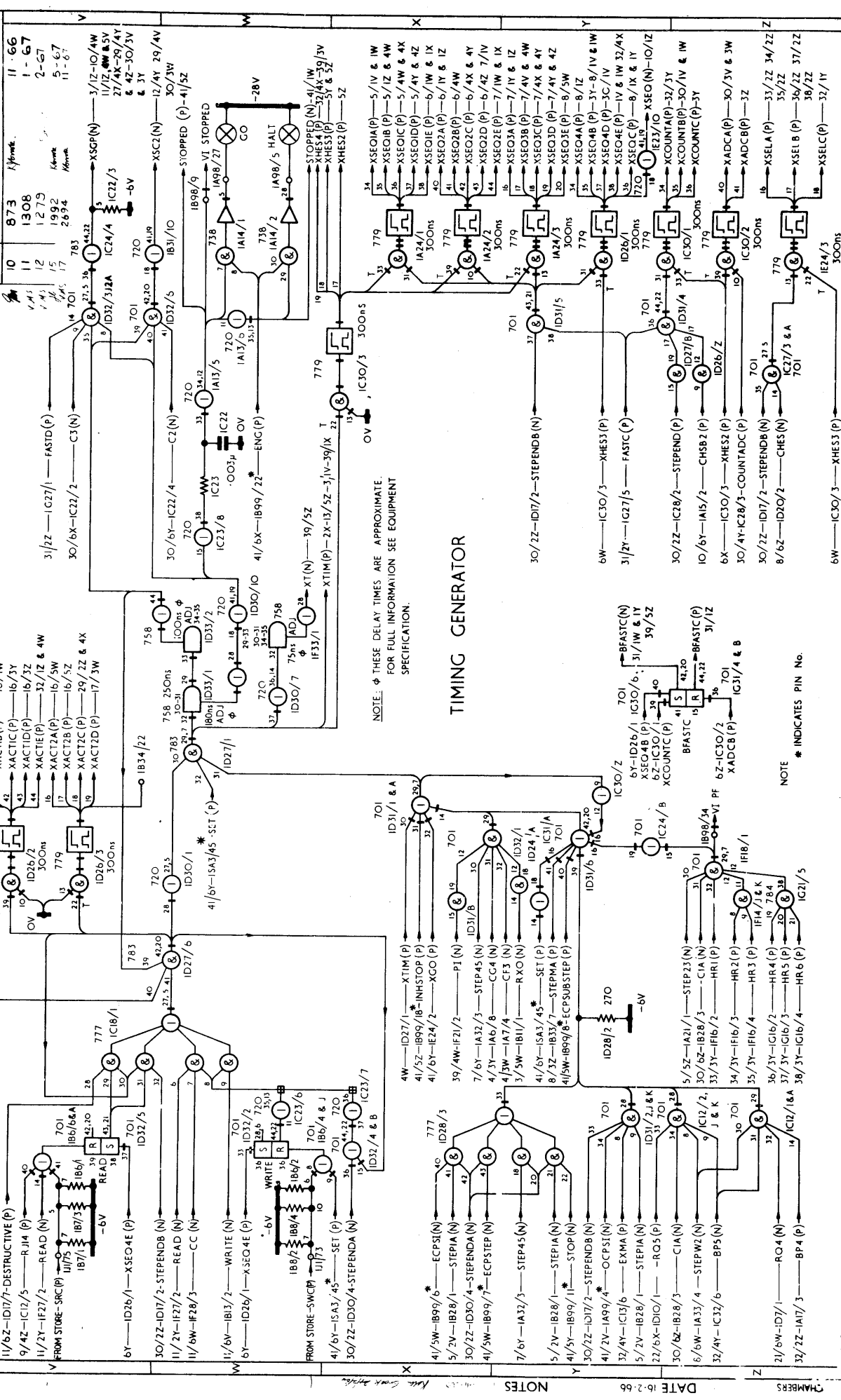
DATE 29.12.65

NOTES

### CHANGES

### ISS.

10	873	11-66
11	1308	1-67
12	1279	2-67
13	1992	5-67
14	2694	11-67

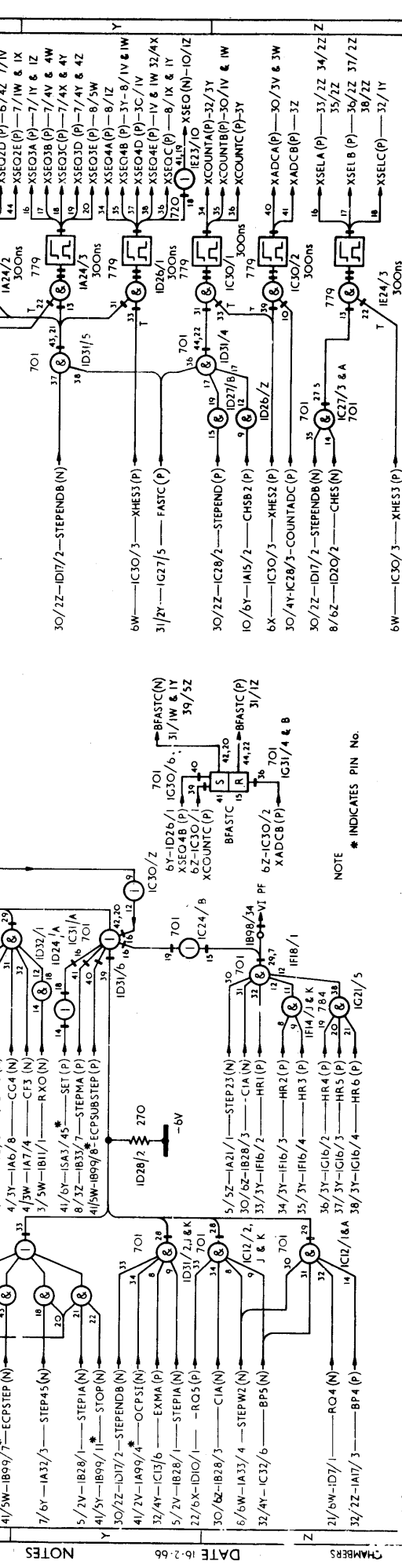


NOTE: φ THESE DELAY TIMES ARE APPROXIMATE. FOR FULL INFORMATION SEE EQUIPMENT SPECIFICATION.

### TIMING GENERATOR

### CHANGES

15	873	11-66
16	1308	1-67
17	1279	2-67
18	1992	5-67
19	2694	11-67



NOTE: φ THESE DELAY TIMES ARE APPROXIMATE. FOR FULL INFORMATION SEE EQUIPMENT SPECIFICATION.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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1901  
COMPUTER  
LOGIC DIAGRAM

5013073/17

ISSUE 2

SHEET D

ISSUE SHEET

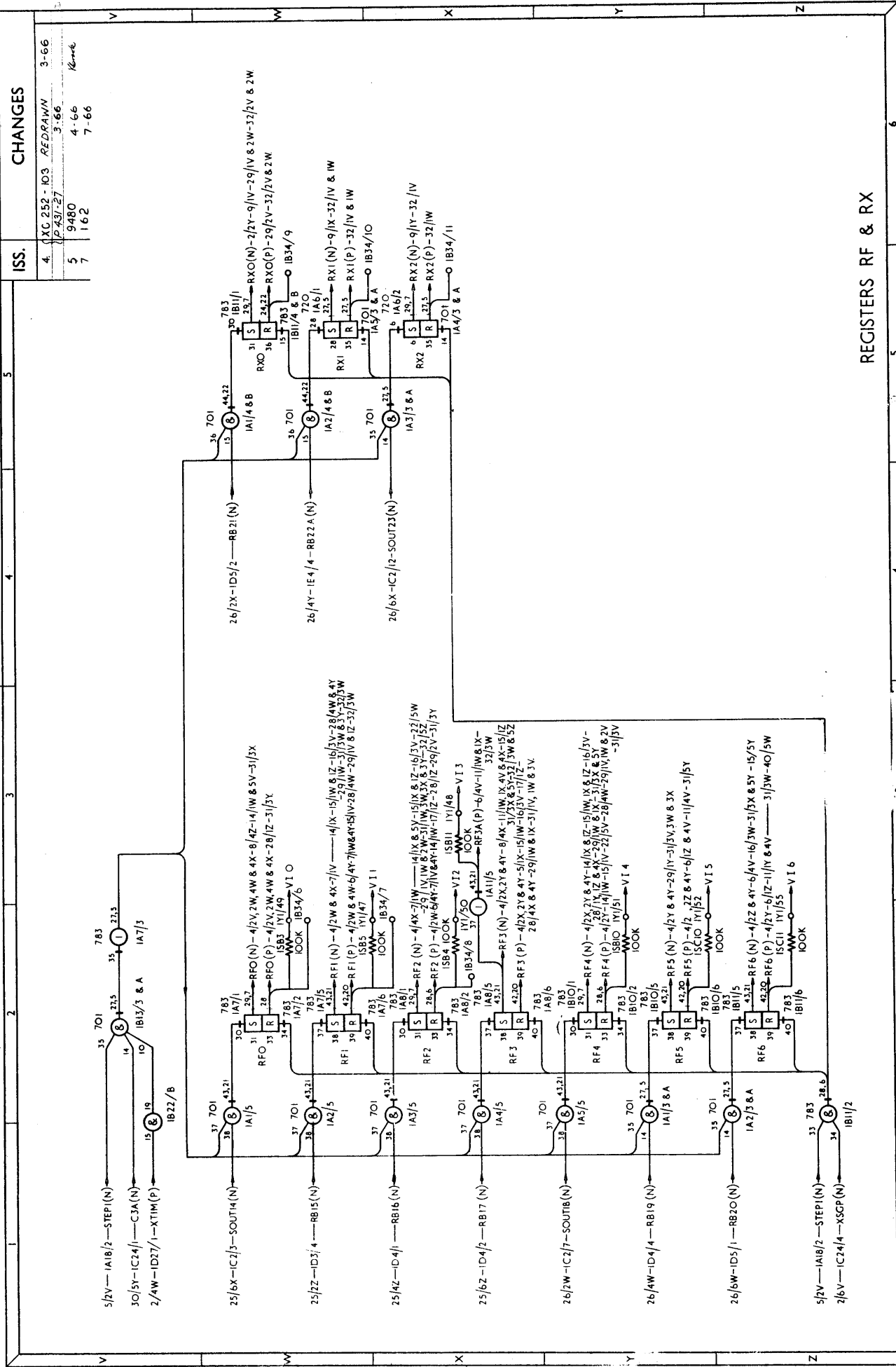
CHAMBERS BY


DATE 10-2-66

ISSUE NUMBER OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

NOTE: \* INDICATES PIN NO.

DRAWN BY

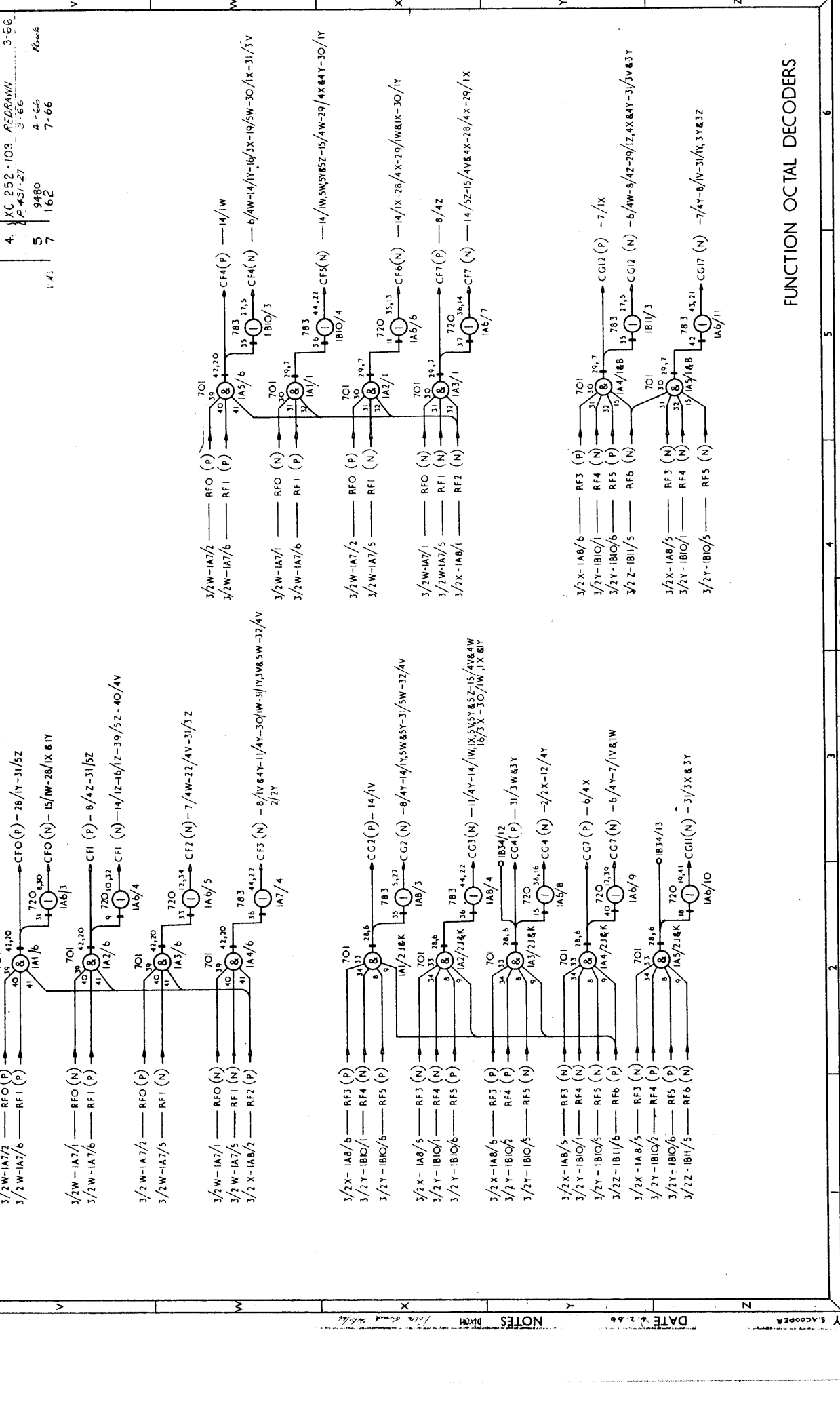


	1901 COMPUTER	5013073	CAT	ISSUE	ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.																												
	LOGIC DIAGRAM	DIAGRAM	3	D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29

REGISTERS RF & RX

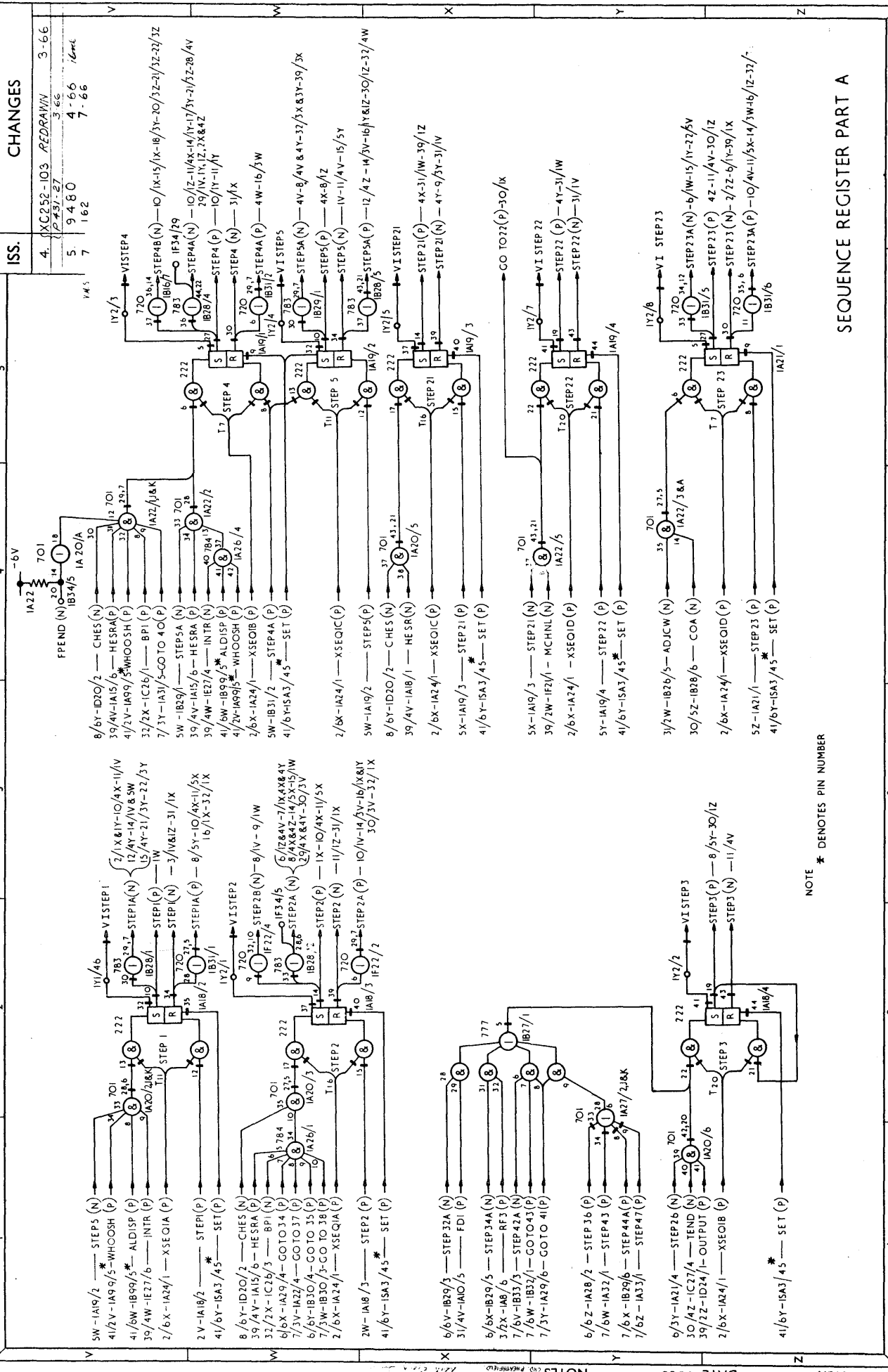
ISS.	CHANGES
4.	XC 252 - 103 REDRAWN 3-66
5	P 431-27 3-66
7	9480 4-66
	162 7-66

NOTES DATE 25-1-66 DRAWN BY L GARNER



**FUNCTION OCTAL DECODERS**

<b>LOGIC DIAGRAM</b>	5013073/7	ISSUE SHEET	4
1901 COMPUTER	DIAGRAM	CAT.	D
<b>I.C.T.</b>	ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.		6



ISS.

4.	XC252-103	REDRAWN	3-66
5.	9480	4-66	166
7.	162	7-66	

CHANGES

4.	XC252-103	REDRAWN	3-66
5.	9480	4-66	166
7.	162	7-66	

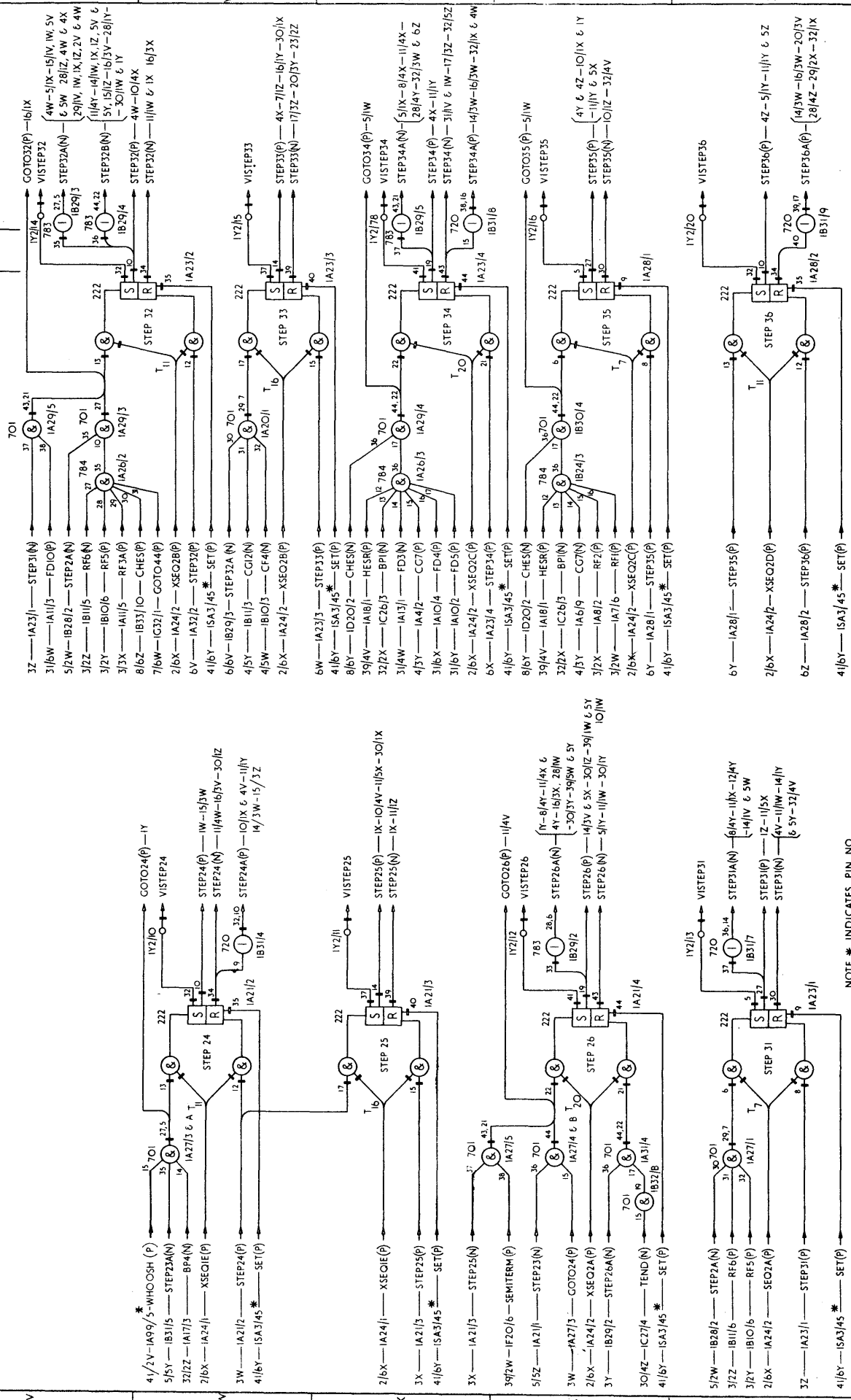
SEQUENCE REGISTER PART A

DRAWN BY 9AC00PR	DATE 8266	NOTES	1901 COMPUTER LOGIC DIAGRAM	DIAGRAM	5013073/7	CAT. 5	ISSUE
							SHEET 5

ISSUE SHEET	1	2	3	4	5	6
ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.	12	13	14	15	16	17
	18	19	20	21	22	23
	24	25	26	27	28	29
	30					

NOTE \* DENOTES PIN NUMBER

SEQUENCE REGISTER PART B



ISS. 10 873 11-66

CHANGES

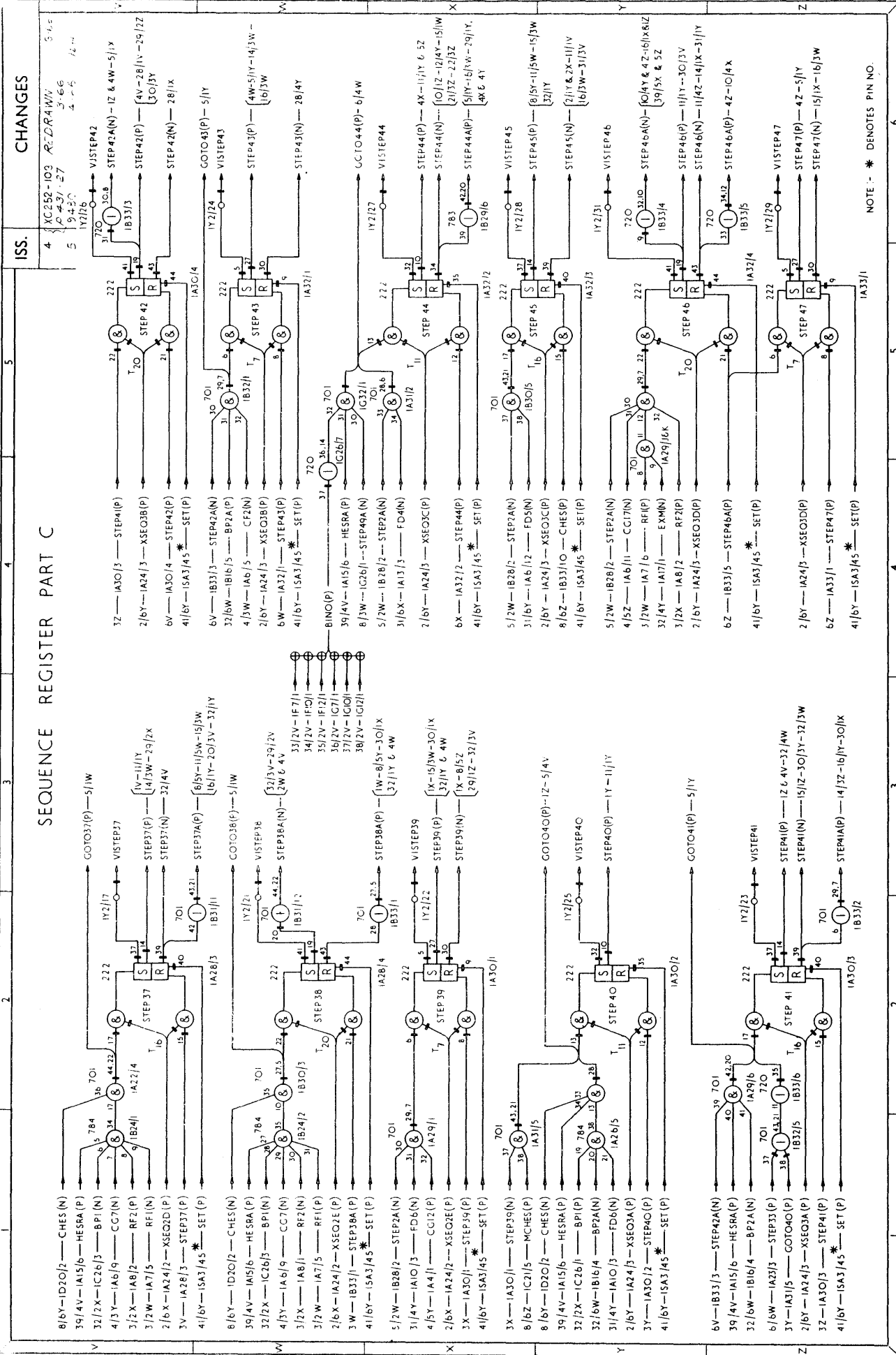
4W-5IX-15IW, 1W, 5V  
6SW 28IZ, 4W, 6 4X  
29IV, 1W, IX, IZ, 2V, 6 4W  
11I4Y-14IW, IX, IZ, 5V, 6  
5T, 15IZ-163V-28IY-  
-30IW & 1Y  
4W-10I4X  
11IW & IX 163X  
4W-5IX-15IW, 1W, 5V  
6SW 28IZ, 4W, 6 4X  
29IV, 1W, IX, IZ, 2V, 6 4W  
11I4Y-14IW, IX, IZ, 5V, 6  
5T, 15IZ-163V-28IY-  
-30IW & 1Y  
4W-10I4X  
11IW & IX 163X

1	2	3	4	5	6
1	2	3	4	5	6
1	2	3	4	5	6

ISSUE	CAT. D	5013073/10	6	1901
SHEET	DIAGRAM	LOGIC DIAGRAM	COMPUTER	COMPUTER
ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.				

NOTE \* INDICATES PIN NO.


### SEQUENCE REGISTER PART C



ISS.		CHANGES	
4	XC252-103 RZDR4WV	3	4
5	577/27	4	5
5	942C	4	5
1	172/26	4	5
1	370	4	5
1	30.8	4	5
1	IB33/3	4	5
1	222	4	5
1	41	4	5
1	43	4	5
1	44	4	5
1	IA30/4	4	5
1	172/24	4	5
1	701	4	5
1	31	4	5
1	32	4	5
1	33	4	5
1	34	4	5
1	35	4	5
1	36	4	5
1	37	4	5
1	38	4	5
1	39	4	5
1	40	4	5
1	41	4	5
1	42	4	5
1	43	4	5
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1	46	4	5
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1	94	4	5
1	95	4	5
1	96	4	5
1	97	4	5
1	98	4	5
1	99	4	5
1	100	4	5

NOTE :- \* DENOTES PIN NO.

### SEQUENCE REGISTER PART C



**COMPUTER LOGIC DIAGRAM**

**5013073 / 5**

**ISSUE SHEET**

**7**

**ISSUE SHEET**

**5**

**CAT. D**

**ISSUE**

**7**

**ISSUE SHEET**

**5**

1	2	3	4	5	6
1	2	3	4	5	6
1	2	3	4	5	6
1	2	3	4	5	6
1	2	3	4	5	6
1	2	3	4	5	6
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1	2	3	4	5	6
1	2	3	4	5	6
1	2	3	4	5	6

DRAWN BY C.M.MILTON.

DATE 7.2.66

NOTES



1901 COMPUTER  
LOGIC DIAGRAM

5013073  
DIAGRAM

ISSUE  
17

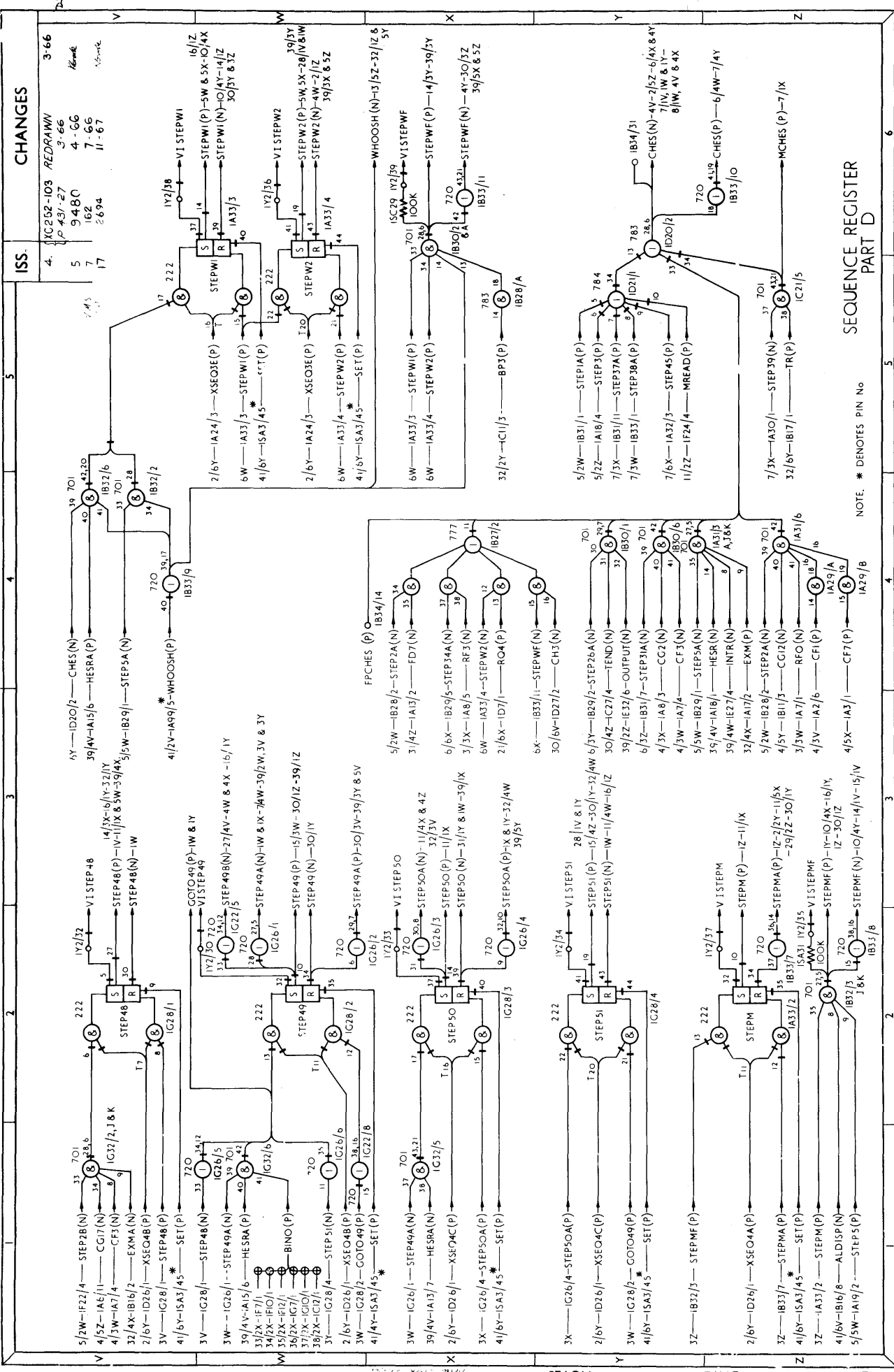
CAT.  
D

ISSUE  
SHEET

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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SEQUENCE REGISTER  
PART D

NOTE. \* DENOTES PIN NO

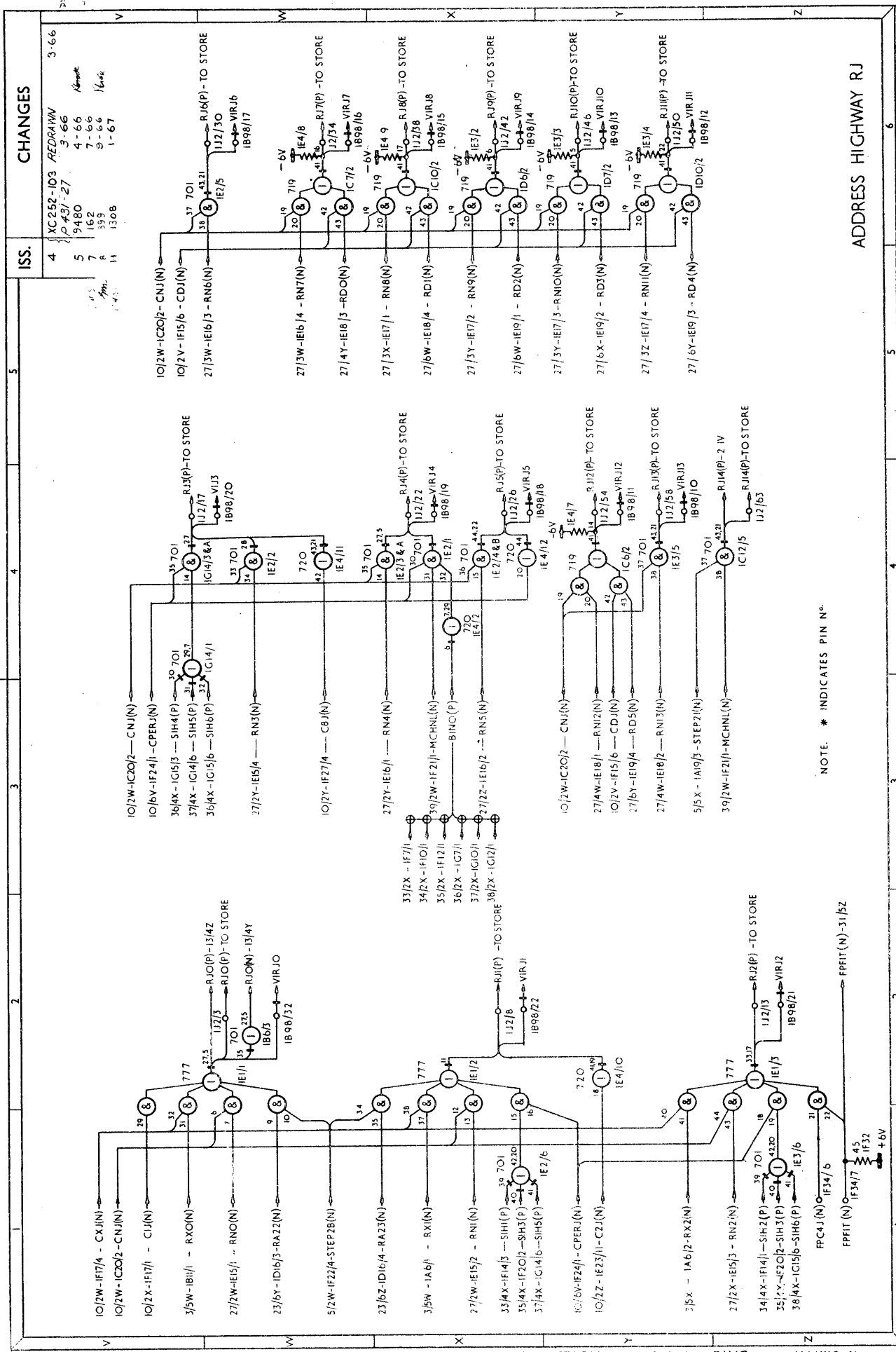


CHANGES

4.	XC252-103 REDRAWN	3-66
5	P. 437-27	3-66
7	948C	4-66
162		7-66
2694		11-67

ISS.





ISS.	CHANGES
4	XC252-ID3 REDRAWN 3-66
5	9480 4-66
7	169 7-66
8	395 9-66
11	1508 1-67

ADDRESS HIGHWAY RJ

NOTE: \* INDICATES PIN N°.

1901  
COMPUTER  
LOGIC DIAGRAM

5013073 / 119

DIAGRAM SHEET

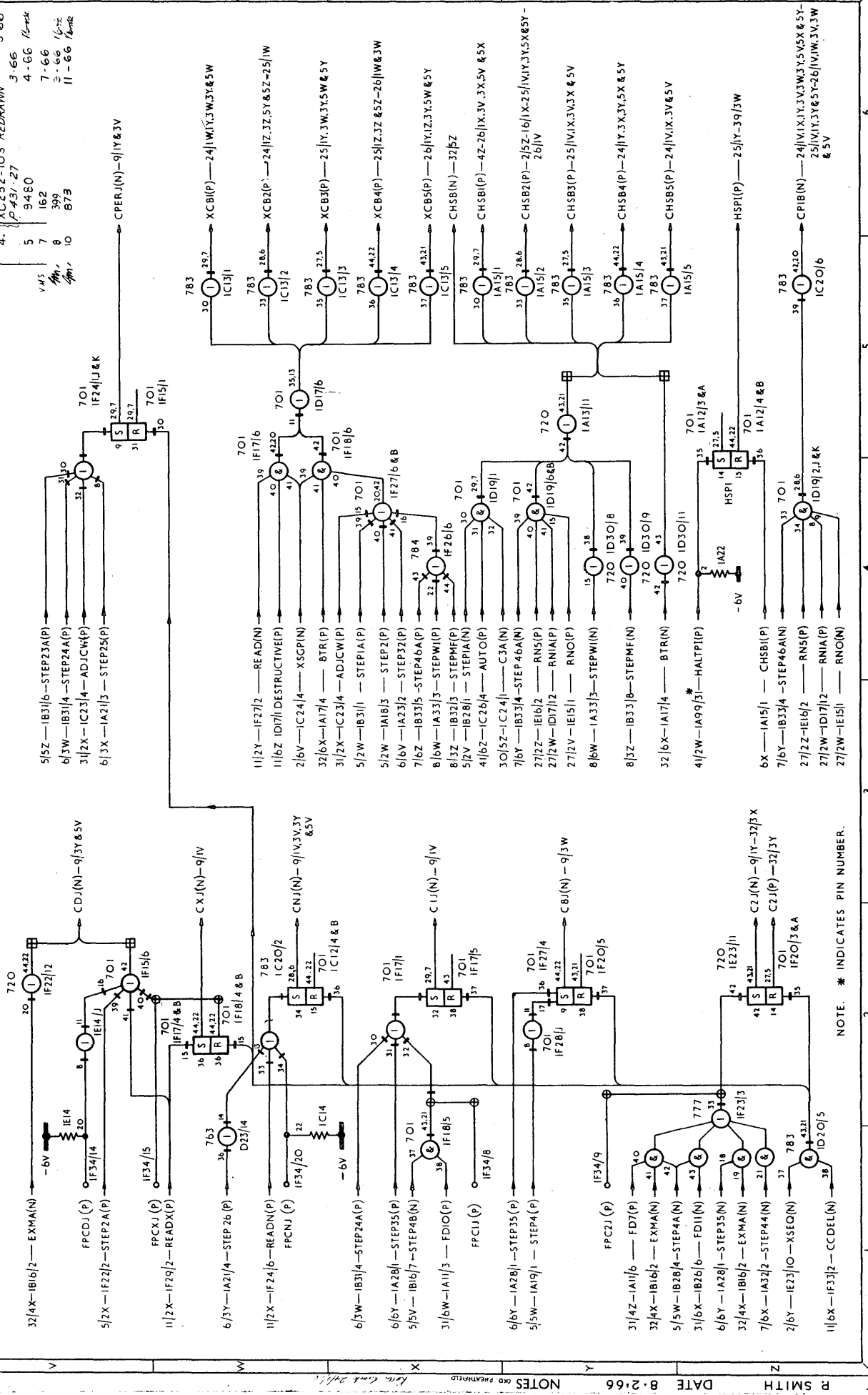
ISSUE CAT. SHEET

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

DRAWN BY R SMITH DATE 7-1-66 NOTES

# CONTROLS R,J,RB & HSPI



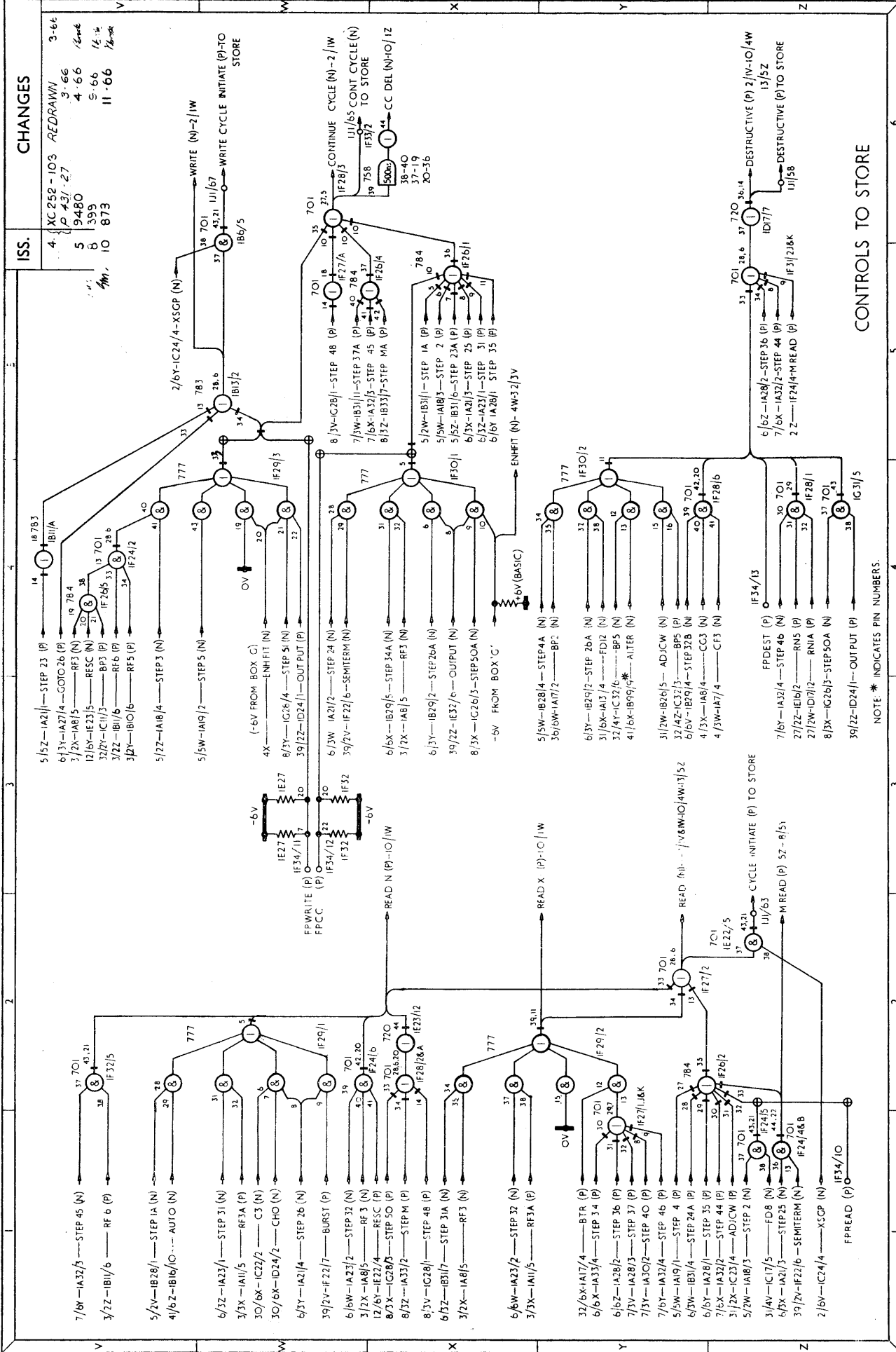
NOTE: \* INDICATES PIN NUMBER.

ISS.

4.	XC252-103 REDRAWN	3-66
5	P-43/-27	4-66 <i>Re-work</i>
7		7-66
8		8-66
10		11-66 <i>Change</i>

CHANGES

DRAWN BY P SMITH	DATE 8-2-66	NOTES AND PREPARED	<p>1901 COMPUTER LOGIC DIAGRAM</p>	<p>5013073 / 10 DIAGRAM</p>	<p>CAT. D</p>	<p>ISSUE SHEET</p>	ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.											
							SHEET 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30											



1901 COMPUTER  
LOGIC DIAGRAM

5013073 / 1016

ISSUE SHEET D

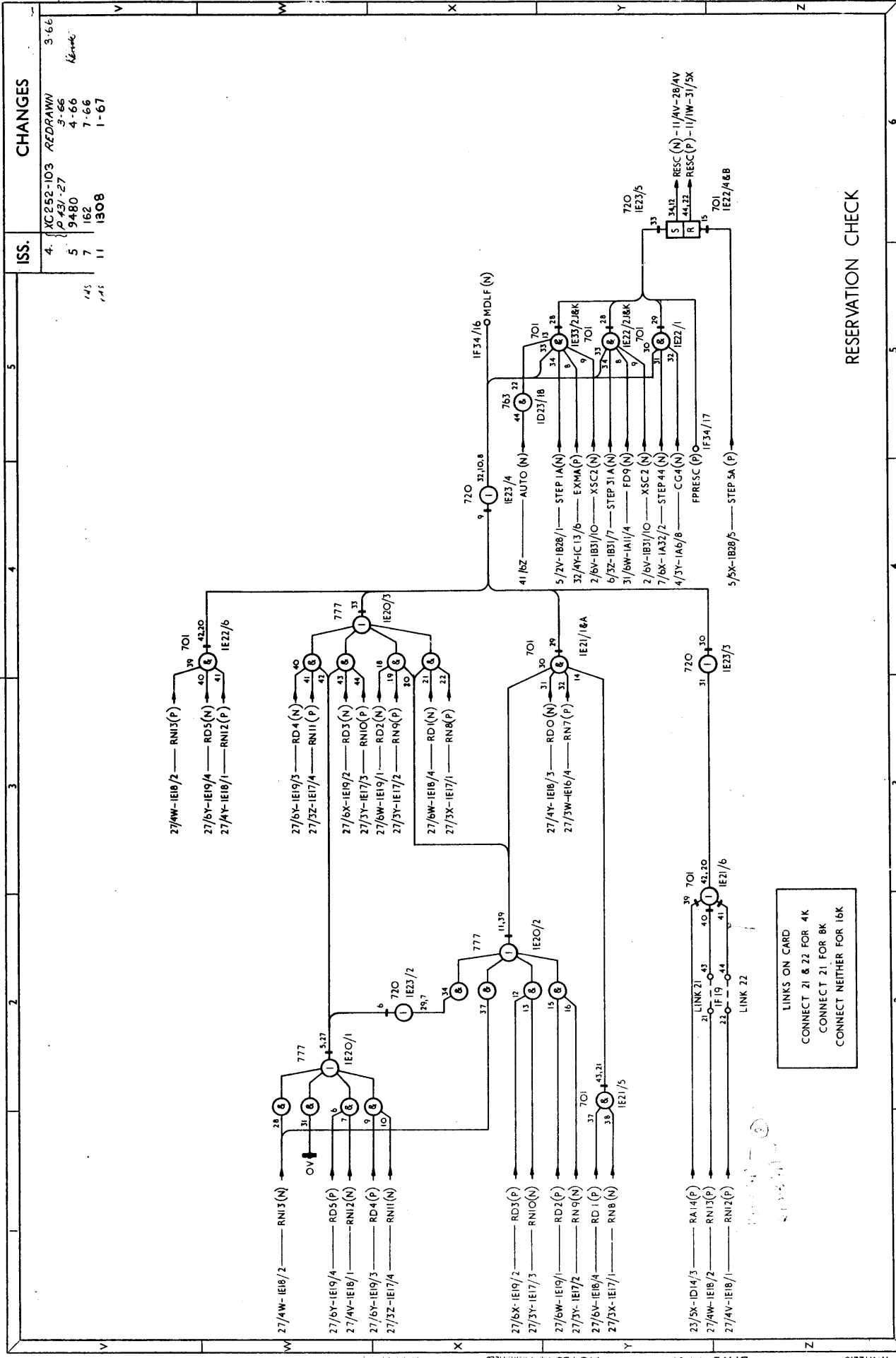
ISSUE

CAT.

CONTROLS TO STORE

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

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DATE 4-1-66 ISS. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30



1901  
COMPUTER  
LOGIC DIAGRAM

5013073  
DIAGRAM

ISSUE 11 / SHEET 12

CAT. D

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

DRAWN BY A WILLIS

NOTES

RESERVATION CHECK

CHANGES

XC252-103 REDRAWN 3-66

P 43/-27 9-66

9480 4-66

162 7-66

1308 1-67

145

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1901  
COMPUTER  
LOGIC DIAGRAM

5013073 / 5

ISSUE SHEET 13

CAT. D

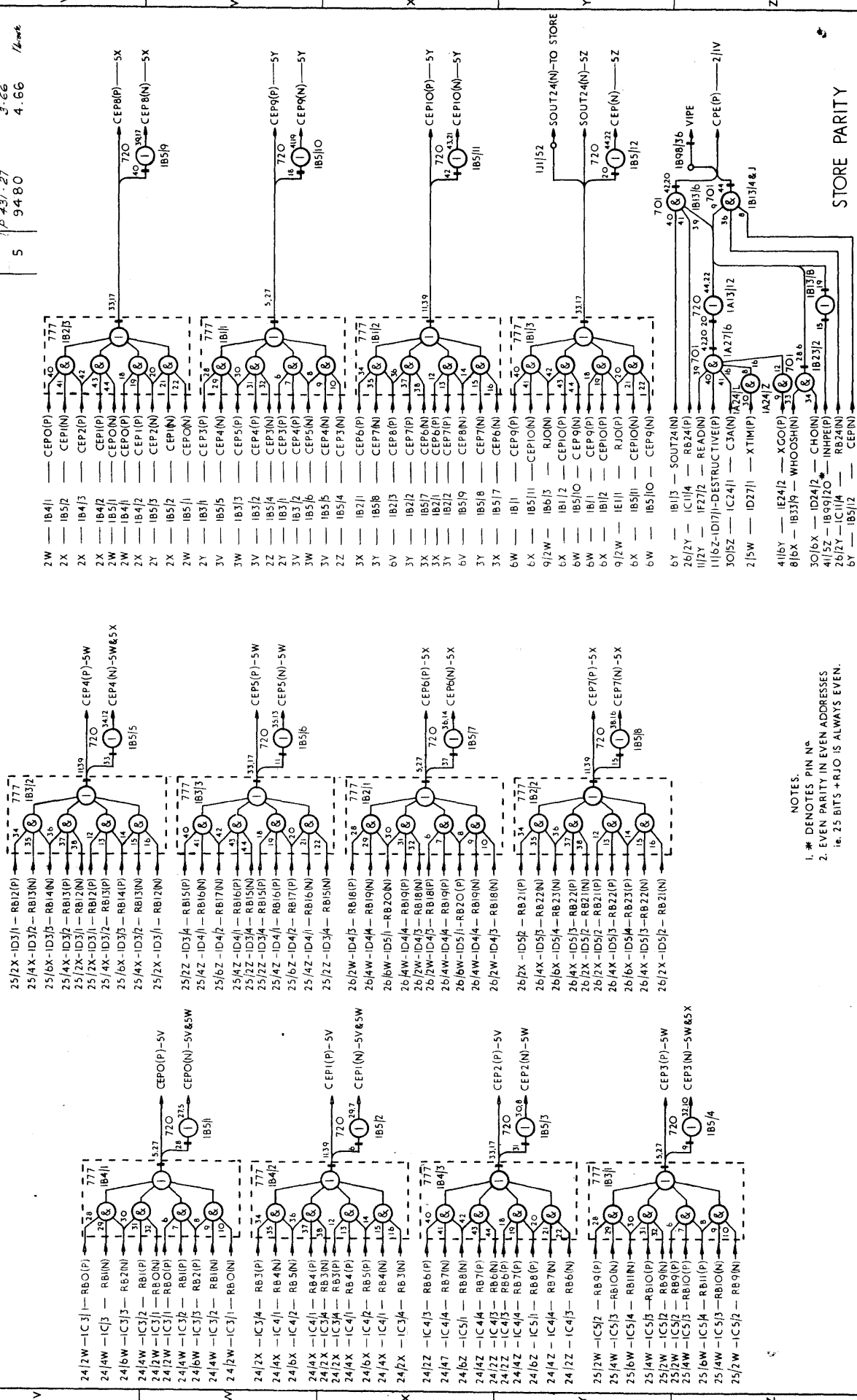
ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

DRAWN BY P. SMITH

DATE 25-1-66

NOTES

- 1. \* DENOTES PIN N°
- 2. EVEN PARITY IN EVEN ADDRESSES  
ie. 25 BITS + RJO IS ALWAYS EVEN.



CHANGES

4	XC252-103 REDRAWN	3-66
5	P 437-27	4.66
	9480	4.66

ISS.



1901  
COMPUTER  
LOGIC DIAGRAM

5013073 / 5  
DIAGRAM

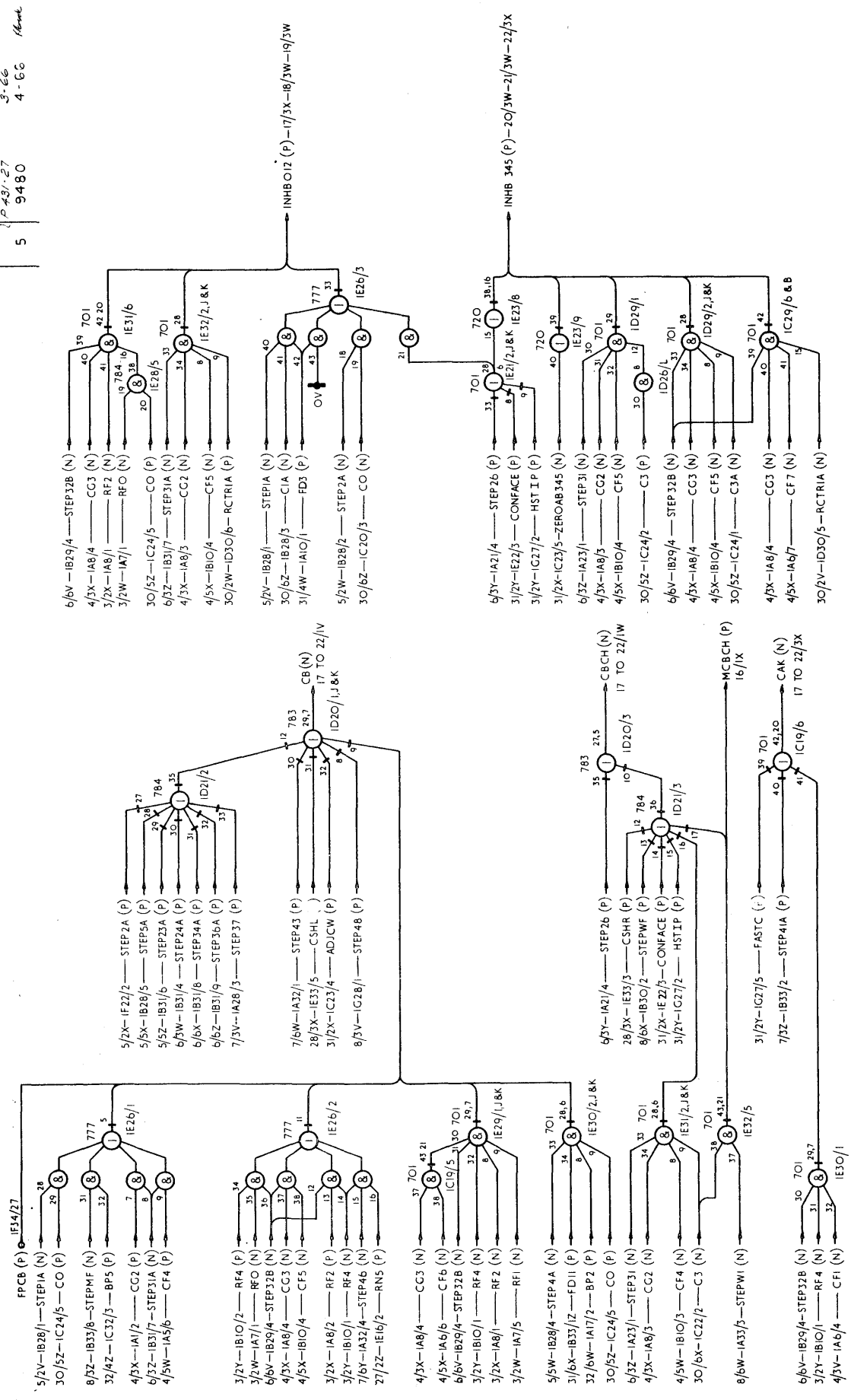
14  
SHEET

CAT. D

ISSUE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ISSUE														SHEET															

CONTROLS TO HIGHWAY RK



CHANGES

ISS.

4

5

4	XC252-103 REDRAWN	3-66
5	P 431-27	4-66
	9480	4-66



1901  
COMPUTER  
LOGIC DIAGRAM

5013073/16  
DIAGRAM

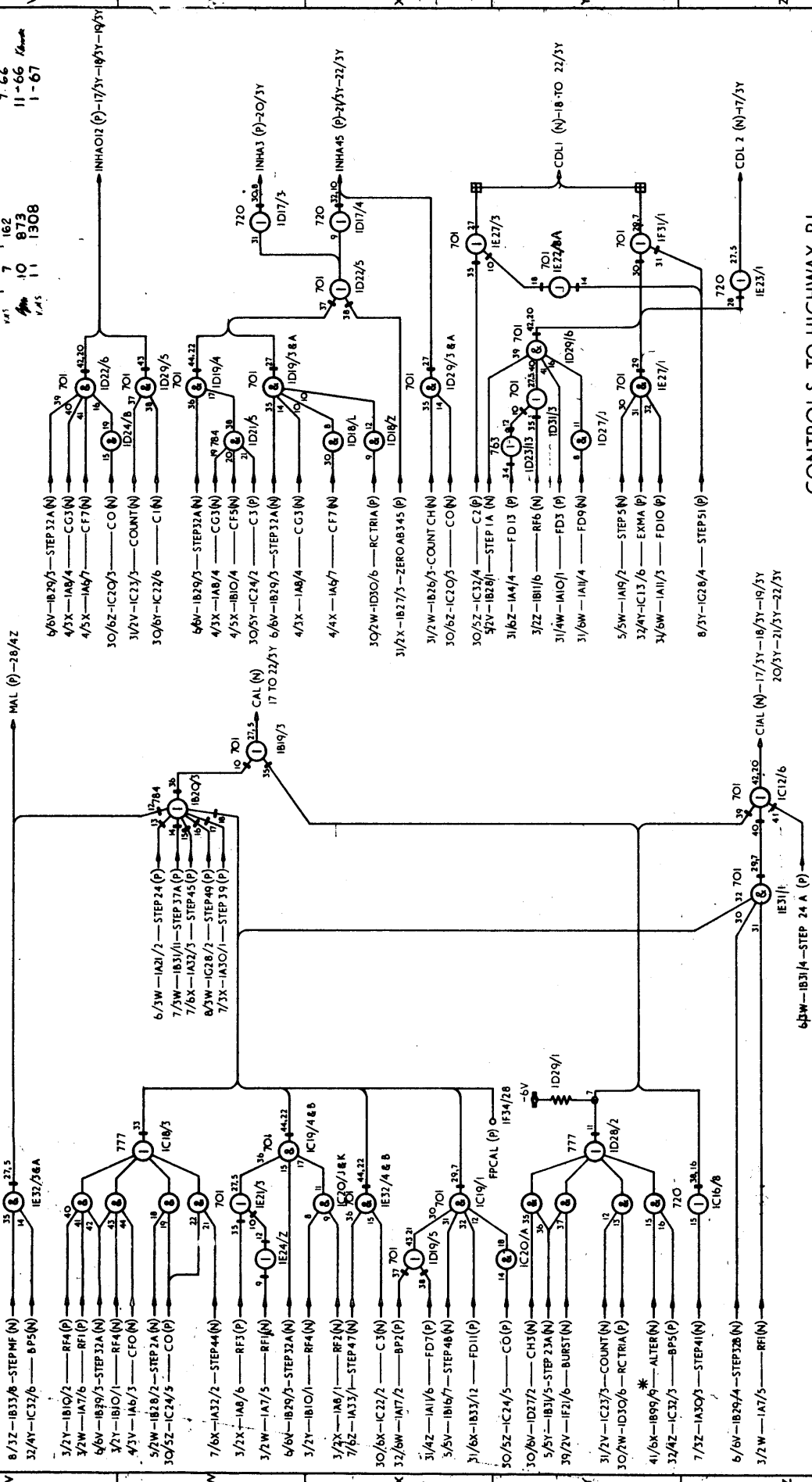
ISSUE SHEET 15

CAT. D

ISSUE SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.																															

CONTROLS TO HIGHWAY RL

NOTE: \* INDICATES PIN No.



CHANGES

ISS.	4.	XC 252-103 REDRAWN	3-66
	5.	9480	4-66 / Bunk
	7.	162	7-66
	10.	873	11-66 Kham
	11.	1308	1-67



1901  
COMPUTER  
LOGIC DIAGRAM

5013073/11

ISSUE

SHEET 16

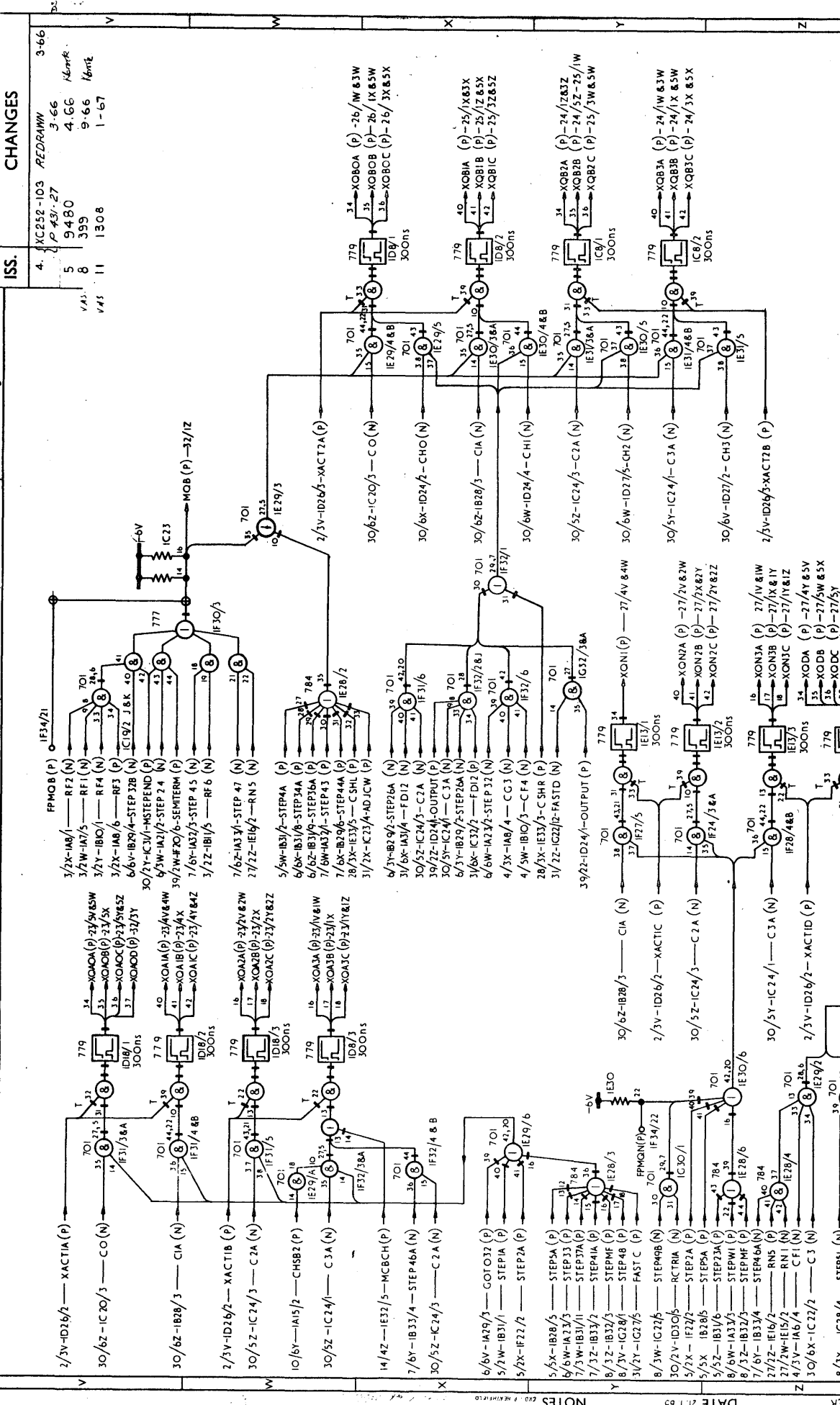
CAT. D

ISSUE

SHEET 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

REGISTER TRIGGER PULSE



DRAWN BY S. COOPER DATE 21 1 65

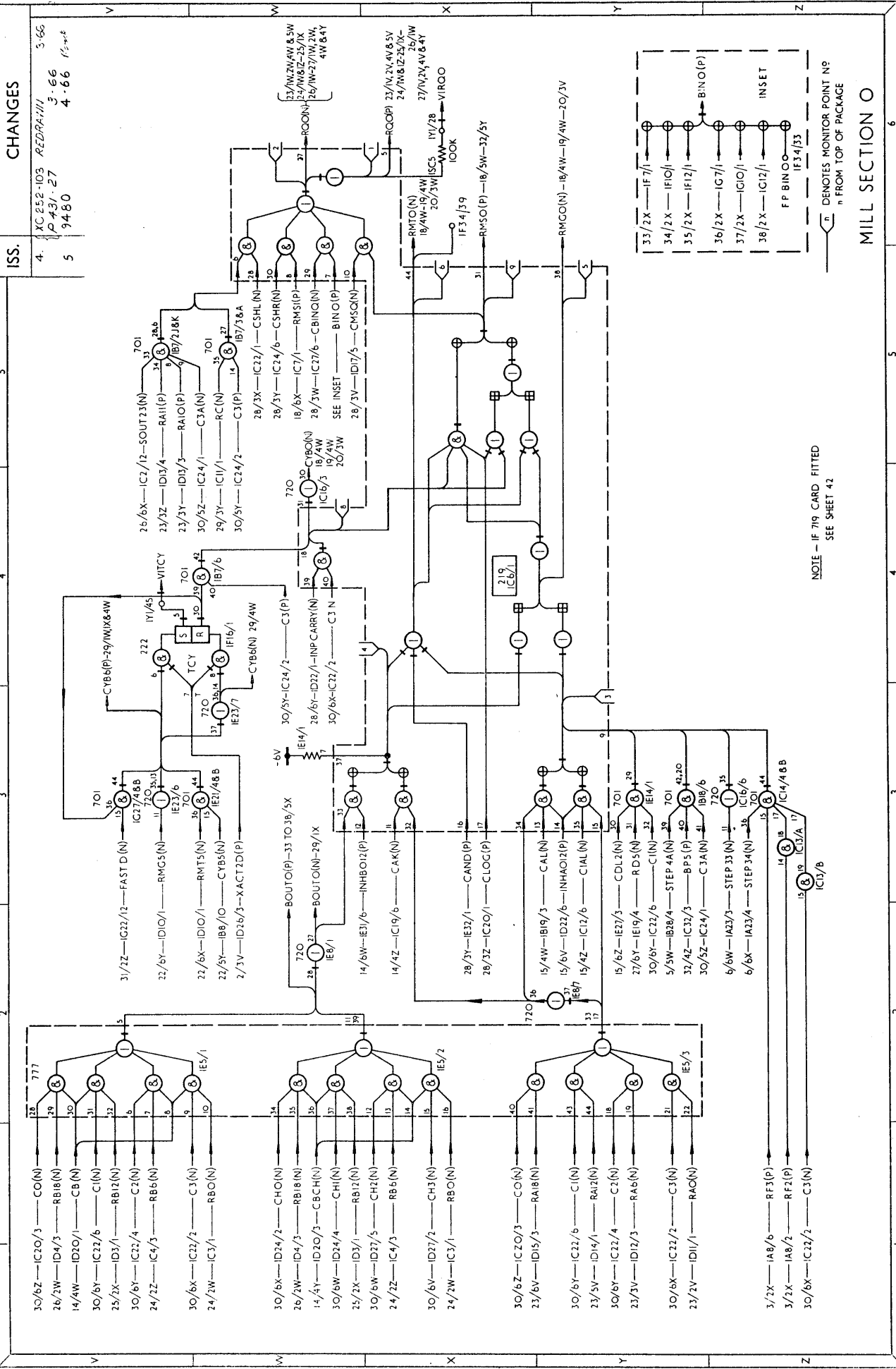
NOTES

CHANGES

4.	XCE52-103 REDRAWN	3-66
5.	9480	4-66
8.	399	9-66
11.	1308	1-67

48177



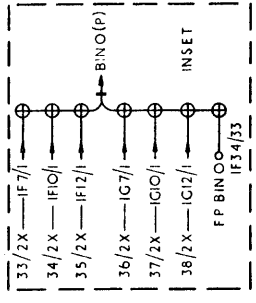


ISS.

4.	XC 652-103 REDRAWN	3-66
5	P 431-27	3-66
	9480	4-66 1/2

NOTE - IF 719 CARD FITTED  
SEE SHEET 42

MILL SECTION O



⊖ DENOTES MONITOR POINT N°  
n FROM TOP OF PACKAGE

1901  
COMPUTER  
LOGIC DIAGRAM

5013073 / 5

DIAGRAM

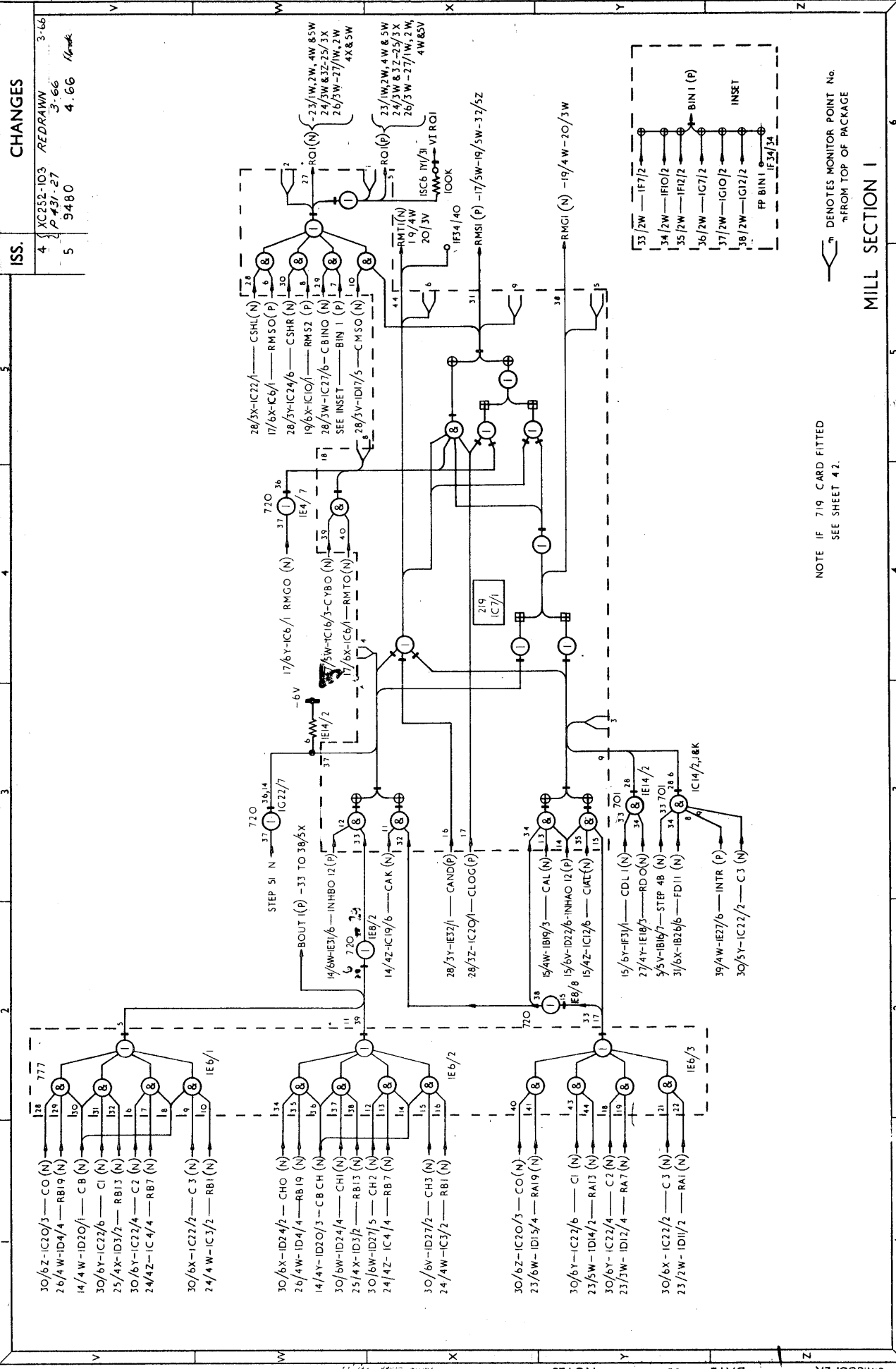
ISSUE	CAT.	SHEET
5	D	17

ISSUE SHEET

1	2	3	4	5	6
1	2	3	4	5	6

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

DRAWN BY S. GUTTERIDGE  
DATE 2. 2. 66  
NOTES



ISS.

4	XC252-103 REDRAWN 3-66
5	P 431-27 3-66
	9480 4-66 Mark

CHANGES

ISSUE

1	2	3	4	5	6

NOTE IF 719 CARD FITTED SEE SHEET 42.

NOTE DENOTES MONITOR POINT No. FROM TOP OF PACKAGE

MILL SECTION I

1901 COMPUTER LOGIC DIAGRAM

5013073/16

ISSUE 18 SHEET 18

CAT. D

ISSUE SHEET

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.



1901  
COMPUTER  
LOGIC DIAGRAM

5013073/5

ISSUE SHEET 19

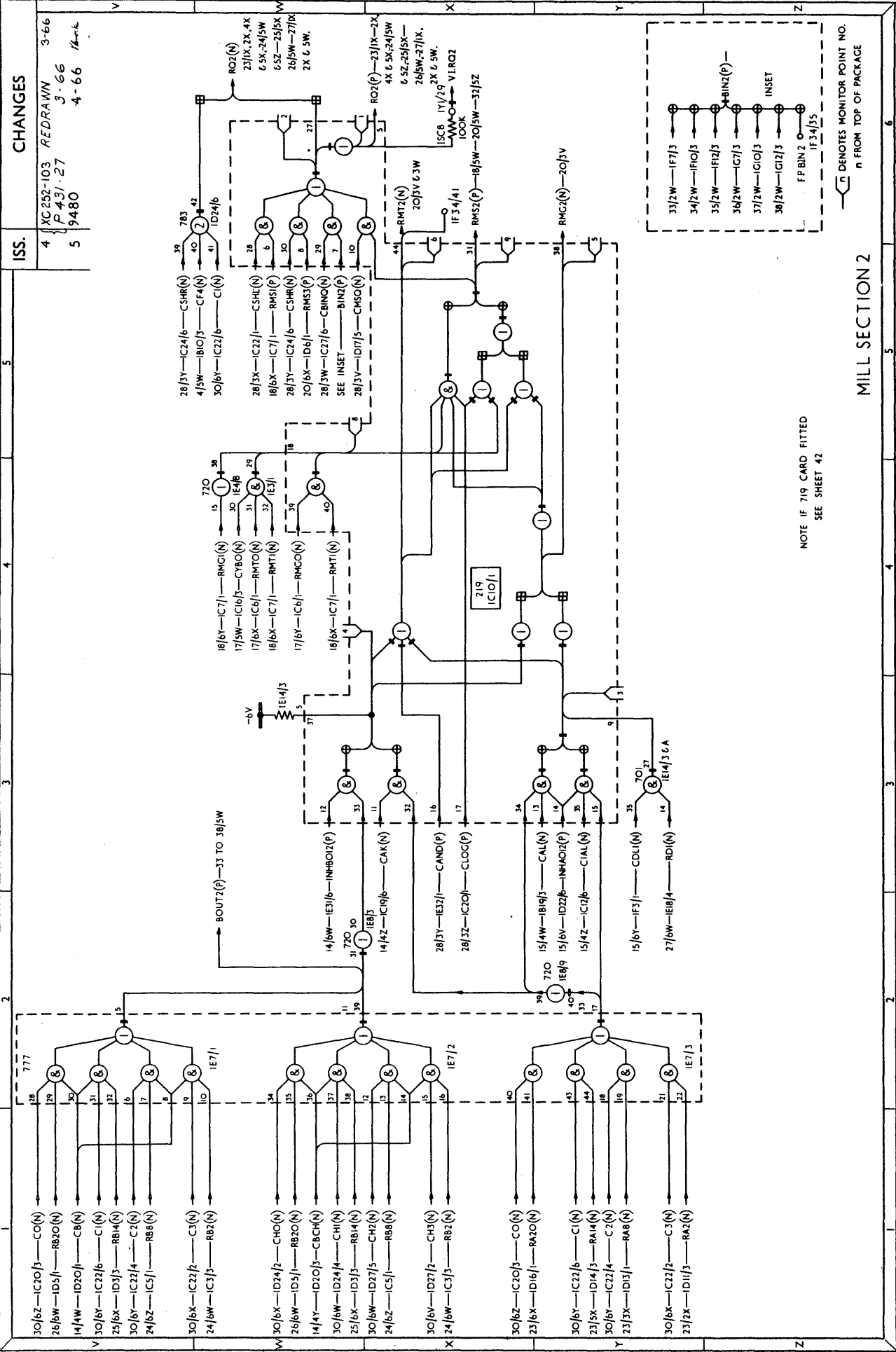
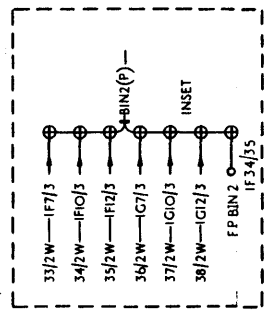
CAT. D

ISSUE SHEET 1

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MILL SECTION 2

NOTE IF 719 CARD FITTED  
SEE SHEET 42



CHANGES

ISS.	4	XC252-103 REDRAWN	3-66
	5	P 43/27	3-66
		9480	4-66



1901  
COMPUTER  
LOGIC DIAGRAM.

5013073/11

ISSUE  
11

SHEET  
20

CAT.  
D

ISSUE  
SHEET

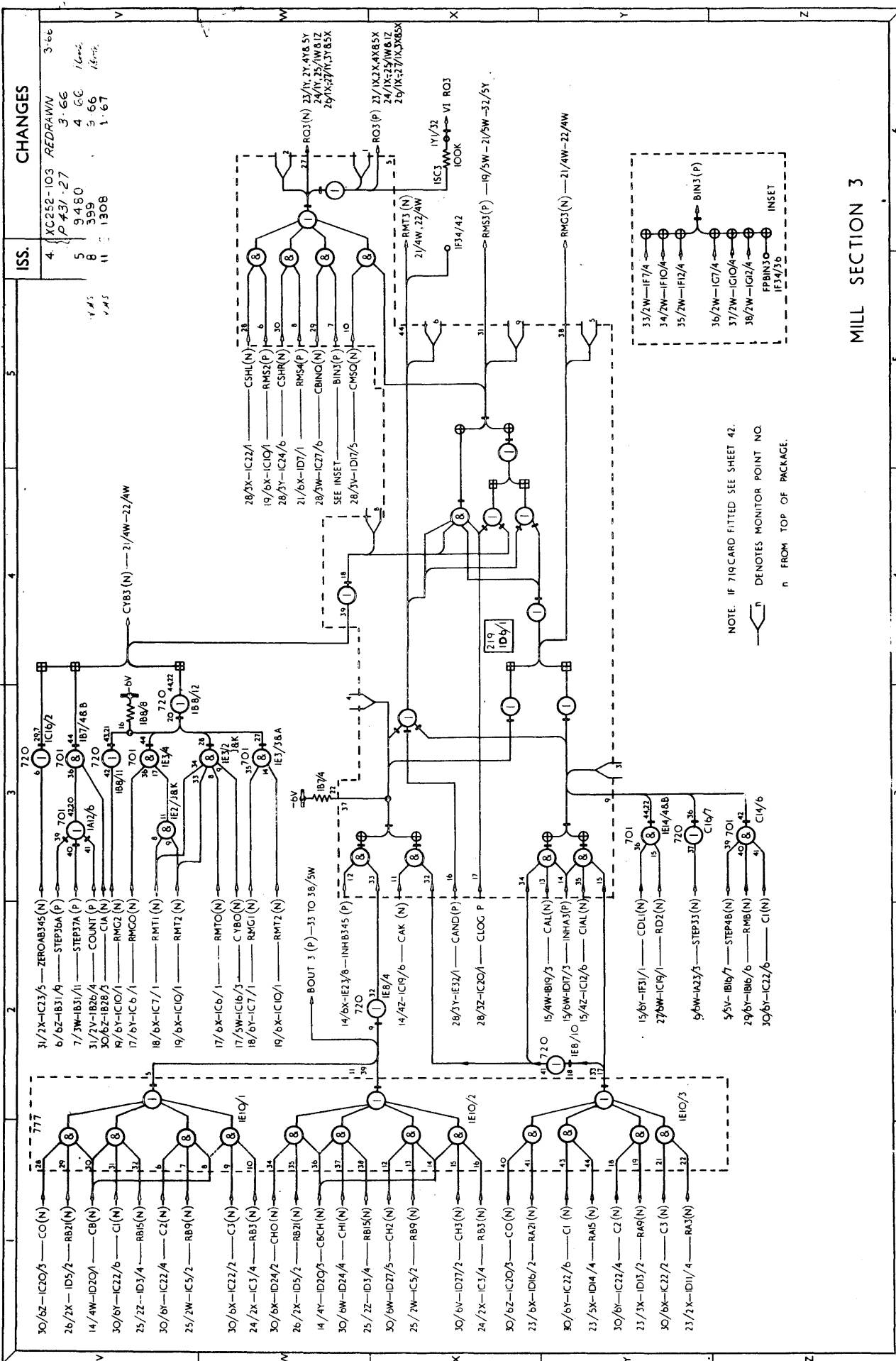
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ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.																													

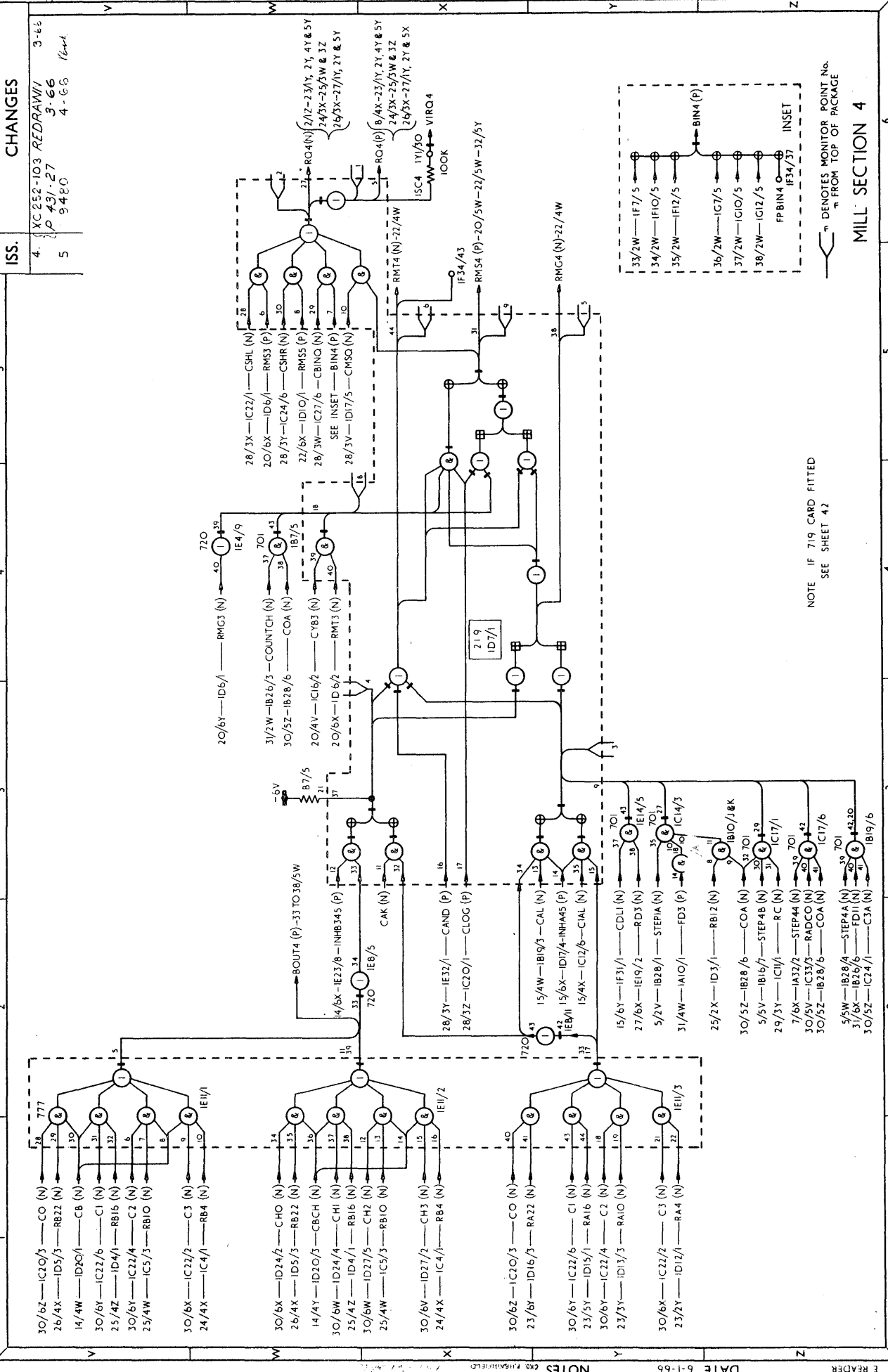
MILL SECTION 3

DRAWN BY L. SPENCER

DATE 2-66

NOTES





ISS.

4.	XC 252-103 REDRAWN	3-66
5	P 431-27	3-66
	9480	4-66

4-66

CHANGES

ISS.

4.	XC 252-103 REDRAWN	3-66
5	P 431-27	3-66
	9480	4-66

DATE 6-1-66

DRAWN BY E READER

NOTES

1901 COMPUTER LOGIC DIAGRAM

5013073 / 5

ISSUE SHEET 21

CAT. D

ISSUE SHEET 21

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

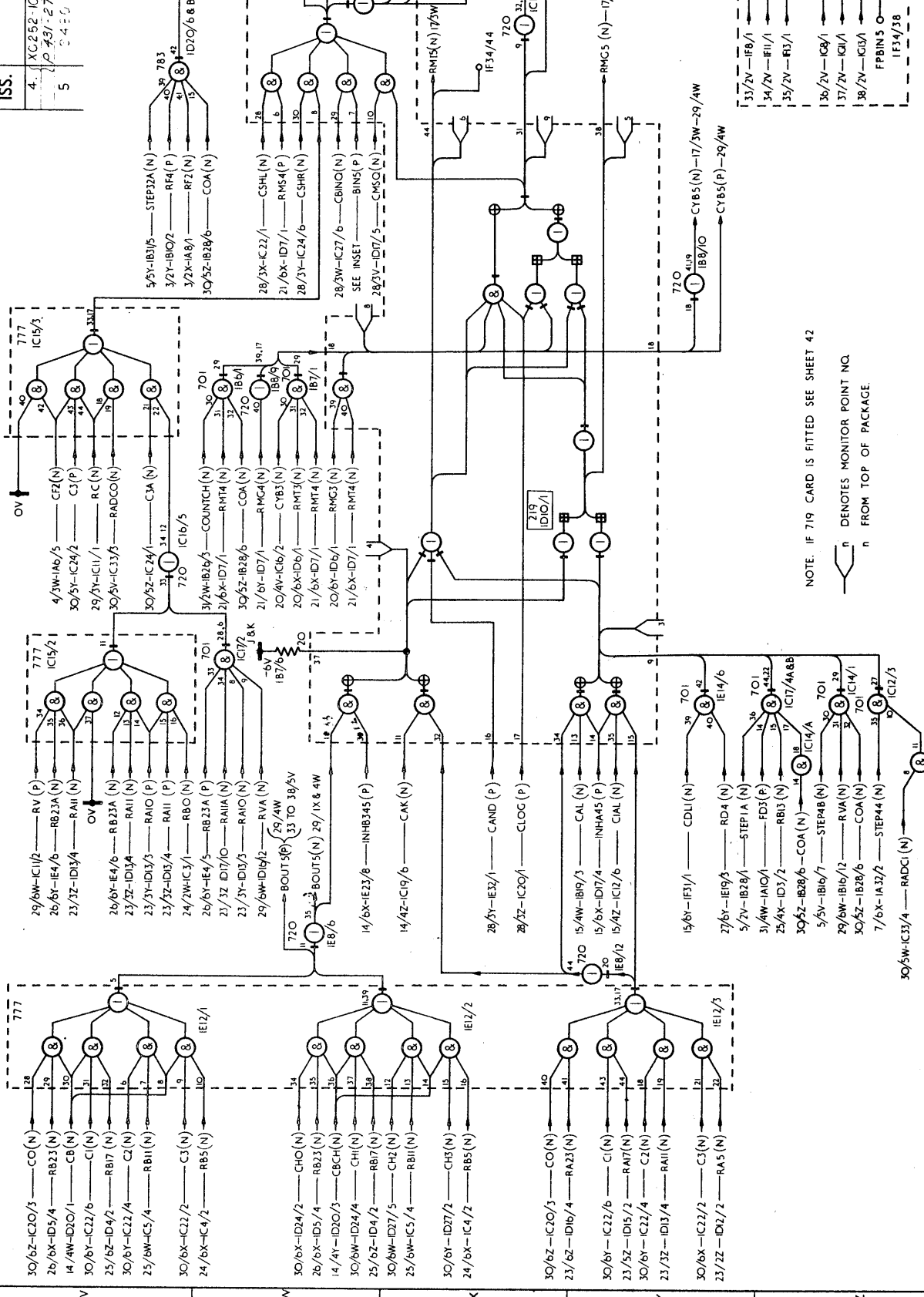
NOTE IF 7/9 CARD FITTED SEE SHEET 42

NOTE DENOTES MONITOR POINT No. FROM TOP OF PACKAGE

MILL SECTION 4

9480

CHANGES  
4. XC252-103 REDRAWN 3-66  
P 431-27 3-66  
5 3450 4-66



ISS. 3-66  
4-66

MILL SECTION 5

NOTE: IF 719 CARD IS FITTED SEE SHEET 42  
n DENOTES MONITOR POINT NO.  
FROM TOP OF PACKAGE

ISSUE  
CAT. D

22  
SHEET

ISSUE

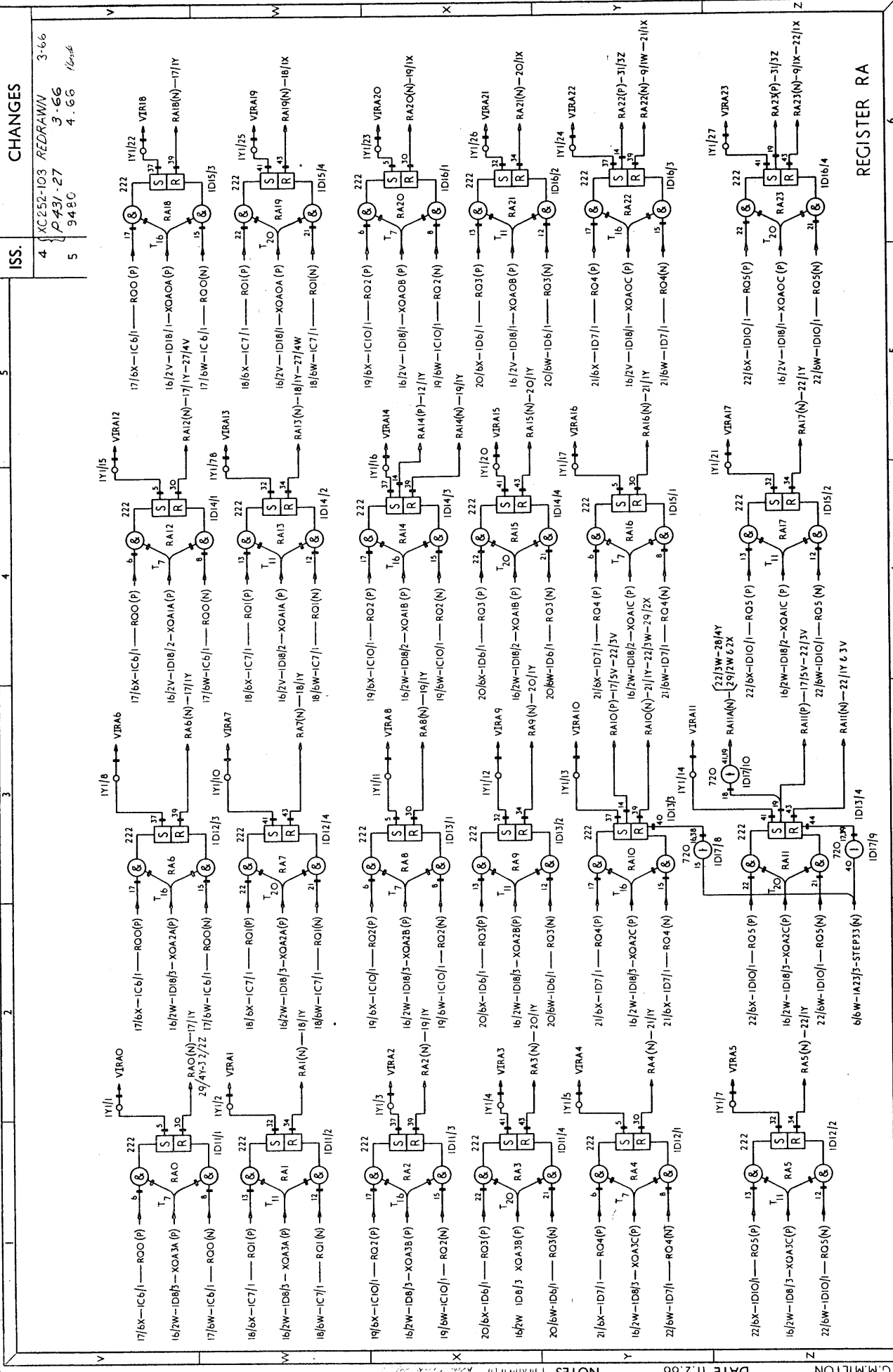
5013073/16

DIAGRAM

1901  
COMPUTER  
LOGIC DIAGRAM

5013073/16  
ISSUE





CHANGES

4	XC252-103 REDRAWN	3-66
5	P431-27	3-66
	9480C	4-66
		1/66

ISS.

1901  
COMPUTER  
LOGIC DIAGRAM

5013073 / 5

REGISTER RA

ISSUE SHEET

CAT D

ISSUE SHEET

23

5

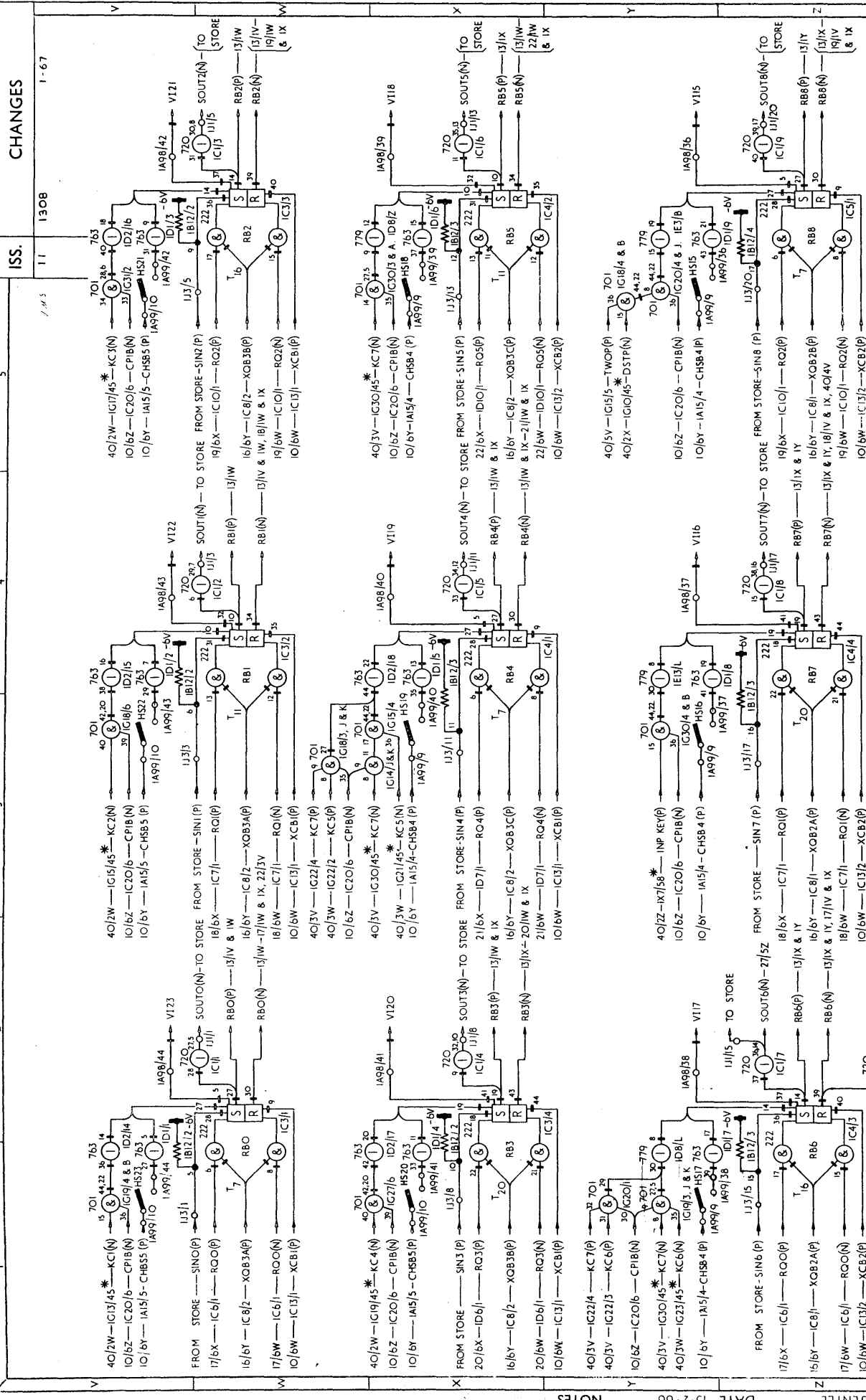
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.



REGISTER RB PART A

NOTE: \* DENOTES PIN NO.



ISS. 1-67

CHANGES

NOTES

DATE 15-2-66

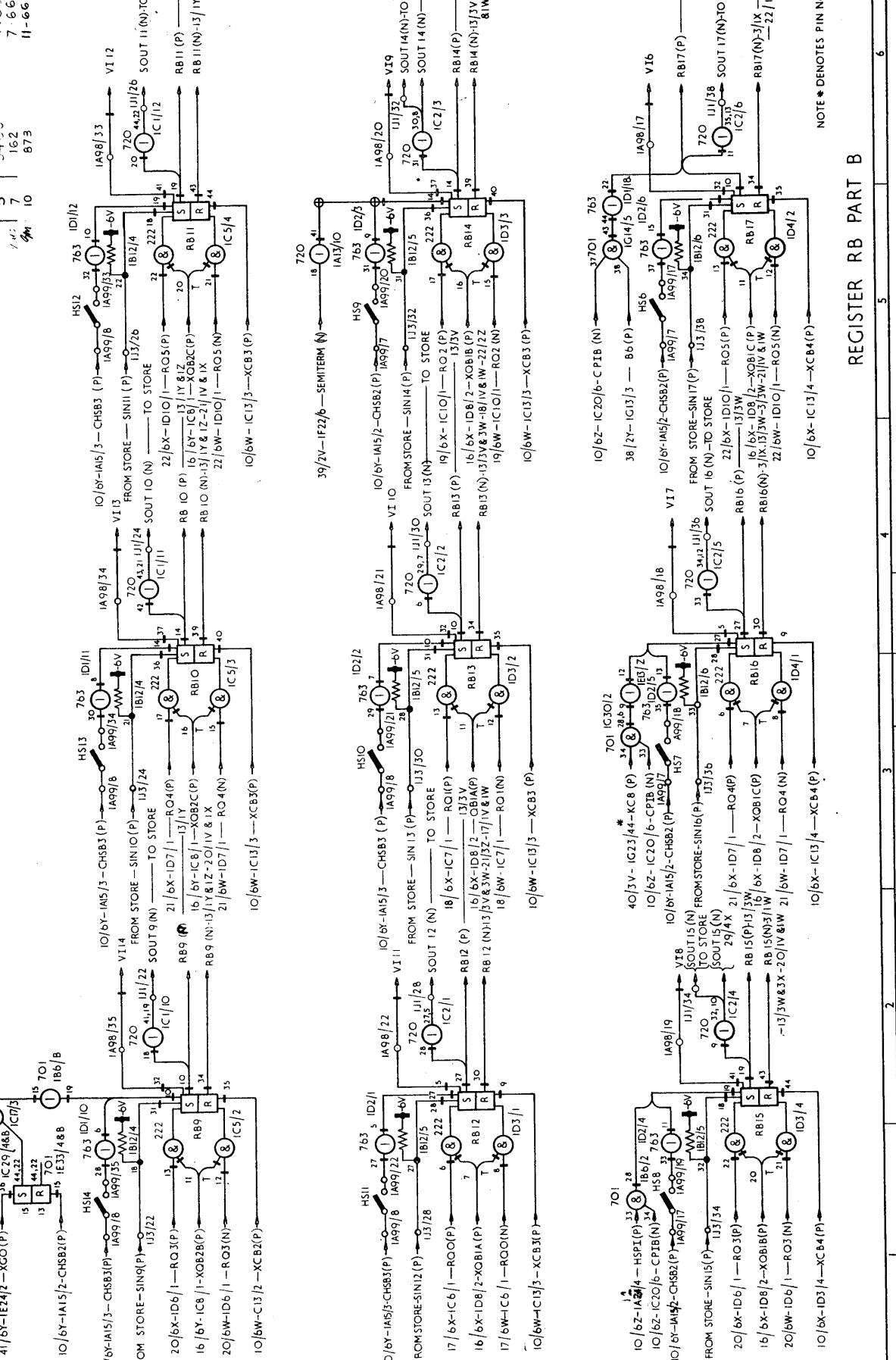
REGISTER RB PART A

818202



ISS. 4 5 7 10

CHANGES  
 XC252-103 REDRAWN 3-66  
 P 431-27 4-66  
 942C 7-66  
 162 11-66  
 B73



ISSUE SHEET 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

ISSUE SHEET 25

DIAGRAM

LOGIC DIAGRAM

1901 COMPUTER

I.C.T.

DRAWN BY J.B. AIRSTROP DATE 17-2-66

REGISTER RB PART B

NOTES \* DENOTES PIN NO.



1901  
COMPUTER  
LOGIC DIAGRAM

5013073  
DIAGRAM

ISSUE 7

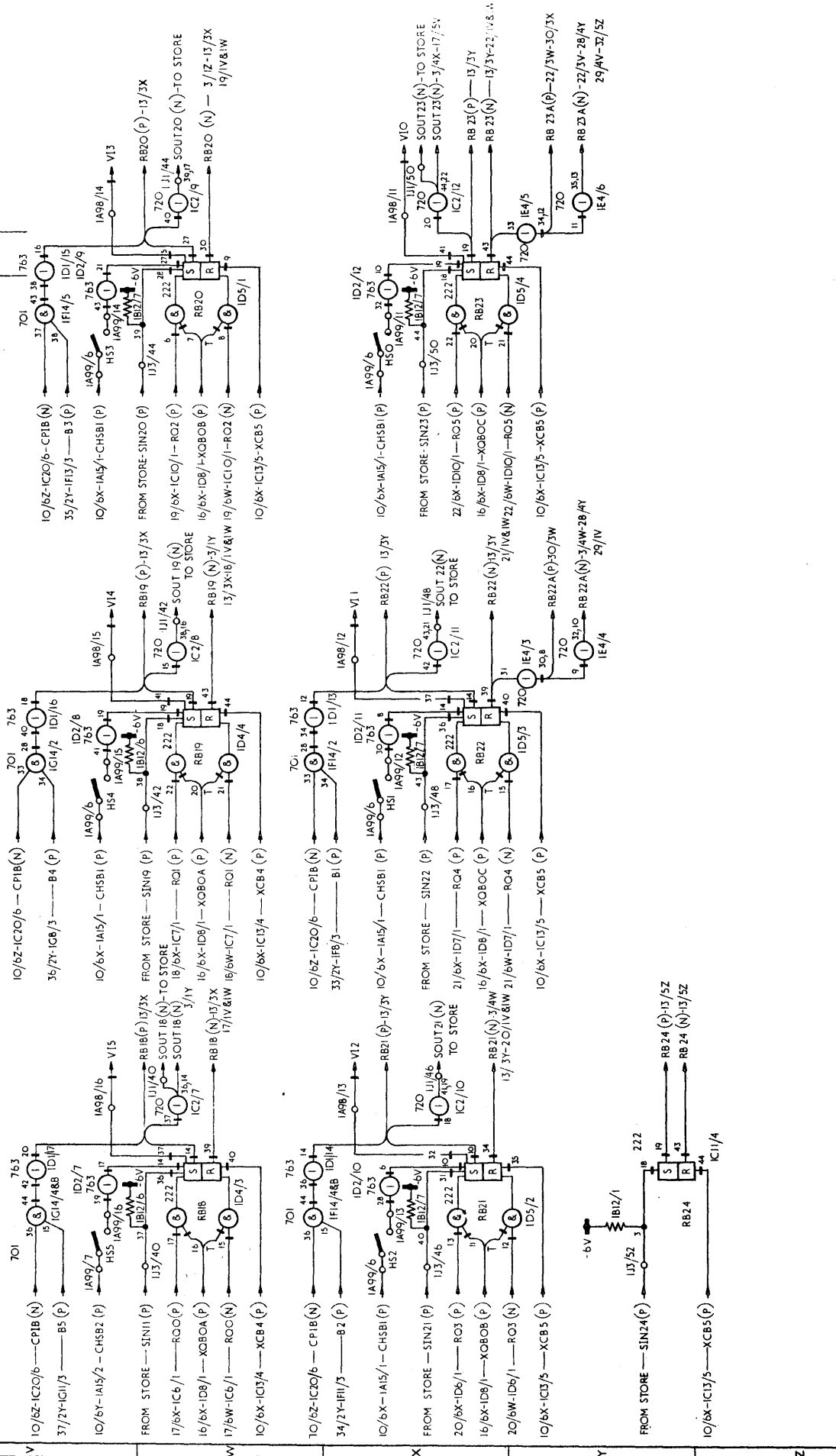
SHEET 26

CAT. D

ISSUE

1	2	3	4	5	6
18	19	20	21	22	23
24	25	26	27	28	29
30					

REGISTER RB PART C



CHANGES

ISS. 7

7 566

2

3

4

5

6

V

W

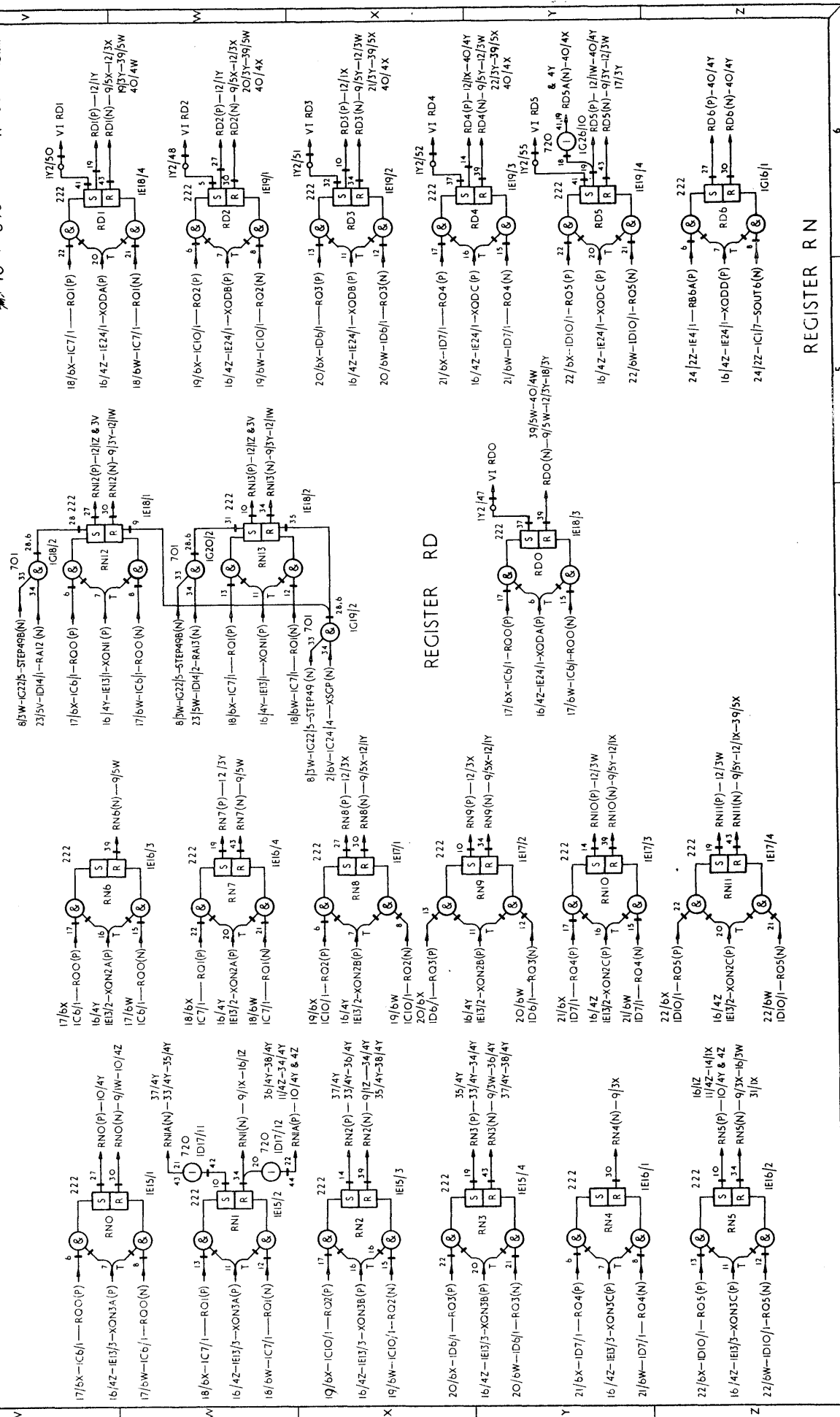
X

Y

Z

ISS. 4  
5  
10

CHANGES  
XC 252-103 REDRAWN 3-66  
P 431-27 3-66  
542C 11-66  
873



REGISTER R N

REGISTER RD

REGISTER R

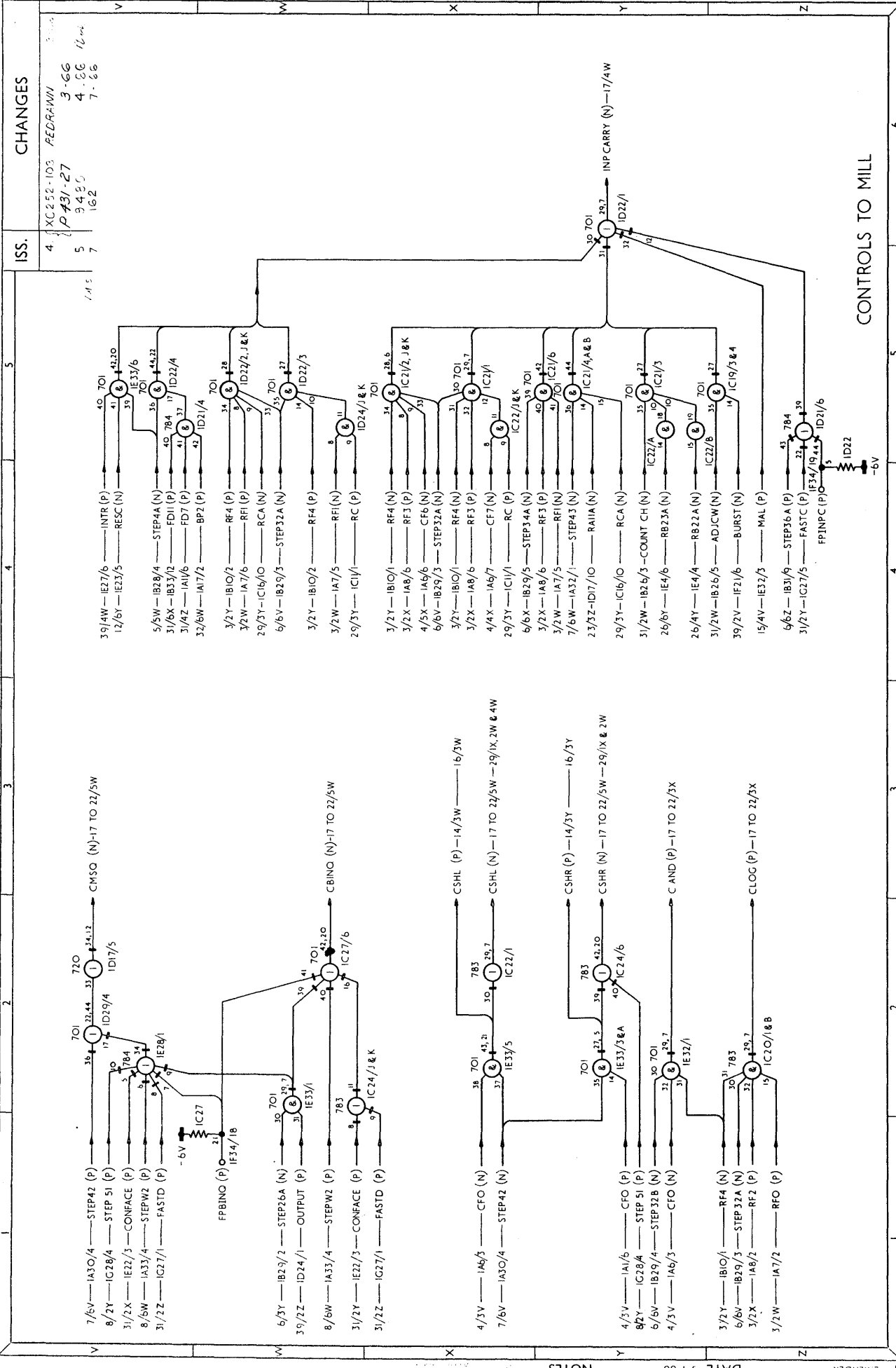
	1901	5013073 / 101627	CAT. D	ISSUE SHEET
	COMPUTER	DIAGRAM	DIAGRAM	ISSUE SHEET
	LOGIC DIAGRAM	DIAGRAM	DIAGRAM	ISSUE SHEET

ISSUE SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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DATE 9-2-66 DRAWN BY V.M.SMITH

ISS. CHANGES

4	XC 252-103 FED-RANV	3-66
5	P 431-27	4-66
7	3425	7-66
	162	



CONTROLS TO MILL

1901 COMPUTER LOGIC DIAGRAM

5013073/16

DIAGRAM

28 SHEET

ISSUE

CAT. D

ISSUE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.



1901  
COMPUTER  
LOGIC DIAGRAM

5013073/15  
ISSUE SHEET

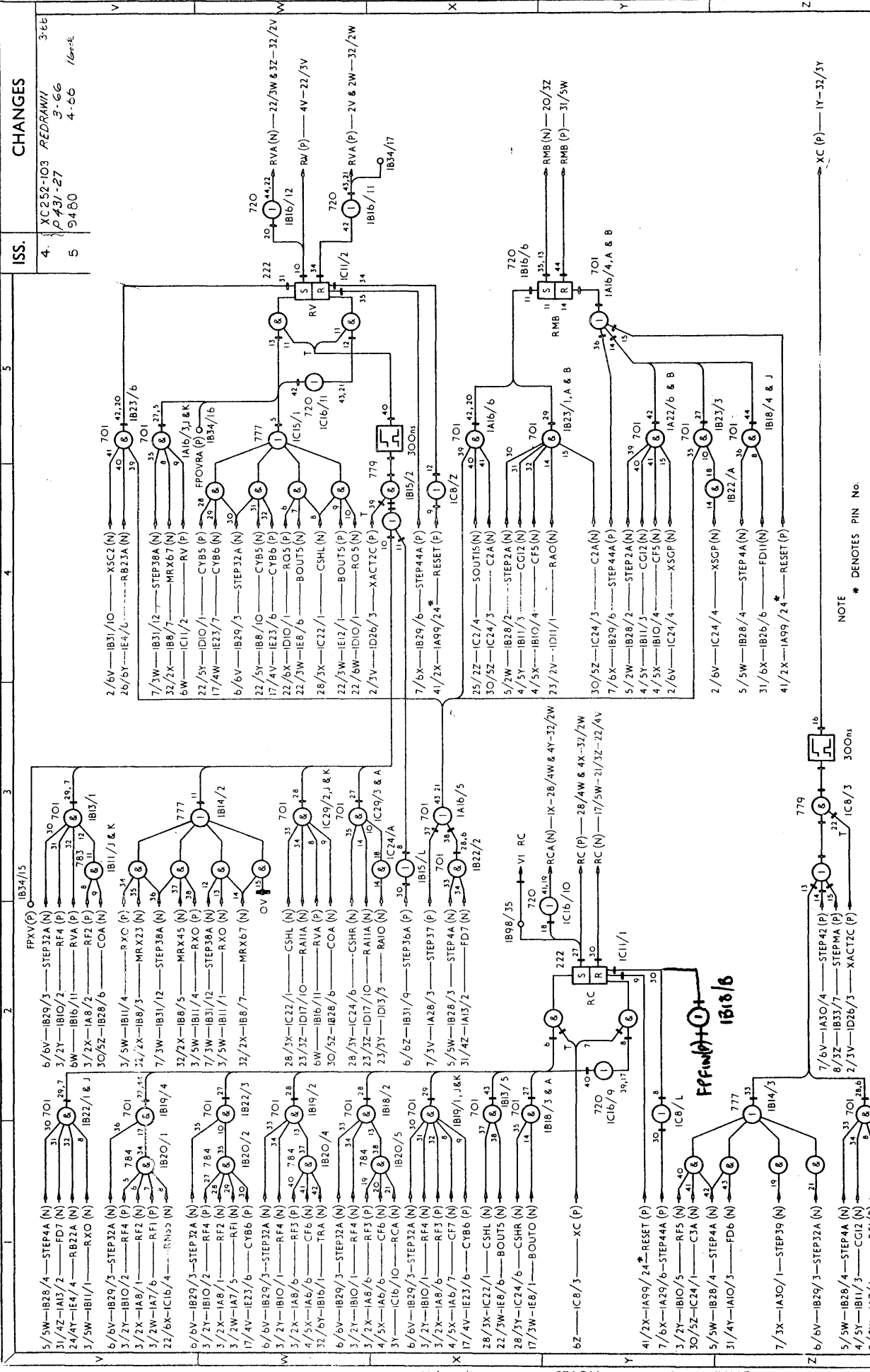
29  
SHEET

D  
CAT.

ISSUE SHEET

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

REGISTERS RC, RV & RMB



CHANGES

4.	XC252-103 REDRAWN	3-66
5	9480	4-66

ISS.

DATE 3-2-66

NOTES

DRAWN BY S.A. CHAMBERS

NOTE \* DENOTES PIN No.



1901  
COMPUTER  
LOGIC DIAGRAM

5013073 / 16A

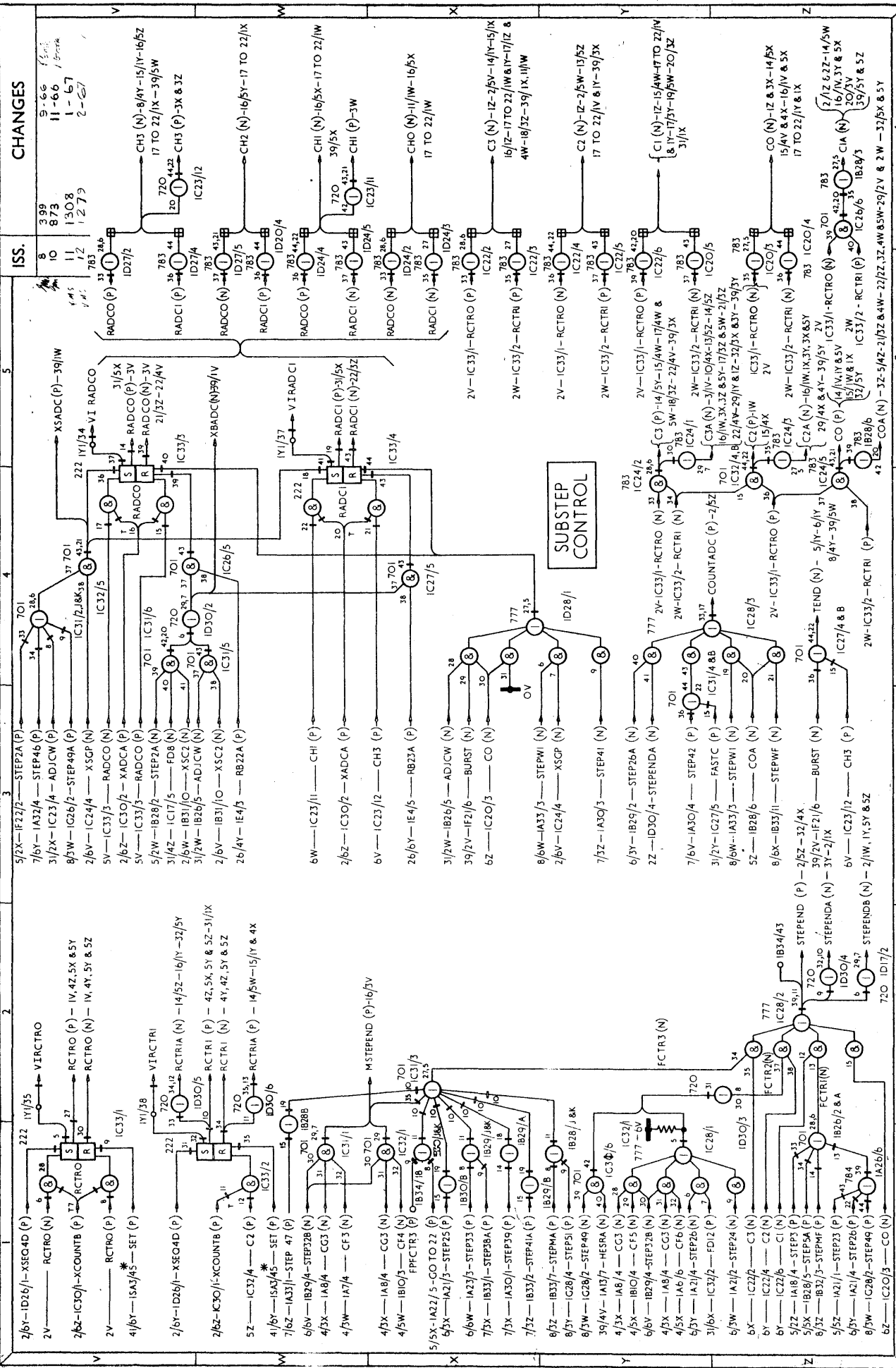
ISSUE SHEET 30

CAT. D

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.  
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DATE 25-1-66

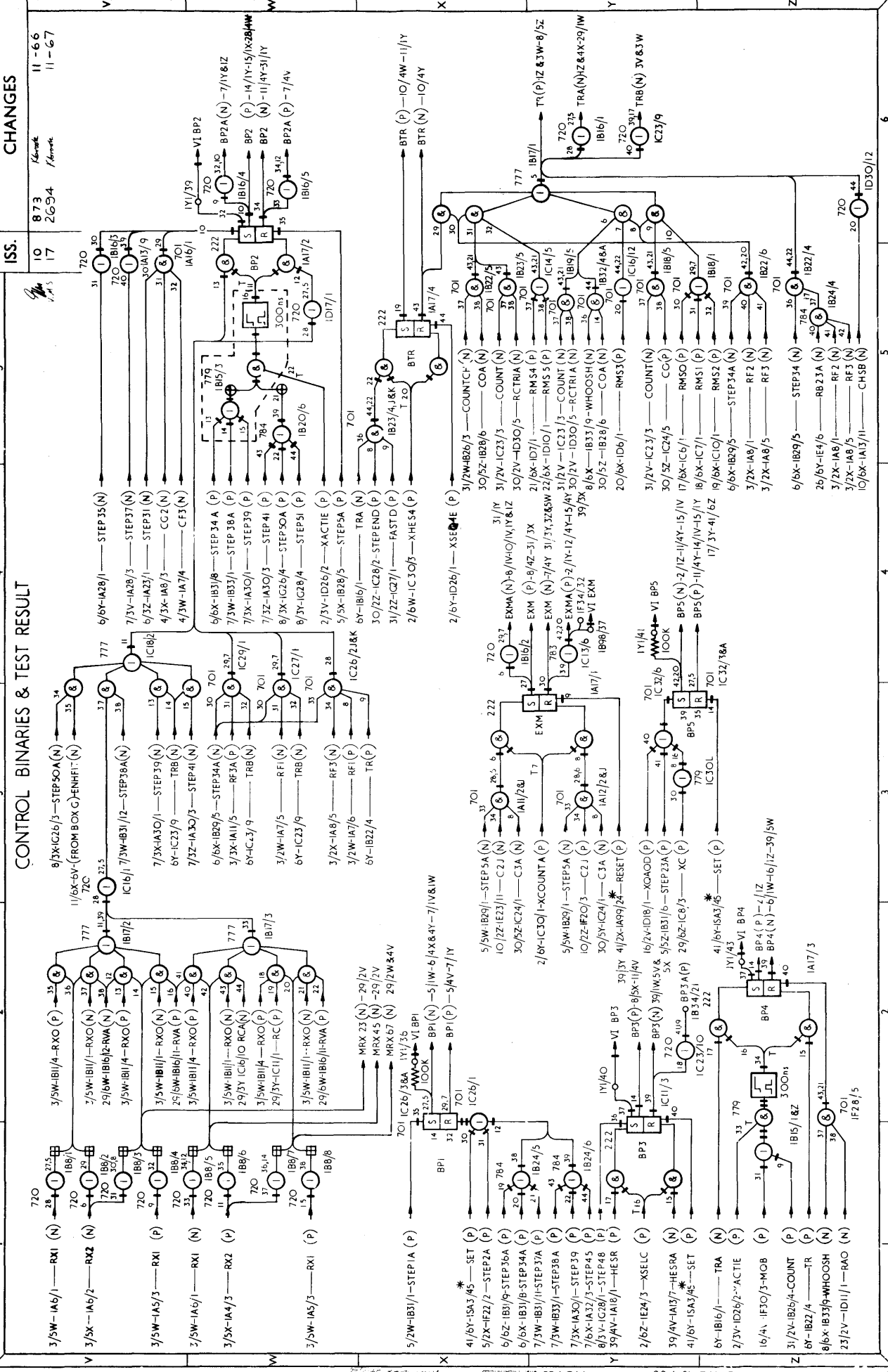
DRAWN BY M. A. MITCHELL



ISS.	CHANGES
8	399 9-66
10	873 11-66
11	1308 1-67
12	1279 2-67
783	

NOTES





CONTROL BINARIES & TEST RESULT

ISS.

10	873	Levack	11-66
17	2694	Farnack	11-67

CHANGES

1	6Y-IA28/1	STEP 35(N)
2	7YV-IA28/3	STEP 37(N)
3	6Y3Z-IA23/1	STEP 31(N)
4	4Y3X-IA8/3	CG2(N)
5	4Y3W-IA7/4	CF3(N)
6	6Y6X-IB31/8	STEP 34(P)
7	7Y3W-IB31/1	STEP 38A(P)
8	7Y3X-IA30/1	STEP 39(P)
9	7Y3Z-IA30/3	STEP 41(P)
10	8Y3X-IG26/4	STEP 50A(P)
11	8Y3Y-IG28/4	STEP 51(P)
12	2Y3V-ID26/2	XACTIE(P)
13	5Y5X-IB28/5	STEP 5A(P)
14	6Y-IB16/1	TRA(N)
15	3OJZ-IC28/2	STPEND(P)
16	3I/ZZ-IC27/1	FASTD(P)
17	2Y6W-IC30/3	XHES4(P)
18	2Y6Y-ID26/1	XSE4(P)
19	3Y2V-IB29/5	COUNT(N)
20	3O/SZ-IB28/6	COA(N)
21	3I/2Y-IC23/5	COUNT(N)
22	3I/6X-ID7/1	RCTRIA(N)
23	3O/2V-ID30/5	RMS4(P)
24	3I/6X-ID7/1	RMS5(P)
25	3I/2Y-IC23/5	COUNT(N)
26	3I/2Y-IC23/5	COUNT(N)
27	3I/2Y-IC23/5	COUNT(N)
28	3I/2Y-IC23/5	COUNT(N)
29	3I/2Y-IC23/5	COUNT(N)
30	3I/2Y-IC23/5	COUNT(N)
31	3I/2Y-IC23/5	COUNT(N)
32	3I/2Y-IC23/5	COUNT(N)
33	3I/2Y-IC23/5	COUNT(N)
34	3I/2Y-IC23/5	COUNT(N)
35	3I/2Y-IC23/5	COUNT(N)
36	3I/2Y-IC23/5	COUNT(N)
37	3I/2Y-IC23/5	COUNT(N)
38	3I/2Y-IC23/5	COUNT(N)
39	3I/2Y-IC23/5	COUNT(N)
40	3I/2Y-IC23/5	COUNT(N)
41	3I/2Y-IC23/5	COUNT(N)
42	3I/2Y-IC23/5	COUNT(N)
43	3I/2Y-IC23/5	COUNT(N)
44	3I/2Y-IC23/5	COUNT(N)
45	3I/2Y-IC23/5	COUNT(N)
46	3I/2Y-IC23/5	COUNT(N)
47	3I/2Y-IC23/5	COUNT(N)
48	3I/2Y-IC23/5	COUNT(N)
49	3I/2Y-IC23/5	COUNT(N)
50	3I/2Y-IC23/5	COUNT(N)
51	3I/2Y-IC23/5	COUNT(N)
52	3I/2Y-IC23/5	COUNT(N)
53	3I/2Y-IC23/5	COUNT(N)
54	3I/2Y-IC23/5	COUNT(N)
55	3I/2Y-IC23/5	COUNT(N)
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57	3I/2Y-IC23/5	COUNT(N)
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67	3I/2Y-IC23/5	COUNT(N)
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70	3I/2Y-IC23/5	COUNT(N)
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72	3I/2Y-IC23/5	COUNT(N)
73	3I/2Y-IC23/5	COUNT(N)
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84	3I/2Y-IC23/5	COUNT(N)
85	3I/2Y-IC23/5	COUNT(N)
86	3I/2Y-IC23/5	COUNT(N)
87	3I/2Y-IC23/5	COUNT(N)
88	3I/2Y-IC23/5	COUNT(N)
89	3I/2Y-IC23/5	COUNT(N)
90	3I/2Y-IC23/5	COUNT(N)
91	3I/2Y-IC23/5	COUNT(N)
92	3I/2Y-IC23/5	COUNT(N)
93	3I/2Y-IC23/5	COUNT(N)
94	3I/2Y-IC23/5	COUNT(N)
95	3I/2Y-IC23/5	COUNT(N)
96	3I/2Y-IC23/5	COUNT(N)
97	3I/2Y-IC23/5	COUNT(N)
98	3I/2Y-IC23/5	COUNT(N)
99	3I/2Y-IC23/5	COUNT(N)
100	3I/2Y-IC23/5	COUNT(N)

1901	5013073	ISSUE	17	32	D	CAT.	ISSUE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
COMPUTER		LOGIC DIAGRAM	ISSUE		SHEET		ISSUE		SHEET		ISSUE		SHEET		ISSUE		SHEET		ISSUE		SHEET		ISSUE		SHEET		ISSUE		SHEET		ISSUE		SHEET		ISSUE		SHEET	



1901 COMPUTER LOGIC DIAGRAM

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

DRAWN BY AW:LLS DATE 13-1-66 NOTES AND REVISIONS





1901

COMPUTER

LOGIC DIAGRAM

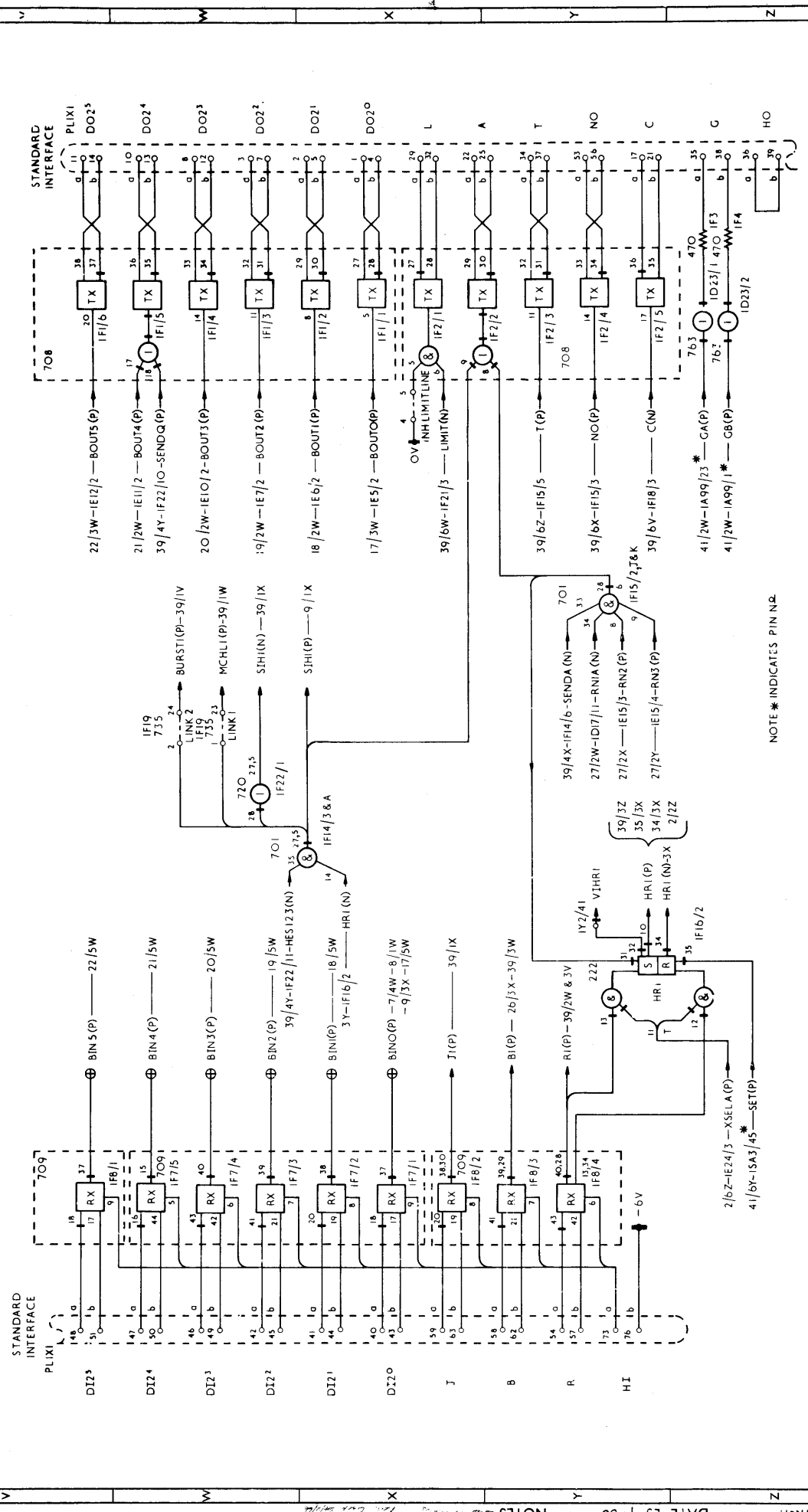
CAT. D

ISSUE

SHEET

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

PERIPHERAL DEVICE INTERFACE I



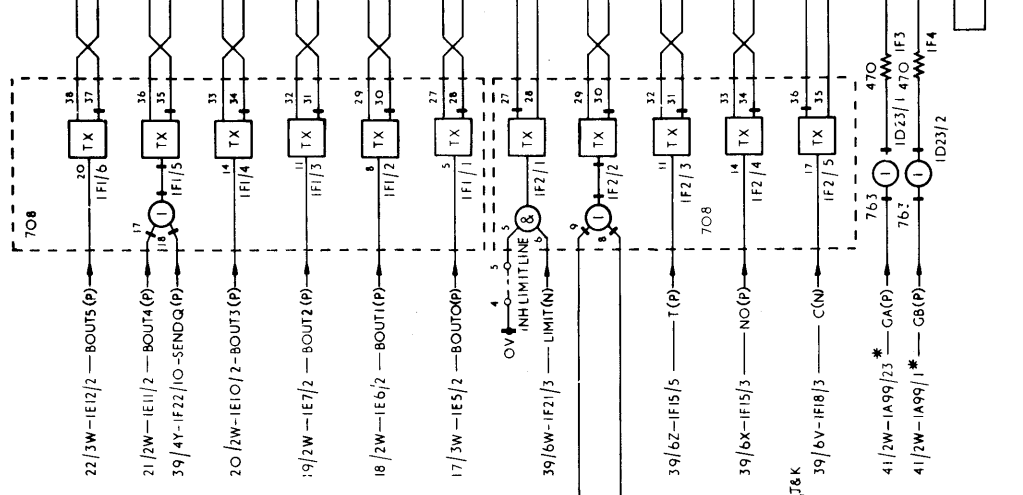
NOTE \* INDICATES PIN NO.

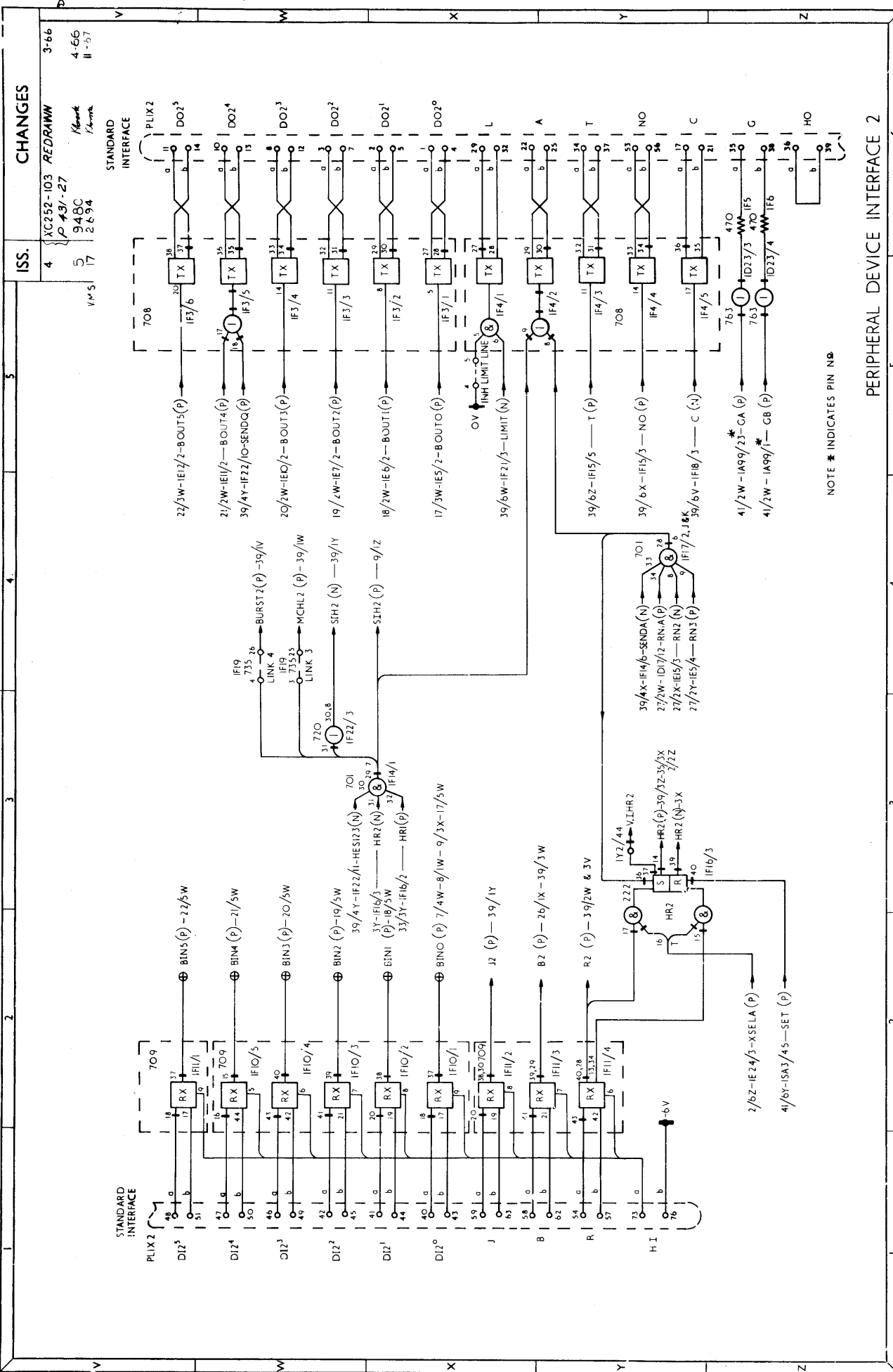
CHANGES

ISS.

4.	XC252-103 REDRAWN	3-66
	P 43/-27	3-66
	9480	4-66
	2694	11-67
	VMS/17	

STANDARD INTERFACE





	1901	5013073/17	CAT. D	ISSUE 34	ISSUE 17	PERIPHERAL DEVICE INTERFACE 2
	COMPUTER	DIAGRAM	DIAGRAM	SHEET 34	SHEET 17	
	LOGIC DIAGRAM					

ISS.	4	5	17
XC252-103 REDRAWN	3-66		
P #31-27	4-66		
9418C			
2694			

ISSUE SHEET 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

NOTE \* INDICATES PIN NO.

DATE 16 2 66

NOTES

DRAWN BY S CCGPER

813178E



1901  
COMPUTER  
LOGIC DIAGRAM

5013073 / 10

ISSUE SHEET

CAT. D

ISSUE

SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

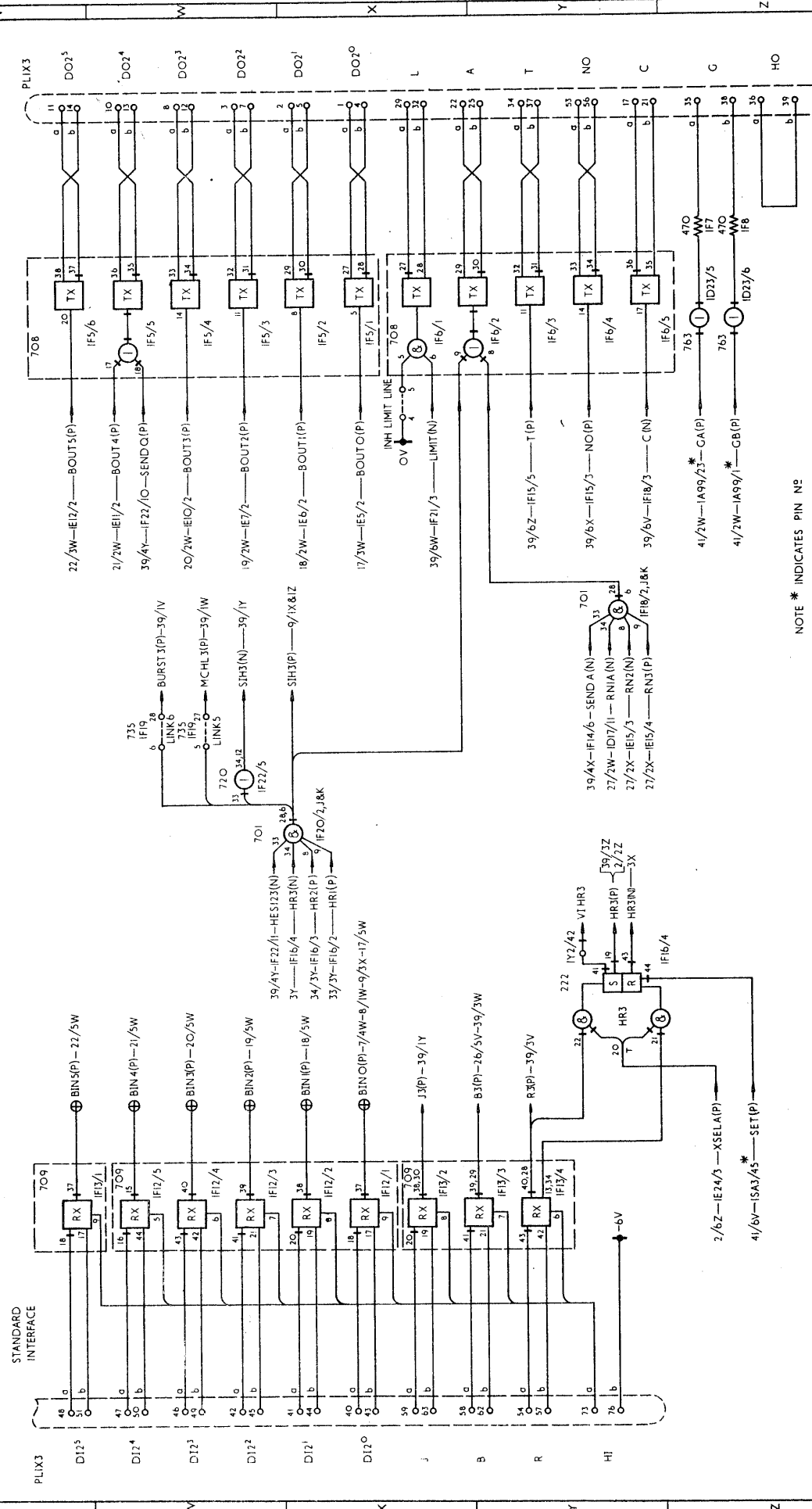
813120 E

DRAWN BY S. CUTTERIDGE

DATE 8.2.66

NOTES

### PERIPHERAL DEVICE INTERFACE 3



NOTE \* INDICATES PIN NO

### CHANGES

ISS.	DESCRIPTION	DATE
4.	XC252-103 REDRAWN	3-66
5	P.43/-27	4-66
10	948C	11-66



1901  
COMPUTER  
LOGIC DIAGRAM

5013073 / 5

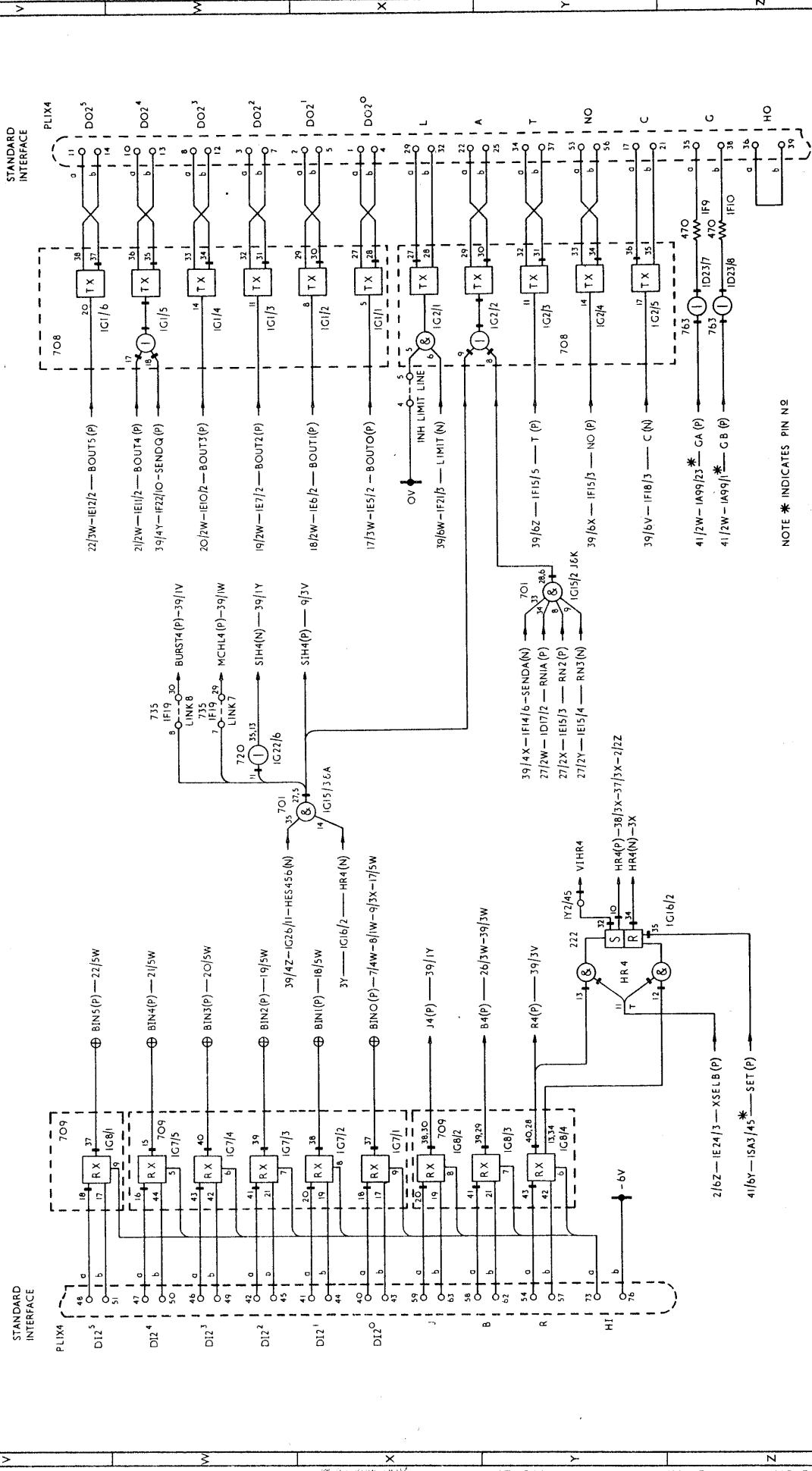
ISSUE SHEET

CAT D

ISSUE SHEET

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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PERIPHERAL DEVICE INTERFACE 4

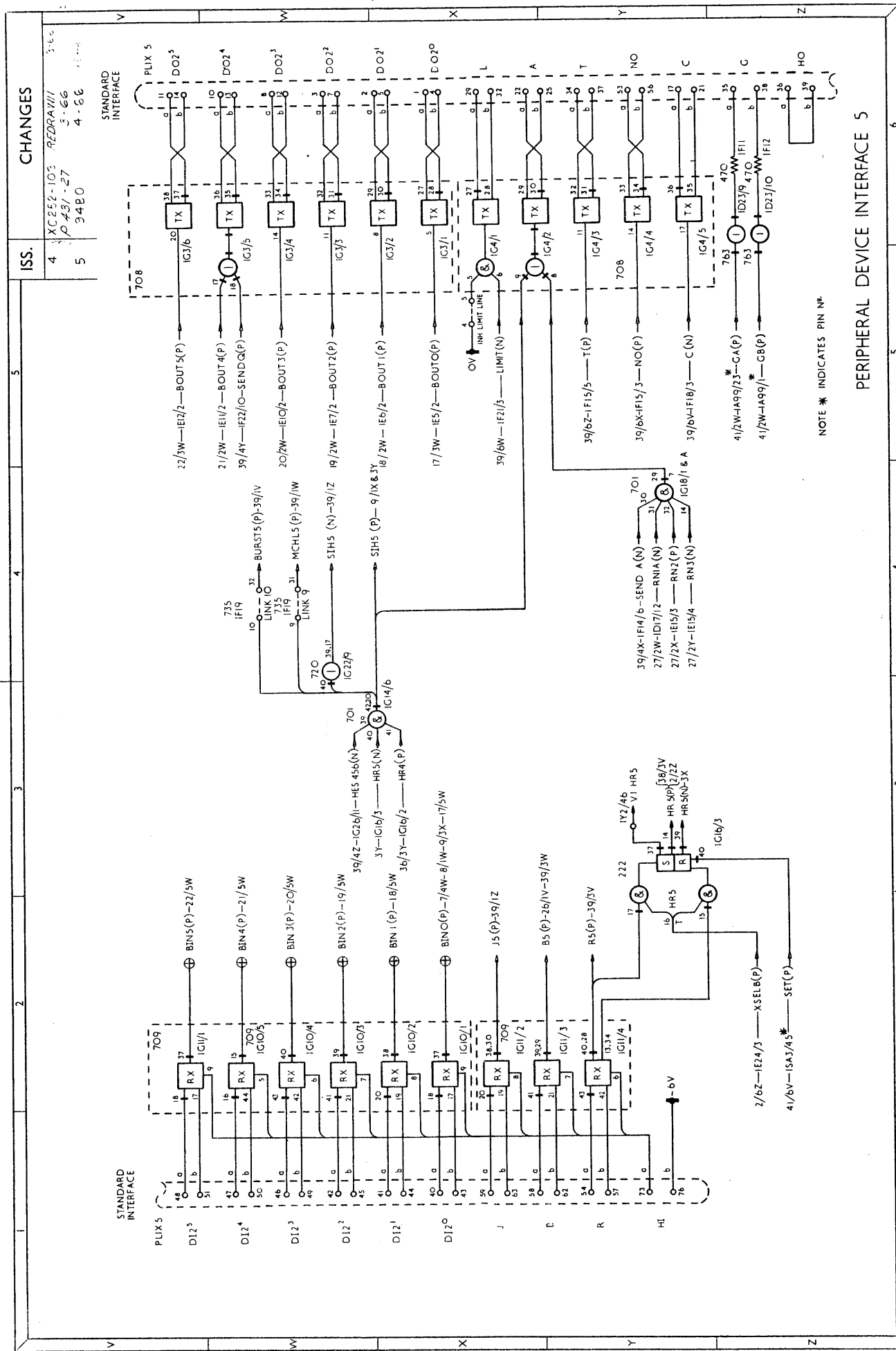


ISS.

4.	XC252-103 REDRAWN	3-66
5.	P #31-27	4-66
	9480	16-66

CHANGES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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PERIPHERAL DEVICE INTERFACE 5

ISS.

4	XC252-103 REDRAWN	3-66
5	P.437-27	3-66
		4-66
		3-68

CHANGES

4	XC252-103 REDRAWN	3-66
5	P.437-27	3-66
		4-66
		3-68

ISSUE

SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.																														

CAT. D

5013073 / 5

1901 COMPUTER LOGIC DIAGRAM



LOGIC DIAGRAM

DATE 1-66

NOTES

DRAWN BY L.SPENCER



1901  
COMPUTER  
LOGIC DIAGRAM

5013073  
DIAGRAM

5  
ISSUE

38  
SHEET

D  
CAT.

ISSUE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.

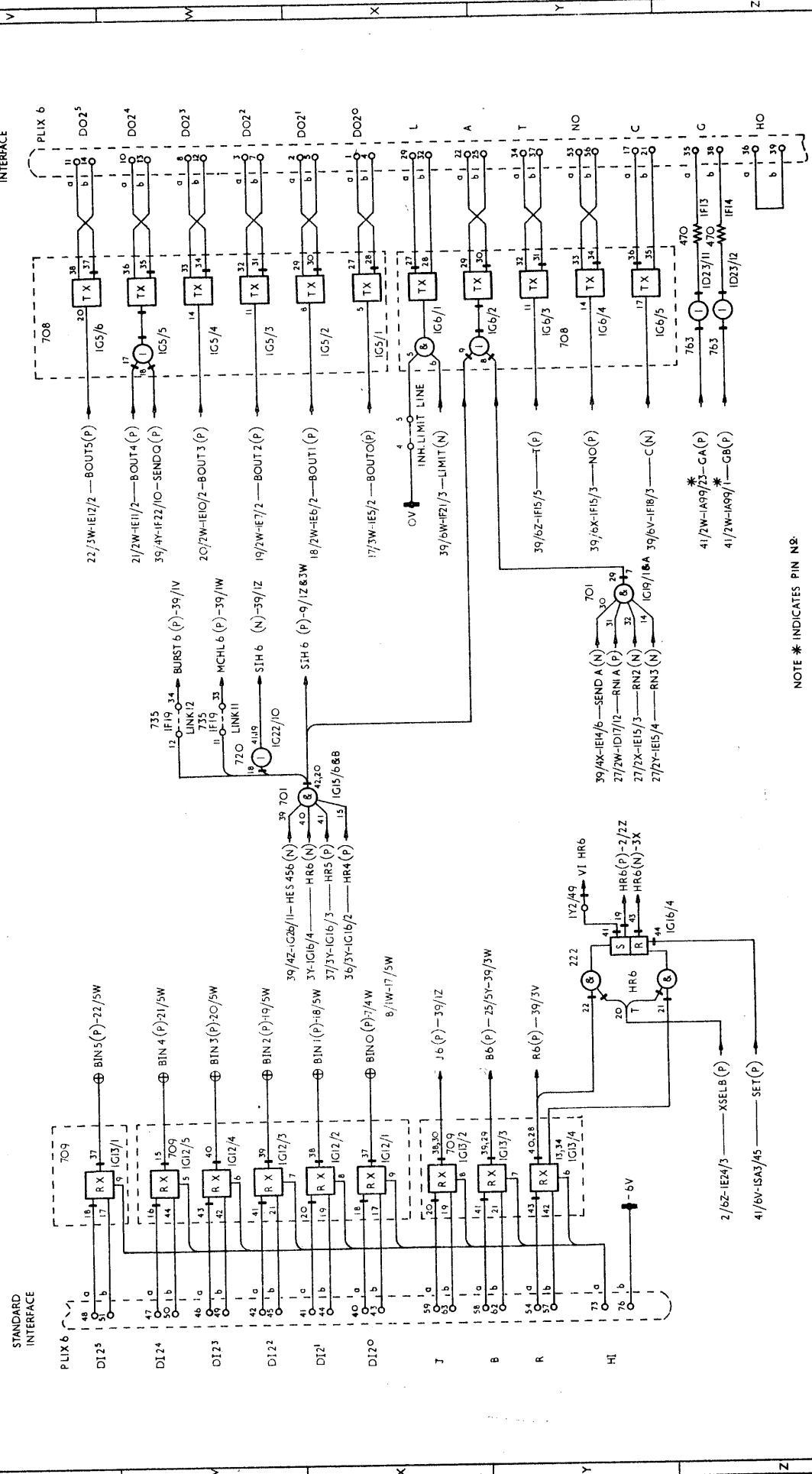
DRAWN BY A WILLIS

DATE 21-1-66

NOTES

CHEMIST

PERIPHERAL DEVICE INTERFACE 6



NOTE \* INDICATES PIN NO.

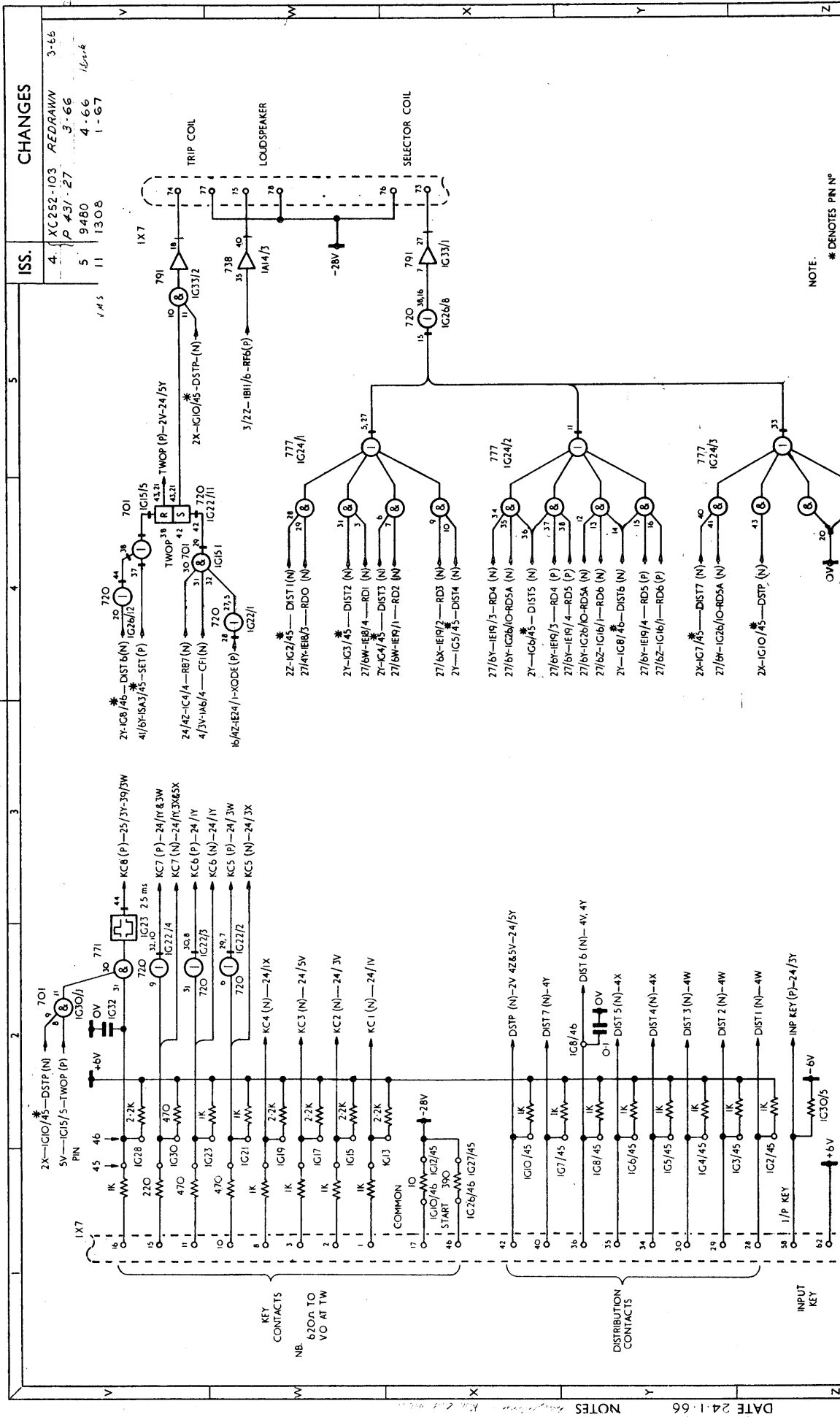
CHANGES

ISS.

4.	XC252-103 REDRAWN	3-66
5	P 43/27	4-66
	3480	4-66

STANDARD INTERFACE



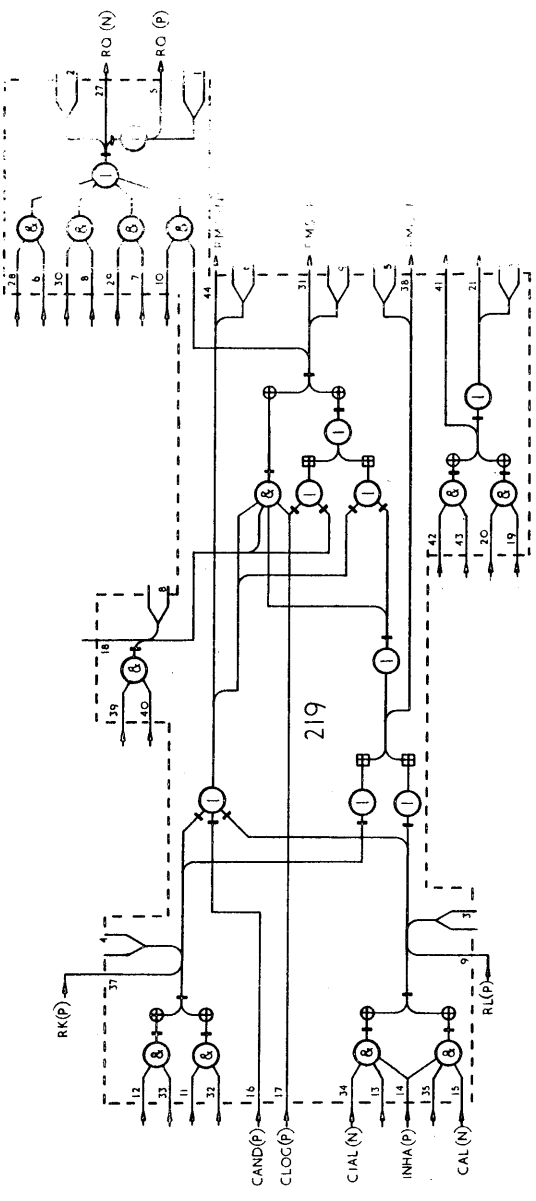




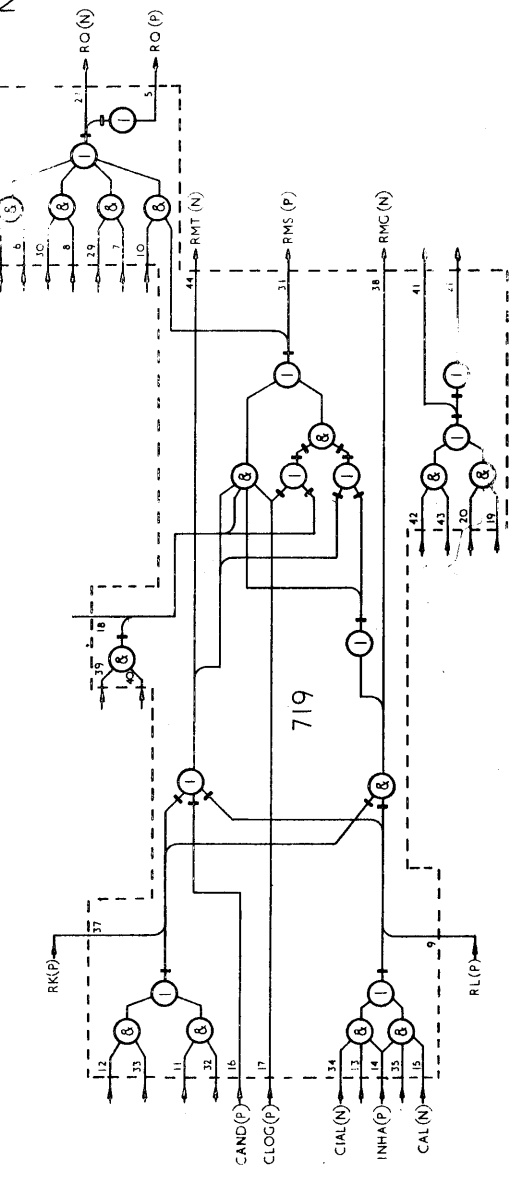


ISS.		CHANGES	
4	XC252-103 REDRAWN	3-66	
5	P 437-27	3-66	
	9450	4-66	1/6m <sup>2</sup>

219 MILL PACKAGE



719 MILL PACKAGE

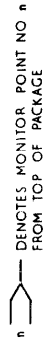


NOTES.

ABOVE IS THE INTERNAL LOGIC ARRANGEMENT OF THE 219 SILICON MILL SLICE CARD. IT IS EXTERNALLY BOTH FUNCTIONALLY AND ELECTRICALLY IDENTICAL WITH THE 719 GERMANIUM MILL SLICE CARD WHICH USES THE DOUBLE-DIODE LOGIC AS SYMBOLISED BELOW. NOTE THAT THE CARD IS ALSO USED AS A GENERAL GATING CARD. eg. ON SHEET 9, AND IS ALWAYS DRAWN IN 719 FORM.

MONITOR POINTS AS SHOWN ABOVE ARE PROVIDED ON 219 ONLY.

THE TWO CARDS ARE FULLY INTERCHANGEABLE



Denotes monitor point no n FROM TOP OF PACKAGE

MILL PACKAGE



1901  
COMPUTER  
LOGIC DIAGRAM

5013073/5

42 SHEET

CAT. D

ISSUE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.



1901  
COMPUTER

LOGIC DIAGRAM DIAGRAM

5013073/14

ISSUE SHEET 43

D CAT.

ISSUE SHEET

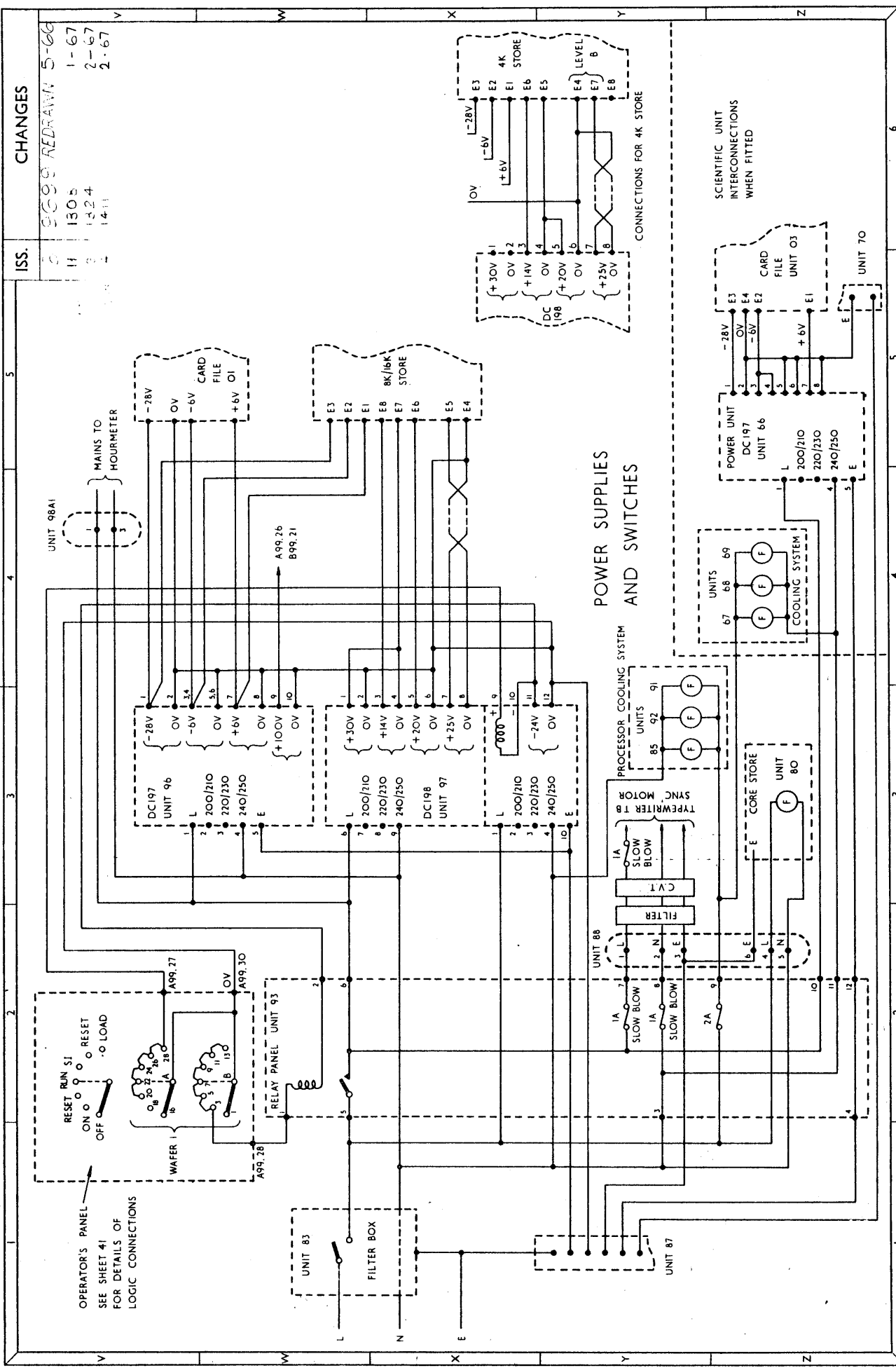
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ISSUE NUMBERS OF OTHER SHEETS AT THE TIME OF ISSUING THIS SHEET.																													

DRAWN BY J. GENTLE

DATE 4-5-66

NOTES

CHG'D BY M. S. 22



CHANGES

ISS.	1	2	3
DATE	1-67	2-67	2-67
BY	1305	1324	1411

REDRAWN 5-66

81326

CHANGES

ISS.	4	REDRAWN XC 252-103	3-66
		P 431-27	3-66
	5	9480	4-66
	6	9699	5-66
	7	162	7-66
		1308	1-67

COMMON STEPS (1-5)

STEP 1 ACCESS INSTRUCTION

CLEAR RF RX RB  
 READN if AUTO  
 HSR to RB if NOT AUTO @ C3 (SEE SHT 50)  
 CONTINUE CYCLE  
 SET RF, RX FROM RB @ C3  
 RB to RK @ C0  
 RD to RL if  $\overline{RF6} \cdot \overline{RF5} \cdot \overline{RF3} \cdot (OBJ + RMB)$   
 RB 12, 13 to RL 4, 5 if  $(G5-G7) @ C0$   
 ZEROAB345 @ C1  
 INH RB 12-14 if  $(G5-G7) @ C1$   
 TRIGGER RA  
 SET RESC if  $OBJ \cdot AUTO \cdot RESFAIL @ XSC2$   
 SET BP1  
 SET BP5 @ C0 (WITH XQAO)  
 CHES  
 STOP if  $ECPSI + (OCPSI \cdot OBJ)$   
 RD to RL if  $G13 \cdot FPFIT \cdot FIX ONLY$

STEP 2 ACCESS MODIFIER

RA to RJ  
 RD to RJ if OBJ  
 READ if  $RA22 + RA23$   
 CONTINUE CYCLE  
 SET RADC @ XSGP  
 RB to RK  
 RA to RL @ C0  
 ZEROAB345 @ C0+C1  
 INH RB 18, 19, 20 @ C0  
 TRIGGER RA  
 TRIGGER RN  
 ALLOW RB22, 23 to RADC if  $RA22 + RA23 @ XSC2$   
 RESET BP1  
 RESET RMB @ XSGP if F125  
 SET RMB if  $F125 \cdot RA0 @ C2$   
 CHES if F172E  
 CHES if  $CG12 \cdot RF0 \cdot CF1 \cdot CF7$   
 STEP 31 if  $\overline{RF6} \cdot \overline{RF5}$   
 STEP 32 if  $\overline{RF6} \cdot \overline{RF5} \cdot \overline{RF3} \cdot CHES \cdot GOTO44$   
 STEP 39 if  $(F110 + 112 + 124) \cdot CG12$   
 STEP 44 if  $ILL \cdot OBJ$   
 STEP 45 if  $ILL \cdot EXM$   
 STEP 46 if  $F170E + 171E$   
 STEP 48 if F173E

STEP 3 WRITE BACK RESULT

WRITE if not  $(\overline{RF6} \cdot \overline{RF5} \cdot \overline{RF3} \cdot \overline{RESC} \cdot \overline{BP3})$   
 FCTR1  
 CHES

STEP 4 ACCESS CONTROL NUMBER

8 to RJ  
 1 to RJ if  $\overline{F023}$   
 2 to RJ if  $(EXM \cdot 172E) + INTR + RESC + (ILL \cdot OBJ)$   
 READ  
 DESTRUCTIVE if BP2  
 16 to RL if  $INTR + RESC + (ILL \cdot OBJ) @ C3$   
 2 to RL if  $INTR \cdot (RESC + (ILL \cdot OBJ)) @ C3$   
 1 to RL if  $BP5 @ C3$   
 INPUT CARRY if  $INTR \cdot RESC$   
 RA to RL if  $BP2 + F172E @ C0$   
 RB to RK if  $BP2 @ C0$   
 INPUT CARRY if  $BP2 \cdot F172E$  }  $\frac{INTR \cdot RESC}{ILL \cdot OBJ}$   
 ZEROAB345 @ C1  
 RMB to RL3 @ C1  
 RC to RL4 @ C0  
 RV to RL5 @ C0  
 TRIGGER RB  
 ALLOW RB22 to RC if  $F172E \cdot RX0$   
 RESET RC if  $(CG12 \cdot \overline{RF1}) + RF5 + F110 + F112 @ C3$   
 SET RV if  $F172E \cdot RB23 @ XSC2$   
 RESET RMB if  $INTR + RESC + (ILL \cdot OBJ)$   
 RESET RMB if F172E @ XSGP  
 SET RMB if  $F172E \cdot RB15 @ C2$   
 STEP. 5

STEP 5 WRITE CONTROL NUMBER

WRITE  
 RESET INTR if EXM  
 SET INTR if PI @ C2  
 SET EXM @ C3 if  $INTR + RESC + (ILL \cdot OBJ)$   
 RESET EXM @ C3 if F172E  
 RESET RESC  
 RB to RK  
 RD to RL if  $OBJ \cdot \overline{F023}$   
 TRIGGER RN, RA  
 FCTR1  
 RESET BP2  
 CHES if  $INTR \cdot HESR$   
 STEP W1 if WHOOSH  
 STEP MF if ALTER+DISPLAY  
 STEP 4 if  $INTR \cdot HESR$   
 STEP 1 if not  $(INTR + WHOOSH + ALTER + DISP)$

+ REPRESENTS LOGICAL OR  
 • REPRESENTS LOGICAL AND.

ISSUE SHEET 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
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44 SHEET

ISSUE

5013073 / 16 DIAGRAM

1901 COMPUTER LOGIC DIAGRAM



DRAWN BY D FRANKLIN DATE 25-2-66 NOTES: CHS FLICK Y. G. 25/2/66

CHANGES

ISS.

4 XC 252-103 3-66  
 P431-27 3-66  
 6 9699 5-66  
 7 162 7-66  
 10 873 11-66

# HESITATIONS

STEP 21 START HESITATION

INHIBIT STORE CYCLE WITH RJ14 if MCHNL  
 ADJCW, COUNT, COUNTCH (SEE SHT. 51 )  
 SET OUTPUT BINARY

FCTR3 if MCHNL  
 STEP 22 if MCHNL  
 STEP 23 if MCHNL

STEP 22 READ CONTROL WORD

ADJCW, COUNT, COUNTCH (SEE SHT. 51 )  
 STEP 23

STEP 23 WRITE CONTROL WORD

PERADD to RJ (done by ADJCW)  
 WRITE  
 RB to RK  
 RA to RL } if BURST+CH3  
 RIA to RL }  
 TRIGGER RN  
 STATICISE J LINE  
 SET BP5  
 FCTR1  
 STEP 24 if BP4•WHOOSH  
 STEP 26 if GOTO24

STEP 24 READ 2nd CONTROL WORD

PERADD to RJ  
 1 to RJ  
 READ  
 CONTINUE CYCLE if SEMITERM  
 RB to RK  
 RA to RL  
 RIA to RL  
 TRIGGER RB } if SEMITERM  
 TRIGGER BP4 }  
 FCTR 2  
 STEP 25

STEP 25 WRITE

PERADD to RJ  
 READ DESTRUCTIVE if SEMITERM  
 WRITE if SEMITERM  
 CONTINUE CYCLE  
 FCTR3  
 STEP 26 if SEMITERM  
 CHES if SEMI TERM

STEP 26 READ TRANSFER WORD

CNJ  
 READN if BURST + (CHO. C3)  
 CONTINUE CYCLE if OUTPUT  
 DESTRUCTIVE if BURST INPUT  
 RBj to RK  
 INHIBIT CBK  
 BIN to RQ if INPUT  
 INHIBIT MILL to RQ if INPUT  
 TRIGGER RADC @ STEPEND  
 ISSUE LIMIT if TEND•BP4  
 if BURST INPUT•CHO  
 SEND T @ C1 otherwise @ C2  
 TRIGGER RBj @ C2 otherwise @ C3 if INPUT  
 FCTR1 otherwise FCTR2  
 STEP 26 if TEND  
 STEP 3 if TEND•INPUT  
 CHES if TEND•OUTPUT  
 RESET SEMITERM

N. B. RB14 IS HELD ON BY SEMITERM

Notes: 1) TEND is CH3+BURST (Transfer end)  
 No is BP3•not(STEP 26+49+50+HSTIP)

2)+ REPRESENTS LOGICAL OR  
 • REPRESENTS LOGICAL AND

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45 SHEET

10 ISSUE

5013073 / 10 DIAGRAM

1901 COMPUTER LOGIC DIAGRAM



DRAWN BY D. BACHMAN DATE 25-2-66 CHECKER C. H. PLICK NOTES: A track 25/26

DS

CHANGES

ISS.	4	XC 252 - 103	3-66
		P 431-27	3-66
	5	9480 KB.	4-66
	6	9699	5-66
	8	399	9-66

STEPS 31 TO 34

STEP 31 G0-G3

READX if RF3  
 READN if RF3  
 CONTINUE CYCLE  
 RB to RK if F024  
 RBj to RK if F024 @ C3  
 INHB345 if F025 @ C3  
 INHB012 if F025 @ C0+C1  
 TRIGGER RA if F023  
 SET RESC if (OBJ+RMB)•RESFAIL @ XSC2  
 SET BP2 if F023  
 CHES if F023  
 STEP32 if F023

STEP 33 F124

CLEAR RA 10, 11  
 1 to RL  
 8 to RL  
 TRIGGER RA  
 FCTR3  
 STEP41

STEP 34 G5 or G6

READX  
 CONTINUE CYCLE if RF3  
 ALLOW TR to BP2 if RF1+RF3  
 RB to RK  
 INHIBIT RMS to TR if RF3•RF2  
 RB23 to TR if RF3•RF2  
 INVERT TR if RF3•RF1  
 TRIGGER BP2  
 TRIGGER RB  
 1 to RL if RF3•RF2 @ C3  
 INPUT CARRY if RF3•RF1  
 COUNT if RF3  
 COUNTCH if RF3•RF2  
 RESET BP1  
 CHES if RF3  
 STEP 3 if RF3

STEP 32 G0-G3, G10, G12

READX if RF3  
 READN if RF3•RESC  
 CLEAR RB  
 DESTRUCTIVE if F033  
 RB to RK if RF4•RF0  
 RB to RK if RF4•RF2  
 RB to RK if RF4•RF2•RF1•F036  
 RB to RK if F035  
 INHB012 if (F035+F037) @ C0  
 INHB345 if (F035 @ C3)+(F037 @ C2+C3)  
 RA to RL if RF4•RF1  
 RA to RL if RF4•CF0, to RK if RF4•CF1  
 RA to RL if RF4•RF2•(RF3+RF1)  
 RIA to RL if RF1 not (RA to RL)  
 INHL012 if F037 @ C0  
 INHL345 if (F035 @ C3)+(F037 @ C0+C1)  
 INPUT CARRY if RF4•((RF1•RC)+(RF1•RC))  
 INPUT CARRY if RF4•RF3•(CF6+(CF7•RC))  
 CLOG if RF4•RF2•RF0  
 CAND if RF4•CF0  
 ZEROQ5 if RF4•RF2 @ C0  
 TRIGGER RB if not functions (033, 034, 026, 027, 126, 127)  
 TRIGGER RBj if F034  
 TRIGGER RC  
 ALLOW ARITH OV to RV  
 TRIGGER RV if RF4•RF2•RV @ C0  
 ALLOW RMS5 to RC if RF4•RF2•RF1  
 ALLOW CYB6 to RC if RF4•RF2•RF1  
 ALLOW CYB6 to RC if F027+F127  
 ALLOW TR to RC if F026+F126  
 ALLOW RC to RC if F026+F126  
 FCTR2 if F035+F036  
 FCTR3 if F033+F034  
 STEP3 if F124  
 STEP33 if F124

+ REPRESENTS LOGICAL OR  
 • REPRESENTS LOGICAL AND.

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8 ISSUE

5013073 / 8 DIAGRAM

1901 COMPUTER LOGIC DIAGRAM



ISS. CHANGES

4	XC 252-103	3-66
	P 431-27	3-66
5	9480 RB	4-66
6	9699	5-66

STEPS 35 TO 41

STEP 35 F070

1 to RJ  
8 to RJ  
2 to RJ if EXM  
READ  
CONTINUE CYCLE  
SET BP2  
STEP 36

STEP 36 F070

READX, DESTRUCTIVE  
RB to RK  
INPUT CARRY  
INH CARRY to SLICE3 @ C1  
TRIGGER RB  
TRIGGER RV (TO CLEAR)  
RESET BP1  
STEP 3

STEP 37 F072

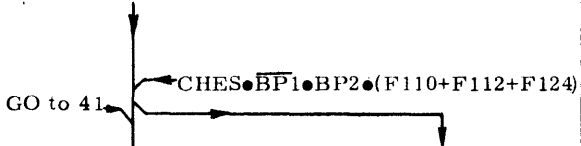
READX, CONTINUE CYCLE;  
RESET RMB @ XSGP  
RA to RL  
RB to RK  
INH CARRY to SLICE3 @ C1  
SET RMB if RB15 @ C2  
SET RV if RB23 @ XSC2  
TRIGGER RA  
SET BP2  
RESET BP1  
CHES

STEP 38 F074

RESET BP1  
TRIGGER BP2  
ALLOW TR to BP2 (Jump condition)  
1 to RV if  $RX2 \bullet RX1 \bullet RV$   
TRIGGER RV if  $RX = 2, 4 \text{ or } 7$   
FCTR3  
CHES

STEP 39 F110, 112

TRIGGER RC to CLEAR  
RA to RL  
ALLOW TR to BP2  
TRIGGER BP2  
RESET BP1  
FCTR3  
CHES if  $TR=0$   
STEP40 and STEP41 together if  $TR=1$



STEP 41 STEP 40

RA to RK  
RA to RL  
RIA to RL  
TRIGGER RA  
ALLOW TR to BP2  
TRIGGER BP2  
CLEAR RADC  
FCTR3  
STEP 42

READX

+ REPRESENTS LOGICAL OR  
• REPRESENTS LOGICAL AND.

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6 ISSUE

5013073 / 6 DIAGRAM

1501 COMPUTER LOGIC DIAGRAM



DS.

CHANGES

ISS.	4	XC 252-103	3-66
		P 431-27	3-66
	5	9480	4-66
	6	9699	5-66
	7	162	7-66
	8	399	9-66
	M.11	1308	1-67

STEPS 42 TO 47

STEP 42 F110, 112, 124

COUNT RADC  
 TRIGGER RC  
 INHIBIT RMS to RQ  
 CSHL if CF0 (see below)  
 CSHR if CF0 (see below)  
 STEP 41 if BP2•HESR  
 STEP 3 if BP2•HESR  
 STEP 3 if BP2•CF2  
 STEP 43 if BP2•CF2

CSHR is: -  
 RQ RIGHT  
 RBj to RK  
 TRIGGER RBj  
 ALLOW BOUT0 to RC  
 RB0 to RQ5 if RA1•RA10 @ C3  
 0 to RQ5 if RA1•RA10 @ C3  
 RB23 to RQ5 if RA11•RA10 @ C3  
 RB23 to RQ5 if RA11•RV @ C3  
 RB23 to RQ5 if RA11•RA10•RV @ C3  
 RC to RQ5 if CF2 @ C3  
 RC to RQ5 if RADCO  
 ZERO RQ2 if CF4 @ C1  
 TRIGGER RV if RA11•RA10

CSHL does: -  
 RQ LEFT  
 RB to RK  
 TRIGGER RB  
 ALLOW BOUT5 to RC  
 RB23 to RQ0 if RA1•RA10 @ C3  
 0 to RQ0 if (RA11+RA10) @ C3  
 RC to RQ0 @ C3  
 SHIFT OV to RV  
 TRIGGER RV if RA11•RV @ C0

STEP 43 ROUND NUMERIC RIGHT SHIFT

RB to RK  
 INPUT CARRY if RA11•RC  
 TRIGGER RB  
 STEP 3

STEP 44 ILLEGAL IN OBJ, HS TRANSFER  
END

2 to RJ  
 READ, DESTRUCTIVE  
 RA to RL @ C0  
 RADC to RL4, 5 @ C0  
 TRIGGER RB  
 RESET RV, RC, RMB  
 SET RESC if CG4•RESFAIL  
 STEP 3

STEP 45 ILLEGAL IN EXECUTIVE MODE

READN if RF6, CONTINUE CYCLE  
 RA to RL  
 TRIGGER RB if RF6  
 RESET BP1  
 STOP @ C0  
 OPERATOR LIGHT if RF5•RF4•RF3•CF3  
 CHES

STEP 46 F170, 171

READX  
 DESTRUCTIVE if RN5•RN1  
 CLEAR RB  
 SET RADC @ XSGP  
 CONFACE if RN5 (see below)  
 ISSUE No if RN11  
 ISSUE T if CF1 @ C1  
 RB to RK if RN5  
 TRIGGER RA0-5 @ C2  
 TRIGGER RD if RN5•RN1•CF1 @ C3  
 HSR to RB if RN5•RN1•RN0 and clear HSPI (SEE SHT 49)  
 PID to RB if RN5•RN1•RN0  
 STEP 47

CONFACE does: -  
 ISSUE A  
 RBj to RK  
 INHIBIT RB to RK  
 BIN to RQ  
 INHIBIT RMS to RQ  
 'NOTE: 7th bit of RD goes direct not via RQ'

STEP 47

RA to RL @ C3  
 TRIGGER RB if RN5  
 STEP 3  
 FCTR3

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 • REPRESENTS LOGICAL AND.

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5013073 / 11 48  
 DIAGRAM

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5013073 S4 19

ISS.	CHANGES
4	XC 252-103 9-66 P 431-27 3-66
5	9480 4-66
6	9000 6-66
7	102 7-66
10	873 11-66
12	1279 2-67
17	2694 11-67

### STEPS 48 TO 51 (FN. 173)

#### STEP 48

READN, CONTINUE CYCLE  
 RB to RK  
 TRIGGER RA  
 STEP 49  
 SET BP3  
 SENDA to set HRO or HR, binary  
 STEP 49

CLEAR RN12, 13 @ XSGP  
 RA to RL  
 TRIGGER RN @ C2+C3  
 RA12, 13 to RN12, 13  
 INHIBIT HES @ C3 (DUCK A)  
 SEND STATUS Q  
 ISSUE C  
 INHIBIT R-LINES 3 to 6  
 SET OUTPUT BINARY  
 SET RADC @ XSGP  
 FCTR2 if HESR  
 FCTR1  
 STEP 50 if HESR  
 STEP 49 if HESR•BIN0  
 STEP 44 if HESR•BIN0

#### STEP 50

READN  
 CONTINUE CYCLE if OUTPUT  
 DESTRUCTIVE if INPUT  
 FAST TRANSFER (INHIBITS NORMAL XCOUNT)  
 FORCE BP2 DATA and TRIGGER BP2  
 FASTC @ BFASTC  
 FASTD @ BFASTC } see below  
 STATICISE J LINE @ XTIM @ C3  
 STEP 51

#### STEP 51

WRITE if INPUT  
 RD to RL  
 2 to RK  
 INHIBIT RMS to RQ  
 RQ RIGHT (NOTE: MAY CLEAR RV)  
 TRIGGER RD if BP4  
 FORCE ZERO to BP2 and TRIGGER BP2 (see HSTIP below).  
 FCTR3  
 STEP 49

HSTIP is:-  
 F173•EXM•ENHANCEMENT FITTED•BP2  
 and does:-  
 ISSUE T @ BFASTC  
 RBj to RK  
 INHIBIT RB to RK  
 ISSUE LIMIT if CH3•BP4•RD=03 or 31

FASTC does:-  
 RA to RK  
 COUNT  
 INPUT CARRY  
 TRIGGER RA  
 COUNT RADC

FASTD does:-  
 BIN to RQ  
 INHIBIT RMS to RQ  
 TRIGGER RBj if INPUT  
 ALLOW TCY TO TCY  
 ALLOW XCOUNT

+ REPRESENTS LOGICAL OR  
 • REPRESENTS LOGICAL AND.

1901 COMPUTER LOGIC DIAGRAM

5013073 / 17 49 D

DIAGRAM SHEET CAT.

ISSUE SHEET

ISSUE SHEETS AT THE TIME OF ISSUING THIS SHEET.

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DRAWN BY DENCKHAM DATE 25-2-66 NOTES: CHR ALICK K. Grook 20/2/66

ISS.	4	XC 252 - 103	3-66
		P 431-27	3-66
	5	9480	4-66
	6	9699	5-66

CHANGES

ALTER OR DISPLAY

STEP MF:

CLEAR RB  
 HSR to RB (see note in 1V)  
 RB to RK if BP5  
 A to RL if BP5 All gated with ALTER or DISPLAY  
 INPUT CARRY if BP5  
 RA and RIA to RL if ALTER•BP5  
 TRIGGER RA, RN  
 FCTR1  
 STEP M

MANUAL FUNCTIONS.  
 STEP ROUTING.

WHOOSH (Rotary Switch LOAD)

WHOOSH uses Step WF to give interface commands, idles in steps W1 and W2 and uses normal hesitation control.

STEP W1

CLEAR RB  
 HSR to RB (see note in 1V)  
 CLEAR RADC @ XSGP  
 RBj to RK @ C3  
 TRIGGER RN  
 TRIGGER RA0-5 @ C3  
 COUNT RADC @ C0  
 STEP W2

STEP W2

SEND STATUS Q  
 ISSUE A @ C3  
 ISSUE T @ C1  
 BIN to RQ  
 INHIBIT RMS to RQ  
 STOP if RQ5•C1•BP5 (P status set)  
 STOP if RQ4•BP4•BP5 (Terminated not limiting)  
 CHES if RQ4

STEP WF (WHOOSH•STEPW1•STEPW2)

RBj to RK  
 ISSUE A  
 ISSUE No if CH1  
 ISSUE T @ C1  
 COUNT RADC @ C0  
 CHES if RADC=3

NOTE: CHSB causes C3 to last for 2 periods.  
 During first period XQA and XCOUNT are inhibited, CHSB and XCB are energised.  
 During second period CHSB and XCB are inhibited, XCOUNT is energised and XQA is allowed if required.

STEP M

READN  
 DESTRUCTIVE if ALTER•BP5  
 CONTINUE CYCLE  
 TRIGGER RC (SETS BP5)  
 FCTR3  
 STOP  
 STEP MF (implied) on restart

STEP ROUTING

GROUP 0-3 not 023	1, 2, 31, 32, 3, 4, 5
F 023	1, 2, 31, 4, 5
GROUP 5	1, 34, 4, 5
GROUP 6	1, 34, 3, 4, 5
F 070	1, 35, 36, 3, 4, 5
F 072	1, 37, 4, 5
F 074	1, 38, 4, 5
GROUP 10	1, 2, 32, 3, 4, 5
F 110	1, 2, 39, 40 & 41 → 42, 3, 4, 5
F 112	1, 2, 39, 40 & 41 → 42, 43, 3, 4, 5
F 120-122	1, 2, 32, 3, 4, 5
F 123	1, 2, 4, 5
F 124	1, 2, 32, 33, 41 → 42, 3, 4, 5
F 125	1, 2, 4, 5
F 126/7 EXM	1, 2, 32, 3, 4, 5
F 170/1 EXM	1, 2, 46, 47, 3, 4, 5
F 172 EXM	1, 2, 4, 5
F 173 EXM	1, 2, 48, 49, 50, 51, (49) → 43, 3, 4, 5
ILL OBJ	1, 2, 44, 3, 4, 5
ILL EXM	1, 2, 45, 4, 5

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 • REPRESENTS LOGICAL AND.

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50 SHEET

ISSUE

5013073/16

1901 COMPUTER LOGIC DIAGRAM



DRAWN BY D RICKHAM DATE 25-2-66 NOTES CHK ALICE K. T. 20/2/66

DS

CHANGES

ISS.

XC 252-103	3-66
P 431-27	3-66
9480	4-66
9699	5-66
162	7-66

SUBFUNCTIONS

READN does: -

RN to RJ  
READ

READX does: -

RX to RJ  
RD to RJ if OBJ  
READ

ZEROAB345 does: -

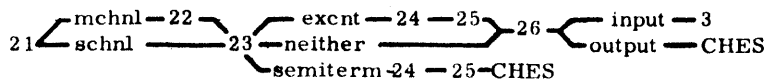
INHIBIT B345  
INHIBIT RL3  
INHIBIT RL45  
INH CARRY to SLICE3

ADJCW does: -

PERADD to RJ  
 READ, CLEAR RB  
 DESTRUCTIVE if BP5  
 SET RADC @ XSGP  
 RB to RK  
 INPUT CARRY if BURST  
 TRIGGER RB  
 RB22, 23 to RADC @ XSC2  
 CLEAR RADC if BURST @ C0  
 STEP 23 @ C0  
 CLEAR SEMITERM @ XSGP  
 ALLOW RB14 TO SEMITERM @ XSC2  
 CHES does: -

STEP 21 if HESR (see note below)  
 STEP W1 if WHOOSH•HESR  
 STEP 34 if  $\overline{\text{HESR}} \cdot \text{BP1} \cdot (\text{G5-G7}) \cdot \text{CG7} \cdot (\text{ILL in OBJ}) \cdot$   
 (ILL in EXM)  
 STEP 35 if  $\overline{\text{HESR}} \cdot \text{BP1} \cdot \text{CG7} \cdot \text{RF2} \cdot \text{RF1}$   
 STEP 37 if  $\overline{\text{HESR}} \cdot \text{BP1} \cdot \text{CG7} \cdot \text{RF2} \cdot \text{RF1}$   
 STEP 38 if  $\overline{\text{HESR}} \cdot \text{BP1} \cdot \text{CG7} \cdot \text{RF2} \cdot \text{RF1}$   
 STEP 2 if  $\overline{\text{HESR}} \cdot \text{BP1} \cdot \text{not}(\text{GOTO } 34+35+37+38)$   
 STEPS 40, 41 if  $\overline{\text{HESR}} \cdot \text{BP1} \cdot \text{BP2} \cdot (\text{F110}+\text{F112}+\text{F124})$   
 STEP 4 if  $\overline{\text{HESR}} \cdot \text{WHOOSH} \cdot \text{BP1} \cdot \text{STEP } 40$  (see F124)

Note: HESITATION is entered by  
 CHES•HESR at STEP 21  
 and proceeds as follows: -



COUNT does: -

RA and RIA to RL @ C0+C1  
 INHIBIT RL012 @ C1  
 INH CARRY to SLICE 3 @ C1  
 INHIBIT RMS012 to TR @ C0  
 INHIBIT RMS3 to TR @ C2+C3+(WHOOSH•CO)  
 INHIBIT RMS45 to TR @ C2+C3+  
 TRIGGER BP4  
 CLEAR BP4 if WHOOSH•HANDSWITCH5 ON

COUNTCH does: -

INPUT CARRY if RB22•RB23  
 INHIBIT RL45 @ C0  
 INJECT CARRY to SLICE4 @ C0  
 INHIBIT RMS45 to TR @ C0

+ REPRESENTS LOGICAL OR  
 • REPRESENTS LOGICAL AND.

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DIAGRAM																													
1901 COMPUTER LOGIC DIAGRAM																													
I.C.T.																													

# 1901 COMPUTER INDEX

CHANGES

ISS. 7 162 7-66  
 10 873 11-66  
 Jr. 10 873 11-66

SHT NO	LOGIC GROUP	SHT NO	LOGIC GROUP
1	BLOCK SCHEMATIC	26	REGISTER RB PART C
2	TIMING GENERATOR	27	REGISTER RN
3	REGISTERS RF AND RX	28	CONTROLS TO MILL
4	FUNCTION OCTAL DECODERS	29	REGISTERS RC, RV AND RMB
5	SEQUENCE REGISTER PART A (STEPS 1-23)	30	SUBSTEP CONTROL
6	SEQUENCE REGISTER PART B (STEPS 24-33)	31	SUBFUNCTIONS AND FUNCTION DECODERS (FD1-12)
7	SEQUENCE REGISTER PART C (STEPS 34-47)	32	CONTROL SEQUENCE REGISTER (BPs) AND TEST RESULT (TR)
8	SEQUENCE REGISTER PART D (STEPS 48-51 M.W.)	33	PERIPHERAL DEVICE INTERFACE 1
9	ADDRESS HIGHWAY RJ	34	PERIPHERAL DEVICE INTERFACE 2
10	CONTROLS RJ, RB AND HSP1	35	PERIPHERAL DEVICE INTERFACE 3
11	CONTROLS TO STORE	36	PERIPHERAL DEVICE INTERFACE 4
12	RESERVATION CHECK	37	PERIPHERAL DEVICE INTERFACE 5
13	STORE PARITY	38	PERIPHERAL DEVICE INTERFACE 6
14	CONTROLS TO HIGHWAY RK	39	PERIPHERAL COMMON CONTROL
15	CONTROLS TO HIGHWAY RL	40	TYPEWRITER CONTROL
16	REGISTER TRIGGER PULSES	41	OPERATION CONTROLS
17	MILL SECTION 0	42	219 AND 719 MILL PACKAGE
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19	MILL SECTION 2	44	COMMON STEPS (1-5)
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DRAWN BY J. WELLS DATE 1-3-66 NOTES CRD 11111111 X Grade 13-66



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ADJCW	31	CPERJ	10	KC's	40	NAME		NAME		10873	gbrnt 11-66
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BIN's	33/38	DISTRUCTIVE	11	DIST's	40	MQB	16	XSGP	2		
BOUT's	17/22	DIST's	40	ECPI's	41	MREAD	11	XT	2		
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BTR	39	ENHFIT	11	ENHFIT	11	MREX's	32	XSEFL	2		
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C1J	10	FASFD	31	FASFD	31	OUTPUT	39				
C2J	10	FD's	31	FD's	31	PF	2				
C8J	10	FP's	5/8	FP's	5/8	PI	39				
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CAND	26	GOTO's	2	GOTO's	2	RADC's	30				
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CBCH	14	HALTED	2	HALTED	2	RC	29				
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CEP's	13	HOURLY	41	HOURLY	41	READX	11				
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