FLOOR PLAN DATA (FPD) SHEETS DESCRIPTION, CHARACTERISTICS, AND USE

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Figures

1. GENERAL

1.01 This section describes the types, characteristics, and use of Floor Plan Data (FPD) sheets.

1.02 Whenever this section is reissued, the reason for reissue will be specified in this paragraph.

1.03 FPD sheets contain information essential to the layout of equipment and systems, and to the planning of buildings. On behalf of AT&TCo, Bell Laboratories prepares FPD for the use of Western Electric, Long Lines, and the Bell Operating Companies.

1.04 FPD consists of identification codes, physical data such as weight and spatial configuration, current drains, heat release, cabling quantities and constraints, and other layout criteria and planning data.

1.05 FPD is furnished for:

(a) Individual equipment items, such as:

Batteries	Engine Alternators
Charging Equipment	Equipment Frames
Desks	Power Distribution Equipment
Computer Terminals	Switch Boards
	Test Boards.

(b) Combinations of equipment items, such as:

Functional Frames	Switching Systems
Power Plants	Transmission Equipment
Power Rooms	Maintenance Centers
Operating Rooms	Central Offices
Operations Support Systems	Distributing Frames.

1.06 The above is only a partial listing. FPD is also furnished for cabinets (in which power and other equipment is mounted), consoles, minicomputer units (including purchased units), lighting fixtures, and other equipment and conditions which must be considered in layout planning. FPD is also provided for "miscellaneous" equipment units which are ordered individually and installed in available frameworks or partially equipped frames in a central office.

1.07 FPD is made available as early as possible because the telephone power, electrical service, and mechanical equipment requirements are determined from the data. The data is also provided promptly to avoid excessively conservative planning for buildings and equipment that could result in severely overengineered power and air conditioning facilities. Because this early information is of such importance, it is sometimes necessary, initially, to provide estimated quantities for such characteristics as current drains, heat release, and weight. When that is necessary, the estimates will be as accurate as possible to avoid the uneconomical equipment and building arrangements that result from over- or under-engineered plans. Generally, estimated data will be identified by asterisks.

1.08 FPD sheets are not intended to be a source of equipment engineering information. However, when certain engineering information is ***pertinent*** to the equipment/building planning function, such information, if reasonably concise, will be included on the FPD sheet. Documents containing extensive information will be referenced.

1.09 FPD has been undergoing a steady modernization in both content and format of the data sheets. Now, new FPD is normally produced in accordance with the requirements of the Floor Plan Data Administration System (FPDAS) which consists of an integrated set of procedures and computer software that control the mechanized preparation, storage, retrieval and distribution of FPD. Hard copies are now furnished as both 8 1/2 inches x 11 inches paper copies and microfilm aperture cards. To make it compatible with graphic display terminal screens, FPDAS type of FPD is produced in a horizontal (turn-page) format.

1.10 FPDAS was developed to shorten the FPD preparation time; to expedite its availability to the WE, LL, and BOC planners; to expand the information content of FPD; and to prepare FPD for entry into the Telephone Office Planning and Engineering System (TOPES) data base. FPDAS-produced FPD contains additional data to enable planners to produce optimum equipment/building arrangements. Added data includes the effective frame width, minimum aisle widths, planning values for heat release, ac current drains, and Common Language Equipment Identification codes, where appropriate. Cable areas are now designated by either class or shield, as required.

1.11 All FPD for equipment and systems compatible with the New Equipment-Building System (NEBS) standards of Section 800-610-164 is being revised to conform to the latest FPD requirements. Other existing sheets are being upgraded or reformatted as they are changed for other reasons.

SCOPE

1.12 The types of FPD sheets in current use are described in **2. TYPES OF FPD SHEETS IN CURRENT USE**, and the general characteristics of FPD sheets are given in **3. GENERAL CHARACTERISTICS OF FPD SHEETS. 4. SIGNIFICANCE OF DATA ITEMS** explains the significance of specific data items and defines the terms used, and **5. EQUIPMENT LAYOUT AND BUILDING PLANNING TECHNIQUES** provides

guidelines on the efficient use of FPD and the correct application of the engineering data.

REFERENCES

1.13 BSP sections in layer 760-1 provide information pertinent to the equipment layout and building planning process. Also, BSP sections in layer 760-2 describe the applications of weight, heat dissipation, and current drain data provided on FPD sheets.

1.14 Section 790-100-650 provides Central Office Equipment — Power Engineering Administrative Procedures, and the Power Systems Engineering Manual contains Sections 790-100-651 through 790-100-664 of which Sections 790-100-652, Planning, and 790-100-662, Layout, are of particular use to equipment layout and building planning personnel.

2. TYPES OF FPD SHEETS IN CURRENT USE

2.01 There are three types of FPD sheets in use. These are characterized as follows:

"OLD" VERTICAL FORMAT

2.02 Until 1976, all FPD sheets were identified by "Section and Sheet" numbers. The section headings are:

Section	Description
1	General
2	Manual — Local
3	Manual — Toll
4	Dial — Panel
5	Dial — Step-by-Step
6	PBXs
7	Equipment Common to More Than One System
8	Power
9	Crossbar
10	No. 4 Toll Switching
11	Dial — Local No. 5 Crossbar
13	101 ESS
18	No. 4 ESS
20	Data Systems
21	Traffic Service Systems
22	Traffic Management Systems
23	Plant Service Systems.

Some sections were subdivided. For example, Section 23.6.1 contains Floor Plan Layouts for Transmission Maintenance Systems (Section 23.6), which is part of Plant Service Systems (Section 23.). A few sheets were printed with "Front" and "Rear" sides.

"9-DIGIT" VERTICAL FORMAT

2.03 In January 1976 a new numbering plan and format were adopted to facilitate retrieval of FPD, and to include additional information required by Bell Operating Company (BOC) and Western Electric (WE) equipment layout and space planners. Under this plan, FPD is generally identified by the nine digits of the Equipment Design Requirements J Spec/BSP for the equipment frame or system; suffixes are added to the nine-digit number to designate either individual equipment frames or portions of a "package" of FPD related to a specific, complete system. The vertical aspect of the sheets and their availability only as 8 1/2 inches x 11 inches paper copies were retained.

HORIZONTAL (FPDAS) FORMAT

2.04 Sheets in the horizontal format represent the latest type of FPD presentation as described in paragraphs 1.09 through 1.11, above.

2.05 All new FPD sheets are being prepared in the FPDAS format. It is expected that by the end of 1981 all existing FPD sheets for New Equipment-Building System (NEBS) compatible equipment and systems will have been converted to the FPDAS format. Older FPD sheets for non-NEBS-compatible equipment and systems will also be reformatted either when reissued for other reasons or at the option of the controlling Bell Labs organization.

2.06 In the discussion of data items in this practice, refer to Fig 1 which illustrates the latest, FPDAS (horizontal) type of FPD sheet. The older types, the "Section and Sheet" and "9-digit" vertical types, which do not contain all of the currently required data, are illustrated in Fig 2 and 3, respectively.

3. GENERAL CHARACTERISTICS OF FPD SHEETS

3.01 The FPD sheets discussed in this section present information in the ***Individual Frame***, the ***System Package***, or the ***Total System Plan*** format.

(a) ***Individual Frame Format***

(1) Complete FPD for an equipment frame is contained on, effectively, one sheet. The individual frame format may also be used to provide FPD for a group of functionally related frames, for a sub-system, or for a complete system. In those cases, complete FPD for each frame is prepared on individual sheets, and additional sheets are provided to explain the functional relationship.

(2) The individual frame format is now also used to provide FPD for miscellaneous equipment. An ***assumed frame*** is described consisting of one or more units together with any required auxiliary units such as power supplies. FPD is then provided for this assumed frame. The nine-digit base number and title are taken from the Equipment Design Requirements JSpec/BSP for the principal unit. Because the unit cannot be ordered as a frame, the weight of the assumed frame is usually broken down into the weights of the component units and framework. In all other respects the FPD for the assumed frame is treated like an individual equipment frame.

(3) TOPES users may obtain planning data for an individual frame by entering the DATA unit and using the data command, specifying the frame name. When available in the individual frame format, FPD will be provided. When the frame is part of a system package for which individual FPD sheets have not been prepared (see below) TOPES Planning Data (TPD) will be displayed on the screen for the convenience of the user. The TPD will be similar to an FPD sheet prepared in the individual format. (TOPES users may, for added convenience. make hard copies of the displayed data.)

(b) ***System Package Format:*** FPD for all frames of an entire system (e g , No. 1/1A ESS) are grouped into tabular arrays of similar data such as ***weight, heat release***, etc , and no single sheet contains all of the data for any given frame.

(c) ***Total System Plan:*** FPD related to a total system plan is contained in a separate group of sheets, within the FPD which file are dedicated to a complete system plan by their identification and content.

The group of total-system-plan FPD sheets contains complete system layouts including information relative to the interrelationships between such component systems as switching, transmission, toll equipment, power (both telephone and building), and building services. The total system plan includes the cable distribution plan, lighting plan, air diffuser plan or other equipment cooling arrangements, fire protection plan, and information on interfaces with other systems.

4. SIGNIFICANCE OF DATA ITEMS

GENERAL

4.01 Accurate estimates of building floor design load requirements and space allocations must often be made several years before the building is constructed or space is available, or before detailed knowledge of the final equipment complement can be obtained. With those considerations in mind, the specific data items are furnished in a form intended to minimize the possibility of over- or under-engineering the equipment-building systems.

4.02 Precise FPD can generally be provided for a frame with a fixed makeup. If, however, the frame has a variable composition either initially or during its operating life because of a choice of equipment units, plug-ins, or line assignments, some of the data may represent a "composite" or average frame. This is discussed in detail below.

4.03 Often, FPD for an individual equipment frame must be provided without knowledge of or control over the frames that will ultimately be located nearby. Consequently, cautionary notes may be provided to alert planners to special considerations such as the following:

(a) FPD for a frame on which a large area of cable is terminated may recommend a limiting number of such frames per lineup or alternate ways of cabling to it to avoid cable rack blockage.

(b) FPD for frames that exceed the uniformly distributed live-load equipment allotment as specified in Section 800-610-164, New Equipment-Building System (NEBS) within their allotted floor area, may so inform the planners and building engineers so that they make suitable adjustments in the equipment layout or building design.

The absence of cautionary notes should not be taken to mean that there are no constraints regarding the placement of the equipment.

4.04 A number in parentheses following an item of data refers to a qualifying note.

DEFINITIONS

4.05 Because the following terms are sometimes interchanged in other documents, definitions of each are included here ***as they apply in this practice and on FPD.***

(a) ***Framework:*** A framework is a structure composed of uprights, a base assembly, and a top member.

(b) ***Frame:*** A frame consists of the framework and the apparatus, equipment, and cable mounted upon it. (For power or other equipment which is usually mounted in cabinets, the use of the term ***frame*** should be understood to apply also to such cabinets. Similarly, it includes other equipment such as consoles, and tape and disk drives which occupy floor space.)

(c) ***Bay:*** A bay is that portion of a frame between any two adjacent uprights of the framework.

4.06 When appropriate, other terms used in this practice are defined where they first appear.

EQUIPMENT IDENTIFICATION

Manufacturer's Code

4.07 The manufacturer's equipment code such as a WE J code, KS code, or ED code will be provided. The code will include as much detail as can be accommodated in the table. Additional detail such as list or group numbers required to fully designate the frame may appear in a referenced note.

Floor Plan Designation, CLE Basic Code, TOPES Suffix

4.08 Every equipment frame, cabinet, stand, tape or disk drive, console, etc., has a Floor Plan Designation (also known as the Frame Function Code or the Equipment Abbreviation). On all FPD sheets in the FPDAS (horizontal) format (see paragraph 2.04 and 2.05), the Floor Plan Designation should agree with the requirements set forth in Section 005-101-112, Standard Abbreviations - Frames, Racks, Bays, and Cabinets. FPD sheets of earlier types may contain non-standard Floor Plan Designations that will be corrected when the sheets are reformatted.

4.09 The CLE Basic Code portion of the Common Language Equipment Identification (CLEI) Code will be provided for equipment requiring it. When the CLE Basic Code is required, it will be made identical to the Floor Plan Designation.

4.10 A "TOPES suffix" has been added to the Floor Plan Designation of each frame so that different frames with identical functions may be uniquely identified. In TOPES documentation, the Floor Plan Designation (also known as the Frame Function code) together with the TOPES suffix, is referred to as the "frame name."

PHYSICAL DATA

4.11 NEBS-compatibility is indicated by either ***Yes, No,*** or ***Conditional*** to indicate the degree of conformity with the New Equipment-Building Systems (NEBS) standards (Section 800-610-164). NEBS-compatibility means the equipment can be used in a building that meets the NEBS standards.

(a) ***Yes*** indicates the equipment meets ***all*** of the NEBS standards.

(b) ***No*** indicates the equipment fails to meet one or more of the NEBS standards and that failure makes it impossible to use the equipment in a NEBS building (e.g., an 11-foot 6-inch frame will not fit under a 10-foot 0-inch ceiling).

(c) ***Conditional*** indicates the equipment fails to meet one or more of the NEBS standards but, with special provisions it could be used in a NEBS building. The recommended special provisions should be indicated. For example, a minicomputer which requires tighter environmental controls than those set forth in Section 800-610-164 would be designated ***conditional*** and might require a temperature-controlled partitioned area.

(d) Other circumstances that would be conditional are:

(1) 9-foot 0-inch radio equipment frames with waveguides below the 9-foot level and minimal cable above

(2) equipment whose weight requires floors designed for greater loads than the limits set forth in Section 800-610-164

(3) frames with non-standard widths or depths.

4.12 The "effective width" of the frame given in the table of physical dimensions consists of the actual width of the frame plus one "mortar space." For NEBS-compatible equipment that meets the modular spacing described in Section 800-610-164, a mortar space is 1/16 inch. Therefore, for a NEBS-compatible frame with an actual width of 4-feet 3-15/16 inches, the effective width is 4-feet 4-inches.

4.13 The weight of a frame, in pounds, is the combined total weight of the following:

(a) the framework

(b) the equipment including ***a full complement of those options or plug-ins that result in the greatest weight,*** and local cable including connectorized interframe cabling

(c) interframe cable that, when connected, does not occupy space in the cable rack

(d) FPD for certain systems (e g , No.1/1A ESS) includes, in addition to the weight described above, an allowance for the system cable, cable rack, and frame supported lighting. It is generally specified as a weight per linear foot of frame lineup and each frame is assigned this additional weight proportional to its width. A note indicates the inclusion and amount of this allowance.

4.14 On Planning Data Sheets [see paragraph 3.01 (b)(2)] available on TOPES terminals, frame weights do ***not*** include any allowance for system cable, cable rack, and frame supported lighting that may have been included in the FPD from which the TPD was derived. See paragraph 4.13.

4.15 Frames per Function denotes the number of frames required to constitute a group of functionally related frames. For example, in the standard arrangement of 7-foot D3 Channel Bank frames, there is one J98718C, L1 and two J98717C, L2 frames. Thus, there are three frames for this functional arrangement comprised of one J98718C, L1 and two J98717C L2 "Frames per Function."

4.16 The quantity "Units per Frame" is used for frames comprised of like multiple units, or functional elements, to denote the frame capacity for such units (i e , the quantity of trunks, circuits, scan points, groups, digroups, etc , for which space is available in the frame). "Hot spares" or standby units are not included in the total.

CABLING DATA

4.17 When systems cabling information is not provided elsewhere, FPD will include the effective cross-sectional area of the cable that is terminated on the frame and distributed to other frames by means of the overhead cable rack. For this purpose, the cable area is equal to the square of the cable diameter. The quantity specified on the FPD sheet represents the area that secured cable would occupy. Unsecured cable would occupy 1.4 times that area. Broadband system cable segregation requirements are designated by Classes A through F, inclusive, as defined in ED-61925-20. Cable segregation requirements for systems using Cableway lineup cable rack are designated by shields (compartments) 1 through 5, inclusive, as defined in J90606 (Section 801-006-158). Segregation requirements for systems using ESS type lineup cable rack are designated by shields 1 through 4 inclusive, as defined in J1A054 (Section 801-801-155). When the cabling information is extensive, it is sometimes provided in a BSP or on an SD drawing.

HEAT RELEASE

4.18 ***Heat release*** is the power dissipated from a frame to its surroundings and includes only the heat from the equipment in the frame. It does not include power delivered to the frame that is passed on by the frame to be dissipated in other frames or in lines and repeaters outside the office.

4.19 Terms used to describe heat release data are defined as follows:

(a) Generally, heat release values for switching equipment are specified as "average busy hour heat release" and "24 hour average."

(1) The ***Average Busy Hour Heat Release*** is the dissipation from the frame when operating during the average busy hour.

(2) The ***24 Hour Average*** is the average value of the heat release during a normal 24 hour period.

(b) Generally, transmission or other equipment designed for a choice of plug-ins, frame powering, variable external line resistances, or other features that could result in variations in heat release require "maximum" and "minimum" values for both the "busy" and "idle" conditions.

(1) The maximum (MAX) value represents the heat given off by a ***fully equipped*** frame with the arrangements and plug-ins that generate the ***most heat*** when in operation.

(2) The minimum (MIN) value represents the heat given off by a ***fully equipped*** frame with the arrangements and plug-ins that generate the ***least*** heat when in operation.

4.20 Planning values of heat release are provided for use in planning equipment cooling facilities. A Planning Value may be obtained from one of several conditions:

(a) the average of the MAX and MIN values for both the Busy and Idle conditions

(b) the average complement of installed plug-in types (possibly based on weighted production figures) and average line resistances

(c) the 24 Hour Average heat release value for the frame

(d) the estimated utilization or activity factor for the frame. Use the Planning Value to avoid over- or under-estimating the equipment cooling requirements.

4.21 For frames that condition power, such as rectifiers, converters, and inverters, the heat release specified represents the ***losses*** in a ***fully equipped*** frame, not the total power being converted. When the frame is comprised of a number of units one of which is a standby unit, the Planning Value represents the total full load losses of the "working" units plus the no-load losses of the spare unit.

DC CURRENT DRAINS

4.22 ***DC Current Drains*** are identified as either List 1, 2, or 3 drains which are defined in Section 790-100-656.

4.23 As used on FPD, terms that describe DC current drains are defined as follows:

(a) ***Maximum amperes*** is the current drain for a ***fully equipped*** frame with those options or plug-ins that draw the most current.

(b) ***Minimum amperes*** is the current drain for a ***fully equipped*** frame with those options or plug-ins that draw the least current.

4.24 Current drains are provided for each voltage required by the frame. When the current is small enough to be considered "negligible" by certain system standards, it will usually be specified as 0.1 amp to indicate that it is non-zero.

AC CURRENT DRAINS

4.25 ***AC Current Drain Categories*** are defined in Section 790-100-660 AC Power for Telecommunications Equipment.

4.26 As used on FPD, terms that describe AC current drains are defined as follows:

(a) ***Running Current*** for ***constant impedance*** loads is the steady-state drain at ***maximum*** input voltage

(b) ***Running Current*** for ***constant power*** loads is the steady-state drain at ***minimum*** input voltage

(c) ***Inrush Current*** is the maximum current drawn by the frame upon connection to a source such as the commercial AC service

(d) ***Inrush Duration*** is the time for the current to reach the steady-state value after circuit closure.

GRAPHICAL DATA

Frame Outline

4.27 The ***frame outline*** on an FPD sheet shows the ***actual*** frame width and depth with guardrails, when applicable. The frame outline is a plain rectangle for ESS and UNIFRAME frameworks.

4.28 The frame outline for frames using the Unequal Flange framework is a rectangle with the frame uprights shown (as closely approximating the true location as the size of the drawing will permit). In addition, the distance will be specified from the rear face of the upright to the rearmost point on

the near guardrail, or rear guardrail extension, if provided.

5. EQUIPMENT LAYOUT AND BUILDING PLANNING TECHNIQUES

USING FPD EFFICIENTLY

5.01 To employ FPD most efficiently, use the following procedure.

(a) Obtain a complete list of all equipment frames that will be used in a new layout or added to an existing layout. (paragraph 1.04 of FPD 800-000-000-2, describes the procedure for locating FPD by using Section 800-020-022, Permuted Title Index, Floor Plan Data Sheets. As indicated in FPD 800-000-000-2, both the BTL Floor Plan Data Administrator and the AT&T Staff Manager-Common Systems Engineering can be consulted for the availability of FPD for new frames. Also TOPES users should consult the Frame catalog (catf command) in the DATA Unit and the current TOPES-O-GRAMS for the latest information on FPD availability.)

(b) Obtain hard copies of FPD for all frames to be used. [Copies may be obtained from the local organizational drawing file or library, as appropriate. TOPES users may also obtain hard copies of FPD or TPD displayed on the terminal screen. See paragraphs 3.01 (a) (3), above. TOPES users taking advantage of the provisions for making hard copies of the latest FPD and TPD displayed on their terminal screens should do so at this time to avoid subsequent interruption of the planning activity.]

(c) Review all FPD noting constraints such as cable length limitations, non-standard aisle requirements, growth direction, etc., and cautionary notes on weight or heat release that affect the placement of the frames. Note any qualifiers that may affect subsequent current drain and heat release calculations.

(d) TOPES users should note ***group names*** indicated on the FPD sheets for layouts of systems, subsystems, or specific combinations of frames.

(e) Begin the floor plan by laying out the largest system first. TOPES users who require less than the ultimate arrangement provided by a designated group should add the entire group to their layout and then delete the unwanted portion. TOPES will automatically retain the engineering data for the remaining frames.

USE OF ENGINEERING DATA

5.02 The ***"engineering data"*** provided on FPD sheets represents the best guidance that the physical designer of the frame can provide to the user with regard to weight, current drains, and heat release.

(a) ***Weight:***

As indicated in paragraph 4.14, the frame weight will always include ***a full complement of those options or plug-ins that result in the greatest weight.*** Use this value in computing floor loads even though partially equipped frames, or frames equipped with lighter plug-ins, may initially be installed.

(b) ***DC Current Drains***

All current drains on FPD sheets are for fully equipped frames. The MAX values represent frames equipped with units, options, or plug-ins that draw the greatest current; MIN values represent frames equipped with units, options, or plug-ins that draw the least current. Although frames may initially be only partially equipped, ***fully equipped frames*** are assumed in the ***planning stage*** in order to determine the size of the power plant that will be required ultimately when the frames are fully equipped and to provide appropriate building space for that plant. The ***power engineering*** of the office will, of course, be based on the ***installed equipment*** at any given time. (The ***Power Systems Engineering Manual*** provides comprehensive guidance for planning and engineering common power systems in operating company equipment buildings.)

(1) When the DC plant supplies power to the frames without intermediate bulk converters, use the List 1 current drains for sizing the power plant. For frames with a variable make-up, when information is available indicating the units, options, or plug-ins required, and, consequently, whether the MAX, the MIN, or some value in between is most appropriate, use the indicated value. When this information is not available, use an average of the MAX and MIN List 1 values for sizing the power plant.

(2) When the DC plant supplies power to the frames through intermediate bulk converters, use the L3 drains for the equipment frame loads to size the converters, and use the L1 drains of the frames, increased by the losses in the converters, to size the power plant.

(3) ***Do not increase the calculated plant size by an arbitrary percentage for "contingencies."*** Often, future developments involve the substitution of equipment of later design requiring ***less*** power.

Upon completion of a trial layout, adjust both the current drains and heat release totals if indicated by the above-noted qualifiers. For example, certain frames operate only when certain others are idle. The corrected sum of the current drains or heat release for all frames should take this into account.

(c) ***Heat Release:***

Unless specific information dictates the use of a different quantity, use the Planning Value of heat release for determining the size of and space required for the ultimate equipment cooling facilities. (The amount of cooling plant installed at any given time in the life of the building and the interval for increasing its capacity will be based on the requirements of the installed equipment and related economic considerations. These and other building planning considerations are discussed in detail in the 760 division BSPs.)

FPD for some systems provides a "system curve" of equipment heat release. This curve may have been derived from measured data for a number of working offices or may be based on a compilation of the typical equipment complement. The heat release is plotted against some measure of office size such as the number of lines or networks. This system curve should be used for estimating system equipment heat dissipation for new installations of that type of system.

When the FPD provides heat release information in the form of Average Busy Hour and/or 24 Hour Average values for individual equipment frames, use this data as follows:

(1) the 24 Hour Average value may be used in lieu of a Planning Value for determining total equipment cooling requirements

(2) the Average Busy Hour heat release values may be used to locate "hot" frames for which individual cooling provisions such as extra air diffusers may be required

(3) the Average Busy Hour heat release may not be used for total equipment cooling planning unless it is known that the Average Busy Hour and 24 Hour Average values are the same.

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DATE	1- 7-81

FLOOR PLAN DATA — IOP 4

EQUIPMENT IDENTIFICATION	PHYSICAL DATA	CABLING DATA	
MFR'S NAME: WE MFR'S CODE: J1C136A RATING: AT&TCo PROVISIONAL FLOOR PLAN DESIGNATION: IOP TOPES SUFFIX: 4 CLE BASIC CODE:	NEBS COMPATIBLE: YES HEIGHT: 7- 0 DEPTH: 2- 0 EFFECT. WIDTH: 2- 2 WEIGHT, LBS: 425 * (3) FRWK TYPE: ESS TYPE MIN FRONT AISLE: 2- 6 MIN REAR AISLE: 2- 0 FRAMES/FUNCTION: UNITS/FRAME:	SHIELD OR CLASS	EFFECTIVE CABLE AREA (SQ.IN.)
		1	4.0
		4	0.8

HEAT RELEASE, WATTS	BUSY	IDLE	PLANNING VALUE
MAX	1050	1050	1050 (2)
MIN	1050	1050	

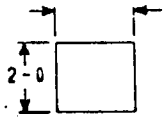
DIMENSIONS 12 INCHES AND OVER ARE IN FEET & INCHES. ALL OTHER DIMENSIONS ARE IN INCHES.
* DENOTES ESTIMATED VALUE.
FOR GENERAL INFORMATION, SEE THE SECTIONS OF FPD 800-000-000 .

DC CURRENT DRAINS

VOLTAGE	LIST NO.	BUS	MAX AMPS	MIN AMPS
-48 (2)	1		21.90	
-48	3		24.70	

AC CURRENT DRAINS

VOLTAGE	CATE-GORY	RUNNING CURR, AMPS	INRUSH	
			CURR, AMPS	DUR., SECS



FRAME OUTLINE

FIG. 1

NOTES:

1. THE J1C136A-1 FRAME CONSISTS OF THE FOLLOWING UNITS:
   J1C129AF-1 FAN UNIT
   J1C130BA-1 BASIC IOP UNIT
   J1C130BB-1 GROWTH IOP UNIT

2. THE HEAT RELEASE AND CURRENT DRAINS SHOWN ARE FOR A FULLY EQUIPPED FRAME CONTAINING 2 BASIC IOP UNITS, AND 2 GROWTH IOP UNITS, AND 2 FAN UNITS.

3. CABLE LENGTH RESTRICTIONS:

IOP UNIT TO TAPE FRAME	-250 CABLE FEET
IOP UNIT TO TTY	-500 CABLE FEET
IOP UNIT TO CONTROL UNIT FRAME	-50 CABLE FEET

INPUT/OUTPUT FRAME
3B PROCESSOR

FPD 801-824-157-1
SHEET 1 OF 1

Fig 1—TOPES Generated FPDAS (Horizontal) Type FPD Sheet

ISSUE	1	2		
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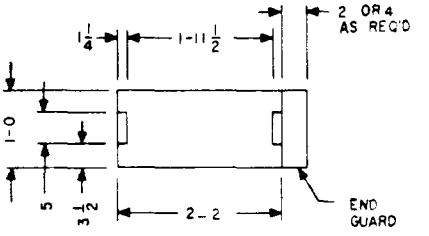
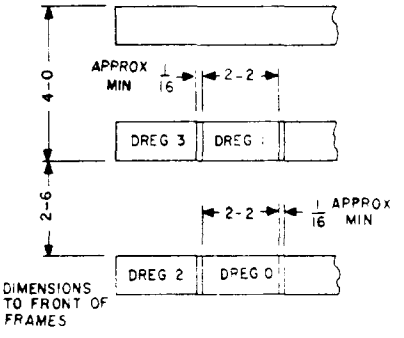
FLOOR PLAN DATA SECT. 10.8 SHEET 3

AT&T CO STANDARD

FLOOR PLAN CONVENTION
FIG. 1



FLOOR PLAN DETAILS
FIG 2



FLOOR PLAN ARRANGEMENT
FIG. 3

WEIGHT	HEAT DISSIPATION WATTS PER UNIT	
650	24 HOUR AVG	BUSY HOUR
	260	415

NOTES:

1. DISTRIBUTOR REGISTOR FRAMES SHALL BE LOCATED ON THE SWITCHING FLOOR IN AN AREA DEDICATED TO 7'-0" ETS FRAMES. FOR SERVICE REASONS, THE DREG FRAMES SHALL BE LOCATED IN A MINIMUM OF TWO SEPARATE LINES PREFERABLE FACING EACH OTHER, AND NO TWO LINES OF FRAMES PLACED BACK TO BACK WITH WIRING SIDES OPPOSITE
2. FOR CLEARANCE AT COLUMNS SECT. 10.8 SHEET 1
3. DIMENSIONS 12 INCHES AND OVER ARE IN FEET AND INCHES. ALL OTHER DIMENSIONS ARE IN INCHES

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

DISTRIBUTOR REGISTER FRAME
TOLL SWITCHING SYSTEMS NO. 4A & 4M

Fig 2—"Section and Sheet" Type of FPD Sheet

HO

ISSUE	1	2			
DATE	5/78	3-29-79			

FRAME	FL PL DESIG	FRAMEWORK	HGT
J60104B	SSBRD	UNEQUAL FLANGE	7-0

FLOOR PLAN DATA

FPD 804 - 911 - 165 - 2

SHEET 1 OF 1

EQPT RATING	AT&TCO. RATING AT&TCO. STANDARD	
NEBS COMPATIBILITY PER BSP 800-610-164.1SS	YES	NO
	/	

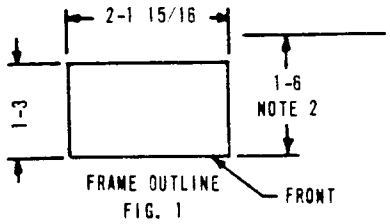


FIG. 1

NOTES:

1. DISTRIBUTION BAY SHALL BE LOCATED SO THAT CONNECTING CABLES TO MGTB AND 500A BAYS WILL BE NO MORE THAN 300' LONG.

2. MINIMUM DISTANCE TO WALL OR IMMOVABLE OBJECT.

DIMENSIONS 12 INCHES AND OVER ARE IN FEET AND INCHES. ALL OTHER DIMENSIONS ARE IN INCHES.

* DENOTES ESTIMATED VALUE.

FOR GENERAL INFORMATION SEE THE SECTS IN FPD 800-000-000.

WEIGHT, LBS	CROSS SECTIONAL CABLE AREA, SQ IN						NOTES
	COAX	OTHER					
450*	10	1.5					1

POWER SOURCE VOLTS			117 VAC	ESSEN.	POWER	
BUSY HOUR DRAIN, AMPS	L-1 MAX		6.5			
	L-1 MIN		1.5			
	L-3 MAX	A BUS				
		B BUS				
	L-3 MIN	A BUS				
		B BUS				

HEAT RELEASE, WATTS			
	BUSY	IDLE	NOTES
MAX	750*	150*	
MIN	150*	150*	

NOTICE

NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT

BELL LABORATORIES | IS

TRANSMISSION SURVEILLANCE SYSTEM DISTRIBUTION BAY
AR6A SIDE BAND RADIO

BRUNING 44-131 29734

N-9056-A (7-75)

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Fig 3—"9-Digit" (Vertical) Type of FPD Sheet