

**Qwest Corporation**  
**Catalog No. 2**  
**Washington**

**SECTION 5**  
Original Index Sheet 1

**PRIVATE LINE**  
**TRANSPORT SERVICES**  
Effective: December 1, 2007

**5. SERVICES**

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## **5. SERVICES**

### **5.1 GENERAL**

Private Line Transport provides a transmission path between customer designated premises or customer designated premises and a Serving Wire Center. Company Centrex central office-like switches are considered to be customer designated premises for purposes of administering and providing Private Line Transport Services.

#### **5.1.1 SERVICE TYPES**

There are several types of services used to provide Private Line Transport. Each type has its own characteristics. All are subdivided by one or more of the following:

- Transmission specifications
- Bandwidth
- Speed (i.e., bit rate)

Customers can order a basic channel and select from a list of available transmission performance and channel interfaces those that they desire to meet specific communications requirements.

For purposes of ordering channels, each has been identified as a type of Private Line Transport. However, such identification is not intended to limit a customer's use of the channel nor to imply that the channel is limited to a particular use.

#### **A. Service Descriptions**

##### Low Speed Data

A channel for the transmission of low speed loop status signals of up to 150 baud and for the transmission of McCulloh type alarm signals

##### Voice Grade

A channel for the transmission of analog signals within an approximate bandwidth of 300-3000 Hz.

##### Local Area Data Service (LADS)

A channel suitable for baseband transmission of digital data signals between points within the same serving wire center area.

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**5.1 GENERAL**

**5.1.1 SERVICE TYPES**

A. Service Descriptions(Cont'd)

Audio

A channel for the transmission of audio signals. The nominal frequency bandwidths are from 200 to 3,500 Hz, from 100 to 5,000 Hz, from 50 to 8,000 Hz or from 50 to 15,000 Hz. Audio multipoint private line channels are specially provided for the closed circuit (non-broadcast) transmission of voice and music in one direction only.

Foreign Central Office (FCO)

Provides dial tone from a wire center in an exchange from which the customer is not normally served.

Exchange Service Extension (ESE)

Channel which extends dial tone from a customer's serving wire center to a noncontinuous property station location.

Telephone Answering Service (TAS)

Channel from a patron's central office to the Answering Bureau.

Digital Data Service (DDS)

A channel for the digital transmission of synchronous serial data at rates of 2.4, 4.8, 9.6, 19.2, 56 and 64 kbit/s.

DS1

A channel for point to point two-way transmission at a speed of 1.544 Mbit/s per second.

DS3

A channel for point to point, two-way high speed digital transmission at speeds of 45 Mbit/s.

## **5. SERVICES**

### **5.1 GENERAL (CONT'D)**

#### **5.1.2 RATE CATEGORIES**

There are four basic rate categories which apply to Private Line Transport Services:

- Network Access Channel
- Channel Performance
- Transport Mileage
- Optional Features and Functions

#### **A. Network Access Channel[1]**

The Network Access Channel provides a two-wire or four-wire communications path between the DP and the normal serving wire center of that premises. One Network Access Channel charge applies per channel terminated at the DP. This charge will apply even if the customer designated premises and the serving wire center are collocated in the same building. On certain services, the Network Access Channel may be derived from an existing service.

#### **B. Channel Performance[1]**

The Channel Performance provides the electronic equipment which is added to the Network Access Channel to provide the desired level of transmission performance. It modifies the circuit with the basic performance necessary for the circuit to function. If appropriate, it may also provide various signaling parameters to enhance the basic performance. Included as part of the Channel Performance is a Network Channel Interface (NCI) or DP arrangement which defines the technical characteristics at the interface between the customer and the Company. One Channel Performance charge will apply per Network Access Channel.

[1] Not applicable on DDS, DS1 and DS3 service.

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**5.1 GENERAL**

**5.1.2 RATE CATEGORIES (CONT'D)**

C. Transport Mileage<sup>[1]</sup>

The Transport Mileage provides for the transmission facilities between the serving wirecenters associated with two customer designated premises. The Transport Mileage is portrayed in mileage bands. There are two rate elements that apply for each band, a flat rate per band and a rate per mile. Transport Mileage is measured by airline miles between serving wire centers via the V and H Coordinates Method, as set forth in the NATIONAL EXCHANGE CARRIER ASSOCIATION TARIFF F.C.C. No. 4.

D. Optional Features and Functions

The Optional Features and Functions rate category provides for optional features and functions which may be added to Private Line Transport Services to improve its quality or utility to meet specific communications requirements. These are not necessarily identifiable with specific equipment, but rather represent the end result in terms of performance characteristics which may be obtained. These characteristics may be obtained by using various combinations of equipment. Although the equipment necessary to perform a specified function may be installed at various locations along the path of the service, they will be charged for as a single rate element.

[1] When a customer's intrastate private line transport service or foreign exchange service is extended into unassigned territory, that service location is termed a Private Line Pricing Point. This location shall be considered a wire center for the purpose of determining airline mileages between two wire centers.

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### **5.1 GENERAL**

#### **5.1.2 RATE CATEGORIES**

##### **D. Optional Features and Functions (Cont'd)**

Examples of Optional Features and Functions that are available include, but are not limited to, the following:

- Hubbing Functions
- Bridging
- Conditioning
- Secondary Channel

A hub is a Company designated serving wire center at which bridging functions are performed. The bridging functions performed are to connect three or more customer designated premises in a multipoint arrangement. NATIONAL EXCHANGE CARRIER ASSOCIATION TARIFF F.C.C. No. 4 identifies serving wire centers, hub locations and the type of bridging.

Standard offerings are available within each category of service. If a Standard offering does not meet a particular customer requirement, the customer may request and the Company may develop a Custom offering. The Channel Performance and/or Optional Features and Functions for customer services will be developed and rated on an individual case basis.

#### **5.1.3 SERVICE CONFIGURATIONS**

The two types of service configurations over which Private Line Transport can be provided are:

- Two-point
- Multipoint

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### 5.1 GENERAL

#### 5.1.3 SERVICE CONFIGURATIONS (CONT'D)

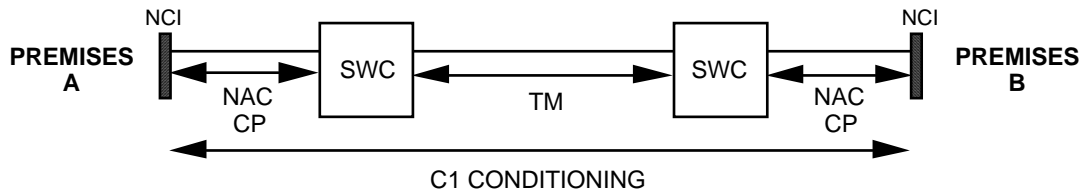
##### A. Two-Point Service

A two-point service connects two customer designated premises through a Company wire center or a customer designated premises and a wire center.

Applicable rate categories are:

- Network Access Channel[1]
- Transport Mileage (when applicable)
- Channel Performance[1]
- Optional Features and Functions (when applicable)

The following diagram depicts a two-point, Voice Grade service connecting two customer designated premises with serving wire centers (SWC) located fifteen miles apart. This service is provided with C1 - Type Conditioning. The location of the Network Channel Interface (NCI) is noted on the diagram.



Applicable rate categories for this example are:

- Network Access Channels (NAC) (2)
- Transport Mileage (TM) (Mileage band over 8 to 25 miles)
- Channel Performance (CP) (2)
- Optional Features and Functions (C1 Conditioning) (2)

[1] For DDS, DS1 and DS3 Services, a Channel Termination rate element applies instead of a Network Access Channel and a Channel Performance.

## **5. SERVICES**

### **5.1 GENERAL**

#### **5.1.3 SERVICE CONFIGURATIONS (CONT'D)**

##### **B. Multipoint Service**

Multipoint Service connects three or more customer designated premises through a Company wire center. When more than four bridging locations are provided in tandem, the quality of the service may be degraded. Only certain types of Private Line Transport Services are provided as multipoint service. These are so designated in the Service Descriptions set forth in 5.2, following.

When ordering, the customer may specify the desired bridging location(s) selected from the NATIONAL EXCHANGE CARRIER ASSOCIATED TARIFF F.C.C. No. 4. The Company, when requested to do so, will assist the customer in selecting the bridge locations(s).

Applicable rate categories are:

- Network Access Channel[1]
- Transport Mileage (when applicable)
- Channel Performance[1]
- Optional Features and Functions (when applicable)

[1] For DDS, DS1 and DS3 Services, a Channel Termination rate element applies instead of a Network Access Channel and Channel Performance.

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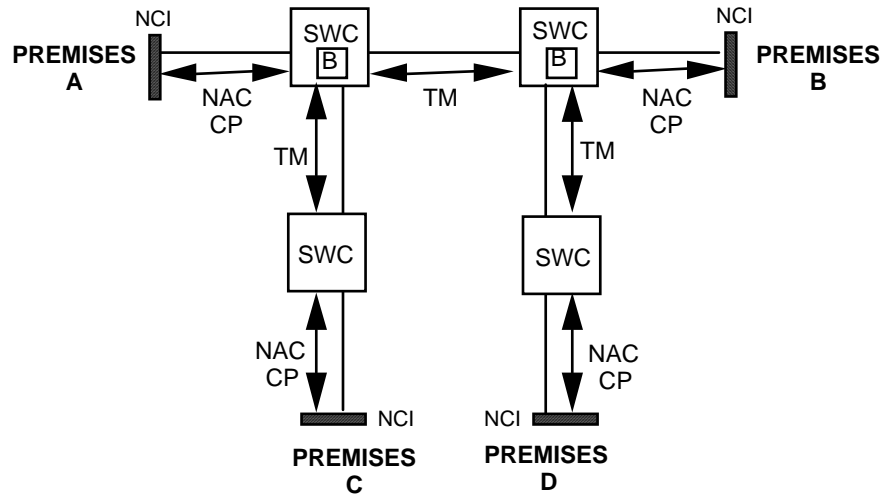
5.1 GENERAL

5.1.3 SERVICE CONFIGURATIONS

B. Multipoint Service (Cont'd)

- Multipoint Analog Service

The following diagram depicts a service connecting four customer designated premises, each served by a different SWC. The location of the Network Channel Interface (NCI) is noted on the diagram.



Applicable rate categories for this example:

- Network Access Channel (NAC) (4)
- Transport Mileage (TM) (3 sections, each from the appropriate mileage band)
- Channel Performance (CP) (4)
- Optional Features and Functions - bridging (B) (6 applicable, one per port)

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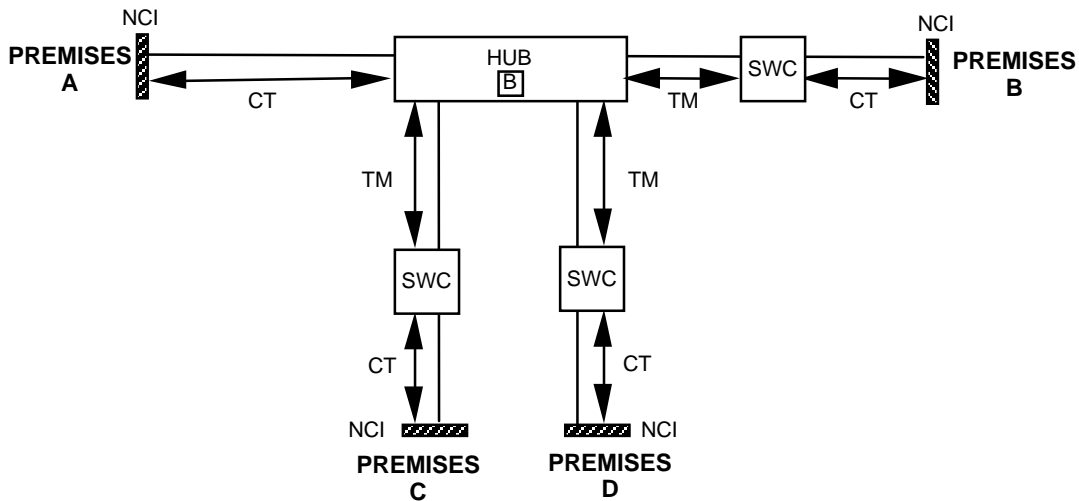
5.1 GENERAL

5.1.3 SERVICE CONFIGURATIONS

B. Multipoint Service (Cont'd)

- Multipoint Digital Data Service

The following diagram depicts a service connecting four customer designated premises, each served by a different Serving Wire Center (SWC). The location of the Network Channel Interface (NCI) is noted on the diagram.



Applicable rate categories for this example:

- Channel Termination (CT) (4)
- Transport Mileage (TM) (3 sections, each from the appropriate mileage band)
- Channel Performance (CP) (4)
- Optional Features and Functions - bridging (B) (4 applicable, one per port)

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### **5.1 GENERAL (CONT'D)**

#### **5.1.4 FACILITY HUBS**

A customer has the option of ordering digital high capacity facilities (e.g., DS1) to a facility hub for channelizing to individual services requiring lower capacity facilities (e.g., Voice Grade, Audio Program, etc.) where facilities are available.

Different locations may be designed as hubs for different facility capacities, e.g., multiplexing from digital to digital may occur at one location while multiplexing from digital to analog may occur at a different location. When ordering, the customer will specify the desired multiplexing hub(s) selected from the NATIONAL EXCHANGE CARRIER ASSOCIATION Tariff F.C.C. No. 4. This Tariff identifies the type(s) of multiplexing functions which are available and the serving wire centers at which they are available.

Some of the types of multiplexing available include the following:

- From higher to lower bit rate
- From digital to voice frequency channels

End-to-end services may be provided on channels of these facilities to a hub. The transmission performance for the end-to-end service provided between the customer designated premises will be that of the lower capacity or bit rate. For example, when a 1.544 Mbit/s facility is multiplexed to voice frequency channels, the transmission performance of the channelized services will be voice grade, not high capacity, i.e., not DS1.

The Company will commence billing the monthly rate for the facility to the hub on the service due date specified by the customer on the service order. Individual services utilizing these facilities may be installed coincident with the installation of the facility to the hub, or may be ordered and/or installed at a later date, at the option of the customer. The customer will be billed for the appropriate Network Access Channel/Channel Termination, Channel Performance, Transport Mileage (when applicable), and the multiplexer at the time the facility is installed. Individual service rates (by service type) will apply for a Network Access Channel, Channel Performance and additional Transport Mileage (as required) for each channelized service. These will be billed to the customer as each individual service is installed.

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### **5.1 GENERAL**

#### **5.1.4 FACILITY HUBS (CONT'D)**

Cascading multiplexing occurs when a digital channel is de-multiplexed to provide channels with a lesser capacity and one of the lesser capacity channels is further de-multiplexed. For example, a DS1 facility is de-multiplexed to twenty-three DS0 facilities and then one of the DS0 facilities is further de-multiplexed to subrate (e.g. ten 4.8 kbit/s).

When cascading multiplexing is performed whether in the same or a different hub, a charge for the additional multiplexing unit also applies. When cascading multiplexing is performed at different hubbing locations, Transport Mileage charges also apply between the hubs.

Although not requiring multiplexing, the Company will designate certain hubs for Audio Program Services. A customer may order service(s) between customer designated premises and a hub. The customer will be charged for each such connection made at the hub at the nonrecurring charges for a Channel Performance, Audio Program Service, as set forth in 5.2.5 following. The rates that also apply for the service between each customer designated premises and the hub are a Network Access Channel and Channel Performance. If applicable, Transport Mileage from the hub to other serving wire centers and rates for Optional Features and Functions may be required.

#### **5.1.5 SHARED USE**

Shared use occurs when Private Line Transport Service and Switched Access Service are provided over the same high capacity facilities through a common interface. The facility will be ordered, provided and rated as Private Line Transport Service (i.e., Network Access Channel, Channel Performance, Transport Mileage, as appropriate, and Multiplexer). The nonrecurring charge that applies when the Shared Use Facility is installed will be the nonrecurring charge associated with the appropriate Private Line Transport high capacity channel. Rating as Private Line Transport will continue until such time as the customer chooses to use a portion of the available capacity for providing Switched Access Service. As each individual channel is activated for Switched Access Service, the Private Line Transport Services rates will be reduced accordingly (e.g., 1/24th for a DS1 service, etc.). The customer must place an order for each individual Switched Access or Private Line Transport Service utilizing the Shared Use Facilities and specify the channel assignment for each such service.

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**5.1 GENERAL**

**5.1.5 SHARED USE (CONT'D)**

Switched Access Service rates and charges which may be found in Section 6 of the Access Service Tariff, will apply for each channel of the Shared Use Facility that is used to provide Switched Access Service. Where Private Line Transport Service is provided utilizing a channel of the Shared Use Facility to the hub, high capacity rates and charges will apply for the facility to the hub and individual service rates and charges will apply from the hub to the customer designated premises. The rates and charges that will apply to the portion from the hub to the customer designated premises will be dependent on the specific type of Private Line Transport Service that is provided (e.g., Voice Grade, etc.). The applicable rates and charges will include a Network Access Channel, Channel Performance and Transport Mileage where applicable. Rates and charges for Optional Features and Functions associated with the service, if any, will apply.

## **5. SERVICES**

### **5.2 SERVICE DESCRIPTIONS**

#### **5.2.1 LOW-SPEED DATA SERVICE**

##### **A. Basic Circuit Description**

These unconditioned channels are capable of transmitting low speed varying signals at rates up to 30 baud or binary signals at rates of 0-150 baud. Low-Speed Data Channels are furnished and rated from a DP to a DP or bridging location to a DP. These channels are furnished on a two-point or multipoint basis.

Information pertaining to the technical specifications and compatible channel interfaces is set forth in the Technical Publications listed under the Reference to Technical Publications preceding.

##### **B. End-to-End Application**

This application is intended for customers requiring an overall Private Line Transport Service, furnished by the Company within the LATA. No DLR will be provided since the performance and maintenance will be the responsibility of the Company. The network channel interface at the terminating end of the overall circuit is referred to as the End User-DP. Following are the service categories that normally apply to the End-to-End application:

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## **5. SERVICES**

### **5.2 SERVICE DESCRIPTIONS**

#### **5.2.1 LOW-SPEED DATA SERVICE**

##### **B. End-to-End Application (Cont'd)**

###### **1. Service Categories**

- **LS31** - Provides for data transfer at speeds within the range of 0 to 150 baud. The channel is further defined by speed into the following functions:

0-30 baud channels provide:

- Two-point service used for key control circuits or remote status monitoring, furnished on a two-wire only basis.[1]
- Two-point or multipoint service intended for use in McCulloh Alarm-type applications, furnished on a two-wire only basis.
- DC Channel (metallic channel) current or voltage interfaces on a two-wire basis. Available at the Company's option, on an intra-wire center basis only where facilities and operations permit. This two-point or multipoint service is intended for applications where dc continuity is required. Requests for new service will be provided on an intra-wire center basis only. Service in place as of May 2, 1988 on an inter-wire center basis will be Grandfathered to the existing locations.

0-75 baud channels are available on a two-point or multipoint basis and are intended for telegraph grade applications.

0-150 baud channels provide EIA RS 232 interfaces. The service is available on a two-point or multipoint basis and is intended for telegraph grade applications.

- **Low-Speed Data-Custom**

A Custom Low-Speed Data channel may be provided upon request when parameters and/or features are not provided by the standard Low-Speed Data channels.

[1] When used as a control type channel, a CPE key may also be required.

## **5. SERVICES**

### **5.2 SERVICE DESCRIPTIONS**

#### **5.2.1 LOW-SPEED DATA SERVICE (CONT'D)**

##### **C. Terms and Conditions**

It is expressly declared that metallic facilities are in continually decreasing supply and the Company is not obligated to continue to provide such facilities. Due to facility rearrangements, continued use of metallic facilities may be denied to existing customers with no obligation on the Company's part to pay customer equipment rearrangement costs. The Company will give the customer reasonable notification of this type of facility rearrangements. Metallic facilities are provided only where existing facilities and operating conditions permit.

Any deviation from the established parameters on a given circuit will be handled on an individual case basis. All transmission measurements will be measured from the primary station.

##### **D. Optional Features and Functions**

###### **1. Bridging:**

- a. McCulloh Bridging allows the connection of up to twenty-six customer premises. This bridging is only available with McCulloh Alarm-type service.
- b. Telegraph Bridging allows the connection of three or more customer-designated premises.
- c. Direct Bridging connects three or more customer-designated premises on the DC Channel.

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**5.2 SERVICE DESCRIPTIONS**

**5.2.1 LOW-SPEED DATA SERVICE (CONT'D)**

E. Service Information

	<b>SERVICE</b>	<b>CLASS OF SERVICE</b>	<b>NETWORK CHANNEL CODE</b>
End-to-End			
	LS-31 Control Status	PYKAN	UY
	LS-31 McCulloh	PYKMN	UY
	Alarm Type		
	LS-31 DC Channel[1]	PYKGN	UY
	LS-31 Telegraph	PYKJN	UY
	0-75 Baud		
	LS-31 Telegraph	PYKKN	UY
	0-150 Baud		
	Custom	PYKCN	UN

[1] Requests for new service will be provided on an intra-wire center basis only. Service in place prior to May 2, 1988 on an inter-wire center basis will be Grandfathered to the existing location.

## **5. SERVICES**

### **5.2 SERVICE DESCRIPTIONS (CONT'D)**

#### **5.2.2 VOICE GRADE SERVICE**

##### **A. Basic Description**

Voice Grade circuits are provided with a bandwidth of 300-3000 Hz designed to meet certain specifications based on Company standards of measurement for voice transmission, data transmission, remote metering, telephoto and miscellaneous signaling purposes. Such identification is not intended to limit a customer's use of the circuits or to imply that the circuit is limited to a particular use. These circuits are not suitable for the transmission of direct current pulses. The number of stations that may be connected and the distance over which transmission is possible may be limited by operating and transmission factors. Circuits are furnished as either two-wire or four-wire on a two-point or multipoint basis.

Information pertaining to the technical specifications and compatible channel interfaces is set forth in the Technical Publications listed under the Reference to Technical Publications preceding.

##### **B. End-Link or Mid-Link Applications**

This application is intended for customers requiring Private Line Transport as part of an overall circuit, extending beyond the LATA. Several Channel Performances are available to facilitate compatibility and a mechanized Design Layout Report (DLR) is available to the customer to assist in their overall design. The network channel interface between the Company facility and the remainder of the overall circuit is referred to as the Mid User-DP. The network channel interface that is at the terminating end of the overall circuit is referred to as the End User-DP. Following are the service categories that normally apply to the End-link or Mid-link application.

##### **1. Service Categories**

- VG2 - Suitable for use as a voice two-point or multipoint private line and switched special service circuit. The transmission interfaces are either two-wire or four-wire.

## **5. SERVICES**

### **5.2 SERVICE DESCRIPTIONS**

#### **5.2.2 VOICE GRADE SERVICE**

##### **B.1. (Cont'd)**

- VG3 - Suitable for use as a two-point voice trunk-type circuit. The transmission interfaces are provided as either two-wire or four-wire.
- VG5 - Suitable for use as a two-point or multipoint voice grade data alarm-type circuit. The transmission interfaces may be either two-wire or four-wire.
- VG6 - Suitable for voice grade analog data circuits (applications may be limited). This service is provided on a two-point or multipoint basis. The transmission interfaces are provided on a four-wire basis only.
- VG7 - Suitable for two-point use for a switched or nonswitched data circuit. The transmission interfaces may be either two-wire or four-wire.
- VG10 - Suitable for a specialized simultaneous two-way voice grade analog data circuit that extends Digital Data Service (DDS) into areas without DDS facilities. This service is provided on a two-point or multipoint basis. The transmission interfaces are provided as either two-wire or four-wire.
- VG12 - Suitable for specialized voice grade private line audio tone protective relaying circuit. High Voltage Power protection is required for provision of VG12 service. This service is provided on a two-point or multipoint basis. The transmission interfaces are provided as either two-wire or four-wire.

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### **5.2 SERVICE DESCRIPTIONS**

#### **5.2.2 VOICE GRADE SERVICE**

##### B.1. (Cont'd)

- Voice Grade W (WATS) (SE, SF)

WATS Access Line service provides a connection between an End User-DP or a Company Centrex switch and a WATS serving office. The WATS Access Line service is only provided in conjunction with Feature Groups C and D Switched Access Service (see Access Service Tariff, Section 6).

Usable frequencies are nominally 300 to 3000 Hz. The service extends from an End User-DP or a Company Centrex switch to a line-side termination at a WATS serving office. WATS Access Line service is provided as effective 2-wire transmission.

##### C. End-to-End Application

This application is intended for customers requiring an overall Private Line Transport, furnished by the Company within the LATA. No DLR will be provided since the performance and maintenance will be the responsibility of the Company. The network channel interface at the terminating end of the overall circuit is referred to as the End User-DP. Following are the service categories that normally apply to the End-to-End application:

## **5. SERVICES**

### **5.2 SERVICE DESCRIPTIONS**

#### **5.2.2 VOICE GRADE SERVICE**

##### **C. End-to-End Application (Cont'd)**

###### **1. Service Categories**

- **VG32** - Suitable for use as a two-point or multipoint line-type circuit. The basic channel is modified with Channel Performance providing no signaling, loop-start, or automatic signaling. Data capability may be added to specific combinations of loop-start signaling circuits. The loop-start signaling option provides the additional capabilities of extending the signaling ranges and of offering repeated ringing for PBX station ports.
- **VG33** - Suitable for use as a two-point trunk-type circuit. The basic channel is modified with Channel Performance providing no signaling, E&M or ground-start signaling. Data capability may be added to specific combinations of E&M or ground-start signaling circuits.
- **VG36** - Suitable for use as a two-point or multipoint voice grade (analog) circuit. All channels are provided with basic data transmission parameters modified by the appropriate Channel Performance. Additional conditioning parameters may be added to the basic Channel Performance. These conditioning parameters allow the section of attenuation distortion/envelope delay and intermodulation distortion as needed.

##### **D. End-Link or Mid-Link and End-To-End Application**

###### **1. Service Categories**

- **Voice Grade Basic (VGB)** - A two-point and two-wire transmission service designed to provide a low cost communication path between two locations served from the same wire center. This service does not provide technical specifications or signaling. There is also no guarantee of dc continuity.
- **Voice Grade Custom (VGC)** - A voice grade service that may be "customized" by specifying any of the technical specifications for VG1 through VG12 or VG32 through VG36. The specifications and interfaces chosen must be compatible, technically feasible, and available.

VGC would be recommended when (1) a VG type does not meet a customer's criteria, (2) parameters from more than one VG type meets the customer's requirements or (3) the Company can provide according to the customer's specifications and the specifications are provided for in accordance with this Catalog.