

APPARATUS INDEX

DESIG	LOCATION	
	FS	APP FIG. EOPT
RELAYS		
CA	5F3, 10D3	2
CB-	3C5, 7E5, 8C4, 9C4	1, 7, 9, 12
FC	4G1, 4G8	5, 6
FCI	4G1, 4G8	5, 6
GT	6E2	2
HM	4D6	2
MK	4G7	2
MS-	2E3, 7D5, 8B4, 9B4	1, 2, 9, 12
SPL	6G3	3
SPLP	6C3	10
SPPA	6D3	11
TC	4E6	2
TCI	4F6	2
TM	4B3	2
TM1	4B4	2
TR	4C6	2
TR1	4C6	2
TRC	5F8	8
TRL	4G6	2
TRS	5C4, 10B3	2
W	4C1, 4C3	2
Z	4D1, 4D3	2

CAPACITORS		
A	5D1	2
C	5C1	2
CA	10E1	2
CB-	7C4	1, 7
D	5C1	2
J	5D1	2
TRS	10C1	2

COMPONENT ASSEMBLIES		
CAO	SEE APP FIG.	2

DIODES		
CB-	7E4, 8D4, 9D3, 4B1	7, 9, 12
TUR	4B1	2

ELECTRON TUBES		
TM	5D1	2
TRS	5C1	2

RESISTORS		
A	5D2	2
C	5D2	2
CA	10D3	2
CA1	10F2	2
CA2	10E2	2
CB-	3C5, 7E5	1, 7
E	5C2	2
F	5E1	2
G	4C4	2
H	4C6	2
K	5C2	2
TRS	10B3	2
TRS1	10C2	2
V-	3C4	4

DESIG	FS LOC
ALARM CKT	
MJ	5B4

IMG SDR CKT	
TM	4A0

TRANSFER OR INC REG CKT	
CN	5A7
FR	5A7
SPL	6C1
SPLP	6C1
TM	4A0

INC REG 26025 MKR CONN CKT MKR PART	
BT	5F1
CB	7A6
CB1	7A6
MA	2E3-2E4, 2E3-2E4, 2F3-2F4, 7A6, 7A6
MB	
MC	

MK	4G5
MRL	5F2
MS1	1B2
MS2	1C2
RCB	2B2-2B4, 3D2-3D4, 3F2-3F4
SPL	4E2
STA	1B2
STB	1C2
TC	4E5
TC1	4F5
TR2	4H5
TRC	4H5
TRK	4H5
TRL	4G5
TRS	4G5
WZ	4C3

CAMA SDR CKT	
TM	4A0

TRANSFER LINE LINK MKR CONN CKT	
CB	7A6
CB1	7A6
LCB	7B0
MA	7A6

PREF CONT FOR ACD LINE LINK MKR CONN CKT	
MK	9F5
MCK	9F5
MSK	9F5

DESIG	FS LOC
INC REG 26026 MKR CONN CKT REG PART	
G	4D1
G1	4E1
GT	6E0
LCB	3B1-3E1, 7C0
RA	4D1
RB	4E1
RBC	4D5
RG	5C7
RPO	5D7
RP1	5D7
RP2	5E7
RP3	5E7
RP4	5E7
RPAB	5C7
RPB	5C7
RPSA	5D7
SPL	6B2
SPLA	6E2
STA	1B1
STB	1C1

DIGIT REG MKR CONN CKT	
BT	5F1
CB	8A6, 9C4
CB1	9C4
G	4D1
G1	4E1
GT	6E0
L	4B0
LCB	9D0, 9C0
MA	9B5
MC	9B5
MK	4G5
MRL	5F2
MS1	1B1
MS2	1D1
RA	4D1
RB	4E1
RBC	4D5
RG	5C7
TC	4E5
TC1	4F5
TR2	4H5
TRC	4H5
TRK	4H5
TRL	4G5
TRS	4F5

TRANSFER REG MKR CONN CKT REG PART	
G	4D1
G1	4E1
GT	6E0
LCB	7D0
RA	4D1
RB	4E1
RBC	4D5
RG	5C7
TC	4E5
TC1	4F5
TR2	4H5
TRC	4H5
TRK	4H5
TRL	4G5
TRS	4F5

TRANSFER REG MKR CONN CKT REG PART	
G	4D1
G1	4E1
GT	6E0
LCB	7D0
RA	4D1
RB	4E1
RBC	4D5
RG	5C7
RPO-4	5D7, 5E7
SPLP	6E2
STA	1B1
STB	1C1

OFFICE TEST FR TBL INL & CONN CKT	
CN	5A9
FR	5A9

LEAD INDEX

DESIG	FS LOC
LINE, LINE LINK AND MKR CONN CONT CKT	
FG	4G1
FBI	4H1
LCB	3A1-3D1, 7D0
MS-	7A0
TC	4F1
TCI	4G1

MKR CKT	
CB	3F5, 7H0
MAK	2G4, 7H5
MC	2E3, 7E5
MCK	2G5, 7H6
MSK	2G4, 7H5

TRAFFIC USAGE RECORDER CKT	
MCU	4B1

LINE LINK MKR CONN CKT	
CB	7A6
CB1	7A6
LCB	3B1, 7B0
MA	2E5, 7A6
RCB	3D4

TRANSFER REG MKR CONN CKT MKR PART	
BT	5F1
CB	7A6
CB1	7A6
MA	7A6-7A8
MB	7A6-7A8
MC	7A6-7A8
MK	4G5
MRL	5F2
MS1	1B2
MS2	1C2
STA	1B2
STB	1C2
TC	4E5
TC1	4F5
TR2	4H5
TRC	4H5
TRK	4H5
TRL	4G5
TRS	4G5

TRANSFER LINE LINK & MKR CONN CONT CKT	
LCB	7C0
FG	4G1
FBI	4H1
MS-	7A0
TC	4F1
TC1	4G1

DESIG	FS
MKR CONN CKT	
BWM	4D8
CN	5A7
CWA	4C8
CWB	4D8
FB	4G2, 4G8
FBI	4G2, 4G8
FR	5A7
GT	6E0
IM	4E8
L	4B0
LCB	3B1-3E1, 7C0
MS-	2A0-2A5
RBG	4D5
RG	5C7
RPO	5D7
RP1	5D7
RP2	5E7
RP3	5E7
RP4	5E7
RPAB	5C7
RPB	5C7
RPSA	5D7
SPL	6B2
STA	1B1
STB	1C1
TCA	4A8
TCB	4B8

MKR CONN MASTER TR CONT	
BWM	4D8
CWA	4C8
CWB	4C8
FB	4G2, 4G8
FBI	4G2, 4G8
IM	4E8
TCA	4A8
TCB	4B8
WCWA	4B8
WCWB	4D8

MASTER TEST FR CONN CKT	
CN	5B9
FR	5B9
RPO	5D9
RP1	5D9
RP2	5D9
RP3	5E9
RP4	5E9
RPAB	5D9
RPB	5C9
RPSA	5D9

TRANSFER LINE LINK & MKR CONN CONT CKT	
LCB	7C0
FG	4G1
FBI	4H1
MS-	7A0
TC	4F1
TC1	4G1

DESIG	FS LOC
MASTER TEST FR JK LP AND KEY CKT	
C	5D4
CB	3F4-3F8, 7G5-7G7, 8G0-8G7, 9H0, 5E4
LCA	5C4
MJI	5C4

ORIGINATING LINE IDENTIFIER CIRCUIT	
CB-	7H1, 7H4, 7H6, 7H9
MC-	

ORG REG CKT OR CONF CONT CKT	
CN	5A7
FR	5A7
TM	4A0

ORG REG MKR CONN CKT REG PART OR CONF CONT CKT	
G	4D1
G1	4E1
GT	6E0
L	4B0
LCB	7C0, 3B1-3E1
RA	4D1
RB	4E1
RBG	4D5
RG	5C7
SPLP	6D1
STA	1B1
STB	1C1

MKR CKT FOR AUTO. CALL DISTRIBUTION	
AMB	4F8
CB	8H0-8H6, 9H0
MAK-E.	8H2-8H8
MAK-ST	8H5, 9H6
MC	8A9, 8B3-8B5, 8E3-8E9
MCK-E	8H0-8H8
MCK-ST	8H6, 9H5
MSK-E	8H1-8H7
MSK-ST	8H5, 9H5

LINE LINK MKR CONN CKT FOR AUTO. CALL DISTRIBUTION	
CB	8A6, 8B1-8B3, 8E0-8E6
CB1	8A7, 8B1-8B4, 8E1-8E7
LCB	8C0, 8F0
MA	8A8, 8B2, 85, 8E2-8E8

TEST CONN CKT	
CN	5A9
FR	5A9

DESIG	FS LOC
JK, LP & KEY CKT FOR AUTO CALL DISTRIBUTION	
C	5D4
CB	9F4
LCA	5E4
MJI	5C4

DIGIT REG CKT	
TM	4A0

ORG REG MKR CONN CKT MKR PART	
BT	5F1
CB	7A6
CB1	7A6
MA	2D5, 7A8
MB	
MC	
MK	4G5
MRL	5F2
MS1	1B2
MS2	1C2
RCB	3D4
STA	1B2
STB	1C2
TC	4E5
TC1	4F5
TR2	4H5
TRC	4H5
TRK	4H5
TRL	4G5
TRS	4G5
WZ	4C3

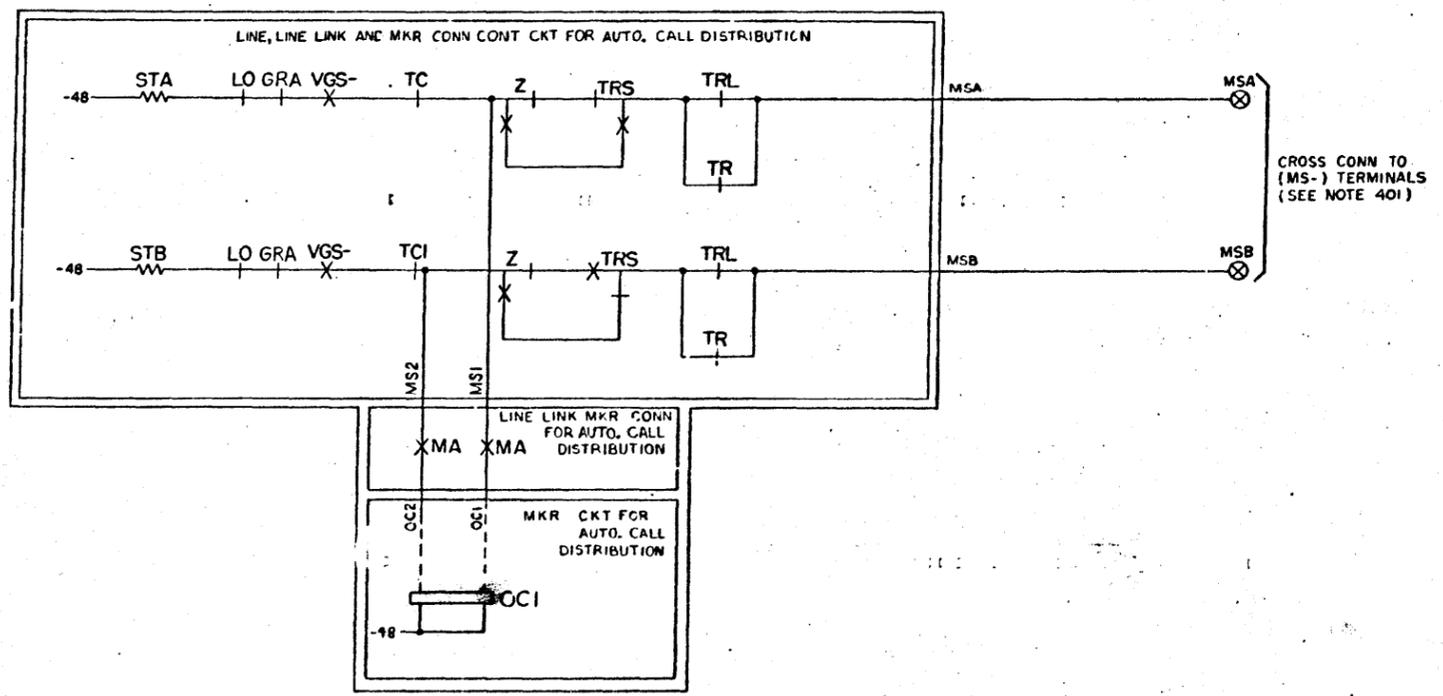
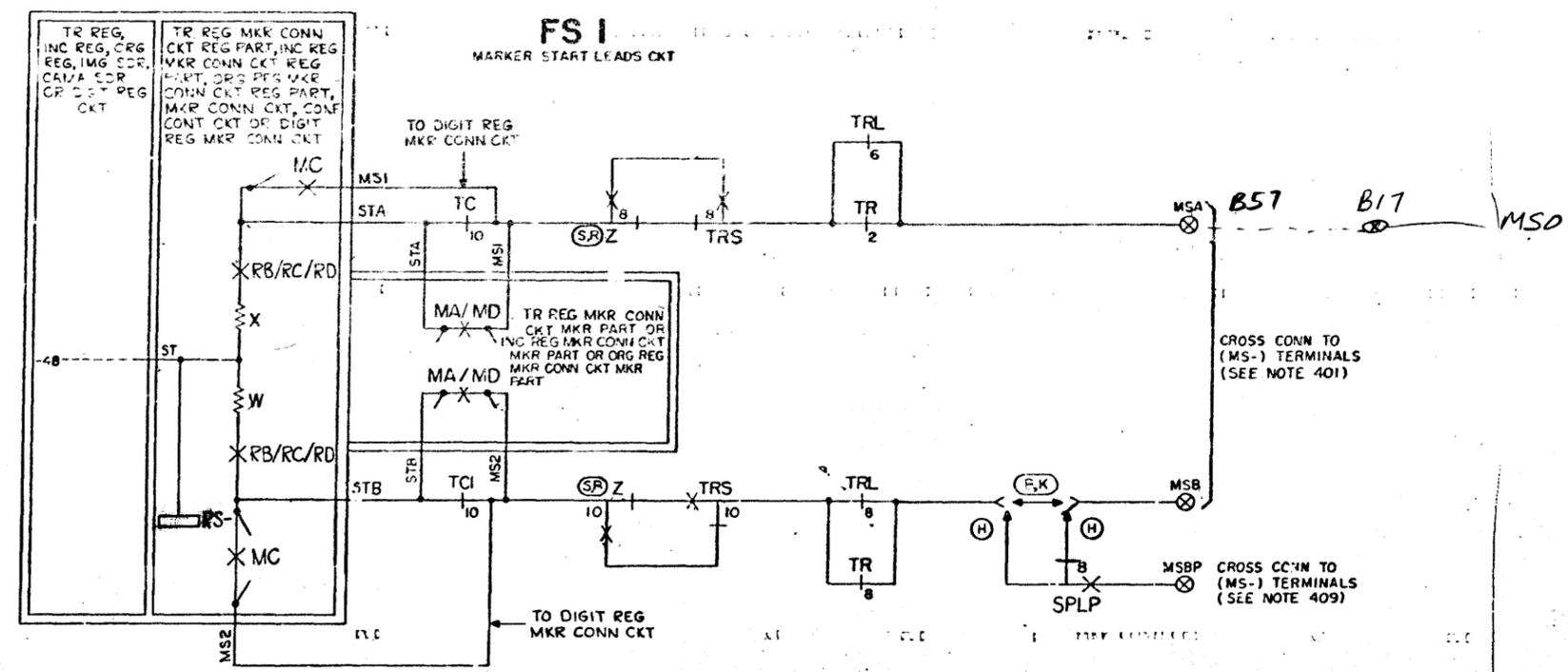
TIME DELAY CONT CKT	
TM	10E2
C	10E1
CP	10E1
G	10E0
I	10E1
L	10D2
TRS	10B2
C	10B1
G	10B0
I	10B1
L	10B2

LINE, LINE LINK AND MKR CONN CONT CKT FOR AUTO. CALL DISTRIBUTION	
FG	4G1
FBI	4H1
LCB	8D0, 6D0
MSA	1E4
MSB	1F4
TC	4F1
TCI	4G1

PREFERENCE CONTROL CIRCUIT	
CN	5A9
FR	5A9

OPTION INDEX

APP OR WIRING	LOCATION
1	APP FIG 1
4	APP FIG 4
5	APP FIG



DRAWING ISSUE	
1	1/28/65
2D	1/28/65
8D	1/28/65
10B	1/28/65
18D	1/28/65
22D	1/28/65
24D	1/28/65

PREFERENCE CONTROL CIRCUIT
FRAME TRAFFIC CONTROL CIRCUIT
CONNECTOR CONTROL CIRCUIT
TROUBLE RECORDER CONNECTOR CIRCUIT

ISSUE 32D
SD-26029-CI-B1

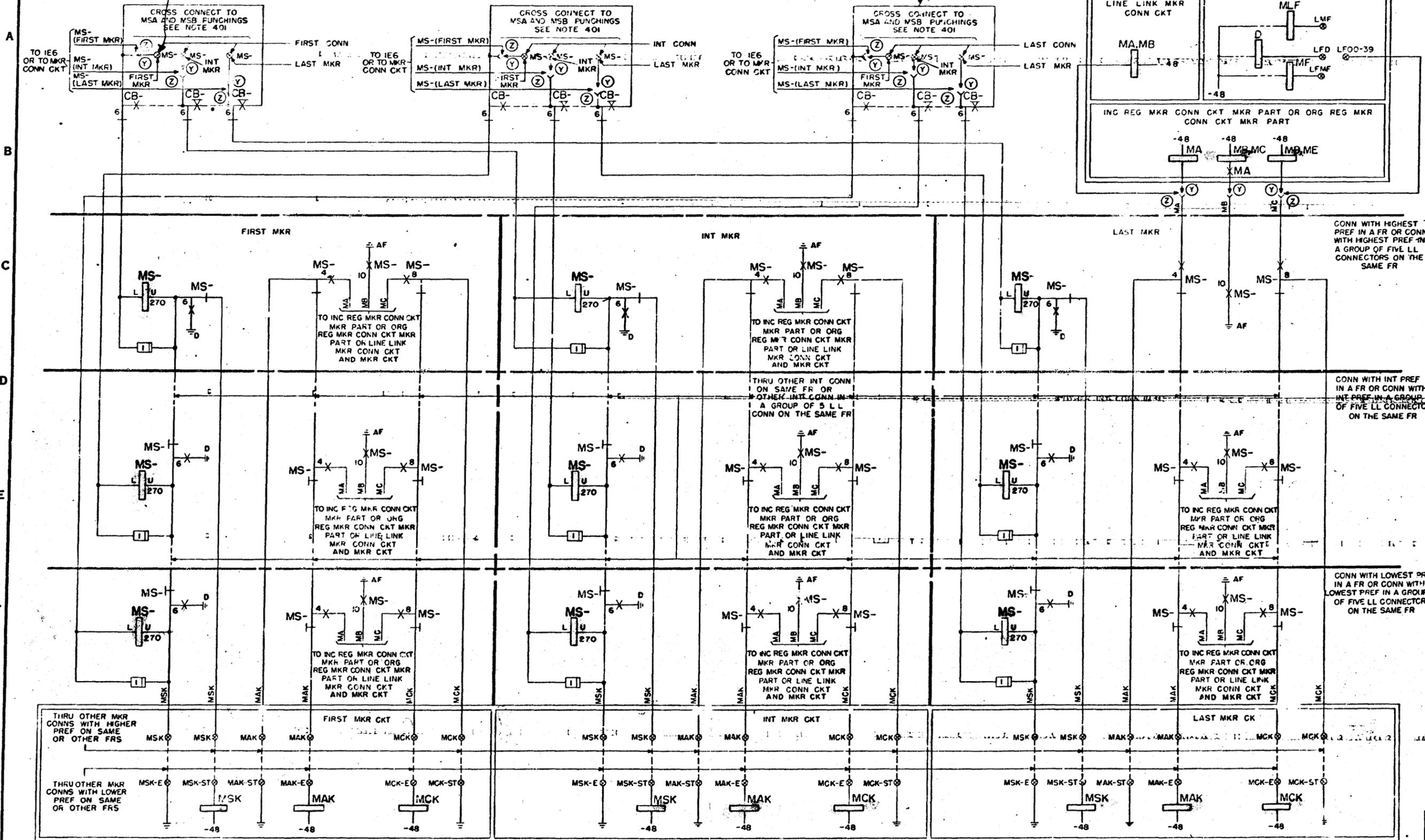
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FS-2

MARKER PREFERENCE CONTROL CKT

DRAWING ISSUE
108 1/75



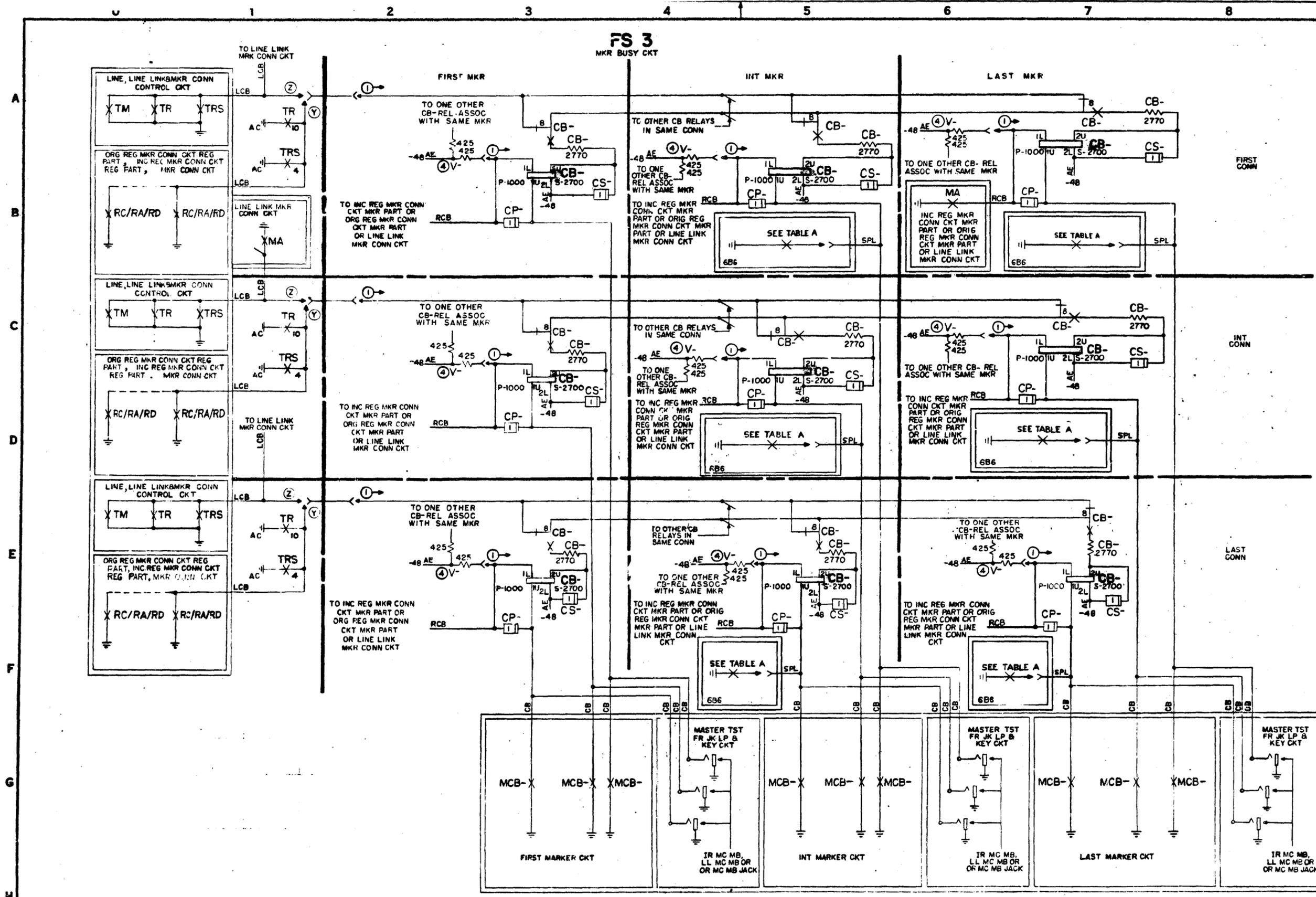
SD-26029-01
 PREFERENCE CONTROL CIRCUIT
 FRAME TRAFFIC CONTROL CIRCUIT
 CONNECTOR CONTROL CIRCUIT
 TROUBLE RECORDER CONNECTOR CIRCUIT

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SD-26029-01-B2

SD-26029-01-B2

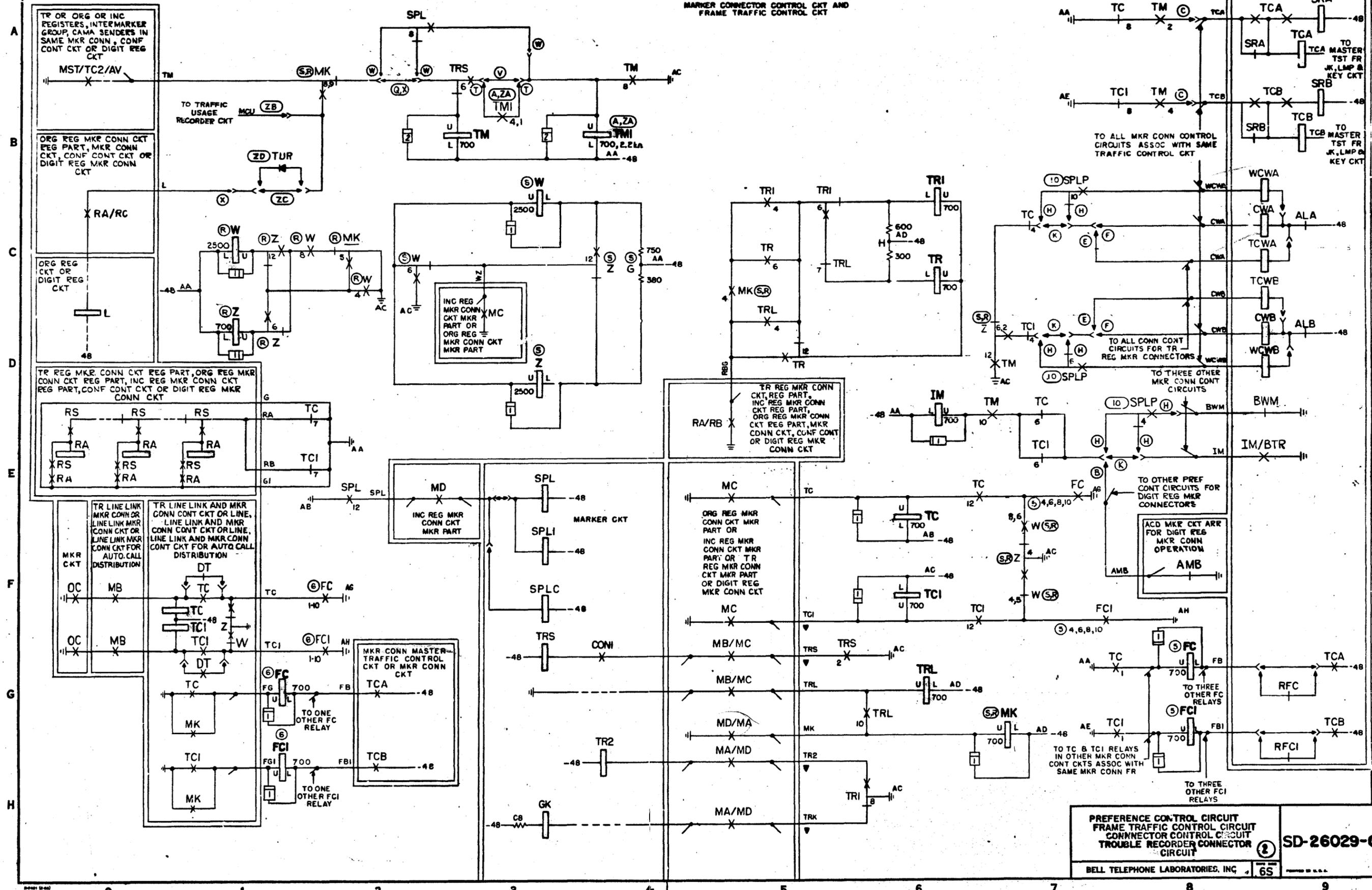
DRAWN	1
ISSUED	2D
REVISED	3A
BY	10B
DATE	170
REVISION	19D
BY	24D
DATE	27D



SD-26029-01-B3

FS 4

MARKER CONNECTOR CONTROL CKT AND FRAME TRAFFIC CONTROL CKT



SD-26029-01-B4

PREFERENCE CONTROL CIRCUIT
 FRAME TRAFFIC CONTROL CIRCUIT
 CONNECTOR CONTROL CIRCUIT
 TROUBLE RECORDER CONNECTOR CIRCUIT

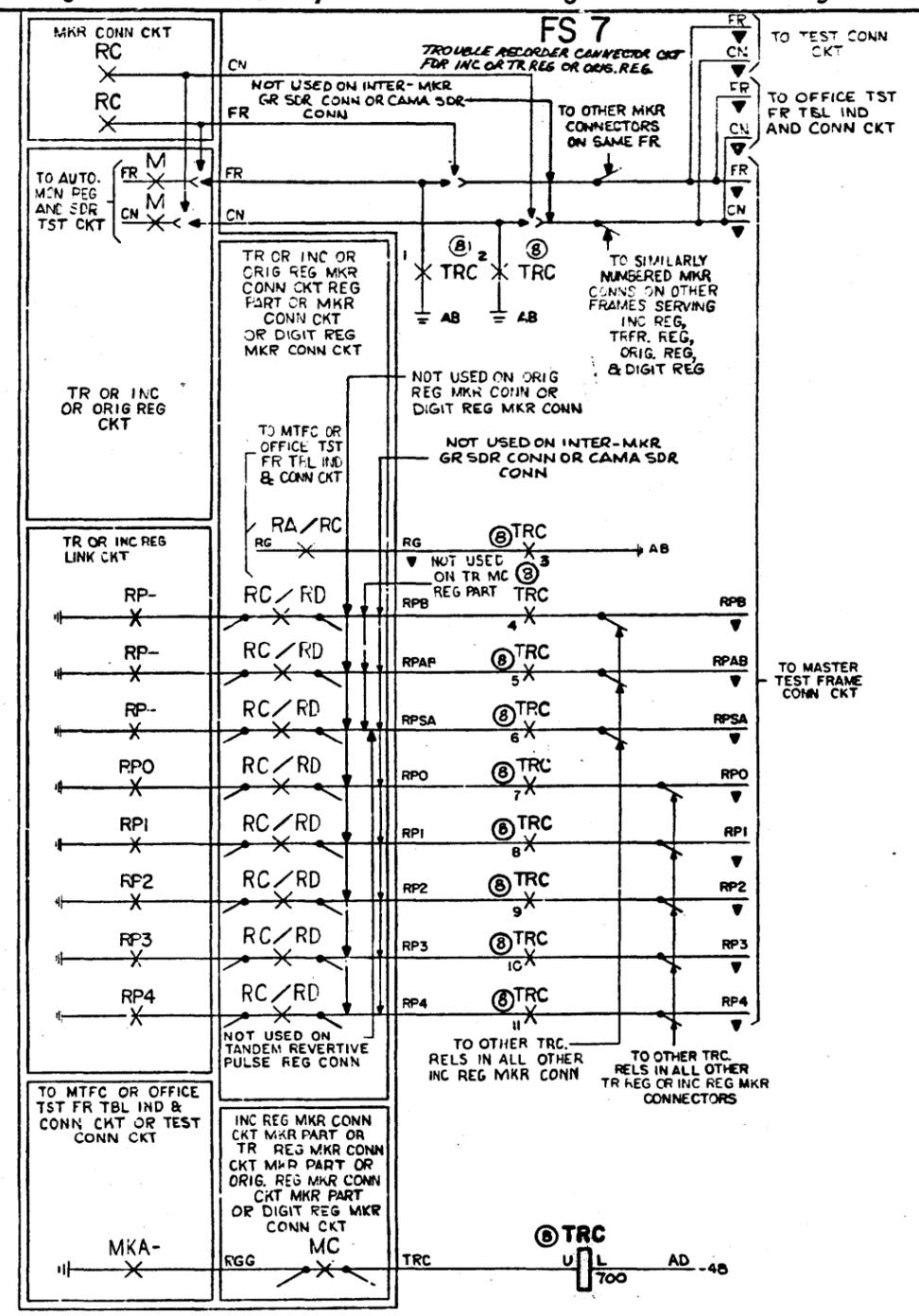
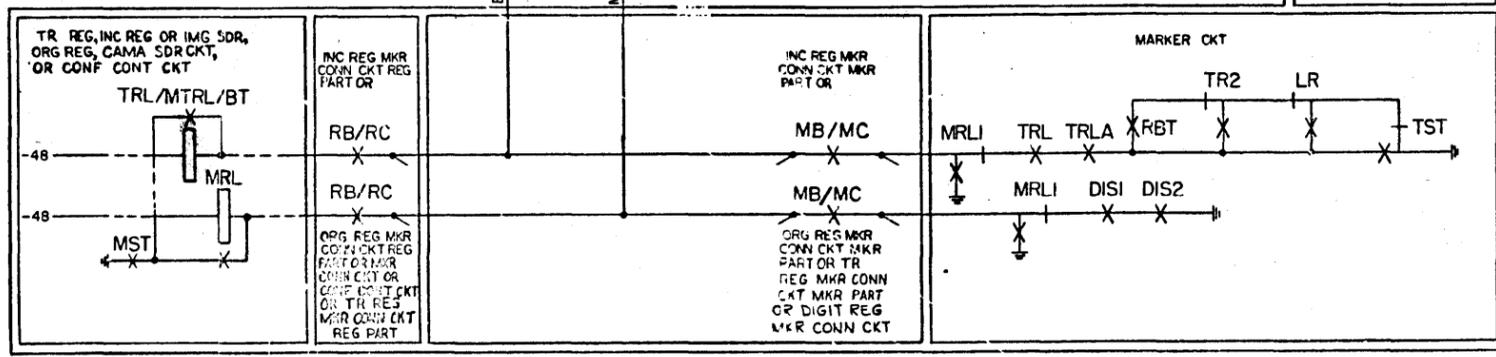
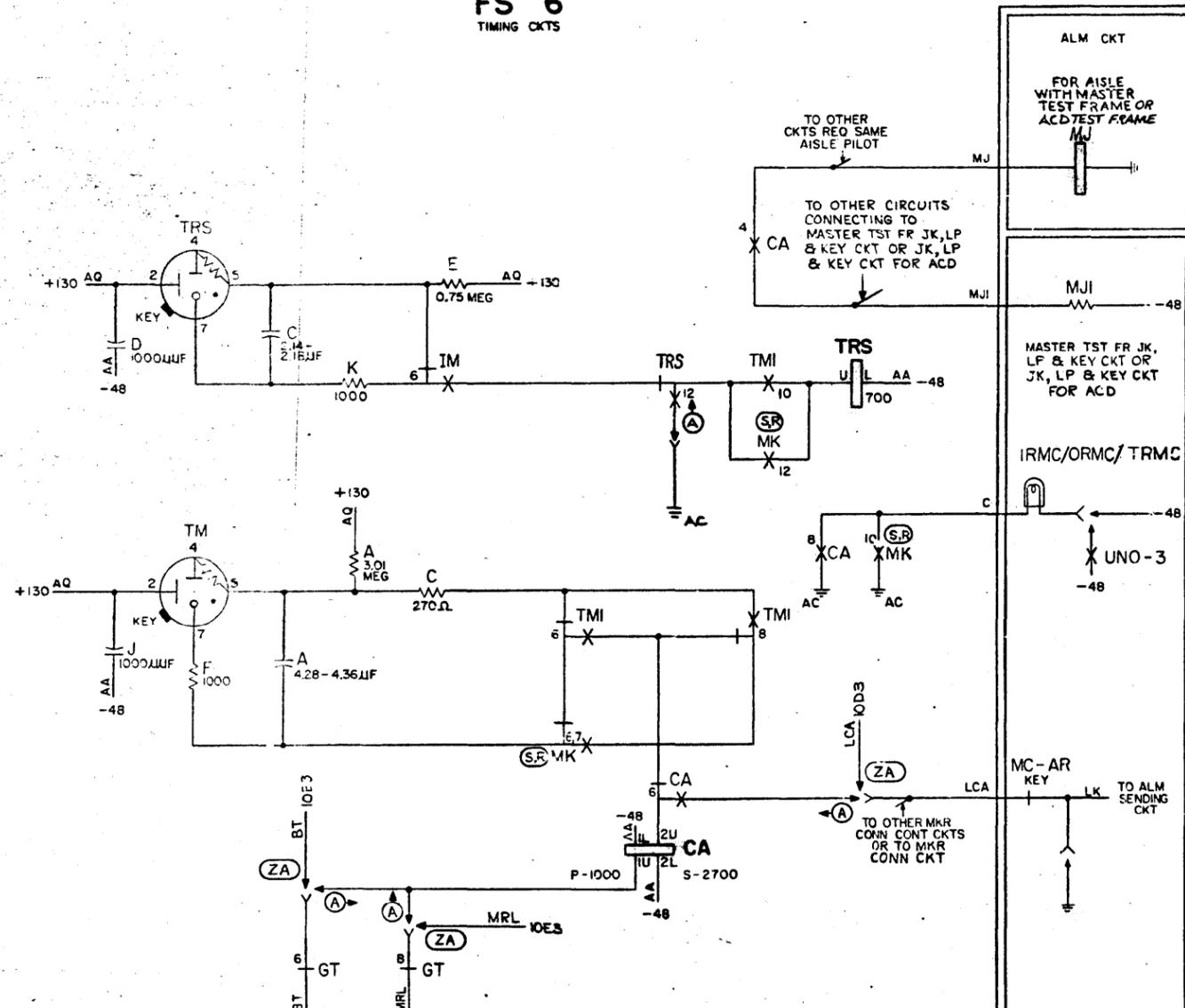
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ISSUE 37B
 SD-26029-01-B4

1	2A
2	2B
3	2C
4	2D
5	2E
6	2F
7	2G
8	2H
9	2I
10	2J
11	2K
12	2L
13	2M
14	2N
15	2O
16	2P
17	2Q
18	2R
19	2S
20	2T
21	2U
22	2V
23	2W
24	2X
25	2Y
26	2Z
27	3A
28	3B
29	3C
30	3D
31	3E
32	3F
33	3G
34	3H
35	3I
36	3J
37	3K
38	3L
39	3M
40	3N
41	3O
42	3P
43	3Q
44	3R
45	3S
46	3T
47	3U
48	3V
49	3W
50	3X
51	3Y
52	3Z
53	4A
54	4B
55	4C
56	4D
57	4E
58	4F
59	4G
60	4H
61	4I
62	4J
63	4K
64	4L
65	4M
66	4N
67	4O
68	4P
69	4Q
70	4R
71	4S
72	4T
73	4U
74	4V
75	4W
76	4X
77	4Y
78	4Z
79	5A
80	5B
81	5C
82	5D
83	5E
84	5F
85	5G
86	5H
87	5I
88	5J
89	5K
90	5L
91	5M
92	5N
93	5O
94	5P
95	5Q
96	5R
97	5S
98	5T
99	5U
100	5V

0 1 2 3 4 5 6 7 8 9

FS 6
TIMING CKTS



DRAWING ISSUE	
1	ISS
2D	ISS
3A	ISS
5A	ISS
8D	ISS
10B	ISS
6D	ISS
17D	ISS
8D	ISS
19D	ISS
20B	ISS
2D	ISS

SD-26029-01-

FS 5
GROUND TEST AND
SPECIAL RELAY CKT

DRAWING
ISSUE
240 JLF
270

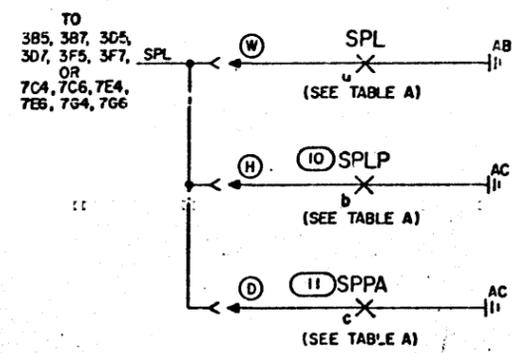
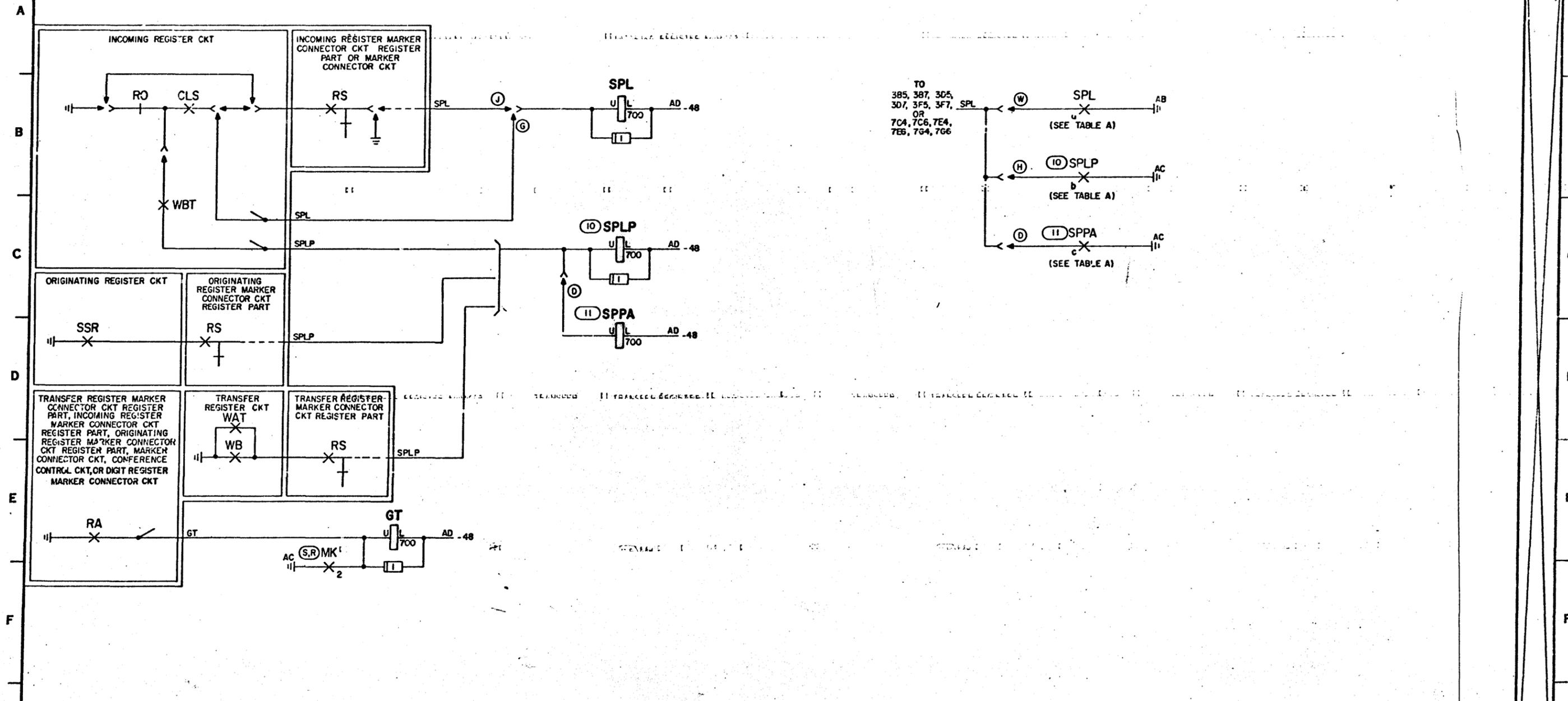


TABLE A

MARKER NUMBER	SPL RELAY CONTACT a	SPLP RELAY CONTACT b	SP RELAY CONTACT c
2	1	1	
3	2	2	
4	3	3	
5	4	5	
6	5	11	
7	6	12	
8	7		1
9	9		2
10	10		3
11	11		5

SD-26029-01-B6

ISSUE
32D

PREFERENCE CONTROL CIRCUIT
FRAME TRAFFIC CONTROL CIRCUIT
CONNECTOR CONTROL CIRCUIT
TROUBLE RECORDER CONNECTOR CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

SD-26029-01-B6

6S

0 1 2 3 4 5 6 7 8 9

FS 9

LINE LINK MKR CONN, MARKER PREF CONTROL AND MKR BUSY CKT FOR AUTO. CALL DISTRIBUTION

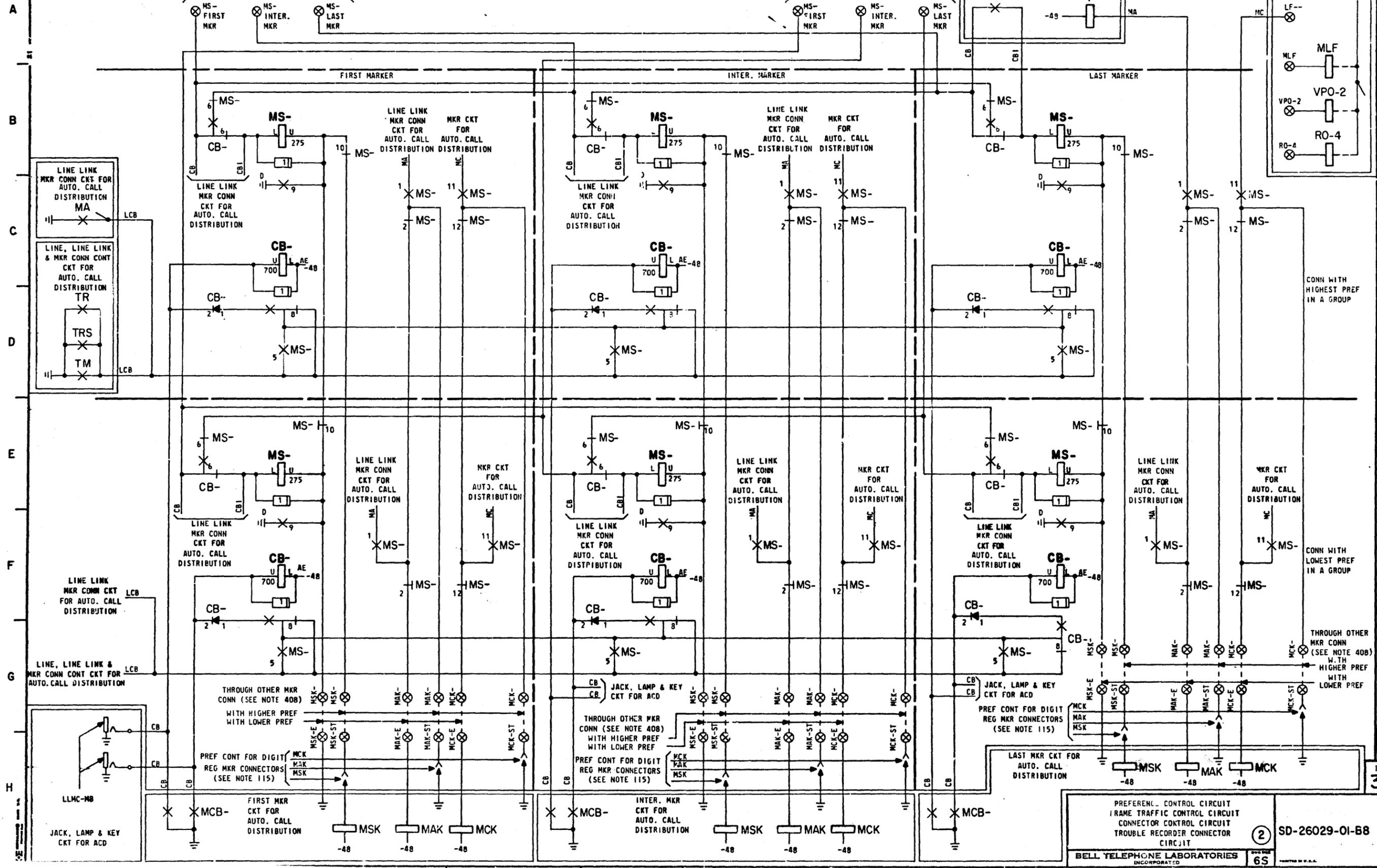
FOR FIRST CONNECTION CROSS CONN TO MSA & MSB PUNCHINGS (SEE NOTE 401)

FOR LAST CONNECTION CROSS CONN TO MSA & MSB PUNCHINGS (SEE NOTE 401)

LINE LINK MKR CONN CKT FOR AUTO. CALL DISTRIBUTION

MKR CKT FOR AUTO. CALL DISTRIBUTION

DRAWING ISSUE 220 25D



SD-26029-01-B8

ISSUE 32D

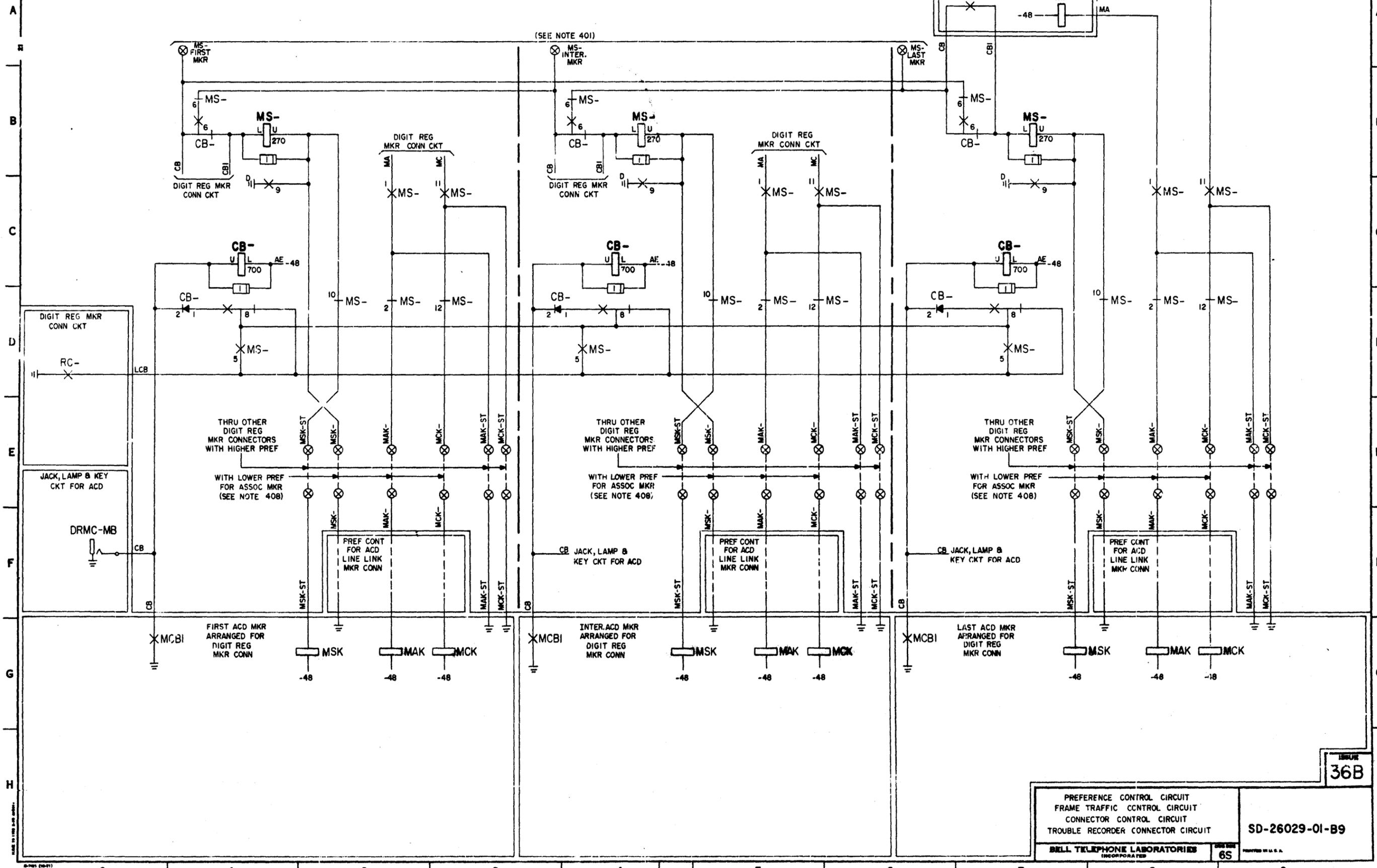
PREFERENC. CONTROL CIRCUIT
 FRAME TRAFFIC CONTROL CIRCUIT
 CONNECTOR CONTROL CIRCUIT
 TROUBLE RECORDER CONNECTOR CIRCUIT

SD-26029-01-B8

BELL TELEPHONE LABORATORIES
 INCORPORATED

12 FS 10
 MKR PREF CONTROL AND
 MKR BUSY CKT FOR DIGIT
 REG MKR CONN (DRMC) FOR
 AUTO. CALL DISTRIBUTION

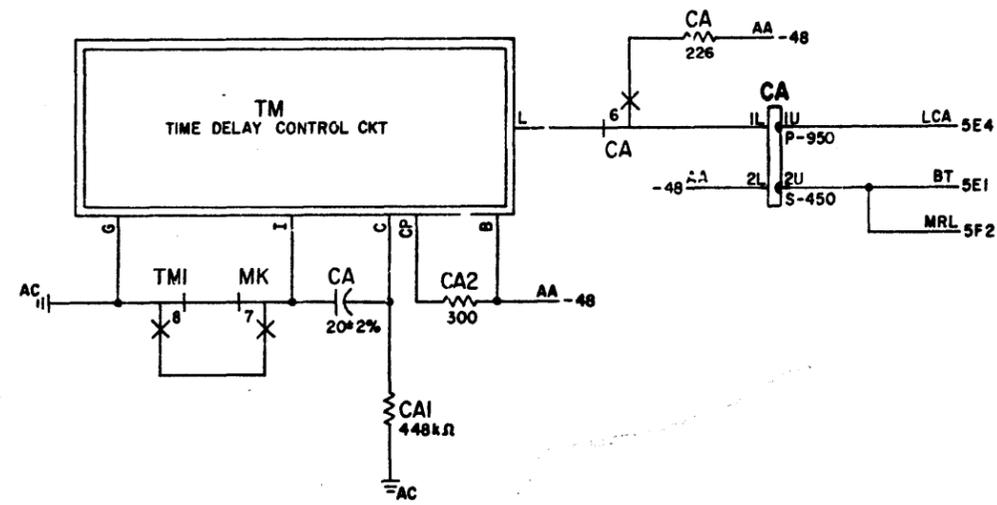
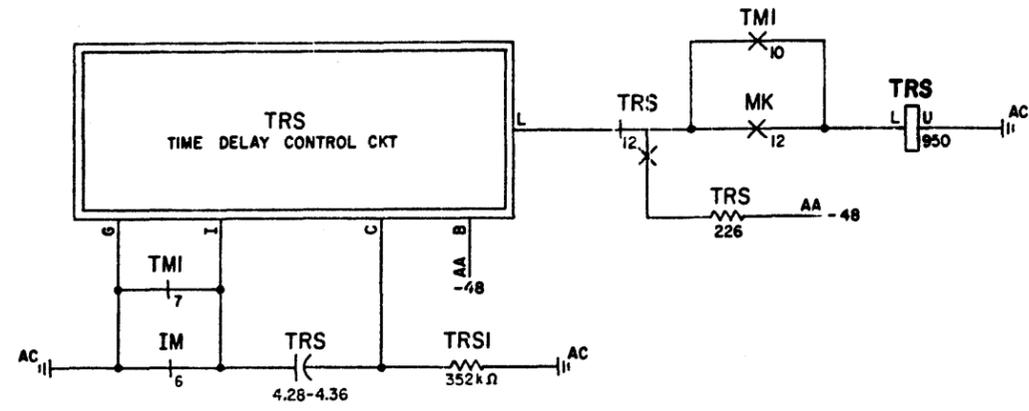
(SEE NOTE 401)



36B

PREFERENCE CONTROL CIRCUIT	SD-26029-01-B9
FRAME TRAFFIC CONTROL CIRCUIT	
CONNECTOR CONTROL CIRCUIT	
TROUBLE RECORDER CONNECTOR CIRCUIT	
BELL TELEPHONE LABORATORIES INCORPORATED	65 PRINTED IN U.S.A.

2A FS II
TIMING CIRCUITS



SD-26029-01-B10

PREFERENCE CONTROL CIRCUIT FRAME TRAFFIC CONTROL CIRCUIT CONNECTOR CONTROL CIRCUIT TROUBLE RECORDER CONNECTOR CIRCUIT		ISSUE 34A
BELL TELEPHONE LABORATORIES INCORPORATED		SD-26029-01-B10
6S		2

APP FIG. 1

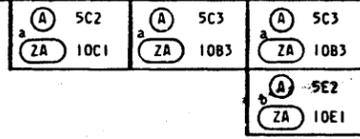
RELAY																		DESIG	
DESIG	CB-	MS-														DESIG			
CODE	AF534	AF105														CODE			
OPTION	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	OPTION
12																			12
11																			11
10			M	2E5															10
9																			9
8	EBM	3C5	EBM	2E5															8
7																			7
6	EBM	2B3	EMB	2E3															6
5																			5
4			EBM	2E4															4
3																			3
2																			2
1																			1
COIL		3C5		2E3															COIL

NETWORK				RESISTOR			
OPT	DESIG	LOC	CODE	OPT	DESIG	LOC	CODE
	CP	3D5	185A		CB-	3C5	T45A, KS-20810, L1A, 2770
	CS	3C5					
	MS	2E3					

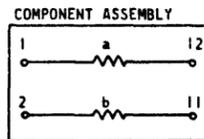
APP FIG. 2

RELAY																		DESIG		
DESIG	CA	GT														DESIG				
CODE	AF70	AF167														CODE				
OPTION	A	ZA														OPTION				
CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	OPTION
12																				12
11																				11
10			M		M															10
9																				9
8	EBM	5D4	M	5D4	BH	5F2				EBM	4B2	EMB	4A8	BM	4B8	EBM	4A4	BM	5D3	8
7	B									EBM	b	B	4D1	B	4E1					7
6	EMB	5E3	FMB	10D2	BH	5F1	EBM	a	EBM	5E2	EMB	4C5	BM	4D7	BM	4E7	EBM	BM	5D2	6
5										EMB	4C2	M								5
4	M	5B3	M	5B3	M					EMB	4C5	BM	4C7	BM	4C8	M	4B8	M	4B3	4
3										EMB		M								3
2										M	6E1	EMB	6E1	M						2
1										M	4G7	M	4G7	M						1
COIL		5E3		10D3		6E2		4D6		4G6		4G6		4F6		4F6		4B3		4B4

RELAY																		DESIG					
DESIG	TM1	TR														DESIG							
CODE	AG6	AF32														CODE							
OPTION	ZA	AF50														OPTION							
CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	OPTION			
12	EMB																			12			
11																				11			
10	EBM	10A3	EBM	3C1	M					M	4G6	EBM	1D3	EMB	1D3				EBM	1C2	EBM	1C2	10
9																				9			
8	EBM	10E1	EBM	1D3	BM	4H6	BM	1C3	EBM	1B3	M	1B3	M	4C1	EBM	4E7	EBM	1B2	EBM	1B2	8		
7	B	10B1								B	4C5	B								7			
6	EMB		EMB	4C5	BM	4C5	BM	1B3	EMB	4B3	EMB	4B3	EMB	4E7	EMB	4C2	EMB	4D1	EBM	4D7	6		
5																				5			
4	EBM		EBM		M	4C5	M	4C5	EBM	3C1	EBM	3C1	M	4C2	EBM	4F7	EBM	4F7	EBM	4F7	4		
3																				3			
2	EBM		EBM	1B3					EBM	4G6	EBM	4G6							EBM	4D7	EBM	2	
1	M	4B3																		1			
COIL		4B4		4C6		4C6		4G6		5C4		10B3		4C1		4B3		4D1		4D3	COIL		



RELAY																			
DESIG																			
CODE																			
OPTION																			
CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	OPTION	
12																			12
11																			11
10																			10
9																			9
8																			8
7																			7
6																			6
5																			5
4																			4
3																			3
2																			2
1																			1
COIL																			COIL



COMPONENT ASSEMBLY			
DESIG	CA0		
CODE	ED-94823-(), 6956		
OPTION	ZA		
COMPONENT	DESIG	LOC	CODE
RESISTOR	a	CA1	10F2 } 22A, KS-20810, L1A, 400M
	b	TRS1	10C2 } 22A, KS-20810, L1A, 352M

CAPACITOR				DIODE			
OPT	DESIG	LOC	CODE	OPT	DESIG	LOC	CODE
A	A	5D1	4370A	ZD	TUR	4B1	446F
A	C	5C1	4390A				
ZA	{2} CA	10E1	574A				
A	D	5C1	KS-13368, L3 1000uF				
A	J	5D1	KS-13368, L3 1000uF				
ZA	TRS	10C1	4370A				

ELECTRON TUBE				NETWORK			
OPT	DESIG	LOC	CODE	OPT	DESIG	LOC	CODE
A	TM	5D1	346C OR 346B		GT	6E2	
A	TRS	5C1			IM	4D6	
				R, S	MK	4H7	185A
					TC	4E6	
					TC1	4F6	
				A	TM	4B2	186A
					TM1	4B3	
				ZA	TM1	4B3	
				S	W	4C3	
				R	W	4C1	185A
				S	Z	4D3	
				R	Z	4D1	

RESISTOR			
OPT	DESIG	LOC	CODE
A	A	5D2	T45C, 261A
A	C	5D2	KS-13490, L1, 270
ZA	CA	10D3	18AG
A	CA2	10E2	18AF
A	E	5C2	T45C, KS-20810, L1A, 0.75MEG
A	F	5E1	18BH
S	G	4C4	19BW
	H	4C6	19GN
A	K	5C2	18BH
ZA	TRS	10B3	18AG

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PREFERENCE CONTROL CIRCUIT
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APP FIG. 3

RELAY										
DESIG	SPL									
CODE	AFB2									
OPTION	CONT	LOC								
12	FM	4E2								
11	M	6B6								
10	M	6B6								
9	M	6B6								
8	EBM	4A2								
7	M	6B6								
6	EMB	6B6								
5	M	6B6								
4	EBM	6B6								
3	M	6B6								
2	M	6B6								
1	M	6B6								
COIL		6B3								

NETWORK			
OPT	DESIG	LOC	CODE
	SPL	6B3	185A

APP FIG. 4

RESISTOR			
OPT	DESIG	LOC	CODE
V-		3C4	196H

APP FIG. 5

RELAY										
DESIG	FC		FC1							
CODE	AF522		AF522							
OPTION	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC
12										
11										
10	M	4EB	M	4FB						
9										
8	BM	4EB	BM	4FB						
7										
6	BM	4EB	BM	4FB						
5										
4	M	4EB	M	4FB						
3										
2										
1										
COIL		4GB		4GB						

NETWORK			
OPT	DESIG	LOC	CODE
	FC	4GB	185A
	FC1	4GB	

APP FIG. 6

RELAY										
DESIG	FC		FC1							
CODE	AF506		AF506							
OPTION	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC
12	M		M							
11	M		M							
10	M	4F1	M	4F1						
9	M	4F1	M	4F1						
8	M	4F1	M	4F1						
7	M	4F1	M	4F1						
6	M	4F1	M	4F1						
5	M	4F1	M	4F1						
4	M	4F1	M	4F1						
3	M	4F1	M	4F1						
2	M	4F1	M	4F1						
1	M	4F1	M	4F1						
COIL		4G1		4G1						

NETWORK			
OPT	DESIG	LOC	CODE
	FC	4G1	185A
	FC1	4G1	

APP FIG. 7

RELAY										
DESIG	CB-		MS-							
CODE	AF531		AF154							
OPTION	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC
12			PB	7D6						
11			M	7D6						
10	EBM		EB	7D5						
9			PM	7D5						
8	EBM	7E6								
7			M							
6	EBM	7D4	EBM	7D4						
5			M	7E4						
4	EBM									
3			M	7D5						
2			PB	7D5						
1			M	7D5						
COIL		7E4		7D4						

CAPACITOR			
OPT	DESIG	LOC	CODE
M	CB-	7E4	542C, 0.25uF, 150V

DIODE			
OPT	DESIG	LOC	CODE
M	CB-	7E4	420G
N	CB-	7E4	446K

NETWORK				RESISTOR			
OPT	DESIG	LOC	CODE	OPT	DESIG	LOC	CODE
	CB-	7E4	185A	M	CB-	7E5	T44A, KS-20289, L6C, 100
	MS-	7D4					

APP FIG. 8

RELAY				
DESIG	TRC			
CODE	AF24			
OPTION	CONT	LOC	CONT	LOC
12	M			
11	M	5E8		
10	M	5E8		
9	M	5E8		
8	M	5D8		
7	M	5D8		
6	M	5D8		
5	M	5C8		
4	M	5C8		
3	M	5C8		
2	M	5B8		
1	M	5B8		
COIL		5F8		

APP FIG. 9

RELAY					
DESIG	CB-		MS-		
CODE	AF531		AF154		
OPTION	CONT	LOC	CONT	LOC	CONT
12			PB	8F6	
11			M	8F6	
10	BM		EB	8E4	
9			PM	8E4	
8	EBM	8F4			
7			M		
6	EBM	8E4	EBM	8E4	
5			M	8G4	
4	EBM				
3			M		
2			PB	8F5	
1			M	8F5	
COIL		8F4		8E4	

DIODE			
OPT	DESIG	LOC	CODE
	CB-	8F4	446K

NETWORK			
OPT	DESIG	LOC	CODE
	CB-	8F4	185A
	MS-	8E4	

APP FIG. 10

RELAY				
DESIG	SPLP			
CODE	AF55			
OPTION	CONT	LOC	CONT	LOC
12	M	6B6		
11	M	6B6		
10	BM	4B8		
9	M			
8	BM	1D4		
7	B			
6	BM	4D8		
5	M	6B6		
4	BM	4D8		
3	M	6B6		
2	M	6B6		
1	M	6B6		
COIL		6C3		

NETWORK			
OPT	DESIG	LOC	CODE
	SPLP	6C3	185A

APP FIG. 11

RELAY				
DESIG	SPPA			
CODE	AF55			
OPTION	CONT	LOC	CONT	LOC
12	M			
11	M			
10	BM			
9	M			
8	BM			
7	B			
6	BM			
5	M	6C6		
4	BM			
3	M	6C6		
2	M	6C6		
1	M	6C6		
COIL		6D3		

APP FIG. 12

RELAY										
DESIG	CB-		MS-							
CODE	AF531		AF535							
OPTION	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC
12			PB	9D6						
11			M	9C6						
10	EBM		EB	9D5						
9			PM	9B4						
8	EBM	9C4	EM							
7			M							
6	EBM	9B4	EBM	9B4						
5			M	9D4						
4	EBM									
3			M							
2			PB	9D5						
1			M	9C5						
COIL		9C4		9B4						

DIODE			
OPT	DESIG	LOC	CODE
	CB-	9D3	446K

NETWORK			
OPT	DESIG	LOC	CODE
	CB-	9C4	185A
	MS-	9B4	

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PREFERENCE CONTROL CIRCUIT
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CIRCUIT NOTES:

DESIG	FUSE AMP	POTENTIAL	ONE PER
AA	1 1/3	48V SIG BAT.	APP FIG. 2
XXXAB	1 1/3	48V SIG BAT.	2 APP FIG. 2 MTD ON SAME FR
XXXAC	1 1/3	48V SIG BAT.	2 APP FIG. 2 MTD ON SAME FR
AD	1 1/3	48V SIG BAT.	APP FIGURES 2,3,8 OR 2,8
AE	1 1/3	48V SIG BAT.	APP FIG. 1 IN TWO MKR CONNECTORS SERVED BY THE SAME MKR AND FOR APP FIG. 4, OR APP FIG. 7 IN TWO MKR CONNECTORS SERVED BY THE SAME MKR OR APP FIG. 12 IN TWO MKR CONNECTORS SERVED BY THE SAME MKR
XXAD	1/2	+130V SIG BAT.	APP FIG. 2
AA		GRD	APP FIG. 2
AB		GRD	APP FIG. 3 AND/OR 8
AC		GRD	APP FIG. 2
AE		GRD	APP FIG. 2
AF		GRD	ALL APP FIG. 1 OR 7 PER MKR CONN FR SERVED BY THE SAME MKR
AG		GRD	APP FIG. 5 AND ONE PER APP FIG. 6
AH		GRD	APP FIG. 5 AND ONE PER APP FIG. 6
AD		GRD	ALL APP FIG. 1 OR 7 OR 1 PER MKR CONN FR SERVED BY THE SAME MKR

X THE GRD SUPPLY SHALL BE OBTAINED FROM THE ASSOC MKR
 XX INDICATES FUSES LOCATED ON THE PWR. RING. & TONE DISTG FR
 XXX ON LL OR MC AND S OR MC, AC & DR, FUSES AB AND AC ARE PROVIDED ON A ONE PER APP FIG. 2 BASIS

BATTERY SYMBOL	VOLTAGE RANGE
-48	45-50V
+130	125-135V

FEATURE OR OPTION	PROVIDE		
	APP FIG.	APP OR WRG	QUANTITY
MKR CONN PREF CKT (SEE NOTE 106)	7	Z	1 PER CONN PER MKR
FR TR CONT CKT	6		1 PER 10 LINE LINK MKR CONN ASSOC WITH SAME CONN FR AND SAME CONN DIVISION (SEE NOTE 102)
MKR CONN PREF CKT (SEE NOTE 106)	7	Y	1 PER CONN PER MKR
MKR CONN CONT CKT GRD TEST CKT	2	A, C, F, X	1 PER CONN
FR TR CONT CKT	5		1 PER CONN FR
TBL RCDR CONN CKT	8		1 PER CONN
WIDEBAND SERVICE IN MKR GROUP	NO		
	YES	2 MARKERS IN MKR GROUP	K
	YES	MORE THAN 2 MARKERS IN MKR GROUP	H
YES	MORE THAN 8 MARKERS IN MKR GROUP	D	1 PER CONN

FEATURE OR OPTION	PROVIDE		
	APP FIG.	APP OR WRG	QUANTITY
MKR CONN PREF CKT (SEE NOTE 106)	7	Y	1 PER CONN PER MKR
MKR CONN CONT CKT GRD TEST CKT	2	A, C, F	1 PER CONN
NO TEST, NO HUNT OR SPECIAL HUNT	3, 8	W	1 PER CONN
TBL RCDR CONN CKT	8		1 PER CONN
FR TR CONT CKT	5		1 PER CONN FR
WHERE ASSOC INC REG MKR CONN SERVES ANY INC REG ARRANGED TO HANDLE WIDEBAND CALLS		NO	
		YES	
		2 MARKERS IN MKR GROUP	G, K
		MORE THAN 2 MARKERS IN MKR GROUP	10
		MORE THAN 8 MARKERS IN MKR GROUP	11
FR TR CONT CKT (ORMC AND TRMC)	5		1 PER CONN TYPE PER CONN FR
FR TR CONT CKT (LLMC)	6		1 PER CONN PER MKR
MKR CONN PREF CKT (SEE NOTE 106)	7	Z	1 PER CONN PER MKR
FR TR CONT CKT	6		1 PER 2 TR LINE LINK MKR CONN ASSOC WITH SAME CONN FR
MKR CONN PREF CKT (SEE NOTE 106)	7	Y	1 PER CONN PER MKR (0-7)
MKR CONN CONT CKT GRD TEST CKT	2	A, C, Q, F	1 PER CONN
		A, C, Q, E	1 PER CONN
TBL RCDR CONN CKT	8		1 PER CONN
FR TR CONT CKT	5		1 PER CONN
WHERE ASSOC TRANSFER REG MKR CONN SERVES ANY TRANSFER REG ARR TO HANDLE WIDEBAND CALLS		NO	
		YES	
		2 MARKERS IN MKR GROUP	K
		MORE THAN 2 MARKERS IN MKR GROUP	10
MKR CONN PREF CKT	9		1 PER CONN PER MKR
FR TR CONT CKT	6		1 PER 10 LINE LINK MKR CONN ASSOC WITH SAME CONN FR
MKR CONN PREF CKT	12		1 PER CONN PER MKR (SEE NOTE 115)
MKR CONN CONT CKT	2	X, B, ZA	1 PER CONN
TBL RCDR CONN CKT	8		1 PER CONN

NETWORK NO.	NETWORK VALUES	
	RESISTANCE IN OHMS	CAPACITANCE IN UF
1	470	0.11
2	120	0.3

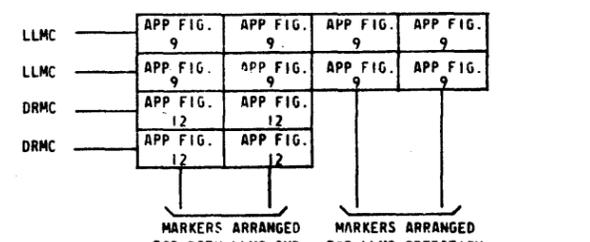
CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT		
				STD	A&M	MD
7D	T OR V	V		T	V	
10B	R OR S	S	102, 105	APP FIG. 7	APP FIG. 1, 4	
15D	ELECTRON TUBES			346C	346B	
18D	APP FIG. 8	APP FIG. 3 AND 8 OR NONE	102, 107	APP FIG. 3, 8		
19D			108			
20B	M, N	M OR NONE	109	N	M	
21D			101, 111, 112			
22D	APP FIG. 9	NONE	102	APP FIG. 9		
24D	G, H, J, K, APP FIG. 10	K OR K AND J	102, 113	G, H, J, K, APP FIG. 10		
27D	E OR F, APP FIG. 11	F	102, 114	E, F, APP FIG. 11		
	D	NONE	102	D		
32D	B, C	C AND APP FIG. 2 OR NONE	102	B, C		
	12	NONE	102, 115	12		
	A, ZA	A	102	A, ZA		
37B	ZB, ZC, ZD	NONE OR (X WITH ZC)	116	ZB, ZD	ZC	
38B	RESISTORS			KS-20810, L1A	145A, 221A, 145C, 145C	
				KS-20289, L6C	144A	

FEATURE OR OPTION	PROVIDE		
	APP FIG.	APP OR WRG	QUANTITY
MKR CONN PREF CKT (SEE NOTE 106)	1	Z	1 PER CONN PER MKR
MKR CONN PREF CKT (SEE NOTE 106)	4		1 PER 2 APP FIG. 1 ASSOC WITH SAME MKR
MKR CONN PREF CKT (SEE NOTE 106)	1	Y	1 PER CONN PER MKR
MKR CONN PREF CKT (SEE NOTE 106)	4		1 PER 2 APP FIG. 1 ASSOC WITH SAME MKR
MKR CONN PREF CKT (SEE NOTE 106)	1	Y	1 PER CONN PER MKR
MKR CONN PREF CKT (SEE NOTE 106)	4		1 PER 2 APP FIG. 1 ASSOC WITH SAME MKR

106. CROSS CONNECTIONS FOR THE MAK, MCK, AND MSK CHAINS SHOULD BE MADE AT THE CONNECTOR FRAMES IN ACCORDANCE WITH NOTE 402 THROUGH 405. PRIOR TO ISSUE 10B, THE CROSS CONNECTIONS WERE MADE AT THE MARKER FRAMES.
107. PRIOR TO ISSUE 18D, APP FIG. 8 WAS PART OF APP FIG. 3.

108. WHERE THIS CKT IS ASSOCIATED WITH ORIGINATING REGISTER MARKER CONNECTOR CIRCUITS AND THE MARKER GROUP IS ARRANGED FOR CENTREX WITH 4 AND 5 DIGIT DIALING OF INTERCOM CALLS OR IDDD, OPTION S MUST BE REPLACED WITH OPTION R.
109. TO MINIMIZE WEAR ON CONTACT 8 OF THE (CB-) RELAY, OPTION N MUST REPLACE OPTION M.
110. PRIOR TO ISSUE 21D, APP FIG. 8 CONNECTION TO THE ORMC REGISTER PART WAS NOT SHOWN.
111. WHERE THIS CIRCUIT IS REQUIRED TO SERVE AN ORMC ASSOC WITH AN ORIGINATING REGISTER ARRANGED FOR TOLL DIVERSION, APP FIG. 8 MUST BE PROVIDED.
112. WHERE THIS CIRCUIT IS PROVIDED FOR ORMC ADDITIONS TO FRAMES NOT EQUIPPED WITH APP FIG. 8, APP FIG. 8 NEED NOT BE PROVIDED. (A&M ONLY)
113. WHERE OPTION G IS REQUIRED, OPTION J, IF PROVIDED MUST BE REMOVED; AND WHERE OPTION H IS REQUIRED, OPTION K IF PROVIDED, MUST BE REMOVED.
114. WHEN A MARKER GROUP IS EXPANDED BEYOND 8 WIRE SPRING COMPLETING MARKERS, OPTION E REPLACES OPTION F FOR TRMC CONTROL CKT.
115. AN ACD OFFICE ARRANGED FOR CALL TRANSFER MAY HAVE SOME MARKERS ARRANGED TO WORK WITH DIGIT REGISTER MARKER CONNECTORS (DRMC) AND OTHERS NOT ARRANGED FOR DIGIT REGISTER MARKER CONNECTORS. THE PREFERENCE CONTROL FOR DIGIT REGISTER MARKER CONNECTORS SHOULD BE EQUIPPED WITH ONE APP FIG. 12 PER CONNECTOR PER MARKER ARRANGED FOR DIGIT REGISTER MARKER CONNECTORS. FOR MARKERS ARRANGED FOR DIGIT REGISTER MARKER CONNECTORS, THE MSK, MAK, AND MCK LEADS ARE TO BE CONNECTED FROM THE PREFERENCE CONTROL FOR THE LINE LINK MARKER CONNECTOR WITH THE HIGHEST PREFERENCE TO THE PREFERENCE CONTROL FOR THE DIGIT REGISTER MARKER CONNECTORS.

BLOCK DIAGRAM OF PREFERENCE CONTROL ARRANGEMENT FOR ACD LINE LINK MARKER CONNECTORS AND DIGIT REGISTER MARKER CONNECTORS:



116. A. PROVIDE OPTION ZB WHERE TUR MEASUREMENTS OR IRMC AND/OR TRMC CIRCUITS ARE REQUIRED, AND PROVIDE OPTIONS ZB AND ZD AND REMOVE OPTION ZC WHERE TUR MEASUREMENTS OF THE ORMC CIRCUITS ARE REQUIRED.
 B. PROVIDE OPTION ZC IN PLACE OF OPTION ZD WHERE TUR MEASUREMENTS OF ORMC CIRCUITS ARE NOT REQUIRED. (A&M ONLY)
- EQUIPMENT NOTES:
201. IN MARKER GROUPS WITH MORE THAN 4 DIAL TONE MARKERS, THE LINE LINK MARKER CONNECTORS ARE DIVIDED (GRADED) INTO A LOWER NUMBERED GROUP AND A HIGHER NUMBERED GROUP OF CONNECTORS. THE HIGHER NUMBERED CONNECTORS AND THEIR PREFERENCE AND CONTROL UNITS WORK WITH DIAL TONE MARKERS 0, 1, 2 & 3 AND THE LOWER NUMBERED CONNECTORS AND THEIR PREFERENCE AND CONTROL UNITS WORK WITH DIAL TONE MARKERS 0, 1, 2 & 4 (5 DIAL TONE MARKERS PROVIDED) OR WITH DIAL TONE MARKERS 0, 1, 5 & 4 (6 DIAL TONE MARKERS PROVIDED). FOR MORE INFORMATION ON CONNECTOR ARRANGEMENTS FOR MORE THAN 4 DIAL TONE MARKERS SEE BSP 819-311-150, PART 6. (A&M ONLY)
202. WHEN AN OFFICE EQUIPPED WITH LL OR MC FRAMES EXPANDS TO MORE THAN 4 WIRE SPRING DIAL TONE MARKERS, THE LINE LINK MARKER CONNECTORS ON SUCH FRAMES ARE ASSOCIATED WITH THE LOWER NUMBERED CONNECTOR GROUP. (A&M ONLY)

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CROSS CONNECTING INFO:

401. MARKER PREFERENCE

- A. IN EACH MKR CONNECTOR TWO MARKERS SHOULD BE CHOSEN TO BE PREFERRED ON ALTERNATE CALLS. WHEN POSSIBLE THESE SHOULD BE SEPARATED BY ONE OR MORE OF THE REMAINING MARKERS WHICH ARE THEN LESS PREFERRED IN THE CONNECTOR. EACH MARKER SHALL APPEAR AS A PREFERRED MARKER IN APPROXIMATELY THE SAME NUMBER OF MARKER CONNECTORS OF THE SAME TYPE. ASSIGNMENT OF PREFERRED MARKERS MAY BE PERIODICALLY SHIFTED TO DISTRIBUTE WEAR (SEE NOTE 409).
- B. CROSS CONNECT TERMINALS (MSA) AND (MSB) OF EACH ORIGINATING REGISTER MKR CONNECTOR AND INCOMING REGISTER MKR CONNECTOR AND DIGIT REGISTER MKR CONNECTOR AND LINE LINK FRAME FOR AUTO. CALL DISTRIBUTION TO THE (MS-) TERMINALS OF THOSE CONNECTORS WHICH ARE ASSOCIATED WITH THE MARKERS CHOSEN AS PREFERRED. (SEE NOTE 409).

- 402. A. PREFERENCE OF MARKER CONNECTORS FOR MARKERS IS ESTABLISHED BY CROSS CONNECTIONS IN THE MARKERS OF THE MSK, MAK AND MCK LEADS. SEE FS2 A&M ONLY OR FS 8 STD. THESE LEADS ARE CHAINED THRU ALL THE CONNECTORS IN AN ORIGINATING TRANSFER OR INCOMING REGISTER MARKER CONNECTOR FRAME OR THRU A GROUP OF FIVE SUCCESSIVE CONNECTORS IN A LINE LINK MARKER CONNECTOR FRAME OR THRU A GROUP OF TWO SUCCESSIVE REGISTER CONNECTORS OR FOUR LLMC IN A COMBINED LLMC-ORMC-IRMC FRAME OR TWO TLLMC IN A COMBINED TLLMC-TTLC-TLLC FRAME. THE HIGHEST AND LOWEST PREFERENCE CONNECTOR LEADS FOR EACH SUCH FRAME OR GROUP ARE TERMINATED IN THE MARKER.
- B. WHERE DIAL TONE MARKERS ARE NOT PROVIDED THE ORDER OF PREFERENCE SHALL BE:
 - ORIGINATING REGISTERS - HIGHEST PREFERENCE
 - INCOMING REGISTERS - INTERMEDIATE PREFERENCE
 - LINE LINKS - LOWEST PREFERENCE
- C. WHERE DIAL TONE MARKERS ARE PROVIDED THE ORDER OF PREFERENCE SHALL BE: LINE LINKS - HIGHEST PREFERENCE, TRANSFER LINE LINKS - LOWEST PREFERENCE. THE ORDER OF PREFERENCE FOR COMPLETING MARKERS SHALL BE ASSIGNED SUCH THAT EACH TYPE OF CONNECTOR (ORMC, IRMC, TRMC) IS FIRST PREFERRED BY AN EQUAL NUMBER OF MARKERS.

D. THE PREFERENCE FOR MARKERS SHALL BE DISTRIBUTED AS EVENLY AS POSSIBLE WITHIN THE TYPE OF CONNECTORS.

E. THE INCOMING REGISTERS MENTIONED ABOVE ALSO INCLUDE INTERMARKER GROUP SENDERS AND CAMA SENDERS.

403. A. FOR LINE LINK MARKER CONNECTOR FRAMES.

FOR A PARTICULAR MARKER, ALL LINE LINK MARKER CONNECTORS IN THE MARKER GROUP MUST BE ASSIGNED AN ORDER OF PREFERENCE. ON A LINE LINK MARKER CONNECTOR FRAME, THERE ARE FOUR GROUPS OF FIVE SUCCESSIVE CONNECTORS.

CONNECT TERMINALS 39, 48 AND 58 ON TERMINAL STRIP (A) ASSOCIATED WITH EACH GROUP OF FIVE CONNECTORS FOR THE PARTICULAR MARKER TO TERMINALS 37, 47 AND 57 RESPECTIVELY ON TERMINAL STRIP (A) ASSOCIATED WITH THE GROUP OF FIVE CONNECTORS THAT HAVE THE NEXT SUCCESSIVE LOWER PREFERENCE IN THE ASSIGNED ORDER FOR THE SAME MARKER WHILE THE LATTER GROUP IS MOUNTED ON THE SAME CONNECTOR FRAME.

B. FOR LLMC OR MC FRAME.

FOR A PARTICULAR MARKER, ALL LINE LINK MARKER CONNECTORS IN THE MARKER GROUP HAVE THE SAME ARRANGEMENT AS THE LLMC FRAME EXCEPT THAT IN THE COMBINED CONNECTOR FRAME EACH FRAME IS LIMITED TO ONE GROUP OF FOUR LINE LINK MARKER CONNECTORS.

C. FOR A TYPICAL ARRANGEMENT OF LINE LINK MARKER CONNECTORS SEE NOTE 404.

D. FOR T-LLMC FRAME.

FOR A PARTICULAR MARKER, ALL TRANSFER LINE LINK MARKER CONNECTORS IN THE MARKER GROUP MUST BE ASSIGNED AN ORDER OF PREFERENCE. ON A TLLMC-TTLC-TLLC COMBINED CONNECTOR FRAME, EACH FRAME IS LIMITED TO ONE GROUP OF TWO TRANSFER LINE LINK MARKER CONNECTORS.

E. FOR A TYPICAL ARRANGEMENT OF TRANSFER LINE LINK MARKER CONNECTORS SEE NOTE 406.

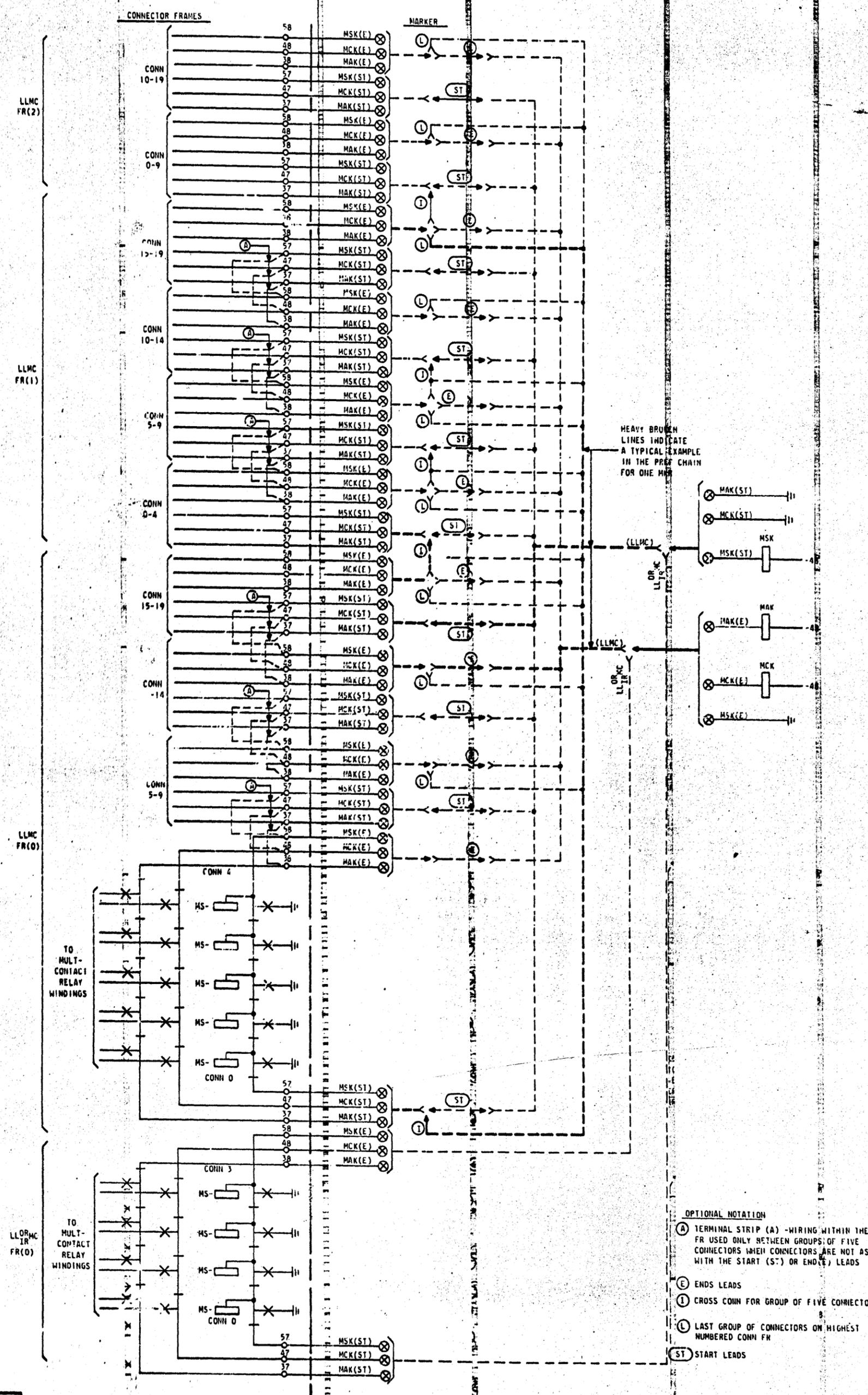
DRAWING	ISSUE
110	320
170	321
180	322
220	323
240	324
270	325

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CROSS CONNECTING INFO:
 40A. TYPICAL CROSS CONNECTIONS FOR LINE LINK MARKER CONNECTORS, SHOWING THE SEPARATE PREFERENCE CHAIN FOR THE (MS-) RELAYS OF ONE MARKER.



- OPTIONAL NOTATION
- (A) TERMINAL STRIP (A) - WIRING WITHIN THE CONN FR USED ONLY BETWEEN GROUPS OF FIVE CONNECTORS WHEN CONNECTORS ARE NOT ASSOC WITH THE START (ST) OR END (E) LEADS
 - (E) ENDS LEADS
 - (I) CROSS CONN FOR GROUP OF FIVE CONNECTORS
 - (L) LAST GROUP OF CONNECTORS ON HIGHEST NUMBERED CONN FR
 - (ST) START LEADS

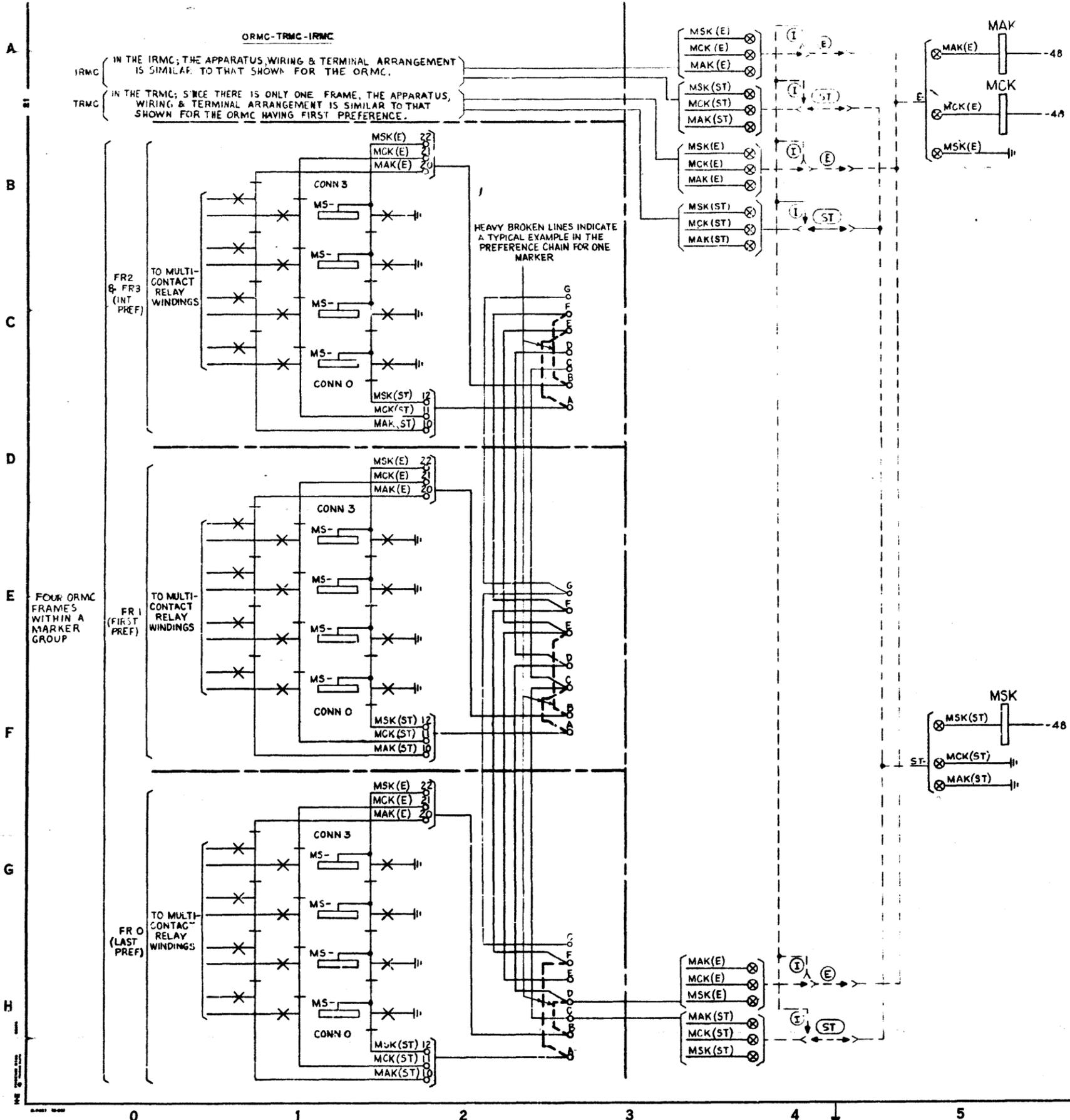
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 PREFERENCE CONTROL CIRCUIT
 FRAME TRAFFIC CONTROL CIRCUIT
 CONNECTOR CONTROL CIRCUIT
 HOURLI RECORDER CONNECTOR
 CIRCUIT
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CROSS CONNECTING IMFC (CONT)

405. TYPICAL EXAMPLE OF ORMC-TRMC-IRMC PREFERENCE CHAIN FOR ONE MARKER (SEE NOTE 405A, 410, 411)



405A. A PREFERENCE CHAIN IS PROVIDED FOR EACH TYPE OF CONNECTOR-ORMC, IRMC, OR TRMC-PLP MARKER TO MAINTAIN A PREFERENCE BETWEEN THE CONNECTORS FOR ACCESS TO A MARKER. EACH FRAME IS ASSIGNED AN ORDER OF PREFERENCE FOR EACH MARKER. THE FIRST PREFERENCE ASSOCIATED WITH EACH MARKER SHOULD BE DISTRIBUTED APPROXIMATELY EQUALLY BETWEEN THE MARKER CONNECTOR FRAMES. THE PREFERENCES AT EACH FRAME ARE CONTROLLED ON THE (MAK), (MCK), AND (MSK) TERMINAL STRIPS AT THE TOP OF THE FRAME BY CROSS CONNECTING TERMINALS A AND B TO C, D, E, F, AND G FOR EACH MARKER. SEE TABLE A.

TABLE A

FRAME TYPE	TOTAL NUMBER OF FRAMES IN THE CHAIN X	ORMC, IRMC, OR TRMC PREFERENCE FOR EACH MARKER							
		ON FR WITH 1ST PREF. TERMINAL		ON FR WITH 2ND PREF. TERMINAL		ON FR WITH 3RD PREF. TERMINAL		ON FR WITH LAST PREF. TERMINAL	
		A	B	A	B	A	B	A	B
ORMC IRMC TRMC LL OR IR MC	1	C	D						
ORMC IRMC TRMC LL OR IR MC	2	C	E					E	D
ORMC IRMC	3	C	E	E	F			F	D
ORMC IRMC	4	C	E	E	F	F	G	G	D

X FOR AN EXAMPLE OF FOUR FRAMES IN THE PREFERENCE CHAIN SEE NOTE 411.

OPTIONAL NOTATION
 (E) END LEAD
 (I) INTERMEDIATE WIRING
 (ST) START LEAD

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PREFERENCE CONTROL CIRCUIT
 FRAME TRAFFIC CONTROL CIRCUIT
 CONNECTOR CONTROL CIRCUIT
 TROUBLE RECORDER CONNECTOR CIRCUIT

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DRAWING ISSUE

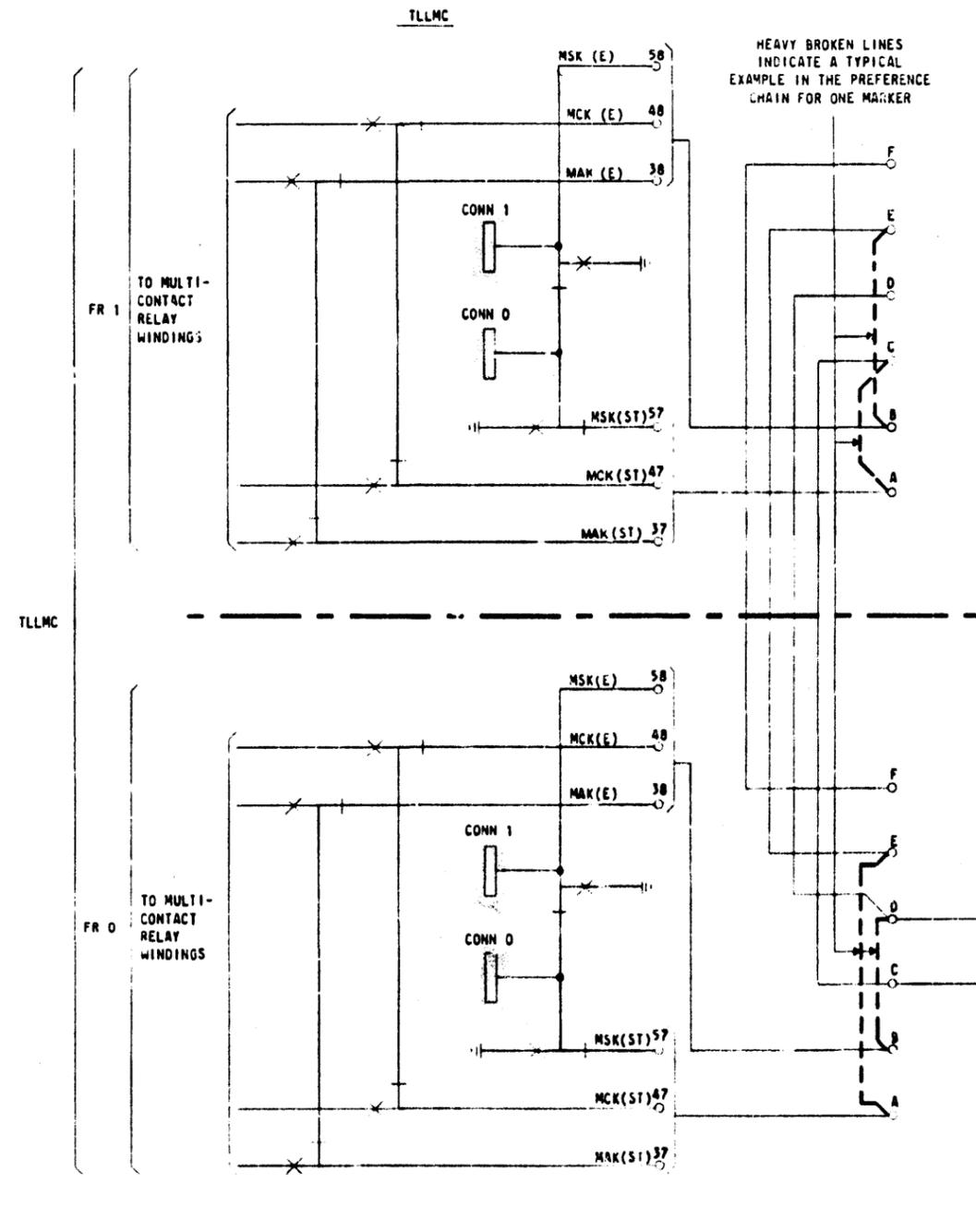
11D	JSL
18D	JSL
19D	JSL
20B	JSL
27D	JSL
30D	JSL

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CROSS CONNECTING INFO (CONT)

406. TYPICAL CROSS CONNECTIONS FOR TRANSFER LINE LINK MARKER CONNECTORS SHOWING THE OPERATE PREFERENCE CHAIN FOR THE (MS-) RELAYS OF ONE MARKER.

407. CROSS CONNECTION WIRE SHOULD BE 24GA TYPE BU COLOR BLACK.

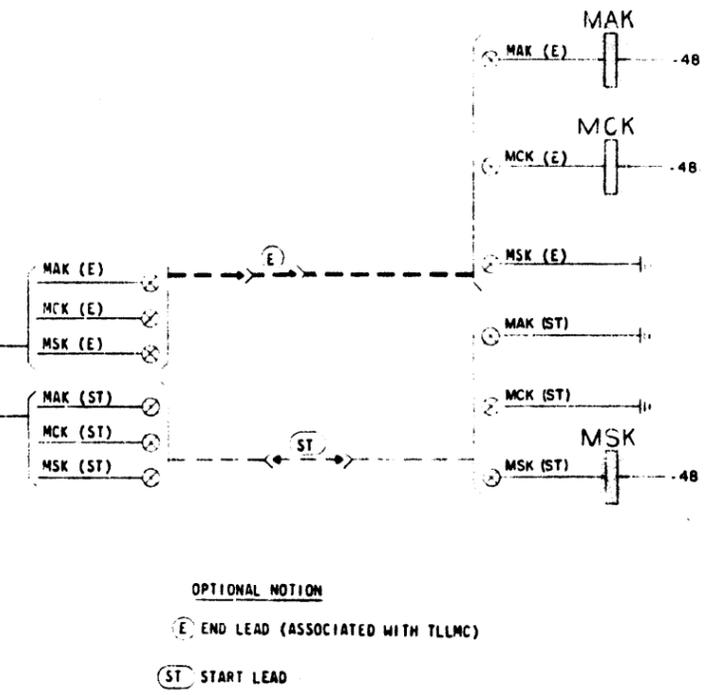


MARKER

FOR TRANSFER LINE LINK MARKER CONNECTORS.

ON THE CONNECTOR FRAME THAT HOLDS THE CONNECTOR WITH THE HIGHEST PREFERENCE CONNECT TERMINALS (A) AND (B) TO TERMINALS (C) AND (E) RESPECTIVELY ON TERMINAL STRIPS MAK, MCK, AND MSK AT TOP OF FRAME.

ON THE CONNECTOR FRAME THAT HOLDS THE CONNECTOR WITH THE LOWEST PREFERENCE, CONNECT TERMINALS (A) AND (B) TO TERMINALS (E) AND (D) RESPECTIVELY ON TERMINAL STRIPS MAK, MCK, AND MSK AT TOP OF FRAME.



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CROSSBAR SYSTEMS PREFERENCE CONTROL CIRCUIT FRAME TRAFFIC CONTROL CIRCUIT CONNECTOR CONTROL CIRCUIT TROUBLE RECORDER CONNECTOR CIRCUIT		SD-26029-01-04
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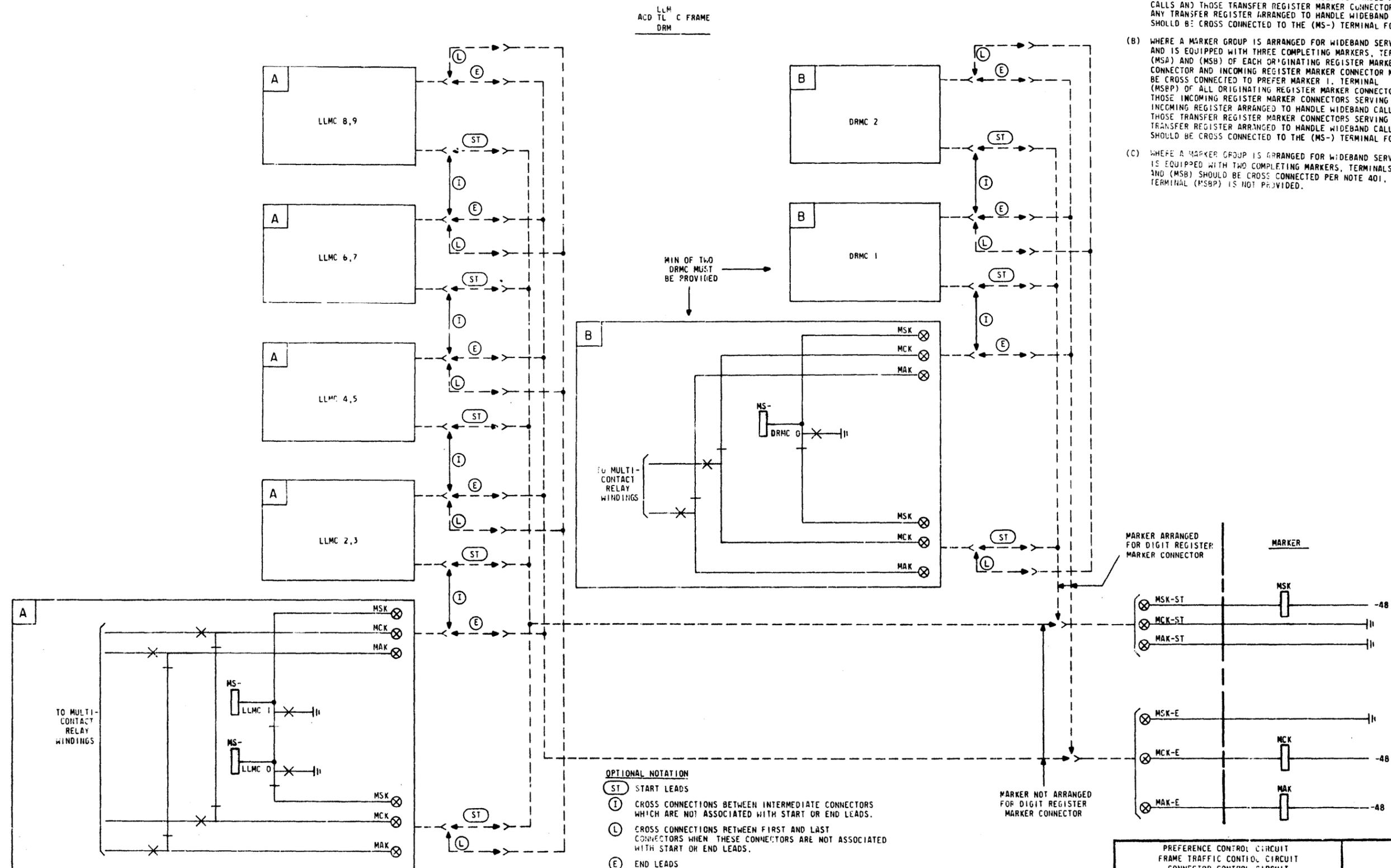
CROSS CONNECTING INFORMATION: (CONT)

408. TYPICAL CROSS CONNECTIONS FOR AUTOMATIC CALL DISTRIBUTION LINE LINK MARKER CONNECTORS AND DIGIT REGISTER MARKER CONNECTORS, SHOWING THE OPERATE PREFERENCE CHAIN FOR THE (MS-) RELAYS.

409. (A) WHERE A MARKER GROUP IS ARRANGED FOR WIDEBAND SERVICE AND IS EQUIPPED WITH MORE THAN THREE COMPLETING MARKERS, TERMINALS (MSA) AND (MSB) OF EACH ORIGINATING REGISTER MARKER CONNECTOR AND TRANSFER REGISTER MARKER CONNECTOR MUST NOT BE CROSS CONNECTED TO PREFER MARKERS 0 OR 1. TERMINAL (MSBP) OF ALL ORIGINATING REGISTER MARKER CONNECTORS AND THOSE INCOMING REGISTER MARKER CONNECTORS SERVING ANY INCOMING REGISTER ARRANGED TO HANDLE WIDEBAND CALLS AND THOSE TRANSFER REGISTER MARKER CONNECTORS SERVING ANY TRANSFER REGISTER ARRANGED TO HANDLE WIDEBAND CALLS SHOULD BE CROSS CONNECTED TO THE (MS-) TERMINAL FOR MARKER 1.

(B) WHERE A MARKER GROUP IS ARRANGED FOR WIDEBAND SERVICE AND IS EQUIPPED WITH THREE COMPLETING MARKERS, TERMINALS (MSA) AND (MSB) OF EACH ORIGINATING REGISTER MARKER CONNECTOR AND INCOMING REGISTER MARKER CONNECTOR MUST NOT BE CROSS CONNECTED TO PREFER MARKER 1. TERMINAL (MSBP) OF ALL ORIGINATING REGISTER MARKER CONNECTORS AND THOSE INCOMING REGISTER MARKER CONNECTORS SERVING ANY INCOMING REGISTER ARRANGED TO HANDLE WIDEBAND CALLS AND THOSE TRANSFER REGISTER MARKER CONNECTORS SERVING ANY TRANSFER REGISTER ARRANGED TO HANDLE WIDEBAND CALLS SHOULD BE CROSS CONNECTED TO THE (MS-) TERMINAL FOR MARKER 1.

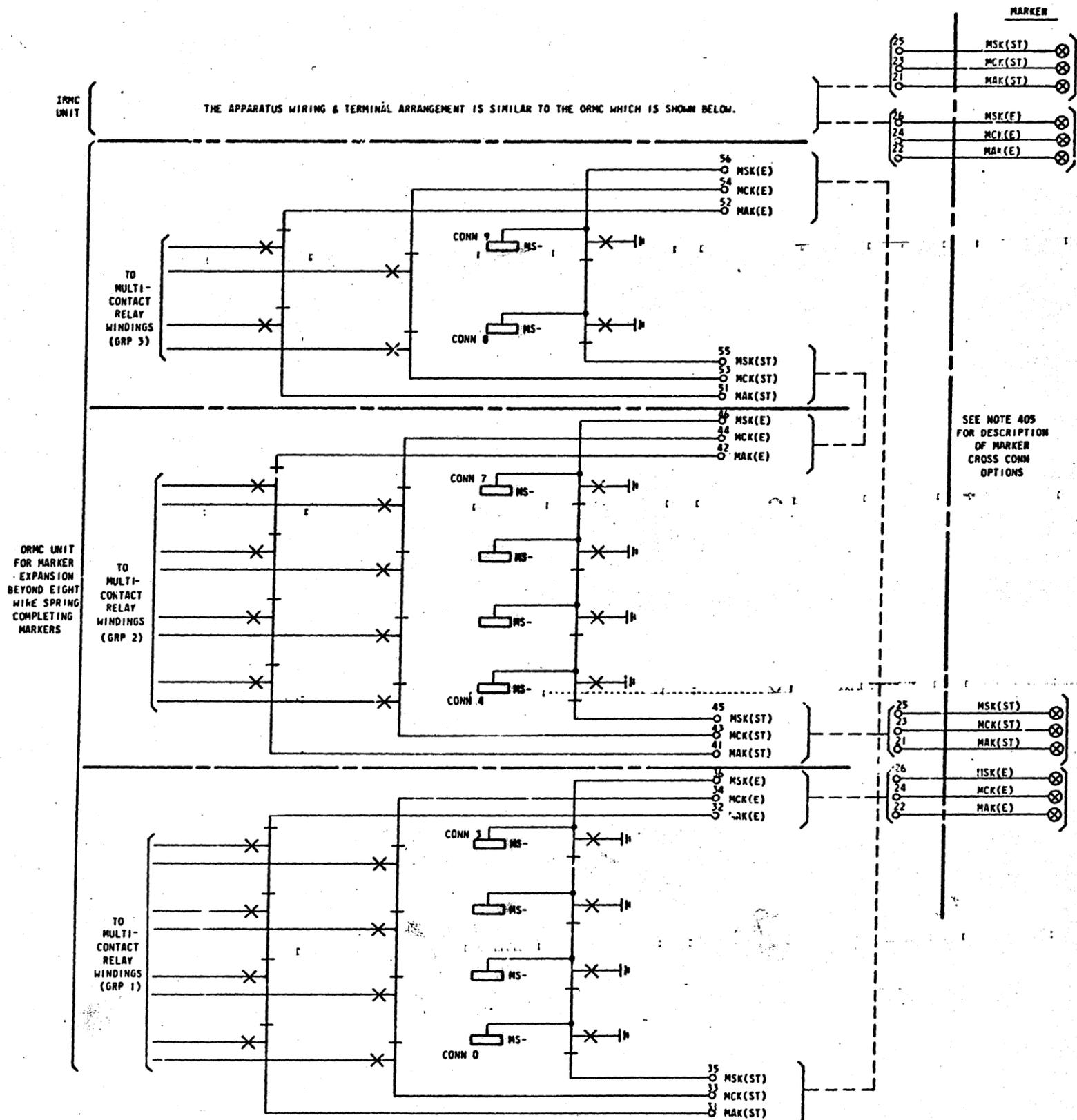
(C) WHERE A MARKER GROUP IS ARRANGED FOR WIDEBAND SERVICE AND IS EQUIPPED WITH TWO COMPLETING MARKERS, TERMINALS (MSA) AND (MSB) SHOULD BE CROSS CONNECTED PER NOTE 401, AND TERMINAL (MSBP) IS NOT PROVIDED.



- OPTIONAL NOTATION
- (ST) START LEADS
 - (I) CROSS CONNECTIONS BETWEEN INTERMEDIATE CONNECTORS WHICH ARE NOT ASSOCIATED WITH START OR END LEADS.
 - (L) CROSS CONNECTIONS BETWEEN FIRST AND LAST CONNECTORS WHEN THESE CONNECTORS ARE NOT ASSOCIATED WITH START OR END LEADS.
 - (E) END LEADS

CROSS CONNECTION NOTES:
 410. TYPICAL EXAMPLE OF ORMC-IRMC PREFERENCE CHAIN FOR MARKERS 2-11. (SEE NOTE 410A)

410A. A PREFERENCE CHAIN IS PROVIDED FOR EACH TYPE OF CONNECTOR-ORMC OR IRMC-ON THE ORMC-IRMC FRAME TO MAINTAIN A PREFERENCE FOR ACCESS TO A MARKER. THE CONNECTORS ARE DIVIDED INTO THREE GROUPS. EACH GROUP IS ASSIGNED AS HAVING A FIRST, INTERMEDIATE, OR LAST PREFERENCE FOR EACH MARKER. THE PREFERENCES ASSOCIATED WITH EACH MARKER SHOULD BE DISTRIBUTED APPROXIMATELY EQUALLY BETWEEN THE CONNECTOR GROUPS. THE PREFERENCE IS CONTROLLED BY CROSS CONNECTING THE MSK, MCK, AND MAK "ST" AND "E" LEADS ON TS (B) LOCATED ON THE PREFERENCE AND CONTROL UNIT. THE DIAGRAM ON THE LEFT SHOWS A TYPICAL EXAMPLE WITH THE ORDER OF PREFERENCE CHOSEN TO BE GRP 2 - GRP 3 - GRP 1.



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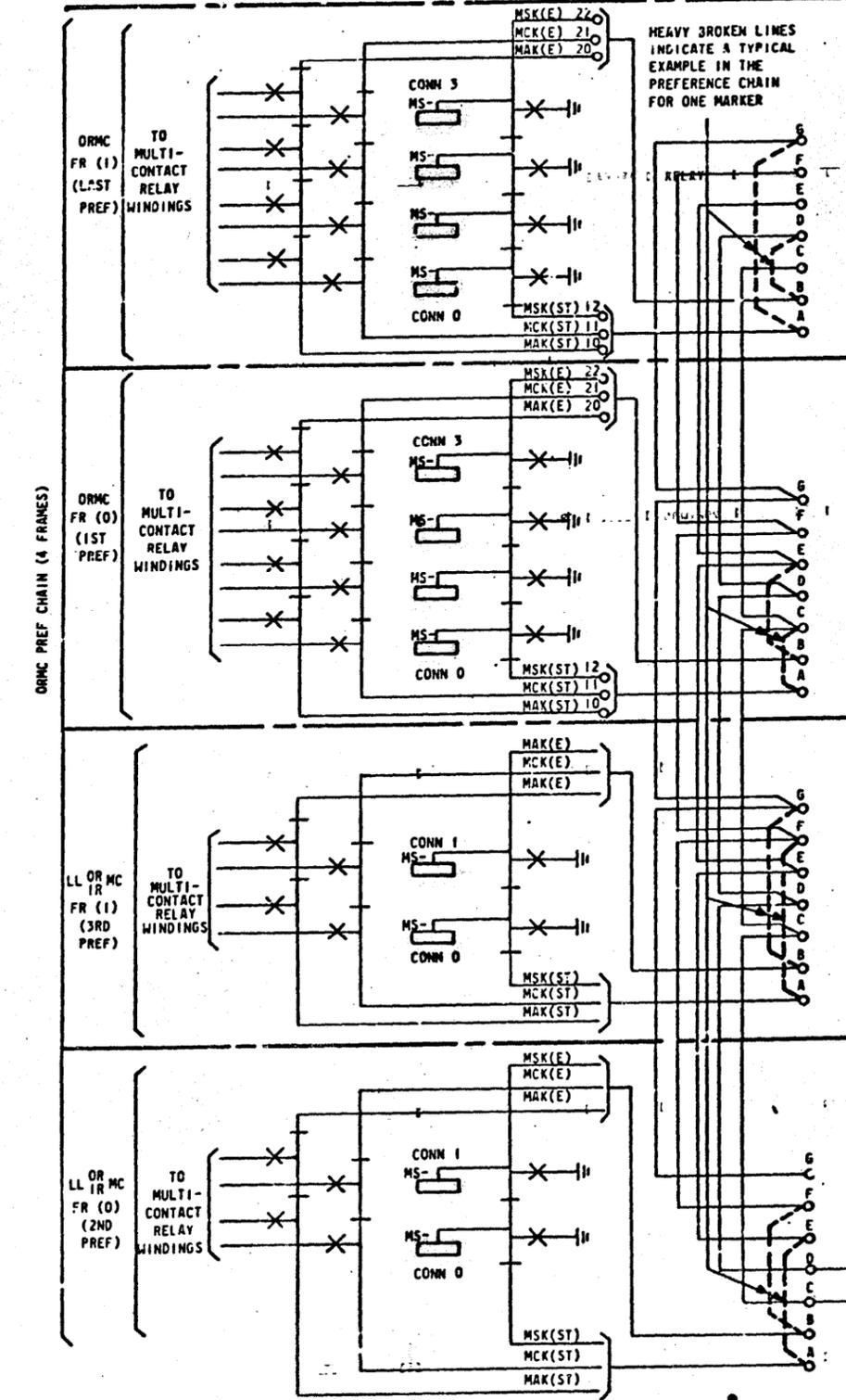
PREFERENCE CONTROL CIRCUIT FRAME TRAFFIC CONTROL CIRCUIT CONNECTOR CONTROL CIRCUIT TROUBLE RECORDER CONNECTOR CIRCUIT		2	SD-26029-01-D6
BELL TELEPHONE LABORATORIES INCORPORATED		65	

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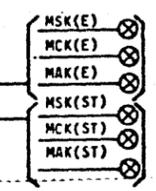
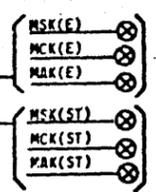
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CROSS CONNECTING INFORMATION (CONT):
 411. TYPICAL EXAMPLE OF ORMC-IRMC PREFERENCE CHAIN FOR ONE MARKER (SEE NOTE 405A) WHERE THE LL OR IR MC FRAME IS PROVIDED.

IRMC (IN THE IRMC: THE APPARATUS, WIRING AND TERMINAL ARRANGEMENT IS SIMILAR TO THAT SHOWN FOR ORMC)



SEE NOTE 405 FOR DESCRIPTION OF CROSS CONN OPTIONS IN THE MARKER



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PREFERENCE CONTROL CIRCUIT	2	SD-26029-01-07
FRAME TRAFFIC CONTROL CIRCUIT		
CONNECTOR CONTROL CIRCUIT		
TROUBLE RECORDER CONNECTOR CIRCUIT		
BELL TELEPHONE LABORATORIES INCORPORATED		6S

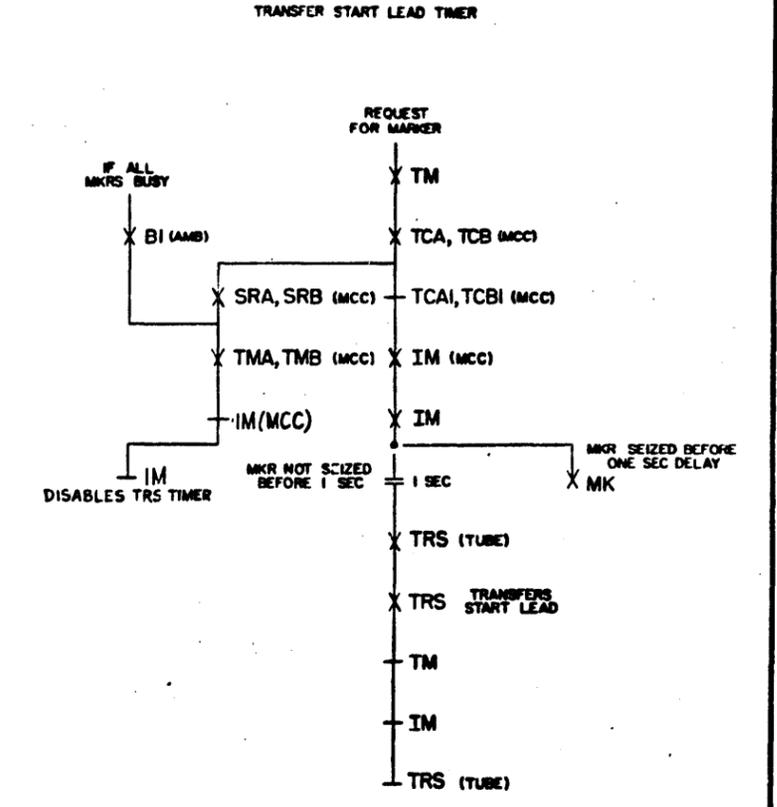
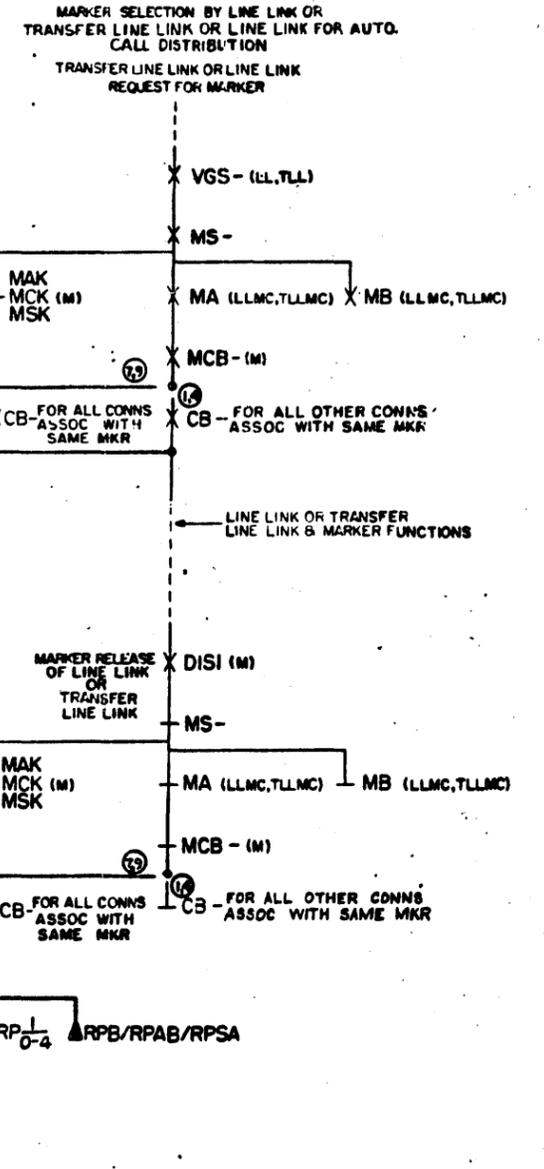
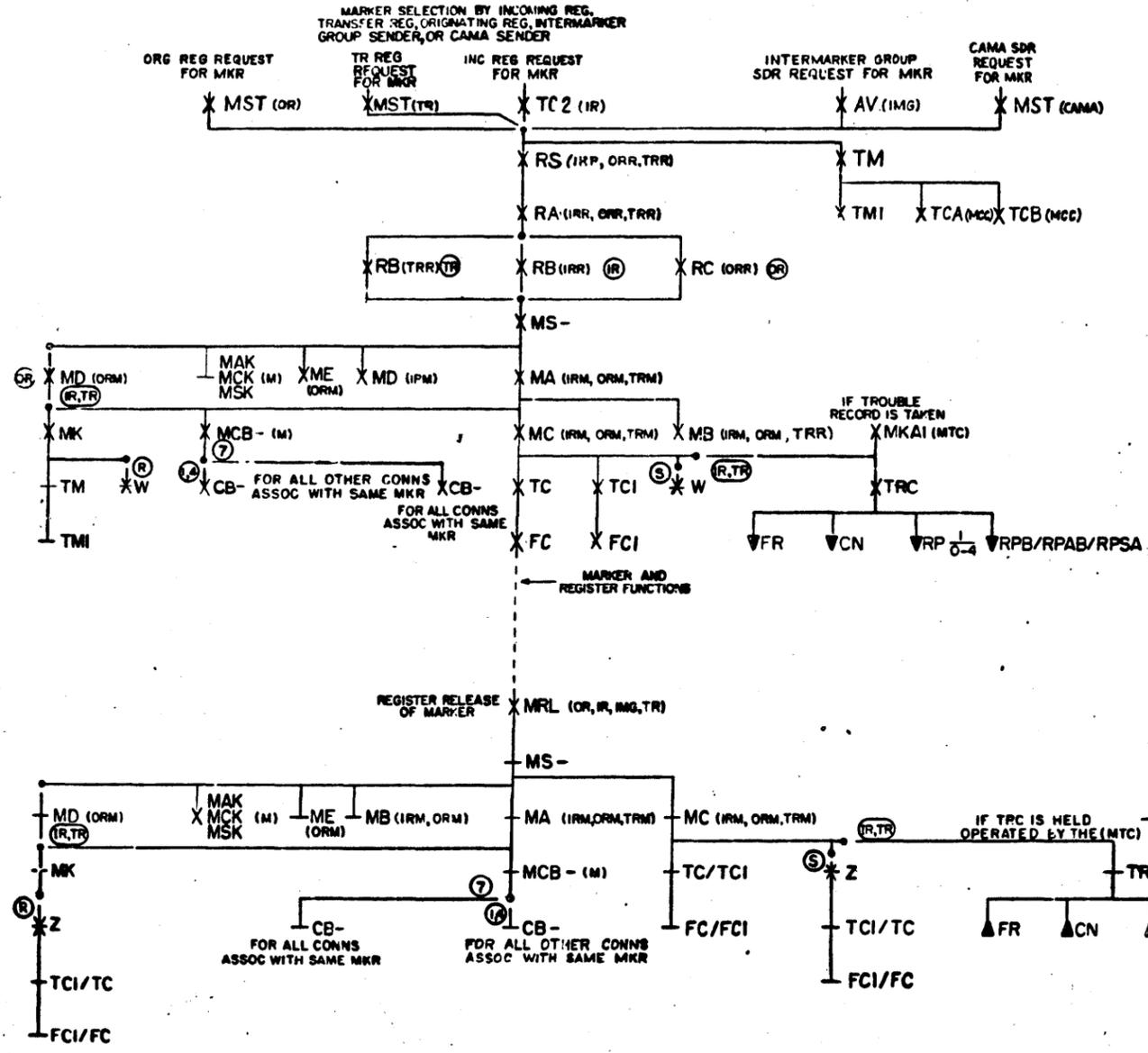
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SC 1

SC 2

SC 3



- SHEET NOTES:**
1. (IR) REFERS TO SEQUENCE FOR INC REG MKR CONN OPERATYN
 2. (OR) REFERS TO SEQUENCE FOR ORG REG MKR CONN OPERATION
 3. (AMB) ALL MARKERS BUSY CKT
 4. (IMG) INTERMARKER GROUP SENDER CKT
 5. (IRI) INCOMING REGISTER CKT
 6. (IRV) INCOMING REGISTER MARKER CONN CKT MKR PART
 7. (IRR) INCOMING REGISTER MARKER CONN CKT REG PART
 8. (LL) LINE, LINE LINK AND MARKER CONN CONTROL CKT
 9. (LLMC) LINE LINK MARKER CONN CKT
 10. (M) MARKER CKT
 11. (MCC) MARKER CONN MASTER TRAFFIC CONTROL CKT
 12. (OR) ORIGINATING REGISTER CKT
 13. (ORM) ORIGINATING REGISTER MARKER CONN CKT MKR PART
 14. (ORR) ORIGINATING REGISTER MARKER CONN CKT REG PART
 15. (MTC) MASTER TEST FRAME CONN CKT
 16. (CAMA) CAMA SENDER CKT
 17. (TR) REFERS TO SEQUENCE FOR TR REG MKR CONN OPERATION
 18. (TRR) TRANSFER REGISTER MKR CONN CKT REG PART
 19. (TRM) TRANSFER REGISTER MARKER CONN CKT MKR PART
 20. (TR) TRANSFER REGISTER CKT
 21. (TLLMC) TRANSFER LINE LINK MARKER CONN CKT
 22. (TLL) TRANSFER LINE LINK & MARKER CONN CONTROL CKT

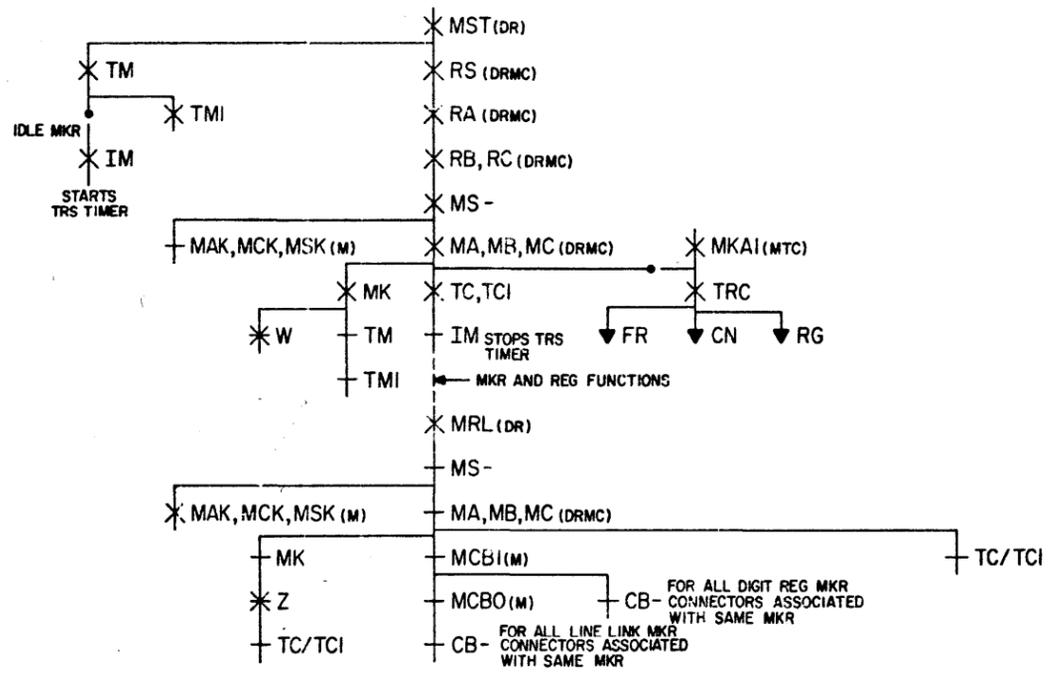
PREFERENCE CONTROL CIRCUIT
 FRAME TRAFFIC CONTROL CIRCUIT
 CONNECTOR CONTROL CIRCUIT
 TROUBLE RECORDER CONNECTOR CIRCUIT

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SC 6

MKR SELECTION BY DIGIT REG CKT (ACD)



- NOTES:
1. (DR) DIGIT REGISTER CKT
 2. (DRMC) DIGIT REGISTER MARKER CONNECTOR CKT
 3. (M) MARKER CKT
 4. (MTC) MASTER TEST FRAME CONNECTOR CKT

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PREFERENCE CONTROL CIRCUIT FRAME TRAFFIC CONTROL CIRCUIT CONNECTOR CONTROL CIRCUIT TROUBLE RECORDER CONNECTOR CIRCUIT	②	SD-26029-01-E3
BELL TELEPHONE LABORATORIES INCORPORATED	6S	

CIRCUIT REQUIREMENTS																
APPARATUS				MECH REQ			CIRCUIT PREPARATION				TEST SET PREP	SEE TEST NOTE	DIRECT CURRENT FLOW REQ			REMARKS
DESIG	CODE	OPT	FIG.	BSP FIG.	CONT PRES	ARM TRVL	BLOCK OR INSULATE	TEST CLIP DATA		TEST WDG			TEST FOR	AFTER SOAK MA	TEST MA	
								CONN BAT.	CONN GRD							
RELAYS																
CA	AF70	A	2	202			4(CA)	1U(CA)	GRD		P	0	18.5	16.5		
								2U(CA)		S			10.4			
CA	AF167	ZA	2	327			6(CA)	L(CA)	BAT.	P	0	14.4	13.1			
								1U(CA)	GRD	S		42	38			
CB-	AF531		7.9, 12	203			8(C-)	U(CB-)	GRD	1,2		0	40	36		
CB-	AF534		1	201			8M(CB-)	2U(CB-)	GRD	1,2	S	0	11.9	10.8		
								1U(CB-)			P	0	7	6.6		
													21			
FC	AF506		6	8			L(FC)	BAT.	6,7,9		0		30.5	29		
FC	AF522		5	18			L(FC)	BAT.	6,7,9		0		23.5	22		
FC1	AF506		6	8			L(FC1)	BAT.	6,8,9		0		30.5	29		
FC1	AF522		5	18			L(FC1)	BAT.	6,8,9		0		23.5	22		
GT	AF50		2	18			U(GT)	GRD	3		0		23.5	22		
IM	AF56		2	209			10(IM) (TR)NO	U(IM)	GRD	3		0	27	25.5		
MK-	AJ50	R	2	209			(CA)NO	U(MK)	GRD	3		0	42.5	40.5		
MK	AF524	S	2	210			(CA)NO	U(MK)	GRD	3		0	27	25.5		
MS-	AF105		1	253			L(MS-)	BAT.	4,5		0		65.5	62		
											H		36.5	34.5		
S-	AF15		7.9	4.7			L(MS-)	BAT.	4,5, 10,14		0		23.5	22		
SP-	AF23		12	473			L(MS-)	BAT.	10,20		0		85	80		
SP-	AF22		3	235			U(SPL)	GRD	3		0		43	40.5		
SP-P	AF55		10	26			U(SPLP)	GRD	3		0		37	35		
													85	80		
SPPA	AF55		11	26			U(SPPA)	GRD	3		0		37	35		
													87	80		

CIRCUIT REQUIREMENTS																
APPARATUS				MECH REQ			CIRCUIT PREPARATION				TEST SET PREP	SEE TEST NOTE	DIRECT CURRENT FLOW REQ			REMARKS
DESIG	CODE	OPT	FIG.	BSP FIG.	CONT PRES	ARM TRVL	BLOCK OR INSULATE	TEST CLIP DATA		TEST WDG			TEST FOR	AFTER SOAK MA	TEST MA	
								CONN BAT.	CONN GRD							
TC	AF507		2	26			12(TC)	U(TC)	GRD	3		0	38.5	35		
TC1	AF507		2	26			12(TC1)	U(TC1)	GRD	3		0	38.5	35		
TM	AF524		2	210			8(MK), (CA)NO	U(TM)	GRD	3		0	27	25.5		
TM1	AG6	ZA	2	239B			(CA)NO, (TRS)NO	U(TM1)	GRD	3		0	9.3	8.8		
												H	1.6	1.5		
												P	0.9	1.0		
												C	23.5	22		
												NO	11.5	13.2		
TR	AF32		2	208			12(TR), 6(TR1)	U(TR)	GRD	3		0	32.5	30.5		
													64	58		
													23.5	22		
													61.5	55.5		
TR1	AF50		2	18			12(TR), 6(TR1)	U(TR1)	GRD	3		0	23.5	22		
													61.5	55.5		
TRC	AF24		8	8			1,2,3(TRC)	U(TRC)	GRD			0	32	29		
TRL	AF511		2	32			(TR)NO, 10(TRL)	U(TRL)	GRD	3		0	25.5	23		
TRS	AF513	A	2	208			(TM)NO, (MK)NO	U(TRS)	GRD	3		0	32.5	30.5		
TRS	AJ107	ZA	2	226			(TM)NO, (MK)NO	L(TRS)	BAT.	3,14		0	13.4	12.7		
W	AF63	R	2	229			(Z)O,(MK)O	U(W)	GRD				7.1	6.7		
W	AF67	S	2	207			12(Z), 6(W)	U(W)	GRD			0	7.2	6.8		
													18	16		
													18	16		
Z	AF30	S	2	217			12(Z), 6(W)	U(Z)	GRD			0	8.7	8.2		
													19	17		
													32.5	30.5		
Z	AF32	F	2	208			W(NO)	U(Z)	GRD			0	32.5	30.5		

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PREFERENCE CONTROL CIRCUIT
 FRAME TRAFFIC CONTROL CIRCUIT
 CONNECTOR CONTROL CIRCUIT
 TROUBLE RECORDER CONNECTOR CIRCUIT

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WELL TELEPHONE LABORATORIES
 INCORPORATED

6S

CIRCUIT REQUIREMENTS																
APPARATUS				MECH REQ			CIRCUIT PREPARATION				TEST SET	SEE TEST	DIRECT CURRENT FLOW REQ			REMARKS
DESIG	CODE	OPT	FIG.	BSP FIG.	CONT PRES.	ARM. TRVL.	BLOCK OR INSULATE	TEST CLIP DATA		TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA		
								CONN BAT.	CONN GRD							
VARISTORS																
CB-	420G		7											12, 13, 15, 16, 17		
TIME REQ																
CA	AF70	A	2											18, 19	OPR(MC-AR) KEY ON MASTER TEST FR TO RLS (CA) REL	
CA	AF167	ZA	2				(TM)O							19	OPR (MC-AR) KEY ON MASTER TEST FR TO RLS (CA) REL	
TRS	AF513	A	2											19	STRAP U (IM) TO U (MK) REL	
TRS	AJ107	ZA	2				(TM)O, (IM)O							19, 21		
ELECTRON TUBES																
TM	346C OR 346B		2				6(CA), (MK)O							16, 17, 19		
TRS	346C OR 346B		2				12(TRS), (TM)O							15, 17, 19		

CIRCUIT REQUIREMENTS																																																																																									
APPARATUS				MECH REQ			CIRCUIT PREPARATION				TEST SET	SEE TEST	DIRECT CURRENT FLOW REQ			REMARKS																																																																									
DESIG	CODE	OPT	FIG.	BSP FIG.	CONT PRES.	ARM. TRVL.	BLOCK OR INSULATE	TEST CLIP DATA		TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA																																																																											
								CONN BAT.	CONN GRD																																																																																
TEST NOTES:																																																																																									
<p>1. FOR LINE LINK MARKER CONN OR TRANSFER LINE LINK MARKER CONN, AT THE MASTER TEST FR, MAKE BUSY THE ASSOCIATED MARKER TO ALL OTHER MARKER CONNECTORS BY INSERTING NO. 322A PLUGS INTO ALL (TLLMC-MB OR LLMC-MB) JACKS ASSOCIATED WITH THE MARKER EXCEPT THE (TLLMC-MB OR LLMC-MB) JACK ASSOCIATED WITH THE (CB) RELAY TO BE REMOVED FROM SERVICE. INSULATE THE 6 BREAK AND SHORT CIRCUIT THE 6 MAKE OF THE (CB) RELAY.</p> <p>2. FOR INCOMING, ORIGINATING, OR TRANSFER REGISTER MARKER CONN AT THE MASTER TEST FRAME, MAKE THE ASSOCIATED MARKER BUSY TO ALL OTHER MARKER CONNECTORS BY INSERTING NO. 322A PLUGS INTO ALL (IRMC-MB, ORMC-MB, OR TRMC-MB) JACKS ASSOCIATED WITH THE MARKER EXCEPT THE (IRMC-MB, OFMC-MB, OR TRMC-MB) JACK ASSOCIATED WITH THE (CB) RELAY TO BE REMOVED FROM SERVICE. MAKE BUSY THE SENDERS OR REGISTERS ASSOCIATED WITH THE (CB) RELAY TO BE REMOVED FROM SERVICE BY INSERTING NO. 322A PLUGS INTO THE PROPER (MB-) JACKS AT THE MASTER TEST FR WAIT APPROXIMATELY 30 SECONDS FOR THE SENDERS OR REGISTERS TO RESTORE TO NORMAL.</p> <p>3. TEST DURING PERIODS OF LIGHT LOAD. SEIZURE OF CONNECTOR MAY INTERFERE WITH THE TEST.</p> <p>4. FOR LINE LINK MARKER CONN OR TRANSFER LINE LINK MARKER CONN, MAKE BUSY THE ASSOCIATED MARKER BY INSERTING A NO. 322A PLUG INTO THE ASSOCIATED (MB-) JACK AT THE MASTER TEST FR. BLOCK NON-OPERATED THE (MA-) AND (MB-) RELAYS. IF THE (MS-) RELAY IS OPERATED, IT MAY CAUSE A TROUBLE ALARM AND A TROUBLE RECORDING DUE TO THE MARKER TIMING OUT. TO SILENCE THE ALARM AFTER RELEASING THE (MS-) RELAY, MOMENTARILY OPERATE THE (AR) KEY AT THE MARKER FR.</p> <p>5. FOR ORIGINATING, INCOMING, OR TRANSFER REGISTER MARKER CONN, MAKE BUSY THE ASSOCIATED MARKER BY INSERTING A NO. 322A PLUG INTO THE ASSOCIATED (MB-) JACK AT THE MASTER TEST FR. BLOCK NON-OPERATED THE (MA-), (MD), AND (ME-) RELAYS. AT THE MASTER TEST FR, INSERT A NO. 322A PLUG INTO THE (TRM3-M) JACK ASSOCIATED WITH THE MARKER MADE BUSY. IF THE (MS-) RELAY IS OPERATED, IT WILL CAUSE A TROUBLE ALARM DUE TO THE MARKER TIMING OUT. TO SILENCE THE ALARM AFTER RELEASING THE (MS-) RELAY, MOMENTARILY OPERATE THE (AR) KEY AT THE MARKER FR.</p> <p>6. CONNECT DIRECT GRD TO U OF RELAY UNDER TEST.</p> <p>7. BLOCK NON-OPERATED THE (TCA) RELAY ASSOCIATED WITH THE (FC) RELAY UNDER TEST. CONNECT DIRECT GRD TO U OF OTHER (FC) RELAYS MULT TO SAME FB LEAD.</p> <p>8. BLOCK NON-OPERATED THE (TCB) RELAY ASSOCIATED WITH THE (FC1) RELAY UNDER TEST. CONNECT DIRECT GRD TO U OF OTHER (FC1) RELAYS MULT TO SAME FB LEAD.</p> <p>9. THE CURRENT FLOW REQUIREMENTS SHOWN ARE TO BE MULTIPLIED BY THE NUMBER OF WINDINGS CONNECTED IN MULT TO THE SAME FB OR FBI LEAD.</p> <p>10. PM SHALL MAKE BEFORE EB IN POSITION 6 AND IO BREAK.</p> <p>11. MAKE ALL VOLTAGE MEASUREMENTS WITH VOLTMETER WITH SENSITIVITIES OF 20,000 OHMS/VOLT DC OR HIGHER. THE KS-14510 VOLTMETER IS SATISFACTORY. START ALL MEASUREMENTS WITH THE RANGE SWITCH ON THE 50V SCALE OR HIGHER, TO PREVENT DAMAGING METER IF VARISTOR IS SHORTED.</p> <p>12. FORWARD RESISTANCE TEST: (A) BLOCK ASSOCIATED (CB-) RELAY NON-OPERATED. (B) CONNECT GRD TO TERMINAL 1 OF (CB-) VARISTOR. (C) VOLTAGE MEASURED ACROSS TERMINALS 1 AND 2 OF VARISTOR SHALL NOT EXCEED 2 VOLTS.</p> <p>13. REVERSE RESISTANCE TEST: (A) CONNECT THE POSITIVE TERMINAL OF A NON-GROUNDED 45-50V BATTERY TO ONE END OF A 0.1 MEG RESISTOR. CONNECT THE OTHER END OF THE RESISTOR TO TERMINAL 2 OF THE (CB-) VARISTOR. (B) CONNECT THE NEGATIVE END OF THE BATTERY TO TERMINAL 1 OF THE (CB-) VARISTOR. (C) VOLTAGE MEASURED ACROSS THE 0.1 MEG RESISTOR SHALL NOT EXCEED 5 VOLTS.</p> <p>14. MINIMUM ARMATURE BACK TENSION - 20 GRAMS.</p> <p>15. SHORT CIRCUIT (K) RESISTOR TO TEST AG FORWARD POTENTIAL. CONNECT GRD TO 6 BREAK OF (IM).</p> <p>16. SHORT CIRCUIT (F) RESISTOR TO TEST AG FORWARD POTENTIAL. CONNECT GRD TO 6 BREAK OF (TM1).</p> <p>17. TEST REQUIREMENTS FOR THE 346C OR 346B TUBE ARE:</p>																																																																																									
<table border="1"> <tr> <td></td> <td>3G 10M</td> <td>AG DROP (AT 20 mA)</td> <td>AG FWD POT.</td> </tr> <tr> <td>MIN VOLTS</td> <td>62</td> <td>72</td> <td></td> </tr> <tr> <td>MAX VOLTS</td> <td>89</td> <td>90</td> <td>160</td> </tr> </table>															3G 10M	AG DROP (AT 20 mA)	AG FWD POT.	MIN VOLTS	62	72		MAX VOLTS	89	90	160																																																																
	3G 10M	AG DROP (AT 20 mA)	AG FWD POT.																																																																																						
MIN VOLTS	62	72																																																																																							
MAX VOLTS	89	90	160																																																																																						
<p>18. CONNECT GRD TO 7B (CA).</p> <p>19. USE TEST SET FOR TIMING TESTS.</p>																																																																																									
<table border="1"> <thead> <tr> <th rowspan="2">DESIG</th> <th colspan="3">TEST CLIP DATA</th> <th colspan="2">TEST SET PREP</th> <th colspan="2">TIME REQ ms</th> <th rowspan="2">REMARKS</th> </tr> <tr> <th>CONN BK</th> <th>CONN R</th> <th>CONN U</th> <th>SEND KEY</th> <th>REC SW</th> <th>MIN</th> <th>MAX</th> </tr> </thead> <tbody> <tr> <td>CA</td> <td>GRD</td> <td>U(TM1)</td> <td>7(CA)</td> <td>MK</td> <td>GRD</td> <td>OC</td> <td>4800</td> <td>10,000</td> <td>"A" OPT</td> </tr> <tr> <td>CA</td> <td>GRD</td> <td>U(TM1)</td> <td>1L(CA)</td> <td>MK</td> <td>OC</td> <td>BAT.</td> <td>5900</td> <td>7000</td> <td>ZA OPT</td> </tr> <tr> <td>TRS</td> <td>GRD</td> <td>U(TM)</td> <td>U(TRS)</td> <td>MK</td> <td>GRD</td> <td>GRD</td> <td>600</td> <td>1250</td> <td>"A" OPT</td> </tr> <tr> <td>TRS</td> <td>GRD</td> <td>7(TM1)</td> <td>9(TRS)</td> <td>BK</td> <td>OC</td> <td>GRD</td> <td>1900</td> <td>1300</td> <td>ZA OPT</td> </tr> <tr> <td>TM</td> <td>6(MK)</td> <td></td> <td>6B(TM1)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>TUBE</td> </tr> <tr> <td>TRS</td> <td>6(IM)</td> <td></td> <td>6B(IM)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>TUBE</td> </tr> </tbody> </table>														DESIG	TEST CLIP DATA			TEST SET PREP		TIME REQ ms		REMARKS	CONN BK	CONN R	CONN U	SEND KEY	REC SW	MIN	MAX	CA	GRD	U(TM1)	7(CA)	MK	GRD	OC	4800	10,000	"A" OPT	CA	GRD	U(TM1)	1L(CA)	MK	OC	BAT.	5900	7000	ZA OPT	TRS	GRD	U(TM)	U(TRS)	MK	GRD	GRD	600	1250	"A" OPT	TRS	GRD	7(TM1)	9(TRS)	BK	OC	GRD	1900	1300	ZA OPT	TM	6(MK)		6B(TM1)						TUBE	TRS	6(IM)		6B(IM)						TUBE
DESIG	TEST CLIP DATA			TEST SET PREP		TIME REQ ms		REMARKS																																																																																	
	CONN BK	CONN R	CONN U	SEND KEY	REC SW	MIN	MAX																																																																																		
CA	GRD	U(TM1)	7(CA)	MK	GRD	OC	4800	10,000	"A" OPT																																																																																
CA	GRD	U(TM1)	1L(CA)	MK	OC	BAT.	5900	7000	ZA OPT																																																																																
TRS	GRD	U(TM)	U(TRS)	MK	GRD	GRD	600	1250	"A" OPT																																																																																
TRS	GRD	7(TM1)	9(TRS)	BK	OC	GRD	1900	1300	ZA OPT																																																																																
TM	6(MK)		6B(TM1)						TUBE																																																																																
TRS	6(IM)		6B(IM)						TUBE																																																																																
<p>20. FOR DIGIT REGISTER MARKER CONN, MAKE BUSY THE ASSOCIATED MARKER BY INSERTING A NO. 322A PLUG INTO THE ASSOCIATED (MB-) JACK AT THE TEST FR. BLOCK THE (MA-), (MB-) AND (MC-) RELAYS NON-OPERATED. AT THE TEST FR, INSERT A NO. 322A PLUG IN THE (TRM3-M) JACK ASSOCIATED WITH THE MARKER. IF THE (MS-) RELAY IS OPERATED, IT WILL CAUSE A TROUBLE ALARM DUE TO MARKER TIME OUT. AFTER (MS-) RELAY IS RELEASED, OPERATE THE (AR) KEY AT THE MARKER FR TO RELEASE THE ALARM.</p> <p>21. TEST DURING PERIOD OF LIGHT LOAD; CONNECT GRD TO 9 MAKE OF (TRS) RELAY; CONNECT TIMING TEST SET BEFORE BLOCKING RELAYS.</p>																																																																																									

SD-26029-01-F2

ISSUE
36B

PREFERENCE CONTROL CIRCUIT
 FRAME TRAFFIC CONTROL CIRCUIT
 CONNECTOR CONTROL CIRCUIT
 TROUBLE RECORDER CONNECTOR CIRCUIT

SD-26029-01-F2

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

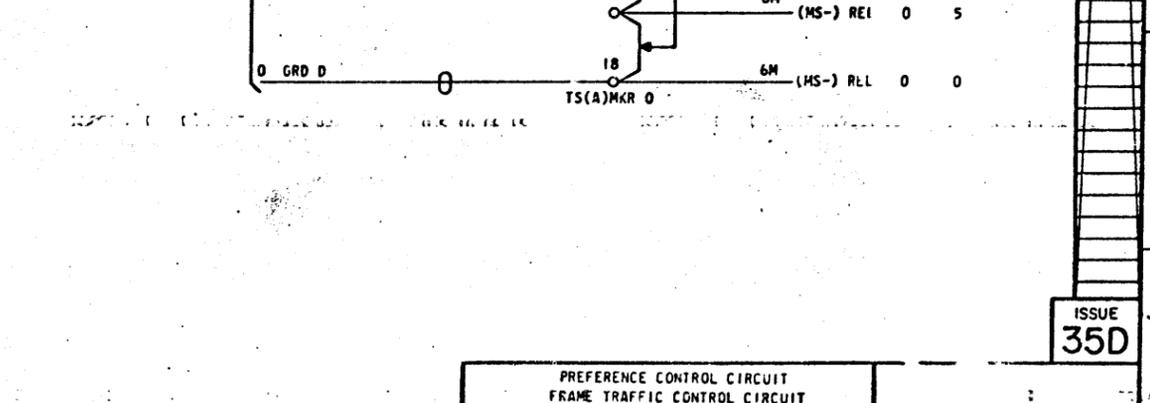
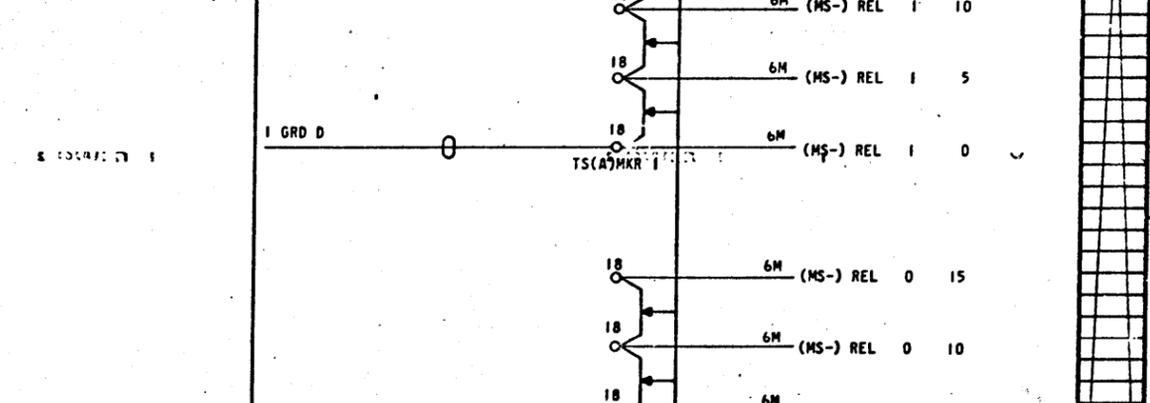
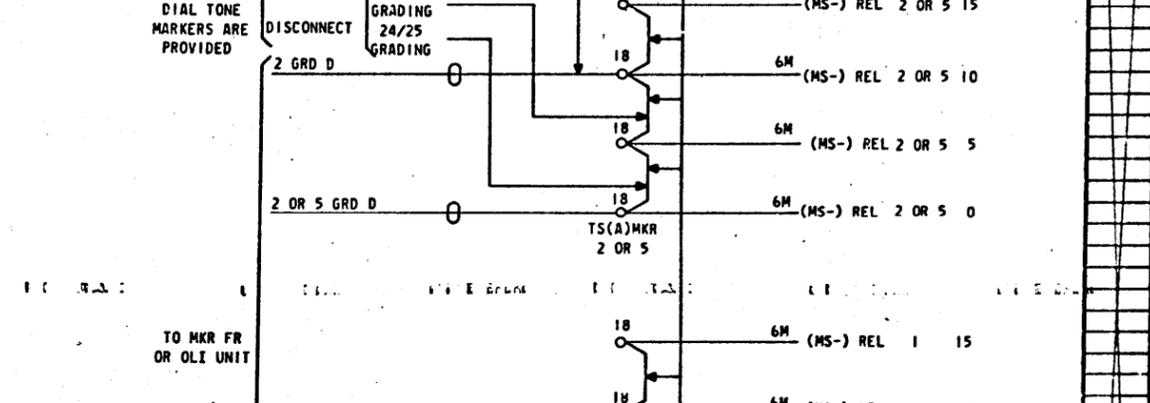
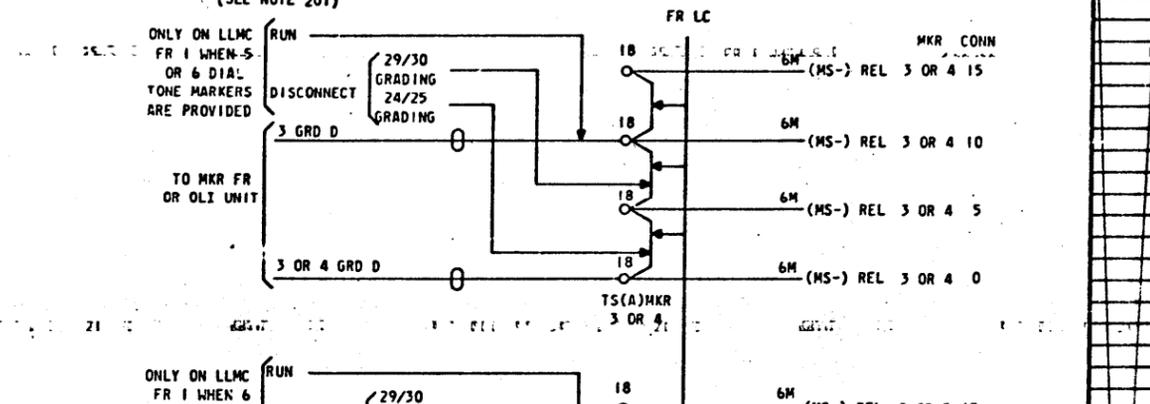
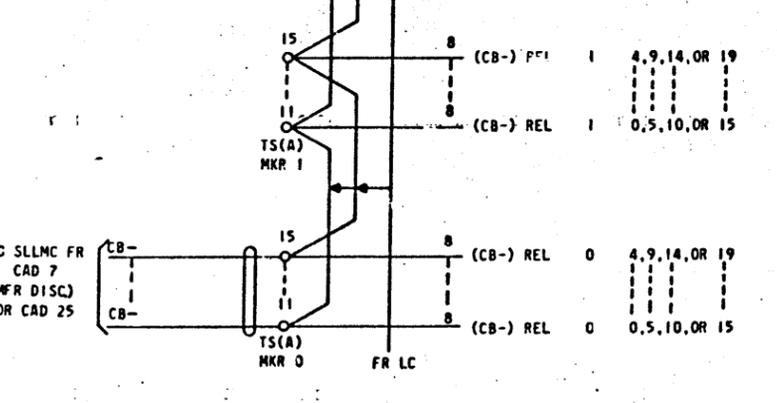
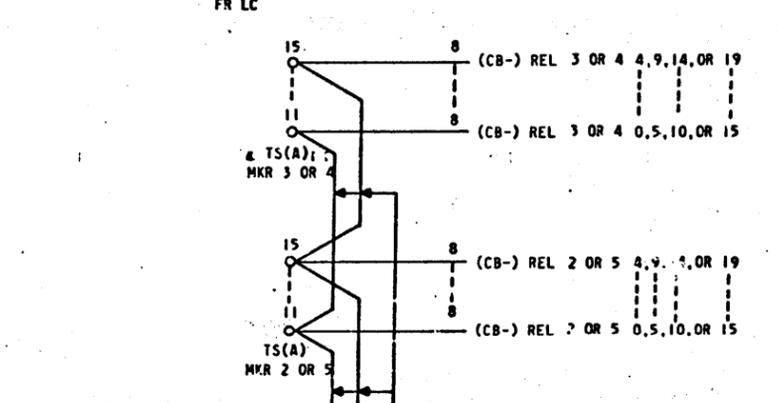
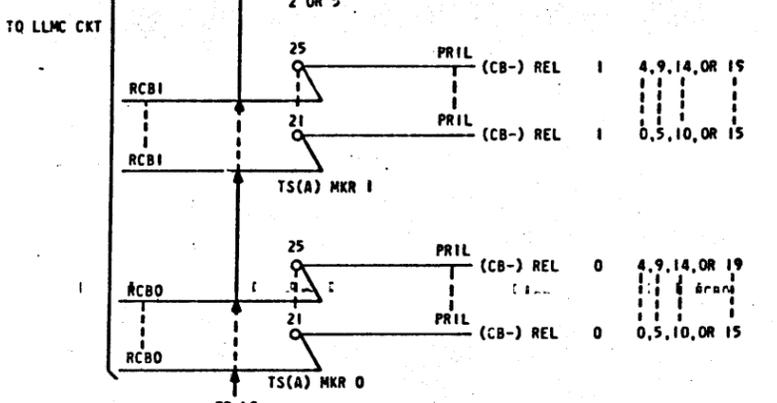
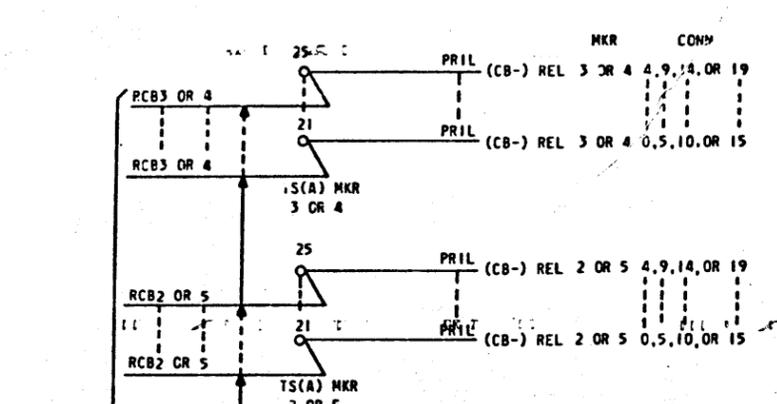
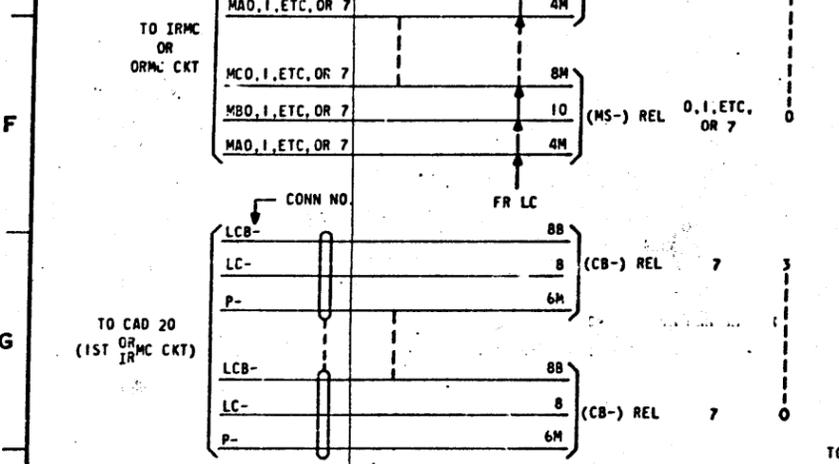
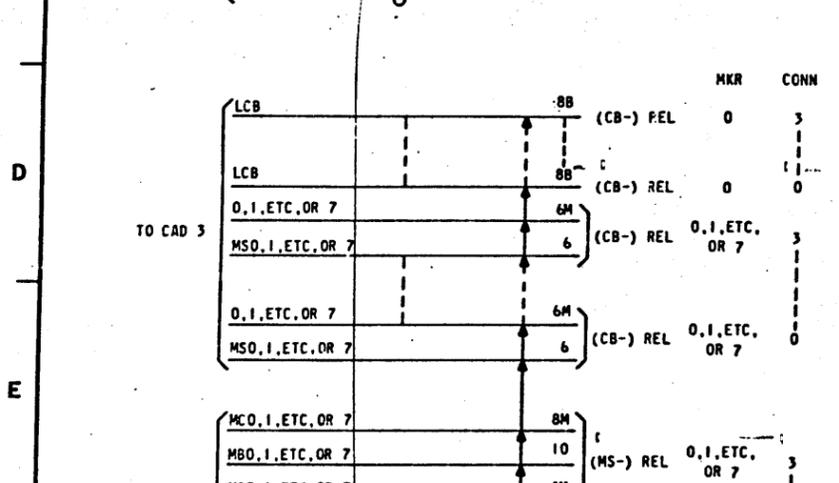
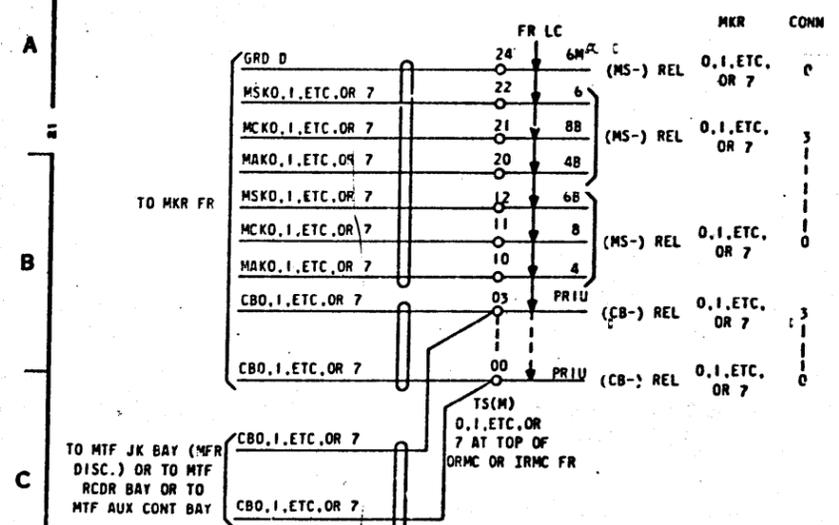
CAD 1 (A&M ONLY)

(FOR APP FIGURES 1 AND 4)
FOR ORMC OR IRMC FR

PART OF CAD 2 (A&M ONLY)

(FOR APP FIGURES 1 AND 4)
FOR LLMC FR MKR PREF CONT UNIT
(SEE NOTE 201)

DRAWING
ISSUE
29D



ISSUE
35D

PREFERENCE CONTROL CIRCUIT
FRAME TRAFFIC CONTROL CIRCUIT
CONNECTOR CONTROL CIRCUIT
TROUBLE RECORDER CONNECTOR
CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

SD-26029-01-GIA

SD-26029-01-GIA

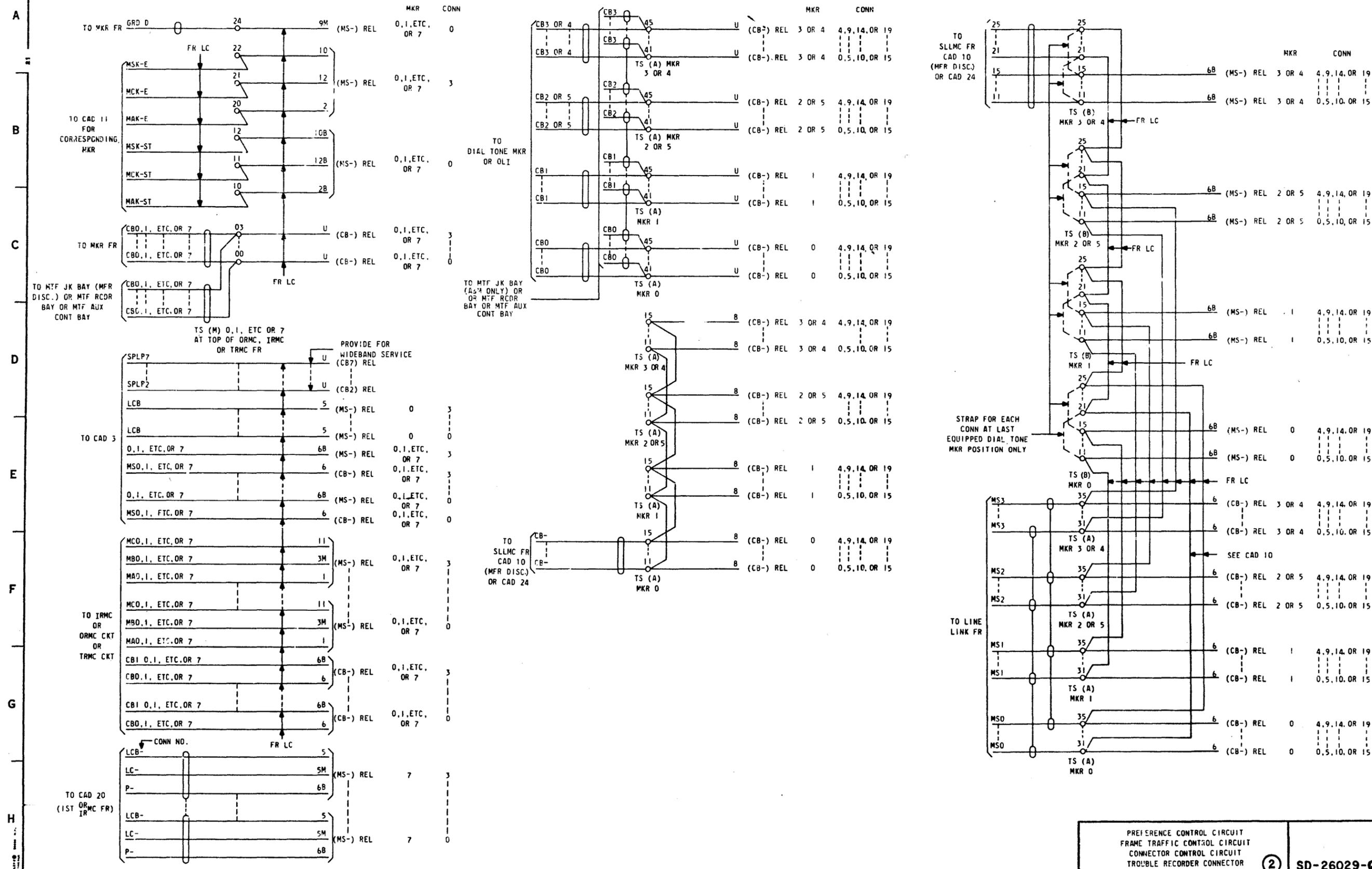
CAD 8

(FOR APP FIG 7)
FOR DRMC, IRMC OR TRMC FR

PART OF CAD 9

(FOR APP FIG 7)
FOR LLMC FR MKR PREF CONT UNIT
(SEE NOTE 201)

DRAWING
ISSUE
29D



SD-26029-01-64A

ISSUE
35D

PREFERENCE CONTROL CIRCUIT
 FRAME TRAFFIC CONTROL CIRCUIT
 CONNECTOR CONTROL CIRCUIT
 TROUBLE RECORDER CONNECTOR CIRCUIT

2 SD-26029-01-64A

BELL TELEPHONE LABORATORIES
 INCORPORATED

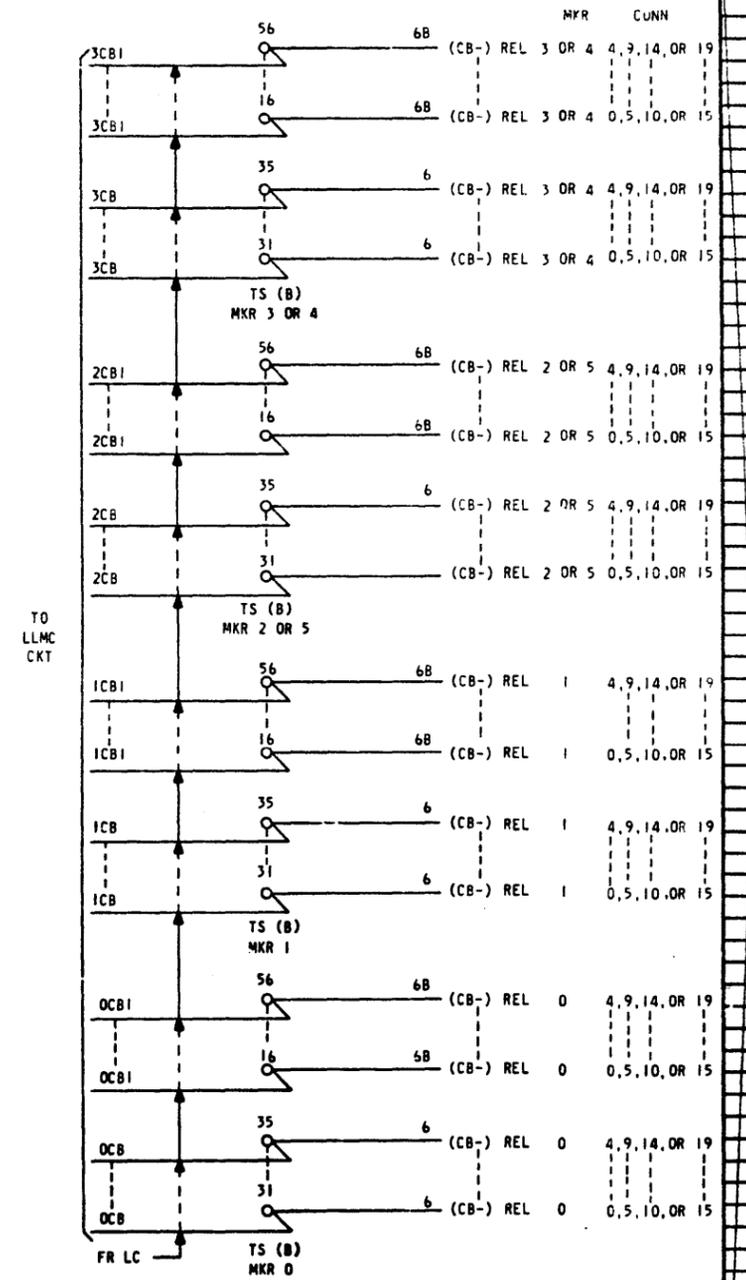
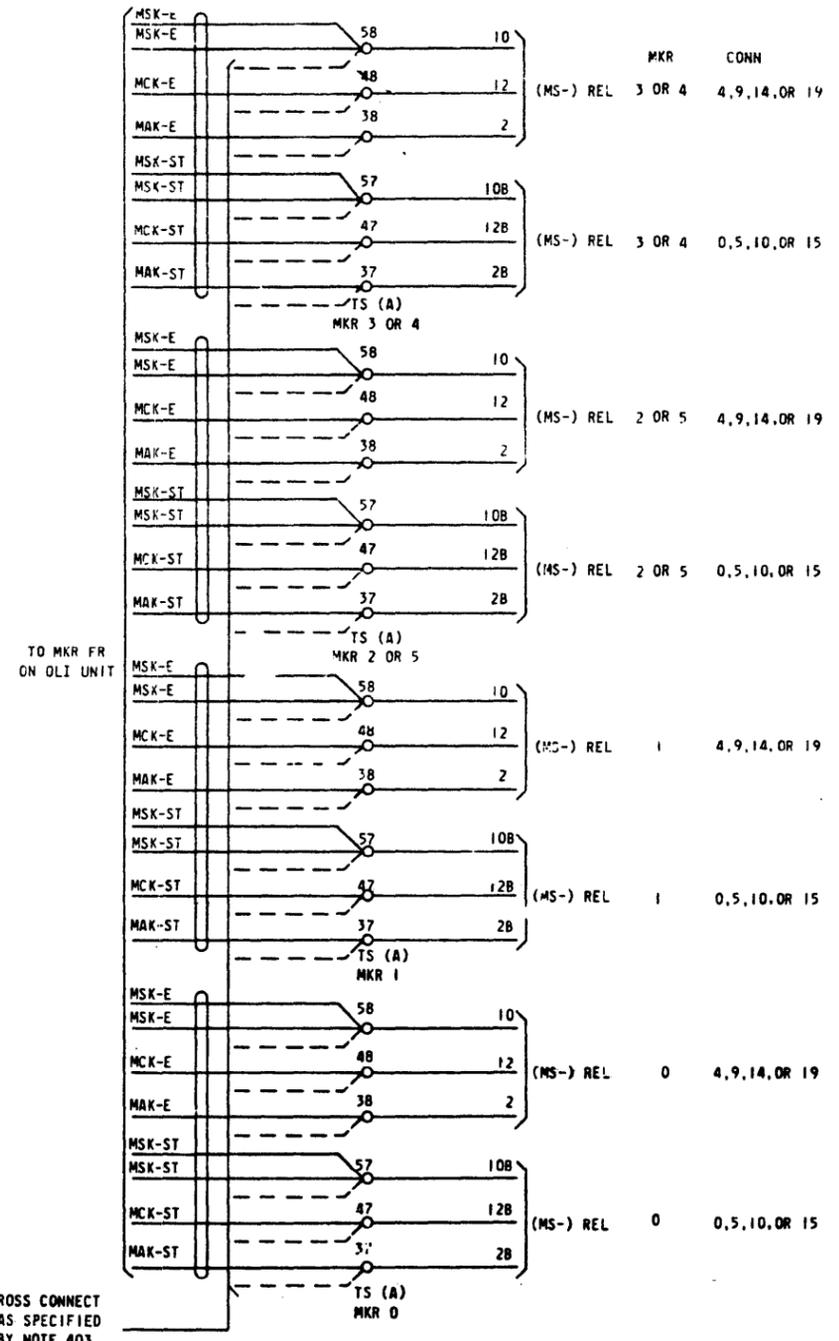
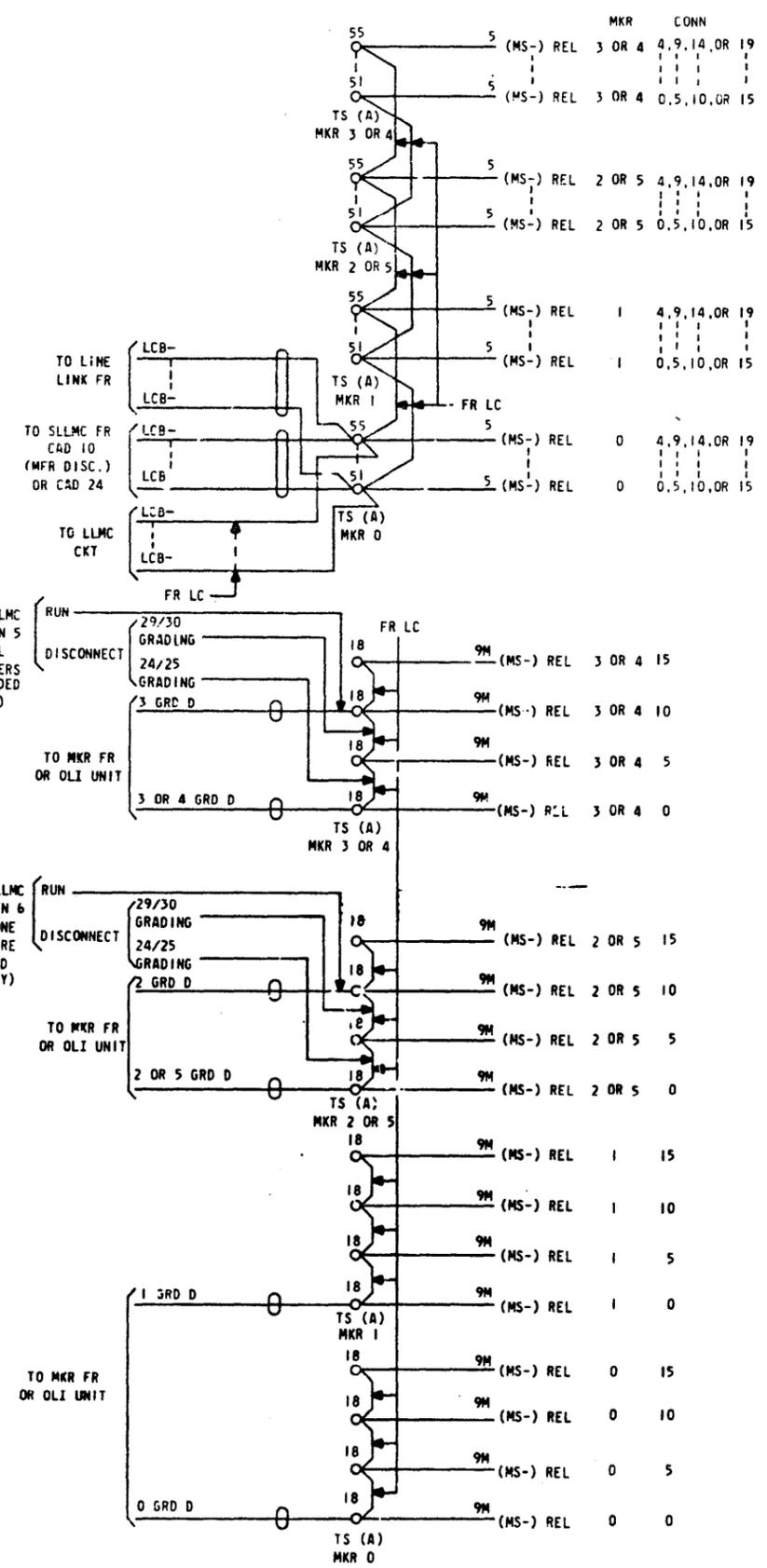
6S

PART OF CAD 9

(FOR APP FIG 7)
FOR LLMC FR MKR PREF CONT UNIT
(SEE NOTE 201)

DRAW
ISSUE
29

A
B
C
D
E
F
G
H



CROSS CONNECT AS SPECIFIED BY NOTE 403

SD-26029-01-G4B

PREFERENCE CONTROL CIRCUIT
 FRAME TRAFFIC CONTROL CIRCUIT
 CONNECTOR CONTROL CIRCUIT
 TROUBLE RECORDER CONNECTOR CIRCUIT

BELL TELEPHONE LABORATORIES
 INCORPORATED

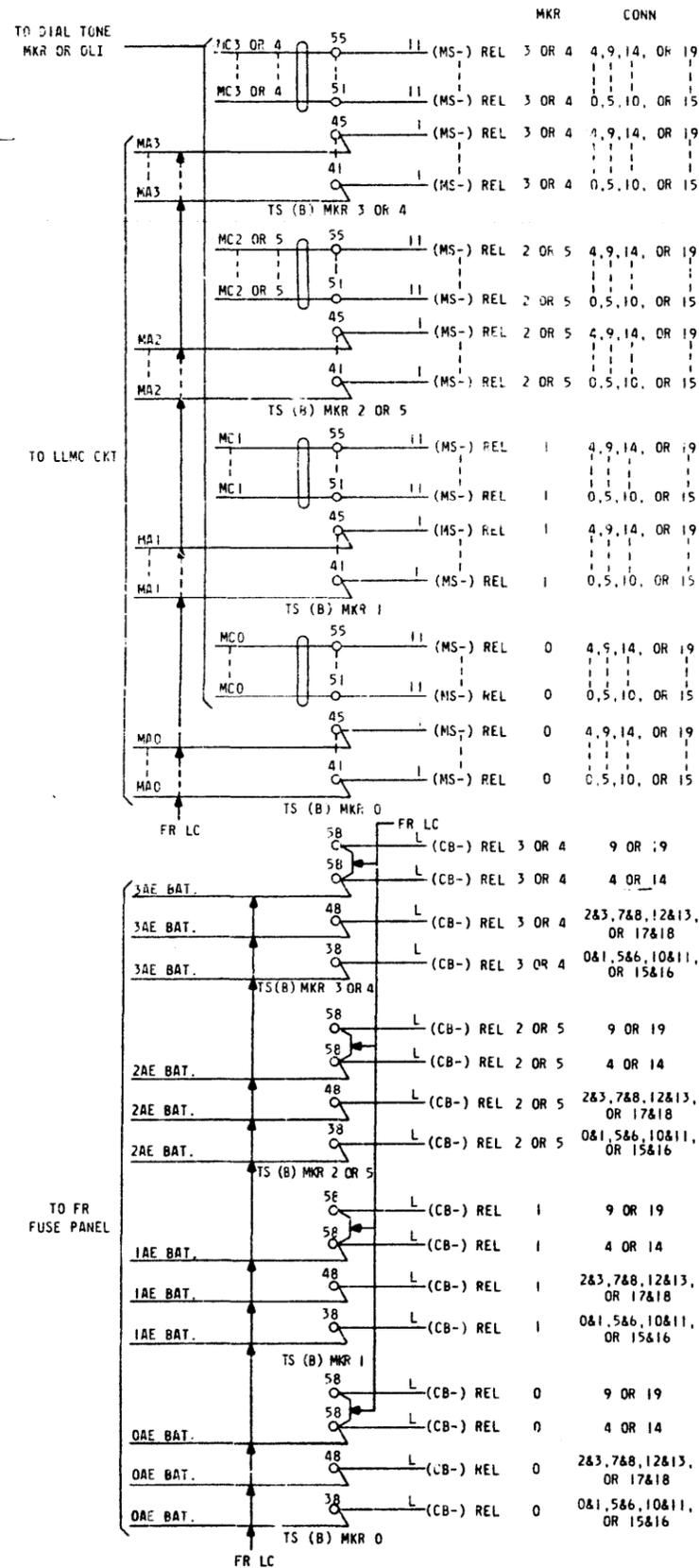
65

SD-26029-01-G4B

ISSUE 350

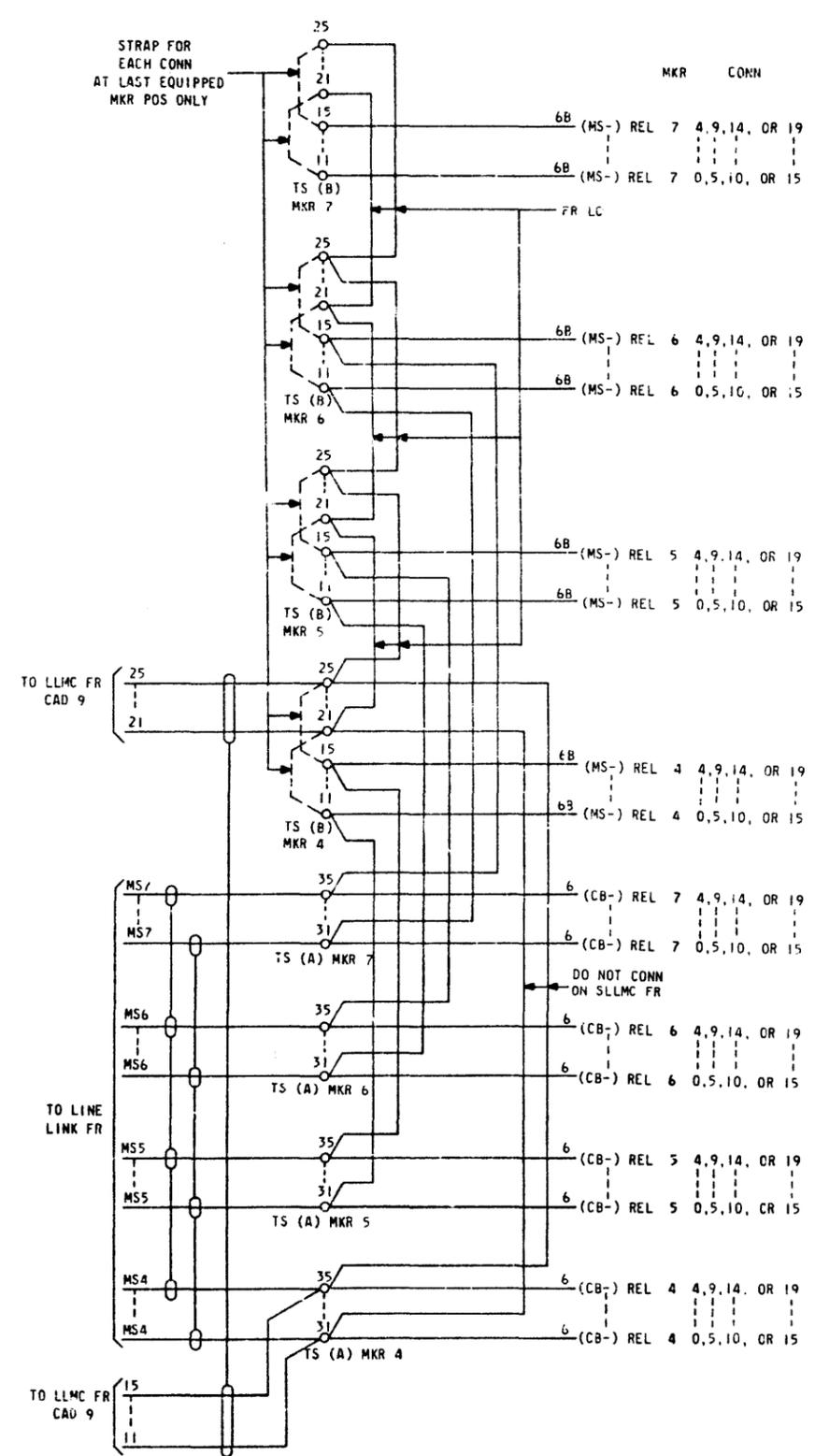
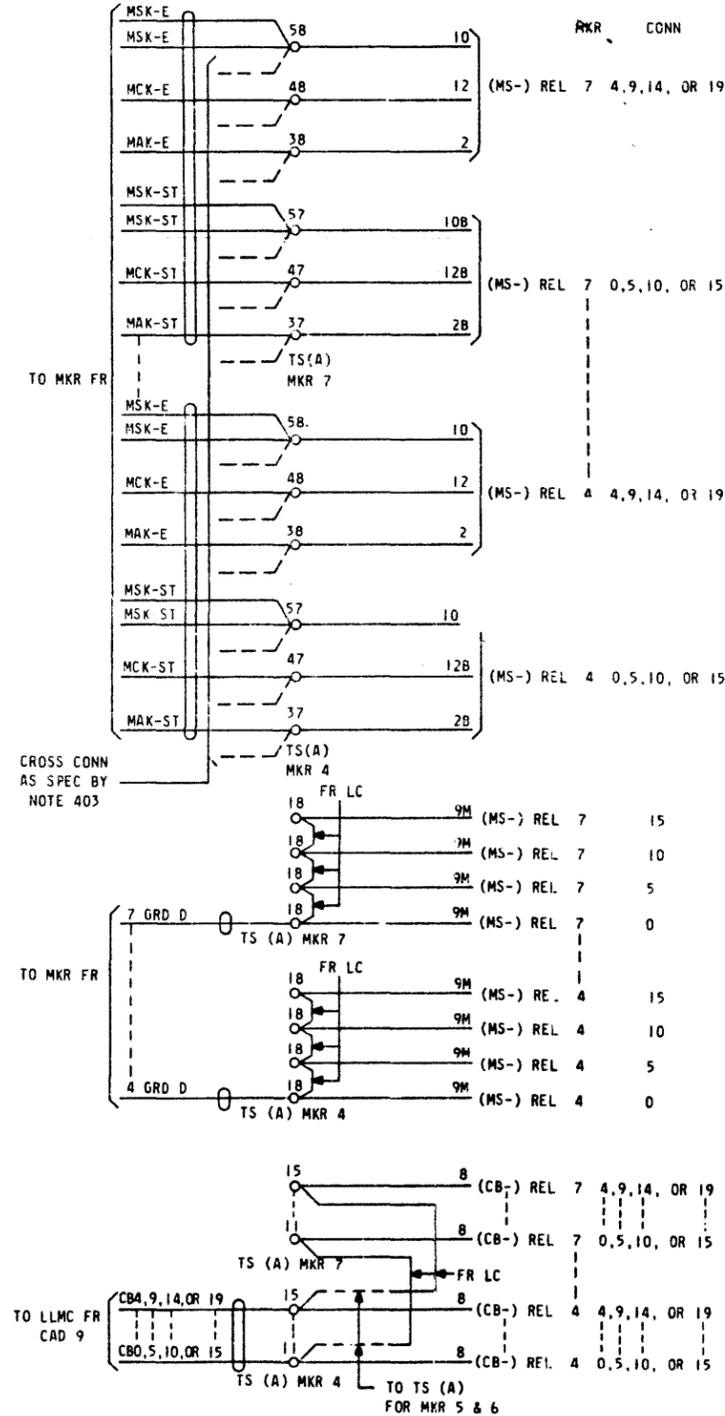
PART OF CAD 9

(FOR APP FIG 7)
FOR LLMC FRAME MKR PREF CONT UNIT
(SEE NOTE 201)



PART OF CAD 10 (MFR DISC.)

(FOR APP FIG 7)
FOR SLLMC FRAME MKR PREF CONT UNIT



SD-26029-01-G5A

PREFERENCE CONTROL CIRCUIT
FRAME TRAFFIC CONTROL CIRCUIT
CONNECTOR CONTROL CIRCUIT
TRCUBLE RECORDER CONNECTOR
CIRCUIT

2

SD-26029-01-G5A

BELL TELEPHONE LABORATORIES
INCORPORATED

65

PRINTED IN U.S.A.

ISSUE
35D

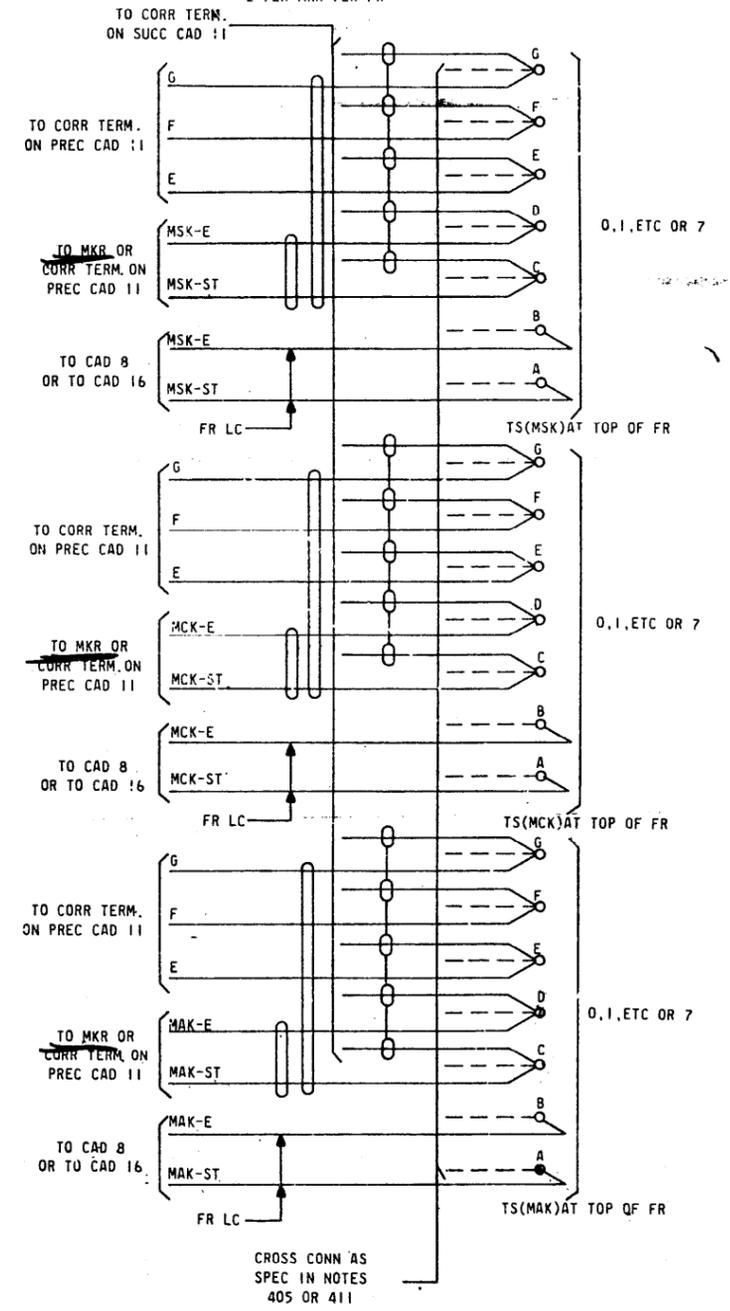
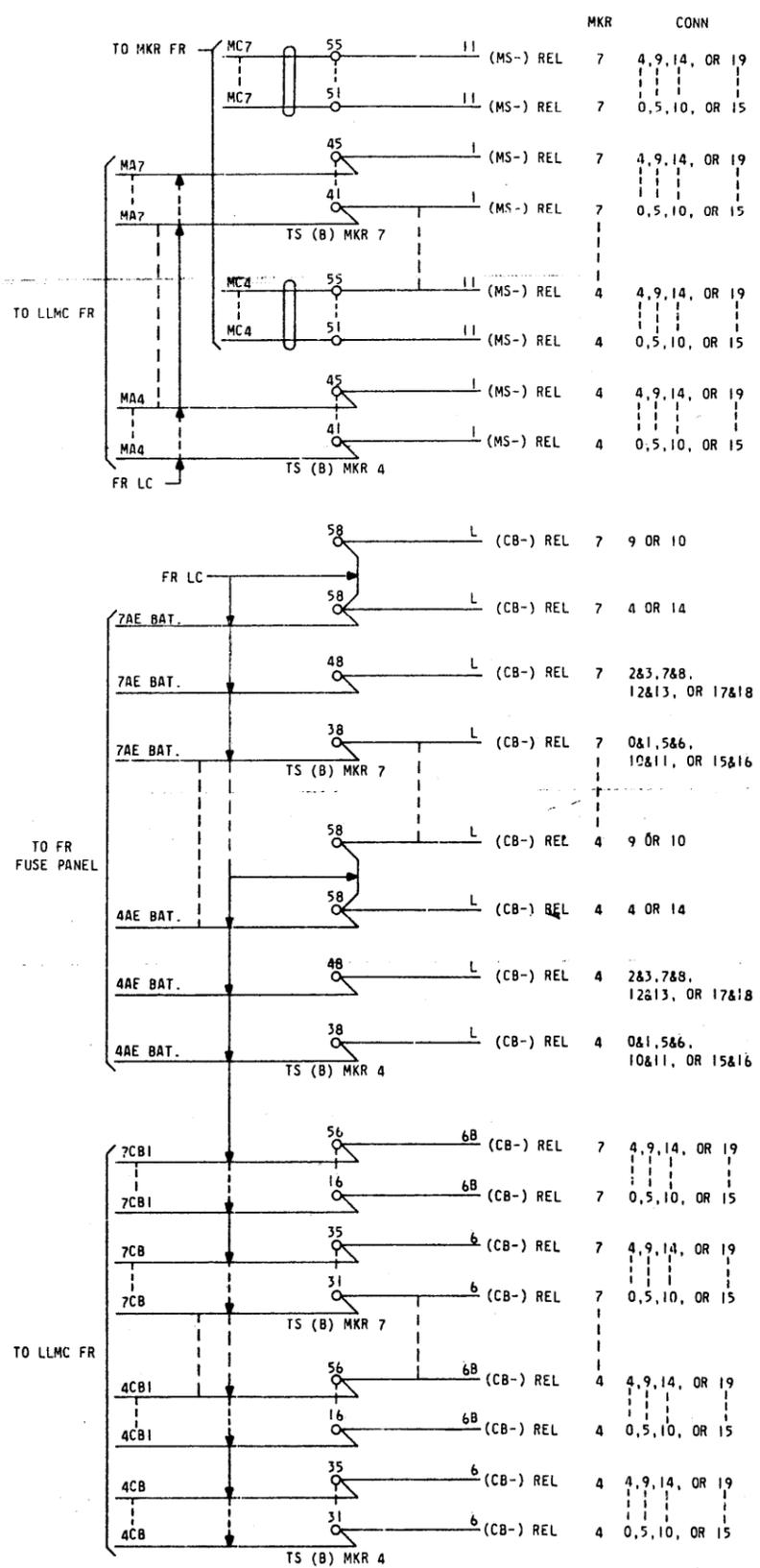
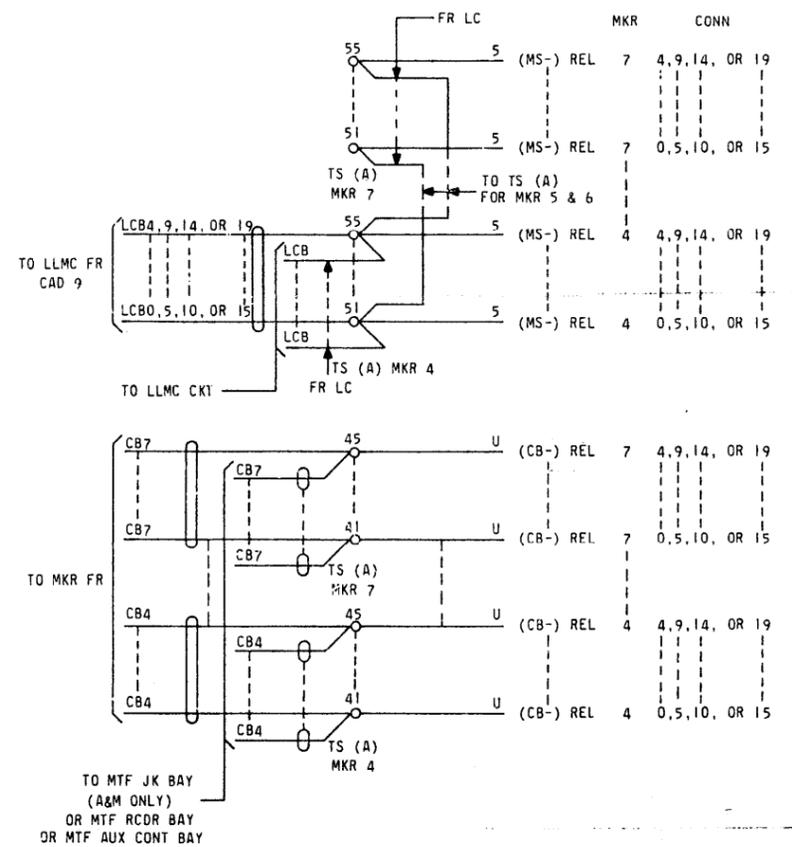
PART OF CAD 10 (MFR DISC)

(FOR APP FIG 7)
FOR SLLMC FRAME MKR PREF CONT UNIT

CAD 11

FOR ORMC, IRMC, OR TRMC FR
OR
1 PER MKR PER FRAME OR FOR LLMC FR
OR
2 PER MKR PER FR

A
B
C
D
E
F
G
H



DRAWING ISSUE
29D
30D
ISSUE
35D

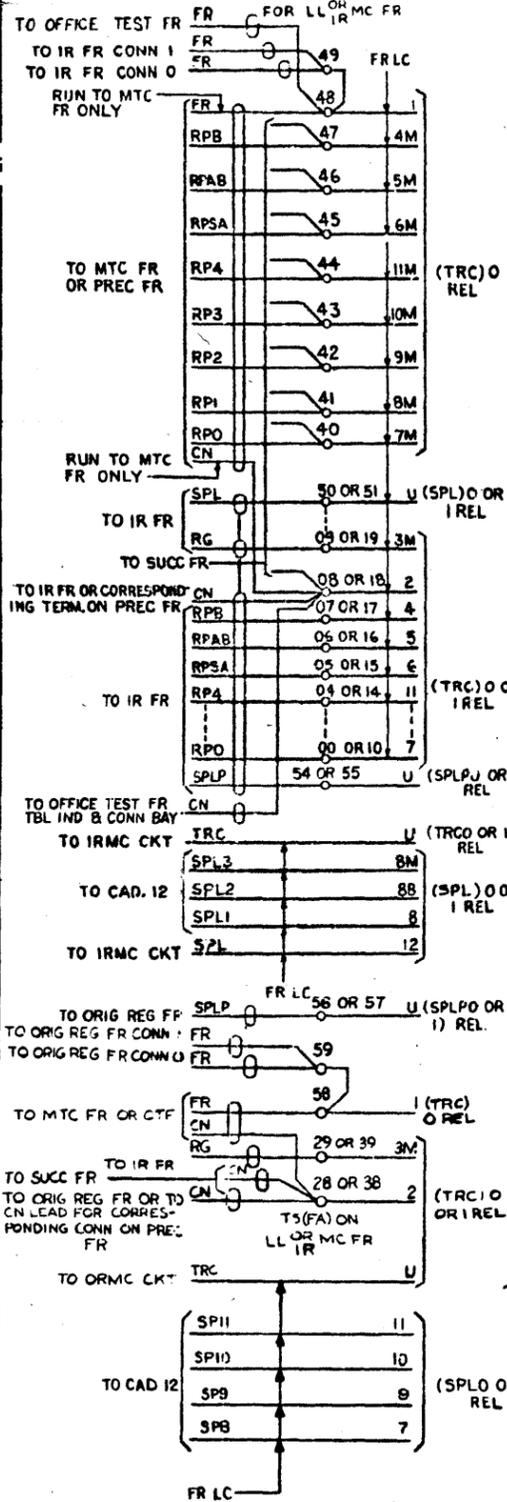
SD-26029-01-65B

PREFERENCE CONTROL CIRCUIT
FRAME TRAFFIC CONTROL CIRCUIT
CONNECTOR CONTROL CIRCUIT
TROUBLE RECORDER CONNECTOR CIRCUIT

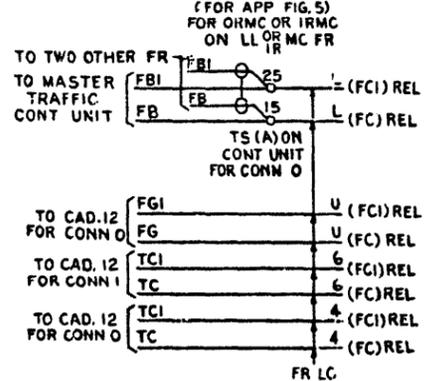
BELL TELEPHONE LABORATORIES INCORPORATED

SD-26029-01-65B

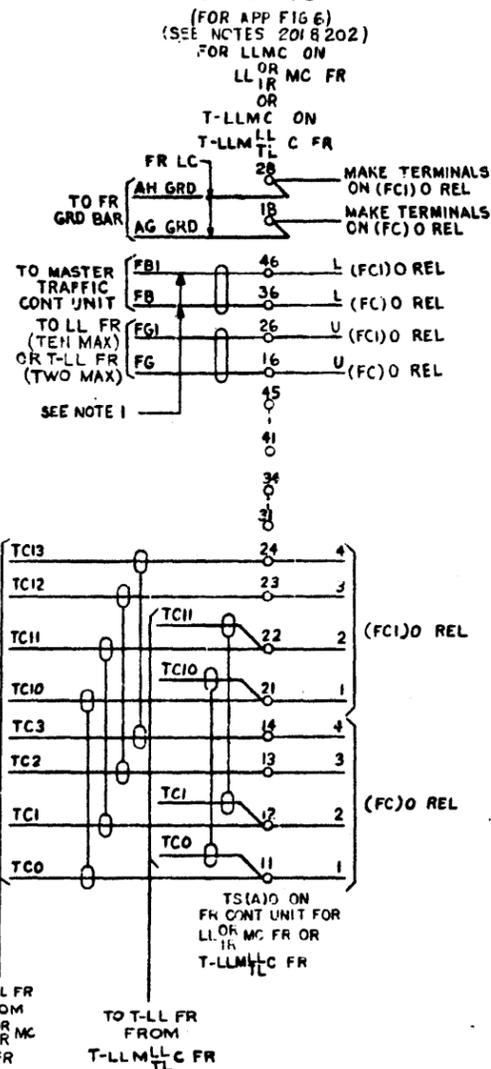
CAD. 13
(FOR APP FIG 3, 8 AND 10)
FOR LL OR MC FR



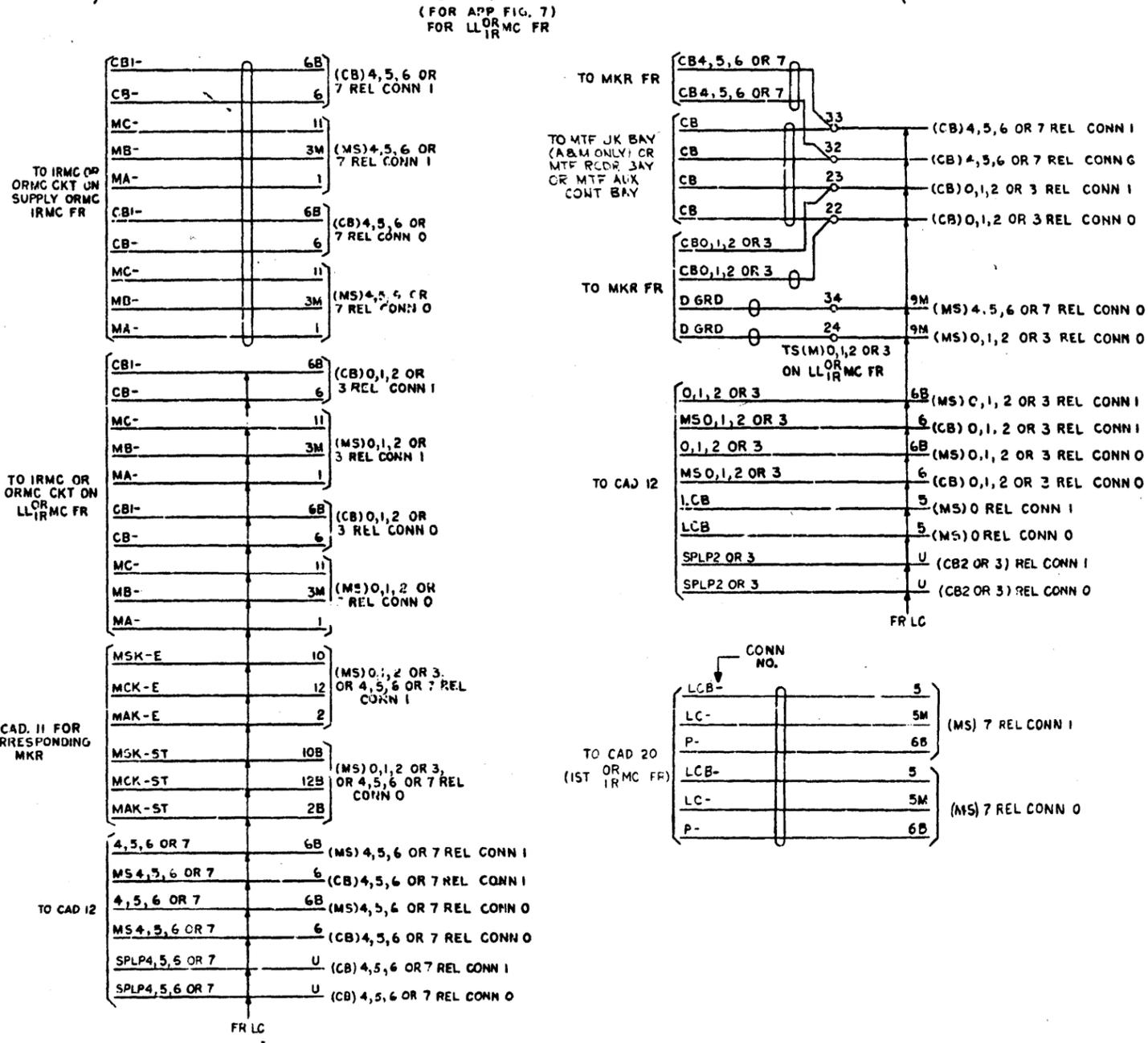
CAD. 14
(FOR APP FIG. 5)
FOR ORMC OR IRMC ON LL OR MC FR



CAD. 15
(FOR APP FIG 6)
(SEE NOTES 201 & 202)
FOR LLMC ON LL OR MC FR



CAD. 16
(FOR APP FIG. 7)
FOR LL OR MC FR



NOTES:
1. RUN AS FOLLOWS:
(a) WHEN 4 OR LESS DIAL TONE MARKERS ARE PROVIDED, RUN TO MASTER TRAFFIC CONT UNIT FOR DIAL TONE MARKERS.
(b) WHEN MORE THAN 4 DIAL TONE MARKERS ARE PROVIDED, RUN: (1) TO MASTER TRAFFIC CONT UNIT B FOR LLMC ONLY. (2) TO MASTER TRAFFIC CONT UNIT A FOR T-LLMC ONLY.

DRAWING ISSUE
110
12D
8D
21D
24D
26A
29D

PREFERENCE CONTROL CIRCUIT
FRAME TRAFFIC CONTROL CIRCUIT
CONNECTOR CONTROL CIRCUIT
TROUBLE RECORDER CONNECTOR CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

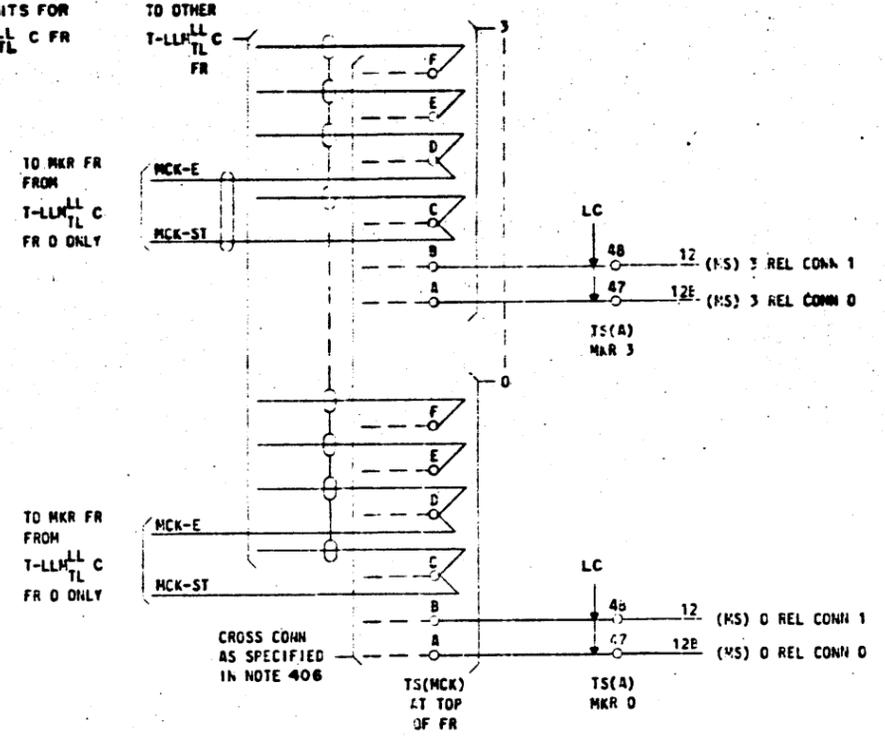
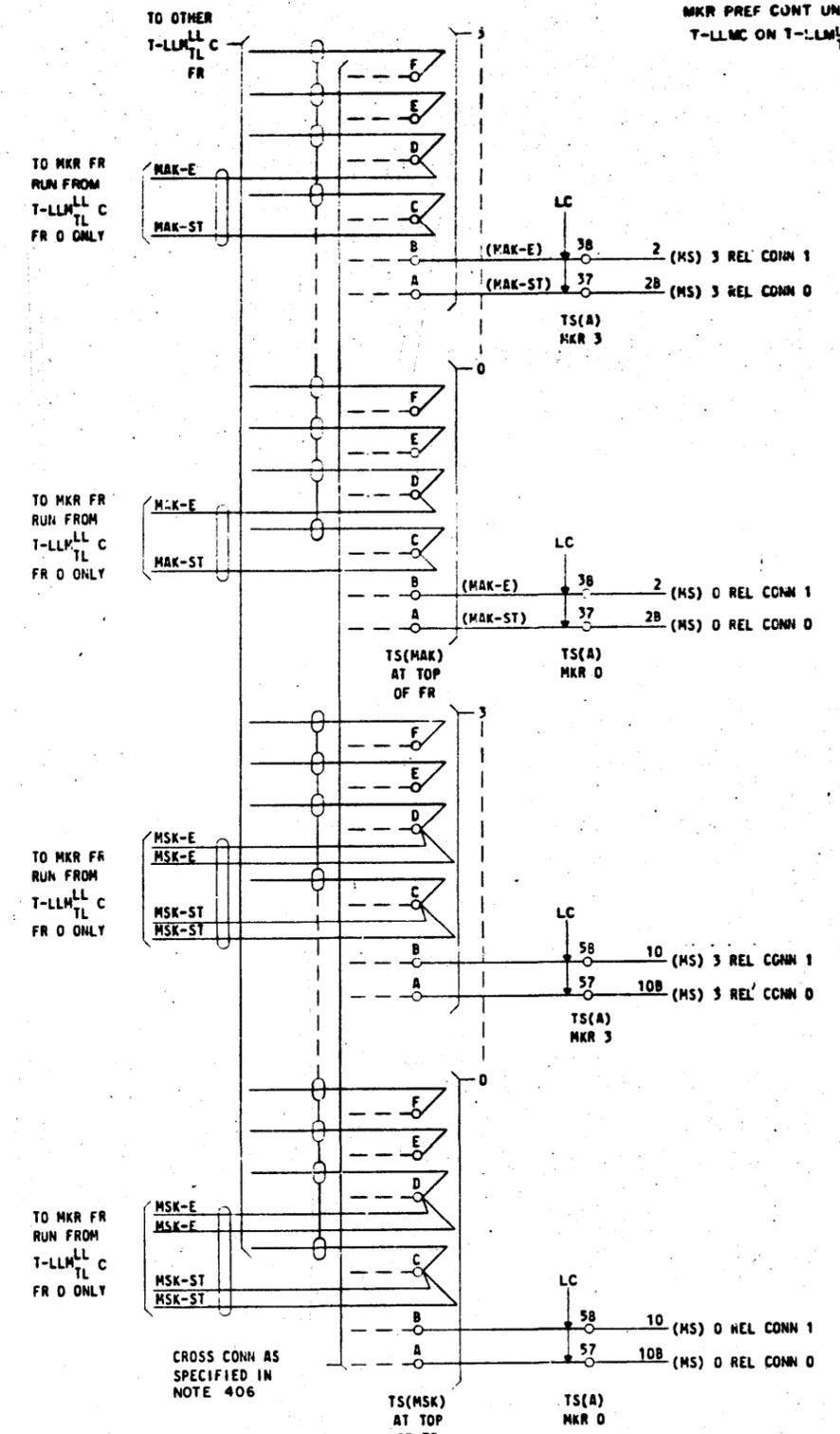
ISSUE 32D
SD-26029-01-67

SD-26029-01-67

PART OF CAD 18

(FOR APP FIG. 7)
MKR PREF CONT UNITS FOR
T-LLMC ON T-LLM^{LL} C FR

A
B
C
D
E
F
G
H



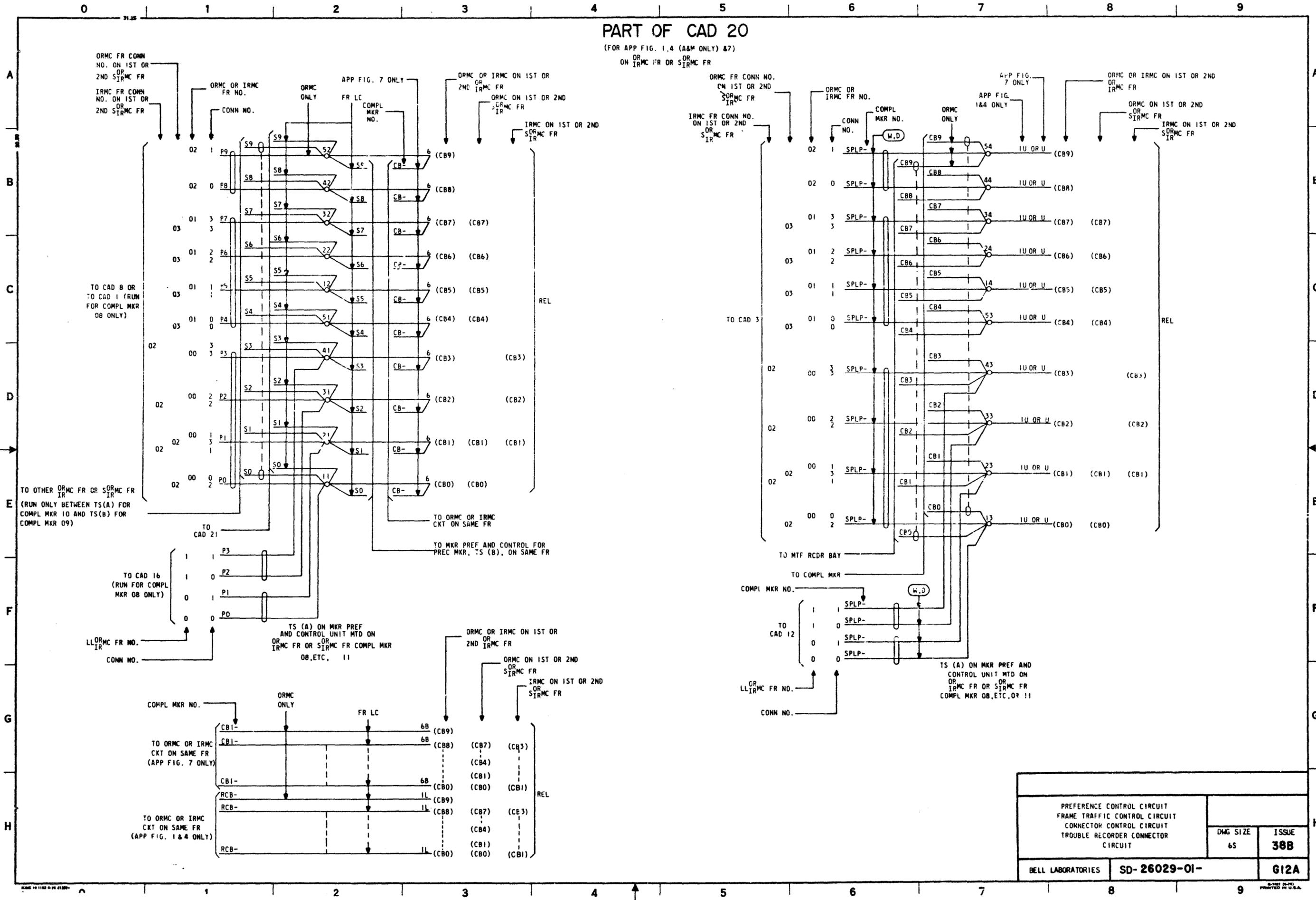
SD-26029-01-610

STABELO

CROSSBAR SYSTEMS PREFERENCE CONTROL CIRCUIT FRAME TRAFFIC CONTROL CIRCUIT CONNECTOR CONTROL CIRCUIT TROUBLE RECORDER CONNECTOR CIRCUIT		2	SD-26029-01-610
BELL TELEPHONE LABORATORIES INCORPORATED		65	

PART OF CAD 20

(FOR APP FIG. 1, 4 (A&M ONLY) & 7)
OR
ON IRMC FR OR SIRMC FR

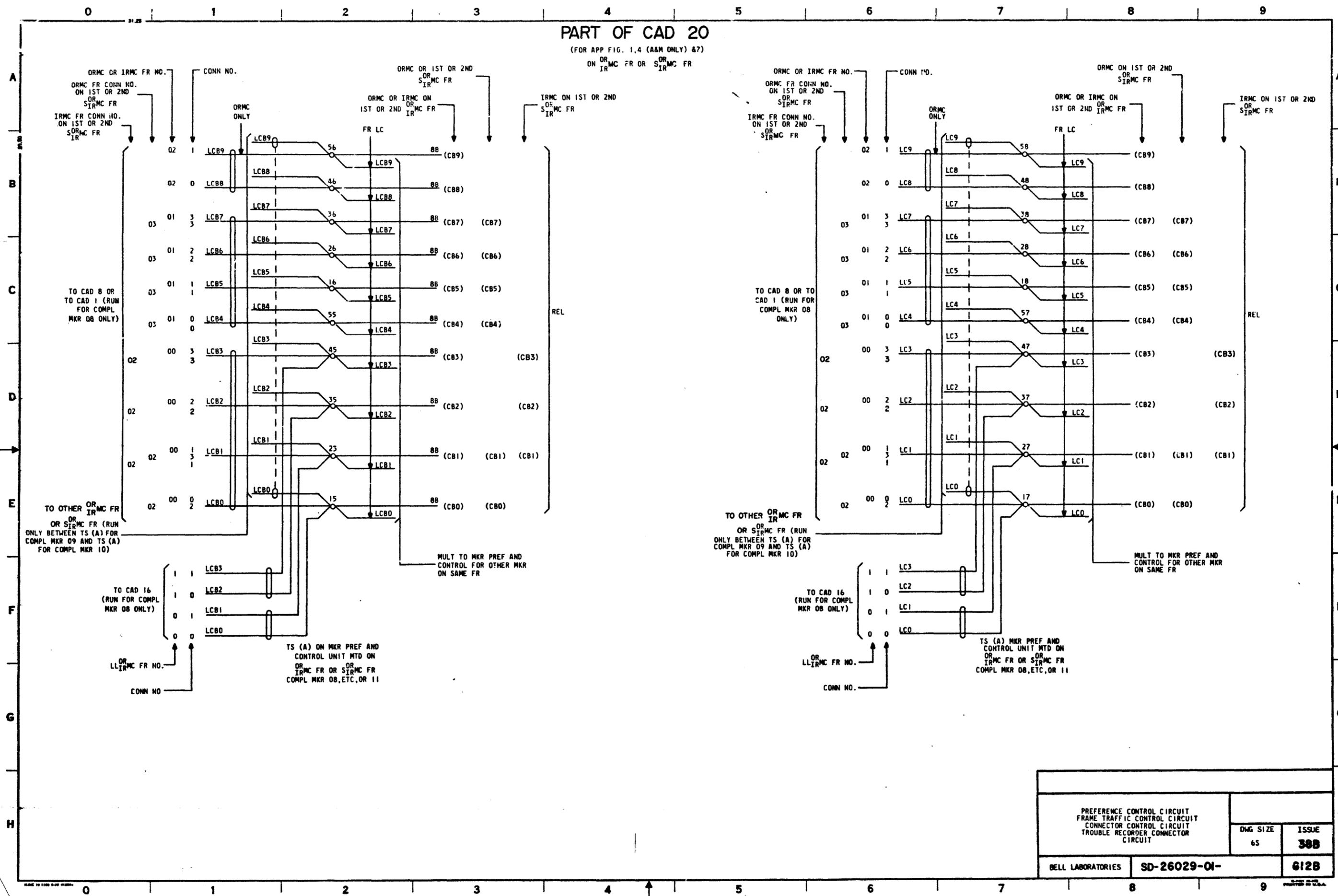


PREFERENCE CONTROL CIRCUIT		DWG SIZE 6S	ISSUE 38B
FRAME TRAFFIC CONTROL CIRCUIT			
CONNECTOR CONTROL CIRCUIT			
TROUBLE RECORDER CONNECTOR CIRCUIT			
BELL LABORATORIES		SD-26029-01-	
		G12A	

PART OF CAD 20

(FOR APP FIG. 1.4 (A&M ONLY) & 7)

ON OR MC FR OR S OR MC FR
IR IR

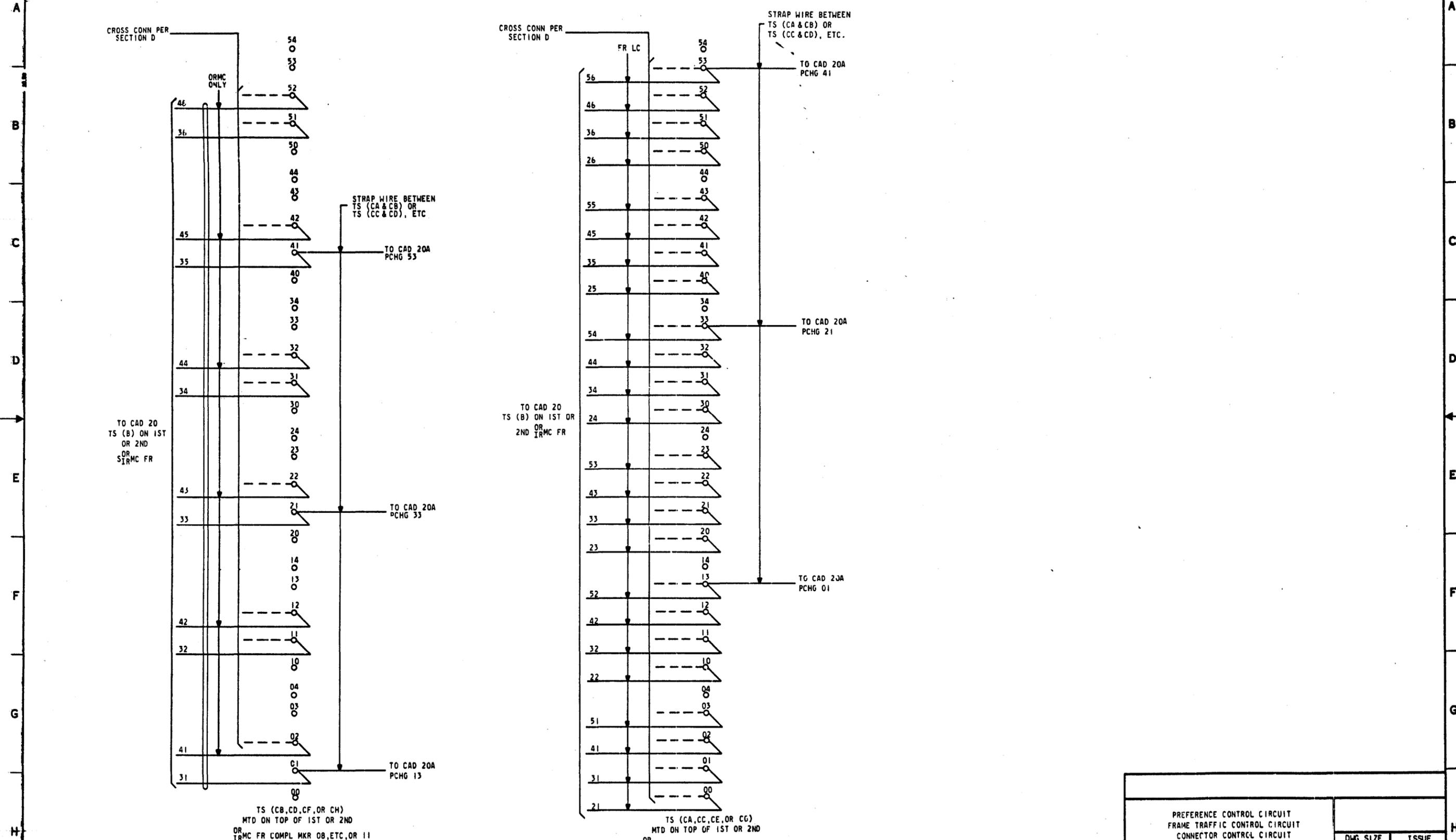


PREFERENCE CONTROL CIRCUIT FRAME TRAFFIC CONTROL CIRCUIT CONNECTOR CONTROL CIRCUIT TROUBLE RECORDER CONNECTOR CIRCUIT		DWG SIZE 65	ISSUE 388
BELL LABORATORIES		SD-26029-01-	
		6/28	

0 1 2 3 4 5 6 7 8 9

CAD 20A

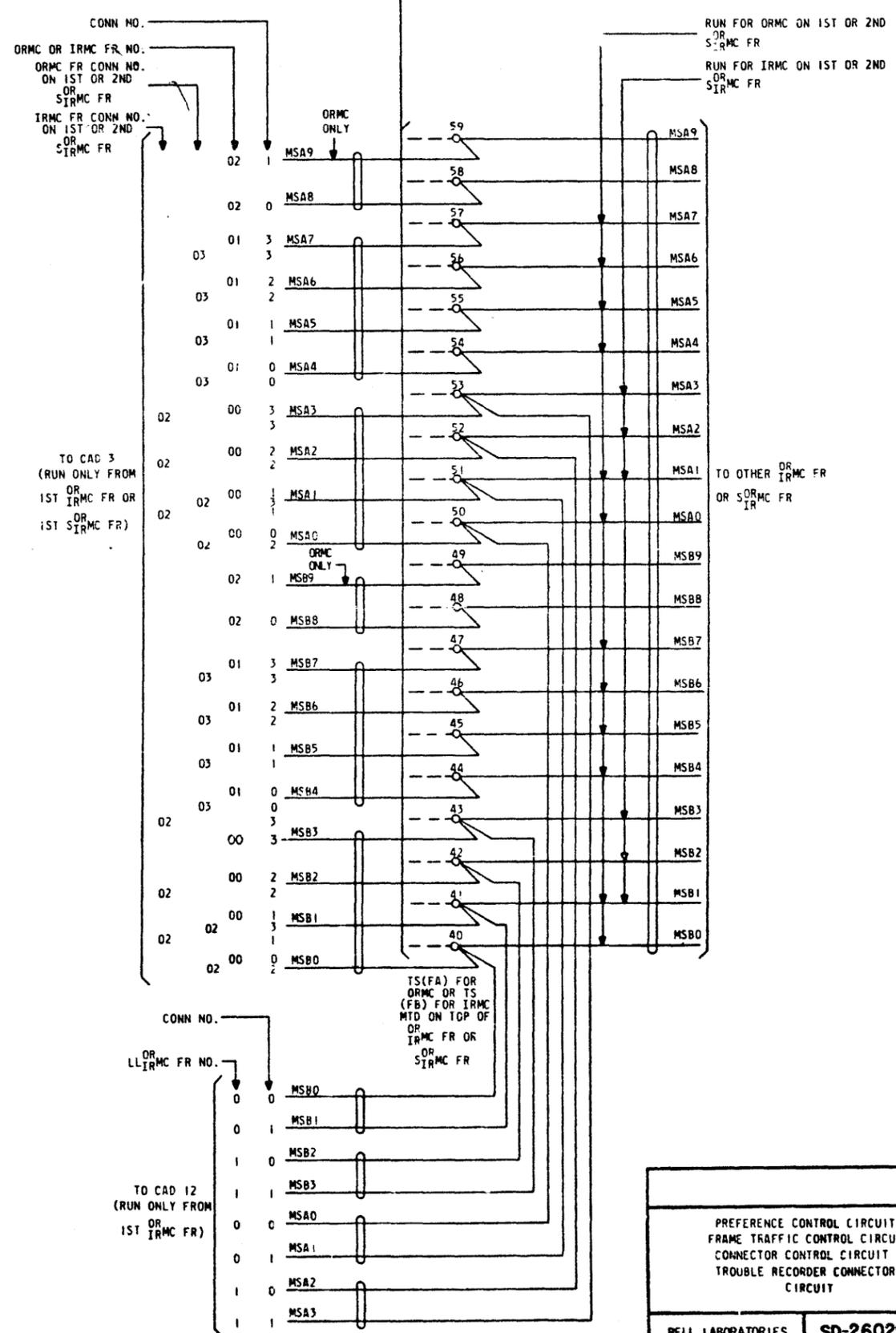
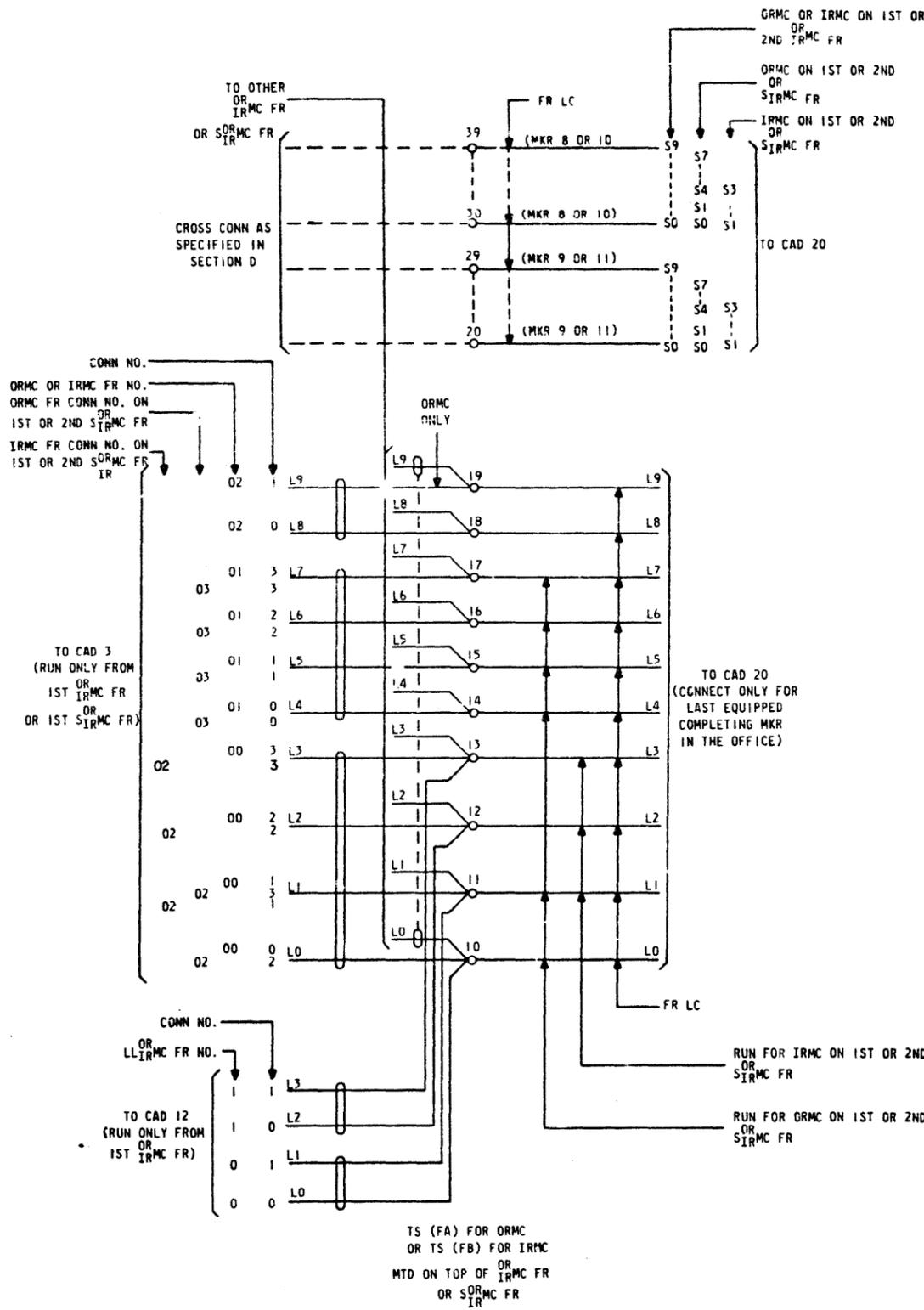
(FOR APP FIG. 1, 4 (A&M ONLY) & 7)
ON OR IRMC FR



PREFERENCE CONTROL CIRCUIT FRAME TRAFFIC CONTROL CIRCUIT CONNECTOR CONTROL CIRCUIT TROUBLE RECORDER CONNECTOR CIRCUIT		DWG SIZE 65	ISSUE 37B
BELL LABORATORIES	SD-26029-01-	G12D	

CAD 21

(FOR OR IRMC FR, OR S IRMC FR) SWBD CABLE TO DRMC,
IRMC, LL IRMC, IRMC, AND S IRMC FR



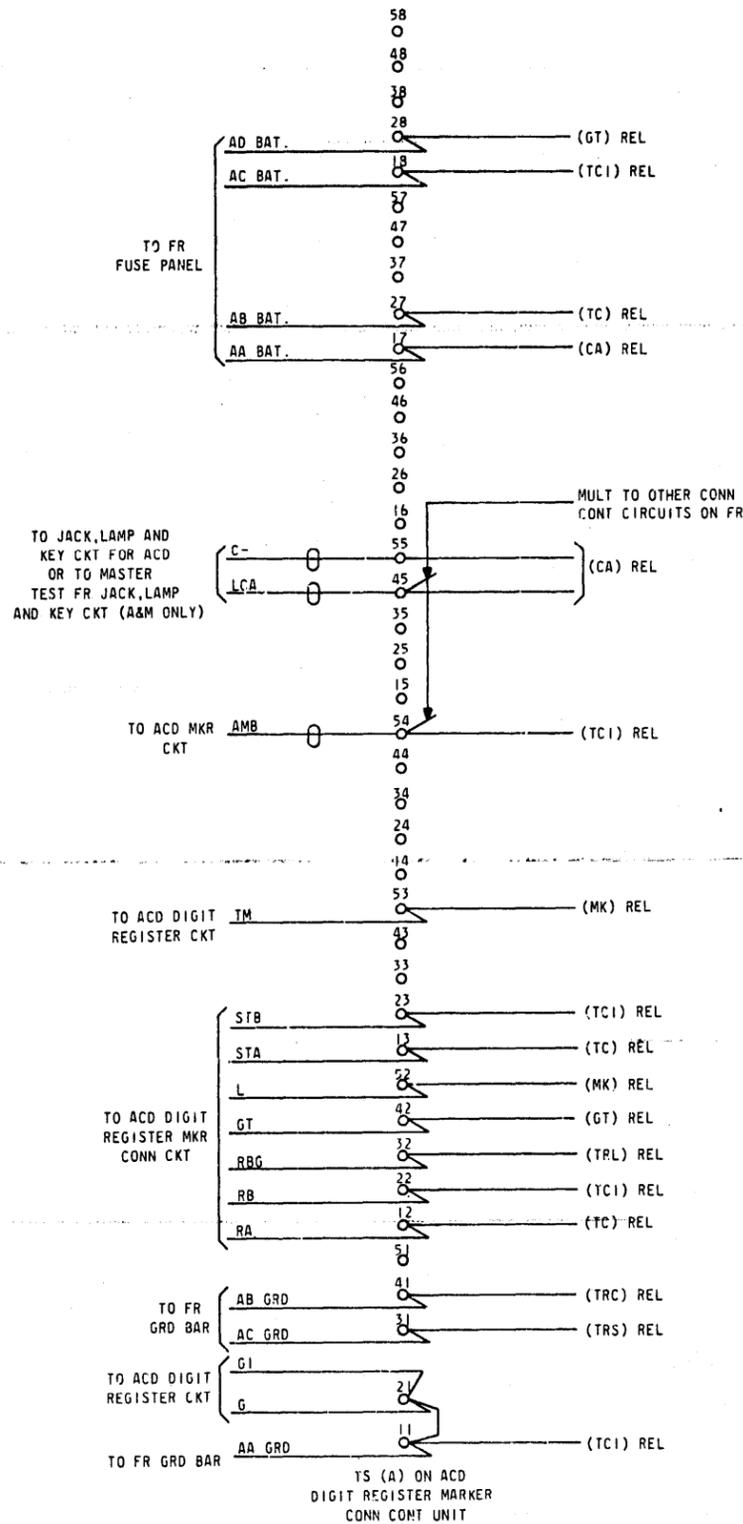
PREFERENCE CONTROL CIRCUIT FRAME TRAFFIC CONTROL CIRCUIT CONNECTOR CONTROL CIRCUIT TROUBLE RECORDER CONNECTOR CIRCUIT		DWG SIZE 65	ISSUE 388
BELL LABORATORIES		SD-26029-01-	
		G13A	

A
B
C
D
E
F
G
H

A
B
C
D
E
F
G
H

PART OF CAD 22

(FOR APP FIG. 2 AND 8)

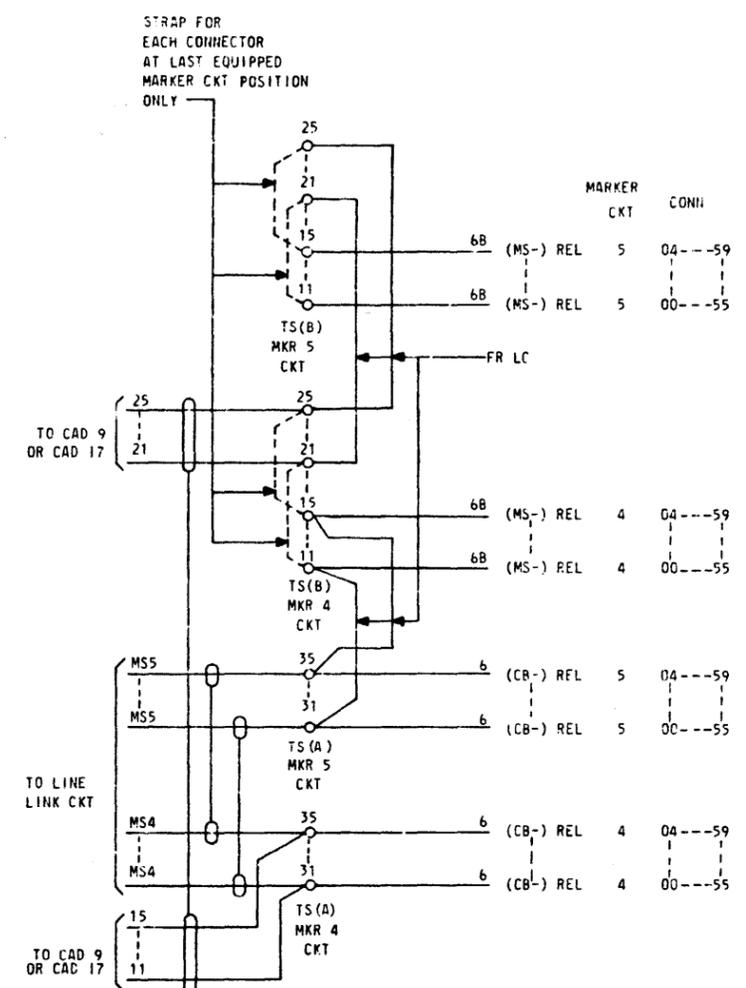
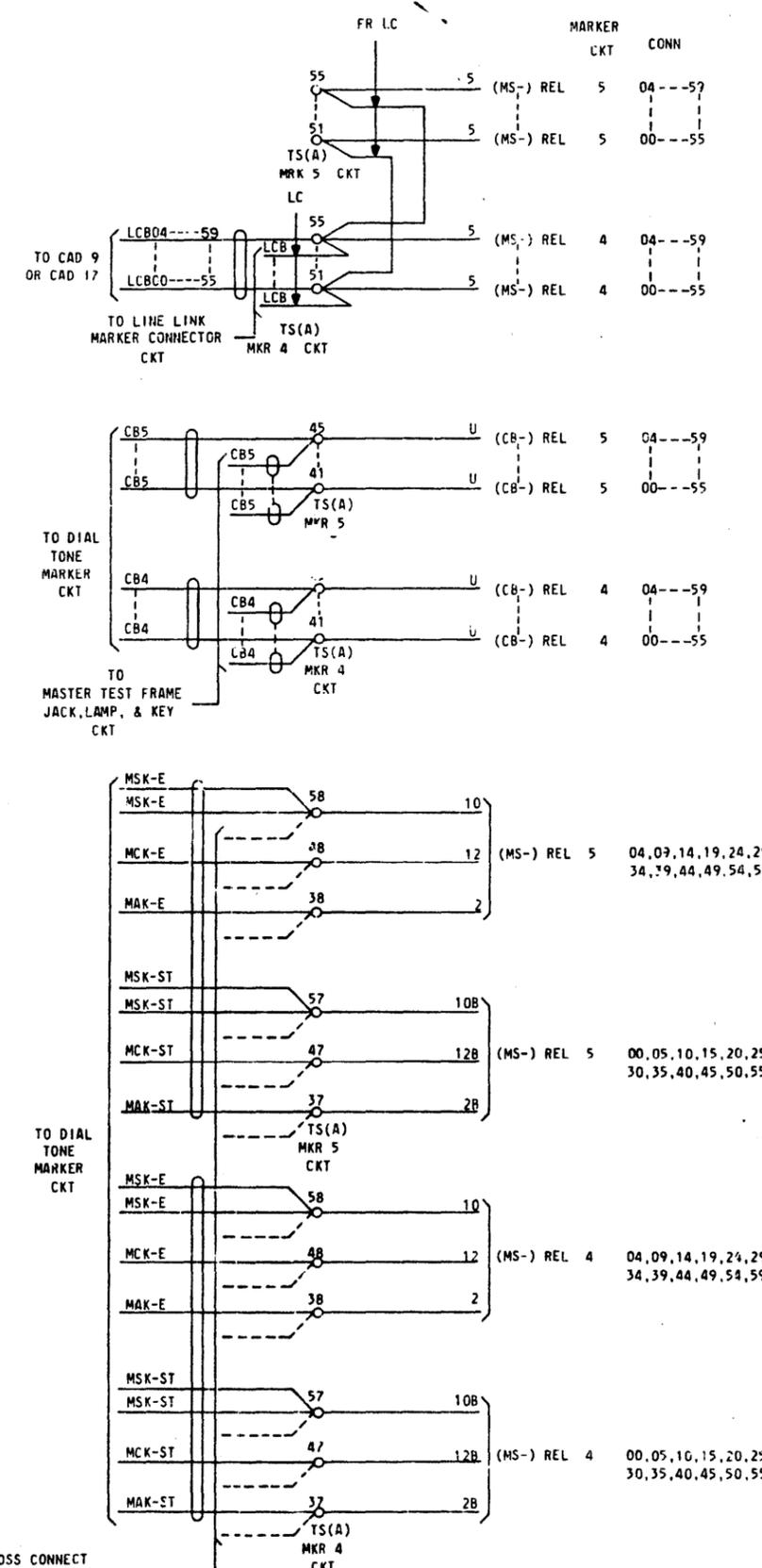
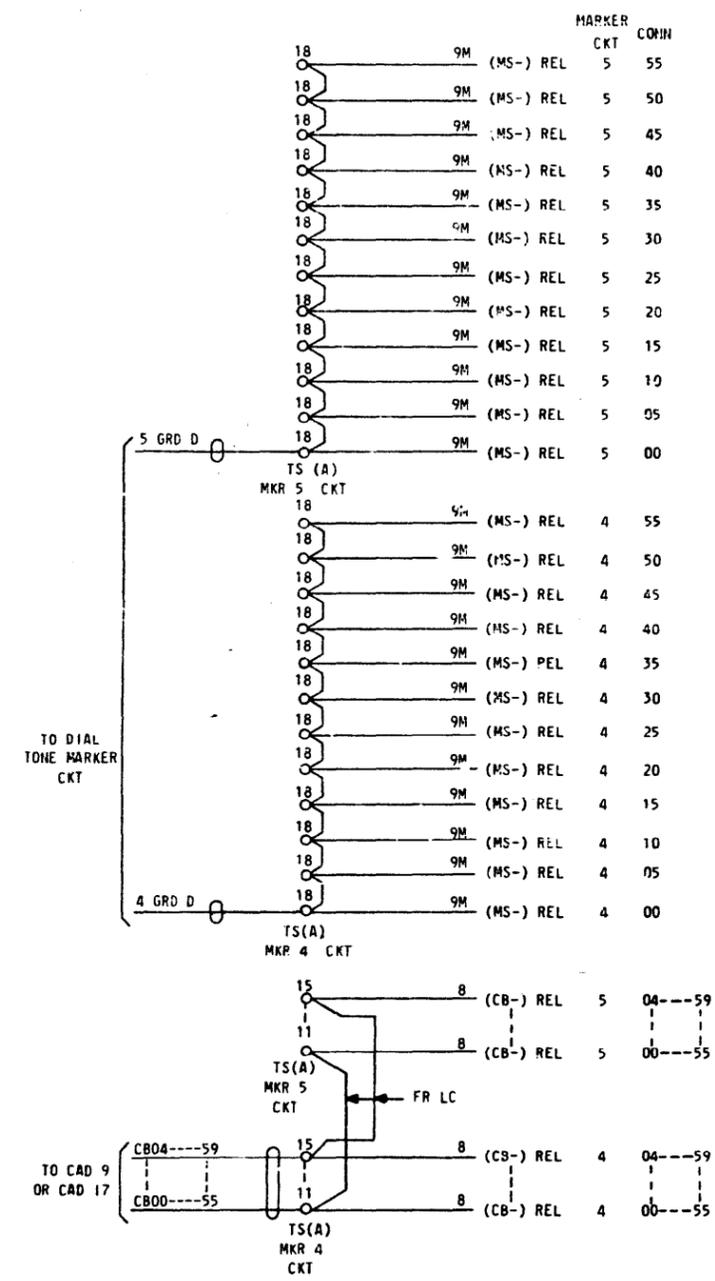


PREFERENCE CONTROL CIRCUIT		
FRAME TRAFFIC CONTROL CIRCUIT		
CONNECTOR CONTROL CIRCUIT		
TROUBLE RECORDER CONNECTOR CIRCUIT		
DWG SIZE	ISSUE	
6S	37B	
BELL LABORATORIES	SD-26029-01-	G13B

PART OF CAD 24

(FOR APP FIG. 7)
FOR SLLMC FRAME MARKER
PREFERENCE CONTROL UNIT

A
B
C
D
E
F
G



A
B
C
D
E
F
G
H

CROSS CONNECT AS SPECIFIED BY NOTE 403

PREFERENCE CONTROL CIRCUIT
FRAME TRAFFIC CONTROL CIRCUIT
CONNECTOR CONTROL CIRCUIT
TROUBLE RECORDER CONNECTOR CIRCUIT

2

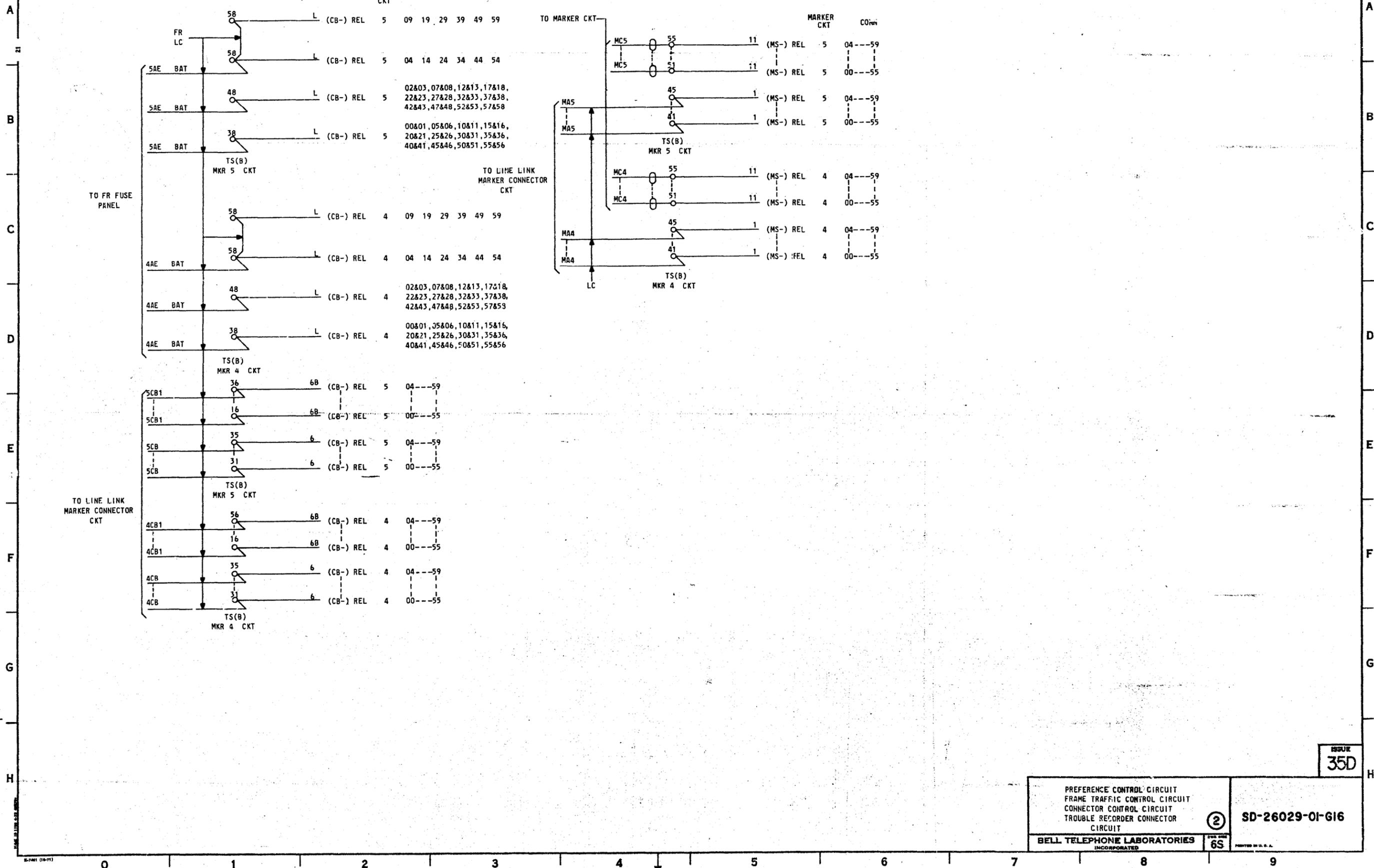
SD-26029-01-G:5

BELL TELEPHONE LABORATORIES

35D

PART OF CAD 24

(FOR APP FIG. 7)
FOR SLLMC FRAME MARKER
PREFERENCE CONTROL UNIT



SD-26029-01-G16

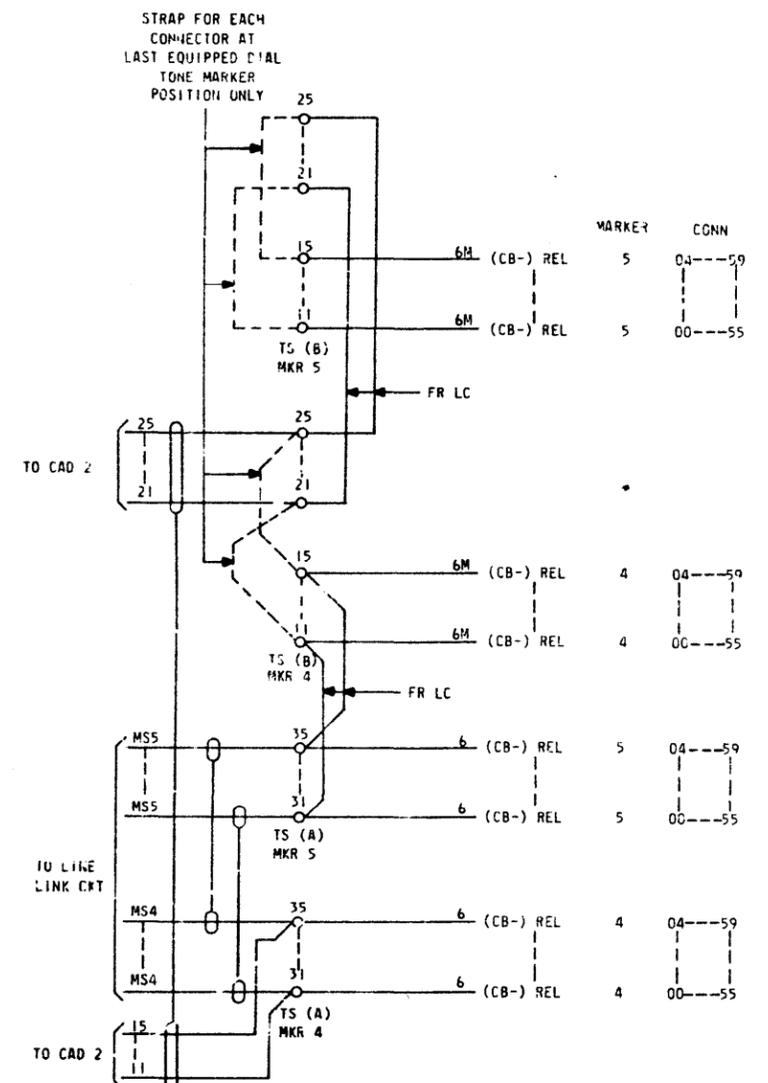
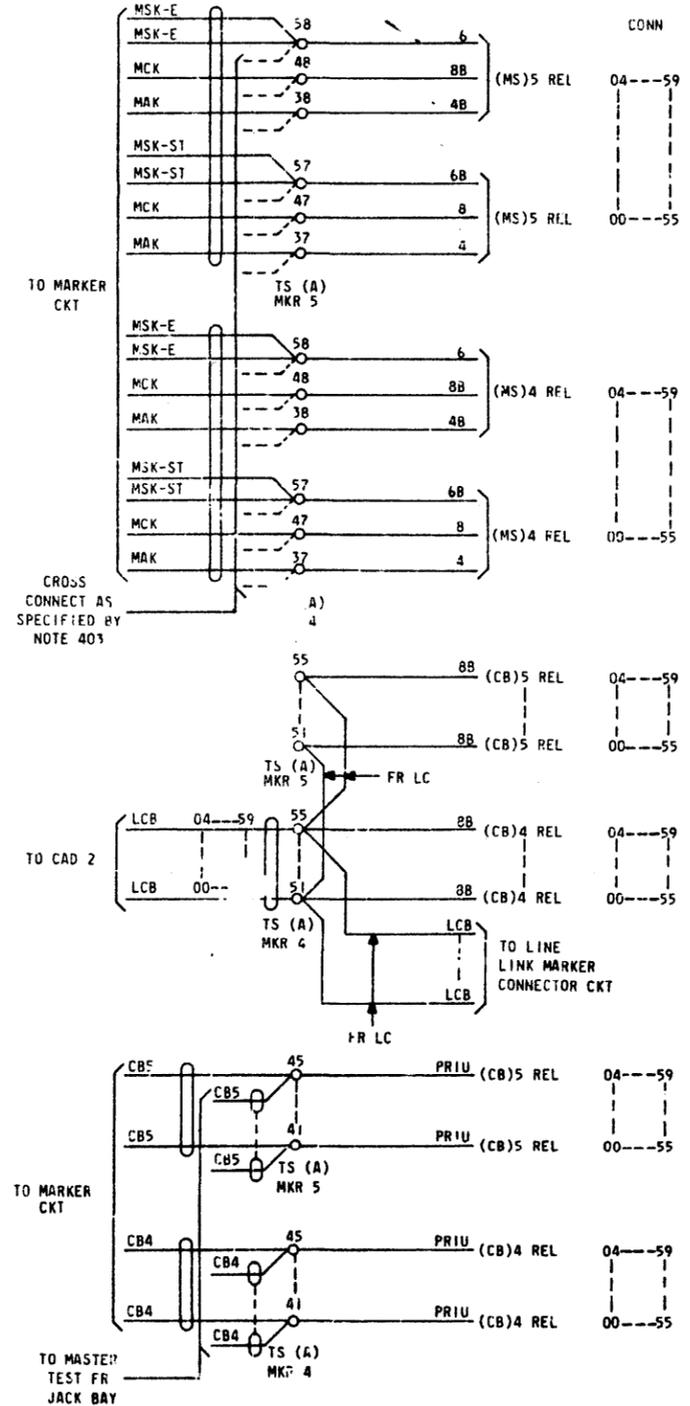
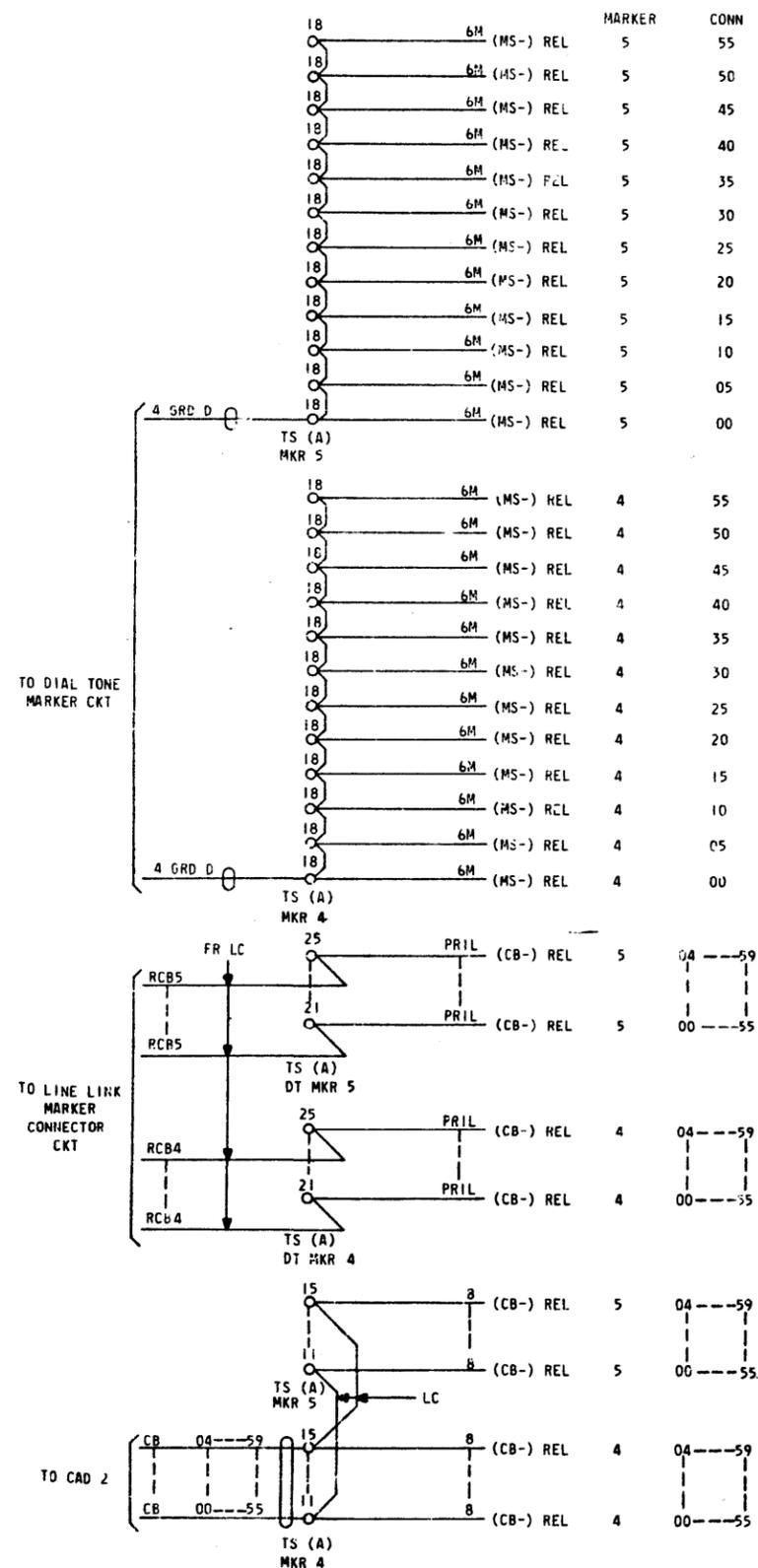
ISSUE
35D

PREFERENCE CONTROL CIRCUIT FRAME TRAFFIC CONTROL CIRCUIT CONNECTOR CONTROL CIRCUIT TROUBLE RECORDER CONNECTOR CIRCUIT	2	SD-26029-01-G16
BELL TELEPHONE LABORATORIES <small>INCORPORATED</small>		FOR USE 6S <small>PRINTED IN U.S.A.</small>

PART OF CAD 25 (A&M ONLY)

(FOR APP FIG. 1 & 4)
FOR SLMC FRAME MARKER PREFERENCE CONTROL UNIT

A
B
C
D
E
F
G
H



SD-26029-01-G17

FIGURE 35D

PREFERENCE CONTROL CIRCUIT FRAME TRAFFIC CONTROL CIRCUIT CONNECTOR CONTROL CIRCUIT TROUBLE RECORDER CONNECTOR CIRCUIT	SD-26029-01-G17
BELL TELEPHONE LABORATORIES <small>INCORPORATED</small>	6S

0 1 2 3 4 5 6 7 8 9

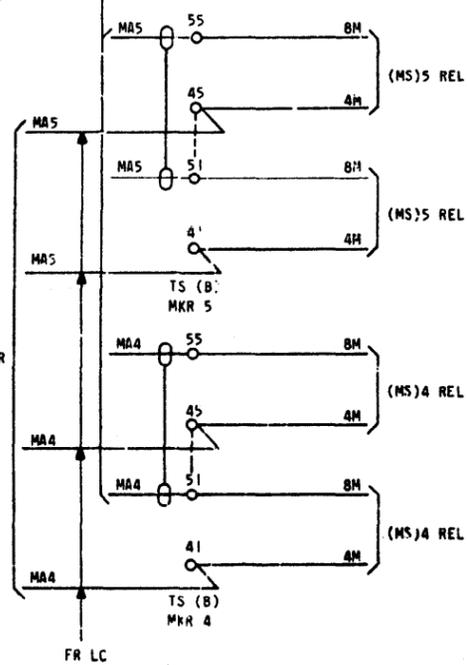
PART OF CAD 25 (A&M ONLY)

(FOR APP FIG. 1 & 4)
FOR SLLMC FRAME MARKER PREFERENCE CON. POL UNIT

TO MARKER CKT

TO LINE LINK
MARKER CONNECTOR
CKT

TO FRAME
FUSE PANEL



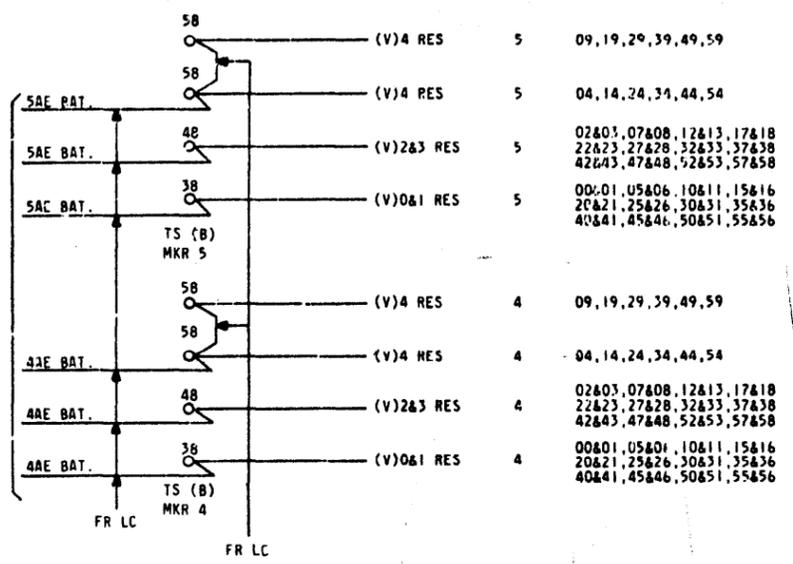
MARKER CONN

5 04 - -59

5 00 - -55

4 04 - -59

4 00 - -55



5 09, 19, 29, 39, 49, 59

5 04, 14, 24, 34, 44, 54

5 02&03, 07&08, 12&13, 17&18
22&23, 27&28, 32&33, 37&38
42&43, 47&48, 52&53, 57&58

5 00&01, 05&06, 10&11, 15&16
20&21, 25&26, 30&31, 35&36
40&41, 45&46, 50&51, 55&56

4 09, 19, 29, 39, 49, 59

4 04, 14, 24, 34, 44, 54

4 02&03, 07&08, 12&13, 17&18
22&23, 27&28, 32&33, 37&38
42&43, 47&48, 52&53, 57&58

4 00&01, 05&06, 10&11, 15&16
20&21, 25&26, 30&31, 35&36
40&41, 45&46, 50&51, 55&56

SD-26029-01-618

35D

PREFERENCE CONTROL CIRCUIT FRAME TRAFFIC CONTROL CIRCUIT CONNECTOR CONTROL CIRCUIT TROUBLE RECORDER CONNECTOR CIRCUIT	SD-26029-01-618
BELL TELEPHONE LABORATORIES INCORPORATED	65