CABLE DUCT-TYPE BAY FRAMEWORK WITH UNEQUAL FLANGE UPRIGHTS AND ASSOCIATED PARTS EQUIPMENT DESIGN REQUIREMENTS COMMON SYSTEMS

1. GENERAL

Scope

1.01 This specification, together with the supplementary information listed herein, covers the equipment design requirements for cable duct-type bay framework with unequal flange uprights and associated parts. (See Fig. 1 and 2.)

1.02 The bay framework covered herein replaces cable duct-type bay framework per ED-63408-01, ED-63409-01, and ED-63460-01.

1.03 This specification is reissued to incorporate previous appendix changes.

Descripton

1.04 The cable duct-type bay framework is so designed that the two bay frames are placed adjacent to one another, and joined by appropriate details, a duct is formed at the junction by the bay uprights (Fig. 3). The narrow and wide flanges of the uprights fashion the open and closed sides, respectively, of the ducts formed by the adjacently placed bays. Thus, each bay in a line-up may be provided with a cable duct at the left and another at the right for the segregation of low transmission levels from high transmission levels in conductors. The cable ducts serve as compartments for concealing wiring, which as a result does not have to be sewn.

1.05 The bay frameworks covered by this specification are furnished in single-bay and double-bay versions. There are no provisions for sealing off the cable ducts of frames at intermediate locations in bay line-ups except for the No. 1 Electronic Switching System (ESS) oriented frame. No closing details are provided for the cable ducts.

1.06 The bay frameworks are not arranged for double-sided mounting, wherein the equipment is mounted on both flanges of the uprights and is wired and maintained from both sides of the frames. They may be used for back-to-back mounting, wherein the equipment in each line-up is wired and maintained from one side of that line-up and the two line-ups are located back-to-back. In this case, the secondary line-up is fastened to the primary line-up. (See Fig. 4.)

1.07 The single-bay and double-bay frames are provided in 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch heights. The 7-foot frames are entirely floor supported structures. The 9-foot, 10-foot 6-inch, and 11-foot 6-inch frames depend upon auxiliary framing, cross aisle racks, or some other means of bracing for stabilization.

1.08 The bays are arranged for a choice of 1-3/4 by 19-inch, 1-3/4 by 23-inch, or 2- by 23-inch mounting plates. Both flanges of the bay uprights are drilled and tapped alike for 0.216-24 screws to hold the mounting plates or panels. Each bay of the 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch frames has a capacity of 43, 56, 66, and 73, 1-3/4 inch mounting plates, respectively, or 38, 49, 58, and 64, 2-inch mounting plates, respectively.

1.09 The frame base members, made of 0.090-inch thick sheet steel, are welded to the uprights. Gussets provided for strength also support a 5-inch removable guard rail cover on either the open- or closed-duct side of the frame, as required. On double-bay frames, the bases and guard rails extend across the two bays. For all heights of frames, arranged for 23-inch mounting plates, the bases for the single-bay frames are identical; and those for double-bay frames are identical. For most applications, the 5-inch guard rails are adequate. However, where needed, the guard rail may be

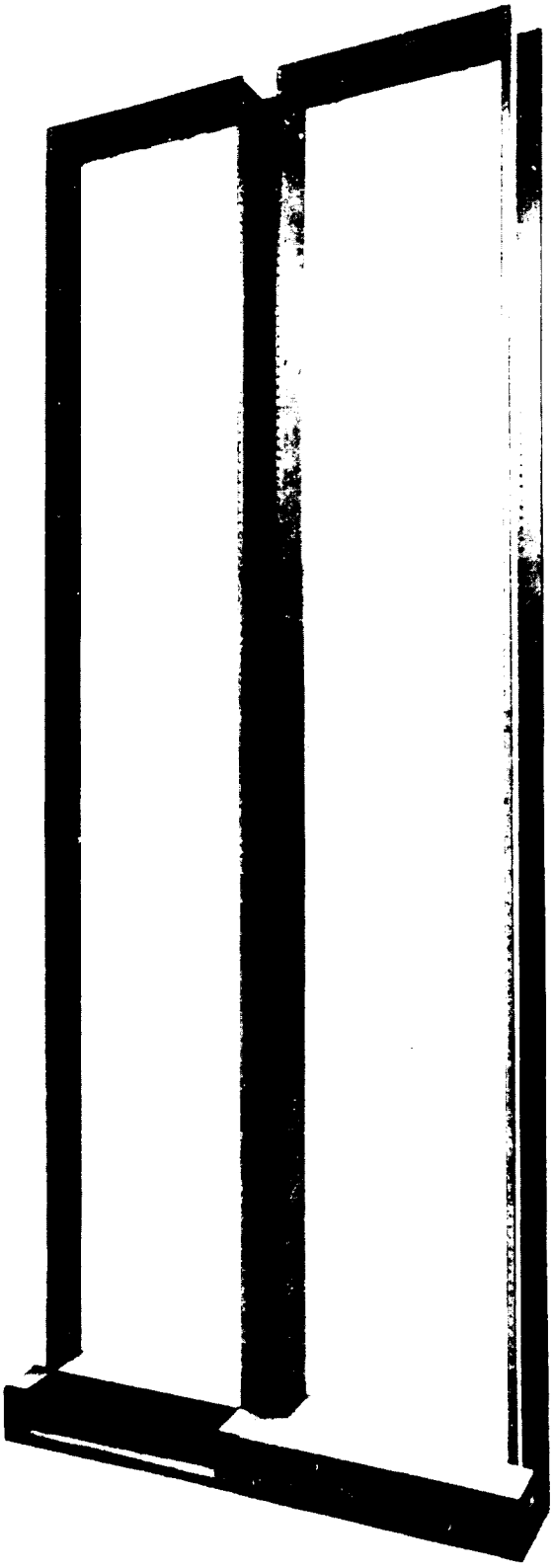

Fig. 1—Two Single 11-foot 6-inch Bays with 5-inch Removable Guard Rail on Narrow Flange Side and Top Angle on Wide Flange Side

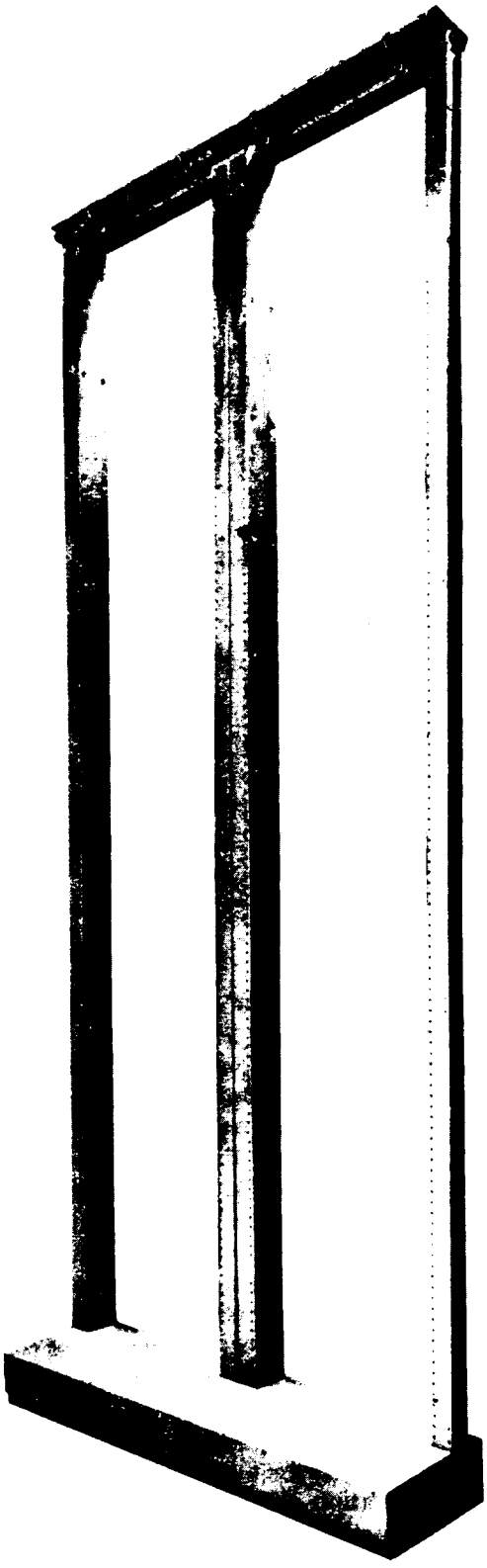

Fig. 2—One Double 11-foot 6-inch Bay with Top Angle and 10-3/8 inch Removable Guard Rail on Wide Flange Side

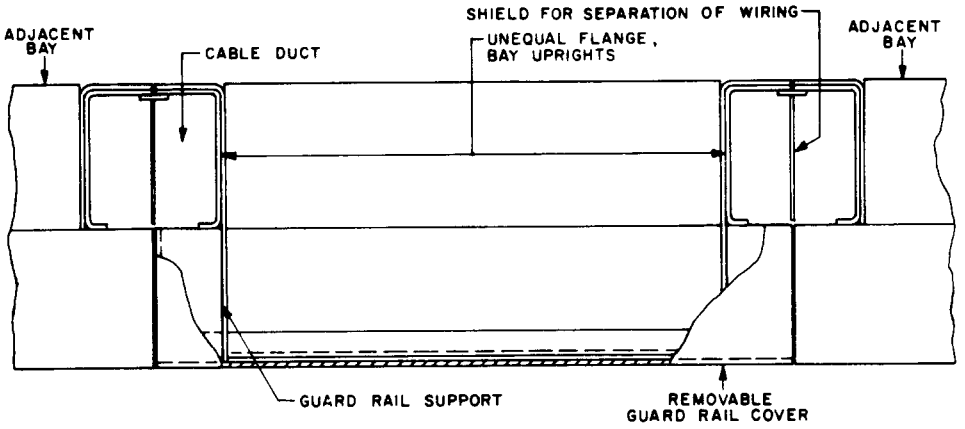

Fig. 3—Single Line-up of Bays

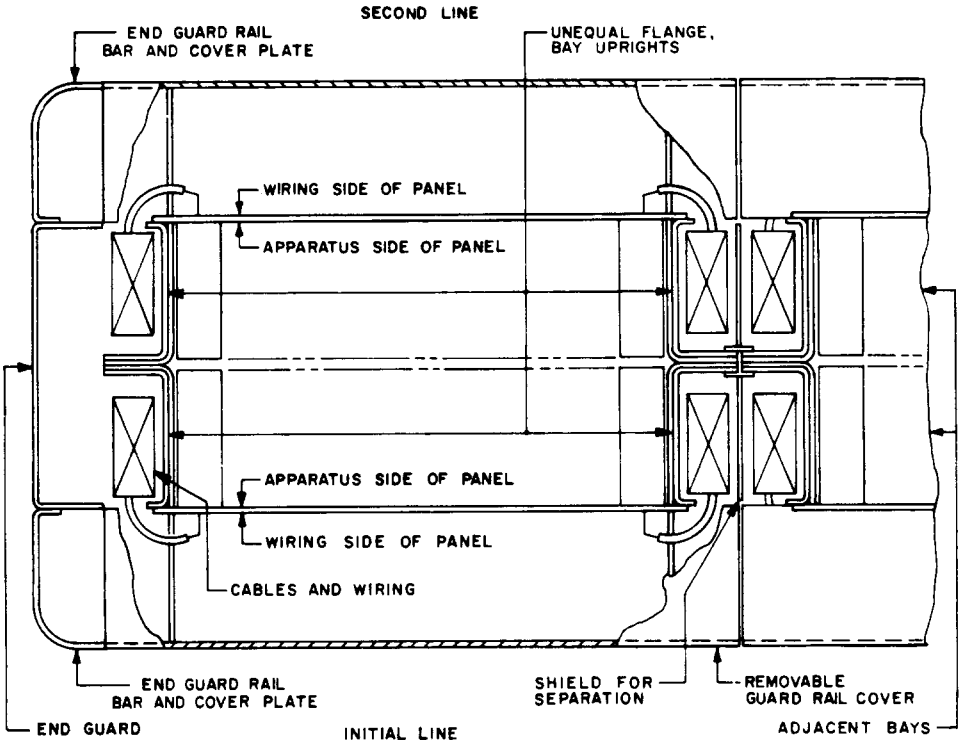

Fig. 4—Two Lines of Bays in Back-to-Back Line-up

extended to 6 or 7 inches by the addition of a 1- by 1-inch or a 1- by 2-inch tube of 0.063-inch thick steel assembled by screws to the front surface along the leading edge of the 5-inch removable cover. A 2- or 5-inch guard rail can be screwed to the side of the frame opposite the side with the removable guard rail cover, Fig. 5. For certain radio equipments, a 10-3/8 inch guard rail can be provided instead of the 5-inch guard rail with removable cover. The 10-3/8 inch guard rail consists of a removable cover, supported by a supplementary base which is assembled by screws to the base of the basic frame.

For most applications, the 5-inch guard rails are adequate. However, where needed, the guard rail may be extended to 6 or 7 inches by the addition of a 1- by 1-inch or a 1- by 2-inch tube of 0.063-inch

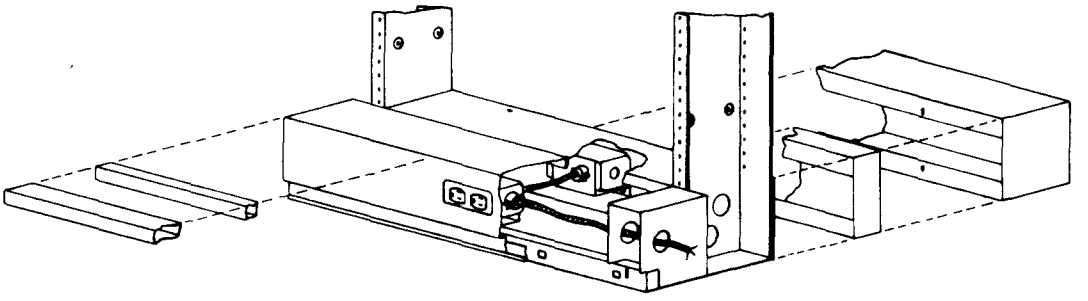

Fig. 5—Guard Rail Cover, Guard Rail, and Guard Rail Extensions

thick steel assembled by screws to the front surface along the leading edge of the 5-inch removable cover. A 2- or a 5-inch guard rail can be screwed to the side of the frame opposite the side with the removable guard rail cover, Fig. 5.

For certain radio equipments, a 10-3/8 inch guard rail can be provided instead of the 5-inch guard rail with removable cover. The 10-3/8 inch guard rail consists of a removable cover, supported by a supplementary base which is assembled by screws to the base of the basic frame.

1.10 The top of each bay of the 7-foot frames consists of a 0.180-inch thick 5-inch wide channel having equal 1-7/16 inch wide flanges. A second channel 0.180 by 3 inches is welded to the inner surface of the 5-inch channel. On the inner surface of the 3-inch channel are three 5/8-11 weld nuts accessible from above through holes in the two channels. The tops of the 9-foot, 10-foot 6-inch, and 11-foot 6-inch frames are very similar to the tops of the previous cable-duct frame, such as ED-63408-01. At the top of each bay, a 3-inch 4-pound channel is welded between the uprights. On most of the frames, a 2- by 2- by 1/4-inch angle extends across the full width and is welded to either the 7/8-inch or 2-7/16 inch flanges of te uprights, as required. The top angles provide for the use of a 1-inch galvanized steel pipe for aligning adjacent frames and for fastening the frames to the office auxiliary framing. Some frames without top angles are provided for certain radio equipments. Top angles would obstruct the waveguides of these equipments.

1.11 The basic frames, i.e., the frame tops, uprights, and bases after assembly are finished with gray enamel, either air dried or baked, as a manufacturing option. The outside surfaces of the guard rails are finished with gray enamel, baked, except those used with the 7-foot frames for No. 1 ESS offices and those used with certain 9-foot frames for radio equipment. These frames have the outside surfaces finished with gray-blue textured vinyl.

1.12 The 7-foot single-bay frames arranged for 23-inch mounting plates are 26 inches wide and are installed on 26-1/16 inch centers. The 7-foot double-bay frames arranged for 23-inch mounting plates are 52 inches wide and are installed on 52-1/8 inch centers. For all the remaining framework, the single-bay frames for 19- and 23-inch mounting plates are 22-3/8 and 26-3/8 inches wide, respectively, and are installed on 22-1/2 and 26-1/2 inch centers. Also, the double-bay frames for 19- and 23-inch mounting plates are 44-7/8 and 52-7/8 inches wide, respectively, and are installed on 45- and 53-inch centers. The dimensions for centers as stated are based on the use of appproximately 5-inch wide cable ducts and must be increased proportionately where wider ducts are used.

1.13 Cable supports, consisting of 4-inch long nickel plated brass paper fasteners, insulators of flexible varnished tubing, and washers, are provided on an optional basis. Where required, these are furnished in the embossed holes nearer the narrow flanges on the bay uprights.

1.14 A 1-inch wide, gray or gray-blue molding of extruded plastic is installed along the front bottom edge of the guard rails on the front of the line-up. This molding, after being adjusted to meet the floor, is secured to the frames between the frame bases and the removable guard rail covers by means of double-sided, adhesive-coated,

pressure-sensitive tape. The molding and tape, available in 10-foot lengths and 36-yard rolls, respectively, is run continuously across all frames in the line-up without interruption, except for the butting of adjacent lengths. For No. 1 ESS offices the gray-blue molding is 1-23/64 inches wide to compensate for the fact that all the frames are always raised in minimum of 0.3 inch from the floor.

End Guards

1.15 For No. 1 ESS offices, the 7-foot frames use No. 1 ESS cabinet-type end guards. For the ends of line-ups, the end guard is 92 inches high, 4 inches deep, and has a full height cover hinged at either the right or left hand side, as required. It has a gray-blue textured vinyl finish on the outer surfaces except for the gray enamel finish on the surface contiguous to the adjoining frame. For cross aisles, the end guard is 84 inches high, and is otherwise similar to the end guard for the ends of line-ups. For intermediate locations, 2-inch deep end guards with detachable covers are available. An intermediate location may take one of several forms. It may be the terminus of frames (a) at line-ups interrupted by building columns or other obstructions or (b) at growing ends of line-ups or ends of line-ups where space has been reserved for growth within incomplete line-ups. For the conditions described in (a), the end guard is 92 inches high and has a gray-blue textured vinyl finish on the outer surfaces except for gray enamel on the surfaces contiguous to the adjoining frame. For the conditions in (b), the end guard is 84 inches high and has a gray enamel finish.

1.16 The 7-foot frames when arranged for use in offices other than No. 1 ESS, the 9-foot, 10-foot 6-inch, and 11-foot 6-inch frames have provisions for sealing off their cable ducts and frame bases only at ends of line-ups and at cross aisles. These end guards are 2-1/2 inches by 7 inches in cross-section with supplementary details at guard rail height as required to build out the 7-inch dimension to conform to the front-to-back depth of the associated bay frames. The end guards are finished on the outside surfaces with gray enamel. No provision has been made for sealing off the cable ducts and frame bases at intermediate locations.

Cable Racks

1.17 Cable racks of an enclosed type are available for use with the 7-foot bay frames when provided in No. 1 ESS offices. These symmetrical racks, designed for the No. 1 ESS equipment, are arranged for installation above the frames and are entirely supported by the frames. A bracket needed for the adaptation of the cable rack to the frame is covered on the No. 1 ESS installation drawing. The racks for installation along the line-ups are 2-tiered welded structures and are available in various lengths. Rack lengths may be obtained for spanning single-bay frames or a line-up of three bay frames for the 26-inch bay structure. The lower tier is approximately 4 inches high with a base slightly greater than the 5-inch top of the frame on which it is fastened. The upper tier is 6 inches high and 12 inches front-to-back. The No. 1 ESS cable rack is offset from the top of the bay by 1-1/2 inches because the 7-foot cable-duct bay with a 12-inch base is a nonsymmetrical configuration. It is a necessity for the front and back vertical surfaces of the cable rack to be plumb with the front and rear surfaces of the bay frame guard rails. The toll transmission cabling, located in the upper portion of the cable rack, is brought out through the side of the upper portion of the rack. It is then routed into the bay duct space as close to the top of the bay as possible. This cable rack has side plates that may either be opened or removed as the case may be. Cross-aisle racks are available for the support of wiring between line-up racks. The outer surfaces of the upper and lower tiers are finished with gray enamel and gray-blue textured vinyl, respectively. Cable racks for the 9-foot, 10-foot 6-inch, and 11-foot 6-inch frames are provided in the same manner as those used with the older cable-duct bays of corresponding heights.

Card Holders

1.18 The bay designation card holders for the frames are similar to those associated with the older cable-duct bay. A series of card holders for association with individual equipment units are available for use on the left or right side flanges of the bay uprights to occupy vertical spaces equivalent to one, two, three, or four mounting plates. The card holders are held in place against the uprights by pressure of the equipment unit or they may be fastened to the uprights with 0.216-24 screws. The card holders are available in three

different types. The first is a flat type arranged for 0.013-inch thick by 1.500-inch wide cards with a 1.375-inch wide usable stamping surface. The second is also a flat type arranged for 0.013-inch thick by 1.3125-inch wide cards with a 1.215-inch wide usable stamping surface. The third is a stand-off type card holder that uses the same size card as does the first type.

1.19 The frameworks are arranged for use at hardened locations. Three holes in the top channel and two holes in the base of each bay provide for the attachment of the additional hardware required at hardened locations. The hardware is attached in accordance with ED-50262-11.

Means For Handling And Erecting The Frames

1.20 The three holes in the top channel, as mentioned above, and three holes in the base of each bay are provided for handling. Oval holes, near the tops of the uprights, provide for hoisting fixtures used in lifting the frame from the horizontal to the vertical position at the site of installation. At the base of each bay frame, on the vertical surface along the turned-up edge, near each end of the frame, a pair of 5/8-inch square cutouts spaced 5-1/2 inches apart is provided. An adapter is secured to the opposite side of the frame base at the time of installation. It extends 5 inches outward, 6 inches upward, and across the width of the frame. The adapter has two pairs of 5/8-inch square cutouts which match up with those already described. The four pairs of cutouts are used for the engagement of four caster-type assemblies or dollies. These dollies provide the means for lifting the frame and positioning it in the line-up. The bases of the bay frames and the end guards for cross aisles have cutouts for bolts by means of which these assemblies are fastened to the floor. An 8-7/8 inch long channel-type bar, placed front-to-back across the inside of the base, is used with each bolt when installing the 7-foot assemblies. The 9-foot, 10-foot 6-inch, and 11-foot 6-inch bay frames use a 3/16- by 2- by 4-inch steel plate with each bolt.

Requirements In No. 1 ESS Offices

1.21 The 7-foot single- and double-bay frames arranged for 23-inch mounting plates use the No. 1 ESS cable rack, cross-aisle cable rack, and end guards when installed in No. 1 ESS switchrooms (J1A054 and J1A052). In addition, a sheet of insulating material is provided between the base of each frame and the floor, insulated shims are used under each corner of the frame, the hold-down bolts are insulated from the frames, and the effectiveness of the insulation is verified as the frame is installed. All cable racks, conduits, etc, supported on cable racks or frames, are interrupted or insulated at points where they leave the switchroom, so as to avoid the possibility of any unwanted ground connections being brought into the area. All frames are grounded by means of a No. 6 copper conductor extending through-out the office, tapped at every frame, and terminated at one of the power distribution frames of the No. 1 ESS equipment.

Bay Configurations

1.22 The following table provides a quick reference for selecting a type of bay framework configuration. For further aid in selecting bay framework see ED-3C089.

TABLE A — CABLE-DUCT FRAMES

DRAWING NUMBER	BAY FRAME	HEIGHT		FRAME WIDTH		MAXIMUM NO. OF MTG PLTS		APPROXIMATE WEIGHT (POUNDS)					
								10 IN. BASE		12 IN. BASE		15 IN. BASE	
		FT	IN.	19 IN.	23 IN.	2 IN.	1-3/4 IN.	19 IN.	23 IN.	19 IN.	23 IN.	19 IN.	23 IN.
ED-97162-50	Single	7	0	1 ft 10-3/8 in.		38	43	81		87		91	
ED-97163-50	Double	7	0	3 ft 8-7/8 in.		38 per bay	43 per bay	162		175		181	
ED-97162-51	Single	7	0		2 ft 2 in.	38	43		86		94		98
ED-97163-51	Double	7	0		4 ft 4 in.	38 per bay	43 per bay		173		188		196
ED-97170-50	Single	9	0	1 ft 10-3/8 in.	2 ft 2-3/8 in.	49	56	95	100	101	108	104	111
		10	6	1 ft 10-3/8 in.	2 ft 2-3/8 in.	58	66	103	108	109	116	112	119
		11	6	1 ft 10-3/8 in.	2 ft 2-3/8 in.	64	73	111	117	118	124	121	128
ED-97171-50	Double	9	0	3 ft 8-7/8 in.	4 ft 4-7/8 in.	49 per bay	56 per bay	189	200	202	215	208	223
		11	6	3 ft 8-7/8 in.	4 ft 4-7/8 in.	64 per bay	73 per bay	223	233	236	249	242	256

SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

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

ED-97162-50—7-foot Equipment Framework, Single-bay Frame, Arranged for 19-inch plates

ED-97162-51—7-foot Equipment Framework, Single-bay Frame, Arranged for 23-inch Mounting Plates

ED-97163-50—7-foot Equipment Framework, Double-bay Frame, Arranged for 19-inch Mounting Plates

ED-97163-51—7-foot Equipment Framework, Double-bay Frame, Arranged for 23-inch Mounting Plates

ED-97165-50—Card Holder Assemblies for Duct-type Framework

ED-97167-51—Junctions for Offset and Reversed Frames 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames per ED-97162-50, ED-97163-50, ED-97170-50, and ED-97171-50

ED-97170-50—Equipment Framework Assembly Cable Duct-type 9-foot, 10-foot 6-inch, and 11-foot 6-inch Single-bay Frames

ED-97171-50—Equipment Framework Assembly Cable Duct-type 9-foot and 11-foot 6-inch Double-bay Frames

ED-97172-50—Bay Designation Card Holder Assembly

ED-97273-50—Junctions Without Separators for 7-1/2 and 10-inch Cable Ducts for 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames

ED-97274-50—Junctions with Separators for Cable Ducts of Various Widths Between 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames with the Top Angle on the Wide Flange Side and the Removable Guard Rail on the Narrow Flange Side

ED-97274-51—Junctions with Separators for Cable Ducts of Various Widths Between 7-foot, 9-foot, and 11-foot 6-inch Cable Duct Frames with Top Angle and Removable Guard Rail on the Wide Flange Side

ED-97274-52—Junctions with Separators for Cable Ducts of Various Widths Between 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames with Top Angle and Removable Guard Rail on the Narrow Flange Side

ED-97275-50—Junctions Between End Guards and Frames for Cable Ducts of Various Widths, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames

ED-97288-50—End Guard Assembly for Cable Duct-type Frames

ED-97289-30—Switches, Appliance Outlets, and Their Interconnection for 7-foot, 9-foot,

10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames

ED-97445-50—Bay Framework Junctions for Junctioning Unequal Flange Cable Duct-type Bays per ED-97170-50, and ED-97171-50 with Channel, Bulb Angle, and Equal Flange Cable Duct-type Bays

ED-3C010-50—Fuse Record Book Holder for Unequal Flange Cable Duct Framework per ED-97162-50, ED-97163-50, ED-97170-50, and ED-97171-50

ED-3C014-51—Method of Grounding 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Frames

2. SUPPLEMENTARY INFORMATION

800-600-000—List of General Equipment Requirement Sections

801-000-000—Equipment Design and General Equipment Requirements and Engineering Information—Common Systems

820-050-150—End Guards, Aisle Directory, Cable Rack Support Stanchions, and Miscellaneous Alarm Units

AA251.007—Line-up Cable Rack Cross-aisle Cable Troughs and End Guards for 7-foot Framework When Used in ESS or Similar Type Offices

Floor Plan Data:

Section 3.3

Sheet 94—Unequal Flange Cable Duct Frames in Single Lines per ED-97162, ED-97163, ED-97170, and ED-97171.

Sheet 95—Unequal Flange Cable Duct-type Frames Back-to-Back Lines per ED-97162, ED-97163, ED-97170, and ED-97171.

Sheet 96—Unequal Flange Cable-duct Type Frames in Single Lines for Use in No. 1 ESS Offices per ED-97162-50 and ED-97163-50

Sheet 101—Unequal Flange Cable-duct Type Frames in Single Lines for Use in No. 1 ESS Offices per ED-97162-51 and ED-97163-51

3. DRAWINGS

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

ED-50262-11—Hardened Equipment Racks, Duct-type Framework with Variable Load Shock Isolators in Hardened Areas

ED-1A184-( )—No. 1 ESS Line-up Cable Rack Assembly

ED-1A197-( )—No. 1 ESS Cross-aisle Cable Rack Assembly

ED-1A198-( )—No. 1 ESS End Guard Assembly

ED-1A210-( )—Common Systems—Method of Installing Equipment

ED-3C085-10—Typical Cabling Plan and Panel Mounting

ED-3C089-50—Reference for Quick Selection of Unequal Flange Cable Duct-type Framework

ED-82097-10—Power Systems—Frame and Aisle Lighting—Equipment and Conduit Plans—Frame Mounted for—Electronic Switching Systems Areas

ED-82097-30—Power Systems—Frame and Aisle Lighting—Frame Mounted for—Electronic Switching Systems Areas—Stocklist and Assembly Figures

J85510A-( )—Power Systems—Frame and Aisle Lighting—Fluorescent Type—Arrangements for Central Office No. 1 ESS—Fixtures Supported from Frame Mounted Unistrut

4. EQUIPMENT

ED-97162-50—7-foot Equipment Framework, Single-bay Frame

Group 3—Basic frame assembly, with supports for a 5-inch removable guard rail cover on the closed-duct side, arranged for 1-3/4 inch by 19-inch mounting plates.

Group 6—Basic frame assembly, with supports for a 5-inch removable guard rail cover on the open-duct side, arranged for 1-3/4 inch by 19-inch mountng plates.

Group 9—One-inch extension for a 5-inch removable guard rail cover with gray-blue finish for a 19-inch bay.

Group 10—Two-inch extension for a 5-inch removable guard rail cover with gray-blue finish for a 19-inch bay.

Group 13—Two-inch guard rail with gray-blue finish for the side of the frame opposite the side with the removable guard rail cover for a 19-inch bay.

Group 14—Five-inch guard rail with gray-blue finish for the side of the frame opposite

the side with the removable guard rail cover for a 19-inch bay.

Group 17—Five-inch removable guard rail cover with gray-blue finish for a 19-inch bay.

Group 19—Five-inch removable guard rail cover with gray enamel finish for a 19-inch bay.

Group 22—One-inch extension for a 5-inch removable guard rail cover with gray enamel finish for a 19-inch bay.

Group 23—Two-inch extension for a 5-inch removable guard rail cover with gray enamel finish for a 19-inch bay.

Group 26—Two-inch guard rail with gray enamel finish for the side of the frame opposite the side with the removable guard rail cover for a 19-inch bay.

Group 27—Five-inch guard rail with gray enamel finish for the side of the frame opposite the side with the removable guard rail cover for a 19-inch bay.

Group 29—One 1-1/4 inch conduit for wiring between cable ducts of a 19-inch bay.

ED-97162-51—7-foot Equipment Framework, Single-bay Frame, Arranged for 23-inch Mounting Plates

Group 1—Basic frame assembly with supports for a 5-inch removable guard rail cover on the closed-duct side arranged for 2- by 23-inch mounting plates.

Group 2—Basic frame assembly with supports for a 5-inch removable guard rail cover on the closed-duct side arranged for 1-3/4 by 23-inch mounting plates.

Group 3—Basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side arranged for 2- by 23-inch mounting plates.

Group 4—Basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side arranged for 1-3/4 by 23-inch mounting plates.

Group 5—One-inch extension for a 5-inch removable guard rail cover with gray-blue finish for a 23-inch bay.

Group 6—Two-inch extension for a 5-inch removable guard rail cover with gray-blue finish for a 23-inch bay.

Group 7—Two-inch guard rail with gray-blue finish for the side of the frame opposite the side with the removable guard rail cover for a 23-inch bay.

Group 8—Five-inch guard rail with gray-blue finish for the side of the frame opposite the side with the removable guard rail cover for a 23-inch bay.

Group 9—Five-inch removable guard rail cover with gray-blue finish for a 23-inch bay.

Group 10—Five-inch removable guard rail cover with gray enamel finish for a 23-inch bay.

Group 11—One-inch extension for a 5-inch removable guard rail cover with gray enamel finish for a 23-inch bay.

Group 12—Two-inch extension for a 5-inch removable guard rail cover with gray enamel finish for a 23-inch bay.

Group 13—Two-inch guard rail with gray enamel finish for the side of the frame opposite the side with the removable guard rail cover for a 23-inch bay.

Group 14—Five-inch guard rail with gray enamel finish for the side of the frame opposite the side with the removable guard rail cover for a 23-inch bay.

Group 15—One 1-1/4 inch conduit for wiring between cable ducts of a 23-inch bay.

Group 16—Cable fasteners for one frame assembly.

Group 17—One set of parts for fastening an ED-97162-50 frame to an ED-97162-51 frame. (See Note A.)

Group 18—One set of parts for fastening an ED-97162-50 frame to an ED-97163-51 frame. (See Note A.)

Group 19—One set of parts for fastening two ED-97162-51 frames together (1/16-inch separation).

Group 20—One set of parts for fastening ED-97162-51 frame to floor. (See Note B.)

Notes

A. For offices already arranged for a frame module of 2 feet 2-3/8 inches where the initial bay spacing must be maintained.

B. Order two groups 20 for the first frame only. All other frames shall fasten to the right of frame center as viewed from front of frame.

ED-97163-50—7-foot Equipment Framework, Double-bay Frame

Group 3—Basic frame assembly, with supports for a 5-inch removable guard rail cover on the closed-duct side arranged for

1-3/4 inch by 19-inch mounting plates.

Group 6—Basic frame assembly, with supports for a 5-inch removable guard rail cover on the open-duct side arranged for 1-3/4 inch by 19-inch mounting plates.

Group 9—One-inch extension for a 5-inch removable guard rail cover with gray-blue finish for a 19-inch bay.

Group 10—Two-inch extension for a 5-inch removable guard rail cover with gray-blue finish for a 19-inch bay.

Group 13—Two-inch guard rail with gray-blue finish for the side of the frame opposite the side with the removable guard rail cover for a 19-inch bay.

Group 14—Five-inch guard rail with gray-blue finish for the side of the frame opposite the side with the removable guard rail cover for a 19-inch bay.

Group 18—One 5-inch removable guard rail cover with gray-blue finish for a 19-inch bay.

Group 20—One 5-inch removable guard rail cover with gray enamel finish for a 19-inch bay.

Group 23—One-inch extension for a 5-inch removable guard rail cover with gray enamel finish for a 19-inch bay.

Group 24—Two-inch extension for a 5-inch removable guard rail cover with gray enamel finish for a 19-inch bay.

Group 27—Two-inch guard rail with gray enamel finish for the side of the frame opposite the side with the removable guard rail cover for a 19-inch bay.

Group 28—Five-inch guard rail with gray enamel finish for the side of the frame opposite the side with the removable guard rail cover for a 19-inch bay.

Group 30—One 1-1/4 inch conduit for wiring between cable ducts of one bay for a 19-inch bay.

ED-97163-51—7-foot Equipment Framework, Double-bay Frame, Arranged for 23-inch Mounting Plates

Group 1—Basic frame assembly with supports for a 5-inch removable guard rail cover on the closed-duct side arranged for 2- by 23-inch mounting plates.

Group 2—Basic frame assembly with supports for a 5-inch removable guard rail cover on the closed-duct side arranged for 1-3/4 by 23-inch mounting plates.

Group 3—Basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side arranged for 2- by 23-inch mounting plates.

Group 4—Basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side arranged for 1-3/4 by 23-inch mounting plates.

Group 5—One-inch extension for a 5-inch removable guard rail cover with gray-blue finish for a 23-inch bay.

Group 6—Two-inch extension for a 5-inch removable guard rail cover with gray-blue finish for a 23-inch bay.

Group 7—Two-inch guard rail with gray-blue finish for the side of the frame opposite the side with the removable guard rail cover for a 23-inch bay.

Group 8—Five-inch guard rail with gray-blue finish for the side of the frame opposite the side with the removable guard rail cover for a 23-inch bay.

Group 9—One 5-inch removable guard rail cover with gray-blue finish for a 23-inch bay.

Group 10—One 5-inch removable guard rail cover with gray enamel finish for a 23-inch bay.

Group 11—One-inch extension for a 5-inch removable guard rail cover with gray enamel finish for a 23-inch bay.

Group 12—Two-inch extension for a 5-inch removable guard rail cover with gray enamel finish for a 23-inch bay.

Group 13—Two-inch guard rail with gray enamel finish for the side of the frame opposite the side with the removable guard rail cover for a 23-inch bay.

Group 14—Five-inch guard rail with gray enamel finish for the side of the frame opposite the side with the removable guard rail cover for a 23-inch bay.

Group 15—One 1-1/4 inch conduit for wiring between cable ducts of one bay for a 23-inch bay.

Group 16—Cable fasteners for the outer two uprights of one frame.

Group 17—Cable fasteners for the four uprights of one frame.

Group 18—Cable fasteners for the inner two uprights of one frame.

Group 19—One set of parts for fastening an ED-97163-50 frame to an ED-97163-51 frame. (See Note A.)

Group 20—One set of parts for fastening an

ED-97163-50 frame to an ED-97162-51 frame. (See Note A.)

Group 21—One set of parts for fastening an ED-97163-51 frame to another ED-97163-51 frame. (See Note A.)

Group 22—One set of parts for fastening two ED-97163-51 frames together (1/8-inch separation).

Group 23—One set of parts for fastening ED-97163-51 frame to floor. (See Note B.)

Notes

A. For offices already arranged for a frame module of 2 feet 2-3/8 inches where the initial bay spacing must be maintained.

B. Order two groups 23 for the first frame only. All other frames shall fasten to the right of the frame center as viewed from front of frame.

ED-97165-50—Card Holder Assemblies for Duct-type Framework

Group 1—Card holder assembly (LEFT) for one 1-3/4 inch mounting plate space.

Group 2—Card holder assembly (LEFT) for two 1-3/4 inch mounting plate spaces.

Group 3—Card holder assembly (LEFT) for three 1-3/4 inch mounting plate spaces.

Group 4—Card holder assembly (LEFT) for four 1-3/4 inch mounting plate spaces.

Group 5—Card holder assembly (LEFT) for one 2-inch mounting plate space.

Group 6—Card holder assembly (LEFT) for two 2-inch mounting plate spaces.

Group 7—Card holder assembly (LEFT) for three 2-inch mounting plate spaces.

Group 8—Card holder assembly (LEFT) for four 2-inch mounting plate spaces.

Group 9—Card holder assembly (RIGHT) for one 1-3/4 inch mounting plate space.

Group 10—Card holder assembly (RIGHT) for two 1-3/4 inch mounting plate spaces.

Group 11—Card holder assembly (RIGHT) for three 1-3/4 inch mounting plate spaces.

Group 12—Card holder assembly (RIGHT) for four 1-3/4 inch mounting plate spaces.

Group 13—Card holder assembly (RIGHT) for one 2-inch mounting plate space.

Group 14—Card holder assembly (RIGHT) for two 2-inch mounting plate spaces.

Group 15—Card holder assembly (RIGHT) for three 2-inch mounting plate spaces.

Group 16—Card holder assembly (RIGHT) for four 2-inch mounting plate spaces.

Group 17—Card holder assembly (LEFT) for one 1-3/4 inch mounting plate space (for use wth ED-97162-51 and ED-97163-51).

Group 18—Card holder assembly (LEFT) for two 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 19—Card holder assembly (LEFT) for three 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 20—Card holder assembly (LEFT) for four 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and Ed-97163-51).

Group 21—Card holder assembly (LEFT) for one 2-inch mounting plate space (for use with ED-97162-51 and ED-97163-51).

Group 22—Card holder assembly (LEFT) for two 2-inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 23—Card holder assembly (LEFT) for three 2-inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 24—Card holder assembly (LEFT) for four 2-inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 25—Card holder assembly (RIGHT) for one 1-3/4 inch mounting plate space (for use with ED-97162-51 and ED-97163-51).

Group 26—Card holder assembly (RIGHT) for two 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 27—Card holder assembly (RIGHT) for three 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 28—Card holder assembly (RIGHT) for four 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 29—Card holder assembly (RIGHT) for one 2-inch mounting plate space (for use with ED-97162-51 and ED-97163-51).

Group 30—Card holder assembly (RIGHT) for two 2-inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 31—Card holder assembly (RIGHT) for three 2-inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 32—Card holder assembly (RIGHT) for four 2-inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 33—Offset card holder assembly (LEFT) for one 1-3/4 inch mounting plate space (for use with ED-97162-51 and

ED-97163-51).

Group 34—Offset card holder assembly (LEFT) for two 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 35—Offset card holder assembly (LEFT) for three 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 36—Offset card holder assembly (LEFT) for four 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 37—Offset card holder assembly (LEFT) for one 2-inch mounting plate space (for use with ED-97162-51 and ED-97163-51).

Group 38—Offset card holder assembly (LEFT) for two 2-inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 39—Offset card holder assembly (LEFT) for three 2-inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 40—Offset card holder assembly (LEFT) for four 2-inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 41—Offset card holder assembly (RIGHT) for one 1-3/4 inch mounting plate space (for use with ED-97162-51 and ED-97163-51).

Group 42—Offset card holder assembly (RIGHT) for two 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 43—Offset card holder assembly (RIGHT) for three 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 44—Offset card holder assembly (RIGHT) for four 1-3/4 inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 45—Offset card holder assembly (RIGHT) for one 2-inch mounting plate space (for use with ED-97162-51 and ED-97163-51).

Group 46—Offset card holder assembly (RIGHT) for two 2-inch mounting plate spaces (for use with (ED-97162-51 and ED-97163-51).

Group 47—Offset card holder assembly (RIGHT) for three 2-inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

Group 48—Offset card holder assembly (RIGHT) for four 2-inch mounting plate spaces (for use with ED-97162-51 and ED-97163-51).

ED-97166-51—Cabinet-type End Guard Assembly for 7-foot Cable-duct Type Frames Used in No. 1 ESS Offices

Group 1—Two-inch end guard assembly, with gray enamel finish, for use where a gap occurs in frame line-up.

Group 2—Two-inch end guard assembly, with gray enamel finish, for use adjacent to a column.

Group 3—Four-inch end guard assembly, with blue-gray finish, for use where line-up cable rack extends beyond end of frame line-up with the door hinge side (when facing end guard) on the right.

Group 4—Four-inch end guard assembly, with blue-gray finish, for use where line-up cable rack extends beyond end of frame line-up with the door hinge side (when facing end guard) on the left side.

Group 5—Four-inch end guard assembly, with blue-gray finish, for use where line-up cable rack does not extend beyond end of frame line-up with the door hinge side (when facing end guard) on the right side.

Group 6—Four-inch end guard assembly, with blue-gray finish, for use where line-up cable rack does not extend beyond end of frame line-up with the door hinge side (when facing end guard) on the left side.

ED-97167-51—Junctions for Offset and Reversed Frames 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames per ED-97162-50, ED-97163-50, ED-97170-50, and ED-97171-50

Group 1—Seven-foot offset junction details (LEFT or RIGHT) providing 2-1/2 inch cable ducts for a frame with closed duct and 5-inch removable guard rail on the front adjoining a frame with open duct and 5-inch removable guard rail on the rear.

Group 2—Nine-foot offset junction details (LEFT or RIGHT) providing 2-1/2 inch cable ducts for a frame with closed duct and 5-inch removable guard rail on the front adjoining a frame with open duct and 5-inch removable guard rail on the rear.

Group 3—Eleven-foot 6-inch offset junction details (LEFT or RIGHT) providing 2-1/2 inch cable ducts for a frame with closed duct and 5-inch removable guard rail on the front adjoining a frame with open duct and 5-inch removable guard rail on the rear.

Group 4—Seven-foot offset junction details (LEFT or RIGHT) providing 2-1/2 inch cable ducts for a frame with open duct and 5-inch removable guard rail on the front adjoining a frame with open duct and 5-inch removable guard rail on the rear.

Group 5—Nine-foot offset junction details (LEFT or RIGHT) providing 2-1/2 inch cable ducts for a frame with open duct and 5-inch removable guard rail on the front adjoining a frame with open duct and 5-inch removable guard rail on the rear.

Group 6—Eleven-foot 6-inch offset junction details (LEFT or RIGHT) providing 2-1/2 inch cable ducts for frame with open duct and 5-inch removable guard rail on the front adjoining a frame with open duct and 5-inch removable guard rail on the rear.

Group 7—Ten-foot 6-inch offset junction details (LEFT or RIGHT) providing 2-1/2 inch cable ducts for a frame with closed duct and 5-inch removable guard rail on the front adjoining a frame with open duct and 5-inch removable guard rail on the rear.

Group 8—Ten-foot 6-inch offset junction details (LEFT or RIGHT) providing 2-1/2 inch cable ducts for a frame with closed duct and 5-inch removable guard rail on the front adjoining a frame with open duct and 5-inch removable guard rail on the rear.

ED-97170-50—Equipment Framework Assembly Cable Duct-type 9-foot, 10-foot 6-inch, and 11-foot 6-inch Single-bay Frames

Group 1—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 2-inch by 23-inch mounting plates for an 11-foot 6-inch bay.

Group 2—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 2-inch by 23-inch mounting plates for a 9-foot bay.

Group 3—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 1-3/4 inch by 23-inch mounting plates for an 11-foot 6-inch bay.

Group 4—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 1-3/4 inch by 23-inch mounting plates for a 9-foot bay.

Group 5—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for an 11-foot 6-inch bay.

Group 6—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for a 9-foot bay.

Group 7—One basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 2-inch by 23-inch mounting plates for an 11-foot 6-inch bay.

Group 8—One basic frame assembly, with supports for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 2-inch by 23-inch mounting plates for a 9-foot bay.

Group 9—One basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 1-3/4 inch by 23-inch mounting plates for an 11-foot 6-inch bay.

Group 10—One basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 1-3/4 inch by 23-inch mounting plates

for a 9-foot bay.

Group 11—One basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for an 11-foot 6-inch bay.

Group 12—One basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for a 9-foot bay.

Group 13—One-inch extension with gray enamel finish for a 5-inch removable guard rail cover for a 23-inch bay.

Group 14—Two-inch extension with gray enamel finish for a 5-inch removable guard rail cover for a 23-inch bay.

Group 15—One-inch extension with gray enamel finish for a 5-inch removable guard rail cover for a 19-inch bay.

Group 16—Two-inch extension with gray enamel finish for a 5-inch removable guard rail cover for a 19-inch bay.

Group 17—Two-inch guard rail with gray enamel finish for the side of the bay opposite the side with the removable guard rail cover for a 23-inch bay.

Group 18—Five-inch guard rail with gray enamel finish for the side of the bay opposite the side with the removable guard rail cover for a 23-inch bay.

Group 19—Two-inch guard rail with gray enamel finish for the side of the bay opposite the side with the removable guard rail cover for a 19-inch bay.

Group 20—Five-inch guard rail with gray enamel finish for the side of the bay opposite the side with the removable guard rail cover for a 19-inch bay.

Group 21—Cable fasteners for one 11-foot 6-inch frame.

Group 22—Support pipe for the top of the frames.

Group 23—One wiring protection shield for the top of the 5-inch wide cable duct.

Group 24—Cable fasteners for one 9-foot frame.

Group 25—One 5-inch removable guard rail cover with gray enamel finish for a 23-inch bay.

Group 26—One 5-inch removable guard rail cover with gray enamel finish for a 19-inch bay.

Group 27—One 10-3/8 inch removable guard rail cover with gray enamel finish and supports for a 23-inch bay.

Group 28—One 10-3/8 inch removable guard rail cover with gray enamel finish and supports for a 19-inch bay.

Group 29—One 1-1/4 inch conduit for wiring between cable ducts of one bay for a 23-inch bay.

Group 30—One 1-1/4 inch conduit for wiring between cable ducts of one bay for a 19-inch bay.

Group 31—Gray molding for the front of the frame line-up.

Group 32—One basic frame assembly without the top angle, with supports for the removable guard rail cover on the open-duct side, arranged for 2-inch by 23-inch mounting plates for a 9-foot bay.

Group 33—One basic frame assembly without the top angle, with supports for a removable guard rail cover on the open-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for a 9-foot bay.

Group 34—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the open-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for an 11-foot 6-inch bay.

Group 35—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the open-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for a 9-foot bay.

Group 36—One-inch extension, with gray-blue finish, for a 5-inch removable guard rail cover for a 23-inch bay.

Group 37—Two-inch extension, with gray-blue finish, for a 5-inch removable guard rail cover for a 23-inch bay.

Group 38—Two-inch guard rail, with gray-blue finish, for the side of the bay opposite the side with the removable guard rail cover for a 23-inch bay.

Group 39—Five-inch guard rail with gray-blue finish, for the side of the bay opposite the side with the removable guard rail cover for a 23-inch bay.

Group 40—One 5-inch removable guard rail cover, with gray-blue finish for a 23-inch bay.

Group 41—Gray-blue molding for the front of the frame line-up.

Group 42—One basic frame assembly with supports

for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for a 10-foot 6-inch bay.

Group 43—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the open-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for a 10-foot 6-inch bay.

Group 44—Back-to-back fastening details for joining two single bays.

Group 45—One 10-3/8 inch removable guard rail cover, with gray-blue finish, and supports for a 23-inch bay.

Group 46—One 10-3/8 inch removable guard rail cover, with gray-blue finish, and supports for a 19-inch bay.

Group 47—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side arranged for 2-inch by 23-inch mounting plates for a 10-foot 6-inch bay.

Group 48—One basic frame assembly with supports for a 5-inch removable guard-rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 2- by 23-inch mounting plates for a 10-foot 6-inch bay.

Group 49—One anchor bolt assembly (see Note A).

Notes

A. This group is intended for use with relocated bays or where need for two anchor bolts per bay is required (initial bay in line-up).

ED-97171-50—Equipment Framework Assembly Cable Duct-type 9-foot and 11-foot 6-inch Double-bay Frames

Group 1—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 2-inch by 23-inch mounting plates for 11-foot 6-inch bays.

Group 2—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 2-inch by 23-inch mounting plates for 9-foot bays.

Group 3—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 1-3/4 inch by 23-inch mounting plates for 11-foot 6-inch bays.

Group 4—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 1-3/4 inch by 23-inch mounting plates for 9-foot bays.

Group 5—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for 11-foot 6-inch bays.

Group 6—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the closed-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for 9-foot bays.

Group 7—One basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side and top angle on the closed-duct side, arranged for 2-inch by 23-inch mounting plates for 11-foot 6-inch bays.

Group 8—One basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 2-inch by 23-inch mounting plates for 9-foot bays.

Group 9—One basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 1-3/4 inch by 23-inch mounting plates for 11-foot 6-inch bays.

Group 10—One basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 1-3/4 inch by 23-inch mounting plates for 9-foot bays.

Group 11—One basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 1-3/4 inch by 19-inch mounting plates for 11-foot 6-inch bays.

Group 12—One basic frame assembly with supports for a 5-inch removable guard rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 1-3/4 inch by 19-inch mounting plates

for 9-foot bays.

Group 13—One-inch extension for a 5-inch removable guard rail cover with gray enamel finish for 23-inch bays.

Group 14—Two-inch extension for a 5-inch removable guard rail cover with gray enamel finish for 23-inch bays.

Group 15—One-inch extension for a 5-inch removable guard rail cover with gray enamel finish for 19-inch bays.

Group 16—Two-inch extension for a 5-inch removable guard rail cover with gray enamel finish for 19-inch bays.

Group 17—Two-inch guard rail with gray enamel finish for the side of the bay opposite the side with the removable guard rail cover for 23-inch bays.

Group 18—Five-inch guard rail with gray enamel finish for the side of the bay opposite the side with the removable guard rail cover for 23-inch bays.

Group 19—Two-inch guard rail with gray enamel finish for the side of the bay opposite the side with the removable guard rail cover for 19-inch bays.

Group 20—Five-inch guard rail with gray enamel finish for the side of the bay opposite the side with the removable guard rail cover for 19-inch bays.

Group 21—Cable fasteners for the two outer up-rights of one 11-foot 6-inch frame.

Group 22—Support pipe for the top of the frames.

Group 23—One wiring protection shield for the top of the 5-inch wide cable duct.

Group 24—Cable fasteners for the two outer up-rights of one 9-foot frame.

Group 25—Cable fasteners for the four uprights of one 11-foot 6-inch frame.

Group 26—Cable fasteners for the four uprights of one 9-foot frame.

Group 27—One 5-inch removable guard rail cover with gray enamel finish for the 23-inch bays.

Group 28—One 5-inch removable guard rail cover with gray enamel finish for the 19-inch bays.

Group 29—One 10-3/8 inch removable guard rail cover with gray enamel finish and supports for 23-inch bays.

Group 30—One 10-3/8 inch removable guard rail cover with gray enamel finish and supports for the 19-inch bays.

Group 31—One 1-1/4 inch conduit for wiring between cable ducts of one bay for the 23-inch bay.

Group 32—One 1-1/4 inch conduit for wiring between cable ducts of one bay for the 19-inch bay.

Group 33—Gray molding for the front of the bay line-up.

Group 34—One basic frame assembly without the top angle, with supports for the removable guard rail cover on the open-duct side arranged for 2-inch by 23-inch mounting plates for 9-foot bays.

Group 35—One basic frame assembly without top angle, with supports for the removable guard rail cover on the open-duct side arranged for 1-3/4 inch by 19-inch mounting plates for 9-foot bays.

Group 36—Cable fasteners for the two inner uprights of one 11-foot 6-inch frame.

Group 37—Cable fasteners for the two inner uprights of one 9-foot frame.

Group 38—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the open-duct side arranged for 1-3/4 inch by 19-inch mounting plates for 11-foot 6-inch bays.

Group 39—One basic frame assembly with supports for a 5-inch removable guard rail cover and the top angle on the open-duct side arranged for 1-3/4 inch by 19-inch mounting plates for a 9-foot bay.

Group 40—Gray-blue molding for the front of the line-up.

Group 41—One basic frame assembly with supports for 5-inch removable guard-rail cover on the open-duct side and the top angle on the closed-duct side, arranged for 2- by 23-inch mounting plates for a 10-foot 6-inch bay.

ED-97172-50—Bay Designation Card Holder Assembly

Group 1—One bay designation card holder assembly for a 7-foot bay per ED-97162-50, ED-97162-51, ED-97163-50, or ED-97163-51.

Group 2—One bay designation card holder assembly for a 9-foot, 10-foot 6-inch, or 11-foot 6-inch bay per ED-97170-50 or ED-97171-50.

Group 3—One bay designation card holder assembly for a 9-foot, 10-foot 6-inch, or 11-foot 6-inch bay, front only.

Group 4—One bay designation card holder assembly for use with a 9-foot, 10-foot 6-inch, or 11-foot 6-inch bay when the bay is

equipped with a 10-3/8 inch removable guard rail.

ED-97273-50—Junctions Without Separators for 7-1/2 inch and 10-inch Cable Ducts for 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames

Group 1—One set of junction details for a 7-1/2 inch duct between 11-foot 6-inch frames having 10-inch bases and guard rails with removable covers on narrow flange side (top angle on wide flange side).

Group 2—One set of junction details for a 7-1/2 inch duct between 9-foot frames having 10-inch bases and guard rails with removable covers on narrow flange side (top angle on wide flange side).

Group 3—One set of junction details for a 7-1/2 inch duct between 7-foot frames having 10-inch bases and guard rails with removable covers on narrow flange side.

Group 4—One set of junction details for a 7-1/2 inch duct between 11-foot 6-inch frames having 15-inch bases and guard rails with removable covers on narrow flange side (top angle on narrow flange side).

Group 5—One set of junction details for a 7-1/2 inch duct between 9-foot frames having 15-inch bases and guard rails with removable covers on narrow flange side (top angle on narrow flange side).

Group 6—One set of junction details for a 7-1/2 inch duct between 7-foot frames having 15-inch bases and guard rails with removable covers on narrow flange side.

Group 7—One set of junction details for a 10-inch duct between 11-foot 6-inch frames having 10-inch bases and guard rails with removable covers on narrow flange side (top angle on wide flange side).

Group 8—One set of junction details for a 10-inch duct between 9-foot frames having 10-inch bases and guard rails with removable covers on narrow flange side (top angle on wide flange side).

Group 9—One set of junction details for a 10-inch duct between 7-foot frames having 10-inch bases and guard rails with removable covers on narrow flange side.

Group 10—One set of junction details for a 10-inch duct between 11-foot 6-inch frames having 15-inch bases and guard rails with removable covers on narrow flange side (top angle on narrow flange side).

Group 11—One set of junction details for a 10-inch duct between 9-foot frames having 15-inch bases and guard rails with removable covers on narrow flange side (top angle on narrow flange side).

Group 12—One set of junction details for a 10-inch duct between 7-foot frames having 15-inch bases and guard rails with removable covers on narrow flange side.

Group 13—One set of junction details for a 10-inch duct between 9-foot frames having 15-inch bases and guard rails with removable covers on narrow flange side.

ED-97274-50—Junctions with Separators for Cable Ducts of Various Widths for 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames with the Top Angle on the Wide Flange Side and the Removable Guard Rail on the Narrow Flange Side

Group 1—One set of separators for one 5-inch cable duct between 11-foot 6-inch frames with 10-inch, 12-inch, or 15-inch bases.

Group 2—One set of separators for one 5-inch cable duct between 9-foot frames with 10-inch, 12-inch, or 15-inch bases.

Group 3—One set of separators for one 5-inch cable duct between 7-foot frames with 10-inch, 12-inch, or 15-inch bases.

Group 4—Eleven-foot 6-inch bay junctions for one 5-inch left duct and one 5-inch right duct between bays (10-inch base).

Group 5—Nine-foot bay junctions for one 5-inch left duct and one 5-inch right duct between bays (10-inch base).

Group 6—Eleven-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 7-1/2 inch right duct between bays (10-inch base).

Group 7—Nine-foot bay junctions for one 7-1/2 inch left duct and one 7-1/2 inch right duct between bays (10-inch base).

Group 8—Eleven-foot 6-inch bay junctions for one 2-1/2 inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 9—Nine-foot bay junctions for one 2-1/2 inch left duct and one 5-inch right duct

between bays, as viewed from the wide flange side (10-inch base).

Group 10—Eleven-foot 6-inch bay junctions for one 5-inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 11—Nine-foot bay junctions for one 5-inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 12—Eleven-foot 6-inch bay junctions for one 2-1/2 inch left duct and one 7-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 13—Nine-foot bay junctions for one 2-1/2 inch left duct and one 7-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 14—Eleven-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 15—Nine-foot bay junctions for one 7-1/2 inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 16—Eleven-foot 6-inch bay junctions for one 5-inch left duct and one 7-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 17—Nine-foot bay junctions for one 5-inch left duct and one 7-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 18—Eleven-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 19—Nine-foot junctions for one 7-1/2 inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 20—Eleven-foot 6-inch bay junctions for one 10-inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 21—Nine-foot bay junctions for one 10-inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (10-inch base).

Group 22—Ten-foot 6-inch bay junctions for one 5-inch left duct and one 5-inch right duct between bays (10-inch base).

Group 23—Ten-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 7-1/2 inch right duct between bays (10-inch base).

Group 24—Ten-foot 6-inch bay junctions for one 2-1/2 inch left duct and one 5-inch right duct between bays (10-inch base).

Group 25—Ten-foot 6-inch bay junctions for one 5-inch left duct and one 2-1/2 inch right duct between bays (10-inch base).

Group 26—Ten-foot 6-inch bay junctions for one 2-1/2 inch left duct and one 7-1/2 inch right duct between bays (10-inch base).

Group 27—Ten-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 2-1/2 inch right duct between bays (10-inch base).

Group 28—Ten-foot 6-inch bay junctions for one 5-inch left duct and one 7-1/2 inch right duct between bays (10-inch base).

Group 29—Ten-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 5-inch right duct between bays (10-inch base).

Group 30—Ten-foot 6-inch bay junctions for one 10-inch left duct and one 5-inch right duct between bays (10-inch base).

Group 31—One set of separators for one 5-inch cable duct between 10-foot 6-inch frames with 10-inch, 12-inch, or 15-inch bases.

ED-97274-51—Junctions with Separators for Cable Ducts of Various Widths Between 7-foot, 9-foot, and 11-foot 6-inch Cable Duct Frames with Top Angle and Removable Guard Rail on the Wide Flange Side

Group 1—One set of separators for one 5-inch cable duct between 11-foot 6-inch frames with 10-inch, 12-inch, or 15-inch bases.

Group 2—One set of separators for one 5-inch cable duct between 9-foot frames with 10-inch, 12-inch, or 15-inch bases.

Group 3—One set of separators for one 5-inch cable duct between 7-foot frames with 10-inch, 12-inch, or 15-inch bases.

Group 4—Eleven-foot 6-inch bay junctions for one 5-inch left duct and one 5-inch right duct between bays (12-inch base).

Group 5—Nine-foot bay junctions for one 5-inch left duct and one 5-inch right duct

between bays (12-inch base).

Group 6—Eleven-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 7-1/2 inch right duct between bays (12-inch base).

Group 7—Nine-foot bay junctions for one 7-1/2 inch left duct and one 7-1/2 inch right duct between bays (12-inch base).

Group 8—Eleven-foot 6-inch bay junctions for one 2-1/2 inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 9—Nine-foot bay junctions for one 2-1/2 inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 10—Eleven-foot 6-inch bay junctions for one 5-inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 11—Nine-foot bay junctions for one 5-inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 12—Eleven-foot 6-inch bay junctions for one 5-inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 13—Nine-foot bay junctions for one 5-inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 14—Eleven-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 15—Nine-foot bay junctions for one 7-1/2 inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 16—Eleven-foot 6-inch bay junctions for one 5-inch left duct and one 7-1/2 inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 17—Nine-foot bay junctions for one 5-inch left duct and one 7-1/2 inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 18—Eleven-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 19—Nine-foot bay junctions for one 7-1/2 inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 20—Eleven-foot 6-inch bay junctions for one 10-inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (12-inch base).

Group 21—Nine-foot bay junctions for one 10-inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (12-inch base).

ED-97274-52—Junctions with Separators for Cable Ducts of Various Widths Between 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames with the Top Angle and Removable Guard Rail on the Narrow Flange Side

Group 1—One set of separators for one 5-inch cable duct between 11-foot 6-inch frames with 10-inch, 12-inch, or 15-inch bases.

Group 2—One set of separators for one 5-inch cable duct between 9-foot frames with 10-inch, 12-inch, or 15-inch bases.

Group 3—One set of separators for one 5-inch cable duct between 7-foot frames with 10-inch, 12-inch, or 15-inch bases.

Group 4—Eleven-foot 6-inch bay junctions for one 5-inch left duct and one 5-inch right duct between bays (10-inch base). (See Note A.)

Group 5—Nine-foot bay junctions for one 5-inch left duct and one 5-inch right duct between bays (10-inch base). (See Note A.)

Group 6—Eleven-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 7-1/2 inch right duct between bays (10-inch base). (See Note A.)

Group 7—Nine-foot bay junctions for one 7-1/2 inch left duct and 7-1/2 inch right duct between bays (10-inch base). (See Note A).

Group 8—Eleven-foot 6-inch bay junctions for one 2-1/2 inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 9—Nine-foot bay junctions for one 2-1/2 inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 10—Eleven-foot 6-inch bay junctions for one 5-inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 11—Nine-foot bay junctions for one 5-inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 12—Eleven-foot 6-inch bay junctions for one 2-1/2 inch left duct and one 7-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 13—Nine-foot bay junctions for one 2-1/2 inch left duct and one 7-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 14—Eleven-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 15—Nine-foot bay junctions for one 7-1/2 inch left duct and one 2-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 16—Eleven-foot 6-inch bay junctions for one 5-inch left duct and one 7-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 17—Nine-foot bay junctions for one 5-inch left duct and one 7-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 18—Eleven-foot 6-inch bay junctions for one 7-1/2 inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 19—Nine-foot bay junctions for one 7-1/2 inch left duct and one 5-inch right duct between bay, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 20—Eleven-foot 6-inch bay junctions for one 10-inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 21—Nine-foot bay junctions for one 10-inch left duct and one 5-inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 22—One 2-1/2 inch junction extension to provide a 15-inch base. (See Note A.)

Group 23—Ten-foot 6-inch bay junctions for one 5-inch left duct and one 5-inch right duct between bays (10-inch base). (See Note A.)

Group 24—Ten-foot 6-inch bay junctions for one 7-1/2 inch left duct and 7-1/2 inch right duct between bays (10-inch base). (See Note A.)

Group 25—Ten-foot 6-inch bay junctions for one 2-1/2 inch left duct and 5-inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 26—Ten-foot 6-inch bay junctions for one 5-inch left duct and 2-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 27—Ten-foot 6-inch bay junctions for one 2-1/2 inch left duct and 7-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 28—Ten-foot 6-inch bay junctions for one 7-1/2 inch left duct and 2-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 29—Ten-foot 6-inch bay junctions for one 5-inch left duct and 7-1/2 inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 30—Ten-foot 6-inch bay junctions for one 7-1/2 inch left duct and 5-inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 31—Ten-foot 6-inch bay junctions for one 10-inch left duct and 5-inch right duct between bays, as viewed from the wide flange side (10-inch base). (See Note A.)

Group 32—One set of separators for one 5-inch cable duct between 10-foot 6-inch frames with 10-inch, 12-inch, or 15-inch bases.

Note

A. The number of junction extensions necessary is dependent upon the width of the duct space required.

ED-97275-50—Junctions Between End Guards and Frames for Cable Ducts of Various Widths 9-foot, 10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames

Group 1—Junction details between 11-foot 6-inch end guards and bay frames providing a 2-1/2 inch duct for a 10- or 12-inch base. Top angle on the wide flange side and removable guard rail on the narrow flange side for a 10-inch base, and the top angle on the wide flange side and removable guard rail on the wide or narrow flange side for a 12-inch base.

Group 2—Junction details between 9-foot or 10-foot 6-inch end guards and bay frames providing a 2-1/2 inch duct for a 10- or 12-inch base. Top angle on the wide flange side and removable guard rail on the narrow flange side for a 10-inch base, and top angle on the wide flange side and removable guard rail on the wide or narrow flange side for a 12-inch base.

Group 3—Junction details between 11-foot 6-inch end guards and bay frames providing a 5-inch duct for a 10-inch base. Top angle on the wide flange side and removable guard rail on the narrow flange side.

Group 4—Junction details between 9-foot or 10-foot 6-inch end guards and bay frames providing a 5-inch duct for a 10-inch base. Top angle on the wide flange side and removable guard rail on the narrow flange side.

Group 5—Junction details between 11-foot 6-inch end guards and bay frames providing a 5-inch duct for a 15-inch base. Top angle and removable guard rail on the narrow flange side.

Group 6—Junction details between 9-foot or 10-foot 6-inch end guards and bay frames providing a 5-inch duct for a 15-inch base. Top angle and removable guard rail on the narrow flange side.

Group 7—Junction details between 11-foot 6-inch end guards and bay frames providing a 7-1/2 inch duct for a 10-inch base. Top angle on the wide flange side and removable guard rail on the narrow flange side.

Group 8—Junction details between 9-foot or 10-foot 6-inch end guards and bay frames providing a 7-1/2 inch duct for a 10-inch base. Top angle on the wide flange side and removable guard rail on the narrow flange side.

Group 9—Junction details between 11-foot 6-inch end guards and bay frames providing a 7-1/2 inch duct for a 15-inch base. Top angle and removable guard rail on the narrow flange side.

Group 10—Junction details between 9-foot or 10-foot 6-inch end guards and bay frames providing a 7-1/2 inch duct for a 15-inch base. Top angle and removable guard rail on the narrow flange side.

Group 11—Junction details between 11-foot 6-inch end guards and bay frame providing a 10-inch duct for a 10-inch base. Top angle on the wide flange side and removable guard rail on the narrow flange side.

Group 12—Junction details between 9-foot or 10-foot 6-inch end guards and bay frames providing a 10-inch duct for a 10-inch base. Top angle on the wide flange side and removable guard rail on the narrow flange side.

Group 13—Junction details between 11-foot 6-inch end guards and bay frames providing a 10-inch duct for a 15-inch base. Top angle and removable guard rail on the narrow flange side.

Group 14—Junction details between 9-foot or 10-foot 6-inch end guards and bay frames providing a 10-inch duct for a 15-inch base. Top angle and removable guard rail on the narrow flange side.

Group 15—Junction details between 11-foot 6-inch end guards and bay frames providing a 2-1/2 inch duct for a 10- or 15-inch base. Top angle and removable guard rail on the narrow flange side.

Group 16—Junction details between 9-foot or 10-foot 6-inch end guards and bay frames providing a 2-1/2 inch duct for a 10- or 15-inch base. Top angle and removable guard rail on the narrow flange side.

Group 17—Junction details between end guard

ED-97288-50, Group 12 and two 10-foot 6-inch back-to-back bay frameworks providing a 2-1/2 inch duct for right or left end of line-up.

Group 18—Junction details between end guard ED-97288-50, Group 12 and two 10-foot 6-inch back-to-back bay frameworks providing a 5-inch duct for right or left end of line-up.

Group 19—Junction details between end guard ED-97288-50, Group 12 and two 10-foot 6-inch back-to-back bay frameworks providing a 7-1/2 inch duct for right or left end of line-up.

Group 20—Junction details between end guard ED-97288-50, Group 12 and two 10-foot 6-inch back-to-back bay frameworks providing a 10-inch duct for right of left end of line-up.

ED-97288-50—End Guard Assembly for Cable Duct-type Frames

Group 1—Eleven-foot 6-inch, gray enamel finish, end guard.

Group 2—Nine-foot, gray enamel finish, end guard.

Group 3—Three-inch, gray enamel finish, end guard rail bar and cover plate.

Group 4—Five-inch, gray enamel finish, end guard rail bar and cover plate.

Group 5—Nine-foot, gray-blue finish, end guard.

Group 6—Three-inch, gray-blue finish, end guard rail bar and cover plate.

Group 7—Five-inch, gray-blue finish, end guard rail bar and cover plate.

Group 8—Seven-foot, gray enamel finish, end guard.

Group 9—Four-inch, gray enamel finish, end guard rail bar and cover plate.

Group 10—Four-inch, gray-blue finish, end guard rail bar and cover plate.

Group 11—Ten-foot 6-inch, gray enamel finish, end guard.

Group 12—Ten-foot 6-inch, gray enamel finish, end guard for two bays back-to-back.

Group 13—Eight-3/8 inch, gray enamel finish, end guard rail bar and cover plate.

Group 14—Eleven-foot 6-inch, gray enamel finish, end guard for two 11-foot 6-inch bays mounted back-to-back.

Group 15—Nine-foot, blue-gray finish, end guard 5 inches wide including guard rail bar for 10-3/8 inch removable guard rail cover (RIGHT END).

Group 16—Nine-foot, blue-gray enamel finish, end guard 5 inches wide including guard rail bar to 10-3/8 inch removable guard rail cover (LEFT END).

Group 17—Six-inch, gray enamel finish, end guard rail bar and cover plate for 5-inch removable guard rail with 1-inch extension.

Group 18—Seven-inch, gray enamel finish, end guard rail bar and cover plate for 5-inch removable guard rail with 2-inch extension.

Group 19—Two-inch, gray enamel finish, end guard rail bar for 2-inch guard rail.

ED-97289-30—Switches, Appliance Outlets, and Their Interconnection for 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Cable Duct Frames

Group 1—Front and rear outlet assembly with gray enamel finish for one single- or double-bay frame.

Group 4—Gray cover plates for one single- or double-bay frame when outlets are not required.

Group 31—One set of supports for ac cables for 9-foot 0-inch, 10-foot 6-inch, and 11-foot 6-inch end guards.

Group 33—One armored cable to the junction box in the 10-foot 6-inch or 11-foot 6-inch end guard for ac outlets.

Group 35—One 3-way switch assembly for one-point control of aisle lighting.

Group 37—One set of supports for ac cables for 7-foot end guard.

Group 40—Gray-blue outlet assembly for front of one single bay and gray cover plate for rear of bay.

Group 43—Front and rear outlet assembly with gray-blue textured vinyl finish for one single- or double-bay frame.

Group 44—Gray-blue cover plates for one single- or double-bay frame when outlets are not required.

Group 45—Gray enamel outlet assembly for front of single bay and gray enamel cover plate for rear of bay.

ED-97445-50—Bay Framework Junctions for Junctioning Unequal Flange Cable Duct-type Bays per ED-97170-50 and ED-97171-50 with Channel, Bulb Angle, and Equal Flange Cable Duct-type Bays (See Note C)

Group 1—Junction with 2-inch spacing between unequal flange duct bay (12-inch base, top angle on rear, and removable guard rail on front) and bulb-angle bay (12-inch base). Duct bay at left or right.

Group 2—Junction with 2-inch spacing between unequal flange duct bay (12-inch base, top angle and removable guard rail on front) and bulb-angle bay (12-inch base). Duct bay at left or right.

Group 3—Junction with 2-inch spacing between unequal flange duct bay (12-inch base, top angle and removable guard rail on front) and channel bay (12-inch base). Duct bay at left or right.

Group 4—Junction without spacing between unequal flange duct bay (12-inch base, top angle and removable guard rail on the front) and equal flange bay (10-inch base, with top angle and guard rail on front). Unequal flange duct bay at left or right.

Group 5—Junction with 2-inch spacing between unequal flange duct bay (16-inch base, top angle and removable guard rail with 1-inch extension on front) and channel bay (12-inch base). Unequal flange duct bay at left as viewed from front.

Group 6—Junction with 2-inch spacing between unequal flange duct bay (12-inch base, top angle and removable guard rail on front) and bulb-angle bay (10-inch base). Duct bay at left or right.

Group 7—Junctioning details for one unequipped 23-inch relay rack space between two unequal flange duct bays (10-inch base) (see Note A).

Group 8—Junctioning details for one unequipped 23-inch relay rack space between two unequal flange duct bays (12-inch base) (see Note A).

Group 9—Junctioning details for one unequipped 23-inch relay rack space between two unequal flange duct bays (15-inch base) (see Note A).

Group 10—Junction with 2-inch spacing between unequal flange duct bay (12-inch base, top angle on front and removable guard rail on rear) and bulb-angle bay (12-inch base). Duct bay at left or right.

Group 11—Junction without spacing between unequal flange duct bay (11-inch base, top angle on front, and removable guard rail with 1-inch extension on front) and equal flange duct bay (11-inch base, 6-inch guard rail on front). Unequal flange duct bay at left or right.

Group 12—Junctioning details for one unequipped 19-inch relay rack space between two unequal flange duct bays (10-inch base) (see Note B).

Group 13—Junctioning details for one unequipped 19-inch relay rack space between two unequal flange duct bays (12-inch base) (see Note B).

Group 14—Junctioning details for one unequipped 19-inch relay rack space between two unequal flange duct bays (15-inch base) (see Note B).

Notes

A. For unequipped relay rack space of two single 23-inch bays, framework per ED-97170-50 or one double 23-inch bay, framework per ED-97171-50, order two groups 7, 8, or 9; one P-49K978 bar; and omit two of each of the following: P-49K978 bar, P-47H359 spacer, P-423920 screw, P-369017 washer, and P-182907 nut.

B. For unequipped relay rack space of two single 19-inch bays, framework per ED-97170-50, or one double 19-inch bay, framework per ED-97171-50, order two groups 12, 13, or 14; one P-45U760 bar; and omit two of each of the following: P-45U759 bar, P-47H359 spacer, P-423920 screw, P-369017 washer, and P-182907 nut.

C. Removable guard rail and guard rail extension are always on same side; fixed guard rail is always on side opposite side with removable guard rail.

ED-3C010-50—Fuse Record Book Holder for Unequal Flange Cable Duct Framework per ED-97162-50, ED-97163-50, ED-97170-50, and ED-97171-50

Group 1—One fuse record book holder for framework with a removable guard rail on the open-duct side.

Group 2—One fuse record book holder for framework with a removable guard rail on the closed-duct side.

ED-3C014-51—Method of Grounding 7-foot, 9-foot, 10-foot 6-inch, and 11-foot 6-inch Frames

Group 1—Ground connection between bay framework and junction pipe for potential ground.
Group 2—Ground bond between two junction pipes in same row of frames.
Group 3—Ground terminal on junction pipe for ground lead on right or left.
Group 6—Ground connection between 7-foot unequal flange bay framework and ground feeder located in frame supported cable rack (for No. 1 ESS offices).

5. GENERAL NOTES

Methods Of Grounding And Aligning Bay Frameworks And End Guards

5.01 Bay frameworks and end guards shall be provided with a potential ground by means of a galvanized steel pipe connected to a No. 6 ground lead as shown on ED-3C014-51. Each bay framework is joined to the pipe by means of a No. 6 copper wire. This wire has a terminal lug at each end and fastens to the bay and the pipe. The installer must drill clear holes in the pipe to allow the No. 6 ground wire to be fastened with self-forming screws. A piece of No. 6 wire and two terminal lugs will be furnished with every bay frame.

5.02 In bays equipped with protectors, No. 6 ground leads are run from the sealed test terminal or the protector mounting, as the case may be, directly to the office ground or main feeder supplying the potential ground, usually at the end of a line-up. The No. 6 ground leads are generally shown on the cabling plans for the equipment involved.

5.03 The 1-inch galvanized steel pipe shall be furnished in accordance with ED-97170-50, Group 22 and ED-97171-50, Group 22. Each of these groups consists of a 20-foot length of pipe. The full or partial length shall be installed where any portion of it is to be used initially to support bay frameworks and the unused portion required for the ultimate capacity of the line-up of bays shall be secured to the superstructure for future use. The pipes shall be cut as required to meet the following conditions:

(a) To provide for initial or ultimate junctioning of pipes at the middle of any bay in the line-up.

(b) The pipes shall not extend into a cross-aisle beyond the ultimate ends of the line-up of the bays.

(c) Th pipes shall not extend beyond the ultimate ends of groups of bays in line-ups which are interrupted as by building columns.

5.04 In line-ups where all bay top angles are not on the same side of the line-up or for any reason where the bay top angles are not in alignment, as in the case of cable duct bays junctioned to other types of bays, the 1-inch pipes for alignment of each group of bays shall be extended beyond the bay top angles to the next superstructure cross channel or bar and secured thereto. The two pipes at junctioned bays shall be braced together in a manner as shown on ED-97167-51 and ED-97445-50.

Bay Designation Cards

5.05 In general, bay designation card holders shall be furnished per ED-97172-50. The designation card holder is made to clip onto the bay top channel and to display a card bearing the bay number, bay name, and the numbers of all circuits provided in the particular bay to agree with ED-63650-01.

Panels, Covers, And Cover Support Assemblies

5.06 Typical panels, covers, and cover supports for use on unequal flange cable duct-type bays are as follows:

ED-61887-01—1/8-inch and 7/32-inch thick, 19-inch long flat panels; 4-7/8 inches and 5-3/8 inches deep, 22-3/16 inch long covers on panels or mounting plates or combinations of both; details per ED-99035-01.
ED-62089-01—0.090-inch thick, 19-inch long panel with flanges turned away from the bay upright; 4-7/8 inches and 5-3/8 inches deep, 22-3/16 inch long covers; details per ED-99072-01.

ED-62096-01—1/8-inch and 7/32-inch thick, 19-inch long flat panels; 4-7/8 inches and 5-3/8 inches deep, 22-3/16 inch long covers and 17-1/4 inch short covers; details per ED-99035-01 and ED-99075-01.

ED-92338-01—7/32-inch thick aluminum panels, with no provision for covers.

ED-92339-01—0.090-inch thick channel-type steel panels, with no provision for covers.

The general rules affecting the selection of the above panels and covers are as follows:

(a) Flat aluminum panels, 7/32-inch thick, should be used preferably for finish reasons, chiefly because the only finish required is an alkali dip cleaning process.

(b) Flat steel panels, 1/8-inch thick should be used only for large production items where punching the panels is desirable and where comparatively large apparatus is used which itself adds rigidity to the panel.

(c) Flanged panels 0.090-inch thick per ED-62089-01 should be used primarily where the degree of shielding between adjacent panels as provided by the panel flange overlapping the cover is desirable. In general, the use of this panel should be restricted to smaller sizes not to exceed 12-1/4 inches.

(d) Covers, 4-7/8 inches deep should be used on the open-duct side of the bay except where the apparatus necessitates the use of 5-3/8 inch deep covers.

(e) Drawings ED-61887-01 and ED-62089-01 show panels which require covers on the open-duct side of the bay, whereas ED-62096-01 shows a panel which requires covers on the open-duct side of the bay as well as between the bay uprights usually called the apparatus side of the bay.

(f) While traditionally most equipment arrangements grow from the top down, the most desirable equipment arrangements with the use of the bays will be obtained from maintenance, cabling, and installing standpoints, by having the equipment grow from the bottom up as shown on ED-50071-13.

5.07 One cover may extend over one or more panels depending upon the particular requirements.

Fusing And Fuse Panel Equipment

5.08 Where decentralized fusing is most economical and a filter for battery discharge leads is required, the filtering capacitors should be located as near as practical to the fuse panels involved. The associated retard coils, if any, should be located on the superstructure, in general, above the top of the bay where the capacitors for the particular coil are located. The following is a list of fuse panels, covers, capacitors and coil equipment which may be required for use with the unequal flange bay for single-bay mounting only.

ED-61377-01—Fuse panels and mounting for electrolytic capacitors arranged for mounting on the open-duct side of bays; the mounting bracket sets out the panel 4-15/16 inches from the bay upright; double row fuses; single, split, and triple bus bars.

ED-62123-01—Fuse panels and mounting brackets arranged for mounting on the open-duct side of bays in a single line-up; fuses on the side opposite that on which the panel is mounted; double row fuses; single split and triple bus bars; covers for these fuse panels shall be furnished per ED-62089-01 or ED-61887-01 as required.

ED-59093-01—Covers and cover supports for covering fuse panels per ED-61377-01 and mountings for electrolytic capacitors.

ED-63498-01—Fuse panel for V3 repeaters in small offices, single 152-volt tapped or untapped battery; dust shield mounts on the side opposite that on which the panel is mounted.

ED-63632-71—Method of mounting the coils associated with electrolytic capacitors on ED-62631-01.

ED-92183-30—Fuse panel arranged for mounting on bays in single line-up; fuses on the side opposite that on which the panel is mounted; with or without filament voltage adjustment; with transparent protective cover over fuses.

5.09 In line-ups of bays which are located back-to-back, each fuse panel should be mounted in the bay of a line which it serves in order to simplify maintenance and to reduce the length of the wiring between the circuit fuses and the equipment. In bays arranged on a back-to-back basis and opposite the bay equipment with fuse panels, it will be necessary to allow vacant space in back of the fuse panels for maintenance purposes.

Bays With Concentrated Jack Fields

5.10 Where concentrated jack fields are to be mounted on cable duct-type bays, see ED-63141-01 for a typical arrangement and all necessary accessories.

Equipment On End Guards

5.11 Each end guard is arranged to mount four aisle pilot lamps, two switches for aisle lighting, and one 11B fuse holder. The items shall be ordered in accordance with (a), (b), and (c). Any unequipped cutouts shall be covered by cover plates furnished with the end guard assemblies. [For equipment on 7-foot No. 1 ESS end guards, see ED-1A198-( ).]

(a) Any combination of the aisle pilots lamps may be equipped in customary color sequence of location, as covered in the requirements for central office maintenance alarm equipment. Knockouts are provided in a cover plate on the end guard which, when removed, provide openings for mounting receptacles with 5/8-inch deep ring and lug.

(b) The switches for aisle lighting shall be furnished as part of a group assembly on ED-97289-50 [for No. 1 ESS offices, see ED-1A198-( )].

(c) One 11B fuse holder shall be furnished at each end of line-up bays in which fuses are provided.

Cabling And Wiring

5.12 Fanning strips per ED-92426-70 with associated wiring arrangements per ED-92330-01 shall be provided for bays where there are large amounts of cabling and wiring to be formed to jack mountings, mounting plates, and small panels.

5.13 The wiring from butted cables in the cable ducts should, in general, be held by means of clips similar to that shown in ED-63607-01. Since unbutted cables are not sewn within the cable ducts of the bays it is not necessary to sew these same cables on the cable racks feeding these bays. In conspicuous places, usually in main stations, the bottom portion of these cable racks (with unsewn cables on them) should be provided with cable rack screws per ED-91689-01 when specified by the customer or where circumstances require that such details be provided.

5.14 Since each bay is potentially provided with two separate cabling ducts for the purpose of separating wiring where the transmission levels differ considerably, two or more cable racks (usually divided between both sides of each line of bays) are required for the cases where large differences in transmission levels are encountered.

5.15 Where separation of wiring is required, in general, low level wiring is run in the duct at the left of the bay, and high level, battery supply, and noisy leads are run in the duct on the right, as viewed from the maintenance side of the bay.

5.16 Where it is necessary to mount equipment so that it is set out from the flanges of the bay uprights, P-452540 or P-452548 studs shall be used. P-452540 and P-452548 are for 5/8-inch and 1-inch spacing, respectively. They may be used alone, in tandem, or in combination, as required.

5.17 Cable supports per ED-61976-01 shall be provided as required for supporting vertical or horizontal cable arms.

5.18 The P-43E282 cable supports shall be used for supporting cables at panels from which cables are run downward to other panels in the same or other bays as shown in ED-62207-01, Fig. 7.

5.19 For a typical cable arrangement of the unequal flange cable duct bay, see ED-3C085-10.

Hardened Locations

5.20 Where it is necessary to harden bay framework, a top plate per P-48G709 is used at the top of the bay. This plate may be ordered

from ED-50262-11 which is the drawing used for hardening both the equal and unequal flange-type frames.

LIST OF A&M ONLY AND MFR DISC. EQUIPMENT

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
ED-97162-50,			ED-97162-51,
G1,G2	Mfr Disc.	1	G1,G2
G4,G5	Mfr Disc.	1	G3,G4
G7,G8	Mfr Disc.	1	G5,G6
G11,G12	Mfr Disc.	1	G7,G8
G15,G16	Mfr Disc.	1	G16,G9
G18	Mfr Disc.	1	G10
G20,G21	Mfr Disc.	1	G11,G12
G24,G25	Mfr Disc.	1	G13,G14
G28	Mfr Disc.	1	G15
ED-97163-50,			ED-97163-51,
G1,G2	Mfr Disc.	1	G1,G2
G4,G5	Mfr Disc.	1	G3,G4
G7,G8	Mfr Disc.	1	G5,G6
G11,G12	Mfr Disc.	1	G7,G8
G15,G16,G17	Mfr Disc.	1	G16,G17,G9
G19	Mfr Disc.	1	G10
G21,G22	Mfr Disc.	1	G11,G12
G25,G26	Mfr Disc.	1	G13,G14
G29	Mfr Disc.	1	G15
G31	Mfr Disc.	1	G18
ED-97166-51	Mfr Disc.	1	ED-1A198-( )
ED-97168-50	Mfr Disc.	1	ED-1A184-( )
ED-97169-30	Mfr Disc.	1	ED-97289-30
ED-97173-50	Mfr Disc.	1	ED-1A210-( ) & ED-3C014-51
ED-97186-50	Mfr Disc.	1	—
ED-97220-50	Mfr Disc.	1	ED-1A197-( )
ED-97220-51	Mfr Disc.	1	ED-1A197-( )
ED-3C014-50	Mfr Disc.	1	ED-3C014-51
ED-97155-50	Mfr Disc.	1	—
ED-97289-30, G2,G3,G5 through G30, G32,G34, G36,G38, G39,G41 & G42	Mfr Disc.	1	—
ED-3C014-51 G4 & G5	Mfr Disc.	1	—
ED-82097-11	Mfr Disc.	1	—
ED-82097-31	Mfr Disc.	1	—
J85510B-( )	Mfr Disc.	1	—

The above 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.

Bell Telephone Laboratories, Incorporated

Dept 2166