

SERVICE

1638- AND 1639-TYPE TELEPHONE SETS

1. GENERAL

1.01 This section contains connection information for 18- and 30-button telephone sets equipped with 10-button TOUCH-TONE[®] dials, headset jacks and used with station line concentrator. Connection information for these sets was formerly contained in Section 502-636-413 which is hereby canceled.

1.02 Refer to the appropriate Reference section for ordering and piece part information or the section entitled 630-, 1630-, and 2630-Series Telephone Sets, Common Installation and Maintenance Information in Division 502.

1.03 These sets are not intended for use with 3-type speakerphone systems.

2. CONNECTIONS

2.01 A 235A (MD) or B KTU is associated with each 1638-type telephone set. A 236A (MD) or B KTU is associated with each 1639-type telephone set. Because of the single common talking pair and control lead patterns used in these sets, a line concentrator unit must be associated with each telephone set installed and cannot be shared, even on a bridged station basis.

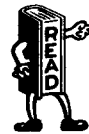
2.02 See SD-69499-01 (key telephone system, 6A, 1A1 and 1A2 station line concentrators) and appropriate sections in Division 518 for connections to station line concentrators using 235- and 236-type key telephone units.

2.03 When 400-type KTU's are used as line circuits, a 235B or 236B KTU must be used or a 235A or 236A KTU modified as shown in Division 518.

2.04 The P-90D033 Printed Wiring Board Assembly used to provide a station busy lamp circuit for 1638- and 1639-type telephone sets is intended

to mount in the 235- or 236-type line concentrator key telephone unit associated with these sets. Connections to the telephone set are through the TA lead (Fig. 2 and 3). For connections to the printed wiring board assembly, see section on station line concentrators in Division 518 or refer to SD-69580-01.

2.05 A 599B key may be used in the first key position to provide ringer or line cutoff (Notes 5, 6, and 7, Fig. 2 or 3). When other uses are required they must be provided for by means of an auxiliary relay separately mounted and controlled by the turn key contacts since there are insufficient mounting cord conductors to permit full switching at the key.



Some spade-tipped conductors or mounting cord leads are insulated with tubing which should be cut off with electrician scissors or diagonal pliers. Other conductors are insulated with stiff plastic pockets. Pinch open the mouth to release the spade tips.

2.06 Because of insufficient leads from the first module plug for use with a 599H key, the supplemental hold feature cannot be used in these sets.

2.07 To convert a key position from pickup (locking) to signal (nonlocking) remove the screw detail P-10E837 entirely from the plunger at the key position to be converted. Make the necessary wiring changes as shown in Table B.

Note: When converting keys in concentrator type telephone sets from locking to nonlocking, an insulating detail must be installed over the key contacts associated with the operation of the concentrator units. Refer to the section of modular keys in Division 512 for details on installing the P-11E977 insulating detail.

TABLE A

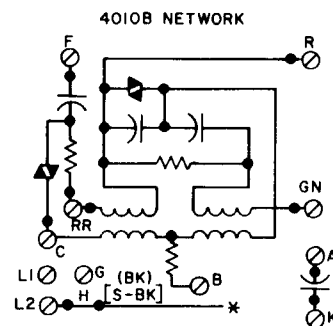
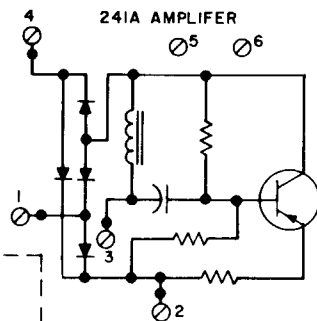
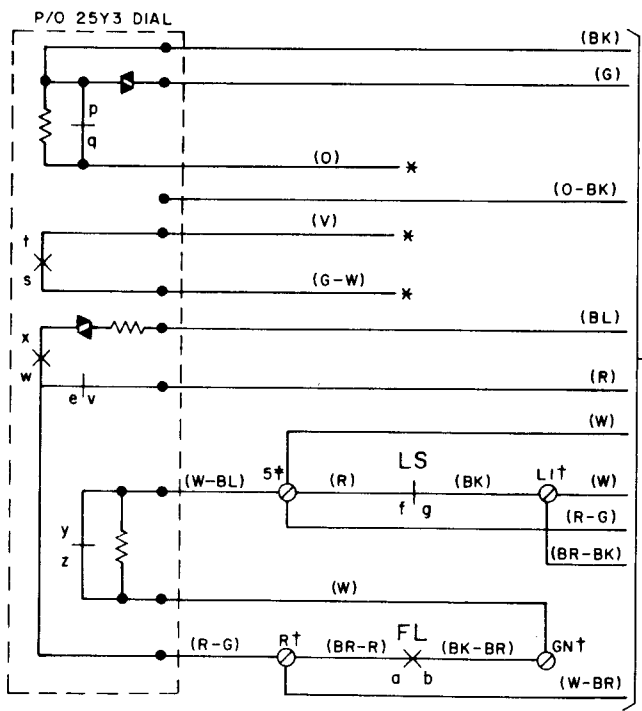
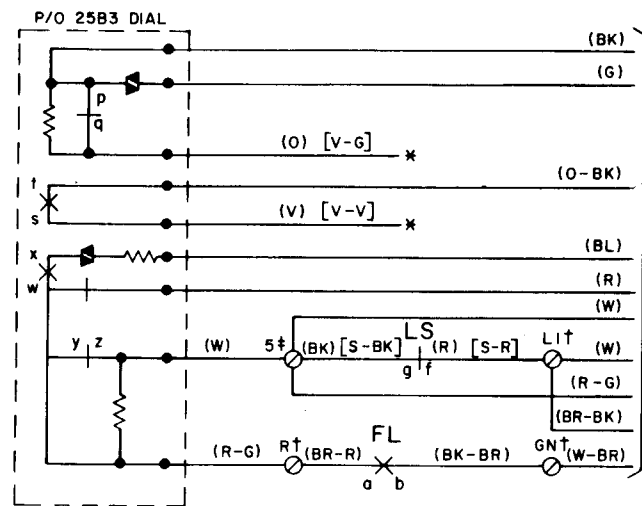
P-90D197 POLARITY GUARD CONNECTIONS

LEAD		REMOVE FROM	CONNECT TO
Strap on Terminal Block	(O-Y)	C*	S†
Dial	(BK)	RR*	T†
Polarity Guard	(W)		C*
	(G)		RR*

*Network terminal

†Polarity guard terminal

Note: Polarity guards shall be installed when specified by local instructions for end-to-end signaling.

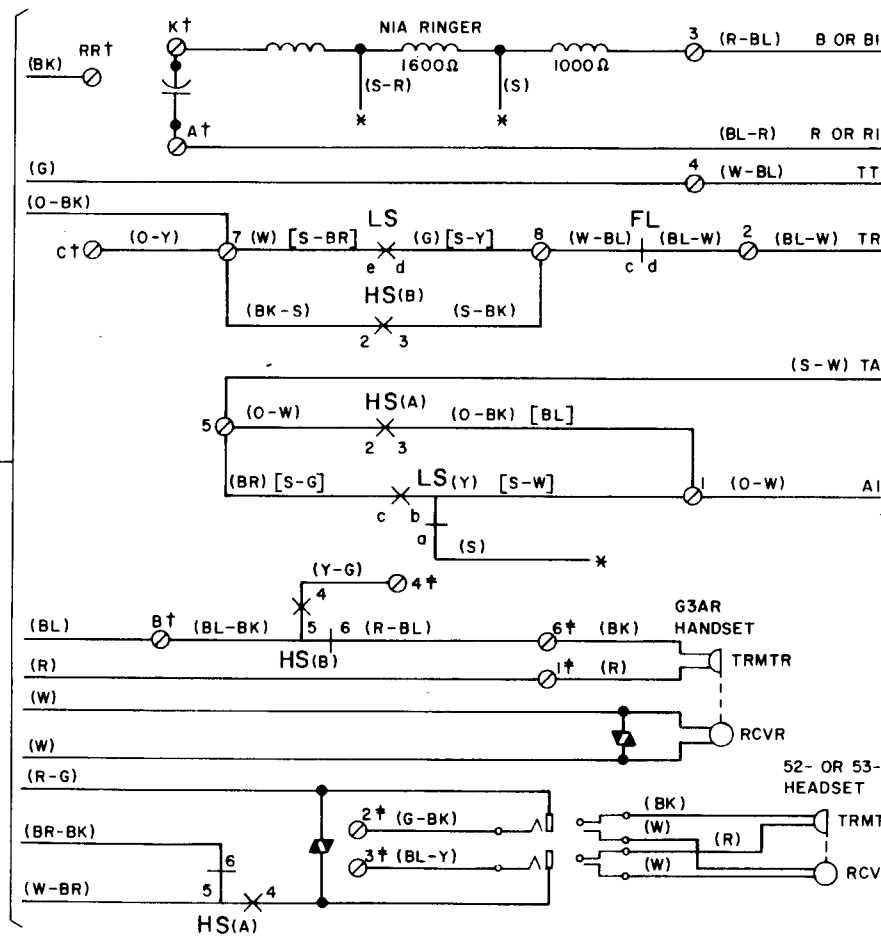


LEGEND:

LS - LINE SWITCH
 HS (A) - 517 HEADSET JACK A
 HS (B) - 517 HEADSET JACK B
 FL - FLASH KEY

* INSULATED AND STORED
 † NETWORK TERM UNDESIGNATED
 ‡ AMPLIFIER TERM TERMINALS
 ARE ON TERM BOARD

() CURRENT COLOR CODE
 [] MD COLOR CODE



TO FIG. 2 OR 3

Fig. 1—1638- and 1639-Type Telephone Set, Connections

Notes For Fig. 2 and 3:

1. WHEN 599A, 599B, 657A OR 657B KEYS ARE USED IN FIRST MODULE, HOLD KEY LAMP (6TH LAMP) MAY BE USED FOR A MISCELLANEOUS VISUAL SIGNAL. CONNECT INDICATED LEAD TO AN AVAILABLE LAMP GROUND. WHEN 598A OR 656A KEY IS USED IN FIRST MODULE, INDICATED LEAD IS CONNECTED TO GROUND ON TERMINAL 5 OF TBI.
2. WHEN 598A OR 656A KEY IS USED IN FIRST MODULE, INDICATED LEAD IS CONNECTED TO TERMINAL A OF TB6 ON 1638-TYPE SETS AND TERMINAL 1A OF TB6 ON 1639-TYPE SETS.
3. WHEN 598A OR 656A KEY IS USED IN THIRD MODULE OF 1638-TYPE TELEPHONE SET, (V-S) LEAD IS CONNECTED TO TERMINAL 5 OF TB3.
4. TO CONVERT A KEY POSITION FROM PICKUP (LOCKING) TO SIGNALING (NONLOCKING) REMOVE THE SCREW DETAIL P-10E837 ENTIRELY FROM THE PLUNGER AT THE KEY POSITION TO BE CONVERTED. MAKE THE NECESSARY CHANGES AS SHOWN IN CONVERSION TABLE A. TO CONVERT A KEY POSITION FROM NONLOCKING TO LOCKING, INSERT SCREW DETAIL P-10E837. WHEN CONVERTING A KEY FOR SIGNALING, PLACE A P-11E977 INSULATING DETAIL OVER THE 2 KEY CONTACTS ADJACENT TO KEY PLUNGER.
5. CUTOFF OF THE INTERNAL RINGER CAN BE PROVIDED USING THE 599B OR 657B KEY IN FIRST MODULE. TRANSFER BI LEAD FROM TERMINAL 3 OF TERMINAL BOARD (FIG. 1) TO TERMINAL 6 OF TBI (FIG. 2 OR 3) TRANSFER (R) LEAD FROM TERMINAL 5 OF TBI (FIG. 2 OR 3) TO TERMINAL VACATED BY BI LEAD.
6. WHEN 599B OR 657B KEY IS USED IN FIRST MODULE TO PROVIDE CUTOFF, SWITCHING, OR TRANSFER FEATURES, TRANSFER (Y-BR) LEAD FROM TERMINAL 6 OF TBI TO TERMINAL SG OF TBVI. THESE SERVICE FEATURES ARE PROVIDED BY AN AUXILIARY RELAY (229B KTU OR EQUIVALENT) SEPARATELY MOUNTED AND CONTROLLED BY THE TURNKEY CONTACTS THROUGH THE LGS,C,S,SI LEAD.
7. CONTACTS OF TURNKEY CONNECTED TO TERMINALS 9 AND 11 MUST BE ISOLATED FROM EACH OTHER WITH INSULATING DETAIL P-13E443 (FURNISHED WITH 599B OR 657B KEY) TO PREVENT INTERFERENCE WITH WORKING CIRCUITS.
8. THE TURNKEY LAMP CAN BE ILLUMINATED IN ACCORDANCE WITH, OR INDEPENDENT OF TURNKEY OPERATION.
9. WHEN THE 617A KEY IS REQUIRED AS A DUAL-PURPOSE KEY, THE BRASS STRAP BETWEEN THE SI AND SG TERMINALS OF THE KEY MAY BE REMOVED. USE MIW CORD OR EQUIVALENT TO CONNECT SI TERMINAL OF 617A TO A DISSIMILAR GROUND OR A NONGROUNDED CIRCUIT.
10. CONNECTIONS FOR THE STATION BUSY LAMP FEATURE ARE PROVIDED ON THE 235-AND 236-TYPE KTU. REFER TO THE SECTION ON LINE CONCENTRATORS IN DIVISION 518 FOR THIS CONNECTION INFORMATION.
11. CORDS MANUFACTURED BEFORE APRIL 1968 HAVE SOME LEADS SOLDERED TO THE TB.

- * LEADS ARE SPADE TIPPED, INSULATED AND STORED.
- () CURRENT COLOR CODE.
- [] MD COLOR CODE.

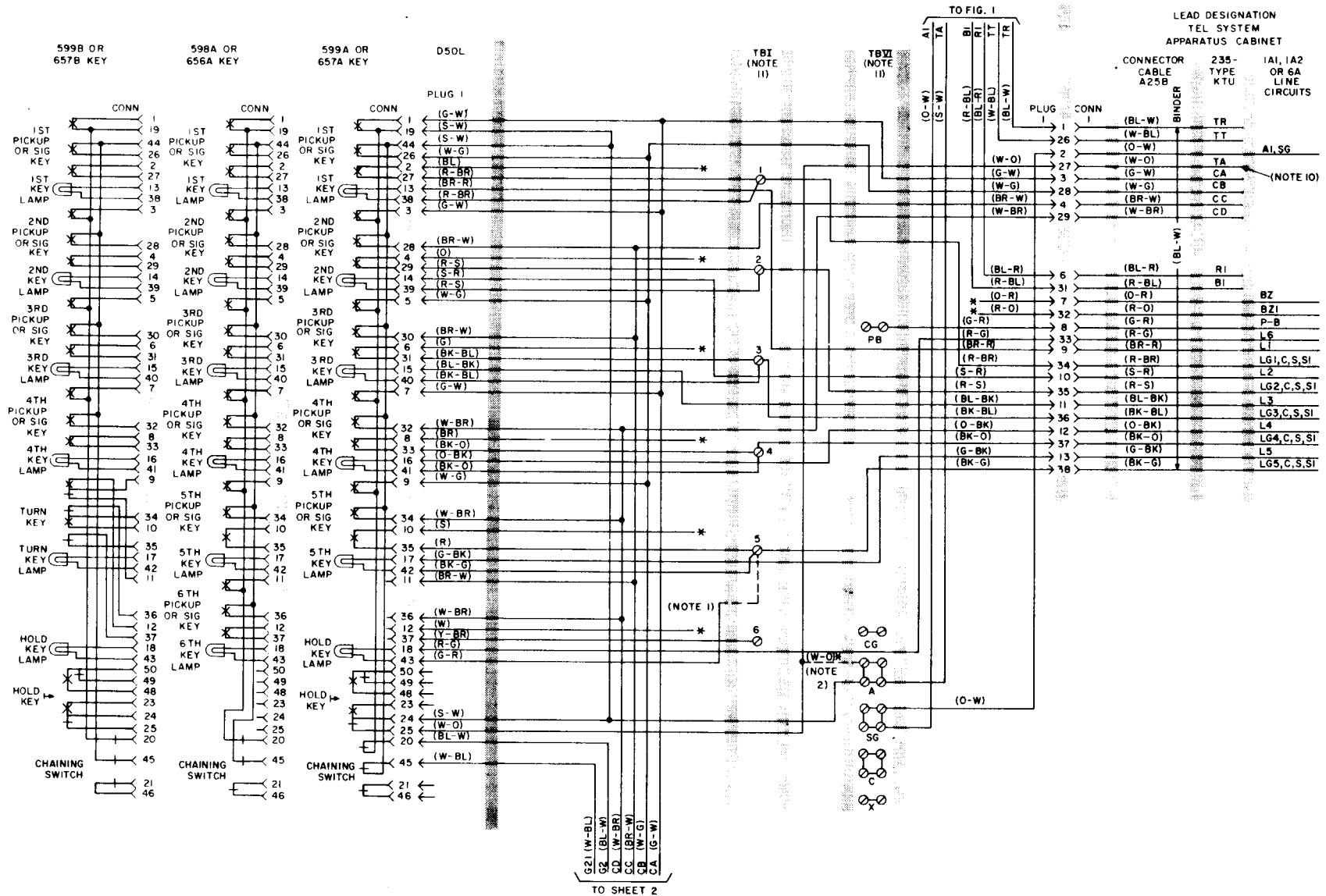


Fig. 2—Module Arrangements and Cord and Cable Connections for 1638-Type Telephone Sets (Sheet 1 of 3)

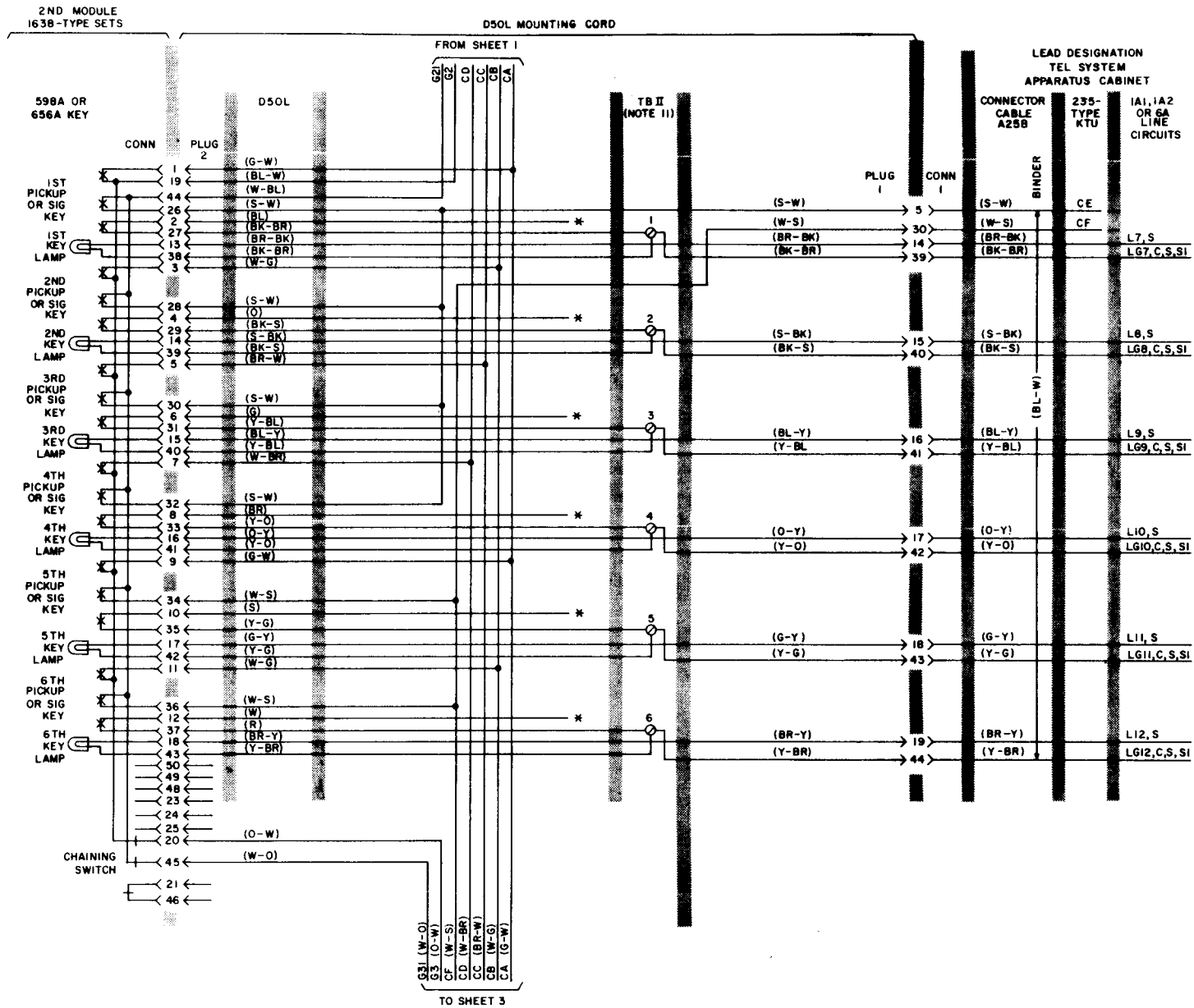


Fig. 2—Module Arrangements and Cord and Cable Connections for 1638-Type Telephone Sets (Sheet 2 of 3)

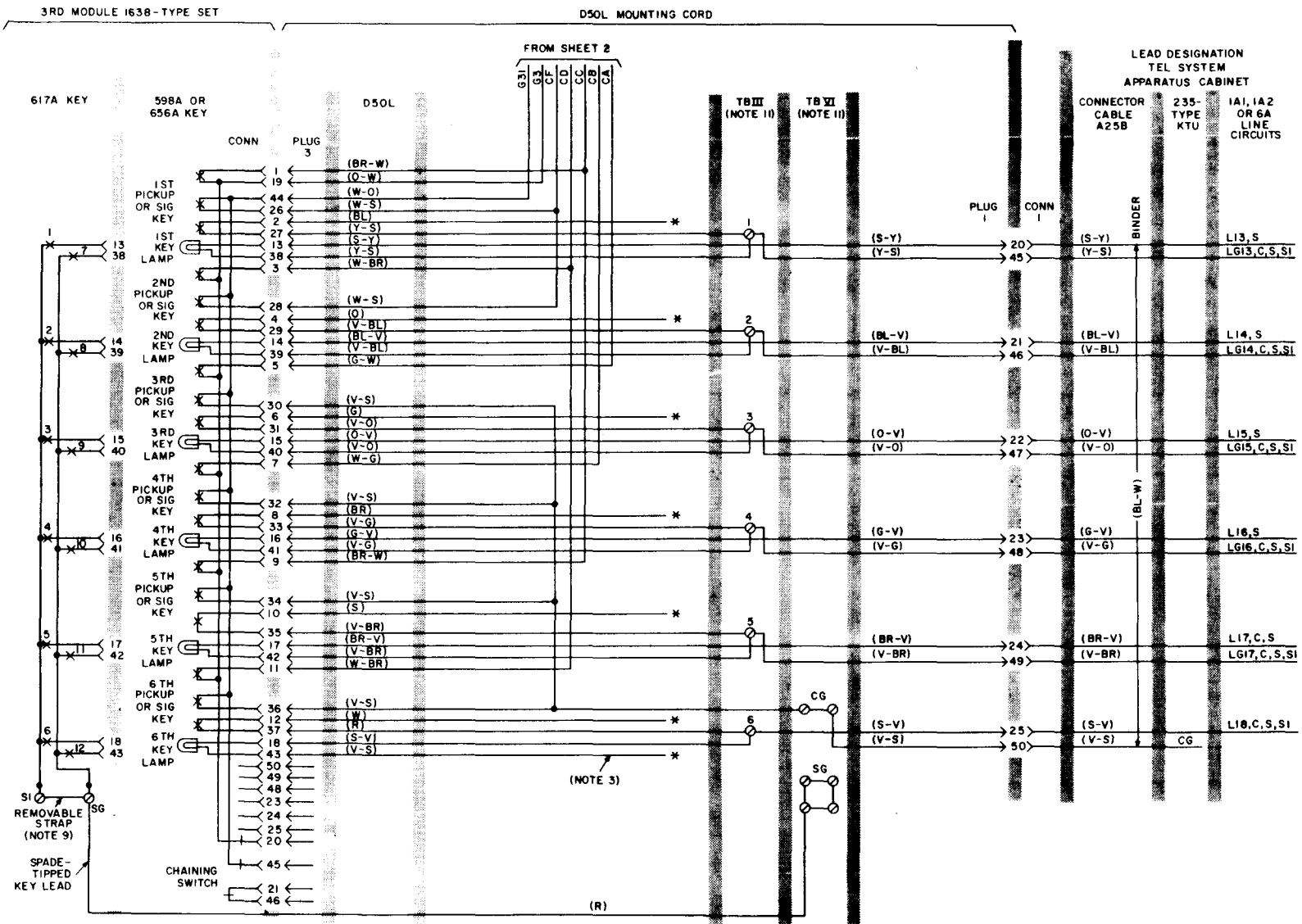


Fig. 2—Module Arrangements and Cord and Cable Connections for 1638-Type Telephone Sets (Sheet 3 of 3)

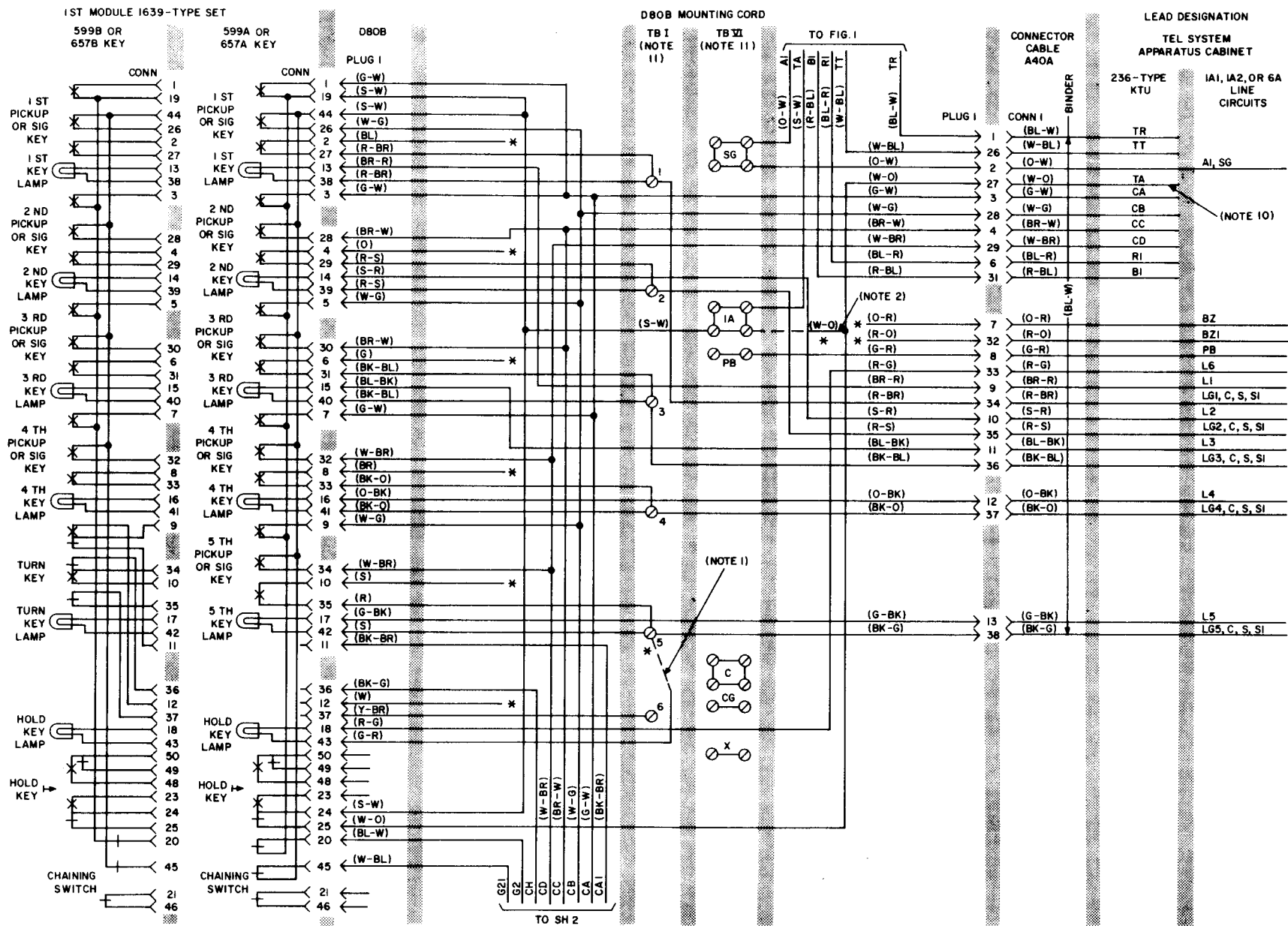


Fig. 3—Module Arrangements and Cord and Cable Connections for 1639-Type Telephone Sets (Sheet 1 of 5)

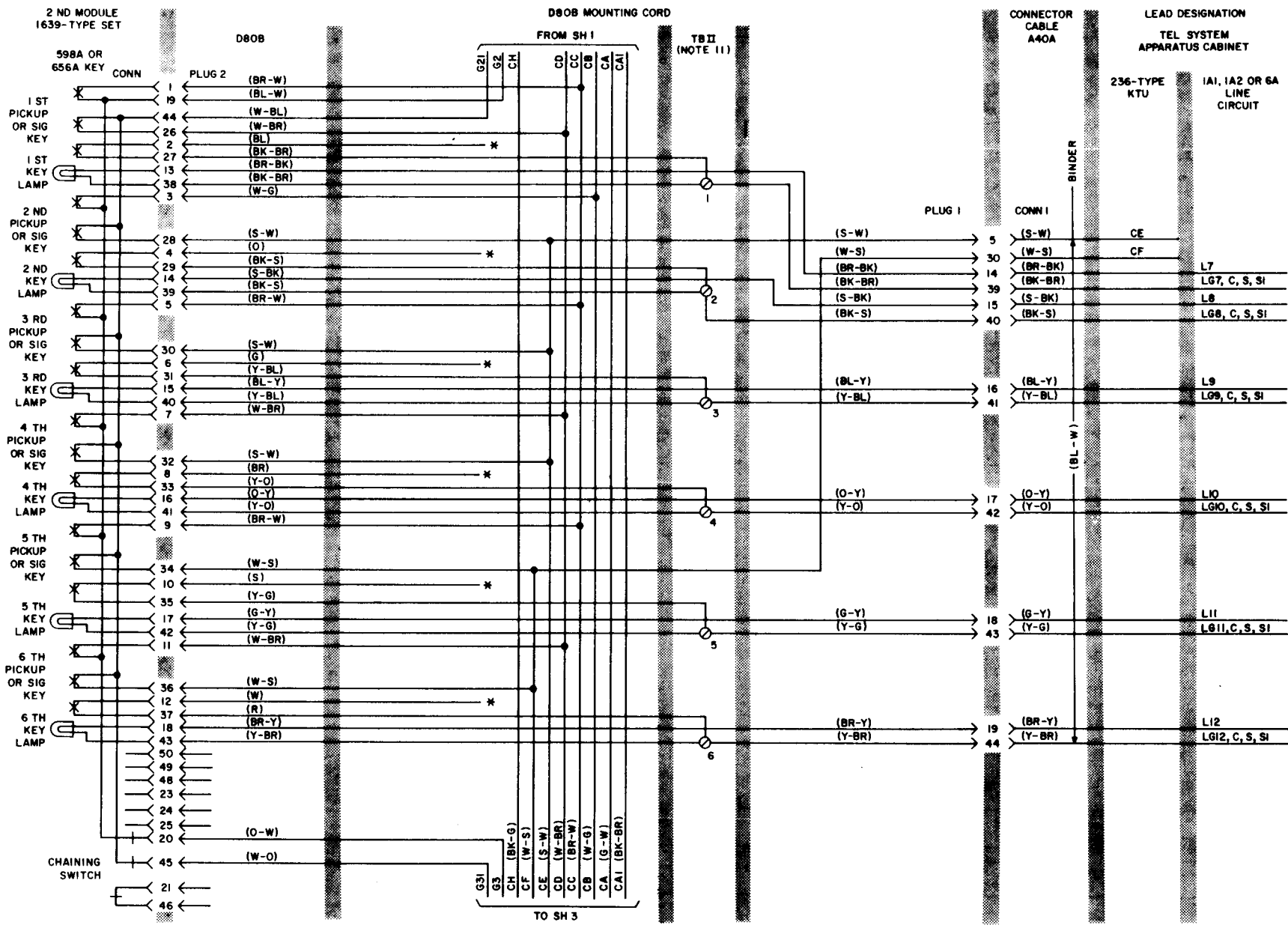


Fig. 3—Module Arrangements and Cord and Cable Connections for 1639-Type Telephone Sets (Sheet 2 of 5)

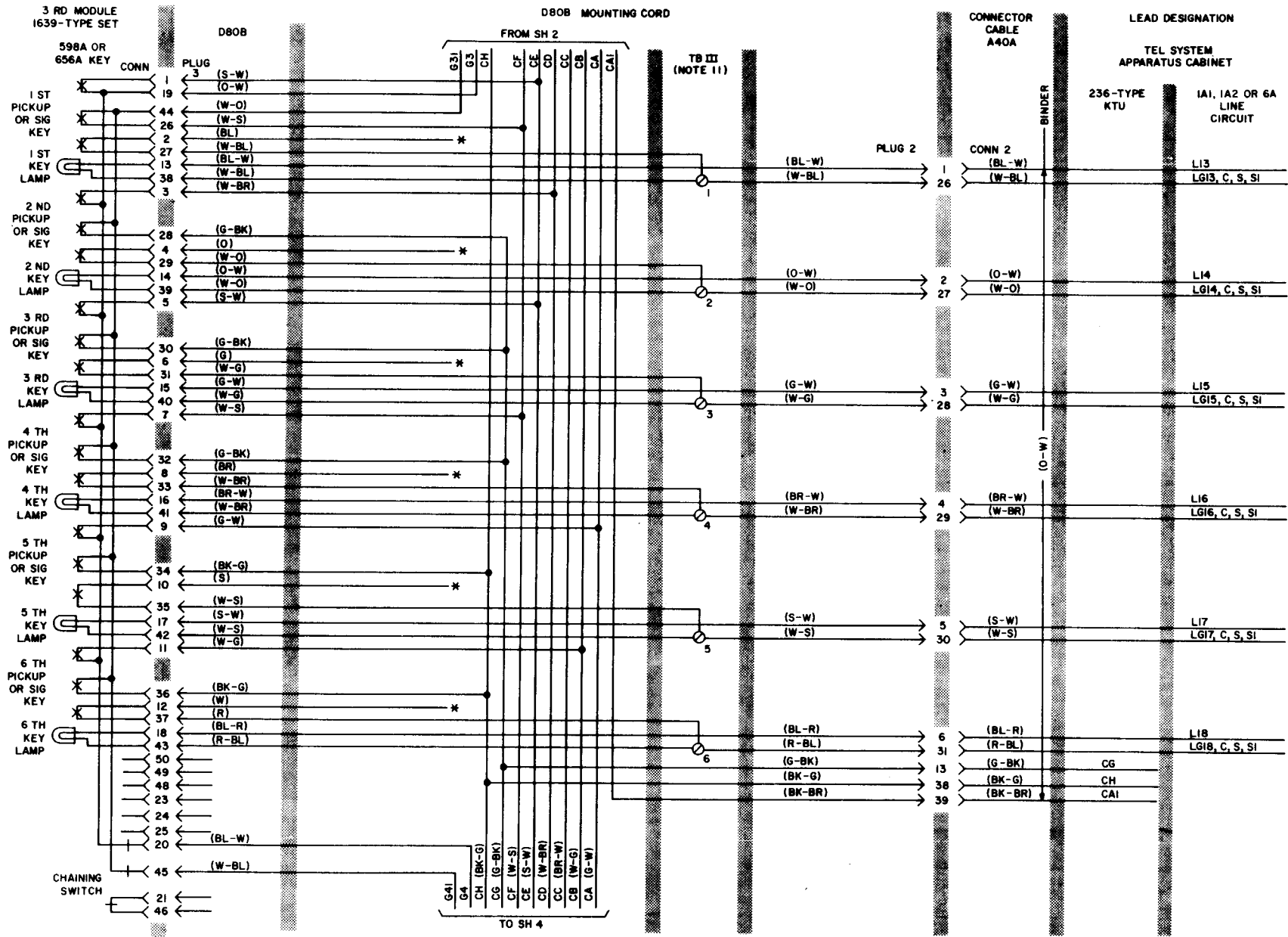


Fig. 3—Module Arrangements and Cord and Cable Connections for 1639-Type Telephone Sets (Sheet 3 of 5)

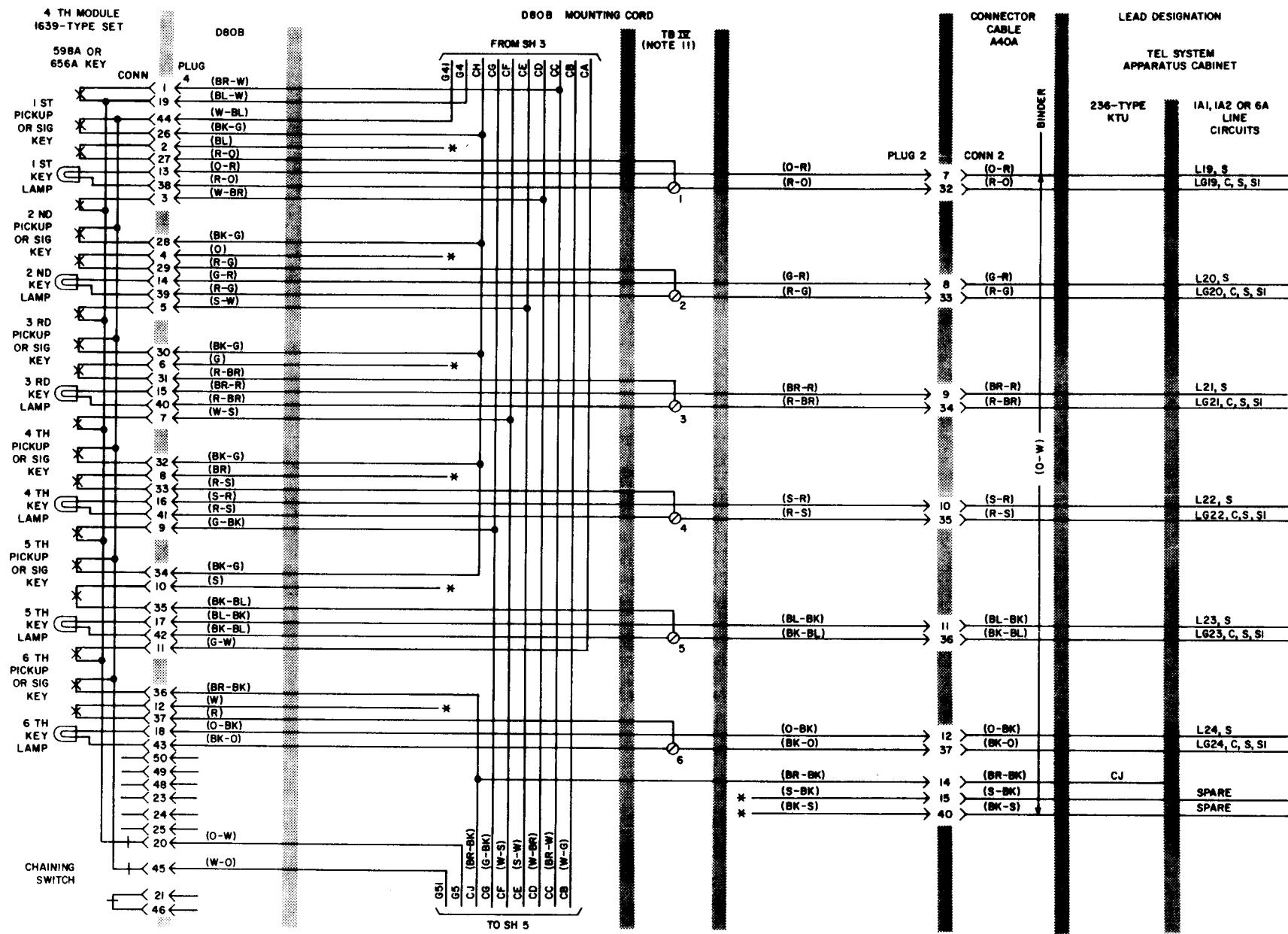


Fig. 3—Module Arrangements and Cord and Cable Connections for 1639-Type Telephone Sets (Sheet 4 of 5)

TABLE B — CONVERSION OF 1638- AND 1639-TYPE TELEPHONE SETS EQUIPPED WITH EVEN-COUNT COLORED-CODED CORDS

KEY POSITION		SERVICE FEATURE OPTIONS								LINE PICKUP
		BUZZER SIGNAL		6A ADD-ON		6A PUSHBUTTON		LOCKED-IN LAMP RELEASE		
1638 TYPE TEL SETS	1639 TYPE TEL SETS	CONNECT STORED SPADE-TIPPED LEAD INDICATED TO TERMINAL SG OF TB VI.	DISCONNECT SPADE-TIPPED LEAD INDICATED FROM ASSOC TB. INSULATE AND STORE.	CONNECT STORED SPADE-TIPPED LEAD INDICATED TO TERMINAL PB OR TB. VI.	DISCONNECT SPADE-TIPPED LEAD INDICATED FROM ASSOC TB. INSULATE AND STORE.	CONNECT STORED SPADE-TIPPED LEAD INDICATED TO TERMINAL A (1638) OR TO TERMINAL 1A (1639) OF TB. VI.	DISCONNECT SPADE-TIPPED LEAD INDICATED FROM ASSOC TB. INSULATE AND STORE.	CONNECT STORED SPADE-TIPPED LEAD INDICATED TO TERMINAL SG OF TB VI.	MOVE SPADE-TIPPED LEAD INDICATED FROM ASSOC TB TO AVAIL. LAMP GRD.	
1	1	BL	R-BR	BL	R-BR	BL	R-BR	BL	R-BR	1638 and 1639— Factory equipped and wired
2	2	O	R-S	O	R-S	O	R-S	O	R-S	
3	3	G	BK-BL	G	BK-BL	G	BK-BL	G	BK-BL	
4	4	BR	BK-O	BR	BK-O	BR	BK-O	BR	BK-O	
5	5	S	BK-G	S	BK-G	S	BK-G	S	BK-G	
6	6	1638—Not convertible. 1639—Connect W to term. SG of TB VI. Connect one of two spares (S-BK) (BK-S) from Plug 2 to term. 6 of TBI.		1638—Not convertible. 1639—Connect W to term. PB of TB VI. Connect one of two spares (S-BK) (BK-S) from Plug 2 to term. 6 of TBI.		1638—Not convertible. 1639—Connect W to term. 1A of TB VI. Connect one of two spares (S-BK) (BK-S) from Plug 2 to term. 6 of TBI.		1638—Not convertible. 1639—Connect W to term. SG of TB VI. Connect one of two spares (S-BK) (BK-S) from Plug 2 to term. 6 of TBI. Connect G-R to avail. lamp grd.		Replace 599A or 657A key with 598A or 656A key. Connect G-R to avail. lamp grd. Connect W-O to term. A (1638) or to term. 1A (1639) of TBVI.
7	7	BL	BK-BR	BL	BK-BR	BL	BK-BR	BL	BK-BR	1638 and 1639— Factory equipped and wired
8	8	O	BK-S	O	BK-S	O	BK-S	O	BK-S	
9	9	G	Y-BL	G	Y-BL	G	Y-BL	G	Y-BL	
10	10	BR	Y-O	BR	Y-O	BR	Y-O	BR	Y-O	
11	11	S	Y-G	S	Y-G	S	Y-G	S	Y-G	
12	12	W	Y-BR	W	Y-BR	W	Y-BR	W	Y-BR	
	13	BL	W-BL	BL	W-BL	BL	W-BL	BL	W-BL	
	14	O	W-O	O	W-O	O	W-O	O	W-O	
	15	G	W-G	G	W-G	G	W-G	G	W-G	
	16	BR	W-BR	BR	W-BR	BR	W-BR	BR	W-BR	
	17	S	W-S	S	W-S	S	W-S	S	W-S	
	18	W	R-BL	W	R-BL	W	R-BL	(1638—Not convertible.) W (1639)	(1638—Not convertible.) R-BL (1639)	
	19	BL	R-O	BL	R-O	BL	R-O	BL	R-O	1639—Factory equipped and wired
	20	O	R-G	O	R-G	O	R-G	O	R-G	
	21	G	R-BR	G	R-BR	G	R-BR	G	R-BR	
	22	BR	R-S	BR	R-S	BR	R-S	BR	R-S	
	23	S	BK-BL	S	BK-BL	S	BK-BL	S	BK-BL	
	24	W	BK-O	W	BK-O	W	BK-O	W	BK-O	
13	25	BL	Y-S	BL	Y-S	BL	Y-S	BL	Y-S	
14	26	O	V-BL	O	V-BL	O	V-BL	O	V-BL	
15	27	G	V-O	G	V-O	G	V-O	G	V-O	
16	28	BR	V-G	BR	V-G	BR	V-G	BR	V-G	
17	29	S	V-BR	S	V-BR	S	V-BR	S	V-BR	
18	30	W	V-S	W	V-S	W	V-S	W	V-S	

Note : All pickup key positions converted to nonlocking for features in Table B must have P-11E977 insulating details placed over the two key contacts adjacent to the key plunger. Insulating details are furnished with the telephone set. Remove the P-10E837 screw detail entirely from the plunger at the key position to be converted.

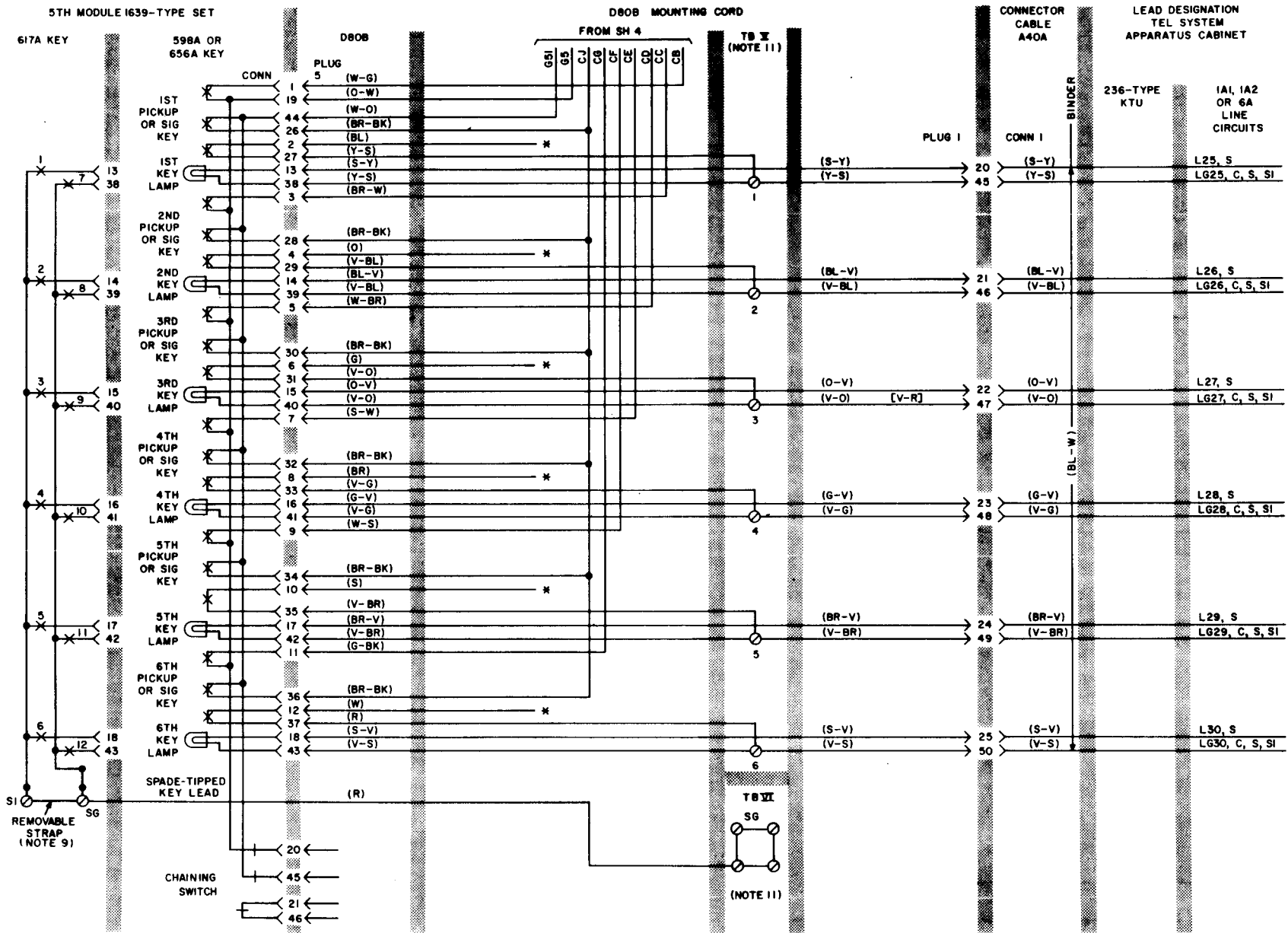


Fig. 3—Module Arrangements and Cord and Cable Connections for 1639-Type Telephone Sets (Sheet 5 of 5)