

**ASSOCIATING CONNECTOR TERMINALS
WITH INTERCEPTING TRUNKS
STEP-BY-STEP AND COMMUNITY DIAL OFFICES**

1. GENERAL

1.01 This section covers information regarding the methods of making connections for intercepting service in step-by-step and community dial offices.

1.02 This section is reissued to incorporate material from the addendum in its proper location. In this process marginal arrows have been omitted.

1.03 The methods for making connections to intercepting trunks are as follows:

(A) Common Intercepting Trunks — Terminal Strips Equipped with Three Rows of Additional Terminals for Intercepting Connections

(B) Common Intercepting Trunks Arranged to Route Calls Either to an Operator or to an Announcement Machine — Terminal Strips Equipped with Three Rows of Additional Terminals for Intercepting Connections

(C) Common Intercepting Trunks — Terminal Strips NOT Equipped with Three Rows of Additional Terminals for Intercepting Connections

(D) Common Intercepting Trunks Arranged to Route Calls Either to an Operator or to an Announcement Machine — Terminal Strips NOT Equipped with Three Rows of Additional Terminals for Intercepting Connections

(E) Terminal-per-Station — Eight-Party and Ten-Party Connector Terminals

(F) Individual Intercepting Trunks

(G) Particular Station — Terminal-per-Line Party Lines — Nos. 1 and 350A Step-by-Step Offices and Nos. 355A, 360A and 35-E-97 Community Dial Offices — Trunk Circuit SD-31995-01 or Equivalent.

(H) Particular Station — Terminal-per-Line Party Lines — Nos. 355A and 35-E-97 Community Dial Offices — Trunk Circuit SD-31766-01

(I) Particular Station or Several Stations — Terminal-per-Line Party Lines — No. 375 Community Dial Office

1.04 All cross-connection work should be so planned as to leave the connector terminal unguarded for a minimum length of time.

1.05 The general methods described in Sections 069-120-801 and 069-140-811 for the running of jumpers, removing insulation, amount of slack and connecting and soldering the wires to the terminals shall be adhered to unless exception is made in this section. The cautions given in Section 069-120-801 should also be observed.

2. TOOLS AND MATERIALS

2.01 Tools as listed in Section 069-120-801.

2.02 No. 22 Gauge Triple Distributing Frame Wire.

2.03 No. 20 Gauge Single Distributing Frame Wire.

2.04 No. 22 Gauge Black Insulated Tinned Copper Wire per P-26991.

Methods (A), (B), (C), (D) and (E) Only

2.05 No. 22 Gauge Bare Tinned Copper Wire per P-314952.

Methods (A) and (B) Only

2.06 Sleeved straps per P-420380, P-450295, P-30A389 and P-30A390.

3. METHOD

(A) Common Intercepting Trunks — Terminal Strips Equipped with Three Rows of Additional Terminals for Intercepting Connections

3.01 To connect a vacant connector terminal which is to be routed to the operator over an intercepting trunk serving a group of connector terminals, use three P-450295 sleeved straps for unsoldered connections or three P-420380 sleeved straps for soldered connections between the regular terminals and the intercepting terminals connecting sleeve to sleeve, ring to ring and tip to tip in the order named, see Fig. 2. Unless otherwise specified, the unsoldered strap P-450295 should be used and the ends tightly wrapped two complete turns around the terminal as shown in Fig. 3, exercising care not to break the wire by pulling too tight. These straps should be connected at the notches of the terminals. Fig. 1 illustrates the method of forming the sleeved straps and illustrates soldered connections when P-420380 sleeved straps are used. Fig. 3 illustrates the method of wrapping the wire of the sleeved straps P-450295, P-30A389 or P-30A390 around the terminal for connections that are not soldered.

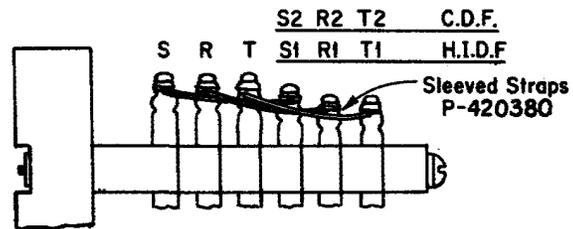
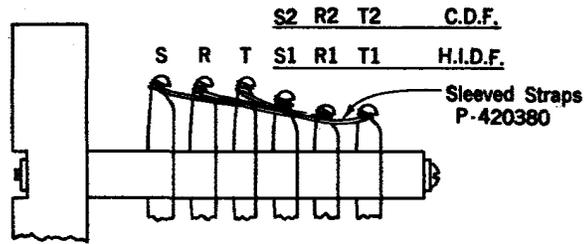


Fig. 1 — Soldered Straps between Vacant Terminals and Intercepting Terminals

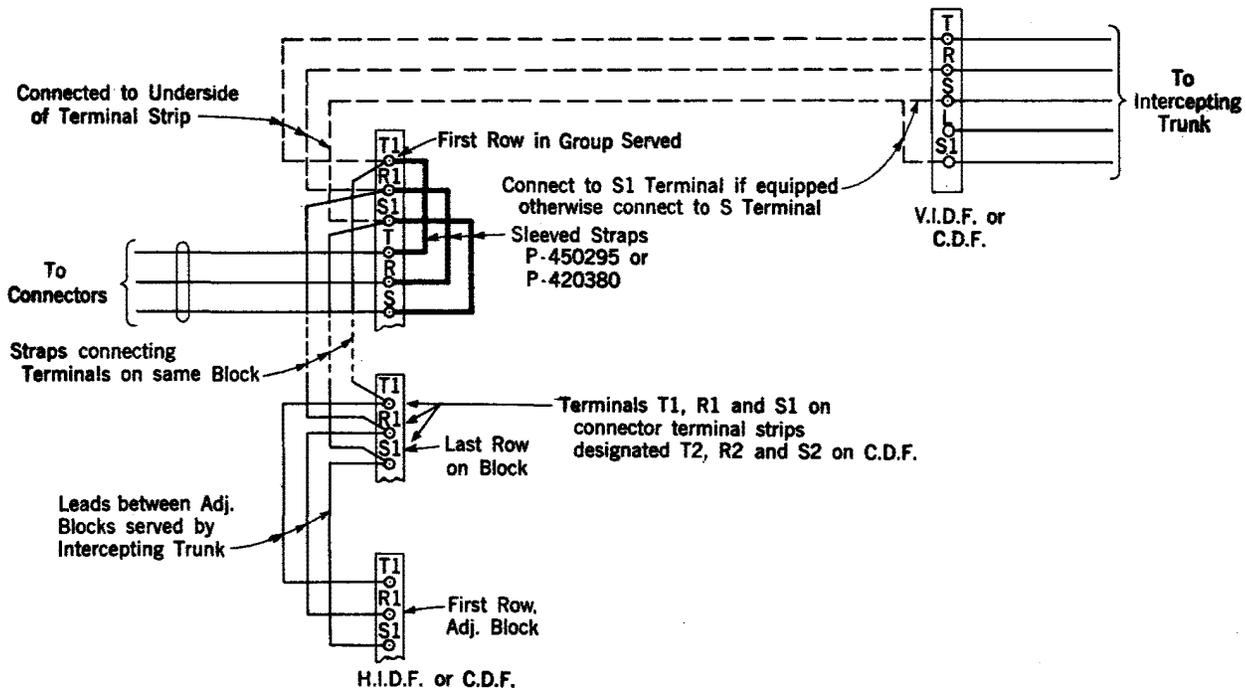


Fig. 2 — Common Intercepting Trunks — Terminal Strips with Three Rows of Terminals for Intercepting Connections

(B) Common Intercepting Trunks Arranged to Route Calls Either to an Operator or to an Announcement Machine — Terminal Strips Equipped with Three Rows of Additional Terminals for Intercepting Connections

3.02 To connect a vacant connector terminal which is to be routed to the operator over the intercepting trunk serving a group of connector terminals connect as in Paragraph 3.01.

3.03 To connect a vacant connector terminal which is to be routed to the announcement machine over the intercepting trunk serving a group of connector terminals use a P-30A390 sleeved strap to connect the regular ring terminal to the intercepting tip terminal (R to T1), a P-30A389 sleeved strap to connect the regular tip terminal to the intercepting ring terminal (T to R1) and a P-420380 (soldered connection) or a P-450295 sleeved strap (unsoldered connection) to connect the regular sleeve terminal to the intercepting sleeve terminal (S to S1), see Fig. 4. Unless otherwise specified all connections should be tightly

wrapped two complete turns around the terminal and omit soldering as shown in Fig. 3. These straps should be connected at the notches of the terminals.

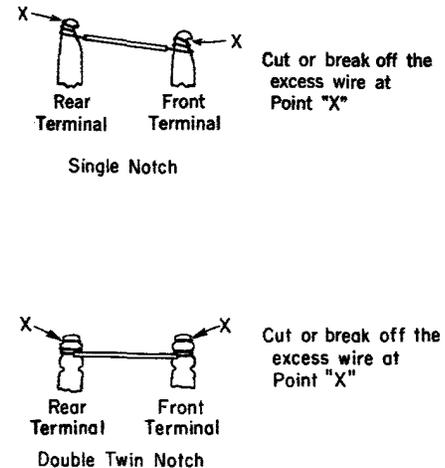


Fig. 3 — Termination of Unsoldered P-450295, P-30A389 or P-30A390 Straps on Lug of Terminal Strip

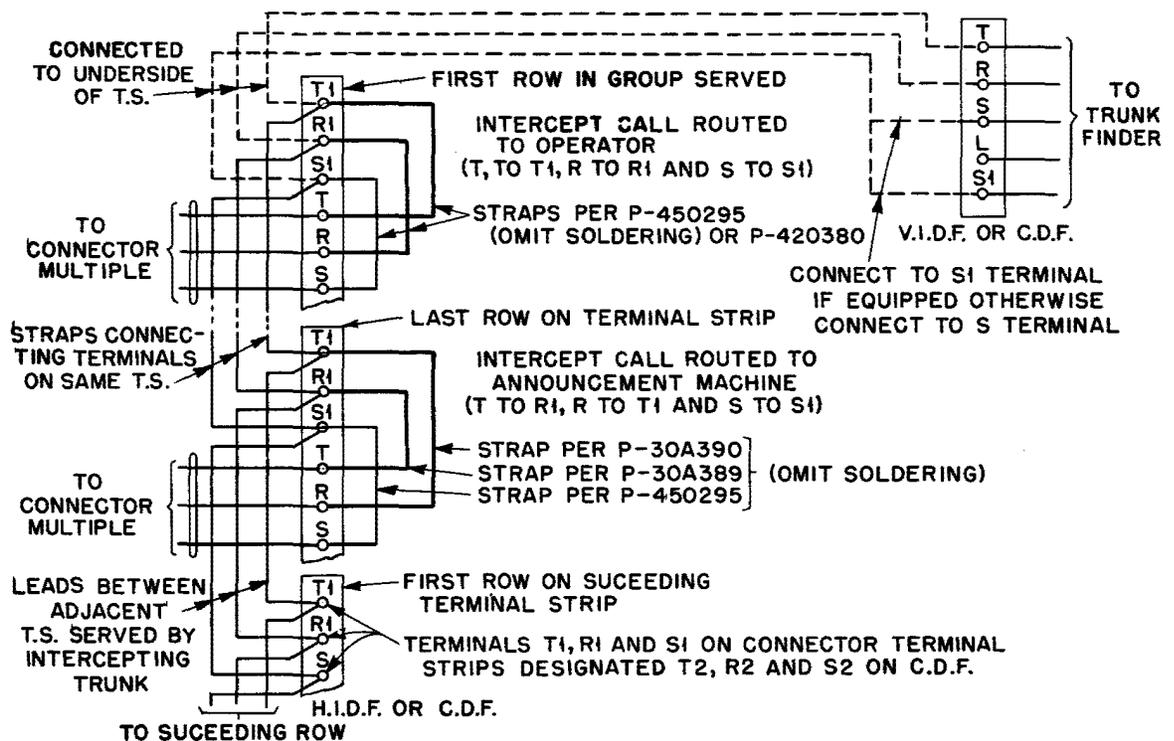


Fig. 4 — Common Intercepting Trunks Arranged to Route Calls Either to an Operator or to an Announcement Machine — Terminal Strips with Three Rows of Terminals for Intercepting Connections

(C) Common Intercepting Trunks – Terminal Strips NOT Equipped with Three Rows of Additional Terminals for Intercepting Connections

3.04 Two triple cross-connections should be run from the intercepting trunk terminals on the V.I.D.F. or C.D.F. They should be long enough to reach any connector terminal in the group which the trunk serves. When rearrangements are made any slack should be disposed of by running the jumpers through the distributing frame rings so that the normal amount of slack will be provided when the jumper is connected.

3.05 The two cross-connections should be run from the intercepting trunk, one to the first and one to the last vacant terminal of the group. The tip and sleeve colors of these cross-connections should be reversed in order to distinguish them from working subscriber lines. See Fig. 5.

3.06 Where vacant terminals in the same intercepting group appear in consecutive order, the tip, ring and sleeve terminals should be strapped with No. 22 gauge bare tinned copper wire as shown in Figs. 5 and 6. This wire is placed around the first and last terminals in the con-

secutive group and laid in the notches of the intermediate terminals and soldered so that all consecutive vacant terminals in each row are connected together by a continuous piece of wire.

Note: When a vacant terminal is to be connected for service, cut the strap close to the terminal lug and solder the ends of the strap back around the adjoining vacant terminals. When a working terminal becomes vacant in a consecutive group of vacant terminals, add strap wire to connect it to the adjacent vacant terminals.

3.07 Non-adjacent terminals or groups of terminals should be connected together using triple distributing frame wire. See Fig. 5. These jumpers should be run parallel to the terminal strips about four inches back of the strips and under some of the regular jumpers on the shelf. The tip and sleeve colors of these cross-connections should be reversed.

Note: When rearranging these connections, the wire in place should be reused as long as the four-inch slack can be approximately obtained.

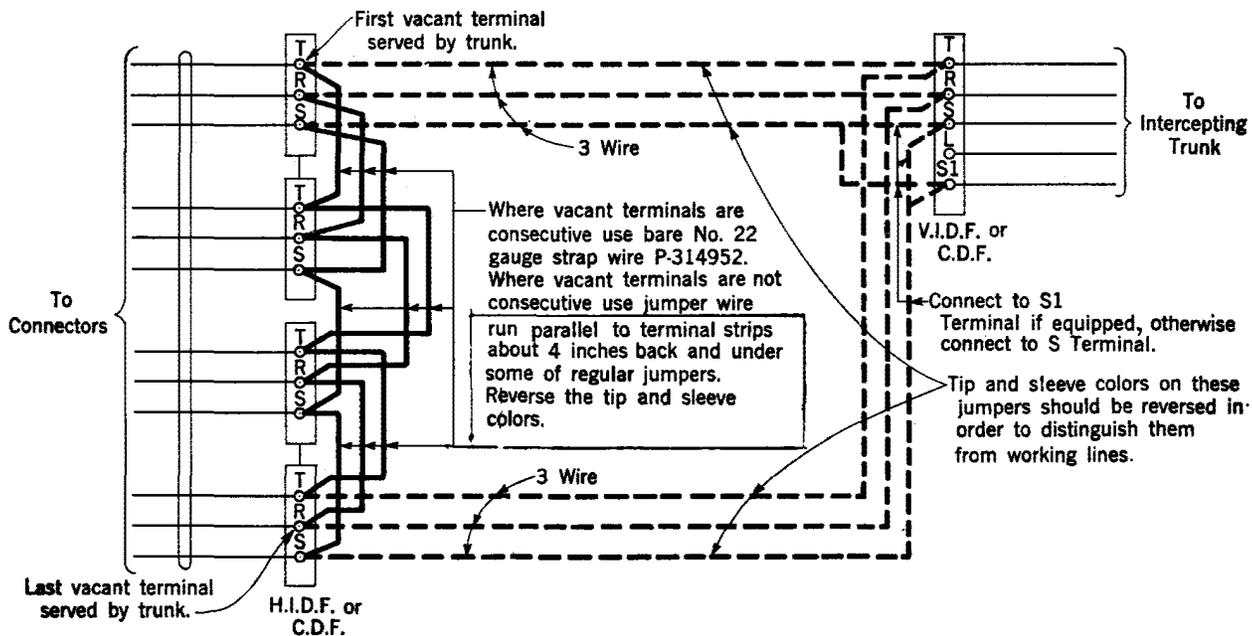


Fig. 5 – Common Intercepting Trunks – Terminal Strips without Three Rows of Terminals for Intercepting Connections

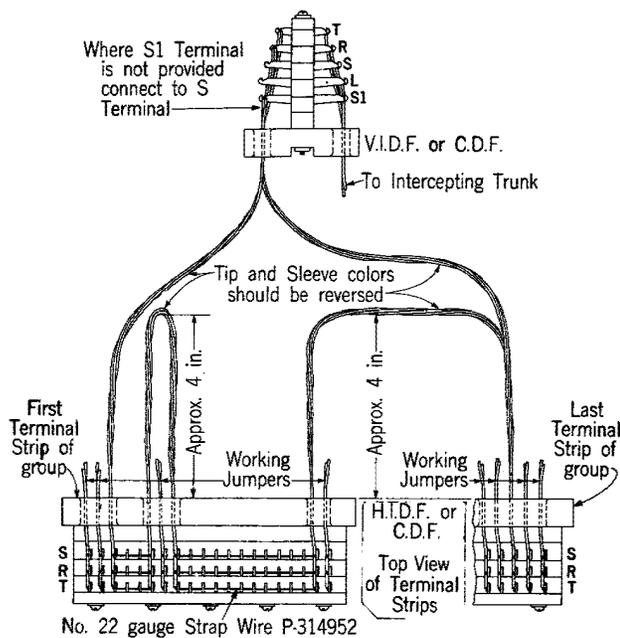


Fig. 6 — Common Intercepting Trunks — Typical Arrangement of Cross-Connections — Terminal Strips without Three Rows of Terminals for Intercepting Connections

(D) Common Intercepting Trunks Arranged to Route Calls Either to an Operator or to an Announcement Machine — Terminal Strips NOT Equipped with Three Rows of Additional Terminals for Intercepting Connections

3.08 Two triple cross-connections should be run from the intercepting trunk terminals on the V.I.D.F. or C.D.F. They should be long enough to reach any connector terminal in the group which the trunk serves. When rearrangements are made any slack should be disposed of by running the jumpers through the distributing frame rings so that the normal amount of slack will be provided when the jumper is connected.

3.09 The two cross-connections should be run to vacant terminals that are to be routed to the operator, one to the lowest vacant terminal and the other to the highest vacant terminal. In the event that all vacant terminals in either half

of the group served by one intercepting trunk are routed to the announcement machine the tip and ring of the jumper serving that part of the group should be reversed, and if all vacant terminals in the group are routed to the announcement machine the tip and ring of both jumpers should be reversed. This reversal should be made at the connector terminal block on the H.I.D.F. or C.D.F. These jumpers should have the tip and sleeve colors reversed to distinguish them from working lines. See Fig. 8.

3.10 Where vacant terminals of the same class of intercepting (i.e., to be routed either to the operator or to the announcement machine) in the same intercepting group are consecutive, the tip, ring and sleeve terminals should be strapped with No. 22-gauge bare tinned copper wire as shown in Figs. 7 and 8. This wire is placed around the first and last terminals in the consecutive group and laid in the notches of the intermediate terminals and soldered so that all consecutive vacant terminals in each row are connected together by a continuous piece of wire.

Note: When a vacant terminal is to be connected for service, cut the strap close to the terminal lug and solder the ends of the strap back around the adjoining vacant terminals. When a working terminal becomes vacant in a consecutive group of vacant terminals of the same class of intercepting add strap wire to connect it to the adjacent vacant terminals.

3.11 Non-adjacent terminals or groups of terminals should be connected together using triple distributing frame wire as shown in Fig. 7. Terminals or groups of terminals that are to be routed to the operator should be connected so that the tip, ring and sleeve are connected to the tip, ring and sleeve, respectively, of the intercepting trunk. When routed to the announcement machine connect the regular tip

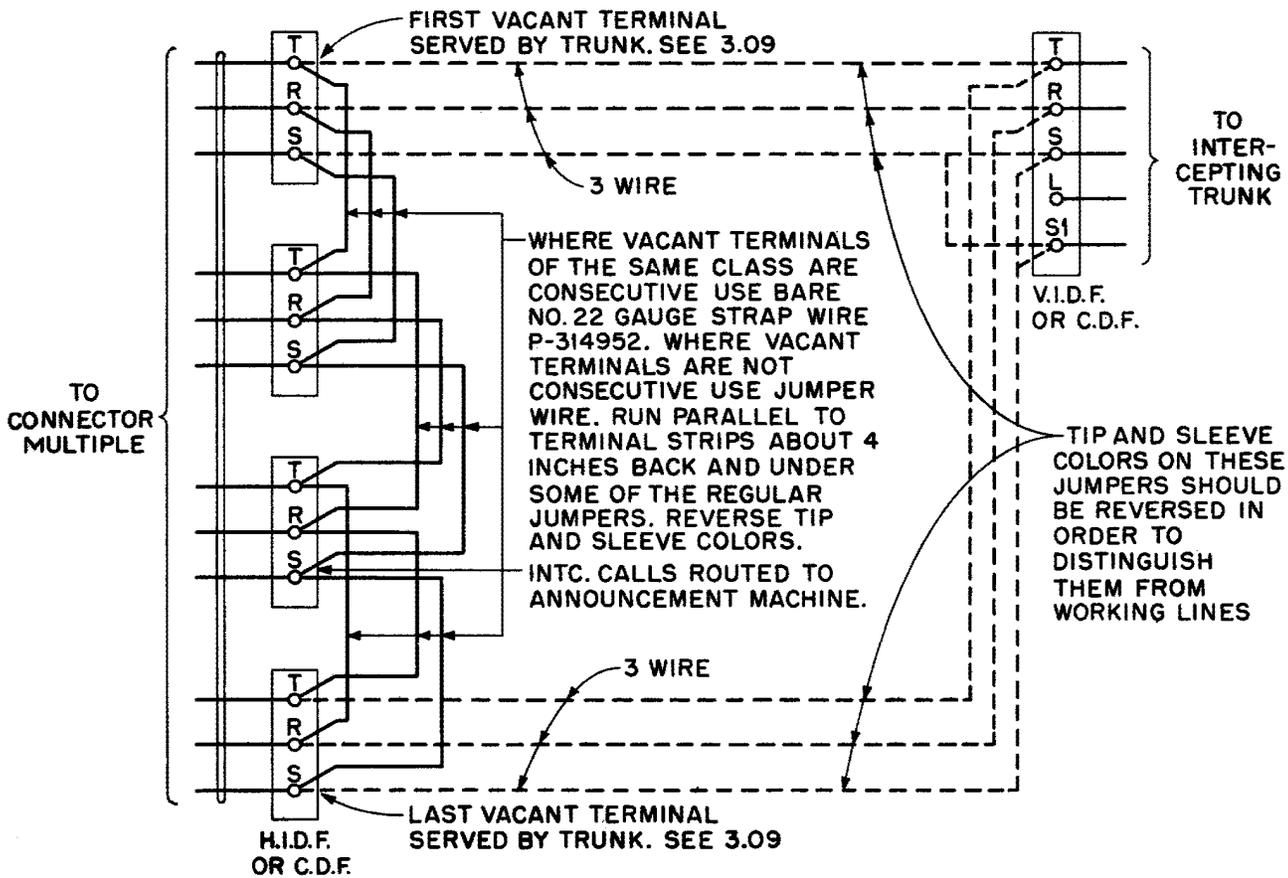


Fig. 7 – Common Intercepting Trunks Arranged to Route Calls Either to an Operator or to an Announcement Machine – Terminal Strips without Three Rows of Terminals for Intercepting Connections

terminal to the ring of the intercepting trunk and the regular ring terminal to the tip of the intercepting trunk and the regular sleeve terminal to the sleeve of the intercepting trunk. These jumpers should be run parallel to the terminal strips about four inches back of the strips and under some of the regular jumpers on the shelf.

The tip and sleeve colors of these cross-connections should be reversed.

Note: When rearranging these connections the wire in place should be reused as long as the four-inch slack can be approximately obtained.

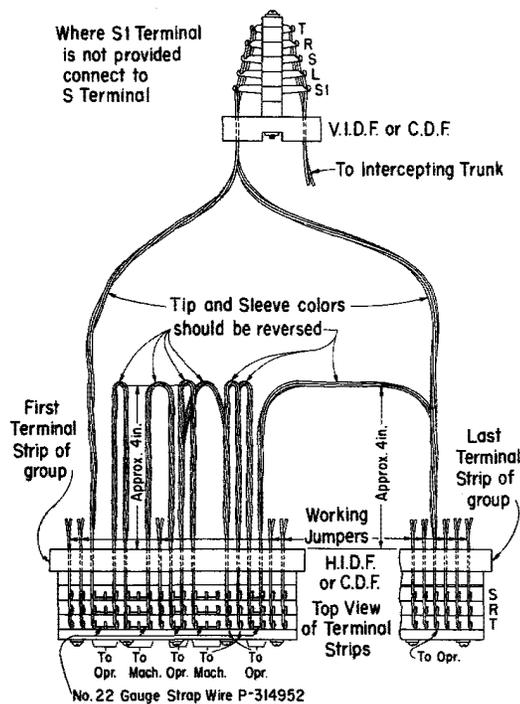
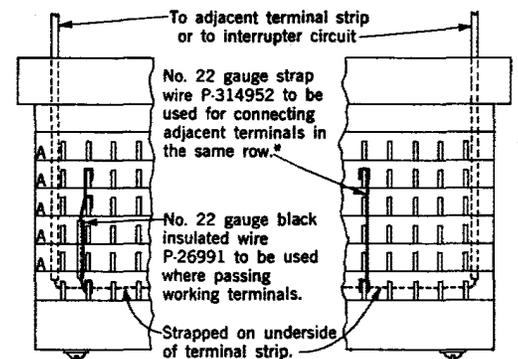


Fig. 8 – Common Intercepting Trunks Arranged to Route Calls Either to an Operator or to an Announcement Machine – Typical Arrangement of Cross-Connections – Terminal Strips without Three Rows of Terminals for Intercepting Connections

(E) Terminal-per-Station – Eight-Party and Ten-Party Connector Terminals

3.12 The Procedure for connecting a vacant connector terminal to an intercepting trunk serving a group of connector terminals is the same as in (A), (B), (C), or (D) depending on whether or not the terminal strips are equipped with three rows of additional terminals for intercepting connections, and whether or not the intercepting trunks are arranged to route calls to an operator only, or to route calls either to an operator or to an announcement machine.

3.13 Where the A leads from the connector multiple are terminated on a terminal strip which accommodates 100 leads, connect the associated ringing code terminal A to a terminal in the front row as shown in Fig. 9. Adjacent terminals in the same row of A terminals should be strapped with bare wire. When more than two



* This strap formerly shown on left side of terminals.

Fig. 9 – Connections of Ringing Interrupter Terminals – Eight-Party and Ten-Party Terminal-per-Station Terminals

adjacent terminals are strapped, wrap the wire around the end terminals in the notch and run along the side of the intermediate terminals and solder. For terminals not adjacent, use insulated wire where passing working terminals.

Note: When changes are required in the strapping on account of service orders, re-use as much as possible of the strapping in place.

3.14 Where the A or H leads from the connector multiple are terminated on the same terminal strip as the T, R and S leads from the connector multiple, an additional row of terminals is provided at the rear of the terminal strip and designated H1. These H1 terminals are strapped together on the under side of the terminal strip and connected to the C1A or 1+A lead of the ringing interrupter. When a connector terminal is connected to an intercepting trunk the associated A or H terminal is connected to the corresponding H1 terminal with No. 22-gauge strap wire (P-26991).

(F) Individual Intercepting Trunks

3.15 When a vacant connector terminal is assigned to an individual intercepting trunk, cross-connect the vacant T, R and SN

terminals in No. 375 type offices or the T, R and S terminals in all other type offices to the corresponding intercepting trunk terminals on the A, B or C frame in No. 375 type offices or on the H.I.D.F. or C.D.F. in all other type offices. Triple distributing frame wire should be used with the tip and sleeve colors reversed to distinguish the cross-connection from working subscriber lines.

3.16 *Intercepting Trunks Arranged to Route Calls Either to an Operator or to an Announcement Machine:* When a vacant connector terminal is assigned to an individual intercepting trunk and the calls are to be routed to the operator cross-connect as outlined in Paragraph 3.15. When the calls are to be routed to the announcement machine the connections are the same as in Paragraph 3.15 with the exception that the tip of the vacant connector terminal is connected to the ring of the intercepting trunk and the ring of the vacant connector terminal is connected to the tip of the intercepting trunk.

3.17 On an eight-party or ten-party terminal-per-station connector terminal, connect the associated ringing code terminal A or H as outlined in Paragraph 3.13 or 3.14.

(G) Particular Station — Terminal-per-Line Party Lines — Nos. 1 and 350A Step-by-Step Offices and Nos. 355A, 360A and 35-E-97 Community Dial Offices — Trunk Circuit SD-31995-01 or Equivalent

3.18 The methods to be used in cross-connecting a multiparty intercepting trunk to an outgoing trunk or trunk finder are outlined in Paragraphs 3.19 to 3.21. The methods to be used in cross-connecting the multiparty trunk for station identification are outlined in Paragraphs 3.19 to 3.22. The methods to be used in cross-connecting the first multiparty trunk to the line terminals and the methods to be used in cross-connecting additional trunks for intercepting other stations on the same line are outlined in Paragraphs 3.27 to 3.30.

Cross-connection of Multiparty Intercepting Trunk to Outgoing Trunk or Trunk Finder — Toll Identification Required

3.19 *Ring Station:* Cross-connect the multiparty intercepting trunk terminals T1, R1, and S1 or T1, R1, S1 and G to the outgoing trunk terminals T, R, and S or the trunk finder terminals, T, R, S and G, tip to tip (T1 to T), ring to ring (R1 to R) sleeve to sleeve (S1 to S) and G to G. See Fig. 10, W wiring.

3.20 *Tip Station:* Cross-connect as in Paragraph 3.19 reversing the tip and ring jumpers (see Fig. 10, V wiring) at the multiparty intercepting trunk terminals T1 and R1 except where the multiparty trunk is being connected to a station served by an eight-party semiselective connector in a No. 355A office in which case the tip and ring jumpers are cross-connected straight as in Paragraph 3.19.

Cross-connection of Multiparty Intercepting Trunk to Outgoing Trunk or Trunk Finder — Toll Identification Not Required

3.21 *Ring or Tip Stations:* Cross-connect as in Paragraph 3.19. Usually this jumper is run and left in permanently.

Cross-connection of Multiparty Intercepting Trunk for Station Identification — Operators Do Not Rering

3.22 *Trunk for Two-Party Selective Station:* Station identification is cared for in the trunk to line cross-connection as in Paragraph 3.29. See Fig. 10.

3.23 *Trunk for Four-Party Selective Station:* Cross-connect the SUP terminal associated with the multiparty intercepting trunk to a superimposed $\pm -$ or $\pm +$ ringing supply terminal of opposite polarity from that used on calls to the station to be intercepted; using the same source of ringing supply as that furnished the connector group serving the line involved. See Fig. 10.

Note: This same trunk and cross-connection arrangement may also be used to intercept two tip or two ring stations on an eight-party semiselective line where both stations have the same polarity of superimposed ringing.

Cross-connection of Multiparty Intercepting Trunk for Station Identification — Operators May Rering

3.24 Trunk for Two-Party or Four-Party Selective or Eight-Party Semiselective Stations: Cross-connect the G terminal associated with the multiparty intercepting trunk to the G1 or R2 (or INT1 or INT2 for No. 35-E-97) interrupted ground code supply terminal, the SUP terminal to the superimposed $\pm -$ or $\pm +$ ringing supply terminal and the TR terminal to the tripping battery TR+ or TR- supply terminal corresponding in each case to those used on calls to the intercepted station, using the same source of supply as that furnished the connector group serving the line involved. In some cases the code terminal R1 is used in place of the G1 terminal but the cross-connection should agree with the code terminal used on the particular connector group involved. See Fig. 10.

3.25 Trunk for Ten-Party Code Ringing Station (5 Codes): Cross-connect the C terminal associated with the multiparty intercepting trunk to the proper code ringing supply terminal C1 to C5 corresponding to that used on calls to the intercepted station.

3.26 Trunk for Ten-Party or Twenty-Party Code Ringing Station (10 Ground Codes): Cross-connect the G terminal associated with the multiparty intercepting trunk to the interrupted ground code supply terminals G1 to G10 corresponding to that used on calls to the intercepted station.

Cross-connection of Multiparty Trunk to Line

3.27 Cross-connection of the multiparty intercepting trunk to the line terminals or to the preceding multiparty trunk terminals is to be made only after the outgoing trunk and station identification cross-connections have been completed. This avoids service interruptions to other stations on the line.

3.28 The method of cross-connecting the multiparty intercepting trunk to a line or preceding trunk is arranged so that the color of the tip and ring jumpers connected to the T and R terminals of each trunk indicates whether it

is serving a tip or ring station. This facilitates additions and rearrangements.

3.29 First Trunk: Cross-connect the T, R and S terminals of the first multiparty intercepting trunk to the line terminals T, R and S, tip to tip, ring to ring and sleeve to sleeve for ring party stations (see Fig. 10, R wiring) or reverse the tip and ring jumpers at the trunk terminal strip (see Fig. 10, T wiring) for tip party stations.

3.30 Additional Trunks: Cross-connect the T, R and S terminals of each additional multiparty intercepting trunk serving another station on the same line to the T, R and S terminals of the preceding trunk as follows:

(a) When the new trunk and the preceding trunk both serve ring party stations, connect tip to tip, ring to ring and sleeve to sleeve.

(b) When the new trunk is serving a ring party station and the preceding trunk is serving a tip party station, reverse the tip and ring jumper at the terminal strip of the preceding trunk.

(c) When the new trunk and the preceding trunk both serve tip party stations, connect tip to tip, ring to ring and sleeve to sleeve but reverse the colors normally used for the tip and ring jumpers.

(d) When the new trunk is serving a tip party station and the preceding trunk is serving a ring party station, reverse the tip and ring jumper at the terminal strip of the new trunk.

(H) Particular Station — Terminal-per-Line Party Lines — Nos. 355A and 35-E-97 Community Dial Offices — Trunk Circuit SD-31766-01

3.31 The methods to be used in strapping terminals on the unit terminal strips or cross-connecting the multiparty intercepting trunk for station identification are outlined in

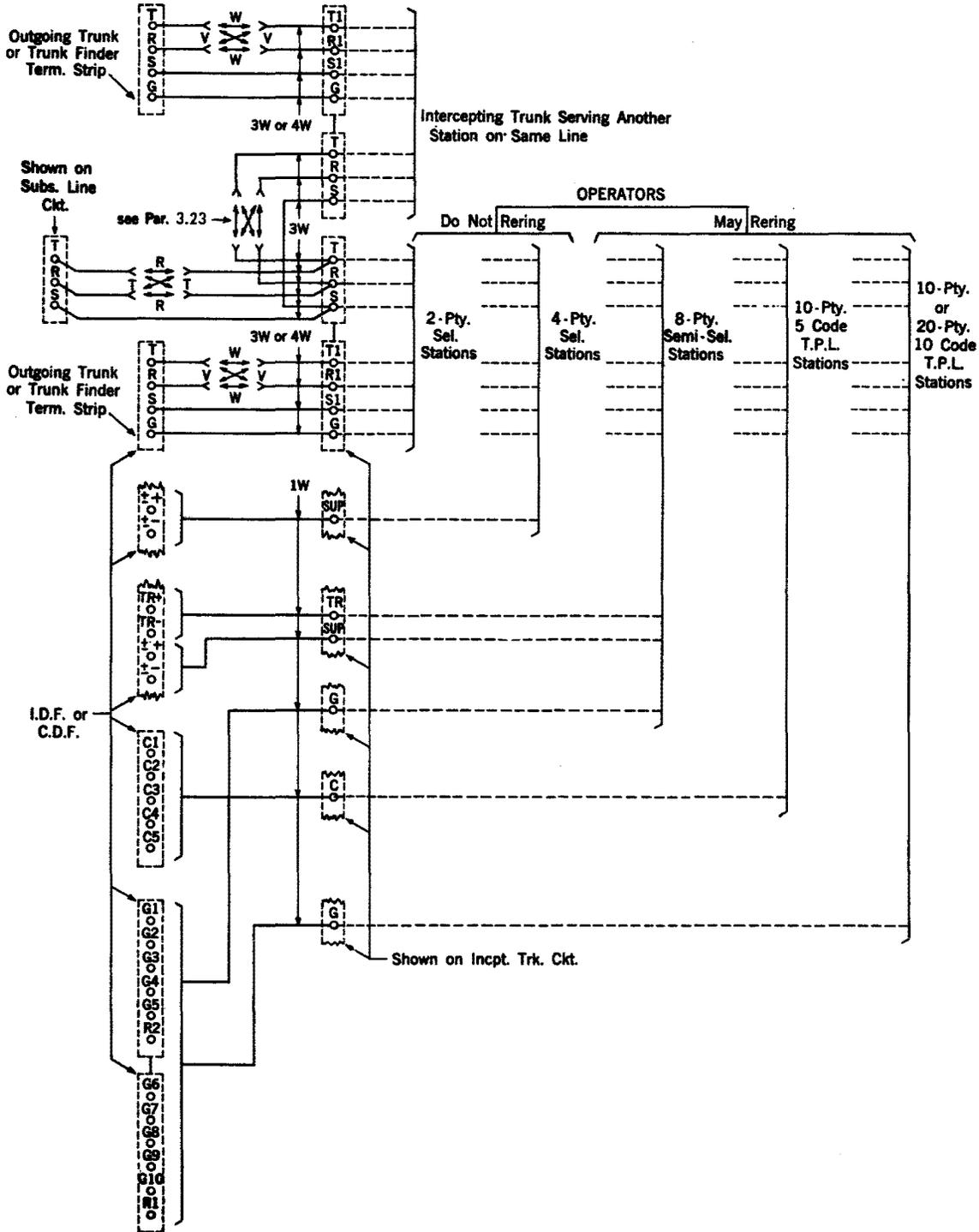


Fig. 10 – Cross-Connection Diagram – Terminal-per-Line Party Lines – Nos. 1, 350A, 355A, 360A and 35-E-97 Offices

Paragraphs 3.32 to 3.36. The methods to be used in cross-connecting the first multiparty trunk to the line terminals and the methods of cross-connecting additional trunks for intercepting other stations on the same line are outlined in Paragraphs 3.37 to 3.39.

Cross-connection of Multiparty Intercepting Trunk for Station Identification — Operators Do Not Rering

3.32 Trunk for Two-Party Selective Station:

At the trunk unit terminal strip strap terminal No. 9 to terminal No. 2 for a ring party station or to terminal No. 1 for a tip party station. Where the tripping relay in the associated connector is in the ground return path also strap terminal No. 11 to terminal No. 1 for a ring party station or to terminal No. 2 for a tip party station.

3.33 Trunk for Four-Party Selective Lines: At

the trunk unit terminal strip, strap terminal No. 9 to terminal No. 2 for a ring party station or to terminal No. 1 for a tip party station. Strap terminal No. 11 to terminal No. 10 for a superimposed ringing negative station or to terminal No. 12 for a superimposed ringing positive station.

Cross-connection of Multiparty Intercepting Trunk for Station Identification — Operators May Rering

3.34 Trunk for Two-Party or Four-Party Selective or Eight-Party Semiselective Stations:

At the trunk unit terminal strip A, strap terminal No. 9 to terminal No. 2 for a ring party station or to terminal No. 1 for a tip party station. Where the tripping relay in the associated connector is in the ground return path, also strap terminal No. 11 to terminal No. 1 for a ring party station or to terminal No. 2 for a tip party station. On terminal strip B, strap terminal No. 16 to terminal No. 15 for a one ring code or to terminal No. 14 for a two ring code. On terminal strip C, strap terminal No. 3 to terminal No. 5 and terminal No. 11 to terminal No. 13 for a superimposed ringing negative station or strap terminal No. 3 to terminal No. 1 and terminal No. 11 to terminal No. 9 for a superimposed positive ringing station.

3.35 Trunk for Ten-Party Code Ringing Station

(5 Codes): On the trunk unit terminal strip A, strap terminal No. 9 to terminal No. 2 and terminal No. 11 to terminal No. 1 for a ring party station or strap terminal No. 9 to terminal No. 1 and terminal No. 11 to terminal No. 2 for a tip party station. Where the code supply leads C1 to C5 appear on the C.D.F., cross-connect the C terminal associated with the multiparty intercepting trunk to the proper code terminal C1 to C5 corresponding to that used on calls to the intercepted station. Where the code supply leads C1 to C5 appear on terminal Nos. 5 to 9, respectively, of unit terminal strip B, strap terminal No. 3 on unit terminal strip B to the proper code terminal No. 5 to No. 9 corresponding to that used on calls to the intercepted station.

3.36 Trunk for Ten-Party or Twenty-Party Code Ringing Station (10 Codes):

On unit terminal strip A, strap terminal No. 9 to terminal No. 2 and terminal No. 11 to terminal No. 1 for a ring party station or strap terminal No. 9 to terminal No. 1 and terminal No. 11 to terminal No. 2 for a tip party station. On unit terminal strip B, strap terminal No. 16 to the interrupted ground code terminal No. 6 to No. 15 (ground codes 10 to 1, respectively) corresponding to that used on calls to the intercepted station.

Cross-connection of Multiparty Intercepting Trunk to Line

3.37 Cross-connection of the multiparty intercepting trunk to the line terminals or the preceding multiparty trunk terminals is made only after the station identification cross-connections have been completed. This avoids service interruptions to other stations on the same line.

3.38 First Trunk: Cross-connect the T, R and S terminals of the multiparty trunk to the line terminals T, R and S, tip to tip, ring to ring and sleeve to sleeve.

3.39 Additional Trunks: Cross-connect the T, R and S terminals of each additional trunk serving another station on the same line to the T, R and S terminals of the preceding trunk, tip to tip, ring to ring and sleeve to sleeve.

SECTION 226-165-300

(I) Particular Station or Several Stations — Terminal-per-Line Party Lines — No. 375 Community Dial Office

3.40 At the trunk unit terminal strip, strap the proper code marking terminal (No. 10 to No. 29) corresponding to the code used on the station or stations to be intercepted to the (+) marking terminal No. 7 for positive (tip) stations, to the (—) marking terminal No. 8 for

negative (ring) stations or to the (\pm) marking terminal No. 9 where the same code or codes are to be intercepted on both sides of the line. See Fig. 11.

3.41 Cross-connect the multiparty intercepting trunk to the line terminals tip to tip (T to T), ring to ring (R to R) and sleeve to sleeve (SN to SN).

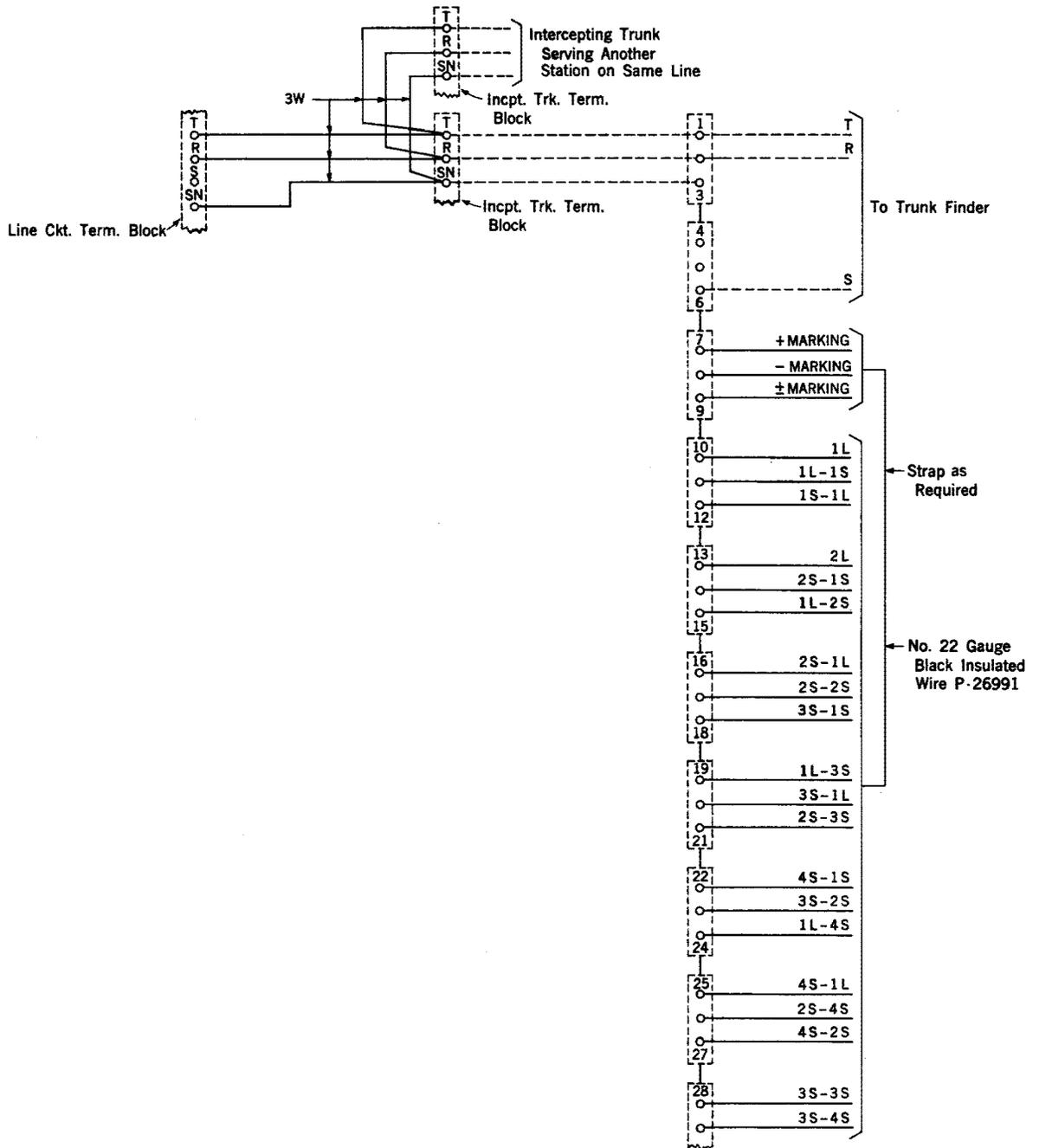


Fig. 11 — Cross-connection Diagram — Terminal-per-Line Party Lines — No. 375 Offices