

TIE LINES AND STATION LINES TERMINATIONS IN APPARATUS CABINET

1. GENERAL

1.01 This section covers the connections required for tie lines and station lines. This includes strapping between key telephone units, terminating of wires from power source, terminating of lines from distant terminal, and terminating of key or running cables from key telephone stations.

1.02 An index listing the various features, power sources, types of associated equipment, and table numbers is shown on pages 2 and 3 of this section. Connections are shown on individual tables numbered 10.01 through 10.24.

2. DEFINITIONS OF TERMS USED IN THIS SECTION

2.01 The term "Distant Terminal" denotes the other end, or terminus, of the tie line or station line.

2.02 The term "Common Strapping" denotes the strapping that must be run between tie and station line units (203A, 204A, and 205A) and system flashing and timing-out unit (209A or 212A) **regardless** of the system line number, or numbers, assigned to tie and/or station line units.

2.03 The term "Line Strapping" denotes the specific individual strapping that must be run for each line between tie and station line units (203A, 204A, and 205A) and system flashing and timing-out unit (209A or 212A). If a tie or station line is to be the first line in the system, the connections opposite "Line No. 1" should be used. If the tie or station line is to be the second line in the system, the connections opposite "Line No. 2" should be used, etc.

3. POWER WIRING

3.01 Connection data for power wiring is based on the principle established in SD-69203-01, Figs. 67 and 68. It does not agree with the specific power connections shown in SD-69203-01, Figs. 51, 52, 53, and 54, Issue 2. It is planned to include the revised information in future issues of the drawings.

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WIRING BETWEEN KEY TELEPHONE UNITS

TYPE OF STRAPPING	TYPE OF LINE	TYPE OF K.T.U. USED FOR		TABLE NO.	PAGE NO.
		TIE LINE OR STA. LINE UNIT	SYS. FLASHING AND TIMING-OUT UNIT		
Common	Automatic Tie Line	203A	209A	10.01	4
			212A	10.02	5
	Ringdown Tie Line	204A	209A	10.03	6
			212A	10.04	7
	Station Line	205A	209A	10.05	8
			212A	10.06	9
Individual Line	Automatic Tie Line	203A	209A	10.07	10
			212A	10.08	10
	Ringdown Tie Line	204A	209A	10.07	10
			212A	10.08	10
	Station Line	205A	209A	10.07	10
			212A	10.08	10

CABLE CONNECTIONS

LINES TO	TYPE OF CIRCUIT	TYPE OF KEY TEL. SET USED		TABLE NO.	PAGE NO.	
Distant Terminal (Incoming or Running Cable)	Feed	All		10.16	15	
Stations—Key Cable	Line and Lamp	All 1A1 Sys. Sets Except 565A		10.17	16	
		565A		10.18	17	
	Distant Term. Signaling	Internal Sig. Keys (Push Buttons)	All 1A1 Sys. Sets Except 565A		10.19	18
			565A		10.20	18
		External Sig. Keys (Push Buttons)	Amplified Talking Ckt. May Not Be Used in Same Cable		10.21	19
			Amplified Talking Ckt. May Be Used in Same Cable		10.22	20
Stations—Running Cable	Line and Lamp	All 1A1 Sys. Sets Except 565A		10.17	16	
		Systems Using 565A Sets Only		10.18	17	
	Distant Term. Signaling	All 1A1 Sys. Sets		10.23	21	
		Systems Using 565A Sets Only		10.24	22	

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POWER WIRING

POWER					TABLE NO.	PAGE NO.
FURNISHED	TYPE★	SOURCE	CONNECTED FROM	FOR		
Through Fuse and Ringing Lamp Units	Battery	101G Power Plant, Trans., Static Ringing Generator, and/or CO, PBX, Building, or Local Supply	Fuse Unit	Common Buzzers	10.09	11
				Transmitter, Lamps, and Relays	10.10	11
	Generator		Ringing Lamp Unit	Common Bells	10.11	12
				Distant Term. Signaling ✕◆	10.12	12
			Common Aud. Sig. Terms. On Same K.T.U.	Distant Term. Signaling ✕□	10.14	14
Direct to Line Units	Battery and Generator	101G Power Plant, Trans., Static Ringing Generator, and/or CO, PBX, Building, or Local Supply	CO or PBX Line Unit	Common Buzzers	10.13	13
				Common Bells	10.13	13
				Transmitter, Lamps, and Relays	10.13	13
				Common Aud. Sig. Terms. On Same K.T.U.	Distant Term. Signaling ✕□	10.14
	Generator	101G Power Plant or Static Ringing Generator	Incoming Power Wiring From Source	Distant Term. Signaling ✕◆	10.15	14

Notes: ★ The term "Battery" as used in this column denotes low voltage ac or dc.

✕ Distant terminal signaling generator supply is required only by ringdown tie lines and station lines.

◆ Where ringing current (generator) is not being used to operate common audible signal select:
 Table 10.12 where ringing current is supplied through ringing lamp units.
 Table 10.15 where ringing current is not supplied through ringing lamp units.

□ Where ringing current (generator) is being used to operate common audible signal, select table 10.14.

TABLE 10.01

CONNECTIONS BETWEEN SYSTEM FLASHING AND TIMING-OUT UNIT (209A) AND AUTOMATIC TIE LINE UNIT (203A) AND BETWEEN FIRST 203A UNIT AND TIE LINE AND STATION LINE UNITS (203A, 204A, 205A); BETWEEN ALL 203A, 204A, AND 205A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (16A); BETWEEN ALL 203A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (211A)—COMMON STRAPPING

- (A) Run Straps as Shown on Subtable a Below, Whether or Not an Audible Signal Control Unit Is Provided:
- (B) When Audible Signal Control Unit Is Provided and 16A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable b for All Lines to Be Connected to the Audible Signal Control Circuit:
- (C) When Audible Signal Control Unit Is Provided and 211A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable c for All Lines to Be Connected to the Audible Signal Control Circuit:

SUBTABLE	LEAD DESIG.	K.T.U. USED	K.T.U. USED
α	TO CO	209A K.T.U. TERM. STRIP "A" TERM. 5 6	ALL 203A K.T.U. TERM. 21 22
	TRANS BAT "A" TRANS GRD "A" LAMP GRD LAMP POWER B1 COM RING POWER RELAY BAT "B" RELAY GRD "B"	1st 203A K.T.U. TERM. 15 16 30 31 33 36 38 40	ALL 203A, 204A, 205A K.T.U. TERM. 15 16 30 31 33 36 38 40
SUBTABLE	LEAD DESIG.	ALL 203A, 204A, 205A K.T.U. TERM.	16A K.T.U. TERM.
b	R RR	23 27	9 7
SUBTABLE	LEAD DESIG.	ALL 203A K.T.U. TERM.	211A K.T.U. TERM.
c	R RR	23 27	2 3

Reference: SD-69203-0107, Fig. 24
SD-69203-0118, Fig. 52
SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54
SD-69203-0121, Fig. 55
SD-69203-0122, Fig. 56

TABLE 10.02

CONNECTIONS BETWEEN COMBINED SYSTEM FLASHING AND TIMING-OUT CIRCUIT AND CENTRAL OFFICE OR PRIVATE BRANCH EXCHANGE LINE CIRCUIT UNIT (212A) AND TIE LINE AND STATION LINE UNITS (203A, 204A, 205A) AND BETWEEN AUTOMATIC TIE LINE UNIT (203A) AND ALL SUCCEEDING 203A, 204A, AND 205A UNITS; BETWEEN ALL 203A, 204A, AND 205A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (16A); BETWEEN ALL 203A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (211A)—COMMON STRAPPING

- (A) Run Straps as Shown on Subtable a Below, Whether or Not an Audible Signal Control Unit Is Provided:
- (B) When Audible Signal Control Unit Is Provided and 16A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable b for All Lines to Be Connected to the Audible Signal Control Circuit:
- (C) When Audible Signal Control Unit Is Provided and 211A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable c for All Lines to Be Connected to the Audible Signal Control Circuit:

SUBTABLE	LEAD DESIG.	K.T.U. USED	K.T.U. USED
a	TO CO	212A K.T.U. TERM. STRIP "A" TERM. 17 18	ALL 203A, 204A, 205A K.T.U. TERM. 21 22
	TRANS BAT "A" TRANS GRD "A" LAMP GRD LAMP POWER BI COM RING POWER RELAY BAT "B" RELAY GRD "B"	1st 203A K.T.U. TERM. 15 16 30 31 33 36 38 40	ALL SUCCEEDING 203A, 204A, 205A K.T.U. TERM. 15 16 30 31 33 36 38 40
SUBTABLE	LEAD DESIG.	ALL 203A, 204A, 205A K.T.U. TERM.	16A K.T.U. TERM.
b	R RR	23 27	9 7
SUBTABLE	LEAD DESIG.	ALL 203A K.T.U. TERM.	211A K.T.U. TERM.
c	R RR	23 27	2 3

Reference: SD-69203-0107, Fig. 24
SD-69203-0118, Fig. 52
SD-69203-0119, Fig. 53

SD-69203-0120, Fig. 54
SD-69203-0121, Fig. 55
SD-69203-01, Fig. 67

TABLE 10.03

CONNECTIONS BETWEEN SYSTEM FLASHING AND TIMING-OUT UNIT (209A) AND RINGDOWN TIE LINE UNIT (204A) AND BETWEEN FIRST 204A UNIT AND TIE LINE AND STATION LINE UNITS (204A, 205A); BETWEEN ALL 204A AND 205A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (16A); BETWEEN ALL 204A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (211A)—COMMON STRAPPING

- (A) Run Straps as Shown on Subtable a Below, Whether or Not an Audible Signal Control Unit Is Provided:
- (B) When Audible Signal Control Unit Is Provided and 16A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable b for All Lines to Be Connected to the Audible Signal Control Circuit:
- (C) When Audible Signal Control Unit Is Provided and 211A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable c for All Lines to Be Connected to the Audible Signal Control Circuit:

SUBTABLE	LEAD DESIG.	K.T.U. USED	K.T.U. USED
α	TO CO LK	209A K.T.U. TERM. STRIP "A" TERM. 8 7 9	ALL 204A K.T.U. TERM. 21 22 24
	RING POWER RING GRD TRANS BAT "A" TRANS GRD "A" LAMP GRD LAMP POWER B1 COM RING POWER RELAY BAT "B" RELAY GRD "B"	1st 204A K.T.U. TERM. 5 6 15 16 30 31 33 36 38 40	ALL SUCCEEDING 204A, 205A K.T.U. TERM. 5 6 15 16 30 31 33 36 38 40
SUBTABLE	LEAD DESIG.	ALL 204A, 205A K.T.U. TERM.	16A K.T.U. TERM.
b	R RR	23 27	9 7
SUBTABLE	LEAD DESIG.	ALL 204A K.T.U. TERM.	211A K.T.U. TERM.
c	R RR	23 27	4 5

Reference: SD-69203-0107, Fig. 24
SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

SD-69203-0121, Fig. 55
SD-69203-0122, Fig. 56

CONNECTIONS BETWEEN COMBINED SYSTEM FLASHING AND TIMING-OUT
CIRCUIT AND CENTRAL OFFICE OR PRIVATE BRANCH EXCHANGE LINE
CIRCUIT UNIT (212A) AND TIE LINE AND STATION LINE UNITS (204A, 205A)
AND BETWEEN 212A UNIT AND RINGDOWN TIE LINE UNIT (204A) AND
BETWEEN FIRST 204A UNIT AND ALL 204A AND 205A UNITS; BETWEEN
ALL 204A AND 205A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (16A);
BETWEEN ALL 204A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (211A)
—COMMON STRAPPING

- (A) Run Straps as Shown on Subtable a Below, Whether or Not an Audible Signal Control Unit Is Provided:
- (B) When Audible Signal Control Unit Is Provided and 16A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable b for All Lines to Be Connected to the Audible Signal Control Circuit:
- (C) When Audible Signal Control Unit Is Provided and 211A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable c for All Lines to Be Connected to the Audible Signal Control Circuit:

SUBTABLE	LEAD DESIG.	K.T.U. USED	K.T.U. USED
α	TO CO	212A K.T.U. TERM. STRIP "A" TERM. 17 18	ALL 204A, 205A K.T.U. TERM. 21 22
	LK	212A K.T.U. TERM. STRIP "B" TERM. 20	ALL 204A K.T.U. TERM. 24
	RING POWER RING GRD TRANS BAT "A" TRANS GRD "A" LAMP GRD LAMP POWER B1 COM RING POWER RELAY BAT "B" RELAY GRD "B"	1st 204A K.T.U. TERM. 5 6 15 16 30 31 33 36 38 40	ALL 204A, 205A K.T.U. TERM. 5 6 15 16 30 31 33 36 38 40
SUBTABLE	LEAD DESIG.	ALL 204A, 205A K.T.U. TERM.	16A K.T.U. TERM.
b	R RR	23 27	9 7
SUBTABLE	LEAD DESIG.	ALL 204A K.T.U. TERM.	211A K.T.U. TERM.
c	R RR	23 27	4 5

Reference: SD-69203-0107, Fig. 24
SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

SD-69203-0121, Fig. 55
SD-69203-01, Fig. 67

TABLE 10.05

CONNECTIONS BETWEEN SYSTEM FLASHING AND TIMING-OUT UNIT (209A) AND STATION LINE UNIT (205A) AND BETWEEN FIRST 205A UNIT AND ALL SUCCEEDING 205A UNITS; BETWEEN ALL 205A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (16A); BETWEEN ALL 205A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (211A)—COMMON STRAPPING

- (A) Run Straps as Shown on Subtable a Below, Whether or Not an Audible Signal Control Unit Is Provided:
- (B) When Audible Signal Control Unit Is Provided and 16A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable b for All Lines to Be Connected to the Audible Signal Control Circuit:
- (C) When Audible Signal Control Unit Is Provided and 211A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable c for All Lines to Be Connected to the Audible Signal Control Circuit:

SUBTABLE	LEAD DESIG.	K.T.U. USED	K.T.U. USED
α	TO CO	209A K.T.U. TERM. STRIP "A" TERM. 10 11	ALL 205A K.T.U. TERM. 21 22
	RING POWER RING GRD TRANS BAT "A" TRANS GRD "A" LAMP GRD LAMP POWER B1 COM RING POWER RELAY BAT "B" RELAY GRD "B"	1st 205A K.T.U. TERM. 5 6 15 16 30 31 33 36 38 40	ALL SUCCEEDING 205A K.T.U. TERM. 5 6 15 16 30 31 33 36 38 40

SUBTABLE	LEAD DESIG.	ALL 205A K.T.U. TERM.	16A K.T.U. TERM.
b	R RR	23 27	9 7

SUBTABLE	LEAD DESIG.	ALL 205A K.T.U. TERM.	211A K.T.U. TERM.
c	R RR	23 27	6 7

Reference: SD-69203-0107, Fig. 24
SD-69203-0120, Fig. 54
SD-69203-0121, Fig. 55
SD-69203-0122, Fig. 56

TABLE 10.06

CONNECTIONS BETWEEN COMBINED SYSTEM FLASHING AND TIMING-OUT CIRCUIT AND CENTRAL OR PRIVATE BRANCH EXCHANGE LINE CIRCUIT UNIT (212A) AND STATION LINE UNIT (205A) AND BETWEEN FIRST 205A UNIT AND ALL 205A UNITS; BETWEEN ALL 205A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (16A); BETWEEN ALL 205A UNITS AND AUDIBLE SIGNAL CONTROL UNIT (211A)—COMMON STRAPPING

- (A) Run Straps as Shown on Subtable a Below, Whether or Not an Audible Signal Control Unit Is Provided:
 (B) When Audible Signal Control Unit Is Provided and 16A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable b for All Lines to Be Connected to the Audible Signal Control Circuit:
 (C) When Audible Signal Control Unit Is Provided and 211A K.T.U. Is Used, Run Additional Straps as Shown Below on Subtable c for All Lines to Be Connected to the Audible Signal Control Circuit:

SUBTABLE	LEAD DESIG.	K.T.U. USED	ALL 205A K.T.U. TERM.
α	TO CO	212A K.T.U. TERM. STRIP "A" TERM.	
		17	21
		18	22
	RING POWER RING GRD TRANS BAT "A" TRANS GRD "A" LAMP GRD LAMP POWER B1 COM RING POWER RELAY BAT "B" RELAY GRD "B"	1st 205A K.T.U. TERM.	
		5	5
		6	6
		15	15
		16	16
		30	30
		31	31
33		33	
36	36		
38	38		
40	40		
SUBTABLE	LEAD DESIG.	ALL 205A K.T.U. TERM.	16A K.T.U. TERM.
b	R	23	9
	RR	27	7
SUBTABLE	LEAD DESIG.	ALL 205A K.T.U. TERM.	211A K.T.U. TERM.
c	R	23	6
	RR	27	7

Reference: SD-69203-0107, Fig. 24
 SD-69203-0120, Fig. 54
 SD-69203-0121, Fig. 55
 SD-69203-01, Fig. 67

TABLE 10.07

CONNECTIONS BETWEEN SYSTEM FLASHING AND TIMING-OUT UNIT (209A) AND TIE LINE AND/OR STATION LINE UNITS (203A, 204A, AND/OR 205A)—INDIVIDUAL LINE STRAPPING

Run Straps as Shown Below for the Lines to Be Used for Tie and Station Line Circuits:

LINE NO. IN SYS.	LEAD DESIG.	209A K.T.U. TERM. STRIP "A" TERM.	203A, 204A AND/OR 205A K.T.U. TERM.
1	LF	21	25
	LB	22	26
2	LF	23	25
	LB	24	26
3	LF	25	25
	LB	26	26
4	LF	27	25
	LB	28	26
5	LF	29	25
	LB	30	26
6	LF	19	25
	LB	20	26

Reference: SD-69203-0118, Fig. 52
 SD-69203-0119, Fig. 53
 SD-69203-0120, Fig. 54
 SD-69203-0122, Fig. 56

TABLE 10.08

CONNECTIONS BETWEEN COMBINED SYSTEM FLASHING AND TIMING-OUT CIRCUIT AND CENTRAL OFFICE OR PRIVATE BRANCH EXCHANGE LINE CIRCUIT UNIT (212A) AND TIE LINE AND/OR STATION LINE UNITS (203A, 204A, AND/OR 205A)—INDIVIDUAL LINE STRAPPING

Run Straps as Shown Below for the Lines to Be Used for Tie and Station Line Circuits:

LINE NO. IN SYS.	LEAD DESIG.	212A K.T.U. TERM. STRIP "B" TERM.	203A, 204A AND/OR 205A K.T.U. TERM.
4	LF	17	25
	LB	18	26
5	LF	27	25
	LB	28	26
6	LF	37	25
	LB	38	26

Reference: SD-69203-0118, Fig. 52
 SD-69203-0119, Fig. 53
 SD-69203-0120, Fig. 54
 SD-69203-01, Fig. 67

CONNECTIONS BETWEEN TIE LINE AND/OR STATION LINE UNITS (203A, 204A, AND/OR 205A) AND CIRCUIT FUSE UNIT (201A)—FOR LOW VOLTAGE COMMON BUZZER SUPPLY

TABLE 10.09

Run Straps as Shown Below:

TYPE OF POWER AND USE	LEAD DESIG.	1st 203A, 204A, AND/OR 205A K.T.U. TERM.	CKT. FUSE 201A K.T.U. TERM.
LOW VOLTAGE AC OR DC USED FOR COMMON BUZZER	SIG POWER SIG GRD	36 33	10 19

Reference: SD-69203-0118, Fig. 52
SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54
SD-69203-0125, Fig. 66

CONNECTIONS BETWEEN TIE LINE AND/OR STATION LINE UNITS (203A, 204A, AND/OR 205A) AND CIRCUIT FUSE UNIT (201A)—FOR LAMP, RELAY, AND TRANSMITTER SUPPLY

TABLE 10.10

Run Straps as Shown Below:

TYPE OF POWER AND USE	LEAD DESIG.	1st 203A, 204A, AND/OR 205A K.T.U. TERM.	CKT. FUSE 201A K.T.U. TERM.
LOW VOLTAGE AC OR DC USED FOR LAMPS	LAMP POWER LAMP GRD	31 30	14 20
18-24V DC USED FOR RELAY SUPPLY	RELAY BAT RELAY GRD	38 40	4 16
18-24V DC USED FOR TRANSMITTER SUPPLY	TRANS BAT TRANS GRD	15 16	2 15

Reference: SD-69203-0118, Fig. 52
SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54
SD-69203-0125, Fig. 66

TABLE 10.11

CONNECTIONS BETWEEN TIE LINE AND/OR STATION LINE UNITS (203A, 204A, AND/OR 205A) AND RINGING LAMP UNIT (211A OR 11A) WHEN GENERATOR IS USED FOR COMMON AUDIBLE SIGNAL

See Table 10.14 for Connections Between Common Ringer Terminals and Distant Signaling Terminals on Ring-down Tie Line and Station Line K.T.U.

Select the One Subtable Applicable to Installation and Run Straps as Shown Below:

SUB-TABLE	LEAD DESIG.	203A, 204A, AND/OR 205A K.T.U. TERM.	K.T.U. USED AS RINGING LAMP UNIT
α	COMMON RING POWER COMMON RING GRD	36 33	211A K.T.U. TERM. 14 or 15 * 16 or 17 ✖
b	COMMON RING POWER COMMON RING GRD	36 33	11A K.T.U. TERM. 4, 9, or 8 ♦ 2, 6, or 5 □

- Notes: * Use terminal 14 when strapping to 204A K.T.U. and terminal 15 when strapping to 203A and 205A K.T.U.
 ✖ Use terminal 16 when strapping to 204A K.T.U. and terminal 17 when strapping to 203A and 205A K.T.U.
 ♦ Use terminals 4, 9, and 8 for strapping to 203A, 204A, and 205A K.T.U., respectively.
 □ Use terminals 2, 6, and 5 for strapping to 203A, 204A, and 205A K.T.U., respectively.

Reference: SD-69203-0106, Fig. 22
SD-69203-0118, Fig. 52

SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

SD-69203-0121, Fig. 55

TABLE 10.12

CONNECTIONS BETWEEN RINGDOWN TIE LINE AND/OR STATION LINE UNITS (204A AND/OR 205A) AND RINGING LAMP UNIT (211A OR 11A) WHEN GENERATOR IS NOT USED FOR COMMON SIGNAL

Select the One Subtable Applicable to Installation and Run Straps as Shown Below:

SUB-TABLE	LEAD DESIG.	204A AND OR 205A K.T.U. TERM.	K.T.U. USED AS RINGING LAMP UNIT
α	DST SIG POWER DST SIG GRD	5 6	211A K.T.U. TERM. 14 or 15 * 16 or 17 ✖
b	DST SIG POWER DST SIG GRD	5 6	11A K.T.U. TERM. 9 or 8 ♦ 6 or 5 □

- Notes: * Use terminals 14 and 15 for 204A and 205A K.T.U., respectively.
 ✖ Use terminals 16 and 17 for 204A and 205A K.T.U., respectively.
 ♦ Use terminals 9 and 8 for 204A and 205A K.T.U., respectively.
 □ Use terminals 6 and 5 for 204A and 205A K.T.U., respectively.

Reference: SD-69203-0106, Fig. 22
SD-69203-0119, Fig. 53

SD-69203-0120, Fig. 54
SD-69203-0121, Fig. 55

POWER CONNECTIONS BETWEEN CENTRAL OFFICE OR PRIVATE BRANCH EXCHANGE LINE UNIT (202A, 202B, OR 212A) AND TIE LINE AND/OR STATION LINE UNITS (203A, 204A, AND/OR 205A)

TABLE 10.13

See Table 10.14 for Connections Between Common Ringer Terminals and Distant Signaling Terminals on Ring-down Tie Line and Station Line K.T.U.

Select the One Subtable Applicable to Installation and Run Straps as Shown Below:

SUBTABLE	LEAD DESIG.	K.T.U. USED AS CO OR PBX LINE UNIT	1ST 203A, 204A, AND/OR 205A K.T.U. TERM.
a	LAMP GRD LAMP POWER COMMON RING GRD COMMON RING POWER TRANS "A" AND RELAY "B" BAT TRANS "A" AND RELAY "B" GRD	1st or 2nd 202A K.T.U. TERM.	
		30	30
		31	31
		33	33
		36	36
		38	38 and 15
b	LAMP GRD LAMP POWER COMMON RING GRD COMMON RING POWER TRANS "A" AND RELAY "B" BAT TRANS "A" AND RELAY "B" GRD	1st or 2nd 202B K.T.U. TERM.	
		40	30
		39	31
		8	33
		19	36
		29	38 and 15
c	LAMP GRD LAMP POWER COMMON RING GRD COMMON RING POWER TRANS "A" AND RELAY "B" BAT TRANS "A" AND RELAY "B" GRD	212A K.T.U. TERM. STRIP "A" TERM.	
		40	30
		39	31
		8	33
		19	36
		29	38 and 15
	30	40 and 16	

Reference: SD-69203-0117, Fig. 51
SD-69203-0118, Fig. 52
SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54
SD-69203-01, Fig. 67
SD-69203-01, Fig. 68

TABLE 10.14

STRAPPING BETWEEN COMMON RINGER TERMINALS AND DISTANT SIGNALING TERMINALS ON RINGDOWN TIE LINE AND/OR STATION LINE UNITS (204A AND/OR 205A) WHEN GENERATOR IS USED FOR COMMON AUDIBLE SIGNAL

Run Straps Between Terminals on 204A and/or 205A K.T.U. as Shown Below:

LEAD DESIG.	204A AND/OR 205A K.T.U.	
	TERM.	TERM.
DST SIG POWER	36 _____	5
DST SIG GRD	33 _____	6

Reference: SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

TABLE 10.15

CONNECTIONS BETWEEN 101G POWER PLANT OR STATIC RINGING GENERATORS AND RINGDOWN TIE LINE AND/OR STATION LINE UNITS (204A AND/OR 205A) FOR DISTANT TERMINAL SIGNALING WHEN GENERATOR IS NOT USED FOR COMMON AUDIBLE SIGNAL

10.15a LOCAL WIRING OR INCOMING CABLE FROM 101G POWER PLANT OR STATIC RINGING GENERATOR *

Terminate Cable Conductors On Key Telephone Units as Shown Below:

LEAD DESIG.	101G POWER PLANT ✕ TERM.	INCOMING CABLE			1ST 204A AND/OR 205A K.T.U. TERM.
		PAIR NO.	"C" INSIDE WIRING	"D" INSIDE WIRING	
			CONDUCTOR COLOR		
RING POWER RING GRD	105V± RING GRD	16	G-BR ♦ W ♦	BL ♦ Y ♦	5 6

10.15b RUNNING CABLE FROM 101G POWER PLANT OR STATIC RINGING GENERATOR *

Terminate Cable Conductors On Key Telephone Units as Shown Below:

LEAD DESIG.	101G POWER PLANT ✕ TERM.	RUNNING CABLE			1ST 204A AND/OR 205A K.T.U. TERM.
		PAIR NO.	"C" INSIDE WIRING	"D" INSIDE WIRING	
			CONDUCTOR COLOR		
RING POWER RING GRD	105V± RING GRD	45	S BK	S-W Y	5 6

Notes: ★ When local wiring is used, connect terminals on 101G power plant to terminals on ringdown tie line unit (204A) and/or station line unit (205A) with 20-gauge copper wire.

✕ Or static ringing generator.

♦ If a 16-pair cable is used, these colors will be red and white.

Reference: SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

INCOMING LINES FROM DISTANT TERMINAL—AUTOMATIC TIE LINE UNITS
(203A), RINGDOWN TIE LINE UNITS (204A), AND STATION LINE UNITS
(205A)

TABLE 10.16

If Lines From Distant Terminal Are Brought in Through Incoming Cable, Use Columns 1, 2, and 3 Below:

If Lines From Distant Terminal Are Brought in Through Running Cable, Use Columns 1, 3, and 4 Below:

Connect Incoming or Running Cable Pairs to Key Telephone Units as Shown Below:

COL. 1	COL. 2			COL. 3		COL. 4		
LEAD DESIG.	INCOMING CABLE			K.T.U. AND LINE NO. IN SYS.		RUNNING CABLE		
	PAIR NO.	"C" INSIDE WIRING	"D" INSIDE WIRING			PAIR NO.	"C" INSIDE WIRING	"D" INSIDE WIRING
		CONDUCTOR COLOR		LINE	TERM.		CONDUCTOR COLOR	
R T	1	BL W	BL W	1 *	2 1	46	BL-W BK	BL-W V
R T	2	O W	O W	2 *	2 1	47	BL-O BK	O-W V
R T	3	G W	G W	3 *	2 1	48	BL-G BK	G-W V
R T	4	BR W	BR W	4 *	2 1	49	BL-BR BK	BR-W V
R T	5	S W	S W	5 *	2 1	50	BL-S BK	S-W V
R T	6	BL-W W	BL R	6 *	2 1	51	O-W BK	BL-R W

Note: * If the tie or station line is the first line in the system, make connections as shown in the horizontal block for the first line; if the tie or station line is the second line in the system, make connections as shown in the horizontal block for the second line, etc.

Reference: SD-69203-0118, Fig. 52
SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

TABLE 10.17

KEY OR RUNNING CABLE TO KEY TELEPHONE UNITS FOR ALL 1A1 SYSTEM KEY TELEPHONE SETS EXCEPT 565A SETS—LINE AND LAMP CONNECTIONS—TIE LINE AND/OR STATION LINE UNITS (203A, 204A, AND/OR 205A)

Connect Key or Running Cable Pairs to Key Telephone Units as Shown Below:

LINE NO. IN SYS.	LEAD DESIG.	KEY OR RUNNING CABLE			203A, 204A, AND/OR 205A K.T.U. TERM.
		PAIR NO.	"C" INSIDE WIRING	"D" INSIDE WIRING	
			CONDUCTOR COLOR		
1*	R T	1	BL W	BL W	4, 11, or 12 3, 9, or 10
	L LG	16	G-BR W	BL Y	17, 18, or 28 19, 20, or 29
2*	R T	3	G W	G W	4, 11, or 12 3, 9, or 10
	L LG	17	G-S W	O Y	17, 18, or 28 19, 20, or 29
3*	R T	5	S W	S W	4, 11, or 12 3, 9, or 10
	L LG	18	BR-W W	G Y	17, 18, or 28 19, 20, or 29
4*	R T	7	BL-O W	O R	4, 11, or 12 3, 9, or 10
	L LG	19	BR-S W	BR Y	17, 18, or 28 19, 20, or 29
5*	R T	9	BL-BR W	BR R	4, 11, or 12 3, 9, or 10
	L LG	20	S-W W	S Y	17, 18, or 28 19, 20, or 29
6*✱	R T	22	O R	O V	4, 11, or 12 3, 9, or 10
	L LG	24	BR R	BR V	17, 18, or 28 19, 20, or 29

Notes: * If the tie or station line is the first line in the system, make connections as shown in the horizontal block for the first line; if the tie or station line is the second line in the system, make connections as shown in the horizontal block for the second line, etc.

✱ Running cable only.

Reference: SD-69203-0118, Fig. 52
SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

KEY OR RUNNING CABLE TO KEY TELEPHONE UNITS FOR 565A KEY TELEPHONE SETS—LINE AND LAMP CONNECTIONS—TIE LINE AND/OR STATION LINE UNITS (203A, 204A, AND/OR 205A)

TABLE 10.18

Connect Key or Running Cable Pairs to Key Telephone Units as Shown Below:

LINE NO. IN SYS.	LEAD DESIG.	KEY OR RUNNING CABLE			203A, 204A AND/OR 205A K.T.U. TERM.
		PAIR NO.	"C" INSIDE WIRING	"D" INSIDE WIRING	
			CONDUCTOR COLOR		
1*	R T	1	BL W	BL W	4, 11, or 12 3, 9, or 10
	L LG	16	G-BR W	BL Y	17, 18, or 28 19, 20, or 29
2*	R T	2	O W	O W	4, 11, or 12 3, 9, or 10
	L LG	17	G-S W	O Y	17, 18, or 28 19, 20, or 29
3*	R T	3	G W	G W	4, 11, or 12 3, 9, or 10
	L LG	18	BR-W W	G Y	17, 18, or 28 19, 20, or 29
4*	R T	4	BR W	BR W	4, 11, or 12 3, 9, or 10
	L LG	19	BR-S W	BR Y	17, 18, or 28 19, 20, or 29
5*	R T	5	S W	S W	4, 11, or 12 3, 9, or 10
	L LG	20	S-W W	S Y	17, 18, or 28 19, 20, or 29
6*	R T	6	BL-W W	BL R	4, 11, or 12 3, 9, or 10
	L LG	15	G-W W	S BK	17, 18, or 28 19, 20, or 29

Note: * If the tie or station line is the first line in the system, make connections as shown in the horizontal block for the first line; if the tie or station line is the second line in the system, make connections as shown in the horizontal block for the second line, etc.

Reference: SD-69203-0118, Fig. 52
SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

TABLE 10.19

KEY CABLE TO KEY TELEPHONE UNITS—PUSH BUTTONS IN ALL 1A1 SYSTEM KEY TELEPHONE SETS EXCEPT 565A SETS TO RINGDOWN TIE LINE AND/OR STATION LINE UNITS (204A AND/OR 205A)

Connect Key Cable Pairs To Key Telephone Units as Shown Below:

CONNECTIONS FOR	LEAD DESIG.	KEY CABLE			204A AND/OR 205A K.T.U. TERM.
		PAIR NO.	"C" INSIDE WIRING	"D" INSIDE WIRING	
			CONDUCTOR COLOR		
COMMON GRD	GRD	11	O-W(W)	BL(BK)	40
4th BUTTON IN SET	S	6	W(BL-W)	R(BL)	13 or 14
5th BUTTON IN SET	S	8	W(BL-G)	R(G)	13 or 14
6th BUTTON IN SET	S	10	W(BL-S)	R(S)	13 or 14

Reference: SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

TABLE 10.20

KEY CABLE TO KEY TELEPHONE UNITS—PUSH BUTTONS IN 565A KEY TELEPHONE SETS TO RINGDOWN TIE LINE AND/OR STATION LINE UNITS (204A AND/OR 205A)

Connect Key Cable Pairs To Key Telephone Units as Shown Below:

CONNECTIONS FOR	LEAD DESIG.	KEY CABLE			204A AND/OR 205A K.T.U. TERM.
		PAIR NO.	"C" INSIDE WIRING	"D" INSIDE WIRING	
			CONDUCTOR COLOR		
COMMON GRD	GRD	11	O-W(W)	BL(BK)	40
4th BUTTON IN SET	S	9	BL-BR(W)	BR(R)	13 or 14
5th BUTTON IN SET	S	9	W(BL-BR)	R(BR)	13 or 14
6th BUTTON IN SET	S	10	BL-S(W)	S(R)	13 or 14

Reference: SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

TABLE 10.21

KEY CABLE TO KEY TELEPHONE UNITS FOR ALL 1A1 SYSTEM KEY TELEPHONE SETS — EXTERNAL SIGNALING KEYS TO RINGDOWN TIE LINE AND/OR STATION LINE UNITS (204A AND/OR 205A)—AMPLIFIED TALKING CIRCUIT MAY NOT BE USED IN SAME CABLE

Make Connections According To The Following Steps:

- (A) To Determine Key Cable Pair, Select Horizontal Block (Under Key Cable) with Same Number as External Signal Key Lead Number to Which Tie Line or Station Line Will Be Connected.
- (B) To Determine Terminals, Select Horizontal Block (Under Key Telephone Unit) with Same Number as Line Being Installed.
- (C) Connect Cable Pair (Selected in A) to Terminals (Selected in B).

KEY CABLE					KEY TELEPHONE UNIT			
External Sig. Key Lead No.	Lead Desig.	Pair No.	"C" Inside Wiring	"D" Inside Wiring	Line No. In Sys.	Lead Desig.	204A AND/OR 205A K.T.U. Term.	
			CONDUCTOR COLOR					
—	GRD	22	O	O	to	—	GRD	40
1	S		R	V				
2	S	23	G	G		1	S	13 or 14
3	S		R	V		2	S	13 or 14
4	S	24	BR	BR		3	S	13 or 14
5	S		R	V		4	S	13 or 14
6	S	25	S	S		5	S	13 or 14
7	S		R	V		6	S	13 or 14
8	S	26	BL-W	BL-W				
9	S		R	W				
10	S	27	BL-O	O-W				
11	S		R	W				
12	S	28	BL-G(R)	G-W(W)				

Reference: SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

TABLE 10.22

KEY CABLE TO KEY TELEPHONE UNITS FOR ALL 1A1 SYSTEM KEY TELEPHONE SETS — EXTERNAL SIGNALING KEYS TO RINGDOWN TIE LINE AND/OR STATION LINE UNITS (204A AND/OR 205A) — AMPLIFIED TALKING CIRCUIT MAY BE USED IN SAME CABLE

Make Connections According To The Following Steps:

- (A) To Determine Key Cable Pair, Select Horizontal Block (Under Key Cable) with Same Number as External Signal Key Lead Number to Which Tie Line or Station Line will be Connected.
- (B) To Determine Terminals, Select Horizontal Block (Under Key Telephone Unit) with Same Number as Line Being Installed.
- (C) Connect Cable Pair (Selected in A) to Terminals (Selected in B).

KEY CABLE				
External Sig. Key Lead No.	Lead Desig.	Pair No.	"C" Inside Wiring	"D" Inside Wiring
			CONDUCTOR COLOR	
1	G S	22	O R	O V
2	G S	23	G R	G V
3	G S	24	BR R	BR V
4	G S	25	S R	S V
5	G S	26	BL-W R	BL-W W
6	G S	27	BL-O R	O-W W
7	G S	28	BL-G R	G-W W
8	G S	29	BL-BR R	BR-W W
9	G S	30	BL-S R	S-W W
10	G S	31	O-W R	BL-W R
11	G S	32	O-G R	O-W R
12	G S	33	O-BR R	G-W R

KEY TELEPHONE UNIT		
Line No. In Sys.	Lead Desig.	204A AND/OR 205A K.T.U. Term.
1	G S	40 13 or 14
2	G S	40 13 or 14
3	G S	40 13 or 14
4	G S	40 13 or 14
5	G S	40 13 or 14
6	G S	40 13 or 14

Reference: SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

**RUNNING CABLE TO KEY TELEPHONE UNITS FOR ALL 1A1 SYSTEM KEY
TELEPHONE SETS — DISTANT TERMINAL SIGNALING CONNECTIONS—
RINGDOWN TIE LINE AND/OR STATION LINE UNITS (204A AND/OR 205A)**

TABLE 10.23

Connect Running Cable Pairs to Key Telephone Units as Shown Below:

LINE NO. IN SYS.	LEAD DESIG.	RUNNING CABLE			204A AND/OR 205A K.T.U. TERM.
		PAIR NO.	"C" INSIDE WIRING	"D" INSIDE WIRING	
			CONDUCTOR COLOR		
1*	G S	2	O W	O W	40 13 or 14
2*	G S	4	BR W	BR W	40 13 or 14
3*	G S	6	BL-W W	BL R	40 13 or 14
4*	G S	8	BL-G W	G R	40 13 or 14
5*	G S	10	BL-S W	S R	40 13 or 14
6*	G S	23	G R	G V	40 13 or 14

Note: * If the tie or station line is the first line in the system, make connections as shown in the horizontal block for the first line; if the tie or station line is the second line in the system, make connections as shown in the horizontal block for the second line, etc.

Reference: SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54

TABLE 10.24

RUNNING CABLE TO KEY TELEPHONE UNITS—FOR SYSTEMS USING 565A KEY TELEPHONE SETS ONLY—DISTANT TERMINAL SIGNALING CONNECTIONS — RINGDOWN TIE LINE AND/OR STATION LINE UNITS (204A AND/OR 205A)

Connect Running Cable Pairs to Key Telephone Units as Shown Below:

LINE NO. IN SYS.	LEAD DESIG.	RUNNING CABLE			204A AND/OR 205A K.T.U. TERM.
		PAIR NO.	"C" INSIDE WIRING	"D" INSIDE WIRING	
			CONDUCTOR COLOR		
1*	G S	7	BL-O W	O R	40 13 or 14
2*	S	8	BL-G	G	13 or 14
3*	S		W	R	13 or 14
4*	S	9	BL-BR	BR	13 or 14
5*	S		W	R	13 or 14
6*	S	10	BL-S(W)	S(R)	13 or 14

Note: ★ If the tie or station line is the first line in the system, make connections as shown in the horizontal block for the first line; if the tie or station line is the second line in the system, make connections as shown in the horizontal block for the second line, etc.

Reference: SD-69203-0119, Fig. 53
SD-69203-0120, Fig. 54