

TELEPHONE SETS

833- AND 2833-TYPE

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 key telephone sets are special plug-ended 20-button key telephone sets, initially designed for use with the 14A Communication System, (COM KEY* 1434). May also be used with 21A Communication System (COM KEY 2152). For information on COM KEY Systems, refer to the appropriate section in Division 518.

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1.02 This section is reissued to:

- Change NIGHT TRANSFER feature to RING TRANSFER feature
- Revise Tables A, C, F, and G to update information
- Revise Fig. 1, 2, 3, and 7 through 14 to update information
- Delete Fig. 3 and 4
- Show 3-type speakerphone MD

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

2. IDENTIFICATION

2.01 The 833BM, 2833BM, 833CM, and 2833CM (Fig. 1) are modular type telephone sets and will replace the 833B, 2833B, 833C, and 2833C telephone sets, respectively, which are hereby rated MD. The 833DM, 2833DM, 833EM, and 2833EM are also modular sets and are electrically and

functionally equivalent to the 833BM, 2833BM, 833CM, and 2833CM sets, respectively, except that they have been adapted for wall mounting. The modular sets will all be equipped with a G15A-50 handset and H4DU-50 handset cord which will plug into a 616T jack mounted on the left front of the telephone set base (Fig. 2). Current production models of these sets also are equipped with an improved line switch and an automatic button restoral (ABR) feature. Some early production BM and CM sets were not so equipped.



Fig. 1—2833CM Telephone Set

2.02 The 833B (MD) or 833BM, DM and 2833B (MD) or 2833BM, DM 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, and eight line buttons. The privacy circuit board is factory installed and wired (Fig. 2).

NOTICE

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

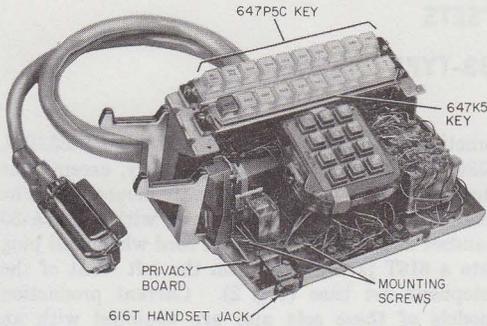


Fig. 2—2833BM Telephone Set Base

2.03 The 833C (MD) or 833CM, EM and 2833C (MD) or 2833CM, EM 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 RING TRANSFER button (not connected), and eight line buttons. The RING TRANSFER button must be wired in the field when ring transfer option is provided (Table E).

Note: In early production 833C and 2833C telephone sets the RING TRANSFER key was factory wired.

2.04 The DM and EM (wall type) sets and BM and CM (desk type) sets are not interchangeable due to the mechanical changes in the handset hanger and the new 6C1-50 housing.

2.05 An adapter (833A-50) will be furnished with each DM and EM telephone set for wall mounting. The switchhook of these sets has been designed to hang vertically to the left of the housing. The sets are equipped with a hard-wired mounting cord which can be coiled up and concealed in the adapter or the cord can be extended down the wall through a notch in the adapter for termination to appropriate connector-ended cable. All maintenance can be performed on internal components of these sets without removing the set from the wall.

2.06 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 resotation restores all depressed buttons to the unoperated positions when the handset is replaced.

2.07 Multiline conferencing is a feature of these telephone sets. Since there is no amplification involved, this type conferencing is limited. When lines are conferenced, using this manner of conferencing, distant stations may have trouble hearing each other and transmission is not guaranteed.

2.08 The 833- and 2833-type telephone sets may be used with either the 3-type (MD) or 4A 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-type (MD) or 4A speakerphone system.

2.09 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).

2.10 Any station set may be optionally wired to ring on one CO/PBX line only or for common audible ringing.



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

Ordering Guide

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

TABLE A

TELEPHONE SETS AND REPLACEABLE COMPONENTS
ORDERING GUIDE

TEL SET	BASE	HOUSING	DIAL	KEY	FACE-PLATE*	HANDSET	HANDSET CORD	LAMP
833BM-50	833BM	6C1-50	8C or 8CA	647P5C 647K5	833A-	G15A-50	H4DU-50	51A
833CM-50	833CM			647N5C 647K5				
833DM-50	840998678			647P5C 647K5				
833EM-50	840998694			647N5C 647K5				
2833BM-50	2833BM	832A-50	35AF3A	647P5C 647K5	2833A-	G15A-50	H4DU-50	51A
2833CM-50	2833CM			647N5C 647K5				
2833DM-50	840998686	6C1-50		647P5C 647K5				
2833EM-50	840998702			647N5C 647K5				

* See Table B for color suffix.

2.12 The following optional apparatus may be associated with desk type 833 and 2833 sets (order as required):

- D-180656 Kit of Parts [to provide a wall shelf mounting arrangement] consists of the following:

1—840362446 shelf

1—840362479 clamp

1—801812553 screw

- Diode 446F or equivalent (order one for each rotary dial station to be restricted)
- 4A Speakerphone (order one each of the following for each station to be equipped with speakerphone). For additional information on 4A components, refer to Section 512-700-100.

Loudspeaker, 108AA-†† (includes 7 foot D20N mounting cord)

Transmitter, 680AD-†† (includes 7 foot D8S mounting cord)

Adapter, 223D (includes 7 foot M16H and 25 foot M2FG cord)

Unit, Power, 85B1-49

† Add color suffix.

‡ The transmitter and loudspeaker set will be shipped in one of four promoted colors, Black (-03), Green (-51), White (-58), and Light Beige (-60). For ivory components, it will be necessary to also order a D-180508 Kit of Parts.

- Ringer, E1C (one for each CO/PBX line to be wired 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 833C, CM, EM, 2833C, CM, or EM telephone set.
- Transmitter, 683A-50 (for HFAI feature of COM KEY 2152)
- Adapter, 268A (for mounting 683A-50 transmitter when using DM or EM type telephone sets)

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. 5

through 12 for schematics of 833B, BM, DM, 2833B, BM, DM; 833C, CM, EM, and 2833C, CM, EM telephone sets, respectively.

3.02 All DM and EM (wall type) sets are shipped with an 833A-50 adapter, screw, and clip (Fig. 3) which are used for mounting the telephone set to a vertical surface. Install the 833A-50 adapter and telephone set as follows.

- (1) Mount the adapter to the wall or vertical surface as shown in Fig. 3, using appropriate fasteners (Section 080-720-105). If the mounting cord is to be dressed down the wall, it is necessary to pass the cord through the notch in the adapter before final attachment of the adapter to the wall (Fig. 4). If the cabling enters through the wall, the mounting cord may be contained within the adapter.
- (2) Remove faceplate and housing from telephone set.
- (3) Hang the telephone set on the adapter from the headed rivets that protrude from the base pan (Fig. 4).

Note: It may be necessary to slightly bend the top slotted portion of the adapter so the headed rivets of the base pan will align properly.

- (4) Secure the telephone set base with the clip, and screw at the bottom of the adapter (Fig. 3).
- (5) Install telephone set options (see 3.05).
- (6) Replace housing and faceplate.

3.03 A D-180656 Kit of Parts may be ordered separately for shelf mounting of all B, BM, C, or CM sets. The 840362446 shelf should be mounted to a wall or vertical surface and, after placing the telephone set on the shelf, secure set with retainer clamp and screw furnished with the shelf.

3.04 To install telephone set options the faceplate and housing must be removed and the dial lifted from its mounting brackets. Use a KS-21107L1 type releaser or equivalent to release the faceplate catch.

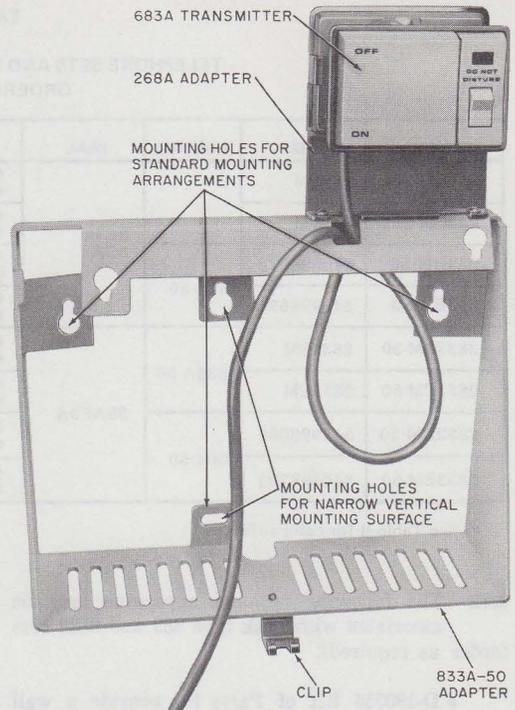


Fig. 3—833A-50 Adapter with 268A Adapter and 683A Transmitter

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 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

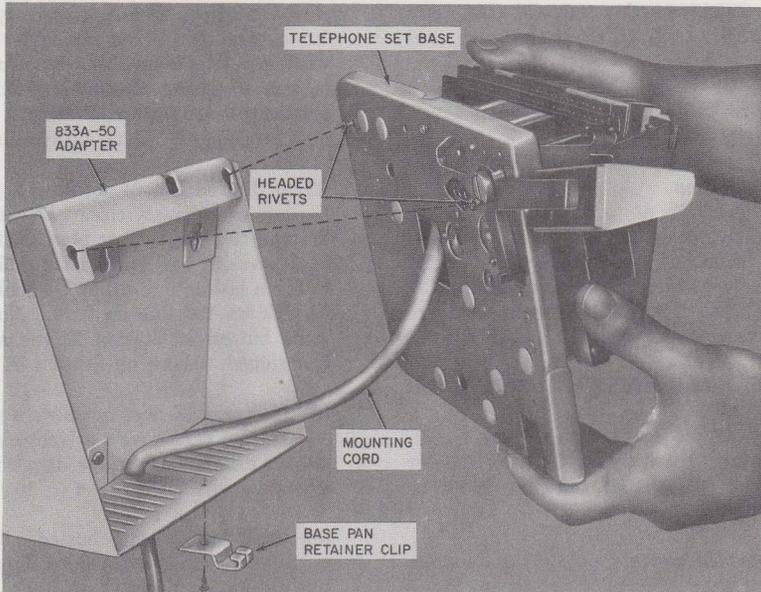


Fig. 4—Mounting Telephone Set Base onto 833A-50 Adapter

between terminal positions. Check for clearance before reinstalling the dial.

3.05 Options are installed as follows:

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

(1) Install 446F or equivalent diode between network terminals RR and F. Terminate negative lead of diode on terminal F (arrow on diode pointing toward 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.

(c) **Privacy Circuit 833C, CM, EM, or 2833C, CM, EM (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. 2) using mounting screws furnished with the telephone set.

(2) Refer to Table C for connections.

(3) To test privacy circuit refer to 3.06.

(d) **Disable Privacy Circuit (D-180486 Kit of Parts) 833-type telephone sets:** Remove (O) and (BR) leads of privacy circuit from the telephone set terminal 8 and 12, respectively, and insulate and store.

(e) **To Disable PRIV RLS (part of top key) 833B, BM, DM or 2833B, BM, DM telephone sets:** Move (O-BK) lead of privacy release key from telephone set terminal 10 to 15, see Table G.

(f) **RING TRANSFER (833C, CM, FM or 2833C, CM, EM 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 RING TRANSFER feature factory wired. Current 833C, CM, EM and 2833C, CM, EM telephone sets are not factory wired for RING TRANSFER.

(g) **HANDS FREE ANSWER INTERCOM (HFAI):**

- (1) If feature is to be added to DM- or EM-type set, a 268A adapter must be used as follows:

- (a) Mount 268A adapter onto 833A-50 adapter with two screws as shown in Fig. 3 with the tabs of the 268A adapter facing outward from the vertical surface. The 683A-50 transmitter is secured by sliding the transmitter downward between the tabs on the adapter. The telephone set end of the transmitter cord enters the telephone set and is attached to the telephone set base at the small notch on the top edge of the base panel. The excess cord is stored in the 833A-50 adapter.

- (2) For B/BM or C/CM (desk type) sets, the transmitter cord will enter at the rear of the set.

- (3) Refer to Table D for connections.

Note: It may be necessary to slightly reduce the volume of the 683A transmitter if distortion or feedback is noticed when the HFAI feature is used.

3.06 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 ie, 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.

3.07 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-21107 type releaser or equivalent to release the faceplate catch and seat the faceplate.

3.08 The 647K5 and 647P5C keys use designation tabs, forms E-5837 and E-6672 (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.

3.09 For telephone set number designation, use form E-4203-G or E-4204-G on nonmodular rotary dial sets and form E-5002-A or E-5002-B for station number card on nonmodular TOUCH-TONE dial sets. Use forms E-4203-G-(M) or E-6417 for rotary dial sets (modular) and forms E-5002-A-(M) or E-6418 for TOUCH-TONE dial sets (modular).

3.10 Refer to Fig. 7 through 14 for telephone set schematics.

3.11 Refer to Section 512-620-487 or 512-740-471 for connections to 3-type (MD) or 4A speakerphone system, respectively.

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

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.



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

4.02 The future production 647-type key will be modified for each 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 B

COLOR ORDERING GUIDE

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

* Faceplates must be ordered separately (Table A).

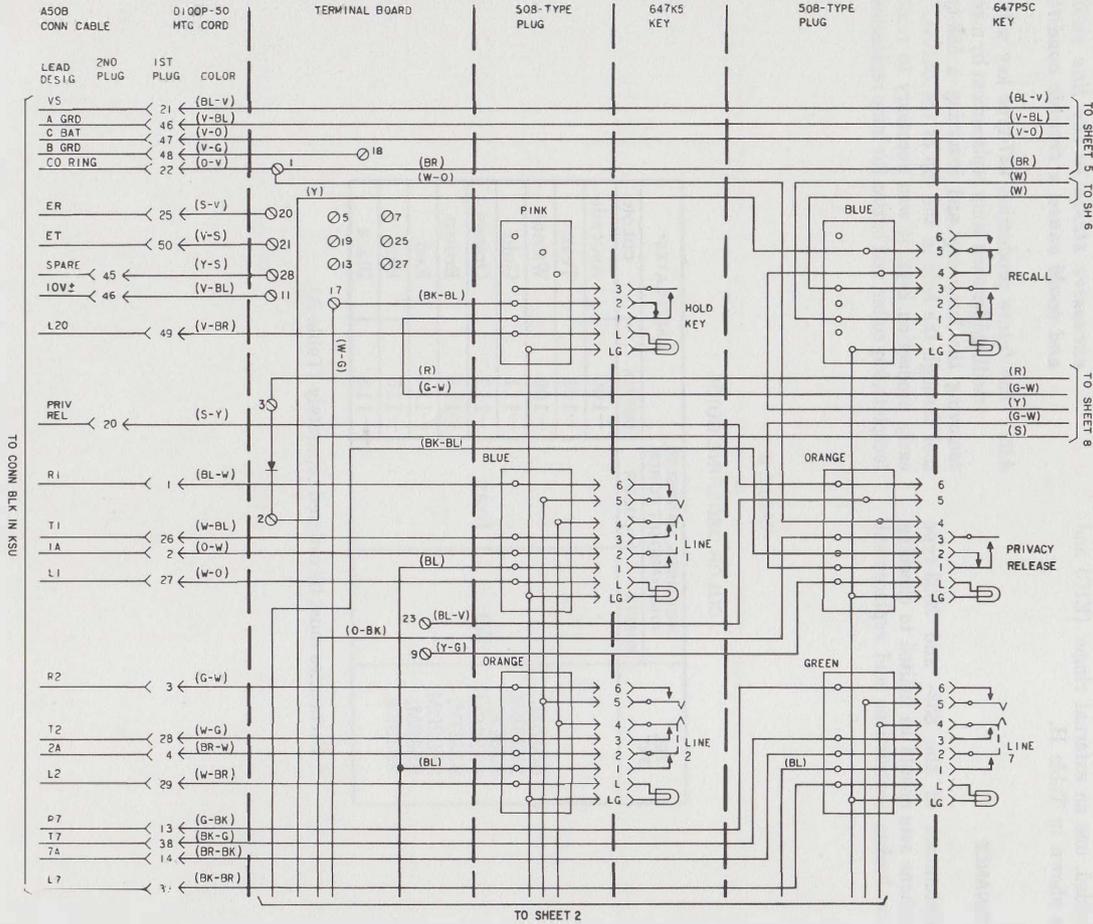


Fig. 5—833B (MD) Telephone Set, Connections (Sheet 1 of 8)

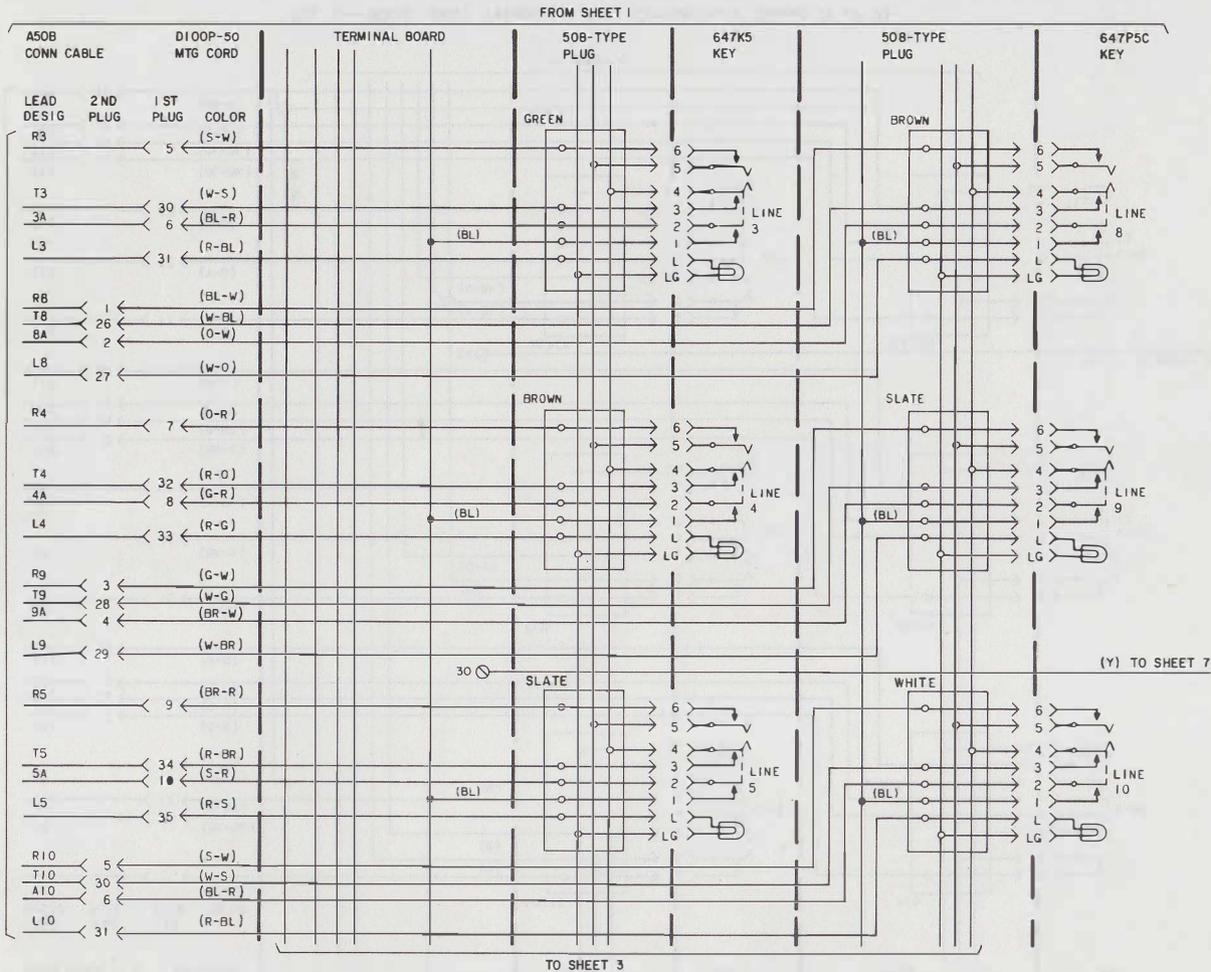


Fig. 5—833B (MD) Telephone Set, Connections (Sheet 2 of 8)

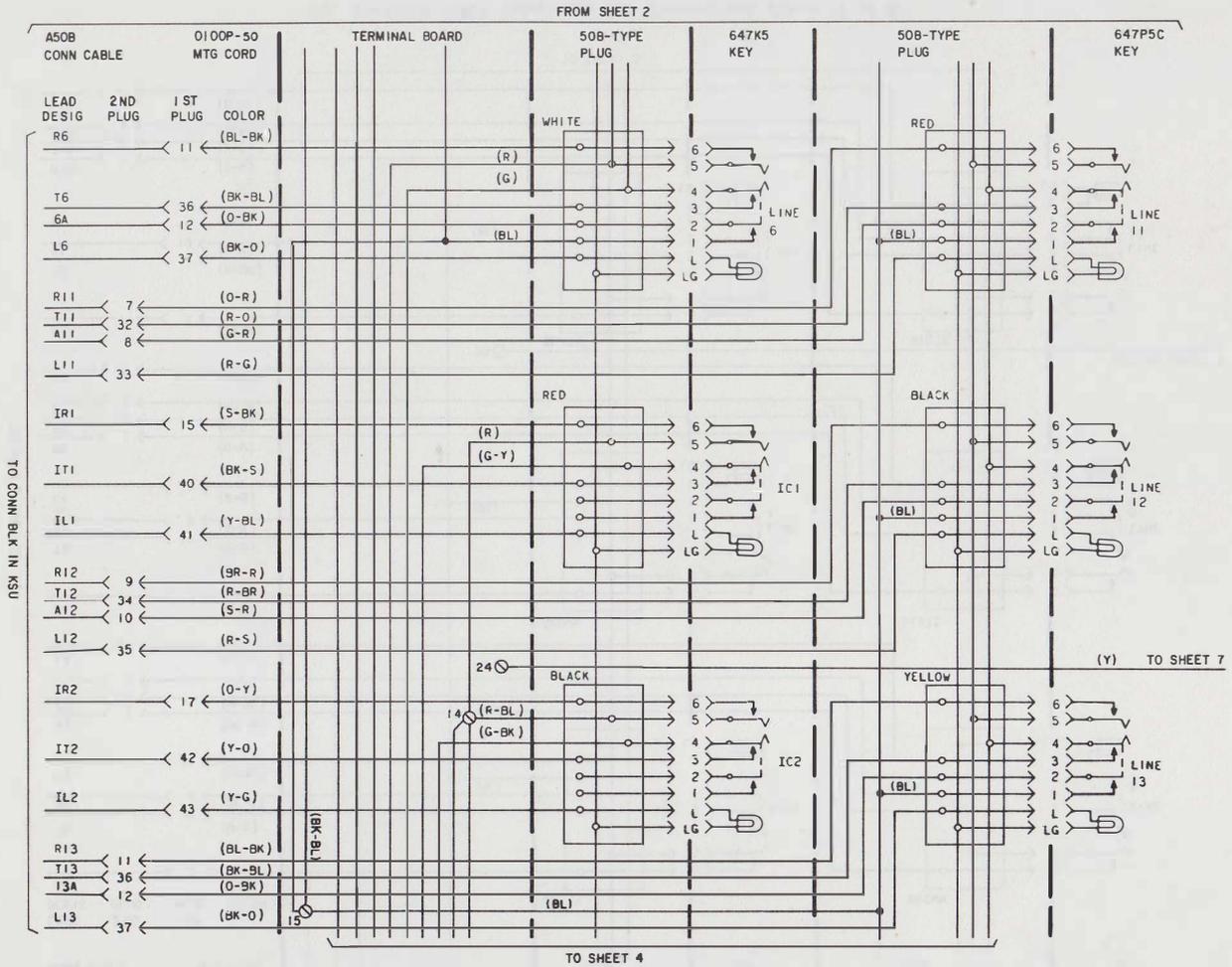


Fig. 5—833B (MD) Telephone Set, Connections (Sheet 3 of 8)

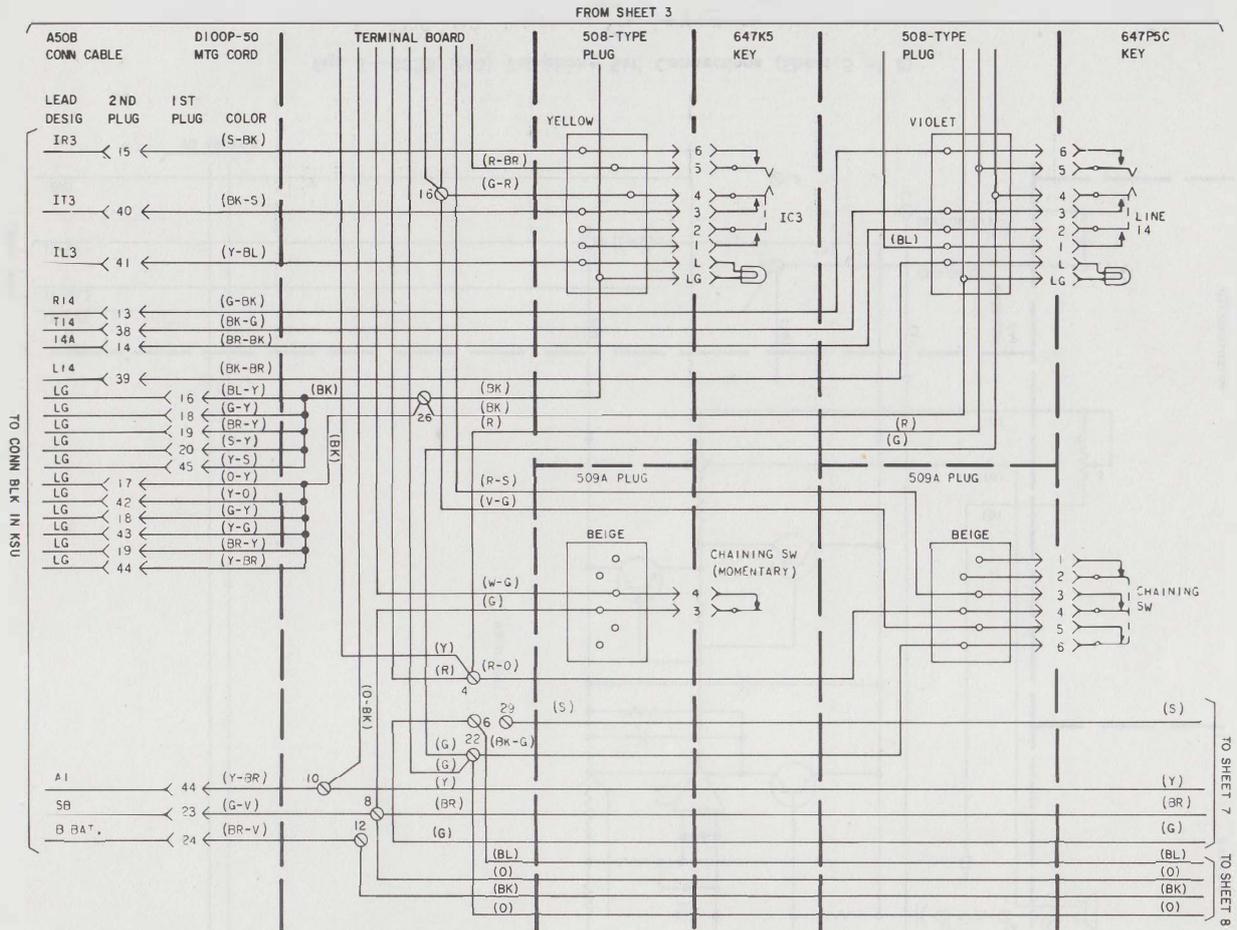


Fig. 5—833B (MD) Telephone Set, Connections (Sheet 4 of 8)

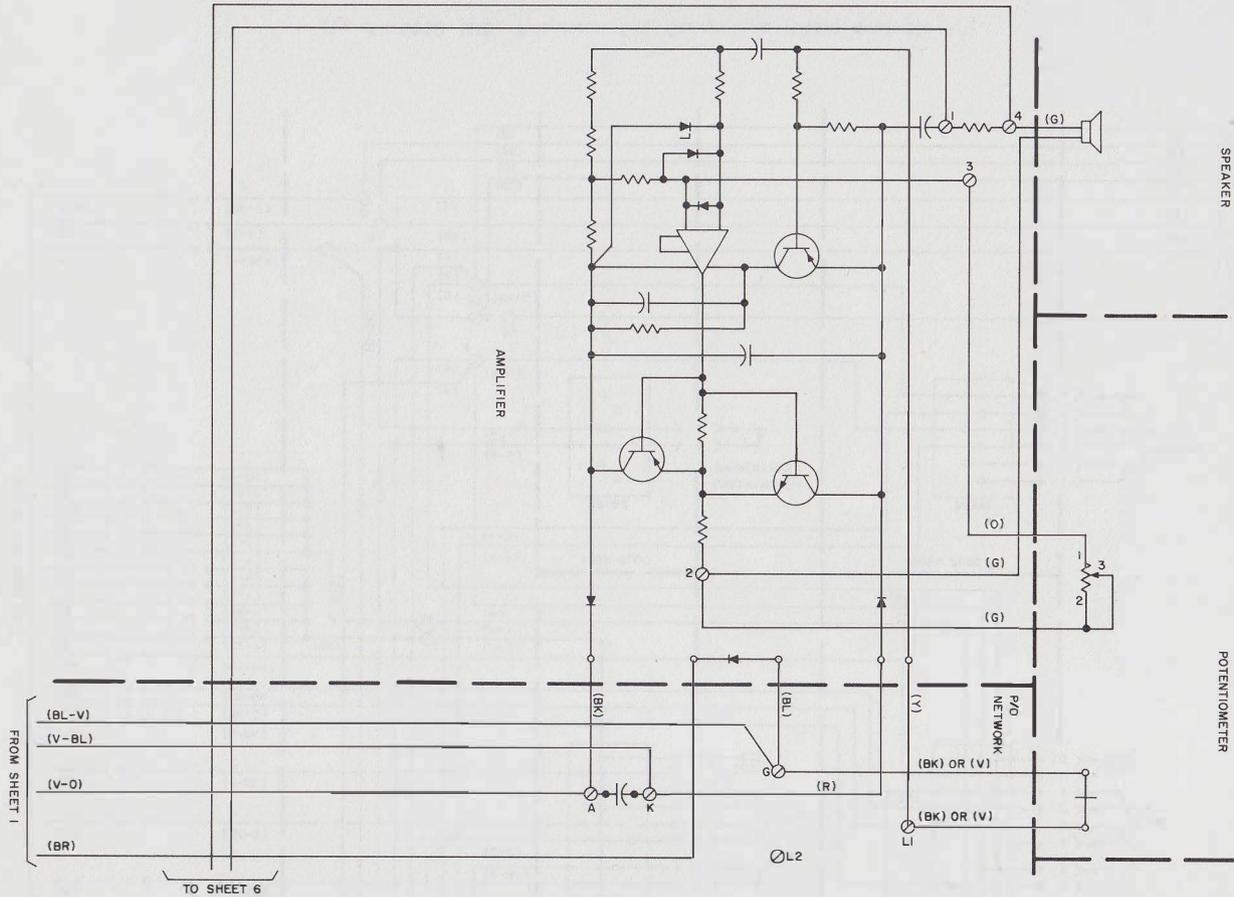


Fig. 5—833B (MD) Telephone Set, Connections (Sheet 5 of 8)

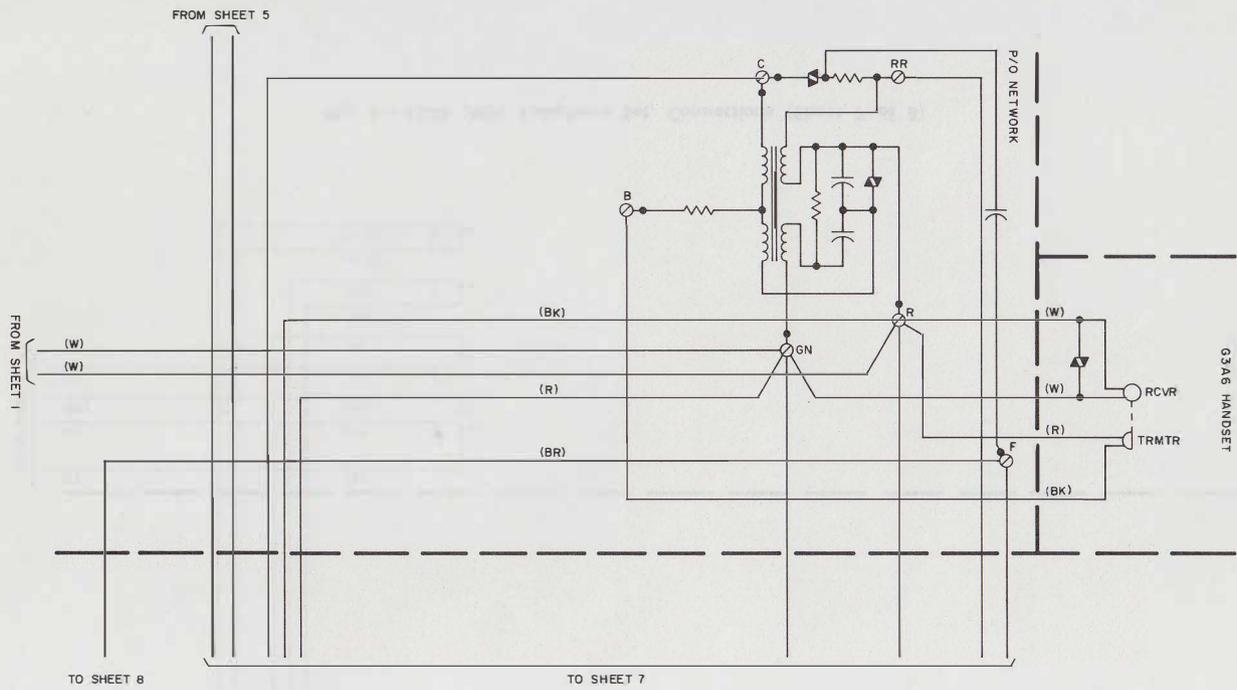


Fig. 5—833B (MD) Telephone Set, Connections (Sheet 6 of 8)

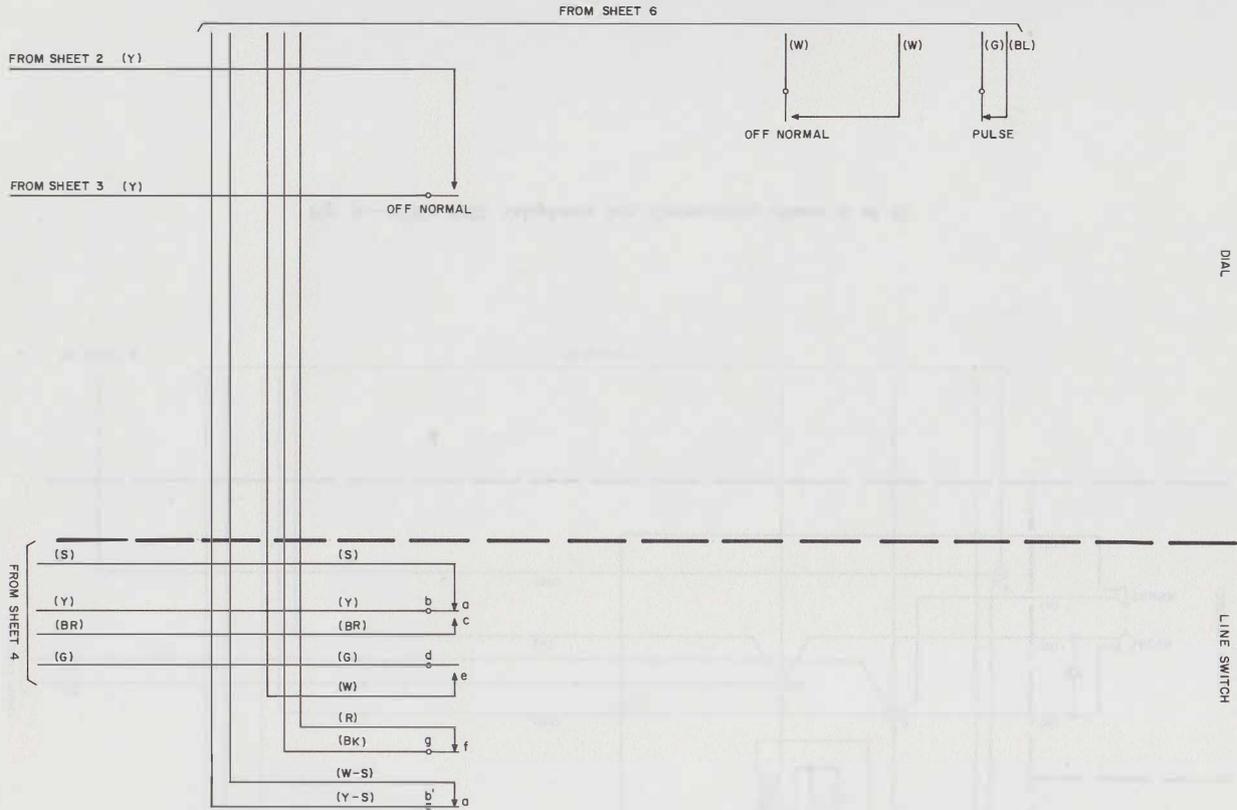


Fig. 5—833B (MD) Telephone Set, Connections (Sheet 7 of 8)

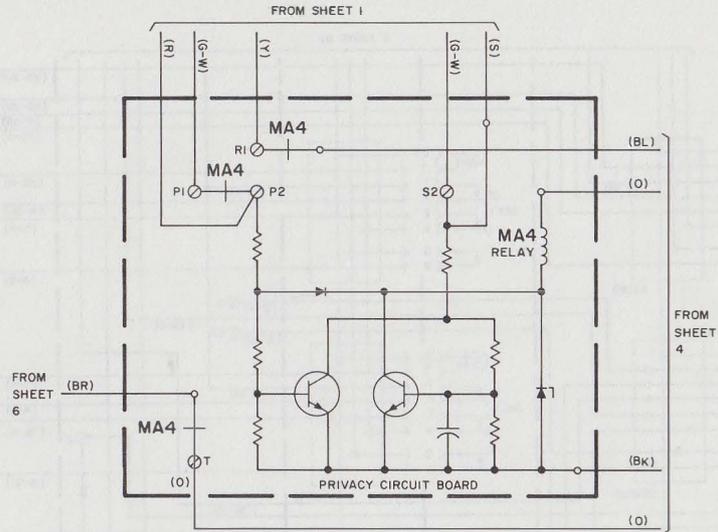


Fig. 5—833B (MD) Telephone Set, Connectors (Sheet 8 of 8)

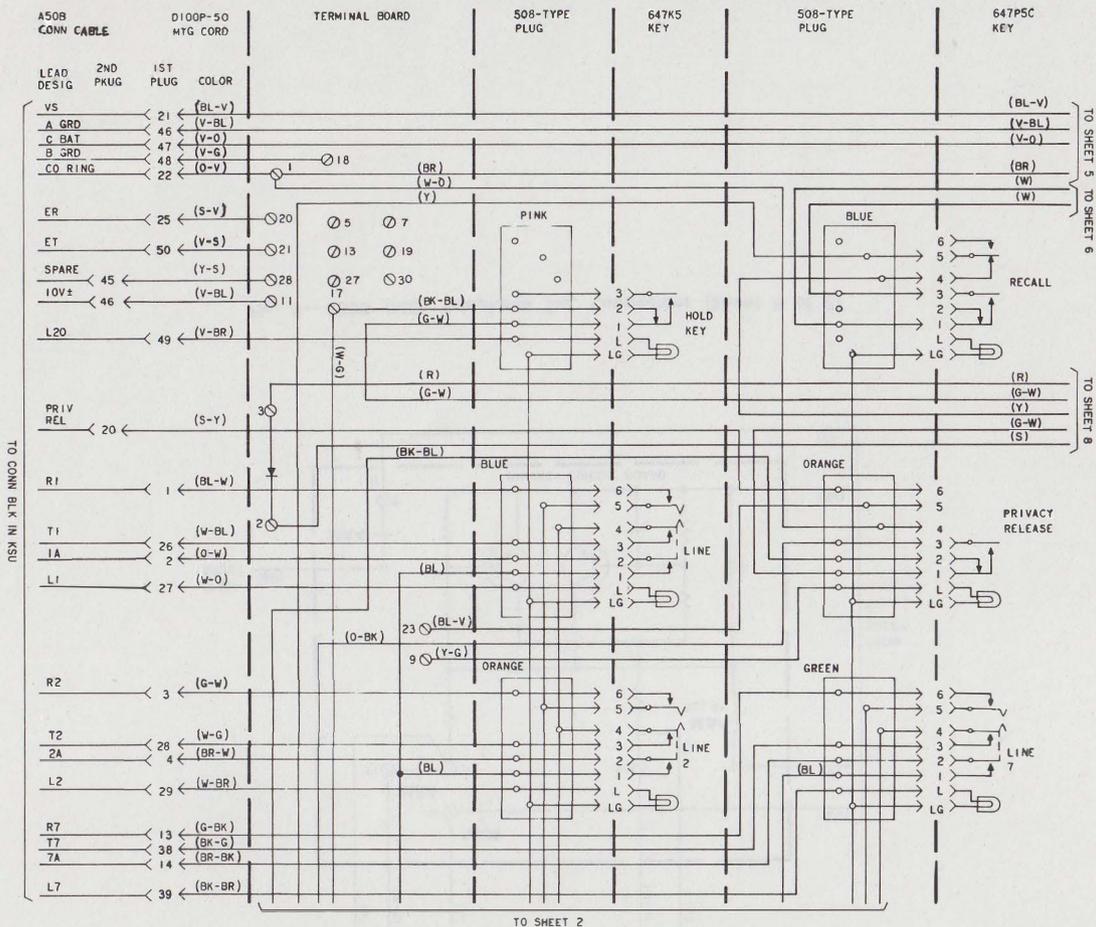


Fig. 6—2833B (MD) Telephone Set, Connections (Sheet 1 of 8)

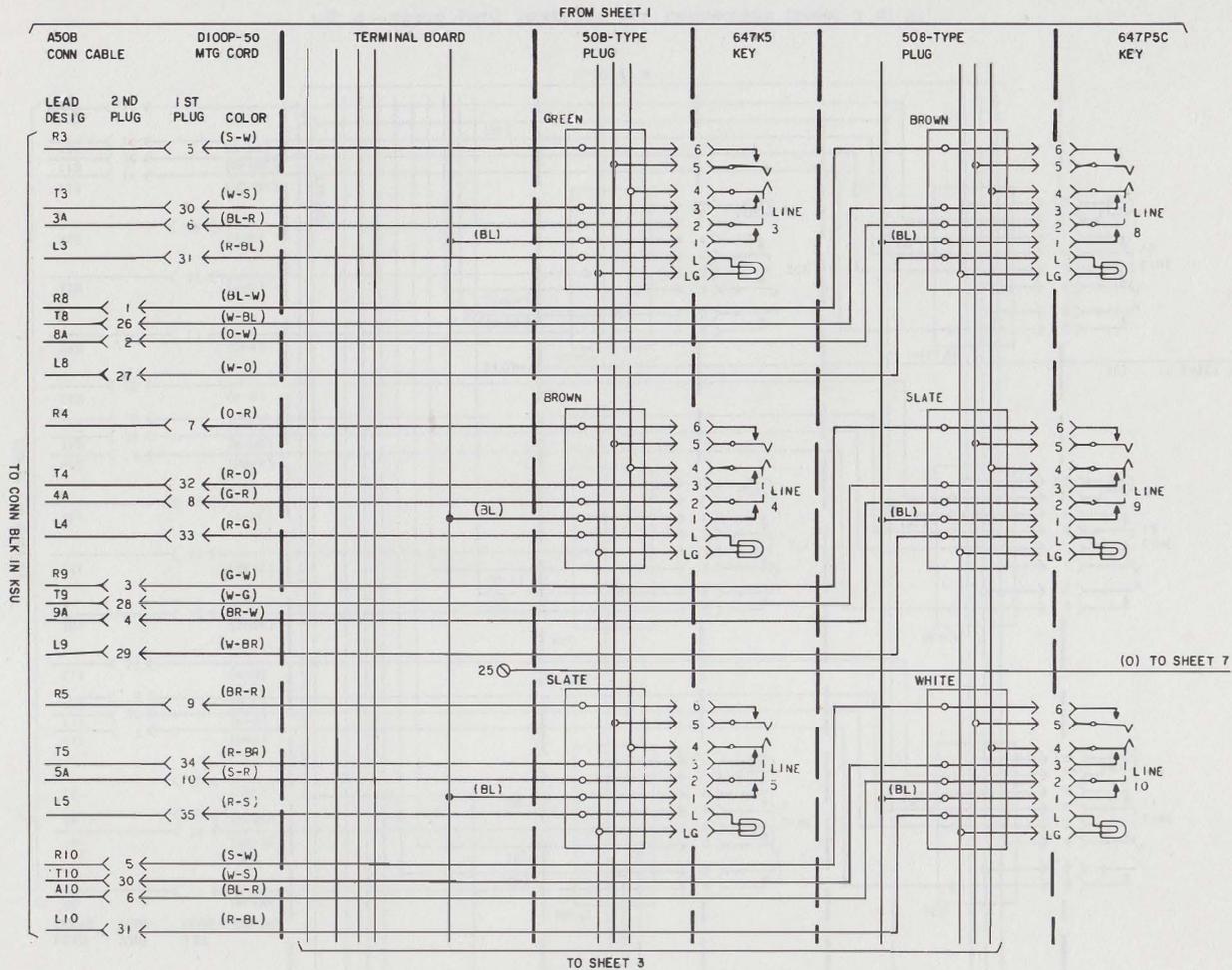


Fig. 6—2833B (MD) Telephone Set, Connections (Sheet 2 of 8)

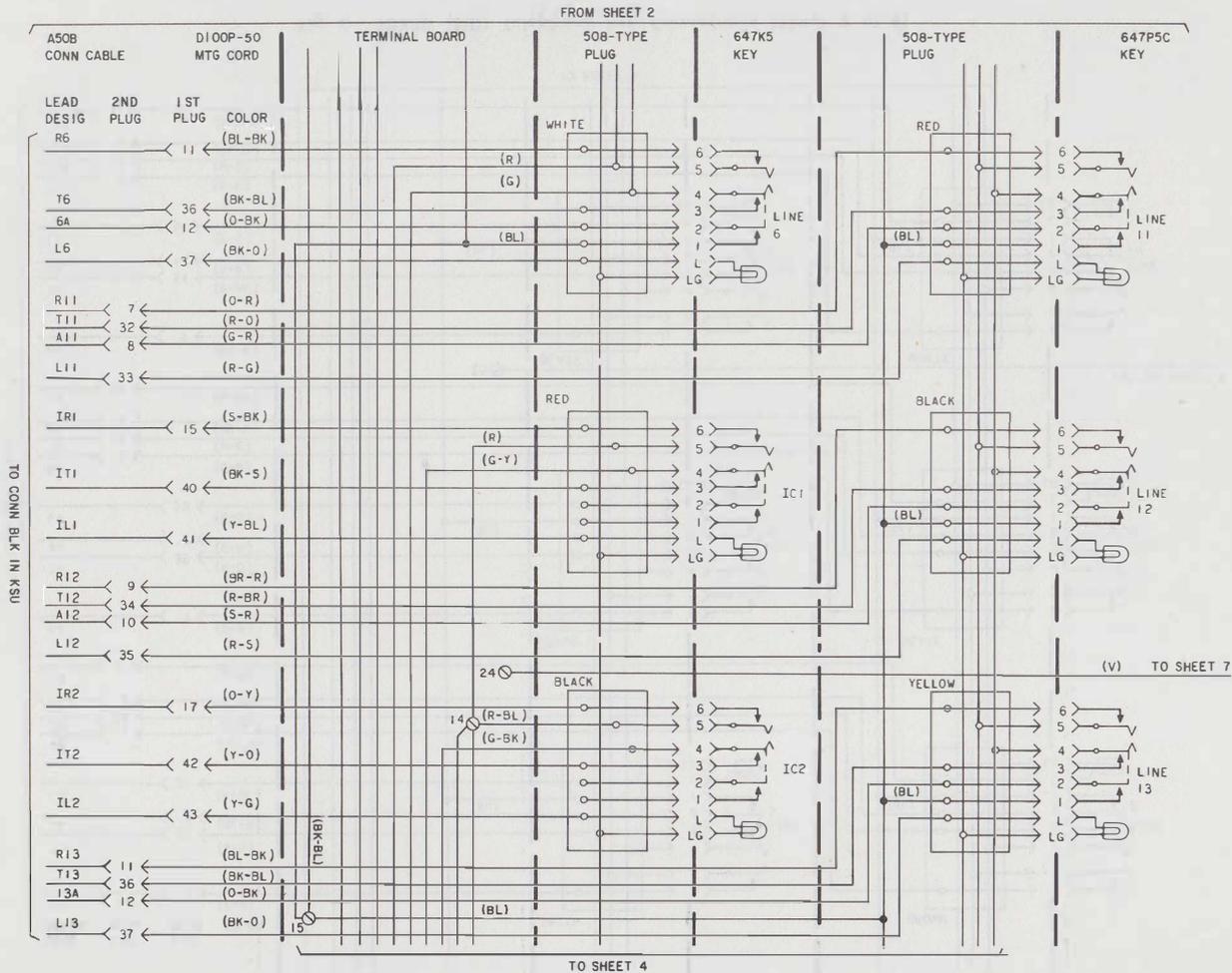


Fig. 6—2833B (MD) Telephone Set, Connections (Sheet 3 of 8)

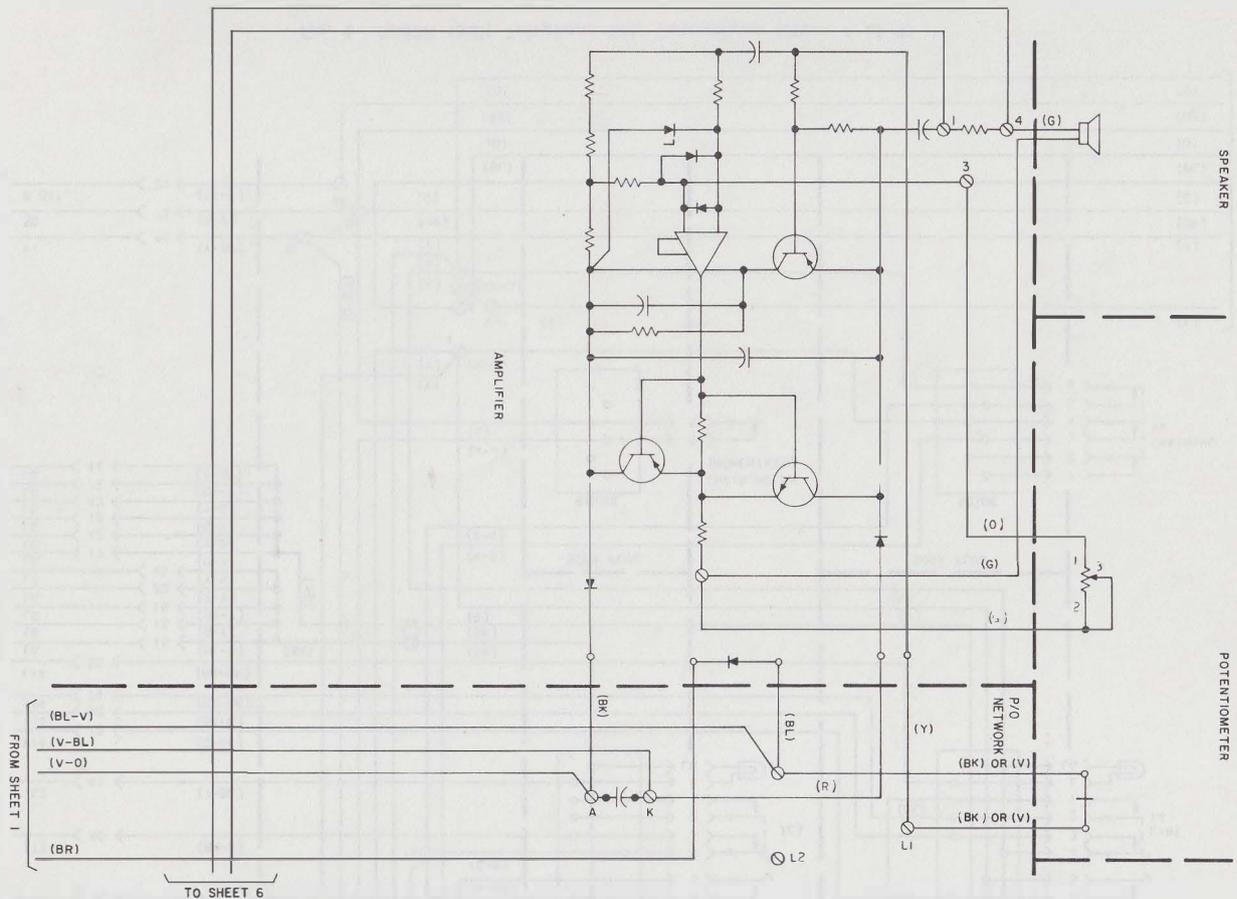


Fig. 6—2833B (MD) Telephone Set, Connections (Sheet 5 of 8)

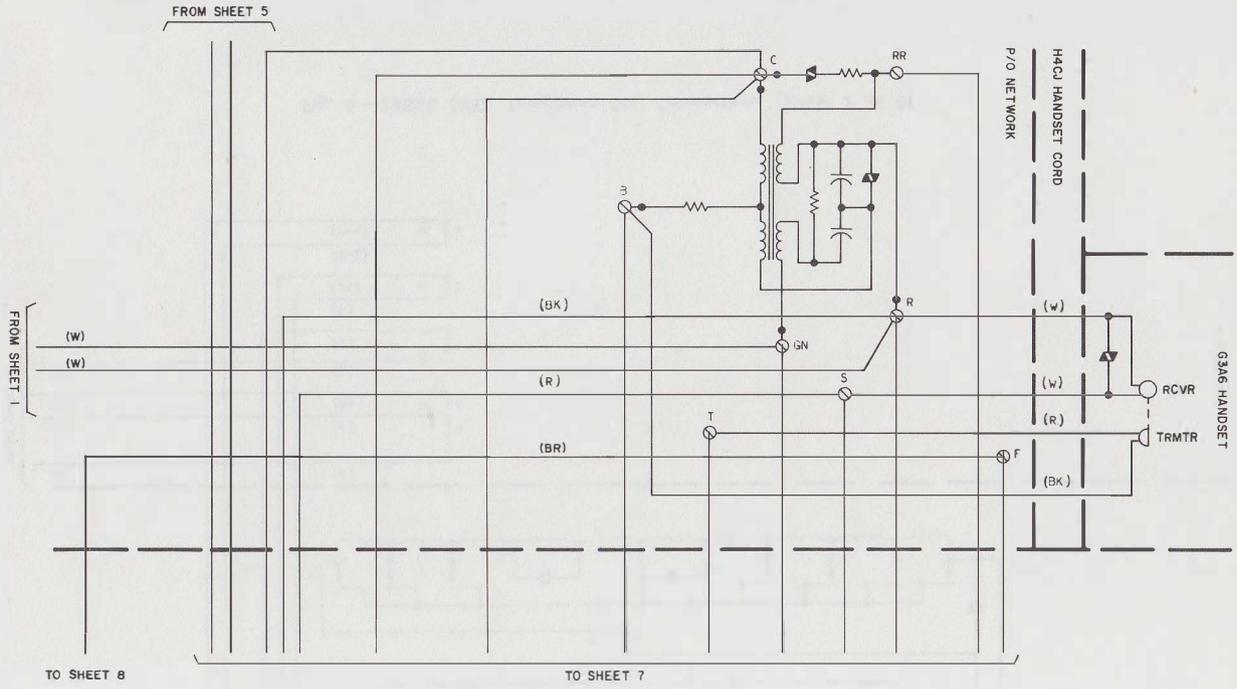


Fig. 6—2833B (MD) Telephone Set, Connections (Sheet 6 of 8)

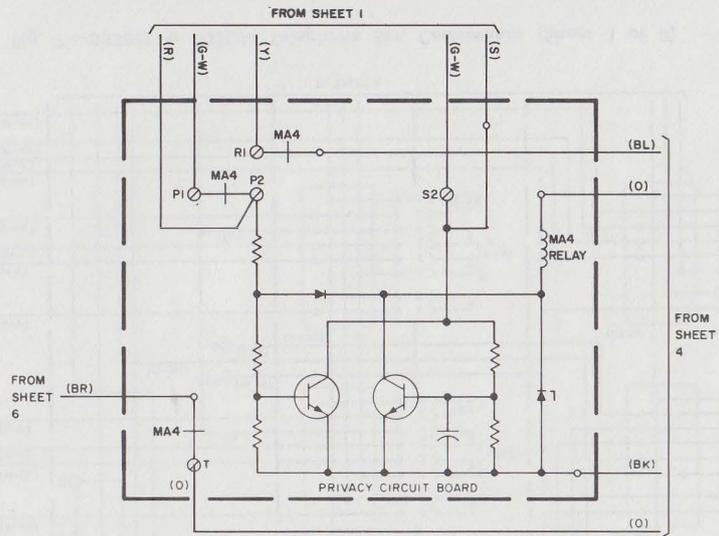


Fig. 6—2833B (MD) Telephone Set, Connections (Sheet 8 of 8)

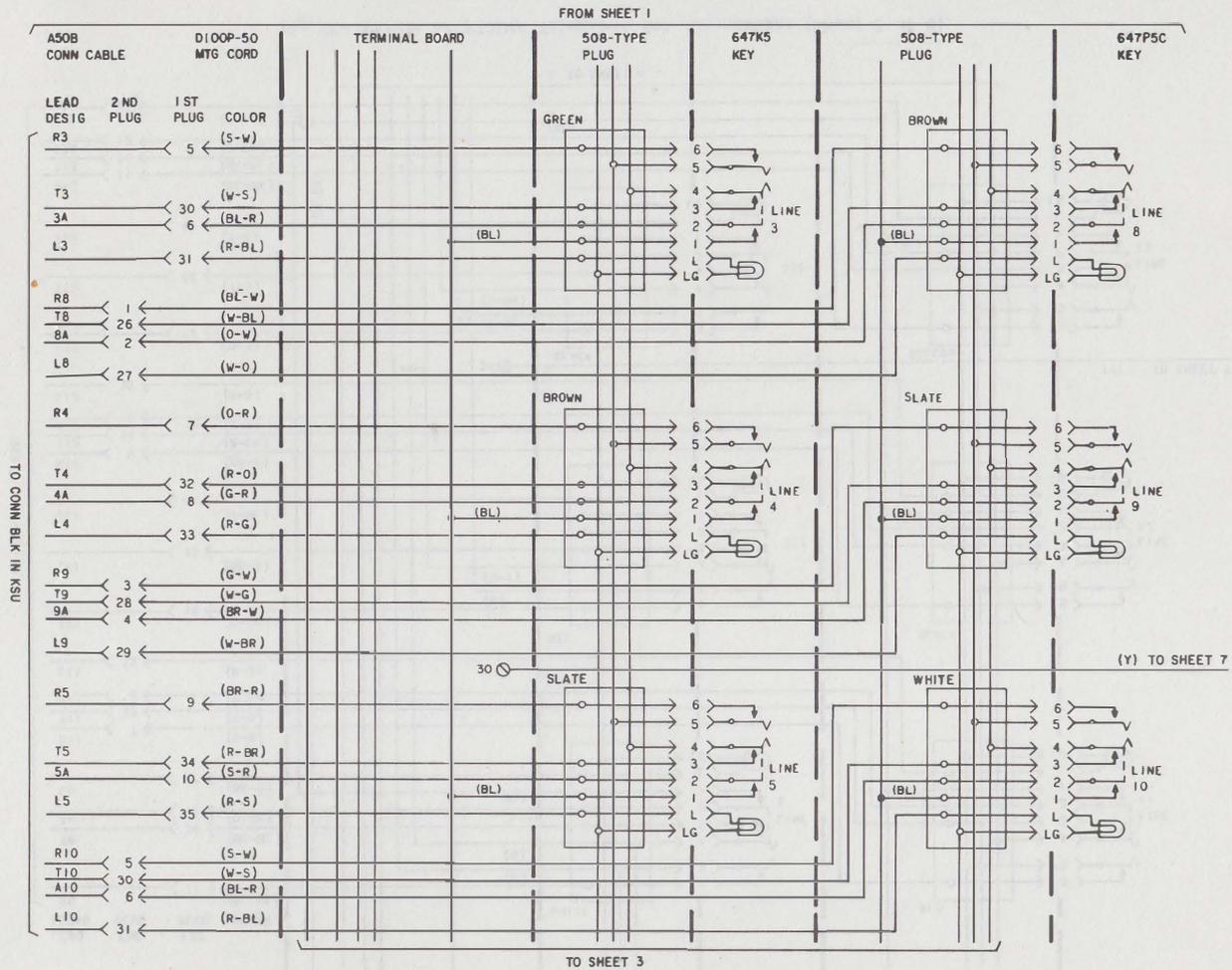


Fig. 7—833BM or 833DM Telephone Set, Connections (Sheet 2 of 8)

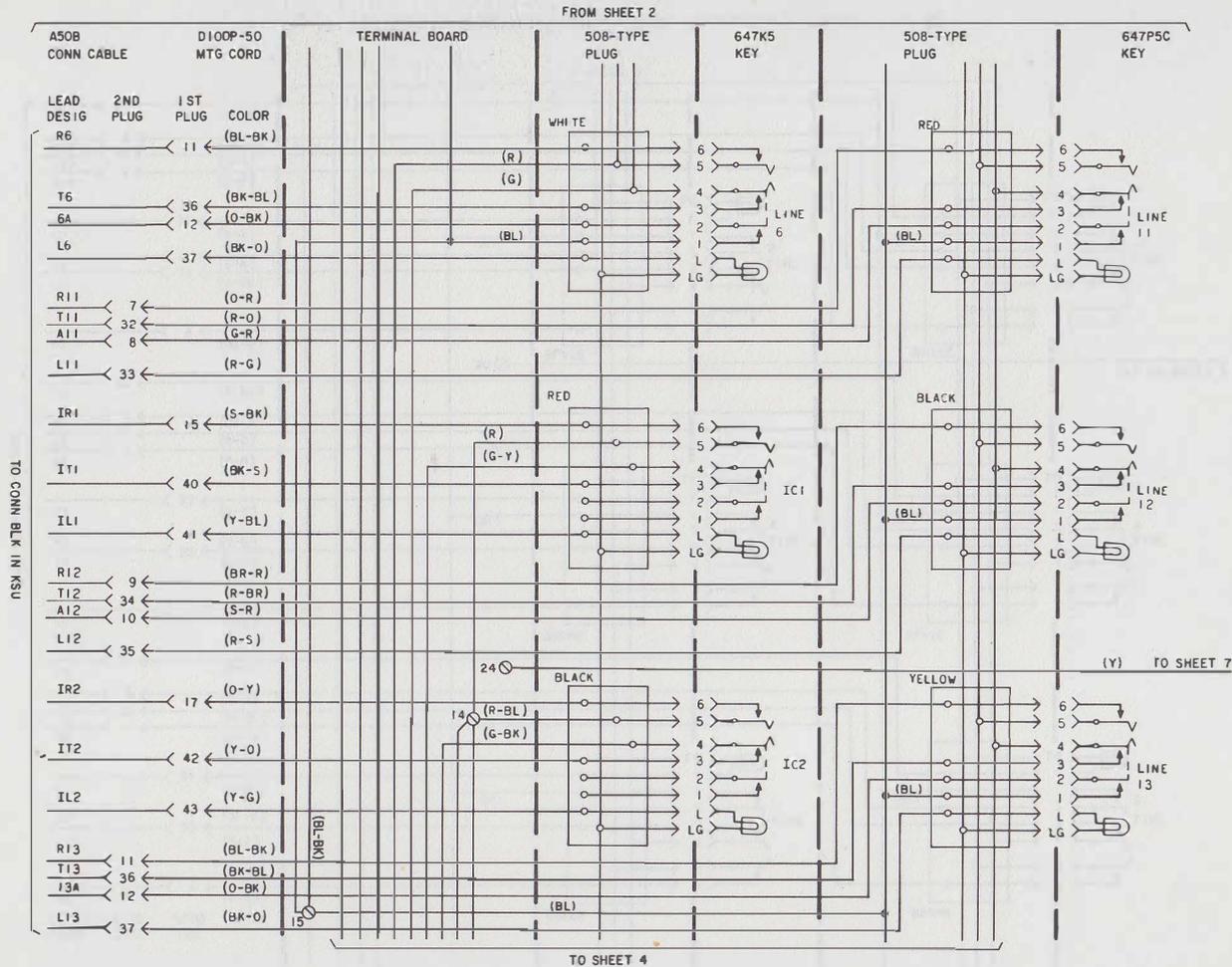


Fig. 7—833BM or 833DM Telephone Set, Connections (Sheet 3 of 8)

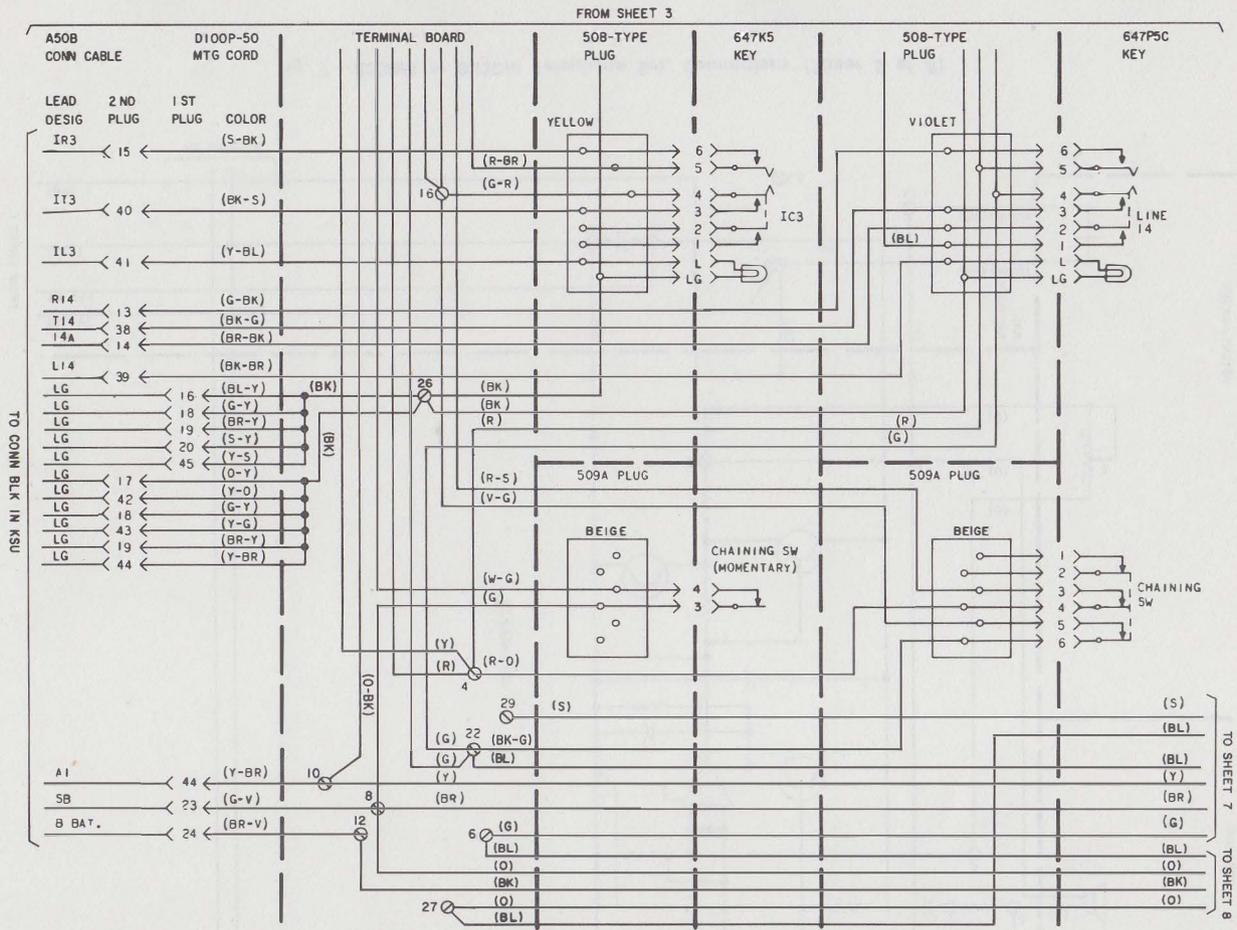


Fig. 7—833BM or 833DM Telephone Set, Connections (Sheet 4 of 8)

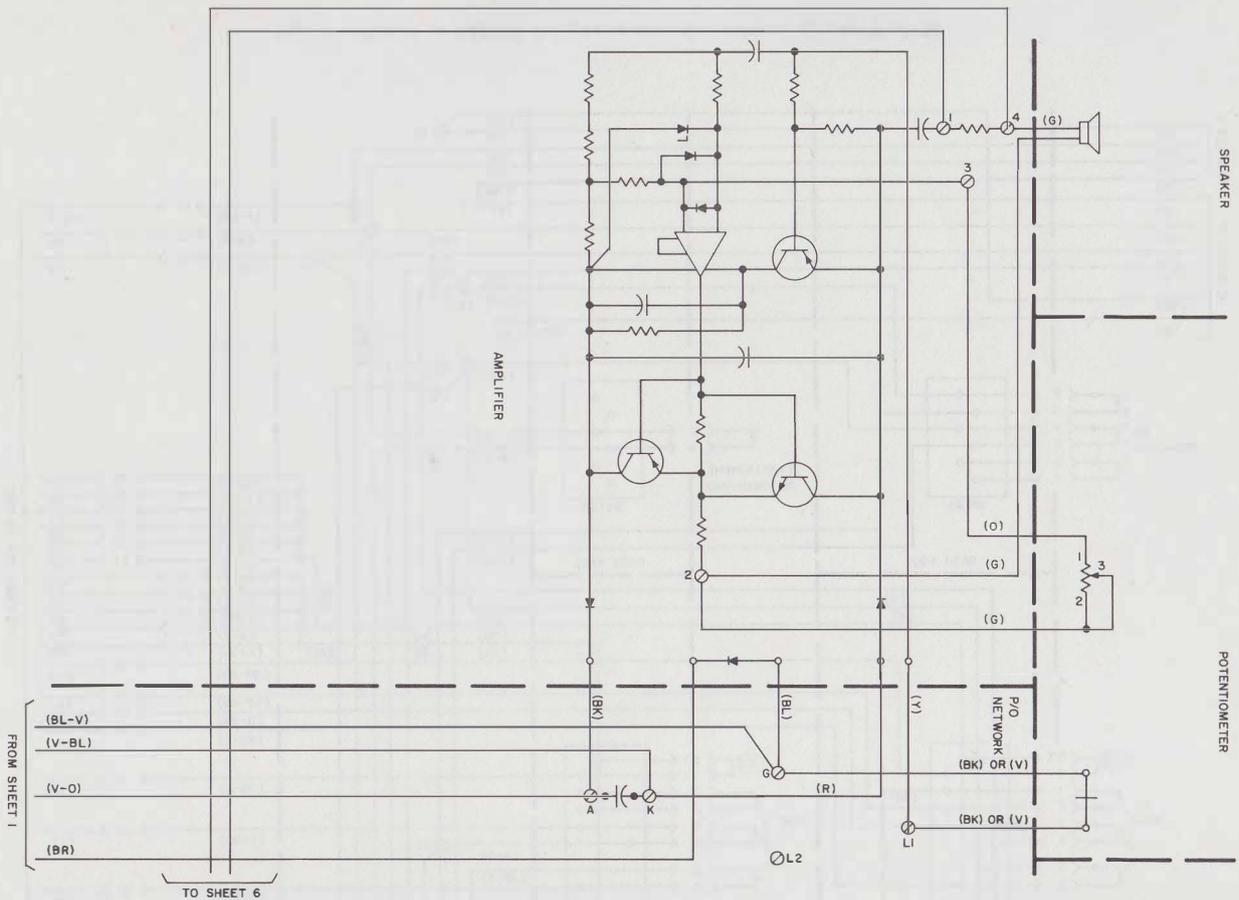


Fig. 7—833BM or 833DM Telephone Set, Connections (Sheet 5 of 8)

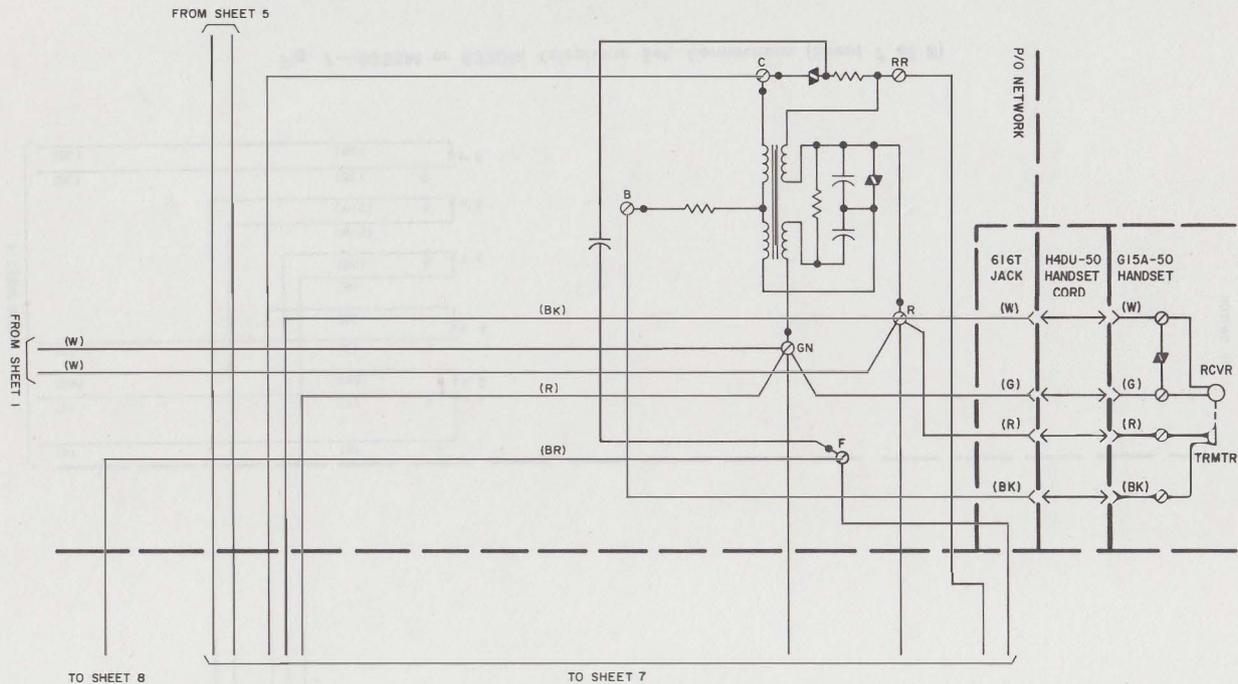


Fig. 7—833BM or 833DM Telephone Set, Connections (Sheet 6 of 8)

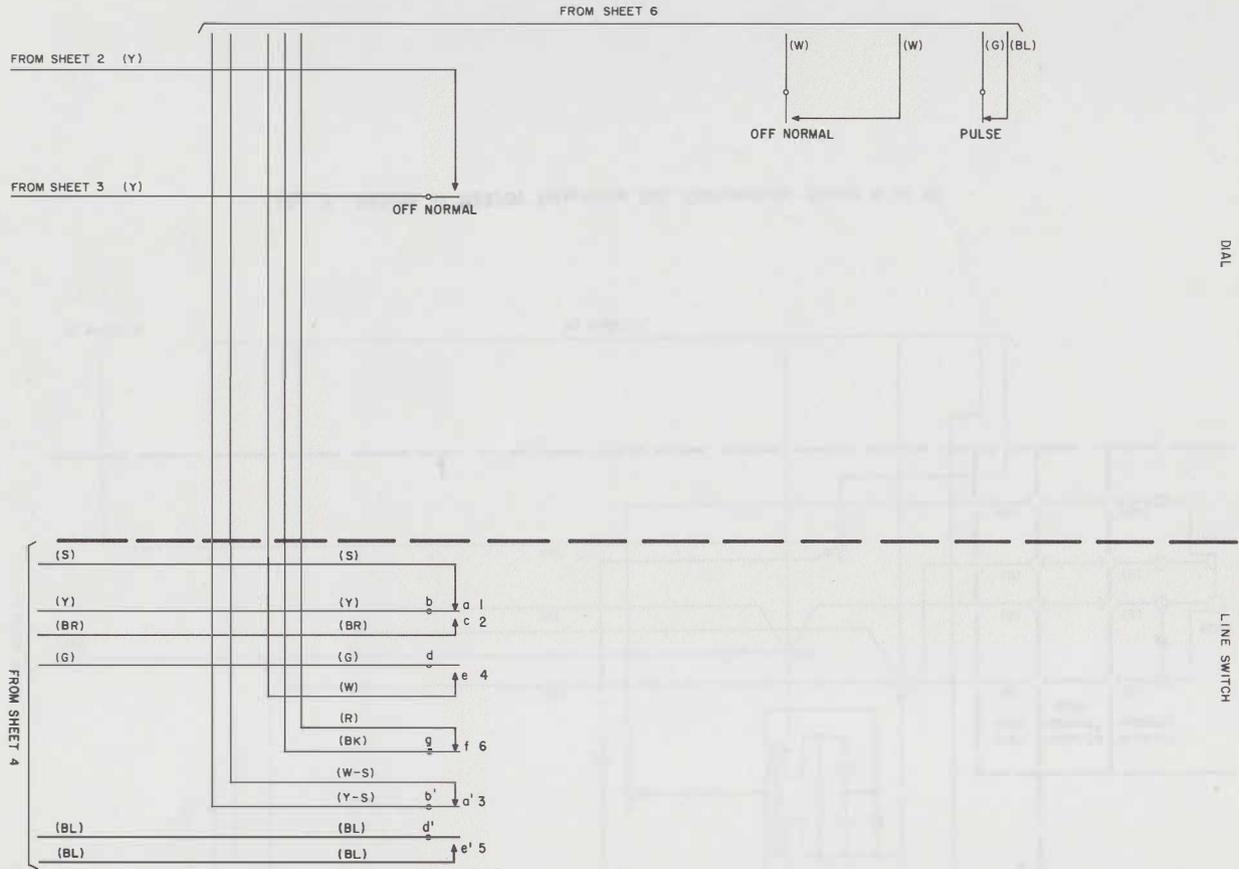


Fig. 7—833BM or 833DM Telephone Set, Connections (Sheet 7 of 8)

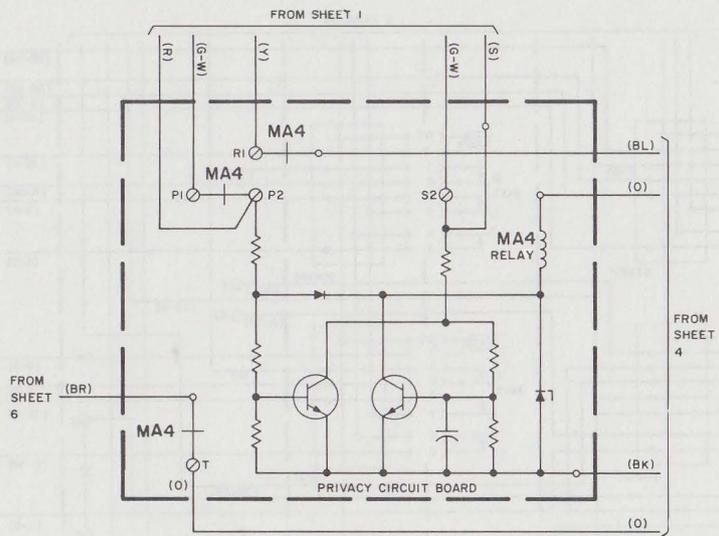


Fig. 7—833BM or 833DM Telephone Set, Connections (Sheet 8 of 8)

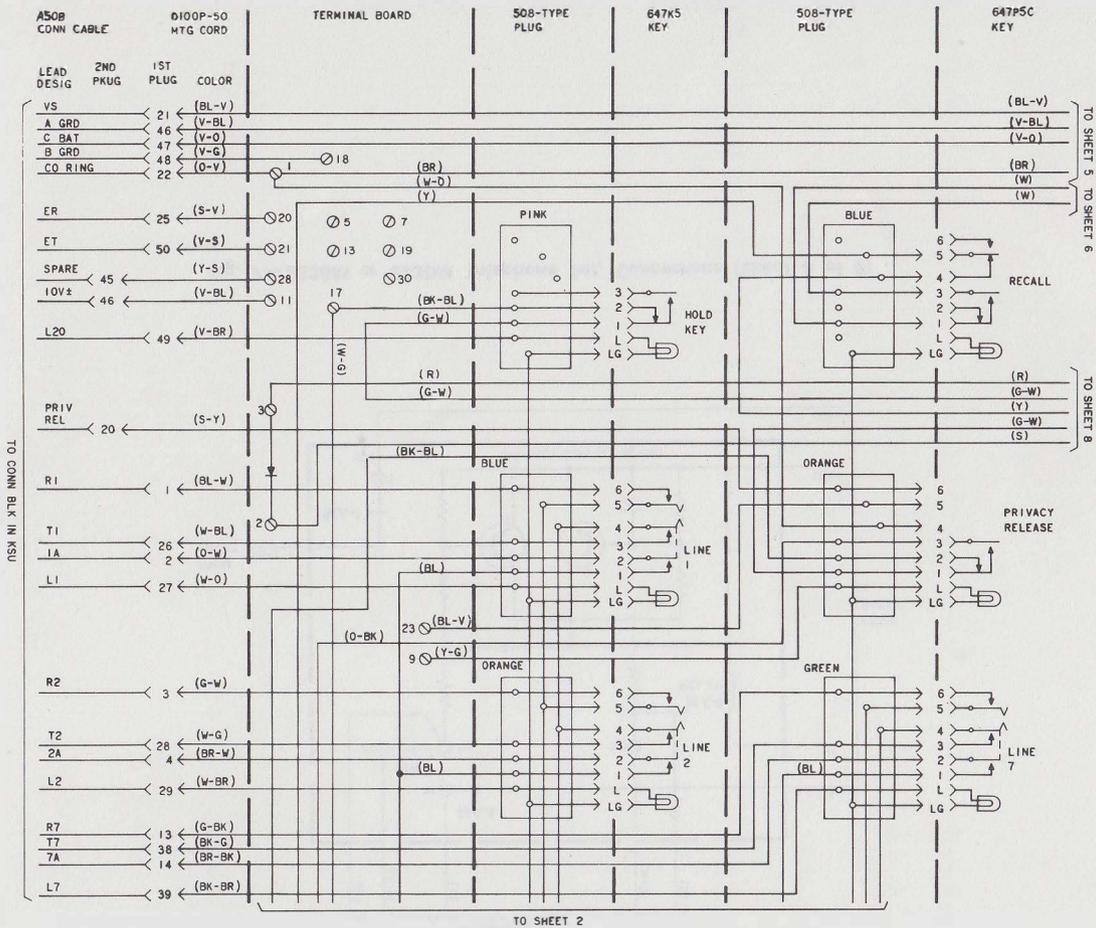


Fig. 8—2833BM or 2833DM Telephone Set, Connections (Sheet 1 of 8)

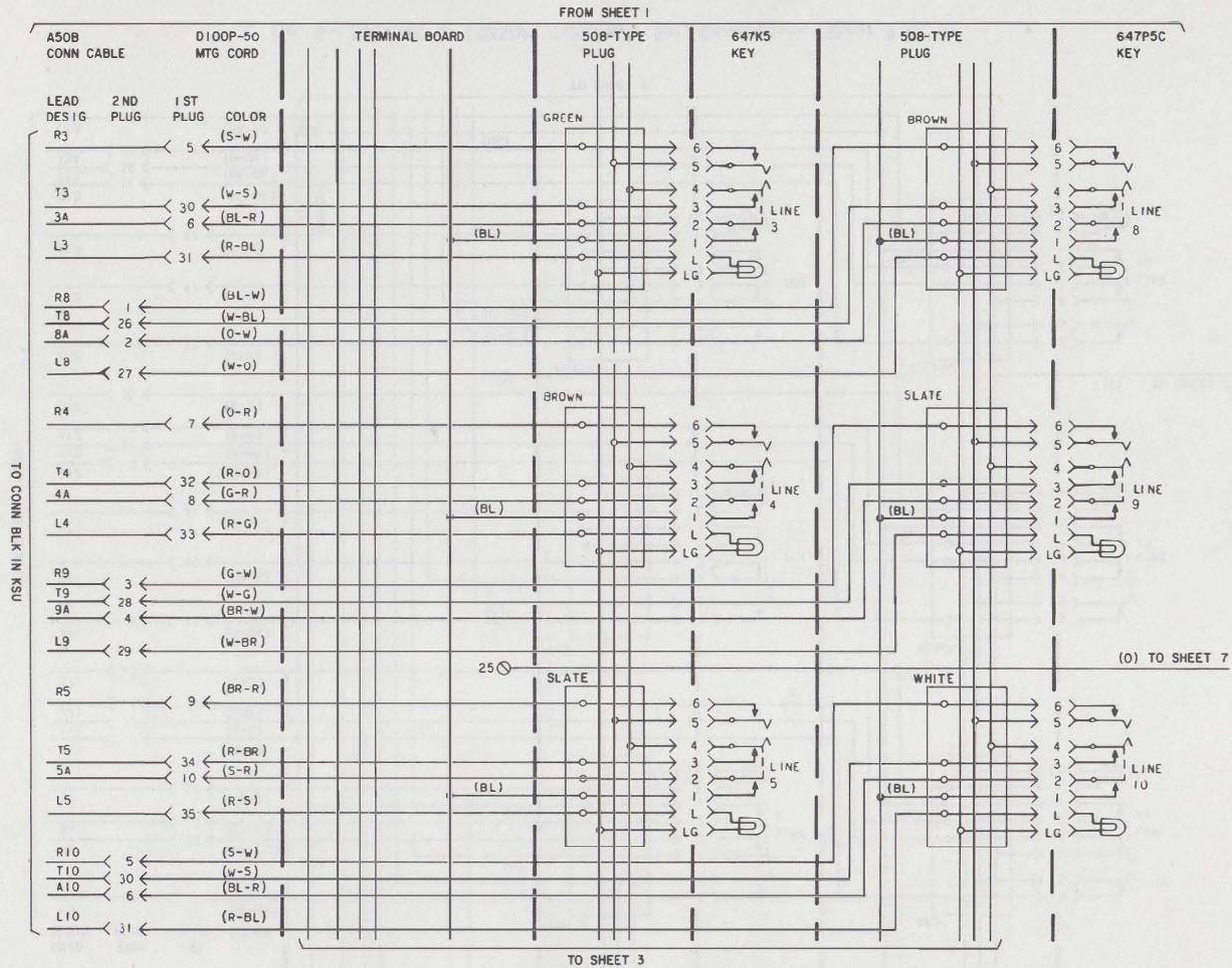


Fig. 8—2833BM or 2833DM Telephone Set, Connections (Sheet 2 of 8)

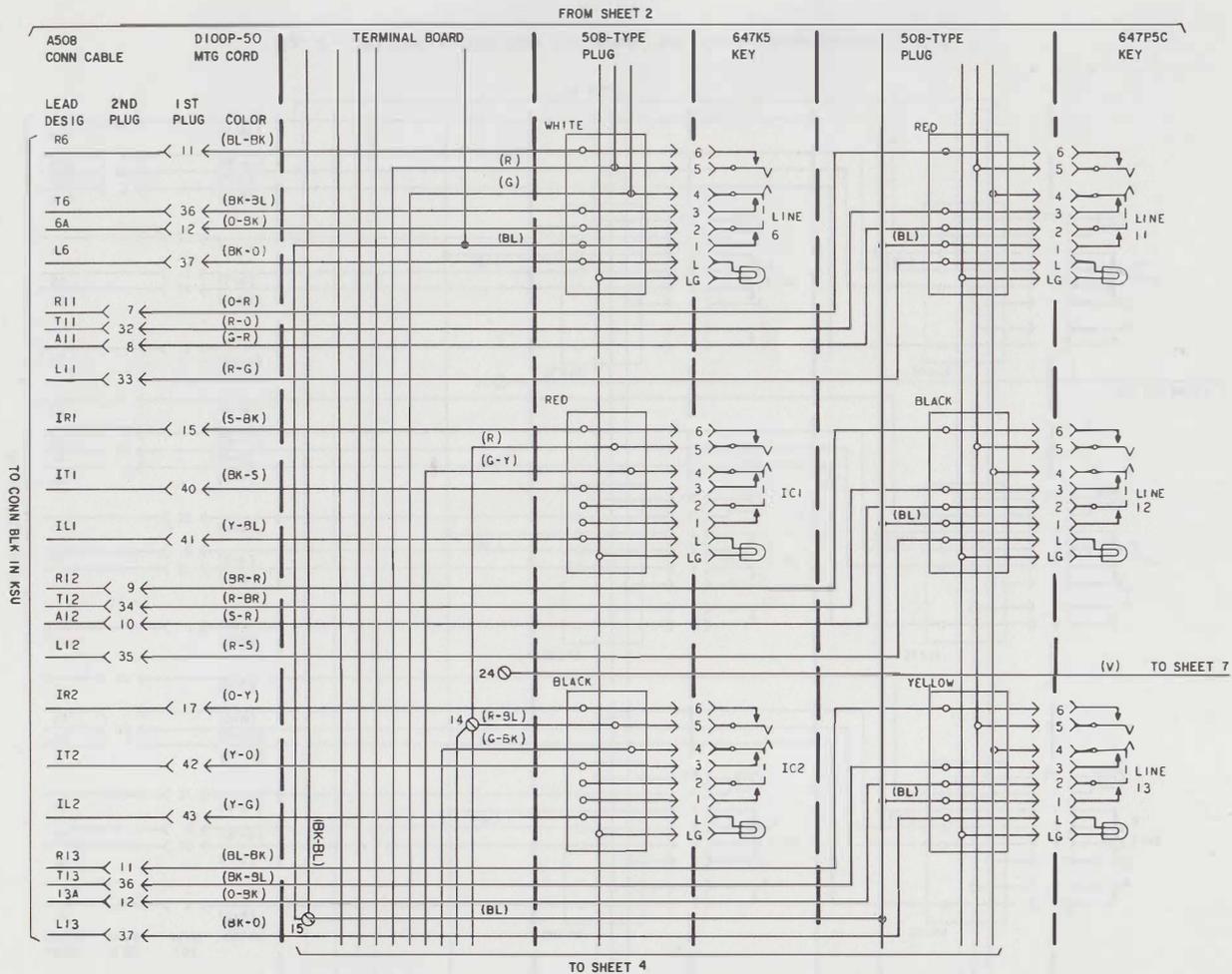


Fig. 8—2833BM or 2833DM Telephone Set, Connections (Sheet 3 of 8)

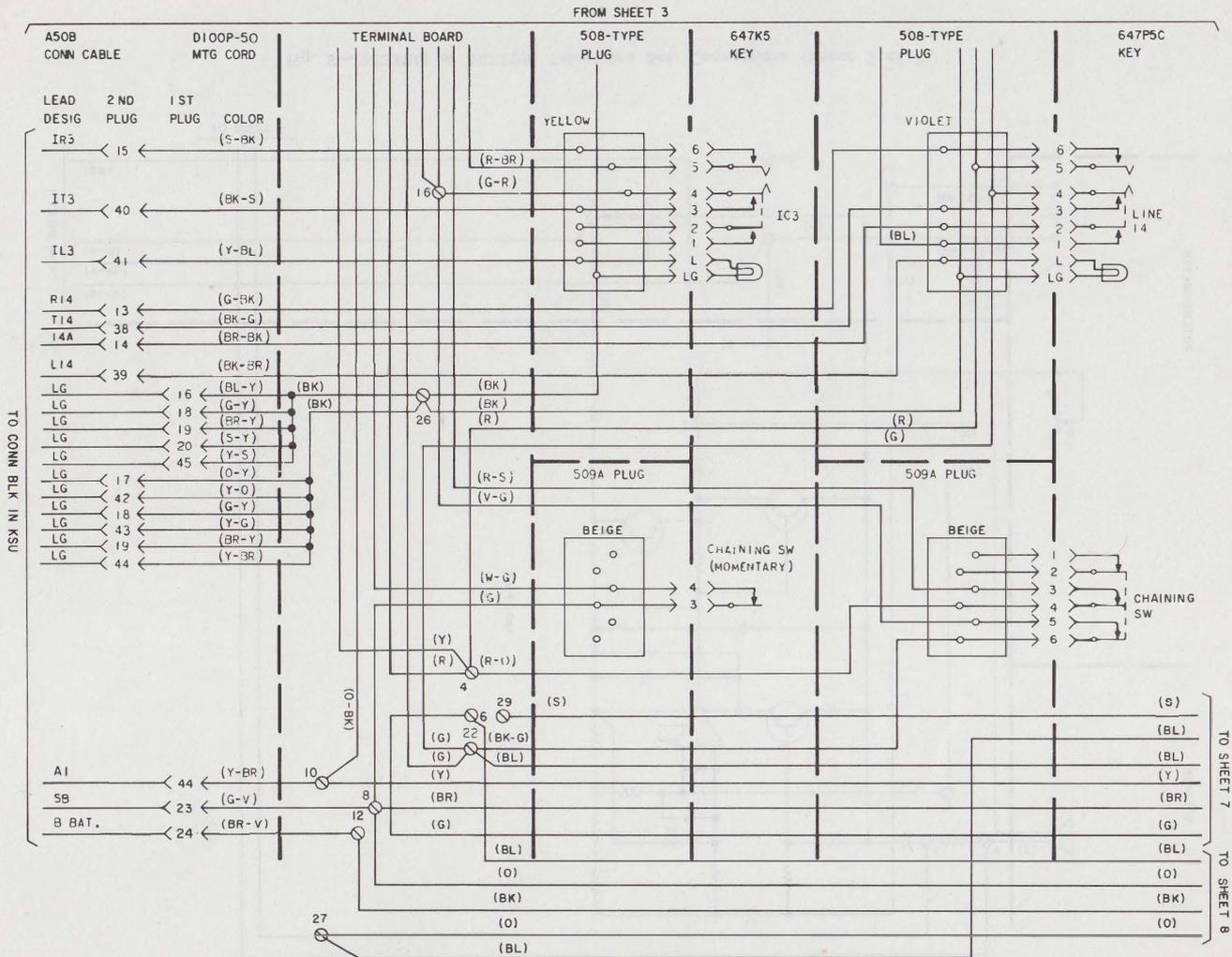


Fig. 8—2833BM or 2833DM Telephone Set, Connections (Sheet 4 of 8)

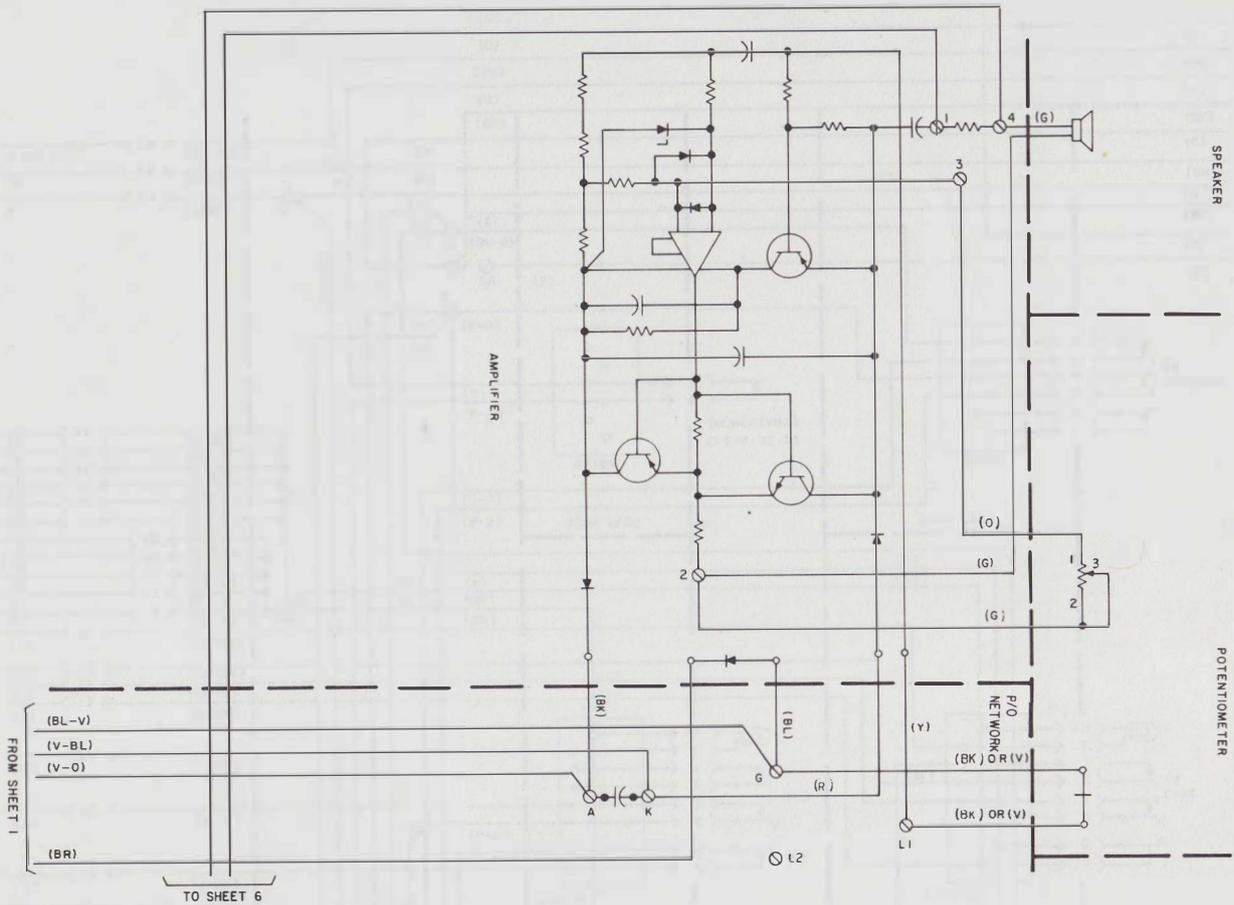


Fig. 8—2833BM or 2833DM Telephone Set, Connections (Sheet 5 of 8)

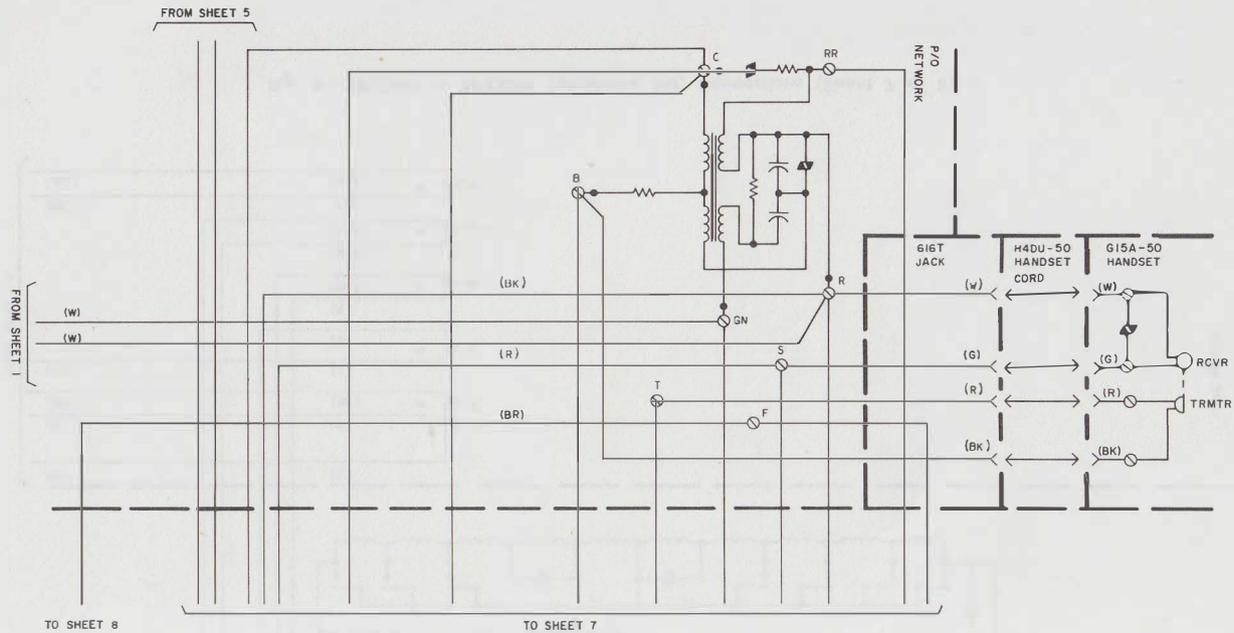


Fig. 8—2833BM or 2833DM Telephone Set, Connections (Sheet 6 of 8)

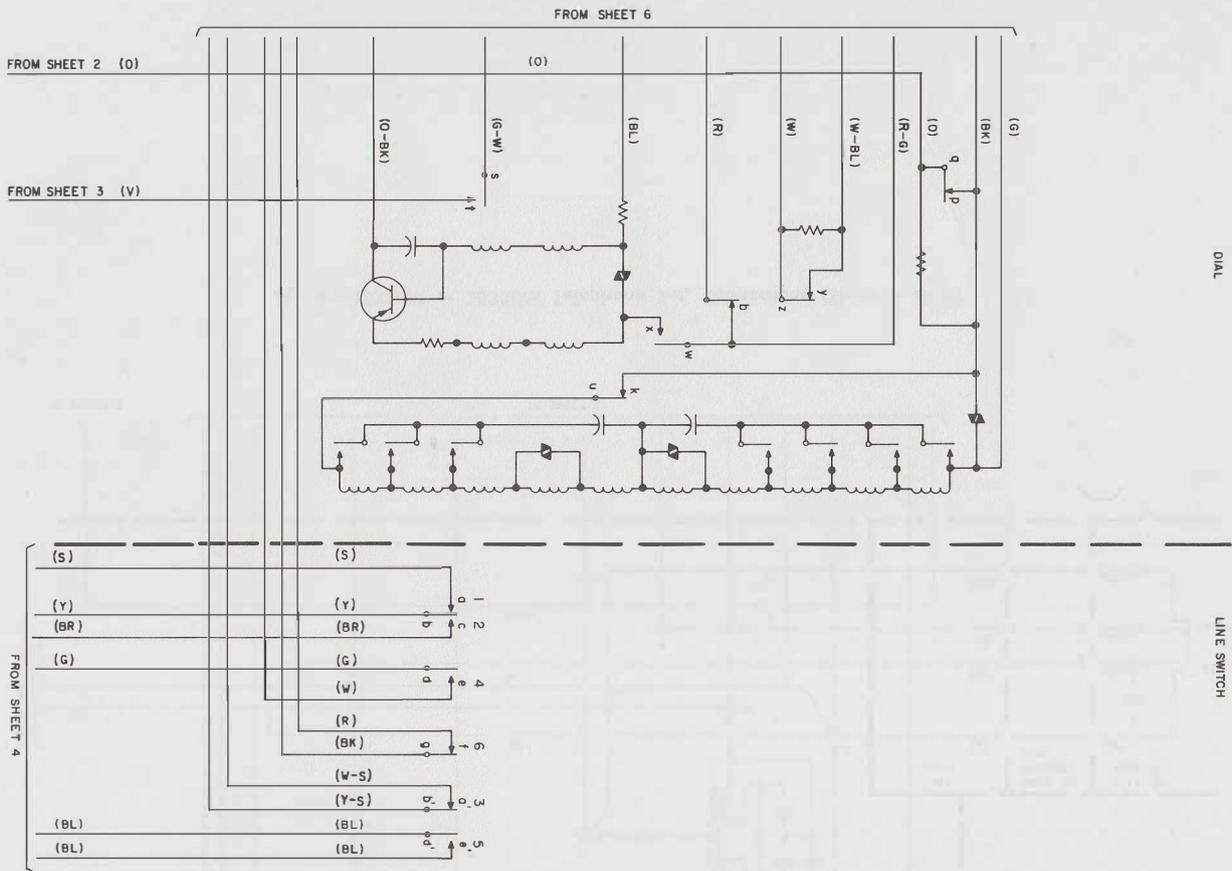


Fig. 8—2833BM or 2833DM Telephone Set, Connections (Sheet 7 of 8)

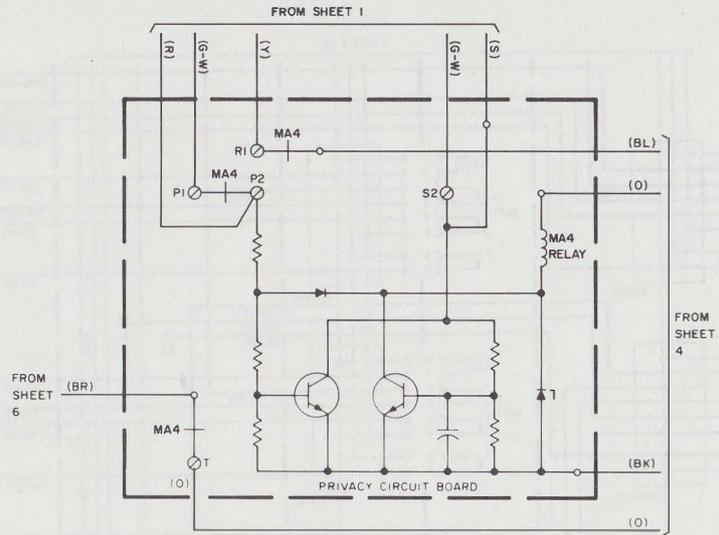


Fig. 8—2833BM or 2833DM Telephone Set, Connections (Sheet 8 of 8)

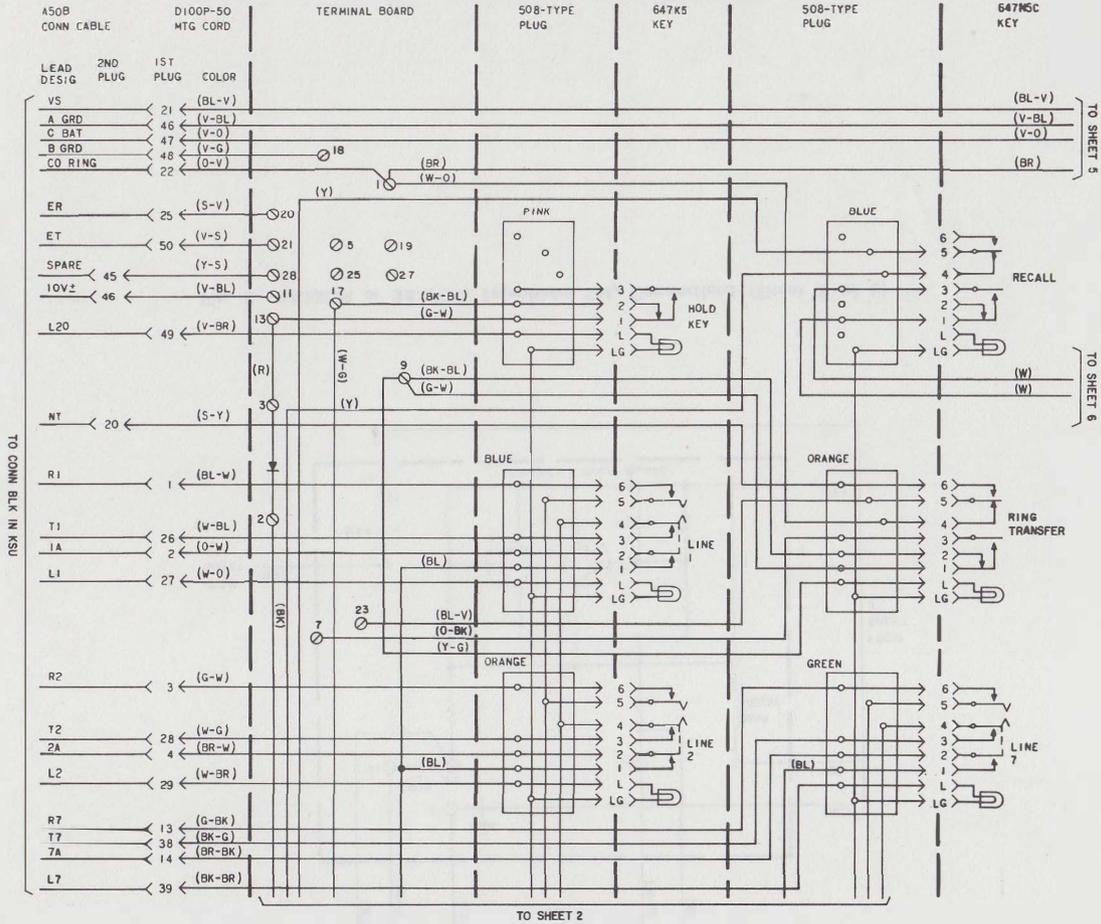


Fig. 9—833C (MD) Telephone Set, Connections (Sheet 1 of 7)

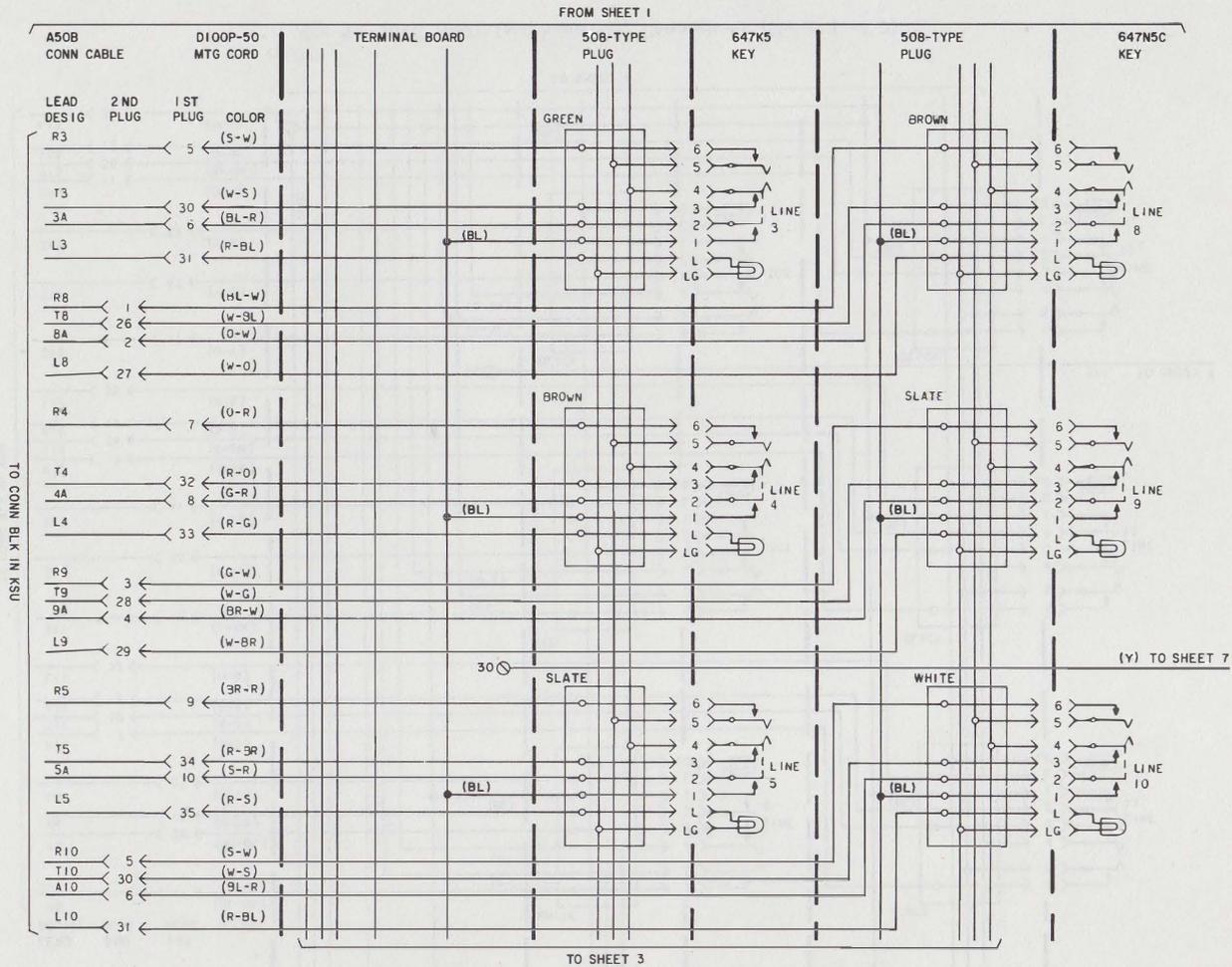


Fig. 9—833C (MD) Telephone Set, Connections (Sheet 2 of 7)

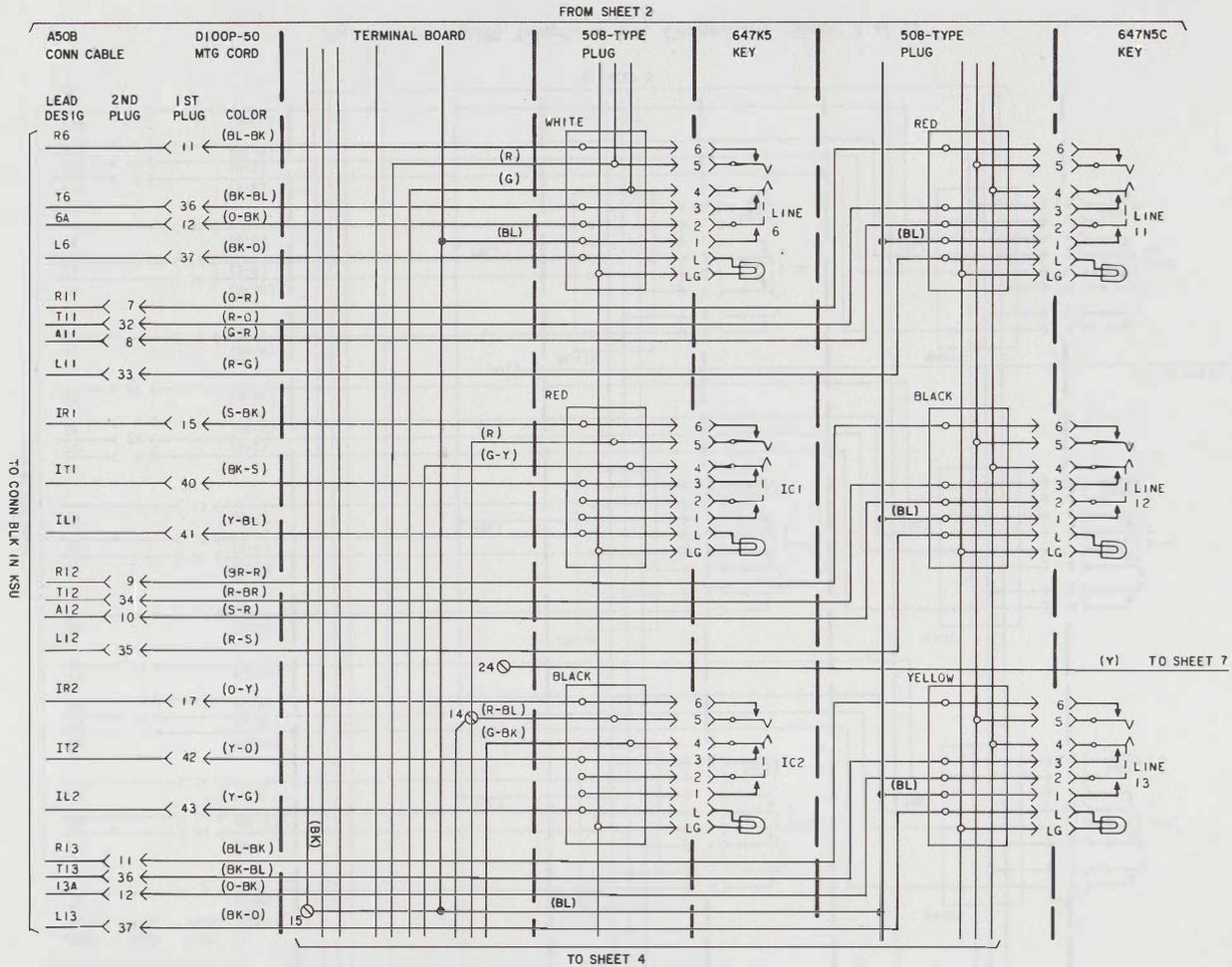


Fig. 9—833C (MD) Telephone Set, Connections (Sheet 3 of 7)

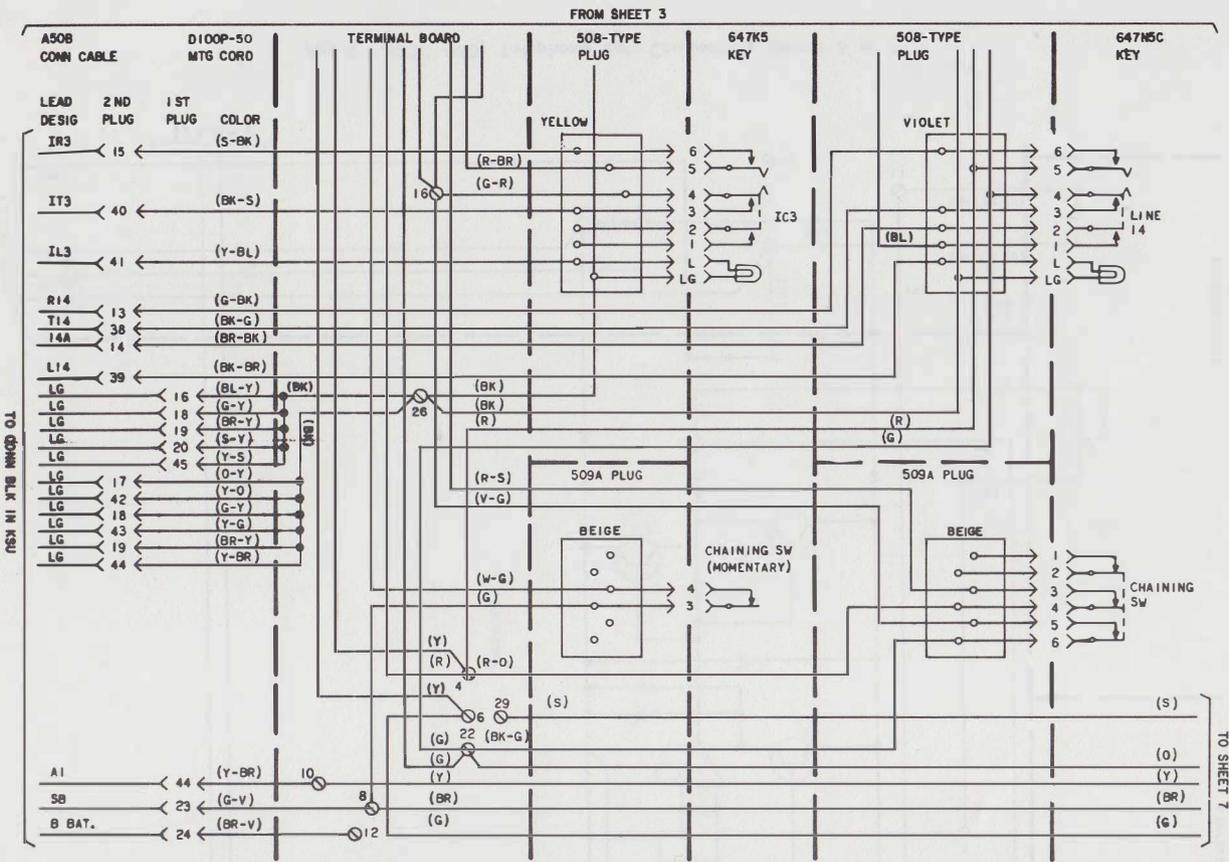


Fig. 9—833C (MD) Telephone Set, Connections (Sheet 4 of 7)

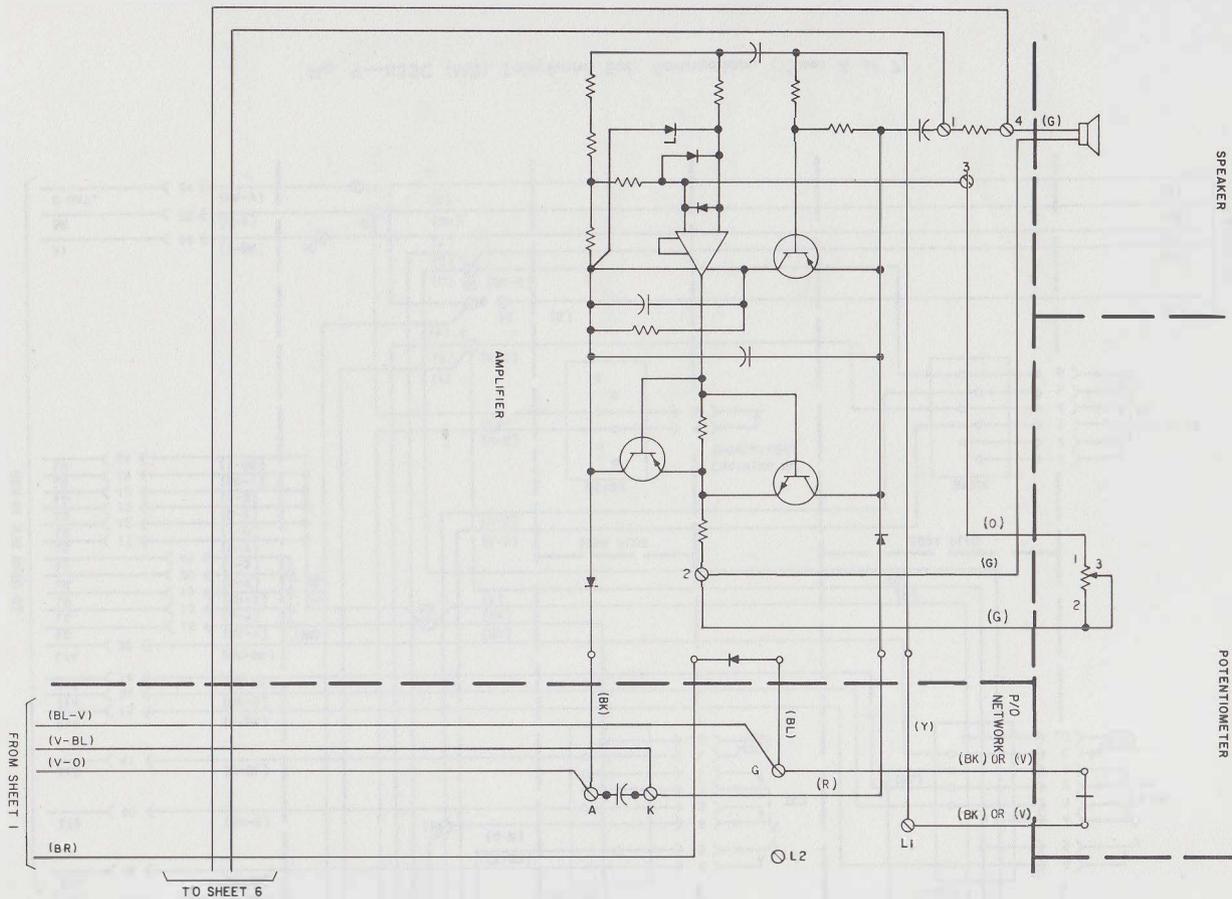


Fig. 9—833C (MD) Telephone Set, Connections (Sheet 5 of 7)

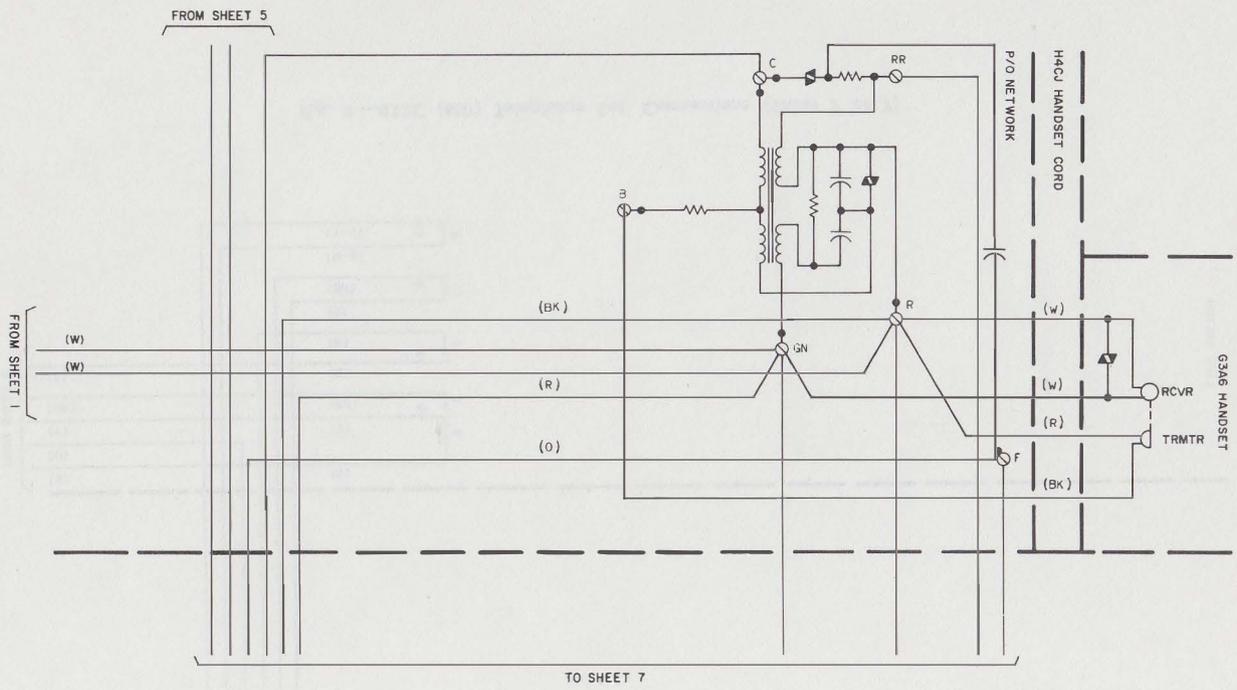


Fig. 9—833C (MD) Telephone Set, Connections (Sheet 6 of 7)

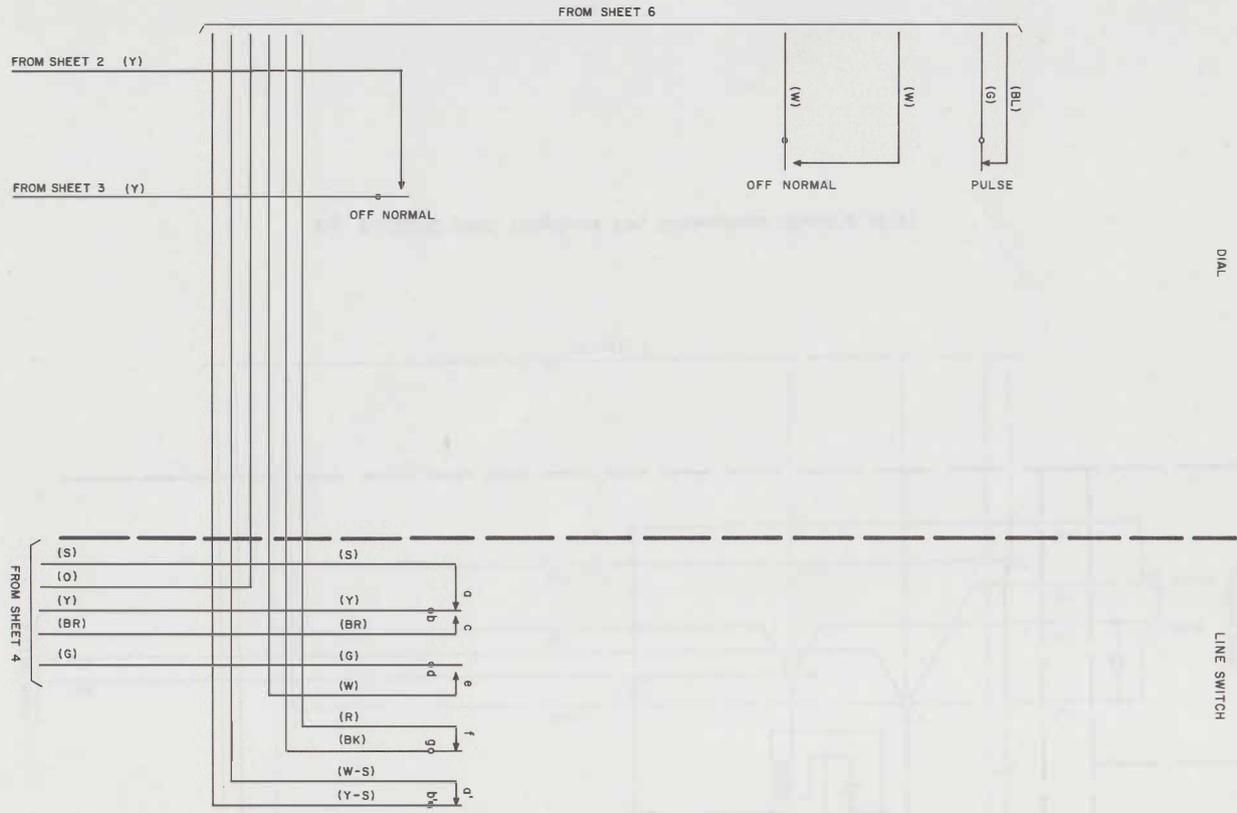


Fig. 9—833C (MD) Telephone Set, Connections (Sheet 7 of 7)

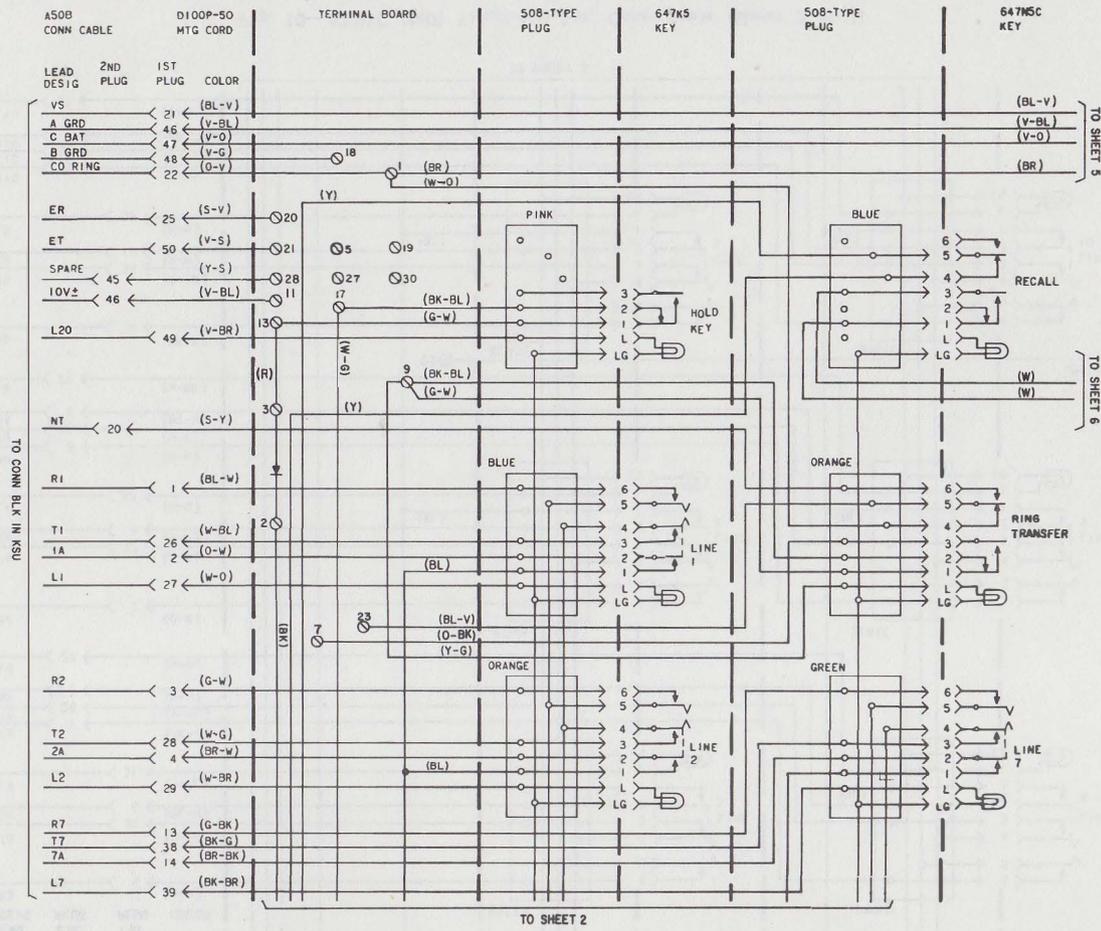


Fig. 10—2833C (MD) Telephone Set, Connections (Sheet 1 of 7)

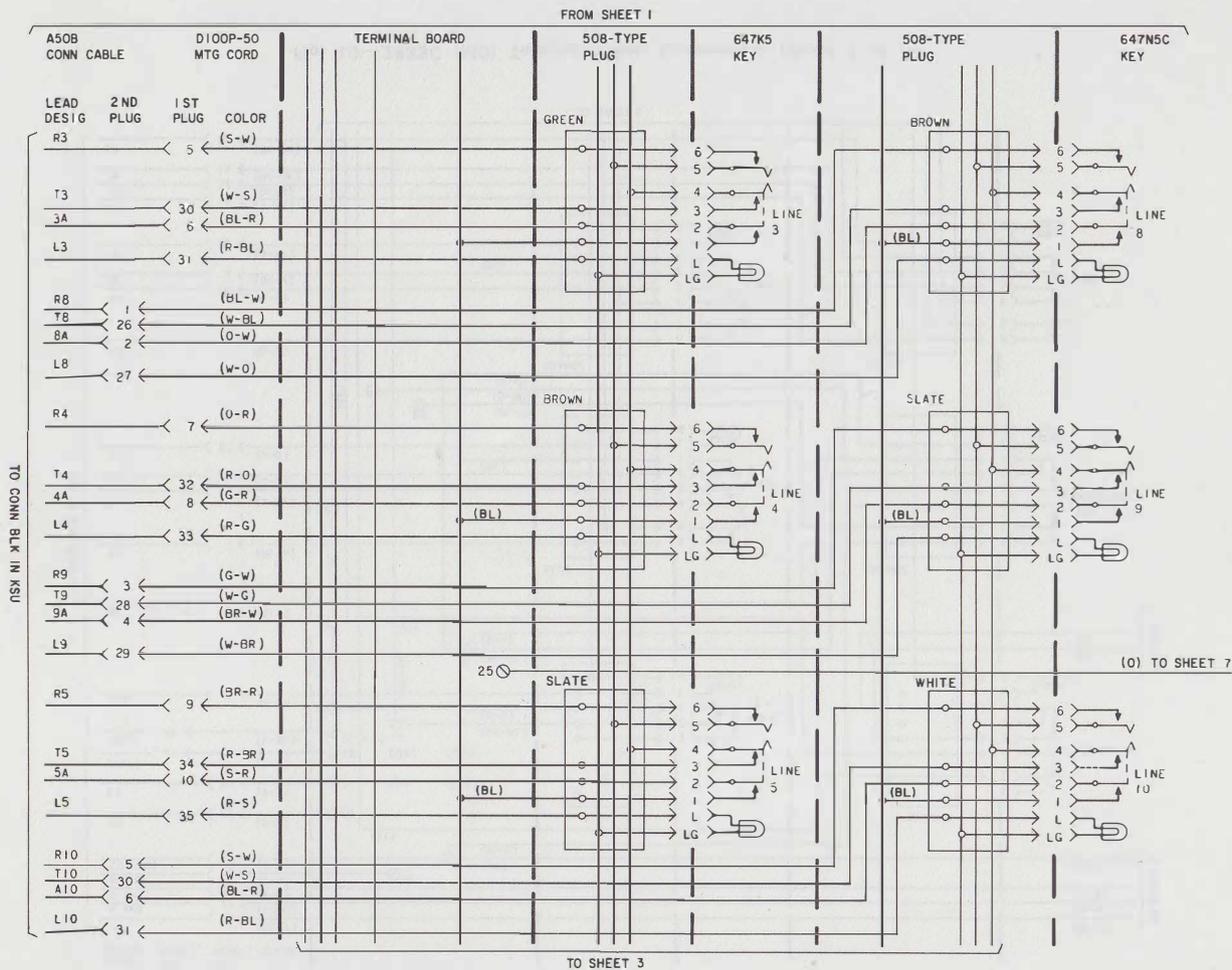


Fig. 10—2833C (MD) Telephone Set, Connections (Sheet 2 of 7)

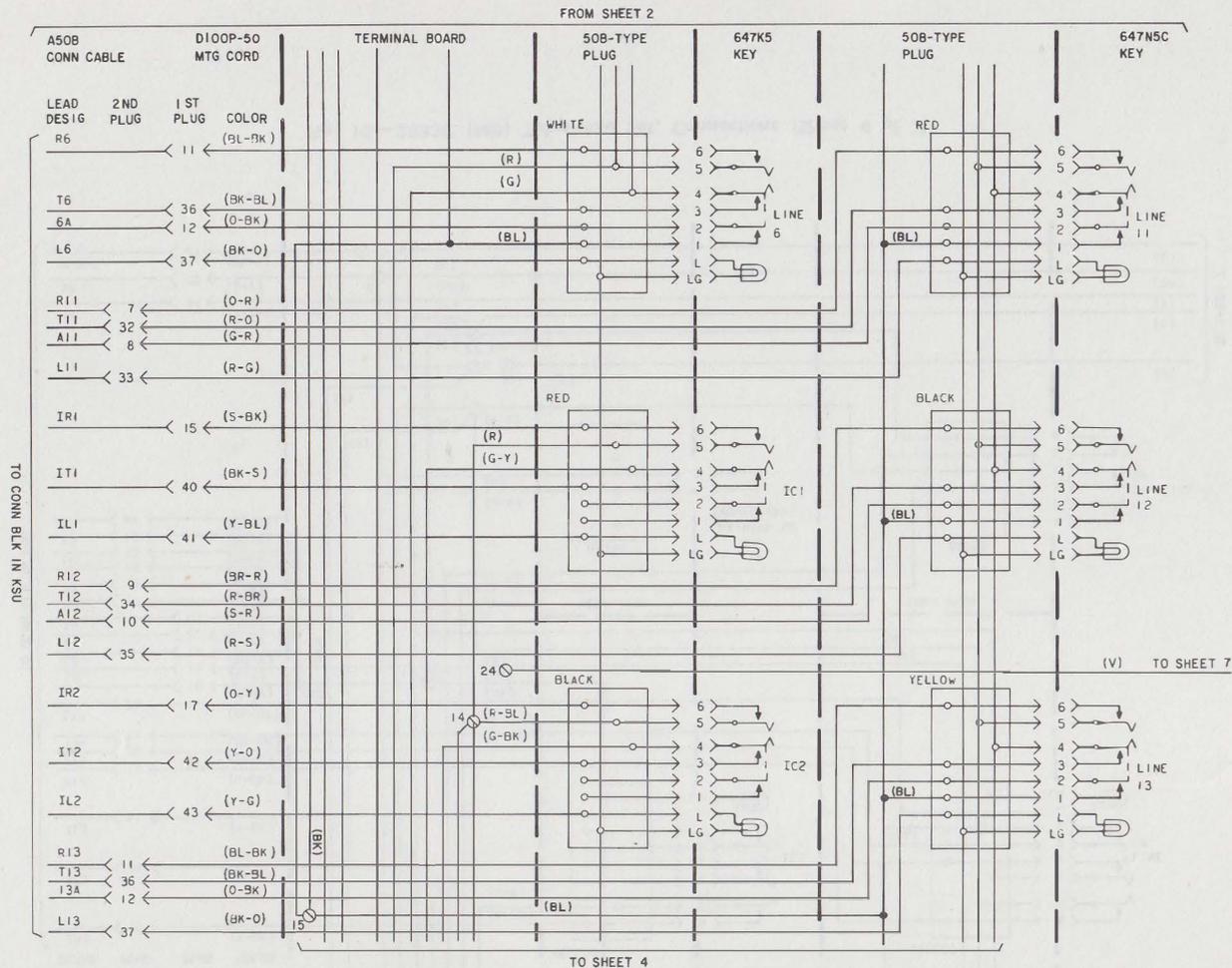


Fig. 10—2833C (MD) Telephone Set, Connections (Sheet 3 of 7)

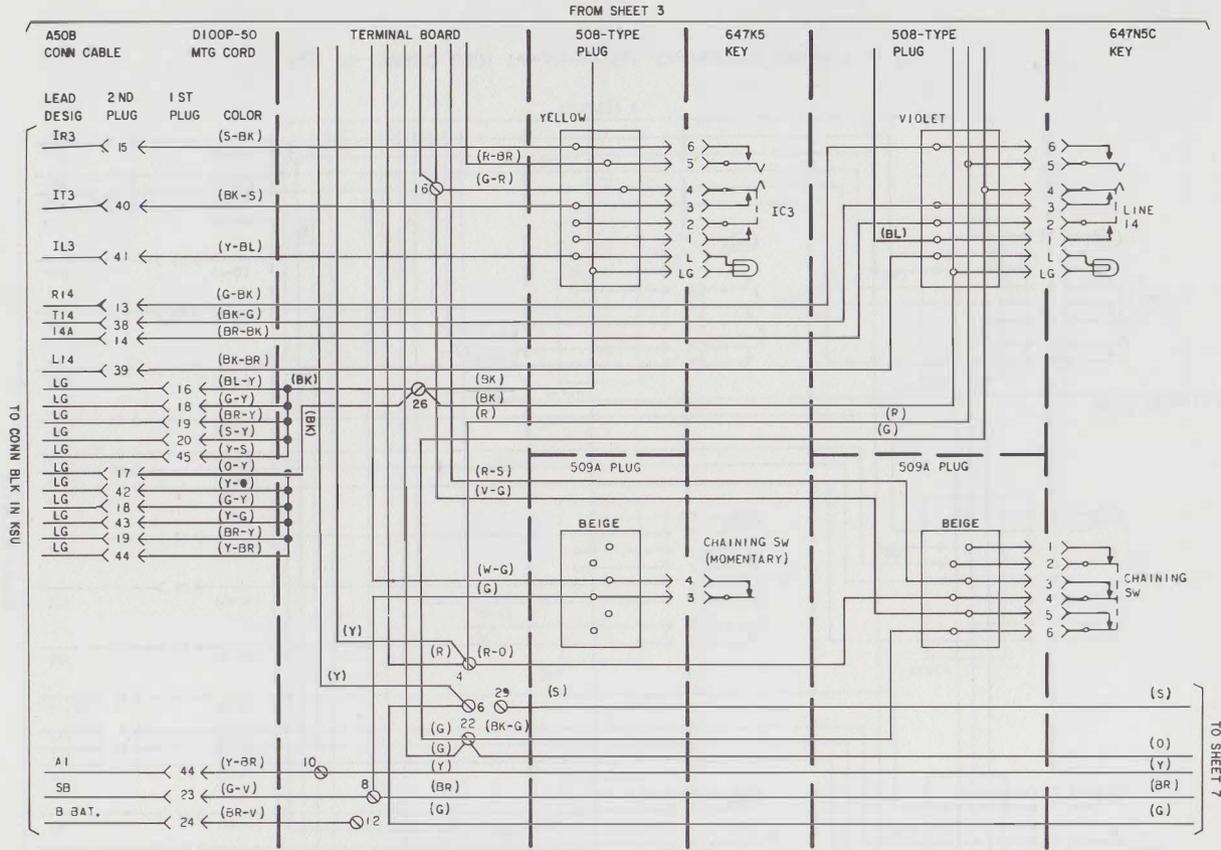


Fig. 10—2833C (MD) Telephone Set, Connections (Sheet 4 of 7)

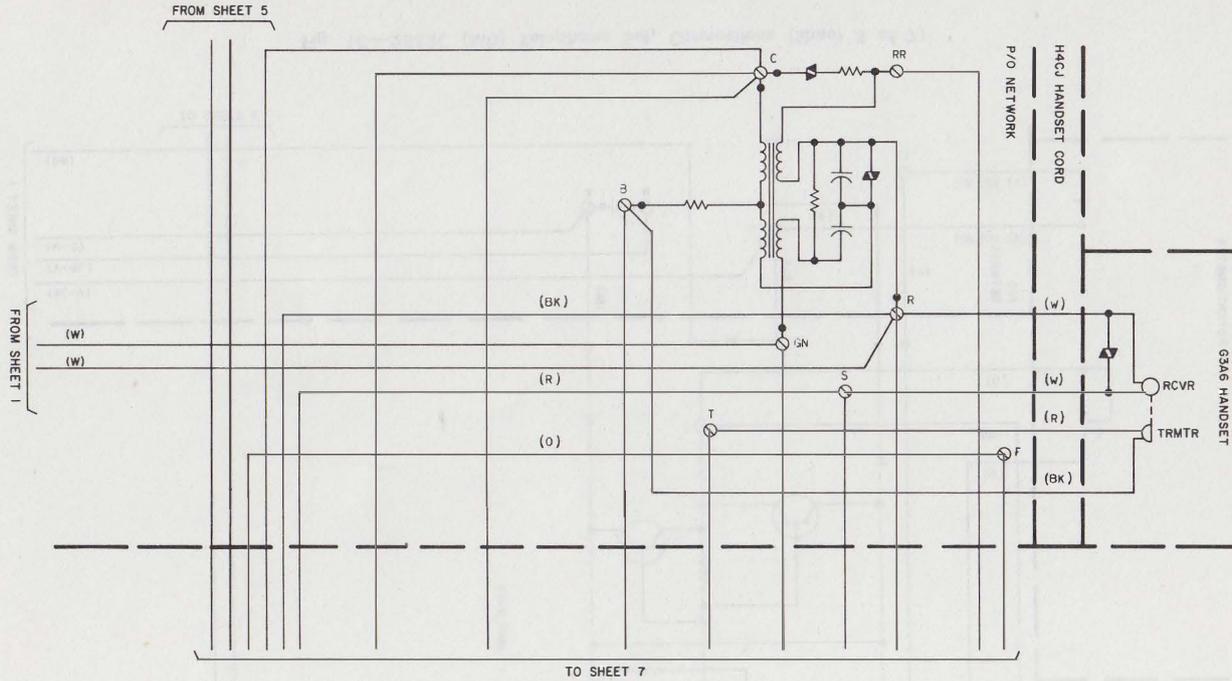


Fig. 10—2833C (MD) Telephone Set, Connections (Sheet 6 of 7)

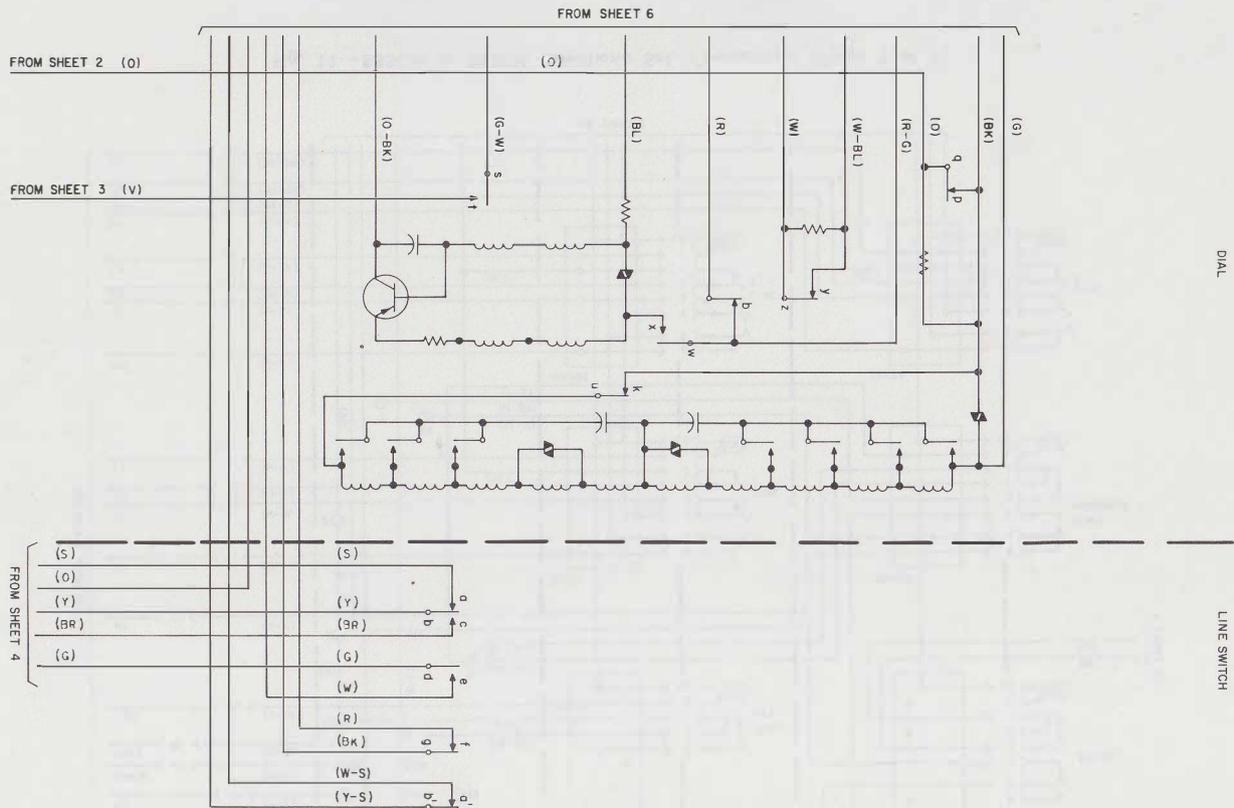


Fig. 10—2833C (MD) Telephone Set, Connections (Sheet 7 of 7)

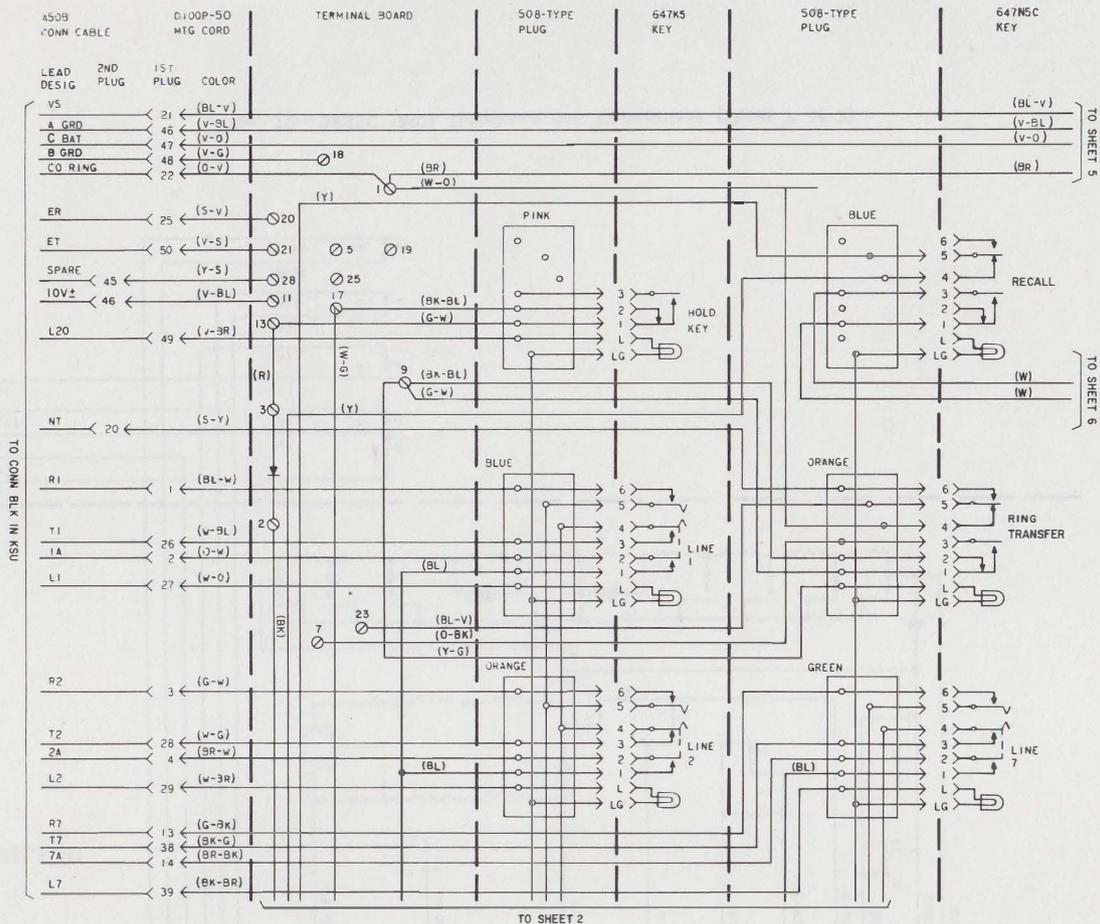


Fig. 11—833CM or 833EM Telephone Set, Connections (Sheet 1 of 7)

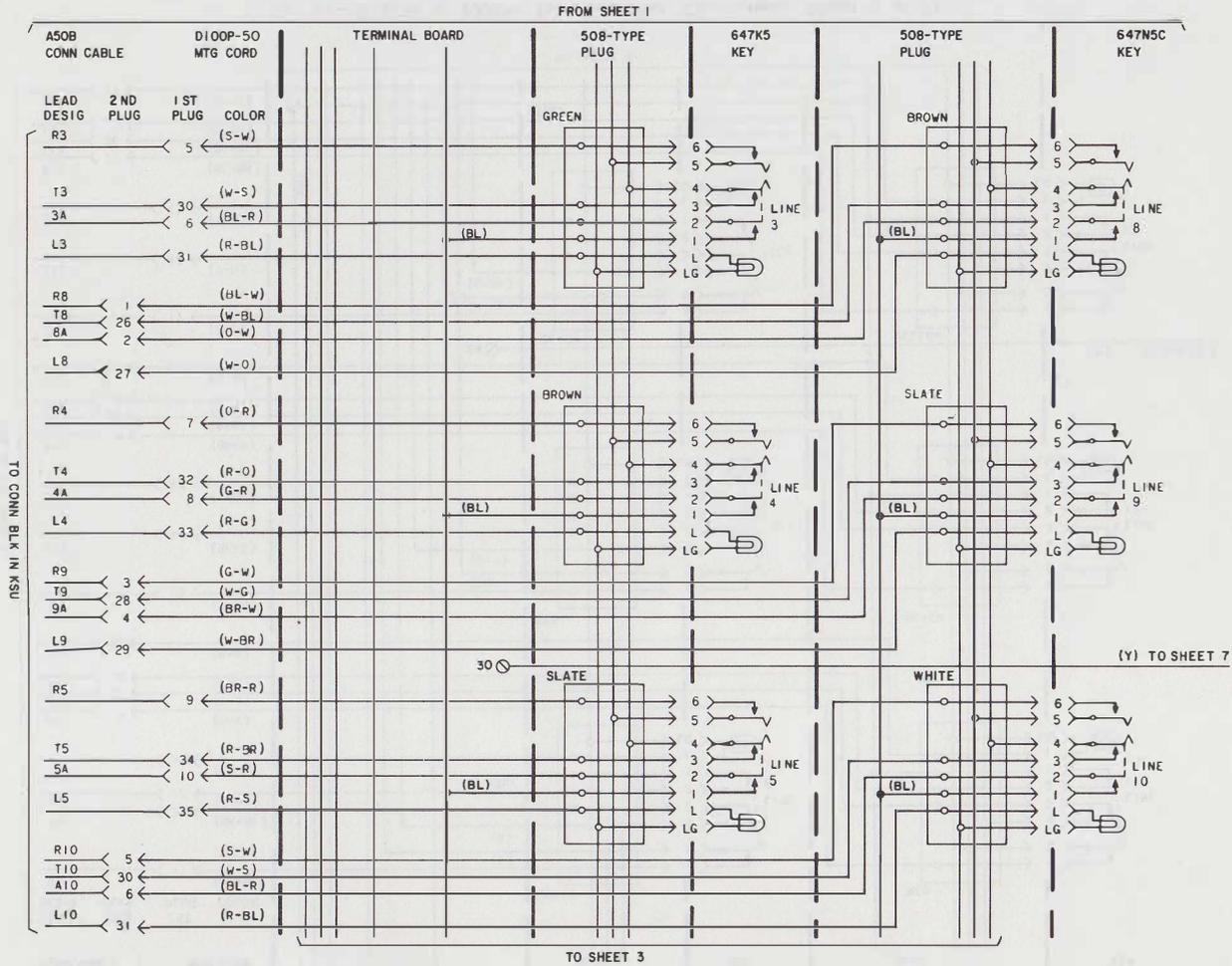


Fig. 11—833CM or 833EM Telephone Set, Connections (Sheet 2 of 7)

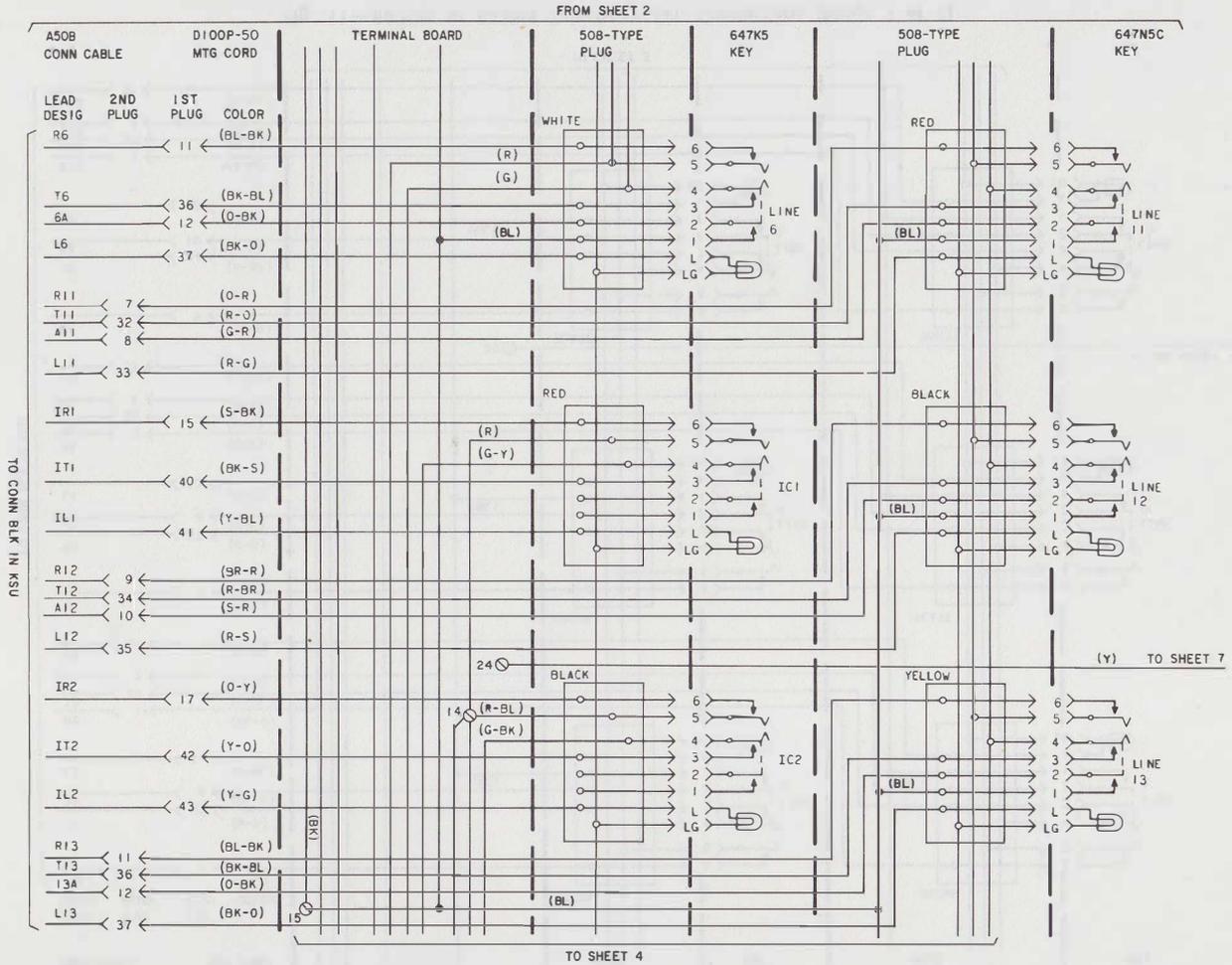


Fig. 11—833CM or 833EM Telephone Set, Connections (Sheet 3 of 7)

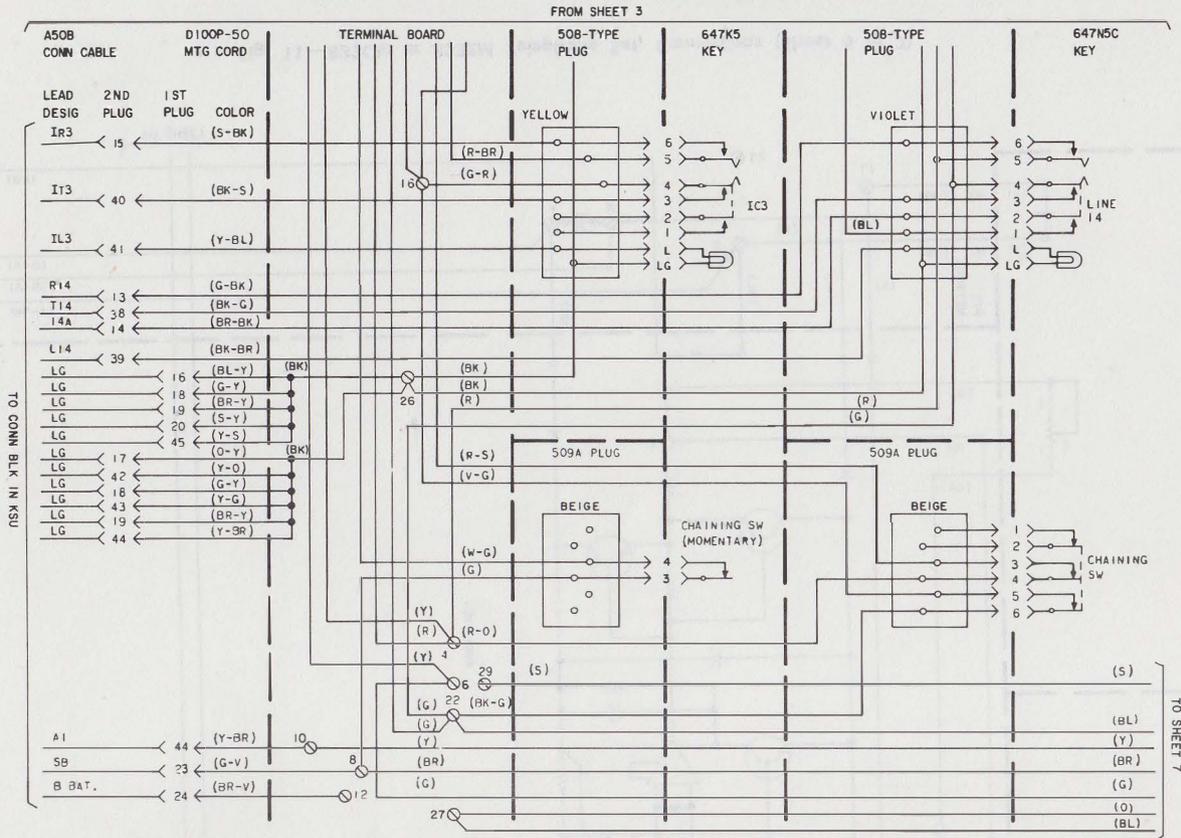


Fig. 11—833CM or 833EM Telephone Set, Connections (Sheet 4 of 7)

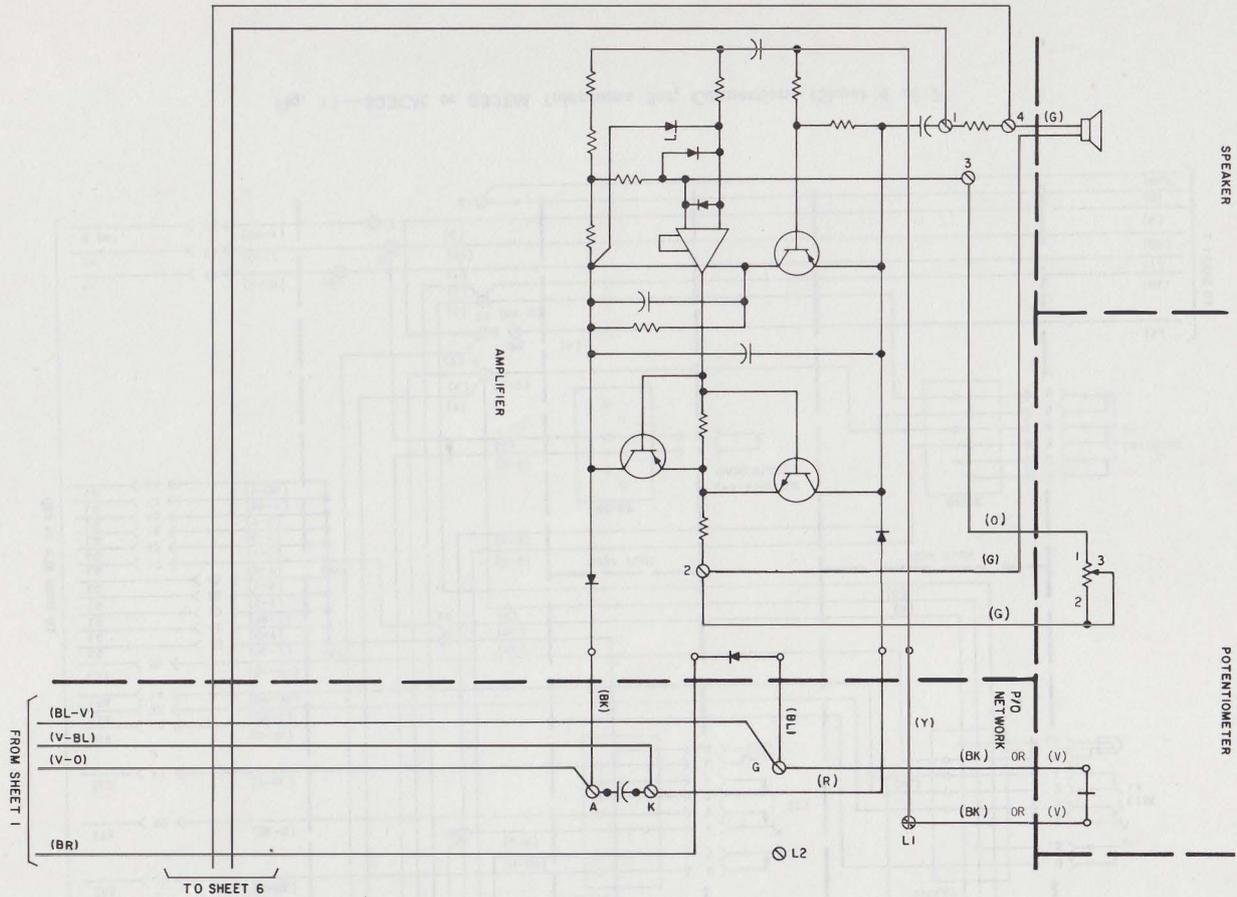


Fig. 11—833CM or 833EM Telephone Set, Connections (Sheet 5 of 7)

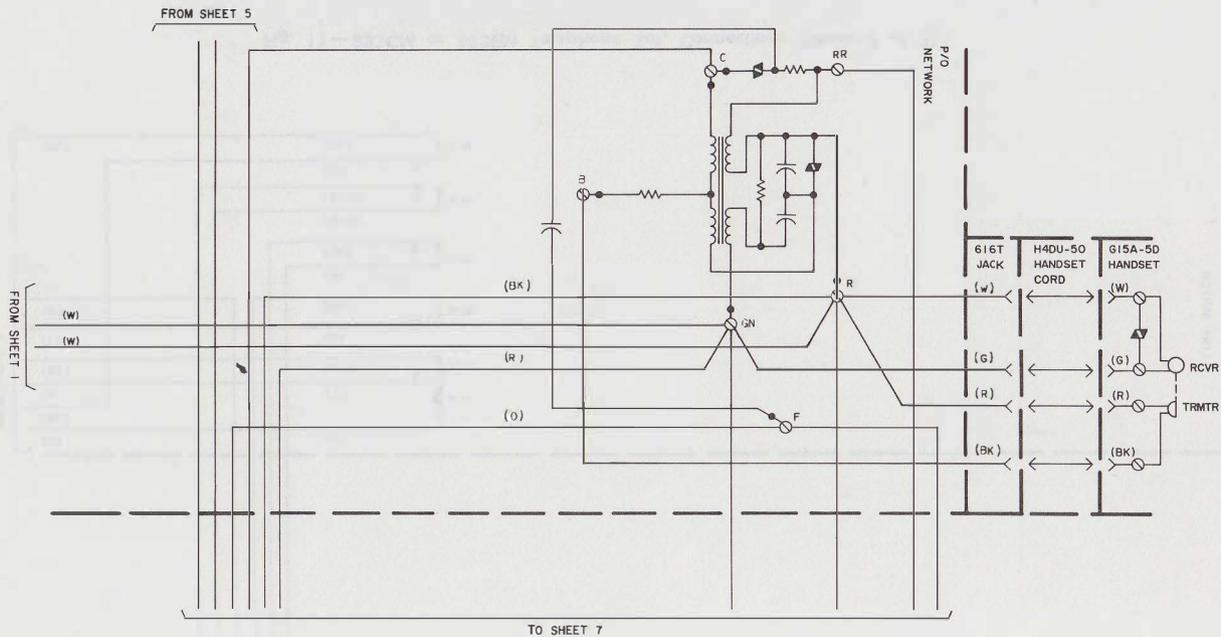


Fig. 11—833CM or 833EM Telephone Set, Connections (Sheet 6 of 7)

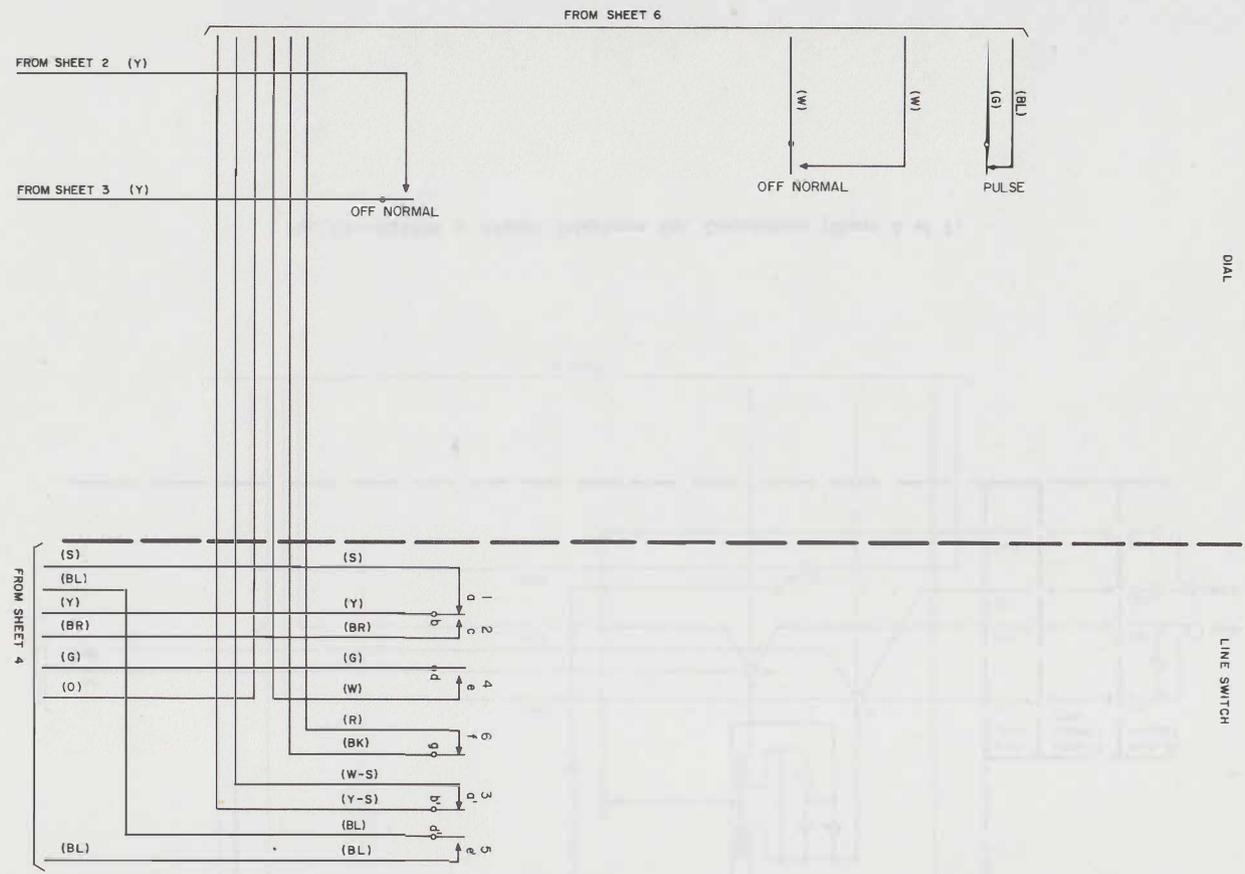


Fig. 11—833CM or 833EM Telephone Set, Connections (Sheet 7 of 7)

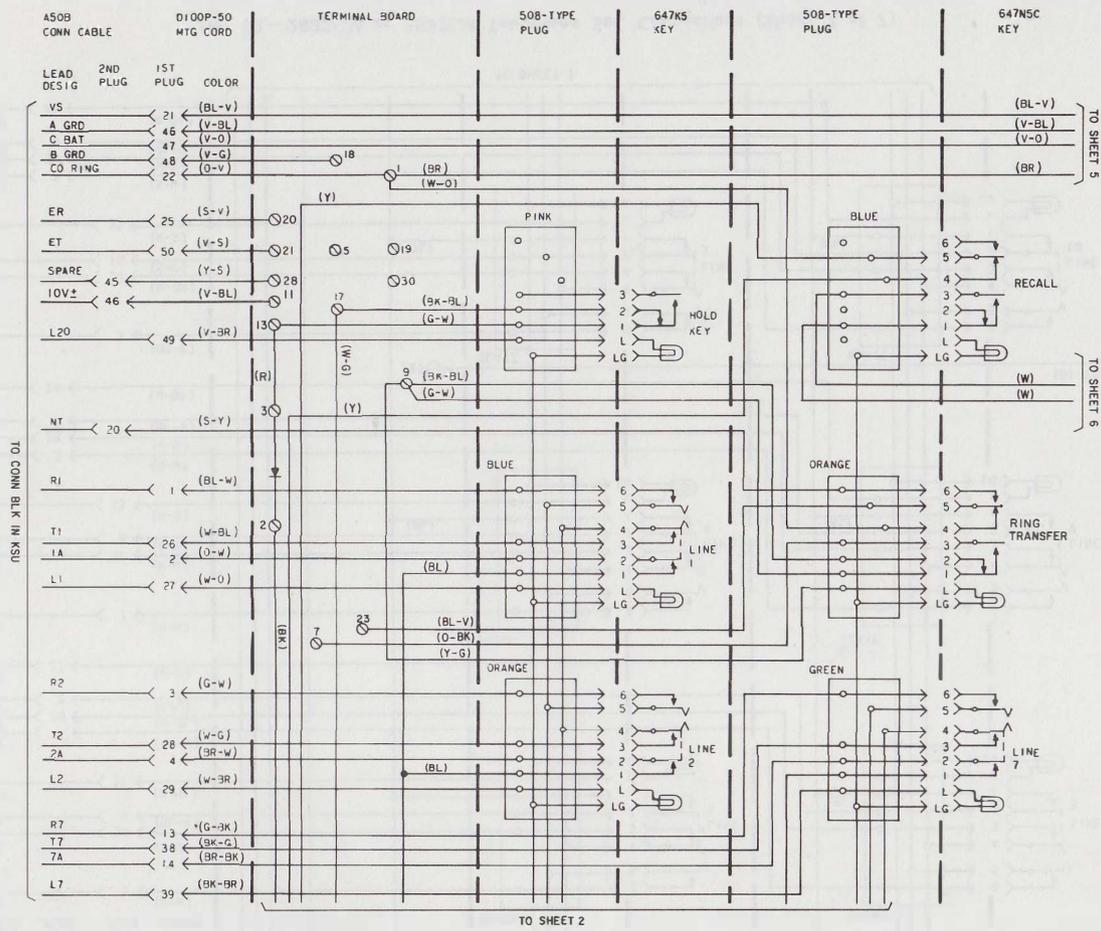


Fig. 12—2833CM or 2833EM Telephone Set, Connections (Sheet 1 of 7)

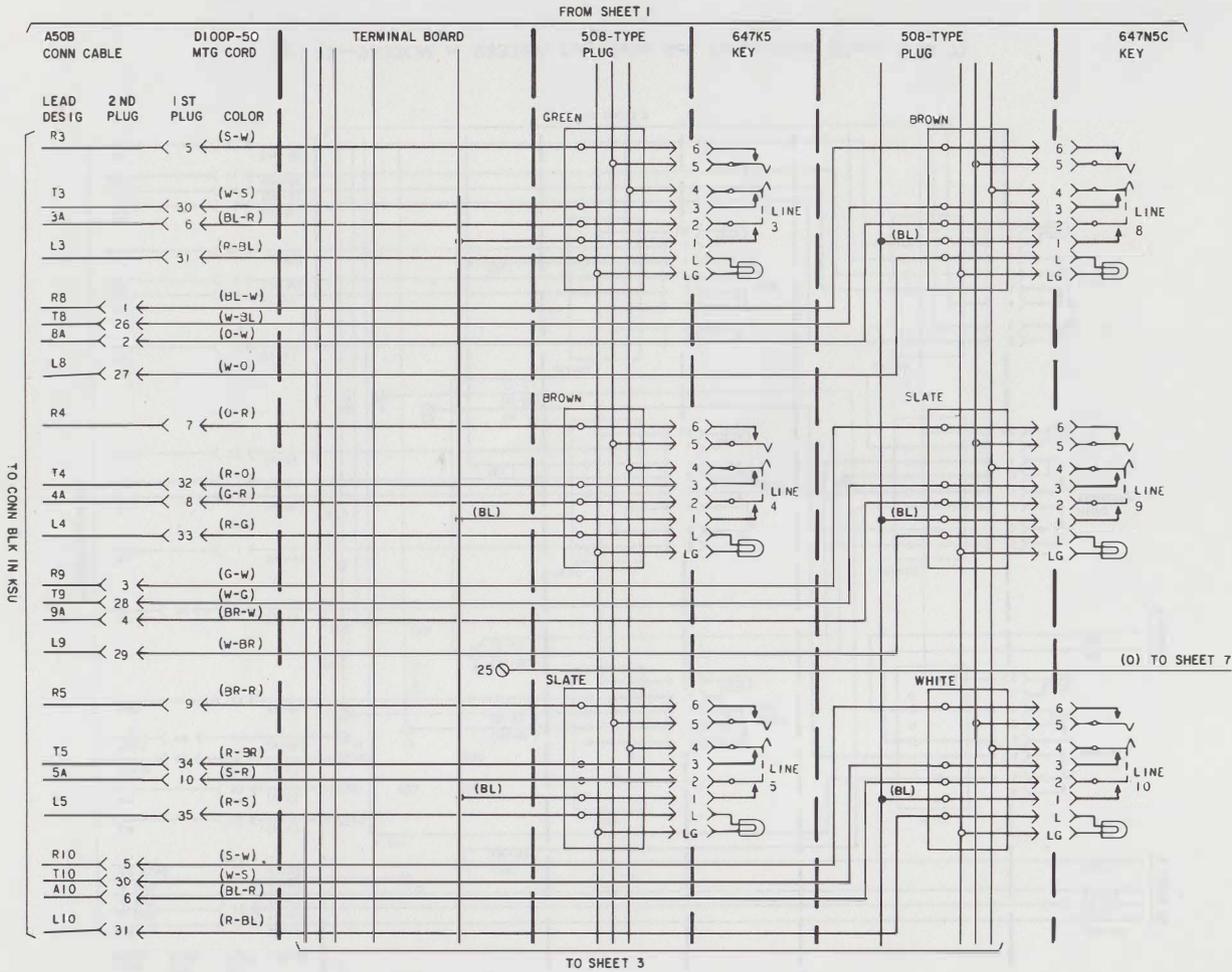


Fig. 12—2833CM or 2833EM Telephone Set, Connections (Sheet 2 of 7)

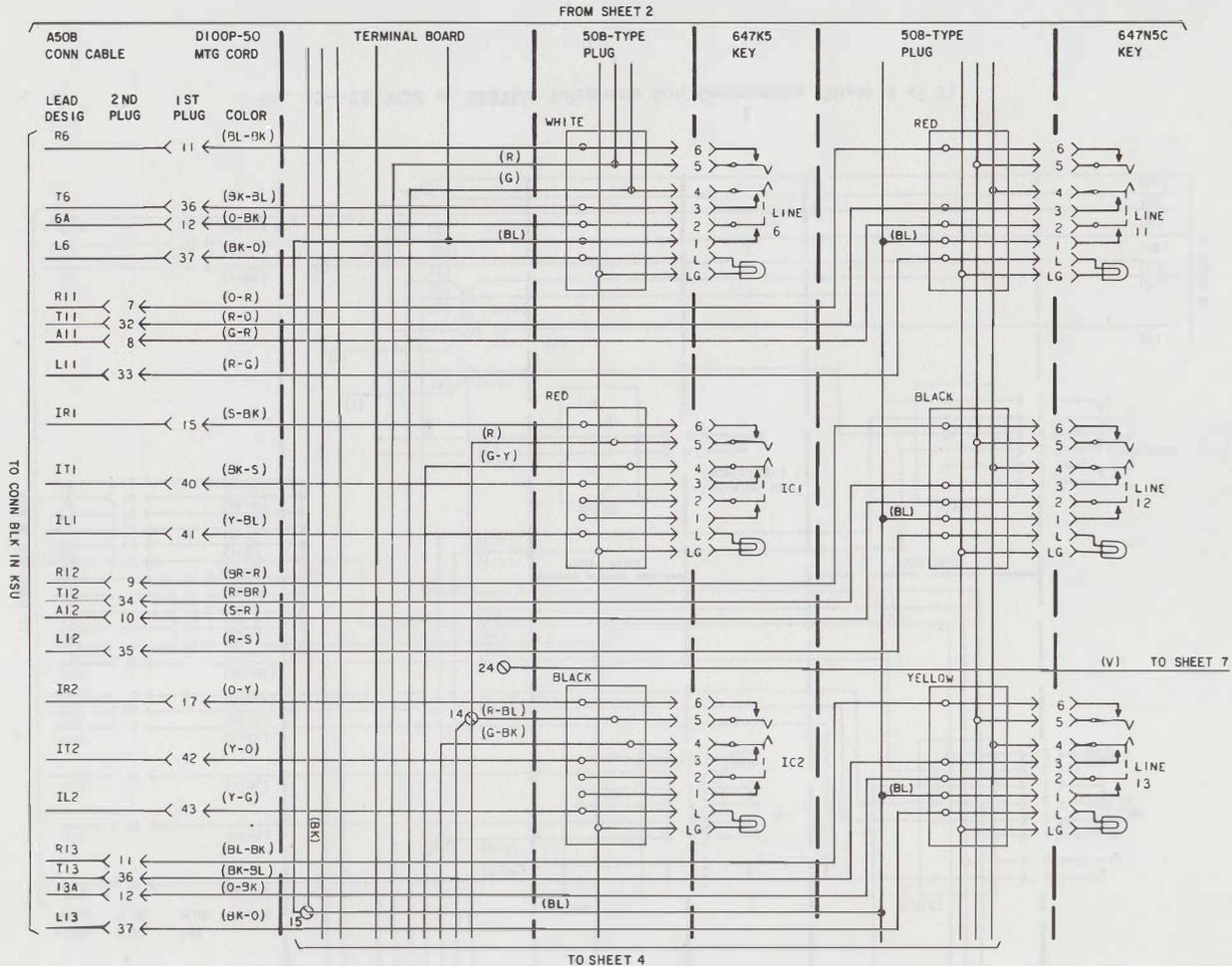


Fig. 12—2833CM or 2833EM Telephone Set, Connections (Sheet 3 of 7)

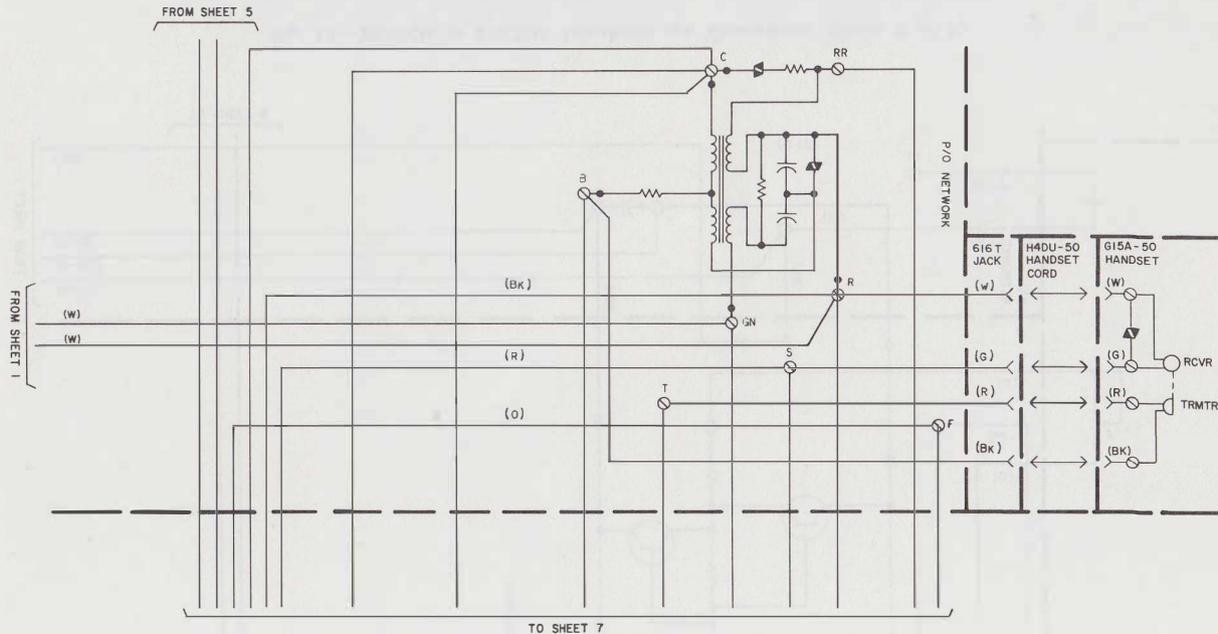


Fig. 12—2833CM or 2833EM Telephone Set, Connections (Sheet 6 of 7)

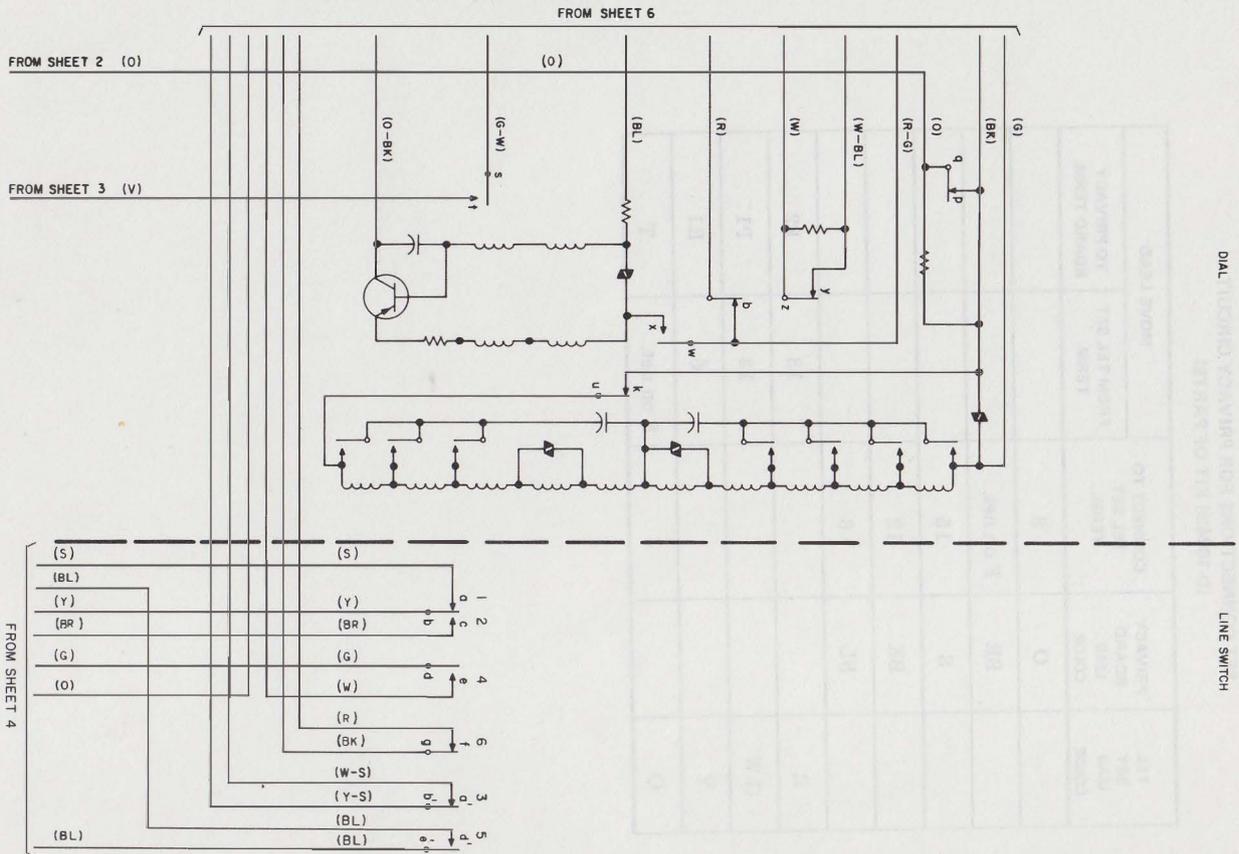


Fig. 12—2833CM or 2833EM Telephone Set, Connections (Sheet 7 of 7)

TABLE C

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

TEL SET LEAD COLOR	PRIVACY BOARD LEAD COLOR	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

TABLE D

683A TRANSMITTER CONNECTIONS FOR HFAI (SEE NOTE)

FROM 683A TRANSMITTER	CONNECT TO TELEPHONE SET	
	TERM. BOARD	NET. TERM.
W-BL	26	
BL-W	18	
W-O	20	
O-W	21	
W-G		L2
G-W		G*
W-BR		K
BR-W		A

*Remove (BL-V) from G of network and connect to L2 of network.

Note: HFAI feature initially available with COM KEY 2152 only.

TABLE E

833C(MD), CM, EM OR 2833C(MD), CM, EM TELEPHONE SET CONNECTIONS FOR RING TRANSFER

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

TABLE F

TO DISABLE PRIVACY CIRCUIT

COLOR	MOVE LEAD IN TEL SET	
	FROM TERM.	TO TERM.
O	8	*
BK	12	*

* Insulate and store.

TABLE G

TO DISABLE PRIVACY RELEASE KEY

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

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.