REPLACING PAGE ADDENDUM
Filing Instructions:

1. REMOVE FROM THE SECTION THE PAGES NUMBERED THE SAME AS THOSE ATTACHED TO THIS PINK SHEET.
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OFFICE JUNCTOR AND LINE JUNCTOR GROUPING FRAMES EQUIPMENT DESIGN REQUIREMENTS NO. 1 CROSSBAR SYSTEM

1. GENERAL

1.001 This addendum supplements Section 816-402-150, Issue 4. The attached pages must be inserted in the section in accordance with the filing instructions above.

1.002 This addendum is issued to revise part 1.01 under Scope to include references to BSPs carrying the same J specification number.

Attached:

Page 1 dated June 1965, revised.
Page 2 dated June 1965, reissued without change.

OFFICE JUNCTOR AND LINE JUNCTOR GROUPING FRAMES EQUIPMENT DESIGN REQUIREMENTS NO. 1 CROSSBAR SYSTEM

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 engineering, manufacture, and installation of the office junctor and line junctor grouping frames. ***This specification is applicable to the following systems and appears under the Plant Series numbers listed:***

NO. 1 CROSSBAR SYS ***816-402-150***
TANDEM CROSSBAR SYS ***817-210-150***

1.02 This section is reissued to incorporate previous appendix changes.

Capacity

1.03 The grouping frames are arranged for the indicated maximum equipment as follows:

(a) Office Junctor Grouping Frame

District or Trunk Link Frames	20
Office Link Frames	20
Office Junctors per District or Trunk Link Frame	200
Office Junctors Total	4000

(b) Line Junctor Grouping Frame for Offices Not Using Incoming Extension Frames

Line Choices	10
Incoming Link Frames	10
Line Junctors per Incoming Link Frame	200
Line Junctors Total	2000

(c) Line Junctor Grouping Frame for Offices Using Incoming Extension Frames

Line Choices	20
Incoming Groups	10
Line Junctors per Incoming Group	400
Line Junctors Total	4000

Description

1.04 ***The function*** of the office junctor grouping frames is to provide means for terminating the office junctors between the district or trunk link frames and the office link frames so that each group of 100 district junctors or each group of 160 tandem incoming trunks will have equal access to the outgoing trunks on each office frame. Likewise, that of the line junctor grouping frame is to provide means for terminating the line junctors between the incoming and the line link frames so that each group of 160 incoming trunks will have equal access to all lines in each half choice for completing service.

1.05 The office and line junctor grouping frames are single sided frames, insofar as floor space requirements are concerned, and consist of bays 11'-6" high and 4'-1" long. For the office junctor grouping frames, two bays are required which are located end to end for all installations; while the line junctor grouping frame requires either one bay or two bays depending on whether the incoming link frames are provided with 200 line junctor capacity or with incoming extension frames for 400 line junctor capacity.

1.06 ***The equipment*** on these frames consists only of terminal strips on which switchboard cables from secondary district or trunk link vertical units and primary office vertical units terminate to form the office junctor grouping frame; and from secondary incoming vertical units and secondary line link vertical units to form the line junctor grouping frame.

1.07 ***The terminal strips*** for the junctors are mounted in 5 vertical rows, 10 terminal strips high, in each bay and each terminal strip is mounted with the fanning base at right angles to the length of the frame so that one end of each terminal is toward the front of the frame and the other end is toward the rear of the frame.

1.08 Below these terminal strips, on No. 1 office junctor grouping frames arranged for battery distribution, there are terminal strips for the distribution of battery leads to the office primary hold magnets from the fuse panel for the corresponding district secondary hold magnets. These are mounted on an auxiliary framework. These terminal strips and their associated auxiliary framework are not required in No. 1 offices not arranged for office junctor battery distribution.

1.09 *Switchboard cable* from district or trunk link frames (for the OJG frames) or from incoming link frames (for the LJG frames) are run vertically and connected to the ends of the terminals of the vertical rows of terminal strips on the front of the frame. Cables from the office link frames (for the OJG frames) or line link frames (for the LJG frames) are run horizontally and connected to the opposite ends of the terminals of the horizontal rows of terminal strips on the rear of the frame. Where cable leads on the front of the frame and cable leads on the rear of the frame terminate on opposite ends of the same terminal, a permanent connection is formed which will be referred to in this description as a "cross point" and which is never changed as the office grows.

1.10 Where there is less than a maximum number of link frames installed, there will be terminals on each side of the junctor grouping frame which have cable leads attached to one end but not to the opposite end. These terminals are connected with triple jumper wire in accordance with the junctor assignment charts listed under "Wiring and Cabling" drawings, the application of which is covered under part 5 in this specification. When an addition of link frames is made and additional cables are run to both the front and the rear of the junctor frame, there will be an increasing number of terminals having cable leads terminating on each end and, therefore, the number of jumpers per link frame will decrease. When the maximum number of link frames is installed, all terminals will have cable leads attached to each end and no jumpers are required.

1.11 The link frames of each type furnished for all installations of the same size are always numbered consecutively, from 0 up, and are connected exactly alike at the junctor grouping frames, eliminating job engineering of junctor distribution. An installation may grow from minimum to maximum in any number of steps according to a fixed plan which is alike for all offices.

1.12 ***No. 1 Offices Arranged for Office Junctor Battery Distribution:*** In No. 1 offices arranged for office junctor battery distribution one lead from each district secondary switch hold magnet fuse and one lead from each office primary hold magnet are terminated on the No. 1 OJG frame. The terminals to which these leads are connected are arranged in such a manner that the 20 office primary hold magnets which are to be connected to a particular district secondary fuse may be strapped together and connected to the correct fuse terminal. On a maximum installation of 20 district and 20 office link frames, these straps are all "straight," but where less than the maximum are installed, some irregular strapping is necessary in order that the fuse connections will correspond to the standard office junctor assignment chart for the T, R, and S leads of corresponding district secondary and office primary switch verticals.

Subdivision of Equipment

ED-25232-02 — Assembly of Office and Line Junctor Grouping Frame

2. SUPPLEMENTARY INFORMATION

816-000-000 — No. 1 Crossbar System Index
817-000-000 — Tandem Crossbar System Index
BSP — Gen. Equip. Req. — Wiring and Cabling
BSP — Gen. Equip. Req. — Numbering and Lettering — Crossbar Equipment
BSP — Gen. Equip. Req. — Auxiliary Framing
J25551 (816-040-150, 817-060-150) — End Guards, Aisle Pilot Lamp and DPTS Supports, Fuse Record Book and Holder, and Spare Fuse Mountings
J25552 (816-017-150, 817-037-150) — Frame Lighting and Appliance Outlets
J29253 (817-010-100) — General Outline — Tandem Crossbar System
J29255 (816-010-150, 817-018-150) — Office Junctor Redistribution Procedures
J29256 (816-011-150) — Line Junctor Redistribution Procedures
Floor Plan Data — Section 9.4, Sheet 1

3. DRAWINGS

Keysheets

SD-25000-01 — Crossbar System — No. 1 Office
SD-25435-01 — Crossbar System — Tandem Office

Framework

ED-25023-01 — Frame Details
ED-25232-02 — Assembly of Office and Line Junctor Grouping Frame

Equipment

ED-25230-02 — Office Junctor Grouping Frame Equipment
ED-25233-01 — Line Junctor Grouping Frame Equipment

Wiring and Cabling

ED-25012-01 — Office Junctor Assignment Chart — 10 to 20 Office Link Frames
ED-25016-01 — Office Junctor Assignment Chart — 2 to 8 Office Link Frames
ED-25153-02 — Line Junctor or Office Junctor Grouping Frame — Switchboard Cabling — General
ED-25206-02 — Office Junctor Grouping Frame — Strapping of District to Office Battery Leads
ED-25231-02 — Office Junctor Grouping Frame — Switchboard Cabling Details
ED-25234-01 — Line Junctor Grouping Frame — Switchboard Cabling Details
ED-25713-01 — Line Junctor Assignment Chart For Installations with 2 to 10 Incoming Link Frames and 2 to 10 Line Choices
ED-25714-01 — Line Junctor Assignment Chart — For Installations with 2 to 10 Incoming Groups and 4 to 20 Line Choices

4. EQUIPMENT

ED-25232-02 — Assembly of Office and Line Junctor Grouping Frame

Group 1 — One left bay for No. 1 office junctor grouping frame

Group 2 — One right bay for No. 1 office junctor grouping frame

Group 3 — One left bay for tandem office junctor grouping frame or one left or single bay for No. 1 line junctor grouping frame

Group 4 — One right bay for tandem office junctor grouping frame or No. 1 line junctor group frame

5. EQUIPMENT NOTES

5.01 The frame uprights, base assembly and top angle are welded assemblies for each bay and the uprights are drilled for attaching the terminal strip mounting bar assemblies and the cable brackets. If it is economical from a manufacturing standpoint, the corresponding vertical uprights for all bays may be drilled alike.

5.02 Distributing rings, shown as Fig. A on the frame assembly drawing and located on both sides of the terminal strip mounting grid as shown in Section G-G, shall be provided at the position of all terminal strips regardless of the number of terminal strips equipped.

Junctor Assignment Charts

5.03 The office junctor assignment charts show the order in which the district or trunk link secondary verticals are connected by cable to office link primary verticals at the OJG frame and, likewise, the line junctor assignment charts show the order in which the incoming link or incoming group secondary verticals are connected to the line link secondary verticals at the LJG frame. References to the (JC) relays, "patterns," and "pattern application tables" in the office junctor assignment charts have no significance in cabling to the OJG frame since the (JC) relays are mounted on the district or trunk link frames and wired to the vertical units at that point, while the "patterns" are used in wiring the originating or tandem marker frames. References to the (LJ) relays, "patterns," and "pattern application tables" in the line junctor assignment charts have no significance in cabling to the LJG frame since the (LJ) relays are mounted and wired on the line junctor connector frame while the "patterns" are used in wiring the terminating marker frames.

5.04 On the junctor assignment charts, the extreme left columns are designated "Channel Number." From the view-point of the

office junctor grouping frames, the channel number is a secondary switch number for the district or trunk link frame and a primary switch number for the office link frame. In the case of the line junctor grouping frame, the channel number is a secondary switch number for both the incoming link (or group) and the line link frames. In detail, the definition of "Channel" for originating, terminating, and tandem traffic is as follows:

(a) ***Originating Traffic:*** This channel, which is abbreviated as a DJO channel (district link, junctor, office link), is one of the possible associations of a district link, an office junctor, and an office link which is used to extend a call from a district junctor to an outgoing trunk and may be identified by one of 20 numbers 0L to 9L and 0R to 9R. The number of the channel used for a call is the same as the number of the district link frame primary switch hold magnet, the district link frame secondary switch number, the office link frame primary switch number, and the office link frame secondary switch hold magnet number.

(b) ***Terminating Traffic:*** This channel, which is abbreviated as an IJL channel (incoming link, junctor, line link), is one of the possible associations of an incoming link, a line junctor, and a line link which is used to complete a call from an incoming trunk to a subscriber line and may be identified by one of 10 numbers 0 to 9. The number of the channel used for a call is the same as the number of the incoming link frame primary switch hold magnet, the incoming secondary switch number, the line link secondary switch number and the line link primary switch selecting magnet or level number.

(c) ***Tandem Traffic:*** This channel, which is abbreviated as a TJO channel (trunk link, junctor, office link), is one of the possible associations of a trunk link, an office junctor, and an office link which is used to extend a call from a tandem incoming trunk to an outgoing trunk and may be identified by one of 20 numbers 0L to 9L and 0R to 9R. The number of the channel used for a call is the same as the number of the trunk link frame primary switch hold magnet, the trunk link frame secondary switch number, the office link frame primary switch number, and the office link frame secondary switch hold magnet number.

5.05 By referring to the equipment drawings, it will be seen that the switch numbers on both sides of the terminal strips are alike and that the channel numbers shown on the charts correspond to the switch numbers of the frames covered by the chart (district or trunk link secondary and office primary for the OJG frame or incoming link secondary and line link secondary for the LJG frame).

5.06 The junctor assignment charts show the vertical unit numbers at the "cross points" (see item 1.09) of the cables at the junctor grouping frames and also show how the vertical units which do not meet at cross points shall be cross connected. At cross points, the cables on the opposite sides of the terminal strips are attached to opposite ends of the same terminals so that, for a maximum frame installation, all cable leads on one side of the frame will meet cable leads on the other side of the frame and no jumpers will be necessary. The smaller the installation, the larger will be the number of jumpers in proportion to the number of frames installed. When cross points are once established, they are never changed, but all or part of the jumpered connections may require change on an addition.

Office Junctor Grouping Frame

5.07 The numbering stamped on the terminal strips of the office junctor grouping frames indicates the points on the link frames from which cables are terminated and corresponds to the numbering shown on the assignment charts. While the equipment drawing for the office junctor grouping frames shows the numbering of terminal strips for the maximum number of link frames, the application of the assignment charts to an installation of definite size may be illustrated by assuming an installation of 14 district and 14 office link frames. The assignment chart for this size of installation is shown on ED-25012-01, Fig. 3, and, since office frame terminations appear on the rear of the grouping frame and district frame terminations on the front, it is necessary to keep in mind the numbering on both front and rear of the terminal strips when applying a specific assignment chart. Referring to the equipment drawing

ED-25230-02 and Fig. 1 of this specification, it will be seen that for district link frame 0, all the 0 verticals of secondary switches 0L, 1R, 2L, 3R, 4L, 5R, 6L, 7R, 8L, 9R terminate on the opposite ends of the same terminals as the cables from office link frame 0, verticals 0, primary switches 0L, 1R, 2L, 3R, 4L, 5R, 6L, 7R, 8L, 9R; and that the 0 verticals of secondary switches 0R, 1L, 2R, 3L, 4R, 5L, 6R, 7L, 8R, 9L terminate on the opposite ends of the same terminals as the cable leads from office link frame 1, verticals 0, primary switches 0R, 1L, 2R, 3L, 4R, 5L, 6R, 7L, 8R, 9L. On ED-25012-01, Fig. 3, where there are two numerals in the "body" of the chart for each district link frame, e.g., 0-9, 0-2, 8-8, etc, the left-hand numeral is the district secondary vertical and the right-hand is the office primary vertical. Referring to the chart for district frame 0, it will be seen that the light faced double figures in the left-hand column under office link frame 0 when transferred to the terminal strip for district link frame 0 and office frame 0, as shown on the equipment drawing and on Fig. 1, place the terminals in position so that the cable from district link frame 0 when run vertically past the terminal strip, and the cable from office link frame 0 when run horizontally past the upper half of the same strip will terminate on opposite ends of the same terminals. Therefore, if the cables are connected in accordance with the numbering on the equipment drawing, the connections which will be permanent will agree with the light faced type on the charts.

5.08 For a 14-14 installation, the junctor frame will be equipped with terminal strips so that the cables from district link frames will terminate on 7 vertical rows of terminal strips, 10 high, and the cables from the office link frames on 7 rows, 10 wide, as shown in Fig. 1. This leaves 3 horizontal rows, 7 wide, upon which nothing but district link frames terminate (district secondary verticals 7, 8, and 9) and 3 vertical rows, 7 high, upon which nothing but office link frames terminate (office primary verticals 7, 8, and 9). To connect these terminals, on which cable leads terminate on one end only, it is necessary to use jumpers. Referring to ED-25012-01, Fig. 3, the heavy faced type represents the connections which must be made by jumpers. It will be found that the highest numbered light faced numerals for district link frame 0 are verticals 6 and that district secondary vertical numbers 7, 8, and 9 are heavy faced. To associate this table with the equipment sketch in Fig. 1, refer to the connections between district link frame 0 and office link frame 0. The heavy-faced 9-9 at the lower left corner of the table means that the terminals for district link frame 0, vertical 9, secondary switch 0R, are cross-connected to the terminals for office link frame 0, vertical 9, primary switch 0R. Likewise, the terminals for district link frame 0, vertical 9, secondary switch 0L, are cross connected to the terminals for office link frame 1, vertical 9, primary switch 0L. Connections between other district and office frames, verticals and switches may be traced in the same manner.

5.09 The number of district or trunk link frames in an installation will usually equal the number of office link frames, but the charts can be used as well when the quantities are not alike. The chart for the larger number of frames should be used and all connections to frames beyond the highest number used shall be disregarded, i.e., for 16 office link and 12 district or trunk link frames, the 16-16 chart shall be used; or for 4 office and 2 district or trunk link frames, the 4-4 chart shall be used. For the former condition, verticals which are listed as connecting to the district or trunk link frames 12, 13, 14 and 15 are left unconnected at the OJGF. For the latter condition, verticals which are listed as connecting to district or trunk link frames 2 and 3 are left unconnected at the OJGF.

5.10 ***In No. 1 offices arranged for office junctor battery distribution,*** battery from the district link frames is distributed to the office link frame primary hold magnets on a group of terminal strips located in the lower part of the office junctor grouping frame. Where this arrangement is used, it is necessary as indicated in paragraph 1.12 to connect the same hold magnets for a given junctor for fusing as are connected by the T, R and S leads on the upper portion of the frame. The equipment drawing for the frame shows the numbering and arrangement of terminals and the strapping drawing shows the method of connecting the terminals. The strapping drawing illustrates an installation of 14 district and 14 office link frames with connections made in accordance with assignments taken from the office junctor distribution

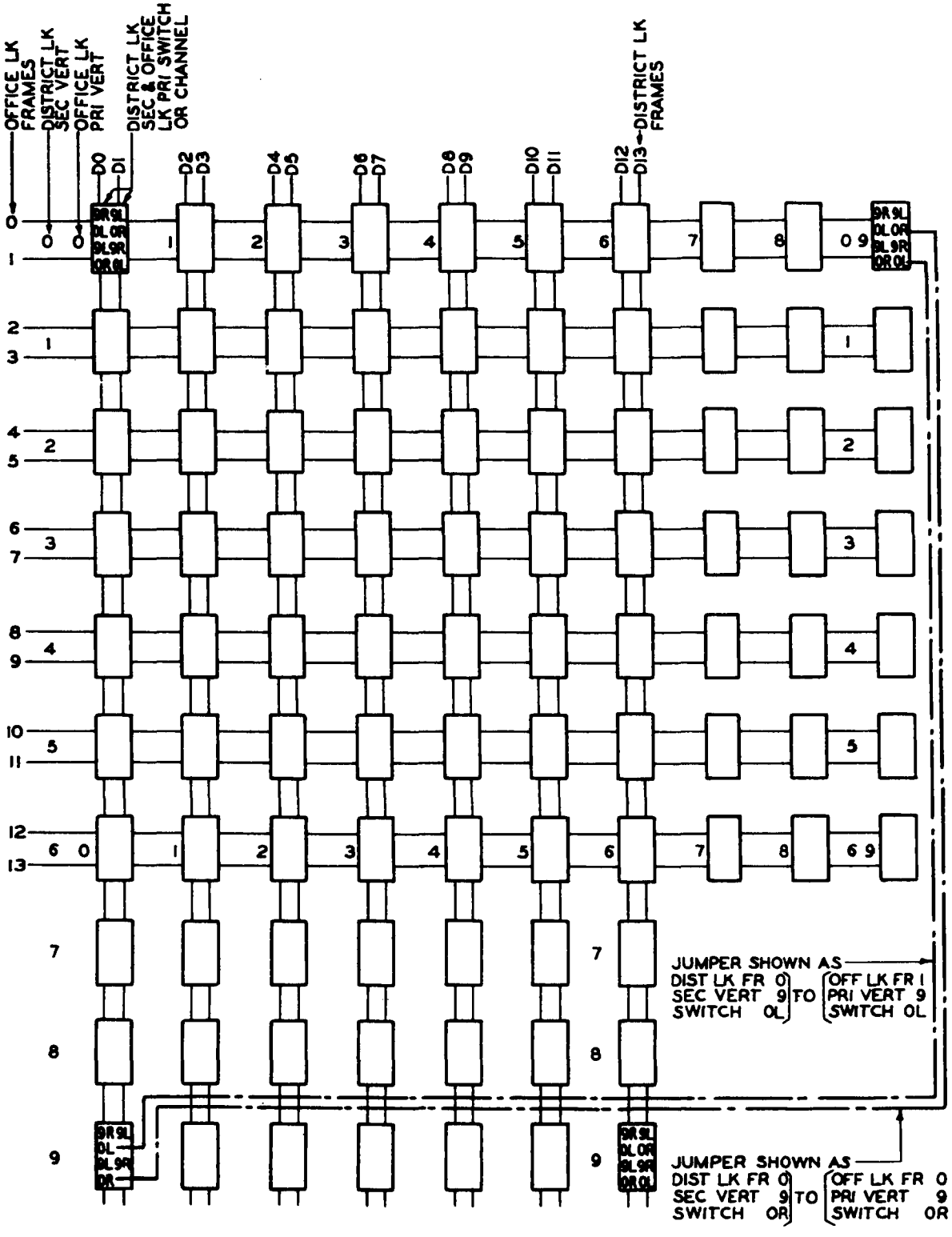


Fig. 1 – Office Junctor Grouping Frame — 14 District and 14 Office Frames Shown

charts. Because of frame height limitations, it has been necessary to locate terminal strips for this purpose in both bays, with terminals in one bay for cables from 10 of an ultimate of 20 office link frames and in the other bay for cables from the remaining 10 office link frames. The 191A terminal strips provide for the termination in one bay of all the cables from the fuses of 20 district link frames which are multipled to the terminal strip in the other bay when required. By means of strap wire, the terminals of the 191A strips in each bay are connected to terminals of the strips on which cables from the office link primary hold magnets terminate. For offices having an initial installation of not more than 10 office link frames, battery distribution terminals shall be provided only for the left bay, (facing the front of the frame).

5.11 The district secondary vertical units are fused with one fuse per switch of 20 vertical units. Battery for the office switches is picked up in cable at the fuse panel of each district link frame and terminated on a 191A terminal strip shown on the OJGF equipment drawing. Other cables pick up the hold magnet terminals of all the office verticals and are terminated on 212A terminal strips shown on the equipment drawing. By referring to this drawing and Fig. 1 in this specification, it will be seen that T, R, and S of district link frame 0, switches 0L and 0R, verticals 0 to 6, connect on opposite ends of terminals to office link frames 0 to 13, primary switches 0L and 0R, verticals 0; and that for district link frame 1, switches 0R and 0L, verticals 0 to 6 connect on opposite ends of terminals to office link frames 0 to 13, primary switches 0R and 0L, verticals 0. In order to have the battery leads from the district frames furnish battery to the associated district and office verticals, the arrangement of terminals shown on the strapping drawing has been provided. For all sizes of installations, the method of numbering the terminal strips will be the same, but the strapping will vary for each size. The strapping connections in the 14-14 case are taken from the office junctor chart ED-25012-01, Fig. 3, as follows: On the table for district link frame 0, channels (or switch) 0L and 0R are connected to fuse 0, 1L and 1R are connected to fuse 1, 2L and 2R are connected to fuse 2, 3L and 3R are connected to fuse 3, etc. The same applies to district link frames 1, 2, 3, etc. Now going back to district link frame 0, the light faced double figures in each box, 0-0, 1-0, etc, give the district secondary vertical as the left figure and office primary vertical as the right figure. Reading light faced figures only, left to right, then for district link frame 0, fuse 0 connects to verticals 0 of office primary switch (or channel) 0L for office link frames 0, 2, 4, 6, 8, 10, and 12 and to verticals 0 of office primary switch 0R for office link frames 1, 3, 5, 7, 9, 11, and 13. Referring to the strapping drawings, terminal strips (1) and (3), terminals for office link frames 0 to 13 are assigned from the top down for the left (L) half of office primary switches of the even numbered office link frames and the right (R) half of switches of the odd numbered frames. These terminals are all in a vertical line and are connected by strap wire. In a similar manner, fuse 0 of district link frame 1 connects to verticals 0 of office primary switch (or channel) 0R for office link frames 0, 2, 4, 6, 8, 10, and 12 and to verticals 0 of office primary switch 0L for office link frames 1, 3, 5, 7, 9, 11, and 13. Referring to the strapping drawings, terminal strips (2) and (4), terminals for office link frames 0 to 13 are assigned from the bottom up for the right (R) half of office primary switches of the even numbered office link frames and the left (L) half of switches of the odd numbered frames. These terminals are also all in a vertical line and are connected by strap wire.

5.12 For this size installation, the highest numbered office primary verticals that can be strapped for all office link frames 0 to 13 are verticals 6 shown in tables for district link frames 12 and 13. The remaining verticals 7, 8, and 9 must be connected between the office link frames and district fuses in a manner corresponding to the jumper connections of T, R, and S leads between the district link and office link frames.

5.13 To show how these irregular connections are made, take district link frame 0 again, channels (or switch) 0L and 0R, which are fused on fuse 0 of district link frame 0. Reading the heavy faced type only, left to right for office link frames 0 to 13, fuse 0 connects to vertical 9 of office primary switches (or channels) 0R for office link frames 0 and 10 and switches 0L for office link frames 1 and 11. It also connects to vertical 8 of the office primary switch 0R for office link frame 4 and switch 0L for office

link frame 5. For district frame 1, the channels (or switch) 0L and 0R are connected to fuse 0 of district frame 1. Reading left to right, fuse 0 connects to vertical 9 of office primary switches 0L for office link frames 0 and 10 and switches 0R for office link frames 1 and 11. It also connects to vertical 8 of office primary switch 0L for office link frame 4 and switch 0R for office link frame 5.

Line Junctor Grouping Frame

5.14 The equipment drawing for the LJG frames shows the numbering of terminal strips for the maximum number of link frames for two capacities. One figure is for a capacity of 10 incoming links and 10 line choices having 200 junctors per incoming link frame and the other figure for a capacity of 10 incoming groups and 20 line choices having 400 junctors per incoming group. The former grouping frame has 5 vertical rows of 10 terminal strips each while the latter has 10 vertical rows of 10 terminal strips each and is used when each incoming link frame has an adjacent extension frame of secondary switches, providing 400 line junctors common to two such frames.

5.15 When the incoming link frames are not provided with extension frames, the horizontal multiples on each of the switches are split between the tenth and eleventh of the 20 vertical units and the halves are known as left and right. When the incoming link frames are provided with extension frames, the horizontal multiples of the secondary switches are not split, and the incoming link frame secondary switches provide the left junctors and the extension frame switches the right junctors.

5.16 For equipment, circuit and traffic reasons, 4 line link frames constitute a "line choice" and the 2 line link frames, which have line junctors in multiple, are known as a "half choice". The "line choices" are distinguished by numerals such as LC0, LC1, LC2, etc, and the half choices are distinguished by letters A and B.

5.17 Cables from the incoming link frames run vertically past the terminal strips on the front of the LJG frame, and cables from the half choices run horizontally past the same terminal strips on the rear of the frame. The cable leads on both front and rear are attached to the terminals at the "cross points" in accordance with the line junctor distribution charts and the numbering of the terminal strips shown on the equipment drawings.

Frame for Capacity of 10 Incoming Frames and 10 Line Choices

5.18 With cables run as above, when 10 incoming link frames and 10 line choices are equipped, the connections at the terminal strips on the junctor grouping frame will agree with the table shown on ED-25713-01, Fig. 10. If there are only 8 line choices (0A and 0B to 7A and 7B) and 8 incoming link frames (I0 to I7) equipped, connections at the terminal strips will agree with the table as far as incoming link frame 7 and half choices 7A and 7B. The terminal strips on which incoming secondary verticals 8 and 9 terminate will have no corresponding half choice cables terminating on the opposite ends of the terminals. Likewise the terminal strips on which line link verticals 8 and 9 terminate will have no corresponding incoming link frame cables terminating on the opposite side, as indicated in Fig. 2 of this specification. These terminal ends without cable leads are interconnected with triple jumper wire in accordance with the table shown on ED-25713-01, Fig. 8. The connections between the incoming link frames and the half choices that are made with cable leads on opposite ends of terminals form the minimum junctor group of ten junctors between an incoming link frame and a specific half choice. When the size of the junctor groups exceeds the minimum, the junctors are arranged in subgroups of ten or less and these permanent connections are known as "1st subgroup" junctors. Other groups of terminals which are connected with jumper wire are used to form "2nd," "3rd," or "4th" subgroups of junctors. On installations consisting of 2, 3, 4, 6, or 7 incoming frames or incoming groups, the full complement of 200 secondary switch verticals per incoming frame and the corresponding line link frame secondary switch verticals are not interconnected. The junctors used are arranged in subgroups to facilitate growing from one size to a higher numbered size and to facilitate changing from the arrangement per ED-25079-01 to a higher numbered size per ED-25713-01.

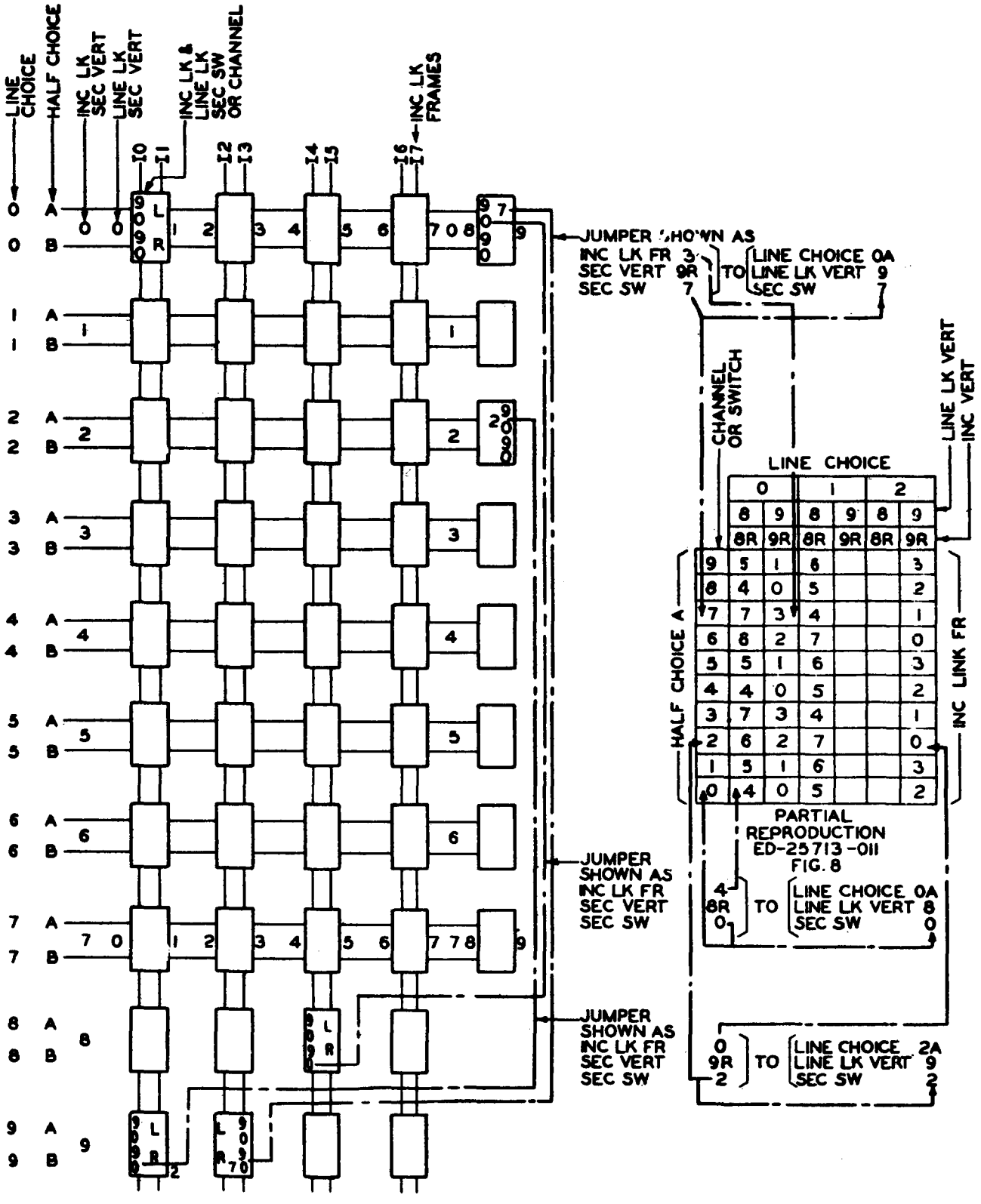


Fig. 2 – Line Junctor Grouping Frame 10 I-10 LC Capacity 8 Incoming Link and 8 Line Choices Shown

5.19 In order to illustrate the application of the table for cross connections between incoming secondary and line link secondary verticals, the cables from which do not meet at "cross points" on terminal strips, assume an installation of 8 incoming link frames and 8 line choices, the table for which is ED-25713-01, Fig. 8. Inasmuch as only the cable leads from line link secondary verticals and incoming secondary verticals 8 and 9 do not meet other cable leads at cross points, these are the only verticals that have to be cross connected, and are the only verticals referred to in the table. Line link and incoming link verticals 0 to 7 meet at cross points as shown on ED-25713-01, Fig. 10. A portion of Fig. 8 of ED-25713-01 has been copied on Fig. 2 of this specification for easy reference. Fig. 2 also shows the terminal strip numbering and cabling in schematic form. To find the line link secondary vertical to which an incoming secondary vertical is jumpered, take incoming link frame 4, switch (or channel) 0, vertical 8R. By referring to the table, we find that all incoming verticals 8R are in half choice A and that the only place in the table where incoming link frame 4, vertical 8R, appears in the same horizontal with channel (or switch) 0, is under line choice 0. Since the channels (or switch) number is the same at both ends, it is switch 0 at the line link. Therefore, the connection at the line link side of the terminal strip is to line choice 0A, switch 0, vertical 8. As another example in finding the line link vertical termination of a jumper, take incoming link frame 0, channel (or switch) 2, vertical 9R. By referring to the table all incoming secondary verticals 9R are in half choice A, and the only place in the table where incoming link frame 0, vertical 9R, appears in the same horizontal line with channel (or switch) 2 is under line choice 2. Since the channel (or switch) number is the same as both ends, the connection at the line link is, then, line choice 2A, switch 2, vertical 9.

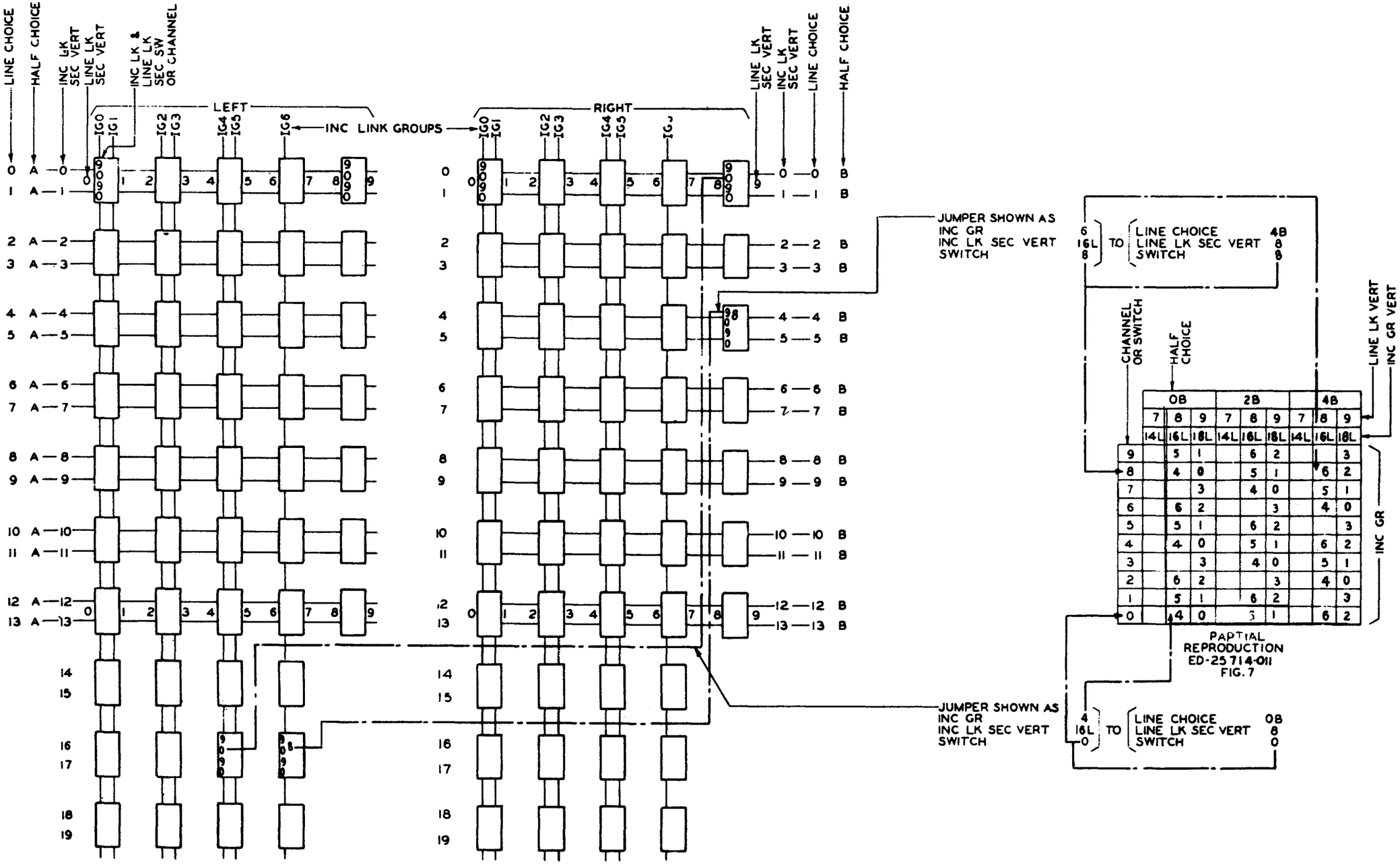
Frame for Capacity of 10 Incoming Groups and 20 Line Choices

5.20 When 10 incoming groups and 20 line choices are equipped, the connections at the terminal strips on the junctor frame will agree with ED-25714-01, Fig. 10. If there are only 7 incoming groups (0-6) and 14 line choices (0A and 0B to 13A and 13B) equipped, connections at the terminal strips will agree with the table as far as incoming groups 6 and half choices 13A and 13B. The terminal strips on which incoming verticals 14 to 19, inclusive, terminate will have no corresponding half choice cables terminating on the opposite ends of the terminals. Likewise, the terminal strips on which line link secondary verticals 7, 8, and 9 terminate will have no corresponding incoming link frame cables terminating on the opposite side as indicated in Fig. 3 of this specification. These terminal ends without cable leads are interconnected with triple jumper wire in accordance with the table shown on ED-25714-01, Fig. 7.

6. WIRING NOTES

6.01 No. 22 gauge, type "L", triple conductor, jumper wire shall be used on the grouping frames for connecting the ends of the district, trunk or incoming link secondary multiples with the ends of the office primary switch multiple or the line switch secondary multiple which do not coordinate on the terminal strips on the junctor grouping frames. These connections shall be made in accordance with the junctor assignment charts listed under "Wiring and Cabling" drawings. The jumpers shall connect to the opposite ends of the terminals from the cable leads and, facing the front of the frame, they shall gather at the top of each terminal strip for district, trunk, or incoming link frames and shall be carried horizontally, in the cable rings on the rear of the frame, to the vertical in which the terminal strip appears to which the leads will connect. The leads shall then turn toward the top of the frame, passing through to the cable ring attached to the opposite side of the ring bar, and continue vertically to the terminal strip to which they are assigned.

6.02 In No. 1 offices arranged for office junctor battery distribution the connections on the terminal strips at the bottom of the office junctor grouping frame shall be 18 or 20 gauge, bare or sleeved strap wire for straight straps and 22 gauge type K wire for irregular straps as shown on the drawing for strapping of battery leads listed under part 3, Wiring and Cabling, in this specification.



PARTIAL REPRODUCTION ED-25714-011 FIG. 7

Fig. 3 – Line Junctor Grouping Frame 10 IG-20 LC Capacity 7 Incoming Groups and 14 Line Choices Shown

Switchboard Cabling

6.03 The code numbers of the switchboard cables ordinarily used for the leads to the office and line junctor grouping frames are shown on the switchboard cabling detail drawings. The circuits should be checked, however, to insure that the proper codes are specified to meet the latest circuit requirements. The wire in the cables shall be 24 gauge except for the cables to the fuses on the district link frame in which the wire shall be 20 gauge so as to avoid excessive voltage drop.

6.04 The schematic of cable runs to the grouping frames is shown on the switchboard cabling detail drawings for the district, trunk, office, incoming, and line link frames.

6.05 Switchboard cabling from the district, trunk, or incoming link frames is run vertically down the front of the grouping frame and is connected to the 10 terminal strips in the same vertical row in accordance with the numbering of the terminal strips. Each cable will contain some leads which terminate on each of the 10 terminal strips and, therefore, all of the cables of each vertical group will butt above the top terminal strip with the leads placed in the cable rings without sewing.

6.06 Switchboard cabling from the office link or line link frames is run horizontally across each horizontal row of terminal strips in accordance with the numbering of the terminal strips. Each cable will contain some leads which terminate on each of the terminal strips in the horizontal row and, therefore, all the cables for each horizontal row will butt at the first terminal strip in the row with the leads placed in the cable rings without sewing.

6.07 In No. 1 offices arranged for office junctor battery distribution, the cable leads from the fuses on the district link frames to the 191A terminal strip in the left bay (facing the front) of the office junctor grouping frame are 20 gauge. The multiple leads from this terminal strip to the 191A terminal strip in the right bay when it is furnished shall be 24 gauge in switchboard cable. When the size of the installation requires the multiple 191A terminal strip, all 200 assigned terminals shall be multipled, regardless of the number actually required for the number of office hold magnets cabled.

6.08 Because of the large number of cables to this frame for a full installation it will probably be necessary to approach the frame from each end with approximately half the total number of cables.

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