MAIN DISTRIBUTING FRAMES
COMBINED DISTRIBUTING FRAMES
PROTECTOR FRAMES
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 double sided "B" type main and combined distributing and protector frames for dial, manual, and PBX systems. Equipment included in this specification may be ordered by specifying the code and group numbers covered in part 4. Separate specifications for other distributing and protector frames are available as follows:

J67001—Distg. and Prot. Frames—Toll Systems
J17004—Wall Type MDF
J97032—Intermediate and Trunk Dist'g. Frames
J97030—Single Sided Dist'g Frame Arr'gd for Radio Filters
J97029—Single Sided Dist'g. Frame with 10" Guard Rail Width
J27053—District Junctor Grouping Frame

1.02 The specification is issued to cover the new, narrower frames recently standardized, also to cover the arrangement of all frames for C50 and C52 protector mountings which replace the 77 type protector mountings. Arrangements for the 77 type mountings, however, are retained on an "A&M Only" basis on the various assembly drawings.

1.03 The specification, in accordance with present practice, combines framework, equipment, and cabling, whereas former specifications, now replaced by this specification, covered these items in separate specifications for each type of frame. The following specifications are replaced:

J37006	J97006	J97010
J57001	J97007	J97017
J97003	J97008	J97020
J97005	J97009	J97026

Description

Main and Combined Distributing Frames

1.04 The main and combined frames are of the usual design, employing vertical angles, channel transverse arms, top and base angles, rectangular tie bars and angle guard rails.

Protector and Associated Main Frames

1.05 Protector frames are used in conjunction with main distributing frames having terminal strips on both sides. This arrangement is used in the larger multi-office buildings where the protector requirements are high and would exceed the requirements of the horizontal side, were a regular MDF used.

1.06 The protector frame is arranged to mount protectors on each side. The protector mounting bars, with angles welded to them for fastening to the base and top angles, are connected by flat bars forming the vertical assembly of the frame. In addition to the base and top angles channel tie bars and braces, and angle guard rails, are used.

1.07 The main distributing frame used with protector frame is of conventional design and is arranged to mount terminal strips on the vertical as well as horizontal side. The vertical terminal strips serve as a means of terminating tie cables from the protector frame.

1.08 General data on the frames are covered in the table on page 3.

Subdivisions of Equipment

1.09 See part 4 for subdivisions of equipment consisting of assembly and end guard drawings for the various 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
J93002—No. 4 Local Test Desk Equipment
J93005—Plugging Up Line Equipment
J95001—Loud Speaking Telephone Equipment
J93808—Service Observing Desk No. 7
J93810—Service Observing Desk No. 9
J93811—Service Observing Desk No. 10
J93812—Service Observing Desk No. 11
J90602—Mezzanine Platform
J58801—701 & 711A PBX Systems
J12801 to J12806—No. 11 Swbd. Equipment
J12703 & J12704—No. 12 Swbd. Equipment

Floor Plan Data

Section 7.1—Sheet 26—14'-5", 12'-5" & 11'-6" MDF's for Large Offices
Section 2.2—Sheet 13—11'-6" & 8'-8" MDF's For Small Manual Offices (No. 11 Switchboard)
Section 2.2—Sheet 16—For No. 12 Switchboard
Section 7.1—Sheet 32—11'-6" & 9'-0" CDF's Wide Type Frames
Section 7.1—Sheet 31—11'-6" & 9'-0" CDF's Narrow Type Frames
Section 7.1—Sheet 16—7'-0" Floor Supported CDF
Section 7.1—Sheet 19—14'-5" & 12'-5" Protector Frames
Section 7.1—Sheet 29—14'-5" & 12'-5" MDF's Used With Protector Frames

3. DRAWINGS

Assemblies

ED-10801-01—8'-8" MDF) For Small Manual Of-
ED-10802-01—11'-6" MDF) fices (No. 11 Swbd.)
ED-65000-01—7'-0" CDF—For Small Offices—Floor Supported (No Guard Rails)
ED-90274-01—14'-5" Protector Frame
ED-90275-01—12'-5" Protector Frame
ED-91001-01—12'-5" MDF Used With Protector Frame
ED-91006-01—12'-5" MDF Arranged for Jacks or Protectors
ED-91023-01—14'-5" MDF Used With Protector Frame
ED-91235-01—14'-5" MDF Arranged for Jacks or Protectors
ED-91670-01—11'-6" MDF Arranged for Protectors
ED-91672-01—9'-0" CDF—Narrow Type—Shop Assembled Units
ED-91673-01—9'-0" CDF—Narrow Type for Ultimates up to 400 Ckts. per Shelf
ED-91674-01—11'-6" CDF—Narrow Type for Ultimates up to 400 Ckts. per Shelf
ED-91676-01—11'-6" CDF—Wide Type for Ultimates above 400 Ckts. per Shelf
ED-91677-01—9'-0" CDF—Wide Type for Ultimates above 400 Ckts. per Shelf
ED-91678-01—6'-2" MDF for No. 12 Swbd. (No Guard Rails)

End Guards

ED-10005-01—11'-6" & 8'-8" MDF—Small Offices
ED-90278-01—14'-5" Protector Frame
ED-90581-01—12'-5" Protector Frame
ED-91004-01—12'-5" & 11'-6" MDF—Large Offices
ED-91233-01—14'-5" MDF—Large Offices
ED-91532-01—11'-6" & 9'-0" CDF—Narrow Type
ED-91675-01—11'-6" & 9'-0" CDF—Wide Type

Frame Equipment

ED-20853-01—MDF, Panel System
ED-25393-01—MDF, Crossbar System
ED-30132-01—MDF, Step-by-Step System
ED-30332-01—7'-0" CDF, Step-by-Step System
ED-30340-01—11'-6" CDF, Step-by-Step System
ED-30341-01—9'-0" CDF, Step-by-Step System
ED-65283-01—9'-0" CDF, PBX Systems

Switchboard Cabling

ED-30333-01—11'-6", 9'-0" & 7'-0" CDF's, Step-by-Step System
ED-65286-01—CDF—PBX Systems
ED-90290-01—Protector Frame
ED-91034-01—MDF Used with Protector Frame
ED-91236-01—MDF Arranged for Jacks or Protectors

DESCRIPTION OF FRAMES AND EQUIPMENT

NAME	TYPE & GENERAL USE	ASSEMBLY	HEIGHT	WIDTH	WIDTH OVER GUARD RAILS	SHELF & VERTICAL SPACING	NUMBER OF SHELVES	TYPE OF TERM. STRIPS ON H SIDE	CAPACITY PER VERTICAL: PROTS. ONLY (C50&C52 MTGS) NO. OF CABLE PAIRS	CAPACITY PER VERTICAL: PROTS. (C50&C52 MTGS) & TERM. STRIPS NO. OF CABLE PAIRS	CAPACITY PER VERTICAL: PROTS. (C50&C52 MTGS) & TERM. STRIPS NO. OF 8" TS	CAPACITY PER VERTICAL: TERM. STRIPS ONLY NO. OF 8" TS	CAPACITY PER VERTICAL: TERM. STRIPS ONLY NO. OF 16" TS	444A & 444B JACKS NO. OF CABLE PAIRS
Main Distributing Frame	Arrgd. for Jacks or Protectors	ED-91235-01	14-5	3-0	3-9	8	19	65, 91, 92, 93, 182, 183	404	—	—	—	—	808
		ED-91006-01	12-5	3-0	3-9	8	15		304	—	—	—	—	608
	Arrgd. for Prots.	ED-91670-01	11-6	3-0	3-9	8	15		304	—	—	—	—	—
	For Manual Offices (No. 11 Swbd.)	ED-10802-01	11-6	3-3 3/4	4-1 5/8	8	12	35, 36. Etc.	304	—	—	—	—	—
		ED-10801-01	8-8	2-9 3/4	3-7 5/8	8	11		202	—	—	—	—	—
	For No. 12 Swbd.	ED-91678-01	6-2	1-3 7/8	1-8 (Floor Support)	6 1/2	10	38, 39, Etc.	152	—	—	—	—	—
Combined Distributing Frame	Wide Type- for Ultimates above 400 Ckts. per Shelf	ED-91676-01	11-6	2-10 3/4	3-10	8	15	35, 36, Etc.	304	202	4	14	7	—
	Narrow Type- for Ultimates up to 400 Ckts. per Shelf	ED-91674-01	11-6	1-10	2-9 1/2	8	15		304	202	4	14	—	—
	Wide Type - for Ultimates above 400 Ckts. per Shelf	ED-91677-01	9-0	2-9 3/4	3-9	8	11		202	102	4	—	5	—
	Narrow Type- For Ultimates up to 400 Ckts. per Shelf	ED-91673-01	9-0	1-10	2-9 1/2	8	11		202	102	4	10	—	—
	Narrow Type Shop Assembled Units	ED-91672-01	9-0	1-10	2-9 1/2	8	11		202	102	4	10	—	—
	For Small Offices (Floor Supported)	ED-65000-01	7-0	2-1 1/2	No Guard Rails	Verts. 6 1/2 Shelves 8	8	38. 29 Etc.	202	—	—	8	—	—
Port. Frame		ED-90274-01	14-5	1-4	2-5	Verts. 8 Shelves -	—	—	404 on each side	—	—	—	—	—
Main Distributing Frame Used with Prot. Frame	For Large Multioffice Buildings	ED-90275-01	12-5	1-4	2-5	Verts. 8 Shelves -	—	—	304 on each side	—	—	—	—	—
		ED-91023-01	14-5	3-0	3-9	8	19	65, 91, 92, 93, 182, 183	—	—	—	—	8	—
		ED-91001-01	12-5	3-0	3-9	8	15		—	—	—	—	6	—

Grounding Arrangements

ED-90026-01—MDF and CDF
ED-90276-01—Protector Frame

Jack Boxes and Mountings for Plugging-up Lines, Test and Talking Trunks, Service Observing & Misc. Equipment

ED-90047-01 - Jack Box Assemblies
ED-90048-01 - Equipment
ED-91441-01 - Supports
ED-90582-01 - Location and Cabling Diagram MDF
ED-90586-01 - Location and Cabling Diagram MDF & CDF
ED-91557-01 - Location and Cabling Diagram Protector Frame
ED-90585-01 - Switchboard Cabling Plan MDF
ED-90584-01 - Switchboard Cabling Plan MDF & CDF
ED-90598-01 - Switchboard Cabling Plan Protector Frame

PU Lines, Test & Talk Trks.

ED-91319-01 - Cord Hooks for Service Observing Equipment

Connecting Blocks

ED-90046-01—Mounting of 33 Type
SD-90048-01—Battery and Ground Connections-17 Type
SD-90122-01—Battery and Ground Connections-33 Type

Miscellaneous

ED-90277-01—Bracing Details for Protector Frame
ED-91152-01)—Common Details for Distributing Frames
ED-91153-01)ED-91234-01—Fanning Strips for Protectors and Jacks
ED-91237-01—Common Details for Distributing Frames
ED-91268-01—Modification of MDF per ED-90074-01 for Mounting 444 Type Jacks or C30 & C52 Protector Mountings (404 Protectors per Vert.)
ED-91306-01—Modification of MDF per ED-90141-01 for Mounting 444 Type Jacks or C50 & C52 Protector Mountings (304 Protectors per Vert.) Includes Adapter Bars for General Use

4. EQUIPMENT

ED-10005-01—End Guards for MDF's ED-10801-01 and ED-10802-01)

Group 1—End guard for right end of 11'-6" frame
Group 2—End guard for left end of 11'-6" frame
Group 3—End guard for right end of 8'-8" frame
Group 4—End guard for left end of 8'-8" frame

ED-10801-01—Assembly of MDF 8'-8" High (Small Offices—No. 11 Swbd.)

Group 1—Unit of one vertical
Group 5—Unit of 5 verticals
Group 6—Unit of 6 verticals
Group 10—Unit of 10 verticals
Group 11—Unit of 11 verticals
Group 50—Set of jumper pins and junction between units
Group 51—Fanning strip for 202 protectors

ED-10802-01—Assembly of MDF—11'-6" High (Small Offices—No. 11 Swbd.)

Group 1—Unit of one vertical
Group 2—Unit of 5 verticals
Group 3—Unit of 6 verticals
Group 4—Unit of 10 verticals
Group 5—Unit of 11 verticals
Group 50—Set of junction details between groups of verticals
Group 51—Fanning strip for 304 protectors

ED-65000-01—Assembly of CDF—7'-0" High (For Small Offices)

Group 1—Unit of 5 verticals including distributing rings and guards
Group 2—Unit of one vertical including distributing rings
Group 3—One floor support detail
Group 4—Set of details for arranging a vertical to mount 684 protector mountings
Group 5—Set of cable rack supporting details
Group 6—Set of details for arranging a vertical to mount 77A protector mountings
Group 7—Set of details for arranging a vertical to mount C50 and C52 protector mountings

ED-90274-01—Assembly of Protector Frame—14'-5" High

Group 1A—Unit of one vertical
Group 2A—Unit of 2 verticals
Group 3A—Unit of 3 verticals
Group 5A—Unit of 5 verticals
Group 10A—Unit of 10 verticals
Group 11A—Unit of 11 verticals
Group 20A—Unit of 20 Verticals
Group 21A—Unit of 21 Verticals
Group 50—Set of junction details between units
Group 51—Set of bracing details
Group 52—Pair of 4" cover sections for portion of slot 8" long, with cutouts for 4, 202 pair cables per code FA202
Group 53—Pair of 4" blank cover sections for portion of slot 8" long

ED-90275-01—Assembly of Protector Frame—12'-5" High

Group 1A—Unit of one vertical
Group 2A—Unit of 2 verticals
Group 3A—Unit of 3 verticals
Group 5A—Unit of 5 verticals
Group 10A—Unit of 10 verticals
Group 11A—Unit of 11 verticals
Group 20A—Unit of 20 verticals
Group 21A—Unit of 21 verticals
Group 50—Set of junction details between units
Group 51—Set of bracing details
Group 52—Pair of 4" blank cover sections for portion of slot 8" long

ED-90278-01—End Guards for Protector Frame ED-90274-01

Group 1—End guard for right or left end of frame—14'-5" high

ED-90581-01—End Guards for Protector Frame ED-90275-01

Group 1—End guard for right or left end of frame—12'-5" high

ED-91001-01—Assembly of MDF—12'-5" High—Used with Protector Frame

Group 1—Unit of one vertical
Group 2—Unit of 2 verticals
Group 3—Unit of 3 verticals
Group 5—Unit of 5 verticals
Group 10—Unit of 10 verticals
Group 11—Unit of 11 verticals
Group 20—Unit of 20 verticals
Group 21—Unit of 21 verticals
Group 50—Set of junction details between units

ED-91004-01—End Guards for MDF—ED-91006-01 and ED-91670-01

Group 1—End guard for right end of 11'-6" and 12'-5" frames
Group 2—End guard for left end of 11'-6" and 12'-5" frames

ED-91006-01—Assembly of MDF—12'-5" High—Arranged for Jacks or Protectors

Group 1—Unit of one vertical
Group 2—Unit of 2 verticals
Group 3—Unit of 3 verticals
Group 5—Unit of 5 verticals
Group 10—Unit of 10 verticals
Group 11—Unit of 11 verticals
Group 20—Unit of 20 verticals
Group 21—Unit of 21 verticals
Group 50—Set of junction details between units
Group 51—Fanning strip for 608 cable pairs—for use with jacks
Group 53—Fanning strip for 304 cable pairs—for use with protectors
Group 54—Protector ground bar for one vertical
Group 55—Protector ground bar for 2 verticals
Group 56—Protector ground bar for 3 verticals
Group 57—Protector ground bar for 5 verticals
Group 58—Protector ground bar for 10 verticals
Group 59—Protector ground bar for 11 verticals
Group 60—Protector ground bar for 20 verticals
Group 61—Protector ground bar for 21 verticals

ED-91023-01—Assembly of MDF—14'-5" High—Used With Protector Frame

Group 1—Unit of one vertical
Group 2—Unit of 2 verticals
Group 3—Unit of 3 verticals
Group 5—Unit of 5 verticals
Group 10—Unit of 10 verticals
Group 11—Unit of 11 verticals
Group 20—Unit of 20 verticals
Group 21—Unit of 21 verticals

Group 50—Set of junction details between units

ED-91233-01—End Guards for MDF—ED-91023-01 and ED-91235-01

Group 1—End guard for right end of 14'-5" frames
Group 2—End guard for left end of 14'-5" frames

ED-91235-01—Assembly of MDF—14'-5" High—Arranged for Jacks or Protectors

Group 1—Unit of one vertical
Group 2—Unit of 2 verticals
Group 3—Unit of 3 verticals
Group 5—Unit of 5 verticals
Group 10—Unit of 10 verticals
Group 11—Unit of 11 verticals
Group 20—Unit of 20 verticals
Group 21—Unit of 21 verticals
Group 50—Set of junction details between units
Group 51—Fanning strip for 808 cable pairs—for use with jacks
Group 53—Fanning strip for 404 cable pairs—for use with protectors
Group 54—Protector ground bar for one vertical
Group 55—Protector ground bar for 2 verticals
Group 56—Protector ground bar for 3 verticals
Group 57—Protector ground bar for 5 verticals
Group 58—Protector ground bar for 10 verticals
Group 59—Protector ground bar for 11 verticals
Group 60—Protector ground bar for 20 verticals
Group 61—Protector ground bar for 21 verticals

ED-91532-01—End Guards for CDF—ED-91672-01, ED-91673-01, and ED-91674-01)

Group 1—End guard for right end of 11'-6" narrow type frame
Group 2—End guard for left end of 11'-6" narrow type frame
Group 3—End guard for right end of 9'-0" narrow type frame
Group 4—End guard for left end of 9'-0" narrow type frame

ED-91670-01—Assembly of MDF—11'-6" High—Arranged for Protectors

Group 1—Unit of one vertical
Group 2—Unit of 2 verticals
Group 3—Unit of 3 verticals
Group 5—Unit of 5 verticals
Group 10—Unit of 10 verticals
Group 11—Unit of 11 verticals
Group 20—Unit of 20 verticals
Group 21—Unit of 21 verticals
Group 50—Set of junction details between units
Group 51—Fanning strip for 304 cable pairs—for use with protectors

ED-91672-01—Assembly of CDF—9'-0" High—Shop Assembled Units

Group 2—Units of 2 verticals arranged for protectors, protectors and terminal strip, or terminal strip only on vertical side
Group 3—Unit of 3 verticals arranged for protectors, protectors and terminal strips, or terminal strips only on vertical side
Group 50—Set of distributing rings, jumper pins, and junction details between units
Group 51—One designation board and supports for 2 verticals
Group 52—One designation board and supports for 3 verticals
Group 53—Fanning strip for 202 protectors
Group 54—Fanning strip for 102 protectors
Group 55—Set of details for mounting 4, 8" terminal strips on vertical side
Group 56—Set of details for mounting 10, 8" terminal strips on vertical side
Group 57—Protector ground bar for 2 verticals
Group 58—Protector ground bar for 3 verticals
Group 59—Frame ground bar with terminal lugs and protector ground lead assembly

ED-91673-01—Assembly of CDF—9'-0" High—Narrow Type

Group 1—Unit of one vertical arranged for protectors or protectors and terminal strips
Group 2—Unit of one vertical arranged for 8" terminal strips only
Group 5—Longitudinal details for 5 verticals
Group 6—Longitudinal details for 6 verticals
Group 10—Longitudinal details for 10 verticals
Group 50—Set of jumper pins and junction details between units
Group 51—Designation board support
Group 52—Fanning strip for 202 protectors
Group 53—Fanning strip for 102 protectors
Group 54—Set of details for mounting 4, 8" terminal strips on protector side
Group 55—Protector ground bar for 5 verticals
Group 56—Protector ground bar for 6 verticals
Group 57—Protector ground bar for 10 verticals
Group 58—Longitudinal details for 5 verticals arranged for terminal strips only

Group 59—Longitudinal details for 6 verticals arranged for terminal strips only
Group 60—Longitudinal details for 10 verticals arranged for terminal strips only
Group 61—Longitudinal details for 2 verticals arranged for protectors and terminal strip
Group 62—Longitudinal details for 2 verticals arranged for terminal strips only
Group 63—Ground bar for 2 verticals

ED-91674-01—Assembly of CDF—11'-6" High—Narrow Type

Group 1—Unit of one vertical arranged for protectors or protectors and terminal strips
Group 2—Unit of one vertical arranged for 8" terminal strips only
Group 5—Longitudinal details for 5 verticals
Group 6—Longitudinal details for 6 verticals
Group 10—Longitudinal details for 10 verticals
Group 50—Set of jumper pins and junction details between units
Group 51—Designation board support
Group 52—Fanning strip for 202 protectors
Group 53—Fanning strip for 304 protectors
Group 54—Set of details for mounting 4, 8" terminal strips on protector side
Group 55—Protector ground bar for 5 verticals
Group 56—Protector ground bar for 6 verticals
Group 57—Protector ground bar for 10 verticals
Group 58—Longitudinal details for 5 verticals arranged for terminal strips only
Group 59—Longitudinal details for 6 verticals arranged for terminal strips only
Group 60—Longitudinal details for 10 verticals arranged for terminal strips only

ED-91675-01—End Guards for CDF ED-91676-01 and ED-91677-01

Group 1—End guard for right end of 11'-6" wide type frame
Group 2—End guard for left end of 11'-6" wide type frame
Group 3—End guard for right end of 9'-0" wide type frame
Group 4—End guard for left end of 9'-0" wide type frame

ED-91676-01—Assembly of CDF—11' 6" High-Wide Type

Group 1—Unit of one vertical arranged for protectors or protectors and terminal strips
Group 2—Unit of one vertical arranged for 16" terminal strips
Group 3—Unit of one vertical arranged for 8" terminal strips only
Group 5—Longitudinal details for 5 verticals
Group 6—Longitudinal details for 6 verticals
Group 10—Longitudinal details for 10 verticals
Group 50—Set of jumper pins and junction details between units
Group 51—Designation board support
Group 52— Designation board support for frame arranged for 16" terminal strips
Group 53—Fanning strip for 304 protectors
Group 54—Fanning strip for 202 protectors
Group 55—Set of details for mounting 4, 8" terminal strips on protector side
Group 56—Protector ground bar for 5 verticals
Group 57—Protector ground bar for 6 verticals
Group 58—Protector ground bar for 10 verticals

ED-91677-01—Assembly of CDF—9'-0" High—Wide Type

Group 1—Unit of one vertical arranged for protectors or protectors and terminal strips
Group 2—Unit of one vertical arranged for 16" terminal strips
Group 3—Unit of one vertical arranged for 8" terminal strips only
Group 5—Longitudinal details for 5 verticals
Group 6—Longitudinal details for 6 verticals
Group 10—Longitudinal details for 10 verticals
Group 50—Set of jumper pins and junction details between units
Group 51—Designation board support
Group 52—Designation board support for frame arranged for 16" terminal strips
Group 53—Fanning strip for 202 protectors
Group 54—Fanning strip for 102 protectors
Group 55—Set of details for mounting 4, 8" terminal strips on protector side
Group 56—Protector ground bar for 5 verticals
Group 57—Protector ground bar for 6 verticals
Group 58—Protector ground bar for 10 verticals

ED-91678-01—Assembly of MDF—6'-2" High (Small Offices—No. 12 Swbd.)

Group 1—Unit of 5 verticals
Group 2—Unit of one vertical
Group 3—Details for strapping MDF to first section of swbd.
Group 4—Tie bars for 10 verticals

5. GENERAL NOTES

End Guards

5.01 An end guard should be furnished at each end of frames unless otherwise specified. In the case of MDF 6'-2" high and CDF 7'-0" high, however, end guards are not considered necessary and have therefore not been made available.

Frame Support

5.02 14'-5" and 12'-5" frames are adapted to the high type, and 11'-6" and 9'-0" frames to the low type of auxiliary framing.

Frame Growth

5.03 The frames are arranged to grow in either direction lengthwise.

Distributing Rings

5.04 10A (double) distributing rings for verticals on 8" centers are used throughout, except that on initial frames with an even number of verticals and on additions with an odd number of verticals, a set of 9A (single) rings will be required for one of the verticals. Rings are ordered separately and are not included in the framework groups. Exceptions to this practice are 6'-2" MDF ED-91678-01, 7'-0" CDF ED-65000-01, and 9'-0" CDF with shop assembled units, in which cases distributing rings are included in the framework groups. 10B (double) rings are used on the first two of these frames since the verticals are 6-1/2" centers.

Jacks, Protectors and Terminal Strips

5.05 As indicated in part 1 the 14'-5" and 12'-5" MDF's are arranged for 444A and 444B jacks or C50A and C52A protectors, the former and latter mounting interchangeably. Other MDF's CDF's and protector frames are intended for C50A and C52A protectors only. The codes of terminal strips for which the various frames are arranged are covered on page 3. Code numbers used for subscriber, trunk, and other equipment are covered on the equipment drawings listed in part 3. The method of mounting the terminal strips and the maximum number of rows of terminals that should be used are as follows:

	METHOD OF MOUNTING	MAXIMUM NO. OF ROWS OF TERMS.
Larger MDF's	On Horizontal Mounting Bar	5
Smaller MDF's	On Terminal Strip Lugs	6
CDF's	On Terminal Strip Lugs	9

Equipment Arrangement and Numbering

5.06 ***Horizontal Side:*** Subscriber line terminal strip equipment should be arranged so as to leave the required number of shelves at the top of the frame for trunks and miscellaneous equipment. As indicated on the various equipment drawings listed in part 3, successive groups of 100 circuits of subscriber lines shall be numbered from bottom up and in the direction of the frame growth. Within each group the numbering shall be from left to right regardless of the frame growth. These requirements also apply to trunks and other equipment divided in groups. Where a circuit is not divided in groups the numbering shall also be from left to right for both directions of frame growth. The numbering of individual terminal strips shall be from left to right whether the equipment is divided in groups or not, and regardless of frame growth.

5.07 ***Vertical Side:*** Groups of terminal strip equipment on the vertical side of CDF's shall be numbered from bottom up. The direction of growth of consecutively numbered terminal strips on the vertical side shall also be from bottom up. Numbering on individual terminal strips on the vertical side shall be from top down in all cases.

5.08 The direction of numbering of jacks and protectors is from top down on the vertical, in accordance with standard numbering practice.

Plugging-Up Lines, Test, and Talking Trunks

5.09 ***Type of Equipment:*** For MDF's and protector frames jack boxes of 40 jack pair capacity, for both plugging-up, test and talking trunk equipment, should be furnished. In case boxes of 40 jack pair capacity are not adequate for combined equipment entire boxes should be furnished for plugging-up lines and sets of 201A jack mountings for test and talking jacks. In case more than 24 pairs of test jacks are required per appearance a 40 jack pair box should be furnished.

5.10 For CDF's jack boxes of 20 jack pair capacity for combined equipment should in general be used. In case the combined equipment cannot be accommodated in boxes of this size, boxes of 20 jack pair capacity for plugging-up lines and sets of 201A jack mountings for test and talking jacks, should be furnished.

5.11 ***Locating of Jack Boxes and Mountings:*** Boxes and mountings are to be placed between verticals on the vertical side. The arrangement should be chosen which will fit the ultimate condition. The first set of boxes and mountings should be placed as near the positions shown on the location and cabling diagram drawing as practicable thus avoiding relocations when additions are made. Requirements for the location of boxes and mountings are as follows:

(a) ***Frames with Mezzanine Platform:*** Boxes and mountings should be placed 30 or a slightly less number of verticals apart above and below the platform. Vertically the boxes and mountings should be placed midway between floor and platform and midway between platform and top of frame.

(b) ***Frames without Mezzanine Platform:*** Boxes and mountings should be placed 15 or a slightly less number of verticals apart with top of boxes about 6'-1-1/2" and top of mountings about 5'-9" from the floor.

5.12 The plan of placing boxes and mountings as above indicated insures that all plugging up, test and talking circuits will be accessible to all parts of the frame. In the case of frames with a mezzanine platform the order of multipling is from the area above the platform to that below and vice versa and like numbered boxes are 30 or a slightly less number of verticals apart above and the same number apart below the platform. This plan makes it possible to use a cord of fixed length which will reach 15 verticals on either side of a box or set of mountings. On frames without a platform like numbered boxes are 15 or a slightly less number of verticals apart and the same length cord will reach 7 or 8 verticals on either side of a box or set of mountings.

5.13 ***Cords:*** Cords 12'-0" long, for use either above or below the platform, and not ordinarily between these areas, should be specified for frames with a platform. Occasionally, at the end of a frame, it may be necessary to run cords between the upper and lower areas in case a jack box or set of mountings on the same side of the platform is not within reach of the desired protector. Cords 12'-0" long should also be specified for frames without a mezzanine platform.

5.14 ***Cord and Plug Assemblies and Number Plates:*** For codes of cord and plug assemblies refer to the circuit drawings. A cord and plug assembly with two number plates engraved with the circuit designation, shall be furnished for each plugging-up and test trunk circuit unless otherwise specified by the Telephone Company. The codes of these number plates are as follows:

Plugging-up Circuit—145D

Test Trunk Circuit—145F

Circuit numbers as specified by the Telephone Company will be stamped on the plates by the installer. Number plates for talking trunk circuits will not be required.

Service Observing Equipment

5.15 Service observing jack boxes, when required, shall be located over the horizontal side. The boxes shall be placed in multiple unless otherwise specified and shall be placed 25 or 26 bays apart beginning with the 12th or 13th bay. This plan makes it possible to use a cord of fixed length (19'-6") which will reach any terminal strip on the frame 13 bays on either side of a box. A cord hook shall be furnished at each transverse arm

except at those under boxes where space will not permit the hooks to be mounted.

5.16 For codes of cord and plug assemblies refer to the circuit drawings. A cord and plug assembly with two 145B number plates engraved with the circuit designation, shall be furnished for each service observing circuit unless otherwise specified by the Telephone Company. Circuit numbers as specified by the Telephone Company will be stamped on the plates by the installer.

Battery, Switchman's Message Rate Test, Etc. Jacks

5.17 On frames where this equipment is required furnish 201A jack mountings placed between the 6th and 7th shelves (also between the 7th and 8th shelves where a second level of mountings is required), from the bottom of the frame on the horizontal side. Mountings should be placed about 25 bays apart. Locate however so that no terminal strip will be over 13 bays from a mounting. Cords 12'-0" long should be used.

Connecting Blocks

5.18 ***Types and Use:*** Connecting blocks shall be furnished as specified on both vertical and horizontal sides of the frame, to provide battery and ground connections. The 17B block is used on the vertical side for testing between the MDF, CDF or protector frame and points in the outside plant and is attached to the guard rail support at the bottom of the frame. The 33A or B block is used on the horizontal side and clamps to the lower edge of a terminal strip.

5.19 ***Locations:***

(a) Locate 17B at the 5th, 15th, 25th, etc. verticals or at verticals nearest to these that have a guard rail support. All blocks to be connected in multiple with 16 gauge ESCB wire.

(b) Locate 33A or B at 5th and 16th shelves (on frames with mezzanine platform) and at 5th and 10th shelves (on frames without platform) from the bottom in every 10th bay beginning with the 5th bay. Where a terminal strip is not furnished, a wood block as covered on the connecting block mounting drawing shall be used.

5.20 ***Miscellaneous Requirements:***

(a) 18 type resistances required in the circuit for the 17B shall be mounted on the relay rack. A pair of leads shall be run from a connecting block to these resistances and then to the fuse board for the battery and ground supply.

(b) Battery and ground supply for 33A or B shall be obtained at the fuse board. Signaling battery shall be used and one fuse provided for each frame. ESCB wire shall be used in all cases.

Distributing Frame Wire

5.21 Furnish distributing frame wire only when specified.

Cabling

5.22 The arrangements of cable runs entering the frame, the minimum clearances for cable runs above the frame, and the arrangements governing the running, placing, butting, and fanning of cables within the frame shall be in accordance with the switchboard cabling plan listed herein. Cable codes for the major cable runs entering the frame shall be in accordance with the switchboard cabling plan. The minimum dimensions shown on the cabling plan for cable run clearances shall not be used unless the ceiling height will not permit a greater dimension.

Grounding Arrangements

5.23 A ground bus bar for terminating the protector and other ground leads shall be located at a suitable point along the frame near the floor and a No. 0 wire used to connect this bar to a protector ground bar run along the top of the frame and fastened to each protector mounting support. The detailed arrangements are covered on the grounding drawings listed in part 3. The details shall be furnished as miscellaneous equipment for each office as required.

Notes Applying to Protector Frame and Associated MDF Only

5.24 ***Cable Designation Boards:*** On the 14'-5" protector frame a designation board shall be provided at the top of the verticals and also

at the underside of the mezzanine platform, on both sides of the frame, and on the associated MDF above the vertical terminal strips and at the underside of the platform, unless otherwise specified. On the 12'-5" frames designation boards will be required at the top of the verticals only, no platform being furnished.

5.25 ***Bracing Details for Protector Frame:*** Bracing details shall be furnished as follows:

On an original lineup of 5 to 9 vertical assemblies one set placed at head end of frame.

On an original lineup of 10 to 34 vertical assemblies—one set placed at each end of frame.

On an original lineup of 35 to 60 vertical assemblies—one set placed at each end of frame, and one set placed approximately midway between ends.

On each addition of 10 to 30 vertical assemblies—one additional set placed at far end of the additional framework.

5.26 ***Arrangement of Protector Frame in Sections:*** In general, the frame shall not be furnished in one continuous length but shall be arranged in sections not to exceed 60 verticals each, so as to provide for passageways about every 40 feet. A frame requiring several sections shall be subdivided to suit ultimate conditions. The space allowed for passageways shall be approximately 2'-9" between end guards or 3'-4" between the ends of longitudinal base angles. No section of frame shall consist of less than 5 vertical assemblies in order to permit the use of bracing details.

5.27 ***Arrangement of Frames and Platforms:*** To facilitate maintenance and cabling the protector frame and associated MDF should be located parallel to and directly opposite each other. At points on the MDF opposite the breaks in the protector frame the verticals are left vacant. The horizontal side of the MDF however is equipped without interruptions. A mezzanine platform is furnished at each side of the protector frame and, when specified, at the horizontal side of the MDF. The platforms are connected at each end and across the breaks in the protector frame. The 16" space in the center of the vertical side of the MDF, at the platform level, should be left unequipped, as it is not readily accessible. On the horizontal side the platform is opposite the 10th shelf which is usually left vacant. At the protector frame the platform being at the halfway point along the verticals, each outside cable can be terminated entirely above or below the platform which is desirable from a maintenance viewpoint.

5.28 ***Numbering of Frame Verticals:*** To facilitate association of the protector frame verticals with verticals of the main distributing frame to which the protector frame is cabled, the vertical number for each of the protector frame verticals shall be the same as that of the corresponding vertical of main frame except that, being a double sided frame, the letters "A" shall be added to designate that portion of a protector frame vertical on the side away from the main frame, and "B" to that portion on the side toward the main frame. As an illustration, the numbers 15-A and 15-B would designate a vertical of protector frame associated with the 15th vertical of main frame, 15-A being on the far side of the protector frame with respect to its position with the main frame. Where protector frame verticals are omitted to provide a passageway the numbers of such verticals shall also be omitted.

5.29 ***Ceiling Heights:*** The 14'-5" protector and main frames are designed to be used in terminal rooms having a minimum ceiling height of 15'-0" under the girders and 15'-6" to the beams or slabs. If used in a building with a lower ceiling a careful check of cabling conditions will be required. For 12'-5" frames the minimum height under girders should be 12'-6".

5.30 ***Miscellaneous:*** Where protector frame vertical assemblies are furnished but not equipped with protectors, protector to main switchboard cables shall be furnished together with the necessary terminal strips and cable racks. The cables shall be butted, fanned and soldered to the terminal strips at the main frame end, and stripped and butted only at the protector frame end. These strippers shall then be placed in tubes for protection. The Telephone Company will solder them to the protectors as required.