

JOB SPECIFICATIONS, "A" SECTION

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1. SCOPE

1.1 This section covers the general practices applicable to the preparation of the "A" Section of the job bulk and/or formed cable specifications for Product Oriented Information System (POIS) and Regional Merchandise and Service (RMS), and supplements the general practices applicable to all types of job specifications.

1.2 The general practices for the "A" Section of the job specification shall also apply to the "A" Section of the cable specifications supplemented by the following.

2. JOB SPECIFICATION TITLE PAGE

2.1 The title page of job specifications covers the type of equipment being ordered and the system to which the equipment belongs, the telephone company's name, division, area or territory and the office name, city and state. All specifications on an order show the same office name or names. Each specification contains only one title page.

3. JOB SPECIFICATION HEADINGS

<u>CODE</u>	<u>HEADING</u>
GL	GENERAL
JS	JOB SUMMARY (in installing specification only)
SS	SUPPLEMENTARY SPECIFICATIONS (in installing specification only)
EP	ENGINEERING REFERENCE PAPERS
WI	WORK TO BE DONE BY THE INSTALLER
WC	WORK TO BE DONE BY THE CONTRACTOR (Turnkey Orders)
WH	WORK TO BE DONE BY THE SERVICE CENTER
RE	LIST OF REMOVED OR DISCONNECTED MATERIAL
GI	GENERAL NOTES FOR THE INSTALLER (in installing specification, and in framework, cabling and power specifications if required)
GC	GENERAL NOTES FOR THE CONTRACTOR (Turnkey Orders)
IN	INSTALLER'S NOTES
CN	CONTRACTOR'S NOTES (Turnkey Orders)
DN	SERVICE CENTER NOTES
DS	DRAWING
DS	SPECIFICATION DRAWING
CS	COMBINED SPECIFICATION AND CIRCUIT DRAWINGS

<u>CODE</u>	<u>HEADING</u>
FD	FRAMEWORK, ASSEMBLY, AND EQUIPMENT DRAWINGS
CD	CIRCUIT AND OTHER MAINTENANCE DRAWINGS
ED	INSTALLER'S EQUIPMENT DRAWINGS
IP	INSTALLER'S REFERENCE PAPERS
PB	PRINT BACK SYSTEM DRAWINGS
CP	CONTRACTOR'S REFERENCE PAPERS (Turnkey Orders)
DP	SERVICE CENTER REFERENCE PAPERS
TD	TELEPHONE COMPANY DRAWINGS
FR,FS	FUSE RECORD SHEETS
FI	FLOOR ALARM AND INTERRUPTER RECORD SHEETS
TA	TRUNK GROUP ASSIGNMENT CHARTS
TU	TRAFFIC ASSIGNMENT CHARTS
MP	PAPER MOUNTINGS AND PHOTOSTATS
3.01	<u>General (GL)</u>
3.011	The heading "General" is used in all job specifications. The particular equipment covered in the individual specifications is summarized in the following manner:
	(a) A list of the principal items furnished in the job specification showing the quantity and title of the equipment is required. In power specifications sufficient information is required to make clear the service the equipment is to provide.
3.02	<u>Job Summary (JS)</u>
3.021	The heading "Job Summary" is used only in the installing specifications. Under this heading a complete summary of the entire job is covered following the practices stated in PAR. 4. On a one specification job, however, the heading "Job Summary" is omitted where the complete information is shown under "General".
3.022	Change of traffic is included in the job summary, when the -92 specification is omitted.
3.03	<u>Supplementary Specifications (SS)</u>
3.031	The heading "Supplementary Specifications" is used only in the installing specifications. Under this heading a list of all specifications prepared for the job is shown following the practices covered in PAR. 4.

3.032 The Supplementary Specifications page generates the narrative "099 Customer's Drawings".

3.04 Engineering Reference Papers (EP)

3.041 Drawings and other papers listed under this heading are for reference only by the personnel of the engineering organization. They are not sent to the Installer or customer and are therefore not described in this section.

3.05 Work to be Done by the Installer (WI)

3.051 The Installer shall add or make changes in the equipment ordered under "Summary of Material" and as specified herein, in accordance with the drawings listed in this and associated specifications.

3.052 The Installer shall place either Western Electric or Non-Western Electric Co. manufactured shop wired equipments (those either completely or partially shop-wired), install and connect the "Outside of Local Cable" or "Outside of Unit or Panel" wiring without specific instructions under this heading. The only instructions to add to shop-wired equipment is covered in the explanatory paragraph following the heading "Work to be Done by the Installer".

3.053 Where new wiring list and job equipment drawings are prepared, the Installer shall work entirely from these drawings. The exception is modification of new equipment, which is covered in the specification under this heading.

3.054 No work item is required where the Installer utilizes manufacturing note on standard drawings.

3.055 The Installer shall place switchboard circuit apparatus and add installer's wiring without specific "add" work items under this heading. An exception is when the addition does not result in the ordering of circuit apparatus in the "B" Section of the switchboard specification.

3.056 The Installer shall extend power feeders, grounding, or frame and aisle lighting appearance to new or existing equipment.

3.057 The circuit "Title" will be omitted from the contents of the "ADD" work item.

- 3.06 Work to be Done by the Contractor (WC) (Turnkey Orders)
- 3.061 The contractor will erect and install the material ordered under "Summary of Material", and shall make topographical terrain changes as specified herein in accordance with the drawings listed in this specification.
- 3.07 Work to be Done by the Service Center (WH)
- 3.071 The Service Center will add wiring and associated apparatus and make changes as covered under this heading and deliver to the Installer on the job. The Installer shall place the equipment and install the "Outside of Local Cable" or "Outside of Unit or Panel" wiring.
- 3.072 Equipment modified by the Service Center is listed "General". All material not required for making the modification at the Service Center, even though furnished by them shall be covered in the regular specification.
- 3.08 List of Removed or Disconnected Material (RE)
- 3.081 Removed or disconnected material will be prepared only if a general note is included in the Telephone Company order.
- 3.082 All items that are covered by "Remove" or "Disconnect" shall have appropriate R notes. These notes shall be numbered consecutively, R1, R2, R3, etc.
- 3.083 For any removed equipment being placed in Class "C" Service Center stock, the Telephone Company will be responsible for insuring that all lists or groups are shown on the document being sent to the Distributing House.
- 3.084 Modifications expressed in terms of a Detail Change Sheet (DCS) as shown being removed, replaced, or disconnected will be included under this heading.
- 3.085 Plug-in units are not included under this heading.

- 3.09 General Notes for the Installer (GI)
- 3.091 The heading "General Notes for the Installer" will be used in the installing specification, and in framework, cabling and power specifications, if required. Notes applying to the Installer which are of a general nature, not associated with a specific item in the specification, will be shown under this heading. When this is the case the notes will not be duplicated under "Installer's Notes."
- 3.10 General Notes for the Contractor (GC) (Turnkey Orders)
- 3.101 The heading "General Notes for the Contractor" will be used in the 011 Specification for Turnkey Orders. Notes applying to the contractor which are of a general nature, not associated with a specific item in the specification, will be shown under this heading. When this is the case, the notes will not be duplicated under "Contractor's Notes".
- 3.11 Installer's Notes (IN)
- 3.111 Notes applying only to the Installer are shown under this heading, except that maintenance notes are shown on the wiring list drawing when there is such a drawing.
- 3.112 "Installer's Notes" are lettered sequentially, beginning with "A" for each specifications. For information only, the notes "CA" to "CZ" are automatically assigned by the computer when CCS and CCP Specifications are processed. All other Installer's Notes are part of a sequence of lettering scheme. Notes "I" to "O" may not be assigned, to avoid confusion with numeric characters one and zero respectively.
- 3.113 Notes referred to the "B" Section of the job specification can be used to replace work items to modify the material furnished.
- 3.114 Transition procedures are included under this heading, when applying transition material for major changes in existing equipment.
- 3.115 When new wired equipment is added, and the "Outside of Local Cable" or "Outside of Unit or Panel" wiring is in place, an "Installer's Note" is required to indicate that it is in place. The exception is when cable contains standard terminations that are always furnished for future applications.

- 3.12 Contractor's Notes (CN)
(Turnkey Orders)
- 3.121 Notes applying only to the contractor which pertain to a specific item in the specification will be shown under this heading.
- 3.13 Service Center Notes (DN)
- 3.131 Notes applying only to the Service Center Shops are shown under this heading.
- 3.132 Service Center notes are numbered above 101-200, as numbers 1 to 100 are reserved for other purposes.
- 3.14 Drawings (DS)
- 3.141 The drawings required for a job specification are listed under this general heading in five sub-sections as follows:
- (a) Specification Drawings
 - (b) Combined Specification and Circuit Drawings
 - (c) Framework, Assembly and Equipment Drawings
 - (d) Circuit and Other Maintenance Drawings
 - (e) Installer's Equipment Drawings
- 3.142 The sub-divisions listed in the preceding PARS. are explained respectively in PARS. 3.15 to 3.19. These drawings require supplements or change orders and reissues on changes and they make up what is commonly referred to as the "drawing list".
- 3.143 Issue numbers of drawings are listed in job specifications.
- 3.144 The symbols, F, G, M, etc., and their associated notes are shown immediately following the general heading "drawings" in job specifications and apply to drawings in the different sub-divisions. These symbols which are explained in PAR. 9.1 restrict the distribution of the drawings.
- 3.145 The drawings listed under the heading "Installer Reference Papers" are covered in PAR. 5.
- 3.146 Telephone Company drawings, including A.T.&T., Automatic Electric and similar drawings, used by the shop for manufacturing purposes, are listed in the same manner as other manufacturing drawings except the company's name is added.
- 3.147 Drawings designated "PP" indicates both paper prints and microfilm are to be shipped.
- 3.148 The following list of drawings are furnished to the Installer:
- (a) Job Drawings
 - (b) Equipment Manufacturing Specification and Standard Equipment Drawings.
 - (c) Wiring Diagrams, Schematic Drawings, and "CD" Sheets.
 - (d) Detail Change Sheets
 - (e) Terminal Assignment Lists
- 3.15 Specification Drawings (DS)
- 3.151 All standard equipment specifications are listed under this heading regardless of whether material is being ordered from them or they are being furnished purely as an equipment drawing. Also equipment manufacturing specifications are listed. This includes all "J" specification drawings and any other standard equipment specifications even though they are numbered in the "ED", "H", "T", or "C" series.
- 3.152 The "KS" specifications are listed under this heading when they consist of circuit equipment to be wired into the office and are ordered by KS-specifications or as part of equipment manufacturing specification.
- 3.16 Combined Specification and Circuit Drawings (CS)
- 3.161 This heading lists all equipment manufacturing specifications which also contain the wiring diagram information (no associated circuit drawing has been prepared). Also the associated schematic drawing

is listed here, in accordance with the same rules for listing schematic drawings under "Specification Drawings" or "Circuit and Other Maintenance Drawings."

3.17 Framework, Assembly and Equipment Drawings (FD)

(a) Drawings are listed as follows under this heading:

- (1) Standard Equipment Drawings
- (2) Job Equipment Drawings (except Distributing Frame Equipment Drawings)
- (3) Switchboard or Bay Cabling Plans or Method of Cabling Drawings
- (4) Floor Plans
- (5) Job Cabling Plans
- (6) Power Conduit and Cable Running List
- (7) Standard Local Cable Design Drawings

3.18 Circuit and Other Maintenance Drawings (CD)

Drawings are listed as follows under this heading:

- (a) Wiring diagrams and schematic drawings
- (b) All other drawings required by the maintenance force such as:
 - (1) ~~Job Wiring List, and Job Wiring List "R" or "W" Drawings~~
 - (2) Office Record Drawings (-000) or ORI (normally in the Installing Specification)
 - (3) Job Cross-Connection Charts or Drawings
 - (4) Particular Circuit Charts
 - (5) Final Selector Locating Charts
 - (6) Interconnection Charts or Drawings

- (7) Alarm Trunk Application Schematic Drawings
- (8) Job Application Schematic Drawings
- (9) Emergency Alarm Layouts
- (10) Alarm System Schematic Drawings
- (11) Job Power Wiring Diagrams
- (12) Traffic Schematic Drawings (in -02 Spec.)
- (13) Apparatus Location Drawings (See Sec. 203)
- (14) Distributing Frame Equipment Drawings
- (15) Magnetic Data Listings (ESS Equipment)
- (16) Program Documents (ESS Equipment)
- (17) -09 Drawings when applicable.
- (18) Circuit Pack Schematic (CPS) Drawings

3.19 Installer's Equipment Drawings (ED)

- (a) Cable connecting drawings, Switchboard power cable connecting drawings, standard cross-connecting drawings (other than wiring diagrams), standard jumper assignment charts, Switch Conversion Sheets (SCS), Detail Change Drawing (DCT), Program Change Sheets (PCS) and Growth Recent Change (GRC) documents are listed under this heading.
- (b) Cable connecting drawings are listed in the cabling specification. Switchboard power cable connecting drawings shall be listed in the specification in which the associated equipment is ordered.
- (c) Job and Standard Detail Change Sheets (DCS) and Circuit Revision Instructions (CRI) also appear under this heading.

3.20 Installer's Reference Papers (IP)

- 3.201 Refer to PAR. 5 for a description of the information appearing under this heading.

- 3.21 Print Back System Drawings (PB)
- 3.211 Print back system work job drawings and titles are listed when required.
- 3.22 Contractor's Reference Papers (CP) (Turnkey Orders)
- 3.221 This heading is used only in specifications for Turnkey Orders. Only drawing numbers and titles are required.
- 3.23 Service Center Reference Papers (DP)
- 3.231 The heading "Service Center Reference Papers" serves the same purpose for the Service Center as the heading "Installer's Reference Papers" serves the Installer and the same practices will apply.
- 3.24 Telephone Company Drawings (TD)
- 3.241 The Telephone Company drawings required by the Installer shall be obtained by the Planner from the Telephone Company. The issue is listed if known.
- 3.25 Fuse Record Sheets (FR)(FS)
- 3.251 These headings will be used only in -64, -65 and -69 specifications when scheduled. Otherwise the installing specification (092, or 500 etc.) contains one or more of the following items:
- (a) Fuse bay binder books
 - (b) Fuse record sheets
 - (c) Ringing power and tone distribution assignment binder books
 - (d) Assignment sheets
- 3.252 The "FR" page is used to order binder books and the associated fuse record or ringing assignment sheets. The "FS" page is used to order replacing or supplementary fuse record or ringing assignment sheets only.

- 3.26 Floor Alarm And Interrupter Record Sheets (FI)
- 3.261 This heading lists group frame, drawing number, issue and title as follows:
- (a) Floor alarm binder book and record sheets.
 - (b) Replacing or supplementary floor alarm record sheets
 - (c) Interrupter record binder book and binder sheets
 - (d) Interrupter backward tracing record book and blank record sheets when required by the Telephone Company.
- 3.27 Trunk Group Assignment Charts (TA)
- 3.271 When assignment charts are required for trunk group usage equipment, they are listed under this heading.
- 3.28 Traffic Assignment Charts (TU)
- 3.281 Used for a listing of traffic usage recorder assignment charts under this heading when required for Traffic Usage Register and Traffic Usage Frame and Assignment Charts for Traffic Measurement System 1A. Two sets of pages made by B and W direct reproduction process from the drawings listed are furnished.
- 3.29 Paper Mountings and Photostats (MP)
- 3.291 Orders for cardboard mountings and reproductions of designation cards, terminal assemblies, charging circuits, Installer's running and connecting sheets, floor alarm frame work sheets, trunk RR cable work sheets and Call Data Accumulator (CDA) assignment charts are under this heading.

4. INSTALLING INFORMATION IN JOB SPECIFICATIONS

4.1 -092 (or Other Installing) Specification

4.11 The installing specification under the heading "General" includes a summary of the equipment ordered therein. A "Job Summary" may be used in the installing specification when an -092 specification is not scheduled.

(a) The extent and type of added equipment; or the changes in traffic to be affected by modifications being made is listed in the installing specifications.

(b) A list of the major items of equipment to be installed, and information as to any special conditions associated with the equipment is in this specification.

(c) On a one-specification job, items of job summary shall be included under "General".

(d) If a change in traffic is apparent from equipment changes being made, this information may be included in a job summary placed in the installing specification when an -092 specification is not scheduled.

4.111 The information given in accordance with (a) of PAR. 4.11 is not apparent from the wiring lists and the material ordered, and is usually obtained by the Engineer from the Telephone Company's specification.

4.112 The information given in accordance with (b) of PAR. 4.11 for large new or addition jobs is usually given by showing in the list of "Supplementary Specifications" after each specification the number of sections, frames, desks, bays, etc., with their office location numbers. On smaller jobs a list of the major items of equipment is given under the heading "Job Summary" and only the number and names of the specifications are listed under the heading "Supplementary Specifications".

4.12 Special conditions are covered for both large and small jobs by narrative form notes, e.g., any special procedure of installation that may be required by the Telephone Company such as advance installations or a particular sequence of completion of

portions of the job or of modification of equipment which must remain in service during alteration or relocation.

4.13 The possibility of field modification of coded circuit packs (CP) is predetermined by the controlling PECC.

4.14 An example of a Step-by-Step Job Summary follows:

Switching Equipment

New Step-by-Step equipment arranged for 2-party selective and 4-party semiselective ringing which will replace existing manual office in same building.

8,600 subscriber lines, 11,000 connector terminals and 48 repeaters.

Extended area service will be available to certain subscribers.

Intercepted calls will be routed to intercepting operator at No. 3 tollboard.

A new test center and a dial tandem unit for AB toll service will also be furnished.

Power Equipment

One 863C AC/DC ringing power plant.

One 48 Volt 302B 2000 AMP Power Plant E/W Two Strings of Batteries and Two 400 AMP Rectifier Bays.

4.2 Framework or Assembly and Equipment Specifications

4.21 Each framework or assembly and equipment specification under the heading "General" includes a complete summary of the equipment ordered therein requiring manufacturing and installing effort. Any information concerning an item in the specification that will aid the Installer in understanding the reasons for the changes, especially any modification items, is given with an "Installer's Note" associated with the item. On a one-specification job the complete summary is covered under the heading "General". Therefore the heading "Job Summary" is omitted.

4.3 Power Specifications

4.31 The power specifications includes a complete detailed summary of the equipment being furnished. Sufficient

information is given to make clear the service it is to provide and briefly, the method of operation. The control and reserve equipment is listed.

5. INSTALLER'S REFERENCE PAPERS

5.1 The kinds of drawings described in PAR. 5.11 which are required by the Installer only and of which he does not need copies of supplements or a later issue are listed under the heading "Installer's Reference Papers." Since the Installer does not require later issues, the issue numbers are omitted. Issue numbers of Detail Change Sheets are listed.

5.11 The kind of drawings and papers listed under the heading "Installer's Reference Papers" are:

(a) Drawings for Equipment Modified: If wiring is to be changed to agree with another drawing, the existing drawing and also outside supplier's drawings are listed. Outside supplier drawings for new equipment added are ordered in the "B" Section.

(b) Drawings for Equipment Relocated: If equipment is to be relocated, the wiring diagrams covering the "Outside of Local Cable" or "Outside of Unit or Panel" wiring which will be reconnected are listed.

(c) Drawings for Equipment Removed: For equipment being removed, drawings are listed as follows:

- (1) Drawings referred to in the removal note.
- (2) Any wiring diagram which the Installer will need to disconnect and care for the "Outside of Local Cable" or "Outside of Unit Panel" wiring.
- (3) Where circuits from the equipment being removed are connected to other frames, etc., it will often be necessary to furnish the Installer with the wiring diagrams involved at the other end of the cable in order for him to disconnect wires at that end of the cable.

(d) Drawings for Equipment Recabled: Drawings of wiring diagrams of the recabled wiring, even though they may be outside supplier's drawing are listed.

(e) Drawings of Existing Equipment for Cable Terminations: Wiring diagrams, schematic drawings, circuit description sheets, and equipment manufacturing drawings that are needed as an aid to the Installer in connection of these cables are listed.

(f) Drawings Listed on Other Drawings: If framework or equipment is ordered from a drawing and that drawing in turn lists other drawings in the stock list or notes, only these drawings are required by the Installer are listed. Drawings covering stamping, drilling, mounting and assembly information and "Installer's Notes" are required.

(g) Local cable Plans: If a local cable is to be placed by the Installer, the local cable plan drawing is listed.

(h) "N" Drawings: "N" Drawings are furnished to show existing wiring or equipment arrangement when the "N" Drawing is not originated on the job.

(i) Apparatus Drawings: If apparatus is modified or drilled for by the Installer. Apparatus drawings which cover layout of holes, mounting or assembly information required by the Installer are also listed. On Engineer and Furnish orders apparatus is not modified in the field since apparatus drawings are not sent to the Telephone Company. The apparatus is replaced unless the modification is covered by a "KS" Specification, "ED" drawing or similar information.

(j) "KS" Specifications: If equipment is to be modified in the field by a "KS" Specification, the "KS" specification is listed. "KS" Specifications which cover mounting or assembly information required by the Installer are also listed.

(k) Drawing for Locating Apparatus on Mounting Plates with 1/16" Centers: Drawing H-224-000 is listed whenever the Installer is to add apparatus on D-48928 or D-48930 Mounting Plates in order to aid in locating the different apparatus positions involved. The "A" Drawings are listed to show apparatus layout of holes.

(l) Drawings for Telephone Company furnished equipment may be listed under other headings.

6. EQUIPMENT MODIFIED BY SERVICE CENTER

6.1 The portion of the job necessary for installation of the equipment is covered in the 010 specification. The equipment modified by the Service Center however, is referred to under "General" but is not included in the summary of material of the regular specification. All material not required for making the modifications at the Service Center is covered in the regular specification, even though such material may be furnished by the Service Center.

7. DRAWINGS REQUIRED BY INSTALLER

7.1 The following drawings are furnished for the Installer's use:

- (a) Job Drawings
- (b) Equipment Manufacturing Specifications and Standard Equipment Drawings
- (c) Wiring Diagrams, Schematic Drawings, and "CD" Sheets
- (d) Detail Change Sheets
- (e) Terminal Assignment Lists

8. ADDITIONAL DRAWINGS FOR TELEPHONE COMPANY'S USE

8.1 Standard Drawings and Job Drawings are furnished on an automatic basis and sent directly from the distribution center to the Telephone Company. The list is generated by the job specification.

9. SYMBOLS USED IN DRAWING LIST

9.1 Symbols Used in Drawings List are as follows:

- (a) Drawings designated "F" are not required by the Installer.
- (b) Drawings designated "G" require the supplying organization to show restrictive legend stamp.
- (c) Drawings designated "M" are common to more than one specification. Issue will be found in the 092 specification.
- (d) Drawings designated "PP" indicates both prints and microfilm are to be shipped.

10. WIRING LISTS IN JOB SPECIFICATIONS

10.1 General Requirements

10.11 In general, the record of the wiring of equipment is maintained on drawings. In the case of equipment approaching their ultimate, old offices soon to be replaced and equipment on which the records are poor, the records have not been put on drawings and are maintained in the job specifications. The information in PARS. 10.12 to 10.147 applies to wiring lists on drawings or job specifications.

10.12 Shop and Installer's Wiring Combined: If a wiring diagram has separate figures for "inside" and "outside" of local cable wiring, all of the information is listed together in the wiring list under one heading.

10.13 Wiring Only: For wired only circuits it is the general practice to furnish both the local cable and "outside of local cable" wiring. If the wiring or cables for wired only circuits are furnished contrary to these practices, the fact is indicated on the wiring list.

10.14 Optional Wiring, Apparatus or Adjustments are handled as follows:

10.141 If certain options depend on information to be furnished by the Telephone Company and the information cannot be obtained before installation, the Installer is informed by a note in the specification that the information will be furnished by the Telephone Company.

10.142 The modifications of equipment or the cutting or disconnecting by the Installer of wiring furnished by the shop (as in the case of stocked equipment) to meet job requirements. Such changes which are furnished automatically but which are changed to meet a particular job condition will be covered under "Work to be Done by the Installer". However, these changes will not be covered under this heading when instructions are given to the Installer on standard drawings. (i.e., Maintenance Notes shown on drawings and marked with "X" in Installers column.)

10.143 Automatic circuit figures and options, such as "To Figures A or B, To Figure A unless otherwise specified" are listed in the wiring list.

10.144 Optional Relay Adjustment: For relays that have more than one adjustment shown on the schematic drawing, the adjustment to be used is covered as a maintenance note on the wiring list drawing.

10.145 Universal Wiring: In the case of associated wiring diagrams one of which shows complete (i.e., universal) wiring for all of the drawings, the "universal" drawing is specified to cover the complete wiring and the particular wiring diagram that fits the job is specified to cover the apparatus. If a wiring diagram shows universal wiring for two or three figures the cable is wired universally and the figure required is equipped.

10.146 Office Circuit Numbering: For circuits that are numbered on the equipment, the office circuit numbering of both the equipped and wired only circuit is shown in the wiring list. Arbitrary numbers are not assigned in the wiring list to miscellaneous circuits that are actually not numbered on the equipment.

10.147 Modification Wiring Diagrams are not specified for new or additional equipment unless authorized in the title of the drawing or by the standards engineer. The reason is that they are prepared for modification of present wiring and may contain unsatisfactory wiring conditions if used for new or additional equipment, such as splices, obsolete wire colors and awkward wiring arrangements.

10.2 Modification of Local Cables

10.21 Detail Change Sheets: If cables are to be modified, the Installer is provided with detail sheets for conditions covered in Section 40A.

10.22 Supplementary Local Cable: Where modifying or adding features to existing equipment that require extensive changes and it is not practicable to have the Installer modify the existing cable a supplementary (or new) cable is furnished.

10.3 Equipment Transferred

10.31 For equipment which is to be transferred bodily from one exchange to another the wiring is covered on the wiring list drawing for the office to which the equipment will be transferred. If the wiring modifications are to be made they are covered in the specification under the heading "Wiring and Apparatus to be Placed by the Installer."

10.4 Notes in Job Specifications

10.41 Non-maintenance notes are placed in the specification in all cases. Notes are assigned letters A to Z, AA to AZ, etc. Notes shown on the wiring list drawing are 51 and up. Notes pertaining to the substitution of cable and wire are considered as non-maintenance notes as such appear on the wiring list drawing.

10.42 Note References are handled as follows:

10.421 For new offices or new units a reference in the specifications to all wiring list is covered only on the wiring list drawing which shows a reference to all notes.

10.422 Present Offices:

(1) For new equipment being ordered for present offices, references in the specification are omitted to all notes that affect the wiring, as the wiring is covered in detail only on the wiring list drawing which shows a reference to all notes.

(2) For present equipment a reference is shown in the specification opposite the item to all notes that affect the wiring list.

(3) For other notes such as those covering framework modifications or the location of non-wired material, a reference is shown in the specification opposite the heading covering the equipment affected.

10.5 Wiring List Changes on Open Orders

10.51 If a wiring list drawing exists and changes are required on an open order, the supplement or the changed wiring list drawing will provide sufficient information to the field regarding the change.

EXCEPTION A: When a job specification is completed which had been issued as incomplete due to engineering or manufacturing information not being available at the time the specification was prepared, the additional wiring list changes are covered in Class "M" appendix in addition to changing the wiring list drawing.

EXCEPTION B: When changes in wiring list information are necessary due to engineering omissions which are billable, the additional wiring list changes are covered by a Class "A" appendix in addition to changing the wiring list drawing.

10.6 Definition of Terms

10.61 The terms which appear under "Work to be Done by the Installer" in job specifications - are as follows:

<u>Term</u>	<u>Definition</u>
Activate	When spare or fully equipped idle units, shelves, positions, frames, etc., are to be placed in service. If special steps such as removal of blocks from relays, removal of ground from a particular lead, connection of an external switch-board cable etc., are required to place the circuit, unit, shelf etc., in service, the exact operations the Installer must perform will be stated in an "Installer's Note".
Add	Required when new or additional equipments are to be furnished. When adding a wiring diagram figure of wiring only to an existing circuit, consideration should be given to whether the addition is a circuit modification. (a) "Circuits" includes wiring and apparatus unless otherwise qualified. "Wiring" includes installing and connecting the local cable wiring or surface wiring and all of the outside wiring. (b) The addition of a local cable associated with an Add Work Item shall be covered by an Installer's Note. (c) When additional circuits are added to existing circuits of shop-wired equipment or installer wired equipments are added, include the code of the equipment manufacturing specification. When the outside of unit wiring is in place include this information in an Installer's Note and specify the far end termination.

<u>Term</u>	<u>Definition</u>		
	(d) When the addition requires modification of existing circuits or the rearrangement of apparatus, mounting plates, etc., and the modification is covered in a modification, the code of the equipment to be mounted is shown in this Add Work Item. The modification specification is included in an Installer's Note.	Extend	Existing circuits are being extended into locations in which they did not previously appear. (The location for all appearances in terms of sections, positions, panels, frames, terminals, circuits, etc., is specified).
	(e) For the addition of "External Cabling Only" to existing equipment, an indication that cable only furnished is included.	Magnetize	Required when changes must be provided in the magnetic data that exists on the magnetic storage devices of a telephone system.
Assemble	When individual components such as teletypewriter equipment, are fitted together to form a complete unit come under this item.	Make Spare	A circuit, unit, shelf, position, frame, etc., is to be taken out of service. This is normally accomplished by removing cross-connections, shown on Western Electric drawings and fuses. This information is generally obtained from the Telephone Company by the Engineer and recorded on the wiring list drawings. Any special conditions are specified in the job specification.
Assign	Spare or fully equipped idle miscellaneous circuits or terminals on banks and switches or keys, jacks, lamps etc. are to be associated with added equipment. If the assignment is to be made using existing cables an "Installer's Note" will explain. If new switchboard cable is to be used, this is specified in the Installer's Cable Running List.	Modify	Apparatus, wiring or both of existing circuits are being changed to provide new or changed circuit conditions and all or a part of the present wiring is being reused, or non-circuit apparatus is being changed. Only the figures and/or options directly associated with the modification are shown.
Connect	Existing wiring is to be connected to apparatus in place and no additional wiring is furnished.		(a) When the modification of a circuit, as indicated by the Telephone Company, results in a change to the Common Language Equipment Order (CLEO) code, the Installer shall be instructed in a note to re-stamp the equipment. The Installer's Note shall list the existing and new code.
Disconnect	Wiring is to be disconnected from the apparatus left in place. (Complete details of what wiring is to be disconnected is specified and the fact that the apparatus is not to be removed is definitely stated).		
Equip	Apparatus is being added and connected to existing wiring.		

To Agree With Required when a wiring diagram, figure, wiring or apparatus options or non-circuit apparatus is being replaced by a new condition, only the new condition is listed.

To Remove and/or To Add Required when modification involves the straight removal and/or addition of figures and/or option or non-circuit apparatus. To modify - to remove items, the figure or options to be removed need not be listed in the modify portion of the item.

Rearrange Required when the cross-connection on a present Junctor Grouping Frame or other Central Office Equipment is to be changed by the reassignment, removal and/or addition of cross-connection jumpers, including jumpers to serve new equipment.

Reassign Required when an existing working circuit is to be disassociated from one circuit and reassociated with another circuit. (The figures which show the jumper connection are listed and both the present and new assignment or termination are given.)

(a) Reassign and recable are combined when recabling is necessary to accomplish the reassignment.

Recable Required when only either or both ends of a switchboard or power cable is being reterminated. This may involve the replacing of existing cable with new cable.

Relocate Apparatus, wiring or both of one or more circuits are being changed from one location to another, or non-circuit apparatus or equipment is being changed from one location to another.

Connector Splice When using Modular Connectors, i.e., 710 type, when wired equipment is relocated by splicing out inter-connecting cable, when reused equipment with attached stub cable is added, or when modification for an additional appearance of circuit equipment is required.

Remove

Splicing by Modular Connector must be authorized by the Telephone Company who is responsible for also indicating the approximate location of splices and the splicing arrangement.

Apparatus, wiring or both of one or more circuits are to be removed, or non-circuit apparatus or equipment is to be removed. (When removing only the apparatus, a qualifying statement "Apparatus Only" is added. When removing only the wiring of a circuit, a qualifying statement "Wiring Only" is added.)

(a) If the far end termination cannot be determined from the Office Record, and there is reason to believe that the Telephone Company contributed to the inaccuracy of the records, an agreement between Western Electric Company Engineering and the Telephone Company for acceptance of the billing for installation's effort in searching out and identifying cabling associated with the removal item. The removal work item shall refer to an Installer's Note, acknowledging the agreement.

(b) If deficient office records are a W.E. CO. responsibility and an informal effort has been made to obtain the missing location information, an Installer's Note shall state that the far end termination could not be located by Engineering, and the information is cross-referenced to the removal item.

(c) Abbreviated work items may be used for partial removals when the removed equipment is to be scrapped and the removal is not covered by a firm contract proposal for major equipment removal. The far end terminations are listed only when they are located on equipment not being removed.

(d) When disposition of removed equipment information

is given in the TEO, this information is included in an Installer's Note.

Major Central Office Equipment Removals
(Firm Contract)

This type of removal is based on the dismantling of obsolete central offices in which all removed equipment is junked. Salvage of valuable scrap material is part of this operation. A firm contract proposal is prepared for the Telephone Company for the complete removal only. A salvage credit is included in this proposal. Removal of the equivalent of 25 frames or more is the size considered economically feasible under this service offering. Smaller equipment groups may be accepted if the cost of estimating and order processing are given due consideration or if the job is to the mutual advantage of all organizations involved.

Two-Order Concept

An EF&I is desirable to "condition" the office for the equipment removal, whether only part of the office is removed or the complete office is dismantled. It is necessary to retire the equipment, as well as to void (or R-drawing) the affected office drawings, in preparation for the major equipment removal as defined by the firm contract proposal. The conditioning order will include any relocations, removals for reuse, modifications, recabling, etc., to keep the remaining equipment in service after the major equipment removal. The Ship Date of the conditioning order is 7 weeks prior to start of the equipment removal.

Major Equipment Removal Order

No specification is scheduled on the removal order.

The Conditioning Order

This order requires advance information from the Telephone Company on frames or equipment to be specified for removal, also the desired start date of the removal by Installation. Office drawings for all equipment to be removed as part of the major equipment removal shall be voided (or R-Drawing) on this order.

Renumber

Office numbering of present positions, relay racks, bays, frames, circuits, etc. is being changed and no other changes are involved (the old numbering and new numbering is given). The term renumber is used even though the actual work involved may be restamping, restenciling, etc.

Reopen and Close

Routing switchboard and power cable or wire through existing cable hole or slot or sleeve ferrule located in floor, wall, partition, roof or end panel of CTS, switchboard, desk, etc.

Retire in Place

Equipment is retired and left in place. (This term is used only when specifically authorized by the Telephone Company inasmuch as the price of the equipment so designated is removed from the Telephone Company's Capital Account.) All switchboard cable originating from and terminating on the frame, unit or position being retired in place is to be removed (at both ends) i.e., at the retired frame, unit or position, distributing frames, fuse boards, other frames, unit or positions etc. Outside of local cable wiring shall be removed by a separate work item.

(a) Fuses are to be removed at the fuse bay, PRTD, etc. and fuse bay drawings corrected to remove the job information.

(b) Terminal strips are to be removed at all distributing frames (when other cable terminations are not involved) and equipment drawings corrected to remove the job information.

(c) A note on the wiring list drawing shall be referenced against the retired-in-place equipment. The note shall

indicate the circuits as being retired-in-place, any deviations from the normal retired-in-place condition and shall include provision for a running record of future CN's which are not applied to this equipment at the time they would have been applied if the circuits were active.

(d) When the Telephone Company deviates from the instructions in the above information, instructions must be included in a note to the Installer as well as being covered in a note on the wiring list drawing.

(e) If Retired-In-Place equipment is to be reinstated, it shall be ordered in the job specification's "Summary of Material, as a Telephone Company furnished item, to reinstate it on the Telephone Company's Capital account. If the equipment is added to the same office or another office in the same building and original locations is to be maintained, an Installer's Note or a Summary of Material note is used to show that the equipment presently exists in the location specified.

(f) The terminations under this heading may be specified under "General Notes for the Installer", or use of an Installer's Note in the removal specification.

Retire for Removal

This heading is required when equipment is to be retired in preparation for the removal of equipment as scrap. This item shall only be used on a "conditioning" order associated with a major equipment removal contract proposal.

(a) This work item allows the Installer to retire equipment by removing fuses and tagging equipment and permits engineering to immediately void or change the associated equipment office drawings to indicate the equipment as removed.

(b) The far end terminations, removed power fuses or other auxiliary supplies, terminal strips on distributing frames, etc., shall be listed for the Installer to tag as "retired for removal".

(c) Void or R-Drawings shall be issued for all equipment being retired for removal. These drawings shall be issued on a conditioning order for previously retired-in-place equipment when now it is also scheduled for removal on the associated removal contract proposal.

Rewire

Wiring of existing circuits is being changed to provide new or changed circuit conditions and none of the present wiring is reused, and either a new or supplementary local cable is furnished for the new circuit arrangements.

(a) To agree with requirements which will be the same, they shall reflect the new condition.

(b) When "wired only" circuits are to be rewired and equipped the term "Rewire and Equip" shall be used.

New Technology Documentation

When the equipment specification drawing includes an engineering note, "This document contains complete engineering information for subject equipment. Job Information shall be recorded by List or Group". Then any changes to this equipment that is in the field shall consist of work items using the equipment specification and lists or groups instead of T-drawing, figures and options.

(a) Typical examples of the New Technology Documentation work items are as follows:

Modify: 1 J4A001A-1 List 1
 Time Slot Interchange
 Frame TS1-00
 To Add: List A

Modify: 2 J4A001AA List 1
 PU Bus and Interface
 Units
 Units 0 & 1 TSI-00
 To Add: List A

apply as per the following example:

(a) Designation Card and Method of
 Wiring District Timing Frame

Photographic Reproductions per
 T _____ Fig. _____ To _____.

11. TRANSITION WORK

11.1 In general the Installer will order all additional material required during installation for transition purposes on a Telephone Company approved requisition. In case, however, the engineer knows definitely that certain material is required, it will be ordered in the specification and designated "F".

11.2 If the Telephone Company specifies a method of procedure information in the specification is added as follows:

"The following notes cover a proposed method of transition procedure and are listed to facilitate the preparation of the Detailed Method of Procedures by the Installation Organization. Any questions regarding this proposed method should be taken up with the Telephone Company through the regular channels rather than the Western Electric Engineering Department."

11.3 In addition to the Telephone Company's method of procedure, any other information that may be useful to the installer in making the transition is listed.

12. DESIGNATIONS CHARTS AND CARDS

12.1 Charts Mounted on Equipment by Shop: These include all charts similar to "Apparatus Designation Subscribers Link Test Set" and "Apparatus Designation Chart District Selector Test Frame." These charts are ordered in the associated standard equipment specification.

12.2 Charts and Cards Mounted on Press-board or Shipped Unmounted: These include all charts similar to "Designation Card and Method of Wiring District Timing Frame", "Charging Circuit" and terminal assembly drawings. Papers of this class are ordered under the heading "Paper Mountings and Photostats" in the job specification covering the unit on which the charts

12.21 Changes in papers of this class are made by appendices until three weeks before job completion. After this date the Installer will requisition new designation cards as required.

13. SUPPLEMENTARY INFORMATION

13.1 General Requirements

13.11 To reduce to a minimum the amount of information to be obtained and verified by the Installer on the job, the following practices are followed:

(a) Information regarding "No Record Options" and/or strapping added by the Installer shall be included in an "Installer's Note", referenced to the summary of material item.

(b) As it is impossible to determine the facilities information on the job, the line engineer obtains the facilities information from the Telephone Company and covers it in an "Installer's Note" similar to the following:

The hybrid repeating coil groups are to be used with the following facilities:

Circuits-----Type of Line-----
 Circuits-----Composited-----
 Circuits-----Noncomposited-----
 Circuits-----Carrier line filters-----
 Circuits-----Signaling-----
 Circuits-----Loading-----

(c) Information required by the Installer and cannot be obtained from the Telephone Company prior to installation, shall be included in an Installer's Note to be furnished by the Telephone Company during installation period.

13.12 The Installer shall not be asked to check any equipment in an office for purpose of bringing drawings up to date.

13.13 The Installer shall not be asked to determine the type and quantity of circuits to be modified.

13.14 Wherever possible, the Installer shall not be asked to make up modification details. Every effort shall be made to furnish the Installer with the correct details from the factory. If the modification can be made from a standard detail, such as a piece part, and the modification work involves little effort, it is permissible to furnish the standard details and the Installer is requested to make the necessary changes to fit the job.

13.15 The Installer shall not be asked to select a location for mounting apparatus or equipment. All apparatus and equipment shall be assigned a location by engineering.

13.16 Instructions to the Installer to purchase material locally shall be assigned a location by engineering.

- (a) Exhaust pipe and fittings for engines in multifloor buildings only.
- (b) Distributing frame designation boards.
- (c) Wood blocks, and battens, for support of auxiliary framing, cable racks, and ladder tracks to ceilings or walls.
- (d) Material for closing detail of a Cable Turning Section.

14. "A" SECTION OF CABLE SPECIFICATIONS

14.1 Title Page

14.11 The title page will be prepared in accordance with practices, except job specifications containing and/or planned to contain cable running list.

14.2 Secured and Unsecured Cable

14.21 A note is added under the "General" heading in the "A" Section of each bulk and formed cable specification to cover the footage of secured cable ordered, as indicated in the following conditions.

- (a) When all cables in the specification are run either secured or unsecured, add the following note:

"All cables are run secured (unsecured)."

14.22 All cables on vertical runs are counted as secured.

- (b) When cables in the same specification are run both secured and unsecured, a reliable approximation of the footage of secured cables shall be covered by the following note:

"Approximately _____ feet of cable are run secured."

Note 1: The notes above do not apply to wire, power cables or a few miscellaneous cables ordered in an A&E (installing) Specification.

Note 2: Information conveyed in the above notes shall be adjusted, as required, to reflect the effect of appendices changing the total quantity of secured or unsecured cable furnished.

14.3 Cable Holes & Slots

14.31 On additions to existing offices where cables or power leads are routed through present cable holes or cable slots, definite instructions will be included under the "WI" heading in the last cable specification on the order as follows:

<u>Term</u>	<u>Qty</u>	<u>Description</u>
Reopen & Close		Cable Holes & Cable Slots as Follows:

<u>Cable Hole or Slot</u>	<u>Fl.</u>	<u>Location</u>
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14.32 The cable hole, floor and cable hole location such as column, pilaster, partition, etc., on all jobs on which cables or power leads are to be run through existing holes are specified.

Where it is necessary to reopen slots under distributing frames the portion of the slot to be reopened will be defined in terms of the vertical numbers served.

14.33 When cables are initially routed through end panels or roofs of cable turning sections, switchboard or desks, in the cable specification under "WI" heading the following is specified.

<u>Term</u>	<u>Qty</u>	<u>Description</u>
Add		Cable holes in the roof, end panel of CTS, Swbd, desk as required, and provide the necessary material for closing the cable hole. The closing details shall be made from wood obtained locally.

14.4 Listing of Drawings in Cable Specifications

14.41 Method of Cabling Drawings:

All method of cabling drawings under "FD" heading for new equipment which are required for the Installer's information are listed. Method of cabling drawings for existing bays, frames, racks, switchboards, etc., will be listed under "IP" heading if location and method of installing additional cables involved would not be readily apparent from a physical check of the arrangement of the existing cabling.

14.42 Method of cabling drawings for Broadband Carrier equipment (duct type framework) bays will be listed in all cases for new and existing bays to which additional cables are run.

14.43 Job Cabling Plans and Floor Plans:

Only such job cabling plan and floor plan drawings as are required for the installation of the equipment involved are listed. The changed floor and cabling plan drawings under "Framework, Assembly and Equipment Drawings" heading are listed. Floor and Cabling plans that have not been changed are listed under "Installer's Reference Papers" heading.

14.44 Cable Form Drawings

(a) The cable form drawings under the "FD" heading are listed Drawings designated as not required by the Installer, except where cables normally formed in the shop are furnished in bulk, or where the form drawings contain notes or other information required by the Installer.

(b) Drawings covering connecting information for the unformed ends of switchboard cable, when available, are listed.

14.45 Switchboard Cable Connecting Drawings:

List switchboard cable connecting drawings under the heading of "Installer's Equipment Drawings" in the cable specifications. Provide sufficient title information to permit ready identification of the equipment covered on the drawing.

Engineering Planning Manager
Common Installation and Services

Reason for Reissue:
Section completely
Revised