AUXILIARY RELAY RACK MOUNTED EQUIPMENT
EQUIPMENT DESIGN REQUIREMENTS
NO. 1 CROSSBAR SYSTEM
CROSSBAR TANDEM 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, primarily of the SD-25000-01 and SD-27000-01 series, to be used in the engineering and installation of the relay rack equipment.

1.02 This specification is reissued to:

(a) Add units J23066DJ per SD-28127-01; J23066DK per SD-28110-01, J23066DL per SD-28110-01, J23066DN per SD-28128-01; and J23066DP per SD-27047-01.

(b) Revise unit J23066CN per SD-27985-01, Issue 4B.

(c) Rate J23066Y,L3 Mfr Disc. per SD-27047-01, Issue 11B.

(d) Incorporate information from Addendum Issue 1.

CAPACITY

1.03 One relay rack bay drilled for 2- by 23-inch mounting plates has a capacity of 60 plates.

DESCRIPTION

1.04 The relay rack framework for crossbar offices is 11 feet 6 inches high and 2 feet 0-5/8 inch wide. The framework for each bay consists of two bulb-angle uprights and a formed steel base 10 inches wide. The framework can be lined up with other crossbar frames.

1.05 The relay rack equipment units listed herein are arrangements whereby the equipment for one or two circuits is mounted together in one self-contained unit. The apparatus is mounted on 2- by 23-inch mounting plates. When two or more plates are required for a unit, they are secured to mounting bars. The design permits the unit to be completely assembled, wired, and tested in the shop. Then it is either shipped individually to be mounted by the installation force or mounted on relay rack frameworks in the shop and shipped as fully equipped bays. Terminal strips on the unit furnish soldered or wire-wrapped terminals for cables connecting to other equipment in the office.

Not Specifically Designed for Crossbar

1.06 Fuse panels and resistance lamps in ringing supply for relay rack equipment are mounted on angle relay rack-type bays. The fuse bay or bays will ordinarily be located at the end of the relay rack lineup, but individually, floor plan layouts may dictate the location of fuse bays centrally with respect to several small lineups of relay bays. (See paragraph 5.09.)

1.07 Talking battery filters in accordance with the specification listed herein are located on the fuse bays.

2. SUPPLEMENTARY INFORMATION

816-000-000—Numerical Index—Crossbar System
800-600-000—Checking List — General Equipment Requirements
J20151—816-016-150 — Limiting Conductor Lengths Between Frames and Units

J25551—816-040-150 — 817-060-150 — End Guards
J25552—816-017-150 — 817-037-150 — Frame Lighting and Appliance Outlets— Incandescent Type
J64001—Transmission Measuring
J85505—Frame and Aisle Lighting—Fluorescent Type
J88507—Frame and Aisle Lighting—Fluorescent Type
J93005—816-605-150—Plugging-up Line Panel
J97025—Relay Rack Angle Type
J99226—Battery Filters
Floor Plan Data—Section 9.2, Sheet 7

3. DRAWINGS

For additional drawings forming a part of this specification, see listings under **SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX**.

Keysheets

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

Equipment

ED-25594-01—135- and 170-Volt Supply Lamp and Fuse Bay Equipment
ED-81063-01—22-Volt Supply Panel
ED-92082-10—No. 1 Crossbar Office—Incoming Repeater from Step-by-Step Office
ED-92173-71—Filter Panels 0 to 50 Amperes
ED-92175-31—Filter Panels 50 to 200 Amperes
ED-92242-01—Application of 2 Inch Plates or Units to 1-3/4 Racks or 1-3/4 Inch Plates or Units to 2 Inch Racks

Wiring and Cabling

ED-91325-01—Filter Panel Power Wiring
ED-92224-01—Typical Cabling Drawing Angle
ED-92224-11—Relay Rack

4. EQUIPMENT

ED-25634-01—Tandem Office Outgoing Repeater to Step-by-Step Office

Group 1—Assembly, wiring, and equipment per SD-25634-01, Fig. 1 and M apparatus required for one outgoing repeater (less repeating coil) arranged for battery and ground pulsing.

Group 2—Assembly, wiring, and equipment per SD-25634-01, Fig. 1 and N apparatus required for one outgoing repeater (less repeating coil) arranged for loop pulsing.

Group 10—Equipment per SD-25634-01, Fig. 1, V apparatus and connections, required in addition to group 1 or 2 for one 94E repeating coil for trunk impedance ratio of 0.81 to 1.25 and for all office impedances.

Group 11—Equipment per SD-25634-01, Fig. 1, S apparatus and connections, required in addition to group 1 or 2 for one 94F repeating coil for trunk impedance ratio above 1.25 and for all office impedances.

Group 12—Equipment per SD-25634-01, Fig. 1, Z apparatus and connections, required in addition to group 1 or 2 for one 94F repeating coil for trunk impedance ratio up to 0.8 and for all office impedances.

Group 13—Equipment per SD-25634-01, Fig. 1, E apparatus and connections, required in addition to group 1 or 2 for one 120C repeating coil for trunk impedance ratio 0.81 to 1.25 and for all office impedances.

Group 14—Equipment per SD-25634-01, Fig. 1, H apparatus and connections, required in addition to group 1 or 2 for one 120D repeating coil for trunk impedance ratio 0.51 to 0.8 and office impedance greater than 1100 ohms.

Group 15—Equipment per SD-25634-01, Fig. 1, F apparatus and connections, required in addition to group 1 or 2 for one 120D repeating coil for trunk impedance ratio 1.26 to 2.0 and office impedance greater than 735 ohms.

Group 16—Equipment per SD-25634-01, Fig. 1, J apparatus and connections, required in addition to group 1 or 2 for one 120E repeating coil for trunk impedance ratio of 1.26 to 2.00 and for office impedance of 735 ohms or less.

Group 17—Equipment per SD-25634-01, Fig. 1, G apparatus and connections, required in addition to group 1 or 2 for

one 120E repeating coil for trunk impedance ratio of 0.51 to 0.8 and for office impedance of 1100 ohms or less.

Group 18—Equipment per SD-25634-01, Fig. 1, K apparatus and connections, required in addition to group 1 or 2 for one 120F repeating coil for trunk impedance ratio above 2.00 and for all office impedances.

Group 19—Equipment per SD-25634-01, Fig. 1, P apparatus and connections, required in addition to group 1 or 2 for one 120F repeating coil for trunk impedance ratio up to 0.5 and for all office impedances.

Note

A. Repeaters per ED-25634-01 shall be mounted on the relay rack bays by means of a shelf assembly per ED-30754-01, GR3, which mounts four repeaters per shelf.

ED-92082-10—No. 1 Crossbar Office— Incoming Repeater from Step-by-Step Office

Group 1—Assembly, wiring, and equipment for SD-95413-01, Fig. 1 for one incoming repeater arranged to repeat dial pulses and reverse battery supervision.

Notes

A. Group 1 includes a repeater base-mounted unit and an externally mounted jack and resistance.

B. One shelf assembly per ED-30754-01, GR3 is required for each four repeaters as shown on ED-92082-10, Fig. 1.

C. One bay framework per ED-91183-71, GR2, with jack and resistance mountings and cable brackets as shown on ED-92082-10, Fig. 1, is required for each ten shelves of repeaters.

D. All wiring external to the repeater unit is installer wiring.

E. The following items are required for testing purposes and should be furnished as specified by the telephone company.

(1) 298A plug

(2) 1101E handset equipped with 204B plug.

J23066A—Reserved

J23066B—AT&TCo Std — Special Service Operator Incoming Trunk Unit

List 1—Framework, assembly, equipment, and wiring per SD-25116-01, Fig. 1 required for one trunk with provisions for two addition circuits. (See Note A.)

List 2—Assembly, equipment, and wiring per SD-25116-01, Fig. 1 required in addition to list 1 for a second trunk circuit. (See Note A.)

List 3—Equipment and wiring per SD-25116-01, Fig. 1 required in addition to list 1 for a third trunk circuit. (See Note A.)

List 4—Equipment and wiring per SD-25116-01, Fig. C required in addition to lists 1, 2, and 3 for one trunk for use with coin lines.

List 5—Equipment and wiring per SD-25116-01, Fig. D required in addition to lists 1, 2, and 3 for one trunk for use with noncoin lines.

List 6—Equipment and wiring per SD-25116-01, Fig. 1, X apparatus, required in addition to lists 1, 2, and 3 when number checking is required.

Note

A. Provide optional wiring as required.

J23066C—AT&TCo Std—Auxiliary Line Unit for 10-Party Terminals per Station Code Ringing Lines or 8-Party Terminals per Station Semiselective Ringing Lines

List 1—Framework, assembly, equipment, and wiring per SD-25296-01, Fig. 1 required for one 8- or 10-party auxiliary line unit.

List 2—Equipment and wiring per SD-25296-01, Fig. A required in addition to list 1 for

calls dial originating and dial terminating.

List 3—Equipment and wiring per SD-25296-01, Fig. B required in addition to list 1 for calls manual originating and dial terminating.

List 4—Equipment and wiring per SD-25296-01, Fig. 2 required in addition to list 1 for one 10-party code ringing identification relay.

List 5—Equipment and wiring per SD-25296-01, Fig. 3 required in addition to list 1 for one 8-party code ringing identification relay.

List 6—Equipment and wiring per SD-25296-01, Fig. 1 option T only, and Fig. 5 required in addition to list 1 for 8-party semiselective ringing.

List 7—Equipment and wiring per SD-25296-01, Fig. 1, option V only, and Fig. 4 required in addition to list 1 for 10-party code ringing lines.

J23066D—AT&TCo Std—Business Office Line Unit for Terminating Calls From A Switchboard and Originating Calls Through Subscriber Line Circuits—No. 13C, 13D, 15C, or 15D Switchboard

List 1—Assembly and common equipment for one business office line unit with provisions for three circuits.

List 2—Equipment and wiring per SD-25139-01, Fig. 1 required in addition to list 1 for one circuit. (See Notes A and B.)

Notes

A. The jack and key equipment per SD-25139-01, Fig. 3 is located in the A switchboard.

B. Provide optional wiring as required.

J23066E—A&M Only—Local or Toll Intercepting, Trouble Intercept, and Verification Request Trunk Unit—No. 13C, 13D, 15C, or 15D Switchboard

List 1—Framework, assembly, equipment, and wiring per SD-25454-01, Fig. 1 for one trunk circuit. (See Note A.)

List 7—Equipment and wiring per SD-25454-01, Fig. 2 for timing circuit for use where calls from a DSA operator in the same building whose cord circuits furnish 24-volt talk battery reach this circuit through incoming trunks not provided with machine ringing.

List 8—Equipment and wiring per SD-25454-01, Fig. E required in addition to list 1 when trunk is used as an intercepting trunk.

List 9—Equipment and wiring per SD-25454-01, Fig. F and option N, required in addition to list 1 when trunk is used as a verification request trunk.

Note

A. Provide optional wiring as required.

J23066G—A&M Only — Tandem Office — Overflow Trunk Unit With Tone

List 1—Assembly, equipment, and wiring per SD-25442-01, Fig. 5 required for one overflow trunk and common equipment for four additional trunks. (See Note A.)

List 2—Equipment and wiring per SD-25442-01, Fig. 5 required in addition to list 1 for one additional overflow trunk. (See Note A.)

List 3—Equipment and wiring per SD-25442-01, Fig. 2 required in addition to lists 1 and 2 to arrange five overflow trunks for use where tone is supplied from a panel or crossbar office.

Note

A. Connect Fig. A and F for tone supply from a step-by-step office, Fig. B and C for tone supply from panel offices, and Fig. B and D for tone supply from crossbar offices.

J23066H—AT&TCo Std — Outgoing Trunk Unit to Crossbar for Central Switchboard

List 1—Assembly, equipment, and wiring per SD-25423-01, Fig. 1 required for one outgoing trunk with common equipment for one additional trunk.

List 2—Equipment and wiring per SD-25423-01, Fig. 1 required in addition to list 1 for one additional trunk circuit.

List 3—Equipment and wiring per SD-25423-01, Fig. A required in addition to list 1 or 2 for 20-cycle ringing.

List 4—Equipment and wiring per SD-25423-01, Fig. B required in addition to list 1 or 2 for simplex ringing.

List 5—Assembly, equipment, and wiring per SD-25423-01, Fig. 2 required in addition to list 1 for one coin control circuit with common equipment for one additional circuit.

List 6—Equipment and wiring per SD-25423-41, Fig. 2 required in addition to list 5 for one additional coin control circuit.

Notes

A. Repeating coils shall be provided in accordance with line impedance, and optional wiring shall be connected as required.

B. List 5 shall include mounting plates required for the coin control feature.

J23066J—AT&TCo Std—Subscriber Recording Completing Trunk Unit — Outgoing to Toll — Subscriber Recall— Number Check — Noncoin or Single-Slot Coin

List 1—Assembly, equipment, and wiring per SD-25124-01, Fig. 1 and B required for one subscriber recording completing trunk unit when number checking is not required.

Note

A. Repeating coils shall be provided in accordance with line impedance, and optional wiring shall be connected as required.

J23066K—Reserved

J23066M—AT&TCo Std—B Switchboard Auxiliary Incoming Trunk From Manual Office for Local Interoffice Trunks

List 1—Framework, assembly, wiring, and common equipment per SD-25025-01 for one unit of five trunks.

List 2—Wiring and equipment per SD-25025-01 required in addition to list 1 for one trunk.

J23066N—AT&TCo Std — Subscriber Recording Completing Trunk Unit—Coin Collected and Dial-Tone-First

List 1—Assembly, equipment, and wiring per SD-25218-01, Fig. 1, B, D, and F, option ZC required for one trunk not arranged for number checking. (See Note B.)

List 3—Equipment and wiring per SD-25218-01, T apparatus, required in addition to list 1 or 2 when earth potential on coin lines exceeds −12 volts but does not exceed ±20 volts.

List 4—Equipment and wiring per SD-25218-01, Fig. K, (less P resistance lamp, option ZF) required in addition to list 1 when dial-tone-first operation is required. (See Notes C, D, and E.)

List 5—Equipment and wiring per SD-25218-01, Fig. H, required in addition to list 4 when district junctors are not equipped to seize a coin supervisory circuit on operator class calls. (See Note D.)

Notes

A. Repeating coils shall be provided in accordance with line impedance, and optional wiring shall be provided as required.

B. Provide K wiring when initial coin deposit is returned automatically when attendant answers; otherwise, provide J wiring.

C. Provide wiring per Fig. J when dial-tone-first operation is not required.

D. Provide wiring per Fig. G when list 5 is not required or when list 4 and 5 are not required.

E. The P resistance lamp, option ZF, shall be located on the miscellaneous fuse bay and shall be provided once per each list 4.

J23066P—Reserved

J23066R—AT&TCo Std — Outgoing Trunk Unit to No. 2, 3, 4, 6A, or 6B Infor-

mation Desk or No. 19 or 23 Operating Room Desk

List 1—Assembly, equipment, and wiring per SD-25119-01 for one trunk circuit with common equipment for one additional trunk.

List 2—Equipment and wiring per SD-25119-01, required in addition to list 1 for one additional circuit.

J23066S—AT&TCo Std—Auxiliary Line Unit for Use Where Service is Furnished to a 2-Way Trunk in No. 20 Key Cabinet Desk, Chief Operator Line Transfer Key Circuit, B Supervisor Circuit, or Subscriber Set From More Than One Central Office or Multioffice Unit in Same Building

List 1—Assembly, equipment, and wiring per SD-25319-10, Fig. 1, 2, and 3 required for one auxiliary line circuit for offices 1 and 2 for single-office operation or offices 1 to 4 with multioffice operation with provisions for two additional Fig. 3.

List 2—Equipment and wiring per SD-25319-01, Fig. 3 required in addition to list 1 for one additional office cut-in circuit for each office per single-office operation or pair of offices for multioffice operation for more offices than covered in list 1 (lists 1 and 2 provide for a maximum of four offices for single-office operation or eight offices for multioffice operation).

List 3—Equipment and wiring per SD-25319-01, Fig. 4 required in addition to list 1 for one incoming busy circuit for B supervisor circuit A or B line.

List 4—Equipment and wiring per SD-25319-01, Fig. 5 required in addition to list 1 for one outward service auxiliary line circuit for 2-way service only.

Note

A. For more than four offices, single-office operation, provide line-busy circuit and office cut-in circuit per SD-25319-01, Fig. 6 and 3, on a miscellaneous basis mounted adjacent to unit J23066S.

J23066T—AT&TCo Special—Auxiliary Incoming Trunk From Tandem Manual Office Straightforward or MF Pulsing Arranged to Convert Reverse Battery Supervision to High-Low Supervision (See Paragraph 5.07)

List 1—Assembly, equipment, and wiring per SD-25025-01, Fig. 1 option U, required for one trunk circuit with common equipment for three additional circuits.

List 2—Equipment and wiring per SD-25025-01, Fig. 1, option U, required in addition to list 1 for one additional trunk circuit.

Note

A. Repeating coils shall be provided in accordance with trunk impedance.

J23066U—AT&TCo Std—Outgoing Trunk in Central A Switchboard—Trouble or Regular Intercepting Arranged for Machine Announcements

List 1—Assembly, equipment, and wiring per SD-25413-01, Fig. 2 required for one trunk circuit arranged for regular intercept calls.

List 2—Equipment and wiring per SD-25413-01, Fig. 2, V apparatus, required in addition to list 1 for trouble intercept calls.

List 3—Equipment and wiring per SD-25413-01, Fig. 2, E apparatus, required in addition to list 1 for machine intercept of calls to vacant or unassigned numbers.

List 4—Equipment and wiring per SD-25413-01, Fig. 2, F apparatus, required in addition to list 1 where trunk impedance at 1000 cycles is greater than 1100 ohms.

List 5—Equipment and wiring per SD-25413-01, Fig. 2, G apparatus, required in addition to list 1 where trunk impedance at 1000 cycles is 1100 ohms or less.

List 6—Equipment and wiring per SD-25413-01, Fig. 2, Y apparatus, required in addition to list 1 where trunk impedance at 1000 cycles is greater than 1100 ohms.

List 7—Equipment and wiring per SD-25413-01, Fig. 2, Z apparatus, required in addition to list 1 where trunk impedance at 1000 cycles is 1100 ohms or less.

List 8—Equipment and wiring per SD-25413-01, Fig. 8 and option ZE required in addi-

tion to list 1 when testing is required for outgoing test frame to No. 5 crossbar automatic call distribution test facilities.

Notes

A. Specify lists 4 or 5 as required where the corresponding Permalloy-type repeat coils per list 6 or 7 are not available.

B. The RT resistance lamp shall be located on the fuse board.

C. Provide optional wiring as required.

J23066W—AT&TCo Std—Tandem Offices No Circuit, Reorder, Ovrerflow, Vacant Code, or All PBX Trunks Busy Signal Trunk Unit

List 1—Framework, assembly, wiring, and equipment per SD-27025-01, Fig. 1 for one unit of six no circuit, reorder, overflow, vacant code, or all PBX trunk busy trunks.

J23066X—A&M Only—Crossbar System—No. 15D A Switchboard — Interlocal Trunk Unit — 2-Way Type X TB Supply to Manual or Dial A Switchboard Ringdown Signaling Wet-Dry Supervision

List 1—Framework, assembly, wiring, and common equipment for a unit of three trunks equipped with one circuit per SD-25313-01, Fig. 1.

List 2—Equipment and wiring required in addition to list 1 for each additional trunk per SD-25313-01, Fig. 1.

List 3—Equipment and wiring required in addition to list 1 or 2 for one battery supply relay circuit per SD-25313-01, Fig. A.

List 4—Equipment and wiring required in addition to list 1 or 2 for one bridged relay circuit per SD-25313-01 Fig. B.

J23066Y—AT&TCo Std—Group Busy Unit for Announcement Connecting Trunks

List 1—Wiring and equipment per SD-27047-01, Fig. 10 to provide a group busy auxiliary relay unit arranged for 80 and equipped for 10 announcement connecting trunks associated with either MCA, UCA, or VCA announcement amplifier.

List 2—Wiring and equipment per SD-27047-01, Fig. 10 required in addition to list 1 for each additional 10 connecting trunks associated with the same announcement amplifier (a maximum of seven list 2).

J23066AA—AT&TCo Std—Keypulsing Outgoing Trunk Unit—For Single-Office or Multioffice Operation

List 1—Assembly, equipment, and wiring per SD-25127-01, Fig. 1 required for one trunk circuit. (See Note A.)

List 2—Equipment and wiring per SD-25127-01, Fig. A required in addition to list 1 for single-office operation.

List 3—Equipment and wiring per SD-25127-01, Fig. B required in addition to list 1 for multioffice operation.

Note

A. Provide optional wiring as required.

J23066AB—AT&TCo Std — Official PBX Trunk Unit Arranged for Terminating Service

List 1—Assembly, equipment, and wiring per SD-25312-01, Fig. 1 for one trunk circuit. (See Note A.)

Note

A. Provide optional wiring as required.

J23066AC—AT&TCo Std—Outgoing Auxiliary Line Unit to Which the Operator Makes Emergency Connections

List 1—Framework, assembly, equipment, and wiring per SD-25140-01, Fig. 1 for one auxiliary line circuit with common equipment for two additional circuits. (See Note A.)

List 2—Equipment and wiring per SD-25140-01, Fig. 1 required in addition to list 1 for one additional auxiliary line circuit. (See Note A.)

Notes

A. Provide optional wiring as required.

B. The key and jack are located in the A switchboard.

J23066AD—AT&TCo Std—Tandem Office Outgoing Trunk Unit to Step-by-Step Office With CX, Type B, or SX Signaling

List 1—Framework, assembly, equipment, and wiring per SD-25490-01, Fig. 1 required for one trunk circuit with common equipment for one additional circuit. (See Note A.)

List 2—Equipment and wiring per SD-25490-01, Fig. 1 required in addition to list 1 for one additional trunk circuit.

List 3—Equipment and wiring per SD-25490-01, Fig. 1 option Y required in addition to list 1 or 2 when telephone repeaters are directly connected to repeating coils at this end of the trunk.

List 4—Equipment and wiring per SD-25490-01, Fig. 1, option U, required in addition to list 1 or 2 when telephone repeaters are not directly connected to repeating coils at this end of trunk and long-range composite signaling circuit is used.

Note

A. Provide optional wiring as required.

J23066AE—AT&TCo Std—Dial Terminating Manual Subscriber Line Unit

List 1—Assembly, equipment, and wiring per SD-25040-01, Fig. 1 required for one circuit with common equipment for one additional circuit. (See Note A.)

List 2—Equipment and wiring per SD-25040-01, Fig. 1 required in addition to list 1 for one additional circuit.

List 3—Equipment and wiring per SD-25040-01, Fig. C required in addition to list 1 or 2 for one prepay coin line circuit or for one line circuit which may be converted from noncoin to coin or coin to noncoin.

List 4—Equipment and wiring per SD-25040-01, Fig. 2 required in addition to list 1 or 2 when emergency transfer relay is required.

Notes

A. Provide optional wiring as required.

B. A&M Only—The emergency transfer key per SD-25040-01, Fig. 3 or 4 is located in the switchboard cable turning section.

J23066AH—AT&TCo Std—Outgoing Auxiliary Trunk Unit—For Use With 2-Way Operator Office Trunk or Toll Switching Trunk to Step-by-Step Office in Same or Distant Building—Reserve Battery Supervision

List 1—Assembly, wiring, and equipment for a unit of two outgoing auxiliary trunk circuits per SD-27039-01, Fig. 1, less option Z, for use with 2-way operator office trunk or toll switching trunk to step-by-step office in same or distant building.

List 2—Wiring and equipment per SD-27039-01, Fig. 1, option Z only, required in addition to list 1 when building-out capacitor is specified.

J23066AJ—AT&TCo Std—Outgoing Auxiliary Trunk Unit—For Use With 2-Way Operator Office Trunk—In Same or Distant Building—For Converting E and M Lead Supervision to Reverse Battery Supervision

List 1—Framework, assembly, wiring, and common equipment for a unit of two outgoing trunk circuits per SD-27040-01, Fig. 1 less options Z and X for use with 2-way operator office trunk in same or distant building (See Note A.)

List 2—Wiring and equipment per SD-27040-01, Fig. 1, option Z only, required in addition to list 1 for building-out capacitor.

List 3—Wiring and equipment per SD-27040-01, Fig. 2 required in addition to list 1 to arrange trunk for operation with link-type CDO.

List 4—Wiring and equipment per SD-27040-01, option X only, required in addition to list 1 for operation with step-by-step offices.

Notes

A. Provide optional wiring as required.

B. When converting existing units for connection to No. 5 crossbar CDO, furnish Fig. 2 and option S if unit was arranged for connection SXS, and furnish option S if unit was arranged for connection to link-type CDO.

C. Provide option R when power plant of associated switchboard trunk or toll switching trunk circuit is not the same as this circuit.

J23066AK—AT&TCo Std—Auxiliary Outgoing Trunk Unit—For Use With No. 3, 3C, or 3CL Switchboard—Ringdown Intertoll Trunk Circuit in the Same Building

List 1—Framework, assembly, wiring, and equipment for a unit of two auxiliary outgoing trunks per SD-27041-01, Fig. 1 less option T, required for use with No. 3, 3C, or 3CL switchboard ringdown intertoll trunks in the same or adjacent building.

List 2—Wiring and equipment per SD-27041-01, Fig. 2 required to provide a ringing battery resistance for use with 30 trunks. (See Note A.)

Note

A. Ringing battery resistances (R) shall be mounted on a miscellaneous basis.

J23066AM—AT&TCo Std—Outgoing Auxiliary Trunk Unit—For Use With 2-Way Operator Office Trunk to Link-Type Community Dial Office—Reserve Battery Supervision

List 1—Assembly, wiring, and equipment for one auxiliary trunk per SD-27039-01, Fig. 2, less option Z, for use with 2-way operator office trunk to link-type community dial office in same or distant building.

List 2—Wiring and equipment per SD-27039-01, Fig. 2, option Z only, required in addition to list 1 when building-out capacitor is specified.

J23066AN—A&M Only—Announcement Connecting Trunk Unit—For Vacant Code Sender Overload and Misrouted Non-CAMA Calls

List 1—Assembly, wiring, and equipment for four announcement connecting trunk circuits per SD-27047-01, Fig. 1 for connecting vacant code sender overload or misrouted non-CAMA calls.

List 2—Wiring and equipment per SD-27047-01, Fig. 3 required in addition to list 1 for each announcement channel for trunks arranged for delayed cut-through. (See Notes A and B.)

List 3—Equipment and wiring per SD-27047-01, Fig. 5 required in addition to list 1 to arrange four connecting trunks for reorder announcement.

Notes

A. One required per maximum 20 announcement connecting trunk circuits assigned to the same announcement channel and mounted on the unit with the first four circuits assigned to the announcement channel.

B. Provide optional wiring as required.

C. This unit shall be mounted on a relay rack bay adjacent to the bay mounting the announcement trunks whenever practicable.

J23066AP—AT&TCo Std—For Auxiliary Outgoing Trunk Unit—For Intertoll Completion—For Use With No. 1 Switchboard—Ringdown Intertoll Trunk Circuit in the Same Building

List 1—Assembly, wiring, and equipment for two auxiliary outgoing trunk circuits per SD-27042-01, Fig. 1, less option U, for use with No. 1 switchboard ringdown intertoll trunks in the same building. (See Note A.)

List 2—Wiring and equipment per SD-27042-01, Fig. 1, option U only, required in addition to list 1 when building-out capacitors are required.

Note

A. Provide optional wiring as required.

J23066AR—AT&TCo Std—Outgoing Trunk Unit (Tandem)—or Auxiliary Outgoing Trunk Unit (No. 5 Crossbar) MF Pulsing or Automatic 4-Wire Talking

List 1—Assembly, wiring, and equipment per SD-27016-01, Fig. 1, less all options except option S, for one 4-wire talking outgoing trunk circuit. (See Notes A and B.)

List 2—Wiring and equipment per SD-27016-01, option Y wiring and option J of Fig. 1 required in addition to list 1 when office impedance is 900 ohms.

List 3—Wiring and equipment per SD-27016-01, option X wiring and option K of Fig. 1 required in addition to list 1 when office impedance is 1500 ohms.

List 4—Wiring and equipment per SD-27016-01, Fig. 1, option R only, required in addition to list 1 when signaling on phantom.

List 5—Wiring and equipment per SD-27016-01, Fig. 1, option Z only, required in addition to list 1 when building-out capacitor is required.

List 6—Wiring and equipment per SD-27016-01, Fig. 3 required in addition to list 1 when transmission requires use of 1C pad. (See Note C.)

List 7—Wiring and equipment per SD-27016-01, Fig. 1, option B when additional impulse noise filtering is required.

Notes

A. Provide V wiring when signaling on SX leads.

B. Installation force shall provide options M, N, and V wiring at unit terminal strip as required.

C. This unit requires two 89-type plug-in resistors for list 6 per SD-27016-01, Note 102B, and shall be furnished only when specified by the telephone company.

J23066AS—AT&TCo Std—Alarm Transfer Unit

List 1—Framework, assembly, wiring, and common equipment for one unit of one circuit.

	WIRE	EQUIP	NOTES
Alarm Transfer Circuit, SD-27063-01:			
Fig. 1, 2, 5, 9, 18, 21, and 27	1	1	
Fig. 4, 7, 8, 12, 13, 15, 19, 20, 24, and 25	1	0	A&B
Fig. 3	3	0	
Fig. 6 and 23	4	0	
Fig. 14	13	0	
Fig. 11 and 17	20	0	
Fig. 16 and 22, less Option ZE	2	0	

List 2—Equipment per SD-27063-01, Fig. 3 required in addition to list 1 for each floor of equipment associated with one alarm transfer unit (a maximum of three list 2.)

List 3—Equipment per SD-27063-01, Fig. 4 required in addition to list 1 in offices where CAMA is provided.

List 4—Equipment per SD-27063-01, Fig. 6 required in addition to list 1 for each group of eight or less sender link frames served by one alarm transfer unit (a maximum of four list 4) (sender link frames 0 to 31).

List 5—Equipment per SD-27063-01, Fig. 7 required in addition to list 1 in offices equipped with a marker trouble indicator frame.

List 6—Equipment per SD-27063-01, Fig. 8 required in addition to list 1 in offices equipped with a transverter trouble indicator frame.

List 7—Equipment per SD-27063-01, Fig. 11 required in addition to list 1 for each group of ten or less MF, RP, DP, or PCI senders (a maximum of 20 list 7).

List 8—Equipment per SD-27063-01, Fig. 12 required in addition to list 1 in crossbar

tandem offices where power plant alarms are not transmitted by other alarm transfer circuits in other types of offices with the same building.

List 9—Equipment per SD-27063-01, Fig. 13 required in addition to list 1 to provide for the transfer of alarms within the same building.

List 10—Equipment per SD-27063-01, Fig. 14 required in addition to list 1 for each group of ten or less incoming registers provided in an office (a maximum of 13 list 10).

List 11—Equipment per SD-27063-01, Fig. 15 required in addition to list 1 to provide community dial office distinctive alarm signals.

List 12—Equipment per SD-27063-01, Fig. 16 required in addition to list 1 to provide distinctive alarms for ten or less local optional alarm circuits (a maximum of two list 12).

List 13—Equipment per SD-27063-01, Fig. 17 required in addition to list 1 to provide distinctive alarm signals for community dial office and local optional alarms (a maximum of 20 list 13).

List 14—Equipment per SD-27063-01, Fig. 19 required in addition to list 1 in offices equipped with a trouble recorder frame.

List 15—Equipment per SD-27063-01, Fig. 20 required in addition to list 1 where transfer of carrier alarms is required.

List 16—Equipment per SD-27063-01, Fig. 22 required in addition to lists 1 and 15 for every five aisles of carrier equipment whose alarms are to be transferred.

List 17—Equipment per SD-27063-01, Fig. 23 required in addition to lists 1 and 4 for each group of eight or less sender link frames served by one alarm transfer unit (a maximum of four list 17) (sender link frames 32 to 63).

List 18—Equipment per SD-27063-01, Fig. 24 and 25 required in addition to list 1 in offices where traffic service position 100A features are provided.

List 19—Equipment per SD-27063-01, option ZE only to provide for operation with the Billing Data Transmitter (BDT) or CAMA-C (SD-5P000-01).

Notes

A. Wire for Fig. 7 and 8 in offices equipped with trouble indicator frames or for Fig. 19.

B. Equipment per SD-27063-01, Fig. 24, required in addition to list 1 in offices where data transfer circuit is provided and traffic service position features are not provided.

J23066AT—AT&TCo Prov—Outgoing Trunk Unit— Ringdown Signaling to a Distant PBX

List 1—Framework, assembly, wiring, and equipment per SD-27066-01, Fig. 1 for one outgoing trunk arranged for ringdown signaling to a distant PBX.

List 2—Wiring and equipment per SD-27066-01, Fig. 2 required in addition to list 1 when building-out capacitor is specified.

J23066AX—AT&TCo Std — Announcement Connecting Trunk Unit

List 1—Assembly, equipment, and wiring per SD-27047-01, Fig. 1 for a unit of two announcement connecting trunks for connecting calls which cannot be completed to a recorded announcement. (See Note A.)

List 2—Equipment and wiring per SD-27047-01, Fig. 5 required in addition to list 1 to arrange two connecting trunks for a reorder announcement.

Notes

A. Provide optional wiring as required.

B. Loose wiring shall terminate at the front of terminal strips with a gooseneck per Section 800-612-153, Fig. 7.

J23066AY—AT&TCo Std — Announcement Amplifier and Alarm Unit

List 1—Assembly, equipment, and wiring for one announcement amplifier and alarm unit equipped with two circuits per SD-27047-01, Fig. 4 and two KS-16754 L4 amplifiers. (See Notes A and B.)

List 2—Equipment and wiring per SD-27047-01, Fig. 8 required in addition to list 1 when announcement connecting trunks are associated with a multichannel announcing machine for use in toll-type offices. (See Note C.)

Notes

A. List 1 is required for each two types of announcements.

B. Provide optional wiring as required.

C. List 2 is required for MCA, UCA, and VCA announcement groups.

J23066BB—Reserved

J23066BC—Reserved

J23066BD—AT&TCo Std — Announcement Connecting Trunk Unit — For Voice Announcements From No. 1, 3, 3C, or 3CL Toll Switchboard

List 1—Assembly, equipment, and wiring per SD-27047-01, Fig. 6 for a unit of four announcement connecting circuits arranged to provide a maximum of two voice announcements by an attendant at a toll switchboard. (See Note A.)

Note

A. The required announcements are selected at the traffic supervisory cabinet.

J23066BE—AT&TCo Std — Announcement Connecting Trunk Unit — For Voice Announcements From 601 Telephone Set

List 1—Assembly, equipment, and wiring per SD-27047-01, Fig. 7 for a unit of four announcement connecting circuits arranged to provide voice announcement by an attendant at a 601 telephone set. (See Note A.)

Note

A. One circuit is required for each of the following announcements.

1. Misrouted Non-CAMA (MCA)
2. Reorder (ROA)
3. Unauthorized Code (UCA)
4. Vacant Code (VCA)

J23066BF—AT&TCo Std — Tone Amplifier Unit

List 1—Assembly, equipment, and wiring for one tone amplifier unit arranged to provide tone at a low output impedance level, should the announcement signal fall below a satisfactory level equipped with one circuit per SD-27047-01, Fig. 9 and one KS-16754 L4 amplifier. (See Note A.)

Note

A. The tone amplifier unit is required once per office and must be mounted on the same frame with all the announcement amplifier units, J23066AY.

J23066BH—AT&TCo Std—Trunk Identifier Steering Control, Timing, and Register Unit—Four 2- by 23-Inch Mounting Plates—Surface Wired

List 1—Framework, assembly, wiring, and equipment per SD-27077-01, Fig. 2 for one trunk identifier steering control, timing, and register unit.

List 2—Wiring and equipment per SD-27077-01, Fig. 4 required in addition to list 1 when the trunk identifier serves two marker groups with a common trouble indicator or trouble recorder.

Note

A. This unit is ordered as a component part of J23066CL.

J23066BJ—AT&TCo Std—Trunk Identifier Input Unit—Three 2- by 23-Inch Mounting Plates—Surface Wired

List 1—Framework, assembly, wiring, and equipment per SD-27077-01, Fig. 1 for one trunk identifier input unit.

List 2—Wiring and equipment per SD-27077-01, Fig. 5 required in addition to list 1 when the trunk identifier serves two marker groups with a common trouble indicator or trouble recorder.

Note

A. This unit is ordered as a component part of J23066CL.

J23066BK—AT&TCo Std—Trunk Identifier Power Supply Unit—One 2- by 23-Inch Mounting Plate and One 6- by 23-Inch Mounting Plate—Surface Wired

List 1—Framework, assembly, wiring, and equipment per SD-27077-01, Fig. 3 for one trunk identifier power supply unit.

List 2—Wiring and equipment per SD-27077-01, Fig. 6, required in addition to list 1 when the trunk identifier is arranged to function with two incoming trunk test frames (SD-25161-01).

Note

A. This unit is ordered as a component part of J23066CL.

J23066BM—AT&TCo Std—Outgoing Auxiliary Trunk Unit—For Use With Toll Switchboard Trunk Circuit in Same Building—For Converting E and M Lead Supervision to Reverse Battery Supervision

List 1—Assembly, wiring, and equipment for one auxiliary trunk per SD-27710-01, Fig. 1 less option Z for use with toll switchboard trunk circuit in same building. (See Note A.)

List 2—Equipment and wiring per SD-27710-01, Fig. 1, option Z only, required in addition to list 1 when building-out capacitor is required.

Note

A. Provide option Y when power plant of associated switchboard trunk circuit is not the same as this unit.

J23066BN—AT&TCo Std—Synchronous Test Line for Testing Incoming Trunks

List 1—Assembly, wiring, and equipment per SD-27149-01, Fig. 1 and 2, for two synchronous test lines.

J23066BP—AT&TCo Std—Alarm Transfer Subunit

List 1—Assembly, wiring, and equipment per SD-27063-01 two Fig. 26 to provide alarm transfer features for the first 20 incoming registers in offices equipped with more than 130 registers.

List 2—Wiring and equipment per SD-27063-01, Fig. 26 for each group of 10 or less incoming registers (a maximum of 15 list 2).

J23066BR—AT&TCo Std — Tandem Office Outgoing Trunk Unit—Dial Pulsing or MF Pulsing—E and M Lead Supervision With or Without Rering

List 1—Assembly, wiring, and equipment for an outgoing trunk unit of two trunks arranged for dial pulsing per SD-27051-01, two Fig. 1 and 2.

List 2—Assembly, wiring, and equipment for an outgoing trunk unit of two trunks arranged for MF pulsing per SD-27051-01, two Fig. 1.

List 3—Wiring and equipment per SD-27051-01, two Fig. 3 required in addition to list 1 or 2 when rering is specified.

List 5—Wiring and equipment per SD-27051-01, Fig. 5 required in addition to list 1 or 2 when trunk unit is associated with 17B toll testboard.

List 6—Wiring and equipment per SD-27051-01, two Fig. 6 required in addition to list 1 or 2 when building-out capacitors are specified.

J23066BT—AT&TCo Std—No. 1 Crossbar Line Unit—Line Link Pulsing—Automatic Intercept Service—Reverse Battery Supervision

List 1—Assembly, equipment, and wiring for one line unit arranged and equipped for two line circuits per SD-27750-01, two Fig. 1.

J23066BU—AT&TCo Std—No. 1 Crossbar—Line Unit—Line Link Pulsing—Automatic Intercept Service— E and M Lead Supervision

List 1—Assembly, equipment, and wiring for a unit of two line circuits per SD-27751-01, two Fig. 1 arranged for line link pulsing, automatic intercept service, and E and M lead supervision.

J23066BW—AT&TCo Std—No. 1 Crossbar—Line Unit—Line Link Pulsing—Direct Inward Dialing— Reverse Battery Supervision

List 1—Assembly, equipment, and wiring for one line unit arranged and equipped for four line circuits per SD-27752-01, four Fig. 1 and two Fig. 2.

J23066BY—AT&TCo Std — Tandem Office Outgoing Trunk Unit—Multifrequency Pulsing—E and M Lead Supervision Without Rering (See Note A.)

List 1—Assembly, wiring, and equipment for an outgoing trunk unit of two trunks arranged for MF pulsing without rering per SD-27051-01, two Fig. 1 and 4.

List 2—Wiring and equipment per SD-27051-01, two Fig. 6, required in addition to list 1 when building-out capacitors are specified.

Note

A. When rering and/or connection to 17B toll testboard is required use J23066BR.

J23066CA—AT&TCo Std—No. 1 Crossbar Outgoing Sender Group Busy and Alarm Relay Unit

List 1—Assembly, wiring, and equipment for one outgoing sender group busy and alarm relay unit per SD-27763-01, Fig. 1 and 4. (See Note A.)

List 2—Wiring and equipment required in addition to list 1 for each DP outgoing sender group (0 through 5) served, per SD-27763-01, Fig. 2 (a maximum of five or six list 2). (See list 3 and Note B.)

List 3—Wiring and equipment required in addition to list 1 for one MF outgoing sender group per SD-27763-01, Fig. 5 (one list 3 with a maximum of five list 2.)

Notes

A. Provide wiring per SD-27763-01, option Z in addition to list 1 when alarm transfer is not required.

B. This unit is arranged to serve five DP and one MF outgoing sender groups or six DP outgoing sender groups.

J23066CB—AT&TCo Std—No. 1 Crossbar—Outgoing Sender DP Group Busy Control Relay Unit (See Note A.)

List 1—Assembly, wiring, and equipment for one outgoing sender DP group busy control relay unit to serve one DP sender group and 276 LLP—DP line circuits per SD-27763-01, Fig. 6 and 12 Fig. 3 (arranged for 400 line circuits and 18 Fig. 3).

List 2—Wiring and equipment required in addition to list 1 to serve 23 additional line circuits for the DP sender group per SD-27763-01, Fig. 3 (a maximum of six list 2 per unit). (See Note B.)

Note

A. This unit must be mounted on the same bay with its associated unit J23066CA.

B. A total of 400 line circuits may be associated with each unit. The last relay provided by list 2 has only nine (not 23) line circuits associated with it.

J23066CC—AT&TCo Std—Crossbar No. 1, 2-Way Line Unit—Line Link Pulsing With Direct Inward Dialing Service

List 1—Assembly, wiring, and equipment for one 2-way line unit, line link pulsing with inward dialing service per SD-27753-01, Fig. 1 and SD-94820-01, Fig. 2.

Notes

A. This unit should be located with other line units used for line link pulsing on the same or adjacent relay rack frames.

B. Office wiring records need not be maintained for options W, X, Y, and Z.

J23066CD—AT&TCo Std — Tandem Office Auxiliary Intertoll Trunk Unit— For Emergency Access to Intertoll Trunk From Outgoing Trunk Circuit—At Toll Switchboard No. 2, 3, 3C, or 3CL

List 1—Assembly, wiring, and equipment for one emergency access trunk unit per SD-27807-01, Fig. 1, less options X and Y and Fig. 3.
List 2—Equipment per SD-27807-01, Fig. 1, option Y only, required in addition to list 1 when capacitor is across A and B leads in tandem trunk circuit.
List 3—Equipment per SD-27807-01, Fig. 1, option X only, required in addition to list 1 when a building-out capacitor is specified.

J23066CE—AT&TCo Std—No. 1 Crossbar— Sub RC Trunk Unit— E and M Lead Supervision Noncoin 2-Wire OGT to Toll Office Arranged to Recall Subscriber

List 1—Assembly, wiring, and equipment for one sub RC trunk unit, arranged and equipped for two trunk circuits, per SD-27877-01, two Fig. 1 and SD-94820-01, two Fig. 2. (See Notes A and B.)

Notes

A. The MR resistance lamp per SD-27877-01, Fig. 2, shall be located on the miscellaneous fuse bay on a 1- per-60 trunk circuit basis.

B. The R resistance lamp per SD-27877-01, Fig. 3, shall be located on the miscellaneous fuse bay on a 1- per-5 trunk circuit basis. Five R resistance lamps are common to one 105-volt battery.

J23066CF—AT&TCo Std—No. 1 Crossbar Outgoing Trunk Unit—ANI with LAMA—MF Pulsing — Operator Assistance or Special Toll— Noncoin—High-Low or E and M Supervision

List 1—Assembly, common equipment, and wiring for one trunk unit per SD-27815-01, Fig. 1. (See Notes C and D.)
List 2—Equipment and wiring per SD-27815-01, Fig. 3 option V required when high-low supervision is required.
List 3—Equipment and wiring per SD-27815-01, Fig. 4 and SD-94820-01, Fig. 2 required when E and M supervision is required. (See Note D.)

Notes

A. Reserved.

B. Job records need not be maintained for options W, X, Y, and Z.

C. Resistance lamp per SD-27815-01, Fig. 2 shall be located on the miscellaneous fuse bay.

D. The signaling on this trunk is convertible from high-low supervision to E and M supervision. When conversion is desired by the telephone company on a job where the trunk was initially installed with high-low supervision, the top mounting plate containing the supervisory apparatus must be replaced. The replacing plate shall be the top plate on J23066CF-( ), equipped and stamped by the shop per the applicable lists on the equipment drawing.

J23066CG—AT&TCo Std—No. 1 Crossbar Outgoing Trunk Unit—MF Pulsing— ANI with LAMA— Operator Assistance or Special Toll— Coin— High-Low or E and M Supervision to TSP or to TSPS

List 1—Assembly, equipment, and wiring for one trunk unit per SD-27816-01, Fig. 1. (See Notes C and D.)
List 2—Equipment and wiring per SD-27816-01, Fig. 3 option R required in addition to

list 1 when high-low supervision is required.

List 3—Equipment and wiring per SD-27816-01, Fig. 4 and SD-94820-01, Fig. 2 required in addition to list 1 when E and M supervision is required. (See Note E.)

List 4—Equipment and wiring per SD-27816-01, Fig. 5 required in addition to list 1 when either dial-tone-first or initial coin deposit returned automatically or both types of coin service improvement features are required. (See Note A.)

List 5—Equipment and wiring per SD-27816-01, Fig. 6 required in addition to list 4 when dial-tone-first operation is required. (See Note F.)

Notes

A. In addition there are SD-27816-01 options involving wiring only as follows:

(1) Option W required in addition to lists 3 and 4 when initial coin deposit is to be returned automatically and E and M signaling is required.

(2) Option Y required in addition to lists 3 and 4 when initial coin return deposit automatic feature is not required.

(3) Option T required in addition to list 2 when trunks are used for access to a traffic service position (TSP) in crossbar tandem.

(4) Option S required in addition to list 2 when trunks are used for access to a Traffic Service Position System (TSPS).

B. Job records need not be maintained for options Q, R, X, Y, and Z.

C. Resistance lamp per SD-27816-01, Fig. 2 shall be located on the miscellaneous fuse bay.

D. The signaling on this trunk is convertible from high-low supervision to E and M supervision. When conversion is desired by the telephone company on a job where the trunk was initially installed with high-low supervision, the top mounting plate containing the supervisory apparatus must be replaced. The replacing plate shall be the top plate on J23066CG-( ), equipped and stamped by the shop per the applicable lists on the equipment drawing. This plate plus wiring shall be shipped to the installation force for conversion.

E. When list 3 is used, provide one dial channel record unit per J23058AJ-( ) for each trunk circuit.

F. Resistance lamp per SD-27816-01, Fig. 7, shall be provided once per each list 5 and located on the miscellaneous fuse bay.

J23066CH—AT&TCo Std—No. 1 Crossbar—Coin Service Applique Unit

List 1—Assembly, wiring, and equipment for one coin service applique unit, per SD-27886-01, Fig. 1, for each incoming trunk served. (See Notes B and C.)

Notes

A. Reserved.

B. Resistance lamp RB per SD-27886-01, Fig. 2, shall be located on the miscellaneous fuse bay, one per five list 1.

C. Resistance lamp(s) per SD-27886-01, Fig. 3, shall be located on the miscellaneous fuse bay, one per list 1.

J23066CJ—AT&TCo Std — Tandem Office Dynamic Overload Control Unit

List 1—Assembly, wiring, and equipment per SD-27737-01, Fig. 1 for one dynamic overload control unit.

Note

A. The J23066CJ unit is required in crossbar tandem offices to receive signals generated by traffic control equipment in an office of higher priority. The dynamic overload control unit may be arranged for operation with the 43A1 telegraph facility, 4-wire loop closure, 4-wire battery and ground signaling, and 2-wire battery and ground signaling on a cross-connect basis. The J23066CJ unit replaces the J23066BS unit which is rated Mfr Disc.

J23066CK—AT&TCo Std—Channel Identification Unit

List 1—Assembly, wiring, and equipment per SD-27077-01, Fig. 7, for one channel identification unit. (See Notes A and B.)

List 2—Wiring and equipment per SD-27077-01, Fig. 8, required in addition to list 1 for channel identification with two marker groups and no auxiliary recorder control circuit provided.

List 3—A&M Only—TS(L) and wiring required in addition to list 1 when this unit is used with the J23066BG trunk identifier unit. (See Note B.)

Notes

A. This unit is ordered as a component part of J23066CL.

B. When this unit is provided in addition to the J23066BG trunk identifier (Mfr Disc.), locate on the miscellaneous relay rack and provide wiring and equipment per list 3.

J23066CL—AT&TCo Std — Trunk Identifier Unit With Channel Identification For Crossbar Tandem Office Outgoing Trunks

List 1—Framework, assembly, wiring, and equipment for one trunk identifier unit.

	WIRE	EQUIP	NOTES
Trunk Identifier Ckt, SD-27077-01: Fig. 1, 2, 3, and 7	1	0	
Trunk Ident Steering, Control, Timing, and Register Unit J23066BH,L1	0	1	
Trunk Ident Input Unit J23066BJ,L1	0	1	
J23066CK,L1	0	1	

List 2—Wiring and equipment required in addition to list 1 when trunk identifier serves two marker groups with a common trouble indicator or trouble recorder per J23066BH,L2 or J23066BJ,L2.

List 3—Wiring and equipment required in addition to list 1 when the trunk identifier is arranged to function with two incoming trunk test frames (SD-25161-01) per J23066BK,L2.

List 4—Wiring and equipment required in addition to list 2 for channel identification with two marker groups and no auxiliary recorder control circuit provided.

Notes

A. The unit cable shall include all interunit wiring.

B. Provide 110 Vac appliance outlet similar to ED-81770-10, Fig. 8 or 9, and 11.

J23066CM—AT&TCo Std—Crossbar Systems No. 1, Voice Alarm Unit

List 1—Assembly, wiring, and equipment per SD-27984-01, Fig. 1, for one voice alarm unit.

List 2—Equipment and wiring per SD-27984-01 Fig. 2 required in addition to list 1 when automatic group busy for voice or cut-through failure is provided in announcement trunks.

Notes

A. Wiring per SD-27984-01, option Y is required for alarm transfer. Provide Z wiring when alarm transfer is not required.

B. Wiring per SD-27984-01, option X is required when alarms lock in after operation and require manual reset. This only functions when office is attended.

C. The 303E relay mounted in position 8 of the unit extends 1-3/8 inches into mounting space of the plate directly above. For this reason, it is required that any plate mounted adjacent to, and above, this unit be free of apparatus for the first 2-3/4 inches as measured from the left end of that plate.

J23066CN—AT&TCo Std—Crossbar Systems No. 1 Announcement Trunk Unit

List 1—Assembly, wiring, and equipment per SD-27985-01, Fig. 1, for one announcement trunk unit.

List 2—Equipment and wiring required in addition to list 1 when this circuit connects into a 7A (A&M Only) or 13A Announcement System per SD-27985-01, Fig. 2, (only one list 2 is required per 100 list 1s)—1st, 101st, 201st—etc, trunk.

List 3—Apparatus and wiring required in addition to list 1 when this trunk connects into a 7A (A&M Only) or 13A Announcement System per SD-27985-01, option Y. (See Notes B and E.)

List 4—Apparatus and wiring required in addition to each ten list 3 (2nd, 12th, 22nd, etc, trunks) when automatic group busy for voice or cut-through failure is required per SD-27985-01, Fig. 3. (See Notes B and D.)

List 5—Apparatus and wiring required in addition to list 4 for the second trunks only, per SD-27985-01, option V.

List 6—Apparatus and wiring required in addition to list 4 for the twelfth trunk only per SD-27985-01, option T. (See Note C.)

List 7—Apparatus and wiring required in addition to the third list 3 (third trunk of group associated with a 13A announcement system channel) per SD-27985-01, Fig. 4.

Notes

A. Wiring per SD-27985-01, option Z required in addition to list 1 for trunk that connects into 6A Announcement System.

B. The X wiring is required in addition to list 3 when list 4 is not provided.

C. The S wiring is required in addition to list 4 for the 22nd, 32nd, 42nd, etc trunks.

D. The W wiring is required in addition to list 3 when automatic group busy for voice or cut-through failure is required.

E. Wiring required in addition to list 3 to provide option R (A&M Only) for 7A announcement system or provide option Q for 13A announcement system.

J23066CP—AT&TCo Std—Remote CAMA Position Outgoing Trunk Unit— Arranged to Convert MF Keypulsing from Distant Offices to DC Keypulsing for Operation With Senders Arranged for DCKP—Trunk Outgoing Side Arranged for 2-Wire Loop Signaling

List 1—Framework, assembly, wiring, and equipment per SD-28034-01, App Fig. 1 and 2 for one 2-wire trunk circuit. (See Note A.)

Note

A. One MF receiver must be provided for each trunk.

J23066CR—AT&TCo Std—Remote CAMA Position Outgoing Trunk Unit— Arranged to Convert MF Keypulsing from Distant Offices to DC Keypulsing for Operation with Senders Arranged for DCKP—Trunk Outgoing Side Arranged for 600-Ohm 4-Wire E and M Signaling

List 1—Framework, assembly, wiring, and equipment per SD-28034-01, App Fig. 1 and 3 for one 4-wire trunk circuit. (See Note A.)

Note

A. One MF receiver must be provided for each trunk.

J23066CS—AT&TCo Std—Free Trunk to 911 Emergency Bureau

List 1—Assembly, wiring, and equipment per SD-28072-01, App Fig. 1, for one 2-wire outgoing trunk circuit to 911 emergency bureau. (See Note A.)

Note

A. Repeating coil shall be furnished in accordance with Circuit Note 105 of SD-28072-01.

J23066CT—AT&TCo Std—No. 1 Crossbar Make-Busy and Alarm Unit for Maintenance Data Transmitter Circuit

List 1—Assembly, wiring, and equipment for one make-busy and alarm unit per SD-28110-01, Fig. 1. (See Notes A through E.)

List 2—Wiring and equipment required in addition to list 1 to provide alarms for keyboard printer 1, per SD-28110-01 option X. (See Note B.)

Notes

A. Provide optional wiring for:

(1) Option Z when alarm transfer is not required.

(2) Option Y when alarm transfer is required.

B. Keyboard printer alarm equipment is provided in lists 1 and 2; however, exception report and alarm lamps RALO and RAL1 must be located remote from this unit, near their respective keyboard printers on a job basis.

C. For automatic trouble analysis in No. 1 crossbar and related requirements see notes on SD-28110-01, No. 1 crossbar maintenance data transmitter circuit.

D. For associated trouble indicator concentrator units see J23066CU, CV, and CW.

E. The preferred location for this unit is 2 inches above the associated programmable scanner distributor unit per J99379A.

F. Two data set mounting shelves may be provided for up to two data sets, each shelf for 103 and 108 type data sets and associated equipment, and they may be located near the PSD unit per J99379A.

J23066CU—AT&TCo Std—No. 1 Crossbar A-Trouble Indicator Concentrator Unit for Maintenance Data Transmitter Circuit

List 1—Assembly, wiring, and equipment for A-trouble indicator concentrator unit per SD-28110-01 Fig. 2, 3 and option W provides concentration for one originating trouble indicator and one terminating trouble indicator 0.

List 2—Wiring and apparatus SD-28110-01 Fig. 3 option N only required, in addition to list 1, when automatic intercept service without line link pulsing is required.

Note

A. This unit is cabled to the programmable scanner distributor unit (J99379A) using connectorized switchboard cable.

J23066CV—AT&TCo Std—No. 1 Crossbar B-Trouble Indicator Concentrator Unit for Maintenance Data Transmitter Circuit

List 1—Assembly, wiring, and equipment for one B-trouble indicator concentrator unit, arranged but not equipped for concentration for one ANI-trouble ticketer, one stuck sender trunk identification system, one code compressor trouble indicator and one controller trouble indicator.

List 2—Wiring and equipment required in addition to list 1, to equip for one anti-trouble ticketer concentration per SD-28110-01, Fig. 4.

List 3—Wiring and equipment required in addition to list 1, to equip for one stuck sender trunk identification system concentration per SD-28110-01, Fig. 5.

List 4—Wiring and equipment required in addition to list 1, to equip for one code compressor trouble indicator concentration per SD-28110-01, Fig. 8.

List 5—Wiring and equipment required in addition to list 1, to equip for one controller trouble indicator concentration per SD-28110-01, Fig. 9.

J23066CW—AT&TCo Std—No. 1 Crossbar C-Trouble Indicator Concentrator Unit for Maintenance Data Transmitter Circuit

List 1—Assembly, wiring, and equipment for one C-trouble indicator concentrator unit arranged for concentration for two terminating trouble indicators and equipped for terminating trouble indicator-1, per SD-28110-01, Fig. 6 option V.

List 2—Wiring and equipment required in addition to list 1, to equip for one terminat-

ing trouble indicator-2 concentration, per SD-28110-01, Fig. 7 options W and V.

List 3—Wiring and apparatus per option N in Fig. 6 required in addition to list 1, when automatic intercept service without line link pulsing is required.

List 4—Wiring and apparatus per option N in Fig. 7 required, in addition to list 2, when automatic intercept service without line link pulsing is required.

J23066CX—AT&TCo Std—Crossbar Systems No. 1 — Telecommunications Alarm Surveillance and Control (TASC) System Control Unit

List 1—Assembly, wiring, and equipment for one TASC alarm release and control unit per SD-28119-01, Fig. 1.

J23066CY—AT&TCo Std—Crossbar Systems No. 1 — TASC Alarm Release Break to Ground Unit

List 1—Assembly, wiring, and equipment for one TASC alarm release break to ground unit per SD-28119-01, Fig. 5 arranged for 120 break to ground leads and equipped for 24 break to ground leads. (Circuits 1 to 24.)

List 2—Wiring and equipment required in addition to list 1 to equip for each additional 24 break to ground leads per SD-28119-01, Fig. 5 (maximum 4 list 2).

First list 2 — circuits 25-48
Second list 2 — circuits 49-72
Third list 2 — circuits 73-96
Fourth list 2 — circuits 97-120

Note

A. Switchboard cable for circuits 1 through 40 shall come down the left upright. All other switchboard cable shall come down the right upright.

J23066CZ—AT&TCo Std—Crossbar Systems No. 1 — TASC Alarm Release Make to Ground Unit

List 1—Assembly, wiring, and equipment for one TASC alarm make to ground unit per SD-28119-01,Fig. 6 arranged for 120 make to ground leads and equipped for 24 make to ground leads. (Circuits 1 through 24.)

List 2—Wiring and equipment required in addition to list 1 to equip for each additional 24 make to ground leads per SD-28119-01, Fig. 6 (maximum 4 list 2).

First list 2 — circuits 25-48
Second list 2 — circuits 49-72
Third list 2 — circuits 73-96
Fourth list 2 — circuits 97-120

Note

A. Switchboard cable for circuits 1 through 40 shall come down the left upright. All other switchboard cable shall come down the right upright.

J23066DA—AT&TCo Std—Crossbar Systems No. 1 — TASC Alarm Release Loop Break Unit

List 1—Assembly, wiring, and equipment for one TASC alarm release loop break unit per SD-28119-01, Fig. 7 arranged for circuits 1 through 96 and equipped for circuits 1 through 24.

List 2—Wiring and equipment required in addition to list 1 to equip for each additional 24 circuits per SD-28119-01, Fig. 7 (maximum 3 list 2).

First list 2 — circuits 25-48
Second list 2 — circuits 49-72
Third list 2 — circuits 73-96

Note

A. Switchboard cable for circuits 1 through 48 shall come down the left upright. All other switchboard cable shall come down the right upright.

J23066DB—AT&TCo Std—Crossbar Systems No. 1—TASC Release Unit for Wire Spring Subscriber Senders and Flat Spring Subscriber Senders Not Equipped for TOUCH-TONE® in Offices Not Equipped for Stuck Sender Trunk Identification

List 1—Assembly, wiring, and equipment for one TASC release unit per SD-28119-01, Fig. 3, arranged for circuits 1 through 96 and equipped for circuits 1 through 24 for wire spring subscriber senders and for flat spring subscriber senders not equipped for TOUCH-TONE in offices not equipped for stuck sender trunk identification.

List 2—Wiring and equipment required in addition to list 1 to equip for each additional 24 subscriber senders per SD-28119-01, Fig. 3 (maximum 3 list 2).

First list 2 — circuits 25-48
Second list 2 — circuits 49-72
Third list 2 — circuits 73-96

Notes

A. Switchboard cable for circuits 1 through 48 shall come down the left upright. All other switchboard cable shall come down the right upright.

B. Separate units must be furnished for each originating marker group and all subscriber senders assigned to a unit must be associated with the same originating marker group.

J23066DD—AT&TCo Std—Crossbar Systems No. 1 — TASC Alarm Release Loop Make Unit

List 1—Assembly, wiring, and equipment for one TASC alarm release loop make unit per SD-28119-01 Fig. 8, arranged for circuits 1 through 96 and equipped for circuits 1 through 24.

List 2—Wiring and equipment required in addition to list 1 to equip for each additional 24 circuits per SD-28119-01, Fig. 8 (maximum 3 list 2).

First list 2 — circuits 25-48
Second list 2 — circuits 49-72
Third list 2 — circuits 73-96

Note

A. Switchboard cable for circuits 1 through 48 shall come down the left upright. All other switchboard cable shall come down the right upright.

J23066DE—AT&TCo Std—Crossbar Systems No. 1—TASC Mode Signal Unit

List 1—Assembly, wiring, and equipment for one TASC mode signal unit arranged for 48 make loop signals and 48 break loop signals and equipped for 24 break loop signals per SD-28119-01, Fig. 9. (Circuits 1-24.)

List 2—Wiring and equipment required in addition to list 1 to equip for 24 additional break loop signals per SD-28119-01, Fig. 9. (Circuits 25-48.)

List 3—Wiring and equipment required in addition to list 1 to equip for 24 make loop signals per SD-28119-01 (maximum 2 list 3).

First list 2 — circuits 1-24
Second list 3 — circuits 25-48

Note

A. Switchboard cable for break loop circuits shall come down the left upright. Switchboard cable for make loop circuits shall come down the right upright.

J23066DF—AT&TCo Std—Crossbar Systems No. 1—TASC Release Unit for Flat Spring Subscriber Senders Equipped for TOUCH-TONE in Offices Not Equipped for Stuck Sender Trunk Identification

List 1—Assembly, wiring, and equipment for one TASC release unit per SD-28119-01, App Fig. 12 for flat spring subscriber senders equipped for TOUCH-TONE in the first originating marker group in an office not equipped for stuck sender trunk identification.

List 2—Wiring and equipment required in addition to list 1 to equip a second SD-28119-01, App Fig. 12 for flat spring subscriber senders equipped for TOUCH-TONE in the second originating marker group in an office not equipped for stuck sender trunk identification.

List 3—Wiring and equipment required in addition to list 1 to equip a third SD-28119-01, App Fig. 12 for flat spring subscriber senders equipped for TOUCH-TONE in the third originating marker group in an office not equipped for stuck sender trunk identification.

J23066DG—AT&TCo Std—Crossbar Systems No. 1 TASC Alarm Release for Line Links and Terminating Sender Links

List 1—Assembly, wiring, and equipment for a TASC alarm release unit, per SD-28119-01, Fig. 13, for line links and terminating sender links for one terminating marker group.

List 2—Wiring and equipment per SD-28119-01, Fig. 13, required, in addition to list 1, for a second terminating marker group.

Note

A. A maximum of two units per TASC system is required. The first unit serves the first and second terminating marker groups, and the second unit serves the third and fourth terminating marker groups.

J23066DH—AT&TCo Std — Interface and Control Unit for Telecommunications Alarm Surveillance and Control System (TASC) for Crossbar Tandem

List 1—Assembly, wiring, and equipment per SD-28121-01, for interface and control unit to interface between crossbar tandem and the TASC central. (See Notes A and C.)

	WIRE	EQUIP	NOTES
SD-28121-01:			
Fig. 1, 2, 4, 5, 6, 7, 8, 9	1	1	
Count Accumulation, Fig. 3	1	0	B
AMA Record Central, Fig. 10	1	0	

List 2—Equipment per SD-28121-01, Fig. 3 required in addition to list 1, to provide unit with one tens counter for count accumulation on either marker peg count, transverter peg count or on COMAS ineffective attempts (maximum 21 list 2). (See Notes A and B.)

List 3—Equipment per SD-28121-01, Fig. 10 required in addition to list 1 to arrange unit with make-busy control of AMA recorders.

Notes

A. The TASC unit, which occupies the space of 15 mounting plates, shall be mounted on the relay rack at a height convenient to read the counters.

B. The counters provided in list 2 are assigned as required (one per marker maximum 8; one per transverter maximum 12; one per COMAS system maximum 1).

C. It is recommended that the remote E2A units be mounted on the same frame as the TASC interface unit.

J23066DJ—AT&TCo Std—Verification Network Outgoing Trunk Unit

List 1—Assembly, wiring, and equipment for one verification network outgoing trunk unit per SD-28127-01, Fig. 1.

List 2—Apparatus per SD-28127-01, Fig. 2, required in addition to list 1, to equip unit for two verification network outgoing trunk circuits (maximum 5, list 2).

J23066DK—AT&TCo Std—Progression Test Control and Test Unit for Maintenance Data Transmitter

List 1—Assembly, wiring, and equipment for one A-progression test control and connector concentrator unit arranged for ten test frames per SD-28110-01, Fig. 12. (See Note A.)

List 2—Wiring and equipment required for the first outsender test frame, per SD-28110-01, Fig. 13 and 15.

List 3—Wiring and equipment required in addition to list 2 for the second outsender test frame per SD-28110-01, Fig. 15.

List 4—Wiring and equipment required for the first terminating sender test frame per SD-28110-01, Fig. 15. (See Note A.)

List 5—Wiring and equipment required for the first outpulser-identifier trunk test frame per SD-28110-01, Fig. 15. (See Note A.)

List 6—Wiring and equipment required in addition to list 1 when list 4 or list 5 is specified per SD-28110-01, Fig. 13.

List 7—Wiring and equipment required for the first zone registration test frame per SD-28110-01, Fig. 13 and Fig. 14.

List 8—Wiring and equipment required in addition to list 7 for the second zone registration test frame per SD-28110-01, Fig. 15. (See Note A.)

List 9—Wiring and equipment required for the first incoming trunk test frame per SD-28110-01, Fig. 13 and 14.

List 10—Wiring and equipment required in addition to list 9 for the second incoming trunk test frame per SD-28110-01, Fig. 14.

List 11—Wiring and equipment required for the first district junctor test frame per SD-28110-01, Fig. 13 and 14.

List 12—Wiring and equipment required in addition to list 11 for the second district junctor test frame per SD-28110-01, Fig. 14.

Note

A. The B-PTCC concentrator unit J23066DL-( ) shall be provided for the third and fourth zone registration test frames or the second terminating sender test frame or the second outpulser-identifier trunk test frame.

J23066DL—AT&TCo Std—Auxiliary Progression Test Control and Test Unit for Maintenance Data Transmitter

List 1—Assembly, wiring, and equipment for one B-progression test control and connector concentrator unit arranged for four test frames per SD-28110-01, Fig. 16. (See Note A.)

List 2—Wiring and equipment required for the third zone registration test frame per SD-28110-01, Fig. 13 and 15.

List 3—Wiring and equipment required in addition to list 2 for the fourth zone registration test frame, per SD-28110-01, Fig. 15.

List 4—Wiring and equipment required for the second terminating sender test frame per SD-28110-01, Fig. 15.

List 5—Wiring and equipment required for the second outpulser-identifier trunk test frame per SD-28110-01, Fig. 15.

List 6—Wiring and equipment required in addition to list 1 when list 4 or list 5 is specified per SD-28110-01, Fig. 13.

Note

A. The A- progression test control and connector concentrator unit J23066DK-( ) must be equipped when this unit is arranged.

J23066DN—AT&TCo Std—Verification Network Positive Supply Unit

List 1—Assembly, wiring, equipment, and apparatus for one verification network positive supply unit per SD-28128-01, App Fig. 1. (See Notes A and B.)

Notes

A. For thermal considerations it is recommended that this unit be located as close to the top of the frame as possible and that a minimim of two inches above and below the unit be free of equipment.

B. Equip So-Sq fuses as required.

J23066DP—AT&TCo Std — Reorder Announcement Time-Out Unit

List 1—Assembly, wiring, and equipment per SD-27047-01, Fig. 11, to provide alarm cut-off feature for ROA time out.

5. GENERAL NOTES AND INDEXES

5.01 The method of mounting the various units as well as the miscellaneous equipment is shown on ED-92224-10 and ED-92224-11. In the location of equipment on the relay rack, as far as practical, like equipment should be located in the same adjacent bays.

5.02 Test posts, test jacks, and telephone jacks per SD-25440-01 will be mounted in accordance with ED-92649-10 usually on an added or existing mounting plate, approximately 6 feet from the floor. This equipment should be at the right end of the plate, the remainder of the plate being available for miscellaneous equipment. It should be furnished in alternate bays, starting with the second bay of the lineup. Test posts may be located in spare position of 230 or similar jack mounting when available by using sleeves per ED-91210-55, Fig. 1.

5.03 Fuse alarm resistances per SD-25048-01 will be located on the fuse panels.

5.04 Battery leads will be run in switchboard cable from the relay rack equipment to the associated fuse panels. In general, it will be desirable to have one cable form over a number of relay rack units in the same bay.

5.05 All the cross-connections will be made on the horizontal side of the main distributing frame, as indicated on the crossbar system circuits listed herein, unless otherwise specified. Wherever panel system circuits are used in the crossbar office showing cross-connections on either side of the intermediate distributing frame or other distributing frames, they will be interpreted as the horizontal side of the main distributing frame, unless otherwise specified. Where existing equipment, terminated on distributing frames other than main distributing frame, is to be cross-connected, the crossbar equipment tie cable will be provided when necessary.

5.06 The relay equipment units contained herein are arranged for mounting on relay racks drilled and tapped for 2-inch plates. However, when necessary, these units may be mounted on relay racks drilled and tapped for 1-3/4 inch plates as shown on ED-92242-01.

5.07 The auxiliary trunks covered by J23066M and J23066T are required with trunks from manual offices to convert reverse battery supervision of the crossbar incoming trunks to high-low supervision of the manual trunks. When the trunks in the manual office are already arranged for reverse battery supervision, these auxiliary trunks are not required. Test jacks per SD-25440-01, Fig. 2, 3, and 4 are furnished on alternate bays of the equipment using the mounting shown on ED-92649-10, Fig. 1 and sketch AA. Where the auxiliary trunks are associated with MF pulsing incoming trunks, and provision is made for testing them with the wagon-type incoming trunk test set, it is necessary to terminate the MF supply at the relay rack so it can be patched to the test wagon. This requires the use of an H.B. Jones socket per SD-25440-01, Fig. 7, which is mounted as shown on ED-92649-10, Fig. 1 on an added or existing mounting plate approximately 6 feet 0 inch from the floor. The socket would be mounted at the left end of the mounting plate leaving the remainder of the plate available for other miscellaneous equipment, such as the test posts, etc, referred to in paragraph 5.02. The MF current supply socket is furnished in alternate bays or in the middle bay of three bays having auxiliary trunks associated with MF pulsing incoming trunks. The auxiliary trunk units, J23066M and J23066T, include facilities for grouping the individual PB leads. A set of 12 leads from the traffic register relay rack is terminated on a separate terminal strip on the auxiliary trunk unit and multipled to the other units or as specified. Terminated on the same terminal strip are the individual PB leads from the ten trunks of the unit. The individual PB punchings are strapped together by trunk groups within the unit, and then strapped to one or more of the 12 common leads for grouping to trunks on other units and for connection to the traffic register circuit. On alternate relay rack bays or on the middle bay of 3-in-1 line having pushbutton converter jacks, provide a remote control jack for the originating sender test frame per SD-25440-01, Fig. 9 using the mounting shown on ED-92649-10,GR9. On alternate relay rack bays or on the middle bay of 3-in-1 line having LAMA-ANI special toll trunk units for No. 1 crossbar office only, provide a LAMA-ANI trunk test circuit voltage supply receptacle.

Location of Fuses for Relay Rack Equipment

5.08 Fuses associated with relay rack equipment will be located on fuse panels mounted on angle relay rack-type fuse bays per J97033. These bays will, in general, be grouped in a convenient location at the main cross-aisle end of alternate lineups of relay rack over ten bays long, or on an every third lineup for less

than ten bays in ultimate length. For cases where one or two bays of relay equipment are used to fill out rows of crossbar frames, a common fuse bay will be provided in a convenient location for a group of relay rack bays.

5.09 Where relay racks are located on more than one floor, fuse bays will be provided on each floor, all equipment on one floor to be fused on that floor.

5.10 Fuse panels will be arranged with talking battery at the bottom with voltages increasing toward the top of the bay.

5.11 Resistance lamps which are required for coin battery, ringing, etc, will be located on mounting plates at the top of the bay in which their associated fuses are located. Spare space between the ultimate fuse and lamp requirements may be used on relay rack units or miscellaneous relay equipment.

5.12 All ringing and coin control circuits shall be fused with 35-type fuses which have their fuse wire protected by a porcelain tube: that is, 35J, 35K, etc.

Cabling

5.13 The methods of running switchboard cables to the equipment listed in this specification are shown on ED-92224-10 and ED-92224-11. In accordance with general standard practices, large switchboard cables serving convenient numbers of circuits or units in the same bay shall be used.

5.14 In general, 24-gauge cables are used. However, 22-gauge cables are specified on unit equipment drawings and circuit drawings when multiple lamp leads are included or when there are other limitations on conductor resistance. Twenty-gauge cables are used for battery leads from the fuse bay to two or more circuits served by the same fuse or where a small number of conductors are required.

5.15 The test trunk circuit connections from the office link frame include an S lead in addition to the T, R, and S1 leads, which are cabled to the distributing frame on a 3-wire basis from the link frame and cross-connected as required. The S lead must be cabled directly from the distributing frame terminal strip assigned to the miscellaneous circuit for the tandem trunk frame to the office link frame. The test trunk assignment, therefore, shall be obtained from the telephone company to permit the cabling of the S lead.

Grounding

5.16 Relay rack bay frameworks will be grounded by means of a 1- by 1/8-inch copper bus bar mounted on the top angle in accordance with ED-91210-55. This bus bar will also supply signal ground for the circuits mounted on these bays through the use of a bare-tinned 6-wire extending the full height of each bay on the wiring side in accordance with ED-99224-10, ED-99224-11, and ED-91210-55.

5.17 Talking battery filters of the required capability per J99226 are, in general, located on each fuse bay serving the talking battery fuse panels in that bay. Bays having less than 10 amperes talking battery drain, however, may be connected to filters in an adjacent bay if there is enough excess filter capacity available there. The filters will be located at the top of the bay.

Crossbar Tandem Office

5.18 In general, the relay rack arrangements for tandem offices are similar to those for local crossbar offices as outlined in the notes covered herein. The 135- and 170-volt remote-control zone registration battery supply lamp and fuse panels shall be furnished in accordance with ED-25594-10 and located on the fuse bays with the lamps at the top. The 22-volt ac supply and associated fuse panels, which are located on the miscellaneous frame in a local crossbar office, shall be located on an angle relay rack fuse bay in tandem offices. The 23-inch transformer unit per J86724C shall be furnished for this purpose and located immediately above its associated fuse panels. Fuse panels for the 48-volt signal battery supply for the tandem office relay rack mounted equipment shall be located in the customary manner on a relay rack fuse bay located with the tandem relay racks. However, the fuses required for the 24-volt talk and signal battery, the 48-volt talk battery, and the ringing supply required for the miscellaneous trunks and

tie lines to the various maintenance desks shall be located on available fuse panels associated with the local equipment.

5.19 The unit numbers J23066A, K, P, BB, and BC have been removed from the list as reserved numbers and canceled, due to nonusage.

List of A&M Only and Mfr Disc. Equipment

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

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J23066E	A&M Only	2	—
L2, to L6	Mfr Disc.	1	—
J23066F	Mfr Disc.	2	J23066AW
J23066G	A&M Only	1	J23066AW
J23066J,L2	Mfr Disc.	7	—
J23066L	Mfr Disc.	1	J23066AF
J23066N,L2	Mfr Disc.	6	—
J23066V	Mfr Disc.	1	J23066AR
J23066W,L3	Mfr Disc.	1	—
J23066X	A&M Only	1	—
J23066Y,L3	Mfr Disc.	10	J23066DP
J23066AF	Mfr Disc.	1	—
J23066AG	Mfr Disc.	8	—
J23066AL	Mfr Disc.	8	—
J23066AN	A&M Only	2	J23066AX
J23066AW	Mfr Disc.	5	J23066W
J23066BA	Mfr Disc.	6	J23066CG
J23066BG	Mfr Disc.	7	J23066CL
J23066BL	Mfr Disc.	6	J23066CF
J23066BS	Mfr Disc.	7	J23066CJ
J23066DC	Mfr Disc.	*	J23066DF

* J23066DC was rated Mfr Disc., replaced by J23066DF prior to issuance of issue 10, and subsequent to issue 9 of the J specification.

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	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
ED-25634-01	—	Tandem Office Outgoing Repeater to Step-by-Step Office	ED-25634-01, Fig. 1	SD-25634-01	1 (switch plate unit)	—
ED-92082-10	—	No. 1 Crossbar Office-Incoming Repeater From Step-by-Step Office	ED-92082-10	SD-95413-01	1 (switch plate unit)	—
Installer Wired	—	Fuse Alarm Circuit	See paragraph 5.03	SD-25048-01	—	—
Installer Wired	Std	Test Battery and Telephone Jacks	ED-92649-01, GR1	SD-25440-01, Fig. 1, 2, & 4	1	—

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
Installer Wired	Std	Incoming Trunk Test Circuit Jacks	ED-92649-10, GR2 or GR3	SD-25440-01, Fig. 3	1	—
Installer Wired	Std	Continuous Dial Pulsing and Talking Line Jacks	ED-92649-10, GR5	SD-25440-01, Fig. 5 & 6	1	—
Installer Wired	Std	MF Current Supply Socket	ED-92649-10 GR4	SD-25440-01 Fig. 7	1	—
Installer Wired	Std	Originating Sender Test Remote Control Jack	ED-92649-10, GR9	SD-25440-01, Fig. 9	1	—
Installer Wired	Std	LAMA-ANI Trunk Test Circuit Voltage Supply Receptacle	ED-92649-10 GR10	SD-25440-01, Fig. 10	1	—
Installer Wired	Std	Originating Trouble Indicator Frame Remote Control Test Jack	ED-92649-10, GR11	SD-25440-01, Fig. 11	1	—
Installer Wired	Std	AC Supply Jack and Key for Adjusting (L) or Equivalent Relays of Perm Sig Hold Tks	ED-92649-10, GR12	SD-25440-01, Fig. 12	1	—
Installer Wired	Std	DID FR Remote Test Control Jack	ED-92649-10, GR13	SD-25440-01, Fig. 13	1	—
Installer Wired	Std	Trk Mk-Bsy Ckt	ED-95059-11 GR1 to 13	SD-96448-01 Fig. 1-7 & A	10	1
J23066B	Std	Special Service Operator Incoming Trunk Unit	J23066B-( )	SD-25116-01	3	2
J23066C	Std	Auxiliary Line Unit for 10-Party Terminals per Station Code Ringing Lines or 8-Party Terminals per Station Semiselective Ringing Lines	J23066C-( )	SD-25296-01	1	3

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
J23066D	Std	Business Office Line Unit for Terminating Calls From a Switchboard and Originating Calls Through Subscriber Line Circuits — No. 13C, 13D, 15C, or 15D Switchboard	J23066D-( )	SD-25139-01	3	1
J23066E	A&M Only	Local or Toll Intercepting, Trouble Intercept, and Verification Request Trunk Unit — No. 13C, 13D, 15C, or 15D Switchboard	J23066E-( )	SD-25454-01	1	2
J23066G	A&M Only	Tandem Office — Overflow Trunk Unit With Tone	J23066G-( )	SD-25442-01	5	2
J23066H	Std	Outgoing Trunk Unit to Crossbar for Central Switchboard	J23066H-( )	SD-25423-01	2	5
J23066J	Std	Subscriber Recording Completing Trunk Unit — Outgoing to Toll — Subscriber Recall Number Check — Noncoin or Single-Slot Coin	J23066J-( )	SD-25124-01	1	2
J23066M	Std	B Switchboard Auxiliary Incoming Trunk From Manual Office for Local Interoffice Trunks	J23066M-( )	SD-25025-01	5	3
J23066N	Std	Subscriber Recording Completing Trunk Unit — Coin Collect and Dial-Tone-First	J23066N-( )	SD-25218-01	1	3

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
J23066R	Std	Outgoing Trunk Unit to No. 2, 3, 4, 6A, or 6B Information Desk or No. 19 or 23 Operating Room Desk	J23066R-( )	SD-25119-01	2	1
J23066S	Std	Auxiliary Line Unit for Use Where Service is Furnished to a 2-Way Trunk in No. 20 Key Cabinet Desk, Chief Operator Line Transfer Key Circuit, B Supervisor Circuit, or Subscriber Set From More Than One Central Office or Multioffice Unit in Same Building	J23066S-( )	SD-25319-01	1	1
J23066T	Special	Auxiliary Incoming Trunk From Tandem Manual Office Straight forward or MF Pulsing Arranged to Convert Reverse Battery Supervision to High-Low Supervision	J23066T-( )	SD-25025-01	4	3
J23066U	Std	Outgoing Trunk to Central A Switchboard — Trouble or Regular Intercepting Arranged for Machine Announcements	J23066U-( )	SD-25413-01	1	2
J23066W	Std	Tandem Office, No Circuit, Reorder, Overflow, Vacant Code, or all PBX Trunks Busy Signal Trk Unit	J23066W-( )	SD-27025-01	6	2

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
J23066X	A&M Only	Crossbar System No. 15D A Switchboard — Interlocal Trunk Unit — 2-Way Type X TB Supply to Manual or Dial A Switchboard Ringdown Signaling Wet-Dry Supervision	J23066X-( )	SD-25313-01	3	2
J23066Y	Std	Announcement Connecting Trunk Group Busy Unit	J23066Y-( )	SD-27047-01	1	1
J23066AA	Std	Keypulsing Outgoing Trunk Unit — For Single-Office or Multi-office Operation	J23066AA-( )	SD-25127-01	1	1
J23066AB	Std	Official PBX Trunk Unit Arranged for Terminating Service	J23066AB-( )	SD-25312-01	1	1
J23066AC	Std	Outgoing Auxiliary Line Unit to Which the Operator Makes Emergency Connections	J23066AC-( )	SD-25140-01	3	2
J23066AD	Std	Tandem Office Outgoing Trunk Unit to Step-by-Step Office With CX, Type B, or SX Signaling	J23066AD-( )	SD-25490-01	2	3
J23066AE	Std	Dial Terminating Manual Subscriber Line Unit	J23066AE-( )	SD-25040-01	2	1
J23066AG	Std	Tone Applier Unit — Tandem Offices	J23066AG-( )	SD-27034-01	3	1

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
J23066AH	Std	Outgoing Auxiliary Trunk Unit — For Use With 2-Way Operator Office Trunk or Toll Switching Trunk to Step-by-Step Office in Same or Distant Building — Reverse Battery Supervision	J23066AH-( )	SD-27039-01, Fig. 1	2	1
J23066AJ	Std	Outgoing Auxiliary Trunk Unit — For Use With 2-Way Operator Office Trunk — In Same or Distant Building — For Converting E and M Lead Supervision to Reverse Battery Supervision	J23066AJ-( )	SD-27040-01	2	3
J23066AK	Std	Auxiliary Outgoing Trunk Unit — For Use With No. 3, 3C, or 3CL Switchboard — Ringdown Intertoll Trunk Circuit in the Same Building	J23066AK-( )	SD-27041-01	2	3
J23066AL	Std	Tone Applier Unit — For Incoming Trunks — Arranged for MF Pulsing and E and M Lead Supervision	J23066AL-( )	SD-27034-01	2	1
J23066AM	Std	Outgoing Auxiliary Trunk Unit — For Use With 2-Way Operator Office Trunk to Link Type Community Dial Office — Reverse Battery Supervision	J23066AM-( )	SD-27039-01, Fig. 1	1	1

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
J23066AN	A&M Only	Announcement Connecting Trunk Unit — For Vacant Code Sender Overload and Misrouted Non-CAMA Calls	J23066AN-( )	SD-27047-01	4	2
J23066AP	Std	Auxiliary Outgoing Trunk Unit — For Intertoll Completion — For Use With No. 1 Switchboard — Ringdown Intertoll Trunk Circuit in the Same Building	J23066AP-( )	SD-27042-01	2	—
J23066AR	Std	Outgoing Trunk Unit (Tandem) — Or Auxiliary Outgoing Trunk Unit (No. 5 Crossbar) MF Pulsing or Automatic 4-Wire Talking	J23066AR-( )	SD-27016-01	1	—
J23066AS	Std	Alarm Transfer Unit	J23066AS-( )	SD-27063-01	1	—
J23066AT	Prov	Outgoing Trunk Unit — Ringdown Signaling to a Distant PBX	J23066AT-( )	SD-27066-01	1	—
J23066AX	Std	Announcement Connecting Trunk Unit	J23066AX-( )	SD-27047-01, Fig. 1 & 5	2	—
J23066AY	Std	Announcement Amplifier and Alarm Unit	J23066AY-( )	SD-27047-01, Fig. 4 & 8	2	—
J23066BD	Std	Announcement Connecting Trunk Unit — For Voice Announcements From No. 1, 3, 3C, or 3CL Toll Switchboard	J23066BD-( )	SD-27047-01, Fig. 6	4	—
J23066BE	Std	Announcement Connecting Trunk Unit — For Voice Announcements From 601 Telephone Set	J23066BE-( )	SD-27047-01,	4	—

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
J23066BF	Std	Tone Amplifier Unit	J23066BF-( )	SD-27047-01, Fig. 9	1	—
J23066BH	Std	Trunk Identifier Steering Control, Timing, and Register Unit	J23066BH-( )	SD-27077-01	1	4
J23066BJ	Std	Trunk Identifier Input Unit	J23066BJ-( )	SD-27077-01	1	3
J23066BK	Std	Trunk Identifier Power Supply Unit	J23066BK-( )	SD-27077-01	1	4
J23066BM	Std	Outgoing Auxiliary Trunk Unit — For Use With Toll Switchboard Trunk Circuit in Same Building — For Converting E and M Lead Supervision to Reverse Battery Supervision	J23066BM-( )	SD-27710-01	1	1
J23066BN	Std	Synchronous Test Line For Testing Incoming Trunks	J23066BN-( )	SD-27149-01	2	2
J23066BP	Std	Alarm Transfer Subunit	J23066BP-( )	SD-27063-01	1	2
J23066BR	Std	Tandem office — Outgoing Trunk Unit — DP or MF Plusing-E and M Lead Supervision	J23066BR-( )	SD-27051-01	2	2
J23066BT	Std	No. 1 Crossbar Line Unit — Line Link Pulsing Auto Intercept Service Rev Bat. Supervision	J23066BT-( )	SD-27750-01	2	3
J23066BU	Std	No. 1 Crossbar — Line Unit — Line Link Pulsing Auto Intercept Service E and M Lead Supervision	J23066BU-( )	SD-27751-01	2	3

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
J23066BW	Std	No. 1 Crossbar — Line Unit — Line Link Pulsing Direct Inward Dialing Rev Bat. Supervision	J23066BW-( )	SD-27752-01	4	3
J23066BY	Std	Tandem Office Outgoing Trunk Unit — MF Pulsing — E and M Lead Supervision— Without Rering	J23066BY-( )	SD-27051-01	2	1
J23066CA	Std	No. 1 Crossbar — OG Sender Group Busy and Alarm Rel Unit	J23066CA-( )	SD-27763-01	1	2
J23066CB	Std	No. 1 Crossbar — OG Sender DP Group Busy Control Rel Unit	J23066CB-( )	SD-27763-01	1	2
J23066CC	Std	No. 1 Crossbar — 2-Way Line Unit — Line Link Pulsing With DID Service	J23066CC-( )	SD-27753-01	1	2
J23066CD	Std	Tandem Office Emergency Access	J23066CD-( )	SD-27807-01	1	1
J23066CE	Std	No. 1 Crossbar Sub RC Trk Init, E and M Lead Supv, Noncoin, 2-Wire OGT to Toll Office Arranged to Recall Sub	J23066CE-( )	SD-27877-01	2	3
J23066CF	Std	No. 1 Crossbar OGT, ANI with LAMA, MF Pulsing, Operator or Special Toll, Noncoin, High-Low or E and M Supv, to TSP or TSPS	J23066CF-( )	SD-27815-01	1	2
J23066CG	Std	No. 1 Crossbar OGT, ANI with LAMA, MF Pulsing, Operator or Special Toll, Coin High-Low or E and M Supv, to TSP or TSPS	J23066CG-( )	SD-27816-01	1	3

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
J23066CH	Std	No. 1 Crossbar Coin Service Applique Unit	J23066CH-( )	SD-27886-01	1	1
J23066CJ	Std	Tandem Office Dynamic Overload Control Unit	J23066CJ-( )	SD-27737-01	1	1
J23066CK	Std	Channel Identification Unit	J23066CK-( )	SD-27077-01	1	2
J23066CL	Std	Trunk Identifier Unit With Channel Identification for Crossbar Tandem Office Outgoing Trunks	J23066CL-( )	SD-27077-01	1	13
J23066CM	Std	Crossbar Systems No. 1 Voice Alarm	J23066CM-( )	SD-27984-01	1	1
J23066CN	Std	Crossbar Systems No. 1 Announcement Trunk Unit	J23066CN-( )	SD-27985-01	1	1
J23066CP	Std	Remote CAMA Position Outgoing Trunk Unit — Arranged to Convert MF Keypulsing from Distant Offices to DC Keypulsing for Operation with Senders Arranged for DCKP — Trunk Outgoing Side Arranged for 2-Wire Loop Signaling	J23066CP-( )	SD-28034-01	—	—
J23066CR	Std	Remote CAMA Position Outgoing Trunk Unit — Arranged to Convert MF Keypulsing from Distant Offices to DC Keypulsing for Operation with Senders Arranged for DCKP — Trunk Outgoing Side Arranged for 600-ohm 4-Wire E and M Signaling	J23066CR-( )	SD-28034-01	—	—

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
J23066CS	Std	Free Trunk to 911 Emergency Bureau	J23066CS-( )	J28072-01	—	—
J23066A J23066K J23066P J23066BB J23066BC	Canceled					
J23066CT	Std	No. 1 Crossbar Make-Busy and Alarm Unit for Maintenance Data Transmitter Circuit	J23066CT-( )	SD-28110-01	—	—
J23066CU	Std	No. 1 Crossbar A-Trouble Indicator Concentrator Unit for Maintenance Data Transmitter Circuit	J23066CU-( )	SD-28110-01	—	—
J23066CV	Std	No. 1 Crossbar B-Trouble Indicator Concentrator Unit for Maintenance Data Transmitter Circuit	J23066CV-( )	SD-28110-01	—	—
J23066CW	Std	No. 1 Crossbar C-Trouble Indicator Concentrator Unit for Maintenance Data Transmitter Circuit	J23066CW-( )	SD-28110-01	—	—
J23066CX	Std	Crossbar Systems No. 1 — Telecommunications Alarm Surveillance and Control (TASC) System Control Unit	J23066CS-( )	SD-28119-01	—	—
J23066CY	Std	Crossbar Systems No. 1 — TASC Alarm Release Break to Ground Unit	J23066CY-( )	SD-28119-01	—	—
J23066CZ	Std	Crossbar Systems No. 1 — TASC Alarm Release Make to Ground Unit	J23066CZ-( )	SD-28119-01	—	—

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
J23066DA	Std	Crossbar Systems No. 1 — TASC Alarm Release Loop Break Unit	J23066DA-( )	SD-28119-01	—	—
J23066DB	Std	Crossbar Systems No. 1 — TASC Release Unit for Wire Spring Subscriber Senders and Flat Spring Subscriber Senders Not Equipped for TOUCH-TONE	J23066DB-( )	SD-28119-01	—	—
J23066DD	Std	Crossbar Systems No. 1 — TASC Alarm Release Loop Make Unit	J23066DD-( )	SD-28119-01	—	—
J23066DE	Std	Crossbar Systems No. 1 — TASC Mode Signal Unit	J23066DE-( )	SD-28119-01	—	—
J23066DF	Std	Crossbar Systems No. 1 — TASC Release Unit for Flat Spring Subscriber Senders Equipped for TOUCH-TONE In Office Not Equipped for Stuck Sender Trunk Identification	J23066DF-( )	SD-28119-01	—	—
J23066DG	Std	Crossbar Systems No. 1— TASC Alarm Release for Line Links and Terminating Sender Links	J23066DG-( )	SD-28119-01	—	—
J23066DH	Std	Interface and Control Unit for Telecommunications Alarm	J23066DH-( )	SD-28121-01	—	—
J23066DJ	Std	Verification Network Outgoing Trunk Unit	J23066DJ-( )	SD-28127-01	—	—
J23066DK	Std	Progression Test Control and Test Unit for Maintenance Data Transmitter	J23066DK-( )	SD-28110-01	—	—

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
J23066DL	Std	Auxiliary Progression Test Control and Test Unit for Maintenance Data Transmitter	J23066DL-( )	SD-28110-01	—	—
J23066DN	Std	Verification Network Positive Supply Unit	J23066DN-( )	SD-28128-01	—	—
J23066DP	Std	Reorder Announcement Time Out Unit	J23066DP-( )	SD-27047-01	—	—

Circuit Schematic Index

CIRCUIT DRAWING	J23066 EQUIP CODE
SD-25025-01	M, T
SD-25040-01	AE
SD-25048-01	Installer Wired
SD-25116-01	B
SD-25119-01	R
SD-25124-01	J
SD-25127-01	AA
SD-25139-01	D
SD-25140-01	AC
SD-25218-01	N
SD-25296-01	C
SD-25312-01	AB
SD-25313-01	X
SD-25319-01	S
SD-25413-01	U
SD-25423-01	H
SD-25440-01 Fig. 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, & 12	Installer Wired
SD-25442-01	G
SD-25454-01	E
SD-25490-01	AD
SD-25634-01	ED-25634-01
SD-27016-01	AR
SD-27025-01	W
SD-27034-01	AG, AL
SD-27039-01 Fig. 1 & 2	AH, AM
SD-27040-01	AJ
SD-27041-01	AK
SD-27042-01	AP
SD-27047-01 Fig. 1, 4, 5, 6, 7, 8, & 9	Y, AN, AX, AY, BD, BE, BF, DP
SD-27051-01	BR, BY
SD-27063-01	AS, BP
SD-27066-01	AT
SD-27077-01	BG, BH, BJ, BK, CK, CL
SD-27149-01	BN
SD-27710-01	BM
SD-27737-01	CJ
SD-27750-01	BT
SD-27751-01	BU
SD-27752-01	BW
SD-27753-01	CC
SD-27763-01	CA, CB
SD-27787-01	CE
SD-27807-01	CD
SD-27815-01	CF
SD-27816-01	CG
SD-27886-01	CH
SD-27984-01	CM
SD-27985-01	CN
SD-28110-01	CT, CU, CV, CW, DK, DL
SD-28119-01	CX, CY, CZ, DA, DB, DD, DE, DF, DG
SD-28121-01	DH
SD-28127-01	DJ
SD-28128-01	DN
SD-95413-01	ED-92082-10

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