

# NONKEY TELEPHONE SETS CONVERSION FOR USE WITH 1A1 OR 1A2 KEY TELEPHONE SYSTEMS

## 1. GENERAL

1.01 This section contains connections and conversion of nonkey general purpose sets to A lead control to permit their use with 1A1 or 1A2 key telephone systems.



*All AC1 and AD1 telephone bases manufactured prior to 10-1-72 and any base which is opened for any reason should be rewired as shown in Table A before proceeding with connections shown in Tables B, C, and D.*

1.02 This section is reissued to:

- Update connection information to show current 220- and 2220-type hand telephone sets with current AC- and AD-type telephone bases
- Show modular version connections to 554-, 702-, 2554-, 2660-, and 2702-type telephone sets

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

1.03 Sets that are factory-wired for A lead control such as the 500L/M or 2500M are not included since no conversion is required.

1.04 The sets included in this section are equipped with line switches adjusted to break the line circuit before the A lead when going on-hook to

prevent false hold conditions. Field adjustment of line switch is not recommended. If these conditions can not be met, the set should be replaced.

## 2. CONNECTIONS

2.01 Connections shown provide for a separate ringer circuit when possible. This is necessary with older types of 1A1 KTS line circuits where tip and ring are not available for incoming signals at the telephone set.

2.02 At installations equipped with 1A1 or 1A2 KTS line circuits where tip and ring are continuous to the telephone set and only one line is picked up, the R-R1 and B-B1 leads may not be required and the ringer can be connected across the line in the set. When used as an individual line ringer, the capacitor must be in the ringer circuit with the ringer poled as a ring station.

2.03 Some sets included in this section also have the capability of other services such as speakerphone, requiring additional connections and leads. For information on these features, refer to the Reference Section of the set involved.

2.04 For connection of the sets to separately mounted keys, refer to Division 512.

2.05 In sets having a dial light (TRIMLINE® or PRINCESS® type) A1 ground should not be common with one of the transformer leads. This is necessary to prevent feedback of ac to the A relay in the case of accidental grounding of the transformer leads.

## NOTICE

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TABLE A

CONVERSION OF EARLY AC1 AND AD1  
TELEPHONE BASES  
MANUFACTURED PRIOR TO 10-1-72  
(SEE READ IN 1.01)

WIRE OR LEAD (SEE NOTE)	COLOR	REMOVE FROM	CONNECT TO
Ringer Lead	BL	B	*
	S	*	B
	BK†	G	L1
Strap from A	BK	A	L2

\* Insulate and store.

† AD1 base only.

Note: Early model AC1 and AD1 bases, the leads from pins 1 and 5 of the mounting and handset cord jacks are (W) and (Y), respectively. In current model, the leads from pins 1 and 5 are (Y) and (W), respectively.

TABLE B

CONVERSION FOR 1A1 OR 1A2 KTS  
USING 220B (MD), 220C, 220AL, OR 2220C HAND  
TELEPHONE SET (FIG. 11)  
(SEE READ IN 1.01)

WIRE OR LEAD	COLOR	TERMINAL BOARD	
		REMOVE FROM	CONNECT TO
Line Switch	BR	C	3
	S	A	C
	Y	L2	1
Handset Cord Jack in Base	R	C	L2

TABLE C

CONVERSION FOR 1A1 OR 1A2 KTS WITHOUT DIAL  
LIGHT USING 220A (MD) OR 2220B HAND TELEPHONE  
SET (FIG. 12) (SEE READ IN 1.01)

WIRE OR LEAD	COLOR	TERMINAL BOARD	
		REMOVE FROM	CONNECT TO
Line Switch	BR	C	3
	S	A	C
	Y	L2	1
Hand Tel Set Cord Jack in Base	R	C	L2
	Y	3	*
	BK	4	*

\* Insulate and store.

TABLE D

**CONVERSION OF AD2 OR AD2 BASES FOR  
1A1 OR 1A2 KTS WITH DIAL LIGHT (NOTE 2)  
USING 220A (MD) OR 2220B HAND TEL SET (FIG. 13)  
(SEE READ IN 1.01)**

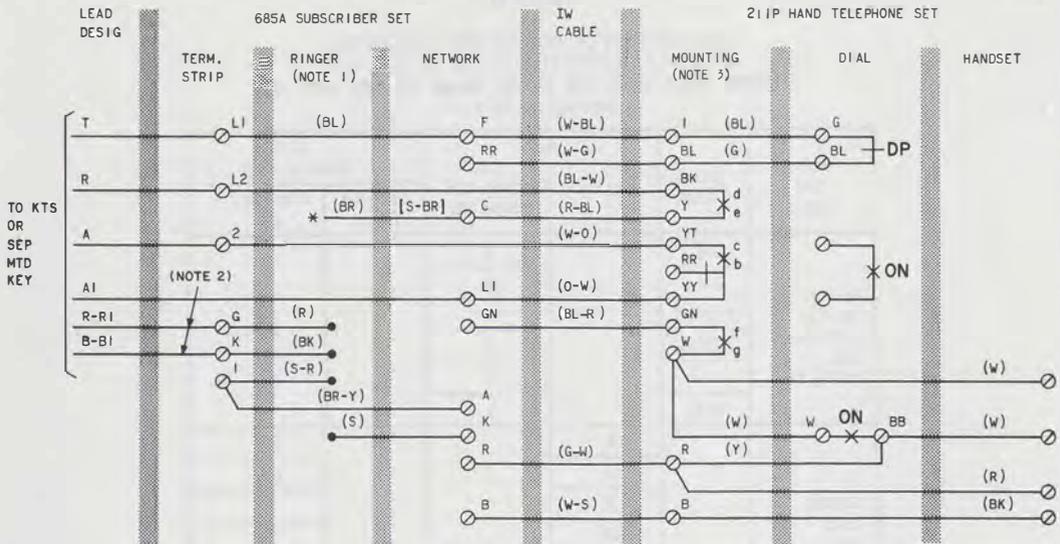
WIRE OR LEAD	LEAD DESIG	COLOR	74D CONN. BLK TERM. BD	BASE TERM. BOARD	
				REMOVE FROM	CONNECT TO
Inside Wire at 74D Conn Blk (Note 1)	Tip		1		
	Ring		2		
	TRNSF		3		
	TRNSF		4		
	A		6		
	A1		5		
623T6 Jack (Note 1)		R			L2
		G			L1
		Y			3
		BK			1
		BL			B
		W			G
Line Switch	A1	BR		C	B
	A	Y		L2	G
		S		A	C
Ringer		S		B	*
		S-R		G	*
Strap		BK		A	L2
Handset Cord Jack in Base		R		C	L2
		W		B	†

\* Insulate and store.

† Insulate and store (AD2 only).

*Notes:*

1. The 623T6 jack, 74D connecting block, and D6AM mounting cord must be ordered separately.
2. AC1P or AC2P bases cannot be wired for 1A1 or 1A2 KTS with dial light.



NOTES:

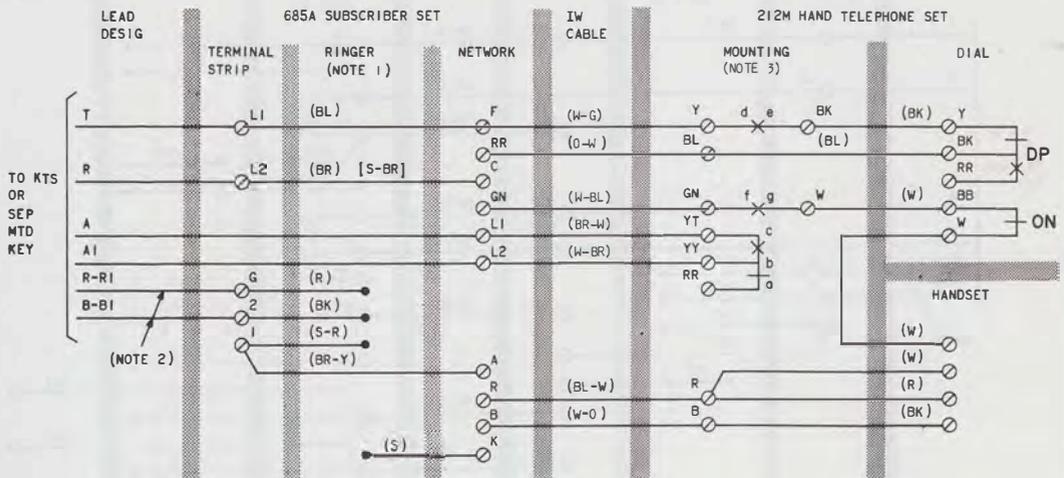
1. FOR COMMON RINGER WITHOUT CAPACITOR, MOVE (S) RINGER LEAD TO A.
2. CONNECT R-R1 AND B-B1 LEADS FOR COMMON OR LINE RINGER AT EQUIPMENT OR KEY AS REQUIRED.
3. TO PREVENT FALSE HOLD CONDITION WHEN GOING ON-HOOK, THE TIP AND RING CONTACTS OF THE LINE SWITCH MUST BREAK BEFORE "A" LEAD CONTACTS. (FIELD ADJUSTMENT OF LINE SWITCH NOT RECOMMENDED).

\* INSULATED AND STORED  
 ( ) CURRENT COLOR CODE  
 [ ] MD COLOR CODE  
 DP - DIAL PULSE CONTACT  
 ON - OFF NORMAL CONTACT

SET MODIFICATION

LEAD	COLOR	FROM	TO
RINGER	(R)	L2	G
	(BK)	L1	K
STRAP	(BR) [S-BR]	L2 OR 2	*

Fig. 1— 211PR (MD) Hand Telephone Set, Connections for Use with 1A1 or 1A2 KTS



## NOTES:

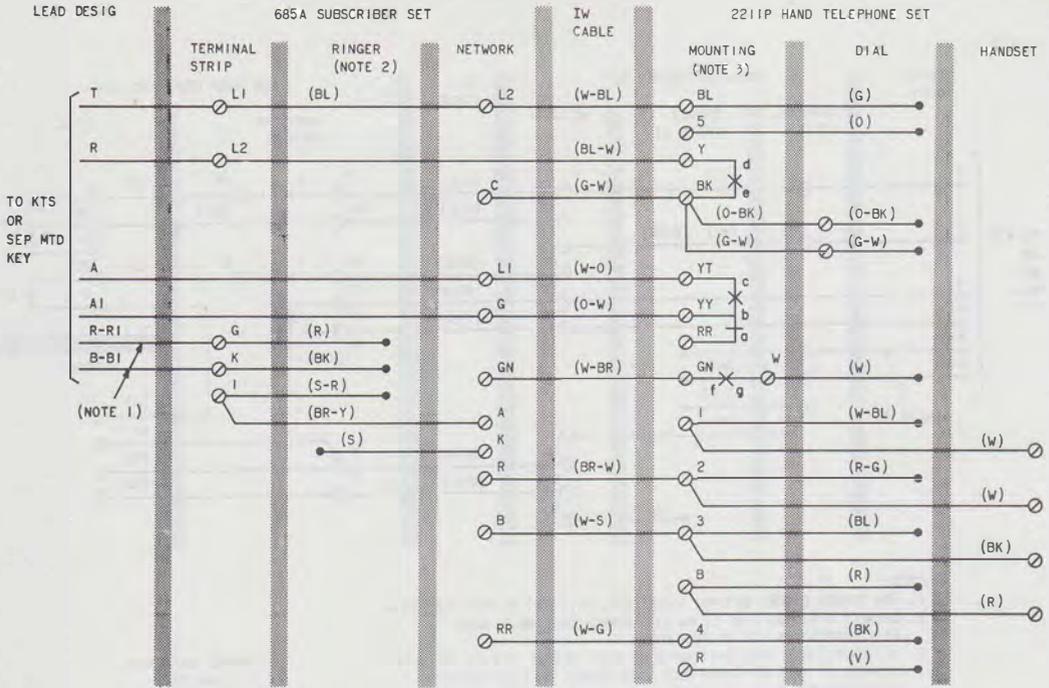
1. FOR COMMON RINGER WITHOUT CAPACITOR, MOVE (S) RINGER LEAD TO A.
2. CONNECT R-RI AND B-BI LEADS FOR COMMON OR LINE RINGER AT EQUIPMENT OR KEY AS REQUIRED.
3. TO PREVENT FALSE HOLD CONDITION WHEN GOING ON-HOOK, THE TIP AND RING CONTACTS OF THE LINE SWITCH MUST BREAK BEFORE "A" LEAD-CONTACTS. (FIELD ADJUSTMENT OF LINE SWITCH NOT RECOMMENDED).

( ) CURRENT COLOR CODE  
 [ ] MD COLOR CODE  
 DP - DIAL PULSE CONTACT  
 ON - OFF NORMAL CONTACT

## SET MODIFICATION

LEAD	COLOR	FROM	TO
RINGER	R	L2	G
	BK	L1	2

Fig. 2— 212MR (MD) Hand Telephone Set, Connections for Use with 1A1 or 1A2 KTS



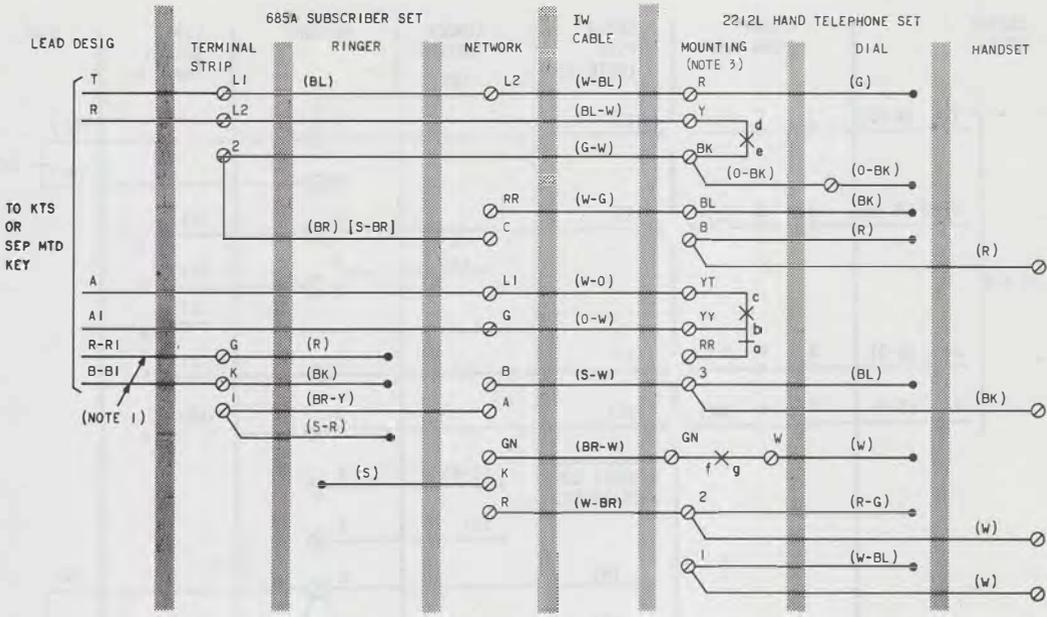
NOTES:

1. CONNECT R-R1 AND B-B1 LEADS FOR COMMON OR LINE RINGER AT EQUIPMENT OR KEY AS REQUIRED.
2. FOR COMMON RINGER WITHOUT CAPACITOR, CONNECT (S) RINGER LEAD TO A.
3. TO PREVENT FALSE HOLD CONDITION WHEN GOING ON-HOOK, THE TIP AND RING CONTACTS OF THE LINE SWITCH MUST BREAK BEFORE "A" LEAD CONTACTS. (FIELD ADJUSTMENT OF LINE SWITCH NOT RECOMMENDED).

SET MODIFICATION

LEAD	COLOR	FROM	TO
RINGER	(R)	L2	G
	(BK)	L1	K

Fig. 3— 2211P (MD) Hand Telephone Set, Connections for Use with 1A1 or 1A2 KTS



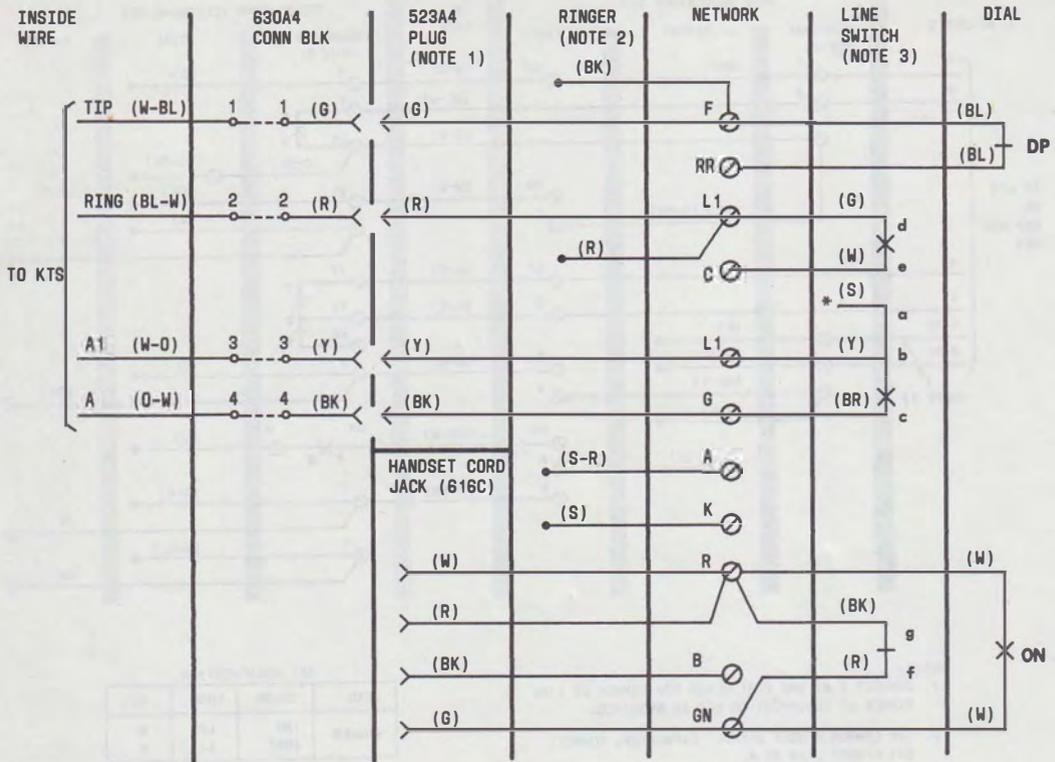
- NOTES:
1. CONNECT R-RI AND B-BI LEADS FOR COMMON OR LINE RINGER AT EQUIPMENT OR KEY AS REQUIRED.
  2. FOR COMMON RINGER WITHOUT CAPACITOR, CONNECT (S) RINGER LEAD TO A.
  3. TO PREVENT FALSE HOLD CONDITION WHEN GOING ON-HOOK, THE TIP AND RING CONTACTS OF THE LINE SWITCH MUST BREAK BEFORE "A" LEAD CONTACTS. (FIELD ADJUSTMENT OF LINE SWITCH NOT RECOMMENDED)

SET MODIFICATION

LEAD	COLOR	FROM	TO
RINGER	(R) (BK)	L2 L1	G K

( ) CURRENT COLOR CODE  
 [ ] MD COLOR CODE

Fig. 4— 2212L (MD) Hand Telephone Set, Connections for Use with 1A1 or 1A2 KTS



SET MODIFICATION

LEAD	COLOR	FROM	TO
523A4 PLUG	G		F
	R		L1
	Y		L2
	BK		G
RINGER	BK	L1	F
	R	L2	L1
LINE SWITCH	W	F	C
	BR	C	G
	S	L2	*

NOTES:

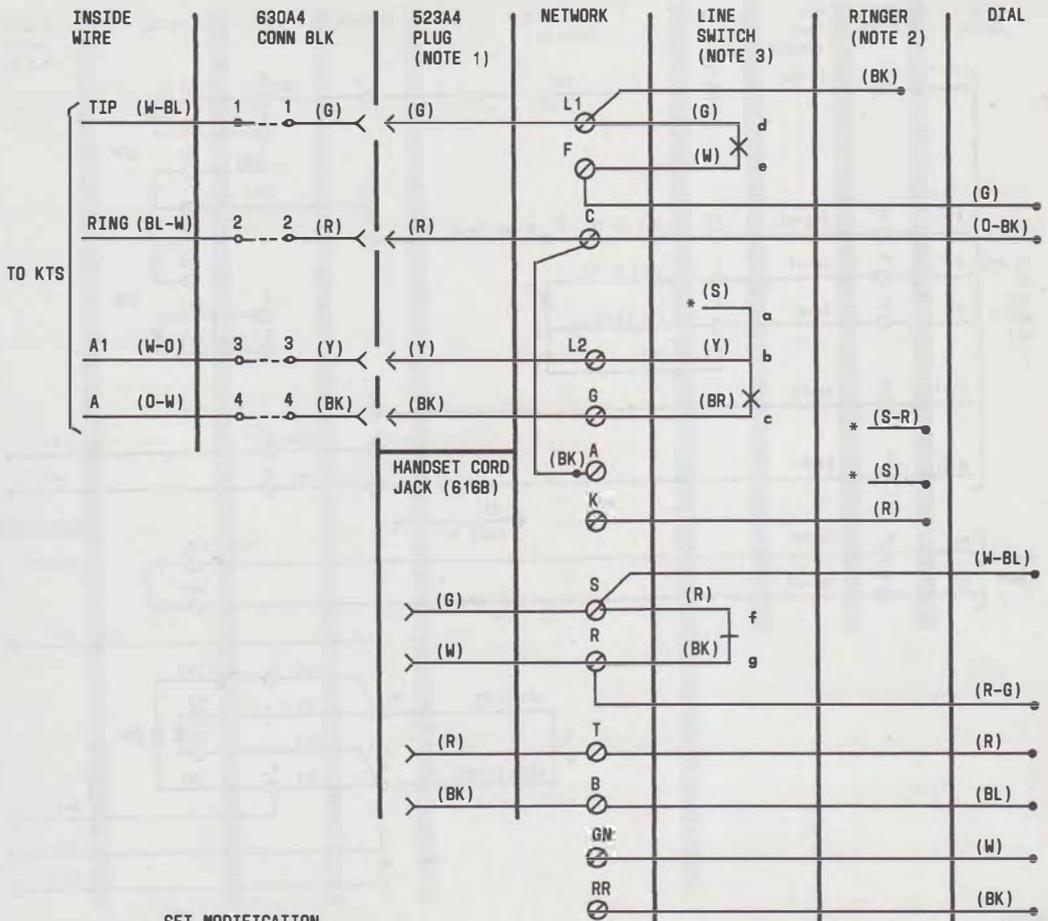
1. REPLACE 523A3 PLUG WITH 523A4 PLUG, ORDERED SEPARATELY.
2. WIRED FOR INDIVIDUAL OR BRIDGED RINGING.
3. TO PREVENT FALSE HOLD CONDITION WHEN GOING ON-HOOK, THE TIP AND RING CONTACTS OF THE LINE SWITCH MUST BREAK BEFORE "A" LEAD CONTACTS. (FIELD ADJUSTMENT OF LINE SWITCH NOT RECOMMENDED).

\* INSULATE AND STORE

DP - DIAL PULSE CONTACTS

ON - DIAL OFF-NORMAL CONTACTS

Fig. 5— 554BMP Telephone Set, Connections for Use with 1A1 or 1A2 KTS



SET MODIFICATION

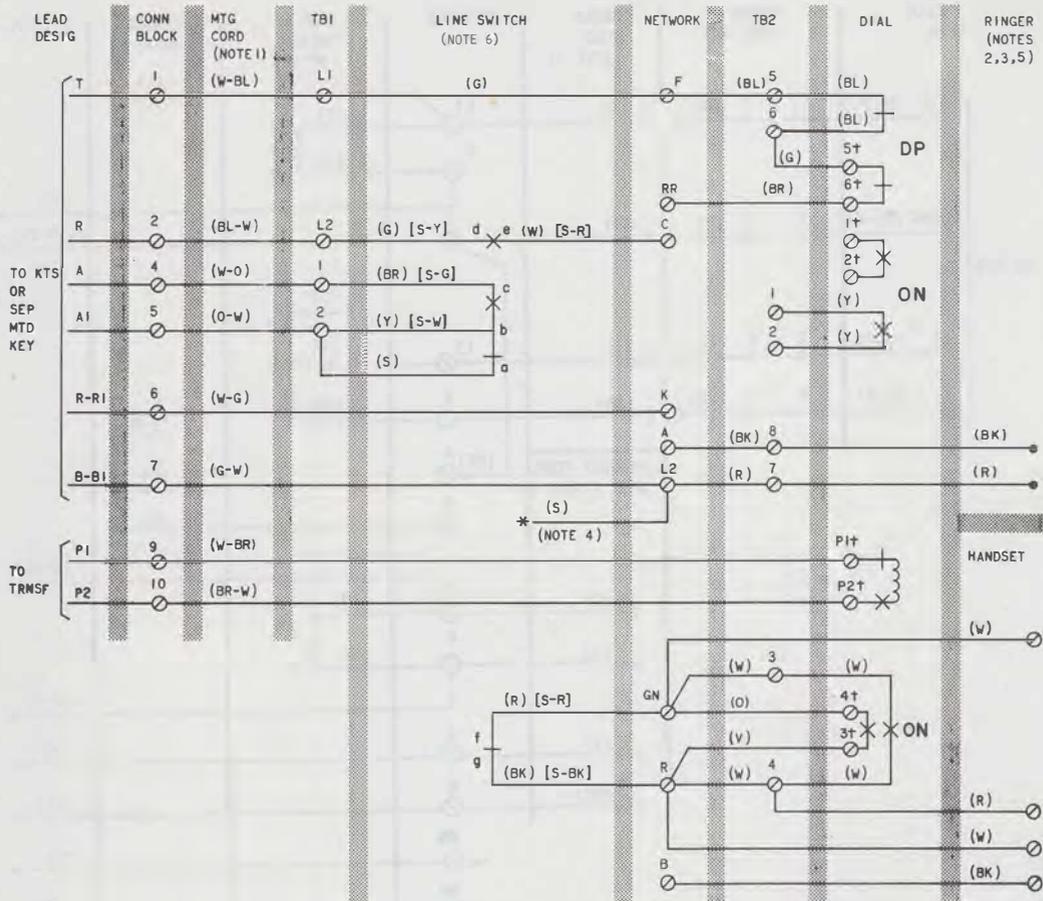
LEAD	COLOR	FROM	TO
523A4 PLUG	G		L1
	R		C
	Y		L2
	BK		G
LINE SWITCH	S	L2	*
	BR	C	G
STRAP	BK	L2	C

NOTES:

1. REPLACE 523A3 PLUG WITH 523A4 PLUG, ORDERED SEPARATELY.
2. WIRED FOR INDIVIDUAL OR BRIDGED RINGING.
3. TO PREVENT FALSE HOLD CONDITION WHEN GOING ON-HOOK, THE TIP AND RING CONTACTS OF THE LINE SWITCH MUST BREAK BEFORE "A" LEAD CONTACTS. (FIELD ADJUSTMENT OF LINE SWITCH NOT RECOMMENDED).

\* INSULATE AND STORE

Fig. 6— 2554BMP Telephone Set, Connection for Use with 1A1 or 1A2 KTS



NOTES:

1. REPLACE D6AF MTG CORD WITH D10R.
2. CONNECT R-R1 AND B-B1 LEADS FOR COMMON OR LINE RINGER AS REQUIRED.
3. FOR COMMON RINGER WITHOUT CAPACITOR, CONNECT (W-G) MTG CORD LEAD TO A.
4. REMOVE FROM TBI-L2, INSULATE AND STORE.
5. CONNECTIONS SHOWN ARE FOR C4B RINGER, IF C4A IS USED, WIRE AS FOLLOWS:
 

<ul style="list-style-type: none"> <li>• (R) TO TB2-7</li> <li>• (BK) TO TB2-8</li> <li>• (S) TO TB2-9</li> <li>• (S-R) TO TB2-10</li> </ul>	<ul style="list-style-type: none"> <li>• (R) TB2-7 TO L2 OF NET ORK</li> <li>• (BK) TB2-8 TO G OF NETWORK</li> <li>• (S) TB2-9 TO K OF NETWORK</li> <li>• (S-R) TB2-10 TO A OF NETWORK</li> </ul>
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6. TO PREVENT FALSE HOLD CONDITION WHEN GOING ON-HOOK, THE TIP AND RING CONTACTS OF THE LINE SWITCH MUST BREAK BEFORE "A" LEAD CONTACTS. (FIELD ADJUSTMENT OF LINE SWITCH NOT RECOMMENDED).

( ) CURRENT COLOR CODE  
[ ] MD COLOR CODE

\* INSULATE AND STORE  
† TERMINALS AND CONTACTS ON 41-TYPE DIAL

DP DIAL PULSE CONTACTS

ON OFF NORMAL CONTACTS

SET MODIFICATION

LEAD	COLOR	FROM	TO
STRAP	(G)	L1	F
	(S)	TBI-L2	*
LINE SWITCH	(G) [S-Y]	L1	L2
	(W) [S-R]	F	C
	(BR) [S-G]	C	TBI-1
	(Y) [S-W]	TBI-L2	TBI-2
	(S)	TBI-L2	TBI-2

Fig. 7— 660A1M (MD) Telephone Set, Connections for Use with 1A1 or 1A2 KTS

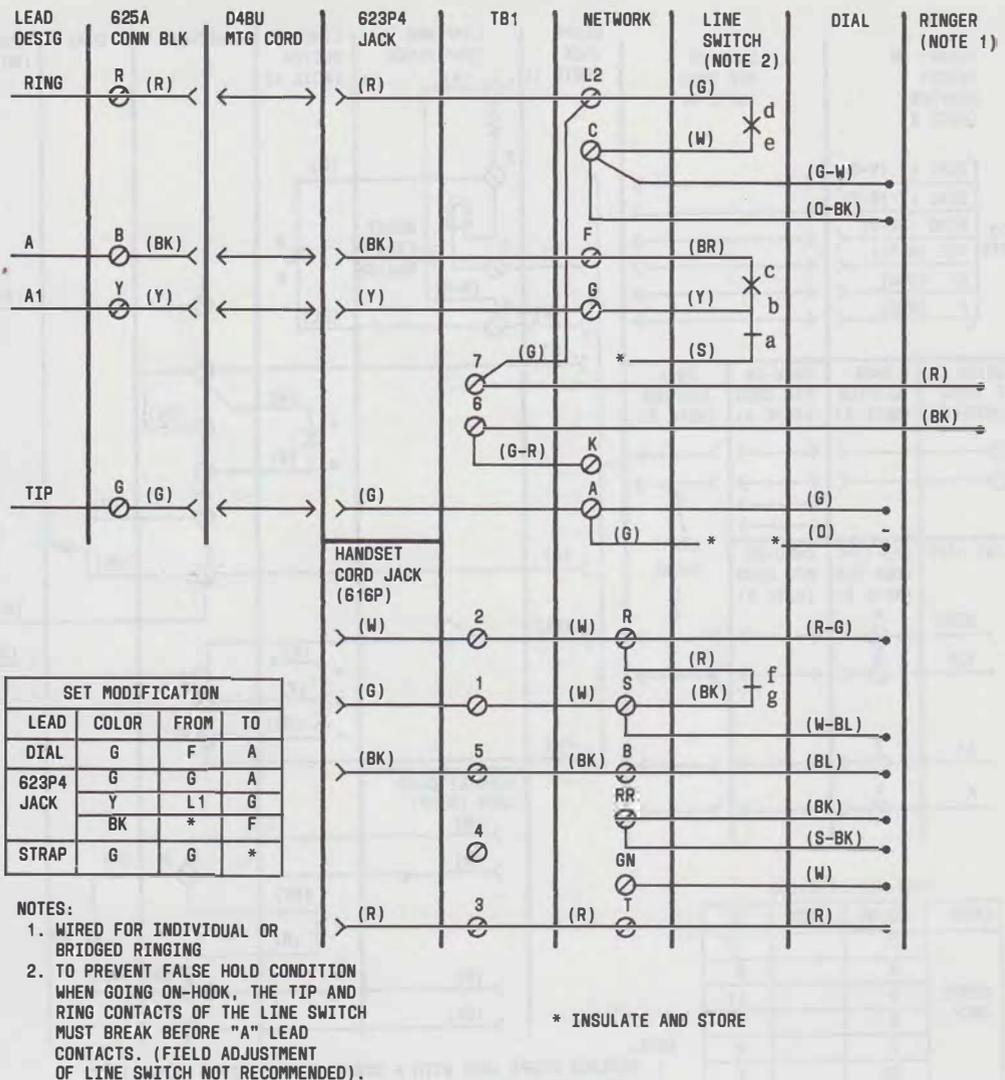


Fig. 8— 2660A1M Telephone Set, Connections for Use with 1A1 or 1A2 KTS

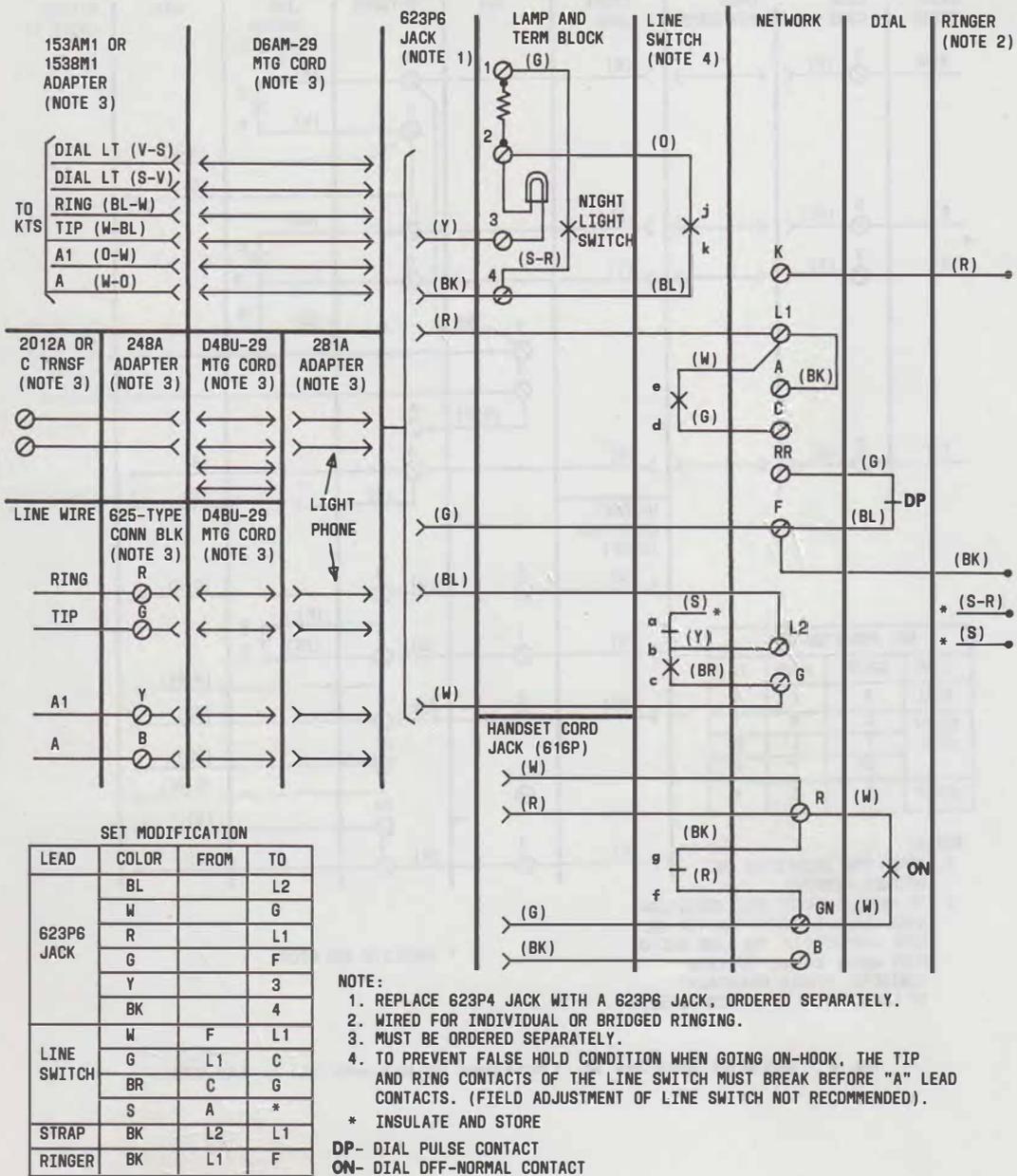


Fig. 9— 702BM Telephone Set, Connections for Use with 1A1 or 1A2 KTS

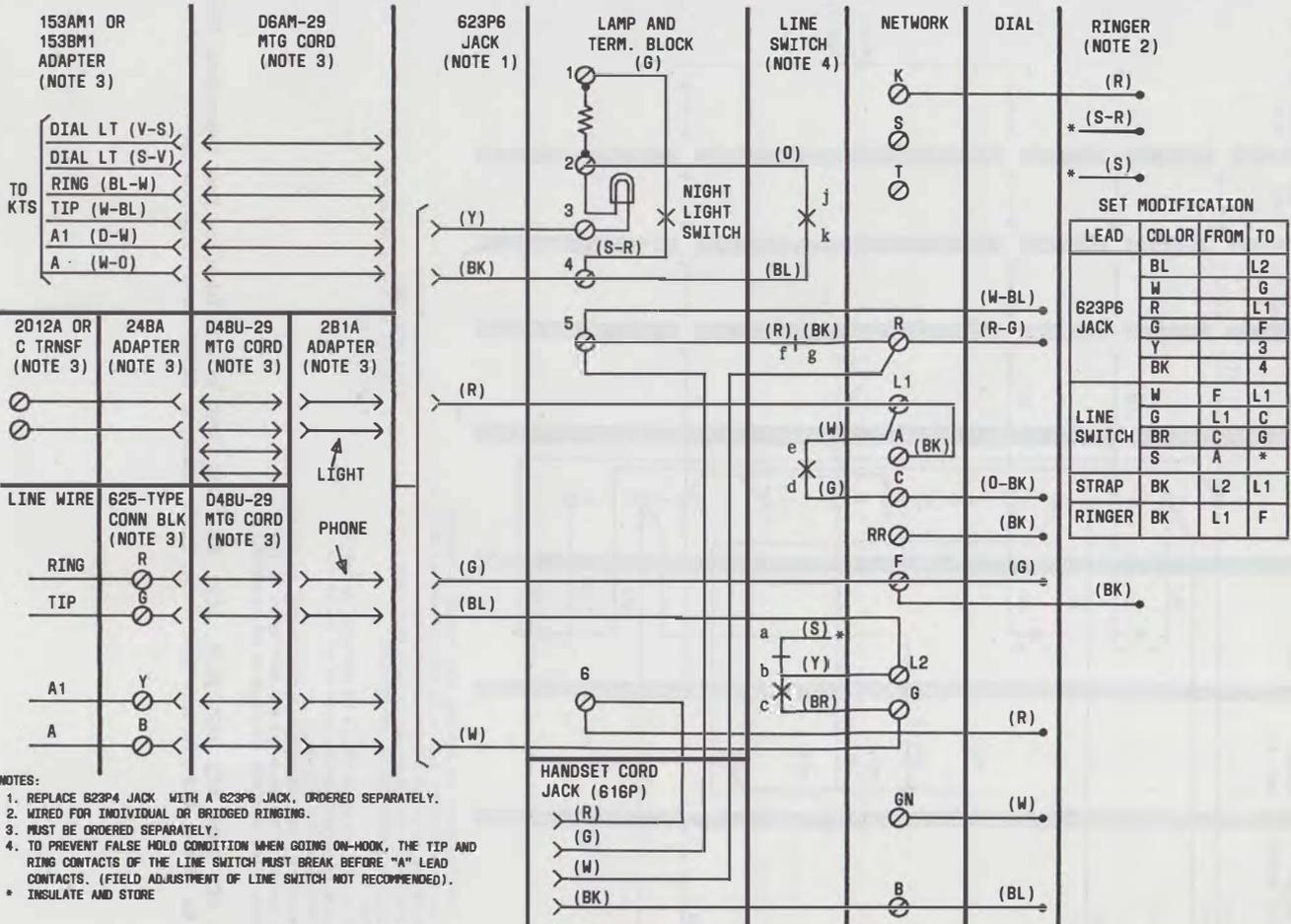
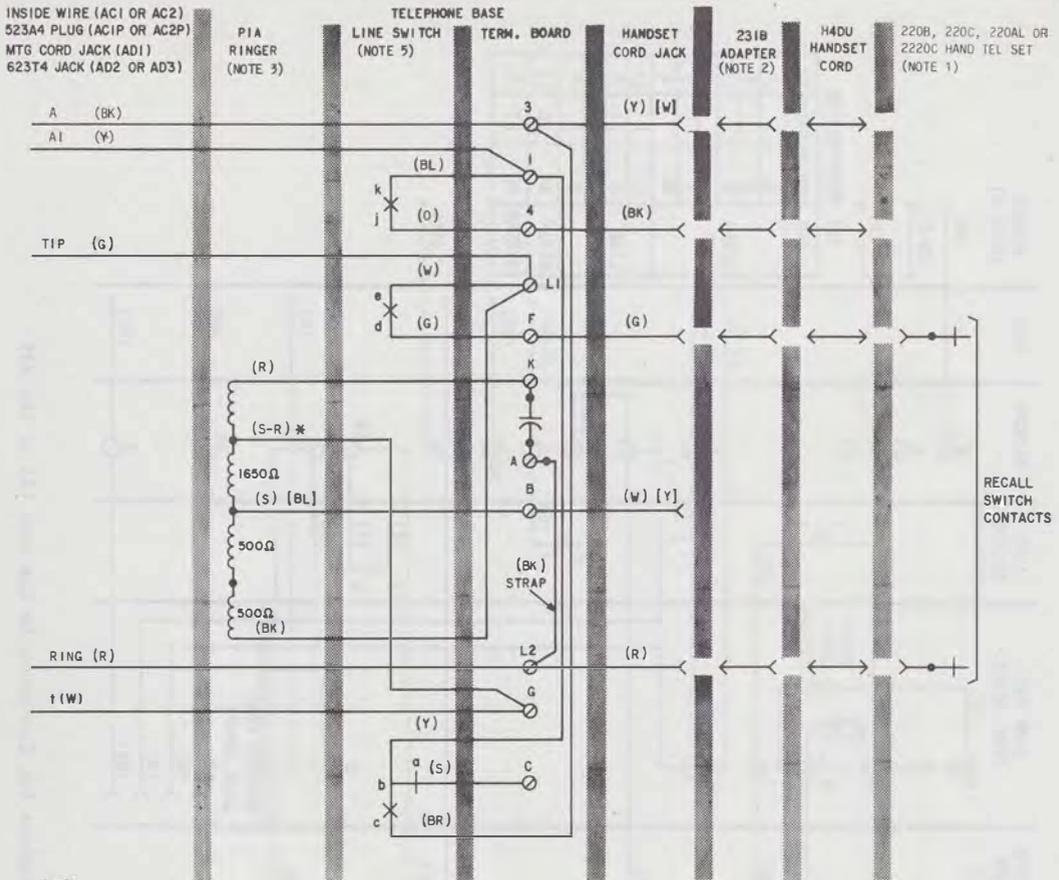


Fig. 10— 2702BM Telephone Set, Connections for Use with 1A1 or 1A2 KTS

SECTION 502-110-102



NOTES:

1. DIAL LIGHT TRANSFORMER NOT REQUIRED. DIAL LIGHTING IS PROVIDED BY LIGHT EMITTING DIODES (LED) IN THE HAND TELEPHONE SET WHICH IS POWERED BY C.G. BATTERY OVER THE INCOMING LINE.
2. THE 231B ADAPTER NOT REQUIRED ON AC2, AC2P, OR AD3 BASE.
3. SET WIRED FOR BRIDGED RINGING. FOR KTS REFER TO TABLE B.
4. REFER TO READ IN 1.01 AND TABLE A FOR ADDITIONAL INFORMATION ON WIRING ARRANGEMENT AND LEAD COLORS OF AC1 AND AD1 BASES MANUFACTURED PRIOR TO 10-1-72.
5. TO PREVENT FALSE HOLD CONDITION WHEN GOING ON-HOOK, THE TIP AND RING CONTACTS OF THE LINE SWITCH MUST BREAK BEFORE "A" LEAD CONTACTS. (FIELD ADJUSTMENT OF LINE SWITCH NOT RECOMMENDED).

- ( ) CURRENT COLOR CODE
- [ ] EARLY COLOR CODE
- \* INSULATED AND STORED (AD1 ONLY)
- † AD1 BASE ONLY

Fig. 11— AC1 (MD), AC2 (MD), AC1P, AC2P, AD1 (MD), AD2, or AD3 Telephone Base Connections, Wired for 1A1 or 1A2 KTS with 220B (MD), 220C, 220AL, or 2220C Hand Telephone Set



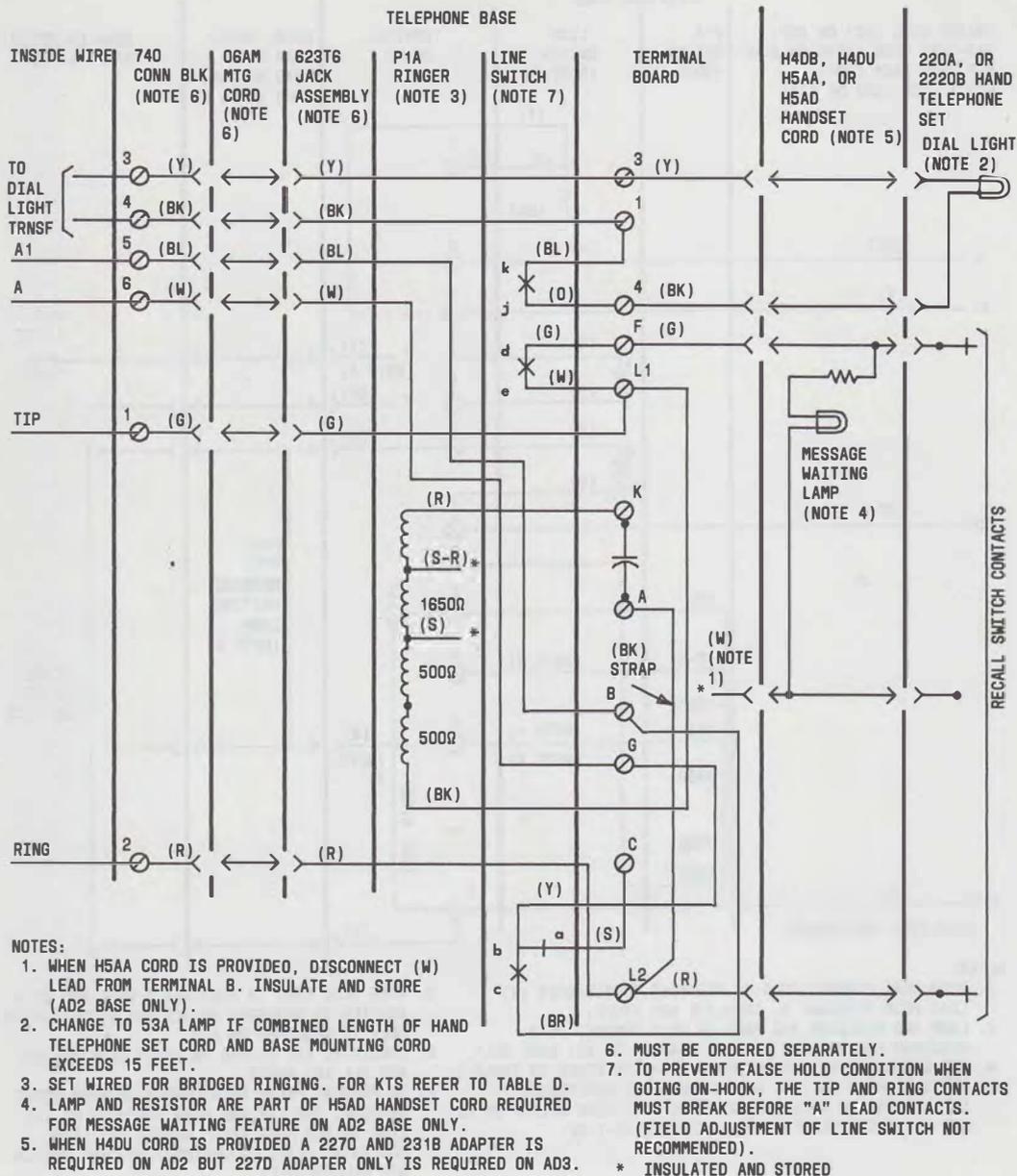


Fig. 13— AD2 or AD3 Telephone Base Wired for 1A1 or 1A2 KTS with Dial Light using 220A (MD) or 2220B Hand Telephone Set