KEY TELEPHONE SYSTEMS

STATION ARRANGEMENT FOR 2- AND 4-WIRE NO. 5 CROSSBAR CENTRAL OFFICE LINES CONNECTIONS

1. GENERAL

1.01 This section covers the connections required at the apparatus cabinet to provide various arrangements for 4-wire line circuits and transfer circuits. These connections cover the necessary terminations to be made for incoming lines, power supply, key or running cables to the stations, and cross-connections straps within and between the units.

1.02 This section is reissued to:

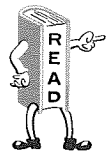
- Change Tables A and C.
- Change Fig. 5.

1.03 Service features for 2-wire central office lines such as illuminated station lamps, holding, etc, are provided by the 1A1 key telephone system. These connections are not covered in this section. For descriptive information and connections for 1A1 units, refer to the appropriate sections under the 1A1 key telephone system.

1.04 The installation procedure for this equipment is the same as for the 1A1 key telephone system.

2. APPARATUS

2.01 For dimensions of each KTU and for features each provides, refer to the related point section covering identification.



Handling of key telephone units sometimes results in damage to wire-spring relays. After mounting, visually inspect all wire-spring relays for:

- ***Improper position of contact springs***
- ***Broken cards***
- ***Improper position of cards.***

2.02 Fig. 1 shows a typical wire-spring relay with the card and springs properly positioned. Other parts are shown merely to aid in identification.

3. POWER SUPPLY

3.01 This equipment is designed to operate from a 20- to 26-volt dc source. A 101G-type power plant may be used to furnish power. A 101G power plant J86731A, List 4 should be provided when 105-volt 20-cycle ringing is required for the audible signals. The power supply from an associated 1A1 key telephone system installation may be used, providing its capacity is adequate. Power supply arrangements and limitations appear in the section covering station systems power supply.

4. INDEX OF CONNECTION FIGURES

REFERENCES: SD-69414-01
SD-69422-01
SD-69294-01

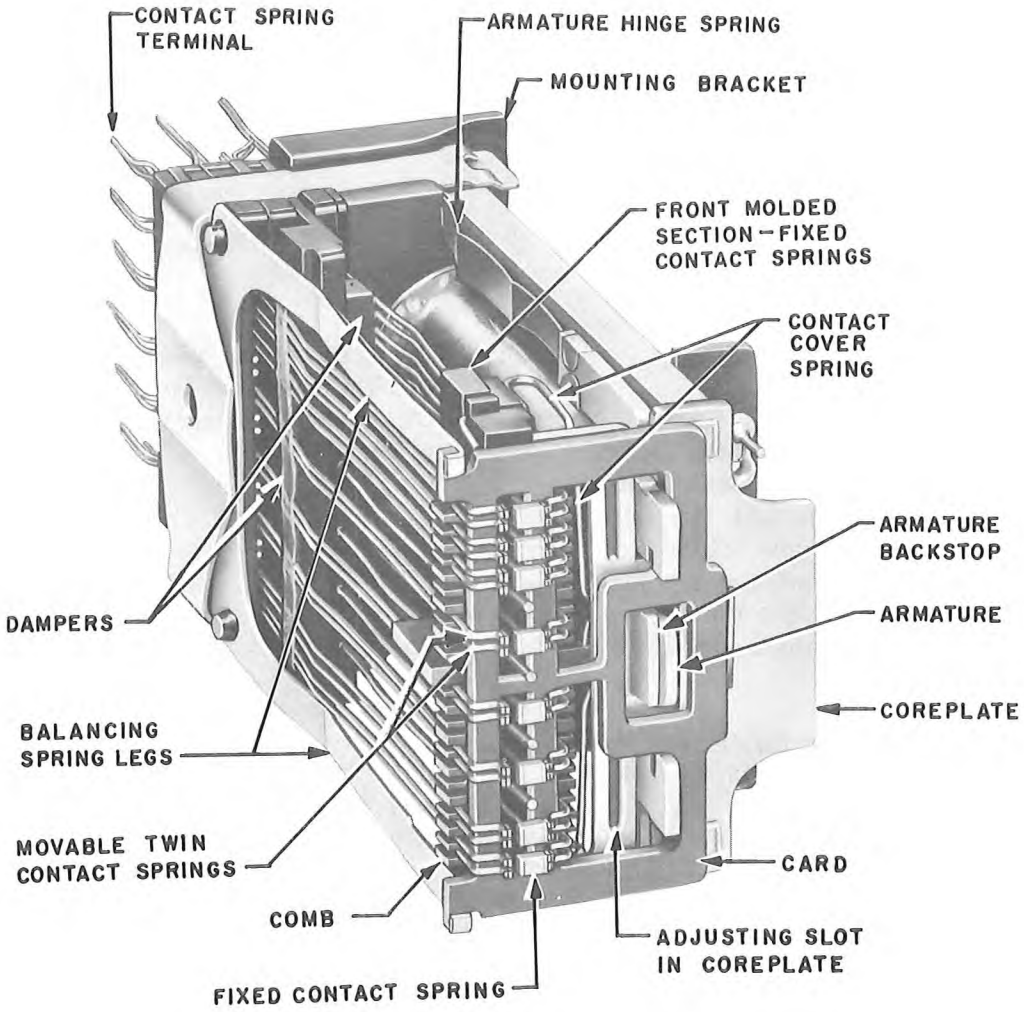


Fig. 1 — Typical Wire-Spring Relay without Cover

TABLE A

WIRING OPTIONS FOR USE WITH FIG. 3, 5, AND 6

Feature or Option			Wiring
Attenuator Pad Ckt (245A KTU) See Table C	Line Transfer Ckt (Fig. 5)	Not Required	L
		Provided	M
	Aux Line Trfr Ckt (Fig. 6) When Indiv Pad Is	Not Provided	H, K
		Provided	H, J
	Aux Line Trfr Ckt (Fig. 6) When Com Pad Is	Not Required	H, K
		Provided	G, K
Common Audible Signaling	Steady		R
	Interrupted		N
	Controlled by Com Aud Control Ckt (227A KTU)		Q
4-Wire Line Ckt Used Without Line Transfer Ckt			T
Special Grade Service with	TOUCH-TONE Calling Sets	Furnished on Class of Service Basis or Not Reqd	Y
		Obtained by Opr SG Key	W
	Rotary Dial Sets	Furnished on Class of Service Basis, Obtained by Dialing Special Code or Not Reqd	X
Auxiliary Service Ringer	Provided		U
	Not Required	Ext Cond Loop Res under 200Ω	
		Ext Cond Loop Res over 200Ω	V
Line Transfer Circuit Used Without Aux Line Trfr Ckt			Z

TABLE B

FUSE REQUIREMENTS

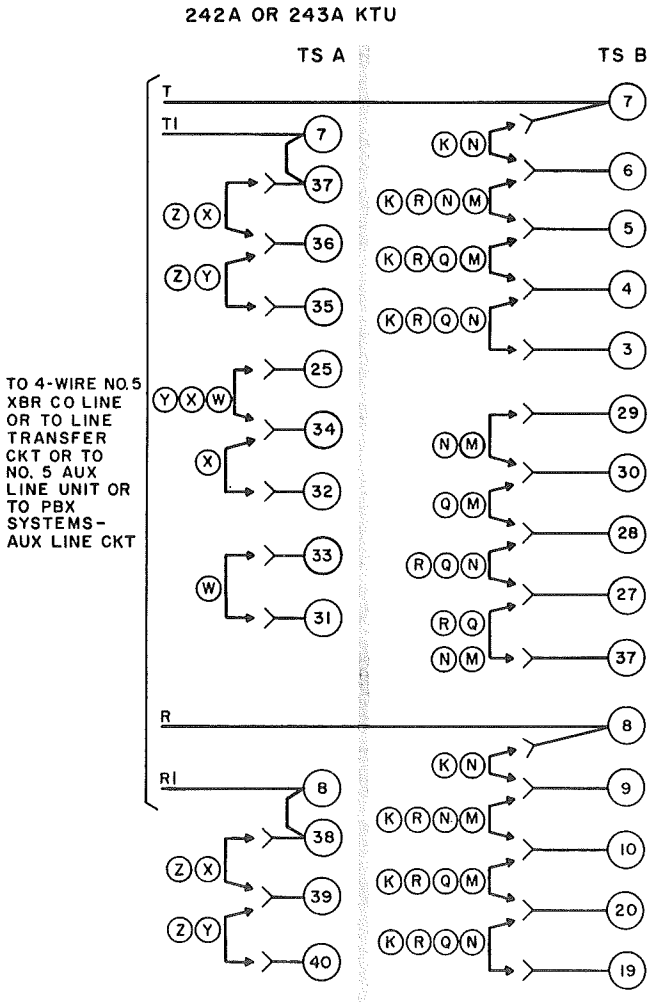
Fuse Amp	Potential	One Per
2	-24V Sig	242 or 243A KTU and Associated Exclusion Control Relay (229B KTU)
2	-24V Sig	All Pickup Relays (229B KTU) Associated with Same Station
2	-24V Sig	240B KTU or 244A KTU and Associated 241A KTU

TABLE C

89-TYPE PLUG-IN RESISTORS FOR USE WITH 245A KTU*

Resistor Code	Pad Loss in DB
89A	0
89E	1
89J	2
89N	3
89T	4
89AA	5
89AE	6
89AJ	7
89AN	8
89AT	9
89BA	10
89BC	11
89BE	12
89BG	13
89BJ	14
89BL	15
89BN	16
89BR	17
89BT	18
89BW	19
89CA	20

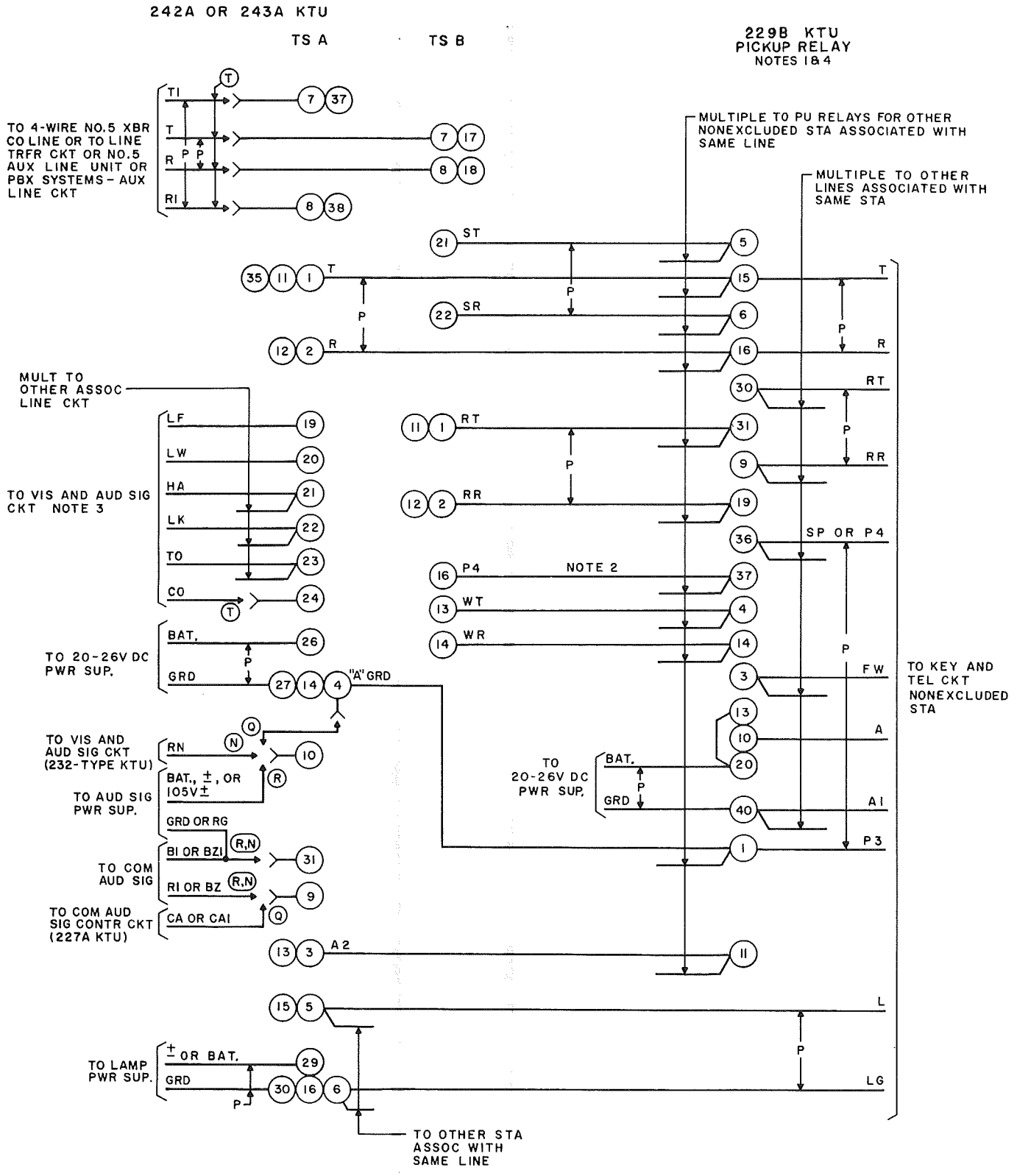
* Resistors must be ordered separately (two per 245A KTU).



TO PROVIDE TRANSMITTING LOSS OF	PROVIDE OPTION
0 DB	Z
2 DB	Y
4 DB	X
6 DB	W
TO PROVIDE RECEIVING LOSS OF	
0 DB	K
4 DB	R
6 DB	Q
8 DB	N
10 DB	M

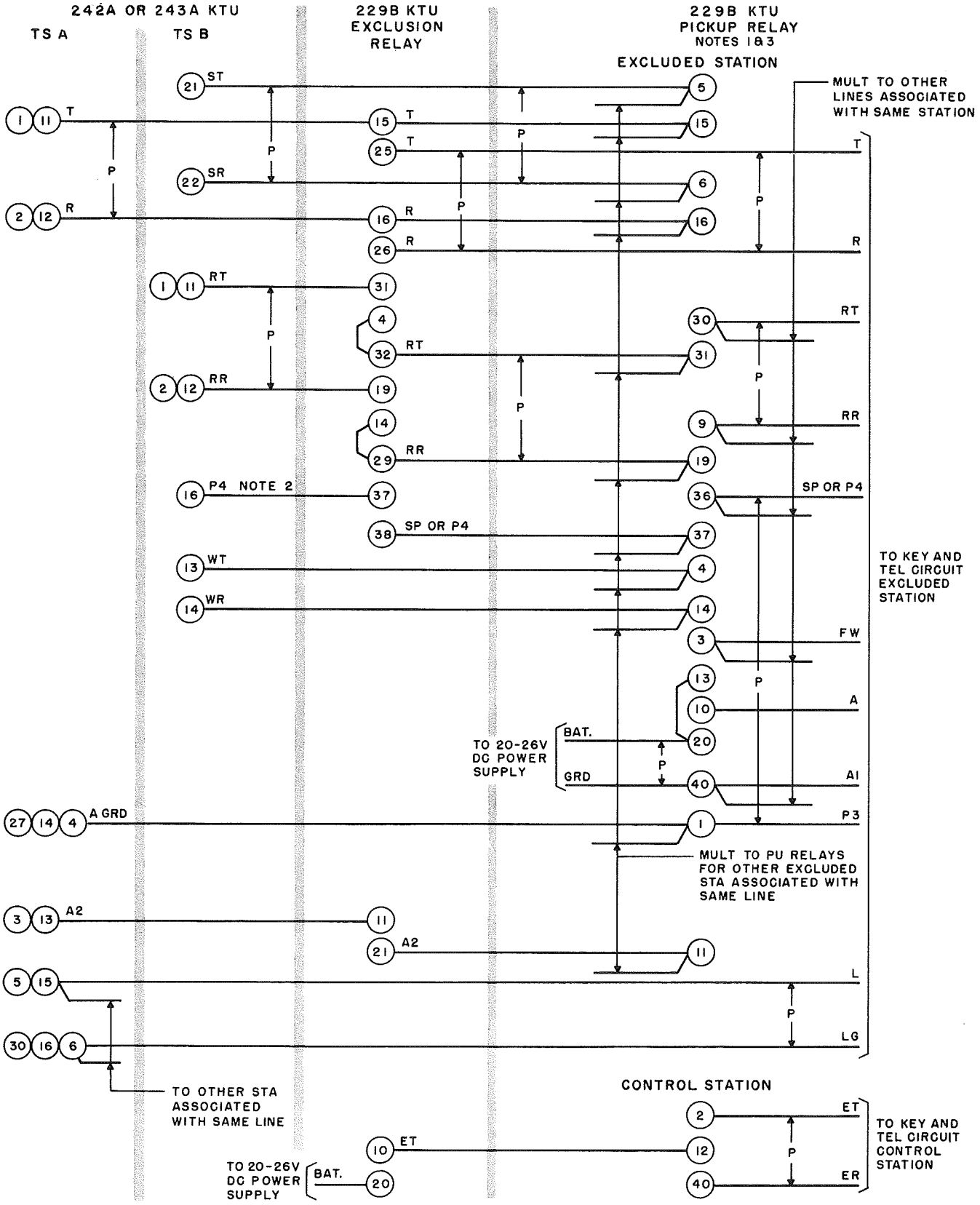
Note: The options shown are added to the external loop loss to obtain the desired 8 db for the transmit pair and 12 db for the receive pair.

Fig. 2 — Transmission Pad Options



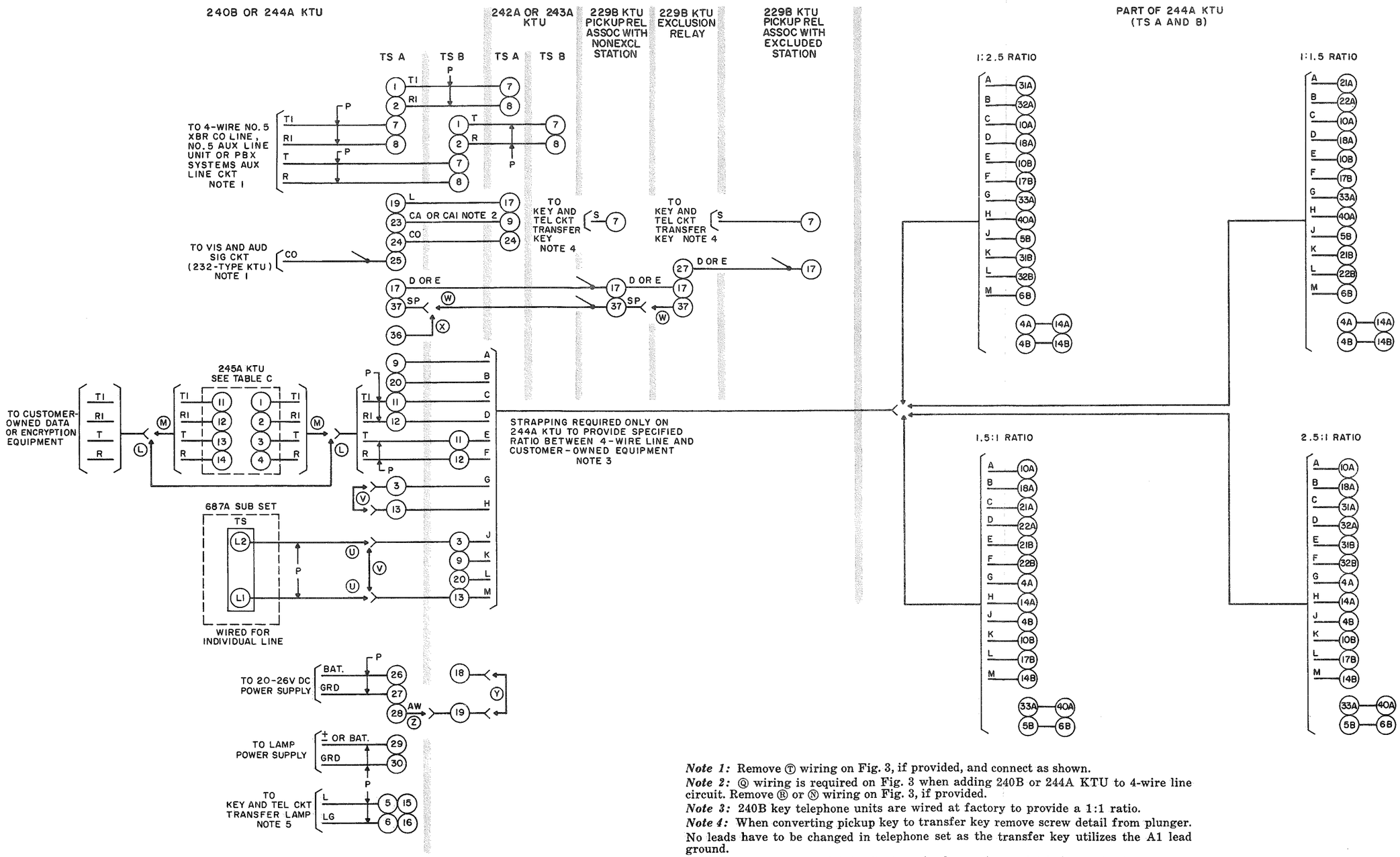
Note 1: Provide one pickup relay (229B KTU) per station per 4-wire line.
Note 2: Required only on 243A KTU.
Note 3: For steady visual hold signal instead of lamp wink, omit HA and LW leads. Connect lamp battery to terminal 20.
Note 4: See Fig. 5 and 6 (if provided) for additional connections when nonexcluded stations are added to an existing system.

Fig. 3 — 4-Wire Line Circuit Connections for Nonexcluded Stations



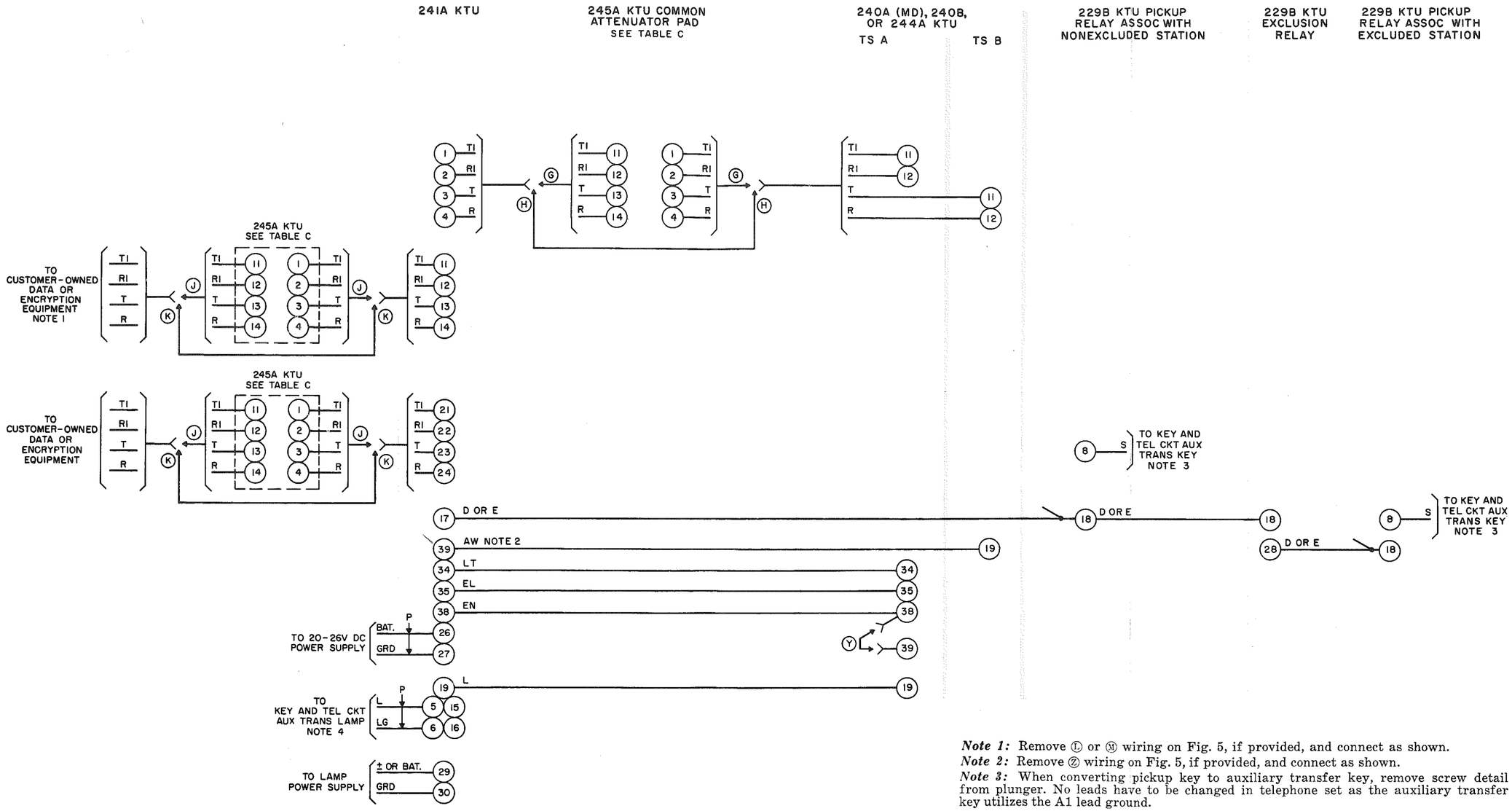
Note 1: Provide one pickup relay (229B KTU) per station per 4-wire line.
Note 2: Required only on 243A KTU.
Note 3: See Fig. 5 and 6 (if provided) for additional connections when excluded stations are added to an existing system.

Fig. 4 — 4-Wire Line Circuit Connections for Excluded Stations



Note 1: Remove Ⓣ wiring on Fig. 3, if provided, and connect as shown.
Note 2: Ⓠ wiring is required on Fig. 3 when adding 240B or 244A KTU to 4-wire line circuit. Remove Ⓡ or Ⓝ wiring on Fig. 3, if provided.
Note 3: 240B key telephone units are wired at factory to provide a 1:1 ratio.
Note 4: When converting pickup key to transfer key remove screw detail from plunger. No leads have to be changed in telephone set as the transfer key utilizes the A1 lead ground.
Note 5: Use lamp associated with transfer key at key and telephone circuit.

Fig. 5 — Connections for Line Transfer Circuit



Note 1: Remove Ⓛ or Ⓜ wiring on Fig. 5, if provided, and connect as shown.

Note 2: Remove Ⓩ wiring on Fig. 5, if provided, and connect as shown.

Note 3: When converting pickup key to auxiliary transfer key, remove screw detail from plunger. No leads have to be changed in telephone set as the auxiliary transfer key utilizes the A1 lead ground.

Note 4: Use lamp associated with auxiliary transfer key at key and telephone circuit.

Fig. 6 — Connections for Auxiliary Line Transfer Circuit