

STATION LINE CONCENTRATORS

235- AND 236-TYPE KEY TELEPHONE UNITS

IDENTIFICATION AND CONNECTIONS

1. GENERAL

1.01 This section is reissued to:

- Add ordering information on D-180240 Kit of Parts
- Add schematic of station busy lamp printed wiring board assembly
- Add SD and CD references

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

1.02 When a 446F diode and 185A network is added to the 235A (MD) or 236A (MD) KTU, they become identical to the 235B and 236B, respectively.

2. IDENTIFICATION

PURPOSE

- The 235- and 236-type key telephone units (Fig. 1 and 2) are used to reduce the number of conductors required to connect key system line circuit units and CALL DIRECTOR® concentrator telephone sets or large capacity 400-type key mountings.

APPLICATION

- The 235- and 236-type KTUs may be used with 1A1, 1A2, or 6A key telephone systems.

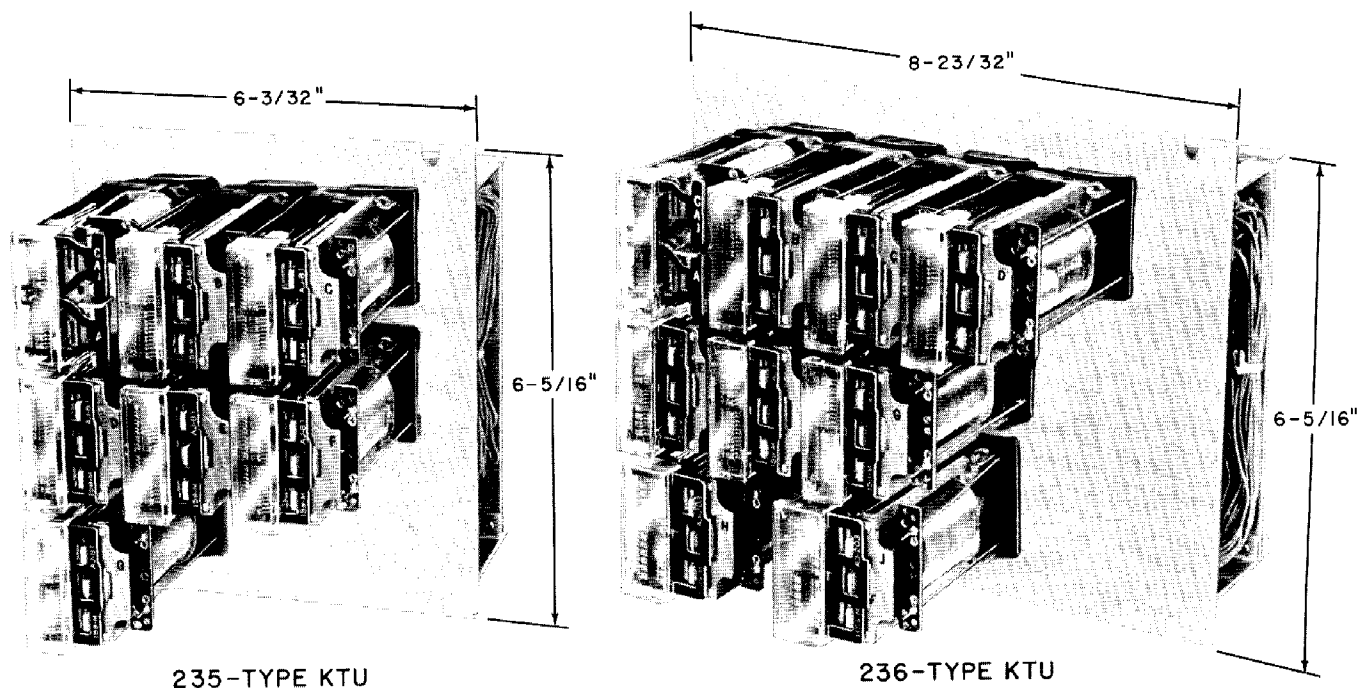


Fig. 1 — Station Line Concentrator KTUs, Front View

- A 235B key telephone unit can be used as a station line concentrator for a maximum of 18 line circuits in conjunction with 634-, 638-, or their equivalent TOUCH-TONE® type CALL DIRECTOR telephone set. A 236B key telephone unit is used for a maximum of 30 lines with 635-, 639-, or their equivalent TOUCH-TONE type set or 400-type key mountings. More than one 236B KTU may be required with larger 400-type key mountings where the number of lines exceed 30, with a maximum of 120 lines. Station line concentrator units must be supplied on a per station basis.

ORDERING GUIDE

Unit, Telephone, Key, 235B

Unit, Telephone, Key, 236B

(a) *Optional Components (ordered and installed separately)*

- P-90D033 Printed Wiring Board Assembly*

- Diode, 446F (for 235A (MD) and 236A (MD) KTU)
- Diode, 400(†) (for 235A (MD) and 236A (MD) KTU)
- Network, 185A (for 235A (MD) and 236A (MD) KTU)

* D-180240 Kit of Parts

† Add type suffix

DESIGN FEATURES

- Circuitry for connecting a common transmission pair and control lead through a combination of two switching relays to the selected line circuit.
- Option of common audible or individual line ringer.
- Power failure option when common audible is not required.
- Common audible with power failure.

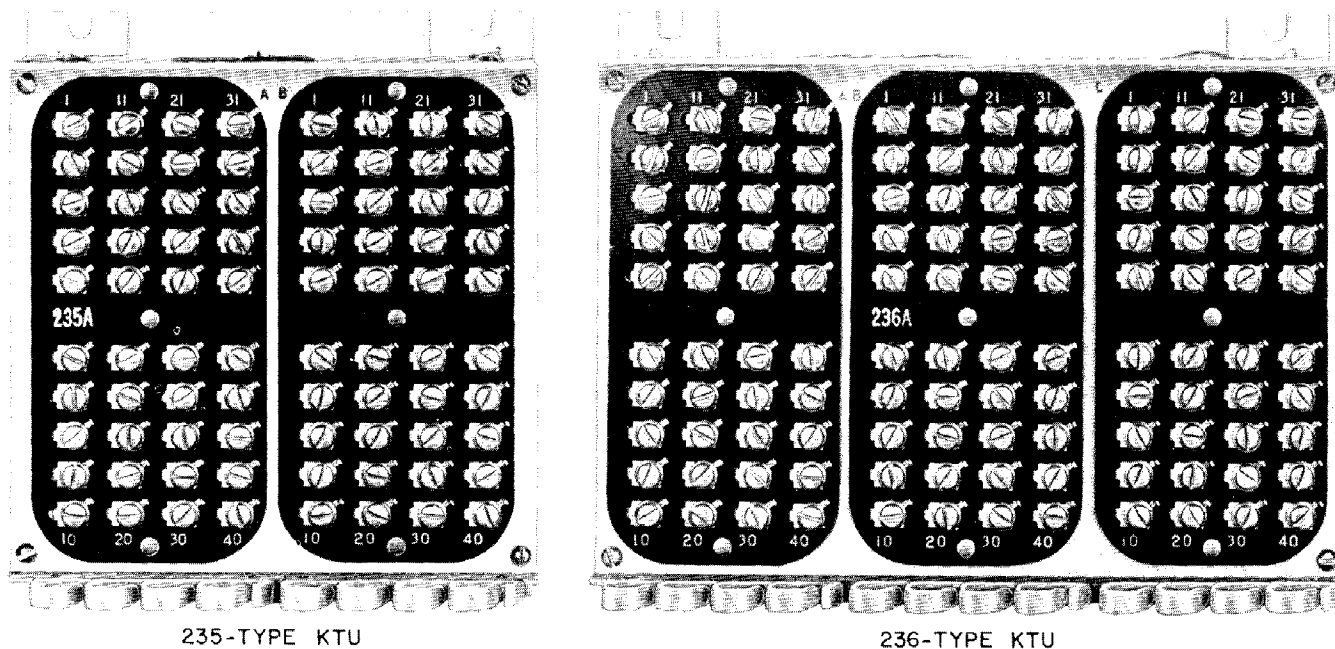


Fig. 2 — Station Line Concentrator KTUs, Rear View

3. CONNECTIONS

3.01 All lamp control, speakerphone, and A1 leads from CALL DIRECTOR or 400-type key mountings bypass station concentrator units and are wired directly to the station line unit.

3.02 When the busy lamp feature is furnished in CALL DIRECTOR telephone sets equipped with head set jacks (638-, 639-, and equivalent TOUCH-TONE types), a D-180240 Kit of Parts (P-90D033) must be added to the 235- or 236-type KTU as shown in Fig. 4 or 6.

3.03 Modification of 235A and 236A KTUs are required when used with 400D KTUs. The modification prevents a false-hold condition or damage to the Q3 transistor in the 400D KTU caused by large transient voltages occurring when the associated concentrator type CALL DIRECTOR set goes on-hook. Modification of concentrator units is not required when used with 1A1, KTS, or 400B or 400C in 1A2 KTS.

CONNECTION INDEX

Table A — Options

Fig. 3 — Connections for 235-Type KTU When Used With 634-, 635-, and Their Equivalent TOUCH-TONE Telephone Sets

Fig. 4 — Connections for 235-Type KTU When Used With 638-, 639-, and Their Equivalent TOUCH-TONE Telephone Sets

Fig. 5 — Connections for 236-Type KTU When Used With 634-, 635-, and Their Equivalent TOUCH-TONE Telephone Sets

Fig. 6 — Connections for 236-Type KTU When Used With 638-, 639-, and Their Equivalent TOUCH-TONE Telephone Sets

For other information, refer to:

SD and CD-69498-01 (Key Telephone System No. 6A, 1A1, and 1A2, Station Line Concentrator, 634-, 635-, 1634-, and 1635-Type Telephone Set Circuits)

SD and CD-69499-01 (Key Telephone System No. 1A1, 1A2, and 6A Station Line Concentrator Key and Telephone Circuit, 638-, 1638-, 639-, and 1639-Type Telephone Sets)

SD and CD-69513-01 (Key Telephone System No. 1A2, CO or PBX Line Circuits)

SD and CD-69580-01 (Key Telephone System No. 1A1 or 1A2, Station Busy Lamp Circuit)

TABLE A

OPTIONS

FEATURE	KTU							
	235				236			
	A		B		A		B	
	634-, 635-, AND TOUCH-TONE EQUIVALENT TYPE TELEPHONE SET	638-, 639-, AND TOUCH-TONE EQUIVALENT TYPE TELEPHONE SET	634-, 635-, AND TOUCH-TONE EQUIVALENT TYPE TELEPHONE SET	638-, 639-, AND TOUCH-TONE EQUIVALENT TYPE TELEPHONE SET	634-, 635-, AND TOUCH-TONE EQUIVALENT TYPE TELEPHONE SET	638-, 639-, AND TOUCH-TONE EQUIVALENT TYPE TELEPHONE SET	634-, 635-, AND TOUCH-TONE EQUIVALENT TYPE TELEPHONE SET	638-, 639-, AND TOUCH-TONE EQUIVALENT TYPE TELEPHONE SET
Common Audible	X	X	X	X	Y	Y	Y	Y
Power Failure	W	W	W	W	Z	Z	Z	Z
Common Audible With Power Failure	J	H	J	H	K	J	K	J
With Station Busy Lamp Circuit	M	G	M	G	M	G	M	G
Without Station Busy Lamp Circuit	E	F	-	-	E	F	-	-
Individual Line Signaling	V	V	V	V	T	T	T	T
Not Associated With 400D KTU	F	B	-	-	F	B	-	-
Associated With 400D KTU in No. 1A1 KTS	G	E	-	-	G	E	-	-
29 Lines With Hold	-	-	-	-	R	K	R	K
30 Lines Without Hold	-	-	-	-	N	M	N	M

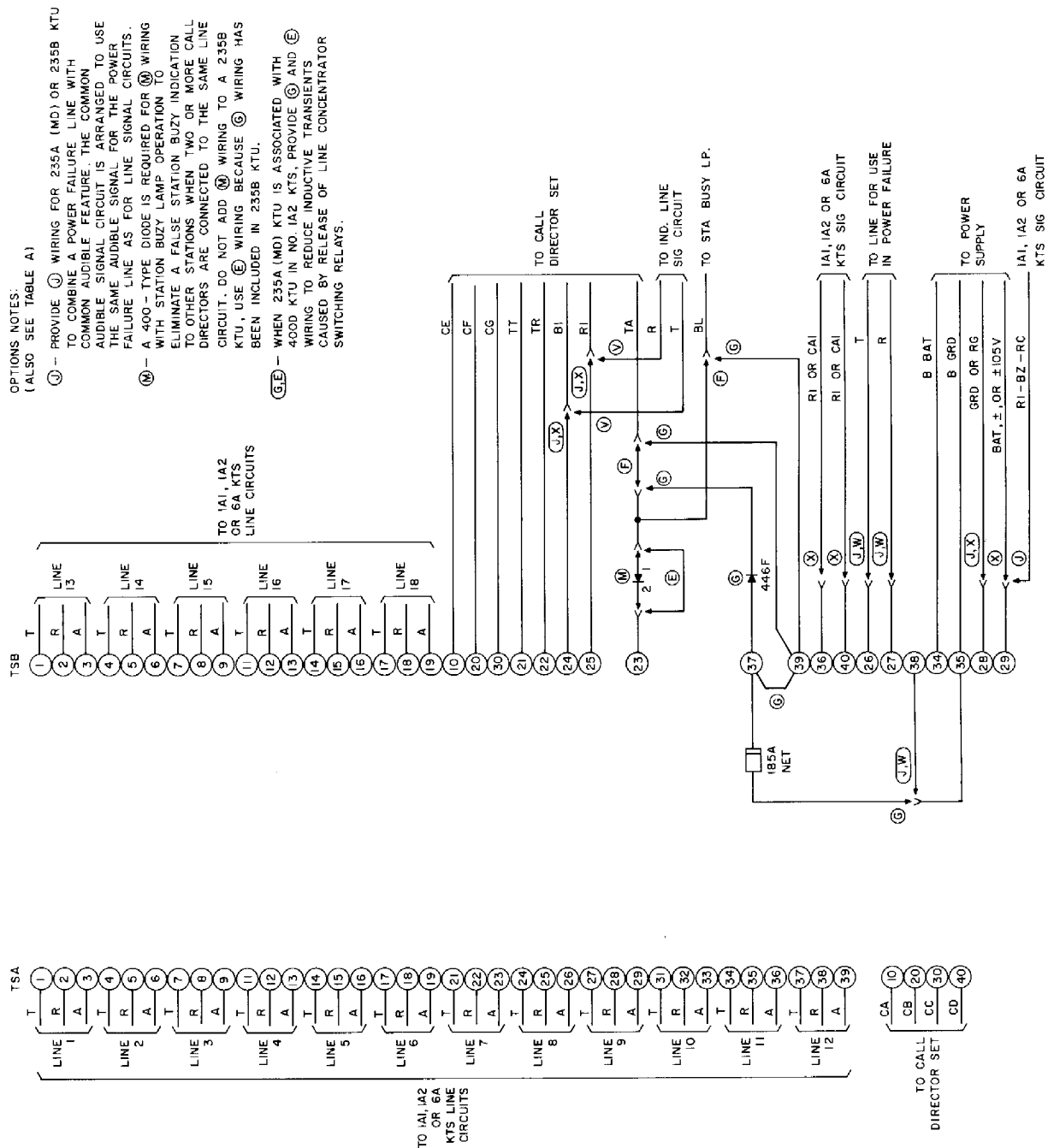


Fig. 3 — Connections for 235-Type KTU When Used With 634-, 635-, and Their Equivalent TOUCH-TONE Telephone Sets

OPTION NOTES:
(ALSO SEE TABLE A)

(H) — PROVIDE (H) WIRING FOR 235A (MD) OR 235B KTU TO COMBINE A POWER FAILURE LINE WITH COMMON AUDIBLE FEATURE. THE COMMON AUDIBLE SIGNAL CIRCUIT IS ARRANGED TO USE SAME AUDIBLE SIGNAL FOR THE POWER FAILURE LINE AS FOR THE LINE SIGNALING CIRCUIT.

(G) — WHEN TWO OR MORE CALL DIRECTORS ARE CONNECTED TO THE SAME LINE CIRCUIT, A 400-TYPE DIODE OR EQUIVALENT IS REQUIRED TO PREVENT A FALSE BUSY INDICATION WHEN USING 235A (MD) KTU. DO NOT ADD (G) WIRING TO A 235B KTU. USE (F) WIRING BECAUSE (E) WIRING HAS BEEN INCLUDED IN 235B KTU.

(EF) — WHEN 235A (MD) KTU IS ASSOCIATED WITH 400D KTU IN NO. 1A2 KTS, PROVIDE (E) AND (F) WIRING TO REDUCE INDUCTIVE TRANSIENTS CAUSED BY RELEASE OF LINE CONCENTRATOR SWITCHING RELAYS.

(47,2) — THE HOLD KEY OF THE 639 OR TOUCH-TONE EQUIVALENT TELEPHONE SET MAY NOT BE CONVERTED TO A PICKUP KEY BY REPLACING THE 559A KEY WITH A 598A KEY IF OPTIONS (1), (2) OR (3) ARE TO BE USED.

* D-161488 CONNECTOR
† WHEN P-900033 PROVIDED
(E) WIRING MUST BE PROVIDED WHEN P-900033 IS ADAPTED TO KTU.

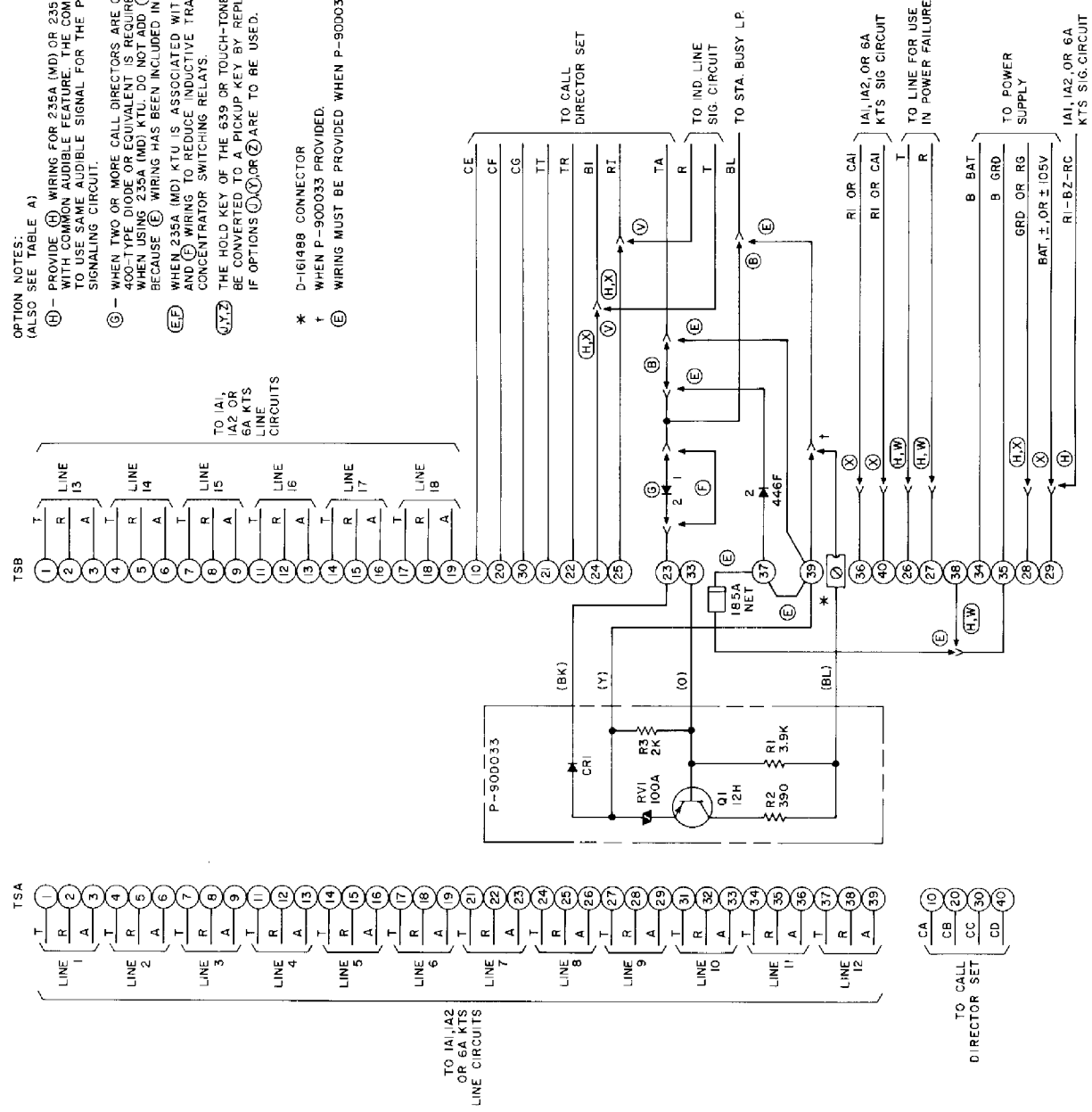


Fig. 4 — Connections for 235-Type KTU When Used With 638-, 639-, and Their Equivalent TOUCH-TONE Telephone Sets

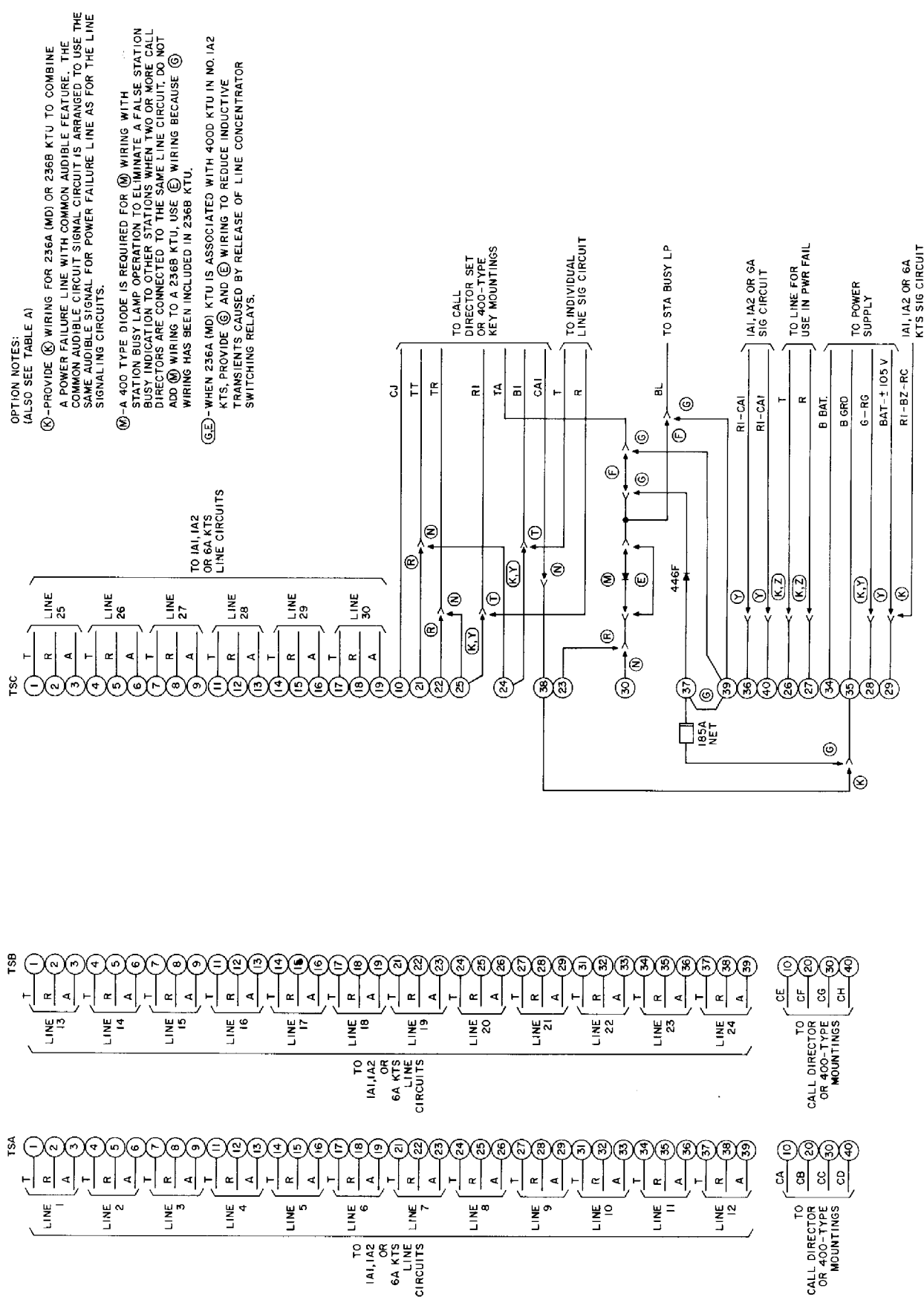


Fig. 5 — Connections for 236-Type KTU When Used With 634-, 635-, and Their Equivalent TOUCH-TONE Telephone Sets

