



C661-416L-CD

AIR TRAINING COMMAND

COMPUTER SYSTEM DEPARTMENT

AN/FSQ-7 INPUT/OUTPUT SYSTEM SCHEMATICS

CIRCUIT DIAGRAMS

Course Nr. ABR30533-1

KEESLER AFB, MISS

FOR ATC INSTRUCTIONAL PURPOSES ONLY

UNCLASSIFIED

Computer Systems Department
KTTC, Mississippi

Circuits and Diagrams
Course ABR30533-1
9 August 1966

SCHEMATICS

FOR

**INPUT/OUTPUT
SYSTEMS**

AN/FSQ-7
COMBAT DIRECTION CENTRAL

TRAINING MANUAL

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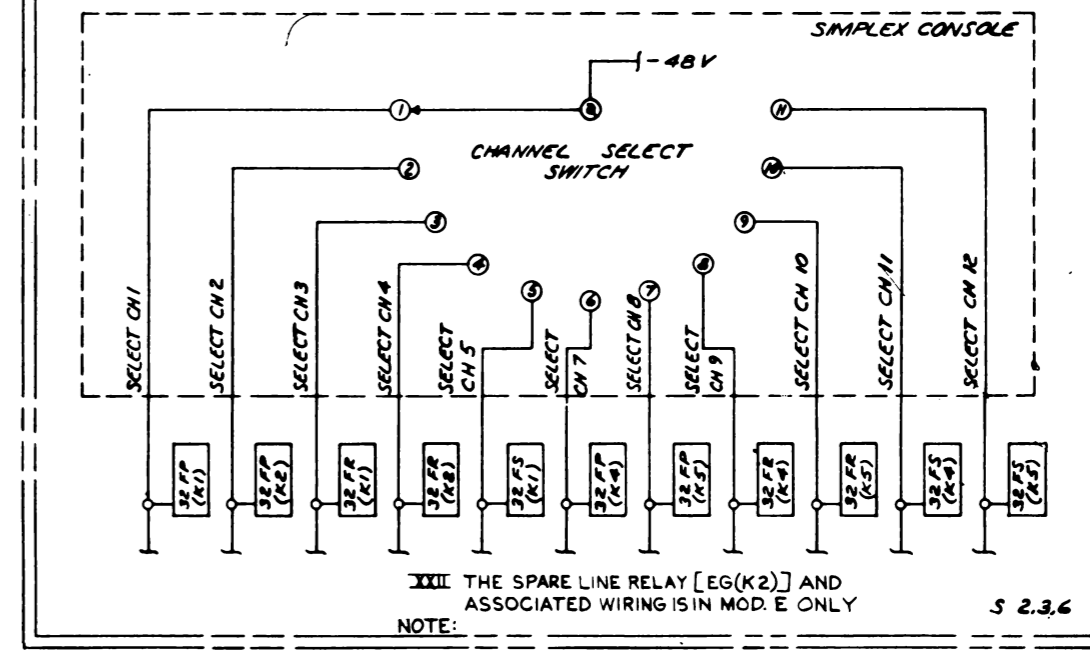
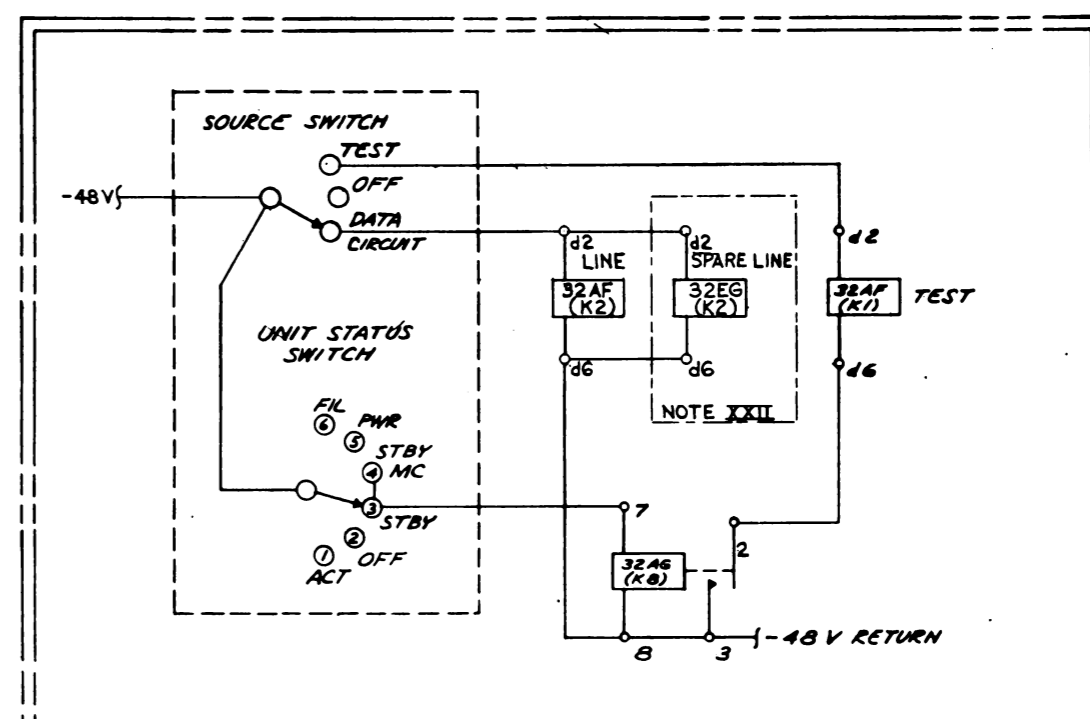
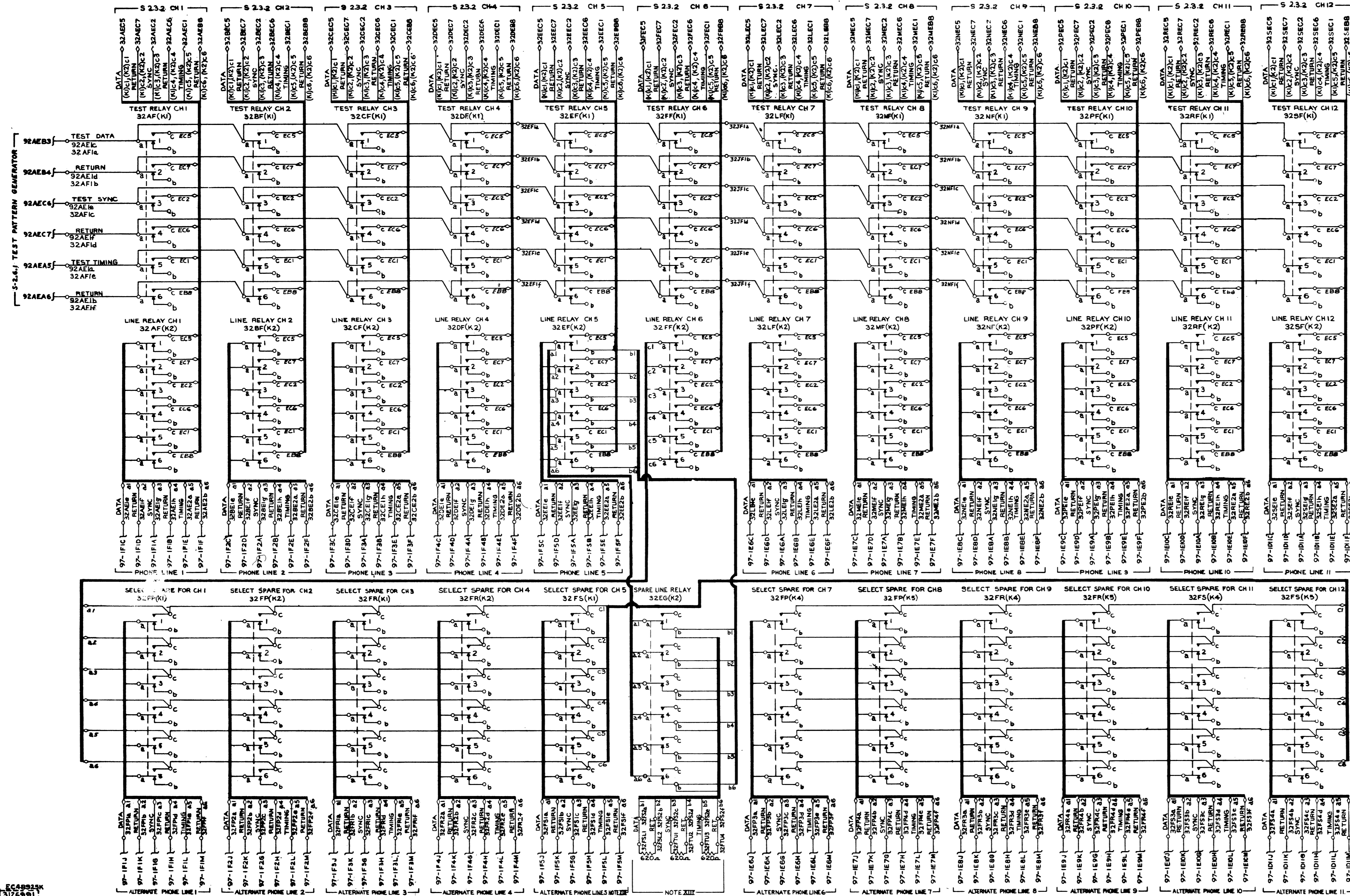
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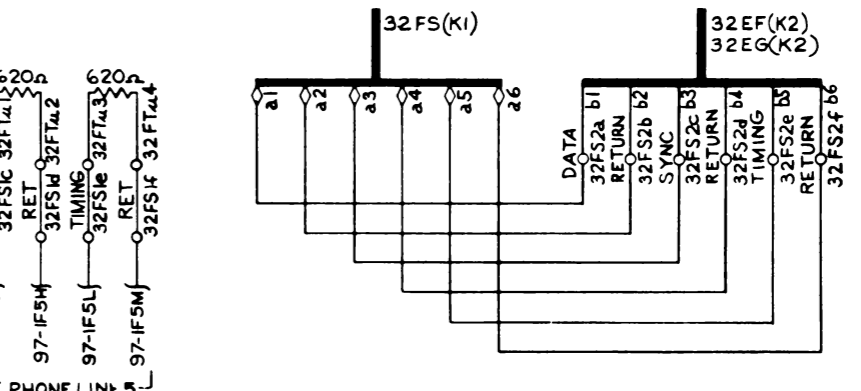
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L I S T O F C O N T E N T S

LOGIC	DESCRIPTION
S2.3.1	CROSSTELL INPUT SWITCHING
S2.3.2	CROSSTELL CHANNEL
S2.3.3	CROSSTELL WRITE SW. & SPARE CHAN. PHONE LINE INDICATION SW.
S2.3.4	CROSSTELL CORE READOUT LINES
A2.3.5	CROSSTELL COMMON A
B2.3.5	CROSSTELL COMMON B
S2.3.6	CROSSTELL RELAY COILS & MISC. NEON INDICATION
S2.4.1	LRI INPUT DATA SWITCHING CH. 1-18
S2.4.1-2	LRI INPUT DATA SWITCHING CH. 19-36
S2.4.2	LRI CHANNEL
S2.4.3	SWITCHING FOR WRITE LEVEL & PHONE LINE INDICATION LRI
S2.4.4	LRI CORE READOUT LINES
S2.4.5	DRUM DEMAND LRI
A2.4.6	LRI COMMON A
B2.4.6	LRI COMMON B
S2.4.7	LRI RELAY COILS & MISC. NEON INDICATION
2.5.1	STORAGE REGISTERS & ANALOG SECTION
2.5.1-1	LRI MONITOR
2.5.1-2	BLOCK SCHEMATIC LRI MONITOR
2.5.2	WORD RECOGNITION AND INTENSIFICATION TIMING
S2.5.3	BLOCK SCHEMATIC UNIT 620
S2.5.4	BLOCK SCHEMATIC UNIT 621
S2.5.4-1	BLOCK SCHEMATIC UNIT 621
S2.5.4-2	BLOCK SCHEMATIC UNIT 621
S2.6.1	X-TELL TEST PATTERN
S2.6.3	LRI TEST PATTERN
3.1.1	OUTPUT CONTROL LEFT OB BO MOD
3.1.1-2	OUTPUT CONTROL RIGHT OB BO MOD
3.1.1-3	OUTPUT CONTROL INFORMATION BO MOD
3.1.2	OUTPUT BURST COUNTERS
3.1.3	OUTPUT PULSE TIMING & DISTRIBUTION
3.1.4	OUTPUT TEST
3.2.2	G/G STORAGE & CONVERSION
3.2.3	TTY OUTPUT STORAGE & CONVERSION
3.2.5	G/A, TD STORAGE & CONVERSION



NOTE: THE SPARE LINE RELAY [EG(K2)] AND ASSOCIATED WIRING IS IN MOD. E ONLY

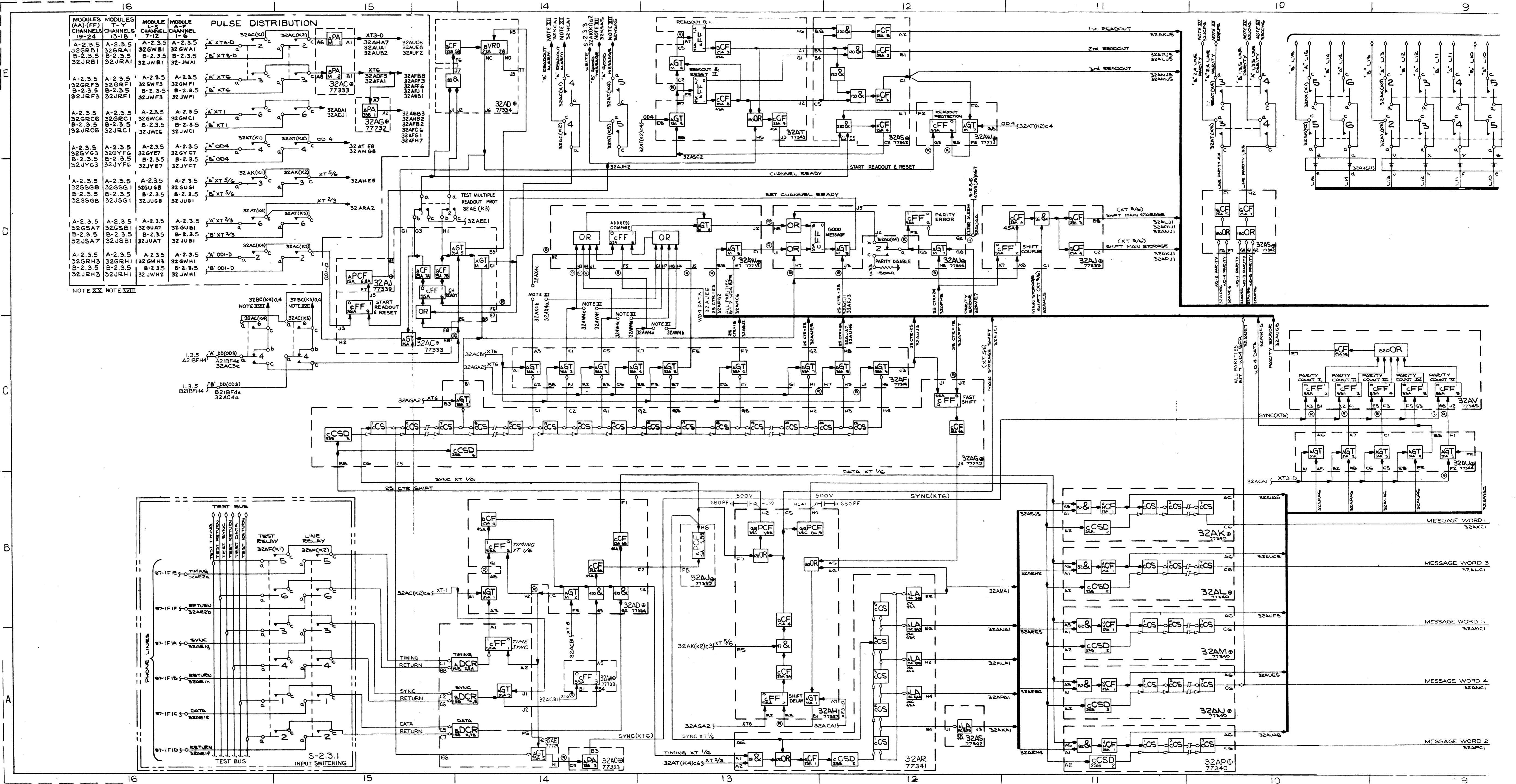


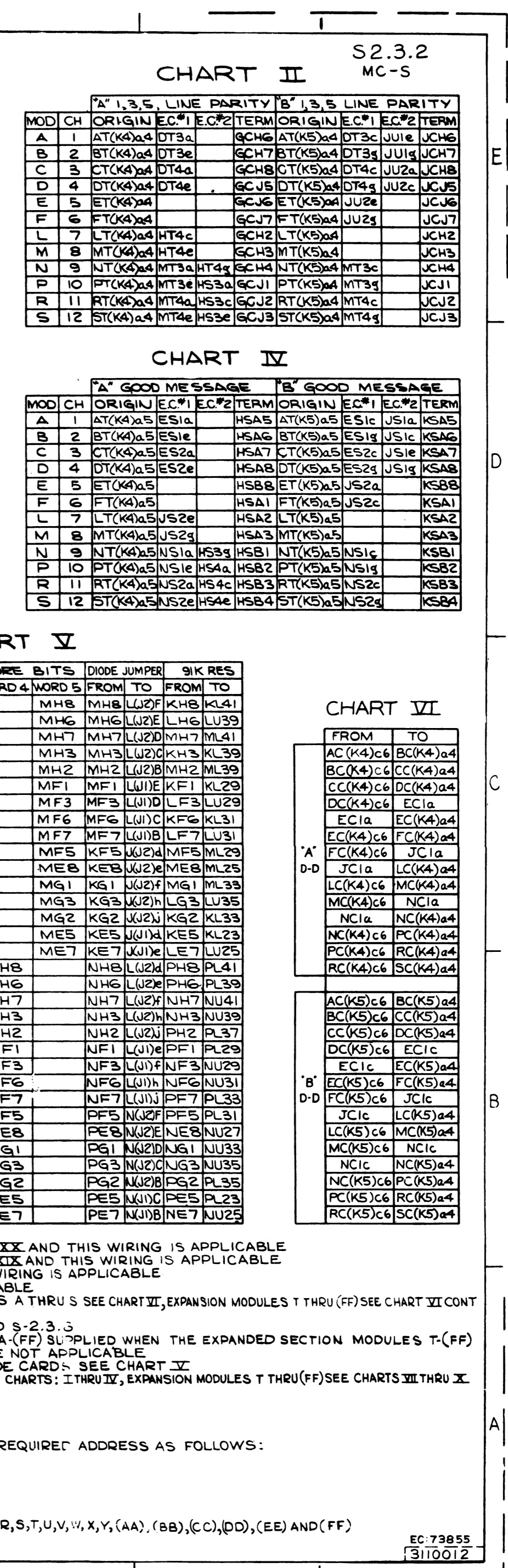
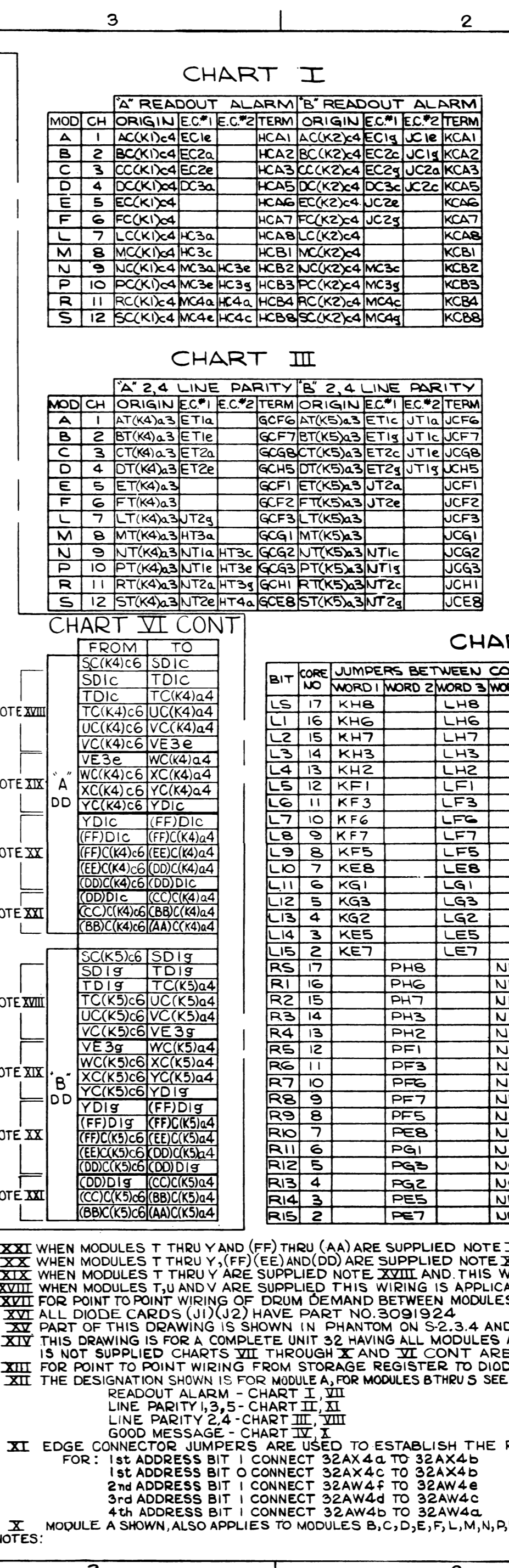
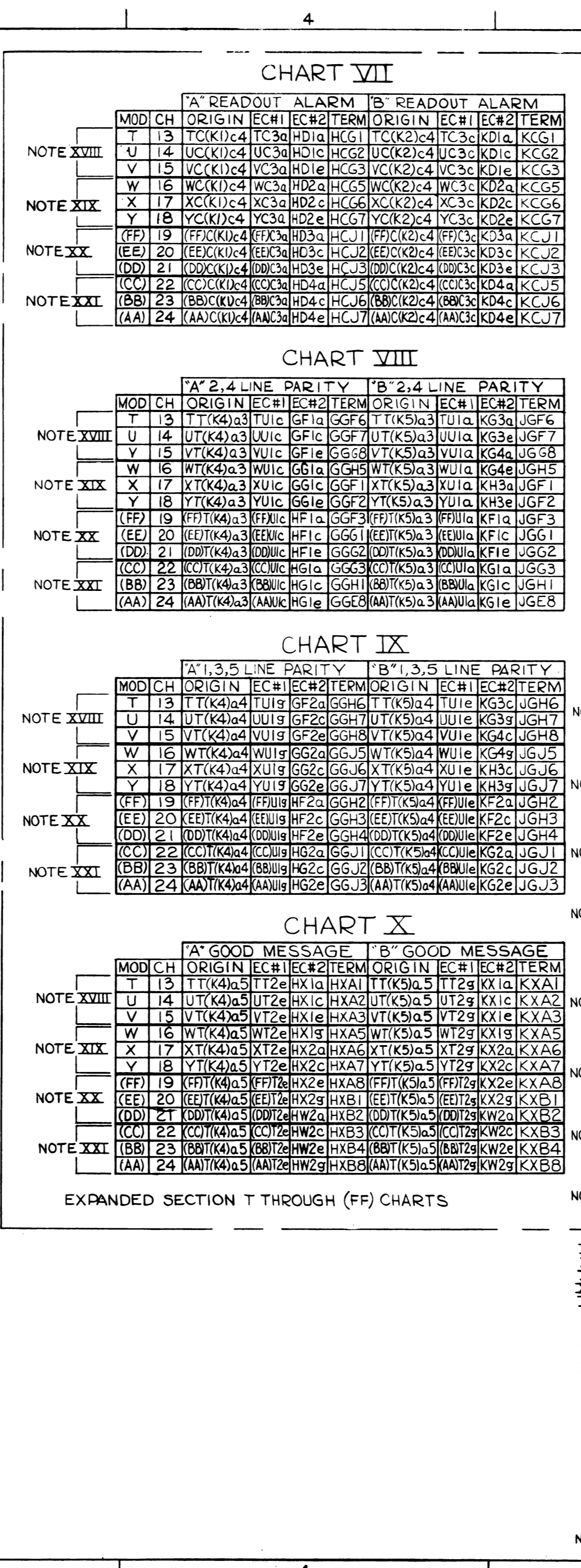
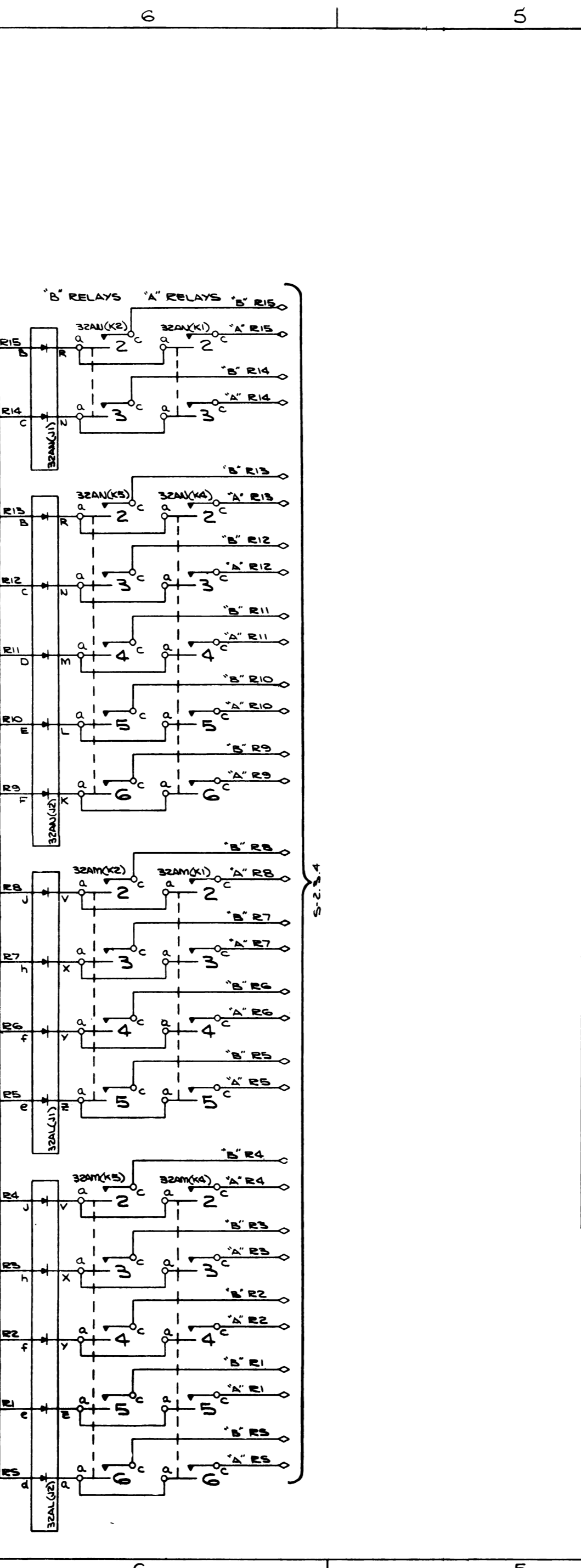
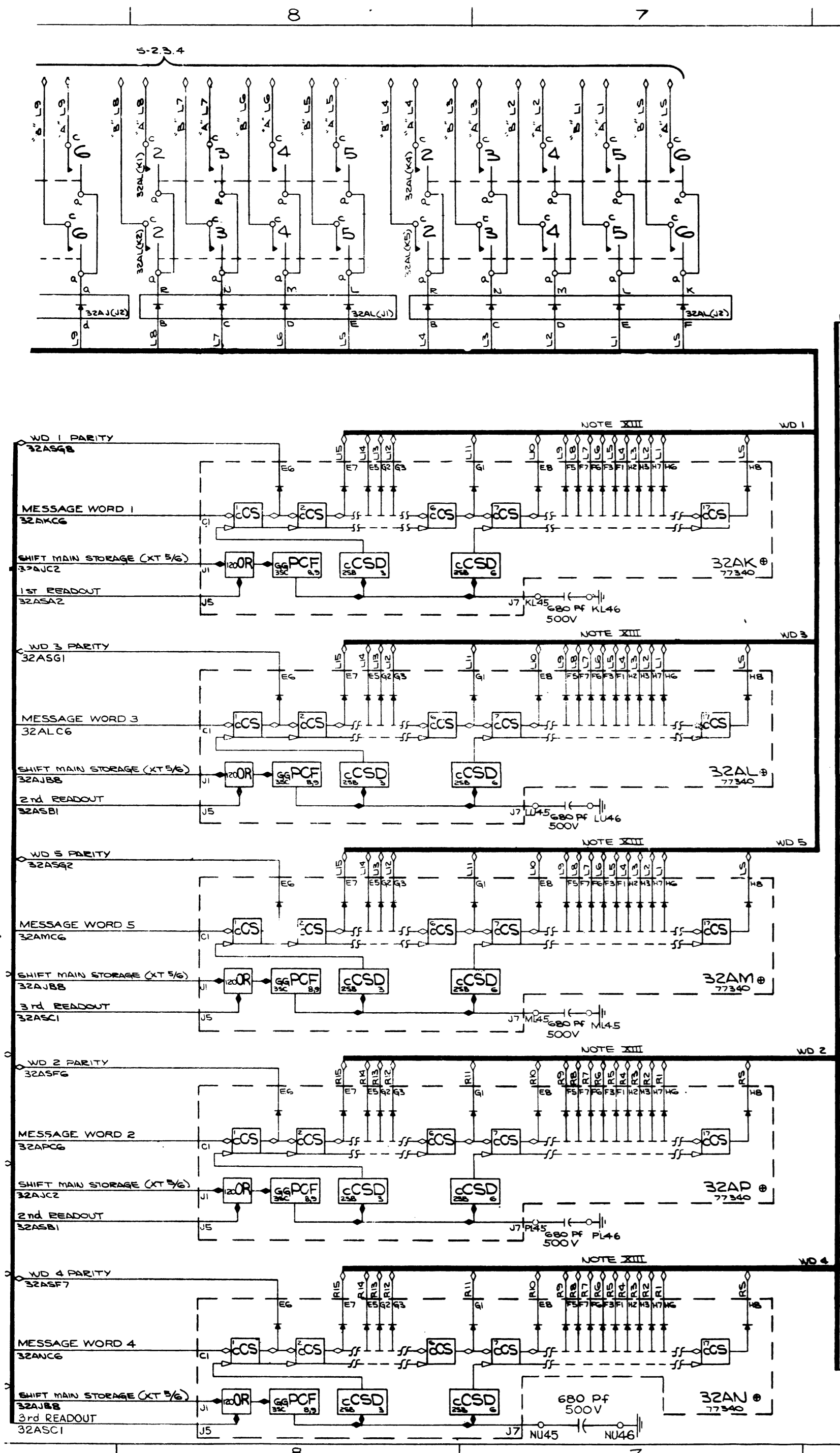
NOTE: THE CONNECTIONS SHOWN ARE FOR A SINGLE SITE (I.E. DC OR CC ALONE) USING ALTERNATE PHONE LINE 5 FOR A COMBINED SITE (I.E. DC AND CC) NOT USING ALTERNATE PHONE LINE 5 THESE CONNECTIONS SHOULD BE MOVED TO THE CORRESPONDING PINS OF THE OPPOSITE EDGE CONNECTORS AS SHOWN BELOW.

NOTE: PART OF THIS DRAWING IS SHOWN IN PHANTOM ON S-2.3.2.

NOTE: ALL RELAYS SHOWN HAVE 400-1 W. RESISTORS ON AN ADJACENT RESISTOR BOARD CONNECTED BETWEEN 51E2, 51E4 AND 51E6, EXCEPT 32EF(K2) AND 32EG(K2).

EC48924
3126901





NOTE XXVIII WHEN MODULES T THRU Y AND (FF) THRU (AA) ARE SUPPLIED NOTE XXX AND THIS WIRING IS APPLICABLE

NOTE XXIX WHEN MODULES T THRU Y, (FF) (EE) AND (DD) ARE SUPPLIED NOTE XXX AND THIS WIRING IS APPLICABLE

NOTE XXX WHEN MODULES T THRU Y ARE SUPPLIED NOTE XXVIII AND THIS WIRING IS APPLICABLE

NOTE XXXI WHEN MODULES T, U AND V ARE SUPPLIED THIS WIRING IS APPLICABLE

NOTE XXXII FOR POINT TO POINT WIRING OF DRUM DEMAND BETWEEN MODULES A THRU S SEE CHART II, EXPANSION MODULES T THRU (FF) SEE CHART VI CONT

NOTE XXXIII ALL DIODE CARDS (U) (J2) HAVE PART NO. 3091924

NOTE XXXIV PART OF THIS DRAWING IS SHOWN IN PHANTOM ON S2.3.4 AND S-2.3.5

NOTE XXXV THIS DRAWING IS FOR A COMPLETE UNIT 32 HAVING ALL MODULES A-(FF) SUPPLIED WHEN THE EXPANDED SECTION MODULES T-(FF) IS NOT SUPPLIED CHARTS VII THROUGH X AND VI CONT ARE NOT APPLICABLE

NOTE XXXVI FOR POINT TO POINT WIRING FROM STORAGE REGISTER TO DIODE CARDS SEE CHART IX

NOTE XXXVII THE DESIGNATION SHOWN IS FOR MODULE A, FOR MODULES B THRU S SEE CHARTS I THRU IV, EXPANSION MODULES T THRU (FF) SEE CHARTS VII THRU X

NOTE XXXVIII LINE PARITY 1,3,5 - CHART II, III

NOTE XXXIX LINE PARITY 2,4 - CHART III, VIII

NOTE XL GOOD MESSAGE - CHART IV, X

NOTE XLI EDGE CONNECTOR JUMPERS ARE USED TO ESTABLISH THE REQUIRED ADDRESS AS FOLLOWS:

FOR: 1st ADDRESS BIT 1 CONNECT 32AX4a TO 32AX4b

1st ADDRESS BIT 0 CONNECT 32AX4c TO 32AX4d

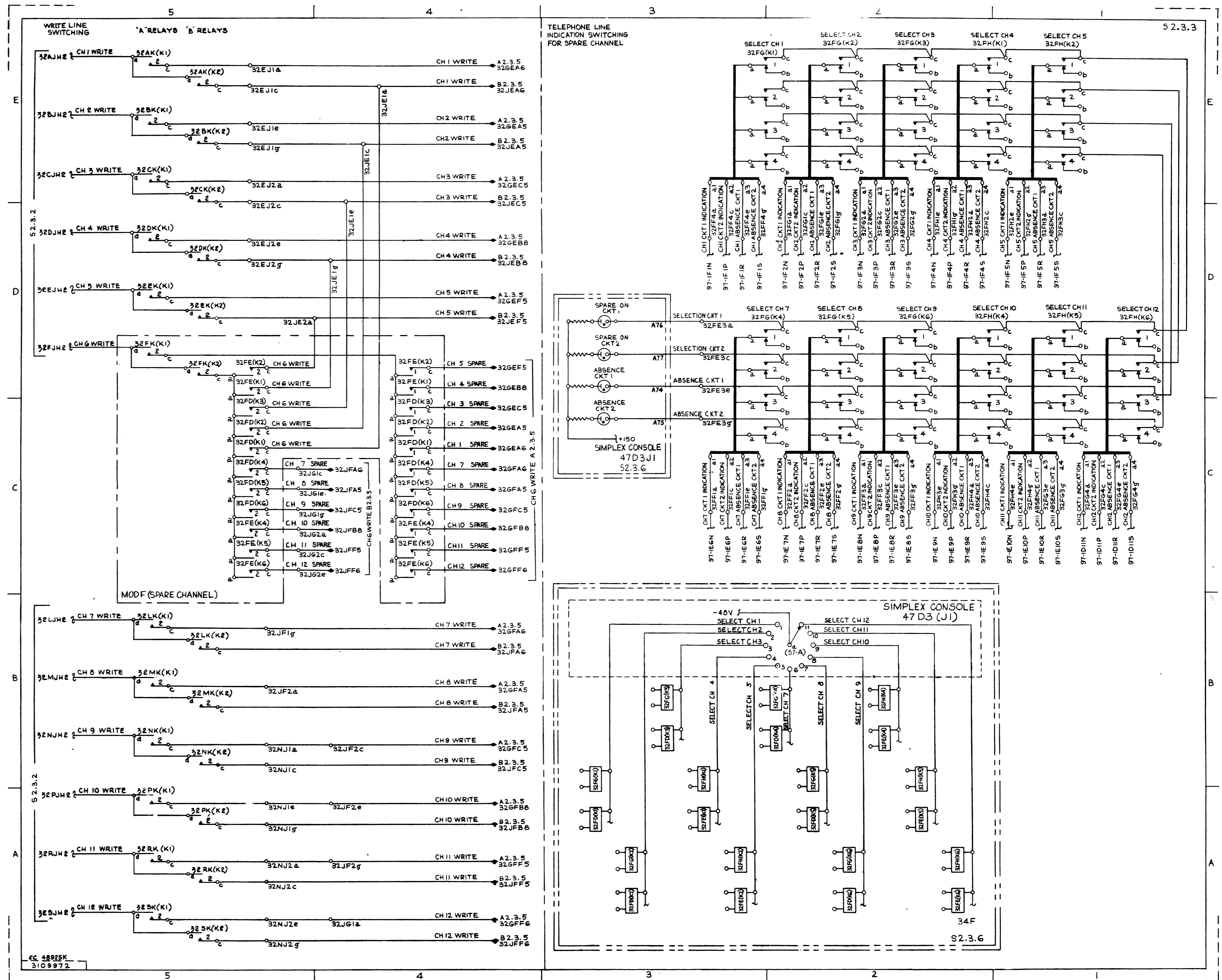
2nd ADDRESS BIT 1 CONNECT 32AW4f TO 32AW4e

3rd ADDRESS BIT 1 CONNECT 32AW4d TO 32AW4c

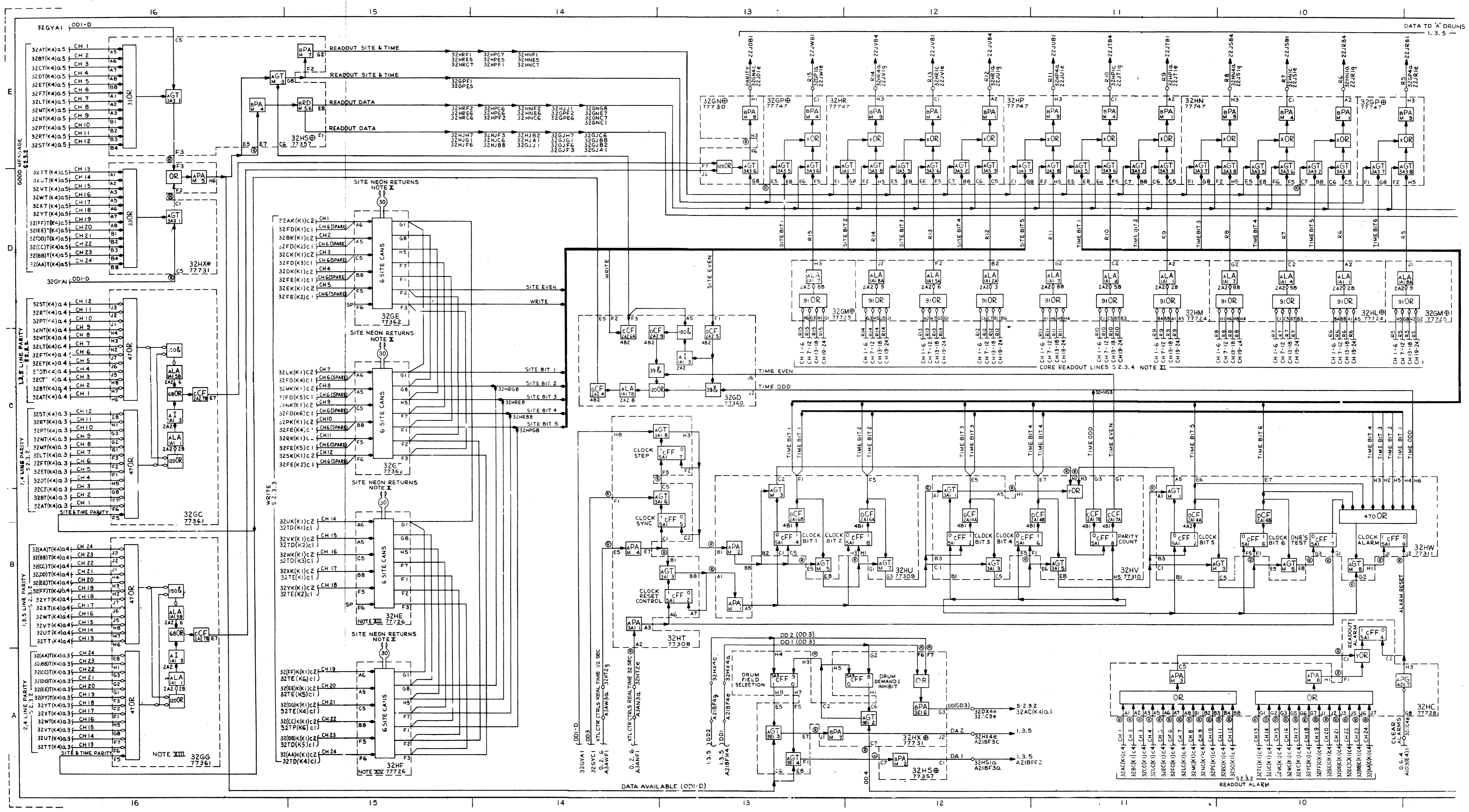
4th ADDRESS BIT 1 CONNECT 32AW4b TO 32AW4a

NOTE XLII MODULE A SHOWN, ALSO APPLIES TO MODULES B, C, D, E, F, L, M, N, P, R, S, T, U, V, W, X, Y, (AA), (BB), (CC), (DD), (EE) AND (FF)

EC: 73855
311012



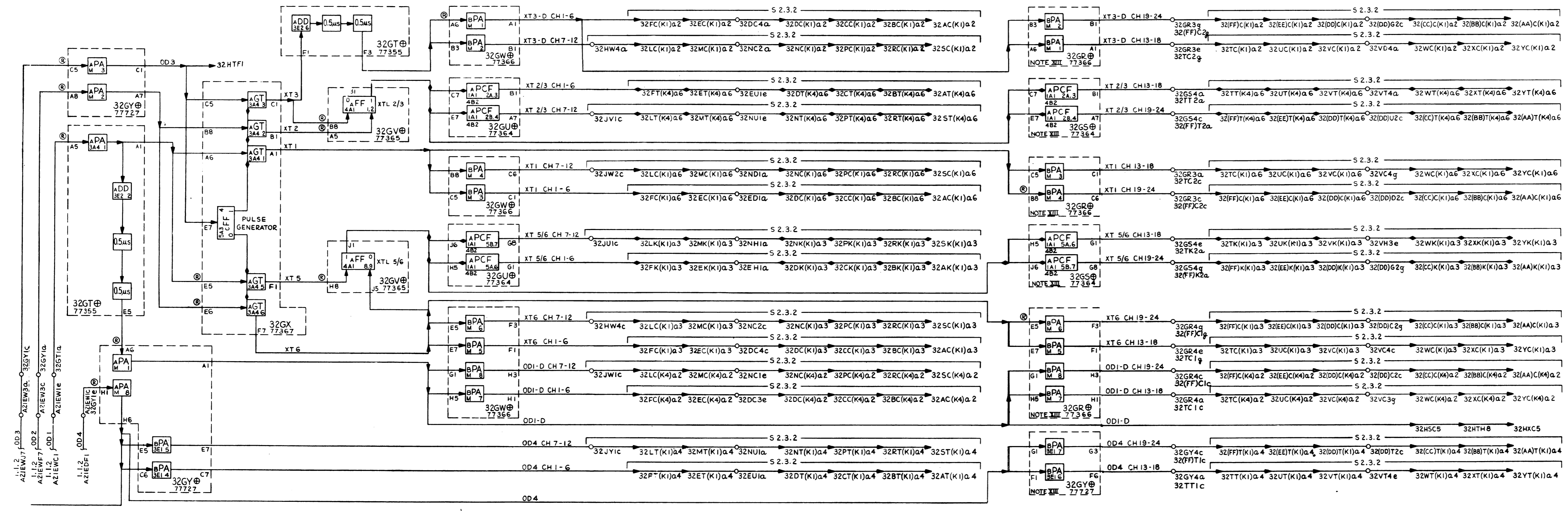
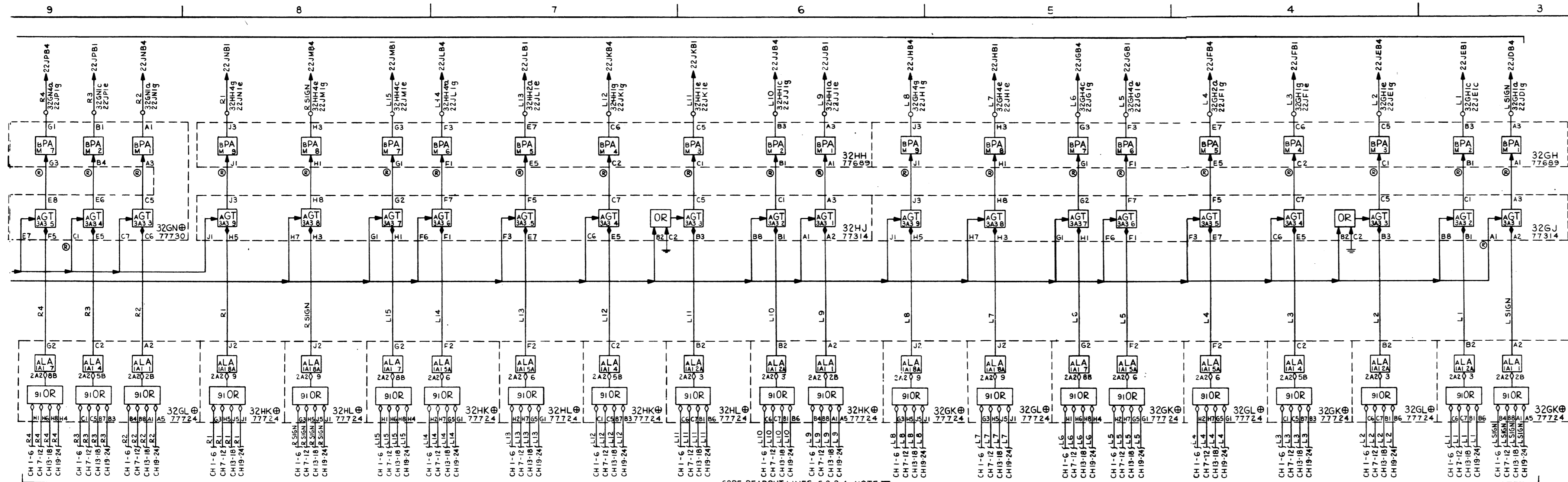
CC 48928K 310 9972 5 4 3 2 1 S2.3.3 S2.3.6 XTEL WRITE SW AND SPARE CHAN PHONE LINE INDICATION SW



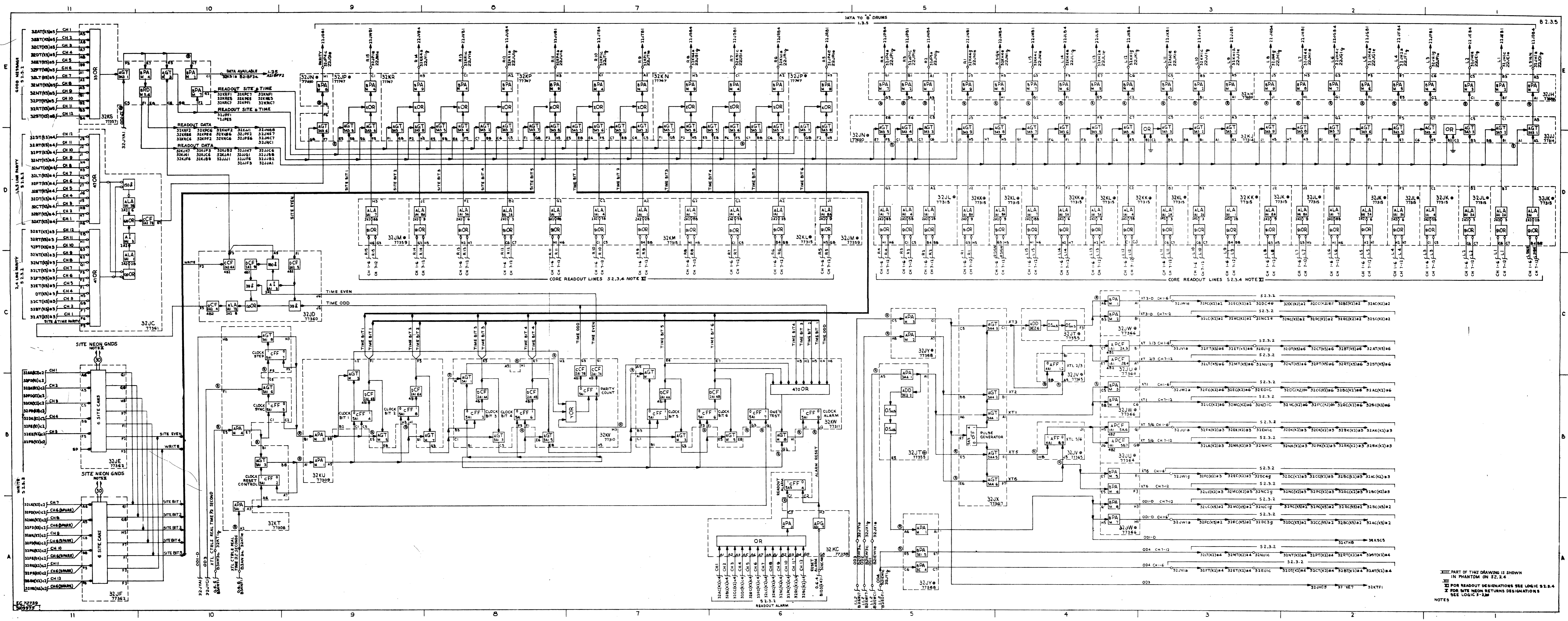
0.2.6 XTLCYLS REAL TIME 1/2 SEC
A3ANFI
A3ANW3
A3ANW3
A3ANW3

DATA AVAILABLE (OD-D)

READOUT ALARM



XII THIS PU IS USED ONLY WHEN EXPANDED SECTIONS (FF)-(DD) & (CC)-(AA) ARE USED.
 XIII THESE PUS ARE USED ONLY WHEN EXPANDED SECTIONS TV, WY (FF)-(DD) & (CC)-(AA) ARE USED
 XIV PART OF THIS DRAWING IS SHOWN IN PHANTOM ON S 2.3.4
 XV FOR WIRING OF CORE READOUT LINES SEE LOGIC S 2.3.4
 XVI FOR SITE NEON RETURN DESIGNATIONS SEE LOGIC S 2.3.6
 NOTES



XIII PART OF THIS DRAWING IS SHOWN IN PHANTOM ON S2.3.4
 XII FOR READOUT DESIGNATIONS SEE LOGIC S2.3.4
 XI FOR SITE NEON RETURNS DESIGNATIONS SEE LOGIC S2.3.4
 NOTES

CHART I		'A' COMMON				'B' COMMON			
LINE	CH	UNIT 32 RU PIN	UNIT 32 EDGE CONN	UNIT 47 CONN	UNIT 32 RU PIN	UNIT 32 EDGE CONN	UNIT 47 CONN	UNIT 47 CONN	UNIT 47 CONN
SITE BIT NEON GND	2	32GEC1	32G44	47D3U1870	32JEC1	32J44	47D3U1870	47D3U1870	
	3	32GEC2	32G45	47D3U1870	32JEC2	32J45	47D3U1870	47D3U1870	
	4	32GEC3	32G46	47D3U1870	32JEC3	32J46	47D3U1870	47D3U1870	
	5	32GEC4	32G47	47D3U1870	32JEC4	32J47	47D3U1870	47D3U1870	
	6	32GEC5	32G48	47D3U1870	32JEC5	32J48	47D3U1870	47D3U1870	
	7	32GEC6	32G49	47D3U1870	32JEC6	32J49	47D3U1870	47D3U1870	
	8	32GEC7	32G50	47D3U1870	32JEC7	32J50	47D3U1870	47D3U1870	
	9	32GEC8	32G51	47D3U1870	32JEC8	32J51	47D3U1870	47D3U1870	
	10	32GEC9	32G52	47D3U1870	32JEC9	32J52	47D3U1870	47D3U1870	
	11	32GEC10	32G53	47D3U1870	32JEC10	32J53	47D3U1870	47D3U1870	
	12	32GEC11	32G54	47D3U1870	32JEC11	32J54	47D3U1870	47D3U1870	
	13	32GEC12	32G55	47D3U1870	32JEC12	32J55	47D3U1870	47D3U1870	
SITE BIT NEON GND	2	32GEC13	32G56	47D3U1870	32JEC13	32J56	47D3U1870	47D3U1870	
	3	32GEC14	32G57	47D3U1870	32JEC14	32J57	47D3U1870	47D3U1870	
	4	32GEC15	32G58	47D3U1870	32JEC15	32J58	47D3U1870	47D3U1870	
	5	32GEC16	32G59	47D3U1870	32JEC16	32J59	47D3U1870	47D3U1870	
	6	32GEC17	32G60	47D3U1870	32JEC17	32J60	47D3U1870	47D3U1870	
	7	32GEC18	32G61	47D3U1870	32JEC18	32J61	47D3U1870	47D3U1870	
	8	32GEC19	32G62	47D3U1870	32JEC19	32J62	47D3U1870	47D3U1870	
	9	32GEC20	32G63	47D3U1870	32JEC20	32J63	47D3U1870	47D3U1870	
	10	32GEC21	32G64	47D3U1870	32JEC21	32J64	47D3U1870	47D3U1870	
	11	32GEC22	32G65	47D3U1870	32JEC22	32J65	47D3U1870	47D3U1870	
	12	32GEC23	32G66	47D3U1870	32JEC23	32J66	47D3U1870	47D3U1870	
	13	32GEC24	32G67	47D3U1870	32JEC24	32J67	47D3U1870	47D3U1870	
SITE BIT NEON GND	2	32GEC25	32G68	47D3U1870	32JEC25	32J68	47D3U1870	47D3U1870	
	3	32GEC26	32G69	47D3U1870	32JEC26	32J69	47D3U1870	47D3U1870	
	4	32GEC27	32G70	47D3U1870	32JEC27	32J70	47D3U1870	47D3U1870	
	5	32GEC28	32G71	47D3U1870	32JEC28	32J71	47D3U1870	47D3U1870	
	6	32GEC29	32G72	47D3U1870	32JEC29	32J72	47D3U1870	47D3U1870	
	7	32GEC30	32G73	47D3U1870	32JEC30	32J73	47D3U1870	47D3U1870	
	8	32GEC31	32G74	47D3U1870	32JEC31	32J74	47D3U1870	47D3U1870	
	9	32GEC32	32G75	47D3U1870	32JEC32	32J75	47D3U1870	47D3U1870	
	10	32GEC33	32G76	47D3U1870	32JEC33	32J76	47D3U1870	47D3U1870	
	11	32GEC34	32G77	47D3U1870	32JEC34	32J77	47D3U1870	47D3U1870	
	12	32GEC35	32G78	47D3U1870	32JEC35	32J78	47D3U1870	47D3U1870	
	13	32GEC36	32G79	47D3U1870	32JEC36	32J79	47D3U1870	47D3U1870	

CHART II		GROUND		CIRCUIT 1		CIRCUIT 2		ABSENCE		SELECTION		RETURN	
CH	UNIT 47 PANEL LOCATION	UNIT 47 CONN A71	UNIT 47 CONN A72	UNIT 47 CONN A73	UNIT 47 CONN A74	UNIT 47 CONN A75	UNIT 47 CONN A76	UNIT 47 CONN A77	UNIT 47 CONN A78	UNIT 47 CONN A79	UNIT 47 CONN A80	UNIT 47 CONN A81	UNIT 47 CONN A82
2	47D3U1870	97-IF 22	97-IF 21	97-IF 20	97-IF 19	97-IF 18	97-IF 17	97-IF 16	97-IF 15	97-IF 14	97-IF 13	97-IF 12	
3	47D3U1870	97-IF 32	97-IF 31	97-IF 30	97-IF 29	97-IF 28	97-IF 27	97-IF 26	97-IF 25	97-IF 24	97-IF 23	97-IF 22	
4	47D3U1870	97-IF 42	97-IF 41	97-IF 40	97-IF 39	97-IF 38	97-IF 37	97-IF 36	97-IF 35	97-IF 34	97-IF 33	97-IF 32	
5	47D3U1870	97-IF 52	97-IF 51	97-IF 50	97-IF 49	97-IF 48	97-IF 47	97-IF 46	97-IF 45	97-IF 44	97-IF 43	97-IF 42	
6	47D3U1870	97-IF 62	97-IF 61	97-IF 60	97-IF 59	97-IF 58	97-IF 57	97-IF 56	97-IF 55	97-IF 54	97-IF 53	97-IF 52	
7	47D3U1870	97-IF 72	97-IF 71	97-IF 70	97-IF 69	97-IF 68	97-IF 67	97-IF 66	97-IF 65	97-IF 64	97-IF 63	97-IF 62	
8	47D3U1870	97-IF 82	97-IF 81	97-IF 80	97-IF 79	97-IF 78	97-IF 77	97-IF 76	97-IF 75	97-IF 74	97-IF 73	97-IF 72	
9	47D3U1870	97-IF 92	97-IF 91	97-IF 90	97-IF 89	97-IF 88	97-IF 87	97-IF 86	97-IF 85	97-IF 84	97-IF 83	97-IF 82	
10	47D3U1870	97-IF 102	97-IF 101	97-IF 100	97-IF 99	97-IF 98	97-IF 97	97-IF 96	97-IF 95	97-IF 94	97-IF 93	97-IF 92	
11	47D3U1870	97-IF 112	97-IF 111	97-IF 110	97-IF 109	97-IF 108	97-IF 107	97-IF 106	97-IF 105	97-IF 104	97-IF 103	97-IF 102	
12	47D3U1870	97-IF 122	97-IF 121	97-IF 120	97-IF 119	97-IF 118	97-IF 117	97-IF 116	97-IF 115	97-IF 114	97-IF 113	97-IF 112	

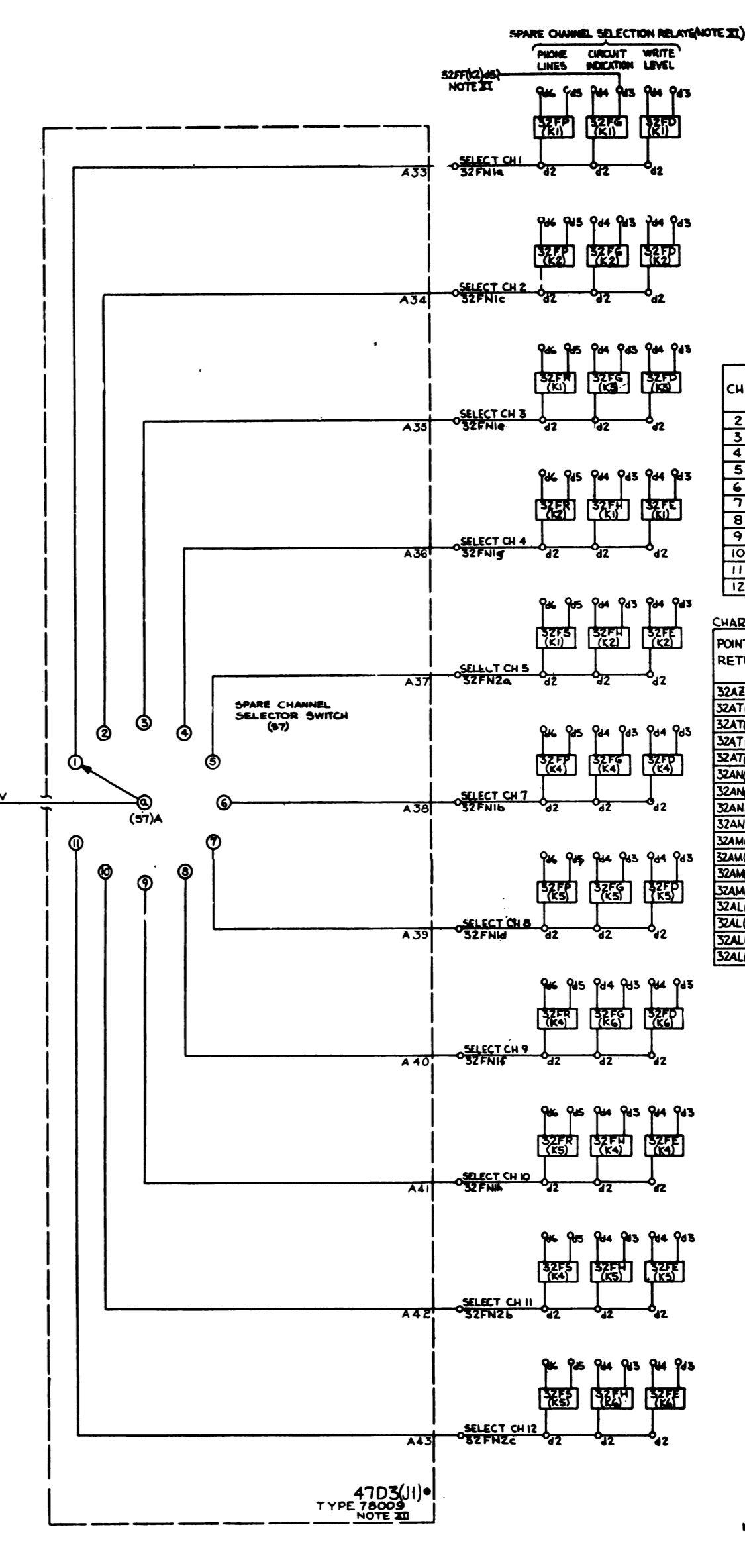
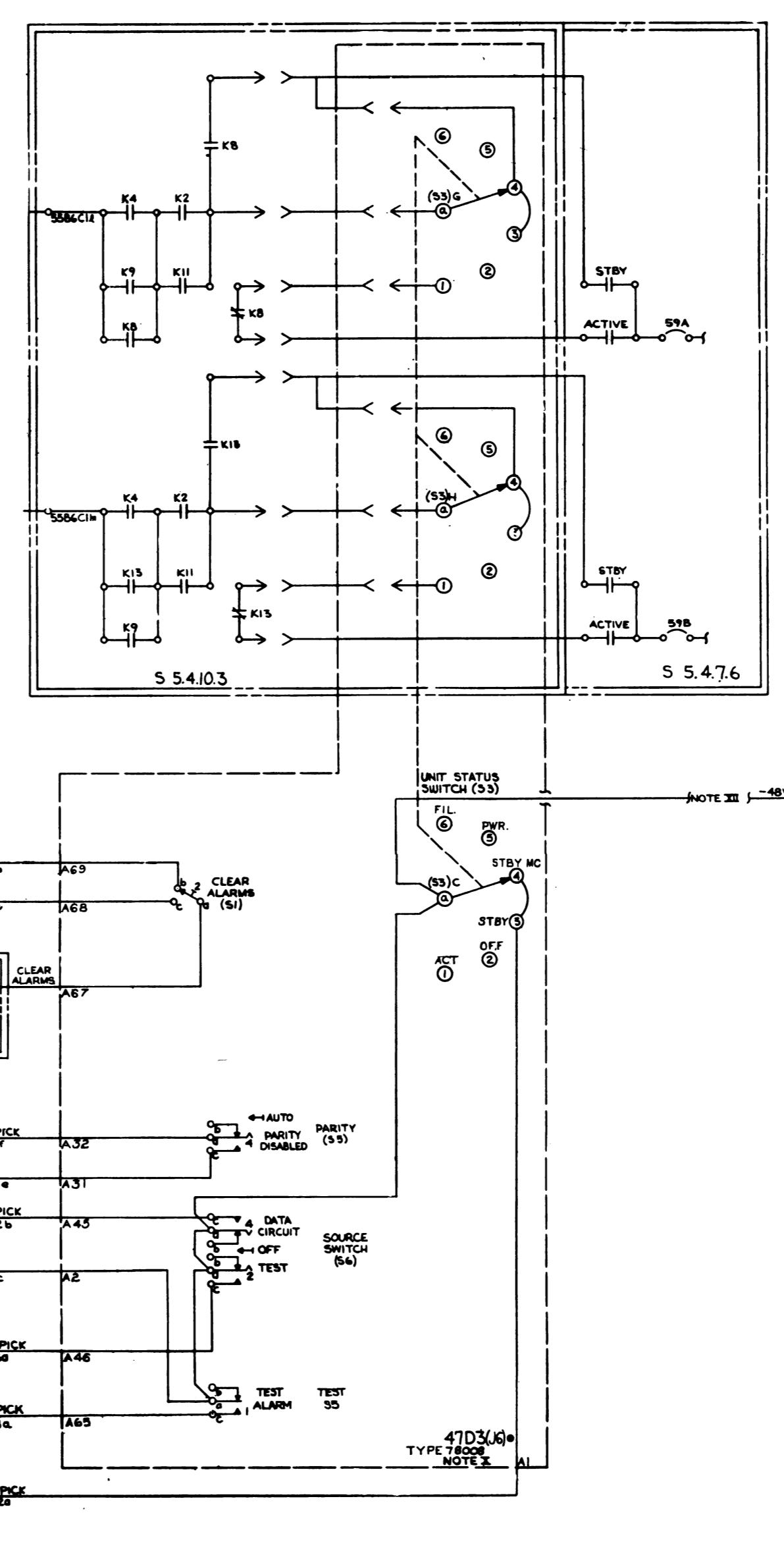
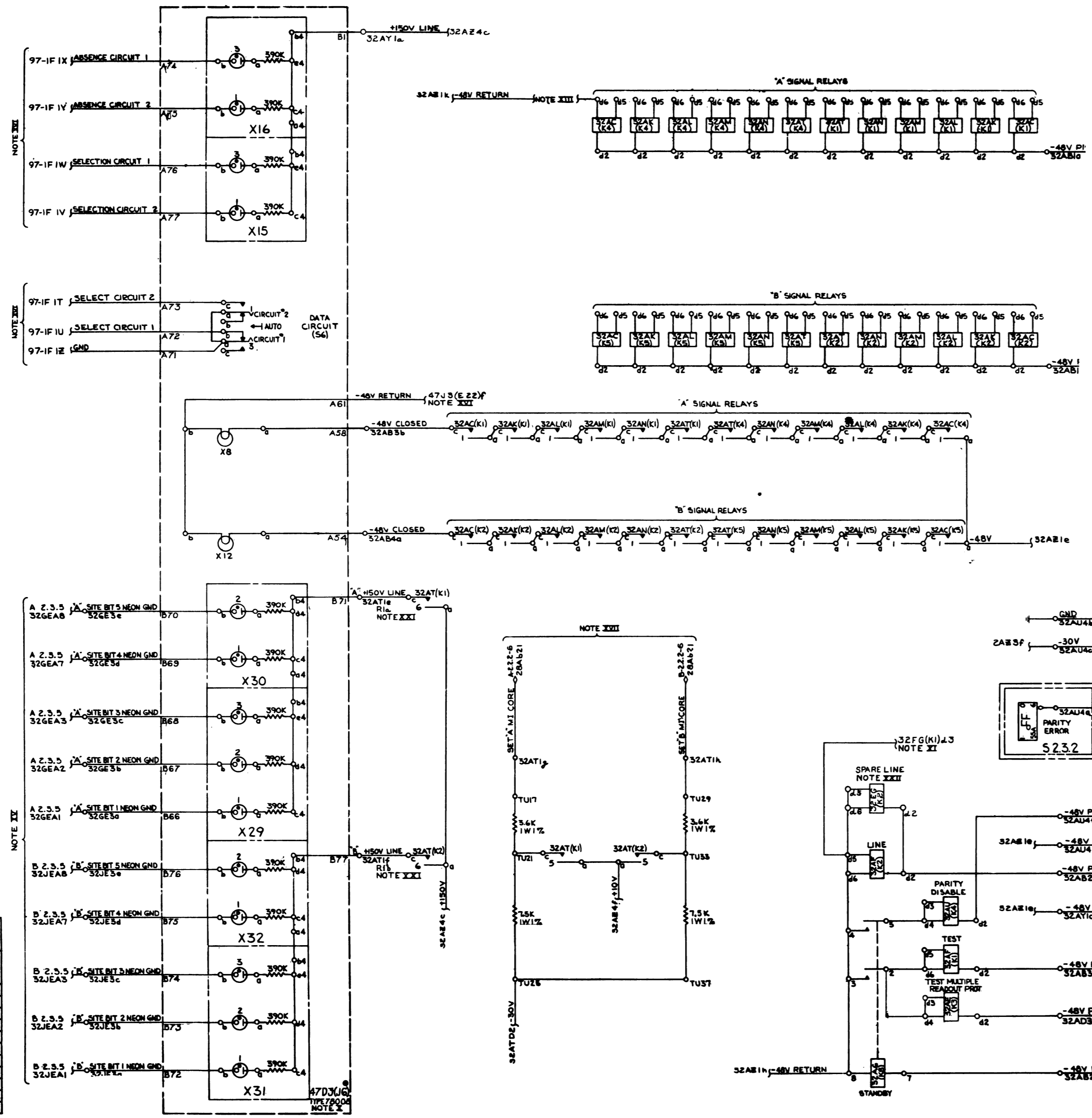
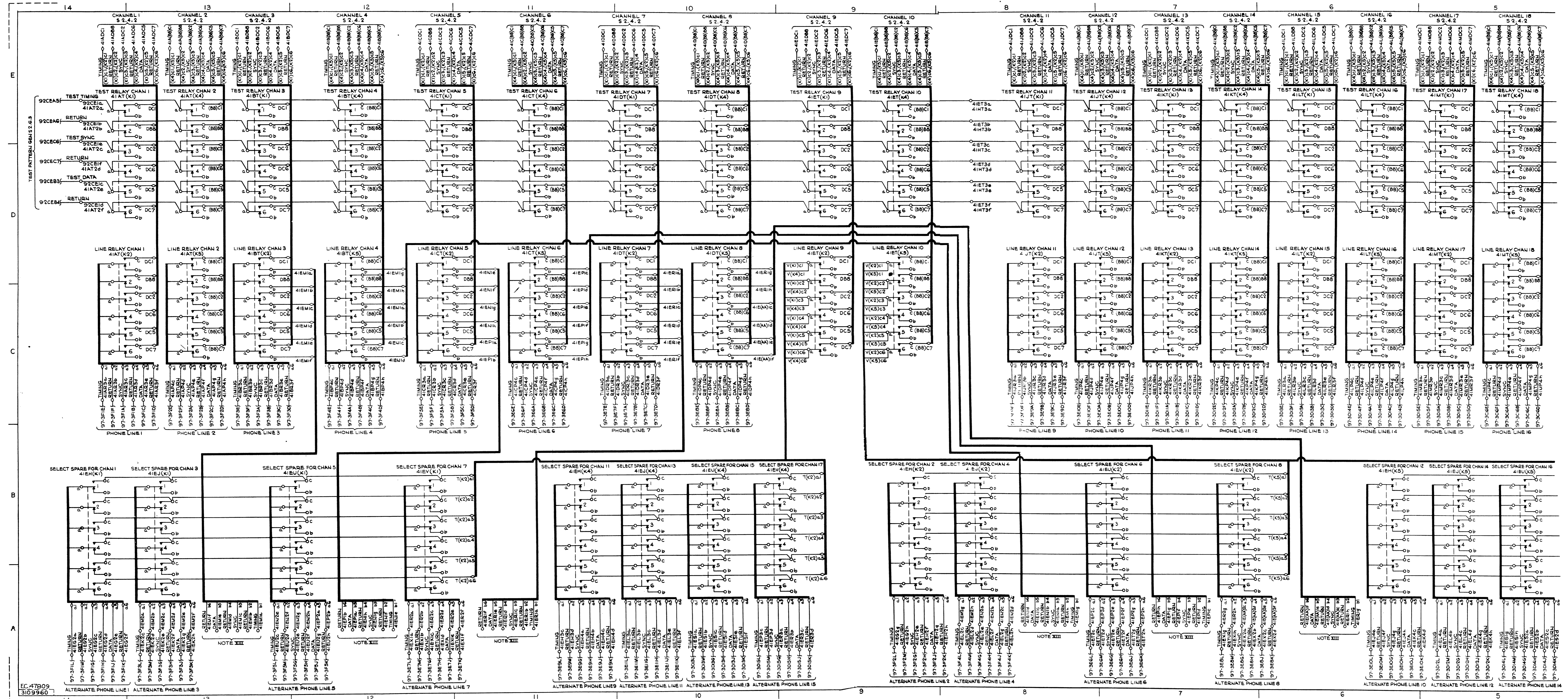


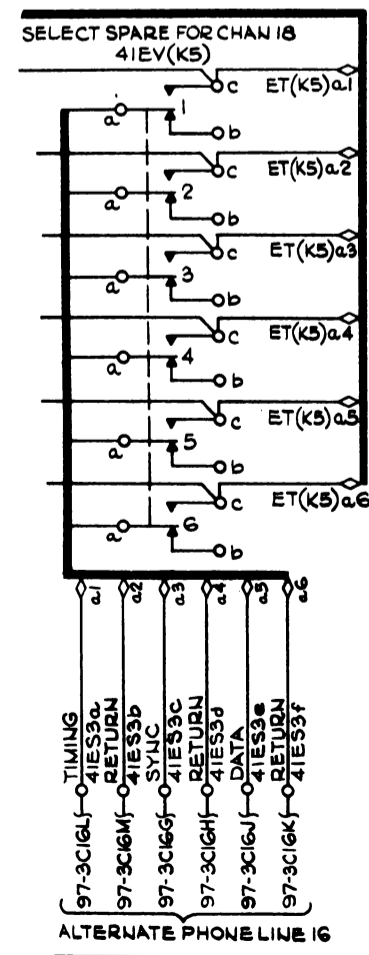
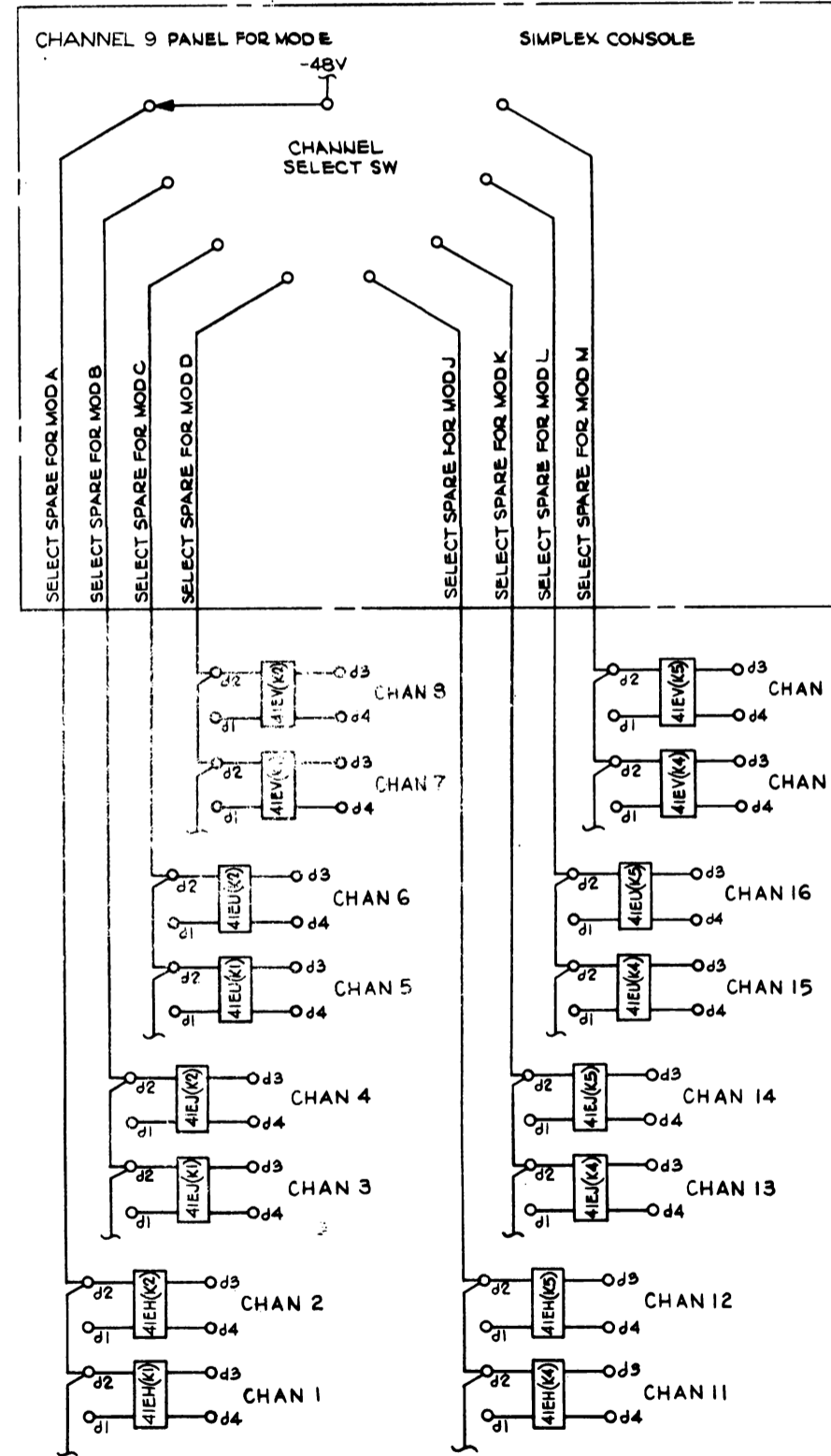
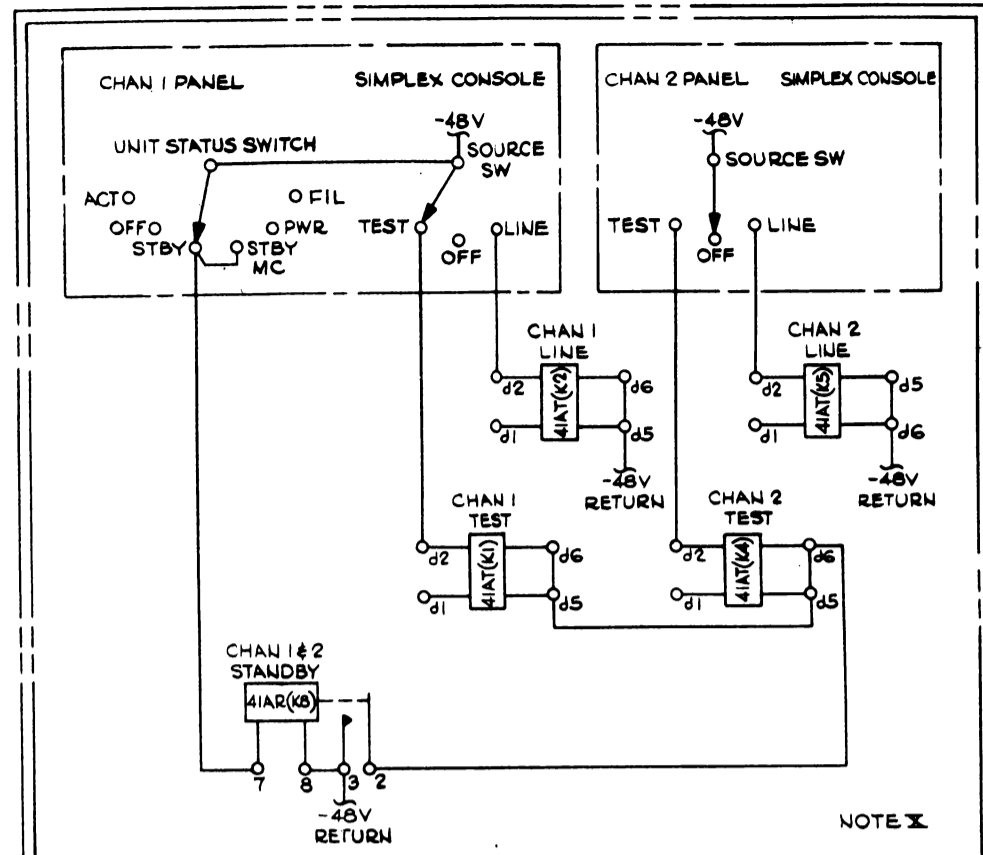
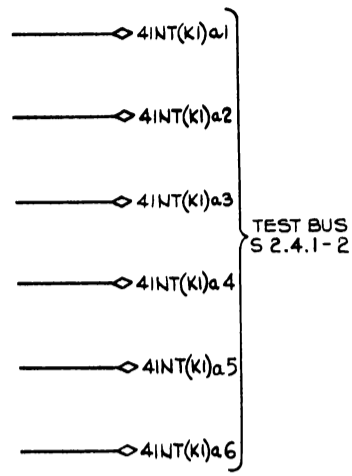
CHART III		SET 'A' MI CORE		SET 'B' MI CORE	
CH	UNIT 32 EDGE CONN	UNIT 32 EDGE CONN	UNIT 47 PANEL CONN	UNIT 47 PANEL CONN	UNIT 47 PANEL CONN
2	32CT11	32A22	32CT11	32A22	32A22
3	32CT12	32A23	32CT12	32A23	32A23
4	32CT13	32A24	32CT13	32A24	32A24
5	32CT14	32A25	32CT14	32A25	32A25
6	32CT15	32A26	32CT15	32A26	32A26
7	32CT16	32A27	32CT16	32A27	32A27
8	32CT17	32A28	32CT17	32A28	32A28
9	32CT18	32A29	32CT18	32A29	32A29
10	32CT19	32A30	32CT19	32A30	32A30
11	32CT20	32A31	32CT20	32A31	32A31
12	32CT21	32A32	32CT21	32A32	32A32

CHART IV		CHART V	
CH	UNIT 32 EDGE CONN	UNIT 32 EDGE CONN	UNIT 47 PANEL CONN
2	32C22	32B	47D3U1870
3	32C23	32C	47D3U1870
4	32C24	32D	47D3U1870
5	32C25	32E	47D3U1870
6	32C26	32F	47D3U1870
7	32C27	32G	47D3U1870
8	32C28	32H	47D3U1870
9	32C29	32I	47D3U1870
10	32C30	32J	47D3U1870
11	32C31	32K	47D3U1870
12	32C32	32L	47D3U1870

CHART VI		CHART VII	
CH	UNIT 32 EDGE CONN	UNIT 32 EDGE CONN	UNIT 47 PANEL CONN
2	32F21	32F21	32F21
3	32F22	32F22	32F22
4	32F23	32F23	32F23
5	32F24	32F24	32F24
6	32F25	32F25	32F25
7	32F26	32F26	32F26
8	32F27	32F27	32F27
9	32F28	32F28	32F28
10	32F29	32F29	32F29
11	32F30	32F30	32F30
12	32F31	32F31	32F31

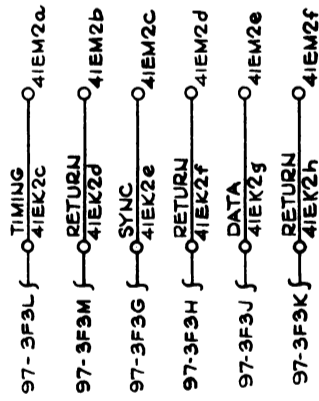
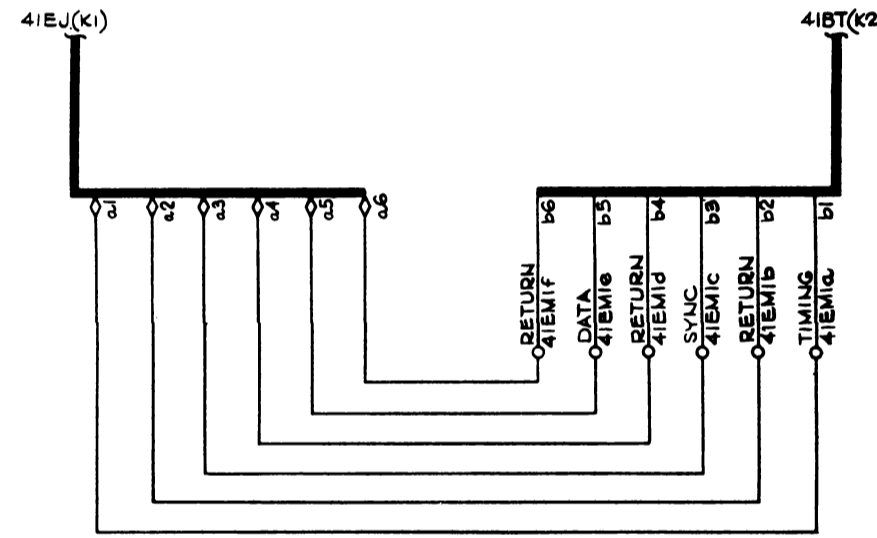


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X COIL CONNECTIONS SHOWN FOR MCD A
 FOR OTHER CHAN MODS SUBSTITUTE:
 B CHAN 3 & 4 J CHAN 11 & 12
 C CHAN 5 & 6 K CHAN 13 & 14
 D CHAN 7 & 8 L CHAN 15 & 16
 E CHAN 9 & 10 (SPARE CHAN) M CHAN 17 & 18

S 2.4.7
 RELAY COIL CONN



XIII FOR SINGLE PHONE LINE OPERATION, DISCONNECT THE 620 Ω 1/2 W RESISTORS FROM THE 'b' CONTACTS OF THE LINE RELAY IN THE CHANNEL WHICH IS TO OPERATE WITH A SINGLE PHONE LINE. THEN CHANGE THE LEADS IN THE SPARE MODULE AS ILLUSTRATED IN THE CHART ABOVE. (CHART SHOWS CHANNEL 9 AS A SAMPLE, OTHER CHANNELS WOULD BE WIRED IN A SIMILAR MANNER)

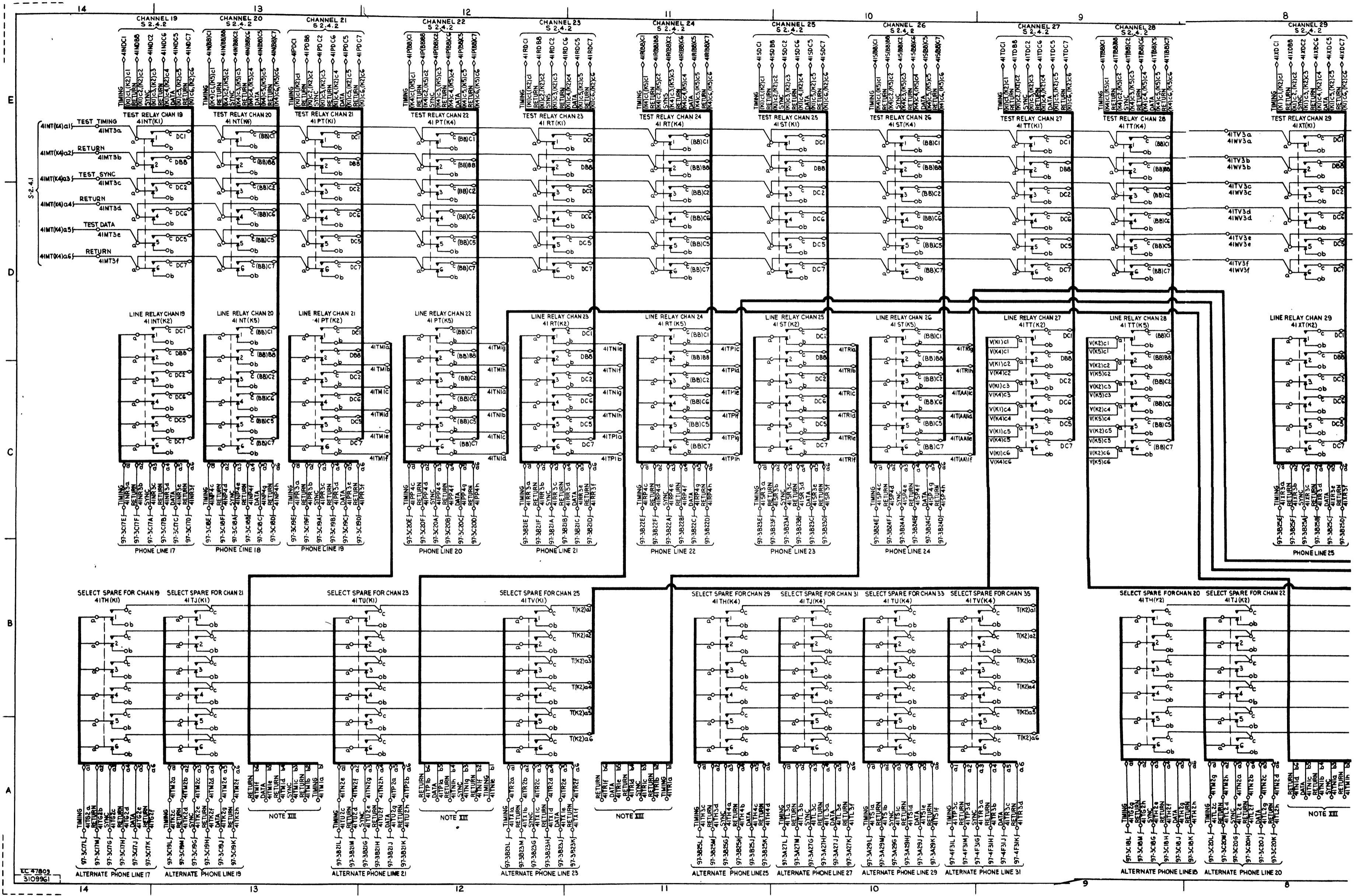
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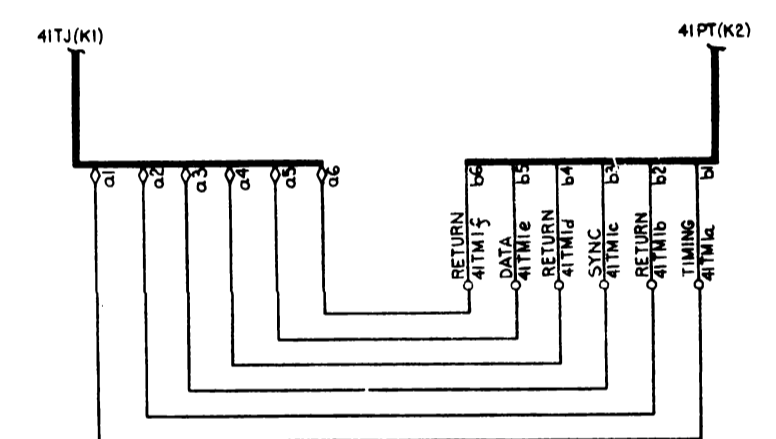
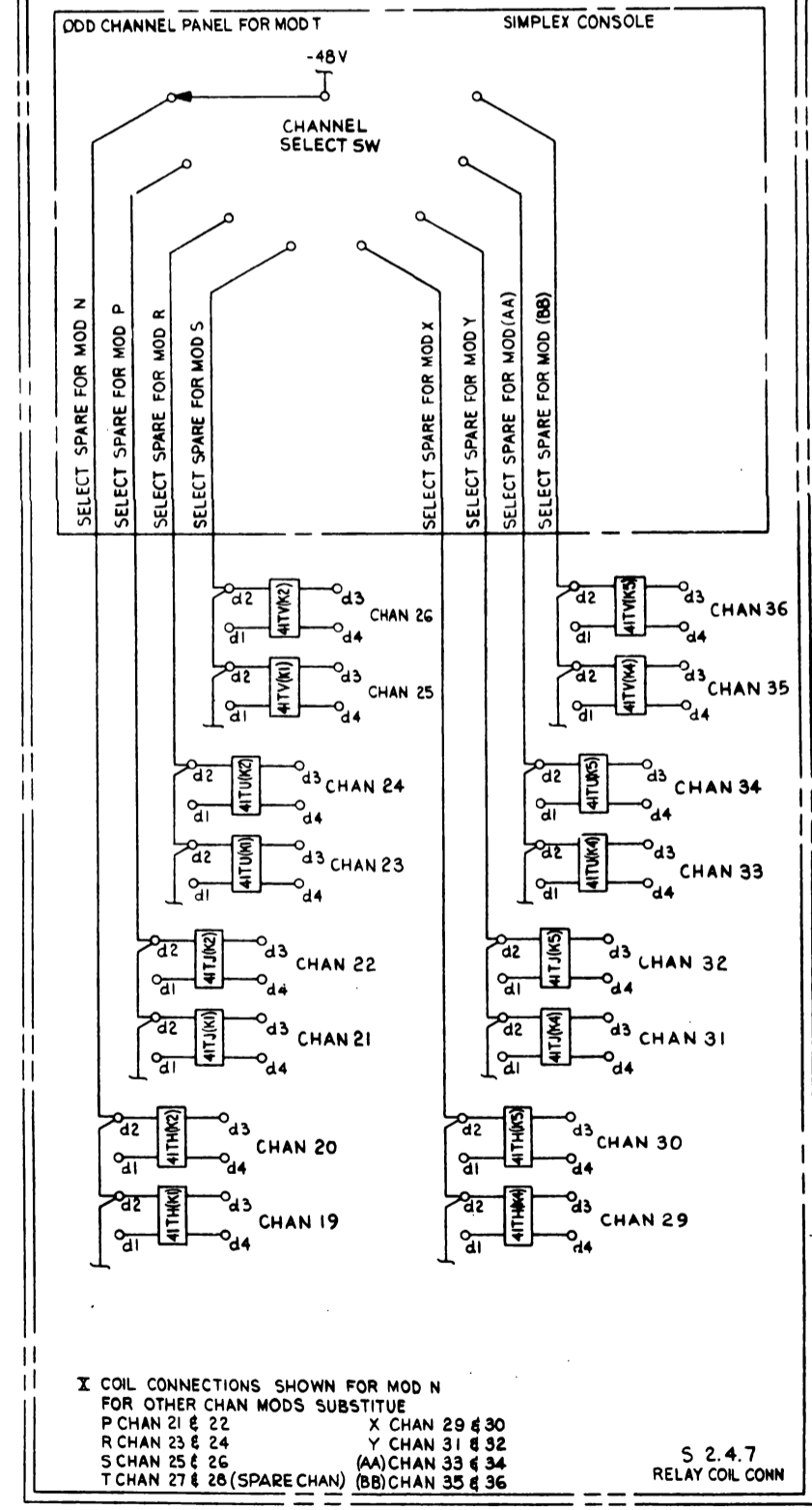
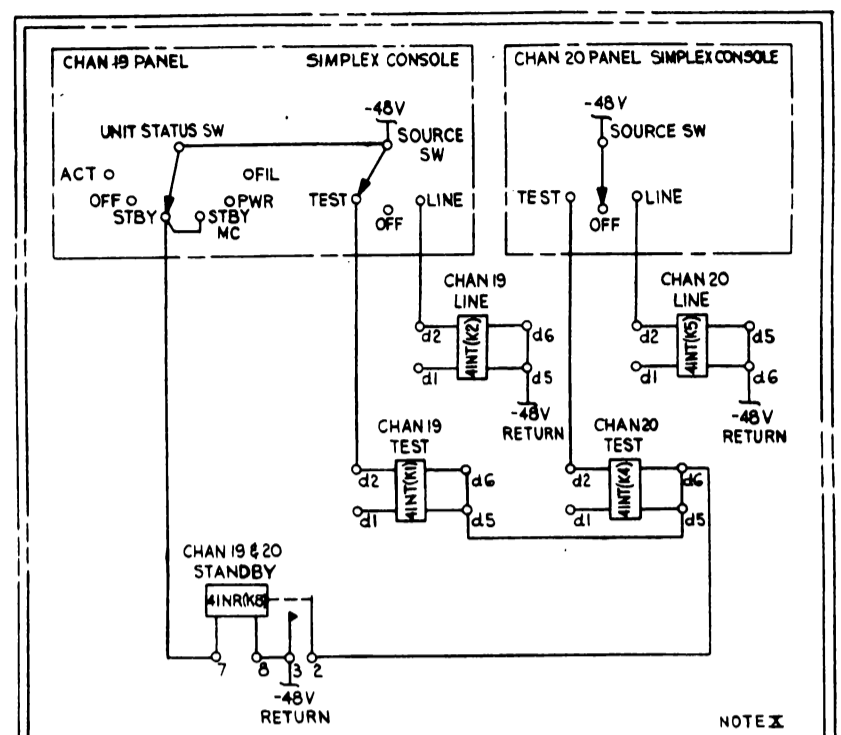
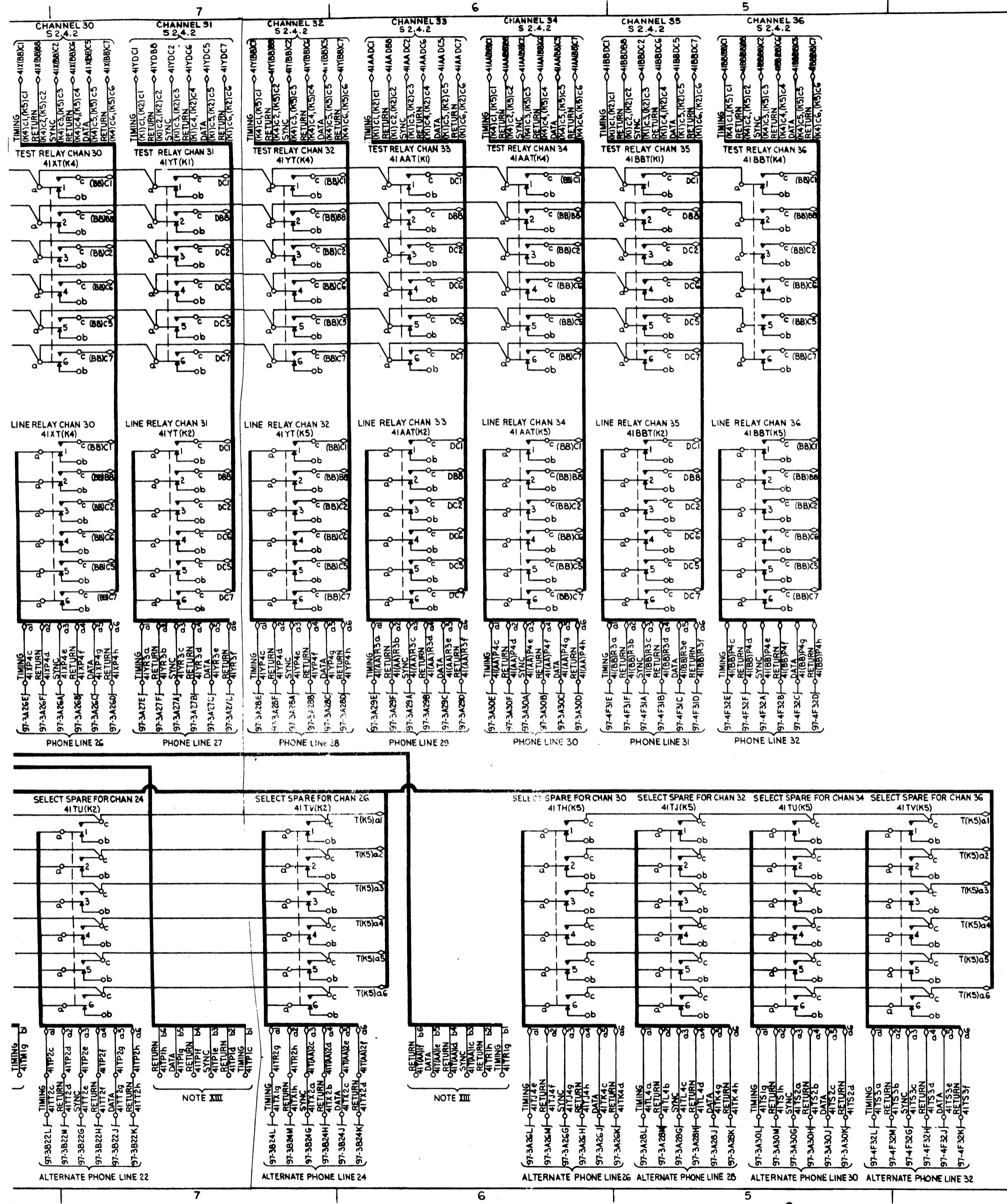
XI THIS DRAWING IS FOR A COMPLETE UNIT 41 HAVING ALL MODULES WIRED. WHEN UNWIRED SHIPPING SECTION J-M IS SUBSTITUTED, THE CIRCUITRY SHOWN FOR THIS SHIPPING SECTION IS NOT APPLICABLE. WHEN J-M IS AN UNWIRED SHIPPING SECTION THE FOLLOWING SHIELDED TWISTED PAIR JUMPERS ARE PROVIDED.

- 41ET3a TO 41HT3a
- 41ET3b TO 41HT3b
- 41ET3c TO 41HT3c
- 41ET3d TO 41HT3d
- 41ET3e TO 41HT3e
- 41ET3f TO 41HT3f

X ALL RELAYS SHOWN HAVE 620 Ω 1/2 W RESISTORS CONNECTED BETWEEN b1 & b2, b3 & b4 AND b5 & b6.

NOTES

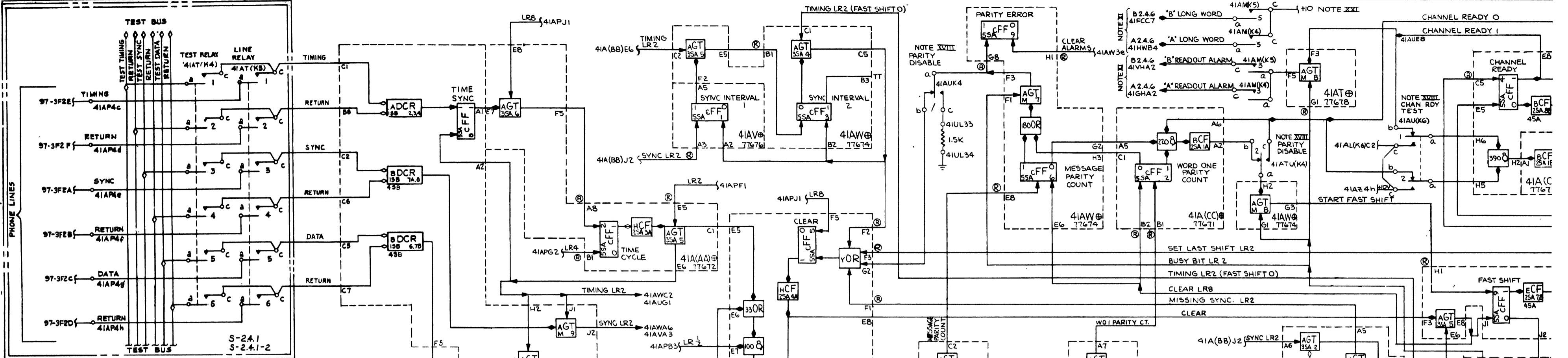




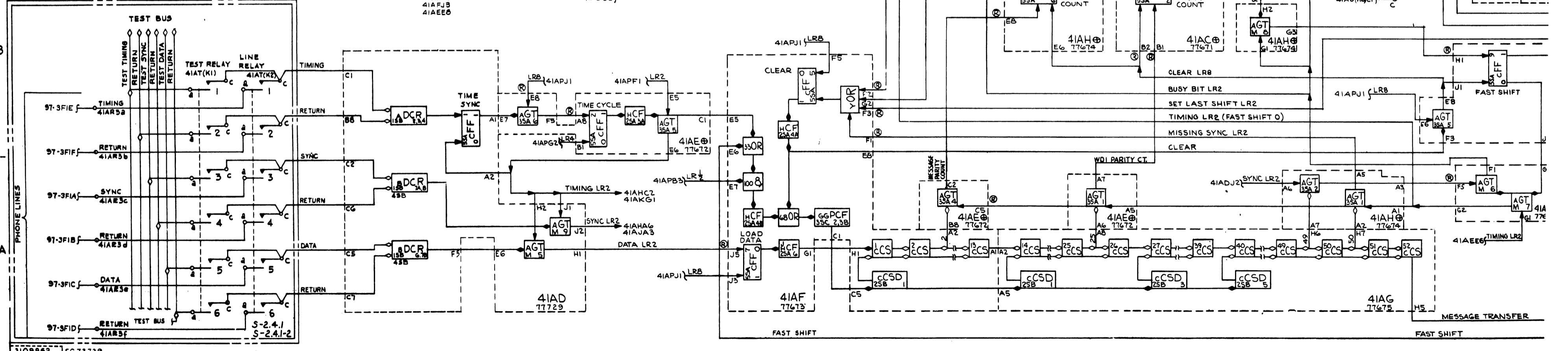
- III FOR SINGLE PHONE LINE OPERATION, DISCONNECT THE 620 Ω 1/2 W RESISTORS FROM THE 'b' CONTACTS OF THE LINE RELAY IN THE CHANNEL WHICH IS TO OPERATE WITH A SINGLE PHONE LINE. THEN CHANGE THE LEADS IN THE SPARE MODULE AS ILLUSTRATED IN THE CHART ABOVE. (CHART SHOWS CHANNEL 21 AS A SAMPLE, OTHER CHANNELS WOULD BE WIRED IN A SIMILAR MANNER.)
- II PART OF THIS DRAWING SHOWN IN PHANTOM ON S 2.4.2.
- XI THIS DRAWING IS FOR A COMPLETE UNIT 41 HAVING ALL MODULES WIRED. WHEN UNWIRED SHIPPING SECTION X-BB IS SUBSTITUTED, THE CIRCUITRY SHOWN FOR THIS SHIPPING SECTION IS NOT APPLICABLE.
- X ALL RELAYS SHOWN HERE HAVE 620 Ω 1/2 W RESISTOR CONNECTED BETWEEN b1 & b2, b3 & b4 AND b5 & b6

X COIL CONNECTIONS SHOWN FOR MOD N
 FOR OTHER CHAN MODS SUBSTITUTE
 P CHAN 21 & 22 X CHAN 29 & 30
 R CHAN 23 & 24 Y CHAN 31 & 32
 S CHAN 25 & 26 (AA) CHAN 33 & 34
 T CHAN 27 & 28 (BB) CHAN 35 & 36

S 2.4.7
 RELAY COIL CONN



MOD A-E CH 1-10	MOD J-M CH 11-18	MOD N-T CH 19-28	MOD X(BB) CH 29-36
B-2.4.6 41FBI A-2.4.6 41HNB	B-2.4.6 41HMB A-2.4.6 41HNB	B-2.4.6 41HMB A-2.4.6 41HNB	B-2.4.6 41HMB A-2.4.6 41HNB
A-2.4.6 41HMC5 B-2.4.6 41HMC6 41WLB8	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3
A-2.4.6 41HMF5 B-2.4.6 41HMF6 41WLF5	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3
A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3
A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3	A-2.4.6 41HMB3 B-2.4.6 41HMB4 41WLB3



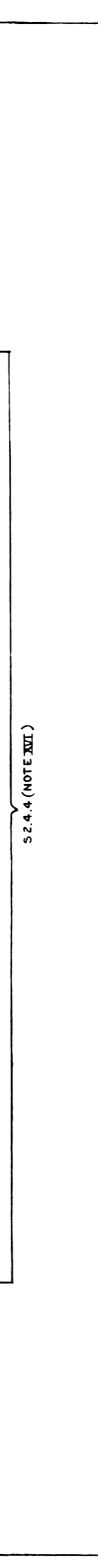
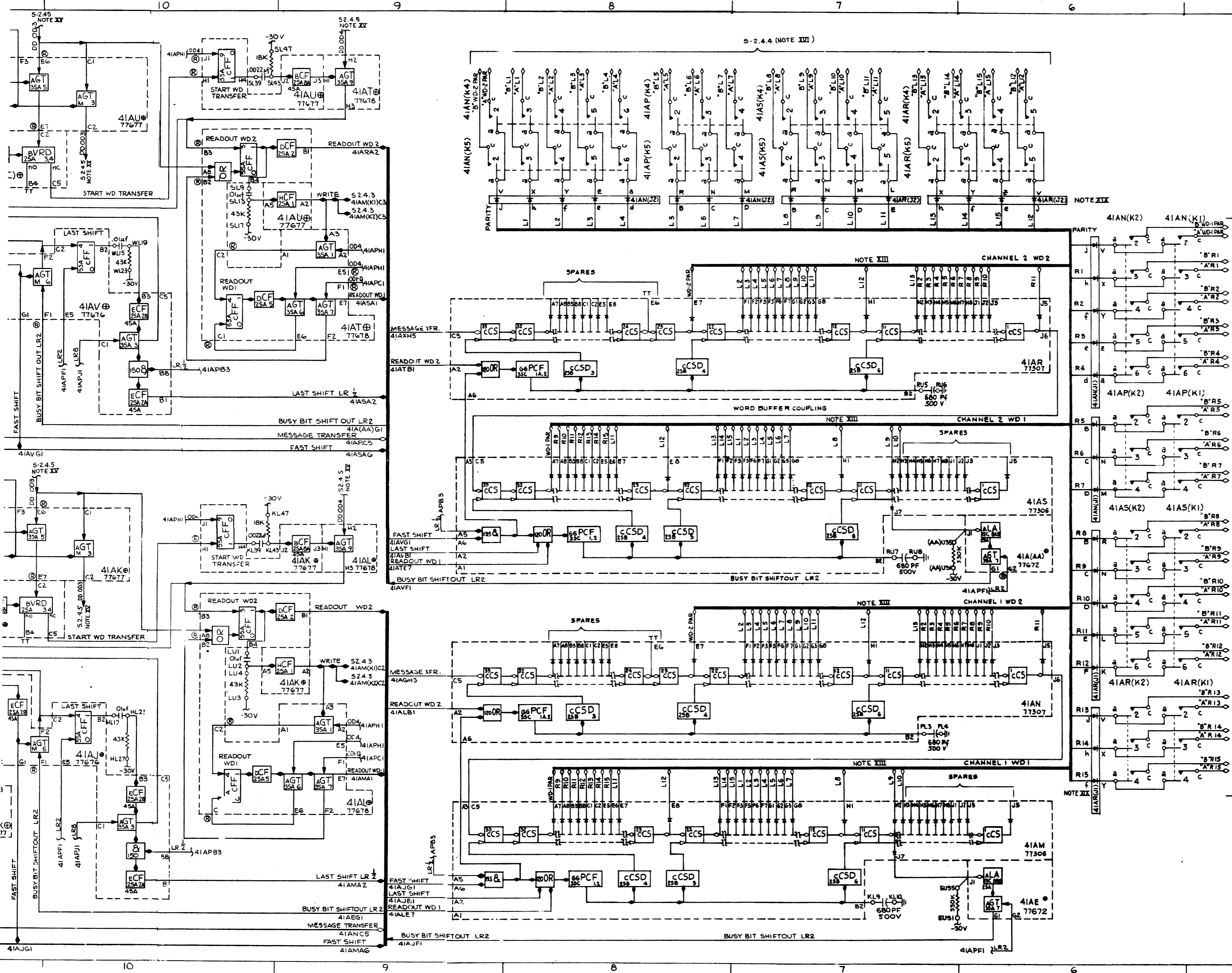


CHART I

Table with columns: CH, RELAY, EC, PU, PIN. Lists relay connections for longword 'A'.

CHART II

Table with columns: CH, RELAY, EC, PU, PIN. Lists relay connections for longword 'B'.

CHART IV

Table with columns: READOUT CORE BIT, CORE TO DIODE, DIODE TO CORE, CORE TO RESS. Lists readout alarm connections.

CHART III

Table with columns: CH, RELAY, EC, EC, EC, EC, PU, PIN. Lists relay connections for readout alarm 'A'.

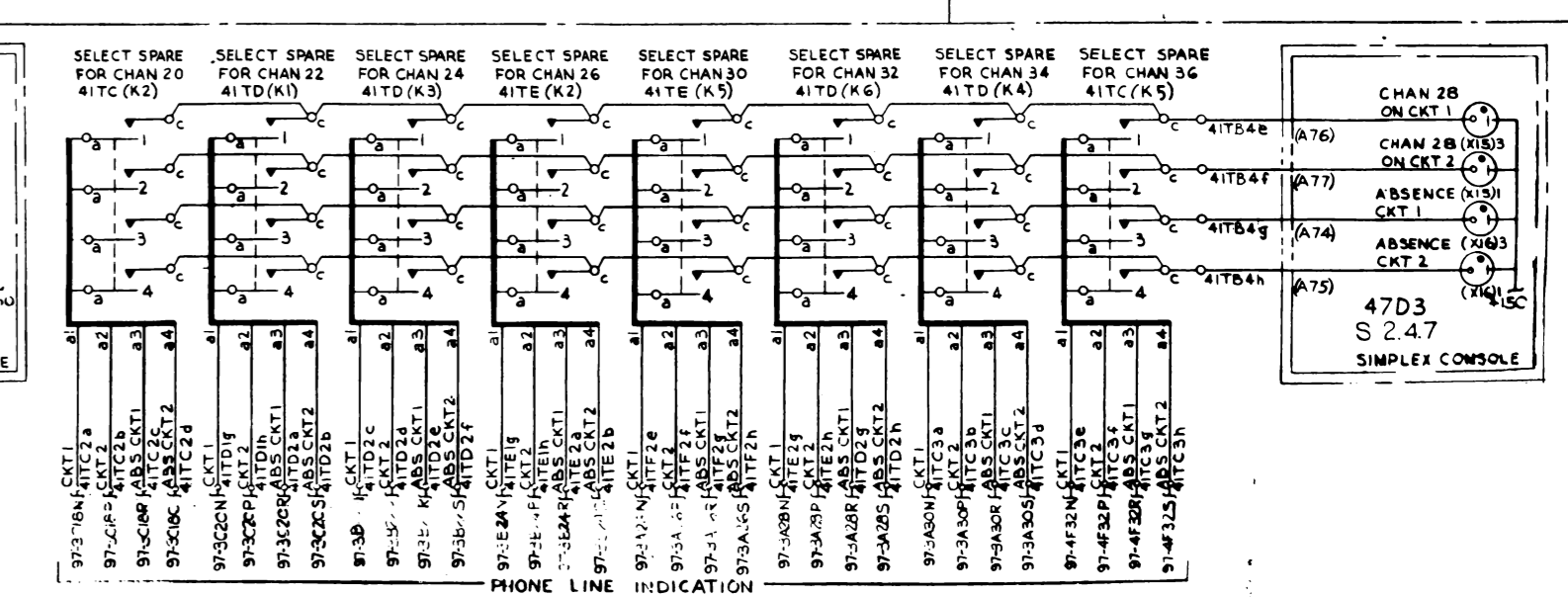
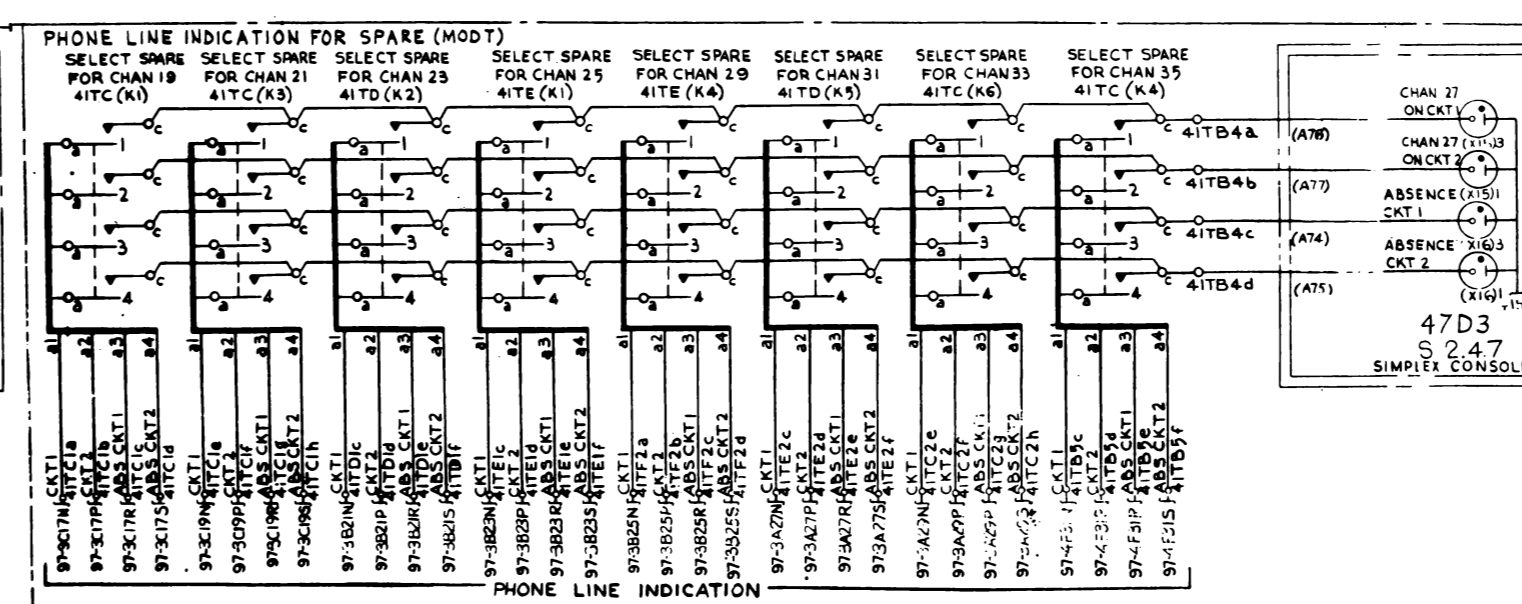
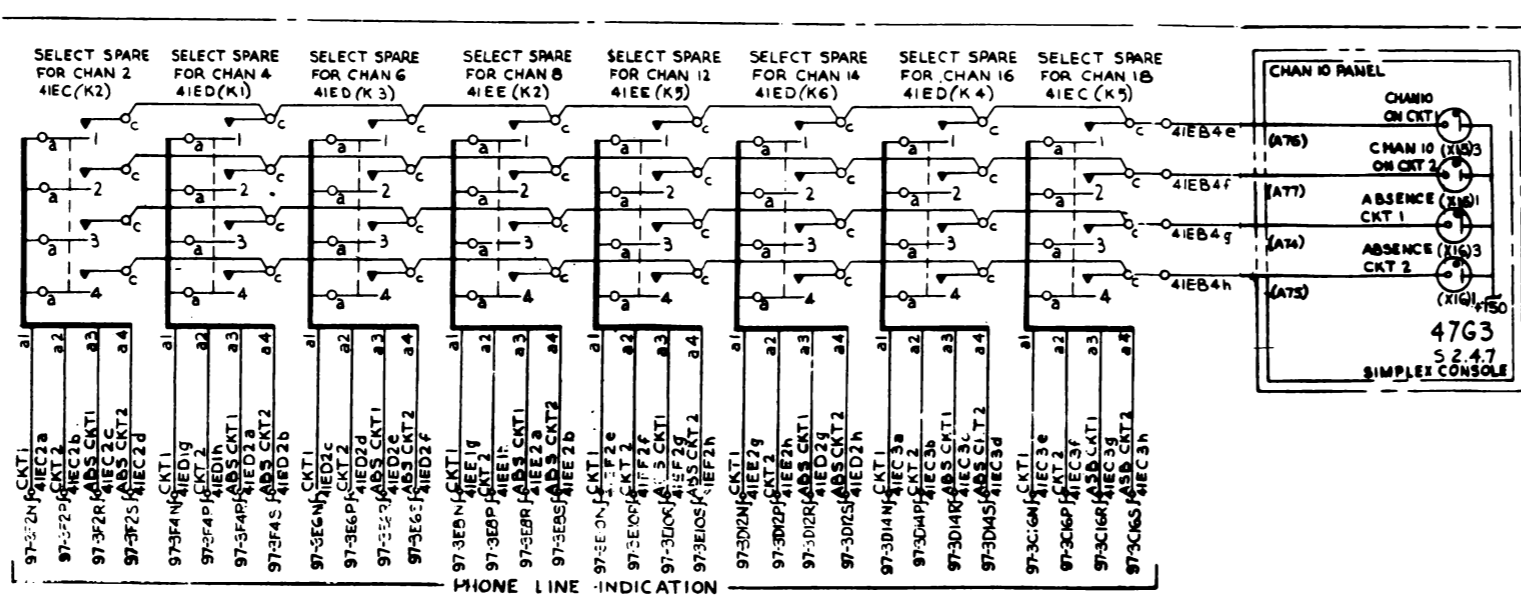
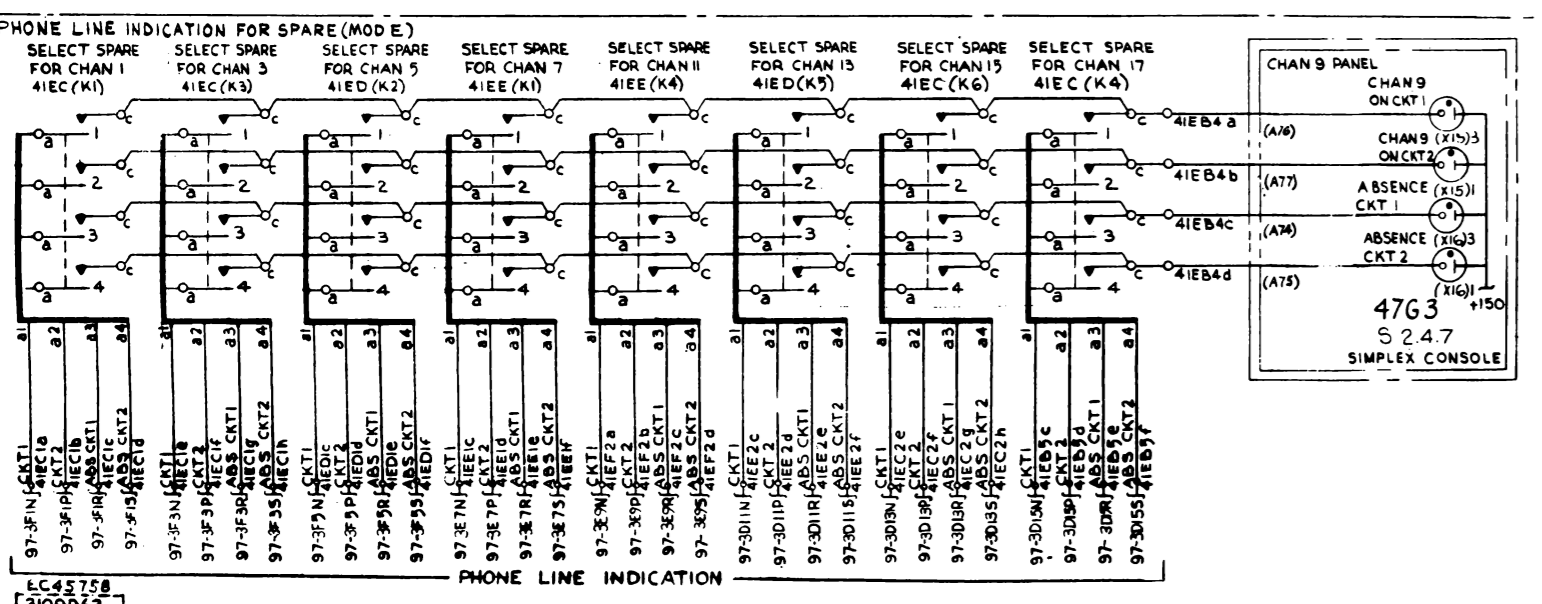
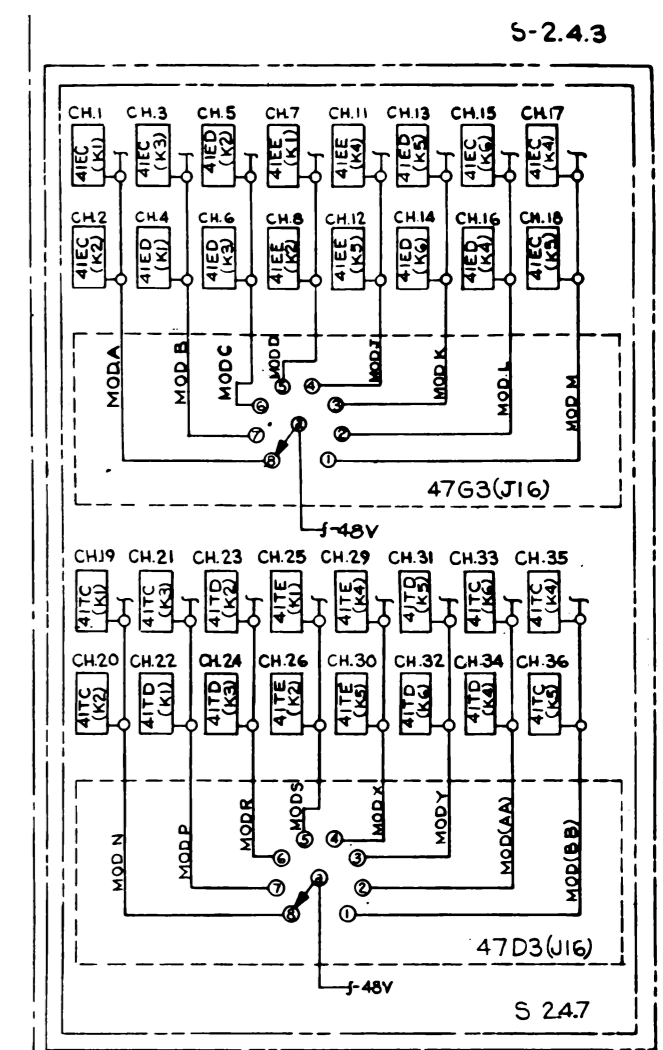
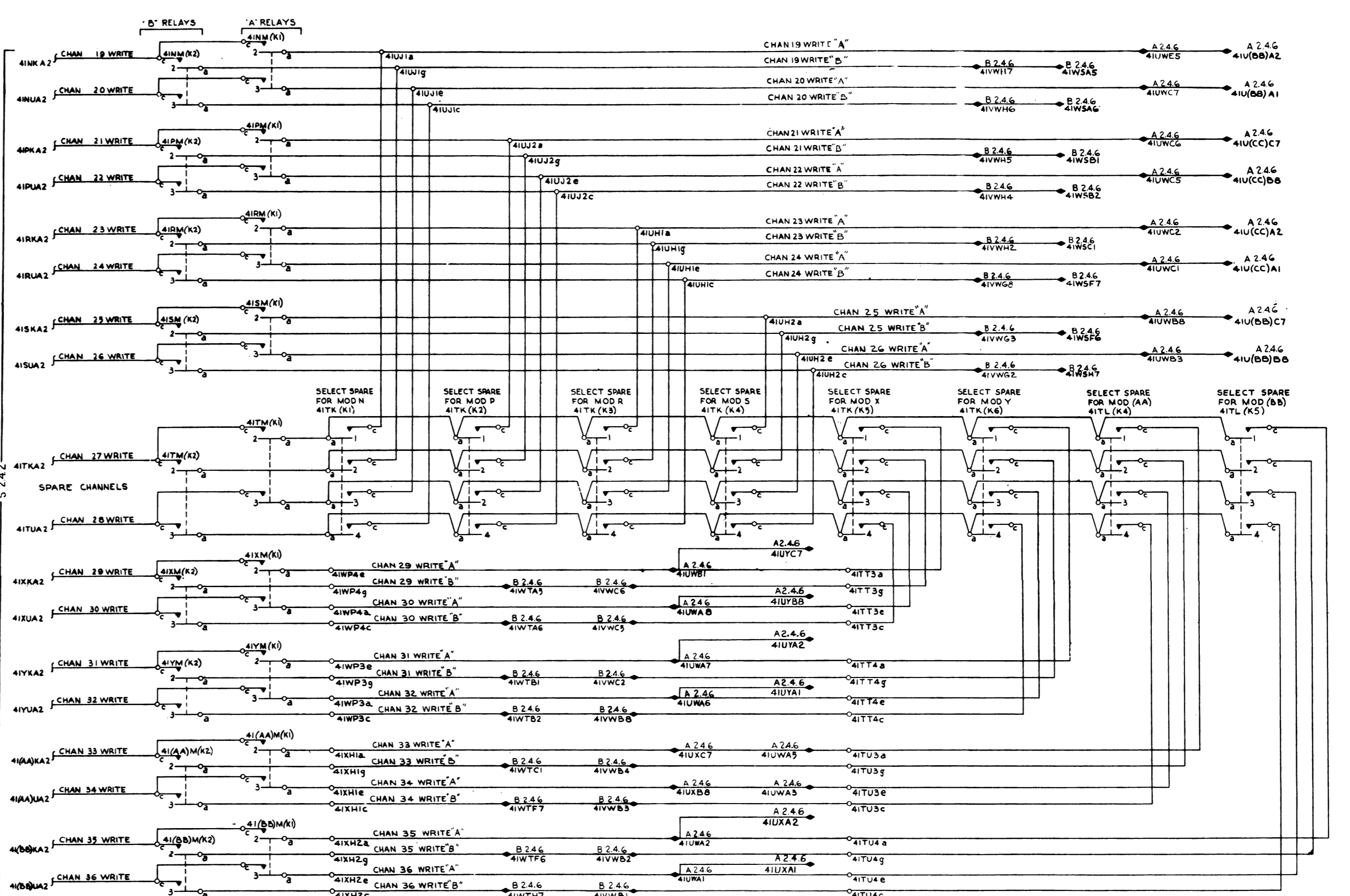
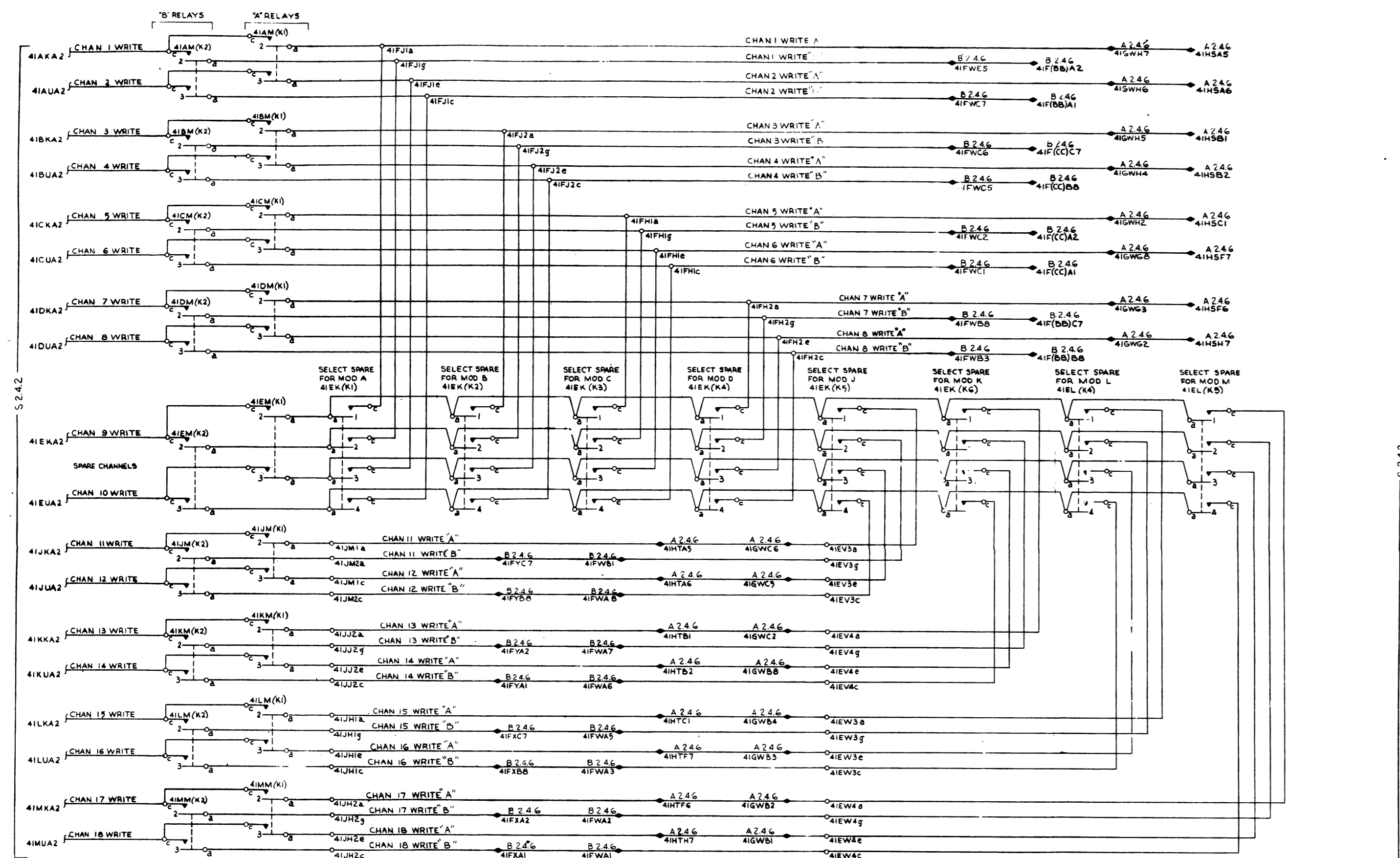
CHART V

Table with columns: CH, RELAY, EC, EC, EC, EC, PU, PIN. Lists relay connections for readout alarm 'B'.

CHART VI

Table with columns: NORMAL CHAN, SPARE CHAN. Lists channel connections.

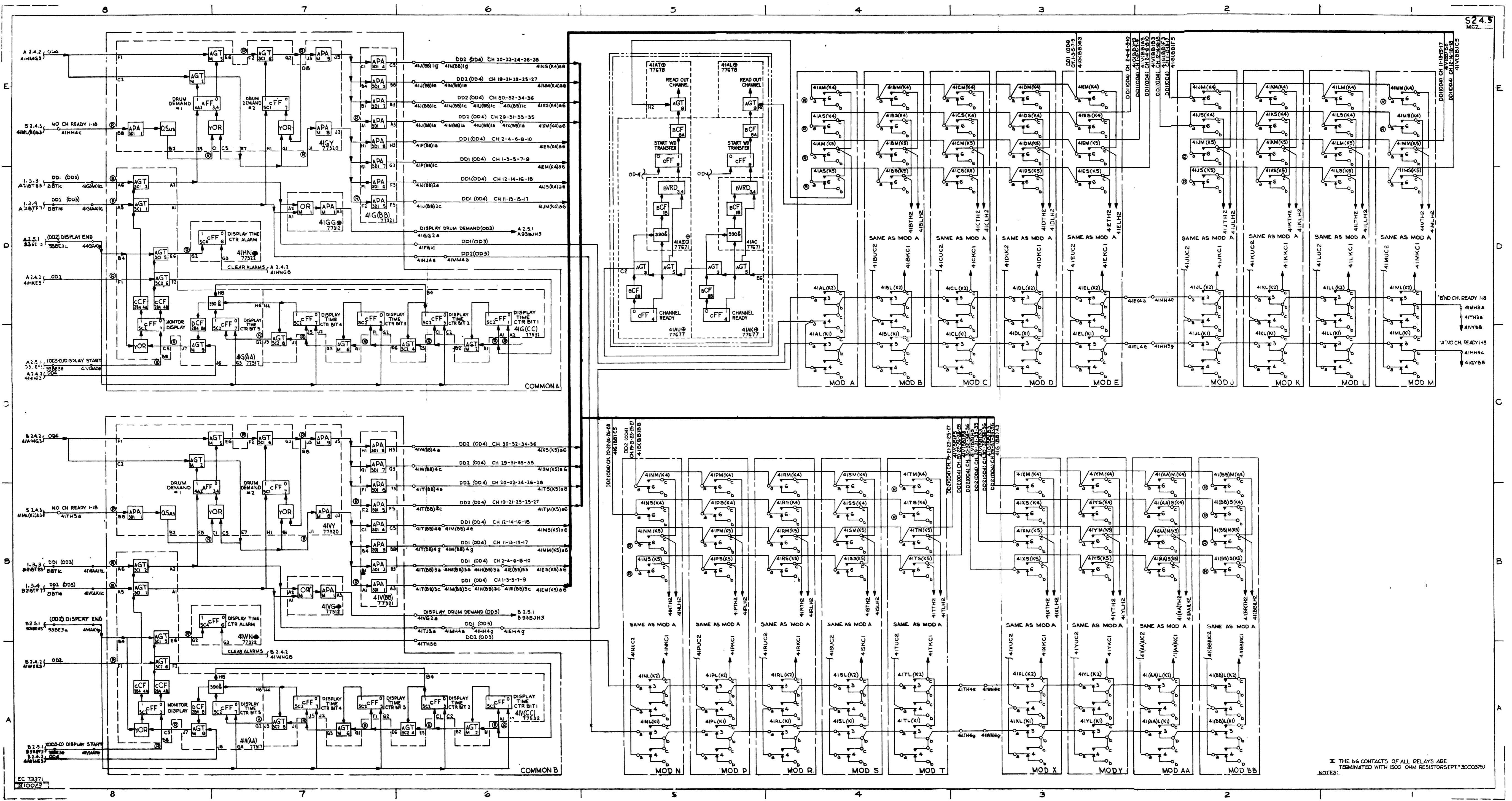
Notes section containing technical explanations and warnings for the circuit diagrams, including points about wiring and diode connections.



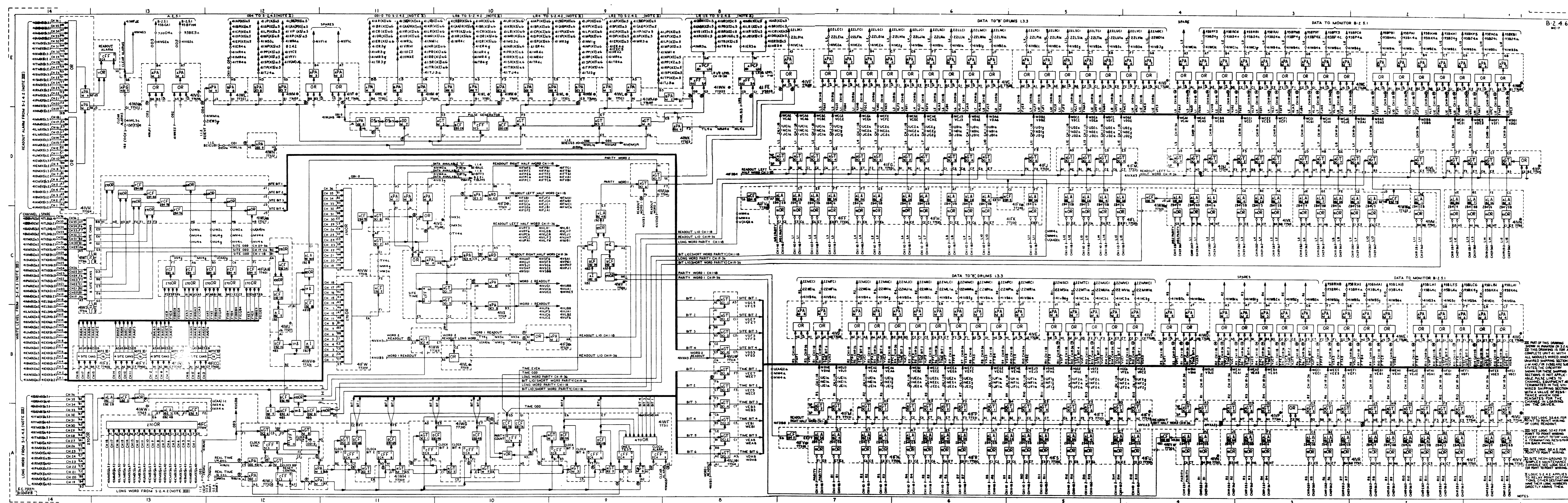
XI THE CHART BELOW SHOWS ALL POSSIBLE SELECTIONS FOR THE "A" OR "B" RELAYS IN ANY CHANNEL MODULE.
 UNIT STATUS SWITCH COMP A ACTIVE COMP B ACTIVE
 ACTIVE RELAYS PICKED RELAYS PICKED
 BY STATUS SW BY RELAYS PICKED BY RELAYS PICKED
 OFF POWER FIL. NO RELAYS PICKED NO RELAYS PICKED

X THE REPRESENTATION
 41JM(K)2-41JM2L 41HTAS 4EW6 41EVS4 41EK(K)6
 INDICATES INFORMATION FLOW TO 41HTAS AND 41EW6 FROM THE CHANNEL OR THE SPARE CHANNEL DEPENDING ON RELAYS ENERGIZED. PT TO PT WRITING IS FROM 41JM(K)2L TO 41JM2L TO 41HTAS TO 41EW6 TO 41EVS4 TO 41EK(K)6

NOTES



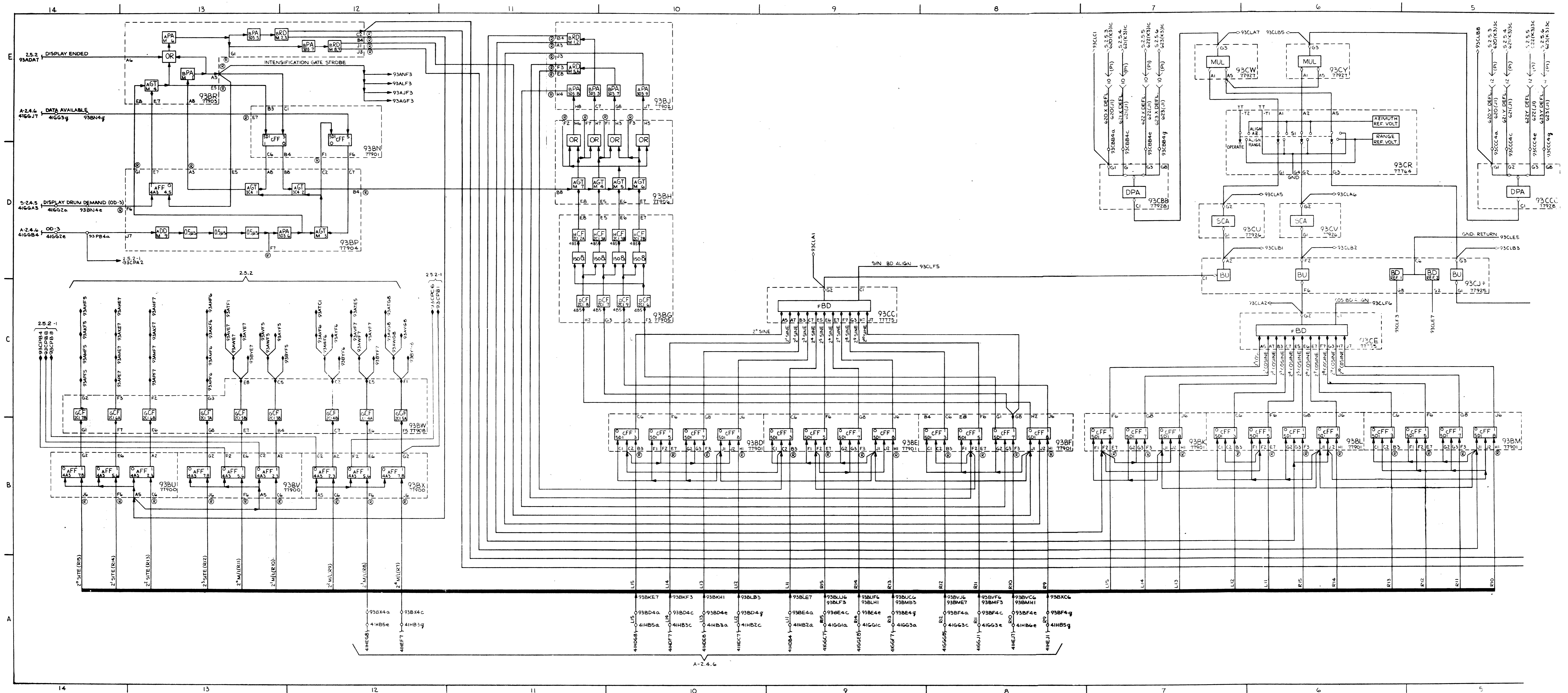
DRUM DEMAND LRI

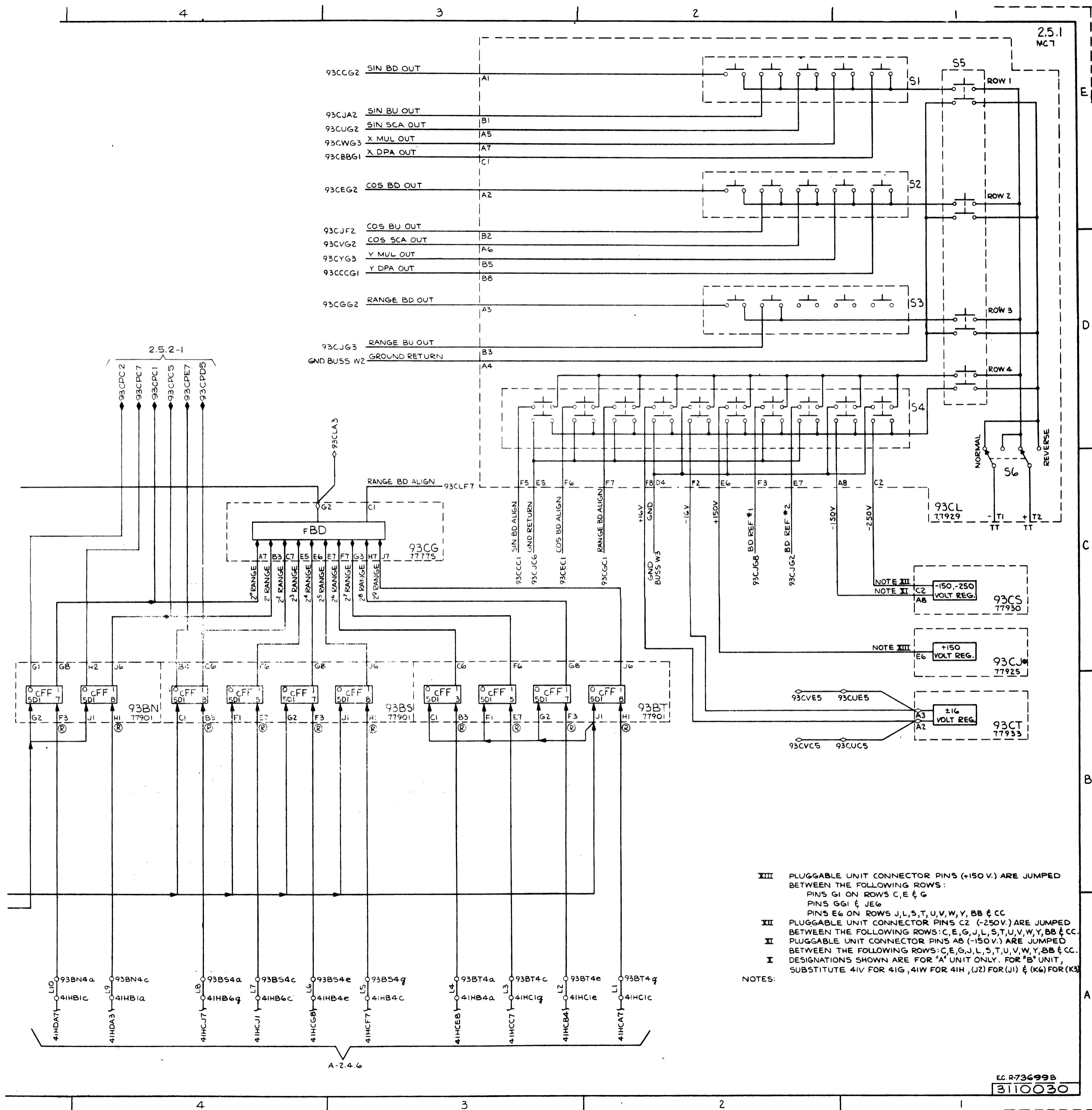


B-2-46
MC-7

THIS PART OF THE DRAWING
SHOWN IN PARENT OR 3-2-4
IS THE DRAWING FOR A
COMPLETE UNIT WITH
UNWIDED SHIPPING SECTIONS
J-N AND/OR FLIP-FLIP
SITES IN THE DRAWING
SHOWS THE SHIPPING
SECTIONS IS NOT APPLICABLE
THESE LINES TO
CHANNEL EQUIPMENT ARE
TERMINATED IN THE UN-
WIDED SHIPPING SECTION
WITH A VALUE OF RESISTANCE
SPECIFIED FOR THE
CHANNEL ORIGIN
ON THE DRIVER.

NOTES:
1. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
2. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
3. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
4. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
5. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
6. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
7. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
8. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
9. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
10. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
11. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
12. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
13. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.
14. SEE LOGIC 32-1-4 FOR
POINT TO POINT WIRING
AND CLARIFYING NOTES.





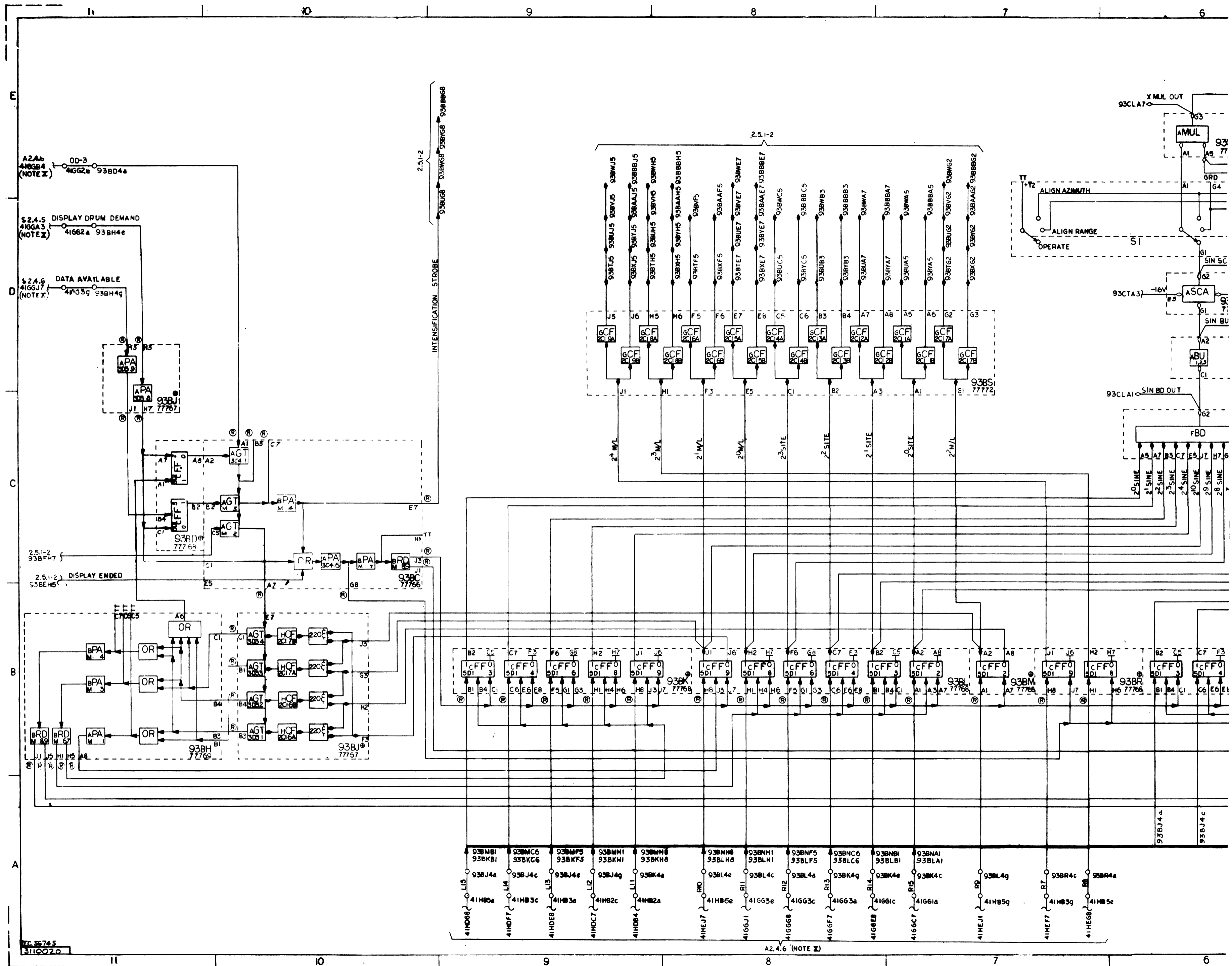
NOTES:

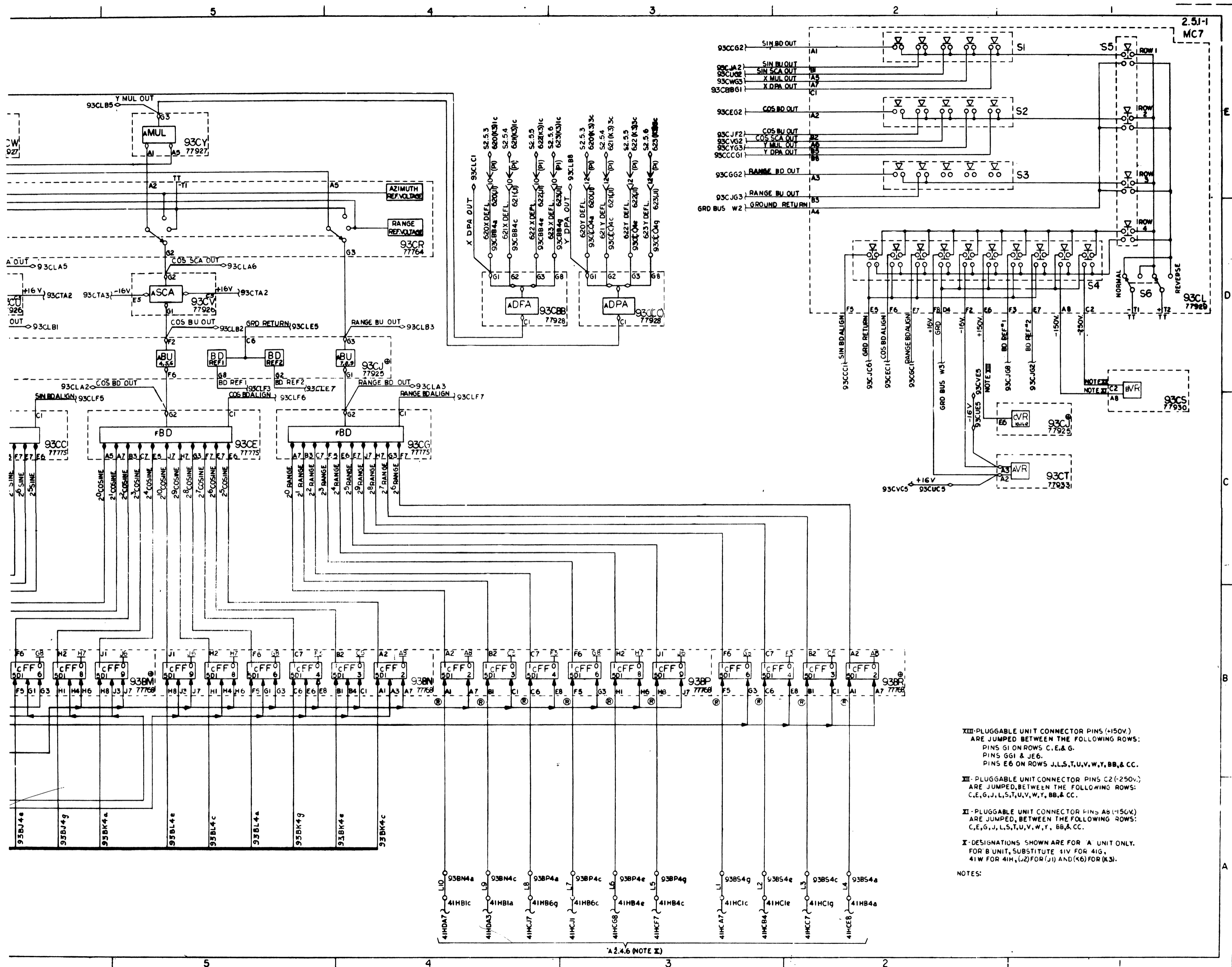
XIII PLUGGABLE UNIT CONNECTOR PINS (+150 V.) ARE JUMPED BETWEEN THE FOLLOWING ROWS:
 PINS G1 ON ROWS C, E & G
 PINS G6 & J6
 PINS E6 ON ROWS J, L, S, T, U, V, W, Y, BB & CC

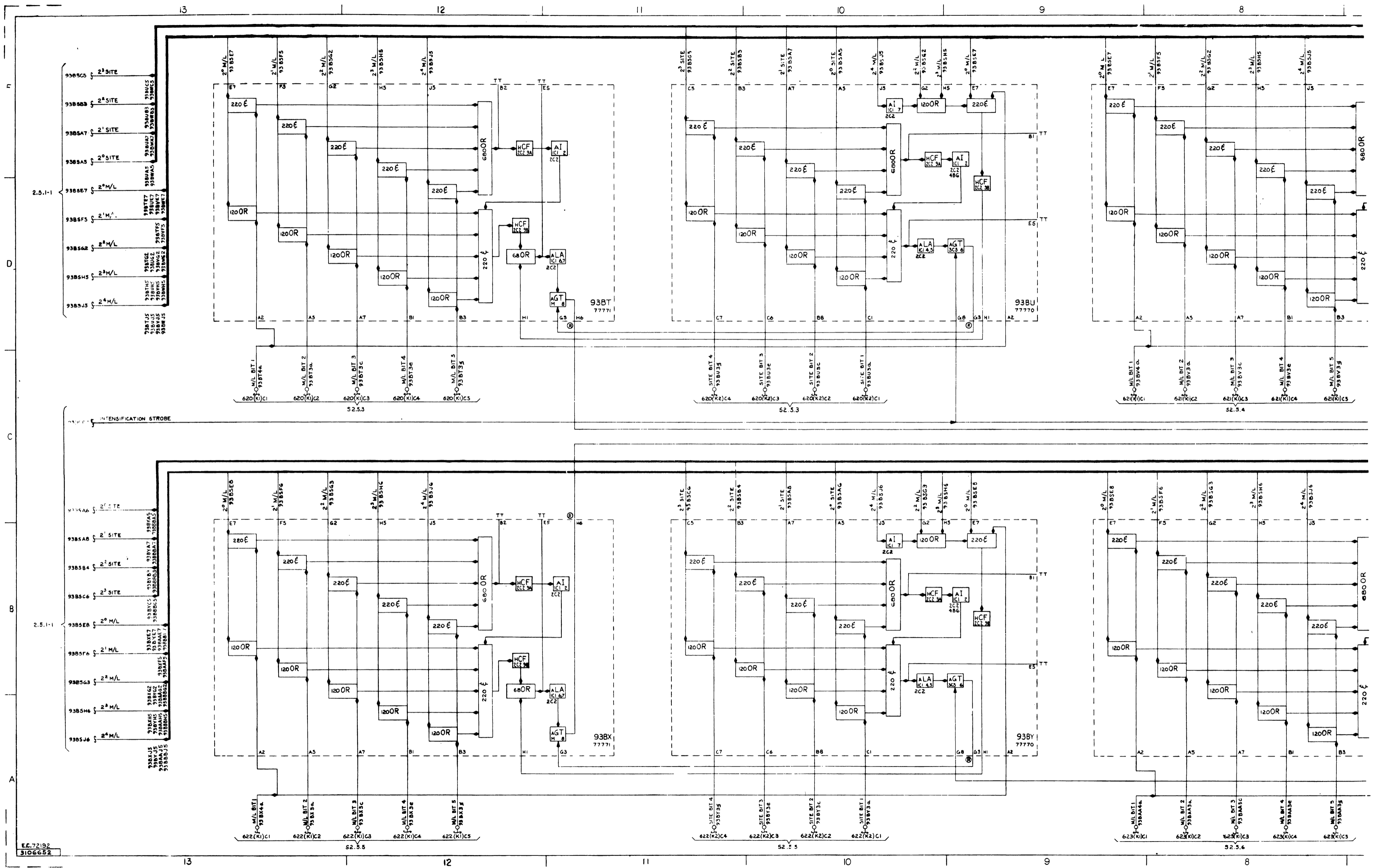
XII PLUGGABLE UNIT CONNECTOR PINS C2 (-250V.) ARE JUMPED BETWEEN THE FOLLOWING ROWS: C, E, G, J, L, S, T, U, V, W, Y, BB & CC.

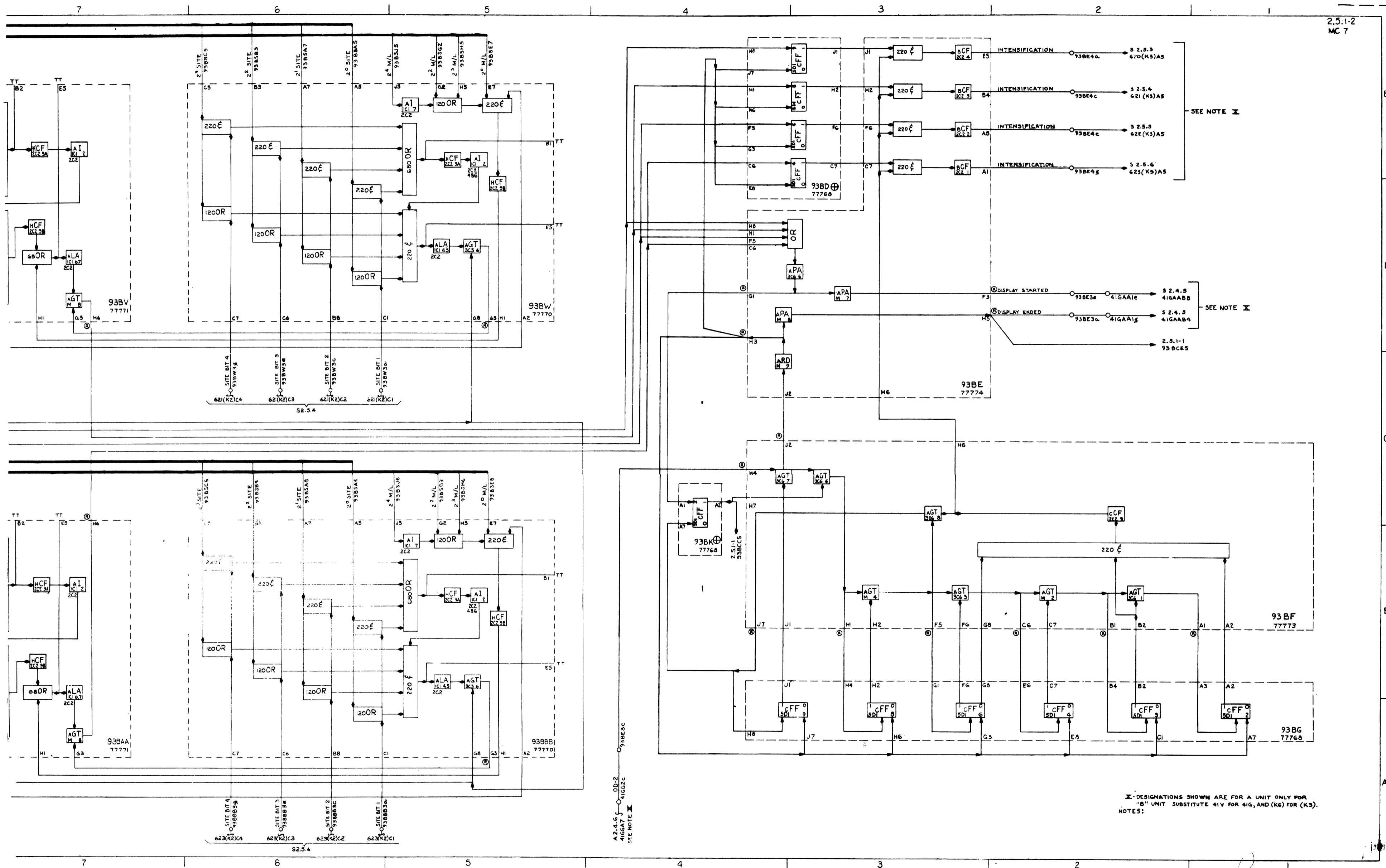
XI PLUGGABLE UNIT CONNECTOR PINS A8 (-150V.) ARE JUMPED BETWEEN THE FOLLOWING ROWS: C, E, G, J, L, S, T, U, V, W, Y, BB & CC.

I DESIGNATIONS SHOWN ARE FOR 'A' UNIT ONLY. FOR 'B' UNIT, SUBSTITUTE 4IV FOR 4IG, 4IW FOR 4IH, (J2) FOR (J1) & (K6) FOR (K3).









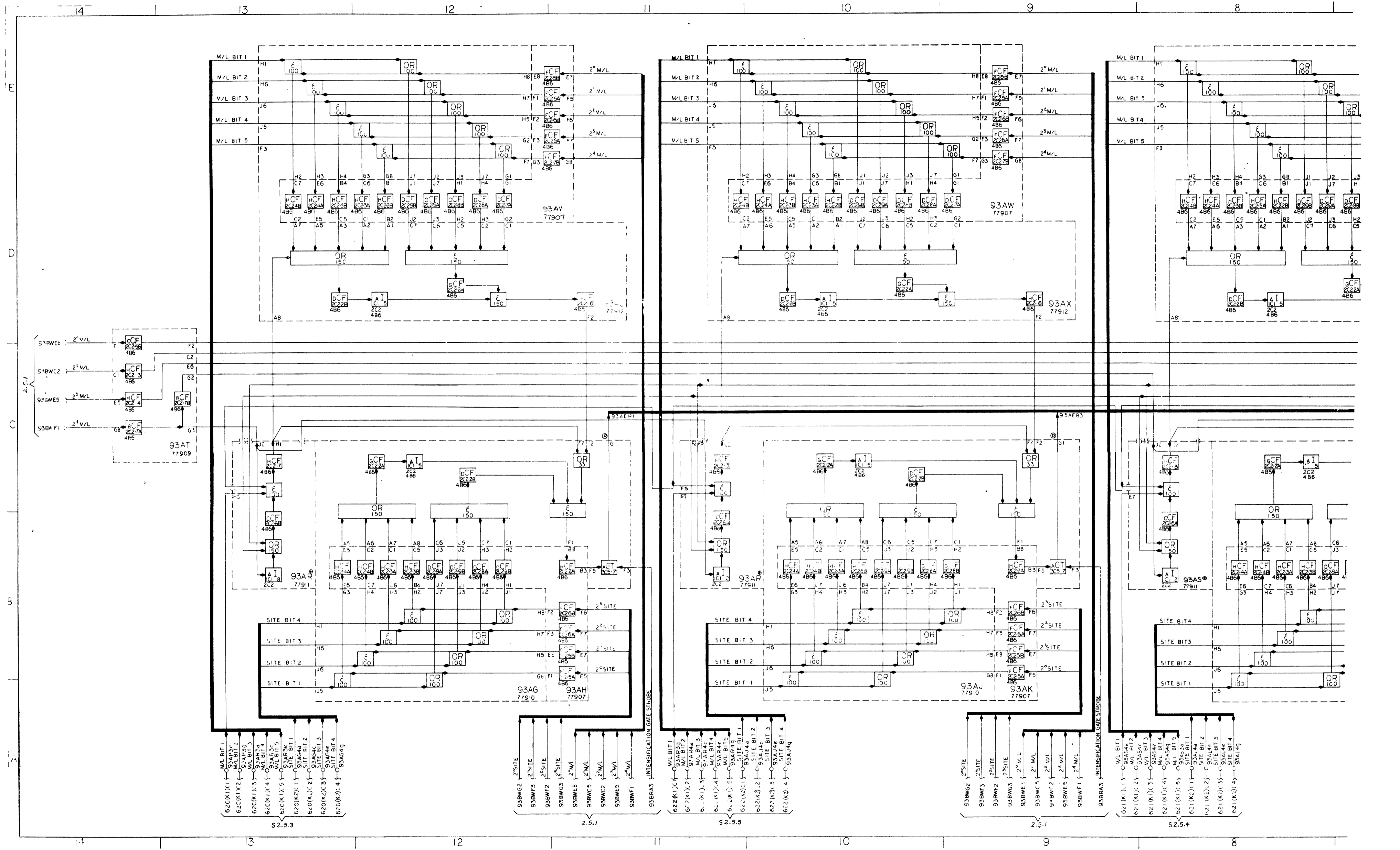
2.5.1-2
MC 7

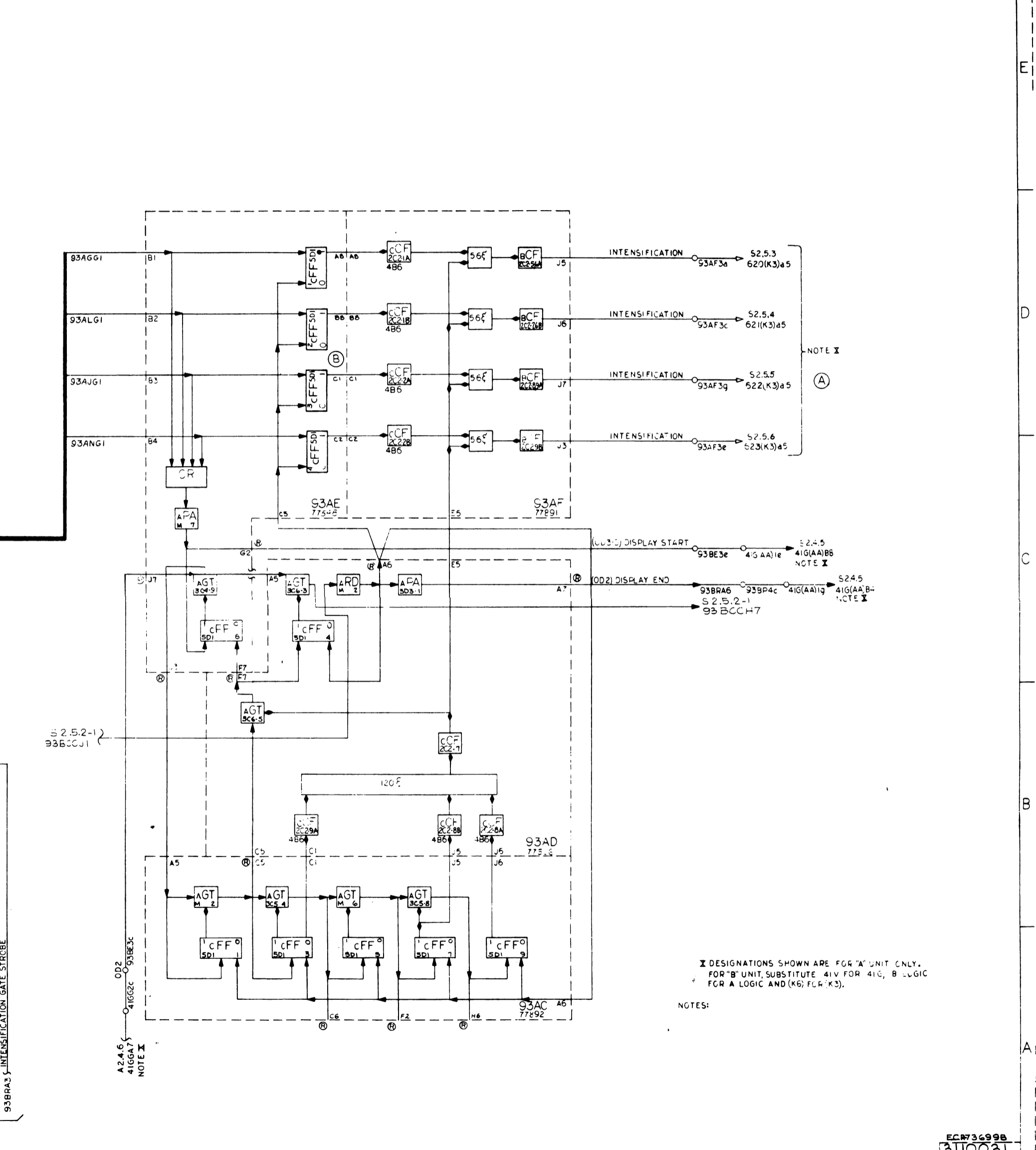
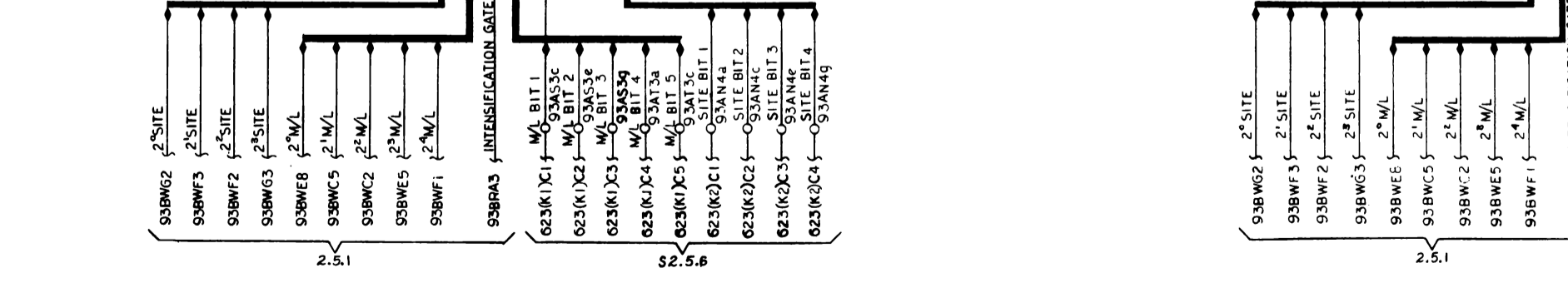
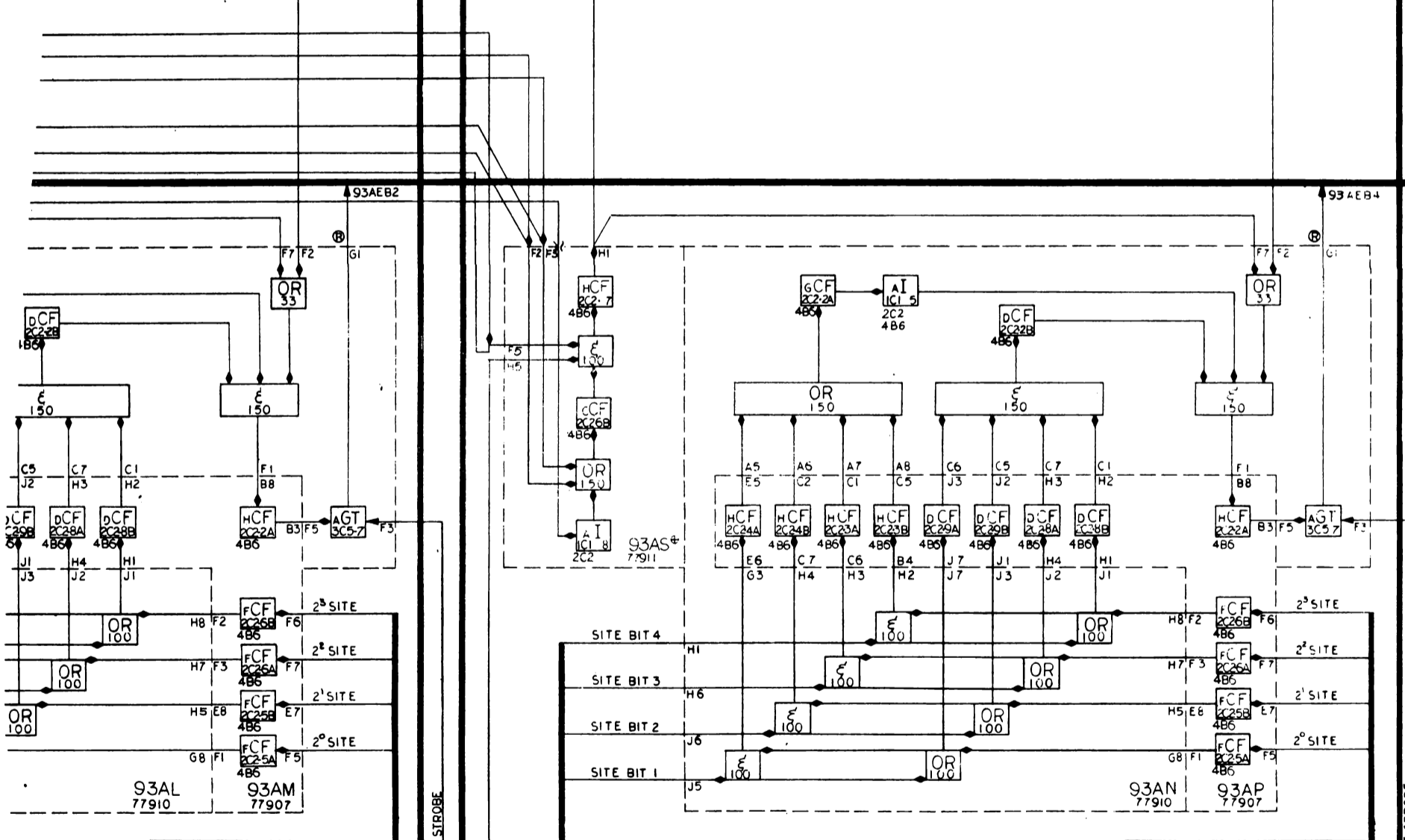
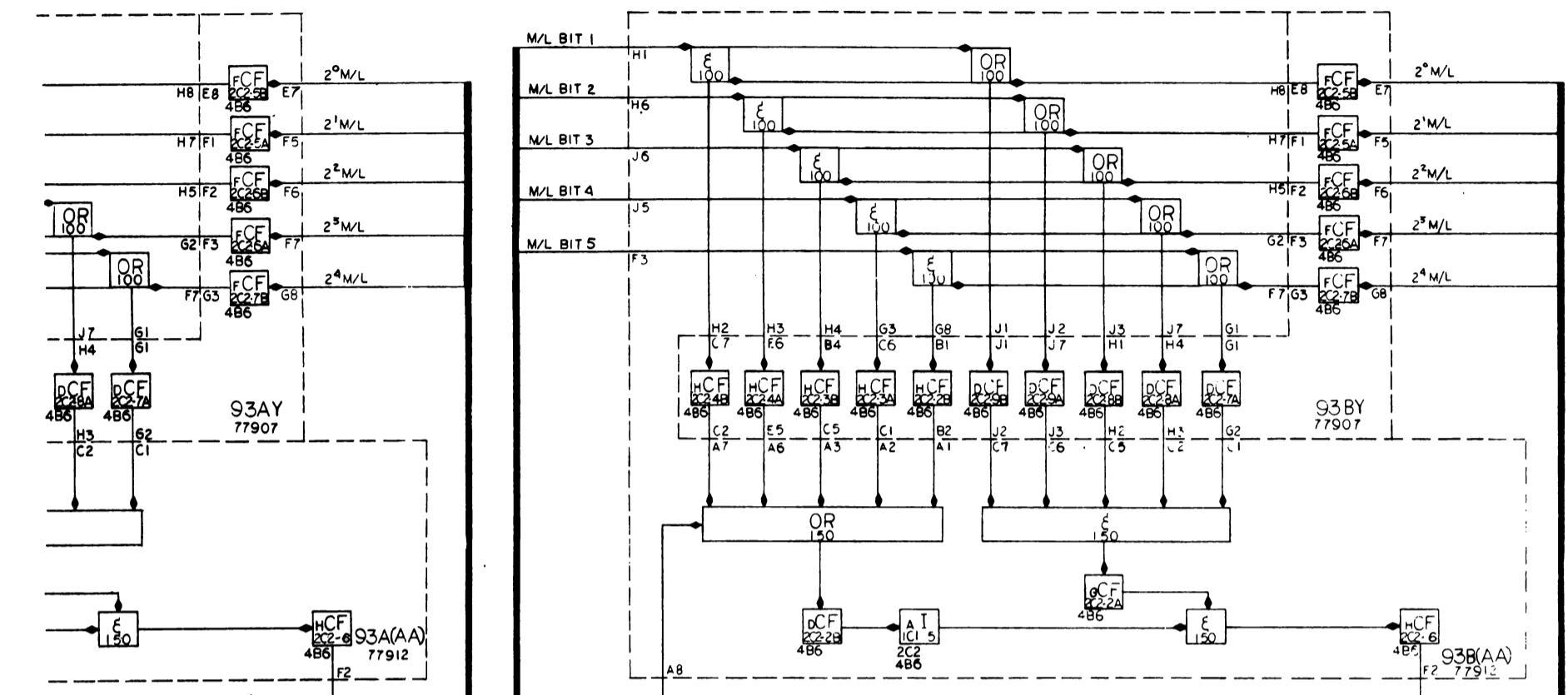
SEE NOTE X

SEE NOTE X

A 2.4.6 41GAA7 41GG2C
SEE NOTE X

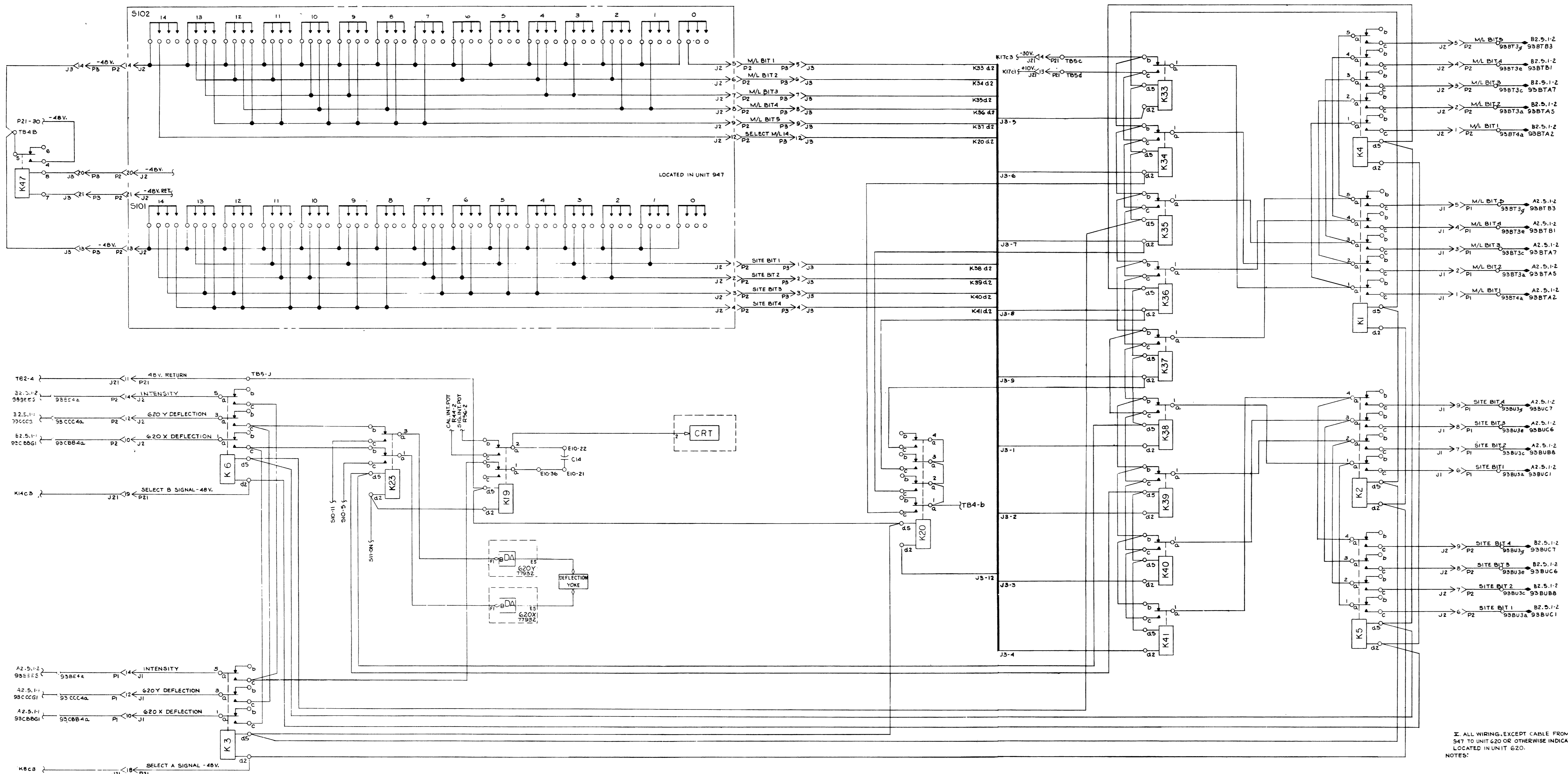
X- DESIGNATIONS SHOWN ARE FOR A UNIT ONLY FOR "B" UNIT SUBSTITUTE 41G FOR 41G, AND (K6) FOR (K3).
NOTES:





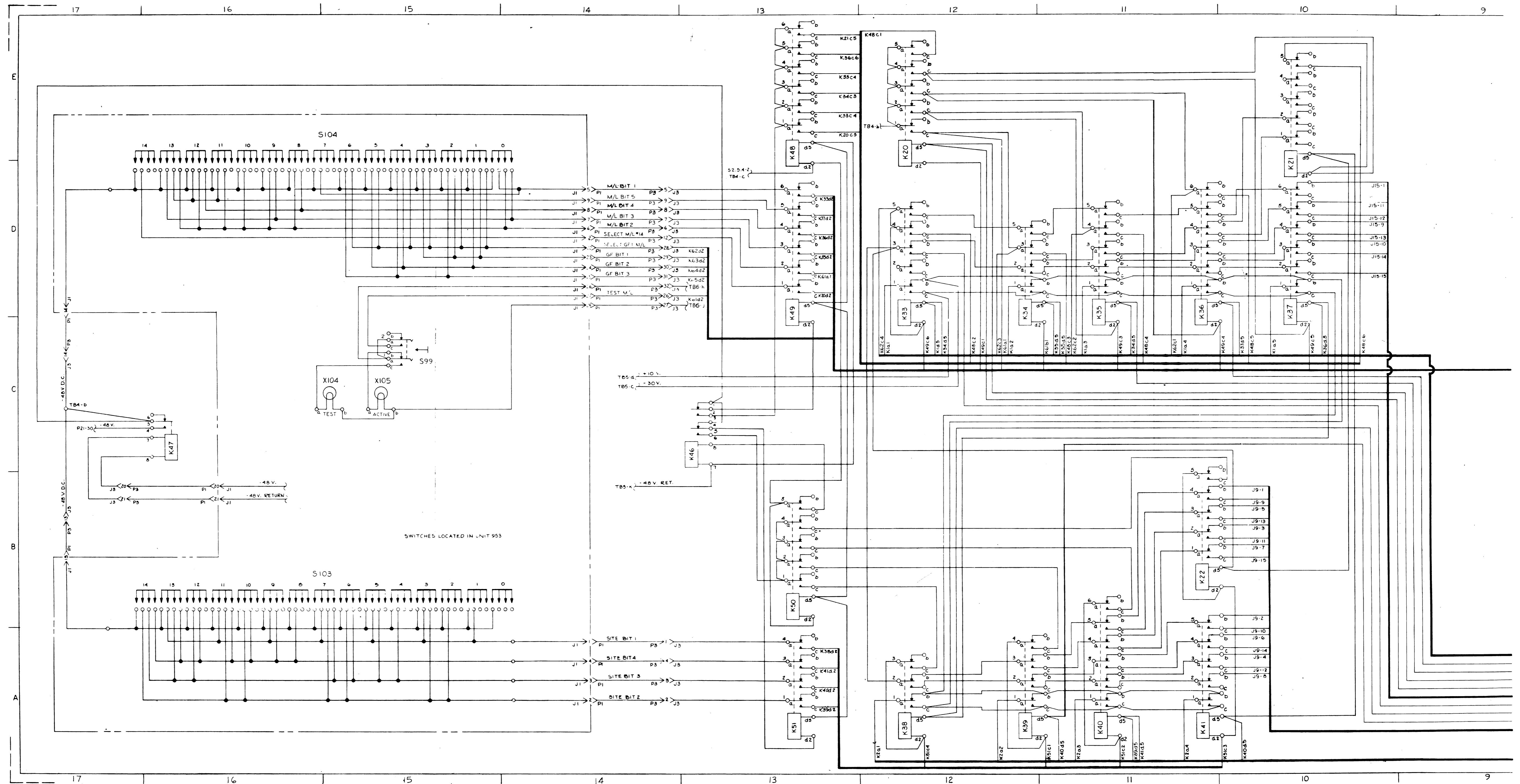
DESIGNATIONS SHOWN ARE FOR "A" UNIT ONLY. FOR "B" UNIT, SUBSTITUTE 41G FOR 41G, B LOGIC FOR A LOGIC AND (K6) FOR (K3).

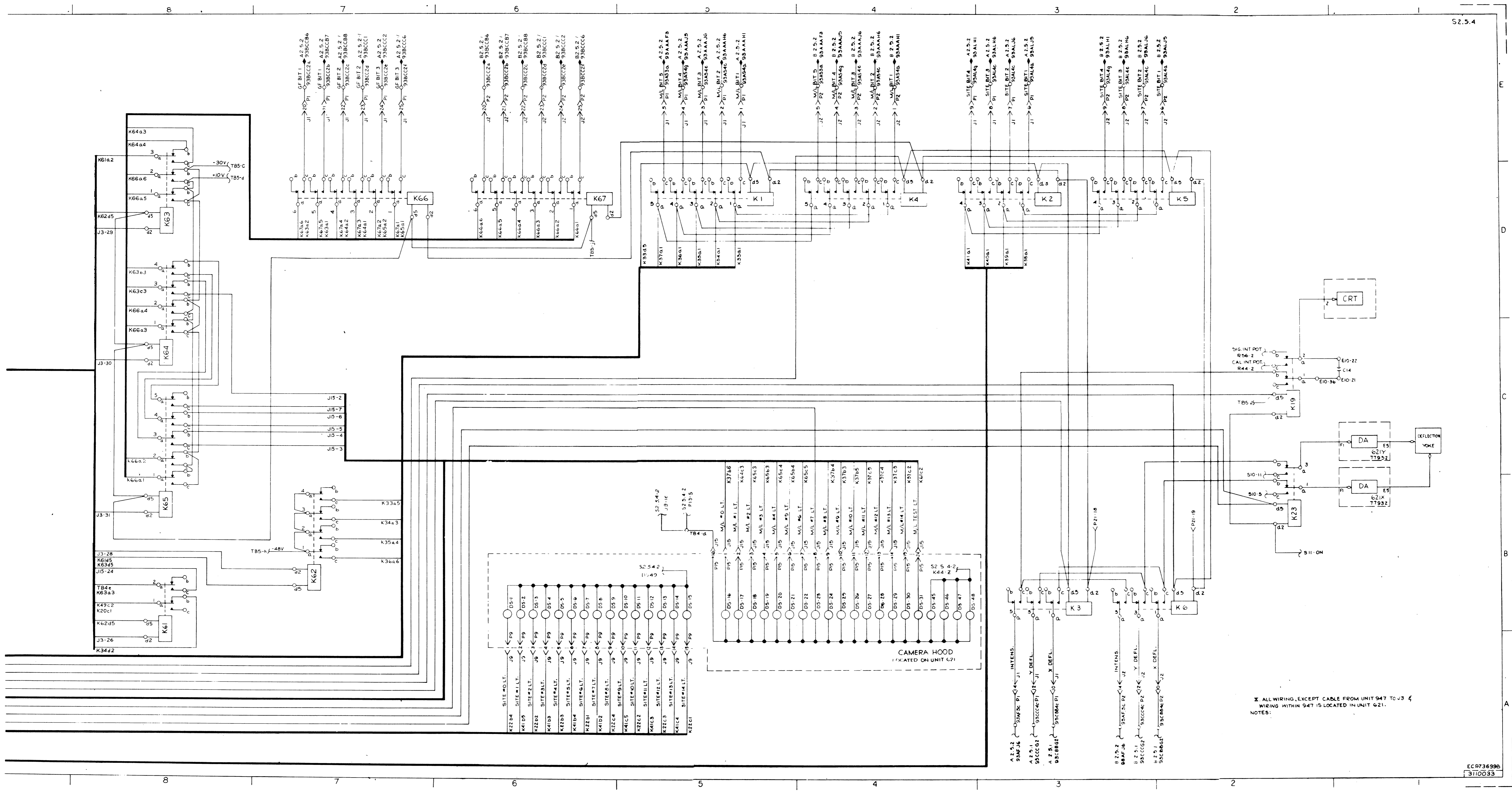
NOTES:



X. ALL WIRING, EXCEPT CABLE FROM UNIT 947 TO UNIT 620 OR OTHERWISE INDICATED IS LOCATED IN UNIT 620.

EC 2846
31357521

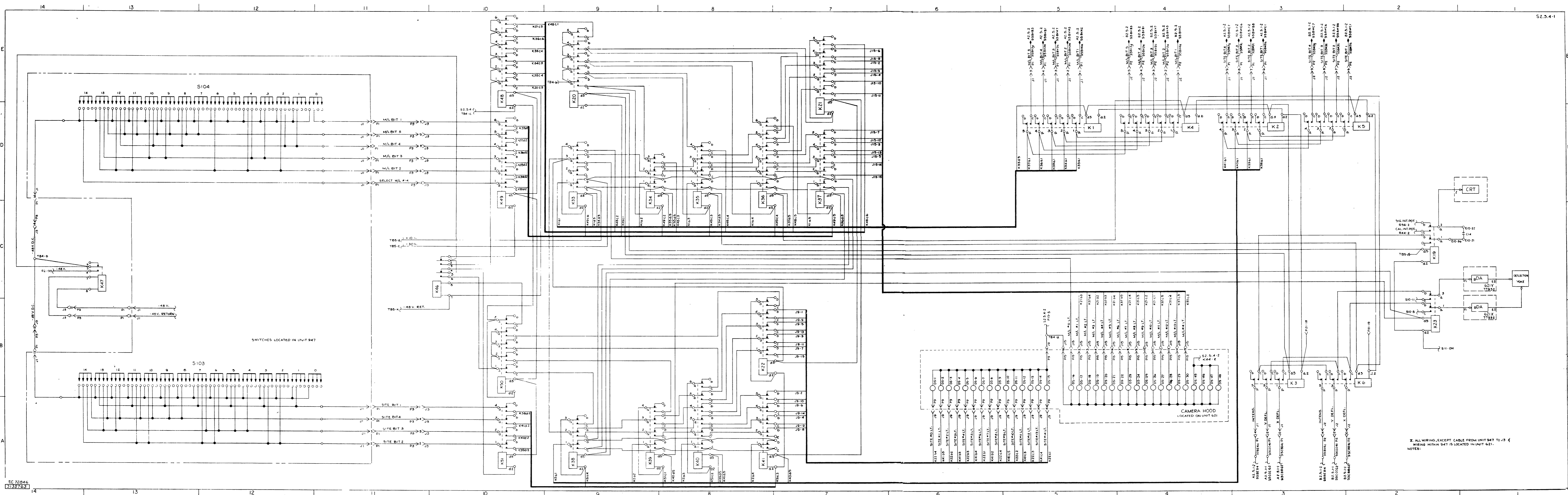




NOTES:
 X ALL WIRING, EXCEPT CABLE FROM UNIT 947 TO J3 & WIRING WITHIN 947 IS LOCATED IN UNIT 621.

BLOCK SCHEMATIC UNIT 621

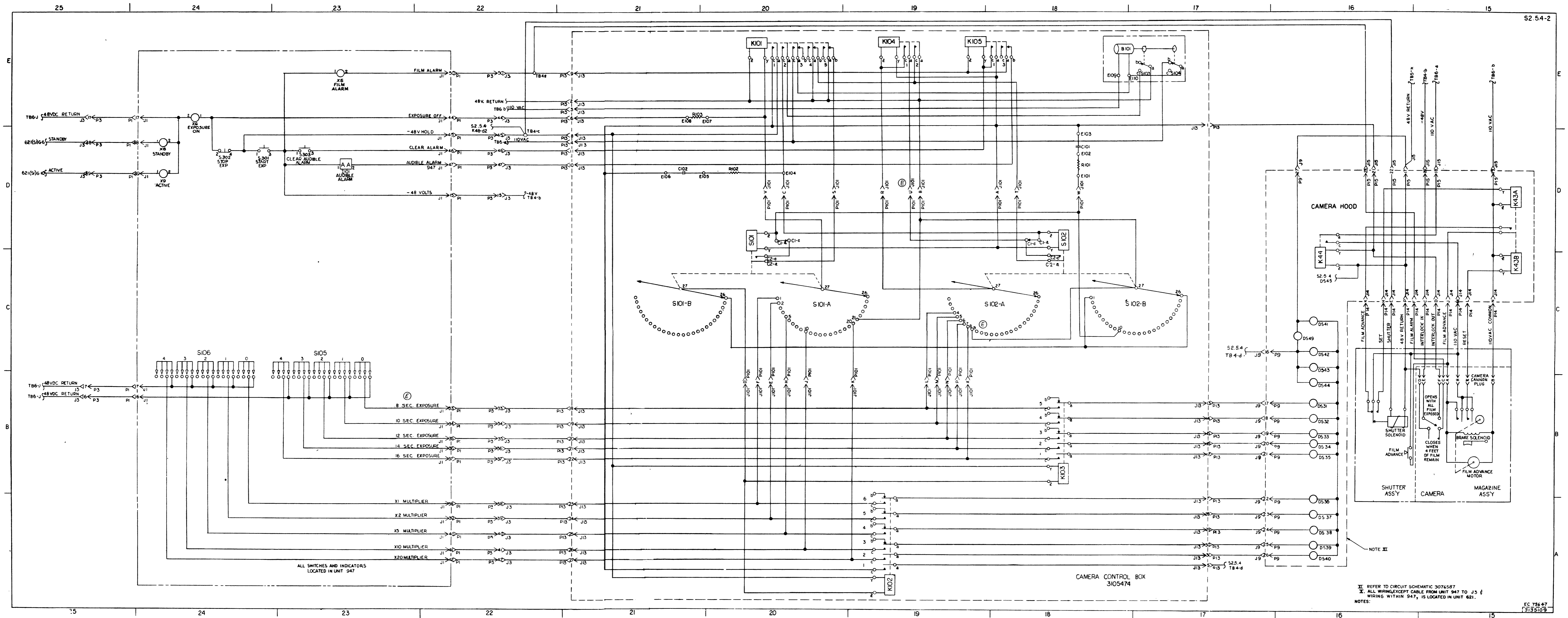
EC9736990
 3170033



EC 72846
3138763

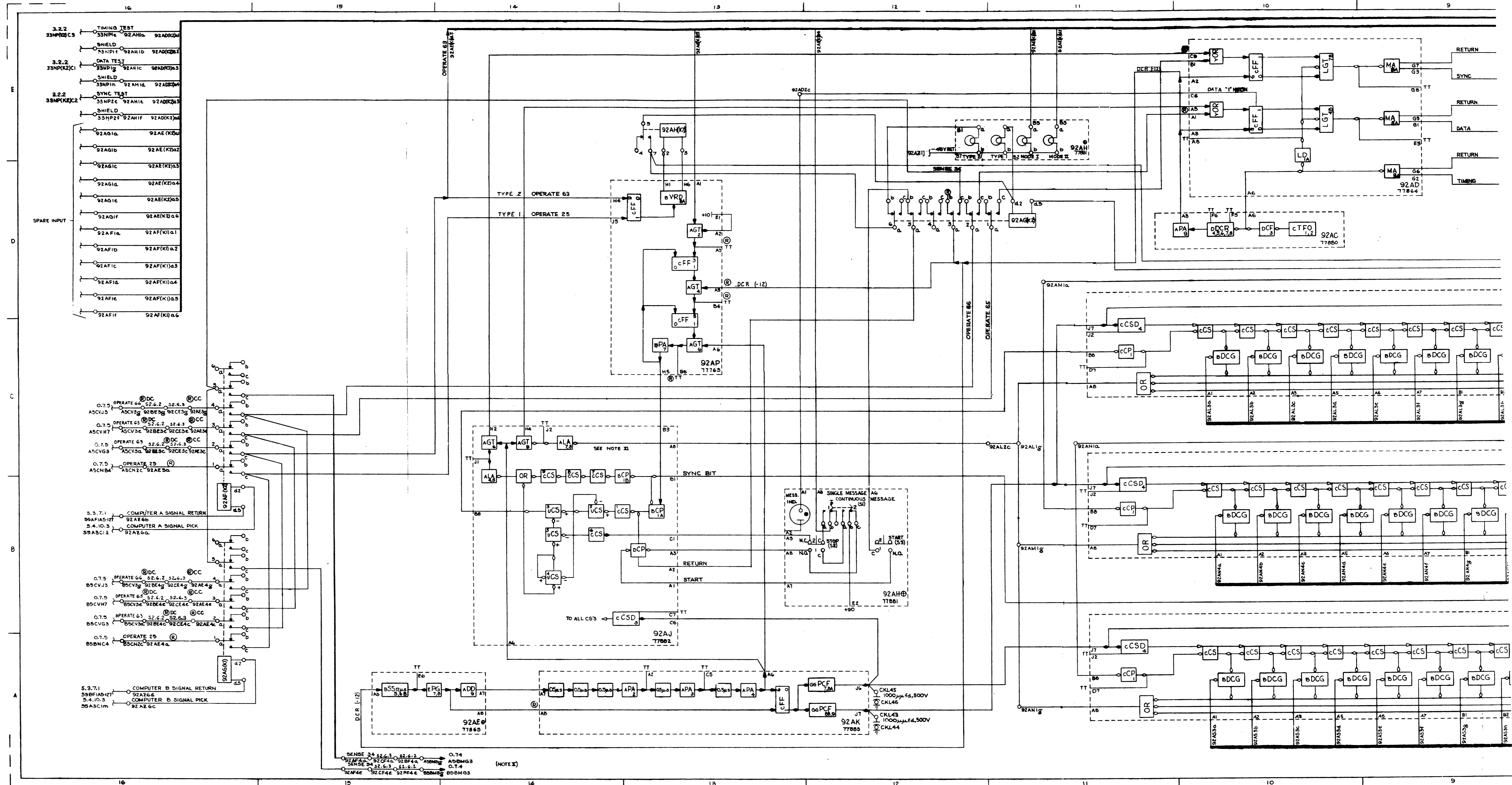
BLOCK SCHEMATIC UNIT 621

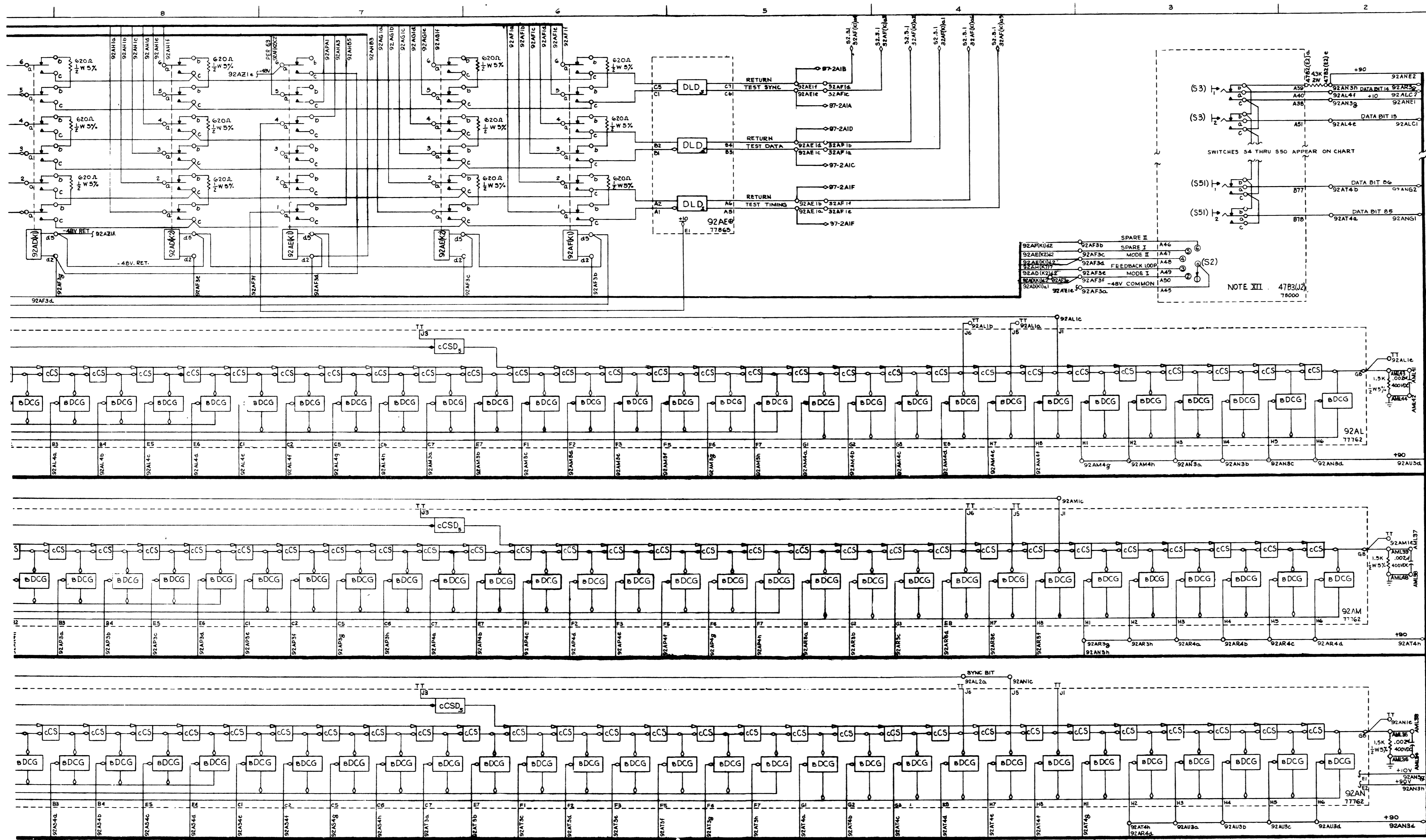
ALL WIRING, EXCEPT CABLE FROM UNIT 947 TO 9 & WIRING WITHIN 947 IS LOCATED IN UNIT 621.



II REFER TO CIRCUIT SCHEMATIC 3076587
 X ALL WIRING EXCEPT CABLE FROM UNIT 947 TO J3 & WIRING WITHIN 947, IS LOCATED IN UNIT 621.

NOTES:
 EC 73647
 3135109

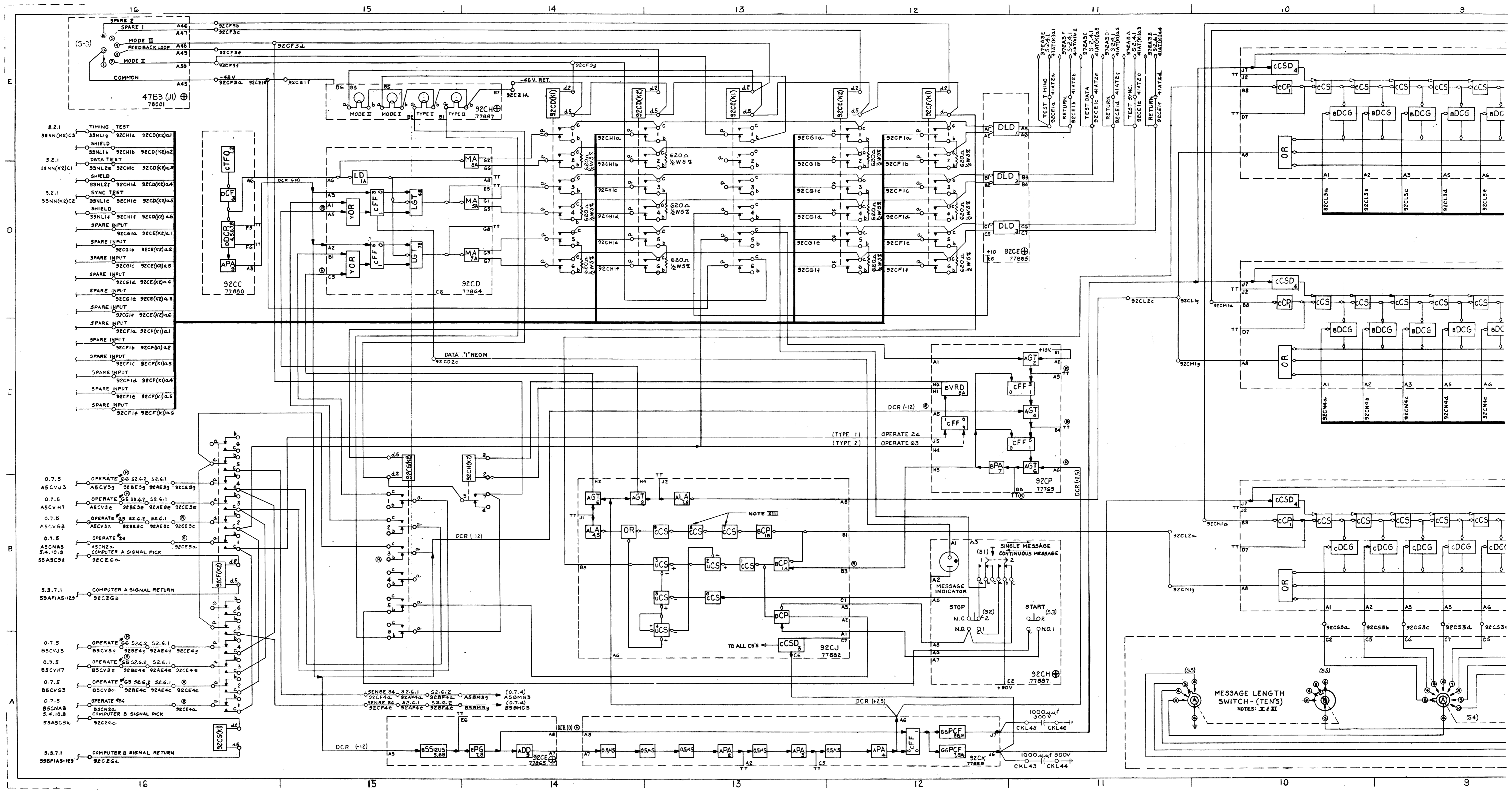


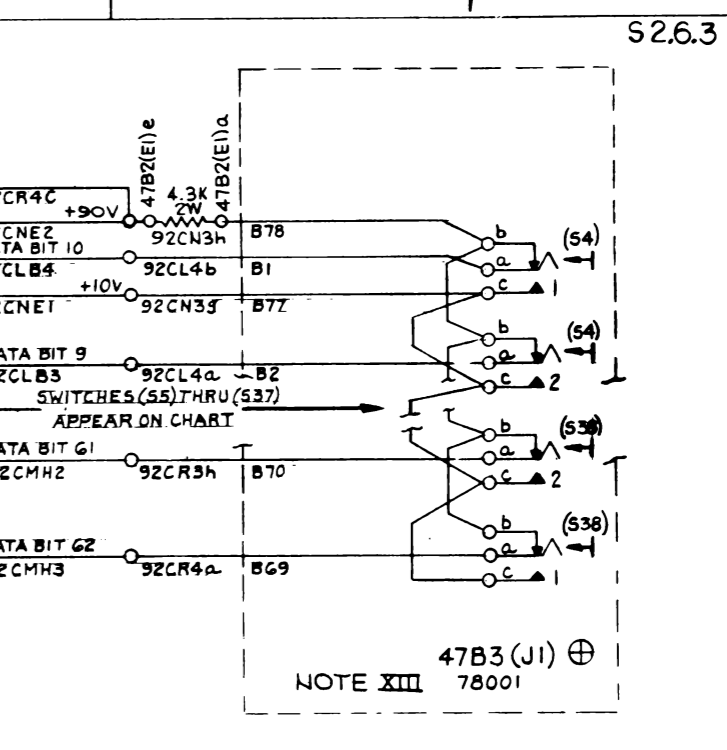
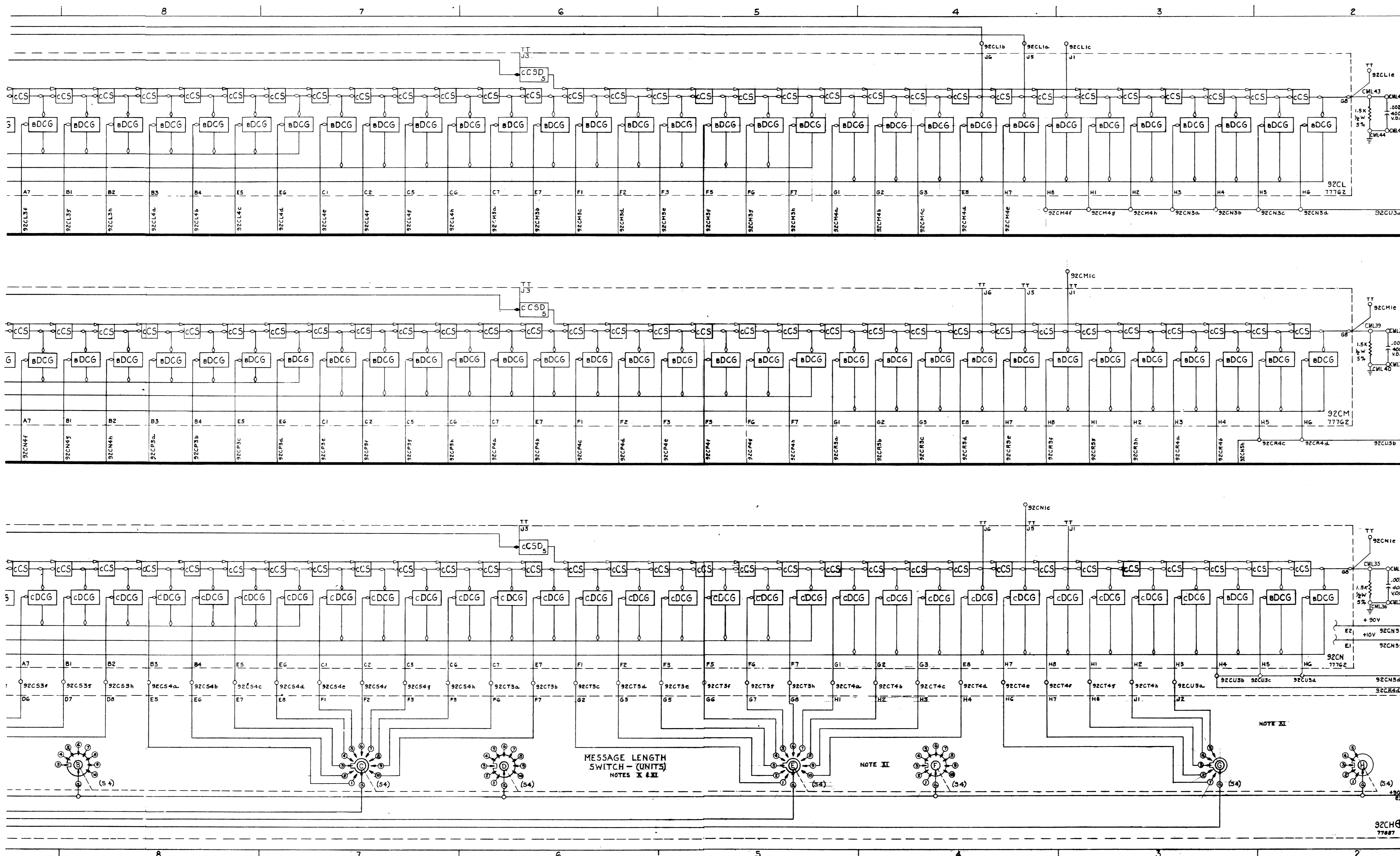


S2.G.1

P.U. UNIT	EDGE CONN. OR 92	JACK ON 47	SWITCH NO.	DESCRIPTION
92AL A1	92AL 3a	47B3(J2)A72	47B3(50)Q.2	DATA BIT 1
A2	3d	A71	(59)Q.1	2
A3	3c	A70	(58)Q.2	3
A4	3d	A69	(58)Q.1	4
A5	3d	A68	(57)Q.2	5
A6	3e	A67	(57)Q.1	6
A7	3f	A66	(56)Q.2	7
B1	3g	A65	(56)Q.1	8
B2	3h	A64	(55)Q.2	9
B3	4a	A63	(55)Q.1	10
B4	4b	A62	(54)Q.2	11
B5	4c	A61	(54)Q.1	12
B6	4d	A60	(53)Q.2	13
C1	4e	A59	(53)Q.1	14
C2	4f	A48	(51)Q.2	15
C3	4g	B8	(51)Q.1	16
C4	4h	B7	(50)Q.2	17
C5	4i	B6	(50)Q.1	18
C6	4j	B5	(49)Q.2	19
C7	4k	B4	(49)Q.1	20
D1	3c	B3	(51)Q.2	21
D2	3d	B2	(51)Q.1	22
D3	3e	B1	(50)Q.2	23
D4	3f	A78	(52)Q.2	24
D5	3g	A77	(52)Q.1	25
D6	3h	A76	(51)Q.2	26
D7	3i	A75	(51)Q.1	27
D8	3j	A74	(50)Q.2	28
D9	3k	A73	(50)Q.1	29
D10	3l	A72	(49)Q.2	30
D11	3m	A71	(49)Q.1	31
D12	3n	A70	(48)Q.2	32
D13	3o	A69	(48)Q.1	33
D14	3p	A68	(47)Q.2	34
D15	3q	A67	(47)Q.1	35
D16	3r	A66	(46)Q.2	36
D17	3s	A65	(46)Q.1	37
D18	3t	A64	(45)Q.2	38
D19	3u	A63	(45)Q.1	39
D20	3v	A62	(44)Q.2	40
D21	3w	A61	(44)Q.1	41
D22	3x	A60	(43)Q.2	42
D23	3y	A59	(43)Q.1	43
D24	3z	A58	(42)Q.2	44
D25	4a	A57	(42)Q.1	45
D26	4b	A56	(41)Q.2	46
D27	4c	A55	(41)Q.1	47
D28	4d	A54	(40)Q.2	48
D29	4e	A53	(40)Q.1	49
D30	4f	A52	(39)Q.2	50
D31	4g	A51	(39)Q.1	51
D32	4h	A50	(38)Q.2	52
D33	4i	A49	(38)Q.1	53
D34	4j	A48	(37)Q.2	54
D35	4k	A47	(37)Q.1	55
D36	4l	A46	(36)Q.2	56
D37	4m	A45	(36)Q.1	57
D38	4n	A44	(35)Q.2	58
D39	4o	A43	(35)Q.1	59
D40	4p	A42	(34)Q.2	60
D41	4q	A41	(34)Q.1	61
D42	4r	A40	(33)Q.2	62
D43	4s	A39	(33)Q.1	63
D44	4t	A38	(32)Q.2	64
D45	4u	A37	(32)Q.1	65
D46	4v	A36	(31)Q.2	66
D47	4w	A35	(31)Q.1	67
D48	4x	A34	(30)Q.2	68
D49	4y	A33	(30)Q.1	69
D50	4z	A32	(29)Q.2	70
D51	5a	A31	(29)Q.1	71
D52	5b	A30	(28)Q.2	72
D53	5c	A29	(28)Q.1	73
D54	5d	A28	(27)Q.2	74
D55	5e	A27	(27)Q.1	75
D56	5f	A26	(26)Q.2	76
D57	5g	A25	(26)Q.1	77
D58	5h	A24	(25)Q.2	78
D59	5i	A23	(25)Q.1	79
D60	5j	A22	(24)Q.2	80
D61	5k	A21	(24)Q.1	81
D62	5l	A20	(23)Q.2	82
D63	5m	A19	(23)Q.1	83
D64	5n	A18	(22)Q.2	84
D65	5o	A17	(22)Q.1	85
D66	5p	A16	(21)Q.2	86
D67	5q	A15	(21)Q.1	87
D68	5r	A14	(20)Q.2	88
D69	5s	A13	(20)Q.1	89
D70	5t	A12	(19)Q.2	90
D71	5u	A11	(19)Q.1	91
D72	5v	A10	(18)Q.2	92
D73	5w	A9	(18)Q.1	93
D74	5x	A8	(17)Q.2	94
D75	5y	A7	(17)Q.1	95
D76	5z	A6	(16)Q.2	96
D77	6a	A5	(16)Q.1	97
D78	6b	A4	(15)Q.2	98
D79	6c	A3	(15)Q.1	99
D80	6d	A2	(14)Q.2	100
D81	6e	A1	(14)Q.1	101
92AL H1	92AL 4g	47B3(J2)B72	47B3(54)Q.2	DATA BIT 91

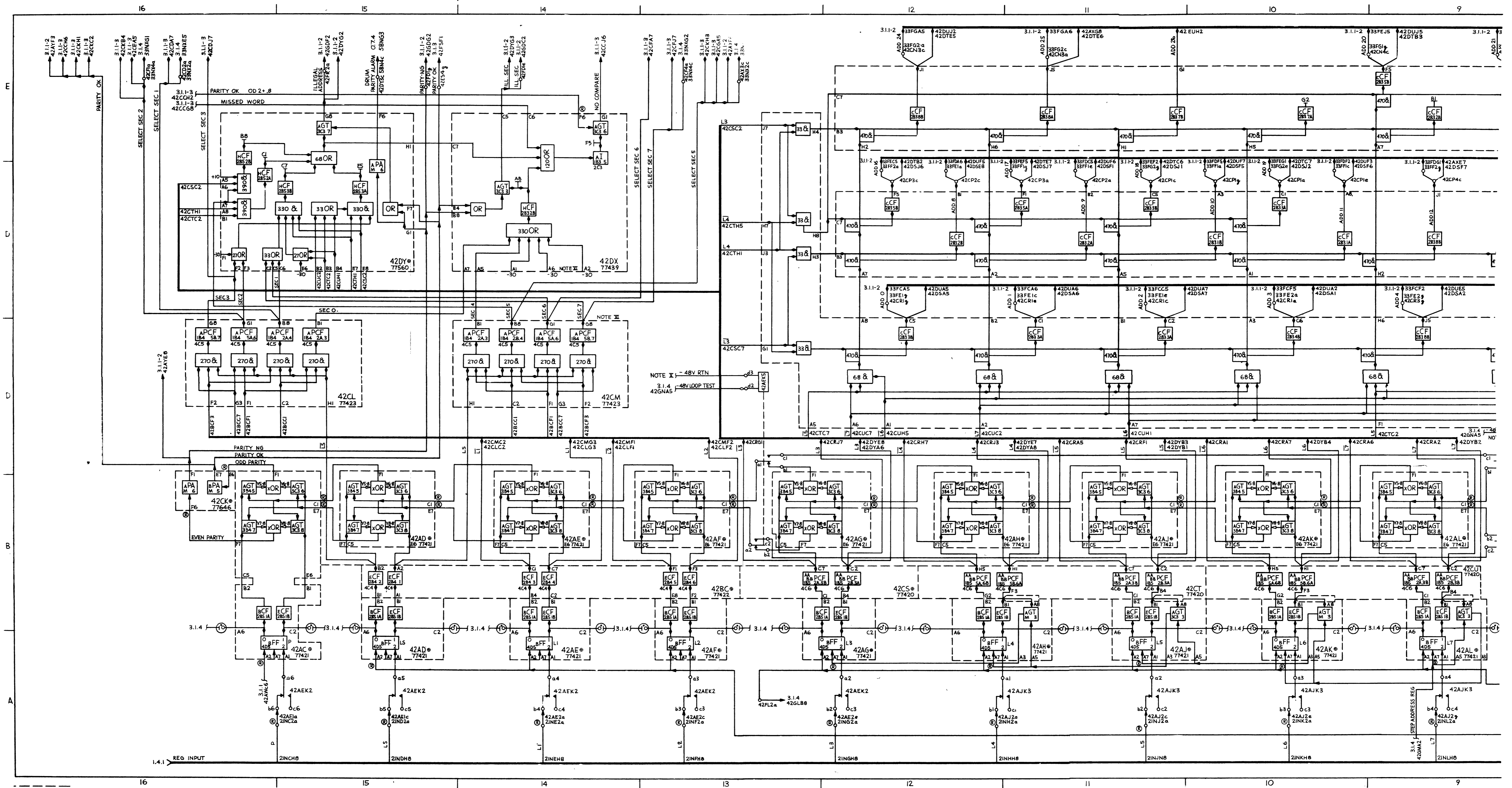
III DESIGNATION 47B2(E2) AND 47B3(J2) BECOME 47A2(E2) AND 47A3(J2) IN THOSE SYSTEMS WHICH HAVE THE "X" MODULE ON UNIT 47
 XI NUMBERS IN UCS AND DCG BLOCKS INDICATE CORRESPONDING POSITION IN CHART SCHEMATIC 3078514.
 X NOTES:

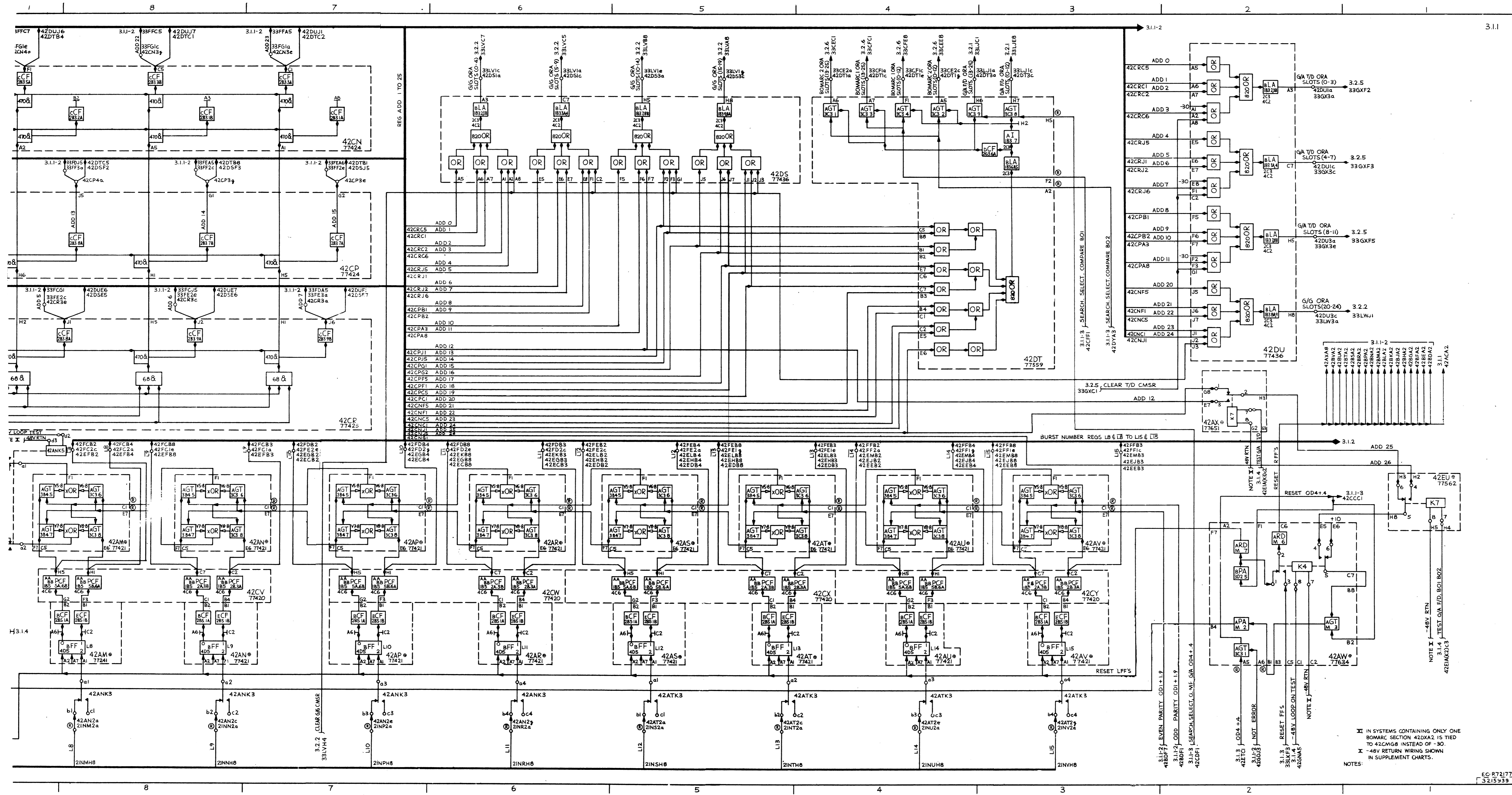


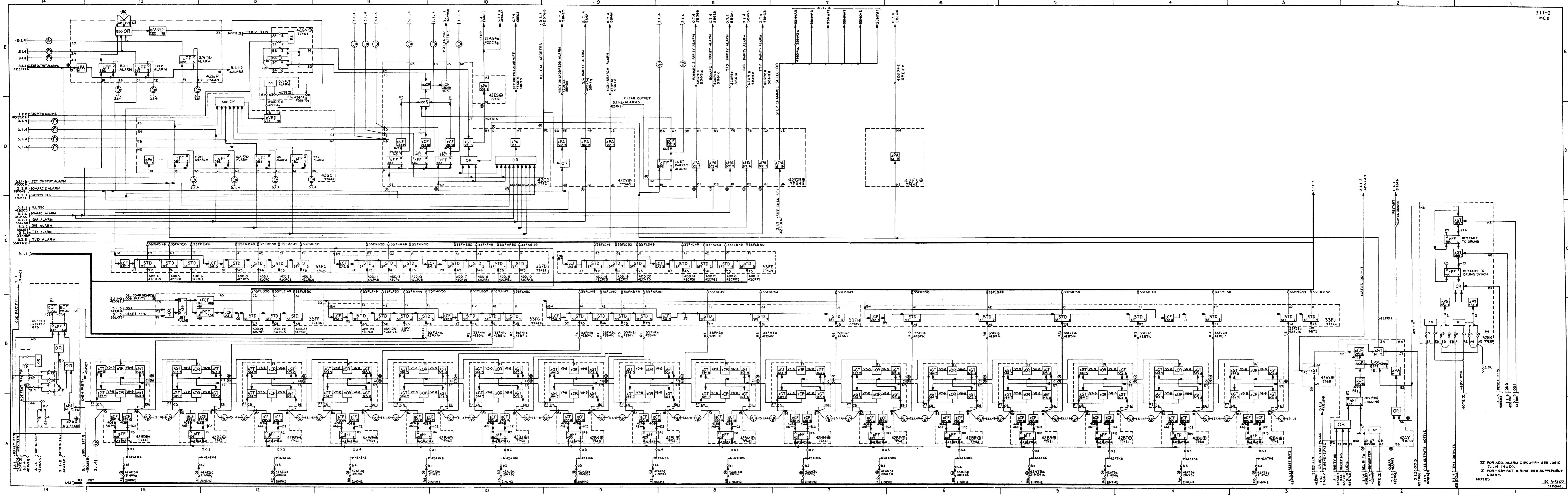


PU UNIT	EDGE CONN. ON 92	JACKON 47	SWITCH NUMBER	DESCRIPTION
92CLA	92CL3a	47B3(J1)B10	47B3(58)a2	DATA BIT 1
A2	5b	B8	(58)a1	2
A3	3c	B6	(57)a2	3
A4	3d	B7	(57)a1	4
A5	3e	B4	(56)a2	5
A7	3f	B5	(56)a1	6
B1	3g	B4	(55)a2	7
B2	3h	B3	(55)a1	8
B3	4a	B2	(54)a2	9
B4	4b	B1	(54)a1	10
E5	4c	B0	(53)a2	11
E6	4d	B19	(519)a1	12
C1	4e	B18	(518)a2	13
C2	4f	B17	(518)a1	14
E5	4g	B16	(517)a2	15
C6	92CL4h	B15	(517)a1	16
C7	92CM3a	B14	(516)a2	17
E7	3b	B13	(516)a1	18
F1	Bc	B12	(515)a2	19
F2	3d	B11	(515)a1	20
F3	3e	B0	(514)a2	21
F5	3f	B29	(514)a1	22
F6	3g	B28	(517)a2	23
F7	3h	B27	(517)a1	24
G1	4a	B26	(516)a2	25
G2	4b	B25	(516)a1	26
G3	4c	B24	(515)a2	27
E8	4d	B23	(515)a1	28
92CLH7	92CM4e	B22	(514)a2	29
92CM A1	92CN4a	B21	(514)a1	30
A2	4b	B40	(528)a2	31
A3	4c	B39	(528)a1	32
A5	4d	B38	(528)a2	33
A6	4e	B37	(528)a1	34
A7	4f	B36	(527)a2	35
B1	4g	B35	(527)a1	36
B2	92CN4h	B34	(526)a2	37
B3	92CP5a	B33	(526)a1	38
B4	3b	B32	(519)a2	39
B11	3c	B31	(519)a1	40
E6	3d	B30	(518)a2	41
C1	3e	B49	(520)a1	42
C2	3f	B48	(527)a2	43
C5	3g	B47	(527)a1	44
CC	3h	B46	(526)a2	45
C7	4a	B45	(526)a1	46
E7	4b	B44	(525)a2	47
F1	4c	B43	(525)a1	48
F2	4d	B42	(524)a2	49
F3	4e	B41	(524)a1	50
F5	4f	B60	(533)a2	51
F6	4g	B59	(533)a1	52
F7	92CP4h	B58	(532)a2	53
G1	92CR5a	B57	(532)a1	54
GF	3b	B56	(531)a2	55
G5	3c	B55	(531)a1	56
E8	3d	B54	(530)a2	57
H7	3e	B53	(530)a1	58
H8	3f	B52	(529)a2	59
H1	3g	B51	(529)a1	60
H2	3h	B70	(538)a2	61
H3	4a	B69	(538)a1	62
92CMH4	92CR4b	47B3(J1)B68	47B3(58)a2	DATA BIT 68

NOTE XIII
 XIII DESIGNATIONS 47B3(EI) AND 47B3(JI) BECOME 47A2(EI) AND 47A3(JI) IN THOSE SYSTEMS WHICH HAVE THE "A" MODULE ON UNIT 47.
 XII NUMBERS IN UCS AND CCS BLOCKS INDICATE THE CORRESPONDING POSITION IN CKT. SCHEMATIC 3076514.
 XI FOR SIMPLICITY, JUMPERS BETWEEN THE CORRESPONDING TERMINALS ON WAFERS (A48), (C49), (E49), (E64) EXCLUDING THE "X" TERMINALS, ARE NOT SHOWN.
 X SWITCHES ARE POSITIONED FOR A MESSAGE LENGTH OF 52.
 EC P-73063
 3106639

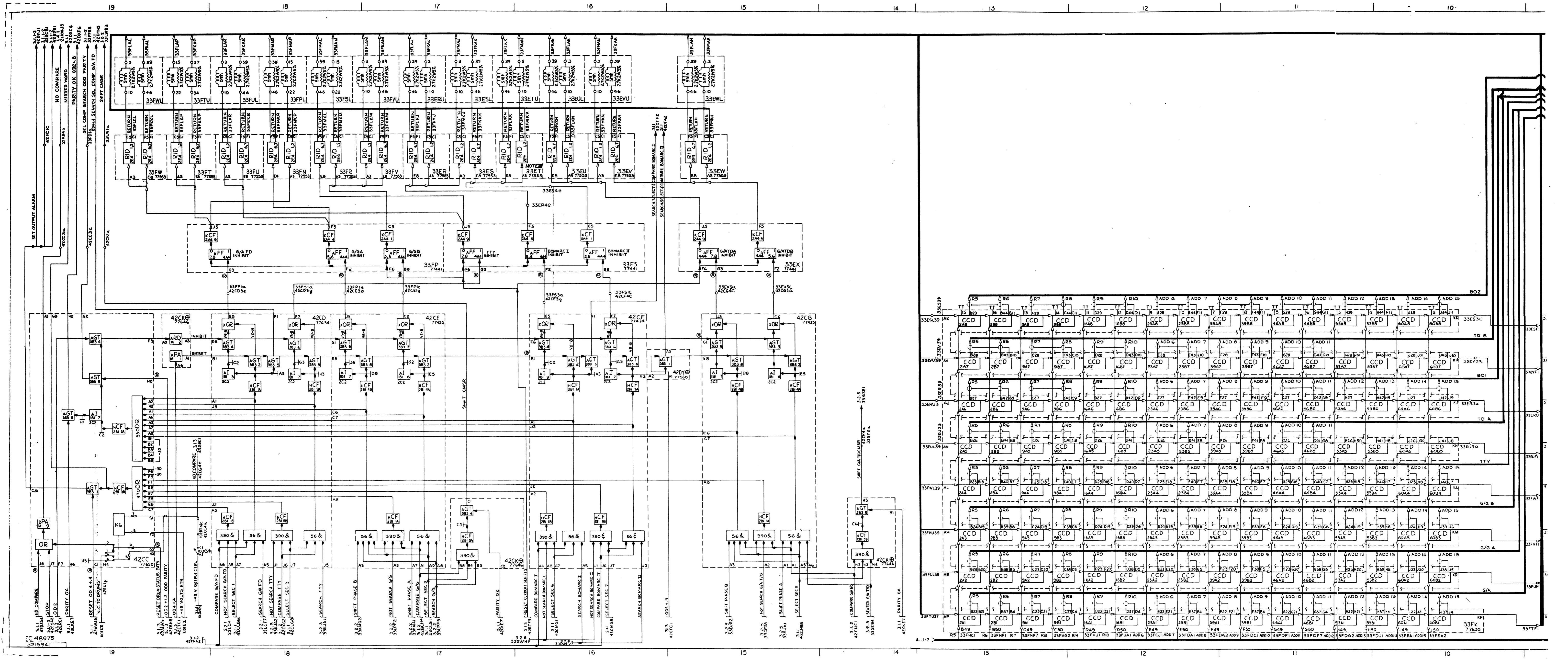


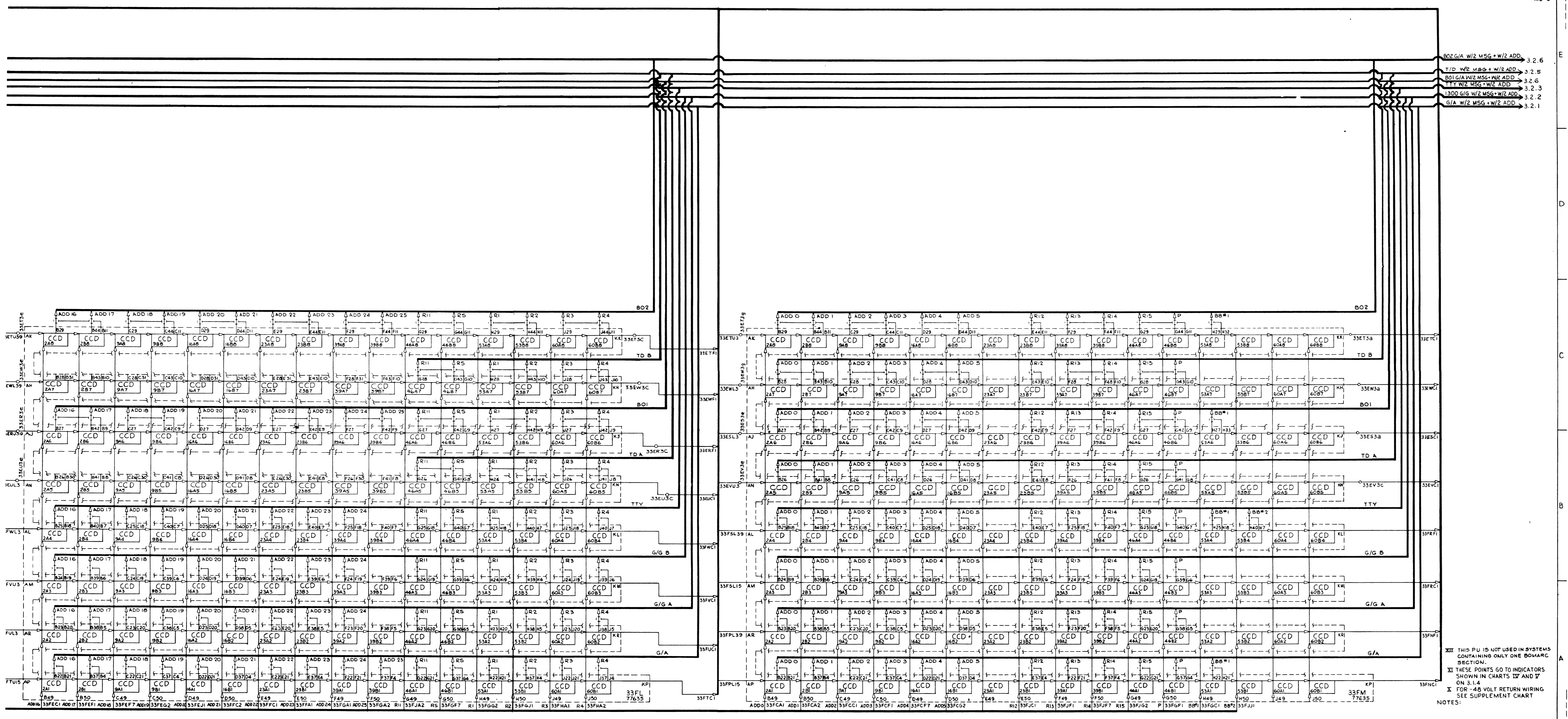




- 3.1.1.1 STOP TO DRUMS
- 3.1.1.2 SET OUTPUT ALARM
- 3.1.1.3 ROMANCE ALARM
- 3.1.1.4 PARITY NS
- 3.1.1.5 ILL SEC
- 3.1.1.6 ROMANCE ALARM
- 3.1.1.7 Q/A ALARM
- 3.1.1.8 Q/S ALARM
- 3.1.1.9 TTY ALARM
- 3.1.1.10 T/D ALARM

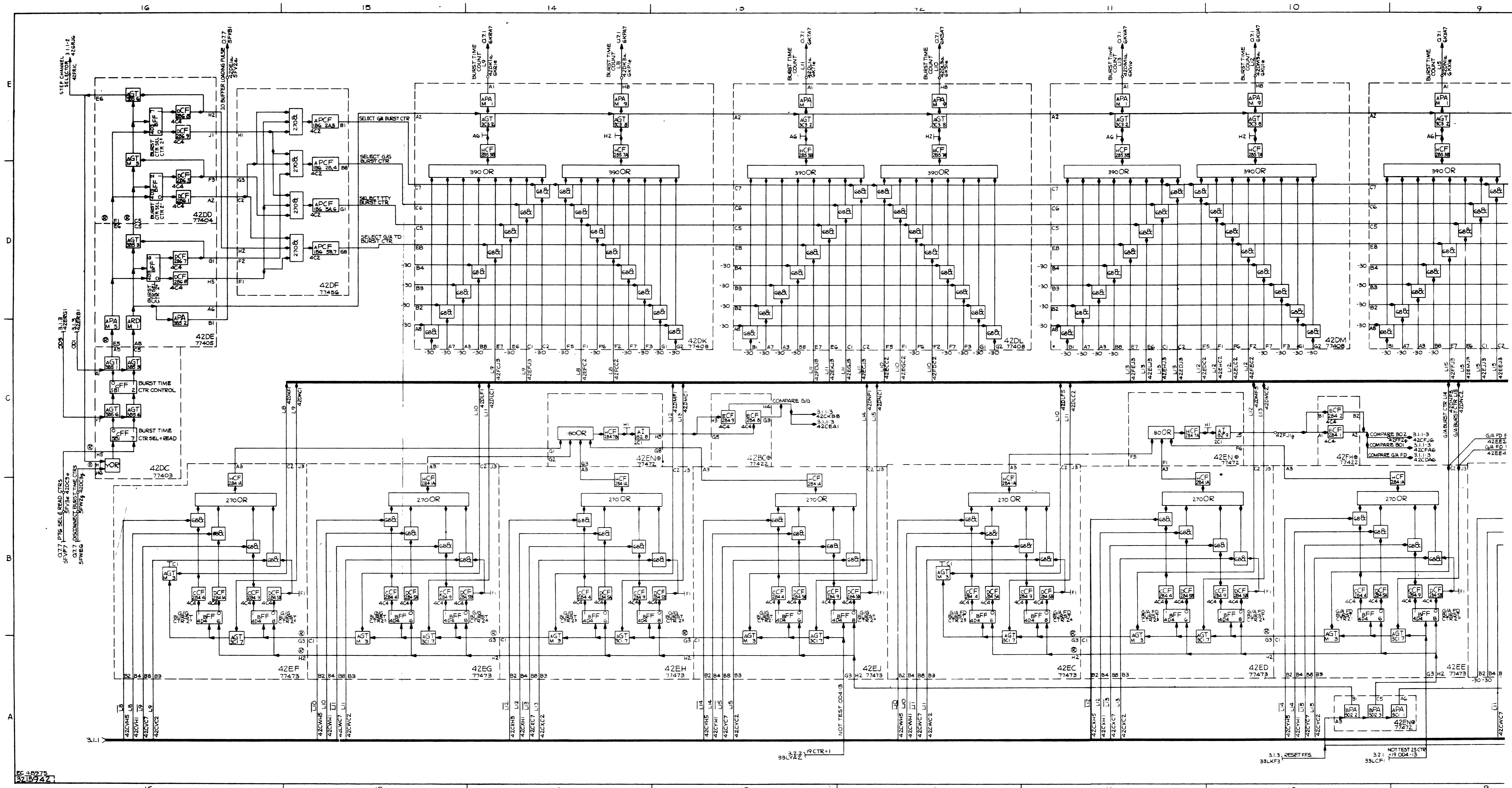
XI FOR ADD ALARM CIRCUITRY SEE LOGIC
 7.1-14 (40D).
 XII FOR -45V RET WIRING SEE SUPPLEMENT
 CHART.
 NOTES
 EC R-72177
 311510

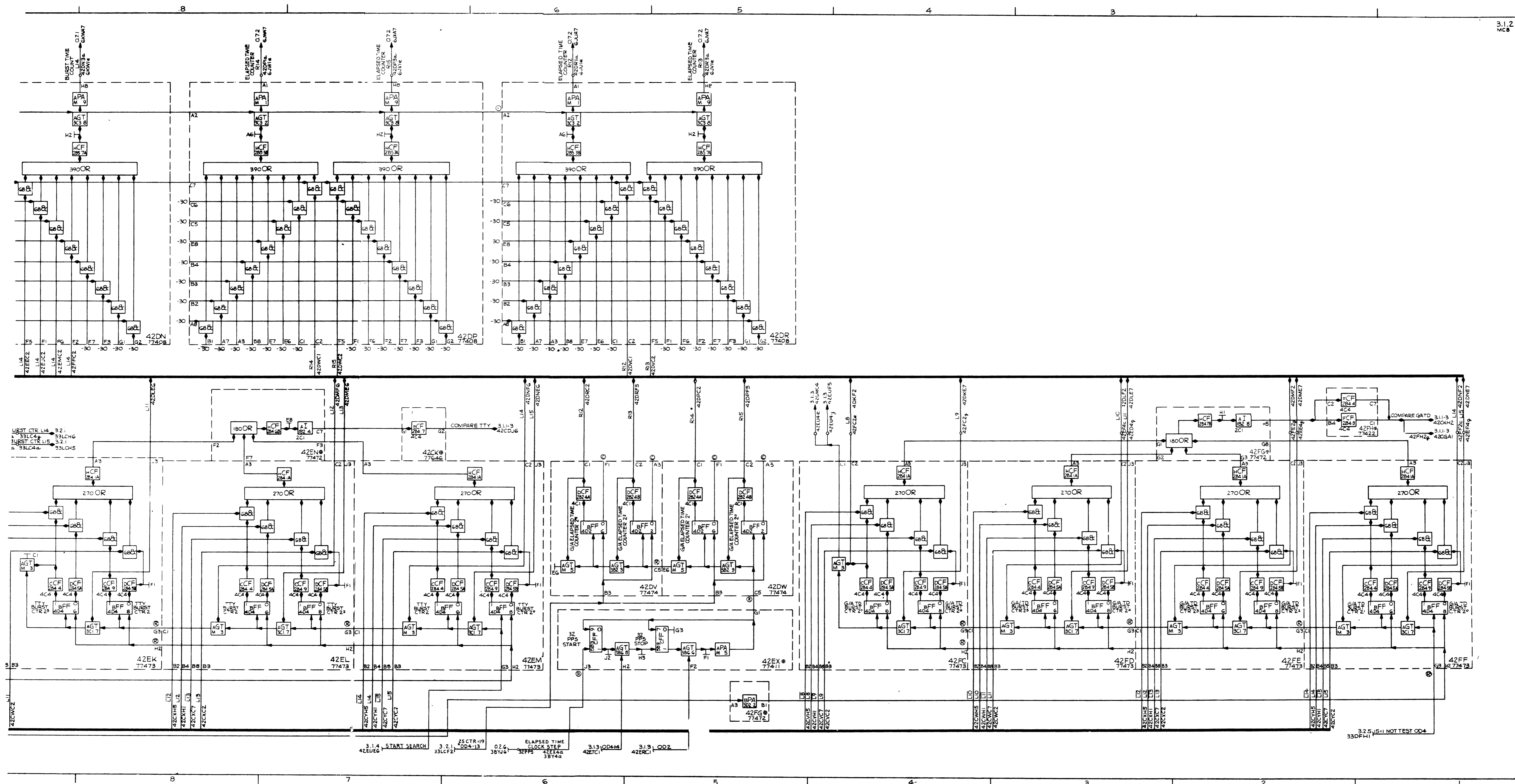




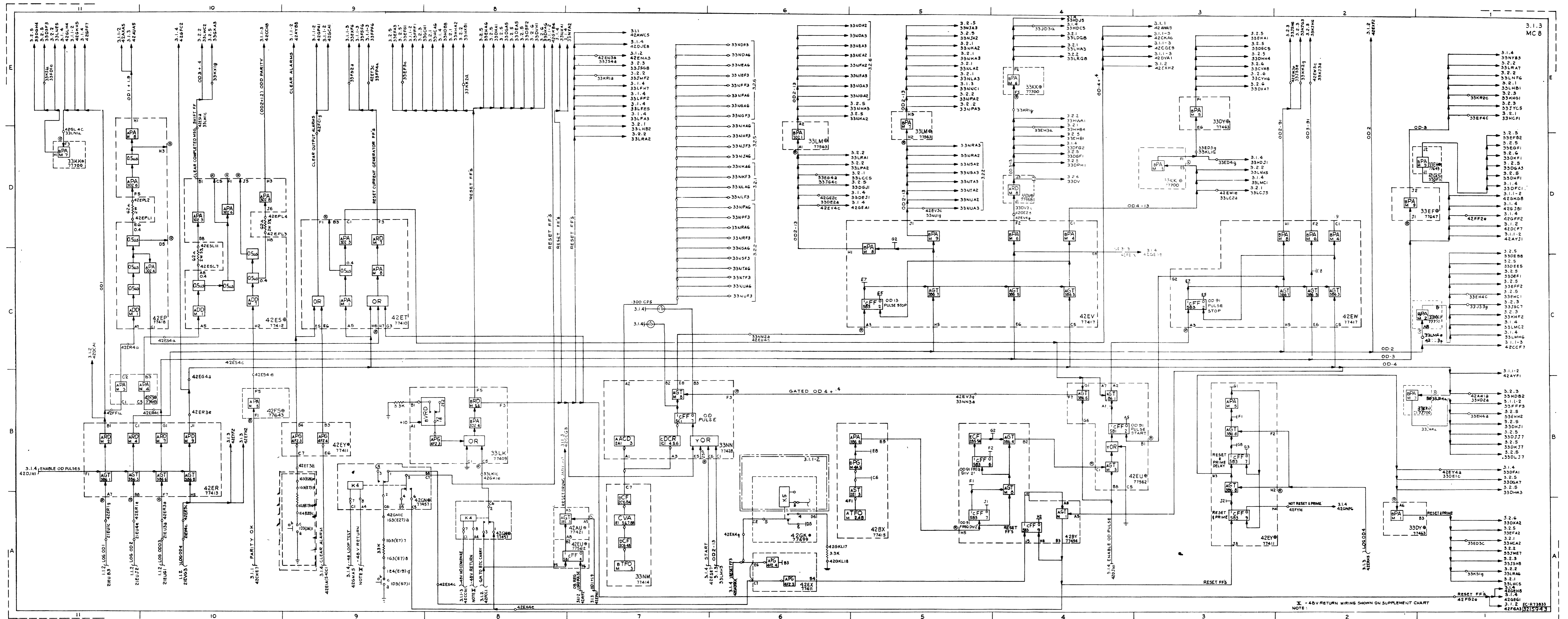
BO2 G/A W/2 MSG + W/2 ADD 3.2.6
 T/D W/2 MSG + W/2 ADD 3.2.6
 BO1 G/A W/2 MSG + W/2 ADD 3.2.6
 TTY W/2 MSG + W/2 ADD 3.2.3
 L300 G/G W/2 MSG + W/2 ADD 3.2.2
 G/A W/2 MSG + W/2 ADD 3.2.1

XIII THIS PU IS NOT USED IN SYSTEMS
CONTAINING ONLY ONE BOMARC
SECTION.
XI THESE POINTS GO TO INDICATORS
SHOWN IN CHARTS IX AND V
ON 3.1.4
X FOR -48 VOLT RETURN WIRING
SEE SUPPLEMENT CHART
NOTES:





OUTPUT BURST COUNTERS - BO MOD



NOTE: X - 48V RETURN WIRING SHOWN ON SUPPLEMENT CHART

OUTPUT PULSE TIMING & DISTRIBUTION BO MOD

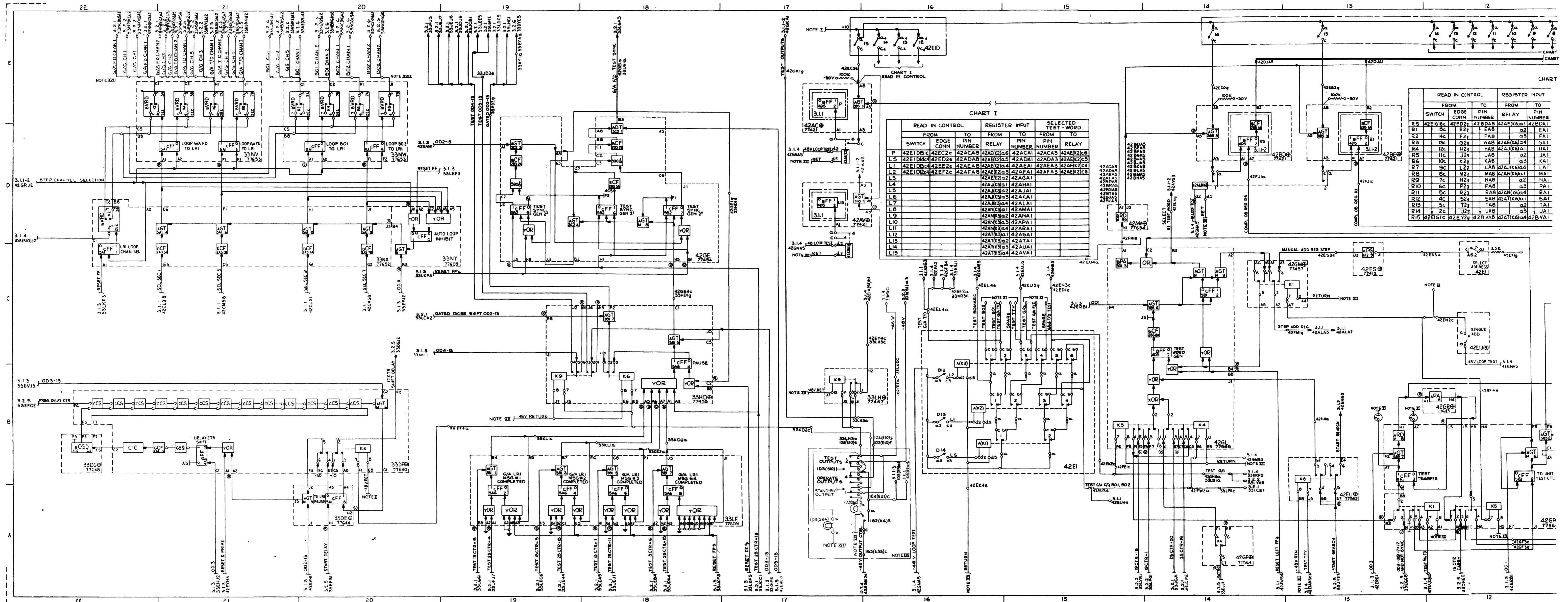
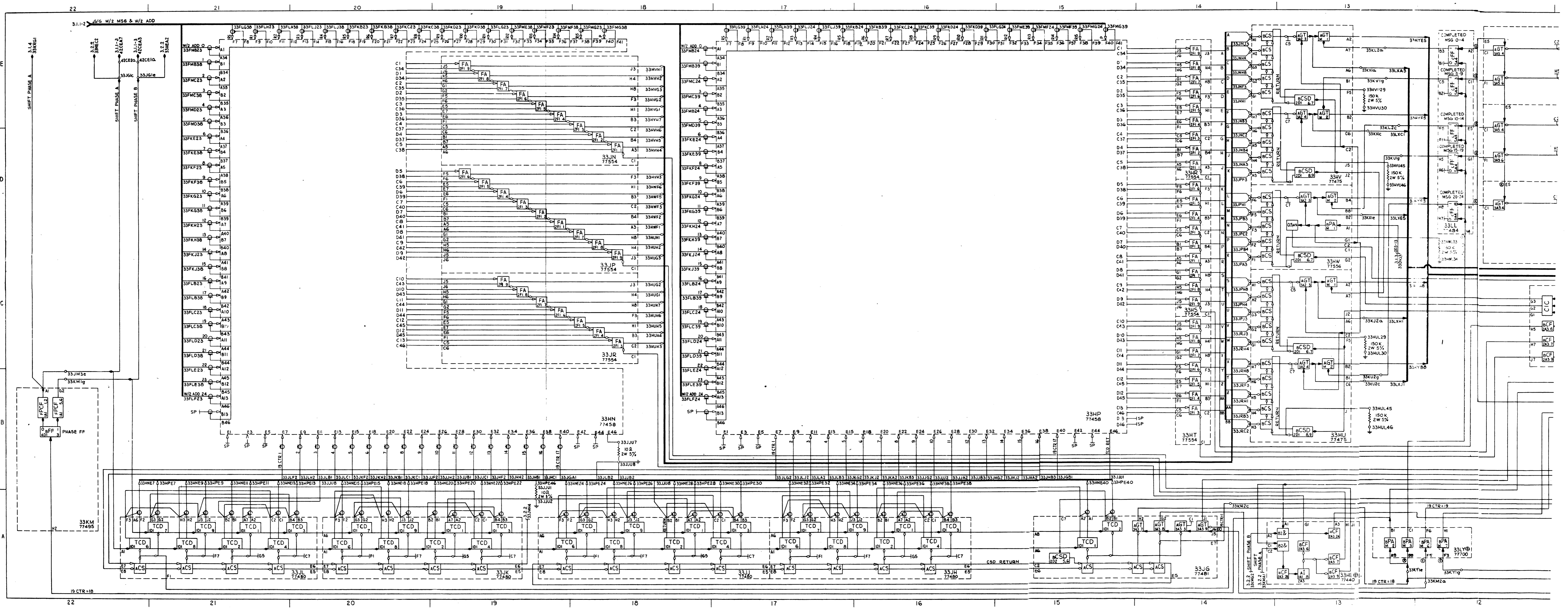


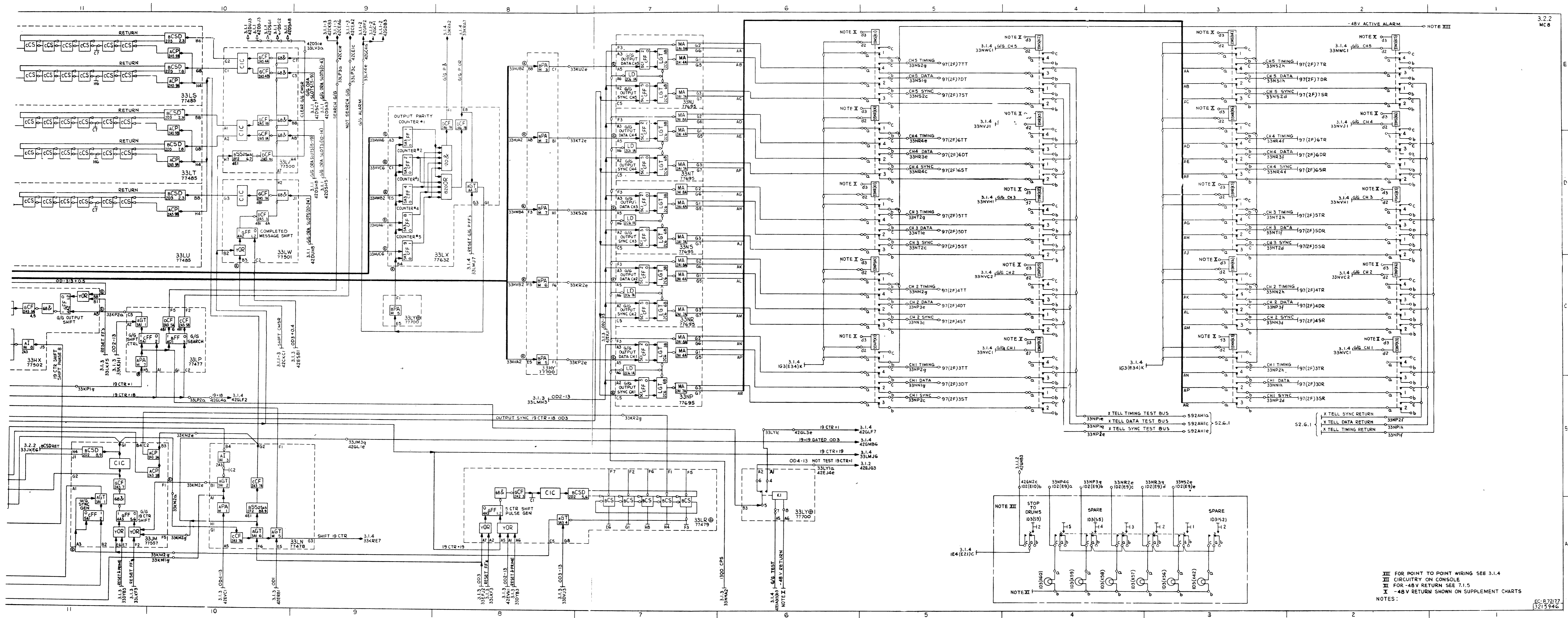
CHART I

READ IN CONTROL		REGISTER INPUT		SELECTED TEST-WORD	
FROM SWITCH	EDGE CONN	TO RELAY NUMBER	FROM RELAY NUMBER	TO PIN	TO RELAY
P	42E1D5C	42EC2	42ACAB	42AE2Q6	42ACA1
L5	42E1D4C	42ED2E	42ADAD	42AE2Q5	42ADA3
L1	42E1D3C	42EE2E	42AEAB	42AE2Q4	42AEA1
L2	42E1D2C	42EF2E	42AFAB	42AE2Q3	42AFA3
L3			42AE2Q2	42AGA1	
L4			42AE2Q1	42AHA1	
L5			42AE2Q3	42AJA1	
L6			42AE2Q3	42AKA1	
L7			42AE2Q4	42ALA1	
L8			42AE2Q1	42AMA1	
L9			42AE2Q2	42ANA1	
L10			42AE2Q3	42APA1	
L11			42AE2Q4	42ABA1	
L12			42ATK3Q1	42ASA1	
L13			42ATK3Q2	42ATA1	
L14			42ATK3Q3	42AUA1	
L15			42ATK3Q4	42AVA1	

READ IN CONTROL REGISTER INPUT

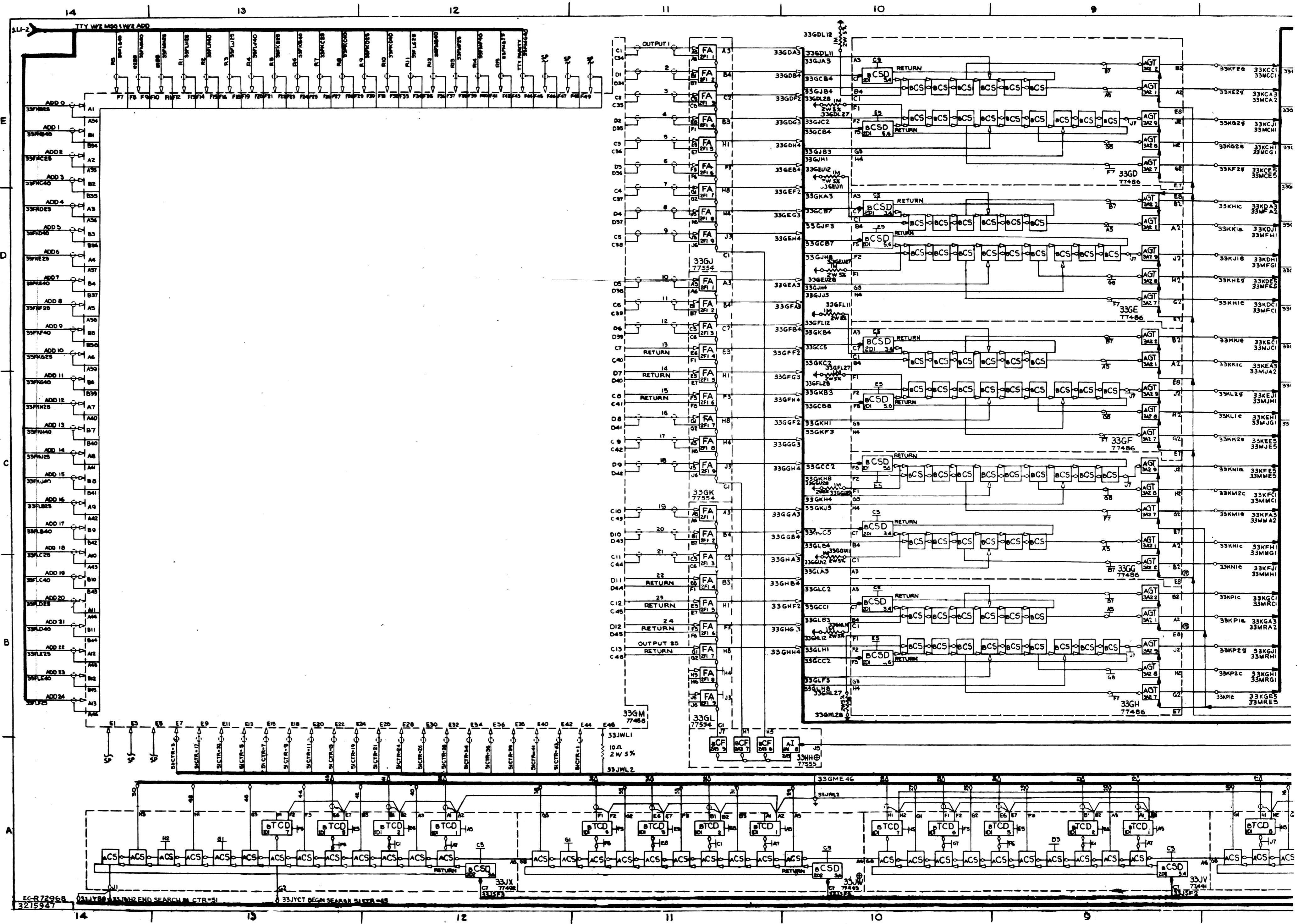
FROM SWITCH	EDGE CONN	TO RELAY NUMBER	FROM RELAY NUMBER	TO PIN	TO RELAY
R5	42E1G1C	42ED2E	42BDAB	42AEK6Q1	42BDA1
R1	15C	F2E	FAB	Q2	EAI
R3	14C	F2L	FAB	Q3	FAI
R4	13C	G2E	GAB	42AEK6Q4	GAI
R5	11C	H2E	HAB	42AJK6Q1	HAI
R6	10C	K2E	KAB	Q3	KAI
R7	9C	L2E	LAB	42AKK6Q4	LAI
R8	8C	M2E	MAB	42ANK6Q1	MAI
R9	7C	N2E	NAB	Q2	NAI
R10	6C	P2E	PAB	Q3	PAI
R11	5C	R2E	RAB	42ANK6Q4	RAI
R12	4C	S2E	SAB	42ATK6Q1	SAI
R13	3C	T2E	TAB	Q2	TAI
R14	2C	U2E	UAB	Q3	UAI
R15	42E1G1C	42E1V2E	42BVAR	42ATK6Q4	42BVA1





III FOR POINT TO POINT WIRING SEE 3.1.4
 XII CIRCUITRY ON CONSOLE
 XI FOR 48V RETURN SEE 7.1.5
 X 48V RETURN SHOWN ON SUPPLEMENT CHARTS

NOTES:



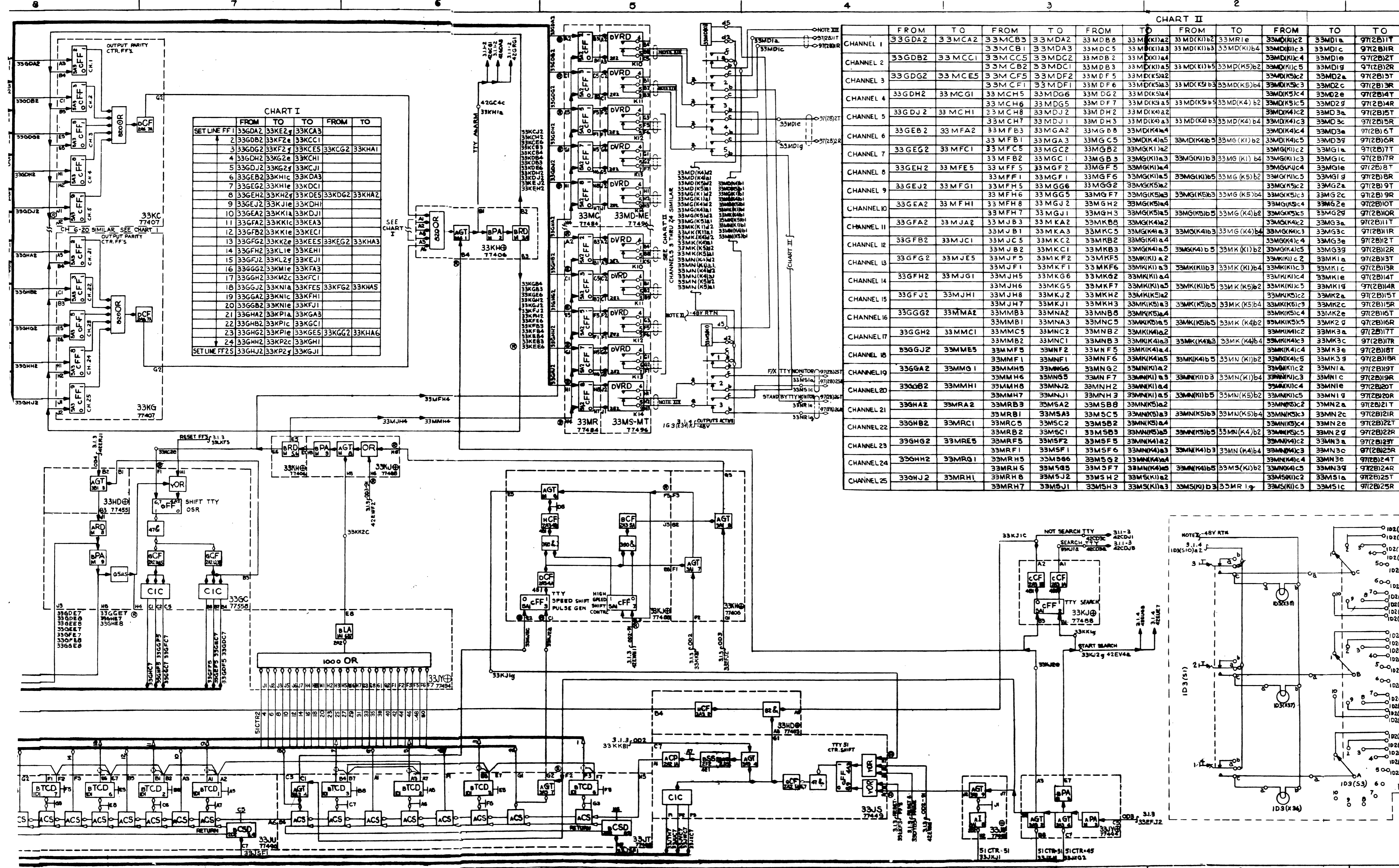
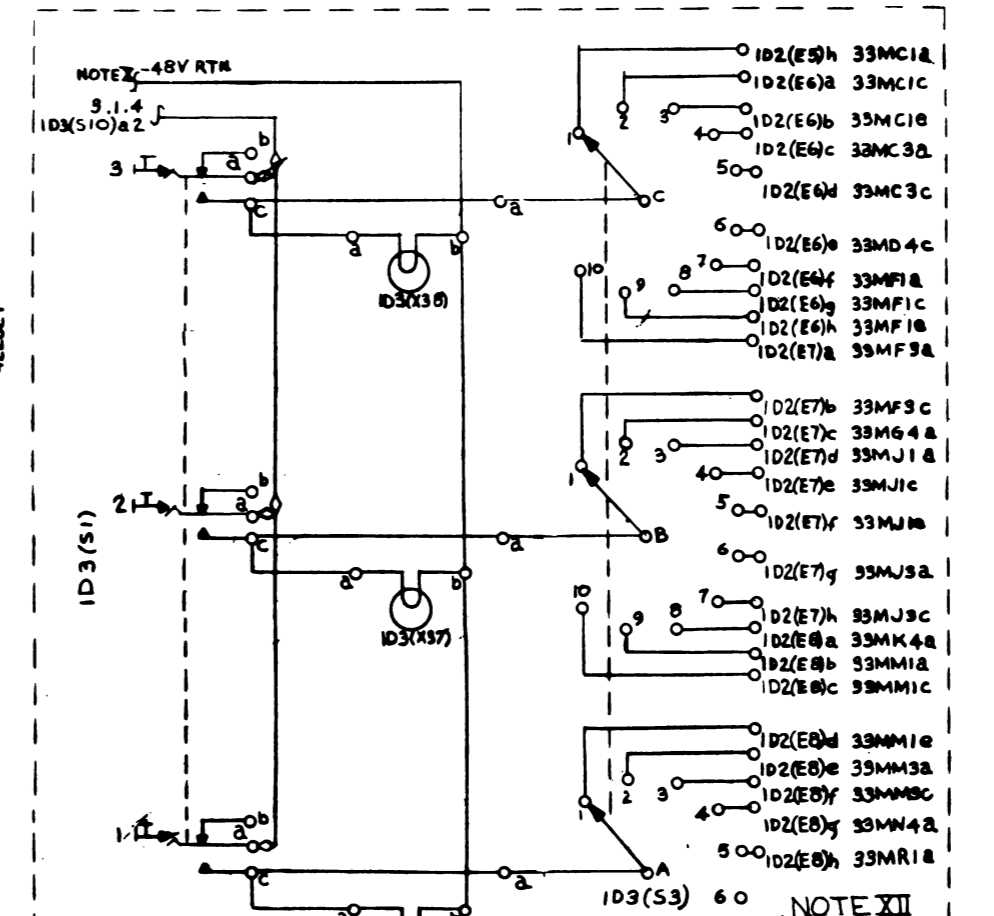


CHART I

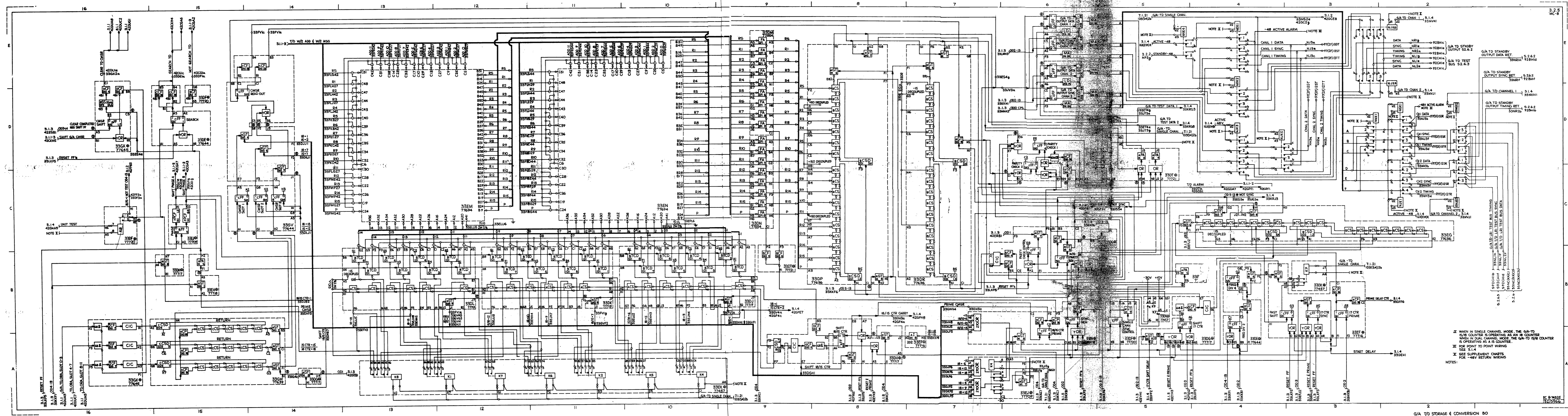
SET LINE	FROM	TO	TO	FROM	TO
1	33GDA2	33KE2	33KCA3		
2	33GDB2	33KF2	33KCC1		
3	33GDG2	33KF2	33KCE5	33KCG2	33KHA1
4	33GDH2	33KG2	33KCH1		
5	33GDU2	33KG2	33KCH1		
6	33GEB2	33KH1	33KDA3		
7	33GEG2	33KH1	33KDC1		
8	33GEH2	33KH2	33KDE5	33KDG2	33KHA2
9	33GEJ2	33KH1	33KDH1		
10	33GEA2	33KH1	33KDJ1		
11	33GFA2	33KB3	33KEA3		
12	33GFB2	33KH1	33KEC1		
13	33GFG2	33KH2	33KEE5	33KEG2	33KHA3
14	33GFH2	33KH1	33KEH1		
15	33GFJ2	33KH2	33KEJ1		
16	33GG2	33KH1	33KFA3		
17	33GGH2	33KH2	33KFC1		
18	33GGJ2	33KH1	33KFE5	33KFG2	33KHA5
19	33GGK2	33KH1	33KFH1		
20	33GGB2	33KH1	33KFJ1		
21	33GHA2	33KH1	33KGA3		
22	33GHB2	33KH1	33KGC1		
23	33GHG2	33KH1	33KGE5	33KGG2	33KHA6
24	33GHJ2	33KH2	33KGI1		
25	33GHJ2	33KH2	33KGI1		

CHART II

CHANNEL	FROM	TO	FROM	TO	FROM	TO	FROM	TO
CHANNEL 1	33GDA2	33MCA2	33MCB3	33MDA2	33MDB8	33MDK1a2	33MDK1b2	33MR1e
CHANNEL 2	33GDB2	33MCC1	33MCB1	33MDA3	33MDC5	33MDK1a3	33MDK1b3	33MDK1c3
CHANNEL 3	33GDG2	33MCE5	33MCB2	33MDC1	33MDB3	33MDK1a5	33MDK1b5	33MDK1c5
CHANNEL 4	33GDH2	33MCG1	33MCH5	33MDG6	33MDF2	33MDK1a6	33MDK1b6	33MDK1c6
CHANNEL 5	33GDJ2	33MCH1	33MCH6	33MDG5	33MDF7	33MDK1a7	33MDK1b7	33MDK1c7
CHANNEL 6	33GEB2	33MFA2	33MFB3	33MDJ2	33MDH2	33MDK1a8	33MDK1b8	33MDK1c8
CHANNEL 7	33GEG2	33MFC1	33MFB1	33MGA2	33MGD8	33MDK1a9	33MDK1b9	33MDK1c9
CHANNEL 8	33GEH2	33MFE5	33MFB2	33MGC1	33MGD9	33MDK1a10	33MDK1b10	33MDK1c10
CHANNEL 9	33GEJ2	33MFG1	33MFB5	33MGF2	33MGF5	33MDK1a11	33MDK1b11	33MDK1c11
CHANNEL 10	33GEA2	33MFH1	33MFH6	33MG5	33MG7	33MDK1a12	33MDK1b12	33MDK1c12
CHANNEL 11	33GFA2	33MJA2	33MJ2	33MKA2	33MK8	33MDK1a13	33MDK1b13	33MDK1c13
CHANNEL 12	33GFB2	33MJC1	33MJ3	33MK2	33MK5	33MDK1a14	33MDK1b14	33MDK1c14
CHANNEL 13	33GFG2	33MJE5	33MJ5	33MKF2	33MKF5	33MDK1a15	33MDK1b15	33MDK1c15
CHANNEL 14	33GFH2	33MJG1	33MJ6	33MK6	33MK9	33MDK1a16	33MDK1b16	33MDK1c16
CHANNEL 15	33GFJ2	33MJH1	33MJ7	33MKJ1	33MKH3	33MDK1a17	33MDK1b17	33MDK1c17
CHANNEL 16	33GG2	33MMAR	33MMB3	33MNA2	33MNB8	33MDK1a18	33MDK1b18	33MDK1c18
CHANNEL 17	33GGH2	33MMC1	33MMB1	33MNA3	33MNB5	33MDK1a19	33MDK1b19	33MDK1c19
CHANNEL 18	33GGJ2	33MME5	33MMB2	33MNC2	33MNB2	33MDK1a20	33MDK1b20	33MDK1c20
CHANNEL 19	33GGA2	33MMG1	33MMF5	33MNF2	33MNF6	33MDK1a21	33MDK1b21	33MDK1c21
CHANNEL 20	33GGB2	33MMH1	33MMH5	33MMG6	33MMG2	33MDK1a22	33MDK1b22	33MDK1c22
CHANNEL 21	33GHA2	33MRA2	33MRB3	33MSA2	33MSB8	33MDK1a23	33MDK1b23	33MDK1c23
CHANNEL 22	33GHB2	33MRC1	33MRC5	33MSC2	33MSB2	33MDK1a24	33MDK1b24	33MDK1c24
CHANNEL 23	33GHG2	33MRE5	33MRF5	33MSF2	33MSF5	33MDK1a25	33MDK1b25	33MDK1c25
CHANNEL 24	33GHJ2	33MRG1	33MRH5	33MSG2	33MSG5	33MDK1a26	33MDK1b26	33MDK1c26
CHANNEL 25	33GHJ2	33MRH1	33MRH8	33MSJ2	33MSH2	33MDK1a27	33MDK1b27	33MDK1c27



NOTE XII
 (A) 24K SUPPRESSOR NETWORK OF 24K
 IN 3% RES IN SERIES WITH JAP
 220V CAP BETWEEN SAFETY OUTPUT RETURN
 AND SPARE CATHODE ON CONSOLE
 WIRE - ADVISORY USE
 SUPPLEMENTARY CHARTS
 FOR 48V RETURN POINT TO POINT
 SEE 7.1.5



GIA TO STORAGE 4 CONVERSION 80