

ACCESS SERVICE

8. RESERVED FOR FUTURE USE

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

Transmittal No. 101

Issued: November 27, 2019

Effective: December 12, 2019

Vice President - Regulatory
5 Davis Farm Road, Portland, ME 04103

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

9. [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

10. Special Federal Government Access Service10.1 General

This section covers specialized Access Services that are provided to a customer for use only by agencies or branches of the Federal Government and other users authorized by the Federal Government. Services provided to state emergency operations centers are included. These services provide for command and control communications, including communications for national security, emergency preparedness and presidential requirements. They are required to assure continuity of Government in emergency and crisis situations and to provide for national security.

(C)

Services for command and control communications and for national security and emergency preparedness sometimes require short notice and short duration service provisions. These provisions are especially needed to meet presidential requirements or in response to natural, man-made, or declared emergencies. Requirements of this type cannot be forecasted and are usually needed for a relatively short period. The provision of service under these conditions may require the availability of facilities, such as portable microwave equipment, which are provided on a temporary basis by the Telephone Company or customer.

ACCESS SERVICE

10. Special Federal Government Access Service (Cont'd)10.2 Emergency Conditions

These services will be provided on the date requested or as soon as possible thereafter when the emergency falls into one of the following categories:

- State of crisis declared by the National Command Authorities (includes commitments made to the National Communications System in the "National Plan for Emergencies and Major Disasters").
- Efforts to protect endangered U.S. personnel or property both in the U.S. and abroad. (Includes space vehicle recovery and protection efforts).
- Communications requirements resulting from hostile action, a major disaster or a major civil disturbance.
- The Director (Cabinet level) of a Federal department, Commander of a Unified/Specified Command, or head of a military department has certified that a communications requirement is so critical to the protection of life and property or to the National Defense that it must be processed immediately.
- Political unrest in foreign countries which affect the national interest.
- Presidential service.

10.3 Facility Availability

In order to insure communications during periods of emergency, the Telephone Company will, within the limits of good management, make available the necessary facilities to restore service in the event of damage or to provide temporary emergency service.

In order to meet the requirements of agencies or branches of the Federal Government, the Telephone Company may utilize government- owned facilities, when necessary to provide service.

10.4 Federal Government Regulations

In accordance with Federal Government Regulations, all service provided to the Federal Government will be billed in arrears. However, this provision does not apply to other customers that obtain services under the provisions of this tariff to provide their services to the Federal Government.

10. Special Federal Government Access Service (Cont'd)

10.5 Service Offerings to the Federal Government

(D)

11

(D)

10.5.1 Type and Description

(A) [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

10. Special Federal Government Access Service (Cont'd)

10.5 Service Offerings to the Federal Government (Cont'd)

10.5.1 Type and Description (Cont'd)

(A) [Reserved for Future Use] (Cont'd)

(C)

(D)

(D)

10. Special Federal Government Access Service (Cont'd)

10.5 Service Offerings to the Federal Government (Cont'd)

10.5.1 Type and Description (Cont'd)

(A) [Reserved for Future Use] (Cont'd)

(C)

(D)

(D)

(B) [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

10. Special Federal Government Access Service (Cont'd)10.5 Service Offerings to the Federal Government (Cont'd)10.5.1 Type and Description (Cont'd)(C) Government Emergency Telecommunications Service (GETS)

The Government Emergency Telecommunications Service (GETS) provides authorized federal government end users with a national security and emergency preparedness (NS/EP) switched voice and data communications service utilizing the public switched network through the activation of a special code(s) in the telephone company end offices and tandem switching offices as requested by the Federal Government or its authorized agent. Access to GETS is accomplished through the use of the 710 nongeographical numbering plan area (NPA) code utilizing the public switched network and an interexchange carrier (IC) designated by the Federal Government or its authorized agent as a GETS-designated IC.

Applicable access charges under other provisions of this tariff will apply for the underlying switched access services provided. The jurisdictional nature of GETS features is 100 percent interstate. GETS facilities may not be used for nonemergency government telecommunications, non- GETS services or by unauthorized end users.

ACCESS SERVICE

10. Special Federal Government Access Service (Cont'd)10.5 Service Offerings to the Federal Government (Cont'd)10.5.1 Type and Description (Cont'd)(C) Government Emergency Telecommunications Service (GETS)
(Cont'd)(1) GETS Alternate Carrier Routing (ACR) Feature

ACR is an advanced intelligent network feature available in suitably equipped offices. The ACR feature provides for the routing of the GETS universal access number to a sequence of GETS ICs. ACR allows NS/EP users to utilize the public switched network to provide enhanced call completion capability on calls made during times of a national emergency or disaster. ACR provides alternate route capability on calls originated from lines served by end offices equipped with the ACR feature to the GETS universal access number.

When the presubscribed IC is a participating GETS IC, GETS ACR enables calls first to be routed for completion to the presubscribed IC of the originating line. When the presubscribed IC is not a participating GETS IC, then an office selection table determines the GETS IC. The office selection table contains three alternatives for a GETS IC and is preselected on a per end office basis using data provided by the Federal Government or its authorized agent.

(2) GETS High Probability of Completion (HPC) Feature

HPC is a set of enhanced features, available in suitably equipped offices, which improves the probability of the completion of GETS traffic via the public switched telephone network (PSTN) during times of a national emergency or disaster when the PSTN is congested due to heavy traffic or damage to the network. The HPC feature sets the call priority value and provides the capability to queue the GETS NS/EP access call against a busy switched access trunk group in a route list until a member of that trunk group becomes idle. As soon as a trunk group member becomes idle, it is offered to the queued GETS NS/EP access call before any other calls are processed. The HPC feature works with switched access trunk groups equipped with SS7 out of band signaling or equal access multifrequency address signaling.

ACCESS SERVICE

10. Special Federal Government Access Service (Cont'd)

10.5 Service Offerings to the Federal Government (Cont'd)

10.5.2 [Reserved for Future Use]

(C)

(D)

|

|

|

|

(D)

ACCESS SERVICE

10. Special Federal Government Access Service (Cont'd)

10.6 Rates and Charges

10.6.1 General

The rates and charges for special offerings to the Federal Government are developed on an individual case basis. (C)
(C)

10.6.2 [Reserved for Future Use] (C)

(D)
|
|
|
(D)

10.6.3 Move Charges

(A) When a service without a termination charge associated with that service is moved to a different building, the nonrecurring charge applies; when moved to a new location in the same building, a charge of one-half of the nonrecurring charge applies. (C)

(B) When service with a termination charge associated with that service is moved and reinstalled at a new location, the customer may elect: (C)

- to pay the unexpired portion of the termination charge for the service, if any, with the application of a nonrecurring charge and the establishment of a new termination charge for such service at the new location, or
- to continue service subject to the unexpired portion of the termination charge, if any, and pay the estimated costs of moving such service, provided that the customer requests these charges be quoted prior to ordering the service move. Charges for moving such service will be based on estimated costs attributable to the move.

Move charges include the estimated costs of removal, restoration of services or facilities necessitated by the move, transportation, storage, reinstallation, engineering, labor, supervision, materials, administration, and any other specific items of cost directly attributable to the move.

ACCESS SERVICE

11. Special Facilities Routing of Access Services11.1 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, Special Access Service or Special Federal Government 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 Combined11.1.4 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; Metallic, Telegraph Grade and Voice Grade Special Access Services as set forth respectively in 7.4, 7.5 and 7.6 preceding and Special Federal Government Access Services as set forth in 10.5 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 7.6 preceding and Special Federal Government Access Services as set forth in 10.5 preceding.

ACCESS SERVICE

11. Special Facilities Routing of Access Services (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 17.4.6 following and are in addition to all other rates and charges that may be applicable for services provided under other sections of this tariff.

ACCESS SERVICE

12. Specialized Service or Arrangements12.1 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.

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services

These charges apply to Special Access Service for Non-Competitive End User Channel Terminations and Optional Features and Functions regulated in this tariff. Additional Engineering, Additional Labor and Miscellaneous Services charges may apply to all other detariffed Special Access rate elements excluded from the tariff as described in Section 1.1. Engineering, Additional Labor and Miscellaneous Services charges applied to Switched Access are included herein. 13.1 addresses Additional Engineering. 13.2 addresses Additional Labor (which is comprised of Overtime Installation, Overtime Repair, Standby, 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 Telecommunications Service Restoration Priority). 13.4 addresses Presubscription.

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 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:

- (A) 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.
- (B) 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.
- (C) 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.

ACCESS SERVICE

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 following will apply before any Additional Labor is undertaken. A call-out of a Telephone Company employee at a time not consecutive with the employee's scheduled work period is subject to a minimum charge of four hours. When provisioning or restoring Telecommunications Service Priority services, the Telephone Company will, when possible, notify the customer of the applicability of these Additional Labor charges.

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 Standby

Standby includes all time in excess of one-half (1/2) hour during which Telephone Company personnel standby 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.

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.3 Miscellaneous Services13.3.1 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 following. A call-out of a Telephone Company employee at a time not consecutive with the employee's scheduled work period is subject to a minimum charge of four hours. 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).

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 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 FGs C and D.

(C)
|
|
(C)(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

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, 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) following.

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, C, and D not routed through an access tandem), is a service where the Telephone Company provides a technician at its office(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.

(C)

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) following.

(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.

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)(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:

- 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 customer's 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 times mutually agreed upon.

ACCESS SERVICE

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) 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).

ACCESS SERVICE

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 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 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 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 (D) and Additional Labor rates as set forth in 17.4.3 are applicable.

ACCESS SERVICE

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

13.3 Miscellaneous Services (Cont'd)

13.3.4 [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

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 Reference Information Center at the Federal Communications 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 interLATA calls. This IC is referred to as the end user's presubscribed interexchange carrier (PIC).
- (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 PIC or No-PIC for all of its lines,
 - indicate a different PIC or No-PIC 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 (No-PIC). 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 (10XXX or 101XXXX) for all interLATA calls.

After the end user's initial selection of a PIC or the designation that it does not want to presubscribe to any IC (No-PIC), for any change in selection after conversion to Equal Access in the serving end office, a nonrecurring charge, as set forth in 13.4(J) following applies.

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.4 Presubscription (Cont'd)

- (D) End users not responding to the initial notification will be sent a second notification for the selection of a PIC 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 default option of No-PIC will be assigned to them if they fail to respond to the second notification.

End users assigned to a No-PIC by default may change their No-PIC 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 Section 13.4(J), 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 end users 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.

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 select a PIC or designate that they do not want to presubscribed to any IC (No-PIC) 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.

- indicate a PIC or No-PIC for all of its lines,
- indicate a different PIC or No-PIC for each of its lines.

Only one PIC or No-PIC may be selected for each individual line, or lines terminating in the same hunt group. End users that select No-PIC 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 (101XXXX) for all interLATA calls. Subsequent to the installation of Telephone Exchange Service and after the end user's initial selection of a PIC or No-PIC, for any change in selection, a nonrecurring charge, as set forth in 13.4(J) following, applies.

- (G) If the new end user fails to make a PIC or No-PIC Selection prior to the date of installation of Telephone Exchange Service, the Telephone Company will (1) default the customer's line to No-PIC, which will require the end user to dial an access code (101XXXX) for all interLATA calls or (2) block the end user from interLATA calling if unable to default customer's line to No-PIC. The end user will be notified which option will be applied if it fails to make a PIC or No-PIC selection. The end user will be allowed a six month period from installation of their service to select a PIC one time at no charge.

For any change in selection after 6 months from the installation of Telephone Exchange Service, a nonrecurring charge, as set forth in 13.4(J) following applies.

- (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 cancelling their service and that they should contact the Telephone Company to select a new PIC. The IC will also inform the end user that it will pay the PIC change charge. The cancelling IC will then be billed by the Telephone Company the nonrecurring charge set forth in Section 13.4(J) following for each end user for a period of two years from the discontinuance of Feature Group D service.

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.4 Presubscription (Cont'd)

- (I) If an IC elects to change or discontinue use of a Carrier Identification Code (CIC) for any reasons other than those set forth in (H) above, the IC will identify to the Telephone Company any affected end users and advise the Telephone Company of the new CIC to be assigned to these end users. If the CIC change involves a change of carrier for any end users, the IC will notify the affected end users of the change. The telephone company will change the PIC of each end user identified by the IC to the new CIC and bill the IC the nonrecurring charge set forth in 13.4(J) following for each end user line or trunk that is changed.
- (J) As specified above, a nonrecurring charge will apply for subsequent changes to the end user's selection of a PIC, including the establishment or removal of a PIC or No-PIC selection. The nonrecurring charge to process a PIC change request is bifurcated into four (4) separate nonrecurring charges and applies as follows:
 - (1) A nonrecurring charge, as set forth in Section 17.4.4(I)(1), following, applies when the PIC change request is submitted to the Telephone Company through manual methods.
 - (2) A nonrecurring charge, as set forth in Section 17.4.4(I)(2), following, applies when the PIC change request is submitted to the Telephone Company through electronic methods.
 - (3) A nonrecurring charge, as set forth in Section 17.4.4(I)(3), following, applies to the PIC change when a request submitted to the Telephone Company through manual methods requests a simultaneous change to both the interLATA PIC and intraLATA PIC selections.
 - (4) A nonrecurring charge as set forth in Section 17.4.4(I)(4), following, applies to the PIC change when a request submitted to the Telephone Company through electronic methods requests a simultaneous change both the interLATA PIC and intraLATA PIC selections.

As used above, manual methods are (i) all personal interaction between an end user, or a person acting on behalf of the end user, and a Telephone Company employee and (ii) any facsimile or written submissions from an end user, or a person acting on behalf of the end user, to a Telephone Company service center. Electronic methods shall include all other methods. If a PIC change request utilizing an electronic method results in manual processing, the electronic nonrecurring charge shall apply upon completion of the request.

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.5 Unauthorized Presubscribed Interexchange Carrier (PIC) Change

For purposes of this section, a subscriber is defined as:

- the party identified in the account records of the Telephone Company as responsible for payment of the telephone bill, or
- any adult person authorized by such party to change telecommunications services or to charge services to the account, or
- any person contractually or otherwise lawfully authorized to represent such party.

If an IC requests a PIC change on behalf of a subscriber and the subscriber subsequently denies requesting the change; the Telephone Company will:

- Notify both carriers involved in the unauthorized change allegation made by the subscriber. This notification must include the identity of both carriers.
- Direct the subscriber to the appropriate state regulatory agency or the Federal Communications Commission to file a complaint.
- Inform the subscriber that if he or she has not already paid charges to the unauthorized carrier, he or she is not required to pay for any charges incurred for the first 30 days after the unauthorized change.

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.6 Blocking Service13.6.1 International Blocking Service

The Telephone Company will provide International 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 Telephone Company end offices. Those offices providing International Blocking Service are identified in NATIONAL EXCHANGE CARRIER ASSOCIATION, INC. TARIFF F.C.C. NO. 4.

On each line or trunk for which International Blocking Service is ordered, the Telephone Company will block all direct dialed international calls that use the call sequence of 011+ or 10XXX-011+ or 101XXX-011+. When capable, the Telephone Company will route the blocked calls to a recorded message.

An International Blocking Service charge as set forth in 17.4.4(J) following is applicable for each new or existing exchange line or trunk or Feature Group A Switched Access line to which International Blocking Service is added or removed. 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.

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.6 Blocking Service (Cont'd)13.6.1 International Blocking Service (Cont'd)

A Miscellaneous Service Order Charge as set forth in 17.4.1(D) will apply to orders adding or removing International Blocking Service that are placed subsequent to the initial installation of the associated exchange line(s) or trunk(s) or Feature Group A Switched Access line(s). 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.

13.6.2 900 Blocking Service

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.

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.

A Blocking Service charge as set forth in 17.4.4(J) following is applicable when ordered by the end user customer with the following exceptions:

- Blocking access to 900 Service is offered to all subscribers at no charge from November 1, 1993 through December 31, 1993.
- 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.

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.

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.7 Billing Name and Address Service13.7.1 General Description

- (A) 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 telecommunications service provider is defined as an interexchange carrier, an operator service provider, an enhanced service provider or any other provider of interstate telecommunications services.
- (B) 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.
- (C) 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.

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.7 Billing Name and Address Service (Cont'd)13.7.2 Undertaking of the Telephone Company

- (A) A standard format for the receipt of BNA requests and the provision of BNA information will be established by the Telephone Company.
- (B) 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.
- (C) Where facilities are available, the Customer may request an optional specialized output format required to meet a specific Customer need.
- (D) 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.
- (E) The Telephone Company will not disclose BNA information to parties other than interstate service providers and their authorized billing agents as defined in 13.7.1(A) preceding. BNA disclosure is limited to those purposes as defined in 13.7.1(B) preceding.
- (F) 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 interexchange carrier has based the order. This request is made to ensure that the BNA information is to be used only for purposes as described in 13.7.1(B) preceding. The Telephone Company will not process the order until such time as the interstate service provider supplies the requested data

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.7 Billing Name and Address Service (Cont'd)13.7.3 Obligations of the Customer

- (A) 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.
- (B) 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 13.7.1(B), preceding.
- (C) 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.
- (D) 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.

13.7.4 Rate Regulations

- (A) 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 following.
- (B) Where available, the customer may order the response formatted on Magnetic Tape. The Optional Magnetic Tape charge is specified in 17.4.4 following and is in addition to the BNA Order Charge and the BNA Record Charge.
- (C) 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 following and is in addition to the BNA Order Charge and the BNA Record Charge.

ACCESS SERVICE

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

13.8 [Reserved for Future Use]

(C)

(D)

(D)

13.9 Nonchargeable Confirmation Services

13.9.1 Billed Number Screening (BNS)

At the request of the customer, the Telephone Company business office will confirm BNS codes associated with a line to which a call is to be billed.

13.9.2 Originating Line Screening (OLS)

At the request of the customer, the Telephone Company business office will confirm OLS codes associated with an exchange service line from which a call originates.

ACCESS SERVICE

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

13.10 [Reserved for Future Service]

(C)

(D)

(D)

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.11 Local Number Portability

Where facilities permit, Local Number Portability (LNP) provides an end user of local exchange telecommunications service the ability to retain its existing local exchange service telephone number (TN) when changing from one telecommunications service provider to another provided the end user remains at the same location. LNP also allows an end user the ability to complete calls to numbers that have been ported from one telecommunications service provider to another. LNP capability will be activated in Telephone Company end office or tandem switches. The Telephone Company will identify its LNP capable serving wire centers in the NATIONAL EXCHANGE CARRIER ASSOCIATION, INC. TARIFF F.C.C. No. 4. The technical specifications for Local Number Portability are contained in Telcordia Technologies Technical Reference GR-2936-CORE.

13.11.1 LNP End User Charge(A) Description

The LNP End User Charge applies to local exchange service end users, resellers of the Telephone Company's local exchange service, line side access customers, and purchasers of unbundled switch ports that are served by either:

- an LNP capable serving wire center or
- a non-LNP capable serving wire center that provides local exchange service through an Extended Area Service arrangement with either:
 - one of the 100 largest metropolitan statistical areas, or an adjacent LNP capable local exchange carrier.

The LNP End User Charge recovers the Telephone Company's costs directly related to providing LNP.

(B) Rate Regulations

The Telephone Company will bill a monthly LNP End User Charge as set forth in Section 17.4.4(N), following, with the following exceptions:

- Each PBX trunk shall be assessed the equivalent of nine monthly LNP End User Charges as specified in Section 17.4.4(N), following.
- Each ISDN PRI arrangement shall be assessed the equivalent of five monthly LNP End User Charges as specified in Section 17.4.4(N), following.
- Lifeline end user customers shall not be assessed the LNP End User Charge.

The Telephone Companies will recover the LNP End User Charge for a 60 month period beginning with the effective date of each rate as specified therein.

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.11 Local Number Portability (Cont'd)13.11.2 LNP Query Service(A) Description

LNP Query Service uses Advanced Intelligent Network (AIN) technology and the Common Channel Signaling (CCS) network to query an LNP database to obtain network routing instructions before completion of a call. The LNP database contains all of the TNs within an NXX and the location routing number (LRN) of the switch serving each of those TNs when at least one of the TNs within the NXX has been transferred from one telecommunications service provider to another. The LRN associates a unique NPA-NXX-XXXX routing number with each central office switch that has subscribers who have transferred their TNs.

Where more than one carrier is involved in completing the call, the carrier prior to the terminating carrier (i.e., the N-1 carrier) is responsible for querying an LNP database to obtain the LRN used in routing the call for a number portable NXX code. When the N-1 carrier forwards a non-queried call to a Telephone Company end office or tandem switch and the NXX code has one or more transferred TNs, the Telephone Company's end office or tandem switch will suspend call processing and formulate and launch a query to an LNP database to secure the LRN of the transferred TN. When the LRN has been returned from an LNP database to the Telephone Company end office or tandem switch originating the query, call processing is resumed and the call is either processed in the Telephone Company's network or routed to the correct telecommunications service provider's network for completion to the called party. The Telephone Company will perform the query on behalf of the N-1 carrier (i.e., the LNP query service customer) that forwarded the call. The Telephone Company will bill the N-1 wireline or wireless telecommunications carrier a charge per query, regardless of whether the call is completed.

An LNP Order Charge will apply on a per order basis for those Customers that have ordered LNP Query Service. N-1 carriers who terminate non-queried traffic into the Telephone Company's network and have not placed an order for LNP Query Service will be assessed on a per account basis an LNP Billing Charge.

ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)13.11 Local Number Portability (Cont'd)13.11.2 LNP Query Service (Cont'd)(B) Limitations

LNP Query Service is to be used only on a call-by-call basis for routing calls to number portable NXX codes and cannot be used for purposes other than those functions described herein.

(C) Network Management

The Telephone Company will administer its network to ensure the provision of acceptable service levels to all customers of the LNP Query Service.

The Telephone Company reserves the right to block any LNP query traffic in a nondiscriminatory manner, where the processing of the LNP queries threatens to disrupt operation of its network and impair network reliability.

(D) Rate Regulations

The LNP charge per query recovers the cost to query an LNP database on behalf of the N-1 carrier. The rate associated with an LNP query will be billed monthly, per query, based on the recorded number of queries. The Telephone Company will develop monthly charges based on an average number of queries per month if actual query recordings are not available. For billing purposes, each month is considered to have thirty (30) days.

The LNP Order Charge and LNP Billing Charge recover the cost to establish the customer's LNP query account. The LNP Order Charge will be billed per order to those customers that have ordered LNP Query Service. The LNP Billing Charge will be applied per account to the N-1 carrier who terminates non-queried traffic into the Telephone Company's network and has not placed an order for LNP Query Service.

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.)

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.

(C)
(C)15.1 Switched Access Service

Ten 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 (D) following.

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)

Interface Group 1 is provided with Type C Transmission Specifications, as set forth in 15.1.2(C) following, and Interface Groups 2 through 10 are provided with Type A or B Transmission Specifications, as set forth respectively in 15.1.2(E) and (F) 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.

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.

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

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.

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 Groups 3 through 5

Interface Groups 3 through 5 provide analog transmission at the point of termination at the customer designated premises. The various interfaces are capable of transmitting electrical signals at the frequencies illustrated following, with the capability to channelize voice frequency transmission paths. Certain frequencies within the bandwidth of the Interface Groups are reserved for Telephone Company use, e.g., pilot and carrier group alarm tones. Before the first point of switching, the Telephone Company will provide multiplex equipment to derive the transmission paths of frequency bandwidth of approximately 300 to 3000 Hz.

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)(C) Interface Groups 3 through 5 (Cont'd)

The interfaces are provided with individual transmission path SF supervisory signaling.

<u>Interface Group Identification No.</u>	<u>Transmission Frequency Bandwidth</u>	<u>Analog Hierarchy Level</u>	<u>Maximum No. Of Channelized Voice Freq. Trans. Paths</u>
3	60-108kHz	Group	12
4	312-552 kHz	Supergroup	60
5	564-3084 kHz	Mastergroup	600

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) Interface Groups 6 through 10

Interface Groups 6 through 10 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/D4 format.

The interfaces are provided with individual transmission path bit stream supervisory signaling.

<u>Interface Group Identification No.</u>	<u>Nominal Bit Rate (Mbps)</u>	<u>Digital Hierarchy Level</u>	<u>Max. No. of Channelized Voice Freq. Trans. Paths</u>
6	1.544	DS1	24
7	3.152	DS1C	48
8	6.312	DS2	96
9	44.736	DS3	672
10	274.176	DS4	4032

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) 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 with the exception of the addition of 64 Clear Channel Capability to an existing service).

When the 64 Clear Channel Capability optional feature is installed on an existing facility the addition will be treated as a discontinuance and start of service and all associated nonrecurring charges will apply.

- 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 GR-334-CORE. This feature is available with Interface Groups 2 through 10 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.
- 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.

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) Local Transport Optional Features (Cont'd)- 64 Clear Channel Capability

64 Clear Channel Capability allows the customer to transport voice or data signals over a 64 Kbps channel with no constraints on the quantity or sequence of ones and zero bits. This option employs the Bipolar 8 Zero Suppression (B8ZS) technique to permit customers to use the full 64 Kbps bandwidth of a DS0 channel. It is only available in suitably equipped electronic end offices as identified in NATIONAL EXCHANGE CARRIER ASSOCIATION, INC. TARIFF NO. 4. 64 Clear Channel Capability, as described in Technical Reference GR-334-CORE, is available with Interface Groups 6 and 9 for Feature Groups C and D with Signaling System 7 (SS7) signaling.

The Interface Groups, as described in (A) through (D) 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 Signaling,
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

- For Interface Groups 3 through 5

Optional Supervisory Signaling Not Available

- For Interface Groups 6 through 10

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) Local Transport Optional Features (Cont'd)

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

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)(F) 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.

<u>Interface Group</u>	<u>Telephone Company Switch Supervisory Signaling</u>	<u>Premises 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	3RV3-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			

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)(F) Available Premises Interface Codes (Cont'd)

Interface Group	Telephone Company Switch Supervisory Signaling	Premises Interface Code	A	Feature Group		
2 (Cont'd)				B	C	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-O		X	X	X
	RV	4RV3-T		X	X	X
	SS7	4NO2			X	X
3	LO, GO	4AH5-B	X			
	RV, EA, EB, EC	4AH5-B		X	X	X
	SS7	4AH5-B			X	X
4	LO, GO	4AH6-C	X			
	RV, EA, EB, EC	4AH6-C		X	X	X
	SS7	4AH6-C			X	X
5	LO, GO	4AH6-D	X			
	RV, EA, EB, EC	4AH6-D		X	X	X
	SS7	4AH6-D			X	X

Transmittal No. 81

Issued: April 16, 2018

Effective: May 1, 2018

Vice President - Regulatory
5 Davis Farm Road, Portland, ME 04103

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)(F) Available Premises Interface Codes (Cont'd)

<u>Interface Group</u>	<u>Telephone Company Switch Supervisory Signaling</u>	<u>Premises Interface Code</u>	<u>Feature Group</u>			
			<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
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
7	LO, GO	4DS9-31	X			
	LO, GO	4DS9-31L	X			
	RV, EA, EB, EC	4DS9-31		X	X	X
	RV, EA, EB, EC	4DS9-31L		X	X	X
	SS7	4DS9-31			X	X
8	LO, GO	4DS0-63	X			
	LO, GO	4DS0-63L	X			
	RV, EA, EB, EC	4DS0-63		X	X	X
	RV, EA, EB, EC	4DS0-63L		X	X	X
	SS7	4DS0-63			X	X
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
10	LO, GO	4DS6-27	X			
	LO, GO	4DS6-27L	X			
	RV, EA, EB, EC	4DS6-27		X	X	X
	RV, EA, EB, EC	4DS6-27L		X	X	X
	SS7	4DS6-27			X	X

ACCESS SERVICE

15. Access Service Interfaces and Transmission Specifications (Cont'd)15.1 Switched Access Service (Cont'd)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 (D) following. Descriptions of each of these Standard Transmission Specifications and the two Data Transmission Parameters mentioned are set forth respectively in (E) through (G) and 15.1.3(A) and (B) 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 through 10. 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 through 10. Type DB Data Transmission Parameters are provided with FGB to the first point of switching.

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 B or Type C Transmission Specifications as follows:

- When routed directly to the end office either Type B or Type 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 when routed directly to an end office. Type B is provided with Interface Groups 2 through 10, whether routed directly to an end office or to 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, and between the customer designated premises and the access tandem and between the access tandem and the end office when routed via an access tandem.

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 through 10.

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 ± 2.0 dB

(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.

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)(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 dBrnCO
51 to 100	34 dBrnCO
101 to 200	37 dBrnCO
201 to 400	40 dBrnCO
401 to 1000	42 dBrnCO

(4) C-Notch Noise

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

(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 Return Loss</u>	<u>Singing 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

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)(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

(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 ± 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:

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

* For Feature Groups 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 GR-334-CORE.

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:

	<u>Echo Return Loss</u>	<u>Singing 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 (Effective 4-Wire transmission path at end office)	16 dB	11 dB
- For FGC access (Effective 2-Wire transmission path at end office)	13 dB	6 dB

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 ± 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.

(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 dBrnCO	38 dBrnCO
51 to 100	33 dBrnCO	39 dBrnCO
101 to 200	35 dBrnCO	41 dBrnCO
201 to 400	37 dBrnCO	43 dBrnCO
401 to 1000	39 dBrnCO	45 dBrnCO

* For Feature Groups 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 GR-334-CORE.

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

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 50 route miles	900 microseconds

1004 to 2404 Hz

less than 50 route miles	200 microseconds
equal to or greater than 50 route miles	400 microseconds

(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

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)(5) Phase Jitter

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

(6) Frequency Shift

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

(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	
50 route miles	1000
microseconds	

1004 to 2404 Hz

less than 50 route miles	320
microseconds	
equal to or greater than	
50 route miles	500
microseconds	

(3) Impulse Noise Counts

The Impulse Noise Counts exceeding a 67 dBmCO threshold in 15 minutes is no more than 15 counts.

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)(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.

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 for Non-Competitive End User Channel Terminations and Optional Features and Functions regulated in this tariff. Codes necessary to order special Access Service rate elements which are detariffed as described as competitive in section 1.1 are also included in this section. In addition, this section provides and lists the codes necessary for ordering 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 or 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 (e.g., TG1 = Telegraph). The SD and NC codes are displayed as components of the matrices designated as Technical Specifications packages in (A) through (G) 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.

(C)
—
(C)

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 Telcordia Technologies Inc.'s NC/NCI Decoder. However, not all services contained in that technical publication 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.

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 Telcordia Technologies Inc.'s NC/NCI Decoder.

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, MT, TG, etc.) are set forth in Section 7 preceding. Variations within service type (e.g., VG1, MTC, TG2, etc.) are described in the various Technical Publications cited in (A) through (H) 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.

(A) Technical Specifications Packages Metallic Service

SD Code <u>MT2</u> NC Code	<u>Package</u>				
	<u>MTC*</u>	<u>MT1</u>			
	<u>MT3</u> <u>MQ</u>	<u>NT</u>	<u>NU</u>	<u>NV</u>	
<u>Parameter</u>					
DC Resistance					
Between Conductors	X	X	X		
Loop Resistance					X
Shunt Capacitance	X				X
<u>Optional Features and Functions</u>					
Three Premises Bridging	X	X			X
Series Bridging	X		X		

The technical specifications are described in Technical Reference TR-NPL-000336.

* All parameters are available within ranges selected by the customer where technically feasible.

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 Telegraph Grade Service

	SD Code	<u>TGC*</u>	<u>Package</u>	
	<u>TG2</u>		<u>TG1</u>	
	NC Code	<u>NO</u>	<u>NW</u>	<u>NY</u>
<u>Parameter</u>				
Telegraph Distortion		X	X	X
<u>Optional Features</u> <u>and Functions</u>				
Telegraph Bridging		X	X	X

The technical specifications are described in Technical Reference TR-NPL-000336.

* All parameters are available within ranges selected by the customer where technically feasible.

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 Voice Grade Service

<u>Package VG -</u>														
SD Code	<u>C</u> * <u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>			
NC Code	LQLB	<u>LC</u>	<u>LD</u>	<u>LE</u>	<u>LF</u>	<u>LG</u>	<u>LH</u>	<u>LJ</u>	<u>LK</u>	<u>LN</u>	<u>LP</u>			
		<u>LR</u>	<u>SE</u>											
Parameter														
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	X
Frequency														
Shift	X						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	X

The technical specifications for these parameters (except for dropouts, phase hits, and gain hits) are described in Technical References GR-334-CORE and TR-NWT-000335. The technical specifications for dropouts, phase hits, and gain hits are described in Technical Reference PUB 41004 (MDP-326-584), Table 4.

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

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 Voice Grade Service (Cont'd)

Package VG -														
SD Code	<u>C*</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>W</u>
NC Code	<u>LQ</u>	<u>LB</u>	<u>LC</u>	<u>LD</u>	<u>LE</u>	<u>LF</u>	<u>LG</u>	<u>LH</u>	<u>LJ</u>	<u>LK</u>	<u>LN</u>	<u>LP</u>	<u>LR</u>	<u>SE</u>
<u>Optional Features and Functions</u>														
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			
.Sealing Current	X							X						
.Data Capability	X						X	X			X			
.Telephoto Capability	X												X	
Customer Specified Premises Receive Level	X		X	X				X	X	X				
Improved Return Loss For Effective Four-Wire Transmission	X	X	X	X	X	X	X	X	X	X	X	X	X	
For Effective Two-Wire Transmission	X		X	X				X						
Improved Two-Wire Voice Transmission														X
PPSN Interface Arrangement	X									X				
Selective Signaling Arrangement	X		X			X	X				X	X	X	
Signaling Capability Transfer	X	X	X	X				X	X	X				
Arrangement	X	X	X	X	X	X	X	X	X	X	X	X	X	

Transmittal No. 81

Issued: April 16, 2018

Effective: May 1, 2018

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 Program Audio Service

SD Code NC Code	Package				
	<u>APC*</u> <u>PQ</u>	<u>AP1</u> <u>PE</u>	<u>AP2</u> <u>PF</u>	<u>AP3</u> <u>PJ</u>	<u>AP4</u> <u>PK</u>
<u>Parameter</u>					
Actual Measured Loss	X	X	X	X	X
Amplitude Tracking	X				
Crosstalk	X	X	X	X	X
Distortion Tracking	X				
Gain/Frequency					
Distortion	X	X	X	X	X
Group Delay	X				
Noise	X	X	X	X	X
Phrase Tracking	X				
Short-Term Gain					
Stability	X				
Short-Term Loss	X				
Total Distortion	X	X	X	X	X
<u>Optional Features</u> <u>and Functions</u>					
Central Office Bridging					
Capability	X	X	X	X	X
Gain Conditioning	X	X	X	X	X
Stereo	X				X

The technical specifications are described in Technical Reference GR-337-CORE and associated Addendum.

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

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)(E) Technical Specifications Packages Video Service

	SD Code	<u>TVC*</u>	<u>Package</u> <u>TV1</u>	
	<u>TV2</u>			
	NC Code	<u>TQ</u>	<u>TV</u>	<u>TW</u>
<u>Video Parameters</u>				
Insertion Gain		X	X	X
Field-Time Distortion		X	X	X
Line-Time Distortion		X	X	X
Short-Time Distortion		X	X	X
Chrominance-Luminance Gain				
Inequality		X	X	X
Chrominance-Luminance Delay				
Inequality		X	X	X
Amplitude/Frequency Characteristic		X	X	X
Luminance Non-Linear Distortion		X	X	X
Chrominance Non-Linear Gain				
Distortion		X	X	X
Chrominance Non-Linear Phase				
Distortion		X	X	X
Transient Synchronizing Signal				
Non-Linearty		X	X	X
Dynamic Gain Distortion				
- Picture Signal		X	X	X
- Synchronizing Signal		X	X	X
Differential Gain		X	X	X
Differential Phase		X	X	X
Chrominance-Luminance Intermodulation		X	X	X

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

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)(E) Technical Specifications Packages Video Service (Cont'd)

	SD Code	<u>TVC*</u>	<u>Package</u> <u>TV1</u>	
	<u>TV2</u>			
	NC Code	<u>TQ</u>	<u>TV</u>	<u>TW</u>
<u>Audio Channel Parameters</u>				
<u>Associated with Video Service</u>				
Insertion Gain		X	X	X
Amplitude/Frequency Characteristic		X	X	X
Total Harmonic Distortion & Noise		X	X	X
Maximum Steady-State Test Levels		X	X	X
Gain Differential Between Channels		X	X	
Phase Differential Between Channels		X	X	
Crosstalk		X	X	X
Audio-To-Video Time Differential		X	X	X

The technical specifications are described in Technical Reference
GR-338-CORE.

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)(F) Technical Specifications Packages Digital Data Service

SD Code NC Code	<u>Package</u>					
	<u>D1</u> <u>XA</u>	<u>D2</u> <u>XB</u>	<u>D3</u> <u>XG</u>	<u>D4</u> <u>XH</u>	<u>D5</u> <u>XE</u>	<u>D6</u> <u>YN</u>
<u>Parameter/Hubbed</u>						
Error-Free Seconds	X	X	X	X	X	X
<u>Optional Features and Functions/Hubbed</u>						
Central Office Bridging Capability	X	X	X	X	X	X
PPSN Interface Transfer Arrangement	X	X	X	X	X	X
Transfer Arrangement	X	X	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 contained in Technical Reference PUB 62310 (MDP-326-726).

Optional Features
and Functions/Non-Hubbed

Public Packet Data Arrangement	X	X
-----------------------------------	---	---

Voltages which are compatible with Digital Data Service are delineated in Technical Reference TR-NWT-000341.

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)(G) Technical Specifications Packages High Capacity Service

		<u>Package</u>					
SD Code		<u>HC0</u>	<u>HC1</u>	<u>HC1C</u>	<u>HC2</u>	<u>HC3</u>	<u>HC4</u>
NC Code		<u>HS</u>	<u>HC</u>	<u>HD</u>	<u>HE</u>	<u>HF</u>	<u>HG</u>
<u>Parameters</u>							
Error-Free Seconds			X				
<u>Optional Features and Functions</u>							
Automatic Loop Transfer			X				
Central Office Multiplexing:							
DS4 to DS1							X
DS3 to DS1						X	
DS2 to DS1					X		
DS1C to DS1			X				
DS1 to Voice			X				
DS1 to DS0			X				
DS0 to Subrate*	X						
Transfer Arrangement			X				
Clear Channel Capability			X				

A channel with technical specifications package DS1 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 GR-334-CORE.

* Available only on a channel of 1.544 Mbps facility to a Telephone Company Hub.

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)(H) Technical Specifications Packages Synchronous Optical Channel Service

		<u>Package</u>	
		<u>OC3</u>	<u>OC12</u>
		<u>OB</u>	<u>OD</u>
<u>Parameters</u>			
<u>Error-Free Seconds</u>	X	X	
<u>Optional Features and Functions</u>			
Customer Premises			
Multiplexing:			
OC12 to OC3			X
OC12 to OC3c			X
OC12 to DS3			X
OC12 to DS1			X
OC3 to STS-1		X	
OC3 to DS3	X		
OC3 to DS1	X		
Central Office			
Multiplexing:			
OC12 to OC3			X
OC12 to OC3c			X
OC3 to DS3	X		
OC3 to DS1	X		

Technical specifications are delineated in Technical Reference GR-253-CORE, GR-1374-CORE, ANSI T1.102-1993 and ANSI T1.105-2001.

(1)SD = Service Designation Code

(2)NC = Network Channel Code

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

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.

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 OptionsParameter

<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
AH-		analog high capacity interface
	-B	60 kHz to 108 kHz (12 channels)
	-C	312 kHz to 552 kHz (60 channels)
	-D	564 kHz to 3084 kHz (600 channels)
CT -		Centrex Tie Trunk Termination
CS -		digital hierarchy interface at Digital Cross Connect System (DCS)
	-15	1.544 Mbps (DS1) ANSI Extended Superframe (ESF) Format
and		B8ZS Clear Channel Capability
	-15A	1.544 Mbps (DS1) Superframe (SF) format
	-15B	1.544 Mbps (DS1) Superframe (SF) format and B8ZS Clear Channel Capability
	-15K	1.544 Mbps (DS1) Extended Superframe (ESF)
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
	-10	VF for TG1 and TG2
	-43	VF for 43 Telegraph Carrier type signals, TG1 and TG2
DC -		direct current or voltage
	-1	monitoring interface with series RC combination (McCulloh format)
	-2	Telephone Company energized alarm channel
	-3	Metallic facilities (DC continuity) for direct current/low frequency control signals or slow speed data (30 baud)
DD -		DATAPHONE Select-A-Station (and TABS) interface at customer's point of termination
DE -		DATAPHONE Select-A-Station (and TABS) interface at the customer's end user's point of termination

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 OptionsParameter

<u>Code</u>	<u>Option</u>	<u>Definition</u>
DS		-digital hierarchy interface
	-15	1.544 Mbps (DS1) format per PUB 62411 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 62411
	-15K	1.544 Mbps format per PUB 62411 plus extended framing format
	-15L	1.544 Mbps (DS1) with SF signaling
	-27	274.176 Mbps (DS4)
	-27L	274.176 Mbps (DS4) with SF signaling
	-31	3.152 Mbps (DS1C)
	-31L	3.152 Mbps (DS1C) with SF signaling
	-44	44.736 Mbps (DS3)
	-44L	44.736 Mbps (DS3) with SF signaling
	-63	6.312 Mbps (DS2)
	-63L	6.312 Mbps (DS2) with SF signaling
DU		-digital access interface
	-24	2.4 kbps
	-48	4.8 kbps
	-19	19.2 kbps
	-56	56.0 kbps
	-96	9.6 kbps
	-64	64.0 kbps
	-A	1.544 Mbps format per GR-342-CORE
	-B	1.544 Mbps format per GR-342-CORE plus D4
	-C	1.544 Mbps format per GR-342-CORE plus extended framing format
	-1KN	1.544 Mbps ANSI Extended Superframe (ESF) Format without line power
	-1SN	1.544 Mbps ANSI Extended Superframe (ESF) Format with B8ZS Clear Channel Capability and without line power
	-AN	1.544 Mbps free-framing format without line power (only avail. to U.S. Govt. agencies)
	-BN	1.544 Mbps Superframe (SF) Format without line power
	-DN	1.544 Mbps Superframe (SF) Format with B8ZS Clear Channel Capability without line power
DX -		duplex signaling interface at customer's point of termination
DY -		duplex signaling interface at customer's end user's point of termination

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>
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.
FC -		Fiber Optic Interface
	-B	OC3, OC3c
	-D	OC12
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
LS -		loop start loop signaling - closed end function by customer or customer's end user
NO -		no signaling interface, transmission only

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>
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
SO -		SONET Optical
	-AB	Long Range Multilongitudinal Mode (LR1-MLM) Bidirectional Ring
	-AU	LR1-MLM Unidirectional Ring
	-BB	Long Range Single Longitudinal Mode (LR1 - SLM) Bidirectional Ring
	-BU	LR1-SLM Unidirectional Ring
	-CB	Intermediate Range Multilongitudinal Mode (IR1-MLM) Bidirectional Ring
	-CU	IR1-MLM Unidirectional Ring
	-DB	Intermediate Range Single Longitudinal Mode (IR1-SLM) Bidirectional Ring
	-DU	IR1-SLM Unidirectional Ring
	-EB	Short Range Multilongitudinal Mode Light Emitting Diode (SRMLM/LED) Bidirectional Ring
	-EU	SR-MLM/LED Unidirectional Ring
	-FB	Short Range Multilongitudinal Mode (SR-MLM) Bidirectional Ring
	-FU	SR-MLM Unidirectional Ring

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

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>
ST -		Synchronous Transmission Signal (STS)
-A		STS1
TF -		telephotograph interface
TT -		telegraph/teletypewriter interface at either customer POT or customer's end user POT
	-2	20.0 milliamperes
	-3	3.0 milliamperes
	-6	62.5 milliamperes
TV -		television interface
	-1	combined (diplexed) video and one audio signal
	-2	combined (diplexed) video and two audio signals
	-5	video plus one (or two) audio 5 kHz signal(s) or one (or two) two wire
	-15	video plus one (or two) audio 15 kHz signal(s)

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
Fiber	F
Radio	R

+ 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 C.C. Docket No. 20099 Settlement Agreement.

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

The following tables show the Network Channel Interface codes (NCIs) which are compatible:

(1) MetallicCompatible CIs

2DC8-1	2DC8-2
2DC8-3	2DC8-3
4DS8-	2DC8-1
4DS8-	2DC8-2

(2) Telegraph Grade

	Compatible CIs	Compatible
	CIs	
2DB2-10	10IA8	4DB2-10
	10IA8	
	2TT2-2	
	2TT2-2	
	4TT2-2	
	4TT2-2	
2DB2-43*	10IA8	4DB2-43*
	10IA8	
	2TT2-2	
	2TT2-6	
	2TT2-6	
	4TT2-2	
	4TT2-2	
		4DS8-
	10IA8	
2TT2-2	2TT2-2	
	2TT2-2	
	2TT2-6	
2TT2-3	2TT2-2	
	4TT2-2	
	4TT2-2	
	4TT2-6	
2TT2-6	2TT2-6	4TT2-2
	4TT2-2	
	4TT2-6	
		4TT2-6
	2TT2-6	

* Supplemental Channel Assignment information required.

Transmittal No. 81

Issued: April 16, 2018

Effective: May 1, 2018

Vice President - Regulatory
5 Davis Farm Road, Portland, ME 04103

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)(3) Voice Grade

<u>Compatible CIs</u>		<u>Compatible</u>		<u>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	2GO2	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				

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)(3) Voice Grade (Cont'd)

<u>Compatible CIs</u>		<u>Compatible CIs</u>		<u>Compatible CIs</u>	
4AB2	2AC2				
	4AB2				
	4AC2				
	4SF2				
4AB3	2AC2				
	4AC2				
	4SF2				
4AC2	2AC2				
	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
4DD3	2DE2		2NO2		6EB2-M
	4DE2		2PR2		6GS2
			2RV2-T		6LS2
			2TF2		8EB2-E
			4AC2		8EB2-M
			4DA2		9DY2
			4DE2		9DY3
			4DX2		9EA2
			4DX3		9EA3
			4DY2		
			4EA2-E		
			4EA2-M		

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)(3) Voice Grade (Cont'd)

<u>Compatible CIs</u>		<u>Compatible CIs</u>		<u>Compatible CIs</u>	
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		
	6EA2-M		4EA2-M		
	6EB2-E		4LS2		
	6EB2-M		4RV2-T		
	6LS2		4SF2		
			4SF3		

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)(3) Voice Grade (Cont'd)

<u>Compatible CIs</u>		<u>Compatible CIs</u>		<u>Compatible CIs</u>	
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	4GO3	2GO2
	8EB2-E		6EB2-E		2GS2
	8EB2-M		6EB2-M		2GS3
	9DY2		8EB2-E		4GS2
	9DY3		8EB2-M		4SF2
			9DY2		6GS2
4EA2-M	2DY2		9DY3	4GS	
	4DY2		9EA2		
	4EA2-M		9EA3		2GS
	4SF2				2LS
	6DY2				4GS
	6DY3				4LS
	6EB2-E				
	6EB2-M				
	8EB2-E				
	8EB2-M				
	9DY2				
	9DY3				

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)(3) 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
4LO3	2LS2	4NO2	4SF2	4SF2	4AC2
	2LS3		2DA2		4DY2
	4LS2		2DE2		4LS2
	4SF2		2NO2		4RV2-T
	6LS2		4DA2		4SF2
4LR2	2LR2	4RV2-0	4DE2	4SF3	6DY2
	4LR2		4NO2		6DY3
	4SF2		6DA2		6GS2
4LR3	2LR2		2RV2-T		9DY2
	4LR2		4RV2-T		9DY3
	4SF2		4SF2		2DY2
4LS	2GS	4SF2	2AC2	4SF2	2GO3
	2LS		2DY2		2GS2
	4GS		2GS2		2GS3
	4LS		2GS3		2LA2
4LS2	2LA2	4SF2	2LA2	4SF2	2LB2
	2LB2		2LB2		2LC2
	2LC2		2LC2		2LO3
	2LO2				2LR2
	2LO3				

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)(3) 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	6DX2	2DY2		6DY2
	4DY2				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 4TF2	6DY2	2DY2		4SF3
			4DY2		6DY2
			6DY2		6DY3
					6EA2-E
					6EA2-M

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)(3) 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
			9DY2		6EA2-M
6EA2-M	2AC2	6EB2-E	9DY3	6EX2-A	8EB2-E
	2DY2				8EB2-M
	2LA2				
	2LB2		2DY2		9DY2
	2LC2		4DY2		9DY3
	2LO3		4SF2		9EA2
	2LS2		6DY2		9EA3
	2LS3		6DY3		
	2RV2-T		6EB2-E		
	2GS2	6EB2-M			
	4AC2		6EB2-M		2GS3
	4DY2		9DY2		2LS2
	4EA2-E		9DY3		2LS3
	4EA2-M				4GS2
	4LS2		2DY2		4LS2
	4RV2-T		4DY2		4SF2
	4SF2		4SF2		6GS2
	4SF3		6DY2		6LS2
			6DY3		
			6EB2-M		
			9DY2		
			9DY3		

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)(3) Voice Grade (Cont'd)

<u>Compatible CIs</u>		<u>Compatible CIs</u>		<u>Compatible CIs</u>	
6EX2-B	2GO3	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	2LA2		9DY2		9DY3
	2LB2		9DY3		
	2LC2				
	2LO2				
	2LO3				
	4SF2				

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)(3) 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				6DY3
	6DY3	9DY3	2DY2		6EA2-E
	6EA2-E		4DY2		6EA2-M
	6EA2-M		6DY2		6EB2-E
	6EB2-E		6DY3		6EB2-M
	6EB2-M		9DY2		8EB2-E
	8EB2-E		9DY3		8EB2-M
	8EB2-M				9DY2
	9DY2	9EA2	2DY2		9DY3
	9DY3		4DY2		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		

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)(4) Program Audio

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

(5) Video

<u>Compatible</u>		<u>CIs</u>	
<u>Compatible CIs</u>			
2TV6-1	4TV6-15	4TV7-5	4TV6-5
	4TV7-15		4TV7-5
2TV6-2	6TV6-15	4TV7-15	4TV6-15
	6TV7-15		4TV7-15
2TV7-1	4TV6-15	6TV6-5	6TV6-5
	4TV7-15		6TV7-5
2TV7-2	6TV6-15	6TV6-15	6TV6-15
	6TV7-15		6TV7-15
4TV6-5	4TV6-5	6TV7-5	6TV6-5
	4TV7-5		6TV7-5
4TV6-15	4TV6-15	6TV7-15	6TV6-15
	4TV7-15		6TV7-15

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)(6) Digital Data

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

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

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)(7) High Capacity

<u>Compatible CIs</u>		<u>Compatible CIs</u>	
4DS0-63	4DS0-63 4DU8-A,B, or C 6DU8-A,B, or C	4DS8-15J	4DU8-A 6DU8-A
4DS6-27	4DS6-27 4DU8-A,B, or C 6DU8-A,B, or C	4DS8-15K	4DU8-B 4DU8-C 6DU8-B 6DU8-C
4DS6-44	4DS6-44 4DU8-A,B, or C or C or C	4DS8-31	4DS8-31 4DU8-A,B, 6DU8-A,B,
4DS8-15	4DS8-15+ 4DU8-B or C 6DU8-8	4DU8-A,B, or C	4DU8-A,B,

(8) Synchronous Optical Channel Service

<u>Compatible CIs</u>		<u>Compatible CIs</u>	
4DS9-1S	4DU9-1S	2SOF-A	2SOF-A
4DS9-1K	4DU9-1K	2SOF-B	2SOF-B
		2SOF-C	2SOF-C
		2SOF-D	2SOF-D
		2SOF-E	2SOF-E
		2SOF-F	2SOF-F

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

ACCESS SERVICE

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

15.3 [Reserved for Future Use]

(C)

(D)

(D)

ACCESS SERVICE

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

15.3 Reserved for Future Use

(C)

(D)

(D)