

2A FARM INTERPHONE

CONNECTIONS AND MODIFICATIONS

1.00 GENERAL

1.01 This section covers the connection of station apparatus and the modification of telephone sets used with the 2A farm interphone. It is re-issued to:

- Add diode across the winding of the K_2 relay in the 54A control unit for transistor protection. ↗
- Add descriptive information on the schematic drawing of the 54A control unit.
- Include a brief operational description of the 54A control unit. ↘

1.02 Because of the limitations of the amplifier, the maximum number of telephone sets equipped with loudspeakers which may be connected to this system is as follows:

Monitor station	1 or 2
Remote stations	2 or 3
	4
Total telephones	4

1.03 The maximum number of loudspeaker units which may be connected to the system is as follows:

Indoor type (759B)	1 or 2
Indoor type (760A)	1 to 5
Outdoor type (KS-16846, List 1)	1 to 3
	6
Total loudspeakers	6

1.04 A G5KR hand set must be ordered as a separate item and substituted for the original handset at each telephone set. This substitution is made in the field.

1.05 Locate the 54A control unit as close as practicable to the monitor station.

2.00 CONNECTIONS AND SCHEMATICS

2.01 Connections and schematics are shown as follows:

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2.02 When controlled by a 687B subscriber set, the E1B ringer may be used on the following services:

- 4-party selective
- 8-party selective

3.00 MODIFICATIONS

Telephone set modifications are shown in Tables A, B, and C.

4.00 GENERAL OPERATIONAL DESCRIPTION

4.01 One monitor station or two stations are the central part of the 2A farm interphone. It monitors all sounds in the vicinity of the remote microphone loudspeaker locations. There is a volume control at the monitor location to regulate the output volume. This control is shunted out over the SA lead when any remote station calls over the handset to the monitor location.

4.02 All remote loudspeakers are bridged at the 54A control unit on the primary winding of the T1 transformer.

4.03 The quieting relay, K1B, is operated when any two locations are talking handset to handset on intercom, and either of the stations momentarily depresses the quieting pushbutton. The relay locks up under control of the handsets. In operating, this relay opens the input leads to the amplifier, and keeps all sounds out of the loudspeakers.

4.04 The push-to-talk K1A relay is operated from any location where the line key is in the intercom position and the handset push-to-talk button is depressed. This station is on the input of the amplifier as long as the button is held operated. The amplifier is reversed and all loudspeakers will be on the output at this time.

TABLE A

511C/D TELEPHONE SET MODIFICATION

Feature	Wire or Lead	From Term.	To Term.
Hold Key	BL	E1	1
	W	E2	2
	G-Y	2	Tape
	R-Y	1	Tape
Switch-hook	S	10	E2
	S-G	9	E1
	S-W	7	E1
Push-to-Talk G5KR Hand Set	BK		10
	BK		7
	W		R
	W		GN
	R		R
	R		B

TABLE B

558C/D TELEPHONE SET MODIFICATION

Feature	Wire or Lead	From Term.	To Term.
Hold Key	W	6	2
	G-Y	6	Tape
	BL	5	1
	R-Y	5	Tape
Switch-hook	S	10	E2
	S-G	9	E1
	S-W	9	E1
Push-to-Talk G5KR Hand Set	BK		10
	BK		7
	W		R
	W		GN
	R		R
	R		B

TABLE C

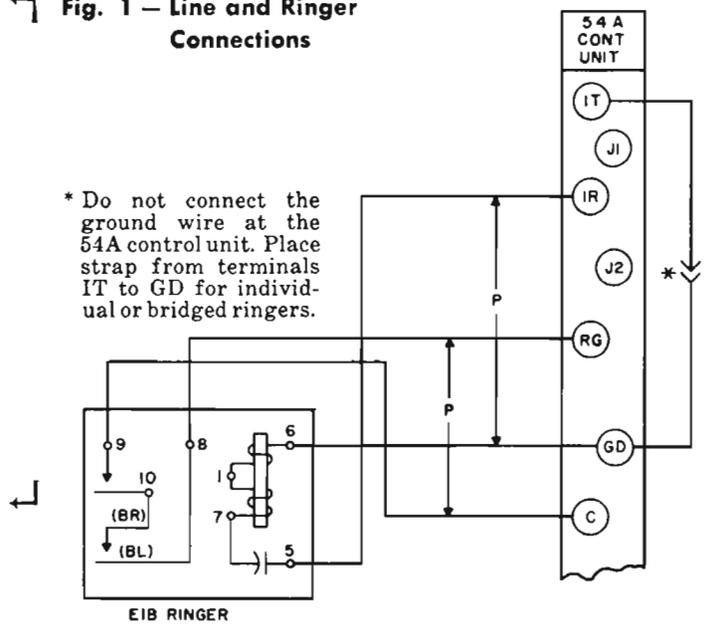
711B TELEPHONE SET MODIFICATION

Feature	Wire or Lead	From Term.	To Term.
Hold Key	BL(2)	E1	1
	W	E2	2
	G-Y	2	Tape
	R-Y	1	Tape
Switch-hook	S	10	E2
	S-BR	9	E1
	S-Y	7	E1
Push-to-Talk G5KR Hand Set	BK		10
	BK		7
	W		R
	W		GN
	R		R
	R		B

4.05 The battery feed relay, *K2*, operates when any handset is off the hook and the turn key turned to intercom. This transfers the monitor loudspeaker to bridge the input of the preamplifier. In 4.04 the reverse is explained: all loudspeakers are on the output when a handset push-to-talk button is operated.

4.06 Tone ringing from the central office line is a reproduction of central office ringing over the loudspeakers. A strap between *J1* and *J2* must be placed. Then contacts of the *E1B* ringer will operate the *K3* or ring relay. Only a one-wire takeoff from the ring of the line is necessary for the amplifier input. Direct ringing current does not reach any part of the amplifier.

Fig. 1 — Line and Ringer Connections



CENTRAL OFFICE LINE CONNECTIONS

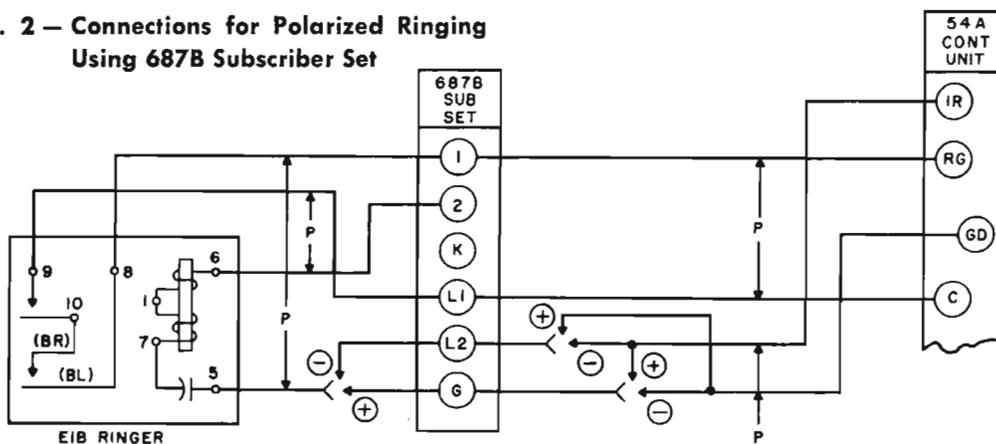
Class of Service	R	T	G
Ind or Bridged	IR	IT	*
Ring Party	IR	IT	GD
Tip Party	IT	IR	GD

Note 1: Wire the *E1B* ringer directly to the 54A control unit. Use a quad *JKT* inside wire for this connection.

Note 2: Terminate the central office line directly to the 54A control unit.

Note 3: Tip party identification is not provided with the *E1B* ringer.

Fig. 2 — Connections for Polarized Ringing Using 687B Subscriber Set



CENTRAL OFFICE LINE CONNECTIONS

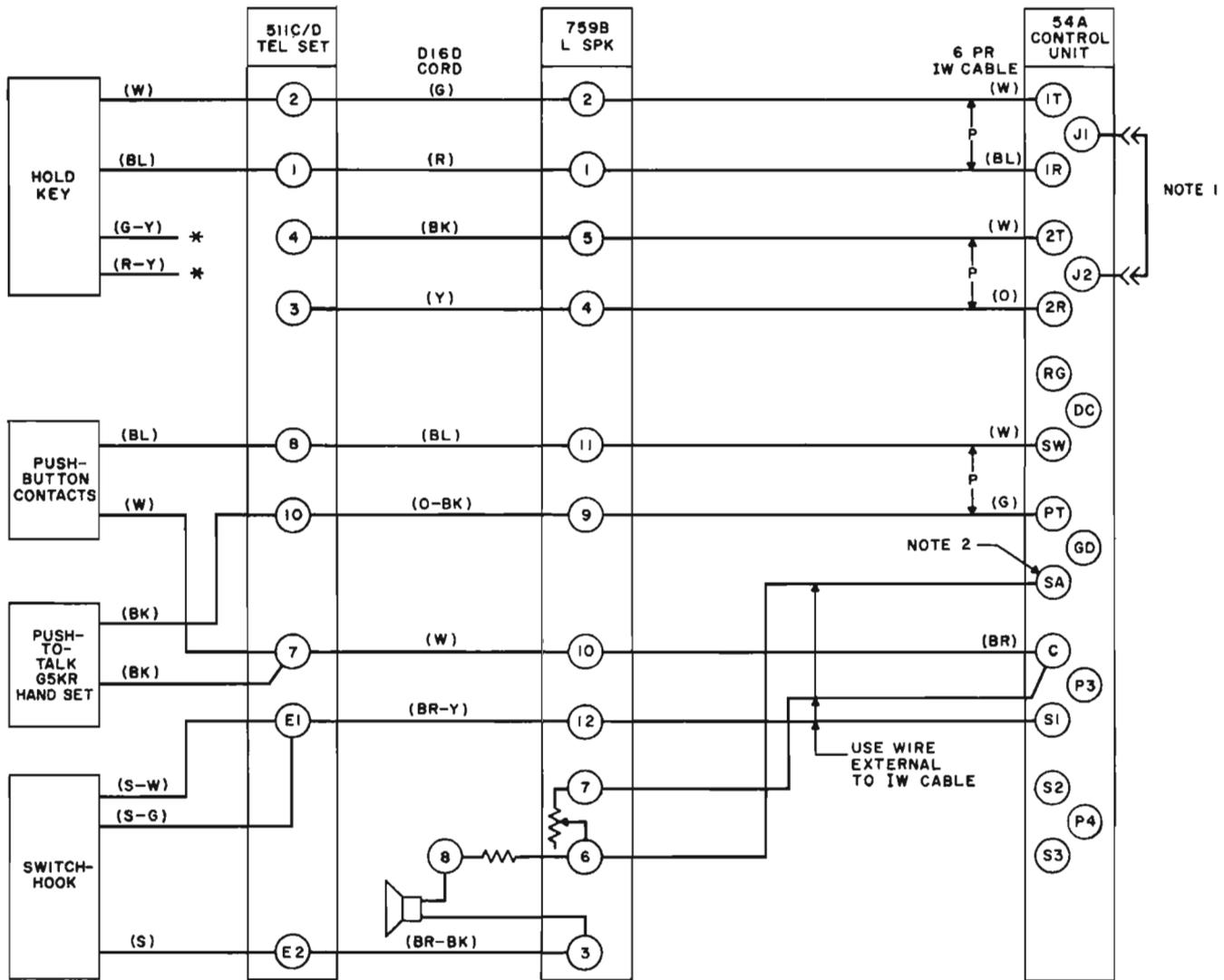
Class of Service	R	T	G
All Pos and Neg Ring Parties	IR	IT	GD
All Pos and Neg Tip Parties	IT	IR	GD

Note 1: To modify wiring in the 687B subscriber set, move *BR-BL* wire from terminal 1 to terminal *L2* for all positive tip and ring parties, and to terminal 6 for all negative tip and ring parties.

Note 2: Terminate the central office line directly to the 54A control unit.

⊖ Wiring for tip and ring negative parties.

⊕ Wiring for tip and ring positive parties.



Note 1: Place strap when tone signaling is required at monitor station.

Note 2: Connect to SA terminal only for the first monitor station. Connect no other wires at this terminal.

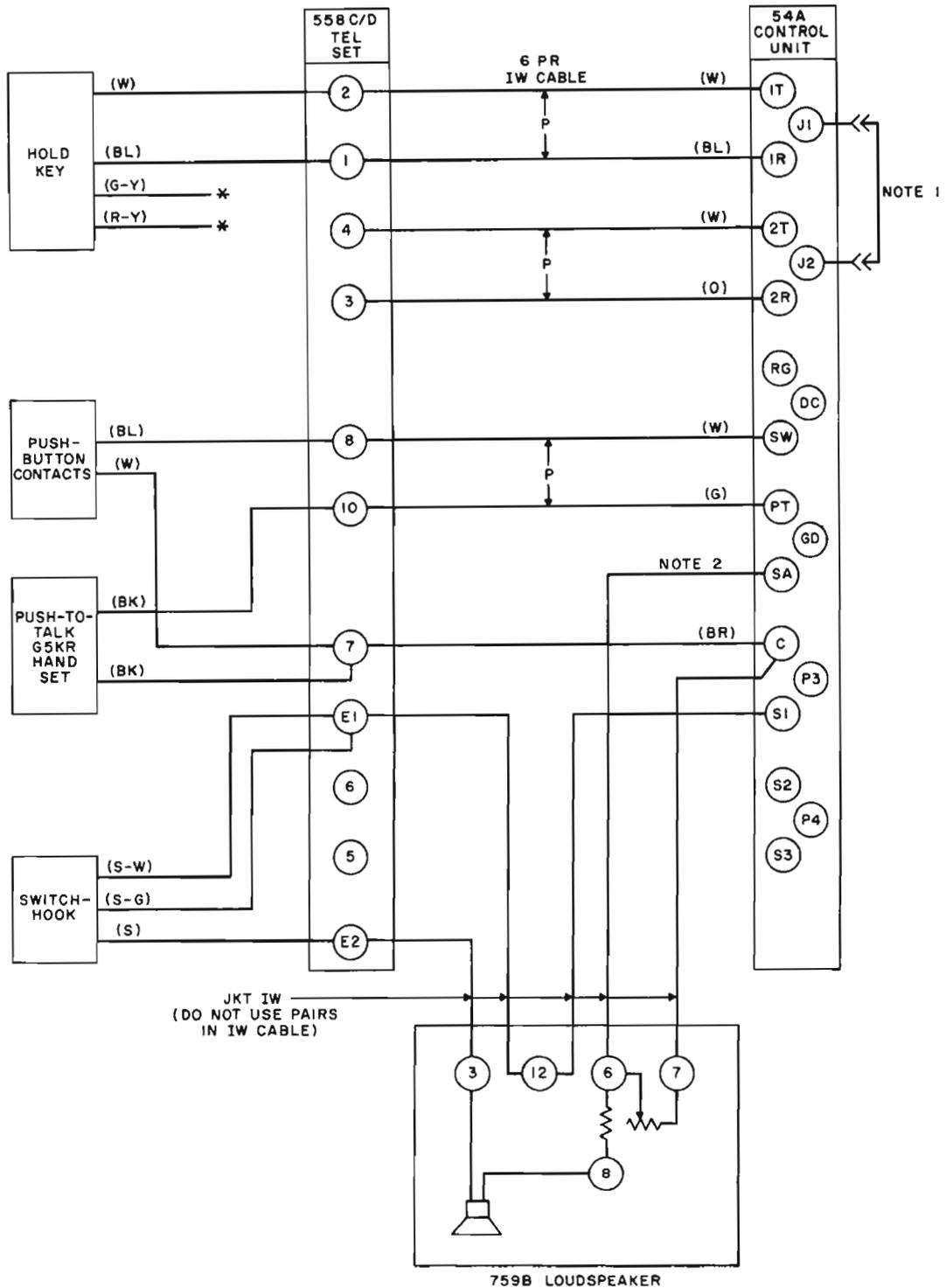
Note 3: Ringer connections are shown in Fig. 1 and 2.

Note 4: Use separate external wiring for loudspeaker leads at monitor station.

Note 5: Tape and store all unused cord conductors at terminal block of 759B loudspeaker.

* Tape individually and store.

Fig. 3 – Monitor Station Using 511C/D Telephone Set with 759B Loudspeaker, Connections



Note 1: Place strap when tone signaling is required at monitor station.

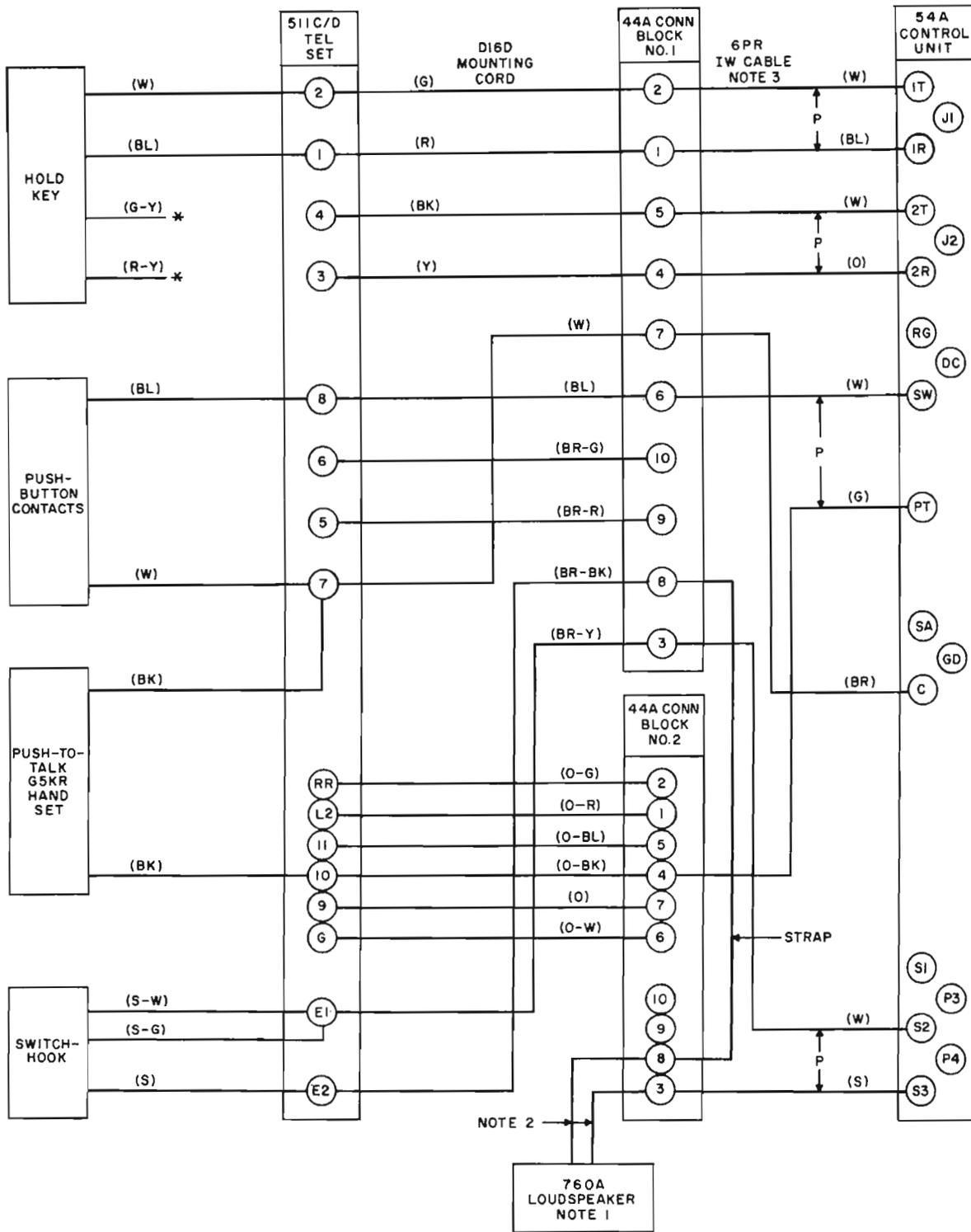
Note 2: Connect wire to SA terminal only for the first monitor station. Connect no other wires at this terminal.

Note 3: Ringer connections are shown in Fig. 1 and 2.

Note 4: Use separate external wiring for loudspeaker leads at monitor station.

* Tape and store.

Fig. 4 — Monitor Station Using 558C/D Telephone Set with 759B Loudspeaker, Connections



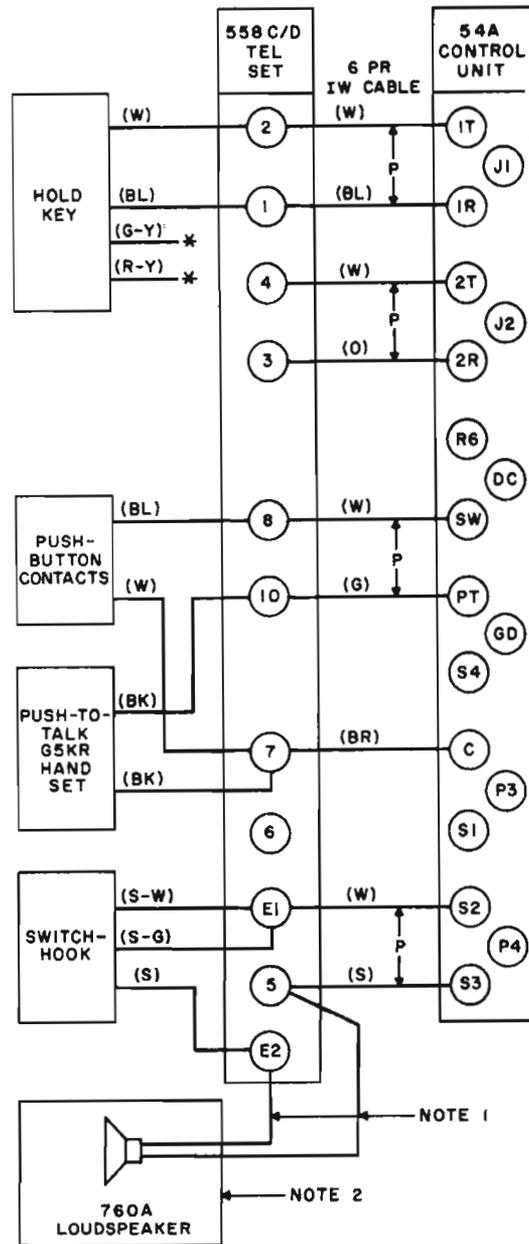
Note 1: KS-16846, List 1 outdoor loudspeaker may be substituted at remote station locations.

Note 2: Use R2FK cord furnished with 760A loudspeaker or paired JKT inside wire as appropriate.

Note 3: In order that the mounting cord conductors may be terminated on the proper terminals at the connecting block, the IW cable is cut down in a nonstandard sequence.

* Tape individually and store.

Fig. 6 – Remote Station Using 511C/D Telephone Set with 760A Loudspeaker, Connections

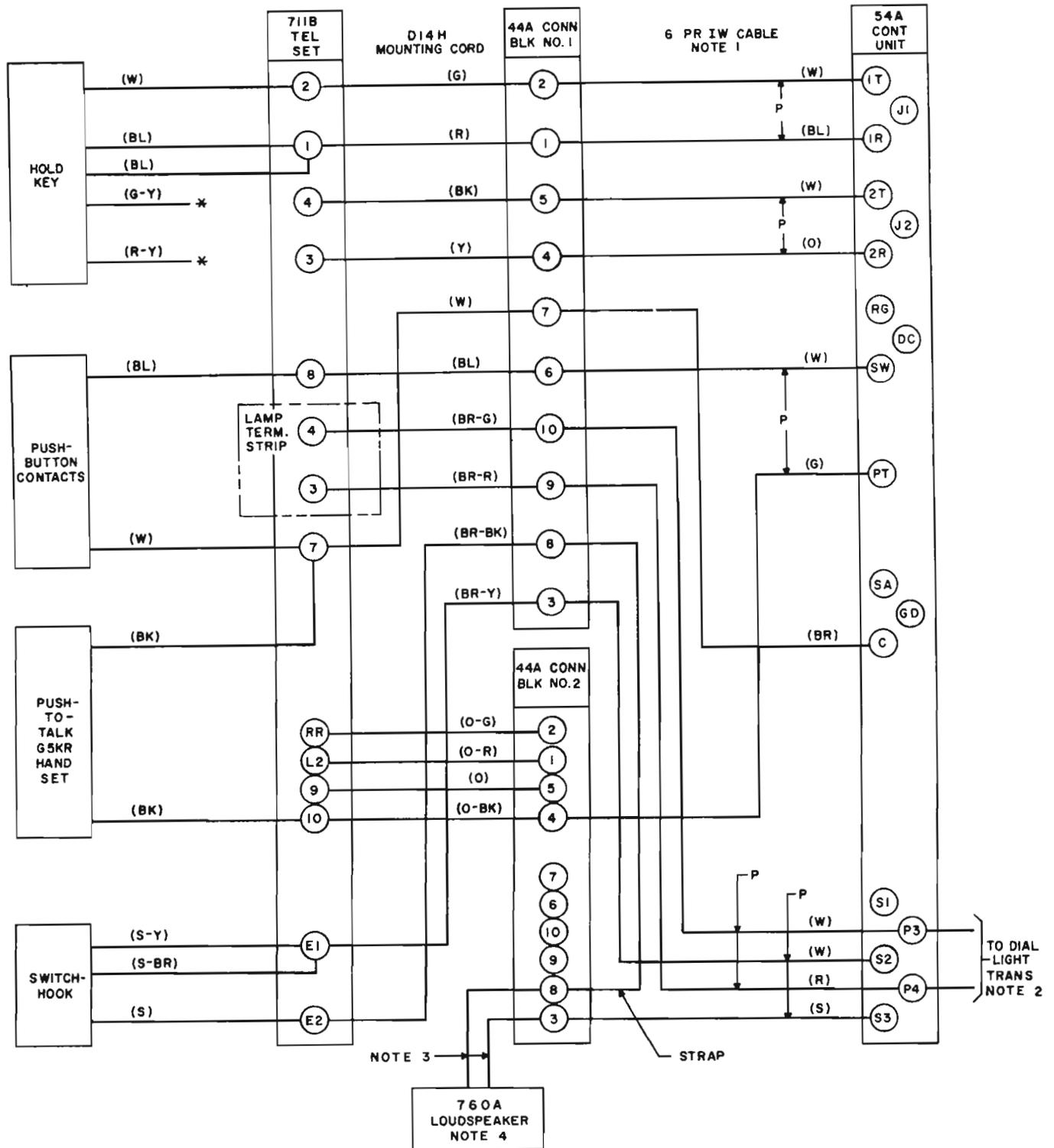


Note 1: Use R2FK cord furnished with 760A loudspeaker, or paired JKT inside wire, as appropriate.

Note 2: KS-14846, List 1 outdoor loudspeaker may be substituted at remote station locations.

* Tape individually and store.

Fig. 7 — Remote Station Using 558C/D Telephone Set with 760A Loudspeaker, Connections



Note 1: In order that the mounting cord conductors may be terminated on the proper terminals at the connecting block, the IW cable is cut down in a nonstandard sequence.

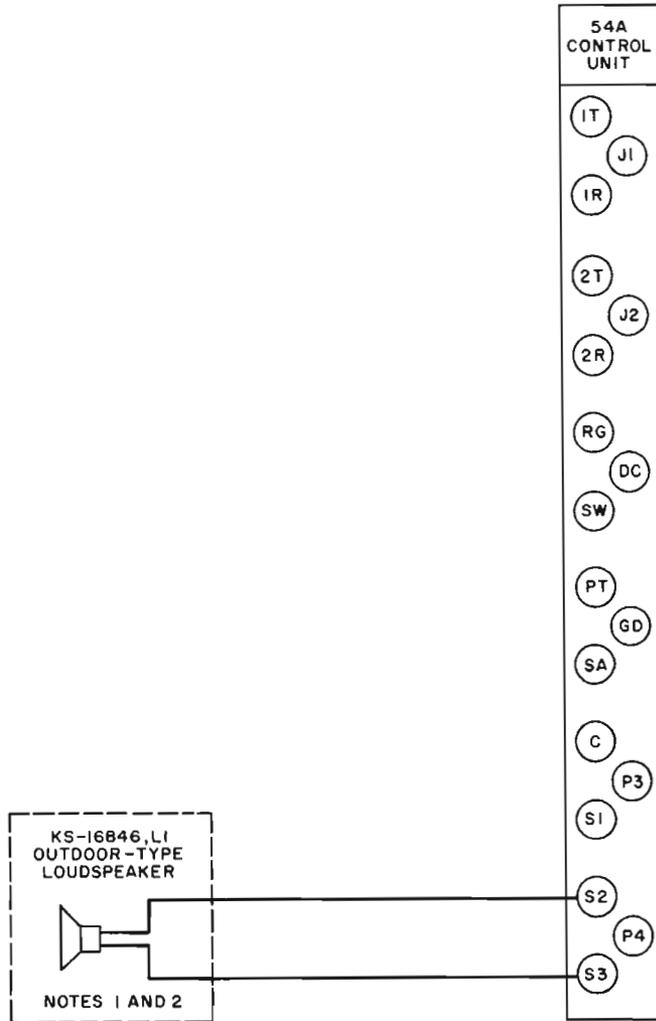
Note 2: One transformer required per dial light. If lead exceeds 150 feet of IW or drop wire or 100 feet of multiple drop wire, locate transformer nearer to 711B telephone set.

Note 3: Use R2FK cord furnished with 760A loudspeaker, or paired JKT inside wire as appropriate.

Note 4: KS-16846, List 1 outdoor loudspeaker may be substituted at remote station locations.

* Tape individually and store.

Fig. 8 — Remote Station Using 711B Telephone Set with 760A Loudspeaker, Connections



Note 1: Maximum of five remote loudspeaker units per system. No more than three of the outdoor type.

Note 2: 760A loudspeaker may be substituted at indoor locations.

Fig. 9 – Connections for Remote Loudspeaker-Only Locations

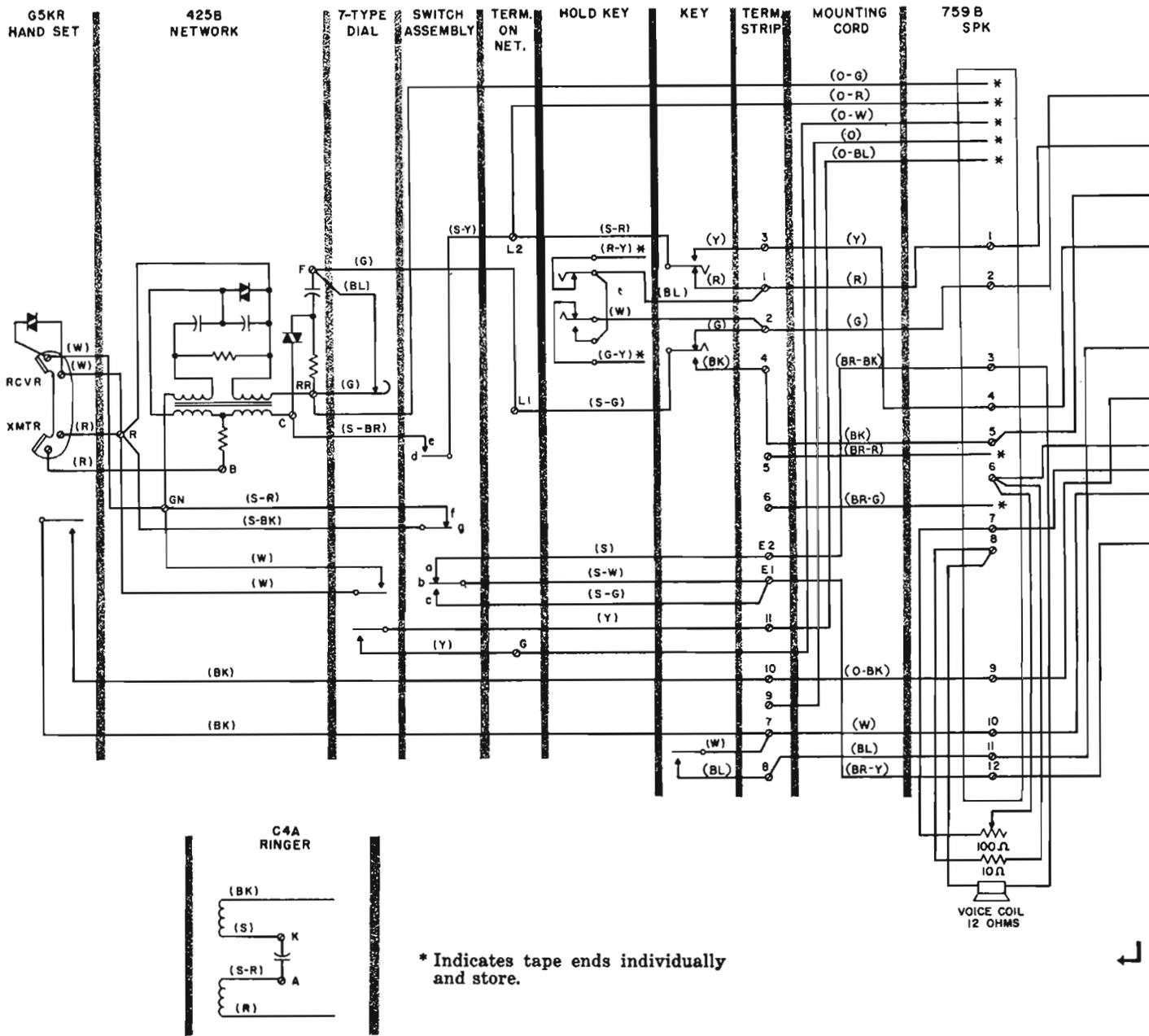


Fig. 10 — Monitor Station Using 511C/D Telephone Set with 759B Loudspeaker, Schematic

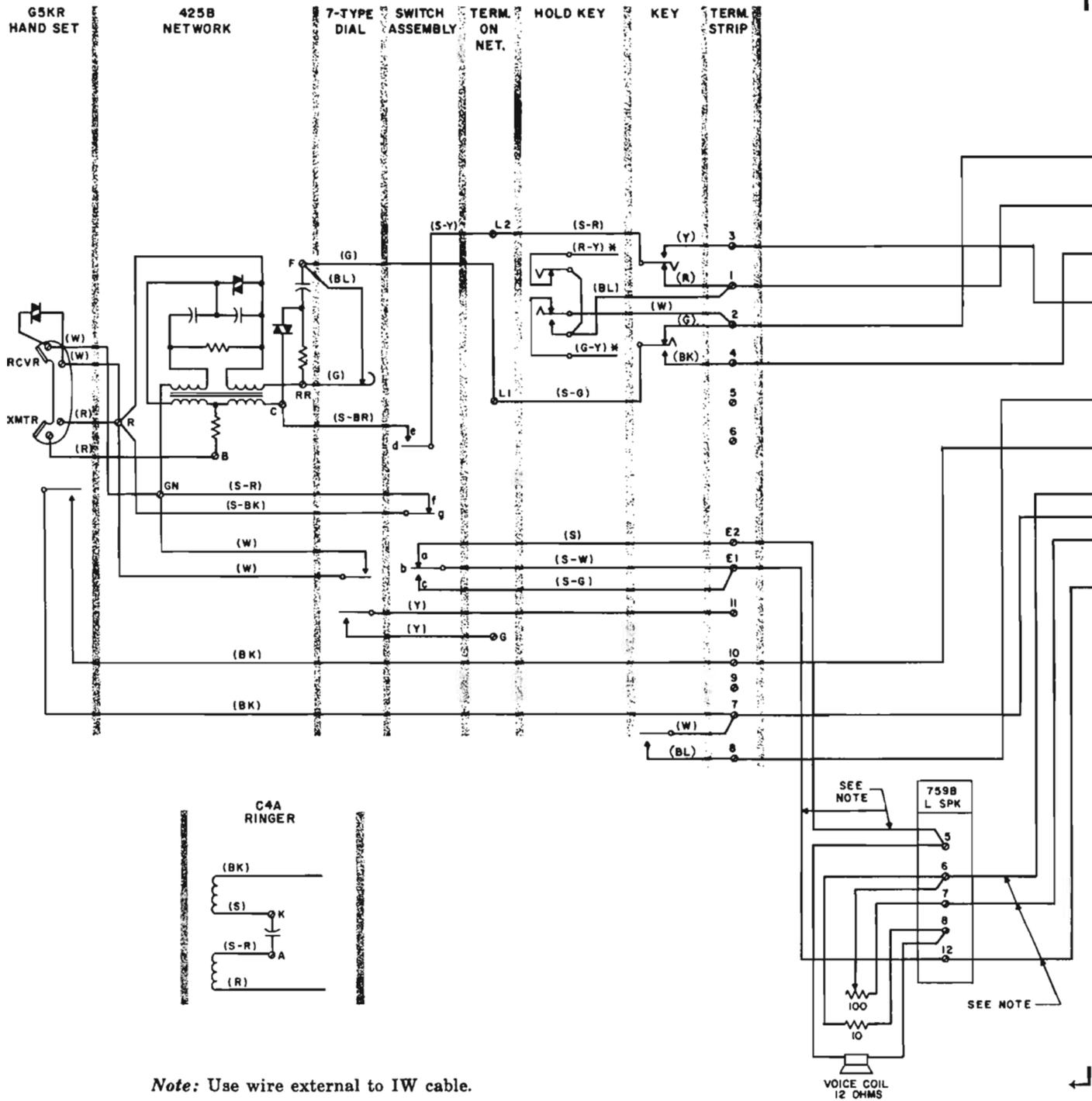
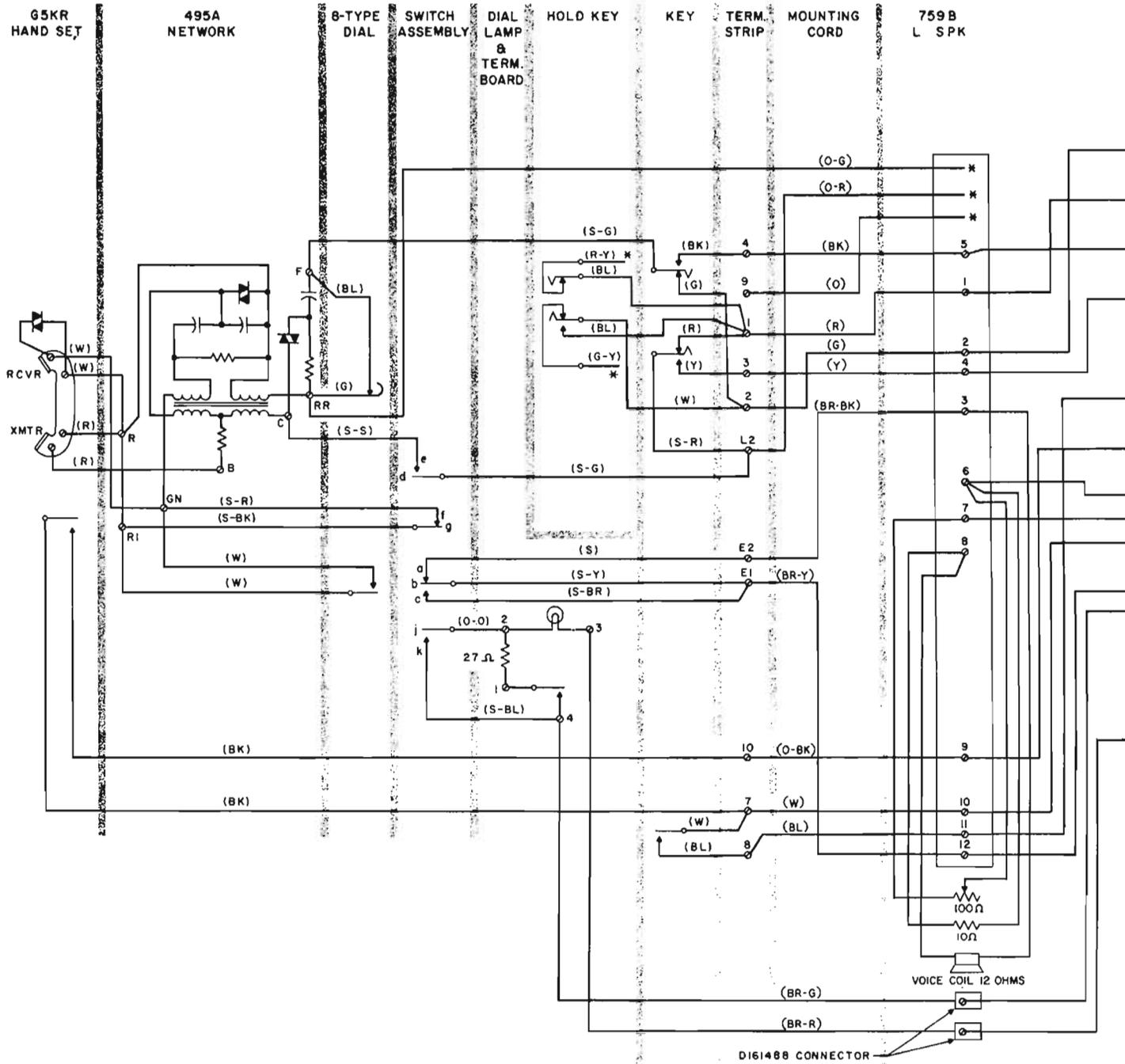
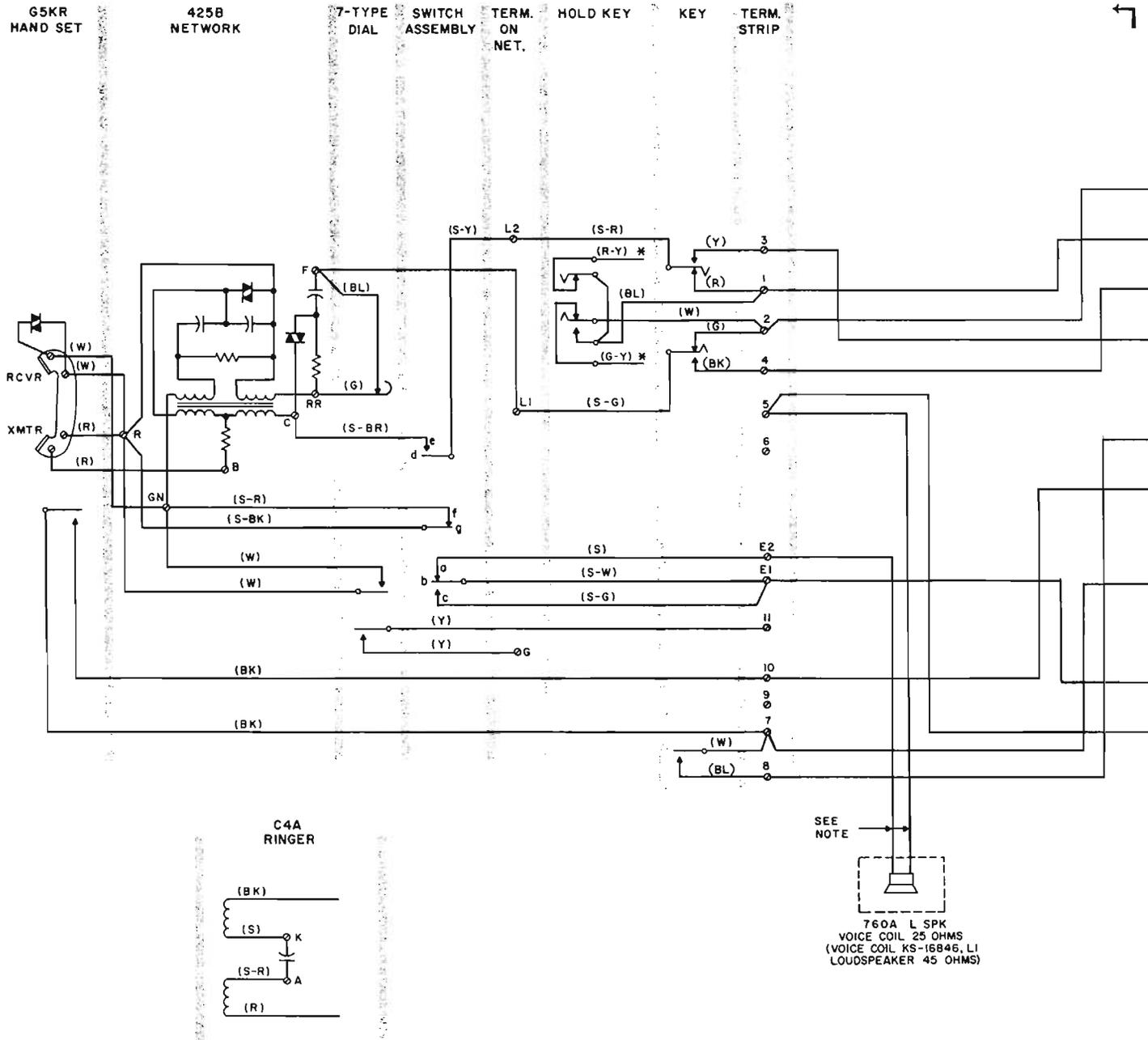


Fig. 11 – Monitor Station Using 558C/D Telephone Set with 759B Loudspeaker, Schematic



* Indicates tape ends individually and store.

Fig. 12 – Monitor Station Using 711B Telephone Set with 759B Loudspeaker, Schematic



Note: For 760A loudspeaker use R2FK cord provided with speaker or paired JKT wire as appropriate. For KS-16846, List 1 loudspeaker, use paired JKT wire or drop wire as appropriate.

Fig. 14 — Remote Station Using 558C/D Telephone Set with 760A Loudspeaker, Schematic

G5KR
HAND SET

495A
NETWORK

8-TYPE
DIAL
SWITCH
ASSEMBLY

DIAL
LAMP
&
TERM.
BOARD

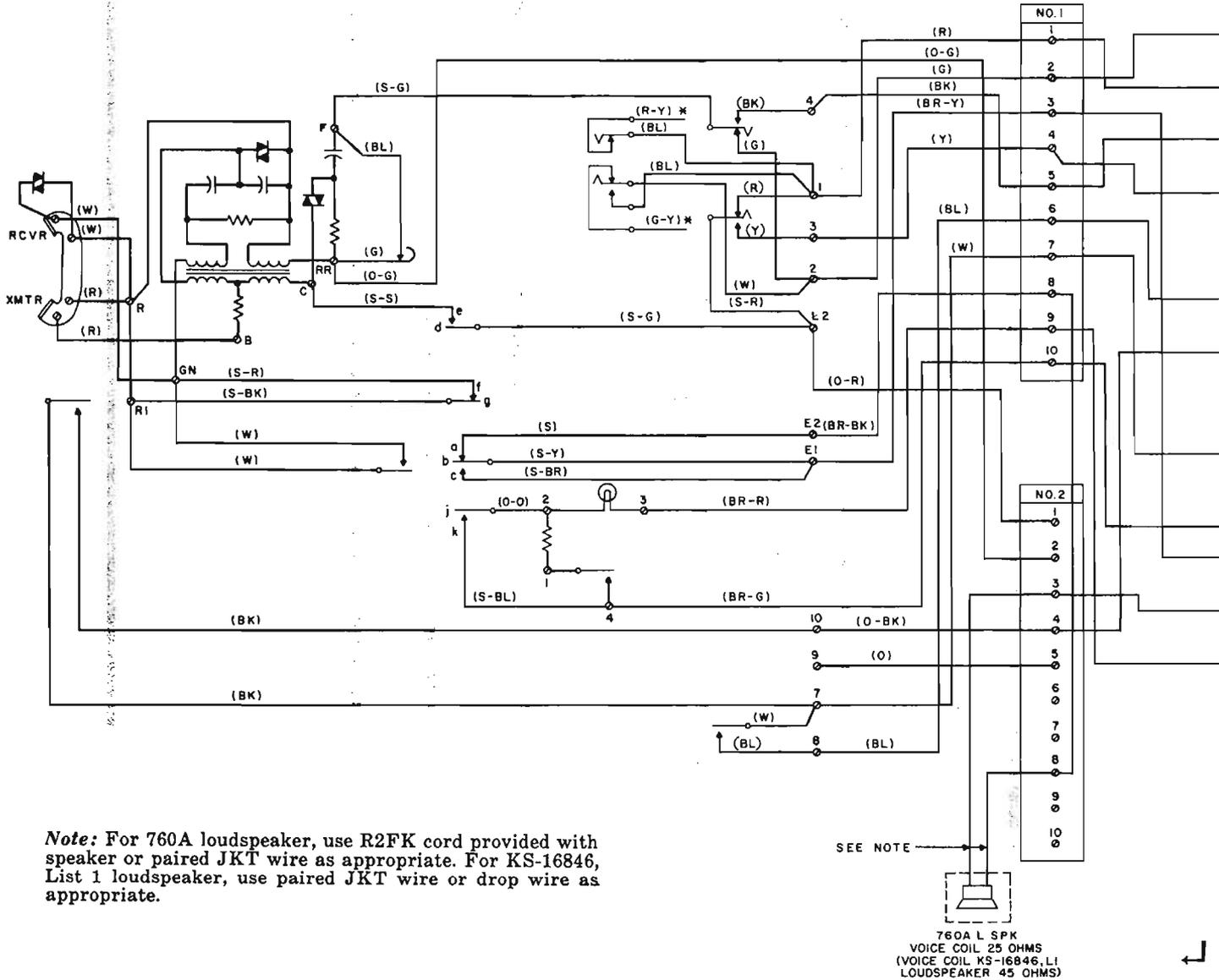
HOLD KEY

KEY

TERM.
STRIP

MOUNTING
CORD

CONNECTING
BLOCKS



Note: For 760A loudspeaker, use R2FK cord provided with speaker or paired JKT wire as appropriate. For KS-16846, List 1 loudspeaker, use paired JKT wire or drop wire as appropriate.

Fig. 15 -- Remote Station Using 711B Telephone Set with 760A Loudspeaker, Schematic

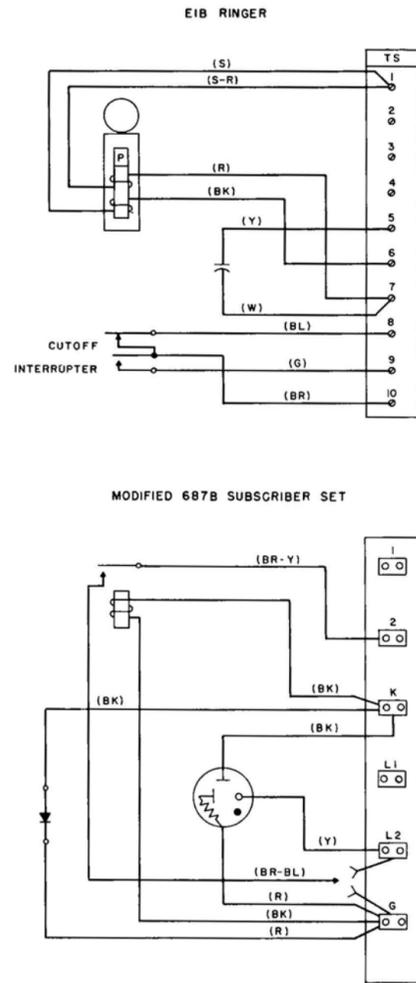
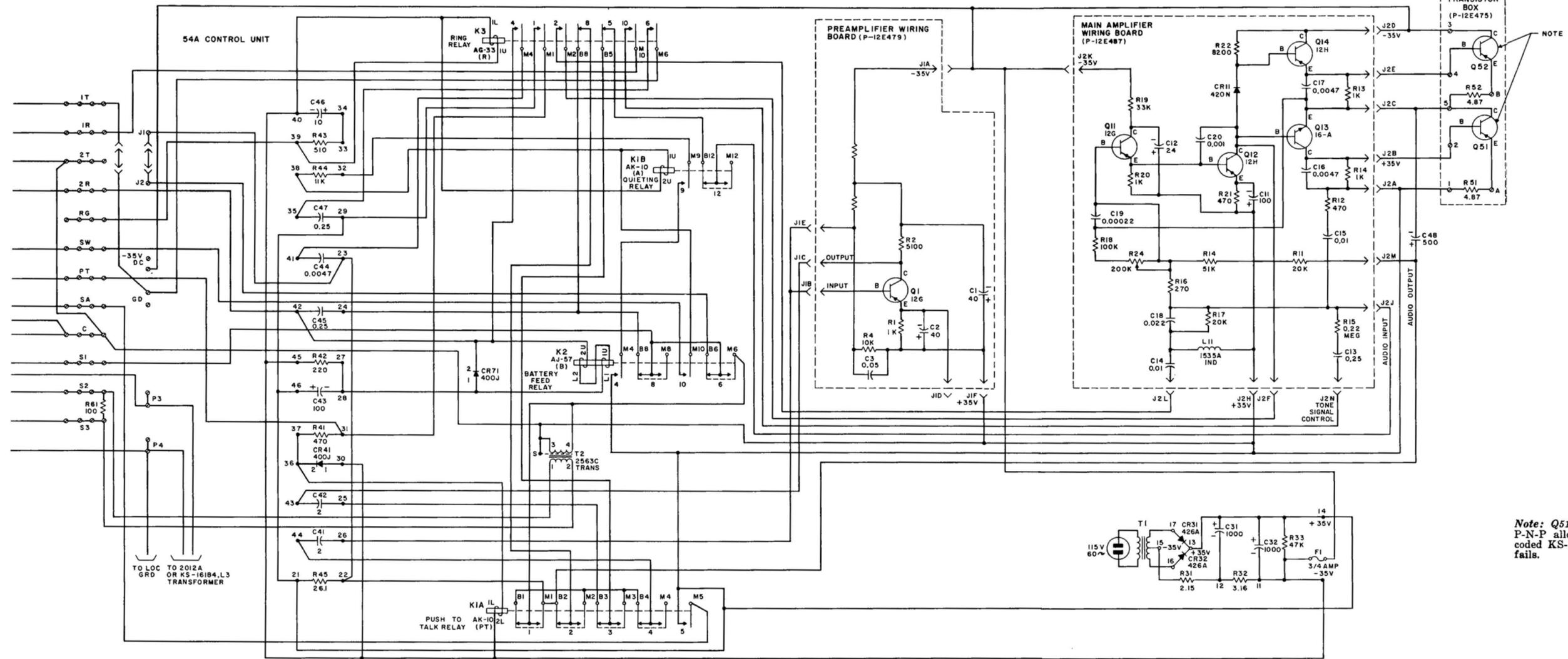


Fig. 16 - Ringer Schematics

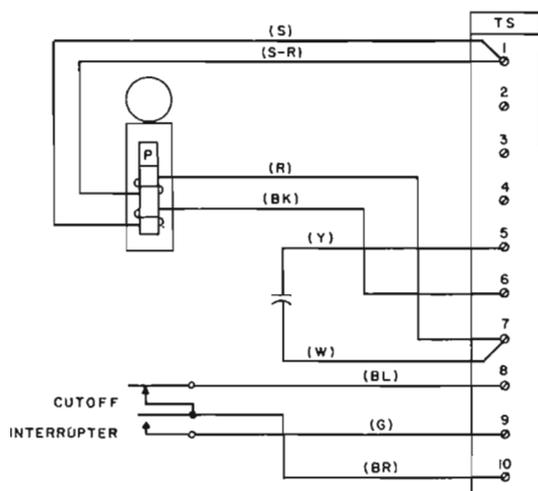


Note: Q51 and Q52 are a matched pair of germanium P-N-P alloy junction transistors. This matched pair is coded KS-16843, List 1. Both must be replaced if either fails.

Fig. 17 - 54A Control Unit

Fig. 16 and 17

EIB RINGER



MODIFIED 687B SUBSCRIBER SET

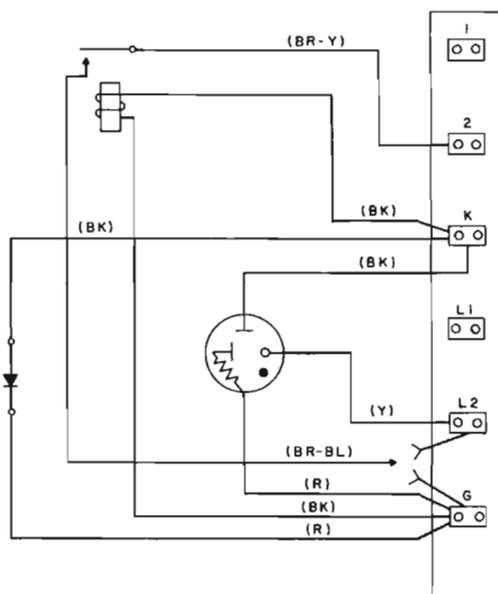


Fig. 16 — Ringer Schematics

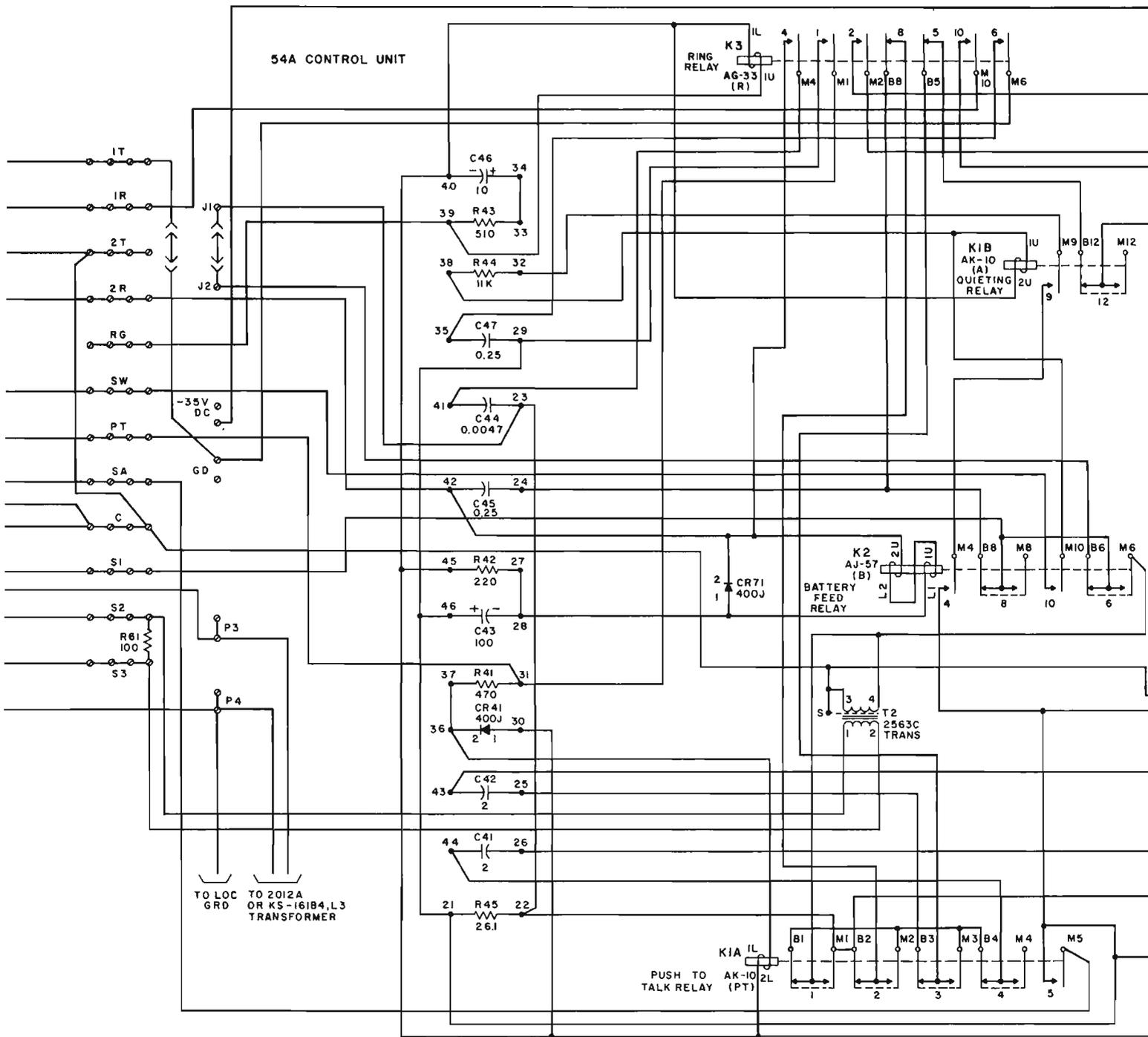


Fig. 17 - 54A Control Unit

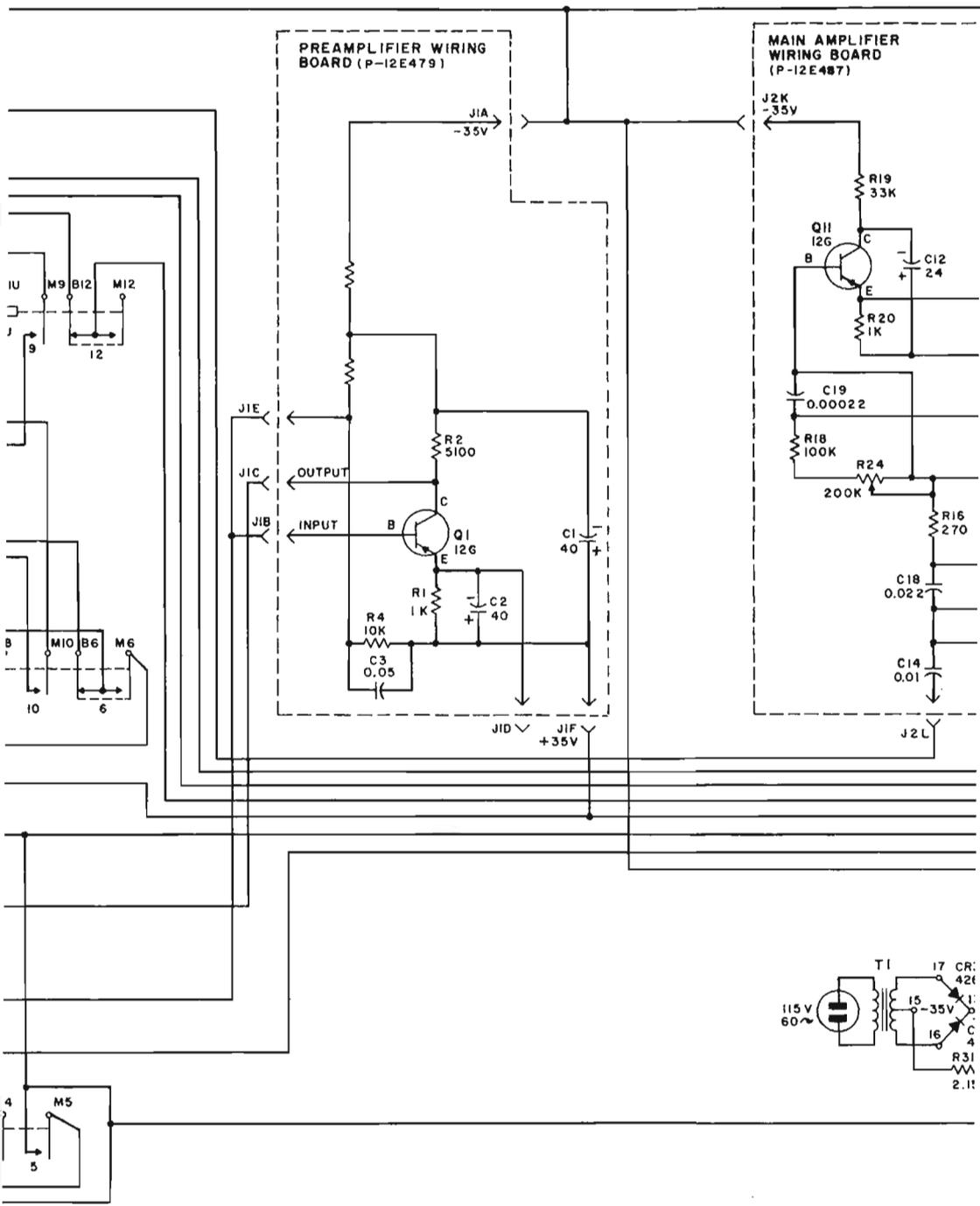
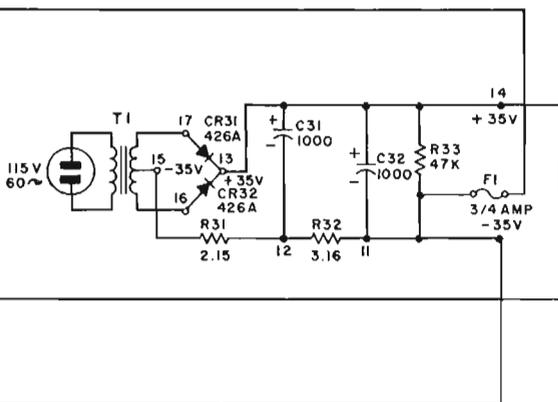
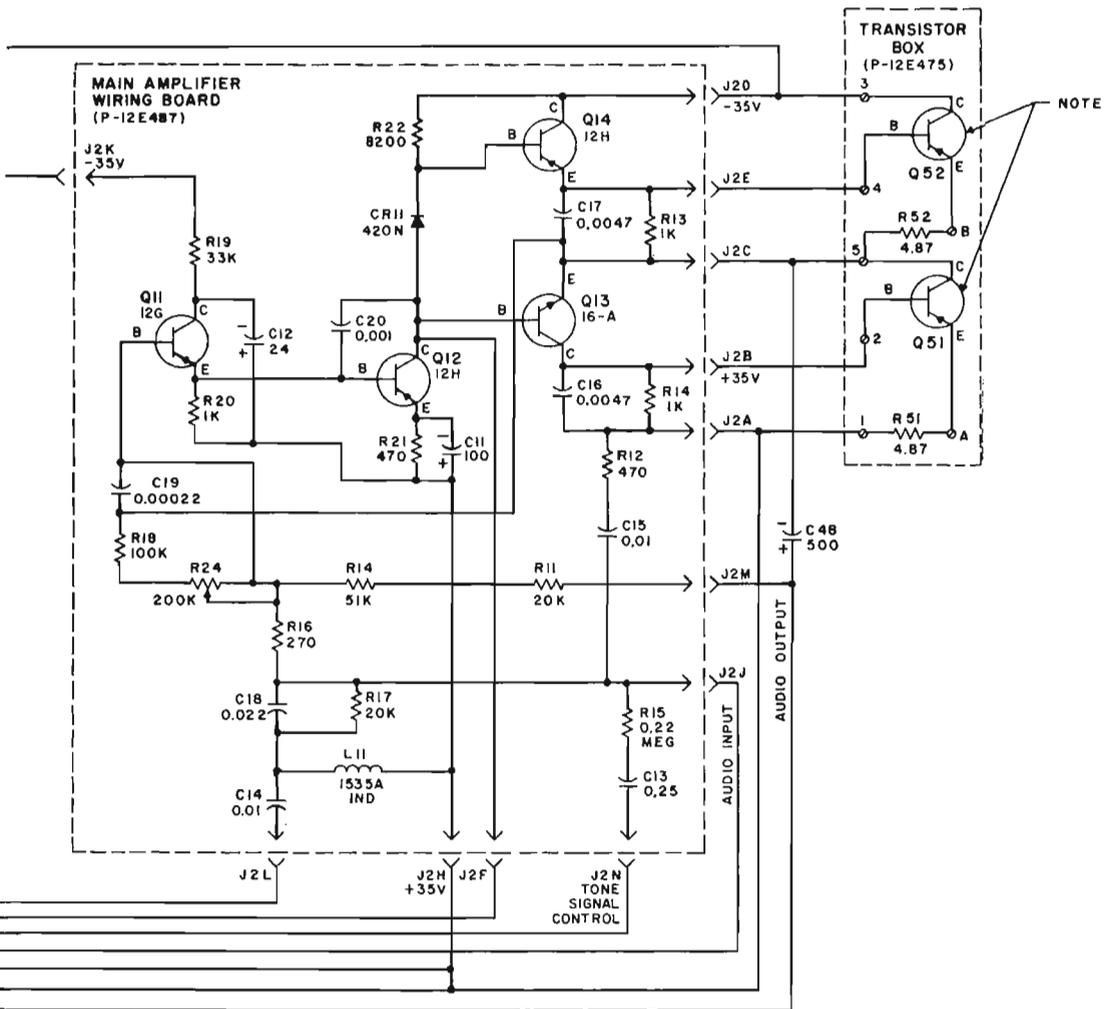


Fig. 17 - 54A Control Unit



Note: Q51 and Q52 are a matched pair of germanium P-N-P alloy junction transistors. This matched pair is coded KS-16843, List 1. Both must be replaced if either fails.

Fig. 17 - 54A Control Unit