

## 833- AND 2833-TYPE TELEPHONE SETS

### 1. GENERAL

**1.01** This section contains identification, installation, connection, and maintenance information for the 833- and 2833-type telephone sets. The 833- (rotary) and 2833- (TOUCH-TONE® dial) type telephone sets are special plug-ended 20-button key telephone sets, initially designed for use with the 14A Communication System, (COM KEY\* 1434). Refer to Section 518-450-102 for information on the 14A Communication System.

\* TRADEMARK

### 2. IDENTIFICATION

**2.01** The 833A (MD) Fig. 1 and 2833A (MD) Fig. 2 telephone sets are equipped with a 647K5 key in the lower key position consisting of a Hold button, six line buttons, and three intercom buttons. A 647P5C key is located in the upper key position consisting of a RECALL button, a Privacy Release (PRIV RLS) button (not connected), and eight line buttons.



Fig. 1—833-Type Telephone Set

**2.02** The 833B and 2833B telephone sets are the same as the 833A and 2833A, respectively, except that the PRIV RLS key is connected and

the privacy circuit board is installed and factory wired.

**2.03** The 833C and 2833C telephone sets are similar to the above sets except a 647N5C key is located in the upper key position consisting of a RECALL button, a NIGHT TRANSFER button (not connected), and eight line buttons. The NIGHT TRANSFER button must be wired in the field when night transfer option is provided (Table E).

*Note:* In early production 833C and 2833C telephone set the NIGHT TRANSFER key was factory wired.

**2.04** All of the 833- and 2833-type sets provide the same basic services such as pickup, hold and illumination, and intercom. They are equipped with a loudspeaker to provide tone and voice signaling. The level of the tone is adjusted by a volume control knob located under the right side of housing. Two or more CO/PBX lines may be conferenced by simultaneously depressing the buttons associated with the lines to be conferenced. The three intercom lines may also be conferenced. Intercom and CO/PBX lines cannot be conferenced. Automatic button restoration restores all depressed buttons to the unoperated positions when the handset is replaced.



Fig. 2—2833-Type Telephone Set (Housing Removed)

**2.05** The 833- and 2833-type telephone sets may be used with either the 3- or 4-type speakerphone system.



*The limited number of mounting cord conductors places a restriction on the location of 3-type speakerphone components unless it is desired to give up one pickup line. Refer to Section 512-620-487 or 512-740-471 for connection information for the 3- or 4-type speakerphone system.*

**2.06** The 833- and 2833-type telephone sets are available in Ivory (-50) only. These sets will be shipped with a disposable faceplate, so it is necessary to order the proper 833A or 2833A faceplate separately (Table B).

**2.07** Any station set may be optionally wired to ring on one CO/PBX line only or for common audible ringing provided no one station is wired for both. In addition the ringing source (455A KTU) of the 570A KSU must not see more than 18 loads—one load being a station set wired for common audible ringing or a station set wired for ringing on one CO/PBX line. Refer to Section 518-450-102.



*When common audible ringing is wired to a station other than the attendant station (Code 0), that station cannot have the night transfer option.*

#### Ordering Guide

**2.09** For telephone set and replaceable component ordering guide, refer to Table A. See Table B for color and faceplate ordering information.

**2.10** The following optional apparatus may be associated with the 833- and 2833-type sets (order as required):

- Diode, 446F (order one for each rotary dial station to be restricted)
- 3-Type Speakerphone (order one each of the following for each station to be equipped with speakerphone)

Cord, D10R-87 (specify length 7, 14, or 25 foot)

Loudspeaker, 760A-50

Transformer, 2012B

Transmitter, 666B-50

Unit, Control, 55B

- 4-Type Speakerphone (order one each of the following for each station to be equipped with speakerphone)

Loudspeaker, 108A-50 or 108AR-50 (includes 7 foot D20N mounting cord)

Transmitter, 680A-50 or 680AR-50 (includes 7 foot D8S mounting cord)

Adapter, 223A-49 (includes 7 foot M16C and 25 foot M2FG cord)

Unit, Power, 85B1-49

- Ringer, E1C (for power failure transfer)
- D-180486 Kit of Parts (privacy circuit board), order one for each station to be locked out. Can be added to the 833A, 833C, 2833A, or 2833C telephone set.

### 3. INSTALLATION AND CONNECTIONS

**3.01** Install telephone sets at desired locations, making sure that any options are installed before telephone set is connected. See Fig. 4 through 9 for schematics of 833A, 2833A, 833B, 2833B, 833C, or 2833C telephone sets, respectively.

**3.02** To install telephone set options the faceplate and housing must be removed and the dial lifted from its mounting brackets. Use a KS-16750 type releaser or equivalent to release the faceplate catch.

**Caution:** *The ten button key(s) in this set is equipped with special low-friction plastic parts. Special care is required when removing or replacing these keys to avoid cracking or breaking the plastic hooked end of the latchbar projecting from from the end of the key. When removing a key, avoid twisting or distorting*

*the hook. When installing a key, make sure the hook is properly engaged over the edge of the pivot arm before tightening the mounting screws of the key.*

**Caution:** *When making wiring changes in this set involving adding or moving spade tipped leads on the terminal board (e.g., privacy option), extreme care must be taken to prevent shorting between terminal positions. Check for clearance before reinstalling the dial.*

3.03 Options are installed as follows:

(a) **Station Restriction (833-type telephone set):**

- (1) Install 446F diode between network terminals RR and F. Terminate negative lead of diode on terminal F, with positive lead on terminal RR.
- (2) On telephone set terminal board, move two (G) leads from terminal 22 to 4 and move two (R) leads from terminal 4 to 22.

(b) **Station Restriction (2833-type telephone set):**

On telephone set terminal board, move two (G) leads from terminal 22 to 4 and move two (R) leads from terminal 4 to 22.

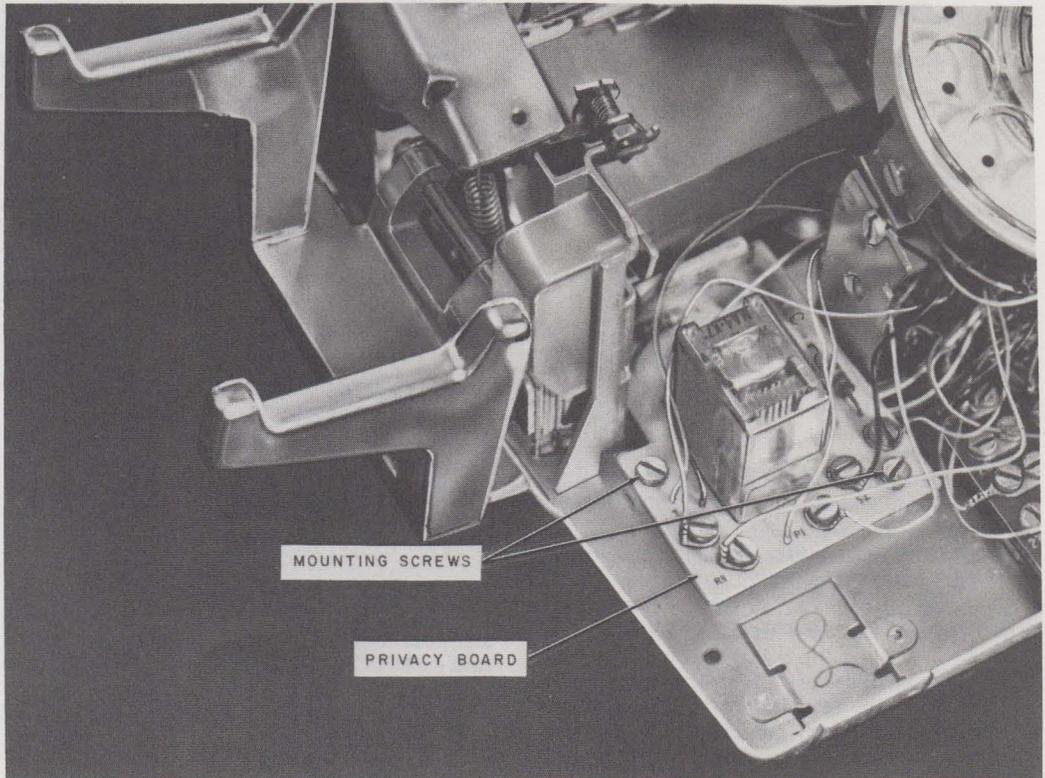


Fig. 3—Privacy Circuit Board Mounted in Telephone Set

(c) **Privacy Circuit 833A, 833C, 2833A, and 2833C (D-180486 Kit of Parts):**

(1) Mount privacy circuit board on the two standoffs located at the left front of the telephone set base (Fig. 3) using mounting screws furnished with the telephone set.

(2) Refer to Table C for connections.

(3) To test privacy circuit refer to 3.04.

(d) **Privacy Circuit (D-180486 Kit of Parts) disabling 833-type telephone sets:** Move

(O) lead of privacy circuit from the telephone set terminal 8 to 13.

(e) **PRIV RLS (D-180488 Kit of Parts) 833A or 2833A telephone sets only:**

(1) Refer to Table D for connections.

(2) To test privacy release key refer to 3.04.

(f) **PRIV RLS (D-180488 Kit of Parts) disabling 833A, 833B, 2833A, and 2833B telephone sets:** Move (O-BK) lead of privacy release key from telephone set terminal 10 to 15.(g) **NIGHT TRANSFER (833C or 2833C telephone set only):**

(1) Refer to Table E for connections.

(2) Refer to Section 518-450-102 for KSU strap addition.

**Note:** Early version of the 833C and 2833C telephone sets had the NIGHT TRANSFER feature factory wired. Current 833C and 2833C telephone sets are not factory wired for NIGHT TRANSFER.

**3.04 Privacy Circuit/Privacy Release Test:**

(a) Busy out a line using another station (Station X). At the set with the privacy circuit to be tested (Station Y) go off-hook on that line. Station Y should be locked out. Hang up Station Y.

(b) If Station X has a privacy release key, depress it. The lamp under the busy line will indicate it is on-hold. Station Y should now

be able to pickup the line on hold. Release the privacy release button, Station X and Y should now be bridged. Hang up Station Y.

(c) If Station X does not have a privacy release key or a privacy circuit he can allow Station Y in on the line by just placing the line on-hold and depressing the hold button (this also releases the line button). Station Y should now be able to pick up the line on hold. Now depress the same button at Station X; the stations should be bridged. Hang up Station Y.

(d) If Station X does not have a privacy release key but does have a privacy circuit he cannot allow Station Y to bridge onto the call without excluding himself.

(e) With the line still busied out by Station X and Station Y not bridged, depress a different line on Station Y and go off-hook. While holding that line button depressed bridge onto the line that was busied out by Station X. Station Y should be locked out of both lines.

**3.05** When installing faceplate, insure that the collar is in place on the key. Place the tabs into slots in front of the faceplate opening in the housing and lower slowly over the dial and key collar until almost in place. Use a KS-16750 type releaser or equivalent to release the faceplate catch and seat the faceplate.

**3.06** The 647K5 and 647P5C keys use designation tabs forms E-5837 and E-6406 (new preprinted designation tabs for feature designations). The forms are shipped with the telephone sets. To install, squeeze sides of the cap and remove. Insert designation tabs and replace cap with locking tabs along the horizontal axis of the key.

**3.07** For telephone set number designation, use form E-4203-G or E-4204-G on rotary sets and form E-5002-A or E-5002-B for station number card on TOUCH-TONE sets.

**3.08** Refer to Fig. 4 through 9 for telephone set schematics.

**3.09** Refer to Table I or J and Section 512-620-487 or 512-740-471 for connections to 3- or 4-type speakerphone system, respectively.

**3.10** If Power Failure Transfer feature is to be provided, use an external ringer (E1C) and connect as shown in Table H.



*Telephone set should not be carried by the switchhook since this applies excessive strain to the line switch and could cause a trouble condition.*

#### 4. MAINTENANCE

**4.01** Maintenance of the 833- and 2833-type telephone sets should be limited to checking for loose or broken connections and replacement of items listed under Ordering Guide table as replaceable components.

**4.02** The current production 647-type key has been modified for easy lamp replacement by merely removing the lamp cap and inserting a 553-type tool through the hole in the top of the button. In early production keys, it was necessary to remove faceplate, key collar, and button for lamp replacement.

TABLE A  
TELEPHONE SETS AND REPLACEABLE COMPONENTS  
ORDERING GUIDE

TEL SET	BASE, TEL SET	HOUSING	DIAL	KEY	FACE PLATE*	HAND-SET	CORD HAND-SET	LAMP
833A-50 (MD)	833A	832A-50	8C	647P5C 647K5	833A-	G3A6-50	H4CJ-50	51A
2833A-50 (MD)	2833A	832A-50	35AF3A	647P5C 647K5	2833A-			
833B-50	833B	832A-50	8C	647P5C 647K5	833A-			
2833B-50	2833B	832A-50	35AF3A	647P5C 647K5	2833A-			
833C-50	833C	832A-50	8C	647N5C 647K5	833A-			
2833C-50	2833C	832A-50	35AF3A	647N5C 647K5	2833A-			

\* See Table B for color suffix.

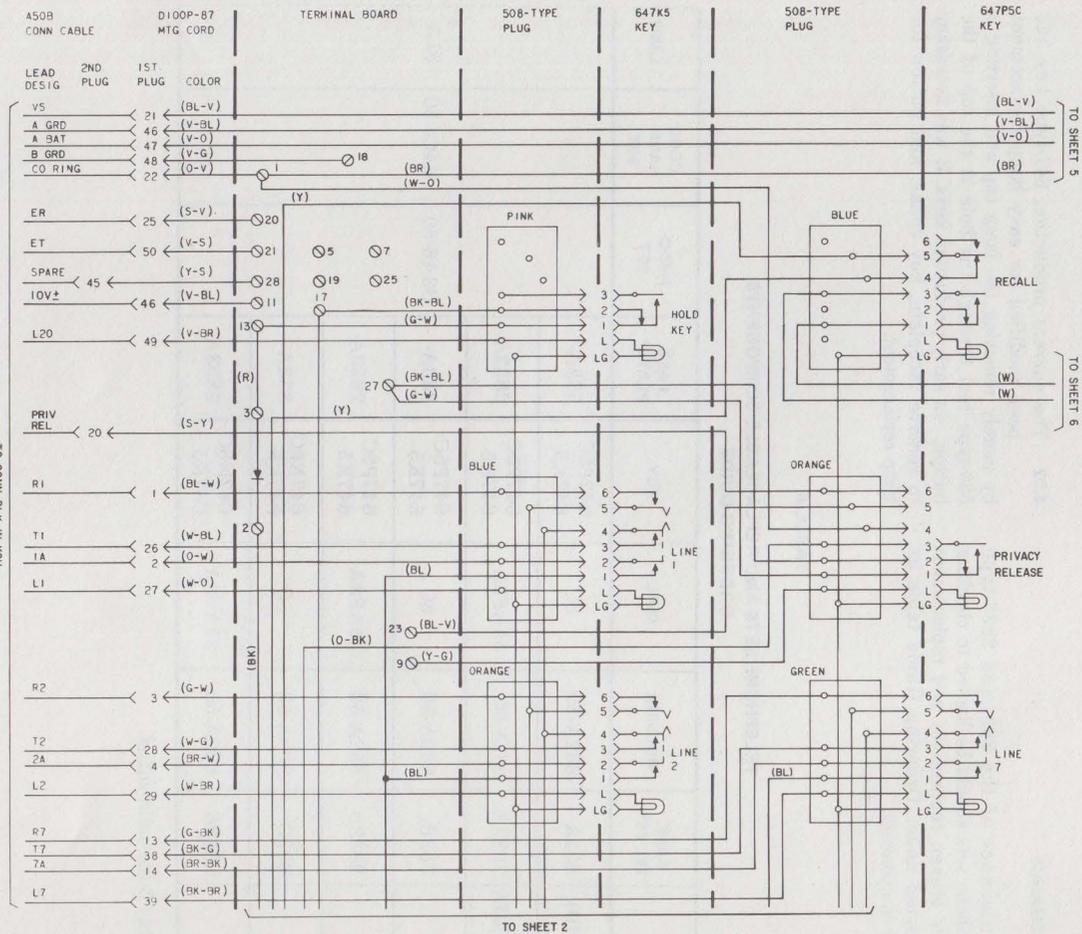


Fig. 4—833A Telephone Set, Connections (Sheet 1 of 7)

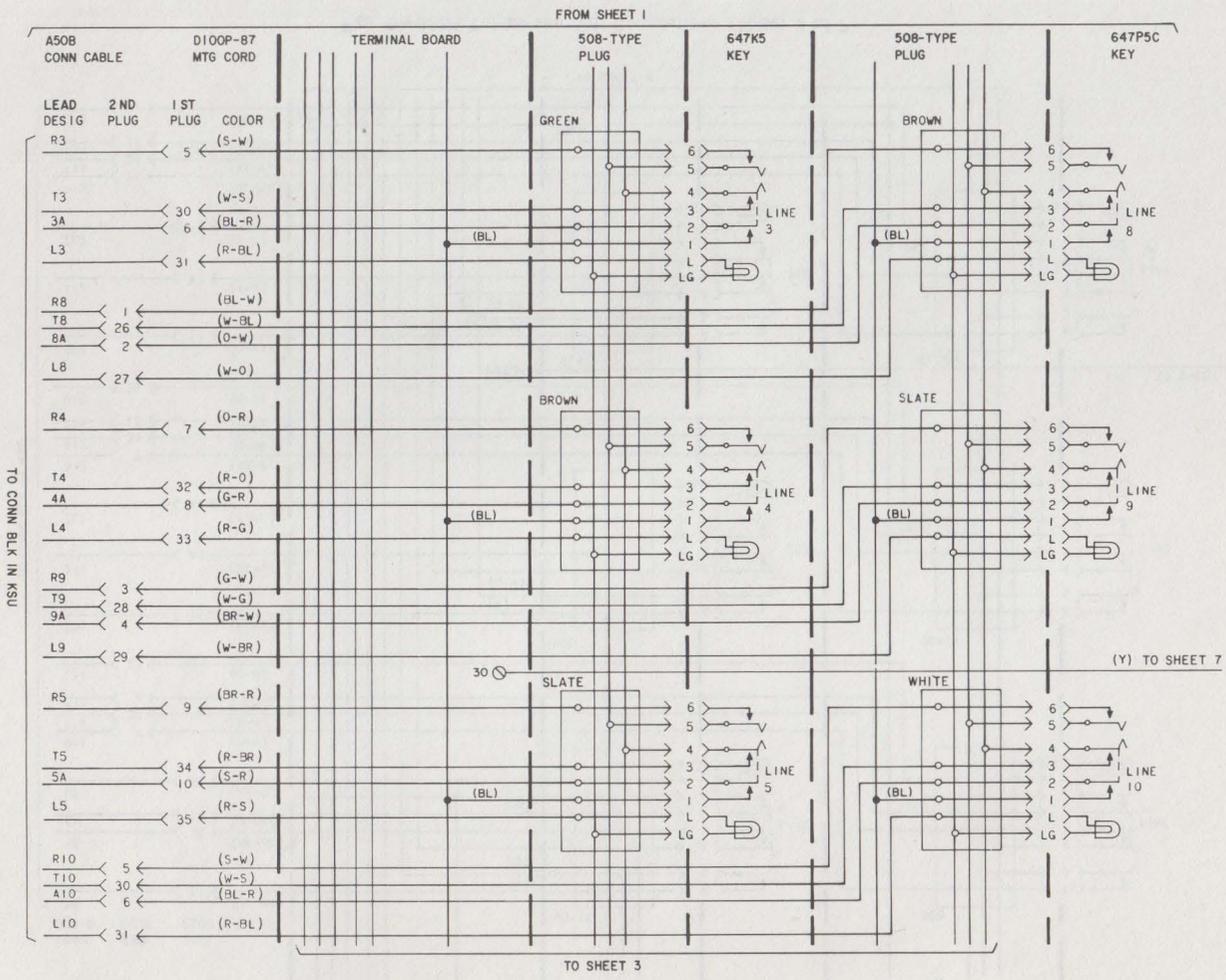


Fig. 4—833A Telephone Set, Connections (Sheet 2 of 7)

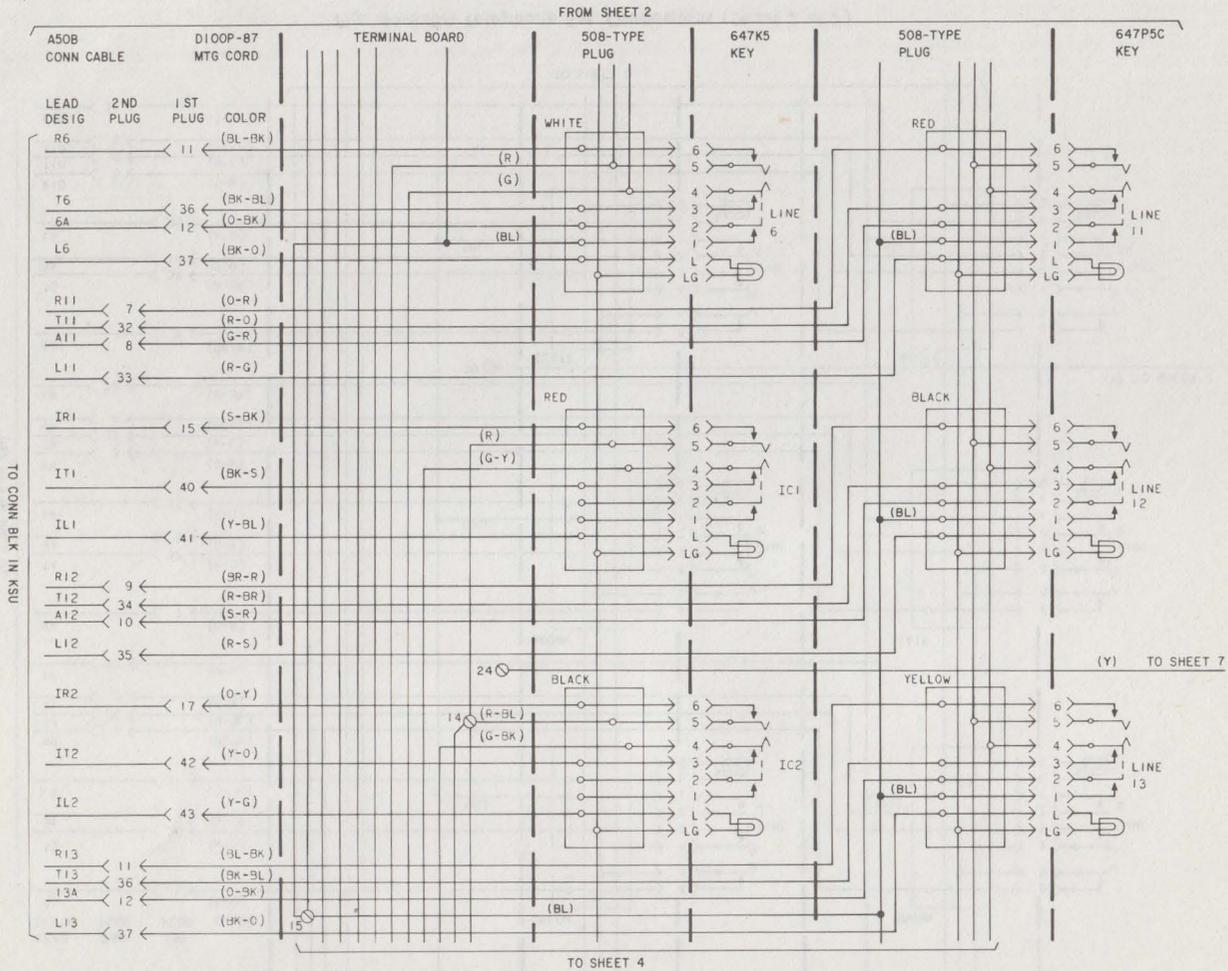


Fig. 4—833A Telephone Set, Connections (Sheet 3 of 7)

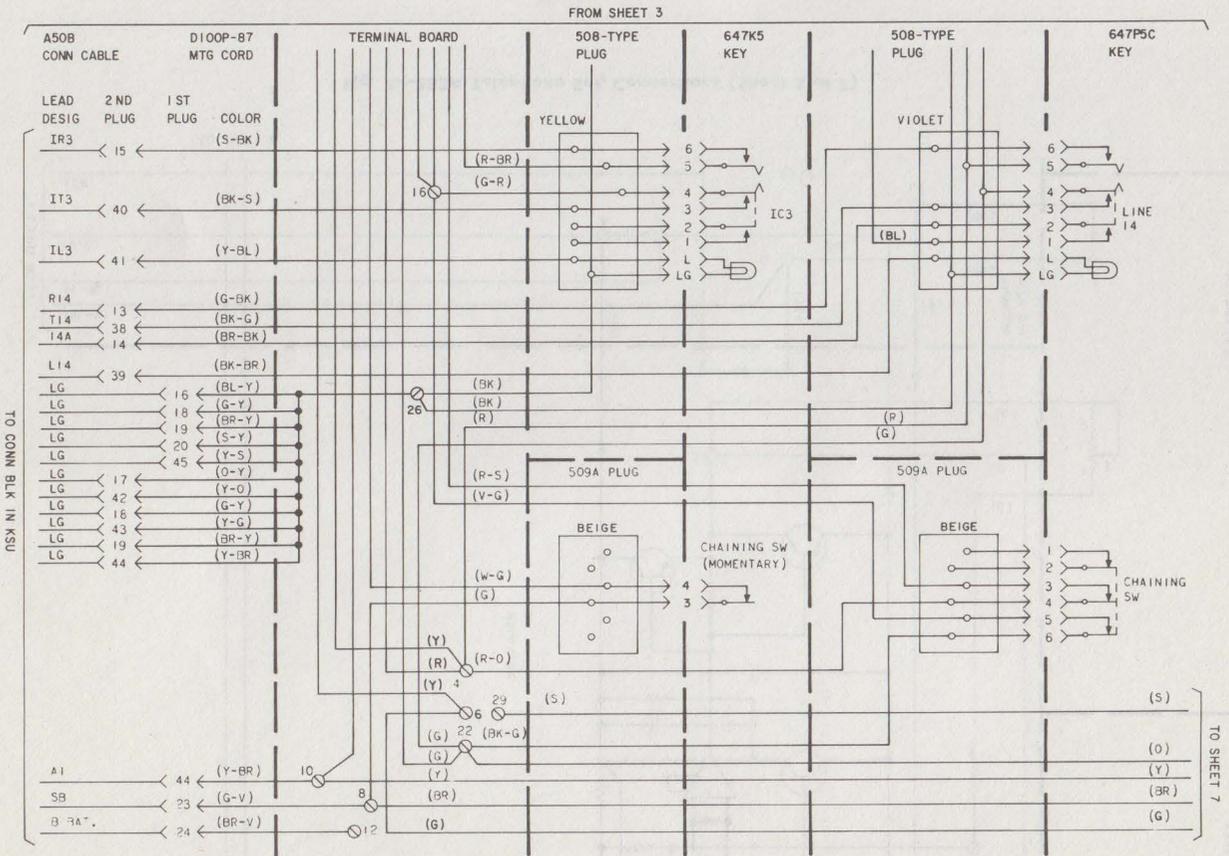


Fig. 4—833A Telephone Set, Connections (Sheet 4 of 7)

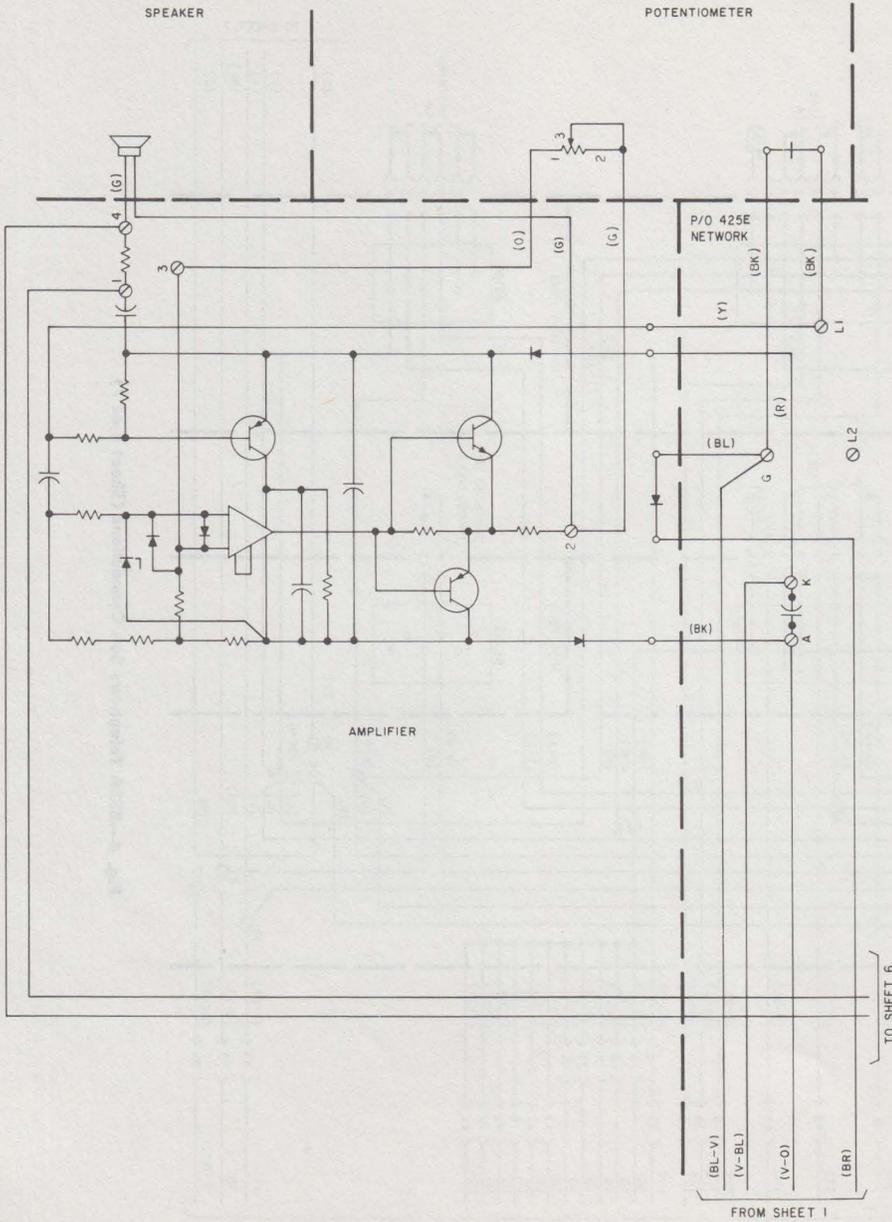


Fig. 4—833A Telephone Set, Connections (Sheet 5 of 7)

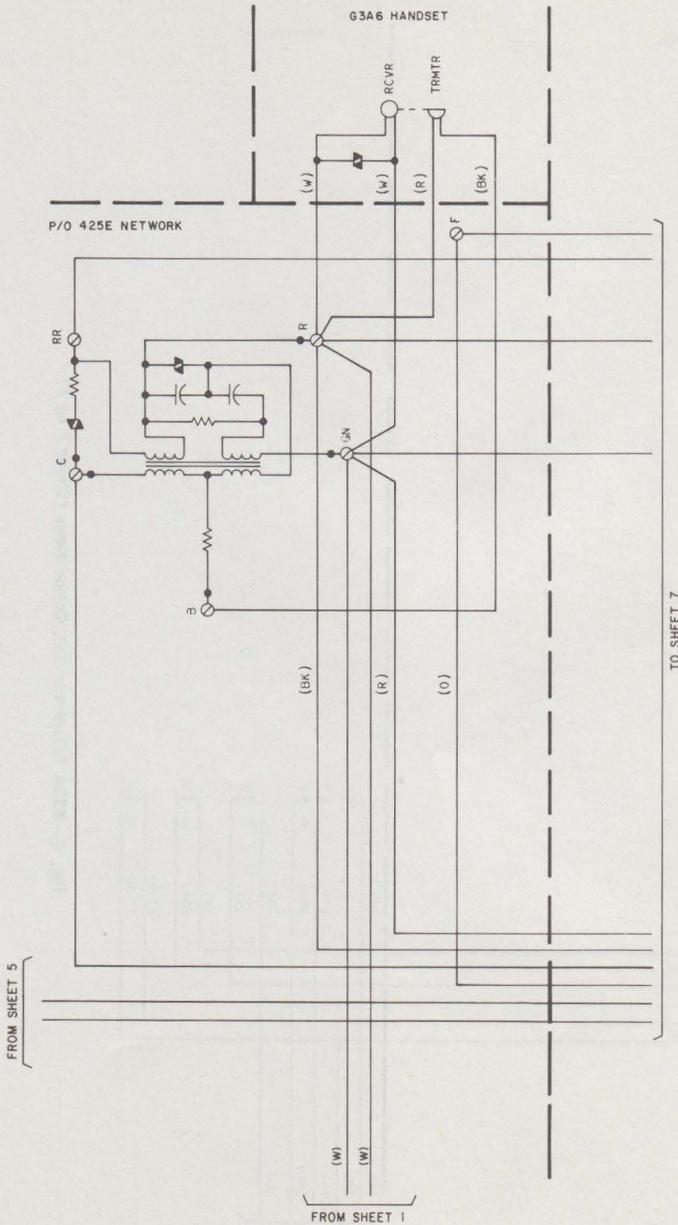


Fig. 4—833A Telephone Set, Connections (Sheet 6 of 7)

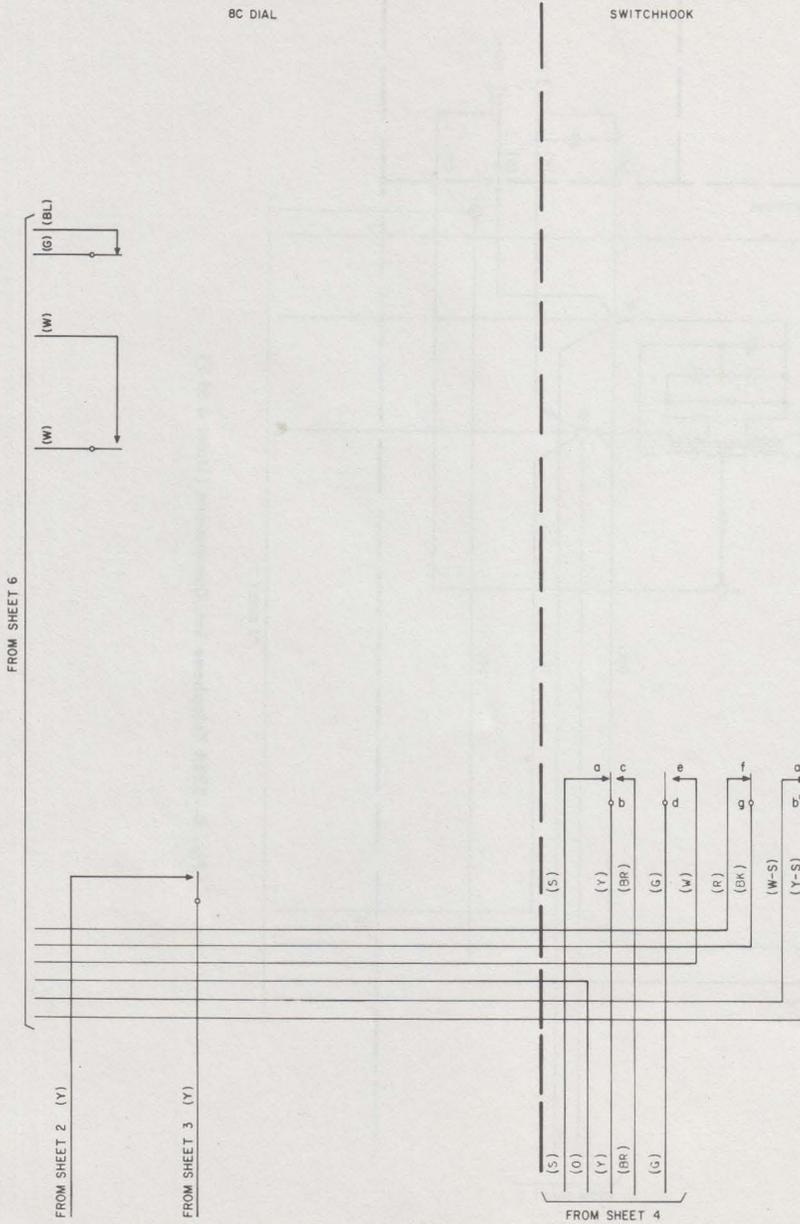


Fig. 4—833A Telephone Set, Connections (Sheet 7 of 7)

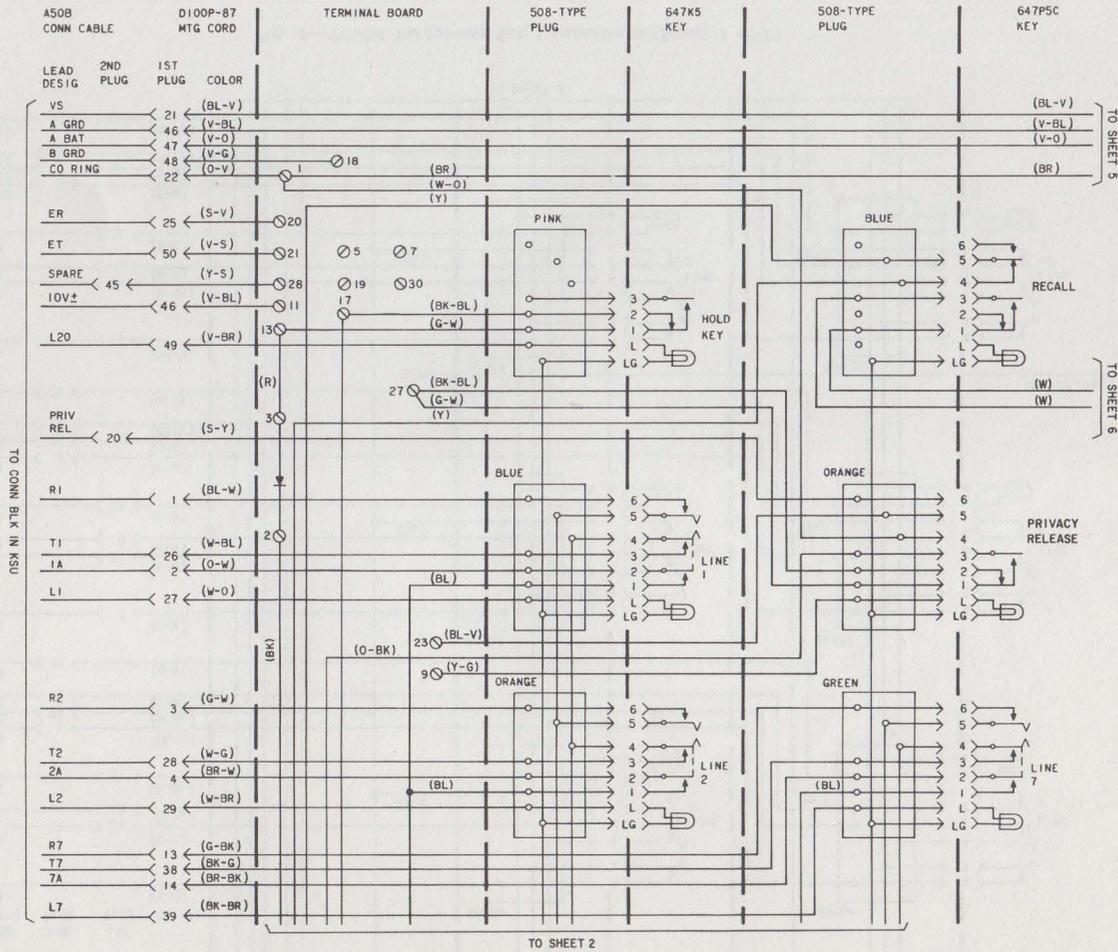


Fig. 5—2833A Telephone Set, Connections (Sheet 1 of 7)

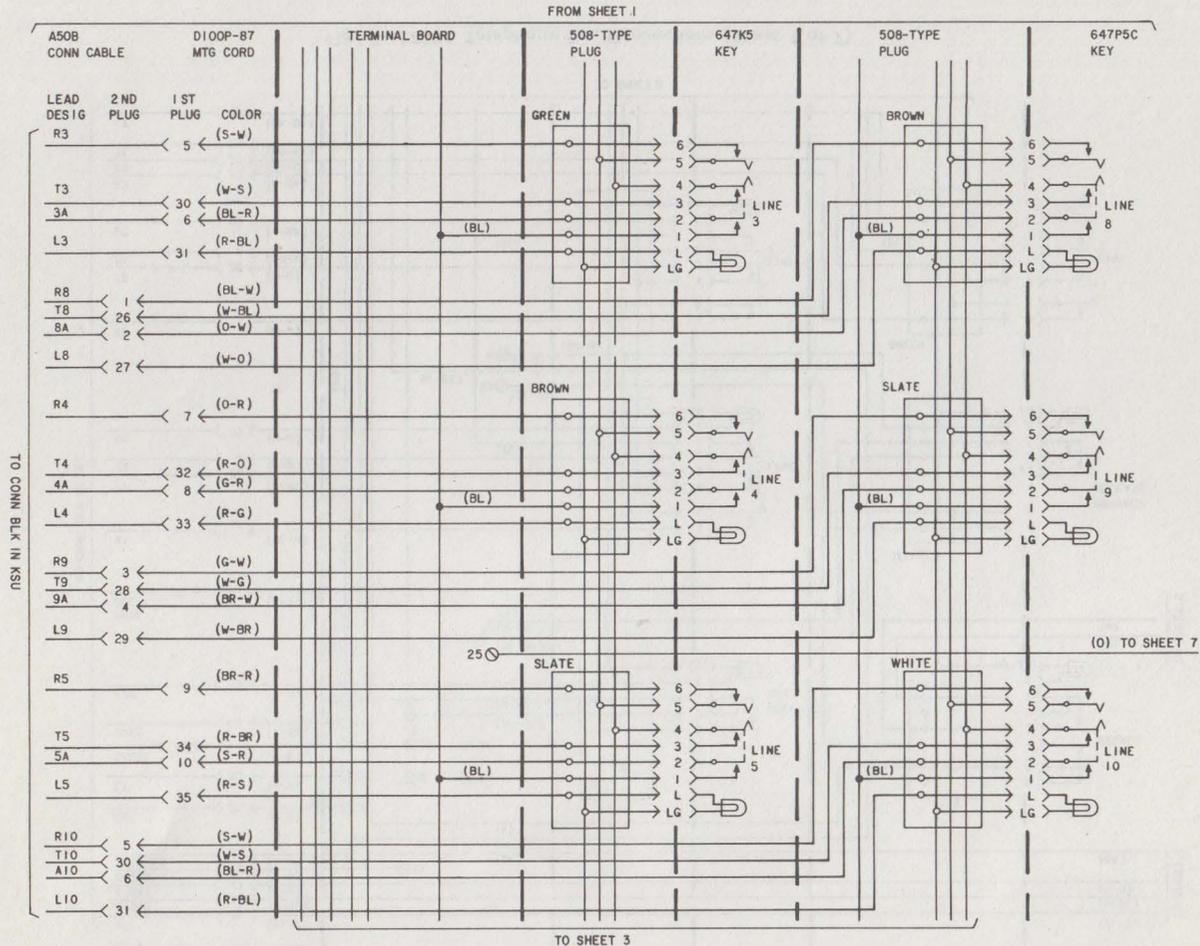


Fig. 5—2833A Telephone Set, Connections (Sheet 2 of 7)

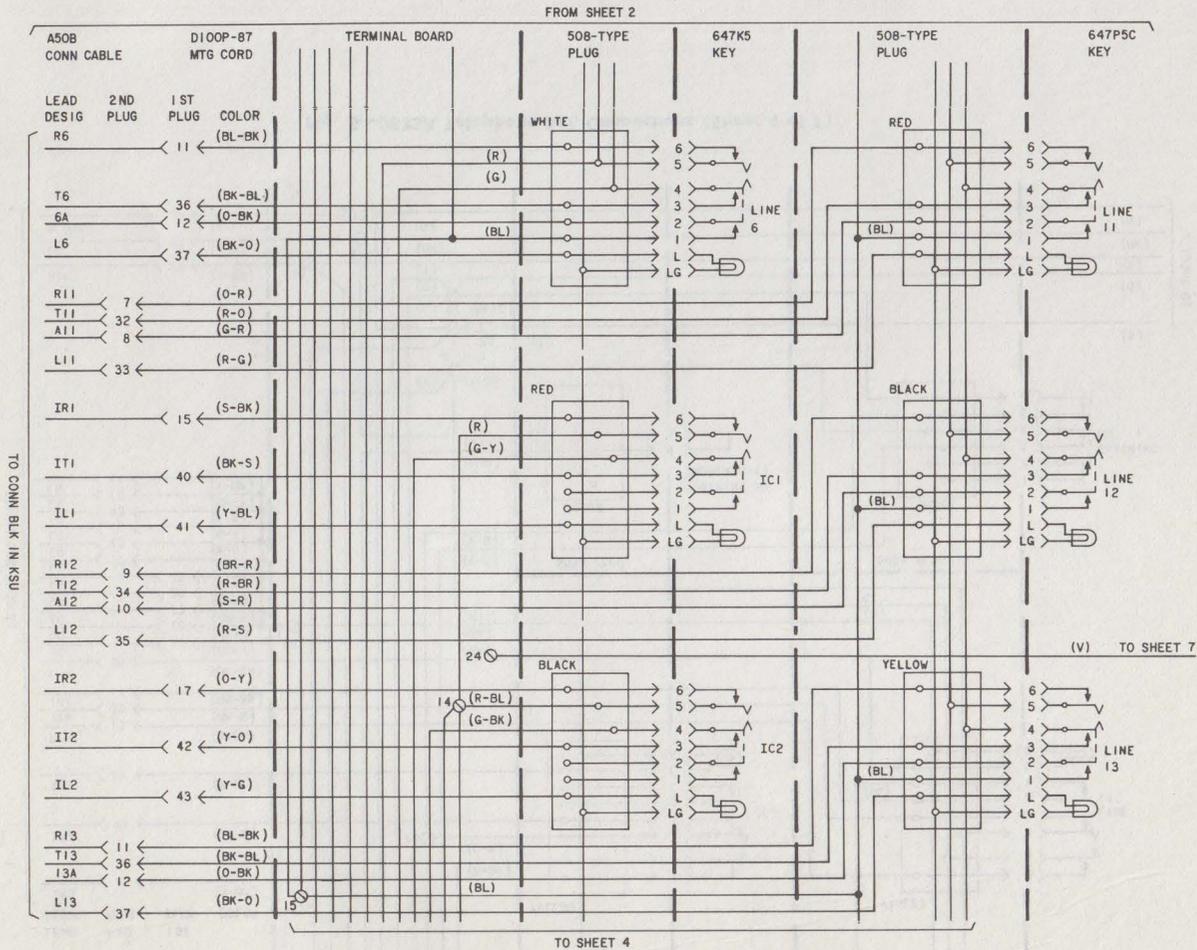


Fig. 5—2833A Telephone Set, Connections (Sheet 3 of 7)



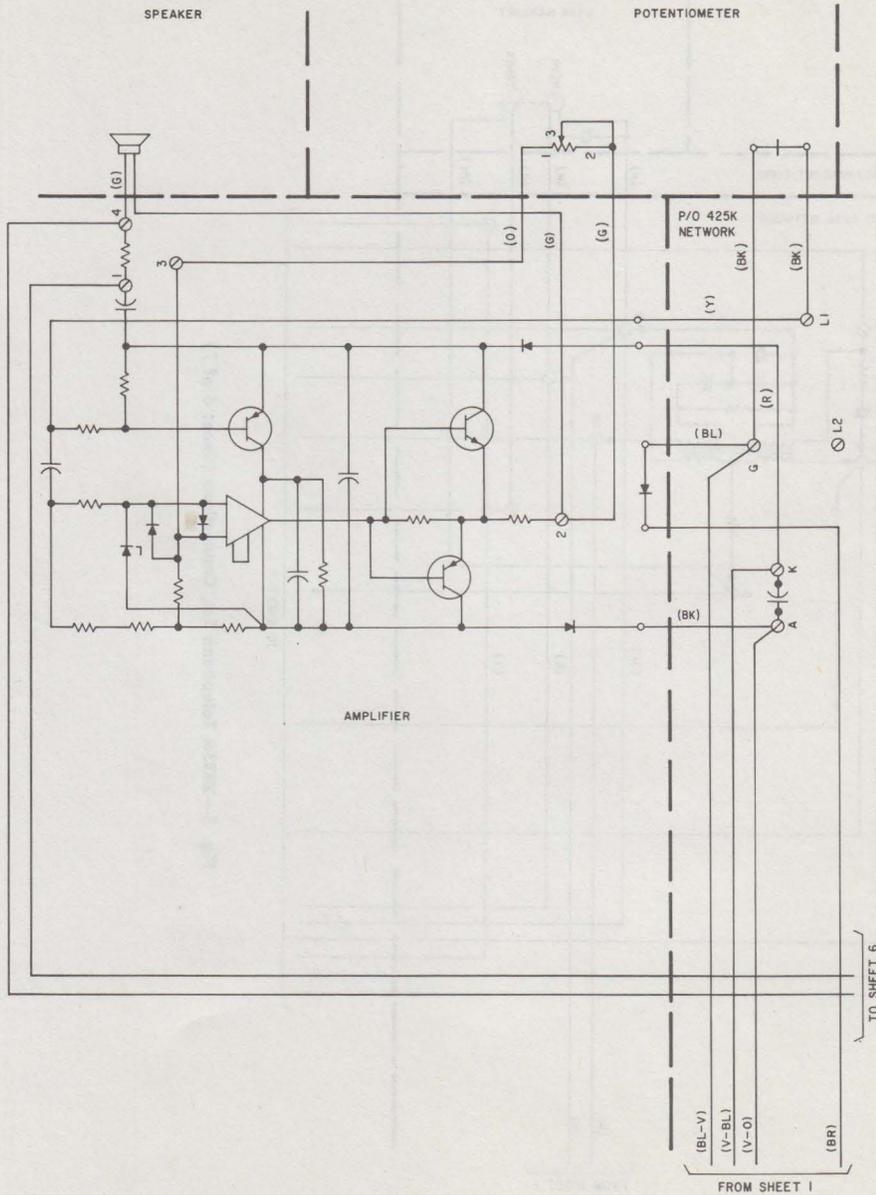


Fig. 5—2833A Telephone Set, Connections (Sheet 5 of 7)

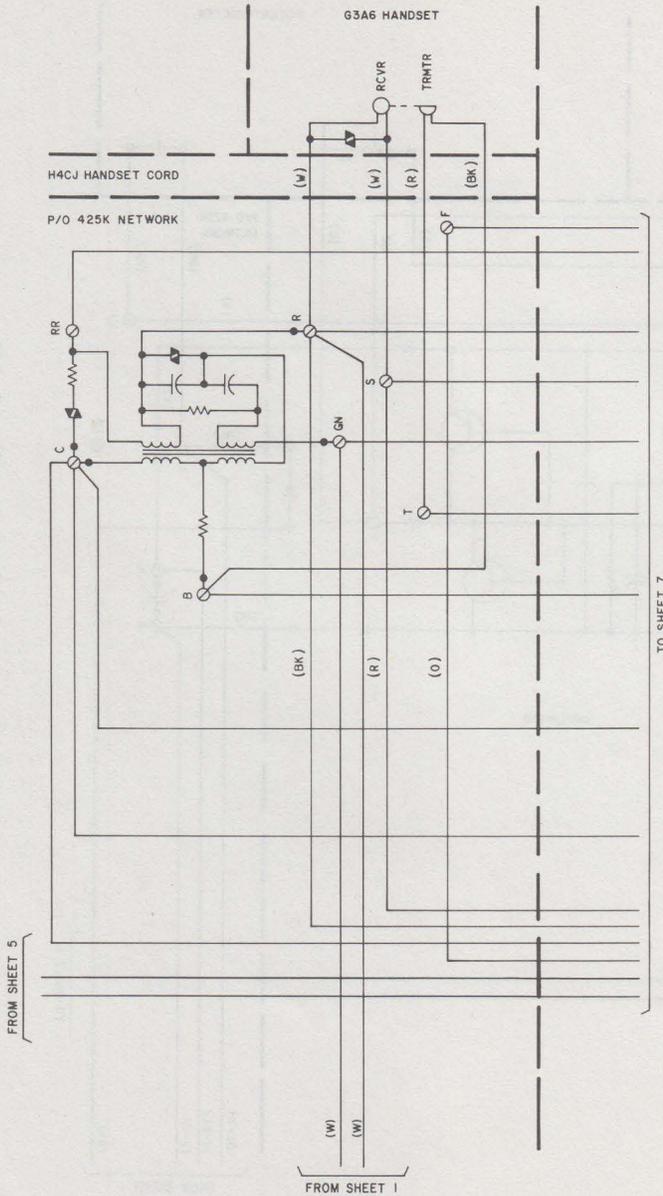


Fig. 5—2833A Telephone Set, Connections (Sheet 6 of 7)

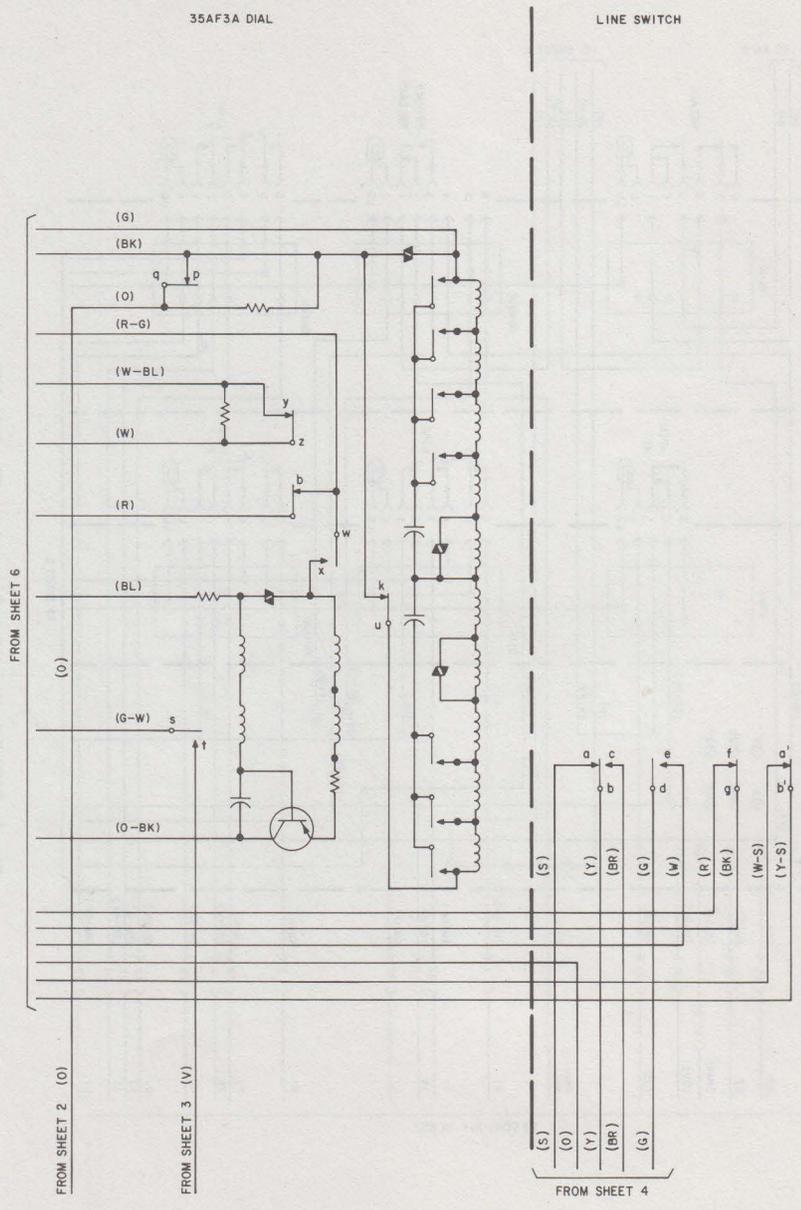


Fig. 5—2833A Telephone Set, Connections (Sheet 7 of 7)

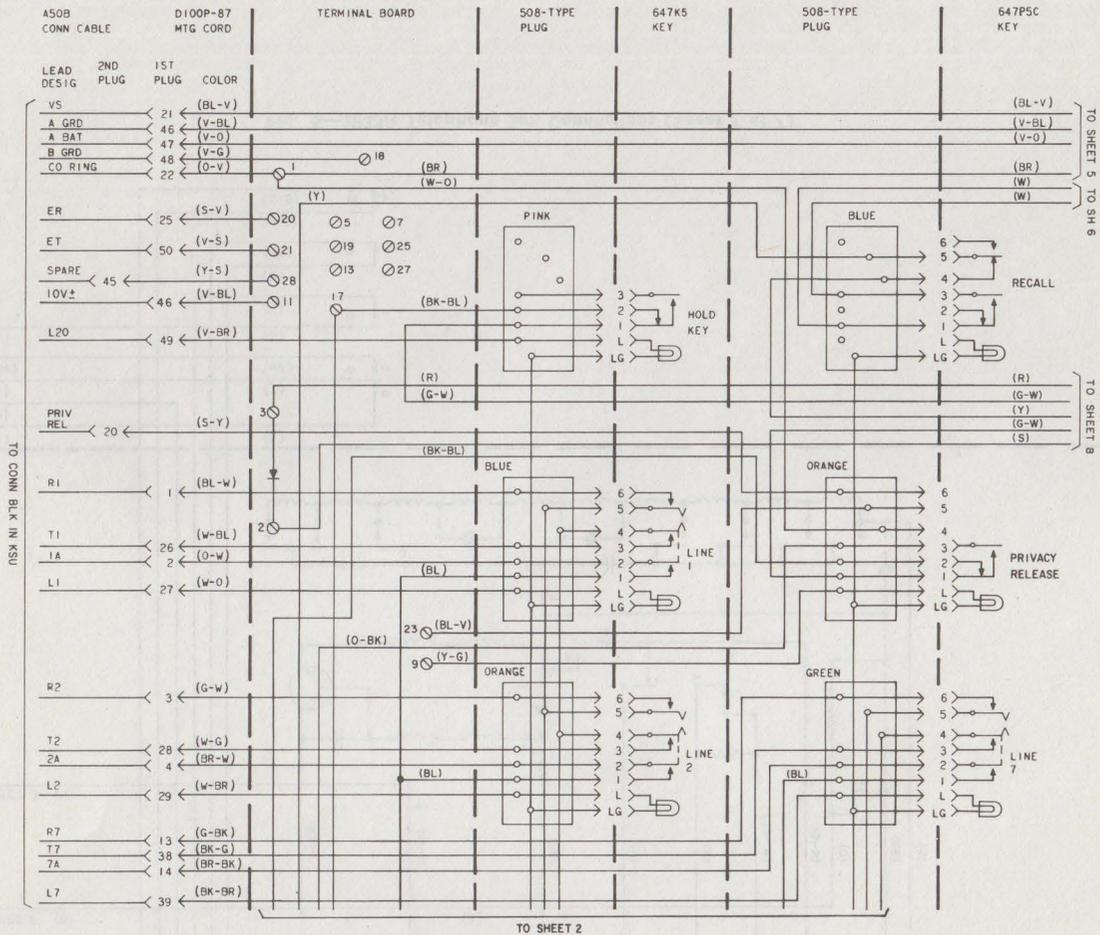


Fig. 6—833B Telephone Set, Connections (Sheet 1 of 8)

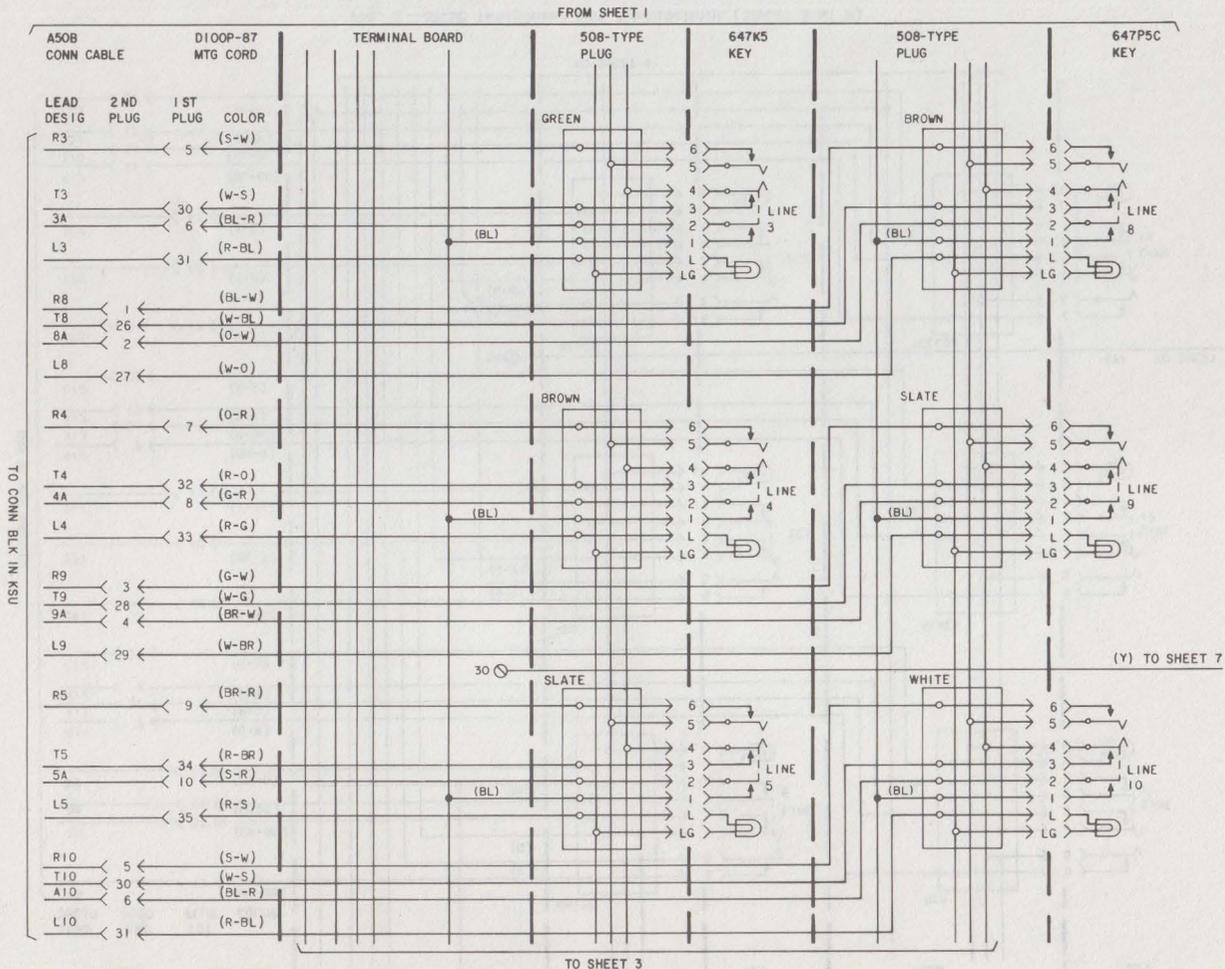


Fig. 6—833B Telephone Set, Connections (Sheet 2 of 8)



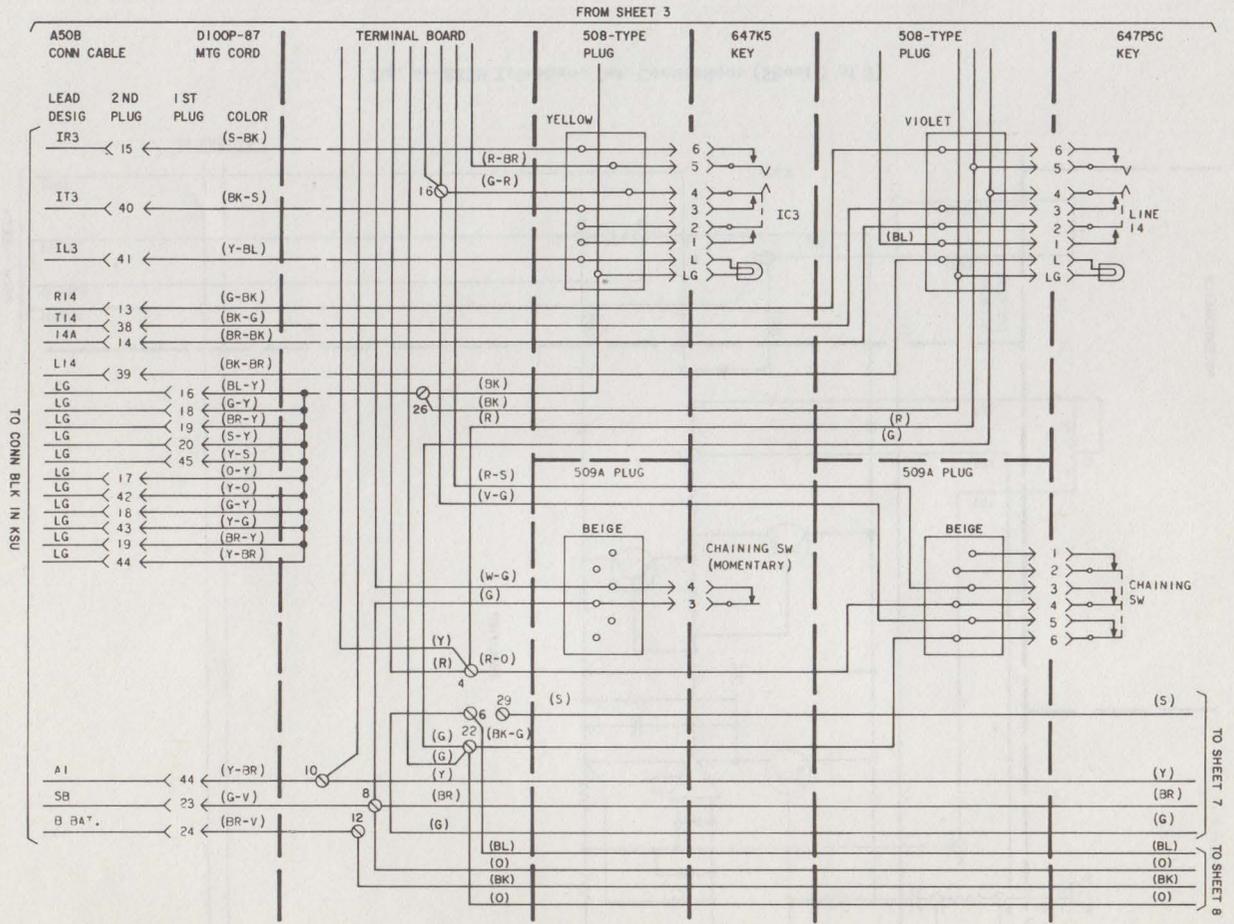


Fig. 6—833B Telephone Set, Connections (Sheet 4 of 8)

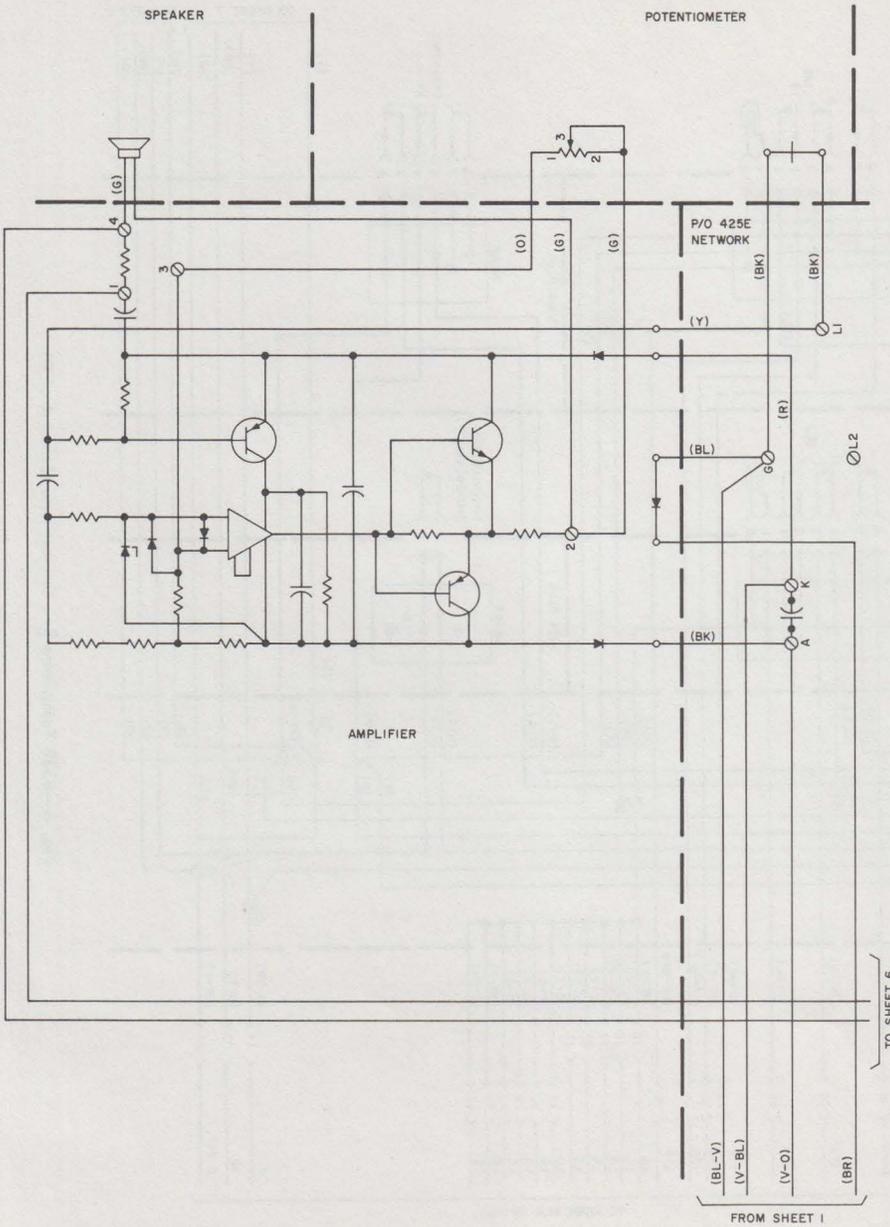


Fig. 6—833B Telephone Set, Connections (Sheet 5 of 8)

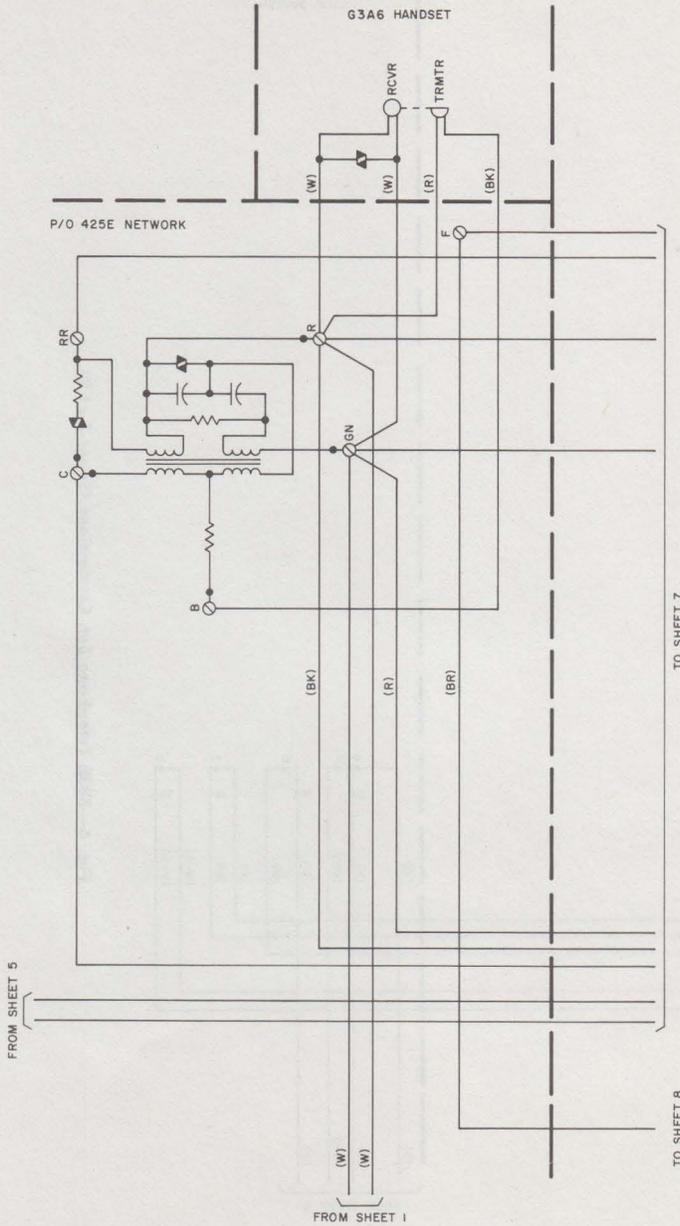


Fig. 6—833B Telephone Set, Connections (Sheet 6 of 8)

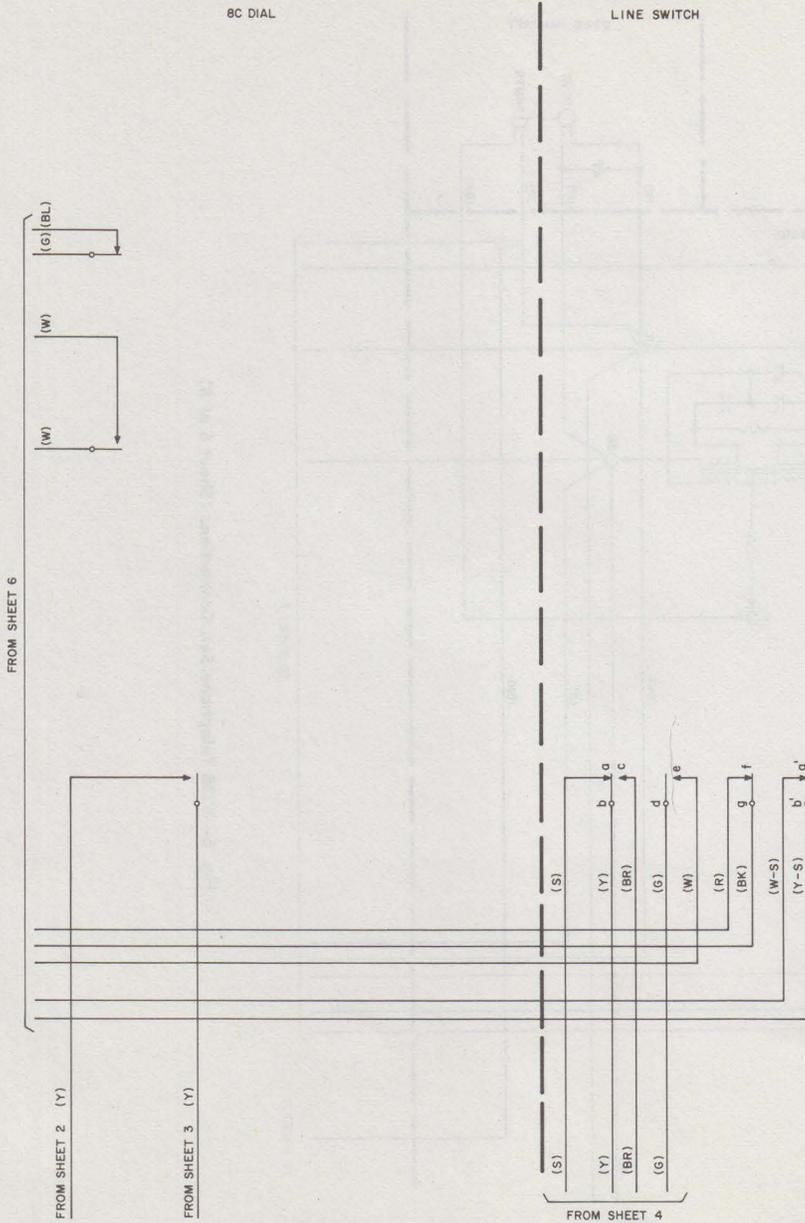


Fig. 6—833B Telephone Set, Connections (Sheet 7 of 8)

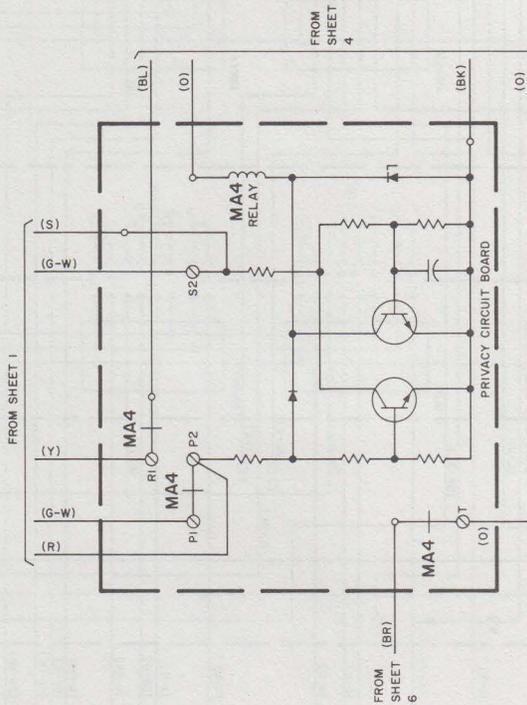


Fig. 6—833B Telephone Set, Connections (Sheet 8 of 8)



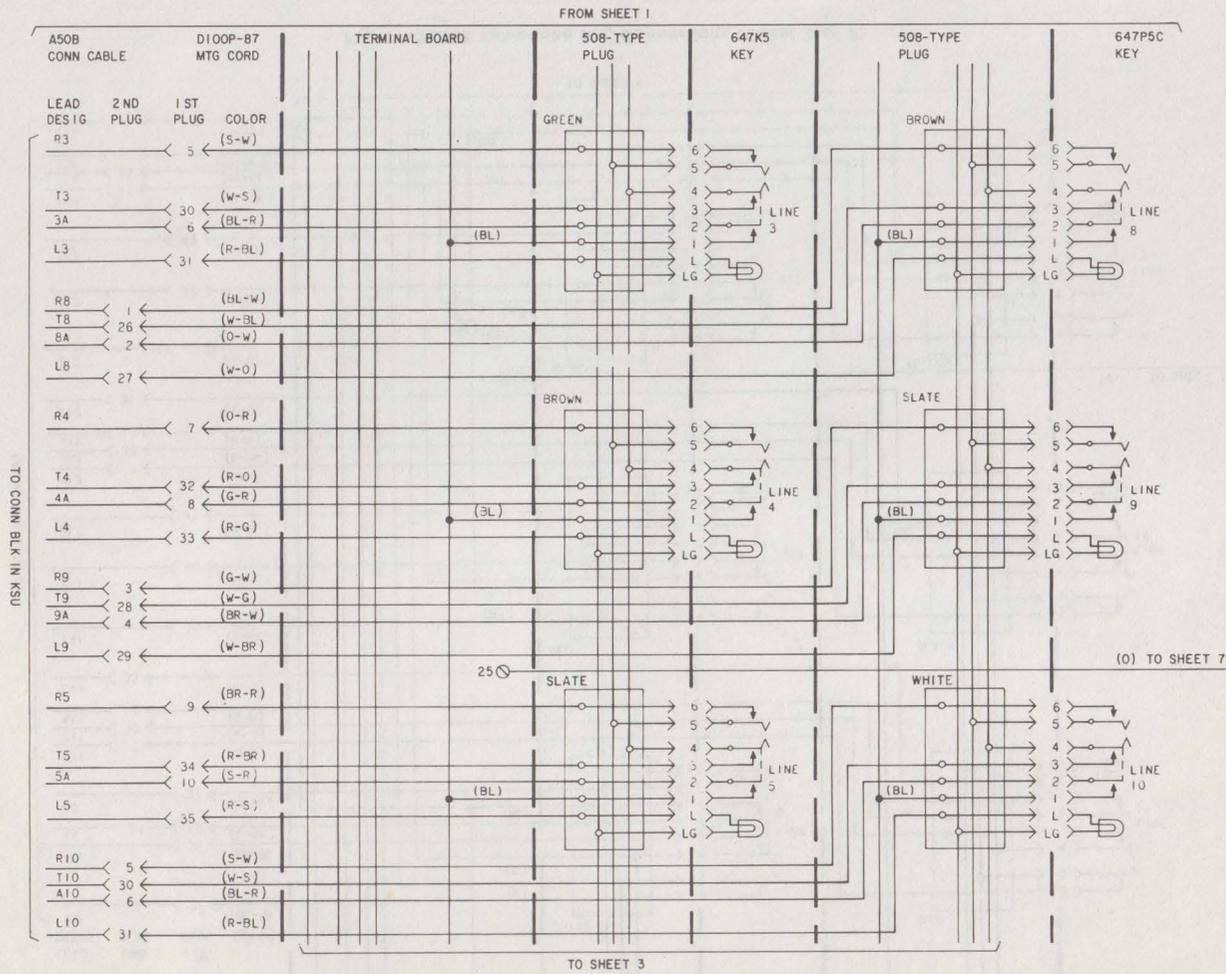


Fig. 7—2833B Telephone Set, Connections (Sheet 2 of 8)

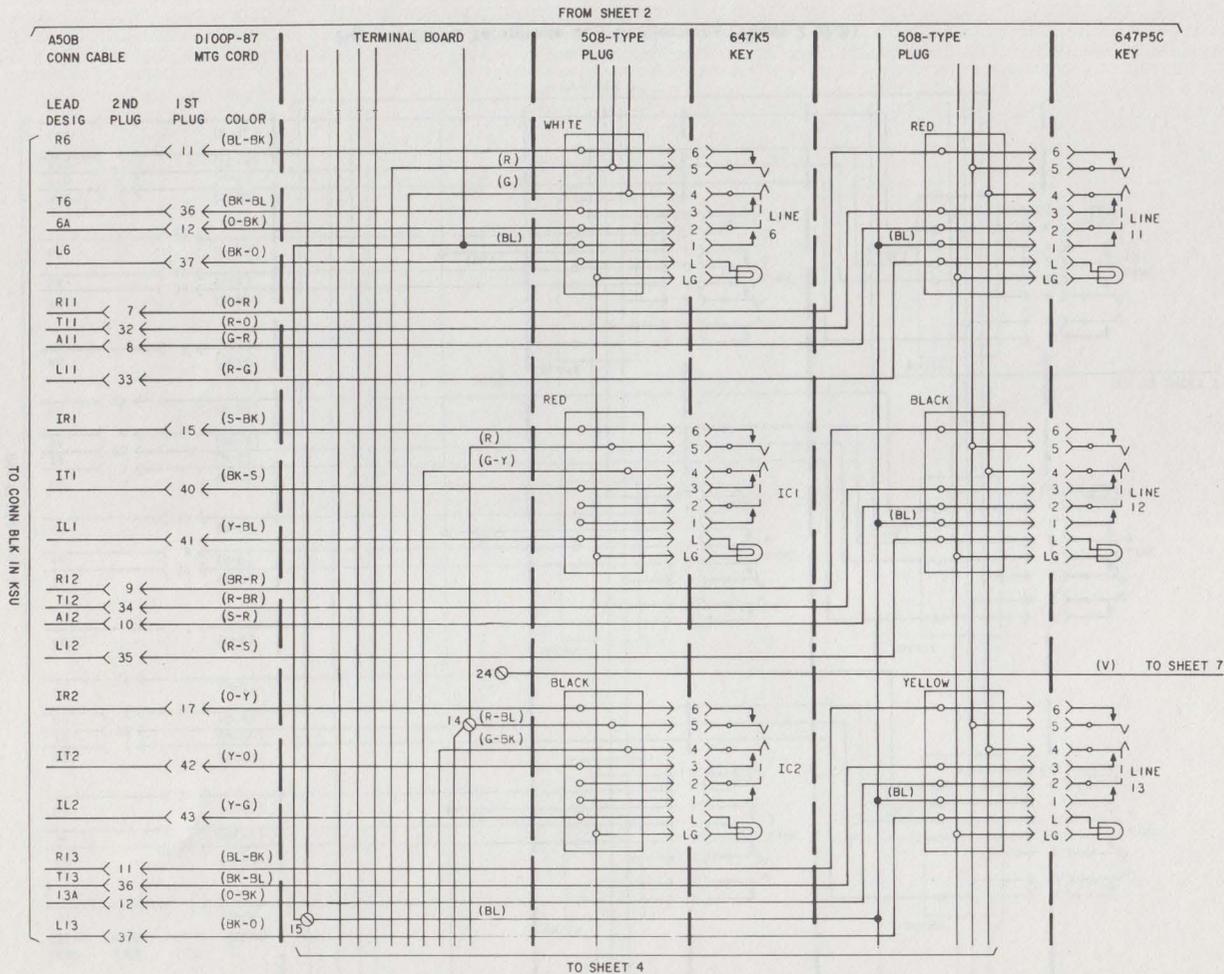


Fig. 7—2833B Telephone Set, Connections (Sheet 3 of 8)

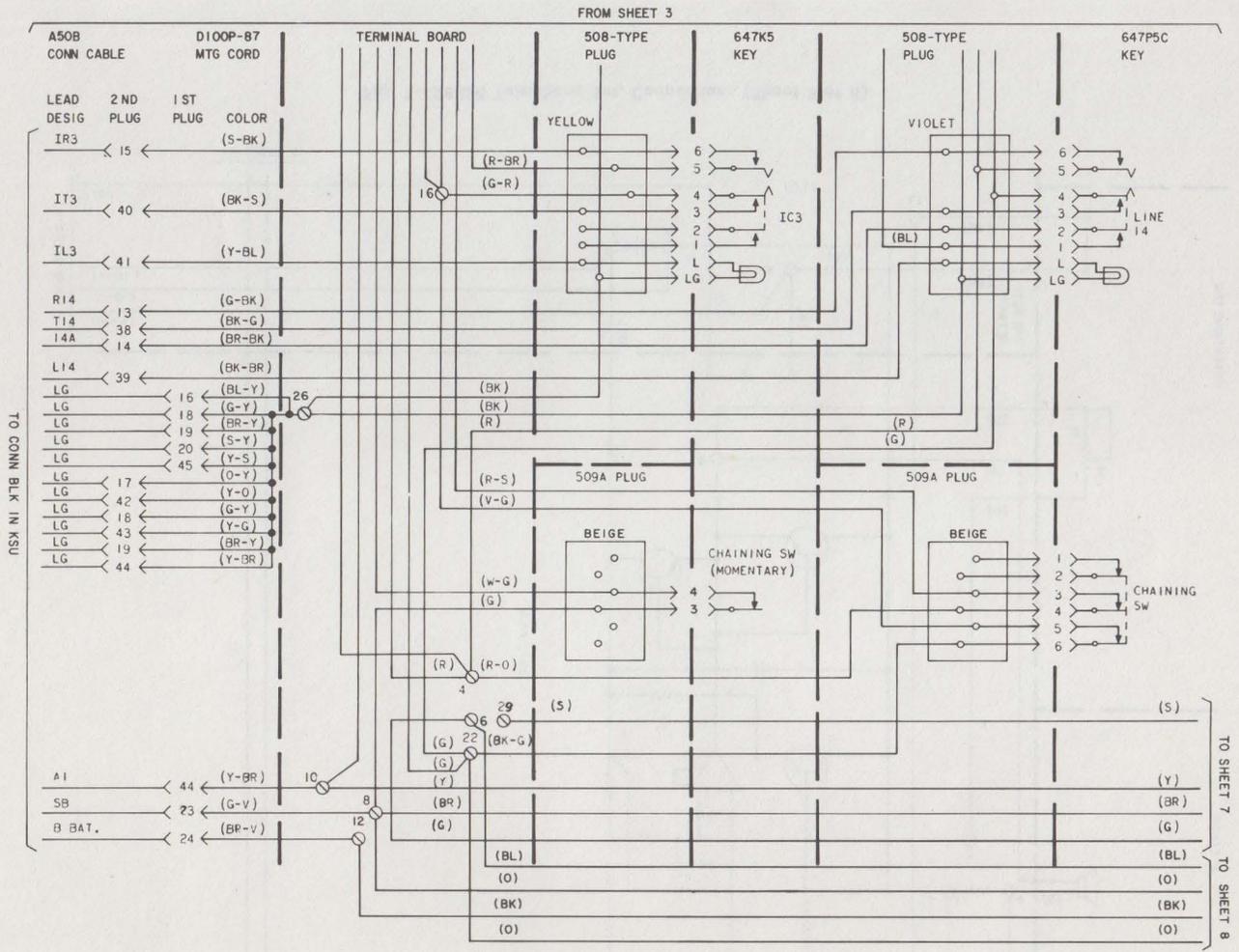


Fig. 7—2833B Telephone Set, Connections (Sheet 4 of 8)

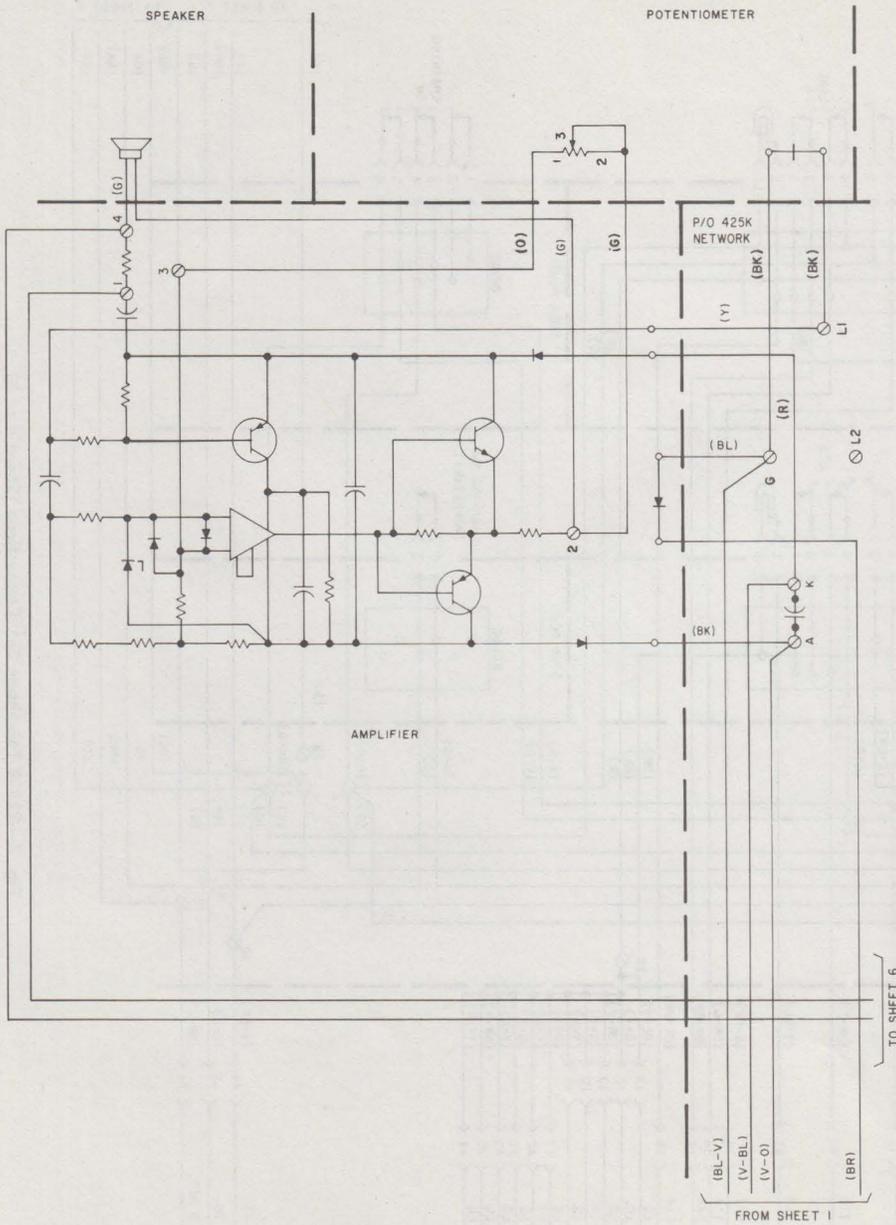


Fig. 7—2833B Telephone Set, Connections (Sheet 5 of 8)

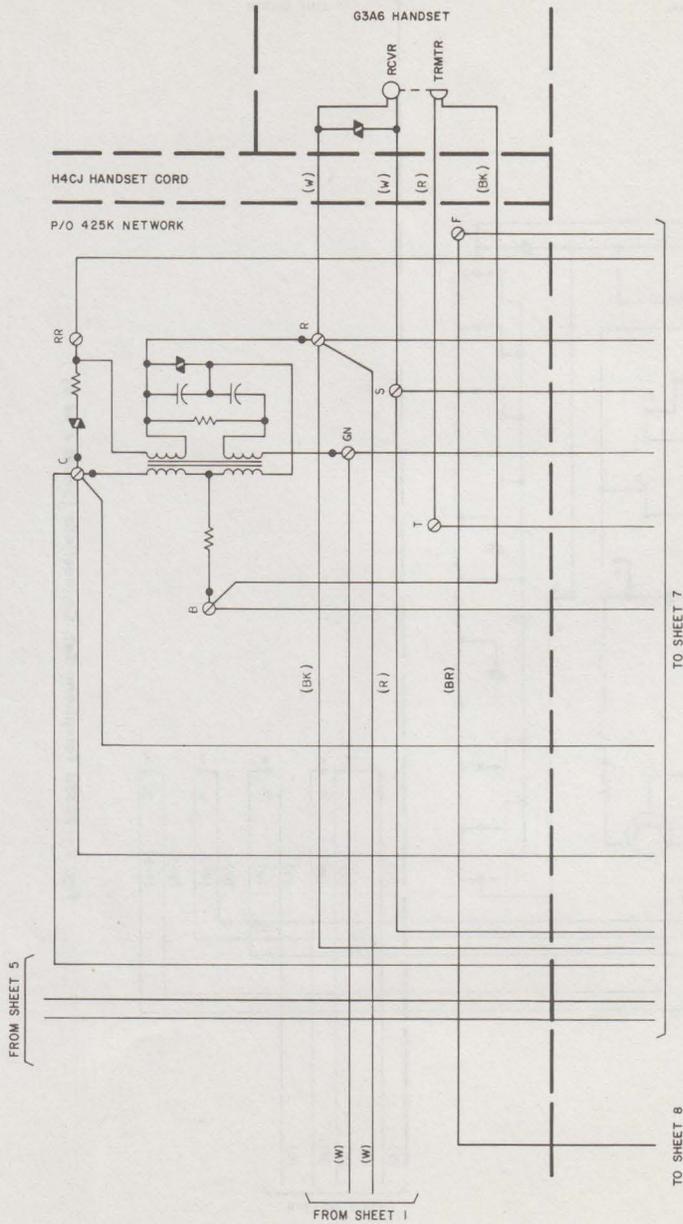


Fig. 7—2833B Telephone Set, Connections (Sheet 6 of 8)

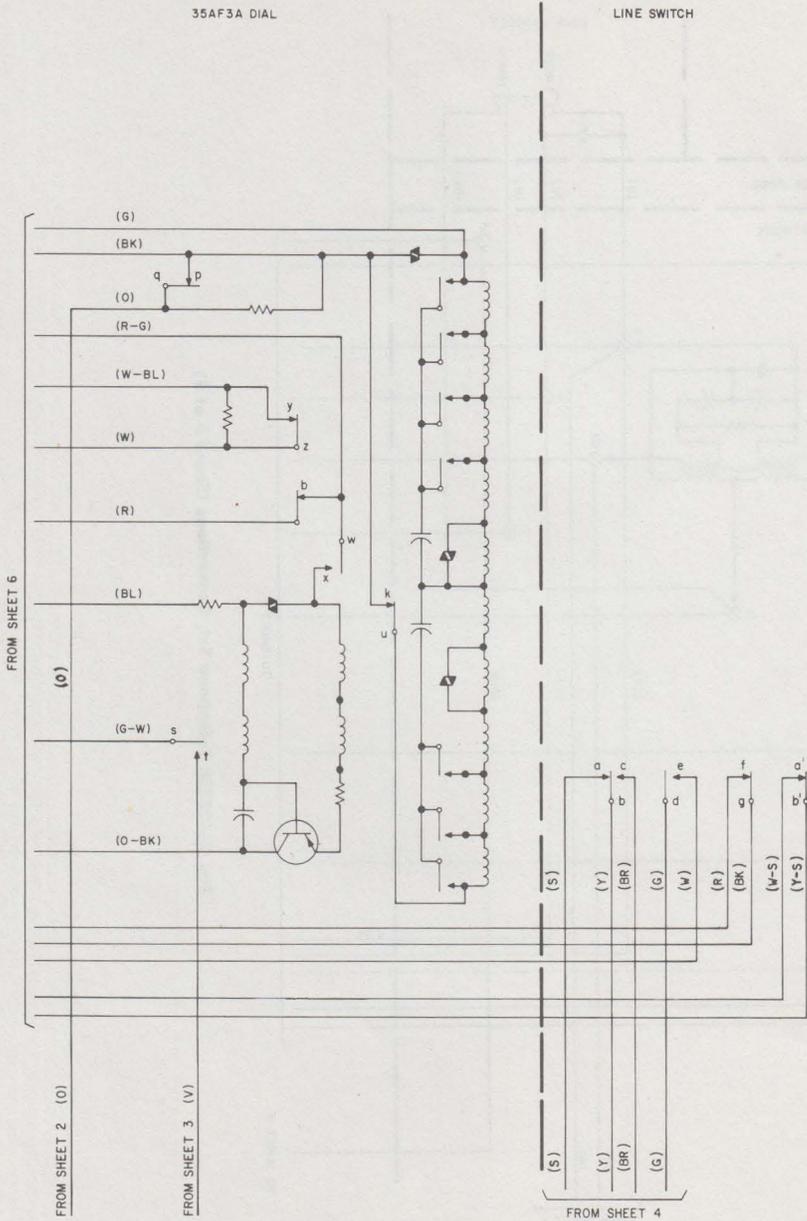


Fig. 7—2833B Telephone Set, Connections (Sheet 7 of 8)

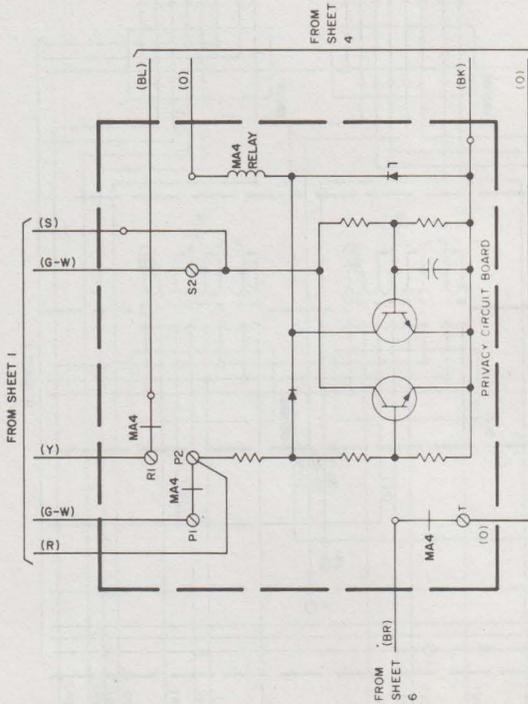


Fig. 7—2833B Telephone Set, Connections (Sheet 8 of 8)

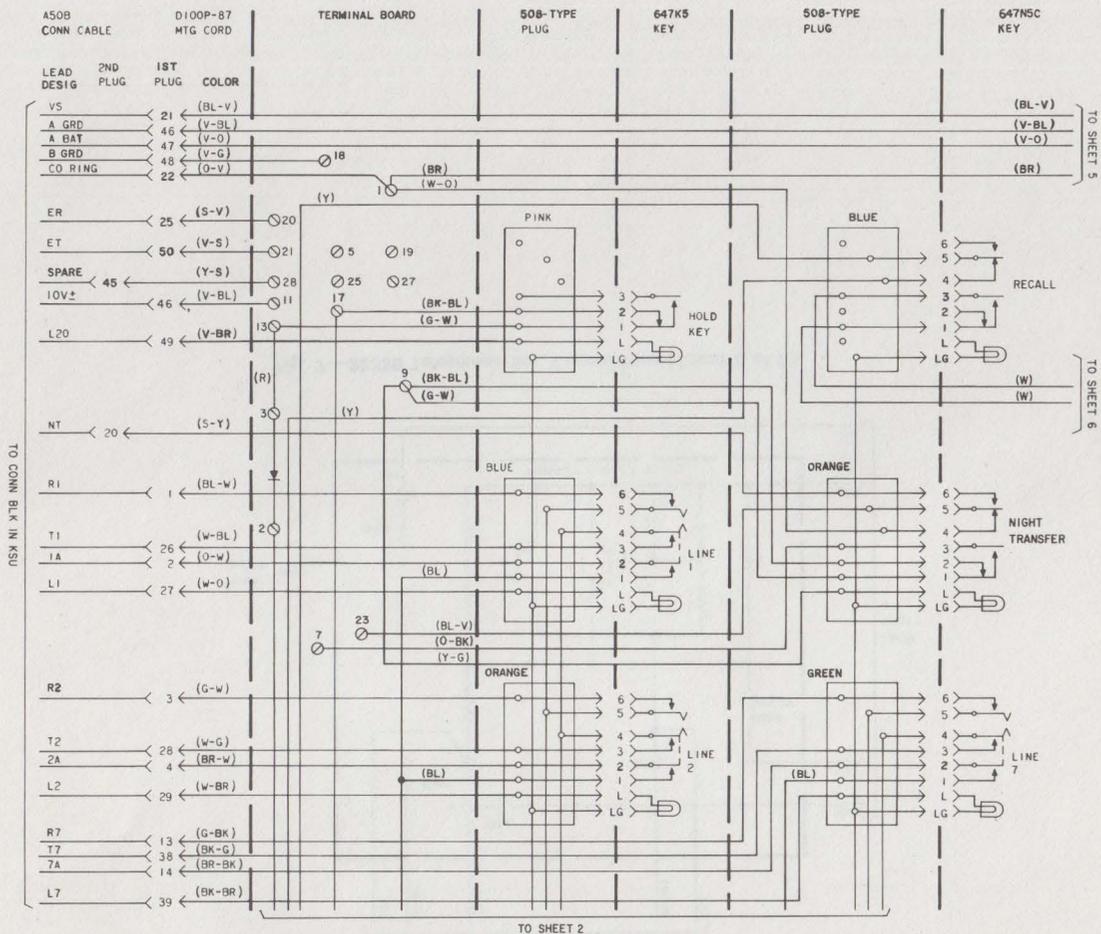


Fig. 8—833C Telephone Set, Connections (Sheet 1 of 7)

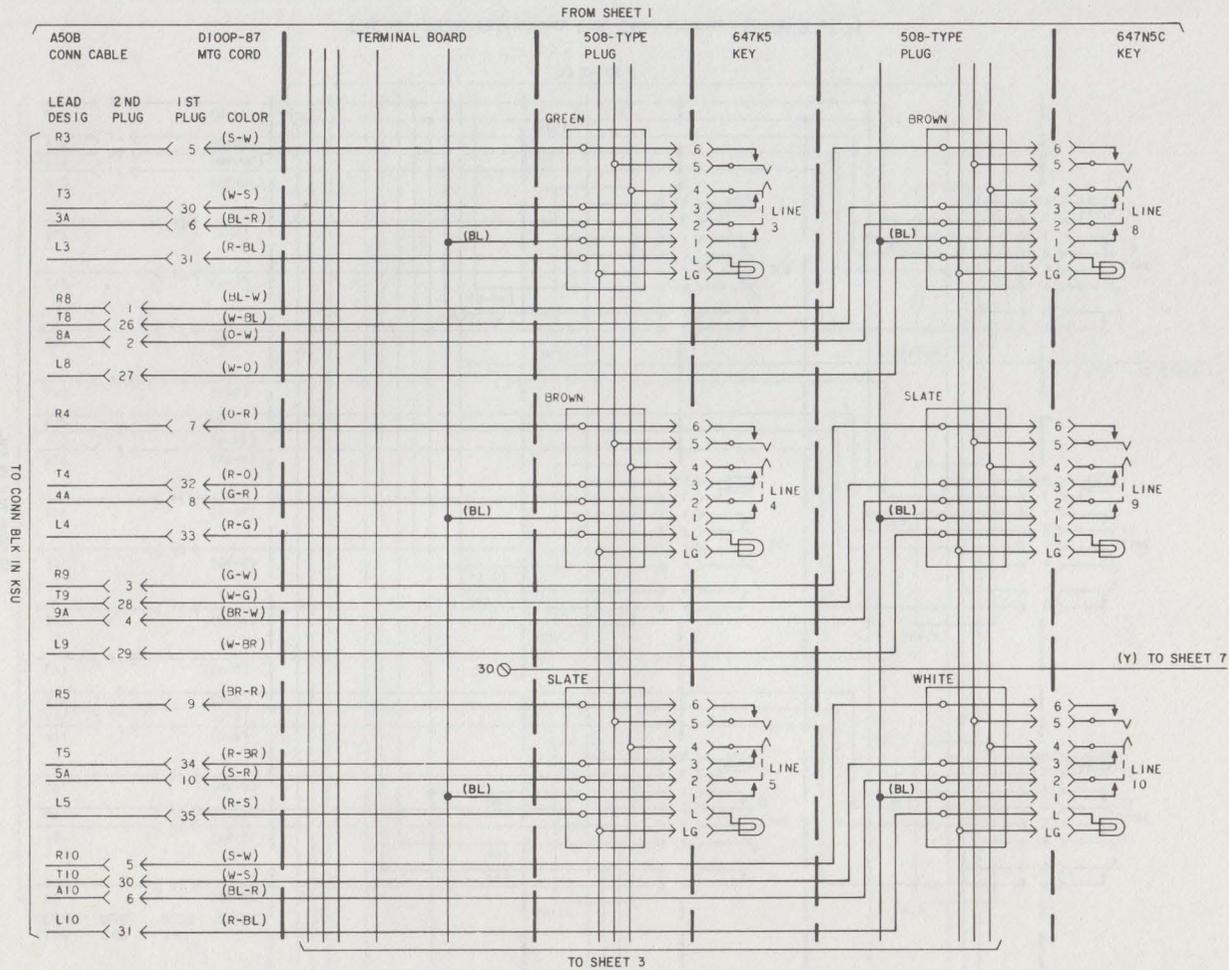


Fig. 8—833C Telephone Set, Connections (Sheet 2 of 7)

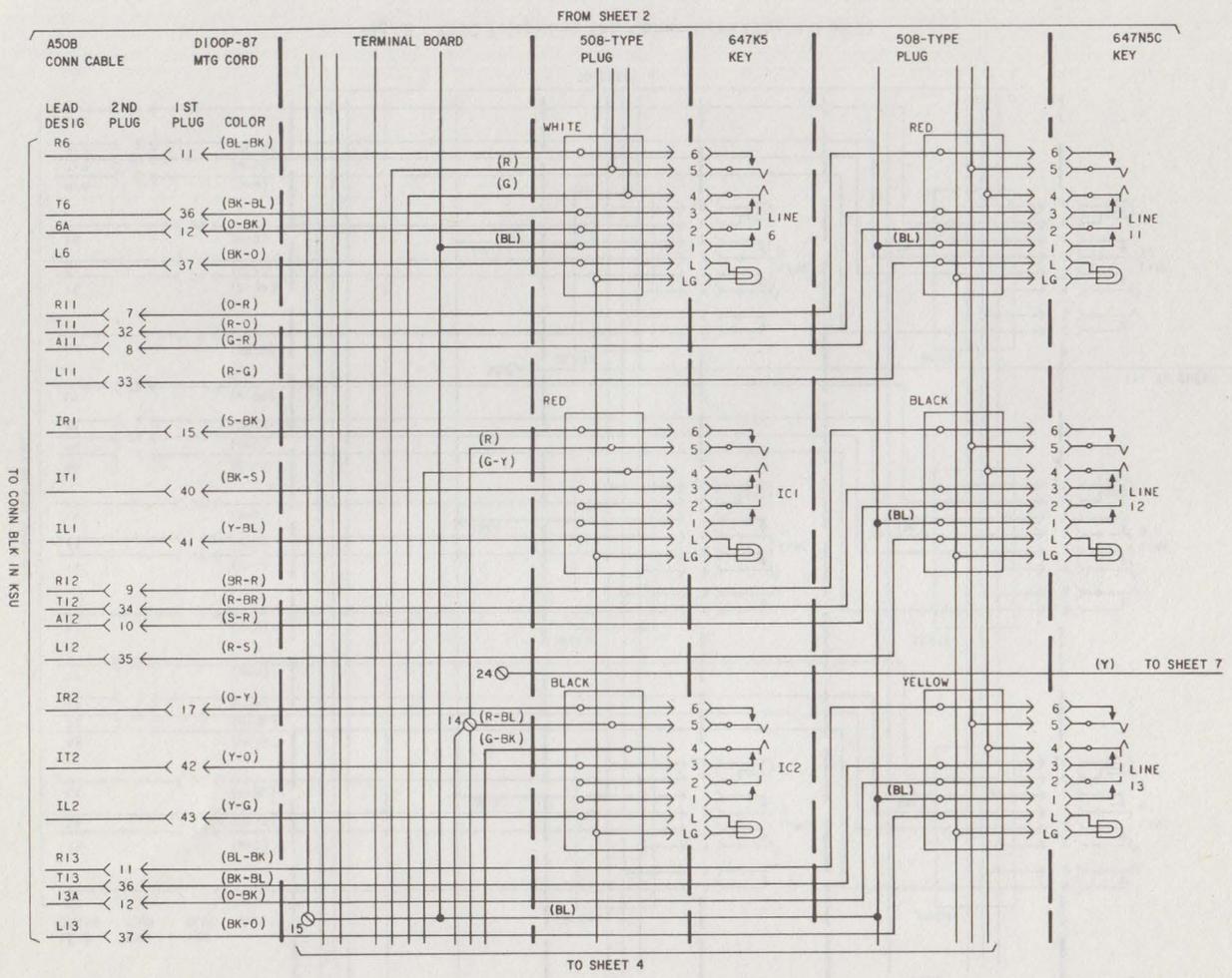


Fig. 8—833C Telephone Set, Connections (Sheet 3 of 7)



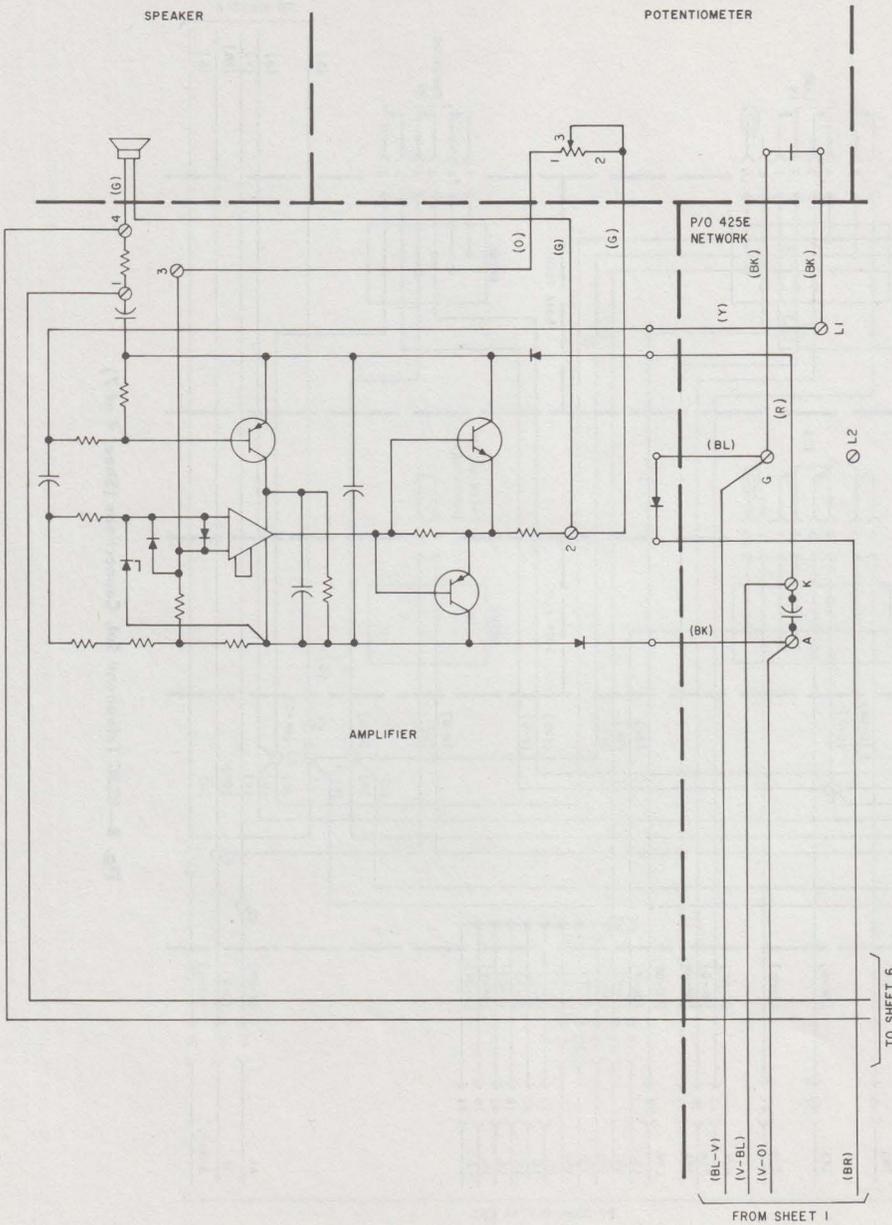


Fig. 8—833C Telephone Set, Connections (Sheet 5 of 7)

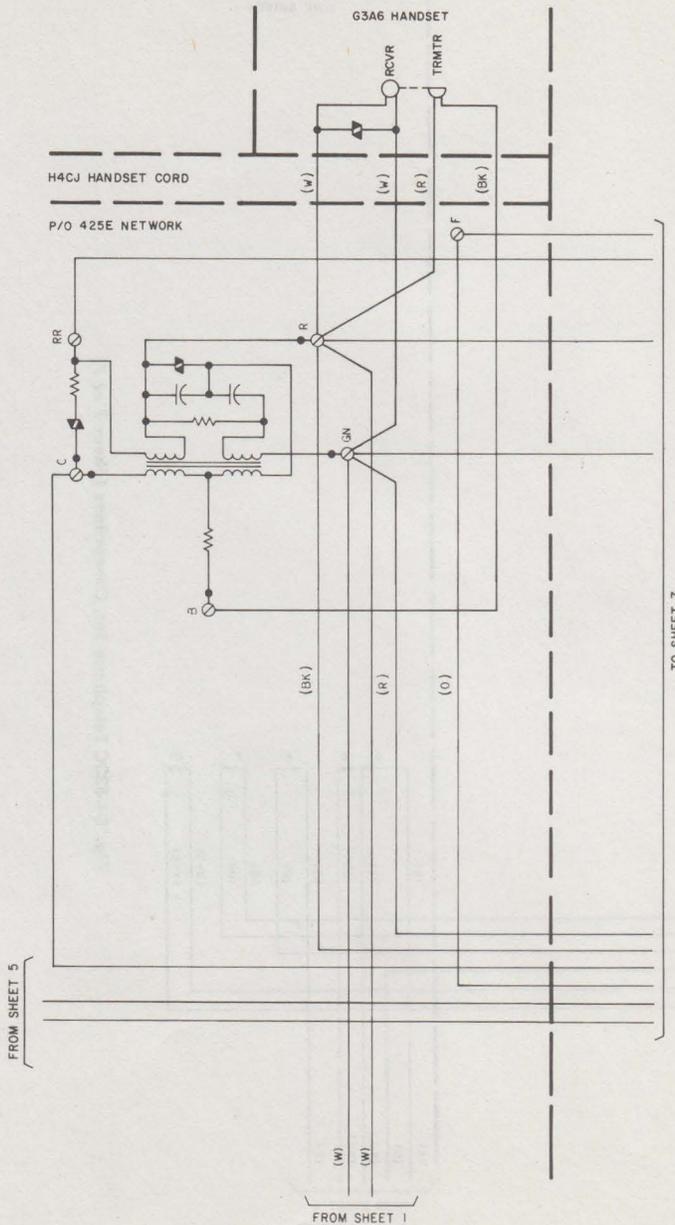


Fig. 8—833C Telephone Set, Connections (Sheet 6 of 7)

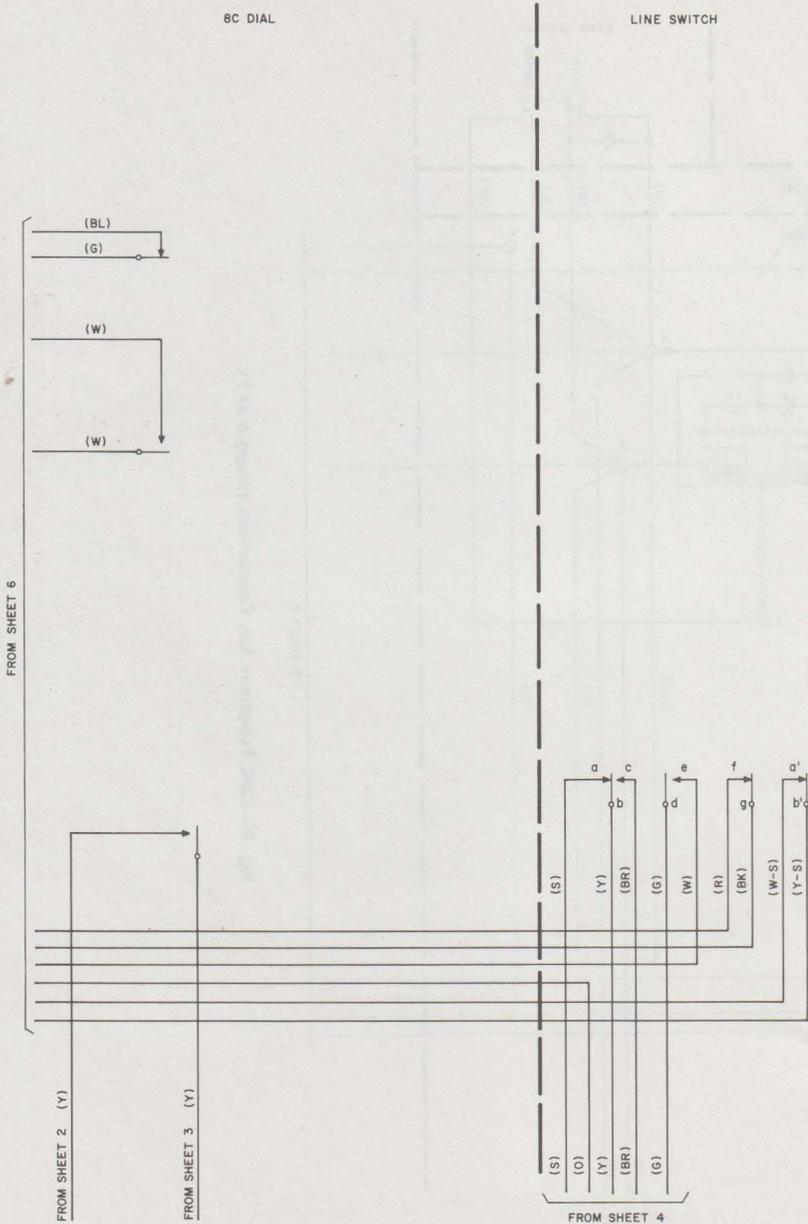


Fig. 8—833C Telephone Set, Connections (Sheet 7 of 7)

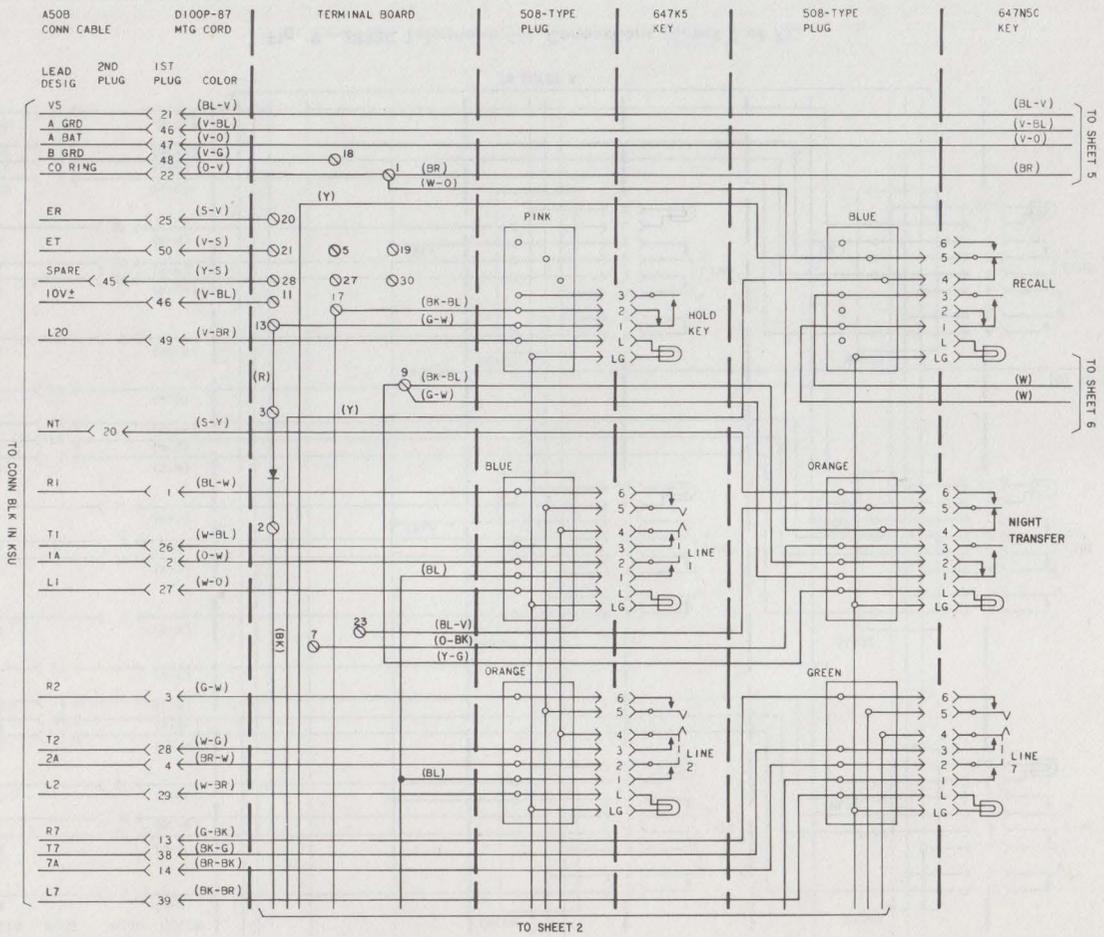


Fig. 9—2833C Telephone Set, Connections (Sheet 1 of 7)

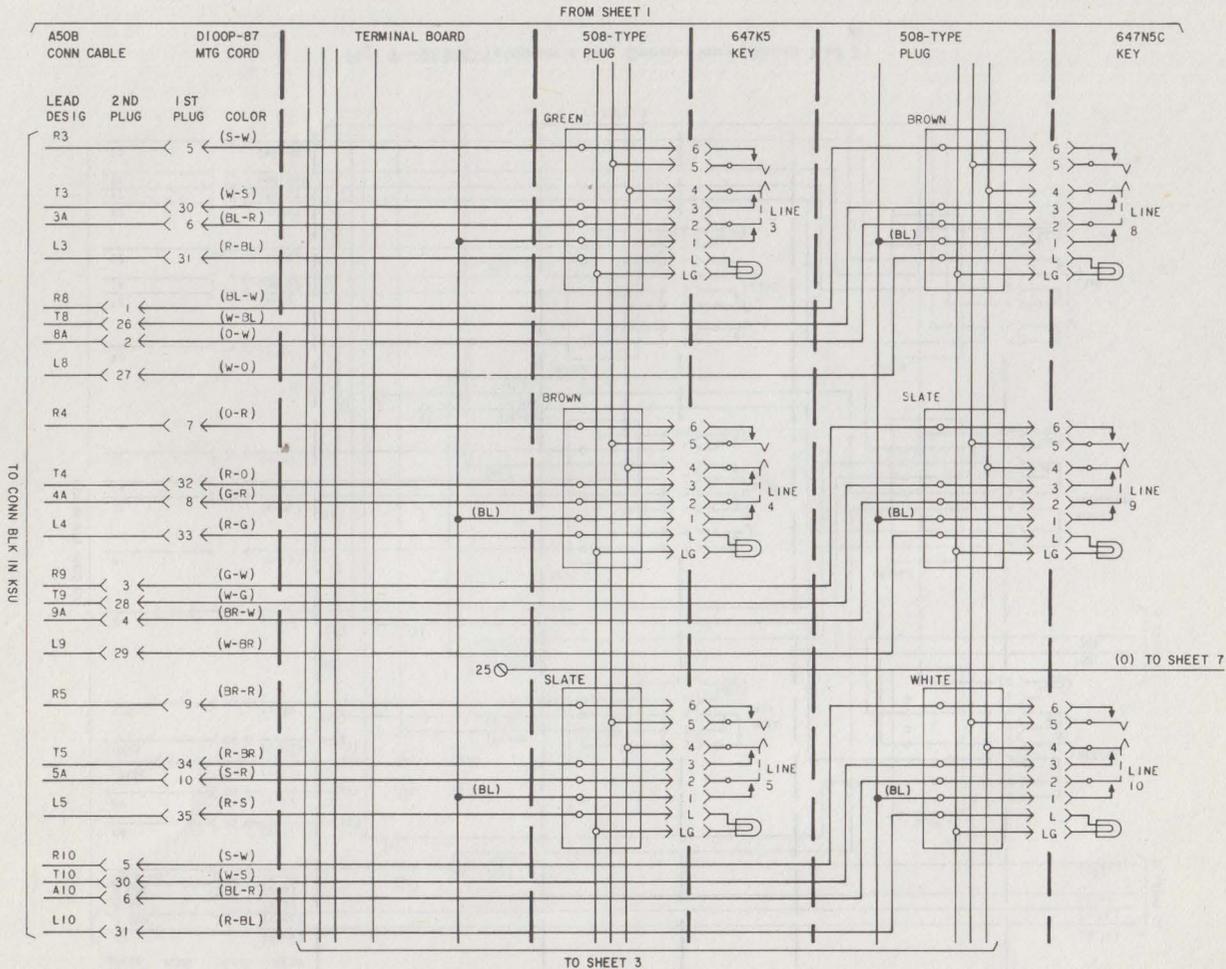


Fig. 9—2833C Telephone Set, Connections (Sheet 2 of 7)

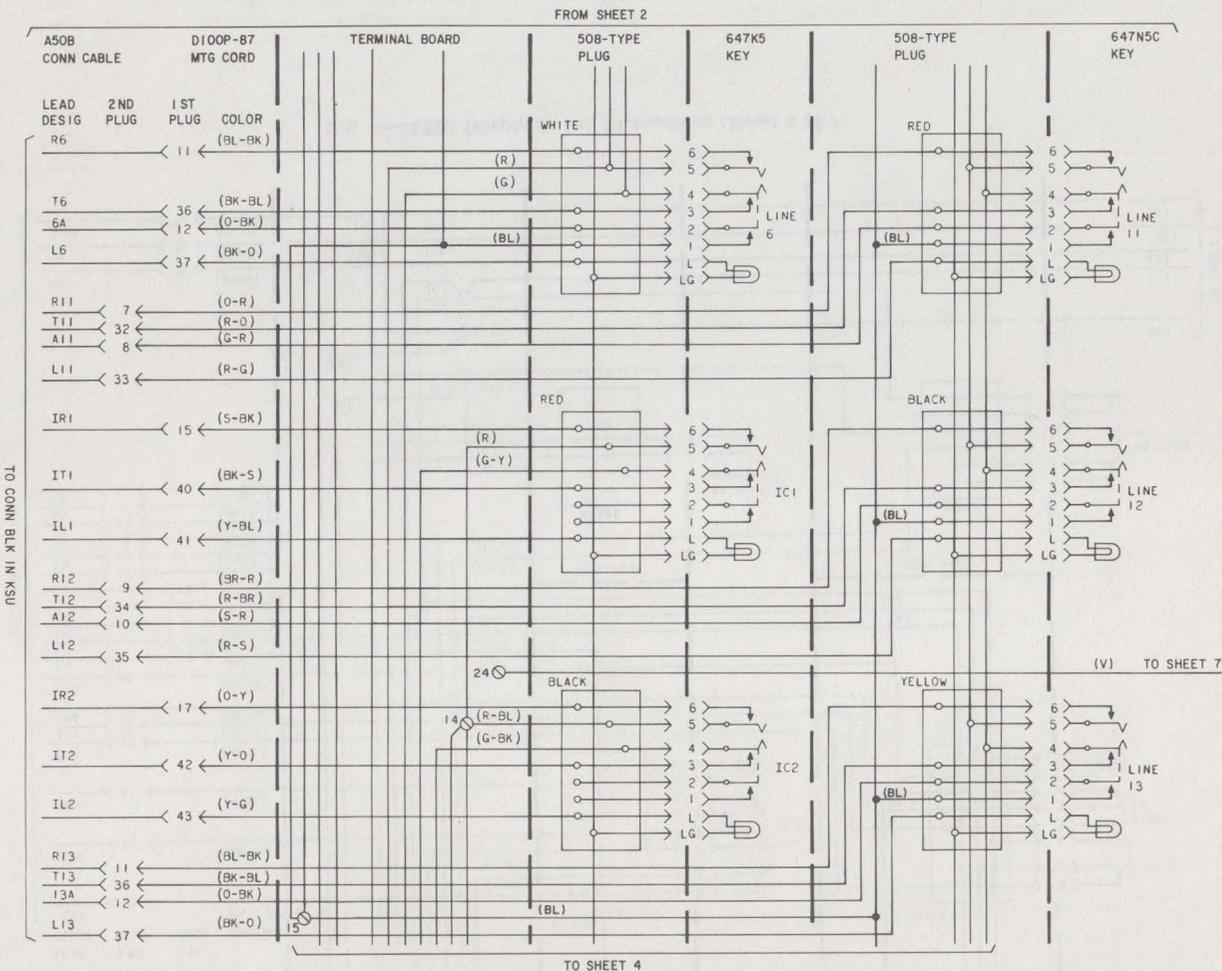


Fig. 9—2833C Telephone Set, Connections (Sheet 3 of 7)

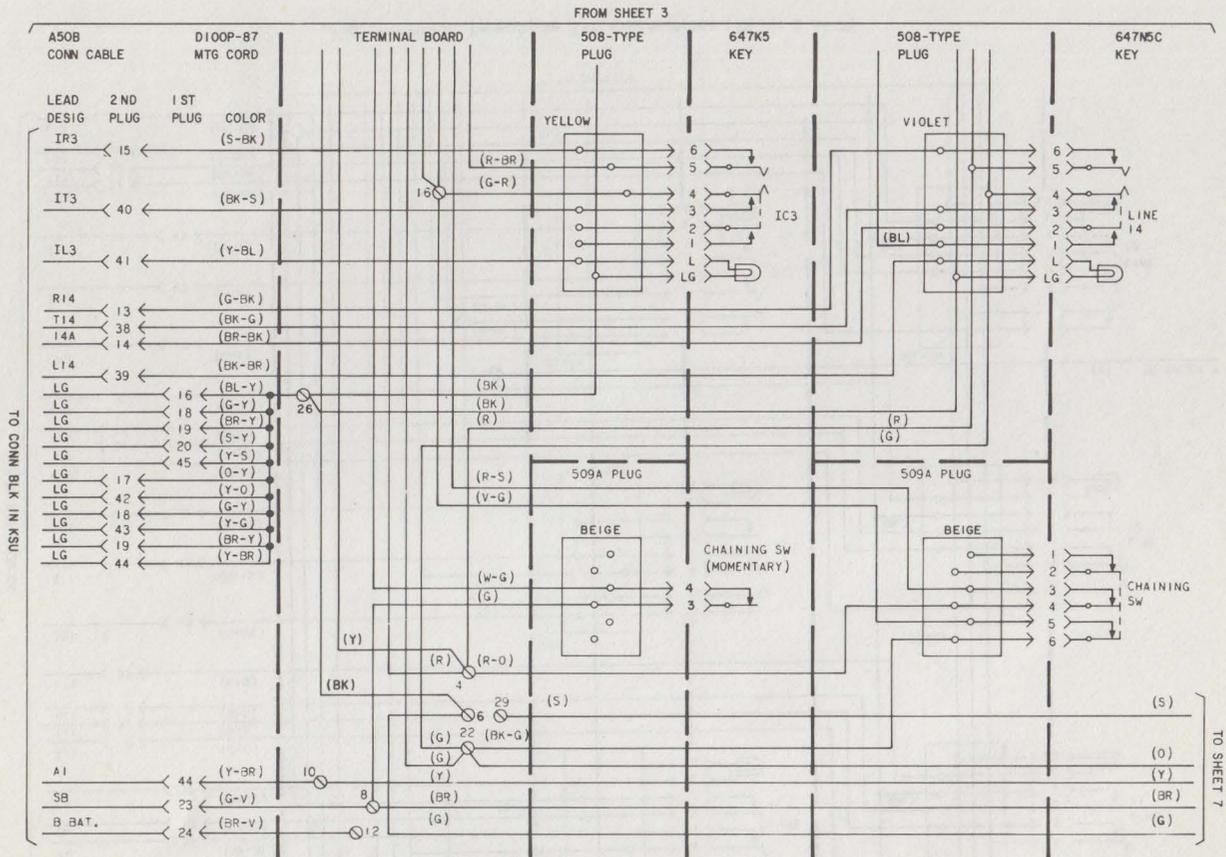


Fig. 9—2833C Telephone Set, Connections (Sheet 4 of 7)

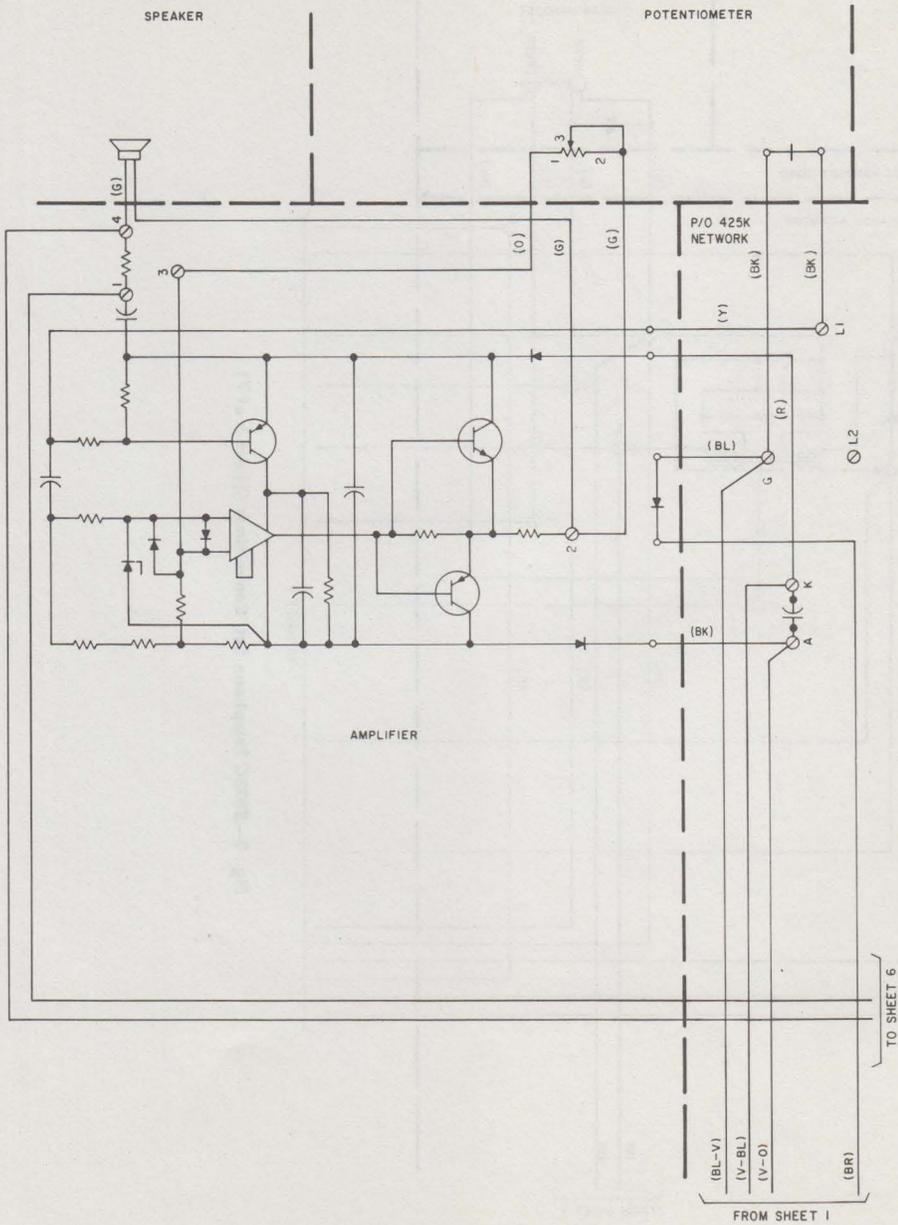


Fig. 9—2833C Telephone Set, Connections (Sheet 5 of 7)

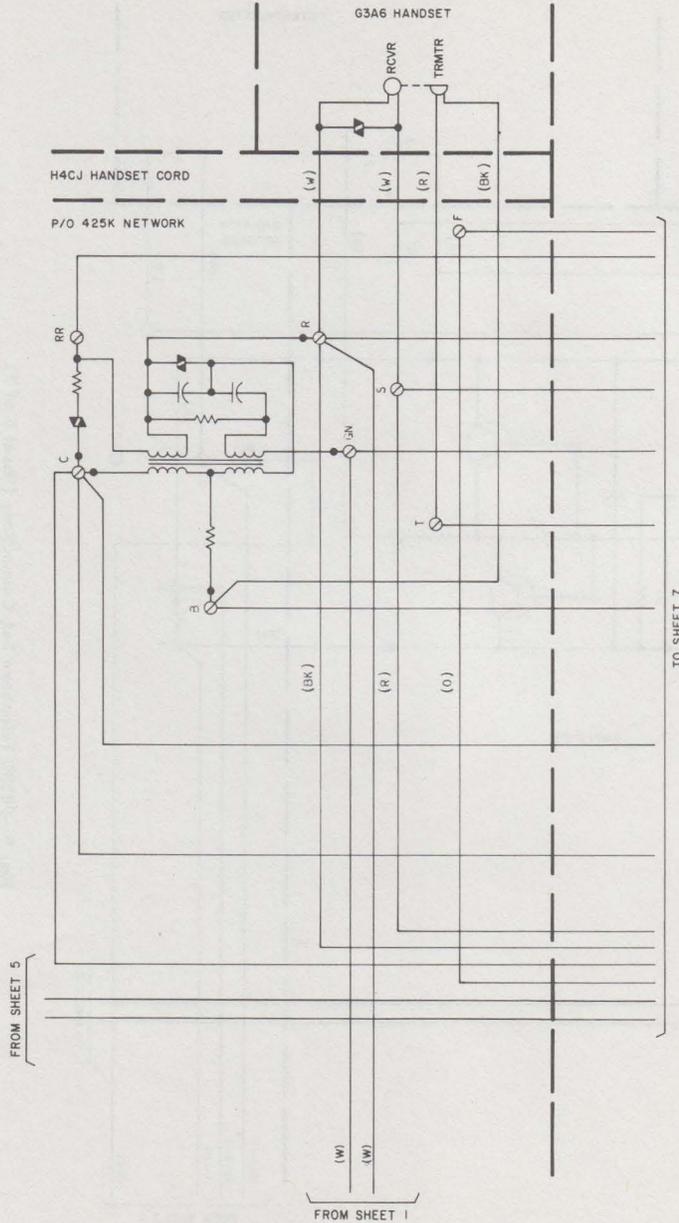


Fig. 9—2833C Telephone Set, Connections (Sheet 6 of 7)

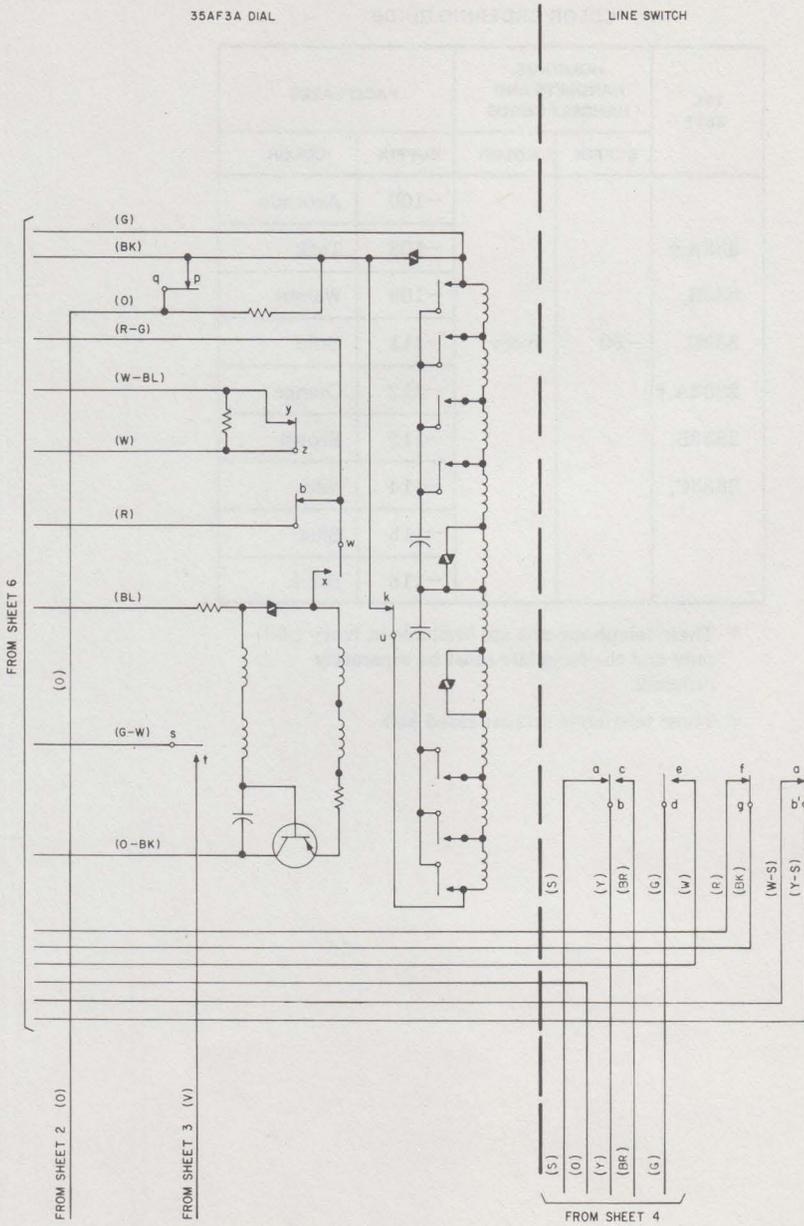


Fig. 9—2833C Telephone Set, Connections (Sheet 7 of 7)

TABLE B  
COLOR ORDERING GUIDE

TEL SET*	HOUSINGS, HANDSETS AND HANDSET CORDS		FACEPLATES	
	SUFFIX	COLOR	SUFFIX	COLOR
833A,† 833B, 833C, 2833A,† 2833B, 2833C,	-50	Ivory	-100	Avocado
			-108	Teak
			-109	Walnut
			-111	Gold
			-112	Orange
			-113	Brown
			-114	Red
			-115	Blue
		-118	Black	

\* These telephone sets are available in Ivory (-50) only and the faceplate must be separately ordered.

† These telephone sets are rated MD.

TABLE C

833A, 833C, 2833A, AND 2833C TELEPHONE  
SET CONNECTIONS FOR PRIVACY CIRCUIT  
(D-180486 KIT OF PARTS)

TEL SET LEADS	PRIVACY BOARD LEADS	CONNECT TO TEL SET TERM.	MOVE LEAD	
			FROM TEL SET TERM.	TO PRIVACY BOARD TERM.
	O	8		
	BR	F on net.		
	S*	15		
	BK	12		
	BL	6		
R			13	P2
G-W			13	P1
Y			6	R1
O			F on net.	T

\* In the 833A and 2833A telephone sets only, store (S) lead under screw terminal S2 on privacy board when privacy release is provided.

TABLE D

833A AND 2833A TELEPHONE SET CONNECTIONS  
FOR PRIVACY RELEASE KEY (D-180488 KIT OF PARTS)

TEL SET LEADS	PRIVACY BOARD LEADS	PRIVACY RELEASE KEY LEADS	CONNECT TO TEL SET TERM.	MOVE LEADS	
				FROM TEL SET TERM.	TO PRIVACY BOARD TERM.
		BK-BL	15	27	
		G-W	2*	27	S2
BK			2*	15	S2
	S†			15	S2

\* If telephone set does not have privacy circuit.

† If telephone set has privacy circuit and privacy release is now being added.

TABLE E

833C OR 2833C TELEPHONE SET CONNECTIONS FOR NIGHT TRANSFER

COLOR	MOVE LEAD IN TEL SET	
	FROM TERM.	TO TERM.
O-BK	7	11
O-V	1	23

TABLE G

TELEPHONE SET CONNECTIONS TO DISABLE PRIVACY RELEASE BUTTON

COLOR	MOVE LEAD IN TEL SET	
	FROM TERM.	TO TERM.
O-BK	10	15

TABLE F

TELEPHONE SET CONNECTIONS TO DISABLE PRIVACY CIRCUIT

COLOR	MOVE LEAD IN TEL SET	
	FROM TERM.	TO TERM.
O	8	13

TABLE H

CONNECTIONS FOR POWER FAILURE TRANSFER RINGER (EIC)

CONNECT LEADS*	
FROM TEL SET TERM.	TO RINGER TERM.
20	5
21	6

\* Use inside wire.

TABLE I

3-TYPE SPEAKERPHONE CONNECTIONS

LEAD DESIG	CORD COLORS			CONNECT LEADS FROM				CONNECT LEADS TO 55B CONTROL UNIT TERM. ‡
	DIOR	T7A	R2FK	TEL SET TERM.	TRMTR TERM.	LSPK TERM.	TRNSF TERM.	
P4 ¶ ¶	W-S			24				13
IR †								
P3 ¶ ¶	S-W			30				4
IT †								
T1	W-BL			25 †				1
				RR § ¶ ¶				
R1	BL-W			6				10
LK	W-BR			29				35
AG	BR-W			8				11
A1	W-G			10				2
	O-W			19 ¶				32
	W-O			**				23
LK	G-W*	BK-O			8			35
F1		G-Y			7			17
S		O-BK			5			18
A1		Y-O			6			19
M2		BK-S			3			16
P1		BL-R			2			8
M1		S-BK			1			7
SP2			G			††		20
SP1			R			††		29 § §

TABLE I (Cont)

## 3-TYPE SPEAKERPHONE CONNECTIONS

LEAD DESIG	CORD COLORS			CONNECT LEADS FROM				CONNECT LEADS TO 55B CONTROL UNIT TERM. ‡
	DIOR	T7A	R2FK	TEL SET TERM.	TRMTR TERM.	LSPK TERM.	TRNSF TERM.	
TF1							‡‡	27
TF2							‡‡	36

\* Insulate and store G-W lead.

† For TOUCH-TONE telephone set.

‡ Strap terminal 4 and 5 on control unit when used with TOUCH-TONE telephone sets.

§ Located on network.

¶ Also remove W-S lead from telephone set amplifier terminal 1 and connect it to terminal 19.

\*\* Connect W-O lead to terminal 1 on telephone set amplifier.

†† Loudspeaker terminals are not designated.

‡‡ Use inside wire. Transformer terminals are not designated.

§§ Connect lead to terminal 30 if a reduction in volume is desired.

¶¶ For rotary dial telephone set.

TABLE J

## 4-TYPE SPEAKERPHONE CONNECTIONS

M16C CORD		TEL SET LEAD	REMOVE FROM AMPLIFIER TERM.	CONNECT TO	
LEAD DESIG	LEAD COLOR			TEL SET TERM.	AMPLIFIER TERM.
A1	W-BR			10	
AG	W-O			8	
R1	BL-W			6	
T1	W-BL			25*	
				RR† (on net.)	
IR*	G-W			24	
P4†					
IT*	W-G			30	
P3†					
LK	O-W			29	
		W-S	1	19	
	S-W			19	
	BL-R				1

\* TOUCH-TONE telephone sets.

† Rotary telephone sets.