SHEET INDEX

CONTENTS	SHEET NO.	ISSUE NO.																																																	SHEET NO.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
SHEET INDEX SUPPORTING INFORMATION	A1	1	2	3	4	5	6	7	8	9	10																																									A1
APPARATUS INDEX LEAD INDEX OPTION INDEX	A2	1	1	3	4	5	6	7	8	8	8																																									A2
FS 1 TIP AND RING CONTROL	B1	1	2	2	4	5	6	6	8	8	8																																									B1
FS 2 SLEEVE AND HOLD MAGNET CONTROL	B2	1	1	1	1	5	6	7	8	8	10																																									B2
FS 3 MARKER INFORMATION RELAYS FS 4 AUDIBLE AND VISUAL SIGNALS	B3	1	1	3	3	3	3	3	8	8	8																																									B3
APP FIG. 1	C1	1	2	2	4	5	6	6	8	8	8																																									C1
CIRCUIT NOTES INFORMATION NOTES TRANSMISSION TEST REQT TABLE EQUIPMENT NOTES WORKING LIMITS	D1	1	2	3	4	5	6	7	8	8	10																																									D1
SC 1 TRUNK SEIZED FOR INCOMING CALL SC 2 ATTENDANT ANSWERS INCOMING CALL SC 3 ATTENDANT STEERS INWARD FOR PBX DIAL TONE SC 4 COMPLETING INCOMING CALL TO STATION LINE	E1	1	1	1	1	1	1	7	8	8	8																																									E1
SC 5 COMPLETING INCOMING CALL TO A TRUNK SC 6 OUTGOING CALL SC 7 ATTENDANT DISCONNECTS FROM TRUNK AFTER ANSWERING INCOMING CALL OR AFTER ORIGINATING OUTGOING CALL SC 8 ATTENDANT DISCONNECTS FROM TRUNK AFTER STEERING INWARD FOR DIAL TONE SC 9 ATTENDANT DISCONNECTS FROM TRUNK AFTER DIALING A STATION OR TRUNK SC 10 ATTENDANT RE-ENTERS CONNECTION TO RELEASE FROM A BUSY LINE	E2	1	1	1	1	1	6	7	8	8	8																																									E2
SC 11 ATTENDANT RE-ENTERS TO RELEASE TRUNK FROM CONNECTION TO CO TRK OR ANOTHER ROT TRK SC 12 CALLED STATION OR DIAL REPEATING TYPE TIE TRUNK DISCONNECTS FROM INCOMING CALL SC 13 CALLING STATION OR DIAL REPEATING TYPE TIE TRUNK DISCONNECTS FROM OUTGOING CALL SC 14 RECALL OF ATTENDANT FROM CALLED STATION OR DIAL REPEATING TYPE TIE TRUNK SC 15 CODE RINGING OUTGOING- V OPTION	E3	1	1	1	1	1	6	7	8	8	8																																									E3
CIRCUIT REQUIREMENTS TABLE	F1	1	1	1	1	1	6	6	6	6	6																																									F1
CAD 1	G1	1	2	3	3	3	6	7	8	8	10																																									G1
CAD 2	G2								8	8	8																																									G2

SUPPORTING INFORMATION

CATEGORY	NO.
756A PBX CABLING DRAWING	SD-65746-01
EQUIPMENT INFORMATION	J58829T-( )
OPERATION TEST BSP	551-195-501

DWG ISSUE	CD ISSUE	DATE ISSUED	DRAWN	APPD
1	1	6-19-59	K.O.G. FGS	AEG PWS
2D	2D	10-7-59	W.A.H. PWS	AEG PWS
3D	3D	3-14-60	MSC DTP	WVS PWS
4B	3D APP 1	3-9-61	RJB J.F	WVS RDW P.D.
5B	3D APP2B	8-28-63	DN SJF	RHF HFH PD
6B	4B	9-2-66	JJR SAK RCL	HED GFH LAH
7D	4B APPID	8-15-69	RPR PJS JPL	WEK RVL LDJ
8D	5D	6-29-72	GQS GRL	WVS RGP AFR
9D	5D APPX 1D	2-26-74	GDI CBH	WVS RVL AFR
10D	5D APPX 2D	5-22-75	CBH —	WVS FKB AFR

SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING, ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.

ISSUE 10D

2J07

PBX SYSTEMS
NO. 756A TIE TRUNK CIRCUIT
OUTGOING MANUAL AND DIAL SELECTED WITH 2 SECOND RINGING SIGNAL INCOMING RINGDOWN

(T TRK OG MAN. & D SEL INC RD)

A&M ONLY

SD-65756-01-A1

13 SHEETS

BELL TELEPHONE LABORATORIES, INC
DWG SIZE 6S
PRINTED IN U.S.A.
E-7596 (9-54)

APPARATUS INDEX

DESIG	LOCATION FS	LOCATION APP FIG.	LOCATION EQPT
RELAYS			
AC	1B6	1	
ACA	1A7	1	
AO	2D6	1	
BY	3A2	1	
DR	1F3	1	
FF	1A2	1	
HD	2G5	1	
HM	2E3	1	
LO	1G6	1	
MC	2G4	1	
P	1E3,1D3	1	
PC	3E2	1	
R	1F7	1	
R1	2C8	1	
RS	3C2	1	
RT	1G2	1	
S	1D5	1	
S1	1C1	1	
SL	2A3	1	
SR	1C1	1	
T	1A8	1	
T1	1B8	1	
TC	1G4	1	
TT	3D2	1	
CAPACITORS			
A	1E8	1	
BR	1F7	1	
D	1E6	1	
FB	1E2	1	
L	1E6	1	
RV	1E3	1	
DIODES			
A	1E2	1	
B	1D3	1	
C	1E6	1	
D1	1E7	1	
D2	1E7	1	
D3	1E7	1	
D4	1E7	1	
F	2A2	1	
G	2A3	1	
H	1B2	1	
J	1D4	1	
K	1D5	1	
L	1A8	1	
M	1B2	1	
N	1G3	1	
P	1G1	1	

DESIG	LOCATION FS	LOCATION APP FIG.	LOCATION EQPT
PADS			
PR	1D8	1	
RESISTORS			
H	1E5	1	
ITT	1E6	1	
IL	1C5	1	
L	3D8	1	
PD	2A4	1	
S	3C8	1	
SL	2B4	1	
T	3B8	1	
TL	1E7	1	
TL1	1D7	1	
THERMISTORS			
R1	2C8	1	
R2	1D7	1	
R3	1F7	1	
TRANSFORMERS			
A	1E6	1	

LEAD INDEX

DESIG	FS LOC
ALARM TRANSFER AND TEST CIRCUIT	
S1	2B9
CORD RINGING SUBSET	
L1	1C7
L2	1C7
CORDLESS POSITION CIRCUIT	
ACA	1A6
BT	3E8
BZ	3F8
BZ(3,4,8,9)	3F8
FB	2F7
H	2F8
HD	2G8
HG	2F8
HM	2E8
L	3D8
LR	1C4
LT	1C4
NT	3F2
SL1	3C8
SP	2G8
SP1	1C5
T	3G8
TL1	3B8
TR	1C5
TT	1C4
U	3G8
2ND CORDLESS POSITION CIRCUIT	
SL2	3C8
TL2	3B8
DISTANT PBX	
R	1D9
T	1D9

DESIG	FS LOC
MARKER CIRCUIT	
BAT	2F2
BY(E,O)	3B1
CK	2A2
FF(E,O)	1A1
IT(93,94,98,99)	2F2
M(E,O)	2E2
NT	3F1
R	1F1
RLS(E,O)	2G2
RS(E,O)	3C1
RT(E,O)	1H2
S	2B2
ST(3,4,8,9)	2F2
T	1D1
TR(O,1)	3G4
TT(E,O)	3E1
U(3,4,8,9)	3G4
POWER SUPPLY CIRCUIT	
BT	3E4
CR	3F4
F(1,2)	3D4
FF(1,2)	3E4
FT	3E4
R1	1H2
RING G	1H1
SF(1,2)	3C4
TMS REMOTE SCANNER	
TU(T-)	2D3
TU(T-A)	2D5

OPTION INDEX

APP OR WIR	LOCATION
Z	2F2
Y	2F2
X	1E7
W	1E7
V	1D7,2C7,3F1
U	1A8,2C8,3F1,3F7
T	3F8
S	3F8
R	APP FIG. 1
Q	APP FIG. 1
N	1E7,2C8
M	1D3,1E2,1E6,1E7,2A2,2A3,2C8
K	1D3,1E2,1E6,1F5,2A2,2A3
J	1A8,1B2,1C2,1E3,1E5,1G5,2E4,2G4
H	1A8,1B2,1C2,1E3,1E5,1G5,2E4,2G4
G	1D4,1D5,1G3
F	1F2, 1G2
E	APP FIG 1
B	APP FIG 1
A	2C8, 2F3
ZA	1E2
ZB	1F2
ZC	3F7
ZD	2D7
ZE	2D8
ZF	3F7

ISSUE 8D

TIE TRUNK CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-65756-01-A2

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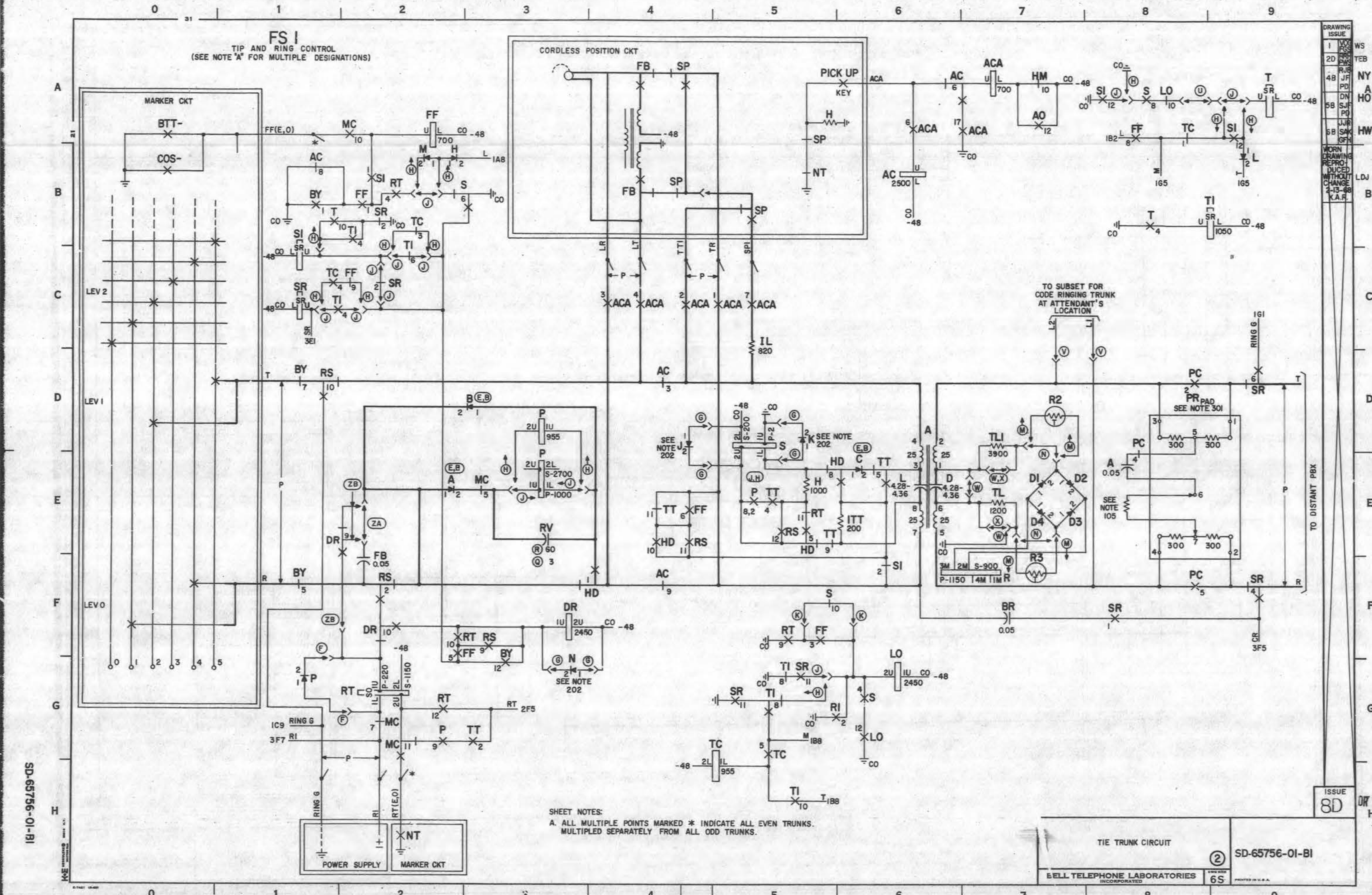
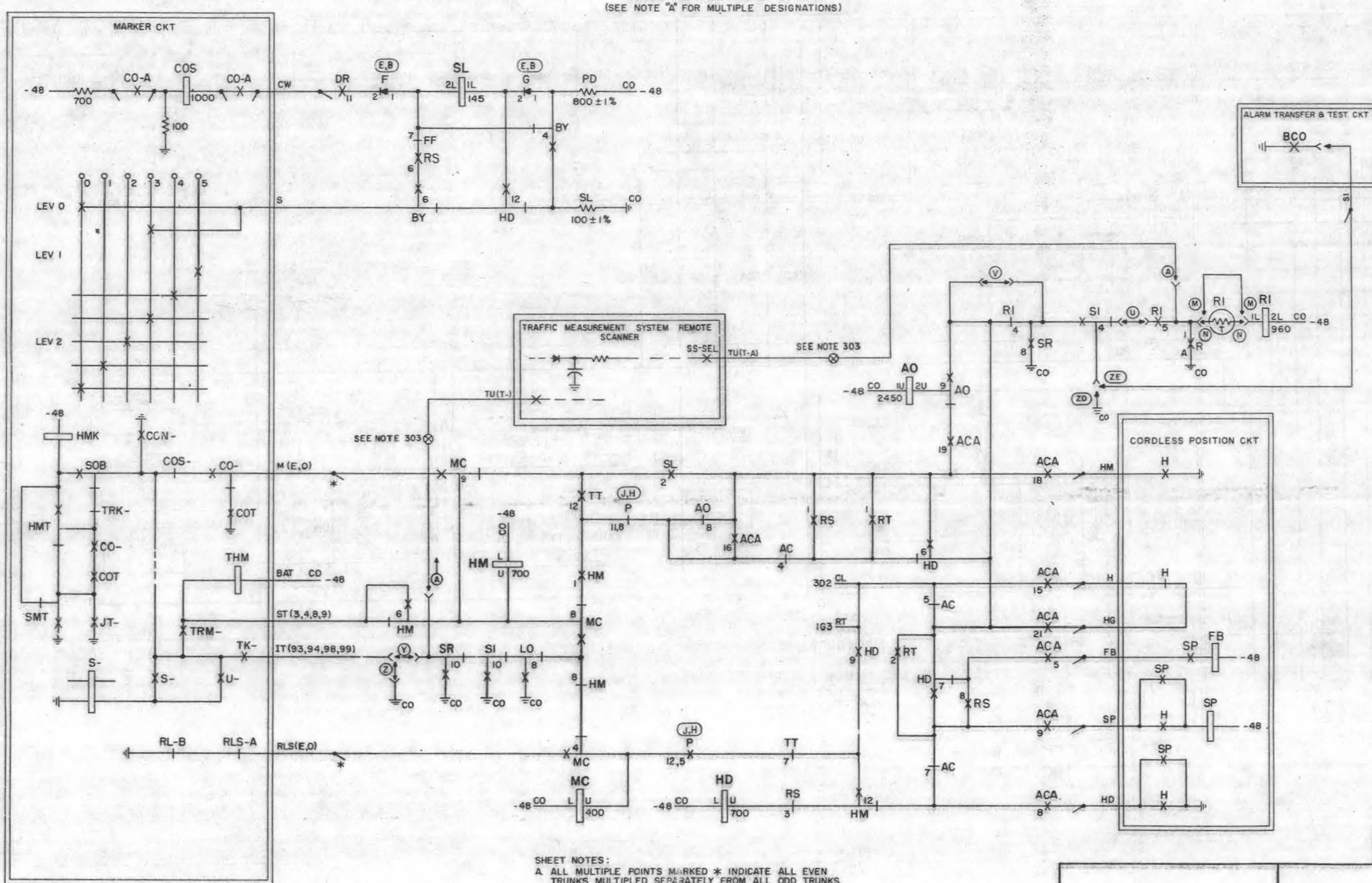
SD-65756-01-A2


FS 1
TIP AND RING CONTROL
(SEE NOTE "A" FOR MULTIPLE DESIGNATIONS)
MARKER CKT
BTT-
COS-
LEV 2
LEV 1
LEV 0
CORDLESS POSITION CKT
PICK UP KEY
TO SUBSET FOR CODE RINGING TRUNK AT ATTENDANT'S LOCATION
TO DISTANT PBX
SEE NOTE 202
SEE NOTE 301
SEE NOTE 105
POWER SUPPLY
MARKER CKT
SHEET NOTES:
A. ALL MULTIPLE POINTS MARKED * INDICATE ALL EVEN TRUNKS. MULTIPLED SEPARATELY FROM ALL ODD TRUNKS.
DRAWING ISSUE
WORN DRAWING REPRODUCED WITHOUT CHANGE 2-13-68 K.A.R.
ISSUE 8D
TIE TRUNK CIRCUIT
SD-65756-01-B1
BELL TELEPHONE LABORATORIES INCORPORATED
6S
PRINTED IN U.S.A.
SD-65756-01-B1

FS 2

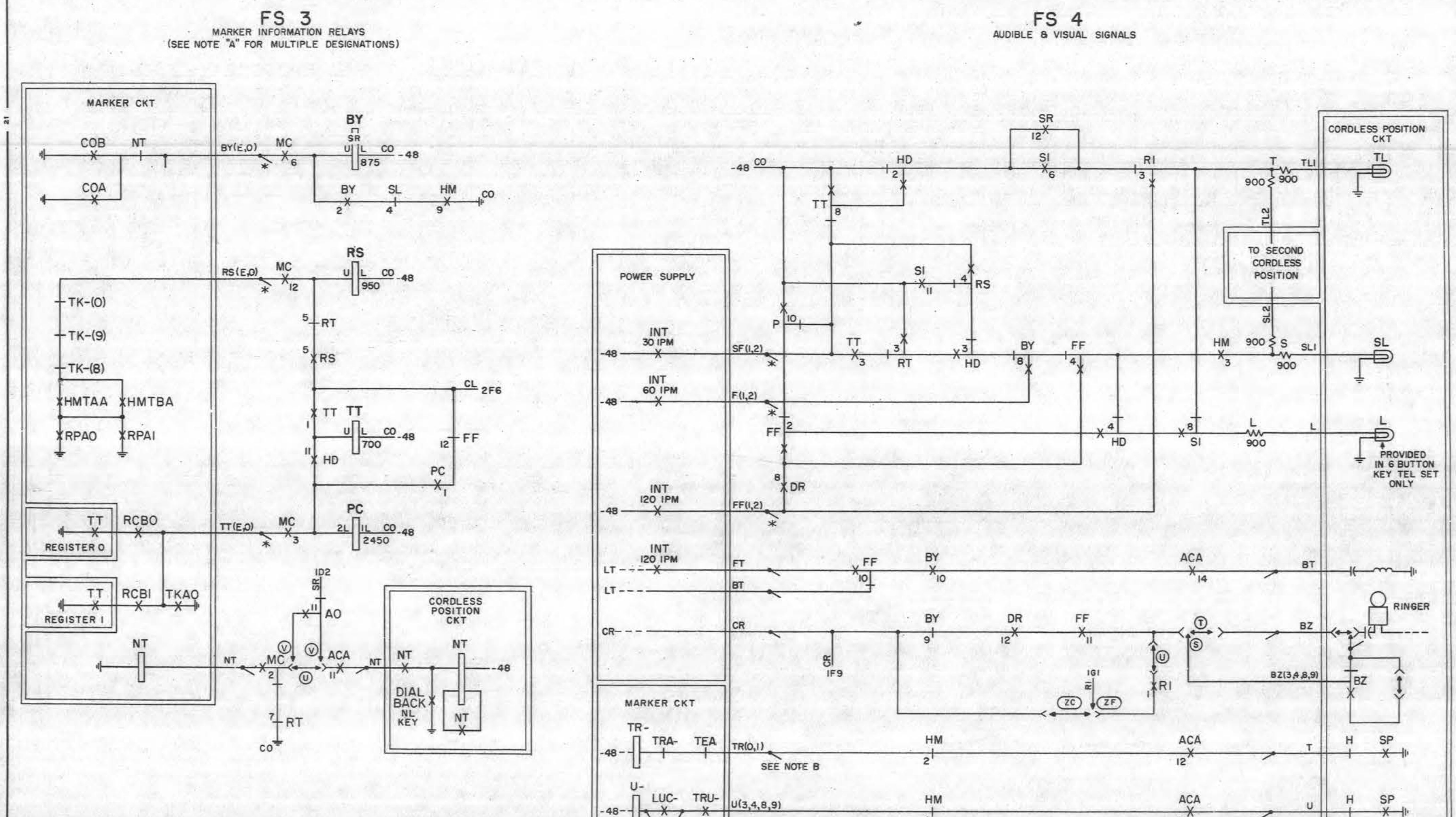
SLEEVE AND HOLD MAGNET CONTROL
(SEE NOTE "A" FOR MULTIPLE DESIGNATIONS)



SHEET NOTES:
A. ALL MULTIPLE POINTS MARKED * INDICATE ALL EVEN TRUNKS MULTIPLED SEPARATELY FROM ALL ODD TRUNKS.

TIE TRUNK CIRCUIT	SD-65756-01-B2
BELL TELEPHONE LABORATORIES INCORPORATED	6S

ISSUE 10D



SHEET NOTES:

A. ALL MULTIPLE POINTS MARKED * INDICATE ALL EVEN TRUNKS MULTIPLED SEPARATELY FROM ALL ODD TRUNKS.

B. MULTIPLE TRUNKS 3 AND 4 ON LEAD "TR0" AND TRUNKS 8 AND 9 INCLUSIVE ON LEAD "TR1".

ISSUE 8D

TIE TRUNK CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

SD-65756-01-B3

APP FIG. I

RELAY

DESIG	AC		AO		PC		BY		DR		RI	
CODE	AF139		AK4				AG33		AK8			
OPTION												
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12			M	1A7			EM	1F3	M	3F6		
11			EBM	3E2					M	2A2		
10	M		EBM				M	3E6	EBM	1F2		
9	B	1F4	EMB	2D6			B	3F6	EBM	1E1		
8	EBM	1B1	EMB	2E5			EBM	3C6	EM	3D5		
7	B	2G6					B	1D1				
6	EMB	1A6					EMB	2B2				
5	B	2F6			EMB	1F8	B	1F1			EM	2C8
4	EBM	2E5			EMB	1E8	EBM	2B4			B	2C7
3	B	1D4			EBM						EBM	3B7
2					EBM	1D8	M	3B2			EBM	1G5
1					M	3E2	M	1B1			M	3F7
COIL	X	1B6	X	2D6	X	3E2	X	3A2	X	1F3	X	2C8

FF		HD		HM		LO		SL				DESIG
AJ15		AJ15		AF100		AK8						CODE
												OPTION
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
EBM	3D2	EBM	2B3	EMB	2G6	M	1G6					12
EBM	3F7	EBM	3D1	M								11
EBM	3E5	EBM	1E4	FBM	1A7	B	1A8					10
EBM	1C2	EBM	2F6	M	3B2							9
EMB	1A8	EMB	1E5	EBM	2F4	BM	2F3					8
EBM	2B3	EBM	2G6									7
EMB	1E4	EMB	2E6	EMB	2F2							6
EMB	1F2	EMB	1E5									5
EBM	3C7	EBM	3D7	EBM	3G6			B	3B2			4
EBM	1F5	EBM	3C6	M	3C8							3
EBM	3D5	EBM	3B6	EBM	3G6			M	2E4			2
EBM	1B2	EBM	1F4	M	2F4							1
X	1A2	X	2G5	X	2E3	X	1G6	X	2A3	X		COIL

RELAY

DESIG	MC		P		P		TC		RS		RT		S	
CODE	AJ56		AJ28		AK7				AJ3		AJ58		AJ26	
OPTION			J		H		H							
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12	EM	3C1	EM		EBM	2G4			EMB	1E5	EM	1G2		
11	BM	1G2	M		EBM	2E4			BM	1E4	B	1E5		
10	M	1A2	EBM	3C5	EBM	3C5			EBM	1D1	M	1F3	B	1F5
9	PMEB	2C3	M	1G2	EM	1G2			M	1F3	BM	1G5		
8	EMB	2F4	EBM	2E4	EM	1E5			EBM	2F7			M	1A8
7	B	1G2									B	3F1		
6	M	3B1	EMB						EMB	2B3			BM	1B2
5	B	1E3	M	2G4			EM	1G5	M	3C1	B	3C1		
4	PMEB	2G4	EBM				EM	1C2	EBM	3C6	M	1B2	M	1G6
3	M	3E1	M				EBM	1B2	BM	2G5	BM	3G6		
2	PBEM	3F1	EBM	1E5			EBM		EBM	1F2	M	2F6		
1	M		M				EBM	1A8	BM	2E5	M	2E6		
COIL	X	2C4	X	1E3	X	1D3	X	1G5	X	3C2	X	1G2	X	1D5

S1		SR		T		T1		TT		DESIG
AG34		AG34		AG24		AG24		AJ12		CODE
										OPTION
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
M	a	M	3A7					EBM	2E4	12
M	3C6	M	1G5					EBM	1E4	11
EBM	2F3	EBM	2F3	M	1B2	M	1G5	EBM		10
								EBM	1E5	9
EBM	3D7	EBM	2D7	BM		BM	1G5	EBM	3B5	8
								EBM	2G5	7
EBM	3B7	EBM	1D9	BM		BM	1C2	EBM		6
								EBM	1E6	5
EBM	2C7	EBM	1F9	M	1B8	M	a	EBM	1E5	4
								EBM	3C5	3
EBM	1F6	EBM	1C2					EBM	1G3	2
M	1B2	M	1F8					EBM	3D1	1
X	1C1	X	1C1	X	1A8	X	1B8	X	3D2	COIL

S1: a (J) 1A8, (H) 1A8

T1: a (J) 1C2, (H) 1B2

RELAY

DESIG	ACA			
CODE	AJ202			
OPTION				
	CONT ARR	LOC	CONT ARR	LOC
24	M			
23	M			
22	M			
21	M	2F7		
20	M			
19	M	2D6		
18	M	2E7		
17	M	1A7		
16	M	2E5		
15	M	2F7		
14	M	3E7		
13	M	3G7		
12	M	3G7		
11	M	3F2		
10	M			
9	M	2G7		
8	M	2G7		
7	M	1C5		
6	M	1A6		
5	M	2F7		
4	M	1C4		
3	M	1C4		
2	M	1C4		
1	M	1C5		
COIL		1A7		

RELAY

R

B615

A 2 1 — 2D8

P — 1F7

S — 1F7

CAPACITOR

DESIG	LOC	CODE
A	1E8	KS-13614,L6,0.05 UF
BR	1F7	KS-13614,L6,0.05 UF
D	1E6	437QA
FB	1E2	KS-13614,L6,0.05 UF OR KS-20300,L3,0.047 UF
L	1E6	437QA
(Q) RV	1E3	444A
(R) RV	1E3	KS-13486,60UF

DIODE

DESIG	LOC	CODE
(E) A	1E2	KS-15724,L2
(B) A	1E2	446F
(E) B	1D3	KS-15724,L2
(B) B	1D3	446F
(E) C	1E6	KS-15724,L2
(B) C	1E6	446F
D1	1E7	400E
D2	1E7	400E
D3	1E7	400E
D4	1E7	400E
(E) F	2A2	KS-15724,L2
(B) F	2A2	446F

DIODE

DESIG	LOC	CODE
(E) G	2A3	KS-15724,L2
(B) G	2A3	446F
(H) H	1B2	446F
(G) J	1D4	446F
(G) K	1D5	446F
(H) L	1A8	446F
(H) M	1B2	446F
(G) N	1G3	446F
(F) P	1G1	446F

PAD

DESIG	LOC	CODE
PR	1D8	1C (MODIFIED) WITH 89 TYPE RES

RESISTOR

DESIG	LOC	CODE
H	1E5	KS-8512,L3A 1000
ITT	1E6	KS-13492,L1,200
IL	1C5	KS-13492,L1,820
L	3D8	18FB
PD	2A4	18GF
S	3C8	19BA
SL	2B4	18BW
T	3B8	19BA
TL	1E7	KS-13492,L1,1200
TL1	1D7	KS-13492,L1,3900

THERMISTOR

DESIG	LOC	CODE
(N) R1	2C8	8B
(M) R2	1D7	8A
(M) R3	1F7	8A

TRANSFORMER

DESIG	LOC	CODE
A	1E6	202A REP COIL

DRAWING ISSUE
1
2D
4B
5B
6B

ISSUE 8D

TIE TRUNK CIRCUIT (2) SD-65756-01-C1

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-65756-01-C1

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER	TERM. DESIG
CO	1-1/3	-48V TALK	APP FIG. 1	
CC		GROUND		

BATTERY SYMBOL	VOLTAGE RANGE
-48	45-52V

102.

FEATURE OR OPTION			PROVIDE APP FIGS.	PROVIDE APP OR WIR	PROVIDE QUANTITY
TIE TRUNK			1		ONE PER TRUNK
INCOMING RINGING	DIRECT, THRU REPEATING COIL, OR THRU BY-PASSING CAPACITORS	LOOP 2000 OHMS OR MORE		X	
		LOOP UNDER 2000 OHMS			
	THRU BLOCKING CAPACITORS	LOOP 1500 OHMS OR MORE		W	
		LOOP UNDER 1500 OHMS		X	
CODE RINGING		REQUIRED		V	
		NOT REQUIRED		U	
TRUNK EQUIPPED AND ASSIGNED AS NON-CODE RINGING TRUNK				Y	
TRUNK EQUIPPED AND UNASSIGNED				Z	
LOCKING GROUND FOR RELAY R1 UNDER CONTROL OF (SEE NOTE 106)		TRUNK	ZD		
		CONSOLE	ZE		

CIRCUIT NOTES: (CONT)

103.

NETWORK VALUES		
NETWORK	RES IN OHMS	CAPACITANCE IN UF

104. RECORD OF APPARATUS FIGURES, WIRING AND APPARATUS CHANGES

CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT STD	USE IN CIRCUIT A&M	USE IN CIRCUIT W.D.	
3D	S OR T	T		S		T	
4B	Q OR R	R		Q		R	
5B	M OR N	N		M		N	
5B	K	NONE		K			
6B	J,H	J		H		J	
6B	G	NONE	202			G	
6B	E,B	E		B		E	
6B	F	NONE		F			
7D	A	NONE		A			
8D	ZA OR ZB	ZA		ZB		ZA	
8D	ZD OR ZE	ZD		ZE		ZD	
8D	ZC OR ZF	ZF		ZC		ZF	
8D	CAP	NONE		KS-20300, L3, .047UF OR KS-13614, L6, .05UF			
10D	ZD OR ZE	ZD	102	ZD,ZE			

105. PROVIDE 89 TYPE RESISTORS IN PAD (PR) AS FOLLOWS:

LINE IMPEDANCE AT 1000~	LOSS (db)	CODE	WINDING RESISTANCE 1-2 OR 3-4	WINDING RESISTANCE 5-6
800 OR LESS	3	89N	123.8	1454
	4	89TN	174.8	1030
	5	89AA	233.4	771
	6	89AE	299	802.2
801 TO 1250	3	89 TYPE PER D-164335	239	2626

CIRCUIT NOTES: (CONT)

106. ON NIGHT CONNECTIONS WITH OPTION ZD, RELAY R1 OPERATED ON AN INCOMING CALL, LOCKS UNDER CONTROL OF RELAY S1 RELEASED. SINCE THE CALL IS NOT ANSWERED, RELAY S1 NEVER OPERATES TO RELEASE RELAY R1. RELAY R1 FLASHES THE TRUNK LAMP IN THE CONSOLE AND OPERATES THE CONSOLE RINGER CONTINUOUSLY. WITH OPTION ZE, THE LOCKING GROUND FOR RELAY R1 IS UNDER CONTROL OF THE BATTERY CUT OFF RELAY IN THE ALARM, TRANSFER AND TEST CIRCUIT AND ON NIGHT CONNECTION RELAY R1 WILL RELEASE TO SILENCE THE CONSOLE RINGER AND EXTINGUISH THE CONSOLE LAMP.

EQUIPMENT NOTES:

201. WHEN V OPTION IS NOT PROVIDED LEADS L1 AND L2 SHALL BE DISCONNECTED AT THE HOUSE BOX.

202. WHEN THE PBX USES A 1A2 KEY TELEPHONE SYSTEM EQUIPPED WITH 400B KEY TELEPHONE UNITS, THE TELEPHONE COMPANY SHALL FURNISH THREE 446F DIODES AND THE INSTALLER SHALL ADD OPTION G.

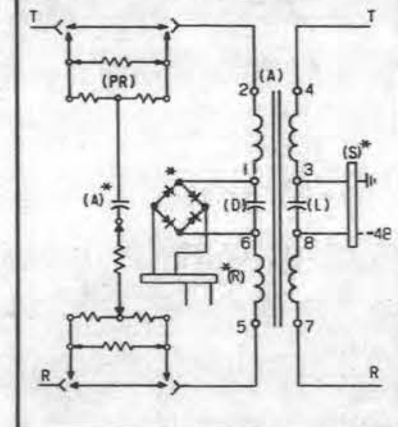
INFORMATION NOTES:

301. MODIFICATION OF 1C PAD CONSISTS OF REMOVING THE STRAP BETWEEN TERMINALS 5 AND 6 AND WIRING IN CAPACITOR (A) IN SERIES WITH (PC) RELAY CONTACT AS SHOWN.

302. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES IN MICROFARADS.

303. SEE SD-66920-01 PER ISSUE 16D FOR CONNECTION TO THE TRAFFIC MEASUREMENT SYSTEM REMOTE SCANNER.

TRANSMISSION TEST REQUIREMENTS
(1000 CYCLE LOSS BETWEEN 600Ω LINES)



MAX ALLOWABLE CIRCUIT LOSS (db)		
1C PAD AND	REP COIL	
89N RES	2C2A	4.6
89T RES	2C2A	5.6
89AA RES	2C2A	6.6
89AE RES	2C2A	7.6
89 TYPE RES PER D-164335	2C2A	4.6
NO PAD	2C2A	1.5

ALLOWABLE INDIVIDUAL APPARATUS LOSSES (db)

APPARATUS	DESIG	CODE	MAX LOSS	MIN LOSS	REMARKS
CAPACITOR	D,L	4.28-4.36	18.6	17.9	
REP COIL	A	2C2A	1.5	0.6	
PAD	PR	1C			SEE NOTE 105

*INDICATES APPARATUS FOR WHICH IND LOSSES ARE NOT REQUIRED.

WORKING LIMITS

SUPERVISION AND TRIPPING	(S) RELAY	(RT) RELAY SILENT INTERVAL	(RT) RELAY RINGING INTERVAL
MAX EXT CKT LOOP RES	2000	1400	2,000
MIN INS RES	10,000	10,000	10,000

RINGING	RINGING SOURCE VOLTAGE 95 VOLTS	RINGING SOURCE VOLTAGE 75 VOLTS
MAX EXT CKT LOOP RES WHEN: CONNECTING CIRCUIT RINGS DIRECT, THRU REPEATING COIL, OR THRU BY-PASSING CAPACITORS	8300	7500
CONNECTING CIRCUIT RINGS THRU BLOCKING CAPACITORS	13,000	10,000

DRAWING ISSUE	
1	E.D.G. F.E.S.
2D	[illegible] PWS
3D	[illegible]
4B	RJB P.D.
5B	SJP
6B	JJG SAK GFH
7D	RFF PJS LDJ

ISSUE 10D

TIE TRUNK CIRCUIT

SD-65756-01-D1

BELL TELEPHONE LABORATORIES INCORPORATED

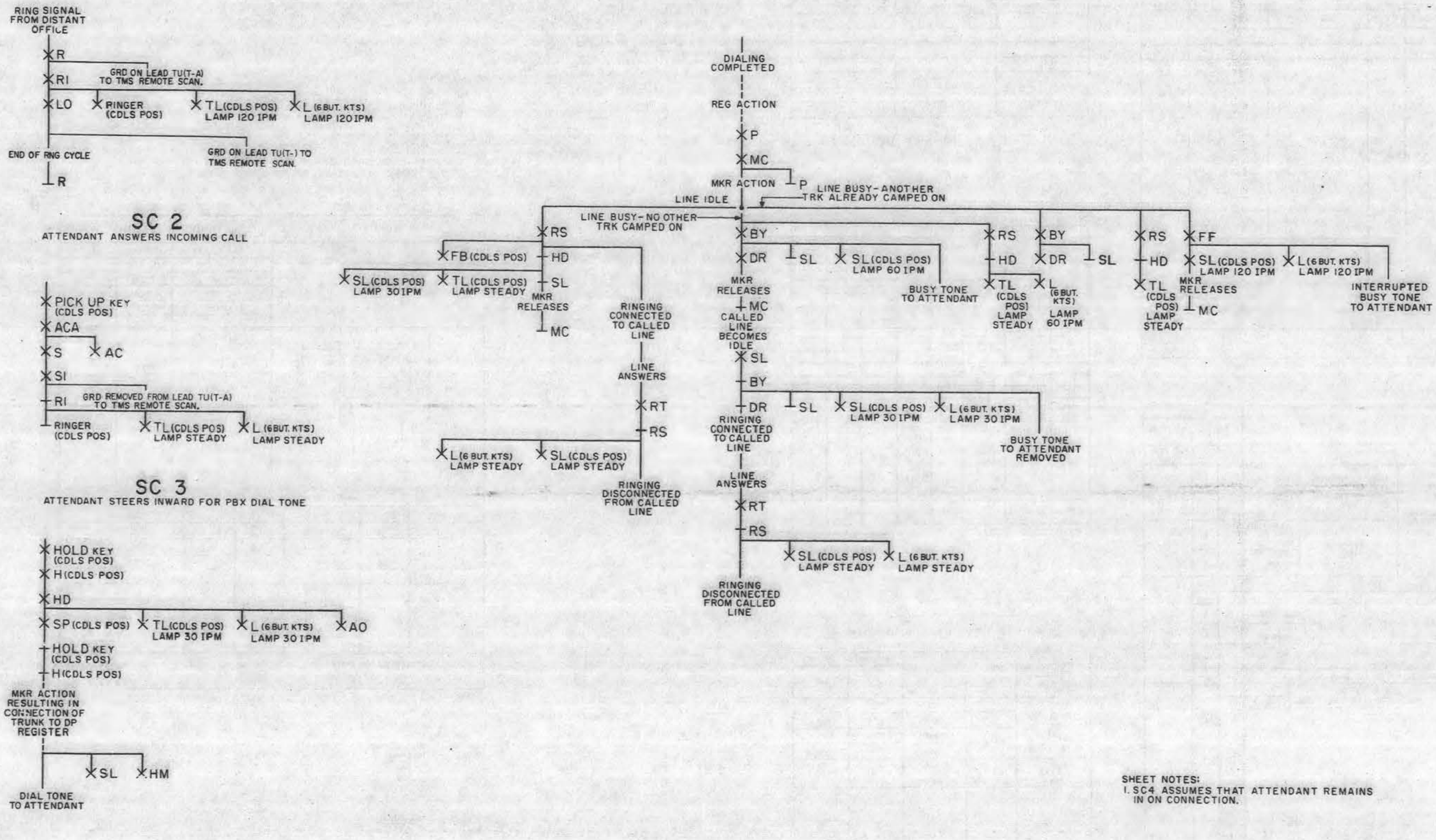
DWG SIZE 6S

SC 1
TRUNK SEIZED FOR INCOMING CALL

SC 2
ATTENDANT ANSWERS INCOMING CALL

SC 3
ATTENDANT STEERS INWARD FOR PBX DIAL TONE

SC 4
COMPLETING INCOMING CALL TO A STATION LINE



RING SIGNAL FROM DISTANT OFFICE
R
RI
GRD ON LEAD TU(T-A) TO TMS REMOTE SCAN.
LO
RINGER (CDLS POS)
TL (CDLS POS) LAMP 120 IPM
L (6 BUT. KTS) LAMP 120 IPM
END OF RNG CYCLE
GRD ON LEAD TU(T-) TO TMS REMOTE SCAN.
R
PICK UP KEY (CDLS POS)
ACA
S
AC
SI
RI
GRD REMOVED FROM LEAD TU(T-A) TO TMS REMOTE SCAN.
RINGER (CDLS POS)
TL (CDLS POS) LAMP STEADY
L (6 BUT. KTS) LAMP STEADY
HOLD KEY (CDLS POS)
H (CDLS POS)
HD
SP (CDLS POS)
TL (CDLS POS) LAMP 30 IPM
L (6 BUT. KTS) LAMP 30 IPM
AO
HOLD KEY (CDLS POS)
H (CDLS POS)
MKR ACTION RESULTING IN CONNECTION OF TRUNK TO DP REGISTER
SL
HM
DIAL TONE TO ATTENDANT
DIALING COMPLETED
REG ACTION
P
MC
MKR ACTION
P
LINE BUSY-ANOTHER TRK ALREADY CAMPED ON
LINE IDLE
LINE BUSY-NO OTHER TRK CAMPED ON
RS
FB (CDLS POS)
HD
SL (CDLS POS) LAMP 30 IPM
TL (CDLS POS) LAMP STEADY
SL
MKR RELEASES
MC
RINGING CONNECTED TO CALLED LINE
LINE ANSWERS
RT
RS
L (6 BUT. KTS) LAMP STEADY
SL (CDLS POS) LAMP STEADY
RINGING DISCONNECTED FROM CALLED LINE
BY
DR
SL
SL (CDLS POS) LAMP 60 IPM
BUSY TONE TO ATTENDANT
MKR RELEASES
MC
CALLED LINE BECOMES IDLE
SL
BY
DR
SL
SL (CDLS POS) LAMP 30 IPM
L (6 BUT. KTS) LAMP 30 IPM
BUSY TONE TO ATTENDANT REMOVED
RINGING CONNECTED TO CALLED LINE
LINE ANSWERS
RT
RS
SL (CDLS POS) LAMP STEADY
L (6 BUT. KTS) LAMP STEADY
RINGING DISCONNECTED FROM CALLED LINE
RS
BY
HD
DR
SL
TL (CDLS POS) LAMP STEADY
L (6 BUT. KTS) LAMP 60 IPM
RS
FF
HD
SL (CDLS POS) LAMP 120 IPM
L (6 BUT. KTS) LAMP 120 IPM
TL (CDLS POS) LAMP STEADY
MKR RELEASES
MC
INTERRUPTED BUSY TONE TO ATTENDANT

SHEET NOTES:
1. SC4 ASSUMES THAT ATTENDANT REMAINS IN ON CONNECTION.

ISSUE 8D

TIE TRUNK CIRCUIT

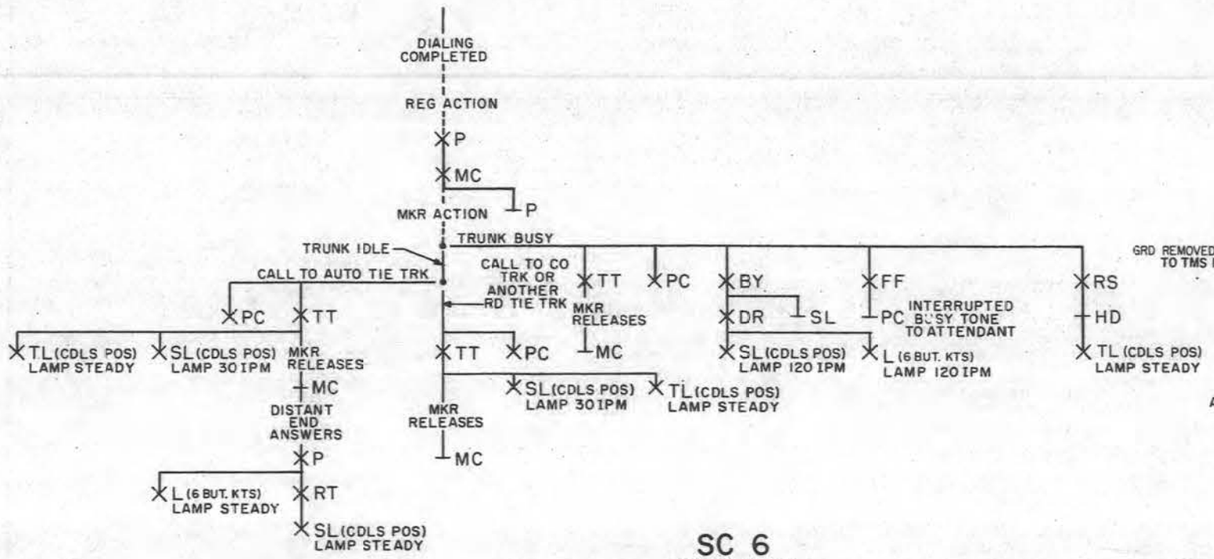
SD-65756-01-E1

BELL TELEPHONE LABORATORIES INCORPORATED

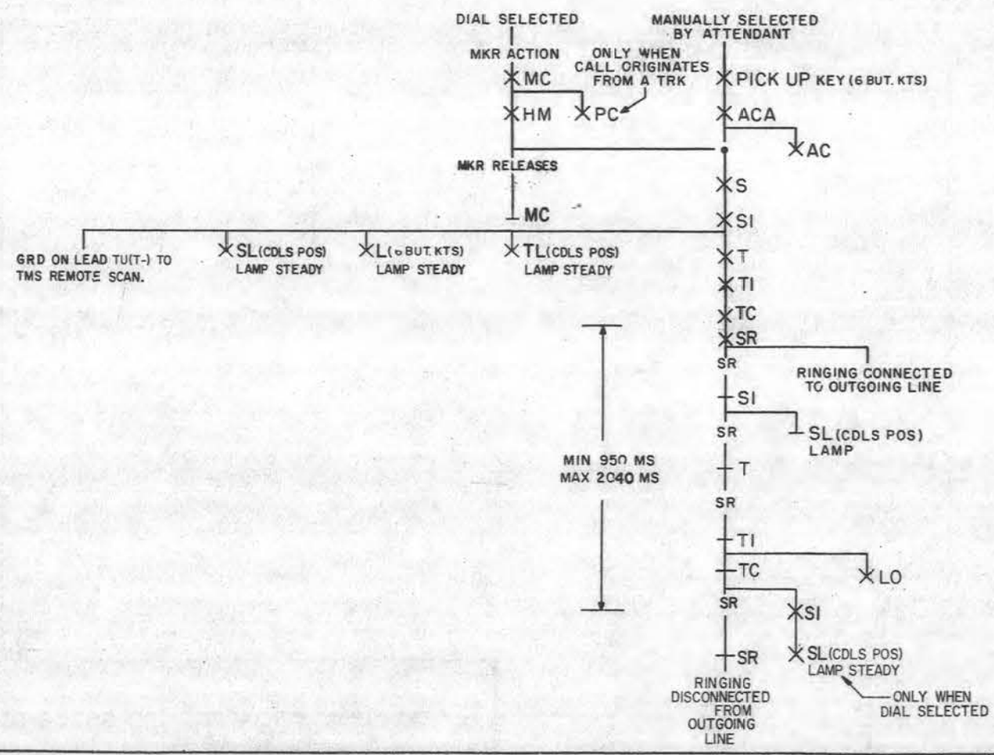
6S

SD-65756-01-E1

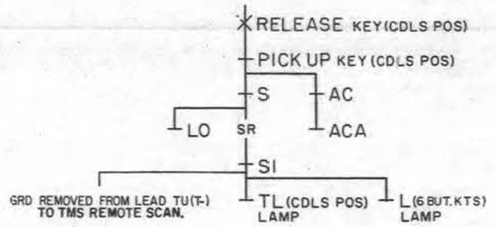
SC 5
COMPLETING INCOMING CALL TO A TRUNK



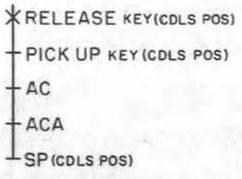
SC 6
OUTGOING CALL



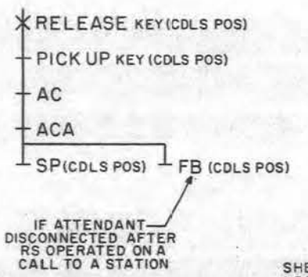
SC 7
ATTENDANT DISCONNECTS FROM TRUNK AFTER ANSWERING INCOMING CALL (SC 2) OR AFTER ORIGINATING OUTGOING CALL (SC 6)



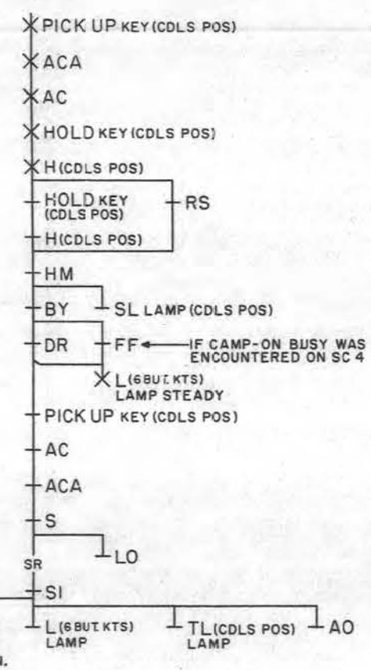
SC 8
ATTENDANT DISCONNECTS FROM TRUNK AFTER STEERING INWARD FOR DIAL TONE (SC 3)



SC 9
ATTENDANT DISCONNECTS FROM TRUNK AFTER DIALING A STATION OR TRUNK (SC 4 OR SC 5)



SC 10
ATTENDANT RE-ENTERS CONNECTION TO RELEASE FROM A BUSY LINE (SC 4 AND SC 9)



SHEET NOTES:
1. SC 5 ASSUMES THAT ATTENDANT REMAINS IN ON CONNECTION.

DRAWING ISSUE

1	AC HM	
6B	JJR SAM GF	
7D	RPR FJS LDJ	HM

ISSUE 8D

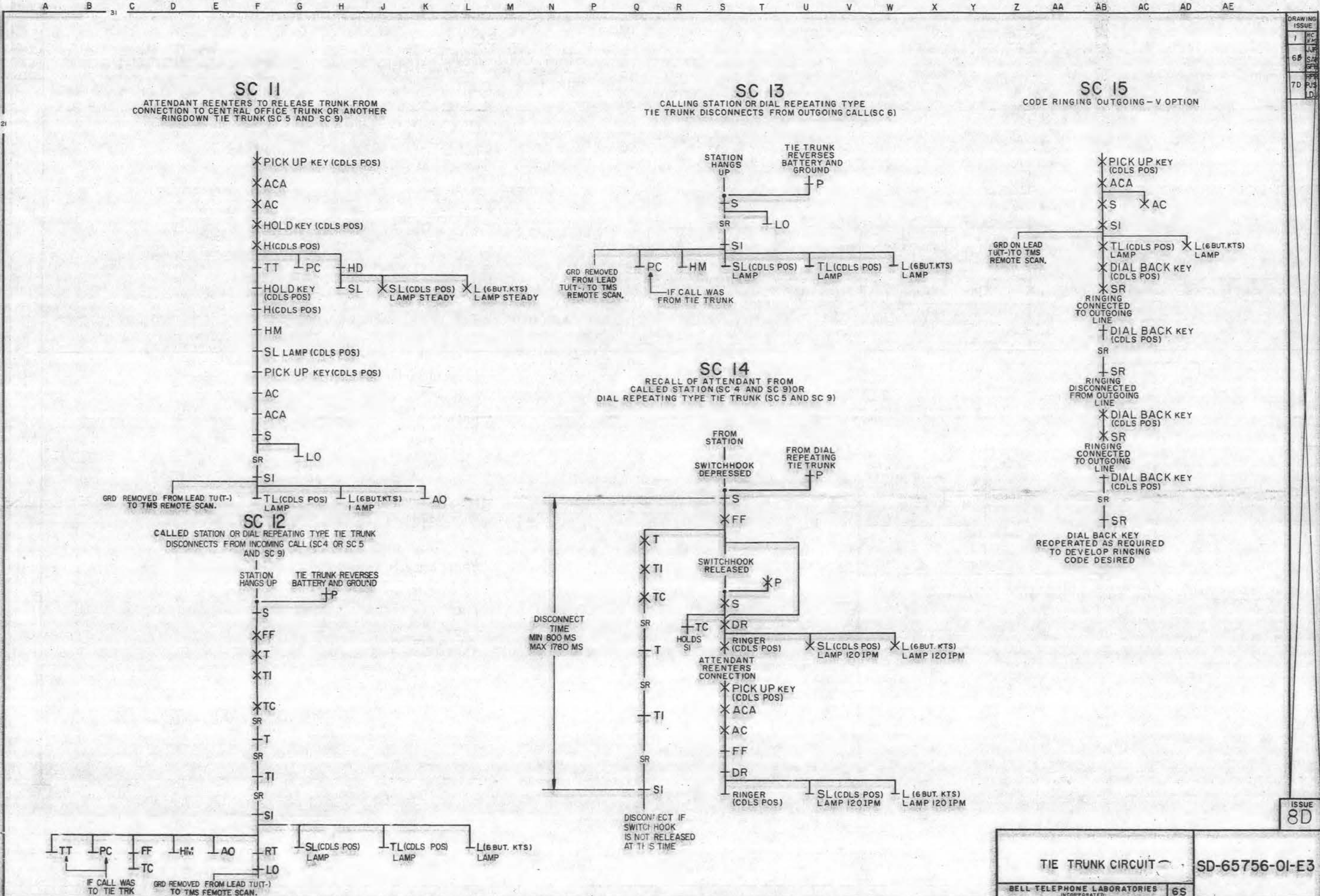
TIE TRUNK CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-65756-01-E2

SD-65756-01-E2


SC 11
ATTENDANT REENTERS TO RELEASE TRUNK FROM CONNECTION TO CENTRAL OFFICE TRUNK OR ANOTHER RINGDOWN TIE TRUNK (SC 5 AND SC 9)
PICK UP KEY (CDLS POS)
ACA
AC
HOLD KEY (CDLS POS)
H(CDLS POS)
TT
PC
HD
HOLD KEY (CDLS POS)
SL
SL (CDLS POS) LAMP STEADY
L (6 BUT. KTS) LAMP STEADY
H(CDLS POS)
HM
SL LAMP (CDLS POS)
PICK UP KEY (CDLS POS)
AC
ACA
S
LO
SR
SI
GRD REMOVED FROM LEAD TU(T-) TO TMS REMOTE SCAN.
TL (CDLS POS) LAMP
L (6 BUT. KTS) LAMP
AO
SC 12
CALLED STATION OR DIAL REPEATING TYPE TIE TRUNK DISCONNECTS FROM INCOMING CALL (SC4 OR SC 5 AND SC 9)
STATION HANGS UP
TIE TRUNK REVERSES BATTERY AND GROUND
P
S
FF
T
TI
TC
SR
T
TI
SI
TT
PC
FF
TC
HM
AO
RT
LO
SL (CDLS POS) LAMP
TL (CDLS POS) LAMP
L (6 BUT. KTS) LAMP
IF CALL WAS TO TIE TRK
GRD REMOVED FROM LEAD TU(T-) TO TMS REMOTE SCAN.
SC 13
CALLING STATION OR DIAL REPEATING TYPE TIE TRUNK DISCONNECTS FROM OUTGOING CALL (SC 6)
STATION HANGS UP
TIE TRUNK REVERSES BATTERY AND GROUND
P
S
LO
SR
SI
GRD REMOVED FROM LEAD TU(T-) TO TMS REMOTE SCAN.
PC
HM
SL (CDLS POS) LAMP
TL (CDLS POS) LAMP
L (6 BUT. KTS) LAMP
IF CALL WAS FROM TIE TRUNK
SC 14
RECALL OF ATTENDANT FROM CALLED STATION (SC 4 AND SC 9) OR DIAL REPEATING TYPE TIE TRUNK (SC 5 AND SC 9)
FROM STATION
SWITCHHOOK DEPRESSED
FROM DIAL REPEATING TIE TRUNK
P
S
FF
T
TI
TC
SWITCHHOOK RELEASED
P
S
DR
TC
HOLDS SI
RINGER (CDLS POS)
SL (CDLS POS) LAMP 120 IPM
L (6 BUT. KTS) LAMP 120 IPM
DISCONNECT TIME MIN 800 MS MAX 1780 MS
ATTENDANT REENTERS CONNECTION
PICK UP KEY (CDLS POS)
ACA
AC
FF
DR
RINGER (CDLS POS)
SL (CDLS POS) LAMP 120 IPM
L (6 BUT. KTS) LAMP 120 IPM
SR
T
TI
SI
DISCONNECT IF SWITCHHOOK IS NOT RELEASED AT THIS TIME
SC 15
CODE RINGING OUTGOING – V OPTION
PICK UP KEY (CDLS POS)
ACA
S
AC
SI
GRD ON LEAD TU(T-) TO TMS REMOTE SCAN.
TL (CDLS POS) LAMP
L (6 BUT. KTS) LAMP
DIAL BACK KEY (CDLS POS)
SR
RINGING CONNECTED TO OUTGOING LINE
DIAL BACK KEY (CDLS POS)
SR
RINGING DISCONNECTED FROM OUTGOING LINE
DIAL BACK KEY (CDLS POS)
SR
RINGING CONNECTED TO OUTGOING LINE
DIAL BACK KEY (CDLS POS)
SR
DIAL BACK KEY REOPERATED AS REQUIRED TO DEVELOP RINGING CODE DESIRED

ISSUE 8D

TIE TRUNK CIRCUIT SD-65756-01-E3

BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-65756-01-E3

CIRCUIT REQUIREMENTS

NO. 756A TIE TRUNK CIRCUIT (T TRK OG MAN & D SEL INC RD)

DRAWING ISSUE	
1	VOG FG3
6	JJR SAK GFH

APPARATUS DESIG	CODE	OPTION	FIG		MECH REQT BSP FIG	CONT PRESS	ARM. TRVL	CIRCUIT PREPARATION BLOCK OR INSULATE	TEST CLIP DATA CONN BAT	CONN GRD	TEST SET PREP	SEE TEST NOTE	DIRECT CURRENT FLOW REQT TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	REMARKS
RELAY																		
AC	AF139		1		256					U(AC)	GRD			0		8.3	7.9	
										U(AC)	GRD			H		4.8	4.5	
ACA	AJ202		1		500			(AC)NO		U(ACA)	GRD			0		4E.5	40.5	
AO	1/2 AK4		1		202					2U(AO)	GRD			0		11.9	11.3	MOUNTED WITH (PC)
BY	AG33		1		305B					U(BY)	GRD			0	FS	14.7	14	
										U(BY)	GRD			H	FS	2.5	2.3	
										U(BY)	GRD			R	FS	1.3	1.5	
DR	1/2 AK8		1		204					1U(DR)	GRD			0		9.2	8.7	MOUNTED WITH (RI)
FF	AJ15		1		249					U(FF)	GRD			0		42.5	40.5	
HD	AJ15		1		249					U(HD)	GRD	1		0		42.5	40.5	
HM	AF100		1		252			6(HM)		U(HM)	GRD			0		43.5	39.5	
LO	1/2 AK9		1		6					1U(LO)	GRD			0		7.7	7.3	MOUNTED WITH (SL)
MC	AJ56		1		413			4(MC)		U(MC)	GRD	2		0		57.5	54.5	
P	1/2 AK7	H	1		203			(AO)O		2U(P)	GRD			0		26.8	25.5	WDG ALONE & WDG WITH VARIST-
								(AO)O		2U(P)	GRD			NO		10.4	11.	OR SHUNT MOUNTED WITH (TC)
P	AJ28	J	1		257				2L(P)	2U(P)	B/G		S	0		12.4	11.8	
									2L(P)	2U(P)	B/G		S	R		1.9	2	WDG ALONE & WDG WITH
								(AC)O	1L(P)	1U(P)	B/G		P	0		23.5	22	VARISTOR SHUNT
								(AC)O	1L(P)	1U(P)	B/G		P	NO		11.1	11.6	
PC	1/2 AK4		1		202					2L(PC)	GRD			0		11.8	11.3	MOUNTED WITH (AO)
R	B81B		1		3		30					4	P	0	AC			
									1H(R)	4H(R)	B/G		S	0		8.8	5.4	
													S	NO		3.4	3.8	
RI	1/2 AK8		1		204					1L(RI)	GRD			0		17	16	MOUNTED WITH (DR)
RS	AJ3		1		226					U(RS)	GRD			0		18	17	
RT	AJ58		1		308			7(MC)	1L(RT)	4U(RT)	B/G	5	P	0		28	26.5	
								7(MC)	1L(RT)	4U(RT)	B/G		P	0		29.5	28	
								7(MC)	1L(RT)	1U(RT)	B/G		P	NO		20	21.5	
										2U(RT)	GRD		S	0		19		
S	AJ26		1		55B	L			1L(S)	2L(S)	M	3	P/S	0		17.5	15.5	
									1L(S)	2L(S)	M		P.S	R		6.5	6.8	
SI	AG34		1		307B					U(SI)	GRD			0	FS	18	17	
										U(SI)	GRD			H	FS	3	2.8	
										U(SI)	GRD			R	FS	1.5	1.8	
SL	1/2 AK9		1		6				2L(SL)	1L(SL)	B/G			0		25.5	24	MOUNTED WITH (LO)
									2L(SL)	1L(SL)	B/G			NO		11.8	12.5	
SR	AG34		1		307B					U(SR)	GRD			0	FS	18	17	
										U(SR)	GRD			H	FS	3	2.8	
										U(SR)	GRD			R	FS	1.5	1.8	

TEST NOTES:

1. CONTACTS 5B AND 8B SHALL BOTH CLOSE BEFORE EITHER CONTACT 5M OR 8M OPEN WHEN (HD) RELAY RELEASES.
2. CONTACTS 9B AND 8B SHALL BOTH CLOSE BEFORE EITHER CONTACT 9M OR 8M OPEN WHEN (MC) RELAY RELEASES.
3. ARMATURE BACK TENSION TEST MIN 15 GRAMS, READJ MIN 20 GRAMS.
4. TEST FOR OPERATE BY RINGING FROM DISTANT PBX OR BY APPLYING 85V MIN, 111V MAX, 1100-1200 RPM RINGING CURRENT THRU A 13C RESISTANCE LAMP AND 8000Ω ±15 NON-INDUCTIVE RESISTOR TO TERMINAL 5 OF REP COIL (A) AND RINGING GROUND TO TERMINAL 2 OF REP COIL (A) WITHOUT "W" OR "X" OPTION.
5. ONLY 8M CONTACTS NEED MAKE ON PRIMARY 20.5 MA OPERATE TEST.

TIE TRUNK CIRCUIT

SD-65756-01-F1

BELL TELEPHONE LABORATORIES, INC.

SD-65756-01-F1

CIRCUIT REQUIREMENTS

DRAWING ISSUE	
1	VOG FG3
6	JJR SAK GFH

APPARATUS DESIG	CODE	OPTION	FIG		MECH REQT BSP FIG	CONT PRESS	ARM. TRVL	CIRCUIT PREPARATION BLOCK OR INSULATE	TEST CLIP DATA CONN BAT	CONN GRD	TEST SET PREP	SEE TEST NOTE	DIRECT CURRENT FLOW REQT TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	REMARKS
T	AG24		1		188	L				U(T)	GRD			0		13.7	13	
										U(T)	GRD			H		1.6	1.5	
										U(T)	GRD			R		0.7	1	
TC	1/2 AK 7	H	1		203					IL(TC)	GRD			0		26.8	25.5	MOUNTED WITH (P)
										IL(TC)	GRD			NO		10.4	11	
TI	AG24		1		188	L				U(TI)	GRD			0		13.7	13	
										U(TI)	GRD			H		1.6	1.5	
										U(TI)	GRD			R		0.7	1	
TT	AJ12		1		220					U(TT)	GRD			0		42.5	40.5	

6

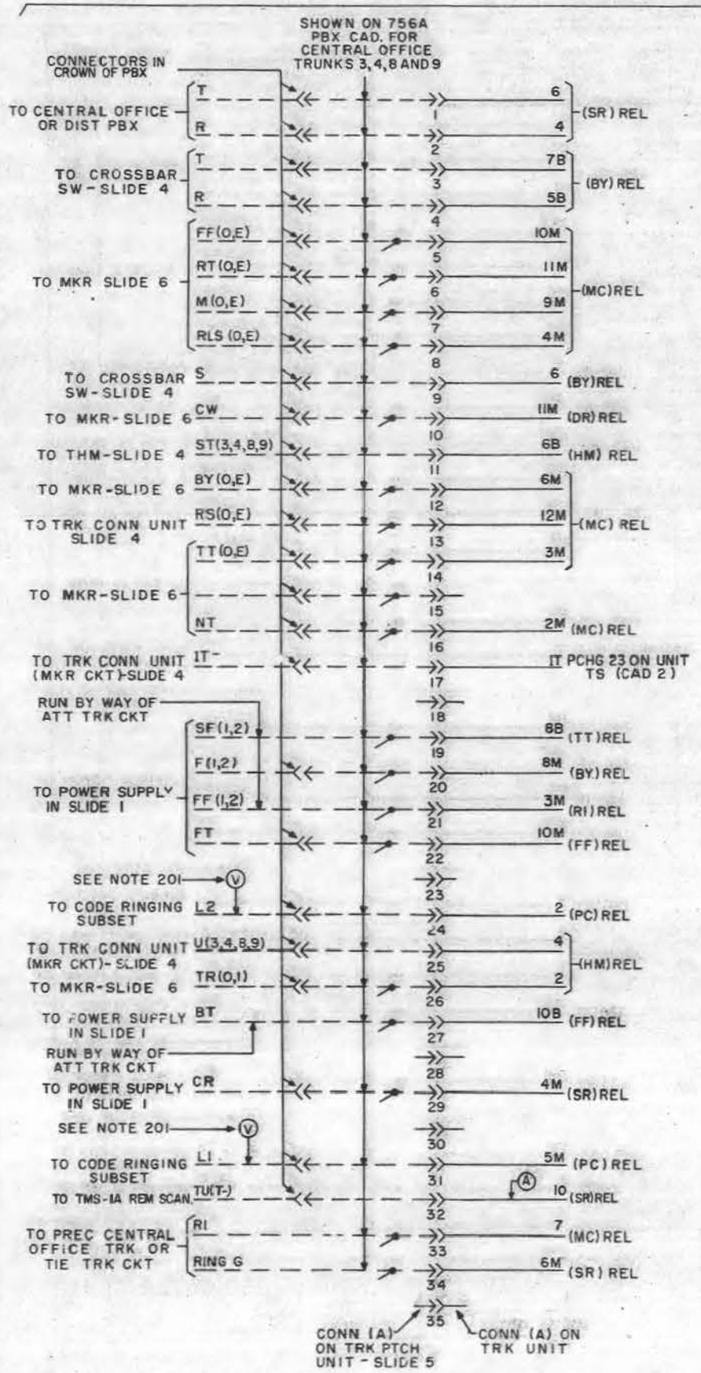
TIE TRUNK CIRCUIT

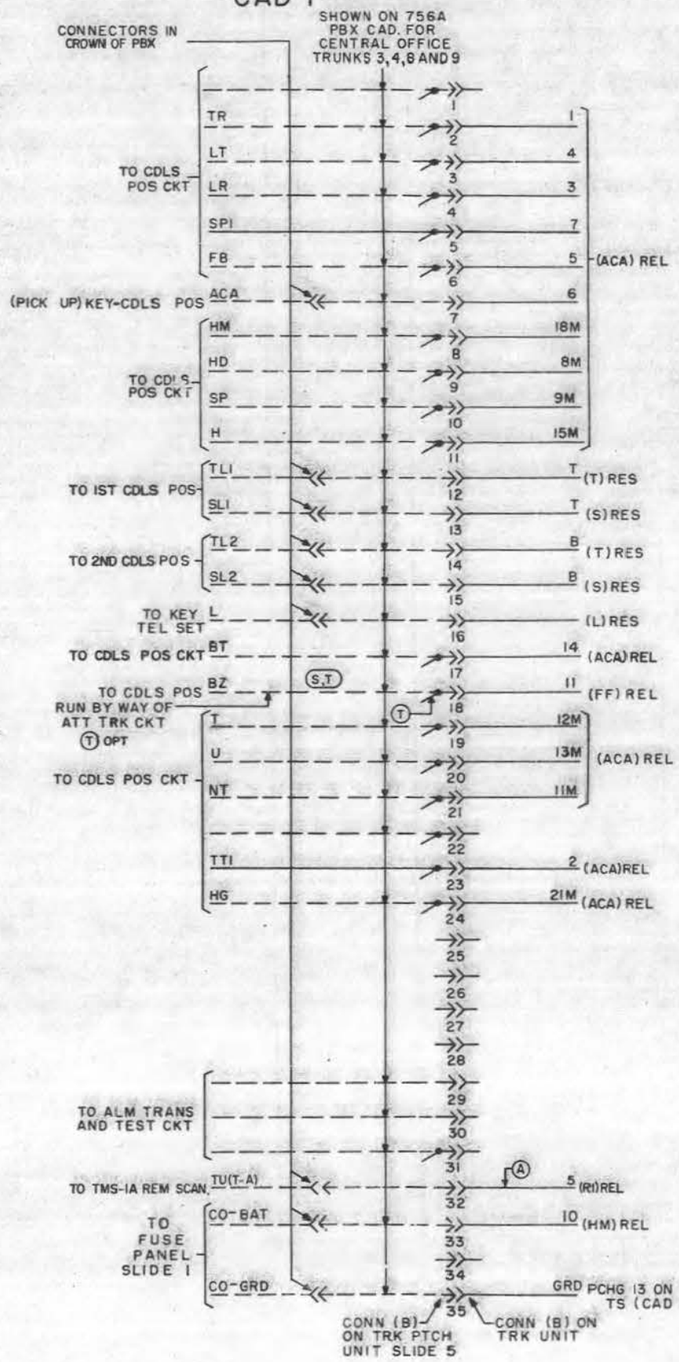
SD-65756-01-F1

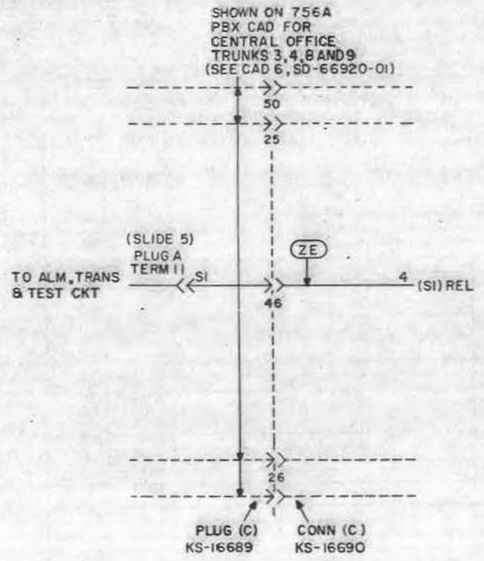
BELL TELEPHONE LABORATORIES, INC.

6S

CAD 1







DRAWING ISSUE

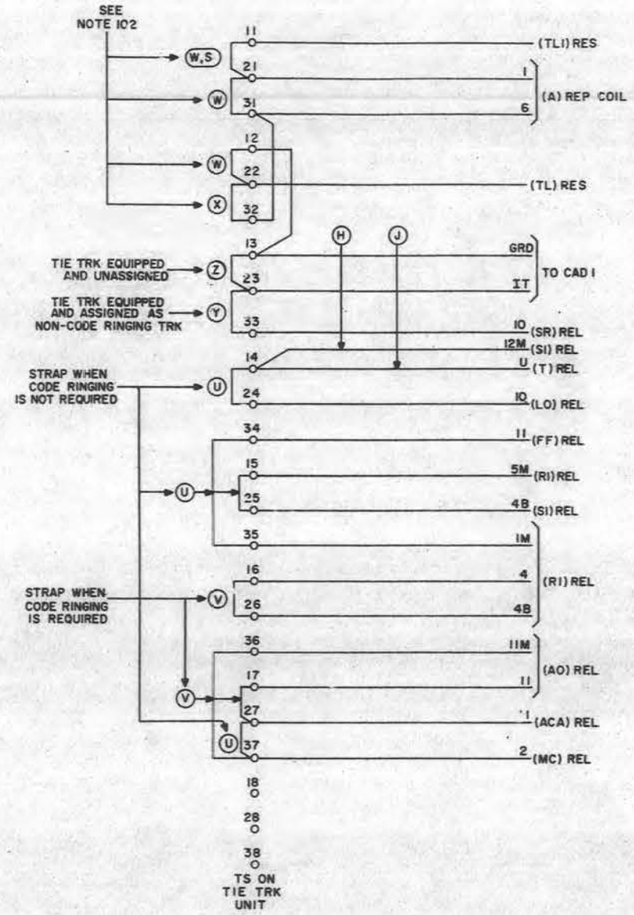
1	
2D	
3D	
6B	
7D	

ISSUE 10D

TIE TRUNK CIRCUIT (2)		SD-65756-01-G1
BELL TELEPHONE LABORATORIES INCORPORATED	6S	

CAD 2

RING DOWN TIE TRUNK OPTIONS



SD-65756-01-G2

ISSUE 8D

TIE TRUNK CIRCUIT

SD-65756-01-G2

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 6S