

SERVICE

1A1 KEY TELEPHONE SYSTEM

KEY SERVICE UNITS

1. GENERAL

1.01 This section contains connection information for the 300-, 301-(MD), 302-(MD), 310-, 311-, 2301-, and 2311-type KSUs.

1.02 Information in this section was formerly contained in Sections 518-240-400, 518-240-401, 518-245-101, and 518-245-102, which are hereby canceled.

1.03 For additional information, refer to CD- and SD-69433-01 (300-, 301-, and 302-type); CD- and SD-69434-01 (310-type); and CD and SD-68480-01 (311-type).

2. CONNECTIONS

2.01 Key and power cable connections and strapping between 202D, 230B, 232B, and 207C KTUs for the 300-, 301-, 302-type KSUs, and for the 310-, 311-type KSUs are shown in Fig. 4 and 5, respectively. Key and power cable connections and strappings between the 230B, 238A, 207C, and 216A for the 310- and 311-type KSUs are shown in Fig. 6.

300-Type Key Service Unit

2.02 KTUs are interwired. Connect key or running cables directly to the screw terminals on back of the KTUs. See Table A for features, lead designations, and connections. When power is not provided, connect an external power source as shown in Table B.

301-Type Key Service Unit

2.03 Connect key or running cables in Columns A through E of 66-type connecting block (Fig. 2). See Table A for features, lead designations, and terminal numbers on connecting blocks A and B.

2.04 When power is not provided, connect an external power source to Column A of connecting block A as shown in Table B.

302-Type Key Service Unit

2.05 An A75A connector cable is connected to 66-Type Connecting block as follows:

- Blue binder (connector 1) to Column A.
- Orange binder (connector 2) to Column B
- Green binder (connector 3) to Column C.

2.06 Each connector provides for:

- All Line features
- Dial intercommunicating line
- Common audible signal for all line circuits.

2.07 See Table C for features, lead designations, and connections to blocks A and B.

2.08 Some pairs in each binder group of the A75A connector cable are not terminated. These pairs may be used for dial intercom codes and miscellaneous circuits by terminating on the proper or vacant terminals on the 66-type connecting block.



These vacant terminals may have wires terminated on Column F that are lying dead at the apparatus end. Make sure that these terminals are cleared before using for miscellaneous circuits.

2.09 A telephone set may be connected to each connector of the A75A connector cable or extended with a B25A connector cable to a bridging adapter or equivalent.

**Reprinted to comply with modified final judgment.

2.10 Fig. 3 shows possible arrangements for intercom signal leads and for extending stations using a 3-way bridging adapter.

Connect additional key or running cables to 66-type connecting blocks (see Fig. 2). See Table A for features, lead designations, and connections to terminal numbers on connecting blocks A and B.

2.12 When power is not provided, connect an external power source to Column A of connecting block A (see Table B).

2.13 When key telephone sets are multiplied through bridging adapters with sets furnishing features on a per station basis such as speaker-phone, line exclusion control, cutoff key, push button and buzzers, station busy lamps, etc, certain control leads must be disconnected, insulated, and stored at the bridged station. This is necessary to avoid interference with working circuits. Refer to appropriate section for the telephone set used.

310-Type Key Service Unit

2.14 KTUs are interwired. Connect key or running cables directly to the screw terminals on the back of the KTUs. See the following tables for features, lead designations, and connections.

● Table D, 4 to 7 lines

● Table F, 9 to 13 lines

2.15 When power is not provided, connect an external power source. See the following tables:

● Table E, 4 to 7 lines

● Table G, 9 to 13 lines

311-Type Key Service Unit

2.16 Connect key or running cables, starting on Column A of the 66-type connecting blocks (Fig. 2). See the following tables for features, lead designations, and terminal numbers on connecting blocks.

● Table D, 4 to 7 lines

● Table F, 9 to 13 lines

2.17 When power is not provided, connect an external power source to Column A of connecting block D. See the following tables:

● Table E, 4 to 7 lines

● Table G, 9 to 13 lines

2301- and 2311-Type Key Service Units

2.18 Connections for terminating running and/or key cables and external power wiring to the 66-type connecting blocks are shown in Tables J and K for the 2301- and 2311-type KSUs, respectively. Interwiring of connections between individual KTUs and the connecting blocks is also shown.

2.19 For further information see CDs and SDs 69352-01 and 69361-01 for the 2301- and 2311-type KSUs, respectively.

Signaling Circuit For Manual Intercom

2.20 Fig. 7 shows an arrangement for manual signaling when dial intercom is not provided. This arrangement uses terminals normally used for dial intercom. (See *Read* after 2.08).

Wink-Hold Circuit

2.21 All packages are wired for the wink-hold feature.

Steady Hold

2.22 For steady hold feature see the connection and strapping diagram for the particular KSU.

2.23 Connection Index

Fig. 1—Method of Counting 66B1-25 Connecting Blocks

Fig. 2—Key or Running Cable Terminations on 66-Type Connecting Block For 301-, 302-, and 311-Type KSUs

Fig. 3—Suggested Intercom Signal Connections Using 564HDR or 565HDR Telephone Sets and 302-Type KSU

Fig. 4—300-, 301- and 302-Type KSUs, Connections and Strapping (202D, 230B, 232B, and 207C KTUs)

Fig. 5—310- or 311-Type KSU (4 to 7 Lines) Connections and Strapping (202D, 230B, 232B, and 207C KTUs)

Fig. 6—310- or 311-Type KSU (9 to 13 Lines) Connections and Strapping (230B, 238A, 207C, and 216A KTUs)

Fig. 7—Typical Connections for Manual Signaling When Dial Intercom Circuit is Not Used

Table A—301- and 302-Type KSUs, Connections Between Apparatus and 66-Type Connecting Blocks

Table B—301- and 302-Type KSUs, Connections between Block A of 66-Type Connecting Block, Apparatus, and Power Plant

Table C—302-Type KSU, Connections Between A75A Connector Cable and 66-Type Connecting Blocks

Table D—311-Type KSU (4 - 7 Lines) Connections Between Apparatus and 66-Type Connecting Blocks

Table E—311-Type KSU (4-7 Lines) Connections Between Apparatus, 66-Type Connecting Block, and Power Plant

Table F—311-Type KSU (9-13 Lines) Connections Between Apparatus and 66-Type Connecting Blocks

Table G—311-Type KSU (9-13 Lines) Connections Between Apparatus, 66-Type Connecting Block, and Power Plant

Table H—310- or 311-Type KSU (9 to 13 Lines) Line Circuit Portion of 238A KTU

Table I—310- or 311-Type KSU (9 to 13 Lines) 230B KTU

Table J—2301-Type KSU Connections Between Apparatus and 66-Type Connecting Block

Table K—2311-Type KSU Connections

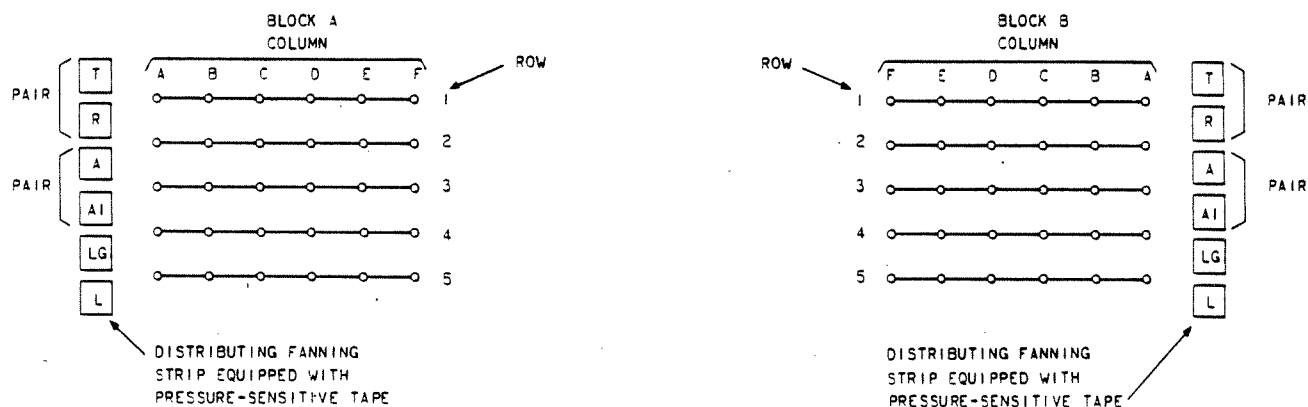


Fig. 1—Method of Counting 66B1-25 Connecting Blocks

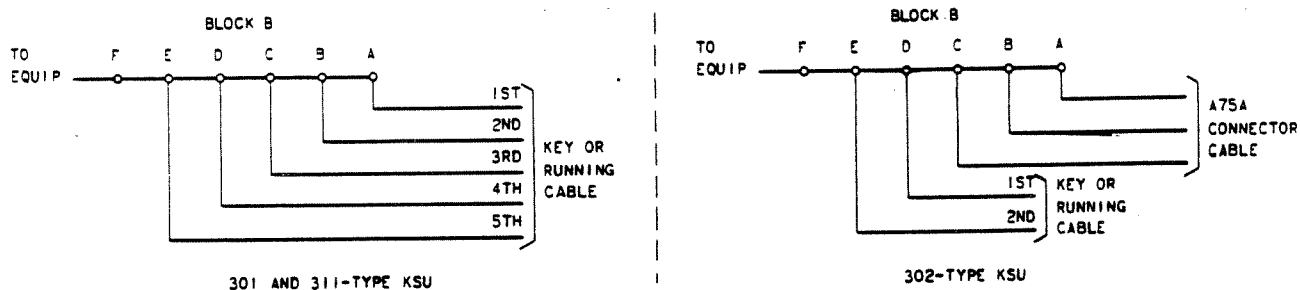


Fig. 2—Key or Running Cable Terminations on 66-Type Connecting Block For 301-, 302-, and 311-Type KSUs

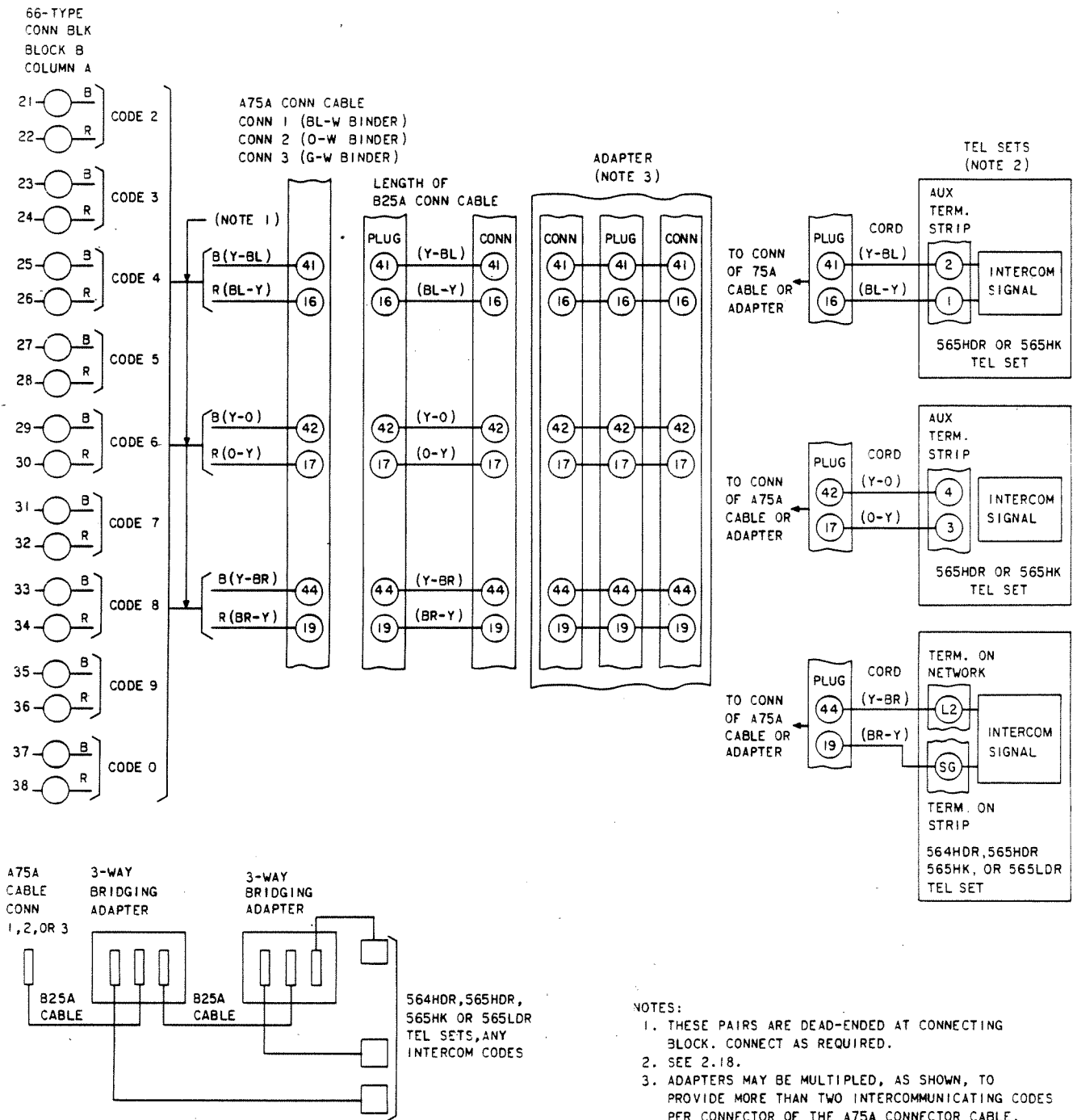
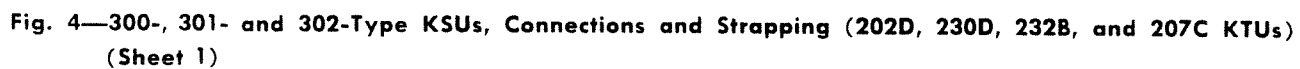
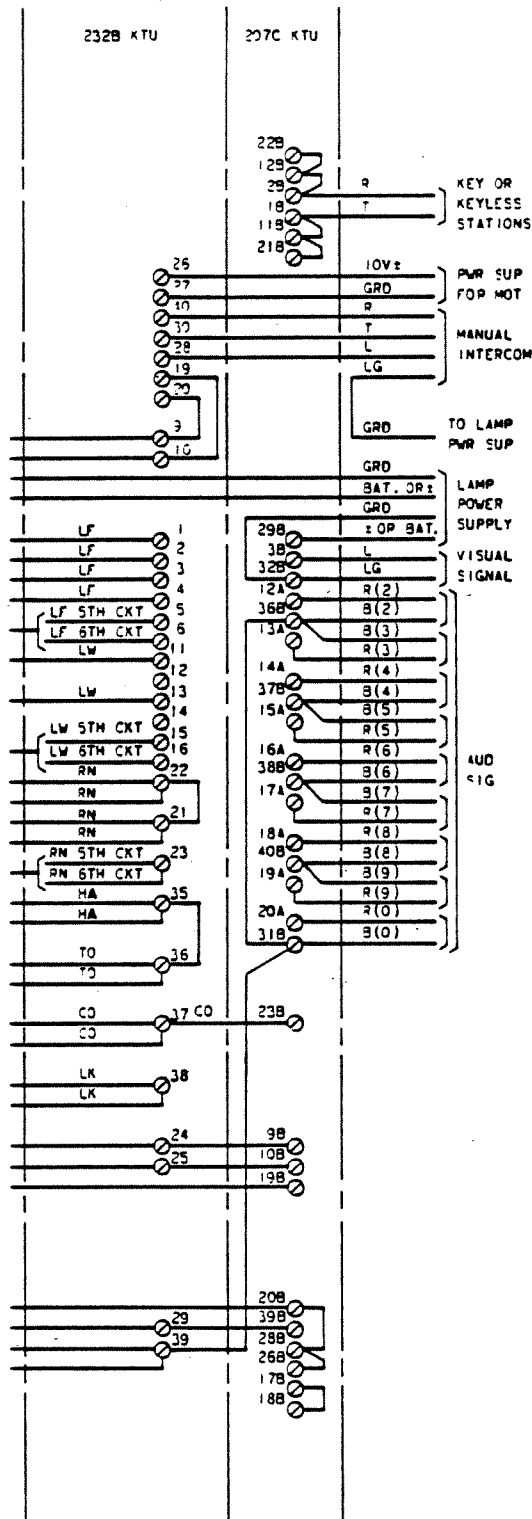


Fig. 3—Suggested Intercom Signal Connections Using 564HDR or 565HDR Telephone Sets, and 302-Type KSU





NOTES:

1. WHEN STEADY HOLD LAMP IS REQUIRED INSTEAD OF LAMP WINK, PROVIDE STRAPS AS FOLLOWS:

202D KTU-TERMS. 20 AND 29

230B KTU-CKTS 1 AND 2 TERMS. 20A,B AND 29A CKTS 3 AND 4 TERMS. 20C,D AND 29A

CAUTION: IF PACKAGE INTERRUPTER IS USED TO FURNISH LAMP WINK FOR OTHER SYSTEMS, DISCONNECT AND TAPE LW LEADS AT TERMINAL 20 OF EACH LINE CIRCUIT NOT USING THE WINK FEATURE.

2. SYMBOL (II) MEANS ADJACENT TERMINALS ARE NOT STRAPPED. REFER TO LEGEND FOR TERMINATIONS.

* WIRED FOR METALLIC RINGING AND INTERRUPTED AUDIBLE

† FOR COMMON AUDIBLE, STRAP ALL NO. 10 TERMINALS
‡ A AND B GROUNDS MUST BE CONNECTED TOGETHER AT POWER SUPPLY

WIRING		OPTION
METALLIC RINGING FURNISHED		Z
GROUNDED RINGING		Y
INTERRUPTED AUDIBLE SIG (FURNISHED)		X
STEADY AUDIBLE SIGNAL		W
LAMP SUPPLY	MAX 40 LAMPS (FURNISHED)	S
	MAX 80 LAMPS	R

Fig. 4—300-, 301- and 302-Type KSUs, Connections and Strapping (202D, 230B, 232B, and 207C KTUs)
(Sheet 2)

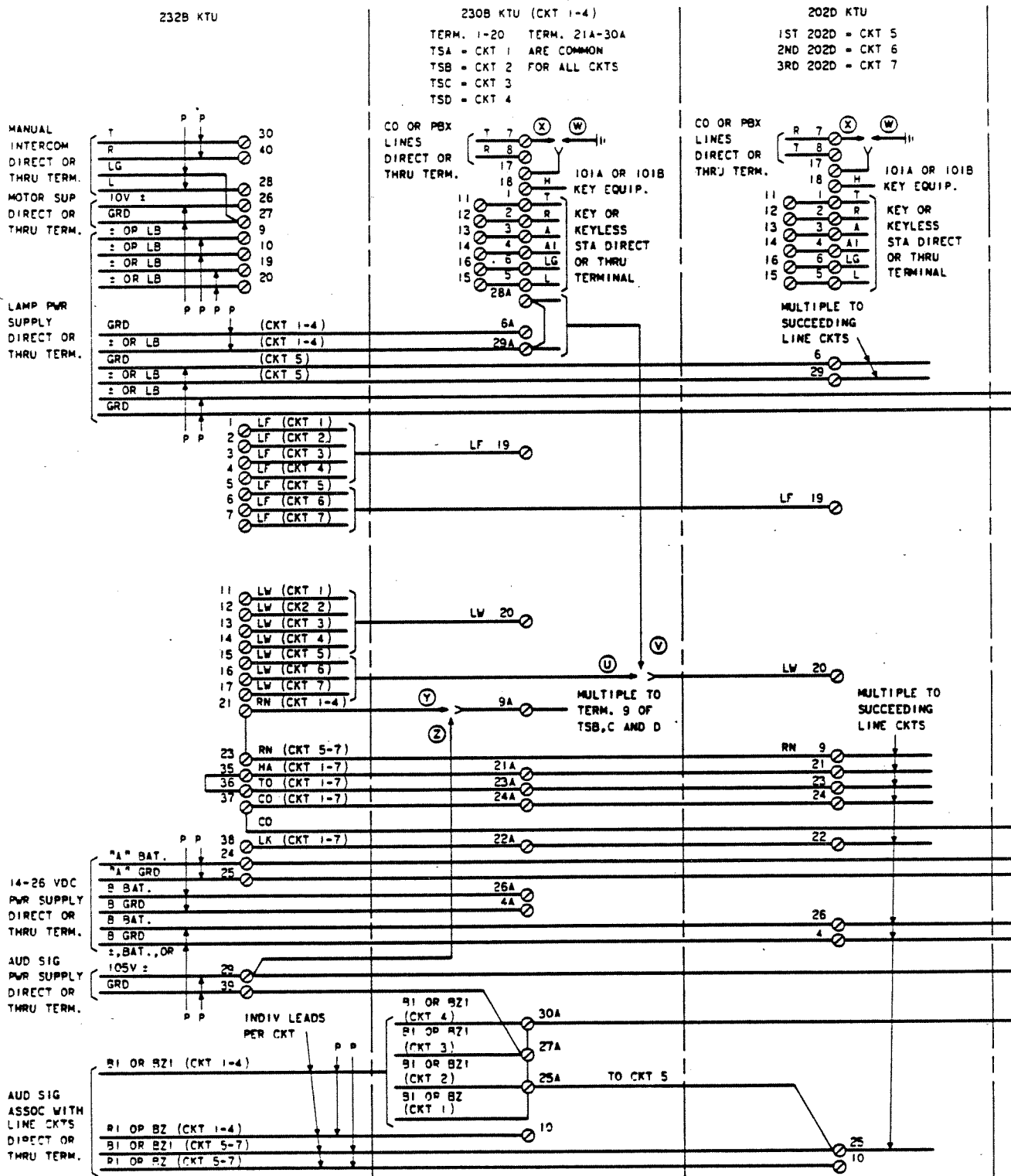


Fig. 5—310- or 311-Type KSU (4 to 7 Lines) Connections and Strapping (202D, 230B, 232B, and 207C KTUs)
(Sheet 1)

207C KTU

NOTES:

1. FOR COMMON AUDIBLE SIGNAL STRAP ALL NO. 10 TERMS.
2. WHEN STEADY HOLD SIGNAL IS REQUIRED (V OPTION)
PROVIDE STRAPS AS FOLLOWS:
202D KTU-TERM. 20-29
230B KTU-TERM. 20A,B-29A (CKT 1-2)
TERM. 20C,D-28A (CKT 3-4)
3. A AND B GROUNDS MUST BE CONNECTED TOGETHER.

OPTIONS:

- Ⓢ WINKING HOLD SIGNAL (FURNISHED).
- Ⓥ STEADY HOLD SIGNAL.
- Ⓦ GROUNDED LINE RINGING.
- ⓧ METALLIC LINE RINGING (FURNISHED).
- Ⓨ INTERRUPTED AUDIBLE SIGNAL USING ELECTRO-MECHANICAL INTERRUPTER (232B KTU) (FURNISHED).
- Ⓩ STEADY AUDIBLE SIGNAL

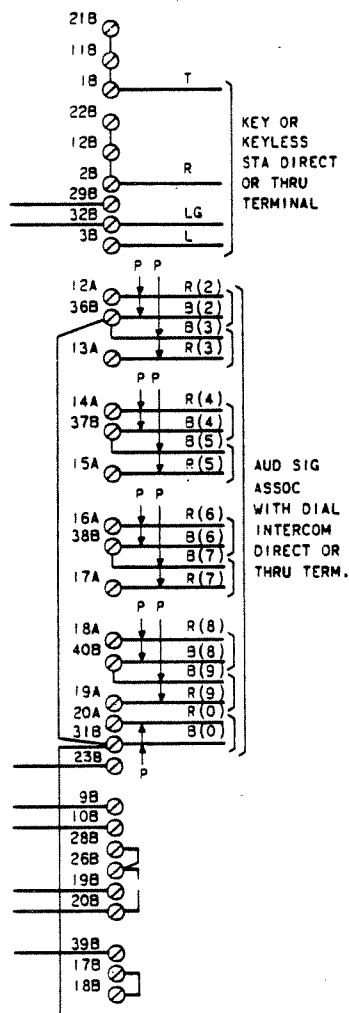


Fig. 5—310- or 311-Type KSU (4 to 7 Lines) Connections and Strapping
(202D, 230B, 232B, and 207C KTUs) (Sheet 2)

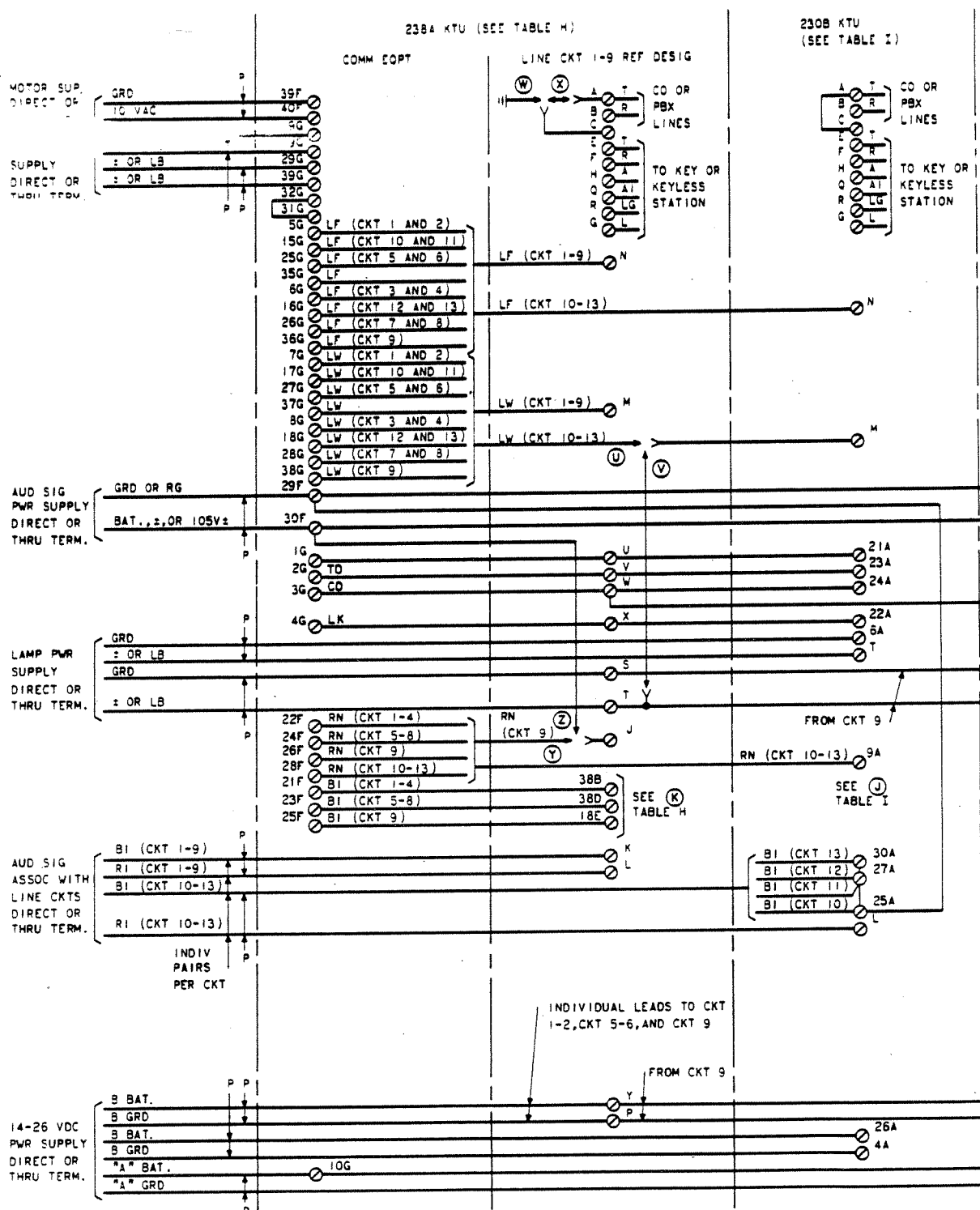


Fig. 6—310- or 311-Type KSU (9 to 13 Lines) Connections and Strapping (230B 238A, 207C, and 216A KTUs)
(Sheet 1)

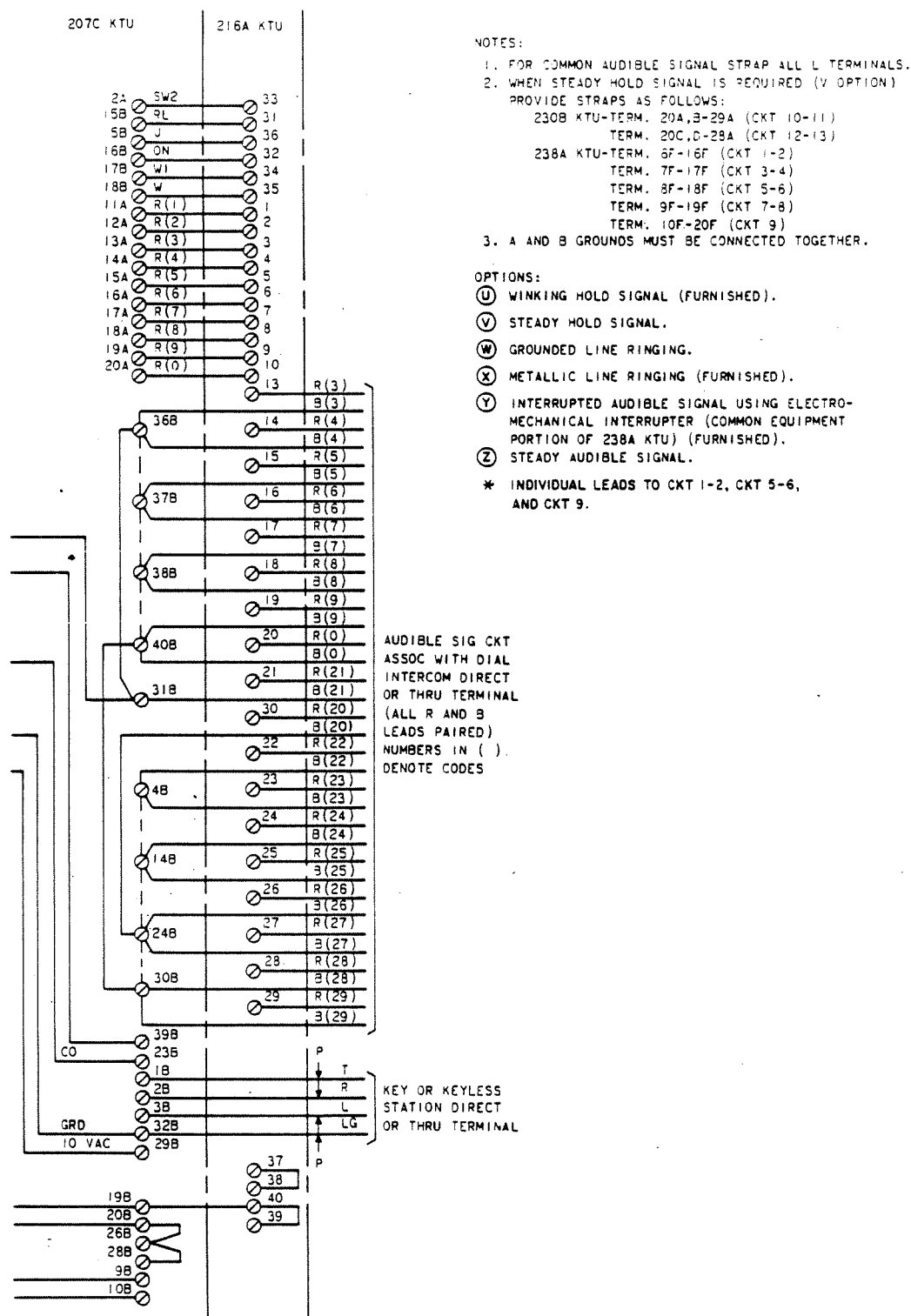


Fig. 6—310- or 311-Type KSU (9 to 13 Lines) Connections and Strapping (230B, 238A, 207C, and 216A KTUs) (Sheet 2)

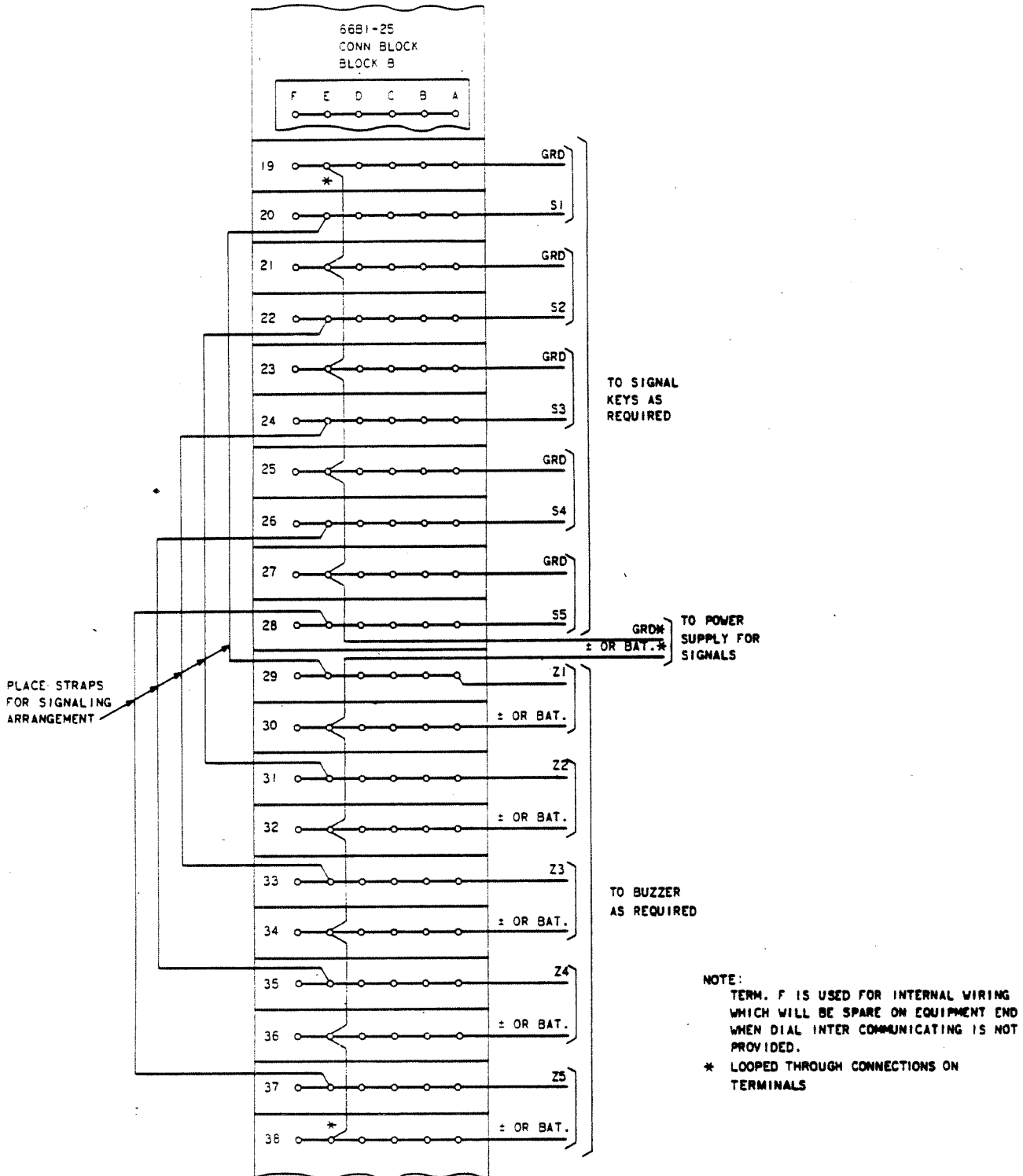


Fig. 7—Typical Connections for Manual Signaling When Dial Intercom Circuit is Not Used

TABLE A

301- AND 302-TYPE KSU'S, CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS

FEATURE	LEAD DESIG	BLOCK A 66B1-25 CONN BLK			TERMINAL ON 232B KTU	TERMINAL ON 230B KTU	TERMINAL ON 202D KTU		TERMINAL ON 207C KTU
		ROW	COL	CABLE COLOR O-W BINDER					
Line 1	T	1	F	W-BL		1A			
	R	2		BL-W		2A			
	A	3		W-O		3A			
	A1	4		O-W		4A			
	LG	5		W-G		6A			
Line 2	L	6		G-W		5A			
	T	7		W-BR		1B			
	R	8		BR-W		2B			
	A	9		W-S		3B			
	A1	10		S-W		4B			
Line 3	LG	11		R-BL		6B			
	L	12		BL-R		5B			
	T	13		R-O		1C			
	R	14		O-R		2C			
	A	15		R-G		3C			
Line 4	A1	16		G-R		4C			
	LG	17		R-BR		6C			
	L	18		BR-R		5C			
	T	19		R-S		1D			
	R	20		S-R		2D			
Line 5	A	21		BK-BL		3D			
	A1	22		BL-BK		4D			
	LG	23		BK-O		6D			
	L	24		O-BK		5D			
	T	25		BK-G			1	1st	
Line 6	R	26		G-BK			2		
	A	27		BK-BR			3		
	A1	28		BR-BK			4		
	LG	29		BK-S			6		
	L	30		S-BK			5		
Line 6	T	31		Y-BL			1	2nd	
	R	32		BL-Y			2		
	A	33		Y-O			3		
	A1	34		O-Y			4		
	LG	35		Y-G			6		
Motor Supply	GRD	37		G-Y			5		
	10V±	38							
Spare		39							
		40							
Lamp Supply	± or BAT.	41							
	± or BAT.	42							
	GRD	43							
	± or BAT.	44							
Audible Signal Supply	GRD	45							
	BAT., ±, or 105V ±	46							
20v dc Talk or A Bat.	GRD	47							
	BAT.	48							
20v dc Sig or B Bat.	GRD	49							
	BAT.	50							

See Table B
for Power Connections

TABLE A (Cont)

301- AND 302-TYPE KSU'S CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS

FEATURE		LEAD DESIG	BLOCK B 6681-25 CONN BLK		TERMINAL ON 232B KTU	TERMINAL ON 230B KTU	TERMINAL ON 202D KTU		TERMINAL ON 207C KTU
			ROW	COL			CABLE COLOR BL-W BINDER		
Manual Intercom Line		T	1	↑ <					

* On the 302 KSU the R1 leads and the B1 leads are factory-strapped.

TABLE B
301- AND 302-TYPE KSU'S, CONNECTIONS BETWEEN BLOCK A
OF 66-TYPE CONNECTING BLOCK, APPARATUS, AND POWER PLANT

FEATURE	LEAD DESIG	CONNECTING BLOCK A												COL A	
		ROW ON 6681-25 CONN BLOCK	COL F			COL E			COL D			COL C			TO
			CABLE COLOR CODE	KTU	TERM.	CABLE COLOR CODE	KTU	TERM.	CABLE COLOR CODE	KTU	TERM.	CABLE COLOR CODE	KTU	TERM.	
Motor Supply	GRD 10V ±	37	Y-BR	232B	27									BL2Y	10V AC
Spare		38	BR-Y		26									BL1Y	G B
Lamp Supply	± or BAT.	41	BR*	232B	9									W	B†
	± or BAT.	42	S*	232B	10			29						R-W	10V AC
Audible Signal Supply	GRD	43	BL-W†	230B	6A			16A						R-Y	G
	± or BAT.	44	BL†	230B	28A			29A						R	B†
20v dc Talk or A Bat.	GRD	45	V-G	232B	39										
	±, BAT., or 105V ±	46	G-V	232B	29										
20v dc Sig or B Bat.	GRD	47	V-BR	232B	25									G2Y	20V DC
	BAT.	48	BR-V	232B	24									G1Y	20V DC
	GRD	49	V-S	230B	4A									S2BK	20V DC
	BAT.	50	S-V	230B	26A									S1BK	Sig B

* 18 Gauge — G-W Binder.

† 20 Gauge — G-W Binder.

‡ Use loop through method of termination for terminals 41, 42, and 43.

TABLE C

302-TYPE KSU, CONNECTIONS BETWEEN
A75A CONNECTOR CABLE AND 66-TYPE CONNECTING BLOCKS

FEATURE	LEAD DESIG	CONN 1					CONN 2					CONN 3				
		CONN 1 BL-W BINDER		TERMINATION ON 66-TYPE CONN BLOCK			CONN 2 O-W BINDER		TERMINATION ON 66-TYPE CONN BLOCK			CONN 3 G-W BINDER		TERMINATION ON 66-TYPE CONN BLOCK		
		PIN NO.	CABLE COLOR	ROW	BLK	COL	PIN NO.	CABLE COLOR	ROW	BLK	COL	PIN NO.	CABLE COLOR	ROW	BLK	COL
Line 1	T	26	W-BL	1	A	A	26	W-BL	1	A	B	26	W-BL	1	A	C
	R	1	BL-W	2			1	BL-W	2			1	BL-W	2		
	A	27	W-O	3			27	W-O	3			27	W-O	3		
Line 2	A1	2	O-W	4			2	O-W	4			2	O-W	4		
	LG	28	W-G	5			28	W-G	5			28	W-G	5		
	L	3	G-W	6			3	G-W	6			3	G-W	6		
Line 3	T	29	W-BR	7	A	A	29	W-BR	7	A	B	29	W-BR	7	A	C
	R	4	BR-W	8			4	BR-W	8			4	BR-W	8		
	A	30	W-S	9			30	W-S	9			30	W-S	9		
Line 4	A1	5	S-W	10			5	S-W	10			5	S-W	10		
	LG	31	R-BL	11			31	R-BL	11			31	R-BL	11		
	L	6	BL-R	12			6	BL-R	12			6	BL-R	12		
Line 5	T	32	R-O	13	A	A	32	R-O	13	A	B	32	R-O	13	A	C
	R	7	O-R	14			7	O-R	14			7	O-R	14		
	A	33	R-G	15			33	R-G	15			33	R-G	15		
Line 6	A1	8	G-R	16			8	G-R	16			8	G-R	16		
	LG	34	R-BR	17			34	R-BR	17			34	R-BR	17		
	L	9	BR-R	18			9	BR-R	18			9	BR-R	18		
Line 7	T	35	R-S	19	A	A	35	R-S	19	A	B	35	R-S	19	A	C
	R	10	S-R	20			10	S-R	20			10	S-R	20		
	A	36	BK-BL	21			36	BK-BL	21			36	BK-BL	21		
Line 8	A1	11	BL-BK	22			11	BL-BK	22			11	BL-BK	22		
	LG	37	BK-O	23			37	BK-O	23			37	BK-O	23		
	L	12	O-BK	24			12	O-BK	24			12	O-BK	24		
Dial Inter-com	T	38	BK-G	17	B	A	38	BK-G	17	B	B	38	BK-G	17	B	C
	R	13	G-BK	18			13	G-BK	18			13	G-BK	18		
Spare*		39	BK-BR				39	BK-BR				39	BK-BR			
		14	BR-BK				14	BR-BK				14	BR-BK			
Dial Inter-com	LG	40	BK-S	19			40	BK-S	19			40	BK-S	19		
	L	15	S-BK	20			15	S-BK	20			15	S-BK	20		
Spare*		41	Y-BL				41	Y-BL				41	Y-BL			
		16	BL-Y				16	BL-Y				16	BL-Y			
		42	Y-O				42	Y-O				42	Y-O			
		17	O-Y				17	O-Y				17	O-Y			
		43	Y-G				43	Y-G				43	Y-G			
Com Aud	B1 or BZ1	44	Y-BR				44	Y-BR				44	Y-BR			
	R1 or BZ	19	BR-Y				19	BR-Y				19	BR-Y			
		45	Y-S	5			45	Y-S	7			45	Y-S	9		
		20	S-Y	6			20	S-Y	8			20	S-Y	10		
Spare*		46	V-BL				46	V-BL				46	V-BL			
		21	BL-V				21	BL-V				21	BL-V			
		47	V-O				47	V-O				47	V-O			
		22	O-V				22	O-V				22	O-V			
		48	V-G				48	V-G				48	V-G			
		23	G-V				23	G-V				23	G-V			
		49	V-BR				49	V-BR				49	V-BR			
		24	BR-V				24	BR-V				24	BR-V			
Spare*		50	V-S				50	V-S				50	V-S			
		25	S-V				25	S-V				25	S-V			

* Dead-ended and stored at connecting blocks. Connect as required.

TABLE D

**311-TYPE KSU (4-7 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE	LEAD DESIGNATION	BLOCK A 66-TYPE CONNECTING BLOCK			TERMINAL ON 232B KTU	TERMINAL ON 230B KTU	TERMINAL ON 202D KTU		TERMINAL ON 207C KTU
		ROW	COL	CABLE COLOR BLUE BINDER					
Line 1	T	1	F	W-BL		1A			
	R	2		BL-W		2A			
	A	3		W-O		3A			
	A1	4		O-W		4A			
Line 2	LG	5		W-G		6A			
	L	6		G-W		5A			
	T	7		W-BR		1B			
	R	8		BR-W		2B			
Line 3	A	9		W-S		3B			
	A1	10		S-W		4B			
	LG	11		R-BL		6B			
	L	12		BL-R		5B			
Line 4	T	13		R-O		1C			
	R	14		O-R		2C			
	A	15		R-G		3C			
	A1	16		G-R		4C			
Line 5	LG	17		R-BR		6C			
	L	18		BR-R		5C			
	T	19		R-S		1D			
	R	20		S-R		2D			
Line 6	A	21		BK-BL		3D			
	A1	22		BL-BK		4D			
	LG	23		BK-O		6D			
	L	24		O-BK		5D			
Line 7	T	25		BK-G			1	1st	
	R	26		G-BK			2		
	A	27		BK-BR			3		
	A1	28		BR-BK			4		
Line 8	LG	29		BK-S			6	2nd	
	L	30		S-BK			5		
	T	31		Y-BL			1		
	R	32		BL-Y			2		
Line 9	A	33		Y-O			3	3rd	
	A1	34		O-Y			4		
	LG	35		Y-G			6		
	L	36		G-Y			5		
Line 10	T	37		Y-BR			1	3rd	
	R	38		BR-Y			2		
	A	39		Y-S			3		
	A1	40		S-Y			4		
Line 11	LG	41		V-BL			6	3rd	
	L	42		BL-V			5		
	T	43		V-O	30				
	R	44		O-V	40				
Manual Intercom	LG	45		V-G	27				
	L	46		G-V	28				
Dial Intercom	T	47		V-BR					1B
	R	48		BR-V					2B
	LG	49		V-S					32B
	L	50		S-V					3B

TABLE D (Cont)

311-TYPE KSU (4-7 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS

FEATURE	LEAT DESIGNATION	BLOCK B 66-TYPE CONNECTING BLOCK			TERMINAL ON 232B KTU	TERMINAL ON 230B KTU	TERMINAL ON 202D KTU		TERMINAL ON 207C KTU
		ROW	COL	CABLE COLOR ORANGE BINDER					
Aud Sig Assoc With Dial Intercom	Code	B	1	F	W-BL				36B
	2	R	2		BL-W				12A
		B	3		W-O				36B
	3	R	4		G-W				13A
		B	5		W-G				37B
	4	R	6		G-W				14A
		B	7		W-BR				37B
	5	R	8		BR-W				15A
		B	9		W-S				38B
	6	R	10		S-W				16A
		B	11		R-BL				38B
	7	R	12		BL-R				17A
		B	13		R-O				40B
	8	R	14		O-R				18A
		B	15		R-G				40B
	9	R	16		G-R				19A
		B	17		R-BR				31B
	0	R	18		BR-R				20A
Aud Sig Assoc With Line Ckts	Line 1	B1 or BZ1	19		R-S		25A		
		R1 or BZ	20		S-R		10A		
	Line 2	B1 or FZ1	21		BK-BL		25A		
		R1 or BZ	22		BL-BK		10B		
	Line 3	B1 or BZ1	23		BK-O		27A		
		R1 or BZ	24		O-BK		10C		
	Line 4	B1 or BZ1	25		BK-G		30A		
		R1 or BZ	26		G-BK		10D		
	Line 5	B1 or BZ1	27		BK-BR		25	1st	
		R1 or BZ	28		BR-BK		10		
	Line 6	B1 or BZ1	29		BK-S		25	2nd	
		R1 or BZ	30		S-BK		10		
	Line 7	B1 or BZ1	31		Y-BL		25	3rd	
		R1 or BZ	32		BL-Y		10		
Vacant			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						
			46						
			47						
			48						
			49						
			50						

TABLE D (Cont)

**311-TYPE KSU (4-7 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE	LEAD DESIGNATION	BLOCK D 66-TYPE CONNECTING BLOCK			TERMINAL ON 230B KTU	TERMINAL ON 202D KTU	
		ROW	COL	CABLE COLOR ORANGE BINDER			
Co or PBX Lines	Line 1	T R	1 2	F	Y-O O-Y	7A 8A	
	Line 2	T R	3 4		Y-G G-Y	7B 8B	
	Line 3	T R	5 6		Y-BR BR-Y	7C 8C	
	Line 4	T R	7 8		Y-S S-Y	7D 8D	
	Line 5	T R	9 10		V-BL BL-V		7 8 1st
	Line 6	T R	11 12		V-O O-V		7 8 2nd
	Line 7	T R	13 14		V-G G-V		7 8 3rd
	Spare		15		V-BR		
			16		BR-V		
			17		V-S		
			18		S-V		
	Vacant		19				
			20				
			21				
			22				
			23				
			24				
			25				
			26				
			27				
			28				
			29				
			30				
			31				
			32				
			33				
			34				
			35				
			36				
See Table E For Power Connections			37		See Table E For Power Connections		
			38				
			39				
			40				
			41				
			42				
			43				
			44				
			45				
			46				
			47				
			48				
			49				
			50				

TABLE E

311-TYPE KSU (4-7 LINES) CONNECTIONS BETWEEN APPARATUS,
66-TYPE CONNECTING BLOCK, AND POWER PLANT

CONNECTING BLOCK D													
FEATURE	LEAD DESIG	ROW ON 66-TYPE CONN BLOCK	COL F			COL E			COL D			COL A	
			CABLE COLOR BR-W BNDR	TO		CABLE COLOR BR-W BNDR	TO		CABLE COLOR BR-W BNDR	TO		CABLE COLOR	TO J86731-D POWER PLANT
				KTU	TERMINAL		KTU	TERMINAL		KTU	TERMINAL		
Audible Signal Power Supply	GRD	37	W-BL										
	±, BAT., or 105V ±	38	BL-W	232B	29								
20v dc Talk or A Bat.	GRD	39	W-O									G-2Y	20V DC Talk
	BAT.	40	O-W	232B	24							G-1Y	B
20v dc Signal or B Bat.	GRD	41	R-BR	1st 202D	4							BL-2Y	G
	GRD	42	W-Y*	230B 1st	4A							S-2BK	20V DC Signal
	BAT.	43	BR-R	202D	26							BL-1Y	B
	BAT.	44	Y*	230B	26A							S-1BK	B
Lamp and Motor Supply	GRD	45	W-BL*	1st 202D	6							R-Y†	G
	GRD†	46	W-O*	230B	6A	R-G	232B	27	W-G*	207C	32R	R-W†	
	10V AC†	47	W-BR†	232B	9	G-R	232B	26				W†	10V AC
	± or BAT.	48	BR†	232B	10		1st					W†	
	± or BAT.	49	W-St	232B	19	BL*	202D	29				R†	
	± or BAT.	50	St	232B	20	O*	230B	29A	G*	207C	29B	R†	±

* 20 Gauge Wire.

† 18 Gauge Wire.

† Motor supply must be 10 volt ac. When direct current is used for lamps move W-O from terminal 46, clip 6 to terminal 45, clip 5 and W-BR from terminal 47, clip 6 to terminal 48, clip 5.

TABLE F

**311-TYPE KSU (9-13 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE	LEAD DESIGNATION	BLOCK D 66-TYPE CONNECTING BLOCK			TERMINAL ON 238A KTU
		ROW	COL	CABLE COLOR BLUE BINDER	
Line 1	T	1	F	W-BL	1A
	R	2		BL-W	2A
	A	3		W-O	3A
	A1	4		O-W	4A
	LG	5		W-G	6A
	L	6		G-W	5A
Line 2	T	7		W-BR	31A
	R	8		BR-W	32A
	A	9		W-S	33A
	A1	10		S-W	34A
	LG	11		R-BL	36A
	L	12		BL-R	35A
Line 3	T	13		R-O	1B
	R	14		O-R	2B
	A	15		R-G	3B
	A1	16		G-R	4B
	LG	17		R-BR	6B
	L	18		BR-R	5B
Line 4	T	19		R-S	31B
	R	20		S-R	32B
	A	21		BK-BL	33B
	A1	22		BL-BK	34B
	LG	23		BK-O	36B
	L	24		O-BK	35B
Line 5	T	25		BK-G	1C
	R	26		G-BK	2C
	A	27		BK-BR	3C
	A1	28		BR-BK	4C
	LG	29		BK-S	6C
	L	30		S-BK	5C
Line 6	T	31		Y-BL	31C
	R	32		BL-Y	32C
	A	33		Y-O	33C
	A1	34		O-Y	34C
	LG	35		Y-G	36C
	L	36		G-Y	35C
Line 7	T	37		Y-BR	1D
	R	38		BR-Y	2D
	A	39		Y-S	3D
	A1	40		S-Y	4D
	LG	41		V-BL	6D
	L	42		BL-V	5D
Line 8	T	43		V-O	31D
	R	44		O-V	32D
	A	45		V-G	33D
	A1	46		G-V	34D
	LG	47		V-BR	36D
	L	48		BR-V	35D
Spare		49		V-S	
		50		S-V	

TABLE F (Cont)

**311-TYPE KSU (9-13 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE	LEAD DESIGNATION	BLOCK B 66-TYPE CONNECTING BLOCK			TERMINAL ON 238A KTU	TERMINAL ON 230B KTU	TERMINAL ON 207C KTU	TERMINAL ON 216A KTU
		ROW	COL	CABLE COLOR ORANGE BINDER				
Line 9	T	1	F	W-BL	1E			
	R	2		BL-W	2E			
	A	3		W-O	3E			
	A1	4		O-W	4E			
	LG	5		W-G	6E			
Line 10	L	6		G-W	5E			
	T	7		W-BR		1A		
	R	8		BR-W		2A		
	A	9		W-S		3A		
	A1	10		S-W		4A		
Line 11	LG	11		R-BL		6A		
	L	12		BL-R		5A		
	T	13		R-O		1B		
	R	14		O-R		2B		
	A	15		R-G		3B		
Line 12	A1	16		G-R		4B		
	LG	17		R-BR		6B		
	L	18		BR-R		5B		
	T	19		R-S		1C		
	R	20		S-R		2C		
Line 13	A	21		BK-BL		3C		
	A1	22		BL-BK		4C		
	LG	23		BK-O		6C		
	L	24		O-BK		5C		
	T	25		BK-G		1D		
Dial Intercom	R	26		G-BK		2D		
	A	27		BK-BR		3D		
	A1	28		BR-BK		4D		
	LG	29		BK-S		6D		
	L	30		S-BK		5D		
Aud Sig Assoc with Dial Intercom	T	31		Y-BL			1B	
	R	32		BL-Y			2B	
	LG	33		Y-O			32B	
	L	34		O-Y			3B	
	Code	35		Y-G			36B	
	3	36		G-Y				13
	4	37		Y-BR			36B	
	R	38		BR-Y				14
	5	39		Y-S			37B	
	R	40		S-Y				15
	6	41		V-BL			37B	
	R	42		BL-V				16
	7	43		V-O			38B	
	R	44		O-V				17
	8	45		V-G			38B	
	R	46		G-V				18
	9	47		V-BR			40B	
	R	48		BR-V				19
	0	49		V-S			40B	
	R	50		S-V				20

TABLE F (Cont)

**311-TYPE KSU (9-13 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE	LEAD DESIGNATION	BLOCK C 66-TYPE CONNECTING BLOCK			TERMINAL ON 238A KTU	TERMINAL ON 230B KTU	TERMINAL ON 207C KTU	TERMINAL ON 216A KTU
		ROW	COL	CABLE COLOR GREEN BINDER				
Aud Sig Assoc with Dial Intercom	Code 21	B	1	W-BL			31B	
		R	2	BL-W				21
	22	B	3	W-O			4B	
		R	4	O-W				22
	23	B	5	W-G			4B	
		R	6	G-W				23
	24	B	7	W-BR			14B	
		R	8	BR-W				24
	25	B	9	W-S			14B	
		R	10	S-W				25
Aud Sig Assoc with Line Ckts	26	B	11	R-BL			24B	
		R	12	BL-R				26
	27	B	13	R-O			24B	
		R	14	O-R				27
	28	B	15	R-G			30B	
		R	16	G-R				28
	29	B	17	R-BR			30B	
		R	18	BR-R				29
	20	B	19	R-S			24B	
		R	20	S-R				30
	Line 1	B1 or BZ1	21	BK-BL	18A			
		R1 or BZ	22	BL-BK	19A			
	Line 2	B1 or BZ1	23	BK-O	38A			
		R1 or BZ	24	O-BK	39A			
	Line 3	B1 or BZ1	25	BK-G	18B			
		R1 or BZ	26	G-BK	19B			
	Line 4	B1 or BZ1	27	BK-BR	38B			
		R1 or BZ	28	BR-BK	39B			
	Line 5	B1 or BZ1	29	BK-S	18C			
		R1 or BZ	30	S-BK	19C			
	Line 6	B1 or BZ1	31	Y-BL	38C			
		R1 or BZ	32	BL-Y	39C			
	Line 7	B1 or BZ1	33	Y-O	18D			
		R1 or BZ	34	O-Y	19D			
	Line 8	B1 or BZ1	35	Y-G	38D			
		R1 or BZ	36	G-Y	39D			
	Line 9	B1 or BZ1	37	Y-BR	18E			
		R1 or BZ	38	BR-Y	19E			
	Line 10	B1 or BZ1	39	Y-S		25A		
		R1 or BZ	40	S-Y		10A		
	Line 11	B1 or BZ1	41	V-BL		27A		
		R1 or BZ	42	BL-V		10B		
	Line 12	B1 or BZ1	43	V-O		27A		
		R1 or BZ	44	O-V		10C		
	Line 13	B1 or BZ1	45	V-G		30A		
		R1 or BZ	46	G-V		10D		
Spare			47	V-BR				
			48	BR-V				
			49	V-S				
			50	S-V				

TABLE F (Cont)

**311-TYPE KSU (9-13 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE		LEAD DESIGNATION	BLOCK D 66-TYPE CONNECTING BLOCK			TERMINAL ON 238A KTU	TERMINAL ON 230B KTU
			ROW	COL	CABLE COLOR BROWN BINDER		
CO or PBX Lines	Line 1	T R	1 2	F	W-BL BL-W	7A 8A	
	Line 2	T R	3 4		W-O O-W	27A 28A	
	Line 3	T R	5 6		W-G G-W	7B 8B	
	Line 4	T R	7 8		W-BR BR-W	27B 28B	
	Line 5	T R	9 10		W-S S-W	7C 8C	
	Line 6	T R	11 12		R-BL BL-R	27C 28C	
	Line 7	T R	13 14		R-O O-R	7D 8D	
	Line 8	T R	15 16		R-G G-R	27D 28D	
	Line 9	T R	17 18		R-BR BR-R	7E 8E	
	Line 10	T R	19 20		R-S S-R		7A 8A
	Line 11	T R	21 22		BK-BL BL-BK		7B 8B
	Line 12	T R	23 24		BK-O O-BK		7C 8C
	Line 13	T R	25 26		BK-G G-BK		7D 8D
Spare			27 28	BK-BR BR-BK			
			29 30	BK-S S-BK			
			31 32	Y-BL BL-Y			
			33 34	Y-O O-Y			
			35 36	Y-G G-Y			
See Table G for Power Connections			37		See Table G for Power Connections		
			38				
			39				
			40				
			41				
			42				
			43				
			44				
			45				
			46				
			47				
			48				
			49				
			50				

TABLE G
**311-TYPE KSU (9-13 LINES) CONNECTIONS BETWEEN APPARATUS,
 66-TYPE CONNECTING BLOCK, AND POWER PLANT**

CONNECTING BLOCK D															
FEATURE	LEAD DESIG	ROW/ ON 66-TYPE CONN BLOCK	COL F			COL E			COL D			COL A			
			CABLE COLOR	TO		CABLE COLOR	KTU	TERMINAL	CABLE COLOR	KTU	TO		CABLE COLOR	TO	
				KTU	TERMINAL						KTU	TERMINAL			
Audible Signal Power Supply	GRD ±, BAT., or 105V ±	37	V-BR	238A	29F										J86731-D POWER PLANT
		38	BR-V		30F										
20v dc Talk or A Bat.	GRD	39	V-S	207C	10B										20V DC Toll
	BAT.	40	S-V	238A	10G										
20v dc Signal or B Bat.	GRD	41	W-BL*	238A	9A	W-O*	238A	9C							20V DC Signal
	GRD	42	W-G*	238A	9E	W-Y*	230B	4A							
	BAT.	43	BL*	238A	10A	O*	238A	10C							B
	BAT.	44	G*	238A	10E	Y*	230B	25A							
Lamp and Motor Supply	GRD	45	BK-G*	238A	29A	Y-G*	238A	29E							G
	GRD†	46	BR-G*	238A	29C	Y-O*	230B	6A							
	10V AC†	47	W-BR†	238A	9G	BK-W*	238A	30A							10V AC
	± or BAT.	48	BR†	238A	19G	BR-Y*	238A	30C							
	± or BAT.	49	W-S†	238A	29G	Y-BL*	238A	30E							±
	± or BAT.	50	S†	238A	39G	Y-S*	230B	29A							

* 20-Gauge Wire.

† 18-Gauge Wire.

‡ Motor supply must be 10 volt ac. When direct current is used for lamps move the following lead:

LEAD COLOR	FROM	TO
BR-G	Term. 46, Clip 6	Term. 45, Clip 4
Y-O	Term. 46, Clip 5	Term. 45, Clip 3
W-BK	Term. 47, Clip 6	Term. 48, Clip 4
BK-W	Term. 47, Clip 5	Term. 49, Clip 4

TABLE H

310- OR 311-TYPE KSU (9 TO 13 LINES)
LINE CIRCUIT PORTION OF 238A KTU

REF DESIG	TERMINAL ON 238A KTU										IEA/ DES	
	CKT 1	CKT 2	CKT 3	CKT 4	CKT 5	CKT 6	CKT 7	CKT 8	CKT 9	T R	or PB Line Rtg H	
A	7A	27A	7B	27B	7C	27C	7D	27D	7E	Station	Line Rtg H	
B	8A	28A	8B	28B	8C	28C	8D	28D	8E			
C	17A	37A	17B	37B	17C	37C	17D	37D	17E			
D	21E	22E	23E	24E	25E	31E	32E	33E	34E			
E	1A 11A	21A 31A	1B 11B	21B 31B	1C 11C	21C 31C	1D 11D	21D 31D	1E 11E	Station	Line Rtg H	
F	2A 12A	22A 32A	2B 12B	22B 32B	2C 12C	22C 32C	2D 12D	22D 32D	2E 12E			
G	5A 15A	25A 35A	5B 15B	25B 35B	5C 15C	25C 35C	5D 15D	25D 35D	5E 15E			
H	3A 13A	23A 33A	3B 13B	23B 33B	3C 13C	23C 33C	3D 13D	23D 33D	3E 13E			
J	20A	40A	20B	40B	20C	40C	20D	40D	20E	Audible Signal	Line Rtg H	
K	18A	38A	18B	38B	18C	38C	18D	38D	18E			
L	19A	39A	19B	39B	19C	39C	19D	39D	19E			
M	6F		7F		8F		9F		10F			
N	36E		37E		38E		39E		40E	Lamp Wink Lamp Flash	Line Rtg H	
P	9A		9B		9C		9D		9E			
Y	10A		10B		10C		10D		10E			
Q	4A 14A	24A 34A	4B 14B	24B 34B	4C 14C	24C 34C	4D 14D	24D 34D	4E 14E	Relay Power Supply	Line Rtg H	
R	6A 16A	26A 36A	6B 16B	26B 36B	6C 16C	26C 36C	6D 16D	26D 36D	6E 16E			
S	29A		29B		29C		29D		29E			
T	30A, 16F		30B, 17F		30C, 18F		30D, 19F		30E, 20F			
U		1G				11G			21G	Station	Line Rtg H	
V		2G				12G			22G			
W		3G				13G			23G			
X		4G				14G			24G			

○—○ Indicates Factory Strapping.

TABLE I

310- OR 311-TYPE KSU (9 TO 13 LINES)
230B KTU

REF DESIG	TERMINAL ON 230B KTU				LEAD DESIG	
	CKT 1 (10)*	CKT 2 (11)*	CKT 3 (12)*	CKT 4 (13)*		
A	7A	7B	7C	7D	T	CO or PBX Line
B	8A	8B	8C	8D	R	
C	17A	17B	17C	17D	Line Ringing	
D	18A	18B	18C	18D	H	
E	1A 11A ○ — ○	1B 11B ○ — ○	1C 11C ○ — ○	1D 11D ○ — ○	T	Station
F	2A 12A ○ — ○	2B 12B ○ — ○	2C 12C ○ — ○	2D 12D ○ — ○	R	
G	5A 15A ○ — ○	5B 15B ○ — ○	5C 15C ○ — ○	5D 15D ○ — ○	L	
H	3A 13A ○ — ○	3B 13B ○ — ○	3C 13C ○ — ○	3D 13D ○ — ○	A	
J	9A ○ — ○	9B ○ — ○	9C ○ — ○	9D ○ — ○	Audible Signal	
L	10A ○ — ○	10B ○ — ○	10C ○ — ○	10D ○ — ○		
M	20A ○ — ○	20B ○ — ○	20C ○ — ○	20D ○ — ○	Lamp Wink	
N	19A ○ — ○	19B ○ — ○	19C ○ — ○	19D ○ — ○	Lamp Flash	
Q	4A	4B	4C	4D	A1	Station
R	6A	6B	6C	6D	LG	
T	29A ○ — ○		28A ○ — ○		± or Bat.	Lamp Pwr Supply

* Number in parenthesis denotes circuit in package.

○ — ○ Indicates Factory Strapping.

TABLE J
2301-TYPE KSU CONNECTIONS BETWEEN APPARATUS
AND 66-TYPE CONNECTING BLOCKS

FEATURE	LEAD DESIG	BLOCK A 66B1-25 CONNECTING BLOCK		CABLE COLOR BLUE BINDER	TERMINAL ON 232A OR B KTU*	TERMINAL ON KTU		TERMINAL ON 202C OR D KTU	TERMINAL ON 207C KTU
		ROW	COL			230A	230B†		
Line 1	T	1	F	W-BL		1A			
	R	2		BL-W		2A			
	A	3		W-O		3A			
	A1	4		O-W		4A			
	LG	5		W-G		6A			
	L	6		G-W		5A			
Line 2	T	7		W-BR		1B			
	R	8		BR-W		2B			
	A	9		W-S		3B			
	A1	10		S-W		4B			
	LG	11		R-BL		6B			
	L	12		BL-R		5B			
Line 3	T	13		R-O		1C			
	R	14		O-R		2C			
	A	15		R-G		3C			
	A1	16		G-R		4C			
	LG	17		R-BR		6C			
	L	18		BR-R		5C			
Line 4	T	19		R-S		1D			
	R	20		S-R		2D			
	A	21		BK-BL		3D			
	A1	22		BL-BK		4D			
	LG	23		BK-O		6D			
	L	24		O-BK		5D			
Line 5	T	25		BK-G				1	1st
	R	26		G-BK				2	
	A	27		BK-BR				3	
	A1	28		BR-BK				4	
	LG	29		BK-S				6	
	L	30		S-BK				5	
Line 6	T	31		Y-BL				1	2nd
	R	32		BL-Y				2	
	A	33		Y-O				3	
	A1	34		O-Y				4	
	LG	35		Y-G				6	
	L	36		G-Y				5	
Motor Supply	GRD	37		Y-BR	27				
	10v ±	38		BR-Y	26				
Spare		39		Y-S					
		40		S-Y					
Lamp Supply	± or BAT.	41‡		V-BL	9				
	± or BAT.	42‡		BL-V	10				
	GRD	43		V-O		30A	6A		
	± or BAT.	44‡		O-V		29A	29A		
Audible Signal Supply	GRD	45		V-G		25A	30A		
	BAT., ±, or 105V ±	46		G-V	29				
20v dc Talk or A Bat.	GRD	47		V-BR	25				
	BAT.	48		BR-V	24				
20v dc Sig or B Bat.	GRD	49		V-S		26A	26A		
	BAT.	50		S-V		27A	4A		

* 232B KTU is arranged internally to disable time-out feature when BF relay is operated.

† 230B KTU is arranged for individual fusing of circuits 1-2 and 3-4 lamp input power.

‡ With 1 to 72 lamps, strap terminals 41, 42, and 44; with 73 to 144 lamps, strap terminals 42 and 44 and run separate power lead to 41.

TABLE J (Cont)

**SELECTIVE RSD CONNECTIONS BETWEEN APPARATUS
AND 55-T, CONNECTING BLOCKS**

FEATURE	LINE DESIGN	BLOCK A 55-T CONNECTING BLOCK			TERMINAL ON 232A OR B KTU*	TERMINAL ON KTU		TERMINAL ON 202C OR D KTU	TERMINAL ON 207C KTU
		ROW	COL	CABLE COLOR ORANGE BANDER		230A	230B†		
Manual Intercom Line	T	1	F	W-BL	30				
	R	2		BL-W	40				
	LG	3		W-S	*				
	L	4		S-V	28				
Audible Signal	Line 1	B1 or BZ1		W-S		25A 10A	30A 10A		
		R1 or BZ		G-W					
	Line 2	B1 or BZ1		W-BR		25A 10B			
		R1 or BZ		BR-W					
	Line 3	B1 or BZ1		W-S		28A 10C	30A 10C		
		R1 or BZ		S-W					
	Line 4	B1 or BZ1		R-BL		28A 10D	25A 10D		
		R1 or BZ		BL-R					
	Line 5	B1 or BZ1		R-O				25 10	1st
		R1 or BZ		O-R					
	Line 6	B1 or BZ1		R-G				25 10	2nd
		R1 or BZ		G-R					
Dial Selective Intercom Line	T	17		R-BR					1B
	R	18		BR-R					2B
	LG	19		R-S					32B
	L	20		S-R					3B
	B(2)	21		BK-BL					36B
	R(2)	22		BL-BK					12A
	B(3)	23		BK-O					36B
	R(3)	24		O-BK					13A
	B(4)	25		BK-G					37B
	R(4)	26		G-BK					14A
	B(5)	27		BK-BR					37B
	R(5)	28		BR-BK					15A
	B(6)	29		BK-S					38B
	R(6)	30		S-BK					16A
	B(7)	31		Y-BL					38B
	R(7)	32		BL-Y					17A
	B(8)	33		Y-O					40B
	R(8)	34		O-Y					18A
	B(9)	35		Y-G					40B
	R(9)	36		G-Y					19A
CO or PBX	Line 1			Y-BR					31B
				BR-Y					20A
	Line 2			Y-S		7A			
				S-Y		8A			
	Line 3			V-BL		7B			
				BL-V		8B			
	Line 4			V-O		7C			
				O-V		8C			
	Line 5			V-G		7D			
				G-V		8D			
	Line 6			V-BR				7 8	1st
				BR-V					
	Line 6			V-S				7 8	2nd
				S-V					

* Connect to convenient lamp ground.

TABLE K

2311-TYPE KSU — CONNECTIONS

FEATURE	LEAD DESIG	BLOCK A 3651-25 CONNECTING BLOCK			TERMINAL ON 232A OR B KTU*	TERMINAL ON 230A OR B KTU†	TERMINAL ON 202C OR D KTU		TERMINAL ON 207C KTU
		ROW	COL	CABLE COLOR BLUE BINDER					
Line 1	T	1	F	W-BL		1A			
	R	2		BL-W		2A			
	A	3		W-O		3A			
	A1	4		O-W		4A			
	LG	5		W-G		6A			
Line 2	L	6		G-W		5A			
	T	7		W-BR		1B			
	R	8		BR-W		2B			
	A	9		W-S		3B			
	A1	10		S-W		4B			
Line 3	LG	11		R-BL		6B			
	L	12		BL-R		5B			
	T	13		R-O		1C			
	R	14		O-R		2C			
	A	15		R-G		3C			
Line 4	A1	16		G-R		4C			
	LG	17		R-BR		6C			
	L	18		BR-R		5C			
	T	19		R-S		1D			
	R	20		S-R		2D			
Line 5	A	21		BK-BL		3D		1st	
	A1	22		BL-BK		4D			
	LG	23		BK-O		6D			
	L	24		O-BK		5D			
	T	25		BK-G			1		
Line 6	R	26		G-BK			2	2nd	
	A	27		BK-BR			3		
	A1	28		BR-BK			4		
	LG	29		BK-S			6		
	L	30		S-BK			5		
Line 7	T	31		Y-BL			1	3rd	
	R	32		BL-Y			2		
	A	33		Y-O			3		
	A1	34		O-Y			4		
	LG	35		Y-G			6		
Line 7	L	36		G-Y			5		
	T	37		Y-BR			1	3rd	
	R	38		BR-Y			2		
	A	39		Y-S			3		
	A1	40		S-Y			4		
Manual Intercom Line	LG	41		V-BL			6		
	L	42		BL-V			5		
	T	43		V-O	30				
	R	44		O-V	40				
	LG	45		V-G	27				
Dial Selective Intercom Line	L	46		G-V	28				
	T	47		V-BR				1B	2B
	R	48		BR-V					
	LG	49		V-S				32B	3B
	L	50		S-V					

* 232B KTU is arranged internally to disable time-out feature when BF relay is operated.

† 230B KTU is arranged for individual fusing of circuits 1-2 and 3-4 lamp input power.

TABLE K (Cont)

2311-TYPE KSU — CONNECTIONS

FEATURE	LEAD DESIG	BLOCK B 6681-25 CONNECTING BLOCK			TERMINAL ON 232A OR B KTU	TERMINAL ON KTU		TERMINAL ON 202C OR D KTU	TERMINAL ON 207 KTU
		ROW	COL	CABLE COLOR ORANGE BINDER		230A	230B		
Audible Signal Associated With Dial Selective Intercom Line	B(2)	1	↑ F ↓	W-BL					36B
	R(2)	2		BL-W					12A
	B(3)	3		W-O					36B
	R(3)	4		O-W					13A
	B(4)	5		W-G					37B
	R(4)	6		G-W					14A
	B(5)	7		W-BR					37B
	R(5)	8		BR-W					15A
	B(6)	9		W-S					38B
	R(6)	10		S-W					16A
	B(7)	11		R-BL					38B
	R(7)	12		BL-R					17A
	B(8)	13		R-O					40B
	R(8)	14		O-R					18A
	B(9)	15		R-G					40B
	R(9)	16		G-R					19A
	B(0)	17		R-BR					31B
	R(0)	18		BR-R					20A
Aud Sig Assoc with Line Ckts	Line 1	B1 or BZ1 R1 or BZ	19 20	R-S S-R		25A 10A	30A 10A		
	Line 2	B1 or BZ1 R1 or BZ	21 22	BK-BL BL-BK		25A 10B			
	Line 3	B1 or BZ1 R1 or BZ	23 24	BK-O O-BK		25A 10C			
	Line 4	B1 or BZ1 R1 or BZ	25 26	BK-G G-BK		28A 10D	30A 10D		
	Line 5	B1 or BZ1 R1 or BZ	27 28	BK-BR BR-BK				25 10	1st
	Line 6	B1 or BZ1 R1 or BZ	29 30	BK-S S-BK				25 10	2nd
	Line 7	B1 or BZ1 R1 or BZ	31 32	Y-BL BL-Y				25 10	3rd
CO or PBX	Line 1	T R	33 34	Y-O O-Y		7A 8A			
	Line 2	T R	35 36	Y-G G-Y		7B 8B			
	Line 3	T R	37 38	Y-BR BR-Y		7C 8C			
	Line 4	T R	39 40	Y-S S-Y		7D 8D			
	Line 5	T R	41 42	V-BL BL-V				7 8	1st
	Line 6	T R	43 44	V-O O-V				7 8	2nd
	Line 7	T R	45 46	V-G G-V				7 8	3rd
	Ringing Supply*	GRD 105V ±	47 48	V-BR BR-V	29	28A	30A		
	Local Ground	GRD GRD	49 50	V-S† S-V†					

* Do not mount ringing supply (frequency-generator) in cabinet with equipment, due to noise difficulties.

† Connect to ground terminal on J86731D, List 1 power plant.

