STANDARD DRAWINGS

GENERAL INFORMATION - NUMBERING PLANS - RATING AND APPLICATION

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1. GENERAL

1.1 Scope of Section

1.11 This section covers general information pertaining to standard drawings and describes the numbering plans for the drawings most commonly used in installing Central Office Equipment. It also explains the ratings assigned to these drawings and the application of these ratings.

2. BELL LABORATORIES STANDARD DRAWINGS

2.1 Bell Laboratories systems drawings cover engineering design. The numbers for these drawings, assigned by the Bell Laboratories, consist of a set of prefix letters, which indicate the type of drawing, a five character base number, and a set of suffix numbers. Prefix letters and base numbers have been assigned as follows:

Prefix

SD	Circuit Schematics
CD	Circuit Descriptions
ED	Equipment Layouts
EE	Equipment Explanations
ES	Circuit Schematics
PF	Flow Charts
PR	Program Listings
PD	Program System Specification
ML	Magnetization Listings

Base Numbers

Base Number Block From	Through	System
10000	19999	Manual
20000	24999	Panel
25000	29999	#1, #5,Crossbar
30000	35999	Step-By-Step
40000	40999	AMA
42000	42999	Television
45000	46999	Radio
50000	52499	Toll ←
53000	53999	Toll
55000	64999	Toll ←
65000	67999	PBX
68000	68999	Toll Crossbar
69000	69999	Station
70000	74999	Data-Central Office
80000	89999	Power
90000	92999	Common ←
94800	97524	Common
97550	97999	Common ←
1A000	1A999	#1 ESS - 2W
2A000	2A999	#1 ESS - 4W
3A000	3A999	#1 ESS - Data
4A000	4A999	#4 ESS - Toll
5A000	5A499	1A Processor
6A000	6A999	#1 ESS - 2W Feature
1B000	2B999	Traffic Service
3B000	3B514	Traffic Management
1C000	3C499	Common ←
4C000	49099	Common
5C000	5C049	Common
7C000	7C049	Common ←
1D000	4D999	Data Station
1E000	1E999	PBX
5E000	5E499	PBX
1G000	4G999	Private Service
5G000	5G424	Toll ←
6G000	9G999	Toll ←
1H000	1H999	#101 ESS
2H000	2H999	#2 & 2C ESS - 2W Features
3H000	3H999	#3 ESS
1R000	1R099	Radio ←
2R000	2R199	Radio ←

2.2 Circuit schematic drawings in the five-character base number series are prefixed SD- when the circuit is rated "A.T.&T. Company Standard" or "A.T.&T. Company Special". Circuits that are applied only on a very limited number of jobs are likewise numbered in the five-character base

number series but are prefixed ES- and rated "Special".

2.21 Prior to the introduction of SD- and ES- five-character drawings, six-digit drawings prefixed with ES- but without suffix numbers where used for circuit schematics. Some of these drawings are still in good standing.

2.22 The five-character base number may consist of five digits or four digits and a letter. In the latter case the letter will occupy the second position in the base number.

2.23 On attached-contact and small detached-contact (nonsectionalized) drawings, other than those with B-prefix and -90 suffix, the sheet number is indicated by a number suffix preceded by a dash following the -01. For example -7 in SD-12345-01 indicates the seventh sheet of the drawing on B-numbered and -90 drawings, the total number of sheets for the first sheet and the sheet number on on the remaining sheets is shown below the drawing number.

(a) Older vintages of this type drawing carry suffix numbers -01 through -09 except the various sheets of multi-sheet drawings carry an extra digit or digits to indicate the sheet number for example, 0101, -0102, -0113 represent the first, second, the thirteenth sheet respectively of a -01 drawing.

2.24 Large detached-contact schematics (sectionalized) carry suffix numbers -01 to -09 plus a second set of suffix characters consisting of one letter from the group A to G and one or more digits. The letters A to G represent major groups of information shown on these large detached-contact schematics in accordance with the following table:

Group Code	Contents
A	Sheet Index Supporting Information Apparatus Index Lead Index Option Index
B	Functional Schematics (FS)
C	Apparatus Figures (APP. FIG.)
D	Circuit Notes (100 Series) Equipment Notes (200 Series) Information Notes (300 Series) Cross-Connecting Information and Notes (400 Series)
	Transmission Test Requirements Table Working Limits
E	Sequence Charts (SC)
F	Circuit Requirements Tables (CRT) Timing Requirements Tables (TRT)
G	Cabling Diagrams (CAD)

The final digit or digits represent the sheet number within the group. Typical sheet numbers for these drawings are as follows:

SD-12345-01-A1
SD-12345-01-A2
SD-12345-01-B1
T-01234-90-A1

2.25 A circuit description (CD) bears the same base number and the same suffix -01 to -09 as the associated SD.

2.3 Bell Laboratories "ED" drawings and "EE" equipment explanations are assigned suffix numbers -01, -02. If the drawing contains group numbers, the suffix will not be higher than -01 unless due to complexity of the drawing two tracings are required, in which case the group numbers will not be repeated on either drawing.

3. WESTERN ELECTRIC STANDARD DRAWINGS

3.01 Standard Wiring Diagrams

(a) Except as covered below, wiring diagrams made from "SD" drawings and from 5-digit "ES" drawings are in the "T" series and consist of the "SD" base number or the 5-digit "ES" base number with a two or three digit suffix.

(1) Wiring diagrams made from more than one schematic drawing are numbered in the 6-digit "T" series unless the wiring from one or more of the schematic drawings represents only a very minor portion of the wiring diagram, in which case numbering is in accordance with Paragraph (a) above.

(2) Apparatus location drawings use suffix -10 and any replacing drawings use the same suffix followed by the letters A, B, etc., to differentiate between drawing "vintages", as follows:

-10 Sheets 1, 2, etc. original drawing
-10A Sheets 1, 2, etc. 1st replacing drawing
-10B Sheets 1, 2, etc. 2nd replacing drawing

In a like manner the engineering information drawing which contains the engineering notes and the list of schematic figures and options and the corresponding wiring diagram figures and options for a series of wiring diagrams use suffix -09 (followed by A, B, etc., for any replacing drawings). Also a drawing having a suffix -08 may be used to show the cross-reference tables for individual 5-digit wiring diagrams or for a series of wiring diagrams of the same base number when there is no -09 drawing. The base numbers of these drawings agree with the respective base numbers of the associated wiring diagrams. In case of 6-digit wiring diagrams on which there is no room for the corss-reference table another 6-digit drawing is originated to cover the cross-reference table.

3.02 Standard Equipment Drawings

(a) Framework, equipment, local cable plant and similar drawings made from Bell Laboratories "ED" drawings are in the "ED" series and consist of the "ED" base number with a 2-digit or 3-digit suffix as follows:

- 10 to - 49) All types of drawings except
-130 to -149) those fully piece parted
- 50 to - 89) Assemblies which are fully piece parted
- 90 to -129) Assigned to Bell Laboratories

NOTE: Drawings covering small wired units, Amplas Equipment, and Printed Wiring Boards may be assigned suffix numbers in the -30 to -49 series or -130 to -149 series.

(b) Modification framework drawings are in the "ED" series if the drawing being modified is in the "ED" series; otherwise, number in the "H" series.

3.03 "J" Drawings

3.031 "J" Specification drawings are numbered with the prefix "J", a five-character base number, a one or two-character alphabetic suffix (subcode), and a one or two-digit dash suffix. For example, J12345A-1.

3.032 The five-character base number is assigned by the BTL from the following number blocks:

Number Block	System
J10000-19999	Local Manual
J2XX01-2XX49	Panel
J2XX50-2XX99	Cross Bar
J30000-39999	Step-By-Step
J41601-42599	Radio
J44101-44699	Television
J49801-49899	Common (AMA)
J50000-59999	PBX and Station
J60000-69999	Toll and Transmission
J70001-79999	Data-Central Office
J87300-87899	Power
J90000-99999	Common
J1A000-1A499	ESS #1 - 2W
J2A000-2A299	ESS #1 - 4W
J3A000-3A999	ESS #1 - Data
J1B000-2B999	Traffic Service
J3B000-4B999	Traffic Management
J1C000-1C299	Common
J1D000-2D999	Data-Station
J1G000-9G999	Private Service
J1H000-1H999	ESS #101 (EPBX)
J2H000-2H999	ESS #2

3.04 "LC" Drawings - Local Cables

(a) Local cable design drawings are numbered the same as the associated J, H or ED drawing number except that the prefix "LC" and a suffix A, B, C, etc., are added to indicate the various cables associated with the same equipment manufacturing specification. Example: LCJ12345A-1A, 1CH-123-456A, LCED-12345-30A.

(b) In the past, local cable design drawings were numbered in the "LC" series. The number consisted of a prefix "LC", a 3-digit base number and a 3-digit suffix number.

3.05 Wiring Records and Drawings (WRT), (WRED) and (WRES)

(a) Running list drawings covering local cable leads of an individual wiring diagram are numbered the same as the associated wiring diagram number except that the prefix WR is added.

3.06 Circuit Requirements Drawings (CRJ)

(a) Circuit requirements drawings are numbered the same as the associated J drawing number except that the prefix CR is added.

3.07 Soldering Record Drawings (SRJ), (SRH) and (SRED)

(a) Soldering record drawings are numbered the same as the associated J, H or ED drawing number except that the prefix SR is added.

3.08 "SWL", "D", "D1", "D2", and "D3" Method Wiring Drawings

(a) These drawings are numbered the same as the associated J, H, ED, ES, T, and SD specification or wiring diagram number except that the following prefixes are added:

Method	Prefix	Example
"SW1"	S	SJ
"D"	D	DJ
"D1"	D1	D1J
"D2"	D2	D2J
"D3"	D3	D3J

3.09 Detail Change Drawings (DCT)

(a) Detail change drawings are numbered the same as the associated wiring diagram number except that the prefix is added.

3.10 Running List Drawings (LWT), (LWJ)

(a) Running list drawings for the leads designated "LW" on wiring diagram are numbered the same as the associated wiring diagram number or specification number except that the prefix LW is added.

3.11 Local Cable Design Running Lists (RL) and Check Lists (CL)

(a) Local cable running lists and check lists are numbered the same as the associated local cable design drawing number except that a prefix "RL" or "CL" is substituted in place of the prefix "LC". For example, the running list and check list for local cable design drawing number LCJ12345A-1A is RLJ12345-1A and CLJ12345A-1A respectively.

3.12 Connecting Drawings (CC)

(a) Cable connecting drawings are numbered the same as the associated Bell Telephone Laboratories ED method of cabling drawing except that a prefix "CC" is added and 2-digit suffix (-10 and up) is substituted as in CCED-12345-10.

3.13 Combined Spec. and Circuit Drawings (CS)

(a) Certain standard equipment drawings, such as Step-by-Step switches and printed wiring boards, also contain wiring diagram information. This type of drawing may be in the J, H, T or ED series of drawings. See Paragraph 3.02 for assignment of suffixes for the ED drawings. Suffixes for the H, J and T drawings are assigned in the normal manner.

3.14 Tabular Connecting Drawing (TCJ)

(a) Tabular Connecting drawings are numbered the same as the associated, J, H or ED drawing except that the prefix TC is added.

3.15 Buzz Test Drawing (BTJ)

(a) Buzz Test drawings are numbered the same as the associated J, H or ED drawing except that the prefix BT is added.

3.16 Miscellaneous Drawings

3.161 Six-Digit Series T-Drawings

3.1611 6-digit "T" drawing numbers are assigned to the following classes of drawings.

(a) Miscellaneous framework and equipment drawings which do not fit in the "ED" or "H" series.

(b) Wiring diagrams made from more than one "SD" drawing.

(c) Wiring diagrams made from 6-digit Laboratories "ES" or "B" schematic drawings.

(d) Wiring diagrams made from customer's drawings.

(e) Wiring diagrams showing interconnections between Western and Non-Western equipment.

NOTE: Job drawings covering PBX's, 355A dial offices and magnetic offices for Bell Telephone Companies were assigned in the 6-digit "T" series up to 1943 and for job drawings on some distributor sales orders prior to 1965.

4. WESTERN ELECTRIC NONSTANDARD DEVELOPMENT DRAWINGS

4.1 When the Western Electric Company undertakes design development responsibility because the Bell Telephone Laboratories has agreed that they will not be in a position to handle a development the Western Electric Company issues "Nonstandard Development Drawings".

4.2 These drawings are assigned prefix letters as follows:

Prefix	
NS	Circuit Schematics
NT	Wiring Diagrams
NJ	Equipment Manufacturing Specifications
NE	Equipment Drawings

4.3 Numbering will follow the standard format for 5 digit drawings: e.g.

NS-01001-01, 02, etc.
NT-01150-30, -31, -32, etc.
NJ-01110A-1, B-1, C-1, etc.
NE-02421-11, -12, etc.

Generally, the assignment of the 5 digit base number for NT and NJ drawings will be the same as the NS. This will aid in readily identifying and cross-referencing all drawings used with the same base number.

4.4 The NS, NT, NJ and NE drawings are similar in format to standard Bell System SD, T, J and ED drawings.

5. RATING AND APPLICATION OF DRAWINGS

5.1 AT&T Rating Classifications

5.11 Ratings designated as AT&T Ratings are originated by Bell Laboratories for and at the approval of AT&T as covered in Bell Laboratories Engineering Methods. Drawings are assigned AT&T Ratings from the following:

5.1101 AT&TCO STANDARD - Applied to drawings covering engineering requirements for designs approved by AT&T for Bell System use.

5.1102 STANDARD - Applied to drawings covering manufacturing requirements for designs approved by AT&T for Bell System use.

5.1103 AT&TCO SPCS - Applied to drawings covering engineering requirements for stored program control system designs approved by AT&T for Bell System use.

5.1104 SPCS - Applied to drawings covering manufacturing requirements for stored program control system designs approved by AT&T for Bell System use.

5.1105 A & M ONLY - (Additions and Maintenance) Applied to drawings covering engineering and, or manufacturing requirements for existing designs no longer recommended for general use in connection with installation of new equipment, but may be used for additions to or maintenance of existing installations.

5.1106 MFR DISC. - (Manufacture Discontinued) Applied to drawings covering engineering and, or manufacturing requirements for existing designs no longer to be used for new installations or additions to existing equipment, but may be used for maintenance of existing equipment or equip circuits already wired or drilled.

5.1107 AT&TCO PROVISIONAL - Applied to drawings covering engineering requirements for Bell System designs which are not yet standardized but generally conform with existing standards and ultimate standardization is contemplated.

5.1108 PROVISIONAL - Applied to drawings covering manufacturing requirements for Bell System designs which are not yet standardized but generally conform with existing standards and ultimate standardization is contemplated.

5.1109 AT&TCO SPECIAL - Applied to drawings covering engineering requirements for designs which cover special features for a particular job, office, or Telephone Company. Standardization is not planned.

5.1110 SPECIAL - Applied to drawings covering engineering requirements for designs which cover special features for a particular job, office, or Telephone Company. Designs are limited in application and are not coded and, in general, the drawings are prepared by Western Electric. Standardization is not planned.

5.1111 PRELIMINARY - Applied to drawings covering engineering and manufacturing requirements for Bell System designs in the early stages of development. Generally used on trial installations, and restricted to a particular system, part of a system, or telephone office.

5.1112 INFORMATION - Applied to drawings covering engineering requirements used only for Bell System information or educational purposes, and not to be applied to drawings transmitting general engineering or manufacturing requirements.

5.2 WE Ratings Classifications

5.21 Ratings designated as WE Ratings are originated by Western Electric, and generally conform with AT&T Ratings. Additional ratings are also used to cover engineering and manufacturing requirements for special applications.

5.2101 STANDARD - Application to drawings is equivalent to the application of AT&T Ratings of "AT&TCO STANDARD" or "STANDARD".

5.2102 SPCS - Application to drawings is equivalent to the application of AT&T Ratings of "AT&TCO SPCS" or "SPCS".

5.2103 A & M ONLY - (Additions and Maintenance) Application to drawings is equivalent to the application of AT&T Rating of "A & M ONLY".

5.2104 MFR. DISC. - (Manufacture Discontinued) Application to drawings is equivalent to the application of AT&T Rating of "MFR DISC".

5.2105 PROVISIONAL - Application to drawings is equivalent to the application of AT&T Ratings of "AT&TCO PROVISIONAL" or "PROVISIONAL".

5.2106 SPECIAL - Application to drawings is equivalent to the application of AT&T Ratings of "AT&TCO SPECIAL" or "SPECIAL".

5.2107 PRELIMINARY - Application to drawings is equivalent to the application of AT&T Rating of "PRELIMINARY".

5.2108 INFORMATION - Application to drawings is equivalent to the application of AT&T Rating of "INFORMATION".

5.2109 STANDARD FOR A & M ONLY - Applied to drawings to indicate the latest vintage available of designs conforming with AT&T Rating of "A & M ONLY".

5.2110 A & M ONLY FOR MFR DISC. - Applied to drawings covering engineering and manufacturing requirements for modifications of designs conforming with AT&T Rating of "MFR DISC."

5.2111 AT&TCO APPROVED - Applied to drawings covering engineering and manufacturing requirements of designs submitted and approved by AT&T for Bell System use.

5.2112 STANDARD FOR LONG LINES - Applied to drawings covering engineering and manufacturing requirements of designs submitted by AT&T Long Lines Department.

5.2113 STANDARD FOR ( ) TELCO - Applied to drawings covering engineering and manufacturing requirements of designs submitted by a specific Telephone Company, whose name is specified in place of the parenthesis.

5.2114 WECO APPROVED - Applied to drawings covering engineering and manufacturing requirements for nonstandard designs requested by the Telephone Company and approved by AT&T for Bell System use.

5.2115 WECO SPECIAL - Applied to drawings covering engineering and manufacturing requirements for nonstandard designs requested by the Telephone Company for special applications such as non-Bell to Bell System or non-Bell to non-Bell interface and modifications.

5.3 Rating of Distributor Sales Drawings

5.31 Bell Laboratories and Western Electric drawings (except job drawings) prepared exclusively for use on distributor sales orders are rated as follows:

(a) Distributor Standard

(b) Distributor Special

(c) Distributor A & M

(d) Distributor MFR DISC.

→ Indicates new or changed information

Engineering Planning Manager
Common Installation Engineering

Reason for Reissue:
Par. 5 revised to agree with CI 97.110
Par. 3.08 changed to include "D1" and "D2" method wiring
Minor corrections Par. 2.1