

3A COMMUNICATION SYSTEM (HOSPITAL INTERPHONE) EQUIPMENT CABINET INSTALLATION, CONNECTIONS, AND MAINTENANCE

1. GENERAL

1.01 The equipment cabinet contains the station and common control circuitry, power supply, and distribution terminal for the 3A Communication System.

1.02 This section is reissued because Issue 1 did not receive general distribution.

1.03 For detailed equipment cabinet identification and ordering information see Section 512-535-100.

2. INSTALLATION

2.01 The equipment cabinet, normally installed in the nurse control area, is designed to blend in with other hospital furnishings.

2.02 Observe the following when choosing a location for the equipment cabinet:

- Accessibility to both sides of cabinet for ease of installation and maintenance. Allow at least 30 inches on gate side of cabinet to allow gate to be fully opened.
- Location should be dry and reasonably clean.
- Accessibility to control console and patient station wiring runs.
- General requirements set forth in Section 460-110-180.

2.03 Cabling may enter the cabinet through either end or through the bottom at either end. If cables enter through floor, it may be necessary to feed cables through wire entrance hole in bottom before permanently placing and leveling cabinet. This operation should be performed before gate is

equipped with any circuit packs, 1A2 KTS panel, etc, to make cabinet easier to handle. Use the support furnished on the end of the gate to support weight of gate in its open position (Fig. 1).

2.04 Incoming cables from the control console and patient stations are terminated on the distribution terminal which consists of twelve 66J1-72 connecting blocks (Fig. 1). As provided from the factory the wire harnesses are located for bringing the cabling into the equipment cabinet from the right side, looking at the gate. If cabling is brought into left side of cabinet, remove the two right-hand wire harnesses and move to holes provided on left-hand side (Fig. 1). The individual terminals on each connecting block consist of a wire-wrap terminal on the rear of the block to which the factory wiring is connected and an associated clip-type terminal on the front for all field wiring and strapping. Terminate wiring to blocks using a 714B tool.

2.05 Individual A12D connector cables or inside wiring cables may be run to each patient station, or several stations can be fed through a larger cable run to an intermediate distribution point. Eleven pairs per station are required if all options are furnished.

2.06 Either an A100C or an A100F connector cable is required between the control console and the equipment cabinet. The A100C connector cable is used when the console is equipped with a D200C mounting cord.

2.07 Plug-in packs for the interconnecting circuits (battery control, common circuit, and auxiliary control) and the associated interrupter are shipped loose and must be plugged into the proper connector. Station signaling AE3 circuit packs, one per station, are not supplied with the cabinet and must be ordered and installed on an as needed basis.

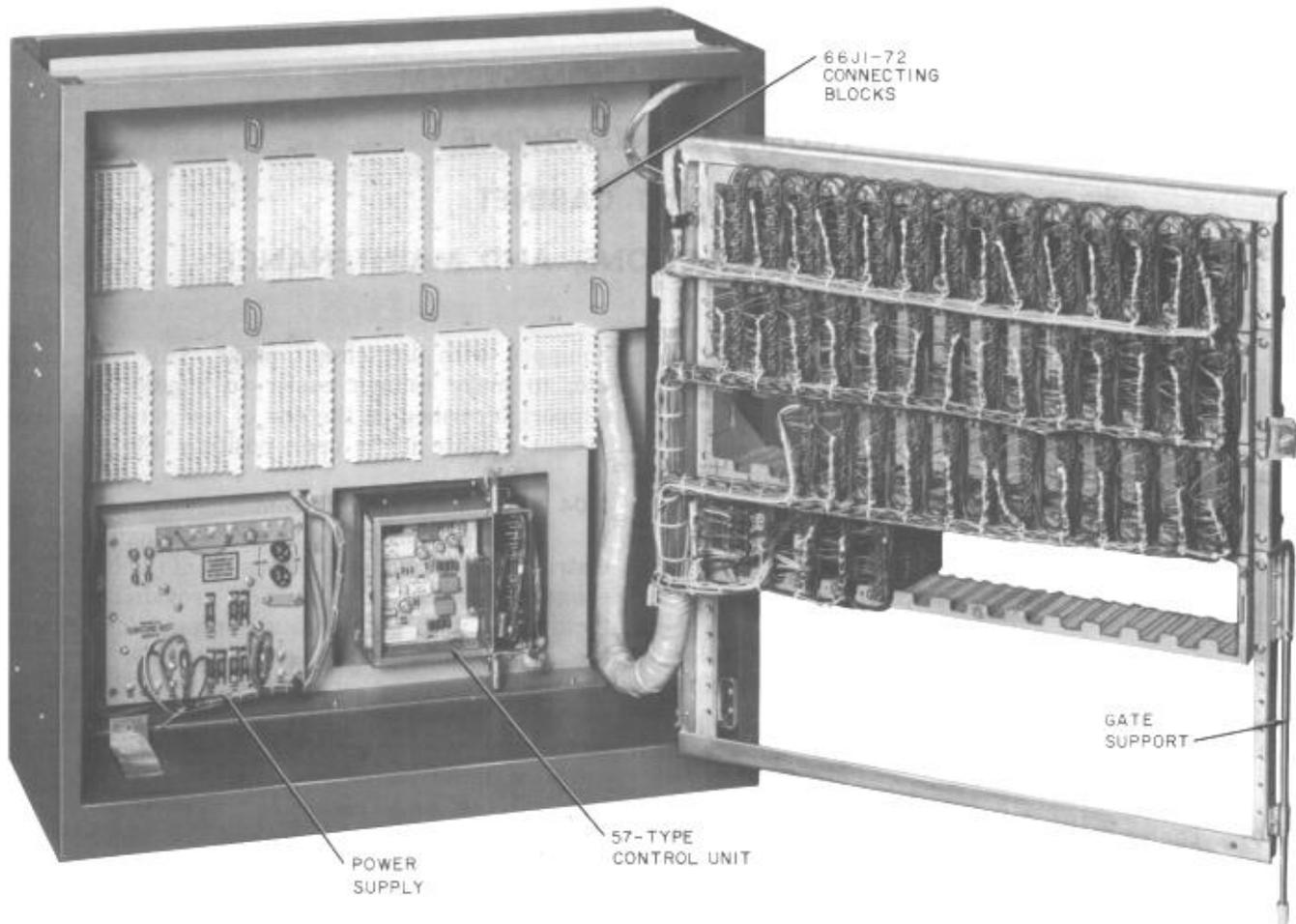


Fig. 1—Equipment Cabinet, Interior View (Gate Open)



Station circuit packs must be installed in consecutive numerical order to permit the remote answering station scanning circuit to function. Retainer bars are used to lock all circuit packs in place.

2.08 The customer must provide a 3-wire circuit and receptacle with the third wire grounded at the electrical distribution cabinet. This should be a separately fused 105/125-volt 60 cycle circuit of 15 ampere capacity which is not under control of a switch. Where local conditions permit, fasten plug to outlet with suitable clamp. Receptacle should be adjacent to the equipment cabinet and accessible for removal of plug for maintenance purposes.

2.09 The 101G (J86731D, L1) or equivalent power plant furnished with the equipment cabinet must be grounded to an approved signal ground. This ground should be connected to the G terminal of the power plant. The equipment cabinet must be grounded by running a separate 14-gauge ground wire between the cabinet grounding lug on the lower gate hinge (Fig. 2) to an approved ground.

2.10 Space is provided on the equipment cabinet gate for a J53038A-1, List 2 assembly, which provides for a maximum of four 1A2 KTS, CO, PBX or Centrex line circuits and a KS-19175, List 1 interrupter. The assembly is equipped with a cable stub which must be terminated at the distribution terminal. The assembly and 400-type 1A2 KTS line circuits must be ordered separately.

2.11 The J53038A-1, List 2 assembly, is shipped with connectors held in place by P-47K089 and P-47K090 brackets. Before mounting the assembly to the common cardholder remove and retain the screws supporting the assembly to the brackets. Discard brackets. Mount assembly to common cardholder using same screws. See Fig. 2 for mounting location.

2.12 Fasten List 2 cable assembly to main cable using the 3 cable ties furnished.

2.13 Designate List 2 connectors F1 through F4 by stenciling on the bottom of the common cardholder, counting to the right of the interrupter.

2.14 When speakerphone option is provided, the 55-type control unit must be mounted outside of the equipment cabinet and can be located at the control console or cabinet. Separate control units are required for the control console and for each remote answering station. These units are not supplied and must be ordered separately. Each control unit must be modified by the addition of a D-180006 kit of parts; this limits the amount of volume at the loudspeaker associated with the speakerphone system. When the speakerphone is activated, the auxiliary control circuit changes the characteristics of the 57B control unit to permit hands-free operation at the control console or remote answering station. A 2012B transformer or equivalent, must be ordered separately to power each 55B control unit.

2.15 A combination circuit pack retainer bar and designation strip is provided on the top edge of each cardholder. When inserting or removing circuit packs, the retainer bar must be raised. The designation strip provides for designating the room number assigned to the circuit packs.

2.16 Dust shields are not provided to cover the cable entrance holes after cables have been placed. If conditions warrant, consideration should be given to providing dust shields locally, ie, the use of Duct-Seal.

3. CONNECTIONS

3.01 All distribution terminal blocks except the option blocks are wired on a vertical paired basis from the fanning strip toward the center; for instance, clip 1, row 1 and clip 1, row 2 are paired with the tip conductor on the odd numbered

rows (Fig. 3). All option connections are made on the field wiring side or front of the block.

3.02 Terminate cabling from control console, patient stations, and remote answering stations, if provided, at distribution terminal as shown in Tables A and B. Door lamp relay and emergency switch leads may be wired from patient station location or directly from equipment cabinet.

3.03 The system is factory wired for operation of one door lamp relay per station. Stations can be grouped to a common door lamp relay by changing the strapping at the option blocks as shown in Fig. 4.

3.04 Refer to Fig. 5 for J53038A-1, List 2 assembly (1A2 KTS) connections.

3.05 The 1A2 KTS common audible signal circuit in the control console requires 105 volts 20 cycle ac from an external source.

3.06 A complete set of bound CD- and SD-drawings are provided with the equipment cabinet and should be left with the cabinet. Reference should be made to the following for schematics and detailed information on the components of the system:

- Equipment cabinet, station telephone sets, and inter-connecting circuits—CD- and SD-69500-01.
- Station line and control circuits—CD- and SD-69531-01.
- 57-type control unit—CD- and SD-69532-01.
- Control console—CD- and SD-69533-01.

4. MAINTENANCE



The gate support should be used anytime it is found necessary to move the gate to the open position to prevent overbalancing or tipping.

4.01 Maintenance of the equipment cabinet should be limited to the following items:

- Replacement of interconnecting, station signaling, 1A2 KTS, and 57-type control unit circuit packs.

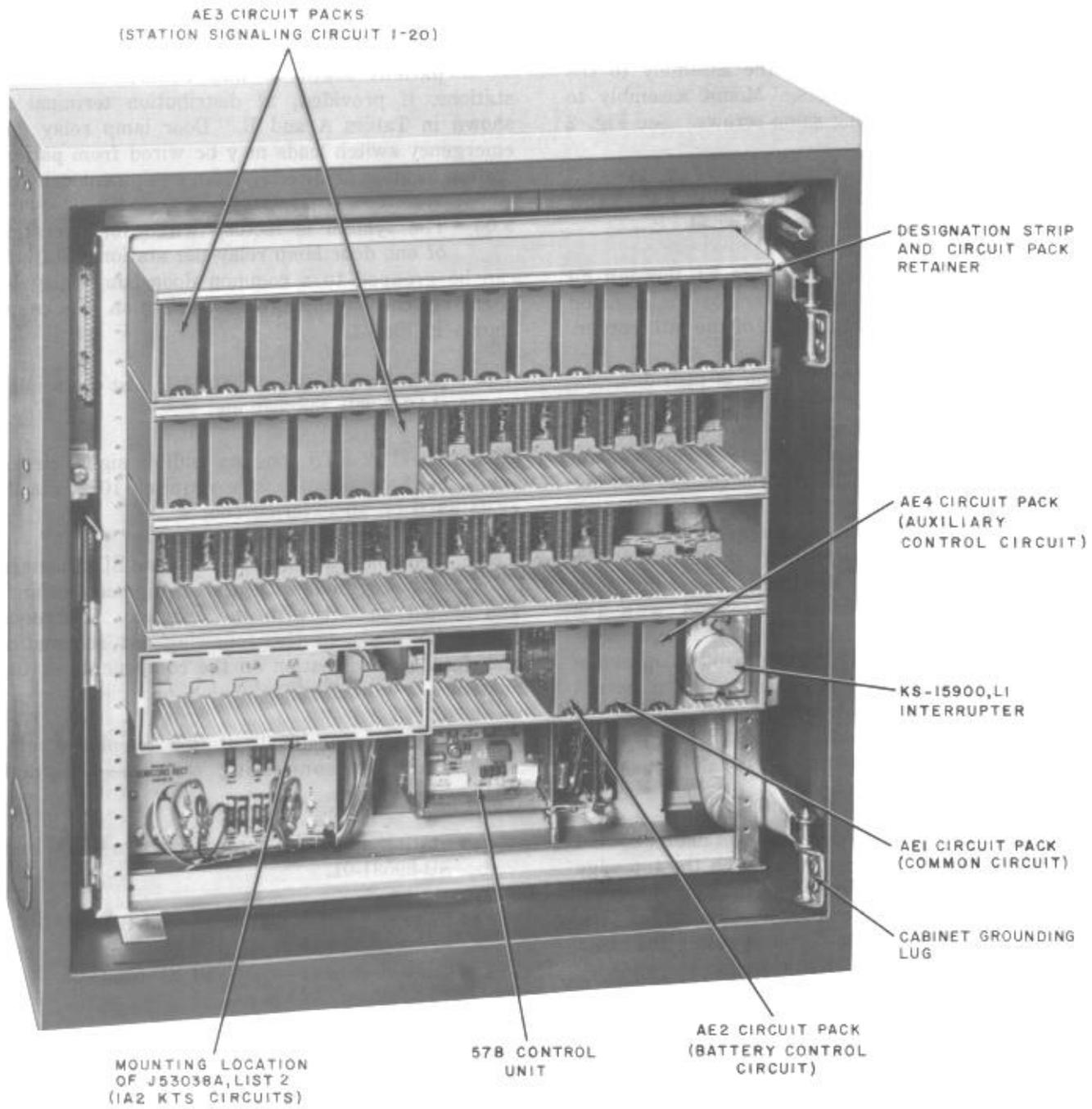


Fig. 2—Equipment Cabinet, Interior View (Gate Closed)

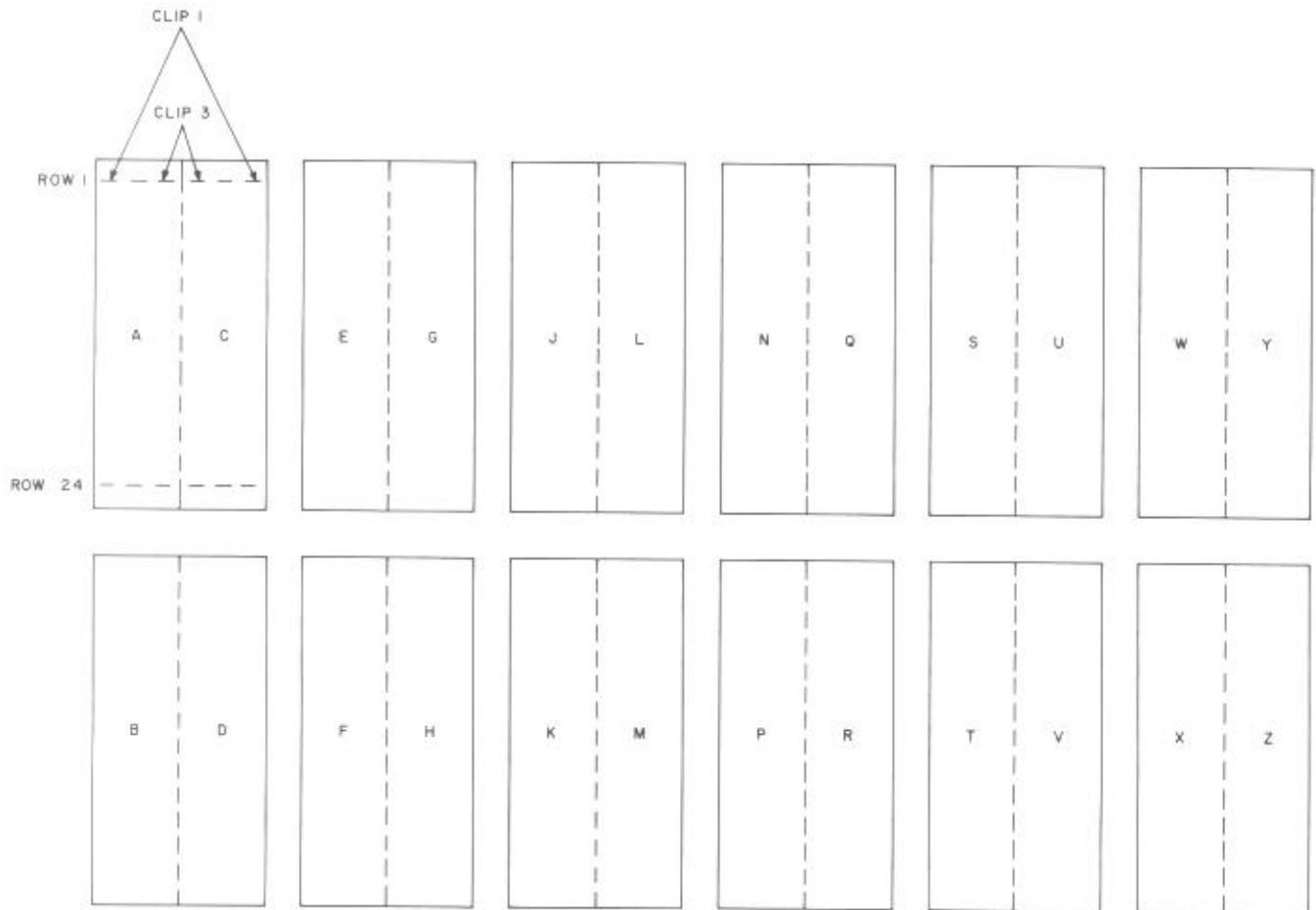


Fig. 3—Distribution Terminal Arrangement

- Replacement of KS-interrupters.
- Replacement of fuses on power supply.
- Verification of field wiring and factory placed wiring to distribution terminal and circuit pack connectors.

Lamp supply leads are double fused. If it is necessary to replace these fuses, the new fuses

should be placed in the same order as those replaced.

Note: Use a KS-16492, List 2 unwrapping tool to remove wire-wrapped connections for testing purposes. The 635A tool may be used to rewrap wire to terminal, but connection must be soldered for reliability. Use long-nose pliers for removing clip-type terminations and a 714B tool for making connections.

TABLE A
DISTRIBUTION TERMINAL CONNECTIONS

BLOCK A				BLOCK C				TO	
TO	CLIP			CLIP					
		11	12	13	13	12			11
STA 1	51	T R NR N M2 M1 EG E	A1 LG LB S2 S1 DG D	LG LP LK B1 R1 PG P	LG LP LK B1 R1 PG P	A1 LG LB S2 S1 DG D	T R NR N M2 M1 EG E	51	STA 7
STA 2	101 151	T R NR N M2 M1 EG E	A1 LG LB S2 S1 DG D	LG LP LK B1 R1 PG P	LG LP LK B1 R1 PG P	A1 LG LB S2 S1 DG D	T R NR N M2 M1 EG E	101 151	STA 8
STA 3	201	T R NR N M2 M1 EG E	A1 LG LB S2 S1 DG D	LG LP LK B1 R1 PG P	LG LP LK B1 R1 PG P	A1 LG LB S2 S1 DG D	T R NR N M2 M1 EG E	201	STA 9
		241	242	243	243	242	241		

BLOCK E	BLOCK G
TO	TO
STA 13	STA 19
STA 14	STA 20
STA 15	STA 21

BLOCK J	BLOCK I
TO	TO
STA 25	STA 31
STA 26	STA 32
STA 27	STA 33

BLOCK B				BLOCK D				TO	
TO	CLIP			CLIP					
		11	12	13	13	12			11
STA 4	51	T R NR N M2 M1 EG E	A1 LG LB S2 S1 DG D	LG LP LK B1 R1 PG P	LG LP LK B1 R1 PG P	A1 LG LB S2 S1 DG D	T R NR N M2 M1 EG E	51	STA 10
STA 5	101 151	T R NR N M2 M1 EG E	A1 LG LB S2 S1 DG D	LG LP LK B1 R1 PG P	LG LP LK B1 R1 PG P	A1 LG LB S2 S1 DG D	T R NR N M2 M1 EG E	101 151	STA 11
STA 6	201	T R NR N M2 M1 EG E	A1 LG LB S2 S1 DG D	LG LP LK B1 R1 PG P	LG LP LK B1 R1 PG P	A1 LG LB S2 S1 DG D	T R NR N M2 M1 EG E	201	STA 12
		241	242	243	243	242	241		

BLOCK F	BLOCK H
TO	TO
STA 16	STA 22
STA 17	STA 23
STA 18	STA 24

BLOCK K	BLOCK M
TO	TO
STA 28	STA 34
STA 29	STA 35
STA 30	STA 36

TABLE A
DISTRIBUTION TERMINAL CONNECTIONS (Cont)

BLOCK N				BLOCK Q				TO
TO	CLIP			CLIP				
	11	12	13	13	12	11		
STA 37	51			LG L LG L LG L	A A1 A A1 A A1	T R T R T R	51	
STA 38	101			LG L	A A1	T R	101	
	151			LG(2) L(2) LG(4) L(4)	S(1) S(2) S(3) S(4)	HLG HL LG(1) L(1) LG(3) L(3)	151	
STA 39	201			LG(6) L(6) LG(8) L(8) LG(10) L(10) LG(12) L(12)	S(5) S(6) S(7) S(8) S(9) S(10) S(11) S(12)	LG(5) L(5) LG(7) L(7) LG(9) L(9) LG(11) L(11)	201	
		241	242	243	243	242	241	

BLOCK P				BLOCK R				TO
TO	CLIP			CLIP				
	11	12	13	13	12	11		
STA 40	51	T R NR N M2 M1 EG E	A1 LG LB S2 S1 DG D	LG LP LK B1 R1 PG P	LG(14) L(14) LG(16) L(16) LG(18) L(18) LG(20) L(20)	S(13) S(14) S(15) S(16) S(17) S(18) S(19) S(20)	LG(13) L(13) LG(15) L(15) LG(17) L(17) LG(19) L(19)	51
REMOTE ANSWER STATION	101	T R T R T	A A1 A A1 A	LG L LG L	LG(22) L(22) LG(24) L(24) LG(26) L(26)	S(21) S(22) S(23) S(24) S(25) S(26)	LG(21) L(21) LG(23) L(23) LG(25) L(25)	101
	151	T R T R	A A1 A A1	LG L LG L	LG(28) L(28) LG(30) L(30)	S(27) S(28) S(29) S(30)	LG(27) L(27) LG(29) L(29)	151
	201	B1 R1 SP2 SP1 T1 R1	BZ1 BZ -15 M1 P9-IT P4-IR	S P1 AG F1	LG(32) L(32) LG(34) L(34) LG(36) L(36)	S(31) S(32) S(33) S(34) S(35) S(36)	LG(31) L(31) LG(33) L(33) LG(35) L(35)	201
			241	242	243	243	242	241

TABLE A
DISTRIBUTION TERMINAL CONNECTIONS (Cont)

BLOCK W					BLOCK Y				TO
TO	CLIP			CLIP					
		11	12	13	13	12	11		
REMOTE ANSWER STATION 55-TYPE CONTROL UNIT	51	SP1	-15	S	LG	GRD	GRD	51	1A2 KTS CIRCUITS
		SP2	M1	P1	10V ±	105 ±	105 ±		
		T1	P3-IT	AG					
		R1	P4-IR	F1			-20 SIG		
		B1*	B1*	A					SPARE
		R1*	R1*	A1					
		BL							
DOOR LAMP OPTIONS	101	C1(1)	C2(1)	C3(1)	C4(1)	C5(1)	D(1)	101	DOOR LAMP OPTIONS
		C1(2)	C2(2)	C3(2)	C4(2)	C5(2)	D(2)		
		C1(3)	C2(3)	C3(3)	C4(3)	C5(3)	D(3)		
		C1(4)	C2(4)	C3(4)	C4(4)	C5(4)	D(4)		
	151	C1(5)	C2(5)	C3(5)	C4(5)	C5(5)	D(5)	151	
		C1(6)	C2(6)	C3(6)	C4(6)	C5(6)	D(6)		
		C1(7)	C2(7)	C3(7)	C4(7)	C5(7)	D(7)		
		C1(8)	C2(8)	C3(8)	C4(8)	C5(8)	D(8)		
	201	C1(9)	C2(9)	C3(9)	C4(9)	C5(9)	D(9)	201	
		C1(10)	C2(10)	C3(10)	C4(10)	C5(10)	D(10)		
		C1(11)	C2(11)	C3(11)	C4(11)	C5(11)	D(11)		
		C1(12)	C2(12)	C3(12)	C4(12)	C5(12)	D(12)		
		C1(13)	C2(13)	C3(13)	C4(13)	C5(13)	D(13)		
		C1(14)	C2(14)	C3(14)	C4(14)	C5(14)	D(14)		
		C1(15)	C2(15)	C3(15)	C4(15)	C5(15)	D(15)		
		C1(16)	C2(16)	C3(16)	C4(16)	C5(16)	D(16)		
	241	242	243	243	242	241			

*Remove factory-wired straps when speakerphone is provided.

BLOCK X					BLOCK Z				TO
TO	CLIP			CLIP					
		11	12	13	13	12	11		
DOOR LAMP OPTIONS	51	C1(17)	C2(17)	C3(17)	C4(17)	C5(17)	D(17)	51	DOOR LAMP OPTIONS
		C1(18)	C2(18)	C3(18)	C4(18)	C5(18)	D(18)		
		C1(19)	C2(19)	C3(19)	C4(19)	C5(19)	D(19)		
		C1(20)	C2(20)	C3(20)	C4(20)	C5(20)	D(20)		
	101	C1(21)	C2(21)	C3(21)	C4(21)	C5(21)	D(21)	101	
		C1(22)	C2(22)	C3(22)	C4(22)	C5(22)	D(22)		
		C1(23)	C2(23)	C3(23)	C4(23)	C5(23)	D(23)		
		C1(24)	C2(24)	C3(24)	C4(24)	C5(24)	D(24)		
	151	C1(25)	C2(25)	C3(25)	C4(25)	C5(25)	D(25)	151	
		C1(26)	C2(26)	C3(26)	C4(26)	C5(26)	D(26)		
		C1(27)	C2(27)	C3(27)	C4(27)	C5(27)	D(27)		
		C1(28)	C2(28)	C3(28)	C4(28)	C5(28)	D(28)		
	201	C1(29)	C2(29)	C3(29)	C4(29)	C5(29)	D(29)	201	
		C1(30)	C2(30)	C3(30)	C4(30)	C5(30)	D(30)		
		C1(31)	C2(31)	C3(31)	C4(31)	C5(31)	D(31)		
		C1(32)	C2(32)	C3(32)	C4(32)	C5(32)	D(32)		
		C1(33)	C2(33)	C3(33)	C4(33)	C5(33)	D(33)		
		C1(34)	C2(34)	C3(34)	C4(34)	C5(34)	D(34)		
		C1(35)	C2(35)	C3(35)	C4(35)	C5(35)	D(35)		
		C1(36)	C2(36)	C3(36)	C4(36)	C5(36)	D(36)		
	241	242	243	243	242	241			

TABLE B

CONTROL CONSOLE CONNECTOR CABLE TO
DISTRIBUTION TERMINAL CONNECTIONS

COLOR	BLUE-WHITE BINDER					ORANGE-WHITE BINDER				
	LEAD DESIG	TERM. IN SET	TERM. IN CAB.			LEAD DESIG	TERM. IN SET	TERM. IN CAB.		
			BLK	ROW	CLIP			BLK	ROW	CLIP
W-BL	T	26		1	1	LG(1)	26		13	1
BL-W	R	1		2	1	L(1)	1		14	1
W-O	A	27		1	2	S(1)	27		13	2
O-W	A1	2		2	2	S(2)	2		14	2
W-G	LG	28		1	3	LG(2)	28		13	3
G-W	L	3		2	3	L(2)	3		14	3
W-BR	T	29		3	1	LG(3)	29		15	1
BR-W	R	4		4	1	L(3)	4		16	1
W-S	A	30		3	2	S(3)	30		15	2
S-W	*	*		4	2	S(4)	5		16	2
R-BL	LG	31		3	3	LG(4)	31		15	3
BL-R	L	6		4	3	L(4)	6		16	3
R-O	T	32		5	1	LG(5)	32		17	1
O-R	R	7		6	1	L(5)	7		18	1
R-G	A	33		5	2	S(5)	33		17	2
G-R	*	*		6	2	S(6)	8		18	2
R-BR	LG	34		5	3	LG(6)	34		17	3
BR-R	L	9		6	3	L(6)	9		18	3
R-S	T	35		7	1	LG(7)	35	Q	19	1
S-R	R	10		8	1	L(7)	10		20	1
BK-BL	A	36		7	2	S(7)	36		19	2
BL-BK	*	*		8	2	S(8)	11		20	2
BK-O	LG	37		7	3	LG(8)	37		19	3
O-BK	L	12		8	3	L(8)	12		20	3
BK-G	T	38		9	1	LG(9)	38		21	1
G-BK	R	13	Q	10	1	L(9)	13		22	1
BK-BR	A	39		9	2	S(9)	39		21	2
BR-BK	*	*		10	2	S(10)	14		22	2
BK-S	LG	40		9	3	LG(10)	40		21	3
S-BK	L	15		10	3	L(10)	15		22	3
Y-BL	(1)SG	41				LG(11)	26		23	1
BL-Y	(1)S	16				L(11)	1		24	1
Y-O	(1)LG	42				S(11)	27		23	2
O-Y	(1)L	17				S(12)	2		24	2
Y-G	(2)SG	43				LG(12)	28		23	3
G-Y	(2)S	18				L(12)	3		24	3
Y-BR	(2)LG	44				LG(13)	29		1	1
BR-Y	(2)L	19				L(13)	4		2	1
Y-S	(3)SG	45				S(13)	30		1	2
S-Y	(3)S	20				S(14)	5		2	2
V-BL	(3)LG	46				LG(14)	31		1	3
BL-V	(3)L	21				L(14)	6		2	3
V-O	(4)SG	47				LG(15)	32	R	3	1
O-V	(4)S	22				L(15)	7		4	1
V-G	(4)LG	48				S(15)	33		3	2
G-V	(4)L	23				S(16)	8		4	2
V-BR	*	*				LG(16)	34		3	3
BR-V	*	*				L(16)	9		4	3
V-S	HLG	50		11	1	LG(17)	35		5	1
S-V	HL	25		12	1	L(17)	10		6	1

*Insulate and store.

TABLE B

**CONTROL CONSOLE CONNECTOR CABLE TO
DISTRIBUTION TERMINAL CONNECTIONS (Cont)**

COLOR	GREEN-WHITE BINDER					BROWN-WHITE BINDER				
	LEAD DESIG	TERM. IN SET	TERM. IN CAB.			LEAD DESIG	TERM. IN SET	TERM. IN CAB.		
			BLK	ROW	CLIP			BLK	ROW	CLIP
W-BL	S(17)	36		5	2	LG(34)	31		21	3
BL-W	S(18)	11		6	2	L(34)	6		22	3
W-O	LG(18)	37		5	3	LG(35)	32	R	23	1
O-W	L(18)	12		6	3	L(35)	7		24	1
W-G	LG(19)	38		7	1	S(35)	33		23	2
G-W	L(19)	13		8	1	S(36)	8		24	2
W-BR	S(19)	39		7	2	LG(36)	34		23	3
BR-W	S(20)	14		8	2	L(36)	9		24	3
W-S	LG(20)	40		7	3	LG(37)	35		1	1
S-W	L(20)	15		8	3	L(37)	10		2	1
R-BL	LG(21)	26		9	1	S(37)	36		1	2
BL-R	L(21)	1		10	1	S(38)	11		2	2
R-O	S(21)	27		9	2	LG(38)	37		1	3
O-R	S(22)	2		10	2	L(38)	12		2	3
R-G	LG(22)	28		9	3	LG(39)	38		3	1
G-R	L(22)	3		10	3	L(39)	13		4	1
R-BR	LG(23)	29		11	1	S(39)	39		3	2
BR-R	L(23)	4		12	1	S(40)	14		4	2
R-S	S(23)	30		11	2	LG(40)	40		3	3
S-R	S(24)	5		12	2	L(40)	15		4	3
BK-BL	LG(24)	31		11	3	B1	TS6-2		5	1
BL-BK	L(24)	6		12	3	R1	TS6-1		6	1
BK-O	LG(25)	32	R	13	1	B2	TS6-2		5	2
O-BK	L(25)	7		14	1	R2	TS6-6		6	2
BK-G	S(25)	33		13	2	BZ1	TS7-4		5	3
G-BK	S(26)	8		14	2	BZ	TS6-8		6	3
BK-BR	LG(26)	34		13	3	BZ3	TS7-4		7	1
BR-BK	L(26)	9		14	3	BZ2	TS6-7	S	8	1
BK-S	LG(27)	35		15	1	*				
S-BK	L(27)	10		16	1	SG	TS5-6		8	2
Y-BL	S(27)	36		15	2	VC1	TS10-8		7	3
BL-Y	S(28)	11		16	2	VC	TS10-9		8	3
Y-O	LG(28)	37		15	3	SP2	TS5-9		9	1
O-Y	L(28)	12		16	3	SP1	TS5-8		10	1
Y-G	LG(29)	38		17	1	-15	TS4-4		9	2
G-Y	L(29)	13		18	1	M1	TS4-9		10	2
Y-BR	S(29)	39		17	2	S	TS4-5		9	3
BR-Y	S(30)	14		18	2	P1	TS4-3		10	3
Y-S	LG(30)	40		17	3	T1	TS5-2		11	1
S-Y	L(30)	15		18	3	R1	TS5-1		12	1
V-BL	LG(31)	26		19	1	P3-IT	TS5-4		11	2
BL-V	L(31)	1		20	1	P4-IR	TS5-5		12	2
V-O	S(31)	27		19	2	AG	TS5-3		11	3
O-V	S(32)	2		20	2	F1	TS4-1		12	3
V-G	LG(32)	28		19	3	A†	TS7-5		17	3
G-V	L(32)	3		20	3	BL†	TS5-5		20	1
V-BR	LG(33)	29		21	1	*				
BR-V	L(33)	4		22	1	*				
V-S	S(33)	30		21	2	SPARE	TS9-9			
S-V	S(34)	5		22	2	SPARE	TS6-9			

*Insulate and store.

†Terminate when speakerphone is provided and control unit is wired directly into console, otherwise insulate and store.

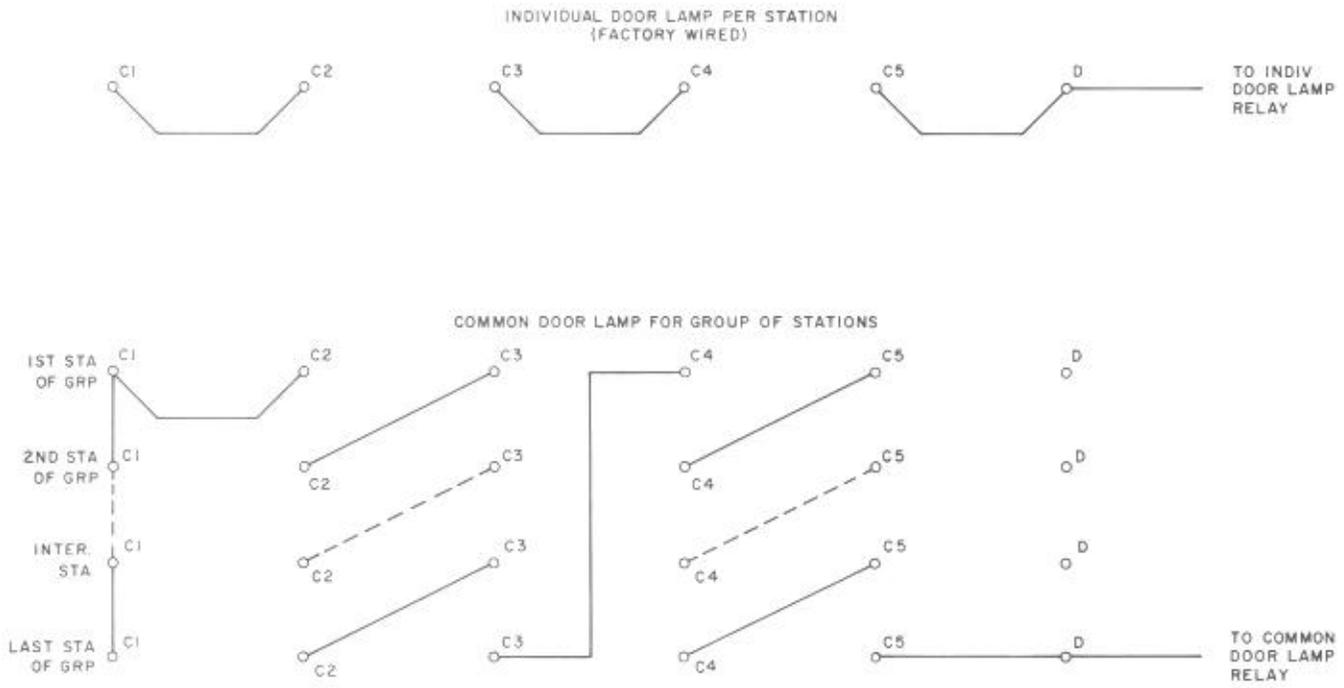
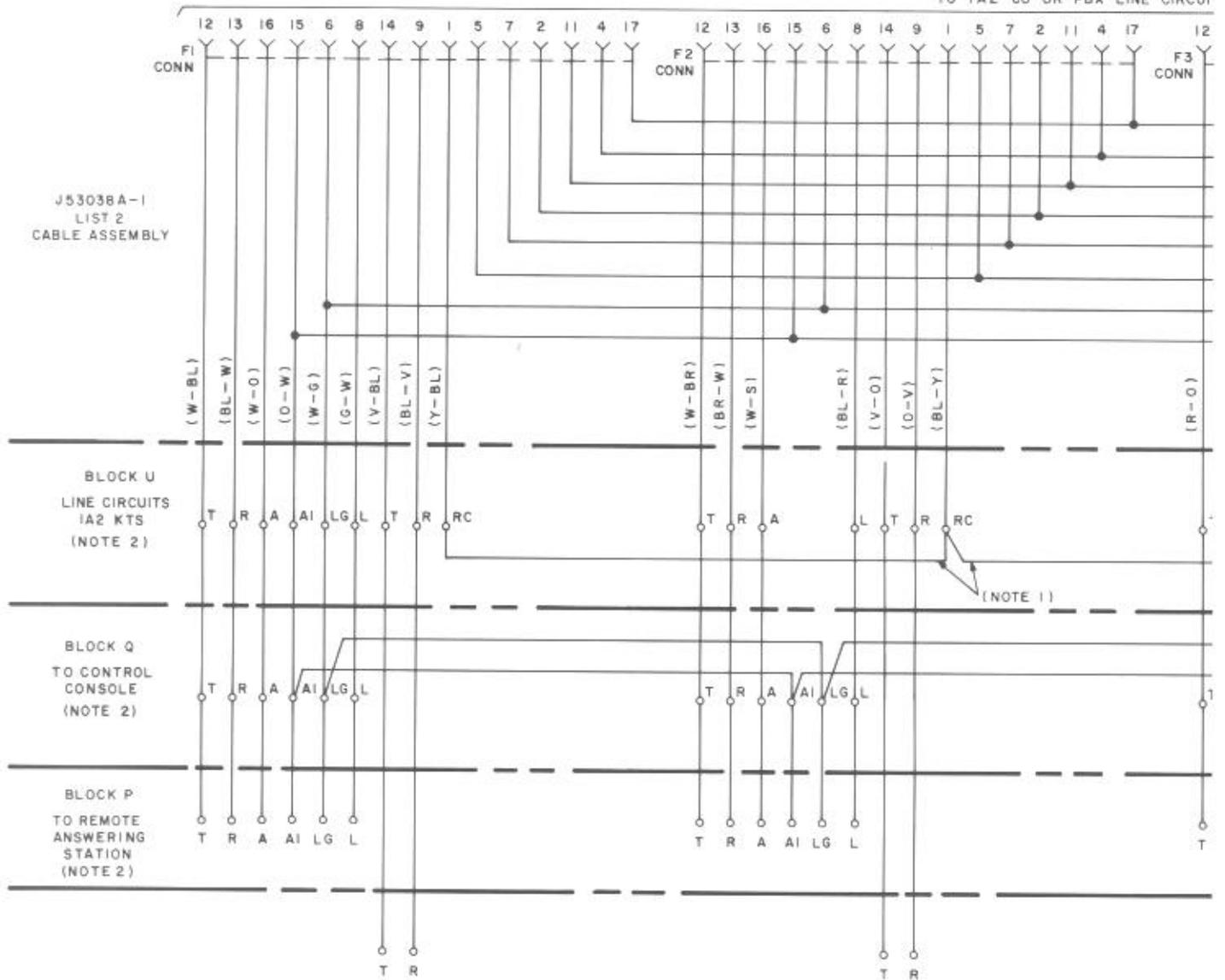


Fig. 4—Door Lamp Option Block Wiring

TO IA2 CO OR PBX LINE CIRCUIT

J5303BA-1
LIST 2
CABLE ASSEMBLY



INCOMING CO OR PBX
LINES FOR IA2 KTS
(BLOCK U)

