REGULAR, AUXILIARY, AND SUPPLEMENTARY INCOMING TRUNK FRAMES FOR USE WITH 160-TRUNK CAPACITY INCOMING LINK FRAMES EQUIPMENT DESIGN REQUIREMENTS NO. 1 CROSSBAR SYSTEM

1. GENERAL

SCOPE

1.01 This specification, together with the supplementary information listed herein, covers the equipment design requirements for the framework, equipment, and circuits to be used in the engineering, manufacture, and installation of regular, auxiliary, and supplementary incoming trunk frames and units in No. 1 crossbar offices.

1.02 This specification is reissued:

(a) To provide equipment design requirements for modifications of incoming trunk unit fuse panels to the modular type.

CAPACITY

1.03 Three kinds of incoming trunk frames are used in No. 1 crossbar offices. The regular incoming trunk frame, which is flanked on the left by a terminating sender link frame and on the right by an incoming link frame, accommodates a maximum of 100 trunks which are served by the adjacent frames. The auxiliary trunk frame, which is flanked on the left by a terminating sender link frame, accommodates a maximum of 100 trunks which are served by the adjacent frame insofar as sender access is concerned. Association with incoming link frames, in this case, is obtained by cabling the auxiliary trunks to regular incoming trunk frames in quantities required to complete the load on the incoming link frames. While the nominal capacity of these trunk frames is 100, equipment irregularities covered herein frequently make it impossible to accommodate the full complement of trunks, in which case, the overflow is located on the supplementary incoming trunk frame. The latter frame also has a nominal capacity of 100 trunks. Each of the three trunk frames accommodates five trunk units having a capacity of 20 trunks each.

DESCRIPTION

1.04 The regular and auxiliary incoming trunk frames are directly associated with 100-trunk capacity terminating sender link frames. The latter frame is provided with five local cable arms which extend to and are terminated on the five units of the trunk frames. While the trunk units will accommodate 20 trunks of one mounting plate each, and provide terminal strip capacity toward the terminating sender link frame for these 20 trunks, some of the circuits require two mounting plates each. Therefore, the trunk units accommodate from 10 to 20 incomings each, depending upon the mounting plate requirements of the individual circuits. To provide the full complement of 100 trunks toward the terminating sender link frame, each trunk displaced by a 2-mounting plate circuit is located on a supplementary frame and is cabled to its assigned position on the terminal strip on the regular or auxiliary trunk unit.

1.05 The regular incoming trunk frames are directly associated with 160-trunk capacity incoming link frames. The latter frame is provided with five local cable arms which extend to and are terminated on the five units on the trunk frames. Each of these arms contain the wiring from the incoming link primary switches for two groups of 16 trunks. The 20 trunks on the unit serve as the first ten of each of the two groups of 16. The terminations for the wiring associated with the remaining six in each group serve as doubling up points for additional circuits, which are cabled as required from auxiliary frames. Irregularities introduced by trunks requiring two mounting plates each, as described in 1.04, are treated similarly,

the supplementary circuits taking the assigned positions of displaced regular or auxiliary trunks on the terminal strips of the regular incoming trunk units.

1.06 The steel structure that is used to mount the incoming trunk units is identical for the regular, auxiliary, and supplementary frames. It is a welded, single-sided, 2-bay structure, 6 feet 4-3/4 inches long and 11 feet 6 inches high, and employs a sheet metal base 10 inches wide.

1.07 The trunk unit consists of a welded steel framework, 6 feet 4-1/4 inches long and 2 feet 1-1/8 inches high, accommodating (left to right in the order described) a vertically mounted terminal strip, fuse panel, jack panel, and two banks of mounting plates and miscellaneous equipment. The trunk mounting plates are 30-1/2 inches long. The unit accommodates ten of these in each bank, and above them, in the left bank, a 20-1/2 inch resistance lamp mounting, a 20-1/2 inch miscellaneous relay mounting plate, and a miscellaneous jack, key, and lamp mounting. Above the trunk mounting plates in the right bank are horizontally mounted terminal strips for the incoming link frame connections and for switchboard cable to auxiliary trunk frames for trunks exceeding ten per group. The vertically mounted terminal strip at the left is principally for terminating sender link frame connections and incoming switchboard cables.

1.08 The ten trunks represented by the lower five mounting plates in the left and right banks on the regular incoming trunk unit are associated with an even-numbered incoming link primary switch. The upper ten trunks are associated with an odd-numbered incoming link primary switch. The trunks on auxiliary and supplementary incoming trunk units are limited only by traffic considerations and by the distribution among incoming link primary switches. The auxiliary incoming trunks in a group of ten must, however, be associated with one incoming link frame.

1.09 In general, the incoming trunks furnish a means for completing calls from customers or attendants to customers in the crossbar office. Where required, they furnish transmission and supervision for the called customer and ring the called customer bell. Other incomings are provided to gain access to customer lines or message registers for testing purposes. Incoming trunks require access to terminating senders for the purpose of controlling the completion of the call in the crossbar office. They also connect to an incoming link frame for completion of the call to the line link frame on which the called party appears.

1.10 Incoming trunks may be divided into four general classes with references to the kind of terminating sender they require, one of the classes having two subdivisions, each of which requires the same kind of sender.

(a) Full selector (revertive pulsing)

(1) Full selector

(2) Keypulsing

(b) "B" switchboard

(c) Dial pulsing

(d) Multifrequency pulsing

1.11 ***Full Selector Incoming Trunks:*** Incoming trunks requiring full selector senders include those from:

Panel local

No. 1 crossbar local

Crossbar tandem

Sender tandem

No. 4 toll

DSA switchboard (keypulsing)

Toll switchboard (keypulsing)

OGT test frame

Manual tandem (keypulsing)

1.12 ***"B" Switchboard Incoming Trunks:*** Incoming trunks requiring "B" switchboard senders include straightforward incomings from:

Manual local

Manual tandem

DSA switchboard

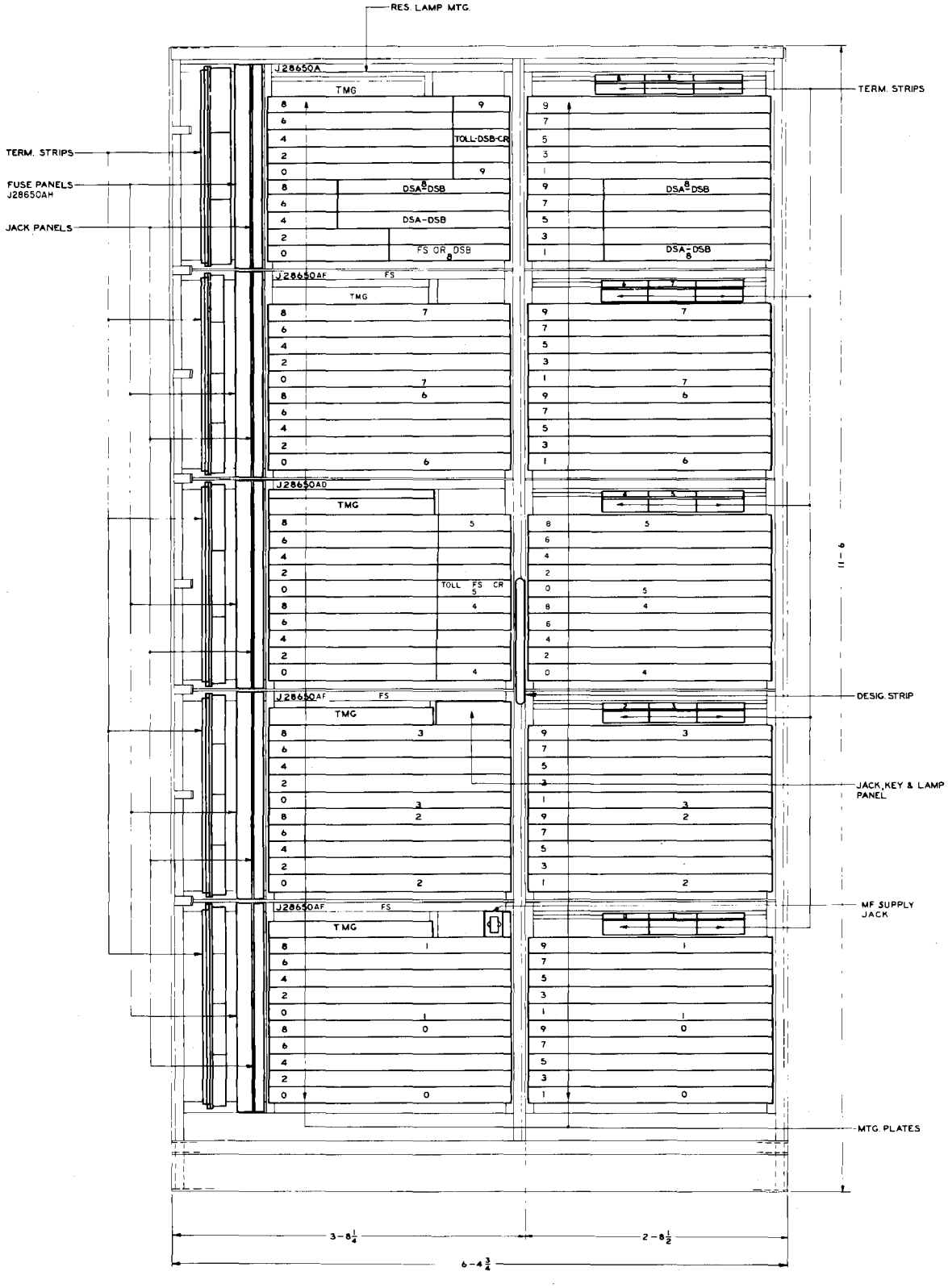

Fig. 1—Typical Incoming Trunk Frame Equipment

Toll switchboard

Test desk

Line message register rack

1.13 ***Dial Pulsing Incoming Trunks:*** Incoming trunks requiring dial pulsing senders include dialing incomings from:

Manual local

Toll switchboard

DSA switchboard

Step-by-step

Test desk

Line message register rack

1.14 ***Multifrequency Pulsing Incoming Trunks:*** Incoming trunks requiring multifrequency pulsing senders include those from:

Attendant positions

No. 5 crossbar

Crossbar tandem

No. 4 toll

Test desk

Line message register rack

1.15 The trunks from DSA switchboard and test desk may be provided with or without the no-test feature. The no-test trunks permit the establishment of a connection to a given line over a busy condition.

1.16 The toll switching trunks may be arranged for either automatic start or controlled start ringing. The controlled start ringing trunks may be used for either delayed outward or inward service. The automatic start ringing trunks are intended for use only on inward service.

1.17 The terminating sender link frame is arranged to connect a given trunk to the required one of a maximum of four kinds of senders. It is essential, however, that all ten trunks of a group require the same kind of sender. This places a restriction on the equipment arrangement of regular and auxiliary trunk units. The four kinds of senders appear on the sender link frames in two multiples, each containing two kinds of senders. In the interest of economy, the second multiple and the trunks requiring the kinds of senders it presents, should be restricted to a minimum number of frames. The number should, of course, be sufficient to provide for load and trunk group distribution as required by traffic and service considerations. This introduces a consideration affecting the equipment arrangements of regular and auxiliary trunk frames.

1.18 The manner in which the terminating sender link frame gains access to senders reacts on the equipment arrangements of regular and auxiliary trunk frames. The secondary switch multiple on the sender link frame may be split initially or ultimately to provide access to a maximum of four kinds of senders, two in each section. The lower-numbered groups of ten trunks on the trunk frames will have access to the two kinds of senders in one section and the upper-numbered groups to the two kinds in the other. The location of the split on the link frame secondary switches, which is variable, depends on the number of trunk groups in each category. On each trunk frame associated with a sender link frame having more than two kinds of senders, there is, consequently, some point below and above which the trunks must be of two definite and distinct varieties. Convertible trunks whose conversion will shift them from one category to the other must be located immediately below or above this point. On frames having trunks in only one category, this point may be considered as being at the top or bottom of the frame with respect to arrangements for conversions of this type.

1.19 Various other features of the terminating sender link frame and incoming link frame impose additional restrictions as to trunk assignment, considered from both equipment and traffic viewpoints.

(a) The number of the incoming link frame associated with a calling trunk is transmitted to the terminating marker through the sender from the sender link frame. This indication may be given on a frame basis for regular incoming trunk frames or by trunk groups of ten for

auxiliary incoming trunk frames. This requires that trunk groups of ten on the auxiliary frames be assigned to only one incoming link frame.

(b) Office indications, required in multioffice terminating units, may also be given by trunk groups of ten through the terminating sender link frame for both regular and auxiliary incoming trunks. This restricts the use of trunks insofar as interoffice trunk group assignments are concerned.

(c) Routings on intercepted calls, supervision on free calls, and discrimination between physical and theoretical offices are established in the marker under control of indications from the incoming link frame. The required indications are given by primary switch horizontals. The two trunks served by a specific primary switch horizontal must consequently require identical treatment with respect to these items. This constitutes a limitation which affects both equipment arrangements and trunk assignments.

1.20 The ten trunks of a group on the regular incoming trunk frames are served in pairs by horizontals 2 through 6 of the associated incoming link primary switch. Horizontals 7 through 9 are usually used in sequence for additional pairs of trunks cabled from auxiliary incoming trunk frames, horizontals 0 and 1 being used for discrimination between the two trunks of a pair. The 20 trunks on an auxiliary incoming trunk unit will normally be assigned by pairs to the corresponding level of the ten primary switches on an incoming link frame. These units are, however, arranged so that the trunks of a group of ten may be distributed individually over the ten incoming link primary switches.

1.21 Because of the various restrictions affecting incoming trunk unit and frame equipment and because of the need for equalizing incoming link primary switch and frame loads, it shall be the function of the telephone company to provide the layout of the regular and auxiliary incoming trunk frames and the assignment of auxiliary incoming trunks to incoming link primary switches. In making such layouts, the foregoing general limitations should be observed, as should detailed restrictions covered herein under Part 6. It should be pointed out, however, that when trunks requiring two mounting plates are located on an auxiliary incoming trunk frame, full use of the associated auxiliary terminating sender link frame requires cabling-in of a trunk from the supplementary incoming trunk frame. Since the incoming link appearance of the trunk is not located adjacent to its sender link appearance, three points may be involved in tracing trouble: the incoming link frame; the auxiliary terminating sender link frame; and the supplementary trunk frame.

1.22 ***Incoming Trunk Circuit for Line Verification Test:*** In offices arranged for automatic message accounting, a line verification test trunk per J28650AC (SD-25611-01) is furnished to check the cross-connections for customer lines. This trunk, in conjunction with the transverter and maintenance recorder, provides a printed record which serves to verify the cross-connections assigning a directory number to a line vertical on service orders. It is also used to check the connections of leads in the line link and controller circuit indicating column, switch and vertical file, and class of service. The functions performed by this trunk correspond, in general, to those performed by the message register test trunk (SD-25433-01) in offices arranged for message register operation. Unlike this latter trunk, however, the verification test trunk is not arranged to mount on the incoming trunk frame. Because of the amount of apparatus involved and the considerable number of associated keys and lamps, the entire circuit is designed as a single unit for mounting on the miscellaneous frame. It is cabled to the regular incoming trunk frame for incoming link frame access and to the regular or auxiliary incoming trunk frame for terminating sender link frame access. This trunk requires access to full selector terminating senders.

Floor Plan Arrangement

1.23 A regular incoming trunk frame is always associated with a terminating sender link frame and an incoming link frame. These three frames are treated as a unit from a floor plan standpoint. Their design requires that they be located adjacent to each other with the trunk frame in the center, the sender link at the left, and the incoming link at the right, as viewed from the front.

1.24 An auxiliary incoming trunk frame is always associated with a terminating sender link frame. These two frames are treated as a unit from a floor plan standpoint. Their design requires that they be located adjacent to each other with

the sender link at the left, as viewed from the front. For cabling and maintenance reasons, they should be located near the associated regular incoming trunk frames.

1.25 The supplementary incoming trunk frame is an independent floor plan unit. However, for cabling and maintenance reasons, it should be located near the associated regular and auxiliary incoming trunk frames.

SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

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

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLATES PER UNIT
ED-25502-11	AT&TCo Std	Regular, Auxiliary, or Supplementary Incoming Trunk Frame	ED-25502-11	SD-25038-01 SD-25439-01	5	—
J28650A	AT&TCo Std	Incoming Trunk Unit — Regular	J28650A-( )	(see Schematic Index)	—	—
J28650B	AT&TCo Std	Incoming Trunk Unit — Auxiliary or Supplementary	J28650B-( )	(see Schematic Index)	—	—
J28650AA	A&M Only	"B" Switchboard or Dial, Multifrequency or Revertive Pulsing Incoming Trunk Unit — Regular	J28650AA-( )	SD-25038-01 SD-25439-01 SD-25875-01	—	—
J28650AB	A&M Only	"B" Switchboard or Dial, Multifrequency or Revertive Pulsing Incoming Trunk Unit — Auxiliary or Supplementary	J28650AB-( )	SD-25038-01 SD-25439-01 SD-25875-01	—	—
J28650AC	AT&TCo Std	Incoming Trunk Unit for Line Verification Test — For use in Offices Arranged for Automatic Message Accounting	J28650AC-( )	SD-25611-01	—	—
J28650AD	AT&TCo Std	Controlled Ringing RP, DP, MFP, or SF Toll or Central "A" Switchboard Incoming Trunk Unit — Regular	J28650AD-( )	SD-25038-01 SD-25302-01 SD-25439-01	—	—
J28650AE	AT&TCo Std	Controlled Ringing RP, DP, MFP, or SF Toll or Central "A" Switchboard Incoming Trunk Unit — Auxiliary or Supplementary	J28650AE-( )	SD-25038-01 SD-25302-01 SD-25439-01	—	—
J28650AF	AT&TCo Std	RP, DP, MFP, or SF Incoming Trunk Unit — Regular	J28650AF-( )	SD-25038-01 SD-25439-01 SD-26204-01	—	—
J28650AG	AT&TCo Std	RP, DP, MFP, or SF Incoming Trunk Unit — Auxiliary or Supplementary	J28650AG-( )	SD-25038-01 SD-25439-01 SD-26204-01	—	—
J28650AH	AT&TCo Std	Fuse Panel Unit	J28650AH-( )	SD-25439-01	—	1

Circuit Schematic Index

CIRCUIT DRAWING	J28650 EQPT CODE
SD-25024-01	A,B
SD-25038-01	A,B,AA,AB,AD,AE,AF,AG, ED-25502-11
SD-25202-01	A,B
SD-25255-01	A,B
SD-25294-01	A,B
SD-25295-01	A,B
SD-25299-01	A,B
SD-25302-01	A,B,AD,AE
SD-25303-01	A,B
SD-25306-01	A,B
SD-25322-01	A,B
SD-25351-01	A,B
SD-25353-01	A,B
SD-25420-01	A,B
SD-25432-01	A,B
SD-25433-01	A,B
SD-25436-01	A,B
SD-25439-01	A,B,AA,AB,AD,AE,AF,AG,AH, ED-25502-11
SD-25611-01	AC
SD-25875-01	A,B
SD-25876-01	A,B
SD-25877-01	A,B
SD-25883-01	A,B
SD-25888-01	A,B
SD-25937-01	A,B
SD-26204-01	AF,AG

2. SUPPLEMENTARY INFORMATION

816-000-000—No. 1 Crossbar System Index
J23051—816-024-150—Miscellaneous Frame Equipment
J99226—Battery Filters
Floor Plan Data—Section9.1,Sheet15—Supplementary Incoming Trunk Frame
Floor Plan Data—Section 9.1, Sheet 25—Regular and Auxiliary Incoming Link Extension Frames
Floor Plan Data—Section 9.1, Sheet 26—Regular and Auxiliary Incoming Frames With Incoming Link Extension Frames

3. DRAWINGS

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

Keysheet

SD-25000-01—No. 1 Crossbar System

Circuits

SD-25024-01—KP Incoming Trunk From DSA Switchboard—Individual and 2-party—Controlled Ringing
SD-25038-01—Timing Circuit
SD-25202-01—"B" Switchboard or DP Incoming Trunk From DSA Switchboard—No Test
SD-25255-01—KP Incoming Trunk From No. 3- or 15-type Switchboard—No Test
SD-25294-01—KP Incoming Trunk From DSA Switchboard—4-party Semiselective—Controlled Ringing
SD-25295-01—RP, DP, MFP, or SF Incoming Trunk From Toll Switchboard, Sender Tandem, Crossbar Tandem, or Manual Tandem—Immediate Ringing—Type A Talking Battery
SD-25299-01—RP Incoming Trunk From Outgoing Trunk Test Frame
SD-25302-01—RP, DP, MFP, or SF Incoming Trunk From Toll or Central "A" Switchboard—Controlled Ringing
SD-25303-01—"B" Switchboard or DP Incoming Trunk From DSA Switchboard—Controlled Ringing
SD-25306-01—KP Incoming Trunk From DSA Switchboard—4-party Full Selective—Controlled Ringing
SD-25322-01—"B" Switchboard Incoming Trunk From DSA Switchboard—Through Ringing
SD-25351-01—KP Incoming Trunk From DSA Switchboard—Panel KP Senders—No Test
SD-25353-01—KP Incoming Trunk From DSA Switchboard—Panel KP Sender—Controlled Ringing
SD-25420-01—"B" Switchboard, DP or MFP Incoming Trunk From Central Office "A" Switchboard—No Test

SD-25432-01—DP or MFP Incoming Trunk From Local Test Desk or Central Test Bureau—No Test
SD-25433-01—"B" Switchboard, DP or MFP Incoming Trunk From Line Message Register—Rack
SD-25436-01—"B" Switchboard Incoming Trunk From Local Test Desk or Central Test Bureau—No Test
SD-25439-01—Incoming Trunk Frame—Miscellaneous Circuit
SD-25611-01—Incoming Trunk From AMA—Line Verification Test
SD-25875-01—RP, DP, MFP, or SF Incoming Trunk From Panel, Crossbar, Sender Tandem, Crossbar Tandem, or Manual—Immediate Ringing
SD-25876-01—MFP Incoming Trunk From No. 3-type Switchboard — 3-wire — Controlled Ringing
SD-25877-01—"B" Switchboard or MFP Incoming Trunk From No. 3-type Switchboard—3-Wire—No Test
SD-25883-01—MFP Incoming Trunk From DSA Switchboard—Controlled Ringing
SD-25888-01—MFP Incoming Trunk From DSA Switchboard—No Test
SD-25937-01—KP Incoming Trunk From No. 3-type Switchboard — 3-wire — Controlled Ringing
SD-26204-01—RP, DP, MFP, or SF Incoming Trunk From Panel, Crossbar, Sender Tandem, Crossbar Tandem, or Manual—Immediate Ringing

Framework

ED-25020-01—Cable Brackets
ED-25021-53—Jack, Key, and Lamp Panel
ED-25023-14, -15—Frame Details
ED-95131-10—Fuse Panel Assembly
ED-25028-51—Unit Assembly—Line Verification Test
ED-25040-51—Unit Jack Panel
ED-25048-30—Frame Assembly
ED-25503-70—Unit Assembly

Equipment

ED-25212-10—Designation Cards
ED-25502-11—Incoming Trunk Frame and Unit Equipment
ED-92171-70—Talking Battery Supply Frame Filter

Wiring and Cabling

ED-25030-01—Unit Local Cable—Line Verification Test
ED-25346-13 and -17—Method of Running Power Feeders
ED-25507-10—Unit Local Cable
ED-25521-10—Cabling Schematic and Switchboard Cable Details
ED-27114-01—No. 1 Crossbar—Wire Gauge and Insulation

4. EQUIPMENT

ED-25502-11—AT&TCo Std—Incoming Trunk Frame, Miscellaneous Frame and Relay Rack Equipment for Regular, Auxiliary, or Supplementary Trunks as Specified.

Group 1—Lamp, key, and jack panel equipment for one regular, auxiliary, or supplementary incoming trunk frame. Miscellaneous circuit, SD-25439-01, Fig. 2, 3, 5, 6, 7, 9, 10, 11, 13, and 14.
Group 3—Equipment required when incoming trunks associated with more than one office are mounted on supplementary frame, per SD-25439-01, Fig. 10.
Group 6—Equipment required for each regular, auxiliary, or supplementary incoming trunk frame when a unit is arranged for timing circuit, per SD-25038-01, Fig. 1.
Group 15—Equipment required for each regular, auxiliary, or supplementary incoming trunk frame when frame is arranged for incoming trunks requiring flash signals, per SD-25439-01, Fig. 12.

J28650A—AT&TCo Std—Incoming Trunk Unit—Regular—To Be Equipped With Miscellaneous Incoming Trunks as Specified

J28650B—AT&TCo Std—Incoming Trunk Unit—Auxiliary or Supplementary—To Be Equipped With Miscellaneous Incoming Trunks as Specified

Equipment—J28650A-( ) or J28650B-( )

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

incoming trunks.

	WIRE	EQUIP	NOTES
Inc Trk Ckts	As Spec	0	
Timing Ckt, SD-25038-01:			
Fig. 2	As Spec	0	
Misc Ckt, SD-25439-01:			
Fig. 18 & 21	1	0	

List 2—Equipment required in addition to list 1 to arrange one unit for timed release of trunks—SD-25038-01, Fig. 2, A relay only.

List 3—Equipment required in addition to list 1 and 2 to arrange upper group of trunks for timed release, SD-25038-01, Fig. 2, B relay only.

List 4—Equipment required in addition to list 1 and 2 to arrange lower group of trunks for timed release, SD-25038-01, Fig. 2, C relay only.

List 7—Equipment required in addition to list 1 and 64, 164, 199, or 216 to provide one incoming trunk with a test jack, SD-25420-01, SD-25329-01, SD-25875-01, SD-25302-01, and SD-25295-01, T jack only.

List 8*—Equipment required in addition to list 1 for one incoming trunk from outgoing trunk test frame with or without access to extra numbers, SD-25299-01, Fig. 1, with A or B and C or D wiring and Y and W option (see list 260).

List 9*—Equipment required in addition to list 1 for one keypulsing "no test" incoming trunk arranged for single-office operation from 3C, 3CL, 13C, 13D, 15C, or 15D switchboard, or for multioffice operation from 3C or 3CL switchboard, SD-25255-01, Fig. 1 and D and Fig. A or F, with A, B, J, S, and T wiring (see list 12, 13, and 242 and Note H).

List 10*—Equipment required in addition to list 1 for one keypulsing "no test" incoming trunk wired for multioffice and equipped for single-office operation from 13C, 13D, 15C, or 15D switchboard, SD-25255-01, Fig. 1, A, and D, with A, B, F, J, S, T, and V wiring, and wiring only for Fig. B and E (see list 11, 12, 13, and 144).

List 11—A&M Only—Equipment required in addition to list 1 and 10 to arrange one trunk per SD-25255-01 for multioffice operation where office signal is given by terminating sender link frame, SD-25255-01, Fig. B, less D resistance.

List 12—Equipment required in addition to list 1 and 9 or 10 to arrange one trunk per SD-25255-01 for use with more than nine line choices, SD-25255-01, B apparatus only.

List 13—Equipment required in addition to list 1 and 9 or 10 to arrange one trunk per SD-25255-01 for supervision on connection to busy line, SD-25255-01, N apparatus only.

List 14*—Equipment required in addition to list 1 for one keypulsing incoming trunk from "A" switchboard for single-office operation wired for 4-party semiselective ringing and equipped for individual and 2-party selective ringing, SD-25294-01, Fig. 1 and B, with A, B, Y, and Z wiring (see list 15, 16, 17, and 245 to 248).

List 15—Equipment required in addition to list 1 and 14 to arrange one trunk, per SD-25294-01, for 4-party semiselective ringing, SD-25294-01, K apparatus only.

List 16—Equipment required in addition to list 1 and 14 or 245 to arrange one trunk per SD-25294-01 for use with "A" switchboards having keypulsing on calling cords only, SD-25294-01, Z apparatus only.

List 17—Equipment required in addition to list 1 and 14 or 245 to arrange one trunk per SD-25294-01 for use with "A" switchboards having keypulsing on answering and calling cords, SD-25294-01, Y apparatus only.

List 18*—Equipment required in addition to list 1 for one incoming trunk from line message register rack with one terminating sender link frame appearance in a single or multioffice terminating unit and arranged for "B" switchboard, DP or MFP operation, wired for two terminating sender link frame appearances, SD-25433-01, Fig. 1 and A, less Y apparatus, with wiring only for Fig. B, C, D, and F (see list 19 through 24 and 252).

List 19—Wiring and equipment required in addition to list 1 and 18 to arrange one incoming trunk per SD-25433-01 for two terminating sender link frame appearances, SD-25433-01, Fig. B, less Y apparatus.

List 20—Wiring and equipment required in addition to list 1 and 18 to arrange one incoming trunk per SD-25433-01 for use in one office of a multioffice terminating unit of the identical twin type, SD-25433-01, Fig. C, less Y apparatus.

List 21—Wiring and equipment required in addition to list 1 and 18 to arrange one incoming trunk per SD-25433-01 for use in the second office of the multioffice terminating unit of the identical twin type, SD-25433-01, Fig. D, less Y apparatus.

List 22—Equipment required in addition to list 1 and 18 to arrange one trunk per SD-25433-01, for use with DP or MFP senders, SD-25433-01, Fig. F.

List 23—Equipment required in addition to list 1 and 18 or 1, 18, and 20 or 21 to arrange one trunk per SD-25433-01 for access to extra numbers, SD-25433-01, Fig. A, C, or D, Y apparatus only.

List 24—Equipment required in addition to lists 1, 18, and 19 to arrange one trunk per SD-25433-01 for access to extra numbers, SD-25433-01, Fig. B, Y apparatus only.

List 25*—Equipment required in addition to list 1 for one B switchboard incoming trunk from a No. 12B or 14 test desk without "no test" and wired for access to extra numbers, SD-25436-01, Fig. 1 and D, with V, X, and Y wiring, and wiring only for Fig. A and B (see list 27, 28, and Note N).

List 26*—Equipment required in addition to list 1 for one B switchboard incoming trunk from a No. 12B or 14 test desk wired for "no test" operation, for access to extra numbers, and for connection to line insulation test control, SD-25436-01, Fig. 1 and D, with V, W, X, Y, and Z wiring, and wiring only for Fig. 2, A, B, and F (see list 27 to 30, 249, and Note N).

List 27—Equipment required in addition to list 1 and 25 or 26 to arrange one trunk per SD-25436-01 for access to regular numbers, SD-25436-01, Fig. A.

List 28—Equipment required in addition to list 1 and 25 or 26 to arrange one trunk per SD-25436-01 for access to extra numbers, SD-25436-01, Fig. B.

List 29—Equipment required per SD-25436-01 for "no test" operation for use with ten line choices, SD-25436-01, Fig. 2, less T apparatus.

List 30—Equipment required in addition to list 1, 26, and 29 to arrange one "no test" trunk per SD-25436-01 for use with more than ten line choices, SD-25436-01, Fig. 2, T apparatus only.

List 37—Equipment required in addition to list 1 and 199 to provide one trunk per SD-25302-01 with a 1:1 transformer, SD-25302-01, A or D apparatus only (see Note J).

List 38—Equipment required in addition to list 1 and 199 to provide one trunk per SD-25302-01 with a 1:1.5 transformer, SD-25302-01, B or E apparatus only (see Note J).

List 39—Equipment required in addition to list 1 and 199 to arrange one trunk per SD-25302-01 for coin control, SD-25302-01, G apparatus only.

List 52*—Equipment required in addition to list 1 for one keypulsing incoming trunk from A switchboard arranged for individual and 2-party selective ringing and single-office operation, SD-25024-01, Fig. 1, D, and E, less Z apparatus with A, B, Y, and Z wiring, and wiring only for Fig. A and B (see list 149 through 151, 53, and 54).

List 53—Equipment required in addition to list 1 and 52 or 1 and 149 to arrange one trunk per SD-25024-01 for use with A switchboard having keypulsing on calling cords only, SD-25024-01, Fig. 1, Z apparatus only Fig. A.

List 54—Equipment required in addition to list 1 and 52 or 1 and 149 to arrange one trunk per SD-25024-01 for use with A switchboard having keypulsing on answering and calling cords, SD-25024-01, Fig. B.

List 64*—Equipment required in addition to list 1 for one "no test" incoming trunk from central A switchboard wired for individual, 2- and 4-party selective, and 4-party semiselective ringing and equipped for individual and 2-party selective ringing, SD-25420-01, Fig. 1 and A with B, E, F, M, Q, W, Y, and ZN wiring, and wiring only for Fig. B and C less M, R, S, T, U, P, D, V, ZA, and ZC apparatus and T jack (see list 7 and 65 through 68, 70 through 73, Note C and F).

List 65—Equipment required in addition to list 1 and 64 to arrange one trunk per SD-25420-01 for 4-party selective ringing, SD-25420-01, Fig. B.

List 66—Equipment required in addition to list 1 and 64 to arrange one trunk per SD-25420-01 for 4-party semiselective ringing, SD-25420-01, Fig. C.

List 67—Equipment required in addition to list 1 and 64 to arrange one trunk per SD-25420-01 as a short-range trunk, SD-25420-01, S apparatus only.

List 68—Equipment required in addition to list 1 and 64 to arrange one trunk per SD-25420-01 as a long-range trunk, SD-25420-01, R apparatus only.

List 70—Equipment required in addition to list 1, 64, and 67 to provide one trunk per SD-25420-01 with compensating resistances, SD-25420-01, M apparatus only (see Note C).

List 71—Equipment required in addition to list 1 and 64 to provide one trunk per SD-25420-01 with a 1:1 transformer, SD-25420-01, T or P apparatus only (see Note J).

List 72—Equipment required in addition to list 1 and 64 to provide one trunk per SD-25420-01 with a 1:1.5 transformer, SD-25420-01, U or D apparatus only (see Note J).

List 73—Equipment required in addition to list 1 and 64 to arrange one trunk per SD-25420-01 for use with more than nine line choices, SD-25420-01, V apparatus only.

List 75—Equipment required in addition to list 1 and 159 to arrange one trunk per SD-25353-01 for 4-party selective ringing, SD-25353-01, Fig. B.

List 76—Equipment required in addition to list 1 and 159 to arrange one trunk per SD-25353-01 for 4-party semiselective ringing, SD-25353-01, Fig. C.

List 77—Equipment required in addition to list 1 and 159 to arrange one trunk per SD-25353-01 for single-office operation and for use with A switchboard having keypulsing on calling cords only, SD-25353-01, Fig. 1, Z apparatus only, and Fig. H.

List 78—Equipment required in addition to list 1 and 159 to arrange one trunk per SD-25353-01 for single office operation and for use with A switchboard having keypulsing on answering and calling cords, SD-25353-01, Fig. 1, A apparatus only, and Fig. H.

List 103—Equipment required in addition to list 1 and 226 to arrange one trunk per SD-25306-01 for 4-party selective ringing, SD-25306-01, K apparatus only.

List 104—Equipment required in addition to list 1 and 226 to arrange one single-office trunk per SD-25306-01 for use with 15C or 15D switchboard having keypulsing on calling cords only, SD-25306-01, Z apparatus only.

List 105—Equipment required in addition to list 1 and 226 to arrange one single office trunk per SD-25306-01 for use with 15D switchboard having keypulsing on answering and calling cords, SD-25306-01, Y apparatus only.

List 115—A&M Only—Equipment required in addition to list 1 and 216 to provide one trunk per SD-25295-01 with a 1:1 transformer, SD-25295-01, Q or P apparatus (see Note J).

List 116—A&M Only—Equipment required in addition to list 1 and 216 to provide one trunk per SD-25295-01 with a 1:1.5 transformer, SD-25295-01, R or E apparatus (see Note J).

*List 123**—Equipment required in addition to list 1 for one B switchboard "no test" incoming trunk from A switchboard, SD-25202-01, Fig. 1, A, and D with Z apparatus and A, B, J, K, X, and Z wiring less B and X apparatus (see list 124, 125, and 152).

List 124—Equipment required in addition to list 1 and 123 to arrange one trunk per SD-25202-01 for use with more than nine line choices, SD-25202-01, B apparatus only.

List 125—Equipment required in addition to list 1 and 123 to arrange one trunk per SD-25202-01 for supervision on connection to busy line, SD-25202-01, X apparatus only.

List 127—Equipment required in addition to list 1 and 152 to arrange one trunk per SD-25202-01 for dial pulsing operation, SD-25202-01, Fig. B.

List 128—Equipment required in addition to list 1 and 152 to arrange one trunk per SD-25202-01 for use with more than nine line choices, SD-25202-01, B apparatus only.

List 129—Equipment required in addition to list 1 and 152 to arrange one trunk per SD-25202-01 for supervision on connection to busy line, SD-25202-01, X apparatus only.

List 130—Equipment required in addition to list 1 for one through ringing B switchboard

incoming trunk from A switchboard wired for individual, 2- and 4-party selective, and 4-party semiselective ringing and equipped for individual and 2-party selective ringing, SD-25322-01, Fig. 1 and B with X wiring, and wiring only for Fig. 2 (see list 131).

List 131—Equipment required in addition to list 1 and 130 to arrange one trunk per SD-25322-01 for 4-party selective or semiselective ringing, SD-25322-01, Fig. 2.

List 133—Equipment required in addition to list 1 and 154 to arrange one trunk per SD-25351-01 for use with more than nine line choices, SD-25351-01, B apparatus only.

List 134—Equipment required in addition to list 1 and 154 to arrange one trunk per SD-25351-01 for supervision on connection to busy line, SD-25351-01, V apparatus only.

List 135*—Equipment required in addition to list 1 for one DP or MFP incoming trunk from No. 14 test desk without "no test" and wired for access to extra numbers, SD-25432-01, Fig. 1, A, D, and E, and wiring only for Fig. B (see list 136, 137, and Note M).

List 136*—Equipment required in addition to list 1 for one DP or MFP incoming trunk from No. 14 test desk wired for "no test" operation, for access to extra numbers, and connection to line insulation test frame, SD-25432-01, Fig. 1, A, D, E, F, and wiring only for Fig. 2 and B (see list 137 through 139, 244, and Note M).

List 137—Equipment required in addition to list 135 or 136 to arrange one trunk per SD-25432-01 for access to extra numbers or for MFP operation, SD-25432-01, Fig. 3, less M apparatus (see list 243 and 258).

List 138—Equipment required in addition to list 1 and 136 to arrange one trunk per SD-25432-01 for "no test" operation for use with ten line choices, SD-25432-01, Fig. 2, less T apparatus.

List 139—Equipment required in addition to list 1, 136, and 138 to arrange one "no test" trunk per SD-25432-01 for use with more than ten line choices, SD-25432-01, T apparatus only.

List 144—Equipment required in addition to list 1 and 10 to arrange one trunk per SD-25255-01 for multioffice operation where office signal is given by keypulsing sender, SD-25255-01, Fig. E, less D resistance.

List 145—Equipment required in addition to list 1 to provide one unit with filter capacitor fuse alarms, SD-25439-01, Fig. 18.

List 149*—Equipment required in addition to list 1 for one keypulsing incoming trunk from A switchboard arranged for individual and 2-party selective ringing, wired for multioffice, and equipped for single-office operation, SD-25024-01, Fig. 1, D, and E, less T and Z apparatus, with A, B, S, T, Y, and Z wiring, and wiring only for Fig. A, B, and F (see list 52 through 54, 150, and 151).

List 150—Equipment required in addition to list 1 and 149 to arrange one trunk per SD-25024-01 for multioffice operation, the keypulsing sender furnishing the office signal, and for use with A switchboard having keypulsing on calling cords only, SD-25024-01, Fig. A and F with T apparatus, less D resistance.

List 151—Equipment required in addition to list 1 and 149 to arrange one trunk per SD-25024-01 for multioffice operation, the keypulsing sender furnishing the office signal, and for use with A switchboard having keypulsing on answering and calling cords, SD-25024-01, Fig. B and F, less D resistance.

List 152*—Equipment required in addition to list 1 for one B switchboard or dial pulsing "no test" incoming trunk from A switchboard arranged for B switchboard operation, wired for 4-digit multioffice operation, and equipped for single-office or 5-digit multioffice operation, SD-25202-01, Fig. 1, A, and D with A, B, J, K, L, and X wiring, and wiring only for Fig. B and E less B and X apparatus (see list 123, 127, 128, 129, and 153).

List 153—Equipment required in addition to list 1 and 152 to arrange one trunk per SD-25202-01 for 4-digit multioffice B switchboard or dial pulsing operation, SD-25202-01, Fig. E.

List 154*—Equipment required in addition to list 1 for one keypulsing "no test" incoming trunk from A switchboard, wired for single or multioffice operation, for use with panel keypulsing senders, SD-25351-01,

Fig. 1 and B; less B and V apparatus, with A, B, K, M, N, ZB wiring, and wiring only for Fig. C, D, E, F, and G (see list 133, 134, 155 through 158, 179 and 180).

List 155—Equipment required in addition to list 1 and 154 to arrange one trunk per SD-25351-01 for single-office operation and for use with A switchboard having keypulsing on calling cords only, SD-25351-01, Fig. C and E.

List 156—Equipment required in addition to list 1 and 154 to arrange one trunk per SD-25351-01 for single-office operation and for use with A switchboard having keypulsing on answering and calling cords, SD-25351-01, Fig. D and E.

List 157—Equipment required in addition to list 1 and 154 to arrange one trunk per SD-25351-01 for multioffice operation (office signal from sender) and for use with A switchboard having keypulsing on calling cords only, SD-25351-01, Fig. C and F.

List 158—Equipment required in addition to list 1 and 154 to arrange one trunk per SD-25351-01 for multioffice operation (office signal from sender) and for use with A switchboard having keypulsing on answering and calling cords, SD-25351-01, Fig. D and F.

*List 159**—Equipment required in addition to list 1 for one keypulsing incoming trunk from A switchboard wired for individual, 2- and 4-party selective, and 4-party semiselective ringing and multioffice operation, and equipped for individual and 2-party selective ringing and single-office operation, for use with panel keypulsing senders, SD-25353-01, Fig. 1, A, E, G, less M, N, Y, and Z apparatus with A, B, M, N, Y, and Z wiring , and wiring only for Fig. B, C, H, and J (see list 75 through 78, 160, and 161).

List 160—Equipment required in addition to list 1 and 159 to arrange one trunk per SD-25353-01 for multioffice operation and for use with A switchboard having keypulsing on calling cords only, SD-25353-01, Fig. 1, N apparatus only, and Fig. J.

List 161—Equipment required in addition to list 1 and 159 to arrange one trunk per SD-25353-01 for multioffice operation and for use with A switchboard having keypulsing on answering and calling cords, SD-25353-01, Fig. 1, M apparatus only, and Fig. J.

*List 164**—A&M Only—Wiring and equipment required in addition to list 1 for one B switchboard or revertive, dial, or multifrequency pulsing incoming trunk, SD-25875-01, Fig. 1, A, B, and C, less P, Q, and R apparatus and T jack (see list 7, 165, 166, 178, and 256).

List 165—A&M Only—Equipment required in addition to list 1 and 164 to arrange one trunk per SD-25875-01 for 4-party selective ringing, SD-25875-01, Fig. A, P apparatus only.

List 166—A&M Only—Equipment required in addition to list 1 and 164 to arrange one trunk per SD-25875-01 for 4-party semiselective ringing, SD-25875-01, Fig. C, Q apparatus only.

List 170—Wiring and equipment required in addition to list 1 and 237 or 239 to arrange one trunk per SD-25876-01 for 4-party selective ringing, SD-25876-01, Fig. B.

List 171—Wiring and equipment required in addition to list 1 and 237 or 239 to arrange one trunk per SD-25876-01 for 4-party semiselective ringing, SD-25876-01, Fig. C.

*List 172**—Wiring and equipment required in addition to list 1 for one multifrequency pulsing, 3-wire, no-test incoming trunk from No. 3C toll switchboard, with controlled start, individual, and 2-party selective ringing, wired for single and multifrequency operation, SD-25877-01, Fig. 1, A, and G, less MB jack, Y and B apparatus, with X, Y, and Z wiring, and wiring only for Fig. D and E (see list 173 through 177, 251, and Note J and K).

List 173—Equipment required in addition to list 1 and 172 to arrange one trunk per SD-25877-01 for single-office or 5-digit multioffice operation, SD-25877-01, Fig. D.

List 174—Equipment required in addition to list 1 and 172 to arrange one trunk per SD-25877-01 for 4-digit multioffice operation, SD-25877-01, Fig. E.

List 175—Wiring and equipment required in addition to list 1 and 172 to arrange one trunk per SD-25877-01 for 4-party selective ringing, SD-25877-01, Fig. B.

List 176—Wiring and equipment required in addition

to list 1 and 172 to arrange one trunk per SD-25877-01 for 4-party semiselective ringing, SD-25877-01, Fig. C.

List 177—Equipment required in addition to list 1 and 172 to arrange one trunk per SD-25877-01 for use with more than nine line choices, SD-25877-01, Y apparatus only.

List 178—A&M Only—Equipment required in addition to list 164 to arrange one trunk per SD-25875-01 for revertive pulsing, SD-25875-01, Fig. 1, R apparatus only.

List 179—A&M Only—Equipment required in addition to list 1 and 154 to arrange one trunk per SD-25351-01 for multioffice operation (office signal from sender link frame) and for use with A switchboard having keypulsing on calling cords only, SD-25351-01, Fig. C and G (see list 157).

List 180—A&M Only—Equipment required in addition to list 1 and 154 to arrange one trunk per SD-25351-01 for multioffice operation (office signal from sender link frame) and for use with A switchboard having keypulsing on answering and calling cords, SD-25351-01, Fig. D and G (see list 158).

*List 181**—Wiring and equipment required in addition to list 1 for one incoming trunk from DSA switchboard with combined dc and MF keysets, arranged for pulsing on calling cords only, with controlled start 1- and 2-party selective ringing, SD-25883-01, Fig. 1 and A, and wiring only for Fig. C, D, and E (see list 183, 184, 197, and 198).

*List 182**—Wiring and equipment required in addition to list 1 for one incoming trunk from DSA switchboard with combined dc and MF keysets, arranged for pulsing on answering and calling cords with controlled start 1- and 2-party selective ringing, SD-25883-01, Fig. 1 and B, and wiring only for Fig. C, D, and E (see list 183, 184, 197, and 198).

List 183—Equipment required in addition to list 1 and 181, 182, 197, or 198 to arrange one trunk per SD-25883-01 for 4-party selective ringing, SD-25883-01, Fig. D.

List 184—Equipment required in addition to list 1 and 181, 182, 197, or 198 to arrange one trunk per SD-25883-01 for 4-party semiselective ringing, SD-25883-01, Fig. E.

*List 185**—Equipment required in addition to list 1 for one multifrequency pulsing no-test incoming trunk from DSA switchboard with combined dc and MF keysets, arranged for single-office operation and pulsing on calling cords only, SD-25888-01, Fig. 1 and A, less T apparatus with R, S, T, and V wiring (see list 189).

*List 186**—Equipment required in addition to list 1 for one multifrequency pulsing no-test incoming trunk from DSA switchboard with combined dc and MF keysets, arranged for single-office operation and pulsing on answering and calling cords, SD-25888-01, Fig. 1 and B, less T apparatus with R, S, T, and V wiring (see list 189).

*List 187**—Equipment required in addition to list 1 for one multifrequency pulsing no-test incoming trunk from DSA switchboard with combined dc and MF keysets, arranged for pulsing on calling cords only, multioffice operation, office signal from sender link frame, SD-25888-01, Fig. 1 and C, less T apparatus, with R, S, T, and V wiring (see list 189).

*List 188**—Equipment required in addition to list 1 for one multifrequency pulsing no-test incoming trunk from DSA switchboard with combined dc and MF keysets, arranged for pulsing on answering and calling cords, multioffice operation, office signal from sender link frame, SD-25888-01, Fig. 1 and D, less T apparatus with R, S, T, and V wiring (see list 189).

List 189—Equipment required in addition to list 1 and 185, 186, 187, 188, 193, 194, 195, or 196 to arrange one trunk per SD-25888-01 for use with more than nine line choices, SD-25888-01, T apparatus only.

*List 193**—Equipment required in addition to list 1 for one multifrequency pulsing no-test incoming trunk from DSA switchboard with MF only keysets, arranged for pulsing on calling cords only, single-office or 5-digit multioffice operation, SD-25888-01, Fig. 1 and E, less T apparatus with R, S, T, and V wiring (see list 189).

*List 194**—Equipment required in addition to list 1 for one multifrequency pulsing no-test incoming trunk from DSA switchboard with MF only keysets, arranged for pulsing on answering and calling cords, single-office or 5-digit multioffice

operation, SD-25888-01, Fig. 1 and F, less T apparatus with R, S, T, and V wiring (see list 189).

*List 195**—Equipment required in addition to list 1 for one multifrequency pulsing no-test incoming trunk from DSA switchboard with MF only keysets, arranged for pulsing on calling cords only, multioffice operation, office signal from sender link frame, SD-25888-01, Fig. 1 and G, less T apparatus with R, S, T, and V wiring (see list 189).

*List 196**—Equipment required in addition to list 1 for one multifrequency pulsing no-test incoming trunk from DSA switchboard with MF only keysets, arranged for pulsing on answering and calling cords, multioffice operation, office signal from sender link frame, SD-25888-01, Fig. 1 and H, less T apparatus with R, S, T, and V wiring (see list 189).

*List 197**—Wiring and equipment required in addition to list 1 for one multifrequency pulsing 3-wire incoming trunk from DSA switchboard with MF only keysets, arranged for pulsing on calling cords only, with controlled start 1- and 2-party selective ringing, SD-25883-01, Fig. 1 and G, and wiring only for Fig. C, D, and E (see list 181 through 184).

*List 198**—Wiring and equipment required in addition to list 1 for one multifrequency pulsing 3-wire incoming trunk from DSA switchboard with MF only keysets, arranged for pulsing on answering and calling cords with controlled start 1- and 2-party selective ringing, SD-25883-01, Fig. 1 and H, and wiring only for Fig. C, D, and E (see list 181 through 184).

*List 199**—Wiring and equipment required in addition to list 1 for one controlled ringing, RP, DP, MFP, or SF trunk from toll or central A switchboard, SD-25302-01, Fig. 1, less A, B, D, E, F, G, N, U, Y, Z, ZI, ZL, and ZX apparatus and T jack, with wiring only for Fig. A, B, D, E, and F (see list 7, 37 through 39, 200 through 208, 253, and 262).

List 200—Equipment required in addition to list 1 and 199 to arrange one trunk per SD-25302-01 for individual and 2- or 4-party selective ringing, SD-25302-01, Fig. B.

List 201—Equipment required in addition to list 1, 199, and 200 to arrange one trunk per SD-25302-01 for 4-party selective ringing, SD-25302-01, Fig. E.

List 202—Equipment required in addition to list 1 and 199 to arrange one trunk per SD-25302-01 for initial individual and 2-party selective and ultimate 4-party semiselective ringing, or for initial 4-party semiselective ringing, SD-25302-01, Fig. D and F, less K apparatus.

List 203—Equipment required in addition to list 1, 199, and 202 to arrange one trunk per SD-25302-01 for 4-party semiselective ringing, SD-25302-01, Fig. F, K apparatus only.

List 204—Equipment required in addition to list 1 and 199 to arrange one trunk per SD-25302-01 for revertive pulsing, SD-25302-01, Fig. 1, ZI apparatus only.

List 205—Equipment required in addition to list 1, 199, and 204 to arrange one trunk per SD-25302-01 for use as a noncompensated revertive pulsing trunk on loops over 2800 ohms, SD-25302-01, Fig. 1, F apparatus only.

List 206—Equipment required in addition to list 1 and 199 for each noncompensated trunk per SD-25302-01 not requiring list 205, SD-25302-01, Fig. 1, U apparatus and N or Z apparatus only.

List 207—Equipment required in addition to list 1 and 199 to arrange one trunk per SD-25302-01 for use as a compensated trunk, SD-25302-01, Fig. 1, U and Y apparatus only (see Note C).

List 208—Equipment required in addition to list 1, 199, and 207 for each compensated MF trunk per SD-25302-01 where sender compensation is not employed, SD-25302-01, Fig. 1, ZL apparatus only.

*List 209**—Wiring and equipment required in addition to list 1 for one controlled ringing SF trunk from A switchboard, SD-25303-01, Fig. 1, with wiring only for Fig. A, D, E, F, G, and H (see list 211 through 214).

*List 210**—Wiring and equipment required in addition to list 1 for one controlled ringing DP or SF trunk from A switchboard, SD-25303-01, Fig. 1, with wiring only for Fig. A, B, D, E, F, G, and H (see list 211 through 215, and 259).

List 211—Equipment required in addition to list 1 and 209 or 210 to arrange one trunk

for individual and 2- or 4-party selective ringing, SD-25303-01, Fig. E.

List 212—Equipment required in addition to list 1, 209 or 210, and 211 to arrange one trunk for 4-party selective ringing, SD-25303-01, Fig. G.

List 213—Equipment required in addition to list 1 and 209 or 210 to arrange one trunk for initial individual, and 2-party selective and ultimate 4-party semiselective ringing or for initial 4-party semiselective ringing SD-25303-01, Fig. D and H, less K apparatus.

List 214—Equipment required in addition to list 1, 209 or 210, and 213 to arrange one trunk for 4-party semiselective ringing, SD-25303-01, Fig. H, K apparatus only.

List 215—Equipment required in addition to list 1 and 210 to arrange one trunk for dial pulsing operation, SD-25303-01, Fig. B.

List 216*—A&M Only—Wiring and equipment required in addition to list 1 for one reverse battery supervision, automatic ringing, RP, DP, MFP, or SF trunk from toll or tandem, SD-25295-01, Fig. 1, less Q, R, P, E, S, Y, Z, ZD, ZE, ZM, and ZN apparatus and T jack with wiring only for Fig. B, C, D, E, and F (see list 6, 7, 115, 116, 217 through 225, 254, 255, and Note D).

List 217—A&M Only—Equipment required in addition to list 1 and 216 to arrange one trunk per SD-25295-01 for individual and 2- or 4-party selective ringing, SD-25295-01, Fig. C.

List 218—A&M Only—Equipment required in addition to list 1, 216, and 217 to arrange one trunk per SD-25295-01 for 4-party selective ringing, SD-25295-01, Fig. E.

List 219—A&M Only—Equipment required in addition to list 1 and 216 to arrange one trunk per SD-25295-01 for initial individual and 2-party selective and ultimate 4-party semiselective ringing or for initial 4-party semiselective ringing, SD-25295-01, Fig. B and F, less K apparatus.

List 220—A&M Only—Equipment required in addition to list 1, 216, and 219 to arrange one trunk per SD-25295-01 for 4-party semiselective ringing, SD-25295-01, Fig. F, K apparatus only.

List 221—A&M Only—Equipment required in addition to list 1 and 216 to arrange one trunk per SD-25295-01 for RP on loops up to 2800 ohms or for DP, MFP, or SF operation, SD-25295-01, Fig. 1, Y apparatus only.

List 222—A&M Only—Equipment required in addition to list 1 and 216 to arrange one trunk per SD-25295-01 for RP on loops up to 3115 ohms, SD-25295-01, Fig. 1, Z apparatus only.

List 223—A&M Only—Equipment required in addition to list 221 or 222 to arrange one trunk per SD-25295-01 for RP operation, SD-25295-01, Fig. 1, ZD apparatus only.

List 224—A&M Only—Equipment required in addition to list 1 and 216 to arrange one trunk per SD-25295-01 for use as a compensated trunk, SD-25295-01, Fig. 1, S apparatus only (see Note C).

List 225—A&M Only—Equipment required in addition to list 1, 216, and 224 to provide compensation for one MF trunk per SD-25295-01 where sender compensation is not employed, SD-25295-01, Fig. 1, ZE apparatus only (see Note G).

List 226*—Wiring and equipment required in addition to list 1 for one dc keypulsing controlled start ringing incoming trunk from A switchboard, wired for multioffice operation and for 4-party selective ringing and equipped for single-office operation and 1- and 2-party selective ringing, SD-25306-01, Fig. 1, B, and C, less K, S, T, Y, and Z apparatus, with A, B, K, L, S, T, Y, and Z wiring, and wiring only for Fig. D (see list 103 through 105, 227, and 228).

List 227—Equipment required in addition to list 1 and 226 to arrange one trunk per SD-25306-01 for multioffice operation and for use with 15D switchboard pulsing on calling cords only, SD-25306-01, T apparatus, and Fig. D, less D resistance.

List 228—Equipment required in addition to list 1 and 226 to arrange one trunk per SD-25306-01 for multioffice operation and for use with 15D switchboard pulsing on answering and calling cords, SD-25306-01, S apparatus and Fig. D, less D resistance.

List 229*—Wiring and equipment required in addition to list 1 for one DCKP 3-wire incoming trunk from No. 3, 3C, or 3CL toll switchboard, with controlled start individual and 2-party selective ringing, wired for single and multioffice operation and pad and coin control, SD-25937-01,

Fig. 1 and A, less MB jack, with wiring only for Fig. 3, D, E, F, and G. (See list 230 through 236, 263, 264, and Notes D and J).

List 230—Equipment required in addition to list 1 and 229 to arrange one trunk per SD-25937-01 for multioffice operation, SD-25937-01, Fig. E.

List 231—Equipment required in addition to list 1 and 229 to arrange one trunk per SD-25937-01 for pad control, SD-25937-01, Fig. 3.

List 232—Equipment required in addition to list 1 and 229 to arrange one trunk per SD-25937-01 for coin control, SD-25937-01, Fig. G, less Y apparatus.

List 233—Equipment required in addition to list 1, 229, and 232 to arrange one trunk per SD-25937-01 for coin control with ground potential differences in excess of 8 volts, SD-25937-01, Fig. G, Y apparatus only.

List 234—Wiring and equipment required in addition to list 1 and 229 to arrange one trunk per SD-25937-01 for 4-party selective ringing, SD-25937-01, Fig. B.

List 235—Wiring and equipment required in addition to list 1 and 229 to arrange one trunk per SD-25937-01 for 4-party semiselective ringing, SD-25937-01, Fig. C.

List 236—Equipment required in addition to list 1 and 172, 229, or 239 to provide one incoming trunk with a 241C make-busy jack, SD-25876-01, Fig. G, SD-25877-01 or SD-25937-01, MB jack only.

*List 237**—Wiring and equipment required in addition to list 1 for one multifrequency pulsing 3-wire incoming trunk from No. 3, 3C, and 3CL toll switchboards with controlled start, individual, and 2-party selective ringing, SD-25876-01, Fig. 1, A, D, and H, less MB jack and ZE apparatus with Z wiring and wiring only for Fig. E. (see list 238, 240, 241, 250, and 261, and Notes J and L).

List 238—Equipment required in addition to list 1 and 237 to provide one incoming trunk with a 285C make-busy jack, SD-25876-01, Fig. H, MB jack only.

*List 239**—Wiring and equipment required in addition to list 1 for one multifrequency pulsing 3-wire incoming trunk from No. 3 or 3CL toll switchboard with controlled start, individual and 2-party selective ringing, SD-25876-01, Fig. 1, A, D, and G, less MB jack and ZE apparatus, with Z wiring and wiring only for Fig. E. (See list 170, 171, 240, 241, 236, 250, and 261, and Note L.)

List 240—Equipment required in addition to list 1 and 237 or 239 to arrange one trunk per SD-25876-01 for coin control, SD-25876-01, Fig. E, less Y apparatus.

List 241—Equipment required in addition to list 1, 237 or 239, and 240 to arrange one trunk per SD-25876-01 for coin control with ground potential differences in excess of 8 volts, SD-25876-01, Fig. E, Y apparatus only.

List 242—Equipment required in addition to list 9 to arrange one trunk per SD-25255-01 for operation with 13C, 13D, 15C, or 15D switchboard, F apparatus only (see Note H).

List 243—Equipment required in addition to list 137 to arrange one trunk per SD-25432-01 with Fig. B for multifrequency operation, SD-25432-01, Fig. B, M apparatus only.

List 244—Equipment required in addition to list 136 to arrange one no-test trunk per SD-25432-01 for connection to line insulation test control, SD-25432-01, Fig. F.

*List 245**—Equipment required in addition to list 1 for one keypulsing incoming trunk from A switchboard wired for multioffice operation and for 4-party semiselective ringing and equipped for single-office operation and for individual and 2-party selective ringing, SD-25294-01, Fig. 1, B, and D with A, B, T, and S wiring (see list 14 through 17).

List 246—Equipment required in addition to list 1 and 245 to arrange one trunk per SD-25294-01 for 4-party semiselective ringing, K apparatus.

List 247—Equipment required in addition to list 1 and 245 to arrange one trunk per SD-25294-01 for multioffice operation and for keypulsing on calling cords only, T apparatus.

List 248—Equipment required in addition to list 1 and 245 to arrange one trunk per SD-25294-01 for multioffice operation and for keypulsing on answering and calling cords, S apparatus.

List 249—Equipment required in addition to list 26 to arrange one incoming trunk per SD-25436-01 for connection to line insulation test control, SD-25436-01, Fig. F.

List 250—Equipment required in addition to list 1 and 237 or 239 to arrange one trunk per SD-25876-01 for fixed pad operation, SD-25876-01, Fig. 1, ZE apparatus only and Fig. 4. (See Note L.)

List 251—Equipment required in addition to list 1 and 172 to arrange one trunk per SD-25877-01 for fixed pad operation, SD-25877-01, Fig. 1, B apparatus only and Fig. 3. (See Note K.)

List 252—Equipment required in addition to list 18 to equip one incoming trunk per SD-25433-01 from line message register rack for ANI line verification.

List 253—Wiring and equipment required in addition to list 1 and 199 to arrange one trunk per SD-25302-01, ZX option for slow disconnect. (See Note O.)

List 254—A&M Only—Equipment required in addition to list 1 and 216 to arrange one trunk per SD-25295-01, ZM option, when slow-disconnect trunk is not required. (See Note O.)

List 255—A&M Only—Equipment required in addition to list 1 and 216 to arrange one trunk per SD-25295-01, ZN option, when slow-disconnect trunk is required. (See Note O.)

List 256—A&M Only—Wiring and equipment required in addition to list 1 and 164 to arrange one trunk per SD-25876-01, ZK option for slow disconnect. (See Note O.)

List 257—Wiring and equipment required in addition to list 1 and 229 to arrange one trunk per SD-25037-01 for via-net-loss operation per SD-25037-01, N option.

List 258—Equipment and wiring required in addition to list 135 or 136 for remote testing, with access to extra numbers not in the regular subscriber number series per SD-25432-01, Fig. J.

List 259—Equipment and wiring required in addition to list 210 to provide coin service improvements (dial-tone-first) when trunk is arranged to complete to a coin station per SD-25303-01, E option.

List 260—Equipment and wiring required in addition to list 8 when the office is arranged for automatic intercept service (AIS), per SD-25299-01, T option.

List 261—Equipment and wiring required in addition to list 237 or 239 to equip one trunk for operation with coin service improvements (dial-tone-first) per SD-25876-01, ZL and ZS options.

List 262—Equipment and wiring required in addition to list 199 to equip one trunk for operation with coin service improvements (dial-tone-first) per SD-25302-01, YE and YK options.

List 263—Equipment and wiring required in addition to list 229 to equip one trunk for operation with coin service improvements (dial-tone-first) per SD-25937-01, B, J, and ZB options (see Note D and list 264).

List 264—Equipment required for each unit which contains trunks, per list 229, that is equipped with list 263 (provides mounting plate for resistance lamp for option B of SD-25937-01, see Note D).

List 265—Apparatus required in addition to list 1 to provide fuse alarm indication per SD-25439-01, Fig. 21, FA lamp only.

Notes

A. List marked with asterisks (*) provide apparatus fundamental to the trunk covered in each instance and include the required mounting plate or plates. All other lists are supplementary to these or to the unit. The various incoming trunk circuits involve lists as follows:

SD-25024-01	52-54 and 149-151
SD-25202-01	123-125, 127-129, 152 and 153
SD-25255-01	9-13, 144, and 242
SD-25294-01	14-17 and 245-248
SD-25295-01	A&M Only 7, 115, 116, 216-225, 254, and 255
SD-25299-01	8, 260
SD-25302-01	7, 37-39, 199-208, 253, and 262
SD-25303-01	209-215, and 259
SD-25306-01	103-105 and 226-228
SD-25322-01	130 and 131
SD-25351-01	133, 134, 154-158, 179, and 180
SD-25353-01	75-78 and 159-161

SD-25420-01	7, 64-68, and 70-73
SD-25432-01	135-139, 243, 244, and 258
SD-25433-01	18-24 and 252
SD-25436-01	25-30 and 249
SD-25875-01	A&M Only 7, 164 to 166, 178, and 256
SD-25876-01	170, 171, 236-241, 250, and 261
SD-25877-01	172-177, 236, and 251
SD-25883-01	181-184, 197, and 198
SD-25888-01	185-189 and 193-196
SD-25937-01	229-236, 257, 263, and 264

B. The trunk circuit wiring furnished with list 1 shall in all cases include all standard wiring options not specifically excluded. The wiring options shall be connected as required by the specific application of each trunk, in accordance with notes on the circuit drawings.

C. The 40-type compensating resistances, per list 70, 207, and 224, are required when the trunks are incoming from No. 1 toll switchboard not employing associated outgoing trunks. When required, they shall be furnished fully strapped, the strapping to be cut by the installation force to suit the individual job conditions. Incoming trunks per list 64, not requiring 400-type compensating resistances shall be equipped with 18-type resistance per SD-25420-01, ZA or ZC apparatus.

D. Resistance lamp mountings shall be furnished as required on units when wired for trunks per SD-25937-01 and List 263.

E. Reserved.

F. SD-25420-01 has optional wiring for use with B switchboard and full selector operation or B switchboard and multifrequency pulsing operation.

G. When list 225 is required for 4-party semiselective trunks per SD-25295-01, the 40CJ resistance C is mounted on the relay rack.

H. F apparatus of SD-25255-01, Fig. 1 was formerly furnished as part of list 9.

J. Furnish transformer in accordance with circuit note.

K. A, B, and Z wiring should be furnished with list 237 or 239 but not connected. When either A or B wiring is specified, Z wiring should not be connected. A and B wiring consist of only one wire each.

L. ZD, ZE, and Z wiring should be furnished with list 237 or 239 but not connected. When either ZD or ZE wiring is specified, Z wiring should not be connected. ZD and ZE wiring consist of only one wire each.

M. The installation force will wire F option or G option as required.

N. Specify H wiring when, the TOUCH-TONE® frequency test is required and remote control is not provided. Otherwise specify J wiring.

O. Furnish slow-disconnect trunk in accordance with circuit note.

J28650AA—A&M Only—"B" Switchboard or Dial, Multifrequency, or Revertive Pulsing Incoming Trunk Unit—Regular

J28650AB—A&M Only—Switchboard or Dial, Multifrequency, or Revertive Pulsing Incoming Trunk Unit—Auxiliary or Supplementary

Equipment—J28650AA-( ) or J28650AB-( )

List 1—Framework, assembly, wiring, and common equipment for one unit of 20 trunks (see Note A).

	WIRE	EQUIP	NOTES
Inc Trk Ckt, SD-25875-01:			
Fig. 1	20	0	
Timing Ckt, SD-25038-01:			
Fig. 2	1	0	
Misc Ckt, SD-25439-01:			
Fig. 18 & 21	1	0	

List 2—Equipment required in addition to list 1 to arrange one unit for timed release of trunks, SD-25038-01, Fig. 2, A relay only.

List 3—Equipment required in addition to list 1 to arrange upper group of trunks for timed release, SD-25038-01, Fig. 2, B relay only.

List 4—Equipment required in addition to list 1 to arrange lower group of trunks for timed release, SD-25038-01, Fig. 2, C relay only.

List 6—Equipment required in addition to list 1 for one local or tandem trunk, SD-25875-01, Fig. 1, less R and ZK apparatus.

List 7—Equipment required in addition to list 1 and 6 to equip one local or tandem trunk for 4-party semiselective ringing, SD-25875-01, Fig. C, Q apparatus only.

List 8—Equipment required in addition to list 1 and 6 to equip one local or tandem trunk for 4-party selective ringing, SD-25875-01, Fig. A, P apparatus only.

List 9—Equipment required in addition to list 1 and 6 to equip one local or tandem trunk for revertive pulsing, SD-25875-01, Fig. 1, R apparatus only.

List 10—Equipment required in addition to list 1 to provide one unit with filter capacitor fuse alarms, SD-25439-01, Fig. 18.

List 11—Wiring and equipment required in addition to list 1 and 6 to arrange one trunk, per SD-25875-01, ZK option, for slow disconnect (see Note C).

List 12—Apparatus required in addition to list 1 to provide fuse alarm indication per SD-25439-01, Fig. 21, FA lamp only.

Notes

A. These two units using U- and Y-type relays are replaced by J28650AF and AG using wire spring relays, except for additions to existing units.

B. Each incoming trunk shall be wired for individual and 2-party selective ringing per Fig. B; universally for individual and 2- or 4-party selective ringing per Fig. B and A; or universally for individual and 2-party selective or 4-party semiselective ringing per Fig. B and C, as required by the ringing conditions for which the trunks are to be arranged.

C. Furnish slow-disconnect trunk in accordance with circuit note.

J28650AC—AT&TCo Std—Incoming Trunk Unit for Line Verification Test—For Use in Offices Arranged for Automatic Message Accounting

Equipment—J28650AC-( )

List 1—Framework, assembly, wiring, and common equipment for one line verification test trunk unit (see Note A).

	WIRE	EQUIP	NOTES
Inc Trk Ckt Line Verification Tst, SD-25611-01:			
Fig. 1, Less Z App	1	1	
Fig. 2, 3, A,B,C,D, & E, each	1	0	

List 2—Equipment per SD-25611-01, Fig. B required in addition to list 1 where the trunk is associated with two offices, each having a separate terminating sender link group.

List 3—Equipment per SD-25611-01, Fig. 1, Z apparatus only, required in addition to list 1 where there are more than ten line choice connectors.

List 4—A&M Only—Equipment per SD-25611-01, Fig. 1, Y apparatus only, required in addition to list 1 where the trunk is used for the verification of coin lines.

List 5—Equipment per SD-25611-01, Fig. 2 required in addition to list 1 where display of line directory number is required.

List 6—Equipment per SD-25611-01, Fig. C required in addition to list 1 where verification is not required on coin lines.

List 7—Equipment per SD-25611-01, Fig. D required in addition to list 1 where verification is required on coin-first lines not using EA1 or E6498 line relays.

List 8—Equipment per SD-25611-01, Fig. E required in addition to list 1 where verification is required on dial-tone-first coin lines or on coin-first lines using EA1 or E6498 line relays alone or with R2032 line relays.

List 9—Equipment per SD-25611-01, Fig. 3, required in addition to list 1 where the trunk is used for the verification of lines equipped with the feature for automatic identification of outward dialing (see Note D).

Notes

A. The local cable for list 1 shall include wiring for all options.

B. This unit shall be located on the miscellaneous frame as covered in specification J23051.

C. A cable bracket per ED-25020-01, Item 12 shall be provided and mounted on the rear of the bay, after the unit is installed, for supporting the local cable.

D. For automatic identified outward dialing provide N option and omit Q option in Fig. 1, SD-25611-01.

J28650AD—AT&TCo Std—Controlled Ringing, RP, DP, MFP, or SF Toll or Central "A" Switchboard Incoming Trunk Unit—Regular

J28650AE—AT&TCo Std—Controlled Ringing, RP, DP, MFP, or SF Toll or Central "A" Switchboard Incoming Trunk Unit—Auxiliary or Supplementary

Equipment—J28650AD-( ) or J28650AE-( )

List 1—Framework, assembly, wiring, and common equipment for one unit of ten trunks

	WIRE	EQUIP	NOTES
Inc Trk Ckt, SD-25302-01:			
Fig. 1,A,B,D,E, & F	10	0	
Timing Ckt, SD-25038-01:			
Fig. 2	1	0	
Misc Ckt, SD-25439-01:			
Fig. 18 & 21	1	0	

List 2—Equipment required in addition to list 1 to arrange one unit for timed release of trunks, SD-25038-01, Fig. 2, A relay only.

List 3—Equipment required in addition to list 1 to arrange upper group of trunks for timed release, SD-25038-01, Fig. 2, B relay only.

List 4—Equipment required in addition to list 1 to arrange lower group of trunks for timed release, SD-25038-01, Fig. 2, C relay only.

List 6—Equipment required in addition to list 1 to provide one unit with filter capacitor fuse alarms, SD-25439-01, Fig. 18.

List 7—Equipment required in addition to list 1 for one trunk, SD-25302-01, Fig. 1, less A, B, F, G, N, U, Y, Z, Z1, ZL, and ZX apparatus.

List 8—Equipment required in addition to list 1 and 7 to provide one trunk with a 1:1 transformer, SD-25302-01, A or D apparatus only (see Note B).

List 9—Equipment required in addition to list 1 and 7 to provide one trunk with a 1:1.5 transformer SD-25302-01, B or E apparatus only (see Note B).

List 10—Equipment required in addition to list 1 and 7 to arrange one trunk for coin control, SD-25302-01, G apparatus only.

List 11—Equipment required in addition to list 1 and 7 to arrange one trunk for individual and 2- or 4-party selective ringing, SD-25302-01, Fig. B.

List 12—Equipment required in addition to list 1, 7, and 11 to arrange one trunk for 4-party selective ringing, SD-25302-01, Fig. E.

List 13—Equipment required in addition to list 1 and 7 to arrange one trunk for initial individual and 2-party selective and ultimate 4-party semiselective ringing, SD-25302-01, Fig. D and F, less K, apparatus.

List 14—Equipment required in addition to list 1, 7, and 13 to arrange one trunk for 4-party semiselective ringing, SD-25302-01, Fig. F, K apparatus only.

List 15—Equipment required in addition to list 1 and 7 to arrange one trunk for revertive pulsing, SD-25302-01, Fig. 1, Z1 apparatus only.

List 16—Equipment required in addition to list 1, 7, and 15 to arrange one trunk for use as a noncompensated revertive pulsing trunk on loops over 2800 ohms, SD-25302-01, Fig. 1, F apparatus only.

List 17—Equipment required in addition to list and 7 for each noncompensated trunk not requiring list 16, SD-25302-01, Fig. 1, U apparatus and N or Z apparatus only.

List 18—Equipment required in addition to list 1 and 7 for each compensated trunk, SD-25302-01, Fig. 1, Y apparatus only.

List 19—Equipment required in addition to list 1, 7, and 18 for each compensated MF trunk where sender compensation is not employed, SD-25302-01, Fig. 1, ZL apparatus only.

List 20—Equipment required in addition to list 1 and 7 to arrange one trunk per SD-25302-01, ZX option, for slow disconnect (see Note D).

List 21—Equipment and wiring required in addition to list 7 to equip one trunk for operation

with coin service improvements (dial-tone-first), per SD-25302-01, YE and YK options.

List 22—Apparatus required in addition to list 1 to provide fuse alarm indication per SD-25439-01, Fig. 21, FA lamp only.

Notes

A. Each incoming trunk shall be wired universally for Fig. A, E, and F, for Fig. B and D, and for the options of Fig. 1 that are not applicable by means of strapping at the vertical terminal strip.

B. Furnish transformer in accordance with circuit note.

C. The 40-type compensating resistances per list 18 and 19 are required when the trunks involved are incoming from No. 1 toll switchboard not employing associated outgoing trunks. When required, these resistances shall be furnished fully strapped, the strapping to be cut by the installation force to suit the individual job conditions. Incoming trunks not requiring 40-type compensating resistances shall be equipped with 18-type resistances per list 16 or 17.

D. Furnish slow-disconnect trunk in accordance with circuit note.

J28650AF—AT&TCo Std—RP, DP, MFP, or SF Incoming Trunk Unit—Regular

J28650AG—AT&TCo Std—RP, DP, MFP, or SF Incoming Trunk Unit—Auxiliary or Supplementary

Equipment—J28650AF-( ) or J28650AG-( )

List 1—Framework, assembly, wiring, and common equipment for one unit of 20 trunks.

	WIRE	EQUIP	NOTES
Inc Trk Ckt, SD-26204-01:			
App Fig. 1, 3, & 4	20	0	
Timing Ckt, SD-25038-01:			
Fig. 3	1	0	
Misc Ckt, SD-25439-01:			
Fig. 18 & 21	1	0	

List 2—Equipment required in addition to list 1 to arrange one unit for timed release of trunks, SD-25038-01, Fig. 3, A relay only.

List 3—Equipment required in addition to list 1 and 2 to arrange upper group of trunks for timed release, SD-25038-01, Fig. 3, B relay only.

List 4—Equipment required in addition to list 1 and 2 to arrange lower group of trunks for timed release, SD-25038-01, Fig. 3, C relay only.

List 6—Equipment required in addition to list 1 to provide talking battery filter fuse alarms, SD-25439-01, Fig. 18.

List 7—Equipment required in addition to list 1 for one incoming trunk from panel, crossbar, or manual, SD-26204-01, apparatus Fig. 1, less apparatus Fig. 3 and 4 and R, X and ZG apparatus.

List 8—Equipment required in addition to list 7 to arrange trunk for 4-party full selective ringing, SD-26204-01, apparatus Fig. 4.

List 9—Equipment required in addition to list 7 to arrange trunk for 4-party semiselective ringing, SD-26204-01, apparatus Fig. 3, less PU lamp.

List 10—Equipment required in addition to list 7 to arrange trunk for revertive pulsing, SD-26204-01, R apparatus.

List 11—Equipment required in addition to list 7 for external loop of 3115 ohms or less, SD-26204-01, X apparatus.

List 12—Wiring and apparatus required in addition to list 7 to arrange one trunk per SD-26204-01, ZG option, for slow disconnect (see Note C).

List 13—Apparatus required in addition to list 1 to provide fuse alarm indication per SD-25439-01, Fig. 21, FA lamp only.

Notes

A. Each incoming trunk shall be wired for individual and 2-party selective ringing; universally for individual and 2- or 4-party selective ringing; or universally for individual and 2-party selective or 4-party semiselective ringing as required by the ringing conditions for which the trunk is to be arranged.

B. Intraplate leads on these units shall be surface wired, the remaining wiring, including options, to be in the unit local cable.

C. Furnish slow-disconnect trunk in accordance with circuit note.

J28650AH—AT&TCo Std—Fuse Panel Unit

Equipment—J28650AH-( )

List 1—Assembly, equipment, and wiring for one incoming trunk unit fuse panel per SD-25439-01, Fig. 21 arranged to provide fusing for 20 incoming trunk circuits.

5. GENERAL NOTES

Equipment

5.01 The number of different types of incoming trunks and the variation in the quantities of these trunks make it impractical to code separate units to care for all conditions. When job requirements for incoming trunk units are not met by the regular coded units, miscellaneous units, per J28650A and J28650B, shall be made up in accordance with the particular conditions. In making up these units, the design and practices of the standard units shall be followed. Further restrictions and requirements for incoming trunks are covered in the following.

5.02 The two J- codes of a pair, J28650AA and AB, AD and AE, AF and AG, are identical from the standpoint of the types and quantities of trunks they accommodate. The first, however, is intended for use on regular incoming trunk frames, and the second on auxiliary and supplementary incoming trunk frames. They differ in the arrangement of their horizontally mounted terminal strips and in the local cable wiring to these terminal strips. These differences result from their varied use with respect to incoming link frame association. The trunks associated with a specific primary switch are provided with one set of common leads to the incoming link frame for control purposes. Since the trunks on the regular units are always divided into two primary switch groups, the common leads are multipled in the local cable between the trunks and brought out once per group. In the case of auxiliary and supplementary units, however, it may be necessary to assign each trunk to a different incoming link primary switch. Consequently, these leads are brought out separately for each trunk on the unit. The J-codes covering the miscellaneous units J28650A and B are similarly treated.

5.03 The jack panel shall be equipped with a jack for each wired circuit on the unit requiring a jack whether or not the associated trunk is equipped. The FC1 and FC2 lamps and resistors shall be equipped on the top unit only on fully equipped frames and on the bottom unit only on partially equipped frames.

5.04 The A relay is either a B or an S type depending on the external loop, as covered in the circuit notes. For either loop condition, the A relay is located in a universally punched position arranged to mount either a B or an S type.

5.05 The units on the regular, auxiliary, and supplementary incoming trunk frames shall be equipped from bottom up. It should be noted in this connection that the four-class terminating sender link frame imposes certain restrictions on the trunk equipment with respect to the segregation of groups of ten trunks. Access to four kinds of senders is obtained by splitting the horizontal multiple on the sender link frame secondary switches into two sections. Each section may accommodate two kinds of terminating senders. To facilitate the more usual conversion of local incomings from manual to crossbar, one section will normally serve B switchboard and full selector senders. Dial pulsing and MF keypulsing senders will then be served through the other section. Since the numbers of the secondary switch verticals correspond to the associated trunk groups, manual and full selector incomings will normally be segregated at the bottom of the frame and dial pulsing and MF keypulsing incomings at the top, or vice versa. On a given job requiring three or four kinds of senders, all of the sender link frames need not be so arranged. Conversions involving the splitting of secondary switches or shifts in existing splits, however, should be anticipated by locating the convertible trunks at the top or bottom of the frame in the former case, or adjacent to the trunks served through the other split in the latter. Partially equipped frames should be equipped in such a manner as to eliminate the need for splitting the secondary switches of the associated terminating sender link frames so as to avoid restrictions on the future use of the spare space on such trunk frames.

5.06 In general, units on the regular and auxiliary incoming trunk frames requiring cabling to trunks on the supplementary frame shall be located near the top of the frame, subject to the requirements of 5.05.

5.07 Although the preferred location of "no test" incoming trunks is on the supplementary incoming trunk frame, they may be located on auxiliary incoming trunk frames. The latter procedure will normally be followed only where the elimination of the supplementary frame results and where the availability of space on the auxiliary frame permits. A no-test incoming trunk requires double the usual number of individual punchings on the vertical terminal strip on the unit, regardless of whether it is a 1- or 2-plate trunk. The terminal punching requirements result in the permanent loss of a trunk position on the terminating sender link frame for each no-test trunk located on an auxiliary frame. In those cases where the supplementary frame is eliminated, the second position on the regular and auxiliary terminating sender link frames and on the incoming link frames for all 2-plate trunks will be spare. The future use of these spare positions will be restricted by the requirements of the associated 2-plate trunks with regard to sender type, office indications, special routings, etc.

5.08 No incoming link primary switch shall accommodate more than two toll number checking trunks, due to their high calling rate. In addition, it is desirable to equalize switch wear on the terminating sender link primary switches due to this type of trunk. The like-numbered selecting magnets on the three terminating sender link primary switches are operated in parallel. If more than two number checking trunks are to be associated with any given frame, their relative locations within the trunk groups of ten shall be different to avoid the use of corresponding primary switch horizontals for such traffic from each group.

Incoming Trunk Circuits

5.09 Incoming trunks of the 4-party semiselective ringing and 4-party full selective ringing types are available with arrangements for initial individual and 2-party selective ringing. Where convertible circuits are desired, the telphone company shall so specify, stating the ultimate ringing condition required.

5.10 When incoming trunks per SD-25875-01 or SD-26204-01 are used as manual local incomings, an applique circuit per SD-25025-01 may be required per trunk. These auxiliary incoming circuits are mounted on the miscellaneous relay rack.

5.11 SD-25875-01 and SD-26204-01 may be used for intraoffice or interoffice trunks from either panel or crossbar to No. 1 crossbar offices, in which case, they are assigned equipment designation FS. They may be used as intraoffice or interoffice incoming trunks from manual to crossbar (DSB) and, under this condition, may require the addition of an auxiliary incoming trunk circuit per SD-25025-01. When used from manual to crossbar on a dial pulsing basis (DP), the auxiliary incoming trunk SD-25025-01 is not required. They may be used as intraoffice or interoffice trunks from manual or crossbar on a multifrequency pulsing basis (MFP); as incoming trunks to No. 1 crossbar from manual tandem (DSB), sender tandem (FS), or crossbar tandem (FS or MFP). The FS classification also includes their use as interoffice trunks from manual tandem or DSA switchboards equipped for key pulsing to crossbar. SD-26204-01 uses wire spring relays and replaces SD-25875-01 which employs U- and Y-type relays. SD-26204-01 also replaces SD-25295-01. The latter provides type A talking battery which is no longer standard for immediate ringing trunks.

5.12 SD-25302-01 is a toll or central DSA switchboard incoming trunk. It may be used for either inward or outward service from toll on a keypulsing (TOLL FS CR) or manual (TOLL DSB CR) basis. When used with a central DSA switchboard, it is designated C A SWBD. The trunk is arranged for reversed-battery supervision, controlled-start ringing, and toll grade transmission. It requires two mounting plates and is furnished in 10-trunk units per J28650AD and AE.

5.13 The trunks described in 5.11 and 5.12 are available in standardized units as covered by the J- codes listed herein. The remaining trunks are covered under J28650A and J28650B; the titles of the various lists giving an indication of their uses and the available features.

5.14 The toll or central "A" switchboard incoming trunk units will mount ten 2-plate circuits. When one of these units is located on a regular or auxiliary incoming trunk frame, the upper five trunks shall appear as an odd-numbered trunk group on the terminating sender link frame and the lower five as an even-numbered trunk group. A unit of ten trunks, when mounted on a supplementary frame, is identical in every respect with that on the auxiliary frame. In all cases, the five trunks of a group shall be numbered 0,

2, 4, 6, and 8. This numbering, in the case of the unit on the regular incoming trunk frame, indicates the incoming link frame association. In the case of the unit on the auxiliary or supplementary incoming trunk frame, this numbering is supplemented on a job basis by stamping indicating the incoming link frame association. Additional stamping, also on a job basis, may be required on supplementary units to indicate the terminating sender link association where such trunks are supplementary to units on the auxiliary incoming link frame.

5.15 Incoming trunks that are common to both offices of a multioffice terminating unit may require terminating sender link frame appearances in two different groups of ten trunks, giving the A office indication from one appearance and the B office indication from the other. Only one incoming link frame appearance is provided for such trunks. The incoming link frame indication is also given through the terminating sender link frame, either on a frame basis or by groups of ten trunks. It will, consequently, be undesirable to provide the two terminating sender link frame appearances on separate regular frames, as the entire group of ten trunks associated with the second appearance becomes useless for other purposes. This applies to the trunk mounting plate space and the associated terminating sender link and incoming link appearances. The two appearances shall be provided, preferably on the same regular terminating sender link frame, but may be located in any manner on auxiliary terminating sender link frames or divided between a regular and an auxiliary frame. Restrictions concerning the use of the balance of the trunk group of ten, including the second appearance, will always result.

Miscellaneous Circuit

5.16 The apparatus for the miscellaneous frame circuit, SD-25439-01, Fig. 2, 3, 5, 6, 7, 9, 10, 11, 13, and 14, shall be mounted on a panel as shown on the frame equipment drawing. One such panel shall be furnished for each regular, auxiliary, and supplementary incoming trunk frame. The relay equipment, per SD-25439-01, Fig. 12 associated with Fig. 11, shall be located on the relay rack. The panel should be mounted by the installation force on the second unit from the floor and wired as covered later under wiring notes. Where only one unit is equipped on a frame, the panel may be located on the bottom unit.

Timing Circuit

5.17 The timing circuit, per SD-25038-01, Fig. 2 or 3, is required on all units mounting incoming trunks from panel, crossbar, or sender tandem, and may be furnished at the option of the telephone company for use with manual incoming trunks and toll switching trunks. In addition, equipment, per SD-25038-01, Fig. 1, is required per incoming trunk frame mounting these trunks. The DX lamp and DX key for Fig. 1 of these circuits shall be mounted with the miscellaneous frame circuit apparatus as covered in 5.16. The remaining apparatus required for Fig. 1 shall be mounted on the relay rack.

Main Distributing Frame

5.18 All the incoming trunks associated with the same incoming trunk frame should be grouped together in consecutive order on the terminal strips on the horizontal side of the main distributing frame. Two 183B terminal strips shall be furnished at the HMDF, per incoming trunk frame. This arrangement provides four punchings per incoming trunk. While the majority of the incoming trunks require only two leads, certain of the incomings require three or four leads to the main frame and the provision of four punchings per circuit permits the location of incomings on the HMDF in consecutive order with no special job engineering.

5.19 Exceptions to the requirements of 5.18 are made:

(a) In the case of the incoming trunks from test desks. Such circuits shall be cabled in 1000CL-type switchboard cable and, for convenience, grouped on a separate terminal strip on the horizontal side of the main distributing frame. A better grade of insulation than is provided in CL-type switchboard cable is required for this class of trunks.

(b) In the case of incoming trunks per SD-25024-01, SD-25306-01, SD-25353-01, SD-25876-01, SD-25877-01, and SD-25888-01 requiring five punchings at the MDF. A 183D terminal strip should be substituted for any 183B terminal strip whose associated 50 circuits include such trunks. This permits application of the remaining requirements of 5.18.

(c) In the case of keypulsing incoming trunks per SD-25937-01 from No. 3, 3C, or 3CL toll switchboards in the same building. As shown in the circuit cross-connections, these trunks are grouped on separate terminal strips on the HMDF or on the toll VIDF, as dictated by the termination of the toll switchboard outgoing trunk jack circuits. Two rows of punchings are assigned per trunk.

Wiring

Local Cable

5.20 The design of the local cable for incoming trunk units is shown on ED-25507-10. No. 24-gauge type BU wire shall be used for all leads, except common battery and ground leads which shall be No. 22-gauge type BU wire. Common ringing and tone leads shall be No. 20 gauge, type BH wire. The incoming trunk frames require no frame local cable.

5.21 The local cables for the terminating sender link and incoming link frames are provided with local cable extensions which carry the leads between these frames and the incoming trunk units. The local cable arms from these frames should be soldered on the corresponding terminal strips and apparatus on the incoming trunk units by the installation force after the frames are in place on the floor.

5.22 The vertically mounted terminal strip at regular and auxiliary incoming trunk frames, to terminate the leads from the terminating sender link frame which are contained in a local cable arm from that frame. It is also used on these and supplementary incoming trunk frames to terminate switchboard cabling as covered hereinafter under that heading. The arrangement of the terminal strip is such that individual punchings for two circuits are in line with the mounting plates on which these circuits are located. All miscellaneous leads are terminated on the upper ten horizontal rows of punchings on terminal strips of the 215-type and on an added row of punchings along the base of terminal strips of the 251-type. In the case of no-test incoming trunks mounted on auxiliary frames, the leads in the terminating sender link frame local cable for the second of the two trunk positions required by each no-test trunk shall not be connected at the vertically mounted terminal strip.

5.23 The horizontally mounted terminal strips at the upper right of the unit are used differently on regular and on auxiliary and supplementary units. On regular units, they terminate the leads from the incoming link frame which are contained in a local cable arm from that frame. The local cable arm to each unit includes leads for 32 trunks in two groups of 16. Only ten trunks can be supplied for each of these groups by the trunk unit. The terminations on the unit of the remaining six trunks in each group serve as doubling up points for switchboard cables introducing such trunks from auxiliary frames. This is also true of the terminations for trunks displaced by the use of 2-plate circuits, such trunks being cabled from supplementary frames. On auxiliary and supplementary frames, the horizontal terminal strips serve only for the termination of switchboard cables distributing the trunks to incoming link frames.

5.24 The NN, NT, NH, etc, leads to the marker connector relays of the incoming link and connector circuit are common to all incoming trunks requiring these leads, served by the same incoming link frames. These leads shall be run from the incoming link frame to the incoming trunk frame in the local cable arm to the top unit only and wired to the other units on the frame by the installation force as required. Since these leads are brought to the top incoming trunk unit, trunks requiring them should be assigned, as far as is practical, to a fully equipped incoming trunk frame. Where this is not practical, the installation force shall run these leads, as required, from the MC relay terminal strips on the incoming link frame to the highest equipped unit (where this is not the top unit) on the incoming trunk frame, superimposing the leads on the incoming link local cable.

5.25 The traffic register leads PB and PC, for each incoming trunk requiring them, are wired to idividual punchings on the vertical terminal strip. These punchings shall be strapped, as required, in order to associate several incoming trunks on the same unit with the same traffic register circuit. Twelve punchings common to the unit are provided on the vertical terminal strip which may be used either for paths busy or peg count register leads. The common punchings are cabled to the traffic register distributing frame and shall be strapped, as required, to the individual PB and PC punchings in order to associate the individual circuits with traffic registers. The

individual PB and PC leads for incoming trunks on the supplementary incoming trunk frame shall be cabled to the associated individual punchings on the regular incoming trunk frame and grouped with other incomings located on the regular frame.

5.26 Keypulsing incoming trunks require access to keypulsing senders to register the number written up on the attendant keys. They also require terminating senders to control the setting up of the call in the crossbar office. Intraoffice keypulsing incoming trunks, therefore, beside being wired in local cable to the terminating sender link frame, must be wired in switchboard cable to the keypulsing sender link frame, or to keypulsing sender selectors on the relay rack.

5.27 As indicated in 5.04 and 5.05, the FC1 and FC2 lamps are located on either the top or bottom unit. Each unit local cable shall include an F lead to these lamps from miscellaneous vertical terminal strip punching 3. For each regular and auxiliary incoming trunk frame, the associated terminating sender link frame local cable shall carry the F lead from punching 3 of the bottom incoming trunk unit only to punching 237 on the terminal strip at the top of the terminating sender link frame. It shall be picked up at this point by the switchboard power cable and carried to the floor alarm circuit through the SDPTS. The F lead shall be multipled from the bottom incoming trunk unit to the third and fifth units from the bottom of the frame by the installation force. For supplementary frames, the F lead shall be run as covered later under switchboard cable.

5.28 Other apparatus for the miscellaneous frame circuit and timing circuit mounted on the second unit from the floor on each regular incoming trunk frame shall be wired from the DPTS through the miscellaneous terminal strip at the top of the associated incoming link frame. The incoming link frame local cable shall carry these leads in the arm to the unit on which the miscellaneous circuit apparatus is located. This arm shall be of sufficient length to reach the apparatus on the panel and shall be superimposed on the top arm of the unit local cable. The corresponding apparatus for the auxiliary and supplementary frames shall be wired as covered under switchboard cable.

Battery and Ground

5.29 The two ground supply leads for the talking battery supply filter shall be wired to the FC ground punching on the top unit on fully equipped frames or to the bottom unit on partially equipped frames. The two fuse alarm leads shall be wired to the FC1 and FC2 resistances on the same fuse panel used for terminating the ground leads.

5.30 Battery and ground shall be provided to each unit separately by taps into the main battery and ground drops. These battery and ground details are shown on ED-25346-17.

5.31 Group-busy indication on the DSA switchboard incoming trunks is an A&M Only feature. When it is provided, the 24-volt battery supply shall be obtained from the miscellaneous fuse board.

Incoming Link Frame Cross-Connections

5.32 The 160-trunk capacity of the incoming link frame is obtained by the provision of arrangements to serve two trunks on each of eight horizontals (2 through 9) of the ten primary switches. The frame is arranged to give indications by switch levels (pairs of trunks) to the terminating marker to effect the proper routing on intercepted calls, the proper supervision on free calls, and the proper restrictions on calls to physical and theoretical offices. Both trunks of a pair must be adaptable to identical treatment by the marker with respect to these items. The desired conditions are established for a pair of trunks by means of a cross-connection on each of two terminal strips on the incoming link frame, a CL terminal strip for the FS, MAN, or TOL cross-connection, and a PT terminal strip for the IP, IT, or IPT cross-connection. These cross-connections are used as follows:

FS—To route to the local intercepting or local trouble intercepting trunk group and to cancel supervision on calls to free lines.

MAN—To route to the local intercepting or local trouble intercepting trunk group and to give supervision on calls to free lines.

TOL—To route to the toll intercepting or toll trouble intercepting trunk group and to give supervision on calls to free lines.

IP—For all trunks in a 10,000-number series which contains only physical office numbers.

For all trunks which are individual to the physical office of a 10,000-number series containing both physical and theoretical office numbers when completion of calls over these trunks is restricted to physical office numbers only.

For all trunks which are common to the physical and theoretical offices of a 10,000-number series and which receive a discriminating signal from the originating sender on full mechanical calls and from the "B" switchboard on calls from manual offices.

IT—For all trunks which are individual to the theoretical office of a 10,000-number series containing both physical and theoretical office numbers when completion of calls over these trunks is restricted to theoretical office numbers only. The IT cross-connection is not required for common trunks.

IPT—For trunks, either individual or common to the physical and theoretical offices of a 10,000-number series, on which discrimination between physical and theoretical office numbers is not desired.

Switchboard Cable

5.33 The switchboard cable for a given arrangement of incoming trunk frames must be engineered in accordance with the requirements of the particular job. In general, the largest practical cables shall be used.

5.34 With several minor exceptions, all incomings require cabling to the MDF for cross connection to trunks. For the majority of the incoming trunks, this cabling will consist of two leads, T and R, per circuit. Where practical, one cable per regular or auxiliary incoming trunk frame shall be used for the T and R leads to the MDF, this cable to be fanned over the vertical terminal strips of the various units on the frame. Those incoming trunks requiring three or more leads to the MDF shall be cabled in accordance with the requirements of the individual circuits.

5.35 The 160-trunk capacity incoming link frame may serve from one to six trunk groups of ten in addition to those of the associated regular incoming trunk frame. Except for the customary use of the supplementary frame, these additional trunk groups are cabled from auxiliary frames. The first two, four, or six trunk groups are contributed by one, two, or three auxiliary units and are cabled in 20-circuit cables. Consecutive trunks on an auxiliary unit of 20 are then assigned by pairs to the ten primary switches of the incoming link frame, permitting the 20 trunks on the unit to be of a given type and effecting an even division of traffic over the incoming link primary switches. Where one, three, or five auxiliary trunk groups are to be associated with an incoming link frame, the last group of ten is cabled in a 10-circuit cable. The ten trunks of this group will occupy the upper- or lower-half of an auxiliary unit and the consecutive trunks will be assigned individually to the ten primary switches of the incoming link frame. Leads common to an incoming link primary switch are cabled only once to each auxiliary frame contributing trunks to the incoming link frame. They are included in the cable to the uppermost auxiliary unit involved and are multipled by the installation force to other units on the frame as required. The number of such runs must be kept at a minimum to avoid congestion at the horizontal terminal strips on the regular incoming trunk units where these leads are terminated. This requires that the auxiliary trunks associated with a given incoming link frame be restricted to one auxiliary frame as far as possible. The cabling considerations involved are illustrated on the incoming trunk cross-connection diagrams.

5.36 The cabling described in 5.35 interconnects the horizontal terminal strips of units on regular and auxiliary incoming trunk frames. This cabling is run on the rear of these frames and is supported by cable brackets furnished as part of the trunk units. Two cable brackets are furnished for each unequipped unit on partially equipped frames and are mounted by the installation force for use in supporting this cabling until such time as additional units are equipped. Corresponding cabling from supplementary frames to regular frames is treated similarly.

5.37 Twelve common punchings are provided on the vertical terminal strip of each regular or auxiliary incoming trunk unit to which the individual PB or PC leads for each incoming trunk

shall be strapped, as required, in order to associate them with traffic register circuits. Twelve leads shall be cabled to the traffic register distributing frame from each incoming trunk frame. These shall be run in one cable to the common punchings on the top equipped unit on each incoming trunk frame, and multipled to the common punchings on the other units on the frame. These leads may be used for either paths busy or peg count registration by any incoming trunk circuit on a given incoming trunk frame. The 12 leads per frame to the traffic register distributing frame are not intended to include PB registration for manual incoming trunks per SD-25875-01 or SD-26204-01. The PB registration for these circuits should be obtained at the associated auxiliary incoming trunk circuits mounted on the relay rack.

5.38 Nine leads to the keypulsing sender link frame are required per keypulsing incoming trunk. Cables for these leads should be provided as required on the basis of one cable per unit containing keypulsing incomings.

5.39 Where A switchboard coin control is required for incoming trunks, one cable per incoming trunk frame, carrying one lead per toll incoming trunk and three leads per unit mounting toll incomings, shall be run to the MDF for cross connection to coin control circuits. Where trunk coin control circuits are used, one cable per incoming trunk frame, carrying two leads per toll incoming trunk requiring coin control, shall be run to the MDF.

5.40 Incoming trunks located on a supplementary frame require cabling to the unit on the regular or auxiliary frame with which they are associated. This cabling includes leads to the associated incoming link and terminating sender link frames, leads to the HMDF, and the individual PB and PC leads. The terminating sender link, MDF, and traffic register leads must be cabled between the vertical terminal strips on the two units and the incoming link leads between horizontal terminal strips. In general, one cable from the vertical terminal strips of units on the supplementary frame and one cable from the horizontal terminal strips shall be run to each regular or auxiliary incoming trunk frame with which the incomings on the supplementary frame are associated.

5.41 No-test incoming trunks require cabling to the no-test connector switches. The T, R, S, and H leads, and as many of the JC leads per no-test incoming trunk as are required, shall be run in one cable to the first bay of the miscellaneous frame mounting no-test connector switches. The remainder of the JC leads, per no-test incoming, shall be run, as required, to succeeding bays of miscellaneous frame mounting no-test connector switches.

5.42 Each incoming trunk unit will require leads common to the unit to the interrupter frame. Certain of these leads are designated as C2 wiring and, therefore, must be run in a separate cable. One cable per incoming trunk frame to the interrupter frame is required and one additional cable for each lead marked C2.

5.43 Certain units require timing equipment per SD-25038-01, Fig. 2 or 3. These figures require two leads per incoming trunk unit to the relays per SD-25038-01, Fig. 1, located on the relay rack. These leads shall be run in one cable per incoming trunk frame to the timing equipment on the relay rack. The B lead to the interrupter frame, common to all unit timing circuits on an incoming trunk frame, shall be run in the switchboard cable with other leads to the interrupter frame.

5.44 Trunks per SD-25432-01 and SD-25436-01, incoming from LTD or CTB, require two leads per ten trunks to the tone supply. These two leads cannot be run in the same cable so that, ordinarily, two cables per unit containing these trunks must be run to the tone supply. Where there are two or more units on the same frame containing these trunks, the two cables may be fanned over all units so equipped.

5.45 SD-25433-01 incoming from line message register rack may require as many as 18 leads per trunk to the message register rack. These leads shall be run in one cable per unit containing this trunk to the miscellaneous circuit on the message register rack.

5.46 One No. 20 gauge switchboard cable per incoming trunk frame shall be run to the miscellaneous fuse board for ringing supply. In addition to ringing supply for the trunks, this cable shall contain two leads for ringing supply to the E jack of the miscellaneous frame circuit, connected directly on the jack. One fuse per unit shall be furnished for each ringing lead required.

5.47 No switchboard power cable is required for regular incoming trunk frames since miscellaneous leads for these frames will be brought in through the associated terminating sender link and incoming link frames. Leads required on a multiple basis, corresponding to those brought in through the incoming link frames, shall be run directly from the DPTS to the supplementary incoming trunk frame in one switchboard cable, terminating directly on the apparatus on the jack, key, and lamp panel per ED-25502-11, SK A, as required. Corresponding leads shall be cabled from this point on a multiple basis to the jack, key, and lamp panels on the auxiliary incoming trunk frames, terminating directly on the apparatus in each case. The F lead for the lineup, including the supplementary incoming truck frame, shall be furnished in duplicate: one lead in the regular switchboard power cable and one from the DPTS directly to the bottom unit on the supplementary frame. Leads that are individual to the frame, such as those to the DX key and DX lamp of SD-25038-01, Fig. 1, shall be run directly from the apparatus on the jack, key, and lamp panel on auxiliary and supplementary frames to the required destination.

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 those of the issue in which the rating was first applied.

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J28650A&B			J28650A&B
L5	Mfr Disc.	5	L265
L6	Mfr Disc.	4	L2&4
L11	A&M Only	1	—
L31-L35	Mfr Disc.	1	L164-L166,L178
L36	Mfr Disc.	2	L199
L40-L42	Mfr Disc.	2	L203,L207
L43-L45	Mfr Disc.	1	L164-L166,L178
L46-L51	Mfr Disc.	2	L216-L225
L55	Mfr Disc.	2	L209
L56	Mfr Disc.	2	L210
L57	Mfr Disc.	2	L215
L58	Mfr Disc.	2	L199
L59-L63	Mfr Disc.	2	L199-L208
L69	Mfr Disc.	2	L70
L74	Mfr Disc.	1	L147
L79-L83	Mfr Disc.	2	—
L84-L87	Mfr Disc.	1	L164-L166,L178
L88	Mfr Disc.	2	L216
L89-L94	Mfr Disc.	2	L216-L225
L95-L101	Mfr Disc.	2	L199-L208
L102	Mfr Disc.	2	L226
L106,L107	Mfr Disc.	2	L209-L215
L108	Mfr Disc.	1	L162
L109-L110	Mfr Disc.	2	L209-L215
L111-L114	Mfr Disc.	2	L216-L225
L115,L116	A&M Only	2	J28650AF&AG J28650A&B
L117	Mfr Disc.	2	L224
L118-L122	Mfr Disc.	2	L209-L215
L126	Mfr Disc.	1	L152
L132	Mfr Disc.	1	L154
L140	Mfr Disc.	4	—
L141	Mfr Disc.	2	—
L142	Mfr Disc.	4	—
L143	Mfr Disc.	4	—
L146	Mfr Disc.	4	—
L147	Mfr Disc.	1	L159
L148	Mfr Disc.	2	—
L162,L163	Mfr Disc.	2	L209-L215
L164-L166	A&M Only	2	J28650AF&AG
L167-L169	Mfr Disc.	2	J28650A&B L239-L241
L178	A&M Only	2	J28650AF&AG
L179,L180	A&M Only	2	J28650A&B L157,L158
L190-L192	Mfr Disc.	2	—
L216-L225	A&M Only	2	J28650AF&AG
J28650C,E,&G	Mfr Disc.	1	J28650AA
J28650D,F,&H	Mfr Disc.	1	J28650AB
J28650J,L,&N	Mfr Disc.	1	J28650A
J28650K,M,&P	Mfr Disc.	1	J28650B
J28650R,T,&W	Mfr Disc.	2	J28650AD
J28650S,U,&Y	Mfr Disc.	2	J28650AE
J28650AA	A&M Only	2	J28650AF
J28650AB	A&M Only	2	J28650AG
J28650AC,L4	A&M Only	2	J28650AC,L6 L8

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J28650AA&AB L5	Mfr Disc.	5	J28650AA&AB L12
J28650AD&AE L5	Mfr Disc.	5	J28650AD&AE L22
J28650AF&AG L5	Mfr Disc.	5	J28650AF&AG L13

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