RELAY RACK EQUIPMENT FOR 13C, 13D, 15C, AND 15D SWITCHBOARDS EQUIPMENT DESIGN REQUIREMENTS NO. 1 AND NO. 5 CROSSBAR, PANEL, NO. 4 TYPE TOLL SWITCHING AND STEP-BY-STEP SYSTEMS

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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, excepting those in the 25000 series, to be used in the manufacture and installation of relay rack equipment associated with "A" switchboards, for use in panel, step-by-step, No. 1 crossbar, No. 5 crossbar, and No. 4 toll switching offices.

1.02 This specification is being reissued to add a new BSP division number 815-075-152, and to bring it into conformity with the general Plant Series plan.

Description

1.03 The units covered herein are designed to mount within a 10-inch guardrail relay rack and are arranged for rear of bay cabling. On the basis of this design, these units can be mounted on bulb-angle rack in No. 1 and No. 5 crossbar, panel, step-by-step, or No. 4 toll switching offices.

1.04 In general, the 224-type terminal strip has been used, which makes relay rack units self-contained within the guardrail. The switchboard cable is brought down the rear of the right-hand upright of the bay, and the butted cable carried through insulators in the terminal strip mounting plate of each unit to the front of the terminal strips as shown on the cabling drawing. In some cases, the 203-type terminal strip has been continued in use, as it fits in with the general setup of 10-inch guards and rear of bay cabling.

1.05 The local cable or surface wiring is, in general, connected to the rear of the 224-type terminal strips and brought in the same way as to relays on the wiring side.

1.06 While the greater portion of the relay rack equipment associated with the "A" switchboard conforms with the design referred to above, a certain amount of equipment is furnished on a miscellaneous basis completely wired by the installer. Switchboard cables are terminated on the wiring side of this nonunit equipment, as shown on ED-91510-01 and ED-90976-01. The nonunit equipment may be mounted in the same bays with units.

1.07 In general, all relay rack equipment is mounted from the front of the bay, as shown on ED-91510-01 and ED-90976-01.

Equipment Not Designed Specifically for Bulb-angle Relay Racks

1.08 Units having 181A or 140 types of terminal strips with either 19-inch or 23-inch plates should not be mounted on the bulb-angle relay rack except where existing telephone company equipment is re-used, in which case they should be modified in accordance with J93001 to prevent extending beyond the guardrail.

1.09 Other unit and nonunit equipment on 19-inch mounting plates may be mounted on the bulb-angle relay rack by means of adapt-

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ers. When adapters are used each adapter shall cover approximately the full height of the mounting plates.

1.10 Fuse panels and resistance lamps in ringing supply for relay rack equipment are mounted on standard angle relay rack-type bays. The fuse bay or bays ordinarily will be located at the end of the relay rack line-up, but individual floor plan layouts may dictate the location of fuse bays centrally with respect to several small line-ups of relay bays. (See 5.08.)

1.11 Talking battery filters, in accordance with J99226, are located on the fuse bays.

SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

WECo J drawings listed should be ordered by referring to the prefix and base number and requesting the highest suffix dash (—) number.

CIRCUIT DRAWING	EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CKTS PER UNIT	NO. OF MTG PLTS PER UNIT
SD-20377-01	Installer Wired	—	Sdr Mon Compl Cord Crossbar & Panel	ED-91526-01, Fig. 9	1	1
SD-21104-01	J91104CC	A&M Only	Panel and Crossbar "B" Swbd Pos Unit	J91104CC-( )	1	3
SD-21179-01 SD-21784-01 SD-21787-01 SD-21787-02 SD-21787-03 SD-21858-01 SD-21859-01 SD-25447-01 SD-25462-01	J91104AB	A&M Only	Sender Selector Circuits for K.P. Outgoing Trunks and K.P. "A" Districts and Incoming Selectors and Incoming Trunks	ED-91671-01	10	6
SD-21442-01	J91104DA	A&M Only	Permanent Signal Holding Trunk Unit — Panel — No. 13C, 13D, 15C, or 15D Swbd	J91104DA-( )	1	1
SD-21548-01	Installer Wired	—	Coin Control Ckt Distant Office From "A" Swbd (See 5.20)— Panel & Crossbar	ED-91526-01, Fig. 18 & 19	10 & 1	3, 2
SD-21549-01, Fig. 1 & 2	Installer Wired	—	Coin Control — "A" Swbd & Inc Sel in Separate Bldgs (See 5.20) — Crossbar & Panel	ED-91526-01, Fig. 5 & 6	10 & 3	1, 1
SD-21606-01	Installer Wired	—	Intercept Trks From Vacant Code Terminals — Panel	ED-91526-01, Fig. 8	10	2
SD-21619-01	Installer Wired	—	Voltmeter Cord — Crossbar & Panel	ED-91526-01, Fig. 9	1	1
SD-21648-01, Fig. 1, 4, 5, 7, & B	J91104C	A&M Only	"B" Swbd Key Mon Unit — Crossbar & Panel	ED-91514-01, Fig. 1	1	6

CIRCUIT DRAWING	EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CKTS PER UNIT	NO. OF MTG PLTS PER UNIT
SD-21705-01, Fig. 3, 4, 7, & B	Installer Wired	—	Coin Cont "A" Swbd & Inc Sel in Same Bldg — Crossbar & Panel	ED-91526-01, Fig. 11	1	2
SD-21778-01, Fig. 1	Installer Wired	—	Manual Sub Line With Final Mult — Panel	ED-91526-01, Fig. 14	10	3
SD-21815-01, Fig. 2	Installer Wired	—	Comb. "A" & Pos Distg "B" Pos Tone & "B" Pos Control — Crossbar & Panel	ED-91526-01, Fig. 15	1	2
SD-21823-01 Fig. 1 & 2	J91104J	A&M Only	Oper Rec Compl Trk Unit — 2 Wire — Crossbar & Panel	J91104J-( )	10	19
SD-21859-01	J91104W	A&M Only	Central Swbd Outgoing Trunk to Selector K.P. "A" Swbd Panel	ED-20898-01, Fig. 1	5	13
SD-21883-01	Installer Wired	—	Business Office Line — Panel	ED-91526-01, Fig. 16	10	3
SD-21890-01, Fig. 1, 2, 3, & 4	Installer Wired	A&M Only	No. Checking Pos. — Panel	ED-91526-01, Fig. 17	4	1
SD-25126-01	J91104CS	A&M Only	Perm Sig Hold Trk — No. 13C, 13D, 14C, 14D, 15C, or 15D Swbd — For No. 1 Crossbar	J91104CS-( )	1	1
SD-31198-01	J91104CW	A&M Only	Business Office Line Unit — No. 14C, 14D, or 15C Swbd	J91104CW-( )	3	1
SD-31472-01	J91104BX	A&M Only	Aux Trk Unit — For Compl Delayed Calls	J91104BX-( )	2	1
SD-31499-01	J91104BY	A&M Only	Spl Svc Trk Unit — Inc From Selector	J91104BY-( )	2	1
SD-90409-01	Installer Wired	—	Pos Clock — Crossbar, Panel, & Step by Step	ED-90146-01, Fig. 1, 4, 5, 6, 7, & 11	–	1*, 2*, 1, 1, 1, & 1
SD-90450-01	Installer Wired	—	Manual Lines — Crossbar, Panel, & Step by Step	ED-91530-01, Fig. 2	10	2
SD-90452-01, Fig. 2	J91104A	A&M Only	Rec Compl Cord Unit — Crossbar, Panel, & Step by Step	ED-91525-01, Fig. 1	10	8

*19-inch Mounting Plates

CIRCUIT DRAWING	EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CKTS PER UNIT	NO. OF MTG PLTS PER UNIT
SD-90454-01 SD-90454-02	J91104CG	A&M Only	No. 15C Swbd Comb. Cord Ckt Arr for Compl Intercepted Calls With or Without Flashing Recalls for Use in Panel or Step-by-Step Office	J91104CG-( )	1	2
SD-90463-01, Fig. 1	Installer Wired	—	Dial Mon Ckt Listening Key Dialing — Crossbar, Panel, & Step by Step	ED-91530-01, Fig. 3	1	2
SD-90464-01, Fig. 7 through 12, 22, 26 through 30, & 34 through 36	Installer Wired	—	Aux Signal Dial or K.P. Swbd — Crossbar, Panel, & Step by Step	ED-91530-01, Fig. 4	1	2
SD-90466-01, Fig. 3, 4, & 5 or 9	Installer Wired	—	Outgoing Trk & Group Busy Relay—Crossbar, Panel, & Step by Step	ED-91530-01, Fig. 5	20	1
SD-90467-01, Fig. 5	Installer Wired	—	Mult Ans Jack Lamp Relays — Crossbar, Panel, & Step by Step	ED-91530-01, Fig. 6	20	1
SD-90501-01, Fig. 1 through 9, 13, F, & H	J91104B	A&M Only	Cord Testing Unit — Spl Serv & Incpt Cord Ckts — Crossbar, Panel, & Step by Step	ED-95122-01, Fig. 1	1	6
SD-90501-01, Fig. 17	Installer Wired	A&M Only	Cord Test Spl Serv, & Incpt Crossbar, Panel, & Step by Step	ED-91522-01, Fig. 2	1	1
SD-90501-01, Fig. 18	Installer Wired	A&M Only	Cord Test Spl Serv, & Incpt Crossbar, Panel, & Step by Step	ED-91522-01, Fig. 3	1	1
SD-90501-01, Fig. 19	Installer Wired	A&M Only	Cord Test Spl Serv, & Incpt Crossbar, Panel, & Step by Step	ED-91522-01, Fig. 4	1	1
SD-91018-01	Installer Wired	—	Dist Master Clock Crossbar, Panel, & Step by Step	ED-90146-01, Fig. 2 Fig. 7 Fig. 8 Fig. 9 Fig. 10 Fig. 11	 1 1 1 1 1 1	 1* 1 1* 1 1 1

*19-inch Mounting Plates

CIRCUIT DRAWING	EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CKTS PER UNIT	NO. OF MTG PLTS PER UNIT
SD-91019-01	Installer Wired	—	Bldg Master Clock Crossbar, Panel, & Step by Step	ED-90146-01, Fig. 2 Fig. 6 Fig. 7 Fig. 10 Fig. 11	 1 1 1 1 1	 1* 1 1 1 1
SD-95416-01 Fig. 1, 2, & 4 SD-96132-01 Fig. 1, A, & B SD-96438-01 Fig. 1, 2, & 4	J91104BB	A&M Only	Combined DC-MF Keyset & Cord Splitting — No. 15D Swbd — Crossbar & Panel	J91104BB-( )	1	3
SD-95416-01 Fig. 1, 2, & 4 SD-96438-01, Fig. 1, 2, & 4	J91104BC	A&M Only	DC-MF Keyset Ckt — No. 15D Swbd — Crossbar & Panel	J91104BC-( )	5	9
SD-95416-01 Fig. 6 SD-96438-01 Fig. 6	J91104AU	A&M Only	MF Keyset & Transfer No. 15D Swbd — Crossbar & Panel	J91104AU-( ) Fig. 1	1	2
SD-95423-01, Fig. 1, 2, & 5 SD-95429-01, Fig. 1, 2, & 5	J91104AY	A&M Only	MF Keyset — No. 15D Swbd — Crossbar & Panel	ED-92130-01, Fig. 1	1	2
SD-95423-01, Fig. 1, 2, & 5 SD-95429-01, Fig. 1, 2, & 5 SD-96132-01, Fig. 1, A, & B	J91104BA	A&M Only	Combined MF Keyset & Cord Splitting — No. 15D Swbd — Crossbar & Panel	ED-92131-01, Fig. 1	1	4
SD-95425-01, Fig. 1, A, B, & C	J91104AW	A&M Only	Outgoing Trk — Crossbar & Panel	ED-95008-01, Fig. 1	5	5
SD-95436-01, Fig. 1	J91104CR	A&M Only	TX Trunk	J91104CR-( )	2	3
SD-95471-01, Fig. 1, 3, 4, A, & B	J91104BG	A&M Only	Outgoing Trunk or Aux Outgoing Trk Panel, Step by Step, & Crossbar	ED-92229-01, Fig. 1	2	3
SD-95473-01, Fig. 1, 3, A, & B	J91104BE	A&M Only	Coin Supervisory Ckt No. 5 Crossbar	ED-92216-01, Fig. 1	1	3

*19-inch Mounting Plates

CIRCUIT DRAWING	EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CKTS PER UNIT	NO. OF MTG PLTS PER UNIT
SD-95474-01, Fig. 1, 3, A, & B	J91104BF	A&M Only	Perm Sig Hold. Crossbar	ED-92221-01, Fig. 1	1	4
SD-95475-01, Fig. 1, A, B, C, D, & E	J91104BH	A&M Only	Outgoing Trunk DC-MF Keypulsing Panel & Crossbar	ED-92230-01, Fig. 1	1	2
SD-95486-01, Fig. 1	J91104BK	A&M Only	Test Trunk Toll Testboard No. 18B Panel & Crossbar	ED-92252-01,	1	3
SD-95504-01, Fig. 1 through 5	J91104BL	A&M Only	Outgoing Trunk — Intertoll Dialing	ED-92283-01	1	3
SD-95565-01, Fig. 1, A through E	J91104BN	A&M Only	Outgoing Trunk DC-MF Keypulsing No. 15D Swbd Panel, Step by Step, & Crossbar	J91104BN-( )	1	2
SD-95566-01, Fig. 1, A, B, C, D, & E	J91104BM	A&M Only	Outgoing Trunk MF Keypulsing Panel & Crossbar	ED-92431-01, Fig. 1	1	2
SD-95611-01	J91104BR	A&M Only	OGT Unit — No. 13C, 13D, 14C, 14D, or 15C Swbd — MFKP — In DP-out — Reverse Bat. Spv	ED-92580-01	2	2
SD-95673-01	J91104CV	A&M Only	Verification Request or Official PBX Inc Trk	J91104CV-( )	1	1
SD-95697-01	J91104CZ	A&M Only	Tone & Flashing Demonstration Unit No. 13C, 13D, 14C, 14D, 15C, or 15D Swbd	J91104CZ-( )	1	1
SD-95704-01	J91104CD	A&M Only	Outgoing Dial Trk Unit — Simplex Ring. Start Sig — No. 13C, 13D, 14C, 14D, 15C, or 15D Swbd	J91104CD-( )	2	1
SD-95723-01	J91104CF	A&M Only	Transfer Key and Lamp Unit — For CAMA Conn. in Comb. DSA & CAMA Pos	J91104CF-( )	3	1
SD-95724-01	Installer Wired	—	Keyset Transfer Ckt — for Comb. DSA and CAMA MF-DC and 2-out-of-5 type Key-pulsing (See 5.22.)	ED-91530-01	1	1

CIRCUIT DRAWING	EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CKTS PER UNIT	NO. OF MTG PLTS PER UNIT
SD-95745-01	J91104CH	A&M Only	Inc Trk Unit — Spl Svc From Dial Office — Arr for Ringback	J91104CH-( )	2	3
SD-95799-01	J91104CU	A&M Only	Transfer Key and Lamp Ckt Relay Equip — For CAMA Conn. in Comb. DSA and CAMA Positions — Using MF Keypulsing for CAMA Calls	J91104CU-( )	2	1
SD-96053-01 Fig. 2 through 9	Installer Wired	—	Lamp Trns & Cont Crossbar, Panel, & Step by Step	ED-91530-01, Fig. 7 (Mfr. Disc.) (See Fig. 34, 35, 36, & 37)	20	3
SD-96130-01	J91104CN	A&M Only	Spl Svc Cord Unit — For Use With 15-cord No. 15D Swbd	J91104CN-( )	2	3
SD-96132-01 Fig. 2, 3, 4 & A through F SD-96133-01, Fig. 1, 2, & 4	J91104E	A&M Only	Keyset and Cord Splitting Unit	J91104E-( )	1	3
SD-96132-01, Fig. 1, A, & B SD-96232-01, Fig. 1, 2, 3, A, & B SD-96133-01, Fig. 1 & 2	J91104AL	A&M Only	Comb. Dialing & Cord Splitting — Crossbar & Panel	ED-91821-01, Fig. 1	1	3
SD-96133-01 Fig. 1, 2, & 4	J91104N	A&M Only	DC Keyset Unit Crossbar & Panel	J91104N-( )	5	9
SD-96149-01	Installer Wired	—	Interposition Trks — Crossbar, Panel, & Step by Step	ED-91530-01, Fig. 8	10	3
SD-96163-01, Fig. 1, B, 2, 3, 4, & 6	J91104CA	A&M Only	Service Assistant Telephone Ckt — No. 15C or 15D "A" Swbd	J91104CA-( )	1	2
SD-96164-01, Fig. 6 & 7	J91104AC	A&M Only	Idle Trunk Indicating Relay Ckt — No. 15D Swbd Crossbar, Step by Step or Panel	ED-91696-01, Fig. A	60	7

CIRCUIT DRAWING	EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CKTS PER UNIT	NO. OF MTG PLTS PER UNIT
SD-96164-01, Fig. 1	Installer Wired	—	Dial OGT — Step by Step	ED-91530-01, Fig. 9	20	1
SD-96164-01, Fig. 5	Installer Wired	—	Dial Outgoing to Repeater Ckts — Step by Step	ED-91530-01, Fig. 10	10	2
SD-96164-01, Fig. 4	Installer Wired	—	OGT Sleeve Resistance — Crossbar, Panel, & Step by Step	ED-91530-01, Fig. 11	80	1
SD-96164-01, Fig. 11	J91104BP	A&M Only	Idle Trk Indicating Relay Ckt — No. 15D Swbd No. 4A Crossbar	ED-91696-01, Fig. J	5	1
SD-96169-01, Fig. 1	Installer Wired	—	Inc Trk From No. 1 Toll — Crossbar, Panel, & Step by Step	ED-91530-01, Fig. 12	2	3
SD-96180-01	Installer Wired	—	Emergency Transfer Ckt	ED-91530-01, Fig. 13	10	1
SD-96189-01, Fig. 1 & 4	J91104CY	A&M Only	Official PBX Trk for Use With No. 13C, 13D, 15C, or 15D Swbd or Vacant Code Intercept Trk for Use With No. 13C, 13D, 14C, 14D, 15C, or 15D Swbd	J91104CY-( )	1	1
SD-96189-01	J91104R	A&M Only	Official PBX Trk Unit From Crossbar or Panel Off.	ED-91628-01, Fig. 1	10	6
SD-96189-01, Fig. 3	J91104S	A&M Only	Official PBX Trk Unit From Tandem Offs.	ED-91622-01, Fig. 1	10	9
SD-96189-01, Fig. 4	Installer Wired	A&M Only	Conv Eqpt — OFF PBX Trk to Vac C Incpt Trk — Crossbar	ED-91628-01, Fig. 2	10	2
SD-96193-01	Installer Wired	—	S.A. Tel Ckt for Comb. "A" & "B" Pos — Crossbar & Panel	ED-91530-01, Fig. 14	1	4
ES-96198-01, Fig. 1 through 5 & A, B, or C	Installer Wired	AT&TCo Special	Sdr Mon Pos Service Observing Ckt — Panel	ED-91530-01, Fig. 15	1	8
SD-96209-01, Fig. 1	J91104G	A&M Only	Outgoing Trunk Unit — To Central Swbd —NC Spl Serv Crossbar & Panel	ED-91597-01, Fig. 1	10	16

CIRCUIT DRAWING	EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CKTS PER UNIT	NO. OF MTG PLTS PER UNIT
SD-96209-01, Fig. 7	Installer Wired	—	Common Timing Outgoing Special Serv Trk — Crossbar & Panel	ED-91597-01, Fig. 4	1	1
SD-96210-01, Fig. 1	J91104K	A&M Only	OGT Trunk Unit to Central Swbd — Coin Spl Serv, Crossbar, & Panel	ED-91598-01, Fig. 1	5	14
SD-96216-01	Installer Wired	—	Interoffice Trk 2-way Ringdown — Crossbar, Panel, & Step by Step	ED-91530-01, Fig. 16	6	6
ES-96243-01, Fig. 2	Installer Wired	AT&TCo Special	Permanent Signal Test & Sdr Mon Cord Ckt — Crossbar & Panel	ED-91530-01, Fig. 18	1	1
SD-96283-01, Fig. 1	Installer Wired	—	Inc Trk from C.D.O.	ED-91530-01, Fig. 19	1	1
SD-96299-01, Fig. 1 through 5 & 7 through 9	Installer Wired	—	Tone Demonstration Ckts	ED-91530-01, Fig. 24	1	2
SD-96301-01, Fig. 1	Installer Wired	—	Trk Ckt — 2 Wire, 2 Way From DSA Swbd to Toll Swbd or Between DSA Swbds	ED-91530-01, Fig. 26	2	1
SD-96333-01, Fig. 1	J91104AD	A&M 0nly	Incoming Recording Trunk Unit — No. 15D Swbd	ED-91711-01, Fig. 1	10	4
SD-96334-01, Fig. 1	J91104AE	A&M Only	Outgoing Trunks for Use With Mach Ring. Toll Sw Trks — No. 15D Swbd	ED-91712-01, Fig. 1	10	11
SD-96365-01	J91104CT	A&M Only	Cent. Swbd Inc Trk for Coin Special Service	J91104CT-( )	2	5
SD-96379-01, Fig. 1	Installer Wired	—	Frame Line Ckt — Crossbar, Panel, & No. 4 Toll Office	ED-91530-01, Fig. 25	1	1
SD-96394-01, Fig. 1	J91104AG	A&M Only	2-way Ringdown Trk to Toll Swbd 2-way Ringdown Trk Coils	ED-91800-01, Fig. 1	5	10
Fig. 2	Installer Wired	—		Fig. 2	12	7
SD-96395-01, Fig. 1, A, & B	J91104AH	A&M Only	Dialing Outgoing Trk to Local Manual or No. 4 Toll Offices	ED-91801-01, Fig. 1	10	12
SD-96412-01, Fig. 1, 2, A, B, & D	J91104AM	A&M Only	2-wire Recording Completing Trunk — Coin	ED-91822-01, Fig. 1	10	13

CIRCUIT DRAWING	EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CKTS PER UNIT	NO. OF MTG PLTS PER UNIT
SD-96412-01, Fig. 1, A, B, & D	J91104AN	A&M Only	2-wire Recording Completing Trunk — Non-coin	ED-91822-01, Fig. 2	10	11
SD-96412-01, Fig. 1, 2, A, B, C, & D	J91104AP	A&M Only	2-wire Recording Completing Trunk — Coin — Recall	ED-91822-01, Fig. 3	10	14
SD-96412-01, Fig. 1, A, B, C, & D	J91104AR	A&M Only	2-wire Recording Completing Trunk — Non-coin — Recall	ED-91822-01, Fig. 4	10	12
SD-96413-01, Fig. 1	J91104AK	A&M Only	Tandem Compl Trk From Man. Tdm Off. — No. 15C or 15D Swbd	ED-91823-01, Fig. 1	10	14
SD-96459-01	J91104CL	A&M Only	OGT Unit — No. 15C or 15D Swbd	J91104CL-( )	1	1
	J91104F, J91104AT	Unassigned				

2. SUPPLEMENTARY INFORMATION

814-000-000 — Step-by-Step Systems Index
815-000-000 — Panel Systems Index
816-000-000 — No. 1 Crossbar System Index
818-000-000 — No. 4 Type Toll Switching Systems Index
819-000-000 — No. 5 Crossbar System Index
AA128.006 — List of General Equipment Requirements Sections
J13006 — Relay Rack Units — Manual Systems
J20151 — Limiting Conductor Length Between Frames and Units — Crossbar System
J25551 — End Guards — Angle-type Relay Rack
J25552 — Frame Lighting and Appliance Outlets
J64001 — Transmission Measuring
J93001 — Relay Rack Unit Framework and Local Cable
J93003 — Relay Rack Units for Test Equipment
J93005 — Plugging-up Line Panel
J93006 — Relay Rack Mounted Test Equipment
J97025 — Relay Rack — Bulb-angle Type
J97033 — Fuse Bays
J99206 — Relay Rack Units — Common Systems
J99226 — Battery Filters
X-61400 — List of Panel Equipment Design Requirement Specification
Floor Plan Data — Section 9.2, Sheet 7

3. DRAWINGS

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

Key Sheets

SD-21300-01 — Panel Systems
SD-21680-01 — Panel Systems
SD-25000-01 — No. 1 Crossbar Systems
SD-31359-01 — No. 1 Step-by-Step Systems
SD-90250-01 — Master Key Sheet
SD-25760-01 — No. 5 Crossbar System

Cabling

ED-91510-01 — Miscellaneous Relay Rack Cabling and Mounting Switchboard Cable on Rear (Step by Step — No. 1 Office — Office Alarm Frame)
ED-91600-01 — Cabling Plan — Vertical Local Wiring — Units Using 224-type Terminal Strips
ED-91601-01 — Cabling Plan — Horizontal Local Wiring — Units Using 224-type Terminal Strips
ED-91729-01 — Sender Selector Unit — Cabling Plan
ED-92224-01 — Typical Cabling Plan — Angle Relay Rack Using Plastic Wiring Supports and Adjustable Plastic Loops

4. EQUIPMENT

J91104A (A&M Only) — Recording Completing Cord Unit — Crossbar, Panel, and Step by Step (See Note A)

Equipment — ED-91525-01, Fig. 1
Local Cable — ED-91600-01, Fig. 1

List 1 — Framework, assembly, wiring, and common equipment for one unit of ten cord circuits.

	WIRE	EQUIP
Framework, ED-90782-01, G8		0
Recording Compl Cord Ckt, SD-90452-01, Fig. 2	10	0

List 2 — Equipment per SD-90452-01, Fig. 2 required in addition to list 1 for one cord circuit.

Note

A. The equipment shown on SD-90452-01, Fig. 1, is located in the switchboard.

J91104B (A&M Only) — Cord Testing Unit — Special Service and Intercept Cord Circuits — Crossbar, Panel, and Step by Step

Equipment — ED-91522-01, Fig. 1
Local Cable — ED-91601, Fig. 1

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

	WIRE	EQUIP
Framework, ED-90782-01, G6		1
Cord Testing Circuit, SD-90501-01:		
Battery and Ground Supply Ckt, Fig. 1	1	1
Coin Test Ckt, Fig. 2 With "A" and "B" Wiring	1	0
Ring. Test Ckt, Fig. 3 With "G," "H," "N," and "Q" Wiring	1	0
AC Continuity Test Ckt, Fig. 4	1	1
Flash and Trip Test Ckt, Fig. 5, F, and H, With "F," "G," "H," "L," "M," "N," "W," "X," "Y," and "Z" Wiring	1	0
Supervisory and Sleeve Relay Test Ckt, Fig. 6 With "X" and "Y" Wiring	1	1
Interrupter Ckt for Supervisory and Sleeve Relay Tests, Fig. 7	1	0
Interrupter Ckt for Supervisory and Sleeve Relay Tests and Flash and Trip Test, Fig. 8	1	0
Intercepting Test From Toll Office, Fig. 9 With "X" and "Y" Wiring	1	0
Through AC Continuity Test, Fig. 13	1	0

List 8 — Equipment per SD-90501-01, Fig. 7 required in addition to list 1 for supervisory and sleeve relay test in panel and crossbar offices.

List 9 — Equipment per SD-90501-01, Fig. 8 required in addition to list 1 for supervisory and sleeve relay test and flash and trip test in step-by-step offices.

List 10 — Equipment per SD-90501-01, Fig. 9, with "X" apparatus, required in addition to list 1 for intercepting test from toll in panel and crossbar offices.

List 11 — Equipment per SD-90501-01, Fig. 9 required in addition to list 1 for intercepting test from toll in step-by-step offices.

List 12 — Equipment per SD-90501-01, Fig. 13 required in addition to list 1 for through continuity test.

List 17 — Equipment per SD-90501-01, Fig. 2 required in addition to list 1 for coin test.

List 21 — Equipment per SD-90501-01, Fig. 3, less "N" and "Q" apparatus, requiring in addition to list 1 for ring test.

List 22 — Equipment per SD-90501-01, Fig. 3, "N" apparatus only, required in addition to list 21 when number checking to crossbar is used.

List 23 — Equipment per SD-90501-01, Fig. 3, "Q" apparatus only, required in addition to list 21 when number checking to crossbar is not used.

List 24 — Equipment per SD-90501-01, Fig. 5, less "G," "H," "N," and "Z" apparatus, required in addition to list 1 for flash and trip test.

List 25 — Equipment per SD-90501-01, Fig. 5, "G" apparatus only, required in addition to list 24 for use where cord circuits are not equipped with coin control keys.

List 26 — Equipment per SD-90501-01, Fig. 5, "H" apparatus only, required in addition to list 24 for use when cord circuits are equipped with coin control keys.

List 27 — Equipment per SD-90501-01, Fig. 5, "W" apparatus only, required in addition to list 24 for use where necessary to test No. 15D switchboard cord circuits which handle panel traffic.

List 28 — Equipment per SD-90501-01, Fig. 5, "Z" apparatus, required in addition to list 24 when list 27 is not used.

List 29 — Equipment per SD-90501-01, Fig. F, less "X" apparatus, required in addition to list 24 where R284 TR relay is used in the position circuit.

List 30 — Equipment per SD-90501-01, Fig. F, "X" apparatus only, required in addition to list 29, when used for panel or crossbar offices.

List 31 — Equipment per SD-90501-01, Fig. H, with "F" apparatus, required in addition to list 24 where B340 TR relay is used in position circuit.

List 32 — Equipment per SD-90501-01, Fig. H, with "N" apparatus, required in addition to list 24 where J21 TR relay is used in the position circuit.

Notes

A. When test for false generation is required, provide wiring and equipment per SD-90501-01, Fig. 17 and arrange per ED-91522-01, Fig. 2.

B. When MF signal voltage test of MF-DC key sets is specified, provide wiring and equipment per SD-90501-01, Fig. 18 and arrange per ED-91522-01, Fig. 3.

C. When MF signal voltage test of MF key set is specified, provide wiring and equipment per ED-91522-01, Fig. 4.

J91104C (A&M Only) — "B" Switchboard Key Monitoring Unit (See Note A) — Crossbar and Panel

Equipment — ED-91514-01, Fig. 1
Local Cable — ED-91601-01, Fig. 1

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

	WIRE	EQUIP
Framework, ED-90782-01, G6		1
Key Mon Ckt, SD-21648-01:		
Fig. 1 and B, With "Q" and "R" Wiring	1	1
Office Key Relay Ckt, Fig. 4 & 7	1	0
Office Recording Relay Ckt, Fig. 5	8	0

List 2 — Equipment per SD-21648-01, Fig. 4 required in addition to list 1 for multioffice operation when office keys for six or less offices are provided in "B" position.

List 3 — Equipment per SD-21648-01, Fig. 5 required in addition to list 2 or 4 for multioffice operation per each office code displayed on recording lamps.

List 4 — Equipment per SD-21648-01, Fig. 7 required in addition to list 1 for multioffice operation when office keys for a maximum of eight offices are provided in "B" position.

Notes

A. The digit recording and call progress lamps are located in the sender monitoring position.

B. Provide "R" wiring for single-office operation and "Q" wiring for multioffice operation.

J91104E (A&M Only) — Keyset and Cord Splitting Unit (See 5.19)

Equipment — J91104E-( )
Local Cable — ED-91601-01, Fig. 1

List 1 — Framework, assembly, wiring, and common equipment for one unit having one keyset and one cord splitting circuit.

	WIRE	EQUIP	SEE NOTES
Framework, ED-90782-01, G3		1	
Keyset Ckt, SD-96133-01:			
Fig. 1 With "Q," "R," "S," and "W" Wiring and "P" and "W" Apparatus and less "S" Apparatus	1	1	A
Fig. 1, "S" Apparatus only	1	0	
Fig. 2 & 4	1	0	B
Cord Splitting Circuit, SD-96132-01, Fig. 1, A, & B With "W" and "Z" Wiring	1	0	B

List 2 — Equipment per SD-96133-01, Fig. 1, "S" apparatus only, required in addition to list 1 for keypulsing on both cords.

List 3 — Equipment per SD-96133-01, Fig. 2 required in addition to list 2 for key monitoring.

List 4 — Equipment per SD-96132-01, Fig. 1 required in addition to list 1 for one cord splitting circuit.

List 5 — Equipment per SD-96132-01, Fig. A required in addition to list 4 where associated cord circuits have metallic supervision.

List 6 — (AT&TCo Special) — Equipment per SD-96132-01, Fig. B required in addition to list 4 where associated cord circuits have ground supervision.

Notes

A. "H" and "K" wiring shown on SD-96133-01, Fig. 1, is taken care of on the number checking position circuit.

B. Provide wiring per SD-96133-01, Fig. 4 when cord splitting is not furnished initially and provide SD-96132-01, Fig. 1 "W" wiring in addition to list 4 when cord circuits are arranged for completion of intercepted calls. When cord circuits are not arranged for completion of intercepted calls, SD-96132-01 Fig. 1 "Z" wiring, must be provided in addition to list 4 and for crossbar number checking wiring per SD-96133-01, Fig. 1, "K" wiring, must be provided to list 1.

J91104F — Unassigned

J91104G (A&M Only) — Outgoing Trunk Unit — To Central Switchboard — Noncoin Special Service Crossbar and Panel (See 5.18)

Equipment — ED-91597-01, Fig. 1
Local Cable — ED-91600-01, Fig. 2

List 1 — Framework, assembly, wiring, and common equipment for one unit of ten trunk circuits.

	WIRE	EQUIP
Framework, ED-90782-01, G16		1
Special Service Trunk Ckt, SD-96209-01, Fig. 1, "X" Wiring	10	0

List 2 — Equipment per SD-96209-01, Fig. 1, less "Y" and "Z" apparatus, required in addition to list 1 for one trunk circuit.

List 3 — Equipment per SD-96209-01, Fig. 1, "Z" apparatus, required in addition to list 2 when trunk impedance is 1100 ohms or less (repeat coil).

List 4 — Equipment per SD-96209-01, Fig. 1, "Y" apparatus, required in addition to list 2 when trunk impedance is greater than 1100 ohms (repeat coil).

List 5 — Common equipment of one mounting plate per ED-91597-01, Fig. 2 required in addition to list 1 for two circuits per SD-96209-01, Fig. 3, for offices having individual and 2-party selective or 4-party semiselective ringing.

List 6 — Equipment per SD-96209-01, Fig. 3 required in addition to list 5 for one circuit.

List 7 — Common equipment of one mounting plate per ED-91597-01, Fig. 3 required in addition to list 1 for two circuits per SD-96209-01, Fig. 4, for offices having individual and 4-party selective ringing.

List 8 — Equipment per SD-91209-01, Fig. 4 required in addition to list 7 for one circuit.

List 9 — Common equipment of one mounting plate per ED-91597-01, Fig. 5 required in addition to list 1 for ten test jack and trunk make-busy circuits, in panel offices, per SD-96209-01, Fig. 5 and 6.

List 10 — Equipment per SD-96209-01, Fig. 5 and 6 required in addition to list 9 for one circuit.

List 11 — Equipment per SD-96209-01, Fig. 7 required per office for common timing circuit for offices having individual and 4-party selective ringing.

List 12 — Common equipment of one mounting per ED-91597-01, Fig. 6 for ten circuits for test jack in panel offices not equipped with make-busy frames.

List 13 — Equipment per SD-96210-01, Fig. 5 required in addition to list 12 for one circuit.

Notes

A. Miscellaneous equipment per lists 5, 6, 7, 8, 9, 10, 11, 12, and 13, is wired by the installer.

B. For crossbar offices, provide SD-96209-01, Fig. 1, "X" wiring, in addition to list 2.

J91104J (A&M Only) — Operator Recording Completing Trunk Unit — 2 Wire — Crossbar — Panel (See Notes A and B)

Equipment — J91104J-( )
Local Cable — ED-91600-01, Fig. 1

List 1 — Framework, assembly, wiring, and common equipment for one unit of ten trunk circuits.

	WIRE	EQUIP
Framework, ED-90782-01, G19		1
Mounting Bars, ED-90185-01, G3		1
Oper Rec Compl Trk Ckt, SD-21823-01, Fig. 1, A, & C, With "X," "K," and "L" Wiring, and SD-21823-02, Fig. 1, A, & C With "X," "K," "L," and "F" Wiring	10	0

List 2 — Equipment per SD-21823-01, Fig. 1 and A, less "C" and "D" apparatus, required in addition to list 1 for one trunk not arranged for coin control.

List 3 — Equipment per SD-21823-02, Fig. 1 and A, less "C" and "D" apparatus, required in addition to list 1 for one trunk arranged for coin control.

List 4 — Equipment per SD-21823-01, Fig. 1, or SD-21823-02, Fig. 1, "C" apparatus, required in addition to list 2 or 3 to arrange for trunk impedance of 1100 ohms or less (repeat coil).

List 5 — Equipment per SD-21823-01, Fig. 1, of SD-21823-02, Fig. 1, "D" apparatus, required in addition to list 2 or 3 to arrange for trunk impedance over 1100 ohms (repeat coil).

Notes

A. "X" wiring is provided in all cases and is removed on the job when the trunk loop resistance is less than 500 ohms.

B. "J" wiring at the terminal strips on the unit is provided when the disposal of coins is controlled from the toll office.

C. Provide wiring per SD-21823-01, Fig. 1 or SD-21823-02, Fig. 1, "K" wiring in addition to list 2 for unrestricted use of recall feature. For restricted use of recall feature when the receiver appears to be off the switchhook to care for PBX arranged to receive recall signals, wiring per SD-21823-01, Fig. 1 or SD-21823-02, Fig. 1, "L" wiring must be connected. Provide wiring per SD-31832, Fig. 1, "F" wiring in addition to list 3 when disposal of coin is controlled from the associated "A" switchhook.

J91104K (A&M Only) — Outgoing Trunk Unit to Central Switchboard — Coin Special Service, Crossbar, and Panel (See Note 5.18)

Equipment — ED-91598-01, Fig. 1
Local Cable — ED-91600-01, Fig. 1

List 1 — Framework, assembly, wiring, and common equipment for one unit of five trunk circuits.

	WIRE	EQUIP
Framework, ED-90782-01, G14		1
Special Service Trunk Ckt, SD-96210-01, Fig. 1, "X" Wiring	5	0

List 2 — Equipment per SD-96210-01, Fig. 1, less "Y" and "Z" apparatus, required in addition to list 1 for one trunk circuit.

List 3 — Equipment per SD-96210-01, Fig. 1, "Z" apparatus, required in addition to list 2 when trunk impedance is 1100 ohms or less (repeat coil).

List 4 — Equipment per SD-96210-01, Fig. 1, "Y" apparatus, required in addition to list 2 when trunk impedance is greater than 1100 ohms (repeat coil).

List 5 — Common equipment of one mounting per ED-91598-01, Fig. 2 required in addition to list 1 for four circuits per SD-96210-01, Fig. 3, for offices having individual and 2-party selective or party semiselective coin lines.

List 6 — Equipment per SD-96210-01, Fig. 3 required in addition to list 5 for one circuit.

List 7 — Common equipment of one mounting plate per ED-91598-01, Fig. 3 required in addition to list 1 for two circuits per SD-96210-01, Fig. 4 for offices having individual and 4-party selective coin lines.

List 8 — Equipment per SD-96210-01, Fig. 4 required in addition to list 7 for one circuit.

List 9 — Common equipment of one mounting per ED-91598-01, Fig. 4 required in addition to list 1 for ten circuits for test jack and trunk make-busy circuits, in panel offices, per SD-96210-01, Fig. 5 and 6.

List 10 — Equipment per SD-96210-01, Fig. 5 and 6 required in addition to list 9 for one circuit.

List 11 — Common equipment of one mounting per ED-91598-01, Fig. 5 for ten circuit test jack in panel offices not equipped with make-busy frame.

List 12 — Equipment per SD-96210-01, Fig. 5 required in addition to list 11 for one circuit.

Notes

A. The miscellaneous equipment per lists 5, 6, 7, 8, 9, 10, 11, and 12 is wired by the installer.

B. Provide wiring per SD-96210-01, Fig. 1, "X" wiring in addition to list 2 for crossbar offices.

J91104N (A&M Only) — DC Keyset Unit Crossbar and Panel (See 5.19)

Equipment — J91104N-( )
Local Cable — ED-91600-01, Fig. 2

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

	WIRE	EQUIP	SEE NOTES
Framework, ED-90782-01, G9		1	
Keyset Ckt, SD-96133-01, Fig. 1, 2, & 4 and "Y," "W," and "S" Options	5	0	A

List 2 — Equipment per SD-96133-01, Fig. 1, less "S" apparatus, required in addition to list 1 for one keyset circuit.

List 3 — Equipment per SD-96133-01, Fig. 1, "S" apparatus only, required in addition to list 2 for keypulsing in both cords.

List 4 — Equipment per SD-96133-01, Fig. 2 required in addition to list 2 for key monitoring.

List 5 — Equipment per SD-96133-01, Fig. 1, "W" apparatus, required in addition to list 2 to provide improved margin for the marginal register relays of the associated keypulsing senders.

Notes

A. "H" and "K" wiring shown on SD-96133-01, Fig. 1, is taken care of on the number checking position circuit.

B. When crossbar number checking is required, provide "K" wiring per SD-96133-01, Fig. 1 and 2.

J91104R (A&M Only) — Official PBX Trunk Unit From Panel or Crossbar Office

Equipment — ED-91628-01, Fig. 1
Local Cable — ED-91600-01, Fig. 1

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

	WIRE	EQUIP
Framework, ED-90782-01, G6		1
Official PBX Trunk Ckt, SD-96189-01, Fig. 1, With "R" and "W" Wiring	10	0

List 2 — Equipment per SD-96189-01, Fig. 1 required in addition to list 1 for one trunk circuit.

J91104S (A&M Only) — Official PBX Trunk Unit From Tandem Offices

Equipment — ED-91622-01, Fig. 1
Local Cable — ED-91600-01, Fig. 1

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

	WIRE	EQUIP
Framework ED-90782-01, G9		1
Official PBX Trunk Ckt SD-96189-01, Fig. 3 "T" and "V" Wiring	10	0

List 2 — Equipment per SD-96189-01, Fig. 3 required in addition to list 1 for one trunk circuit.

Note

A. For trunks from operator tandem, if tip and ring are reversed at tandem or from trunks from manual tandem, provide "T" wiring per SD-96189-01, Fig. 3 in addition to list 2 and for trunks from operator tandem office if tip and ring are not reversed at tandem "V" wiring per SD-96189-01, Fig. 3 must be provided in addition to list 2.

J91104W (A&M Only) — Central Switchboard Outgoing Trunk Unit Equipment Using Keypulsing Senders

Equipment — ED-20898-01, Fig. 1
Local Cable — ED-91600-01, Fig. 1

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

	WIRE	EQUIP
Framework ED-90782-01, G13		1
Outgoing Trunk Ckt, SD-21859-01, Fig. 1, With "Y" and "Z" Wiring	5	0

List 2 — Equipment per SD-21859-01, Fig. 1 required in addition to list 1 for one trunk.

List 3 — Equipment per SD-21859-01, Fig. 1, "C" apparatus (120C repeating coil), required in addition to list 2 when trunk impedance is 1100 ohms or less.

List 4 — Equipment per SD-21859-01, Fig. 1 (120D repeating coil) required in addition to list 2 when trunk impedance is greater than 1100 ohms.

Note

A. When trunk is arranged for idle indicating lamps, provide "Y" wiring per SD-21859-01, Fig. 1 in addition to list 2 or when trunk is arranged for group busy lamps provide "Z" wiring per SD-21859-01, Fig. 1 in addition to list 2.

J91104AB (A&M Only) — Keypulsing Sender Selector Unit

Equipment — ED-91671-01
Local Cable — ED-91729-01

List 1 — Framework, assembly, wiring, and common equipment for one unit of ten sender selectors for keypulsing outgoing trunks or keypulsing "A" switchboard district and incoming selectors and incoming trunks.

	WIRE	EQUIP
Framework, ED-90782-01, G6 and G39		1
Sender Selector Circuits, SD-21179-01, SD-21784-01, SD-21787-01, SD-21787-02, SD-21787-03, SD-21858-01, SD-21859-01, SD-25447-01, SD-25462-01 (bank equipment only)	10	10

List 2 — Equipment required in addition to list 1 for one sender selector circuit (less bank) per SD-21179-01, SD-21784-01, SD-21787-01, SD-21787-02, SD-21787-03, SD-21858-01, SD-21859-01, SD-25447-01, or SD-25462-01.

J91104AC (A&M Only) — Idle Trunk Indicating Equipment Unit

Equipment — ED-91696-01, Fig. A
Local Cable — ED-91601-01, Fig. 1

List 1 — Framework, assembly, wiring, and common equipment for one idle trunk indicating unit arranged for 60 trunks.

	WIRE	EQUIP
Framework ED-90782-01, G7		1
Idle Trunk Indicating Circuit, SD-96164-01, Fig. 6 and 7	60	0

List 2 — Mounting plate required in addition to list 1 for each ten idle trunks indicating circuits.

List 3 — Equipment per SD-96164-01, Fig. 7 required in addition to list 1 and 2 for one circuit associated with relay or selector equipment.

List 4 — Equipment per SD-96164-01, Fig. 6 required in addition to list 1 and 2 for one circuit associated with OGT jack only.

J91104AD (A&M Only) — Incoming Recording Trunk Unit — No. 15D Switchboard

Equipment — ED-91711-01, Fig. 1
Local Cable — ED-91600-01, Fig. 1

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

	WIRE	EQUIP
Framework, ED-90782-01		1
Incoming Recording Trunk Circuit, SD-96333-01, Fig. 1	10	0

List 2 — Equipment per SD-96333-01, Fig. 1 required in addition to list 1 for one trunk.

J91104AE (A&M Only) — Outgoing Trunk Unit for Use With Machine Ringing Toll Switching Trunks — No. 15D Switchboard

Equipment — ED-91712-01, Fig. 1
Local Cable — ED-91600-01, Fig. 1

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

	WIRE	EQUIP
Framework, ED-90782-01, G11		1
Outgoing Trunk Circuit, SD-96334-01, Fig. 1	10	0

List 2 — Equipment per SD-96334-01, Fig. 1 required in addition to list 1 for one trunk.

List 3 — Equipment per SD-96334-01, Fig. 1, "X" apparatus (No. 120C repeating coil), required in addition to list 2 where trunk impedance is 1100 ohms or less.

List 4 — Equipment per SD-96334-01, Fig. 1, "W" apparatus (No. 120D repeating coil), required in addition to list 2 where trunk impedance is greater than 1100 ohms.

J91104AG (A&M Only) — 2-way Ringdown Trunk Unit — To Toll Switchboard (See Note A)

Equipment — ED-91800-01, Fig. 1
Local Cable — ED-91600-01, Fig. 1

List 1 — Framework, assembly, wiring, and common equipment for one unit of five trunk circuits.

	WIRE	EQUIP
Framework, ED-90782-01, G10		1
2-way Ringdown Trunk Circuit, SD-96394-01, Fig. 1	5	0

List 2 — Equipment per SD-96394-01, Fig. 1 required in addition to list 1 for one trunk circuit.

Note

A. The trunk coil and condenser equipment per SD-96394-01, Fig. 2, shall be mounted on a miscellaneous basis in accordance with ED-91800-01, Fig. 2.

J91104AH (A&M Only) — Outgoing Trunk Unit — To Manual or Crossbar Office — Arranged for Rering, Idle Trunk Indicating, and Group Busy Lamp for Dial Offices

Equipment — ED-91801-01, Fig. 1
Local Cable — ED-91600-01, Fig. 2

List 1 — Framework, assembly, wiring, and common equipment for one unit of ten trunk circuits.

	WIRE	EQUIP
Framework, ED-90782-01, G12		1
Outgoing Trunk Circuit, SD-96395-01, Fig. 1, A With "N," "J," and "K" Wiring	10	0

List 2 — Equipment per SD-96395-01, Fig. 1 required in addition to list 1 for one trunk arranged to connect to toll switching trunk in local manual office.

List 3 — Equipment per SD-96395-01, Fig. 1, "U" apparatus, required in addition to list 2 when trunk impedance at 1000 cycles is 1100 ohms or less.

List 4 — Equipment per SD-96395-01, Fig. 1, "V" apparatus, required in addition to list 2 when trunk impedance at 1000 cycles is greater than 1100 ohms.

List 5 — Equipment per SD-96395-01, Fig. 1, "P" apparatus, required in addition to list 2 for No. 120CS repeating coil for one trunk circuit. (See note A.)

List 6 — Equipment per SD-96395-01, Fig. 1, "M" apparatus, required in addition to list 2 for No. 120DS repeating coil for one trunk circuit. (See note A.)

Notes

A. Specify lists 5 and 6 in place of lists 3 and 4, respectively, only when permaloy repeating coils are not available.

B. Provide additional equipment required to modify unit when trunk is to be arranged for simplex ringing on a miscellaneous basis.

J91104AK (A&M Only) — Tandem Completing Trunk Unit — Jack Ended — Straightforward From Manual Tandem — Through Supervision

Equipment — ED-91823-01, Fig. 1
Local Cable — ED-91600-01, Fig. 2

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

	WIRE	EQUIP
Framework, ED-90782-01, G14		1
Tandem Completing Trunk Circuit, SD-96413-01, Fig. 1	10	0

List 2 — Equipment per SD-96413-01, Fig. 1 required in addition to list 1 for one trunk.

List 3 — Equipment per SD-96413-01, Fig. 1, "Z" apparatus, for No. 94E repeating coil for one trunk.

List 4 — Equipment per SD-96413-01, Fig. 1, "Y" apparatus, for No. 94F repeating coil for one trunk.

J91104AL (A&M Only) — Combined Dial and Cord Splitting Unit — Crossbar and Panel (See 5.19)

Equipment — ED-91821-01, Fig. 1
Local Cable — ED-91601-01, Fig. 1

List 1 — Framework, assembly, wiring, and common equipment for one unit having one dial and one cord splitting circuit.

	WIRE	EQUIP
Framework, ED-90782-01, G3		1
Dial Circuit, SW-96232-01:		
Fig. 1, Less "M" and "P" Options	1	1
Fig. 1, "M" and "P" Options, 2, 3, A, & B	1	0
Cord Splitting Circuit SD-96132-01, Fig. 1, A, and B with "W" and "Z" Wiring	1	0

List 2 — Equipment per SD-96232-01, Fig. A required in addition to list 1 for dialing on both cords.

List 5 — Equipment per SD-96232-01, Fig. 2 required in addition to list 1 for dial monitoring.

List 6 — Equipment per SD-96132-01, Fig. 1 required in addition to list 1 for one cord splitting circuit.

List 7 — Equipment per SD-96132-01, Fig. A required in addition to list 6 where associated cord circuits have metallic supervision.

List 8 — (AT&TCo Special) — Equipment per SD-96132-01, Fig. B required in addition to list 6 where associated cord circuits have grounded vision.

Note

A. When dialing on calling cord only is required, provide wiring per SD-96232-01, Fig. B, in addition to list 1, and when associated cord circuits are arranged for completion of intercepted calls, wiring per SD-96132-01, Fig. 1, "W" wiring is required in addition to list 6. When special service cords or when cords not arranged for completion of interrupted calls are required, "Z" wiring per SD-96132-01, Fig. 1 is required in addition to list 6. "N" wiring is required with list 5 when (DM) relay is not connected in parallel with peg count checking key, and "Q" wiring is required with list 5 when (DM) relay is connected to same sleeve of monitoring jack as peg count checking relay shown on miscellaneous register circuit.

J91104AM (A&M Only) — 2-wire Recording Completing Trunk Unit — Coin

Equipment — ED-91822-01, Fig. 1
Local Cable — ED-91600-01, Fig. 1

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

	WIRE	EQUIP
Framework, ED-90782-01, G13		1
Recording Completing Trunk Circuit, SD-96412-01, Fig. 1, 2, A, B, & D	10	0

List 2 — Equipment per SD-96412-01, Fig. 1 required in addition to list 1 for one trunk circuit.

List 3 — Equipment per SD-96412-01, Fig. 1, "V" apparatus, required in addition to list 8 for No. 120C repeating coil for one trunk.

List 4 — Equipment per SD-96412-01, Fig. 1, "U" apparatus, required in addition to list 2 for No. 120D repeating coil for one trunk.

List 5 — Equipment per SD-96412-01, Fig. 2 required in addition to list 2 for coin control equipment for one trunk.

List 6 — Equipment per SD-96412-01, Fig. A required in addition to list 2 for ringing recall equipment for one trunk.

List 7 — Mounting plate required when list 6 is specified. (Specify one list 7 per unit.)

J91104AN (A&M Only) — 2-wire Recording Completing Trunk Unit — Noncoin

Equipment — ED-91822-01, Fig. 2
Local Cable — ED-91600-01, Fig. 1

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

	WIRE	EQUIP
Framework, ED-90782-01, G11		1
Recording Completing Trunk Circuit, SD-96412-01, Fig. 1, A, B, & D	10	0

List 2 — Equipment per SD-96412-01, Fig. 1 required in addition to list 1 for one trunk.

List 3 — Equipment per SD-96412-01, Fig. 1, "V" apparatus, required in addition to list 2 for No. 120C repeating coil for one trunk.

List 4 — Equipment per SD-96412-01, Fig. 1, "U" apparatus, required in addition to list 2 for No. 120D repeating coil for one trunk.

List 5 — Equipment per SD-96412-01, Fig. A required in addition to list 2 for ringing recall equipment for one trunk.

List 6 — Mounting plate required when list 5 is specified. (Specify one list 6 per unit.)

J91104AP (A&M Only) — 2-wire Recording Completing Trunk Unit — Coin — Recall

Equipment — ED-91822-01, Fig. 3
Local Cable — ED-91600-01, Fig. 1

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

	WIRE	EQUIP
Framework, ED-90782-01, G14		1
Recording Completing Trunk Circuit, SD-96412-01, Fig. 1, 2, A, B, C, & D	10	0

List 2 — Equipment per SD-96412-01, Fig. 1 and C required in addition to list 1 for one trunk circuit.

List 3 — Equipment per SD-96412-01, Fig. 1, "V" apparatus, required in addition to list 2 for No. 120C repeating coil for one trunk.

List 4 — Equipment per SD-96412-01, Fig. 1, "U" apparatus, required in addition to list 2 for No. 120D repeating coil for one trunk.

List 5 — Equipment per SD-96412-01, Fig. 2 required in addition to list 2 for coin control equipment for one trunk.

List 6 — Equipment per SD-96412-01, Fig. A required in addition to list 2 for ringing recall equipment for one trunk.

J91104AR (A&M Only) — 2-wire Recording Completing Trunk Unit — Noncoin — Recall

Equipment — ED-91822-01, Fig. 4
Local Cable — ED-91600-01, Fig. 1

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

	WIRE	EQUIP
Framework, ED-90782-01, G12		1
Recording Completing Trunk Ckt, SD-96412-01, Fig. 1, A, B, C, & D	10	0

List 2 — Equipment per SD-96412-01, Fig. 1 and C required in addition to list 1 for one trunk.

	WIRE	EQUIP
Framework, ED-90782-01, G4		1
MF Keyset, Circuit SD-95423-01 and SD-95429-01, Fig. 1, 2, & 5	1	0
Cord Splitting Circuit, SD-96132-01, Fig. 1, A, & B, and "W" and "Z" Wiring	1	0

List 2 — Equipment per SD-95423-01, Fig. 1, less "Z" and "T" apparatus, required in addition to list 1 for one mf keyset circuit.

List 3 — Equipment per SD-95429-01, Fig. 1, less "Z" and "T" apparatus, required in addition to list 1 for one mf keyset circuit.

List 4 — Equipment per SD-95423-01, Fig. 1, "Z" apparatus, or SD-95429-01, Fig. 1, "Z" apparatus, required in addition to list 2 or 3 for mf keypulsing on both calling and answering ends of cord without cord splitting.

List 5 — Equipment per SD-95423-01, Fig. 5, or SD-95429-01, Fig. 5 required in addition to list 2 or 3 for key monitoring.

List 6 — Equipment per SD-96132-01, Fig. 1 required in addition to list 1 for one cord splitting circuit.

List 7 — Equipment per SD-96132-01, Fig. A required in addition to list 6 where associated cord circuits have metallic supervision.

List 8 — (AT&TCo Special) — Equipment per SD-96132-01, Fig. B required in addition to list 6 where associated cord circuits have ground supervision.

List 9 — Equipment per SD-95423-01, Fig. 1, "T" apparatus, or SD-95429-01, Fig. 1, "T" apparatus, required in addition to list 2 or 3 for MF keypulsing on calling cord only or on both calling or answering cords, with cord splitting.

J91104BB (A&M Only) — Keyset and Cord Splitting Unit — No. 15D Switchboard (See 5.19)

Equipment — J91104BB-( )
Local Cable — ED-91601, Fig. 1

List 1 — Framework, assembly, wiring, and common equipment for one unit having one keyset and one cord splitting circuit.

	WIRE	EQUIP
Framework, ED-90782-01, G3 Keyset		1
Circuit, SD-95416-01 and SD-96438-01, Fig. 1, 2, & 4, With "M" and "N" Wiring	1	0
Cord Splitting Circuit, SD-96132-01, Fig. 1, A, & B, With "W" and "Z" Wiring	1	0

List 2 — Equipment per SD-95416-01, Fig. 1, less "S" apparatus, required in addition to list 1 for one keyset circuit.

List 3 — Equipment per SD-96438-01, Fig. 1, less "S" apparatus, required in addition to list 1 for one keyset circuit.

List 4 — Equipment per SD-95416-01, Fig. 1, "S" apparatus, or SD-96438-01, Fig. 1, "S" apparatus, required in addition to list 2 or 3 for keypulsing and answering cord.

List 5 — Equipment per SD-95416-01, Fig. 2, or SD-96438-01, Fig. 2 required in addition to list 2 or 3 for key monitoring.

List 6 — Equipment per SD-96132-01, Fig. 1 required in addition to list 1 for one cord splitting circuit.

List 7 — Equipment per SD-96132-01, Fig. A required in addition to list 6 where associated cord circuits have metallic supervision.

List 8 — (AT&TCo Special) — Equipment per SD-96132-01, Fig. B required in addition to list 6 where associated cord circuits have ground supervision.

List 9 — Equipment per SD-95416-01, Fig. 1, "M" apparatus only, or SD-95438-01, Fig. 1, "M" apparatus only, required in addition to list 1 when stop-go pulsing is required on mf calls.

J91104BC (A&M Only) — Keyset Unit — No. 15D Switchboard (See 5.19)

Equipment — J91104BC-( )
Local Cable — ED-91600-01, Fig. 1

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

	WIRE	EQUIP
Framework, ED-90782-01, G9		1
Keyset Circuit, SD-95416-01 and SD-96438-01, Fig. 1, 2, & 4, With "M," and "N" Wiring	5	0

List 2 — Equipment per SD-95416-01, Fig. 1, less "S" apparatus, required in addition to list 1 for one keyset circuit.

List 3 — Equipment per SD-96438-01, Fig. 1, less "S" apparatus, required in addition to list 1 for one keyset circuit.

List 4 — Equipment per SD-95416-01, Fig. 1, "S" apparatus, or SD-96438-01, Fig. 1, "S" apparatus, required in addition to list 2 or 3 for keypulsing on both cords.

List 5 — Equipment per SD-95416-01, Fig. 2, or SD-96438-01, Fig. 2 required in addition to list 2 or 3 for key monitoring.

List 6 — Equipment per SD-95416-01, Fig. 1, "M" apparatus only, or SD-95438-01, Fig. 1, "M" apparatus only, required in addition to list 1 when stop-go pulsing is required on mf calls.

J91104BE (A&M Only) — Coin Supervisory Unit — Arranged for Stuck Coin With or Without Overtime Monitoring

Equipment — ED-92216-01, Fig. 1
Local Cable — ED-92216-01, Fig. 1

List 1 — Framework, assembly, wiring, and common equipment for one coin supervisory circuit.

	WIRE	EQUIP
Framework, ED-90781-01, G3		1
Stuck Coin Monitoring & Supervisory Circuit, SD-95473-01:	1	1
Fig. 1 With "Q," "X," "Y," and "Z" Wiring and Less "R" and "S" Options	1	0
Fig. 1, "R" and "S" Options	1	0
Overtime Monitoring Circuit, Fig. 3, A, and B	1	0

List 2 — Equipment per SD-95473-01, Fig. 3, less "R" and "S" options, required in addition to list 1 for overtime monitoring.

List 3 — Equipment per SD-95473-01, Fig. A, and "R" option per Fig. 3 required in addition to list 2 for low sleeve resistance.

List 4 — Equipment per SD-95473-01, Fig. B and "S" option per Fig. 3 required in addition to list 2 for high sleeve resistance.

List 5 — Equipment per SD-95473-01, Fig. 1, "S" option only, required in addition to list 1 for high sleeve resistance.

J91104BF (A&M Only) — Permanent Signal Holding Trunk Unit — For Use With 5 and 1 Crossbar

Equipment — ED-92221-01, Fig. 1
Local Cable — ED-91601-01, Fig. 1

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

	WIRE	EQUIP	SEE NOTES
Framework, ED-90782-01, G4		1	
Permanent Signal Holding Trunk Circuit, SD-95474-01:			
Fig. 1 & A and "V," "Y," and "Z" Wiring	1	1	A
Howler Relay Circuit, Fig. 3	1	0	

List 2 — Equipment per SD-95474-01, Fig. 3 required in addition to list 1 when howler tone is required.

List 3 — Equipment per SD-95474-01, Fig. B required in addition to list 1, less Fig. A, when high resistance sleeve is required.

Note

A. When this trunk is located in a step-by-step office, equipment per SD-95474-01, Fig. 4 shall be furnished on a miscellaneous basis to be wired and cabled by the installer.

J91104BG (A&M Only) — Outgoing Trunk or Auxiliary Outgoing Trunk Unit — Arranged for Dial Pulsing for Outgoing Trunk or DC Keypulsing for Auxiliary Outgoing Trunk, Reverse Battery Supervision, Simplex or 20-cycle Controlled Ringing With or Without Coin Control Over Separate Single Trunk Conductor

Equipment — ED-92229-01, Fig. 1
Local Cable — ED-91601-01, Fig. 1

List 1 — Framework, assembly, wiring, and common equipment for a unit of two trunks.

	WIRE	EQUIP
Framework, ED-90782-01, G3		1
Outgoing Auxiliary Trunk Ckt, SD-95471-01:		
Trunk Circuit, Fig. 1, 3, & 4	2	0
Simplex Controlled Ringing Circuit, Fig. A	2	0
20-cycle Controlled Ringing Circuit, Fig. B	2	0

List 2 — Equipment per SD-95471-01, Fig. 1, 3 and "S" apparatus, less "Z" apparatus, required in addition to list 1 for one outgoing trunk circuit without coin control.

List 3 — Equipment per SD-95471-01, Fig. 1, "Z" apparatus only, required in addition to list 2, 6, or 7 for coin control.

List 4 — Equipment per SD-95471-01, Fig. A required in addition to list 2, 6, or 7 for simplex controlled ringing.

List 6 — Equipment per SD-95471-01, Fig. 1, and "S" apparatus, less "Z" apparatus, required in addition to list 1 for one auxiliary outgoing trunk circuit without coin control.

List 7 — Equipment per SD-95471-01, Fig. 1, and 4, and "R" apparatus, less "Z" apparatus, required in addition to list 1 for one outgoing trunk circuit without coin control.

J91104BH (A&M Only)--Outgoing Trunk Unit — Arranged for MF Keypulsing, Reverse Battery Supervision, Simplex or 20-cycle Controlled Ringing With or Without Coin Control Over Separate Single Trunk Conductor — For Use When Position is Arranged for Both DC and MF Keypulsing

Equipment — ED-92230-01, Fig. 1
Local Cable — ED-91601-01, Fig. 1

List 1 — Framework, assembly, wiring, and common equipment for one outgoing trunk.

	WIRE	EQUIP
Framework, ED-90782-01, G2		1
Outgoing Trunk Circuit, SD-95475-01:		
Fig. 1	1	1
Fig. A, B, & C	1	0
Simplex Controlled Ringing Circuit, Fig. D	1	0
20-cycle Controlled Ringing Circuit, Fig. E	1	0

List 2 — Equipment per SD-95475-01, Fig. A required in addition to list 1 when trunk is arranged for idle trunk indicating lamps for use with an incoming trunk.

List 3 — Equipment per SD-95475-01, Fig. B required in addition to list 1 when trunk is arranged for group-busy lamps.

List 4 — Equipment per SD-95475-01, Fig. C required in addition to list 1 when trunk is arranged for idle trunk indicating lamps for use with intermediate trunk.

List 5 — Equipment per SD-95475-01, Fig. 1, "Y" apparatus only, required in addition to list 1 for coin control.

List 6 — Equipment per SD-95475-01, Fig. D required in addition to list 1 for simplex controlled ringing.

J91104BK (A&M Only) — Test Trunk Unit — No. 13C, 13D, 15C, or 15D Switchboard — From No. 18B Toll Testboard—For Testing Outgoing Trunks Which Are Arranged for MF Pulsing in Switchboards Which Are Equipped With Combined DC-MF Keyset Circuits — Three 23-inch Mounting Plates (See Note A)

Equipment — ED-92252-01, Fig. 1
Local Cable — ED-91601-01, Fig. 1

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

	WIRE	EQUIP
Framework, ED-90782-01, G3		1
Test Trunk Circuit, SD-95486-01, Fig. 1	1	0

List 2 — Equipment per SD-95486-01, Fig. 1, less "Y" and "Z" options, required in addition to list 1 for one test trunk circuit.

List 3 — Equipment per SD-95486-01, Fig. 1, "Z" option, required in addition to list 2 when trunk impedance is 1100 ohms or less.

List 4 — Equipment per SD-95486-01, Fig. 1, "Y" option, required in addition to list 3 when trunk impedance is greater than 1100 ohms.

Note

A. The cords and lamp shall be located in positions and cord locations as assigned by the telephone company.

J91104BL (A&M Only) — Outgoing Trunk Unit — Intertoll Dialing — CX Signaling Type B on SX Signaling — No. 13C, 13D, 14C, 14D, or 15C Switchboard — Three 23-inch Mounting Plates

Equipment — ED-92283-01
Local Cable — ED-91601-01

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

	WIRE	EQUIP
Framework, ED-90782-01, G3		1
Outgoing Trunk Circuit, SD-95504-01:		
"K," "Y," and "Z" Wiring, Less "K" and "Y" Apparatus	1	1
Fig. 2 to 5 and "M," "N," "R," "Q," "T," and "Y" Wiring, Less "M" and "Y" Apparatus	1	0

List 2 — Equipment per SD-95504-01, Fig. 2 required in addition to list 1 to arrange one outgoing trunk circuit for nonpad control office, for pad control offices when it is desired to remove incoming pad in the toll trunk connected at the intertoll selector, or for pad control offices when it is desired to retain the pad in the toll trunk connected at the intertoll selector.

List 3 — Equipment per SD-95504-01, Fig. 2 and 3, less "M" apparatus required in addition to list 1 to arrange one outgoing trunk circuit for connection to a No. 1 toll office transmission pad circuit.

List 4 — Equipment per SD-95504-01, Fig. 3, "M" apparatus only, required in addition to list 3 to arrange one outgoing trunk circuit for connection to a No. 3 toll office transmission pad circuit.

List 5 — Equipment per SD-95504-01, Fig. 4 required in addition to list 1 to arrange one outgoing trunk circuit for the out-of-service feature.

List 6 — Equipment per SD-95504-01, Fig. 1, "K" apparatus only, required in addition to list 1 to arrange one outgoing trunk circuit for use with trunks equipped with repeaters.

List 7 — Equipment per SD-95504-01, Fig. 1 or 2, "Y" apparatus only, required in addition to list 1 for one outgoing trunk circuit where building-out condensers are required.

List 8 — Equipment per SD-95504-01, Fig. 5 required in addition to list 1 to arrange one outgoing trunk circuit for group-busy registration for connection to intertoll dialing incoming trunk or to intertoll dialing auxiliary trunk.

List 9 — Equipment per SD-95504-01, Fig. 1, "Y" apparatus only, required in addition to list 2 for one outgoing trunk circuit where building-out condensers are required.

J91104BM (A&M Only) — Outgoing Trunk Unit Equipment — MF Pulsing, High-low Reverse Battery Supervision, Simplex or 20-cycle Ringing, With or Without Coin Control Over Separate Single Trunk Conductor — No. 1, 1D, 11, or 15D Switchboard — Two 23-inch Mounting Plates — Surface Wired.

Equipment — ED-92431-01, Fig. 1

List 1 — Framework, assembly, wiring, and equipment for one outgoing trunk circuit per SD-95566-01, Fig. 1.

List 2 — Wiring and equipment per SD-95566-01, Fig. 1, "Z" apparatus only, required in addition to list 1 for coin control.

List 3 — Wiring and equipment per SD-95566-01, Fig. A required in addition to list 1 for simplex controlled ringing.

List 4 — Wiring and equipment per SD-95566-01, Fig. B required in addition to list 1 for 20-cycle controlled ringing.

List 5 — Wiring and equipment per SD-95566-01, Fig. 3 required in addition to list 1 when trunk is arranged for idle trunk indicating lamps or when neither idle trunk indicating lamps nor group-busy lamps are required.

List 6 — Wiring and equipment per SD-95566-01, Fig. D required in addition to list 1 when trunk is arranged for group-busy lamps.

List 7 — Wiring and equipment per SD-95566-01, Fig. E required in addition to list 1 when trunk is arranged for idle trunk indicating lamps for use with intermediate trunks.

List 8 — Wiring and equipment per SD-95566-01, Fig. F required in addition to list 1 for simplex controlled ringing to toll offices.

J91104BN (A&M Only)—Outgoing Trunk Unit —For Use Where Position Is Arranged for Both DC and MF Keypulsing—One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104BN-( )

List 1 — Assembly, wiring and equipment per SD-95565-01, Fig. 1 for one outgoing trunk circuit.

List 2 — Wiring and equipment per SD-95565-01, Fig. A required in addition to list 1 for one trunk circuit when trunk is arranged for idle trunk indicating lamps for use with an incoming trunk.

List 3 — Wiring and equipment per SD-95565-01, Fig. B when trunk is arranged for group-busy lamps.

List 4 — Wiring and equipment per SD-95565-01, Fig. C required in addition to list 1 when trunk is arranged for idle trunk indicating lamps for use with controlled ringing intermediate trunks.

List 5 — Wiring and equipment per SD-95565-01, Fig. 1, "Y" apparatus, required in addition to list 1 for one trunk circuit arranged for coin control.

List 6 — Wiring and equipment per SD-95565-01, Fig. D required in addition to list 1 for simplex controlled ringing.

List 7 — Wiring and equipment per SD-95565-01. Fig. E required in addition to list 1 for 20-cycle controlled ringing.

J91104BP (A&M Only) — Idle Trunk Indicating Equipment Unit for Connection Between No. 15C or 15D Switchboard and No. 4, A4A, or 4A Crossbar Systems

Equipment — ED-91696-01, Fig. J
Local Cable — ED-91601-01, Fig. 3

List 1 — Assembly, wiring, and common equipment for one idle trunk indicating unit arranged for five trunks.

	WIRE	EQUIP
Idle Trunk Indicating Circuit, SD-96164-01, Fig. 11	5	5

J91104BR (A&M Only) — Outgoing Trunk Unit Equipment — No. 13C, 13D, 14C, 14D, or 15C Switchboard — MFKP — IN DP-OUT — Reverse Battery Supervision — 20-cycle SX or No Ringing Start Signal — With or Without Coin Control Over Separate Single Trunk Conductor—Two 2- by 23-inch Mounting Plates — Surface Wired

Equipment — ED-92580-01

List 1 — Framework, assembly, and common equipment for one outgoing trunk unit arranged for two trunks.

List 2 — Wiring and equipment per SD-95611-01, Fig. 1, A, and D, less all options, required in addition to list 1 for one outgoing trunk arranged for connection to incoming trunks with immediate ringing. (See note A.)

List 3 — Wiring and equipment per SD-95611-01, Fig. 1, B and E, less all options, arranged for connection to incoming trunks with simplex controlled ringing. (See note A.)

List 4 — Wiring and equipment per SD-95611-01. Fig. 1, C, and E, less all options, required in addition to list 1 for outgoing trunk arranged for connection to ining trunks with 20-cycle controlled ringing. (See note A.)

List 5 — Wiring and equipment per SD-95611-01, Fig. 1, "M" apparatus only, required in addition to list 2, 3, or 4 for coin control.

Note

A. Provide "Q," "S," "T," "V," "W," "X," "Y," and "Z" wiring as specified.

J91104BX (A&M Only)—Auxiliary Trunk Unit — For Completing Delayed Calls — One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104BX-( )

List 1 — Assembly, equipment, and wiring for one auxiliary trunk for completing delayed call per SD-31472-01, Fig. 1.

List 2 — Wiring and equipment per SD-31472-01, Fig. 1 required in addition to list 1 for one additional trunk.

J91104BY (A&M Only)—Special Service Trunk Unit — Incoming From Selectors — One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104BY-( )

List 1 — Assembly, wiring, and equipment for one trunk circuit unit per SD-31499-01, Fig. 1, and "Y" wiring, not arranged for number checking or make busy with provision for two trunk circuits.

List 2 — Wiring and equipment per SD-31499-01, Fig. 1, and "Y" wiring required in addition to list 1 for one additional trunk circuit not arranged for number checking or make busy.

List 3 — Wiring and equipment per SD-31499-01, Fig. 1, "B" apparatus, required in addition to list 1 or 2 for one trunk arranged for make busy.

List 4 — Wiring and equipment per SD-31499-01, Fig. 1, "X" apparatus only, required in addition to list 1 or 2 for one trunk arranged for number checking.

J91104CA (A&M Only) — Service Assistants Telephone Unit Equipment — No. 15C or 15D "A" Switchboard — Two 2- by 23-inch Mounting Plates — Surface Wired

Equipment — J91104CA-( )

List 1 — Assembly, wiring, and equipment for one service assistants telephone division circuit with common equipment for four section circuits. (See note A.)

List 2 — Wiring and equipment per SD-96163-01, Fig. 2 required in addition to list 1 for one service assistant section without intercepting positions.

List 3 — Wiring and equipment per SD-96163-01, Fig. 3 required in addition to list 1 for one service assistant section with intercepting positions only.

List 4 — Wiring and equipment per SD-96163-01, Fig. 4 required in addition to list 1 for one service assistant section with both nonintercepting and intercepting positions.

List 5 — Wiring and equipment per SD-96163-01, Fig. 6 required in addition to list 1, for service assistants division circuit for outgoing calls to the line trouble desk or chief switchman's desk.

List 6 — Wiring and equipment per SD-96163-01, Fig. 1, "X" option, required in addition to list 1 when service observing connections are required. (See note A.)

List 7 — Wiring and equipment per SD-96163-01, Fig. 1, "Z" option, required in addition to list 1 when quiet operating room features are required.

Note

A. Provide optional wiring as required.

J91104CC (A&M Only) — Call Distributing "B" Switchboard Position Unit — Three 2- by 23-inch Mounting Plates — Surface Wired

Equipment — J91104CC-( )

List 1 — Assembly, wiring, and equipment per SD-21104-01, Fig. 1 required for one position circuit. (See note A.)

List 2 — Wiring and equipment per SD-21104-01, Fig. 23, required in addition to list 1 for one telephone circuit. (See note A.)

List 3 — Wiring and equipment per SD-21104-01, Fig. 2 required in addition to list 1 for key monitoring auxiliary circuit. (See note A.)

List 4 — Wiring and equipment per SD-21104-01, Fig. 2, "L" apparatus, required in addition to list 3 for single-jack monitoring relay.

List 5 — Wiring and equipment per SD-21104-01, Fig. 17 required in addition to list 3 for office key monitor when 5-key operation is required for use with six or less offices.

List 6 — Wiring and equipment per SD-21104-01, Fig. 30 required in addition to list 3 for office key monitor when 5-key operation is required for use with more than six offices.

List 7 — Wiring and equipment per SD-21104-01, Fig. A and Fig. 1, "K" and "Q" wiring, required in addition to list 1 for double order tone apparatus for 4-key call distributing "B" operation.

List 8 — Wiring and equipment per SD-21104-01, Fig. B required in addition to list 1 for single order tone apparatus for 5-key call distributing "B" operation.

List 9 — Wiring and equipment per SD-21104-01, Fig. C required in addition to list 1 for single and double order tone apparatus for both 4- and 5-key call distributing operation.

List 10—Wiring and equipment per SD-21104-01, Fig. 21 and Fig. 1, "R" wiring, required in addition to list 8 or 9 for 5-key operation only or combined 4- and 5-key operation when office grouping is not required.

Notes

A. Provide "E," "F," "N," and "U" wiring as required.

B. When the "A" switchboard position is arranged as a "B" position for both 4- and 5-key operations, one office key grouping circuit per SD-21104-01, Fig. 22 shall be provided. (This equipment is located in the switchboard.)

C. When a "B" switchboard lineup is used and arranged for both 4- and 5-key operation, one office key grouping circuit per SD-21104-01, Fig. 22 shall be provided. In addition, provide equipment and wiring per SD-96000-01, Fig. 5 and 6 when one transmission test line supply circuit is required, arranged per J91104CC-( ), Fig. 2. (This equipment is located on the relay rack.)

J91104CD (A&M Only) — Outgoing Dial Trunk Unit — No. 13C, 13D, 14C, 14D, 15C, or 15D Switchboard — Simplex Ringing Start Signal — One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104CD-( )

List 1 — Assembly, wiring, and equipment per SD-95704-01, Fig. 1 required for one trunk with common equipment for one additional trunk.

List 2 — Wiring and equipment per SD-95704-01, Fig. 1 required in addition to list 1 for one additional trunk.

Note

A. The 313C electron tube required for the operation of this trunk is not furnished.

J91104CF (A&M Only) — Transfer Key and Lamp Unit — No. 13C, 15C, or 15D Switchboard — For CAMA Connection in Combined DSA and CAMA Position — One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104CF-( )

List 1 — Assembly, wiring, and equipment for one transfer key and lamp circuit of a 3-circuit unit per SD-95723-01, Fig. 1.

List 2 — Wiring and equipment per SD-95723-01, Fig. 1 required in addition to list 1 for additional transfer key and lamp circuit.

Note

A. When Fig. 5 of SD-95723-01, is required, a 189A mounting plate with one U422 relay per circuit shall be mounted below and adjacent to the unit J91104CF.

J91104CG (A&M Only) — Combination Cord Unit — Arranged for Completing Intercepted Calls — With or Without Flashing Recall — For Use in Panel or Step-by-Step Office — Two 2- by 23-inch Mounting Plates — Surface Wired

Equipment — J91104CG-( )

List 1 — Framework, assembly, wiring, and equipment for one special service cord circuit without coin control per SD-90454-01, Fig. 1 and F. (See note A.)

List 2 — Framework, assembly, wiring and equipment for one special service cord circuit with coin control per SD-90454-02, Fig. 1 and F. (See note A.)

List 3 — Wiring and equipment per SD-90454-01, or SD-90454-02, Fig. E, less Fig. F, required in addition to list 1 or 2 when any incoming trunks in the position are arranged for tone identification of the calling office.

List 4 — Wiring and equipment per SD-90454-01, or SD-90454-02, Fig. 1, "X" option, required in addition to list 1 or 2 when flashing recall is required. (See note B.)

Notes

A. Provide optional wiring as specified.

B. When list 4 is specified, furnish "X" wiring and apparatus and G98 as the A relay, otherwise "Y" wiring as the G97 or the A relay.

J91104CH (A&M Only)—Incoming Trunk Unit Equipment — Special Service From Dial Office — Arranged for Ringback — Central "A" Switchboard — No. 1, 1C, 1D, 11, 13C, 13D, 14C, 15C, or 15D Switchboard — Three 2- by 23-inch Mounting Plates — Surface Wired

Equipment — J91104CH-( )

List 1 — Assembly, wiring, and equipment for a unit of two incoming special service trunk circuits per SD-95745-01, Fig. 1.

List 2 — Wiring and equipment per SD-95745-01, Fig. 1, "W" option, required in addition to list 1 for one trunk circuit when impedance is 1100 ohms or less.

List 3 — Wiring and equipment per SD-95745-01, Fig. 1, "X" option, required in addition to list 1 for one trunk circuit when impedance is greater than 1100 ohms.

List 4 — Wiring and equipment per SD-95745-01, Fig. A, "Y" option, required in addition to list 1 for one trunk requiring low sleeve resistance when outgoing trunk is not equipped with class-of-service tone.

List 5 — Wiring and equipment per SD-95745-01, Fig. A, "Z" option, required in addition to list 1 for one trunk requiring high sleeve resistance when outgoing trunk is not equipped with class-of-service tone.

List 6 — Wiring and equipment per SD-95745-01, Fig. B, "Y" option, required in addition to list 1 for one trunk requiring low sleeve resistance when outgoing trunk is equipped with class-of-service tone or when special service trunk is used as an emergency line.

List 7 — Wiring and equipment per SD-95745-01, Fig. B, "Z" option, required in addition to list 1 for one trunk requiring high sleeve resistance when outgoing trunk is equipped with class-of-service tone or when special service trunk is used as an emergency line.

List 8 — Wiring and equipment per SD-95745-01, Fig. 2 required in addition to list 1 for trunks when switchboard answering cord is not equipped with ringing keys.

J91104CL (A&M Only) — Outgoing Trunk Unit — No. 15C or 15D Switchboard — To Local Selector, Test Distributor, Selector for Completing Delayed Calls — Outgoing Trunk Repeater, Incoming Repeaters, A-B Toll Transmission Selector or A-B Toll Preceding Selector or To Crossbar Tandem Office — One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104CL-( )

List 1 — Assembly, wiring, and equipment for one outgoing trunk unit per SD-96459-01, Fig. 1. (See note A.)

List 2 — Wiring and equipment per SD-96459-01, Fig. 2 required in addition to list 1 for use with selector for completing intercepting calls.

List 3 — Wiring and equipment per SD-96459-01, Fig. 3 required in addition to list 1, for use with outgoing trunk repeater circuit.

List 4 — Wiring and equipment per SD-96459-01, Fig. 4 required in addition to list 1 for delay dial circuit, for use with outgoing trunk to crossbar tandem.

J91104CN (A&M Only) — Special Service Cord Unit — For Additional Cords for No. 15D Switchboard — 15-cord Capacity Lower Units — Three 2- by 23-inch Mounting Plates — Surface Wired

Equipment — J91104CN-( )

List 1 — Framework, assembly, and common equipment for one unit arranged for two special service cords.

List 2 — Wiring and equipment per SD-96130-01, Fig. 2, less "H," "S," "T," "X," and "Y" apparatus, required in addition to list 1 for one cord circuit.

List 3 — Wiring and equipment per SD-96130-01, Fig. 2 required in addition to list 2 for coin control for one cord circuit.

List 4 — Wiring and equipment per SD-96130-01, Fig. A required in addition to list 2 for metallic supervision for one cord circuit.

List 5 — (AT&TCo Special)—Wiring and equipment per SD-96130-01, Fig. B required in addition to list 2 for grounded supervision for one cord circuit.

List 6 — Wiring and equipment per SD-96130-01, Fig. 2 required in addition to list 2 for flashing recall for one cord circuit.

List 7 — Wiring and equipment per SD-96130-01, Fig. 2, "S" apparatus, required in addition to list 2 for keypulsing on both cords of one circuit.

List 8 — Wiring and equipment per SD-96130-01, Fig. 2, "Y" apparatus, required in addition to list 2 for number checking for one cord circuit.

List 9 — Wiring and equipment per SD-96130-01, Fig. 2, "H" apparatus, required in addition to list 2 when provision is made on one cord circuit for handling transferred CAMA calls in a combined CAMA and DSA or toll positions.

J91104CR (A&M Only) — TX Trunk Unit — No. 13C, 13D, 14C, 14D, 15C, or 15D Switchboard — Reverse Battery Supervision — Simplex DC Ringing — Three 2- by 23-inch Mounting Plates — Surface Wired

Equipment — J91104CR-( )

List 1 — Framework, assembly, wiring, and equipment for one TX trunk of a 2-circuit unit per SD-95436-01, Fig. 1, B, and D.

List 2 — Wiring and equipment per SD-95436-01, Fig. 1, B, and D required in addition to list 1 for an additional trunk.

J91104CS (A&M Only) — Permanent Signal Holding Trunk Unit — No. 13C, 13D, 14C, 14D, 15C, or 15D Switchboard — For No. 1 Crossbar — One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104CS-( )

List 1 — Assembly, wiring, and equipment for one permanent signal holding trunk unit per SD-25126-01, Fig. 1.

List 2 — Wiring and equipment per SD-25126-01, Fig. 1, "X" option, required in addition to list 1 for use without AMA.

List 3 — Wiring and equipment per SD-25126-01, Fig. 1, "W" option, required in addition to list 1 for use with AMA.

List 4 — Apparatus required in addition to list 3 on first permanent signal holding trunk unit in relay rack bay (once per bay).

Notes

A. Provide optional wiring as specified.

B. When tone relay S per SD-25126-01, Fig. 2 or MC relay per Fig. 3 is specified, locate on a miscellaneous basis. Locate as close as practicable to the associated trunk unit.

J91104CT (A&M Only) — Incoming Trunk Unit — For Coin Special Service — To Special Switchboard — Five 2- by 23-inch Mounting Plates — Surface Wired

Equipment — J91104CT-( )

List 1 — Framework, assembly, equipment, and wiring per SD-96356-01, Fig. 1 required for one trunk with provisions for one additional trunk. (See note A.)

List 2 — Assembly, equipment, and wiring per SD-96356-01, Fig. 1 required in addition to list 1 for one additional trunk. (See note A.)

List 3 — Wiring and equipment per SD-96365-01, Fig. 1, "Z" apparatus, required in addition to list 1 or 2 for one trunk with impedance of 1100 ohms or less.

List 4 — Wiring and equipment per SD-96365-01, Fig. 1, "U" apparatus, required in addition to list 1 or 2 for one trunk with impedance greater than 1100 ohms.

List 5 — Wiring and equipment per SD-96365-01, Fig. 2 required in addition to list 1 or 2 when switchboard answering cords are not equipped with ringing keys.

List 6 — Wiring and equipment per SD-96365-01, Fig. A and F required in addition to list 1 or 2 for DSA switchboards requiring low resistance sleeves, and for No. 1 switchboard where the outgoing trunk is equipped with class-of-service tone.

List 7 — Wiring and equipment per SD-96365-01, Fig. A and G required in addition to list 1 or 2 for DSA switchboards requiring high resistance sleeves where the outgoing trunk is equipped with class-of-service tone.

List 8 — Wiring and equipment per SD-96365-01, Fig. A required in addition to list 1 or 2 for No. 1D, 10, or 11 switchboard where the outgoing trunk is equipped with class-of-service tone.

List 9 — Wiring and equipment per SD-96365-01, Fig. B required in addition to list 1 or 2 for DSA switchboards requiring low resistance sleeves and for No. 1 switchboard where the outgoing trunk is not equipped with class-of-service tone.

List 10 — Wiring and equipment per SD-96365-01, Fig. E required in addition to list 1 or 2 for DSA switchboards requiring high resistance sleeves where the outgoing trunk is not equipped with class-of-service tone.

List 11 — Wiring and equipment per SD-96365-01, Fig. H required in addition to list 1 or 2 for No. 1D, 10, or 11 switchboard where the outgoing trunk is not equipped with class-of-service tone.

List 12 — Wiring and equipment per SD-96365-01, Fig. J, "N" apparatus, required in addition to list 8 or 11 where switchboard is a No. 10.

List 13 — Wiring and equipment per SD-96365-01, Fig. J, "P" apparatus, required in addition to List 8 or 11 where switchboard is a No. 1D or 11.

List 14 — Wiring and equipment per SD-96365-01, Fig. C required in addition to list 1 or 2 when traffic register is required on incoming trunk.

List 15 — Wiring and equipment per SD-96365-01, Fig. 1, "G" apparatus, required in addition to list 1 or 2 for DSA switchboards.

Note

A. Provide optional wiring as required.

J91104CU (A&M Only) — Transfer Key and Lamp Circuit Relay Equipment — For CAMA Connections in Combined DSA and CAMA Positions Using MF Keypulsing for CAMA Calls — For No. 13C, 13D, or 15C Switchboard — In Panel, Step-by-Step or No. 1 Crossbar Offices — One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104CU-( )

List 1 — Assembly, wiring, and equipment per SD-95799-01, Fig. 1 for one relay unit with common equipment for one additional circuit.

List 2 — Wiring and equipment per SD-95799-01, Fig. 1 required in addition to list 1 for one additional relay circuit.

J91104CV (A&M Only) — Verification Request or Official PBX Incoming Trunk Unit — One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104CV-( )

List 1 — Assembly, wiring, and equipment for one trunk circuit per SD-95673-01, Fig. 1.

List 2 — Wiring and equipment per SD-95673-01, Fig. 1, "Q" option only, required in addition to list 1 for use with No. 10 switchboard.

List 3 — Wiring and equipment per SD-95673-01, Fig. 1, "R" option only, required in addition to list 1 when list 2 is not required.

List 4 — Wiring and equipment per SD-95673-01, Fig. 1, "Z" option only, required in addition to list 1 when trunk impedance is 1100 ohms or less.

List 5 — Wiring and equipment per SD-95673-01, Fig. 1, "Y" option only, required in addition to list 1 when trunk impedance is greater than 1100 ohms.

J91104CW (A&M Only) — Business Office Line ***Unit — No. 14C, 14D, or 15C Switchboard — One 2- by 23-inch Mounting Plate — Surface Wired***

Equipment — J91104CW-( )

List 1 — Wiring and equipment for one business office line circuit per SD-31198-01, Fig. 1 with provisions for two additional circuits.

List 2 — Wiring and equipment per SD-31198-01, Fig. 1 required in addition to list 1 for an additional circuit.

List 3 — Wiring and equipment per SD-31198-01, Fig. 1, "Z" apparatus, required in addition to list 1 or 2 when busy lamps are required.

List 4 — Wiring and equipment per SD-31198-01, Fig. 1, "X" apparatus, required in addition to list 1 or 2 when busy lamps are required.

J91104CY (A&M Only) — Official PBX Trunk for Use With No. 13C, 13D, 15C, or 15D Switchboard or Vacant Code Intercepting Trunk for Use With No. 13C, 13D, 14C, 14D, 15C, or 15D Switchboard — One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104CY-( )

List 1 — Assembly, wiring, and equipment per SD-96189-01, Fig. 1 for one trunk circuit for use as official PBX trunk for No. 13C, 13D, 15C, or 15D switchboards (See note A.)

List 2 — Wiring and equipment per SD-96189-01 Fig. 4 required in addition to list 1 for vacant code intercepting trunk from offices not handling toll traffic for No. 13C, 13D, 14C, 14D, 15C, or 15D switchboard.

List 3 — Wiring and equipment per SD-96189-01, Fig. 1 "E" option only required in addition to list 2 for VF termination during idle condition.

List 4 — Wiring and equipment per SD-96189-01, Fig. 1, "B" option only, required in addition to list 1 for building-out capacitor.

Note

A. Provide optional wiring as required.

J91104CZ (A&M Only) — Tone and Flashing Demonstration Unit — No. 13C, 13D, 14C, 14D, 15C or 15D Switchboard — One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104CZ-( )

List 1 — Assembly and common equipment for one tone and flashing demonstration unit.

List 2 — Wiring and equipment per SD-95697-01, Fig. 1 and 4 required in addition to list 1, for simulating line busy, reorder, or no-circuit signals in a crossbar office DSA switchboard.

List 3 — Wiring and equipment per SD-95697-01, Fig. 2 and 4 required in addition to list 1 for simulating line busy, reorder, or no-circuit signals in a panel office DSA switchboard or no-circuit signal in a step-by-step office DSA switchboard.

List 4 — Wiring and equipment per SD-95697-01, Fig. 7 with "Y" option required in addition to list 1 simulating line busy or reorder signals in a step-by-step office DSA switchboard with idle trunk indicating.

List 5 — Wiring and equipment per SD-95697-01, Fig. 7 with "Z" option required in addition to list 1 for switchboard without idle trunk indicating.

J91104DA (A&M Only) — Permanent Signal Holding Trunk Unit — Equipment for Panel Offices — No. 13C, 13D, 15C, or 15D Switchboard — One 2- by 23-inch Mounting Plate — Surface Wired

Equipment — J91104DA-( )

List 1 — Assembly, wiring, and equipment per SD-21442-01, Fig. 1 less options for one permanent signal holding trunk circuit.

List 2 — Wiring and equipment per SD-21442-01, Fig. 1, "S" and "U" options only required in addition to list 1 for use with 1A key equipment.

List 3 — Wiring and equipment per SD-21442-01, Fig. 1 "A" option only required in addition to list 1 for use in switchboards having low resistance sleeves.

List 4 — Wiring and equipment per SD-21442-01, Fig. 1, "B" option only required in addition to list 1 for use in switchboards having high resistance sleeves.

List 5 — Wiring and equipment per SD-21442-01, Fig. 1, E476 relay (L3) required in addition to list 1 when tone is required for operator verification of line-out of service condition in addition to identification of cable pairs.

List 6 — Wiring and equipment per SD-21442-01, Fig. 1, E6445 relay (L3) required in addition to list 1 when tone is required for identification of cable pairs only.

Notes

A. Provide optional wiring as required.

B. When (MC) relay per SD-21442-01, Fig. 4 is required, provide on a miscellaneous basis and locate as close as possible to associated units.

5. GENERAL NOTES

5.01 The equipment covered by this specification shall be mounted on relay rack framework designed for rear of bay cabling where the equipment is mounted on the front of the uprights. This equipment may be mounted on existing relay rack frameworks only where all equipment in the bay is arranged for rear of bay cabling and equipment mounted from the front of the bay. Vacant space on existing front of bay cabled relay racks may be used to mount 19-inch mounting plate equipment, when required in the office.

5.02 The method of mounting the various units as well as the miscellaneous equipment is shown on ED-91510-01, or ED-92224-01. In the location of equipment on the relay rack as far as practical like equipment should be located in the same and adjacent bays.

5.03 Connecting blocks wired for 24-volt and 48-volt battery and ground per SD-90122-01 and SD-25440-01 will be mounted in accordance with ED-91210-01 and ED-90046-01 approximately 6 feet 0 inch above the floor on the apparatus side of each third bay beginning with the second bay of relay rack.

5.04 Fuse alarm resistances per SD-96444-01, SD-21272-01, or SD-31613-01 will be located on the fuse panels on the fuse bay.

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

5.06 When used in crossbar offices all the cross connections will be made on the horizontal side of the MDF unless otherwise specified.

Wherever panel system circuits are used in the crossbar office showing cross connections on either side of the IDF or other distributing frames, they will be interpreted as HMDF unless otherwise specified. Where existing equipment, terminated on distributing frames other than the MDF, is to be cross-connected, the crossbar equipment tie cable will be provided when necessary.

5.07 The equipment arranged to mount on 19-inch relay rack will be mounted on 23-inch relay rack by means of adapter details per ED-90273-01 in accordance with ED-91510-01. The adapter details in all cases shall extend approximately the full length of the unit instead of using short adapters on each side of the unit.

Location of Fuses for Relay Rack Equipment

5.08 Fuses associated with relay rack equipment will be located on fuse panels mounted on angle relay rack type fuse bays per J97033. These bays will, in general, be grouped in a convenient location at the main cross aisle end of alternate line-ups of relay rack over ten bays long, or on every third lineup for less than ten bays in ultimate length. For cases where one or two bays of relay equipment are used to fill out rows of crossbar frames, a common fuse bay will be provided in a convenient location for a group of relay rack bays.

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

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

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

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

Cabling

5.13 The method of running switchboard cables to the equipment listed in this specification is illustrated on drawing ED-91510-01, or ED-92224-01. In accordance with general standard practices, large switchboard cables serving convenient numbers of circuits or units in the same bay shall be used, butted near the first equipment to which they are formed and connected. There may be exceptions to this general rule and these will be taken care of on the specific equipment units.

5.14 In general, 24-gauge cables may be used. However, 22-gauge cables are specified on unit equipment drawings and circuit drawings when multiple lamp leads are included or when there are other limitations on conductor resistance. 20-gauge cables are used for battery leads from the fuse bay to two or more circuits served by the same fuse or where a small number of conductors is required. Otherwise, 22 gauge is used.

Grounding

5.15 Relay rack bay frameworks will be grounded by means of a 1-inch by 1/8-inch copper bus bar mounted on the top angle in accordance with drawing ED-91210-01. This bus bar will also supply signal ground for the circuits mounted on these bays through the use of a bare tinned No. 6 wire extending the full height of each bay on the local cable side in accordance with ED-91510-01.

Talking Battery Supply

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

Bay Layout

5.17 In general, there are no restrictions on the arrangement of equipment on relay rack bays except for cabling convenience, keeping like equipment together. In cases where the equipment contains jacks or keys, notes are shown recommending location at convenient heights from the floor. To minimize keypulsing loop re-

sistance, the switchboard keyset and cord splitting units should be located on bays adjacent to bays on which associated combination cord units are mounted.

Centralized Switchboard

5.18 Relay rack equipment required in connection with a central switchboard is covered by J91104G, J91104K, J91104CH, and J91104AF. J91104G and J91104K are units of coin and noncoin special service outgoing trunks (dial zero) located at the distant crossbar or panel office which terminate at the "A" board office in trunk per J91104CH and J91104CT. Plugging-up lines in offices served by a central switchboard are handled on the plugging-up line frame covered in specification J93005.

5.19 The keyset and cord splitting unit covered by J91104E, J91104AL, J91104BA, and J91104BB should be used when an office either initially or ultimately will use cord splitting. The keyset unit per J91104N, J91104AU, J91104AY, and J91104BC shall be used in offices not requiring, either initially or ultimately, the cord splitting equipment. Codes J91104E, J91104N, and J91104AL are for use with dc keypulsing; codes J91104AU, J91104AY, and J91104BA are for use with MF KP; and codes J91104BB and J91104BC are for combined DC-MF keypulsing.

5.20 Coin control for incoming selectors and recording completing trunks is furnished per SD-21705-01, when the "A" switchboard is in the same building with the incoming selectors or recording completing trunks. It is furnished per SD-21549-01 and SD-21548-01 when the "A" switchboard is not in the same building with the incoming selector or recording completing trunks. The SD-21549-01 circuit is mounted at the "A" board end and the SD-21548-01 circuit at the selector end. When the incoming trunk method of coin control is used, the "A" board is not involved and the coin control time is furnished per SD-95031-01 covered in J99206. The CN relay, shown on the above circuits is located on the incoming selector frame in panel and the incoming trunk frame in crossbar offices.

5.21 The fuses associated with the pulsing relay in the keyset circuit, the keypulsing sender circuit and the "A" board key monitoring circuit as covered in notes on the circuit drawings shall be mounted on the same fuse panel on the fuse board or on adjacent fuse panels when necessary.

5.22 The equipment for the keyset circuit, SD-95724-01, shown on ED-91530-01, Fig. 33, is designed specifically for use with special service position of the No. 15D switchboard when the position is to function as combined DSA and CAMA position using MF-DC and 2-out-of-5 type keypulsing. The location of this miscellaneous unit on the relay rack was decided upon after considering the location of the associated keyset circuit, pairing of the MF supply leads, and the availability of space in the near equipment. At the present time, no equipment arrangement of the keyset transfer circuit is available for the No. 13C and 13D switchboards. When required, the equipment information will be handled on a job basis. For information concerning the special service position of the No. 15C switchboard, refer to J91101B.

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
J91104B, L2 to L7, L13 to L16, L18 & L19	Mfr. Disc.	2	J91104B, L21 to L32
L20	Mfr. Disc.	3	
J91104D	Mfr. Disc.	3	J91104CM
J91104H	Mfr. Disc.	2	J61533JK
J91104L	Mfr. Disc.	3	J91104CE
J91104M	Mfr. Disc.	1	J91104AF
J91104P	Mfr. Disc.	3	J93016BK
J91104T	Mfr. Disc.	3	J91104CV
J91104U	Mfr. Disc.	3	J99235AK J95417D
J91104Y	Mfr. Disc.	3	J91104CA
J91104AA	Mfr. Disc.	3	J91104CN

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J91104AF	Mfr. Disc.	3	J91104CT
J91104AJ	Mfr. Disc.	3	J91104CY
J91104AL, L3 & L4	Mfr. Disc.	3	—
J91104AS	Mfr. Disc.	4	—
J91104AW, L5	Mfr. Disc.	3	—
J91104BD	Mfr. Disc.	3	J91104CR
J91104BG, L5	Mfr. Disc.	3	—
J91104BH, L7	Mfr. Disc.	3	—
J91104BJ	Mfr. Disc.	3	J91104CV
J91104BS	Mfr. Disc.	4	J91104CK
J91104BT	Mfr. Disc.	4	—
J91104BU	Mfr. Disc.	4	—
J91104BW	Mfr. Disc.	4	J91104CL
J91104BZ	Mfr. Disc.	4	J91104DA
J91104CB	Mfr. Disc.	4	J91104CZ
J91104CE	Mfr. Disc.	4	J91104CH
J91104CJ	Mfr. Disc.	4	J99235AK
J91104CK	Mfr. Disc.	4	J91104CP
J91104CM	Mfr. Disc.	4	—
J91104CP	Mfr. Disc.	4	J95517D J99235AK

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