

ISSUE NO.

DRAWING ISSUE		
1	PCO CEP	EA
2A	KUB GUM	WCB
3D	RLV GUM	WCB
4D	GM	
5AR	GM	7
6D	RAR TFS MHO	3
7D	WV	3
8D		2

APPARATUS INDEX

DESIG	LOCATION		
	FS	APP FIG.	EQPT
RELAYS			
AB	700	4	
CLS	700	4	
CLT	700	4	
OCK	104	1	
FG0	700	4	
FG1	700	4	
FG2	700	4	
GR	304	2	
H	100	1	
HIG	044	4	
IB1	507	1	
IF	700	1	
IF1	400	1	
L	300	2	
LA	300	2	
LB	300	2	
LR	700	1	
M	002, 800	5/6	
MB	002	1	
MRL	200	1	
OA	700	4	
OB	700	4	
ON	100	1	
ONI	100	1	
OVL	700	1	
P1	700	2	
P2	700	2	
P3	700	2	
P4	700	2	
P5	700	2	
RA1	507	2	
RA2	507	2	
RB	100	1	
RB1	100	1	
RLK	100	1	
RV1	700	1	
RV2	700	1	
RV3	700	1	
RV4	700	1	
RV5	700	1	
SM	500	2	
SS	300	2	
STP	300	2	
TC1	100	1	
TC2	700	1	
TM	700	1	
TMA	700	1	
TRL	700	1	
TT	700	1	

DESIG	LOCATION		
	FS	APP FIG.	EQPT
CAPACITORS			
GR	304	2	
IF	700	1	
IF1	700	1	
LR	700	1	
SS	300	2	
STP	300	2	
TM	700	1	
JACKS			
T	300	2	
LAMPS			
L	300	1	
SM	104	1	
RESISTORS			
GR	304	2	
IF	700	1	
IF1	700	1	
IF2	700	1	
IF3	700	1	
L	300	2	
LA	300	1	
LB	300	1	
LK	100	1	
LK1	100	1	
LR	700	1	
LRL	700	1	
LR2	700	1	
LR3	700	1	
P1	700	2	
P2	700	2	
R	300	1	
RA1	500	2	
RA2	500	2	
RB0	200	1	
RB1	200	1	
RB2	200	1	
RB3	200	1	
RB4	200	1	
RB5	200	1	
RB6	200	1	
RB7	200	1	
RB8	200	1	
RB9	200	1	
RB10	200	1	
RB11	200	1	
RB12	200	1	

DESIG	LOCATION		
	FS	APP FIG.	EQPT
RESISTORS			
RB13	200	1	
RB14	200	1	
SS	300	2	
STP	300	2	
T	300	1	
TC1	100	1	
TM1	700	1	
TM2	700	1	
TM3	700	1	
TM4	700	1	
TMA	700	1	
SWITCH (CROSSBAR)			
HOLD MAGNETS			
F	500	3	
FB	500	3	
FT	500	3	
FU	500	3	
IB	500	3	
IG	500	3	
SELECT MAGNETS			
SO	500	3	
SI	500	3	
SA	500	3	
SB	500	3	
SC	500	3	
SD	500	3	
SE	500	3	
SF	500	3	
SG	500	3	
SH	500	3	

DESIG	LOCATION		
	FS	APP FIG.	EQPT
TUBES			
IF	700	1	
LR	700	1	
TM	700	1	

OPTION INDEX

APP OR WIRING	LOCATION
5	100, APP FIG. 5
6	APP FIG. 6
Z	APP FIG. 4
Y	001
X	001
W	003
V	APP FIG. 4
T	002
S	001
R	002
Q	002

LEAD INDEX

DESIG	LOCATION		
	FS	APP FIG.	EQPT
INC REG LK CKT			
B	100	1	
BL	100	1	
CLO-5	700	1	
CO	100	1	
D	100	1	
FG0	700	1	
FG1	700	1	
FG2	700	1	
HM	100	1	
LK	100	1	
LO	100	1	
ON	100	1	
UN	100	1	
R	300	1	
RB0-14	200	1	
RP	004	1	
SM	100	1	
T	300	1	
TF	100	1	
TFO-9	001	1	

DESIG	LOCATION		
	FS	APP FIG.	EQPT
AUTO MON REG & SDR TEST CKT			
BLG	100	1	
BS	000	1	
CN	000	1	
FR	000	1	
H	100	1	
M	000	1	
MB	000	1	
MON	000	1	
MST	000	1	
RG	000	1	
RPL1	300	1	
RPL2	300	1	
RPL3	300	1	
RPL4	300	1	
RPLT	000	1	
RS	001	1	
INC REG TEST CKT			
H	100	1	
M	000	1	
ML	000	1	
MON	000	1	
RP	000	1	
MTR TST FR CONN CKT			
RG	000	1	
GROUP BUSY CKT			
OVL	700	1	
TRAFFIC REG CKT			
GB	000	1	

DESIG	LOCATION		
	FS	APP FIG.	EQPT
MTR TEST FRAME JK, LP, & KEY CKT			
ALM	001	1	
LP	001	1	
MB	001	1	
TRAFFIC USAGE RECORDER CKT			
RB	100	1	
RB4	000	1	
PREFERENCE CONTROL CKT			
SPL	000	1	
TM	200	1	

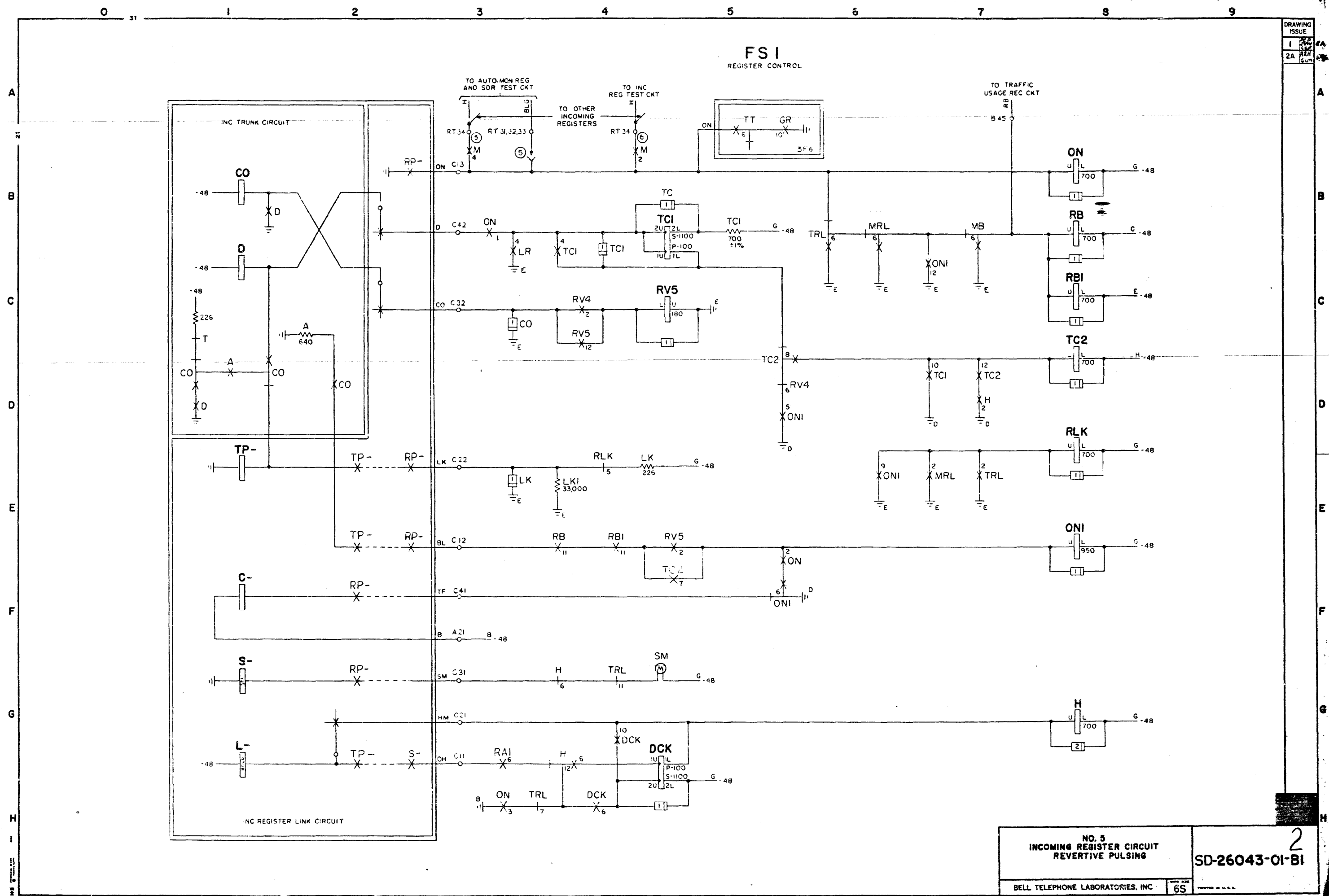
DRAWING	
ISSUE	1
3D	1
5AR	1
7D	1

INCOMING REGISTER CIRCUIT
REVERTIVE PULSING

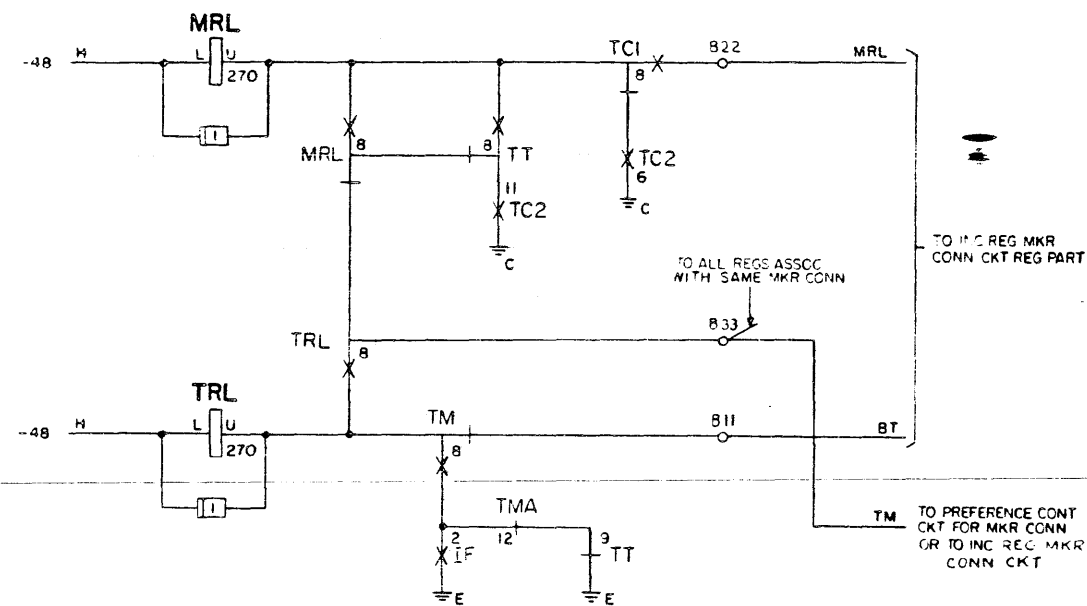
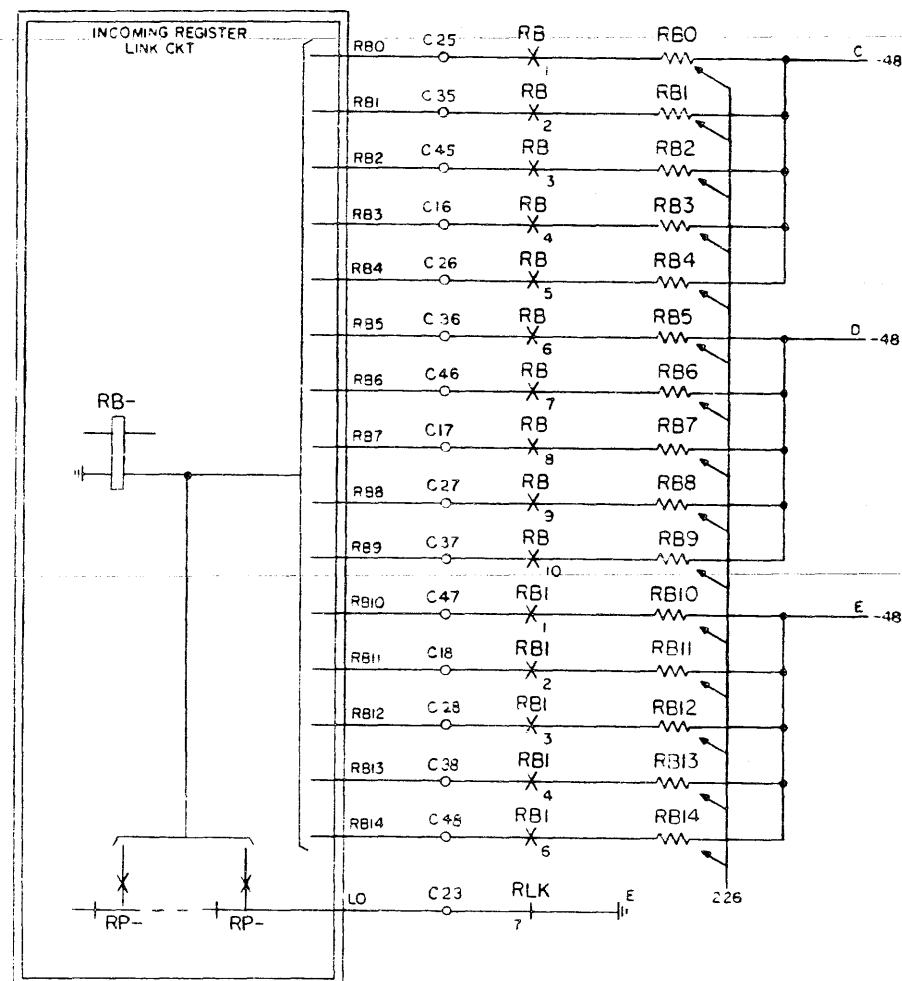
SD-26043-01-A3

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FS 2 REGISTER BUSY AND MARKER RELEASE



NO. 5
INCOMING REGISTER CKT
REVERTIVE PULSING

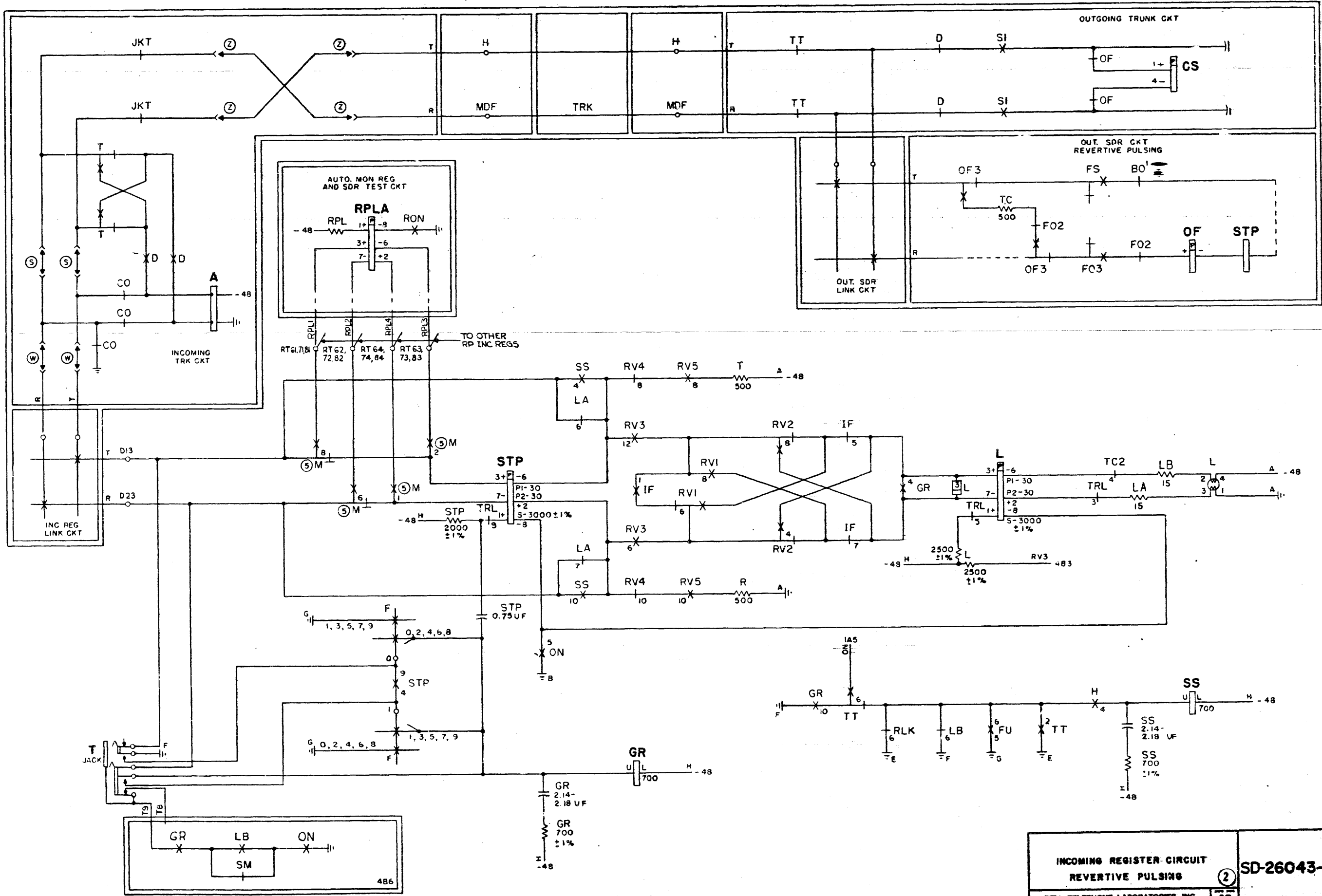
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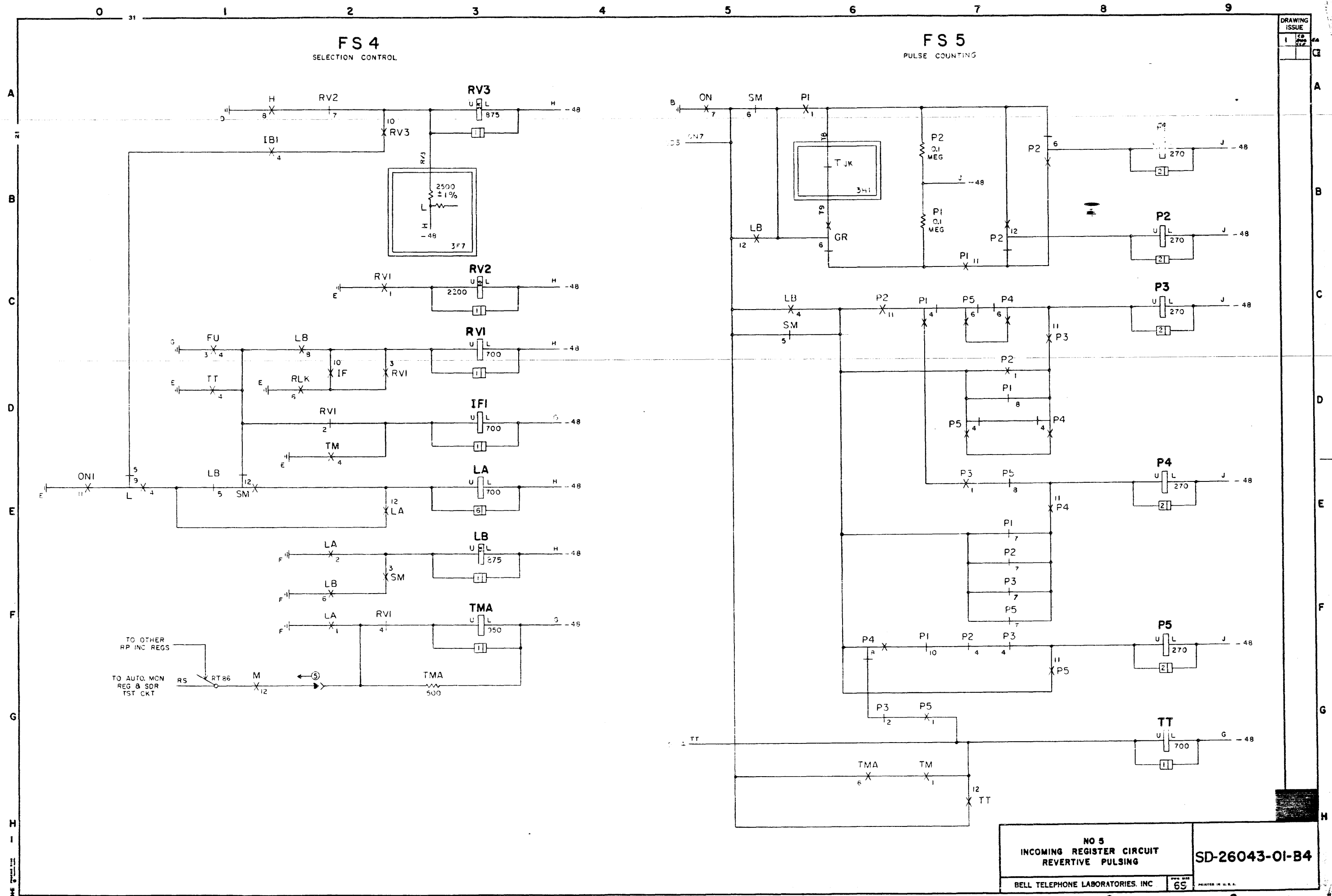
BELL TELEPHONE LABORATORIES, INC.

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FS3 TIP AND RING CONTROL

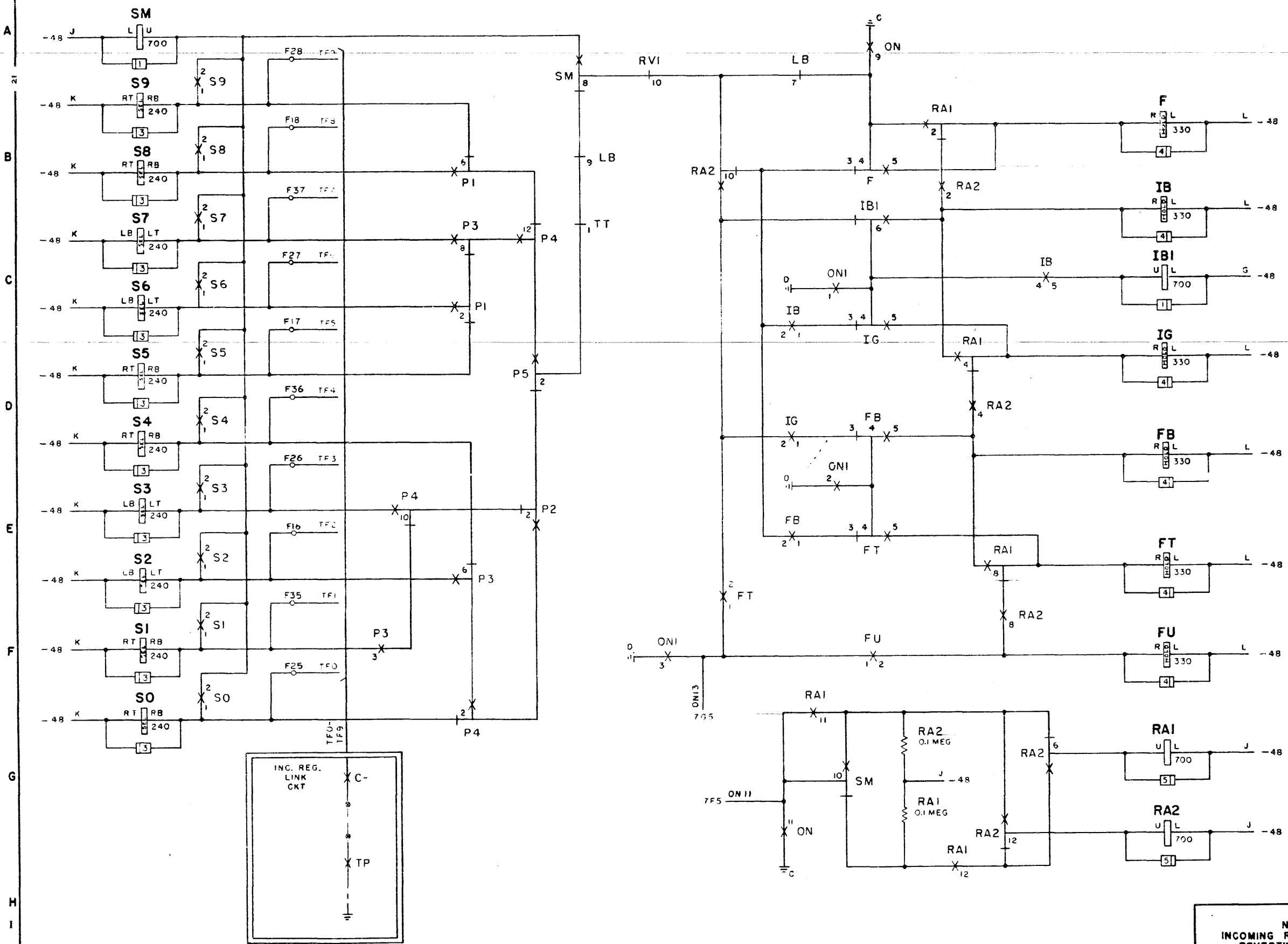
DRAWING
ISSUE
1
2A
5AR

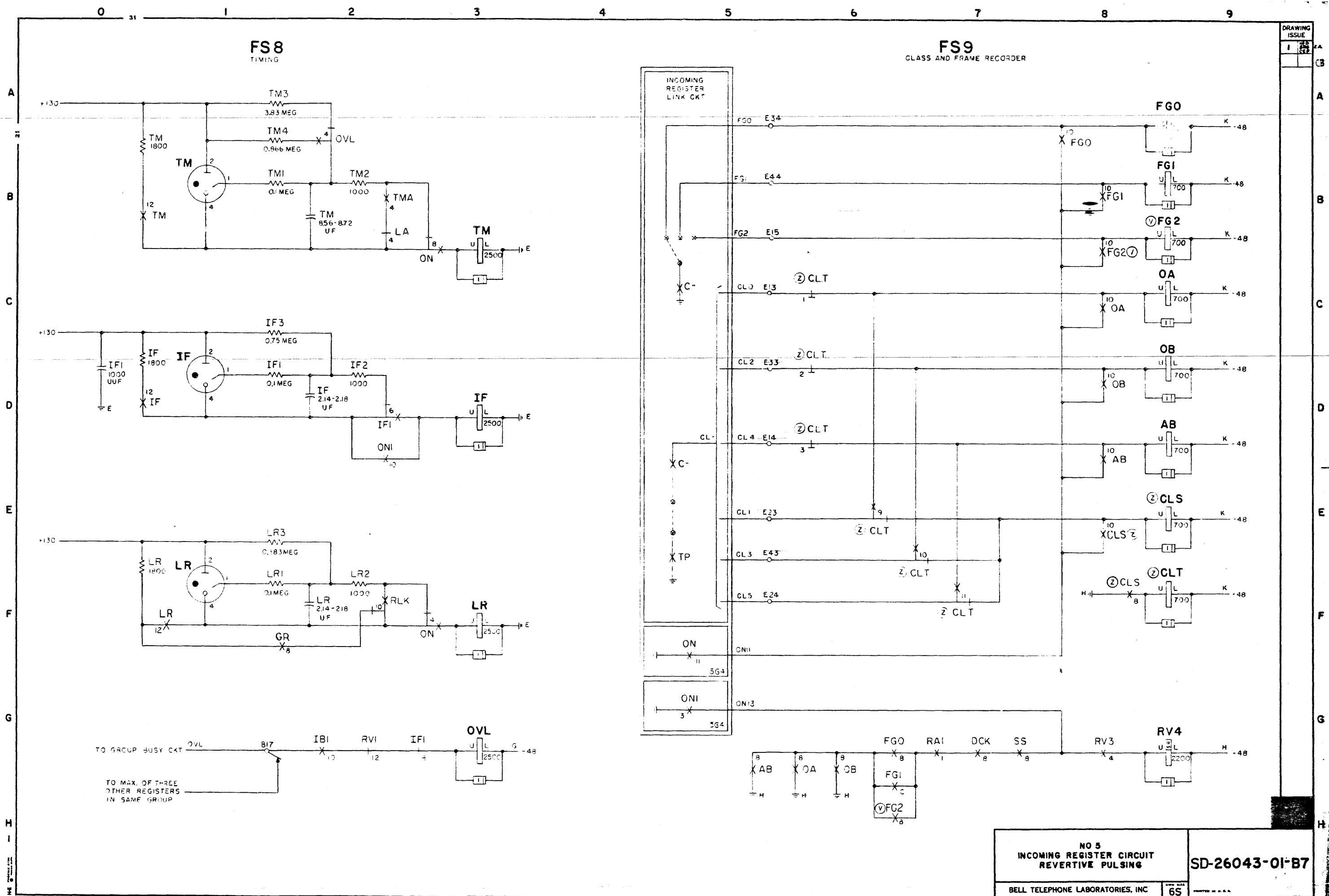




0 1 2 3 4 5 6 7 8 9

DRAWING
ISSUE
1





F



APP FIG.1

RELAY																							DESIG					
DESIG	CK	H				IB1		IF		IF1		LR		MB		MRL		ON		ON1		OVL		RB		CODE		
CODE	AF60	AF32				AF32		AF13		AF50		AF13		AF63		AF519		AFB2		AJ3		AF505		AF24		OPTION		
OPTION																												
	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC		
12			EMB	1G4	EMB		EM	7D0			EM	7F0			M		M	EM		EMB	1C7			M	8F2	12		
11															M		M	5G4	EM	4E0			M	1E4	11			
10	M	1G4	EBM		EBM	7G2	M	4D2	M		M				M		M		EBM	7D2			M	2C2	10			
9													B				M	5A5	M	1E8			M	2C2	9			
8	EBM	7G7	EBM	4A1	EBM	6B1	EBM		8M	7G3	EBM		B	8B1	B	8D3	B	6B1	M	4A5			EBM		M	2C2	8	
7						B	3E6				B		B	6B1	B	8D3	B	6B1	M	4A5			EBM		M	2C2	7	
6	EMB	1H4	EMB	1G4	EMB	5B5	EMB	B	3E6	8M	7D2	EMB	B	6A1	EMB	1B7	8M	1B6	M	3F4	M	1D5		EBM		M	2B2	6
5																			M	3F4	M	1D5		EBM	7A2	M	2B2	5
4	M	6A1	EBM	3G8	EBM	4B1	M		M			M	1C3	M			M		EBM	7F2	EBM		EBM	7A2	M	2B2	4	
3																	M	1E7	M	1H3	8M	5F4		M	2B2	3		
2			EBM	1D7	EBM		M	2D6					M				M		M	1E5	EBM	5E5		M	2B2	2		
1							M	3E4				M					M		M	1B3	8M	5C5		M	2A2	1		
COIL		1G4		1G8		5C7		7D3		4D3		7F3		6C3		2B5		1B8		1E8		7G5		1B8	COIL			

RELAY		R81		RLK		RV1		RV2		RV3		RV4		RV5		TC1		TC2		TM		TMA		TRL		DESIG
CODE		AF34		AF54		AF100		AJ27		AG42		AG8		AJ33		AF68		AF82		AF13		AF110		AF48		CODE
OPTION																										OPTION
X		CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	X
12	M			M		EMB	7G2	EM		EMB	3E4	EMB		M	1C4			EM	1D7	EM	7B0	B	2D5	M		11
11	M		1E4			M												M	2B6							12
10	M			BM	7F2	EBM	5A4	M		M	4A2	EBM	3F4	M	3F5	M	1D7	M		M	8D2	EBM		BM		10
9						M		B		B								M						B		9
8	M			BM		EBM	3E5	EBM	3E5	M		EBM	3D4	M	3D5	EBM	2B7	EBM	1D5	EBM	2C6	EBM		BM		8
7	B			B	2E2			B	4A2	B		B						M	1F5	B				B		7
6	M		2E2	BM	a	EMB	3E5	EMB		EMB	3E4	EMB	1D6	M		EMB		EMB	a	EMB		EMB	4G8	BM		6
5				B	1E4			B		B								M	B					B		5
4	M		2D2	BM		EBM	4F2	EBM	3E5	M	7G8	EBM		M		M	1C4	EBM	3E8	M	4D2	EBM	7B2	BM		4
3	M		2D2				4D2											M	8B2	M	8D2			M	3E8	3
2	M		2D2	M		EBM	4D2	M				EBM	1C4	M	1E6			M	8B1	M	4G7			M	1E7	2
1	M		2D2			M	4C2					M						M	1D8		7B5		4F3	B	8B1	1
COIL	X	1C8	X	1D8	X	4C3	X	4C3	X	4A3	X	7G9	X	1C4	X	1C4	X		a	2B7				2C5	COIL	
				a	3G8																					
					4D2																					
																								</		

RELAY		TT																						DESIG	
CODE		AF88																						CODE	
OPTION																								OPTION	
X		CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	X	
12		M	4H7																						12
11		B																							11
10		M																							10
9		B	207																						9
8		BM	246																						8
7		B	681																						7
6		BM	3G6																						6
5		B																							5
4		M	4D1																						4
3		B																							3
2		M	3G7																						2
1		B	5C3																						1
COIL			4G9	X		X		X		X		X		X		X		X		X		X		X	COIL

DESIG CODE																						DESIG CODE	OPTION
OPTION		CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC		
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	

CAPACITOR			LAMP			NETWORK			RESISTOR		
DESIG	LOC	CODE	DESIG	LOC	CODE	DESIG	LOC	CODE	DESIG	LOC	CODE
IF	7D2	4390A				CO	1C3	185A	RB1	1C8	185A
IF1	7D0	KS-13368, L3 1000 UUF	L	3E9	11B (RES)	DCK	1H4	185A	RLK	1E8	185A
		OR	SM	1G4	13J (RES)	H	1G8	185A	RV1	4D3	185A
		KS-13367, L30, 1000 UUF				IF1	5C7	185A	RV2	4C3	185A
						IF	7D3	185A	RV3	4A3	185A
						IF1	4D3	185A	RV4	7G9	185A
LR	7F2	4390A				LK	1E3	185A	RV5	1C4	185A
[2] TM	7B2	4370A				LR	7F3	185A	TC1	1B4	185A
						MRL	2B5	185A	TC2	1D8	185A
						ON	1B8	185A	TMA	7C3	185A
						ON1	1F8	185A	TRL	2D5	185A
						OVL	7G3	185A	TT	4G9	185A
						RB	1C8	185A			

LR	7F0	18EY
LR1	7F1	KS-19150, L3
		0.1 MEG
LR2	7F2	KS-19150, L3
		1000
LR3	7E1	145A, 0.363 MEG
R	3F5	18AC

ELECTRON TUBE

DESIG	LOC	CODE	DESIG	LOC	CODE
(5)RB0-4	2A2-	18AG	IF	7D1	318CC
(5)RB5-9	2B2-	18AG	LR	7F1	313CC
	2C2-		TM	7B1	313CC
(5)RB10-14	2D2-	18AG			
	2E2-				
T	3D5	18AC			
TC1	1B5	18KE			
TM	7A0	18EY			
TM1	7B1	KS-19150, L3			
		0.1 MEG			
TM2	7B2	KS-19150, L3			
		1000			
TM3	7A1	145A, 3.83 MEG			
TM4	7A1	145A, 0.866 MEG			
TMA	4C3	18AC			

INCOMING REGISTER CIRCUIT
REVERTIVE PULSING

BELL TELEPHONE LABORATORIES, INC

SD-26043-01-C1

6S

0 1 2 3 4 5 6 7 8 9

APP FIG. 5

APP FIG. 6

A

B

C

D

E

F

G

H

A

B

C

D

E

F

G

H

RELAY																						DESIG
DESIG	M																					CODE
CODE	AF501																					CODE
OPTION		CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	OPTION
12	BM	NG1																				12
11	M	BA2																				11
10	BM	BB2																				10
9	M	BB2																				9
8	BM	BE2																				8
7	M	BB2																				7
6	BM	BE2																				6
5	M	BC2																				5
4	BM	BB2																				4
3	M	BB2																				3
2	BM	BE2																				2
1	M	BE2																				1
COIL	BC2																					COIL

RELAY																						DESIG
DESIG	M																					CODE
CODE	AF57																					CODE
OPTION		CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	OPTION
12	M	BE2																				12
11																						11
10	M	BE2																				10
9																						9
8	EBM																					8
7																						7
6	EBM	BE2																				6
5																						5
4	M	BD2																				4
3																						3
2	M	BD2																				2
1																						1
COIL	BE2																					COIL

DESIG																						DESIG
CODE																						CODE
OPTION																						OPTION
12		CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	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

DESIG																						DESIG
CODE																						CODE
OPTION																						OPTION
12		CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	CONT	LOC	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

CIRCUIT NOTES:

101.	DESIG	FUSE AMP	POTENTIAL	ONE PER	TERM. DESIG						
		1/2	+130V SIG	APP. FIG. 1							
A	1-1/3	48V SIG	APP. FIG. 1								
B*	1-1/3	48V SIG	CKT.								
C	1-1/3	48V SIG	APP. FIG. 1								
D	1-1/3	48V SIG	APP. FIG. 1								
E	1-1/3	48V SIG	APP. FIG. 1								
F	1-1/3	48V SIG	APP. FIG. 1								
G	1-1/3	48V SIG	APP. FIG. 1, 6								
H	1-1/3	48V SIG	APP. FIG. 1, 2								
J	1-1/3	48V SIG	APP. FIG. 2								
K	1-1/3	48V SIG	APP. FIG. 3, 4								
L	1-1/3	48V SIG	APP. FIG. 3								
A		GROUND	APP. FIG. 1								
B		GROUND	APP. FIG. 1								
C		GROUND	APP. FIG. 1								
D		GROUND	APP. FIG. 1								
E		GROUND	APP. FIG. 1, 5, 6								
F		GROUND	APP. FIG. 2								
G		GROUND	APP. FIG. 3								
H		GROUND	APP. FIG. 4								
*FUSE B PROVIDES BATTERY SUPPLY DESIGNATED "B" IN INCOMING REGISTER LINK CKT.											
<table><tr><th>BATTERY SYMBOL</th><th>VOLTAGE RANGE</th></tr><tr><td>-48</td><td>45-50V</td></tr><tr><td>+130</td><td>125-135V</td></tr></table>						BATTERY SYMBOL	VOLTAGE RANGE	-48	45-50V	+130	125-135V
BATTERY SYMBOL	VOLTAGE RANGE										
-48	45-50V										
+130	125-135V										

102.	FEATURE OR OPTION	APP. FIG.	APP. OR WIR	QUANTITY
	REGISTER CONTROLLER	1		1 PER REG
	REVERTIVE PULSE COUNTER	2		1 PER REG
	REVERTIVE PULSE REGISTER	3		1 PER REG
	CLASS AND TRUNK FRAME RECORDER	4	V	1 PER REG
	WHERE THERE ARE MORE THAN 20 TRUNK LINK FRAMES			
	WHERE DISCRIMINATION IS MADE BY LOW AND HIGH IN-COMING-GROUP SELECTION BETWEEN		Y	
	PHYSICAL AND THEORETICAL NUMBERS OF A SINGLE OFFICE MARKER GRP			
	OFFICE A-AND-OF-FICE B OF A-MULTI OFFICE MARKER GROUP		X	
	LAST REGISTER IN GROUP		W	
	WHEN THIS CKT. FUNCTIONS WITH THE			
	AUTOMATIC MONITOR REGISTER-AND-SENDER TEST CIRCUIT	5		1 PER REG
	INCOMING REGISTER TEST CKT	6		
	WHERE REGISTER SERVES SPECIAL TRUNKS (NO TEST FROM "A" BOARD)		Z	
	AND REGISTER IS ASSOCIATED WITH A MARKER CONNECTOR WHICH HANDLES WIDEBAND "PICTUREPHONE" CALLS	YES	Q	
		NO	R	

103.	NETWORK NO.	RES IN OHMS	CAP. IN UF
	1	470	0.11
	2	120	0.3
	3	150	1
	4	150	0.5
	5	560	1
	6	470	0.5

104.	CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT		
					STD	A&M	M.D
	1			105		T	
	30	S	NONE	106	S		
	70	R,Q	R	102	R,Q		
	80	CAPACITOR			KS-13367, L30	KS-13368, L3	
		JACK			284AM	284A	

105. OPTION "T" MUST BE PROVIDED WHERE A REGISTER IS ADDED TO AN EXISTING OFFICE HAVING U-TYPE RELAY R P. INCOMING REGISTERS THAT ARE NOT WIRED FOR BALANCED REVERTIVE PULSING AND THAT FUNCTION WITH THE AUTO. MON REGISTER AND SDR TEST CKT.

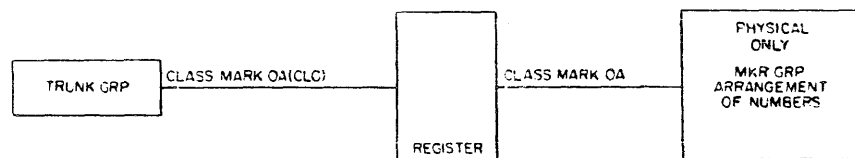
106. OPTION S MUST BE PROVIDED WHERE REGISTER FUNCTIONS IN A MARKER GROUP ARRANGED FOR 4 WIRE SWITCHING.

WORKING LIMITS SELECTIONS	
MAX EXT CKT LOOP RES	3115 INCLUDING NOT MORE THAN .32 MILES OF CABLE
MIN EXT CKT LOOP RES	900 EXCLUSIVE OF RELAYS IN ORIG SENDER
MIN INS RES	30,000

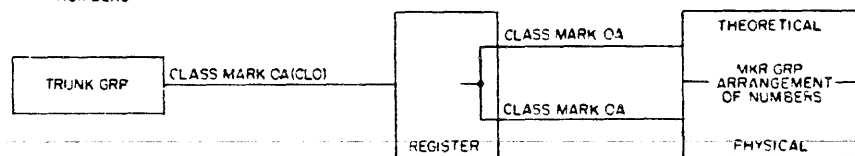
INFORMATION NOTES:

301 USE OF TRUNK CLASS RELAYS IN CONNECTION WITH VARIOUS MKR GROUP ARRANGEMENTS OF NUMBERS

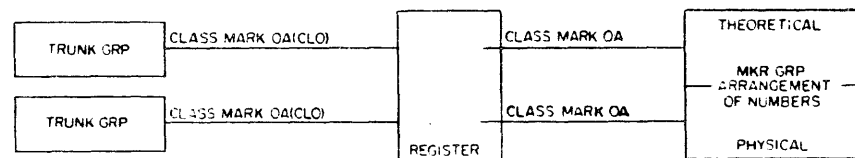
(A) SINGLE OFFICE MKR GRP WITH PHYSICAL NUMBERS ONLY



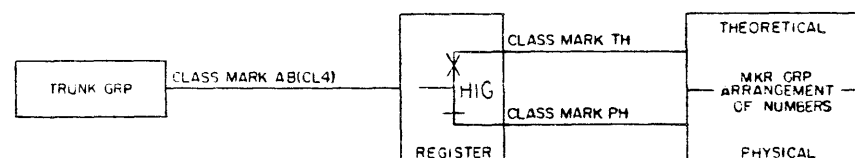
(B) SINGLE OFFICE MKR GRP WITH PHYSICAL AND THEORETICAL NUMBERS



(a) NO DISCRIMINATION BETWEEN PHYSICAL AND THEORETICAL NUMBERS

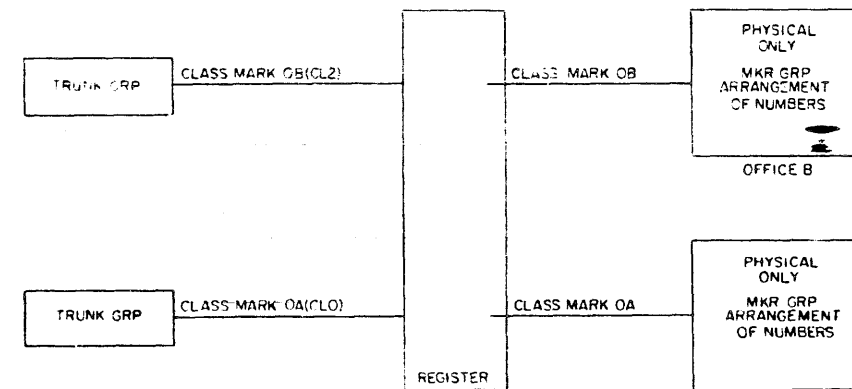


(b) DISCRIMINATION BETWEEN PHYSICAL AND THEORETICAL NUMBERS BY INDIVIDUAL TRUNK GRP

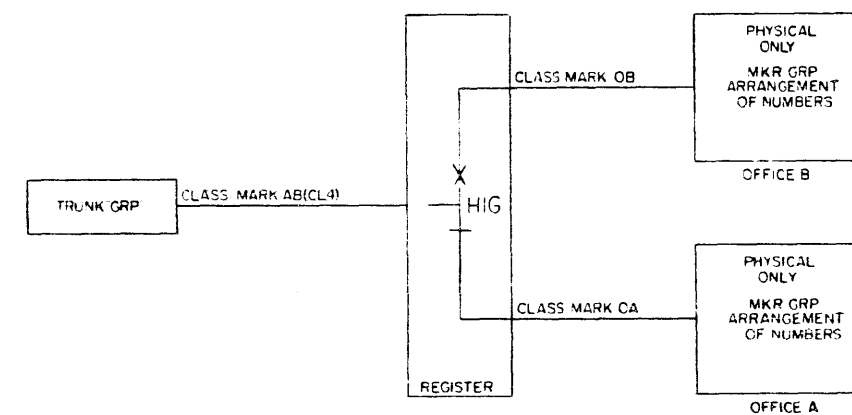


(c) DISCRIMINATION BETWEEN PHYSICAL AND THEORETICAL NUMBERS BY LOW AND HIGH INCOMING GROUP SELECTION

301(2) MULTI-OFFICE MKR GRP WITH PHYSICAL NUMBERS ONLY IN OFFICE A AND PHYSICAL NUMBERS ONLY IN OFFICE B



(a) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B BY INDIVIDUAL TRUNK GRP

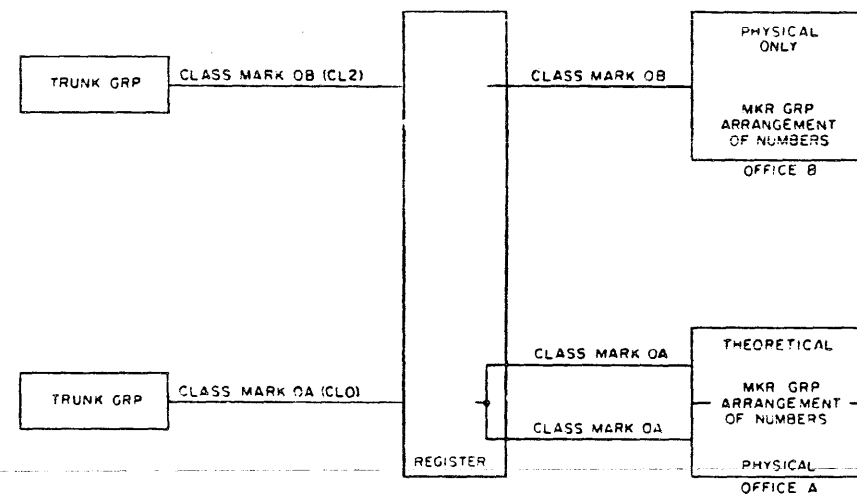


(b) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B BY LOW AND HIGH INC GRP SELECTION

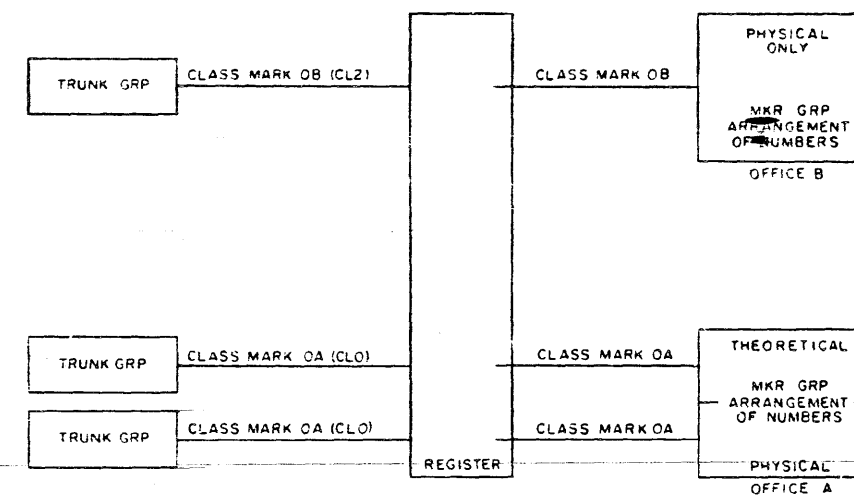
31
INFORMATION NOTES CONT.

301 D) MULTI-OFFICE MKR GRP WITH PHYSICAL AND THEORETICAL NUMBERS IN OFFICE A AND PHYSICAL NUMBERS ONLY IN OFFICE B

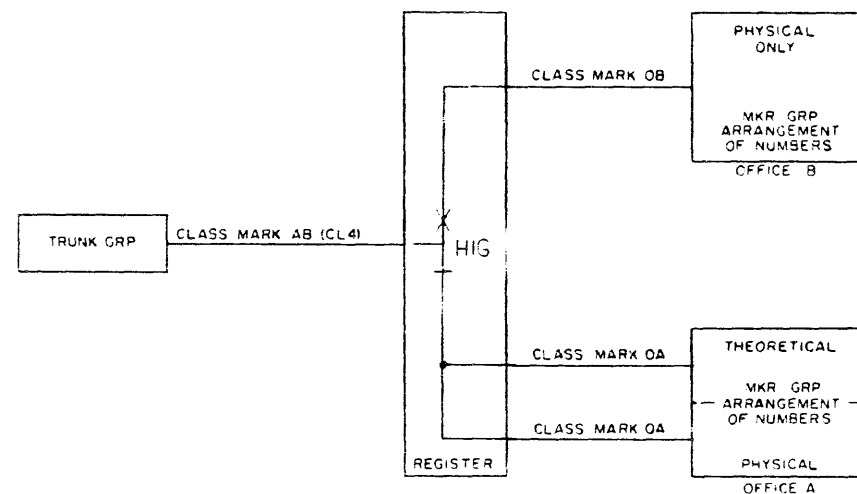
DRAWING
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3



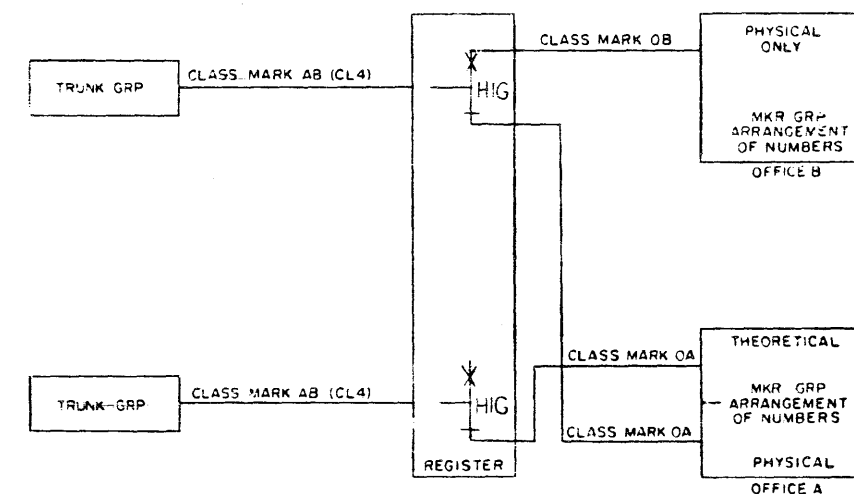
(a) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B BY INDIVIDUAL TRUNK GRPS AND NO DISCRIMINATION BETWEEN PHYSICAL AND THEORETICAL NUMBERS



(c) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B BY INDIVIDUAL TRUNK GRP AND DISCRIMINATION BETWEEN PHYSICAL AND THEORETICAL NUMBERS BY INDIVIDUAL TRUNK GRPS



(b) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B BY LOW AND HIGH INC GRP SELECTION AND NO DISCRIMINATION BETWEEN PHYSICAL AND THEORETICAL NUMBERS



(d) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B BY LOW AND HIGH INC GRP SELECTION AND DISCRIMINATION BETWEEN PHYSICAL AND THEORETICAL NUMBERS BY SEPARATE TRUNK GRPS

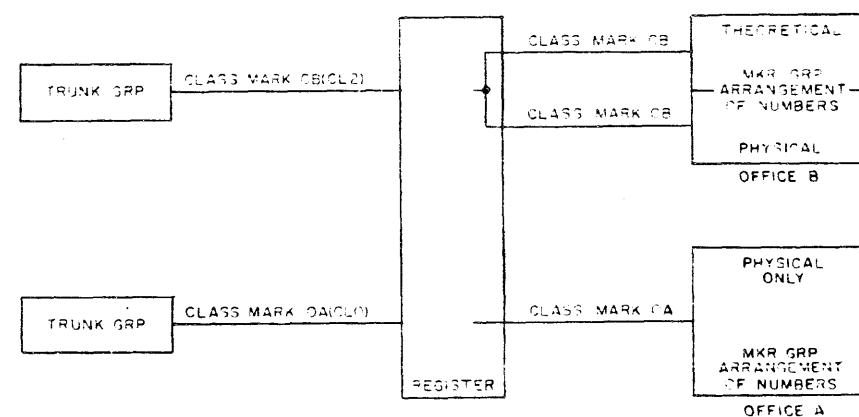
SD-26043-01-D3

NO. 5
INCOMING REGISTER CIRCUIT
REVERTIVE PULSING

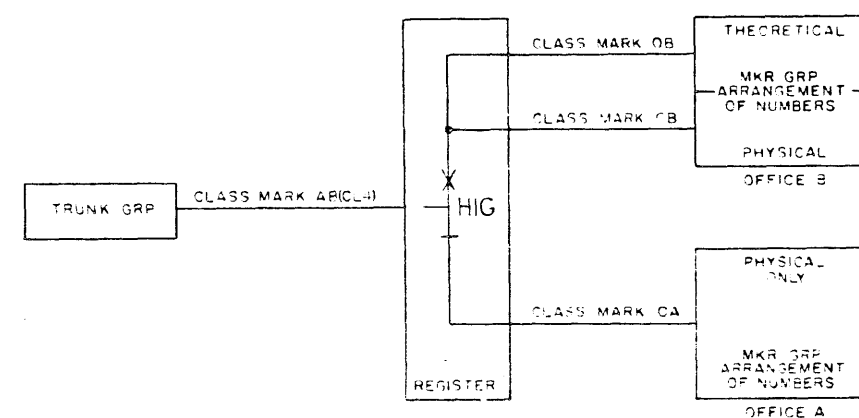
BELL TELEPHONE LABORATORIES, INC.

SD-26043-01-D3

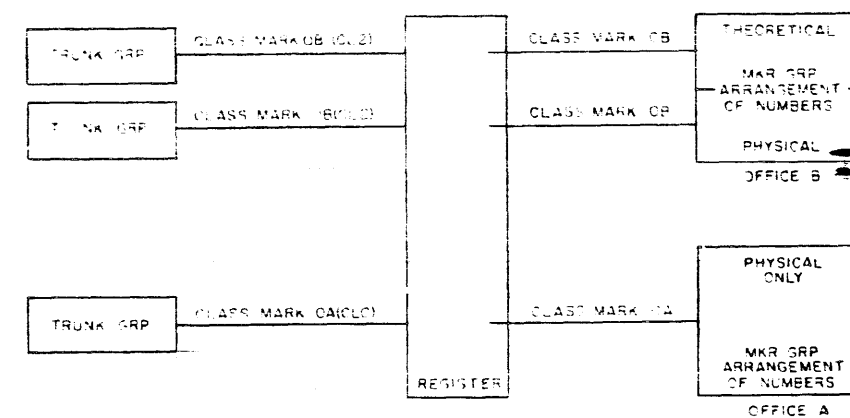
INFORMATION NOTES CONT.
30(E) MULTI-OFFICE MKR GRP WITH PHYSICAL NUMBERS ONLY IN
OFFICE A AND PHYSICAL AND THEORETICAL NUMBERS IN
OFFICE B



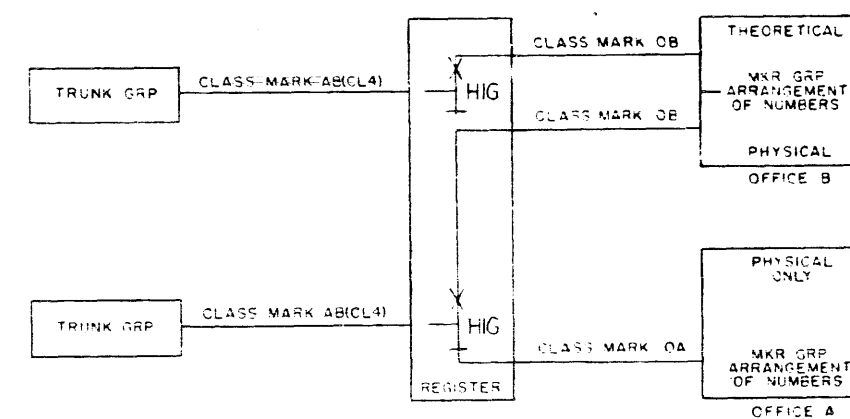
(a) IDENTIFICATION BETWEEN OFFICE A AND
OFFICE B BY INDIVIDUAL TRUNK GRPS
AND NO DISCRIMINATION BETWEEN
PHYSICAL AND THEORETICAL NUMBERS



(b) IDENTIFICATION BETWEEN OFFICE A AND
OFFICE B BY LOW AND HIGH INC GRP
SELECTION AND NO DISCRIMINATION BETWEEN
PHYSICAL AND THEORETICAL NUMBERS



(c) IDENTIFICATION BETWEEN OFFICE A AND
OFFICE B BY INDIVIDUAL TRUNK GRPS AND
DISCRIMINATION BETWEEN PHYSICAL AND
THEORETICAL NUMBERS BY INDIVIDUAL
TRUNK GRPS



(d) IDENTIFICATION BETWEEN OFFICE A AND
OFFICE B BY LOW AND HIGH INC GRP
SELECTION AND DISCRIMINATION
BETWEEN PHYSICAL AND THEORETICAL
NUMBERS BY SEPARATE TRUNK GRPS

DRAWING
ISSUE

NO. 5
INCOMING REGISTER CIRCUIT
REVERTIVE PULSING

BELL TELEPHONE LABORATORIES, INC.

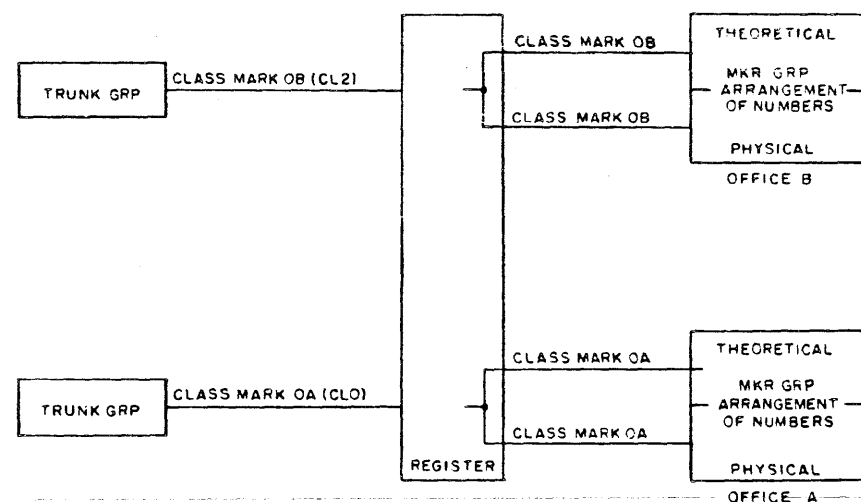
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SD-26043-01-D4

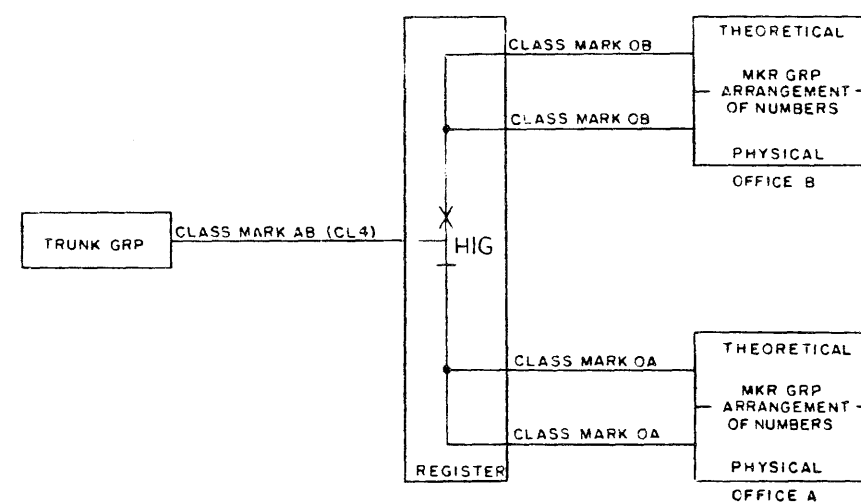
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31
INFORMATION NOTES CONT.

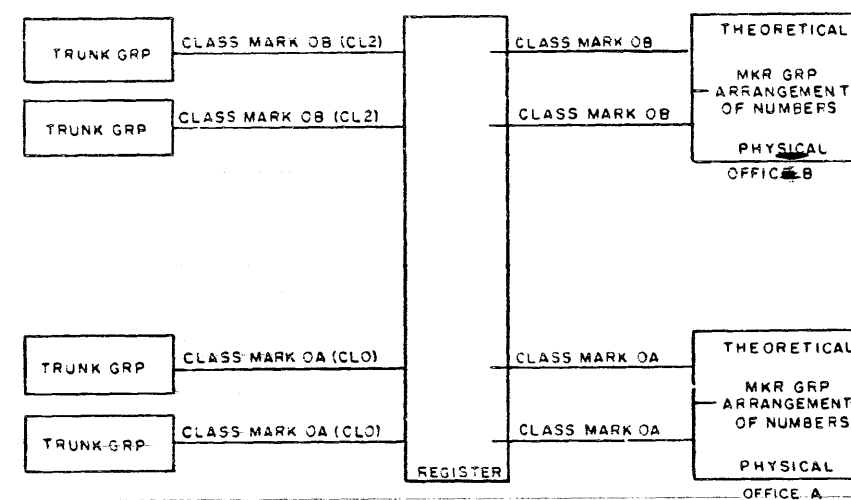
301(F) MULTI-OFFICE MKR GRP WITH PHYSICAL AND THEORETICAL NUMBERS
IN OFFICE A AND PHYSICAL AND THEORETICAL NUMBERS IN OFFICE B



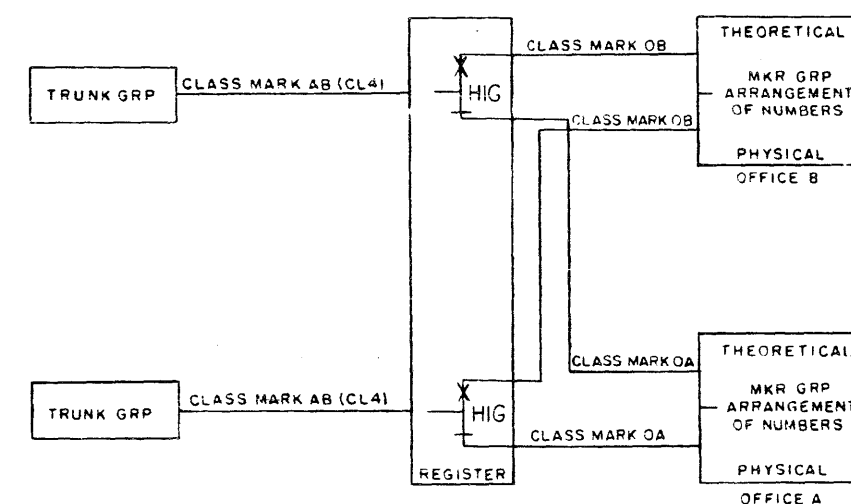
(a) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B
BY INDIVIDUAL TRUNK GRPS AND NO DISCRIMINATION
BETWEEN PHYSICAL AND THEORETICAL NUMBERS



(b) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B
BY LOW AND HIGH INC GRP SELECTION AND NO
DISCRIMINATION BETWEEN PHYSICAL AND
THEORETICAL NUMBERS.



(c) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B
BY INDIVIDUAL TRUNK GRPS AND DISCRIMINATION
BETWEEN PHYSICAL AND THEORETICAL NUMBERS
BY INDIVIDUAL TRUNK GRPS.



(d) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B
BY LOW AND HIGH INC GRP SELECTION AND
DISCRIMINATION BETWEEN PHYSICAL AND THEORETICAL
NUMBERS BY SEPARATE TRUNK GRPS.

DRAWING
ISSUE
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NO. 5
INCOMING REGISTER CIRCUIT
REVERTIVE PULSING

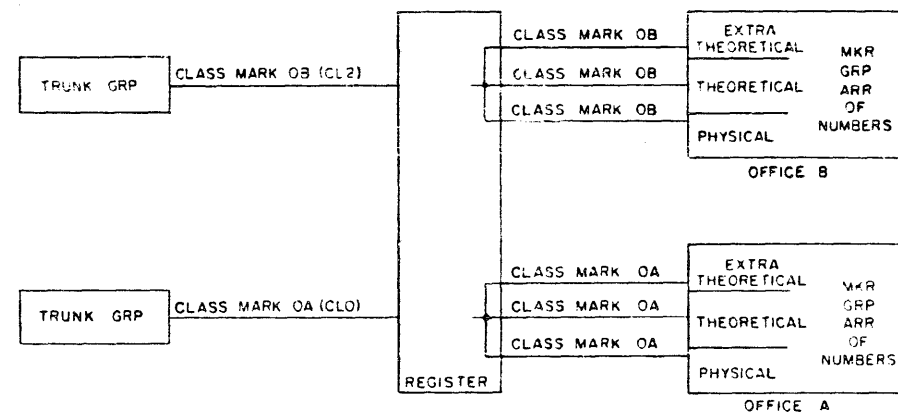
BELL TELEPHONE LABORATORIES, INC.

65

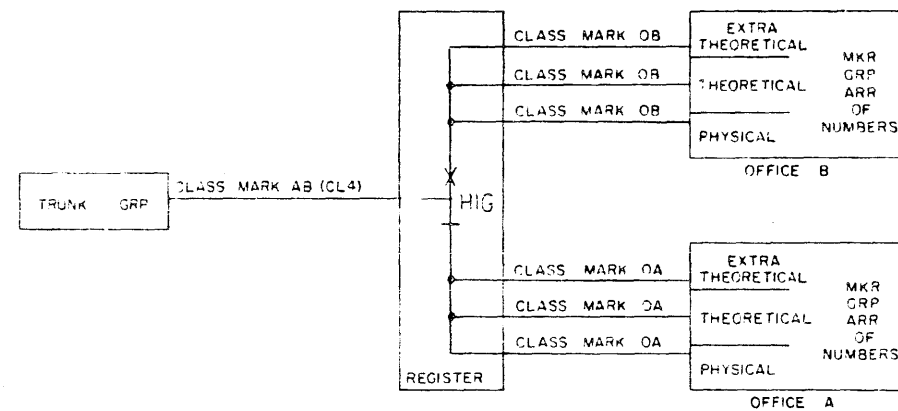
SD-26043-01-D5

INFORMATION NOTES (CONT)

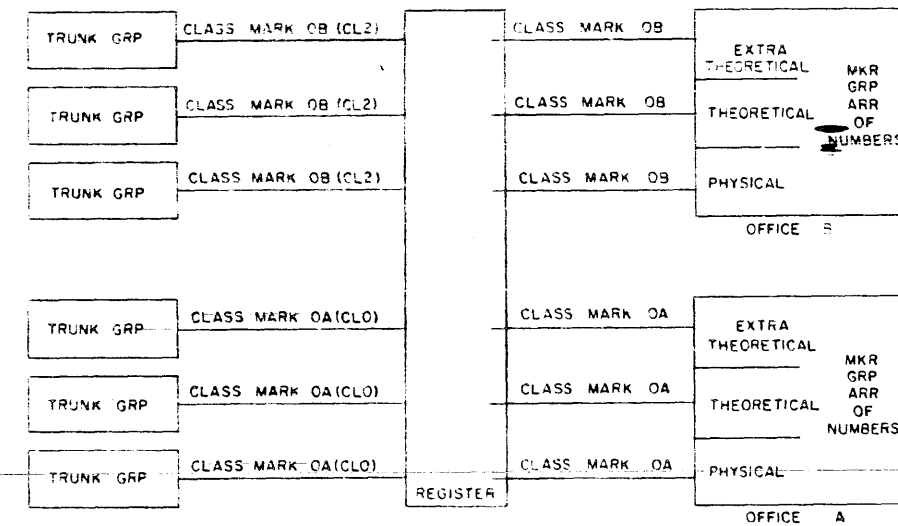
301(G) MULTI-OFFICE MKR GRP WITH PHYSICAL, THEORETICAL AND EXTRA THEORETICAL NUMBERS IN OFFICE A AND PHYSICAL, THEORETICAL AND EXTRA THEORETICAL NUMBERS IN OFFICE B



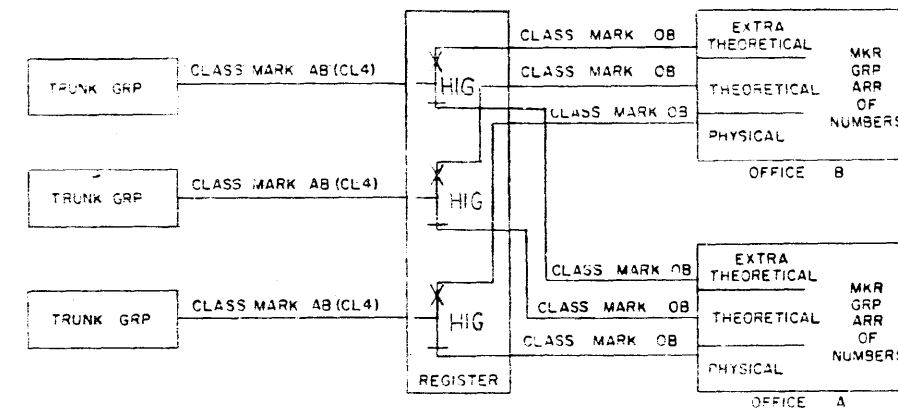
(4) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B BY INDIVIDUAL TRUNK GRPS AND NO DISCRIMINATION BETWEEN PHYSICAL, THEORETICAL AND EXTRA THEORETICAL NUMBERS



(b) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B BY LOW AND HIGH INC GRP SELECTION AND NO DISCRIMINATION BETWEEN PHYSICAL, THEORETICAL AND EXTRA THEORETICAL NUMBERS

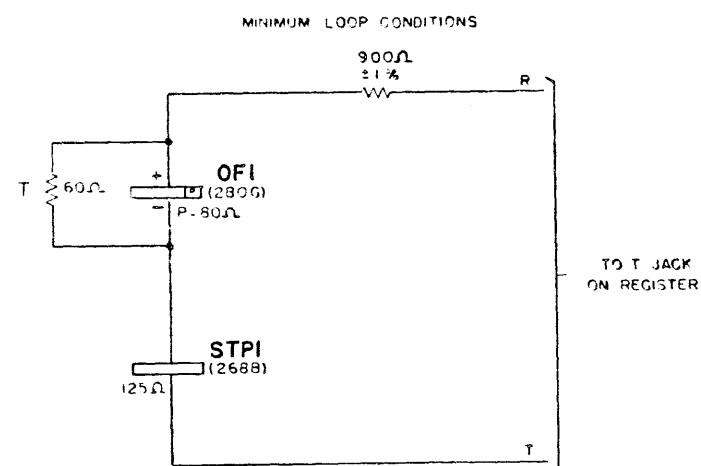
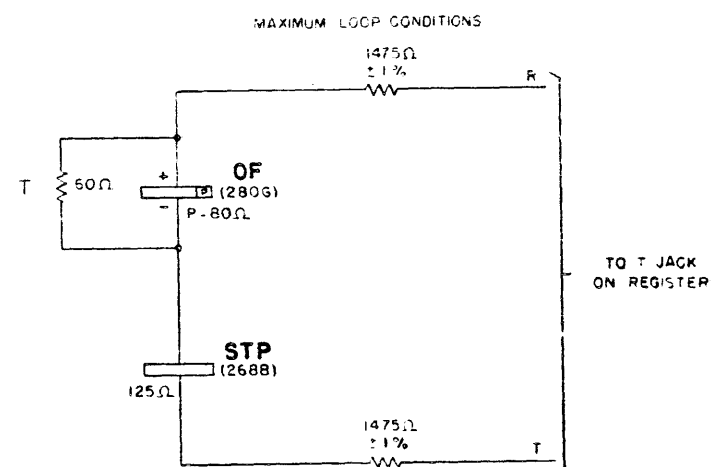


(c) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B BY INDIVIDUAL TRUNK GRPS AND DISCRIMINATION BETWEEN PHYSICAL, THEORETICAL AND EXTRA THEORETICAL NUMBERS BY INDIVIDUAL TRUNK GRPS

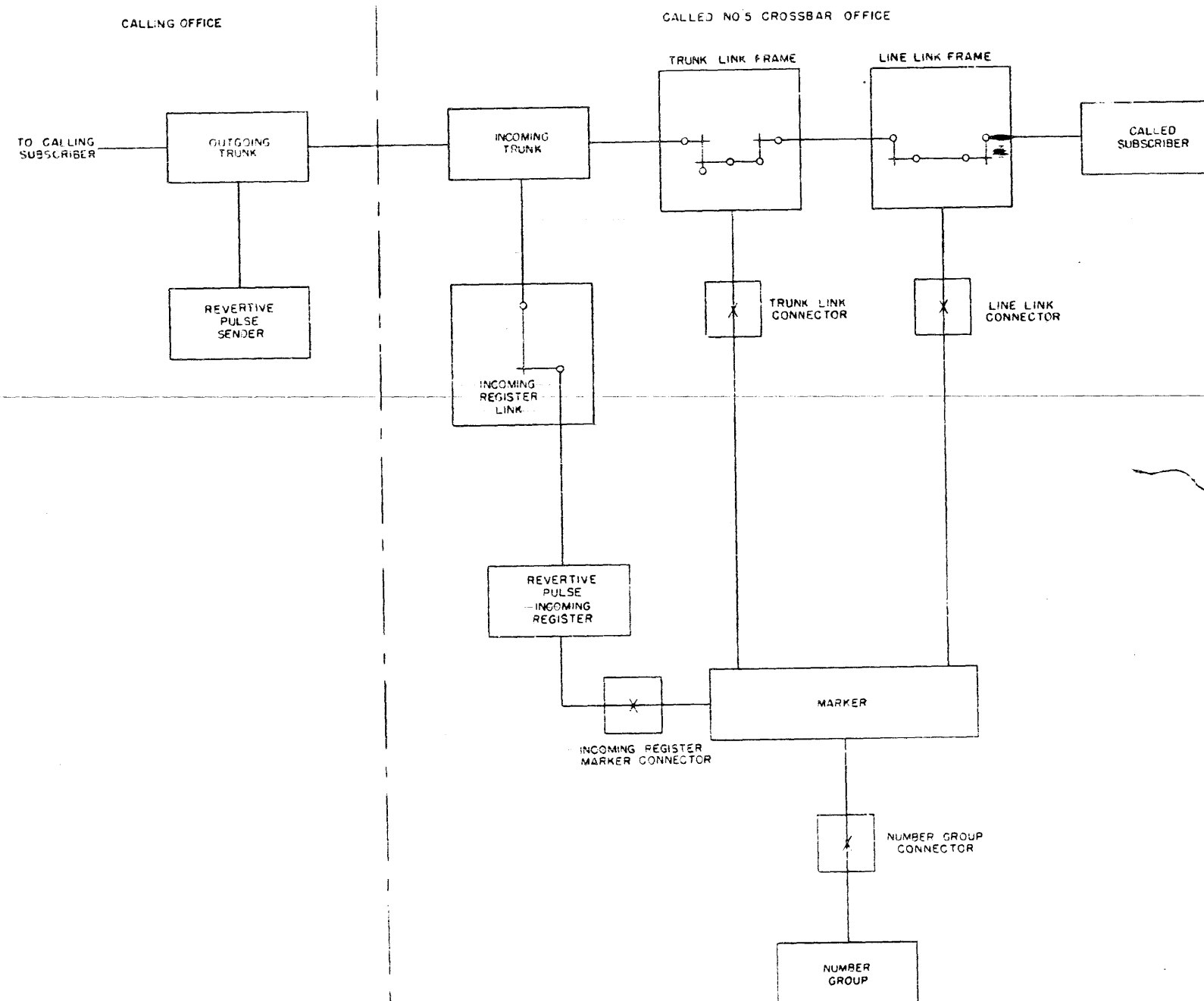


(d) IDENTIFICATION BETWEEN OFFICE A AND OFFICE B BY LOW AND HIGH INC GRP SELECTION AND DISCRIMINATION BETWEEN PHYSICAL, THEORETICAL AND EXTRA THEORETICAL NUMBERS BY SEPARATE TRUNK GRPS

INFORMATION NOTES (CONT.)
 302. MANUFACTURING TEST REQUIREMENTS—LOOP CONDITIONS
 FOR TESTING PULSING SPEED AND PER CENT BREAK.
 (RELAYS TO BE ADJUSTED TO STANDARD REQUIRE-
 MENTS)



303. BLOCK DIAGRAM SHOWING ASSOCIATION OF THE R.P.
 INC. REG. WITH OTHER CKTS. OF THE NO 5 CROSSBAR
 SYSTEM



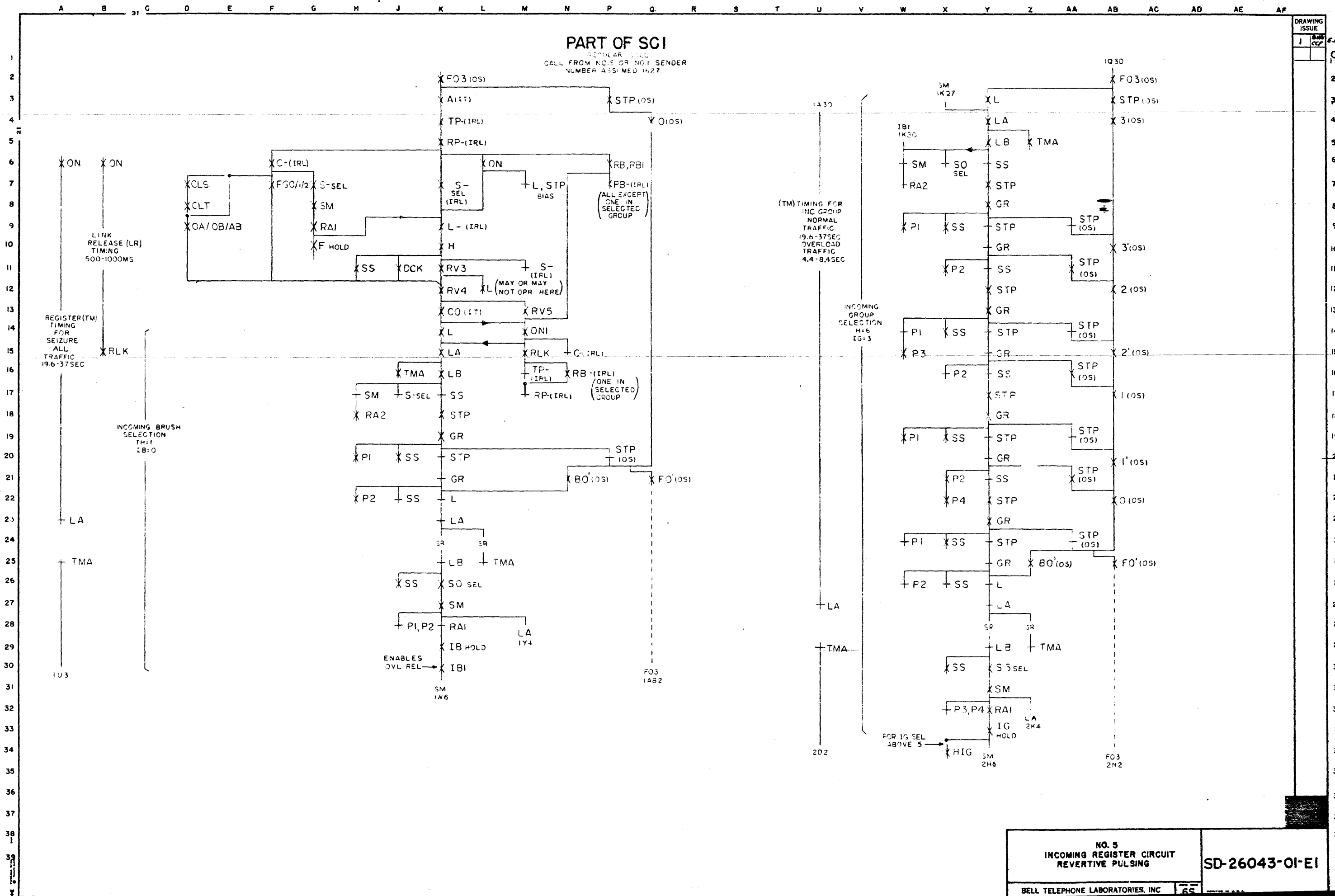
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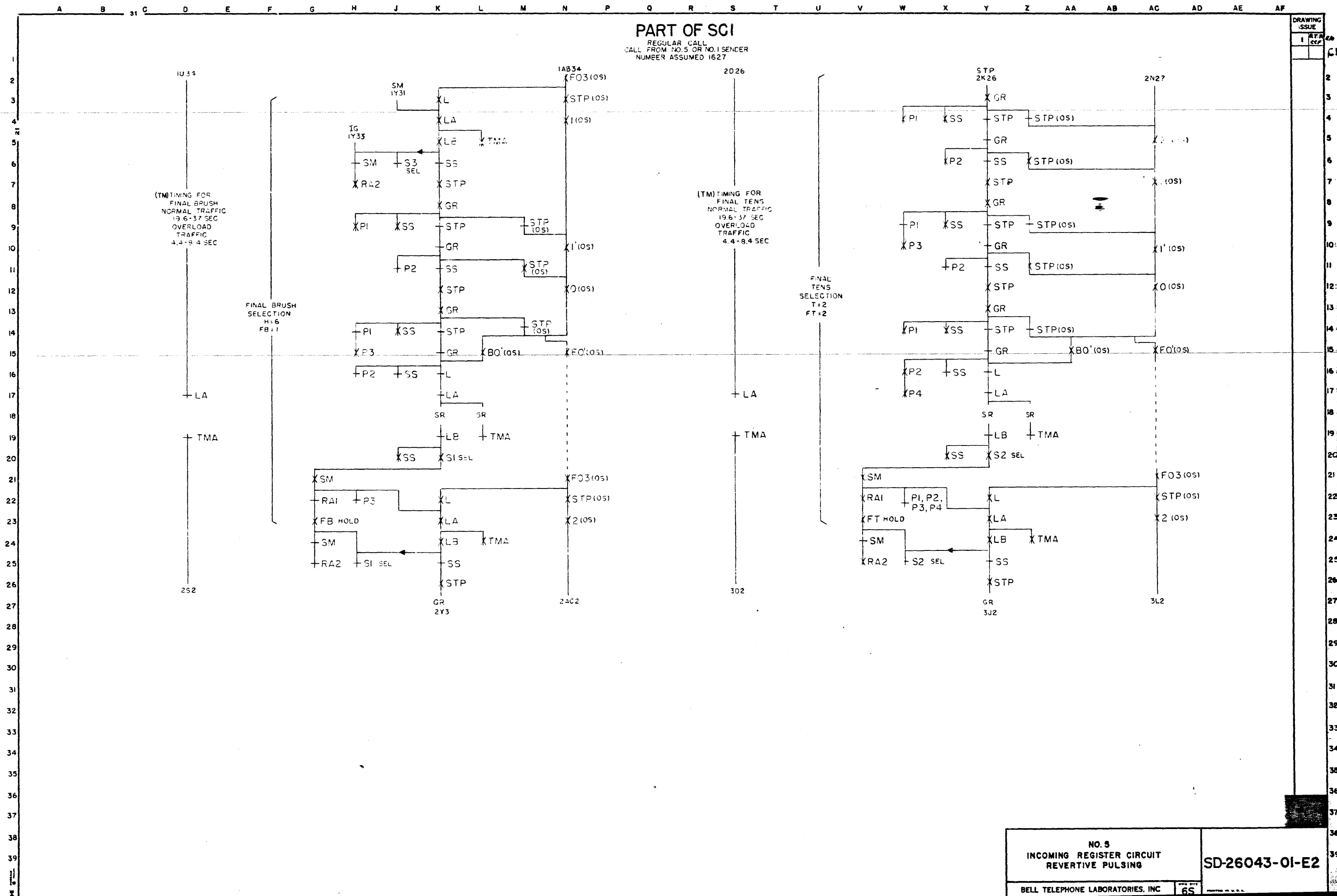
NO. 5
 INCOMING REGISTER CIRCUIT
 REVERTIVE PULSING

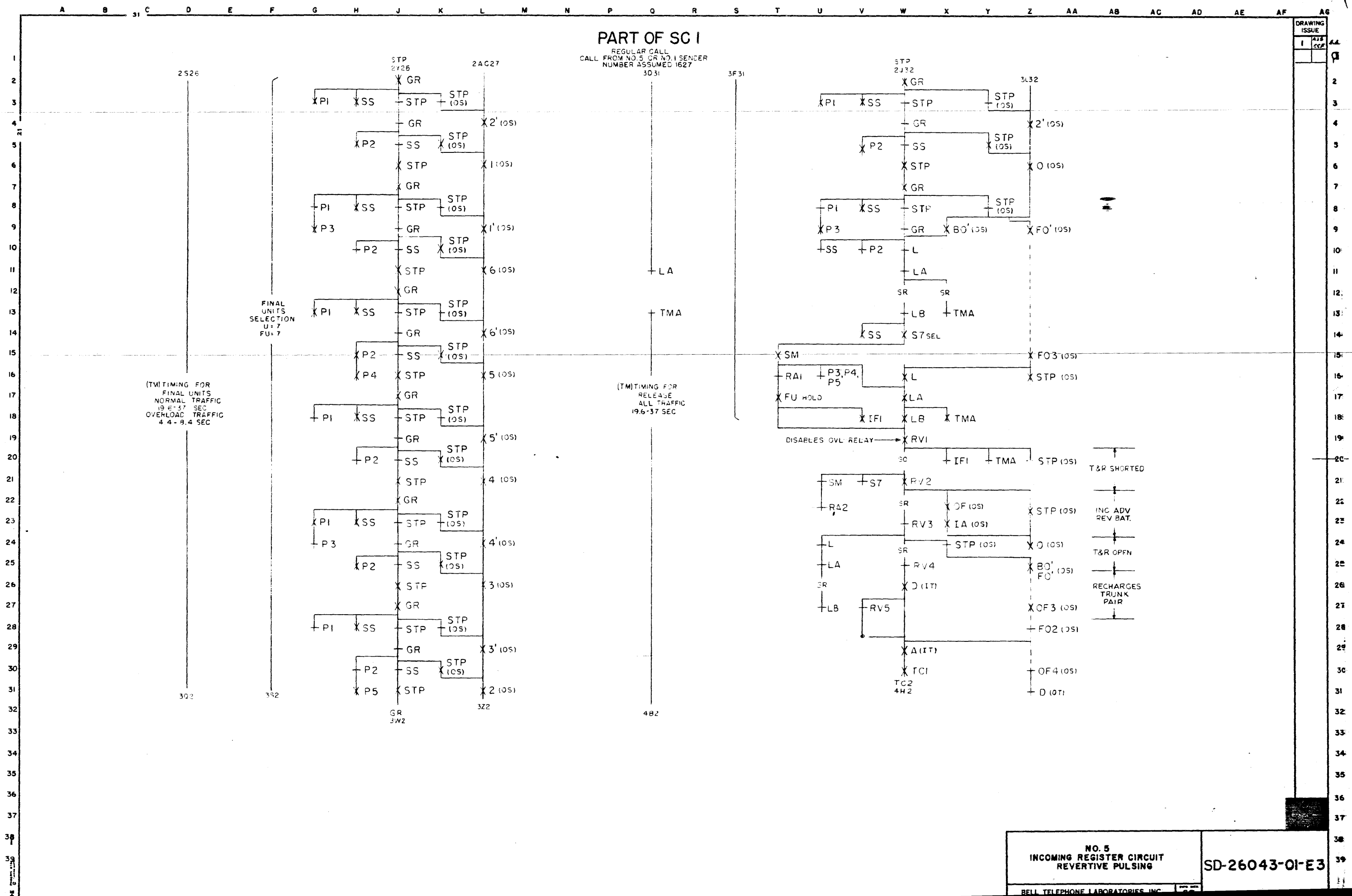
BELL TELEPHONE LABORATORIES, INC.

6S

SD-26043-01-07







PART OF SC1

REGULAR CALL
CALL FROM NO. 5 OR NO. 1 SENDER
NUMBER ASSUMED 1627

TC1
3W30

TC2
RS(MC) TM(MC)
RA(MC) RC(MC)
RB(MC)
MS(MC)
MA(MC)
MB(MC)
MC(MC)

CONNECTS TO MARKER
RELEASE OF REGISTER
D:SI-2(M)

MRL

ON TM(MC) RS(MC) MS(MC)
RA, RB MA, MB
RC(MC) MC(MC)

CLS OA/OB/AB FGO/1/2 ONI TC1 DCK F HOLD LH HOLD (IRL) H

ONL CLT IB FB FT FU HOLD IG HOLD IBI TC2 SS

MRL
RLK RB, RBI
RVI RB-(IRL)
RV2

SC 2 TELL TALE

REVERTIVE COUNT TO 11 PULSES DUE TO
ABANDONMENT OF CALL OR OTHER CAUSE
OR REGISTRATION ON VACANT CROSSPOINTS

START OF 11TH PULSE
GR
REGISTRATION ON
VACANT CROSSPOINTS
FOR IB, IG, OR FB

XPI X SS
STP P3
GR TT

SS HELD
OPERATED X RVI

L (FOR IG, FB, FT, FU) RV2 TMA

SR RV3
SR RV4 LA

D(IT) SR
RV5 LB

A(IT)
TC1
4M23

4H39

TC2

MRL

ON

F HOLD TT ONI TC1 H L- HOLD (IRL),
DCK

-HOLD TC2 SS

MRL

RLK RB, RBI

RVI RB-(IRL)

RV2

SC 3

TM TIMEOUT
FROM ANY RECYCLE POINT

TMA
19.6-37 SEC. NORMAL
4.4-8.4 SEC. OVERLOAD

TM TUBE

TM

TT

SS RVI

SO SR

RV2 TMA

SR

RV3

SR L

RV4 LA

D(IT) SR

RV5 LB

A(IT)

TC1

TC2

MRL

REGISTER RELEASE
AFTER TIMEOUT

ON

ONI TM

IFI TRL TC-LP(JLK)

H ONI TC1 TM F HOLD TT

SS TC2 TO-LP(JLK)

MRL

RB, RBI RLK

RVI RB-(IRL) RVI

RV2

DISABLES
OVL RELAY

0.98-1.9 SEC.

IFI TM TUBE

TO-LP (JLK)

SS

RV1

RV2

RV3

RV4

RV5

RV6

RV7

RV8

RV9

RV10

RV11

RV12

RV13

RV14

RV15

RV16

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RV229

RV230

RV231

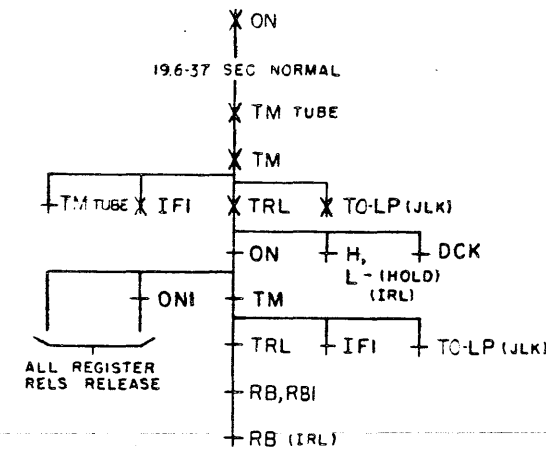
RV232

RV233

RV

SC4

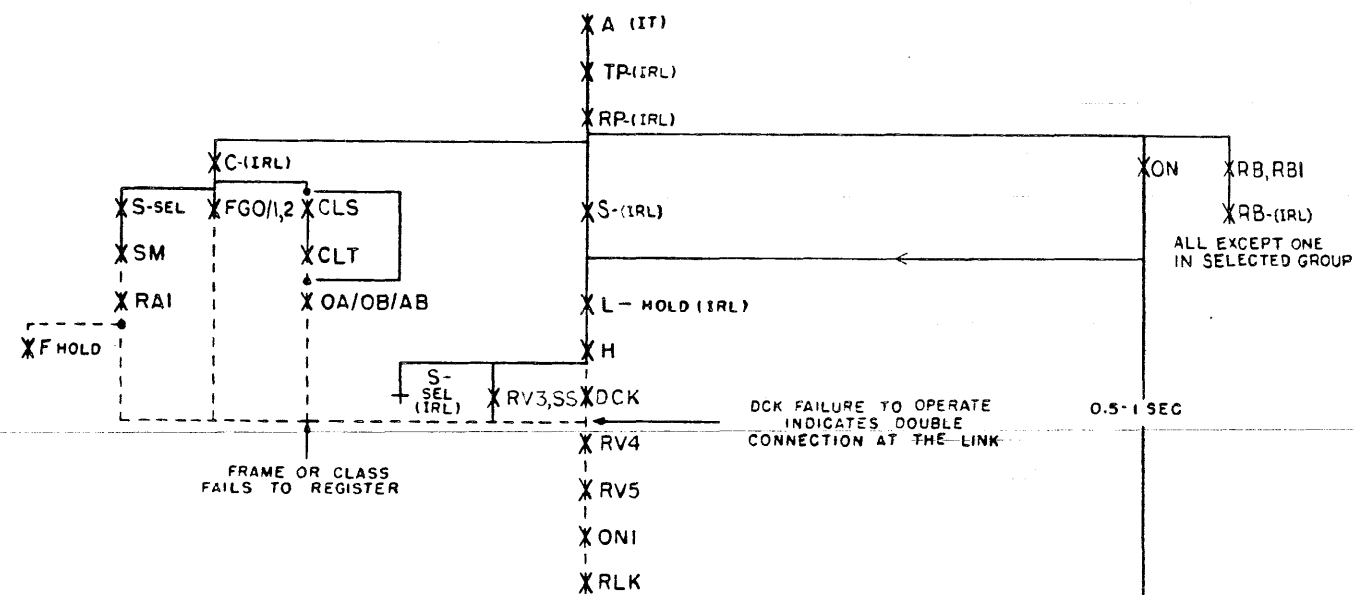
FALSE START WITH NO LOOP CLOSURE



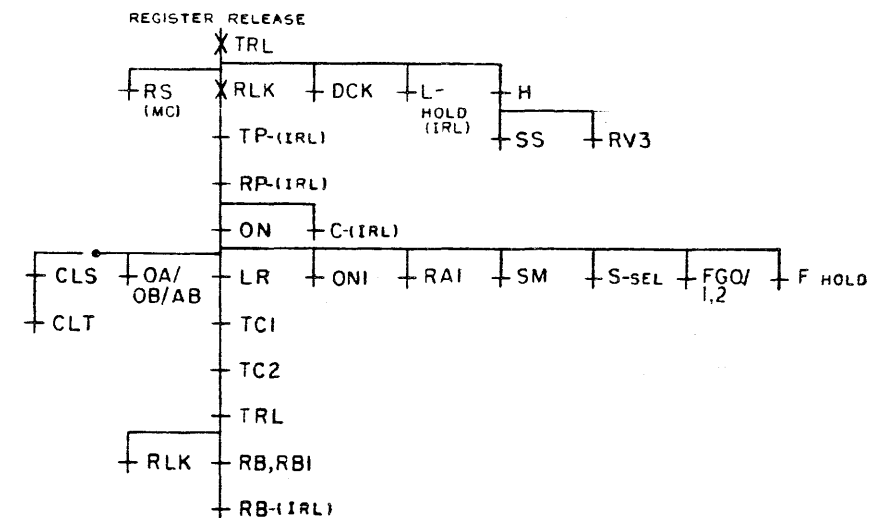
SC5

LINK RELEASE TIMEOUT

LINK FUNCTIONS FAIL TO COMPLETE PREVENTING OPERATION OF RLK

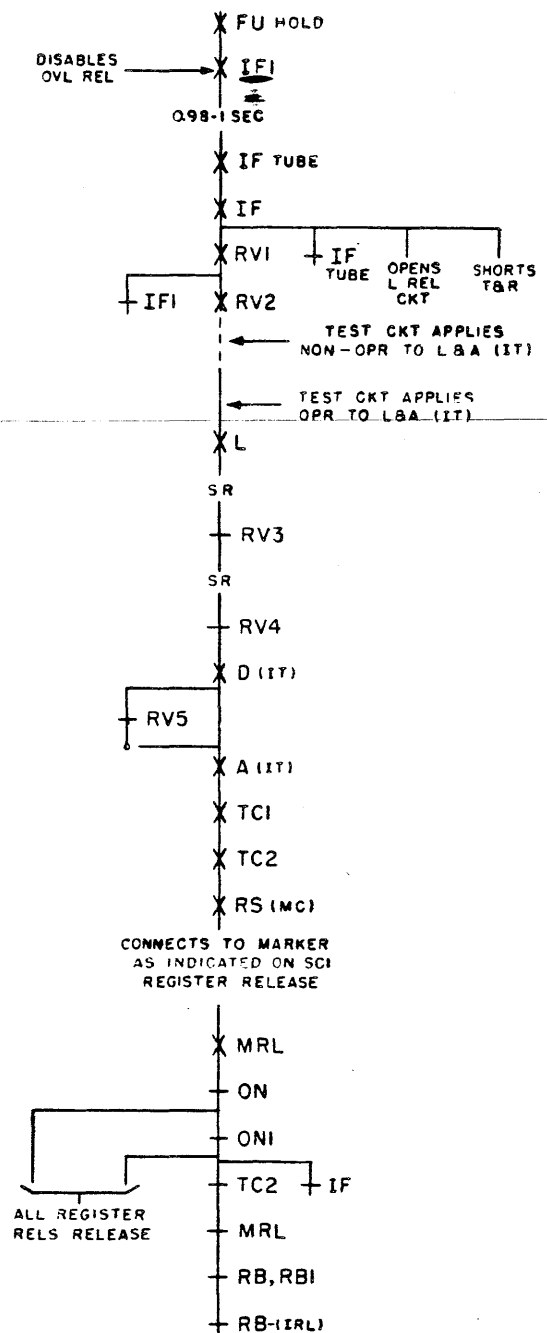


CONNECTS TO MARKER AS INDICATED ON SCI FOR APPROPRIATE ACTION INDICATING LR FAILURE WITH OR WITHOUT DCK



SC6

CALL ORIGINATED BY TRK TEST CKT IN TEST OFFICE CALL PROCEEDS NORMALLY UP TO U HOLD OPERATE, BUT TEST CKT DOES NOT OPERATE L RELAY

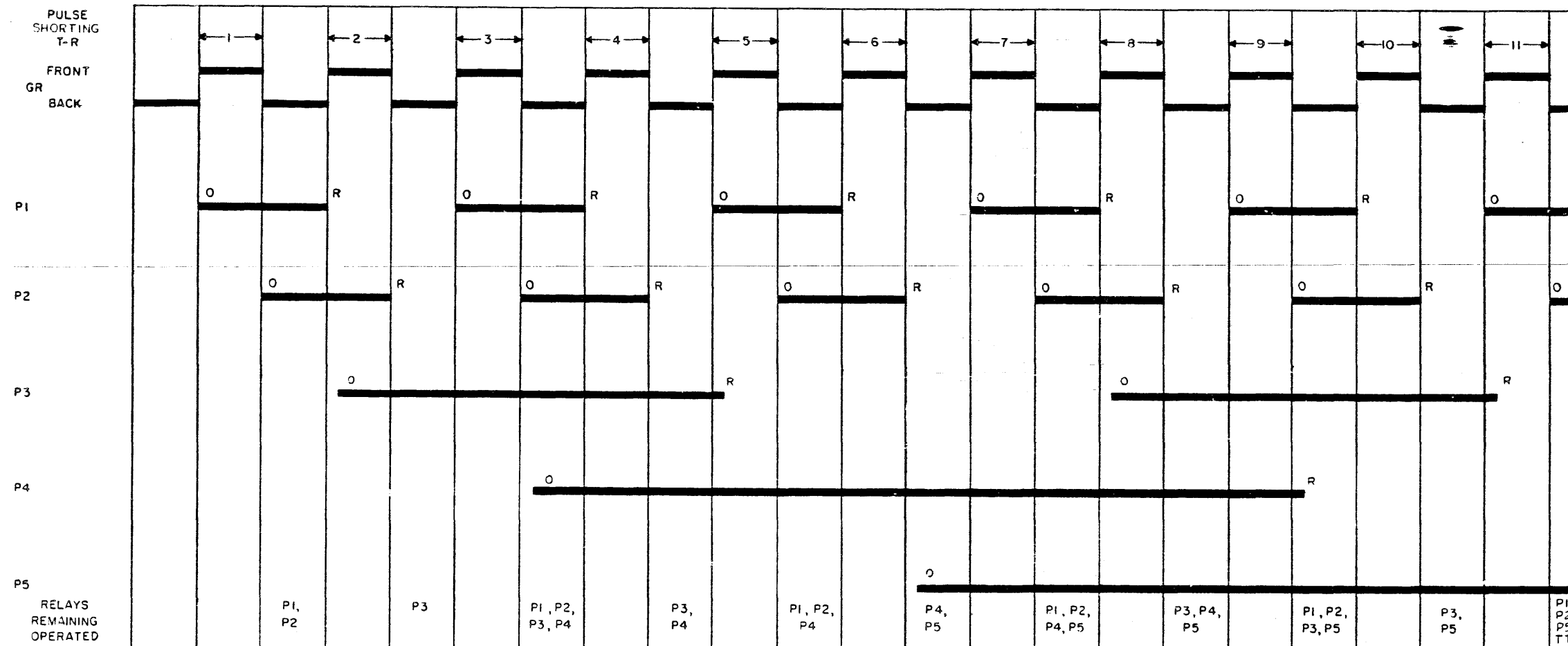


NO. 5
INCOMING REGISTER CIRCUIT
REVERTIVE PULSING

SD-26043-01-E5

SD-26043-01-E5

SC7 SEQUENCE FOR P1, P2, P3, P4, P5, RELAYS



CIRCUIT REQUIREMENTS																	DRAWING ISSUE	
APPARATUS				MECH. REQ.			CIRCUIT PREPARATION				DIRECT CURRENT FLOW TEST				REMARKS			
DESIG	CODE	OPTION	FIG.	BSP FIG.	CONT PRESS	ARM TRVL	BLOCK OR INSULATE	TEST CLIP DATA		TEST SET PREP	SEE TEST NOTE	TEST WGT	TEST FOR	AFTER SOAK H.A.		TEST H.A.	READ H.A.	
								CONN. SAT.	CONN. GRD.									
MAGNETS																		
RP	324C		3															
HOLD	CBR			4/8					R	MAG TST	GRD		0		26.5	34.5		
SEL	SW			104		2	SEL TEST		RB LT	MAG TST	GRD		0		25	20		
RELAYS																		
AB	AF51		4	3					U(AB)	GRD			0		20.5	19.5		
CLS	AF51	Z	4	3					U(CLS)	GRD			0		20.5	19.5		
CLT	AJ9	Z	4	234					U(CLT)	GRD			0		40	38		
OCK	AF66		1	225					1U(DCK) 2U(DCK)	GRD GRD		P S	0 0		65 19	61.5	CCNM DIR SAT TO 1L(DCK)	
FGO, FGI	AF51		4	3					U REL TST	GRD			0		20.5	19.5		
FG2	AF51	V	4	3					U(FG2)	GRD			0		20.5	19.5		
GR	AF511		2	32			(TRL)O (TRL)O		U(GR) U(GR)	GRD GRD			0 NO		24.5 10.3	23 10.9		
H	AF32		1	208					U(H)	GRD			0		22.5	20.5		
HIG	AF70		4	202					1U(HIG) 2U(HIG)	GRD GRD		P S	0 0		17.5 10.4	16.5		
IBI	AF32		1	208					U(IBM)	GRD			0		32.5	30.5		
IF	AF13		1	215				U(IF)		-48V			0		13.1	12.4		
IFI	AF50		1	18					U(IFI)	GRD			0		23.5	22		
L	280K		2	A			(GR)O(TRL)O (TC2)O (TRL)O	4(TC2) 4(TC2) 5(ON)	3(TRL) 3(TRL) 5(TRL)	48V/ GRD GRD		P1/P2 P1/P2 S	0 NO 0	-40 -40	1.8 0.0 1.9	1 0.7		

NO. 5
INCOMING REGISTER CIRCUIT
REVERTIVE PULSING

SD-26043-01-F1

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(4 PAGES) PAGE 1

CIRCUIT REQUIREMENTS															DRAWING ISSUE			
APPARATUS				MECH. REQ.			CIRCUIT PREPARATION			TEST SET PREP	SEE TEST NOTE	DIRECT CURRENT FLOW REQ.				REMARKS	I	C S Y S T E M
DESIG	CODE	OPTION	FIG.	ESP FIG.	CONT. PRESS.	ARM. TRVL.	BLOCK OR INSULATE	TEST CLIP DATA				TEST WOG.	TEST FOR	AFTER SOAK WA.	TEST MA.			
								CONN. BAT.	CONN. GRD.									
LA	AF16		2	204			(LB)O		U(LA)	GRD		0	30.5	29				
LB	AG42		2	289					U(LB)	GRD		0	30	14.8	14			
									U(LB)	GRD		H	30	2.1				
									U(LB)	GRD		R	30	0.5	0			
LR	AF13		1	215			(TC1)MO	U(LR)		-48V		C	12.1					
M	AF501		5	24					U(M)	GRD		0	80	75		DO NOT MONITOR OR TEST INCOMING REGISTERS		
M	AF57		5	210					U(M)	GRD		C	27	25.5		DO NOT TEST INCOMING REGISTERS		
MB	AF63		1	229					U(MB)	GRD		C	7.1	6.7		MAKE CKT BUSY BY BLOCKING OPERATED (RB) AND (RB1) RELS AND REMOVE PLUG FROM (MB) JACK		
MRL	AF519		1	27					U(MRL)	GRD		0	72.5	69				
CA, OB	AF51		4	3					U	REL TST	GRD		0	20.5	19.5			
CN	AF82		1	235			(TRL)O		U(CN)	GRD		C	43	40.5				
CN1	AJ3		1	226			(TRL)O (TC1)MO		U(CN1)	GRD		C	18	17				
CVL	AF515		1	207					U(CVL)	GRD		C	9	8.5				
P1	AF515		2	31			6B(P2)		U(P1)	GRD		0	95	90				
P2	AF518		2	224			12(P2)		U(P2)	GRD		0	105	95				
P3	AF515		2	31					U(P3)	GRD		0	95	90				
P4	AF515		2	31			(P2)O		U(P4)	GRD		0	95	90				
P5	AF515		2	31			(P3)O		U(P5)	GRD		0	95	90				
RA1	AF20		2	205			6B(RA2)		U(RA1)	GRD		0	36	34				
RA2	AF20		2	205			12(RA2)		U(RA2)	GRD		0	37.5	34				
RB	AF24		1	8					U(RB1)	GRD	1	0	30.5	29		WOG ALONE		
												0	68	64.5		CKT COMB. OF (RB) & (RB1) RELS		
TEST NOTES:																		
1: MAKE THE REGISTER BUSY BY BLOCKING OPERATED THE (RB1) IN THE REGISTER AND THE (RB-) RELAYS IN THE INC REGISTER LINK ASSOCIATED WITH THE RBO-O LEADS AND THEN INSULATING 6(MB). REMOVE PLUG FROM (MB) JACK.																		
NO. 5 INCOMING REGISTER CIRCUIT REVERTIVE PULSING															SD-26043-01-F1			
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CIRCUIT REQUIREMENTS																									DRAWING ISSUE	
APPARATUS				MECH TEST			CIRCUIT PREPARATION				TEST SET PREP		DIRECT CURRENT FLOW TEST					REMARKS								
DESIG	CODE	OPTION	FIG.	REP FIG.	CONT PRESS.	ANAL TRVL	BLOCK OR INSULATE		TEST CLIP DATA		TEST SET PREP	SEE TEST NOTE	TEST WDS	TEST POS	AFTER WOME	TEST	REARJ									
									CONN BAT.	CONN GRD					SA.	SA.	SA.									
RB1	AF34		1	14						U(RB1)	GRD	1		0		28	28.5	WOG ALONE								
														0		62	59	CKY COMB. OF (RB) AND (RB1) RELAYS								
RLK	AF34		1	25						U(RLK)	GRD			0		30.5	29									
RV1	AF100		1	252						U(RV1)	GRD			0		41.5	39.5									
RV2	AJ27		1	213						U(RV2)	GRD			0		15	14.2									
														NO		8.1	8.6									
RV3	AG22		1	289										0	30	14.8	14	WOG ALONE								
														H	30	2.1	1.9									
														R	30	0.5	0.7									
										U(RV3)	GRD			0	41.5	21	19.5	CKY COMB (RV3) RELAY AND (L) RES								
										U(RV3)	GRD			H	41.5	3	2.7									
										U(RV3)	GRD			R	41.5	0.6	0.9									
RV4	AG6		1	2398						U(RV4)	GRD			0	FS	9.3	8.8									
										U(RV4)	GRD			H	FS	1.6	1.5									
										U(RV4)	GRD			R	FS	0.8	1									
RV5	AJ33		1	58					L(RV5)		-48V	2		0	FS	31.5	30									
									L(RV5)		-48V			R	FS	17	18									
SM	AJ501		2	249						U(SM)	GRD			0		51	48.5									
SS	AF511		2	32						U(SS)	GRD			0		24.5	23									
										U(SS)	GRD			NO		10.3	10.9									
STP	280K		2	A			(IF)O,(L)O	10(SS)	4(SS)	48V			P1/P2	0	-NO	1.8	1									
							(RV3)O	10(SS)	4(SS)	GRD			P1/P2	NO	-NO	0.C.	0.7									
							(TRL)O	5(CN)	8(TRL)	48V			S	0		1.9										
										GRD																
TC1	AF66		1	225			(TC2)NO, 4(TC1)			1L(TC1)	GRD		P	0		68	61.5	CONN DIR BAT. TO 1U(TC1)								
										1L(TC1)	GRD		P	NO		43.5	43									
							(TC2)NO			2U(TC1)	GRD		S	0		18										
TC2	AF82		1	235			(MRL)O			U(TC2)	GRD			0		43	40.5									
TM	AF13		1	215					U(TM)		-48V			0		13.1	12.4									
TMA	AF110		1	272			(RV1)O			U(TMA)	GRD			0		16.5	15.5									
TPL	AF88		1	28						U(TRL)	GRD			0		95	90									
TT	AF88		1	42						U(TT)	GRD			0		33.5	31.5									
ELECTRON TYPES																										
IF	313CC		1															SEE BSP								
LR	313CC		1															SEE BSP								
TM	313CC		1															SEE BSP								
TEST NOTES:																										
1. MAKE THE REGISTER SURV BY BLOCKING OPERATED THE (RB) IN THE REGISTER AND THE (RB-1) RELAYS IN THE INCOMING REGISTER LINE ASSOCIATED WITH THE RB1-14 LEADS AND THEN INSULATING 6(MB). REMOVE PLUG FROM (MB) JACK.																										
2. CONTACT MAKE 5, NO MAKE 8.5 READJUST. MAKE 3.5, NO MAKE 10 TEST.																										

DRAWING
ISSUE

5AR

1

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GM

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INCOMING REGISTER CIRCUIT
REVERTIVE PULSING

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TIMING REQUIREMENTS														DRAWING ISSUE	
APPARATUS			CIRCUIT PREPARATION				TEST SET PREP				TIME REQ		REMARKS		
DESIG	OPTION	FIG.	BLOCK OR INSULATE	TEST CLIP DATA			SEND KEY	REC SW		SEE NOTE	MIL-SEC				
				CONN BK	CONN R	CONN W		START	STOP		MIN	MAX			
IF		1	(RLK)O, (RV1)NO	GRD	U(IF1)	U(RV1)	HK	-NBV	GRD		1000	1800			
LR		1	(TC1)NO	GRD	U(LN)	2U(TC1)	HK	-NBV	GRD		520	875			
TM		1	(LR)NO							1					

INCOMING REGISTER CIRCUIT
REVERTIVE PULSING

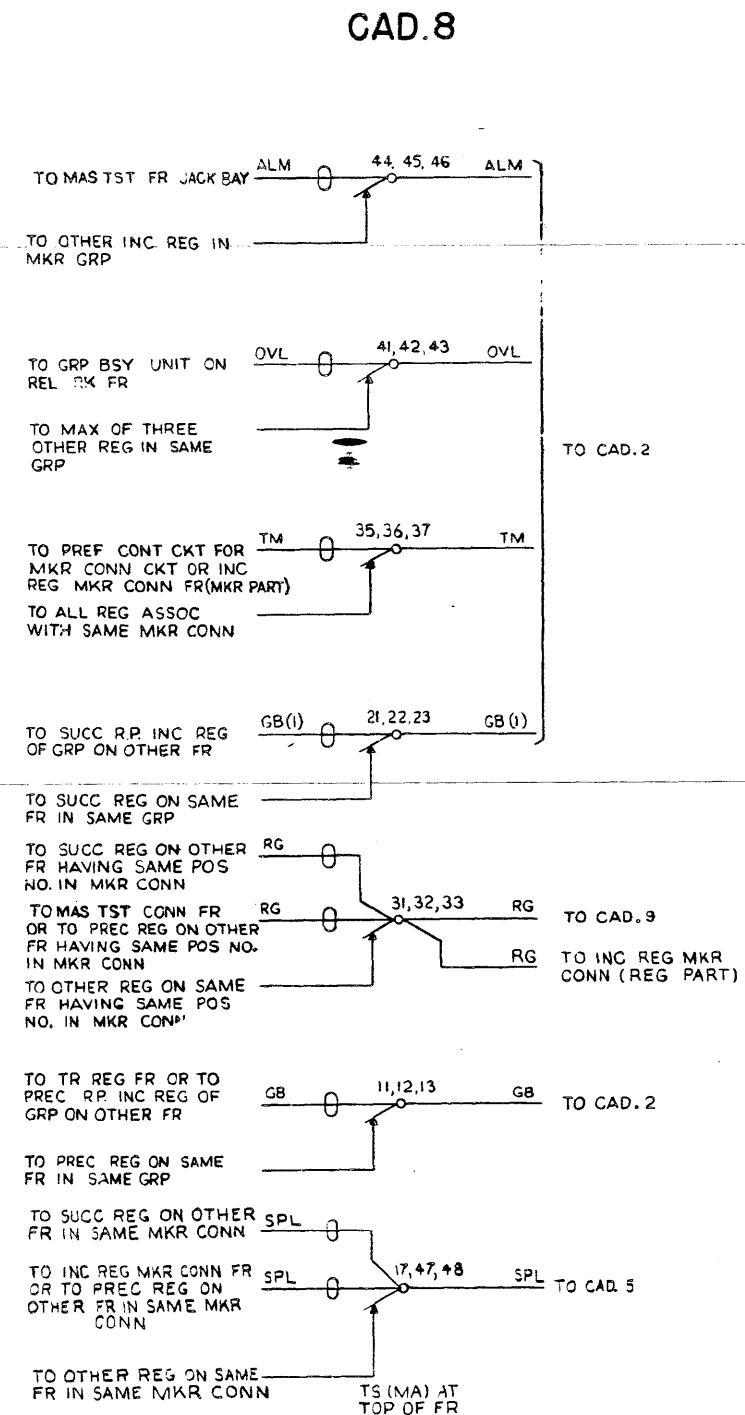
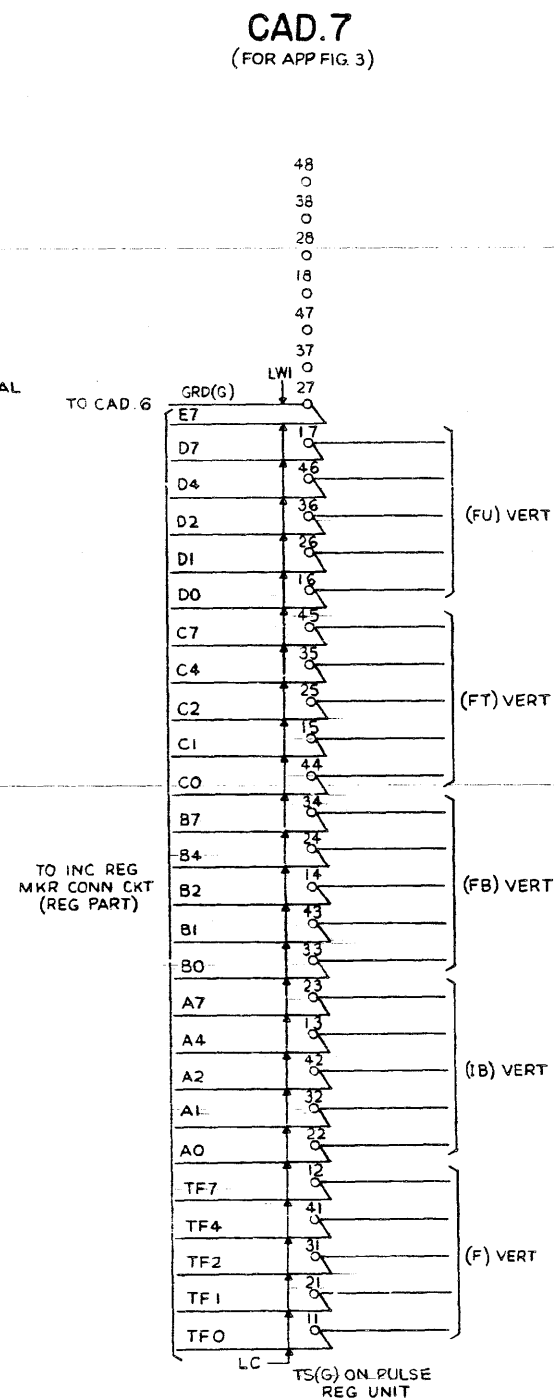
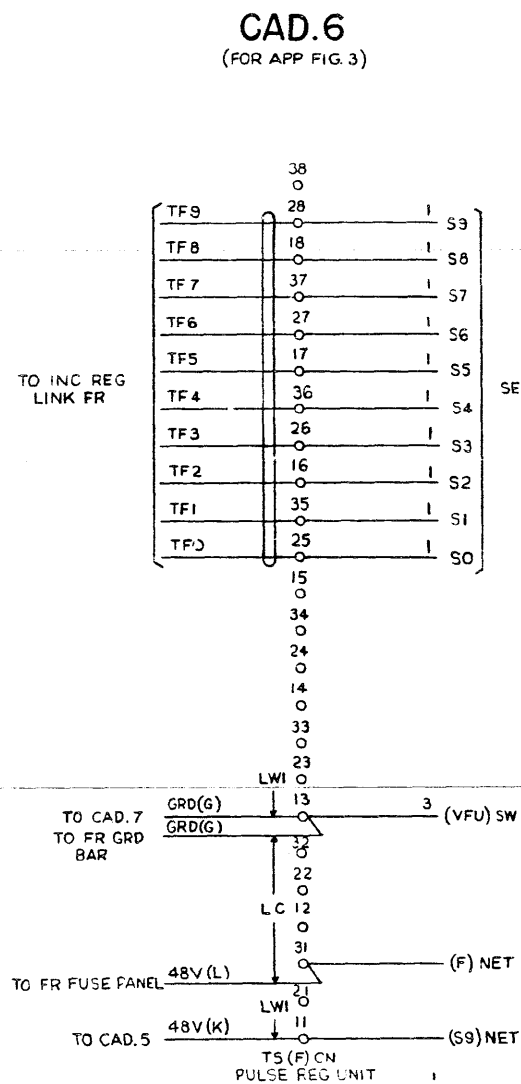
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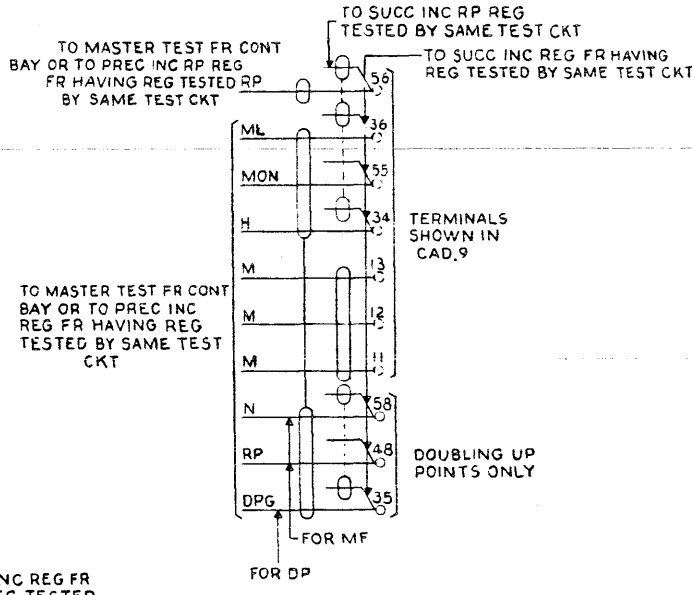
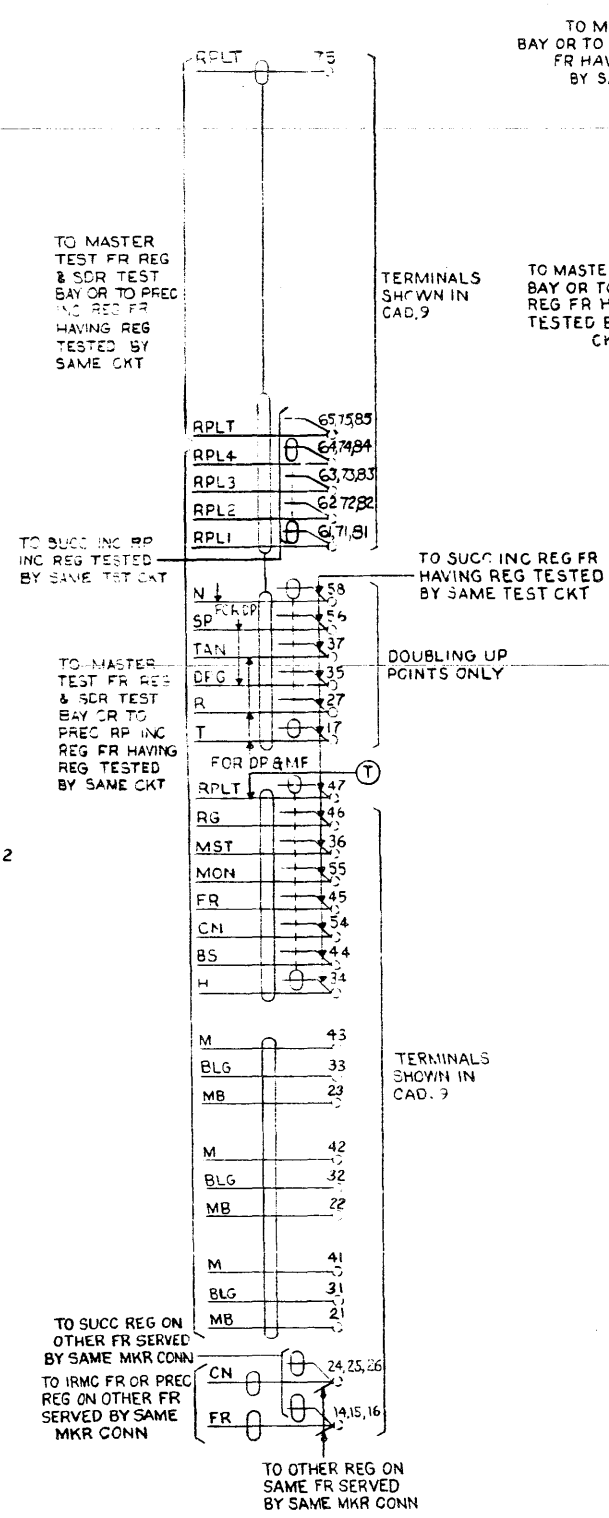
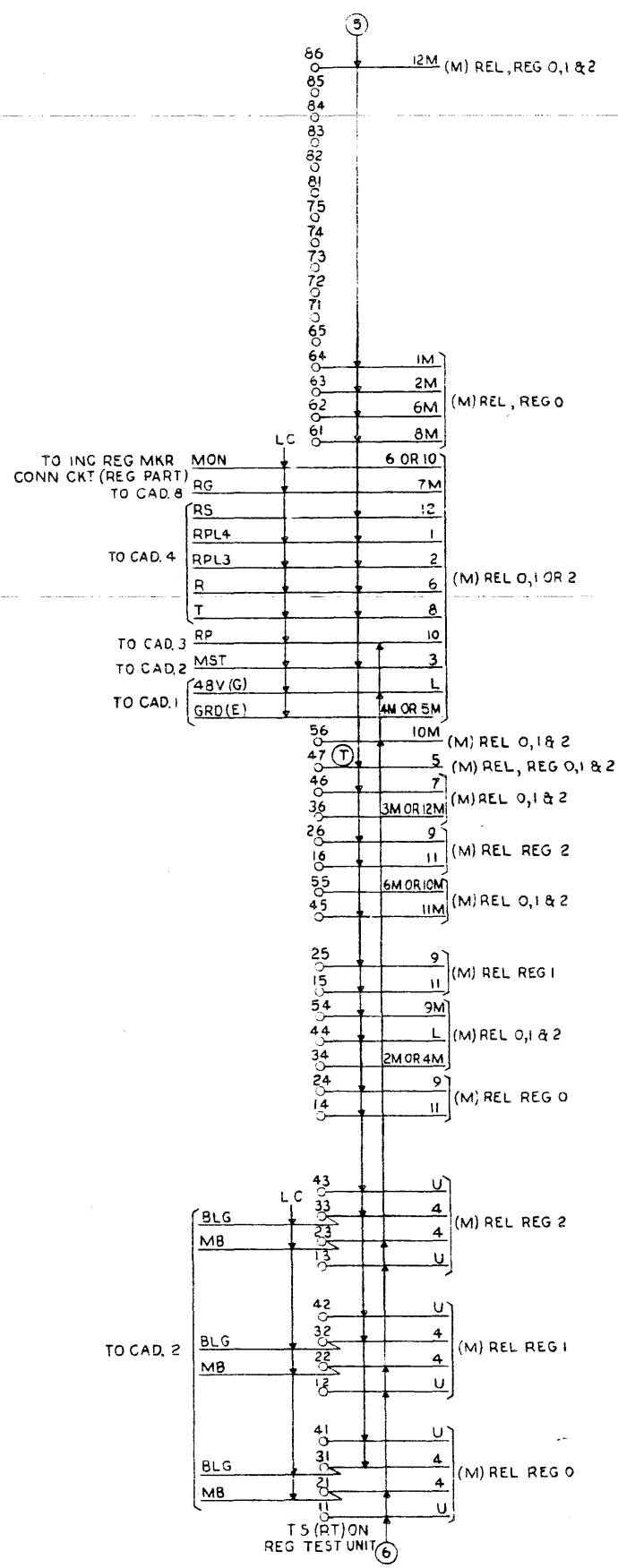


0 1 2 3 4 5 6 7 8 9

CAD.9
LOCAL CABLE CONNECTION
(FOR APP FIG. 5 & 6)

CAD.10
SWITCHBOARD CABLE CONNECTION
(FOR APP FIG. 5)

CAD.11
SWITCHBOARD CABLE CONNECTION
(FOR APP FIG. 6)



DRAWING
ISSUE
1
2A