

FIG. 1

TELEPHONE DIAL SPLITTING AND GROUPING CKTS  
SEE NOTES 206 AND 301

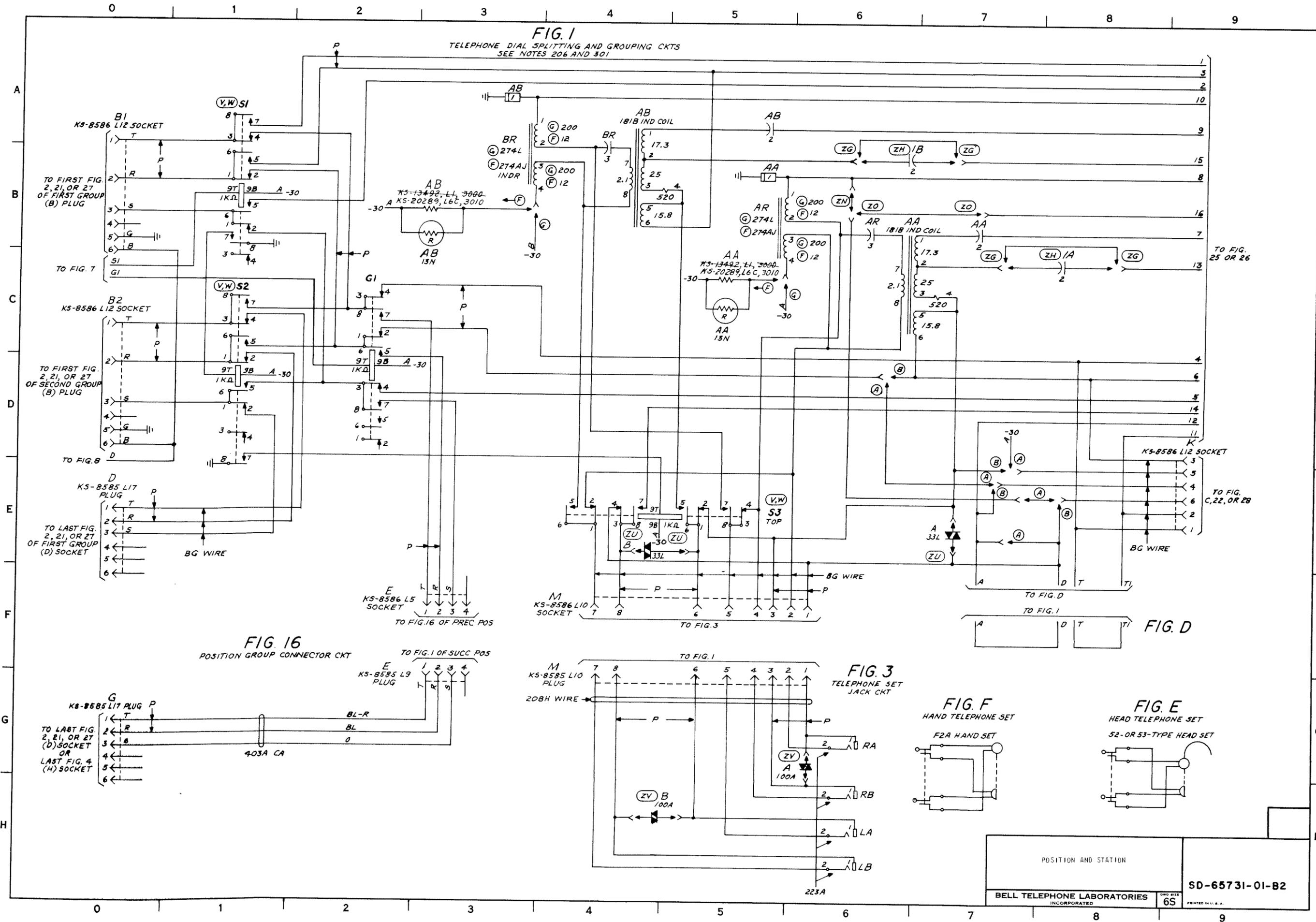


FIG. 16

POSITION GROUP CONNECTOR CKT  
TO FIG. 1 OF SUCC. POS

FIG. 3

TELEPHONE SET JACK CKT

FIG. F

HAND TELEPHONE SET  
F2A HAND SET

FIG. E

HEAD TELEPHONE SET  
52- OR 53-TYPE HEAD SET

FIG 26  
TONE CKT

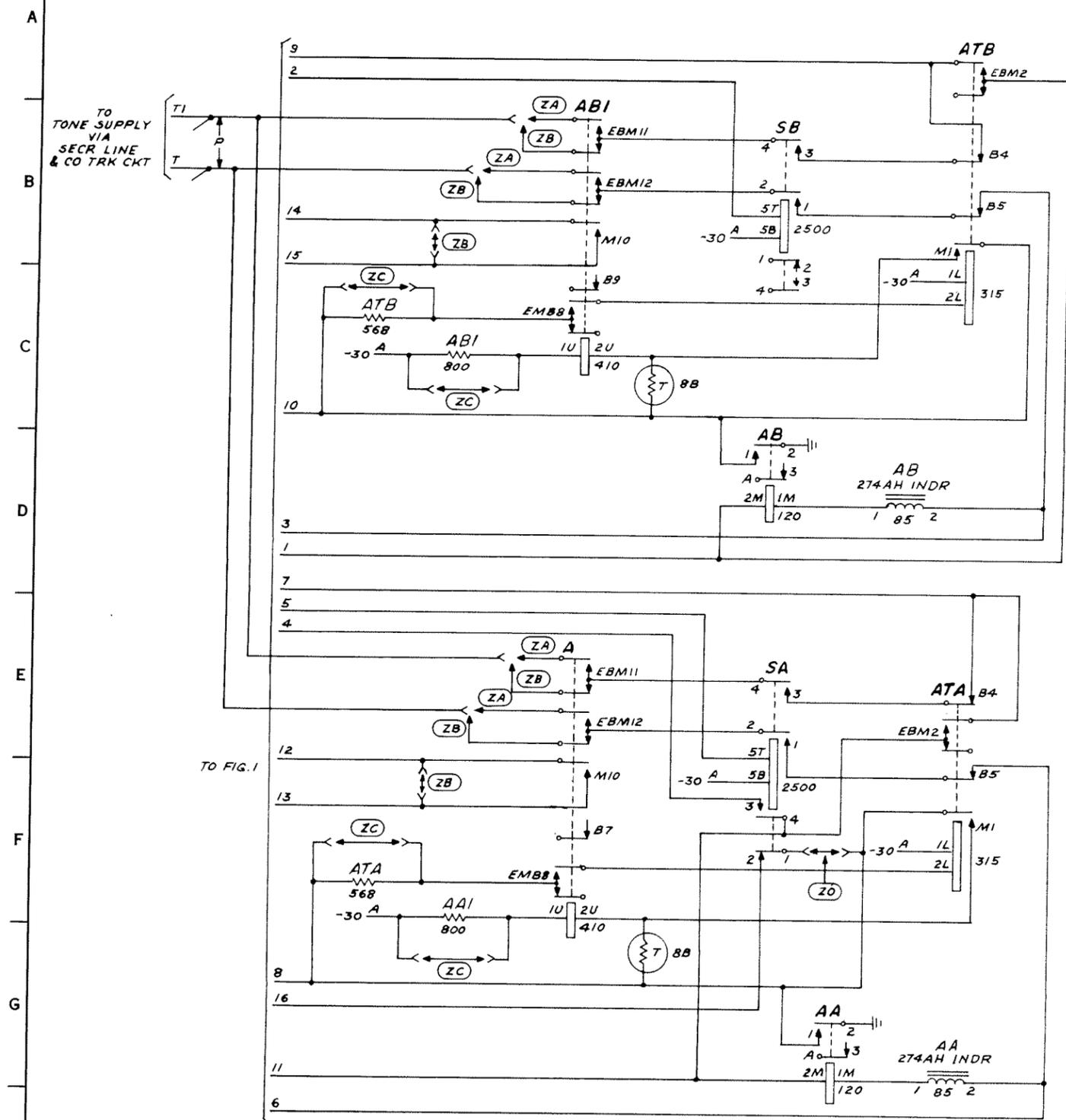
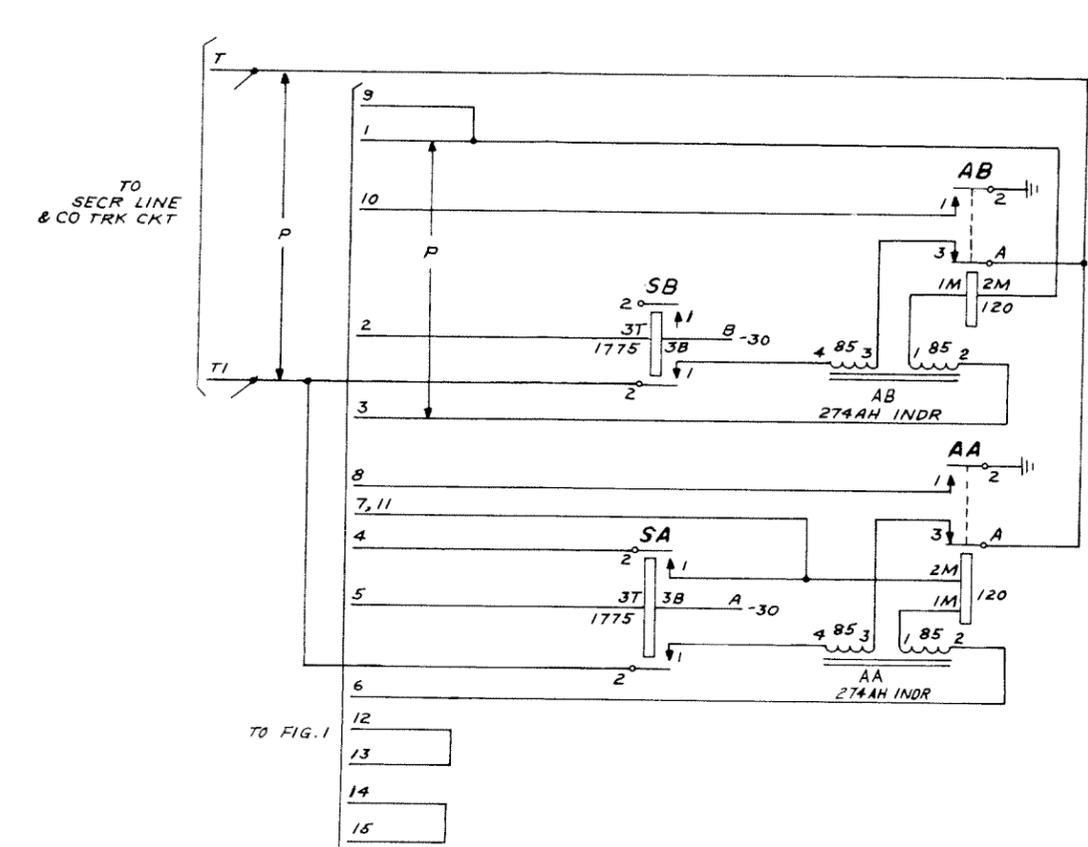
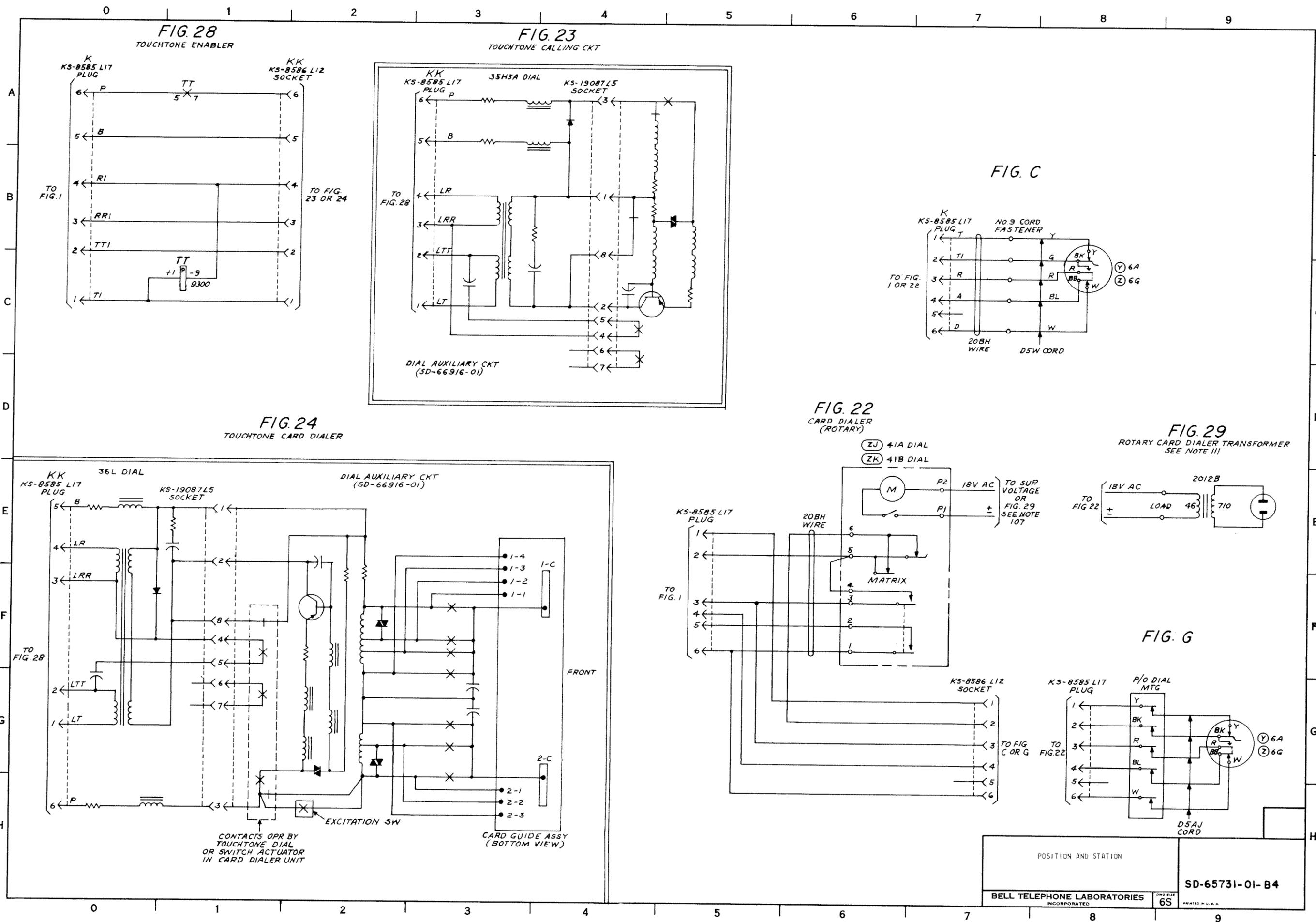
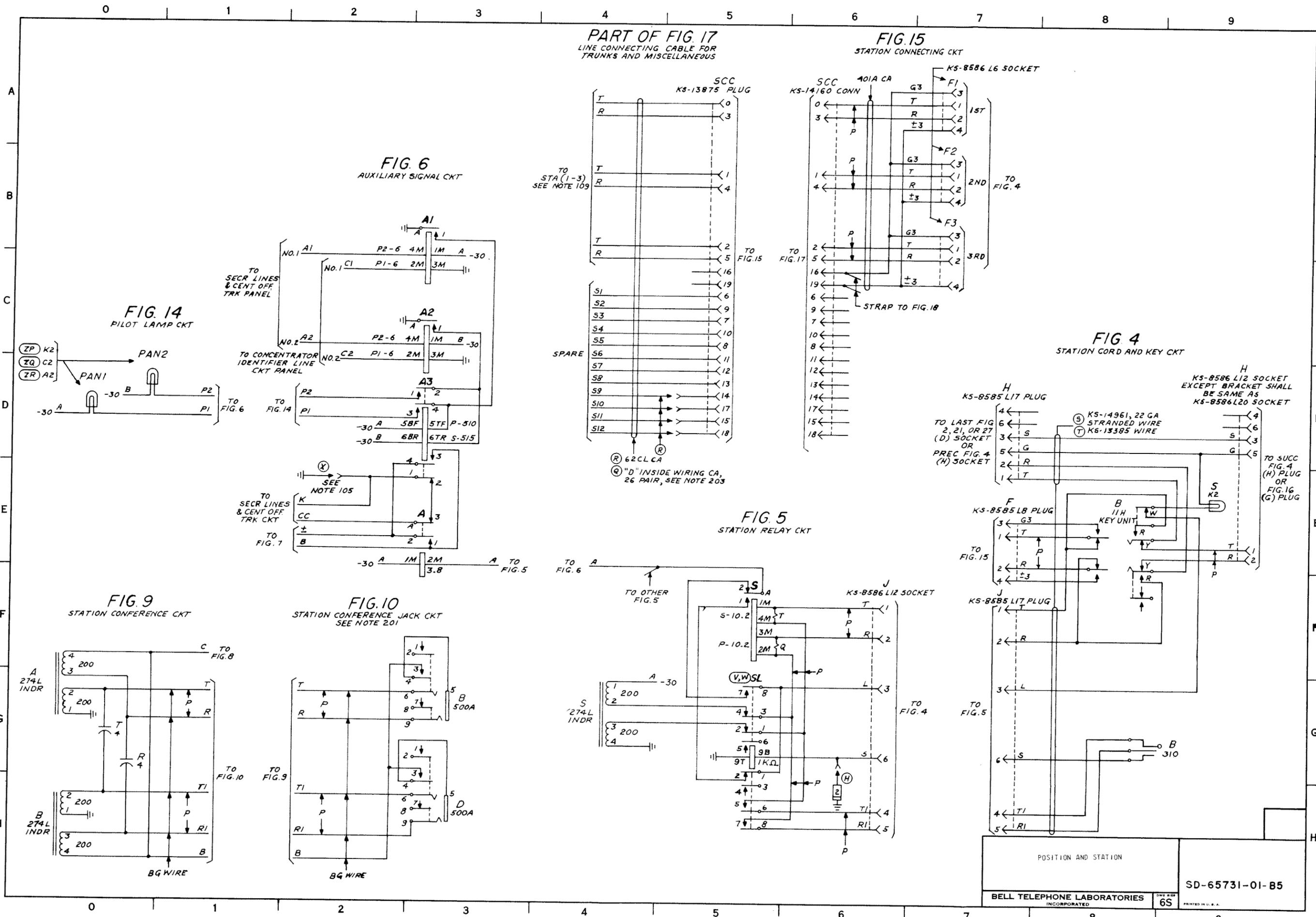


FIG.25 (MFR DISC)  
TONE CKT







**PART OF FIG. 17**  
LINE CONNECTING CABLE FOR  
TRUNKS AND MISCELLANEOUS

**FIG. 15**  
STATION CONNECTING CKT

**FIG. 6**  
AUXILIARY SIGNAL CKT

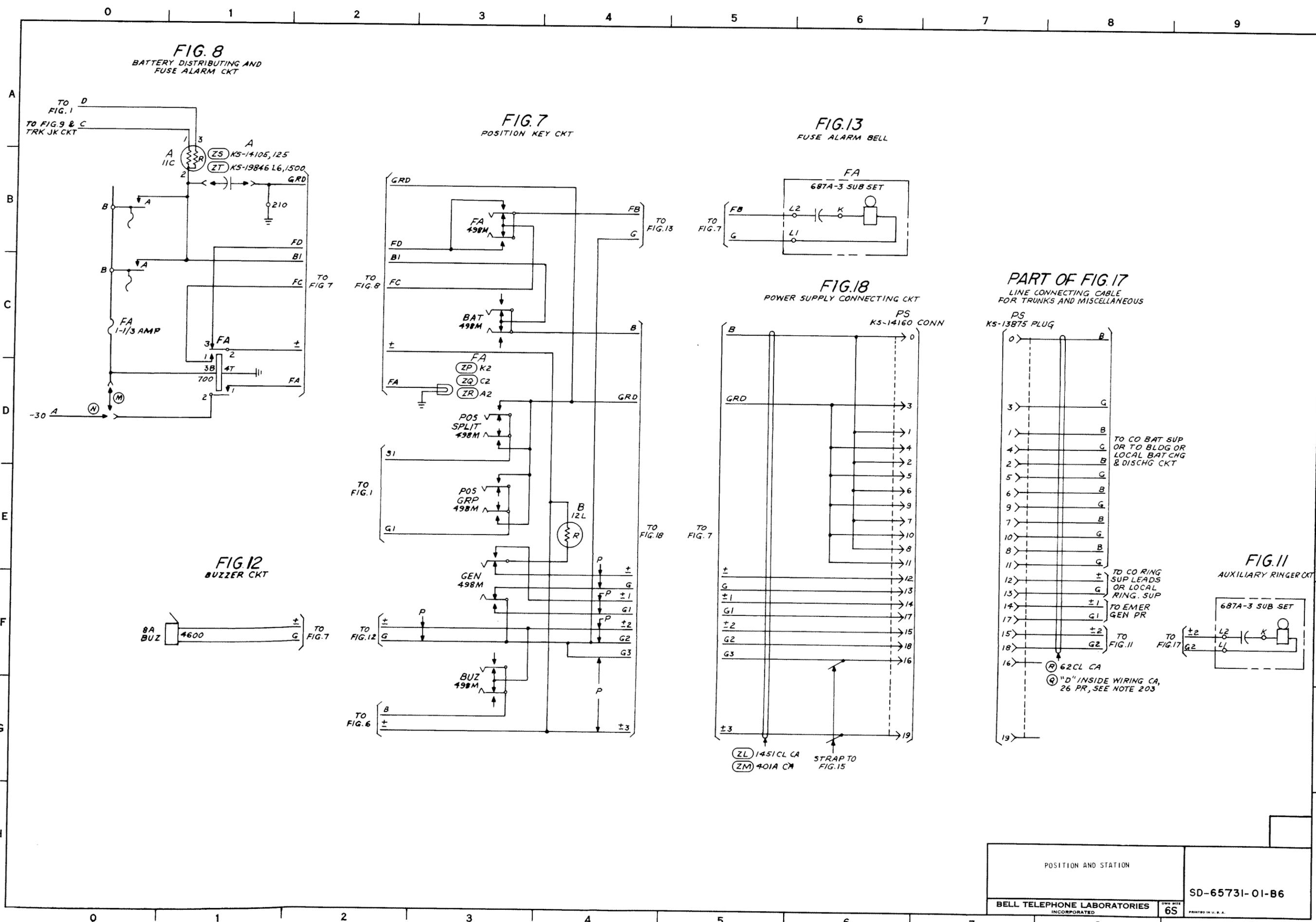
**FIG. 14**  
PILOT LAMP CKT

**FIG. 9**  
STATION CONFERENCE CKT

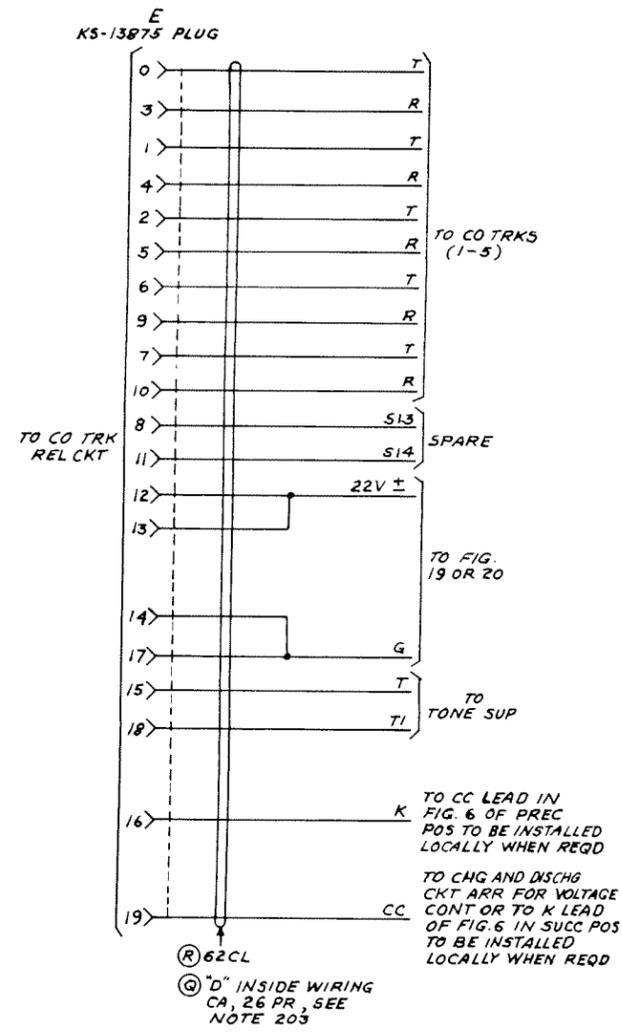
**FIG. 10**  
STATION CONFERENCE JACK CKT  
SEE NOTE 201

**FIG. 5**  
STATION RELAY CKT

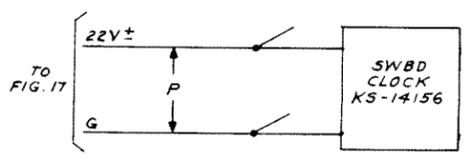
**FIG. 4**  
STATION CORD AND KEY CKT



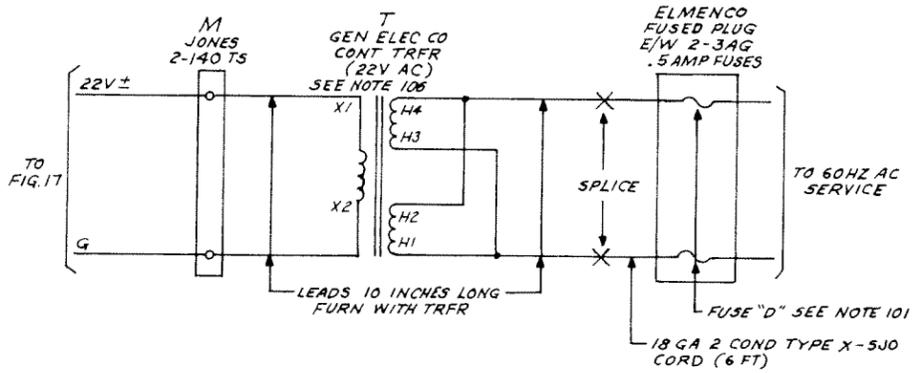
**PART OF FIG. 17**  
 LINE CONNECTION CABLE FOR TRUNKS  
 AND MISCELLANEOUS



**FIG. 19**  
 SWITCHBOARD CLOCK  
 SEE NOTES 109 AND 110



**FIG. 20**  
 50VA TRANSFORMER CKT



CIRCUIT NOTES:

DESIG	FUSE AMP	POTENTIAL	ONE PER
A	1-1/3	30	POSITION
B	1-1/3	30	POSITION
FA	1-1/3	30	POSITION
D	.5FN	105-125V AC	50VA TRANSFORMER
BATTERY SYMBOL		VOLTAGE RANGE	
-30		20-30 (WITH ZR) 36-52 (WITH ZQ) SEE NOTE 113	

FEATURE OR OPTION		PROVIDE	
		FIG.	APP OR WRG
TEL. DIAL. SPLITTING & GROUPING CKTS		1,26	
TEL SET JACK CKT		3	
HEAD TEL SET		E	
HAND TEL SET		F	
SWITCHBOARD IN MANUAL AREA		D	
WITHOUT CARD DIALER	ROTARY DIAL	10 PPS	C, B, Y
		20 PPS	C, B, Z
WITH CARD DIALER	ROTARY DIAL	10 PPS	22, B, E, Y
		20 PPS	29, B, E, Z
	TOUCHTONE DIAL	23, 28	A, Z
		21, 28	A, Z
TONE SIGNAL	STEADY UNTIL CUT THRU	26	ZA
	ZIP AT CUT THRU		ZB
VOLTAGE AT SWITCHBOARD		20-36	ZC
		36-52	NONE
POSITION GROUPING CONNECTOR		16	
LINE CONNECTING CABLE		17	
POWER SUPPLY CONNECTING CKT		18	
INTERCEPT CORD	WITH TRANSFER JACK SEE NOTE 108	27, B	AS REQD MAX 8
	WITH TRANSFER JACK	27, A	
STATION	CONNECTING CKT	15	1 PER POS
	CORD & KEY	4	AS REQD
	RELAY	5	MAX 3
STATION TO STATION	CONFERENCE CKT	9	
	JACK CKT	10	1 PER POS
AUXILIARY SIGNAL CKT		6	
	1ST POSITION SEE NOTE 105		X
POSITION KEY UNITS		7	
PILOT	LAMP	14	1 PER POS
	BUZZER	12	
	AUXILIARY RINGER	11	MAX 2
BAT. DISTRIBUTING & FUSE ALARM		8	
FUSE ALARM BELL		13	1 PER POS
SWITCHBOARD CLOCK		19	AS REQD
	SUPPLY TRANSFORMER	20	1 PER 5 FIG. 19
LAMPS (FIG. 4,7,14) WHEN VOLTAGE IS	20-30 (USE A2)		ZR
	30-52 (USE C2)		ZQ

CIRCUIT NOTES: (CONT)

FEATURE OR OPTION	PROVIDE	
	FIG.	APP OR WRG

RECORD OF FIGURES, WIRING, AND APPARATUS CHANGES						
CHANGED ON ISSUE	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT		
				STD	A&M	MD
4B	V OR W	H		V		W
5D	S OR T	T		S		T
	Q OR R	R		Q		R
6D	M OR N	H		M		N
8D	J OR K	K		J		K
9B	H	NONE		H		
10D	F OR G	G		F		G
11AC	FIG. 21	FIG.21		FIG.2		FIG.2
12B	FIG. 22	NONE		FIG.22		
	E	NONE		E		
14D	A OR B			A OR B		
15AC	FIG. 25 OR 26	FIG. 25		FIG. 26		FIG. 25
	ZA OR ZB	NONE		ZA OR ZB		
	ZC	NONE	114	ZC		
	ZF	NONE		ZF		
16B	ZD OR ZE	ZD	108, 112	ZD OR ZE		
	ZG OR ZH	ZG		ZH		ZG
19D	ZJ OR ZK	ZJ		ZK		ZJ
20B	ZL OR ZM	ZL		ZM		ZL
	FIG. 27	FIG.21		FIG.27		FIG.21
21A	FIG. 28	NONE	102	FIG.28		
	ZN OR ZO	ZN		ZO		ZN
22B			108			ZO
	ZP, ZQ, ZR	ZP	102	ZR		ZP
	ZS OR ZT	ZS	110	ZT		ZS
	ZU OR ZV	ZU		ZV		ZU
						ZJ
	FIG. 29		102, 111	FIG.29		
ZW OR ZX	ZW		ZX		ZW	

CIRCUIT NOTES: (CONT)

NETWORK VALUES			
NETWORK		RESISTANCE IN OHMS	CAPACITY IN UF
NO.	CODE		
1	185A	470	.11
2	186A	120	.35

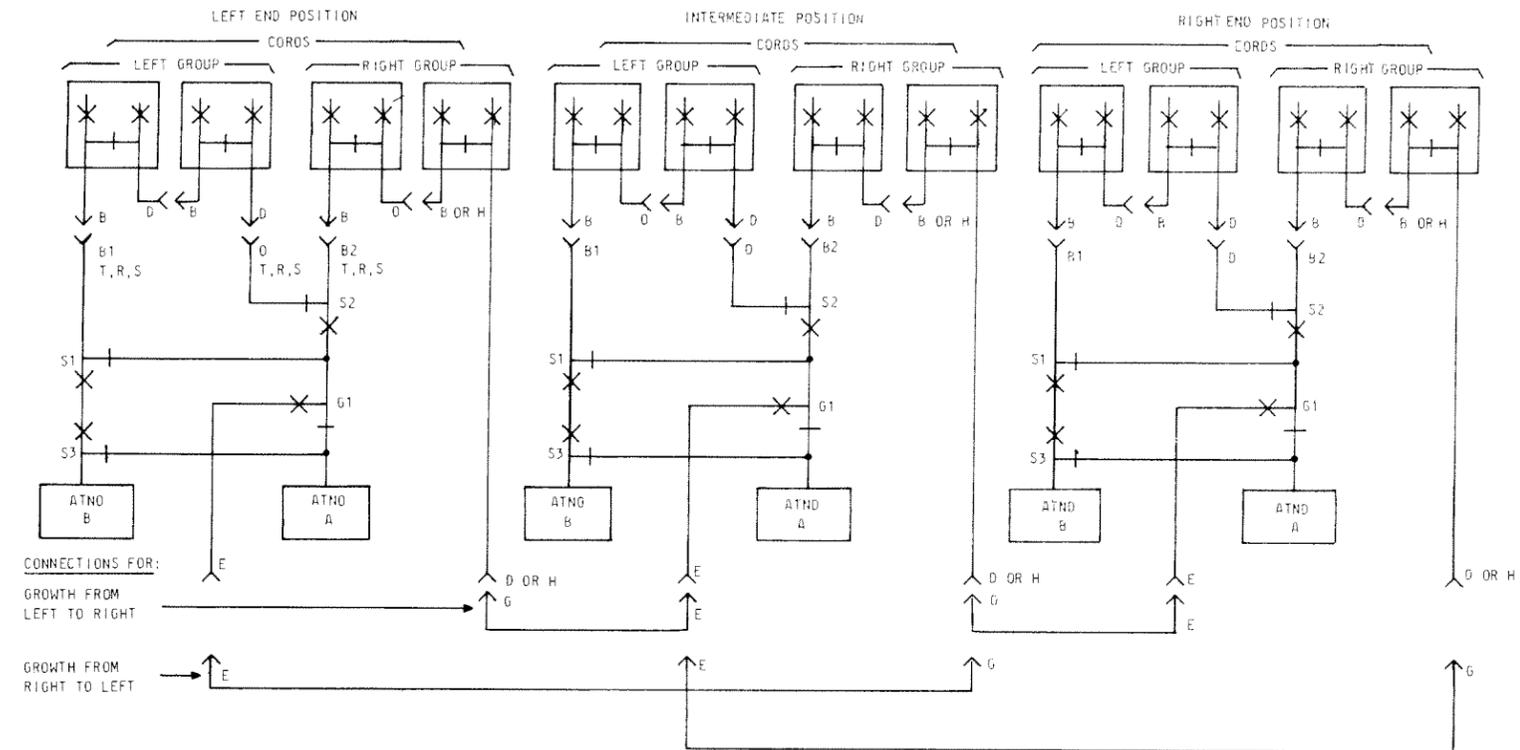
- 105. OPTION X SHALL BE REMOVED IN ALL EXCEPT THE FIRST POSITION OF LINE-UP WHEN PBX IS CONNECTED TO CHARGE AND DISCHARGE CIRCUIT ARRANGED FOR VOLTAGE CONTROL. SERIES WIRING OF CC AND K LEADS SHALL BE CONNECTED LOCALLY AT EXTERNAL TERMINATION.
- 106. PRIOR TO ISSUE 22B CLOCK SUPPLY TRANSFORMER WAS GENERAL ELECTRIC CATALOGUE NO. 9T51Y1266. NEW CATALOGUE NO. IS 9T51Y2141. MAXIMUM LOAD PER TRANSFORMER IS FIVE KS-14156 CLOCKS. MAXIMUM CONDUCTOR LOOP TO FIRST CLOCK IS 3.72 OHMS.
- 107. SUPPLY VOLTAGE MAY BE OBTAINED FROM ONE 2075A TRANSFORMER PER ROTARY CARD DIALER. THE CARD DIALER HAS A POWER DRAIN OF 3 WATTS. THE VOLTAGE AT TERMINALS P1 AND P2 SHALL BE WITHIN 13-18 VOLTS.
- 108. WHEN TOUCHTONE CALLING IS PROVIDED FOR SWITCHBOARDS PRIOR TO ISSUE 22B HAVING TRANSFER JACKS, REMOVE ZD OPTION AND ADD ZE OPTION.
- 109. DO NOT PROVIDE POLARITY GUARDS WITH TOUCHTONE TELEPHONE SETS.
- 110. PRIOR TO ISSUE 22B, ZS OPTION WAS PART OF F OPTION.
- 111. DIALER TRANSFORMER, FIG. 29, PLUGS INTO CONVENIENCE OUTLET. MOUNT AND WIRE ON A JOB BASIS.
- 112. PRIOR TO ISSUE 21A, ZD AND ZE OPTIONS WERE SHOWN ONLY IN FIG. B AS A TIP/RING TRANSPOSITION. OPTIONS ZD AND ZE ARE REVISED ON ISSUE 21A TO AGREE WITH T-65731-32.
- 113. WHERE PBX IS LOCALLY POWERED IT IS EXPECTED THAT THE VOLTAGE RANGE WILL BE 20-30V, USE ZR OPTION. WHERE PBX IS POWERED OVER CABLE PAIRS FROM 48V CENTRAL OFFICE BATTERY CABLE RESISTANCE SHALL BE ENGINEERED TO PROVIDE MIN 30V AT PBX, USE ZQ OPTION LAMPS.

EQUIPMENT NOTES:

- 201. JACKS FOR FIG. 10 ARE SPARE IN STRIP PROVIDED FOR FIG. B OR ON STRIP PROVIDED FOR TRUNKS.
- 202. ALL LOCAL CABLE WIRES FOR BATTERY, GROUND, AND GENERATOR SHALL BE 20BH WIRE.
- 203. LINE CABLE SHALL BE CONNECTED TO INDIVIDUAL PLUGS USING COLOR CODE SEQUENCE IN AGREEMENT WITH FIG. 4 OF INSTALLATIONS AND MAINTENANCE SPECIFICATION BSP 8523.613.
- 204. SPRINGS 3,5; 6,7; 8,9; 10,11, MAKE BEFORE 1,2; 3,4; 5,7; 8, 10 BREAK.
- 205. THE CHANGE FROM FIG. 2 TO FIG. 21 ON ISSUE 11AC APPLIES ONLY TO NEW MANUFACTURE AND EQUIPMENT STILL IN STOCK AT WECO. WECO WILL NOT MAKE THIS CHANGE ON EQUIPMENT NOW IN THE FIELD.
- 206. WIRING BETWEEN TERMINALS 2 AND 4 OF INDUCTION COILS (AA) AND (AB) AND SOCKET (M) SHALL BE PAIRED.
- 207. FIG. A IS A BARE WIRE STRIP AT TERMINALS 1 AND 3 OF SOCKET (A).
- 208. PLACE RESISTOR B (ZX OPTION) ON SOCKET D AND POSITION TO AVOID CONTACT WITH WIRES.

INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED:  
 RESISTANCE VALUES ARE IN OHMS  
 CAPACITANCE VALUES ARE IN MICROFARADS  
 INDUCTIVE COIL, INDUCTOR, TRANSFORMER VALUES ARE IN OHMS.  
 VALUES PRECEDED BY THE SYMBOL + (PLUS) OR - (MINUS)  
 ARE IN VOLTS.
302. INTERCEPT CORD CIRCUIT, FIG. 2, IS DIVIDED INTO TWO GROUPS FOR POSITION SPLITTING PURPOSES. A GROUP MAY CONSIST OF ANY NUMBER OF CORD CIRCUITS FROM ONE TO SEVEN. CONNECT PLUG (B) OF FIRST FIG. 2 IN FIRST GROUP TO SOCKET (B1) OF FIG. 1. CONNECT PLUG (B) OF FIRST FIG. 2 IN SECOND GROUP TO SOCKET (B2) OF FIG. 1.
303. SPLITTING AND GROUPING ARRANGEMENT:



CONNECTIONS FOR:

GROWTH FROM LEFT TO RIGHT

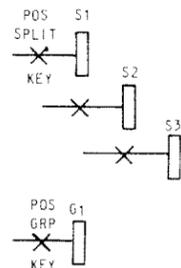
GROWTH FROM RIGHT TO LEFT

SPLIT:

ATTENDANT "A" USES RIGHT CORD GROUP (2-WAY TRAFFIC)  
 ATTENDANT "B" USES LEFT CORD GROUP (ANSWER ONLY)

GROUPING:

ATTENDANT "A" AT LOW NUMBERED POSITION.  
 OPERATE GROUP KEY IN HIGHER NUMBERED POSITIONS.  
 ATTENDANT IS CHAIN CONNECTED TO EVERY CORD IN HOME AND GROUPED POSITIONS.



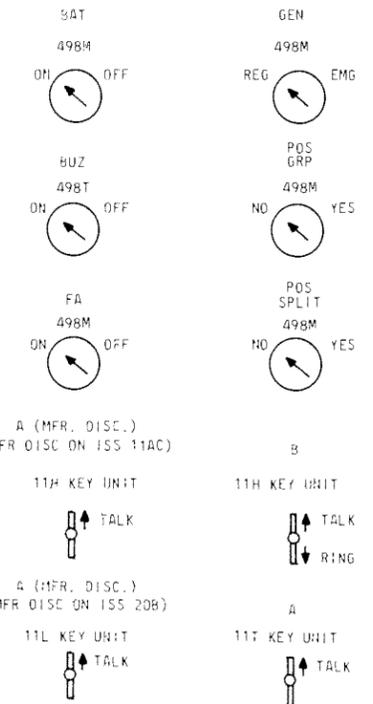
TRANSMISSION TEST REQUIREMENTS (1000 CYCLE LOSS BETWEEN 6000 LINES)			
TEMP °F	MAX ALLOWABLE CIRCUIT LOSS (db)		
	TRANS	REC	
70°	10.7	6.3	
80°		6.5	
90°		6.7	
100°		6.8	
110°		7.0	

ALLOWABLE INDIVIDUAL APPARATUS LOSSES (db)					
APPARATUS	DESIG	CODE	MAX LOSS	MIN LOSS	REMARKS
CAPACITOR	AR OR AB	2 UF	13.7	11.7	
CAPACITOR	AR OR BR	3 UF	17.2	15.1	
IND COIL	AA OR AB	1B1B	11.1	9.3	
INDR	AR OR AB	274AH	0.2		
RELAY	AR OR AB	B617	0.6		
VARISTOR	A OR B	33L			

NOTES:

1. FOR METHOD OF MAKING INDIVIDUAL APPARATUS LOSS TEST, SEE B5P ON TRANSMISSION TEST OF VARISTORS.  
 REQUIREMENTS USING 12 db PAD.  
 TEMPERATURE AT VAR. 70° 80° 90° 100° 105°  
 INDIVIDUAL LOSS 33L VAR. 0.4 0.5 0.6 0.7 0.8  
 LOSSES FOR TEMPERATURES OTHER THAN THOSE LISTED ABOVE MAY BE DETERMINED BY INTERPOLATION.
2. \* INDICATES APPARATUS FOR WHICH INDIVIDUAL LOSS IS NOT REQUIRED.



WORKING LIMITS  
 STATION SIGNALING AND SUPERVISION

MAX CORD LOOP RES	20V	24V
MIN INSULATION RES	1,000Ω	17,000Ω
	20,000Ω	20,000Ω

POSITION AND STATION	
BELL TELEPHONE LABORATORIES INCORPORATED	SD-65731-01-D2 6S PRINTED IN U.S.A.

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		READJ MA	
								CONN BAT.	CONN GRD									
RELAY																		
A	B1166		6			9				2M(A)	GRD		0	100	13.7	13		
										2M(A)	GRD		R	7.2	7.6			
A1, A2	B1077		6			1				2M REL	BAT.	P1	0	20.5	19.5			
										2M TST	BAT.	P1	R	7.5	7.9			
										4M REL	GRD	P2	0	23	21.5			
										4M TST	GRD	P2	R	6.7	7.1			
A3	U723		6			111/110	H	35		3F(A3)		TF(A3)	GRD	2	P	0	26.5	20
										1T(A3)		TR(A3)	GRD	2	S	0	26.5	
AA	B617		25	MD		9		40		1M(AA)	2M(AA)	B/G			5.8	5.5		
										1M(AA)	2M(AA)	B/G	R		1.4	1.5		
AA	B617		26			9		40		1(AA)	1M(AA)	2M(AA)	B/G		5.8	5.5		
										1M(AA)	2M(AA)	B/G	R		1.4	1.5		
AA1	1/2AK1		26			201	H			8M(AA1)		2U(AA1)	GRD		0	25.7	24.5	MTD WITH (ATA)
AB	B617		25	MD		9		40		1M(AB)	2M(AB)	B/G			5.8	5.5		
										1M(AB)	2M(AB)	B/G	R		1.4	1.5		
AB	B617		26			9		40		1(AB)	1M(AB)	2M(AB)	B/G		5.8	5.5		
										1M(AB)	2M(AB)	B/G	R		1.4	1.5		
AB1	1/2AK1		26			201	H			8M(AB1)		2U(AB1)	GRD		0	25.7	24.5	MTD WITH (ATB)
ATA	1/2AK1		26			201	H					2L(ATA)	GRD		0	37.3	36.5	MTD WITH (AA1)
ATB	1/2AK1		26			201	H					2L(ATB)	GRD		0	37.3	36.5	MTD WITH (AB1)
FA	UA37		8			132/101	H	47		3b(FA)		BAT.	2		0	15.5	12.5	
G1	UA148	V	1			151/151	H	41				T(G1)	GRD	2		0	11.4	10.2
G1	U573	W	1			151/151	H	41				T(G1)	GRD	3		0	14.6	13.2
S	B1048		5			3		30		1M(S)	3M(S)	M			9.2	8.7		
										1M(S)	3M(S)	M			3.3	3.5		
S1-S3	UA148	V	1			151/151	H	41				T REL TST	GRD	2		0	11.4	10.2
S1-S3	U573	W	1			151/151	H	41				T REL TST	GRD	3		0	14.6	13.2
SA, SB	UA112		25	MD		101/101	H	29				T REL TST	GRD			0	4.9	3.9
SA, SB	U66		26			111/110	H	35				T REL TST	GRD			0	6	5.7
SL	UA148	V	5			151/151	H	41				B(SL)	BAT.	2				
SL	U573	W	5			151/151	H	41				B(SL)	BAT.	3				
TT	316AG		28			1				9(TT)	1(TT)	B/G	6		0		.25	
										9(TT)	1(TT)	B/G	6		R		.25	

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		READJ MA		
								CONN BAT.	CONN GRD										
MISCELLANEOUS KEYS																			
Z	11H KEY UNIT		2	MD															
B			4																
A	11L KEY UNIT		21	MD															
A	11T KEY UNIT		27																

TEST NOTES:

- CROSS SEQUENCE AND NONCLICK ON NONLOCKING COMBINATION. NONCLICK ON "Y" CONTACTS OF LOCKING COMBINATIONS. ALL "R" CONTACTS SHALL MAKE BEFORE "W" CONTACTS BREAK.
- TEST VALUE ALLOWS FOR VERTICAL MOUNTING OF RELAY.
- TEST VALUE ALLOWS FOR VERTICAL MOUNTING OF RELAY AT MINIMUM OF 17 VOLTS.
- CONTACT "Y" SHALL MAKE BEFORE CONTACTS "W" BREAK. THE SEPARATION SHALL NOT BE LESS THAN .006 INCHES.
- CONTACT "Y" SHALL MAKE BEFORE CONTACTS "W" BREAK. THE SEPARATION SHALL NOT BE LESS THAN .006 INCHES. CONTACT "M" TO MAKE BEFORE THE "Y" CONTACT MAKES.
- CIRCUIT PREPARATION - REMOVE (K) PLUG FROM (X) SOCKET.

