

ACCESS SERVICE

8.

Reserved for future use.

Transmittal No. 1 – Filed under Special Permission No. 04 - 004

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Issued: January 23, 2004

Effective: February 7, 2004

Senior Director, Regulatory and Industry Relations  
300 Decker Drive  
Irving, TX 75062-8136

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## ACCESS SERVICE

## 11. Special Facilities Routing of Access Services

## 11.1 Description

The services provided under this tariff are provided over such routes and facilities as the Telephone Company may elect. Special Facilities Routing is involved when, in order to comply with requirements specified by the customer, the Telephone Company provides Switched Access Service or Special Access Service in a manner which includes one or more of the following conditions:

## 11.1.1 Diversity

Two or more circuits must be provided over not more than two different physical routes.

## 11.1.2 Avoidance

A circuit(s) must be provided on a route which avoids specified geographical locations.

## 11.1.3 Diversity and Avoidance Combined

## 11.1.4 Cable-Only Facilities

Certain Voice Grade services are provided on Cable-Only Facilities to meet the particular needs of a customer.

Service is provided subject to the availability of Cable-Only facilities. In the event of service failure, restoration will be made through the use of any available facilities as selected by the Telephone Company.

Avoidance and Diversity are available on Switched Access Service as set forth in Section 6. preceding; Voice Grade Special Access Service as set forth respectively in 7.4 preceding. Cable-Only Facilities are available for Switched Access Service as set forth in Section 6 preceding; Voice Grade Special Access Services as set forth in 7.4 preceding.

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## 11. Special Facilities Routing of Access Service (Cont'd)

## 11.1 Description (Cont'd)

In order to avoid the compromise of special routing information, the Telephone Company will provide the required routing information for each specially routed service to only the ordering customer. If requested by the customer, this information will be provided when service is installed and prior to any subsequent changes in routing.

The rates and charges for Special Facilities Routing of Access Services are developed on an individual case basis. Such rates and Charges for Special Facilities Routing of Access Services are as set forth in 17.4.5 and 18.4.6, following, and are in addition to all other rates and charges that may be applicable for services provided under other sections of this tariff.

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## ACCESS SERVICE

## 12. Specialized Service Or Arrangements

## 12.1 General

Specialized Service or Arrangements may be provided by the Telephone Company, at the request of a customer, on an individual case basis if such service or arrangements meet the following criteria:

- The requested service or arrangements are not offered under other sections of this tariff.
- The facilities utilized to provide the requested service or arrangements are of a type normally used by the Telephone Company in furnishing its other services.
- The requested service or arrangements are provided within a LATA.
- The requested service or arrangements are compatible with other Telephone Company services, facilities, and its engineering and maintenance practices.
- This offering is subject to the availability of the necessary Telephone Company personnel and capital resources.

Rates and charges and additional regulations if applicable, for Specialized Service or Arrangements are provided on an individual case basis and are as set forth in 17.4.6 and 18.4.7, following.

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## 13. Additional Engineering, Additional Labor and Miscellaneous Services

13.1 addresses Additional Engineering. 13.2 addresses Additional Labor (which is comprised of Overtime Installation, Overtime Repair, Stand by, Testing and Maintenance with Other Telephone Companies, and Other Labor). 13.3 addresses Miscellaneous Services (which are comprised of Testing Services, Maintenance of Service and Restoration Priority).

In this section, normally scheduled working hours are an employee's scheduled work period in any given calendar day (e.g., 8:00 a.m. to 5:00 p.m.) for the application of rates based on working hours.

A Miscellaneous Service Order charge as described in 5.4.2 preceding may be applicable to services ordered from this section.

## 13.1 Additional Engineering

Additional Engineering, including engineering reviews as set forth in 5.4.3 preceding, will be undertaken only after the Telephone Company has notified the customer that additional engineering charges apply as set forth in 17.4.2 and 18.4.2, following, and the customer agrees to such charges.

Additional Engineering will be provided by the Telephone Company at the request of the customer only when:

- 13.1.1 A customer requests additional technical information after the Telephone Company has already provided the technical information normally included on the Design Layout Report (DLR) as set forth in 6.1.5 and 7.1.6 preceding.
- 13.1.2 Additional engineering time is incurred by the Telephone Company to engineer a customer's request for a customized service as set forth in 7.1.2 preceding.
- 13.1.3 A customer requested Design Change requires the expenditure of additional engineering time. Such additional engineering time is incurred by the Telephone Company for the engineering review as set forth in 5.4.3 preceding. The charge for additional engineering time relating to the engineering review, which is undertaken to determine if a design change is indeed required, will apply whether or not the customer authorizes the Telephone Company to proceed with the Design Change. In this case the Design Change charge, as set forth in 17.4.1(C) following, does not apply unless the customer authorizes the Telephone Company to proceed with the Design Change.

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## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.2 Additional Labor

Additional Labor is that labor requested by the customer on a given service and agreed to by the Telephone Company as set forth in 13.2.1 through 13.2.5 following. The Telephone Company will notify the customer that additional labor charges as set forth in 17.4.3 or 18.4.3 will apply before any additional labor is undertaken.

## 13.2.1 Overtime Installation

Overtime installation is that Telephone Company installation effort outside of normally scheduled working hours.

## 13.2.2 Overtime Repair

Overtime repair is that Telephone Company effort performed outside of normally scheduled working hours.

## 13.2.3 Stand by

Stand by includes all time in excess of one-half (1/2) hour during which Telephone Company personnel stand by to make installation acceptance tests or cooperative tests with a customer to verify facility repair on a given service.

## 13.2.4 Testing and Maintenance with Other Telephone Companies

Additional testing, maintenance or repair of facilities which connect other telephone companies is that which is in addition to the normal effort required to test, maintain or repair facilities provided solely by the Telephone Company.

## 13.2.5 Other Labor

Other labor is that additional labor not included in 13.2.1 through 13.2.4 preceding and labor incurred to accommodate a specific customer request that involves only labor which is not covered by any other section of this tariff.

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services

## 13.3.1 Testing Services

Testing Services offered under this section of the tariff are optional and subject to rates and charges as set forth in 17.4.4 and 18.4.4, following. Other testing services, as described in 6.2.4 and 7.1.7 preceding, are provided by the Telephone Company in association with Access Services and are furnished at no additional charge.

Testing services are normally provided by Telephone Company personnel at Telephone Company locations. However, provisions are made in (B)(2) following for a customer to request Telephone Company personnel to perform testing services at the customer designated premises.

The offering of Testing Services under this section of the tariff is made subject to the availability of the necessary qualified personnel and test equipment at the various test locations mentioned in (A) and (B) following.

## (A) Switched Access Service

Testing Services for Switched Access are comprised of (a) tests which are performed during the installation of a Switched Access Service, i.e., Acceptance Tests, (b) tests which are performed after customer acceptance of such access services and which are without charge i.e., routine testing and (c) additional tests which are performed during or after customer acceptance of such access services and for which additional charges apply, i.e., Additional Cooperative Acceptance Tests and in-service tests.

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.1 Testing Services (Cont'd)

## (A) Switched Access Service (Cont'd)

Routine tests are those tests performed by the Telephone Company on a regular basis, as set forth in 6.2.4(B) preceding which are required to maintain Switched Access Service. Additional in-service tests may be done on an automatic basis (no Telephone Company or customer technicians involved), on a manual basis [Telephone Company technician(s) involved at Telephone Company office(s) and Telephone Company or customer technician(s) involved at the customer designated premises].

Testing services are ordered to the Dial Tone Office for FGA, to the access tandem or end office for FGB (wherever the FGB service is ordered) and to the end office for FGC.

## (1) Additional Cooperative Acceptance Testing

Additional Cooperative Acceptance Testing of Switched Access Service involves the Telephone Company provision of a technician at its office(s) and the customer provision of a technician at its premises, with suitable test equipment to perform the required tests.

Additional Cooperative Acceptance Tests may, for example, consist of the following tests:

- Impulse Noise
- Phase Jitter
- Signal to C-Notched Noise Ratio
- Intermodulation (Nonlinear) Distortion
- Frequency Shift (Offset)
- Envelope Delay Distortion
- Dial Pulse Percent Break

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.1 Testing Services (Cont'd)

## (A) Switched Access Service (Cont'd)

## (2) Additional Automatic Testing

Additional Automatic Testing (AAT) of Switched Access Services (Feature Groups B and C and D) is a service where the customer provides remote office test lines and 105 test lines with associated responders or their functional equivalent. The customer may order, at additional charges, gain-slope and C-notched noise testing and may order the routine tests (1004 Hz loss, C-Message Noise and Balance) on an as needed or more than routine schedule.

The Telephone Company will provide an AAT report that lists the test results for each trunk tested. Trunk test failures requiring customer participation for trouble resolution will be provided to the customer on an as-occurs basis.

The Additional Tests, (i.e., gain slope, C- notched noise, 1004 Hz loss, C-message noise and balance) may be ordered by the customer at additional charges, 60 days prior to the start of the customer prescribed schedule. The rates for Additional Automatic Tests are as set forth in 17.4.4(B) and 18.4.4(B) following.

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.1 Testing Services (Cont'd)

## (A) Switched Access Service (Cont'd)

## (3) Additional Manual Testing

Additional Manual Testing (AMT) of Switched Access Services (Feature Groups A, B and C and D) is a service where the Telephone Company provides a technician at its offices(s) and the Telephone Company or customer provides a technician at the customer designated premises, with suitable test equipment to perform the required tests. Such additional tests will normally consist of gain-slope and C-notched noise testing. However, the Telephone Company will conduct any additional tests which the IC may request. The Telephone Company will provide an AMT report listing the test results for each trunk tested. Trunk test failures requiring customer participation for trouble resolution will be provided to the customer on a per occurrence basis.

The Additional Manual Tests may be ordered by the customer at additional charges, 60 days prior to the start of the testing schedule as mutually agreed to by the customer and the Telephone Company.

The rates for Additional Manual Testing are as set forth in 17.4.4(C) and 18.4.4(C), following.

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.1 Testing Services (Cont'd)

## (A) Switched Access Service (Cont'd)

## (4) Obligations of the Customer

- (a) The customer shall provide the Remote Office Test Line priming data to the Telephone Company, as appropriate, to support routine testing as set forth in 6.2.4(B) preceding or AAT as set forth in 13.3.1(A)(2) preceding.
- (b) The customer shall make the facilities to be tested available to the Telephone Company at times mutually agreed upon.

## (B) Special Access Service

The Telephone Company will provide assistance in performing specific tests requested by the customer.

## (1) Additional Cooperative Acceptance Testing

When a customer provides a technician at its premises or at an end user's premises, with suitable test equipment to perform the requested tests, the Telephone Company will provide a technician at its office for the purpose of conducting Additional Cooperative Acceptance Testing on Voice Grade Services. At the customer's request, the Telephone Company will provide a technician at the customer's premises or at the end user premises. These tests may, for example, consist of the following:

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## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.1 Testing Services (Cont'd)

## (B) Special Access Service (Cont'd)

## (1) Additional Cooperative Acceptance Testing (Cont'd)

- Attenuation Distortion (i.e., frequency response)
- Intermodulation Distortion (i.e., harmonic distortion)
- Phase Jitter
- Impulse Noise
- Envelope Delay Distortion
- Echo Control
- Frequency Shift

## (2) Additional Manual Testing

The Telephone Company will provide a technician at its premises, and the Telephone Company or customer will provide a technician at the designated premises with suitable test equipment to perform the requested tests.

## (3) Obligation of the Customer

When the customer subscribes to Testing Service as set forth in this section, the customer shall make the facilities to be tested available to the Telephone Company at time mutually agreed upon.

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## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.2 Maintenance of Service

- (A) When a customer reports a trouble to the Telephone Company for clearance and no trouble is found in the Telephone Company's facilities, the customer shall be responsible for payment of a Maintenance of Service charge as set forth in 17.4.4(F) and 18.4.4(F), following for the period of time from when Telephone Company personnel are dispatched, at the request of the customer, to the customer designated premises to when the work is completed. Failure of Telephone Company personnel to find trouble in Telephone Company facilities will result in no charge if the trouble is actually in those facilities, but not discovered at the time.
- (B) The customer shall be responsible for payment of a Maintenance of Service charge when the Telephone Company dispatches personnel to the customer designated premises, and the trouble is in equipment or communications systems provided by other than the Telephone Company or in detariffed CPE provided by the Telephone Company.

In either (A) or (B) preceding, no credit allowance will be applicable for the interruption involved if the Maintenance of Service Charge applies.

## 13.3.3 Telecommunications Service Priority - TSP

- (A) Priority installation and/or restoration of National Security Emergency Preparedness (NSEP) telecommunications services shall be provided in accordance with Part 64.401, Appendix A, of the Federal Communications Commission's (FCC's) Rules and Regulations.

In addition, TSP System service shall be provided in accordance with the guidelines set forth in "Telecommunications Service Priority (TSP) System for National Security Emergency Preparedness (NSEP) Service Vendor Handbook" (NCSH 3-1-2) dated July 9, 1990, and "Telecommunications Service Priority System for National Security Emergency Preparedness Service User Manual" (NCSM 3-1-1).

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## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.3 Telecommunications Service Priority - TSP (Cont'd)

## (A) (Cont'd)

The TSP System is a service, developed to meet the requirements of the Federal Government, as specified in the Service Vendor's Handbook and Service User's Manual which provides the regulatory, administrative and operational framework for the priority installation and/or restoration of NSEP telecommunications services. These include both Switched and Special Access Services. The TSP System applies only to NSEP telecommunications services, and requires and authorizes priority action by the Telephone Company providing such services.

For Switched Access Service, the TSP System's applicability is limited to those services which the Telephone Company can discreetly identify for priority provisioning and/or restoration

(B) A Telecommunications Service Priority charge applies as set forth in 17.4.4 and 18.4.4 when a request to provide or change a Telecommunications Service Priority is received subsequent to the issuance of an Access Order to install the service.

Additionally, a Miscellaneous Service Order Charge as set forth in 17.4.1 and 18.4.1 will apply to Telecommunications Service Priority requests that are ordered subsequent to the initial installation of the associated access service

A Telecommunications Service Priority charge does not apply when a Telecommunications Service Priority is discontinued or when ordered coincident with an Access Order to install or change service.

In addition, Additional Labor rates as set forth in 17.4.3 and 18.4.3 may be applicable when provisioning or restoring Switched or Special Access Services with Telecommunications Service Priority.

When the customer requests an audit or a reconciliation of the Telephone Company's Telecommunications Service Priority records, a Miscellaneous Service Order Charge as set forth in 17.4.1 or 18.4.1 and Additional Labor rates as set forth in 17.4.3 and 18.4.3 are applicable

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.4 Billing Name and Address (BNA) Service

## (A) General Description

- (1) Billing Name and Address (BNA) Service is the provision by the Telephone Company to an interstate service provider who is a customer of the Telephone Company of the complete billing name, street address, city or town, state and zip code for a telephone number assigned by the Telephone Company. An interstate service provider is defined as an interexchange carrier, an operator service provider, an enhanced service provider or any other provider of interstate telecommunications services.
- (2) BNA Service is provided only for the purposes of allowing customers to bill their end users for telephone services provided by the customer, order entry and customer service information, fraud prevention, identification of end users who have moved to a new address, any purpose associated with equal access requirements, and information associated with Local Exchange Carrier (LEC) calling card calls, collect calls and third party calls. BNA information may not be resold or used for any other purpose including, but not limited to, marketing or merchandising activities.
- (3) BNA information associated with listed/published telephone numbers will be provided. Requests for BNA information associated with non-published and unlisted telephone numbers will be provided, unless the subscriber to a non-published or unlisted telephone number has affirmatively requested that its BNA not be disclosed.

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## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.4 Billing Name and Address (BNA) Service (Cont'd)

## (B) Undertaking of the Telephone Company

- (1) A standard format for the receipt of BNA requests and the provision of BNA information will be established by the Telephone Company.
- (2) Standard response to BNA requests will be by First Class Mail. Standard format will be on paper. Optional Magnetic Tape formatting will be offered where available.
- (3) Where facilities are available, the customer may request an optional specialized output format required to meet a specific customer need.
- (4) The Telephone Company will make every effort to provide accurate and complete BNA data. The Telephone Company makes no warranties, expressed or implied, as to the accuracy or completeness of this information.
- (5) The Telephone Company will not disclose BNA information to parties other than interstate service providers and their authorized billing agents as defined in 13.3.4(A), preceding. BNA disclosure is limited to those purposes as defined in 13.3.4(B), preceding.
- (6) The Telephone Company reserves the right to request from an interstate service provider who has placed an order for BNA service, the source data upon which the interstate service provider has based the order. This request is made to ensure that the BNA information is to be used only for purposes as described in 13.3.4(B), preceding. The Telephone Company will not process the order until such time as the interstate service provider supplies the requested data

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.4 Billing Name and Address (BNA) Service (Cont'd)

## (C) Obligations of the Customer

- (1) The customer shall order BNA Service on a separate BNA Order. The order must identify both the customer's authorized representative and the address to which the information is to be sent.
- (2) The customer shall treat all BNA information as confidential. The customer shall insure that BNA information is used only for the purposes as described in 13.3.4(B), preceding.
- (3) The customer shall not publicize or represent to others that the Telephone Company jointly participates with the customer in the development of the customer's end user records it assembles through the use of BNA Service.
- (4) Upon requests, the customer will provide to the Telephone Company the source data upon which the customer has based an order from BNA service. The Telephone Company will not process the order until such time as the customer provides the requested data.

## (D) Rate Regulations

- (1) For each order for BNA information received by the Telephone Company, a BNA Order Charge applies. In addition, a charge applies for each customer specific record provided. The BNA Order Charge and the Per Record Charge are specified in 17.4.4 and 18.4.4, following.
- (2) Where available, the customer may order the response formatted on Magnetic Tape. The Optional Magnetic Tape Charge is specified in 17.4.4 and 18.4.4, following and is in addition to the BNA Order Charge and the BNA Record Charge.

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.4 Billing Name and Address (BNA) Service (Cont'd)

## (D) Rate Regulations (Cont'd)

- (3) Where available, the customer may order an output format other than a standard paper format in order to meet a customer's specific requirement. This option is subject to an hourly programming charge as specified in 17.4.4 and 18.4.4, following and is in addition to the BNA Order Charge and the BNA Record Charge.

## 13.3.5 Originating Line Screening (OLS) Service

The Telephone Company will provide OLS Service to end user customers who obtain local exchange service from the Telephone Company under its general or local exchange tariffs. OLS service enables customers to determine whether there are billing restrictions on lines from which a call is placed. OLS service delivers a code on operator assisted calls made from aggregator locations to identify privately owned payphones and other such codes as are necessary to identify other categories of aggregator locations, i.e., inmate, hotel/motel.

OLS Service is provided at no charge when ordered with the installation of new local exchange service. However, when OLS Service is added to existing exchange lines, an OLS Service charge is applied as set forth in 17.4.4(K) and 18.4.4(M). This charge is applied for each exchange line to which an OLS code is assigned. The customer must specify the number of lines and each individual telephone number equipped.

A Miscellaneous Service Order Charge as set forth in 17.4.1 and 18.4.1 will apply to orders adding OLS Service that are placed subsequent to the initial installation of the associated exchange line. This charge does not apply when the OLS code is removed from an exchange line at the same time that it is disconnected.

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services (Cont'd)

## 13.3.6 Pay Telephone Coin Supervision (PTCS) Service

The Telephone Company will provide PTCS Service to customers who obtain pay telephone exchange access line service from the Telephone Company under its general exchange tariffs. PTCS Service provides coin collect and coin refund functionality for pay telephones unable to provide these functions internally.

PTCS Service is provided at the charges shown in Section 17.4.4(L) and 18.4.4(N) when ordered with the installation of new pay telephone exchange access line service. This charge is applied for each exchange line to which PTCS is activated.

A Miscellaneous Service Order Charge as set forth in 17.4.1(D) and 18.4.1(D) will apply to orders adding PTCS Service that are placed subsequent to the initial installation of the pay telephone exchange access line.

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.3 Miscellaneous Services

## 13.3.7 900 Blocking Service

- (A) The Telephone Company will provide 900 Blocking Service to customers who obtain local exchange service from the Telephone Company under its general or local exchange tariffs and to customers who obtain Feature Group A Switched Access service under this tariff. This service is only provided at appropriately equipped end offices. Those offices providing 900 Blocking Service are identified in NATIONAL EXCHANGE CARRIER ASSOCIATION, INC. TARIFF F.C.C. NO. 4.
- (B) On each line or trunk for which 900 Blocking Service is ordered, the Telephone Company will block all direct dialed calls placed to a 900 number. When capable, the Telephone Company will route the blocked calls to a recorded message.
- (C) A Blocking Service charge as set forth in 18.4.4(K), following is applicable when ordered by the end user customer with the following exception:

Blocking access to 900 Service is offered to all subscribers at no charge at the time telephone service is established at a new number and for 60 days thereafter.
- (D) The Blocking Service charge is applied for each line, trunk, or Feature Group A Switched Access service to which 900 Blocking Service is added or removed. Requests by subscribers to remove 900 Blocking Service must be in writing. This charge does not apply when blocking is removed from an exchange line or trunk or Feature Group A Switched Access line at the same time that it is disconnected .

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## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.4 Presubscription

Pursuant to the Federal Communications Commission's Memorandum Opinion and Order, CC Docket No. 83-1145, Phase I, adopted May 31, 1985, and released June 12, 1985, the Allocation Plan, outlined in the Appendix B of this Order, will be available for inspection in the Public Reference Room of the Tariff Division at the Federal Communication Commission's Washington, D.C., location or may be obtained from the Commission's commercial contractor.

- (A) Presubscription is the process by which end user customers may select and designate to the Telephone Company an IC to access, without an access code, for the interLATA, interstate calls. This IC is referred to as the end user's presubscribed IC.
- (B) On the effective date of this tariff, all existing end users have access to interstate MTS/WATS. No later than 85 days prior to conversion to Feature Group D in a serving end office, the Telephone Company will notify end users of the availability of equal access in their particular area. The notification will include the names of all ICs wishing to participate in the presubscription process. This notification will be sent via U.S. Mail to each end user of record served by the end office to be converted.
- (C) End users may select one of the following options at no charge:
  - indicate a primary IC for all of its lines,
  - indicate a different IC for each of its lines.

Only one IC may be selected for each line or lines terminating in the same hunt group.

End users may designate that they do not want to presubscribe to any IC. The end user must arrange this designation by directly notifying the Telephone Company's business office. This choice will require the end user to dial an access code (1010XXX) for all interstate calls.

After the end user's initial selection of a presubscribed IC or the designation that they do not want to presubscribe to any IC, for any change in selection after conversion to Equal Access in the serving end office, a nonrecurring charge, as set forth in 17.4.4(I) and 18.4.4(I) following applies.

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Effective: February 7, 2004

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.4 Presubscription (Cont'd)

- (D) Except as noted in 13.5 following, end users not responding to the initial notification will be sent a second notification for the selection of a predesignated IC no earlier than 40 days prior to or no later than 90 days after the conversion to Equal Access in a serving end office. This second notification will indicate the primary IC that has been assigned to them if they fail to respond to the second notification.

After the allocation process has been completed, end users assigned to an IC via the allocation process may change their IC one time within six months after conversion to Equal Access in the serving end office at no charge.

Following the six month period after conversion to Equal Access for any change in selection, a nonrecurring charge as set forth in 17.4.4(I) AND 18.4.4(I) following, applies.

- (E) When an end user indicates more than one IC selection on the return notification or returns an illegible return notification, the Telephone Company will contact the end user for clarification. If the end user indicates an IC selection on the return notification that does not match with information provided by an IC and both notifications indicate the same authorization date, the end user's notification takes precedence and the Telephone Company will process the end user's selection. In the event that two or more ICs provide to the Telephone Company notifications with the same authorization date and neither notification has been processed, the Telephone Company will contact the end user for clarification. A list of these customers in conflict must be sent to the affected IC by the Telephone Company.

In the event that two or more ICs have provided to the Telephone Company notifications with the same authorization date(s), and one IC notification has already been processed by the Telephone Company, those IC notifications not yet processed would be returned to the ICs.

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Issued: January 23, 2004

Effective: February 7, 2004

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.4 Presubscription (Cont'd)

- (F) New end users who are served by end offices equipped with Feature Group D will be asked to presubscribe to an IC at the time they place an order with the Telephone Company for Telephone Exchange Service. They may select either of the following options. There will be no charge for this initial selection.

- designate a primary IC for all of its lines,
- designate a different IC for each of its lines.

Only one IC may be selected for each individual line, or lines terminating in the same hunt group. Subsequent to the installation of Telephone Exchange Service and after the end user's initial selection of a predesignated IC, for any change in selection, a nonrecurring charge, as set forth in 17.4.4(I) and 18.4.4(I) following, applies.

- (G) If the new end user fails to designate an IC as its predesignated IC prior to the date of installation of Telephone Exchange Service, the Telephone Company will (1) allocate the end user to an IC based upon current IC presubscription ratios, (2) require the end user to dial an access code (1010XXX) for all interstate calls, or (3) block the end user from interstate calling. The end user will be notified which option will be applied if they fail to presubscribe to an IC. An allocated or blocked end user may designate another, or initial, IC as its predesignated IC one time at no charge, if it is requested within six months after the installation of Telephone Exchange Service.

For any change in selection after 6 months from the installation of Telephone Exchange Service, a nonrecurring charge, as set forth in 17.4.4(I) and 18.4.4(I), following applies.

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Issued: January 23, 2004

Effective: February 7, 2004

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## ACCESS SERVICE

## 13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

## 13.4 Presubscription (Cont'd)

- (H) If an IC elects to discontinue its Feature Group D Service offering prior to or within 2 years of the conversion, the IC will notify the Telephone Company of the cancellation. The IC will also notify all end users which selected them that they are canceling their service and that they should contact the Telephone Company to select a new primary IC. The IC will also inform the end user that it will pay the presubscription change charge. The canceling IC will then be billed by the Telephone Company the appropriate charge for each end user for a period of two years from the discontinuance of Feature Group D service.

## 13.5 PIC Change

If an IC requests a PIC change on behalf of an end user, the IC must previously have:

- obtained the end user's written authorization; or
- obtained the end user's electronic authorization by use of an 800 number; or
- obtained the end user's oral authorization verified by an independent third party; or
- sent an information package, including a prepaid, returnable postcard, within three days of the end user's request for a change in long distance company, and wait 14 days before submitting the end user's order to the Telephone Company, to give the end user sufficient time to send back the postcard denying or canceling the change order.

## 13.6 Reserved for Future Use

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## ACCESS SERVICE

## 14. Exceptions to Access Service Offerings

The services offered under the provisions of this tariff are subject to availability as set forth in 2.1.4 preceding. In addition, the following exceptions apply:

(Paragraphs 14.1 through 14.5 following are reserved for future listings as a result of a subsequent survey. In the meantime, in planning an end-to-end service, the customer should contact the Telephone Company in each customer designated premises city to assure itself that all of the service or service components required for a given customer service are currently available.)

14.1 The following service(s) is (are) not offered in the operating territory of listed Issuing Carriers.

(Reserved for future use.)

14.2 The following offering(s) is (are) limited to existing locations. No inside moves, rearrangements or additions will be permitted.

(Reserved for future use.)

14.3 The following offering(s) is (are) limited to existing locations. Inside moves or rearrangements may be undertaken. However, no additions will be permitted.

(Reserved for future use.)

14.4 The following offering(s) is (are) limited to existing locations where additional units may be added for growth. Inside moves or rearrangements may be undertaken.

(Reserved for future use.)

14.5 The following offering(s) is (are) limited to existing locations where additional units may be added for growth. However, inside moves or rearrangements will not be permitted.

(Reserved for future use.)

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications

15.1 Contains Switched Access Service Options (which are comprised of Interface Groups, Supervisory Signaling, Entry Switch Receive Level and Local Transport Termination) and Transmission Specifications. 15.2 describes Special Access Service Network Channel (NC) codes and Network Channel Interface (NCI) codes.

## 15.1 Switched Access Service

Three Interface Groups are provided for terminating the Local Transport Entrance Facility at the customer's designated premises. Each Interface Group provides a specified premises interface (e.g., two-wire, four-wire, DS1, etc.). Where transmission facilities permit, and at the option of the customer, the Entrance Facility may be provided with optional features as set forth in 15.1.1 following.

As a result of the customer's access order and the type of Telephone Company transport facilities serving the customer designated premises, the need for signaling conversions or two-wire to four-wire conversions, or the need to terminate digital or high frequency facilities in channel bank equipment may require that Telephone Company equipment be placed at the customer designated premises. For example, if a voice frequency interface is ordered by the customer and the Telephone Company facilities serving the customer designated premises are digital, then Telephone Company channel bank equipment must be placed at the customer designated premises in order to provide the voice frequency interface ordered by the customer.

## 15.1.1 Local Transport Interface Groups

Interface Groups are combinations of technical parameters which describe the Telephone Company handoff at the point of termination at the customer designated premises. The technical specifications concerning the available interface groups are set forth in (A) through (C) following.

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.1 Local Transport Interface Group (Cont'd)

Interface Group 1 is provided with Type C Transmission Specifications, as set forth in 15.1.2(C) following, and Interface Groups 2, 6, and 9 are provided with Type A or B Transmission Specifications, as set forth respectively in 15.1.2(D) and (E) following, depending on the Feature Group and whether the Access Service is routed directly or through an access tandem. All Interface Groups are provided with Data Transmission Parameters.

Only certain premises interfaces are available at the customer designated premises. The premises interfaces associated with the Interface Groups may vary among Feature Groups.

## (A) Interface Group 1

Interface Group 1, except as set forth in the following, provides two-wire voice frequency transmission at the point of termination at the customer designated premises. The interface is capable of transmission of voice and associated telephone signals within the frequency bandwidth of approximately 300 to 3000 Hz.

Interface Group 1 is not provided in association with FGC and FGD when the first point of switching is an access tandem. In addition, Interface Group 1 is not provided in association with FGB, FGC or FGD when the first point of switching provides only four-wire terminations.

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.1 Local Transport Interface Groups (Cont'd)

## (A) Interface Group 1 (Cont'd)

The transmission path between the point of termination at the customer designated premises and the customer's serving wire center may be comprised of any form or configuration of plant capable of and typically used in the telecommunications industry for the transmission of voice and associated telephone signals within the frequency bandwidth of 300 to 3000 Hz.

The interface is provided with loop supervisory signaling. When the interface is associated with FGA, such signaling will be loop start or ground start signaling. When the interface is associated with FGB, FGC or FGD, such signaling, except for two-way calling which is E&M signaling, will be reverse battery signaling.

## (B) Interface Group 2

Interface Group 2 provides four-wire voice frequency transmission at the point of termination at the customer designated premises. The interface is capable of transmission of voice and associated telephone signals within the frequency bandwidth of approximately 300 to 3000 Hz.

The transmission path between the point of termination at the customer designated premises and the customer's serving wire center may be comprised of any form or configuration of plant capable of and typically used in the telecommunications industry for the transmission of voice and associated telephone signals within the frequency bandwidth of approximately 300 to 3000 Hz.

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.1 Local Transport Interface Groups (Cont'd)

## (B) Interface Group 2 (Cont'd)

The interface is provided with loop supervisory signaling. When the interface is associated with FGA, such signaling will be loop start or ground start signaling. When the interface is associated with FGB, FGC or FGD, such signaling, except for two-way calling which is E&M signaling, will be reverse battery signaling.

## (C) Interface Group 6 and 9

Interface Group 6 and 9 provide digital transmission at the point of termination at the customer designated premises. The various interfaces are capable of transmitting electrical signals at the nominal bit rates illustrated following, with the capability to channelize voice frequency transmission paths. Before the first point of switching, when analog switching utilizing analog terminations is provided, the Telephone Company will provide multiplex and channel bank equipment to derive transmission paths of a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching or analog switching with digital carrier terminations is provided, the Telephone Company will provide a DS1 signal(s) in D3 format.

The interface is provided with individual transmission path bit stream supervisory signaling.

| <u>Interface Group<br/>Identification No.</u> | <u>Nominal Bit<br/>Rate (Mbps)</u> | <u>Digital<br/>Hierarchy Level</u> | <u>Max. No. of Channelized<br/>Voice Freq. Trans. Paths</u> |
|---|------------------------------------|------------------------------------|---|
| 6   | 1.544                              | DS1                                | 24  |
| 9   | 44.736                             | DS3                                | 672   |

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.1 Local Transport Interface Groups (Cont'd)

## (D) Local Transport Optional Features

Where transmission facilities permit, the Telephone Company will, at the option of the customer, provide the following features in association with Local Transport. An Access Order Charge as specified in 17.4.1(A) following is applicable on a per order basis when nonchargeable optional features are added subsequent to the installation of service.

- Customer Specified Entry Switch Receive Level

Customer Specified Entry Switch Receive Level allows the customer to specify the receive transmission level at the first point of switching. The range of transmission levels which may be specified is described in Technical Reference TR-NPL-000334. This feature is available with Interface Groups 2 and 6 for Feature Groups A and B.

- Customer Specification of Local Transport Termination

Customer Specification of Local Transport Termination allows the customer to specify, for Feature Group B routed directly to an end office or access tandem, a four-wire termination of the Local Transport at the first point of switching in lieu of a Telephone Company selected two-wire termination. This option is available only when the Feature Group B arrangement is provided with Type B Transmission Specifications.

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.1 Local Transport Interface Groups (Cont'd)

## (D) Local Transport Optional Features (Cont'd)

## - Supervisory Signaling

Supervisory Signaling allows the customer to order an optional supervisory signaling arrangement for each transmission path provided where the transmission parameters permit, and where signaling conversion is required by the customer to meet its signaling capability.

The Interface Groups, as described in (A) through (C) preceding, represent industry standard arrangements. Where transmission parameters permit, the customer may select the following optional signaling arrangements in place of the signaling arrangements standardly associated with the Interface Groups.

## - For Interface Groups 1 and 2 associated with FGB, FGC or FGD

DX Supervisory Signalling,,  
E&M Type I Supervisory Signaling,  
E&M Type II Supervisory Signaling, or  
E&M Type III Supervisory Signaling

## - For Interface Group 2 associated with FGB, FGC or FGD and in addition to the preceding

SF Supervisory Signaling, or Tandem Supervisory Signaling

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.1 Local Transport Interface Groups (Cont'd)

## (D) Local Transport Optional Features (Cont'd)

## - For Interface Group 6

This Interface Group may, at the option of the customer, be provided with individual transmission path SF supervisory signaling where such signaling is available in Telephone Company central offices. Generally such signaling is available only where the first point of switching provides an analog (i.e., non digital) interface to the transport termination.

These optional Supervisory Signaling arrangements are not available in combination with the SS7 optional feature as described in 6.8.2(C)(2) preceding.

Additionally, in (E) following, there is a matrix of available Premises Interface Codes as a function of Interface Group, Telephone Company Switch Supervisory Signaling and Feature Group.

## (E) Available Premises Interface Codes

Following is a matrix showing premises interface codes which are available for each Interface Group. Their availability is a function of the Telephone Company switch supervisory signaling and Feature Group. For explanations of these codes, see the Parameter Codes and Options as set forth in 15.2.2(A) following.

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.1 Local Transport Interface Groups (Cont'd)

## (E) Available Premises Interface Codes (Cont'd)

| <u>Interface<br/>Group</u> | <u>Telephone Company<br/>Switch Supervisory Signaling</u> | <u>Premises<br/>Interface Code</u> | <u>Feature Group</u> |          |          |          |
|----------------------------|---|------------------------------------|----------------------|----------|----------|----------|
|                            |   |                                    | <u>A</u>             | <u>B</u> | <u>C</u> | <u>D</u> |
| 1                          | LO  | 2LS2                               | X                    |          |          |          |
|                            | LO  | 2LS3                               | X                    |          |          |          |
|                            | GO  | 2GS2                               | X                    |          |          |          |
|                            | GO  | 2GS3                               | X                    |          |          |          |
|                            | LO, GO  | 2DX3                               | X                    |          |          |          |
|                            | LO, GO  | 4EA3-E                             | X                    |          |          |          |
|                            | LO, GO  | 4EA3-M                             | X                    |          |          |          |
|                            | LO, GO  | 6EB3-E                             | X                    |          |          |          |
|                            | LO, GO  | 6EB3-M                             | X                    |          |          |          |
|                            | RV, EA, EB, EC  | 2DX3                               |                      | X        | X        | X        |
|                            | RV, EA, EB, EC  | 4EA3-E                             |                      | X        | X        | X        |
|                            | RV, EA, EB, EC  | 4EA3-M                             |                      | X        | X        | X        |
|                            | RV, EA, EB, EC  | 6EB3-E                             |                      | X        | X        | X        |
|                            | RV, EA, EB, EC  | 6EB3-M                             |                      | X        | X        | X        |
|                            | EA, EB, EC  | 6EC3                               |                      |          | X        | X        |
|                            | RV  | 2RV3-0                             |                      | X        | X        | X        |
|                            | RV  | 2RV3-T                             |                      | X        | X        | X        |
|                            | SS7   | 2NO2                               |                      |          | X        | X        |
| 2                          | LO, GO  | 4SF2                               | X                    |          |          |          |
|                            | LO, GO  | 4SF3                               | X                    |          |          |          |
|                            | LO  | 4LS2                               | X                    |          |          |          |
|                            | LO  | 4LS3                               | X                    |          |          |          |
|                            | LO  | 6LS2                               | X                    |          |          |          |

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.1 Local Transport Interface Groups (Cont'd)

## (E) Available Premises Interface Codes (Cont'd)

| <u>Interface<br/>Group</u> | <u>Telephone Company<br/>Switch Supervisory Signaling</u> | <u>Premises<br/>Interface Code</u> | <u>Feature Group</u> |          |          |          |
|----------------------------|---|------------------------------------|----------------------|----------|----------|----------|
|                            |   |                                    | <u>A</u>             | <u>B</u> | <u>C</u> | <u>D</u> |
| 2 (Cont'd)                 | GO  | 4GS2                               | X                    |          |          |          |
|                            | GO  | 4GS3                               | X                    |          |          |          |
|                            | GO  | 6GS2                               | X                    |          |          |          |
|                            | LO, GO  | 4DX2                               | X                    |          |          |          |
|                            | LO, GO  | 4DX3                               | X                    |          |          |          |
|                            | LO, GO  | 6EA2-E                             | X                    |          |          |          |
|                            | LO, GO  | 6EA2-M                             | X                    |          |          |          |
|                            | LO, GO  | 8EB2-E                             | X                    |          |          |          |
|                            | LO, GO  | 8EB2-M                             | X                    |          |          |          |
|                            | LO, GO  | 6EX2-B                             | X                    |          |          |          |
|                            | RV, EA, EB, EC  | 4SF2                               |                      | X        | X        | X        |
|                            | RV, EA, EB, EC  | 4SF3                               |                      | X        |          |          |
|                            | RV, EA, EB, EC  | 4DX2                               |                      | X        | X        | X        |
|                            | RV, EA, EB, EC  | 4DX3                               |                      | X        |          |          |
|                            | RV, EA, EB, EC  | 6DX2                               |                      |          | X        |          |
|                            | RV, EA, EB, EC  | 6EA2-E                             |                      | X        | X        | X        |
|                            | RV, EA, EB, EC  | 6EA2-M                             |                      | X        | X        | X        |
|                            | RV, EA, EB, EC  | 8EB2-E                             |                      | X        | X        | X        |
|                            | RV, EA, EB, EC  | 8EB2-M                             |                      | X        | X        | X        |
|                            | EA, EB, EC  | 8EC2-M                             |                      |          | X        | X        |
|                            | RV  | 4RV2-O                             |                      | X        | X        | X        |
|                            | RV  | 4RV2-T                             |                      | X        | X        | X        |
|                            | RV  | 4RV3-0                             |                      | X        | X        |          |
|                            | RV  | 4RV3-T                             |                      | X        | X        |          |
|                            | SS7   | 4NO2                               |                      |          |          |          |
| 6                          | LO, GO  | 4DS9-15                            | X                    |          |          |          |
|                            | LO, GO  | 4DS9-15L                           | X                    |          |          |          |
|                            | RV, EA, EB, EC  | 4DS9-15                            |                      | X        | X        | X        |
|                            | RV, EA, EB, EC  | 4DS9-15L                           |                      | X        | X        | X        |
|                            | SS7   | 4DS9-15                            |                      |          | X        | X        |

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.1 Local Transport Interface Groups (Cont'd)

## (E) Available Premises Interface Codes (Cont'd)

| <u>Interface<br/>Group</u> | <u>Telephone Company<br/>Switch Supervisory Signaling</u> | <u>Premises<br/>Interface Code</u> | <u>Feature Group</u> |          |          |          |
|----------------------------|---|------------------------------------|----------------------|----------|----------|----------|
|                            |   |                                    | <u>A</u>             | <u>B</u> | <u>C</u> | <u>D</u> |
| 9                          | LO, GO  | 4DS6-44                            | X                    |          |          |          |
|                            | LO, GO  | 4DS6-44L                           | X                    |          |          |          |
|                            | RV, EA, EB, EC  | 4DS6-44                            |                      | X        | X        | X        |
|                            | RV, EA, EB, EC  | 4DS6-44L                           |                      | X        | X        | X        |
|                            | SS7   | 4DS6-44                            |                      |          | X        | X        |

## 15.1.2 Standard Transmission Specifications

Descriptions of the transmission specifications available with each Feature Group as a function of the Interface Group selected by the customer, are set forth in (A) through (C) following. Descriptions of each of these Standard Transmission Specifications and the two Data Transmission Parameters mentioned are set forth respectively in (D) through (F) and 15.1.3(A) following:

## (A) Feature Group A

FGA is provided with either Type B or Type C Transmission Specifications. The specifications for the associated parameters are guaranteed to the first point of switching. Type C Transmission Specifications are provided with Interface Group 1 and Type B is provided with Interface Groups 2 and 6. Type DB Data Transmission Parameters are provided with FGA to the first point of switching.

## (B) Feature Group B

FGB is provided with either Type B or Type C Transmission Specifications. The specifications for the associated parameters are guaranteed to the end office when routed directly or to the first point of switching when routed via an access tandem. Type C Transmission Specifications are provided with Interface Group 1 and Type B is provided with Interface Groups 2 and 6. Type DB Data Transmission Parameters are provided with FGB to the first point of switching.

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.2 Standard Transmission Specifications (Cont'd)

## (C) Feature Group C

FGC is provided with either Type A, Type B or Type C Transmission Specifications as follows:

- When routed to the end office either Type B or C is provided.
- When routed to an access tandem only Type B is provided.
- Type B or Type C is provided on the transmission path from the access tandem to the end office.

Type C Transmission Specifications are provided with Interface Group 1. Type B is provided with Interface Groups 2 and 6, whether routed directly to an end office or an access tandem.

Type DB Data Transmission Parameters are provided with FGC for the transmission path between the customer designated premises and the end office when directly routed to the end office, between the customer designated premises and the access tandem and between the access tandem and the end office when routed via an access tandem.

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Issued: January 23, 2004

Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.2 Standard Transmission Specifications (Cont'd)

## (D) Feature Group D

FGD is provided with either Type A, Type B or Type C Transmission Specifications as follows:

- when routed to the end office either Type B or C is provided.
- when routed to an access tandem only Type A is provided.
- Type A is provided on the transmission path from the access tandem to the end office.

Type C Transmission Specifications are provided with Interface Group 1. Type A and Type B Transmission Specifications are provided with Interface Groups 2 and 6.

Type DB Data Transmission Parameters are provided with FGD for the transmission path between the customer designated premises and the end office when directly routed to the end office. Type DA Data Transmission Parameters are provided for the transmission path between the customer designated premises and the access tandem and between the access tandem and the end office when routed via an access tandem.

## (E) Type A Transmission Specifications

Type A Transmission Specifications is provided with the following parameters:

## (1) Loss Deviation

The maximum Loss Deviation of the 1004 Hz loss relative to the Expected Measured Loss (EML) is  $\pm 2.0$  dB.

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Issued: January 23, 2004

Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.2 Standard Transmission Specifications (Cont'd)

## (E) Type A Transmission Specifications (Cont'd)

## (2) Attenuation Distortion

The maximum Attenuation Distortion in the 404 to 2804 Hz frequency band relative to the loss at 1004 Hz is -1.0 dB to +3.0 dB.

## (3) C-Message Noise

The maximum C-Message Noise for the transmission path at the route miles listed is less than or equal to:

| <u>Route Miles</u> | <u>C-Message Noise</u> |
|--------------------|------------------------|
| less than 50       | 32 dBmCO               |
| 51 to 100          | 34 dBmCO               |
| 101 to 200         | 37 dBmCO               |
| 201 to 400         | 40 dBmCO               |
| 401 to 1000        | 42 dBmCO               |

## (4) C-Notch Noise

The maximum C-Notch Noise, utilizing a -16 dBmO holding tone, is less than or equal to 45 dBmCO.

Transmittal No. 1 – Filed under Special Permission No. 04 – 004

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Issued: January 23, 2004

Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.2 Standard Transmission Specifications (Cont'd)

## (E) Type A Transmission Specifications (Cont'd)

## (5) Echo Control

Echo Control, identified as Equal Level Echo Path Loss, and expressed as Echo Return Loss and Singing Return Loss, is dependent on the routing, i.e., whether the service is routed directly from the customer's point of termination (POT) to the end office or via an access tandem. It is equal to or greater than the following:

|                      | <u>Echo<br/>Return Loss</u> | <u>Singing<br/>Return Loss</u> |
|----------------------|-----------------------------|--------------------------------|
| POT to Access Tandem | 21 dB                       | 14 dB                          |
| POT to End Office    |                             |                                |
| - Direct             | N/A                         | N/A                            |
| - Via Access Tandem  | 16 dB                       | 11 dB                          |

## (6) Standard Return Loss

Standard Return Loss expressed as Echo Return Loss and Singing Return Loss on two-wire ports of a four-wire point of termination shall be equal to or greater than:

| <u>Echo Return Loss</u> | <u>Singing Return Loss</u> |
|-------------------------|----------------------------|
| 5 dB                    | 2.5 dB                     |

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Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.2 Standard Transmission Specifications (Cont'd)

## (F) Type B Transmission Specifications

Type B Transmission Specifications are provided with the following parameters:

## (1) Loss Deviation

The maximum Loss Deviation of the 1004 Hz loss relative to the Expected Measured Loss (EML) is  $\pm 2.5$  dB.

## (2) Attenuation Distortion

The maximum Attenuation Distortion in the 404 to 2804 Hz frequency band relative to loss at 1004 Hz is -2.0 dB to +4.0 dB.

## (3) C-Message Noise

The maximum C-Message Noise for the transmission path at the route miles listed is less than or equal to:

| <u>Route Miles</u> | <u>C-Message Noise*</u> |                |
|--------------------|-------------------------|----------------|
|                    | <u>Type B1</u>          | <u>Type B2</u> |
| less than 50       | 32 dBmCO                | 35 dBmCO       |
| 51 to 100          | 33 dBmCO                | 37 dBmCO       |
| 101 to 200         | 35 dBmCO                | 40 dBmCO       |
| 201 to 400         | 37 dBmCO                | 43 dBmCO       |
| 401 to 1000        | 39 dBmCO                | 45 dBmCO       |

\*For Feature Group C and D only Type B2 will be provided. For Feature Groups A and B, Type B1 or B2 will be provided as set forth in Technical Reference TR-NPL-000334.

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Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.2 Standard Transmission Specifications (Cont'd)

## (F) Type B Transmission Specifications (Cont'd)

## (4) C-Notch Noise

The maximum C-Notch Noise, utilizing a -16 dBm0 holding tone is less than or equal to 47 dBmCO.

## (5) Echo Control

Echo Control, identified as Impedance Balance for FGA and FGB and Equal Level Echo Path Loss for FGC and FGD, and expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL), is dependent on the routing, i.e., whether the service is routed directly from the customer's point of termination (POT) to the end office or via an access tandem. The ERL and SRL also differ by Feature Group, type of termination, and type of transmission path. They are greater than or equal to the following:

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.2 Standard Transmission Specifications (Cont'd)

## (F) Type B Transmission Specifications (Cont'd)

## (5) Echo Control (Cont'd)

|  | <u>Echo<br/>Return Loss</u> | <u>Singing<br/>Return Loss</u> |
|--|-----------------------------|--------------------------------|
| POT to Access Tandem   |                             |                                |
| - Terminated in 4-Wire trunk   | 21 dB                       | 14 dB                          |
| - Terminated in 2-Wire trunk   | 16 dB                       | 11 dB                          |
| POT to End Office  |                             |                                |
| - Direct   | 16 dB                       | 11 dB                          |
| - Via Access Tandem  |                             |                                |
| . For FGB access   | 8 dB                        | 4 dB                           |
| . For FGC access<br>(Effective 4-Wire trans-<br>mission path<br>at end office) | 16 dB                       | 11 dB                          |
| . For FGC access<br>(Effective 2-Wire trans-<br>mission path<br>at end office) | 13 dB                       | 6 dB                           |

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.2 Standard Transmission Specifications (Cont'd)

## (F) Type B Transmission Specifications (Cont'd)

## (6) Standard Return Loss

Standard Return Loss, expressed as Echo Return Loss and Singing Return Loss, on two-wire ports of a four-wire point of termination shall be equal to or greater than:

| <u>Echo Return Loss</u> | <u>Singing Return Loss</u> |
|-------------------------|----------------------------|
|-------------------------|----------------------------|

|      |        |
|------|--------|
| 5 dB | 2.5 dB |
|------|--------|

## (G) Type C Transmission Specifications

Type C Transmission Specifications are provided with the following parameters:

## (1) Loss Deviation

The maximum Loss Deviation of the 1004 Hz loss relative to the Expected Measured Loss (EML) is  $\pm 3.0$  dB.

## (2) Attenuation Distortion

The maximum Attenuation Distortion in the 404 to 2804 Hz frequency band relative to loss at 1004 Hz is -2.0 dB to +5.5 dB.

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Issued: January 23, 2004

Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.2 Standard Transmission Specifications (Cont'd)

## (G) Type C Transmission Specifications (Cont'd)

## (3) C-Message Noise

The maximum C-Message Noise for the transmission path at the route miles listed is less than or equal to:

| <u>Route Miles</u> | <u>C-Message Noise*</u> |                |
|--------------------|-------------------------|----------------|
|                    | <u>Type C1</u>          | <u>Type C2</u> |
| less than 50       | 32 dBmCO                | 38 dBmCO       |
| 51 to 100          | 33 dBmCO                | 39 dBmCO       |
| 101 to 200         | 35 dBmCO                | 41 dBmCO       |
| 201 to 400         | 37 dBmCO                | 43 dBmCO       |
| 401 to 1000        | 39 dBmCO                | 45 dBmCO       |

## (4) C-Notch Noise

The maximum C-Notch Noise, utilizing a -16 dBm0 holding tone is less than or equal to 47 dBmCO.

\*For Feature Group C and D only Type C2 will be provided. For Feature Groups A and B, Type C1 or C2 will be provided as set forth in Technical Reference TR-NPL-000334.

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.2 Standard Transmission Specifications (Cont'd)

## (G) Type C Transmission Specifications (Cont'd)

## (5) Echo Control

Echo Control, identified as Return Loss and expressed as Echo Return Loss and Singing Return Loss is dependent on the routing, i.e., whether the service is routed directly from the customer's point of termination (POT) to the end office or via an access tandem. It is equal to or greater than the following:

|                                       | <u>Echo<br/>Return Loss</u> | <u>Singing<br/>Return Loss</u> |
|---------------------------------------|-----------------------------|--------------------------------|
| POT to Access Tandem                  | 13 dB                       | 6 dB                           |
| POT to End Office                     |                             |                                |
| - Direct                              | 13 dB                       | 6 dB                           |
| - Via Access Tandem<br>(for FGB only) | 8 dB                        | 4 dB                           |

Transmittal No. 1 – Filed under Special Permission No. 04 – 004

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Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.3 Data Transmission Parameters

Two types of Data Transmission Parameters, i.e., Type DA and Type DB, are provided for the Feature Group arrangements. Type DB is provided with Feature Groups A, B and C and also with Feature Group D when Feature Group D is directly routed to the end office. Type DA is only provided with Feature Group D and only when routed via an access tandem. Following are descriptions of each.

## (A) Data Transmission Parameters Type DA

## (1) Signal to C-Notched Noise Ratio

The Signal to C-Notched Noise Ratio is equal to or greater than 33 dB.

## (2) Envelope Delay Distortion

The maximum Envelope Delay Distortion for the frequency bands and route miles specified is:

604 to 2804 Hz

|                          |                  |
|--------------------------|------------------|
| Less than 50 route miles | 500 microseconds |
|--------------------------|------------------|

|  |                  |
|--|------------------|
| Equal to or greater than<br>50 route miles | 900 microseconds |
|--|------------------|

1004 to 2404 Hz

|                          |                  |
|--------------------------|------------------|
| Less than 50 route miles | 200 microseconds |
|--------------------------|------------------|

|  |                  |
|--|------------------|
| Equal to or greater than<br>50 route miles | 400 microseconds |
|--|------------------|

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.3 Data Transmission Parameters (Cont'd)

## (A) Data Transmission Parameters Type DA (Cont'd)

## (3) Impulse Noise Counts

The Impulse Noise Counts exceeding a 65 dBmCO threshold in 15 minutes is no more than 15 counts.

## (4) Intermodulation Distortion

The Second Order (R2) and Third Order (R3) Intermodulation Distortion products are equal to or greater than:

|                   |       |
|-------------------|-------|
| Second Order (R2) | 33 dB |
| Third Order (R3)  | 37 dB |

## (5) The Phase Jitter over the 4-300 Hz frequency band is less than or equal to 5 peak-to-peak.

## (6) The maximum Frequency Shift does not exceed -2 to +2 Hz.

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.3 Data Transmission Parameters (Cont'd)

## (B) Data Transmission Parameters Type DB

## (1) Signal to C-Notched Noise Ratio

The signal to C-Notched Noise Ratio is equal to or greater than 30 dB.

## (2) Envelope Delay Distortion

The maximum Envelope Delay Distortion for the frequency bands and route miles specified is:

604 to 2804 Hz

|                          |                  |
|--------------------------|------------------|
| Less than 50 route miles | 800 microseconds |
|--------------------------|------------------|

|  |                   |
|--|-------------------|
| Equal to or greater than<br>50 route miles | 1000 microseconds |
|--|-------------------|

1004 to 2404 Hz

|                          |                  |
|--------------------------|------------------|
| Less than 50 route miles | 320 microseconds |
|--------------------------|------------------|

|  |                  |
|--|------------------|
| Equal to or greater than<br>50 route miles | 500 microseconds |
|--|------------------|

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.1 Switched Access Service (Cont'd)

## 15.1.3 Data Transmission Parameters (Cont'd)

## (B) Data Transmission Parameters Type DB (Cont'd)

## (3) Impulse Noise Counts

The Impulse Noise Counts exceeding a 67 dB<sub>BrnCO</sub> threshold in 15 minutes is no more than 15 counts.

## (4) Intermodulation Distortion

The Second Order (R2) and Third Order (R3) Intermodulation Distortion products are equal to or greater than:

|                   |       |
|-------------------|-------|
| Second Order (R2) | 31 dB |
| Third Order (R3)  | 34 dB |

## (5) Phase Jitter

The Phase Jitter over the 4-300 Hz frequency band is less than or equal to 7° peak-to-peak.

## (6) Frequency Shift

The maximum Frequency Shift does not exceed -2 to +2 Hz.

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Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service

This section explains and lists the codes that the customer must specify when ordering Special Access Service, Switched Access Entrance Facilities, and Voice Grade and High Capacity Direct-Trunked Transport. These codes provide a standardized means to relate the services being ordered to Special Access Service offerings contained in Section 7. preceding.

When ordering, the type of Special Access Service, Switched Access Entrance Facility or Direct-Trunked Transport is described by two code sets, the Network Channel (NC) code and the Network Channel Interface (NCI) codes.

The Network Channel (NC) code consists of two elements. Element one is a Channel Service Code (character positions 1 and 2) that describes the channel service type in an abbreviated form. Element two is an Optional Feature Code (character positions 3 and 4) that identifies option codes available for each channel service code, such as C-conditioning or Improved Return Loss.

The Network Channel Interface (NCI) is used to identify interface specifications associated with a particular channel. This code describes the total wires, protocol, impedance, protocol options and transmission level point(s) reflecting physical and electrical characteristics between the Telephone Company and the customer.

On the following 3 pages are examples which explain the specific characters of the codes and which reference matrices and charts used in developing the codes. Included in the matrices are Service Designator (SD) codes which are used to identify variations of service within service types. The SD and NC codes are displayed as components of the matrices designated as Technical Specifications Packages in (A) through (D) following. Through the use of these matrices, SD codes may be converted to NC codes for service ordering purposes.

A chart is also provided in 15.2.2(A) following which contains information necessary to develop NCI codes.

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Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

Comprehensive lists of allowed Network Channel (NC) and Network Channel Interface (NCI) codes are contained in Special Report SR-ISD-000307. However, not all services contained in this Special Report may be offered by the Telephone Company at this time.

Lastly, 15.2.2(C) following provides a list of compatible Network Channel Interfaces inasmuch as the Network Channel Interfaces associated with a given service need not always be the same, but all must be compatible.

Example No. 1: If the customer wishes to order a 4-wire voice grade circuit with 600 Ohms impedance, capable of data transmission, and with improved return loss, the customer might specify the following:

|           |            |               |
|-----------|------------|---------------|
| <u>NC</u> | <u>NCI</u> | <u>SECNCI</u> |
| LG-R      | 04DB2      | 04DA2-S       |

NC Code:

LG = Voice Grade Channel Service, VG6  
 -R = Improved Return Loss

NCI Code:

04 = Number of physical wires at CDP  
 DB = Data stream in VF frequency band at the customer designated main terminal location  
 2 = 600 Ohms impedance

SECNCI (Secondary NCI Code):

04 = Number of physical wires at CDP  
 DA = Data stream in VG frequency at the customer designated secondary terminal location  
 2 = 600 Ohms impedance  
 S = Sealing current option for 4-wire transmission

In the above example the NCI (Network Channel Interface) code is the interface requested at the customer's POT (Point of Termination) and the SECNCI (Secondary Network Channel Interface) code represents the interface at the end office serving the End User.

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

Example No. 2: If the customer wishes to order a FX circuit to a station, with 600 Ohms impedance, loop start signaling, which is 4-wire at the CDP and 2-wire at the end-user, the customer might specify:

|           |            |               |
|-----------|------------|---------------|
| <u>NC</u> | <u>NCI</u> | <u>SECNCI</u> |
| LC--      | 04LO2      | 02LS2         |

NC Code:

LC = Voice Grade Channel Service, VG2  
 -- = No Optional Features

NCI Code:

04 = Number of physical wires at CDP  
 LO = Loop start, loop signaling - open end  
 2 = 600 Ohms impedance

SECNCI (Secondary NCI Code):

02 = Number of physical wires at CDP  
 LS = Loop start signaling - closed end  
 2 = 600 Ohms impedance

Example No. 3: If the customer wishes to order a 1.544 Mbps Hi-cap facility with no channel options such as CO multiplexing, the customer might specify the following:

|           |            |               |
|-----------|------------|---------------|
| <u>NC</u> | <u>NCI</u> | <u>SECNCI</u> |
| HC--      | 04DS9-15   | 04DS9-15      |

NC Code:

HC = High Capacity Channel Service, HC1  
 -- = No Optional Features

NCI, SECNCI Code:

04 = Number of physical wires at CDP  
 DS = Digital hierarchy interface  
 9 = 100 Ohms impedance  
 15 = 1.544 Mbps (DS1) format

The preceding three examples use information contained in Special Report SR-ISD-000307.

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.1 Network Channel (NC) Codes

In order to determine the NC code appropriate for the service to be ordered, the type of Special Access Service the customer wishes must be identified. This identification is accomplished by a Service Designator (SD) code. The broad categories of Service Designator codes (e.g., VG, etc.) are set forth in Section 7. preceding. Variations within service type (e.g., VG1, etc.) are described in the various Technical Publications cited in (A) through (D) following.

Having determined the specific service type to be ordered and its SD code, and having used the appropriate Technical Publication, the customer should match the SD code to the NC code using the following matrices. Once the NC code has been determined the Network Channel Interface (NCI) code may be developed using the information set forth in 15.2.2 following and the guidelines concerning specific parameters available for each service type as set forth in the specified Technical Publication.

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Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.1 Network Channel (NC) Codes (Cont'd)

## (A) Technical Specifications Packages Voice Grade Service

| SD Code<br>NC Code | Package VG- |    |    |    |    |    |    |    |    |    |    |    |    | W  |
|--------------------|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
|                    | C*          | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 |    |
|                    | LQ          | LB | LC | LD | LE | LF | LG | LH | LJ | LK | LN | LP | LR | SE |
| <u>Parameter</u>   |             |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Attenuation        |             |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Distortion         | X           | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| C-Message Noise    | X           | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Echo Control       | X           | X  | X  | X  |    | X  |    | X  | X  |    |    | X  | X  | X  |
| Envelope Delay     |             |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Distortion         | X           |    |    |    |    |    |    | X  | X  | X  | X  | X  | X  | X  |
| Frequency Shift    | X           |    |    |    |    |    |    | X  | X  | X  | X  | X  | X  | X  |
| Impulse Noise      | X           |    |    |    |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Intermodulation    |             |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Distortion         | X           |    |    |    |    |    |    | X  | X  | X  | X  | X  |    | X  |
| Loss Deviation     | X           | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Phase Hits, Gain   |             |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Hits, and Dropouts | X           |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Phase Jitter       | X           |    |    |    |    |    |    | X  | X  | X  | X  | X  |    | X  |
| Signal-to-C        |             |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Message Noise      |             |    |    |    | X  |    |    |    |    |    |    |    |    |    |
| Signal-to-C        |             |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Notch Noise        | X           |    |    |    |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |

The technical specifications for these parameters (except for dropouts, phase hits, and gain hits) are described in Technical References TR-NPL-000334 and TR-NPL-000335. The technical specifications for dropouts, phase hits, and gain hits are described in Technical Reference PUB 41004, Table 4.

\* The desired parameters are selected by the customer from the list of available parameters.

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Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.1 Network Channel (NC) Codes (Cont'd)

## (A) Technical Specifications Packages Voice Grade Service (Cont'd)

| SD Code | C* | Package VG- |    |    |    |    |    |    |    |    |    |    |    | W  |
|---------|----|-------------|----|----|----|----|----|----|----|----|----|----|----|----|
|         |    | 1           | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 |    |
| NC Code | LQ | LB          | LC | LD | LE | LF | LG | LH | LJ | LK | LN | LP | LR | SE |

Optional Features  
and Functions

## Central Office

## Bridging

|            |   |  |   |  |  |   |   |  |  |  |   |   |   |  |
|------------|---|--|---|--|--|---|---|--|--|--|---|---|---|--|
| Capability | X |  | X |  |  | X | X |  |  |  | X | X | X |  |
|------------|---|--|---|--|--|---|---|--|--|--|---|---|---|--|

## Central Office

|              |   |  |  |  |  |  |   |  |  |  |  |  |  |  |
|--------------|---|--|--|--|--|--|---|--|--|--|--|--|--|--|
| Multiplexing | X |  |  |  |  |  | X |  |  |  |  |  |  |  |
|--------------|---|--|--|--|--|--|---|--|--|--|--|--|--|--|

## Conditioning:

|          |   |  |  |  |  |   |   |   |   |   |   |  |  |  |
|----------|---|--|--|--|--|---|---|---|---|---|---|--|--|--|
| . C-Type | X |  |  |  |  | X | X | X | X | X | X |  |  |  |
|----------|---|--|--|--|--|---|---|---|---|---|---|--|--|--|

## . Improved

## Attenuation

|            |   |  |  |  |  |   |   |   |   |   |   |  |  |  |
|------------|---|--|--|--|--|---|---|---|---|---|---|--|--|--|
| Distortion | X |  |  |  |  | X | X | X | X | X | X |  |  |  |
|------------|---|--|--|--|--|---|---|---|---|---|---|--|--|--|

## . Improved Envelope

## Delay Distortion

|  |   |  |  |  |  |   |   |   |   |   |   |  |  |  |
|--|---|--|--|--|--|---|---|---|---|---|---|--|--|--|
|  | X |  |  |  |  | X | X | X | X | X | X |  |  |  |
|--|---|--|--|--|--|---|---|---|---|---|---|--|--|--|

|                   |   |  |  |  |  |  |   |   |  |  |   |  |  |  |
|-------------------|---|--|--|--|--|--|---|---|--|--|---|--|--|--|
| . Data Capability | X |  |  |  |  |  | X | X |  |  | X |  |  |  |
|-------------------|---|--|--|--|--|--|---|---|--|--|---|--|--|--|

## . Telephoto

|            |   |  |  |  |  |  |  |  |  |  |  |  |   |  |
|------------|---|--|--|--|--|--|--|--|--|--|--|--|---|--|
| Capability | X |  |  |  |  |  |  |  |  |  |  |  | X |  |
|------------|---|--|--|--|--|--|--|--|--|--|--|--|---|--|

## Improved Return Loss

## for Effective

## Four-Wire

|              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Transmission | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

## For Effective

## Two-Wire

|              |   |  |   |   |  |  |  |   |  |  |  |  |  |  |
|--------------|---|--|---|---|--|--|--|---|--|--|--|--|--|--|
| Transmission | X |  | X | X |  |  |  | X |  |  |  |  |  |  |
|--------------|---|--|---|---|--|--|--|---|--|--|--|--|--|--|

## Selective Signaling

|             |   |  |   |  |  |   |   |  |  |  |   |   |   |  |
|-------------|---|--|---|--|--|---|---|--|--|--|---|---|---|--|
| Arrangement | X |  | X |  |  | X | X |  |  |  | X | X | X |  |
|-------------|---|--|---|--|--|---|---|--|--|--|---|---|---|--|

## Signaling Capability

|  |   |   |   |   |  |  |  |   |   |   |  |  |  |  |
|--|---|---|---|---|--|--|--|---|---|---|--|--|--|--|
|  | X | X | X | X |  |  |  | X | X | X |  |  |  |  |
|--|---|---|---|---|--|--|--|---|---|---|--|--|--|--|

## Transfer Arrangement

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Transmittal No. 1 – Filed under Special Permission No. 04 – 004

Issued: January 23, 2004

Effective: February 7, 2004

Senior Director, Regulatory and Industry Relations  
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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.1 Network Channel (NC) Codes (Cont'd)

## (B) Technical Specifications Packages Program Audio Service

| SD Code<br>NC Code   | <u>Package</u> |     |     |     |
|----------------------|----------------|-----|-----|-----|
|                      | APC*           | AP1 | AP2 | AP3 |
|                      | PQ             | PE  | PF  | PJ  |
| <u>Parameter</u>     |                |     |     |     |
| Actual Measured Loss | X              | X   | X   | X   |
| Amplitude Tracking   | X              |     |     |     |
| Crosstalk            | X              | X   | X   | X   |
| Distortion Tracking  | X              |     |     |     |
| Gain/Frequency       |                |     |     |     |
| Distortion           | X              | X   | X   | X   |
| Group Delay          | X              |     |     |     |
| Noise                | X              | X   | X   | X   |
| Phrase Tracking      | X              |     |     |     |
| Short-Term Gain      |                |     |     |     |
| Stability            | X              |     |     |     |
| Short-Term Loss      | X              |     |     |     |
| Total Distortion     | X              | X   | X   | X   |

The technical specifications are described in Technical Reference TR-NPL-000337.

\* The desired parameters are selected by the customer from the list of available parameters.

Transmittal No. 1 – Filed under Special Permission No. 04 – 004

Issued: January 23, 2004

Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.1 Network Channel (NC) Codes (Cont'd)

## (C) Technical Specifications Packages Digital Data Service

|                    | <u>Package</u> |           |           |           |
|--------------------|----------------|-----------|-----------|-----------|
| SD Code            | <u>D1</u>      | <u>D2</u> | <u>D3</u> | <u>D4</u> |
| NC Code            | <u>XA</u>      | <u>XB</u> | <u>XG</u> | <u>XH</u> |
| <u>Parameter</u>   |                |           |           |           |
| Error-Free Seconds | X              | X         | X         | X         |

The Telephone Company will provide a channel capable of meeting a monthly average performance equal to or greater than 99.875% error-free seconds (if provided through a Digital Data hub) while the channel is in service, if it is measured through a CSU equivalent which is designed, manufactured, and maintained to conform with the specifications, in Technical Reference PUC 62310.

Voltages which are compatible with Digital Data Service are delineated in Technical Reference PUB 62507.

Transmittal No. 1 – Filed under Special Permission No. 04 – 004

Issued: January 23, 2004

Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.1 Network Channel (NC) Codes (Cont'd)

## (D) Technical Specifications Packages High Capacity Service

|  | <u>Package</u> |
|--|----------------|
| SD Code                                | <u>HC1</u>     |
| NC Code                                | <u>HC</u>      |
| <u>Parameters</u>                      |                |
| Error-Free Seconds                     | X              |
| <u>Optional Features and Functions</u> |                |
| Central Office Multiplexing:           |                |
| DS1 to Voice                           | X              |

A channel with technical specifications package HC1 will be capable of an error-free second performance of 98.75% over a continuous 24 hour period as measured at the 1.544 Mbps rate through a CSU equivalent which is designed, manufactured, and maintained to conform with the specifications contained in Technical Reference PUB 62411.

## 15.2.2 Network Channel Interface (NCI) Codes

The electrical interface with the Telephone Company for Special Access Services, is defined by an interface code. There are interface codes for both the customer designated premises and the point of termination. Three examples of NCI codes are found in 15.2 preceding.

Transmittal No. 1 – Filed under Special Permission No. 04 – 004

Issued: January 23, 2004

Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (A) Parameter Codes and Options

Parameter

| <u>Code</u> | <u>Option</u> | <u>Definition</u>  |
|-------------|---------------|--|
| AB          | -             | accepts 20 Hz ringing signal at customer's point of termination                |
| AC          | -             | accepts 20 Hz ringing signal at customer's end user's point of termination     |
| DA          | -             | data stream in VF frequency band at customer's end user's point of termination |
| DB          | -             | data stream in VF frequency band at customer's point of termination            |
| DC          | -             | direct current or voltage  |
|             | - 1           | monitoring interface with series RC combination (McCulloh format)              |
|             | - 2           | Telephone Company energized alarm channel                                      |
| DS          | -             | digital hierarchy interface  |
|             | - 15          | 1.544 Mbps (DS1) format per PUB 41451 plus D4                                  |
|             | - 15E         | 8-bit PCM encoded in one 64 kbps of the DS1 signal                             |
|             | - 15F         | 8-bit PCM encoded in two 64 kbps of the DS1 signal                             |
|             | - 15G         | 8-bit PCM encoded in three 64 kbps of the DS1 signal                           |
|             | - 15H         | 14/11-bit PCM encoded in six 64 kbps of the DS1 signal                         |
|             | - 15J         | 1.544 Mbps format per PUB 41451  |
|             | - 15K         | 1.544 Mbps format per PUB 41451 plus extended framing format                   |
|             | - 15L         | 1.544 Mbps (DS1) with SF signaling   |
|             | - 44          | 44.736 Mbps (DS3)  |
|             | - 44L         | 44.736 Mbps (DS3) with SF signaling  |
| DU          | -             | digital access interface   |
|             | - 24          | 2.4 kbps   |
|             | - 48          | 4.8 kbps   |
|             | - 56          | 56.0 kbps  |
|             | - 96          | 9.6 kbps   |
|             | - A           | 1.544 Mbps format per PUB 41451  |
|             | - B           | 1.544 Mbps format per PUB 41451 plus D4  |
|             | - C           | 1.544 Mbps format per PUB 41451 plus extended farming format                   |

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Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (A) Parameter Codes and Options (Cont'd)

Parameter (Cont'd)

| <u>Code</u> | <u>Option</u> | <u>Definition</u>   |
|-------------|---------------|---|
| DX          | -             | duplex signaling interface at customer's point of termination   |
| DY          | -             | duplex signaling interface at customer's end user's point of termination  |
| EA          | - E           | Type I E&M Lead Signaling. Customer at POT or customer's end user at POT originates on E Lead.                                |
| EA          | - M           | Type I E&M Lead Signaling. Customer at POT or customer's end user at POT originates on M Lead.                                |
| EB          | - E           | Type II E&M Lead Signaling. Customer at POT or customer's end user at POT originates on E Lead.                               |
| EB          | - M           | Type II E&M Lead Signaling. Customer at POT or customer's end user at POT originates on M Lead.                               |
| EC          | -             | Type III E&M signaling at customer POT  |
| EX          | - A           | tandem channel unit signaling for loop start or ground start and customer supplies open end (dial tone, etc.) functions.      |
| EX          | - B           | tandem channel unit signaling for loop start or ground start and customer supplies closed end (dial pulsing, etc.) functions. |
| GO          | -             | ground start loop signaling - open end function by customer or customer's end user  |
| GS          | -             | ground start loop signaling - closed end function by customer or customer's end user  |
| IA          | -             | E.I.A. (25 pin RS-232)  |
| LA          | -             | end user loop start loop signaling - Type A OPS registered port open end  |
| LB          | -             | end user loop start loop signaling - Type B OPS registered port open end  |
| LC          | -             | end user loop start loop signaling - Type C OPS registered port open end  |
| LO          | -             | loop start loop signaling - open end function by customer or customer's end user  |
| LR          | -             | 20 Hz automatic ringdown interface at customer with Telephone Company provided PLAR   |

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Issued: January 23, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (A) Parameter Codes and Options (Cont'd)

Parameter (Cont'd)

| <u>Code</u> | <u>Option</u> | <u>Definition</u>   |
|-------------|---------------|---|
| LS          | -             | loop start loop signaling - closed end function by customer or customer's end user                  |
| NO          | -             | no signaling interface, transmission only   |
| PG          | -             | program transmission - no dc signaling  |
|             | - 1           | nominal frequency from 50 to 15000 Hz   |
|             | - 3           | nominal frequency from 200 to 3500 Hz   |
|             | - 5           | nominal frequency from 100 to 5000 Hz   |
|             | - 8           | nominal frequency from 50 to 8000 Hz  |
| PR          |               | protective relaying*  |
| RV          | - 0           | reverse battery signaling, one way operation, originate by customer                                 |
|             | - T           | reverse battery signaling, one way operation, terminate function by customer or customer's end user |
| SF          | -             | single frequency signaling with VF band at either customer POT or customer's end user POT           |
| TF          | -             | telephotograph interface  |

\* Available only for the transmission of audio tone protective relaying signals used in the protection of electric power systems during fault conditions.

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Issued: January 23, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (B) Impedance

The nominal reference impedance with which the channel will be terminated for the purpose of evaluating transmission performance:

| <u>Value (ohms)</u> | <u>Code(s)</u> |
|---------------------|----------------|
| 110                 | 0              |
| 150                 | 1              |
| 600                 | 2              |
| 900                 | 3+             |
| 135                 | 5              |
| 75                  | 6              |
| 124                 | 7              |
| Variable            | 8              |
| 100                 | 9              |

- + For those interface codes with a 4-wire transmission path at the customer designated POT, rather than a standard 900 ohm impedance the code (3) denotes a customer provided transmission equipment termination. Such terminations were provided to customers in accordance with the F.C.C. Docket No. 20099 Settlement Agreement.

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Issued: January 23, 2004

Effective: February 7, 2004

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (C) Compatible Network Channel Interfaces

## (1) Voice Grade

| <u>Compatible Cis</u> |        | <u>Compatible Cis</u> |      | <u>Compatible CIs</u> |      |
|-----------------------|--------|-----------------------|------|-----------------------|------|
| 2AB2                  | 2AC2   | 2DB2                  | 2DA2 | 2LR2                  | 2LR2 |
| 2AB3                  | 2AC2   | 2DB3                  | 2DA2 | 2LR3                  | 2LR2 |
| 2CT3                  | 2DY2   | 2DX3                  | 2LA2 | 2LS                   | 2GS  |
|                       | 4DS8   |                       | 2LB2 |                       | 2LS  |
|                       | 4DX2   |                       | 2LC2 |                       | 4GS  |
|                       | 4DX3   |                       | 2LO3 |                       | 4LS  |
|                       | 4DY2   |                       | 2LS2 |                       |      |
|                       | 4EA2-E |                       | 2LS3 | 2LS2                  | 2LA2 |
|                       | 4EA2-M |                       |      |                       | 2LB2 |
|                       | 4SF2   | 2G02                  | 2GS2 |                       | 2LC2 |
|                       | 4SF3   |                       | 2GS3 |                       |      |
|                       | 6DX2   |                       |      | 2LS3                  | 2LA2 |
|                       | 6DY2   | 2GO3                  | 2GS2 |                       | 2LB2 |
|                       | 6DY3   |                       | 2GS3 |                       | 2LC2 |
|                       | 6EA2-E |                       |      |                       |      |
|                       | 6EA2-M | 2GS                   | 2GS  | 2NO2                  | 2DA2 |
|                       | 6EB2-E |                       | 2LS  |                       | 2NO2 |
|                       | 6EB2-M |                       | 4GS  |                       |      |
|                       | 6EB3-E |                       | 4LS  | 2NO3                  | 2NO2 |
|                       | 8EB2-E |                       |      |                       | 2PR2 |
|                       | 8EB2-M | 2L02                  | 2LS2 |                       |      |
|                       | 8EC2   |                       | 2LS3 | 2TF3                  | 2TF2 |
|                       | 9DY2   |                       |      |                       |      |
|                       | 9DY3   | 2L03                  | 2LS2 |                       |      |
|                       | 9EA2   |                       | 2LS3 |                       |      |
|                       | 9EA3   |                       |      |                       |      |

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## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (C) Compatible Network Channel Interfaces (Cont'd)

## (1) Voice Grade (Cont'd)

| <u>Compatible CIs</u>             | <u>Compatible CIs</u> | <u>Compatible CIs</u> |
|-----------------------------------|-----------------------|-----------------------|
| 4AB2 2AC2<br>4AB2<br>4AC2<br>4SF2 |                       |                       |
| 4AB3 2AC2<br>4AC2<br>4SF2         |                       |                       |
| 4AC2 2AC2<br>4AC2                 |                       |                       |
|                                   | 4DS8- 2AC2            | 4DS8- 4DG2            |
|                                   | 2DA2                  | 4LR2                  |
|                                   | 2DY2                  | 4LS2                  |
|                                   | 2GO2                  | 4NO2                  |
| 4DA2 4DA2                         | 2GO3                  | 4PR2                  |
|                                   | 2GS2                  | 4RV2-T                |
| 4DB2 2DA2                         | 2GS3                  | 4SF2                  |
| 2NO2                              | 2LA2                  | 4SF3                  |
| 2PR2                              | 2LB2                  | 4TF2                  |
| 4DA2                              | 2LC2                  | 6DA2                  |
| 4DB2                              | 2LO2                  | 6DY2                  |
| 4NO2                              | 2LO3                  | 6DY3                  |
| 4PR2                              | 2LR2                  | 6EA2-E                |
| 6DA2                              | 2LS2                  | 6EA2-M                |
|                                   | 2LS3                  | 6EB2-E                |

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Issued: January 23, 2004

Effective: February 7, 2004

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## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

### 15.2.2 Network Network Channel Interface (NCI) Codes (Cont'd)

(1) Voice Grade (Cont'd)

| Compatible Cis |        | Compatible Cis |        | Compatible CIs |        |
|----------------|--------|----------------|--------|----------------|--------|
| 4DD3           | 2DE2   |                | 2NO2   |                | 6EB2-M |
|                | 4DE2   |                | PR2    |                | 6GS2   |
|                |        |                | 2RV2-T |                | 6LS2   |
|                |        |                | 2TF2   |                | 8EB2-E |
|                |        |                | 4AC2   |                | 8EB2-M |
|                |        |                | 4DA2   |                | 9DY2   |
|                |        |                | 4DE2   |                | 9DY3   |
|                |        |                | 4DX2   |                | 9EA2   |
|                |        |                | 4DX3   |                | 9EA3   |
|                |        |                | 4DY2   |                |        |
|                |        |                | 4EA2-E |                |        |
|                |        |                | 4EA2-M |                |        |
| 4DX2           | 2DY2   | 4DX2           | 8EB2-E | 4DX3           | 6DY2   |
|                | 2LA2   |                | 8EB2-M |                | 6DY3   |
|                | 2LB2   |                | 9DY2   |                | 6EA2-E |
|                | 2LC2   |                | 9DY3   |                | 6EA2-M |
|                | 2LO3   |                | 9EA2   |                | 6EB2-E |
|                | 2LS2   |                | 9EA3   |                | 6EB2-M |
|                | 2LS3   |                |        |                | 6LS2   |
|                | 2RV2-T | 4DX3           | 2DY2   |                | 8EB2-E |
|                | 4DX2   |                | 2LA2   |                | 8EB2-M |
|                | 4DY2   |                | 2LB2   |                | 9DY2   |
|                | 4EA2-E |                | 2LC2   |                | 9DY3   |
|                | 4EA2-M |                | 2LO3   |                | 9EA2   |
|                | 4LS2   |                | 2LS2   |                | 9EA3   |
|                | 4RV2-T |                | 2LS3   |                |        |
|                | 4SF2   |                | 2RV2-T | 4DY2           | 2DY2   |
|                | 4SF3   |                | 4DX2   |                | 4DY2   |
|                | 6DY2   |                | 4DX3   |                |        |
|                | 6DY3   |                | 4DY2   |                |        |
|                | 6EA2-E |                | 4EA2-E |                |        |

Issued: January 23, 2004

Effective: February 7, 2004

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## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (C) Compatible Network Channel Interfaces (Cont'd)

## (1) Voice Grade (Cont'd)

| <u>Compatible Cis</u> |        | <u>Compatible Cis</u> |        | <u>Compatible CIs</u> |      |
|-----------------------|--------|-----------------------|--------|-----------------------|------|
|                       | 6EA2-M |                       | 4EA2-M |                       |      |
|                       | 6EB2-E |                       | 4LS2   |                       |      |
|                       | 6EB2-M |                       | 4RV2-T |                       |      |
|                       | 6LS2   |                       | 4SF2   |                       |      |
|                       |        |                       | 4SF3   |                       |      |
| 4EA2-E                | 2DY2   | 4EA3-E                | 2DY2   | 4GO2                  | 2GO2 |
|                       | 4DY2   |                       | 4DY2   |                       | 2GO3 |
|                       | 4EA2-E |                       | 4EA2-E |                       | 2GS2 |
|                       | 4EA2-M |                       | 4EA2-M |                       | 2GS3 |
|                       | 4SF2   |                       | 4SF2   |                       | 4GS2 |
|                       | 6DY2   |                       | 6DY2   |                       | 4SF2 |
|                       | 6DY3   |                       | 6DY3   |                       | 6GS2 |
|                       | 6EB2-E |                       | 6EA2-E |                       |      |
|                       | 6EB2-M |                       | 6EA2-M | 4G03                  | 2GO2 |
|                       | 8EB2-E |                       | 6EB2-E |                       | 2GS2 |
|                       | 8EB2-M |                       | 6EB2-M |                       | 2GS3 |
|                       | 9DY2   |                       | 8EB2-E |                       | 4GS2 |
|                       | 9DY3   |                       | 8EB2-M |                       | 4SF2 |
|                       |        |                       | 9DY2   |                       | 6GS2 |
|                       |        |                       | 9DY3   |                       |      |
| 4EA2-M                | 2DY2   |                       | 9EA2   |                       |      |
|                       | 4DY2   |                       | 9EA3   | 4GS                   | 2GS  |
|                       | 4EA2-M |                       |        |                       | 2LS  |
|                       | 4SF2   |                       |        |                       | 4GS  |
|                       | 6DY2   |                       |        |                       | 4LS  |
|                       | 6DY3   |                       |        |                       |      |
|                       | 6EB2-E |                       |        |                       |      |
|                       | 6EB2-M |                       |        |                       |      |
|                       | 8EB2-E |                       |        |                       |      |
|                       | 8EB2-M |                       |        |                       |      |
|                       | 9DY2   |                       |        |                       |      |
|                       | 9DY3   |                       |        |                       |      |

Transmittal No. 1 – Filed under Special Permission No. 04 – 004

Issued: January 23, 2004

Effective: February 7, 2004

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Irving, TX 75062-8136

## ACCESS SERVICE

## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (C) Compatible Network Channel Interfaces (Cont'd)

## (1) Voice Grade (Cont'd)

| <u>Compatible Cis</u> |      | <u>Compatible Cis</u> |        | <u>Compatible CIs</u> |        |
|-----------------------|------|-----------------------|--------|-----------------------|--------|
| 4LO2                  | 2LS2 | 4LS3                  | 2LA2   | 4SF2                  | 2LO3   |
|                       | 2LS3 |                       | 2LB2   |                       | 2LR2   |
|                       | 4LS2 |                       | 2LC2   |                       | 2LS2   |
|                       | 4SF2 |                       | 2LO2   |                       | 2LS3   |
|                       | 6LS2 |                       | 2LO3   |                       | 2RV2-T |
| 4L03                  | 2LS2 | 4NO2                  | 4SF2   | 4SF2                  | 4AC2   |
|                       |      |                       | 2DA2   |                       | 4DY2   |
|                       |      |                       | 2DE2   |                       | 4LS2   |
|                       |      |                       | 2NO2   |                       | 4RV2-T |
|                       |      |                       | 4DA2   |                       | 4SF2   |
| 4LR2                  | 2LR2 | 4RV2-0                | 4DE2   | 4SF3                  | 6DY2   |
|                       |      |                       | 4NO2   |                       | 6DY3   |
|                       |      |                       | 6DA2   |                       | 6GS2   |
|                       |      |                       | 2RV2-T |                       | 9DY2   |
|                       |      |                       | 4RV2-T |                       | 9DY3   |
| 4LR3                  | 4LR2 | 4SF2                  | 4SF2   | 4SF2                  | 2DY2   |
|                       |      |                       | 2AC2   |                       | 2G03   |
|                       |      |                       | 2DY2   |                       | 2GS2   |
| 4LS                   | 2GS  | 4SF2                  | 2GS2   | 4SF2                  | 2GS3   |
|                       |      |                       | 2GS3   |                       | 2LA2   |
|                       |      |                       | 2LA2   |                       | 2LB2   |
|                       |      |                       | 2LB2   |                       | 2LC2   |
|                       |      |                       | 2LC2   |                       | 2LO3   |
| 4LS2                  | 2LA2 | 4SF2                  | 2LO2   | 4SF2                  | 2LR2   |
|                       |      |                       | 2LO3   |                       |        |
|                       |      |                       |        |                       |        |
|                       |      |                       |        |                       |        |
|                       |      |                       |        |                       |        |

Transmittal No. 1 – Filed under Special Permission No. 04 – 004

Issued: January 23, 2004

Effective: February 7, 2004

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## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (C) Compatible Network Channel Interfaces (Cont'd)

## (1) Voice Grade (Cont'd)

| <u>Compatible Cis</u> |        | <u>Compatible Cis</u> |        | <u>Compatible CIs</u> |        |
|-----------------------|--------|-----------------------|--------|-----------------------|--------|
| 4SF3                  | 2LS2   | 6DA                   | 4DA2   | 6DY3                  | 2DY2   |
|                       | 2LS3   |                       | 6DA2   |                       | 4DY2   |
|                       | 2RV2-T |                       |        |                       | 6DY2   |
|                       | 4DY2   | 6DX2                  | 2DY2   |                       | 6DY3   |
|                       | 4EA2-E |                       | 4DY2   |                       |        |
|                       | 4EA2-M |                       | 4EA2-E | 6EA2-E                | 2AC2   |
|                       | 4GS2   |                       |        |                       |        |
|                       | 4LR2   |                       | 4EA2-M |                       | 2DY2   |
|                       | 4LS2   |                       | 4SF2   |                       | 2LA2   |
|                       | 4RV2-T |                       | 6DY2   |                       | 2LB2   |
|                       | 4SF2   |                       | 6DY3   |                       | 2LC2   |
|                       | 4SF3   |                       | 6EA2-E |                       | 2LO3   |
|                       | 6DY2   |                       | 6EA2-M |                       | 2LS2   |
|                       | 6DY3   |                       | 6EB2-E |                       | 2LS3   |
|                       | 6EB2-E |                       | 6EB2-M |                       | 2RV2-T |
|                       | 6EB2-M |                       | 8EB2-E |                       | 4AC2   |
|                       | 6GS2   |                       | 8EB2-M |                       | 4DY2   |
|                       | 6LS2   |                       | 9DY2   |                       | 4EA2-E |
|                       | 9DY2   |                       | 9DY3   |                       | 4EA2-M |
|                       | 9DY3   |                       | 9EA2   |                       | 4LS2   |
|                       | 9EA2   |                       | 9EA3   |                       | 4RV2-T |
|                       | 9EA3   |                       |        |                       | 4SF2   |
| 4TF2                  | 2TF2   | 6DY2                  | 2DY2   |                       | 4SF3   |
|                       |        |                       | 4DY2   |                       | 6DY2   |
|                       |        |                       | 6DY2   |                       | 6DY3   |
|                       |        |                       |        |                       | 6EA2-E |
|                       |        |                       |        |                       | 6EA2-M |

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Issued: January 23, 2004

Effective: February 7, 2004

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## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (C) Compatible Network Channel Interfaces (Cont'd)

## (1) Voice Grade (Cont'd)

| <u>Compatible Cis</u> |        | <u>Compatible Cis</u> |        | <u>Compatible CIs</u> |        |
|-----------------------|--------|-----------------------|--------|-----------------------|--------|
| 6EA2-E                | 6EB2-E | 6EA2-M                | 6DY2   | 6EB3-E                | 2DY2   |
|                       | 6EB2-M |                       | 6DY3   |                       | 4DY2   |
|                       | 6LS2   |                       | 6EA2-M |                       | 4EA2-E |
|                       | 8EB2-E |                       | 6EB2-E |                       | 4EA2-M |
|                       | 8EB2-M |                       | 6EB2-M |                       | 4SF2   |
|                       | 9DY2   |                       | 6LS2   |                       | 6DY2   |
|                       | 9DY3   |                       | 8EB2-E |                       | 6DY3   |
|                       |        |                       | 8EB2-M |                       | 6EA2-E |
| 6EA2-M                | 2AC2   |                       | 9DY2   |                       | 6EA2-M |
|                       | 2DY2   |                       | 9DY3   |                       | 8EB2-E |
|                       | 2LA2   |                       |        |                       | 8EB2-M |
|                       | 2LB2   | 6EB2-E                | 2DY2   |                       | 9DY2   |
|                       | 2LC2   |                       | 4DY2   |                       | 9DY3   |
|                       | 2LO3   |                       | 4SF2   |                       | 9EA2   |
|                       | 2LS2   |                       | 6DY2   |                       | 9EA3   |
|                       | 2LS3   |                       | 6DY3   |                       |        |
|                       | 2RV2-T |                       | 6EB2-E | 6EX2-A                | 2GS2   |
|                       | 4AC2   |                       | 6EB2-M |                       | 2GS3   |
|                       | 4DY2   |                       | 9DY2   |                       | 2LS2   |
|                       | 4EA2-E |                       | 9DY3   |                       | 2LS3   |
|                       | 4EA2-M |                       |        |                       | 4GS2   |
|                       | 4LS2   | 6EB2-M                | 2DY2   |                       | 4LS2   |
|                       | 4RV2-T |                       | 4DY2   |                       | 4SF2   |
|                       | 4SF2   |                       | 4SF2   |                       | 6GS2   |
|                       | 4SF3   |                       | 6DY2   |                       | 6LS2   |
|                       |        |                       | 6DY3   |                       |        |
|                       |        |                       | 6EB2-M |                       |        |
|                       |        |                       | 9DY2   |                       |        |
|                       |        |                       | 9DY3   |                       |        |

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Effective: February 7, 2004

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## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (C) Compatible Network Channel Interfaces (Cont'd)

## (1) Voice Grade (Cont'd)

|        | <u>Compatible Cis</u> | <u>Compatible Cis</u> | <u>Compatible CIs</u> |
|--------|-----------------------|-----------------------|-----------------------|
| 6EX2-B | 2G03                  | 8EB2-E 2AC2           | 8EB2-M 2AC2           |
|        | 2LA2                  | 2DY2                  | 2DY2                  |
|        | 2LB2                  | 2LA2                  | 2LA2                  |
|        | 2LC2                  | 2LB2                  | 2LB2                  |
|        | 2LO2                  | 2LC2                  | 2LC2                  |
|        | 2LO3                  | 2LO3                  | 2LO3                  |
|        | 2LR2                  | 2LS2                  | 2LS2                  |
|        | 4LR2                  | 2LS3                  | 2LS3                  |
|        | 4SF2                  | 2RV2-T                | 2RV2-T                |
|        |                       | 4AC2                  | 4AC2                  |
| 6GO2   | 2GO2                  | 4DY2                  | 4DY2                  |
|        | 2GS2                  | 4LS2                  | 4LS2                  |
|        | 2GS3                  | 4RV2-T                | 4RV2-T                |
|        | 4GS2                  | 4SF2                  | 4SF2                  |
|        | 4SF2                  | 4SF3                  | 4SF3                  |
|        | 6GS2                  | 6DY2                  | 6DY2                  |
|        |                       | 6DY3                  | 6DY3                  |
| 6LO2   | 2LS2                  | 6EB2-E                | 6EB2-E                |
|        | 2LS3                  | 6EB2-M                | 6EB2-M                |
|        | 4LS2                  | 6LS2                  | 6LS2                  |
|        | 4SF2                  | 8EB2-E                | 8EB2-M                |
|        | 6LS2                  | 8EB2-M                | 9DY2                  |
| 6LS2   |                       | 9DY2                  | 9DY3                  |
|        |                       | 9DY3                  |                       |
|        | 2LA2                  |                       |                       |
|        | 2LB2                  |                       |                       |
|        | 2LC2                  |                       |                       |
|        | 2LO2                  |                       |                       |
|        | 2LO3                  |                       |                       |
|        | 4SF2                  |                       |                       |

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## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (C) Compatible Network Channel Interfaces (Cont'd)

## (1) Voice Grade (Cont'd)

| <u>Compatible Cis</u> |        | <u>Compatible Cis</u> |      | <u>Compatible CIs</u> |        |  |
|-----------------------|--------|-----------------------|------|-----------------------|--------|--|
| 8EC2                  | 2DY2   | 9DY2                  | 2DY2 | 9EA3                  | 2DY2   |  |
|                       | 4DY2   |                       | 4DY2 |                       | 4DY2   |  |
|                       | 4EA2-E |                       | 6DY2 |                       | 4EA2-E |  |
|                       | 4EA2-M |                       | 6DY3 |                       | 4EA2-M |  |
|                       | 4SF2   |                       | 9DY2 |                       | 6DY2   |  |
|                       | 6DY2   | 9DY3                  | 2DY2 |                       | 6DY3   |  |
|                       | 6DY3   |                       |      |                       | 6EA2-E |  |
|                       | 6EA2-E |                       |      |                       | 6EA2-M |  |
|                       | EA2-M  |                       |      |                       | 6EB2-E |  |
|                       | EB2-E  |                       |      |                       | 6EB2-M |  |
|                       | 6EB2-M |                       |      |                       | 8EB2-E |  |
|                       | 8EB2-E |                       |      |                       | 8EB2-M |  |
|                       | 8EB2-M |                       |      |                       | 9DY2   |  |
|                       | 9DY2   | 9EA2                  | 2DY2 |                       | 9DY3   |  |
|                       | 9DY3   |                       |      |                       | 9EA3   |  |
|                       | 9EA2   |                       |      |                       | 4EA2-E |  |
|                       | 9EA3   |                       |      |                       | 4EA2-M |  |
|                       |        |                       |      |                       | 6DY2   |  |
|                       |        |                       |      |                       | 6DY3   |  |
|                       |        |                       |      |                       | 6EA2-E |  |
|                       | 6EA2-M |                       |      |                       |        |  |
|                       | 6EB2-E |                       |      |                       |        |  |
|                       | 6EB2-M |                       |      |                       |        |  |
|                       | 8EB2-E |                       |      |                       |        |  |
|                       | 8EB2-M |                       |      |                       |        |  |
|                       | 9DY2   |                       |      |                       |        |  |
|                       | 9DY3   |                       |      |                       |        |  |
|                       | 9EA2   |                       |      |                       |        |  |
|                       | 9EA3   |                       |      |                       |        |  |

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## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (C) Compatible Network Channel Interfaces (Cont'd)

## (2) Program Audio

| <u>Compatible Cis</u> |                  | <u>Compatible CIs</u> |                  |
|-----------------------|------------------|-----------------------|------------------|
| 2PG2-1                | 2PG1-1<br>2PG2-1 | 4DS8-15E              | 2PG1-3<br>2PG2-3 |
| 2PG2-3                | 2PG1-3<br>2PG2-3 | 4DS8-15F              | 2PG1-5<br>2PG2-5 |
| 2PG2-5                | 2PG1-5<br>2PG2-5 | 4DS8-15G              | 2PG1-8<br>2PG2-8 |
| 2PG2-8                | 2PG1-8<br>2PG2-8 | 4DA8-15H              | 2PG1-1<br>2PG2-1 |

## (3) Digital Data

| <u>Compatible Cis</u> |   | <u>Compatible Cis</u> |         | <u>Compatible CIs</u> |         |
|-----------------------|---|-----------------------|---------|-----------------------|---------|
| 4DS8-15               | 4DS8-15+<br>4DU5-24<br>4DU5-48<br>4DU5-56<br>4DU5-96<br>6DU5-24<br>6DU5-48<br>6DU5-96 | 4DU5-24               | 4DU5-24 | 6DU5-24               | 6DU5-24 |
|                       |   | 4DU5-48               | 4DU5-48 | 6DU5-48               | 6DU5-48 |
|                       |   | 4DU5-96               | 4DU5-96 | 6DU5-56               | 6DU5-56 |
|                       |   | 4DU8-56               | 4DU5-56 | 6DU5-96               | 6DU5-96 |

+ Available only as a cross connect of two digital channels at appropriate digital speeds at a Telephone Company hub.

Transmittal No. 1 – Filed under Special Permission No. 04 – 004

Issued: January 23, 2004

Effective: February 7, 2004

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## 15. Access Service Interfaces and Transmission Specifications (Cont'd)

## 15.2 Special Access Service (Cont'd)

## 15.2.2 Network Channel Interface (NCI) Codes (Cont'd)

## (C) Compatible Network Channel Interfaces (Cont'd)

## (4) High-Capacity

| <u>Compatible Cis</u> |  | <u>Compatible Cis</u> |   |
|-----------------------|--|-----------------------|---|
| 4DS8-15               | 4DS8-15+<br>4DU8-B<br>6DU8-8                 | 4DU8-A,B<br>or C      | 4DU8-A,B or C                               |
| 4DS6-44               | 4DS6-44+<br>4DU8-A, B or C<br>6DU8-A, B or C | 4DS8-31               | 4DS8-31<br>4DU8-A, B or C<br>6DU8-A, B or C |

+ Available only as a cross connect of two individual channels of 1.544 Mbps facilities at a Telephone Company hub.

Transmittal No. 1 – Filed under Special Permission No. 04 – 004

Issued: January 23, 2004

Effective: February 7, 2004

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