

TELEPHONE SETS

2684- AND 2685-TYPE

1. GENERAL

1.01 This section contains identification, installation, connections, and maintenance information for the 2684- and 2685-type telephone sets. These sets are 18- and 30-button, respectively, CALL DIRECTOR® telephone sets which are intended solely for use with specially engineered lines—*not for general telephone use.*

1.02 This section is reissued to:

- Add 2684AM- and 2685AM-type (modular) telephone sets
- Show 2684A- and 2685A-type telephone sets MD
- Add 656A, 657A, and 657B keys
- Show 697A headset adjunct MD
- Show 3B speakerphone system MD
- Add Comcode numbers

Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The 2684AM- and 2685AM-type modular telephone sets replace the 2684A-(MD) and 2685A-(MD) type telephone sets, respectively.

2. IDENTIFICATION

ORDERING GUIDE

2.01 Order as follows:

- Set, Telephone, 2684AM-* (18-button set)
- Set, Telephone, 2685AM-* (30-button set)



Fig. 1—2685AM1 Telephone Set

Note: Complete telephone set identification for ordering purposes by adding code numbers for key module arrangement from Table B and color desired from Table A (example: 2684AM7-58).

(a) Replaceable Common Components:

- Blank, Apparatus, 105B (see Table B)
- Dial, 35AF3A
- Lamp, 51A
- 812655595 (P-26E559) Relay Assembly
- Ringer, T1A
- Set, Hand, G3Y-* (2684A- or 2685A-type)
- Set, Hand, G15Y-* (2684AM- or 2685AM-type)
- 819040122 (P-90D012) Guard Assembly.

(b) Replaceable Specific Components:

- Cord, Mounting, D120C-* (2684-type sets)

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

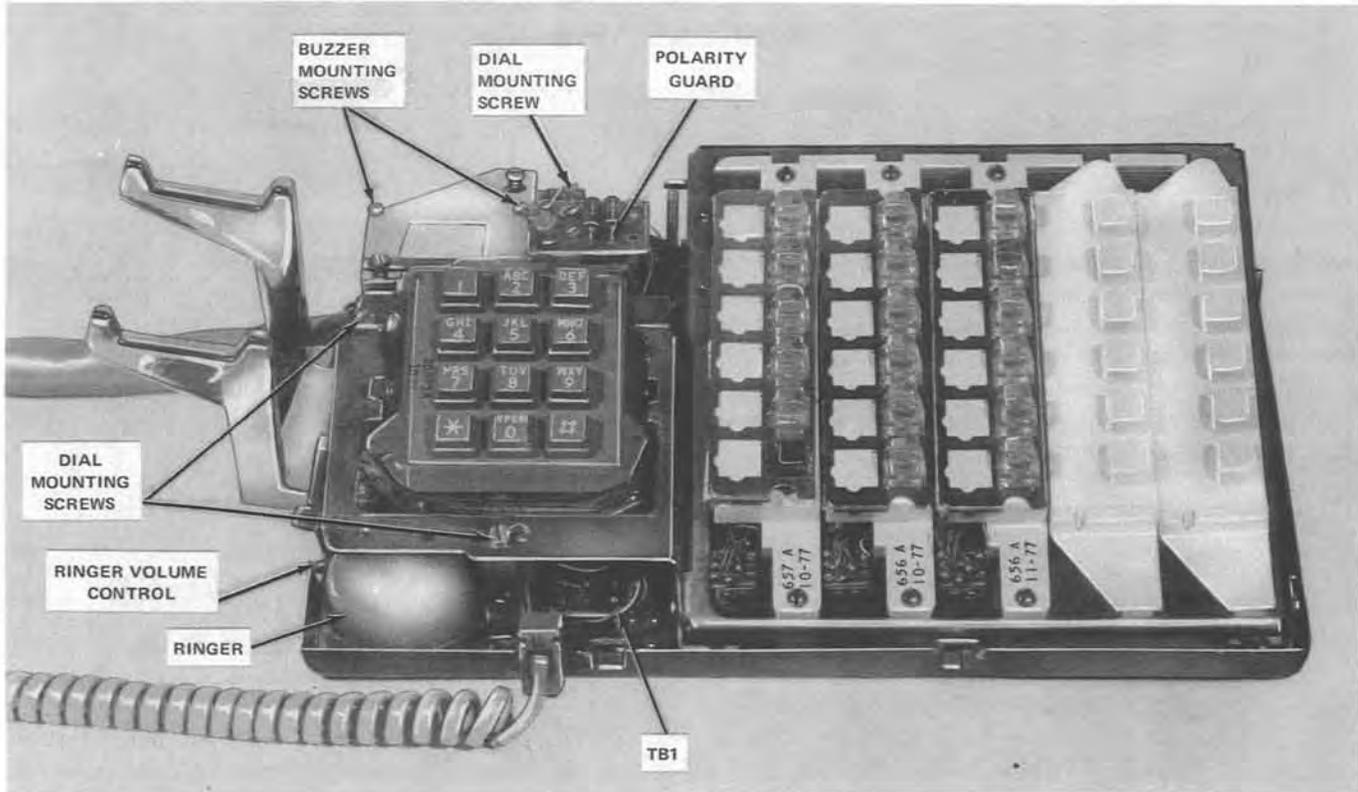


Fig. 2—2685AM1 Telephone Set, Housing Removed

- Cord, Mounting, D200F-* (2865-type sets)
- Housing (2684A- and 2685A-type sets) Table C
- Housing (2684AM and 2865AM-type sets) Table D
- Key
- Bezel
- Faceplate
- Mat, Paper

Tables B, E, F, and G

(c) **Replaceable Optional Components:**

- Buzzer, KS-8109L2 (ac or dc)
- Buzzer, KS-20419L1 (10 volt ac only)
- Loudspeaker, 760A (MD)

- Unit, Control, 55B (MD)
- Unit, Control, J-53041D

See Note

(d) **Loose Parts Furnished with Set:**

- Subscriber Instruction Booklet (SIB 2473)
- 811218585 (P-12A858) Blocking Ring
- 814151290 (P-44E129) Designation Strip
- 814451308 (P-44E130) Designation Strip (sets equipped with 617A key)
- Paper Mat (gold and silver; see Tables E and F)

* Add color code from Table A.

Note: The 55B control unit is required with sets for 3B (MD) speakerphone use on two wire circuits. The 55B and J-53041D control unit are required with sets for 3B speakerphone

use on 4-wire circuits. Connections for 4A speakerphone system must be engineered locally. Refer to SD-69923-01 and Section 512-730-460 for Reference.

COLOR

2.02 These CALL DIRECTOR telephone sets are available in standard telephone set colors with coordinated color paper mats. One gold mat and one silver mat is shipped loose with each set (Tables E and F).

TABLE A
COORDINATED COLOR SCHEME

TELEPHONE SET, CORD, HOUSING, AND HANDSET		PAPER MAT COORDINATED COLOR	
COLOR	CODE	COLOR	CODE
Black	-03	Charcoal	-70
Green	-51	Lt. Green	-71
Red	-53	Muted Red	-69
Yellow	-56	Lt. Yellow	-72
White	-58	Lt. Gray	-73
Lt. Beige	-60	Muted Beige	-75
Lt. Gray	-61	Charcoal	-70
Aqua Blue	-62	Muted Blue	-76
		Silver	-78
		Gold	-79

DESIGN FEATURES

2.03 These sets have the following design features:

- Removable faceplate and mat
- Pushbutton key positions convertible to signaling
- 6 transfer line switch
- 2- or 4-wire operation

- Polarity guard for end-to-end signaling capability
- 18- and 30-line capacity
- Optional headset adjunct.

APPLICATION

2.04 These sets are intended for:

- Specially engineered line circuits of 1A1, 1A2, or 6A key telephone systems having 2- or 4-wire capability per SD-69581-01
- Standard 3B (MD) speakerphone for 2-wire line circuits (2684A- and 2685A-type)
- 3B speakerphone modified for 4-wire line circuits (2684A- and 2685A-type)

3. INSTALLATION

3.01 *Planning:* When installing the 2684- or 2685-type telephone set and its optional services, consider the following:

- Safety for yourself, customer, and maintenance personnel
- Distance between apparatus and associated equipment
- Space requirements
- General appearance of installation

3.02 *Installing the Set:*

- Remove housing with faceplate and mat by loosening two screws at rear of set
- Install key units as necessary and make connections of key leads
- Stamp key designation strips and install under lamp strip
- Assure connections are correct and tight, and reassemble set
- Connect plug-ended mounting cord to appropriate connector cable

TABLE B

TELEPHONE SET CODES AND MODULE ARRANGEMENTS (NOTE)

TELEPHONE SET		SET EQUIPPED WITH					
TYPE	CODE†	LEFT MODULE	2ND MODULE	3RD MODULE	4TH MODULE	5TH MODULE	
2684A (MD) or 2684AM	1	657A	656A	105B			
	2			656A			
	4			617A			
	6			105B			
	7	657B		656A			
	9	656A		105B			
	10			656A			
	11*	657A		617A			667B (MD)
	12*						
	13*	657B		656A			59A
	14	657A					
	15	657B					
2685A (MD) or 2685AM	1	657A	656A	656A	105B	105B	
	2				656A	656A	656A
	3					617A	617A
	4					617A	59A
	5						
	9	105B			105B	105B	
	10				656A	656A	656A
	11					105B	105B
	12	656A			656A	656A	
	13				105B	105B	
	14				656A	656A	
	15				105B	667B (MD)	
	16*	657A			656A	656A	
	17*				617A	617A	
	18*				656A	59A	
19	656A		59A				

Note: The 656- and 657-type keys are electrically the same as and are interchangeable with the 598- and 599-type keys, refer to Section 512-230-100.

Module Identification
 59A — Lamp Socket
 105B — Apparatus Blank
 656A — 6 Pickup Positions
 657A — 5 Pickup and 1 Hold Position

657B — 1 Turnbutton, 4 Pickup, and 1 Hold Positions
 617A — 12 Nonlocking Signal Keys
 667B — Speakerphone Transmitter Unit

* These codes available in the 2684A- and 2685A-type telephone sets only.

† See Table A for color code.

TABLE C
HOUSING ASSEMBLIES FOR 2684A- AND 2685A-TYPE
TELEPHONE SETS

TELEPHONE SET	HOUSING ASSEMBLY	
	NUMBER	COLOR
2684A-Type	818430035 (P-84C003)	Black
	818430514 (P-84C051)	Green
	818430530 (P-84C053)	Red
	818430563 (P-84C056)	Yellow
	818430589 (P-84C058)	White
	818430605 (P-84C060)	Lt. Beige
	818430621 (P-84C062)	Aqua Blue
2685A-Type	818431033 (P-84C103)	Black
	818431512 (P-84C151)	Green
	818431538 (P-84C153)	Red
	818431561 (P-84C156)	Yellow
	818431587 (P-84C158)	White
	818431603 (P-84C160)	Lt. Beige
	818431629 (P-84C162)	Aqua Blue

- Remove faceplate and install number card in space provided below dial by removing paper covering adhesive area.

3.03 *Installing Optional Components:*

- To install 697A (MD) headset adjunct:
 - (1) Remove telephone set housing, faceplate, and mat by loosening two screws at rear of set.
 - (2) Place headset adjunct near telephone set assuring that headset jacks and foot switch are convenient to the user.
 - (3) Make necessary connections of D20J mounting cord from adjunct as outlined in Table I.
 - (4) Install set housing, faceplate, and mat.

- (5) Internal connections of the 697A subset are shown in Section 529-110-407.

- To install KS-8109L2 buzzer:

- (1) Remove telephone set housing, faceplate, and mat by loosening two screws at rear of set.
- (2) Remove two steel screws from the plastic buzzer mounting bracket provided at the dial mounting and install the buzzer using these screws. Buzzer must be insulated from the metal base of the set.
- (3) Make necessary wiring connections as shown in Fig. 10.
- (4) Install set housing, faceplate, and mat.

3.04 A KS-20419L1 miniature buzzer (6-10 volt ac) may be installed at any convenient location within the telephone set. Provide mounting screw as required or secure buzzer using an existing screw. Connect BZ and BZ1 mounting cord leads to (BL) buzzer leads at spare screw terminals or use D-141688 connectors. Refer to appropriate section in Division 501 for detailed information on KS-20419L1 buzzer.

4. CONNECTION INDEX



No changes in wiring other than those specified in this practice shall be made.

Table H—Connections For 667B (MD) Transmitter

Table I—Connections For 697A Subscriber Set, Headset Adjunct Unit

Table J—Conversion of Pickup Key to Signaling (Nonlocking)

Table K—Connections For 657B key (Turn Key)

Fig. 3—657A Key

Fig. 4—657B Key

Fig. 5—656A Key

Fig. 6—667B (MD) Transmitter

Fig. 7—617A Key

Fig. 8—59A Lamp Socket (Use 51A Lamps)

Fig. 9—Jack Assembly Connections for 2684AM- and 2685AM-Type Telephone Set Equipped With Modular Handset and Handset Cord

Fig. 10—2684- or 2685-Type Telephone Set, Connections

Fig. 11—Cord and Cable Connections

5. MAINTENANCE

5.01 Maintenance of 2684- and 2685-type telephone sets is limited to cleaning plastic surfaces, lubricating bearing surfaces of line switch, and replacing defective key units or components.

(a) *Cleaning:*

- Clean exterior plastic parts using water dampened KS-2423 cloth
- **Do not** use scouring cleansers on colored components as this may damage finish
- If cleaning does not result in desired appearance, replace component or entire set.

(b) *Lubricating:*

- Lubricate bearing surfaces of line switch assembly with KS-14774L1 lubricant when required.

(c) *Replacing Components:*

- Refer to sections covering keys, dials, handsets, cords, etc. for replacement of these components
- See Part 2, Ordering Guide, for replacement part numbers
- To replace modular key unit:
 - (1) Remove set housing, faceplate, and mat by loosening two screws in rear of set.
 - (2) Loosen screw on each side of key frame and raise frame to gain access to terminal boards.
 - (3) Disconnect spade-tipped leads of key unit to be removed, if required.
 - (4) Loosen captive screws securing key module to frame and lift key from frame and connector assembly.
 - (5) Install new key unit by reversing procedure (1) through (4).

TABLE D
HOUSING ASSEMBLIES FOR 2684AM- AND 2685AM-TYPE
TELEPHONE SETS

TELEPHONE SET	HOUSING ASSEMBLY	
	HOUSING	COLOR
2684AM-Type	840715304	Black
	840715262	Green
	840715312	Red
	840715320	Yellow
	840715270	White
	840715288	Lt. Beige
	840715296	Lt. Gray
	840715338	Aqua Blue
2685AM-Type	840712327	Black
	840712335	Green
	840712343	Red
	840712350	Yellow
	840712368	White
	840712376	Lt. Beige
	840712384	Lt. Gray
	840712392	Aqua Blue

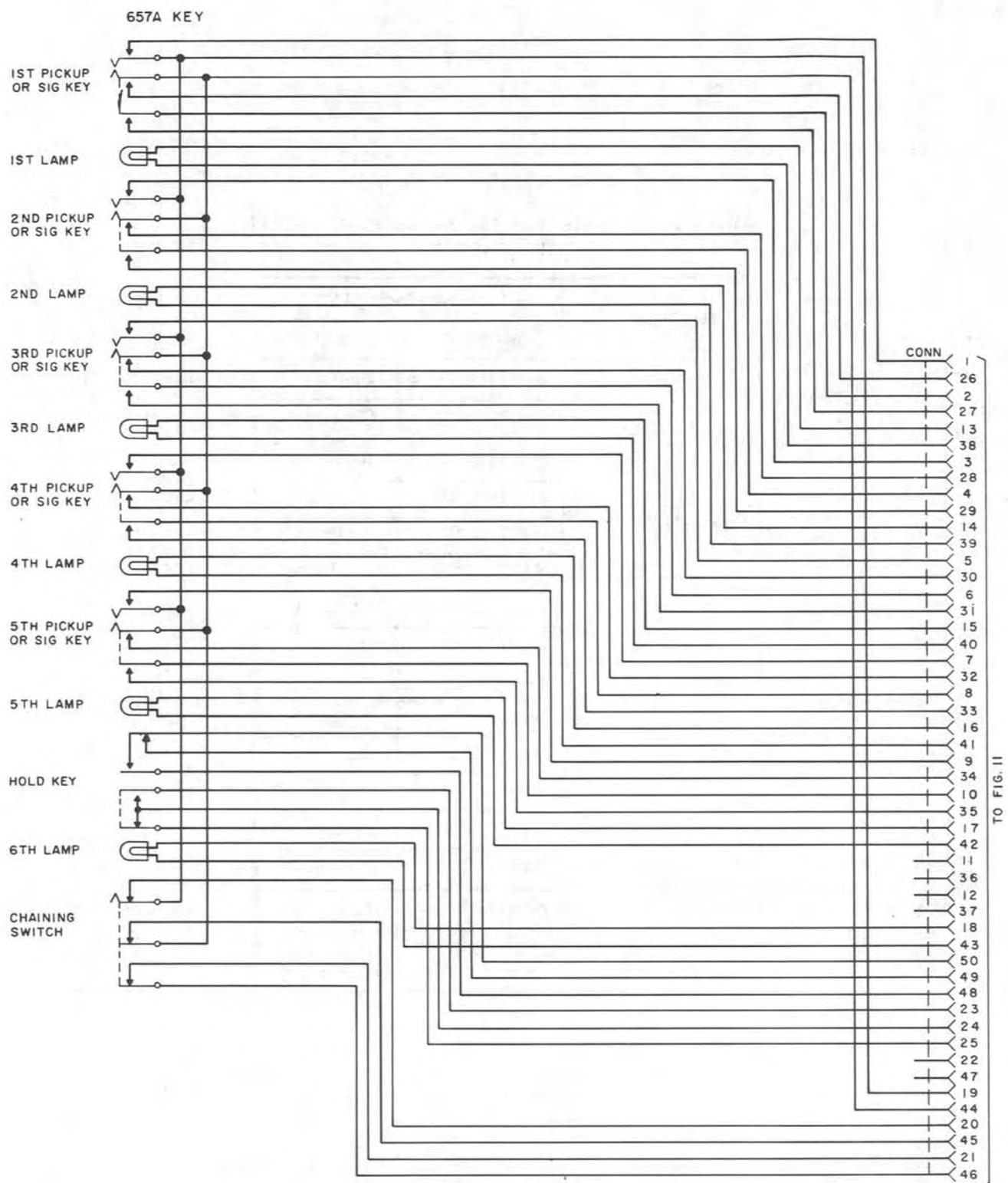


Fig. 3—657A Key

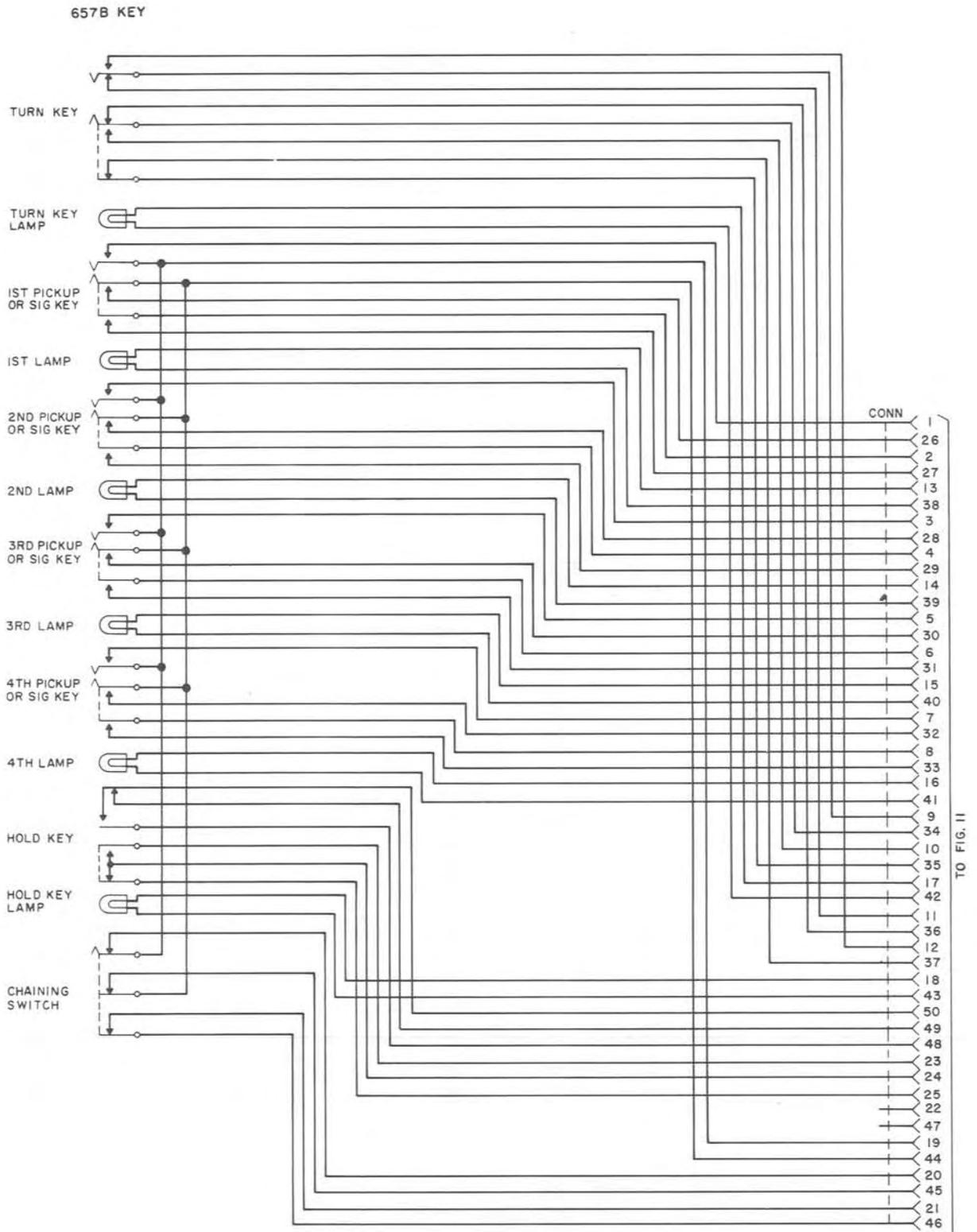


Fig. 4—657B Key

656A KEY

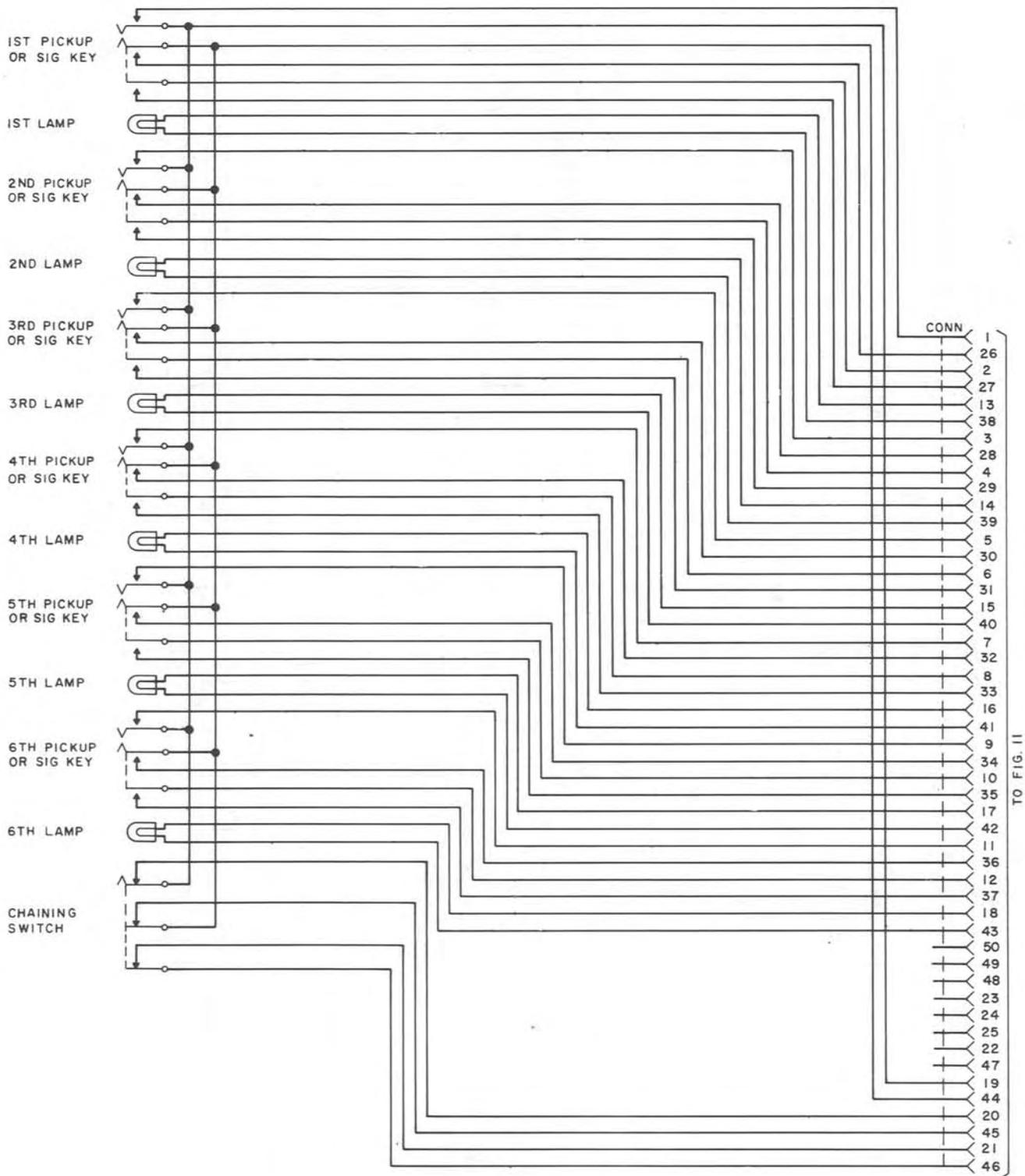
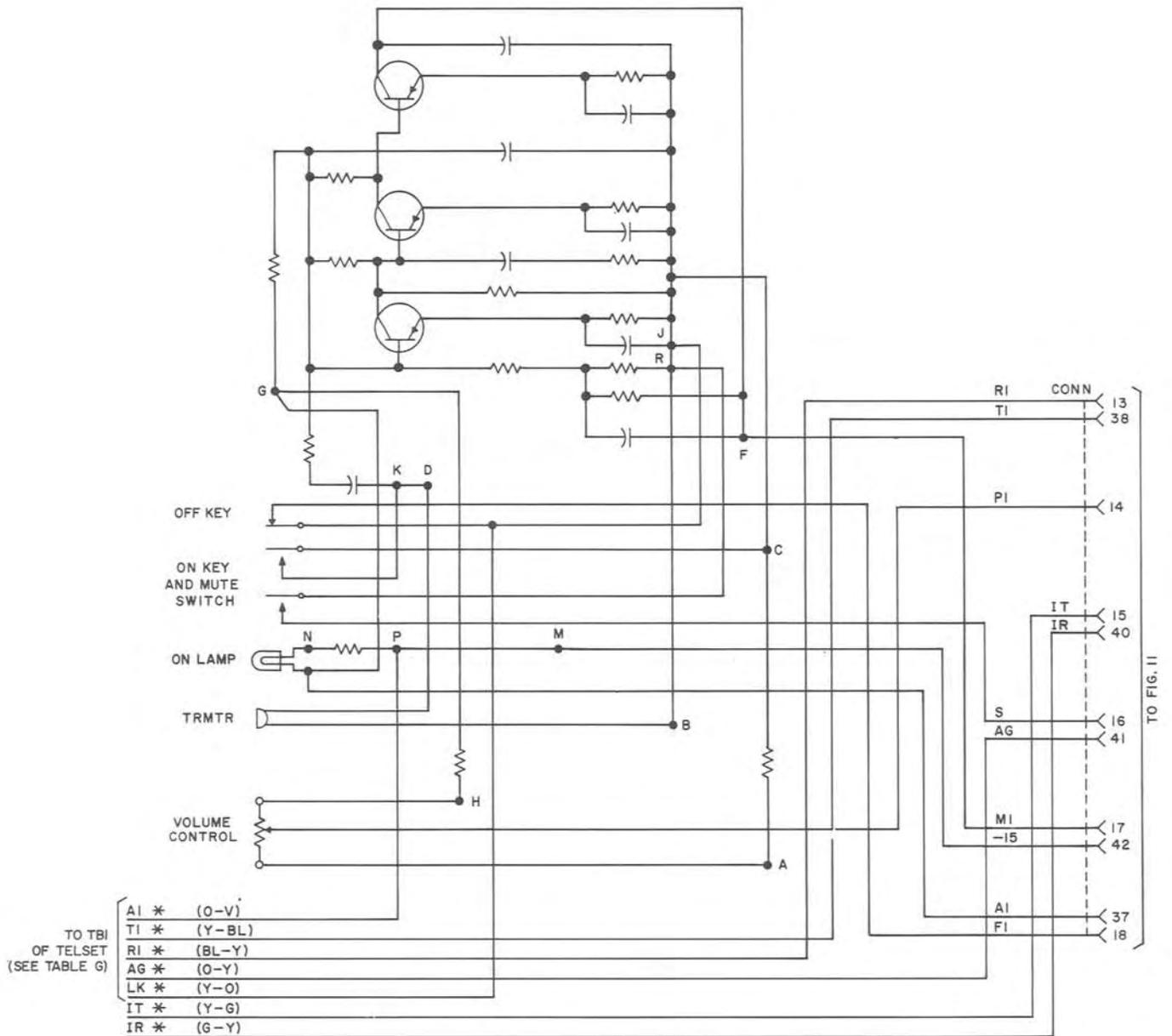


Fig. 5—656A Key

667B
TRANSMITTER



* LEADS ARE SPADE TIPPED AND OF SUFFICIENT LENGTH TO REACH TBI WHEN TRANSMITTER MODULE IS IN THE 5TH KEY POSITION OF 2685A-TYPE TELEPHONE SET.

Fig. 6—667B (MD) Transmitter

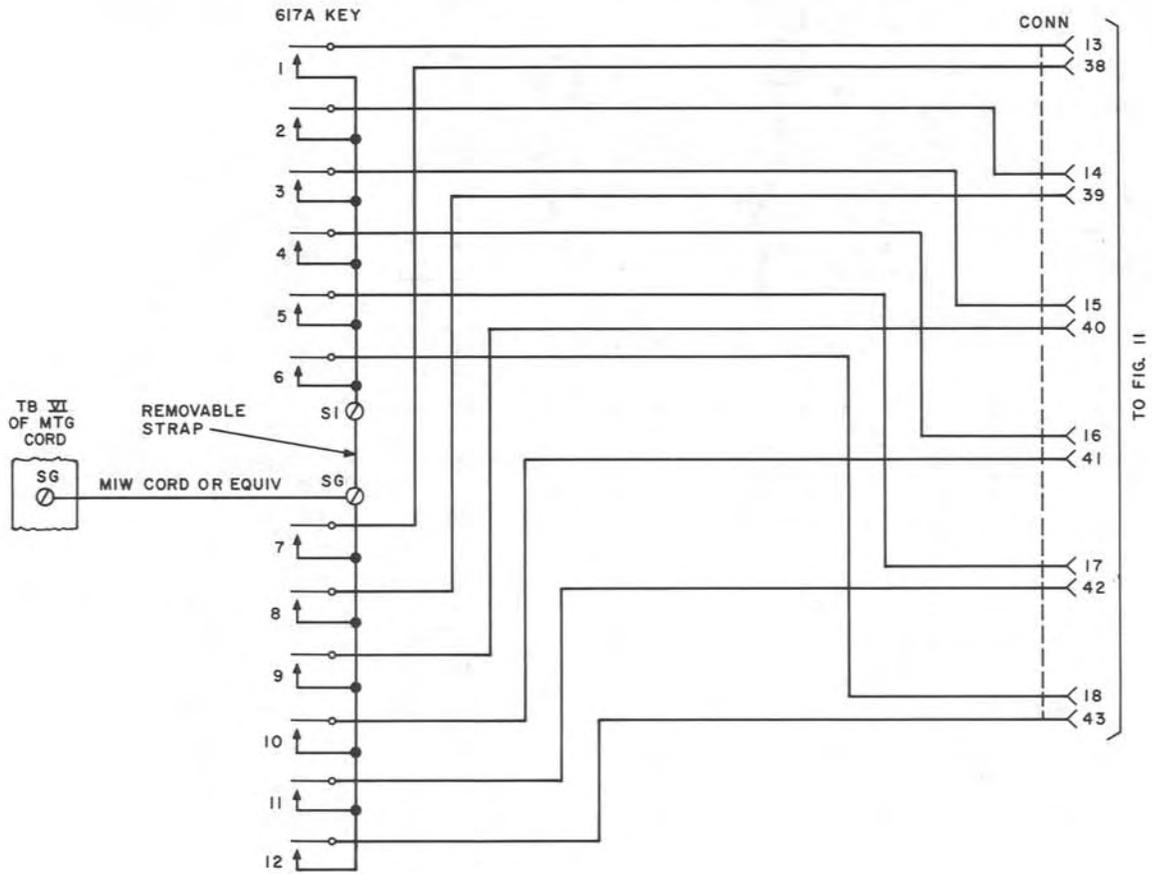


Fig. 7-617A Key

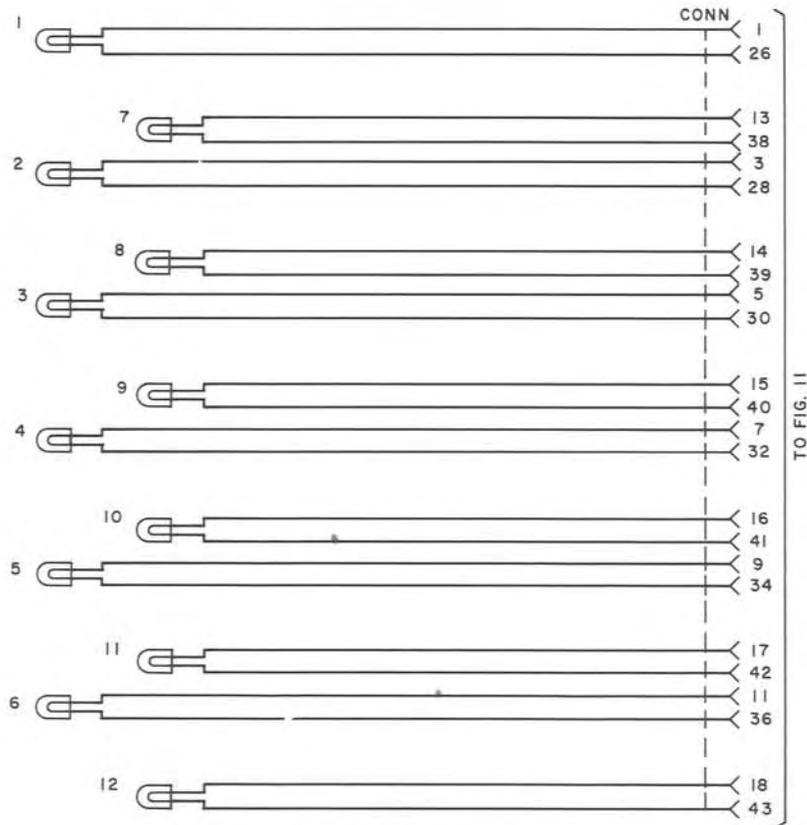


Fig. 8—59A Lamp Socket (use 51A Lamps)

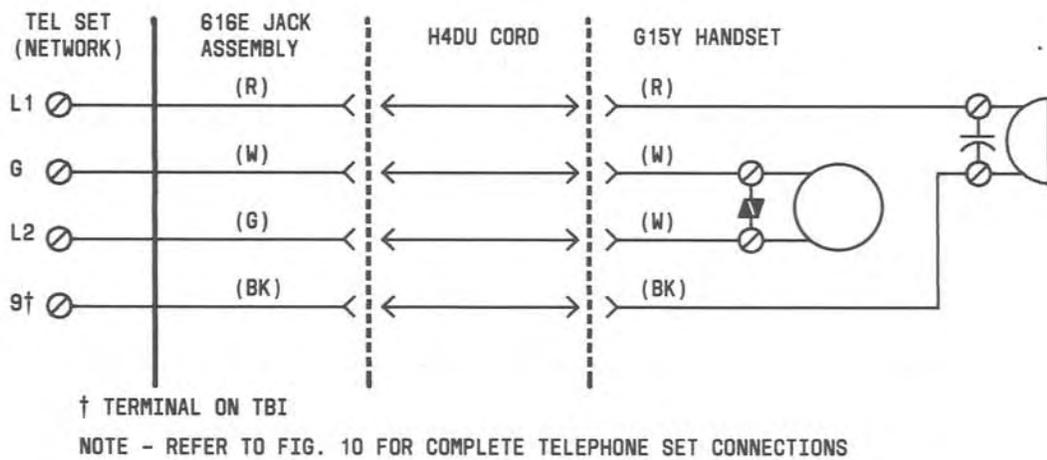


Fig. 9—Jack Assembly Connections for 2684AM- and 2685AM-type Telephone Set Equipped With Modular Handset and Handset Cord (Note)

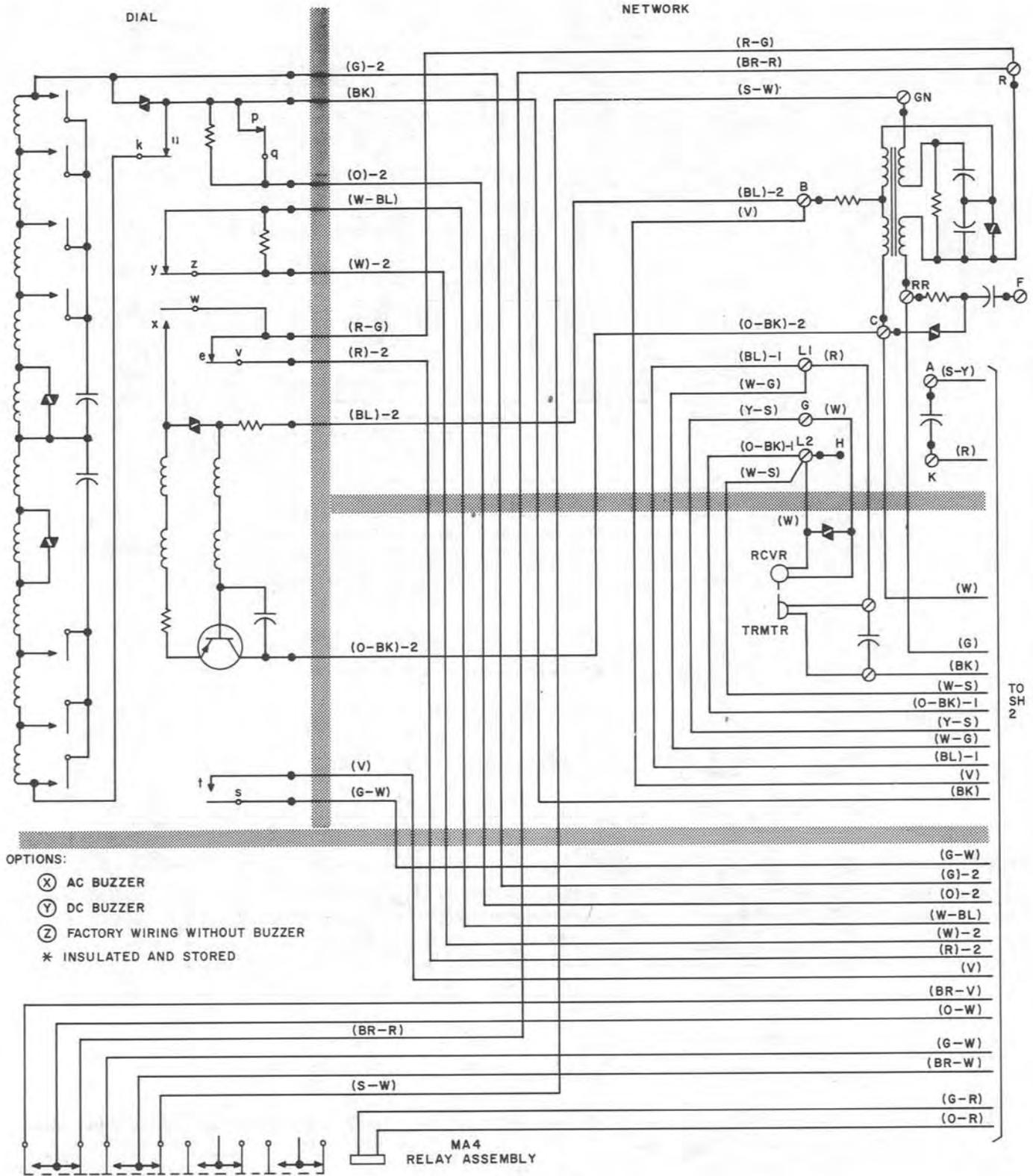


Fig. 10-2684- or 2685-Type Telephone Set, Connections (Sheet 1 of 2)

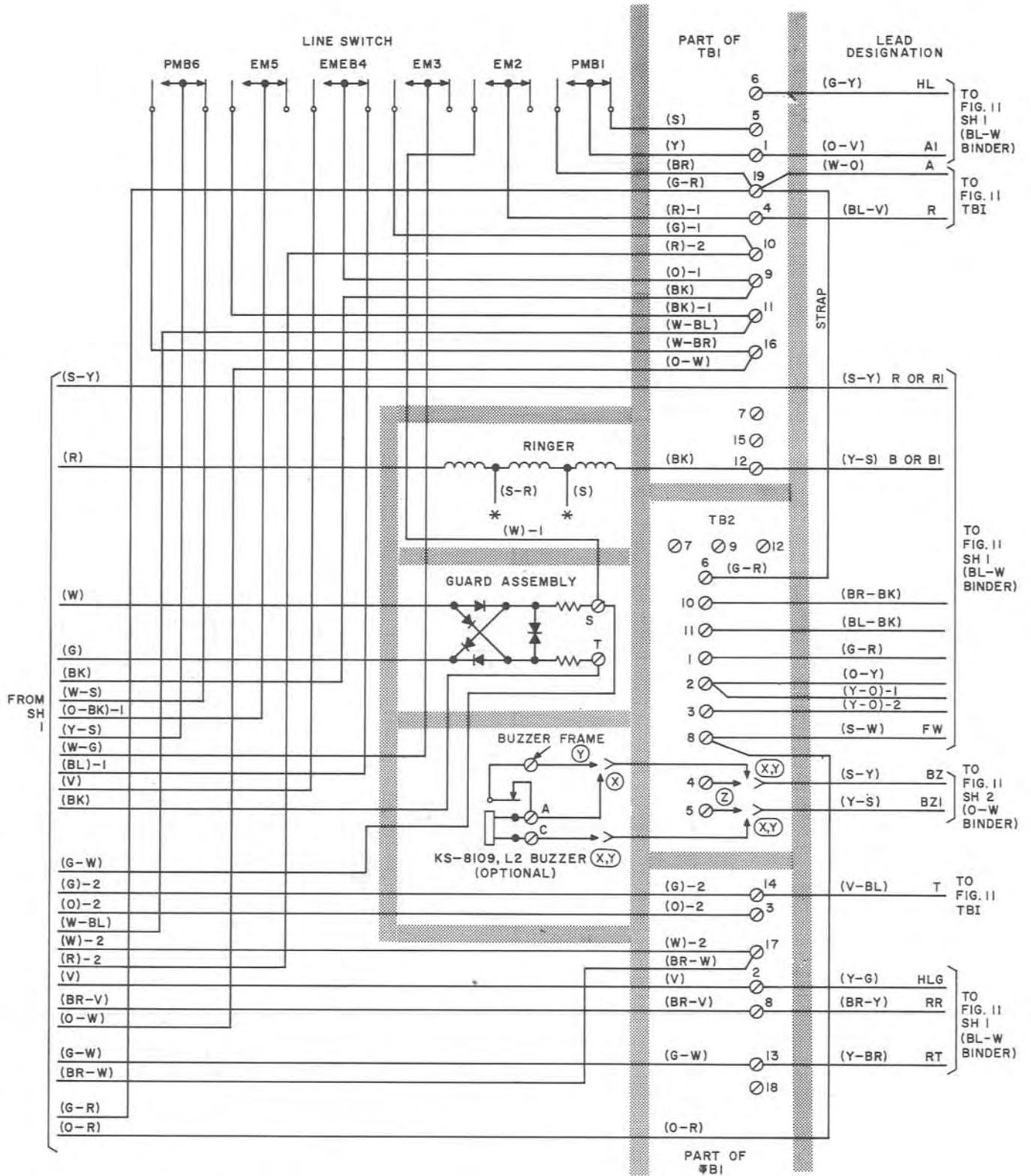


Fig. 10—2684- or 2865-Type Telephone Set, Connections (Sheet 2 of 2)

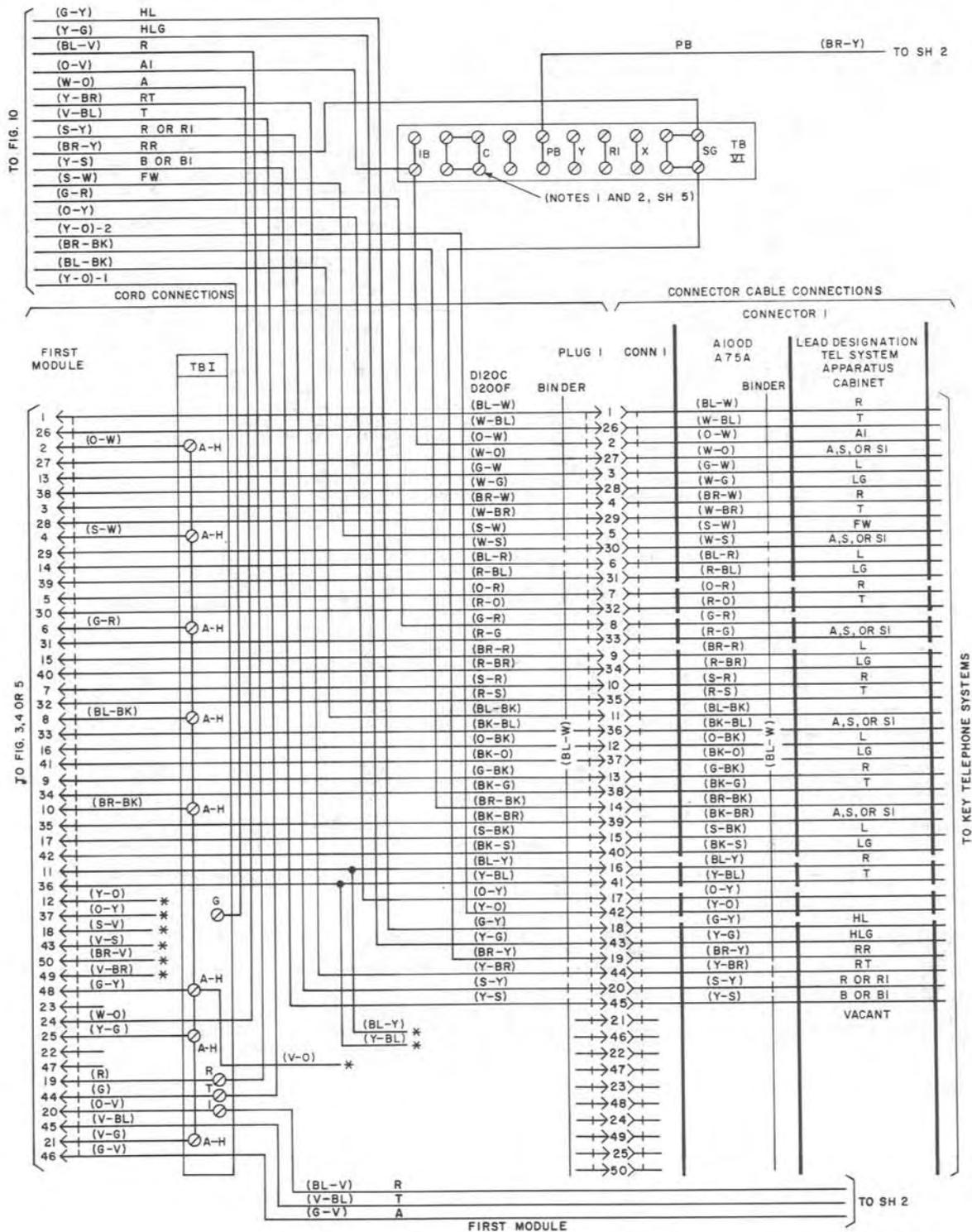


Fig. 11—Cord and Cable Connections (Sheet 1 of 5)

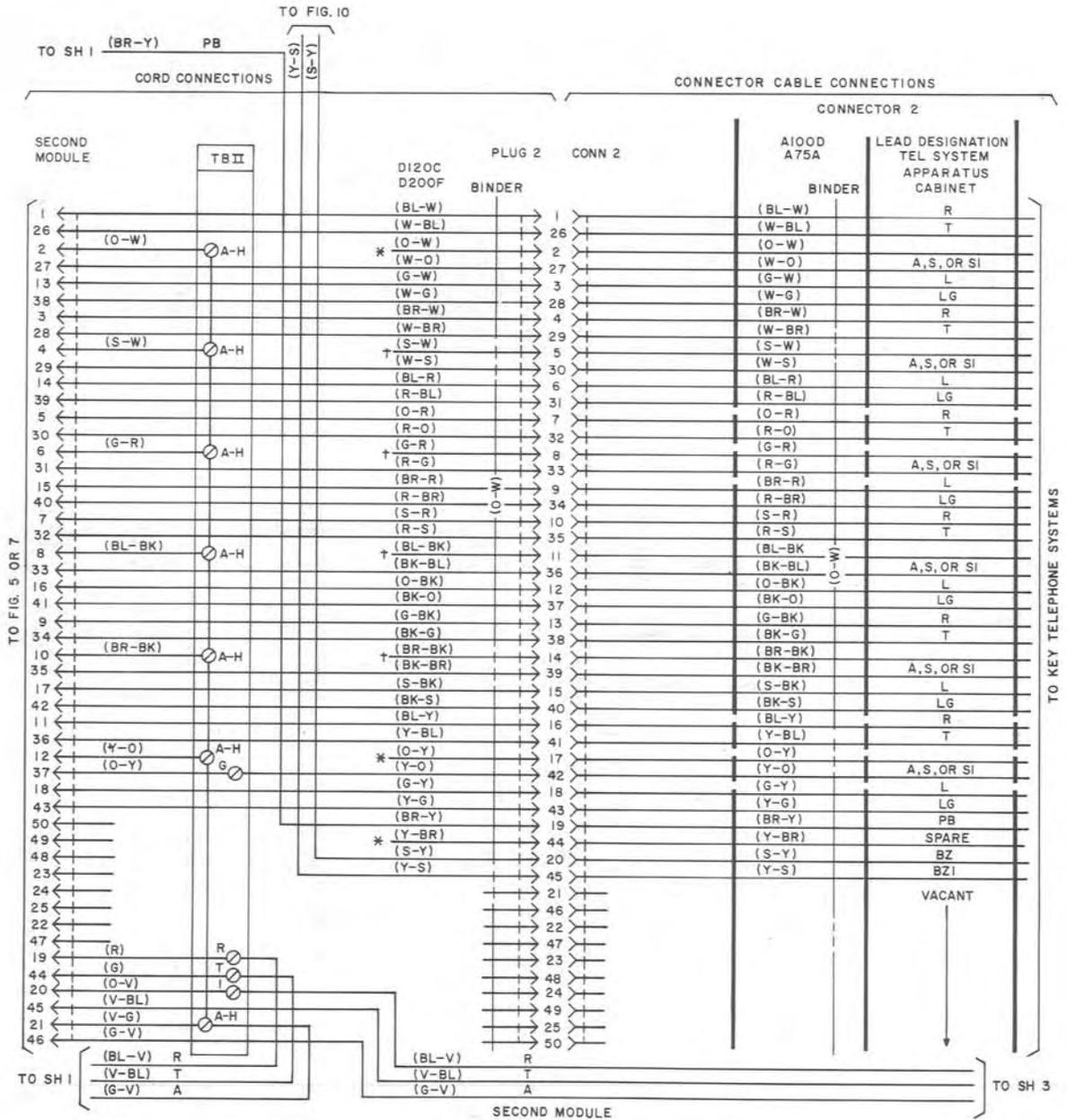


Fig. 11—Cord and Cable Connections (Sheet 2 of 5)

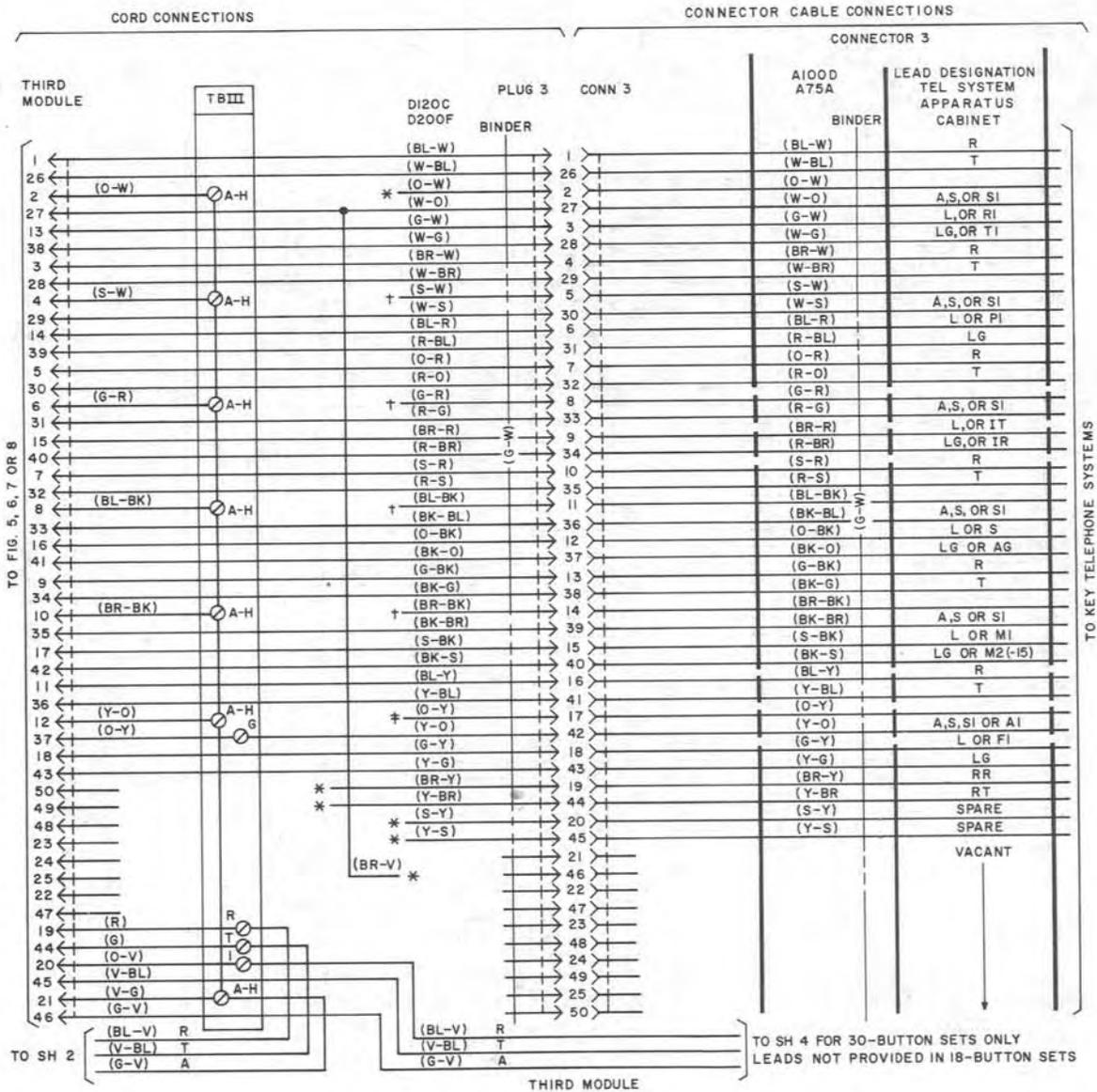


Fig. 11—Cord and Cable Connections (Sheet 3 of 5)

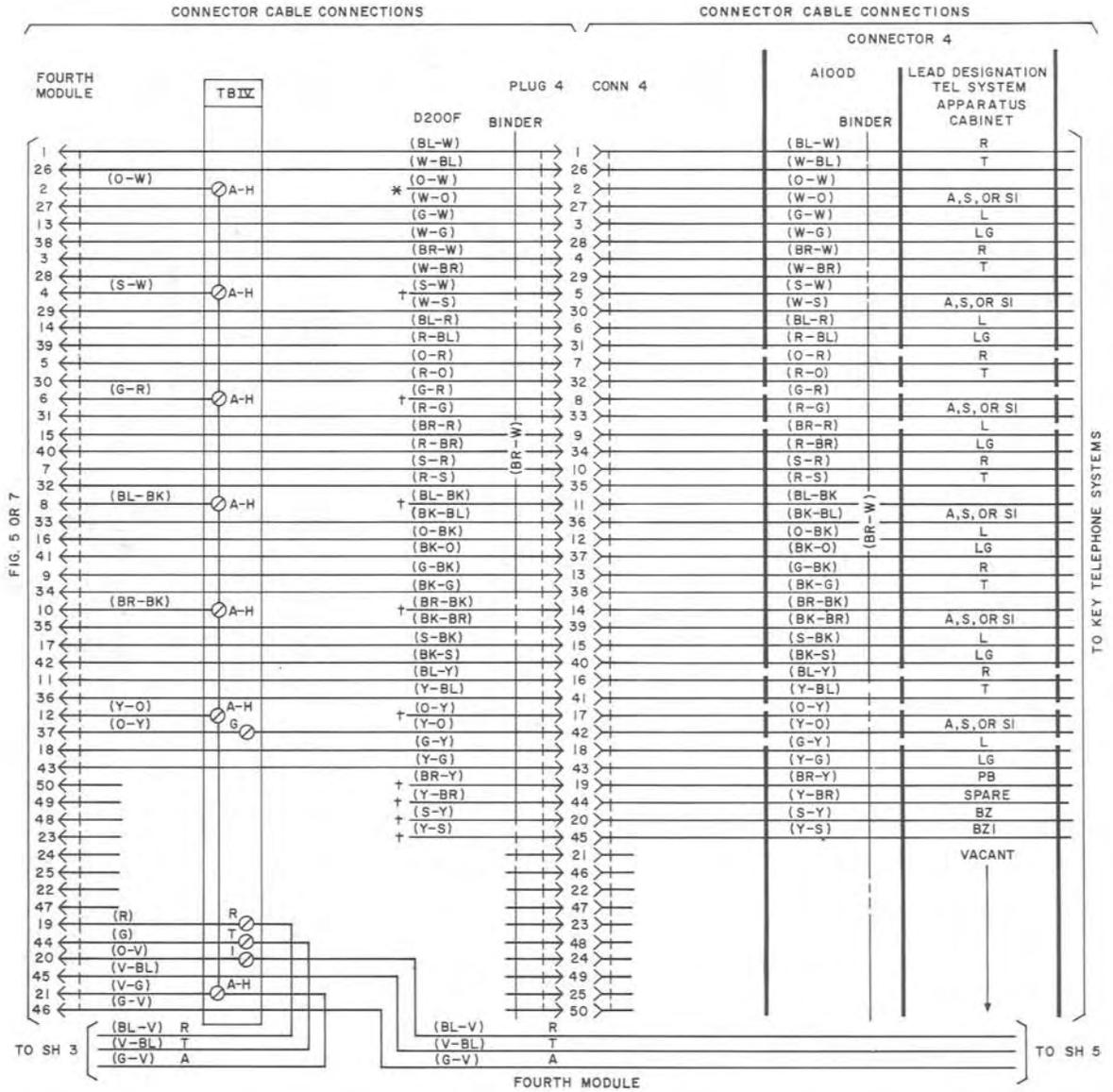
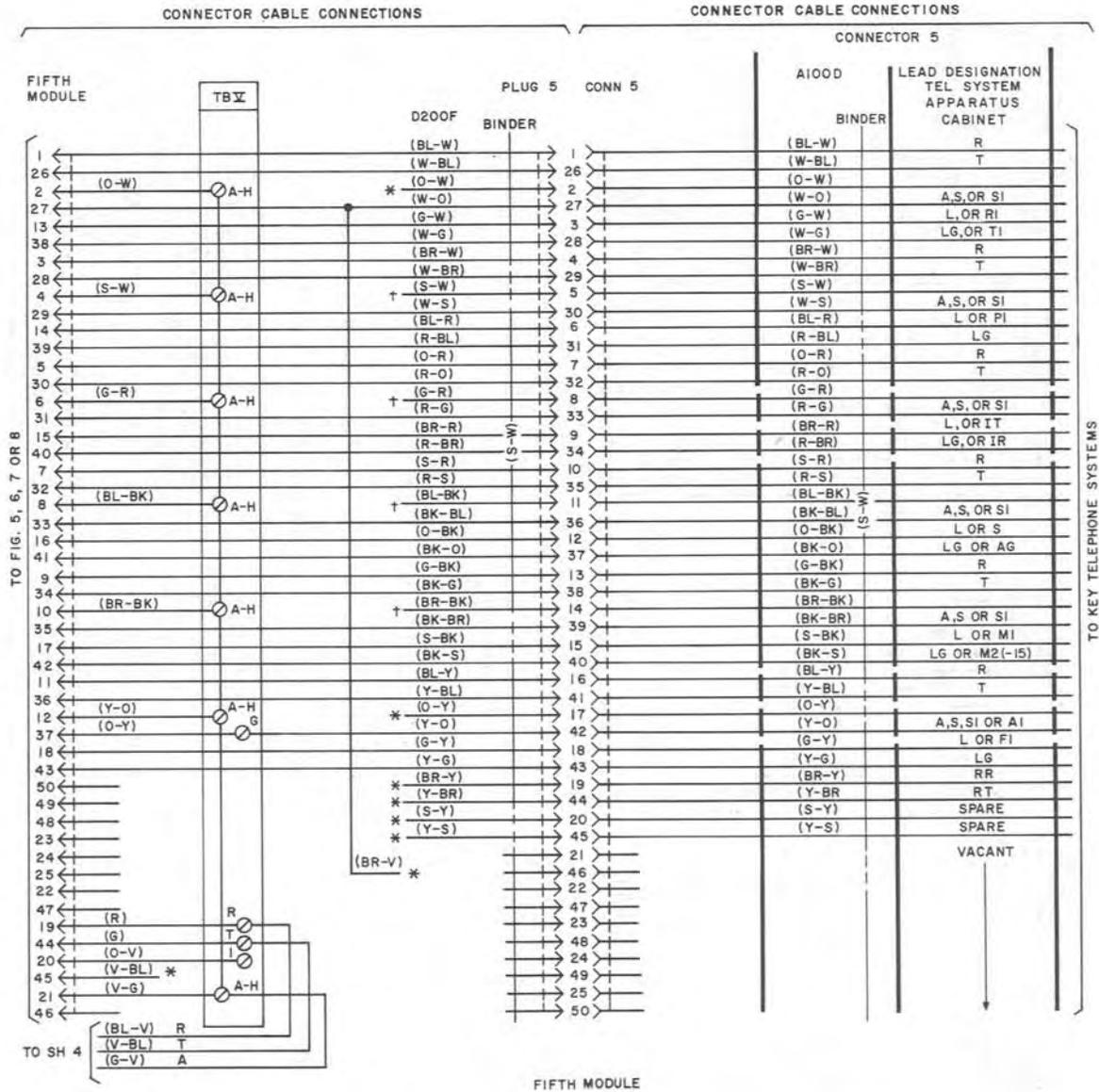


Fig. 11—Cord and Cable Connections (Sheet 4 of 5)



CIRCUIT SYMBOLS:

- * INDICATES LEADS ARE SPADE TIPPED, INSULATED, AND STORED.
- † INDICATES LEADS ARE DEAD ENDED.
- ‡ INDICATES LEADS ARE SPADE TIPPED, INSULATED, AND STORED IN THIRD MODULE OF 18-BUTTON SETS AND DEAD ENDED IN 30-BUTTON SETS.

NOTES:

1. WHEN SIGNALING KEYS OTHER THAN THE 617A ARE PROVIDED, CONNECT THE SPADE-TIPPED LEADS ASSOCIATED WITH THE CONVERTED PICKUP KEYS TO THE SG TERMINAL ON TERMINAL BLOCK 6. IF ADDITIONAL TERMINALS ARE REQUIRED, PROVIDE AN MIW STRAP, OR EQUIVALENT, BETWEEN THE C OR S AND SG TERMINALS ON TERMINAL BLOCK 6.
2. WHEN MORE THAN FIVE PRIVATE AND INTERCOMMUNICATING LINES WITH COMMON SIGNAL KEY ARE REQUIRED PER TELEPHONE SET, AND WHERE THE 617A KEY IS NOT USED, STRAP TOGETHER C TERMINALS OF RESPECTIVE 6-BUTTON KEY UNITS REQUIRING COMMON SIGNALING FEATURE.
3. WITH 656A KEY IN FIRST MODULE CONNECT (Y-O) LEAD TO TB2-3, (S-V) LEAD TO TBI-3, (V-S) LEAD TO TBI-2, THESE SPADE-TIPPED LEADS ARE STORED IN 1ST MODULE. DISCONNECT, INSULATE, AND STORE (V) LEAD CONNECTED TO TBI-2.

Fig. 11—Cord and Cable Connections (Sheet 5 of 5)

TABLE E

MATS FOR 2684-TYPE TELEPHONE SETS

TELEPHONE SET 2684-TYPE		MATS			
CODE	COLOR	COORDINATED COLOR		SILVER	GOLD
1, 2, 4, 6, 7, 9, 10, 14, 15	Black	818380701 (P-83H070)	Charcoal	818380784 (P-83H078)	818380792 (P-83H079)
	Green	818380719 (P-83H071)	Lt. Green		
	Red	818380693 (P-83H069)	Muted Red		
	Yellow	818380727 (P-83H072)	Lt. Yellow		
	White	818380735 (P-83H073)	Lt. Gray		
	Lt. Beige	818380750 (P-83H075)	Muted Beige		
	Lt. Gray	818380701 (P-83H070)	Charcoal		
	Aqua Blue	818380768 (P-83H076)	Muted Blue		
11, 12, 13	Black	818381709 (P-83H170)	Charcoal	818381782 (P-83H178)	818381790 (P-83H179)
	Green	818381717 (P-83H171)	Lt. Green		
	Red	818381691 (P-83H169)	Muted Red		
	Yellow	818381725 (P-83H172)	Lt. Yellow		
	White	818381733 (P-83H173)	Lt. Gray		
	Lt. Beige	818381758 (P-83H175)	Muted Beige		
	Lt. Gray	818381709 (P-83H170)	Charcoal		
	Aqua Blue	818381766 (P-83H176)	Muted Blue		

TABLE F
MATS FOR 2685-TYPE TELEPHONE SET

TELEPHONE SET 2685-TYPE		MATS			
CODE	COLOR	COORDINATED COLOR		SILVER	GOLD
1, 2, 3, 4, 5, 9, 10, 11, 12, 13, 14, 15, 19	Black	818480709 (P-84H070)	Charcoal	818480782 (P-84H078)	818480790 (P-84H079)
	Green	818480717 (P-84H071)	Lt. Green		
	Red	818480691 (P-84H069)	Muted Red		
	Yellow	818480725 (P-84H072)	Lt. Yellow		
	White	818480733 (P-84H073)	Lt. Gray		
	Lt. Beige	818480758 (P-84H075)	Muted Beige		
	Lt. Gray	818480709 (P-84H070)	Charcoal		
	Aqua Blue	818480766 (P-84H076)	Muted Blue		
	16, 17, 18	Black	818481707 (P-84H170)		
Green		818481715 (P-84H171)	Lt. Green		
Red		818481699 (P-84H169)	Muted Red		
Yellow		818481723 (P-84H172)	Lt. Yellow		
White		818481731 (P-84H173)	Lt. Gray		
Lt. Beige		818481756 (P-84H175)	Muted Beige		
Lt. Gray		818481707 (P-84H170)	Charcoal		
Aqua Blue		818481764 (P-84H176)	Muted Blue		

TABLE G

2684A AND 2685A-TYPE TELEPHONE SETS FACEPLATES
AND BEZELS

TELEPHONE SET	CODE	FACEPLATE ASSEMBLY (NOTE 1)	FACEPLATE ONLY	BEZEL ASSEMBLY (NOTE 2)
2684A	1	220A1-	812166056 (P-21F605)	814455085 (P-44E508) (Note 2)
	2			
	4	220B1-	812166064 (P-21F606)	
	6	220A1-	812166056 (P-21F605)	
	7			
	9			
	10			
	11	220C1-	812166072 (P-21F607)	
	12	220D1-	812166080 (P-21F608)	
	13	220C1-	812166072 (P-21F607)	
	14	220J1-	812166098 (P-21F609)	
	15			
	2685A	1	221A1-	
2				
3				
4		221B1-	812166866 (P-21F686)	
5		221E1-	812166890 (P-21F689)	
9		221F1-	812166908 (P-21F690)	
10		221A1-	812166858 (P-21F685)	
11				
12				
13				
14				
15				
16		221C1-	812166874 (P-21F687)	
17				
18		221D1-	812166882 (P-21F688)	
19	221F1-	812166908 (P-21F690)		

Note 1: Faceplate assembly consists of faceplate and three paper mats; one color coordinated, one silver, and one gold.

2: Bezel assembly consists of 814455051 (P-44E505) upper bezel, 814455069 (P-44E506) lower bezel, 814455077 (P-44E507) bezel retainer, RM-712661 bezel clip, and RM-712662 bezel spring.

TABLE H
CONNECTIONS FOR 667B (MD) TRANSMITTER

667B TRANSMITTER	TB1 FIG. 10
G-Y	6
Y-G	2
Y-BL	3
BL-Y	4
Y-O	5
O-V	1
O-Y	19

Note: When 3-type (MD) speakerphone is provided, disconnect, insulate, and store (S-V) and (V-S) key leads from terminals 2 and 6 of TB1.

TABLE I
CONNECTIONS FOR 697A SUBSCRIBER SET
HEADSET ADJUNCT UNIT

WIRE OR LEAD	COLOR	REMOVE FROM			CONNECT TO			INSULATE AND STORE
		TB1	NET	STORED LOCATION	TB1	TB2	NET	
Line Switch	G	10			7			
	V		B			12		
MA4 Relay	O-W	16			18			
Dial	W-BL	11			15			
Set Mtg Cord	Y-BR*			•		7		
D20J Mounting Cord of 697A Subset	BL-W					7		
	W-BL				1			
	O-W				19			
	G-V				4			
	V-G				14			
	BR-W					9		
	W-BR						C	
	BR-Y					12		
	V-BL						B	
	BL-V				10			
	Y-BR				7			
	V-S				15			
	G-R				11			
	S-V				18			
	R-G				16			
	BR-V							•
	V-BR							•
	V-O							•
W-S							•	
W-O							•	

* From O-W binder group.

TABLE J
CONVERSION OF PICKUP KEY TO SIGNALING (NONLOCKING)

NO. OF KEYS REMAINING LINE PICKUP	NO. OF KEYS CONVERTED TO SIGNAL KEYS			NO. OF PRIVATE AND INTERCOM LINES WITH COM SIG KEYS	KEY LEAD TERMINATIONS						
	657A ORIG KEY	657B ORIG KEY	656A SUPL KEY		O-W	S-W	G-R	BL-BK	BR-BK	Y-O SUPL KEY ONLY	O-Y SUPL KEY ONLY
6					A-H*	A-H*	A-H*	A-H*	A-H*	A-H*	G*
5			1		A-H*	A-H*	A-H*	A-H*	A-H*	C	G*
4	1		2		A-H*	A-H*	A-H*	A-H*	C	C	G*
3	2	1	3		A-H*	A-H*	A-H*	C	C	C	G*
2	3	2	4		A-H*	A-H*	C	C	C	C	G*
1	4	3	5		A-H*	C	C	C	C	C	G*
			6		C	C	C	C	C	C	G*
5			1	2	A-H*	A-H*	A-H*	C	C	C	G*
5			1	3	A-H*	A-H*	C	C	C	C	G*
5			1	4	A-H*	C	C	C	C	C	G*
5			1	5	C	C	C	C	C	C	G*

* On terminal board associated with key.

Note 1: To convert a key position from pickup to signaling, remove 811058379 (P-10E837) from plunger at key position to be converted.

Note 2: The sixth key of any supplementary key unit may be converted for use as a common signaling key on several private or intercommunicating lines. The signaling is directed to the S or S1 lead of the lines to be signaled. The 1A1 or 1A2 system automatic cutoff feature cannot be used on a line connected to the common signaling key.

Note 3: Provide an M1W strap or equivalent between the SG and C terminals on TBVI.

TABLE K
CONNECTIONS FOR 657B KEY (TURN KEY)
(INSTALLED IN FIRST KEY MODULE POSITION)

FEATURE	CONNECTOR CABLE LEADS AT EQUIP CABINET						SPADE-TIPPED MOUNTING CORD LEADS IN SET				
	5TH AND 6TH LINE PICKUP POSITION						BL-Y	Y-BL	O-Y	Y-O	BR-BK (Note 1)
	R 5TH G-BK	T 5TH BK-G	A 5TH BK-BR	R 6TH BL-Y	T 6TH Y-BL	A 6TH Y-O					
Cutoff Station on 1A1 or 1A2 KTS	To Equip			To Extension Station			*	*	TBI G	*	*
Cutoff Station on 4-Wire Line (Aux Relay Required)	To Equip GRD	To Aux Relay	*	*			*	*	*	TBI G	TBI G
Cutoff External Ringer or Buzzer	To Key Equip		*	To External Ringer or Buzzer		*	*	*	*	*	*
Cutoff Ringer in Set	To Key Equip		*	(Note 2)		*	TBI 12	Net. A	*	*	*
Cutoff Buzzer in Set	AC	To Key Equip	*	(Note 2)		*	A	C	*	*	*
	DC						†	C			
	Common						Cap. ‡	C			
Monitoring	To Mon Equip		*	*	*	*	TBI R	TBI T	*	*	*

* Insulate and store.

† Connect to screw holding buzzer frame to bracket.

‡ Use network capacitor if available or 548A capacitor or equivalent (ordered separately).

Notes: 1 Disconnect BR-BK lead from A-H terminal of TBI.

2 Insulate the BL-Y and Y-BL connector cable conductors of the BL-W binder group at the apparatus cabinet when the BL-Y and Y-BL spade tipped leads in the set are used.