

GROUP ALERTING SYSTEM

EQUIPMENT DESIGN REQUIREMENTS

COMMON SYSTEMS

1. GENERAL

SCOPE

1.01 This specification, together with the supplementary information listed herein, covers the equipment design requirements for the framework, equipment, and circuits to be used in the manufacture and installation of group alerting systems.

1.02 This specification is reissued to:

- (a) Arrange the group alerting equipment for use with ESS No. 1 and 2 systems in addition to the PBX system.
- (b) Change reference to the 53A control unit to read 53B control unit.
- (c) Change reference to the KS-16754, List 3 and List 4 amplifiers to read KS-20449, List 1 amplifiers.
- (d) Add new codes J95421AB and J95421AC.
- (e) Update Fig. 1 and 2 to include the application of the J95421AB and J95421AC units.
- (f) Add J95421D, Lists 5 and 6; J95421F, List 9; J95421S, List 2; J95421Y, List 3.
- (g) Rate J95421S, List 1 Mfr Disc.

CAPACITY

1.03 Group alerting systems have the following capacities.

Single Group System

Lines (maximum—originating office): 480
Line Groups (maximum): 1
Monitor and Test Group: 1
Monitor and Test Lines: 3

Distant Offices Associated With System: 59 (See Note A)
Lines (maximum—each distant office): 264
Control Stations (maximum): 3

Multigroup System

Lines (maximum—originating office): 480
Line Groups (originating office): 8 (See Note B)
Monitor and Test Group: 1
Monitor and Test Lines (maximum): 3
Distant Offices Associated With System: 59 (See Note A)
Lines (maximum—each distant office): 264
Line Groups (maximum—distant office): 4 (See Note B)

Control Stations: 3

Notes

- A. Because of transmission considerations with regard to the amplifiers in the alerting system, one trunk to a distant office is equivalent to eight auxiliary or monitor test lines. This means that for any given system, the number of lines in the originating office is reduced by eight for each distant office in the system. In general, unless the number of lines in the originating office approaches 480 lines, it is not expected that the number of distant offices would become a serious consideration when engineering a system.
- B. Groups in a distant office may be complete groups called by individual codes or they may be part of a group served by the originating office; however, in no event can the total number of groups in a given system exceed eight.

DESCRIPTION

1.04 The group alerting system is intended for use in local dial offices, and provides the

facilities for signaling one or more groups of telephone customers simultaneously and making an oral or recorded announcement. The alert is initiated at a control station on a customer premises using a telephone set, and on an optional basis, can be switched to an answering set for a recorded announcement. A system may be arranged for single group operation (all lines in a system being rung on each alert) or on a multigroup basis (maximum of nine groups), which permits the selection of a particular group or groups either functionally or geographically by dialing a code digit. One group circuit is always provided for monitor and test purposes, regardless of the number of groups in a given system. All of the equipment at the central office is mounted on a standard 11-foot, 6-inch relay rack. The equipment may be mounted on a 7-foot, 0-inch or 9-foot, 0-inch relay rack for use with ESS No. 1, 2, or PBX systems, located in buildings having low ceiling heights. This equipment, upon receiving the code pulses from the control station, selects the particular group or groups, makes a busy test on those lines to be alerted, and rings those lines found idle. Those lines found to be busy will be camped on and in addition receive approximately 14 seconds of group alerting ringing tone. This tone is applied when the line is found busy and is intended to inform the customer that an alert is in progress and that by hanging up, the customer will receive the alert call. If for some reason the customer should not hang up before the tone times out, the line will continue to be camped on and be connected to the alert as soon as it becomes idle, provided

the alert has not been terminated. The alert may be terminated by dialing zero, or it will terminate automatically at the end of the timing interval set in the central office control equipment (3 to 8 minutes). The alert period may be extended by redialing before the automatic time-out expires. The alerting system has features which enable a particular system to have customers in one or more central offices. The number of lines in any distant office can be divided into a maximum of four groups, and is under control of the common equipment in the office in which the alert is originated. A maximum of three control stations may be used with each system. Each control station may have an alternate control line to the central office to insure against a failure. A monitoring line is always provided with each control station so that the alert can be monitored. Two optional equipment arrangements are available for the control station apparatus. The first consists of a 53B control unit, a modified 565GBR-type telephone set, and a KS-16765 L1 announcement set. Dialing of the code digits for the selection of groups is done in the normal manner. Key buttons on the telephone set control the selection of the regular or alternate control line, the recording of the announcement, the switching of the recorded announcement, and the monitoring of the announcement. The second arrangement consists of a modified 500-type telephone set which is used for dialing the selected groups with no provision for making recorded announcements or switching to an alternate control line. Provision for monitoring is made over a regular message telephone located on the premises.

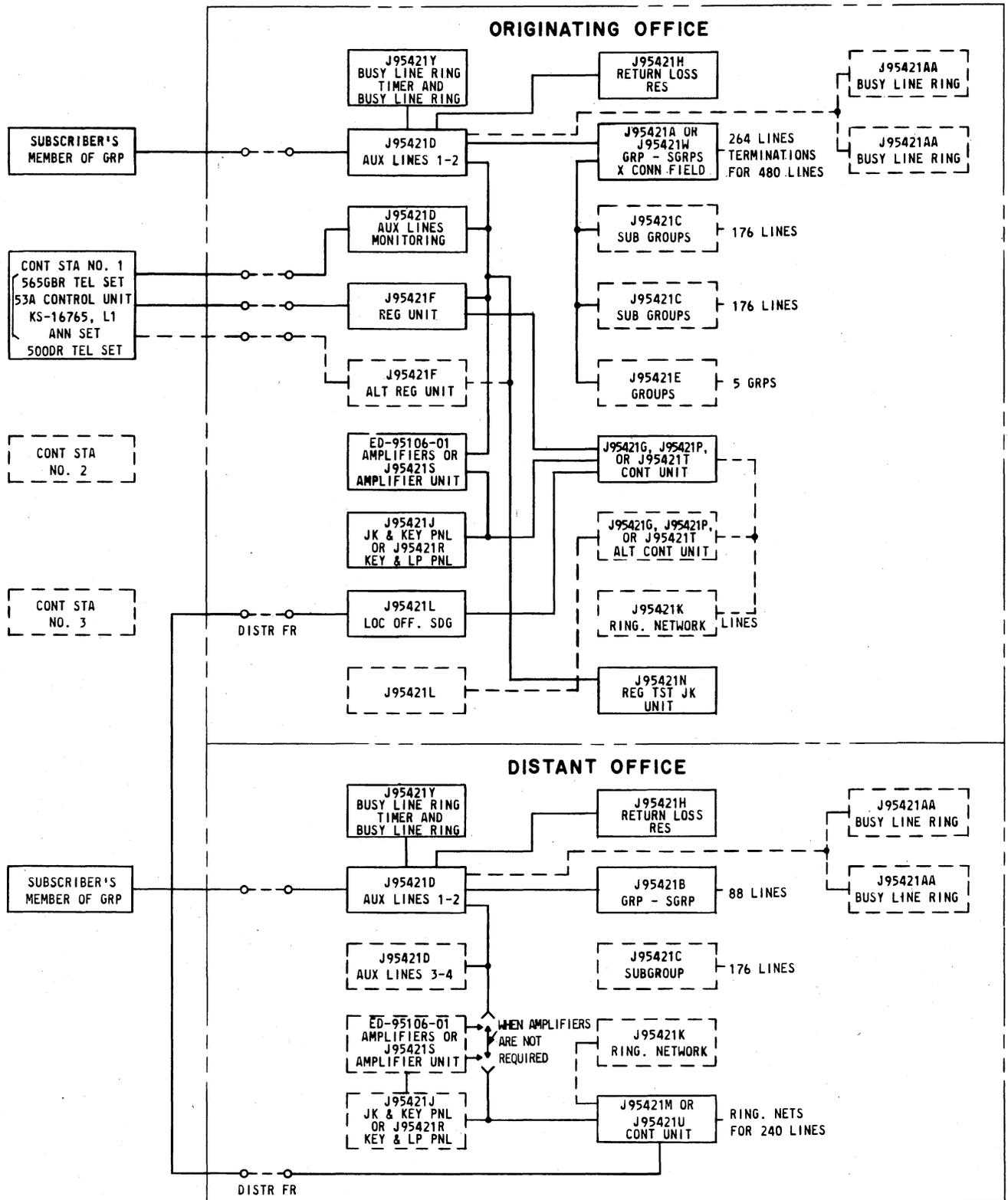


Fig. 1—Single or Multigroup System

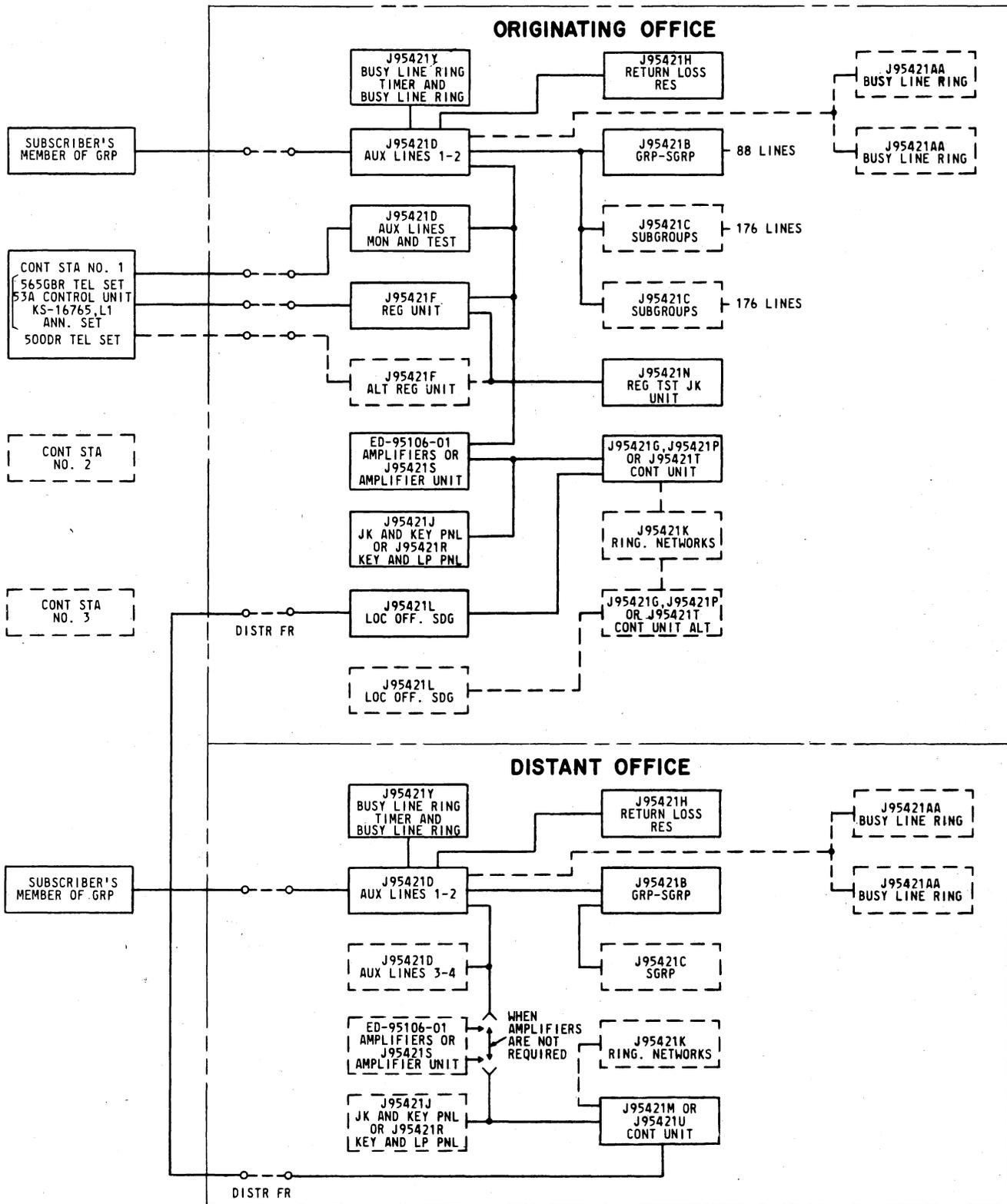


Fig. 2—Single Group System

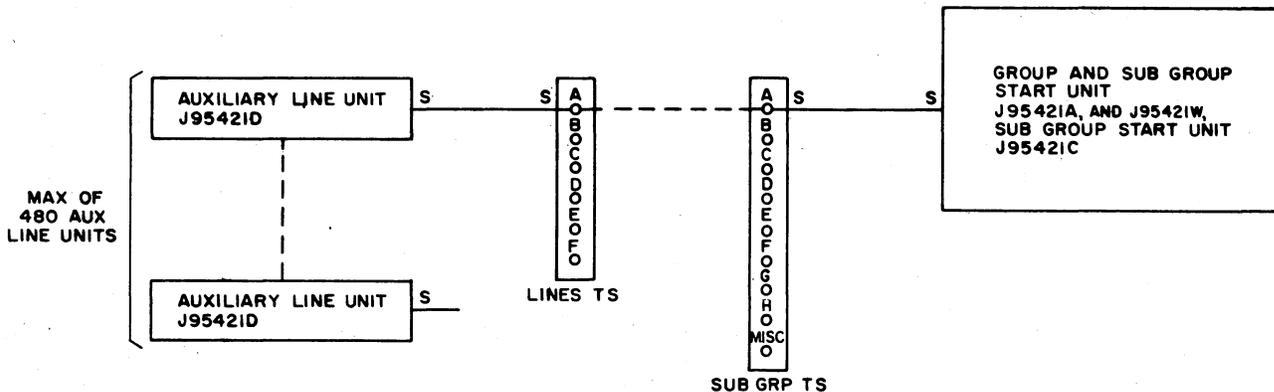


FIG. A - CROSS CONNECTION OF AUXILIARY LINE UNITS TO GROUP AND SUB GROUP START AND SUB GROUP START UNITS FOR SINGLE GROUP ARRANGEMENT.

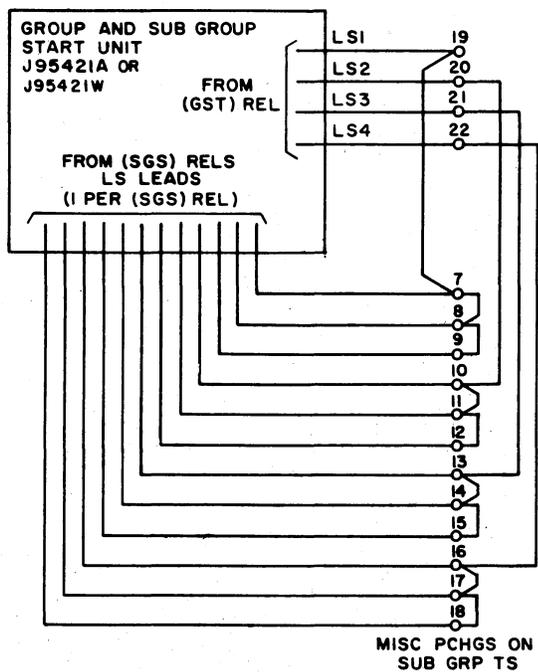


FIG. B - TYPICAL STRAPPING REQUIRED FOR ONE GROUP. MAXIMUM NUMBER OF LINES FOR THIS ARRANGEMENT IS 264.

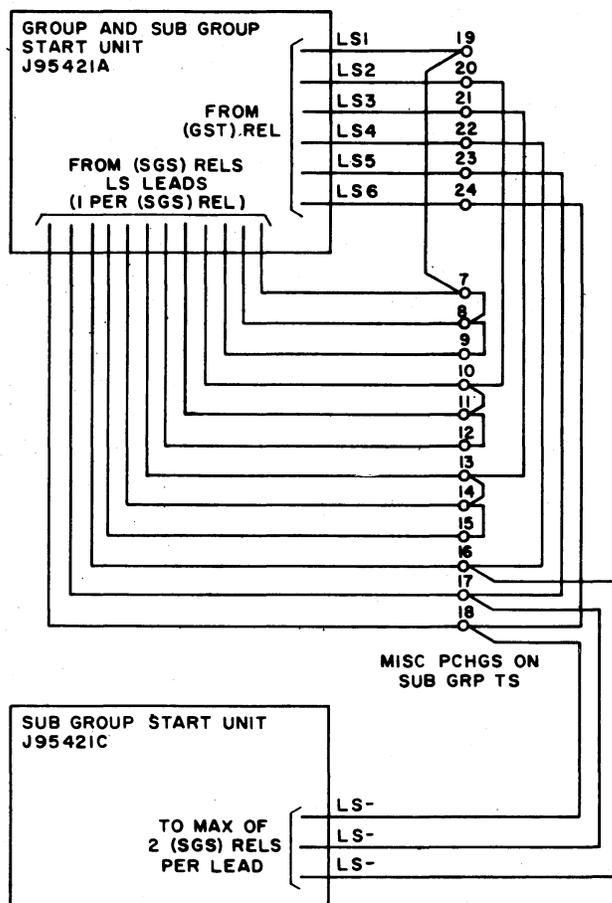


FIG. C - TYPICAL STRAPPING, REQUIRED FOR ONE GROUP WHEN NUMBER OF LINES EXCEEDS 264.

Fig. 3—Cross Connections and Typical Strapping of Groups

S LEADS FROM AUXILIARY UNITS

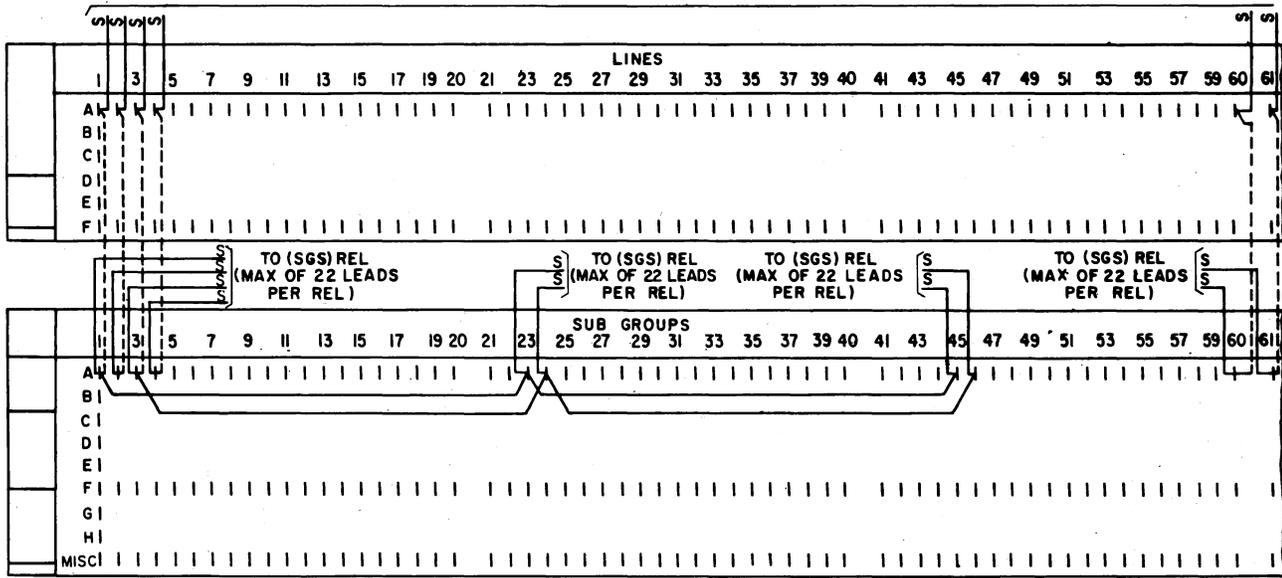
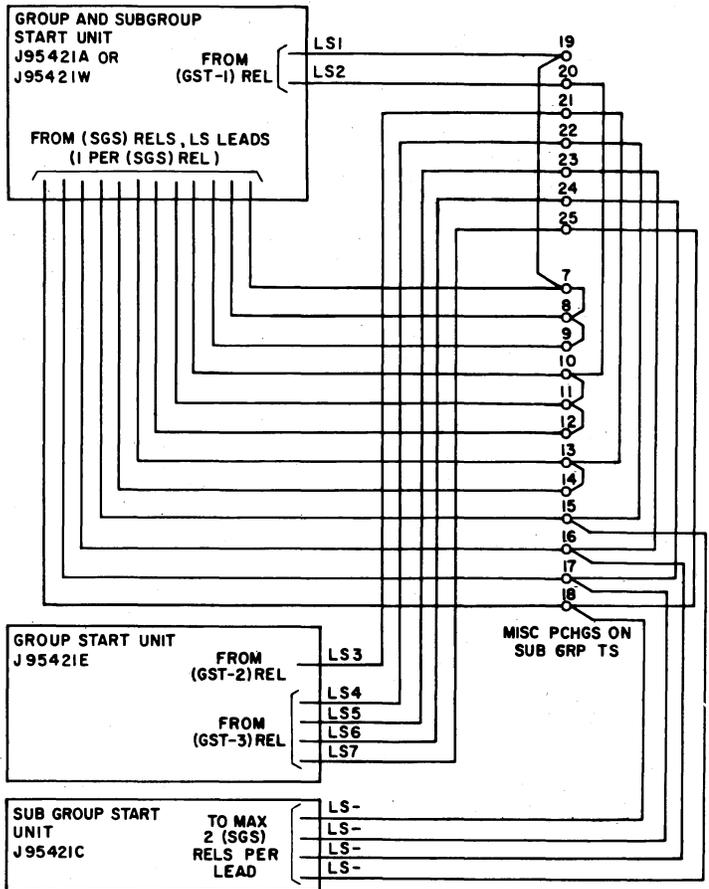


FIG. D- CROSS CONNECTIONS OF AUXILIARY LINE UNITS TO GROUP AND SUB GROUP START UNITS (J95421A-() OR J95421W-()) START UNITS (J95421C-()) FOR MULTI-GROUP ARRANGEMENT. S LEADS ON PUNCHINGS 1 AND 3 ARE STRAPPED TO APPEAR IN THREE DIFFERENT GROUPS. PUNCHINGS 1-22, 23-44 AND 45-67 ARE ASSOCIATED WITH THREE DIFFERENT GROUP START RELAYS. WHEN THE THREE (SGS) RELAYS ARE CONTROLLED BY THREE INDIVIDUAL LS LEADS RESULT IS THREE SEPARATE GROUPS. S LEADS ON 2 AND 4, 60 AND 61 WILL APPEAR ONLY IN 1 GROUP.



NOTES: 1. THE ARRANGEMENT OF AUXILIARY LINES INTO ONE OR MORE GROUPS REQUIRES A COMBINATION OF CROSS CONNECTING AND STRAPPING OF S LEADS AND THE STRAPPING OF LS LEADS.

2. AUXILIARY LINES IN ANY GROUP ARE CROSS CONNECTED TO SUB GROUP S LEADS FOR THAT PARTICULAR GROUP. (SEE FIGS. A AND D)

3. AN AUXILIARY LINE APPEARING IN MORE THAN ONE GROUP IS CROSS CONNECTED TO THE FIRST GROUP AS PER PUNCHINGS 1 AND 3 OF FIG. D AND STRAPPED AT THE S PUNCHING TO S PUNCHINGS OF OTHER GROUPS.

4. GROUPS
A WHERE ONLY ONE GROUP IS PROVIDED FOR A MAX OF 264 LINES, ONLY ONE GROUP START (GST) RELAY IS REQUIRED AND STRAPPING OF THE LS LEADS OF THE (GST) AND SUB GROUP START (SGS) RELAYS IS REQUIRED. (SEE FIG. B)

B WHEN ONLY ONE GROUP IS PROVIDED AND THE NUMBER OF LINES EXCEEDS 264, IT IS NECESSARY TO STRAP TO ADDITIONAL (SGS) RELAYS ON AN ASSOCIATED UNIT AS SHOWN IN FIG. C.

C WHERE MORE THAN ONE GROUP IS NEEDED, ADDITIONAL (GST) RELAYS ARE PROVIDED ON AN ASSOCIATED UNIT AS REQUIRED (SEE FIG. E) WHEN LARGE NUMBERS OF LINES PER GROUP ARE REQUIRED ADDITIONAL (SGS) RELAYS MUST BE FURNISHED ON ANOTHER ASSOCIATED UNIT AND STRAPPED AS SHOWN IN FIG. E.

5. INFORMATION SHOWN APPLIES TO ORIGINATING AND DISTANT OFFICES HAVING CROSS CONNECTION UNIT.

6. PROVIDE GROUP START AND SUB GROUP START RELAYS IN ACCORDANCE WITH TABLE BELOW:

RELAY	REQUIRED
GROUP START	1 PER GROUP.
SUB GROUP START	1 PER MAX 22 LINES.

Fig. 4—Cross Connections and Typical Strapping of Groups

SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

WE J drawings should be ordered by referring to the prefix and base number and requesting the current dash (—) number.

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	2-INCH MTG PLATES PER UNIT
J95421B	AT&TCo Std	Group and Subgroup Start Unit — Single Group System	J95421B-()	SD-95883-01, Fig. 3, 8 & 16	1 Group Starts (originating office) 1 Group Start (distant office) 5 Subgroup Starts	1
J95421C	AT&TCo Std	Subgroup Start Unit — Single or Multigroup System	J95421C-()	SD-95883-01, Fig. 8	8	1
J95421D	AT&TCo Std	Auxiliary Line or Monitor and Test Line Unit — For Use With No. 1 or 5 Crossbar, Step-by-Step, Panel, or No. 1 or 2 ESS Offices	J95421D-()	SD-95884-01, Fig. 1, 4, 5, 6, 7, 8 & 9	2	1
J95421E	AT&TCo Std	Group Start Unit — Multigroup System	J95421E-()	SD-95883-01, Fig. 3	5	1
J95421F	AT&TCo Std	Register Unit — Single or Multigroup System	J95421F-()	SD-95883-01, Fig. 2, 7 & 31	1	2
J95421H	AT&TCo Std	Return Loss Resistor Unit — Single or Multigroup System	J95421H-()	SD-95884-01, Fig. 3	20	1
J95421K	AT&TCo Std	Network Unit — Single or Multigroup System	J95421K-()	SD-95883-01, Fig. 6	44	1
J95421L	AT&TCo Std	Local Office Sending Unit — Single or Multigroup System	J95421L-()	SD-95883-01, Fig. 9	1	1
J95421N	AT&TCo Std	Register Test Jack Unit — Single or Multigroup System	J95421N-()	SD-95883-01, Fig. 17	6	1
J95421R	AT&TCo Std	Key and Lamp Panel — Single or Multigroup System	J95421R-()	SD-95883-01, Fig. 12, 19, 20, 24 & 25	1 Alm Key Ckt 2 Alm Lamps 2 Tbl Alm Lamps 2 Ring Reset Keys 1 Audible Release Key	1

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	2-INCH MTG PLATES PER UNIT
J95421S	AT&TCo Std	Amplifier Unit — For Single or Multigroup System	J95421S-()	SD-95883-01, Fig. 23	1 Ampl Jk 2 Ampl	2
J95421T	AT&TCo Std	Control Unit — For Originating Office — Single or Multigroup System	J95421T-()	SD-95883-01, Fig. 4, 21, 22 & 26	1 Alm & Time-out 4 Ringing Subgroups 1 Ring Group Sequence	3
J95421U	AT&TCo Std	Control Unit — Distant Office Receiving Equipment	J95421U-()	SD-95883-01, Fig. 4, 6, 15, 22, A & B	4 Ringing Subgroups 1 Ringing Group Sequence 40 Contact Protection 2 Distant Office Rec	3
J95421W	AT&TCo Std	Group and Subgroup Start Unit — Cross-Connection Field — Single or Multigroup System	J95421W-()	SD-95883-01, Fig. 3, 8 & 16	2 Group Starts (originating office) 4 Group Starts (distant office) 13 Subgroup Starts	11
J95421Y	AT&TCo Std	Busy Line Ringing Timer and Busy Line Ringing Unit — Single or Multigroup System	J95421Y-()	SD-95883-01, Fig. 27 & 28	1 Busy Line Ring Timer & 5 Busy Line Ringing	1
J95421AA	AT&TCo Std	Busy Line Ringing Unit — Single or Multigroup System	J95421AA-()	SD-95883-01, Fig. 27	8	1
J95421AB	AT&TCo Std	Receiving and Group Start Unit — Distant Office — More Than Four Groups are Required	J95421AB-()	SD-95883-01, Fig. 15 & 16	2	1
J95421AC	AT&TCo Std	440-Cycle Alert Warning Tone and Amplifier Unit	J95421AC-()	SD-95883-01, Fig. 29 & 30	1	2

Circuit Schematic Index

CIRCUIT DRAWING	J95421 EQPT CODE
SD-95883-01	B, C, E, F, K, L, N, R, S, T, U, W, Y, AA, AB, AC
SD-95884-01	O, H

2. SUPPLEMENTARY INFORMATION

- 801-000-000—Numerical Index—Common Systems
- 800-600-000—Checking List—General Equipment Requirement Sections
- J58801—809-803-150—701A PBX
- J58831—809-803-151—701B PBX
- KS-14603—Resistors
- KS-16765—Announcement Set
- KS-20449—Amplifier
- Floor Plan Data
 - Section 9.2,
 - Sheet 7—Relay Rack—Bulb Angle Type
 - Section 3.3,
 - Sheet 32—Relay Rack—Bulb Angle Type
 - Section 11.1,
 - Sheet 3—Relay Rack Sheet Metal Type

3. DRAWINGS

For additional drawings forming a part of this specification, see listings under Subdivisions of Equipment and Detailed Index.

- ED-95106-10—Typical Bay Layout for Group Alerting System
- SD-69364-01—Control Station Circuit
- SD-69385-01—Control Station Circuit
- SD-69386-01—Announcement Circuit
- SD-95286-01—Announcement Circuit

4. EQUIPMENT

J95421B—AT&T Co Std—Group and Subgroup Start Unit—Single Group System

Equipment—J95421B-()

List 1—Assembly and common equipment for one group and subgroup start unit, with provisions for two group start circuits and five subgroup start circuits.

List 2—Equipment and wiring per SD-95883-01, two Fig. 3 and one Fig. 8 required in addition to list 1 for one monitor and test group and subgroup start circuit, and one group start circuit for use in originating office.

List 3—Equipment and wiring per SD-95883-01, Fig. 16 required in addition to list 1 for one group start circuit for use in distant office.

List 4—Equipment and wiring per SD-95883-01, Fig. 8 required in addition to list 2 or 3 for one subgroup start relay.

Notes

- A. Furnish optional wiring as required.
- B. When this unit is used in an originating office, one list 2 and one list 3 are used for monitor and test. Only one LS lead from Fig. 3 and three S leads from Fig. 8 are required to function with a maximum of three auxiliary lines used for monitoring.
- C. When this unit is used in a distant office, monitor and test are not required.

J95421C—AT&T Co Std—Subgroup Start Unit—Single or Multigroup System

Equipment—J95421C-()

List 1—Assembly and common equipment for one subgroup start unit arranged for eight circuits.

List 2—Equipment and wiring per SD-95883-01, Fig. 8 required in addition to list 1 for one subgroup start circuit.

Note

- A. Each subgroup start circuit is capable of handling a maximum of 22 auxiliary line circuits.

J95421D—AT&T Co Std—Auxiliary Line or Monitor and Test Line Unit—For Use With No. 1 or 5 Crossbar, Step-by-Step, Panel, or No. 1 or 2 ESS Offices

Equipment—J95421D-()

List 1—Assembly, common equipment, and wiring per SD-95884-01, Fig. 1 for one line unit

equipped with two circuits.

- List 2**—Equipment and wiring per SD-95884-01, Fig. 4 required in addition to list 1 when line circuit is used in panel BCO office.
- List 3**—Equipment and wiring per SD-95884-01, Fig. 5 required in addition to list 1 when line circuit is used in panel GCO office.
- List 4**—Equipment and wiring per SD-95884-01, Fig. 6 and 7 required in addition to list 1 for busy line ringing.
- List 5**—Equipment and wiring per SD-95884-01, Fig. 7 and 8 required in addition to list 1 for alert warning tone signal.
- List 6**—Equipment and wiring per SD-95884-01, Fig. 9 required in addition to list 1 for use with No. 1 or 2 ESS offices.

Notes

- A. Provide optional wiring as required.
- B. The resistance lamp per SD-95884-01, Fig. 2 shall be located on the resistance lamp panel on the fuse bay.

J95421E—AT&TCo Std—Group Start Unit—Multigroup System

Equipment—J95421E-()

- List 1**—Assembly and common equipment for one group start unit arranged for five circuits.
- List 2**—Equipment and wiring per SD-95883-01, Fig. 3 required in addition to list 1 for one group start circuit.

Note

- A. Provide optional wiring as required.

J95421F—AT&TCo Std—Register Unit—Single or Multigroup System

Equipment—J95421F-()

- List 1**—Framework, assembly, equipment, and wiring for one regular or alternate register unit per SD-95883-01, Fig. 2.
- List 2**—Equipment and wiring per SD-95883-01, Fig. 7, Z option only, required in addition to list 1 for first regular lockout relay.
- List 3**—Equipment and wiring per SD-95883-01, Fig. 7, Y option only, required in addition to list 1 for first alternate lockout relay.

- List 4**—Equipment and wiring per SD-95883-01, Fig. 7, X option only, required in addition to list 1 for second regular lockout relay.
- List 5**—Equipment and wiring per SD-95883-01, Fig. 7, W option only, required in addition to list 1 for second alternate lockout relay.
- List 6**—Equipment and wiring per SD-95883-01, Fig. 7, V option only, required in addition to list 1 for third regular lockout relay.
- List 7**—Equipment and wiring per SD-95883-01, Fig. 7, T option only, required in addition to list 1 for third alternate lockout relay.
- List 8**—Equipment and wiring per SD-95883-01, Fig. 2, ZT option only, required in addition to list 1 for high-tone capacitor when system is associated with PBX.
- List 9**—Equipment and wiring per SD-95883-01, Fig. 31 required in addition to list 1 when connecting to No. 1 or 2 ESS office tone supply.

J95421H—AT&TCo Std—Return Loss Resistor Unit—Single or Multigroup System

Equipment—J95421H-()

- List 1**—Assembly of one mounting plate and common equipment for 20 return loss resistor circuits.
- List 2**—Equipment and wiring per SD-95884-01, Fig. 3 required in addition to list 1 for two return loss resistor circuits.

J95421K—AT&TCo Std—Network Unit—Single or Multigroup System

Equipment—J95421K-()

- List 1**—Assembly and common equipment for one network unit arranged for 84 circuits.
- List 2**—Equipment and wiring per SD-95883-01, Fig. 6 required in addition to list 1 for two network circuits.

J95421L—AT&TCo Std—Local Office Sending Unit—Single or Multigroup System

Equipment—J95421L-()

- List 1**—Assembly, equipment, and wiring per SD-95883-01, Fig. 9 for one local office sending circuit.

Note

A. Provide optional wiring as required.

J95421N—AT&T Co Std—Register Test Jack Unit—Single or Multigroup System

Equipment—J95421N-()

List 1—Assembly, equipment, and wiring for one register test jack unit equipped with one jack circuit per SD-95883-01, Fig. 17 for use with regular or alternate line.

List 2—Equipment and wiring per SD-95883-01, Fig. 17 required in addition to list 1 for one jack circuit for use with regular or alternate line.

J95421R—AT&T Co Std—Key and Lamp Panel—Single or Multigroup System

Equipment—J95421R-()

List 1—Assembly and common equipment for one key and lamp panel for use in originating or distant office.

List 2—Equipment and wiring per SD-95883-01, Fig. 12 required in addition to list 1 for one alarm key circuit for originating office.

List 3—Equipment and wiring per SD-95883-01, Fig. 24 required in addition to list 1 for one ringing reset key for use in originating or distant office.

List 4—Equipment and wiring per SD-95883-01, Fig. 25 required in addition to list 1 for one ringing release key circuit for use in the distant office.

List 5—Equipment and wiring per SD-95883-01, Fig. 19 required in addition to list 1 for one alarm lamp in originating office for regular or alternate line.

List 6—Equipment and wiring per SD-95883-01, Fig. 20 required in addition to list 1 for one trouble alarm lamp in originating office for regular or alternate line.

J95421S—AT&T Co Std—Amplifier Unit—For Single or Multigroup System

Equipment—J95421S-()

List 1—Mfr Disc.—Assembly, equipment, and wiring for one amplifier unit for use in originating or distant office equipped with one amplifier

jack circuit per SD-95883-01, Fig. 23 and two KS-16754 L3 amplifiers.

List 2—Assembly, equipment, and wiring for one amplifier unit for use in originating or distant office equipped with one amplifier jack per SD-95883-01, Fig. 23 and two KS-20449 L1 amplifiers.

Note

A. Provide optional wiring as required.

J95421T—AT&T Co Std—Control Unit—For Originating Office—Single or Multigroup System

Equipment—J95421T-()

List 1—Framework, assembly, equipment, and wiring for one control unit consisting of:

One SD-95883-01, Fig. 21

Four SD-95883-01, Fig. 4

One SD-95883-01, Fig. 22

List 2—Equipment and wiring per SD-95883-01, Fig. 21, M option only, required in addition to list 1 when unit is arranged for use in a No. 5 crossbar office.

List 3—Equipment and wiring per SD-95883-01, Fig. 26 required in addition to list 1 for high-tone generator supply when system is used with 701A or 701B PBX.

Note

A. Provide optional wiring as required.

J95421U—AT&T Co Std—Control Unit—Distant Office Receiving Equipment

Equipment—J95421U-()

List 1—Framework, assembly, equipment, and wiring for one distant office control unit equipped with:

Four SD-95883-01, Fig. 4

One SD-95883-01, Fig. 22

Forty SD-95883-01, Fig. 6

One SD-95883-01, Fig. 15

List 2—Equipment and wiring per SD-95883-01, Fig. 15, less all options, required in addition

to list 1 for second distant receiving circuit.

- List 3**—Equipment and wiring per SD-95883-01, Fig. A required in addition to list 1 or 2 when amplifier is associated with distant office receiving circuit.
- List 4**—Equipment and wiring per SD-95883-01, Fig. A, ZA option only, required in addition to list 3 when loading is 16NL, 19NL, 22NL, or 24NL.
- List 5**—Equipment and wiring per SD-95883-01, Fig. A, ZB option only, required in addition to list 3 when loading is 19B88, 19H44, 19H88, 22H88, or 24H88.
- List 6**—Equipment and wiring per SD-95883-01, Fig. B required in addition to list 1 or 2 when amplifier is not associated with distant office receiving circuit.
- List 7**—Equipment and wiring per SD-95883-01, Fig. B, ZB option only, required in addition to list 6 when loading is 19B88, 19H44, 19H88, 22H88, or 24H88.
- List 8**—Equipment and wiring per SD-95883-01, Fig. B, ZA option only, required in addition to list 1 when loading is 16NL, 19NL, 22NL, or 24NL.
- List 9**—Equipment and wiring per SD-95883-01, Fig. 22, M option only, required in addition to list 1 when unit is arranged for use in a No. 5 crossbar office.

Note

A. Provide optional wiring as required.

J95421W—AT&TCo Std—Group and Subgroup Start Unit—Cross-Connection Field—Single or Multigroup System

Equipment—J95421W-()

List 1—Framework, assembly, common equipment, and wiring for one group, subgroup start, and cross-connection unit.

	WIRE	EQUIP	NOTES
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Cont Ckt, Group Alerting System Dial Cont End, SD-95883-01: Group Start Ckt, Fig. 3	2	0	B
Subgroup Start Ckt, Fig. 8	13	0	
Group Start Ckt, Fig. 16	4	0	

List 2—Assembly and equipment per SD-95883-01, two Fig. 3 and one Fig. 8 required in addition to list 1 for one monitor and test group and subgroup, and one group start circuit for use in originating office.

List 3—Assembly and equipment per SD-95883-01, Fig. 16 required in addition to list 1 for one group start circuit for use in distant office.

List 4—Equipment per SD-95883-01, Fig. 16 required in addition to list 3 for one additional group start circuit for use in distant office.

List 5—Equipment per SD-95883-01, Fig. 8 required in addition to lists 1 and 2 or lists 1 and 3 for one subgroup start circuit.

List 6—Equipment required in addition to list 1 for terminal strip when connecting and strapping requirements exceed the number of punchings available on subgroup terminal strip.

Notes

A. Provide optional wiring as required.

B. For monitor and test, the group and subgroup relays obtain battery through the B fuse. Only three S leads are required from the subgroup relay and one LS lead from the group relay when this unit is used in an originating office.

J95421Y—AT&TCo Std—Busy Line Ringing Timer and Busy Line Ringing Unit—Single or Multigroup System

Equipment—J95421Y-()

List 1—Assembly, equipment, and wiring per SD-95883-01, Fig. 28 and four Fig. 27 for one busy line ringing timer and four busy line ringing circuits. (See Note A.)

List 2—Equipment and wiring per SD-95883-01, Fig. 27 required in addition to list 1 for one additional busy line ringing circuit. (See Note B.)

List 3—Equipment and wiring per SD-95883-01, Fig. 28, YG option only required in addition to list 1 for use in local office.

Notes

A. The four busy line ringing circuits furnished in list 1 can handle the first 80 lines in any given system. When the number of lines in a system exceeds 80, it will be necessary to

furnish additional busy line ringing circuits in accordance with J95421AA-().

- B. When the number of lines in a given system exceeds 400, provide list 2.
- C. Provide optional wiring as required.

J95421AA—AT&T Co Std—Busy Line Ringing Unit—Single or Multigroup System

Equipment—J95421AA-()

List 1—Assembly and common equipment for one busy line ringing unit arranged for eight circuits. (See Note A.)

List 2—Equipment and wiring per SD-95883-01, Fig. 27 required in addition to list 1 for one busy line ringing unit. (See Note A.)

Note

- A. The number of busy line ringing circuits required for a given alerting system is dependent upon the number of lines in the system in groups of 80 and shall be ordered in accordance with the following information. Ringing circuits for lines 1 to 80 are provided on J95421Y-().

NUMBER OF LINES IN SYSTEM	LISTS REQUIRED
81 to 160	1 list 1 and 4 list 2
161 to 240	1 list 1 and 8 list 2
241 to 320	2 list 1 and 12 list 2
321 to 400	2 list 1 and 15 list 2
401 to 480	2 list 1 and 16 list 2

* When the number of lines in a system is 401 to 480, list 2 of J95421Y-() must be provided to fulfill the total complement of 21 busy line ringing circuits which would then be required.

J95421AB—AT&T Co Std—Distant Office Receiving and Group Start Unit For Use Where More Than Four Groups are Required. For Use in No. 1 or 5 Crossbar, Step-by-Step, or Panel Office.

Equipment—J95421AB-()

List 1—Assembly, equipment, and wiring per SD-95883-01, Fig. 15 and 16 for one distant

office receiving circuit 3 and for one group start circuit 5.

List 2—Equipment and wiring per SD-95883-01, Fig. 15 and 16 required in addition to list 1 for distant office receiving circuit 4 and group start circuit 7.

List 3—Equipment and wiring per SD-95883-01, Fig. 16 required in addition to list 1 for group start circuit 6, and in addition to list 2 for group start circuit 8.

Note

- A. Provide optional wiring as required.

J95421AC—AT&T Co Std—440-Cycle Alert Warning Tone Unit

Equipment—J95421AC-()

List 1—Assembly, equipment, and wiring per SD-95883-01, Fig. 29 and 30 for 440-cycle alert warning tone.

Note

- A. Provide optional wiring as required.

Miscellaneous Equipment

4.01 Two KS-20449 L1 voice-frequency amplifiers are always required for use in the originating office. When a system has groups in a distant office, the use of amplifiers therein is dependent on the number of lines in the distant office.

4.02 A 53B control unit, a modified No. 565 GBR telephone set as shown on SD-69385-01, and a KS-16765 L1 announcement set as shown on SD-95286-01, or only a modified No. 500 DR telephone set as shown on SD-69364-01, Fig. 3 is required on each customer premise which is to serve as a control station.

4.03 The 1011G handset and associated 2W38A cord per SD-95883-01, Fig. 18 required for test purposes at the central office, must be ordered separately by the telephone company.

5. GENERAL NOTES

5.01 The telephone company shall furnish the necessary apparatus, KS-14603 L1A, 511-ohm resistor for manual arrangement and wiring, and

modify the control station equipment in accordance with the SD-69364-01, or SD-69385-01 control station circuits.

The above equipment has been replaced as indicated. Where A&M Only items appear, the issue numbers shown are those of the issue in which the rating was first applied.

List of A&M Only and Mfr Disc. Equipment

EQUIPMENT	RATING	DETAILS	
		LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J95421A	Mfr Disc.	2	J95421W
J95421G	Mfr Disc.	1	J95421P
J95421J	Mfr Disc.	2	J95421R, J95421S
J95421M	Mfr Disc.	2	J95421U
J95421P	Mfr Disc.	2	J95421T
J95421S	Mfr Disc.	5	—

Bell Telephone Laboratories, Incorporated

Dept 5223