Perception® II

ELECTRONIC BUSINESS COMMUNICATIONS SYSTEM

INSTALLATION AND MAINTENANCE MANUAL

TOSHIBA AMERICA, INC.

Telecommunication Systems Division

SERIAL NO. PII 5030

TSD 88-11-21 3M PRINTED IN THE U.S.A.

D-02 Software Release Information (continued)

The Transfer Recall Timer is assigned in response to the RTO prompt in the **DSD2 Program.** The Transfer Recall Termination Destination is specified in response to the TRCL prompt in the **DTRK Program.**

4) **Outgoing Call Restriction on Private Lines: D-02** software allows selected stations to be excluded from making outgoing calls on their appearing private lines. Consequently, these lines are reserved exclusively for answering incoming calls. If a private line appears on more than one station, then each individual station can be individually restricted from using the line for outgoing calls. Outgoing call restriction on a private line is assigned by entering the station's port number in response to the OTR prompt in the **DTRK Program.**

As a result of **D-02** software developments, two floppy disks are now required for the storage of operating and maintenance data. One of these disks (System FD) is used specifically for the system program, customer data, and the DSYS and DTRF maintenance programs, while the other disk (Maintenance FD) is used exclusively for all other maintenance programs. A separate disk drive for each disk is required for Remote Maintenance in PERCEPTION II and PERCEPTION$_e$ systems (PERCEPTION I systems with **D-02** software cannot have Remote Maintenance since they cannot accommodate two disk drives). Systems with a single disk drive must interchange disks manually in order to perform the maintenance procedures. In the PERCEPTION$_e$, a second NDFU (with a jumper change) is installed in the FDD1 slot in the basic cabinet. In PERCEPTION II, a second drive (the FFDA-2), that installs in the FFDA, is required. Both of these units are available from Toshiba.

Any system which currently uses **D-01** software must either re-program or use a Special **D-01**-to-**D-02** Software Conversion Disk in order to upgrade to **D-02** software. A direct Data Dump (DDMP) is not possible, due to the restructuring of data blocks in the software. The use of the upgrading Software Conversion Disk is very simple:

1) Remove the **D-01** disk from the drive and insert the Special Software Conversion Disk.
2) Perform a Data Dump (DDMP procedure).
3) Reload the system.
4) Remove the Special Software Conversion Disk from the drive and insert the **D-02** software disk.
5) Perform the DDMP procedure.
6) Reload the system.

The use of **D-02** software in PERCEPTION I or II systems requires the use of FCCU and FPEU printed circuit cards (a PERCEPTION I system also requires a DFRA-3 Disk Drive Assembly). PERCEPTION$_e$ systems must use the **D-version**-only NCCU card.

D-02 software can be ordered through your Customer Service Representative. The Special Software Conversion Disk that enables customer data to be dumped from a **D-01** disk to the new **D-02** disk is also available through your Customer Service Representative.

NOTE:
*When ordering **D-02** software, be sure that a **5 1/4"** disk is ordered for **PERCEPTION I/II** systems and that a **3 1/2"** disk is ordered for **PERCEPTION$_e$** systems.*

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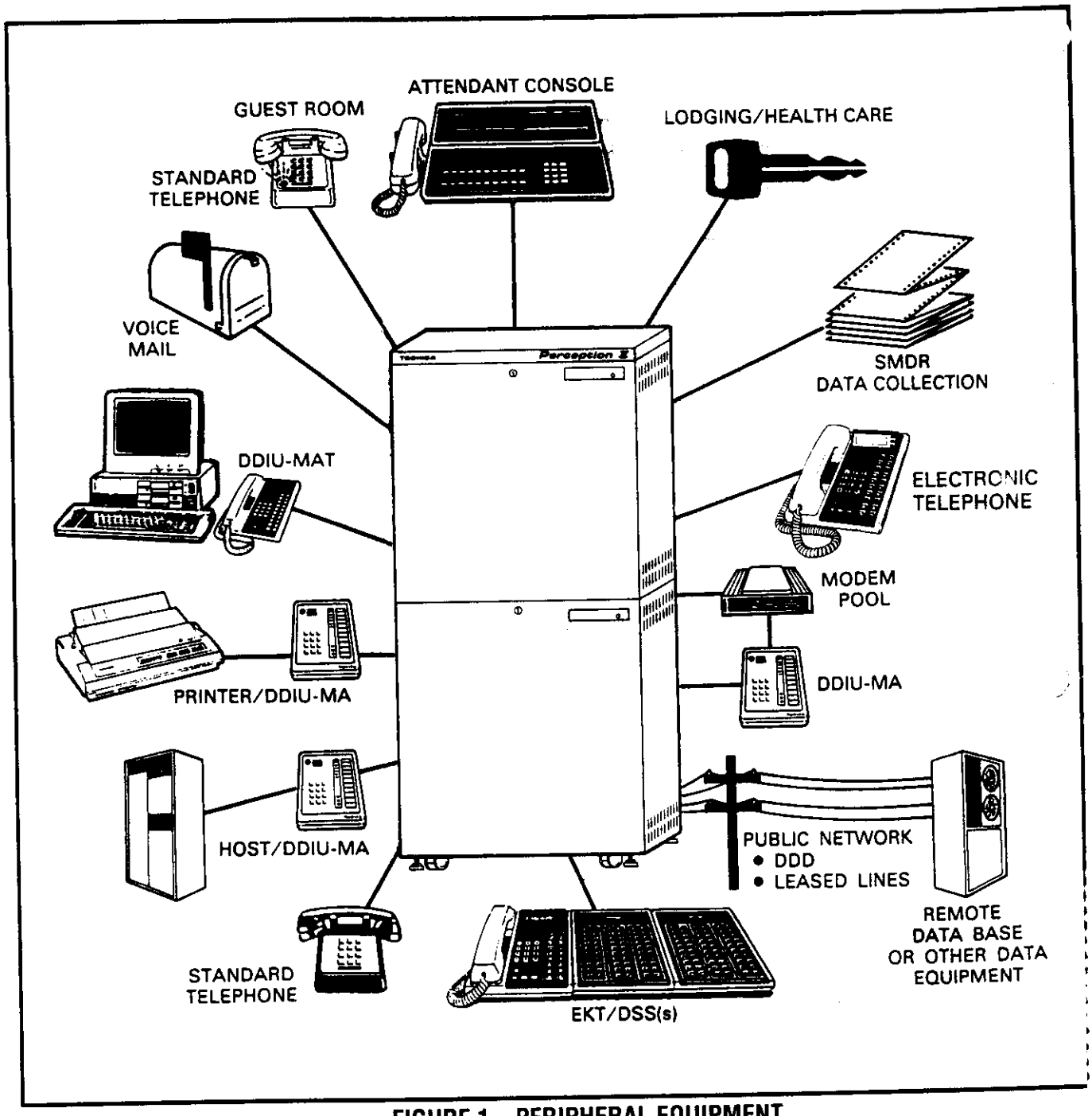

FIGURE 1—PERIPHERAL EQUIPMENT

TOSHIBA

Perception® II

Electronic Digital PBX

General Description

Perception® II

ELECTRONIC BUSINESS COMMUNICATIONS SYSTEM

INSTALLATION AND MAINTENANCE MANUAL

TOSHIBA AMERICA, INC.

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TOSHIBA PUBLICATIONS
NOVEMBER 1988

PERCEPTION® II

ELECTRONIC BUSINESS

COMMUNICATIONS SYSTEM

GENERAL DESCRIPTION

TSD 88-11-04 Issue 1.0 10M PRINTED IN U.S.A.

TOSHIBA AMERICA, INC.

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01 GENERAL

Summary Description

PERCEPTION II is an advanced business and Lodging/Health Care communications system, employing state-of-the-art stored program control, digital (PCM and TDM) switching, and custom LSI circuitry.

Toshiba's proprietary electronic telephones enable PERCEPTION II to utilize the advanced capabilities of an electronic private branch exchange (EPBX) with the functionality and ease-of-use of an electronic key telephone system in a single design.

PERCEPTION II has a maximum capacity of 240 stations and 64 trunks. The capacity of the single basic cabinet is 120 stations and 32 trunks, which is doubled with the addition of the expansion cabinet. The expansion cabinet mounts on top of the basic cabinet and uses the same printed circuit boards.

The system provides all the basic PBX features and an impressive package of optional features, enabling users to design a system that best fits their communication needs. Standard features such as Least Cost Routing, Toll Restriction and Station Message Detail Recording, plus options like Integrated Data Switching help users reduce the cost and maximize the effectiveness of their communications. All of the productivity-enhancing features of the electronic telephones are also available to users of standard telephones.

Peripheral Equipment

In addition, PERCEPTION II offers enhanced connectivity with stand-alone equipment, such as voice mail systems. A wide variety of peripheral equipment can be integrated into the system to serve the user's requirements.

The sophisticated electronic telephone's 32-character alphanumeric Liquid Crystal Display provides:

- Alphanumeric Messages
- Automatic Callback
- Call Duration
- Call Forward
- Call Pickup
- Calling Number
- Clock/Calendar
- Dialed Number
- Feature Activation Display
- Trunk Access Code
- Override
- Station-to-Station Callback Messages

Applications

The range of features available with PERCEPTION II make it an ideal PBX for any business or other application within its line size. Software enhancements and certain specialized features make it especially well-suited to many user applications, as follows.

NOTE:
A more detailed description of all PERCEPTION II features can be found in the Features section of this document and in the PERCEPTION II Feature Description manual.

D.02 Software Enhancements: This software introduces important new capabilities to PERCEPTION II. Among the features provided are:

- **Attendant-Position Electronic Telephones**: Enables up to eight electronic telephones to access attendant-type features, providing important control capabilities to systems operating consoleless or with only DSS consoles.
- **DSS Consoles**: Enables up to eight 60-button Direct Station Selection Consoles to be used with a PERCEPTION II system as either main or backup answering positions (a maximum of two DSS consoles may be matched with an electronic telephone).
- **Group Paging**: Internal Pages can be made through the speakers in the electronic telephones. Pages can be made to 17 different groups of electronic telephones.
- **Fixed Automatic Dialing (ADL) Button**: All ADL buttons in the system can now be assigned as either fixed (nonchangeable at the station) or flexible.
- **INTOUCH Integration**: Provides efficient communications between the PERCEPTION$_e$ and the INTOUCH Voice Managing System.
- **Trunk Transfer Recall**: After a transferred trunk recalls to the station that transferred it, if it is still unanswered, it will transfer to a final

recall destination that can be different for each trunk in the system.

Data Switching: Sophisticated data switching capability converts the office of today into the office of the future. As a reliable, cost effective alternative to local area networks, the system can interconnect desktop computers, mainframes, printers, modems and other equipment into a single data matrix.

- Data can be transmitted synchronously at speeds up to 9.6 kbps; asynchronously at up to 19.2 kbps. Because data and voice are transmitted over discrete circuits, there is no possibility of blockage.
- Modem pools for incoming and outgoing data calls over the telephone network are fully supported. The system automatically switches a modem in the pool into the path of the data call. Least Cost Routing can be used to select the trunks accessed by outgoing data calls, helping the user control long distance data communication costs.

NOTE:
Data Switching features are exceptionally user-friendly and operate just like voice calls. Features like Automatic Callback, Automatic Dialing Buttons (Fixed and Flexible), and Speed Dialing can be used to make data calling even easier.

Lodging/Health Care: A special package of features are provided to meet the unique requirements of the Lodging and Health Care industries. These features enable the user to serve the needs of guests and monitor the status of guest rooms. It also displays such information as room and deposit status at the attendant console.

- Lodging/Health Care information can be output to a printer by an audit command or included in the SMDR output. It can also be separated from SMDR data and transmitted to customer-provided, stand-alone property management or call accounting equipment.

Voice Mail: The Toshiba INTOUCH Digital Voice Messaging System can be integrated with a PERCEPTION II system to increase telephone efficiency and eliminate missed calls. Integration enables PERCEPTION II and the INTOUCH system to communicate much more efficiently than other telephone systems and voice mail/automated attendant systems. PERCEPTION II uses in-band (DTMF tones) signalling to interface voice mail/automated attendant equipment provided by other manufacturers into the user's telephone system. The INTOUCH system connects to a standard station printed circuit card on a port-by-port basis. Among the features provided are:

- **Automated Attendant**: The INTOUCH system provides an integrated Automated Attendant that can streamline the PERCEPTION II call answering capability. Additionally, the unsupervised transfer capability virtually eliminates unanswered or missed calls.
- **Call Forward to Mail Box**: Each telephone user can forward calls directly to a personal voice mail box. This permits the caller to bypass the usual sequence of voice mail commands and simply dictate a message and hang up.
- **Message Waiting Indication**: INTOUCH and PERCEPTION II will automatically turn on a message waiting indication on the station user's telephone when messages are in the mailbox and turn it off when they have been picked up.
- **System Monitoring**: PERCEPTION II will monitor lines and trunks connected to INTOUCH and disconnect them when the caller hangs up, eliminating lost services from equipment held up after the call has been completed.

Station Equipment

Users can choose between six electronic telephone models, each designed to serve different user requirements. The 20- and 10-button electronic telephones are available in either handsfree or speakerphone models. Complete flexibility in assigning buttons allows the configuration of these electronic telephones to match each station user's requirements. A basic, single-line electronic telephone, that can access features by dial codes, is also available. All electronic telephones are hearing aid compatible. Standard rotary and DTMF telephones can be mixed with electronic telephones throughout the system.

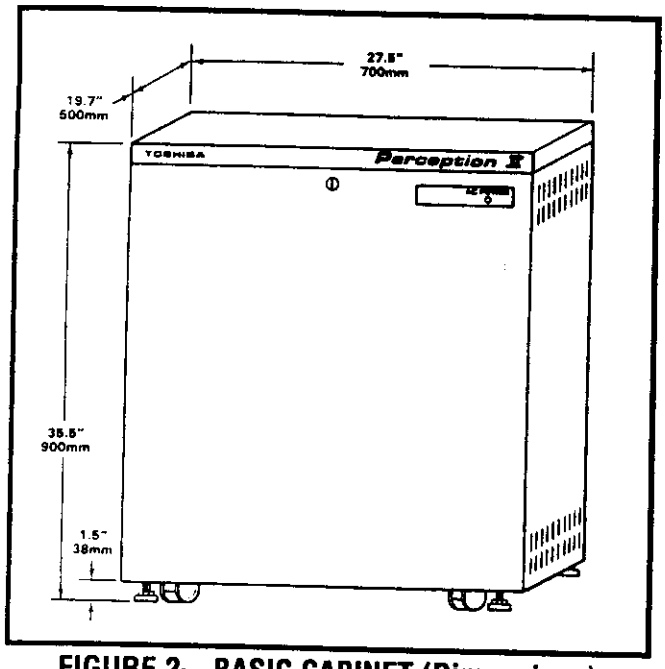


FIGURE 2—BASIC CABINET (Dimensions)

The Attendant Console is both attractive and efficient, and its digital display will provide the operator with all the information required for easy operation. A system may be equipped with two attendant consoles.

The metal equipment cabinets are compact and attractively-styled units. Their noiseless operation, small size and environmental tolerance allow a wide choice of installation locations for the combined central equipment cabinets.

Physical Descriptions

The basic equipment cabinet's (Figure 2) dimensions are:

Height: 35.5" (500 mm)
Width: 27.5" (450 mm)
Depth: 19.7" (300 mm)

When the expansion cabinet (Figure 3) is installed on the basic cabinet, the overall dimensions are:

Height: 63.0" (950 mm)
Width: 27.5" (450 mm)
Depth: 19.7" (300 mm)

Divided into three shelves, the basic equipment cabinet (FCEC-M) shown in Figure 4 has two shelves for plug-in printed circuit board mounting,

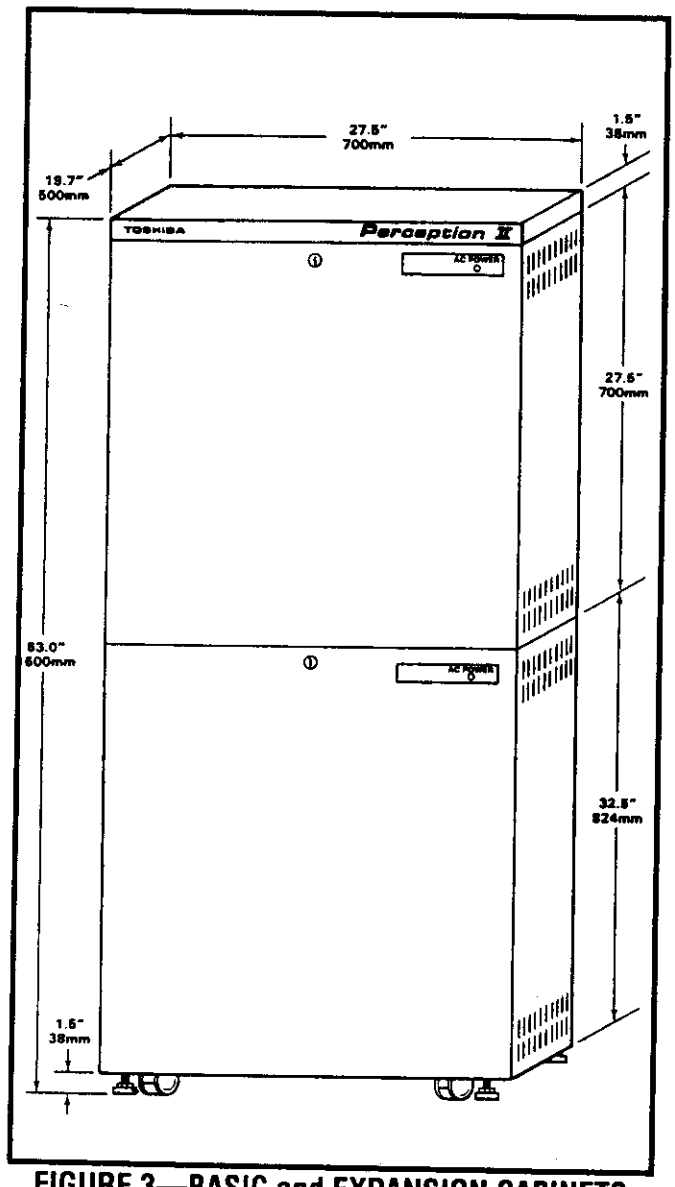
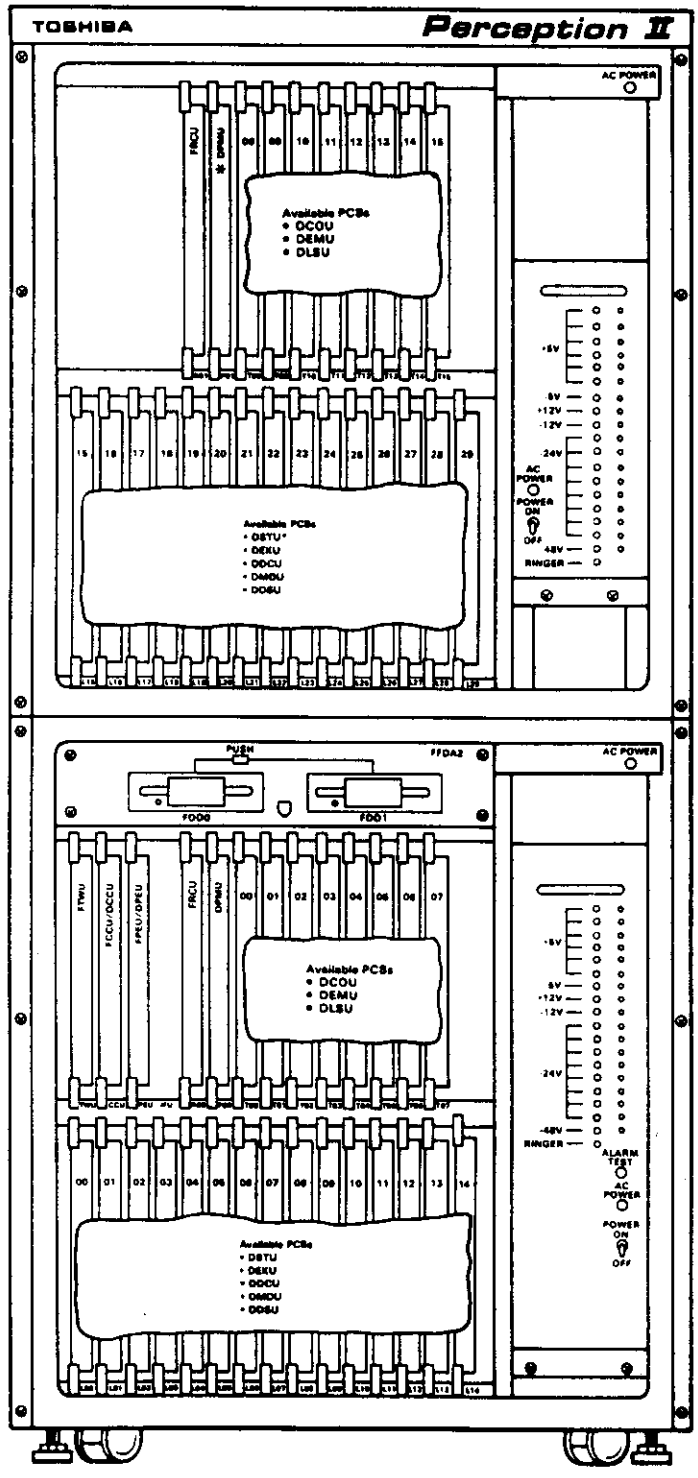


FIGURE 3—BASIC and EXPANSION CABINETS (Dimensions)

and a top shelf for the Floppy Disk Drive Assembly (FFDA2). The Power Supply/Ringer Assembly is on the right side of the cabinet. While the cabinet is easily wheeled about, four adjustable stabilizers, located at the corners on the bottom cabinet, are used to assure that the cabinet is level and stable after installation. The expansion cabinet has two shelves; the upper shelf supporting printed circuit boards for the additional 32 trunks and second DPMU and FRCU, the lower shelf supporting printed circuit boards for the additional 120 voice and data stations. A secondary Power Supply/ Ringer Assembly; is also mounted in the expansion cabinet.



** DPMU required when DSTU is installed in expansion cabinet.*

FIGURE 4—CABINETS (Interior)

Trunks, stations and peripheral equipment connect to the system with amphenol ended cables connected at the rear of the cabinet (Figure 5). Connections are made via a Main Distribution Frame (MDF). Printed circuit boards measure 12" x 12" (305 mm x 305 mm); each one has a protective metal faceplate riveted to the front edge. The rear edge connector carries the electrical terminals: 60- and 40-pin terminals on the peripheral equipment printed circuit boards and 100-pin terminals on the common equipment printed circuit boards.

One or two 5 1/4" floppy disk drives (FDD0 and FDD1) can be installed with the FFDA. Customer office data and the programs for system operation and maintenance/administration are loaded from disk to system memory. If system power is lost, when power is restored, the system will automatically reload the program and customer data base into system memory from the disk drive. The reload procedure takes less than one minute.

The primary power supply is mounted on the right-hand side of the cabinet. It is operated by 117 VAC, 60 Hz commercial power and supplies fused outputs of -48 VDC, -24 VDC, ±12 and ±5 VDC. An 85 ±10 VRMs, 20 Hz ringing generator is part of the power supply in the basic cabinet. The second power supply is located in the expansion cabinet and provides the power to drive the expansion cabinet.

Reserve Power

In the event of a power failure, the Peak Load Battery will maintain call processing for up to two minutes. If more than two minutes of Reserve Power are required, an external battery pack (24 volts), supplied by the customer, can be connected to the basic power supply. The power supply includes, as standard equipment, a 24-volt charger that can be connected directly to external batteries. The duration of uninterrupted system operation that these batteries maintain is determined by several factors: system configuration, system traffic, and the

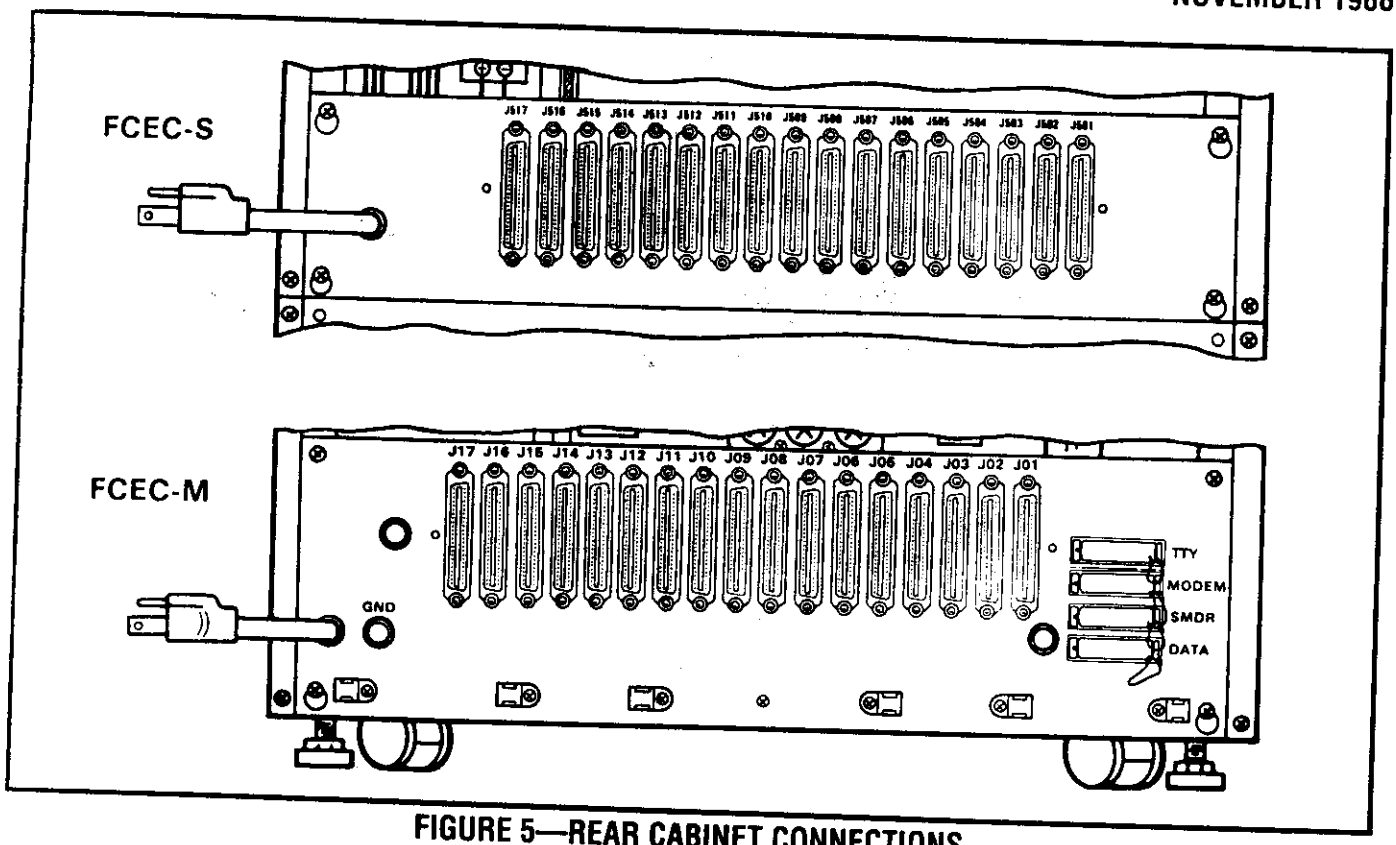


FIGURE 5—REAR CABINET CONNECTIONS

amp/hour rating of the battery pack (see Table C). Switchover between reserve and AC power is automatic and no loss of calls will occur during the process. In addition, during normal AC power operation, the internal charger in the basic cabinet power supply will maintain a proper charge in the batteries. This eliminates the expense of an uninterruptible power system.

Power Fail Transfer

A system without reserve power will lose call processing after two minutes. However, the optional Power Failure/Emergency Transfer feature automatically connects selected trunks and selected standard telephones in the event of power failure. When power is restored, system data will reload and Power Fail stations and trunks will automatically be returned to normal service. This feature requires an external unit, the Power Failure Transfer Unit (DPFT). Each DPFT has eight transfer circuits, and two DPFT's can be installed per system (1 per DPMU).

Attendant Console

The attendant console (Figure 6) is enclosed in an off-white plastic housing with handset/headset modular jacks located on both sides. Two faceplates are available for the attendant console, one for Business and one for Lodging/Health Care. Each is equipped with a keyboard having two horizontal rows of non-locking buttons and LEDs, a standard 12-button dial pad and vertical row of three (Lodging/Health Care) or four (Business) buttons. The console display functions include incoming call identification, source (calling party), class of service, destination (called party) and status (of called party).

In addition, the console is equipped with a busy lamp field that displays 100 2-digit numbers (00 ~ 99), and a "hundreds group" identifier that shows which hundreds group is currently being displayed. The display alternates between groups when the BLF button is pressed. Trunk group busy display, call waiting and alarm indications are also provided. In Lodging/Health Care applications, the console monitors, displays and changes various guest room functions. The attendant console measures:

Height: 4.72" (120 mm)
Width: 14.17" (360 mm)
Depth: 10.24" (260 mm)

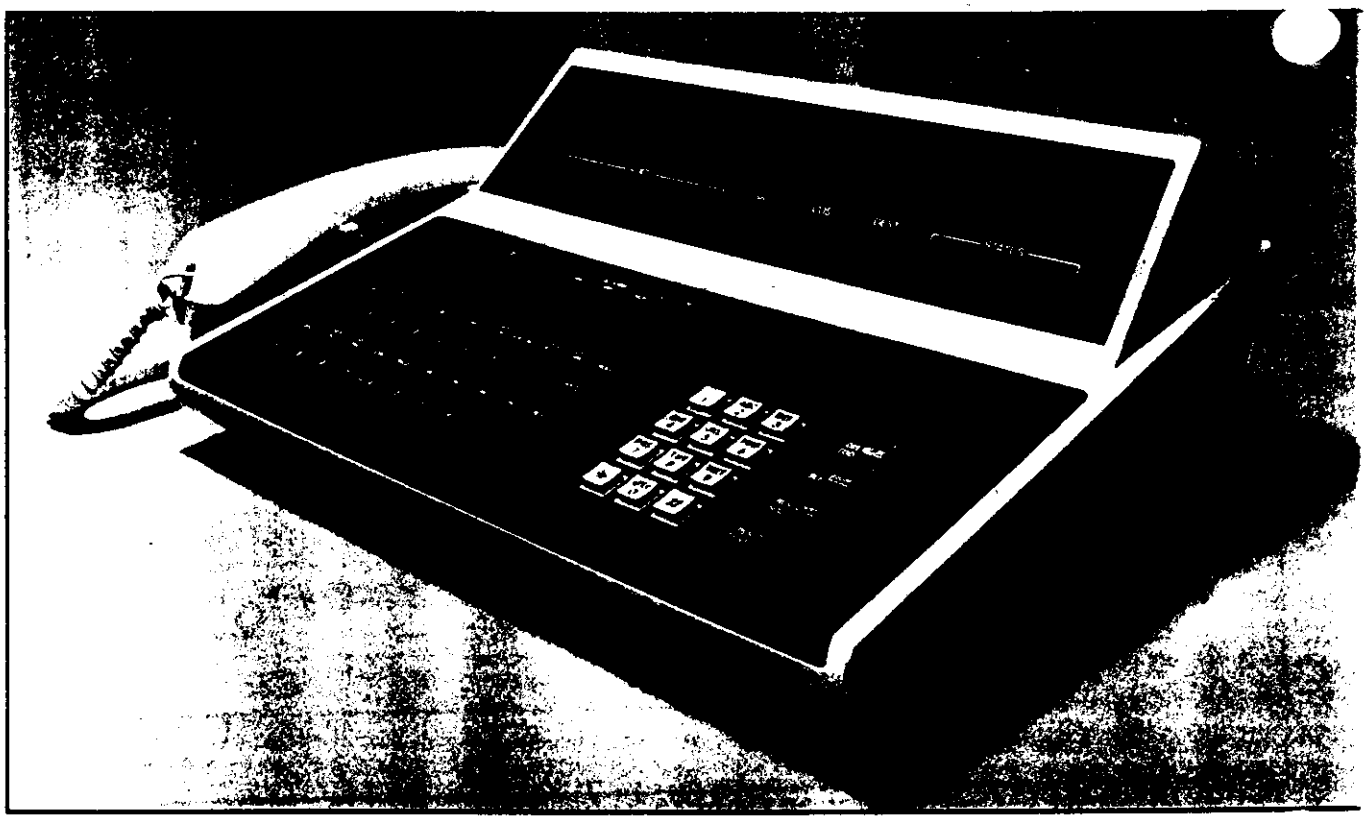


FIGURE 6—ATTENDANT CONSOLE (Business)

Direct Station Selection Console

An optional Direct Station Selection (DSS) console (Figure 7) is available for systems that either do not require attendant consoles or that require distributed call-handling positions. The system is capable of operating two DSS consoles at a single electronic telephone simultaneously, and up to eight DSS consoles can be installed in the system. Each DSS console is equipped with up to 60 station buttons which can be programmed for either DSS capability or call-controlling features. A DSS console has the same footprint as an electronic telephone.

NOTE:
Systems may be equipped with up to eight DSS consoles and two attendant consoles simultaneously, providing a maximum of ten answering positions.

Electronic Telephones

Six models of the Toshiba proprietary electronic telephones may be used with the PERCEPTION II:

1) The single-line electronic telephone provides a single directory number (DN) button, built-in speaker for voice announcing and hands-free monitoring, and dial code access to features (Figure 8). The single-line model is available with or without a message waiting light (LED).

2) A 10-button electronic telephone is available in two models: a full speakerphone or a Handsfree

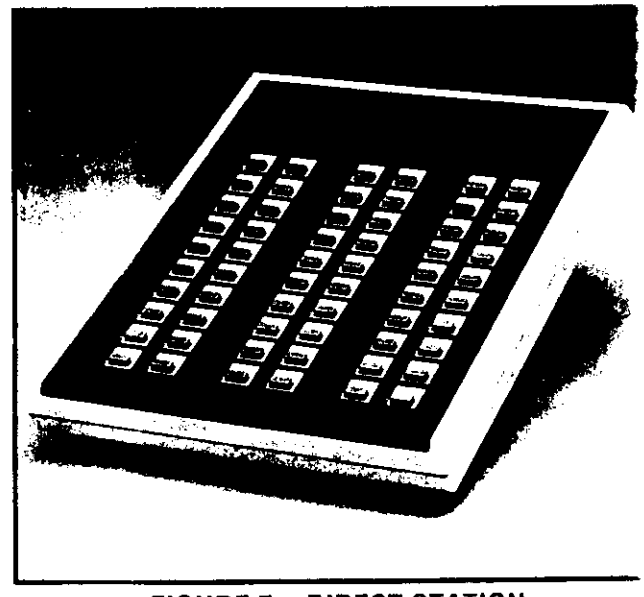


FIGURE 7—DIRECT STATION SELECTION CONSOLE

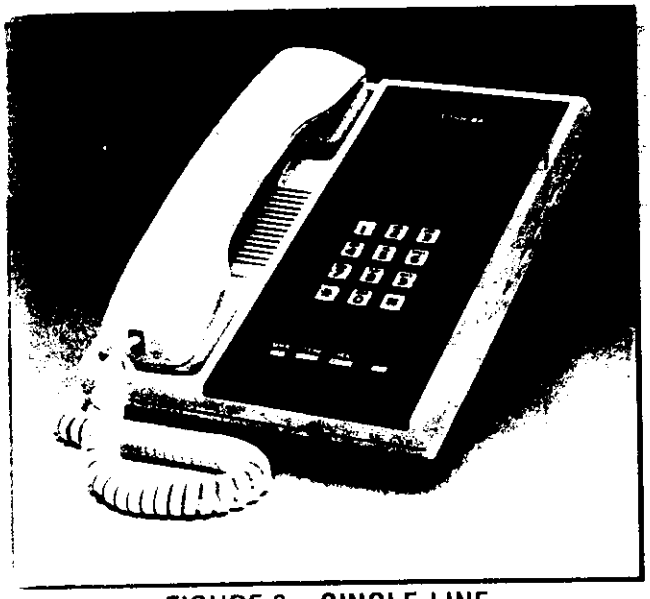


FIGURE 8—SINGLE-LINE ELECTRONIC TELEPHONE

FIGURE 10—20-button ELECTRONIC TELEPHONE

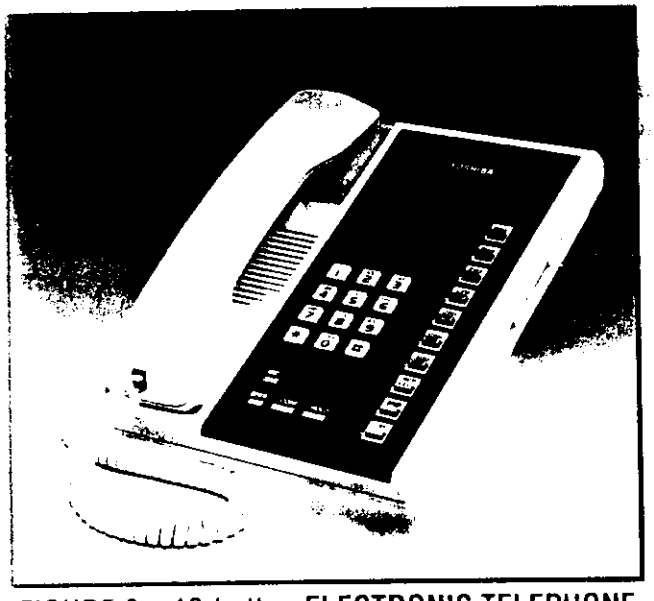


FIGURE 9—10-button ELECTRONIC TELEPHONE

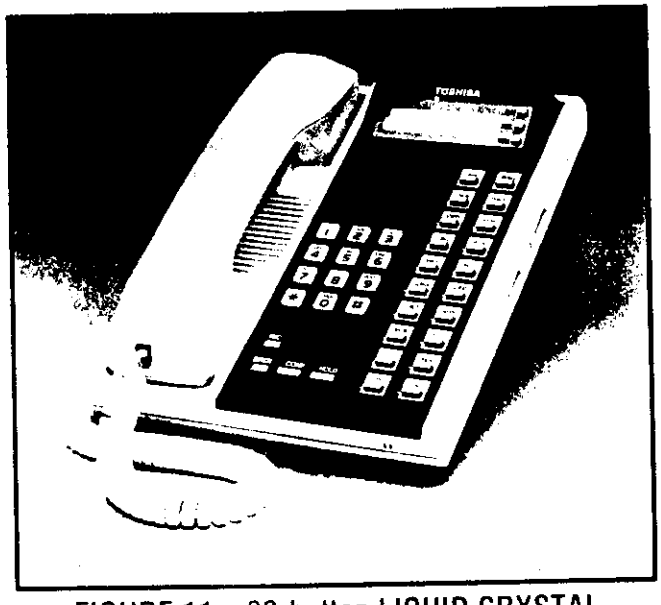


FIGURE 11—20-button LIQUID CRYSTAL DISPLAY ELECTRONIC TELEPHONE

Answerback (HFU) model, each with ten feature buttons (Figure 9).

3) A 20-button electronic telephone is also available in two models: speakerphone or HFU, each with 20 feature buttons (Figure 10).

4) A 20-button LCD electronic telephone is available as a speakerphone only, equipped with a 32-character, alphanumeric Liquid Crystal Display (Figure 11).

All electronic telephones have the same dimensions:

Height: 3.6" (92 mm)
Width: 7.0" (178 mm)
Depth: 9.0" (229 mm)

Housed in an impact-resistant, off-white plastic case with a brown faceplate (with blue, black or wine faceplates optionally available), the attractive electronic telephone fits comfortably into a modern office environment.

The 10- and 20-button electronic telephones offer complete flexibility in feature assignments and line appearances to buttons. This enables

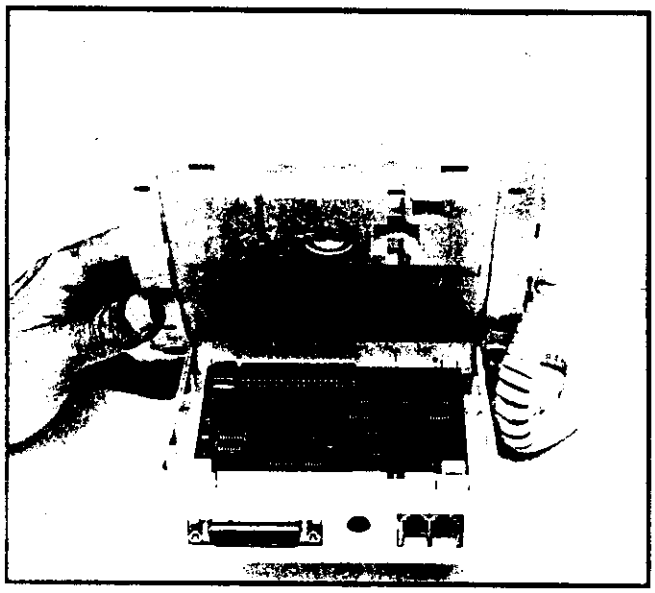


FIGURE 12—DDIU-MAT

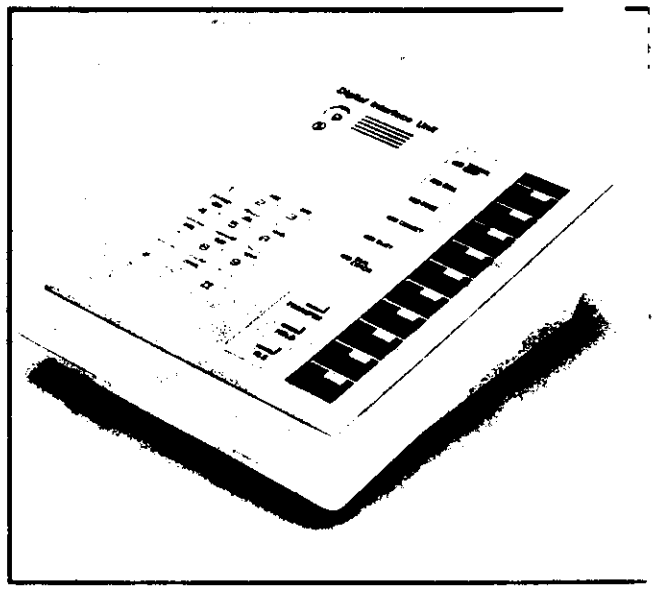


FIGURE 13—DDIU-MA

each station user to have an electronic telephone tailored precisely to his or her job requirements.

Each electronic telephone features a modular handset cord and a modular headset connector (except single-line) and is connected to the system by a two-pair modular line cord. One pair carries voice transmission while the other pair carries station data. Power is provided over the line from the equipment cabinet. The handsets are hearing aid compatable and each telephone has a second jack into which a headset can be plugged.

Standard telephones can be mixed with electronic telephones as required by the user's application, or a system can be configured using only standard telephones. Standard telephones can access all station features using dial code access.

Digital Data Interface Unit

The PERCEPTION II Data Switching feature integrates data devices, such as personal computers, host computer, modems and printers into a PBX-controlled data network. The interface between that data equipment and PERCEPTION II is provided by the Digital Data Interface Unit (DDIU). Two types of DDIUs are available. The DDIU-MAT (Figure 12) is housed in a molded unit that replaces the standard base on any 10- or 20-button electronic telephone. A stand–alone unit, the DDIU-MA (Figure 13), is also available. Typically the DDIU-MAT is used at a station-user's desk in conjunction with a personal computer; while the DDIU-MA is used at a remote or unsupervised location with a printer, modem or host. It can also be used beside a single-line electronic telephone or a standard telephone which cannot accept the DDIU-MAT. Each DDIU communicates digitally with the equipment cabinet over single-pair standard telephone wiring. In the DDIU-MAT, this pair is included with the two-pair voice wiring in a three-pair modular cable run between the wall connector and the phone. A single-pair modular cable connects to the DDIU-MA

The DDIU connects to either a Data Line (DDCU) printed circuit board or Modem Pooling (DMDU) printed circuit board in the equipment cabinet.

02 SYSTEM CHARACTERISTICS

System Parameters

The system parameters of PERCEPTION II are detailed in Table A.

Electrical Characteristics

The electrical characteristics of PERCEPTION II are detailed in Table B.

03 FEATURES and SERVICES

Tables C, D and E, list the features available with PERCEPTION II. These features are divided into seven categories (refer to the Feature Description section for a detailed description of each feature)

- System
- Station
- Electronic Telephone
- Attendant Console
- DSS Console
- Lodging/Health Care
- Data Switching
- Optional

TABLE A

SYSTEM PARAMETERS

Microprocessor:
- Primary: Intel 80C88-type (16-bit)
- Secondary: Zilog Z80-type (8-bit)

Digital Transmission: Pulse Code Modulation (PCM), Time Division Multiplexing (TDM)
- Time slots: 210

Simultaneous Capabilities:
- 6-party conference at console: 1
- 3-party conference at station:
  - 10 Main Cabinet
  - 20 Expanded Cabinet
- Station equipment
  - Attendant console: 2
  - DSS console: 8
  - Attendant-Position Electronic Telephone: 8
  - Electronic telephone (including LCD): 64 per cabinet
  - Standard telephone: 192
  - Data interface units: 32 per cabinet
- Calls ringing in system: 96
- Directory number appearances: 96
- Meet-Me Page zones: 16

Traffic Capacity:
- CCS (100% utilization): 36
  - Trunk calls: 64
  - Station calls: 96

Disk Drive:
- 5 1/4 inch, 1.6 Megabyte
- Format: Proprietary

Speed Dial (16 digits-pause included):
- Automatic dialing buttons: 500
- System speed dial numbers: 90
- Station speed dial numbers: 500 (50 listsof 10 numbers each)
- Total telephone number storage: 1090

Automatic Callback (ACB):
- Originating ACB: 1 per station
- Terminating ACB: 14 per station
- System limit: 80 ACB calls activated

Paging External:
- Number of zones: 5
- All zone page: 1

Paging, Internal:
- 15 groups/32 members each
- 1 group/96 members

Universal Night Answer Zones:
- 1 Per tenant

Night Assignments:
- Fixed
- Flexible
- Universal

Hunting:
- Secretarial: Unlimited members
- Circular: Unlimited members
- Terminal: Unlimited members
- Distributed hunt groups (8 members per group): 4

SMDR Buffer:
- Number of calls: 40

Least Cost Routing:
- Classes of Service: 3
- Routing tables: 15
- Routes (choices per table): 6
- Time of day schedules: 3
- Area code tables: 15
- Area/office code tables: 16
- Modified digits tables: 12

Toll Restriction:
- Classes: 10
  - Unrestricted: 1
  - Denying 0/1: 1
  - Flexible (6-digit): 8
- Specialized common carriers: 2
- Area code tables: 8
- Area/office code tables: 32

Station Classes of Service:
- Flexible: 16

Power Fail Transfer:
- Trunk-to-station circuits: 16 (8 per cabinet)

Voice Mail Ports:
- Per tenant: 32

TABLE B

SUMMARY OF ELECTRICAL CHARACTERISTICS

Station loop limits	
Standard telephone	500 ohms (including telephone)
Electronic telephone	1,000' (305 M), 24 AWG cable
DSS console	500' (152.5 M), 24 AWG cable
Electronic telephone with DDIU-MAT	1,000' (305 M), 24 AWG cable
DDIU-MA	3,280' (1,000 M), 24 AWG cable
Central office loop limit	1,500 ohms
Maximum distance between console and equipment cabinet	1,000' (305 M), 24 AWG cable
Minimum leak resistance	30,000 ohms
Maximum ringer/line (standard telephone)	3
Ringing (standard telephone)	85 ±10 VRMS, 20 Hz, immediate ringing
Ring trip	During silent or ringing period
Ringing tone (electronic telephone)	500/640 Hz, modulated at 10 Hz
Buzz tone	300 Hz
Busy override tone	2,400 Hz
Dial tone	350/440 Hz, continuous
Busy tone	480/620 Hz, interrupted at 60 IPM
Ringback tone	440/480 Hz, 1 second on—3 seconds off
Overflow tone	480/620 Hz, interrupted at 120 IPM
Recall dial tone	350/440 Hz, three 1/8-second pulses, followed by continuous tone
Message Waiting Lamp	120 ±14 VDC, 60 IPM
Miscellaneous tones	440 Hz
Crosstalk	>75 dB down
Insertion loss	
Station-to-trunk	5 dB
Station-to-trunk	1 dB
Trunk-to-station	1 dB
Longitudinal balance	>60 dB (200 ~ 1,000 Hz) on- and off-hook >40 dB (1,000 ~ 4,000 Hz) on- and off-hook
Return loss	>18 dB ERL
Idle circuit noise	25 dBrnC
System impedence	
For stations	600 ohms
For trunks	600/900 ohms
Switching (Integrated Voice and Data)	TDM, PCM, non-blocking (data single-pair ping-pong transmission)
Primary Power	90 ~ 125 VAC, 500 watts, 60Hz
Basic cabinet	100 ~ 120 VAC, 50 ~ 60 Hz, 8.5A
Basic & expansion cabinets	100 ~ 120 VAC, 50 ~ 60 Hz, 14.2A
Reserve power	-24 VDC, external batteries
Basic cabinet only	36A
Basic & expansion cabinets	48A
Storage temperature	14 ~ 149° F (-10 ~ 65° C)
Operating temperature	32 ~ 104° F (0 ~ 40° C)
Operating humidity	20 ~ 80% relative humidity without condensation

TABLE C

STANDARD FEATURES

System

- Attendant-Position Electronic Telephones
- CCSA Access
- Classes of Service
- Consoleless Operation
- Data Transmission
- Direct Inward Dialing (DID)
  - Call Forward Busy/No Answer
  - Multiple Listed Directory Number
- Direct-in Lines
- Distinctive Ringing
- Flexible Numbering
- Immediate Ringing
- Intercept
- Least Cost Routing
- Line Lockout
- Manual/Hot Line Service
- Multiple Console Operation
- Multiple Directory Numbers
- Multiple Trunk Groups
- Music-On-Hold
- Night Service
  - Fixed
  - Flexible
  - Universal
- Paging Groups, Internal
- Paging Zones, External
- Remote Access to Services
- Remote Administration/Maintenance
- Rotary/Tone Dial Compatibility
- Route Advance
- Speed Dialing-System
- Station Message Detail Recording (SMDR)
- Station Set Mix
- Tenant Service
- TIE Trunks
- Toll Restriction (6-digit)
- Tone-to-Dial Pulse Conversion
- Traffic Measurement
- Trunk-to-Trunk Connections (Tandem Switching)
- Trunk Transfer Recall
- Uniform Distribution Wiring
- Universal Night Answer (UNA)
- Variable Timeout
- Voice Mail Interface
  - Call Forward to Voice Mail Box
  - Voice Mail Control from Electronic Telephone
  - Message Waiting Indication

Station

- Account Number Recording
- Automatic Callback
- Call Forward
  - All Calls
  - Busy
  - Busy/No Answer
  - No Answer
  - Trunk
- Call Pickup
  - Directed
  - Group
- Call Waiting
- Conference (3-party with transfer)
- Direct Outward Dialing
- Do Not Disturb
- Meet-Me Page
- Message Waiting
- Override
- Page Access
  - External
  - Internal
- Park
- Private CO Line
- Remote Retrieval of Held Calls
- Repeat Last Number Dialed
- Speed Dialing-Station
- Station Hunting
  - Circular
  - Master Number Distributed
  - Secretarial
  - Terminal
- Trunk-to-trunk Connections
- Uninterrupted Line Connection

Electronic Telephone

- Alphanumeric Messaging with LCD
- Automatic Dialing Buttons
- Fixed
- Flexible

- Automatic Line Preference
- Call Status Indication
- Common Audible Signalling
- Distinctive LED Indications
  - In-Use
  - On-Hold
- End-to-end Signalling
- Flexible Feature Buttons
- Handsfree Answerback with/Speaker Cut-off
- Handsfree Monitoring
- Headset Jack
- Hearing Aid Compatible
- Hold Button
- Manual Signalling
- Modular Cords
- Multiple Appearing Directory Numbers
- Night Answer Button
- Non-Locking Buttons
- On-Hook Dialing
- Prime Directory Number
- Privacy
- Privacy Release
- Push-button Dialing
- Push-button Access to Features
- Release
- Speaker/Amplifier
- Staton-to-Station Message
- System Night Button
- Tone Buzzing
- Tone Ringing
- Voice Paging
- Volume Control
- Wall Mountable Electronic Telephones

Attendant Console

- Alarm Lamps
- Attendant Camp-On with Indication
- Attendant Conference
- Attendant Emergency (Power Fail) Transfer Control
- Attendant Initialization
- Attendant Recall
- Busy Lamp Field
- Call Forward All Clear
- Call Waiting Lamp
- Digital Information Display
- Direct Access to Paging
- Incoming Call Identification
- Incoming Call Priority
- Individual Trunk Access
- Interposition Call/Transfer
- Lockout
- Night Service Control
- Non-Delayed Operation
- Overflow Facility
- Position Busy
- Push-button Dialing
- Secrecy (Exclusion)
- Serial Call (Business only)
- Speed Dialing-System
- Splitting
- Station Number Display
- Station Verification
- Switched Loop Operation
- Through Dialing
- Timed Reminders-Variable
- Time of Day Display/Set/Reset
- Trunk Group Access Control
- Trunk Group Busy Indication
- Trunk Equipment Number Display
- Trunk-to-Trunk Connection
- Trunk Verification

DSS Console

- Attendant Console Emulation
- Automatic Line Hold
- Busy Lamp Field
- Direct Station Selection
- Electronic Telephone Features
- Fixed/Switched Operation

Lodging/Health Care

- Automatic Wake-up
- Controlled Outgoing Restriction
- Deposit Paid Confirmation
- Executive Suite Telephone
- Guest Room Information
- Maid-in-room
- Message Registration
- Message Registration-Audit
- Message Registration-Room Display
- Message Waiting Lamp
- Room/Number Correlation
- Room Status
- Room Status-Audit Display
- Room Status-Audit Printout
- Room-to-Room Blocking

TABLE D

INTEGRATED DATA SWITCHING (Optional)

- Automatic Data Release
- Compatible Voice Features
- Data Button
- Data-only Transmission
- Data Release Button
- Data Security Groups
- Data Switching Modes
- Modem Pooling
- Simultaneous Voice/Data Transmission

TABLE E

OPTIONAL FEATURES

- Attendant Console Lodging/Health Care Faceplate
- Automatic Wake-up Digitized Voice Message
- Electronic Telephones
  - Single-line (with or without Message Waiting light)
  - 10-button (SPK or HFU)
  - 20-button (SPK or HFU)
  - 20-button Liquid Crystal Display (Speakerphone only)
  - Multicolored Faceplates (blue, black & wine)
- Power Failure/Emergency Transfer
- Reserve Power

04 SYSTEM OPERATION

The system diagram in Figure 14 shows the asic and expansion equipment cabinets, attendant console, electronic telephones, electronic telephone with built-in Digital Data Interface Unit, stand-alone Digital Data Interface Unit, standard telephone, power failure/emergency telephone, and their relationship to each other. An external tuner (or equivalent) can be connected as a music-on-hold source.

The functional block diagram in Figure 15 shows the PERCEPTION II system divided into four main sections; power, central control, central service equipment and peripheral interface equipment.

a) Power Section:
- Main power supply
- 20 Hz ringing supply

b) Central Control:
- Floppy disk units
- FCCU/DCCU
- FPEU/DPEU
- A portion of the DPRU

c) Central Service Equipment
- FTWU
- FRCU
- A portion of the DPRU

d) Peripheral Interface Equipment:
- DSTU (interfaces standard telephones)
- DEKU (interfaces electronic telephones and attendant consoles)
- DDSU (interfaces four DSS consoles)
- DDCU (interfaces Digital Data Interface Units)
- DMDU (interfaces Digital Data Interface Units and modems)
- Trunk interfaces:
  - DCOU (CO trunks)
  - DEMU (TIE trunks)
  - DLSU (DID trunks)

The expansion cabinet contains a secondary power supply and two shelves for peripheral interface equipment printed circuit boards. A second power supply must also be installed in the expansion cabinet. The expansion cabinet (current and future software versions) requires that the FCCU/FPEU combination be installed in the basic cabinet. Earlier versions of software can be run in the PERCEPTION II basic cabinet only using the DCCU/DPEU combination.

PERCEPTION II utilizes a virtually non-blocking, pulse code modulated (PCM), time division multiplexed network consisting of twelve 32–time-slot PCM highways and a multiplexer circuit that per-

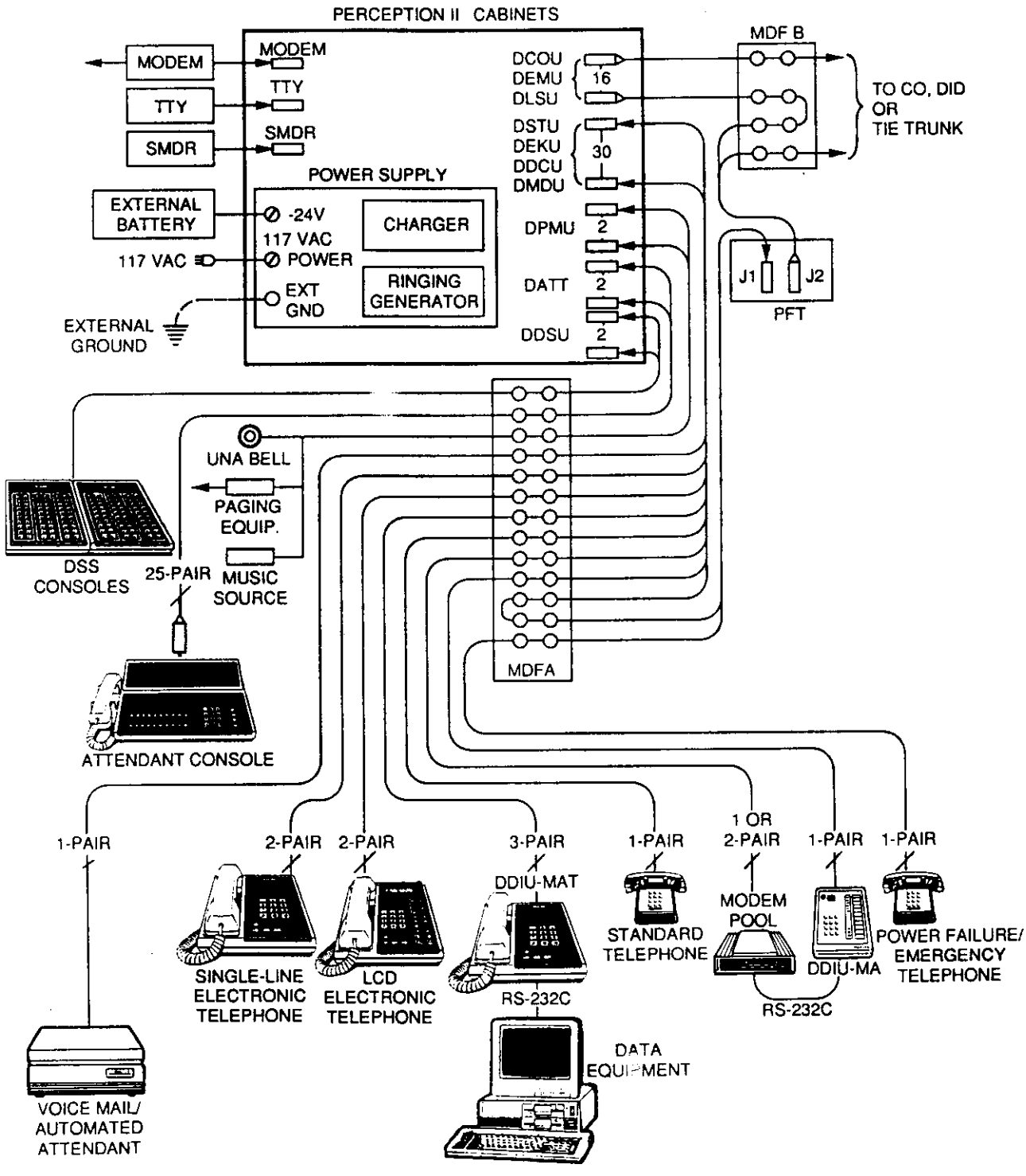


FIGURE 14—SYSTEM DIAGRAM

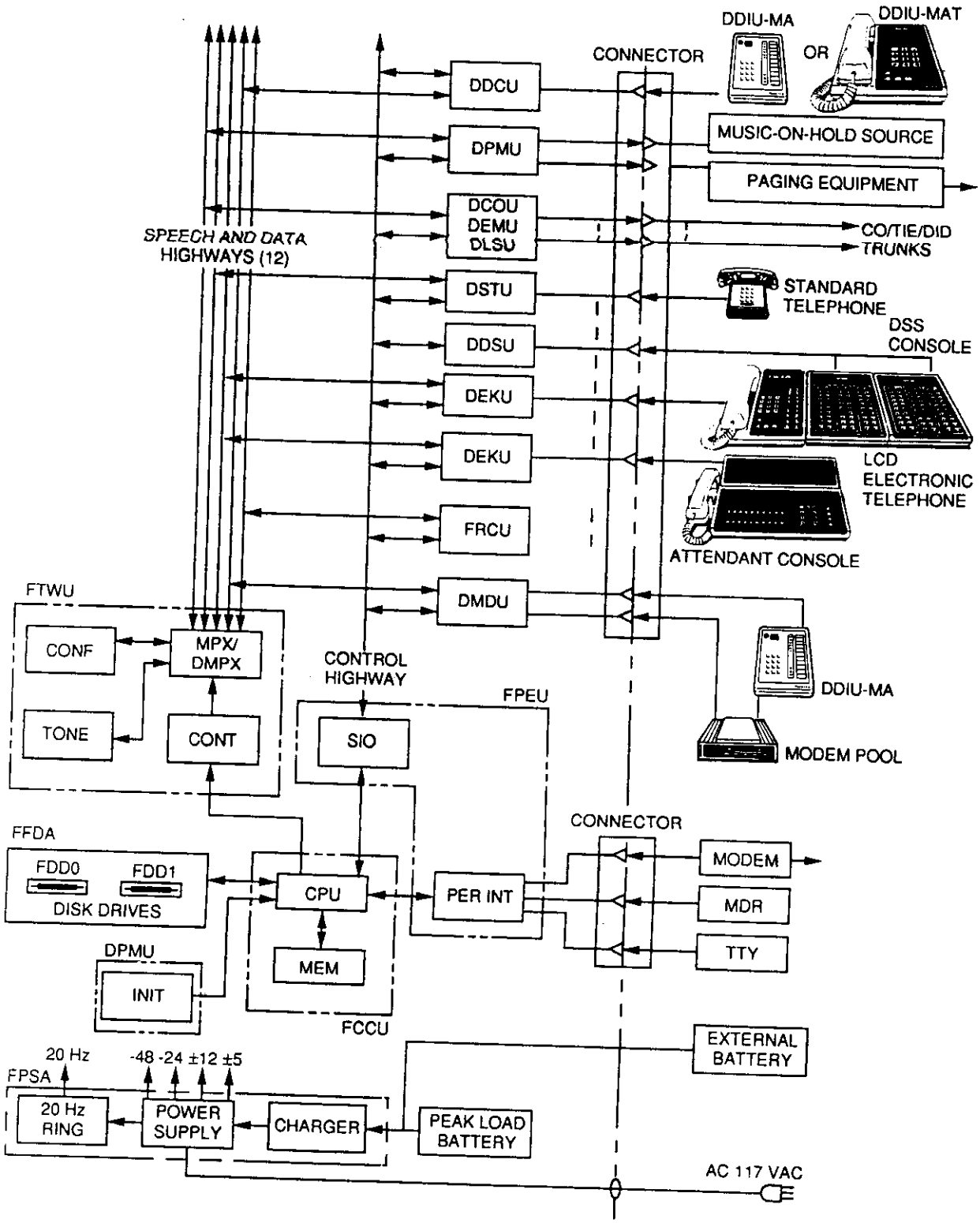


FIGURE 15—FUNCTIONAL BLOCK DIAGRAM

forms time slot interchange, digital padding, and conferencing functions. Analog-to-digital/digital-to-analog converstion is performed on each station and trunk printed circuit board. System tones (dial, busy, etc.) are stored in digital form in read-only-memory (ROM) on the FTWU, which transmits them to stations as required. Central control consists of a 16-bit microprocessor (with a secondary 8-bit microprocessor) and its associated memory, which is on the FCCU. Hardware logic necessary for various system interfaces is located on the FPEU (DPEU). The system program and customer office data are both stored in random access memory (RAM) on the FCCU and on a floppy disk (for backup).

05 SYSTEM CONFIGURATION

Figure 4 shows the locations of the printed circuit boards, the power supply and the floppy disk unit in the basic equipment cabinet (FCEC-M). The FCEC-M is divided into three shelves (for printed circuit boards and the FFDA) and the mounting location for the power supply. All printed circuit boards plug in from the front of the cabinet; all external connections are made at the rear of the cabinet (Figure 5).

The FFDA contains the following:

Floppy Disk Drives (FDD0/FDD1): Houses the floppy disks containing: 1) the system programs and customer data and 2) the Maintenance and Administration programs.

Shelf 1—houses the five common control boards and up to eight trunk interface printed circuit boards.

Time Switch/Control Unit (FTWU): Performs the time slot interchange function for call processing and the conferencing feature, provides the digital speech paths with digital padding, and generates system tones.

Central Control Unit (FCCU/DCCU): Contains the microprocessor and ROM and RAM memory; performs all system control functions. Enables system time and date to be set. One per system must be included in the basic cabinet

Peripheral Control Unit (FPEU): Performs data transmission and receiving functions between stations and trunks and the FCCU.

Receiver Unit (FRCU): Provides DTMF receiver which are required for receiving tone dia from standard telephones, incoming trunks and voice mail equipment. Two versions of FRCU printed circuit boards are available: FRCU-4 and FRCU-8. The FRCU-4 contains four circuits and is suitable for most systems. For use in systems with extremely high outgoing traffic, the FRCU-8 (providing eight circuits) is available. Up to two FRCUs can be installed when using the expansion cabinet (one per cabinet). The actual number of DTMF receiver circuits (printed circuit boards) required depends upon system traffic.

Paging and Music Unit (DPMU): Interfaces the music source (MOH) and the paging equipment to the system and also performs the following functions:

- System program loading switch
- System initialization switch
- UNA signal control
- Power failure/emergency transfer control unit (DPFT)
- Digitized voice message for Auton Wake-up.

IMPORANT!
The DPMU is required in the expansion cabinet (FCEC-S) whenever Standard Telephone Interface Units (DSTU) are installed in the expansion cabinet.

CO Trunk Interface Unit (DCOU): Interfaces four CO trunks to the system. These trunks can be incoming, outgoing, or both way CO trunks; WATS trunks, or Foreign Exchange (FX) trunks. Each can be configured in software for either loop-start or ground-start operation. Ground-start trunks are recommended for many PBX applications.

E & M TIE Trunk Unit (DEMU): Interfaces four TIE trunks to the system. Each TIE trunk can be individually set for either Type I or Type II connection using either 2- or 4-wire operation.

DID Trunk Unit (DLSU): Connects four Direct Inward Dialing (DID) trunks to the system. The DLSU uses loop signalling and enables incoming calls on DID trunks to be received directly at a specific station (private directory numbers).

NOTE:
Any type of trunk interface printed circuit board may be installed at any trunk board slot (maximum: 8 printed circuit boards per cabinet).

Shelf 2—houses the station and data printed circuit boards (four types). There are 15 slots, and each printed circuit board provides eight circuits:

Standard Telephone Interface Unit (DSTU): Supports both DTMF (2500-type) and rotary-dial (500-type) standard telephones. A maximum of eight per card.

Electronic Telephone Interface Unit (DEKU): Supports up to eight proprietary electronic telephones of any model in any combination.

DSS Console Interface Unit (DDSU): Supports up to four DSS consoles. Two per system.

Digital Data Line Interface Unit (DDCU): Supports up to eight DDIUs (-MAT or -MA) and their connected data equipment.

Modem Pooling Interface Unit (DMDU): Supports four DDIUs and four modems (8 circuits).

Expansion Cabinet Equipment

Figure 4 shows the locations of the printed circuit boards and the power supply in the expansion equipment cabinet (FCEC-S). The FCEC-S is divided into two shelves (for printed circuit boards) and the power supply mounting location. All printed circuit boards plug in from the front of the cabinet; all external connections are made at the rear of the cabinet (Figure 5); and the interfacing cables between the upper and lower cabinets are located in the rear. The expansion cabinet requires the FCCU/FPEU combination installed in the basic cabinet.

Shelf 1—houses the following five types of printed circuit boards:

- Receiver Unit (FRCU)
- Paging and Music Unit (DPMU)
- CO Trunk Interface Unit (DCOU)
- E & M TIE Trunk Unit (DEMU)
- DID Trunk Unit (DLSU)

All printed circuit boards provide the same functions as in the basic cabinet except the DPMU. In the expansion cabinet, the DPMU provides ringing control to all Standard Telephone Interface Units (DSTU) installed in the expansion cabinet, a second UNA signal control, and control of a second power failure transfer unit (DPFT). Other DPMU functions do not operate in the expansion cabinet.

Shelf 2—houses the following four types of printed circuit boards:

- Standard Telephone Interface Unit (DSTU)
- Electronic Telephone Interface Unit (DEKU)
- Digital Data Line Interface Uit (DDCU)
- Modem Pooling Interface Unit (DMDU)

Power Failure/Emergency Transfer Unit (DPFT)

The DPFT is mounted externally to the cabinet (typically adjacent to the MDF) and is controlled via the DPMU printed circuit board. If a power failure occurs, this unit will automatically connect eight standard telephones to eight preselected trunks enabling the system to make and receive CO calls over the transferred trunks. When power is restored, the DPFT automatically reconnects the transferred trunks to the appropriate printed circuit board. Emergency transfer can also be set and reset from the attendant console. As a built-in safety feature, the system protects station circuits during power failure transfer conversations by preventing them from being reconnected to trunks until the trunks are idle. Two DPFTs may be installed when using an expansion cabinet for a total of 16 circuits.

06 INSTALLATION and MAINTENANCE

All connections to the equipment cabinet are made via plug-in connector cables. Complete installation instructions, including connection diagrams, programming instructions, and operational procedures are included in the relevant sections of the PERCEPTION II *Installation and Maintenance* manual.

Maintenance is aided by software diagnostics which assist in pinpointing the fault to a particular printed circuit board or subassembly. Diagnostic programs can be run over the public telephone network from a remote maintenance facility. A system malfunction is corrected by replacing the affected PCB or subassembly.

07 FEATURE DESCRIPTIONS

This section contains a brief description of features listed earlier in Tables D, E and F, along with some associated operating procedures. Detailed operating instructions may be found in the appropriate **USER GUIDE** or sections of the system documentation. Software for the features listed as standard is present in all PERCEPTION II systems.

Standard Features

System Features

Attendant-Position Electronic Telephone: This feature enables up to eight electronic telephones to access several attendant-type features: Set and cancel Meet-Me Pages, change the Remote Access code, cancel all system Call Forwards, and change the system between Day and Night operation.

CCSA Access: Accesses a common control switching arrangement (CCSA) network for inward dialing to the system, direct outward dialing to the CCSA network, and other features similar to those provided on the public exchange network.

Classes of Service: The system provides up to 16 classes of service, which can be assigned to stations to allow or deny access to features, including level of Least Cost Routing, access to trunk groups, and access to data security groups.

Consoleless Operation: The system may be operated without a console. All incoming trunk calls are routed either to an assigned station or to a Universal Night Answer device.

Data Transmission: The system offers a sophisticated data switching capability that can interconnect a wide range of end user data equipment, including personal computers, host computers, printers and modem pools. Asynchronous data can be transmitted at speeds of up to 19.2 kbps; synchronous at up to 9.6 kbps.

Direct Inward Dialing (DID): Stations are assigned 7-digit listed directory numbers and can be called directly from the central office via direct inward dialing (DID) trunks.

- **Call Forward-Busy/No Answer**: Incoming DID or CCSA calls are automatically ac to the attendant when the called statio.. ine is busy or does not answer.
- **Multiple Listed Directory Number**: Allows two LDNs to be used for DID purposes on one installation. Each LDN can be assigned a unique incoming call identification (ICI) on the attendant console. In tenant systems, LDN1 is assigned to Tenant 0 and LDN2 is assigned to Tenant 1.

Direct-In Lines: Permits incoming trunks to be routed to a specific station or hunt group. Incoming calls from the trunk ring that station (or hunt group) directly. A Direct-In Line may be assigned to the same or an alternate station (or hunt group) during day and night operation.

Distinctive Ringing: Three types of ringing are provided to distinguish among station-to-station calls, trunk-to-station calls and automatic call-backs.

Flexible Numbering: Station directory numbers as well as trunk and special service ass codes, may be assigned in accordance w. the numbering plan desired by the customer.

Immediate Ringing: Ringing occurs at a called station as soon as it is determined to be idle (there is no waiting for a ring cycle to begin).

Intercept: Calls that cannot be completed because of system restrictions or dialing errors are intercepted and routed to either the attendant or to overflow tone (programmable option).

Least Cost Routing: Enables the customer to decide over which trunks outgoing voice and data calls will be routed. This can greatly reduce the cost of long distance calling. Three classes of LCR can be programmed to give priority routes to the users who need them.

Line Lockout: Stations that go off-hook and do not complete dialing within a predetermined length of time are released, preventing the common equipment and trunks from being held "out of service". Once the locked-out station goes on hook, it is returned to service.

Manual/Hot Line Service: Manual or Hot Line Service is provided to standard telephones only

When the station user goes off-hook, the call is automatically directed to the attendant or to a preselected DN (without any dialing). Although calls cannot be made to any other directory number, incoming calls can still be received.

Multiple Console Operation: Up to two attendant and Direct Station Selection consoles can be used (or the system can operate consoleless). The expansion cabinet is required for the second attendant console; however, the system maximum of eight DSS consoles can be driven from a basic cabinet.

Multiple Directory Numbers: Up to 240 directory numbers can be assigned in the system. Each directory number can appear on up to 96 telephones.

Multiple Trunk Groups: Up to 16 trunk groups can be programmed. Trunk groups are used to control station user access to different types of trunks and also for outgoing call routing by the Least Cost Routing program.

Music-On-Hold: A standard interface enables a customer-provided music source to be connected to the system. This music is connected to all calls placed in the hold, camp-on or call waiting condition by a station or the attendant. The same music source can also be used by the Automatic Wake-up feature for wake-up calls.

Night Service: Night service is activated when an attendant console or an attendant position electronic telephone places the system in Night operation. Incoming calls when the system is in Night Service are routed to answering positions in three ways:

- **Fixed**: Incoming trunk calls are routed to stations preselected in the customer data base.
- **Flexible**: The attendant can change the assignment of trunks to stations for night service. During night service, incoming calls on these trunks will be routed to stations assigned by the attendant.
- **Universal**: Trunks not assigned to ring at a station will signal a customer-provided Universal Night Answer device (usually a bell or chime) to indicate an incoming call. Any station can answer the call by dialing a specific access code or pressing a dedicated feature button. When an expansion cabinet is installed, two UNA zones are available (one per tenant).

Paging Groups, Internal: Permits paging via the speaker in the electronic telephone. Provides the user with access up to 17 internal paging groups, 16 with 32 members each and 1 with 96 members.

Paging Zones, External: Permits the attendant or a station to page through one of five zones of external speakers. An All Call page can also be made through all five zones simultaneously.

Remote Access to Services: Allows a user outside the system to access system services via a trunk connection. The user dials a preselected number to access the system and then dials a 3-digit authorization code. The user may then make outgoing calls or access internal equipment as if the user were a system station.

Remote Administration/Maintenance: The system will interface with a standard modem to allow administration and diagnostic software programs to be executed from a standard terminal at a remote location.

Rotary/Tone Dial Compatibility: The system can support either rotary dial or DTMF tone standard telephones. There is no limit to the number of standard telephones (up to 192) that can be installed in the system.

Route Advance: Routes outgoing calls over alternate trunks when the first trunk choice is busy.

Speed Dialing-System: Allows the station users or attendant to access a directory of up to 90 speed dialing numbers that can be changed only from the console.

Station Message Detail Recording (SMDR): PERCEPTION II automatically records call data (such as call duration, digits dialed, originating station and account codes) of calls made to and from the system. Lodging/Health Care feature activation (Automatic Wake-up, Message Registration, etc.) is also recorded. This data can then output to a printer, recording device or call accounting system. The Lodging/Health Care

feature audit can be combined with SMDR or can be output separately. SMDR helps the user reduce telephone costs and monitor employee telephone usage.

Station Set Mix: The same directory number can appear simultaneously on a mixture of standard telephones and electronic telephones. A maximum of 96 appearances is possible for a given directory number (DN). This feature enables a user to join an established conversation, on a station with the same DN, at any time.

Tenant Service: Two tenants may share the telephone services of a PERCEPTION II system.

TIE Trunks: PERCEPTION II can utilize either Type I or Type II TIE trunks with either 2- or 4-wire operation.

Toll Restriction (6-digit): The system provides 10 classes of toll restriction that can be tailored to the customer's needs in defining each station's outward dialing capability. The first six digits of the dialed number are analyzed with an array of area and office code tables to allow or deny the call. Also **0** or **1** can be denied as the first digit dialed.

Tone-to-Dial Pulse Conversion: DTMF signals from standard telephones are automatically converted to rotary dial pulses for transmission to a rotary dial central office.

Traffic Measurement: The system provides traffic information, such as peg counts and usage, to a terminal or printer, enabling the user to monitor trunk usage and attendant operation.

Trunk-to-Trunk Connections (Tandem Switching): Trunk-to-trunk connections through the system can be set up by station users without attendant assistance.

Trunk Transfer Recall: Each trunk in the system can be programmed to have a unique final transfer recall destination, which can be any system station or attendant console. When a transferred trunk call is unanswered and recalls to the station that transferred it, if it goes unanswered at that station, it will recall to the final destination assigned to that trunk.

Uniform Distribution Wiring: Electronic telephones use 2-pair wiring, while standard telephones use only a single-pair. An installation site can be prewired with 2- or 3-pair cable without concern for the future configuration of the system. However, since the DDIU (required for data switching) uses an additional wire pair it is advisable to run 3-pair cable to all stations that may use data equipment in the future.

Universal Night Answer (UNA): Incoming calls when the system is in night operation, can be programmed to go either to a night answer station or to a Universal Night Answer device such as a bell or loud ringer. Any station user can pick up a UNA call by either pressing a UNA button on the telephone or by dialing an access code. Up to two UNA zones can be programmed per system (tenant systems only).

Variable Timeout: The timeout intervals associated with several features are variable by system programming to fit the end user's application.

Voice Mail Interface: PERCEPTION II provides an enhanced voice mail interface that includes the following specialized capabilities:

- **Call Forward to Voice Mail Box**: Allows a station user to call forward to a voice mail box location. The system will ring the voice mail device and forward the digits of the desired mail box once answered. The caller bypasses the voice mail command menu and can immediately leave a message.
- **Voice Mail Control from Electronic Telephone**: Allows the electronic telephone user to control the voice mail equipment from the telephone dial pad.
- **Message Waiting Indication**: Allows the voice mail system to dial a special access code to set and cancel message waiting at the station when the voice mail system is the message center.

Station Features

NOTE:
The following station features are available with either standard telephones or electronic telephones.

Account Number Recording: By pressing a feature button or dialing an access code, an ac-

count number can be recorded on incoming and outgoing calls and output as part of the Station Message Detail Recording report. Account numbers can be 1 ~ 12 digits.

Automatic Callback: Permits a calling station user, upon encountering a busy directory number or trunk access code (on either a voice or data call), to press a feature button (or dial an access code) that causes the system to monitor the called number. The system will then alert the calling station when the station number or trunk becomes idle. On station-to-station and LCR calls, the system then automatically redials the originally dialed directory numbers.

Call Forward: The system offers five different types of call forwarding. When call forwarding is activated at a station, the user can still originate calls.

- **All Calls**: All calls to a station will automatically be routed to the selected station or outside directory number.
- **Busy**: Calls directed to a busy station will automatically be routed to the selected station or outside directory number.
- **Busy/No Answer**: Combines both the busy and no answer call forward features.
- **No Answer**: Any call not answered within a specific time period is automatically routed to the selected station or outside directory number.
- **Trunk**: Permits any of the call forwarding features to be routed over a trunk to an outside directory number (selected by Least Cost Routing or trunk access).

NOTES:

1. *All call forwarding features are mutually exclusive. When a new call forward feature is activated, the other is automatically cancelled.*
2. *All prime directory numbers, single appearing directory numbers and single appearing private lines on the station will be call forwarded when activated.*
3. *Call Forward No Answer advances one station only.*

Call Pickup: Two types of Call Pickup are available.

- **Directed**: A station user can answer calls ringing or retrieve those placed on hold at another station by operating a feature button or dialing a special programmed pickup code and then dialing that station's number.
- **Group**: A station user can press a feature button or dial an access code to answer an incoming call ringing on another station within the same pickup group.

Call Waiting: During an established call, a tone signal informs the station user that a trunk call is waiting to be connected. The called station can accept the waiting call and then talk alternately to either party.

Conference (3-party with transfer): Stations may consult with another party (station or trunk) while on any type of call. The original party is held during this time and is excluded from the conversation. The station user may transfer the held party to the consulted party, or the consulted party may be added to the original conversation to form a 3-party conference.

Direct Outward Dialing: Station users can access specific trunks directly by dialing an access code (or the user can be restricted to accessing trunks only through the Least Cost Routing feature). Class of Service controls which trunk group each station user can access directly.

Do Not Disturb: Allows a station to give a busy indication to callers when the user does not wish to be disturbed.

Meet-Me Page: Allows the station user to remotely access a call which was "parked" for him by the attendant. A maximum of 16 calls (8 per attendant console) may be "parked". In Tenant Service, there is a maximum of 8 per tenant.

Message Waiting: The designated Message Center (which can be an attendant console, a station, or a voice mail system) can indicate to a station user that a message is waiting. The indication is a ring every 20 minutes, a flashing message waiting lamp (a specially equipped standard telephone) or a Message Waiting (MSG) button/LED on an electronic telephone.

Override: Enables a station user (after reaching a busy number) to override a busy condition and enter the existing conversation on a bridged

basis by pressing the OVR button or dial an access code. A warning tone notifies the existing conversation that a third party is about to enter (also rings a station in DND).

Page Access (External/Internal): The user can access the five external page zones and the 17 internal page groups from any system telephone using either feature buttons or access codes. Partial or total access to paging can be set for each station user in the Class of Service program.

Park: A station user may hold any call in progress by pressing the PARK button or by dialing an access code. This Hold feature allows the station to originate or receive calls on the same DN.

Private CO Line: Permits the appearance of a CO trunk on an electronic telephone button or as the directory number of a standard telephone. Upon going off-hook, the station is connected to the CO by a dedicated trunk circuit inside the system. Incoming calls over that trunk ring that station directly, and outgoing calls bypass the Least Call Routing and Toll Restriction programs. Up to 95 other stations can share this line appearance. Each Private Line can be individually restricted from making outgoing calls.

Remote Retrieval of Held Calls: Calls that have been placed on hold or parked by a station can be retrieved by a different station with the Call Pickup Directed feature.

Repeat Last Number Dialed: The system automatically stores the last number dialed by each station. The number can be redialed by dialing an access code or by pressing a feature button.

Speed Dialing-Station: Allows the user to maintain a separate 10-number directory which are accessed by a feature button or access code and may be shared by any number of stations. The system has a maximum of 50 lists for a total of 500 numbers.

Station Hunting: Calls to busy or unanswered phones can be programmed to "hunt" through a group of preselected directory numbers until it is answered (eight steps maximum). The directory numbers may be arranged in either consecutive or non-consecutive order. Four types of Station Hunting are possible. (See the Feature Descriptions for interaction with Call Forward.)

- **Circular**: Hunting occurs over all stations in the hunt group, beginning with the called number and proceeding through a programmed sequence. The call is completed to the first idle station in the group. There is no limit to the number of stations that can be assigned to a circular hunt group.
- **Master Number Distributed**: This is a special circular hunt that provides a degree of call distribution. Hunting begins at the starting point for each hunt and is incremented for each call (over all stations in the group) when a master DN is dialed. Four groups are possible, with a maximum of eight members per group.
- **Secretarial**: Any directory number can be used as the last number in two or more station hunting groups.
- **Terminal**: Hunting starts with the called station and ends with the last directory number in the prearranged group; however, the call is completed to the first idle number.

Trunk-to-Trunk Conections: The attendant or a station user can join two trunks and then drop out of the conversation, enabling the two distant parties to converse privately. When the distant parties hang up, PERCEPTION II automatically drops each trunk.

Uninterrupted Line Connection: Prevents the insertion of warning tones on any given station line. This feature is intended to provide security for the line(s) used for data transmission, although other applications are also possible.

Electronic Telephone Features

Alphanumeric Messaging with LCD: Allows system and personal messages to be displayed on the 32-character Liquid Crystal Display. Up to ten messages can be programmed (up to 16 characters in length); but messages can also be entered or modified via the station dial pad. A station can personalize the message and then display it at any calling Liquid Crystal Display station.

Automatic Dialing Buttons: One or more buttons can be assigned as automatic dialing buttons, with each button controlling a single telephone

number. The button may be assigned with a fixed number that cannot be changed at the station or can be assigned as soft button that can be programmed by the user. Pressing the button, after receiving dial tone, causes the stored number to be outpulsed. These buttons can also be programmed to dial feature access codes. There is a system maximum of 500 auto-dial buttons.

Automatic Line Preference: Automatically connects the electronic telephone to its prime directory number (PDN) upon going off-hook (see Prime Directory Number).

Call Status Indication: The LED associated with the In-use DN button, provides a visual indication of the status of the call on that line by various illumination states.

Common Audible Signalling: Permits tone ringing at a station when an incoming call is presented on any DN appearing at that station. DNs can also be programmed not to ring on incoming calls.

Distinctive LED Indications:

- **In-Use**: A distinctive LED flash is provided to indicate which directory number is currently in-use at a given electronic telephone.
- **On-Hold**: A distinctive LED flash is provided to indicate the call that is on-hold at a given electronic telephone.

End-to-end Signalling: The electronic telephone is able to transmit DTMF tones through the system to the distant end anytime following normal address dialing. Within the system, up to 32 standard telephone ports per tenant can be programmed to receive DTMF tones, primarily for voice mail operation.

Flexible Feature Buttons: Feature buttons on the electronic telephones* can be assigned to provide one-button access to line appearances or to the features most needed by an individual station. This total flexibility of feature assignment enables each system to be tailored to satisfy the requirements of a wide range of end users.

Handsfree Answerback with/Speaker Cut-off: All electronic telephones* are equipped for handsfree answerback on voice-announced calls. The electronic telephone can also be assigned a Speaker Cut-off SCO button. Activating SCO overrides handsfree answerback and forces all calls to ring the station.

Handsfree Monitoring: On all electronic telephones, the handset can go back on-hook for handsfree monitoring of an on-hold condition.

Headset Jack: All electronic telephones* feature a modular headset connector in addition to the modular handset connector.

Hearing Aid Compatible: All electronic telephones are hearing aid compatible.

Hold Button: An electronic telephone user may hold a call by pressing the HOLD button. This feature causes the DN LED to flash and give a busy signal to all incoming calls.

Manual Signalling: A station user can send an audible signal to a predesignated station by pushing a feature button on the electronic telephone.

Modular Cords: All electronic telephones are equipped with modular line and handset cords.

Multiple Appearing Directory Numbers: Any directory number can appear on up to 96 telephones (electronic or standard). Calls can be originated or received at any appearance of the DN.

Night Answer Button: Enables a station user to answer incoming calls ringing at the Universal Night Answer device by pressing a dedicated button or dialing an access code.

Non-Locking Buttons: All electronic telephone buttons are non-locking. In-use and On-hold indications are provided on DN LEDs to prevent confusion over which DN is active on a given electronic telephone.

On-Hook Dialing: Permits the electronic telephone user to dial without lifting the handset. Call progress can be followed via the speaker.

Prime Directory Number: Each electronic telephone has a Prime Directory Number that is

*Except single-line electronic telephone

selected automatically when the station user goes off-hook.

Privacy: Prevents the station user from entering an existing conversation. (Privacy is the inherent mode of operation for all calls, unless otherwise allowed through the Privacy Release or Station Set Mix features.)

Privacy Release: By operating the Privacy Release button (if equipped), an electronic telephone user can permit up to four more stations to enter a conversation on a Multiple Appearing DN.

Push-button Dialing: All electronic telephones are equipped with push-button dial pads which generate digital signals that are translated by the system CPU. The buttons are arranged in the same fashion as a conventional DTMF dial pad.

Push-button Access to Features: The electronic telephone allows simplified access to sophisticated system features via feature buttons on the telephone.

Release: A Release button can be programmed on the electronic telephone allowing the user to disconnect from an existing call without having to go on-hook or push the hookswitch.

Speaker/Amplifier: Each electronic telephone is equipped with a speaker and amplifier to produce the ringing tone, buzz tone, warning tone and voice-page signals, as well as to provide on-hook calling and internal paging.

Station-to-Station Message: An electronic telephone's directory number may be sent to the display on another station, indicating that that station has called. A maximum of six messages can be set to any one station. The called station can return the call by pressing a station-to-station message button.

System Night button: In systems (or in a tenant) that is operating without an attendant console, one SYS button can be assigned to one Attendant-Position Electronic Telephone to switch the system (or tenant) between Day and Night Direct Inward Dialing destinations.

Tone Buzzing: Alerts the electronic telephone user via a buzz tone through the speaker used for warning tones.

Tone Ringing: An adjustable volume ringing tone via the electronic telephone speaker is used to alert the user to an incoming call.

Voice Paging: By pushing an assigned button, an electronic telephone station user can cause a single tone burst to be sounded at another electronic telephone. Following the tone, the caller can be heard through the called telephone's speaker. The called station user answers via handsfree answerback or by picking up the handset. If using a single-line electronic telephone or if SCO is activated, the call must be answered via the handset.

Volume Con The electronic telephone has two volume controls; one varies the volume level of the ringing tone, buzzing tone and voice page the other controls speakerphone volume.

Wall Mountable Electronic Telephones: All electronic telephones can easily be converted for wall mounting by simply readjusting the base and handset hanger.

Attendant Console Features

Alarm Lamps: The attendant console is equipped with LEDs to indicate MAJOR or MINOR system alarms. An MDR alarm indicates a failure in the external Station Message Detail Recording connection.

Attendant Camp-on with Indication: Enables an incoming trunk call, which has been extended by the attendant to a busy station, to be held until the called station becomes idle. The busy station hears a tone to indicate the waiting call. When the called station becomes idle, the waiting call automatically rings there. If the station has a Call Waiting button, the call automatically activates that feature.

Attendant Conference: The attendant can establish a conference with up to six parties (including the attendant console) or five parties with the console not included. The conferenced parties can be either stations and/or trunks.

Attendant Emergency (Power Fail) Transfer Control: A switch on the bottom of the console

manually controls the Power Fail Transfer feature. The switch transfers all emergency lines and trunks regardless of the system's operational status.

Attendant Initialization: A switch on the bottom of the console enables the attendant to remotely reinitialize system logic.

Attendant Recall: A station user can recall the attendant to any 2-party connection.

Busy Lamp Field: The attendant console is equipped with a 100-LED panel (displaying busy DNs) and a 7-segment display, under the control of the BLF button, indicating which hundreds group is being displayed. The message waiting status can be displayed in the Lodging/Health Care mode of operation.

Call Forward All Clear: All call forwards that are registered in a system may be canceled from either an attendant console (or an Attendant-Position Electronic Telephone) via the use of a Call Forward All Clear access code.

Call Waiting Lamp: An LED indicates calls are waiting in the attendant queue.

Digital Information Display: Displays five specific call details and Lodging/Health Care data:
ICI: Incoming Call Identification.
SRC: Source or calling party's number.
COS: Class of Service of calling party.
DEST: Destination or called party's number.
STATUS: Status of called party.

Direct Access to Paging: The PAGE button on the attendant console provides the operator with direct, push-to-talk access to one paging zone, all paging zones (simultaneously), or all zones and Internal Page Group 0.

Incoming Call Identification: The ICI section of the console display identifies each type of incoming call.

Incoming Call Priority: Allows the attendant console to be programmed for a specific incoming call priority. The incoming calls are answered in a sequence flexibly arranged by trunk group, operator calls and recalls or on a first-in/first-out basis.

Individual Trunk Access: The attendant can access each trunk individually with the VER/CRG button.

Interposition Call/Transfer: Allows attendants in a multiple console system, to call each other and to transfer calls from one console to the other.

Lockout: The attendant cannot re-enter an established connection held on the console unless recalled by the station user.

Night Service Control: The console operator can activate and deactivate Night Service and post trunks to specific night stations.

Non-Delayed Operation: The console operator can make a call for a station user (who has reached the console by dialing **0**) without requiring the station user to go on-hook.

Overflow Facility: When activated by the dedicated button, this feature automatically transfers incoming calls (that have remained unanswered by the attendant for a specified time period) to a preassigned station or to the Universal Night Answer device.

Position Busy: In a multiple-console system, either of the consoles can be taken out of service by using the POS BSY button. If both consoles are "busied out," the system automatically goes into Night Service.

Push-button Dialing: The attendant uses a standard push-button dial pad for all call operations.

Secrecy (Exclusion): Secrecy automatically splits the source party from the connection when the attendant starts to extend the call or answers an attendant recall. The attendant can join the two parties.

Serial Call (Business only): If an incoming trunk caller wishes to be connected to several stations in sequence, the attendant can arrange the trunk to recall the console as each station disconnects. This feature is not available in the Lodging/Health Care mode of operation.

Speed Dialing-System: A dedicated button provides access to the speed dialing-system feature for the attendant. The attendant also has the ability to reprogram the speed dial-system directory from the console.

Splitting: The attendant is able to consult privately with either party of a call that appears on the console. The other party is temporarily put on-hold.

Station Number Display: The SRC and DEST displays show the identity of any station, either calling or called, connected to the console.

Station Verification: The attendant has the ability to establish a voice connection with a busy DN. During the connection, periodic bursts of tone alert the conversation to the attendant's presence.

Switched Loop Operation: Each call requiring attendant assistance is automatically switched to one of four LPK buttons. The call is immediately released from the loop when the attendant presses the RLS button.

Through Dialing: At the attendant's discretion, station users may complete dialing after the attendant selects the trunk on attendant-handled outgoing calls.

Timed Reminders-Variable: The timeout intervals (that determine the recall of the attendant to the calling party) are adjustable by system programming.

Time of Day Display/Set/Reset: The time and date of the system's real-time clock can be displayed and reset at the attendant console. This time and date is displayed at all LCD electronic telephones and is used by such features as Station Message Detailed Recording and Traffic Measurement.

Trunk Group Access Control: The attendant can restrict dial-access by all stations to individual trunk groups. Stations attempting to dial-access the restricted groups will be routed to the attendant for call completion.

Trunk Group Busy Indication: The console is equipped with LEDs showing an "all member trunks busy" condition for up to ten trunk groups.

Trunk Equipment Number Display: The SRC and DEST displays show the identity (trunk group and member number) of any trunk connected to the console.

Trunk-to-Trunk Connection: The attendant has the ability to connect an incoming trunk to an outgoing trunk from the console and then drop out of the conversation. When the parties hang up, the trunks are automatically dropped.

Trunk Verification: The attendant has the ability to establish a voice connection with an apparently busy trunk or special service access line to determine if it is in working order. When the attendant is connected to a busy trunk, periodic bursts of tone alert the conversation to the attendant's presence.

Direct Station Selection Console Features

Attendant Console Emulation: The DSS console can duplicate certain attendant console functions. This requires that the DSS console be connected to an Attendant-Position Electronic Telephone.

Automatic Line Hold: Incoming calls will be placed on hold by pressing the station button on the DSS console. This eliminates the need to place call on hold prior to dialing the s number.

Busy Lamp Field: The console can be used to indicate the on-/off-hook status of all telephones in the system.

Direct Station Selection: By pressing an assigned button, connection tween the DSS station and the called station.

Electronic Telephone Features: Any non-voice electronic telephone features can be assigned to buttons on the DSS console.

Fixed/Switched Operation: DSS console button can be programmed to operate as fixed—each DSS button always accesses the same DN—or switched—the hundreds group accessed by DSS console buttons changes when a specific Hundreds group button is pressed.

Lodging/Health Care Features

Automatic Wake-up: Allows the guest or the attendant to set a "wake-up" alarm that wil g the guest room at a prearranged time. r answering a wake-up call, the station receives either a digitized voice message, music or si-

lence. If the wake-up call is not answered within six rings, or if the guest phone is busy, a second (and, if necessary, a third) attempt will be made at 5-minute intervals. All wake-up information can be included in the SMDR output.

Controlled Outgoing Restriction: Restricts any guest room from making any outgoing trunk calls. While the restriction is in force, any outgoing trunk calls from that guest room will be intercepted (sent to attendant or receive overflow tone). The restriction can be manually activated by the attendant or automatically activated when the maid-in-room status or room vacant status is in effect.

Deposit Paid Confirmation: Using the attendant console display, the attendant can set, cancel or verify the Deposit Paid status of an individual guest room. Deposit status is also indicated during a Room Status Audit printout.

Executive Suite Telephone: Permits an electronic telephone to be assigned as a Guest Room Telephone. Automatic dialing number assignment can only be changed via programming, not by the guest, and can be assigned to call specific directory numbers, such as the front desk, reservations, or a nurse's station. A DDIU and data equipment can also be used with an Executive Suite Telephone.

Guest Room Information: During a power failure, all guest room information is protected by an onboard power supply. The following data is saved during a power failure. This information can also be displayed by the attendant console and printed out either by the SMDR feature or individual status audits.

- Automatic Wake-up
- Controlled Outgoing Restriction
- Deposit Paid Confirmation
- Maid-in-room Status
- Message Registration
- Message Waiting
- Room Status

Maid-in-room: Using the guest room telephone, the maid can indicate to the attendant console that a maid is in the room and change the status of the room from "needs cleaning" to "clean." While Maid-in-Room status is in effect, no outgoing calls can be made from that telephone.

Message Registration: The system will calculate the "total cost" for outside calls, by using the message units accumulated by the guest room telephone. Office codes can be divided into five separate tables allowing flexible assignment of message unit cost and the number of message units charged for calls within the home area code.

Message Registration-Audit: Allows the attendant to request a printout of an individual or all stations that have made local calls. The printout includes the date, time, station number and total cost of message units.

Message Registration-Room Display: Allows the attendant to display the "total cost" of the message units accumulated by an individual station.

Message Waiting Lamp: A standard telephone (or single-line telephone) that is equipped with a message waiting lamp will flash whenever the message waiting feature is activated for that station. Executive suite telephones can have an LED/button programmed to flash when a message is waiting and to automatically call the message center when the button is pressed.

Room/Number Correlation: Permits a 4-digit station dialing plan to be used so that the guest room and telephone can have the same number. The dialing plan is limited to a single "thousands" digit, but 3-, 2- and 1-digit station numbers can also be used.

Room Status: Allows the attendant to display and change the following guest room functions:

- Room Condition Status
  - Vacant and Clean
  - Occupied and Clean
  - Vacant and Needs Cleaning
  - Occupied and Needs Cleaning
- Deposit Paid
- Message Waiting
- Message Registration (total cost and clear)
- Change all Room Condition Status from "clean" to "needs cleaning".
- Change all Room Condition Status from "needs cleaning" to "clean".

- The following functions can be displayed, but not changed, by the attendant:
  - Maid-in-room
  - Do Not Disturb

Room Status-Audit Display: Allows the attendant to display the total number of rooms affected by each of the four room status conditions and with Do Not Disturb registered.

Room Status-Audit Printout: The attendant can request a printout of an individual or ***all*** guest rooms. The printout includes date, time, room number, room condition status, deposit paid and maid-in-room.

Room-to-Room Blocking: Routes ***all*** calls to guest rooms to the attendant, who can then extend the call. This feature is set and cancelled by the attendant.

Integrated Data Switching Features (Optional)

Automatic Data Release: Both Digital Data Interface Units are equipped with an automatic data release feature. If selected, this feature will monitor data transmissions. If no data is detected for a period of 15 minutes, the unit will automatically disconnect.

Compatible Voice Features: The following voice features can be used to make data calls easier and more efficient:
- Automatic Callback
- Automatic Dialing
- Repeat Last Number Dialed
- Speed Dial-Station
- Speed Dial-System

Data Button: A Data button is assigned to an electronic telephone with a built-in DDIU to provide a data connection path to other DDIUs. More than one DATA button may be assigned to allow access to more than one security group (see Data Security Groups). The data button allows data calls to be made in the same manner as voice calls.

Data-only Transmission: A stand-alone DDIU-MA can be used when a data station has no voice requirements. Typically this would be a printer, modem, or host-computer location. The stand-alone unit can also be used with standard telephones and single-line electronic phones.

Data Release Button: A Data Release button can be assigned to an electronic telephone to allow the data path to be disconnected separately from the voice path, when using a built-in DDIU.

Data Security Groups: The system provides up to 16 data security groups. Each DDIU is assigned to one or more groups. Dial access into a data security group can be denied by the class of service. There is no limit to the number of DDIUs that can be assigned to one data security group. Data security groups enable the system user to control who has access to sensitive data or heavily used data equipment.

Data Switching Modes: Allows data to be transmitted and received either asynchronously or synchronously. (Maximum data transmission speeds are 19.2 kbps asynchronous and 9.6 kbps synchronous.) In the asynchronous mode, the DDIU will automatically adjust to match the transmission speed of the connected devic
the synchronous mode, the DDIU can be set at 9.6, 4.8 or 2.4 kbps, but will automatically adjust to a slower speed if required.

Modem Pooling: Allows the use of a "pool" of modems by DDIU users so that a separate modem is not needed for each individual user. On either outgoing or incoming data calls, a modem is automatically connected into the transmission path. Operation is transparent to data station users and enables outside data calls to directly access system data equipment with no in-house assistance (this includes calls into the system via the Remote Access to Services feature). Outgoing data calls can be transmitted over trunks selected by the Least Cost Routing feature (which can significantly reduce costs in systems with moderate-to-heavy outgoing data traffic).

Simultaneous Voice/Data Transmission: Allows both voice and data transmissions simultaneously, through the use of a Digital Data Interface Unit (DDIU-MAT) and any electronic telep
(except single-line electronic telephones). The DDIU mounts directly to the bottom of the elec-

tronic telephone, forming a single built-in unit. A 3-pair connection is required, 2-pair for the electronic telephone and 1-pair for the DDIU. Because voice and data are passed over discrete circuits, they can be transmitted simultaneously with no possibility of blockage. A station user can have a simultaneous voice and data call to two different locations.

Optional Features

Attendant Console Lodging/Health Care Faceplate: The Business and Lodging/Health Care Attendant Console faceplates can easily be exchanged. A label (that can be attached under the SRC and COS displays) is provided with each Lodging/Health Care faceplate to provide guest room function identification.

Automatic Wake-up Digitized Voice Message: The DPMU PCB can be equipped with a read-only-memory (ROM) chip that provides the following digitized voice message: "Hello, this is your wake-up call, have a pleasant day."

Electronic Telephones: There are six different electronic telephones that may be used in PERCEPTION II:

- **Single-Line (with or without Message Waiting light)**: Provides a single directory number (DN) button, a built-in speaker for Voice Announce and handsfree monitoring, and dial code access to all station features. Available with or without a message waiting light (LED).
- **10-button (SPK or HFU)**: Available with handsfree answerback on internal calls only or with full speakerphone capabilities.
- **20-button (SPK or HFU)**: Available with handsfree answerback on internal calls only or with full speakerphone capabilities.
- **20-button Liquid Crystal Display (Speakerphone only)**: A 20-button electronic telephone with full speakerphone capabilities and a Liquid Crystal Display (LCD), that features a 32-character alphanumeric display. (See Alphanumeric Messaging with LCD.)
- **Multicolored Faceplates (blue, black and wine)**: The standard brown electronic telephone faceplate can easily be changed on any electronic telephone to coordinate with the office decor.

Power Failure/Emergency Transfer: If a control or power failure causes loss of call processing, selected trunk lines are automatically connected directly to pre-selected standard telephones. Optional hardware is required.

Reserve Power: An internal charger connects directly to a customer-provided 24-volt battery. If power fails, the battery source will maintain system call processing. During normal operation, the system power supply keeps the battery source charged. This cost-effective Reserve Power system eliminates the need for an expensive Universal Power System.

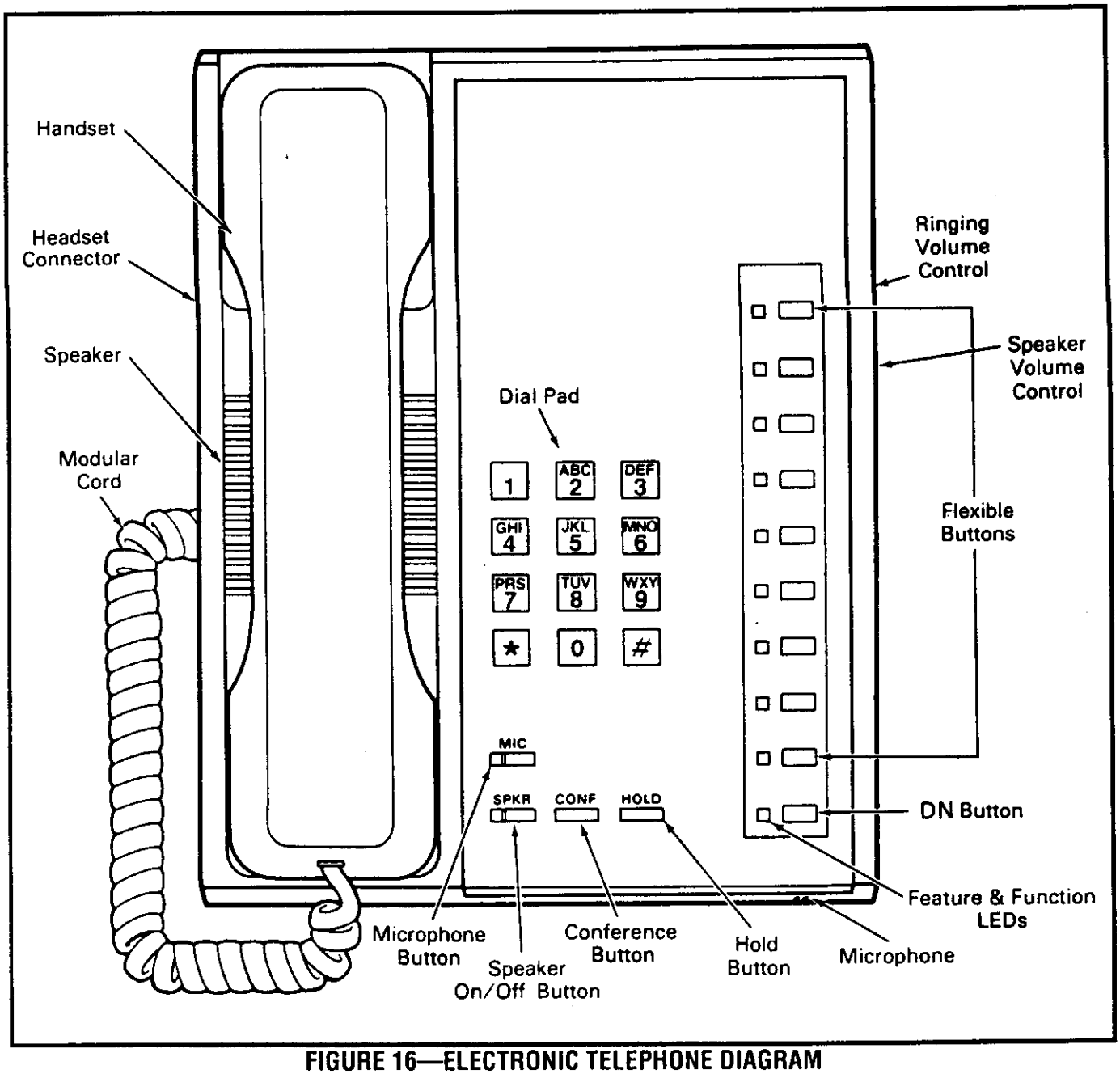


FIGURE 16—ELECTRONIC TELEPHONE DIAGRAM

PERCEPTION II

INSTALLATION

PERCEPTION II
INSTALLTION INSTRUCTIONS

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ILLUSTRATION LIST

ILLUSTRATION LIST (continued)

01 GENERAL

01.01 This section describes the installation procedures that are necessary to ensure the proper operation of the PERCEPTION II system. These general instructions apply to both basic and extension cabinets.

02 UNPACKING and INSPECTION

02.01 When the system is received, examine all packages and make careful note of any visible damage. If any damage is found, bring it to the attention of the delivery carrier and make the proper claims.

02.02 Check the system against the purchase order and packing slip. If it is determined that equipment is missing, contact your supplier immediately.

02.03 After unpacking (and before installing), inspect all equipment for damage. If any damage is detected, contact your supplier immediately.

CAUTION!
Whenever handling (installing, removing, examining, etc.) printed circuit boards (PCBs), do not touch either the back (soldered) side or the edge connector. Always hold a PCB by its edges when you must handle it.

03 PACKING and STORAGE

03.01 When storing or shipping PCBs, be sure they are packed in their original anti-static bags for protection against static discharge.

04 EQUIPMENT CABINET LOCATION REQUIREMENTS

04.00 Commercial Power

04.01 The system requires a power source of 90 ~ 120 VAC, 50/60 Hz, and has a maximum power consumption of 1.5 kw. The AC power outlet should be grounded and separately fused. If reserve power is to be installed, the battery pack will require a well-ventilated location that is adjacent to the equipment cabinet.

04.10 Environmental Requirements

04.11 Humidity at the equipment cabinet location should be within 20 ~ 80%, and the temperature should be relatively constant within a range of 32 ~ 104°F (0 ~ 40°C). Exposure to dust and airborne chemicals should be avoided.

04.20 Equipment Room Recommendations

04.21 The minimum floor and maintenance space that is required for installation of the PERCEPTION II system, is shown in Figure 1. The use of an expansion cabinet requires no additional floor space since the unit is stacked on top of the basic cabinet.

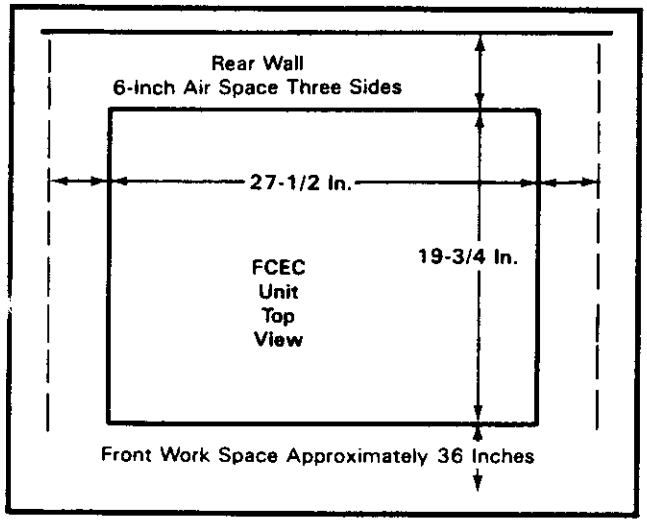


FIGURE 1
MINIMUM EQUIPMENT CABINET FLOOR SPACE

04.22 The following requirements must be considered when selecting a location for the system cabinet(s):

The location MUST BE:
- Dry and clean.
- Well ventilated.
- Well lit.
- Easily accessible.

The location MUST NOT BE:
- Subject to extreme heat or cold.
- Subject to corrosive fumes.
- Next to a reproducing or copying machine.

04.30 Cabling Considerations

04.31 The system cabinet(s) must be located close to the facility Main Distribution Frame (MDF). The maximum house cable run-distances for both

station and peripheral equipment must also be considered when choosing the location of the cabinet(s). The limit for each type of equipment is as follows:

- Electronic telephone-1,000 cable feet (305 M), 24 AWG
- Standard telephone-500 ohms (including telephone)
- Electronic telephone with DDIU-MAT-1,000 cable feet (305 M), 24 AWG Stand-alone DDIU-MA3,280 cable feet (1,000 M), 24 AWG)
- Attendant Console-1,000 cable feet (305 M), 24 AWG

04.32 Acceptable cable for all telephones is 22 or 24 AWG twisted pair wire located inside telephone station cable (jacketed but not shielded). Two twisted pairs are required for an electronic telephone and one pair is required for a standard telephone. Three twisted pairs are required for an electronic telephone equipped with a DDIU-MAT, while a stand-alone DDIU-MA requires one twisted pair.

04.33 A 25-pair cable is required for an attendant console. The console is equipped with a male 50-pin amphenol-type connector.

04.40 Grounding

04.41 The system requires a solid earth ground for proper operation. Failure to provide such a ground may lead to confusing trouble symptoms and, in extreme cases, to system failure. This ground connection is made at the **FG** or **GND** terminals on the rear of the power supply (Figure 2).

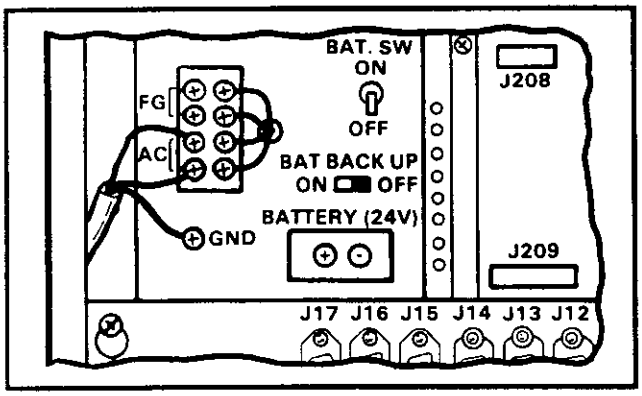


FIGURE 2—EARTH GROUND CONNECTION

04.42 In most installations within the continental United States, the ground that is provided by the "third wire ground" at the commercial power outlet, will be satisfactory for all system requirements. However, in a small percentage of installations, this ground may be installed incorrectly. Therefore, before installing a system, it is necessary to test the third wire ground for continuity by either measuring the resistance between the third prong terminal (earth ground) and a metal cold water pipe (maximum: 1 ohm), or by using a commercially-available earth ground indicator. If neither procedure is possible, then the test procedures denoted in Paragraph **04.43** should be performed.

WARNING!
Hazardous voltage that may cause death or injury is exposed during thefollowing test. Use great care when working with AC power line voltage.

04.43 Earth Ground Test

1) Obtain a suitable voltmeter and set it for a maximum possible reading of 250 VAC.
2) Connect the meter probes between the two AC voltage terminals (red and black wires) at the wall outlet. The reading that is obtained should be 90 ~ 130 VAC.
3) Move one of the meter probes to the third terminal (green wire ground). Either the same reading or a reading of 0 volts should be obtained.
4) If the reading is 0V, leave one probe on the ground terminal and move the other probe to the second voltage terminal. If a reading of 0V is obtained on both voltage terminals, this indicates that the outlet is not properly grounded. In this case, omit Steps 5 and 6, and proceed directly to Step 7.
5) If a reading of 0V on one terminal and a reading of 90 ~ 130 VAC on the other terminal is obtained, remove both probes from the outlet.
6) Next, set the meter on the "OHMS/Rx1" scale, place one probe on the ground terminal, and set the other probe on the terminal which gave a reading of 0V. A reading of less than 1 ohm should be obtained. If a reading of less than 1 ohm is not obtained, then the outlet is not adequately grounded.
7) If the above tests show that the outlet is not properly grounded, then that condition should be corrected by a qualified electrician before the system is connected. Proper grounding is required by Article 250 of the National Electrical Code.

05 EQUIPMENT CABINET ASSEMBLY

05.00 Basic Equipment Cabinet Assembly

05.01 The basic equipment cabinet (FCEC) consists of a single free-standing cabinet which is mounted on casters for easy movement. Four stabilizers, which are located at the bottom corners of the cabinet, can be adjusted to ensure that the cabinet is level and stable. Assembly of the FCEC consists of installing the disk drive subassembly (FFRA), the power supply assembly (FPSA), and the various printed circuit boards (PCBs).

NOTE:
Standard telephony tools are required to install both the basic and extension PERCEPTION II cabinets. It is recommended that a16mm socket wrench and extension be available for ease of installation.

05.10 FFDA Installation

05.11 The FFDA is mounted on the top shelf of the FCEC. In **D.02** systems, a second drive (FDD1) may be installed. To install the FDDA:

1) Remove the FCEC rear cover (Figure 3).
2) Unpack the FFDA and inspect it for damage.
3) Set the **1.6M/1M** switch on FDD0 to **1.6M** (Figure 5). (A.04 and earlier software require the **1.M** setting.)
4) If the second disk drive (FDD1) is used, proceed as follows:
   a) Unpack FDD1 and cables.
   b) Remove protective panel from FDDA and mount FDD1 with four screws.
   c) Remove the two-ended ribbon cable and the two-ended wire bundle running between PCBs on FDD0.
   d) Connect the three-ended ribbon cable between FDD0 and FDD1 (Figure 6).
   e) Connect the three-ended wire bundle between FDD0 and FDD1 (Figure 6).
   f) Connect the green ground wire to FDD1.
5) Verify that FDD0 and FDD1 (if used) are strapped as shown in Figure 5.
6) Remove the 4 screws from the front of the FCEC and slide the FDDA into the FCEC from the front. Tale care not to damage any of the cables extending from the drives.
7) Secure the FDDA to the front of the FCEC using the 4 screws removed in step 5.
8) At the rear of the FCEC, connect the ribbon cable extending from FDD0 to **J241** on the motherboard. Connect the wire bundle extending from FDD0 to **J240** on the motherboard. Connect the green ground wire extending from FDD1 to the motherboard (Figure 6).

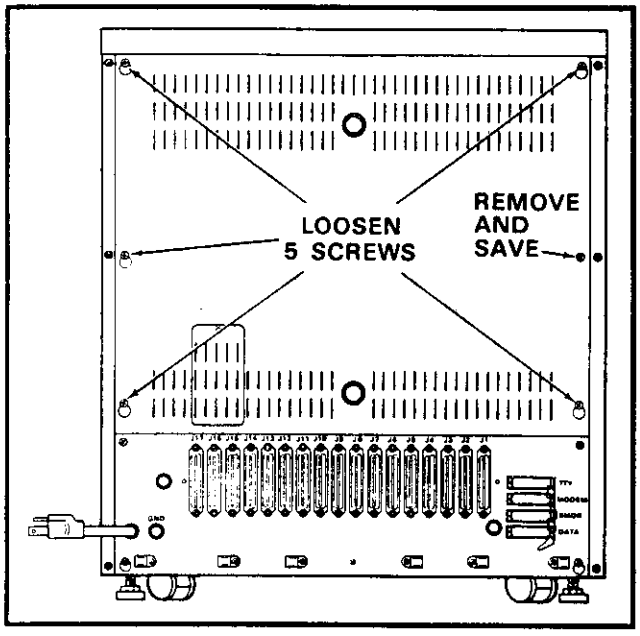


FIGURE 3—FCEC REAR COVER

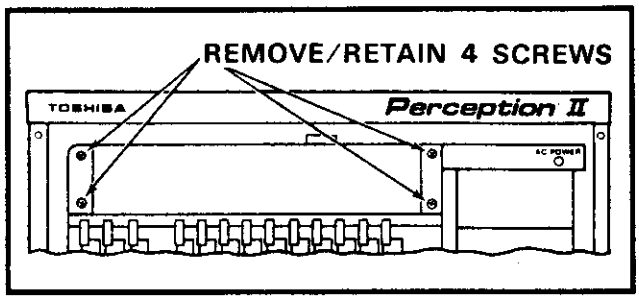


FIGURE 4—FCEC TOP SHELF (Front)

05.20 Basic Cabinet Power Supply Installation

05.21 The power supply for the PERCEPTION II system (FPSA) is contained within a single metal chassis which is installed from the rear of the basic cabinet. If a system configuration utilizes an expansion cabinet, then an additional power supply is required in that cabinet (see Paragraph **05.40**). The chassis which contains the power supply also contains the system ring generator and an inverter/charger that is used for Reserve Power.

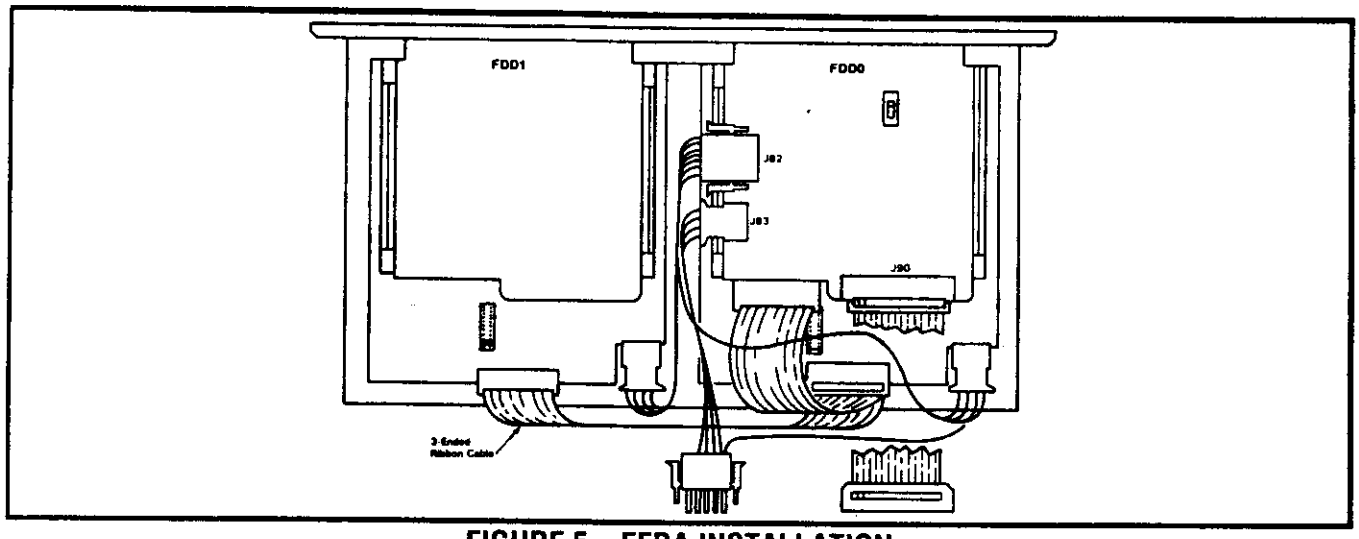


FIGURE 5—FFDA INSTALLATION

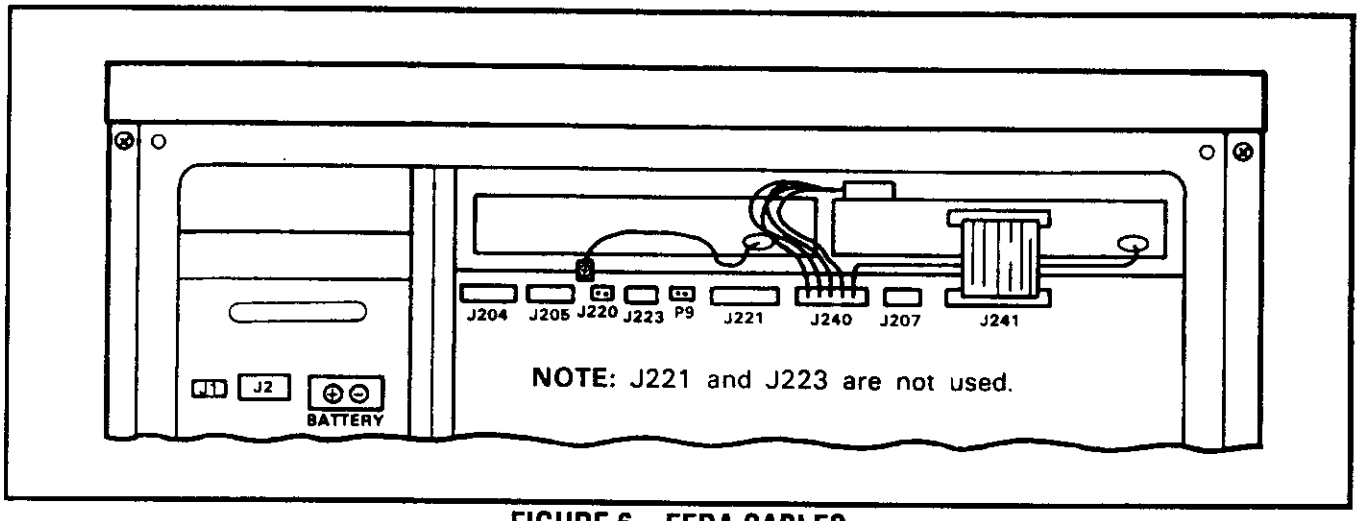


FIGURE 6—FFDA CABLES

The front of the chassis is equipped with a circuit breaker and LED indicator for each power supply output, an AC power LED indicator, an Alarm/Test switch, and the system power switch. The rear of the chassis is equipped with the Reserve Power switch and status indicator, and the terminal blocks to which the system power cord and Reserve Power battery cables are connected.

05.22 Install the FPSA as follows:

1) Remove the two screws which secure the pressure plate onto the bottom front of the FCEC's power supply shelf (see Figure). Save both the screws and the pressure plate for later use.
2) Remove and save the two screws located in the upper rear corners of the FPSA, as shown in Figure 7.
3) From the front of the cabinet, slide the FPSA into position. (Figure 9).
4) From the rear of the cabinet, use the two screws that were removed in step 2 to secure the FPSA in the power supply mounting bracket (Figure 7).
5) Mount the pressure plate that was removed in step 1 onto the bottom of the power supply shelf so that the FPSA is secured firmly (Figure 7).

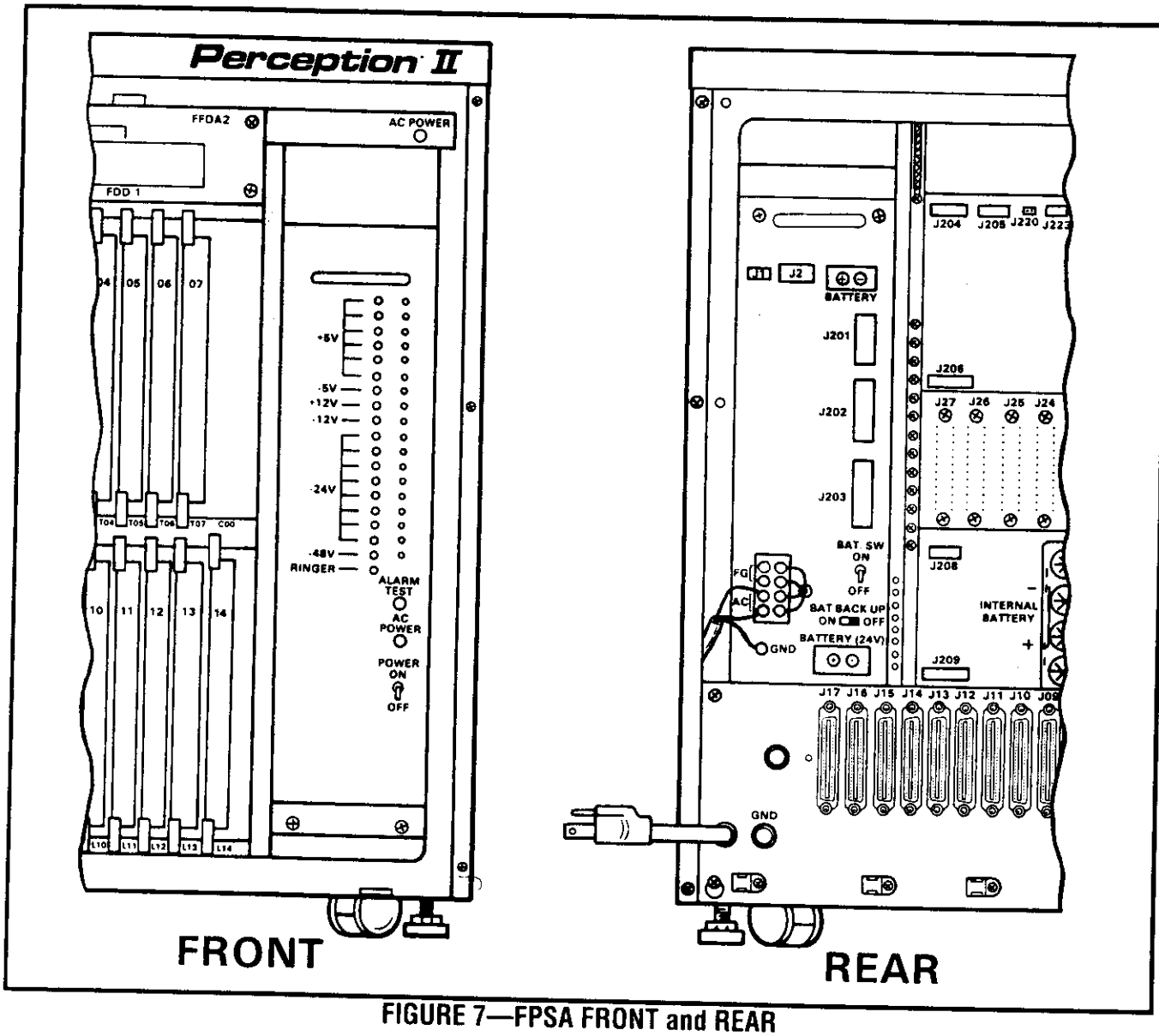


FIGURE 7—FPSA FRONT and REAR

TABLE A

FPSA Acceptable Voltage Ranges

NOMINAL (VDC)	RANGE (VDC)
-48	-47.52 -48.96
-24	-23.52 -24.96
+12	+11.76 +12.48
-12	-11.76 -12.48
+5	+5.0 +5.4
-5	-5.0 -5.4

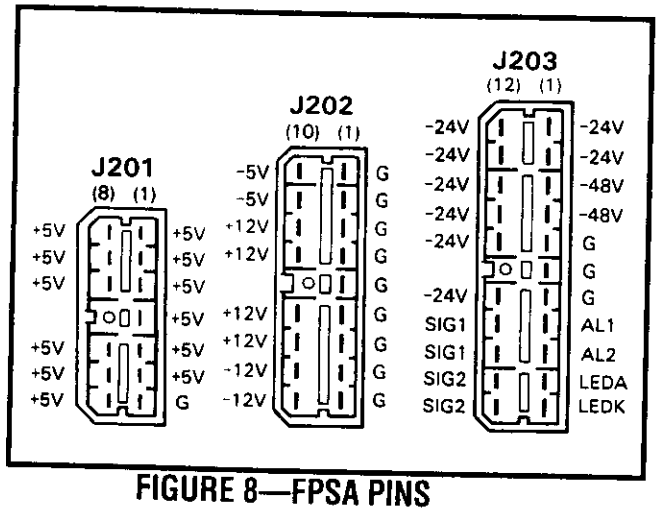


FIGURE 8—FPSA PINS

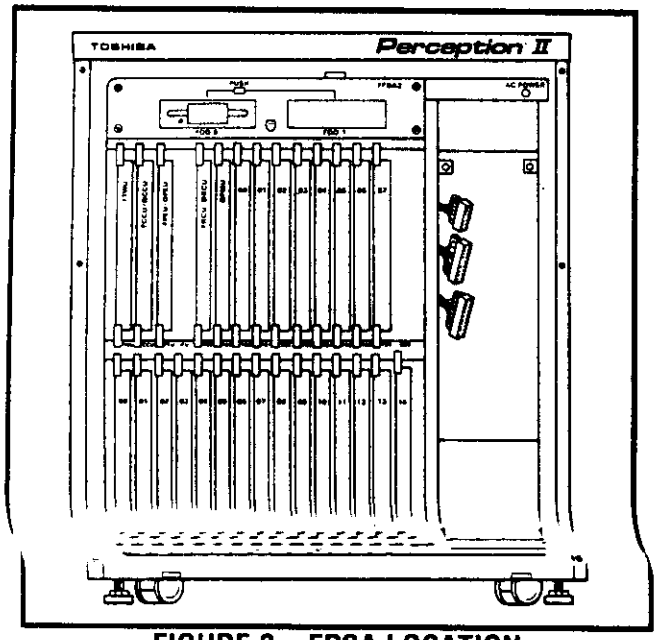


FIGURE 9—FPSA LOCATION

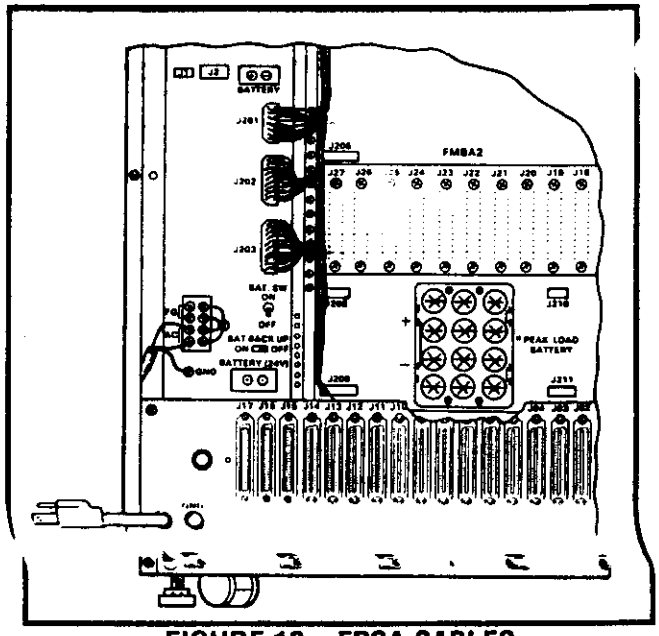


FIGURE 10—FPSA CABLES

6) Insert the end of the power cord through the grommetted **AC** line hole in the connector panel (grommet must be installed first). Connect the white and black leads to the **AC** terminals and the green (ground) lead to the **GND** screw on the FPSA (Figure 10).
7) With the FPSA turned **OFF**, plug the AC power cord into the AC outlet.
8) Momentarily press each FPSA circuit breaker in order to verify that each breaker has not been tripped.
9) Place the FPSA power switch in its **ON** position.

WARNING!
Hazardous voltage that may cause death or injury is exposed at the FPSA AC terminal.

10) Verify that all FPSA power indicator LEDs are on. If any of the LEDs are not on, replace the FPSA (the **RINGER** LED should be pulsating rapidly).
11) Using a multimeter (set to the appropriate ranges), check the pins on connectors **J201**, **J202**, and **J203** for the voltages shown in Figure 8. (The connectors are located on the rear of the power supply chassis). Measure between the voltage pin and a ground pin. (All ground leads are tied to a single point, so any can be used). Table A denotes the acceptable range for each output voltage. If a measured voltage falls outside of the acceptable range, replace the FPSA.
12) Turn the power supply off and then connect **J201**, **J202** and **J203**, respectively, as shown in Figure 10.

WARNING!
Before installing the peak load battery, the system power supply must be turned OFF.

13) Set both the **BAT. SW** and the **BAT BACKUP** switches to **OFF** (Figure 10).
14) To install the peak load battery pack (supplied), first remove the four connecting screws from the peak load mounting bracket. Refer to Figure 11 for the location of these screws. The peak load battery is used to maintain maximum system power during peak traffic conditions. This battery does not provide Reserve Power backup. If Reserve Power is to be installed, refer to Paragraph **13.20** for the required procedures.
15) Mount the peak load battery on the mounting bracket, with the battery terminals facing toward the power supply (see Figure 11).

WARNING!
When connecting peak load battery cables, be certain to observe correct po-

larity, and never, under any circumstances, allow the peak load battery leads to come in contact with each other if they are connected to the peak load battery.

16) Connect the orange lead of the provided cable to the positive battery terminal which is located on the lower rear of the power supply (see Figure 11).
17) Connect the blue lead of the provided cable to the negative battery terminal which is located on the lower rear of the power supply.
18) Connect the orange lead of the provided cable to the positive terminal on the peak load battery.
19) Connect the blue lead of the provided cable to the negative terminal on the peak load battery.
20) Turn the **BAT. SW** to **ON**, and place the **BAT. BACKUP** switch in its **OFF** position.

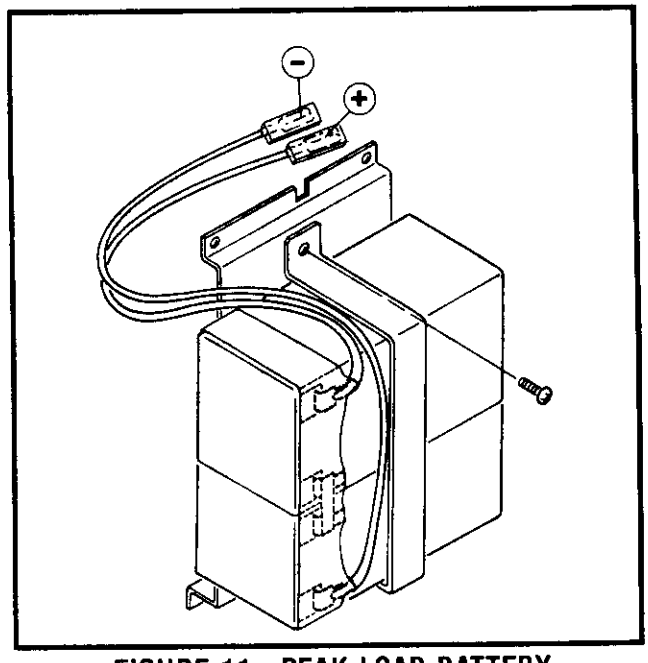


FIGURE 11—PEAK LOAD BATTERY

05.30 Expansion Cabinet Assembly

05.31 The expansion cabinet (FCEC-S) is a single cabinet that mounts on top of the PERCEPTION II basic cabinet and is secured in place with attaching hardware. The complete assembly of the FCEC-S consists of installing its specific power supply assembly (FPSA2-S), completing the required inter-cabinet cabling, and installing the cabinet's various printed circuit boards (PCBs).

WARNING!

Hazardous voltage that may cause death or injury is present in the system during operation. Ensure that AC power to both cabinets is turned off prior to performing this procedure.

05.32 The expansion cabinet is mounted on top of the basic equipment cabinet. To install the expansion cabinet:

1) Remove and save the four screws securing the basic cabinet top cover and lift the cover off the cabinet (Figure 12).
2) Remove the metal L bracket (located at the rear of the basic cabinet) by removing two screws.
3) Adjust the four stabilizers located at the bottom corners of the basic cabinet, to ensure cabinet stability during the expansion cabinet installation.

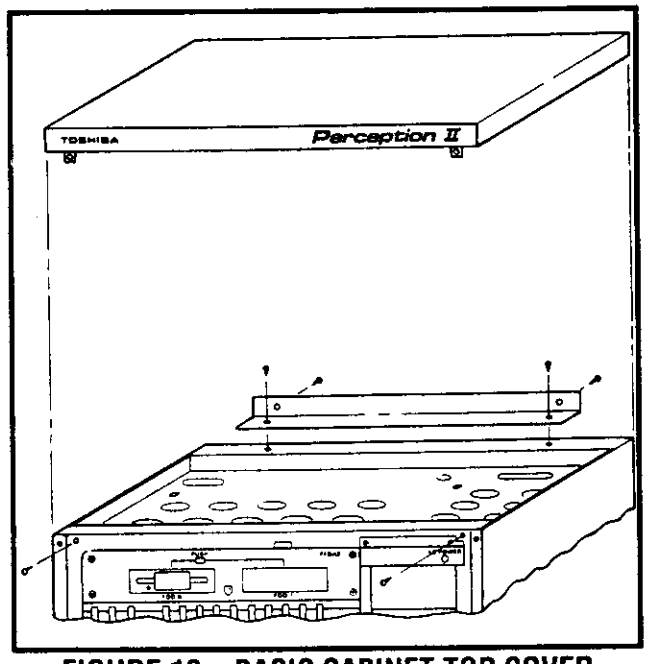


FIGURE 12—BASIC CABINET TOP COVER

4) Unpack the expansion cabinet and inventory the hardware items, as explained in Paragraphs **02.01 ~ 02.03**.
5) In order to ease the process of lifting the expansion cabinet, remove the cabinet's door and rear cover. To remove the rear cover, loosen its six connecting screws and completely remove the right center screw. Save this screw for later application. Lift off the cabinet cover, while

allowing each screw head to clear its respective "keyhole" (Figure 13).

6) Place the expansion cabinet on top of the basic cabinet while ensuring the proper alignment of the four corner mounting holes. Secure the cabinets in place with four 16mm bolts, flatwashers, and lockwashers.

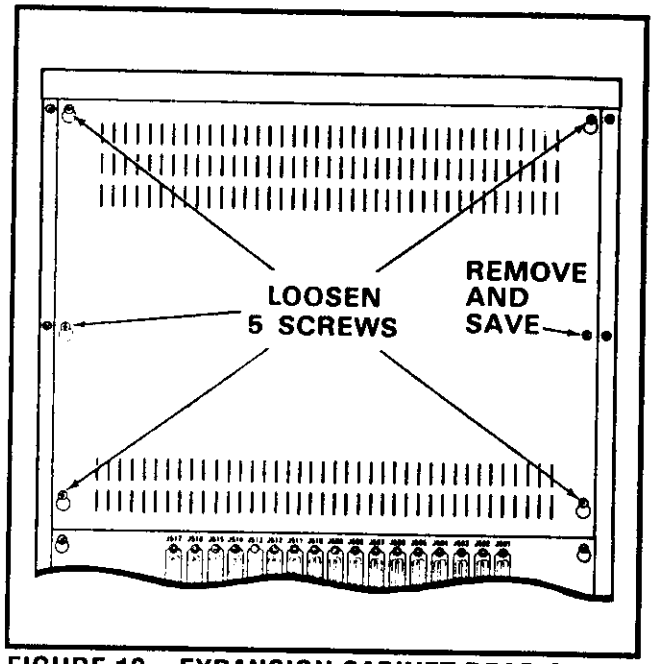


FIGURE 13—EXPANSION CABINET REAR COVER

05.40 Expansion Cabinet Power Supply Installation

1) Remove and retain the power supply retainer bracket by removing its two connecting screws.
2) Remove two screws from the rear of the expansion cabinet power supply. From the front of the expansion cabinet, slide the power supply into the rack and secure it in place with the two rear screws.
3) Reinstall the power supply retainer bracket and secure it in place with its two previously-removed screws.
4) Remove the plastic cover from the main power terminal (located on the rear panel) by removing its two connecting screws. Connect the AC line power supply wiring to the main power terminal block. Ensure that the wires match their corresponding colored wires, as indicated below and in Figure 14:

   black to black
   white to white
   green to gnd

5) Reinstall the plastic cover and secure it with the two previously-removed screws.
6) Connect the ground cable to the screw provided in the rear of the cabinet copper frame (Figure 14).
7) Plug the expansion power supply "J" connectors into their corresponding numbered receptacles on the power supply (Figure 15).
8) Guide the two ribbon cables through the hole provided at the bottom right of the expansion cabinet, and into the basic cabinet.

CAUTION!
When routing inter-cabinet cabling, ensure that connector pins and wiring are not damaged.

9) Plug the ribbon cables into their corresponding numbered receptacles, located on the rear right side of the basic cabinet backplane.
10) Guide the green grounding wires through the hole provided in the bottom of the expansion cabinet. Route the wiring through the grommet provided on the basic cabinet frame. Secure the ground wires to the ground plugs provided on the metal strip at the rear of the basic cabinet.
11) Route the power supply cabling through the hole in the expansion cabinet and connect both power supplies at the **J1** and **J2** receptacles. Ensure that the cable connectors are properly keyed prior to insertion.
12) Using a voltmeter, perform a static check of the voltages on connectors **J701**, **J702**, and **J703** of the expansion power supply. (Refer to Figure 15).
13) Install the top cover on the expansion cabinet and secure with its four previously-removed screws.
14) Reinstall the back covers on the basic and expansion cabinets, and secure them each in place with their six previously-removed screws.
15) Install the door on the expansion cabinet.
16) Attach the male amphenol-type connectors to the connector panel of the expansion cabinet, and secure them in place with the connector locking bar (Figure 16). Install the connector locking bar (located on the outside of the basic cabinet rear panel), and use the plastic cable clamps that are provided along

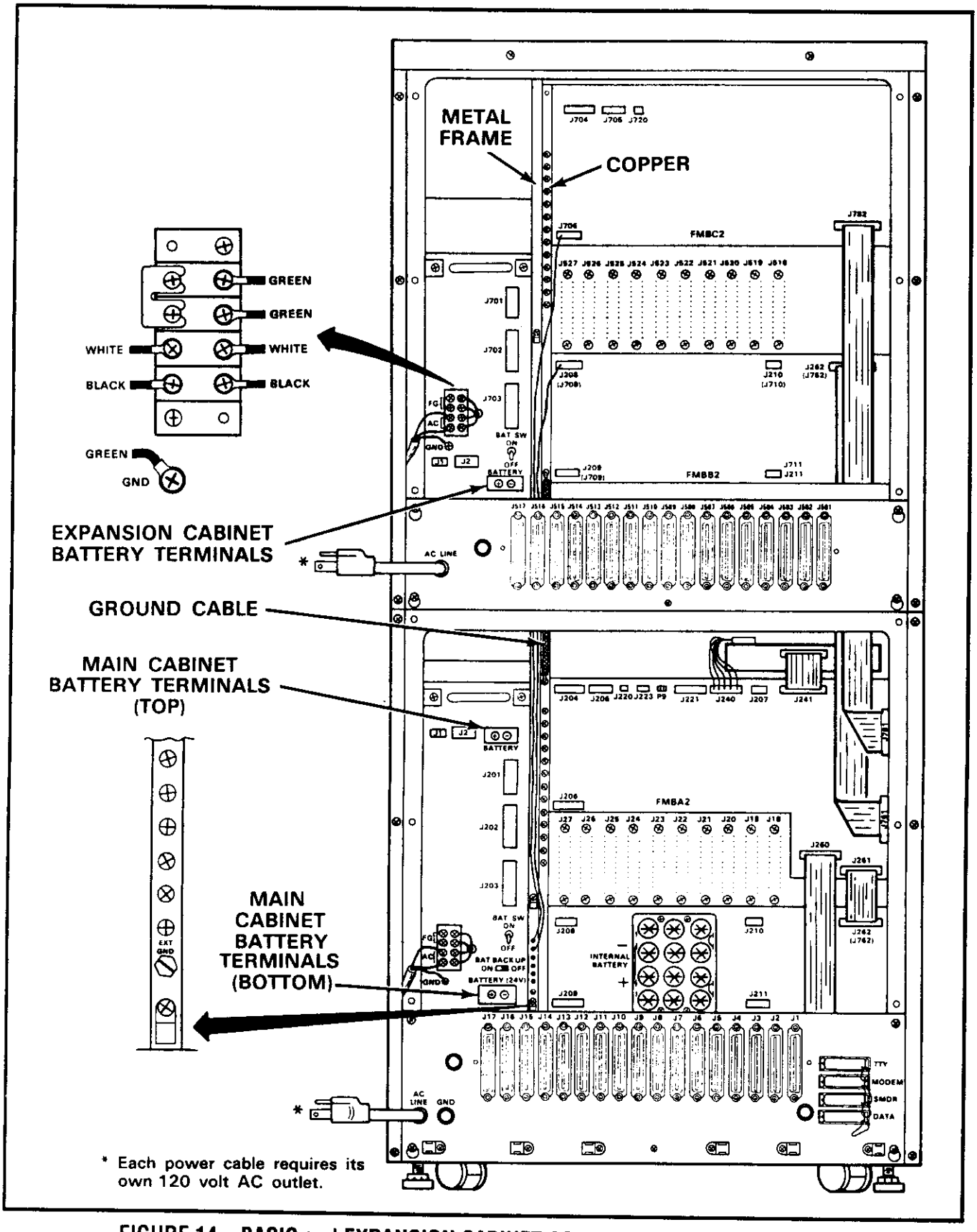


FIGURE 14—BASIC and EXPANSION CABINET AC and GROUND CONNECTIONS

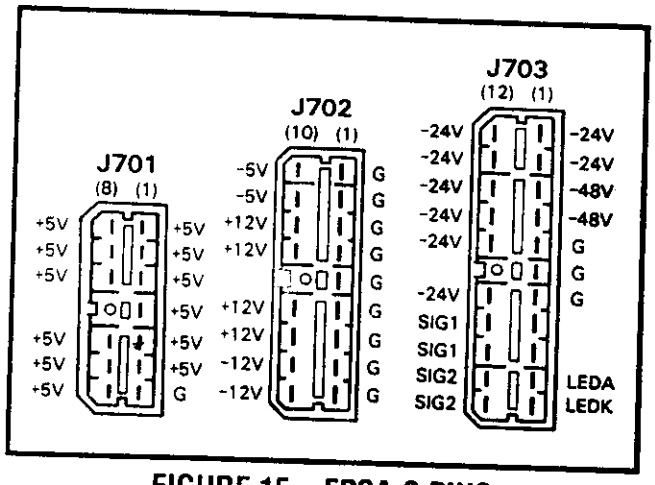


FIGURE 15—FPSA-S PINS

the base of each cabinet to secure the cables.

17) Turn the main power switches on both the basic cabinet and the expansion cabinet to **ON**.

05.50 Expansion Cabinet Peak Load Battery Cabling Connections

05.51 The system's peak load battery is used during peak traffic conditions in order to maintain maximum system power capacity. This battery does not provide Reserve Power backup. The addition of an expansion cabinet to a basic cabinet configuration requires specific cabling connections in order to provide peak load power from the basic to the expansion unit. To perform these required connections, follow the steps below:

WARNING!

Before any connections are made between cabinets, both battery switches must be turned off and connection to any battery (either PEAK LOAD or customer-supplied Reserve Power) must be disconnected. The power supply must also be turned OFF. Failure to comply with these measures may result in injury or death due to the emission of high voltage levels.

1) Turn the main power switches on both the basic cabinet and the expansion cabinet to **OFF**.

WARNING!

When performing cabling connections, be certain to observe correct polarity, and never, under any circumstances, allow the peak load battery leads to come in contact with each other if they are connected to the peak load battery.

2) Verify that the **BAT. BACKUP** switch, which is located on the rear of the basic power supply, is in its **OFF** position.
3) Observing correct polarity, connect the peak load battery cables to the **BATTERY** (24V) terminal strip located on the lower rear of the expansion cabinet power supply (see Figure 14).
4) Observing correct polarity, connect the peak load battery cables to the (top) **BATTERY** (24V) terminal strip located on the upper rear of the basic power supply (see Figure 14).
5) Turn the **BAT. SW** switch on the lower rear of the basic cabinet to **ON**. Leave the **BAT. BACKUP** switch on the lower rear of the basic cabinet in its **OFF** position.
6) Turn the main power switches on both the basic cabinet and the expansion cabinet to **ON**.

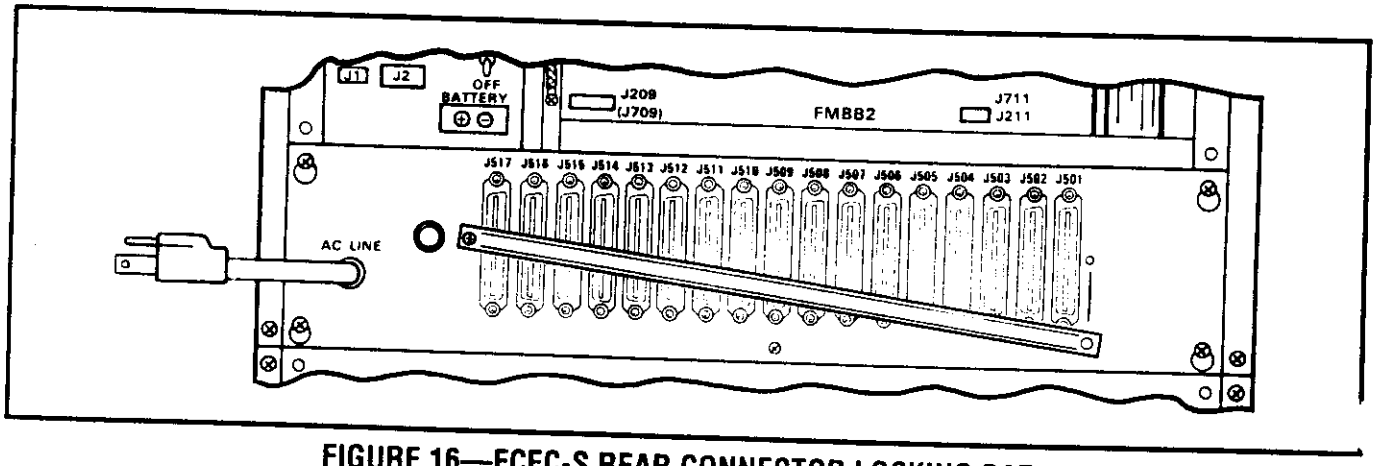


FIGURE 16—FCEC-S REAR CONNECTOR LOCKING BAR

05.60 Printed Circuit Board (PCB) Descriptions

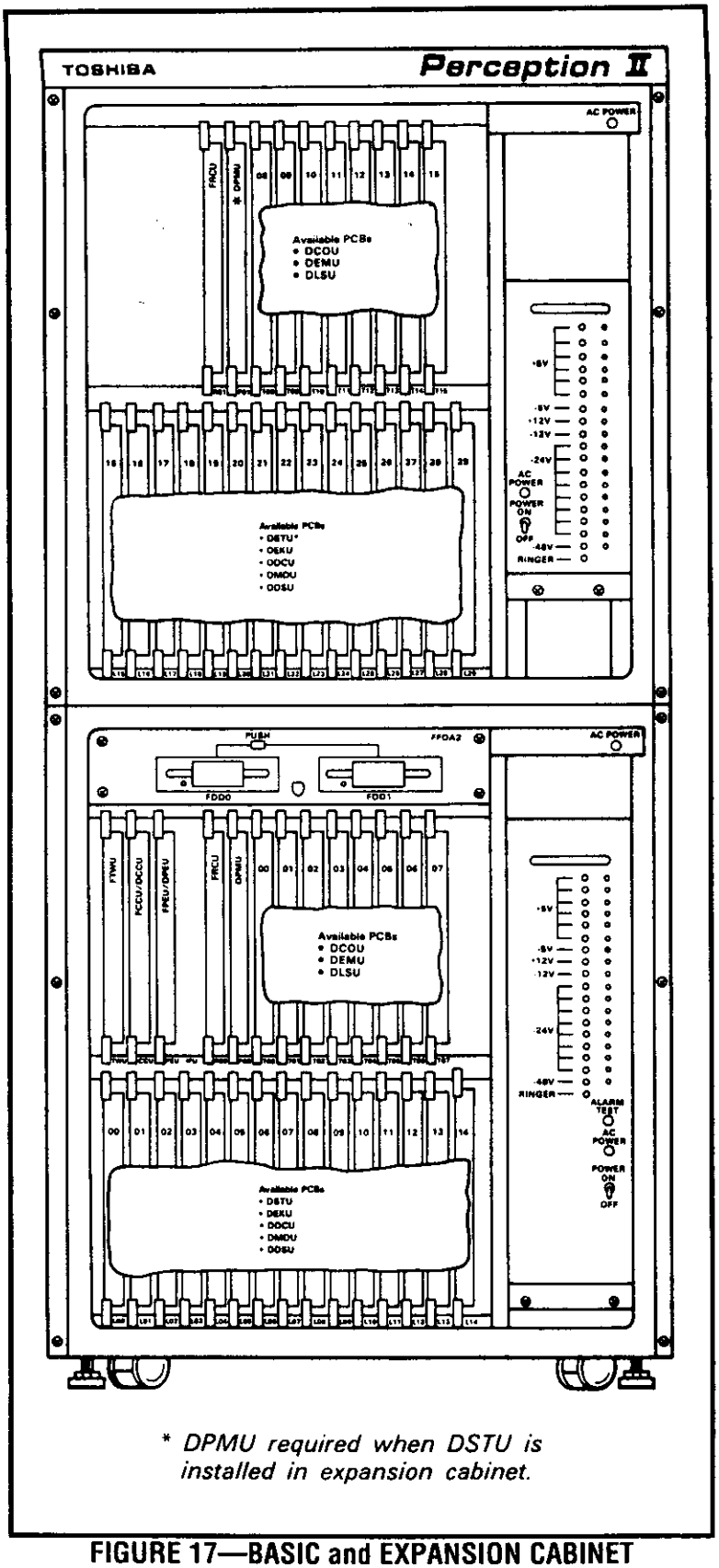
05.61 In a single-cabinet system, thirteen different types of PCBs are used in the basic equipment cabinet. If an cabinet is used, then the DCCU and DPEU cards, which may safely occupy the basic cabinet in a single-cabinet system, must be replaced by an FCCU and FCEU card. The general placement of these cards is depicted in Figure 17, while a description of each PCB is provided in the following Paragraphs:

FTWU (Time Switch Unit)-one per system: This card performs the PCM time slot interchange function for call processing. Specifically, it provides the speech path with digital padding and provides the timing and control for time slot switching and system tones.

DCCU/FCCU (Central Control Unit)-one per system: Each system requires one of these two cards in order to provide the system central processor and main memory, and to perform all system control functions. A DCCU or FCCU may be installed in the basic cabinet of a single cabinet system, while an FCCU must be used in the basic cabinet of a dual (expansion) system.

DPEU/FPEU (Peripheral Equipment Interface Unit)-one per system: Every system requires one of these two cards in order to enable data transmission and the receipt of functions between the central control and peripheral equipment. The basic cabinet of a single cabinet system may utilize either a DPEU or an FPEU card, while the basic cabinet of a dual (expansion) system must utilize an FPEU card. The central control and peripheral equipment which is interfaced by the DPEU/FPEU card includes the following units:

- Station PCBs
- Trunk PCBs
- Modem interface (remote maintenance)



** DPMU required when DSTU is installed in expansion cabinet.*

FIGURE 17—BASIC and EXPANSION CABINET PCB INSTALLATION

- TTY interface
- SMDR interface
- Lodging/Health Care audit interface

FRCU (Receiver Unit)-one per system: This optional PCB provides DTMF receivers (which are required in order to receive dialed tones from standard telephones). Two types of FRCU cards are available: FRCU-4 (which houses four circuits and is suitable for most systems) and FRCU-8 (which houses six/eight circuits and is normally used in systems with high traffic).

DPMU (Paging and Music-on-Hold Unit)-one per system: This PCB houses program load and initialization control switches, and performs the following miscellaneous functions:

- Paging interface and control
- Music-on Hold interface
- Power Failure/Emergency transfer control
- UNA single control
- Attendant Console power transmission
- Digitized voice message for Automatic Wake-Up (optional)

In a dual cabinet system, a DPMU card is required in the expansion cabinet if that cabinet contains any DSTU cards if a second UNA zone is used in a tenant system or if a second UNA zone is used in a tenant system.

DCOU (Central Office Trunk Unit): Each DCOU PCB interfaces four CO/FX/WATS trunks to the system. The card provides the following options on a per-circuit basis:

- Loop or Ground Start
- 600- or 900-ohm termination
- A maximum of 16 DCOU PCBs (64 trunks) can be installed in a system (see DEMU and DLSU).

NOTE:
Ground Start trunks are required for the use of certain features.

DEMU (E & M TIE Trunk Unit): Each DEMU PCB interfaces four E & M TIE Trunks to the system. The DEMU provides a Type 1 two-wire E & M interface with the option of a 600- or 900-ohm voice line termination. The operation mode of the DEMU card is software-controlled and can be set as either Immediate Start, Delay Dial, or Wink Start. A maximum of 16 DEMU cards may be installed in a system, with each occupying its own trunk card position.

DLSU (DID Trunk Unit): Each DLSU PCB interfaces four Direct Inward Dialing (DID) Trunks to the system. The DLSU provides the following:

- Strapping for either 600- or 900-ohm voice line termination
- Loop Resistance Level Adjustment (Battery Ground Dial Pulsing)
- Loop Current Detection Level Selection
- A maximum of 16 DLSU PCBs can be installed in a system, with each occupying a separate trunk card position.

DEKU (Electronic Telephone Unit): This card interfaces eight electronic telephones to the system and also serves as an attendant console interface. Each attendant console requires one electronic telephone circuit:

- ATT #0 PCB position L00 circuit #1
- ATT #1 PCB position L12 circuit #1
- If either console is not used, an electronic telephone can be connected to its designated DEKU circuit.
- A maximum of 30 DEKU PCBs (240 stations) may be installed in a system.

DSTU (Standard Telephone Unit): A DSTU PCB interfaces eight standard telephones (either DTMF or rotary dial) to the system. A maximum of 30 DSTU PCBs (240 stations) may be installed per system. If a DSTU card is installed in an expansion cabinet, then a DPMU card must also be installed in that cabinet.

DDSU (DSS Console Controller Unit): Interfaces four DSS Consoles to the system. Installs in any Line card slot. A maximum of two DDSU PCBs per system and both can be installed in the same cabinet.

DDCU (Data Control Unit): This card interfaces eight Digital Interface Units (DDIUs) to the system. The DDCU controls data transmission between the DDIU and the cabinet. A maximum of 30 DDCU PCBs may be installed per system.

DMDU (Modem Pooling Unit): The DMDU PCB interfaces up to four modems and their associ-

ated DDIU-MAs. Any of the four DDIU circuits that are not required by a modem can be used with a standard DDIU (MA or MAT). A maximum of 30 DDCU PCBs may be installed in a system.

NOTE:
The IFU slot on the second shelf is not used. Do not insert a PCB in this slot.

05.70 Printed Circuit Board Installation

05.71 Install the FRCU in its proper position, as depicted in Figure 17. There are no straps or plugs on this PCB.

05.72 Prior to installing the FTWU card in any PERCEPTION II system, the placement of plug connections must be verified. Refer to Figure 18 for the proper location of these plugs. A system that uses A-version software requires the strapping of P11 jumper block pins 2 and 3. If the system uses **D-version** software, then pins 1 and 2 of this jumper block should be strapped. The location of jumper block P11 is depicted in Figure 18.

05.73 The FPEU/DPEU card requires plug verification prior to installation. Proper plug locations are depicted in Figures 19 and 20.

05.74 Prior to installation, a DCCU card requires manual strapping in order to designate specific memory type as either SRAM or DRAM (Figure 21). The Static RAM (SRAM) memory must be selected in order to provide data protection for Lodging/Health Care customer data, while the Dynamic (DRAM) memory must be selected for use in a Business system. Strapping requirements for each of these memory options are as follows:

Memory Type	P7	P8
SRAM	A-B	A-B
DRAM	B-C	B-C

After strapping, verify that connection plugs P1, P2, P3, P4, and P9 are in place, and then install the DCCU card in its proper position, as per Figure 17. The use of an FCCU card requires the verification of two fixed straps for the protection of Lodging/Health Care customer data (Figure 22). The FCCU card is preselected for SRAM memory.

05.75 If the DPMU has an ROM installed in IC62,

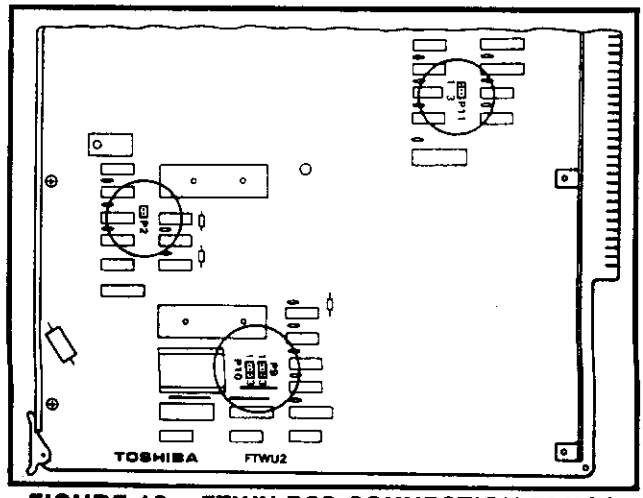


FIGURE 18—FTWU PCB CONNECTION PLUGS and STRAPPING

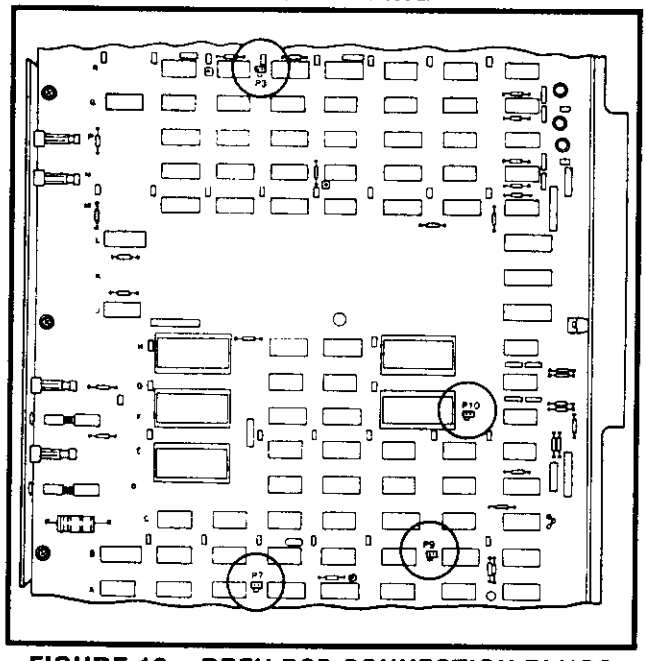


FIGURE 19—DPEU PCB CONNECTION PLUGS

then a digitized voice message will be heard when an automatic wake-up call is answered. Prior to the installation of this card, strapping must be performed to specify interrupted or continuous messages (Figure 23). If a 3-second pause is desired between messages, then pins 1 and 2 of TB1 must be strapped. If the message is to be continu ous, then pins 2 and 3 must be strapped. After strapping, install the DPMU PCB as per Figure 17. A DPMU card is required in any expansion cabinet which contains one or more DSTU cards.

05.76 DCOU cards have Ground/Loop Start and

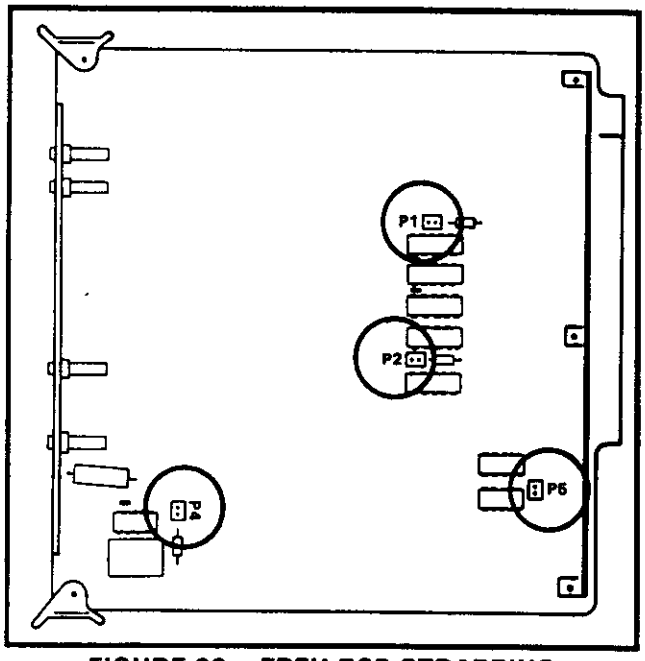


FIGURE 20—FPEU PCB STRAPPING

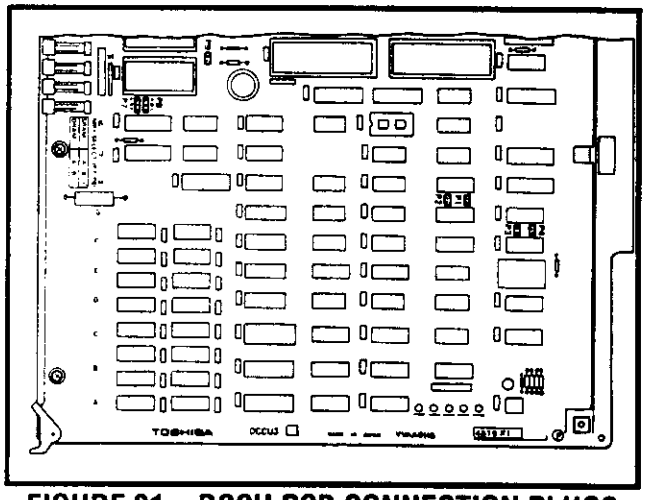


FIGURE 21—DCCU PCB CONNECTION PLUGS and STRAPPING

600/900-ohm termination strap selections which must be made prior to card installation.

1) Each DCOU circuit is individually strapped for either Ground-Start or Loop-Start operation (Figure 24). The strapping location for each circuit is shown below.

TB 102—Circuit 1
TB 202—Circuit 2
TB 302—Circuit 3
TB 402—Circuit 4

2) Strap for the required mode of operation according to Table B.

TABLE B
DCOU Operational Mode

	Operation	Strap Pins
GROUND START	NO EXTEND	D - E
	EXTEND	B - C
LOOP START	NO EXTEND	C - D
	EXTEND	A - B

3) The GROUND START "EXTEND/NO EXTEND" option refers to the use of "loop extenders" on long trunks. If a battery boost is used on the trunk, then select EXTEND, otherwise select NO EXTEND.
4) The LOOP START "NORMAL/REVERSE" option refers to the system's ability to detect a pre-ring supervision signal. The signal is in the form of a battery polarity reversal on the CO TIP and RING.
   - If NORMAL is selected, the system will not be sensitive to CO trunk polarity.
   - If REVERSE is selected, the CO circuit will be "made busy" when the CO reverse polarity prior to ringing on an incoming call.
5) Determine the proper impedance for each trunk and then strap its DCOU circuit for either 600-ohm or 900-ohm operation. At each strapping location, install the shorting bar across the center pin and the pin corresponding to either the 600 or 900 label (Figure 23). The strapping location for each circuit is shown below:

TB 101—Circuit 1
TB 201—Circuit 2
TB 301—Circuit 3
TB 401—Circuit 4

6) Install the DCOU PCB(s) in slots T00 ~ T15 as per Figure 17.

05.77 Each DEMU (TIE) PCB circuit must be strapped for either 600-ohm or 900-ohm voice line impedance (Figure 25). The strapping location for each circuit is shown below:

TB 10—Circuit 1
TB 20—Circuit 2
TB 30—Circuit 3
TB 40—Circuit 4

1) Determine the proper impedance for the TIE trunk to be used, and then make the selection

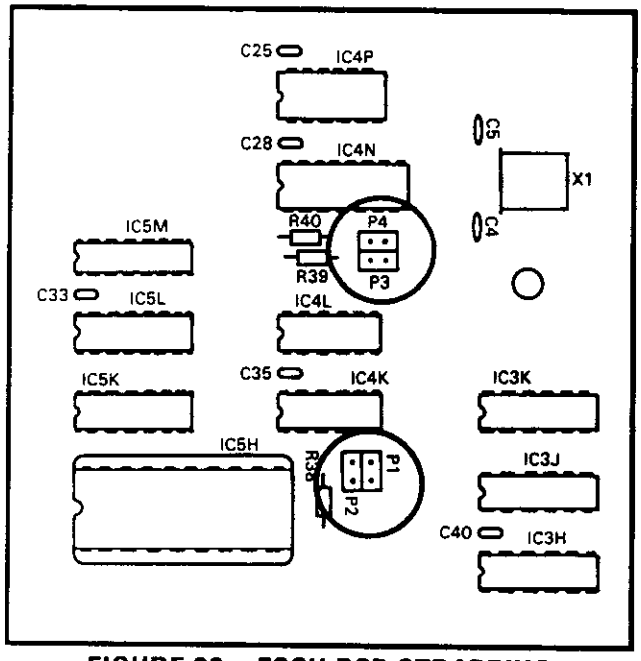


FIGURE 22—FCCU PCB STRAPPING

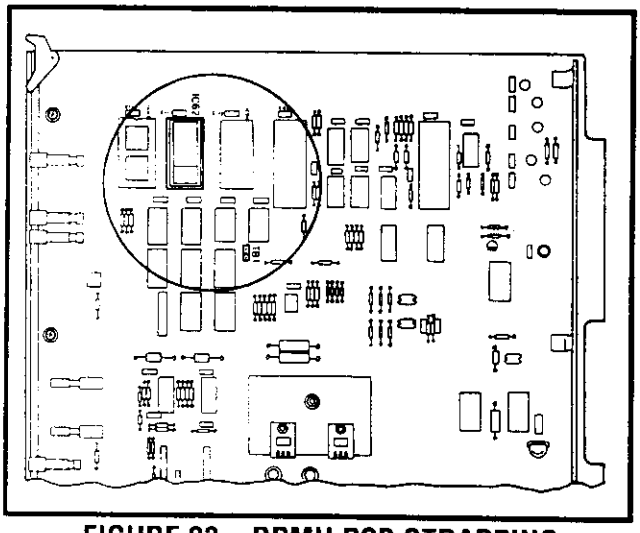


FIGURE 23—DPMU PCB STRAPPING

with the shorting bar. Connect the center pin to the outer pin labeled either 600 or 900.

2) Install the DEMU PCB(s) in the slots designated T00 ~ T15 (Figure 17).

05.78 Three separate strappings must be made for each of the four circuits on the DLSU PCB (Figure 26).

1) The 600/900-ohm termination strapping locations for each circuit are shown below:

TB 101—Circuit 1
TB 102—Circuit 1
TB 201—Circuit 2
TB 202—Circuit 2

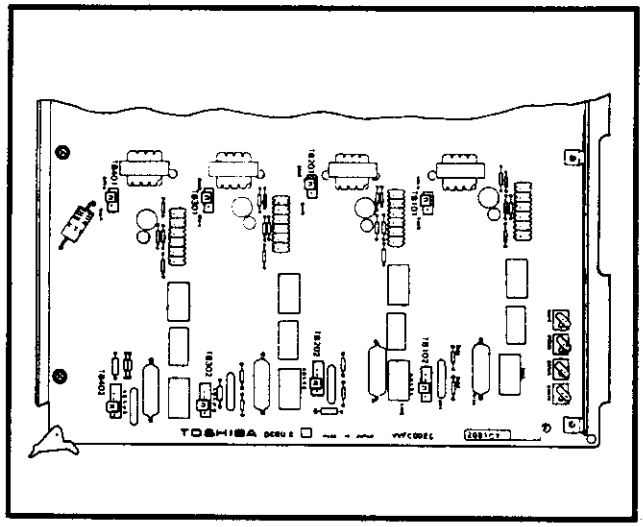


FIGURE 24—DCOU PCB STRAPPING LOCATION

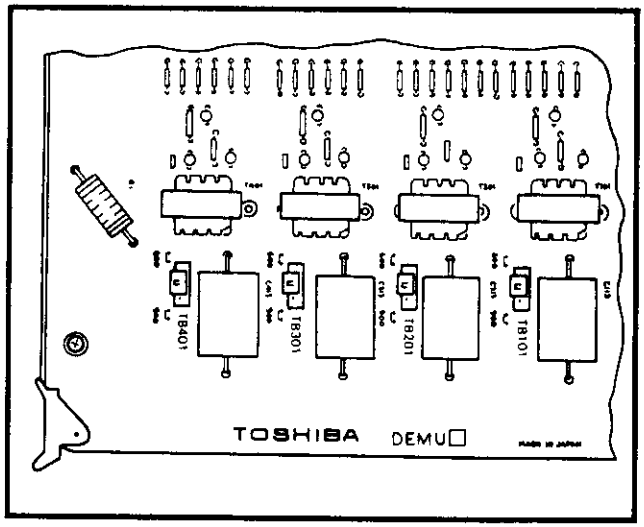


FIGURE 25—DEMU PCB STRAPPING LOCATION

TB 301—Circuit 3
TB 302—Circuit 3
TB 401—Circuit 4
TB 402—Circuit 4

2) Determine the proper impedance for the trunk line to be used, and then make the selection with the shorting bar.Connect the center pin to the outer pin labeled either 600 or 900 for both strapping terminals.
3) When the CO distance exceeds a 2,000-ohm loop resistance, Battery-to-Ground Dial Pulsing should be used. For a distance of less than 2,000-ohm loop resistance, use Loop Dial Pulsing. The strapping locations for each circuit are shown below (Figure 26):

TB 103—Circuit 1
TB 203—Circuit 2

TB 303—Circuit 3
TB 403—Circuit 4

4) Strap for each DSLU circuit as shown in Figure 26:
   More than 2,000-ohms: A-B & E-F
   2,000-ohms or less: B-C & D-E.
5) Each DLSU circuit must be adjusted for CO trunk loop resistance to ensure proper detection of incoming digits. Each circuit adjustment is made by strapping at the locations shown in (Figure 26):
   TB 104—Circuit 1
   TB 204—Circuit 2
   TB 304—Circuit 3
   TB 404—Circuit 4

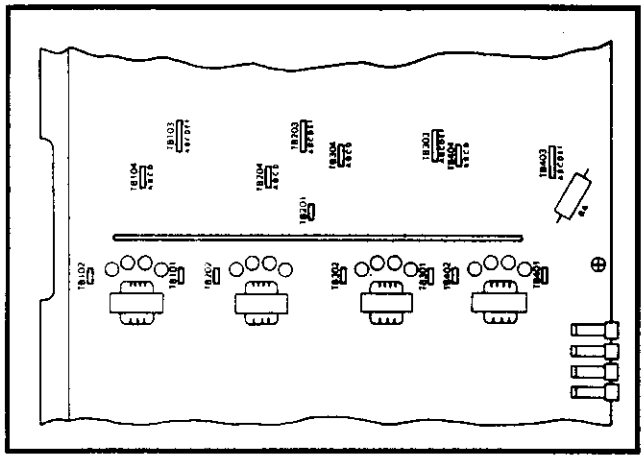


FIGURE 26—DLSU PCB STRAPPING LOCATIONS

6) Strap for the appropriate level as shown below:
   0 ~ 800-ohms c-d (least sensitive)
   800 ~ 1.5-ohms b-c (mid sensitive)
   1.5-ohms and above a-b (most sensitive)

NOTE:
The CO trunk loop resistance values are arbitrary and are used as an initial strapping guide. If the incoming digits are not being detected properly, then move the strap to the next most sensitive position and test again for proper operation.

7) Install the DLSU PCBs in slots T00 ~ T15 as per Figure 17.

NOTE:
The combined total of DCOU, DEMU, and DLSU PCBs cannot exceed 16 (8 per cabinet).

05.79 The following PCBs are installed in locations L00 ~ L29 on the lower shelf of each cabinet. With the exception of the noted restrictions, any combination of PCBs may be used.

- DEKU PCBs are installed at the rate of one PCB for each group of eight electronic telephones. If an attendant console is to be installed, then it must be included in the electronic telephone count. A DEKU PCB must be used in the L00 position when Attendant Console #0 is used, and in the L12 position for Attendant Console #1. All other DEKU positions are flexible.
- DSTU PCBs are installed at the rate of one PCB for each group of eight standard telephones.
- DDCU PCBs are installed at the rate of one PCB for each group of eight DDIUs.
- DMDU PCBs are installed at the rate of one PCB for each group of four DDIU-MA/Modem pairs.
- DDSU PCBs are installed at the rate of one per four DSS consoles. There is a system maximum of two DSSUs, both of which can be installed in the same cabinet.

NOTE:
The combined total of DEKU, DSTU, DDCU, DMDU, and DDSU PCBs cannot exceed 30 (15 per cabinet).

06 MDF ARRANGEMENT

06.01 All connections from the FCEC to external equipment, such as trunks, stations, data interface units, etc. are made via a customer-provided main distribution frame (MDF).

06.02 Cables with male amphenol-type connectors are attached to the connector panel of the FCEC and are secured with the connector locking bar (Figure 27). Plastic cable clamps are provided along the base of the FCEC to secure the cables. The opposite ends of the cables are then terminated on 66-type quick-connect terminal blocks on the MDF (split blocks with bridging clips should be used to allow for fault isolation). A typical MDF layout is shown in Figure 27. Connect each cable from the FCEC to one side of the block, and connect external equipment cables to the other side. Use bridging clips to make the connections.

06.03 FCC regulations prohibit unregistered equipment from being terminated on the same block as CO trunks. It is good practice to separate trunks from all other equipment at the MDF.

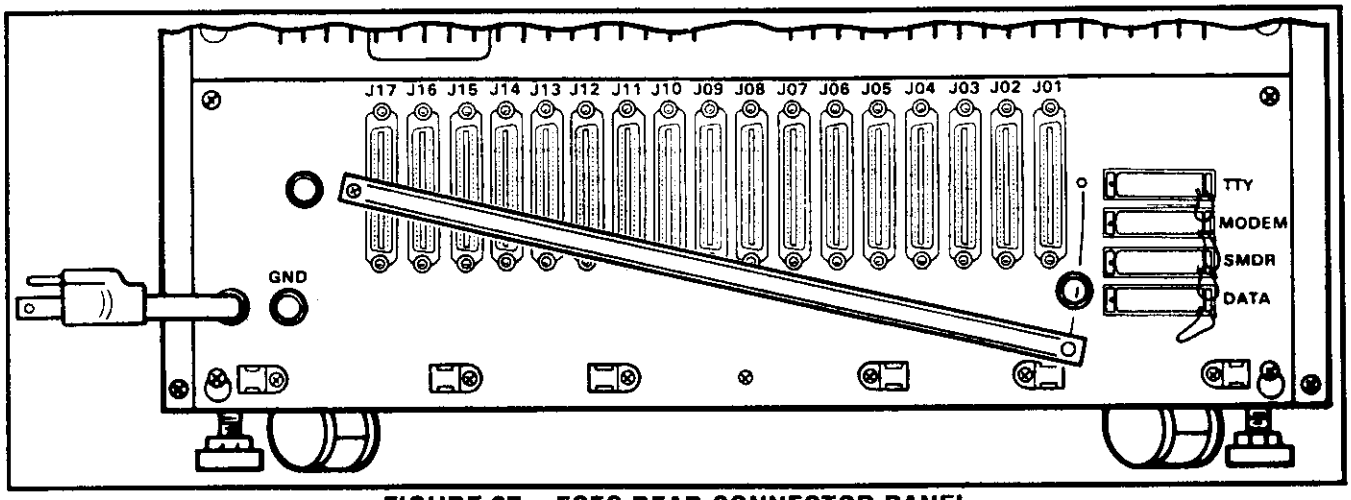


FIGURE 27—FCEC REAR CONNECTOR PANEL

07 CABLE CONNECTIONS

07.01 Table C lists the connector cables that are required for both single and dual cabinet systems.

07.02 All connections to the system are made on the connector panel at the lower rear of the FCEC and on the Power Failure Transfer Unit. Cables with standard amphenol-type connectors are used for everything except the TTY, SMDR, and MODEM connectors (which require male RS-232C connectors).

07.03 Detailed connection information for each cable used in a single cabinet system is shown in Tables D ~ V. Connection information for cables that are involved exclusively in dual cabinet systems, is shown in Tables W ~ AO.

IMPORTANT!

Note that station, trunk, and DDIU connections are identified by both the PCB location and the circuit number on that PCB. These numbers combine to form a Port Number, which is used to identify each station or trunk circuit when programming directory numbers and features. A station Port Number is determined as follows:

a) A station Port Number is determined as follows:

PCB Location	Circuit on PCB	Port No.
L00 ~ L29	1 ~ 8	N/A
EX.L01	3	L013

b) A trunk Port Number is determined as follows:

PCB Location	Circuit on PCB	Port No.
T00 ~ T15	1 ~ 4	N/A
EX.T02	4	T024

08 PERIPHERAL EQUIPMENT INSTALLATION

08.00 Electronic Telephone Connections

08.01 See the DEKT Program in Section **400-100-300**, *Programming*, for input information regarding the various electronic telephones. The programming of an electronic telephone requires the input of telephone type (single-line, 10- or 20-button), as well as each telephone's customized button assignment.

08.02 Electronic telephones are connected to the MDF via standard twisted-pair jacketed telephone cable. (Two-pair wiring is required; however, 3-pair wiring is strongly recommended in order to permit future upgrades, such as data, etc.). To accommodate the electronic telephone modular line cord, terminate the cable in a modular station connector block at the station location. The standard modular electronic telephone cord length is 7', while the maximum allowed length is 25'.

08.03 The overall length of the electronic telephone cable run must not exceed 1,000 ' (305 M), 24 AWG cable.

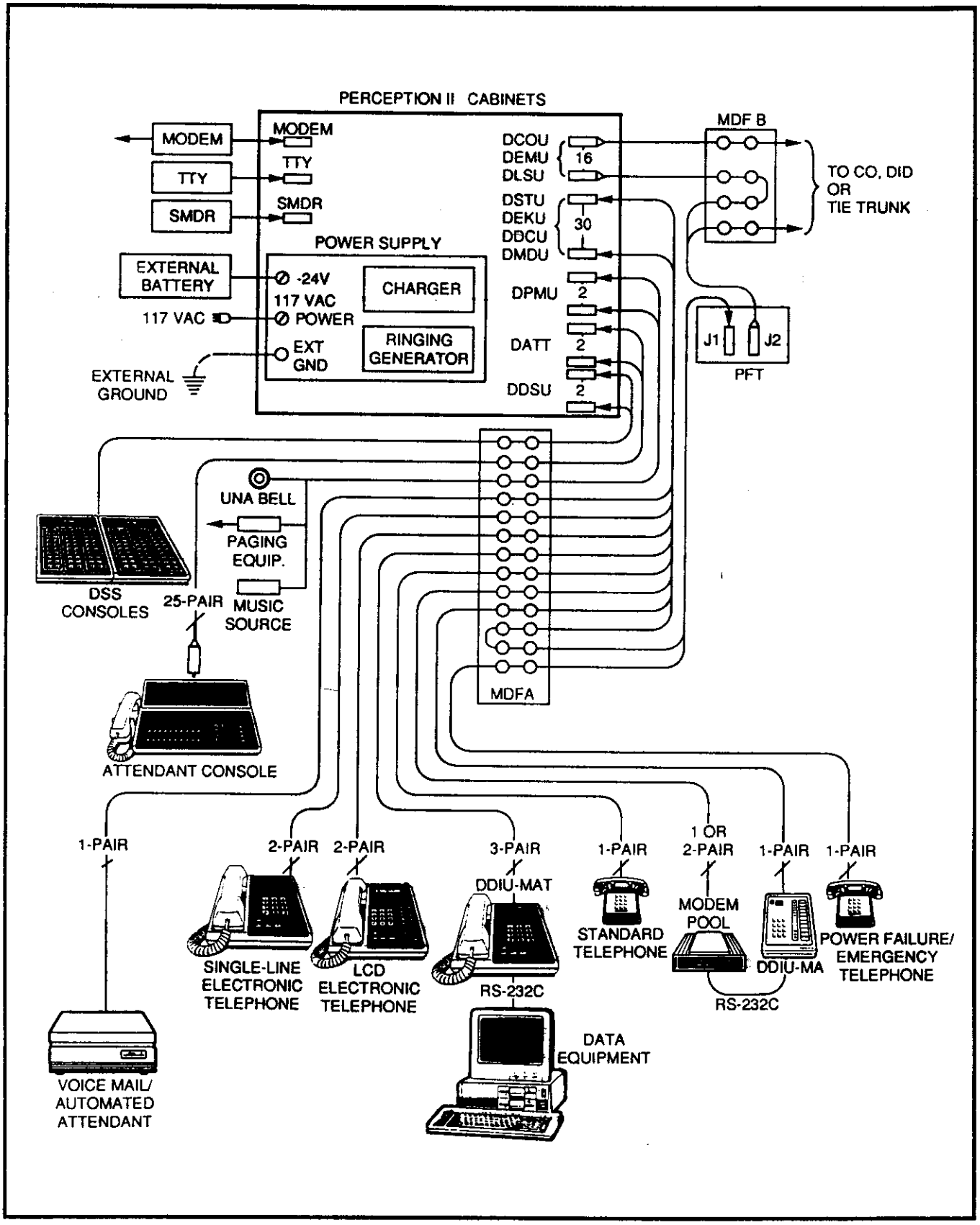


FIGURE 28—MAIN DISTRIBUTION FRAME

IMPORTANT!

When installing electronic telephone station cable, do not run parallel to and within 3' of an AC power line. Such power lines should be crossed only at right angles (90).

08.04 Electronic telephone connection details are shown in Figure 29.

08.10 Standard Telephone Connections

08.11 Refer to the DSTT Program in Section **400-100-300**, *Programming*, for input information regarding standard telephones. Programming requires the input of the port location for each installed standard telephone.

08.12 Standard telephones require only single-pair wire and are connected to the MDF via standard twisted-pair telephone cable.

08.13 Standard telephone connection details are shown in Figure 30.

08.20 Digital Data Interface Unit Connections

08.21 Refer to the DDIU Program in Section **400-100-300**, *Programming*, for input information regarding Digital Data Interface Units. The system must be told which type of Digital Data Interface Unit (-MA or -MAT) is installed at each location.

08.22 Digital Data Interface Units require only single-pair wiring and are connected to the MDF via standard twisted pair telephone cable.

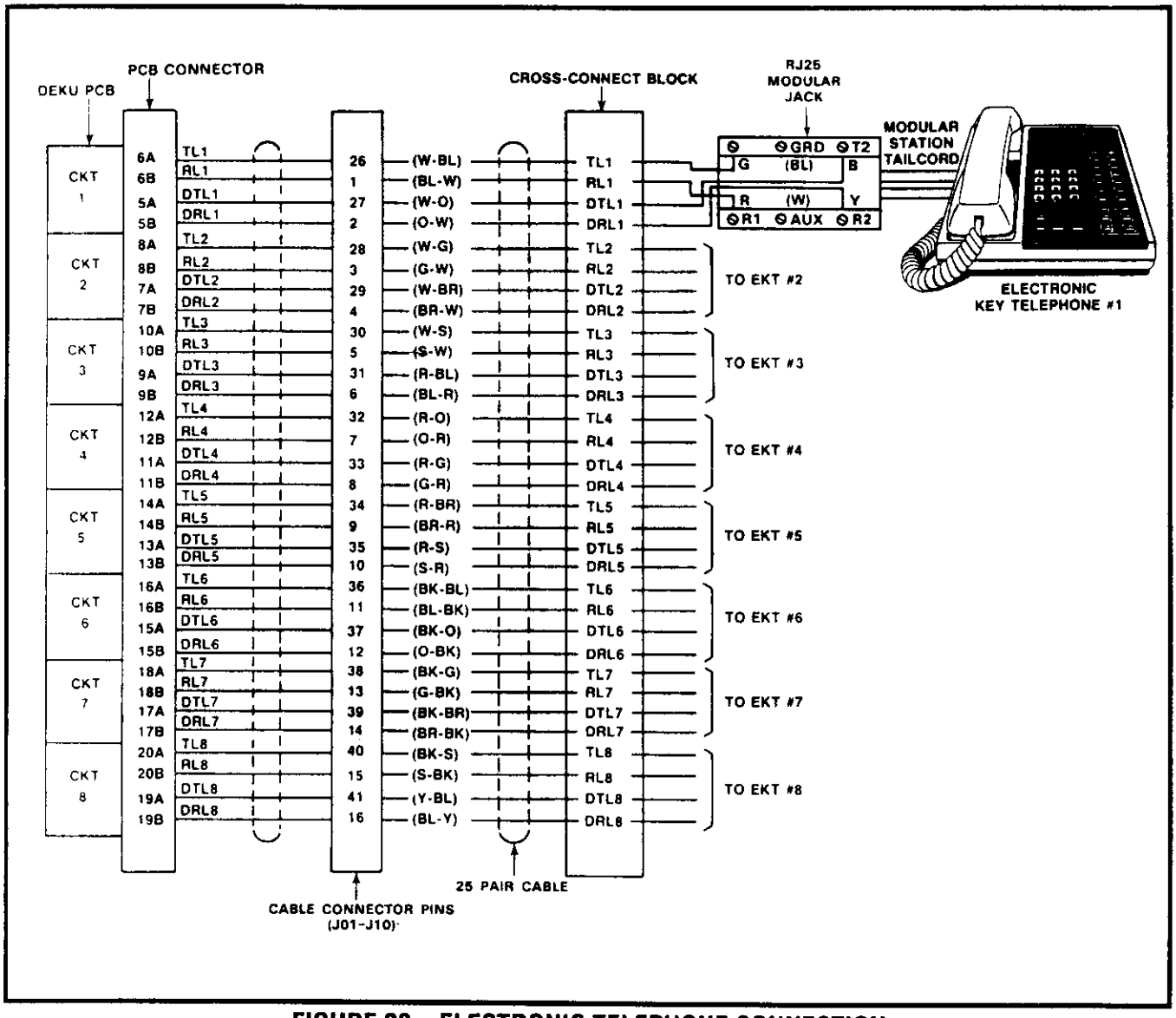


FIGURE 29—ELECTRONIC TELEPHONE CONNECTION

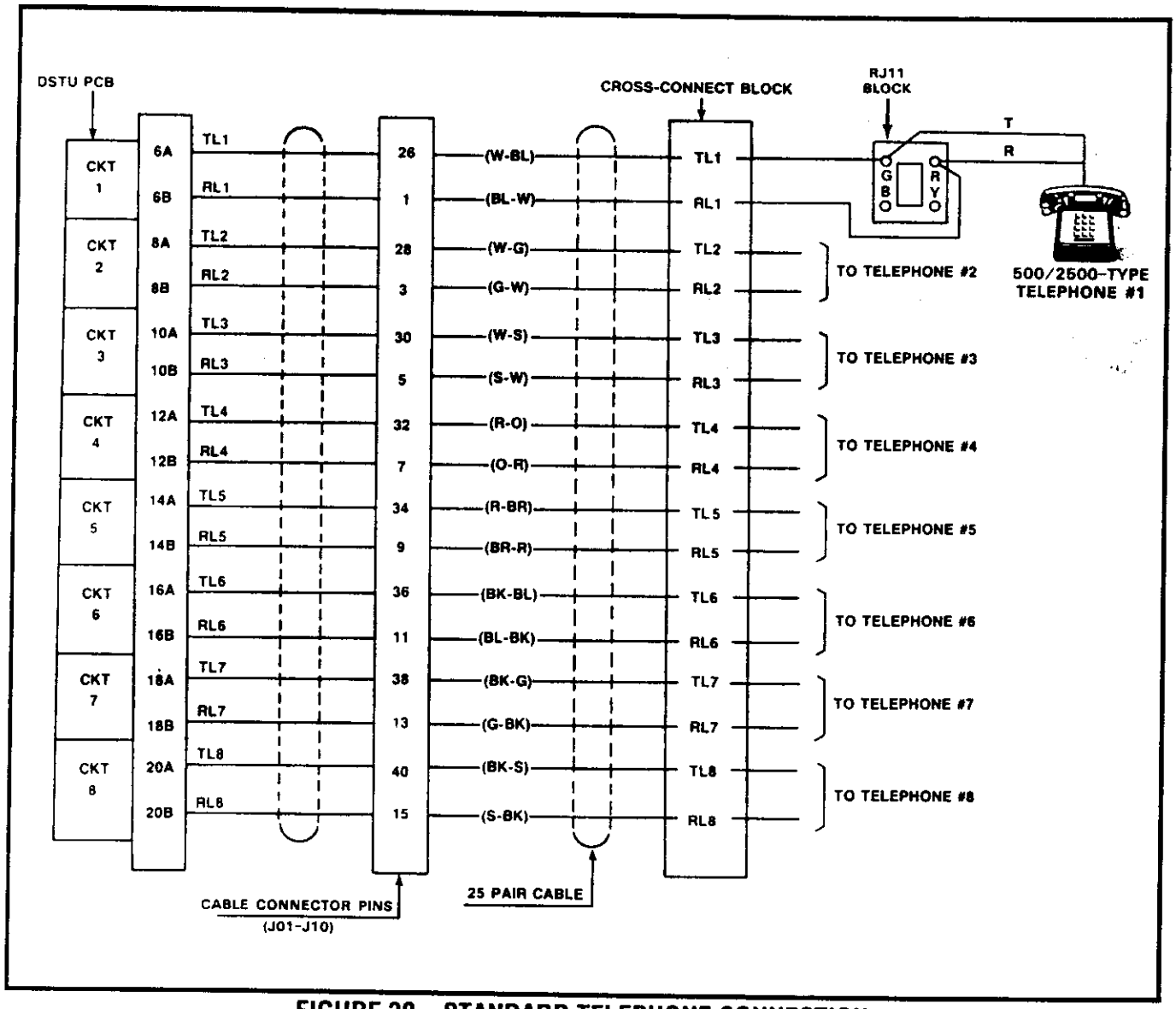


FIGURE 30—STANDARD TELEPHONE CONNECTION

NOTE:
A DDIU-MAT requires an additional two-pair for electronic telephone operation. (For this reason three-pair cable should be run to locations where a DDIU-MAT may be installed).

08.23 Digital Data Interface Unit connection details are shown in Figure 31.

IMPORTANT!
All connections to DDIUs (-MA or -MAT) must observe correct tip and ring polarity for proper operation to occur.

08.30 Modem Pooling Connections

08.31 See the DMDM Program in Section **400-100-300**, *Programming*, for input information regarding Modem Pooling.

08.32 Most modems require only single-pair wiring and are connected to the MDF via standard twisted-pair telephone cable. Some modems, however, may require a two-pair connection (one for transmit-one for receive). For this type of connection, use the next wire pair (which is not normally used). Cable connections for modem pooling are summarized in Figure 32.

-20-

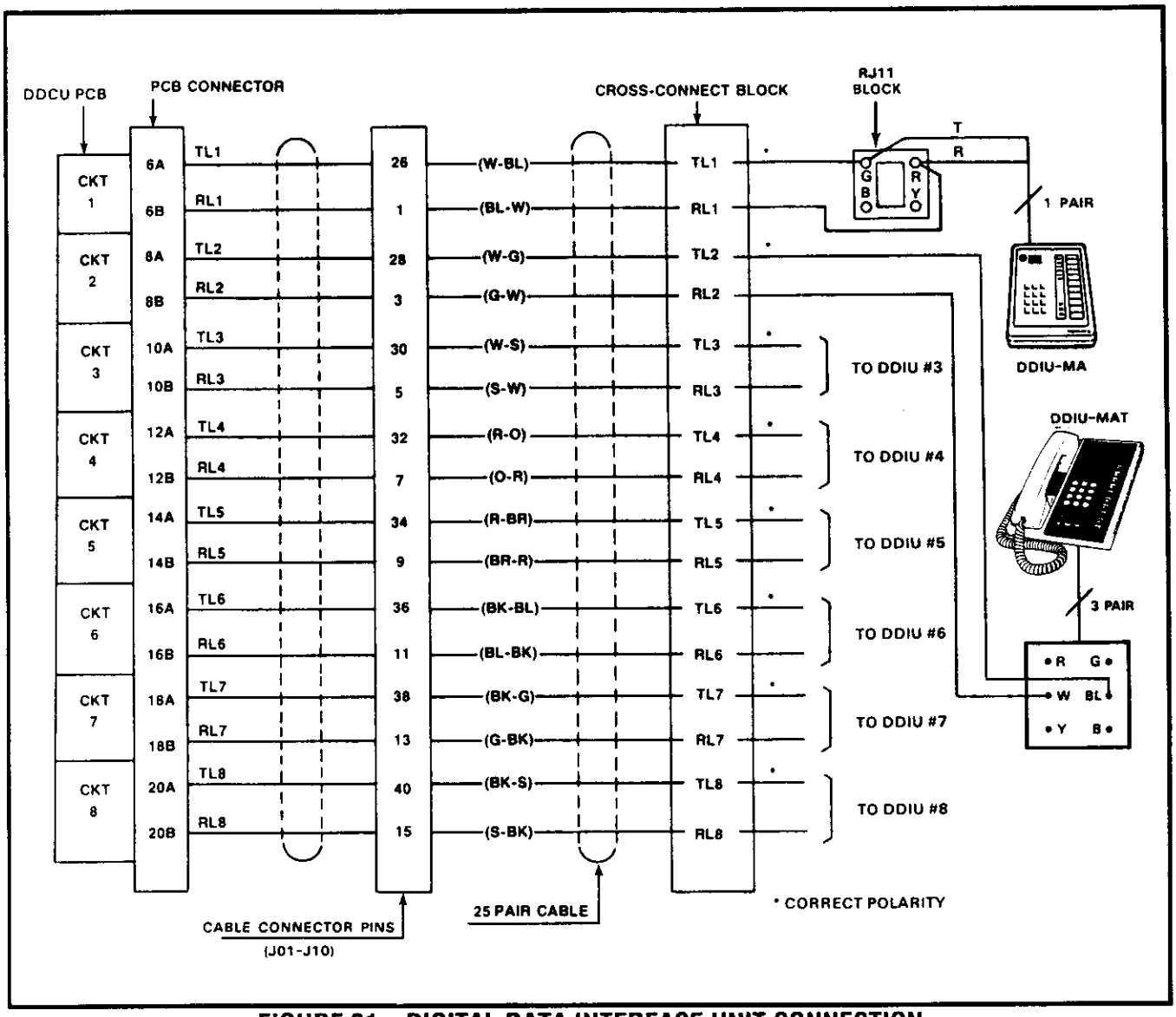


FIGURE 31—DIGITAL DATA INTERFACE UNIT CONNECTION

08.33 The DMDU card, which serves as the interface between a modem and its associated DDIU-MAs, must be strapped for operation with either a one-pair or two-pair modem connection. The two strapping positions for each modem are shown below:

Strap each circuit for the appropriate operational mode as shown in Figure 33. For one-pair operation, strap A to B on both terminal blocks. For two-pair operation, strap B to C on both terminal blocks.

CIRCUIT	STRAPS	OPERATION	
		One-Pair	Two-Pair
1	TB 501 TB 502	B ~ C	A ~ B
2	TB 601 TB 602		
3	TB 701 TB 702		
4	TB 801 TB 802		

08.34 If a DDIU circuit is not used for Modem Pooling, then the circuit may be used for a DDIU (-MA or -MAT) connection. Use the DDIU Program in Section 400-100-300, Programming, to assign the desired port (1 ~ 4) on the DMDU.

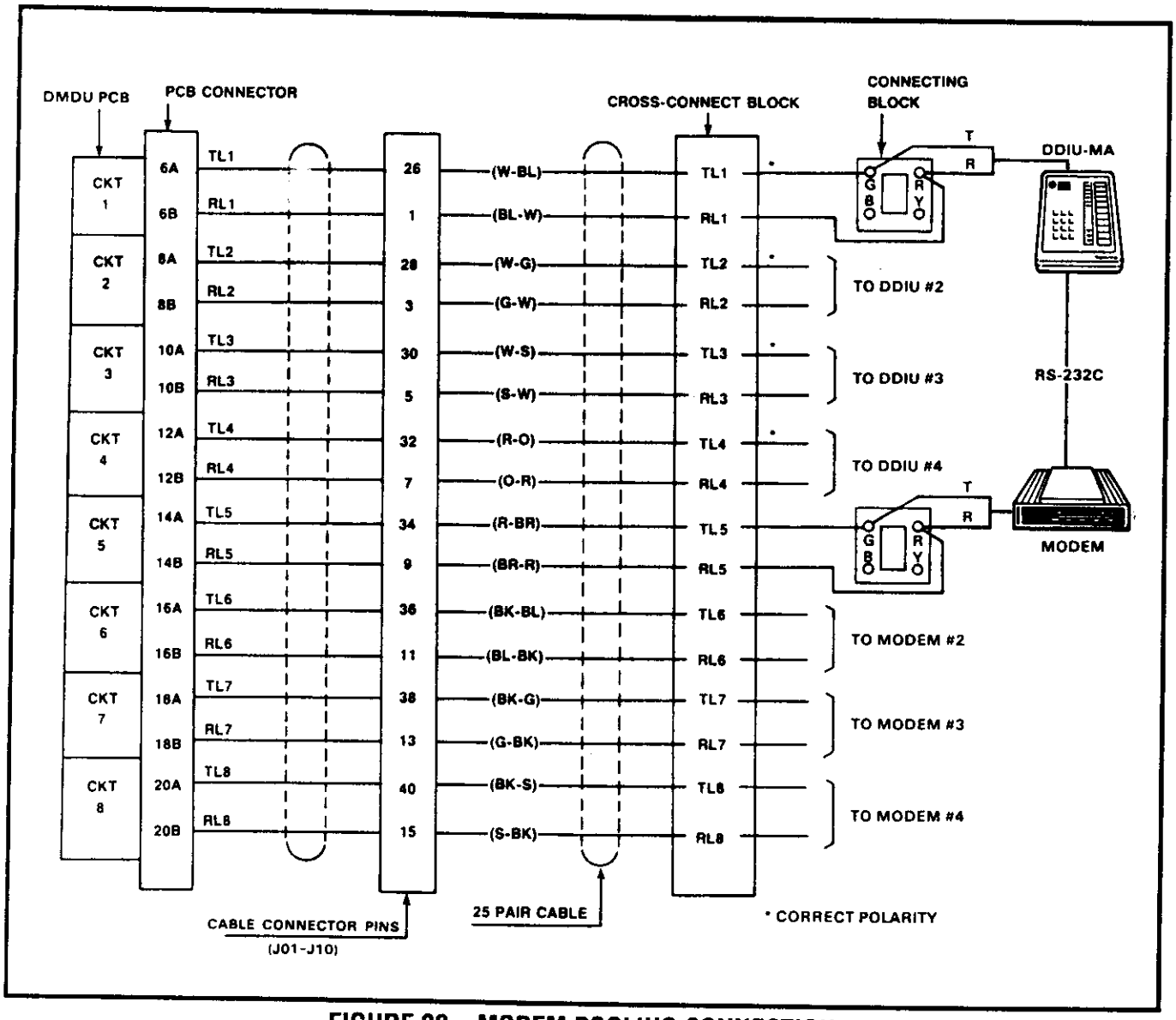


FIGURE 32—MODEM POOLING CONNECTION

IMPORTANT!
All connections to DDIUs (-MA or -MAT) must observe correct tip and ring polarity in order for proper operation to occur.

08.40 DSS Console Connections

08.41 See the **DSS Program** in Section **400-100-300**, *Programming*, to input information concerning DSS Console.

08.42 The DSS Console must be positioned adjacent to an electronic telephone (preferably an LCD model). DSS Consoles use 2-pair wiring and are connected to the MDF via standard twisted-pair telephone cables. An RJ25 modular connector should be attached to the instrument-end of the telephone cable to permit connection to the DSS Console.

08.43 The overall length of the DSS Console cable run from the equipment cabinet must not exceed 1,000 feet (305 M), 24 AWG cable.

IMPORTANT!
When installing the DSS cable, do not run parallel to and within 3' of an AC power line. Such power lines should be crossed at right angles (90°) only.

08.44 DSS Console connection details are shown in Figure 34.

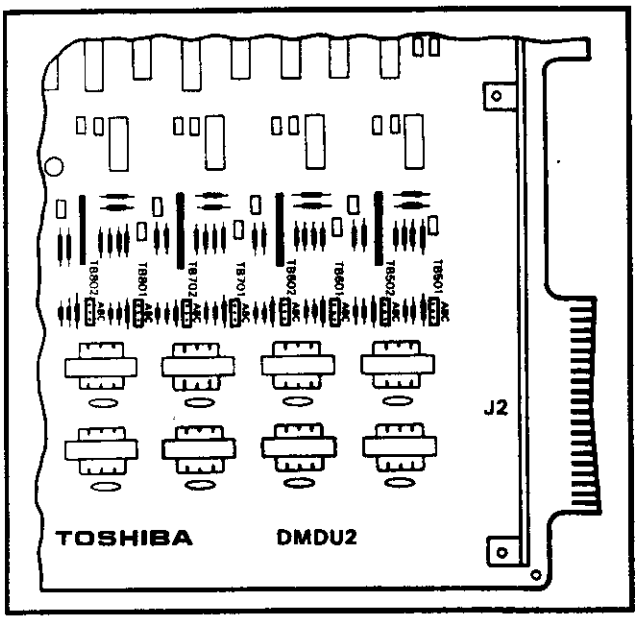


FIGURE 33—DMDU PCB STRAPPING

08.50 Attendant Console Connection

08.51 The attendant console is connected to the MDF via an industry-standard 25-pair cable, which is equipped with a female amphenol-type connector at the console end.

08.52 Connection details for the attendant console(s) are shown in Figures 35 and 36.

08.60 Trunk Connections

08.61 Connections from the telephone company jack (RJ21X for CO/FX/WATS/DID and RJ2EX for E & M TIE trunk) should be terminated on a 66-block, and then cross-connected to the appropriate leads on the CO portion of the MDF. Perform these connections by using Tables Q, R, and S as guides.

08.70 Maintenance Terminal/Modem

08.71 A keyboard/printer terminal (such as the Texas Instruments Model 743/745/703) is required to program the system. (See Section **400-100-300**, *Programming*, for details).

08.72 The terminal connects to the TTY connector located on the connector panel of the lower rear of the FCEC, via a female-type RS-232C connector.

08.73 The **MODEM** connector is used for Remote Maintenance. By connecting a customer-provided answer-only modem between this connector and

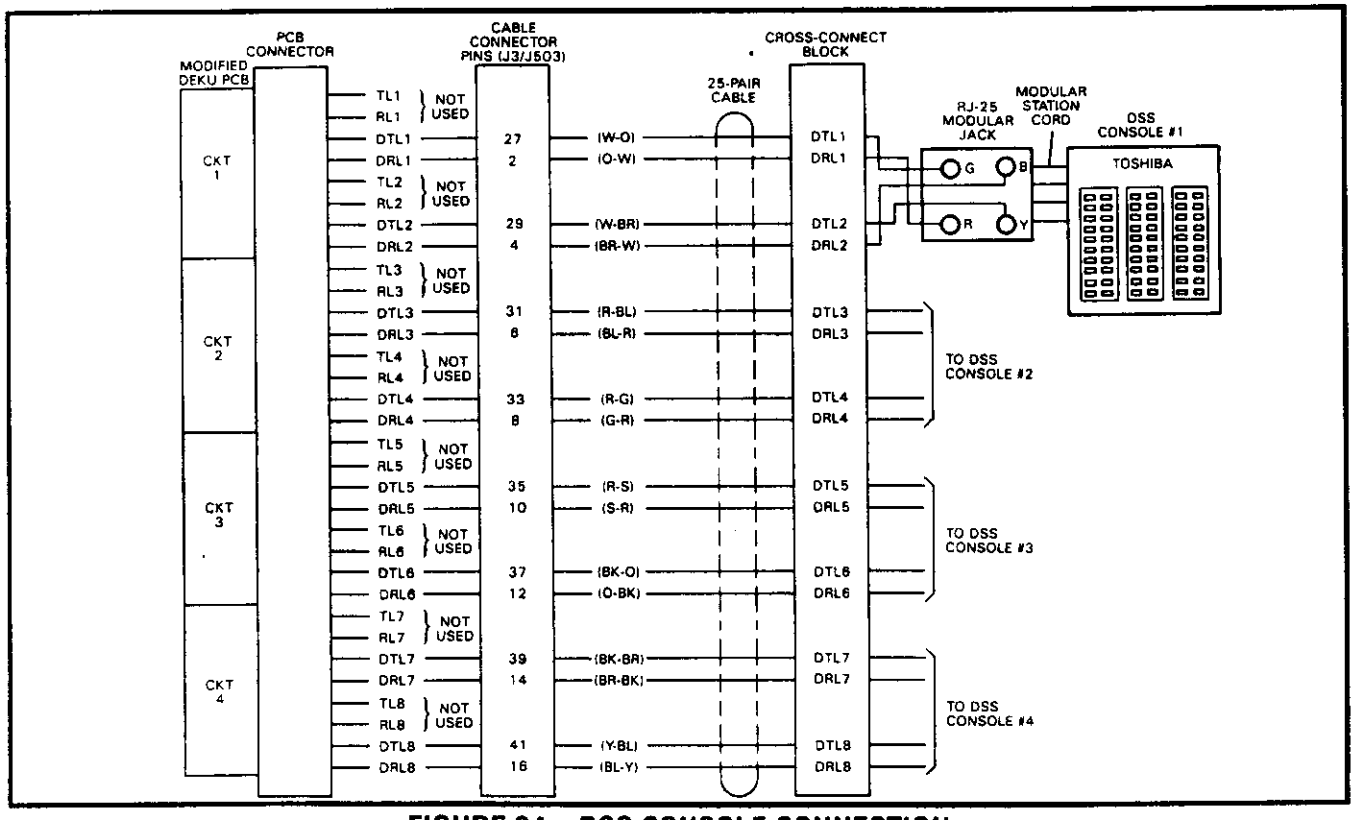


FIGURE 34—DSS CONSOLE CONNECTION

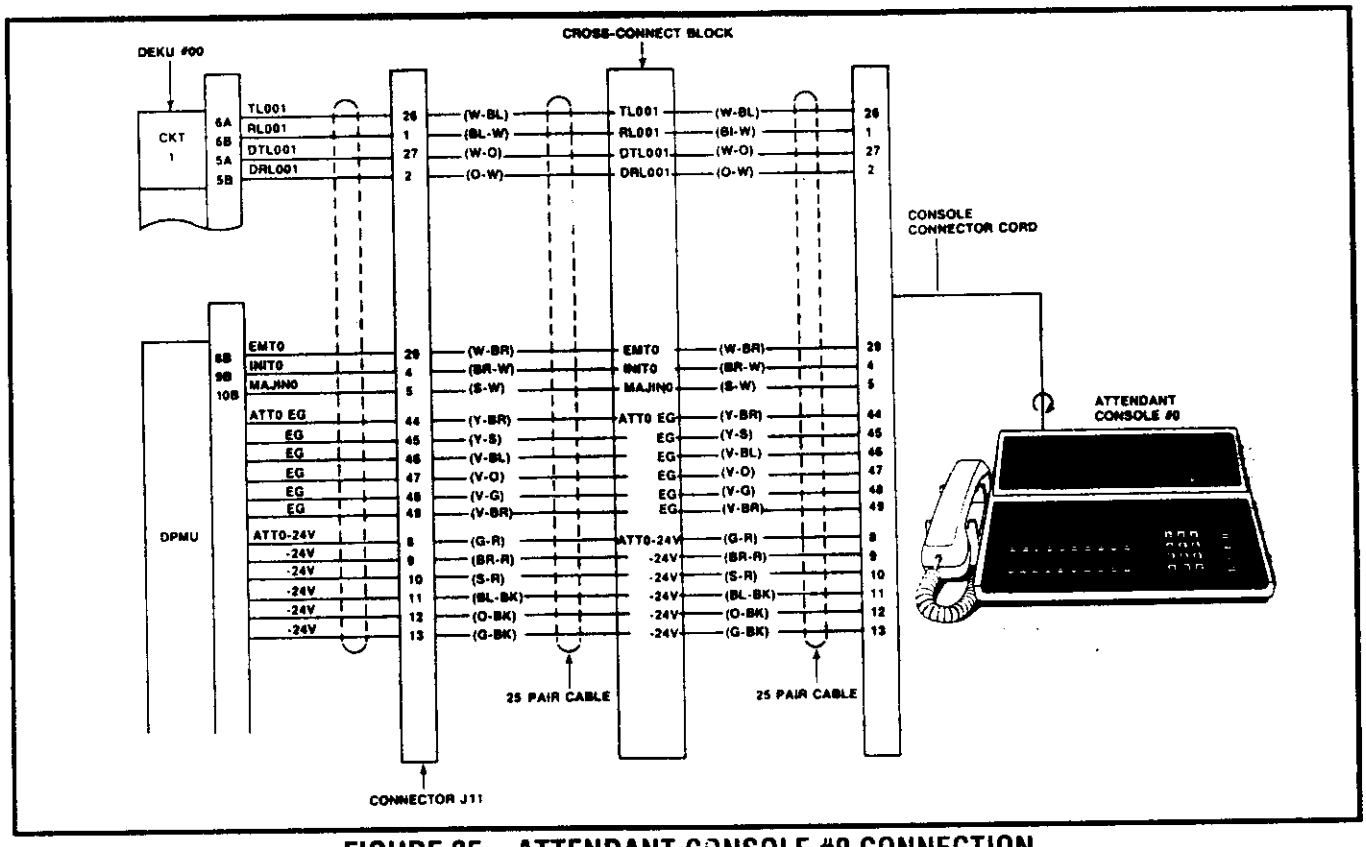


FIGURE 35—ATTENDANT CONSOLE #0 CONNECTION

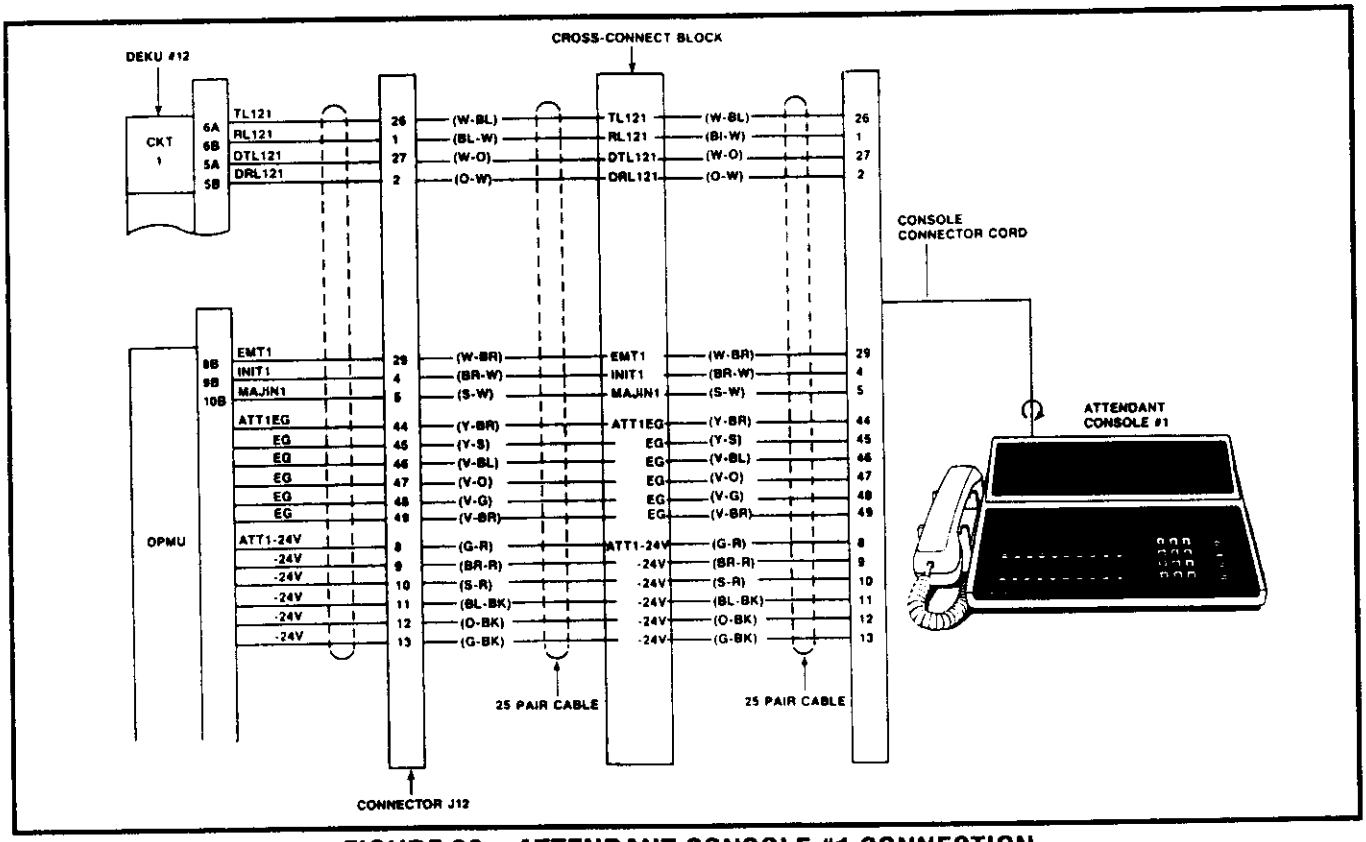


FIGURE 36—ATTENDANT CONSOLE #1 CONNECTION

a dedicated trunk, all programming and diagnostic operations can be executed over the telephone network from a remote facility.

08.74 The TTY and MODEM ports can operate at speeds of 300 or 1200 bps, and utilize a standard 7-level ASCII code with one start bit, one stop bit, and one parity bit. The system transmits even parity and ignores the parity bit on the receive side. The speed is selected by a push-on/push-off switch located on the front of the DPEU PCB. The switch's associated LED will light whenever 1200 bps is selected.

08.75 The speed selection must be the same for both ports. The ports are wired in a logical "EXCLUSIVE OR" fashion and cannot be used at the same time (one must be "open").

08.76 The pin assignments of the TTY and MODEM connectors are as follows:

TTY:

Pin No.		Designation
2	RXD	Receive Data (from TTY)
3	TXD	Transmit Data (to TTY)
5	CTS	Clear to Send*
6	DSR	Data Set Ready*
7	SG	Signal Ground
8	CD	Carrier Detect*
20	DTR	Data Terminal Ready (from TTY)

*Connect to +12VDC internally.

MODEM:

Pin No.		Designation
2	TXD	Transmit Data (to modem)
3	RXD	Receive Data (from modem)
4	RTS	Request to Send (to modem)
5	CTS	Clear to Send (from modem)
6	DSR	Data Set Ready (from modem)
7	SG	Signal Ground

NOTE:
For SMDR pin assignments see paragraph 13.63.

09 ELECTRONIC TELEPHONE INFORMATION

09.01 Six different electronic telephones may be used in the system. Refer to the General Description for a complete description of each electronic telephone type.

09.02 All electronic telephones share the same dimensions:

Height: 3.7" (94 mm)
Width: 7.1" (180 mm)
Depth: 9.5" (241 mm)

09.03 All electronic telephone types feature a modular handset cord and are connected to the system via a 4-conductor modular line cord. In addition, each electronic telephone model may be used at any or all stations.

09.10 Electronic Telephone Wall Mounting

09.11 All electronic telephones may be mounted either on a wall or on any other flat, vertical surface to which the telephone base can be secured. The mounting procedure is the same for all electronic telephone types. When selecting a mounting site, considerations should be made for the electronic telephone's weight and the additional stresses to which the mounting will be subjected.

09.12 Mounting screws or mollies which are appropriate for the telephone's mounting surface, must be provided by the installer.

09.13 Locking tabs secure the base to the electronic telephone. The direction in which the base is attached to the electronic telephone determines whether it will be used as a desk unit or a wall unit (each telephone is factory-configured as a desk unit). To alter the direction of the base, disengage the locking tabs by pushing downward on the base (Figure 37). Remove and rotate the base 180°, and then insert the locking tabs in the slots provided in the lower bottom of the electronic telephone.

09.14 Route the tail cord through the notch in the bottom of the electronic telephone.

09.15 Secure the electronic telephone to the desired wall site. (Use dimensions shown in Figure 38 to position unit.)

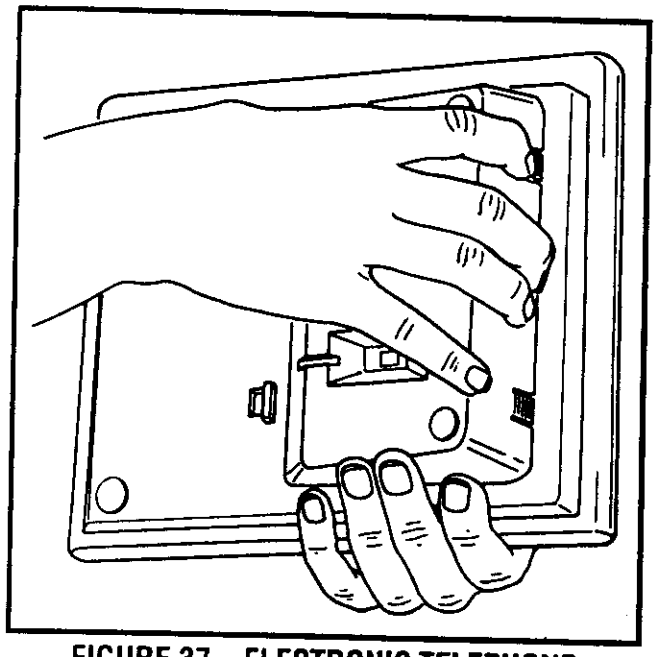


FIGURE 37—ELECTRONIC TELEPHONE BASE REMOVAL

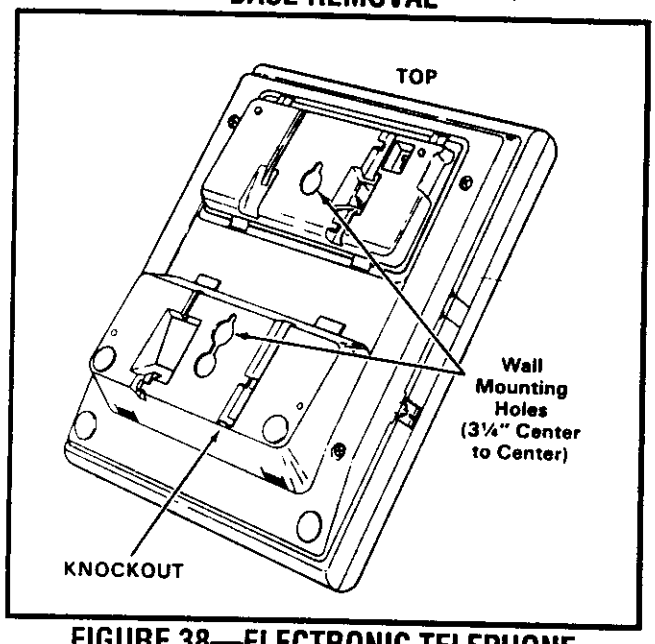


FIGURE 38—ELECTRONIC TELEPHONE WALL MOUNTING DIMENSIONS

09.16 The optional 13-foot handset cord is available from a designated supplier. It is suggested that this cord be used if an electronic telephone is wall-mounted.

09.17 Insert a small object (such as a paper clip) into the hole above the handset hanger to release the hanger catch (Figure 39). Remove and reinsert the hanger into the upper hole as shown. Note: the hanger will fit in the notch on the handset.

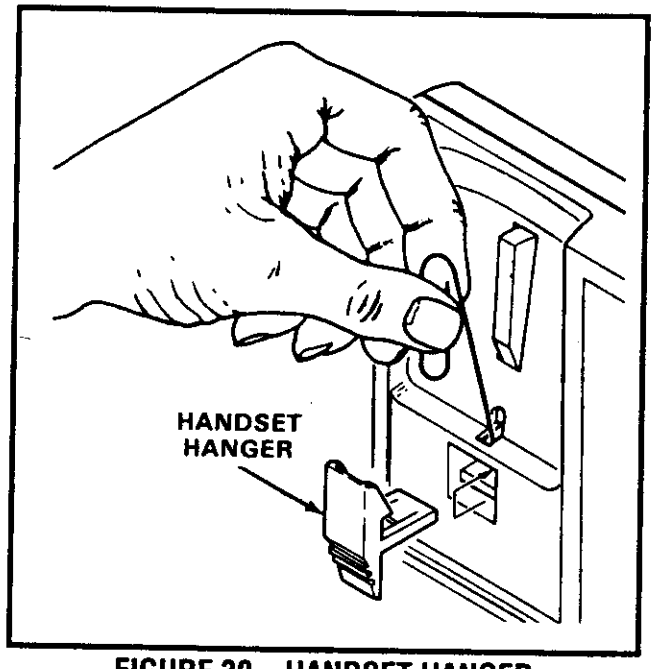


FIGURE 39—HANDSET HANGER

09.18 Connect the appropriate length line cord to the modular connector, route it to the electronic telephone, and then connect it to the electronic telephone modular jack. Test the electronic telephone by using the TTRM Program, as described in Section **400-100-300**, *Programming.*

10 DIGITAL DATA INTERFACE UNIT INFORMATION

10.00 General

10.01 There are two types of Digital Data Interface Units (DDIUs): DDIU-MAT and DDIU-MA. The DDIU-MAT is a built-in unit which attaches directly to the bottom of a 10- or 20-button electronic telephone (replacing the base). The DDIU-MA is a stand-alone unit. Each unit is equipped with a female RS-232C connector, operation switches, and a power supply. The power supply connects to the DDIUs via a 6-foot cord and plugs into a standard 115 VAC wall outlet.

10.10 DDIU-MAT

10.11 The DDIU-MAT mounts directly onto the bottom of a 6000-series electronic telephone, to form a single unit (Figure 40). Follow the steps below to install the DDIU-MAT:

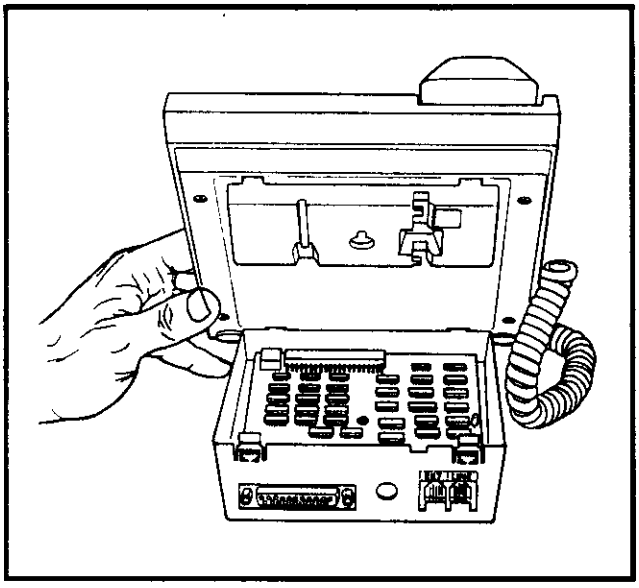


FIGURE 40—DDIU-MAT INSTALLATION

1) Remove the electronic telephone base (see Paragraph **09.13**).
2) Insert the DDIU-MAT's tabs into the slots at the top of the electronic telephone base.
3) Secure the DDIU-MAT to the electronic telephone with its locking tabs.

NOTE:
An electronic telephone with an attached DDIU-MAT cannot be wall-mounted.

10.12 The DDIU-MAT requires four types of connections for proper operation to occur:
- Power Supply (to power outlet)
- 25-pin female RS-232C connector (to data device)
- 2-pair modular line cord (to electronic telephone)
- 3-pair modular connector (to FCEC)

10.13 The power supply (provided) connects the DDIU-MAT to a 115 VAC wall outlet. The 25-pin female RS-232C connector interfaces with the customer-supplied Data Terminal Equipment (DTE) and uses the following pins:

Pin No. Designation

1	FG	Protective Ground/Frame Ground
2	SD	Transmit Data (to DDIU)
3	RDR	eceive Data (from DDIU)
4	RTS	Request to Send (to DDIU)
5	CTS	Clear to Send (from DDIU)
6	DSR	Data Set Ready (from DDIU)
7	SG	Signal Ground/Common Return
8	RCD	Receive Carrier Detect (from DDIU)
15	ST2	Transmission Signal Element Timing 2 (from DDIU)
17	RT	Transmission Signal Element Timing (from DDIU
20	DTR	Data Terminal Ready/Equipment Ready (to DDIU)
22	CI	Ring Indicator (from DDIU)

10.14 The provided 2-pair modular line cord connects the DDIU-MAT to the electronic telephone line connector. The 3-pair modular line connector connects to the three-pair house cable which runs from the FCEC (see Digital Data Interface Unit Connection, Paragraph **8.20**).

10.15 Several DIP switches located on the bottom of the DDIU-MAT, must be set in order for proper operation to occur (Figure 41).

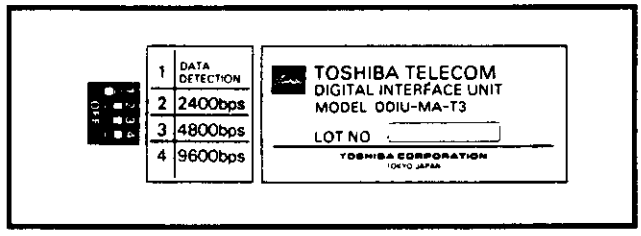


FIGURE 41—DDIU-MAT DIP SWITCHES

10.16 When the **DATA DETECTION** switch (Switch 1) is placed in its **ON** position, the automatic data release feature will be activated. The data connection will be automatically released if no data is transmitted for a period of 18 minutes.

10.17 Switches 2, 3, and 4 are used to select the data speed for synchronous transmission.

Switch 2 = 2400 bps
Switch 3 = 4800 bps
Switch 4 = 9600 bps

If asynchronous of operation is used, then the prior switching position will have no effect, and the data speed will self-adjust to a maximum speed of 19.2 kbps.

10.18 The power **ON/OFF** switch (Figure 41) provides power to a DDIU-MAT from the power supply. If the switch is **OFF**, then the DDIU-MAT will not function. The electronic telephone, however, will continue to function normally. When the switch is **ON**, both the DDIU-MAT and the electronic telephone will function, and the LED located on the bottom right corner of the DDIU-MAT will light.

10.20 DDIU-MA

10.21 A DDIU-MA is a stand-alone unit which incorporates the manual dialing and auto-answering features of the DDIU-MAT, but is used solely as a data transceiver.

10.22 The DDIU-MA has several internal and external switches that must be set in order for proper operation to occur.

10.23 The power **ON/OFF** switch, on the bottom of the DDIU-MA, must be turned **ON** in order for the DDIU-MA to operate. When the switch is on, an LED on the front faceplate will light.

10.24 The DDIU-MA's faceplate must be removed in order to set the internal DIP switches. Remove the faceplate by carefully lifting the lower right corner and then pulling the faceplate away from the base. Set the following parameters as required at switch **S26** on the internal DIUA PCB (Figure 42):

Switch 1* = Equipment Ready Supervision **ON**-Data device provides an Equipment Ready signal to the DDIU (the Terminal Ready LED will light only when this signal is received). **OFF**-Data device does not provide an Equipment Ready signal to the DDIU (the Terminal Ready LED will remain continuously lit).

Switch 2 = not used.

Switch 3 = not used. Switch 4 = ON (Enables automatic answer mode of operation.)

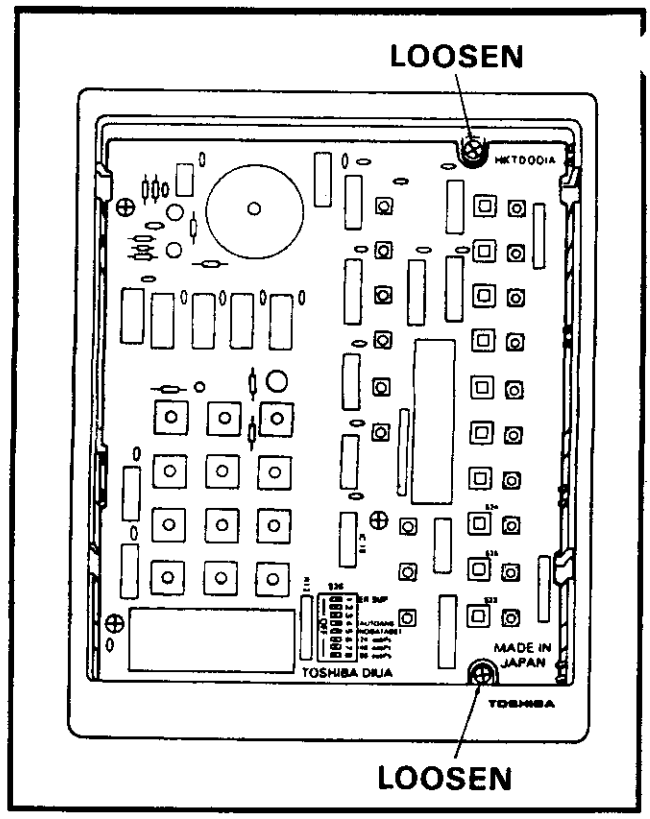


FIGURE 42—DIUA PCB

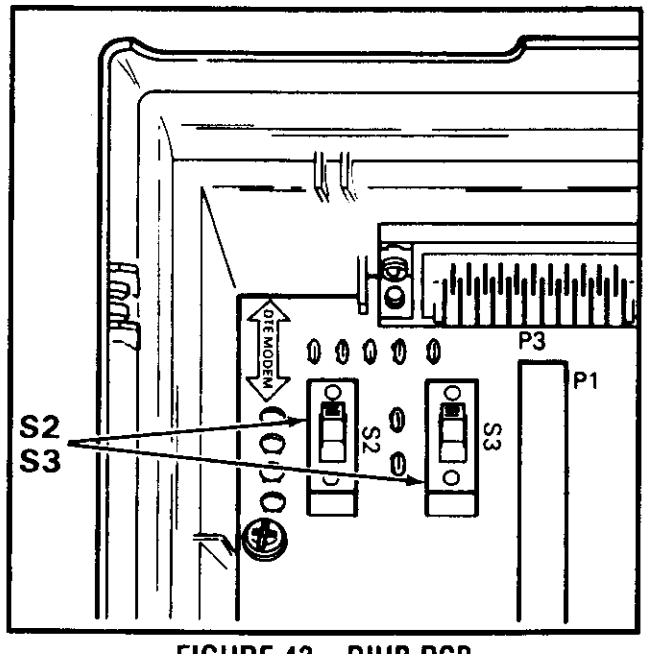


FIGURE 43—DIUB PCB

Switch 5 = ON (Activates automatic Data Release feature. The data connection will be automatically released if no data is transmitted for a period of 18 minutes).

Switch 6 = 2.4 kbps**

Switch 7 = 4.8 kbps**
Switch 8 = 9.6 kbps**

A data path cannot be established if the Terminal Ready light is **OFF. Even when answering a DDIU-MA manually, the Terminal Ready light must be **ON**.*

***Select the appropriate speed for synchronous data transmission. If the asynchronous mode of operation is used, then the position of these switches will have no effect, and the DDIU-MA will automatically adjust to the appropriate speed (to a maximum of 19.6 kbps).*

10.25 Two switches on the DIUB PCB must be set for either DTE or MODEM (DCE) operation. The pin assignments shown in Paragraph **10.28** explain the RS-232C cable signalling differences between DTE and DCE devices. (Typically, a DTE is a terminal device such as a personal computer or printer, while a DCE is an intermediate device such as a modem or protocol converter that is connected to a host. Refer to the data device manufacturer's documentation for its specific signalling information). Set the DIUB PCB switches as follows:

1) Loosen the two screws found under the DDIU-MA's faceplate on the right side (top and bottom) of the DIUA PCB (Figure 42).
2) Carefully separate the two halves of the DDIU-MA in order to expose the **S2** and **S3** (DTE/MODEM) switches located on the upper left corner of the DIUB PCB (Figure 43).
3) If the DDIU-MA is to be connected to a DTE, then both switches must be in the **DTE** position. If it is to be connected to a DCE, then both switches must be in the **MODEM** position.
4) Reassemble the DDIU-MA.

10.26 Refer to either Operating Procedures or to the DDIU-MA and electronic telephone USER GUIDES for information regarding the DDIU dial pad, LED/button operation, and specific telephone functions.

10.27 The DDIU-MA requires three types of connections in order for proper operation to occur:

- Power supply (to facility power)
- 25-pin female RS-232C connector (to data device)
- Single pair modular connector (DDIU-MA to FCEC)

10.28 The power supply (provided) connects the DDIU-MA to a 115 VAC wall outlet. The 25-pin female RS-232C connector connects to the customer-supplied data device and is configured for either DTE or DCE operation as shown:

DTE Position:

Pin No.		Designation
1	FG	Protective Ground/Frame Ground
2	SD	Transmitted Data (to DDIU)
3	RD	Received Data (from DDIU)
4	RTS	Request to Send (to DDIU)
5	CTS	Clear to Send (from DDIU)
6	DSR	Data Set Ready (from DDIU)
7	SG	Signal Ground/Common Return
8	RCD	Receive Carrier Detect (from DDIU)
15	ST2	Transmission Signal Element Timing 2 (from DDIU)
17	RT	Transmission Signal Element Timing 2 (from DDIU)
20	DTR	Data Terminal Ready/Equipment Ready (to DDIU)
22	CI	Ring Indicator (from DDIU)

The DDIU-MA connects to the FCEC with a single pair station line cable that plugs into the modular connector on the back of the base (see Digital Data Interface Unit Connections, Paragraph **8.20**).

IMPORTANT:

All connections to DDIUs (-MA or -MAT) must observe correct tip and ring line polarity in order for proper operation to occur.

DCE (MODEM) Position:

Pin No.	Designation	
1	FG	Protective Ground/Frame Ground
2	TD	Transmitted Data (from DDIU)
3	RD	Received Data (to DDIU)
4	RTS	Request to Send (from DDIU)
5	CTS	Clear to Send (to DDIU)
6	DSR	Data Set Ready (to DDIU)
7	SG	Signal Ground/Common Return
20	ER	Data Terminal Ready/Equipment Ready (from DDIU)
24	ST1	Transmit Signal Element Timing 1 (to DDIU)

11 SYSTEM INDICATORS and CONTROLS

11.01 Several system indicators and controls are located on the various PCBs and assemblies. The locations and functions of these indicators/controls are as follows:

FFDA

- FDD0 LED will light to indicate when the disk is being accessed.
- PUSH Switch used to ensure proper insertion of the diskette.

FTWU

- CLOCK LED will flash continually whenever the system is operating normally.

DCCU/FCCU

- DISP LEDs 1 ~ 8 will to display system status during a program load (see Paragraph **12.02**) and also to indicate the following fault conditions:
- DISP LED 6 will light to indicate a failure of the 20 Hz ringing power. This will be accompanied by a MIN alarm on the console.
- DISP LED 7 will light on the DCCU to indicate that the system clock has not been set. This will be accompanied by a MIN alarm on the console. Neither of these actions will occur on an FCCU card.

DPEU/FPEU

- MAJ LED will light whenever a MAJOR alarm exists in the system.
- MDR LED will light whenever the DTR signal from the SMDR device is not present.
- TTY/MODEM switch this is a push-on/push-off switch that is used to select 300 or 1200 bps speed for TTY and MODEM ports. The switch's associated LED will light whenever 1200 bps is selected, and will remain dark when speed is set at 300 bps. These ports may be used for programming and maintenance and/or the Lodging/Health Care Audit.
- SMDR switch this is a push-on/push-off switch which is used to select 300 or 1200 bps speed for the SMDR port. The switch's associated LED will light whenever 1200 bps is selected and will remain dark when speed is set for 300 bps. This port may be use for SMDR and/or Lodging/Health Care Audit.

DPMU

- FALT LED indicates software-detected faults concerning the MOH or Paging circuits.
- BSY LED 1 & 2
  #1 will light when there is a page in progress.
  #2 indicates when MOH is in use (a call is on hold or camp-on).
- MOH volume control adjusts Music-on-Hold volume level.
- LOAD switch a momentary switch used in an emergency condition to reload system program and data from disk.
- INT switch a momentary switch that is used in emergency conditions to reset system logic. All existing calls will be dropped when this switch is pushed.
- PFT switch a momentary switch that is used to manually activate a power failure/emergency transfer via the DPFT unit. A transfer that is activated by this switch must also be reset via the use of this switch.
- PFT LED this LED will light whenever there is an existing transfer condition which has been caused by anything other than a power failure.

FRCU-4

- FALT LEDs 1 & 2 used to indicate software-detected faults or a disabled state caused by an input command from the maintenance terminal (**TPER Program**). Each LED indicates two of the four circuits on the FRCU:
  FALT #1 = Circuits 1 & 2
  FALT #2 = Circuits 3 & 4

FRCU-8

- FALT LEDs 1 ~ 4-indicate software-detected faults or a disabled state caused by an input command from the maintenance terminal (**TPER Program**). Each LED indicates two of the eight circuits on the FRCU:
  FALT #1 = Circuits 1 & 2
  FALT #2 = Circuits 3 & 4
  FALT #3 = Circuits 5 & 6
  FALT #4 = Circuits 7 & 8

DCOU/DEMU/DLSU

- FALT LEDs 1 & 2 indicate software-detected faults or a disabled state caused by an input command from the maintenance terminal (**TPER Program**). Each LED indicates two of the four circuits on the DCOU, DEMU, or DLSU:
  FALT #1 = Circuits 1 & 2
  FALT #2 = Circuits 3 & 4
- BSY LEDs 1 ~ 4 indicate the busy/idle status of

-30-

each of the four circuits on the DCOU, DEMU, or DLSU. Each LED will light when its respective circuit is busy.

DEKU/DSTU

- FALT LEDs 1 & 2 indicate software-detected faults or a disabled state caused by an input command from the maintenance terminal (**TPER Program**). Each LED indicates four of the eight circuits on the DEKU or DSTU:

  FALT #1 = Circuits 1 ~ 4
  FALT #2 = Circuits 3 ~ 8

DDSU

- Falut Leds 1 & 2 indicate software detected faults or a disabled state caused by an input command from the maintenance terminal (**TPER Program**)

  FALT #1 = Circuits 1 & 2
  FALT #2 = Circuits 3 & 4

DDCU

- FALT LEDs 1 & 2 indicate software-detected faults or a disabled state caused by an input command from the maintenance/programming terminal (**TPER Program**). Each LED represents four of the eight circuits on the DDCU:

  FALT #1 = Circuits 1 ~ 4
  FALT #2 = Circuits 5 ~ 8

- NOT READY LEDs DIU 1 ~ 4 and DIU 5 ~ 8 indicate that either the DDIU's (-MA or -MAT) power switch is not in its **ON** position, or that the tip and ring line polarity is reversed.

DMDU

- FALT LEDs 1 & 2 indicate software-detected faults or a disabled state caused by an input command from the maintenance/programming terminal (**TPER Program**):

  FALT #1 = DIU Circuits 1 ~ 4
  FALT #2 = Modem Circuits 1 ~ 4

- NOT READY LEDs DIU 1 ~ 4 indicate that either the DDIU's (-MA or -MAT) power switch is not in its **ON** position, or that the tip and ring line polarity is reversed.
- BSY LEDs (Modem) 1 ~ 4 indicate the busy/idle status of each of the four modem circuits. Each LED will light when its respective circuit is busy.

DDSU

- FALT LEDs 1 & 2 indicate software-detected faults or a disabled state caused by an input command from the maintenance terminal (**TPER Program**). Each LED indicates two of the four circuits in the DDSU:

  FALT #1 = Circuits 1 & 2
  FALT #2 = Circuits 3 & 4

FPSA

- LEDs indicate the presence of: Ringer and -48, -24, -12, +12, -5, +5 voltages.
- AC Power LED indicates the presence of AC power to the FPSA.
- ALARM TEST switch used to test DCCU FALT #6 and the MIN ALARM on the attendant console.

12 SYSTEM POWER UP

12.00 General

12.01 When the system undergoes its initial power up, it will automatically load its operating system and customer data from the floppy disk. Two diskettes are provided with each system; one should always be mounted in the drive, while the other should be kept as a spare.

12.02 Activate the system as follows:

1) Be sure that the main power switch on the FPSA is in its **OFF** position (Figure 7), and plug the AC power cord into the outlet.
2) Turn the main power switch on the FPSA to its **ON** position.
3) Press and hold the PUSH switch on the FFDA.
4) Place the diskette in the drive, with the title applique on the disk facing up (Figure 44). **D.02** software requires the use of two diskettes. In this case, the **System** disk is inserted into FDD0. (If 2 disk drives are used, insert the **Maintenance** disk in FDD1).

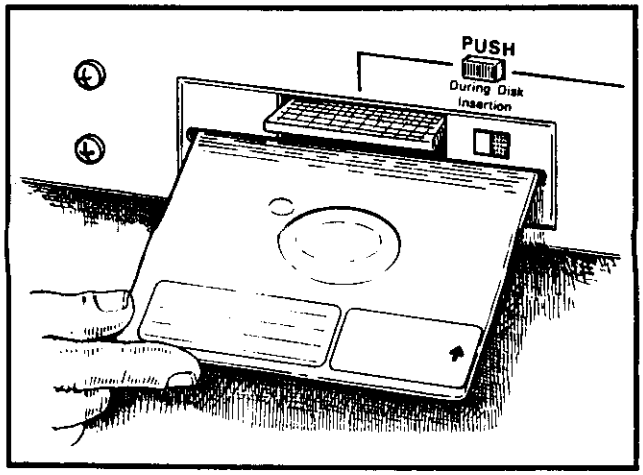


FIGURE 44—INSERTING DISKETTE

5) Close the drive door and release the PUSH switch.
6) The floppy disk drive will now run:
   - The DPEU MAJ ALARM LED will be **ON**.
   - The DPMU PFT LED will be **ON**.
   - The FALT LEDs on all peripheral PCBs will be **ON**.
   - The DISP LEDs (DCCU) will indicate loading sequence. LED #4 will light for a short time and then 1, 2, 3, and 4 will be **ON** until loading is complete.
7) When loading is complete, the system will initialize and clear all LEDs. Only a true fault indication will remain. Refer to Section **400-100-500**, *Fault Finding Procedures*, for an explanation of all LED indications and for assistance with fault clearing.
8) Refer to Section **400-100-300**, *Programming*, in order to complete customer data assignments.

NOTE:
*DISP LED #7 and the console's MIN LED will be **ON** until the system's date and time have been set either via the console or through the use of the DTRF Program.*

13 MISCELLANEOUS EQUIPMENT CONNECTIONS

13.00 General

13.01 All connections to miscellaneous equipment are made via J13, TTY, MODEM, or SMDR connectors on the connector panel of the basic cabinet.

NOTE:
The DATA connector is reserved for future use.

13.10 Power Failure/Emergency Transfer

13.11 The Power Failure/Emergency Transfer Unit (DPFT) is used in the event of a system failure to automatically connect up to eight trunks to selected standard telephones. When a transfer occurs, these telephones will then be able to place outside calls without the intervention of the PERCEPTION II system, which will still be out of service.

13.12 The DPFT is a self-contained module that mounts externally to the FCEC, typically on the MDF. Connections to the trunks, stations, and FCEC are made via two 50-pin amphenol-type connectors (J1 and J2) on the DPFT. A functional diagram is show in Figure 45.

13.13 The DPTF unit consists of eight relays, which are normally held open, and which connect the telephones to DSTU circuits and the trunks to DCOU circuits. In the instance of a power failure (or other emergency), these relays will close, and the telephones will be directly connected to the trunks. Calls can then be placed from the telephones over the CO trunks, and the PERCEPTION II (which is out of service) will be completely bypassed.

13.14 Power Failure Transfer (PFT) telephones that are connected to ground-start trunks, must have ground taps (push buttons) in order to operate during power failure transfer conditions.

13.15 A transfer can be activated either automatically, by a power loss, or manually, by the depression of one of two buttons. One of these buttons is located on the underside of the attendant console, while the other is located on the front of the DPMU PCB. A transfer that is caused by a power failure will automatically reset once power is restored. A transfer that has been manually activated, however, must also be reset manually.

13.16 When the DPFT is reset after a transfer, any existing PFT conversations will be protected. Individual circuits will be restored only when they become idle.

13.17 The DPFT is installed as follows:
1) Mount the DPFT on the MDF.
2) Using 25-pair cables with amphenol-type connectors (female for J1, male for J2), connect the DPFT to two "66"-type quick-connect blocks.
3) Using Table U for a guide:
   - Connect the trunks selected for emergency use to the J1 block "CO TIP" and "CO RING" terminals.
   - Connect the DCOU circuits supporting the emergency trunks to the J1 block "DCOU TIP" and "DCOU RING" terminals.
4) Using Table V for a guide:
   - Connect the standard telephone stations which have been selected for emergency

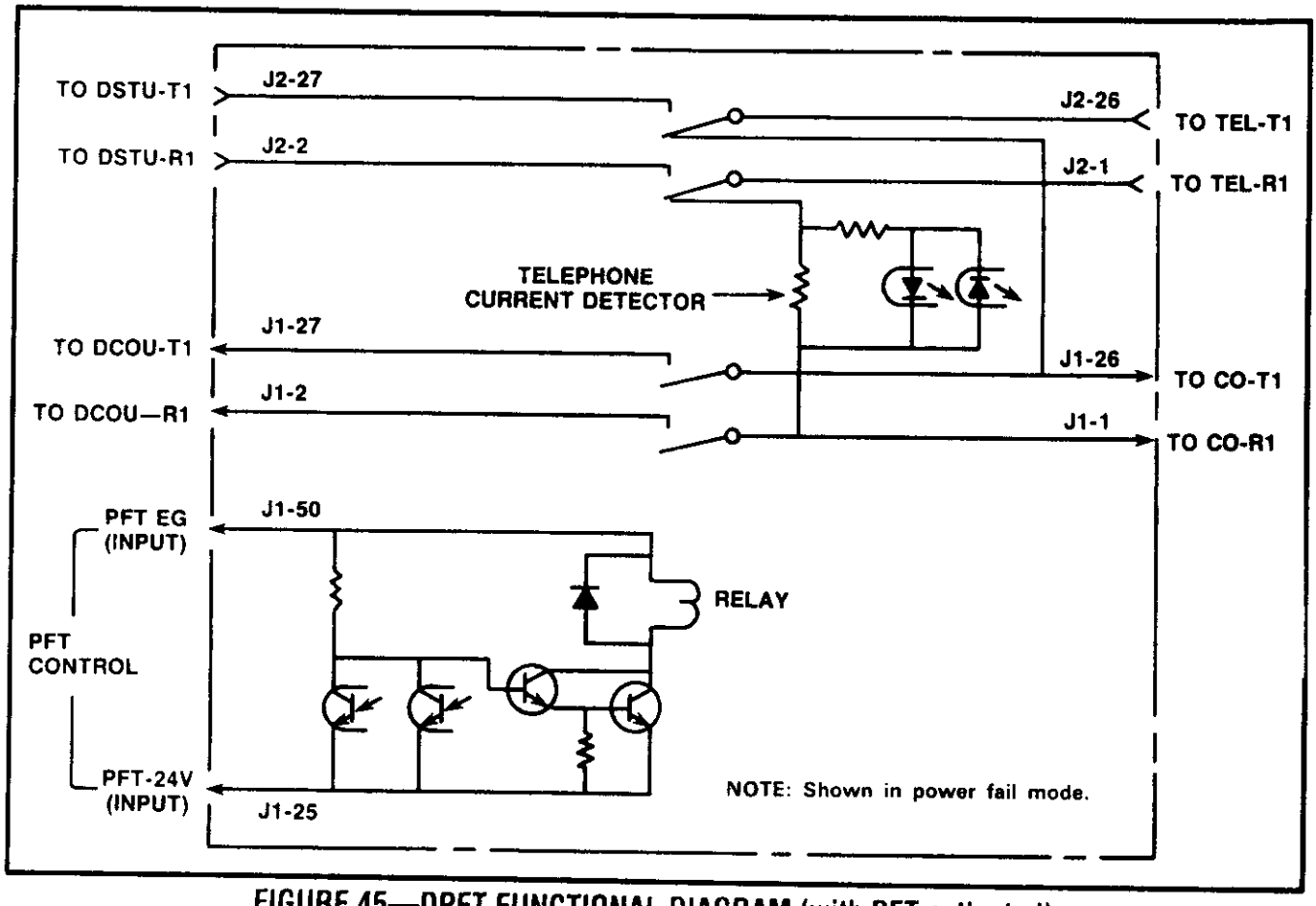


FIGURE 45—DPFT FUNCTIONAL DIAGRAM (with PFT activated)

use to the proper terminals on the J2 block "TEL TIP" and "TEL RING" terminals.

5) At the MDF, connect the DPFT to the FCEC control as follows:

DPFT J1 = FCEC J14, 15 or 16
Pin 25 (S-V) = Pin 25 (S-V)*
Pin 50 (V-S) = Pin 50 (V-S)*
DFPT J2 = FCEC J01 J10

**On the J1 connector, the Pin 25 connection provides the -24 VDC input that is required to drive the DPFT. The Pin 50 connection provides ground. There are no power connections on connector J2.*

13.20 Reserve Power

13.21 The PERCEPTION II power supply is standardly-equipped with an integral battery charger. Full reserve power can be provided for any system by connecting an appropriate, customer-supplied 24-volt battery pack. During normal operation, the power supply charger unit will maintain the proper charge in the battery pack. In the event of an AC power failure, switchover to battery power will be automatic. There will be no loss of system operation as a result of power switchover.

13.22 Battery selection and size will depend on system size and desired reserve operating time. The maximum power consumption of the Basic Cabinet is 24 amps at 24VDC. A configuration consisting of both a Basic and an Expansion Cabinet has a maximum power consumption of 36 amps at 24 VDC. The selected batteries must be compatible with the PERCEPTION II charger float voltage of 27.3 VDC.

13.23 To install Reserve Power, refer to Figure 46 and follow the steps below:

1) Place the battery pack at its installation location.

CAUTION:
Batteries can emit fumes that are poisonous to people, potentially explosive, and

corrosive to electronic components. Locate batteries so that any fumes will be adequately vented.

2) Completely wrap the Peak Load Battery terminals with electrical tape and cable tie them securely. Disconnect the Peak Load Battery.
3) Place the **BAT. SW** in its **OFF** position (Figure 46).

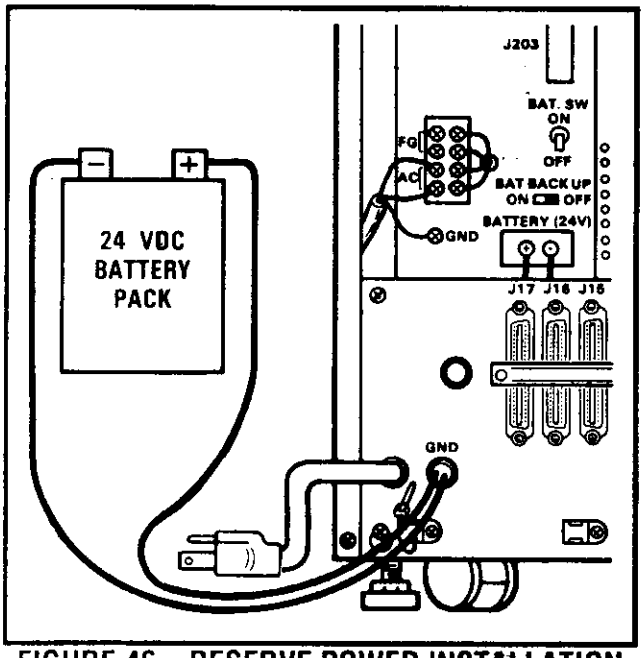


FIGURE 46—RESERVE POWER INSTALLATION

4) Observing correct polarity, connect the battery pack leads to the **BATTERY (24V)** terminal block on the FPSA.
5) Observing correct polarity, connect the leads to the battery pack. Fix battery leads to the cabinet by using the clamp.
6) Place the **BAT. SW** in its **ON** position.

13.30 Paging Equipment

13.31 By combining a single customer-supplied paging amplifier with the system's paging interface and speaker zone switching, it is possible to provide a paging system of up to five zones with All Page capability.

13.32 Figures 47, 48, and 49 depict possible paging arrangements. As a standard feature (part of the DPMU PCB), the system provides a 600-ohm output to a paging amplifier. If more than one paging zone is required, the output of the amplifier can be routed back to the DPMU PCB where it will be switched to one of five sets of speakers via relays K1 ~ K5. The relay to be operated is determined by the access code dialed by the station user. The actual access code is assigned in software (see Section **400-100-300**, *Programming*).

13.33 An All Page code can also be defined in software. When that code is dialed, all relays will be activated simultaneously in order to permit paging to all speaker zones.

13.34 If the power loads of the different zones are such that a single amplifier is not suitable, then multiple amplifiers (up to one for each zone) can be connected, as shown in Figure 49.

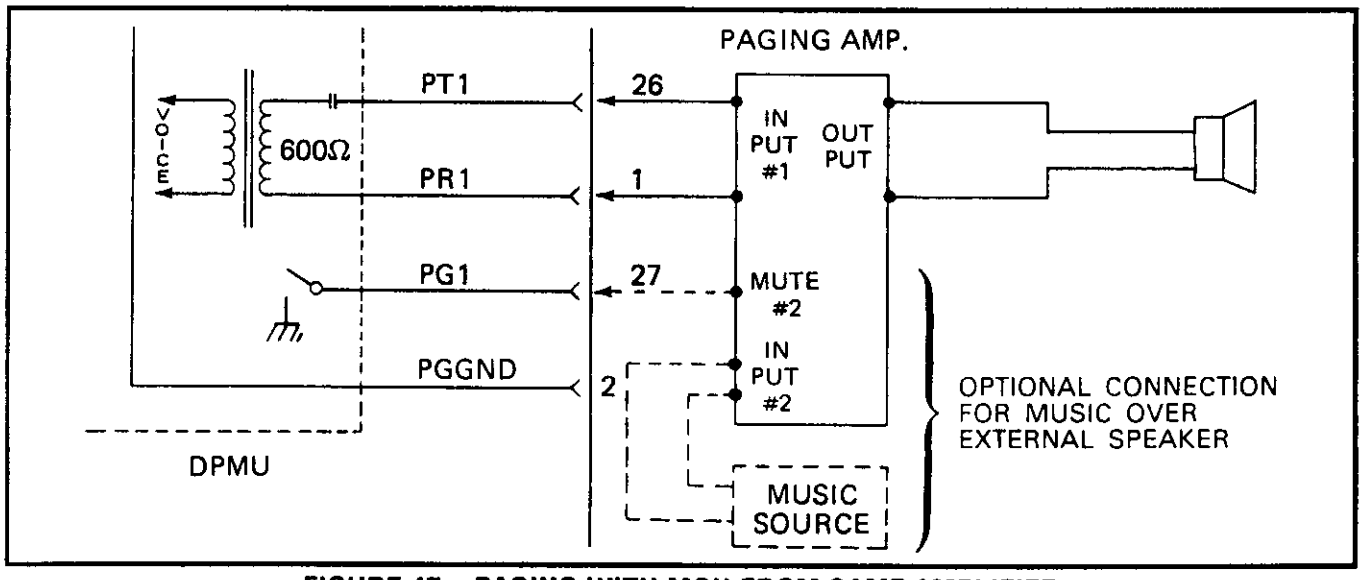


FIGURE 47—PAGING WITH MOH FROM SAME AMPLIFIER

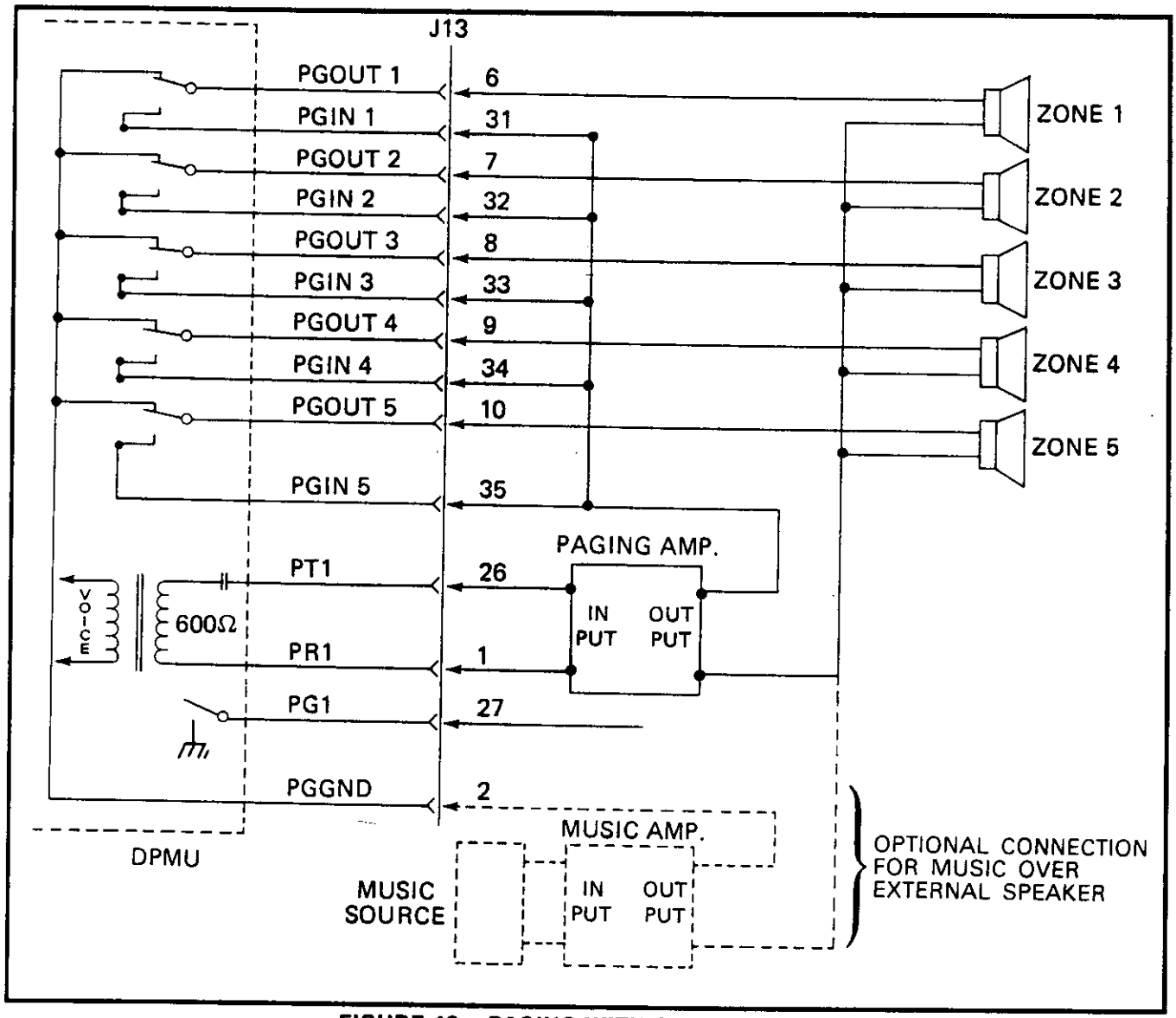


FIGURE 48—PAGING WITH ONE AMPLIFIER

13.35 If music is to be broadcast over the paging system, then two arrangements are possible:

1) If the music is supplied from a separate amplifier (as in Figures 48 & 49), it can be connected between the speaker common line and the PG GND input to the DPMU (J13 and pin #2). Music will be supplied to all speaker zones through the K1 ~ K5 relay "break" contracts, whenever there is no page in progress. When a page access code is dialed, the proper relay will operate, the music will be disconnected from that zone, and the page amplifier output will be connected.
2) If the music is connected to a second input of the paging amplifier (as in Figure 48), the PG1 control lead (J13 pin #27) can be connected to the MUTE terminal of the page amplifier music channel. When any page access code is dialed, a ground output is applied to the PG1 lead in order to MUTE the music.

13.36 All paging connections are made via J13 in the FCEC connector panel. See Table P for details.

13.40 Music-on-Hold

13.41 A Music-on-Hold (MOH) interface is a standard system feature. The circuitry occupies part of the DPMU PCB. If MOH is equipped, it will be heard by any station or trunk that has been placed

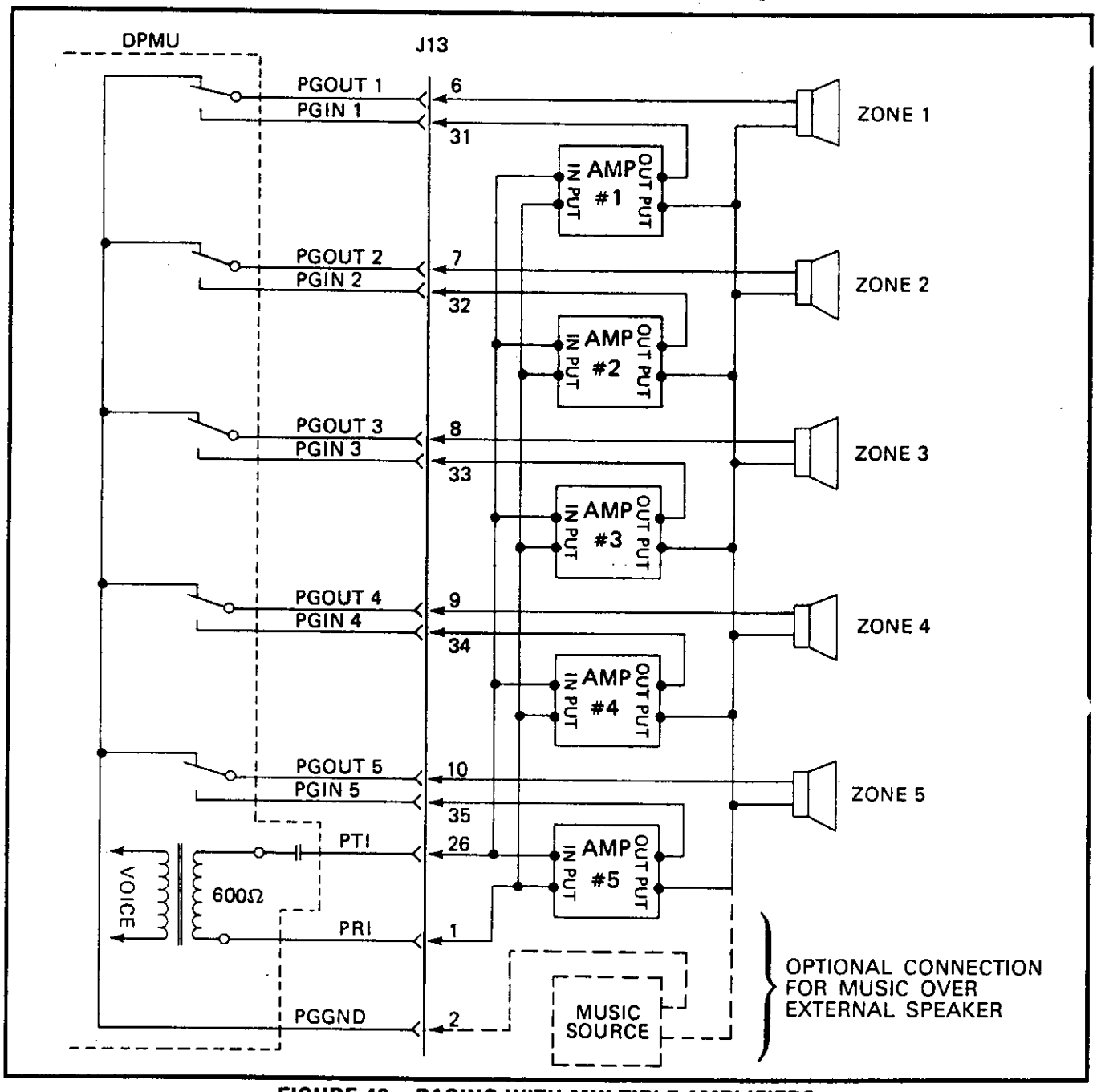


FIGURE 49—PAGING WITH MULTIPLE AMPLIFIERS

on-hold in the system, or by any trunk that has been put into the camp-on state.

13.42 A tuner or other program source must be provided by the customer. The program source is connected to the MOH input via pins #4 and #29 (Br-W and W-Br) of J13 (see Table P). The input impedance is 600-ohms.

13.43 Adjust the MOH volume with the MOH volume control on the front of the DPMU PCB. Maximum volume is limited by internal circuits in order to comply with FCC regulations.

13.50 Universal Night Answer

13.51 The Universal Night Answer (UNA) feature provides an output of interrupted ringing voltage (85 (±)10 VRMS, 20 Hz superimposed on VDC) whenever the system is in Night Service and

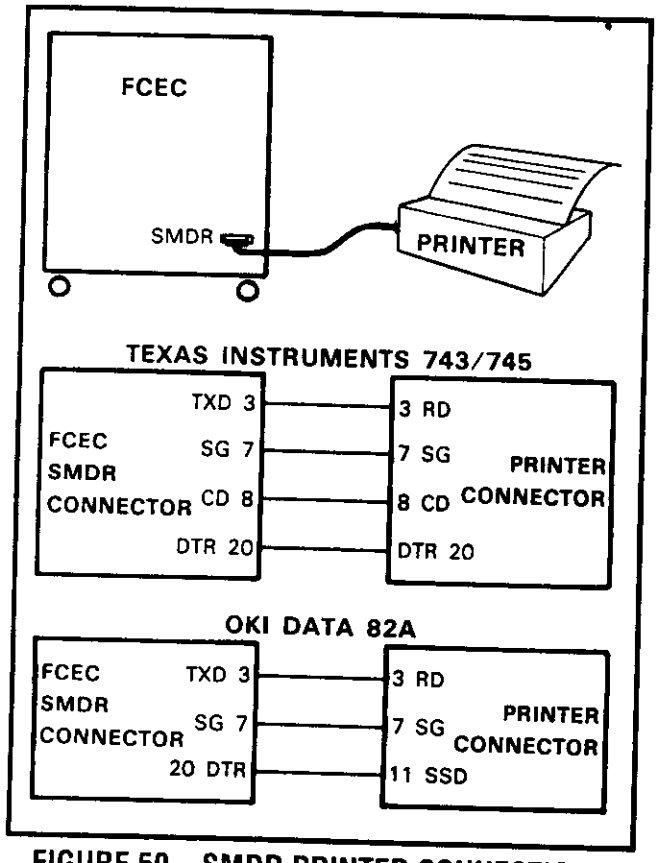


FIGURE 50—SMDR PRINTER CONNECTIONS

an incoming call is received by a trunk that has been designated for UNA. When the UNA chime or bell sounds, any station user can dial the UNA access code and be connected to the caller.

13.52 The ringing voltage output is intended to control a strategically-located chime or loud-ringing bell. The available power for the UNA chime or bell is five ringer equivalents.

13.53 Connections to the UNA ringing signal are via pins #22 and #47 (O-V, V-O) of J13 (see Table P) or J16 (see Table S).

13.60 Station Message Detail Recording

13.61 The Station Message Detail Recording (SMDR) feature enables a business to monitor and control its telephone costs by collecting data regarding each outgoing and/or incoming trunk call. Specifically, a record of each call is output at the SMDR connector on the connector panel located on the lower rear of the FCEC. (In a Lodging/Health Care application, an SMDR output will contain data that is specific to that particular application).

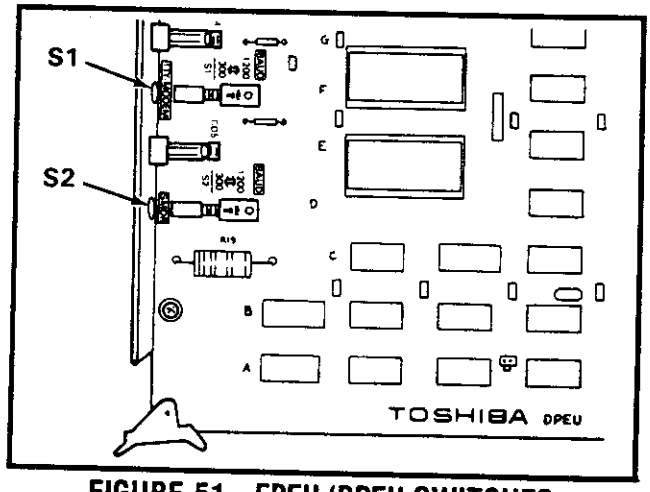


FIGURE 51—FPEU/DPEU SWITCHES

13.62 SMDR output can be connected to a variety of customer-provided equipment, including the following:

- A local 80-column printer, for an on-line printout at the termination of each trunk call.
- A recording device that is used to store data for subsequent processing, either on-site or by a service bureau.
- Call accounting equipment that is used to provide customized call reports.

13.63 The SMDR connector pin assignments are noted below. (For information regarding the connection of SMDR peripheral equipment, refer to the documentation supplied by each item's manufacturer).

SMDR Position:

Pin No. Designation

3	TXD	Transmit Data (to SMDR device)
4	RTS	Request to Send (to SMDR Device)
5	CTS	Clear to Send (to PERCEPTION II)
6	DSR	Data Set Ready
7	SG	Signal Ground
8	CD	Carrier Detect
20	DTR	Data Terminal Ready (from SMDR device)

13.64 Printers which are known to be compatible with the PERCEPTION II system are as follows:

Texas Instruments Silent 700 Series
(models 703/743/745)
OKI Data model 82A/182A

Refer to Figure 49 for the proper connections regarding each of these printers.

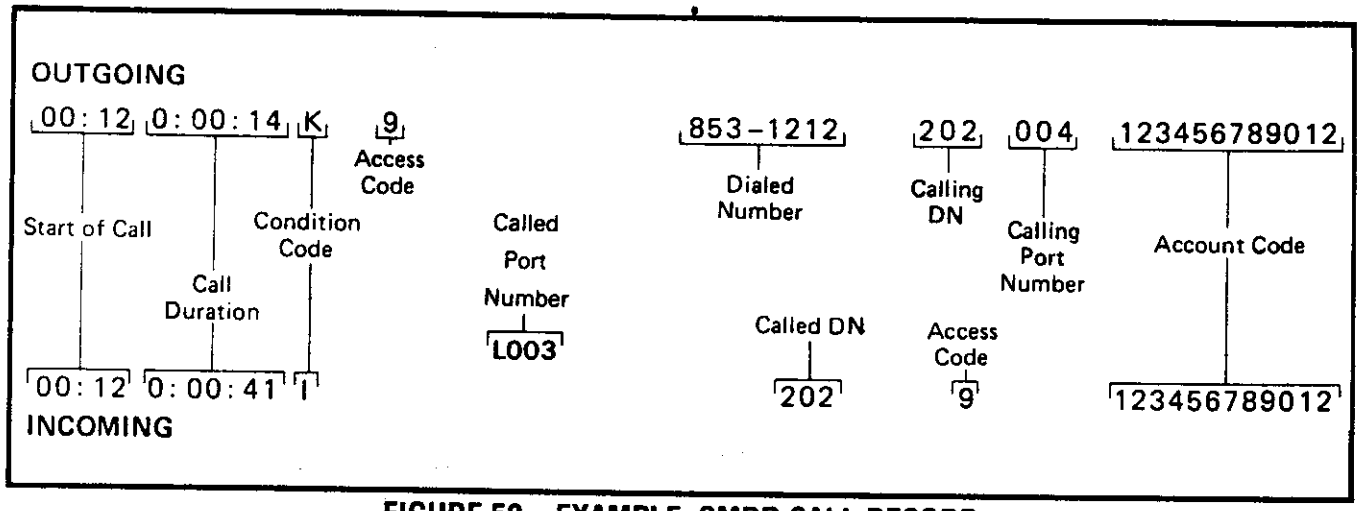


FIGURE 52—EXAMPLE: SMDR CALL RECORD

13.65 The SMDR output speed can be set for either 300 bps or 1200 bps by pressing the **SMDR** switch on the front panel of the DPEU PCB (Figure 51). If the speed is set at 1200 bps, then the LED that is associated with the speed select switch, will light.

13.66 The code that is used by SMDR is the standard 7-level ASCII code, using one start bit, one stop bit, and one parity bit (even parity).

13.67 SMDR can be programmed to record call data under any one of the following conditions:
- No recording.
- Incoming calls only.
- Outgoing calls only.
- Incoming and Outgoing calls.
- Outgoing toll calls only.
- All incoming calls and outgoing toll calls.

13.68 When SMDR is programmed to monitor outgoing calls, all calls which seize a trunk will be recorded, regardless of their calling duration. When programmed to monitor incoming calls, all answered calls will be recorded. Calls that are disconnected by Toll or Code Restriction features will not be recorded.

13.69 SMDR recording for each of the different call types will begin at the times noted below:
- Outgoing calls when a trunk is seized.
- Incoming calls to an attendant when the attendant answers.
- Incoming calls which are extended by an attendant when the attendant answers.

13.70 A station user can enter a charge account code of up to twelve digits for each call. This code will be included in the SMDR output.

13.71 The recording criteria and charge account code length are defined in the DMDR Program (see Section **400-100-300, Programming**).

13.72 Each time a trunk is seized, data regarding that call will be collected up until the trunk is released. The collected data will then be output at the SMDR port in the following format (see Figure 52):
- Time
  - Start of Call — Hour-tens, -units, Minute-tens, -units
  - Call Duration — Hour-units, Minute-tens, -units, Seconds-tens, -units
  - Condition Code — (See Table)

    A = Attendant handled
    D = Call > 10 hours
    E = Maintenance (SMDR port)
    F = Maintenance (trunk test)
    I = Incoming call
    K = Outgoing call
    L = Conference Attendant or 3-party
    M = Transfer or Call Forward
    N = SPCC #1
    O = SPCC #2

P = Date/Time change
Q = System Initialize
S = Date printed (every hour)
- Access Code 3 digits maximum
- Dialed Number 15 digits maximum
- Calling DN 3 digits maximum
- Calling Port Number 3 digits maximum
- Account Code 12 digits maximum

This is a standard call record.
The format of the special record, Initialize/Reload and Time Change is as follows:
Initialize/Reload:
NNNN etc. (previous records - usual call)
00 (Initialize or Reload)
Any record printed after the initialize record will appear on the same line and be offset three columns from the usual record.
Example:
NNNN (previous record)
00 NNNNN (Initialize and next record)
NNNNNN
Time Change:
Following an Initialize/Reload
00 00 00
HH : MM (elapsed time since Initialize or Reload)
MM DD (new date)
HH : MM (new time)
Without Initialize or Reload MM DD (old date)
HH : MM (old time)
MM DD (new date)
HH : MM (new time)

13.73 Some complex calls will cause multiple call records (CR) for the same station or trunk.
Examples:
1) Station #1 transfers Trunk #1 to Station #2
CR for Station 1 ~ Trunk 1
= Condition Code I or K
CR for Station 2 ~ Trunk 1
= Condition Code M
2) Station #1 transfers Trunk #1 to Trunk #2
CR for Station 1 ~ Trunk 1
= Condition Code I or K
CR for Station 1 ~ Trunk 2
= Condition Code L
CR for Trunk 1 ~ Trunk 2
= Condition Code M
3) Station #1 holds Trunk #1 and calls Trunk #2
CR for Station 1 ~ Trunk 1
= Condition Code I or K
CR for Station 1 ~ Trunk 2
= Condition Code K

13.80 Lodging/Health Care Data Audit

13.81 The Lodging/Health Care Data Audit feature enables the Lodging/Health Care system user to record and analyze the registration and operation of specific features in Lodging/Health Care applications.

13.82 Lodging/Health Care audit data is output at either the **SMDR** or the **TTY** connector on the connector panel located on the lower rear of the basic cabinet. (Because the **TTY** connector is required for on-site programming and maintenance procedures, it is recommended that the SMDR port be used). Both the selection of data to be output and the connector choice (TTY or SMDR) are software-controlled (refer to the **DHMF Program** in Section **400-100-300**, *Programming*).

13.83 The SMDR or TTY output can be connected to either:
- A local 80-column, receive-only printer, for an on-line printout.
- Compatible call accounting or property management interface equipment which has been supplied by another vendor.

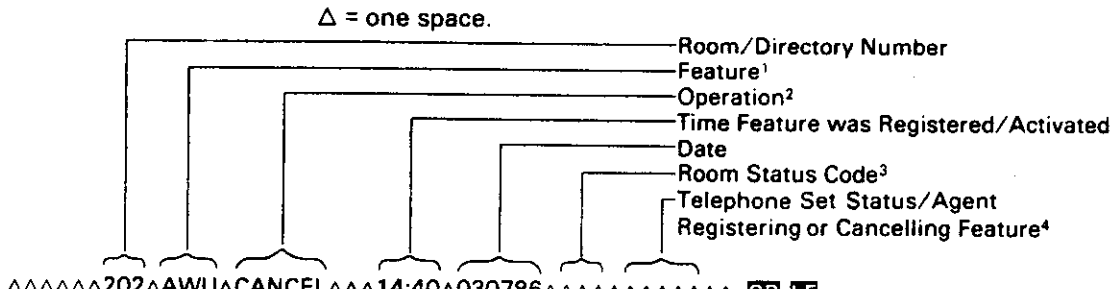
13.84 The audit pin-out assignments at either the **SMDR** or the **TTY** connector are identical to those for the Station Message Detail Recording (SMDR) feature (see Paragraph **13.63** and Figure 50). For instructions regarding the connection of peripheral equipment units, refer to the documentation supplied by each unit's respective manufacturer.

13.85 The audit data output rate can be set for either 300 bps or 1200 bps by pressing either the SMDR switch (**S2**) or the TTY switch (**S1**) on the front panel of the DPEU PCB. The specific setting depends on the configuration of the receiving equipment. Both the SMDR and the TTY switches are two-position, push-type switches (see Figure 51). They should be pushed in for 1220 bps operation and pushed out for 300 bps operation.

CAUTION!

If the TTY connector is used for programming and maintenance operations (with an on-site teleprinter), be careful not to change the data rate setting of switch S1 so that it is incompatible with on-site programming equipment.

13.86 Figure 53 shows a typical Lodging/Health Care audit printout. Notes on the figure explain each column on the printout and the possible values for each column.



ΔΔΔΔΔΔ202ΔAWUΔCANCELΔΔΔ14:40Δ030786ΔΔΔΔΔΔΔΔΔΔΔΔ CR LF

ΔΔΔΔΔΔ400ΔMWΔONΔΔΔΔΔΔΔΔ14:45Δ030786ΔΔΔΔΔΔΔΔΔΔΔΔ CR LF

ΔΔΔΔΔΔ400ΔMWΔOFFΔΔΔΔΔΔΔ14:50Δ030786ΔΔΔΔΔMCΔΔΔΔΔ CR LF

ΔΔΔΔΔΔ202ΔAWUΔSETΔΔΔΔΔΔ15:11Δ030786ΔΔΔΔΔ15:15ΔΔ CR LF

ΔΔΔΔΔΔ202ΔROOMΔSTATUSΔΔ10:18Δ031086Δ4ΔΔΔMΔDΔΔΔΔ CR LF

NOTES:

1. FEATURE

MW = *Message Waiting*
AWU = *Automatic Wake-up*
MRA = *Message Registration Audit*
ROOM STATUS = *Room Status Audit*

2. OPERATION

ON = *Set at Attendant Console*
OFF = *Cancelled at either Attendant Console or Station Set*
SET = *Set at either Attendant Console or Station Set*
CANCEL = *Cancelled at either Attendant Console orStation Set.*

3. This column shows either the status of the station set accessed for feature operation (for example, a wake-up call) or the agent who registered the feature.

STATUS

RNA = *Ring No-Answer*
BSY = *Busy*
ANS = *Call was answered*
$XXX.XX = *Total call charges for this station*
M = *Maid in Room*
D = *Deposit Paid*
XX:XX = *Time Wake-up call scheduled for*

AGENT

MC = *Message Center*
EXT = *ation Set*

4. ROOM STATUS C E

1 = *Vacant and clean*
2 = *Occupied and clean*
3 = *Vacant and needs cleaning*
4 = *Occupied and needs cleaning*

FIGURE 53—EXAMPLE: AUDIT PRINTOUT (Lodging/Health Care)

TABLE C
LIST OF CONNECTOR CABLES

CABLE NO.	FROM FCEC TO	DCEC CONN. NO	CONTENT OF CONNECTOR	CONN. REQUIRED ON CABLE	DESC. TABLE
1	MDF	J01	DEKU/DSTU/DDCU/DMDU 00 ~ 01 (1/2)*†	M	D
2	MDF	J02	DEKU/DSTU/DDCU/DMDU 01 (1/2) ~ 02†	M	E
3	MDF	J03	DEKU/DSTU/DDCU/DMDU 03 ~ 04 (1/2)†	M	F
4	MDF	J04	DEKU/DSTU/DDCU/DMDU 04 (1/2) ~ 05†	M	G
5	MDF	J05	DEKU/DSTU/DDCU/DMDU 06 ~ 07 (1/2)†	M	H
6	MDF	J06	DEKU/DSTU/DDCU/DMDU 07 (1/2) ~ 08†	M	I
7	MDF	J07	DEKU/DSTU/DDCU/DMDU 09 ~ 10 (1/2)†	M	J
8	MDF	J08	DEKU/DSTU/DDCU/DMDU 10 (1/2) ~ 11†	M	K
9	MDF	J09	DEKU/DSTU/DDCU/DMDU 12 ~ 13 (1/2)†	M	L
10	MDF	J10	DEKU/DSTU/DDCU/DMDU 13 (1/2) ~ 14†	M	M
11	MDF	J11	ATT 0	M**	N
12	MDF	J12	ATT 1	M**	O
13	MDF	J13	DPMU	M	P
14	MDF	J14	DCOU/DEMU/DLSU 00 ~ 02	M	Q
15	MDF	J15	DCOU/DEMU/DLSU 03 ~ 05	M	R
16	MDF	J16	DCOU/DEMU/DLSU 06 ~ 07	M	S
17	MDF	J17	*Future Expansion*	M	T
18	FROM PFT TO MDF	PFT CONN. NO. J1	CO LINE & DCOU 00 ~ 07 (maximum: 8) (maximum: 8)	M	U
19	FROM PFT TO MDF	PFT CONN. NO. J2	STT LINE & DSTU 00 ~ 14 (maximum: 8) (maximum: 8)	M	V
20	MDF	J501	DEKU/DSTU/DDCU/DMDU 15 ~ 16(1/2)*†		W
21	MDF	J502	DEKU/DSTU/DDCU/DMDU 16 (1/2) ~ 17†	M	X
22	MDF	J503	DEKU/DSTU/DDCU/DMDU 18 ~ 19 (1/2)†	M	Y
23	MDF	J504	DEKU/DSTU/DDCU/DMDU 19 (1/2) ~ 20†	M	Z
24	MDF	J505	DEKU/DSTU/DDCU/DMDU 21 ~ 22 (1/2)†	M	AA
25	MDF	J506	DEKU/DSTU/DDCU/DMDU 22 (1/2) ~ 23†	M	AB
26	MDF	J507	DEKU/DSTU/DDCU/DMDU 24 ~ 25 (1/2)†	M	AC
27	MDF	J508	DEKU/DSTU/DDCU/DMDU 25 (1/2) ~ 26†	M	AD
28	MDF	J509	DEKU/DSTU/DDCU/DMDU 27 ~ 28 (1/2)†	M	AE
29	MDF	J510	DEKU/DSTU/DDCU/DMDU 28 (1/2) ~ 29†	M	AF
30	MDF	J511	ATT 2 (Future)	M	AG
31	MDF	J512	ATT 3 (Future)	M**	AH
32	MDF	J513	DPMU	M**	AI
33	MDF	J514	DCOU/DEMU/DLSU 08 ~ 10	M	AJ
34	MDF	J515	DCOU/DEMU/DLSU 11 ~ 13	M	AK
35	MDF	J516	DCOU/DEMU/DLSU 14 ~ 15	M	AL
36	MDF	J517	*Future Feature*	M	AM
37	FROM PFT TO MDF	PFT CONN. NO. J1A***	CO LINE & DCOU 00 ~ 07 (maximum: 8) (maximum: 8)	M	AN
38	FROM PFT TO MDF	PFT CONN. NO. J2A***	STT LINE & DSTU 00 ~ 14 (maximum: 8) (maximum: 8)	M	AO
39	MDF	J01 ~ J10 J501~ J510	DDSS 00/01	M	AP

* (1/2 indicates that only the first four or last four circuits of that PCB are connected to that cable.

** Attendant console requires a male connector at the FCEC and a female connector at the console location.

*** Cables from Connectors 37 and 38 on the Expansion Cabinet connect to connectors J1A and J2A, respectively, on the **second** DPFT.

† A DDSU PCB can be installed in this slot; refer to Table AP for cross-connection.

TABLE D
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J01
DEKU/DSTU/DDCU/DMDU POSITIONS L00 ~ L01 (1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION		FUNCTION		PCB POSITION
1T	26	W-Bl	TL	001	TIP-LINE	CKT 001	DEKU/DSTU/DDCU/DMDU L00
R	1	Bl-W	RL	001	RING-LINE	CKT 001	" " " " "
2T	27	W-O	DTL	001	DATA TIP-LINE	CKT 001	" " " " "
R	2	O-W	DRL	001	DATA RING-LINE	CKT 001	" " " " "
3T	28	W-G	TL	002	TIP-LINE	CKT 002	" " " " "
R	3	G-W	RL	002	RING-LINE	CKT 002	" " " " "
4T	29	W-Br	DTL	002	DATA TIP-LINE	CKT 002	" " " " "
R	4	Br-W	DRL	002	DATA RING-LINE	CKT 002	" " " " "
5T	30	W-S	TL	003	TIP-LINE	CKT 003	" " " " "
R	5	S-W	RL	003	RING-LINE	CKT 003	" " " " "
6T	31	R-Bl	DTL	003	DATA TIP-LINE	CKT 003	" " " " "
R	6	Bl-R	DRL	003	DATA RING-LINE	CKT 003	" " " " "
7T	32	R-O	TL	004	TIP-LINE	CKT 004	" " " " "
R	7	O-R	RL	004	RING-LINE	CKT 004	" " " " "
8T	33	R-G	DTL	004	DATA TIP-LINE	CKT 004	" " " " "
R	8	G-R	DRL	004	DATA RING-LINE	CKT 004	" " " " "
9T	34	R-Br	TL	005	TIP-LINE	CKT 005	" " " " "
R	9	Br-R	RL	005	RING-LINE	CKT 005	" " " " "
10T	35	R-S	DTL	005	DATA TIP-LINE	CKT 005	" " " " "
R	10	S-R	DRL	005	DATA RING-LINE	CKT 005	" " " " "
11T	36	Bk-Bl	TL	006	TIP-LINE	CKT 006	" " " " "
R	11	Bl-Bk	RL	006	RING-LINE	CKT 006	" " " " "
12T	37	Bk-O	DTL	006	DATA TIP-LINE	CKT 006	" " " " "
R	12	O-Bk	DRL	006	DATA RING-LINE	CKT 006	" " " " "
13T	38	Bk-G	TL	007	TIP-LINE	CKT 007	" " " " "
R	13	G-Bk	RL	007	RING-LINE	CKT 007	" " " " "
14T	39	Bk-Br	DTL	007	DATA TIP-LINE	CKT 007	" " " " "
R	14	Br-Bk	DRL	007	DATA RING-LINE	CKT 007	" " " " "
15T	40	Bk-S	TL	008	TIP-LINE	CKT 008	" " " " "
R	15	S-Bk	RL	008	RING-LING	CKT 008	" " " " "
16T	41	Y-Bl	DTL	008	DATA TIP-LINE	CKT 008	" " " " "
R	16	Bl-Y	DRL	008	DATA RING-LINE	CKT 008	" " " " "
17T	42	Y-O	TL	011	TIP-LINE	CKT 011	DEKU/DSTU/DDCU/DMDU L01 (1/2)
R	17	O-Y	RL	011	RING-LINE	CKT 011	" " " " "
18T	43	Y-G	DTL	011	DATA TIP-LINE	CKT 011	" " " " "
R	18	G-Y	DRL	011	DATA RING-LINE	CKT 011	" " " " "
19T	44	Y-Br	TL	012	TIP-LINE	CKT 012	" " " " "
R	19	Br-Y	RL	012	RING-LINE	CKT 012	" " " " "
20T	45	Y-S	DTL	012	DATA TIP-LINE	CKT 012	" " " " "
R	20	S-Y	DRL	012	DATA RING-LINE	CKT 012	" " " " "
21T	46	V-Bl	TL	013	TIP-LINE	CKT 013	" " " " "
R	21	Bl-V	RL	013	RING-LINE	CKT 013	" " " " "
22T	47	V-O	DTL	013	DATA TIP-LINE	CKT 013	" " " " "
R	22	O-V	DRL	013	DATA RING-LINE	CKT 013	" " " " "
23T	48	V-G	TL	014	TIP-LINE	CKT 014	" " " " "
R	23	G-V	RL	014	RING-LINE	CKT 014	" " " " "
24T	49	V-Br	DTL	014	DATA TIP-LINE	CKT 014	" " " " "
R	24	Br-V	DRL	014	DATA RING-LINE	CKT 014	" " " " "
25T	50	V-S	SPARE				
R	25	S-V	"				

NOTE: A DDSU PCB can be installed in this slot.

TABLE E
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J02
DEKU/DSTU/DDCU/DMDU POSITIONS L01 (1/2) ~ L02

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 015	TIP-LINE	CKT 015	DEKU/DSTU/DDCU/DMDU L01 (1/2)
R	1	Bl-W	RL 015	RING-LINE	CKT 015	" " " " "
2T	27	W-O	DTL 015	DATA TIP-LINE	CKT 015	" " " " "
R	2	O-W	DRL 015	DATA RING-LINE	CKT 015	" " " " "
3T	28	W-G	TL 016	TIP-LINE	CKT 016	" " " " "
R	3	G-W	RL 016	RING-LINE	CKT 016	" " " " "
4T	29	W-Br	DTL 016	DATA TIP-LINE	CKT 016	" " " " "
R	4	Br-W	DRL 016	DATA RING-LINE	CKT 016	" " " " "
5T	30	W-S	TL 017	TIP-LINE	CKT 017	" " " " "
R	5	S-W	RL 017	RING-LINE	CKT 017	" " " " "
6T	31	R-Bl	DTL 017	DATA TIP-LINE	CKT 017	" " " " "
R	6	Bl-R	DRL 017	DATA RING-LINE	CKT 017	" " " " "
7T	32	R-O	TL 018	TIP-LINE	CKT 018	" " " " "
R	7	O-R	RL 018	RING-LINE	CKT 018	" " " " "
8T	33	R-G	DTL 018	DATA TIP-LINE	CKT 018	" " " " "
R	8	G-R	DRL 018	DATA RING-LINE	CKT 018	" " " " "
9T	34	R-Br	TL 021	TIP-LINE	CKT 021	DEKU/DSTU/DDCU/DMDU L02
R	9	Br-R	RL 021	RING-LINE	CKT 021	" " " " "
10T	35	R-S	DTL 021	DATA TIP-LINE	CKT 021	" " " " "
R	10	S-R	DRL 021	DATA RING-LINE	CKT 021	" " " " "
11T	36	Bk-Bl	TL 022	TIP-LINE	CKT 022	" " " " "
R	11	Bl-Bk	RL 022	RING-LINE	CKT 022	" " " " "
12T	37	Bk-O	DTL 022	DATA TIP-LINE	CKT 022	" " " " "
R	12	O-Bk	DRL 022	DATA RING-LINE	CKT 022	" " " " "
13T	38	Bk-G	TL 023	TIP-LINE	CKT 023	" " " " "
R	13	G-Bk	RL 023	RING-LINE	CKT 023	" " " " "
14T	39	Bk-Br	DTL 023	DATA TIP-LINE	CKT 023	" " " " "
R	14	Br-Bk	DRL 023	DATA RING-LINE	CKT 023	" " " " "
15T	40	Bk-S	TL 024	TIP-LINE	CKT 024	" " " " "
R	15	S-Bk	RL 024	RING-LING	CKT 024	" " " " "
16T	41	Y-Bl	DTL 024	DATA TIP-LINE	CKT 024	" " " " "
R	16	Bl-Y	DRL 024	DATA RING-LINE	CKT 024	" " " " "
17T	42	Y-O	TL 025	TIP-LINE	CKT 025	" " " " "
R	17	O-Y	RL 025	RING-LINE	CKT 025	" " " " "
18T	43	Y-G	DTL 025	DATA TIP-LINE	CKT 025	" " " " "
R	18	G-Y	DRL 025	DATA RING-LINE	CKT 025	" " " " "
19T	44	Y-Br	TL 026	TIP-LINE	CKT 026	" " " " "
R	19	Br-Y	RL 026	RING-LINE	CKT 026	" " " " "
20T	45	Y-S	DTL 026	DATA TIP-LINE	CKT 026	" " " " "
R	20	S-Y	DRL 026	DATA RING-LINE	CKT 026	" " " " "
21T	46	V-Bl	TL 027	TIP-LINE	CKT 027	" " " " "
R	21	Bl-V	RL 027	RING-LINE	CKT 027	" " " " "
22T	47	V-O	DTL 027	DATA TIP-LINE	CKT 027	" " " " "
R	22	O-V	DRL 027	DATA RING-LINE	CKT 027	" " " " "
23T	48	V-G	TL 028	TIP-LINE	CKT 028	" " " " "
R	23	G-V	RL 028	RING-LINE	CKT 028	" " " " "
24T	49	V-Br	DTL 028	DATA TIP-LINE	CKT 028	" " " " "
R	24	Br-V	DRL 028	DATA RING-LINE	CKT 028	" " " " "
25T	50	V-S	SPARE			
R	25	S-V	"			

NOTE: A DDSU PCB can be installed in this slot.

TABLE F
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J03
DEKU/DSTU/DDCU/DMDU POSITIONS L03 ~ L04 (1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 031	TIP-LINE	CKT 031	DEKU/DSTU/DDCU/DMDU L03
R	1	Bl-W	RL 031	RING-LINE	CKT 031	" " " " "
2T	27	W-O	DTL 031	DATA TIP-LINE	CKT 031	" " " " "
R	2	O-W	DRL 031	DATA RING-LINE	CKT 031	" " " " "
3T	28	W-G	TL 032	TIP-LINE	CKT 032	" " " " "
R	3	G-W	RL 032	RING-LINE	CKT 032	" " " " "
4T	29	W-Br	DTL 032	DATA TIP-LINE	CKT 032	" " " " "
R	4	Br-W	DRL 032	DATA RING-LINE	CKT 032	" " " " "
5T	30	W-S	TL 033	TIP-LINE	CKT 033	" " " " "
R	5	S-W	RL 033	RING-LINE	CKT 033	" " " " "
6T	31	R-Bl	DTL 033	DATA TIP-LINE	CKT 033	" " " " "
R	6	Bl-R	DRL 033	DATA RING-LINE	CKT 033	" " " " "
7T	32	R-O	TL 034	TIP-LINE	CKT 034	" " " " "
R	7	O-R	RL 034	RING-LINE	CKT 034	" " " " "
8T	33	R-G	DTL 034	DATA TIP-LINE	CKT 034	" " " " "
R	8	G-R	DRL 034	DATA RING-LINE	CKT 034	" " " " "
9T	34	R-Br	TL 035	TIP-LINE	CKT 035	" " " " "
R	9	Br-R	RL 035	RING-LINE	CKT 035	" " " " "
10T	35	R-S	DTL 035	DATA TIP-LINE	CKT 035	" " " " "
R	10	S-R	DRL 035	DATA RING-LINE	CKT 035	" " " " "
11T	36	Bk-Bl	TL 036	TIP-LINE	CKT 036	" " " " "
R	11	Bl-Bk	RL 036	RING-LINE	CKT 036	" " " " "
12T	37	Bk-O	DTL 036	DATA TIP-LINE	CKT 036	" " " " "
R	12	O-Bk	DRL 036	DATA RING-LINE	CKT 036	" " " " "
13T	38	Bk-G	TL 037	TIP-LINE	CKT 037	" " " " "
R	13	G-Bk	RL 037	RING-LINE	CKT 037	" " " " "
14T	39	Bk-Br	DTL 037	DATA TIP-LINE	CKT 037	" " " " "
R	14	Br-Bk	DRL 037	DATA RING-LINE	CKT 037	" " " " "
15T	40	Bk-S	TL 038	TIP-LINE	CKT 038	" " " " "
R	15	S-Bk	RL 038	RING-LING	CKT 038	" " " " "
16T	41	Y-Bl	DTL 038	DATA TIP-LINE	CKT 038	" " " " "
R	16	Bl-Y	DRL 038	DATA RING-LINE	CKT 038	" " " " "
17T	42	Y-O	TL 041	TIP-LINE	CKT 041	DEKU/DSTU/DDCU/DMDU L04 (1/2)
R	17	O-Y	RL 041	RING-LINE	CKT 041	" " " " "
18T	43	Y-G	DTL 041	DATA TIP-LINE	CKT 041	" " " " "
R	18	G-Y	DRL 041	DATA RING-LINE	CKT 041	" " " " "
19T	44	Y-Br	TL 042	TIP-LINE	CKT 042	" " " " "
R	19	Br-Y	RL 042	RING-LINE	CKT 042	" " " " "
20T	45	Y-S	DTL 042	DATA TIP-LINE	CKT 042	" " " " "
R	20	S-Y	DRL 042	DATA RING-LINE	CKT 042	" " " " "
21T	46	V-Bl	TL 043	TIP-LINE	CKT 043	" " " " "
R	21	Bl-V	RL 043	RING-LINE	CKT 043	" " " " "
22T	47	V-O	DTL 043	DATA TIP-LINE	CKT 043	" " " " "
R	22	O-V	DRL 043	DATA RING-LINE	CKT 043	" " " " "
23T	48	V-G	TL 044	TIP-LINE	CKT 044	" " " " "
R	23	G-V	RL 044	RING-LINE	CKT 044	" " " " "
24T	49	V-Br	DTL 044	DATA TIP-LINE	CKT 044	" " " " "
R	24	Br-V	DRL 044	DATA RING-LINE	CKT 044	" " " " "
25T	50	V-S	SPARE			
R	25	S-V	"			

NOTE: A DDSU PCB can be installed in this slot.

TABLE G
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J04
DEKU/DSTU/DDCU/DMDU POSITIONS L04 (1/2) ~ L05

PAIR	PIN	COLOR CODE	LEAD DESIGNATION		FUNCTION		PCB POSITION
1T	26	W-Bl	TL	045	TIP-LINE	CKT 045	DEKU/DSTU/DDCU/DMDU L04 (1/2)
R	1	Bl-W	RL	045	RING-LINE	CKT 045	" " " " "
2T	27	W-O	DTL	045	DATA TIP-LINE	CKT 045	" " " " "
R	2	O-W	DRL	045	DATA RING-LINE	CKT 045	" " " " "
3T	28	W-G	TL	046	TIP-LINE	CKT 046	" " " " "
R	3	G-W	RL	046	RING-LINE	CKT 046	" " " " "
4T	29	W-Br	DTL	046	DATA TIP-LINE	CKT 046	" " " " "
R	4	Br-W	DRL	046	DATA RING-LINE	CKT 046	" " " " "
5T	30	W-S	TL	047	TIP-LINE	CKT 047	" " " " "
R	5	S-W	RL	047	RING-LINE	CKT 047	" " " " "
6T	31	R-Bl	DTL	047	DATA TIP-LINE	CKT 047	" " " " "
R	6	Bl-R	DRL	047	DATA RING-LINE	CKT 047	" " " " "
7T	32	R-O	TL	048	TIP-LINE	CKT 048	" " " " "
R	7	O-R	RL	048	RING-LINE	CKT 048	" " " " "
8T	33	R-G	DTL	048	DATA TIP-LINE	CKT 048	" " " " "
R	8	G-R	DRL	048	DATA RING-LINE	CKT 048	" " " " "
9T	34	R-Br	TL	051	TIP-LINE	CKT 051	DEKU/DSTU/DDCU/DMDU L05
R	9	Br-R	RL	051	RING-LINE	CKT 051	" " " " "
10T	35	R-S	DTL	051	DATA TIP-LINE	CKT 051	" " " " "
R	10	S-R	DRL	051	DATA RING-LINE	CKT 051	" " " " "
11T	36	Bk-Bl	TL	052	TIP-LINE	CKT 052	" " " " "
R	11	Bl-Bk	RL	052	RING-LINE	CKT 052	" " " " "
12T	37	Bk-O	DTL	052	DATA TIP-LINE	CKT 052	" " " " "
R	12	O-Bk	DRL	052	DATA RING-LINE	CKT 052	" " " " "
13T	38	Bk-G	TL	053	TIP-LINE	CKT 053	" " " " "
R	13	G-Bk	RL	053	RING-LINE	CKT 053	" " " " "
14T	39	Bk-Br	DTL	053	DATA TIP-LINE	CKT 053	" " " " "
R	14	Br-Bk	DRL	053	DATA RING-LINE	CKT 053	" " " " "
15T	40	Bk-S	TL	054	TIP-LINE	CKT 054	" " " " "
R	15	S-Bk	RL	054	RING-LING	CKT 054	" " " " "
16T	41	Y-Bl	DTL	054	DATA TIP-LINE	CKT 054	" " " " "
R	16	Bl-Y	DRL	054	DATA RING-LINE	CKT 054	" " " " "
17T	42	Y-O	TL	055	TIP-LINE	CKT 055	" " " " "
R	17	O-Y	RL	055	RING-LINE	CKT 055	" " " " "
18T	43	Y-G	DTL	055	DATA TIP-LINE	CKT 055	" " " " "
R	18	G-Y	DRL	055	DATA RING-LINE	CKT 055	" " " " "
19T	44	Y-Br	TL	056	TIP-LINE	CKT 056	" " " " "
R	19	Br-Y	RL	056	RING-LINE	CKT 056	" " " " "
20T	45	Y-S	DTL	056	DATA TIP-LINE	CKT 056	" " " " "
R	20	S-Y	DRL	056	DATA RING-LINE	CKT 056	" " " " "
21T	46	V-Bl	TL	057	TIP-LINE	CKT 057	" " " " "
R	21	Bl-V	RL	057	RING-LINE	CKT 057	" " " " "
22T	47	V-O	DTL	057	DATA TIP-LINE	CKT 057	" " " " "
R	22	O-V	DRL	057	DATA RING-LINE	CKT 057	" " " " "
23T	48	V-G	TL	058	TIP-LINE	CKT 058	" " " " "
R	23	G-V	RL	058	RING-LINE	CKT 058	" " " " "
24T	49	V-Br	DTL	058	DATA TIP-LINE	CKT 058	" " " " "
R	24	Br-V	DRL	058	DATA RING-LINE	CKT 058	" " " " "
25T	50	V-S	SPARE				
R	25	S-V	"				

NOTE: A DDSU PCB can be installed in this slot.

TABLE H
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J05
DEKU/DSTU/DDCU/DMDU POSITIONS L06 ~ L07 (1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	TL 061	TIP-LINE CKT 061	DEKU/DSTU/DDCU/DMDU L06
R	1	Bl-W	RL 061	RING-LINE CKT 061	" " " " "
2T	27	W-O	DTL 061	DATA TIP-LINE CKT 061	" " " " "
R	2	O-W	DRL 061	DATA RING-LINE CKT 061	" " " " "
3T	28	W-G	TL 062	TIP-LINE CKT 062	" " " " "
R	3	G-W	RL 062	RING-LINE CKT 062	" " " " "
4T	29	W-Br	DTL 062	DATA TIP-LINE CKT 062	" " " " "
R	4	Br-W	DRL 062	DATA RING-LINE CKT 062	" " " " "
5T	30	W-S	TL 063	TIP-LINE CKT 063	" " " " "
R	5	S-W	RL 063	RING-LINE CKT 063	" " " " "
6T	31	R-Bl	DTL 063	DATA TIP-LINE CKT 063	" " " " "
R	6	Bl-R	DRL 063	DATA RING-LINE CKT 063	" " " " "
7T	32	R-O	TL 064	TIP-LINE CKT 064	" " " " "
R	7	O-R	RL 064	RING-LINE CKT 064	" " " " "
8T	33	R-G	DTL 064	DATA TIP-LINE CKT 064	" " " " "
R	8	G-R	DRL 064	DATA RING-LINE CKT 064	" " " " "
9T	34	R-Br	TL 065	TIP-LINE CKT 065	" " " " "
R	9	Br-R	RL 065	RING-LINE CKT 065	" " " " "
10T	35	R-S	DTL 065	DATA TIP-LINE CKT 065	" " " " "
R	10	S-R	DRL 065	DATA RING-LINE CKT 065	" " " " "
11T	36	Bk-Bl	TL 066	TIP-LINE CKT 066	" " " " "
R	11	Bl-Bk	RL 066	RING-LINE CKT 066	" " " " "
12T	37	Bk-O	DTL 066	DATA TIP-LINE CKT 066	" " " " "
R	12	O-Bk	DRL 066	DATA RING-LINE CKT 066	" " " " "
13T	38	Bk-G	TL 067	TIP-LINE CKT 067	" " " " "
R	13	G-Bk	RL 067	RING-LINE CKT 067	" " " " "
14T	39	Bk-Br	DTL 067	DATA TIP-LINE CKT 067	" " " " "
R	14	Br-Bk	DRL 067	DATA RING-LINE CKT 067	" " " " "
15T	40	Bk-S	TL 068	TIP-LINE CKT 068	" " " " "
R	15	S-Bk	RL 068	RING-LING CKT 068	" " " " "
16T	41	Y-Bl	DTL 068	DATA TIP-LINE CKT 068	" " " " "
R	16	Bl-Y	DRL 068	DATA RING-LINE CKT 068	" " " " "
17T	42	Y-O	TL 071	TIP-LINE CKT 071	DEKU/DSTU/DDCU/DMDU L07 (1/2)
R	17	O-Y	RL 071	RING-LINE CKT 071	" " " " "
18T	43	Y-G	DTL 071	DATA TIP-LINE CKT 071	" " " " "
R	18	G-Y	DRL 071	DATA RING-LINE CKT 071	" " " " "
19T	44	Y-Br	TL 072	TIP-LINE CKT 072	" " " " "
R	19	Br-Y	RL 072	RING-LINE CKT 072	" " " " "
20T	45	Y-S	DTL 072	DATA TIP-LINE CKT 072	" " " " "
R	20	S-Y	DRL 072	DATA RING-LINE CKT 072	" " " " "
21T	46	V-Bl	TL 073	TIP-LINE CKT 073	" " " " "
R	21	Bl-V	RL 073	RING LINE CKT 073	" " " " "
22T	47	V-O	DTL 073	DATA TIP-LINE CKT 073	" " " " "
R	22	O-V	DRL 073	DATA RING-LINE CKT 073	" " " " "
23T	48	V-G	TL 074	TIP-LINE CKT 074	" " " " "
R	23	G-V	RL 074	RING-LINE CKT 074	" " " " "
24T	49	V-Br	DTL 074	DATA TIP-LINE CKT 074	" " " " "
R	24	Br-V	DRL 074	DATA RING-LINE CKT 074	" " " " "
25T	50	V-S	SPARE		
R	25	S-V	"		

NOTE: A DDSU PCB can be installed in this slot.

TABLE I
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J06
DEKU/DSTU/DDCU/DMDU POSITIONS L07 (1/2) ~ L08

PAIR	PIN	COLOR CODE	LEAD DESIGNATION		FUNCTION		PCB POSITION
1T	26	W-Bl	TL	075	TIP-LINE	CKT 075	DEKU/DSTU/DDCU/DMDU L07 (1/2)
R	1	Bl-W	RL	075	RING-LINE	CKT 075	" " " " "
2T	27	W-O	DTL	075	DATA TIP-LINE	CKT 075	" " " " "
R	2	O-W	DRL	075	DATA RING-LINE	CKT 075	" " " " "
3T	28	W-G	TL	076	TIP-LINE	CKT 076	" " " " "
R	3	G-W	RL	076	RING-LINE	CKT 076	" " " " "
4T	29	W-Br	DTL	076	DATA TIP-LINE	CKT 076	" " " " "
R	4	Br-W	DRL	076	DATA RING-LINE	CKT 076	" " " " "
5T	30	W-S	TL	077	TIP-LINE	CKT 077	" " " " "
R	5	S-W	RL	077	RING-LINE	CKT 077	" " " " "
6T	31	R-Bl	DTL	077	DATA TIP-LINE	CKT 077	" " " " "
R	6	Bl-R	DRL	077	DATA RING-LINE	CKT 077	" " " " "
7T	32	R-O	TL	078	TIP-LINE	CKT 078	" " " " "
R	7	O-R	RL	078	RING-LINE	CKT 078	" " " " "
8T	33	R-G	DTL	078	DATA TIP-LINE	CKT 078	" " " " "
R	8	G-R	DRL	078	DATA RING-LINE	CKT 078	" " " " "
9T	34	R-Br	TL	081	TIP-LINE	CKT 081	DEKU/DSTU/DDCU/DMDU L08
R	9	Br-R	RL	081	RING-LINE	CKT 081	" " " " "
10T	35	R-S	DTL	081	DATA TIP-LINE	CKT 081	" " " " "
R	10	S-R	DRL	081	DATA RING-LINE	CKT 081	" " " " "
11T	36	Bk-Bl	TL	082	TIP-LINE	CKT 082	" " " " "
R	11	Bl-Bk	RL	082	RING-LINE	CKT 082	" " " " "
12T	37	Bk-O	DTL	082	DATA TIP-LINE	CKT 082	" " " " "
R	12	O-Bk	DRL	082	DATA RING-LINE	CKT 082	" " " " "
13T	38	Bk-G	TL	083	TIP-LINE	CKT 083	" " " " "
R	13	G-Bk	RL	083	RING-LINE	CKT 083	" " " " "
14T	39	Bk-Br	DTL	083	DATA TIP-LINE	CKT 083	" " " " "
R	14	Br-Bk	DRL	083	DATA RING-LINE	CKT 083	" " " " "
15T	40	Bk-S	TL	084	TIP-LINE	CKT 084	" " " " "
R	15	S-Bk	RL	084	RING-LING	CKT 084	" " " " "
16T	41	Y-Bl	DTL	084	DATA TIP-LINE	CKT 084	" " " " "
R	16	Bl-Y	DRL	084	DATA RING-LINE	CKT 084	" " " " "
17T	42	Y-O	TL	085	TIP-LINE	CKT 085	" " " " "
R	17	O-Y	RL	085	RING-LINE	CKT 085	" " " " "
18T	43	Y-G	DTL	085	DATA TIP-LINE	CKT 085	" " " " "
R	18	G-Y	DRL	085	DATA RING-LINE	CKT 085	" " " " "
19T	44	Y-Br	TL	086	TIP-LINE	CKT 086	" " " " "
R	19	Br-Y	RL	086	RING-LINE	CKT 086	" " " " "
20T	45	Y-S	DTL	086	DATA TIP-LINE	CKT 086	" " " " "
R	20	S-Y	DRL	086	DATA RING-LINE	CKT 086	" " " " "
21T	46	V-Bl	TL	087	TIP-LINE	CKT 087	" " " " "
R	21	Bl-V	RL	087	RING-LINE	CKT 087	" " " " "
22T	47	V-O	DTL	087	DATA TIP-LINE	CKT 087	" " " " "
R	22	O-V	DRL	087	DATA RING-LINE	CKT 087	" " " " "
23T	48	V-G	TL	088	TIP-LINE	CKT 088	" " " " "
R	23	G-V	RL	088	RING-LINE	CKT 088	" " " " "
24T	49	V-Br	DTL	088	DATA TIP-LINE	CKT 088	" " " " "
R	24	Br-V	DRL	088	DATA RING-LINE	CKT 088	" " " " "
25T	50	V-S	SPARE				
R	25	S-V	"				

NOTE: A DDSU PCB can be installed in this slot.

TABLE J
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J07
DEKU/DSTU/DDCU/DMDU POSITIONS L09 ~ L10 (1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 091	TIP-LINE	CKT 091	DEKU/DSTU/DDCU/DMDU L09
R	1	Bl-W	RL 091	RING-LINE	CKT 091	" " " " "
2T	27	W-O	DTL 091	DATA TIP-LINE	CKT 091	" " " " "
R	2	O-W	DRL 091	DATA RING-LINE	CKT 091	" " " " "
3T	28	W-G	TL 092	TIP-LINE	CKT 092	" " " " "
R	3	G-W	RL 092	RING-LINE	CKT 092	" " " " "
4T	29	W-Br	DTL 092	DATA TIP-LINE	CKT 092	" " " " "
R	4	Br-W	DRL 092	DATA RING-LINE	CKT 092	" " " " "
5T	30	W-S	TL 093	TIP-LINE	CKT 093	" " " " "
R	5	S-W	RL 093	RING-LINE	CKT 093	" " " " "
6T	31	R-Bl	DTL 093	DATA TIP-LINE	CKT 093	" " " " "
R	6	Bl-R	DRL 093	DATA RING-LINE	CKT 093	" " " " "
7T	32	R-O	TL 094	TIP-LINE	CKT 094	" " " " "
R	7	O-R	RL 094	RING-LINE	CKT 094	" " " " "
8T	33	R-G	DTL 094	DATA TIP-LINE	CKT 094	" " " " "
R	8	G-R	DRL 094	DATA RING-LINE	CKT 094	" " " " "
9T	34	R-Br	TL 095	TIP-LINE	CKT 095	" " " " "
R	9	Br-R	RL 095	RING-LINE	CKT 095	" " " " "
10T	35	R-S	DTL 095	DATA TIP-LINE	CKT 095	" " " " "
R	10	S-R	DRL 095	DATA RING-LINE	CKT 095	" " " " "
11T	36	Bk-Bl	TL 096	TIP-LINE	CKT 096	" " " " "
R	11	Bl-Bk	RL 096	RING-LINE	CKT 096	" " " " "
12T	37	Bk-O	DTL 096	DATA TIP-LINE	CKT 096	" " " " "
R	12	O-Bk	DRL 096	DATA RING-LINE	CKT 096	" " " " "
13T	38	Bk-G	TL 097	TIP-LINE	CKT 097	" " " " "
R	13	G-Bk	RL 097	RING-LINE	CKT 097	" " " " "
14T	39	Bk-Br	DTL 097	DATA TIP-LINE	CKT 097	" " " " "
R	14	Br-Bk	DRL 097	DATA RING-LINE	CKT 097	" " " " "
15T	40	Bk-S	TL 098	TIP-LINE	CKT 098	" " " " "
R	15	S-Bk	RL 098	RING-LING	CKT 098	" " " " "
16T	41	Y-Bl	DTL 098	DATA TIP-LINE	CKT 098	" " " " "
R	16	Bl-Y	DRL 098	DATA RING-LINE	CKT 098	" " " " "
17T	42	Y-O	TL 101	TIP-LINE	CKT 101	DEKU/DSTU/DDCU/DMDU L10 (1/2)
R	17	O-Y	RL 101	RING-LINE	CKT 101	" " " " "
18T	43	Y-G	DTL 101	DATA TIP-LINE	CKT 101	" " " " "
R	18	G-Y	DRL 101	DATA RING-LINE	CKT 101	" " " " "
19T	44	Y-Br	TL 102	TIP-LINE	CKT 102	" " " " "
R	19	Br-Y	RL 102	RING-LINE	CKT 102	" " " " "
20T	45	Y-S	DTL 102	DATA TIP-LINE	CKT 102	" " " " "
R	20	S-Y	DRL 102	DATA RING-LINE	CKT 102	" " " " "
21T	46	V-Bl	TL 103	TIP-LINE	CKT 103	" " " " "
R	21	Bl-V	RL 103	RING-LINE	CKT 103	" " " " "
22T	47	V-O	DTL 103	DATA TIP-LINE	CKT 103	" " " " "
R	22	O-V	DRL 103	DATA RING-LINE	CKT 103	" " " " "
23T	48	V-G	TL 104	TIP-LINE	CKT 104	" " " " "
R	23	G-V	RL 104	RING-LINE	CKT 104	" " " " "
24T	49	V-Br	DTL 104	DATA TIP-LINE	CKT 104	" " " " "
R	24	Br-V	DRL 104	DATA RING-LINE	CKT 104	" " " " "
25T	50	V-S	SPARE			
R	25	S-V	"			

NOTE: A DDSU PCB can be installed in this slot.

TABLE K
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J08
DEKU/DSTU/DDCU/DMDU POSITIONS L10 (1/2) ~ L11

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	TL 105	TIP-LINE CKT 105	DEKU/DSTU/DDCU/DMDU L10 (1/2)
R	1	Bl-W	RL 105	RING-LINE CKT 105	" " " " "
2T	27	W-O	DTL 105	DATA TIP-LINE CKT 105	" " " " "
R	2	O-W	DRL 105	DATA RING-LINE CKT 105	" " " " "
3T	28	W-G	TL 106	TIP-LINE CKT 106	" " " " "
R	3	G-W	RL 106	RING-LINE CKT 106	" " " " "
4T	29	W-Br	DTL 106	DATA TIP-LINE CKT 106	" " " " "
R	4	Br-W	DRL 106	DATA RING-LINE CKT 106	" " " " "
5T	30	W-S	TL 107	TIP-LINE CKT 107	" " " " "
R	5	S-W	RL 107	RING-LINE CKT 107	" " " " "
6T	31	R-Bl	DTL 107	DATA TIP-LINE CKT 107	" " " " "
R	6	Bl-R	DRL 107	DATA RING-LINE CKT 107	" " " " "
7T	32	R-O	TL 108	TIP-LINE CKT 108	" " " " "
R	7	O-R	RL 108	RING-LINE CKT 108	" " " " "
8T	33	R-G	DTL 108	DATA TIP-LINE CKT 108	" " " " "
R	8	G-R	DRL 108	DATA RING-LINE CKT 108	" " " " "
9T	34	R-Br	TL 111	TIP-LINE CKT 111	DEKU/DSTU/DDCU/DMDU L11
R	9	Br-R	RL 111	RING-LINE CKT 111	" " " " "
10T	35	R-S	DTL 111	DATA TIP-LINE CKT 111	" " " " "
R	10	S-R	DRL 111	DATA RING-LINE CKT 111	" " " " "
11T	36	Bk-Bl	TL 112	TIP-LINE CKT 112	" " " " "
R	11	Bl-Bk	RL 112	RING-LINE CKT 112	" " " " "
12T	37	Bk-O	DTL 112	DATA TIP-LINE CKT 112	" " " " "
R	12	O-Bk	DRL 112	DATA RING-LINE CKT 112	" " " " "
13T	38	Bk-G	TL 113	TIP-LINE CKT 113	" " " " "
R	13	G-Bk	RL 113	RING-LINE CKT 113	" " " " "
14T	39	Bk-Br	DTL 113	DATA TIP-LINE CKT 113	" " " " "
R	14	Br-Bk	DRL 113	DATA RING-LINE CKT 113	" " " " "
15T	40	Bk-S	TL 114	TIP-LINE CKT 114	" " " " "
R	15	S-Bk	RL 114	RING-LING CKT 114	" " " " "
16T	41	Y-Bl	DTL 114	DATA TIP-LINE CKT 114	" " " " "
R	16	Bl-Y	DRL 114	DATA RING-LINE CKT 114	" " " " "
17T	42	Y-O	TL 115	TIP-LINE CKT 115	" " " " "
R	17	O-Y	RL 115	RING-LINE CKT 115	" " " " "
18T	43	Y-G	DTL 115	DATA TIP-LINE CKT 115	" " " " "
R	18	G-Y	DRL 115	DATA RING-LINE CKT 115	" " " " "
19T	44	Y-Br	TL 116	TIP-LINE CKT 116	" " " " "
R	19	Br-Y	RL 116	RING-LINE CKT 116	" " " " "
20T	45	Y-S	DTL 116	DATA TIP-LINE CKT 116	" " " " "
R	20	S-Y	DRL 116	DATA RING-LINE CKT 116	" " " " "
21T	46	V-Bl	TL 117	TIP-LINE CKT 117	" " " " "
R	21	Bl-V	RL 117	RING-LINE CKT 117	" " " " "
22T	47	V-O	DTL 117	DATA TIP-LINE CKT 117	" " " " "
R	22	O-V	DRL 117	DATA RING-LINE CKT 117	" " " " "
23T	48	V-G	TL 118	TIP-LINE CKT 118	" " " " "
R	23	G-V	RL 118	RING-LINE CKT 118	" " " " "
24T	49	V-Br	DTL 118	DATA TIP-LINE CKT 118	" " " " "
R	24	Br-V	DRL 118	DATA RING-LINE CKT 118	" " " " "
25T	50	V-S	SPARE		
R	25	S-V	"		

NOTE: A DDSU PCB can be installed in this slot.

TABLE L
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J09
DEKU/DSTU/DDCU/DMDU POSITIONS L12 ~ L13 (1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION		FUNCTION		PCB POSITION
1T	26	W-Bl	TL	121	TIP-LINE	CKT 121	DEKU/DSTU/DDCU/DMDU L12
R	1	Bl-W	RL	121	RING-LINE	CKT 121	" " " " "
2T	27	W-O	DTL	121	DATA TIP-LINE	CKT 121	" " " " "
R	2	O-W	DRL	121	DATA RING-LINE	CKT 121	" " " " "
3T	28	W-G	TL	122	TIP-LINE	CKT 122	" " " " "
R	3	G-W	RL	122	RING-LINE	CKT 122	" " " " "
4T	29	W-Br	DTL	122	DATA TIP-LINE	CKT 122	" " " " "
R	4	Br-W	DRL	122	DATA RING-LINE	CKT 122	" " " " "
5T	30	W-S	TL	123	TIP-LINE	CKT 123	" " " " "
R	5	S-W	RL	123	RING-LINE	CKT 123	" " " " "
6T	31	R-Bl	DTL	123	DATA TIP-LINE	CKT 123	" " " " "
R	6	Bl-R	DRL	123	DATA RING-LINE	CKT 123	" " " " "
7T	32	R-O	TL	124	TIP-LINE	CKT 124	" " " " "
R	7	O-R	RL	124	RING-LINE	CKT 124	" " " " "
8T	33	R-G	DTL	124	DATA TIP-LINE	CKT 124	" " " " "
R	8	G-R	DRL	124	DATA RING-LINE	CKT 124	" " " " "
9T	34	R-Br	TL	125	TIP-LINE	CKT 125	" " " " "
R	9	Br-R	RL	125	RING-LINE	CKT 125	" " " " "
10T	35	R-S	DTL	125	DATA TIP-LINE	CKT 125	" " " " "
R	10	S-R	DRL	125	DATA RING-LINE	CKT 125	" " " " "
11T	36	Bk-Bl	TL	126	TIP-LINE	CKT 126	" " " " "
R	11	Bl-Bk	RL	126	RING-LINE	CKT 126	" " " " "
12T	37	Bk-O	DTL	126	DATA TIP-LINE	CKT 126	" " " " "
R	12	O-Bk	DRL	126	DATA RING-LINE	CKT 126	" " " " "
13T	38	Bk-G	TL	127	TIP-LINE	CKT 127	" " " " "
R	13	G-Bk	RL	127	RING-LINE	CKT 127	" " " " "
14T	39	Bk-Br	DTL	127	DATA TIP-LINE	CKT 127	" " " " "
R	14	Br-Bk	DRL	127	DATA RING-LINE	CKT 127	" " " " "
15T	40	Bk-S	TL	128	TIP-LINE	CKT 128	" " " " "
R	15	S-Bk	RL	128	RING-LING	CKT 128	" " " " "
16T	41	Y-Bl	DTL	128	DATA TIP-LINE	CKT 128	" " " " "
R	16	Bl-Y	DRL	128	DATA RING-LINE	CKT 128	" " " " "
17T	42	Y-O	TL	131	TIP-LINE	CKT 131	DEKU/DSTU/DDCU/DMDU L13 (1/2)
R	17	O-Y	RL	131	RING-LINE	CKT 131	" " " " "
18T	43	Y-G	DTL	131	DATA TIP-LINE	CKT 131	" " " " "
R	18	G-Y	DRL	131	DATA RING-LINE	CKT 131	" " " " "
19T	44	Y-Br	TL	132	TIP-LINE	CKT 132	" " " " "
R	19	Br-Y	RL	132	RING-LINE	CKT 132	" " " " "
20T	45	Y-S	DTL	132	DATA TIP-LINE	CKT 132	" " " " "
R	20	S-Y	DRL	132	DATA RING-LINE	CKT 132	" " " " "
21T	46	V-Bl	T	133	TIP-LINE	CKT 133	" " " " "
R	21	Bl-V	R	133	RING-LINE	CKT 133	" " " " "
22T	47	V-O	DTL	133	DATA TIP-LINE	CKT 133	" " " " "
R	22	O-V	DRL	133	DATA RING-LINE	CKT 133	" " " " "
23T	48	V-G	TL	134	TIP-LINE	CKT 134	" " " " "
R	23	G-V	RL	134	RING-LINE	CKT 134	" " " " "
24T	49	V-Br	DTL	134	DATA TIP-LINE	CKT 134	" " " " "
R	24	Br-V	DRL	134	DATA RING-LINE	CKT 134	" " " " "
25T	50	V-S	SPARE				
R	25	S-V	"				

NOTE: A DDSU PCB can be installed in this slot.

TABLE M
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J10
DEKU/DSTU/DDCU/DMDU POSITIONS L13 (1/2) ~ L14

PAIR	PIN	COLOR CODE	LEAD DESIGNATION		FUNCTION		PCB POSITION
1T	26	W-Bl	TL	135	TIP-LINE	CKT 135	DEKU/DSTU/DDCU/DMDU L13 (1/2)
R	1	Bl-W	RL	135	RING-LINE	CKT 135	" " " " "
2T	27	W-O	DTL	135	DATA TIP-LINE	CKT 135	" " " " "
R	2	O-W	DRL	135	DATA RING-LINE	CKT 135	" " " " "
3T	28	W-G	TL	136	TIP-LINE	CKT 136	" " " " "
R	3	G-W	RL	136	RING-LINE	CKT 136	" " " " "
4T	29	W-Br	DTL	136	DATA TIP-LINE	CKT 136	" " " " "
R	4	Br-W	DRL	136	DATA RING-LINE	CKT 136	" " " " "
5T	30	W-S	TL	137	TIP-LINE	CKT 137	" " " " "
R	5	S-W	RL	137	RING-LINE	CKT 137	" " " " "
6T	31	R-Bl	DTL	137	DATA TIP-LINE	CKT 137	" " " " "
R	6	Bl-R	DRL	137	DATA RING-LINE	CKT 137	" " " " "
7T	32	R-O	TL	138	TIP-LINE	CKT 138	" " " " "
R	7	O-R	RL	138	RING-LINE	CKT 138	" " " " "
8T	33	R-G	DTL	138	DATA TIP-LINE	CKT 138	" " " " "
R	8	G-R	DRL	138	DATA RING-LINE	CKT 138	" " " " "
9T	34	R-Br	TL	141	TIP-LINE	CKT 141	DEKU/DSTU/DDCU/DMDU L14
R	9	Br-R	RL	141	RING-LINE	CKT 141	" " " " "
10T	35	R-S	DTL	141	DATA TIP-LINE	CKT 141	" " " " "
R	10	S-R	DRL	141	DATA RING-LINE	CKT 141	" " " " "
11T	36	Bk-Bl	TL	142	TIP-LINE	CKT 142	" " " " "
R	11	Bl-Bk	RL	142	RING-LINE	CKT 142	" " " " "
12T	37	Bk-O	DTL	142	DATA TIP-LINE	CKT 142	" " " " "
R	12	O-Bk	DRL	142	DATA RING-LINE	CKT 142	" " " " "
13T	38	Bk-G	TL	143	TIP-LINE	CKT 143	" " " " "
R	13	G-Bk	RL	143	RING-LINE	CKT 143	" " " " "
14T	39	Bk-Br	DTL	143	DATA TIP-LINE	CKT 143	" " " " "
R	14	Br-Bk	DRL	143	DATA RING-LINE	CKT 143	" " " " "
15T	40	Bk-S	TL	144	TIP-LINE	CKT 144	" " " " "
R	15	S-Bk	RL	144	RING-LING	CKT 144	" " " " "
16T	41	Y-Bl	DTL	144	DATA TIP-LINE	CKT 144	" " " " "
R	16	Bl-Y	DRL	144	DATA RING-LINE	CKT 144	" " " " "
17T	42	Y-O	TL	145	TIP-LINE	CKT 145	" " " " "
R	17	O-Y	RL	145	RING-LINE	CKT 145	" " " " "
18T	43	Y-G	DTL	145	DATA TIP-LINE	CKT 145	" " " " "
R	18	G-Y	DRL	145	DATA RING-LINE	CKT 145	" " " " "
19T	44	Y-Br	TL	146	TIP-LINE	CKT 146	" " " " "
R	19	Br-Y	RL	146	RING-LINE	CKT 146	" " " " "
20T	45	Y-S	DTL	146	DATA TIP-LINE	CKT 146	" " " " "
R	20	S-Y	DRL	146	DATA RING-LINE	CKT 146	" " " " "
21T	46	V-Bl	TL	147	TIP-LINE	CKT 147	" " " " "
R	21	Bl-V	RL	147	RING-LINE	CKT 147	" " " " "
22T	47	V-O	DTL	147	DATA TIP-LINE	CKT 147	" " " " "
R	22	O-V	DRL	147	DATA RING-LINE	CKT 147	" " " " "
23T	48	V-G	TL	148	TIP-LINE	CKT 148	" " " " "
R	23	G-V	RL	148	RING-LINE	CKT 148	" " " " "
24T	49	V-Br	DTL	148	DATA TIP-LINE	CKT 148	" " " " "
R	24	Br-V	DRL	148	DATA RING-LINE	CKT 148	" " " " "
25T	50	V-S	SPARE				
R	25	S-V	"				

NOTE: A DDSU PCB can be installed in this slot.

TABLE N
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J11
ATTENDANT CONSOLE #0

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	TL 001	TIP-LINE CKT 001	DEKU L00
R	1	Bl-W	RL 001	RING-LINE CKT 001	" "
2T	27	W-O	DTL 001	DATA TIP-LINE CKT 001	" "
R	2	O-W	DRL 001	DATA RING-LINE CKT 001	" "
3T	28	W-G	SPARE		
R	3	G-W	"		
4T	29	W-Br	EMT 0	EMERGENCY TRANSFER SWT	DPMU
R	4	Br-W	INIT 0	INITIALIZE SWITCH	"
5T	30	W-S	SPARE		
R	5	S-W	MAJ IN 0	MAJOR ALARM	DPMU
6T	31	R-Bl	SPARE		
R	6	Bl-R	"		
7T	32	R-O	"		
R	7	O-R	"		
8T	33	R-G	"		
R	8	G-R	ATT 0 –24V	–24V	DPMU
9T	34	R-Br	SPARE		
R	9	Br-R	ATT 0 –24V	–24V	DPMU
10T	35	R-S	SPARE		
R	10	S-R	ATT 0 –24V	–24V	DPMU
11T	36	Bk-Bl	SPARE		
R	11	Bl-Bk	ATT 0 –24V	–24V	DPMU
12T	37	Bk-O	SPARE		
R	12	O-Bk	ATT 0–24V	–24V	DPMU
13T	38	Bk-G	SPARE		
R	13	G-Bk	ATT 0 –24V	–24V	DPMU
14T	39	Bk-Br	SPARE		
R	14	Br-Bk	"		
15T	40	Bk-S	"		
R	15	S-Bk	"		
16T	41	Y-Bl	"		
R	16	Bl-Y	"		
17T	42	Y-O	"		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	ATT 0 EG	GROUND	DPMU
R	19	Br-Y	SPARE		
20T	45	Y-S	ATT 0 EG	GROUND	DPMU
R	20	S-Y	SPARE		
21T	46	V-Bl	ATT 0 EG	GROUND	DPMU
R	21	Bl-V	SPARE		
22T	47	V-O	ATT 0 EG	GROUND	DPMU
R	22	O-V	SPARE		
23T	48	V-G	ATT 0 EG	GROUND	DPMU
R	23	G-V	SPARE		
24T	49	V-Br	ATT 0 EG	GROUND	DPMU
R	24	Br-V	SPARE		
25T	50	V-S	"		
R	25	S-V	"		

TABLE O
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J12
ATTENDANT CONSOLE #1

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	TL 121	TIP-LINE CKT 121	DEKU L12
R	1	Bl-W	RL 121	RING-LINE CKT 121	" "
2T	27	W-O	DTL 121	DATA TIP-LINE CKT 121	" "
R	2	O-W	DRL 121	DATA RING-LINE CKT 121	" "
3T	28	W-G	SPARE		
R	3	G-W	"		
4T	29	W-Br	EMT 1	EMERGENCY TRANSFER SWT	DPMU
R	4	Br-W	INIT 1	INITIALIZE SWITCH	"
5T	30	W-S	SPARE		
R	5	S-W	MAJ IN 1	MAJOR ALARM	DPMU
6T	31	R-Bl	SPARE		
R	6	Bl-R	"		
7T	32	R-O	"		
R	7	O-R	"		
8T	33	R-G	"		
R	8	G-R	ATT 1–24V	–24V	DPMU
9T	34	R-Br	SPARE		
R	9	Br-R	ATT 1–24V	–24V	DPMU
10T	35	R-S	SPARE		
R	10	S-R	ATT 1–24V	–24V	DPMU
11T	36	Bk-Bl	SPARE		
R	11	Bl-Bk	ATT 1–24V	–24V	DPMU
12T	37	Bk-O	SPARE		
R	12	O-Bk	ATT 1–24V	–24V	DPMU
13T	38	Bk-G	SPARE		
R	13	G-Bk	ATT 1–24V	–24V	DPMU
14T	39	Bk-Br	SPARE		
R	14	Br-Bk	"		
15T	40	Bk-S	"		
R	15	S-Bk	"		
16T	41	Y-Bl	"		
R	16	Bl-Y	"		
17T	42	Y-O	"		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	ATT 1 EG	GROUND	DPMU
R	19	Br-Y	SPARE		
20T	45	Y-S	ATT 1 EG	GROUND	DPMU
R	20	S-Y	SPARE		
21T	46	V-Bl	ATT 1 EG	GROUND	DPMU
R	21	Bl-V	SPARE		
22T	47	V-O	ATT 1 EG	GROUND	DPMU
R	22	O-V	SPARE		
23T	48	V-G	ATT 1 EG	GROUND	DPMU
R	23	G-V	SPARE		
24T	49	V-Br	ATT 1 EG	GROUND	DPMU
R	24	Br-V	SPARE		
25T	50	V-S	"		
R	25	S-V	"		

TABLE P
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J13
PAGING, MUSIC & UNA RINGING

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	PT 1	PAGING TIP	DPMU
R	1	Bl-W	PR 1	PAGING RING	"
2T	27	W-O	PG 1	PAGING EQUIP. CONTROL	"
R	2	O-W	PG GND	PAGING EQUIP. COMMON	"
3T	28	W-G	SPARE		
R	3	G-W	"		
4T	29	W-Br	MT	MOH SOURCE TIP	DPMU
R	4	Br-W	MR	MOH SOURCE RING	"
5T	30	W-S	SPARE		
R	5	S-W	"		
6T	31	R-Bl	PG IN 1	PAGING AMP #1 OUT	DPMU
R	6	Bl-R	PG OUT 1	PAGE ZONE #1 OUT	"
7T	32	R-O	PG IN 2	PAGING AMP #2 OUT	"
R	7	O-R	PG OUT 2	PAGE ZONE #2 OUT	"
8T	33	R-G	PG IN 3	PAGING AMP #3 OUT	"
R	8	G-R	PG OUT 3	PAGE ZONE #3 OUT	"
9T	34	R-Br	PG IN 4	PAGING AMP #4 OUT	"
R	9	Br-R	PG OUT 4	PAGE ZONE #4 OUT	"
10T	35	R-S	PG IN 5	PAGING AMP #5 OUT	"
R	10	S-R	PG OUT 5	PAGE ZONE #5 OUT	"
11T	36	Bk-Bl	SPARE		
R	11	Bl-Bk	"		
12T	37	Bk-O	"		
R	12	O-Bk	"		
13T	38	Bk-G	"		
R	13	G-Bk	"		
14T	39	Bk-Br	"		
R	14	Br-Bk	"		
15T	40	Bk-S	"		
R	15	S-Bk	"		
16T	41	Y-Bl	"		
R	16	Bl-Y	"		
17T	42	Y-O	"		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	"		
R	19	Br-Y	"		
20T	45	Y-S	"		
R	20	S-Y	"		
21T	46	V-Bl	"		
R	21	Bl-V	"		
22T	47	V-O	UNA B	UNA RINGING GROUND	DPMU
R	22	O-V	UNA A	UNA RINGING 20 Hz	"
23T	48	V-G	SPARE		
R	23	G-V	"		
24T	49	V-Br	"		
R	24	Br-V	"		
25T	50	V-S	"		
R	25	S-V	"		

TABLE Q
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J14
TRUNK CARD POSITIONS T00 ~ T02 & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	T 001	TIP-TRUNK	CKT 001	DCOU/DEMU/DLSU T00
R	1	Bl-W	R 001	RING-TRUNK	CKT 001	" " " "
2T	27	W-O	M 001	M LEAD-TRUNK	CKT 001	" " " "
R	2	O-W	E 001	E LEAD-TRUNK	CKT 001	" " " "
3T	28	W-G	T 002	TIP-TRUNK	CKT 002	" " " "
R	3	G-W	R 002	RING-TRUNK	CKT 002	" " " "
4T	29	W-Br	M 002	M LEAD-TRUNK	CKT 002	" " " "
R	4	Br-W	E 002	E LEAD-TRUNK	CKT 002	" " " "
5T	30	W-S	T 003	TIP-TRUNK	CKT 003	" " " "
R	5	S-W	R 003	RING-TRUNK	CKT 003	" " " "
6T	31	R-Bl	M 003	M LEAD-TRUNK	CKT 003	" " " "
R	6	Bl-R	E 003	E LEAD-TRUNK	CKT 003	" " " "
7T	32	R-O	T 004	TIP-TRUNK	CKT 004	" " " "
R	7	O-R	R 004	RING-TRUNK	CKT 004	" " " "
8T	33	R-G	M 004	M LEAD-TRUNK	CKT 004	" " " "
R	8	G-R	E 004	E LEAD-TRUNK	CKT 004	" " " "
9T	34	R-Br	T 011	TIP-TRUNK	CKT 011	DCOU/DEMU/DLSU T01
R	9	Br-R	R 011	RING-TRUNK	CKT 011	" " " "
10T	35	R-S	M 011	M LEAD-TRUNK	CKT 011	" " " "
R	10	S-R	E 011	E LEAD-TRUNK	CKT 011	" " " "
11T	36	Bk-Bl	T 012	TIP-TRUNK	CKT 012	" " " "
R	11	Bl-Bk	R 012	RING-TRUNK	CKT 012	" " " "
12T	37	Bk-O	M 012	M LEAD-TRUNK	CKT 012	" " " "
R	12	O-Bk	E 012	E LEAD-TRUNK	CKT 012	" " " "
13T	38	Bk-G	T 013	TIP-TRUNK	CKT 013	" " " "
R	13	G-Bk	R 013	RING-TRUNK	CKT 013	" " " "
14T	39	Bk-Br	M 013	M LEAD-TRUNK	CKT 013	" " " "
R	14	Br-Bk	E 013	E LEAD-TRUNK	CKT 013	" " " "
15T	40	Bk-S	T 014	TIP-TRUNK	CKT 014	" " " "
R	15	S-Bk	R 014	RING-TRUNK	CKT 014	" " " "
16T	41	Y-Bl	M 014	M LEAD-TRUNK	CKT 014	" " " "
R	16	Bl-Y	E 014	E LEAD-TRUNK	CKT 014	" " " "
17T	42	Y-O	T 021	TIP-TRUNK	CKT 021	DCOU/DEMU/DLSU T02
R	17	O-Y	R 021	RING-TRUNK	CKT 021	" " " "
18T	43	Y-G	M 021	M LEAD-TRUNK	CKT 021	" " " "
R	18	G-Y	E 021	E LEAD-TRUNK	CKT 021	" " " "
19T	44	Y-Br	T 022	TIP-TRUNK	CKT 022	" " " "
R	19	Br-Y	R 022	RING-TRUNK	CKT 022	" " " "
20T	45	Y-S	M 022	M LEAD-TRUNK	CKT 022	" " " "
R	20	S-Y	E 022	E LEAD-TRUNK	CKT 022	" " " "
21T	46	V-Bl	T 023	TIP-TRUNK	CKT 023	" " " "
R	21	Bl-V	R 023	RING-TRUNK	CKT 023	" " " "
22T	47	V-O	M 023	M LEAD-TRUNK	CKT 023	" " " "
R	22	O-V	E 023	E LEAD-TRUNK	CKT 023	" " " "
23T	48	V-G	T 024	TIP-TRUNK	CKT 024	" " " "
R	23	G-V	R 024	RING-TRUNK	CKT 024	" " " "
24T	49	V-Br	M 024	M LEAD-TRUNK	CKT 024	" " " "
R	24	Br-V	E 024	E LEAD-TRUNK	CKT 024	" " " "
25T	50	V-S	PFT EG	PFT GROUND (OUTPUT)		DPMU
R	25	S-V	PFT–24V			"

TABLE R
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J15
TRUNK CARD POSITIONS T03 ~ T05 & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	T 031	TIP-TRUNK	CKT 031	DCOU/DEMU/DLSU T03
R	1	Bl-W	R 031	RING-TRUNK	CKT 031	" " " "
2T	27	W-O	M 031	M LEAD-TRUNK	CKT 031	" " " "
R	2	O-W	E 031	E LEAD-TRUNK	CKT 031	" " " "
3T	28	W-G	T 032	TIP-TRUNK	CKT 032	" " " "
R	3	G-W	R 032	RING-TRUNK	CKT 032	" " " "
4T	29	W-Br	M 032	M LEAD-TRUNK	CKT 032	" " " "
R	4	Br-W	E 032	E LEAD-TRUNK	CKT 032	" " " "
5T	30	W-S	T 033	TIP-TRUNK	CKT 033	" " " "
R	5	S-W	R 033	RING-TRUNK	CKT 033	" " " "
6T	31	R-Bl	M 033	M LEAD-TRUNK	CKT 033	" " " "
R	6	Bl-R	E 033	E LEAD-TRUNK	CKT 033	" " " "
7T	32	R-O	T 034	TIP-TRUNK	CKT 034	" " " "
R	7	O-R	R 034	RING-TRUNK	CKT 034	" " " "
8T	33	R-G	M 034	M LEAD-TRUNK	CKT 034	" " " "
R	8	G-R	E 034	E LEAD-TRUNK	CKT 034	" " " "
9T	34	R-Br	T 041	TIP-TRUNK	CKT 041	DCOU/DEMU/DLSU T04
R	9	Br-R	R 041	RING-TRUNK	CKT 041	" " " "
10T	35	R-S	M 041	M LEAD-TRUNK	CKT 041	" " " "
R	10	S-R	E 041	E LEAD-TRUNK	CKT 041	" " " "
11T	36	Bk-Bl	T 042	TIP-TRUNK	CKT 042	" " " "
R	11	Bl-Bk	R 042	RING-TRUNK	CKT 042	" " " "
12T	37	Bk-O	M 042	M LEAD-TRUNK	CKT 042	" " " "
R	12	O-Bk	E 042	E LEAD-TRUNK	CKT 042	" " " "
13T	38	Bk-G	T 043	TIP-TRUNK	CKT 043	" " " "
R	13	G-Bk	R 043	RING-TRUNK	CKT 043	" " " "
14T	39	Bk-Br	M 043	M LEAD-TRUNK	CKT 043	" " " "
R	14	Br-Bk	E 043	E LEAD-TRUNK	CKT 043	" " " "
15T	40	Bk-S	T 044	TIP-TRUNK	CKT 044	" " " "
R	15	S-Bk	R 044	RING-TRUNK	CKT 044	" " " "
16T	41	Y-Bl	M 044	M LEAD-TRUNK	CKT 044	" " " "
R	16	Bl-Y	E 044	E LEAD-TRUNK	CKT 044	" " " "
17T	42	Y-O	T 051	TIP-TRUNK	CKT 051	DCOU/DEMU/DLSU T05
R	17	O-Y	R 051	RING-TRUNK	CKT 051	" " " "
18T	43	Y-G	M 051	M LEAD-TRUNK	CKT 051	" " " "
R	18	G-Y	E 051	E LEAD-TRUNK	CKT 051	" " " "
19T	44	Y-Br	T 052	TIP-TRUNK	CKT 052	" " " "
R	19	Br-Y	R 052	RING-TRUNK	CKT 052	" " " "
20T	45	Y-S	M 052	M LEAD-TRUNK	CKT 052	" " " "
R	20	S-Y	E 052	E LEAD-TRUNK	CKT 052	" " " "
21T	46	V-Bl	T 053	TIP-TRUNK	CKT 053	" " " "
R	21	Bl-V	R 053	RING-TRUNK	CKT 053	" " " "
22T	47	V-O	M 053	M LEAD-TRUNK	CKT 053	" " " "
R	22	O-V	E 053	E LEAD-TRUNK	CKT 053	" " " "
23T	48	V-G	T 054	TIP-TRUNK	CKT 054	" " " "
R	23	G-V	R 054	RING-TRUNK	CKT 054	" " " "
24T	49	V-Br	M 054	M LEAD-TRUNK	CKT 054	" " " "
R	24	Br-V	E 054	E LEAD-TRUNK	CKT 054	" " " "
25T	50	V-S	PFT EG	PFT GROUND (OUTPUT)		DPMU
R	25	S-V	PFT-24V	PFT-24V (OUTPUT)		

TABLE S
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J16
TRUNK CARD POSITIONS T06 & T07, UNA RINGING & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	T 061	TIP-TRUNK	CKT 061	DCOU/DEMU/DLSU T06
R	1	Bl-W	R 061	RING-TRUNK	CKT 061	" " " "
2T	27	W-O	M 061	M LEAD-TRUNK	CKT 061	" " " "
R	2	O-W	E 061	E LEAD-TRUNK	CKT 061	" " " "
3T	28	W-G	T 062	TIP-TRUNK	CKT 062	" " " "
R	3	G-W	R 062	RING-TRUNK	CKT 062	" " " "
4T	29	W-Br	M 062	M LEAD-TRUNK	CKT 062	" " " "
R	4	Br-W	E 062	E LEAD-TRUNK	CKT 062	" " " "
5T	30	W-S	T 063	TIP-TRUNK	CKT 063	" " " "
R	5	S-W	R 063	RING-TRUNK	CKT 063	" " " "
6T	31	R-Bl	M 063	M LEAD-TRUNK	CKT 063	" " " "
R	6	Bl-R	E 063	E LEAD-TRUNK	CKT 063	" " " "
7T	32	R-O	T 064	TIP-TRUNK	CKT 064	" " " "
R	7	O-R	R 064	RING-TRUNK	CKT 064	" " " "
8T	33	R-G	M 064	M LEAD-TRUNK	CKT 064	" " " "
R	8	G-R	E 064	E LEAD-TRUNK	CKT 064	" " " "
9T	34	R-Br	T 071	TIP-TRUNK	CKT 071	DCOU/DEMU/DLSU T01
R	9	Br-R	R 071	RING-TRUNK	CKT 071	" " " "
10T	35	R-S	M 071	M LEAD-TRUNK	CKT 071	" " " "
R	10	S-R	E 071	E LEAD-TRUNK	CKT 071	" " " "
11T	36	Bk-Bl	T 072	TIP-TRUNK	CKT 072	" " " "
R	11	Bl-Bk	R 072	RING-TRUNK	CKT 072	" " " "
12T	37	Bk-O	M 072	M LEAD-TRUNK	CKT 072	" " " "
R	12	O-Bk	E 072	E LEAD-TRUNK	CKT 072	" " " "
13T	38	Bk-G	T 073	TIP-TRUNK	CKT 073	" " " "
R	13	G-Bk	R 073	RING-TRUNK	CKT 073	" " " "
14T	39	Bk-Br	M 073	M LEAD-TRUNK	CKT 073	" " " "
R	14	Br-Bk	E 073	E LEAD-TRUNK	CKT 073	" " " "
15T	40	Bk-S	T 074	TIP-TRUNK	CKT 074	" " " "
R	15	S-Bk	R 074	RING-TRUNK	CKT 074	" " " "
16T	41	Y-Bl	M 074	M LEAD-TRUNK	CKT 074	" " " "
R	16	Bl-Y	E 074	E LEAD-TRUNK	CKT 074	" " " "
17T	42	Y-O	SPARE			
R	17	O-Y	"			
18T	43	Y-G	"			
R	18	G-Y	"			
19T	44	Y-Br	"			
R	19	Br-Y	"			
20T	45	Y-S	"			
R	20	S-Y	"			
21T	46	V-Bl	"			
R	21	Bl-V	"			
22T	47	V-O	UNA B	UNA RINGING GROUND		DPMU
R	22	O-V	UNA A	UNA RINGING 20 Hz		"
23T	48	V-G	SPARE			
R	23	G-V	"			
24T	49	V-Br	"			
R	24	Br-V	"			
25T	50	V-S	PFT EG	PFT GROUND (OUTPUT)		DPMU
R	25	S-V	PFT –24V	PFT –24V (OUTPUT)		"

TABLE T
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J17

Future Expansion

TABLE U
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J1
CENTRAL OFFICE LINE CONNECTION & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	T	TIP-CO #1	
R	1	Bl-W	R	RING-CO #1	
2T	27	W-O	T	TIP-DCOU #1	
R	2	O-W	R	RING-DCOU #1	
3T	28	W-G	T	TIP-CO #2	
R	3	G-W	R	RING-CO #2	
4T	29	W-Br	T	TIP-DCOU #2	
R	4	Br-W	R	RING-DCOU #2	
5T	30	W-S	T	TIP-CO #3	
R	5	S-W	R	RING-CO #3	
6T	31	R-Bl	T	TIP-DCOU #3	
R	6	Bl-R	R	RING-DCOU #3	
7T	32	R-O	T	TIP-CO #4	
R	7	O-R	R	RING-CO #4	
8T	33	R-G	T	TIP-DCOU #4	
R	8	G-R	R	RING-DCOU #4	
9T	34	R-Br	T	TIP-CO #5	
R	9	Br-R	R	RING-CO #5	
10T	35	R-S	T	TIP-DCOU #5	
R	10	S-R	R	RING-DCOU #5	
11T	36	Bk-Bl	T	TIP-CO #6	
R	11	Bl-Bk	R	RING-CO #6	
12T	37	Bk-O	T	TIP-DCOU #6	
R	12	O-Bk	R	RING-DCOU #6	
13T	38	Bk-G	T	TIP-CO #7	
R	13	G-Bk	R	RING-CO #7	
14T	39	Bk-Br	T	TIP-DCOU #7	
R	14	Br-Bk	R	RING-DCOU #7	
15T	40	Bk-S	T	TIP-CO #8	
R	15	S-Bk	R	RING-CO #8	
16T	41	Y-Bl	T	TIP-DCOU #8	
R	16	Bl-Y	R	RING-DCOU #8	
17T	42	Y-O	SPARE		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	"		
R	19	Br-Y	"		
20T	45	Y-S	"		
R	20	S-Y	"		
21T	46	V-Bl	"		
R	21	Bl-V	"		
22T	47	V-O	"		
R	22	O-V	"		
23T	48	V-G	"		
R	23	G-V	"		
24T	49	V-Br	"		
R	24	Br-V	"		
25T	50	V-S	PFT EG	PFT GROUND (INPUT)	DPMU
R	25	S-V	PFT –24V	PFT –24V (INPUT)	"

TABLE V
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J2
STATION LINE CONNECTION

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	T	TIP-TEL #1	
R	1	Bl-W	R	RING-TEL #1	
2T	27	W-O	T	TIP-DSTU #1	
R	2	O-W	R	RING-DSTU #1	
3T	28	W-G	T	TIP-TEL #2	
R	3	G-W	R	RING-TEL #2	
4T	29	W-Br	T	TIP-DSTU #2	
R	4	Br-W	R	RING-DSTU #2	
5T	30	W-S	T	TIP-TEL #3	
R	5	S-W	R	RING-TEL #3	
6T	31	R-Bl	T	TIP-DSTU #3	
R	6	Bl-R	R	RING-DSTU #3	
7T	32	R-O	T	TIP-TEL #4	
R	7	O-R	R	RING-TEL #4	
8T	33	R-G	T	TIP-DSTU #4	
R	8	G-R	R	RING-DSTU #4	
9T	34	R-Br	T	TIP-TEL #5	
R	9	Br-R	R	RING-TEL #5	
10T	35	R-S	T	TIP-DSTU #5	
R	10	S-R	R	RING-DSTU #5	
11T	36	Bk-Bl	T	TIP-TEL #6	
R	11	Bl-Bk	R	RING-TEL #6	
12T	37	Bk-O	T	TIP-DSTU #6	
R	12	O-Bk	R	RING-DSTU #6	
13T	38	Bk-G	T	TIP-TEL #7	
R	13	G-Bk	R	RING-TEL #7	
14T	39	Bk-Br	T	TIP-DSTU #7	
R	14	Br-Bk	R	RING-DSTU #7	
15T	40	Bk-S	T	TIP-TEL #8	
R	15	S-Bk	R	RING-TEL #8	
16T	41	Y-Bl	T	TIP-DSTU #8	
R	16	Bl-Y	R	RING-DSTU #8	
17T	42	Y-O	SPARE		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	"		
R	19	Br-Y	"		
20T	45	Y-S	"		
R	20	S-Y	"		
21T	46	V-Bl	"		
R	21	Bl-V	"		
22T	47	V-O	"		
R	22	O-V	"		
23T	48	V-G	"		
R	23	G-V	"		
24T	49	V-Br	"		
R	24	Br-V	"		
25T	50	V-S	"		
R	25	S-V	"		

TABLE W
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J501
DEKU/DSTU/DDCU/DMDU POSITIONS L15 ~ L16 (1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 151	TIP-LINE	CKT 151	DEKU/DSTU/DDCU/DMDU L15
R	1	Bl-W	RL 151	RING-LINE	CKT 151	" " " " "
2T	27	W-O	DTL 151	DATA TIP-LINE	CKT 151	" " " " "
R	2	O-W	DRL 151	DATA RING-LINE	CKT 151	" " " " "
3T	28	W-G	TL 152	TIP-LINE	CKT 152	" " " " "
R	3	G-W	RL 152	RING-LINE	CKT 152	" " " " "
4T	29	W-Br	DTL 152	DATA TIP-LINE	CKT 152	" " " " "
R	4	Br-W	DRL 152	DATA RING-LINE	CKT 152	" " " " "
5T	30	W-S	TL 153	TIP-LINE	CKT 153	" " " " "
R	5	S-W	RL 153	RING-LINE	CKT 153	" " " " "
6T	31	R-Bl	DTL 153	DATA TIP-LINE	CKT 153	" " " " "
R	6	Bl-R	DRL 153	DATA RING-LINE	CKT 153	" " " " "
7T	32	R-O	TL 154	TIP-LINE	CKT 154	" " " " "
R	7	O-R	RL 154	RING-LINE	CKT 154	" " " " "
8T	33	R-G	DTL 154	DATA TIP-LINE	CKT 154	" " " " "
R	8	G-R	DRL 154	DATA RING-LINE	CKT 154	" " " " "
9T	34	R-Br	TL 155	TIP-LINE	CKT 155	" " " " "
R	9	Br-R	RL 155	RING-LINE	CKT 155	" " " " "
10T	35	R-S	DTL 155	DATA TIP-LINE	CKT 155	" " " " "
R	10	S-R	DRL 155	DATA RING-LINE	CKT 155	" " " " "
11T	36	Bk-Bl	TL 156	TIP-LINE	CKT 156	" " " " "
R	11	Bl-Bk	RL 156	RING-LINE	CKT 156	" " " " "
12T	37	Bk-O	DTL 156	DATA TIP-LINE	CKT 156	" " " " "
R	12	O-Bk	DRL 156	DATA RING-LINE	CKT 156	" " " " "
13T	38	Bk-G	TL 157	TIP-LINE	CKT 157	" " " " "
R	13	G-Bk	RL 157	RING-LINE	CKT 157	" " " " "
14T	39	Bk-Br	DTL 157	DATA TIP-LINE	CKT 157	" " " " "
R	14	Br-Bk	DRL 157	DATA RING-LINE	CKT 157	" " " " "
15T	40	Bk-S	TL 158	TIP-LINE	CKT 158	" " " " "
R	15	S-Bk	RL 158	RING-LINE	CKT 158	" " " " "
16T	41	Y-Bl	DTL 158	DATA TIP-LINE	CKT 158	" " " " "
R	16	Bl-Y	DRL 158	DATA RING-LINE	CKT 158	" " " " "
17T	42	Y-O	TL 161	TIP-LINE	CKT 161	" " " " "
R	17	O-Y	RL 161	RING-LINE	CKT 161	DEKU/DSTU/DDCU/DMDU L16 (1/2)
18T	43	Y-G	DTL 161	DATA TIP-LINE	CKT 161	" " " " "
R	18	G-Y	DRL 161	DATA RING-LINE	CKT 161	" " " " "
19T	44	Y-Br	TL 162	TIP-LINE	CKT 162	" " " " "
R	19	Br-Y	RL 162	RING-LINE	CKT 162	" " " " "
20T	45	Y-S	DTL 162	DATA TIP-LINE	CKT 162	" " " " "
R	20	S-Y	DRL 162	DATA RING-LINE	CKT 162	" " " " "
21T	46	V-Bl	TL 163	TIP-LINE	CKT 163	" " " " "
R	21	Bl-V	RL 163	RING-LINE	CKT 163	" " " " "
22T	47	V-O	DTL 163	DATA TIP-LINE	CKT 163	" " " " "
R	22	O-V	DRL 163	DATA RING-LINE	CKT 163	" " " " "
23T	48	V-G	TL 164	TIP-LINE	CKT 164	" " " " "
R	23	G-V	RL 164	RING-LINE	CKT 164	" " " " "
24T	49	V-Br	DTL 164	DATA TIP-LINE	CKT 164	" " " " "
R	24	Br-V	DRL 164	DATA RING-LINE	CKT 164	" " " " "
25T	50	V-S	SPARE			
R	25	S-V				

NOTE: A DDSU PCB can be installed in this slot.

TABLE X
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J502
DEKU/DSTU/DDCU/DMDU POSITIONS L16 (1/2) ~ L17

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 165	TIP-LINE	CKT 165	DEKU/DSTU/DDCU/DMDU L16 (1/2)
R	1	Bl-W	RL 165	RING-LINE	CKT 165	" " " " "
2T	27	W-O	DTL 165	DATA TIP-LINE	CKT 165	" " " " "
R	2	O-W	DRL 165	DATA RING-LINE	CKT 165	" " " " "
3T	28	W-G	TL 166	TIP-LINE	CKT 166	" " " " "
R	3	G-W	RL 166	RING-LINE	CKT 166	" " " " "
4T	29	W-Br	DTL 166	DATA TIP-LINE	CKT 166	" " " " "
R	4	Br-W	DRL 166	DATA RING-LINE	CKT 166	" " " " "
5T	30	W-S	TL 167	TIP-LINE	CKT 167	" " " " "
R	5	S-W	RL 167	RING-LINE	CKT 167	" " " " "
6T	31	R-Bl	DTL 167	DATA TIP-LINE	CKT 167	" " " " "
R	6	Bl-R	DRL 167	DATA RING-LINE	CKT 167	" " " " "
7T	32	R-O	TL 168	TIP-LINE	CKT 168	" " " " "
R	7	O-R	RL 168	RING-LINE	CKT 168	" " " " "
8T	33	R-G	DTL 168	DATA TIP-LINE	CKT 168	" " " " "
R	8	G-R	DRL 168	DATA RING-LINE	CKT 168	" " " " "
9T	34	R-Br	TL 171	TIP-LINE	CKT 171	DEKU/DSTU/DDCU/DMDU L17
R	9	Br-R	RL 171	RING-LINE	CKT 171	" " " " "
10T	35	R-S	DTL 171	DATA TIP-LINE	CKT 171	" " " " "
R	10	S-R	DRL 171	DATA RING-LINE	CKT 171	" " " " "
11T	36	Bk-Bl	TL 172	TIP-LINE	CKT 172	" " " "
R	11	Bl-Bk	RL 172	RING-LINE	CKT 172	" " " "
12T	37	Bk-O	DTL 172	DATA TIP-LINE	CKT 172	" " " " "
R	12	O-Bk	DRL 172	DATA RING-LINE	CKT 172	" " " " "
13T	38	Bk-G	TL 173	TIP-LINE	CKT 173	" " " " "
R	13	G-Bk	RL 173	RING-LINE	CKT 173	" " " " "
14T	39	Bk-Br	DTL 173	DATA TIP-LINE	CKT 173	" " " " "
R	14	Br-Bk	DRL 173	DATA RING-LINE	CKT 173	" " " " "
15T	40	Bk-S	TL 174	TIP-LINE	CKT 174	" " " " "
R	15	S-Bk	RL 174	RING-LINE	CKT 174	" " " " "
16T	41	Y-Bl	DTL 174	DATA TIP-LINE	CKT 174	" " " " "
R	16	Bl-Y	DRL 174	DATA RING-LINE	CKT 174	" " " " "
17T	42	Y-O	TL 175	TIP-LINE	CKT 175	" " " " "
R	17	O-Y	RL 175	RING-LINE	CKT 175	" " " " "
18T	43	Y-G	DTL 175	DATA TIP-LINE	CKT 175	" " " " "
R	18	G-Y	DRL 175	DATA RING-LINE	CKT 175	" " " " "
19T	44	Y-Br	TL 176	TIP-LINE	CKT 176	" " " " "
R	19	Br-Y	RL 176	RING-LINE	CKT 176	" " " " "
20T	45	Y-S	DTL 176	DATA TIP-LINE	CKT 176	" " " " "
R	20	S-Y	DRL 176	DATA RING-LINE	CKT 176	" " " " "
21T	46	V-Bl	TL 177	TIP-LINE	CKT 177	" " " " "
R	21	Bl-V	RL 177	RING-LINE	CKT 177	" " " " "
22T	47	V-O	DTL 177	DATA TIP-LINE	CKT 177	" " " " "
R	22	O-V	DRL 177	DATA RING-LINE	CKT 177	" " " " "
23T	48	V-G	TL 178	TIP-LINE	CKT 178	" " " " "
R	23	G-V	RL 178	RING-LINE	CKT 178	" " " "
24T	49	V-Br	DTL 178	DATA TIP-LINE	CKT 178	" " " "
R	24	Br-V	DRL 178	DATA RING-LINE	CKT 178	" " " " "
25T	50	V-S	SPARE			
R	25	S-V	"			

NOTE: A DDSU PCB can be installed in this slot.

TABLE Y
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J503
DEKU/DSTU/DDCU/DMDU POSITIONS L18 ~ L19 (1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 181	TIP-LINE	CKT 181	DEKU/DSTU/DDCU/DMDU L18
R	1	Bl-W	RL 181	RING-LINE	CKT 181	" " " " "
2T	27	W-O	DTL 181	DATA TIP-LINE	CKT 181	" " " " "
R	2	O-W	DRL 181	DATA RING-LINE	CKT 181	" " " " "
3T	28	W-G	TL 182	TIP-LINE	CKT 182	" " " " "
R	3	G-W	RL 182	RING-LINE	CKT 182	" " " " "
4T	29	W-Br	DTL 182	DATA TIP-LINE	CKT 182	" " " " "
R	4	Br-W	DRL 182	DATA RING-LINE	CKT 182	" " " " "
5T	30	W-S	TL 183	TIP-LINE	CKT 183	" " " " "
R	5	S-W	RL 183	RING-LINE	CKT 183	" " " " "
6T	31	R-Bl	DTL 183	DATA TIP-LINE	CKT 183	" " " " "
R	6	Bl-R	DRL 183	DATA RING-LINE	CKT 183	" " " " "
7T	32	R-O	TL 184	TIP-LINE	CKT 184	" " " " "
R	7	O-R	RL 184	RING-LINE	CKT 184	" " " " "
8T	33	R-G	DTL 184	DATA TIP-LINE	CKT 184	" " " " "
R	8	G-R	DRL 184	DATA RING-LINE	CKT 184	" " " " "
9T	34	R-Br	TL 185	TIP-LINE	CKT 185	" " " " "
R	9	Br-R	RL 185	RING-LINE	CKT 185	" " " " "
10T	35	R-S	DTL 185	DATA TIP-LINE	CKT 185	" " " " "
R	10	S-R	DRL 185	DATA RING-LINE	CKT 185	" " " " "
11T	36	Bk-Bl	TL 186	TIP-LINE	CKT 186	" " " " "
R	11	Bl-Bk	RL 186	RING-LINE	CKT 186	" " " " "
12T	37	Bk-O	DTL 186	DATA TIP-LINE	CKT 186	" " " " "
R	12	O-Bk	DRL 186	DATA RING-LINE	CKT 186	" " " " "
13T	38	Bk-G	TL 187	TIP-LINE	CKT 187	" " " " "
R	13	G-Bk	RL 187	RING-LINE	CKT 187	" " " " "
14T	39	Bk-Br	DTL 187	DATA TIP-LINE	CKT 187	" " " " "
R	14	Br-Bk	DRL 187	DATA RING-LINE	CKT 187	" " " " "
15T	40	Bk-S	TL 188	TIP-LINE	CKT 188	" " " " "
R	15	S-Bk	RL 188	RING-LINE	CKT 188	" " " " "
16T	41	Y-Bl	DTL 188	DATA TIP-LINE	CKT 188	" " " " "
R	16	Bl-Y	DRL 188	DATA RING-LINE	CKT 188	" " " " "
17T	42	Y-O	TL 191	TIP-LINE	CKT 191	DEKU/DSTU/DDCU/DMDU L19 (1/2)
R	17	O-Y	RL 191	RING-LINE	CKT 191	" " " " "
18T	43	Y-G	DTL 191	DATA TIP-LINE	CKT 191	" " " " "
R	18	G-Y	DRL 191	DATA RING-LINE	CKT 191	" " " " "
19T	44	Y-Br	TL 192	TIP-LINE	CKT 192	" " " " "
R	19	Br-Y	RL 192	RING-LINE	CKT 192	" " " " "
20T	45	Y-S	DTL 192	DATA TIP-LINE	CKT 192	" " " " "
R	20	S-Y	DRL 192	DATA RING-LINE	CKT 192	" " " " "
21T	46	V-Bl	TL 193	TIP-LINE	CKT 193	" " " " "
R	21	Bl-V	RL 193	RING-LINE	CKT 193	" " " " "
22T	47	V-O	DTL 193	DATA TIP-LINE	CKT 193	" " " " "
R	22	O-V	DRL 193	DATA RING-LINE	CKT 193	" " " " "
23T	48	V-G	TL 194	TIP-LINE	CKT 194	" " " " "
R	23	G-V	RL 194	RING-LINE	CKT 194	" " " " "
24T	49	V-Br	DTL 194	DATA TIP-LINE	CKT 194	" " " " "
R	24	Br-V	DRL 194	DATA RING-LINE	CKT 194	" " " " "
25T	50	V-S	SPARE			
R	25	S-V	"			

NOTE: A DDSU PCB can be installed in this slot.

TABLE Z
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J504
DEKU/DSTU/DDCU/DMDU POSITIONS L19 (1/2) ~ L20

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 195	TIP-LINE	CKT 195	DEKU/DSTU/DDCU/DMDU L19 (1/2)
R	1	Bl-W	RL 195	RING-LINE	CKT 195	" " " " "
2T	27	W-O	DTL 195	DATA TIP-LINE	CKT 195	" " " " "
R	2	O-W	DRL 195	DATA RING-LINE	CKT 195	" " " " "
3T	28	W-G	TL 196	TIP-LINE	CKT 196	" " " " "
R	3	G-W	RL 196	RING-LINE	CKT 196	" " " " "
4T	29	W-Br	DTL 196	DATA TIP-LINE	CKT 196	" " " " "
R	4	Br-W	DRL 196	DATA RING-LINE	CKT 196	" " " " "
5T	30	W-S	TL 197	TIP-LINE	CKT 197	" " " " "
R	5	S-W	RL 197	RING-LINE	CKT 197	" " " " "
6T	31	R-Bl	DTL 197	DATA TIP-LINE	CKT 197	" " " " "
R	6	Bl-R	DRL 197	DATA RING-LINE	CKT 197	" " " " "
7T	32	R-O	TL 198	TIP-LINE	CKT 198	" " " " "
R	7	O-R	RL 198	RING-LINE	CKT 198	" " " " "
8T	33	R-G	DTL 198	DATA TIP-LINE	CKT 198	" " " " "
R	8	G-R	DRL 198	DATA RING-LINE	CKT 198	" " " " "
9T	34	R-Br	TL 201	TIP-LINE	CKT 201	DEKU/DSTU/DDCU/DMDU L20
R	9	Br-R	RL 201	RING-LINE	CKT 201	" " " " "
10T	35	R-S	DTL 201	DATA TIP-LINE	CKT 201	" " " " "
R	10	S-R	DRL 201	DATA RING-LINE	CKT 201	" " " " "
11T	36	Bk-Bl	TL 202	TIP-LINE	CKT 202	" " " " "
R	11	Bl-Bk	RL 202	RING-LINE	CKT 202	" " " " "
12T	37	Bk-O	DTL 202	DATA TIP-LINE	CKT 202	" " " " "
R	12	O-Bk	DRL 202	DATA RING-LINE	CKT 202	" " " " "
13T	38	Bk-G	TL 203	TIP-LINE	CKT 203	" " " " "
R	13	G-Bk	RL 203	RING-LINE	CKT 203	" " " " "
14T	39	Bk-Br	DTL 203	DATA TIP-LINE	CKT 203	" " " " "
R	14	Br-Bk	DRL 203	DATA RING-LINE	CKT 203	" " " " "
15T	40	Bk-S	TL 204	TIP-LINE	CKT 204	" " " " "
R	15	S-Bk	RL 204	RING-LINE	CKT 204	" " " " "
16T	41	Y-Bl	DTL 204	DATA TIP-LINE	CKT 204	" " " " "
R	16	Bl-Y	DRL 204	DATA RING-LINE	CKT 204	" " " " "
17T	42	Y-O	TL 205	TIP-LINE	CKT 205	" " " " "
R	17	O-Y	RL 205	RING-LINE	CKT 205	" " " " "
18T	43	Y-G	DTL 205	DATA TIP-LINE	CKT 205	" " " " "
R	18	G-Y	DRL 205	DATA RING-LINE	CKT 205	" " " " "
19T	44	Y-Br	TL 206	TIP-LINE	CKT 206	" " " " "
R	19	Br-Y	RL 206	RING-LINE	CKT 206	" " " " "
20T	45	Y-S	DTL 206	DATA TIP-LINE	CKT 206	" " " " "
R	20	S-Y	DRL 206	DATA RING-LINE	CKT 206	" " " " "
21T	46	V-Bl	TL 207	TIP-LINE	CKT 207	" " " " "
R	21	Bl-V	RL 207	RING-LINE	CKT 207	" " " " "
22T	47	V-O	DTL 207	DATA TIP-LINE	CKT 207	" " " " "
R	22	O-V	DRL 207	DATA RING-LINE	CKT 207	" " " " "
23T	48	V-G	TL 208	TIP-LINE	CKT 208	" " " " "
R	23	G-V	RL 208	RING-LINE	CKT 208	" " " " "
24T	49	V-Br	DTL 208	DATA TIP-LINE	CKT 208	" " " " "
R	24	Br-V	DRL 208	DATA RING-LINE	CKT 208	" " " " "
25T	50	V-S	SPARE			
R	25	S-V	"			

*NOTE: A DDSU PCB can be installed in this slot.

TABLE AA
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J505
DEKU/DSTU/DDCU/DMDU POSITIONS L21 ~ L22 (1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 211	TIP-LINE	CKT 211	DEKU/DSTU/DDCU/DMDU L21
R	1	Bl-W	RL 211	RING-LINE	CKT 211	" " " " "
2T	27	W-O	DTL 211	DATA TIP-LINE	CKT 211	" " " " "
R	2	O-W	DRL 211	DATA RING-LINE	CKT 211	" " " " "
3T	28	W-G	TL 212	TIP-LINE	CKT 212	" " " " "
R	3	G-W	RL 212	RING-LINE	CKT 212	" " " " "
4T	29	W-Br	DTL 212	DATA TIP-LINE	CKT 212	" " " " "
R	4	Br-W	DRL 212	DATA RING-LINE	CKT 212	" " " " "
5T	30	W-S	TL 213	TIP-LINE	CKT 213	" " " " "
R	5	S-W	RL 213	RING-LINE	CKT 213	" " " " "
6T	31	R-Bl	DTL 213	DATA TIP-LINE	CKT 213	" " " " "
R	6	Bl-R	DRL 213	DATA RING-LINE	CKT 213	" " " " "
7T	32	R-O	TL 214	TIP-LINE	CKT 214	" " " " "
R	7	O-R	RL 214	RING-LINE	CKT 214	" " " " "
8T	33	R-G	DTL 214	DATA TIP-LINE	CKT 214	" " " " "
R	8	G-R	DRL 214	DATA RING-LINE	CKT 214	" " " " "
9T	34	R-Br	TL 215	TIP-LINE	CKT 215	" " " " "
R	9	Br-R	RL 215	RING-LINE	CKT 215	" " " " "
10T	35	R-S	DTL 215	DATA TIP-LINE	CKT 215	" " " " "
R	10	S-R	DRL 215	DATA RING-LINE	CKT 215	" " " " "
11T	36	Bk-Bl	TL 216	TIP-LINE	CKT 216	" " " " "
R	11	Bl-Bk	RL 216	RING-LINE	CKT 216	" " " " "
12T	37	Bk-O	DTL 216	DATA TIP-LINE	CKT 216	" " " " "
R	12	O-Bk	DRL 216	DATA RING-LINE	CKT 216	" " " " "
13T	38	Bk-G	TL 217	TIP-LINE	CKT 217	" " " " "
R	13	G-Bk	RL 217	RING-LINE	CKT 217	" " " " "
14T	39	Bk-Br	DTL 217	DATA TIP-LINE	CKT 217	" " " " "
R	14	Br-Bk	DRL 217	DATA RING-LINE	CKT 217	" " " " "
15T	40	Bk-S	TL 218	TIP-LINE	CKT 218	" " " " "
R	15	S-Bk	RL 218	RING-LINE	CKT 218	" " " " "
16T	41	Y-Bl	DTL 218	DATA TIP-LINE	CKT 218	" " " " "
R	16	Bl-Y	DRL 218	DATA RING-LINE	CKT 218	" " " " "
17T	42	Y-O	TL 221	TIP-LINE	CKT 221	DEKU/DSTU/DDCU/DMDU L22 (1/2)
R	17	O-Y	RL 221	RING-LINE	CKT 221	" " " " "
18T	43	Y-G	DTL 221	DATA TIP-LINE	CKT 221	" " " " "
R	18	G-Y	DRL 221	DATA RING-LINE	CKT 221	" " " " "
19T	44	Y-Br	TL 222	TIP-LINE	CKT 222	" " " " "
R	19	Br-Y	RL 222	RING-LINE	CKT 222	" " " " "
20T	45	Y-S	DTL 222	DATA TIP-LINE	CKT 222	" " " " "
R	20	S-Y	DRL 222	DATA RING-LINE	CKT 222	" " " " "
21T	46	V-Bl	TL 223	TIP-LINE	CKT 223	" " " " "
R	21	Bl-V	RL 223	RING-LINE	CKT 223	" " " " "
22T	47	V-O	DTL 223	DATA TIP-LINE	CKT 223	" " " " "
R	22	O-V	DRL 223	DATA RING-LINE	CKT 223	" " " " "
23T	48	V-G	TL 224	TIP-LINE	CKT 224	" " " " "
R	23	G-V	RL 224	RING-LINE	CKT 224	" " " " "
24T	49	V-Br	DTL 224	DATA TIP-LINE	CKT 224	" " " " "
R	24	Br-V	DRL 224	DATA RING-LINE	CKT 224	" " " " "
25T	50	V-S	SPARE			
R	25	S-V	"			

NOTE: A DDSU PCB can be installed in this slot.

TABLE AB
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J506
DEKU/DSTU/DDCU/DMDU POSITIONS L22 (1/2) ~ L23

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 225	TIP-LINE	CKT 225	DEKU/DSTU/DDCU/DMDU L22 (1/2)
R	1	Bl-W	RL 225	RING-LINE	CKT 225	" " " " "
2T	27	W-O	DTL 225	DATA TIP-LINE	CKT 225	" " " " "
R	2	O-W	DRL 225	DATA RING-LINE	CKT 225	" " " " "
3T	28	W-G	TL 226	TIP-LINE	CKT 226	" " " " "
R	3	G-W	RL 226	RING-LINE	CKT 226	" " " " "
4T	29	W-Br	DTL 226	DATA TIP-LINE	CKT 226	" " " " "
R	4	Br-W	DRL 226	DATA RING-LINE	CKT 226	" " " " "
5T	30	W-S	TL 227	TIP-LINE	CKT 227	" " " " "
R	5	S-W	RL 227	RING-LINE	CKT 227	" " " " "
6T	31	R-Bl	DTL 227	DATA TIP-LINE	CKT 227	" " " " "
R	6	Bl-R	DRL 227	DATA RING-LINE	CKT 227	" " " " "
7T	32	R-O	TL 228	TIP-LINE	CKT 228	" " " " "
R	7	O-R	RL 228	RING-LINE	CKT 228	" " " " "
8T	33	R-G	DTL 228	DATA TIP-LINE	CKT 228	" " " " "
R	8	G-R	DRL 228	DATA RING-LINE	CKT 228	" " " " "
9T	34	R-Br	TL 231	TIP-LINE	CKT 231	DEKU/DSTU/DDCU/DMDU L23
R	9	Br-R	RL 231	RING-LINE	CKT 231	" " " " "
10T	35	R-S	DTL 231	DATA TIP-LINE	CKT 231	" " " " "
R	10	S-R	DRL 231	DATA RING-LINE	CKT 231	" " " " "
11T	36	Bk-Bl	TL 232	TIP-LINE	CKT 232	" " " " "
R	11	Bl-Bk	RL 232	RING-LINE	CKT 232	" " " " "
12T	37	Bk-O	DTL 232	DATA TIP-LINE	CKT 232	" " " " "
R	12	O-Bk	DRL 232	DATA RING-LINE	CKT 232	" " " " "
13T	38	Bk-G	TL 233	TIP-LINE	CKT 233	" " " " "
R	13	G-Bk	RL 233	RING-LINE	CKT 233	" " " " "
14T	39	Bk-Br	DTL 233	DATA TIP-LINE	CKT 233	" " " " "
R	14	Br-Bk	DRL 233	DATA RING-LINE	CKT 233	" " " " "
15T	40	Bk-S	TL 234	TIP-LINE	CKT 234	" " " " "
R	15	S-Bk	RL 234	RING-LINE	CKT 234	" " " " "
16T	41	Y-Bl	DTL 234	DATA TIP-LINE	CKT 234	" " " " "
R	16	Bl-Y	DRL 234	DATA RING-LINE	CKT 234	" " " " "
17T	42	Y-O	TL 235	TIP-LINE	CKT 235	" " " " "
R	17	O-Y	RL 235	RING-LINE	CKT 235	" " " " "
18T	43	Y-G	DTL 235	DATA TIP-LINE	CKT 235	" " " " "
R	18	G-Y	DRL 235	DATA RING-LINE	CKT 235	" " " " "
19T	44	Y-Br	TL 236	TIP-LINE	CKT 236	" " " " "
R	19	Br-Y	RL 236	RING-LINE	CKT 236	" " " " "
20T	45	Y-S	DTL 236	DATA TIP-LINE	CKT 236	" " " " "
R	20	S-Y	DRL 236	DATA RING-LINE	CKT 236	" " " " "
21T	46	V-Bl	TL 237	TIP-LINE	CKT 237	" " " " "
R	21	Bl-V	RL 237	RING-LINE	CKT 237	" " " " "
22T	47	V-O	DTL 237	DATA TIP-LINE	CKT 237	" " " " "
R	22	O-V	DRL 237	DATA RING-LINE	CKT 237	" " " " "
23T	48	V-G	TL 238	TIP-LINE	CKT 238	" " " " "
R	23	G-V	RL 238	RING-LINE	CKT 238	" " " " "
24T	49	V-Br	DTL 238	DATA TIP-LINE	CKT 238	" " " " "
R	24	Br-V	DRL 238	DATA RING-LINE	CKT 238	" " " " "
25T	50	V-S	SPARE			
R	25	S-V				

NOTE: A DDSU PCB can be installed in this slot.

TABLE AC
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J507
DEKU/DSTU/DDCU/DMDU POSITIONS L24 ~ L25 (1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 241	TIP-LINE	CKT 241	DEKU/DSTU/DDCU/DMDU L24
R	1	Bl-W	RL 241	RING-LINE	CKT 241	" " " " "
2T	27	W-O	DTL 241	DATA TIP-LINE	CKT 241	" " " " "
R	2	O-W	DRL 241	DATA RING-LINE	CKT 241	" " " " "
3T	28	W-G	TL 242	TIP-LINE	CKT 242	" " " " "
R	3	G-W	RL 242	RING-LINE	CKT 242	" " " " "
4T	29	W-Br	DTL 242	DATA TIP-LINE	CKT 242	" " " " "
R	4	Br-W	DRL 242	DATA RING-LINE	CKT 242	" " " " "
5T	30	W-S	TL 243	TIP-LINE	CKT 243	" " " " "
R	5	S-W	RL 243	RING-LINE	CKT 243	" " " " "
6T	31	R-Bl	DTL 243	DATA TIP-LINE	CKT 243	" " " " "
R	6	Bl-R	DRL 243	DATA RING-LINE	CKT 243	" " " " "
7T	32	R-O	TL 244	TIP-LINE	CKT 244	" " " " "
R	7	O-R	RL 244	RING-LINE	CKT 244	" " " " "
8T	33	R-G	DTL 244	DATA TIP-LINE	CKT 244	" " " " "
R	8	G-R	DRL 244	DATA RING-LINE	CKT 244	" " " " "
9T	34	R-Br	TL 245	TIP-LINE	CKT 245	" " " " "
R	9	Br-R	RL 245	RING-LINE	CKT 245	" " " " "
10T	35	R-S	DTL 245	DATA TIP-LINE	CKT 245	" " " " "
R	10	S-R	DRL 245	DATA RING-LINE	CKT 245	" " " " "
11T	36	Bk-Bl	TL 246	TIP-LINE	CKT 246	" " " " "
R	11	Bl-Bk	RL 246	RING-LINE	CKT 246	" " " " "
12T	37	Bk-O	DTL 246	DATA TIP-LINE	CKT 246	" " " " "
R	12	O-Bk	DRL 246	DATA RING-LINE	CKT 246	" " " " "
13T	38	Bk-G	TL 247	TIP-LINE	CKT 247	" " " " "
R	13	G-Bk	RL 247	RING-LINE	CKT 247	" " " " "
14T	39	Bk-Br	DTL 247	DATA TIP-LINE	CKT 247	" " " " "
R	14	Br-Bk	DRL 247	DATA RING-LINE	CKT 247	" " " " "
15T	40	Bk-S	TL 248	TIP-LINE	CKT 248	" " " " "
R	15	S-Bk	RL 248	RING-LINE	CKT 248	" " " " "
16T	41	Y-Bl	DTL 248	DATA TIP-LINE	CKT 248	" " " " "
R	16	Bl-Y	DRL 248	DATA RING-LINE	CKT 248	" " " " "
17T	42	Y-O	TL 251	TIP-LINE	CKT 251	DEKU/DSTU/DDCU/DMDU L25 (1/2)
R	17	O-Y	RL 251	RING-LINE	CKT 251	" " " " "
18T	43	Y-G	DTL 251	DATA TIP-LINE	CKT 251	" " " " "
R	18	G-Y	DRL 251	DATA RING-LINE	CKT 251	" " " " "
19T	44	Y-Br	TL 252	TIP-LINE	CKT 252	" " " " "
R	19	Br-Y	RL 252	RING-LINE	CKT 252	" " " " "
20T	45	Y-S	DTL 252	DATA TIP-LINE	CKT 252	" " " " "
R	20	S-Y	DRL 252	DATA RING-LINE	CKT 252	" " " " "
21T	46	V-Bl	TL 253	TIP-LINE	CKT 253	" " " " "
R	21	Bl-V	RL 253	RING-LINE	CKT 253	" " " " "
22T	47	V-O	DTL 253	DATA TIP-LINE	CKT 253	" " " " "
R	22	O-V	DRL 253	DATA RING-LINE	CKT 253	" " " " "
23T	48	V-G	TL 254	TIP-LINE	CKT 254	" " " " "
R	23	G-V	RL 254	RING-LINE	CKT 254	" " " " "
24T	49	V-Br	DTL 254	DATA TIP-LINE	CKT 254	" " " " "
R	24	Br-V	DRL 254	DATA RING-LINE	CKT 254	" " " " "
25T	50	V-S	SPARE			
R	25	S-V	"			

NOTE: A DDSU PCB can be installed in this slot.

TABLE AD
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J508
DEKU/DSTU/DDCU/DMDU POSITIONS L25 (1/2) ~ L26

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 255	TIP-LINE	CKT 255	DEKU/DSTU/DDCU/DMDU L25 (1/2)
R	1	Bl-W	RL 255	RING-LINE	CKT 255	" " " " "
2T	27	W-O	DTL 255	DATA TIP-LINE	CKT 255	" " " " "
R	2	O-W	DRL 255	DATA RING-LINE	CKT 255	" " " " "
3T	28	W-G	TL 256	TIP-LINE	CKT 256	" " " " "
R	3	G-W	RL 256	RING-LINE	CKT 256	" " " " "
4T	29	W-Br	DTL 256	DATA TIP-LINE	CKT 256	" " " " "
R	4	Br-W	DRL 256	DATA RING-LINE	CKT 256	" " " " "
5T	30	W-S	TL 257	TIP-LINE	CKT 257	" " " " "
R	5	S-W	RL 257	RING-LINE	CKT 257	" " " " "
6T	31	R-Bl	DTL 257	DATA TIP-LINE	CKT 257	" " " " "
R	6	Bl-R	DRL 257	DATA RING-LINE	CKT 257	" " " " "
7T	32	R-O	TL 258	TIP-LINE	CKT 258	" " " " "
R	7	O-R	RL 258	RING-LINE	CKT 258	" " " " "
8T	33	R-G	DTL 258	DATA TIP-LINE	CKT 258	" " " " "
R	8	G-R	DRL 258	DATA RING-LINE	CKT 258	" " " " "
9T	34	R-Br	TL 261	TIP-LINE	CKT 261	DEKU/DSTU/DDCU/DMDU L26
R	9	Br-R	RL 261	RING-LINE	CKT 261	" " " " "
10T	35	R-S	DTL 261	DATA TIP-LINE	CKT 261	" " " " "
R	10	S-R	DRL 261	DATA RING-LINE	CKT 261	" " " " "
11T	36	Bk-Bl	TL 262	TIP-LINE	CKT 262	" " " " "
R	11	Bl-Bk	RL 262	RING-LINE	CKT 262	" " " " "
12T	37	Bk-O	DTL 262	DATA TIP-LINE	CKT 262	" " " " "
R	12	O-Bk	DRL 262	DATA RING-LINE	CKT 262	" " " " "
13T	38	Bk-G	TL 263	TIP-LINE	CKT 263	" " " " "
R	13	G-Bk	RL 263	RING-LINE	CKT 263	" " " " "
14T	39	Bk-Br	DTL 263	DATA TIP-LINE	CKT 263	" " " " "
R	14	Br-Bk	DRL 263	DATA RING-LINE	CKT 263	" " " " "
15T	40	Bk-S	TL 264	TIP-LINE	CKT 264	" " " " "
R	15	S-Bk	RL 264	RING-LINE	CKT 264	" " " " "
16T	41	Y-Bl	DTL 264	DATA TIP-LINE	CKT 264	" " " " "
R	16	Bl-Y	DRL 264	DATA RING-LINE	CKT 264	" " " " "
17T	42	Y-O	TL 265	TIP-LINE	CKT 265	" " " " "
R	17	O-Y	RL 265	RING-LINE	CKT 265	" " " " "
18T	43	Y-G	DTL 265	DATA TIP-LINE	CKT 265	" " " " "
R	18	G-Y	DRL 265	DATA RING-LINE	CKT 265	" " " " "
19T	44	Y-Br	TL 266	TIP-LINE	CKT 266	" " " " "
R	19	Br-Y	RL 266	RING-LINE	CKT 266	" " " " "
20T	45	Y-S	DTL 266	DATA TIP-LINE	CKT 266	" " " " "
R	20	S-Y	DRL 266	DATA RING-LINE	CKT 266	" " " " "
21T	46	V-Bl	TL 267	TIP-LINE	CKT 267	" " " " "
R	21	Bl-V	RL 267	RING-LINE	CKT 267	" " " " "
22T	47	V-O	DTL 267	DATA TIP-LINE	CKT 267	" " " " "
R	22	O-V	DRL 267	DATA RING-LINE	CKT 267	" " " " "
23T	48	V-G	TL 268	TIP-LINE	CKT 268	" " " " "
R	23	G-V	RL 268	RING-LINE	CKT 268	" " " " "
24T	49	V-Br	DTL 268	DATA TIP-LINE	CKT 268	" " " " "
R	24	Br-V	DRL 268	DATA RING-LINE	CKT 268	" " " " "
25T	50	V-S	SPARE			
R	25	S-V	"			

NOTE. A DDSU PCB can be installed in this slot.

TABLE AE
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J509
DEKU/DSTU/DDCU/DMDU POSITIONS L27 ~ L28 (1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 271	TIP-LINE	CKT 271	DEKU/DSTU/DDCU/DMDU L27
R	1	Bl-W	RL 271	RING-LINE	CKT 271	" " " " "
2T	27	W-O	DTL 271	DATA TIP-LINE	CKT 271	" " " " "
R	2	O-W	DRL 271	DATA RING-LINE	CKT 271	" " " " "
3T	28	W-G	TL 272	TIP-LINE	CKT 272	" " " " "
R	3	G-W	RL 272	RING-LINE	CKT 272	" " " " "
4T	29	W-Br	DTL 272	DATA TIP-LINE	CKT 272	" " " " "
R	4	Br-W	DRL 272	DATA RING-LINE	CKT 272	" " " " "
5T	30	W-S	TL 273	TIP-LINE	CKT 273	" " " " "
R	5	S-W	RL 273	RING-LINE	CKT 273	" " " " "
6T	31	R-Bl	DTL 273	DATA TIP-LINE	CKT 273	" " " " "
R	6	Bl-R	DRL 273	DATA RING-LINE	CKT 273	" " " " "
7T	32	R-O	TL 274	TIP-LINE	CKT 274	" " " " "
R	7	O-R	RL 274	RING-LINE	CKT 274	" " " " "
8T	33	R-G	DTL 274	DATA TIP-LINE	CKT 274	" " " " "
R	8	G-R	DRL 274	DATA RING-LINE	CKT 274	" " " " "
9T	34	R-Br	TL 275	TIP-LINE	CKT 275	" " " " "
R	9	Br-R	RL 275	RING-LINE	CKT 275	" " " " "
10T	35	R-S	DTL 275	DATA TIP-LINE	CKT 275	" " " " "
R	10	S-R	DRL 275	DATA RING-LINE	CKT 275	" " " " "
11T	36	Bk-Bl	TL 276	TIP-LINE	CKT 276	" " " " "
R	11	Bl-Bk	RL 276	RING-LINE	CKT 276	" " " " "
12T	37	Bk-O	DTL 276	DATA TIP-LINE	CKT 276	" " " " "
R	12	O-Bk	DRL 276	DATA RING-LINE	CKT 276	" " " " "
13T	38	Bk-G	TL 277	TIP-LINE	CKT 277	" " " " "
R	13	G-Bk	RL 277	RING-LINE	CKT 277	" " " " "
14T	39	Bk-Br	DTL 277	DATA TIP-LINE	CKT 277	" " " " "
R	14	Br-Bk	DRL 277	DATA RING-LINE	CKT 277	" " " " "
15T	40	Bk-S	TL 278	TIP-LINE	CKT 278	" " " " "
R	15	S-Bk	RL 278	RING-LINE	CKT 278	" " " " "
16T	41	Y-Bl	DTL 278	DATA TIP-LINE	CKT 278	" " " " "
R	16	Bl-Y	DRL 278	DATA RING-LINE	CKT 278	" " " " "
17T	42	Y-O	TL 281	TIP-LINE	CKT 281	DEKU/DSTU/DDCU/DMDU L28 (1/2)
R	17	O-Y	RL 281	RING-LINE	CKT 281	" " " " "
18T	43	Y-G	DTL 281	DATA TIP-LINE	CKT 281	" " " " "
R	18	G-Y	DRL 281	DATA RING-LINE	CKT 281	" " " " "
19T	44	Y-Br	TL 282	TIP-LINE	CKT 282	" " " " "
R	19	Br-Y	RL 282	RING-LINE	CKT 282	" " " " "
20T	45	Y-S	DTL 282	DATA TIP-LINE	CKT 282	" " " " "
R	20	S-Y	DRL 282	DATA RING-LINE	CKT 282	" " " " "
21T	46	V-Bl	TL 283	TIP-LINE	CKT 283	" " " " "
R	21	Bl-V	RL 283	RING-LINE	CKT 283	" " " " "
22T	47	V-O	DTL 283	DATA TIP-LINE	CKT 283	" " " " "
R	22	O-V	DRL 283	DATA RING-LINE	CKT 283	" " " " "
23T	48	V-G	TL 284	TIP-LINE	CKT 284	" " " " "
R	23	G-V	RL 284	RING-LINE	CKT 284	" " " " "
24T	49	V-Br	DTL 284	DATA TIP-LINE	CKT 284	" " " " "
R	24	Br-V	DRL 284	DATA RING-LINE	CKT 284	" " " " "
25T	50	V-S	SPARE			
R	25	S-V	"			

NOTE: A DDSU PCB can be installed in this slot.

TABLE AF
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J510
DEKU/DSTU/DDCU/DMDU POSITIONS L28 (1/2) ~ L29

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-Bl	TL 285	TIP-LINE	CKT 285	DEKU/DSTU/DDCU/DMDU L28 (1/2
R	1	Bl-W	RL 285	RING-LINE	CKT 285	" " " " "
2T	27	W-O	DTL 285	DATA TIP-LINE	CKT 285	" " " " "
R	2	O-W	DRL 285	DATA RING-LINE	CKT 285	" " " " "
3T	28	W-G	TL 286	TIP-LINE	CKT 286	" " " " "
R	3	G-W	RL 286	RING-LINE	CKT 286	" " " " "
4T	29	W-Br	DTL 286	DATA TIP-LINE	CKT 286	" " " " "
R	4	Br-W	DRL 286	DATA RING-LINE	CKT 286	" " " " "
5T	30	W-S	TL 287	TIP-LINE	CKT 287	" " " " "
R	5	S-W	RL 287	RING-LINE	CKT 287	" " " " "
6T	31	R-Bl	DTL 287	DATA TIP-LINE	CKT 287	" " " " "
R	6	Bl-R	DRL 287	DATA RING-LINE	CKT 287	" " " " "
7T	32	R-O	TL 288	TIP-LINE	CKT 288	" " " " "
R	7	O-R	RL 288	RING-LINE	CKT 288	" " " " "
8T	33	R-G	DTL 288	DATA TIP-LINE	CKT 288	" " " " "
R	8	G-R	DRL 288	DATA RING-LINE	CKT 288	" " " " "
9T	34	R-Br	TL 291	TIP-LINE	CKT 291	DEKU/DSTU/DDCU/DMDU L29
R	9	Br-R	RL 291	RING-LINE	CKT 291	" " " " "
10T	35	R-S	DTL 291	DATA TIP-LINE	CKT 291	" " " " "
R	10	S-R	DRL 291	DATA RING-LINE	CKT 291	" " " " "
11T	36	Bk-Bl	TL 292	TIP-LINE	CKT 292	" " " " "
R	11	Bl-Bk	RL 292	RING-LINE	CKT 292	" " " " "
12T	37	Bk-O	DTL 292	DATA TIP-LINE	CKT 292	" " " " "
R	12	O-Bk	DRL 292	DATA RING-LINE	CKT 292	" " " " "
13T	38	Bk-G	TL 293	TIP-LINE	CKT 293	" " " " "
R	13	G-Bk	RL 293	RING-LINE	CKT 293	" " " " "
14T	39	Bk-Br	DTL 293	DATA TIP-LINE	CKT 293	" " " " "
R	14	Br-Bk	DRL 293	DATA RING-LINE	CKT 293	" " " " "
15T	40	Bk-S	TL 294	TIP-LINE	CKT 294	" " " " "
R	15	S-Bk	RL 294	RING-LINE	CKT 294	" " " " "
16T	41	Y-Bl	DTL 294	DATA TIP-LINE	CKT 294	" " " " "
R	16	Bl-Y	DRL 294	DATA RING-LINE	CKT 294	" " " " "
17T	42	Y-O	TL 295	TIP-LINE	CKT 295	" " " " "
R	17	O-Y	RL 295	RING-LINE	CKT 295	" " " " "
18T	43	Y-G	DTL 295	DATA TIP-LINE	CKT 295	" " " " "
R	18	G-Y	DRL 295	DATA RING-LINE	CKT 295	" " " " "
19T	44	Y-Br	TL 296	TIP-LINE	CKT 296	" " " " "
R	19	Br-Y	RL 296	RING-LINE	CKT 296	" " " " "
20T	45	Y-S	DTL 296	DATA TIP-LINE	CKT 296	" " " " "
R	20	S-Y	DRL 296	DATA RING-LINE	CKT 296	" " " " "
21T	46	V-Bl	TL 297	TIP-LINE	CKT 297	" " " " "
R	21	Bl-V	RL 297	RING-LINE	CKT 297	" " " " "
22T	47	V-O	DTL 297	DATA TIP-LINE	CKT 297	" " " " "
R	22	O-V	DRL 297	DATA RING-LINE	CKT 297	" " " " "
23T	48	V-G	TL 298	TIP-LINE	CKT 298	" " " " "
R	23	G-V	RL 298	RING-LINE	CKT 298	" " " " "
24T	49	V-Br	DTL 298	DATA TIP-LINE	CKT 298	" " " " "
R	24	Br-V	DRL 298	DATA RING-LINE	CKT 298	" " " " "
25T	50	V-S	SPARE			
R	25	S-V	"			

NOTE A DDSU PCB can be installed in this slot.

TABLE AG
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J511
ATTENDANT CONSOLE #2
(FUTURE)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	TL 151	TIP-LINE CKT 151	DEKU L15
R	1	Bl-W	RL 151	RING-LINE CKT 151	" "
2T	27	W-O	DTL 151	DATA TIP-LINE CKT 151	" "
R	2	O-W	DRL 151	DATA RING-LINE CKT 151	" "
3T	28	W-G	SPARE		
R	3	G-W	"		
4T	29	W-Br	EMT 2	EMERGENCY TRANSFER SWT	DPMU
R	4	Br-W	INIT 2	INITIALIZE SWITCH	"
5T	30	W-S	SPARE		
R	5	S-W	MAJ IN 2	MAJOR ALARM	DPMU
6T	31	R-Bl	SPARE		
R	6	Bl-R	"		
7T	32	R-O	"		
R	7	O-R	"		
8T	33	R-G	"		
R	8	G-R	ATT 2 –24V	–24V	DPMU
9T	34	R-Br	SPARE		
R	9	Br-R	ATT 2 –24V	–24V	DPMU
10T	35	R-S	SPARE		
R	10	S-R	ATT 2 –24V	–24V	DPMU
11T	36	Bk-Bl	SPARE		
R	11	Bl-Bk	ATT 2 –24V	–24V	DPMU
12T	37	Bk-O	SPARE		
R	12	O-Bk	ATT 2 –24V	–24V	DPMU
13T	38	Bk-G	SPARE		
R	13	G-Bk	ATT 2 –24V	–24V	DPMU
14T	39	Bk-Br	SPARE		
R	14	Br-Bk	"		
15T	40	Bk-S	"		
R	15	S-Bk	"		
16T	41	Y-Bl	"		
R	16	Bl-Y	"		
17T	42	Y-O	"		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	ATT 2 EG	GROUND	DPMU
R	19	Br-Y	SPARE		
20T	45	Y-S	ATT 2 EG	GROUND	DPMU
R	20	S-Y	SPARE		
21T	46	V-Bl	ATT 2 EG	GROUND	DPMU
R	21	Bl-V	SPARE		
22T	47	V-O	ATT 2 EG	GROUND	DPMU
R	22	O-V	SPARE		
23T	48	V-G	ATT 2 EG	GROUND	DPMU
R	23	G-V	SPARE		
24T	49	V-Br	ATT 2 EG	GROUND	DPMU
R	24	Br-V	SPARE		
25T	50	V-S	"		
R	25	S-V	"		

TABLE AH
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J512
ATTENDANT CONSOLE #3 (FUTURE)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	TL 271	TIP-LINE CKT 271	DEKU L27
R	1	Bl-W	RL 271	RING-LINE CKT 271	" "
2T	27	W-O	DTL 271	DATA TIP-LINE CKT 271	" "
R	2	O-W	DRL 271	DATA RING-LINE CKT 271	" "
3T	28	W-G	SPARE		
R	3	G-W	"		
4T	29	W-Br	EMT 3	EMERGENCY TRANSFER SWT	DPMU
R	4	Br-W	INIT 3	INITIALIZE SWITCH	"
5T	30	W-S	SPARE		
R	5	S-W	MAJ IN 3	MAJOR ALARM	DPMU
6T	31	R-Bl	SPARE		
R	6	Bl-R	"		
7T	32	R-O	"		
R	7	O-R	"		
8T	33	R-G	"		
R	8	G-R	ATT 3 -24V	-24V	DPMU
9T	34	R-Br	SPARE		
R	9	Br-R	ATT 3 -24V	-24V	DPMU
10T	35	R-S	SPARE		
R	10	S-R	ATT 3 -24V	-24V	DPMU
11T	36	Bk-Bl	SPARE		
R	11	Bl-Bk	ATT 3 -24V	-24V	DPMU
12T	37	Bk-O	SPARE		
R	12	O-Bk	ATT 3 -24V	-24V	DPMU
13T	38	Bk-G	SPARE		
R	13	G-Bk	ATT 3 -24V	-24V	DPMU
14T	39	Bk-Br	SPARE		
R	14	Br-Bk	"		
15T	40	Bk-S	"		
R	15	S-Bk	"		
16T	41	Y-Bl	"		
R	16	Bl-Y	"		
17T	42	Y-O	"		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	ATT 3 EG	GROUND	DPMU
R	19	Br-Y	SPARE		
20T	45	Y-S	ATT 3 EG	GROUND	DPMU
R	20	S-Y	SPARE		
21T	46	V-Bl	ATT3 EG	GROUND	DPMU
R	21	Bl-V	SPARE		
22T	47	V-O	ATT 3 EG	GROUND	DPMU
R	22	O-V	SPARE		
23T	48	V-G	ATT 3 EG	GROUND	DPMU
R	23	G-V	SPARE		
24T	49	V-Br	ATT 3 EG	GROUND	DPMU
R	24	Br-V	SPARE		
25T	50	V-S	"		
R	25	S-V	"		

TABLE AI
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J513
PAGING, MUSIC & UNA RINGING

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	PT 1	PAGING TIP	DPMU
R	1	Bl-W	PR 1	PAGING RING	"
2T	27	W-O	PG 1	PAGING EQUIP. CONTROL	"
R	2	O-W	PG GND	PAGING EQUIP. COMMON	"
3T	28	W-G	SPARE		
R	3	G-W	"		
4T	29	W-Br	MT	MOH SOURCE TIP	DPMU
R	4	Br-W	MR	MOH SOURCE RING	"
5T	30	W-S	SPARE		
R	5	S-W	"		
6T	31	R-Bl	PG IN 1	PAGING AMP #1 OUT	DPMU
R	6	Bl-R	PG OUT 1	PAGE ZONE #1 OUT	"
7T	32	R-O	PG IN 2	PAGING AMP #2 OUT	"
R	7	O-R	PG OUT 2	PAGE ZONE #2 OUT	"
8T	33	R-G	PG IN 3	PAGING AMP #3 OUT	"
R	8	G-R	PG OUT 3	PAGE ZONE #3 OUT	"
9T	34	R-Br	PG IN 4	PAGING AMP #4 OUT	"
R	9	Br-R	PG OUT 4	PAGE ZONE #4 OUT	"
10T	35	R-S	PG IN 5	PAGING AMP #5 OUT	"
R	10	S-R	PG OUT 5	PAGE ZONE #5 OUT	"
11T	36	Bk-Bl	SPARE		
R	11	Bl-Bk	"		
12T	37	Bk-O	"		
R	12	O-Bk	"		
13T	38	Bk-G	"		
R	13	G-Bk	"		
14T	39	Bk-Br	"		
R	14	Br-Bk	"		
15T	40	Bk-S	"		
R	15	S-Bk	"		
16T	41	Y-Bl	"		
R	16	Bl-Y	"		
17T	42	Y-O	"		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	"		
R	19	Br-Y	"		
20T	45	Y-S	"		
R	20	S-Y	"		
21T	46	V-Bl	"		
R	21	Bl-V	"		
22T	47	V-O	UNA B	UNA RINGING GROUND	DPMU
R	22	O-V	UNA A	UNA RINGING 20 Hz	"
23T	48	V-G	SPARE		
R	23	G-V	"		
24T	49	V-Br	"		
R	24	Br-V	"		
25T	50	V-S	"		
R	25	S-V	"		

NOTE: For clarification of designation, see Figures 38, 39 and 40.

TABLE AJ
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J514
TRUNK CARD POSITIONS T08 ~ T10 & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	T 081	TIP-TRUNK CKT 081	DCOU/DEMU/DLSU T08
R	1	Bl-W	R 081	RING-TRUNK CKT 081	" " " "
2T	27	W-O	M 081	M LEAD-TRUNK CKT 081	" " " "
R	2	O-W	E 081	E LEAD-TRUNK CKT 081	" " " "
3T	28	W-G	T 082	TIP-TRUNK CKT 082	" " " "
R	3	G-W	R 082	RING-TRUNK CKT 082	" " " "
4T	29	W-Br	M 082	M LEAD-TRUNK CKT 082	" " " "
R	4	Br-W	E 082	E LEAD-TRUNK CKT 082	" " " "
5T	30	W-S	T 083	TIP-TRUNK CKT 083	" " " "
R	5	S-W	R 083	RING-TRUNK CKT 083	" " " "
6T	31	R-Bl	M 083	M LEAD-TRUNK CKT 083	" " " "
R	6	Bl-R	E 083	E LEAD-TRUNK CKT 083	" " " "
7T	32	R-O	T 084	TIP-TRUNK CKT 084	" " " "
R	7	O-R	R 084	RING-TRUNK CKT 084	" " " "
8T	33	R-G	M 084	M LEAD-TRUNK CKT 084	" " " "
R	8	G-R	E 084	E LEAD-TRUNK CKT 084	" " " "
9T	34	R-Br	T 091	TIP-TRUNK CKT 091	DCOU/DEMU/DLSU T09
R	9	Br-R	R 091	RING-TRUNK CKT 091	" " " "
10T	35	R-S	M 091	M LEAD-TRUNK CKT 091	" " " "
R	10	S-R	E 091	E LEAD-TRUNK CKT 091	" " " "
11T	36	Bk-Bl	T 092	TIP-TRUNK CKT 092	" " " "
R	11	Bl-Bk	R 092	RING-TRUNK CKT 092	" " " "
12T	37	Bk-O	M 092	M LEAD-TRUNK CKT 092	" " " "
R	12	O-Bk	E 092	E LEAD-TRUNK CKT 092	" " " "
13T	38	Bk-G	T 093	TIP-TRUNK CKT 093	" " " "
R	13	G-Bk	R 093	RING-TRUNK CKT 093	" " " "
14T	39	Bk-Br	M 093	M LEAD-TRUNK CKT 093	" " " "
R	14	Br-Bk	E 093	E LEAD-TRUNK CKT 093	" " " "
15T	40	Bk-S	T 094	TIP-TRUNK CKT 094	" " " "
R	15	S-Bk	R 094	RING-TRUNK CKT 094	" " " "
16T	41	Y-Bl	M 094	M LEAD-TRUNK CKT 094	" " " "
R	16	Bl-Y	E 094	E LEAD-TRUNK CKT 094	" " " "
17T	42	Y-O	T 101	TIP-TRUNK CKT 101	DCOU/DEMU/DLSU T10
R	17	O-Y	R 101	RING-TRUNK CKT 101	" " " "
18T	43	Y-G	M 101	M LEAD-TRUNK CKT 101	" " " "
R	18	G-Y	E 101	E LEAD-TRUNK CKT 101	" " " "
19T	44	Y-Br	T 102	TIP-TRUNK CKT 102	" " " "
R	19	Br-Y	R 102	RING-TRUNK CKT 102	" " " "
20T	45	Y-S	M 102	M LEAD-TRUNK CKT 102	" " " "
R	20	S-Y	E 102	E LEAD-TRUNK CKT 102	" " " "
21T	46	V-Bl	T 103	TIP-TRUNK CKT 103	" " " "
R	21	Bl-V	R 103	RING-TRUNK CKT 103	" " " "
22T	47	V-O	M 103	M LEAD-TRUNK CKT 103	" " " "
R	22	O-V	E 103	E LEAD-TRUNK CKT 103	" " " "
23T	48	V-G	T 104	TIP-TRUNK CKT 104	" " " "
R	23	G-V	R 104	RING-TRUNK CKT 104	" " " "
24T	49	V-Br	M 104	M LEAD-TRUNK CKT 104	" " " "
R	24	Br-V	E 104	E LEAD-TRUNK CKT 104	" " " "
25T	50	V-S	PFT EG	PFT GROUND (OUTPUT)	DPMU
R	25	S-V	PFG –24V	PFT –24V (OUTPUT)	"

TABLE AK
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J515
TRUNK CARD POSITIONS T11 ~ T13 & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	T 111	TIP-TRUNK CKT 111	DCOU/DEMU/DLSU T11
R	1	Bl-W	R 111	RING-TRUNK CKT 111	" " " "
2T	27	W-O	M 111	M LEAD-TRUNK CKT 111	" " " "
R	2	O-W	E 111	E LEAD-TRUNK CKT 111	" " " "
3T	28	W-G	T 112	TIP-TRUNK CKT 112	" " " "
R	3	G-W	R 112	RING-TRUNK CKT 112	" " " "
4T	29	W-Br	M 112	M LEAD-TRUNK CKT 112	" " " "
R	4	Br-W	E 112	E LEAD-TRUNK CKT 112	" " " "
5T	30	W-S	T 113	TIP-TRUNK CKT 113	" " " "
R	5	S-W	R 113	RING-TRUNK CKT 113	" " " "
6T	31	R-Bl	M 113	M LEAD-TRUNK CKT 113	" " " "
R	6	Bl-R	E 113	E LEAD-TRUNK CKT 113	" " " "
7T	32	R-O	T 114	TIP-TRUNK CKT 114	" " " "
R	7	O-R	R 114	RING-TRUNK CKT 114	" " " "
8T	33	R-G	M 114	M LEAD-TRUNK CKT 114	" " " "
R	8	G-R	E 114	E LEAD-TRUNK CKT 114	" " " "
9T	34	R-Br	T 121	TIP-TRUNK CKT 121	DCOU/DEMU/DLSU T12
R	9	Br-R	R 121	RING-TRUNK CKT 121	" " " "
10T	35	R-S	M 121	M LEAD-TRUNK CKT 121	" " " "
R	10	S-R	E 121	E LEAD-TRUNK CKT 121	" " " "
11T	36	Bk-Bl	T 122	TIP-TRUNK CKT 122	" " " "
R	11	Bl-Bk	R 122	RING-TRUNK CKT 122	" " " "
12T	37	Bk-O	M 122	M LEAD-TRUNK CKT 122	" " " "
R	12	O-Bk	E 122	E LEAD-TRUNK CKT 122	" " " "
13T	38	Bk-G	T 123	TIP-TRUNK CKT 123	" " " "
R	13	G-Bk	R 123	RING-TRUNK CKT 123	" " " "
14T	39	Bk-Br	M 123	M LEAD-TRUNK CKT 123	" " " "
R	14	Br-Bk	E 123	E LEAD-TRUNK CKT 123	" " " "
15T	40	Bk-S	T 124	TIP-TRUNK CKT 124	" " " "
R	15	S-Bk	R 124	RING-TRUNK CKT 124	" " " "
16T	41	Y-Bl	M 124	M LEAD-TRUNK CKT 124	" " " "
R	16	Bl-Y	E 124	E LEAD-TRUNK CKT 124	" " " "
17T	42	Y-O	T 131	TIP-TRUNK CKT 131	DCOU/DEMU/DLSU T13
R	17	O-Y	R 131	RING-TRUNK CKT 131	" " " "
18T	43	Y-G	M 131	M LEAD-TRUNK CKT 131	" " " "
R	18	G-Y	E 131	E LEAD-TRUNK CKT 131	" " " "
19T	44	Y-Br	T 132	TIP-TRUNK CKT 132	" " " "
R	19	Br-Y	R 132	RING-TRUNK CKT 132	" " " "
20T	45	Y-S	M 132	M LEAD-TRUNK CKT 132	" " " "
R	20	S-Y	E 132	E LEAD-TRUNK CKT 132	" " " "
21T	46	V-Bl	T 133	TIP-TRUNK CKT 133	" " " "
R	21	Bl-V	R 133	RING-TRUNK CKT 133	" " " "
22T	47	V-O	M 133	M LEAD-TRUNK CKT 133	" " " "
R	22	O-V	E 133	E LEAD-TRUNK CKT 133	" " " "
23T	48	V-G	T 134	TIP-TRUNK CKT 134	" " " "
R	23	G-V	R 134	RING-TRUNK CKT 134	" " " "
24T	49	V-Br	M 134	M LEAD-TRUNK CKT 134	" " " "
R	24	Br-V	E 134	E LEAD-TRUNK CKT 134	" " " "
25T	50	V-S	PFT EG	PFT GROUND (OUTPUT)	DPMU
R	25	S-V	PFT -24V	PFT -24V (OUTPUT)	"

TABLE AL
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J516
TRUNK CARD POSITIONS T14 & T15, UNA RINGING & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION		FUNCTION		PCB POSITION
1T	26	W-Bl	T	141	TIP-TRUNK	CKT 141	DCOU/DEMU/DLSU T14
R	1	Bl-W	R	141	RING-TRUNK	CKT 141	" " " "
2T	27	W-O	M	141	M LEAD-TRUNK	CKT 141	" " " "
R	2	O-W	E	141	E LEAD-TRUNK	CKT 141	" " " "
3T	28	W-G	T	142	TIP-TRUNK	CKT 142	" " " "
R	3	G-W	R	142	RING-TRUNK	CKT 142	" " " "
4T	29	W-Br	M	142	M LEAD-TRUNK	CKT 142	" " " "
R	4	Br-W	E	142	E LEAD-TRUNK	CKT 142	" " " "
5T	30	W-S	T	143	TIP-TRUNK	CKT 143	" " " "
R	5	S-W	R	143	RING-TRUNK	CKT 143	" " " "
6T	31	R-Bl	M	143	M LEAD-TRUNK	CKT 143	" " " "
R	6	Bl-R	E	143	E LEAD-TRUNK	CKT 143	" " " "
7T	32	R-O	T	144	TIP-TRUNK	CKT 144	" " " "
R	7	O-R	R	144	RING-TRUNK	CKT 144	" " " "
8T	33	R-G	M	144	M LEAD-TRUNK	CKT 144	" " " "
R	8	G-R	E	144	E LEAD-TRUNK	CKT 144	" " " "
9T	34	R-Br	T	151	TIP-TRUNK	CKT 151	DCOU/DEMU/DLSU T15
R	9	Br-R	R	151	RING-TRUNK	CKT 151	" " " "
10T	35	R-S	M	151	M LEAD-TRUNK	CKT 151	" " " "
R	10	S-R	E	151	E LEAD-TRUNK	CKT 151	" " " "
11T	36	Bk-Bl	T	152	TIP-TRUNK	CKT 152	" " " "
R	11	Bl-Bk	R	152	RING-TRUNK	CKT 152	" " " "
12T	37	Bk-O	M	152	M LEAD-TRUNK	CKT 152	" " " "
R	12	O-Bk	E	152	E LEAD-TRUNK	CKT 152	" " " "
13T	38	Bk-G	T	153	TIP-TRUNK	CKT 153	" " " "
R	13	G-Bk	R	153	RING-TRUNK	CKT 153	" " " "
14T	39	Bk-Br	M	153	M LEAD-TRUNK	CKT 153	" " " "
R	14	Br-Bk	E	153	E LEAD-TRUNK	CKT 153	" " " "
15T	40	Bk-S	T	154	TIP-TRUNK	CKT 154	" " " "
R	15	S-Bk	R	154	RING-TRUNK	CKT 154	" " " "
16T	41	Y-Bl	M	154	M LEAD-TRUNK	CKT 154	" " " "
R	16	Bl-Y	E	154	E LEAD-TRUNK	CKT 154	" " " "
17T	42	Y-O	SPARE				
R	17	O-Y	"				
18T	43	Y-G	"				
R	18	G-Y	"				
19T	44	Y-Br	"				
R	19	Br-Y	"				
20T	45	Y-S	"				
R	20	S-Y	"				
21T	46	V-Bl	"				
R	21	Bl-V	"				
22T	47	V-O	UNA B		UNA RINGING GROUND		DPMU
R	22	O-V	UNA A		UNA RINGING 20 Hz		"
23T	48	V-G	SPARE				
R	23	G-V	"				
24T	49	V-Br	"				
R	24	Br-V	"				
25T	50	V-S	PFT EG		PFT GROUND (OUTPUT)		DPMU
R	25	S-V	PFT -24V		PFT -24V (OUTPUT)		"

TABLE AM
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J517

Future Feature

TABLE AN
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J1A
CENTRAL OFFICE LINE CONNECTION & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	T	TIP-CO #1	
R	1	Bl-W	R	RING-CO #1	
2T	27	W-O	T	TIP-DCOU #1	
R	2	O-W	R	RING-DCOU #1	
3T	28	W-G	T	TIP-CO #2	
R	3	G-W	R	RING-CO #2	
4T	29	W-Br	T	TIP-DCOU #2	
R	4	Br-W	R	RING-DCOU #2	
5T	30	W-S	T	TIP-CO #3	
R	5	S-W	R	RING-CO #3	
6T	31	R-Bl	T	TIP-DCOU #3	
R	6	Bl-R	R	RING-DCOU #3	
7T	32	R-O	T	TIP-CO #4	
R	7	O-R	R	RING-CO #4	
8T	33	R-G	T	TIP-DCOU #4	
R	8	G-R	R	RING-DCOU #4	
9T	34	R-Br	T	TIP-CO #5	
R	9	Br-R	R	RING-CO #5	
10T	35	R-S	T	TIP-DCOU #5	
R	10	S-R	R	RING-DCOU #5	
11T	36	Bk-Bl	T	TIP-CO #6	
R	11	Bl-Bk	R	RING-CO #6	
12T	37	Bk-O	T	TIP-DCOU #6	
R	12	O-Bk	R	RING-DCOU #6	
13T	38	Bk-G	T	TIP-CO #7	
R	13	G-Bk	R	RING-CO #7	
14T	39	Bk-Br	T	TIP-DCOU #7	
R	14	Br-Bk	R	RING-DCOU #7	
15T	40	Bk-S	T	TIP-CO #8	
R	15	S-Bk	R	RING-CO #8	
16T	41	Y-Bl	T	TIP-DCOU #8	
R	16	Bl-Y	R	RING-DCOU #8	
17T	42	Y-O	SPARE		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	"		
R	19	Br-Y	"		
20T	45	Y-S	"		
R	20	S-Y	"		
21T	46	V-Bl	"		
R	21	Bl-V	"		
22T	47	V-O	"		
R	22	O-V	"		
23T	48	V-G	"		
R	23	G-V	"		
24T	49	V-Br	"		
R	24	Br-V	"		
25T	50	V-S	PFT EG	PFT GROUND (INPUT)	DPMU
R	25	S-V	PFT -24V	PFT -24V (INPUT)	"

TABLE AO
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J2A
STATION LINE CONNECTION

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-Bl	T	TIP-TEL #1	
R	1	Bl-W	R	RING-TEL #1	
2T	27	W-O	T	TIP-DSTU #1	
R	2	O-W	R	RING-DSTU #1	
3T	28	W-G	T	TIP-TEL #2	
R	3	G-W	R	RING-TEL #2	
4T	29	W-Br	T	TIP-DSTU #2	
R	4	Br-W	R	RING-DSTU #2	
5T	30	W-S	T	TIP-TEL #3	
R	5	S-W	R	RING-TEL #3	
6T	31	R-Bl	T	TIP-DSTU #3	
R	6	Bl-R	R	RING-DSTU #3	
7T	32	R-O	T	TIP-TEL #4	
R	7	O-R	R	RING-TEL #4	
8T	33	R-G	T	TIP-DSTU #4	
R	8	G-R	R	RING-DSTU #4	
9T	34	R-Br	T	TIP-TEL #5	
R	9	Br-R	R	RING-TEL #5	
10T	35	R-S	T	TIP-DSTU #5	
R	10	S-R	R	RING-DSTU #5	
11T	36	Bk-Bl	T	TIP-TEL #6	
R	11	Bl-Bk	R	RING-TEL #6	
12T	37	Bk-O	T	TIP-DSTU #6	
R	12	O-Bk	R	RING-DSTU #6	
13T	38	Bk-G	T	TIP-TEL #7	
R	13	G-Bk	R	RING-TEL #7	
14T	39	Bk-Br	T	TIP-DSTU #7	
R	14	Br-Bk	R	RING-DSTU #7	
15T	40	Bk-S	T	TIP-TEL #8	
R	15	S-Bk	R	RING-TEL #8	
16T	41	Y-Bl	T	TIP-DSTU #8	
R	16	Bl-Y	R	RING-DSTU #8	
17T	42	Y-O	SPARE		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	"		
R	19	Br-Y	"		
20T	45	Y-S	"		
R	20	S-Y	"		
21T	46	V-Bl	"		
R	21	Bl-V	"		
22T	47	V-O	"		
R	22	O-V	"		
23T	48	V-G	"		
R	23	G-V	"		
24T	49	V-Br	"		
R	24	Br-V	"		
25T	50	V-S	"		
R	25	S-V	"		

TABLE AP
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J01 ~ J10 & J501 ~ J510
DSS CONSOLE CONNECTION

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		CROSS CONNECT*	DSS CONSOLE
1T	26	W-Bl	TL	TIP-LINE	CKT	G	1 (LXX1)
R	1	Bl-W	RL	RING-LINE	CKT	R	
2T	27	W-O	DTL	DATA TIP-LINE	CKT	Y	
R	2	O-W	DRL	DATA RING-LINE	CKT	BK	
3T	28	W-G	TL	TIP-LINE	CKT		
R	3	G-W	RL	RING-LINE	CKT		
4T	29	W-Br	DTL	DATA TIP-LINE	CKT		
R	4	Br-W	DRL	DATA RING-LINE	CKT		
5T	30	W-S	TL	TIP-LINE	CKT	G	2 (LXX2)
R	5	S-W	RL	RING-LINE	CKT	R	
6T	31	R-Bl	DTL	DATA TIP-LINE	CKT	Y	
R	6	Bl-R	DRL	DATA RING-LINE	CKT	BK	
7T	32	R-O	TL	TIP-LINE	CKT		
R	7	O-R	RL	RING-LINE	CKT		
8T	33	R-G	DTL	DATA TIP-LINE	CKT		
R	8	G-R	DRL	DATA RING-LINE	CKT		
9T	34	R-Br	TL	TIP-LINE	CKT	G	3(LXX3)
R	9	Br-R	RL	RING-LINE	CKT	R	
10T	35	R-S	DTL	DATA TIP-LINE	CKT	Y	
R	10	S-R	DRL	DATA RING-LINE	CKT	BK	
11T	36	Bk-Bl	TL	TIP-LINE	CKT		
R	11	Bl-Bk	RL	RING-LINE	CKT		
12T	37	Bk-O	DTL	DATA TIP-LINE	CKT		
R	12	O-Bk	DRL	DATA RING-LINE	CKT		
13T	38	Bk-G	TL	TIP-LINE	CKT	G	4(LXX4)
R	13	G-Bk	RL	RING-LINE	CKT	R	
14T	39	Bk-Br	DTL	DATA TIP-LINE	CKT	Y	
R	14	Br-Bk	DRL	DATA RING-LINE	CKT	BK	
15T	40	Bk-S	TL	TIP-LINE	CKT		
R	15	S-Bk	RL	RING-LINE	CKT		
16T	41	Y-Bl	DTL	DATA TIP-LINE	CKT		
R	16	Bl-Y	DRL	DATA RING-LINE	CKT		
17T	42	Y-O	TL	TIP-LINE	CKT	NOT USED	
R	17	O-Y	RL	RING-LINE	CKT		
18T	43	Y-G	DTL	DATA TIP-LINE	CKT		
R	18	G-Y	DRL	DATA RING-LINE	CKT		
19T	44	Y-Br	TL	TIP-LINE	CKT		
R	19	Br-Y	RL	RING-LINE	CKT		
20T	45	Y-S	DTL	DATA TIP-LINE	CKT		
R	20	S-Y	DRL	DATA RING-LINE	CKT		
21T	46	V-Bl	TL	TIP-LINE	CKT		
R	21	Bl-V	RL	RING-LINE	CKT		
22T	47	V-O	DTL	DATA TIP-LINE	CKT		
R	22	O-V	DRL	DATA RING-LINE	CKT		
23T	48	V-G	TL	TIP-LINE	CKT		
R	23	G-V	RL	RING-LINE	CKT		
24T	49	V-Br	DTL	DATA TIP-LINE	CKT		
R	24	Br-V	DRL	DATA RING-LINE	CKT		
25T	50	V-S	SPARE				
R	25	S-V	"				

PROGRAMMING PROCEDURES
SECTION 400-100-300
NOVEMBER 1988

PERCEPTION II

SYSTEM PROGRAMMING

Version D-02

PERCEPTION II
PROGRAMMING PROCEDURES

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

TABLE LIST

TABLE LIST (continued)

TABLE LIST (continued)

01 INTRODUCTION

01.00 General

1.01 PERCEPTION II is a stored program-controlled system which utilizes a 16-bit microprocessor as the central processing unit (CPU). The system memory is made up of Read Only Memory (ROM), Dynamic Random Access Memory (DRAM), and Static Random Access Memory (SRAM). The small amount of ROM that is provided contains the "Loader" program for the 5.25-inch disk drive (FFDA). When the system is initially powered up or is reset manually, the remainder of the Operating System programs and Customer Data will be loaded into RAM from the disk, under the control of the Loader program.

01.02 Since Dynamic RAM is volatile (its contents are lost when power is removed), the disk remains in the system as backup. If a reload is required, the entire system program and customer database will reload in approximately 45 seconds. In Lodging/Health Care operation, some customer data is stored in Static RAM in order to protect it in case of a power failure.

01.10 Dual Disk Operation

01.11 The PERCEPTION II system (with D-02 software) utilizes two floppy disks (FDs) for the storage of operating and maintenance data. One of these disks (System FD) is used specifically for the system program, customer data, and the DSYS, DTRF, and TPER maintenance programs, while the other disk (Maintenance FD) is used exclusively for all other maintenance programs. A separate disk drive for each disk is required for remote maintenance. Systems with a single disk drive must interchange disks manually in order to perform the various system functions. The System FD is inserted for system program loading, data saving, and system operation, while the Maintenance FD is inserted for system programming or the performance of maintenance operations. Dual-drive systems require the insertion of the System FD in FDD0, followed by the insertion of the Maintenance FD in FDD1. The various steps involved in floppy disk installation for both single- and dual-disk systems are noted in Table A.

01.20 Customer Data

01.21 All PERCEPTION II options are controlled by entries made in the Customer Database. Tables are provided for defining System Parameters and Trunks, as well as individual station features. The Customer Data is unique to each system and is usually entered on-site by using a keyboard terminal. After the data has been entered into system memory, a simple keyboard command causes it to be copied onto the System disk (FD), where it remains as a permanent record.

01.30 Utility Programs

01.31 In addition to the Operating System programs and Customer Data, the System FD also contains many Utility Programs, which are divided into three groups:

1) Data Input Procedures—used when making changes to Customer Data.
2) Data Output Procedures—used for obtaining printouts of the contents of the Customer Data memory.
3) Maintenance Procedures—used when testing the system. The System FD contains only the DSYS and DTRF maintenance programs, while the maintenance FD contains all other maintenance programs.

01.32 When required, a Utility Program can be called up by entering a command via the keyboard terminal. The system will respond by locating the proper Utility Program on the proper floppy disk and then loading it into the memory overlay area. When the loading is completed, a prompt will be output to the terminal. The overlay area can accommodate only one Utility Program at a time. When a program is called up, the previous program will be erased.

NOTE:
Any disk failure will cause an error code to be output to the terminal. See Table AZ for the list of error codes.

01.40 Keyboard Terminal

01.41 The PERCEPTION II system is designed to interface with a standard asynchronous keyboard/printer data terminal (a Texas Instruments Model

TABLE A

FLOPPY DISK INSTALLATION PROCEDURES

Operation	Disk That Performs Operation		
	One-Disk Systems	Two-Disk Systems	Note
1. Turn power on (Boot Loading).	Sys-FD	Sys-FD in FDD0	1
2. For Two-drive systems: After the system initializes, change the NOD entry in the DSYS Program from 1 to 2.	Sys-FD	Sys-FD in FDD0	1
3. Set up customer data for all maintenance programs except DSYS and DTRF.	Mnt-FD	Mnt-FD in FDD1	2 & 3
4. Save and dump data.	Sys-FD	Sys-FD in FDD0	4

NOTES:

1. *If the System-FD is not inserted in FDD0, then the D0 and D3 LEDs on the FCCU/DCCU will light.*
2. *The DSYS, DTRF, and TPER Programs are stored on the System-FD. If this disk is not inserted in FDD0, then the system will respond with the following message:*
   "CURRENT FD IS NOT SYSTEM FD. CHANGE IT TO SYSTEM FD"
3. *If the Maintenance-FD is not installed either in FDD0 of a one-drive system, or in FDD1 of a two-drive system, then the following message will be generated:*
   "CURRENT FD IS NOT MAINT. FD. CHANGE IT TO MAINT. FD"
4. *If the System-FD is not installed in FDD0, then the system will request a change by generating the same message as in note 2.*
5. *In single drive systems, the Maintenance FD can be left in FDD0 up until performing a SAVE. Before a SAVE can actually be performed, the System FD must be installed.*

TABLE B

TTY and MODEM CONNECTIONS

TTY:

PIN NO.	MNEMONIC	DESIGNATION
2	RXD	Receive Data[1]
3	TXD	Transmit Data[2]
5	CTS	Clear To Send[3]
6	DSR	Data Set Ready[3]
7	SG	Signal Ground
8	CD	Carrier Detect[3]
20	DTR	Data Terminal Ready[1]

[1]From TTY [2]To TTY [3]Connect to +12 VDC internally

MODEM:

PIN NO.	MNEMONIC	DESIGNATION
2	TXD	Transmit Data[1]
3	RXD	Receive Data[2]
4	RTS	Request To Send[1]
5	CTS	Clear To Send[2]
6	DSR	Data Set Ready[2]
7	SG	Signal Ground
20	DTR	Data Terminal Ready[2]

[1]To MODEM [2]From MODEM

743 or 745, or equivalent, is suitable), or a personal computer configured as a dumb terminal. A female RS-232C connector (**TTY**) is located on the rear of the basic cabinet. (This port is set for either 300 or 1200 bps by a switch on the front of the FCCU PCB.) TTY port pin assignments are shown in Table B.

1.50 Remote Administration

1.51 By utilizing a locally-provided MODEM, the PERCEPTION II Utility Programs can be called up and the system can be programmed and tested from a remote location via a telephone line. The modem connects to the MODEM RS-232C connector on the rear of the basic cabinet (see Table B for pin assignments).

1.60 Data Format

1.61 The system communicates on the TTY and modem ports via the standard 7-bit ASCII code, using one start bit, one stop bit, and one parity bit. The system transmits even parity and ignores parity on the receive side.

02 DATA INPUT/OUTPUT PROCEDURES

02.00 General

02.01 The Utility Programs are divided into three types:
1) Data Input Procedures
2) Data Output Procedures
3) Maintenance Procedures.

02.02 Each Utility Program has a 4-letter mnemonic name that is used to identify it and to call it up from the disk on which it is contained. An Authorization Procedure must be executed before a Utility Program can be called up.

02.03 The Utility Programs are listed in Table C, complete with their mnemonics and the titles of the tables that show their format.

03 SYSTEM DATA PREPARATION

03.00 General

03.01 Before PERCEPTION II system data can be input, option selections must be made and then listed on the System Record (shown in Appendix 1). The System Record will then serve as a programming guide and installation record.

03.02 The System Record contains a form for each Data Input Utility Program. Each form is identified by the Utility Program name and by the program's corresponding mnemonic that is requested by the system (for example: System Data Block = **DSYS Program**).

03.03 Entering data via a Utility Program is a matter of responding to the prompts. These prompts are listed in their proper order in the System Record Forms. Space is provided to record a response.

03.04 Using the System Record Forms to record the various choices, make the option selections as per the instructions in the following paragraphs.

03.05 System Data Block (Table E)

The System Data Block (**DSYS Program**) contains miscellaneous data entries that apply to the system as a whole rather than to any individual station or trunk. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Since data is always present, only the CHG response is possible.

EXP (Expansion Cabinet)—Indicates whether or not an expansion cabinet is installed.
Enter: Y: if an expansion cabinet is installed.
N: if only the basic cabinet is installed.

NOTES:
1. *Y must be entered to enable the system to provide up to twenty simultaneous conferences in an expansion cabinet using a second DPMU PCB.*
2. *If N is entered, then only ten simultaneous conferences will be supported.*

NOD—Indicates whether one or two disk drives are being used. (Two drives are used only with D-02 or later software versions.)
Enter: 1: if only a single drive (FDD0) is used.
2: if two drives (FDD0 and FDD1) are used. (The system will not access maintenance programs in FDD1 if 1 is entered, unless the System disk is replaced by the Maintenance disk.)

TOR (Time of Daily Routine)—Specifies the time of day that the daily routine task (System Dump) will run (listed after the next prompt).

TABLE C

UTILITY PROGRAMS

DATA INPUT PROCEDURES

NAME	MNEM.	TABLE
Authorization Code Change	DCHG	D
System Data Block (DB)	DSYS	E
System DB 2	DSD2	F
Access Code DB	DACD	G
Electronic Telephone DB	DEKT	H
Standard Telephone DB	DSTT	I
Class of Service DB	DCOS	J
Toll Restriction DB	DTOL	K
Speed Dial List DB	DSDL	L
SMDR DB	DMDR	M
Attendant DB	DATT	N
DSS Console DB	DDSS	O
Traffic Measurement DB	DTRF	P
DTMF Receiver DB	DRCV	Q
Trunk Group DB	DTGP	R
Trunk DB	DTRK	S
Least Cost Routing DB	DLC1	T 1-3
Least Cost Routing DB	DLC2	T 4-5
Lodging/Health Care DB	DHMF	U
Digital Data Interface Unit DB	DDIU	V
Message Registration DB	DMRD	W
Modem Pooling DB	DMDM	X
Message Center DB	DMCD	Y
Alphanumeric Message DB	DMSG	Z

DATA OUTPUT PROCEDURES

NAME	MNEM.	TABLE
Print System Data Block (DB)	PSYS	AA
Print System DB 2	PSY2	AB
Print Access Code DB	PACD	AC
Print Station DB	PSDB	AD
Print Class of Service DB	PCOS	AE
Print Toll Restriction DB	PTOL	AF
Print Speed Dial List DB	PSDL	AG
Print SMDR DB	PMDR	AH
Print DSS Console DB	PDSS	AI
Print Trunk Group DB	PTGP	AJ
Print Trunk DB	PTRK	AK
Print Least Cost Routing DB	PLCR	AL
Print Call Pickup Groups	PCPG	AM
Print Hunting Arrangements	PHNT	AN
Print Paging Group DB	PPAG	AO
Print Lodging/Health Care DB	PHMF	AP
Print DDIU DB	PDIU	AQ
Print Message Registration DB	PMRD	AR
Print Modem Pooling DB	PMDM	AS
Print Message Center DB	PMCD	AT
Print Alphanumeric Message DB	PMSG	AU

MAINTENANCE PROCEDURES

NAME	MNEM.	TABLE
Back-up Memory Check Proc.	DMYC	AV
Data Dump Program	DDMP	AW
Electronic Telephone/ Attendant Console Test	TTRM	AX-1 AX-2
Peripheral Equipment Test	TPER	AY

Enter: 24-hour clock time.
(For example: 1315 = 1:15 pm).

DRT (Daily Routine Task)—Specifies whether or not a System Data Dump is to be performed at the time specified in response to TOR.
Enter: DDMP (Data Dump) or NONE.

TEN (Tenant Service)—Specifies whether or not tenant service is to be used. If "Y" is entered, incoming trunk calls, dial calls, attendant recalls, intercepts, etc. will be routed to the proper attendant console (Att. #0 for Tenant #0 and Att. #1 for Tenant #1) according to the response to the TEN prompt in the following Data Blocks: Electronic Telephone (**DEKT Program**), Standard Telephone (**DSTT Program**), and Trunk Group (**DTGP Program**). If "N" is entered, then the attendant consoles will operate in the load sharing mode.
Enter: Y or N.

ICP1 (Intercept #1)—If the attendant takes control of a trunk group by using the trunk group access control feature, then stations that place calls to that trunk group will be routed to Intercept #1. This entry defines ICP1 as being either overflow tone (OFL) or attendant (ATT).
Enter: ATT or OFL.

ICP2 (Intercept #2)—An incoming call from a DID, TIE, or CCSA trunk to a non-existing DN will be routed to Intercept #2 when the system is in day service and to overflow tone when night service is active. This entry defines ICP2 as being either overflow tone or attendant.
Enter: ATT or OFL.

ICP3 (Intercept #3)—A call that is violating trunk access restrictions will be routed to Intercept #3 when the system is in day service and to overflow tone when night service is active. This entry defines ICP3 as being either overflow tone or attendant.
Enter: ATT or OFL.

LCR (Least Cost Routing)—A "Y" response enables Least Cost Routing in the system. Refer to Least Cost Routing Data Block **DLC1** and **DLC2 Programs.**
Enter: Y or N.

APG (All Page Access Code)—Defines the All Page access code. The use of this code will simultaneously access Expanded Internal Group Paging and External All Paging (paging zones 0 ~ 4)—(maximum: 3 digits).
Enter: 1, 2, or 3 digits.

AAT (Not Used):
Enter: CR.

APX (Not Used):
Enter: CR.

LN1 (Listed Directory Number #1)—Defines the LDN #1, which is used with the DID feature when routing a call to the attendant console (maximum: 3 digits).

LN2 (Listed Directory Number #2—Defines the LDN #2, which is used with the DID feature when routing a call to the attendant console (maximum: 3 digits).
Enter: 1, 2, or 3 digits.

NT1 (LDN #1 Night Number)—Defines the destination to which LDN #1 calls will be routed when the system is in night service (DN or Universal Night Answer).
Enter: 1, 2, 3, or 4 digits or UNA.

NT2 (LDN #2 Night Number)—This is prompted only if the response to TEN was "Y". The response to this prompt defines the destination to which LDN #2 calls will be routed when the system is in night service (DN or UNA).
Enter: 1, 2, 3, or 4 digits or UNA.

BLF1 (Busy Lamp Field #1)—Defines one of the hundreds groups that is to be displayed by the console BLF.
Enter: 1 digit (1 ~ 9).

BLF2 (Busy Lamp Field #2)—Defines one of the hundreds groups that is to be displayed by the console BLF.
Enter: 1 digit (1 ~ 9).

OFL1 (Overflow DN-Attendant Console #0)—Defines the destination for calls that are rerouted from attendant console #0 during an overflow condition.
Enter: 1, 2, 3, or 4 digits or NONE (UNA).

NOTE:
This data may also be changed via the attendant console.

OFL2 (Overflow DN-Attendant Console #1)—Defines the destination for calls that are re-routed from attendant console #1 during an overflow condition.
Enter: 1, 2, 3, or 4 digits or NONE (UNA).

NOTES:
1. *The overflow destination can also be changed at the attendant console.*
2. *OFL 2 will not print out when the system is not in tenant service.*

MMP (Meet-Me Page Access Code)—Defines the access code that is used by the attendant to "park" a call for the Meet-Me Page feature (maximum: 3 digits; the system default is 10).
Enter: 1, 2, or 3 digits.

REM (Remote Access DN)—Defines the DN that is used to assign a trunk for "Remote Access to Services" operation (maximum: 4 digits). The DN must be the same as an assigned station DN. Refer to the note at the NIT prompt in the **DTRK Program** .
Enter: 1, 2, 3 , or 4 digits or NONE.

RAC (Remote Access to Services Change Code)—Defines the access code that must be entered before the system's remote access code can be changed. The remote access code can be changed from either an attendant console or an Attendant-Position Electronic Telephone after entering the change code. The remote access code is used by outside callers who want to access the system's remote access feature.
Enter: 1, 2, or 3 digits.

ACC* (* Access Code)—Defines the digit that is to be used by a rotary dial telephone in place of the * button.
Enter: 1 digit or NONE.

NOTE:
*AAC * **must not** conflict with either the DN or other access codes —it is not checked by software.*

ACC# (# Access Code)—Defines the digit that is to be used by a rotary dial telephone in place of the # button.
Enter: 1 digit or NONE.

NOTE:
*AAC# **must not** conflict with either the DN or other access codes—it is not checked by software.*

COT (Camp-on or Call Waiting Timeout)—Defines the Camp-on and Call Waiting feature timeout period.
Enter: Time in seconds.
For example: 30).

RNA (Ring-No-Answer Timeout)—Defines the Ring-No-Answer timeout period for attendant-handled calls.
Enter: Time in seconds.

AOF (Attendant Overflow Timeout)—Defines the timeout period for the attendant overflow facility.
Enter: Time in seconds.

CFD (Call Forward No Answer Timeout)—Defines the Call Forward No-Answer timeout period.
Enter: Time in seconds.

NOTE:
CFD must be less than RNA time or else RNA time will prevail.

HLD (2500 Hold/Electronic Telephone Park Timeout)—Defines the timeout period for the recall of a held call to a single line telephone or of a parked call to an electronic telephone.
Enter: Time in seconds or NONE.

DPT (Dial Pulse Timeout)—Defines the maximum pause that is allowed before the first digit is dialed or between other digits that are dialed from a DTMF or rotary dial telephone. Stations that are released due to the DPT timer will hear overflow tone. This timeout is used with the line lockout feature.
Enter: Time in seconds.

NOTE:
The Dial Pulse Timeout also controls the release of an idle attendant console **LPK** *button.*

PBT (Push-Button Timeout)—Defines the maximum pause that is allowed between digits that are dialed on a trunk from a DTMF telephone.

The transmit voice path from a DTMF telephone to a trunk is broken during dialing. The PBT timer determines how quickly the path is restored and, therefore, should be set as short as possible.
Enter: Time in seconds.

LLO (Line Lockout Time)—Defines the length of time that overflow tone is applied to a station after having been released due to the DPT timer. After this timeout occurs, the station will hear nothing.
Enter: Time in seconds.

ACB (Automatic Callback Reserve Time)—Defines the length of time that the called station or trunk in an ACB call is reserved for the caller (maximum: 6 seconds).
Enter: Time in seconds.

HFS (Handsfree Answerback Station)—A "Y" response allows calls from any station to voice-announce to an electronic telephone that is equipped with Handsfree Answerback.
Enter: Y or N.

HFA (Handsfree Answerback Attendant)—A "Y" response allows calls from the attendent to voice-announce to an electronic telephone that is equipped with Handsfree Answerback.
Enter: Y or N.

MDR (SMDR Equipped)—A "Y" response enables SMDR and activates the MDR alarm on the console.
Enter: Y or N.

UNA0 (Universal Night Answer Zone 0)—A response of 0 assigns UNA Zone 0 to Tenant 0. A response of 1 assigns UNA Zone 0 to Tenant.1. (This prompt will only appear if the **TEN** prompt was answered **Y**.)
Enter: TEN0 or TEN1.

UNA1 (Universal Night Answer Zone 1)—A response of 0 assigns UNA Zone 1 to Tenant 0. A response of 1 assigns UNA Zone 1 to Tenant 1. (This prompt will only appear if the **TEN** prompt was answered **Y**.)
Enter: TEN0 or TEN1.

03.06 System Data Block 2 (Table F)

The System Data Block (**DSD2 Program**) contains miscellaneous data entries that apply to the system as a whole rather than to any individual station or trunk. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Since data is always present, only the CHG response is possible.

MD0 (ACD Master DN0)—Assigns a "master number" to Distributed Hunt Group 0. Whenever this number is dialed, the calls will be distributed among the stations in the group.
Enter: 1 ~ 4-digit number.

MD1 (ACD Master DN1)—Assigns a "master number" to Distributed Hunt Group 1. Whenever this number is dialed, the calls will be distributed among the stations in the group.
Enter: 1 ~ 4-digit number.

MD2 (ACD Master DN2)—Assigns a "master number" to Distributed Hunt Group 2. Whenever this number is dialed, the calls will be distributed among the stations in the group.
Enter: 1 ~ 4-digit number.

MD3 (ACD Master DN3)—Assigns a "master number" to Distributed Hunt Group 3. Whenever this number is dialed, the calls will distributed among the stations in the group.
Enter: 1 ~ 4-digit number.

AHM (Lodging/Health Care)—Identifies the system's mode of operation.
Enter: Y (Lodging/Health Care)
N (Business).

NOS (Night Operator Station)—Assigns the Night Mode answering destination for calls to an attendant console. Calls can be routed either directly to a designated station or voice directory number (1 ~ 4 digits), or to a UNA device.
Enter: XXXX (Station or voice directory number [1 ~ 4 digits]).
NONE (UNA).

RTO (Transfer Recall Timer)—Assigns the length of time that the system will wait before performing a transfer recall. A transfer recall occurs when a station transfers a call to another station which is not answered. This station will ring until the Ring-No-Answer timeout period elapses (or, if the station is busy, until the Camp-on/Call

Waiting timeout period elapses). After this time, the transferred call will return to the transferring station, where it will ring for the period designated by the Transfer Recall Timer, before it is directed to another destination (an attendant console, system UNA device, or an alternative station). This final destination is assigned for each trunk, in response to the TRCL prompt in the **DTRK Program**.

Enter: 1 ~ 255 seconds.
(Default = 255 seconds).

NOTE:
If the system is to utilize a voice mail system, then it is recommended that the Transfer Recall Timer be set rather short so that voice mail will be activated promptly.

AEKT (Attendant-Position Electronic Telephone)—Assigns an electronic telephone as an attendant position (up to eight may be assigned per system). This assignment enables the electronic telephone to access several features that are normally associated only with attendant console access (e.g., Meet-Me Page assignment and cancellation, system-wide call forward cancellation, and Remote Access Code assignment). Following the AEKT prompt, the system will prompt "D." Any port numbers that are entered will be deleted. To add an entry, press the carriage return (CR) key. The system will then prompt "A" and any port numbers that are entered will be added.

Enter: D LNNX LNNX...
A LNNX LNNX...
(LNNX denotes the station port number of the electronic telephone that is to be assigned or deleted as an attendant position. Up to eight port numbers may be entered in any one line.)

03.07 Access Code Data Block (Table G)

The Access Code Data Block (**DACD Program**) assigns the dial access codes for feature execution. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Since data is always present, only the CHG response is possible.

FTR (Feature)—
Enter: The 3- or 4-character feature abbreviation (see Table G-1), a space, and then the desired access code. (See Table G-1 for feature names and standard code assignments.)

NOTE:
Default access codes are shown in Table G-1. Any feature that does not require a change, does not need to be entered. Features may be entered in any order.

03.08 Electronic Telephone Data Block (Table H)

The Electronic Telephone Data Block (**DEKT Program**) defines all parameters for each electronic telephone. A separate Electronic Telephone Data Block must be completed for each electronic telephone in the system. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Three responses are possible:
NEW—To create a new Data Block.
CHG—To alter an existing Data Block.
OUT—To delete an existing Data Block.

POR (Port Number)—Identifies the hardware location of the electronic telephone circuit that is to be defined. The port number has two parts:
1) DEKU PCB location: L00 ~ L29 (NN).
2) Circuit number on that PCB: 1 ~ 8 (X).
Example: The port number of the 4th circuit on the DEKU in position L01 is L014.
Enter: Port number of the electronic telephone (LNNX).

NOTE:
If the OUT command was given above, the port just defined will be deleted and the next prompt will be REQ.

KS (Number of Button Strips)—Informs the system of the number of feature buttons (groups of ten) that the electronic telephone will have.
Enter: 1 (for single line or 10-button) or 2 (for 20-button).

COS (Class of Service)—Assigns one of the 16 Classes of Service to the electronic telephone. (Classes of Service are defined in the **COS Program**.)
Enter: COS Number (0 ~ 15).

TEN (Tenant Number)—Assigns the electronic telephone to one of two possible tenants in the system.
Enter: 0 if tenant service is **not** selected in the **DSYS Program** (TEN = N).
0 or 1 if tenant service is selected in the **DSYS Program** (TEN = Y).

PUG (Call Pickup Group)—Assigns the electronic telephone to one of the 32 possible Call Pickup groups.
Enter: Group number (0 ~ 31) or NONE.

WTA (Warning Tone Allowed?)—Defines an interruption-protected station. An "N" response will prevent warning tones from being applied to the station. (CWT cannot be assigned if N is entered.)
Enter: Y or N.

CFT (Call Forward to Trunk)—Permits calls to this station to be forwarded over a trunk to an outside directory number (maximum: 16 digits).
Enter: Y or N.

TOL (Toll Restricted Class)—Assigns one of the ten classes of Toll Restriction to the electronic telephone. Classes 0 ~ 7 are defined in the Toll Restriction Data Block (**DTOL Program**). Class 8 is simple toll restriction; restricting when **0** or **1** is dialed as the first digit. NONE defines the electronic telephone as unrestricted.
Enter: 0 ~ 8 or NONE.

MTA (Not Used)—
Enter: N.

HFA (Handsfree Answerback Equipped)—A "Y" response activates the Handsfree Answerback and voice-announce capability of this electronic telephone.
Enter: Y or N.

DIS (Display Electronic Telephone)—A "1" or "2" response activates the LCD display on the electronic telephone (maximum display electronic telephones in the system may equal the total number of allowable stations).
Enter: 1, 2, or NONE.
(1 = 2000 series LCD Electronic Telephone.
2 = 6000 series LCD Electronic Telephone.
NONE = Not an LCD Electronic Telephone).

PAG (Paging Group)—Assigns the station to up to four internal paging groups (L, M, N, O) or to no paging groups (NONE).
Enter: L, M, N, O, or NONE.

KEY (Button Assignments)—Assigns a DN or feature to one of the flexible buttons.
Enter:
1) The number of the button to be defined, followed by a space bar. Buttons are numbered 0 ~ 9 (or 19 for a 20-button electronic telephone), starting from the bottom of the vertical button strip (the four buttons below the dial pad have fixed assignments). Following the button number and space, any existing button data will be output.
2) Feature or DN assignments. The possible assignments are as follows:
Directory (Station) Number (1, 2, 3, or 4 digits):
SCR NNNN XXXX—Single Call Ring
- Incoming calls will audibly ring this station.
- NNNN = Directory (Station) Number.
- XXXX = Hunt number. Enter either the DN to which this DN will hunt or the code for distributed hunt (see below).

SCN NNNN XXXX—Single Call, No Ring
- Incoming calls will not audibly ring this station (LED flash only).
- NNNN = Directory Number.
- XXXX = Hunt number. Enter either the DN to which this DN will hunt or the code for distributed hunt (see below).

Station Hunt—Distributed:
- #X is entered in place of the hunt number above. For example: SCR NNN #X.
X = Distributed Hunt Group Number (0 ~ 3). Maximum: 8 stations per group.

Data Directory Number Button Assignment:
- DIU LNXX—Data Port Assignment.
- Incoming data calls will audibly ring the electronic telephone.
- N = PCB location for DDCU or DMDU PCB.
- XX = circuit number.

- An electronic telephone/DDIU-MAT combination will use two station ports—one DEKU port and one DDCU or DMDU port. This Data (DN) button entry assigns a data port to an electronic telephone port.

NOTE:
The Data DN is assigned when the data port is assigned (see DDIU Data Block). This must be done before assigning a data port number to an electronic telephone.

DRS Data Release—Private CO Lines:

PVR XXX—Private Line Ring.
- Incoming calls will audibly ring this station.
- XXX = Trunk Directory Number assigned in Trunk Data Block.

PVN XXX—Private Line No Ring.
- Incoming calls will not audibly ring this station (LED flash only).
- XXX = Trunk Directory Number assigned in Trunk Data Block.

Features:

CRG—Account Number (SMDR)
ACB—Automatic Callback
ADL—Automatic Dialing
FAD XXX—Fixed Automatic Dialing
CFD—Call Forward
CFBY—Call Forward - Busy
CFBD—Call Forward - Busy/No Answer
CFNA—Call Forward - No Answer
CFSB—Call Forward - Busy (System/DID)
CFSN—Call Forward - Busy/No Answer (System/DID)
PUD—Call Pickup - Directed
PUG—Call Pickup Group
CWT—Call Waiting
DND—Do Not Disturb
DIS—Display Date & Time/Elapsed Time
FLH—Flash (a 500 ms or 1 second flash on a CO trunk).
HNG XX—Hundreds Group
SIG LNNX—Manual Signaling (LNNX = port number of electronic telephone to be signaled).
MES—Alphanumeric Message (LCD)
MSG—Message Waiting
OVR—Override
PARK—Call Park
PEXT—External Paging
PINT—Internal Paging
PRS—Privacy Release
RLS—Release
RND—Repeat Last Number Dialed
SCF—Speaker Cut-off
SDS—Speed Dial - System
SDC XX—Speed Dial - Station (controller of list XX — XX = 1 ~ 50).
SDU XX—Speed Dial - Station (user of list XX — XX = 1 ~ 50).
SSM—Station-to-Station Message (LCD)
SYS—System Night Operation (available only on one Attendant-Position Electronic Telephone or DSS console per tenant).
UNA—Universal Night Answer
VCP XXXX—Voice Page (XXXX = DN to be paged).

KEY—The prompt will be repeated until all entries have been made and the DEL key is pressed.

03.09 Standard Telephone Data Block (Table I)

The Standard Telephone Data Block (**DSTT Program**) defines all parameters for a given standard telephone. One Data Block must be completed for each standard telephone in the system. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Three responses are possible:
NEW—To create a new Data Block.
CHG—To alter an existing Data Block.
OUT—To delete an existing Data Block.

NOTE:
If OUT is entered, then only the port number (POR) needs to be entered below. No other entry is necessary.

POR (Port Number)—Identifies the hardware location of the STT circuit that is to be defined. The port number has two parts:
1) DSTU PCB location: L00 ~ L29 (NN).
2) Circuit number on that PCB: 1 ~ 8 (X).
For example: The port number of the fifth circuit on the DSTU in position L02 is L025.
Enter: Port Number of station (LNNX).

DN (Directory Number)—Defines the directory number (station number) of the station.
Enter: DN (1, 2, 3, or 4 digits).

SMX (Station Mix)—When the DN entered after the DN prompt, is also programmed on an electronic telephone, bridging is possible between the two telephones.
Enter: Y (bridging is automatically established without a warning tone—i.e., no privacy). or...
N (bridging is not allowed—privacy exists with an LED indication).

NOTE:
If the DN does is not programmed on an electronic telephone, enter "N."

COS (Class of Group Services)—Assigns one of the 16 available Classes of Service to the telephone. (The Classes of Services are defined by the **DCOS Program**.)
Enter: COS Number 0 ~ 15.

TEN (Tenant Number)—Assigns the station to one of the two possible tenants in the system.
Enter: 0 if tenant service is not selected in System Data Block
(TEN= N).
0 or 1 if tenant service is selected in System Data Block
(TEN = Y).

PUG (Call Pickup Group)—Assigns the station to one of the 32 possible pickup groups.
Enter: Group number (0 ~ 31) or NONE.

HNT (Hunt Number)—Defines the station to which this DN hunts.
Enter: Next DN in hunt group (1 ~ 4 digits).
For Station Hunt-Distributed: #X.
(X = Distributed hunt group number, [0 ~ 3]; Maximum: 8 stations per group).
NONE: No hunt group assignment.

DLG (Dialing Type)—Defines the type of dialing, if any, to be used by the station.
Enter: DIP for dial pulse.
TON for DTMF.
MNL XXXX for Manual Line to attendant or a DN. (XXXX = ATT0, ATT1, or DN [1 ~ 4 digits]).

SDL (Speed Dial List)—Assigns one of the 50, 10-number speed dial lists for use at this station.
Enter: SDC XX—Makes the station a controller of list number XX (XX = 1 ~ 50).
SDU XX—Makes the station a user of list number XX.
(XX = 1 ~ 50).
NONE—No list assigned.

WTA (Warning Tone Allowed?)—Defines an interruption-protected station. An "N" response will prevent warning tones from being applied to the station.
Enter: Y or N.

CFT (Call Forward to Trunk)—Permits calls to this station to be forwarded over a trunk to an outside directory number (maximum: 16 digits).
Enter: Y or N.

TOL (Toll Restriction Class)—Assigns one of the ten Toll Restriction classes to the station. Classes 0 ~ 7 are defined in the Toll Restriction Data Block (**DTOL Program**). Class 8 is simple toll restriction; restricting either 0 or 1 as the first digit. NONE defines the station as unrestricted.
Enter: 0 ~ 8 or NONE.

MWL (Message Waiting Lamp)—Defines a station that is equipped with a Message Waiting Lamp.
Enter: Y or N.

03.10 Class of Service Data Block (Table J)

The Class of Service Data Block (**DCOS Program**) defines the 16 Classes of Service that are available in the system. All services that are controlled by the COS are allowed to all stations unless they are restricted in this Data Block.

The **DCOS Program** assigns a number (0 ~ 15) to each group of restrictions to be used. The number defined here is then entered in response to the COS prompt in the **DSTT**, **DEKT**, and **DTGP Programs**. Any numbers that are not entered or are otherwise defined will have no COS restrictions. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. The only response possible is CHG.

COS (Class of Service)—Defines the COS number (0 ~ 15) and the restrictions to be associated with it. The possible restrictions are listed in Table J-1.
Enter: COS number, followed by the restric-

tion(s), in the following format: 3 T00 OVR ACO.

NOTES:

1. *In this example, COS 3 will not allow direct access to Trunk Group 00, the Override feature, or the Attendant Control Override feature.*
2. *If Lodging/Health Care features are to be allowed in the COS, the code HRM must be entered. The result of this entry is the opposite of all other COS entries, since it allows, rather than denies feature operation.*

COS—Repeat for all COS entries.

03.11 Toll Restriction Data Block (Table K)

The Toll Restriction Data Block (**DTOL Program**) defines the office codes and area codes to be allowed or denied by the Toll Restriction feature.

There are eight classes of Toll Restriction for defining a station's outward dialing privileges. The privileges of each station may be tailored to meet the customer's needs. Each class includes specific restrictions, one area code table, and one office code table. For convenience, the tables may be defined as either allow or deny tables.

When specific office codes are to be allowed or denied within a specified area code, 32 area/office code tables are available as exceptions to the area code tables. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. The only response possible is CHG.

TYPE (Sub-program Type)—There are three sub-programs within the **DTOL Program**. Select one of the following three possible responses:

PAR (Miscellaneous Parameters Table—Table K-1)—Defines system operating parameters.

CLS (Restriction Class Table—Table K-2)—Defines each class of Toll Restriction.

AOC (Area/Office Code Exception Table—Table K-3)—Defines exceptions to the dialing allowances that are defined in the CLS area code table.

NOTE:
Each sub-program can be entered independently with one of the above responses to the TYPE prompt. Within each sub-program, the prompts are issued sequentially, as listed below:

The next prompt for PAR (Table K-1) will be:

HAC (Home Area Code)—Defines the area code in which the system is operating. Home area codes are also used to analyze a dialed number that does not contain an area code. Data that is entered here will appear in the Least Cost Routing Data Block (**DLC1 Program**, PAR table, HAC prompt).
Enter: Area Code N0/1X.

NOTE:
N = 2 ~ 9 0/1 = 0 or 1 X = 0 ~ 9.

ICC (Interchangeable Codes)—A "Y" informs the system that interchangeable codes are used. Interchangeable codes are office codes that have 0 or 1 as the second digit (N0/1X format). Area codes will be identified as the three digits following the DDD prefix. Office codes will be identified as the first three digits when a DDD prefix is not dialed (see DDP prompt).
Enter: Y or N.

SPCC1 (Specialized Common Carrier #1)—Informs the system of the DN that is to be used to access an SPCC (MCI, Sprint, etc.) or equal access carrier (10XXX). The system will recognize the DN and ignore it for Toll Restriction purposes. Data that is entered here will also appear in the **DMDR Program**.
Enter: NXXXXXX (SPCC Number) or
10XXX (Equal Access Number) or
NONE.

SPCC2 (Specialized Common Carrier #2)—Same as SPCC1, but for a second carrier.
Enter: NXXXXXX (SPCC Number) or
10XXX (Equal Access Number) or
NONE.

DDP (Direct Distance Dialing Prefix)—Defines the Direct Distance Dialing (DDD) prefix in the Numbering Plan Area (NPA). If the ICC response is "Y," then the dialed DDP will identify the interchangeable code as an area code. If

the ICC response is "N", then the dialed DDP will not be used to identify the area code.
Enter: 1, 2, or 3 digits or NONE.

NOTE:
If a DDD prefix is used in the NPA, it must be entered here even if Toll Restriction is not used.

AUTH1 (Authorization Code #1)—Indicates the number of digits in the authorization code to be used with SPCC1. These digits and the SPCC1 DN that is entered will be ignored for Toll Restriction purposes.
Enter: 1 ~ 12 or NONE.

NOTE:
When using equal access (10XXX) for SPCC1 or SPCC2, do not enter an authorization code.

AUTH2 (Authorization Code #2)—Same as AUTH1, but for SPCC2.
Enter: 1 ~ 12 or NONE.

NOTE:
The SPCC and AUTH entries will not appear in the SMDR output.

The next prompt for CLS (Table K-2) will be:

CN0 (Class Number)—Indicates the number of the Toll Restriction class that is being defined. This number is used in response to the TOL prompt in the **DEKT**, **DSTT**, and **DTGP Programs**.
Enter: 0 ~ 7 (Class Number) or NOUT.

NOTE:
Enter OUT after the class number (N) in order to remove that class from service.

OPR (Operator and Operator-Assisted Calls)—A "Y" response allows a station in this toll restriction class to make operator and operator-assisted calls.
Enter: Y or N.

INT (International Calls)—A "Y" response allows a station in this toll restriction class to make international calls (011, 01).
Enter: Y or N.

LDA (Long Distance Directory Assistance)—A "Y" response allows a station in this toll restriction class to call long distance directory assistance. Any area code + 555 + XXXX will be allowed.
Enter: Y or N.

ACT (Area Code Table Type)—Defines the Area Code Table of this toll restriction class as either an Allow (A) or a Deny (D) type table.
- An "A" entry will allow all area codes except those deleted below, in response to the ACD prompt.
- A "D" entry will deny all area codes except those added below, in response to the ACD prompt.

Enter: A or D.

ACD (Area Code Table)—Indicates the area codes that are to be allowed or denied for this toll restriction class. Area codes may be either added or deleted, as described above.
Enter: A N0/1X N0/1X etc. to add area codes.
. . . or . . .
D N0/1X N0/1X etc. to delete area codes.

NOTE:
N = 2 ~ 9 0/1 = 0 or 1 X = 0 ~ 9.

OCT (Office Code Table Type)—Defines the Office Code Table of this toll restriction class as either an Allow (A) or a Deny (D) type table. An "A" entry will allow all office codes within the Home Area Code (HAC), except those deleted in response to the OCD prompt. A "D" entry will deny all office codes within the Home Area Code, except those added in response to the OCD prompt.
Enter: A or D.

OCD (Office Code Table)—Indicates the office codes to be allowed or denied for this toll restriction class. Office codes may be added or deleted either as single 3-digit codes, or as a "range" covering up to ten sequential 3-digit office codes. Ranges are entered by using a 4-digit format; where the first two digits are common to all codes in this range; the third digit represents the starting point of the range (from) for the last digit of the office code; and the fourth digit represents the end point of the range (to) for the last digit of the office code. See ranges example.

Enter: A NXXX NXX NXXX etc. to add office codes.

. . . or . . .

D NXXX NXX NXX etc. to delete office codes.

NOTES:

1. *N = 2 ~ 9, X = 0 ~ 9.*
2. *Codes cannot be added and deleted in the same pass through the table. A separate pass is required for each step.*
3. *Following the OCD/ACD prompt, an "A" prompt will appear and any entered codes will be added. To delete, press the carriage return (CR) key. A "D" will appear and any entered codes will be deleted.*

The next prompt for AOC (Table K-3) will be:

TN0 (Table Number)—Selects one of 32 area/office code exception (AOC) tables.
Enter: 0 ~ 31 (Table Number).

RANGES EXAMPLE:	
4-digit Format	**Office Codes**
2209	220 ~ 229
2316	231 ~ 236
2478	247 ~ 248

ARC (Area Code)—Identifies the area code to which this AOC table is assigned. A maximum of eight AOC tables can be assigned to any area code. (the table numbers must be sequential).
Enter: Area Code N0/1X or NONE.

NOTE:
N = 2 ~ 9 0/1 = 0 or 1 X = 0 ~ 9.

CN0 (Class Number)—Defines the toll restriction class numbers (0 ~ 7) that are subject to this exception table. Any number of classes, up to maximum of eight, may be entered. If a toll restriction class table is allowed to dial an area code, then all office codes within that specified area code will be allowed, except those specifically added in response to the OFC prompt. If a toll restriction class table is not allowed to dial an area code, all office codes within that specified area code will not be allowed, except those specifically added in response to the OFC prompt.
Enter: Class Numbers 0 1 2 etc. or NONE.

OFC (Office Codes)—Indicates the office codes that are assigned to this area/office code exception table. Office codes may be added or deleted as single 3-digit codes or as a range covering up to ten sequential 3-digit office codes. Ranges are entered by using a 4-digit format; where the first two digits are common to all codes in this range; the third digit represents the starting point of the range (from) for the last digit of the office code; and the fourth digit represents the end point of the range (to) for the last digit of the office code. See RANGES example, CLS sub-program, OCD prompt.
Enter: A NXXX NXX NXXX etc. (to add office codes).

...or...

D NXXX NXX NXXX etc. (to delete office codes).

NOTES:

1) N = 2 ~ 9, X = 0 ~ 9.
2) Codes cannot be added and deleted in the same pass through the table. A separate pass is required for each step.
3) When entering office codes (OFC prompt), the system will prompt "A". Any entries made will be added. To delete office codes, press the carriage return (CR) key. A "D" will appear and any entries made will be deleted.

03.12 Speed Dial Data Block (Table L)

The Speed Dial Data Block (**DSDL Program**) contains all numbers stored on the 90-number Speed Dial-System list and the 50 10-number Speed Dial-Station lists.

The **DSDL Program** allows initial storage or changes to any speed dial list from the maintenance terminal. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Two responses are possible:
CHG—To alter an existing or to enter a new Data Block.
OUT—To delete an existing Data Block.

LNO (List Number)—The number of the list to be changed or deleted.
Enter: 00 (for System List) or
01 ~ 50 (for Station List).

NOTE:
If the OUT command was entered in response to REQ above, then no other data is required.

STR (Store Number)—This prompt requests the number to be stored.
Enter: Address code, space, and number in the following format:
Example: 1 9*NPANNXXXXX
2 9*NPANNXXXXX.

NOTE:
In these examples, 9 is a trunk access code. Therefore, a "" is entered to cause a 3-second pause for dial tone delay. The "*" is counted as one of the 16 allowable digits .*

03.13 Station Message Detail Recording Data Block (Table M)

The Station Message Detail Recording Data Block (**DMDR Program**) defines the account code length and type of calls to be recorded for each trunk group for the SMDR feature. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Three responses are possible:
NEW—To create a new Data Block.
CHG—To alter an existing Data Block.
OUT—To delete an existing Data Block.

ACL (Account Code Length)—Defines the length of the account code that is to be used or indicates that no account code.is to be used.
Enter: Number of digits to be used (1 ~ 12) or NONE.

SPCC1 (Specialized Common Carrier #1)—Informs the system of the DN that is used to access an SPCC (MCI, Sprint, etc.). The system will recognize the DN and enter a unique condition code in the SMDR output.
Enter: SPCC Number NXXXXXX or
Equal Access Number 10XXX or
NONE.

SPCC2 (Specialized Common Carrier #2)—Same as SPCC1, but for a second carrier.
Enter: SPCC Number NXXXXXX or
Equal Access Number 10XXX or
NONE.

NOTE:
Data that is entered here will also appear at the SPCC1 and SPCC2 entries in the DTOL Data Block. SPCC1 and SPCC2 entries will not appear in the SMDR output.

TGP (Trunk Group)—Defines the type of calls to be recorded by SMDR for a given trunk group.
Enter: XX YYY
(XXY = Trunk group number)
(YYY = INC—Incoming only
OGT—Outgoing only
IAO—Incoming and outgoing
TOL—Toll calls only
INT—Incoming-all Outgoing-toll only
NONE—No records).

Repeat for each trunk group that is used in the system.

NOTE:
*A call made by using an SPCC is **not** treated as a toll call for SMDR purposes.*

03.14 Attendant Data Block (Table N)

The Attendant Data Block (**DATT Program**) defines one or two attendant consoles in the system and selects the attendant options. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Three responses are possible:
NEW—To create a new Data Block.
CHG—To alter an existing Data Block.
OUT—To delete an existing Data Block.

ANO (Attendant Number)—Selects the console that is to be assigned.
Enter: 0 or 1.

POR (Port Number)—Selects the port that is to be occupied by the console.
Enter: L001 for Attendant Console #0.
L121 for Attendant Console #1.

LKO (Lockout Allowed?)—A "Y" response will enable the lockout feature, and will not allow the attendant to re-enter a held LPK button conference.
Enter: Y or N.

PAG (Page Button)—Assigns the console PAGE

button to access either the Expanded Internal Paging Group, one or all external paging zones, or the Expanded Internal Paging Group and all external paging zones. Options that are not assigned to the feature access button may still be accessed by dialing a paging access code.

Enter one of the following:

INT—Expnded Internal Group Paging.
EXT—External All Paging (zones 0 ~ 4).
N—External Paging to Zone N (0 ~ 4).
ALL—Expanded Internal Group Paging and External All Paging.
NONE—No Internal or External Paging Access.

PRI (Incoming Call Priority)—A "Y" response will direct all calls to the attendant console according to the priority defined by the PR1 ~ PR5 prompts. An "N" response will direct all calls to the attendant console on a first-in/first-out priority basis.

Enter: Y or N.

PR1 ~ 5 (Priority 1 ~ 5, Current)—A "Y" response to the PRI prompt will print the current priority tables.

PR1 (Priority 1 ~ 5, Set)—Defines the incoming call priority. The possible types of calls are: CO, FX, TIE, WAT, OPR, RCL, HLD, TIM, LN1, LN2, INT, SER (Business mode only).

Enter: NN or NNN (type of call).

03.15 DSS Console Data Block (Table O)

The DSS Console Data Block (**DDSS Program**) is used to assign a DSS console. A maximum of eight DSS consoles can be assigned. Each DSS console must be assigned to an electronic telephone and up to two consoles may be assigned to each electronic telephone. Each console has 60 programmable buttons, which may be programmed as either fixed or switched direct station select (DN) buttons or as feature access buttons. Any electronic telephone feature, except those requiring a speech path, can be programmed onto a DSS console button (see Table O-1). Data for this program is entered as follows:

REQ (Request)—Indicates that the program has loaded. Three responses are possible:

NEW—To create a new Data Block.
CHG—To alter an existing Data Block.
OUT—To delete an existing Data Block.

NOTE:
If OUT is entered, then only the port number (POR) needs to be entered below. No other entry is necessary.

NBR (Port Number)—Defines the number of the DSS console in the system. There is a maximum of eight consoles per system.

Enter: DSS Number (0 ~ 7).

POR (Port Number)—Identifies the hardware location of the DSS circuit that is to be defined (LNNX). The port number has two parts, which are each noted as follows:

1) NN designates the location of the PCB on which the DSS console circuit is installed (L00 ~ L29).
2) X designates the DSS console's associated circuit number (1, 2, 3, or 4) on the DDSU PCB.

Enter: Port Number of the DSS console (LNNX).

NOTE:
On PERCEPTION II systems, the DDSU card cannot be installed in either of the C00/C01 slots.

SPT (Station Port)—Designates the electronic telephone station that is to be connected to the DSS console.

Enter: Port Number of station (LNNX).

F/S (Fixed or Switched Operation)—Defines the operation of DSS button assignment on the console. Fixed assignment (F) means that each DSS button is permanently-associated with a single extension DN. Switched assignment (S) means that each button is variably-assigned and can be changed by a Hundreds Group button. For example, when a Hundreds Group button of 2 is pressed, switched DN buttons 00 ~ 09 become buttons 200 ~ 209. When a Hundreds Group button of 3 is pressed, these same buttons become buttons 300 ~ 309. When an electronic telephone has two associated DSS consoles, one may be assigned as switched and one may be assigned as fixed. However, there can be no mixture of switched/fixed functions on the same console.

Enter: F or S.

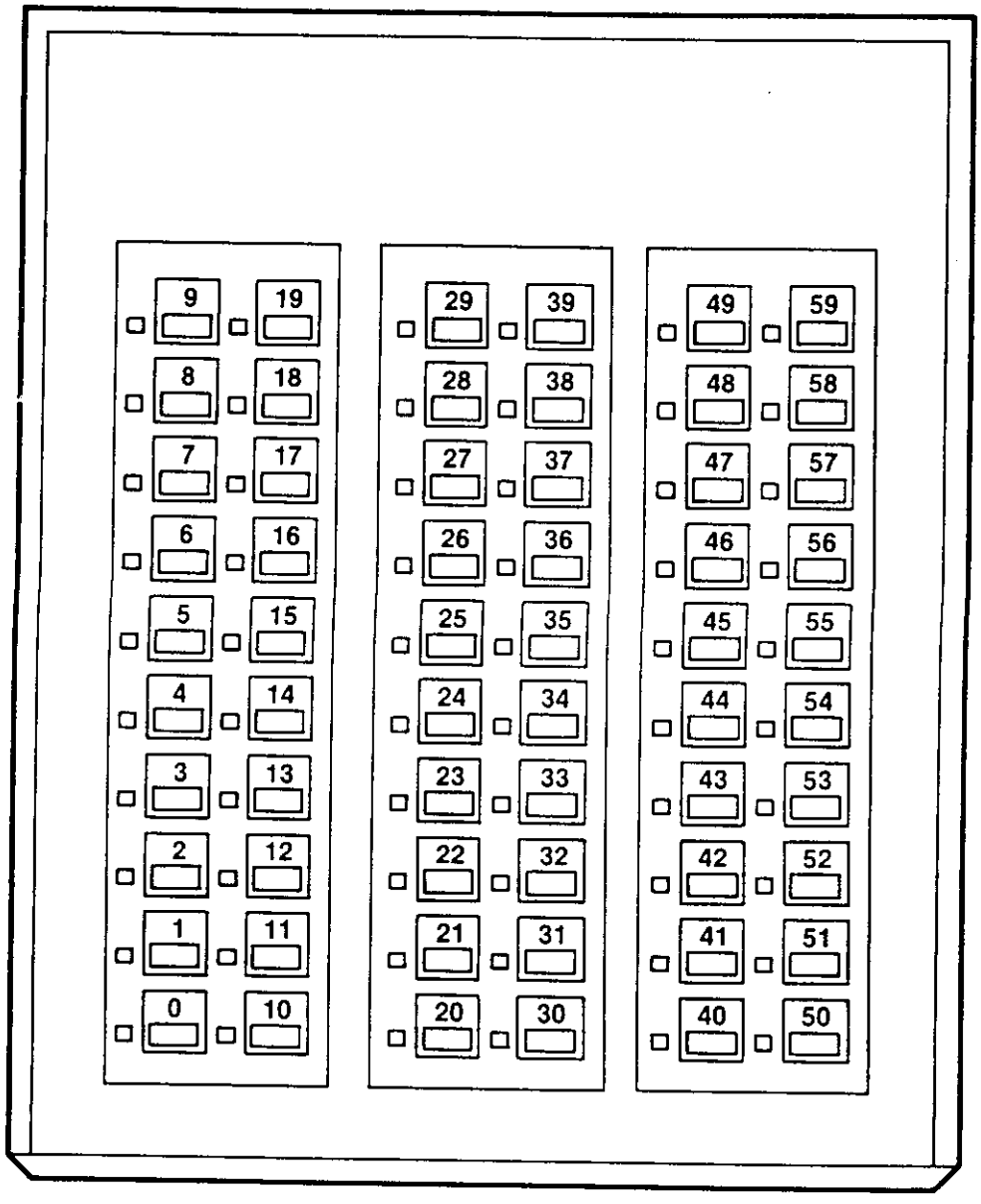


FIGURE 1—DSS CONSOLE BUTTON NUMERICAL ARRANGEMENT

NOTE:
This prompt will only appear when NEW is entered in response to REQ. To change a programmed DSS console from Fixed/ Switched, the console must be deleted and then reprogrammed.

KEY (DSS Button)—Defines the various buttons on the DSS console. Each button is assigned either to a specific DN (for fixed operation), to a two-digit number (for switched operation), or to a specific feature. (See Figure 1 for the numerical arrangement of DSS console buttons.) When assigning or deleting data from DSS console buttons, data can be assigned/deleted in groups. Additionally, data that is assigned to one DSS console may be duplicated either entirely or partially (either specific buttons or columns of buttons) onto another DSS console by utilizing range programming functions. To program a DSS console button, perform one of the following operations:

1) Assign a DN: For a fixed button, enter the number of the button being defined (m = 0 ~ 59 [see Figure 1]), followed by a space, *, and the extension DN (N, NN, NNN, or NNNN). For a switched button, enter the number of the button being defined, a space, #, and the last two digits of the extension DN (NN). The digit preceding these lower digits will be determined by Hundreds Group buttons.
   Enter: m *N (NN, NNN, or NNNN) (for Fixed operation).
   m #NN (for Switched operation).

NOTE:
There cannot be a mixture of switched/fixed buttons on the same console.

2) Assign a Feature: Enter the number of the button being defined, followed by a space and the mnemonic of the feature. All electronic telephone features are available to DSS console arrangement, except those requiring a speech path (DIU, DRS, SCR, SCN, PVR, and PVN). Features that are available for DSS assignment are listed in Table O-1.
   Enter: m Feature.
   (m = button number [0 ~ 59]).

3) Range Assignment: This entry allows a consecutive range of directory numbers to be simultaneously assigned to DSS buttons. Ranges are entered by using a format which indicates the starting point (L) and the ending point (M) of the button range (L must be less than M), and the starting extension DN to be programmed (XX, XXX, XXXX [2 ~ 4 digit DNs]). The programmed extensions will include the starting extension number that is entered, and each subsequent extension within the indicated range. The operation of these assignments will depend on whether the DSS is programmed as fixed or as switched. For example, in switched DN assignment, a data input of 10 19 30 will assign DNs 30 ~ 39 to DSS buttons 10 ~ 19. In fixed DN assignment, a data input of 00 59 200 will assign DNs 200 ~ 259 to DSS buttons 0 ~ 59.
   Enter: AUT L M XX or XXX.
4) Duplicate a Complete DSS Button Arrangement: This option will duplicate the entire DSS button arrangement of on DSS console onto another DSS.
   Enter: DUP M.
   (M = The number [0 ~ 7] of the console that is to be duplicated entirely.)
5) Duplicate a Column of DSS Buttons: This option will duplicate a complete column of assigned DSS buttons (onto another DSS console (Y). Console button columns are numbered 0 ~ 5, from left to right on the DSS console.
   Enter: DUP MX Y.
   (M = The number of the console being copied from.
   X = The column of the DSS console being copied from.
   Y = The column of the DSS console being copied to.)
6) Duplicate Selected Buttons: This option will duplicate a series of buttons (YY thru ZZ) from one console (M) to the console being programmed.
   Enter: DUP MXX YY ZZ.
   (M = Number of the console being copied from.

XX = The first button on the console that is to be programmed.
YY = Starting range button of the console being copied.
ZZ = Ending range button of the console being copied.)

03.16 Traffic Measurement Data Block (Table P)

The Traffic Measurement Data Block (**DTRF Program**) defines the parameters that control the Traffic Measurement feature. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Four responses are possible:

STT (Start Command)—Starts the record keeping and reporting activity when SCH = SMD. (Must be entered after each RPT request.)

RPT (Report Command)—A report will follow (see Table P-1 for format), if record keeping has been started with STT command.

OUT (Out Command)—Deletes record keeping and reports.

CHG (Change Command)—Establishes or alters the reporting parameters.

The next prompt for CHG input will be:

SYST.DATE MMDDYY (System Date)—Reports the date that is currently in memory and gives an opportunity for a change.

Enter: New date: MMDDYY or CR (no change).

DOW (Day of Week)—Identifies the current day of the week for the system clock.

Enter: SUN, MON, TUE, WED, THU, FRI, or SAT.

SYST.TIME HHMMSS (System Time)—Reports the time that is currently in memory and gives an opportunity for a change.

Enter: New time: HHMMSS (24 hour clock) or CR (no change).

SCHXXX (Schedule of Reports)—Defines the schedule for reports; outputs the current data; and gives an opportunity for a change.

Enter: CMD—Report will occur only when the RPT command is given in response to REQ above.
30—Report will occur every 30 minutes, beginning at the time listed as STR (next prompt).
60—Same as above, but at 60-minute intervals.
NONE—No report CR.

NOTE:
Reports will continually be output at the specified time intervals unless TTY is disabled (OFF). Record-keeping will continue, but only the last time interval will be saved and reported when the TTY is enabled.

STR.DATE MMDDYY (Start Date)—Defines the start date for record-keeping and reporting, outputs current data, and gives an opportunity for a change.

Enter: Start Date: MMDDYY or CR (no change).

STR.TIME HHMMSS (Start Time)—Defines the start time for record-keeping and reporting, outputs current data, and gives an opportunity for a change.

Enter: Start Time: HHMMSS or CR (no change).

RPT (Report Parameters):

SYST	(System Data)
ATT0	(Attendant 0)
ATT1	(Attendant 1)
TGP00	(Trunk Group 00)
~	~
TGP15	(Trunk Group 15).

Selects those parameters that are to be recorded (see Table P-2). The current data (Y or N) is output for each parameter and an opportunity is given for a change.

Enter: Y or N (followed by a CR for each parameter).

03.17 DTMF Receiver Data Block (Table Q)

The DTMF Receiver Data Block (**DRCV Program**) identifies which DTMF receivers are to be equipped in the system.

The system accommodates one DRCU/FRCU PCB, which can be equipped with four or six single-chip DTMF receivers. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Two responses are possible:
NEW—For installation of DTMF receiver.
OUT—To remove DTMF receiver.

POR (Port Number)—Selects the port that is to be occupied by the DTMF receiver. The port number has two parts:
1) FRCU PCB location (R00/R01).
2) Circuit number on the FRCU PCB (1 ~ 4/1 ~ 8)*.
Enter: Port number to be used (R001 ~ R004/R001 ~ R008)).

*Circuits are numbered 1 ~ 8 per cabinet: R001 ~ R008 in the basic cabinet and R011 ~ R018 in the expansion cabinet.

03.18 Trunk Group Data Block (Table R)

The Trunk Group Data Block (**DTGP Program**) defines the parameters for each of the 16 possible trunk groups in the system. A Data Block must be completed for each trunk group in the system. Not all of the prompts listed below are used for all trunk types. The response given to the TKT (trunk type) prompt will determine which prompts will be given. Table R-1 shows the prompts that can be expected for each trunk type. (Use the proper system record form for the type of trunk being defined). Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Three responses are possible:
NEW—To create a new trunk group.
CHG—To alter an existing Data Block.
OUT—To delete an existing Data Block.

NOTES:
1. *Before the OUT command will be accepted, all trunks must be deleted from the group by using the* ***DTRK Program.***
2. *If OUT is entered, only the Trunk Group Number (GRP) needs to be entered. No other entries are necessary.*

GRP (Trunk Group Number)—Identifies the trunk group number. Sixteen groups are available (0 ~ 15). If private lines are to be used, they all occupy one trunk group called PVL. The PVL group replaces group 15.
Enter: 0 ~ 15 (Trunk Group Number) or PVL.

TEN (Tenant Number)—Identifies the tenant to which the trunk group belongs.
Enter: 0 or 1 (Tenant Number).

TKT (Trunk Type)—Identifies the type of trunk to be used in the group.

NOTE:
It is not possible to enter a change (CHG) for Trunk Type (TKT). The Data Block must be deleted (OUT) and a new (NEW) Data Block must be entered.

Enter: COT—Local CO trunk
FEX—Foreign Exchange line
DID—Direct Inward Dialing trunk
CSA—CCSA line
TIE—TIE trunk
WAT—WATS line.

IAO (Incoming/Outgoing)—Determines whether the trunks will give 2-way or 1-way service.
Enter: ICT—Incoming only
OGT—Outgoing only
IAO—2-way.

STP (Advance Step)—Identifies the next trunk group in a route advance sequence. If a static user attempts to access a trunk in this group and all trunks are busy, then a trunk from the group identified in response to STP will be selected.
Enter: 0 ~ 15 (Next Trunk Group Number) or NONE.

COD (Access Code)—Defines the access code for the trunk group. Access codes can consist of 1, 2, or 3 digits as long as there is no conflict in the system. For example: 3 cannot be used if 30 or 300 is used as an access code or DN.
Enter: 1 ~ 3 digits.

COS (Class of Service)—Defines the system access level of each inward dialing trunk (TIE, DID, or CCSA trunk). Use one of the 16 Classes of Service that has been defined via the **DCOS Program**.
Enter: 0 ~ 15 (COS number).

TRN (Transmission)—Defines the transmission arrangement that is required for the trunks in the group. The entry made here will determine the type of PAD switching that is performed on trunk connections (see Table R-2 for loss plan).
Enter: NTC—Non-transmission Compensated (2-wire circuit with less than 2dB loss).

TRC—Transmission Compensated (4-wire circuit or 2-wire circuit with greater than 2dB loss).
VNL—Via Net Loss (4-wire VNL circuit).

STR (Start Arrangement)—Defines the start arrangement that is to be used by the trunks in the group.
Enter: IMM—Immediate start
WNK—Wink start
DDL—Delay dial.

WTA (Warning Tone Allowed?)—Defines an interruption-protected trunk group (e.g., a data line). An "N" response will prevent warning tones from being applied to this trunk group.
Enter: Y or N.

OAB (Outgoing Absorb Digits)—Identifies the digits which are to be ignored by the Toll Restriction program. These digits will be outpulsed, but will not be counted as the first digit.
Enter: Digits to be absorbed (for example: 1; maximum: 2 digits) or NONE.

IAB (Incoming Absorb Digits)—Defines the number of digits that are to be stripped from an incoming dialed number from a TIE, CCSA, or DID trunk.
Enter: Number of digits (maximum: 2) or NONE.

TRN1 (Translated Number 1)—Defines the absorbed digit (IAB) that is to be translated from one digit to another digit or digits (see example following TRN2).
Enter: X # Y or X # YY or NONE.
(X = The digit that is to be translated. When two digits are absorbed, only the second digit will be translated.
Y or YY = The translated digit (Y) or digits (YY) that will be inserted.)

TRN2 (Translated Number 2)—Defines the digit that is to be translated from one digit to another digit or digits. (The same as TRN1; used when over 100 digits are to be translated—see examples).
Enter: X # Y or X # YY or NONE.

EXAMPLE A: IAB = 1

TRN1 = 9#2
TRN2 = 8#3

Digits Received from CO	DN to Ring
900 ~ 999	200 ~ 299
800 ~ 819	300 ~ 319

EXAMPLE B: IAB = 2

TRN1 = 9#21
TRN2 = 8#32

Digits Received from CO	DN to Ring
5900 ~ 5999	200 ~ 299
5800 ~ 5819	300 ~ 319

EXAMPLE C: IAB = 2

TRN1 = 9#21
TRN2 = 8#32

Digits Received from CO	DN to Ring
590 ~ 599	210 ~ 219
580 ~ 589	320 ~ 329

TOL (Toll Restriction Class)—Assigns one of the 10 classes of Toll Restriction to each outgoing TIE, CCSA, and DID trunk. Classes 0 ~ 7 are defined in the Toll Restriction Data Block (**DTOL Program**). Class 8 is simple Toll Restriction and restricts when either 0 or 1 is dialed as the first digit. NONE defines the trunk as unrestricted.
Enter: 0 ~ 8 or NONE.

FLT (Flash-Hook Timing)—Defines the length of time of a flash-hook (line open) while connected to a CO trunk. On an electronic telephone, the flash-hook will occur whenever the FLH button is pressed.
Enter: 1 = 500 milliseconds
2 = 1 second.

03.19 Trunk Data Block (Table S)

The Trunk Data Block (**DTRK Program**) defines the parameters for each of the trunk circuits in the system. A separate Data Block must be completed for each trunk circuit in the system.

The trunk type (TKT) defined for the group (in the **DTPG Program**) will determine which entries must be made. Not all prompts are meaningful for all trunk types. Table S-1 shows the prompts to which responses should be made. (Use the proper system record form for the type of trunk being defined.) Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Three responses are possible:

NEW—To create a new Data Block.
CHG—To alter an existing Data Block.
OUT—To delete an existing Data Block.

NOTE:
If OUT is entered, then only the port (POR) needs be specified. No other data entries are necessary.

POR (Port Number)—Identifies the hardware location of the trunk circuit that is to be defined. The port number has two parts:
1) T00 ~ T15 (Trunk PCB location).
2) 1 ~ 4 (Circuit number on the trunk PCB).
For example: The port number of the third circuit on the PCB in position T02 is T023.
Enter: TNNX (Port number of trunk).

NOTE:
NN = Trunk PCB Number
X = Circuit Number.

GMN (Group/Member Number)—The Group Member Number identifies the trunk position in the system. The GMN is composed of two parts:
1) Group Number (defined in the **DTGP Program**): Identifies the trunk as being a member of that group (00 ~ 15).
2) Member Number: A unique number (00 ~ 31) is given to each trunk in a group. The numerical order of the number will determine the order in which the trunks will be selected upon dial access. The highest member number will be selected first.
Enter: GGMM (Group and Member Number).

NOTES:
1. *GMN cannot be altered by CHG procedure. The GMN prompt will be followed by the existing GMN.*
2. *To change the GMN, the Data Block must be deleted (OUT) and a new Data Block (NEW) must be entered.*

TDN (Trunk Directory Number)—For private lines only (Trunk Group 15—PVL). TDN defines a directory number that will be used to assign private lines to a station.
Enter: 3-digit number.

RAD (Remote Access Day)—A "Y" response enables the Remote Access to Services trunk for both day and night service. An "N" response enables Remote Access only during night service.
Enter: Y or N.

NIT (Night Number)—Assigns the night station for the trunk. Incoming calls on the trunk will ring the night station whenever the system is in night service. If NONE is entered, then the call will activate the UNA signal. This parameter can also be entered and changed by the attendant console.
Enter: Night station number (maximum: 4-digits) or NONE (UNA).

NOTE:
*To assign a ground start trunk to Remote Access to Services, enter the same DN that was used for the REM entry in the System Data Block (**DSYS Program**) for NIT (Night Number).*

DAY (Day Number)—Assigns the day station for the trunk. Incoming calls on the trunk will ring the day station when the system is not in night service. If NONE is entered, then the call will activate the UNA signal. This parameter can also be entered and changed by the attendant console.
Enter: Day station number (maximum: 4-digits), ATT0 or ATT1 (attendant console 1 or 2), or NONE.

SIG (Signaling)—Identifies the type of signaling to be used on the trunk circuit:
Enter: GRD—Ground Start
LOP—Loop Start
EAM—E & M
LDR—Loop Dial Repeating
OAD—Outgoing Automatic, Incoming Dial.

DIS (Disconnect Supervision)—Informs the system whether or not supervision can be expected when the distant end disconnects (controls trunk-to-trunk connections for ground start trunks).
Enter: Y or N.

CTL (Control of Disconnect)—Defines the release control of TIE, DID, or CCSA connection.
Enter: OPC (Originating Party Control)—The

circuit will not be released until the trunk that originated the call disconnects.
FPR (First Party Release)—The trunk at either end of the connection can release.

DIN (Incoming Dialing)—Informs the system of what type of dialing to expect on an incoming call. (For TIE, CCSA, and DID trunks only.)
Enter: DIP—Dial Pulse
TON—DTMF.

DOT (Outgoing Dialing)—Informs the system of what type of dialing to expect on an outgoing call.
Enter: P10 = Rotary Dial 10 PPS
P20 = Rotary Dial 20 PPS
TON = DTMF.

OTR (Outgoing Call Restriction for Private Lines)—This prompt will only appear if the trunk is a member of the private line trunk group (Group 15). The OTR prompt is used to exclude selected stations from making outgoing calls over the private line. Consequently, these lines can be used only for answering incoming calls. If a private line appears on more than one station, then each station can be individually restricted from using the line for outgoing calls by entering the port number of each DN that is to be restricted (LNNX). Following the OTR prompt, the system will prompt "D" and any entries made will be deleted. To add entries, press the carriage return (CR) key. An "A" prompt will appear and any entries made will be added.
Enter: D LNNX LNNX—To delete an extension port.
A LNNX LNNX—To add an extension port.

ANS (Answer Supervision for TIE, CCSA, and DID Trunks Only)—Determines whether or not answer supervision will be provided to the distant trunk on incoming calls. If "N" is entered, then the system will not return answer supervision.
Enter: Y or N.

TRCL (Destination for Transfer Recall Termination)—Assigns the destination where a transfer recall terminates. When a transfer recall is not answered at the originally-transferring station, the call can be routed to either an attendant, the system UNA device, or an alternative DN.
Enter: ATT0, ATT1—Attendant Console
UNA—System UNA device
DN—Alternative station (either an extension user DN or a master hunt DN).
NONE—No termination destination (the call will continue to ring at the originally-transferring station).

03.20 Least Cost Routing Data Block (Tables T ~ T5)

The Least Cost Routing Data Block (**DLCR Program**) defines the proper outgoing trunk, based on the outside number that is dialed. LCR stores and examines the number dialed, checking the area and/or office codes. Based on this examination and the time of day, LCR chooses the proper trunk from a programmed route table. The LCR Data Block has been divided between two utility programs (**DLC1** and **DLC2**).

- **DLC1** defines the miscellaneous system parameters, the 15 area code tables, and the 16 area/office tables which further modify the area code tables.
- **DLC2** defines the 15 route tables for each of six routes, and includes both three schedules for time of day selection and 12 modify digits tables. Each route table's data (**DLC1** or **DLC2**) is entered as follows:

REQ (Request)—Indicates that the program has loaded. The only response possible is CHG.

TYPE (Sub-program Type)—There are three sub-programs within the **DLC1 Program** and two within the **DLC2 Program**. The possible responses are as follows:

DLC1:
PAR (Miscellaneous Parameters Table)—Identifies the system operating parameters.
ACT (Area Code Table)—Defines each area code table.
AOC (Area/Office Code Table)—Modifies an area code table.

DLC2:
RTB (Route Table)—Defines the routes and selection sequence.

MDT (Modify Digits Table)—Defines the digit modification that is to be applied to a dialed number.

NOTE:
Each sub-program can be entered independently with one of the above responses to the TYPE prompt. Within each sub-program, the prompts are issued sequentially, as listed below:

The next prompt for PAR will be:

ICC (Interchangeable Codes)—A "Y" informs the system that interchangeable codes are used. These are office codes that have 0 or 1 as the second digit (N0/1X format). Area codes will be identified as the three digits following the DDD prefix. Office codes will be identified as the first three digits when a DDD prefix is not dialed (see **DTOL Program**, PAR table, DDP prompt).
Enter: Y or N.

OTO (Operator Call Timeout)—Defines the time, in seconds, that the system will wait for additional digits to be dialed after 0. is pressed.
Enter: Time in seconds (for example: 10).

RTD1 (Return Dial Tone)—A "Y" response returns system dial tone after the LCR access code has been dialed. An "N" response will return silence.
Enter: Y or N.

WTA (Warning Tone Allowed?)—A "Y" response will cause the system to give a 3-second 440 Hz warning tone when the last choice route is being selected.
Enter: Y or N.

NOTES:
1. *If WTA is set to "N", then LCR will not advance to the most expensive route, more than 15 times. To correct this problem, set the WTA prompt to "Y."*
2. *End-to-end signaling is only possible if the WTA prompt is "N."*

HAC (Home Area Code)—Defines the area code in which the system is operating. A home area code is also used to analyze dialed numbers which do not contain an area code. Data that is entered here will appear in the Toll Restriction Data Block (**DTOL Program**, PAR table, HAC prompt).
Enter: N0/1X (Area Code).

NOTE:
N = 2 ~ 9 0/1 = 0 or 1 X = 0 ~ 9.

TFC (Toll-Free Calls)—A "Y" response will route toll-free calls (area code = 800) to the route table defined in the Local Call Route (LCR) prompt. An "N" response informs the system to treat area code 800 as a normal area code.
Enter: Y or N.

LCR (Local Call Route)—Defines the route to be selected for local calls (undefined numbers), area code 800 calls (TFC prompt), and Service Code calls (SVC prompt).
Enter: Route Table (1 ~ 15).

SVC (Service Code Table)—Defines the local service codes (411, 611, 911, etc.) that are to be routed via the Route Table defined by the LCR prompt (maximum: 10 3-digit codes).
Enter: A NXX NXX etc. (to add service codes).
and/or . . .
D NXX NXX etc. (to delete service codes).

DAC (Directory Assistance Calls Allowed)—A "Y" response will route long distance directory assistance calls (NPA + 555 + XXXX) to the route table defined in the long distance information route (LDI prompt). An "N" response will not allow long distance directory assistance calls using Least Cost Routing.
Enter: Y or N.

LDI (Long Distance Information Route)—Defines the route table that is to be selected for long distance directory assistance calls (NPA + 555 + XXXX) if permitted by DAC prompt.
Enter: Route Table (1 ~ 15).

DDP (Direct Distance Dialing Prefix)—Defines the Direct Distance Dialing (DDD) Prefix in the Numbering Plan Area (NPA). If ICC is "Y," then the dialed DDP will identify the interchangeable code as an area code. If ICC is "N," then the dialed DDP will be absorbed.
Enter: 1, 2, or 3 digits or NONE.

The next prompt for ACT will be:

RNO (Route Table Number)—Identifies the number of the Route Table (RTB sub-program

used in the **DLC2 Program**) to which this Area Code Table is assigned. Entering OUT will clear all area codes from Route Table Numbers (RNO 1 ~ 14) and will assign all area codes to RNO 15. Entering a Route Table Number 1 ~ 14, followed by OUT will clear only RNO XX and will assign the area codes to RNO 15.
Enter: 1 ~ 15 or
OUT or
1 ~ 14 OUT.

ACA (Area Codes-Add)—Indicates the area codes that are to be added to this RNO. A maximum of 160 area codes are permitted. Initially, RNO 15 contains all possible 160 area codes, but as codes are added to RNO 1 ~ 14, they are automatically deleted from RNO 15.
Enter: N0/1X N0/1X etc.

NOTE:
N = 2 ~ 9 0/1 = 0 or 1 X = 0 ~ 9.

ACD (Area Codes-Delete)—Indicates the area codes that are to be deleted from this RNO. As codes are deleted from RNO 1 ~ 14, they are automatically added to RNO 15. Codes can only be deleted from RNO 15 by adding them to another RNO (1 ~ 14).
Enter: N0/1X N0/1X etc.

The next prompt for AOC will be:

TNO (Table Number)—Selects one of the 16 area/office code modification (AOC) tables that are to be used.
Enter: 01 ~ 16.

ARC (Area Code)—Identifies the area code to which this AOC table is assigned.
Enter: N0/1X or NONE.

RNO (Route Table Number)—Specifies the Route Table Number that is to be followed for the calls meeting the area/office code criteria of this AOC table.
Enter: 1 ~ 15.

OCA (Office Codes-Add)—Indicates the office codes that are assigned to the AOC modification table. Office codes may be added either as single 3-digit codes or as a "range," covering up to 10 sequential 3-digit codes. Ranges are entered by using a 4-digit format, where the first two digits are common to all codes in this range: the third digit represents the starting (from) point of the range; and the fourth digit represents the end (to) point of the range for the last office code digit. See RANGES example.
Enter: NXXX NXX NXXXX etc.

OCD (Office Codes-Delete)—Indicates the office codes that are to be deleted from the AOC modification table. Office codes may be deleted by using either single 3-digit codes or a range of codes (entered in the same manner as a range for adding codes). See OCA prompt and RANGES example.
Enter: NXXX NXX NXXX etc.

RANGES EXAMPLE:	
4-digit Format	**Office Codes**
2209	220 ~ 229
2316	231 ~ 236
2478	247 ~ 248

NOTE:
Codes cannot be added and deleted in the same pass through the table. A separate pass is required for each step.

The next prompt for RTB will be:

RNO (Route Table Number)—Identifies the number of the Route Table to which an Area Code Table (ACT) and/or an AOC Table is assigned. Entering OUT will clear all Route Tables. Entering RNO 1 ~ 15, followed by OUT will clear RNO XX.
Enter: 1 ~ 15 or
OUT or
1 ~ 15 OUT.

RT1 ~ 6 (Route Definition)—Defines the Trunk Group for each route in this Route Table. If a Trunk Group is entered at this time, then a Modify Digits Table must also be entered.
Enter: XX MM or NONE.
(XX = Trunk Group Number 0 ~ 15)
(MM = Modify Digits Table Number 1 ~ 12).

NOTE:
The existing Route Schedule data will be automatically printed after the response to RT6 prompt is entered.

SCHA (Route Schedule A)—Defines the time-of-

day interval for the first of three possible routing schedules. Start and end times are entered by using a 24-hour clock format.
Enter: Start Time End Time
(for example: 0900 1700).

LC3 (Class 3 Routing Priority)—Defines the routing choice sequence that is accessible to station classes LC3, LC2, and LC1 during Schedule A time interval. Enter the routes (RT1 ~ 6) in the order of selection priority.
Enter: Routing Choice (for example: RT6 RT1 etc.)
. . . or . . .
NONE (this entry for LC3 will also change LC2 & LC1 to NONE for this schedule).

LC2 (Class 2 Routing Priority)—Defines the routing choice sequence that is accessible to station classes LC2 and LC1 during Schedule A time interval. Enter the routes (RT1 ~ 6) in the order of selection priority.
Enter: Routing Choice (for example: RT5 RT2 etc.)
. . . or . . .
NONE.

LC1 (Class 1 Routing Priority)—Defines the routing choice sequence that is accessible to station class LC1 during Schedule A time interval. Enter the routes (RT1 ~ 6) in the order of selection priority.
Enter: Routing Choice (for example: RT4 RT3 etc.)
. . . or . . .
NONE.

NOTE:
The DCOS Data Block is used to define station class of service for Least Cost Routing (LCR) by using three classes of service for LCR. The access permitted to each LCR Class of Service is as follows:
LC1—Allows routes defined for LC1, LC2, and LC3.
LC2—Allows routes defined for LC2 and LC3.
LC3—Allows routes defined for LC3 only.

SCHB (Route Schedule B)—Defines the time-of-day interval for the second of three possible routing schedules. The start time, which is the end time of Schedule A, will be automatically printed (24-hour clock format).
Enter: End Time (for example: 2300).

LC3 (Class 3 Routing Priority)—Same as LC3 in Schedule A, but for Schedule B time interval.
Enter: Routing Choice (for example: RT5 RT4 etc.)
. . . or . . .
NONE (this entry for LC3 will also cause LC2 & LC1 to be longer for this schedule).

LC2 (Class 2 Routing Priority)—Same as LC2 in Schedule A, but for Schedule B time interval.
Enter: Routing Choice (for example: RT3 RT2 etc.)
. . . or . . .
NONE.

LC1 (Class 1 Routing Priority)—Same as LC1 in Schedule A, but for Schedule B time interval.
Enter: Routing Choice (for example: RT1 RT6 etc.)
. . . or . . .
NONE.

SCHC (Route Schedule C)—Defines the time-of-day interval for the last of three possible routing schedules. The start time, which is the end time of Schedule B, and the end time, which is the start time of Schedule A, will be automatically printed (24-hour clock format).
No entry is necessary.

LC3 (Class 3 Routing Priority)—Same as LC3 in Schedule A and B, but for Schedule C time interval.
Enter: Routing Choice (for example: RT1 RT6 etc.)
. . . or . . .
NONE (this entry for LC3 will also cause LC2 and LC1 to be NONE for this schedule).

LC2 (Class 2 Routing Priority)—Same as LC2 in Schedules A and B, but for Schedule C time interval.
Enter: Routing Choice (for example: RT2 RT3 etc.)
. . . or . . .
NONE.

LC1 (Class 1 Routing Priority)—Same as LC1 in Schedules A and B, but for Schedule C time interval.
Enter: Routing Choice (for example: RT4 RT5 etc.)
. . . or . . .
NONE.

The next prompt for MDT will be:

TNO (Modify Digits Table Number)—Specifies the Modify Digits Table Number assigned to the defined routes in the Route Tables (RT1 ~ RT6). The same Modify Digits Table may be used for more than one route.
Enter: Table Number (1 ~ 12).

DLT (Digits to be Deleted)—Defines the number of digits that are to be deleted from the start of a dialed number. The system will remove these digits before prefixing any digits defined by the digits to be added (ADD) prompt. Maximum: 10 digits.
Enter: Number of digits to be deleted or NONE.

ADD (Digits to be Added)—Defines the actual digits to be prefixed to a dialed number. The system will prefix these digits after removing the number of digits defined by the digits to be deleted (DLT) prompt. Maximum: 20 digits.
Enter: Actual digits to be prefixed or NONE.

NOTE:
*The following codes are used in response to the ADD prompt to insert pauses: *1 = 1-second pause, *2 = 2-second pause, *3 = 6-second pause (*X = 1 digit).*

03.21 Lodging/Health Care Features Data Block (Table U)

The Lodging/Health Care Features Data Block (**DHMF Program**) defines the number of miscellaneous parameters that pertain to the Lodging/Health Care features. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Three responses are possible:
NEW—To create a new Data Block.
CHG—To alter an existing Data Block.
OUT—To delete an existing Data Block.

NOTE:
If OUT is entered, all entries will be set to "NONE".

AWU SRC (Automatic Wake-up Source)—Identifies the source that the called party will hear after the wake-up call has been answered.
Enter: MOH—Music-on-Hold.
VCE—Preprogrammed digitized voice announcement.
NONE—Silence.

AWU POR (Automatic Wake-up)—Identifies the output port that the system will use to send automatic wake-up verification information.
Enter: SMDR, TTY, or NONE.

MW POR (Message Waiting)—Identifies the output port that the system will use to send message waiting verification information.
Enter: SMDR, TTY, or NONE.

MR POR (Message Registration)—Identifies the output port that the system will use to send message registration information.
Enter: SMDR, TTY, or NONE.

RMS (Room Status Audit)—Identifies the output port that the system will use to send Room Status Audit information.
Enter: SMDR, TTY, or NONE.

RM PFX (Room Number Prefix)—Identifies the prefix that is to be used in a 4-digit number plan.
Enter: 1 digit or NONE.

03.22 DDIU Data Block (Table V)

The DDIU Data Block (**DDIU Program**) defines all parameters of a given Digital Data Interface Unit. A DDIU Data Block must be completed for each DDIU in the system. Not all of the prompts listed below are used for both DDIUs (-MA or -MAT). The response given to the TYP (DDIU type) prompt will determine which prompts will be given. Refer to the notes found in Table V to determine which prompts can be expected for each DDIU type. Data is entered as follows:

REQ (Request)—Indicates that the program has loaded. Three responses are possible:
NEW—To create a new Data Block.
CHG—To alter an existing Data Block.
OUT—To delete an existing Data Block.

POR (Port Number)—Identifies the hardware location of the DDIU circuit that is to be defined. The port number has two parts:

1) DDCU or DMDU PCB location: L00 ~ L29 (NN).
2) Circuit number on that PCB: 1 ~ 8 (X) on the DDCU type or 1 ~ 4 (X) on the DMDU type.

Enter: Port number of DDIU (LNNX).

TYP (Type)—Identifies the type of hardware that is to be connected to this port.
Enter: DIU1 (DDIU-MA) or DIU2 (DDIU-MAT).

DN (Directory Number)—Assigns the directory number (data number) of the DDIU.
Enter: 1, 2, 3, or 4 digits.

HNT (Hunt Directory Number)—Defines the data station to which this DN hunts. (Used with the Hunting feature.)
Enter: XXXX (1 ~ 4 digits) for the next DN in the hunt group or NONE.

COS (Class of Service)—Assigns one of the 16 Classes of Service to the data station. (The Classes of Service are defined by the **DCOS Program.**)
Enter: COS Number (0 ~ 15).

GOD (Group of DDIUs)—Assigns the DDIU to one of the 16 possible DDIU groups. Dial access into a group can be denied by Class of Service.
Enter: 0 ~ 15.

TEN (Tenant Number)—Assigns the data station to one of the two possible tenants in the system.
Enter: 0 if tenant service is not selected in the System Data Block (TEN = N).
0 or 1 if tenant service is selected in the System Data Block (TEN = Y).

NOTE:
The TEN entry for a DDIU-MAT should be the same as the TEN entry for the electronic telephone to which it is assigned.

KEY (Button Assignment)—Assigns a DN or feature to one of the flexible buttons.
Enter:
1) The number of the button that is to be defined followed by a space bar. Buttons are numbered 0 ~ 9, starting from the bottom of the vertical buttonstrip. The three buttons located next to the dial pad (TRANSFER, HOLD, and RLS) have fixed assignments. The TRANSFER and HOLD buttons are for future use and are non-functionable.
2) Feature or DN assignments. The possible assignments are as follows:
Directory (Station) Number: (1, 2, or 3 digits):
SCR NNNN XXXX—Single Call Ring
- Incoming calls will audibly ring the DDIU.
- NNNN = Directory (station) Number.
- XXXX = Hunt number = Enter DN to which this DN will hunt.

SCN NNNN XXXX—Single Call No Ring
- Incoming calls will not audibly ring DDIU (LED flash only).
- NNNN = Directory (station) Number.
- XXXX = Hunt number = Enter DN to which this DN will hunt.

Features:
ACB—Automatic Callback
ADL/FAD—Automatic Dialing (Flexible/Fixed)
DND—Do Not Disturb
RND—Repeat Last Number Dialed
SDC/SDU—Station Speed Dial Controller/User
SDS—System Speed Dial.

KEY—The prompt will be repeated until all entries have been made and the **DEL** key is pressed.

03.23 Message Registration Data Block (Table W)

The Message Registration Data Block (**DMRD Program**) defines all parameters for the Message Registration feature.

REQ (Request)—Indicates that the program has loaded. Two responses are possible:
CHG—To change an existing Data Block.
OUT—To delete an existing Data Block.

ICC (Interchangeable Codes)—A "Y" informs the system that interchangeable codes are used. These are office codes that have 0 or 1 as the second digit (N0/1X format). Area codes will be identified as the three digits following the DDD prefix. Office codes will be identified as the first three digits when a DDD prefix is not dialed (see DDP prompt).
Enter: Y or N.

DDP (Direct Distance Dialing Prefix)—Defines the Direct Distance Dialing (DDD) Prefix in the Numbering Plan Area (NPA). If ICC is "Y", then the dialed DDP will identify the interchangeable code as an area code. If ICC is "N", then the dialed DDP will be absorbed.
Enter: 1, 2, or 3 digits or NONE.

HAC (Home Area Code)—Defines the area code in which the system is operating. A home area code is also used to analyze dialed numbers which do not contain an area code. Data entered here will appear in the Toll Restriction Data Block (**DTOL Program**, PAR table, HAC prompt).
Enter: Area Code (N0/1X).

SVT (Supervision Time)—Defines the time allowed for a call to be connected before the First Billing Interval begins. This timer will start when the system accesses a trunk during an outgoing local call.
Enter: 1 ~ 120 (time in seconds).

TN1 (Rate Table #1)—This prompt requires no user entry. It will be followed by prompts which request parameters for the operation of the Message Registration features.

FBI (First Billing Interval)—Defines the interval time for the first billing interval.
Enter: 1 ~ 180 (time in seconds).

FBU (First Billing Unit)—Defines the number of Billing Units per first billing interval.
Enter: 1 ~ 100.

IBI (Incremental Billing Interval)—Defines the interval time for each incremental billing interval.
Enter: 1 ~ 180 (time in seconds).

IBU (Incremental Billing Units)—Defines the number of billing units per incremental billing interval.
Enter: 1 ~ 100.

CST (Unit Cost)—Defines the cost per each billing unit.
Enter: 1 ~ 500 (cost in cents).

OCA (Office Codes-Add)—Indicates the office codes that are to be added to the office code table and defines the calls that are to be billed according to one of the five Rate Tables. Office codes may be added either by using single 3-digit codes or by using 4-digit range codes.
Enter: NXXX NXX NXXX etc.

OCD (Office Codes-Delete)—Indicates the office codes that are to be deleted from the office code table. Office codes may be deleted either by using single 3-digit codes or by using 4-digit range codes.
Enter: NXXX NXX NXXX etc.

NOTE:
N = 2 ~ 9, X = 0 ~ 9.

RANGES EXAMPLE:	
4-digit Format	**Office Codes**
2209	220 ~ 229
2316	231 ~ 236
2478	247 ~ 248

03.24 Modem Pooling Data Block (Table X)

The Modem Pool Data Block (**DMDM Program**) identifies the Modem Pooling ports.

REQ (Request)—Indicates that the program has loaded. Two responses are possible:
NEW—To assign a new Data Block.
OUT—To delete an existing Data Block.

POR (Port Number)—Identifies the hardware location of the NMDU circuits that are to be defined. The port number has two parts:
1) DMDU PCB location: L00 ~ L29 (NN).
2) Circuit number on that PCB: 1 ~ 4 (X).
3) When a circuit number is identified, two circuits are assigned, one for a modem and one for its associated DDIU (i.e., if circuit 1 is identified, circuits 1 and 5 are assigned. if circuit 2 is identified, circuits 2 and 6 are assigned, and so on).
Enter: Port number (LNNX).

03.25 Message Center Data Block (Table Y)

The Message Center Data Block (**DMCD Program**) identifies the type of Message Center and its location.

REQ (Request)—Indicates that the program has loaded. Two responses are possible:

NEW—To create a new Data Block.
CHG—To alter an existing Data Block.

MWC0 (Message Center #0)—Identifies the type of Message Center.
Enter: MC (Message Center) or VM (Voice Mail).

MWC1 (Message Center #1)—Identifies the type of Message Center. (This prompt will only appear if TEN = Y in the DSYS Data Block.)
Enter: MC (Message Center) or VM (Voice Mail).

MDN0 (Message Center #0 DN)—Identifies directory numbers of Message Center #0. An "A" (add) or "D" (delete) will follow the MDN0 prompt.
Enter: 1 ~ 4 digits for each DN, or ATT0.
(ATT0 or electronic telephone DN is valid only if MWC0 = MC. If MWC0 = VM, then up to 32 standard telephone [NSTU] port DNs can be entered. This will allow internal DTMF signaling to these ports.)

MDN1 (Message Center #1 DN)—Identifies directory numbers of Message Center #1. This prompt will appear only in tenant systems. An "A" (add) or "D" (delete) will follow the MDN1 prompt:
Enter: 1 ~ 4 digits for each DN, or ATT1.
(ATT1 or electronic telephone DN is valid only if MWC1 = MC. If MWC1 = VM, then up to 32 standard telephone [NSTU] port DNs can be entered. This will allow internal DTMF signaling to these ports.)

NOTE:
*If you are using a Toshiba INTOUCH Voice Messaging System, **do not** make any entries for the MDN0 and MDN1 prompts. Press the return key.*

DSC0 (Disconnect Code)—Defines the disconnect code of the voice mail equipment for Message Center #0. (This prompt will only appear when MWC0 = VM.) This disconnect code is sent to voice mail equipment for disconnect before the voice mail timeout occurs, and must match the code that is programmed in the voice mail system.
Enter: XXX or NONE.

DSC1 (Disconnect Code)—Defines the disconnect code of the voice mail equipment for Message Center #1. (This prompt will only appear when MWC1 = VM.) This disconnect code is sent to voice mail equipment before the voice mail timeout occurs, and must match the code that is programmed in the voice mail system.
Enter: XXX or NONE.

TVM0 (Toshiba Voice Messaging #0)—If you are using a Toshiba INTOUCH Voice Messaging System, you can enter up to 32 DSTU ports that will be connected to that system. This provides enhanced integration of the systems. Following the DSC1 prompt, the system will prompt an "A." Any entries made will be added. To delete a port, press the carriage return (CR) key. The system will then prompt a "D" and any entries made will be deleted.
Enter: A LNNX LNNX...
D LNNX LNNX...

TVM1 (Toshiba Voice Messaging #1)—If you are using a Toshiba INTOUCH Voice Messaging System, you can enter up to 32 DSTU ports that will be connected to that system. This provides enhanced integration of the systems. Following the TVM0 prompt, the system will prompt an "A." Any entries made will be added. To delete a port, press the carriage return (CR) key. The system will then prompt a "D" and any entries made will be deleted. (This prompt will only appear in tenant systems.)
Enter: A LNNX LNNX...
D LNNX LNNX...

03.26 Alphanumeric Message Data Block (Table Z)

The Alphanumeric Message Data Block (**DMSG Program**) changes system messages that can be left on 6000-series LCD electronic telephones (five messages are initialized).

Initialized Messages:

Message Number	Message
0	OUT TO LUNCH
1	IN A MEETING
2	CALL
3	BACK AT
4	RETURN ON

REQ (Request)—Indicates that the program has loaded. The only response possible is CHG.

MSG (Message)—Assigns the ten system alphanumeric messages.
Enter:

1) The number of the message to be defined. The system will automatically enter a space after the number. Messages are numbered 0 ~ 9. Following the message number and space, any existing message will be output. Type the new message (the existing message will be replaced). NONE deletes any existing message but does not add a new one.
2) The available message characters are: 0 9, A Z, [space], :, -, +, /. Messages can be up to 16 characters in length.

04 DATA INPUT PROCEDURES

04.00 General

04.01 Once the system data has been recorded in the System Record, connect the data terminal and input the data to the system, as explained in the following paragraphs.

04.10 Data Terminal Connection

04.11 A keyboard/printer terminal (Texas Instruments Model 743/745 or equivalent) is required to communicate with the PERCEPTION II system.

04.12 The terminal is connected to the system via a female-type RS-232C connector (labeled TTY), which is located on the connector panel on the lower rear of the FCEC.

04.13 In addition to the TTY connector, a MODEM connector is provided. By attaching a customer-provided "auto answer" modem, all functions that are normally performed by the local terminal can be performed from a remote location.

04.14 The TTY and MODEM ports can operate at speeds of 300 or 1200 bps, and utilize a standard 7-level ASCII code with one start bit, one stop bit, and one parity bit. The system transmits even parity and ignores the parity bit on the receive side. The speed is selected by a push-on/push-off switch, which is located on the front of the FPEU PCB. When 1200 bps is selected, the associated LED will light.

04.15 The speed selection is made simultaneously for the TTY and MODEM ports. These two ports are wired in a logical "OR" fashion and cannot be used at the same time. One must be "open."

04.16 The pin assignments of the TTY and MODEM connectors are:

TTY and MODEM CONNECTIONS

TTY:

Pin No.	Mnemonic	Designation
2	RXD	Receive Data[1]
3	TXD	Transmit Data[2]
5	CTS	Clear To Send[3]
6	DSR	Data Set Ready[3]
7	SG	Signal Ground
8	CD	Carrier Detect[3]
20	DTR	Data Terminal Ready[1]

[1]From TTY [2]To TTY [3]Connect to +12 VDC internally

MODEM:

Pin No.	Mnemonic	Designation
2	TXD	Transmit Data[1]
3	RXD	Receive Data[2]
4	RTS	Request To Send[1]
5	CTS	Clear To Send[2]
6	DSR	Data Set Ready[2]
7	SG	Signal Ground
20	DTR	Data Terminal Ready[2]

[1]To MODEM *[2]From MODEM*

04.17 The TTY and MODEM port connectors are located on the rear of the basic cabinet. Four female, 25-pin, EIA-type connectors are provided in a vertical row. Looking from top to bottom the connectors are labeled:

- TTY
- MODEM
- SMDR
- DATA

Plug the terminal into the **TTY** connector.

04.18 Before switching the power on, the data terminal should be set for the proper speed and for full duplex operation.

04.20 Authorization Procedure

04.21 To prevent unauthorized tampering with the Customer Data Base, the PERCEPTION II system requires an authorization code to be entered before any Utility Program can be called up. This authorization must be entered prior to requesting each utility.

04.22 There are three levels of authorization (each of which has a unique 4-digit code that is assigned in the system memory). When shipped from the factory, all levels are assigned 0000. Codes are changed with the Authorization Code Change procedure (**DCHG**).

04.23 The activity granted to each level is as follows:

Level 1: Can do all activities of Levels 2 and 3.
Can change the 4-digit codes of Levels 1, 2, and 3.

Level 2: Can do all Level 1 activities except change or read out codes.
Can change Level 2 and 3 codes.

Level 3: Normally assigned for end user use.
Can change: Station Data
System 2 Data
DSS Console Data
Attendant Console Data
Class of Service Data
Speed Dial List Data
SMDR Data
DDIU Data
Modem Pooling Data
Alphanumeric Message Data.

Level 3: Can request printouts of above data, plus:
Call Pickup Groups
Hunt Lists.
Can request: Data Dump.

04.24 Execute the Authorization Procedure as follows:

1) Plug in and power up data terminal.
2) Press the carriage return **CR** key.
   - The system will respond by printing COD and will print several characters on the spaces to be occupied by your next entry (this is done to mask the authorization code).

IMPORTANT!
This measure is not effective when a CRT is used. Be careful not to leave the authorization code displayed on the screen.

3) Enter the 4-digit code, followed by **CR**.
   - The system will print:
     ERROR if invalid code is entered (return to Step 2).
     OK if valid code is entered (proceed to request Utility Program).

04.30 Utility Program Use

04.31 Execute the Authorization Procedure and then after the system responds with OK, enter the mnemonic of the required Utility Program.

04.32 After the Utility Program name is entered, the program will be loaded from the disk. When the loading is complete, the system will prompt REQ.

04.33 Entering data via a Utility Program is a matter of responding to the prompts given by the system via the data terminal. The prompts and the required responses are mnemonics that are usually abbreviations of the actual English word required.

04.34 If an improper response is made to a prompt, the system will respond with an error message. The error message will be a "?" when the error is obvious, but in most cases it will be an alphanumeric code. The alphanumeric code consists of five letters (identifying the program) and two numbers (identifying the error).

04.35 Boxes are used to indicate control code keys on the programming terminal. The **CTRL** (control) key must be held down while simultaneously pressing the **X** or the **H** key. Press the carriage return key whenever **CR** appears. The following control codes are available when using Utility Programs (press the **CR** key after each code):

CTRL **X**—Ignore line entered—the same prompt will be repeated.

CTRL **H**—Backspace will allow you to overwrite the previous character(s).

DEL—May be entered anytime—the system will stop execution and return to REQ prompt.

DEL **DEL**—Exits the program—ends the use

of one utility. The system will respond with SAVE. A "Y" entry will cause the system to copy all present data onto the disk. If more changes are to be made, enter "N."

NOTE:
If applicable, use the **RUB OUT** *key instead of* **DEL**.

04.36 When data already exists for a given prompt and a change is not required, entering a **CR** will advance the system to the next prompt without changing existing data.

04.37 Tables D through AY show the format of each Utility Program. If applicable, each table is followed by a list explaining the error codes which pertain to that program. Using the appropriate tables as guides, enter data that has been previously recorded in the System Record.

04.40 Authorization Codes Change (Table D)

04.41 The **DCHG Program** changes the authorization codes which are used in the Authorization Procedure.

04.42 To use the **DCHG Program**:

- Complete the Authorization Procedure (Level 1 or 2).
  Enter: DCHG **CR** (in response to the OK prompt).
- The next prompt will be: L1XXXX (Level 1 authorization code).
  (XXXX = present code).

NOTES:

1. *If Level 2 authorization code was given above, L1 will not be output. Go to the next prompt (L2).*
2. *If Level 3 authorization code was entered above, an error message will be given, Level 3 cannot change the authorization codes.*

Enter: New L1 code (4 digits) **CR**.
L2XXXX (Level 2 authorization code).
(XXXX = present code).
Enter: New L2 code (4 digits) **CR**.
L2XXXX (Level 3 authorization code).
(XXXX = present code).
Enter: New L3 code (4 digits) **CR**.
L1 or L2 (Program repeats).
Enter: **DEL** **DEL** (to exit program).

05 DATA OUTPUT PROCEDURES

05.00 General

05.01 The data output procedures allow the maintenance terminal to request a printout of the data that is contained in the various system Data Blocks.

05.02 The Authorization Procedure must be performed before requesting a printout procedure. The following Data Blocks may be output for Level 1, 2, or 3:

- System Data Block 2
- Station Data Block
- Class of Service Data Block
- Speed Dial List Data Block
- SMDR Data Block
- DSS Console Data Block
- Call Pickup Groups
- Hunting Arrangements
- Digital Data Interface Unit Data Block
- Modem Pooling Data Block
- Alphanumeric Message Data Block.

The following Data Blocks may be output for Level 1 or 2 only:

- System Data Block
- Access Code Data Block
- Trunk Group Data Block
- Trunk Data Block
- Toll Restriction Data Block
- Least Cost Routing Data Block
- Paging Group Data
- Lodging/Health Care Features Data Block
- Message Registration Data Block
- Message Center Data Block.

05.03 Print System Data Block (Table AA)

To use the Print System Data Block (**PSYS Program**):

- Perform the Authorization Procedure (Level 1 or 2).
  Enter: PSYS (in response to OK prompt).
- When the REQ prompt is received after the program is loaded:
  Enter: PRT.
- The System Data Block will be output in the same format as it is input in the **DSYS Program**.

Example:
```
REQ   PRT
TOR   2359
DRT   DDMP
TEN   Y
ICP1  OFL
ICP2  OFL
ICP3  OFL
APG   NONE
etc.
```

- REQ will be prompted when the printout is complete.
  Enter: DEL DEL CR (to exit program).

05.04 Print System Data Block 2 (Table AB)

To use the Print System Data Block 2 (**PSY2 Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PSY2 (in response to OK prompt).
- When the REQ prompt is received after the program is loaded:
  Enter: PRT.
- System Data Block 2 will be output in the same format as input in the **DSD2 Program.**
- REQ will be prompted when the printout is complete.
  Enter: DEL DEL CR (to exit program).

05.05 Print Access Code Data Block (Table AC)

To use the Print Access Code Data Block (**PACD Program**):

- Perform the Authorization Procedure (Level 1 or 2).
  Enter: PACD (in response to OK prompt).
- When the REQ prompt is received after the program is loaded:
  Enter: PRT.
- The Access Code Data Block will be output in the same format as it is input in the **DACD Program.**

  Example:
  ```
  REQ   PRT
  ACB   *7
  CBR   **7
  CFD   *9
  CFR   **9
  PUD   *6
  etc.
  ```

- REQ will be prompted when the printout is complete.
  Enter: DEL DEL CR (to exit program).

05.06 Print Station Data Block (Table AD)

To use Print Station Data Block (**PSDB Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PSDB (in response to OK prompt).
- When a REQ prompt is received after the program is loaded:
  Enter: One of the following commands:

PORALL—All electronic telephone and station Data Blocks will be output in numerical order of port numbers (lowest number first).

PORNNX—Data Block for port NNX will output (NNX = port number without L).

PORVAC—A list of all unassigned ports will output.

DNALL—All electronic telephone and station Data Blocks will be output in numerical order of DN (lowest to highest). For electronic telephones, PDN will be used.

DNXXXX—Data Block for DN XXXX will be output. If it is a multiple appearance DN, then all Data Blocks in which it appears will be output.

EKTALL—All electronic telephone Data Blocks will be output in order of prime DN (lowest first).

STTALL—All STT Data Blocks will be output in order of DN (lowest first). The output format will be the same as the input format in the DEKT and DSTT data input programs.

05.07 Print Class of Service Data Block (Table AE)

To use the Print Class of Service Data Block (**PCOS Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PCOS (in response to the OK prompt).
- When an REQ prompt is received after the program is loaded:
  Enter: PRT.
- The COS Data Block will print out in the following format (see Table J-1 for an explanation of feature codes):

  ```
  COS NO.
  COS 0 AAA BBB CCC DDD EEE FFF
  GGG HHH III JJJ KKK LLL
  COS 1 (etc., up to 15)
  ```

REQ (this prompt will be given at the end of printout).

Enter: DEL DEL CR (to exit program).

05.08 Print Toll Restriction Data Block (Table AF)

To use the Print Toll Restriction Data Block (**PTOL Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PTOL (in response to the OK prompt).
- When an REQ prompt is received after the program is loaded:
  Enter one of the following commands:

TRDALL—All Toll Restriction Data Blocks will be output.

PAR—Miscellaneous Parameters Table will be output.

CLSALL—All code tables (area, office and area/office) will be output for all eight classes.

CLSCNX—All code tables (area, office and area/office) will be output for class X.

AOCALL—All AOC tables will be output.

AOCNOXX—The area code and all office codes for AOC table number XX will be output.

CODXXX—The AOC table which relates to area code XXX will be output.

05.09 Print Speed Dial List Data Block (Table AG)

To use the Print Speed Dial List Data Block (**PSDL Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PSDL (in response to the OK prompt).
- When the REQ prompt is received after the program is loaded:
  Enter one of the following commands:

ALL—All of the Speed Dial lists will be output.

SYST—System Speed Dial list will be output.

LSTXX—Station Speed Dial list XX will be output.

NOTE:
There are 50 station speed dial (LST01 ~ LST50) lists, which each may have up to ten numbers (0 ~ 9).

The output format is as follows:

```
REQ  LST06
LNO  06
SDC  L002
SDU  L003 L010
STR  00 9*7147305000
     01 9*9142731750
     02 NONE
     03 "
     ~ "
     09 "
```

05.10 Print SMDR Data Block (Table AH)

To use the Print SMDR Data Block (**PMDR Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3):
  Enter: PMDR (in response to the OK prompt).
- When an REQ response is received after the program is loaded:
  Enter: PRT.
- The SMDR Data Block will be printed out in the following format:

```
REQ     PRT
ACL     XX (01  12)
SPCC1   NXXXXXX or 10XXX
SPCC2   NXXXXXX or 10XXX
TGP     XX XXX
TGP     XX XXX
etc.
```

- The REQ prompt will be given when the printout is complete.
  Enter: DEL DEL CR (to exit program).

05.11 Print DSS Console Data Block (Table AI)

To use the Print DSS Console Data Block (**PDSS Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PDSS (in response to the OK prompt).
- After the program has loaded and the REQ prompt is received:
  Enter one of the following commands:

PORALL—All DSS Data Blocks will be output in numerical order of ports (lowest first).

PORLNNX—All LNNX data will be output.

PORVAC—A list of all unassigned ports will be output.

STALNNX—All data regarding the station that is associated with the DSS console (installed at LNNX) will be output.

DSSNN—All DSS switched DN assignments (#NN = the last two digits of extension numbers) will be output.

05.12 Print Trunk Group Data Block (Table AJ)

To use the Print Trunk Group Data Block (**PTGP Program**):

- Perform the Authorization Procedure (Level 1 or 2).
  Enter: PTGP (in response to the OK prompt).
- When an REQ prompt is received after the program is loaded:
  Enter one of the following commands:

ALL—All Trunk Group Data Blocks will be output.

GRPXX—Trunk Group XX Data Block will be output.

COT—All CO Trunk Group Data Blocks will be output.

FEX—All FX Trunk Group Data Blocks will be output.

WAT—All WATS Trunk Group Data Blocks will be output.

TIE—All TIE Trunk Group Data Blocks will be output.

DID—All DID Trunk Group Data Blocks will be output.

CSA—All CCSA Trunk Group Data Blocks will be output.

PVL—All Private Line Trunk Group Data Blocks will be output.

NOTE:
*The output format will be the same as the input format that is used in the **DTGP Program**.*

- REQ will be prompted when the printout is complete.
  Enter: DEL DEL CR (to exit program).

05.13 Print Trunk Data Block (Table AK)

To use the Print Trunk Data Block (**PTRK Program**):

- Perform the Authorization Procedure (Level 1 or 2).
  Enter: PTRK (in response to OK prompt).
- When the REQ prompt is received after the program is loaded:
  Enter one of the following commands:

PORALL—All Trunk Data Blocks will be output in order of Port Number (lowest first).

PORNXX—Trunk Data Block of Port NNX will be output.

PORVAC—All unassigned trunk ports will be listed.

TGPNN—All Trunk Data Blocks assigned to Trunk Group NN will be output.

COT—All CO Trunk Data Blocks will be output.

FEX—All FX Trunk Data Blocks will be output.

TIE—All TIE Trunk Data Blocks will be output.

DID—All DID Trunk Data Blocks will be output.

WAT—All WATS Trunk Data Blocks will be output.

CSA—All CCSA Trunk Data Blocks will be output.

PVL—All Private Line Trunk Data Blocks will be output.

NIT—Night Station assignments for all CO/FX/WATS trunks will be output.

NOTE:
*The output format will be the same as that used for data input in the **DTRK Program**.*

05.14 Print Least Cost Routing Data Block (Table AL)

To use the Print Least Cost Routing Data Block (**PLCR Program**).

- Perform Authorization Procedure (Level 1 or 2).
  Enter: PLCR (in response to the OK prompt).
- When the REQ prompt is received after the program is loaded, enter one of the following commands:

LCRALL—All Least Cost Routing Data Blocks will be output.

PAR—Miscellaneous Parameters Table will be output.

ACTALL—All Area Code Tables will be output.

ACTRNXX—All Area Code Tables that point to Route Number (RN) XX will be output.

AOCALL—All Area/Office Code Tables will be output.

AOCNOXX—Area/Office Code Table XX will be output.

AOCRNXX—All Area/Office Code Tables that point to Route Number (RN) XX will be output.

CODXXX—All Area/Office Code Tables relating to Area Code XXX will be output.

RTALL—All Route Tables will be output.

RTXX—Route Tables using Trunk Group XX will be output.

TGPXX—All Route Tables using Trunk Group XX will be output.

RTMDXX—All Route Tables using Modify Digits Table XX will be output.

MDTXX—Modify Digits Table XX will be output.

05.15 Print Call Pickup Groups (Table AM)

To use the Print Call Pickup Groups (**PCPG Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PCPG (in response to the OK prompt).
- When an REQ prompt is received after the program is loaded, enter one of the following commands:

ALL—All Call Pickup groups will be output.

DNXXX—The number of the Call Pickup group containing DNXXX will be output.
Example:

```
#1  REQ   DN205
    GRP00
#2  REQ   ALL
    GRP00 XXX  XXX  XXX  XXX
          XXX  XXX  XXX  XXX
          XXX  etc.
    GRP01 XXX  XXX  XXX
    GRP02 XXX  XXX  XXX.
```

05.16 Print Hunting Arrangements (Table AN)

To use the Print Hunting Arrangements (**PHNT Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter PHNT (in response to the OK prompt).
- When an REQ prompt is received after the program is loaded, enter one of the following commands:

ALL—All hunting sequences will be output.

DNXXX—All hunting sequences containing DNXXX will be output.

- The output format will be as in the following examples:

```
REQ   DN224
HNT   223-224-225
REQ   ALL
HNT   223-224-225
HNT   242-243
HNT   250-251-252
etc.
```

05.17 Print Paging Group Data Block (Table AO)

To use the Print Paging Group Data Block (**PPAG Program**):

- Perform the Authorization Procedure (Level 1 or 2).
  Enter: PPAG (in response to the OK prompt).
- After the program has loaded and the REQ prompt has been received, enter one of the following commands:

PAG N—All electronic telephones belonging to the indicated paging group N will be output in the order in which they were programmed, in the format shown below (for paging group 00):
PAGING GROUP 00 LNNX LNNX LNNX.

PAGALL—All assigned paging groups and their electronic telephone members will be output in the order in which they were programmed.

05.18 Print Lodging/Health Care Features Data Block (Table AP)

To use the Print Lodging/Health Care Features Data Block (**PHMF Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PHMF (in response to the OK prompt).
- When an REQ prompt is received after the program is loaded:
  Enter: PRT
- The Lodging/Health Care Data Block will be output in the same format as they are input in the **DHMF Program**.

05.19 Print Digital Interface Unit Data Block (Table AQ)

To use the Print Digital Interface Unit Data Block (**PDIU Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PDIU (in response to the OK prompt).
- When a REQ prompt is received after the program is loaded:
  Enter: PORALL.
- All DDIU Data Blocks will be output in numerical order of ports (lowest first).

05.20 Print Message Registration Data Block (Table AR)

To use the Message Registration Data Block **PMRD Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PMRD (in response to the OK prompt).
- When an REQ prompt is received after the program is loaded:
  Enter: One of the following commands:

MRDALL—All Message Registration Data will be output. There may be a delay in the output after the OCA prompt.

MRDPAR—The system will output a partial list of the Message Registration Data Block (ICC, DDP, HAC, and SVT).

RTNPAR—The system will output a partial list of the Message Registration Data Block (FBI, FBU, IBI, IBU, and CST for Rate Tables 1 ~ 5).

RTNALL—The system will output all the data from the Rate Tables 1 ~ 5 (FBI, FBU, IBI, IBU, CST, and OCA). There may be a delay in the output after the OCA prompt.

05.21 Print Modem Pooling Data Block (Table AS)

To use the Print Modem Pooling Data Block (**PMDM Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PMDM (in response to the OK prompt).
- When the REQ prompt is received after the program is loaded:
  Enter: PORALL.
- All Modem Pooling Data Blocks will be output in numerical order of ports (lowest first).

05.22 Print Message Center Data Block (Table AT)

To use the Print Message Center Data Block (**PMCD Program**):

- Perform the Authorization Procedure (Level 1 or 2).
  Enter: PMCD (in response to the OK prompt).
- When the REQ prompt is received after the program is loaded:
  Enter: PRT.
- The Message Center Data Block will output data in the same format as it is input in the **DMCD Program**.

05.23 Print Alphanumeric Data Block (Table AU)

To use the Print Alphanumeric Data Block (**PMSG Program**):

- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: PMSG (in response to the OK prompt).
- When the REQ prompt is received after the program is loaded:
  Enter: One of the following commands:

ALL—The system will output all messages in the system (0 ~ 9).

MSGX—Message X will be output.

06 MAINTENANCE PROCEDURES

06.00 General

06.01 The Maintenance Procedures assist with the administration and maintenance of the system.

06.02 Four programs are provided:
- Back-up Memory Entry Procedure—**DMYC**
- Data Dump—**DDMP**
- Electronic Telephone/Attendant Console Test—**TTRM**
- Peripheral Equipment Test—**TPER.**

06.03 The **DDMP** and **TTRM Programs** are available to users of Levels 1, 2, and 3, while the **DMYC** and **TPER Programs** require Level 1 or 2 authorization.

06.10 Back-up Memory Check Entry Procedure (Table AV)

06.11 The **DMYC Program** check the system's memory.

To use the **DMYC Program**:
- Perform the Authorization Procedure (Level 1 or 2).
  Enter: DMYC (in response to the OK prompt).
- When an REQ prompt is received after the program is loaded:
  Enter: CHK.
- The system will respond with MYR CHK and the process will begin.

  NOTE:
  The memory check will delete all data relating to Lodging/Health Care telephones (i.e., Room Status, Message Waiting, and Message Registration).

- The system will print DONE when the memory check is complete.
- If the memory check fails, the system will respond with:
  ERROR
  ADRS = XXXH
  COL = XXH

06.20 Data Dump Program (Table AW)

06.21 The **DDMP Program** transfers the contents of the system data memory to the disk for permanent storage.

06.22 Using this program has the same effect as responding "Y" to the SAV prompt that is given when a data input program is exited. The current data that is then residing in system memory will be written on the disk, thereby replacing any previously-recorded data.

06.23 It is possible, via the System Data Block, to specify the **DDMP Program** as a daily routine and to cause the data to be recorded daily. This enables the speed dialing information that has been entered by the attendant console or station user to be captured on the disk.

06.24 This program is also useful for updating a spare disk.

To use the **DDMP Program** manually (refer to Table AW):
- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: DDMP (in response to the OK prompt).
- The system will respond with DPG and then the dumping process will begin.
- The system will print DUN when the data transfer is complete.
- No other input is required.

06.30 Electronic Telephone/Attendant Console Test (Tables AX-1 and AX-2)

06.31 When the **TTRM Program** has been loaded, a test sequence can be performed at the Attendant Consoles and electronic telephones. The test is designed to check all functions of the terminals in a time-efficient manner.

To use the **TTRM Program** (refer to Tables AX-1 and AX-2):
- Perform the Authorization Procedure (Level 1, 2, or 3).
  Enter: TTRM (in response to the OK prompt).
- REQ will be printed when the program has loaded.

06.32 Proceed to the electronic telephone or console that is to be tested. The test is performed as follows:

a) Electronic Telephone:
- Press the DN button to obtain dial tone.
- Dial TEK (*835) on the dial pad.
- The system will respond by lighting all electronic telephone LEDs.
- Operate the buttons and observe the responses in the sequence shown in Table AX-1.

b) Attendant Console:
- Press the LPK button in order to obtain dial tone.
- Dial TAT (*828) on the dial pad.

- The system will respond by lighting all BLF LEDs.
- Operate the buttons and observe the responses in the sequence shown in Table AX-2.

c) When all electronic telephones and console(s) have been tested, exit the program:
Enter: DEL DEL

06.40 Peripheral Equipment Test (Table AY)

06.41 The **TPER Program** is designed to aid in fault location by disabling and enabling various PCBs and circuits. When a faulty circuit or PCB has been located, it is left disabled until it can be replaced in order to prevent it from interfering with normal system operation.

06.42 It is also possible, with the **TPER Program**, to determine the busy/idle status of any station, trunk, or DTMF receiver port. To use the **TPER Program** (refer to Table AY):

- Perform the Authorization Procedure (Level 1 or 2).
  Enter: TPER (in response to the OK prompt).
- REQ will be printed when the program has loaded.
  Enter: One of the following commands:

DSCDXXX—Disables PCB XXX regardless of busy/idle status (XXX = TXX, LXX, or RXX); lights PCB FALT LEDs, and returns the REQ prompt.

DSTKNNX—Disables trunk NNX if it is idle (NN = trunk PCB number, i.e., T01 = 01; X = circuit number on that PCB, i.e., 1 ~ 4), lights the FALT LED relating to that circuit (FALT #1 for circuits 1 & 2; FALT #2 for circuits 3 & 4), and returns the REQ prompt.

DSLCNNX—Disables station circuit NNX if it is idle (NN = station PCB number, i.e., L04 = 04; X = circuit number on that PCB, i.e., 1 ~ 8), lights the FALT LED relating to that circuit (FALT #1 for circuits 1 ~ 4; FALT #2 for circuits 5 ~ 8), and returns the REQ prompt.

DSDSNNX—Disables DSS circuit NNX (NN = PCB number; X = circuit number), lights the FALT LED relating to that circuit, and returns the REQ prompt.

ENCDXXX—Enables PCB XXX (XXX = TXX LXX, or RXX), turns FALT LEDs off, and returns the REQ prompt.

ENTKNNX—Enables trunk NNX (NN = trunk PCB number; X = circuit number on that PCB), turns FALT LEDs off unless other circuit is still disabled, and returns the REQ prompt.

ENLCNNX—Enables station line circuit NNX (NN = trunk PCB number; X = circuit number on that PCB), turns FALT LEDs off unless the other circuits are still disabled, and returns the REQ prompt.

ENDSNNX—Enables DSS circuit NNX (NN = PCB number; X = circuit number), turns FALT LEDs off if all circuits are enabled, and returns the REQ prompt.

DSRC00X—Disables DTMF receiver circuit 00X/01X if it is idle (R00 = basic cabinet /R01 = expansion cabinet; X = DTMF Receiver circuit in that cabinet, 1 ~8)), lights the FALT LED on the DPRU PCB relating to that circuit (FALT #1 for circuits 1 & 2; FALT #2 for circuits 3 & 4; FALT #3 for circuits 5 & 6; and FALT #4 for circuits 7 & 8), and returns the REQ prompt.

ENRC00X—Enables DTMF receiver 00X/01X (00/01 = PCB number R00; X = circuit number in that cabinet, 1 ~8), turns the FALT LED off unless the other circuit is still disabled, and returns the REQ prompt.

DSCIXXX—Disables each circuit on the PCB as it becomes idle, lights the appropriate FALT LED as circuits are disabled, and returns the REQ prompt.

LIPS—Prints out a list of all system ports (DTMF receivers, DSS consoles, stations, and trunks) that are idle at the time that the command is entered, and returns the REQ prompt when the printout is complete.

LBPS—Prints out a list of all system ports (DTMF receivers, DSS consoles, stations, and trunks) that are busy at the time that the command is entered, and returns the REQ prompt when the printout is complete.

LDPS—Prints out a list of all system ports (DTMF receivers, DSS consoles, stations, and trunks)

that are in a disabled state at the time that the command is entered, and returns the REQ prompt when the printout is complete.

STLCNNX—Gives the status of station line circuit NNX (NN = station line PCB number; X = circuit number on that PCB). The output format will be a combination of two items. (See Notes 1 and 2.)

Station Type[1]	Status[2]
EKT	BSY
ATT	DIS TTY
UNEQ	DIS CBL
UNAS	DIS TLD
Example:	
REQ	STLC002
	CKT 2 EKT IDL

- Returns the REQ prompt when the printout is complete.

STTKNNX—Gives the status of trunk circuit NNX (NN = trunk PCB number; X = circuit number on that PCB). The output format will be a combination of two items. (See Notes 1 and 2.)

Trunk Type[1]	Status[2]
CO	IDL
FX	BSY
WAT	DIS TTY
TIE	DIS TLD
CCSA	
UNEQ	
UNAS	
Example:	
REQ	STTK001
	CKT 1 TIE IDL

- Returns the REQ prompt when the printout is complete.

STDSNNX—Gives the status of DSS circuit NNX (NN = PCB number; X = circuit number). The output format will be IDL, BSY, DIS TTY, DIS CBL, DIS TLD. (See Notes 1 and 2.)

Example:

REQ DSSC001
CKT 1 IDL

- Returns the REQ prompt when the printout is complete.

STRC00X—Gives the status of DTMF receiver 00X/01X (00/01 = receiver PCB number R00/R01; X = circuit number in that cabinet). The output format will be IDL, BSY, DIS TTY, DIS TLD, UNEQ, UNAS. (See Notes 1 and 2.)

Example:

REQ STRC001
CKT 1 IDL

- Returns the REQ prompt when the printout is complete.

NOTES:

1. *Type: UNEQ = No PCB in that position. UNAS = PCB is equipped but no data is assigned.*
2. *Status: IDL = Idle. BSY = Busy. DIS TTY = Manually disabled via TTY. DIS CBL = Electronic telephone port disabled by software due to open cable. DIS TLD = Software disabled due to traffic load (indicates faulty PCB).*

STCDXXX—Gives the status of all circuits on PCB XXX (XXX = PCB location LXX, TXX, or R00/01). Printout formats will be the same as for STLC, STTK, and STRC commands, but will list all circuits on that PCB in order of circuit number.

- Returns the REQ prompt when the printout is complete.

CALL TNNX—(Sets up a monitor link from Trunk NNX to the remote test center):

- This command is used at a remote test center to establish an audio link between the system and the test center. The object is to command the system to select a particular trunk (A) and to dial the number of a telephone at the test center. When the call is answered, a 440 Hz tone will be heard.
- Once a monitor link has been established, other trunks can be tested. The trunk to be tested (B) is seized by the keyboard terminal command and then the test number (for example: time, weather, tone, etc.) to be dialed is entered via the terminal. The audio responses are monitored at the test center.
- The set-up sequence includes several steps that are led by system prompts. Following the entry CALL TNNX, the system prompts will be as follows:

WAIT—Indicates that the first command was received. A carriage return must be entered in order to advance the program.
Enter: CR.

STS TLK, WAIT or OVR (Status)—Gives the status of the requested trunk.
- STS TLK will be output if the trunk was idle and has now been seized. The program will automatically advance to the next prompt (DN).
- STS WAIT indicates that the requested trunk is busy. The program will automatically return to the WAIT prompt.
  Enter: CR to access the same trunk again or DEL CR to return to the REQ prompt.
- STS OVR indicates that the requested trunk does not exist in the system.
  Enter: DEL CR to return to the REQ prompt.

DN (Directory Number)—The system is requesting the number of the telephone to be called at the test center.
Enter: DN followed by a CR.

STS TLK, DDL, or RLSA (Status)—Gives the status of the connection.
- STS TLK will be output if the dialing is complete, and the program will automatically advance to the next prompt (TRK).
- STS DDL indicates that the trunk was still dialing when CR was entered.
  Enter: CR to advance the program.
- STS RLSA indicates that Trunk A was disconnected due to a malfunction or some outside influence, such as the distant end going on-hook on a ground start trunk. After printing STS RLSA, the program will automatically return to the REQ prompt.

TRK (Trunk)—At this point, the monitor link to the test center (using Trunk A) has been established (a 440 Hz tone is heard when Trunk A is answered at the remote test center), and the system is requesting the identity of a trunk to be tested.
Enter: CALL TNNX (TNNX = port number of the trunk to be tested; 440 Hz tone removed).

WAIT—Indicates that the command was received. A carriage return must be entered to advance the program.
Enter: CR.

STS TLK, BSY, OVR, or RLSA (Status)—Gives the status of the connection.
- STS TLK will be output if the requested trunk was idle and has now been seized. The program will automatically advance to the next prompt (DN).
- STS BSY indicates that the requested trunk is busy. The program will automatically return to the TRK prompt above in order to allow another trunk to be selected.
- STS OVR indicates that the requested trunk does not exist in the system. The program will automatically return to the TRK prompt above to allow another trunk to be selected.
- STS RLSA is output if the monitor link trunk (A) was disconnected due to a malfunction or some outside influence, such as the distant end going on-hook. After printing STS RLSA, the program will automatically return to the REQ prompt.

DN (Directory Number)—The trunk under test (B) has been seized and the system is requesting the number to be dialed (time, weather, tone, etc.).
Enter: DN followed by a CR.

DDL (Dialing)—The system is dialing via Trunk B. When dialing is complete, progress tones (ringing, etc.) will be heard over Trunk B via the monitor link (Trunk A). When the test is complete, enter CR to release Trunk B and to return to the TRK prompt.
Enter: CR.

STS TLK, DDL, RLSA, or RLSB (Status)—Gives the status of the connection.
- STS TLK will be printed in response to a CR entered following the above dialing prompt. The CR released the trunk under test (B), therefore the output indicates the status of the monitor link (A). The program will automatically return to the TRK prompt in order to allow another trunk to be selected.
- STS DDL will be printed if a CR was entered before dialing was complete. This state is

the same as DDL above.

- STS RLSA will be printed if the monitor link (A) is released due to a malfunction or some outside influence. The trunk under test (B) will also be released and the program will automatically return to the REQ prompt .
- STS RLSB will be printed if the trunk under test (Trunk B) is released due to a malfunction or some outside influence. The program will automatically return to the TRK prompt in order to allow another trunk to be selected.

Example: Monitor link trunk (A) = T014
Test center DN = 730-5000
Test DN = 730-0002
Trunk under test (B) = T012.

PROMPT	USER ENTRY
OKT	PER
-DISK LOADING-	
REQ	CALL T014
WAIT	CR
STS TLK	
DN	7305000
DDL	CR
STS TLK	(440 Hz tone heard)
TRK	CALL T021
WAIT	CR
STS TLK	
DN	7300002
DDL	CR
STS TLK	(Time, Weather, Tone)
TRK	CALL TNNX (new test) ...or... CR (end of test)

TABLE D

Procedure — **Authorization Code Change**

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

SYSTEM	USER	NOTE NO.
OK	DCHG	
L1 = XXXX		1 & 2
L2 = XXXX		2
L3 = XXXX		2
OK		3

NOTES:

1. *a. An error message will be received if Level 3 was given in the Authorization Procedure.*
   b. If Level 2 was given in the Authorization Procedure, L1 will be omitted and the response to CHG will be L2 = XXXX.
   c. XXXX = present code of that level.
2. *The possible responses are:*
   YYYY = This new access code will replace the existing XXXX.
   CR = *Carriage Return — the code will not be changed and the system will issue the next prompt.*
   CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*
3. *Program will repeat.*

TABLE E

Procedure — System Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DSYS	
	REQ	CHG	
— DISK LOADING —			
Expansion Cabinet	EXP	Y or N	
Number of Disk Drives	NOD	1 or 2	1
Time of Daily Routine	TOR	Time (e.g., 1315)	
Daily Routine Tasks	DRT	DDMP or NONE	
Tenant Service?	TEN	Y or N	
Intercept #1	ICP1	ATT or OFL	
Intercept #2	ICP2	ATT or OFL	
Intercept #3	ICP3	ATT or OFL	
Least Cost Routing	LCR	Y or N	
All Page Access Code	APG	"ALL PAGE" access code (160)*	2
Not Used	AAT	CR	
Not Used	APX	CR	
Listed Directory Number #1	LN1	LDN (1 ~ 3 digits)	
Listed Directory Number #2	LN2	LDN (1 ~ 3 digits)	
LDN #1 Night Number	NT1	Night DN (1 ~ 4 digits) or UNA	
LDN #2 Night Number	NT2	Night DN (1 ~ 4 digits) or UNA	
Busy Lamp Field #1	BLF1	1 digit (1 ~ 9)	
Busy Lamp Field #2	BLF2	1 digit (1 ~ 9)	
Overflow DN Attendant Console #0	OFL1	1 ~ 4 digits or NONE (UNA)	
Overflow DN Attendant Console #1	OFL2	1 ~ 4 digits or NONE (UNA)	3
Meet-Me Page Access Code	MMP	MMP (1 ~ 3 digits) access code (10)*	
Remote Access DN	REM	RA DN (1 ~ 4 digits) or NONE	
Remote Access to Services Change Code	RAC	1 ~ 3 digit change code (# * 2)*	
"*" Access Code	ACC *	"X" or NONE	4 & 5
"#" Access Code	ACC #	"X" or NONE	4 & 5
Camp-on (or CWT) Timeout	COT	Time (in seconds) (50)*	
Ring-No-Answer Timeout	RNA	Time (in seconds) (31)*	

*System default value.

(continued)

TABLE E (continued)

ITEM	PROMPT	USER ENTRY	NOTE
Attendant Overflow Timeout	AOF	Time (in seconds) (30)*	
Call Forward No-Answer Timeout	CFD	Time (in seconds) (10)*	6
2500 Hold Electronic Telephone Park Timeout	HLD	Time (in seconds) or NONE (50)*	
Dial Pause Timeout	DPT	Time (in seconds) (15)*	7
Push-button Timeout	PBT	Time (in seconds) (4)*	
Line Lockout Timeout	LLO	Time (in seconds) (15)*	
Automatic Callback Reserve Time	ACB	Time (in seconds) (4)*	
Handsfree Answerback-Station	HFS	Y or N	8
Handsfree Answerback-Attendant	HFA	Y or N	9
SMDR Equipped	MDR	Y or N	
Universal Night Answer	UNA0	TEN0 TEN1	
Universal Night Answer	UNA1	TEN0 TEN1	

*System default value.

NOTES:

1. *D.02 and later software versions can use two disk drives. If two drives are used, enter 2; otherwise, enter 1.*
2. *All Page access code = 1, 2, or 3 digits.*
3. *Not printed if tenant service is not used (TEN = N).*
4. *X = number dialed in place of "*" or "#."*
5. *Beware of conflicts with the numbering plan and access codes — the system will not always check.*
6. *CFD time must be less than RNA or else RNA will prevail.*
7. *DPT timer also controls attendant LPK release.*
8. *A "Y" response allows calls from **any station** to a Handsfree Answerback-equipped electronic telephone to be answered handsfree.*
9. *A "Y" response allows calls from the attendant to a Handsfree Answerback-equipped electronic telephone to be answered handsfree.*
10. CTRL X = *Ignore line entered.*
    CTRL H = *Backspace.*
    DEL = *Stop printing and return to REQ.*
    DEL DEL = *Exit program.*

Error Codes

Program Name: System Data Block (DSYS Program)	
Error Code	**Meaning**
ERSYS 00	Directory number or Access code conflicts with an existing directory number, access code, or room prefix.
ERSYS 01	Entered DN does not exist in the system.
ERSYS 02	Entered DN is a trunk DN.
ERSYS 05	Station DN has not been assigned as RA DN.

TABLE F

Procedure — System Data Block 2

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DSD2	
— DISK LOADING —			
	REQ	CHG	
ACD Master DN0	MD0	XXXX	1
ACD Master DN1	MD1	XXXX	1
ACD Master DN2	MD2	XXXX	1
ACD Master DN3	MD3	XXXX	1
Lodging/Health Care	AHM	Y or N	2
Night Operator Station	NOS	XXXX	3
Transfer Recall Timer	RT0	1-255 seconds	4
Attendant-Position Electronic Telephone	AEKT	LNNX, LNNX . . .	5 & 6
	D	LNNX, LNNX . . .	5 & 7
	A	LNNX, LNNX . . .	5, 8, 9

NOTES:

1. *XXXX = 1-, 2-, 3-, or 4-digit number.*
2. *Y = Lodging/Health Care mode. N = Business mode.*
3. *The directory number to which dial 0 calls will go when the system is in night service.*
4. *If a system utilizes a voice mail system, it is recommended that this timer be set rather short so that voice mail can be activated promptly.*
5. *LNNX denotes the station port number of the electronic telephone that is to be assigned (or is to be added or deleted) as an Attendant-Position Electronic Telephone.*
6. *Data which appears represents old entries. If no old data exists, then the system will respond with "NONE."*
7. *"D" represents a deletion. Any port number that is entered in response to this prompt will be deleted as an Attendant-Position Electronic Telephone.*
8. *"A" represents an addition. Any port number that is added in response to this prompt will be added as an Attendant-Position Electronic Telephone.*
9. *Up to eight port numbers (eight electronic telephones) may be added or deleted in any one line. There is a maximum of eight Attendant-Position Electronic Telephones per system.*
10. CTRL X = *Ignore line entered.*
    CTRL H = *Backspace.*
    DEL = *Stop printing and return to REQ.*
    DEL DEL = *Exit program.*

Error Codes

Program Name: System Data Block 2 (DSD2)	
Error Code	**Meaning**
ERSY2 00	ACD Master DN conflicts with existing ACD Master DN.
ERSY2 03	The port that you are trying to delete does not exist.
ERSY2 04	The number of ports which have been entered exceeds the maximum amount of eight.
ERSY2 05	The entered port is already assigned as an Attendant-Position Electronic Telephone port.
ERSY2 06	The entered port is not an assigned electronic telephone port.

TABLE G

Procedure — Access Code Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DACD	
— DISK LOADING —			
	REQ	CHG	
Feature?	FTR	Feature + [space] + code	1

NOTES:

1. a. *The 3- or 4-character feature abbreviation followed by a space and its access code is entered in response to FTR.*
   b. *The features may be entered in any order and any new access code will overwrite the existing one.*
   c. *Any feature code which is to be unchanged need not be entered.*
   d. *The feature abbreviations and factory assigned codes are listed in Table G-1.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE G-1

FEATURE ABBREVIATION AND CODE LIST

FEATURE	ABB.	STD. CODE
Automatic Callback	ACB	*7
Automatic Callback Cancel	CBR	**7
Call Forward All Call (Extension)	CFD	*9
Call Forward Busy (Extension)	CFBY	#10
Call Forward No Answer (Extension)	CFNA	#11
Call Forward Busy/No Answer (Extension)	CFBD	#12
Call Forward Busy (System/DID)	CFSB	#13
Call Forward-Busy/No Answer (System/DID)	CFSN	#14
Call Forward Cancel (Extension)	CFR	**9
Call Forward — All Clear	CFAR	#18
Call Pickup Directed	PUD	*6
Call Pickup Group	PUG	*4
Hold-All Calls/Electronic Telephone Park	HLD	*3
Meet-Me Page Zone #0	MMP0	110
Meet-Me Page Zone #1	MMP1	111
Meet-Me Page Zone #2	MMP2	112
Meet-Me Page Zone #3	MMP3	113
Meet-Me Page Zone #4	MMP4	114
Meet-Me Page Zone #5	MMP5	115
Meet-Me Page Zone #6	MMP6	116
Meet-Me Page Zone #7	MMP7	117
Meet-Me Page Zone #8	MMP8	118
Meet-Me Page Zone #9	MMP9	119
Meet-Me Page Zone #10	MMP10	120
Meet-Me Page Zone #11	MMP11	121
Meet-Me Page Zone #12	MMP12	122
Meet-Me Page Zone #13	MMP13	123
Meet-Me Page Zone #14	MMP14	124
Meet-Me Page Zone #15	MMP15	125
Meet-Me Page Cancel	MPC	150
Override	OVR	*0
Repeat Last Number Dialed	RND	#7
Call Waiting	CWT	#4
Speed Dial-Station-Call	SDU	#3

(continued)

TABLE G-1 (continued)

FEATURE	ABB.	STD. CODE
Speed Dial-Station-Program	SDC	##3
Speed Dial-System-Call	SDS	#6
Universal Night Answer	UNA	*1
Charge Account	CRG	#9
Flash	FLH	*5
Internal Group Paging (selected group 0, 2 ~ 17)	PINT	151
Expanded Internal Group Paging (group 0)	PINA	152
External Paging (selected zone 0 ~ 4)	PEXT	153
External All Paging (zones 0 ~ 4)	PEXA	154
Expanded Internal Group Paging and External All Paging	PALL	160
Hold-All Calls Retrieve	RTV	**3
Message Waiting All Clear	MAL	##5
Message Waiting Cancel	MCC	#5
Do Not Disturb	DND	#2
Do Not Disturb Cancel	DNC	##2
Remote Access to Services Authorization Code	RAC	#*2
Least Cost Routing Access Code	LCR	##6
Direct-in Line	DIL	#*3
Automatic Wake-up Time Set/Cancel	AWU	#80
Message Registration Print-All	MRAA	#81
Message Registration Print-Directed	MRAN	#82
Message Registration Print-Stop	MRST	#83
Controlled Outgoing Restriction Set	CRS	#84
Controlled Outgoing Restriction Cancel	CRC	#85
Room Status Print-All	RSAA	#86
Room Status Print-Directed	RSAN	#87
Room Status Print-Stop	RSST	#88
Room Status Change	MIR	#00
Room Status-Maid-in-Room Set	MIRS	#01
Room Status-Maid-in-Room Cancel	MIRC	#02
Room Status-Maid-in-Room Cancel and Set Room Clean	RCLN	#03
Room-to-Room Block Set	RRS	#04
Room-to-Room Block Cancel	RRC	#05

(continued)

TABLE G-1 (continued)

FEATURE	ABB.	STD. CODE
Room-Status-Status 1 Set (Vacant/Clean)	RSS1	*#1
Room Status-Status 2 Set (Occupied/Clean)	RSS2	*#2
Room Status-Status 3 Set (Vacant/Needs Cleaning)	RSS3	*#3
Room Status-Status 4 Set (Occupied/Needs Cleaning)	RSS4	*#4
Room Status Set From 2 to 4	RS24	*#5
Room Status Set From 4 to 2	RS42	*#6
Display Deposit Paid	DPP	*#7
Set Deposit Paid	SDPP	*#8
Clear Deposit Paid	CDPP	*#9
Voice Message Set	VMS	#15
Voice Message Cancel	VMN	#16
Alphanumeric Message	ANM	#17

Error Codes

Program Name: Access Code Data Block (DACD)	
Error Code	**Meaning**
ERACC 00	Access code conflicts with an existing access code.
ERACC 01	Invalid response (1 ~ 3 digits are allowed).
ERACC 02	Invalid response (7*5, 8#, etc. are not allowed).

TABLE H

Procedure — Electronic Telephone Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DEKT	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Port Number	POR	LNNX	1 & 2
Number of Button Strips	KS	1 or 2	3
Class of Service Group	COS	0 ~ 15	4
Tenant Number	TEN	0 or 1	
Call Pickup Group	PUG	0 ~ 31 or NONE	5
Warning Tone Allowed?	WTA	Y or N	
Call Forward to Trunk	CFT	Y or N	
Toll Restricted Class	TOL	0 ~ 8 or NONE	6
Not Used	MTA	N	
Handsfree Answerback Equipped?	HFA	Y or N	
Display Electronic Telephone	DIS	1, 2, or NONE	7
Paging Group	PAG	L M N O or NONE	8
Button Assignments (10-button)	KEY	Button Number (0 ~ 9) + [space] + FTR	9 ~ 11
Button Assignments (20-button)	KEY	Button Number (0 ~ 19) + [space] + FTR	9 ~ 11

NOTES:

1. *NN = PCB location.*
2. *X = circuit number.*
3. *A maximum of two button strips is possible:*
   Single Line or 10-button electronic telephone = 1. 20-button electronic telephone = 2.
4. *There are 16 different COS groups (which are defined in the COS Data Block).*
5. *There is a maximum of 32 Call Pickup Groups.*
6. *Classes 0 ~ 7 are defined in the Toll Restriction Data Block (**DTOL Program**). Class 8 = Dial 0 or 1 restriction. NONE = No Toll Restriction.*
7. *1 = 2000 series LCD. 2 = 6000 series LCD. NONE = Not an LCD.*
8. *L, M, N, and O represent the four possible paging groups to which an electronic telephone can belong (0, 2 ~ 17). NONE indicates that an electronic telephone does not belong to any paging group. There is a maximum of 32 electronic telephone members for groups 2 ~ 17 and a maximum of 96 for group 0.*
9. *Enter button number followed by a space and then the entry. Button 0 must be the station primary DN. See Table H-1 for possible entries. (For Single Line electronic telephones with Message Waiting lights, assign button 9 as MSG to activate feature; for the Call Waiting feature, assign any button 1 ~ 8 as CWT.)*
10. *Button numbers may be entered in any order; the KEY prompt will be repeated until DEL is entered.*
11. *If KS was 1, 0 ~ 9 will be allowed. If KS was 2, 0 ~ 19 will be allowed.*
12. CTRL X = *Ignore line entered.*
    CTRL H = *Backspace.*
    DEL = *Stop printing and return to REQ.*
    DEL DEL = *Exit program.*

TABLE H-1

ELECTRONIC TELEPHONE BUTTON ASSIGNMENTS

DIRECTORY NUMBER	ENTRY	NOTE
Single Call Ring	SCR NNNN XXXX	1
Single Call No Ring	SCN NNNN XXXX	1
Station Hunt Distributed	#X	2

DATA DIRECTORY NUMBER	ENTRY	NOTE
Data Port Number	DIU LNXX	3
Data Release	DRS	

PRIVATE CO LINE	ENTRY	NOTE
Private Line Ring	PVR XXX	4
Private Line No Ring	PVN XXX	4

FEATURE	ENTRY	NOTE
Account Number (SMDR)	CRG	
Alphanumeric Message	MES	
Automatic Callback	ACB	
Automatic Dialing	ADL	5
Automatic Dialing (Fixed)	FAD XXX	6
Call Forward-All Calls	CFD	
Call Forward-Busy	CFBY	
Call Forward-Busy/No Answer	CFBD	
Call Forward-No Answer	CFNA	
Call Forward-Busy (System/DID)	CFSB	
Call Forward-Busy/No Answer (System/DID)	CFSN	
Call Pickup Directed	PUD	
Call Pickup Group	PUG	
Call Waiting	CWT	
Display Date and Time/Elapsed Time	DIS	7
Do Not Disturb	DND	
Flash	FLH	8
Hundreds Group	HNG XX	9
Manual Signaling	SIG LNNX	10
Message Waiting	MSG	

(continued)

TABLE H-1 (continued)

FEATURE	ENTRY	NOTE
Override	OVR	
Paging, External	PEXT	11
Paging, Internal	PINT	12
Call Park	PARK	
Privacy Release	PRS	
Release	RLS	
Repeat Last Number Dialed	RND	
Speaker Cut-off	SCF	
Speed Dial-System	SDS	
Speed Dial-Station (Controller)	SDC XX	13
Speed Dial-Station (User)	SDU XX	13
Station-to-Station Message	SSM	
System Night Operation	SYS	14
Universal Night Answer	UNA	
Voice Page	VCP XXXX	15

NOTES:

1. *NNNN = Directory Number: 1-, 2-, 3-, or 4-digit DNs are allowed if there is no conflict (e.g., 30X cannot be used if 30 is already being used.*
   XXXX = Hunt DN to remove the present DN, enter NONE. (Also see Station Hunt-Distributed.)
2. *Following electronic telephone DN assignment, enter # in place of the usual hunt DN.*
   X = Distributed Hunt Group Number (0 ~ 3).
3. *N = PCB location for the DDCU or DDMU PCB.*
   XX = Circuit number.
4. *XXX = Trunk Directory Number (assigned in Trunk Data Block).*
5. *There is a maximum of 500 Autodial (ADL) buttons per system.*
6. *XXX = Fixed digits to be dialed (maximum: 16 digits/* * = pause.*
7. *This feature can only be assigned to 2000-series LCD electronic telephones.*
8. *The Flash button causes a 500 ms or a 1-second flash to a CO trunk.*
9. *XX = The leading one or two digits (1 ~ 9) designating the Hundreds Group to be activated on an associated DSS console (switched operation only).*
10. *LNNX = The port number of the electronic telephone to be signaled.*
11. *External Paging is used to access External Paging Zones (0 ~ 4).*
12. *Internal Paging is used to access Internal Paging Groups (0, 2 ~ 17).*
13. *SDC XX makes the station a controller of Station Speed Dial list XX.*
    SDU XX makes the station a user of Station Speed dial list XX.
14. *A System Night Button (SYS) can be assigned to one Attendant-Position Electronic Telephone per tenant if an attendant console is not assigned to that tenant.*
15. *XXXX = the DN of the station that is to receive a Voice Page.*
16. CTRL X = *Ignore line entered.*
    CTRL H = *Backspace.*
    DEL = *Stop printing and return to REQ.*
    DEL DEL = *Exit program.*

(continued)

TABLE H-1 (continued)

Error Codes

Program Name: Electronic Telephone Data Block (DEKT)	
Error Code	Meaning
EREKT 00	A PCB is not equipped in that location.
EREKT 01	The PCB is a DSTU type (not DEKU).
EREKT 02	The port is busy (REQ = CHG or OUT).
EREKT 03	The port is already assigned (REQ = NEW).
EREKT 04	1 was entered, but tenant service was not enabled in the System Data Block.
EREKT 05	1 was entered, but Attendant 1 was not programmed (no Attendant Data Block).
EREKT 06	Wrong button number (over permitted button strip number).
EREKT 07	Assigned port LNNX is not assigned as a station port (Manual Signaling).
EREKT 08	The maximum number of ADL buttons is already assigned (maximum: 500)
EREKT 09	PUG was entered, but a Call Pickup Group number is not assigned.
EREKT 10	The DN conflicts with existing DN.
EREKT 11	240 DNs are already assigned in the system.
EREKT 12	The DN is already assigned to its maximum number of appearances (Primary is 1, Secondary is 95).
EREKT 13	"Call Pickup Group number = NONE" was entered, but PUG button is already assigned.
EREKT 14	The next hunt DN is not assigned.
EREKT 16	A DN has already been assigned to the port.
EREKT 17	The input data was erased because the program was aborted during a NEW data entry.
EREKT 18	The port is not assigned.
EREKT 19	Port is assigned to a DSTU PCB.
EREKT 20	The SDC is already assigned to this Speed Dial.
EREKT 21	The input port is not a DEKU port (SIG LNNX).
EREKT 22	PVR NNN/PVN NNN is entered, but trunk DN NNN has not been assigned.
EREKT 23	The input DN is a trunk DN (VCP NNN Hunt DN).
EREKT 24	Eight DNs have already been assigned to the Distributed Hunt Group.
EREKT 26	The input port conflicts with the electronic telephone's port (KEY x DIU LNNX).
EREKT 28	Autodial (ADL) digits exceed the maximum of 16.
EREKT 29	The first digit does not match with RM PFX, or the second digit conflicts with another DN or access code.
EREKT 30	The input port is not a DDCU port (KEY x DIU LNNX).
EREKT 31	The DIU button is already assigned to another button.

(continued)

TABLE H-1 (continued)

Error Codes

Program Name: Electronic Telephone Data Block (DEKT)	
Error Code	Meaning
EREKT 32	The associated DIU is busy.
EREKT 33	MES is set but the extension is not DIS = 2.
EREKT 34	DIS was entered, but DIS does not equal 1.
EREKT 40	The SYS button is already assigned in this tenant.
EREKT 41	More than two digits were entered as HNG XX.
EREKT 42	The Paging Group Number is out of range. It should be 0, or 2 ~ 17.
EREKT 43	The group to be assigned is already full (maximum member number of each Group 2 ~ 17 is 32; maximum member number of Group 0 is 96).
EREKT 44	The same Group number was entered twice.
EREKT 45	More than 4 (maximum) Paging Groups have been entered.
EREKT 47	The electronic telephone's assigned DSS console must be deleted before the telephone can be deleted.
EREKT 48	The SYS button cannot be set because the extension is not an Attendant-Position Electronic Telephone (DSD2 Data Block).

TABLE I

Procedure — Standard Telephone Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DSTT	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Port Number	POR	LNNX	1 & 2
Directory Number	DN	1 ~ 4 digits	3
Station Mix	SMX	Y or N	
Class of Service	COS	0 ~ 15	4
Tenant Number	TEN	0 or 1	
Call Pickup Group	PUG	0 ~ 31 or NONE	5
Hunt Number	HNT	(1 ~ 4 digits) XXXX, #X or NONE	6
Dialing Type	DLG	DIP, TON, MNL XXXX	7
Speed Dial List	SDL	SDC XX, SDU XX, NONE	8
Warning Tone Allowed?	WTA	Y or N	9
Call Forward to Trunk	CFT	Y or N	
Toll Restriction Class	TOL	0 ~ 8 or NONE	10
Message Waiting Lamp	MWL	Y or N	
	REQ	Repeat program, if necessary	

NOTES:

1. *NN = PCB location.*
2. *X = Circuit number.*
3. *4-, 3-, 2-, or 1-digit DNs are allowed if there is no conflict; (e.g., 30X is not allowed if 30 is used).*
4. *There are 16 different COS groups which are defined in the DCOS Data Block.*
5. *There is a maximum of 32 Call Pickup Groups.*
6. *XXXX = The number to which this DN hunts.*
   #X = Station Hunt-Distributed.
   X = Distributed hunt group number (0 ~ 3). Maximum 8 members per group.
   NONE = No hunt.
7. *DIP = Dial Pulse. TON = DTMF. MNL XXXX = Manual Line Direct to DN (1 ~ 4 digits), ATT 0 or ATT1.*
8. *SDC XX makes the station a controller of list XX. SDU XX makes the station a user of list XX.*
   Maximum: 50 personal 10-number Speed Dial-Station lists (XX = 1 ~ 50).
9. *Y = Call Waiting feature activated. N = Camp-on feature activated.*
10. *Classes 0 ~ 7 are defined in the Toll Restriction Data Block (**DTOL Program**).*
    Class 8 = Dial 0 or 1 restriction.
    NONE = No Toll Restriction.
11. CTRL X = *Ignore line entered.*
    CTRL H = *Backspace.*
    DEL = *Stop printing and return to REQ.*
    DEL DEL = *Exit program.*

(continued)

TABLE I (continued)

Error Codes

Program Name: Standard Telephone Data Block (DSTT)	
Error Code	**Meaning**
ERSTA 00	No PCB is equipped in that location.
ERSTA 01	The PCB is a DEKU type (not a DSTU).
ERSTA 02	Port is busy (REQ = CHG, OUT).
ERSTA 03	Port is already assigned (REQ = NEW).
ERSTA 05	1 was entered, but tenant service was not enabled in the System Data Block.
ERSTA 06	1 was entered, but ATT #1 was not programmed (no Attendant Data Block).
ERSTA 09	Unknown input.
ERSTA 10	DN conflicts with existing DN.
ERSTA 11	240 DNs are already assigned in the system.
ERSTA 12	DN is already assigned to the maximum number of appearances (96).
ERSTA 13	Hot Line DN does not exist.
ERSTA 14	Next Hunt DN does not exist.
ERSTA 17	MNL 0 was entered, but ATT0 is not equipped.
ERSTA 18	MNL 1 was entered, but ATT1 is not equipped.
ERSTA 19	MNL 0 was entered, but this station is in tenant group #1.
ERSTA 20	MNL 1 was entered, but this station is in tenant group #0.
ERSTA 21	Input data was erased because the program was aborted during NEW data entry.
ERSTA 22	The port is not assigned.
ERSTA 23	Another type of data (electronic telephone, etc.) is assigned to the input port.
ERSTA 24	SDC is already assigned to the input list.
ERSTA 25	The next input hunt DN is trunk DN.
ERSTA 26	The Distributed Hunt Group is already assigned its maximum member number (8).
ERSTA 27	Invalid toll class number (0 ~ 8).
ERSTA 28	The first digit does not match with RM PFX or the second digit conflicts with another DN or access code.

TABLE J

Procedure — **Class of Service Data Block**

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DCOS	
— DISK LOADING —			
	REQ	CHG	
	COS	0 AAA BBB etc.	1, 2, & 3
	COS	1 AAA BBB etc.	4
	COS	DEL	5
	REQ	Repeat program if necessary.	

NOTES:

1. *Enter a list of all features which are not allowed to this group. See Table J-1 for a list of features and codes.*
2. *Default = all features allowed.*
3. *If Lodging/Health Care features are to be allowed in this COS, the code* ***HRM*** *must be entered. This entry enables rather than denies these features.*
4. *A maximum of 16 COS Groups (0 ~ 15) is allowed.*
5. *The COS prompt will be repeated until* DEL *is entered, and then an REQ prompt will be given.*
6. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE J-1

CLASS OF SERVICE FEATURES AND CODES

FEATURE	CODE
Trunk Group 0	T00
Trunk Group 1	T01
Trunk Group 2	T02
Trunk Group 3	T03
Trunk Group 4	T04
Trunk Group 5	T05
Trunk Group 6	T06
Trunk Group 7	T07
Trunk Group 8	T08
Trunk Group 9	T09
Trunk Group 10	T10
Trunk Group 11	T11
Trunk Group 12	T12
Trunk Group 13	T13
Trunk Group 14	T14
Trunk Group 15	T15
DDIU Group 0	D00
DDIU Group 1	D01
DDIU Group 2	D02
DDIU Group 3	D03
DDIU Group 4	D04
DDIU Group 5	D05
DDIU Group 6	D06
DDIU Group 7	D07
DDIU Group 8	D08
DDIU Group 9	D09
DDIU Group 10	D10
DDIU Group 11	D11
DDIU Group 12	D12
DDIU Group 13	D13
DDIU Group 14	D14
DDIU Group 15	D15

FEATURE	CODE
Automatic Callback	ACB
Call Forward (All Calls/ext.)	CFD
Call Forward (Busy/ext.)	CFB
Call Forward (No Answer/ext.)	CFN
Call Forward-Busy (DID)	CSB
Call Forward-Busy/No Answer (DID)	CSN
Call Pickup-Directed	PUD
Call Pickup-Group	PUG
Call Waiting	CWT
Override	OVR
Speed Dialing-System	SDS
Attendant Control Override	ACO
Internal Group Paging (Group 00)	PI00
Internal Group Paging (Group 02)	PI02
Internal Group Paging (Group 03)	PI03
Internal Group Paging (Group 04)	PI04
Internal Group Paging (Group 05)	PI05
Internal Group Paging (Group 06)	PI06
Internal Group Paging (Group 07)	PI07
Internal Group Paging (Group 08)	PI08
Internal Group Paging (Group 09)	PI09
Internal Group Paging (Group 10)	PI10
Internal Group Paging (Group 11)	PI11
Internal Group Paging (Group 12)	PI12
Internal Group Paging (Group 13)	PI13
Internal Group Paging (Group 14)	PI14
Internal Group Paging (Group 15)	PI15
Internal Group Paging (Group 16)	PI16
Internal Group Paging (Group 17)	PI17
Internal Group Paging (Groups 02 ~ 17)	PIA
External Zone Paging (Zone 0)	PE0
External Zone Paging (Zone 1)	PE1

(continued)

TABLE J-1 (continued)

FEATURE	CODE
External Zone Paging (Zone 2)	PE2
External Zone Paging (Zone 3)	PE3
External Zone Paging (Zone 4)	PE4
External All Paging (Zones 0 ~ 4)	PEA
All Paging (Group 00, Zones 0 ~ 4)	PAL

FEATURE	CODE
Direct Trunk Access	DTA
LCR Class 1	LC1
LCR Class 2	LC2
LCR Class 3	LC3
Do Not Disturb	DND

Error Codes

Program Name: Class of Service Data Block (DCOS)	
Error Code	**Meaning**
ERCOS 01	Invalid response (0 ~ 15 is allowed).

TABLE K

Procedure — **Toll Restriction Data Block**

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DTOL	
— DISK LOADING —			
	REQ	CHG	
	TYPE	PAR, CLS, AOC	1

NOTES:

1. *Possible entries are:*
   PAR = Miscellaneous Parameters Table (K-1).
   CLS = Restriction Class Table (K-2).
   AOC = Area/Office Code Exception Table (K-3).
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE K-1

Miscellaneous Parameters Table

Load the **DTOL Utility Program**. When the TYPE prompt is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	PAR	
Home Area Code	HAC	NO/1X	1
Interchangeable Codes	ICC	Y or N	2
Specialized Common Carrier #1DN	SPCC1	NXXXXXX or 10XXX or NONE	3
Specialized Common Carrier #2DN	SPCC2	NXXXXXX or 10XXX or NONE	3
DDD Prefix	DDP	XXX (1,- 2-, or 3-digits) or NONE	
Number of digits for SPCC1 Authorization Code	AUTH1	1 ~ 12 or NONE	4
Number of digits for SPCC2 Authorization Code	AUTH2	1 ~ 12 or NONE	4

NOTES:

1. *This entry is coupled with the HAC entry in the PAR table in Least Cost Routing (DLC1). Data that is entered here will also appear in that table.*
2. *Informs the system if interchangeable codes are used (office codes with NO/1X format).*
3. *SPCC 1 & 2 entries are the DN of any specialized common carrier (SPCC) used (MCI, Sprint, etc.) or Equal Access Number (10XXX). Data that is entered here will also appear in the SMDR (**SMDR Program**), but **will not** appear in the SMDR output.*
4. *This represents the number of digits in the authorization codes that are used with SPCC1 or SPCC2. Data that is entered here will **not** appear in the SMDR output.*
5. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE K-2

Restriction Class Table

Load the **DTOL Utility Program**. When the TYPE prompt is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	CLS	
Class Number	CN0	0 ~ 7, NOUT	1 & 2
1 and 0 + Calls Allowed	OPR	Y or N	
International Calls (011, 01) Allowed	INT	Y or N	
L.D. Directory Assist. (NPA-555-1212) Allowed	LDA	Y or N	
Area Code Table = Allow or Deny	ACT	A or D	3
Area Code List = Add or Delete	ACD	A NO/1X NO/1X etc. or D NO/1X NO/1X etc.	4
Office Code Table = Allow or Deny	OCT	A or D	5
Office Code List = Add or Delete	OCD	A NXX NXXX etc. or D NXX NXXX etc.	6

NOTES:

1. *Enter the number of the Toll Restriction class (0 ~7) that is being defined. This number will be used in the DEKT, DSTT, and DTGP Data Blocks in response to the TOL prompt.*
2. *Enter OUT after the class number (NOUT) to remove that class from service.*
3. *Defines the Area Code Table of this class as an allow (A) or deny (D) type.*
   a. *If A is entered, the system **will allow** all area codes **except** those **deleted** in response to the ACD prompt (Note 4).*
   b. *If D is entered, the system **will deny** all area codes **except** those **added** in response to the ACD prompt (Note 4).*
4. *Used to add or delete area codes from the table (Note 3).*
5. *Defines the Office Code Table for this class as an allow (A) or deny (D) type.*
   a. *If A is entered, the system **will allow** all office codes **except** those **deleted** in response to the OCD prompt (Note 6).*
   b. *If D is entered, the system **will deny** all office codes **except** those **added** in response to the OCD prompt (Note 6).*
6. *Used to add or delete office codes from the table (Note 5). Ranges are possible (7309 = 730 ~739).*
7. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE K-3

Area/Office Code Exception Table

Load the **DTOL Utility Program**. When the TYPE prompt is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	AOC	
Table Number	TNO	0 ~ 31	
Area Code	ARC	NO/1X or NONE	1
Class Number	CNO	0 1 etc. or NONE	
Office Codes	OFC	A NXXX NXX etc. or D NXXX NXX etc.	2 & 3

NOTES:

1. *ARC identifies the area code to which this AOC is assigned. Format is NO/1X (N = 2 ~ 9, X = 0 ~ 9). A maximum of eight AOC tables can be assigned to any one area code, but the table numbers (TNO, Note 1) must be sequential.*
2. *Following the OFC prompt, the system will prompt "A" and any office codes that are entered will be added. To delete an office code, press the return key. The system will then prompt "D" and any entries that are made will be deleted. Office codes entered will be an* ***exception*** *to the listed area code and class. Ranges are possible (7309 = 730 ~ 739).*
3. *Codes cannot be added and deleted in the same pass through the table. A separate pass is required for each step.*
4. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Toll Restriction Data Block (DTOL)	
Error Code	**Meaning**
ERTRD 00	Area code (NO/1X) is beyond range.
ERTRD 01	Numeric error (0 ~ 9).
ERTRD 02	Authorization code is out of range (0 ~ 12).
ERTRD 03	Class number is out of range (0 ~ 7).
ERTRD 05	Number of entries exceeds the maximum (20).
ERTRD 06	Table number is beyond range (0 ~ 31).
ERTRD 07	Class numbers exceed the maximum (8).
ERTRD 08	Office code does not exist.

TABLE L

Procedure — Speed Dial List Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DSDL	
— DISK LOADING —			
	REQ	CHG, OUT	
List Number	LNO	XX	1
Store Number	STR	1 9*NPANNXXXXX	2, 3, 4
	STR	2 9*NPANNXXXXX	
	STR	3 9*NPANNXXXXX — etc.	
		DEL	5
	REQ	Repeat program, if necessary.	

NOTES:

1. *XX = List Number.*
   00 = System List (90 numbers maximum).
   01 ~ 50 = Station Lists (10 numbers each maximum).
2. *Input procedure is: Address Code + [space] + Access Code + Pause + DN. For example: 1 9*NPANNXXXX.*
3. *Stored numbers may be any length between 1 and 16 digits; * enters a 3-second pause and is counted as one of the 16 digits.*
4. *If the List Number (LNO) was 00 (system list), 2-digit address codes will be used (10 ~ 99).*
5. *No further prompt will be given until DEL is entered.*
6. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Speed Dial List Data Block (DSDL)	
Error Code	**Meaning**
ERSDL 00	The input list number is out of range (0 ~ 50 are allowed).
ERSDL 01	The address code of system list is out of range (10 ~ 99 are allowed).
ERSDL 02	The address code of station list is out of range (0 ~ 9 are allowed).
ERSDL 03	Invalid DN (1 ~ 16 digits are allowed).

TABLE M

Procedure — SMDR Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DMDR	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Account Code Length	ACL	1 ~ 12 or NONE	
Special Common Carrier #1 DN	SPCC1	NXXXXXX or 10XXX or NONE	1
Special Common Carrier #2 DN	SPCC2	NXXXXXX or 10XXX or NONE	1
Trunk Group	TGP	XX YYY	2
	TGP		3

NOTES:

1. *SPCC 1 & 2 entries are the DN of any Specialized Common Carrier (SPCC) used (MCI, Sprint, etc.) or Equal Access Number (10XXX). Data entered here will also appear in the PAR table in Toll Restriction (DTOL). (Data that is entered here will not appear in the SMDR output.)*
2. *Enter the trunk group number (XX) and the type of calls (YYY) to be recorded on this Trunk Group:*
   INC = Incoming only.
   OGT = Outgoing only.
   IAO = Incoming and outgoing.
   TOL = Toll only.
   INT = Incoming — All
   Outgoing — Toll only.
   NONE
3. *TGP continues to be prompted until* DEL *is entered.*
4. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: SMDR Data Block (DMDR)	
Error Code	**Meaning**
ERMDR 00	SMDR customer data already exists (REQ = NEW).
ERMDR 01	SMDR customer data does not exist (REQ = CHG, OUT).

TABLE N

Procedure — Attendant Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DATT	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Attendant Number	AND	0 or 1	
Port Number	POR	L001 (ATT 0) or L121 (ATT 1)	
Lockout Allowed?	LKO	Y or N	
Page Button	PAG	INT, EXT, N, or ALL	1
Incoming Call Priority	PRI	Y or N	2
Priority Group 1 (Current)	PR1	Printout of Current Priority Group	3
Priority Group 2 (Current)	PR2	Printout of Current Priority Group	3
Priority Group 3 (Current)	PR3	Printout of Current Priority Group	3
Priority Group 4 (Current)	PR4	Printout of Current Priority Group	3
Priority Group 5 (Current)	PR5	Printout of Current Priority Group	3
Priority Group 1 (Set)	PR1	NNN NNN NNN NNN NNN	4
Priority Group 2 (Set)	PR2	NNN NNN NNN NNN NNN	4
Priority Group 3 (Set)	PR3	NNN NNN NNN NNN NNN	4
Priority Group 4 (Set)	PR4	NNN NNN NNN NNN NNN	4
Priority Group 5 (Set)	PR5	NNN NNN NNN NNN NNN	4

NOTES:

1. *Designates the specific kind of paging accessed by the PAGE button.*
   INT = Expanded Internal Group Paging.
   EXT = External All Paging (Zones 0 ~ 4).
   N = External Paging to Zone N (0 ~ 4).
   ALL = Expanded Internal Group Paging and External All Paging.
2. *If "Y" (yes) is entered, all calls will be directed to the attendant console according to the priority defined by the PR1 ~ PR5 prompts. If "N" (no) is entered, all calls will be directed to the attendant console on a first in/first out priority basis.*
3. *If "Incoming Call Priority" is selected (PRI = Y), the current priority table will be printed under prompts PR1 ~ PR5.*
4. *Used to change the "Incoming Call Priority" tables (PR1 ~ PR5). NNN = Type of call (CO, FX, TIE, WAT, OPR, RCL, HLD, TIM, LN1, LN2, INT, SER [Business mode only]).*
5. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

(continued)

TABLE N (continued)

Error Codes

Program Name: Attendant Data Block (DATT)	
Error Code	Meaning
ERATT 00	A PCB is not equipped in that location.
ERATT 01	The PCB is not DEKU type.
ERATT 02	The port is busy.
ERATT 03	The port is already assigned (REQ = NEW).
ERATT 04	The port is not assigned yet (REQ = CHG, OUT).
ERATT 05	Invalid port number (ATT 0 is L001, ATT 1 is L121).
ERATT 06	The entered access code is not assigned to a paging zone or group.
ERATT 08	Input data was erased because the program was aborted during NEW data entry.
ERATT 09	Attendant data is not assigned to the input port (REQ = CHG, OUT).
ERATT 10	The trunk group is already in this priority group.
ERATT 11	This is not a valid entry.

TABLE O

Procedure — DSS Console Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	REQ	NEW, CHG, OUT	
DSS Number	NBR	N	1
Port Number	POR	LNNX	2
Station Port	SPT	LNNX	3
Fixed or Switched	F/S	F or S	4
Button Assignment	KEY	m *N (NN, NNN, NNNN)	5
		m #NN	6
		m Feature	7
		AUT L M XX (XXX, XXXX)	8
		DUP M	9
		DUP M X Y	10
		DUP M XX YY ZZ	11

NOTES:

1. *A maximum of eight DSS consoles may be assigned to each system. Up to two consoles may be assigned to a single electronic telephone.*
2. *L00X ~ L29X. X = 1 ~ 4.*
3. *The port of the station to which the DSS is attached (L00X ~ L29X).*
4. *When an electronic telephone is assigned to two consoles, both may be switched/fixed or one may be switched and one may be fixed. However, there cannot be a mixture of switched/fixed functions on the same console.*
5. *Used to assign a fixed DN to a DSS button (m = Button number; N = Extension DN).*
6. *Used to assign a switched DN to a DSS button (m = Button number; NN = Last two digits of extension DN).*
7. *Used to assign a feature to a DSS button. See Table O-1 for a list of available features.*
8. *Used to assign a range of numbers to a single console. L = Starting button of range. (L must be less than M.)*
   M = Ending button of range.
   XX, XXX = Starting DN to be programmed.
9. *Used to duplicate an entire DSS console button arrangement. M = Number of the DSS console to be copied from (0 ~ 7).*
10. *Used to duplicate a row of DSS buttons to another console.*
    M = Number of the DSS console being copied from.
    X = Row of the DSS console being copied from.
    Y = Row of the DSS console being copied to.
11. *Used to duplicate specific buttons from one console to another.*
    M = Number of the DSS console being copied from.
    XX = Starting button on the DSS console being programmed.
    YY = Starting button of the range to be copied.
    ZZ = Ending button of the range to be copied.
12. CTRL X = *Ignore line entered.*
    CTRL H = *Backspace.*
    DEL = *Stop printing and return to REQ.*
    DEL DEL = *Exit program.*

TABLE O-1

AVAILABLE FEATURES FOR DSS BUTTON ASSIGNMENT

FEATURE	ENTRY	NOTE
Account Number (SMDR)	CRG	
Alphanumeric Message	MES	
Automatic Callback	ACB	
Automatic Dialing, Flexible	ADL	1
Automatic Dialing, Fixed	FAD XXX	1
Call Forward — All Calls	CFD	
Call Forward — Busy	CFBY	
Call Forward — Busy/No Answer	CFBD	
Call Forward — No Answer	CFNA	
Call Forward — Busy (System/DID)	CFSN	
Call Pickup Directed	PUD	
Call Pickup Group	PUG	
Call Waiting	CWT	
Display Date and Time/Elapsed Time	DIS	2
Do Not Disturb	DND	
External Zone Paging	PEXT	
Flash	FLH	3
Hundreds Group	HNG XX	4
Internal Group Paging	PINT	
Manual Signaling	SIG LNNX	5
Message Waiting	MSG	
Override	OVR	
Call Park	PARK	
Privacy Release	PRS	
Release	RLS	
Repeat Last Number Dialed	RND	
Speaker Cut-off	SCF	
Speed Dial — System	SDS	
Speed Dial — Station (Controller)	SDC XX	6
Speed Dial — Station (User)	SDU XX	6
Station-to-Station Message	SSM	
System Night Operation	SYS	7
Universal Night Answer	UNA	

(continued)

TABLE O-1 (continued)

NOTES:

1. *There is a maximum of 500 Autodial buttons per system.*
2. *This feature can only be assigned to 2000-series LCD electronic telephones.*
3. *The Flash button causes a 500 ms or a 1-second flash to a CO trunk.*
4. *XX = The higher two digits of the extension DN (00 ~ 99).*
5. *LNNX = The port number of the electronic telephone to be signaled.*
6. *SDC XX makes the station a controller of list #XX. SDU XX makes the station a user of list #XX. Maximum: 50, 10-number Speed Dial-Station lists (XX = 1 ~ 50).*
7. *Only one SYS button can be assigned per tenant when the tenant does not have an attendant console assigned. The SYS button can only be assigned to an Attendant-Position Electronic Telephone or to a DSS console assigned to an Attendant-Position Electronic Telephone.*

Error Codes

Program Name: DSS Console Data Block (DDSS)	
Error Code	**Meaning**
ERDSS 00	A PCB is not equipped in that location.
ERDSS 01	The port is already assigned (REQ = NEW).
ERDSS 02	The wrong button number was entered.
ERDSS 03	The input DSS or feature button conflicts with the existing button.
ERDSS 04	The PCB is not a DDSU
ERDSS 05	The port is not assigned (REQ = CHG, OUT).
ERDSS 06	The port is busy (REQ = CHG, OUT).
ERDSS 07	An electronic telephone is already assigned to the PCB.
ERDSS 08	Two DSS consoles are already assigned to the electronic telephone.
ERDSS 09	The start button number is larger than the end button number (DUP).
ERDSS 10	The DSS button or feature button conflicts with existing button (DUP).
ERDSS 11	The SYS button is already assigned in this tenant.
ERDSS 12	The input port cannot be disabled.
ERDSS 13	The wrong button parameter was entered.
ERDSS 14	The input port is not an electronic telephone port (SIG LNNX).
ERDSS 15	A station port (SPT) was entered, but the DSS is already assigned to the PCB.
ERDSS 16	The start button number is larger than the end button number (AUT).
ERDSS 17	The button data does not exist.
ERDSS 18	The type of button assignment (Fixed/Switched) is different from the master DSS.

(continued)

TABLE O-1 (continued)

Error Codes

Program Name: DSS Console Data Block (DDSS)	
Error Code	Meaning
ERDSS 19	DIS button is set, but extension is not set (DIS = 1).
ERDSS 20	MES button is set, but extension is not set (DIS = 2).
ERDSS 22	The input DN is a trunk DN (VCP NNN).
ERDSS 23	This SDC is already assigned.
ERDSS 24	A PUG button has been entered, but a Call Pickup Group has not been assigned.
ERDSS 25	The maximum number of ADL buttons (500) is already assigned.
ERDSS 26	Too many digits have been assigned to ADL (maximum = 16).
ERDSS 27	In Business systems, fixed dialing digits cannot be assigned to ADL buttons. Assign these digits to FAD buttons.
ERDSS 28	The SYS button is set, but the extension is not an Attendant-Position Electronic Telephone.

TABLE P

Procedure — Traffic Measurement Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DTRF	
— DISK LOADING —			
	REQ	STT, RPT, OUT, CHG	1
System Date	SYST. DATE MMDDYY	MMDDYY or CR	2
Day of Week	DOW	SUN, MON, TUE, WED, THU, FRI, SAT	3
System Time	SYST. TIME HHMMSS	HHMMSS or CR	4
Schedule	SCH -XXX-	30, 60, CMD, or CR	5
Start Date	STR. DATE MMDDYY	MMDDYY or CR	6
Start Time	STR. TIME HHMM	HHMM or CR	7
Report	RPT		
	SYST	Y or N	8
	ATT0	Y or N	
	ATT1	Y or N	
	TGP00 ~ TGP15	Y or N	

NOTES:

1. *STT = Start Command — used to initialize the program and to start the record-keeping reporting activity.*
   RPT = Report Command — if the program had been started previously, a report would follow. See Table P-1 for format.
   OUT = Out Command — used to stop reports.
   CHG = Change Command — used to alter reporting parameters.
2. *The system will output the date in its memory (Month, Day, Year). Any entry (MMDDYY) will overwrite the existing data. A CR = no change.*
3. *Enter the day of the week: SUN, MON, TUE, WED, THU, FRI, or SAT.*
4. *The system will output the time in its memory (Hour, Minute, Second). An entry (HHMMSS) will overwrite the existing data. A CR = no change.*
5. *Schedule of Reports:*
   30 = Report every 30 minutes beginning at the time listed as STR.DATE (Note 6) and STR.TIME (Note 7).
   60 = Report every 60 minutes beginning at the time listed as STR.DATE (Note 6) and STR.TIME (Note 7).
6. *Date that record-keeping and reporting should start. The system will output the date in its memory (Month, Day, Year). An entry (MMDDYY) will overwrite the existing data. A CR = no change.*
7. *The time that record-keeping and reporting should start. The system will output the time in its memory (Hour and Minute). An entry (HHMM) will overwrite the existing data. A CR = no change.*
8. *Enter Y or N, followed by a CR to select the parameters to be reported (see Table P-2).*
9. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE P-1

TRAFFIC MEASUREMENT REPORT FORMAT

ITEM	PROMPT	USER ENTRY
Authorization Procedure	OK	DTFR
— DISK LOADING —		
	REQ	RPT
	RPT FROM	MM DD YY
		HH MM SS
	TO	MM DD YY
		HH MM SS
	SYST	RCVR DLY 0000
	ATT 0	IN SVC 0000
		WK TIM 0000
		INC TRK 0000
		INC TIM 0000
		O CALL 0000
		LPS BSY 0000
		TTA 0000
		OVFL 0000
	ATT 1	(SAME AS ATT 0)
	TRUNKS	TGP 00*
		INC USE 0000
		INC CALL 0000
		O.G. USE 0000
		O.G. CALL 0000
		ATB 0000

*Trunk Groups 01 ~ 15 are reported in the same way as Group 00.

TABLE P-2

TRAFFIC MEASUREMENT PARAMETERS

GROUP	ITEM RECEIVED	TYPE OF MEASUREMENT
System	DTMF Receiver Delay (3 sec.)	Peg Count
Attendant #0	Time in Service	CCS
	Work Time	CCS
	Incoming Trunk Calls	Peg Count
	Time Servicing Incoming Calls	CCS
	Dial 0 Calls	Peg Count
	All Loops Busy	Peg Count
	Average Time to Answer	SEC
	Overflow	Peg Count
Attendant #1	(Same as Attendant #0)	
Trunks	Group 00* Incoming Usage	CCS
	Incoming Calls	Peg Count
	Outgoing Usage	CCS
	Outgoing Calls	Peg Count
	All Trunks Busy	Peg Count

*Trunk Groups 01 ~ 15 are reported in the same way as Group 00.

Error Codes

Program Name: Traffic Measurement (DTRF)	
Error Code	**Meaning**
ERTRF 01	The program has already been started. Either the start time has been reached or STT was entered previously (REQ = STT).
ERTRF 02	Invalid response. STT or RPT was entered in response to REQ but the SCH entry is 30, 60, or NONE.
ERTRF 03	RPT was entered in response to REQ, but the program has not been started (to correct start time and date, enter = STT).

TABLE Q

Procedure — DTMF Receiver Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DRCV	
— DISK LOADING —			
	REQ	NEW, OUT	
Port Number	POR	R00X/R01X	1
	REQ		

NOTES:

1. *Enter the Receiver port number (R00/R01 = PCB number, X = circuit number — 1 ~ 8).*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: DTMF Receiver Data Block (DRCV)	
Error Code	**Meaning**
ERREC 00	A PCB is not equipped in that location.
ERREC 01	The PCB is not a DRCU/FRCU.
ERREC 02	The port is busy (REQ = OUT).
ERREC 03	The port is already assigned (REQ = NEW).
ERREC 04	The port is not assigned (REQ = OUT).
ERREC 05	Receivers are all assigned (maximum is 16).

TABLE R

Procedure — Trunk Group Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DTGP	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Trunk Group Number	GRP	0 ~ 15 or PVL	1
Tenant Number	TEN	0 or 1	
Trunk Type	TKT	COT, FEX, DID, CSA, TIE, WAT	2
Incoming/Outgoing	IAO	ICT, OGT, or IAO	
Advance Step	STP	XX or NONE	3
Access Code	COD	1 ~ 3 digits	
Class of Service	COS	0 ~ 15	4
Transmission	TRN	NTC, TRC, or VNL	
Start Arrangement	STR	IMM, WNK, or DDL	
Warning Tone Allowed?	WTA	Y or N	
Outgoing Absorb Digits	OAB	X or XX or NONE	5
Incoming Absorb Digits	IAB	X or XX or NONE	6
Translated Number 1	TRN	X # Y, X # YY, or NONE	7
Translated Number 2	TRN2	X # Y, X # YY, or NONE	7
Toll Restriction Class	TOL	0 ~ 8 or NONE	8
Flash-Hook Timing	FLT	1 or 2	9

NOTES:

1. *A maximum of 16 Trunk Groups (normally 0 ~ 15) is possible. If private lines are to be equipped, the code PVL is used in place of 15.*
2. *TKT cannot be changed. The Data Block must be removed (OUT) and NEW data entered.*
3. *The Trunk Group that is to be stepped to if this group is busy.*
4. *COS is meaningful only for TIE/CCSA/DID Trunks. Sixteen COS groups are provided and are defined in the Class of Service Data Block.*
5. *List the digits which are to be ignored for the purpose of Toll Restriction. These digits will be outpulsed, but not counted as the first digit.*
6. *Enter the number of digits which are to be stripped from an incoming dialed DN (TIE, DID, or CCSA Trunk).*
   Example: IAB = 1. Incoming DN = 8249. Recognized DN = 249.
7. *Enter the absorbed digit (IAB) to be translated.*
   X = the absorbed digit (IAB) to be translated. Y or YY = the translated digits to be inserted.
   Example: IAB = 1. TRN1 = 9#2. Incoming DN = 949. Recognized DN = 249.
   TRN2 = 8#3. Incoming DN = 849. Recognized DN = 349.
8. *Classes 0 ~ 7 are defined in the Toll Restriction Data Block (**DTOL Program**).*
   Class 8 = 0 and 1 restriction. NONE = no restriction.
9. *1 = 500 ms. 2 = 1 second.*
10. CTRL X = *Ignore line entered.* DEL = *Stop printing and return to REQ.*
    CTRL H = *Backspace.* DEL DEL = *Exit program.*

TABLE R-1

TRUNK GROUP DATA BLOCK ENTRIES

TRUNK TYPES

	COT	FEX	WAT	PVL	DID	CSA	TIE
GRP	X	X	X	X	X	X	X
TEN	X	X	X	O	X	X	X
TKT	X	X	X	O	X	X	X
IAO	X	X	X	X	X	X	X
STP	X	X	X	O	X	X	X
COD	X	X	X	O	X	X	X
COS	O	O	O	O	X	X	X
TRN	X	X	X	X	X	X	X
STR	X	X	X	X	X	X	X
WTA	X	X	X	X	X	X	X
OAB	X	X	O	O	X	O	O
IAB	O	O	O	O	X	X	X
TRN1	O	O	O	O	X	X	X
TRN2	O	O	O	O	X	X	X
TOL	O	O	O	O	O	X	X
FLT	X	X	X	X	O	O	O

Legend: X = Used O = Not Used

Error Codes

Program Name: Trunk Group Data Block (DTGP)	
Error Code	Meaning
ERTRG 01	The group still has a trunk assigned (REQ = OUT).
ERTRG 02	The entered group number is already assigned (REQ = NEW).
ERTRG 03	One or more trunks are busy (REQ = CHG).
ERTRG 04	The entered group number does not exist (REQ = CHG).
ERTRG 05	The entered advance step group is the same as this group number.
ERTRG 08	#1 entered but tenant service not enabled in System Data Block.
ERTRG 09	#1 entered but Attendant Console #1 does not exist.
ERTRG 10	The start arrangement conflicts with trunk type.
ERTRG 13	The entered group number does not exist (REQ = OUT).
ERTRG 14	The access code conflicts with an existing number.
ERTRG 15	Input data was erased because the program was aborted during a NEW mode.

TABLE R-2

PERCEPTION II LOSS PLAN

THROUGH CONNECTION		TERMINAL BALANCE			THROUGH BALANCE
			NON-VNL		VNL
FROM \ TO		Station Lines/ Attendant Lines	Non-transmission Compensated (2-wire facililty <2dB loss and not impedance compensated)	Transmission Compensated (2-wire facility >2dB loss or impedance compensated, or 4-wire facility)	4-wire
TERMINAL BALANCE	Station Lines/ Attendant Lines	5	1	1	3
TERMINAL BALANCE NON-VNL	Non-transmission Compensated (2-wire facility <2dB loss and not impedance compensated)	1	1	1	3
TERMINAL BALANCE NON-VNL	Transmission Compensated (2-wire facility >2dB loss or impedance compensated or 4-wire facility)	1	1	1	1
THROUGH BALANCE VNL	4-wire	3	3	1	1

NOTE:
The numbers in the boxes represent actual through connection loss in dB.

TABLE S

Procedure — Trunk Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DTRK	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Port Number	POR	TNNX	1
Group/Member Number	GMN	GGMM	2 & 3
Trunk DN	TDN	XXXX	4
Remote Access DAY & NITE	RAD	Y or N	
Night Number	NIT	NNNN or NONE (UNA)	5
DAY Number	DAY	NNNN, ATT0, ATT1, or NONE	6 & 7
Signaling	SIG	GRD, LOP, EAM, LDR or OAD	
Disconnect Supervision	DIS	Y or N	
Control of Disconnect	CTL	OPC or FPR	8
Incoming Dialing	DIN	DIP or TON	9
Outgoing Dialing	DOT	P10, P20, or TON	10
Private Line Outgoing Call Restriction	OTR	LNNX, LNNX . . .	11
Answer Supervision	ANS	Y or N	12
Destination for Transfer Recall Termination	TRCL	ATT0, ATT1, UNA, DN, or NONE	13

NOTES:

1. *NN = Trunk PCB number, X = circuit number.*
2. *GG = Trunk Group Number (0 ~15). MM = Unique trunk number within group (00 ~ 63).*
3. *GMN cannot be changed, Data Block must be removed (OUT) and NEW data must be entered.*
4. *This prompt only appears for Trunk Group 15 (PVL). TDN is the DN assigned to a private trunk line (1 ~ 4 digits).*
5. *NNNN = Trunk's Night Directory Number (1 ~ 4 digits). This number can also be changed by the Attendant when making night assignments (no meaning for TIE/CCSA/DID/PVL trunks). This number must match the REM entry in the* ***DSYS Program*** *in order to activate Remote Access to Services.*
6. *NNNN = Trunk's DAY Directory Number (1 ~ 4 digits). This number can also be changed by the Attendant.*
7. *ATT0 = Will only ring at Attendant 0. ATT1 = Will only ring at Attendant 1. NONE = Will alternate between Attendant 0 and Attendant 1.*
8. *OPC = Originating Party Control, FPR = First Party Release.*
9. *This prompt only appears for TIE/CCSA/DID Trunks.*
10. *Outgoing dialing method: P10 = Rotary Dial 10 PPS. P20 = Rotary Dial 20 PPS TON = DTMF*
11. *The OTR prompt appears only when a trunk is assigned to Trunk Group 15 (PVL). Following the OTR prompt, the system will prompt "D." Any entries made will be deleted. To add an extension port, press the return key. The system will then prompt "A" and any entries made will be added. Each private line can have up to 96 line appearances, each of which can be individually restricted, using OTR. When programming these extension ports, up to ten ports may be entered in a single line.*
12. *Is Answer Supervision required to the calling party?*
13. *This entry assigns the destination of a Transfer Recall on this trunk.*
14. CTRL X = *Ignore line entered.* DEL = *Stop printing and return to REQ.* CTRL H = *Backspace.* DEL DEL = *Exit program.*

TABLE S-1

TRUNK GROUP DATA BLOCK ENTRIES

TRUNK TYPES

	COT	FEX	WAT	PVL	DID	CSA	TIE
POR	X	X	X	X	X	X	X
GMN	X	X	X	X	X	X	X
TDN	O	O	O	X	O	O	O
RAD	X	X	X	O	O	O	O
NIT	X	X	X	O	O	O	O
DAY	X	X	X	O	O	O	O
SIG	X	X	X	X	X	X	X
DIS	X	X	X	X	X	X	X
CTL	O	O	O	O	X	X	X
DIN	O	O	O	O	X	X	X
DOT	X	X	X	X	X	X	X
ANS	O	O	O	O	X	X	X

Legend: X = Used O = Not Used

Error Codes

Program Name: Trunk Group Data Block (DTRK)	
Error Code	Meaning
ERTRK 00	A PCB is not equipped in that location.
ERTRK 01	The PCB is not trunk type.
ERTRK 02	The port is busy (REQ = OUT).
ERTRK 03	The port is already assigned (REQ = NEW).
ERTRK 04	This Trunk Group Data Block does not exist.
ERTRK 05	Member number is already assigned.
ERTRK 06	The entry conflicts with an existing DN or TDN.
ERTRK 07	The night number that was entered does not yet exist.
ERTRK 09	The type of signaling entered conflicts with the trunk type.
ERTRK 11	The input data was erased because the program was aborted during a NEW mode.
ERTRK 12	The port is not assigned.

(continued)

TABLE S-1 (continued)

Error Codes

Program Name: Trunk Group Data Block (DTRK)	
Error Code	Meaning
ERTRK 13	Another type of data is already assigned to the input port.
ERTRK 15	The entered DN is already assigned to a station (electronic or standard telephone).
ERTRK 16	The entered DN is already assigned to another trunk.
ERTRK 17	The input DN is DIU DN.
ERTRK 20	The Transfer Recall Termination DN does not exist.
ERTRK 21	The input port has already been entered.
ERTRK 22	The maximum number of ports (96) has already been registered for this PVL.
ERTRK 23	The entered port does not exist.

TABLE T

Procedure — Least Cost Routing Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
LCR Utility #1 or #1	OK	DLC1, DLC2	1
	— DISK LOADING —		
	REQ	CHG	
Data Table Type	TYPE	PAR, ACT, AOC (DLC1) or RTB, MDT (DLC2)	2

NOTES:

1. *LCR utilities are divided between two programs:*
   Enter: DLC1 for: PAR (Miscellaneous Parameters)
   ACT (Area Code Table)
   AOC (Area/Office Code Table)
   DLC2 for: RTB (Route Table)
   MDT (Modify Digits Table)
2. *If DLC1 was entered, possible responses are PAR, ACT, or AOC. If DLC2 was entered, the possible responses are RTB or MDT.*

TABLE T-1

Miscellaneous Parameters Table

Load the **DLC1 Utility Program**. When TYPE is prompted, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	PAR	
Interchangeable Codes	ICC	Y or N	1
"0" Call Timeout	OTO	XX (time in seconds 0 ~ 99)	
Return Dial Tone after LCR Access Code	RTD	Y or N	
Warn Tone to caller when last route is selected	WTA	Y or N	
Home Area Code	HAC	NO/1X (Home Area Code)	2
Toll Free (**800**) calls permitted via LCR	TFC	Y or N	
Local Call Route	LCR	XX (Local Call Route Table 1 ~ 15)	
Service Code Table	SVC	A NXX NXX or D NXX NXX NXX	3
Directory Assistance (**555**) Call Allow	DAC	Y or N	
Directory Assistance (**555**) Call Route	LD1	XX = 1 ~ 15	4
DDD Prefix	DDP	XXX (1 ~ 3 digits) or NONE	

NOTES:

1. *Informs the system if interchangeable codes are used (Office Codes with NO/1X format).*
2. *Defines the area code in which the system is located. Home area codes are used to route dialed numbers which do not contain an area code. This entry is coupled with the HAC entry in the PAR table Toll Restriction (**DTOL Program**). Data that is entered here will also appear in that table.*
3. *Following the SVC prompt, the system will prompt an "A." Any entries made will be added. To delete a code, press the return key. The system will then prompt "D," and any entries made will be deleted. Codes cannot be added and deleted in the same pass through the table. A separate pass is required for each step.*
4. *Route Table to be used for 555 calls.*
5. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE T-2

Area Code Table

Load the **DLC1 Utility Program**. When TYPE is prompted, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	ACT	
Route Table Number	RNO	NN (Route Table 1 ~ 15), OUT or NN OUT	1
Area Codes — Add	ACA	NO/1X, NO/1X, etc.	2
Area Codes — Delete	ACD	NO/1X, NO/1X, etc.	3

NOTES:

1. *OUT clears RNO 1~14 and assigns all area codes to RNO 15. NN OUT clears RNO NN and assigns the cleared area codes to RNO 15.*
2. *Input area codes to be added to this RNO. A maximum of 160 codes in the format NO/1X are permitted (N = 2 ~ 9, X = 0 ~ 9). At start-up, RNO 15 contains all possible area codes. As codes are added to RNO 1 ~ 14, they are automatically deleted from RNO 15.*
3. *Input codes to be deleted from this RNO. As codes are deleted from RNO 1 ~ 14, they are automatically added to RNO 15. Codes can only be deleted from RNO 15 by adding them to another RNO.*
4. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE T-3

Area / Office Code Table

Load the **DLC1 Utility Program**. When TYPE is prompted, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	AOC	
Table Number	TNO	XX Table No. (1 ~ 16)	
Area Code	ARC	N 0/1X or NONE	
Route Table Number	RNØ	XX (1 ~ 15)	
Office Codes — Add	OCA	NXX NXXX etc.	1
Office Codes — Delete	OCD	NXX NXXX etc.	1

NOTE:

1. *A maximum of 800 3-digit numbers (in the format NXX [N = 2 ~ 9. X = 0 ~ 9]) are permitted. Ranges are possible (7309 = 730 ~ 739).*

TABLE T-4

Route Table

Load the **DLC2 Utility Program**. When TYPE is prompted, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	RTB	
Route Table Number	RNO	XX (1 ~ 15), OUT, or NN OUT	1
Route #1 Definition	RT1	XX MM or None	2
Route #2 Definition	RT2	XX MM or None	2
Route #3 Definition	RT3	XX MM or None	2
Route #4 Definition	RT4	XX MM or None	2
Route #5 Definition	RT5	XX MM or None	2
Route #6 Definition	RT6	XX MM or None	2
— Printout of Existing Route Schedule —			3
Route Schedule A	SCHA	HHMM HHMM	4
Class 3 Routing Priority	LC3	RTX, RTX, etc. or NONE	5 & 8
Class 2 Routing Priority	LC2	RTX, RTX, etc. or NONE	5 & 8
Class 1 Routing Priority	LC1	RTX, RTX, etc. or NONE	5 & 8
Route Schedule B	SCHB	HHMM	4 & 6
Class 3 Routing Priority	LC3	RTX, RTX, etc. or NONE	5 & 8
Class 2 Routing Priority	LC2	RTX, RTX, etc. or NONE	5 & 8
Class 1 Routing Priority	LC1	RTX, RTX, etc. or NONE	5 & 8
Route Schedule C	SCHC	CR	4 & 7
Class 3 Routing Priority	LC3	RTX, RTX, etc. or NONE	5 & 8
Class 2 Routing Priority	LC2	RTX, RTX, etc. or NONE	5 & 8
Class 1 Routing Priority	LC1	RTX, RTX, etc. or NONE	5 & 8

NOTES:

1. *OUT = Will clear all Route Tables.* *NN OUT = Will clear Route Table NN.*
2. *Route definition — maximum is six routes.*
   Format is: XX = Trunk Group Number (0 ~ 15).
   *MM = Modify Digits Table to be applied (1 ~ 12), MD Table **must** be entered.*
3. *Existing Route Schedule data is printed automatically after the response to RT6 prompt is entered.*
4. *Time-of-day interval for this routing schedule.*
5. *Maximum combined entries for LC3, LC2, LC1 are six routes. **Do not** assign the same route to more than one class.*
6. *Entry required for schedule B end time only. Schedule A end time has defined schedule B start time.*
7. *No entry required. Schedule A start time has defined the schedule C end time and schedule B end time has defined the schedule C start time.*
8. *LC3, LC2, and LC1 are used in DCOS Data Block to define Station Class of Service. The access permitted to each class: LC1 = All routes defined for LC1, LC2, LC3.*
   LC2 = Routes defined for LC2, LC3.
   LC3 = Routes defined for LC3 only.
9. CTRL X = *Ignore line entered.* DEL = *Stop printing and return to REQ.*
   CTRL H = *Backspace.* DEL DEL = *Exit program.*

TABLE T-5

Modify Digits Table

Load the **DLC2 Utility Program**. When TYPE is prompted, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	MDT	
Table Number	TNO	XX etc. (1 ~ 12)	
Number of digits to be deleted from dialed number	DLT	XX etc. (maximum: 10) or NONE	
Digits to be prefixed to dialed number	ADD	XXXX etc. (maximum: 20) or NONE	1

NOTES:

1. *The following codes are used to insert pauses in response to ADD:*
   **1 = 1 digit = 1-sec. pause.* **2 = 1 digit = 2-sec. pause.* **3 = 1 digit = 6-sec. pause.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Least Cost Routing Data Block (DLC1 and DLC2)	
Error Code	**Meaning**
ERLCR 00	Input time (in seconds) is out of range (0 ~ 99).
ERLCR 01	Area Code (N 0/1X) is out of range (N = 2 ~ 9, X = 0 ~ 9).
ERLCR 02	Route number is out of range (1 ~ 15).
ERLCR 03	Service Code error.
ERLCR 04	Service Codes exceed the maximum (10).
ERLCR 05	Table number is out of range (1 ~ 16).
ERLCR 06	Office Code is out of range.
ERLCR 07	Trunk Group number is out of range.
ERLCR 08	Modify Digits Table number is out of range (1 ~ 12).
ERLCR 09	Route number error (RT1 ~ RT6).
ERLCR 10	The number of digits to be deleted is out of range (10).
ERLCR 11	The digits to be added exceed the maximum (20).
ERLCR 12	The digit to be added is incorrect.
ERLCR 13	Numeric error (0 ~ 9).
ERLCR 14	The number of Area Codes exceeds maximum (maximum = 160).
ERLCR 15	The number of Office Codes exceeds maximum (maximum = 800).
ERLCR 16	Schedule time is out of range (HH = 0 ~ 23, MM = 0 ~ 59).
ERLCR 17	Schedule time error.
ERLCR 18	Route number is already assigned.

TABLE U

Procedure — Lodging/Health Care Features Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DHMF	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	1
Automatic Wake-up Source	AWU SRC	MOH, VCE, or NONE	2
Automatic Wake-up	AWU PDR	SMDR, TTY, or NONE	
Message Waiting	MW PDR	SMDR, TTY, or NONE	
Message Registration	MR PDR	SMDR, TTY, or NONE	
Room Status Audit	RMS	SMDR, TTY, or NONE	
Room Number Prefix	RM PFX	X or NONE	3

NOTES:

1. *"OUT" sets all entries to "NONE."*
2. *MOH = Music-on-Hold source. VCE = Preprogrammed digitized voice announcement.*
3. *X = 1 ~ 8 are allowed if there is no conflict (9 is not allowed because it is reserved for trunk access).*
4. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Lodging/Health Care Features Data Block (DHMF)	
Error Code	**Meaning**
ERHMF 00	The input data was erased because the program was aborted during a NEW entry.

TABLE V

Procedure — Digital Data Interface Unit Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DDIU	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Port Number	POR	LNNX	1, 2 & 3
Type of DDIU	TYP	DIU1 or DIU2	4
Directory Number	DN	1 ~ 4 digits	5 & 6
Hunt Directory Number	HNT	XXXX (1 ~ 4 digits) or NONE	5 & 7
Class of Service Group	COS	0 ~ 15	8
Groups of DDIUs	GOD	0 ~ 15	9
Tenant Number	TEN	0 or 1	10
Button Assignment	KEY	Button Number 0 ~ 9 + [space] + FTR	11

NOTES:

1. *NN = PCB location.*
2. *X = Circuit number.*
3. *Ports LNN1 ~ 4 on a DMDU PCB can be used if they are not assigned in the **DMDM Program**.*
4. *DIU1 = DDIU-MA. DIU2 = DDIU-MAT.*
5. *This prompt will only appear when DIU2 (DDIU-MAT) is entered after the TYP prompt.*
6. *This directory number will appear on an electronic telephone.*
7. *XXXX = The number to which this DN hunts. NONE = No hunt.*
8. *There are 16 different COS groups (which are defined in the COS Data Block).*
9. *Assigns this DDIU to one of 16 possible groups. Dial access into a group can be denied by Class of Service.*
10. *The TEN entry for a DDIU-MAT should be the same as the TEN entry for the electronic telephone to which it is assigned.*
11. *Enter the button number, followed by a space and then the entry. Button 0 must be the station primary DN. See Table V-1 for possible entries.*
12. CTRL X = *Ignore line entered.*
    CTRL H = *Backspace.*
    DEL = *Stop printing and return to REQ.*
    DEL DEL = *Exit program.*

SPECIAL NOTE:

*When a **DIU2** is assigned, two key entries must be made in the **DEKT PROGRAM** as follows:*

PROMPT	USER ENTRY	NOTE
KEY	DIU LNNX	1
KEY	DRS	2

NOTES:

1. *Port number of DIU attached to the electronic telephone (Data DN).*
2. *Data release key.*

TABLE V-1

DDIU BUTTON ASSIGNMENTS

DIRECTORY NUMBER	ENTRY	NOTE
Single Call Ring	SCR NNNN XXXX	1
Single Call No Ring	SCN NNNN XXXX	1

FEATURE	ENTRY	NOTE
Automatic Callback	ACB	
Automatic Dialing	ADL/FAD XXX	2
Do Not Disturb	DND	
Repeat Last Number Dialed	RND	
Station Speed Dial Controller/User	SDC XX/SDU XX	
System Speed Dial	SDS	

NOTES:

1. *NNNN = Directory Number: 1-, 2-, 3-, or 4-digit DNs are allowed if there is no conflict (i.e., 30X is not allowed if 30 is used).*
   XXXX = Hunt DN — enter NONE to remove present DN. Also see Station Hunt-Distributed.
2. *The maximum number of ADL/FAD buttons for the entire system is 500.*
3. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: DDIU Data Block (DDIU)	
Error Code	Meaning
ERDIU 00	A PCB is not equipped in that location.
ERDIU 01	The PCB is not a DDCU or DMDU type.
ERDIU 02	The port is busy (REQ = CHG or OUT).
ERDIU 03	The port is already assigned (REQ = NEW).
ERDIU 04	#1 was entered, but tenant service was not enabled in the System Data Block.
ERDIU 05	#1 was entered, but Attendant #1 was not programmed (no Attendant Data Block).
ERDIU 06	The button number is not allowed (exceeds maximum allowed for this DDIU).
ERDIU 07	The first digit does not match with RM PFX, or the second digit conflicts with another DN or access code.
ERDIU 08	The maximum number of ADL / FAD buttons is already assigned (maximum = 500).
ERDIU 10	The DN conflicts with existing DN.
ERDIU 11	240 DNs are already assigned in the system.

(continued)

TABLE V-1 (continued)

Error Codes

Program Name: DDIU Data Block (DDIU)	
Error Code	**Meaning**
ERDIU 12	The DN is already assigned to its maximum number of appearances (maximum for a Primary DN = 1; Secondary DN = 95).
ERDIU 14	The next hunt DN is not assigned.
ERDIU 16	The input DN is already assigned to the port.
ERDIU 17	The input data was erased because the program was aborted during a NEW entry.
ERDIU 18	The port is not assigned.
ERDIU 19	Another type of data is assigned to the input port.
ERDIU 20	SDC is already assigned to the input list.
ERDIU 23	The input DN is a trunk DN (VCP NNN HUNT DN).
ERDIU 24	The first digit of an input DN cannot be "0" or "9."
ERDIU 33	Only one DN can be assigned to a DIU.

TABLE W

Procedure — Message Registration Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DMRD	
— DISK LOADING —			
	REQ	CHG, OUT	
Interchangeable Code?	ICC	Y or N	
DDD Prefix	DDP	1 ~ 3 digits or NONE	
Home Area Code	HAC	NO/1X	1
Supervision Time	SVT	0 ~ 120 (time in seconds)	
Rate Table #1	TN1		2
First Billing Interval	FBI	0 ~ 180 (time in seconds)	
First Billing Unit	FBU	1 ~ 100	
Incremental Billing Interval	IBI	1 ~ 180 (time in seconds)	
Incremental Billing Units	IBU	0 ~ 100	
Unit Cost	CST	1 ~ 500 (cost in cents)	
Office Codes — Add	OCA	NXX or NXXX	3
Office Codes — Delete	OCD	NXX or NXXX	3

NOTES:

1. *N = 2 ~ 9, X = 0 ~ 9.*
2. *This Rate Table will be followed by four other Rate Tables with the same prompts (FBI ~ OCD).*
3. *A maximum of 800 3-digit numbers (in the format NXX [N = 2 ~ 9, X = 0 ~ 9]) is permitted. Ranges are possible (7309 = 730 ~ 739).*
4. CTRL X = *Ignore line entered.* CTRL H = *Backspace.* DEL = *Stop printing and return to REQ.* DEL DEL = *Exit program.*

Error Codes

Program Name: Message Registration Data Block (DMRD)	
Error Code	**Meaning**
ERMRD 00	Numeric error (0 ~ 9).
ERMRD 01	Area Code (NO/1X) is out of range (N = 2 ~ 9, X = 0 ~ 9).
ERMRD 02	Supervision Time is out of range (0 ~ 120).
ERMRD 03	Billing Interval is out of range (1 ~ 180).
ERMRD 04	Billing Unit is beyond limit (0 ~ 100).
ERMRD 05	Unit Cost is beyond limit (1 ~ 500).
ERMRD 06	Office Code (NXX) is out of range (N = 2 ~ 9, X = 0 ~ 9).
ERMRD 07	The number of Office Codes exceeds the maximum (800).
ERMRD 08	The input data was erased because the program was aborted during a NEW entry.
ERMRD 10	MRD data does not exist (REQ = CHG, OUT).

TABLE X

Procedure — Modem Pooling Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DMDM	
— DISK LOADING —			
	REQ	NEW, OUT	
Port Number	POR	LNNX	1 & 2

NOTES:

1. *NN = PCB location.*
2. *X = Circuit number.*
3. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Modem Pooling Data Block (DMDM)	
Error Code	**Meaning**
ERMDP 00	A PCB is not equipped in that location.
ERMDP 01	The PCB is not a DMDU type.
ERMDP 02	The port is busy (REQ = CHG or OUT).
ERMDP 03	The port is already assigned (REQ = NEW).
ERMDP 04	The port is not assigned (REQ = OUT).
ERMDP 05	The input port is wrong (LNNX, X is not 1 ~ 4).

TABLE Y

Procedure — **Message Center Data Block**

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DMCD	
— DISK LOADING —			
	REQ	NEW, CHG	
Message/Voice Mail	MWC0	MC or VM	
Message/Voice Mail	MWC1	MC or VM	1
DN of MC 0	MDN0	A 1 ~ 4 digits or ATT0 (maximum: 32 DNs) D 1 ~ 4 digits or ATT0 (maximum: 32 DNs)	2 ~ 5
DN of MC 1	MDN1	A 1 ~ 4 digits or ATT1 D 1 ~ 4 digits or ATT1	1 ~ 5
Disconnect Code	DSC0	XXXX or NONE	6
Disconnect Code	DSC1	XXXX or NONE	1 & 6
Toshiba Voice Messaging #0	TVM0	A XXXX (1 ~ 4 digits; maximum 32 DNs) D XXXX (1 ~ 4 digits; maximum 32 DNs)	7
Toshiba Voice Messaging #1	TVM1	A XXXX (1 ~ 4 digits, maximum 32 DNs) D XXXX (1 ~ 4 digits; maximum 32 DNs)	1 & 7

NOTES:

1. *This entry will appear when TEN = Y.*
2. *If MWC0 or MWC1 = VM, then the user will be able to enter a maximum of 32 directory numbers in MDN0.*
   If MWC0 or MWC1 = MC, then the user can only enter one directory number in MDN1 (electronic telephone DN or attendant console).
   XXXX = Extension directory number.
3. *An "A" will appear after the MDN0 (MDN1) prompt. Any entries made will be added. After pressing the return key, a "D" will appear and any entries made will be deleted.*
4. *If MWC0 = MC, you can enter ATT0 or electronic telephone DN.*
   If MWC1 = MC, you can enter ATT1 or electronic telephone DN. (This prompt will only appear in tenant systems.)
5. *If MWC0 = VM, you can enter up to 32 directory numbers (DSTU ports) that will be connected to the voice mail system.*
   If MWC1 = VM, you can enter up to 32 directory numbers (DSTU ports) that will be connected to the voice mail system for Tenant 1 (TEN = Y).
   *NOTE: **Do not** make any entries for these two prompts if you are using the Toshiba INTOUCH Voice Messaging System. Press the return key.*
6. *This entry will appear when MWC0 or MWC1 = VM.*
7. *If MWC0 = VM and you are using a Toshiba INTOUCH Voice Messaging System, you can enter up to 32 directory numbers (DSTU ports) that will connect to that system.*
   If MWC1 = VM and you are using a Toshiba INTOUCH Voice Messaging System, you can enter up to 32 directory numbers (DSTU ports) that will connect to that system for Tenant 1 (TEN = Y).
   XXXX = Extension directory number
8. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

(continued)

TABLE Y (continued)

Error Codes

Program Name: Message Center Data Block (DMCD)	
Error Code	Meaning
ERMCD 00	All MDNs are assigned.
ERMCD 01	The DN you are trying to delete does not exist.
ERMCD 02	The MDN is already assigned.
ERMCD 03	The DN does not exist in the system.
ERMCD 04	Data is already assigned (REQ = NEW).
ERMCD 05	Data is not assigned (REQ = CHG).
ERMCD 06	MWC0 or MWC1 = VM, therefore ATT0 or ATT1 cannot be entered. You cannot enter ATT0 at the MDN1 prompt or ATT1 at the MDN0 prompt.

TABLE Z

Procedure — Alphanumeric Message Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DMSG	
— DISK LOADING —			
	REQ	CHG	
Message	MSG	Message Number (0 ~ 9) + [space] + Message or NONE	1 & 2

NOTES:

1. *The system will output a space after the MSG number is entered, followed by an existing message (if no message exists, then this will remain blank) and another space. Enter the new message or NONE (to delete the message).*
2. *The characters available for messages are* 0 ~ 9, A ~ Z, [space], :, -, +, /.
3. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Alphanumeric Message Data Block (DMSG)	
Error Code	Meaning
ERMSG 00	Message is too long (maximum: 16)
ERMSG 01	Message can only use: 0 ~ 9, A ~ Z, [space], :, -, +, /

TABLE AA

Procedure — Print System Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PSYS	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The only response possible is: PRT = Output System Data Block.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AB

Procedure — Print System Data Block 2

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PSY2	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The only response possible is: PRT = Output System Data Block.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AC

Procedure — **Print Access Code Data Block**

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PACD	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The only response possible is: PRT = Output Access Code Data Block.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AD

Procedure — **Print Station Data Block**

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PSDB	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The following responses are possible:*
   - *PORALL = All Station Data Blocks will be output in numerical order of ports (lowest first).*
   - *PORNNX = Port NNX data will be output.*
   - *PORVAC = A list of all unassigned ports will be output.*
   - *DNALL = All Station Data Blocks will be output in numerical order (lowest first) by DN (PDN for electronic telephones).*
   - *DNXXXX = DN XXXX data will be output. If it is a multiple appearance DN, then all Data Blocks in which it appears will be output.*
   - *EKTALL = All electronic telephone Data Blocks will be output in order of PDN (lowest first).*
   - *STTALL = All Standard Telephone Data Blocks will be output in order of DN (lowest first).*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Print Station Data Block (PSDB)	
Error Code	**Meaning**
ERPST 00	The input PCB number or circuit number is out of range.
ERPST 01	The input DN does not exist.
ERPST 02	The input port is not assigned to an electronic or a 500/2500 type telephone.
ERPST 03	A manual signaling port does not exist.
ERPST 04	The input DN is not assigned to an electronic telephone or to a 500/2500-type telephone.

TABLE AE

Procedure — Print Class of Service Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PCOS	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The only response possible is: PRT = COS Data Block will be output.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AF

Procedure — Print Toll Restriction Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PTOL	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *TRDALL = All Toll Restriction Data Blocks will be output.*
   PAR = Miscellaneous Parameters Table will be output.
   CLSALL = All Code Tables (Area, Office, and Area/Office) will be output for all eight classes.
   CLSCNX = All Code Tables (Area, Office, and Area/Office) will be output for class X.
   AOCALL = All Area/Office Code Tables will be output.
   AOCNOXX = The Area Code and all Office Codes for Area/Office Code Table number XX will be output.
   CODXXX = The Area/Office Code Table relating to Area Code XXX will be output.
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AG

Procedure — Print Speed Dial List Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PSDL	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The following responses are possible:*
   ALL = *Output all Speed Dial List Data Blocks.*
   SYST = *Output System Speed Dial List Data Block.*
   LSTXX = *Output Station Speed Dial List XX Data Block.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Print Speed Dial List (PSDL)	
Error Code	**Meaning**
ERPST 00	The list number is out of range (0 ~ 50 is available).

TABLE AH

Procedure — Print SMDR Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PMDR	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The only response possible is: PRT = Output SMDR Data Block.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AI

Procedure — **Print DSS Console Data Block**

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PDSS	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The following responses are possible:*
   PORALL = *All DSS Data Blocks will be output in numerical order of ports (lowest first).*
   PORLNNX = *All LNNX data will be output.*
   PORVAC = *A list of all unassigned ports will be output.*
   STALNNX = *All station data that is associated with LNNX DSS consoles will be output.*
   DSSNN = *All DSS switched DN assignments (#NN = lower two digits of extension numbers) will be output.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AK

Procedure — Print Trunk Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PTRK	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The following responses are possible:*
   - *PORALL = All Trunk Data Blocks will be output in numerical order of ports (lowest first).*
   - *PORNNX = Trunk Data Block of Port NNX will be output.*
   - *PORVAC = All unassigned trunk ports will be output.*
   - *TGPNN = All Trunk Data Blocks assigned to trunk group NN will be output.*
   - *COT = All CO Trunk Data Blocks will be output.*
   - *FEX = All FX Trunk Data Blocks will be output.*
   - *WAT = All WATS Trunk Data Blocks will be output.*
   - *TIE = All TIE Trunk Data Blocks will be output.*
   - *DID = All DID Trunk Data Blocks will be output.*
   - *CSA = All CCSA Trunk Data Blocks will be output.*
   - *NIT = Outputs the Night Station Assignments for all CO, FX, and WATS trunks.*
   - *PVL = All PVL Trunk Data Blocks will be output.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Print Trunk Data Block (PTRK)	
Error Code	**Meaning**
ERPTR 00	Invalid response.
ERPTR 01	The PCB number or circuit number is out of range (REQ = PORNNX).
ERPTR 02	The input trunk group is out of range (REQ = TGPNN).
ERPTR 03	The input port is not assigned to trunk (REQ = PORVAC).

TABLE AJ

Procedure — **Print Trunk Group Data Block**

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PTGP	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The following responses are possible:*
   - *ALL* = *All Trunk Group Data Blocks will be output.*
   - *GRPXX* = *Trunk Group XX Data Blocks will be output.*
   - *COT* = *All CO Trunk Data Blocks will be output.*
   - *FEX* = *All FX Trunk Data Blocks will be output.*
   - *WAT* = *All WATS Trunk Data Blocks will be output.*
   - *TIE* = *All TIE Trunk Data Blocks will be output.*
   - *DID* = *All DID Trunk Data Blocks will be output.*
   - *CSA* = *All CCSA Trunk Data Blocks will be output.*
   - *PVL* = *All PVL Trunk Data Blocks will be output.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Print Trunk Group Data Block (PTGP)	
Error Code	Meaning
ERPTG 00	Invalid response.
ERPTG 01	The input trunk group number is out of range (REQ = GRPXX).

TABLE AL

Procedure — Print Least Cost Routing Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PLCR	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The following responses are possible:*
   - *LCRALL = All Least Cost Routing Data Blocks will be output.*
   - *PAR = Miscellaneous Parameters Table will be output.*
   - *ACTALL = All Area Code Tables will be output.*
   - *ACTRNXX = All Area Code Tables that point to Route Number (RNO) XX will be output.*
   - *AOCALL = All Area/Office Code Tables will be output.*
   - *AOCNOXX = Area/Office Code Table XX will be output.*
   - *AOCRNXX = All Area/Office Code Tables that point to Route Number (RNO) XX will be output.*
   - *CODXXX = All Area Code and Area/Office Code Tables relating to Area Code XXX will be output.*
   - *RTALL = All Route Tables will be output.*
   - *RTXX = Route Table XX will be output.*
   - *TGPXX = All Route Tables using Trunk Group XX will be output.*
   - *RTMDXX = All Route Tables using Modify Digit Table XX will be output.*
   - *MDTXX = Modify Digits Table XX will be output.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AM

Procedure — Print Call Pickup Groups

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PCPG	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The following responses are possible:*
   ALL = *Output all Call Pickup Groups listed by DN.*
   DNXXXX = *List the numbers of all Call Pickup Groups containing DNXXXX.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Print Call Pickup Groups (PCPG)	
Error Code	Meaning
ERPCP 00	Invalid response.
ERPCP 01	The input DN does not exist.

TABLE AN

Procedure — Print Hunting Arrangements

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PHNT	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The only response possible is: ALL = Output all hunting sequences.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

Error Codes

Program Name: Print Hunting List (PHNT)	
Error Code	Meaning
ERPHT 00	Input DN does not exist.

TABLE AO

Procedure — Print Paging Group Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PPAG	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The following responses are possible:*
   PAGN = *All electronic telephones belonging to the indicated paging group N will be output in the order in which they were programmed.*
   PAGALL = *All electronic telephones belonging to all assigned paging groups will be output in the order in which they were programmed.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AP

Procedure — Print Lodging/Health Care Features Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PHMF	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The only response possible is: PRT = Output Lodging/Health Care Features Data Block.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AQ

Procedure — Print Digital Data Interface Unit Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PDIU	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The only response possible is:*
   PORALL = All DDIU Data Blocks will be output in numerical order of ports (lowest first).
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AR

Procedure — Print Message Registration Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PMRD	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The following responses are possible:*
   MRDALL = All Message Registration Data will be output. There may be a delay in the output after the OCA prompt.
   MRDPAR = The system will output a partial list of the Message Registration Data Block (ICC, DDP, HAC, and SVT).
   RTNPAR = The system will output a partial list of the Message Registration Data Block (FBI, FBU, IBI, IBU, and CST for Rate Tables 1 ~ 5).
   RTNALL = The system will output all the data from Rate Tables 1 ~ 5 (FBI, FBU, IBI, IBU, CST, and OCA). There may be a delay in the output after the OCA prompt.
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AS

Procedure — Print Modem Pooling Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PMDM	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTES:

1. *The only response possible is:*
   PORALL = All Modem Pooling Data Blocks will be output in numerical order of ports (lowest first).
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AT

Procedure — Print Message Center Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PMCD	
— DISK LOADING —			
	REQ		1

NOTES:

1. *The only response possible is: PRT = Output Message Center Data Block.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AU

Procedure — Print Alphanumeric Message Data Block

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PMSG	
— DISK LOADING —			
	REQ		1

NOTES:

1. *The following responses are possible:*
   ALL = *All messages will be output.*
   MSG X = *Message X will be output.*
2. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AV

Procedure — Back-up Memory Check Entry Procedure

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DMYC	
— DISK LOADING —			
	REQ	CHK	1
Memory Check	MYR CHK		2
Memory Checked out OK	DONE		
Memory Check Failed	ERROR		
	ADRS = XXXH		
	COL = XXH		

NOTES:

1. *Caution: Responding to this prompt will start the memory check and delete all data relating to Lodging/Health Care telephones, (i.e., Room Status, Message Waiting, and Message Registration).*
2. *The system is performing a memory check. Wait for the next prompt before pressing any buttons.*
3. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AW

Procedure — Data Dump Program

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DDMP	
	DPG (Y/N)	Y or N	1
	DUN		2 & 3

NOTES:

1. *Enter Y to perform data dump. Enter N to abort.*
2. *Data dump is complete.*
3. *System will exit program automatically.*
4. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AX-1

Procedure — Electronic Telephone Test Procedure

Authorization Procedure must be complete. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	TTRM	
— DISK LOADING —			
	REQ		1

NOTE:
The program is now active. Proceed to the electronic telephone to be tested, go off-hook, and enter **TEK** *(*1835*) via the dial pad. Enter the following commands in sequence:*

ENTRY	ELECTRONIC TELEPHONE RESPONSE	ENTRY	ELECTRONIC TELEPHONE RESPONSE
TEK	All LEDs = On	Button 2	LED 2 = On (1 = Off)
Handset off-hook	All LEDs = Flash (60Hz)	Button 3	LED 3 = On (2 = Off)
Handset on-hook	All LEDs = Wink (120 Hz)	Button 4	LED 4 = On (3 = Off)
SPKR button on	All LEDs = Off	Button 5	LED 5 = On (4 = Off)
SPKR button off	All LEDs = I-Hold	Button 6	LED 6 = On (5 = Off)
MIC button on[1]	All LEDs = Off	Button 7	LED 7 = On (6 = Off)
MIC button on[1]	All LEDs = I-Use	Button 8	LED 8 = On (7 = Off)
CONF button on	All LEDs = Off	Button 9	LED 9 = On (8 = Off)
CONF button off	SPKR LED = On	Button 10	LED 10 = On (9 = Off)
HOLD button on/off	SPKR LED = Off	Button 11	LED 11 = On (10 = Off)
Dial 1	LED 0 = On	Button 12	LED 12 = On (11 = Off)
Dial 2	LED 1 = On (0 = Off)	Button 13	LED 13 = On (12 = Off)
Dial 3	LED 2 = On (1 = Off)	Button 14	LED 14 = On (13 = Off)
Dial 4	LED 3 = On (2 = Off)	Button 15	LED 15 = On (14 = Off)
Dial 5	LED 4 = On (3 = Off)	Button 16	LED 16 = On (15 = Off)
Dial 6	LED 5 = On (4 = Off)	Button 17	LED 17 = On (16 = Off)
Dial 7	LED 6 = On (5 = Off)	Button 18	LED 18 = On (17 = Off)
Dial 8	LED 7 = On (6 = Off)	Button 19	LED 19 = On (18 = Off)
Dial 9	LED 8 = On (7 = Off)	Handset off-hook	Dial tone on handset (19 = Off)
Dial 0	LED 9 = On (8 = Off)	Handset on-hook	Dial tone through speaker[3]
Dial *	All LEDs = On	**SPKR** button	Ringing through speaker[4]
Dial #	All LEDs = Off	**SPKR** button	Override tone through speaker
Button 0[1]	LED 0 = On	**SPKR** button	End of test, electronic telephone idle
Button 1[2]	LED 1 = On (0 = Off)		

(continued)

TABLE AX-1 (continued)

NOTES:

1. *Button strip test begins with the bottom button.*
2. *Buttons 1 ~ 19 do not function when testing a Single-Line electronic telephone.*
3. *Check the bottom right-hand volume control on speakerphone electronic telephones.*
4. *Check the upper right-hand volume control on speakerphone electronic telephones.*
5. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*

TABLE AX-2

Proc· ure — Attendant Console Test Procedure

·uthorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	TTRM	
— DISK LOADING —			
	REQ		1

NOTE.

1. *T· program is now active. Proceed to the Attendant Console to be tested, press an* LPK *button and enter* * T A T *(· 28) via the dial pad. Enter the following commands in sequence:*

EN·RY	CONSOLE RESPONSE
* T A	All BLF LEDs = On
BLF ·on	All BLF LEDs = Off
Dial 1	ICI TIE & STAT RING = On
Dial 2	ICI CO & STAT BSY = On, Others = Off
Dial 3	ICI WAT & STAT FWD = On, Others = Off
Dial 4	ICI FX & STAT DND = On, Others = Off
Dial 5	ICI INT & STAT RST = On, Others = Off
Dial 6	ICI RCL & STAT HNT = On, Others = Off
Dial 7	ICI OPR & STAT VCT = On, Others = Off
Dial 8	ICI TIM & STAT TLK = On, Others = Off
Dial 9	ICI SER = On, Others = Off
Dial 0	ICI HLD = On, Others = Off
Dial *	ICI LN1 = On, Others = Off
Dial #	ICI LN2 = On, Others = Off
RLS *	Associated LED = On, Others = Off
LPK1	Associated LED = On, Others = Off
LPK2	Associated LED = On, Others = Off
LPK3	Associated LED = On, Others = Off
LPK4	Associated LED = On, Others = Off
PAGE	Associated LED = On, Others = Off
JOIN *	Associated LED = On, Others = Off
SP DL ! *	Associated LED = On, Others = Off
SER C 1 *	Associated LED = On, Others = Off
MSG *	Associated LED = On, Others = Off
HOLD	All LEDs = Off

ENTRY	CONSOLE RESPONSE				
EXCL SRC *	Associated LED = On, Others = Off				
EXCL DEST *	Associated LED = On, Others = Off				
VER/CRG *	Associated LED = On, Others = (				
OVERFLOW *	Associated LED = On, Others = Off				
CONF *	Associated LED = On, Others = Off				
BUZZ *	Associated LED = On, Others = Off				
SPARE *	Associated LED = On, Others = Off				
POS BSY *	Associated LED = On, Others = Off				
NITE *	Associated LED = On, Others = Off				
Dial 1	TGB 0 = On	SRC	COS	DEST = 1	**1
Dial 2	TGB 1 = On	—	—	12	**2
Dial 3	TGB 2 = On	—	—	123	**3
Dial 4	TGB 3 = On	—	1	234	**4
Dial 5	TGB 4 = On	—	12	345	**5
Dial 6	TGB 5 = On	1	23	456	**6
Dial 7	TGB 6 = On	12	34	567	**7
Dial 8	TGB 7 = On	123	45	678	**8
Dial 9	TGB 8 = On	888	88	888	**9
Dial 0	TGB 9 = On	Off	Off	Off	**0
Dial *	All LEDs = Off, busy tone via handset				
Dial #	Buzzer via speaker (check volume control)				
RLS SRC *	MIN ALM = On, Others = Off				
RLS DEST *	MDR LED = On, Others = Off				
DIS TOD *	CW LED = On, Others = Off				
RLS *	End of test, console = Night				

* = Butt· ** = BLF Indication

2. CT 1 X = *Ignore line entered.*
 CT 1 H = *Backspace.*
 DE = *Stop printing and return to REQ.*
 DE DEL = *Exit program.*

TABLE AY

Procedure — **Peripheral Equipment Diagnostic Procedure**

Authorization Procedure must be completed. If an OK response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	TPER	
— DISK LOADING —			
	REQ		1
	REQ		1

NOTE:
The user entries in Table AY-1 should be input as required after each REQ prompt.

TABLE AY-1

TRUNK STATUS ENTRIES

ENTRY	DESCRIPTION	RESPONSE	
DSC XXX	Disable PCB XXX immediately	PCB disabled, FALT LEDs on	
DST NNX	Disable Trunk NNX*	TRK disabled, FALT LED on, REQ prompted	
DSL NNX	Disable Line Circuit NNX*	Line disabled, FALT LED on, REQ prompted	
ENC XXX	Enable PCB XXX	PCB enabled, FALT LEDs off, REQ prompted	
ENT NNX	Enable Trunk NNX*	Trunk enabled, FALT LED off if all circuits are enabled, REQ prompted	
ENL NNX	Enable Line NNX*	Station line enabled, FALT LED off if all circuits are enabled, REQ prompted	
DSD NNX	Disable DSS Circuit NNX*	DSS disabled, FALT LED ON, REQ prompted	
EDD NNX	Enable DSS Circuit NNX*	DSS enabled, FALT LED off if all circuits are enabled, REQ prompted	
DSR NNX	Disable RCVR NNX*	RCVR disabled, FALT LED on, REQ prompted	
ENR OOX	Enable RCVR Circuit OOX*	RCVR enabled, FALT LED off if all circuits are enabled, REQ prompted	
DSC XXX	Disable PCB XXXX when idle	Each port disabled when idle, FALT LEDs on	
LIS	List all idle ports	Idle ports = LNNX, TNNX, etc., REQ prompted	
LBS	List all busy ports	Busy Ports = LNNX, TNX, etc., REQ prompted	
LDS	List all disabled ports	Disabled ports = LNNX, TNNX, etc., REQ prompted	
STL LNX	Status of Line Circuit NNX*	**TYPE (Note 1)** 500/2500 Electronic Telephone UNEQ UNAS	**Status (Note 2)** IDL, BSY DIS CBL DIS TTY DIS TLD REQ prompted
STT TNX	Status of TRK Circuit NNX*	**Type (Note 1)** WAT FX TIE CO CCSA UNEQ UNAS	**Status (Note 2)** IDL BSY DIS TTY DIS TLD REQ prompted
STD DNX	Status of DSS Circuit NNX*	**Type (Note 1)**	**Status (Note 2)** IDL, BSY DIS TTY DIS CLB DIS TLD
STR OOX	Status of RCVR OOX*	Status = IDL, BSY, DIS TTY, DIS TLD, ENEQ, UNAS, REQ prompted	
STC XXX	Status of PCB XXX	Circuit #1 = Same as STLC, STTK, STRC	
		Circuit #2 = Same as STLC, STTK, STRC	
		Circuit #3 = Same as STLC, STTK, STRC	
		Circuit #4 = Same as STLC, STTK, STRC REQ prompted	

NN = P number X = Circuit number

(continued)

TABLE AY-1 (continued)

ENTRY	DESCRIPTION	RESPONSE		
		SYSTEM	USER ENTRY	NOTE
CALL TNNX	Sets up monitor link using TNNX	WAIT	CR	4
		STS TLK ... or ...	Automatic advance to DN prompt	
		STS WAIT ... or ...	CR	5
		STS OVR	DEL CR	6
		DN	DN CR	7
		DDL	CR	8
		STS TLK ... or ...	Automatic advance to TRK prompt	9
		STS RLSA ... or ...	Automatic return to REQ prompt	10
		STS DDL	CR	11
		TRK	Call TNNX	12
		WAIT	CR	4
		STS TLK ... or ...	Automatic advance to DN prompt	13
		STS RLSA ... or ...	Automatic return to REQ prompt	10
		STS BSY ... or ...	Automatic return to TRK prompt	14
		STS OVR	Automatic return to TRK prompt	15
		DN	DN CR	16
		DDL	CR when test is complete	17
		STS TLK ... or ...	Automatic return to TRK prompt	18
		STS RLSA ... or ...	Automatic return to REQ prompt	10
		STS RLSB ... or ...	Automatic return to TRK prompt	19
		STS DDL	CR	20

NOTES:

1. *Type:* *UNEQ = No PCB in that position.*
   UNAS = PCB is equipped but no data is assigned.
2. *Status:* *IDL = Idle.*
   BSY = Busy.
   DIS TTY = Manually disabled via TTY.
   DIS CBL = Electronic telephone port disabled by software due to open cable.
   DIS TLD = Software disabled due to traffic load (indicates faulty PCB).
3. CTRL X = *Ignore line entered.*
   CTRL H = *Backspace.*
   DEL = *Stop printing and return to REQ.*
   DEL DEL = *Exit program.*
4. CR *is required to advance program.*
5. *Requested trunk ((A) is busy. Enter* CR *to try again.*
6. *Requested trunk (A) does not exist in the system. Enter* DEL CR *to return to REQ prompt.*
7. *Enter the test center DN followed by* CR.
8. *Allow time for completion of dialing and then enter* CR.
9. *Dialing is complete; program advances to TRK prompt.*
10. *Trunk A (monitor link) has been released due to a malfunction or an outside influence, such as the distant end going on-hook (ground start).*

(continued)

TABLE AY-1 (continued)

11. *Dialing was not complete when* CR *was entered. A second* CR *is required.*
12. *Enter the port number (TNNX) of the trunk (B) to be tested.*
13. *Requested trunk was idle and has been seized.*
14. *Requested trunk (B) is busy.*
15. *Requested trunk (B) does not exist in the system.*
16. *Enter the DN that should be dialed by the trunk under test, followed by a* CR.
17. *After the dialing is complete, the audio from the trunk under test will be heard via the monitor link. Enter* CR *when the test is complete.*
18. *Test has ended. The program will automatically return to the TRK prompt to allow another trunk to be selected.*
19. *The trunk under test (B) was released due to a malfunction or outside influence, such as the distant end going on-hook (ground start).*
20. CR *was entered while Trunk B was still dialing. (See Note 17.)*

Error Codes

Program Name: Peripheral Diagnostic Data Block (TPER)	
Error Code	Meaning
ERTPE 00	PCB type conflicts with customer data.
ERTPE 01	A PCB is not equipped in that location (enable).
ERTPE 02	The cable is open or port is inhibited by heavy traffic (enable).
ERTPE 03	The entered port is maintenance terminal (enable).
ERTPE 04	No PCB is equipped in that location (disable).
ERTPE 05	The port is busy.
ERTPE 06	The PCB number or electronic telephone number is out of range.
ERTPE 07	The PCB type is not a DSTU or DEKU.
ERTPE 08	The PCB type is not a Trunk.
ERTPE 09	The PCB type is not a DTMF receiver.
ERTPE 11	No PCB is equipped in that location (inhibit).

TABLE AZ

DISK DRIVE OPERATION ERROR CODES

Error Codes

Program Name: Floppy Disk Drive Error	
Error Code	**Meaning**
ERFD 01	File is closed.
ERFD 02	Read error.
ERFD 03	Write error.
ERFD 04	Directory is full.
ERFD 05	Disk is full.
ERFD 06	End-of-file error.
ERFD 07	Disk drive is not ready.
ERFD 08	Incorrect version number.
ERFD 09	File is write-protected.
ERFD 10	File not found.
ERFD 11	Volume not initialized.
ERFD 12	File already exists.
ERFD FF	Other hardware is causing the error.

PERCEPTION® II

APPENDIX #1

SYSTEM RECORDS FORMS

Version D-02

SYSTEM DATA BLOCK (DSYS Program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Expansion Cabinet Installed	EXP	
(Future Enhancement)	NOD	1
Time of Daily Routine	TOR	
Daily Routine Tasks	DRT	
Tenant Service?	TEN	
Intercept #1	ICP1	
Intercept #2	ICP2	
Intercept #3	ICP3	
Least Cost Routing	LCR	
All Page Access Code	APG	
Not Used	AAT	"CR"
Not Used	APX	"CR"
Listed Directory Number #1	LN1	
Listed Directory Number #2	LN2	
LDN #1 Night Number	NT1	
LDN #2 Night Number	NT2	
Busy Lamp Field #1	BLF1	
Busy Lamp Field #2	BLF2	
Overflow DN — Attendant Console #0	OFL1	
Overflow DN — Attendant Console #1	OFL2	
Message Center — Tenant #0*	MC0	
Message Center — Tenant #1*	MC1	
Meet-Me Page DN	MMP	
Remote Access DN	REM	
Remote Access Change Code	RAC	
"*" Access Code	ACC*	
"#" Access Code	ACC#	
Camp-on (or CWT) Timeout	COT	
Ring-No-Answer Timeout	RNA	
Attendant Overflow Timeout	AOF	
Call Forward No-Answer Timeout	CFD	
2500 Hold/Electronic Telephone Park Timeout	HLD	
Dial Pulse Timeout	DPT	
Push-button Timeout	PBT	
Line Lockout Timeout	LLO	
Automatic Callback Reserve Time	ACB	
Handsfree Answerback — Station	HFS	
Handsfree Answerback — Attendant	HFA	
SMDR Dquipped	MDR	
Universal Night Answer Zone 0	UNA0	
Universal Night Answer Zone 1	UNA1	

**To assign a Message Center, see the Message Center Data Block.*

SYSTEM DATA BLOCK (DSYS Program)

ITEM	PROMPT	ENTRY
	REQ	CHG
ACD Master DN0	MD0	
ACD Master DN1	MD1	
ACD Master DN2	MD2	
ACD Master DN3	MD3	
Lodging/Health Care	AHM	
Night Operator Station	NOS	
Transfer Recall Timer	RTO	
Attendant-Position Electronic Telephone	AEKT	

ACCESS CODE DATA BLOCK (DACD Program)

ITEM	PROMPT	ENTRY*
	REQ	CHG
Feature	FTR	
Feature	FTR	
Feature	FTR	
Feature	FTR	
Feature	FTR	
Feature	FTR	
Feature	FTR	
Feature	FTR	
Feature	FTR	
Feature	FTR	
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Feature	FTR	

**Enter the name and access code in this column.*

- 2 -

ELECTRONIC TELEPHONE BLOCK (DEKT Program) PCB Location (L)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY
	REQ								
Port Number	POR								
Number of Button Strips	KS								
Class of Service Group	COS								
Tenant Number	TEN								
Call Pickup Group	PUG								
Warning Tone Allowed?	WTA								
Call Forward to Trunk	CFT								
Toll Restriction Class	TOL								
Not Used	MTA	N	N	N	N	N	N	N	N
Handsfree Answerback Equipped?	HFA								
Display Electronic Telephone	DIS								
Paging Group	PAG								
Button Assignments: Primary DN only!	KEY 0								
	KEY 1								
	KEY 2								
	KEY 3								
	KEY 4								
	KEY 5								
	KEY 6								
	KEY 7								
	KEY 8								
	KEY 9								
	KEY 10								
	KEY 11								
	KEY 12								
	KEY 13								
	KEY 14								
	KEY 15								
	KEY 16								
	KEY 17								
	KEY 18								
	KEY 19								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

STANDARD TELEPHONE DATA BLOCK (DSTT Program) PCB Location (L)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY
	REQ								
Port Number	POR								
Directory Number	DN								
Station Mix	SMX								
Class of Service	COS								
Tenant Number	TEN								
Call Pickup Group	PUG								
Hunt Number	HNT								
Dialing Type	DLG								
Speed Dial List	SDL								
Warning Tone Allowed?	WTA								
Call Forward to Trunk	CFT								
Toll Restriction Class	TOL								
Message Waiting Lamp	MWL								

STANDARD TELEPHONE DATA BLOCK (DSTT Program) PCB Location (L)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY
	REQ								
Port Number	POR								
Directory Number	DN								
Station Mix	SMX								
Class of Service	COS								
Tenant Number	TEN								
Call Pickup Group	PUG								
Hunt Number	HNT								
Dialing Type	DLG								
Speed Dial List	SDL								
Warning Tone Allowed?	WTA								
Call Forward to Trunk	CFT								
Toll Restriction Class	TOL								
Message Waiting Lamp	MWL								

STANDARD TELEPHONE DATA BLOCK (DSTT Program) PCB Location (L)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY	ENTRY
	REQ								
Port Number	POR								
Directory Number	DN								
Station Mix	SMX								
Class of Service	COS								
Tenant Number	TEN								
Call Pickup Group	PUG								
Hunt Number	HNT								
Dialing Type	DLG								
Speed Dial List	SDL								
Warning Tone Allowed?	WTA								
Call Forward to Trunk	CFT								
Toll Restriction Class	TOL								
Message Waiting Lamp	MWL								

NOTE: Use multiple sheets as required.

Sheet ____ of ____

CLASS OF SERVICE DATA BLOCK (DCOS Program)

ITEM	PROMPT	ENTRY								
	REQ									
Class of Service	COS									
	COS									
	COS									
	COS									
	COS									
	COS									
	COS									
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NOTE: Use multiple lines as required.

TOLL RESTRICTION DATA BLOCK (DTOL Program)

Miscellaneous Parameters (PAR Sub-program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Sub-program Type	TYPE	PAR
Home Area Code	HAC	
Interchangable Codes	ICC	
Specialized Common Carrier #1	SPCC1	
Specialized Common Carrier #2	SPCC2	
DDD Prefix	DDP	
Authorization Code 1 Length	AUTH1	
Authorization Code 2 Length	AUTH2	

TOLL RESTRICTION DATA BLOCK (DTOL Program)
Restriction Class Table (CLS Sub-program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Sub-program Type	TYPE	CLS
Class Number	CNO	
0 and 0 + Calls Allowed	OPR	
International Calls Allowed	INT	
Long Dist. Directory Assistance Allowed	LDA	
Area Code Table (Allow/Deny)	ACT	
Area Code List (Add/Delete)	ACD	
Office Code Table (Allow/Deny)	OCT	
Office Code List (Add/Delete)	OCD	

NOTE: Use a separate sheet for each Toll Restriction Class Table.

Sheet _____ of _____

TOLL RESTRICTION DATA BLOCK (DTOL Program)
Area/Office Code Exception Table (AOC Sub-program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Sub-program Type	TYPE	AOC
Table Number	TNO	
Area Code	ARC	
Class Number	CND	
Office Codes (A to add/D to delete)	OFC	

NOTE: Use a separate sheet for each Area/Office Code Exception Table. Sheet _____ of _____

SPEED DIAL DATA BLOCK (DSDL Program)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY
	REQ			
List Number	LNO			
Store Number	STR			

SPEED DIAL DATA BLOCK (DSDL Program)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY
	REQ			
List Number	LNO			
Store Number	STR			

SPEED DIAL DATA BLOCK (DSDL Program)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY
	REQ			
List Number	LNO			
Store Number	STR			

NOTES:
1. *Use multiple sheets as required.*
2. *Use one column for each station list.*
3. *Use multiple columns for system list.*

Sheet ________ of ________

SMDR DATA BLOCK
(DMDR Program)

ITEM	PROMPT	ENTRY
	REQ	
Account Code Length	ACL	
Special Common Carrier #1	SPCC1	
Special Common Carrier #2	SPCC2	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	
Trunk Group	TGP	

ATTENDANT DATA BLOCK (DATT Program)

ITEM	PROMPT	ENTRY	
		ATT 0	ATT 1
	REQ		
Attendant Number	ANO	0	1
Port Number	POR	L001	L121
Lockout Allowed?	LKO		
Page Key	PAG		
Incoming Call Priority	PRI		
Priority 1	PR1		
Priority 2	PR2		
Priority 3	PR3		
Priority 4	PR4		
Priority 5	PR5		

NOTE: Use a second sheet if Tenant Service is activated.

DSS CONSOLE DATA BLOCK (DDSS Program)

ITEM	PROMPT	ENTRY
DSS Number	N8R	
Port Number	P0R	
Station Port	SPT	
Fixed or Switched	F/S	
Button Assignment	KEY 0	
	KEY 1	
	KEY 2	
	KEY 3	
	KEY 4	
	KEY 5	
	KEY 6	
	KEY 7	
	KEY 8	
	KEY 9	
	KEY 10	
	KEY 11	
	KEY 12	
	KEY 13	
	KEY 14	
	KEY 15	
	KEY 16	
	KEY 17	
	KEY 18	
	KEY 19	
	KEY 20	
	KEY 21	
	KEY 22	
	KEY 23	
	KEY 24	
	KEY 25	
	KEY 26	
	KEY 27	

ITEM	PROMPT	ENTRY
Button Assignment	KEY 28	
	KEY 29	
	KEY 30	
	KEY 31	
	KEY 32	
	KEY 33	
	KEY 34	
	KEY 35	
	KEY 36	
	KEY 37	
	KEY 38	
	KEY 39	
	KEY 40	
	KEY 41	
	KEY 42	
	KEY 43	
	KEY 44	
	KEY 45	
	KEY 46	
	KEY 47	
	KEY 48	
	KEY 49	
	KEY 50	
	KEY 51	
	KEY 52	
	KEY 53	
	KEY 54	
	KEY 55	
	KEY 56	
	KEY 57	
	KEY 58	
	KEY 59	

TRAFFIC MEASUREMENT DATA BLOCK (DTRF Program)

ITEM	PROMPT	ENTRY
System Date	REQ	
Day of Week	SYST. DATE MMDDYY	
System Time	DOW	
Schedule	SYST. TIME HHMMSS	
Start Date	SCH -XXX-	
State Time	STR. DATE MMDDYY	
Report	STR. TIME HHMM	
	RPT	
	SYST	
	ATT0	
	ATT1	
	TGP00	
	TGP01	
	TGP02	
	TGP03	
	TGP04	
	TGP05	
	TGP06	
	TGP07	
	TGP08	
	TGP09	
	TGP10	
	TGP11	
	TGP12	
	TGP13	
	TGP14	
	TGP15	

DTMF RECEIVER DATA BLOCK (DRCV Program)

ITEM	PROMPT	ENTRY					
	REQ						
Port Number	POR						

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: CO/FX									
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Outgoing Absorb Digits	OAB								
Flash-Hook Timing	FLT								

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: CO/FX									
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Outgoing Absorb Digits	OAB								
Flash-Hook Timing	FLT								

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: WATS									
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Flash-Hook Timing	FLT								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: TIE/CCSA										
ITEM	PROMPT	ENTRY								
	REQ									
Trunk Group Number	GRP									
Tenant Number	TEN									
Trunk Type	TKT									
Incoming/Outgoing	IAO									
Advance Step	STP									
Access Code	COD									
Class of Service	COS									
Transmission	TRN									
Start Arrangement	STR									
Warning Tone Allowed?	WTA									
Incoming Absorb Digits	IAB									
Translated Number 1	TRN1									
Translated Number 2	TRN2									
Toll Restriction Class	TOL									
Flash-Hook Timing	FLT									

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: PVL (Private Line)									
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Incoming/Outgoing	IAO								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Flash-Hook Timing	FLT								

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: DID									
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Class of Service	COS								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Outgoing Absorb Digits	OAB								
Incoming Absorb Digits	IAB								
Translated Number 1	TRN1								
Translated Number 2	TRN2								
Flash-Hook Timing	FLT								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: CO/FX/WATS		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Remote Access DAY	RAD								
NITE Number	NIT								
DAY Number	DAY								
Signaling	SIG								
Disconnect Supervision	DIS								
Outgoing Dialing	DOT								

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: CO/FX/WATS		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Remote Access DAY	RAD								
NITE Number	NIT								
DAY Number	DAY								
Signaling	SIG								
Disconnect Supervision	DIS								
Outgoing Dialing	DOT								

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: CO/FX/WATS		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Remote Access DAY	RAD								
NITE Number	NIT								
DAY Number	DAY								
Signaling	SIG								
Disconnect Supervision	DIS								
Outgoing Dialing	DOT								

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: TIE/CCSA		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Signaling	SIG								
Disconnect Supervision	DIS								
Control of Disconnect	CTL								
Incoming Dialing	DIN								
Outgoing Dialing	DOT								
Answer Supervision	ANS								

NOTE: Use multiple sheets as required.

Sheet ______ of ______

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: PVL (Private Line)		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/ Member Number	GMN								
Trunk DN	TDN								
Signaling	SIG								
Disconnect Supervision	DIS								
Outgoing Dialing	DOT								

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: DID		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/ Member Number	GMN								
Signaling	SIG								
Disconnect Supervision	DIS								
Control of Disconnect	CTL								
Incoming Dialing	DIN								
Outgoing Dialing	DOT								
Answer Supervision	ANS								

LEAST COST ROUTING DATA BLOCK (DLC1 Program)
Miscellaneous Parameters (PAR Sub-program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Sub-program Type	TYPE	PAR
Interchangable Codes	ICC	
Operator Call Timeout	OTO	
Return Dial Tone	RTD	
Warning Tone Allowed?	WTA	
Home Area Code	HAC	
Toll Free Calls	TFC	
Local Call Route	LCR	
Service Code Table	SVC	
Directory Assistance Calls Allowed	DAC	
Long Distance Information Route	LDI	
DDD Prefix	DDP	

NOTE: Use multiple sheets as required.

Sheet _____ of _____

LEAST COST ROUTING DATA BLOCK (DLC1 Program)
Area Code Table (ACT Sub-program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Sub-program Type	TYPE	ACT
Route Table Number	RNO	

Area Codes (Added with ACA/Deleted with ACD)

LEAST COST ROUTING DATA BLOCK (DLC2 Program)
Route Table (RTB Sub-program)

ITEM	PROMPT	ENTRY		COMMENTS
	REQ	CHG		
Sub-program Type	TYPE	RTB		
Route Table Number	RNO			
		TGN	MDT	
Route #1 Definition	RT1			
Route #2 Definition	RT2			
Route #3 Definition	RT3			
Route #4 Definition	RT4			
Route #5 Definition	RT5			
Route #6 Definition	RT6			
Route Schedule A	SCHA	~		
Class 3 Routing Priority	LC3			
Class 2 Routing Priority	LC2			
Class 1 Routing Priority	LC1			
Route Schedule B	SCHB	~		
Class 3 Routing Priority	LC3			
Class 2 Routing Priority	LC2			
Class 1 Routing Priority	LC1			
Route Schedule C	SCHC	"CR"		
Class 3 Routing Priority	LC3			
Class 2 Routing Priority	LC2			
Class 1 Routing Priority	LC1			

NOTES:
1. *Use a separate sheet for each Route Table.*
2. *Use multiple sheets as required.*

Sheet _____ of _____

LEAST COST ROUTING DATA BLOCK (DLC1 Program)
Area/Office Code Table (AOC Sub-program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Sub-program Type	TYPE	AOC
Table Number	TNO	
Area Code	ARC	
Route Table Number	RNO	

Office Codes (Added with OCA/Deleted with OCD)

NOTE: Use a separate sheet for each Area/Office Code

Sheet _____ of _____

LEAST COST ROUTING DATA BLOCK (DLC2 Program)
Modify Digits Table (MDT Sub-program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Sub-program Type	TYPE	MDT
Table Number	TNO	
Number of Digits to be Deleted	DLT	
Digits to be Added (Prefixed)	ADD	

LEAST COST ROUTING DATA BLOCK (DLC2 Program)
Modify Digits Table (MDT Sub-program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Sub-program Type	TYPE	MDT
Table Number	TNO	
Number of Digits to be Deleted	DLT	
Digits to be Added (Prefixed)	ADD	

LEAST COST ROUTING DATA BLOCK (DLC2 Program)
Modify Digits Table (MDT Sub-program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Sub-program Type	TYPE	MDT
Table Number	TNO	
Number of Digits to be Deleted	DLT	
Digits to be Added (Prefixed)	ADD	

LEAST COST ROUTING DATA BLOCK (DLC2 Program)
Modify Digits Table (MDT Sub-program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Sub-program Type	TYPE	MDT
Table Number	TNO	
Number of Digits to be Deleted	DLT	
Digits to be Added (Prefixed)	ADD	

LEAST COST ROUTING DATA BLOCK (DLC2 Program)
Modify Digits Table (MDT Sub-program)

ITEM	PROMPT	ENTRY
	REQ	CHG
Sub-program Type	TYPE	MDT
Table Number	TNO	
Number of Digits to be Deleted	DLT	
Digits to be Added (Prefixed)	ADD	

NOTE: Use multiple sheets as required. Sheet ____ of ____

LODGING/HEALTH CARE FEATURES DATA BLOCK (DHMF Program)

ITEM	PROMPT	ENTRY
	REQ	
Automatic Wake-up Source	AWU SRC	
Automatic Wake-up	AWU POR	
Message Waiting	MW POR	
Message Registration	MR POR	
Room Status Audit	RMS	
Room Number Prefix	RM PFX	

DDIU DATA BLOCK (DDIU Program)

ITEM	PROMPT	ENTRY
	REQ	
Port Number	POR	
Type of DDIU	TYP	
Directory Number	DN	
Hunt Directory Number	HNT	
Class of Service Group	COS	
Group of DDIU	GOD	
Tenant Number	TEN	
Button Assignments:		
Data DN only!	KEY 0	
	KEY 1	
	KEY 2	
	KEY 3	
	KEY 4	
	KEY 5	
	KEY 6	
	KEY 7	
	KEY 8	
	KEY 9	
	KEY 10	
	KEY 11	
	KEY 12	
	KEY 13	
	KEY 14	
	KEY 15	
	KEY 16	
	KEY 17	
	KEY 18	
	KEY 19	

MESSAGE REGISTRATION DATA BLOCK (DMRD Program)

ITEM	PROMPT	ENTRY
	REQ	
Interchangeable Code?	ICC	
DDD Prefix	DDP	
Home Area Code	HAC	
Supervision Time	SVT	
Rate Table #1*	TN1	
First Billing Interval	FBI	
First Billing Unit	FBU	
Incremental Billing Interval	IBI	
Incremental Billing Units	IBU	
Unit Cost	CST	
Office Codes (Added with OCA/Deleted with OCD)		

NOTES: 1. Use a separate sheet for each Area/Office Code Table. Sheet _____ of _____
2. The TN2 ~ TN5 prompts will follow Office Code–Delete (OCD prompt).

MODEM POOLING DATA BLOCK (DMDM Program) PCB Location (L)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY	ENTRY
	REQ				
Port Number	POR				

MESSAGE CENTER DATA BLOCK (DMCD Program)

ITEM	PROMPT	ENTRY
	REQ	
Message/Voice Mail	MWC0	
Message/Voice Mail	MWC1	
DN of MC0	MDN0	
DN of MC1	MDN1	
Disconnect Code	DSC1	
Disconnect Code	DSC0	
Toshiba Voice Messaging #0	TVM0	
Toshiba Voice Messaging #1	TVM1	

ALPHANUMERIC DATA BLOCK (DMSG Program)

ITEM	PROMPT	ENTRY
	REQ	CHG*
Message 0	MSG	
Message 1	MSG	
Message 2	MSG	
Message 3	MSG	
Message 4	MSG	
Message 5	MSG	
Message 6	MSG	
Message 7	MSG	
Message 8	MSG	
Message 9	MSG	

**Enter the message number and message in this column.*

PERCEPTION II

ELECTRONIC BUSINESS COMMUNICATIONS SYSTEM

APPENDIX #2

LEAST COST ROUTING (LCR)

and

TOLL RESTRICTION (TR)

PROGRAMMING GUIDE

PERCEPTION II

LCR/TOL PROGRAMMING GUIDE

TABLE OF CONTENTS

01 INTRODUCTION

01.01 The purpose of this document is two-fold: a) to describe the Least Cost Routing (LCR) and Toll Restriction (TR) features, and b) to be used as a supplement to Section **400-100-300**, *System Programming*, in order to guide the service technician in programming for these features. Various examples, tables and flow charts are provided to aid in this purpose.

01.02 This document assumes the reader is familiar with PERCEPTION II programming procedures and the mneumonics used with the LCR and TR data entry utility programs.

02 GENERAL DESCRIPTION

02.00 Least Cost Routing (LCR)

02.01 Least Cost Routing causes the system to select the least expensive trunk available for that particular time of day. The station user simply dials an LCR access code and the required telephone number. LCR will then, by analyzing the telephone number dialed (including area code and, in some cases, office code), select the optimally priced route and automatically delete and/or insert digits (MCI, Sprint, etc.), if necessary.

02.02 The three variable time schedules per 24-hour clock allow the end-user to take advantage of rate variations during these hours. The various routing combinations for the three time schedules are contained in 15 Route Tables. Each table is selected as a function of the dialed telephone number.

02.03 The LCR feature is compatible and transparent to all the other features in the system. It is designed so that it is completely disabled functionally until a simple parameter (LCR) is enabled in the System Data Block (**DSYS Program**).

02.04 If a Direct Trunk Access code (not the LCR access code) is dialed, the outgoing call is handled as a normal direct trunk access call without using LCR.

02.05 LCR Data Blocks are separated from all other Data Blocks. So, except to assign the LCR access code (**DACD Program**) or enable LCR (**DSYS Program**), it is unnecessary to change a completed Data Block when adding the LCR feature to a system already in use.

02.06 There are three LCR classes (LC1, LC2 and LC3), allowing some stations to be denied access to the most expensive routes. LC3 is the lowest class—LC1 the highest. LC3 routes are always selected first no matter what class the station is allowed. If all LC3 routes are busy, and the calling station is allowed LC2, the system will try to select an LC2 route in the order programmed. If LC1 is allowed, and all LC2 routes are busy, the system will try to select an LC1 route.

- The Class of Service Data Block indicates the LCR class of that particular Class of Service.
- A warning tone is received by the station user if the last choice route is selected (if the WTA prompt, PAR table, **DLC1 Program**, is programmed to Y).
- If all the routes are busy, busy tone is received by the station user—who may then activate the automatic callback feature. The station will then be called when the first trunk in that station's LCR class is idle. When the station answers the automatic callback, the idle trunk will be seized and the telephone number will be automatically dialed out to the distant end.

02.07 All of the above logic and the remainder of the Lease Cost Routing and Toll Restriction features are described, and can be followed step-by-step, in the Detailed Logic Flowchart. This flowchart can be used as a fault finding procedure for customer data programming, and to answer questions as to what will happen when certain parameters are programmed in a certain manner.

02.10 Toll Restriction (TR)

02.11 The Toll Restriction (TR) program causes the system to restrict (or not restrict) certain stations from calling certain area codes and/or office codes.

02.12 TR can be used for long distance toll restriction or restriction in the local area (home area) or both. The TR class also decides whether to restrict calls to the local central office operator, international calls and/or long distance directory assistance.

02.13 Eight different TR classes (CLS 0 ~ 7) can be programmed in the previously described manner. Also, CLS 8 restricts all 0 + and 1 + calls.

02.14 All stations programmed for TOL =

NONE will have no restrictions. The TOL parameter (TR class number) is located in the **DEKT**, **DSTT** and **DTGP** (TIE/CCSA Trunks) **Programs**.

02.15 Before a call via Least Cost Routing or Direct Trunk Access (DTA) is completed, the **DTOL Program** will decide whether the number being dialing is allowed or not. If not allowed, the originating station receives overflow tone. If allowed, the call will be processed further.

02.16 All of the above logic, and the remainder of the TOL parameter, is described, and can be followed step-by-step, in the Detailed Logic Flowchart.

Example:
Follow a call through the Logic Flowchart according to what is programmed in Example #2.

03 NUMBERING PLAN (NORTH AMERICA)

03.00 Description

03.01 All telephone systems in the USA and Canada use the North American Numbering Plan. This is the plan upon which the PERCEPTION II LCR/TR features are based.

03.02 The routing codes for Direct Distant Dialing (DDD) within the North American Numbering Plan consist of two basic parts:

1) A 3-digit area code or Numbering Plan Area (NPA) code.

2) A 7-digit telephone number made up of a 3-digit central office (CO) code and a 4-digit station number.

NOTE:
When used together, these ten digits comprise the network "address" or destination code for each telephone.

- The first digit of the area code must be a number between 2 and 9. The second digit must be a 1 or 0. The third digit may be any number between 0 and 9.
- The first two digits in the CO code must be any numbers between 2 and 9, except when interchangeable codes are used (then the second digit can be any number between 0 and 9). The third digit of the CO code and all four subscriber numbers may be any number between 0 ~ 9 (Table A).

TABLE A
NORTH AMERICAN NUMBERING PLAN

Area Code	Office Code	Subscriber No.
N0/1X	NNX	XXXX

X = any number from 0 ~ 9
N = any number from 2 ~ 9
0/1 = number 0 or 1

03.03 The following are exceptions to the rule:

1) Service Code (N11): This is used for various special local services and, when programmed properly, it is recognized as a service code only. In this case, the system will act immediately after this 3-digit number is completed.

2) Interchangeable Codes (ICC): In some areas, the second digit of the office code is allowed to be any number from 0 ~ 9. In this case, the office code may look like an area code (if the second digit is 0 or 1). If so, PERCEPTION II looks for a DDD prefix (1) to identify whether or not the next 3-digit number is an area code. **1** + a 3-digit number is, when ICC is used, always an area code. When ICC is not used, the system identifies the area code by looking at the second digit of the first 3-digit number (if 0 or 1, the number is an area code; if not, the number is an office code).

3) Inward WATS: This is a form of long distance service without a charge to the originating party.

- The area code is always **800**.
- In PERCEPTION II LCR this type of call can be programmed either as a regular DDD call with an area code of **800**, or as a toll free **800** call (in PAR table), routed via the local call route table (LCR), as specified in the PAR table.

4) Long distance directory assistance (555): This is a call using any area code (or no area code) plus 555-1212. If allowed, this type of call is routed via the LDI route table, as indicated in the PAR table, or via the route table (DAC =N) to which this area code is related.

NOTE:
When a DDD call is dialed, a prefix of **1** *is usually needed before the area code. A* **0** *prefix will cause the local operator to be connected.*

04 SPECIAL COMMON CARRIER

04.00 Description

04.01 Dialing extra digits to access the Special Common Carrier (SPCC) trunks is not necessary if the LCR feature has been activated. The selection of SPCC trunks (like all other trunks) and the outpulsing of the extra digits (access code, authorization code, etc.), is accomplished automatically by the PERCEPTION II LCR feature. To the station user, this function is completely transparent.

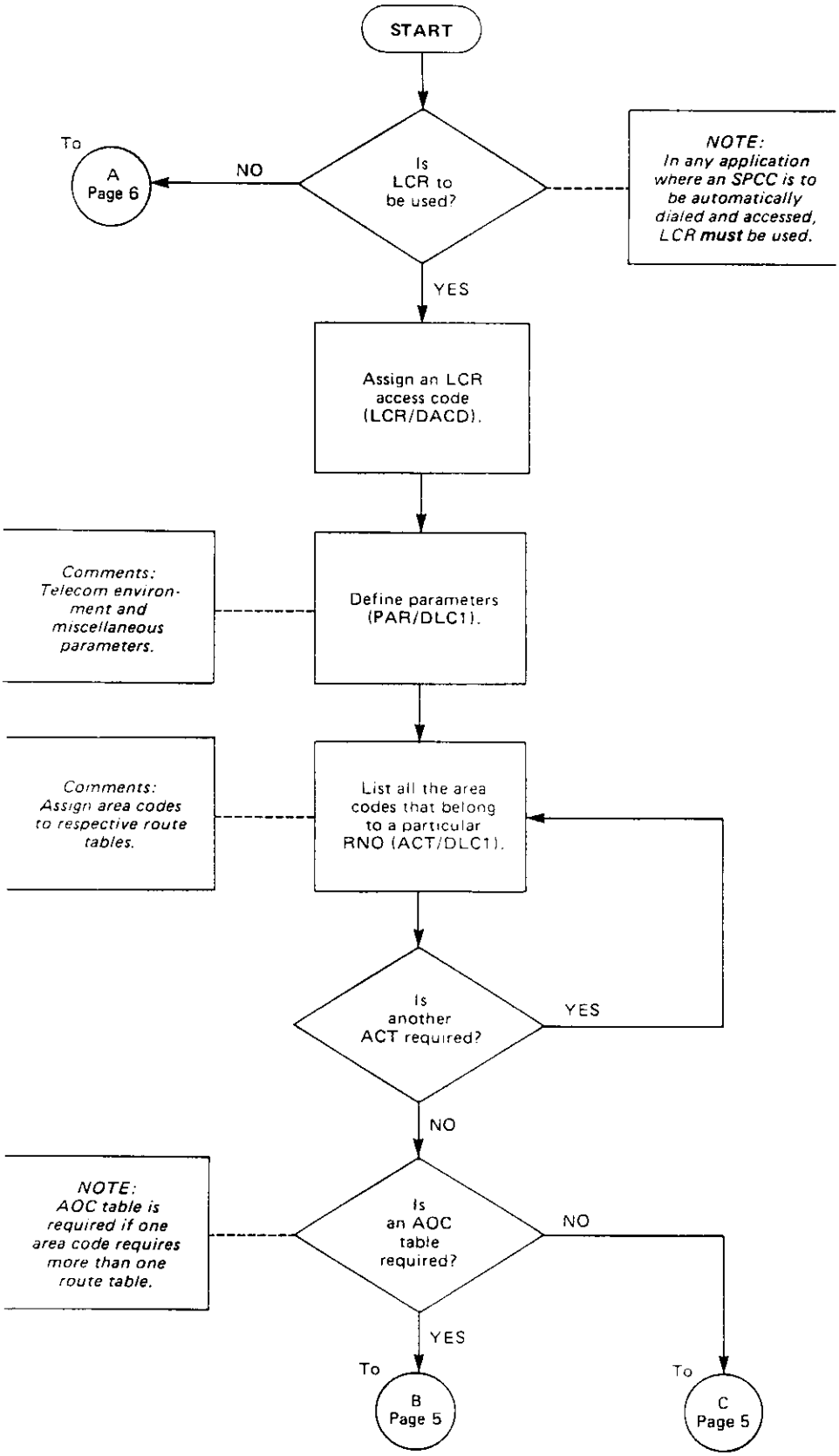
05 PROGRAMMING

05.00 General

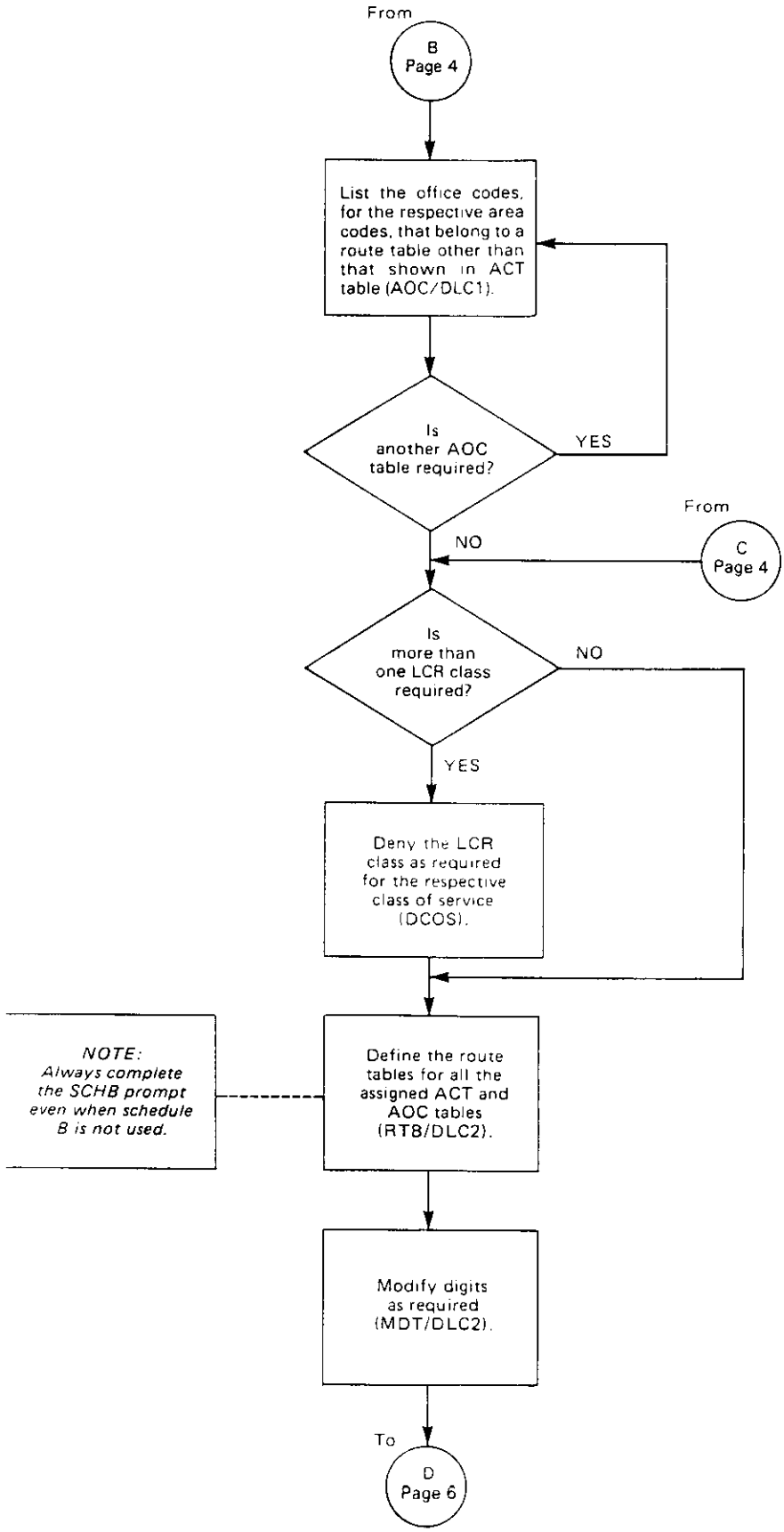
05.01 Customer data programming can be done in many different ways with the same results. The starting point and the particular order may differ according to personal preferences. As an example, one logical sequence for programming customer data is shown in the Customer Data Programming Flowchart.

05.02 For detailed information, see *Programming Procedures,* Section **400-100-300**, in the PERCEPTION II *Installation and Maintenance* manual and the Logic paragraph in this programming guide (Paragraph **07**).

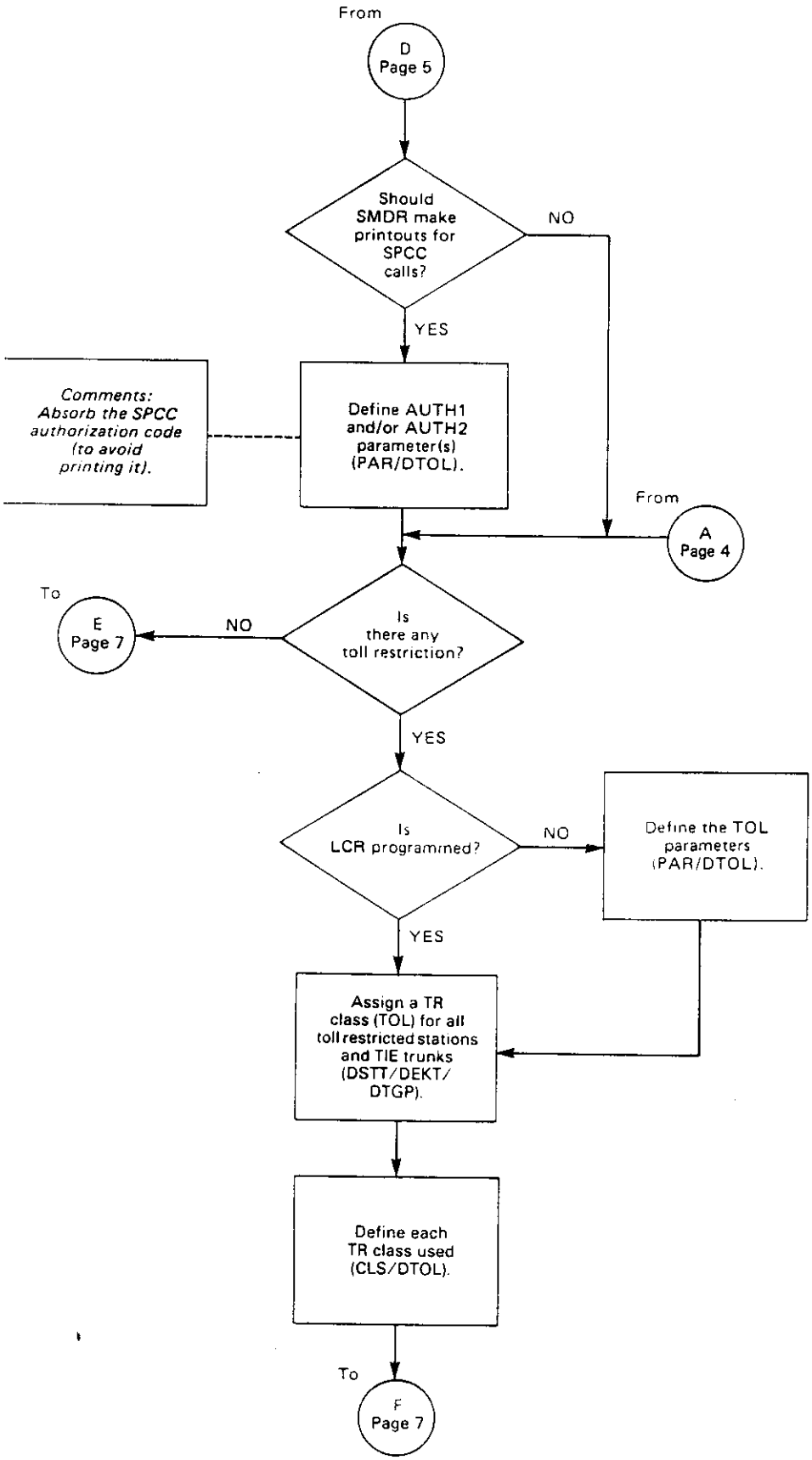
CUSTOMER DATA PROGRAMMING FLOWCHART



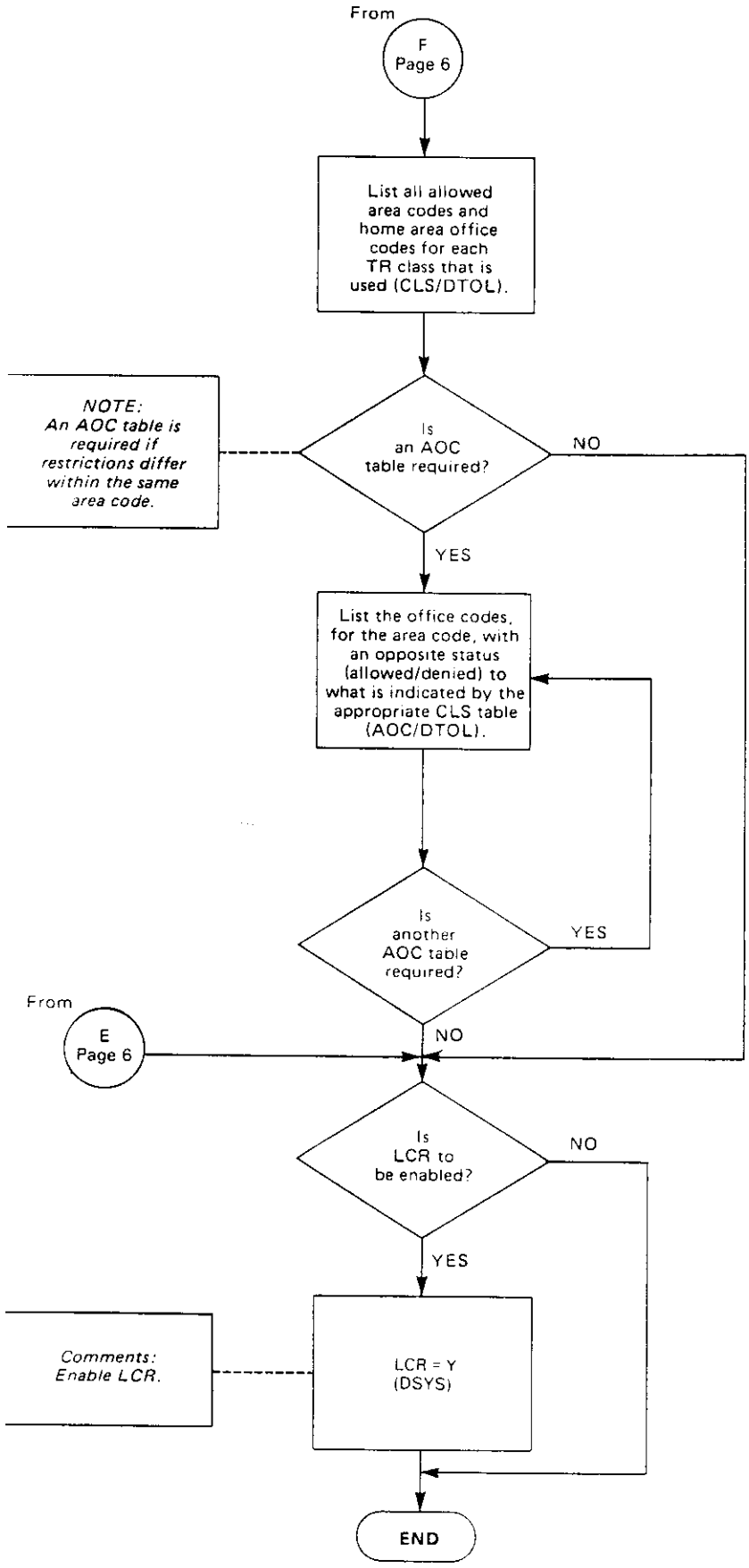
CUSTOMER DATA PROGRAMMING FLOWCHART (continued)



CUSTOMER DATA PROGRAMMING FLOWCHART (continued)



CUSTOMER DATA PROGRAMMING FLOWCHART (continued)



06 PROGRAMMING EXAMPLES

06.00 General

06.01 Examples are given here to show how PERCEPTION II can be programmed for various system applications. It is assumed that your system has been programmed in all areas, except LCR and TR. Comments are shown on the right side of the TTY printouts. These comments are shown only once for the same prompt and are not repeated for every Data Block in the same programming example.

06.02 The two examples show printouts using Data Output mode (see equivalent Data Blocks for Data Input).

IMPORTANT!

These are examples only and may not be realistic applications for the area under discussion.

06.10 Programming Example #1

06.11 This is a very simple case, where only two trunk groups are used. In this case, there is no Least Cost Routing in the true sense, as this application has only one routing choice for the particular area code dialed. However, LCR recognizes the area code, selects the correct trunk group and, when required, automatically outpulses the codes for SPCC access and authorization.

06.12 Least Cost Routing

a) In this case, the system is located in Orange County, California (NPA = 714).

b) For Least Cost Routing purposes, the outgoing trunk calls are divided into three different areas.

   1) Route Table #1 = Local area (NPA = 714).

   2) Route Table #2 = Los Angeles area (NPA = 213).

   3) Route Table #15 = Remainder of North America.

c) One Special Common Carrier (SPCC) is used. An access code (730 0000) and an authorization code (87654) are used to access SPCC.

d) No routing priority is used (i.e. the only LCR class is LC1). This is defined in the **DCOS Program**, by not denying any LCR class. The LCR access code is "9".

e) The telecommunications environment is defined in the **DLC1 Program** (TYPE = PAR).

f) The selection of the Route Table number is accomplished in the Area Code Table. The Modify Digits Table number is selected in the Route Table.

   NOTE:
   *Even when only one time schedule is used (i.e. SCHA), Schedule B (SCHB prompt) must also be completed in the **DLC2 Program**.*

06.13 Toll Restriction: Toll restrictions or home area restrictions are not programmed in this example (TOL = NONE). However, the AUTH1 parameter is programmed to "05" on the PAR table, **DTOL Program**. This causes the 5-digit authorization code to be absorbed (not printed) when the SMDR prints the called number.

```
COD       ******
OK        PSYS

REQ       PRT
TOR       0000
DRT       NONE
TEN       Y
ICP1      OFL
ICP2      OFL
ICP3      OFL
LCR       Y      <-----  LCR enabled
APG       14
AAT       NONE
APX       NONE
LN1       NONE
LN2       NONE
NT1       UNA
NT2       UNA
BLF1      3
BLF2      2
OFL1      NONE
OFL2      NONE
MC0       ATT0
MC1       NONE
MMP       10
REM       NONE
RAC       #*2
ACC  *    NONE
ACC  #    NONE
COT       50
RNA       31
AOF       30
CFD       10
HLD       50
OPT       15
PBT       4
LLO       15
AC8       4
HFS       Y
HFA       Y
MDR       Y
CFS       Y

REQ
```

PSYS Printout

```
>
COD       ******
OK        PACD

REQ       PRT
ACB       *7
CBR       **7
CFD       *9
CFR       **9
PUD       *6
PUG       *4
HLD       *3
MMP1      11
MMP2      12
OVR       *0
RND       #7
CWT       #4
SDU       #3
SDC       ##3
SDS       #6
UNA       *1
CRG       #9
FLH       *5
PAG0      15
PAG1      16
PAG2      17
PAG3      18
PAG4      19
RTV       **3
MAL       ##5
MCC       #5
DND       #2
DNC       ##2
RAC
LCR       9   <--  LCR Access Code = 9
REQ
```

PACD Printout

```
COD          ******
OK           PCOS

REQ          PRT

COS          0 NONE
COS          1 NONE
COS          2 T00
COS          3 NONE
COS          4 NONE
COS          5 NONE
COS          6 NONE
COS          7 NONE
COS          8 NONE
COS          9 NONE
COS          10 NONE
COS          11 NONE
COS          12 NONE
COS          13 NONE
COS          14 NONE
COS          15 NONE
REQ
```

LCR class #1 is allowed for COS 0 through COS 15 (since it is not specifically denied).

PCOS Printout

```
>
COD      ******
OK       PLCR

REQ      PAR

ICC      N
OTO      04
RTD      N
WTA      N
HAC      714
TFC      Y
LCR      01
SVC      411 611 911
DAC      Y
LDI      01
DDP      1
REQ
```

For detailed information see the PERCEPTION II Installation and Maintenance *manual, Section* ***400-100-300****, Paragraph* ***3.19.***

PLCR (PAR) Printout

```
          PLCR
REQ       ACTALL
RN001
                    <-- Home Area Code (Local Calls) are routed according to Route Table #1.
          714
RN002
                    <-- Calls to Area Code 213 are routed according to Route Table #2.
          213
RN003
          NONE
RN004
          NONE
RN005
          NONE
RN006
          NONE
RN007
          NONE
RN008
          NONE
RN009
          NONE
RN010
          NONE
RN011
          NONE
RN012
          NONE
RN013
          NONE      <-- All calls to these Area Codes are routed according to Route Table #15.
RN014
          NONE
RN015
          200 201 202 203 204 205 206 207 208 209
          210 211 212 214 215 216 217 218 219 300
          301 302 303 304 305 306 307 308 309 310
          311 312 313 314 315 316 317 318 319 400
          401 402 403 404 405 406 407 408 409 410
          411 412 413 414 415 416 417 418 419 500
          501 502 503 504 505 506 507 508 509 510
          511 512 513 514 515 516 517 518 519 600
          601 602 603 604 605 606 607 608 609 610
          611 612 613 614 615 616 617 618 619 700
          701 702 703 704 705 706 707 708 709 710
          711 712 713 715 716 717 718 719 800 801
          802 803 804 805 806 807 808 809 810 811
          812 813 814 815 816 817 818 819 900 901
          902 903 904 905 906 907 908 909 910 911
          912 913 914 915 916 917 918 919
REQ
```

PLCR (ACTALL) Printout

```
        RT01

RN001

RT1     00      01      <--- Trunk Group 00, Modify Digits Table 01.
RT2     NONE    NONE
RT3     NONE    NONE
RT4     NONE    NONE
RT5     NONE    NONE
RT6     NONE    NONE

SCHA    0000    2400    <--- Schedule A used only in this application.
LC3     RT1
LC2     NONE
LC1     NONE

SCHB    2400    0000    <--- SCHB prompt must be completed.
LC3     NONE
LC2     NONE
LC1     NONE

SCHC    0000    0000
LC3     NONE
LC2     NONE
LC1     NONE

REQ
```

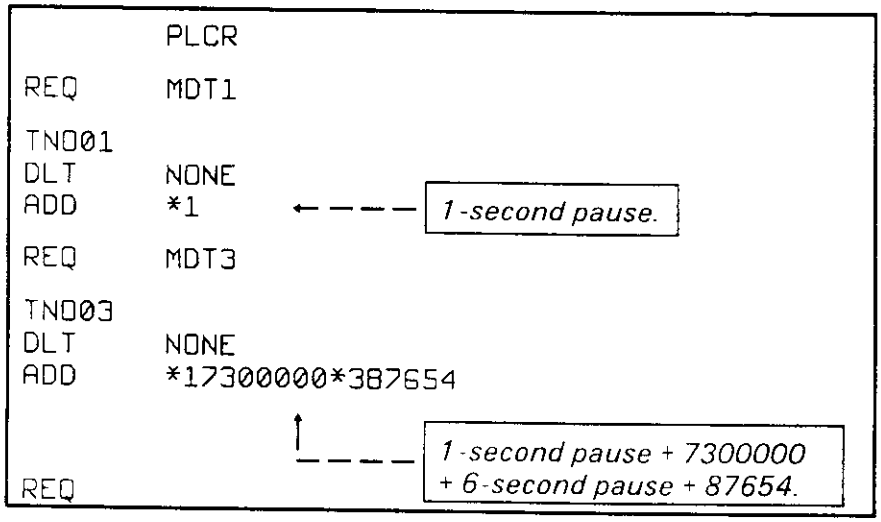
Route Table #1 Printout
PLCR (RT01)

```
        RT02

RN002

RT1     01      01
RT2     NONE    NONE
RT3     NONE    NONE
RT4     NONE    NONE
RT5     NONE    NONE
RT6     NONE    NONE

SCHA    0000    2400
LC3     RT1
LC2     NONE
LC1     NONE

SCHB    2400    0000
LC3     NONE
LC2     NONE
LC1     NONE

SCHC    0000    0000
LC3     NONE
LC2     NONE
LC1     NONE

REQ
```

Route Table #2 Printout
PLCR (RT02)

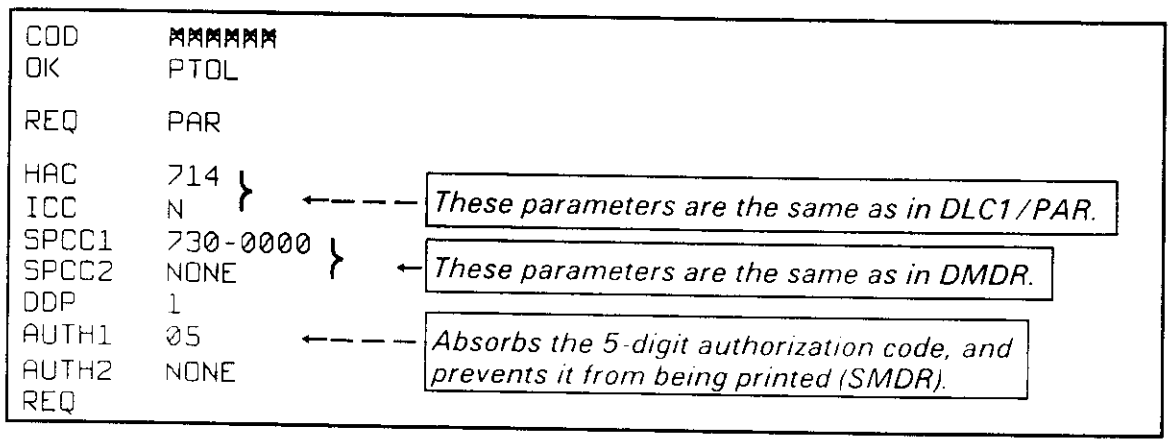
```
        RT15

RN015

RT1     00      03
RT2     NONE    NONE
RT3     NONE    NONE
RT4     NONE    NONE
RT5     NONE    NONE
RT6     NONE    NONE

SCHA    0000    2400
LC3     RT1
LC2     NONE
LC1     NONE

SCHB    2400    0000
LC3     NONE
LC2     NONE
LC1     NONE

SCHC    0000    0000
LC3     NONE
LC2     NONE
LC1     NONE

REQ
```

Route Table #15 Printout
PLCR (RT15)



Modify Digits Table Printout
PLCR (MDT1 and MDT3)

NOTE:
A 1-sec. pause is usually required when using Loop Start trunks, allowing the CO line enough time to attach a receiving register. This is usually not required for Ground Start trunks.



PTOL (PAR) Printout

06.20 Programming Example #2

06.21 Least Cost Routing

a) In this case, the system is located in the Chicago area (NPA = 312).

b) For Least Cost Routing purposes, the outgoing trunk calls are divided into four different areas.

1) Route Table #1 = Local area (NPA = 312).
2) Route Table #2 = Metro area (NPA = 312).
3) Route Table #3 = Illinois.
4) Route Table #15 = Rest of North America.

c) There are five trunk groups:

1) Trunk Group #0 = Local lines.
2) Trunk Group #1 = Metro lines.
3) Trunk Group #2 = Illinois WATS lines.
4) Trunk Group #3 = Local lines. Available to LCR class 1 only.
5) Trunk Group #4 = WATS lines to all North America.

d) One Special Common Carrier (SPCC) is used. An access code (730 0000) and an authorization code (65432) are used to access SPCC.

e) Three LCR classes (routing priorities) are used in this application.

1) COS 0 = LCR class #1.

2) COS 1 = LCR class #2.
3) COS 2 = LCR class #3.

f) Local calls are routed according to Route Table #1. This is defined by the Area Office Code Table #1 (TNO01).

g) Other Route Tables are addressed (pointed to) in the Area Code Tables 0 ~ 15.

NOTE:
No numbering relationship exists between the Area Code Tables and Area Office Code Tables, unless so defined in the Area Office Code Table.

06.22 Toll Restriction: For toll restriction purposes, there are, in this case, four Restriction Class Tables used:

1) CLS 0 = Internal calls only.

2) CLS 1 = 312 Area Code (local and metro) calls only, with one exception = (714)730-XXXX, which is allowed to be dialed.

3) CLS 2 = Local/Metro, Illinois, Wisconsin and Indiana calls allowed only, with one exception = (714)730-XXXX (also allowed).

4) CLS 3 = No restriction at all.

Time = 7 p.m. (= 1900).
Number dialed = (618) NNX-XXXX.
Station Class of Service = COS 1.
Station Toll Restriction (TR) class = CLS 2.

06.23 Sequence of events:

1) User pushes DN key.
   - Dial tone is received.

2) LCR access code 5 is dialed.
   - Dial tone still is received.

3) Digit 1 is dialed.
   - Dial tone is removed.

4) Area Code and Office Code are dialed, which in this case = (618) NNX (non-555-call).
   - No overflow tone received (this number is not restricted).

5) Station number (XXXX) is dialed.

6) Route Table #3 is selected.

7) At this time all trunks in Trunk Group #2 are busy. Trunks in Trunk Group #0 are idle.

8) Route 3 (RT3) is selected and the SPCC signals sent out on Trunk Group #00 are: 1-second pause, 730 0000, 6-second pause, 654321618 NNX XXXX.

9) If an SMDR is connected, the print out for called number = 1-618-NNX-XXXX

NOTE:
This sequence can be followed step-by-step in the Detailed Logic Flowchart.

```
        PSYS

REQ     PRT
TOR     2300
DRT     DDMP
TEN     N
ICP1    ATT
ICP2    ATT
ICP3    ATT
LCR     Y <----  LCR enabled
APG     14
AAT     NONE
APX     NONE
LN1     NONE
LN2     NONE
NT1     UNA
NT2     UNA
BLF1    2
BLF2    ?
OFL1    NONE
MC0     NONE
MMP     299
REM     NONE
RAC     #*2
ACC*    NONE
ACC#    NONE
COT     40
RNA     30
AOF     6
CFD     20
HLD     60
DPT     7
PBT     4
LLO     15
ACB     6
HFS     Y
HFA     Y
MDR     Y
CFS     Y

REQ
```

PSYS Printout

```
        PACD

REQ     PRT
ACB     *7
CBR     **7
CFD     *9
CFR     **9
PUD     *6
PUG     *4
HLD     *3
MMP1    11
MMP2    12
OVR     *0
RND     #7
CWT     #4
SDU     #3
SDC     ##3
SDS     #6
UNA     *1
CRG     *2
FLH     *5
PAG0    15
PAG1    16
PAG2    17
PAG3    18
PAG4    19
RTV     **3
MAL     #5
MCC     ##5
DND     #2
DNC     ##2
RAC     **5
LCR     5 <----  LCR Access Code = 5

REQ
```

PACD Printout

NOTE:
*The **LCR Program** was not designed for tenant service; therefore, if both LCR and tenant service are desired, one of the following two choices must be made:*

a. LCR is shared by both tenants.
b. LCR is used for one tenant, and Direct Trunk Access is used for the other tenant.

```
>
COD       ******
OK        PCOS

REQ       PRT


COS       0 NONE      <---  LCR 1, 2 & 3 allowed.
COS       1 LC1       <---  LCR 2 & 3 allowed.
COS       2 LC1 LC2   <---  LCR 3 allowed.
COS       3 NONE
COS       4 NONE
COS       5 NONE
COS       6 NONE
COS       7 NONE
COS       8 NONE
COS       9 NONE
COS       10 NONE
COS       11 NONE
COS       12 NONE
COS       13 NONE
COS       14 NONE
COS       15 NONE
REQ
```

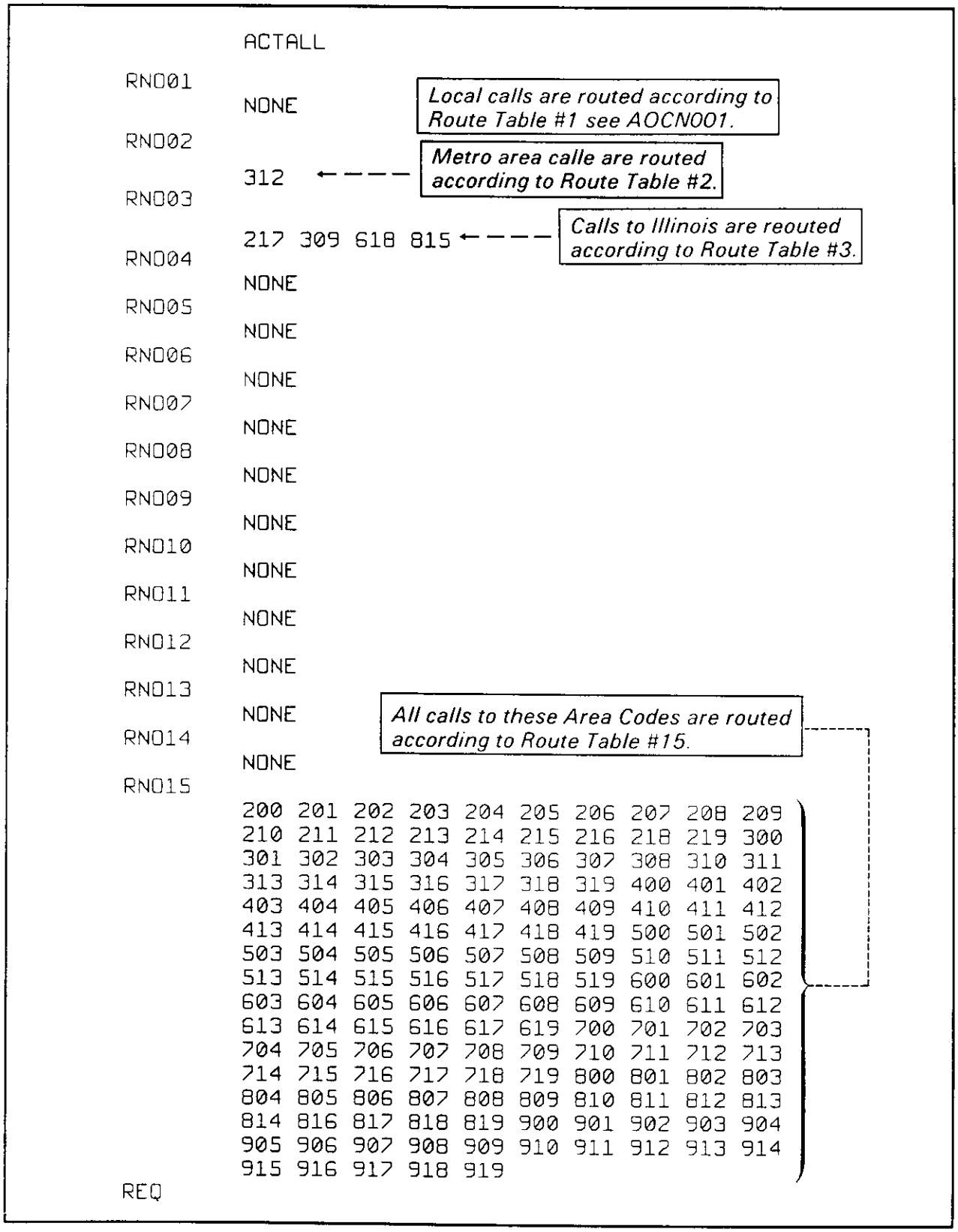
NOTE:
DCOS is a deny list.

PCOS Printout

```
>
COD       ******
OK        PLCR

REQ       PAR

ICC       Y
OTO       06
RTD       Y
WTA       Y
HAC       312
TFC       Y
LCR       01
SVC       411 911 611
DAC       Y
LDI       01
DDP       1
REQ
```

For detailed information see the PERCEPTION II Installation and Maintenance *manual, Section* ***400-100-300,*** *Paragraph* ***03.19.***

PLCR (PAR) Printout



PLCR (ACTALL) Printout

```
          AOCN001
TN001
AC        312
RNO       01     <----  Local calls (Office Codes below) are
                        routed according to Route Table #1.
OC
          223 232 244 249 258 289 331 333 336
          356 362 367 377 381 382 426 428 433
          458 464 466 479 526 534 540 546 552
          554 556 557 563 584 587 594 623 634
          658 662 669 672 680 683 689 695 697
          741 742 746 830 837 840 844 851 859
          879 888 892 896 946 972

REQ
```

PLCR (AOCN001) Printout

```
          RT01
RN001

RT1       00     01  <----  Trunk Group 00, Modify Digits Table 01.

RT2       03     01  <----  Trunk Group 03, Modify Digits Table 01.
RT3       NONE   NONE
RT4       NONE   NONE
RT5       NONE   NONE
RT6       NONE   NONE

SCHA      0000   2400 <---  Schedule A only used in this application.
LC3       RT1
LC2       NONE
LC1       RT2         <---  Route 2 can only be used by LCR class #1.

SCHB      2400   2400 <---  SCHB prompt must be completed.
LC3       NONE
LC2       NONE
LC1       NONE

SCHC      2400   0000
LC3       NONE
LC2       NONE
LC1       NONE

REQ
```

Route Table #1 Printout
PLCR (RT01)

```
          RT02

RNO02

RT1       01      01
RT2       03      01
RT3       NONE    NONE
RT4       NONE    NONE
RT5       NONE    NONE
RT6       NONE    NONE

SCHA      0000    2400
LC3       RT1
LC2       NONE
LC1       RT2

SCHB      2400    2400
LC3       NONE
LC2       NONE
LC1       NONE

SCHC      2400    0000
LC3       NONE
LC2       NONE
LC1       NONE

REQ
```

Route Table #2 Printout
PLCR (RT02)

```
          RT03

RNO03

RT1       02      01
RT2       04      01
RT3       00      02
RT4       03      02
RT5       NONE    NONE
RT6       NONE    NONE

SCHA      0800    1800    <-- Schedule A = 8 a.m. to 6 p.m.
LC3       RT1
LC2       RT2 RT3
LC1       RT4

SCHB      1800    0800    <-- Schedule B = 6 p.m. to 8 a.m.
LC3       RT1
LC2       RT3 RT2
LC1       RT4

SCHC      0800    0800
LC3       NONE
LC2       NONE
LC1       NONE

REQ
```

Route Table #3 Printout
PLCR (RT03)

```
          RT15

RNO15

RT1       00      02
RT2       04      01
RT3       03      02
RT4       NONE    NONE
RT5       NONE    NONE
RT6       NONE    NONE

SCHA      0000    2400
LC3       RT1
LC2       RT2
LC1       RT3

SCHB      2400    2400
LC3       NONE
LC2       NONE
LC1       NONE

SCHB      2400    0000
LC3       NONE
LC2       NONE
LC1       NONE

REQ
```

Route Table #15 Printout
PLCR (RT15)

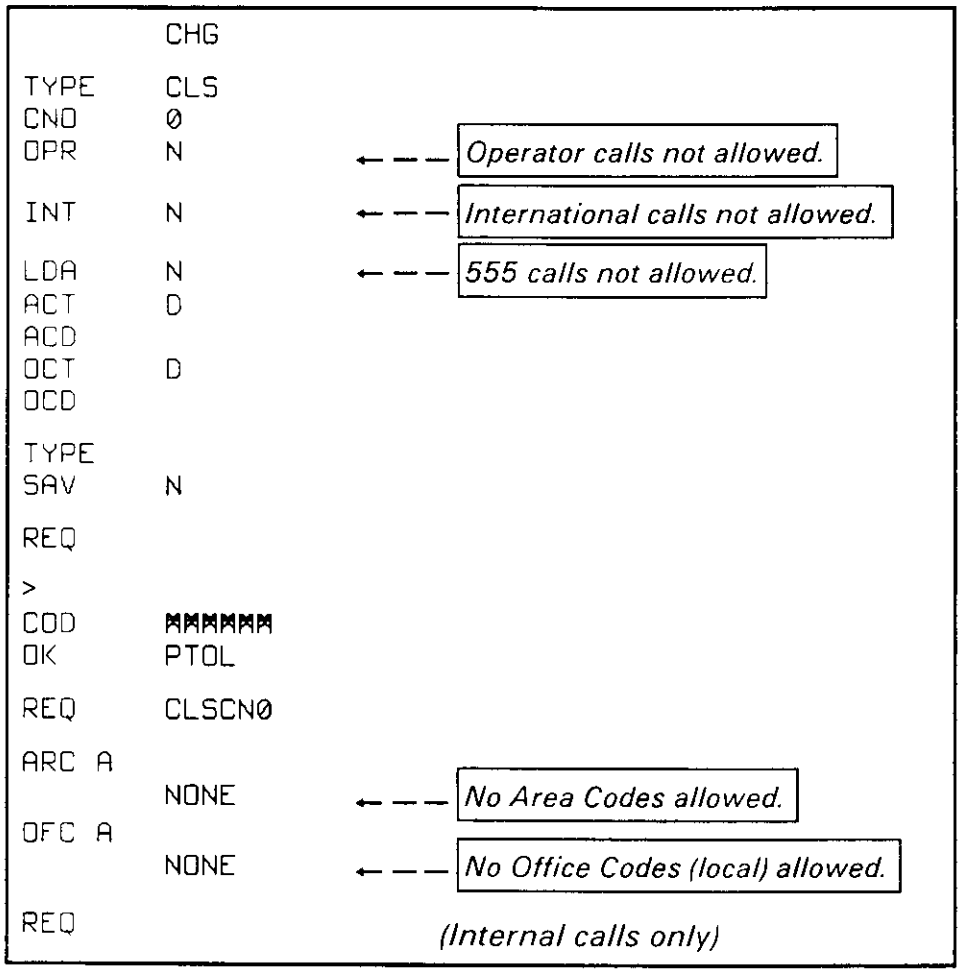
```
REQ       MDT1

TNO01
DLT       NONE
ADD       *1        <----  1-second pause.

REQ       MDT2

TNO02
DLT       NONE
ADD       *17300000*365432 <-  1-second pause + 730
                               0000 + 6-seconds
REQ                            pause + 65432.
```

Modify Digits Table Printout
PLCR (MDT1 and MDT2)

NOTE:
A 1-sec. pause is usually required when using Loop Start trunks, allowing the CO line enough time to attach a receiving register. This is usually not required for Ground Start trunks.

```
COD       ******
OK        PTOL

REQ       PAR

HAC       312     } <---  These parameters are the same as in DLC1/PAR.
ICC       Y       }
SPCC1     730-0000}
SPCC2     NONE    }  <--  These parameters are the same as in DMDR.
DDP       1       <---
AUTH1     05      <----  Absorbs the 5-digit authorization code, and
                         prevents it from being printed (SMDR).
AUTH2     NONE
REQ
```

PTOL (PAR) Printout



DTOL (CLS)—PTOL (CLSCN0) Restriction Class #0 Printout

NOTE FOR INTERNAL CALLS ONLY:
They can also be programmed by denying LC3 and DTA in the respective Class of Service (DCOS); however, they would not allow the option to allow or deny Operator/International/555 calls.

```
>
COD       ******
OK        DTOL

REQ       CHG
TYPE      CLS
CNO       1
OPR       Y
INT       N
LDA       N
ACT       D
ACD
OCT       A
OCD

TYPE
SAV       N

>
COD       ******
OK        PTOL

REQ       CLSCN1

ARC A                                  No Area Codes allowed.
                                       All local Office Codes allowed
          NONE                         (local and metro calls only).
OFC A
          2009 2109 2209 2309 2409 2509 2609 2709 2809
          2909 3009 3109 3209 3309 3409 3509 3609 3709
          3809 3909 4009 4109 4209 4309 4409 4509 4609
          4709 4809 4909 5009 5109 5209 5309 5409 5509
          5609 5709 5809 5909 6009 6109 6209 6309 6409
          6509 6609 6709 6809 6909 7009 7109 7209 7309
          7409 7509 7609 7709 7809 7909 8009 8109 8209
          8309 8409 8509 8609 8709 8809 8909 9009 9109
          9209 9309 9409 9509 9609 9709 9809 9909
TNO       02
ARC       714
CNO       1                            Exception:
OFC                                    Area Code 714 and Office Code 730,
          7300                         so (714)730-XXXX is allowed.
REQ
```

DTOL (CLS)—PTOL (CLSCN1) Restriction Class #1 Printout

```
        CLS
CNO     2
OPR     Y
INT     N
LDA     Y
ACT     D                          (See Note)
ACD
OCT     A
OCD

TYPE
SAV     N

>
COD     ******
OK      PTOL

REQ     CLSCN2

ARC A
        217 219 309 312 317 414 608 618 715 812
        815
OFC A
        2009 2109 2209 2309 2409 2509 2609 2709 2809
        2909 3009 3109 3209 3309 3409 3509 3609 3709
        3809 3909 4009 4109 4209 4309 4409 4509 4609
        4709 4809 4909 5009 5109 5209 5309 5409 5509
        5609 5709 5809 5909 6009 6109 6209 6309 6409
        6509 6609 6709 6809 6909 7009 7109 7209 7309
        7409 7509 7609 7709 7809 7909 8009 8109 8209
        8309 8409 8509 8609 8709 8809 8909 9009 9109
        9209 9309 9409 9509 9609 9709 9809 9909
TNO     01
ARC     714
CNO     2
OFC
        7300
```

Allowing all calls to Illinois, Wisconsin and Indiana, including local and metro calls. No other calls allowed, except (714)730-XXXX.

```
REQ
```

DTOL (CLS)—PTOL (CLSCN2) Restriction Class #2 Printout

NOTE:
The add/delete list is not shown here. Instead, the result of the programming is shown by using the PTOL printout.

```
COD       ******
OK        DTOL

REQ       CHG

TYPE      CLS
CNO       3
OPR       Y
INT       Y
LDA       Y
ACT       A
ACD
OCT       A
OCD

TYPE
SAV       N

>
COD       ******
OK        PTOL

REQ       CLSCN3

ARC A
          200 201 202 203 204 205 206 207 208 209
          210 211 212 213 214 215 216 217 218 219
          300 301 302 303 304 305 306 307 308 309
          310 311 312 313 314 315 316 317 318 319
          400 401 402 403 404 405 406 407 408 409
          410 411 412 413 414 415 416 417 418 419
          500 501 502 503 504 505 506 507 508 509
          510 511 512 513 514 515 516 517 518 519
          600 601 602 603 604 605 606 607 608 609
          610 611 612 613 614 615 616 617 618 619
          700 701 702 703 704 705 706 707 708 709
          710 711 712 713 714 715 716 717 718 719
          800 801 802 803 804 805 806 807 808 809
          810 811 812 813 814 815 816 817 818 819
          900 901 902 903 904 905 906 907 908 909
          910 911 912 913 914 915 916 917 918 919
OFC A
          2009 2109 2209 2309 2409 2509 2609 2709 2809
          2909 3009 3109 3209 3309 3409 3509 3609 3709
          3809 3909 4009 4109 4209 4309 4409 4509 4609
          4709 4809 4909 5009 5109 5209 5309 5409 5509
          5609 5709 5809 5909 6009 6109 6209 6309 6409
          6509 6609 6709 6809 6909 7009 7109 7209 7309
          7409 7509 7609 7709 7809 7909 8009 8109 8209
          8309 8409 8509 8609 8709 8809 8909 9009 9109
          9209 9309 9409 9509 9609 9709 9809 9909

                                  There are no restrictions. Treated as if
                                  TOL = NONE.
REQ
```

DTOL (CLS)—PTOL (CLSCN3) Restriction Class #3 Printout

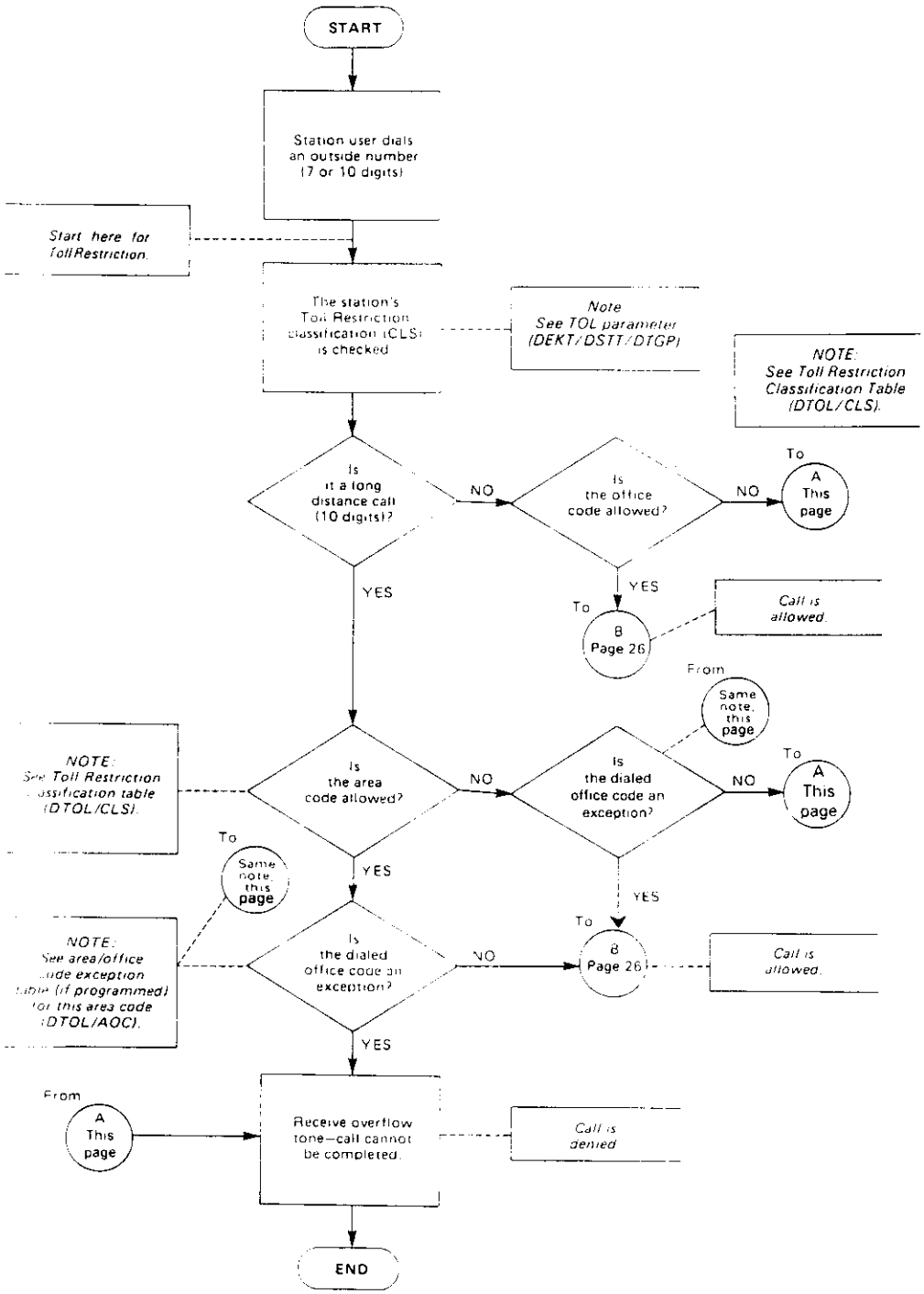
07 LOGIC

07.00 General

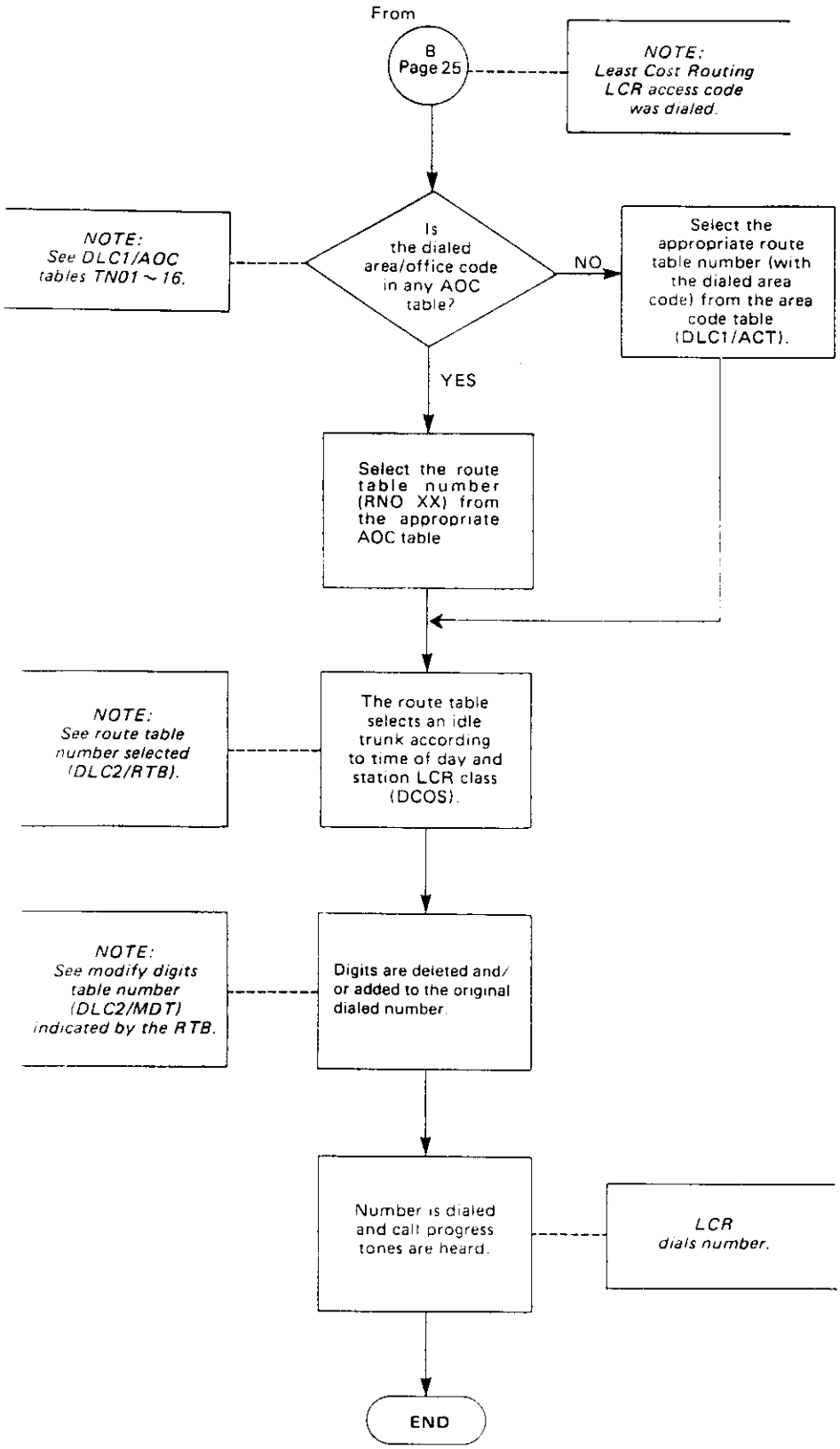
07.01 The purpose of the General Logic Flowchart (which begins below) is to show the general flow for a typical LCR phone call, but without the details.

07.02 All of the LCR/TR logic, and the sequence in which the logic is processed by the CPU, are summarized in the Detailed Logic Flowchart. Use this flowchart to answer questions about how the system will behave when programmed in a certain way. It may also be used as a fault finding procedure for customer data.

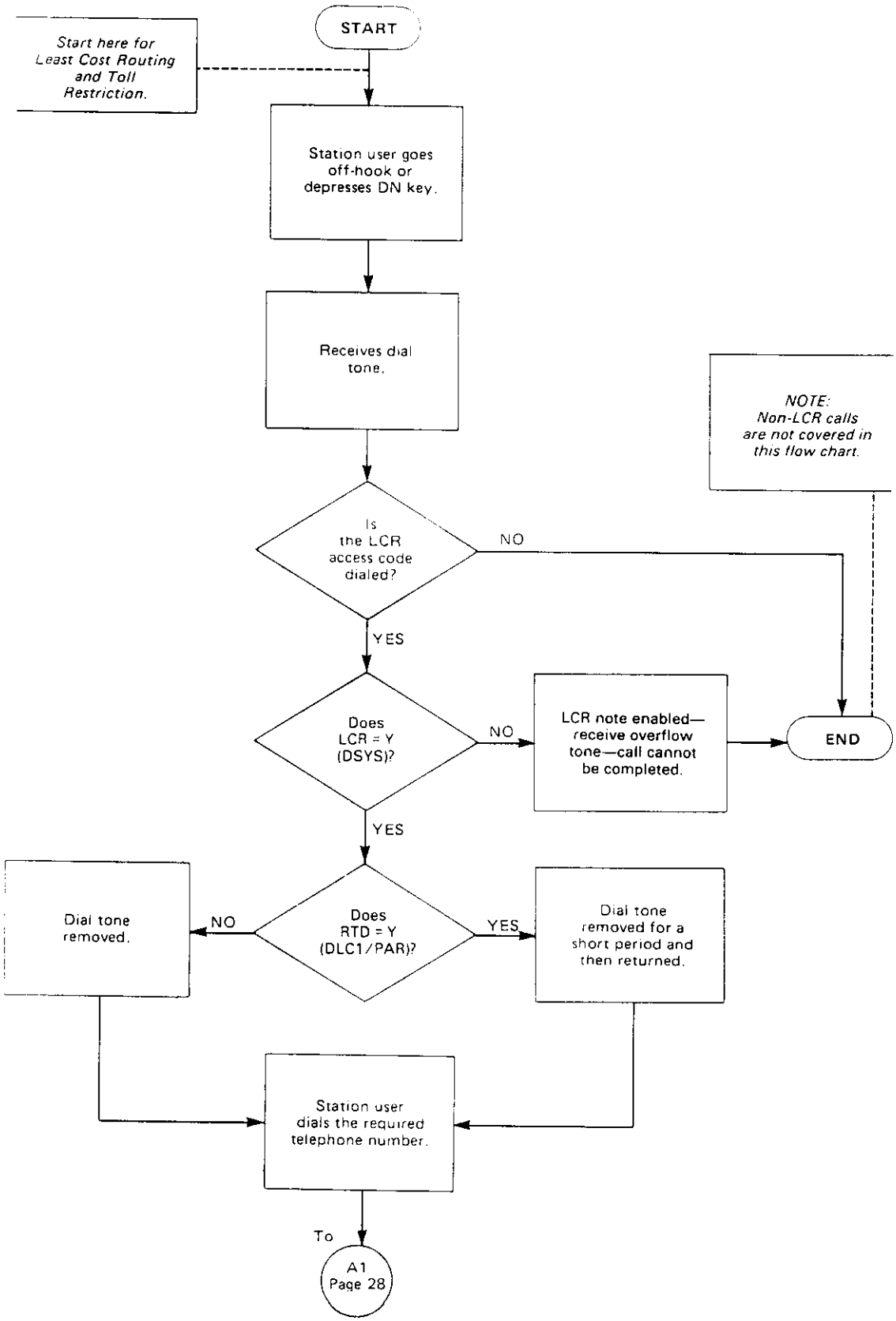
GENERAL LOGIC FLOWCHART



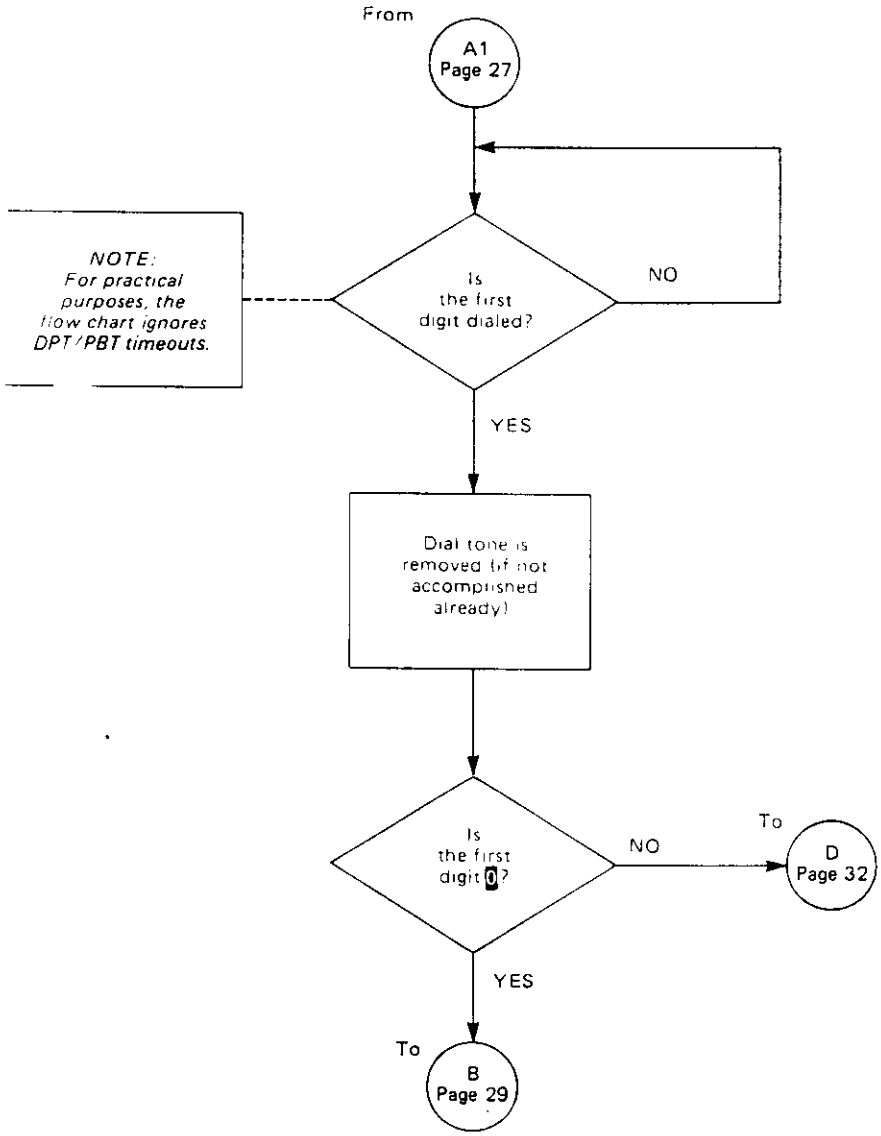
GENERAL LOGIC FLOWCHART (continued)



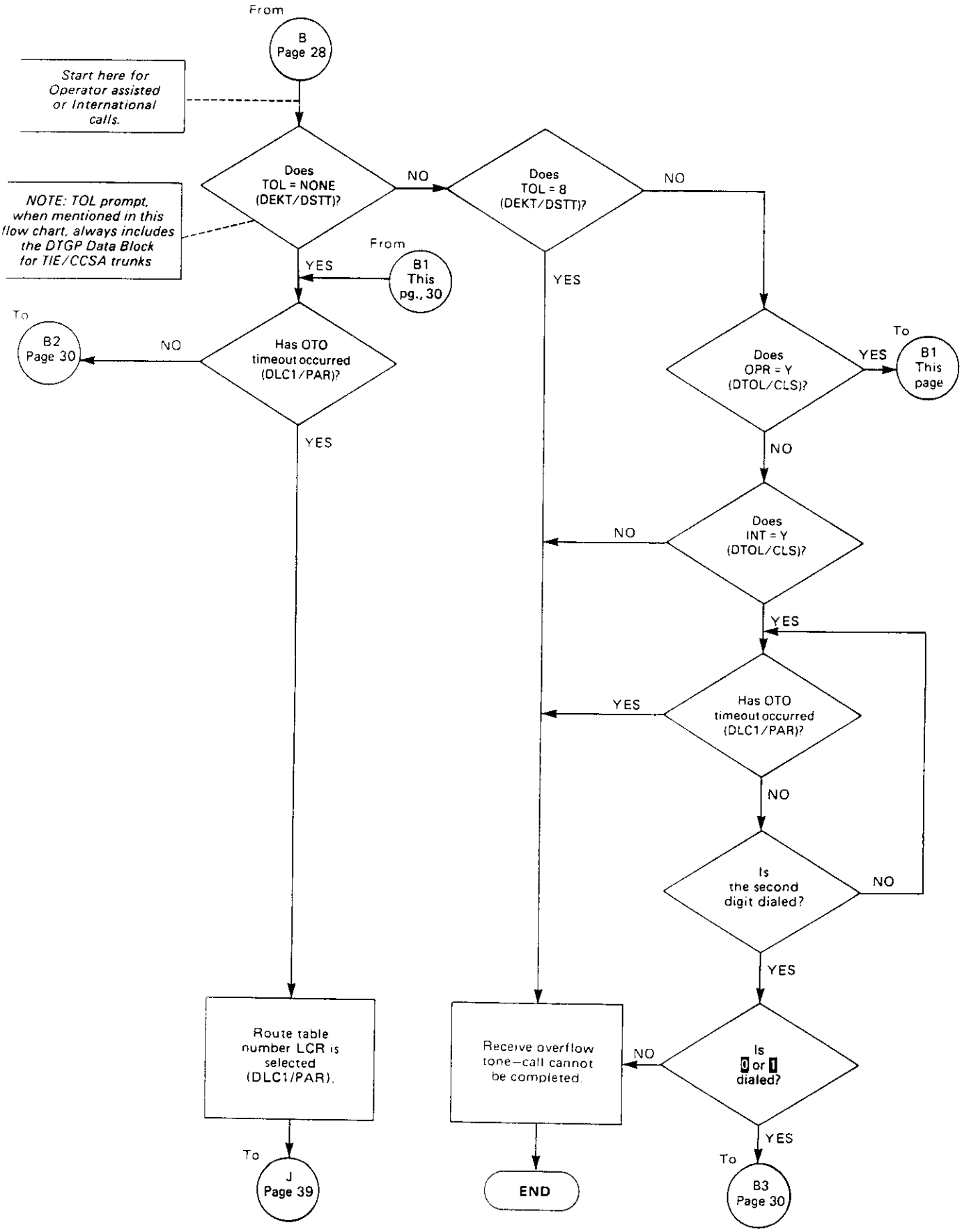
DETAILED LOGIC FLOWCHART



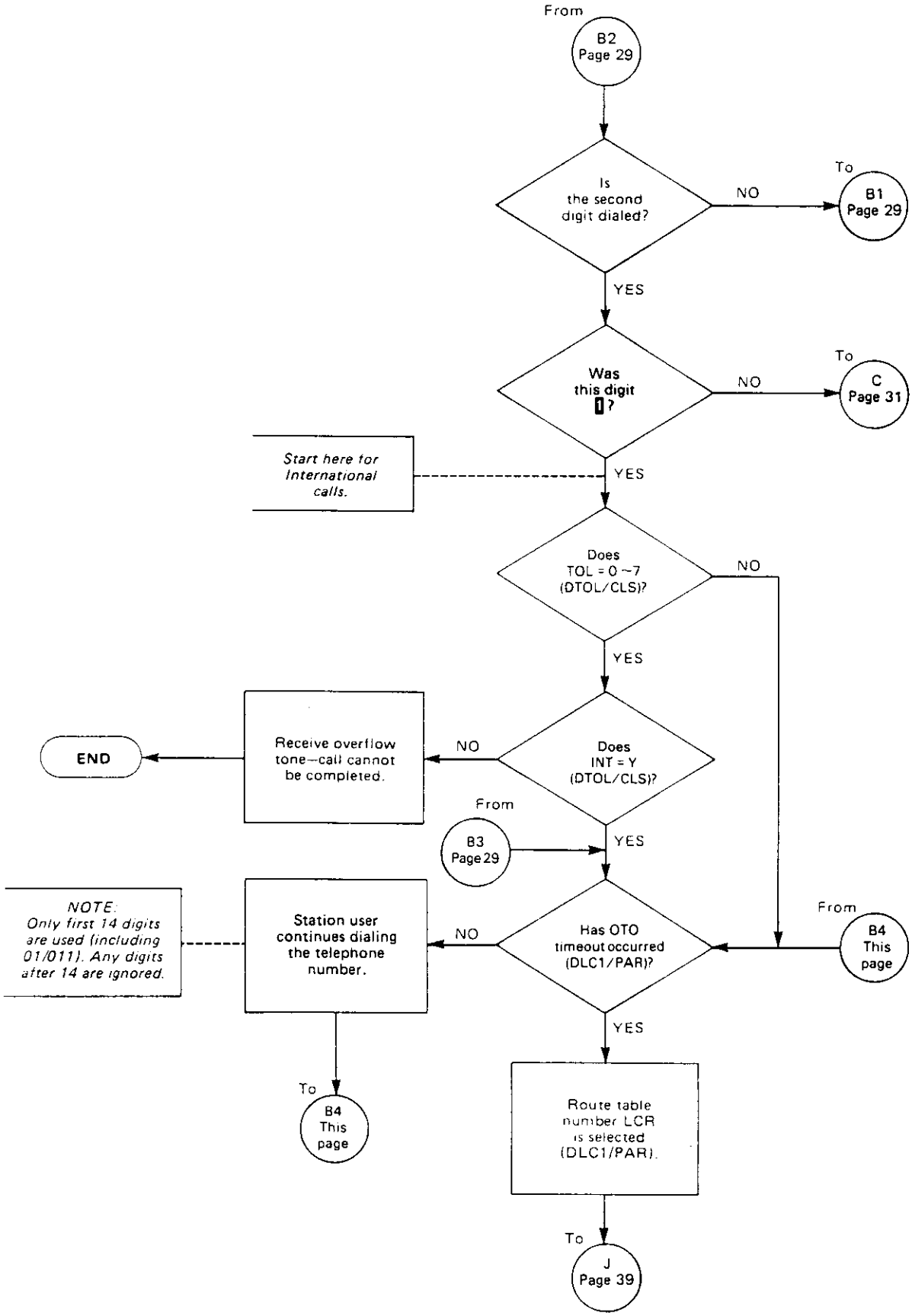
DETAILED LOGIC FLOWCHART (continued)



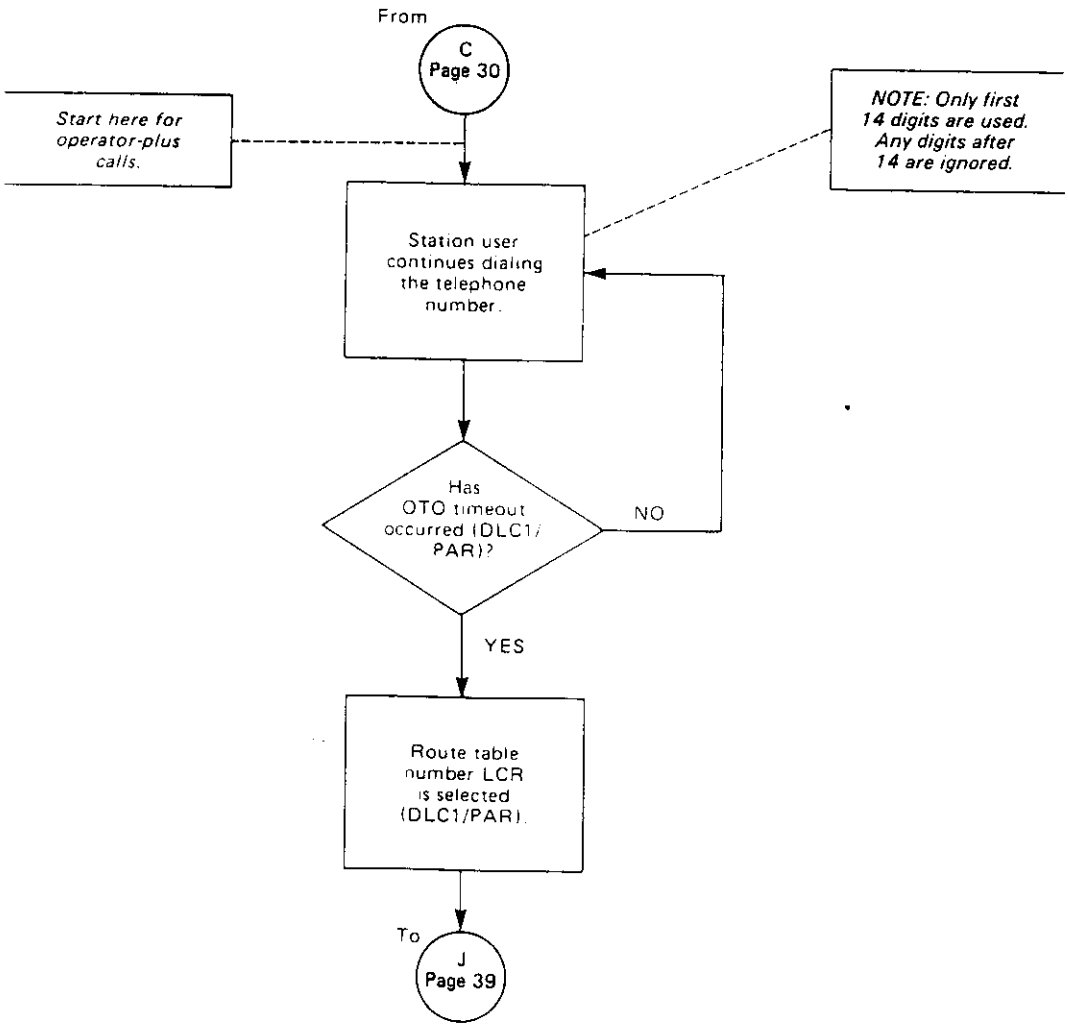
DETAILED LOGIC FLOWCHART (continued)



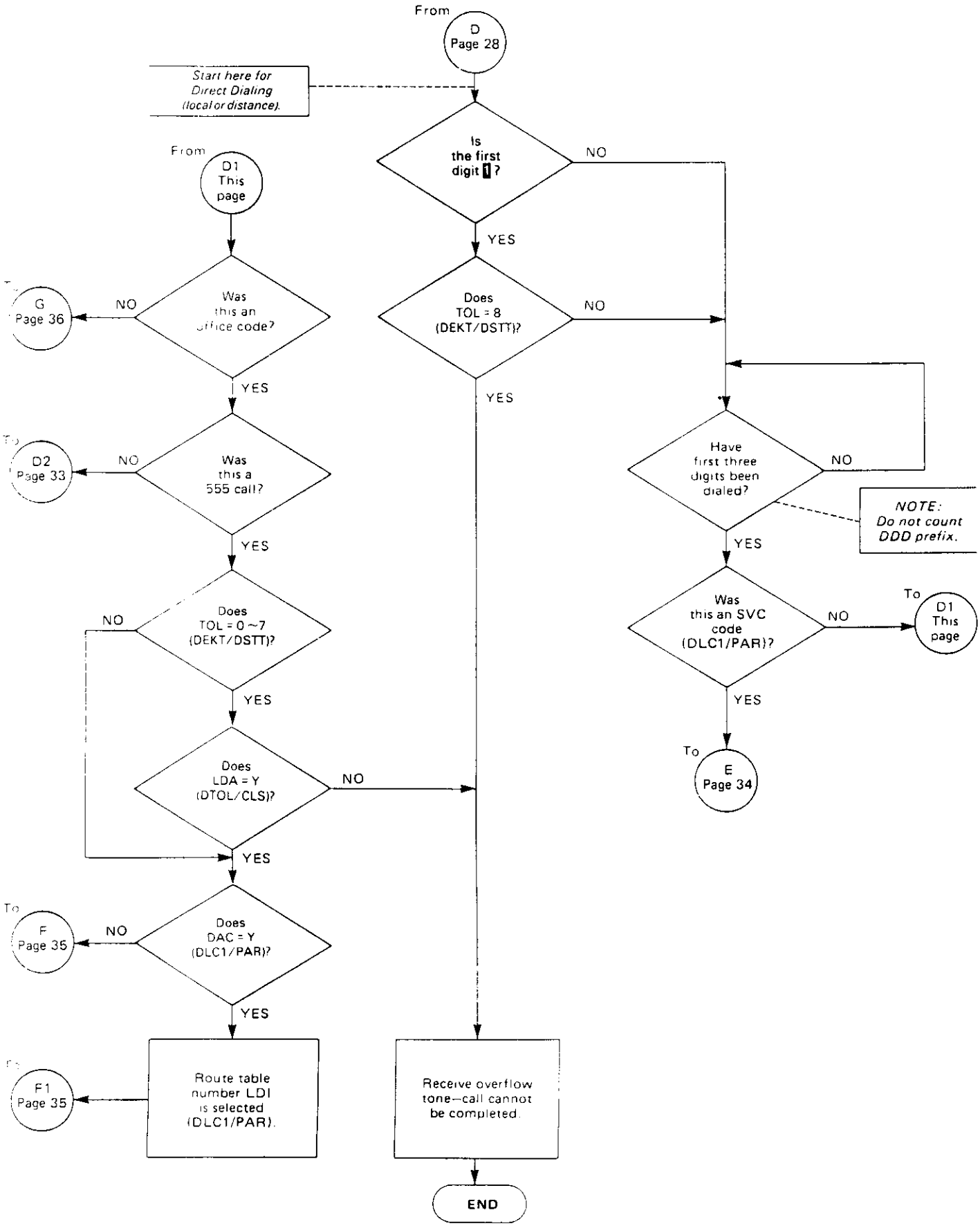
DETAILED LOGIC FLOWCHART (continued)



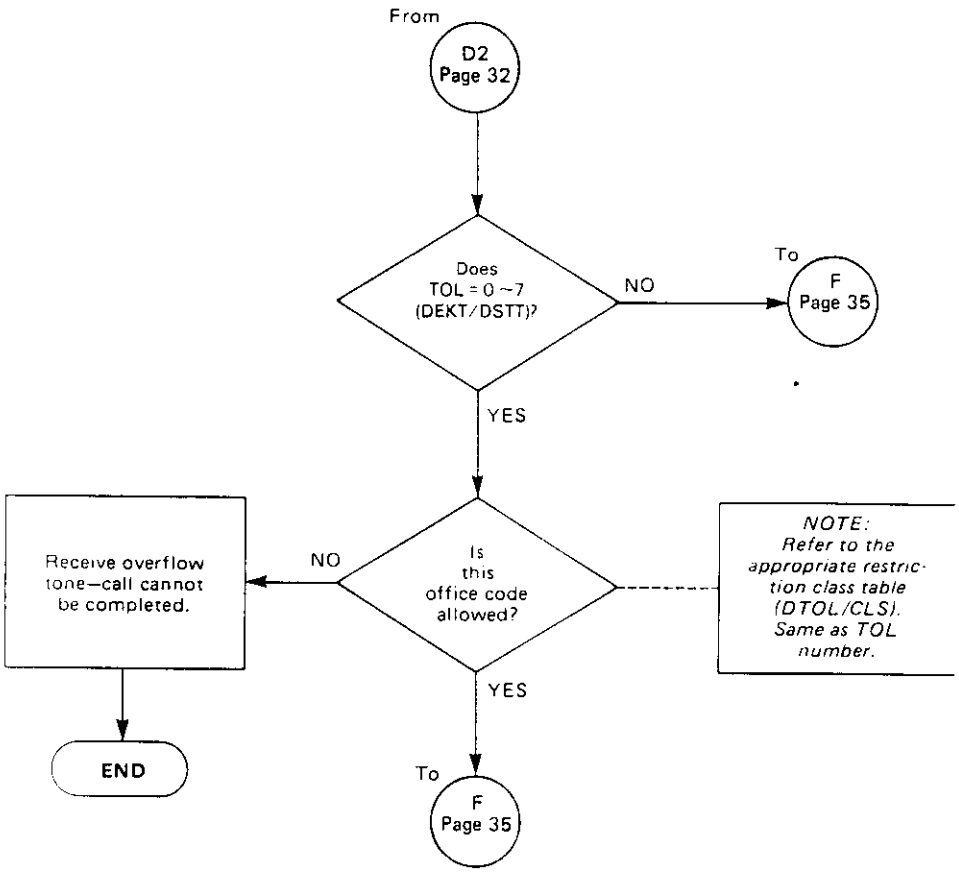
DETAILED LOGIC FLOWCHART (continued)



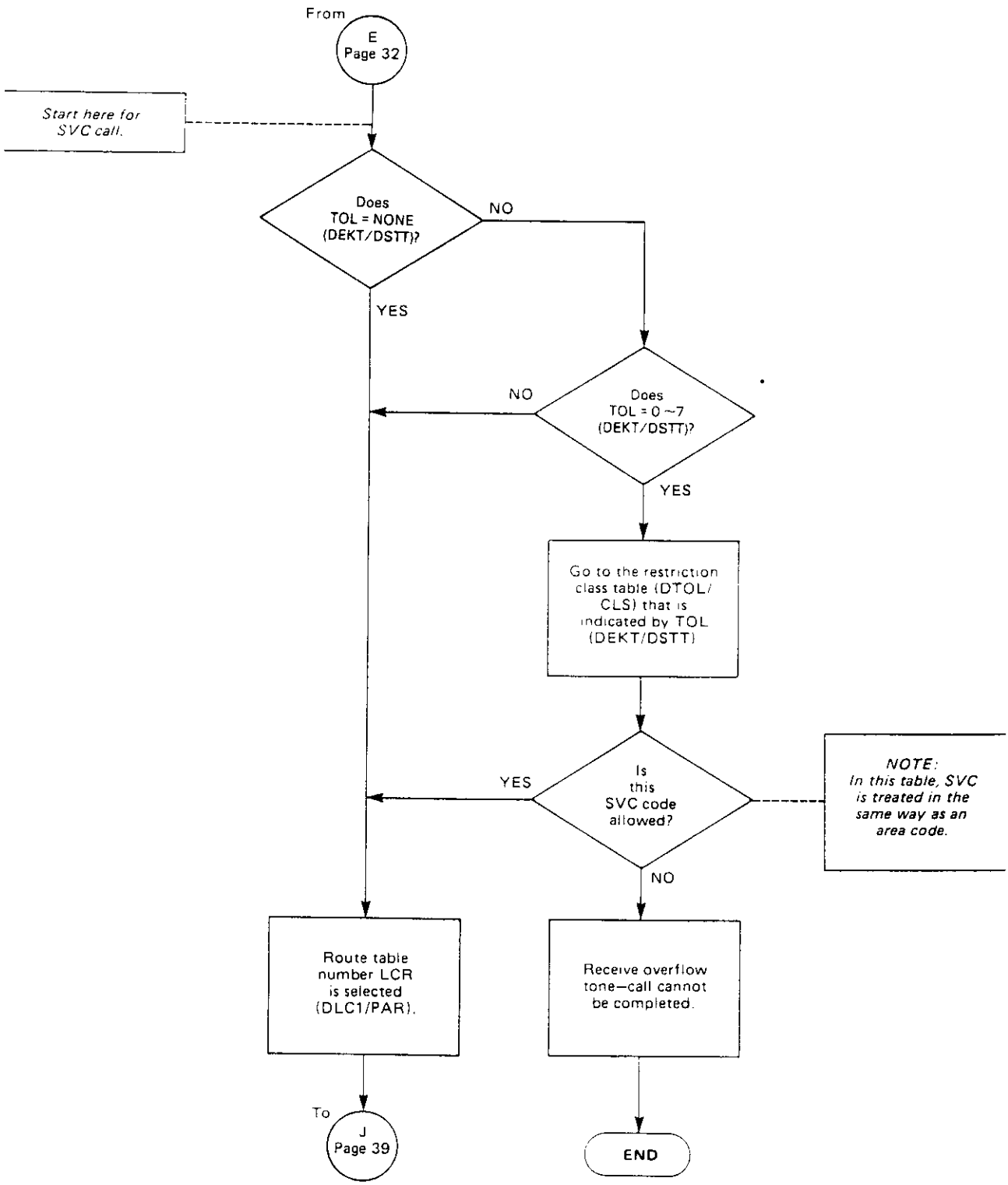
DETAILED LOGIC FLOWCHART (continued)



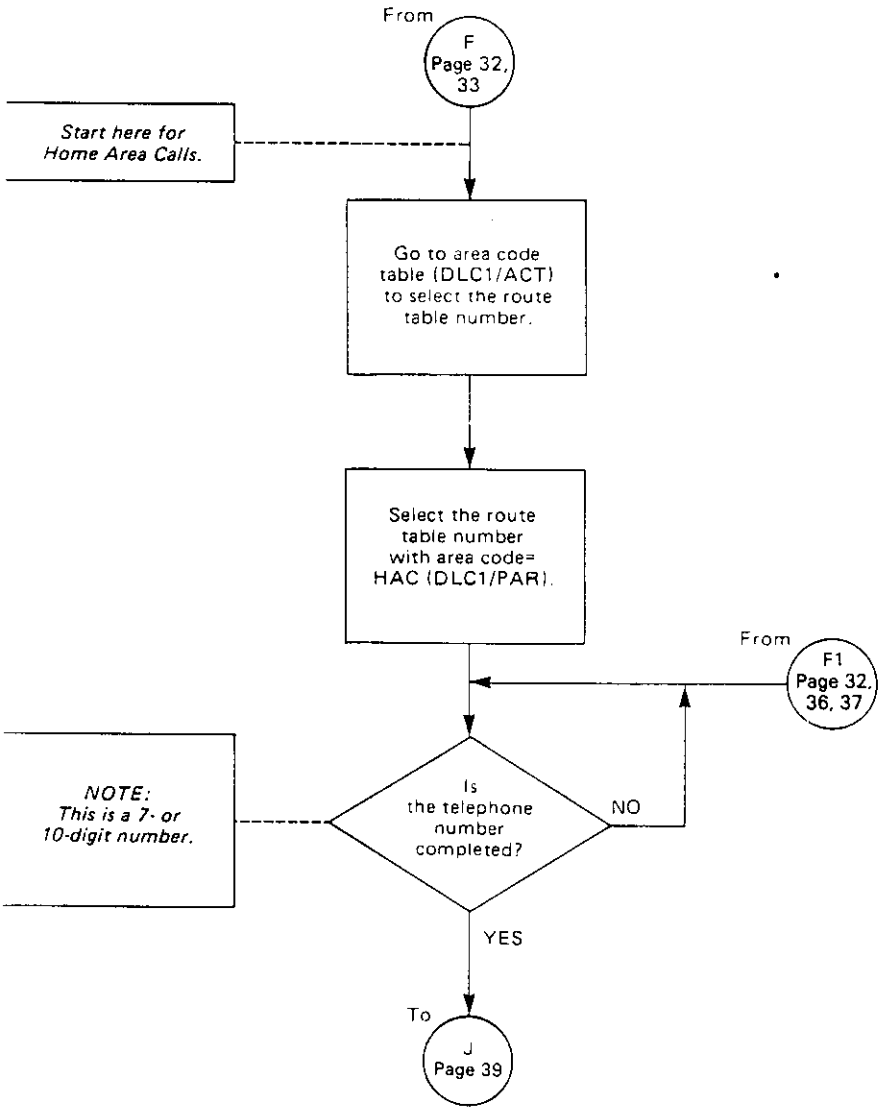
DETAILED LOGIC FLOWCHART (continued)



DETAILED LOGIC FLOWCHART (continued)



DETAILED LOGIC FLOWCHART (continued)



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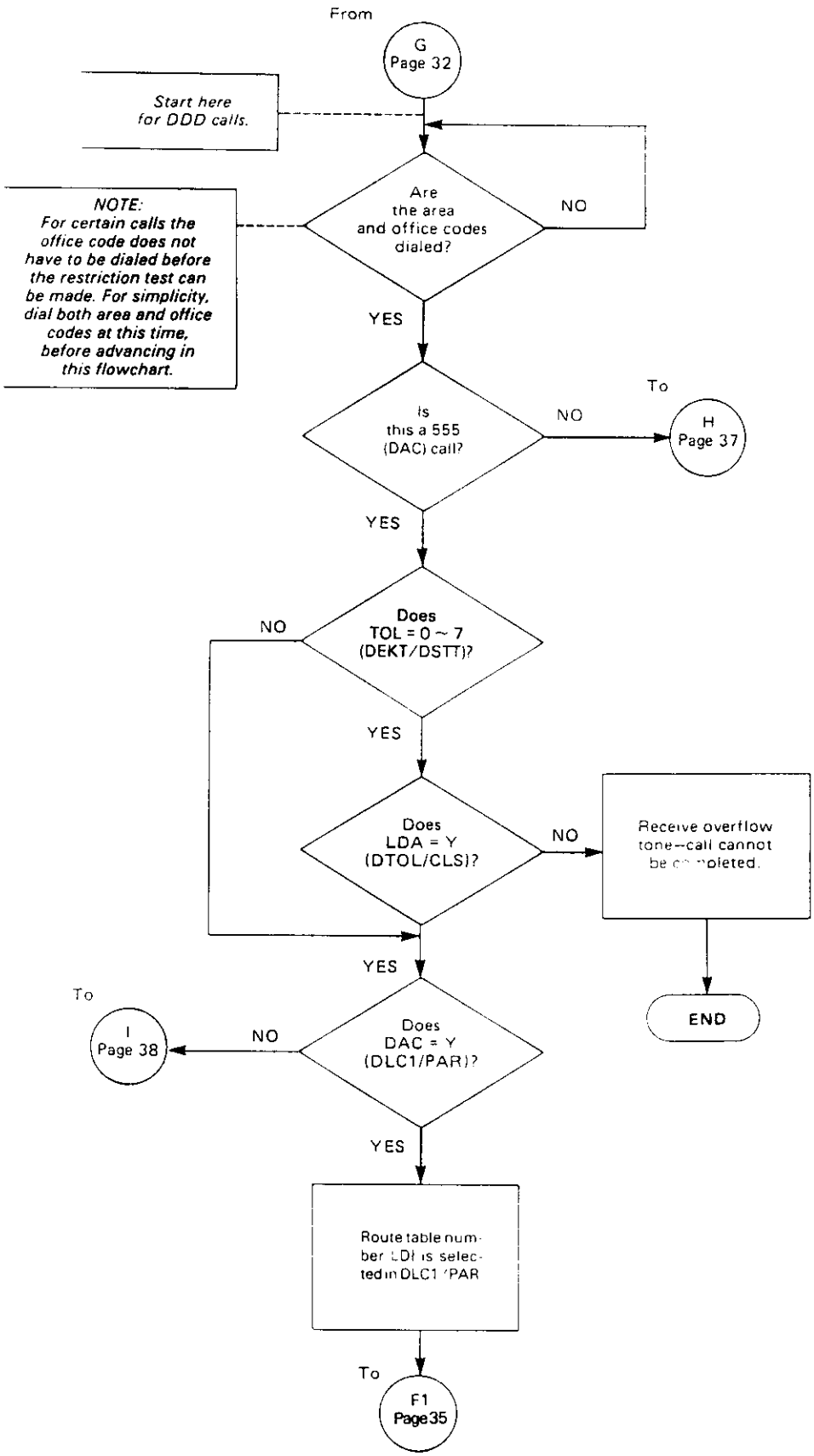
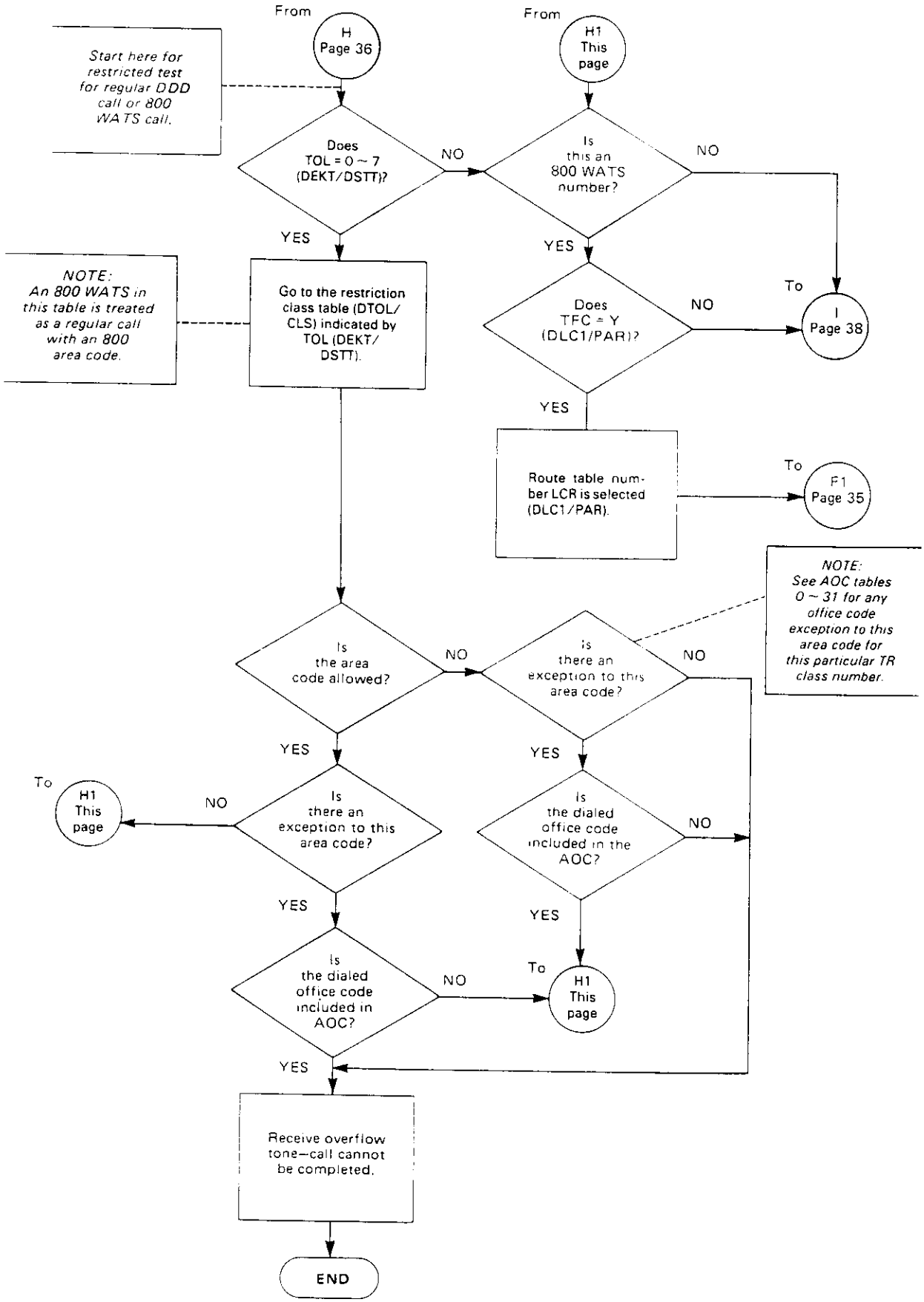


DETAILED LOGIC FLOWCHART (continued)



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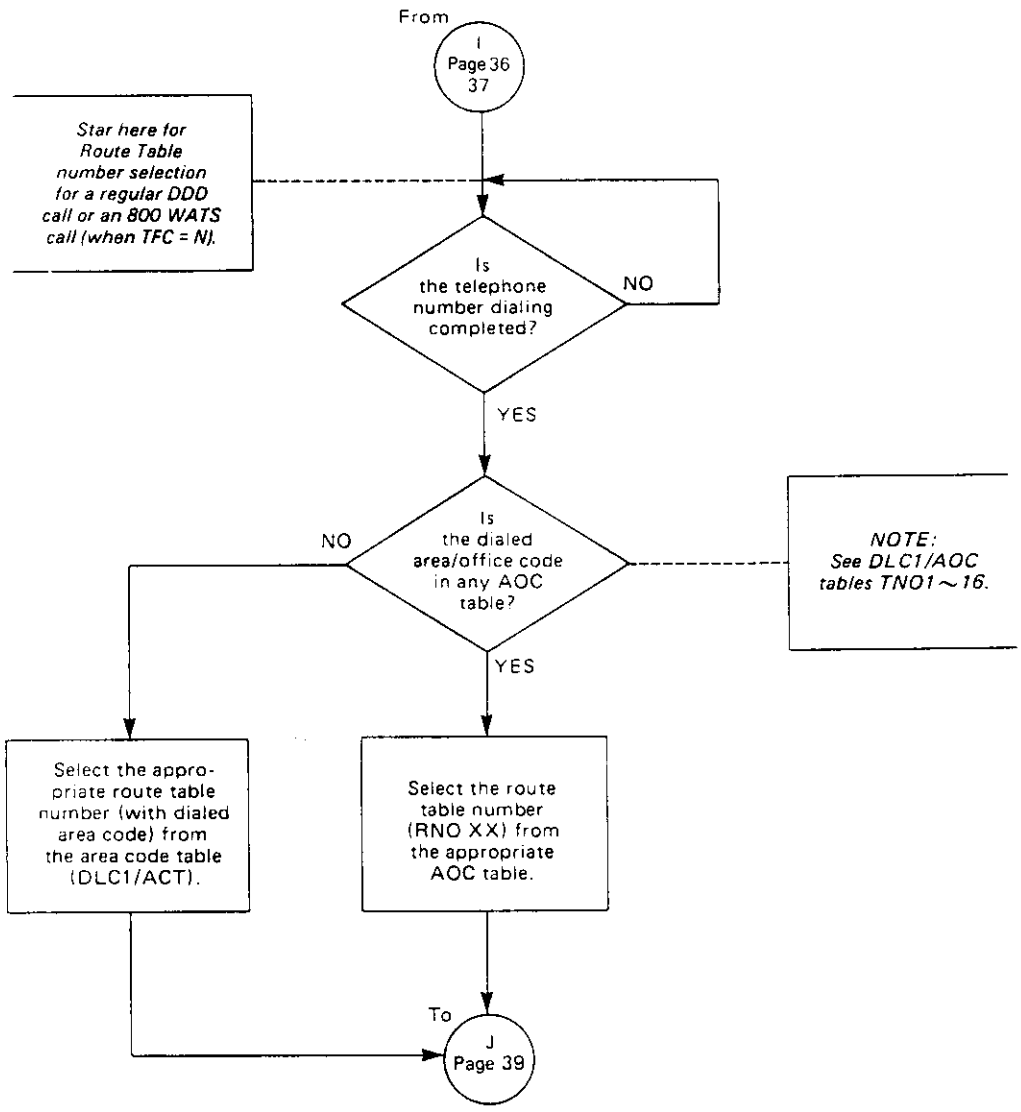

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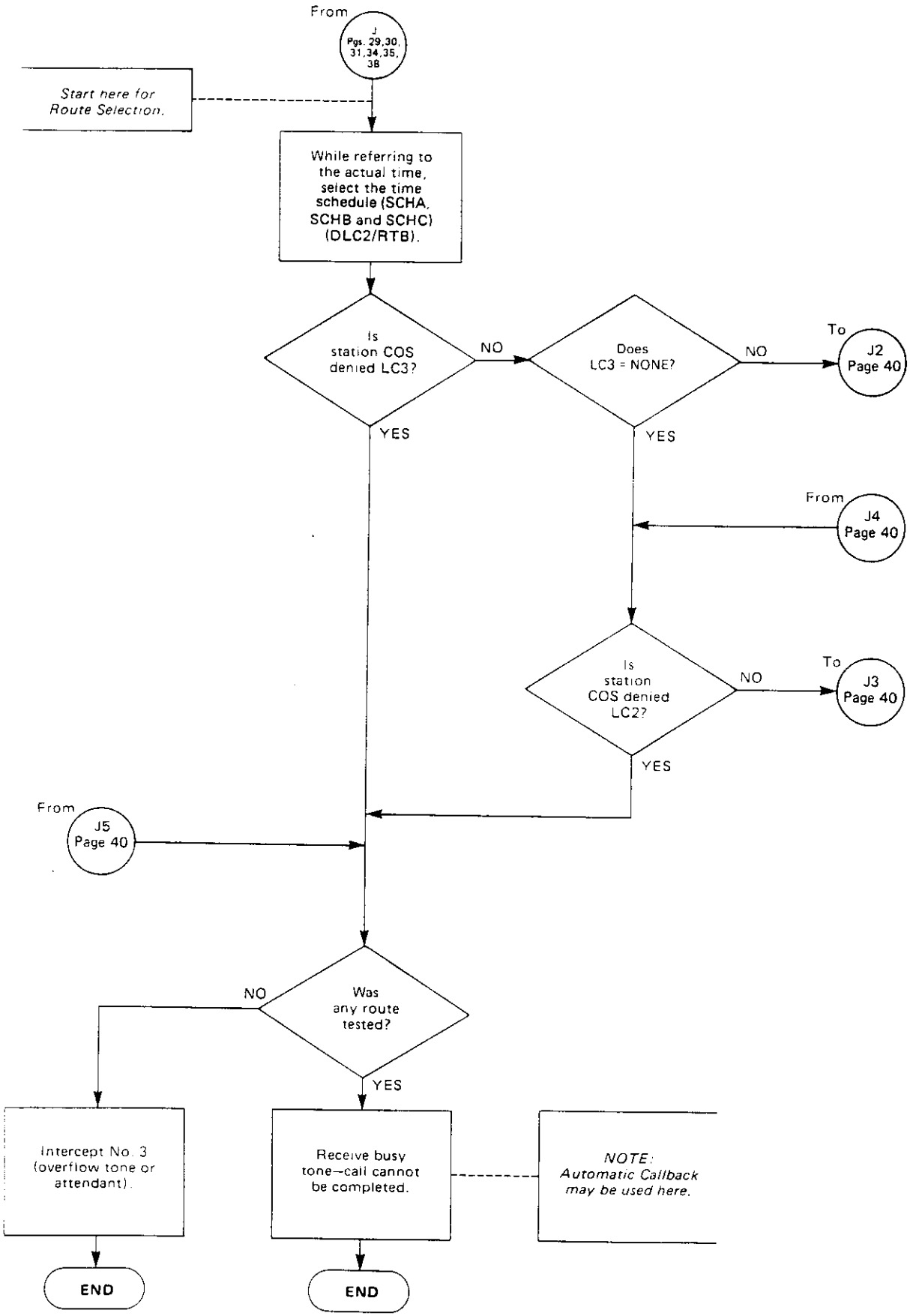

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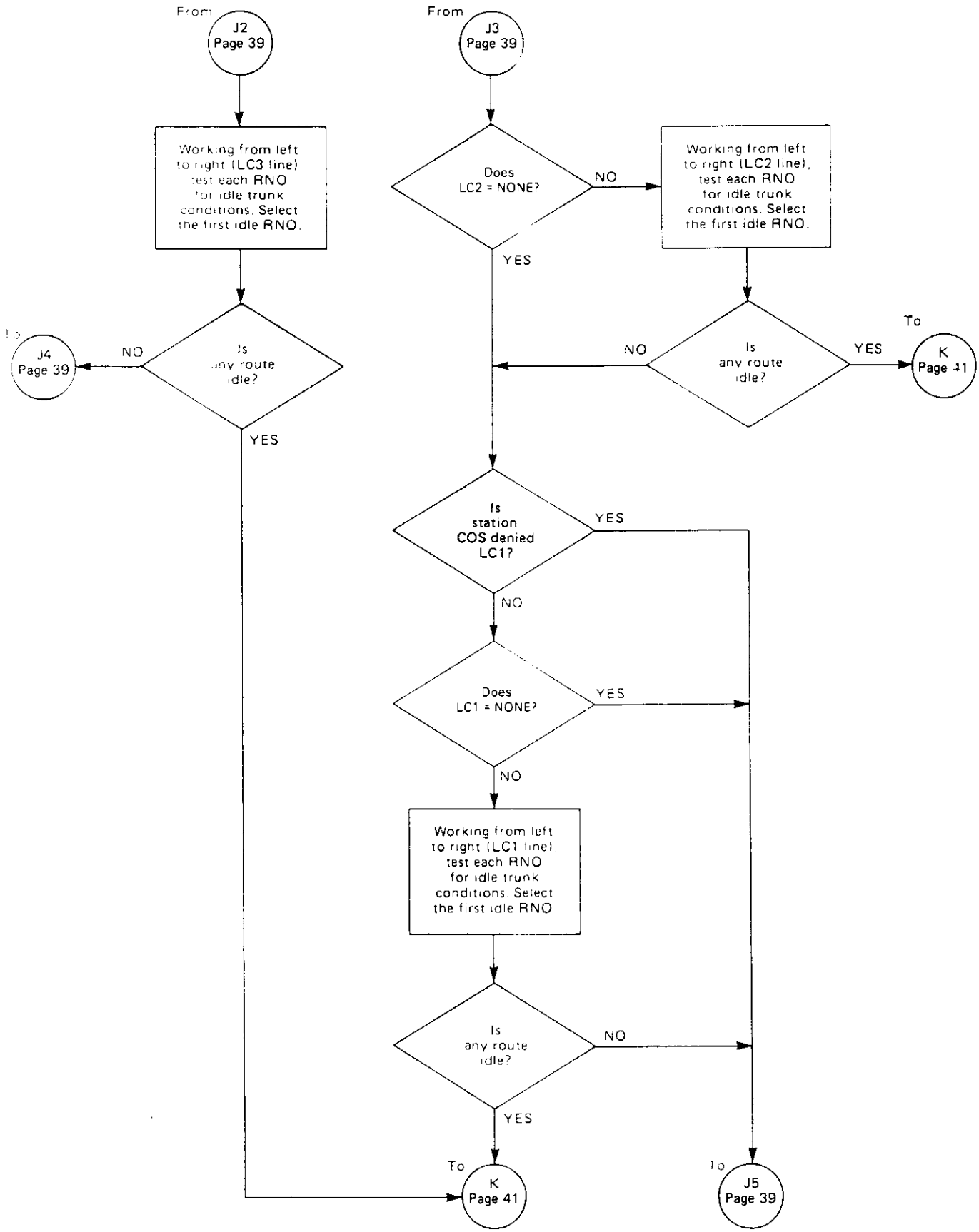

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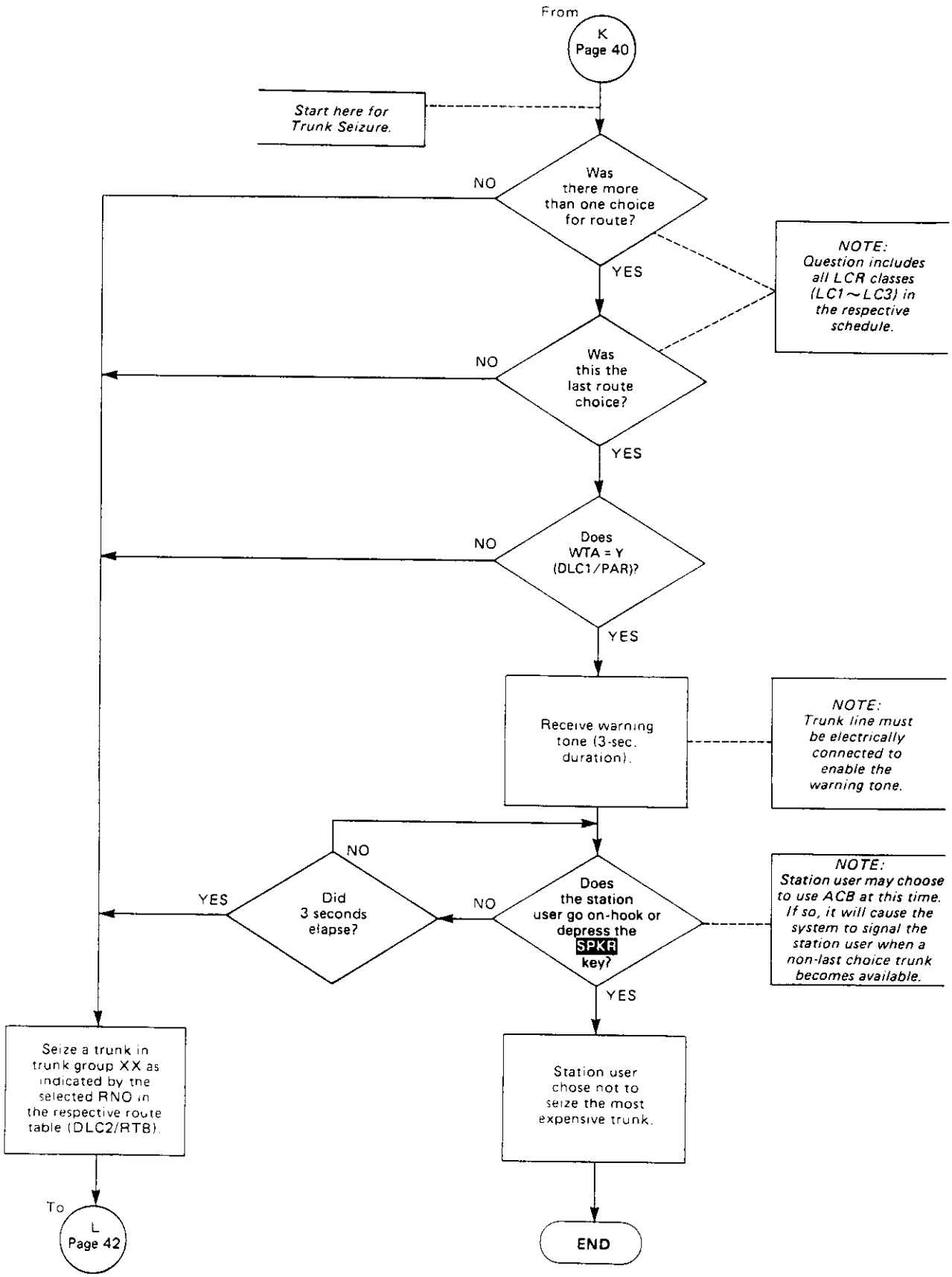

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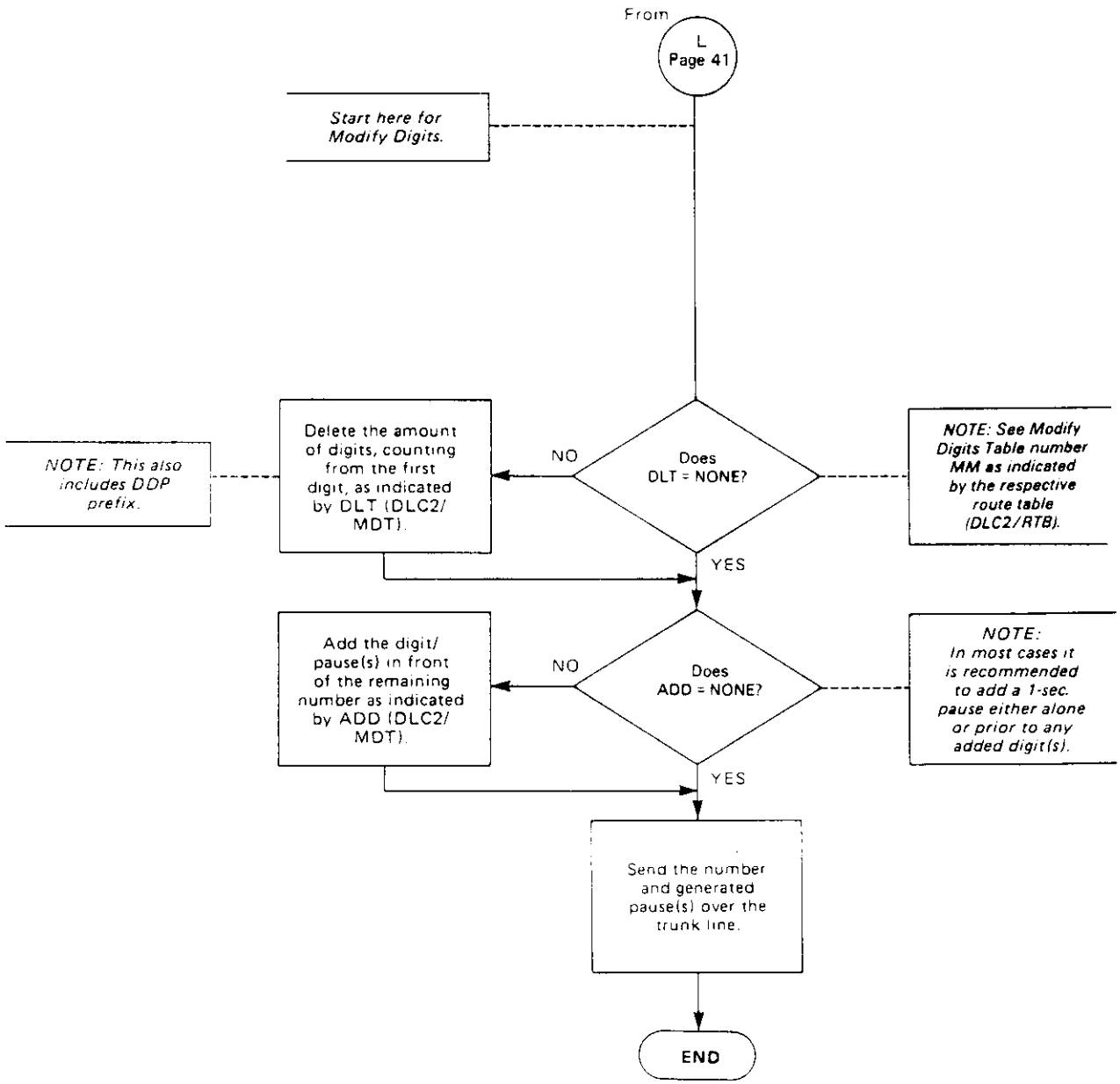


PERCEPTION II

FAULT FINDING PROCEDURES

PERCEPTION II
FAULT FINDING
TABLE of CONTENTS

ILLUSTRATION LIST

01 GENERAL

01.01 This section describes the maintenance procedures used for the diagnosis of faults in the PERCEPTION II Electronic Business Communications system. Faults are classified and then cleared by replacing the apparatus and performing operational tests in the sequences prescribed by the fault clearing flowcharts in Paragraph **05**.

02 FAULT CLASSIFICATION

02.01 A Fault Classification Flowchart is provided to ensure that fault clearing is pursued in a logical sequence (Chart No. 1).

02.02 An assumption is made in the flowcharts that the fault was discovered and reported by a station user. All faults, therefore, are classified according to the way they would appear at the EKT, STT, DDIU, Data Terminal/Computer, DSS Console, Attendant Console or equipment cabinet.

02.03 Faults and associated flowcharts are organized into the following categories:

Table A—Flowcharts

Flowchart	Title
1	Fault Classification
2	Loading Faults
3	Power Faults
4	Ringing Faults
5	Time Switch Clock Faults
6	DPMU Faults
7	FRCU Faults
8	DCOU/DEMU/DLSU Faults
9	DEKU/DSTU/DDSU Faults
10	SMDR, TTY or MODEM Faults
11	Voice Communication Station Faults
12	INIT/LOAD Key Faults
13	MAJOR ALARM Faults
14	CO/DID/TIE Trunk Faults
15	Attendant Console Faults
16	Common Station Feature Faults
17	Speed Path or Dial Tone Faults
18	Data/Speech Path or Dial Tone Faults
19	Dialing Faults
20	Ringing/Ringback Tone Faults
21	Miscellaneous Faults
22	DMDU/DDCU Faults
23	Data Communication Station Faults
24	Data Communication Trunk Faults

03 FAULT CLEARING PROCEDURES

03.01 Before attempting to clear any fault, ensure that it is in the system and not caused by associated external equipment, such as wiring, MOH source, etc.

IMPORTANT!

Many features of the PERCEPTION II are assigned, enabled or disabled using software entries as described in Programming Procedures. ***It is important to verify that the system programming is correct and functional before troubleshooting the hardware.***

03.02 Faults in the PERCEPTION II are cleared by replacing PCBs, EKTs, STTs, DIUs, Attendant Consoles, power supply or FFDA, as instructed in the flowcharts.

03.03 Five symbols are used in the flowcharts, which are identified in Figure 1.

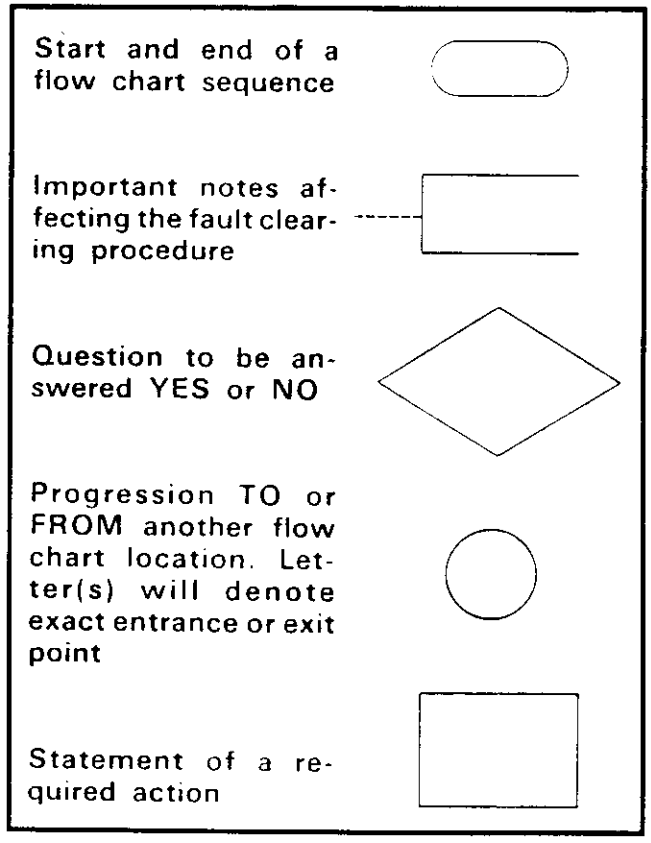


FIGURE 1—FLOWCHART SYMBOLS

03.04 The flowcharts are sequentially arranged to permit rapid fault localization within the system. All fault clearing must begin with the Fault Classification Flowchart, which is arranged in the correct fault

locating sequence.

03.05 If more than one station appears faulty, but these faults are still classified as station faults (as outlined in the flowcharts), one station at a time can be corrected.

03.06 Alarm and fault indicators, if failing, may not be corrected with these flowcharts. However, when an indication does appear, it is used as an aid in finding that particular fault. If a fault occurs and the fault indicator does not function, the affected PCB should be replaced at the first opportunity.

03.07 The following precautions must be observed when handling PCBs.

DO NOT:

- Drop a PCB.
- Stack one PCB on top of another.
- Handle a PCB without discharging any static electricity from your person by touching a metal part of the grounded FCEC.
- Touch PCB contacts with your fingers.

IMPORTANT!
If the fault is not cleared by substituting a PCB, the original PCB must be reinstalled in the FCEC before proceeding to the next flowchart.

04
DEFECTIVE APPARATUS RETURNS

04.01 When a defective system apparatus is shipped for repair, the apparatus must be packed in a suitable container (the original box is highly recommended), as follows:

a) Anti-static containers for all other PCBs.

b) Plastic bags for EKTs, DIUs, Attendant Consoles, etc.

04.02 NEVER WRITE ON THE APPARATUS ITSELF! Describe the nature of the defect on a TSD RA tag, and attach the tag to the front of the unit with string (not wire) so that the tag will remain attached during the testing and repair process.

04.03 If different and/or additional faults are created in the system by substituting a PCB, tag and return the substitute PCB as a defective unit.

05 FAULT IDENTIFICATION and ELIMINATION PROCEDURES

05.01 In the following flowcharts, two different terms are used when referring to single line telephones. If 2500-type is used, a DTMF standard telephone with "touch-tone" dial pad is meant. If "STT" is used, DTMF and rotary dial sets are meant. If "500-type" is used, a standard rotary dial set is meant.

05.02 Check EKT cable continuity with a voltmeter, as follows:

NOTE:
Perform the following at the locations indicated:
Modular block: check all station cables.
MDF: check cables from DEKUs to MDF.

1) Disconnect the EKT.

2) Using a DC voltmeter, measure between the two pairs to verify the presence of the readings shown in Table B.

TABLE B
EKT CABLE CONTINUITY CHECK USING A VOLTMETER

FROM			TO			VOLTAGE*
Pair	Wire	Color	Pair	Wire	Color	
1	T	Green	2	T	Black	24
1	R	Red	2	T	Black	24
1	T	Green	2	R	Yellow	24
1	R	Red	2	R	Yellow	24
1	T	Green	1	R	Red	0
2	T	Black	2	R	Yellow	0

**Nominal voltage—within the power supply limits of 23.2 ~ 28.2 VDC while under AC power.*

3) An improper reading indicates an open, crossed or shorted wire.

4) For the MDF-to-EKT/DSS console cable, a more precise check is made using an ohmmeter per Paragraph **05.03.**

05.03 Check EKT cable continuity with an ohmmeter as follows:

1) Disconnect the EKT.

2) At the MDF, remove the bridging clips.

3) Using an ohmmeter, measure the resistance between all combinations of the four wires at the modular block. All measurements should exceed 1 MOhm.

4) At the MDF, place shorting jumper wires between the Tip and Ring of pair #1 (green-red) and the Tip and Ring of pair #2 (black-yellow).

5) At the modular block, measure the resistance between all wire combinations. The proper readings are shown in Table C.

TABLE C
EKT CABLE CONTINUITY
CHECK USING AN OHMMETER

FROM			TO			RESISTANCE
Pair	Wire	Color	Pair	Wire	Color	
1	T	Green	2	T	Black	1 MOhm
1	R	Red	2	T	Black	1 MOhm
1	T	Green	2	R	Yellow	1 MOhm
1	R	Red	2	R	Yellow	1 MOhm
1	T	Green	1	R	Red	≤ 55 Ohms*
2	T	Black	2	R	Yellow	≤ 55 Ohms*

NOTES:
1. The green-red and black-yellow measurements should be within 10% of each other.
2. 55 ohm is the maximum reading.

05.04 Check SST cable continuity with an ohmmeter as follows:

NOTE:
Perform the following at the locations indicated:
Modular block: check all station cables.
MDF: check cables from DSTUs to MDF.

1) Disconnect the STT or DSS console at the wall.

2) At the MDF, remove the bridging clips.

3) Using an ohmmeter, measure the resistance between the two wires at the modular block. All measurements should exceed 1 MOhm.

4) At the MDF, place shorting jumper wires between the two wires (T and R).

5) At the modular block, measure the resistance between T and R. Verify maximum 300 ohms.

05.05 Check DDIU cable continuity with an ohmmeter as follows:

NOTE:
Perform the following all the locations indicated:
Modular block: check all DDIU cables.
MDF: check cables from DDCUs/ DMDUs to MDF.

1) Disconnect the DDIU.

2) At the MDF, remove the bridging clips.

3) Using an ohmmeter, measure the resistance between the two wires at the modular block. All measurements should exceed 1 MOhm.

4) At the MDF, place shorting jumper wires between the two wires (T and R).

5) At the modular block, measure the resistance between T and R. Verify maximum 300 ohms.

CHART NO. 1
FAULT CLASSIFICATION

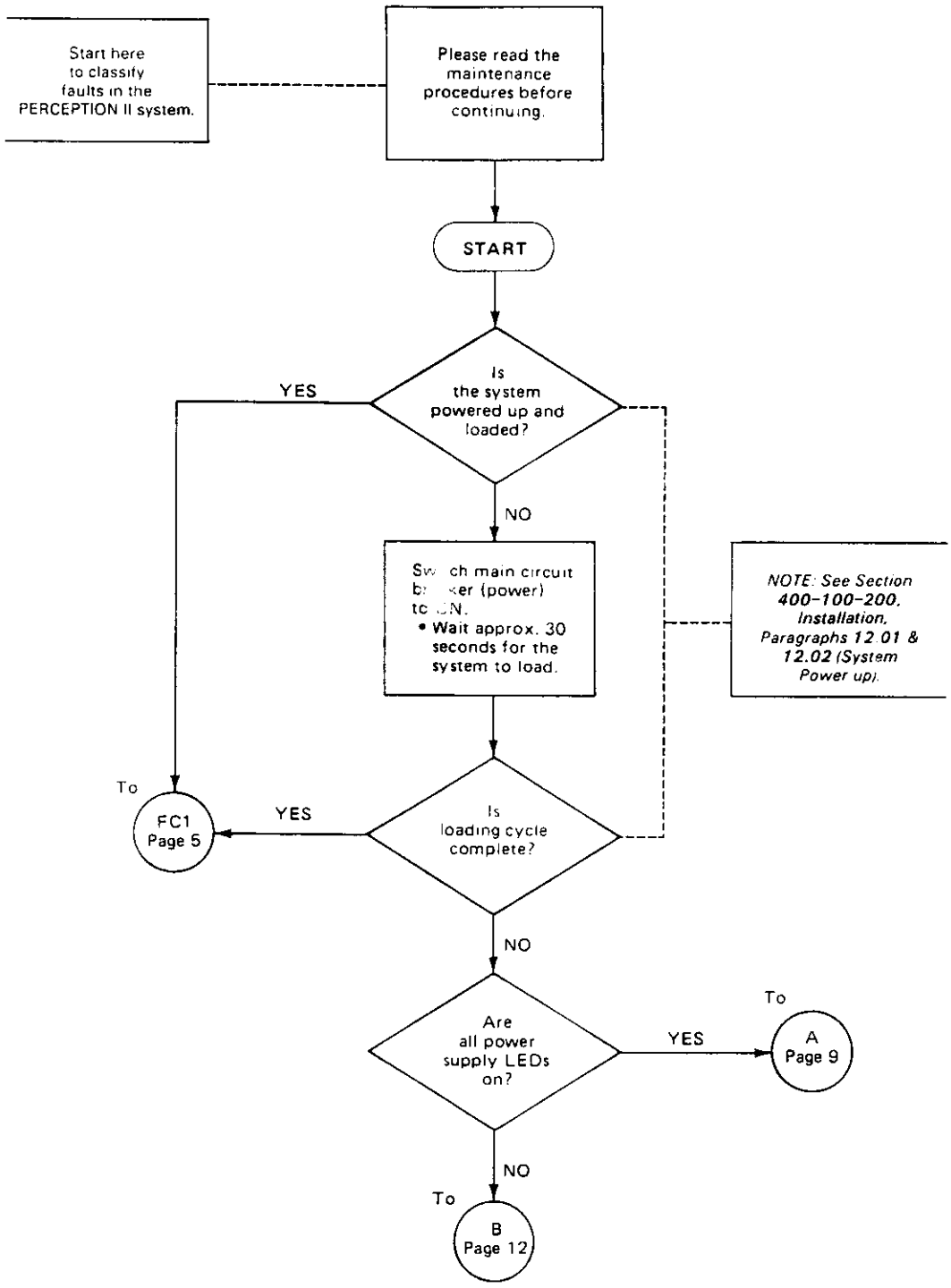
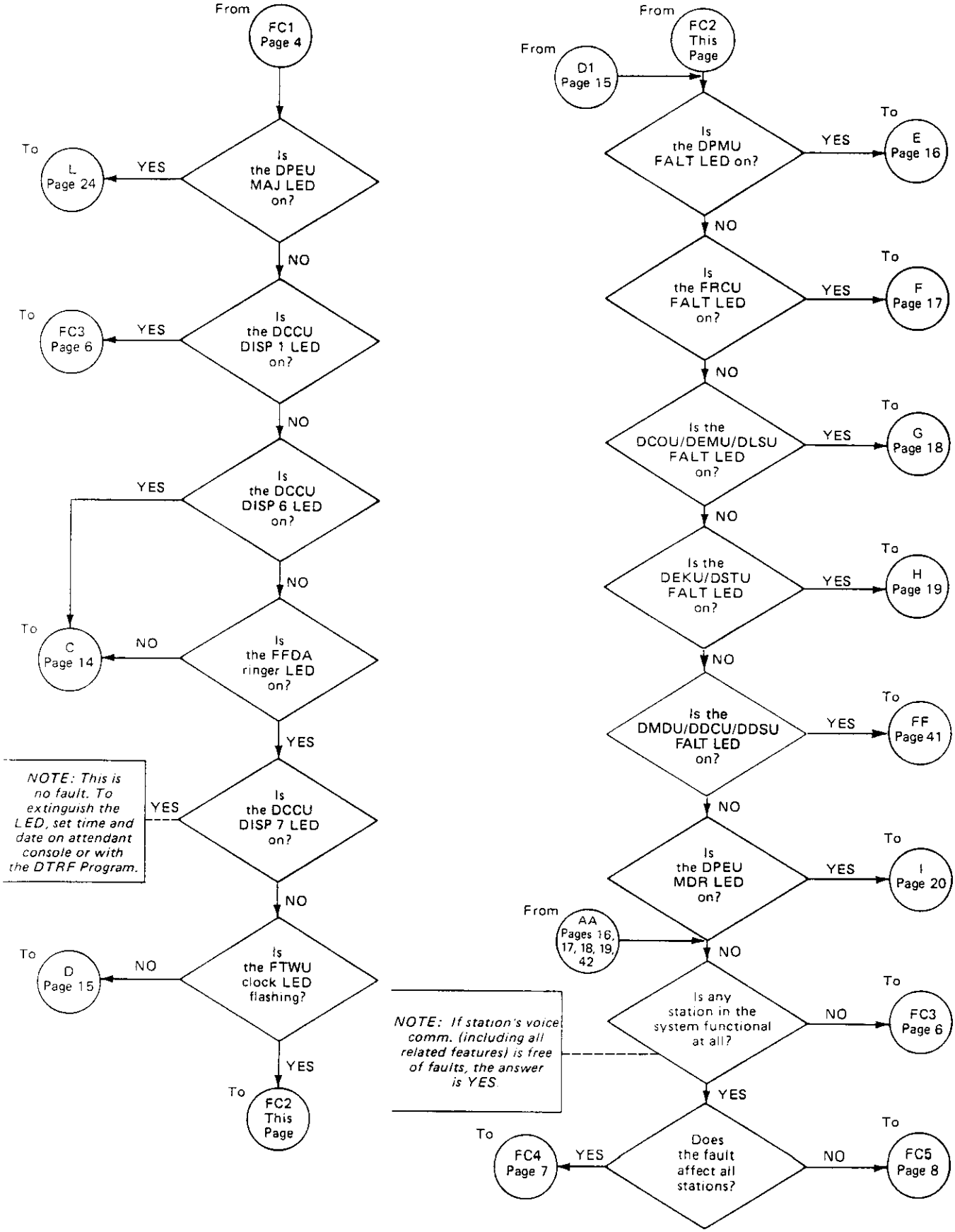


CHART NO. 1
FAULT CLASSIFICATION (con't)



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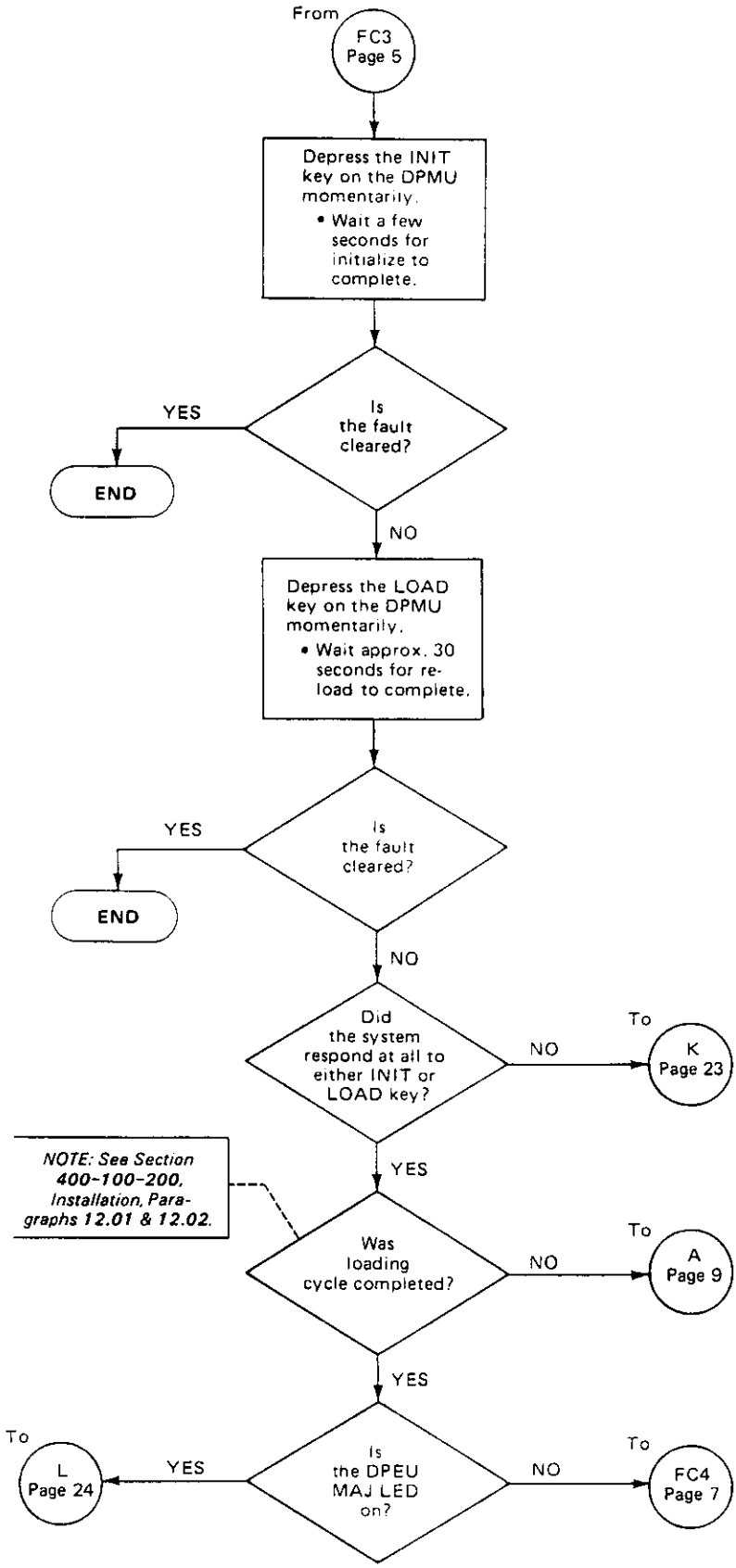


CHART NO. 1
FAULT CLASSIFICATION (con't)

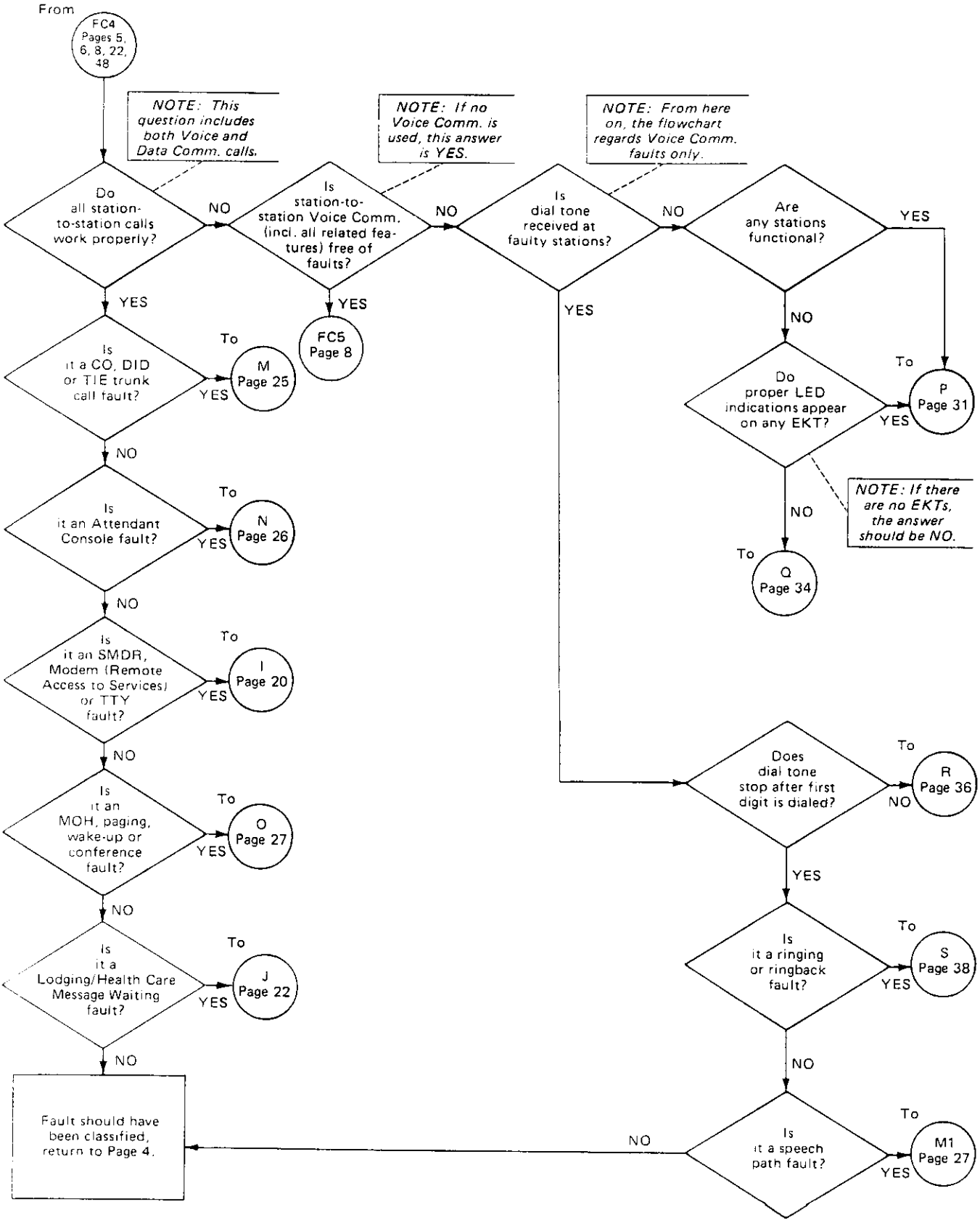


CHART NO. 1
FAULT CLASSIFICATION (con't)

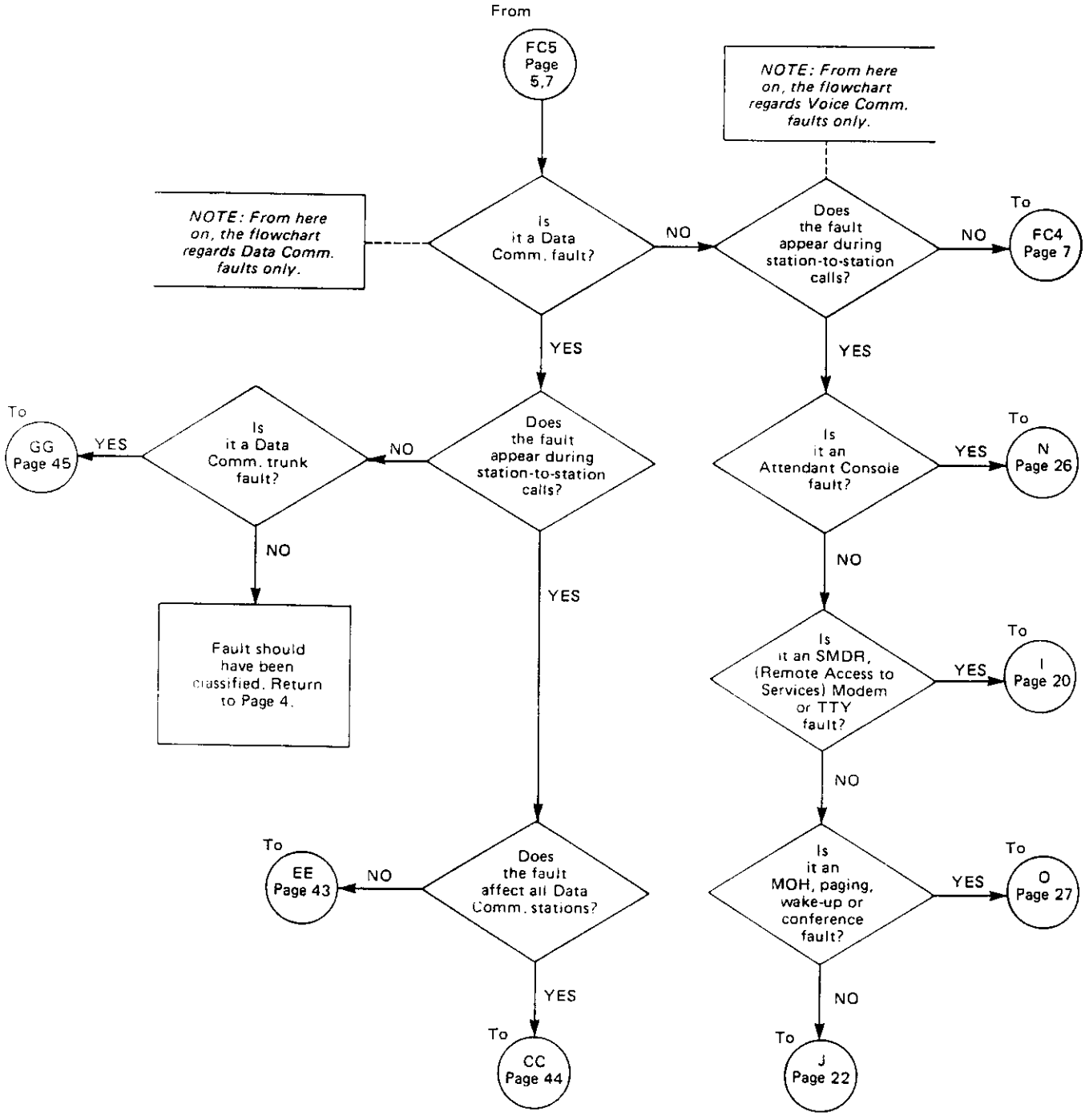
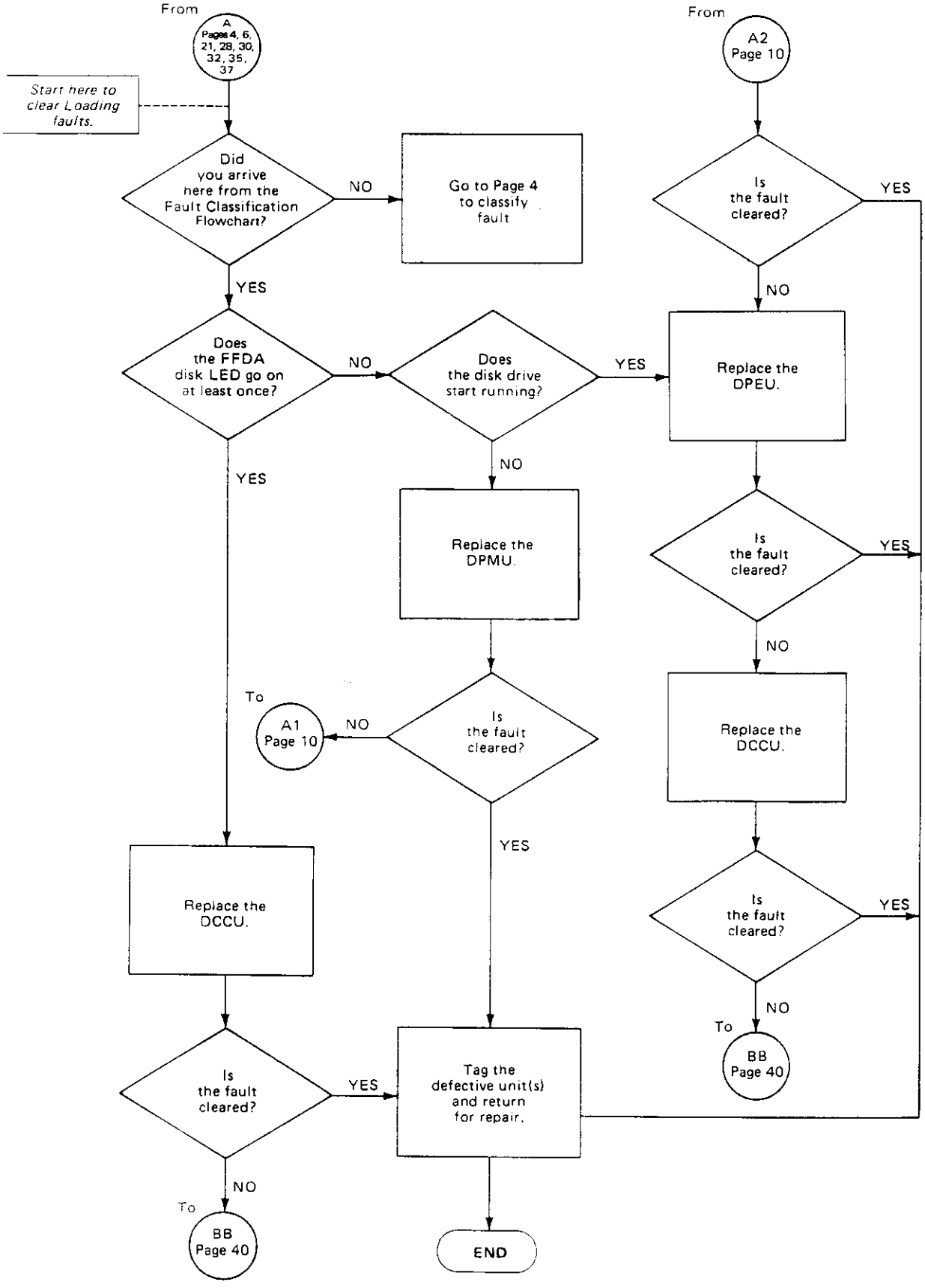


CHART NO. 2
LOADING FAULTS



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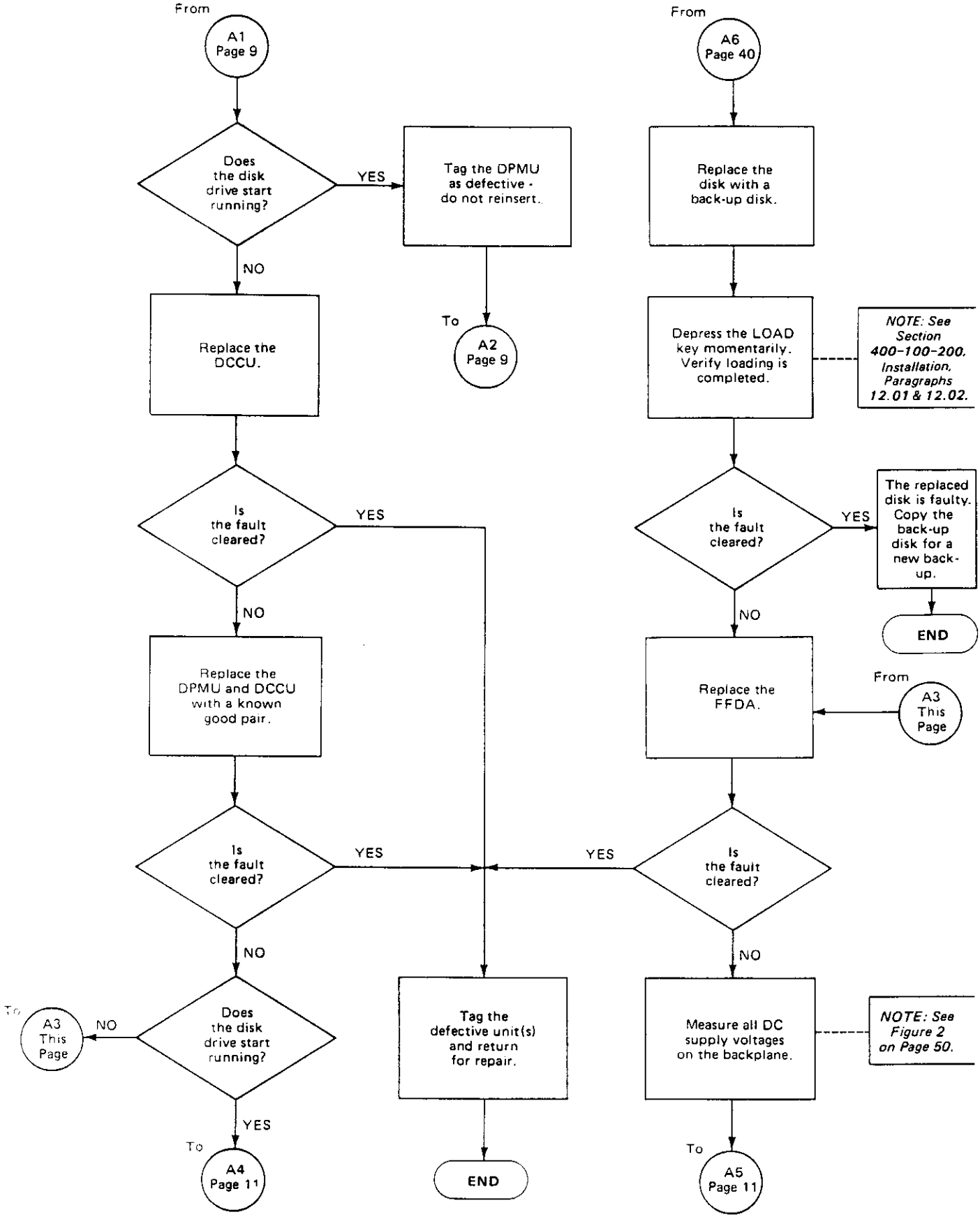

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LOADING FAULTS (con't)

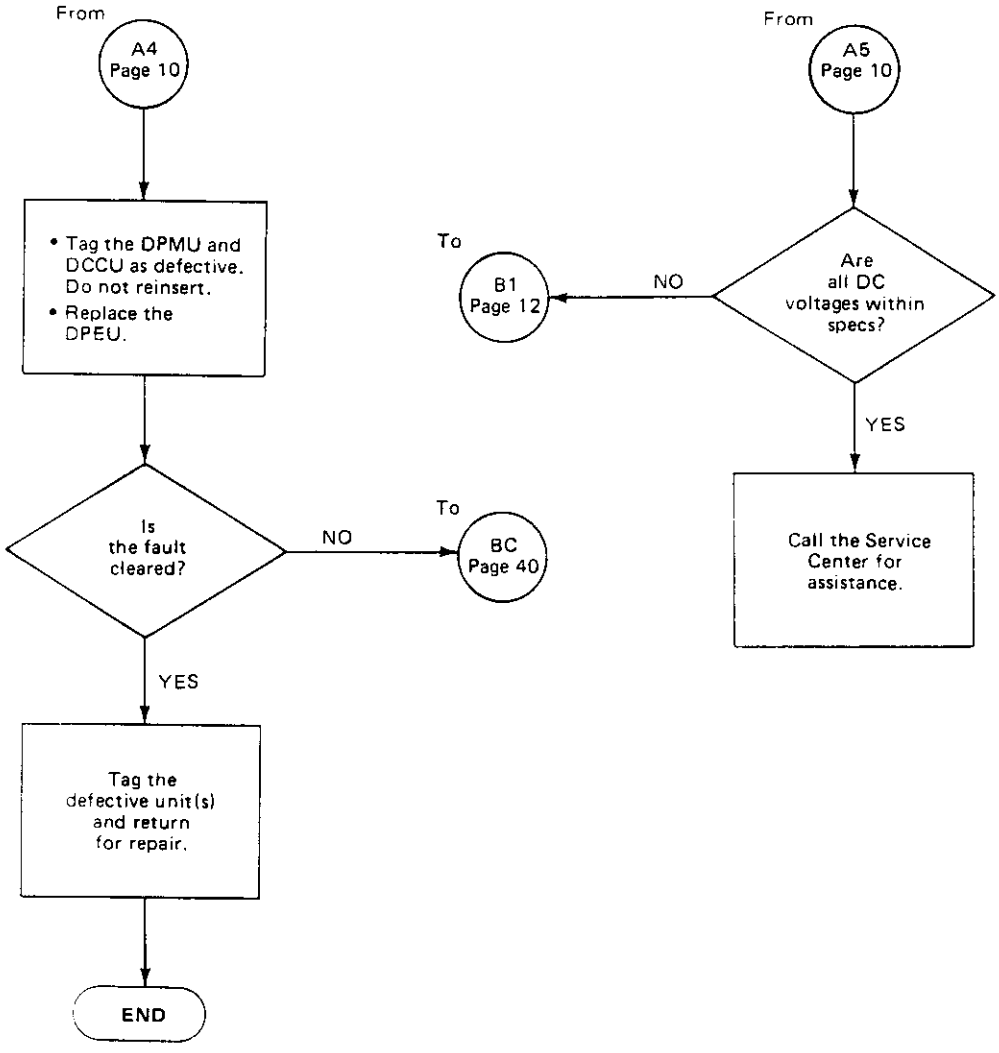
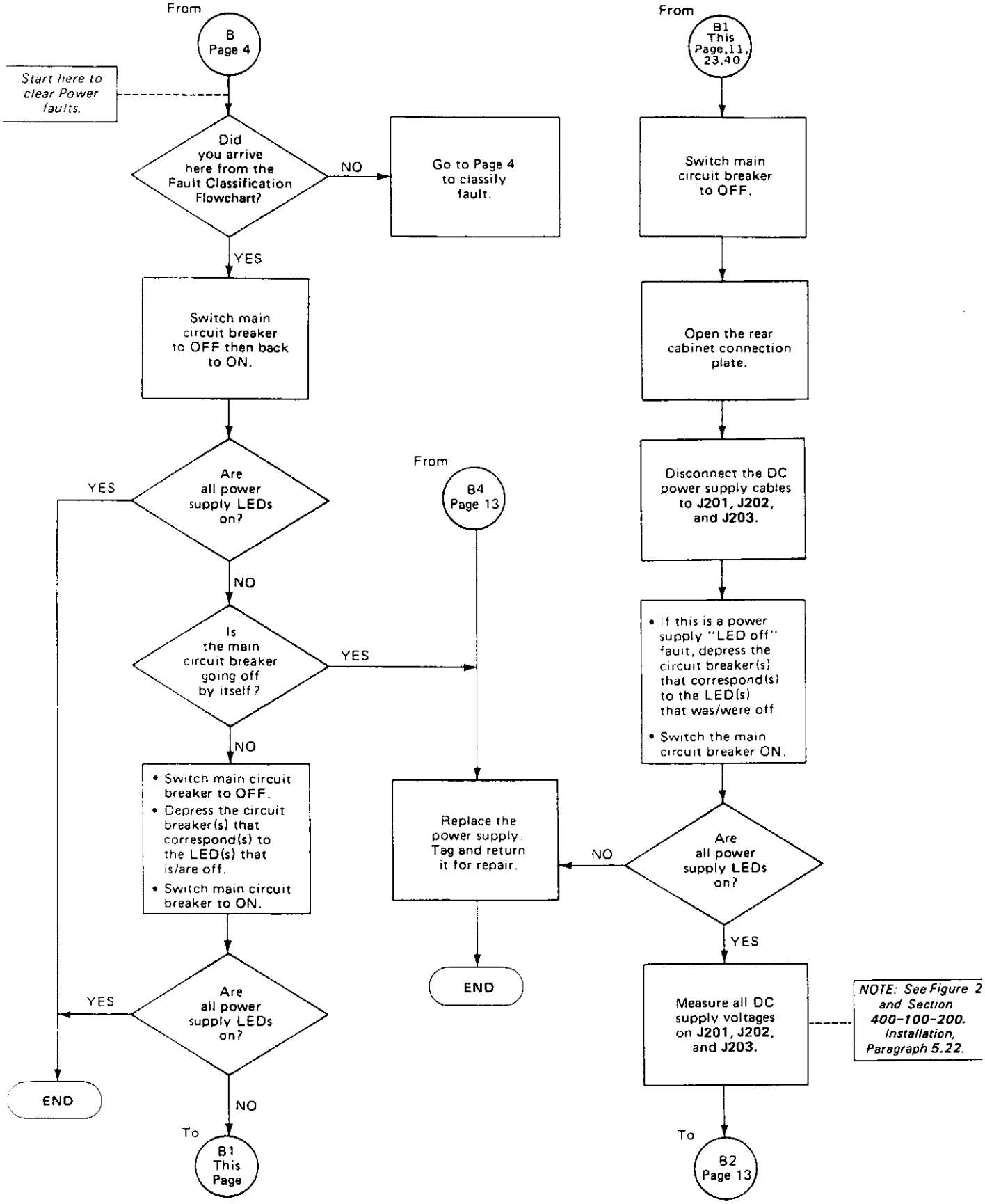


CHART NO. 3
POWER FAULTS



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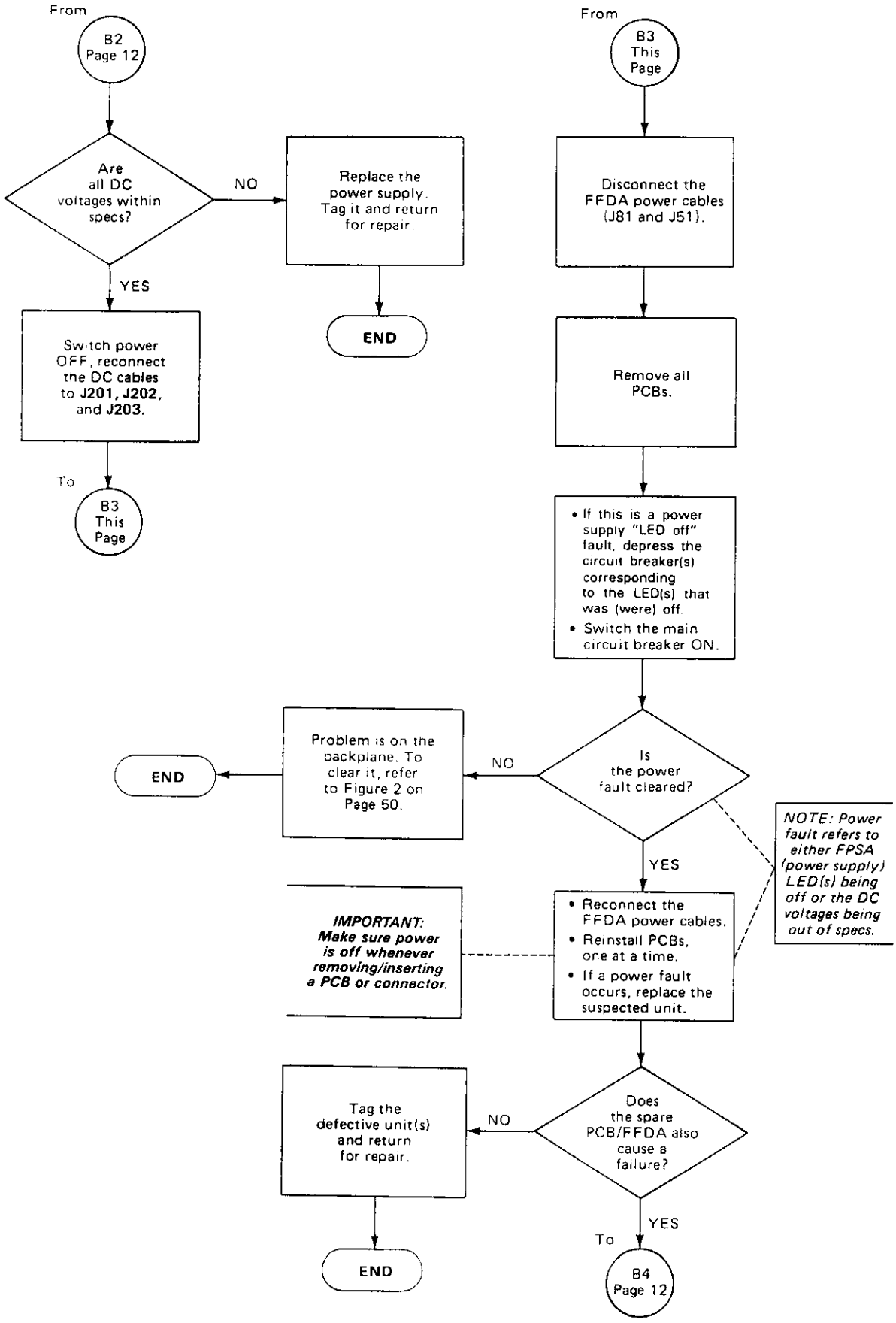


CHART NO. 4
RINGING POWER FAULTS

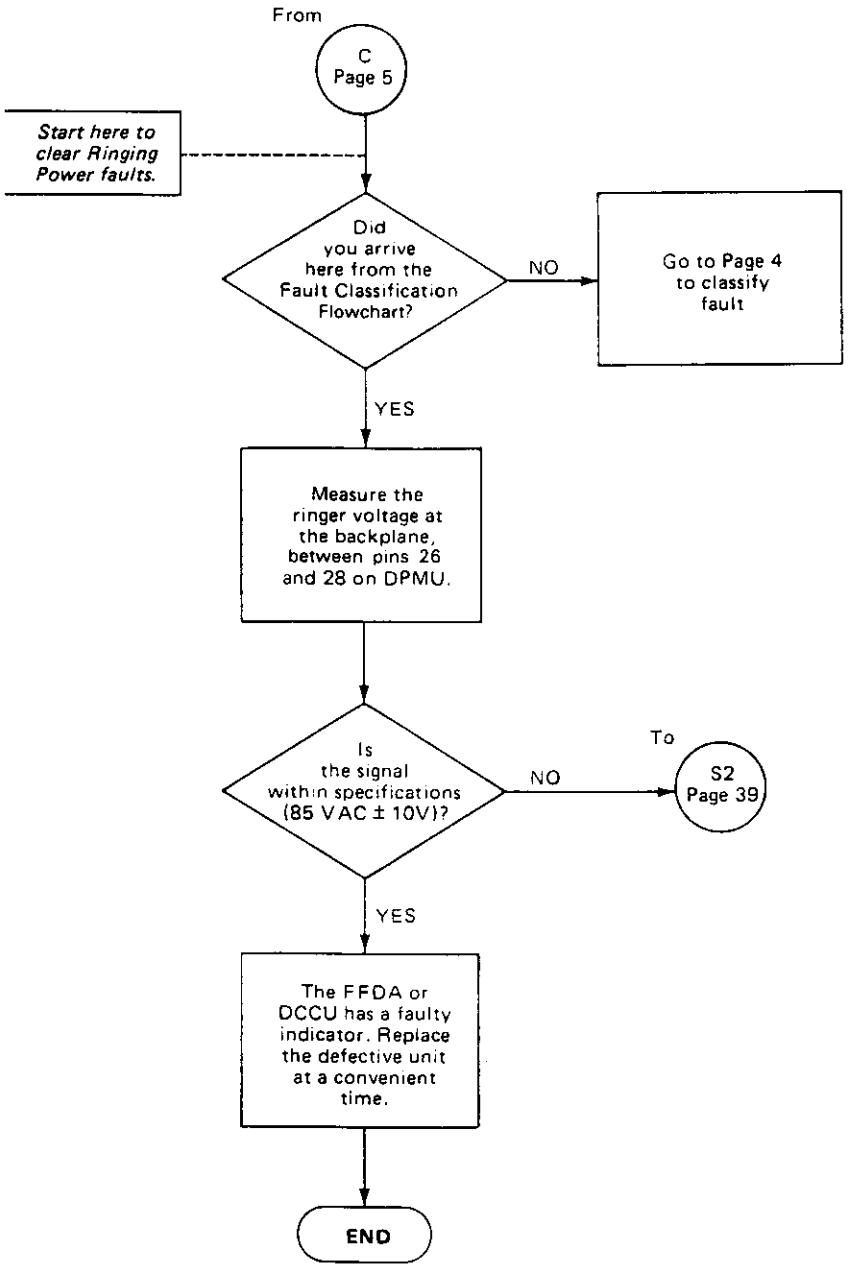


CHART NO. 5
TIME SWITCH CLOCK FAULTS

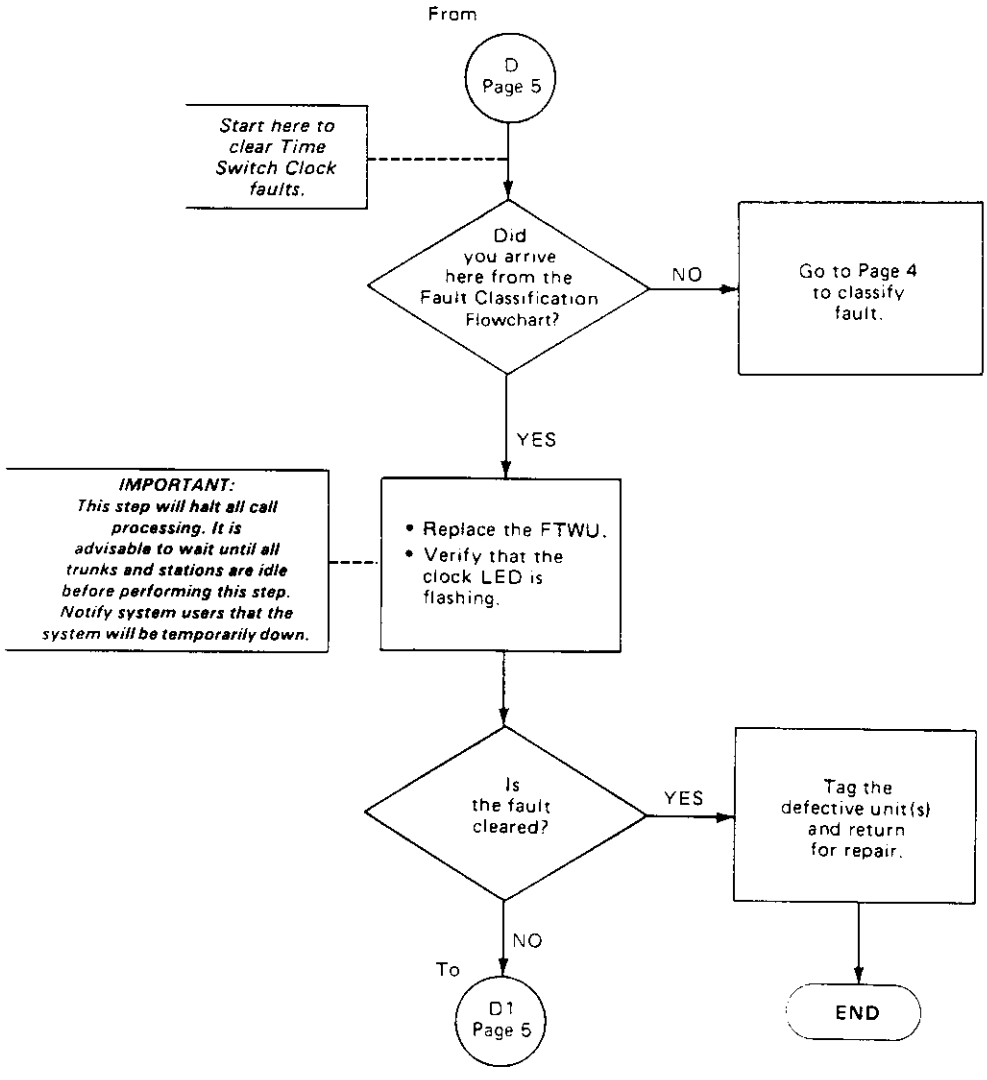


CHART NO. 6
DPMU FAULTS

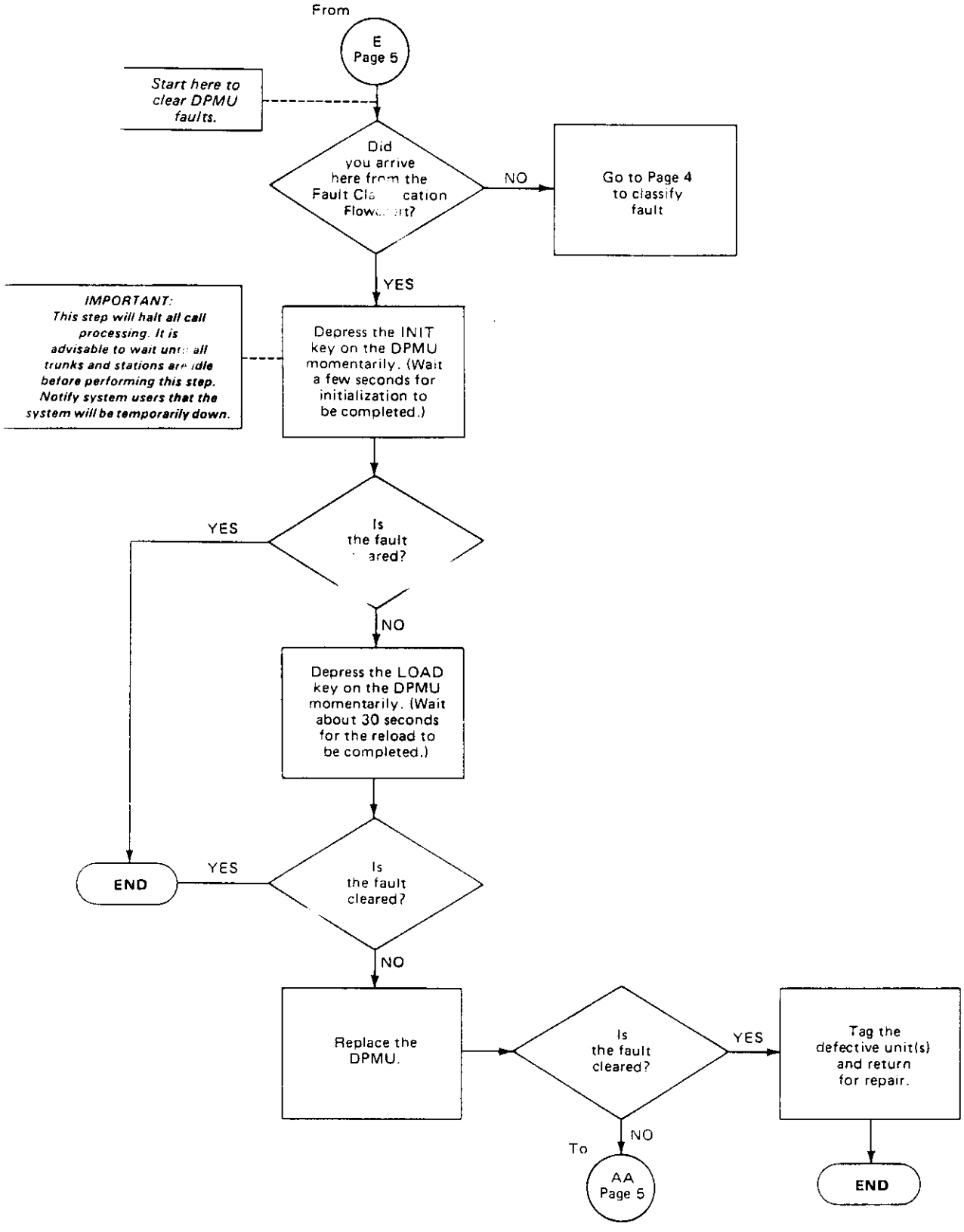


CHART NO. 7
FRCU FAULTS

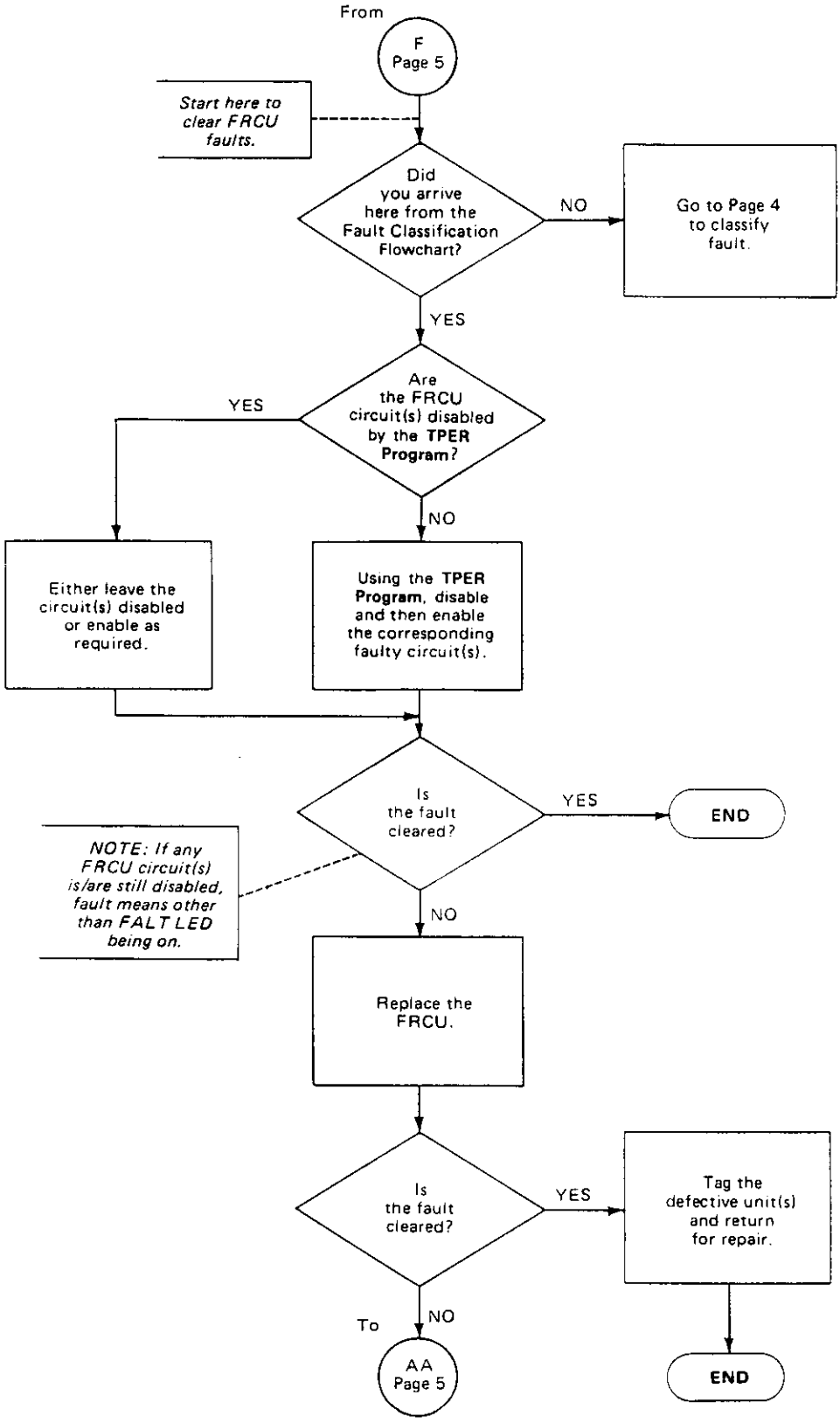


CHART NO. 8
DCOU/DEMU/DLSU FAULTS

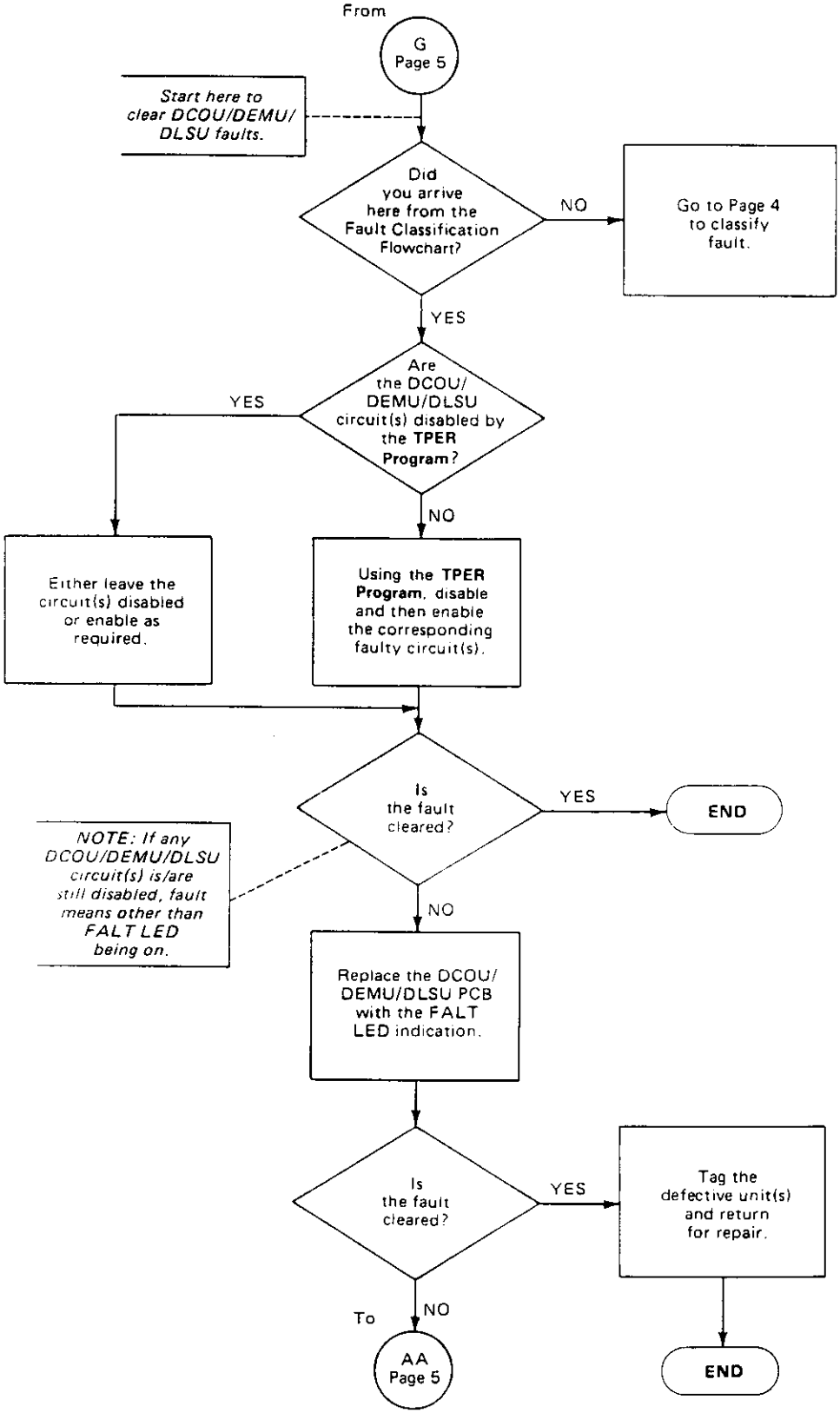


CHART NO. 9
DEKU/DSTU/DDSU FAULTS

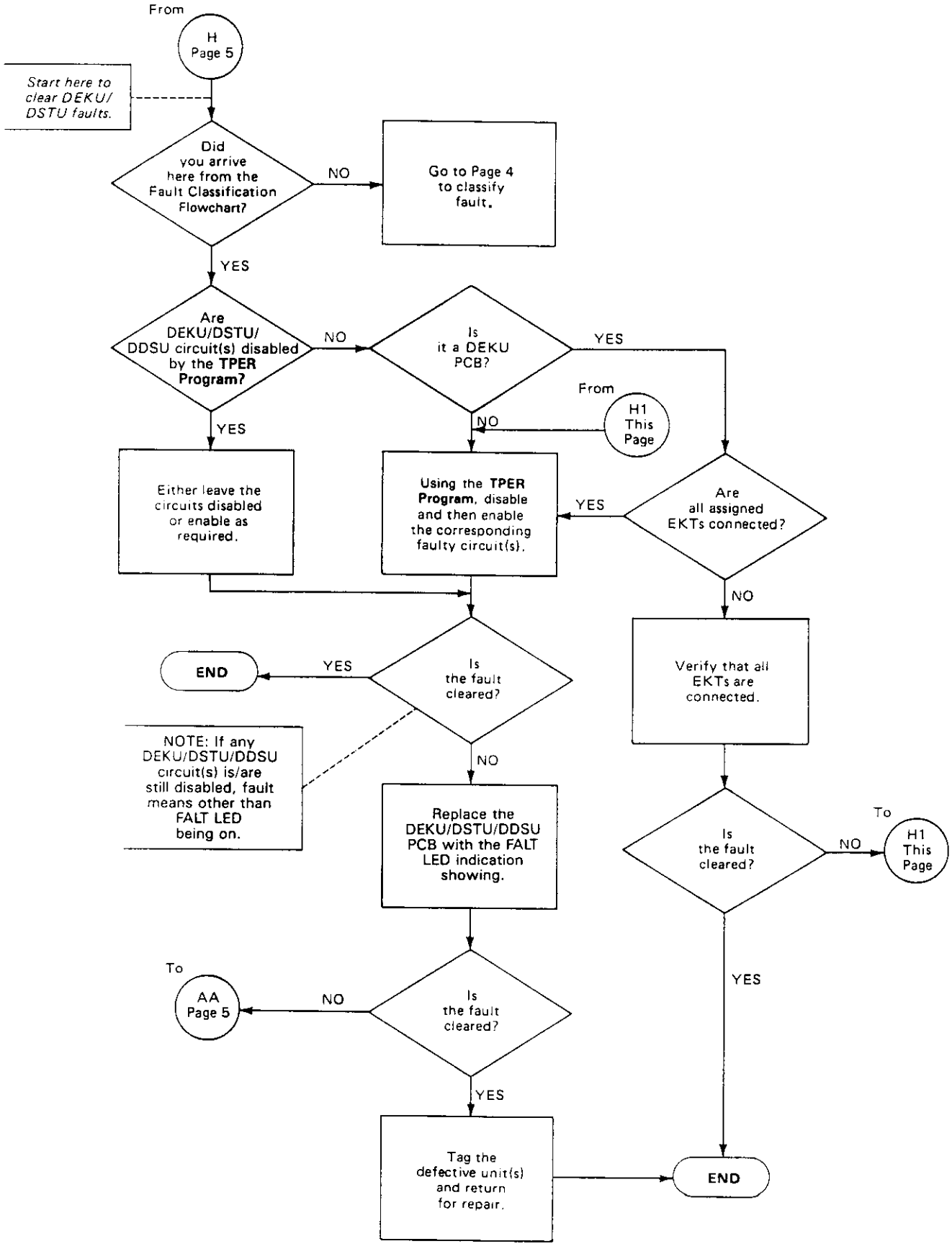
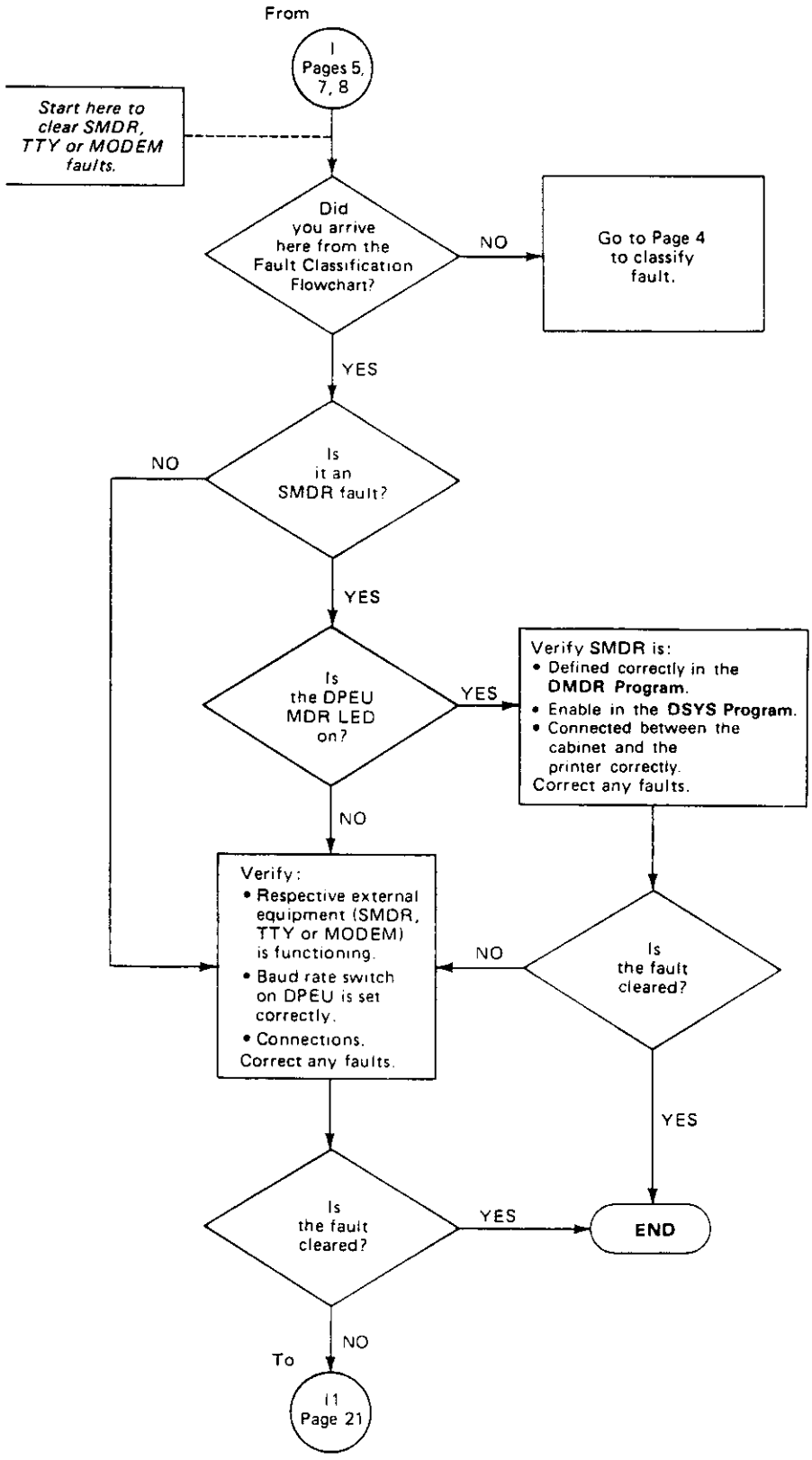


CHART NO. 10
SMDR, TTY OR MODEM FAULTS



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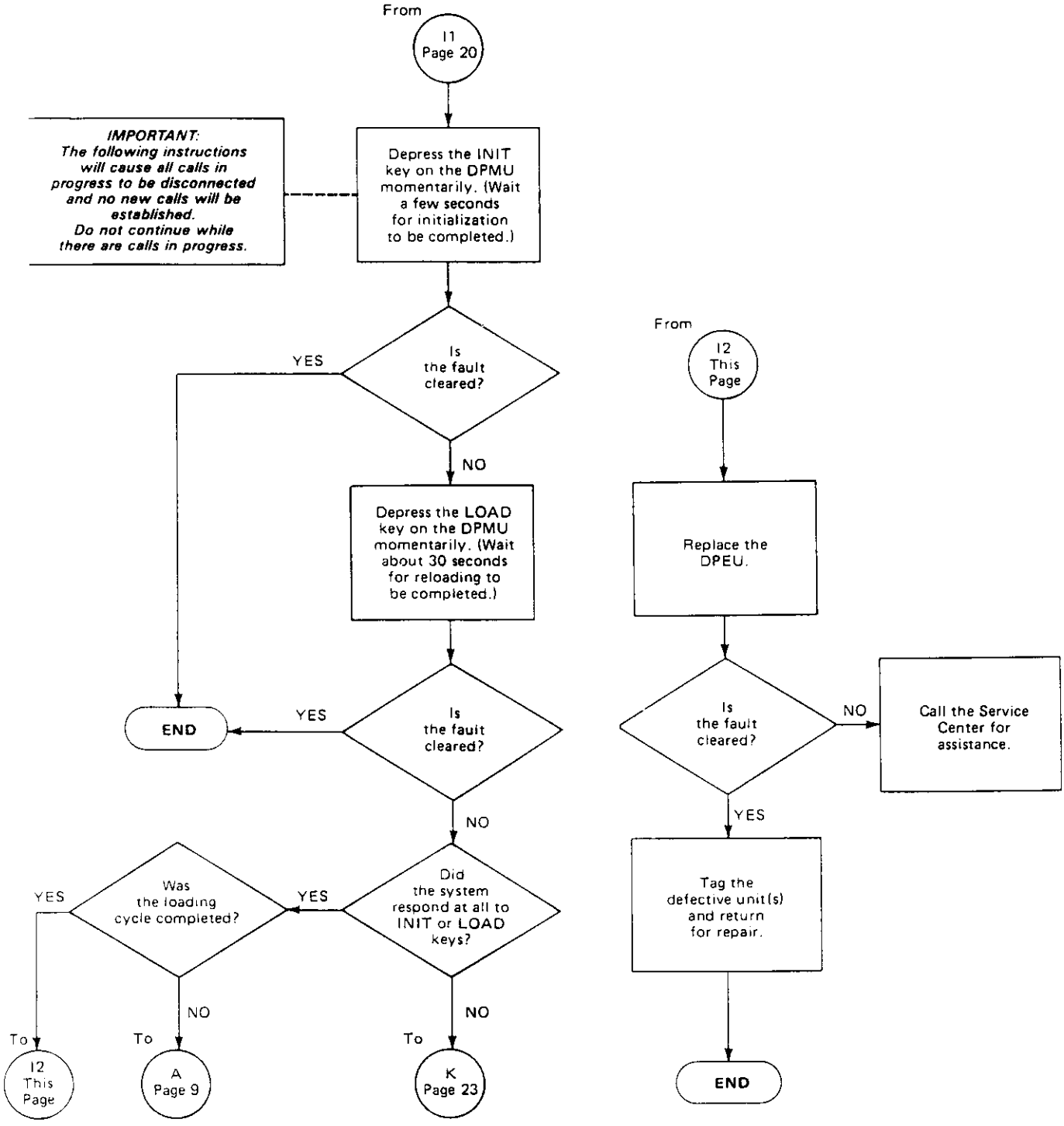


CHART NO. 11
VOICE COMMUNICATION STATION FAULTS

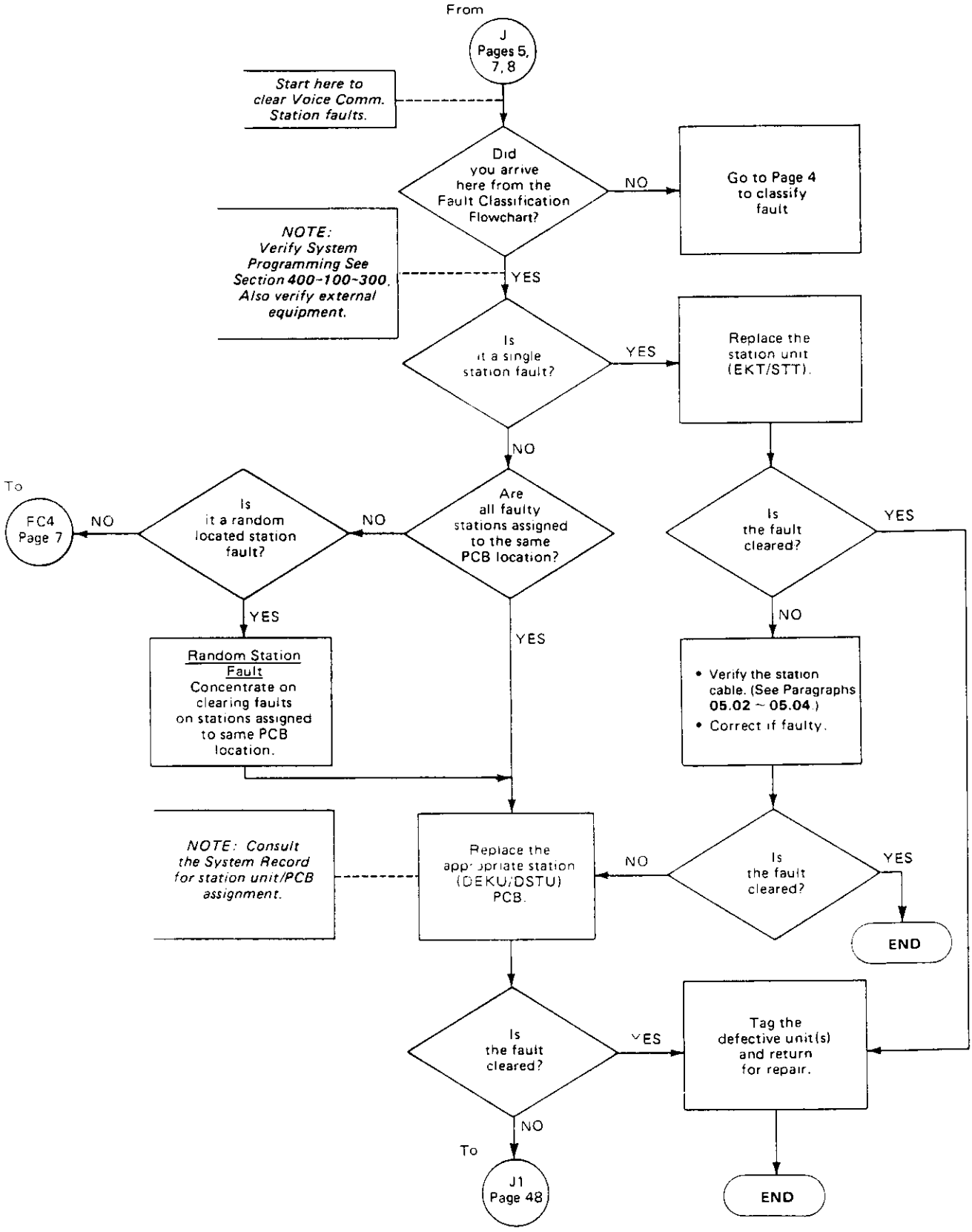


CHART NO. 12
INIT/LOAD KEY FAULTS

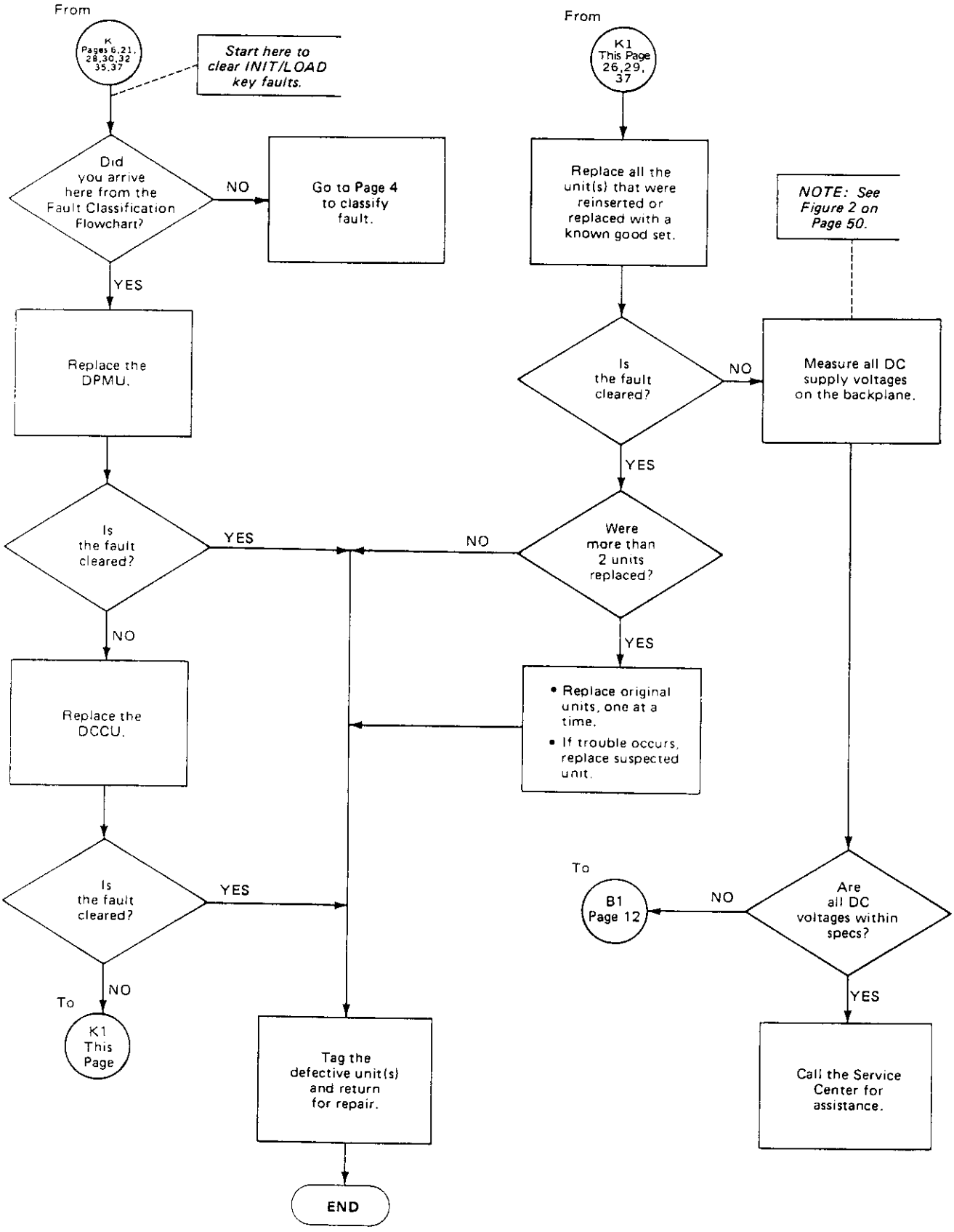


CHART NO. 13
MAJOR ALARM FAULTS
(MAJ LED ON)

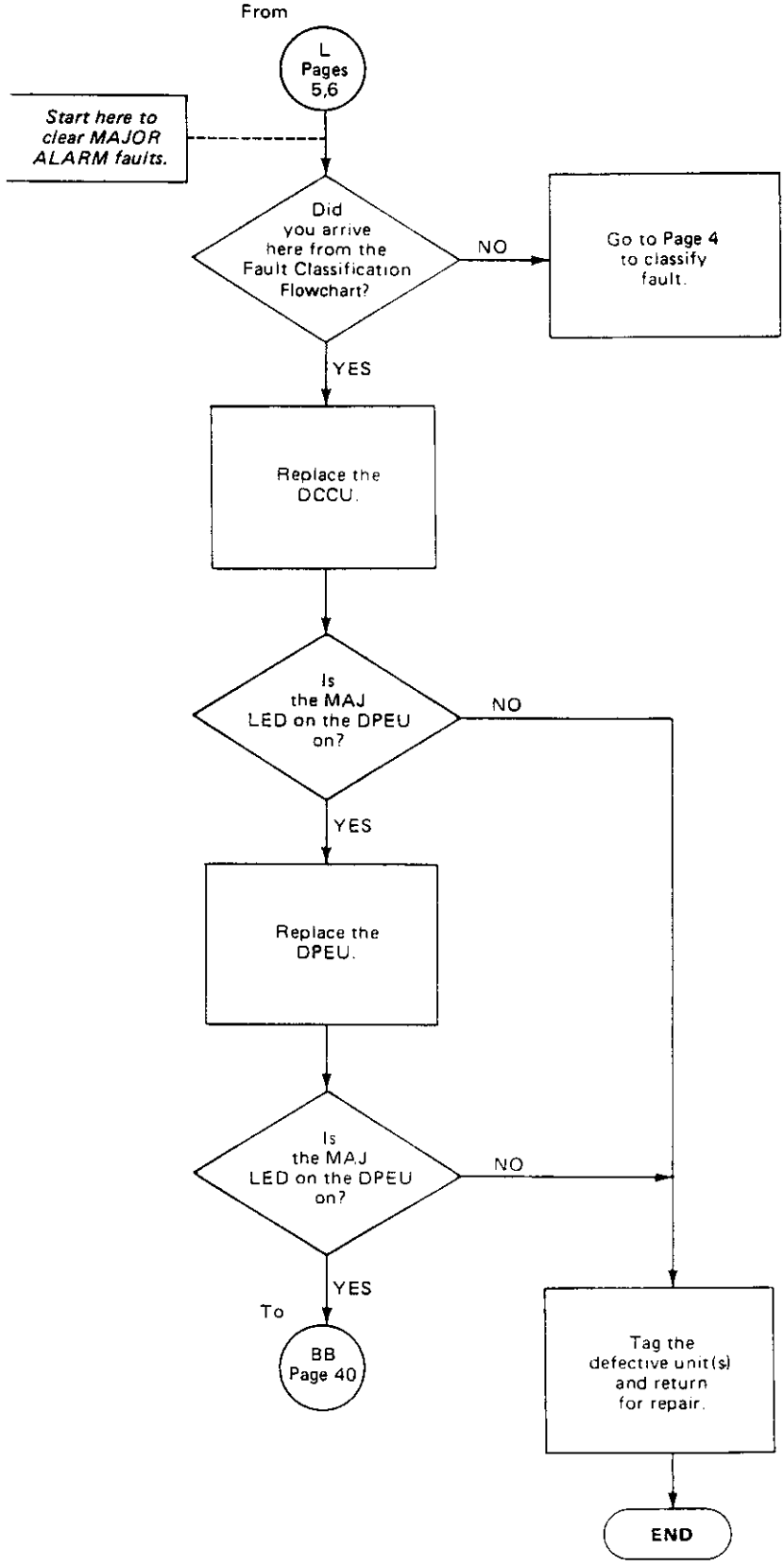


CHART NO. 14
CO/DID/TIE TRUNK FAULTS

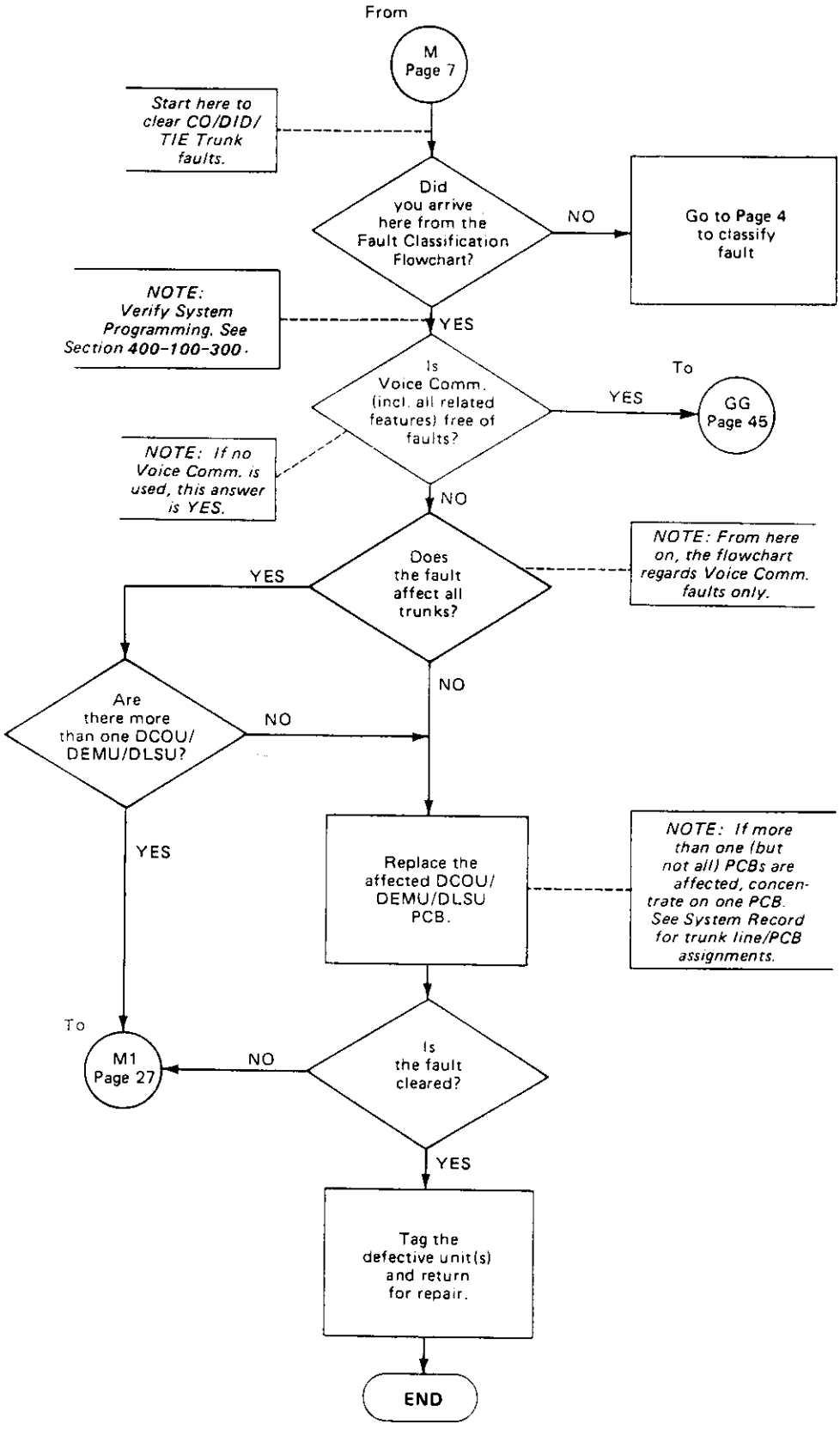


CHART NO. 15
ATTENDANT CONSOLE FAULTS

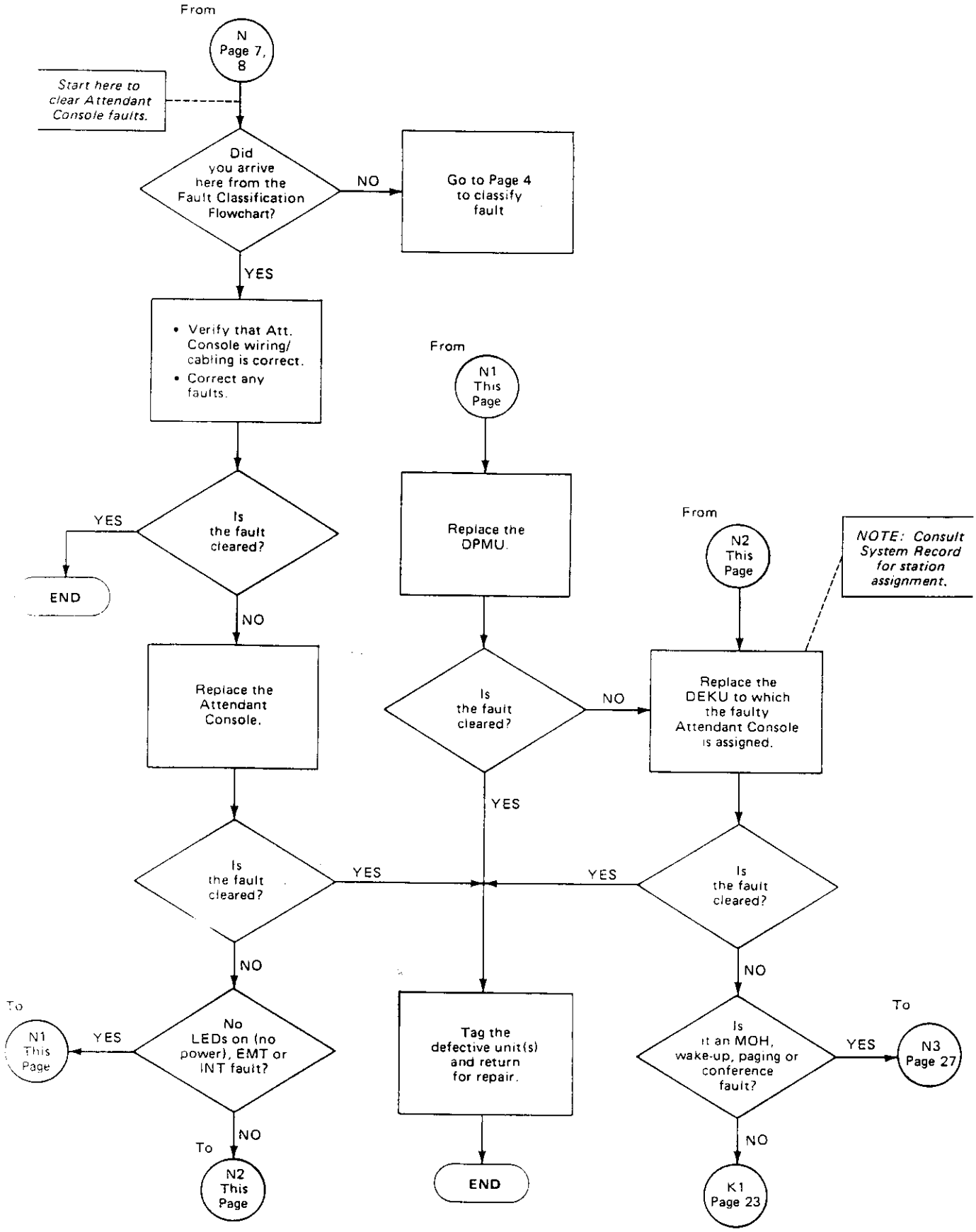
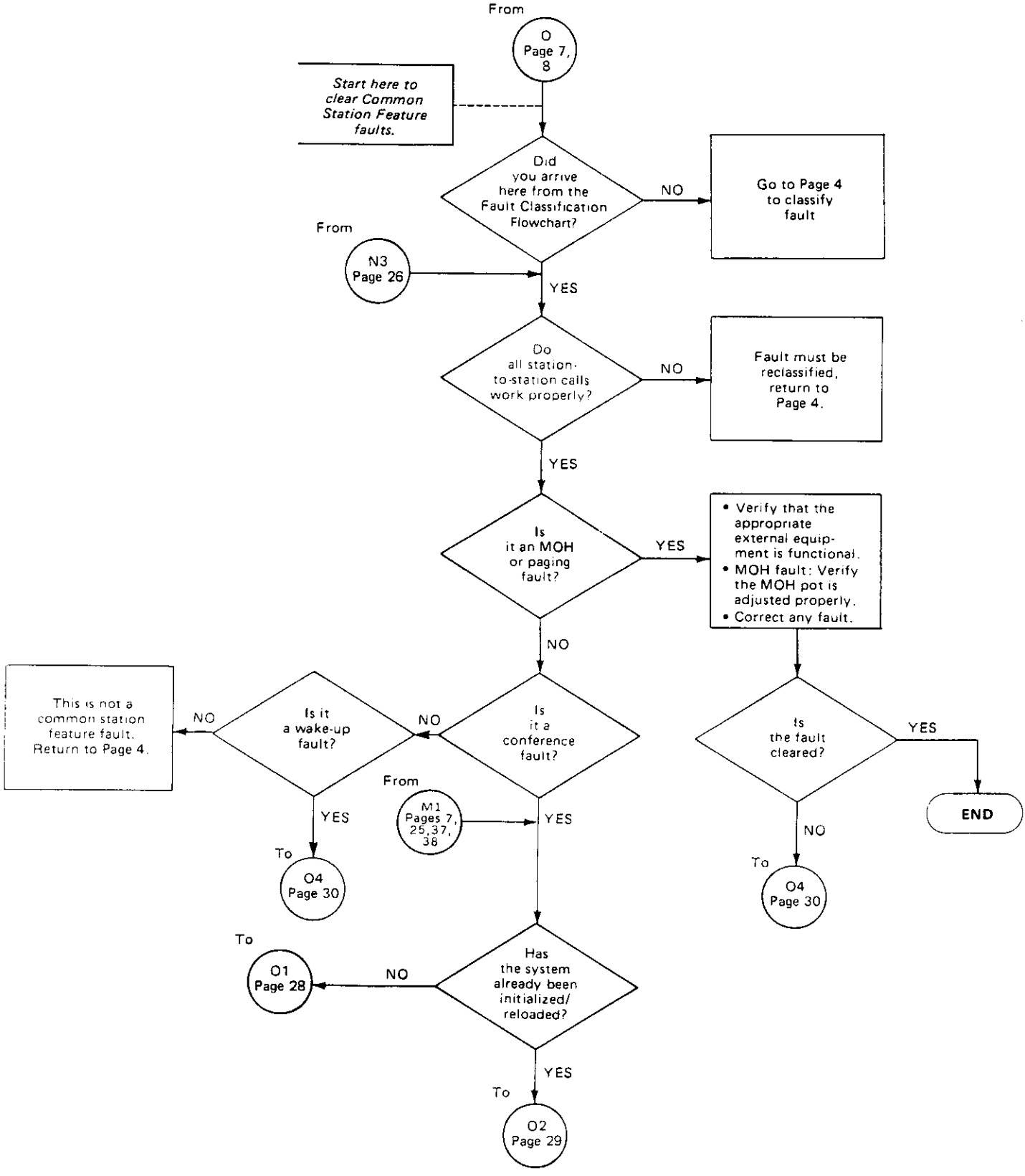


CHART NO. 16
COMMON STATION FEATURE FAULTS



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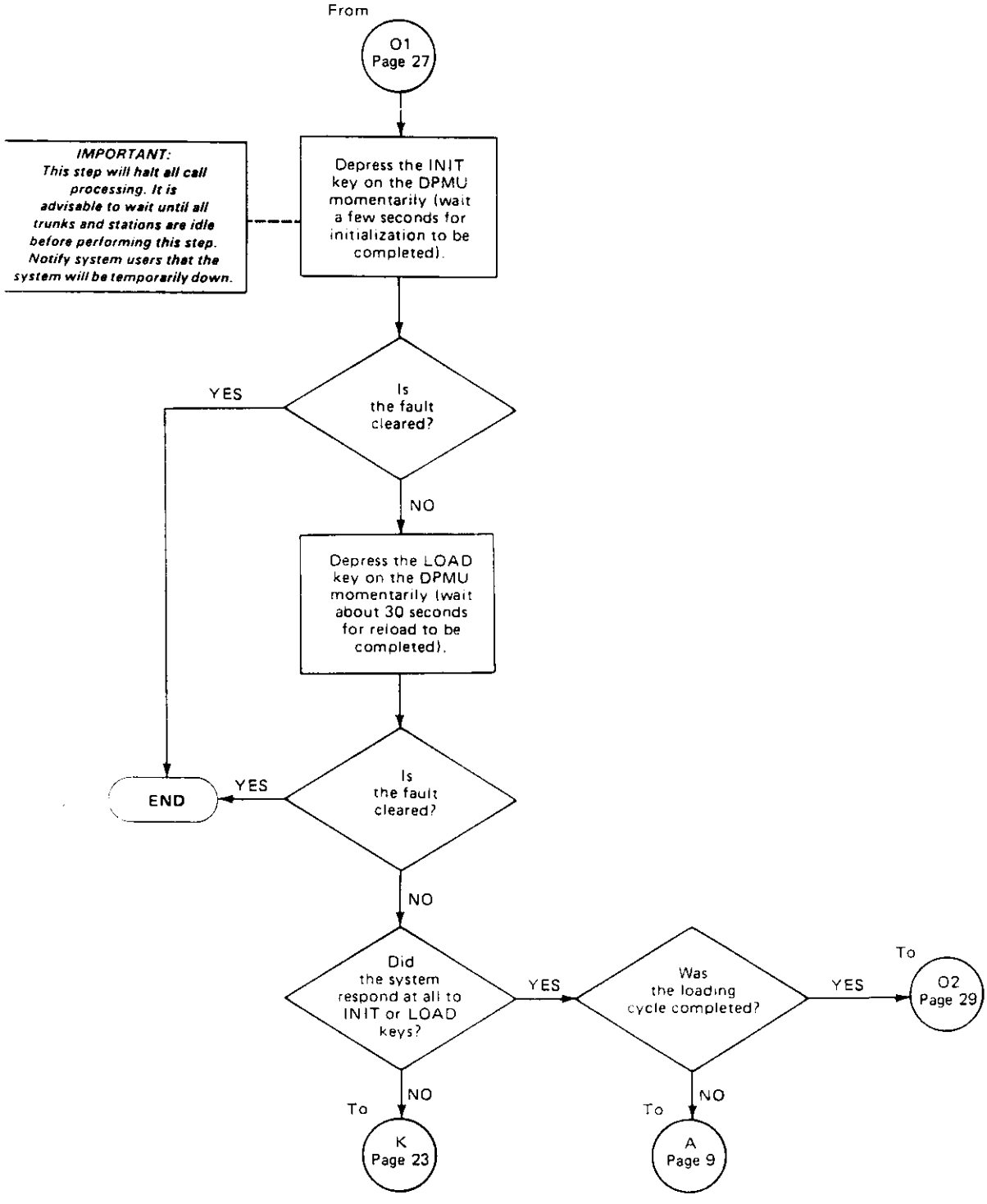
COMMON STATION FEATURE FAULTS (con't)



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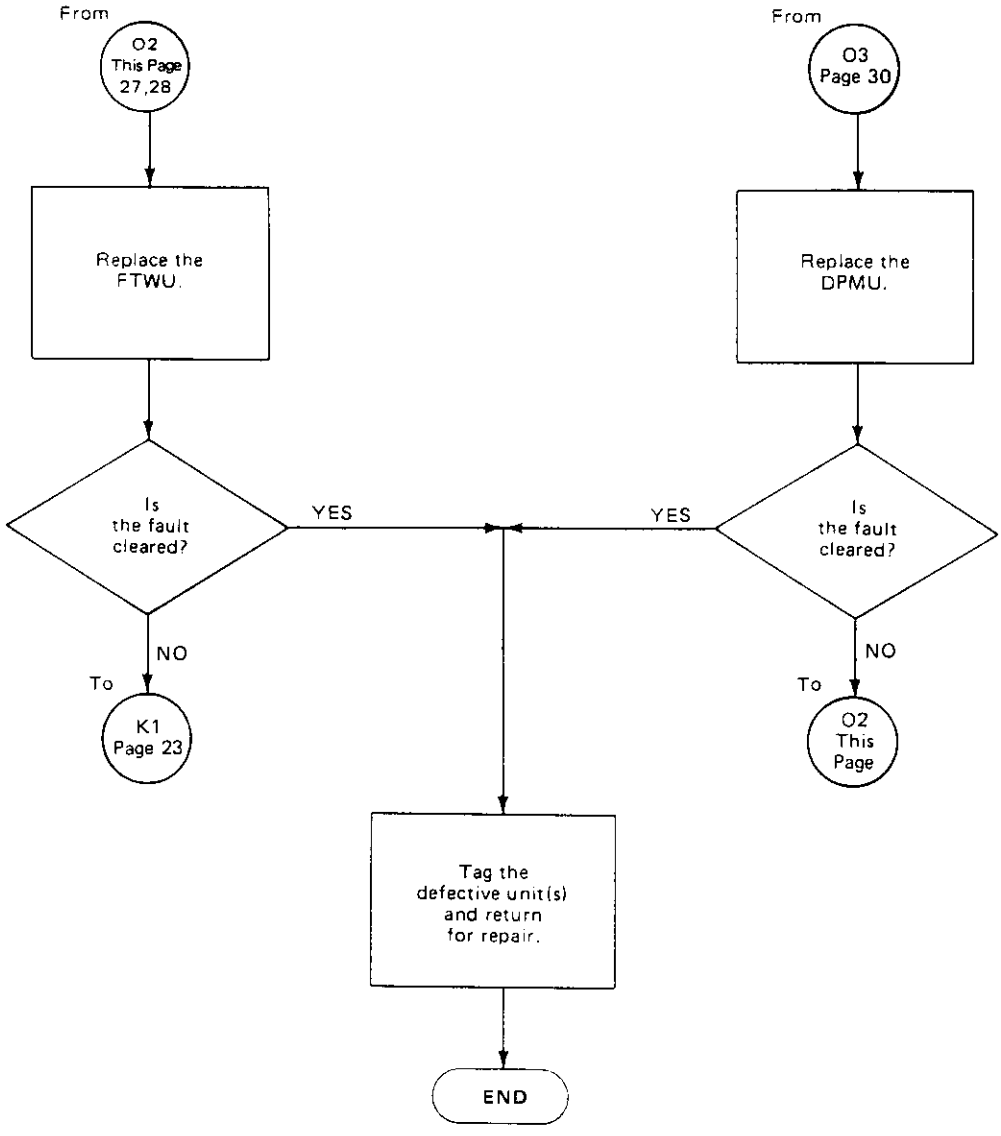

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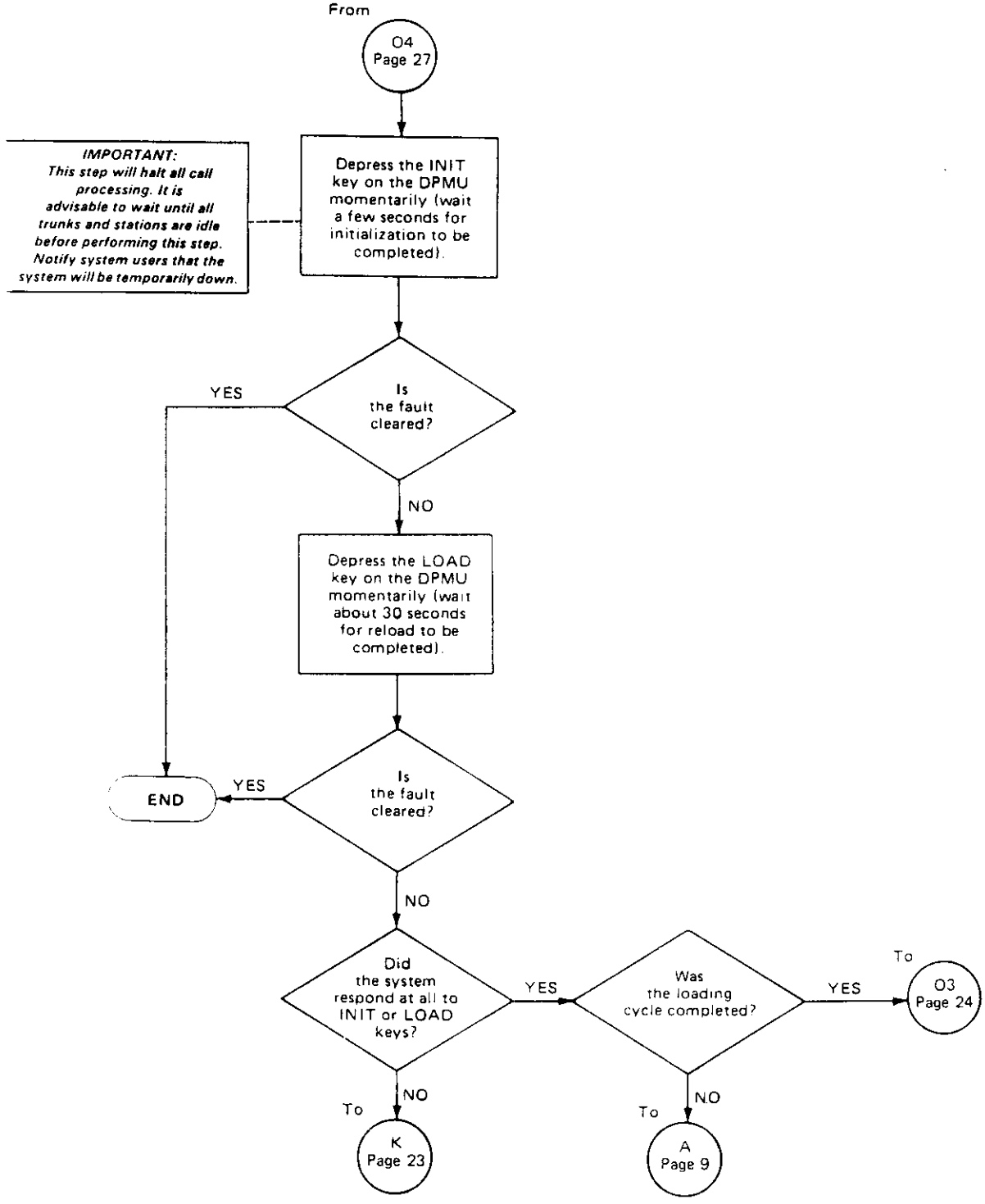
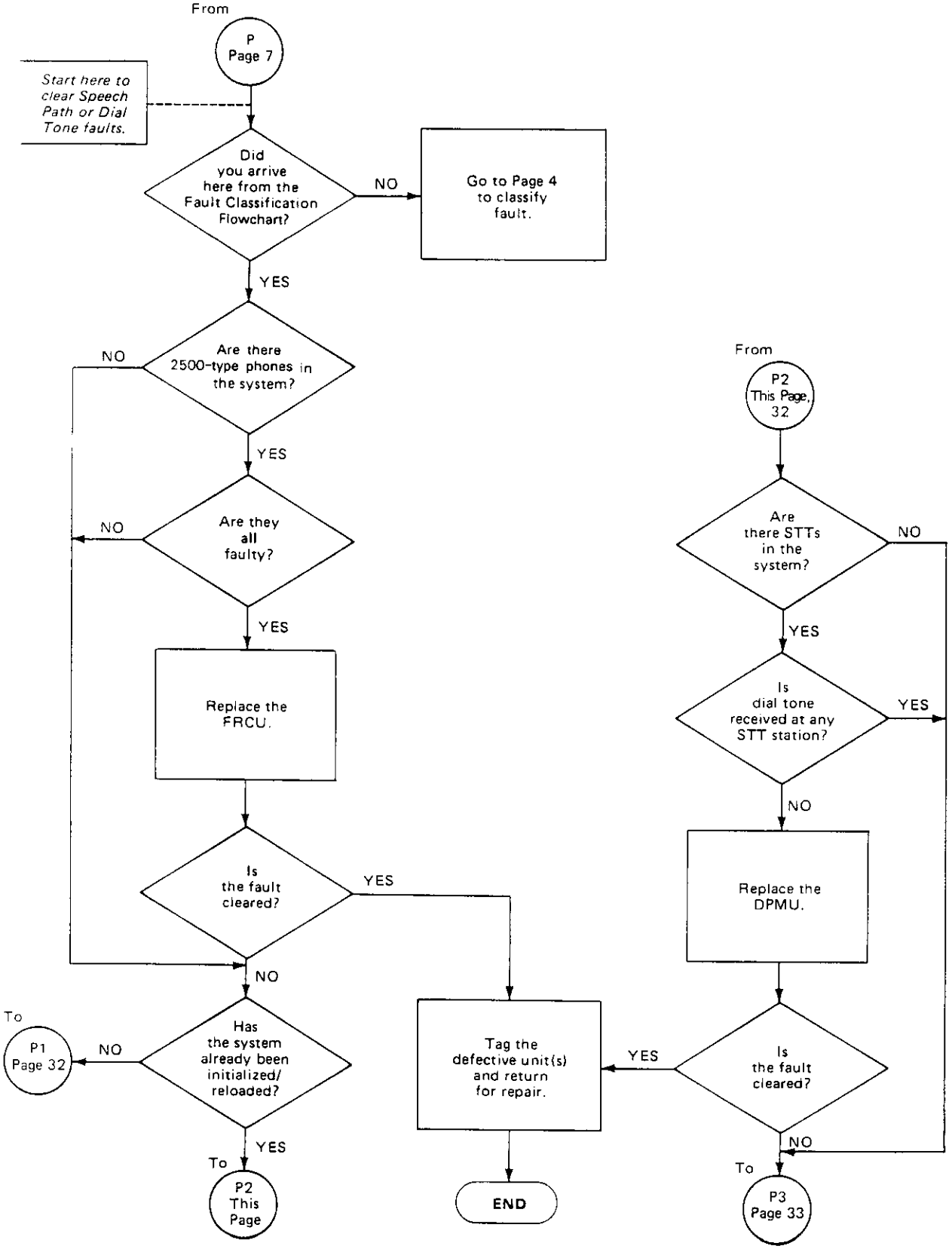


CHART NO. 17
SPEECH PATH OR DIAL TONE FAULTS



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SPEECH PATH OR DIAL TONE FAULTS (con't)

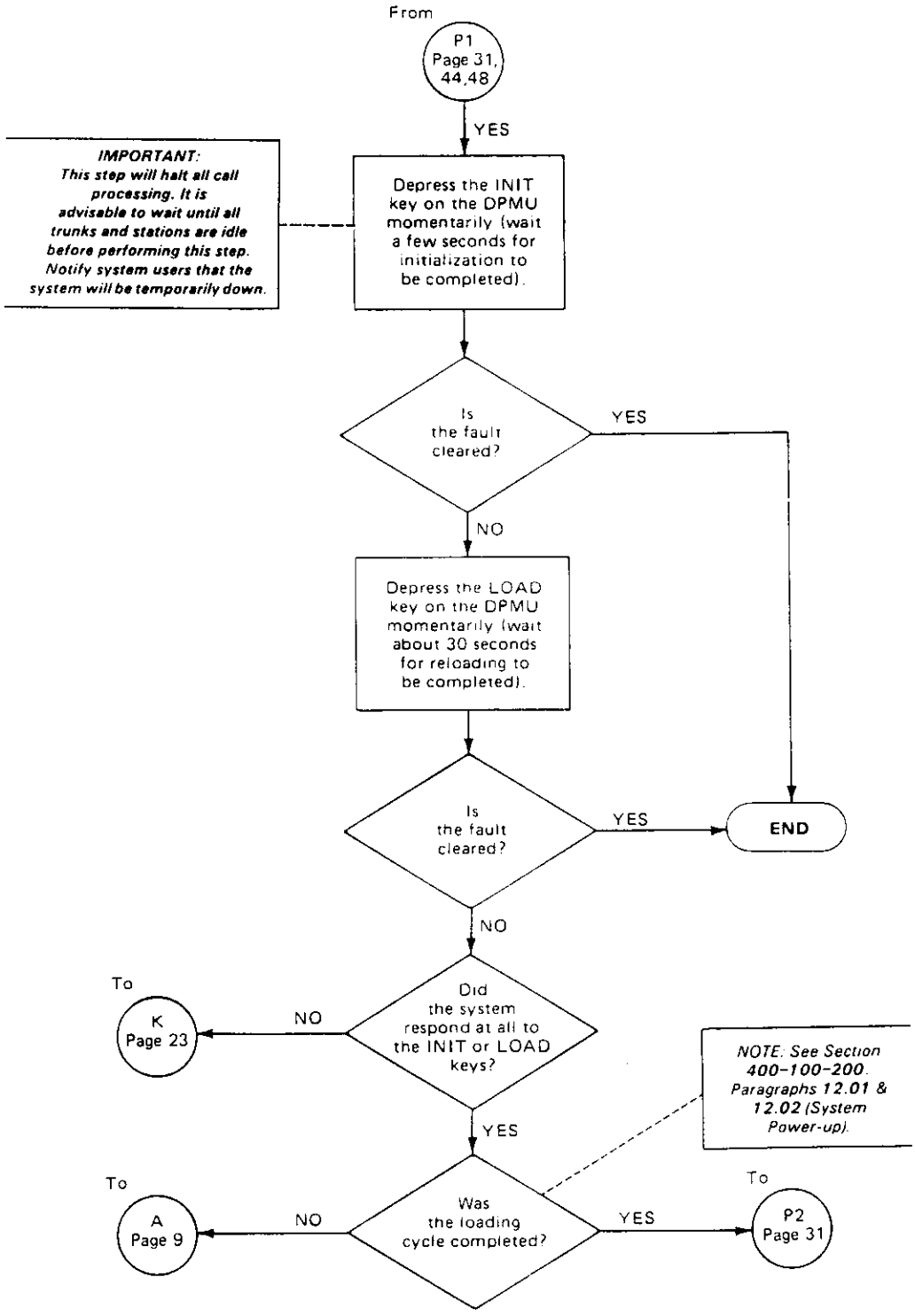

CHART NO. 17
SPEECH PATH OR DIAL TONE FAULTS (con't)

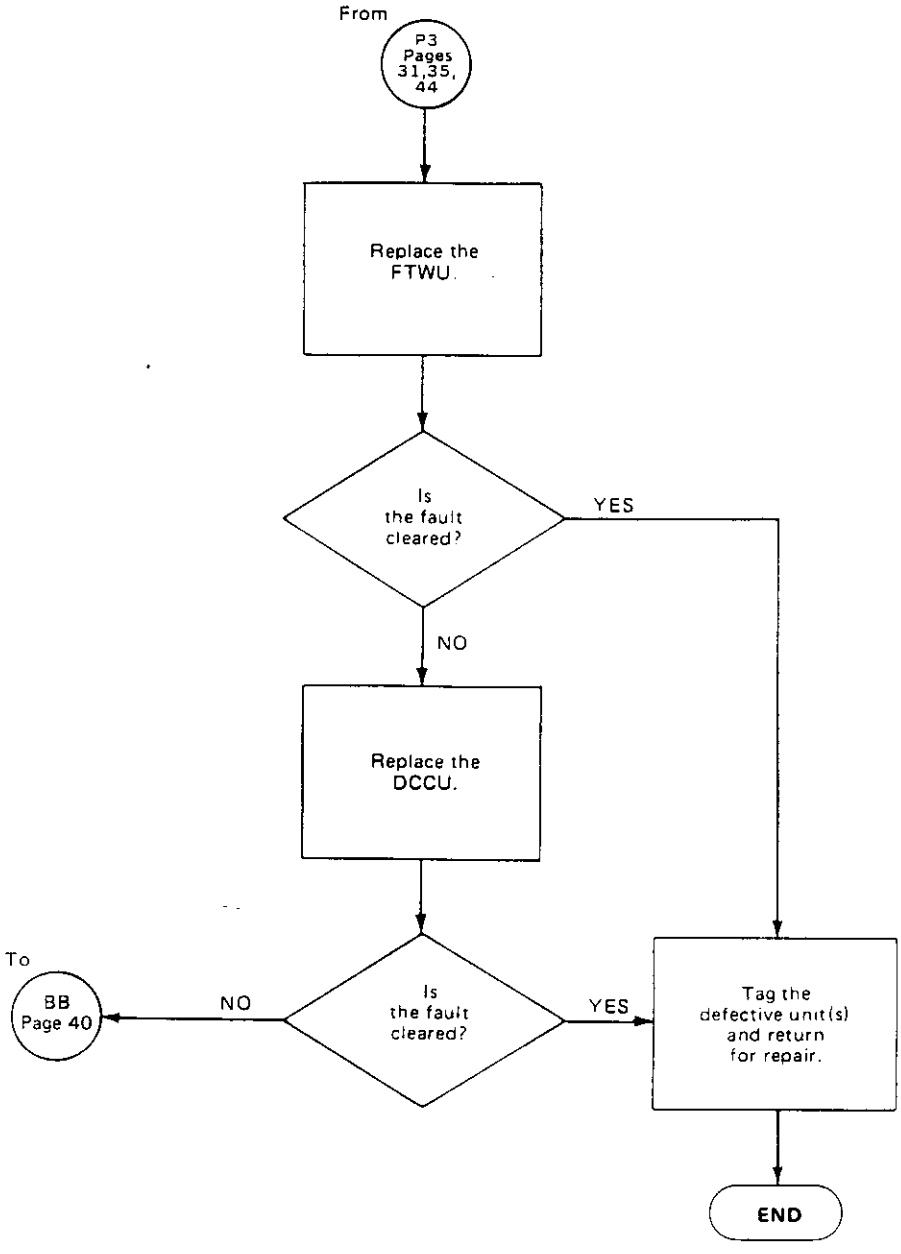

CHART NO. 18
DATA/SPEECH PATH OR DIAL TONE FAULTS

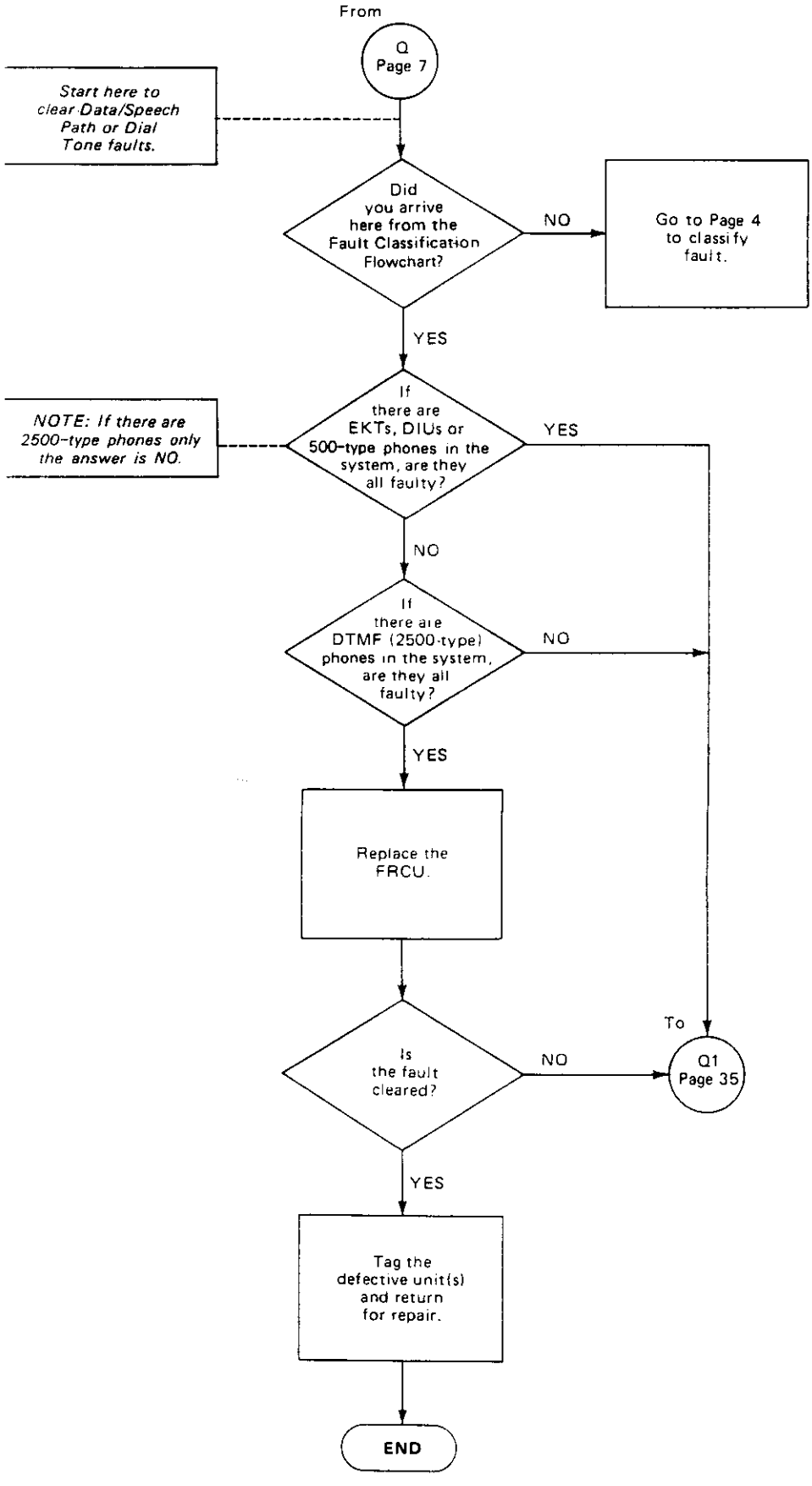

CHART NO. 18
DATA/SPEECH PATH OR DIAL TONE FAULTS (con't)

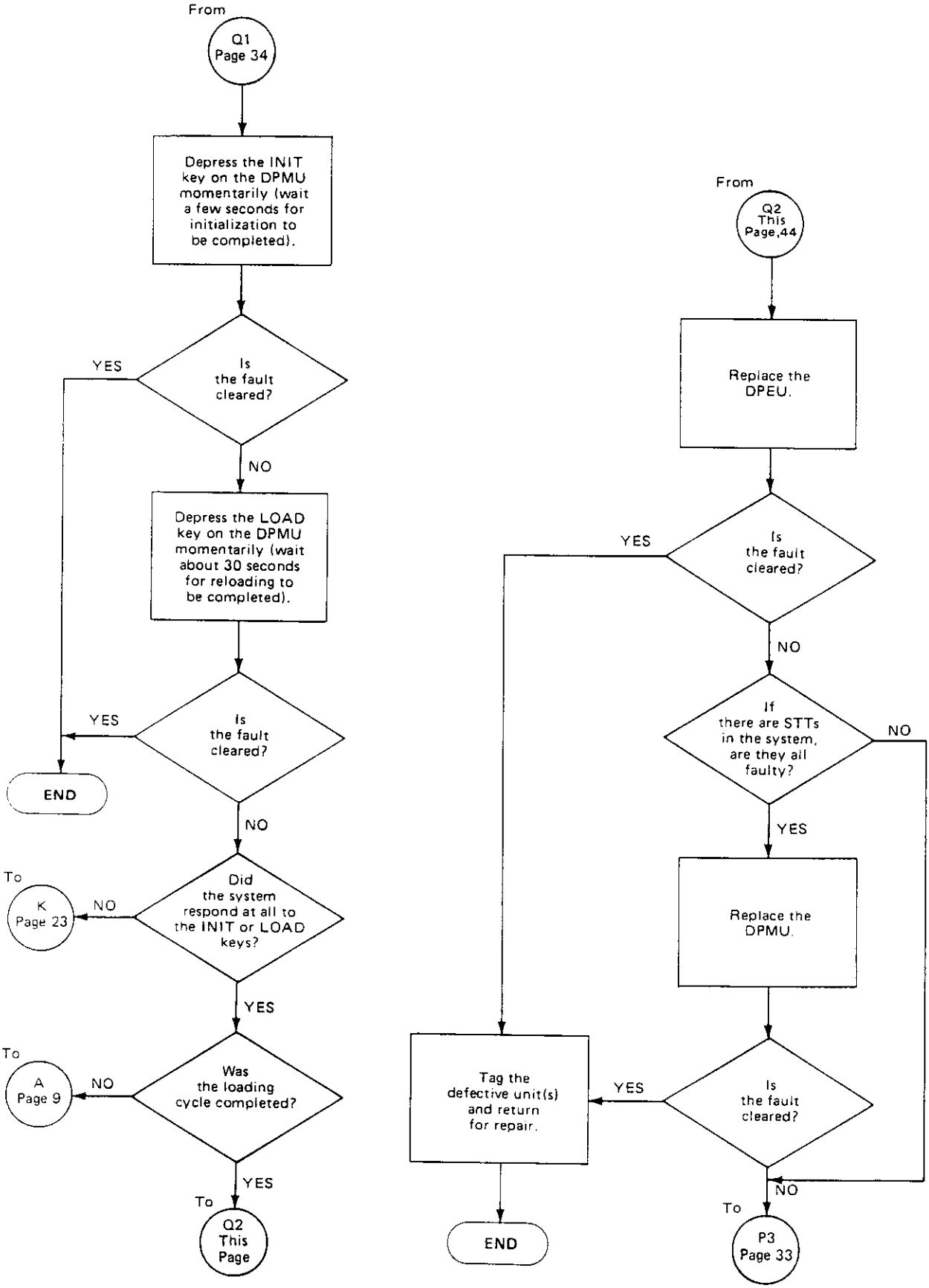

CHART NO. 19
DIALING FAULTS

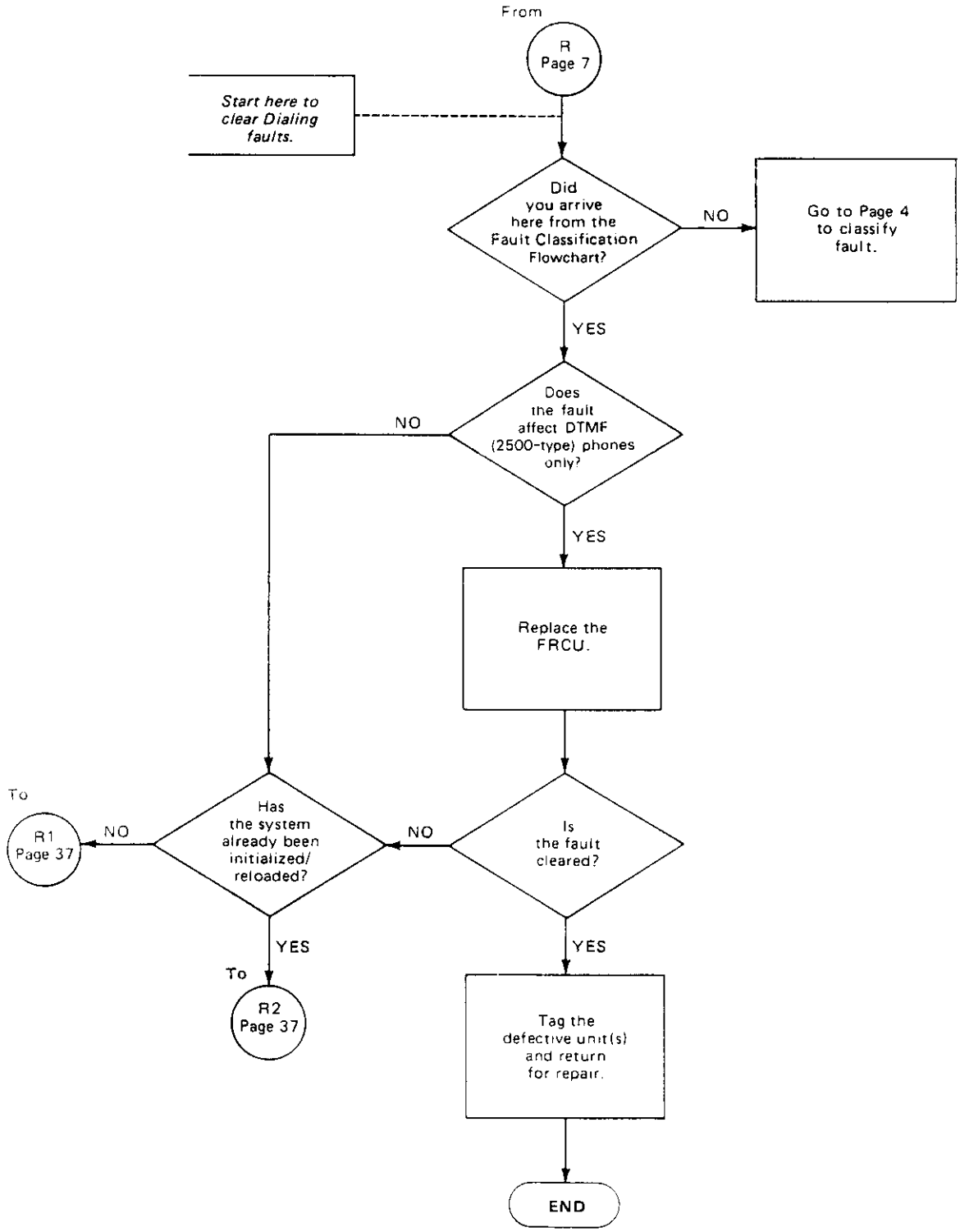

CHART NO. 19
DIALING FAULTS (con't)

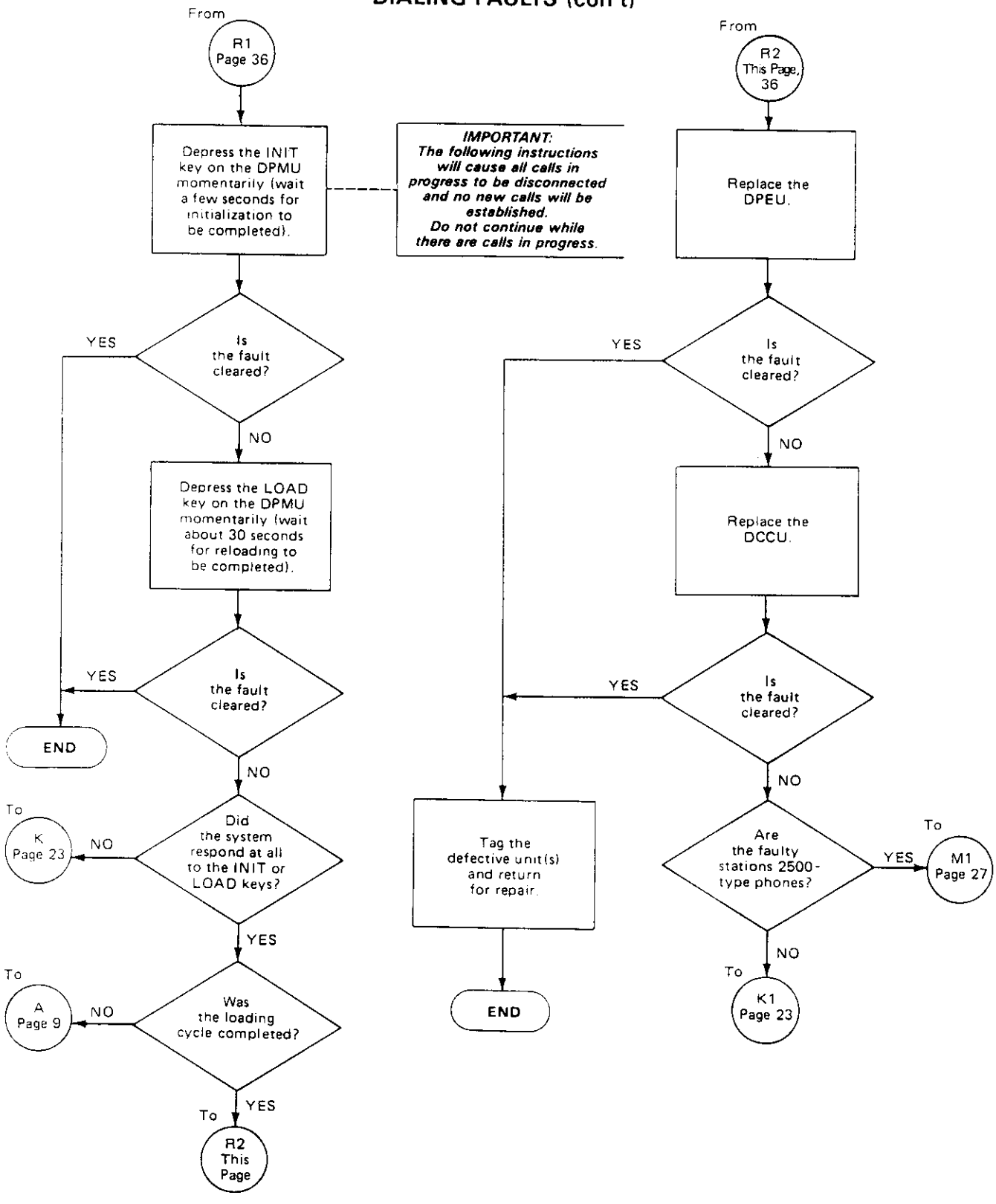

CHART NO. 20
RINGING/RINGBACK TONE FAULTS

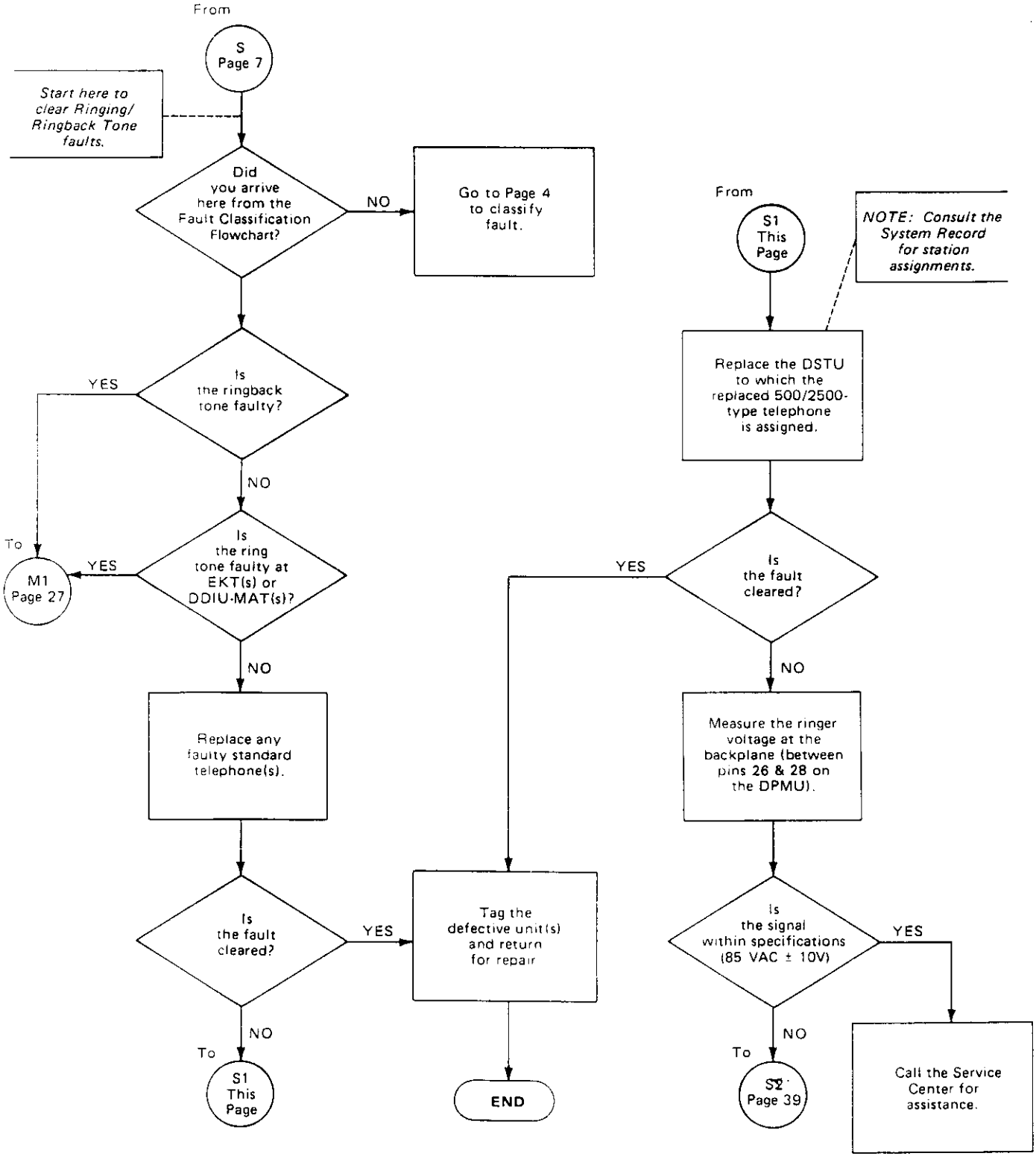

CHART NO. 20
RINGING/RINGBACK TONE FAULTS (con't)

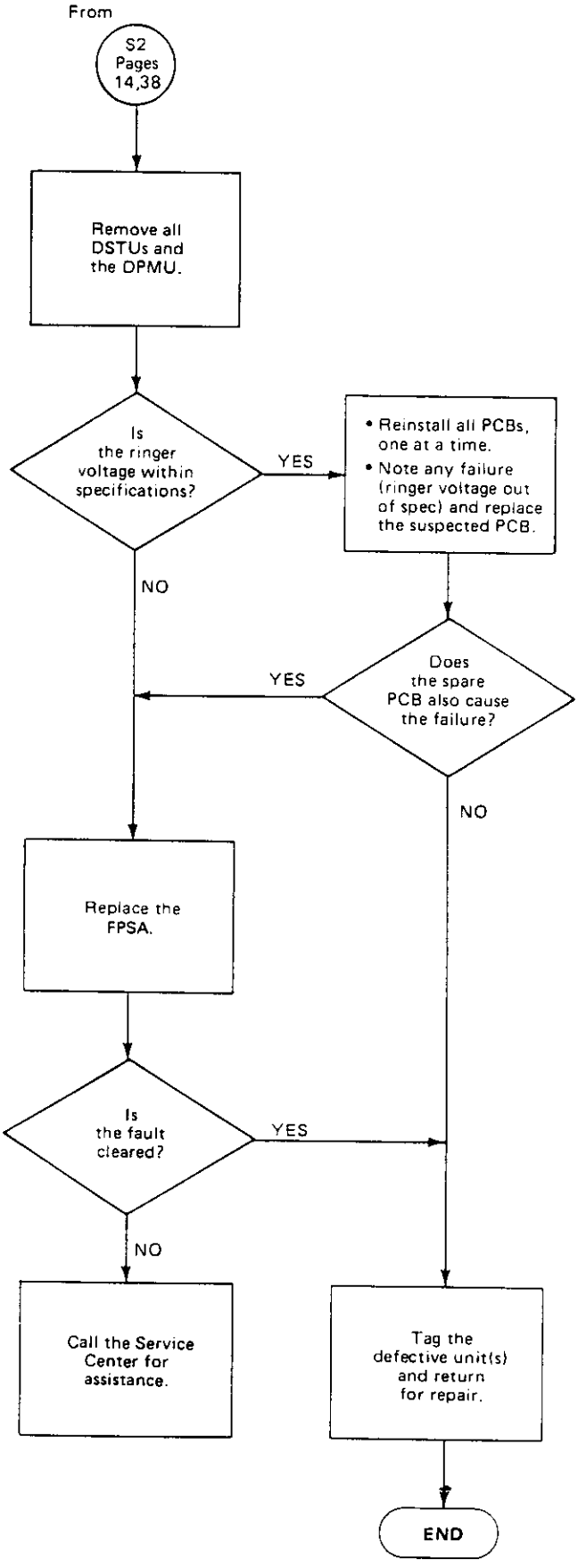

CHART NO. 21
MISCELLANEOUS FAULTS

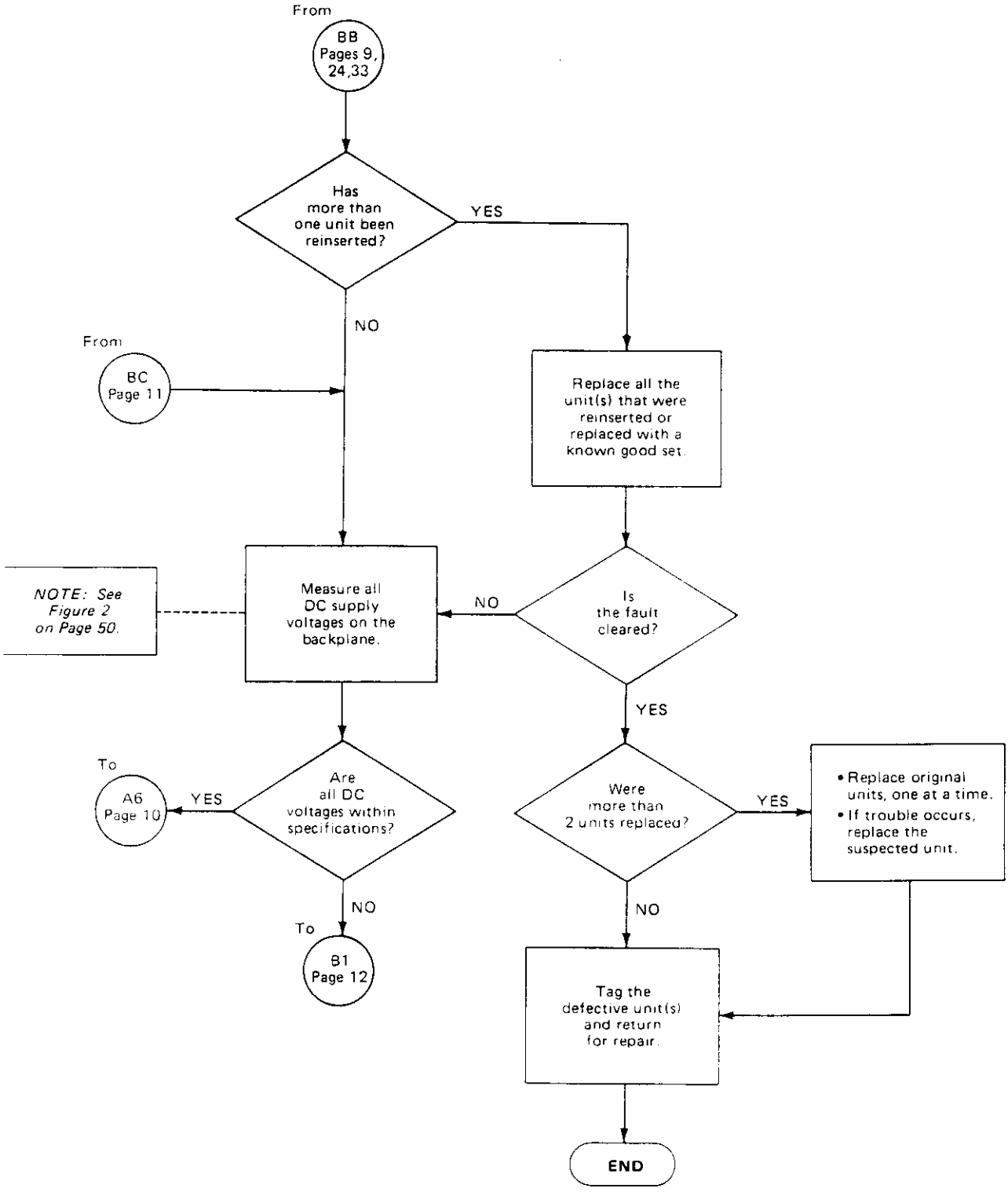

CHART NO. 22
DMDU/DDCU FAULTS

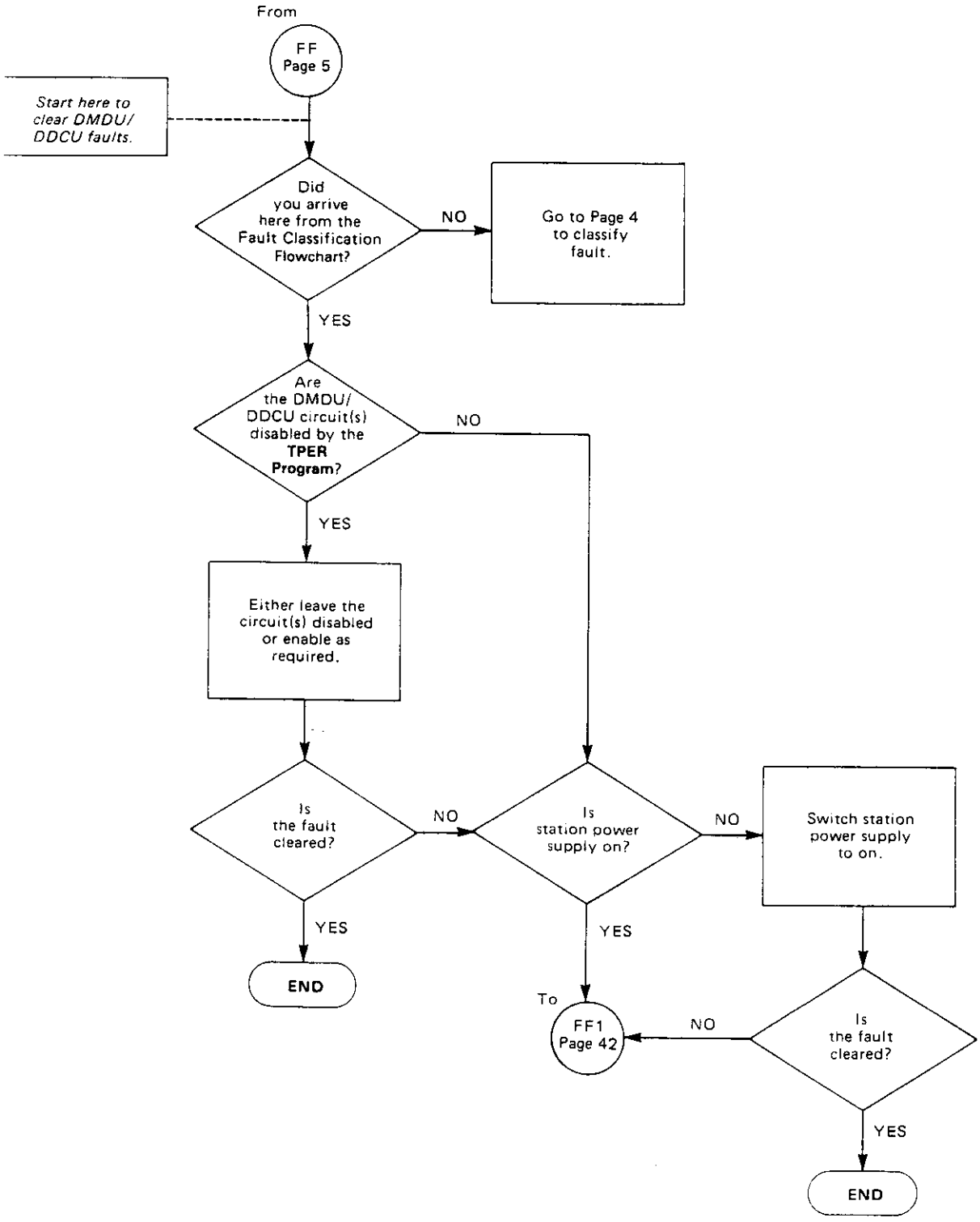

CHART NO. 22
DMDU/DDCU FAULTS (con't)

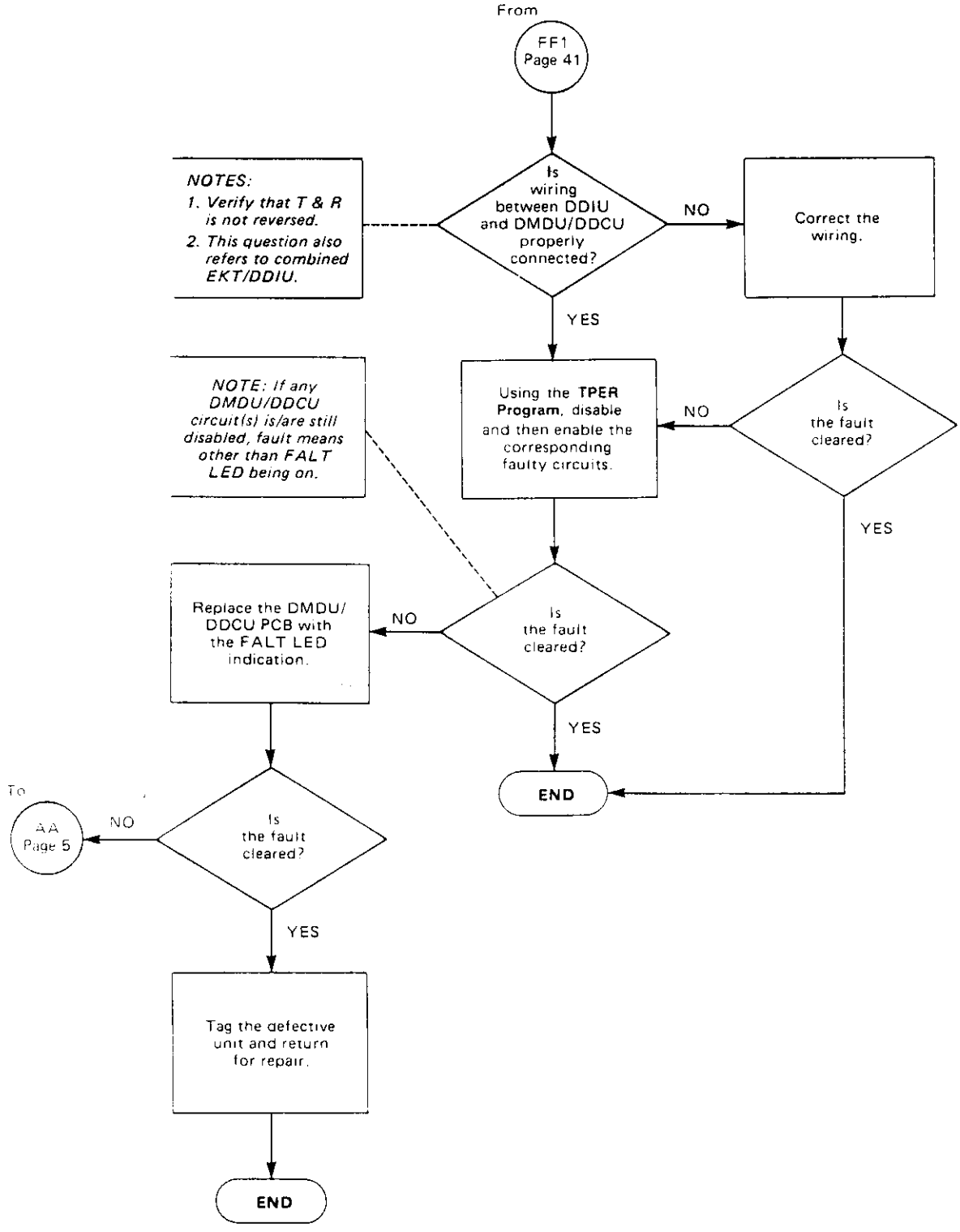

CHART NO. 23
DATA COMMUNICATION STATION FAULTS

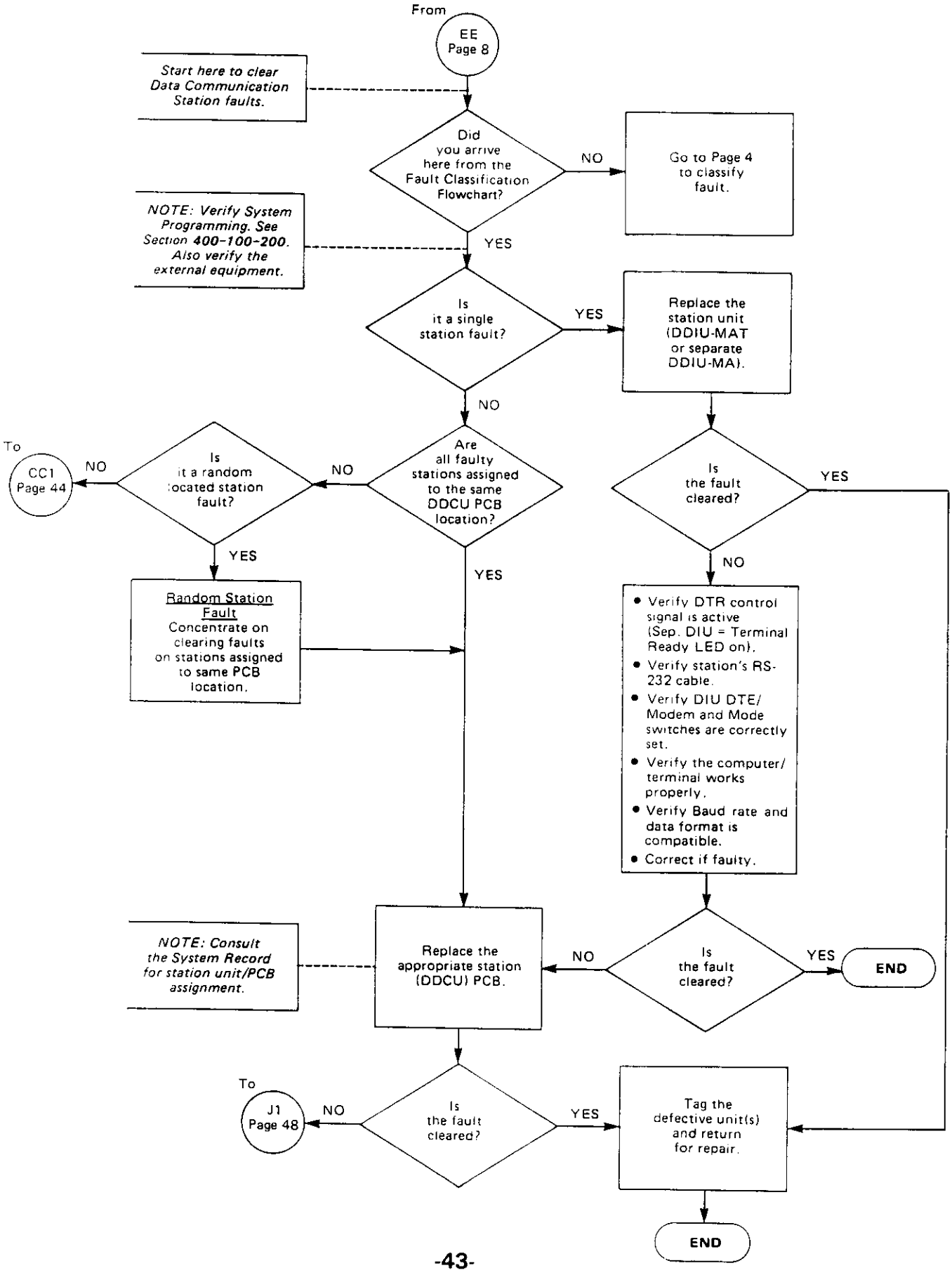

CHART NO. 23
DATA COMMUNICATION STATION FAULTS (con't)

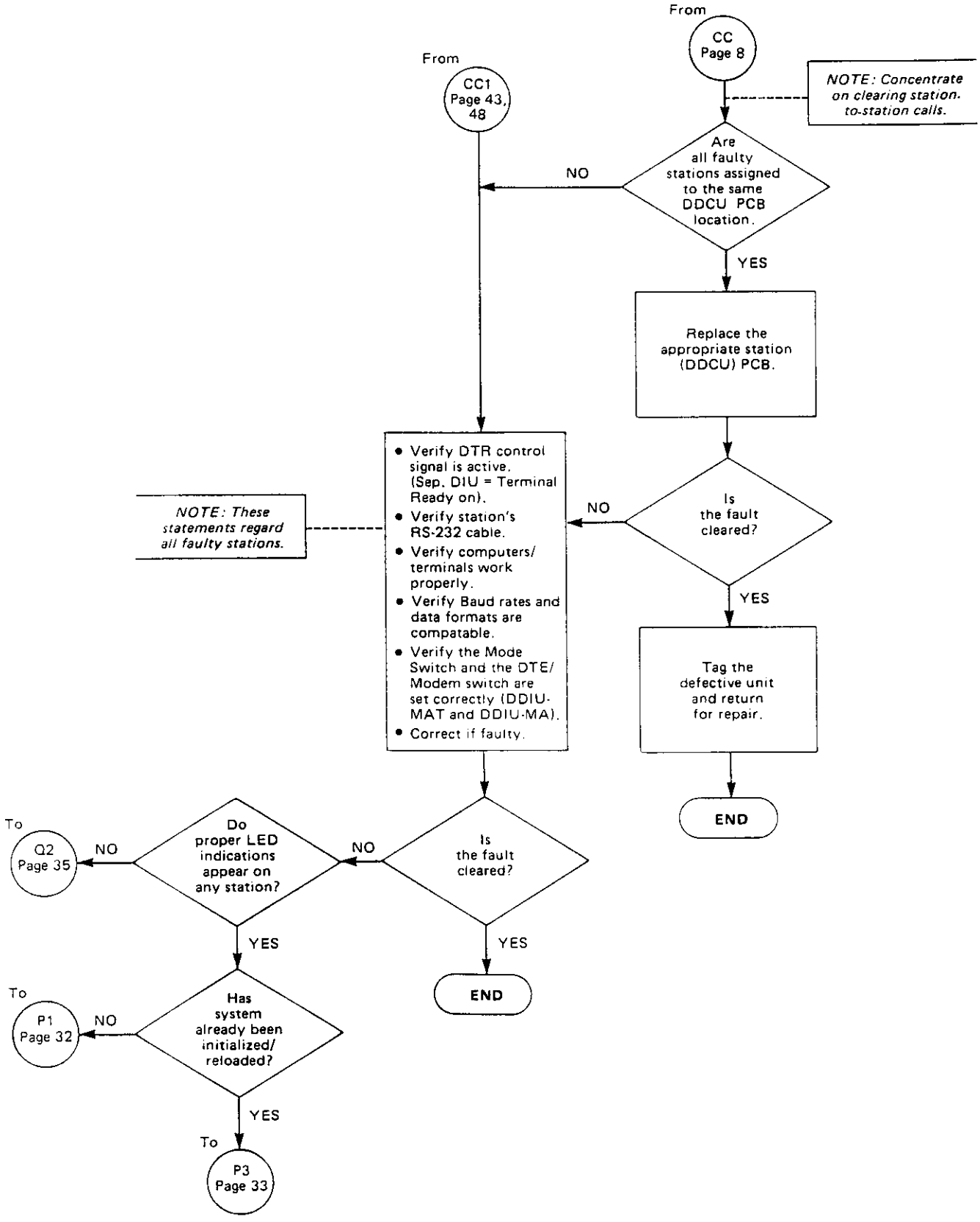

CHART NO. 24
DATA COMMUNICATION TRUNK FAULTS

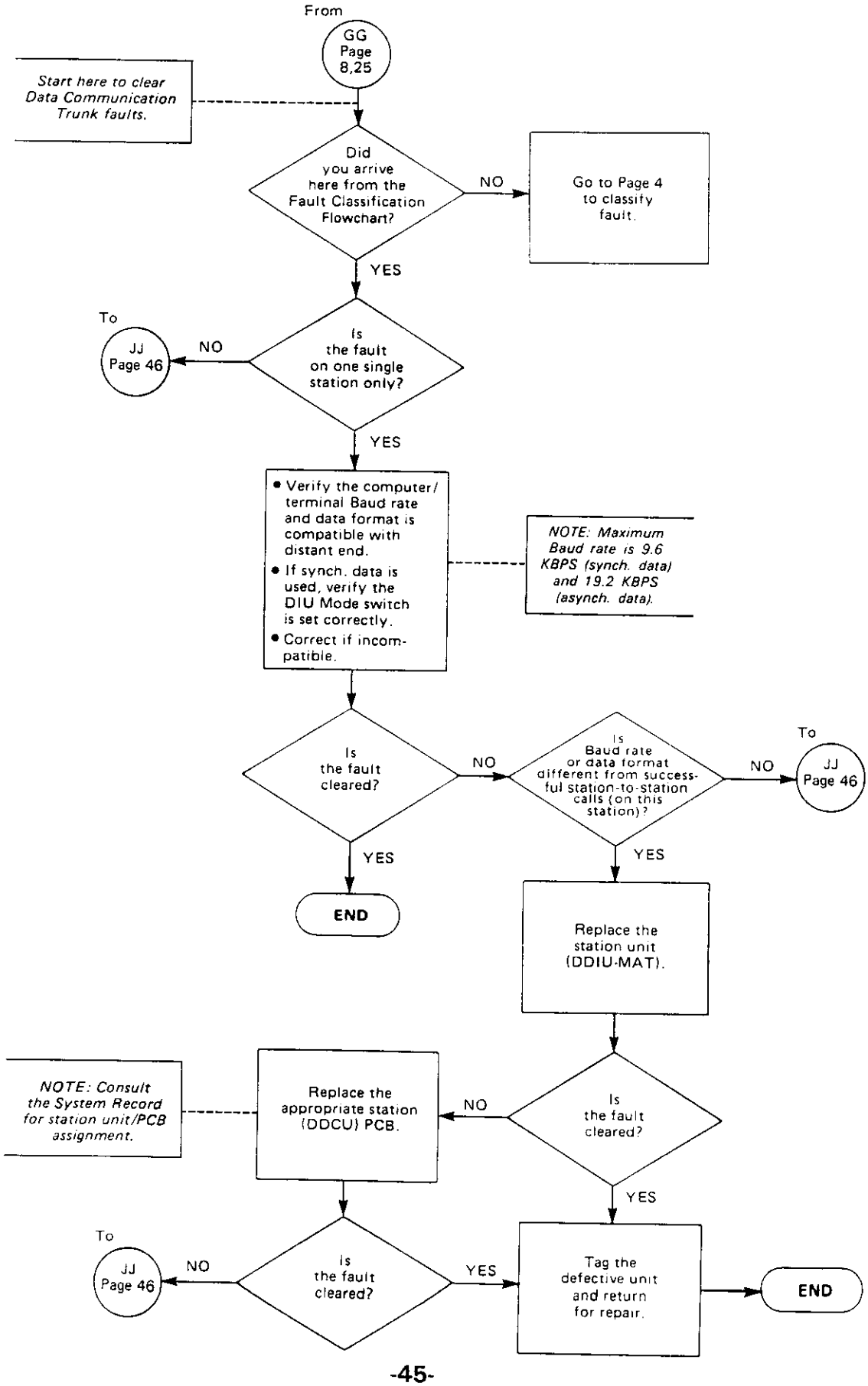

CHART NO. 24
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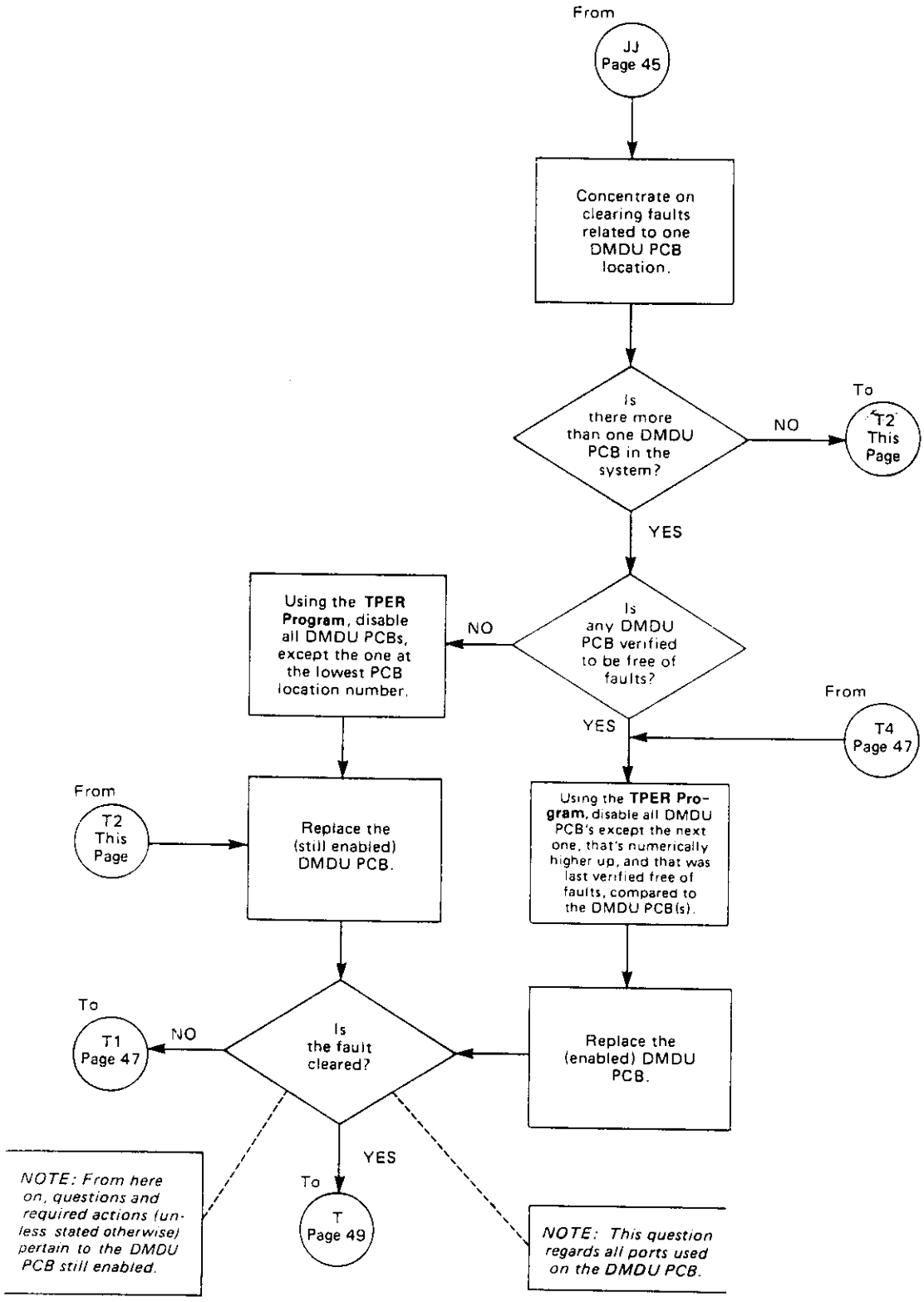

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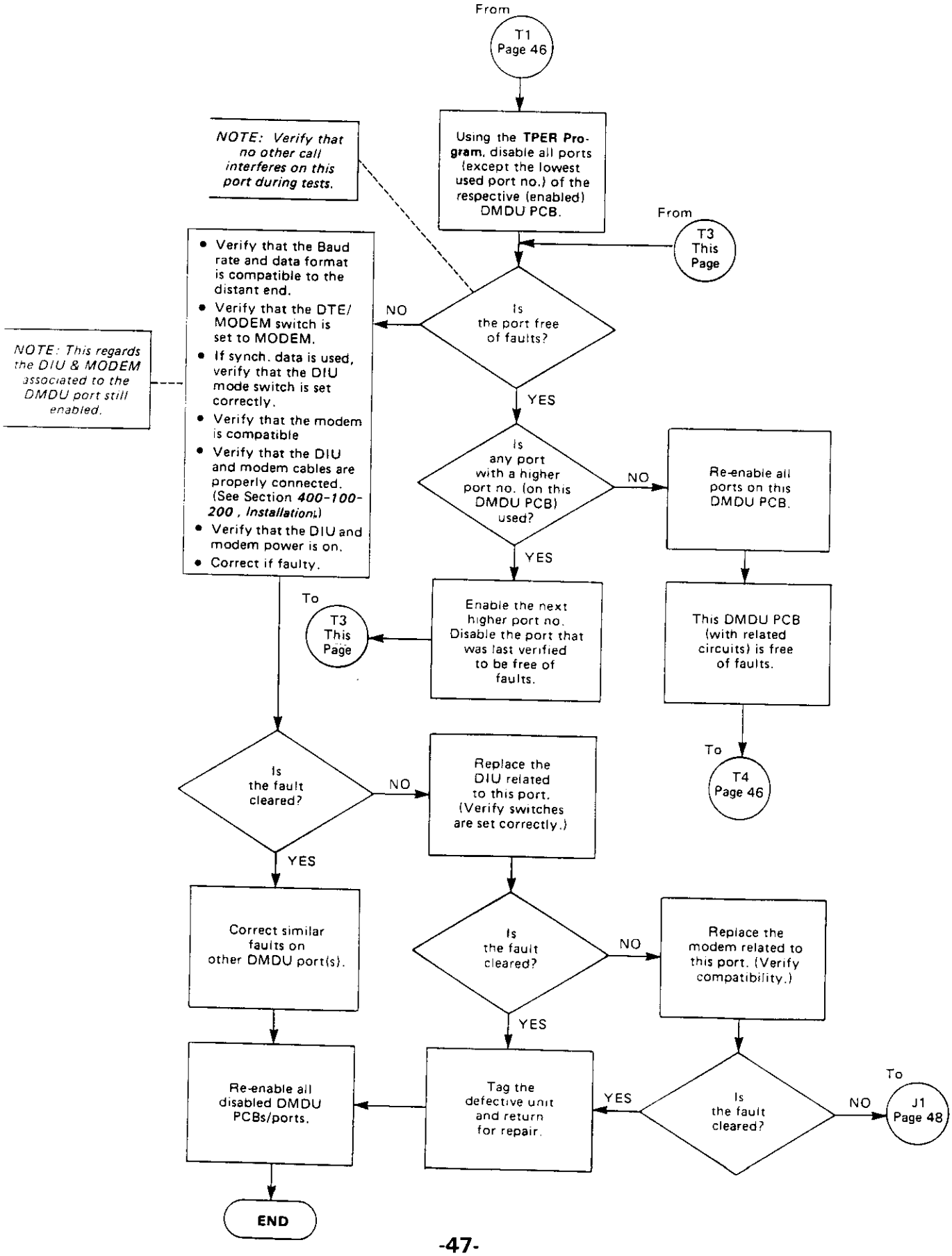

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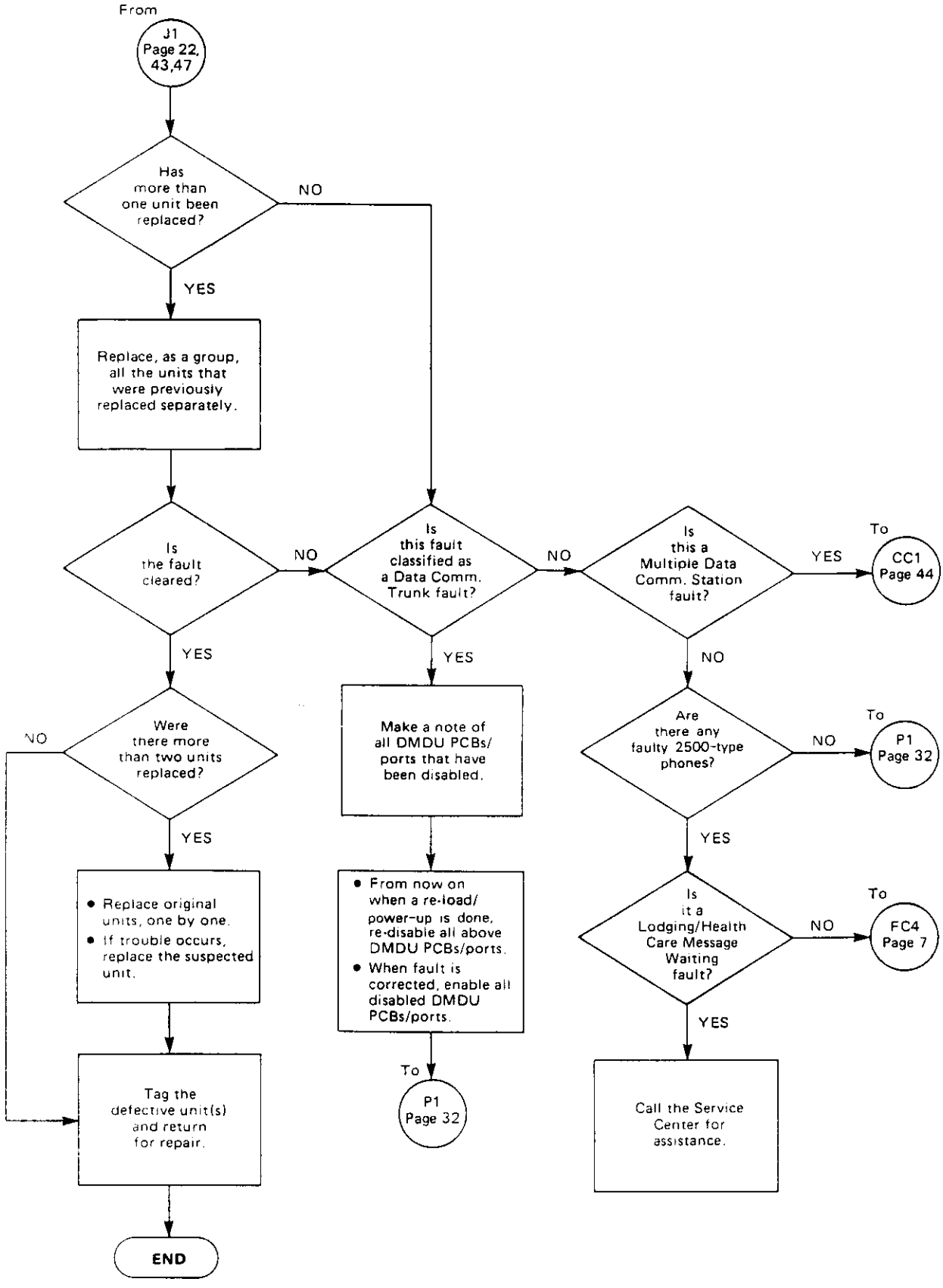
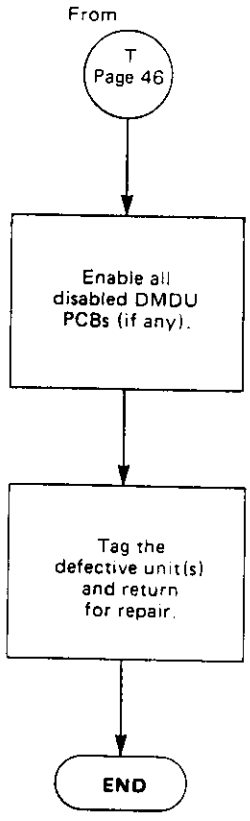
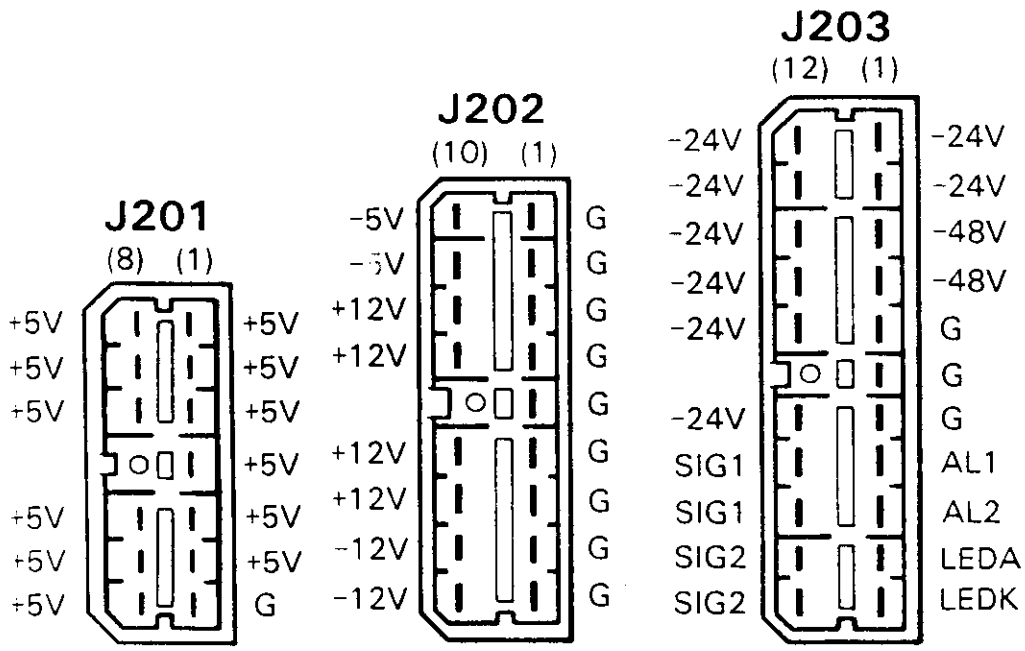


CHART NO. 24
DATA COMMUNICATION TRUNK FAULTS (con't)





FPSA REAR

FPSA ACCEPTABLE VOLTAGE RANGES	
NOMINAL (VDC)	RANGE (VDC)
-48	-47.52 ~ -48.96
-24	-26.75 ~ -28.12
+12	+11.76 ~ +12.48
-12	-11.76 ~ -12.48
+5	+5.0 ~ +5.4
-5	-5.0 ~ -5.4

FIGURE 2—POWER SUPPLY VOLTAGE CHECKS

TOSHIBA

TB 100-8804
December 1, 1988

D-02 Software Release Information

D-02 software is now available (December 1, 1988) and is being shipped with all PERCEPTION II and PERCEPTION$_e$ systems. **D-02** software may also be used to upgrade systems utilizing D-01 software. **D-02** software includes several new features, including DSS Consoles, Internal Group Paging through electronic telephone speakers, External Zone Paging Access Buttons and Codes, Attendant-Position Electronic Telephones, System-Wide Call Forward Cancellation, and Fixed Autodial buttons. **D-02** software also enhances several features that are available with earlier software versions. (**D-02** software also incorporates all of the enhancements contained in **D-01C** software—also released on December 1, 1988.) The new features that are included in **D-02** software are:

1) **DSS Console Connection: D-02** software allows up to eight DSS consoles to be used in a PERCEPTION system. This allows an electronic telephone to operate as an answering position by receiving and directing calls for system stations. Each console contains 60 programmable buttons, which may be programmed as either fixed or switched direct station select (DSS) buttons or as feature access buttons. Many electronic telephone features, other than those requiring a speech path, can be programmed onto a DSS console button. Two DSS consoles can be assigned to a single electronic telephone, providing a total of 120 DSS and feature buttons.

The PERCEPTION DSS console is the same unit that is used with the STRATA$_e$ system; however there are some important operational differences. Refer to the PERCEPTION DSS Console/Attendant-Position Electronic Telephone User Guide for detailed explanations of DSS features.

Refer to the November 1988 edition of the PERCEPTION II and PERCEPTION$_e$ *Installation* and *Maintenance* manuals for DSS console installation procedures.

DSS consoles are programmed via the new DSS Console Data Block (**DDSS Program**). DSS Console Data can be printed out via the new **PDSS Program**.

In PERCEPTION$_e$ systems, DSS consoles are assigned to NDSU cards. PERCEPTION II systems require a DDSU card. Each NDSU or DDSU card supports up to four DSS consoles. Both types of cards can be ordered from Toshiba America.

2) Internal Group Paging: Internal Group Paging is a new **D-02** feature which allows a group of electronic telephones to simultaneously receive a page (through their telephone speakers) from either an attendant console or a telephone. Up to 17 paging groups (0, 2 ~ 17) may be assigned, with groups 2 ~ 17 having an allowable maximum of 32 electronic telephone members, and group 0 (the Expanded Internal Paging Group) having an allowable maximum of 96 members.

D-02 Software Release Information (continued)

Each electronic telephone can belong to up to four paging groups. Each system telephone can access internal paging groups by pressing an assigned Internal Paging feature button (or by dialing the Internal Paging access code) and dialing the desired paging group number. Internal paging buttons may be assigned to either an electronic telephone or a DSS console. Attendant consoles can access internal paging groups via either the Attendant Console Paging button or by dialing an Internal Paging Group access code. For further information regarding paging to internal paging groups, refer to the November 1988 issues of the PERCEPTION Electronic Telephone, Standard Telephone, and Attendant Console User Guides.

The assignment of an electronic telephone to a particular paging group is performed via the **DEKT Program**. Paging group data can be printed out via the new **PPAG Program**. The assignment of an Internal Paging feature button is performed via either the **DEKT** or **DDSS Program** (depending on whether the button is being assigned to an electronic telephone or a DSS console). An Attendant Console Paging button is assigned in response to the PAG prompt in the **DATT Program**. Internal Paging Group access codes are registered in the **DACD Program**. Access to Internal Paging (on a group-by-group basis) is determined by each station's assigned class of service (**DCOS Program**).

3) **External Zone Paging Access Button and Codes**: **D-02** software allows a station to page an external paging zone via a designated External Paging (PEXT) button, which can be assigned to either an electronic telephone or a DSS console. A specific paging zone can be accessed by pressing this button and then dialing the desired zone (0 ~ 4). Alternatively, an External Paging access code can be used instead of the PEXT button. Specific access codes can also be used to page all external zones or the 96-member Expanded Internal Paging Group. The PAGE button on the PERCEPTION attendant console can be programmed to access either a single external paging zone, all external zones, all external zones and the Expanded Internal Paging Group, or the Expanded Internal Paging Group only. Any of these options which are not assigned to the PAGE button can be accessed via designated access codes. For further information regarding paging to external zones, refer to the November 1988 issues of the PERCEPTION Electronic Telephone, Standard Telephone, and Attendant Console User Guides.

An External Paging access button is assigned to an electronic telephone via the **DEKT Program** or to a DSS console via the **DDSS Program**. The attendant console PAGE button is assigned via the PAG prompt in the **DATT Program**. Paging feature access codes are assigned in the **DACD Program**. Individual station access to External Paging, on a zone-by-zone basis, is assigned in the **DCOS Program**.

4) **Attendant-Position Electronic Telephones**: **D-02** software enables up to eight electronic telephones to access several features that have formerly been available only to attendant consoles. These selected features include the ability to perform a Meet-Me Page, the ability to cancel a Meet-Me Page, and the ability to change the Remote Access Code. Attendant-Position Electronic Telephones may also perform a system-wide cancellation of all registered call forwards. Additionally, one of the possible eight Attendant-Position Electronic Telephones may have an assigned System Night Operation button (when an attendant console is not assigned in the system). When pressed, this button will alternate the system between day and night operation. The System Night Operation button may be assigned either directly to an electronic telephone or to a DSS console that is part of an Attendant-Position Electronic Telephone/DSS arrangement. For further information regarding the operation of Attendant-Position Electronic Telephones, refer to the November 1988 issue of the PERCEPTION DSS Console/Attendant Position Electronic Telephone User Guide.

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PERCEPTION II
GENERAL END USER INFORMATION

The PERCEPTION II electronic business communications system is registered in accordance with the provisions of Part 68 of the Federal Communications Commission's Rules and Regulations.

FCC REQUIREMENTS

Means of Connection: The Federal Communications Commission (FCC) has established rules which permit the PERCEPTION II system to be connected directly to the telephone network. Connection points are provided by the telephone company—connections for this type of customer-provided equipment will not be provided on coin lines. Connections to party lines are subject to state tariffs.

Incidence of Harm: If the system is malfunctioning, it may also be disrupting the telephone network. The system should be disconnected until the problem can be determined and repaired. If this is not done, the telephone company may temporarily disconnect service. If possible, they will notify you in advance. But, if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Service or Repair: For service or repair, contact your local Toshiba telecommunications distributor. To obtain the nearest Toshiba telecommunications distributor in your area, call Toshiba America, Inc., Telecommunication Systems Division in Irvine, CA (800) 777-4TSD.

Telephone Network Compatibility: The telephone company may make changes in its facilities, equipment, operations and procedures. If such changes affect the compatibility or use of the PERCEPTION II system, the telephone company will notify you in advance to give you an opportunity to maintain uninterrupted service.

Notification of Telephone Company: Before connecting a PERCEPTION II system to the telephone network, the telephone company may request the following:

1) Your telephone number.

2) FCC registration number:
   - PERCEPTION II
     Hybrid system: BF287N-70443-MF-E

3) Ringer equivalence number: 1.2B(AC)/4.0(DC)
   - The ringer equivalence number (REN) is useful to determine the quantity of divices which you may connect to your telephone line and still have all of those devices ring when your number is called. In most areas, but not all, the sum of the RENs of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area.
     Hybrid system: 4.2B

4) USOC jack required: RJ21X

Items 2 and 3 are also indicated on the equipment label.

RADIO FREQUENCY INTERFERENCE

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the manufacturer's instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference; in which case, the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

This system is listed with Underwriters Laboratory.

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