

SINGLE-LINE, PUSHBUTTON DIAL, DESK TELEPHONES

CIRCUIT LABELS

1. GENERAL

1.01 This document covers the single-line, pushbutton dial, desk telephone. (See Figure 1.) The circuit labels for the various models of single-line, pushbutton dial, desk telephones and the associated features available in each are included in this document. (See Table A.)



AW82-334

Figure 1: Single-Line, Pushbutton Dial, Desk Telephone

1.02 This section is reissued for the following reasons:

- (a) Issue 4 adds new circuit labels for the Model 2500 telephones with a data port and for Model 2500 telephones with flash and message waiting and modifiable A-Lead control.
- (b) Issue 3 added new circuit labels and provided the latest issue of circuit labels for the Model 2500 telephones with Tel-Touch dials, and provided the latest issue of circuit labels for the Model 2500 telephones with Tel-Pulse dial.
- (c) Issue 2 added circuit labels for the Model 2500, Type 20H and the Model 2500, Types 20F and 27F telephones.

1.03 For additional information on description and installation of the telephones, refer to Section 50-500-103. A replacement parts list and an exploded-view drawing for the telephones are contained in Section 50-500-104. Related documents of the CORTELCO Telephone Apparatus Practices Manual provide information on components.

1.04 The Model 2500 desk telephones are single-line, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances.

1.05 The Model 2500 desk telephones are identified by a coded label affixed to the bottom of the base plate. Refer to Section 50-500-103 of the CORTELCO Telephone Apparatus Practices Manual for ordering information of complete telephones and for an explanation of each code number.

TABLE A
LIST OF CIRCUIT LABELS

MODEL NO.	TYPE	FIGURE
2500**OBA	20, 21, 24, 27, 28, 44	2
2500**OBA	39	3
2500**OBA	44	4
2500**QBA	20, 21, 24, 27, 28, 44	5
2500**FBA	20, 24, 27, 28, 44	5
2500**MBA	20, 21, 24, 27, 28, 44	5
2500**OBA	20T, 21T	6
2500**QBA	20T	7
2500**FBA	20T	7
2500**QBA	20S	8
2500**FBA	20S	8
2500**MBA	20S	8
2500**QBA	20F, 27F	9
2500**FBA	20F, 27F	9
2500**MBA	20F, 27F	9
2500**MBA	50M, 57M	10
2500**MBA	20F, 27F	11
2500**OBA	20, 24, 30, 31, 34	12
2500**OBA	27, 28	13
2500**OBA	20F, 27F	14
2500**OBA	20, 24, 27, 28, 44	15
2500**FBA	20, 24, 27, 28, 44	15
2500**MBA	20, 24, 27, 28, 44	15
2502**OBA	30	16

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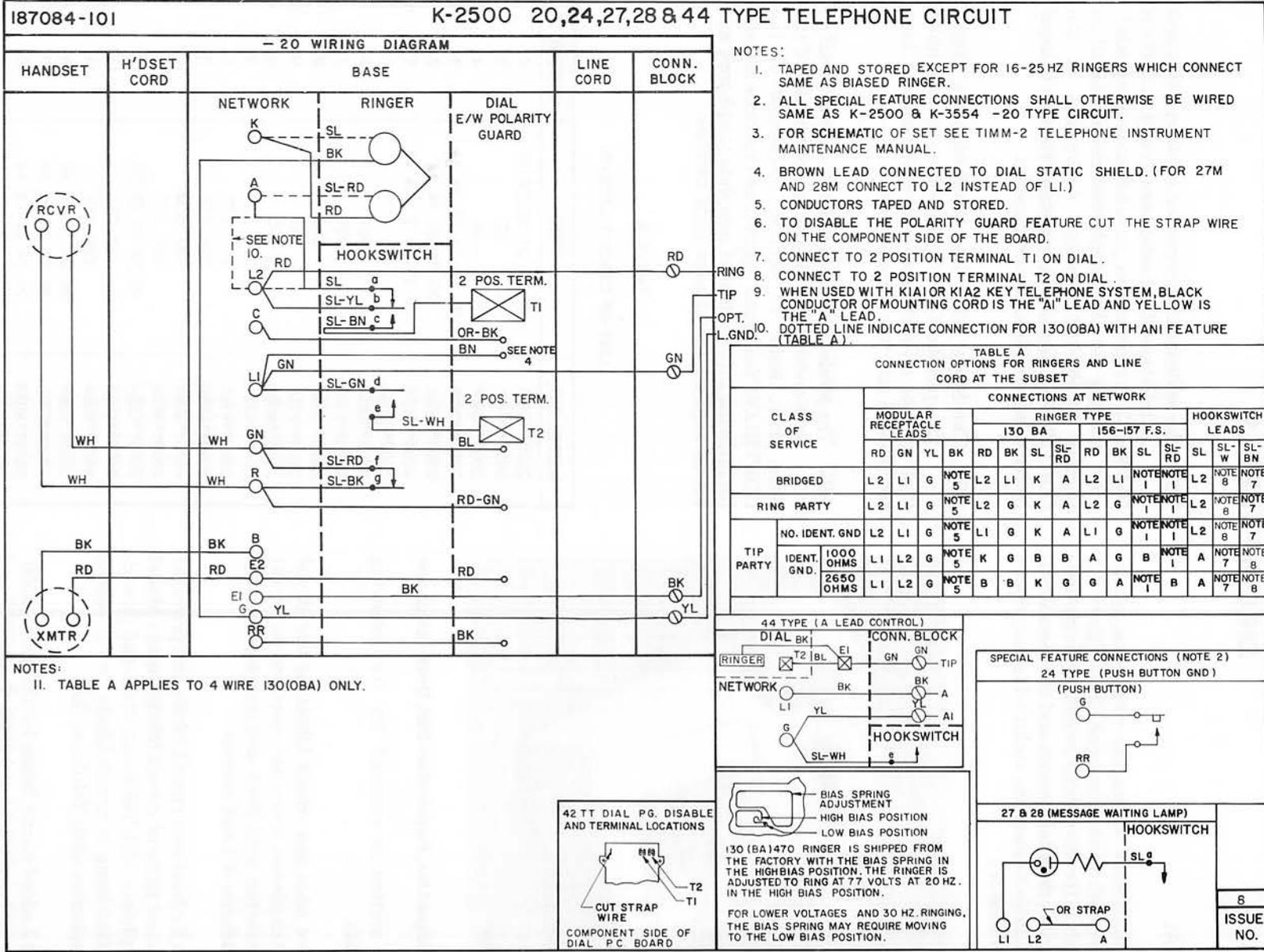
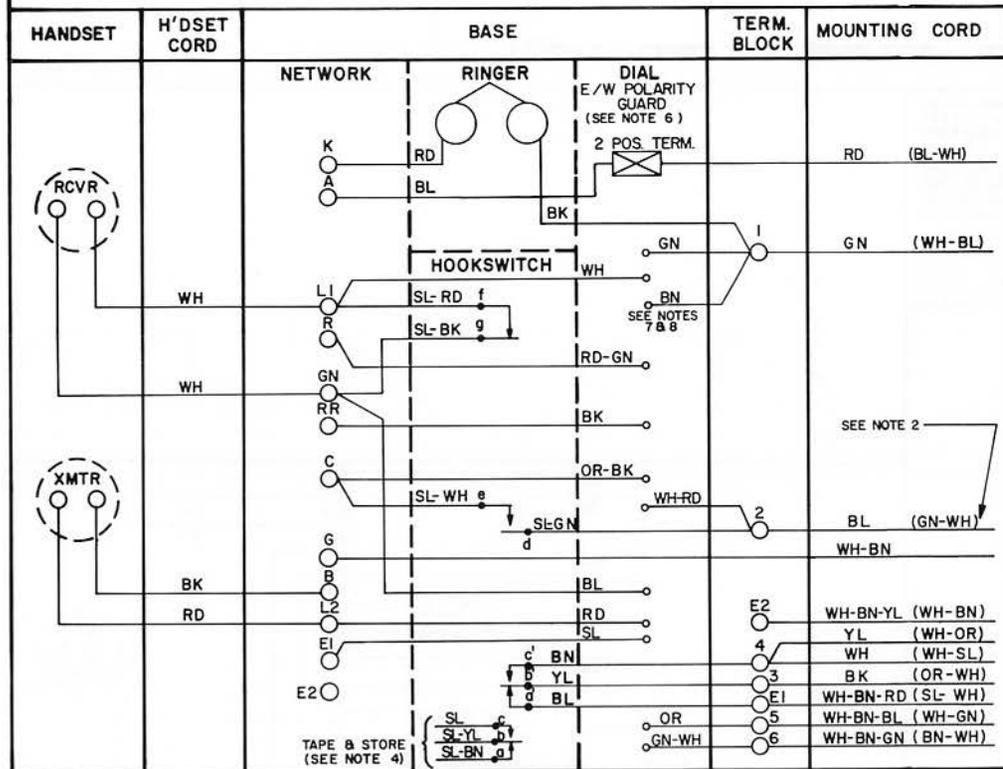


Figure 2: Circuit Label, Model 2500** OBA Types 20, 21, 24, 27, 28, 44

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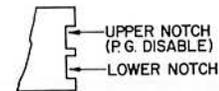
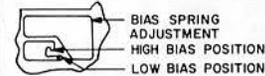
2500 () 39 M TYPE TELEPHONE CIRCUIT



NOTES:

- RINGER CONNECTED FOR BRIDGED SERVICE FOR RING PARTY MOVE RINGER BK LEAD FROM TERMINAL 1 TO TERMINAL 3. FOR TIP PARTY MOVE RINGER RD LEAD FROM DIAL 2 POS. TERM. TO TERM. 3., FOR 130 OBA RINGER ONLY.
- () INDICATES WESTERN ELECTRIC COLOR CODE.
- WHEN HANDSET IS REMOVED: CONTACTS b'-c' MAKES BEFORE a'-b' BREAKS AND d-e MAKES. f-g BREAKS AFTER ALL OTHER OPERATIONS.
- TAPE & STORE HOOKSWITCH LEADS SL-BN, SL-YL, & SL WHICH CORRESPONDS TO CONTACTS a, b, c WHICH ARE NOT USED ON THIS SUBSET.
- * DESIGNATES TAPE & STORE.
- TO DISABLE POLARITY GUARD FEATURE, RECONFIGURE THE DIAL AS FOLLOWS:
 - REMOVE THE OPTIONAL CLIP FROM THE STORAGE (LOWER) NOTCH ON THE CIRCUIT BOARD AT THE REAR OF THE DIAL.
 - PLACE CLIP IN THE POLARITY GUARD DISABLE NOTCH (UPPER).
- BROWN LEAD CONNECTED TO DIAL STATIC SHIELD.
- WHEN SUBSET IS INTERFACED TO A KEY SYSTEM, BN LEAD MUST BE CONNECTED TO KEY SYSTEM GROUND (A1).

46 T-T DIAL P.G. DISABLE

COMPONENT SIDE OF DIAL
P. C. BOARD

BIAS SPRING ADJUSTMENT
 HIGH BIAS POSITION
 LOW BIAS POSITION

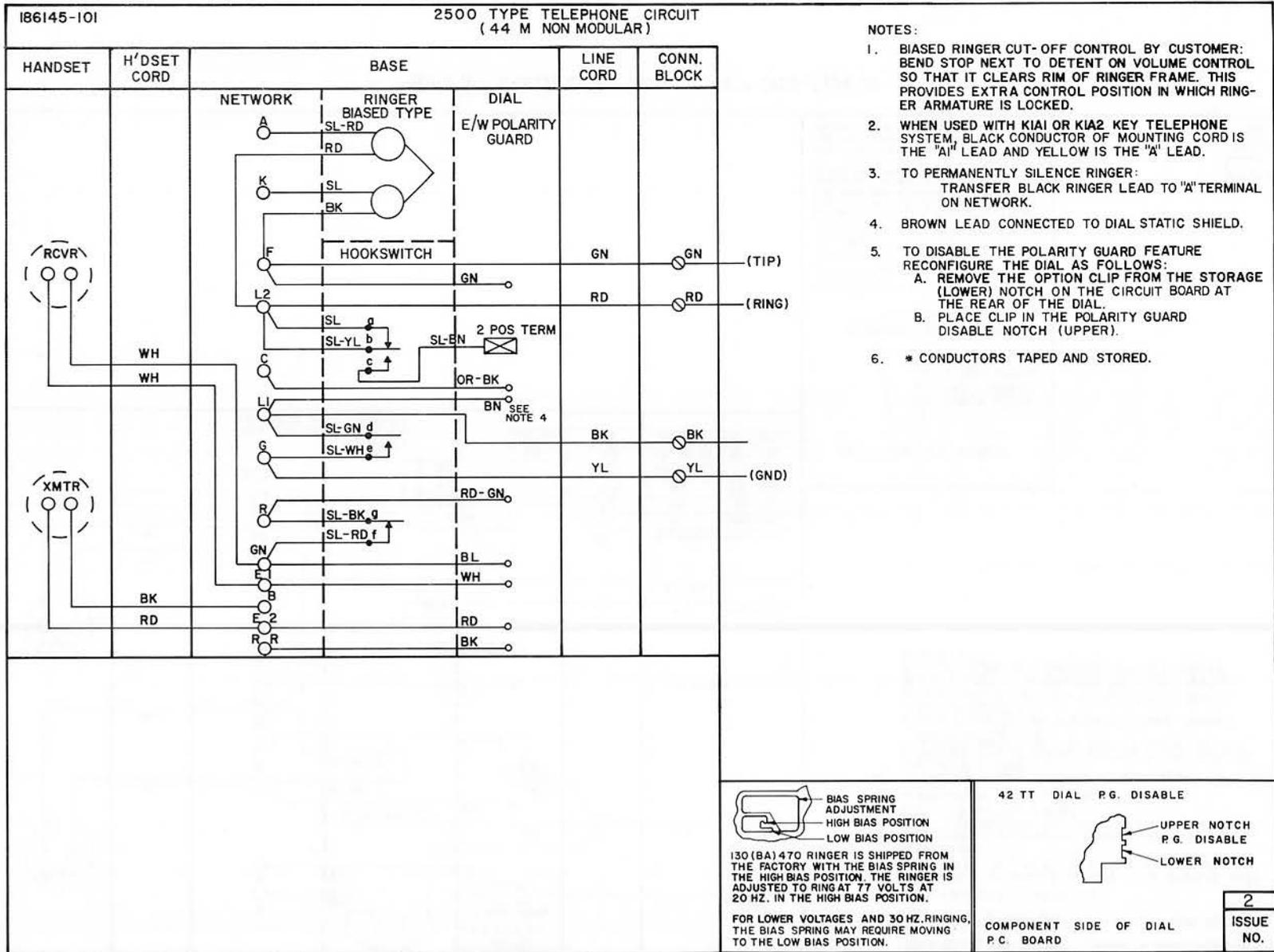
130 (BA) 470 RINGER IS SHIPPED FROM THE FACTORY WITH THE BIAS SPRING IN THE HIGH BIAS POSITION. THE RINGER IS ADJUSTED TO RING AT 77 VOLTS AT 20 HZ. IN THE HIGH BIAS POSITION.

FOR LOWER VOLTAGES AND 30 HZ. RINGING, THE BIAS SPRING MAY REQUIRE MOVING TO THE LOW BIAS POSITION.

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ISSUE
NO.

Figure 3: Circuit Label, Model 2500** OBA Type 39



- NOTES:
1. BIASED RINGER CUT-OFF CONTROL BY CUSTOMER: BEND STOP NEXT TO DETENT ON VOLUME CONTROL SO THAT IT CLEARS RIM OF RINGER FRAME. THIS PROVIDES EXTRA CONTROL POSITION IN WHICH RINGER ARMATURE IS LOCKED.
 2. WHEN USED WITH KIA1 OR KIA2 KEY TELEPHONE SYSTEM, BLACK CONDUCTOR OF MOUNTING CORD IS THE 'A' LEAD AND YELLOW IS THE 'A' LEAD.
 3. TO PERMANENTLY SILENCE RINGER: TRANSFER BLACK RINGER LEAD TO 'A' TERMINAL ON NETWORK.
 4. BROWN LEAD CONNECTED TO DIAL STATIC SHIELD.
 5. TO DISABLE THE POLARITY GUARD RECONFIGURE THE DIAL AS FOLLOWS:
 - A. REMOVE THE OPTION CLIP FROM THE STORAGE (LOWER) NOTCH ON THE CIRCUIT BOARD AT THE REAR OF THE DIAL.
 - B. PLACE CLIP IN THE POLARITY GUARD DISABLE NOTCH (UPPER).
 6. * CONDUCTORS TAPED AND STORED.

Figure 4: Circuit Label, Model 2500** OBA Type 44

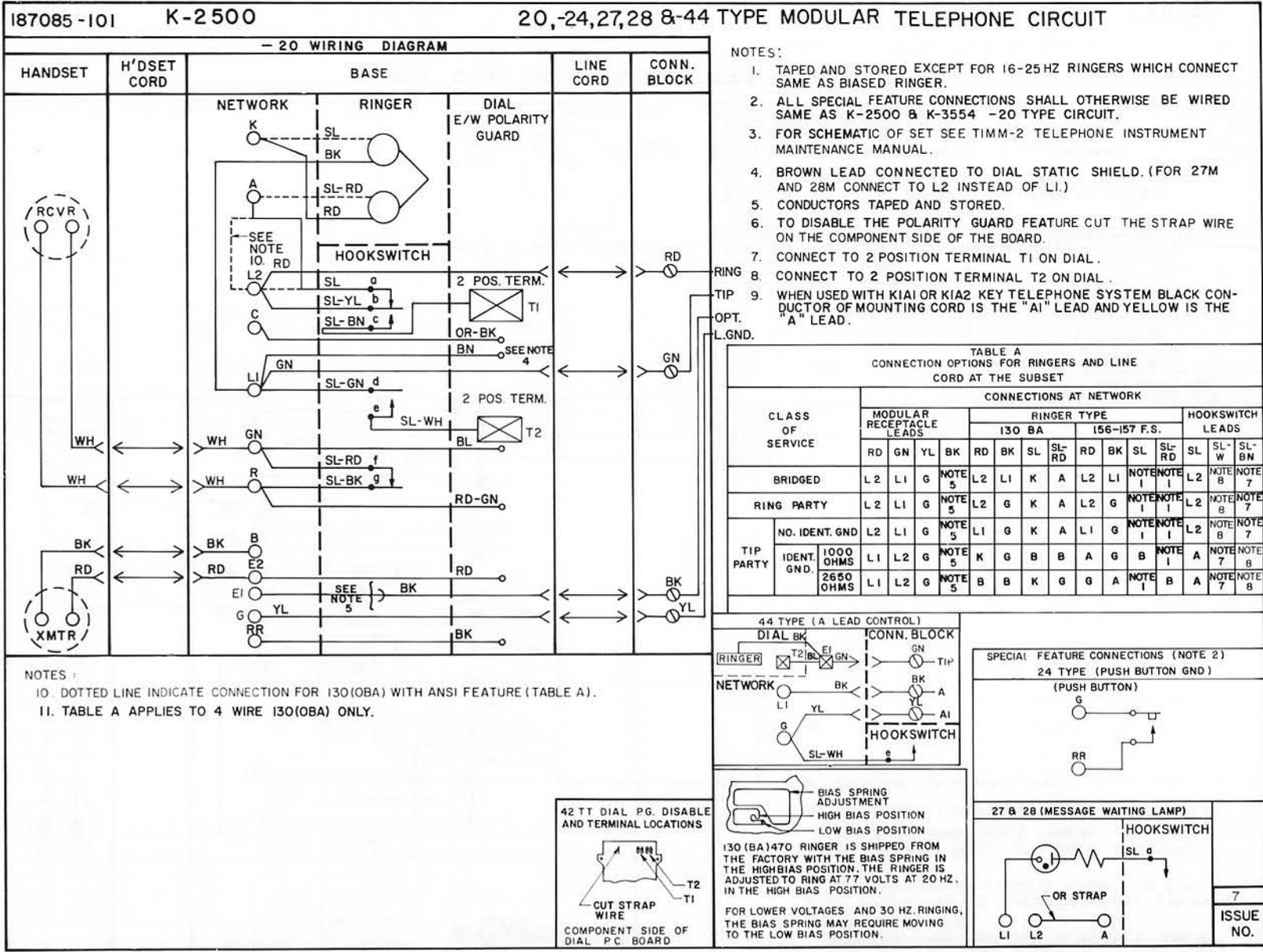


Figure 5: Circuit Label, Model 2500** QBA Types 20, 21, 24, 27, 28, 44; Model 2500** FBA Types 20, 24, 27, 28, 44; Model 2500** MBA Types 20, 21, 24, 27, 28, 44

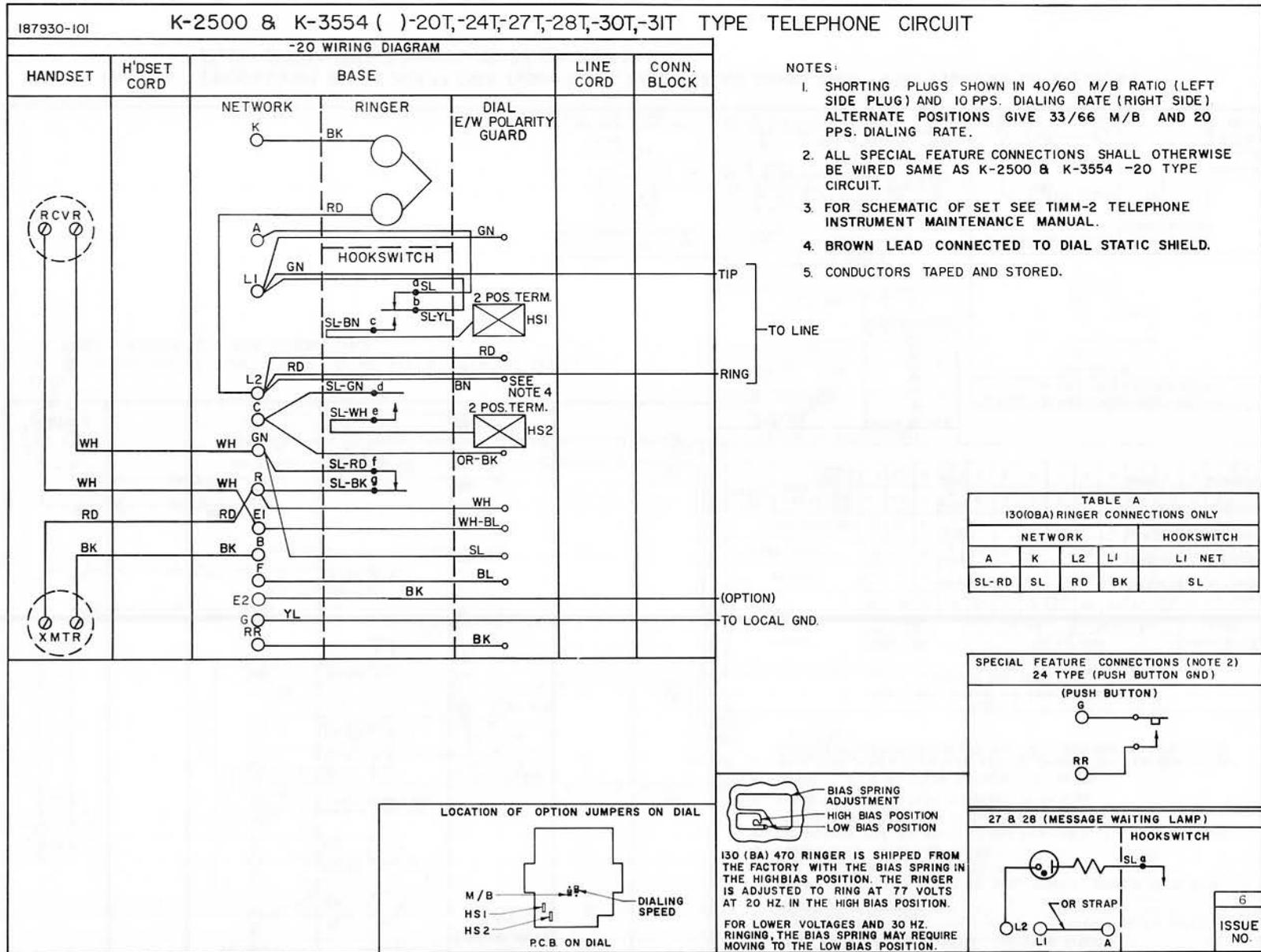
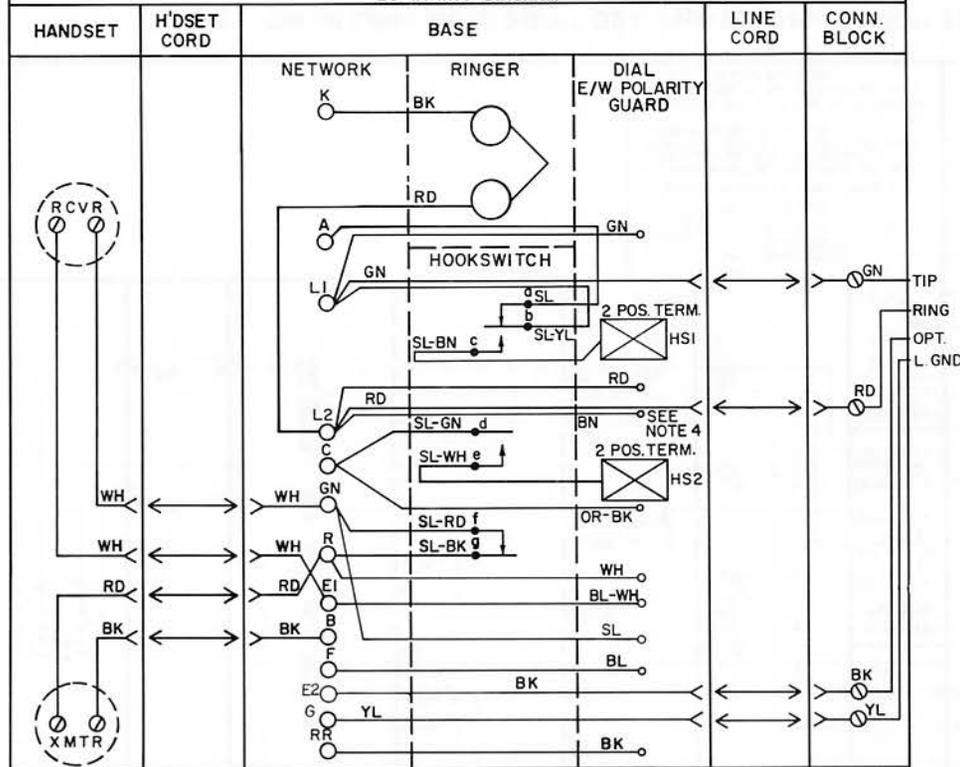


Figure 6: Circuit Label, Model 2500** OBA, Types 20T, 21T

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K-2500 & K-3554 ()-20T,-24T,-27T,-28T TYPE MODULAR TELEPHONE CIRCUIT

-20 WIRING DIAGRAM



NOTES:

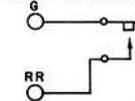
1. SHORTING PLUGS SHOWN IN 40/60 M/B RATIO (LEFT SIDE PLUG) AND 10 PPS. DIALING RATE (RIGHT SIDE). ALTERNATE POSITIONS GIVE 33/66 M/B AND 20 PPS. DIALING RATE.
2. ALL SPECIAL FEATURE CONNECTIONS SHALL OTHERWISE BE WIRED SAME AS K-2500 & K-3554 -20 TYPE CIRCUIT.
3. FOR SCHEMATIC OF SET SEE TIMM-2 TELEPHONE INSTRUMENT MAINTENANCE MANUAL.
4. BROWN LEAD CONNECTED TO DIAL STATIC SHIELD.
5. CONDUCTORS TAPED AND STORED.

TABLE A
130(OBA) RINGER CONNECTIONS ONLY

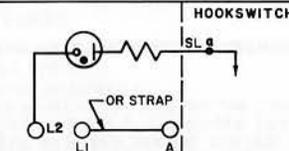
NETWORK				HOOKSWITCH	
A	K	L2	L1	L1	NET.
SL-RD	SL	RD	BK	SL	

SPECIAL FEATURE CONNECTIONS (NOTE 2)
24 TYPE (PUSH BUTTON GND)

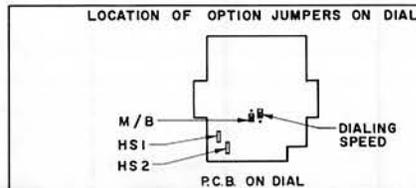
(PUSH BUTTON)



27 & 28 (MESSAGE WAITING LAMP)



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ISSUE NO.



BIAS SPRING ADJUSTMENT
HIGH BIAS POSITION
LOW BIAS POSITION

130 (BA) 470 RINGER IS SHIPPED FROM THE FACTORY WITH THE BIAS SPRING IN THE HIGH BIAS POSITION. THE RINGER IS ADJUSTED TO RING AT 77 VOLTS AT 20 HZ. IN THE HIGH BIAS POSITION.

FOR LOWER VOLTAGES AND 30 HZ. RINGING, THE BIAS SPRING MAY REQUIRE MOVING TO THE LOW BIAS POSITION.

Figure 7: Circuit Label, Model 2500** QBA, Type 20T; Model 2500** FBA, Type 20T

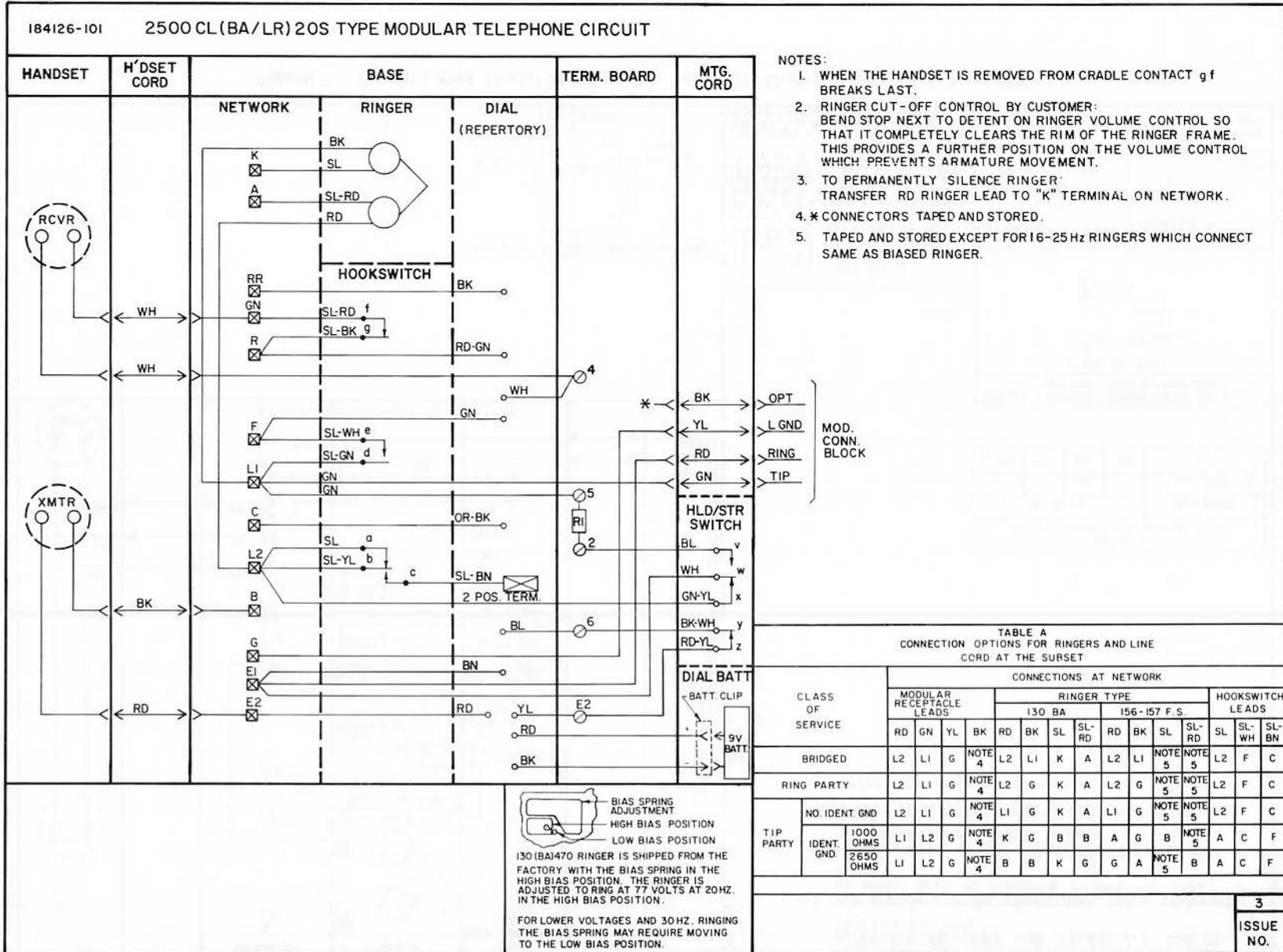


Figure 8: Circuit Label, Model 2500** QBA, Type 20S; Model 2500** FBA, Type 20S; Model 2500** MBA, Type 20S

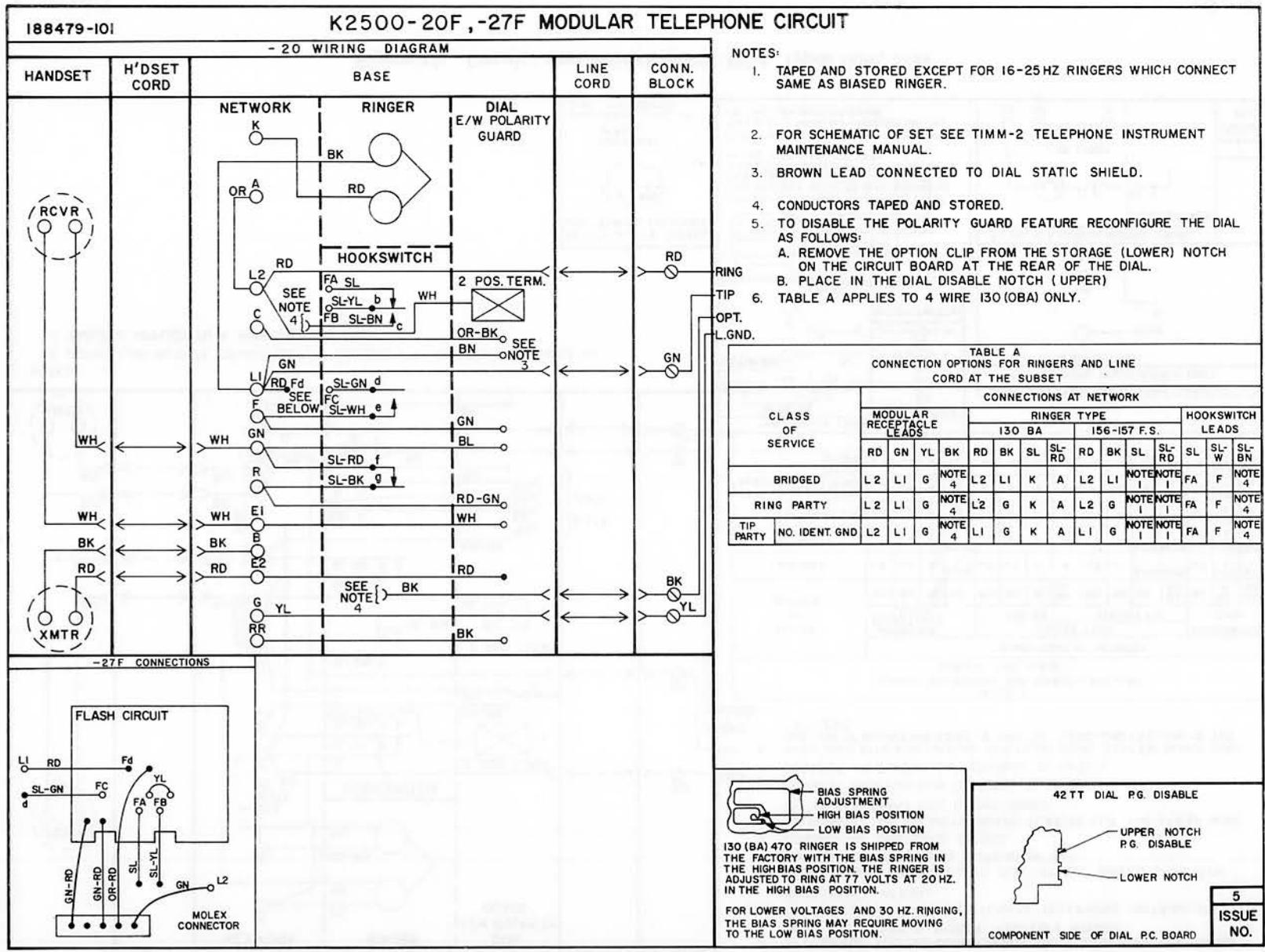


Figure 9: Circuit Label, Model 2500** QBA, Types 20F, 27F; Model 2500** FBA, Types 20F, 27F; Model 2500** MBA, Types 20F, 27F

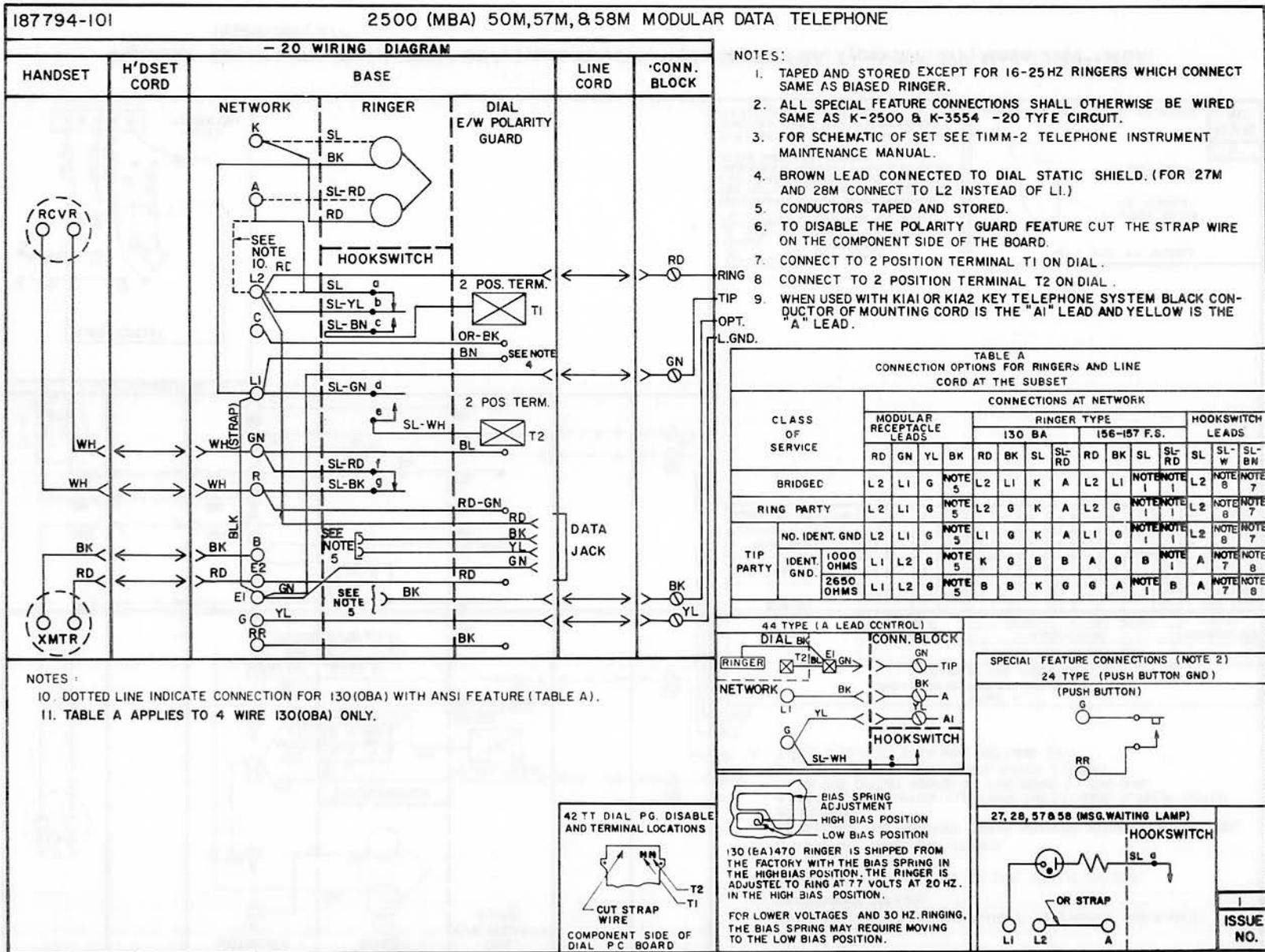
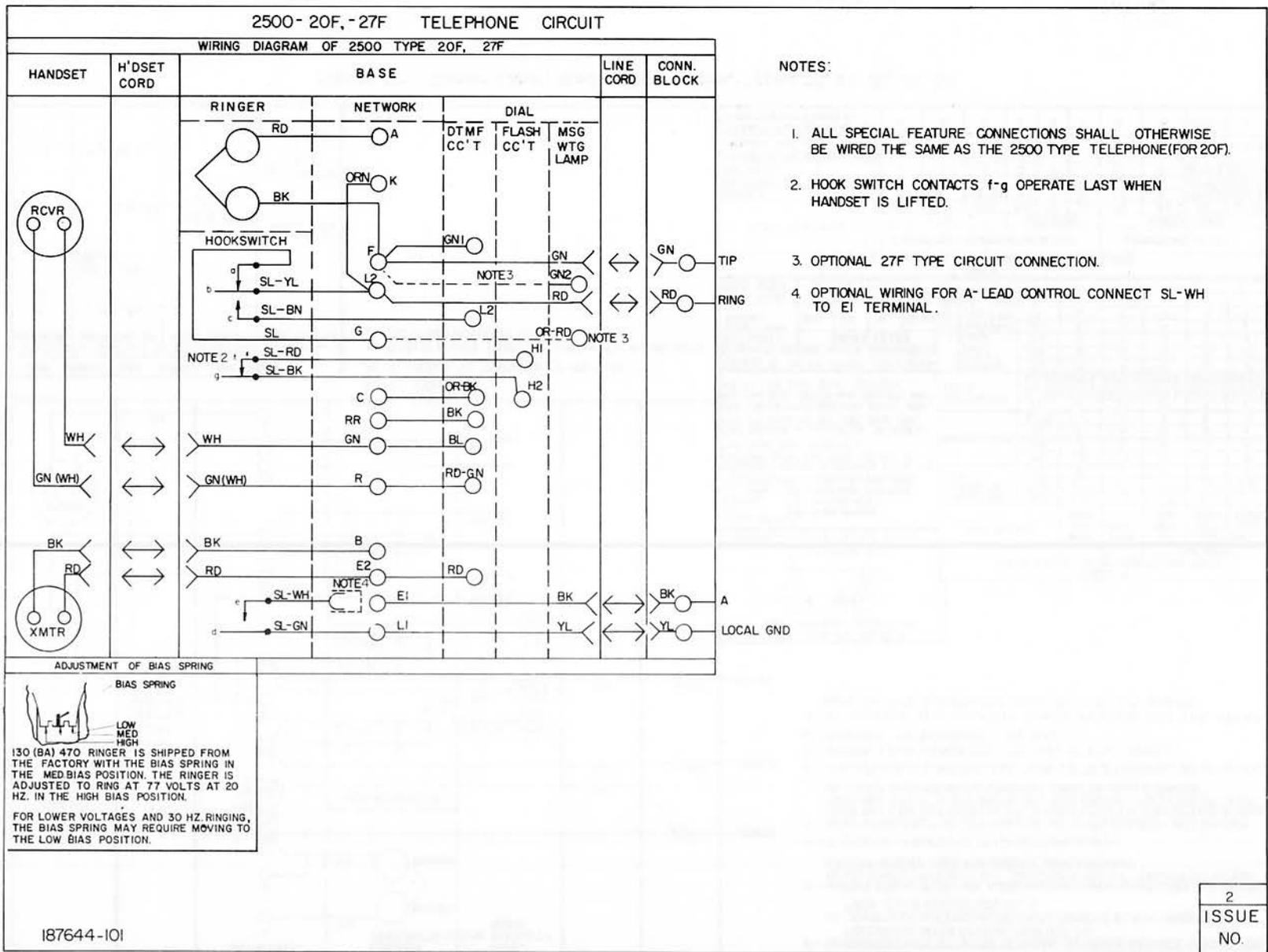


Figure 10: Circuit Label, Model 2500** MBA, Types 50M, 57M

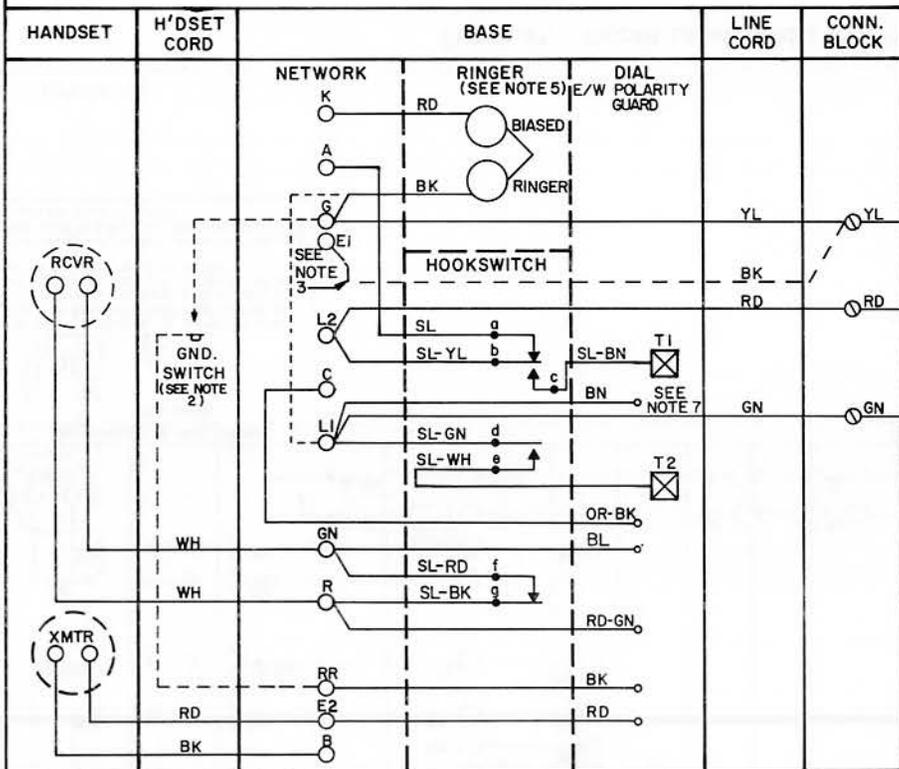


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Figure 11: Circuit Label, Model 2500** MBA, Types 20F, 27F

186064 -101 2500/3554() 20, 20H, 24, 30, 31, 34 TYPE TELEPHONE CIRCUIT

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NOTES

- 1 - FOR TIP-PARTY WITH NO IDENTIFYING GROUND MOVE RED RINGER LEAD FROM L2 TO L1 ON NETWORK AS SHOWN IN TABLE A.
- 2 - (a) BROKEN LINES BETWEEN TERMINAL RR AND G INDICATE CIRCUIT FOR TELEPHONE WITH SPECIAL FEATURE 34.
(b) TO PROVIDE GROUNDING FEATURE, REMOVE BLACK RINGER LEAD FROM G AND REPOSITION TO L1.
- 3 - WHEN 4 CONDUCTORS ARE FURNISHED WITH MOUNTING CORD, TERMINATE BLACK CONDUCTOR WITH YELLOW CONDUCTOR AT CONNECTING BLOCK, EXCEPT WHERE USED FOR SPECIAL APPLICATIONS.
- 4 - IF GROUND IS BROUGHT TO CONNECTING BLOCK.
- 5 - WHEN FREQUENCY SELECT RINGERS ARE USED CONNECT RED RINGER LEAD TO L2 ON NETWORK, BLACK RINGER LEAD TO G ON NETWORK AND TAPE AND STORE SLATE AND SLATE-RED RINGER LEADS, EXCEPT FOR 16 - 25 HZ. RINGERS WHICH CONNECT SAME AS BIASED RINGER.
- 6 - TRANSFER SLATE SWITCH LEAD FROM L2 TO "A" TERMINAL ON NETWORK.
- 7 - BROWN LEAD CONNECTED TO DIAL STATIC SHIELD.
- 8 - CONNECT TO TERMINAL I ON DIAL.
- 9 - TO DISABLE THE POLARITY GUARD FEATURE CUT THE STRAP WIRE ON THE COMPONENT SIDE OF DIAL P.C. BOARD.

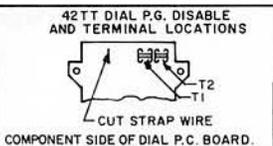


TABLE A
130 BA RINGER LINE AND RINGER CONNECTIONS

WIRE OR LEAD	INDV OR BRDG	RINGER PARTY	TIP PARTY			
			NO IDENT GND.	1000 OHMS	2650 OHMS	
MOUNTING CORD IN SET	RD	L2	L2	L1	L1	L1
	GN	L1	L1	L1	L2	L2
	YL	G	G	G	G	G
RINGER LEADS	RD	L2	L2	L1	K	B
	BK	G	G	G	G	B
	SL	K	K	K	B	K
HOOKSWITCH LEADS	SL	L2	L2	L2	A	A
	SL-WH	NOTE 10	NOTE 10	NOTE 10	NOTE 8	NOTE 8
	SL-BN	NOTE 8	NOTE 8	NOTE 8	NOTE 10	NOTE 10

BIAS SPRING ADJUSTMENT
HIGH BIAS POSITION
LOW BIAS POSITION

130(BA)70 RINGER IS SHIPPED FROM THE FACTORY WITH THE BIAS SPRING IN THE HIGH BIAS POSITION.

THE RINGER IS ADJUSTED TO RING AT 77V. AT 20 HZ. IN THE HIGH BIAS POS.

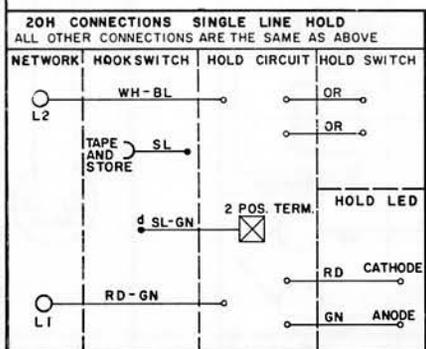
FOR LOWER VOLTAGES AND 30 HZ. RINGING, THE BIAS SPRING MAY REQUIRE MOVING TO THE LOW BIAS POSITION.

TABLE B 130 BA RINGER LEAD CONNECTIONS TO SILENCE RINGER PERMANENTLY

TIP PARTY IDENTIFYING GROUND	RINGER LEADS			
	RED	BK	SL	SL-RD
1000 OHMS	K	G	B	K
2650 OHMS	B	K	K	G

TABLE C CONNECTIONS FOR 156-157 FREQUENCY SELECTIVE RINGER

CLASS OF SERVICE	CONNECTIONS AT CONNECTING BLOCK				CONNECTIONS IN SET						
	LINE		MTG CORD		RINGER LEADS						
	RING	TIP	GND	Y	RD	BK	SL	SL-RD			
BRIDGED	R	G	Y	NOTE 4	R	G	G	L2	G	NOTE 5	NOTE 5
RINGER PARTY	R	G	Y		R	G	Y	L2	G	NOTE 5	NOTE 5
TIP PARTY	R	G	Y		G	R	Y	L2	G	NOTE 5	NOTE 5
TIP PARTY DIAL MESSAGE RATE 1000 OHM SEE NOTE	R	G	Y		G	R	Y	A	G	B	NOTE 5
TIP PARTY DIAL MESSAGE RATE 2650 OHMS SEE NOTE 6.	R	G	Y		G	R	Y	G	A	NOTE 5	B



- NOTES CONT'D.
- 10.-CONNECT TO TERMINAL 2 ON DIAL.
- 11.-TABLE A AND TABLE B APPLY TO FOUR-WIRE 130 (OBA) RINGERS ONLY.

Figure 12: Circuit Label, Model 2500** OBA, Types 20, 24, 30, 31, 34

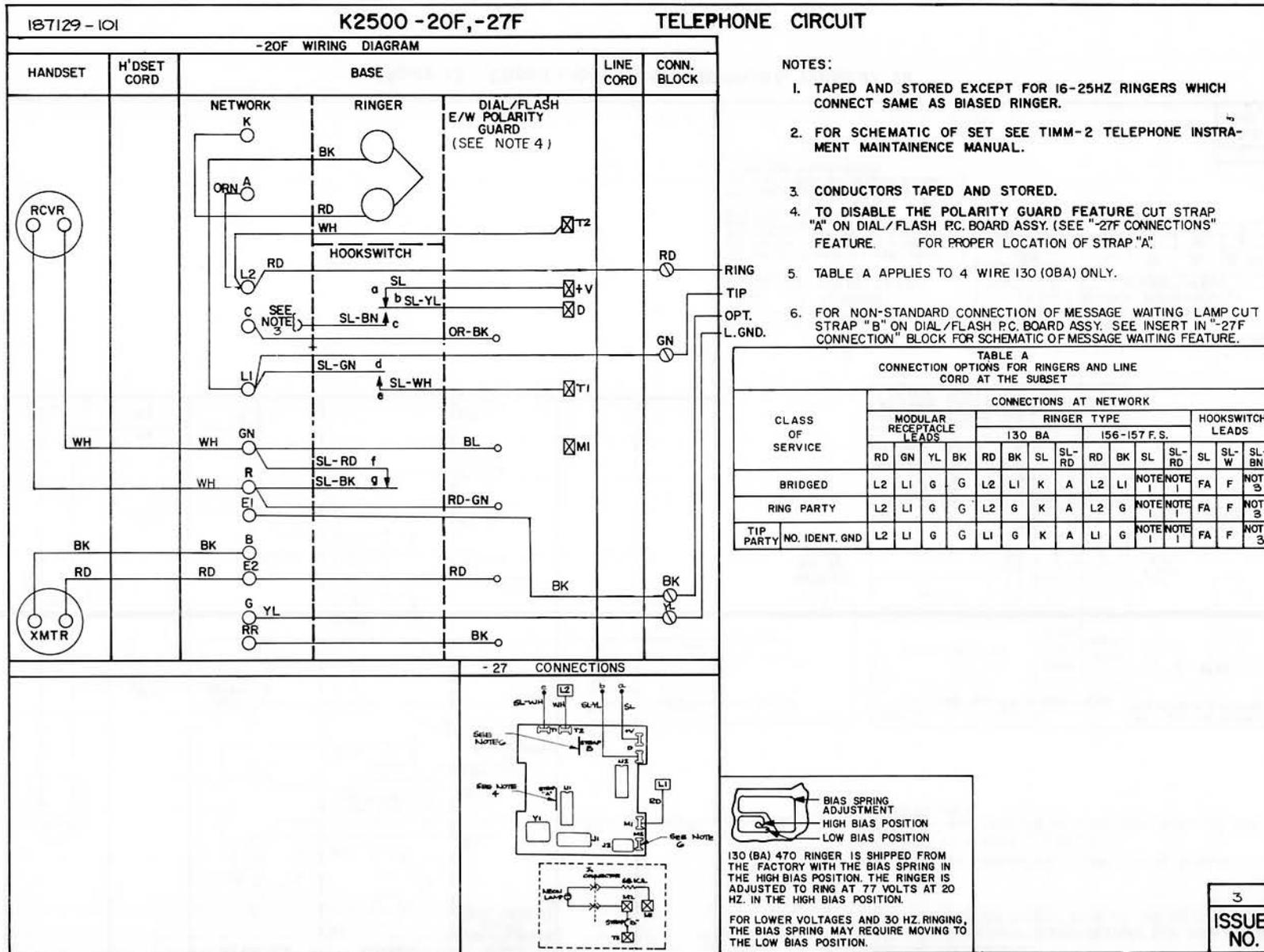


Figure 14: Circuit Label, Model 2500** OBA, Types 20F, 27F

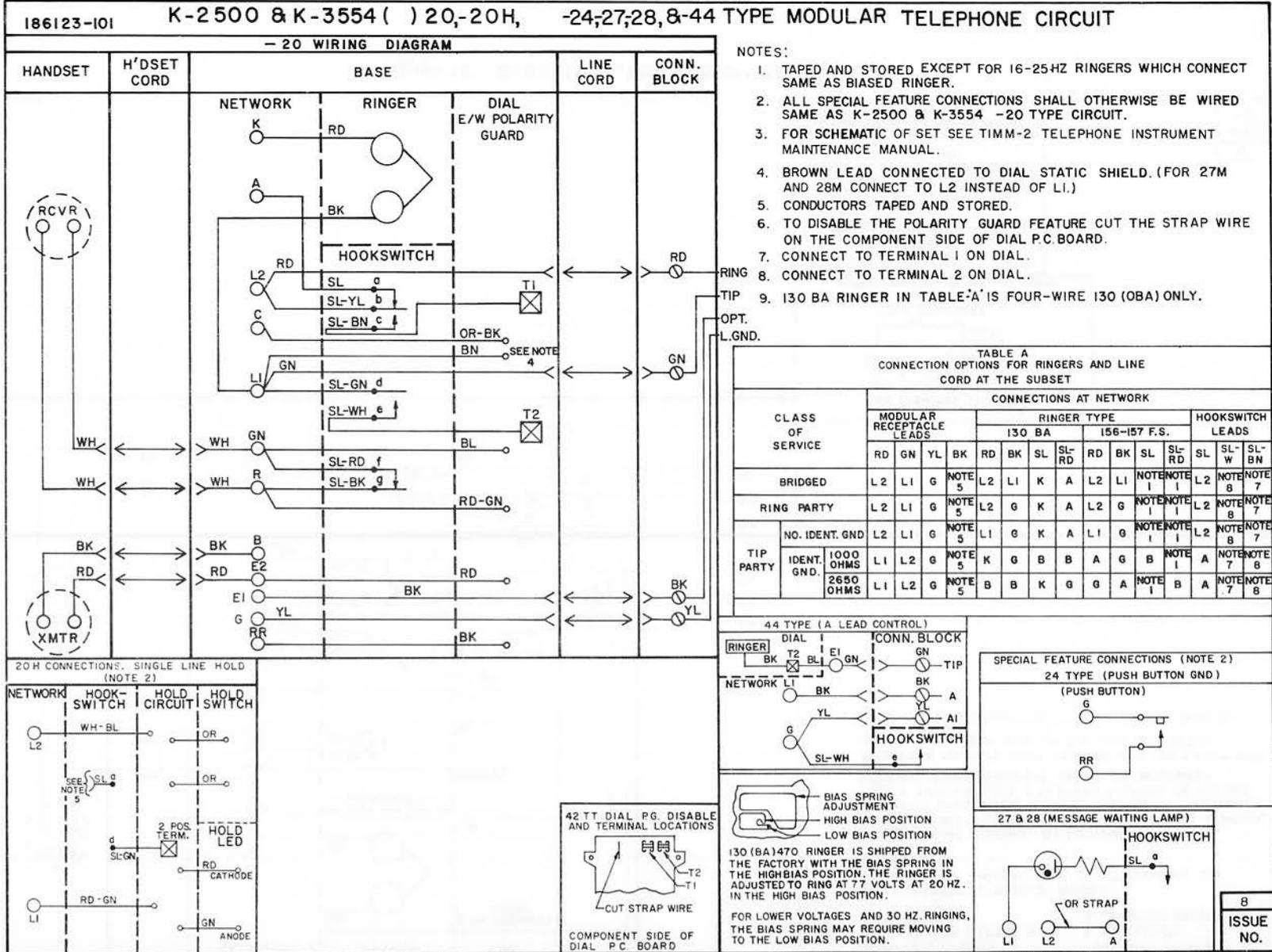


Figure 15: Circuit Label, Model 2500 OBA, Types 20, 24, 27, 28, 44; Model 2500** FBA, Types 20, 24, 27, 28, 44; Model 2500** MBA, Types 20, 24, 27, 28, 44**

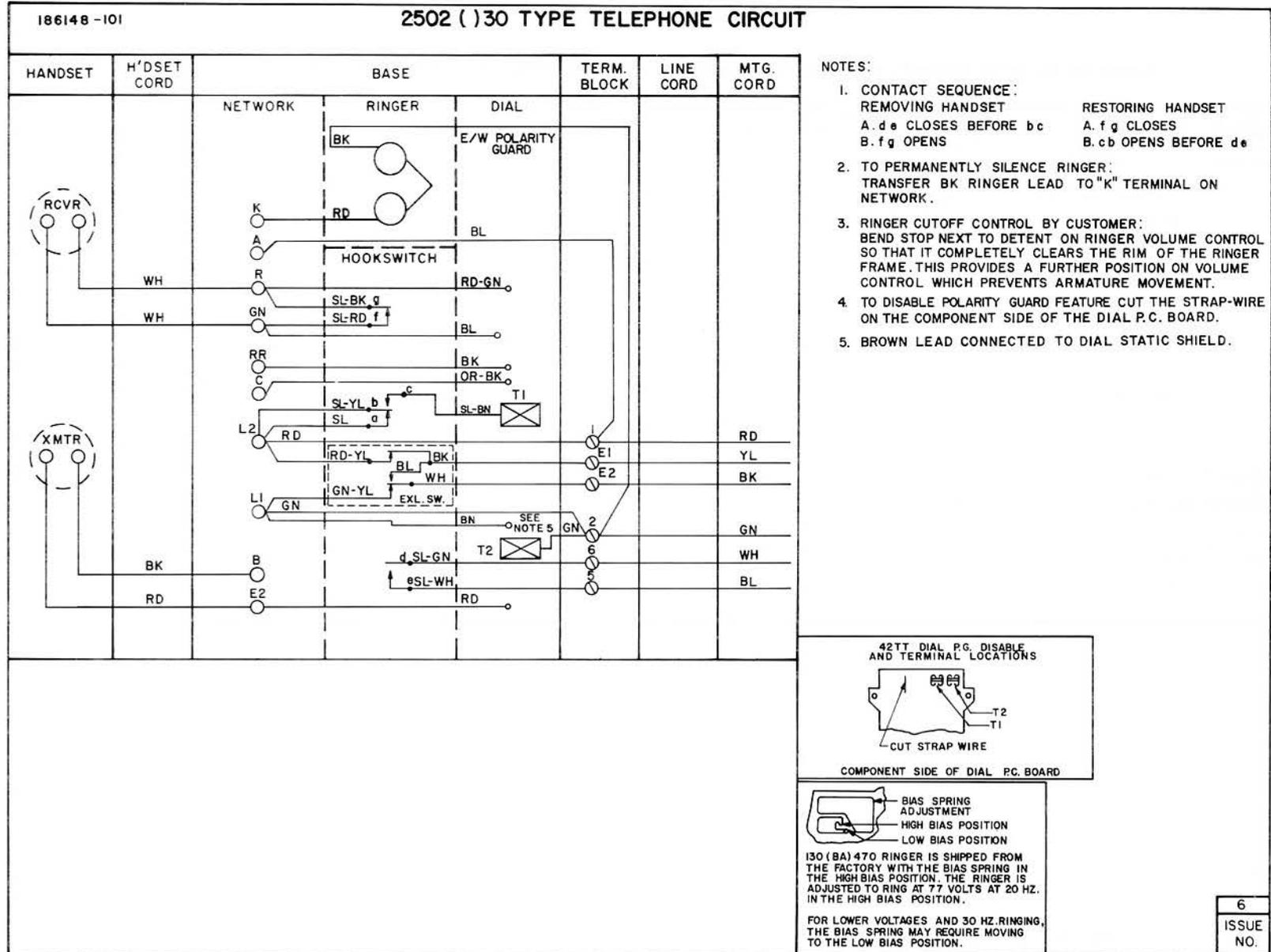


Figure 16: Circuit Label, Model 2502** OBA, Type 30

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FOR USE WITH 30A COUPLER

WIRE OR LEAD		REMOVE TERM ST.	FROM NET	CONNECT TERM ST.	TO NET
MTG. CORD	Y	E1		6	RR
	BK	E2		5	
	W	6		E2	
	BL	5			
EXCL.* KEY	BL	E1			C
	Y STRAP	BL LEAD END	L2	E1 11 (4)	
HANDSET	R	11 (4)		E1	

() ITT TELEPHONES

* CURRENT COLOR CODE IS SHOWN M.D. CODE IS BELOW

CURRENT	M.D.
BL	BL
WH	WH
BK	GN-YW.
Y	RD-YW.

NOTE: W AND BL MTG. CORD LEADS ARE FOR THE COUPLER.
 Y AND BK MTG. CORD LEADS ARE FOR "A" LEAD CONTROL.