

LOCAL TRANSPORT AND TERMINATION SERVICES

4. LTTS

4.1 General

LTTS, which is available to Customers for their use in furnishing their services to end users, provides a two-point communications path between a Customer's switch and an end user's premises. It provides for the use of local transport, end office switching (which includes the use of common subscriber lines and the end user's lines of the Company). LTTS provides for the ability to terminate calls from a Customer designated premises to an end user's premises. Specific references to material describing the elements of LTTS are provided in 4.1.3, 4.5, and 4.6 following.

Rates and charges for LTTS are set forth in 6.1 following. The application of rates for LTTS is described in 4.4 following. Rates and charges for services other than LTTS, e.g., a customer's interLATA toll access message service, may also be applicable when LTTS is used in conjunction with these other services.

4.1.1 Description and Provision of LTTS Arrangements

(A) Description

The provision of LTTS requires Local Transport facilities and the appropriate End Office functions and common line subscriber plant facilities.

There are two specific transmission specifications (i.e., Types A and B) that have been identified for the provision of LTTS arrangements. The technical specifications for Direct Trunked Transport are the same as those set forth in Section 7 of Michigan Exchange Carriers Association, MPSC Tariff No. 25 for Voice Grade and High Capacity services. The specifications provided are dependent on the Interface Group and the routing of the service, i.e., whether the service is routed directly to the end office or via a local tandem. The parameters for the transmission specifications are set forth in Section 7.

LTTS is arranged for terminating based on the Customer end office switching capacity ordered. Termination calling permits the delivery of calls from the Customer designated premises through the Telephone Exchange Service locations to a specific end user's premises .

There are various optional features available with Local Transport and Local Termination with LTTS Arrangements.

Detailed descriptions of each of the available LTTS arrangements are set forth in 4.5 following. Each LTTS arrangement is described in terms of its specific physical characteristics and calling capabilities, the transmission specifications with which it is provided, the optional features available for use with it and the standard testing capabilities.

The Common Switching and Transport Termination optional features, which are described in 4.6 following, unless specifically stated otherwise, are available at all Company end office switches.

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LOCAL TRANSPORT AND TERMINATION SERVICES

4. LTTTS (Cont'd)

4.1 General (Cont'd)

4.1.1 Description and Provision of LTTTS Arrangements (Cont'd)

(B) Manner of Provision

LTTTS is furnished in either quantities of trunks or in busy hour minutes of capacity (BHMCs). LTTTS is furnished on a BHMC and on a per trunk basis as set forth in 3.2 preceding.

BHMCs are differentiated by type and directionality of traffic carried over a LTTTS arrangement. Differentiation of traffic among BHMC types is necessary for the Company to properly design LTTTS to meet the traffic carrying capacity requirement of the Customer.

There is one major BHMC category identified as LTTTS. Terminating BHMCs represent access capacity within an exchange for carrying traffic from the Customer to end users of that exchange. When ordering capacity for LTTTS in BHMCs, the Customer must, at a minimum, specify such interconnection capacity in terms of Terminating BHMCs.

4.1.2 Ordering Options and Conditions

LTTTS is ordered under the LTTTS Order provisions set forth in 3.2 preceding. Also, included in that section are regulations concerning miscellaneous service order charges which may be associated with LTTTS ordering (e.g., Service Date Changes, Cancellations, etc.).

4.1.3 Rate Categories

There are two rate categories which apply to LTTTS:

- Local Transport (described in 4.1.3(A) following)
- Local Termination (described in 4.1.3(B) following)

The Company has either (1) separate rates for each of these rate categories, with Local Transport having rates for each of several different rate elements, or (2) a single rate that includes all rate elements for both rate categories, as specified for the Company in Section 6. The descriptions of the rate categories and rate elements that follow are for purposes of describing the services that are provided, regardless of whether multiple rates are used or a single rate is used.

(A) Local Transport

The Local Transport rate category establishes the charges related to the transmission and tandem switching facilities between the Customer designated premises and the end office switch(es), which may be a Remote Switching Module(s), where the Customer's traffic is switched to terminate the Customer's communications. Mileage measurement rules are set forth in 4.4.5 following and in this section.

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4. Switched LTTS (Cont'd)

4.1 General (Cont'd)

4.1.3 Rate Categories (Cont'd)

(A) Local Transport (Cont'd)

Local Transport is a two-way voice frequency transmission path composed of facilities determined by the Company. The two-way voice frequency transmission path permits the transport of calls in terminating direction (from the Customer designated premises to the end office switch). The voice frequency transmission path may consist of any form or configuration of plant capable of and typically used in the telecommunications industry for the transmission of voice and associate telephone signals within the frequency bandwidth of approximately 300 to 3000 Hz. The Customer must specify the choice of facilities (i.e., Voice Grade 2 or 4 wire or High Capacity DS1 or DS3) to be used in the provision of the Direct Trunked Transport.

The Customer must specify when ordering (1) whether the service is to be directly routed to an end office switch or through a local tandem switch, (2) the type of Direct Trunked Transport and whether it will overflow to Tandem Switched Transport when service is directly routed to an end office, and (3) when multiplexing is required, the hub(s) at which the multiplexing will be provided.

When the Customer has both Tandem Switched Transport and Direct Trunked Transport at the same end office, the Customer will be provided Alternate Traffic Routing as set forth in 4.4.5 following.

Direct Trunked Transport is not available from end offices that lack recording or measurement capability.

Local Transport is provided at the rates and charges set forth in 6.1 following. The application of these rates with respect to individual LTTS Arrangements is as set forth in 4.4.1 following. When more than one company is involved in providing the LTTS, the Local Transport rates are applied as set forth in 2.4.7 preceding.

The Local Transport Rate Category includes three network elements: (1) Direct Trunked Transport, (2) Tandem Switched Transport, and (3) Multiplexing.

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4. LTTS (Cont'd)

4.1 General (Cont'd)

4.1.3 Rate Categories (Cont'd)

(A) Local Transport (Cont'd)

(1) Direct Trunked Transport

The Direct Trunked Transport rate elements associated with the communications path between a serving wire center and an end office or serving wire center and a tandem on circuits dedicated to the use of a single customer.

Direct Trunked Transport is available to all tandems and to all end offices except those end offices identified in NATIONAL EXCHANGE CARRIERS ASSOCIATION, INC. TARIFF FCC NO. 4, WIRE CENTER INFORMATION as not having the capability to provide Direct Trunked Transport.

Direct Trunked Transport is not available: (1) from end offices that lack recording or measurement capability.

Three types of Direct Trunked Transport are available: (1) Voice Grade (an analog channel with an approximate bandwidth of 300 to 3000 Hz), (2) High Capacity DS1 (an isochronous serial digital channel with a rate of 1.544 Mbps), and (3) High Capacity DS3 (an isochronous serial digital channel with a rate of 44.736 Mbps). The minimum period for which a High Capacity DS3 Direct Trunked Transport is provided is twelve months.

High Capacity DS3 Direct Trunked Transport cannot be terminated at end offices that are not identified as hub offices that provide DS3 to DS1 multiplexing.

Additionally, DS1 Direct Trunked Transport cannot be terminated at end offices that are not identified as hub offices that provide DS1 to Voice Grade multiplexing or are not electronic end offices. Offices that provide multiplexing are identified in NATIONAL EXCHANGE CARRIER ASSOCIATION, INC., TARIFF FCC NO. 4, WIRE CENTER INFORMATION.

Direct Trunked Transport consist of a Direct Trunked Facility rate specified in 6.1 following which is applied on a per mile basis and a Direct Trunked Termination rate which is applied at each end of each measured segment of the Direct Trunked Facility (e.g., at the end office, hub, tandem, and serving wire center). When the Direct Trunked Facility mileage is zero, neither the Direct Trunked Facility rate nor the Direct Trunked Termination rate will apply.

The Direct Trunked Facility includes transmission facilities, including intermediate transmission circuit equipment, between the end points of the interoffice circuits.

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LOCAL TRANSPORT AND TERMINATION SERVICES

4. LTTS (Cont'd)

4.1 General (Cont'd)

4.1.3 Rate Categories (Cont'd)

(A) Local Transport (Cont'd)

(1) Direct Trunked Transport (Cont'd)

The Direct Trunked Termination rate specified in 6.1 is associated with the circuit equipment that is necessary for the termination of each end of the Direct Trunked Facility.

(2) Tandem Switched Transport

The Tandem Switched Transport rate elements is associated with a communications path between a tandem and an end office on circuits that are switched at a tandem switch.

Tandem Switched Transport rates consist of a Tandem Switched Facility rate and a Tandem Switched Termination rate.

(a) The Tandem Switched Facility rate is associated with transmission facilities, including intermediate transmission circuit equipment, between the end points of interoffice circuits. The Tandem Switched Facility rate specified in 6.1 following is applied on a per interconnection minute per mile basis for all terminating minutes of use routed over the facility.

(b) The Tandem Switched Termination rate is associated with circuit equipment necessary for the termination of each end of each measured segment of the Tandem Switched Facility. The Tandem Switched Termination rate specified in 6.1 following is applied on a per LTTS minute basis (for all terminating minutes of use routed over the facility) at each end of each measured segment of Tandem Switched Facility (e.g. host office, tandem, and serving wire center). When the Tandem Switched Facility mileage is zero, neither the Tandem Switched Facility rate nor the Tandem Switched Termination rate will apply.

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4. LTTS (Cont'd)

4.1 General (Cont'd)

4.1.3 Rate Categories (Cont'd)

(A) Local Transport (Cont'd)

(3) Multiplexing

DS3 to DS1 Multiplexing services which are included in the charges specified in 6.1 following, apply when a High Capacity DS3 Direct Trunked Facility is connected with High Capacity DS1 Direct Trunked Transport. The DS3 to DS1 multiplexer will convert a 44.736 Mbps channel to 28 DS1 channels using digital time division multiplexing.

DS1 to Voice Grade Multiplexing charges apply when a High Capacity DS1 Direct Trunked Facility is connected with Voice Grade Direct Trunked Transport. However, a DS1 to Voice Grade Multiplexing charge does not apply when a High Capacity DS1 Direct Trunked Transport is terminated at an electronic end office and only Switched LTTS is provided over the DS1 facility (i.e., Voice Grade Special LTTS channels are not derived). The DS1 to Voice Grade multiplexer will convert a 1.544 Mbps channel to 24 Voice Grade channels.

Multiplexing is only available at wire centers identified in NATIONAL EXCHANGE CARRIER ASSOCIATION, INC. TARIFF FCC NO. 4, WIRE CENTER INFORMATION.

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4. LTTs (Cont'd)

4.1 General (Cont'd)

4.1.3 Rate Categories (Cont'd)

(A) Local Transport (Cont'd)

(4) Nonchargeable Optional Features

Where transmission facilities permit, the individual transmission path between the customer's designated premises and the first point of switching may, at the option of the customer, be provided with the following optional features.

When a Customer subscribes to Common Channel Signaling (SS7) Network Connection Service (CCSNC Service), the following optional features are made available and are described in 4.6.1 following.

- Signaling System 7 (SS7) Signaling

(5) Chargeable Optional Features

Common Channel Signaling, Signaling System 7 (CSS/SS7) Network Connection (CCSNC) Service provides a signaling path between a customer's designated Signaling Point of Interface (SPOI) and a Company's Signaling Transfer Point (STP). CCSNC is provided as set forth in 4.10.3(A) following.

(B) Local Termination

The Local Termination rate is for the local end office switching and end user termination functions necessary to complete the transmission of LTTs communications to the end users served by the local end office. The Local Termination rate category includes the Local Switching rate element.

(1) Local Switching

The Local Switching is associated with the use of end office switching equipment, the terminations in the end office of end user lines, the terminations of calls at Company Intercept Operators or recordings, and the end user's lines.

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4. LTTTS (Cont'd)

4.1 General (Cont'd)

4.1.3 Rate Categories (Cont'd)

(B) End Office (Cont'd)

Local Switching (Cont'd)

Local Switching is included in the Local Termination Service rate as set forth in 6.1 following. The application of these rates with respect to individual LTTTS Arrangements is as set forth in 4.4.1 following.

There are six types of functions included in the Local Switching rate element: Common Switching, Transport Termination, Line Termination, Intercept, Common Line and Information Surcharges. These are described in (1) through (6) following.

(1) Common Switching

Common Switching provides the local end office switching functions associated with the various interconnection (i.e., LTTTS Arrangement) switching arrangements. The Common Switching arrangements provided for the various LTTTS arrangements are described in 4.6.1.

Included as part of Common Switching are various nonchargeable optional features which the Customer can order to meet the Customer's specific communications requirements. These optional features are described in 4.6.1 following.

(2) Transport Termination

Transport Termination provides for the trunk side arrangements which terminate the Local Transport facilities.

The number of Transport Terminations provided will be determined by the Company as set forth in 4.2.5 following.

(3) Line Termination

Line Termination provides for the terminations of end user lines in the local end office.

(4) Intercept

The Intercept function provides for the termination of a call at a Company Intercept operator or recording. The operator or recording tells a caller why a call, as dialed, could not be completed, and if possible, provides the correct number.

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4. LTTS (Cont'd)

4.1 General (Cont'd)

4.1.3 Rate Categories (Cont'd)

(B) End Office (Cont'd)

(5) Common Line

Common Line provides for the use of the Company's facilities between the end office serving an end user and that end user's premises.

(6) Information Surcharge

Information Surcharge rates are assessed to a Customer based on the total number of LTTS minutes. Information Surcharge costs are included in the rates sets for Local Switching above. The application of these rates with respect to individual LTTS Arrangements is as set forth in 4.4.1(C) following.

The number of end office switching transmission paths will be determined as set forth in 4.2.5 following.

4.1.4 Special Facilities Routing

Any Customer may request that the facilities used to provide LTTS be specially routed. The rates, terms and conditions for special facilities routine will be negotiated with the Customers at the time of request.

4.1.5 Design Layout Report

At the request of the Customer, the Company will provide to the Customer the makeup of the facilities and services provided from the Customer's premises to the first point of switching. This information will be provided in the form of a Design Layout Report. The Design Layout Report will be provided to the Customer at no charge, and will be reissued or updated whenever these facilities are materially changed.

4.2 Obligations of the Company

In addition to the obligations of the Company set forth in 2. preceding, the Company has certain other obligations pertaining only to the provision of LTTS. These obligations are as follows:

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4. LTTs (Cont'd)

4.2 Undertaking of the Company (Cont'd)

4.2.1 Network Management

The Company will administer its network to insure the provision of acceptable service levels to all telecommunications users of the Company's network services. Generally, service levels are considered acceptable only when both end users and Customers are able to establish connections with little or no delay encountered within the Company network. The Company maintains the right to apply protective controls, i.e., those actions, such as call gapping, which selectively cancel the completion of traffic, over any traffic carried over its network, including that associated with a Customer's LTTs. Generally, such protective measures would only be taken as a result of occurrences such as failure or overload of Company or Customer facilities, natural disasters, mass calling or national security demands. In the event that the protective controls applied by the Company result in the complete loss of service by the Customer, the Customer will be granted a Credit Allowance for Service Interruption as set forth in 2.4.4(B) (3) preceding.

4.2.1.1 NPA-NXX Codes

The Company will load NPA-NXX codes from a requesting Customer after receiving an ASR that complies with the provisions set forth in 3.1 preceding. Once an ASR comporting to the provision set forth in 3.1 preceding has been received by the Company, the Company will input the NPA-NXX codes into its network within three (3) business days.

(N)

(N)

4.2.2 Transmission Specifications

Each LTTs transmission path is provided with standard transmission specifications. There are two different standard specifications (Types A and B). The standard for a particular transmission is dependent on the LTTs Arrangement, the Interface Group and whether the service is directly routed or via an interconnection tandem. The available transmission specifications are set forth in Section 7.1.2. Data Transmission Parameters are also provided with each LTTs transmission path. The Company will, upon notification by the Customer that the data parameters set forth in Section 7.1.3, are not being met, conduct tests independently or in cooperation with the Customer, and take any necessary action to ensure that the data parameters are met.

The transmission specifications concerning LTTs are limits which, when exceeded, may require the immediate corrective action of the Company. The transmission specifications are set forth in Section 7.1.2. Acceptance limits are set forth in Technical Reference GR-334-CORE. This Technical Reference also provides the basis for determining Switched LTTs maintenance limits.

4.2.3 Provision of Service Performance Data

Subject to availability, end-to-end service performance data available to the Company through its own service evaluation routines, may also be made available to the Customer based on previously arranged intervals and format. These data provide information on overall end-to-end call completion and non-completion performance, e.g., Customer equipment blockage, failure results and transmission performance. These data do not include service performance data which are provided under other tariff sections, e.g., testing service results. If data are to be provided in other than paper format, the charges for such exchange will be determined on an individual case basis.

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4. LTTTS (Cont'd)

4.2 Obligations of the Company (Cont'd)

4.2.4 Testing

(A) Acceptance Testing

At no additional charge, the Company will, at the Customer's request, cooperatively test, at the time of installation, the following parameters: loss, C-notched noise, C-message noise, 3-tone slope, DgC. continuity and operational signaling. When the Local Transport is provided with Interface Groups 2 or Group 6 through Group 10, and the Transport Termination is two-wire (i.e., there is a four-wire to two-wire conversion in Local Transport), balance parameters (equal level echo path loss) may also be tested.

(B) Routine Testing

At no additional charge, the Company will, at the customer's request, test after installation on an automatic or manual basis, 1004 Hz loss, C-message noise and Balance (Improved Return loss). In the case of automatic testing, the customer will provide remote office test lines and 105 test lines with associated responders or their functional equivalent.

The frequency of these tests will be that which is mutually agreed upon by the customer and the Company, but will consist of not less than quarterly 1004 Hz Loss and C-message noise tests and an annual Balance test. Trunk test failures requiring customer participation for trouble resolution will be provided to the customer on an as-occurs basis.

Additional tests may be ordered as set forth in 5.3.1 following. Charges for these additional tests are set forth in 6.2.4 following.

4.2.5 Determination of Number of Transmission Paths

For LTTTS Arrangements, which are ordered on a per trunk basis, the Customer specifies the type of transport facilities and the number of channels in the order for service.

For Tandem Switched Transport, the Company will determine the number of LTTTS Transmission paths to be provided for the LTTTS busy hour minutes of capacity ordered. The number of transmission paths will be developed using the total busy hour minutes of capacity by type (as described in 4.1.1(B) preceding) for the end offices for each LTTTS Arrangement ordered from a Customer's designated premises. The total busy hour minutes of capacity by type, will be converted to transmission paths using standard Company traffic engineering methods. The number of transmission paths provided will be the number required based on (1) the use of interconnection tandem switches and end office switches, (2) the use of end office switches only, or (3) the use of tandem switches only.

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4. LTTS (Cont'd)

4.2 Obligations of the Company (Cont'd)

4.2.6 Trunk Group Measurement Reports

Subject to availability, the Company will make available trunk group data in the form of usage in CCS, peg count and overflow, to the customer based on previously agreed to intervals.

4.3 Obligations of the Customer

In addition to the obligations of the customer set forth in Part II preceding, the Customer has certain specific obligations pertaining to the use of LTTS. These obligations are as follows:

4.3.1 Report Requirements

Customers are responsible for providing the following reports to the Company, when applicable.

(A) Certification Reports

When a Customer orders LTTS, the Customer is responsible for providing reports as set forth in 2.3.11 preceding.

4.3.2 Trunk Group Measurement Reports

With the agreement of the Customer, trunk group data in the form of usage in CCS, peg count and overflow for its end of all interconnection trunk groups, where technologically feasible, will be made available to the Company. These data will be used to monitor trunk group utilization and service performance and will be used on previously arranged intervals and format.

4.3.3 Supervisor Signaling

The Customer's facilities will provide the necessary on-hook, off-hook, answer and disconnect supervision.

4.3.4 NPA-NXX Codes

The Customer is responsible for requesting that its NPA-NXX codes be inputted by the Company in its network by using an ASR that complies with the provisions set forth in 3.1 preceding.

(N)
|
(N)

4.4 Rate Regulations

This section contains the specific regulations governing the rates and charges that apply for LTTS.

4.4.1 Description and Application of Rates and Charges

There are two types of rates and charges that apply to LTTS; recurring (usage and flat rates) and nonrecurring charges. These rates and charges are applied differently to the various rate elements as set forth following.

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4. LTTS (Cont'd)

4.4 Rate Regulations (Cont'd)

4.4.1 Description and Application of Rates and Charges (Cont'd)

(A) Recurring Rates

(1) Usage rates for LTTS are rates that apply on a per LTTS minute or a per minute per mile basis as set forth in Section 6.1. LTTS minute charges are accumulated over a monthly period.

(2) Flat Rates for LTTS are rates that apply on a per month per rate element basis and are billed ahead for the coming month.

(B) Nonrecurring Charges

Nonrecurring charges are one-time charges that apply for a specific work activity (i.e., installation or change to an existing service). The types of nonrecurring charges that apply for LTTS are: installation of service, optional feature and service rearrangements. These charges are in addition to the LTTS Order Charge specified in 6.2.1(A) following.

(1) Installation of Service

For LTTS which is ordered on a per trunk basis, the charge is applied on a per trunk basis. For LTTS, which is ordered on a busy hour minutes of capacity basis, the charge is also applied on a per trunk basis but the charge applies only when the capacity ordered requires the installation or activation of an additional trunk(s) or lines which are uniquely identified for the sole use of the ordering Customer.

A maximum of 24 trunks can be activated on a DS1 facility and a maximum of 672 trunks can be activated on a DS3 facility.

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4. LTTTS (Cont'd)

4.4 Rate Regulations (Cont'd)

4.4.1 Description and Application of Rates and Charges (Cont'd)

(B) Nonrecurring Charges (Cont'd)

(2) Service Rearrangements

All changes to existing services other than changes involving administrative activities will be treated as a discontinuance of the existing service and an installation of a new service. The nonrecurring charge described in (1) preceding will apply for this work activity.

Administrative changes will be made without charge(s) to the Customer. Administrative changes are as follows:

- Change of a Customer name,
- Change of Customer or Customer's premises when the change of an address is not a result of a physical relocation of equipment,
- Change in billing data (name, address, or contact name or telephone number),
- Change of agency authorization,
- Change of Customer circuit identification,
- Change of billing account number
- Change of Customer test line number,
- Change of Customer contact name or telephone number.

Other changes made without charge to the Customer are as follows:

- Changes and additions to existing LTTTS which are necessary due to Company initiated network reconfiguration, and required to provide the same grade of service to the Customer that existed prior to the reconfiguration, will be made without charge to the Customer.
- Charges will apply to those changes and additions which are in excess of those required to provide the same grade of service and/or capacity. Grade of service will be determined by industry standard engineering tables.

For additions, changes or modifications to an optional feature which has a separate nonrecurring charge, that nonrecurring charge will apply.

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4. LTTTS (Cont'd)

4.4.1 Description and Application of Rates and Charges (Cont'd)

(B) Nonrecurring Charges (Cont'd)

(2) Service Rearrangements

For additions, changes or modifications to optional features that do not have their own separate nonrecurring charges, a LTTTS Order Charge as set forth in 6.2.1(A) following will apply (with the exception of the addition of 64 Clear Channel Capability to an existing service). When an optional feature is not required on each transmission path, but rather for an entire transmission path group, an end office or a local tandem switch, only one such charge will apply (i.e., it will not apply per transmission path).

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.

(C) Application of Rates

There is no distinction in the LTTTS rate structure between premium and non-premium switched services.

The Company's particular rate structure is identified in Section 6 and the rates specified therein apply to the provision of LTTTS. Part 6 identifies whether the company has (1) separate rates for the Local Transport category and the Local Termination rate category, with Local Transport having rates for each of several different rate elements, or (2) a single rate that includes all rate elements for both rate categories.

4.4.2 Minimum Monthly Charge

LTTTS is subject to a minimum monthly charge. The minimum charge applies for the total capacity provided. The minimum monthly charge is calculated as follows.

For flat rated Local Transport rate elements, the minimum monthly charge is the sum of the recurring charges set forth in 6.1 following, prorated to the number of days or major fraction of days on a 30-day month.

4.4.3 Change of LTTTS Arrangements

Changes from one type of LTTTS arrangement to another will be treated as a discontinuance of one type of service and a start of another.

4.4.4 Local Information Delivery Services

Calls in the terminating direction to certain community information services that are rated under the applicable rates for Switched Access Service are not also rated under this LTTTS Tariff. The charges per call as specified under the Company's local and/or general exchange service tariffs, e.g., 976 (DIAL-IT) Network Service, will also apply.

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4. LTTS (Cont'd)

4.4 Rate Regulations (Cont'd)

4.4.5 Mileage Measurement

The mileage to be used to determine the monthly rate for Local Transport is calculated on the airline distance between the end office switch or the host serving the remote switching module (where the call carried by Local Transport terminates) and the Customer's serving wire center. When Direct Trunked Transport is ordered between a serving wire center and a tandem and Tandem Switched Transport is ordered between the tandem and the end office, mileage is calculated separately for each segment. Exceptions to these methods are as set forth in (B) through (D) following. For SS7 signaling, the mileage to be used to determine the monthly rate for the Signaling Mileage Facility is calculated on the airline distance between the serving wire center associated with the Customer's designated premises (Signaling Point of Interface) and the Company wire center providing the STP Port.

Where applicable, the V & H Coordinates method is used to determine mileage. This method is set forth in the NATIONAL EXCHANGE CARRIER ASSOCIATION TARIFF FCC NO. 4 for Wire Center Information (V&H Coordinates).

Mileage rates are as set forth in 6.1 following. To determine the rate to be billed, first compute the airline mileage using the V&H coordinates method. If the calculation results in a fraction of a mile, always round up to the next whole mile before determining the mileage and applying the rates. Then multiply the mileage by the appropriate rate.

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4. LTTS (Cont'd)

4.5 Description and Provision of LTTS

4.5.1 Description

LTTS provides trunk side interconnection to Company end office switches for the Customer's use in terminating communications to an end user premises served by that end office.

(A) LTTS is provided at all end office switches. LTTS is provided at Company end office switches on a direct trunk basis or via Company designated local tandem switches.

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4. LTTS (Cont'd)

4.5 Description and Provision of LTTS (Cont'd)

4.5.1 Description (Cont'd)

- (B) LTTS is provided as trunk side switching through the use of end office or local tandem switch trunk equipment and the Company's facilities. The switch trunk equipment is provided with answer and disconnect supervisory signaling. Wink start start-pulsing signals are provided in all offices where available. In those offices where wink start start-pulsing signals are not available, delay dial start-pulsing signals will be provided, unless immediate dial pulse signaling is provided, in which case no start-pulsing signals are provided.
- (C) LTTS is provided with multifrequency address signaling except in certain electromechanical end office switches where multifrequency signaling is not available. In such switches, the address signaling will be dial pulse, revertive pulse, immediate dial pulse or panel call indicator signaling, whichever is available. Such called party number signals will be subject to the ordinary transmission capabilities of the Local Transport provided.
- (A) LTTS switching may be used to terminate valid NXXs served by that end office. When directly routed to an end office, only those valid NXX codes served by that office may be interconnected. When routed through a tandem, only those valid NXX codes served by end offices subtending that tandem may be terminated. LTTS may not be switched to a Switched Access Service.
- (E) The Company will establish a trunk group or groups for the customer at end office switches or local tandem switches where LTTS switching is provided. When required by technical limitations, a separate trunk group will be established for each type of LTTS switching arrangement provided. Different types of LTTS or other switching arrangements may be combined in a single trunk group at the option of the Company.
- (F) LTTS switching is provided with multifrequency address signaling or out of band SS7 signaling where technically feasible. Such address signals will be subject to the ordinary transmission capabilities of the Local Transport provided.

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4. LTTS (Cont'd)

4.5 Description and Provision of LTTS (Cont'd)

4.5.2 Optional Features

Following are descriptions of the various nonchargeable and chargeable optional features that are available in lieu of, or in addition to, the standard features provided with LTTS. Nonchargeable optional features are provided as Common Switching, Transport Transmission and Local Transport options as set forth in (A) and (B) following.

(A) Common Switching Options

Descriptions of the common switching optional features are set forth in 4.6 following.

(1) Alternate Traffic Routing

(2) Trunk LTTS Limitation

(B) Local Transport Options

(1) Supervisory Signaling

The Supervisory Signaling optional feature, due to its technical nature, is set forth in Section 7.1.1.

(2) Signaling System 7 (SS7)

The SS7 optional feature allows the Customer to send and receive signals for out of band call set up. This option requires the establishment of a signaling connection between the Customer's designated premises/Signaling Point of Interface (SPOI) and a Company Signaling Transfer Point (STP).

SS7 is provided in both the originating and terminating direction on LTTS and each signaling connection is provisioned for two way SS7 signaling information.

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4. LTTTS (Cont'd)

4.5 Description and Provision of LTTTS (Cont'd)

4.5.2 Optional Features (Cont'd)

(B) Local Transport Options (Cont'd)

(3) Multifrequency Address Signaling

(4) 64 Clear Channel Capability

The 64 Clear Channel Capability optional feature, due to its technical nature, is set forth in Section 7.1.1.

4.5.3 Design and Traffic Routing

For LTTTS the Company will design and determine the routing of LTTTS. Additionally, for Tandem Switched Transport the Company will design and determine the routing from the first point of switching to the end office. The Company will also decide if capacity is to be provided by terminating only or two-way trunk groups. Finally, the Company will decide whether trunk side interconnection will be provided through the use of two-wire or four-wire trunk terminating equipment.

Selection of facilities and equipment and traffic routing of the service is based on standard engineering methods, available facilities and equipment, and actual traffic patterns.

4.5.4 Measuring LTTTS Minutes

Customer traffic to end offices will be measured by the Company at end office switches or by the tandem switches (which may not be owned by the Company). Terminating calls will be measured by the Company, in the case of direct trunked transport for LTTTS, or the Company or tandem, in the case of tandem switched transport for LTTTS to determine the basis for computing chargeable LTTTS minutes. In the event the Customers' message detail is not available because the Company or the Tandem Owner lost or damaged tapes or incurred recording system outages, the Company or the Tandem owner will estimate the volume of lost Customer LTTTS minutes of use based on previously known values.

For terminating calls over LTTTS when measurement capability exists (either Direct or Residual Usage Methodology), the measured minutes are the chargeable LTTTS minutes.

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4. LTTS (Cont'd)

4.5 Description and Provision of LTTS (Cont'd)

4.5.4 Measuring LTTS Minutes (Cont'd)

Terminating Usage

For terminating calls over LTTS with SS7 signaling, usage measurement begins when the terminating recording switch receives answer supervision from the terminating end user. The Company switch receives answer supervision and sends the indication to the Customer in the form of an answer message. The measurement of terminating LTTS call usage ends when the entry switch receives or sends a Release Message, whichever occurs first. For services ordered with tandem switching, this usage will be measured at the tandem when recording at the end office is not technically or economically (in the Company's opinion) practical to perform.

4.5.5 Design Blocking Probability

The Company will design the facilities used in the provision of LTTS to meet the blocking probability criteria as set forth in (A) and (B) following.

- (A) For LTTS the design blocking objective will be no greater than 1 percent (.01) between the point of termination at the Customer's designated premises and the first point of switching when traffic is directly routed without an alternate route. Standard traffic engineering methods will be used by the Company to determine the number of transmission paths required to achieve this level of blocking.
- (B) The Company will perform routine measurement functions assure that an adequate number of transmission paths are in service. The Company will recommend that additional capacity (i.e., busy hour minutes of capacity or trunks) be ordered by the Customer when additional paths are required to reduce the measured blocking to the designated blocking level. For the capacity ordered, the design blocking objective is assumed to have been met if the routine measurements show that the measured blocking does not exceed the threshold listed in the following tables.

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4. LTTS (Cont'd)

4.5 Description and Provision of LTTS (Cont'd)

4.5.5 Design Blocking Probability (Cont'd)

(B) (Cont'd)

(1) For transmission paths carrying only first routed traffic direct between an end office and Customer's designated premises without an alternate route, and for paths carrying only overflow traffic, the measured blocking thresholds are as follows:

Number of Transmission Paths Per Trunk Group	Measured Blocking Thresholds in the Time Consistent Busy Hour for the Number of Measurements Taken Between 8:00 a.m. and 11:00 p.m.			
	Per Trunk Group			
	15-20 Measurements	11-14 Measurements	7-10 Measurements	3-6 Measurements
2	7%	8%	9%	14%
3	5%	6%	7%	9%
4	5%	6%	7%	8%
5-6	4%	5%	6%	7%
7 or more	3%	3.5%	4%	6%

(2) For transmission paths carrying first routed traffic between an end office and Customer's premises via a local tandem, the measured blocking thresholds are as follows:

Number of Transmission Paths Per Trunk Group	Measured Blocking Thresholds in the Time Consistent Busy Hour for the Number of Measurements Taken Between 8:00 a.m. and 11:00 p.m.			
	Per Trunk Group			
	15-20 Measurements	11-14 Measurements	7-10 Measurements	3-6 Measurements
2	4.5%	5.5%	4.0%	9.5%
3	3.5%	4.0%	4.5%	4.0%
4	3.5%	4.0%	4.5%	5.5%
5-6	2.5%	3.5%	4.0%	4.5%
7 or more	2.0%	2.5%	3.0%	4.0%

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4. LTTS (Cont'd)

4.5 Description and Provision of LTTS (Cont'd)

4.5.6 Testing Capabilities

LTTS is provided, in the terminating direction where equipment is available, with seven digit access to balance (100 type) test line, milliwatt (102 type) test line, nonsynchronous or synchronous test line, automatic transmission measuring (105 type) test line, data transmission (107 type) test line, loop around test line, short circuit test line and open circuit test line. In addition to the tests described in 4.2.4 preceding, which are included with the installation of service (Acceptance Testing) and as ongoing routine testing, Additional Cooperative Acceptance Testing, Additional Automatic Testing and Additional Manual Testing, are available as set forth in 5.3.1 following.

When SS7 Signaling is ordered, network compatibility and other testing will be performed cooperatively by the Company and the Customer as specified in Technical Reference TR-TSV-000905.

4.5.7 Network Blocking Charge

The Customer will be notified by the Company to increase its capacity (busy hour minutes of capacity or quantities of trunks) when excessive trunk group blocking occurs on groups carrying LTTS traffic and the measured interconnection minutes for that hour exceed the capacity purchased. Excessive trunk group blocking occurs when the blocking thresholds stated below are exceeded. They are predicated on time consistent, hourly measurements over a 30 day period excluding Saturdays, Sundays and national holidays. If the order for additional capacity has not been received by the Company within 15 days of the notification, the Company will bill the Customer, at the rate set forth in 6.3 following, for each overflow in excess of the blocking threshold when (1) the average "30 day period" overflow exceeds the threshold level for any particular hour and (2) the "30 day period" measured average originating or two-way usage for the same clock hour exceeds the capacity purchased.

<u>Trunks in Service</u>	<u>Blocking Thresholds</u>	
	<u>1%</u>	<u>1/2%</u>
1 - 2	7.0%	4.5%
3 - 4	5.0%	3.5%
5 - 6	4.0%	2.5%
7 or greater	3.0%	2.0%

The 1% blocking threshold is for transmission paths carrying traffic direct (without an alternate route) between an end office and a Customer's premises. The 1/2% blocking threshold is for transmission paths carrying first routed traffic between an end office and a Customer's premises via a local tandem.

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4. LTTS (Cont'd)

4.6 Chargeable and Nonchargeable Optional Features

Following are descriptions of the various optional features that are available in lieu of, or in addition to, the standard features provided with the LTTS arrangements. They are provided as Common Switching options. Local Transport options associated with Common Channel Signaling Network Connection service (CCSNC) are described in 4.6.1 following. All other Local Transport options, due to their technical nature, are described in Section 7.1.1.

4.6.1 Common Switching Nonchargeable Optional Features

The following table shows the LTTS Arrangements with which the optional features are available.

Available LTTS Arrangements

<u>Option</u>	<u>LTTS</u>
A) Multifrequency Address Signaling	X
B) Signaling System 7 (SS7) Signaling	X

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4. LTTS (Cont'd)

4.6 Chargeable and Nonchargeable Optional Features (Cont'd)

4.6.1 Common Switching Nonchargeable Optional Features (Cont'd)

(A) Multifrequency Address Signaling

Multifrequency Address Signaling is available as an optional feature with LTTS. This feature provides for the transmission of number information and control signals (e.g., number address signals, automatic number identification) between the end office switch and the Customer's premises (in either direction). Multifrequency signaling arrangements make use of pairs of frequencies out of a group of six frequencies. Specific information transmitted is dependent upon interconnection arrangement and call type (i.e., POTS, coin or operator). This feature is not available in combination with SS7 signaling.

(B) Signaling System 7 (SS7) Signaling

This feature provides common channel out of band transmission of address and supervisory SS7 protocol signaling information between the end office switch or the tandem office switching system and the Customer's designated premises. The signaling information is transmitted over facilities provided with the Common Channel Signaling/Signaling System 7 Network Connection Service (CCSNC) as specified in 4.1.3(A)(15) preceding. This feature is available with LTTS and will be provided in accordance with the SS7 Interconnect specifications described in Technical Reference TR-TSV-000905.

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4. LTTTS (Cont'd)

4.6 Chargeable and Nonchargeable Optional Features (Cont'd)

4.6.2 Chargeable Optional Features

Common Channel Signaling/Signaling System 7 Network
Connection Service (CCSNC)

Common Channel Signaling/Signaling System 7 (CCS/SS7) Network Connection Service (CCSNC), which is available with LTTTS and D, where technically feasible as designated in NATIONAL EXCHANGE CARRIER ASSOCIATION, INC. TARIFF FCC NO. 4, WIRE CENTER INFORMATION, provides a signaling path between a Customer's designated Signaling Point of Interface (SPOI) and a Signaling Transfer Point (STP). This service provides Customers with the use of a two-way signaling path for interconnecting information necessary for the completion of their end users' calls.

CCS/SS7 Network Connection Service consists of two parts; a Signaling Network LTTTS Link (SNAL, consisting of Signaling Mileage Facility, Signaling Mileage Termination and Signaling Entrance Facility) and a Signaling Transfer Point (STP) Port. The SNAL is provided as a dedicated 56 Kbps out-of-band signaling connection between customer's SPOI and the STP Port on the STP.

The CCS/SS7 Network Connection Service is provisioned by a mated pair of STPs as described in Technical Reference TR-TSV 000905 in order to ensure network availability and reliability. The Company will not be held liable for service outages if the Customer employs technology related to the interconnection of signaling networks that do not adhere to generally accepted industry technical standards.

When CCS/SS7 Network Connection service is provisioned for use with SS7 Signaling, interconnection between signaling networks must occur at a STP.

Rates and charges for the CCS/SS7 Network Connection STP Ports and Signaling Network LTTTS Links will be individually negotiated

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