

2002 Annual Interstate Tariff Filing

Puerto Rico Telephone Company

Description and Justification

Preface

In compliance with the Federal Communication Commission's (FCC) Rules and Regulations and the 2001 TRP Order, Puerto Rico Telephone Company (PRTC) herein adjusts rates for its two study areas, PRTC - 633201 and PRTC-Central - 633200, contained in its Interstate Access Service Tariff F.C.C. No. 1. The proposed rates are for the period July 2, 2002 through June 30, 2003. Information provided to support this filing is contained in the following volumes:

Volume 1-1 Description and Justification

The Description and Justification provides a detailed review of the methods, procedures and assumptions that were used to produce the proposed rates.

Volume 1-2 Tariff Review Plan

The Tariff Review Plan provides a Commission defined display of cost, demand, rates, earnings and revenue information associated with this filing. Also included with the TRP is the Access Charge Reform (ACR) forms and the most recent filed FCC 492 monitoring report.

Volume 2 47 CFR § 61.38 - Cost Study Work Papers

Part 69 cost study work papers provide a showing of interstate revenue requirement detail used in rate

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development to produce interstate rates.

Volume 3 47 CFR § 61.38 - Special Study Work Papers

Special study results provide the information used to develop rates for PRTC's optional features and functions, capitalized loading factor, nonrecurring charges, and additional labor and engineering charges, and its relative index study.

Volume 4 47 CFR § 61.38 - Demand Forecast Work Papers

Demand forecast work papers provide a showing of the development of forecasted interstate demand quantities. This includes the historical demand, forecasting methods and relevant statistical information, where appropriate.

Volume 5 47 CFR § 61.38 - Rate Development Work Papers

This volume provides detailed work papers showing the development of interstate rates proposed in this filing.

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Appendix A - Summary of Rate Changes by Company

**Description and Justification
Introduction and Overview****1.1 Introduction**

In this filing, Puerto Rico Telephone Company (PRTC) adjusts tariff rates for issuing carriers contained in PRTC Interstate Tariff No. 1, for the period July 2, 2002 through June 30, 2003 (test year).¹ PRTC study areas are making this filing under the Commission's rules for rate of return carriers.

The Description and Justification (D&J) for this filing is contained in the following pages of Volume 1-1. Volume 1-2 through 5 are provided as supporting work papers to the rate changes proposed in this filing.

The D&J is comprised of 6 sections. Section 1 is an introduction and overview of the 2002 annual access tariff filing. Section 2 is a review of the methods, procedures and assumptions that were used in preparing forecasted interstate revenue requirements for the test year. Section 3 provides the special studies results used in the development of non-recurring charges (NRC), optional feature and function (OFF) rates, the Company's capitalized loading factor and additional labor and engineering charges. PRTC's tariff year demand assumptions and forecast processes are described in Section 4. Section 5 contains PRTC's rate development methodology. Finally, Section 6 displays a summary of rate changes proposed in this filing.

¹ The term issuing carrier is used interchangeably throughout the D&J with the term study area.

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1.2 Issuing Carrier Status

Each issuing carrier in PRTC FCC No. 1, will continue to reference NECA FCC No. 5 for carrier common line and end-user common line access service. All other interstate access service regulations, rates and charges will be provided out of PRTC FCC No. 1. The two study areas will file composite traffic sensitive access rates under the identification code PRTC.

1.3 FCC Rule Conformance

This filing conforms with all relevant Commission Orders affecting the provision of access service.² The rates contained in this filing conform to 47 C.F.R. Parts 32, 36, 64, 65 and 69. All aspects of Part 36 and Part 69 rules have been reflected in the test year revenue requirements and rate development.

1.4 Demand Methodology

PRTC utilized econometric forecasting techniques to develop switched access demand forecasts. Special access and other "stock items" were forecasted based on a thorough analysis of historical demand trends and current billing. A more detailed description of the demand forecasting methodology follows in

² See, for example, *Amendment of Part 65 of the Commission's Rules to Prescribe Components of the Rate Based and Net Income of Dominant Carriers*, CC Docket No. 86-497, Order, 3 FCC Rcd 269 (1988) (Rate Base Order).

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Section 4 of this Volume.

1.5 Annual Access Tariff Filing Waivers

In addition to the company-specific waivers contained in the order, PRTC utilized the following industry-wide waivers granted by the Commission³, 1) Maintain the special access surcharge rate of \$25.00

1.6 Access Service Arrangements

Service arrangements offered under PRTC Tariff FCC No. 1 are for both switched and special access. Switched access service arrangements are provided by feature group and are distinguished by standard operational capabilities. Special access service arrangements are provided for private line facilities. Further detail for both switched and special access service can be found in PRTC Tariff FCC No. 1, Sections 6 and 7, respectively. In addition, PRTC end office data required for ordering and billing access services are contained in NECA Tariff FCC No. 4.

1.7 Multi-Association Group (MAG) Compliance

³ See: *Annual 1989 Access Tariff Filings*, DA 88-1872, Memorandum Opinion and Order, released 12/2/88 (1989 Waiver Order).

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This filing also complies with the MAG order⁴ and continues to reallocate 30% of the projected Local Switching revenue requirement to Common Line and reallocates the projected Transport Interconnection Charge (TIC) to all access elements.

⁴ See In the Matter of Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers, FCC 01-304, Released November 8, 2001 (“MAG Order”).

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2.1 Introduction and Assumptions

This volume describes the development of forecasted access revenue requirements within the traffic sensitive switched and special access categories. These forecasts were performed to provide the necessary information for rate development as well as furnish the data required by the Commission's Tariff Review Plan (TRP). Revenue requirement forecasts for the test year were developed using the following assumptions:

- 1) The test year for this comprehensive filing is July 2, 2002 through June 30, 2003.
- 2) The past year cost of service (PYCOS) period supporting this filing is January through December 2001.
- 3) Current 47 C.F.R. Part 32 Accounting Standards, Part 36 Separations Rules, and Part 69 Access Charge Rules are reflected.
- 4) Regulated and non-regulated costs are apportioned in compliance with FCC Part 64 Cost Allocation Rules.⁵
- 5) The definition of rate base is determined in accordance with the Rate Base Order which amended Part 65 of the Commission's rules.

⁵ *Separation of Costs of Regulated Telephone Service from Costs of Non-regulated Activities*, CC Docket No. 86-111, Report and Order, 2 FCC Rcd 1298 (1987), released 2/6/87 (Cost Allocation Manual Order).

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- 6) Revenue requirements are calculated to achieve the authorized 11.25% rate of return.
- 7) The apportionment of central office equipment (COE) category 3 for the test year is based on combined study area DEM factors as prescribed in Part 36.125.
- 8) The subscriber plant factor (SPF) has been fully transition for the test year to 25 percent consistent with Part 36.154.
- 9) Costs associated with remote COE are projected based upon RAO Letter 21.⁶
- 10) Other billing & collection (OB&C) expenses are projected based upon the Commission's OB&C Order.
- 11) The revenue requirement data reflect the expense/capital threshold prescribed in the \$500 Expense Limit Order.⁷
- 12) PRTC's expected state income rate is 39% for the test year. This 39% is based on Puerto Rico's Income Tax Schedule whereby corporations with annual Net Income greater than \$275,000 will incur the 20% base tax plus a 19% surtax for an effective 39% rate.

⁶ *Classification of Remote Central Office Equipment for Accounting Purposes*, DA 92-1225, Common Carrier Bureau, Responsible Accounting Officer (RAO) Letter 21, released 9/8/92, (RAO Letter 21).

⁷ *Revisions of the Uniform System of Accounts for Telecommunications Companies*, CC Docket No. 87-135, Common Carrier Services, Report and Order, 3 FCC Rcd 6701 (1988), released 7/22/88, (\$500 Expense Limit Order).

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2.2 2002-2003 Projected Financial Data

PRTC utilized the Company's budgeting process as the basis for projecting test year revenue requirements. PRTC's budgeting process requires the preparation of a five year business plan, prepared each year, for the five subsequent calendar year periods. The five year business plan is submitted to the PRTC Board of Directors for approval.

Because the test year is comprised of information pertaining to two calendar years, additional analysis is required to arrive at the test year forecasts. Using budget numbers for 2002 and 2003 as a starting point, capital improvements and operating expenses were analyzed. Provided below is an overview of PRTC's supplemental analysis used to arrive at test year financial forecasts:

- 1) Forecasts for the calendar years 2002 and 2003 for each PRTC study area were prepared by PRTC personnel.
- 2) Monthly data were established using trends for plant additions and retirements as anticipated in the Company's construction program. The anticipated capital expenditures for cable and wire facilities (C&WF) follow seasonal patterns considering climatic conditions, where applicable. Central office equipment (COE) additions, which are not subject to the same weather conditions as outside plant, were assigned to the actual periods when the expenditures are expected to occur.
- 3) Capital and operating expense activities for the test year were reviewed and adjusted to reflect

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expenditures for the proper period. Central office additions were assigned to the appropriate month based on anticipated cut-over dates.

This analysis represents each study area's best estimate of future costs. The test year forecast takes into account known or expected changes in the business operations, growth and modernization, and expected policy and financial changes. Estimates of investment, operating expense and varying levels of service demand are analyzed to produce a comprehensive budget view. When combined with financial performance objectives, operating results are created.

PRTC's 2002 and 2003 budgets utilize Part 32 Accounting Rules. Non-regulated costs, in accordance with Part 64 of the Commission's Rules, are removed. The resultant regulated costs, subject to separations, are jurisdictionally allocated in accordance with Part 36 rules. Access elements are derived in accordance with Part 69 rules.

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2.3 Cost of Service Study Development

1) Past Year Cost of Service (PYCOS)

Data supporting financial results were utilized as the starting data for the 2001 PYCOS study. Financial statements were reviewed and careful consideration given to the process for segregation of regulated and non-regulated investment and expenses. The 2001 financial statements were analyzed and regulated baseline data were developed for cost allocation and jurisdictional separation based upon Part 36 of the Commission's Rules. Access elements were further developed based upon Part 69 of the Commission's Rules. Volume 2, Section 3, contains the results of the PYCOS studies for each study area and combined study area operations. A summary of study area PYCOS data is also available in the TRP, Volume 1-2.

2) July 2, 2002 through June 30, 2003 Forecasted Cost of Service

As previously discussed, data supporting the July 2, 2002 through June 30, 2003 period was forecasted for the test year. Plant balances were calculated utilizing average plant balances and known plant additions and expenditures in the test year. Expense balances for the 12-month period were summed. These statements were analyzed and regulated baseline data for separate and combined study area operations were developed. Volume 2, Section 2, contains the results of the test year studies for each study area and combined study area operations. A summary of study area test year data is also available in the

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TRP, Volume 1-2.

2.4 Test Year Revenue Requirement

Following are annualized growth rates for the traffic sensitive switched and special access categories comparing the test year to PYCOS period.

Study Area	Switched Total	Special Access
PRTC Study Area	+0.0%	-2.3%
PRTC - Central Study Area	-5.2%	-4.3%
PRTC - Combined	+0.3%	-2.4%

Overall, the total interstate traffic sensitive revenue requirement is projected to increase \$39,726 or 0.0% (annually) compared to 2001 due in large part to the continued expense controls put in place by PRTC during the past year. PRTC continues to upgrade its network consisting of: 1) expansion of network access lines in continuation of PRTC's aggressive program to meet unserved demand and increase household penetration; and 2) deployment of fiber interoffice and interexchange plant.

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3.1 Special Studies

The following studies were updated for the 1999 Annual Tariff Filing for the combined PRTC study areas and the results can be found in Volume 3 of this filing. Next to each study is the transmittal number and filing date denoting the comprehensive study update.

- A) Nonrecurring Charge Study (NRC) -- Transmittal No. 19, June 16, 1997
- B) Optional Features and Functions (OFF) Study -- Transmittal No. 1, April 2, 1996
- C) Loaded Labor Rate Study -- Transmittal No. 19, June 16, 1997
- D) Capitalized Loading Factor Study -- Transmittal No. 1, April 2, 1996
- E) Relative Index Study (RIS) -- Transmittal No. 1, April 2, 1996
- F) DS3 cost of service study -- Transmittal No. 1, April 2, 1996.

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4.1 Introduction

This section describes the methodologies used to develop prospective access demand quantities for the switched, special access and end user categories. Traffic sensitive - switched minutes of use (MOU) and special access demand forecasts were developed for the two Puerto Rico Telephone Company study areas.

4.2 PRTC Demand Data

The historical data used to develop PRTC's demand forecasts were obtained from PRTC's billing systems. Attempts have been made to adjust large peaks and valleys in PRTC's billing data to better reflect the pattern of actual usage. The data used in the analysis are shown in Volume 4, Section 2.

4.3 Switched Minutes of Use Forecast Methodology

For each study area, traffic sensitive minutes of use (MOU) were estimated using statistical forecasting techniques. The demand forecasts were developed using a growth model that relates demand to time. The model assumes that future demand grows at historical rates; an assumption that is reasonable for two major reasons. First, the past history of any time series variables, theoretically, is usually the best predictor of future growth. Second, short-term forecasts based on historical trends are reliable because it is unlikely that near-term future demand will deviate substantially from the recent trends in demand.

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Based upon experience and analysis of the historical trends in minutes of use, MOU, the following model is used in the demand analysis⁸:

$$\text{MOU} = ae^{rt} \quad (1)$$

The model in (1) states that demand (MOU) grows exponentially(e) over time(t) at a constant rate, r. This model is useful to project the growth in demand, and is commonly accepted for determining the growth rate in time series data. The dependent variable is minutes of use and the independent variable is time, t. The coefficient, r, is the growth rate to be estimated by regression method.

The estimation equation is specified by taking the natural logarithms of both sides of the equation in (1), which gives:

$$\text{Ln}(\text{MOU}) = a + rt \quad (2)$$

Since the purpose of the exercise is to estimate the rate of growth in demand, it is extremely important to confirm that demand actually grows with time; or that the future is an extension of the past. In this respect, the regression results are evaluated on the statistical significance of the estimated growth coefficient, r. The estimated coefficients are just significant. This means that they are indicative of rates of growth in historical demand and can be used to predict future demand.

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4.3.1 Summary Table of PRTC TS MOU Forecasts

Study Area	Premium (A)	NonPremium (B)	Total (C)=A+B	Chargeable (D)=A+(B*.45)
PRTC	2,303,006,545	0	2,303,006,545	2,303,006,545
PRTC - Central	323,844,708	0	323,844,708	323,844,708
PRTC - Combined	2,626,851,253	0	2,626,851,253	2,626,851,253

4.3.2 Description of Traffic Sensitive Forecast Models by Study Area

PRTC

Sample period data for the PRTC traffic sensitive MOU forecast model include 48 months of historical data. Data begin in January 1998 and extends through December of 2001. The forecast model was specified with PRTC interstate access MOU as a function of a time trend variable.

⁸None of the other demand model specifications produced results that were statistically reliable.

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Summary statistics for the PRTC forecast model can be found below and the Lotus regression results are presented in Volume 4, Section 2.

<u>Variable</u>	<u>Coefficient</u>	<u>T-Statistic</u>
Constant	18.89145	372.25
Time	0.003131	1.6770
R ²	0.1978	

The model estimates a test year total MOU of 2,303,006,54.

PRTC-Central

The PRTC-Central model was specified with MOU as a function of time and a constant. The estimation sample period was from January 1998 through December 2001.

Summary statistics from the estimation can be found below, and the E-Views regression results are provided in Volume 4, Section 2.

<u>Variable</u>	<u>Coefficient</u>	<u>T-Statistic</u>
Constant	16.94752	290.7734
Time	0.002745	1.3239
R ²	0.2262	

The PRTC-Central model predicts a test year total MOU of 323,844,708.

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4.4 Special Access, Non-Recurring Charges and Other Features and Functions Demand

Forecasts

The 2002/2003 tariff year forecasts for special access, non-recurring charges (NRC) and optional features and functions (OFF) quantities were based on historical analysis, coupled with overlays to account for anticipated out-of-trend events.

Demand for special access service as well as NRCs and OFFs is relatively small for PRTC. The low level of demand with some variance in the billing volumes accounts for the difficulty in forecasting these stock items. The forecasts for special access, NRCs, and OFFs rely heavily on subjective input from the operating company coupled with a detailed examination of the most recent billing information.

A fourth quarter 2001 and a first quarter 2002 average was examined to determine the appropriate baseline for forecast development. Adjustments to this information was made based on anticipated additions\deletions of circuits for the test year. A review of the 2001 PYCOS and test year results for special access, OFF, and NRC quantities can be found in Volume 4, Section 5.

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5.1 Introduction

This section describes the end user and traffic sensitive rate development processes used by PRTC in this filing. For rate making purposes, Volume 2, Section 1 displays the test year revenue requirement and Volume 4 displays the test year demand quantities.

The 30% shift from local switching to common line and the reallocation of TIC can be found in Volume 2, Section 1. For this annual filing, PRTC projected what the TIC revenue requirement would have been absent the MAG changes in order to determine the amount the reallocation to all access elements. This calculation of the projected TIC revenue requirement of \$14,711,080, can be found in Volume 5A. Volume 5A does not contain any proposed tariff rates, it is simply used to calculate the projected TIC revenue requirement. Because the TIC revenue requirement is less than PRTC's TIC revenue limit of \$21.3M,⁹ PRTC used the lower amount for reallocation to the access elements.¹⁰

5.2 Switched Access Rate Development

Switched access is composed of the following access elements: local switching, information and transport.

⁹ See PRTC Transmittal Number 43, December 17, 2001, MAG compliance filing, whereby PRTC reported that it's TIC limit for the 12 month period ending June 30, 2001 to be \$21,299,598.

¹⁰ See MAG order paragraphs 102-103.

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5.2.1 Local Switching

The switched access local switching (LS) rate element is designed to recover costs associated with Category 3, COE investment and expenses. Pursuant to the Commission's Access Orders, SS7 costs are now recovered via the LS rate. The proposed local switching rate was calculated by dividing the test year local switching, equal access and SS7 revenue requirement less 30% now assigned to Common Line by the test year minutes. The local switching rate is decreasing approximately 10.5%.

Local switching rate development is displayed in Volume 5, Page 3. The revenue requirement is displayed in Volume 2, Section 1. Test year switching minutes are displayed in Volume 4, Section 1.

5.2.2. Directory Assistance

The Directory Assistance rate is designed to recover the costs for interstate directory assistance. These costs are recovered through a per message directory assistance rate. The proposed Directory Assistance rate was calculated by dividing the test year Directory Assistance revenue requirement by the test period Directory Assistance messages. Directory Assistance rate development is displayed in Volume 5, Page 3.

5.2.3. Local Transport

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The local transport rate elements are designed to recover the costs associated with providing originating or terminating switched access service between the access customer's premise and the end office switch(es). Local transport rates are filed in accordance with the Commission's Transport Orders.

Direct Trunked and Entrance Facility Rate Calculation

The term "Direct Trunked Transport" denotes switched access transport from the serving wire center (SWC) to the end office or from the SWC to the access tandem. The Direct Trunked Transport Rates are flat rate charges billed on a monthly basis where mileage exists between end offices and hubs, hubs and hubs, end office and SWC or end office and tandem. The mileage sensitive element is Direct Trunked Facility (DTF) and is comparable to the special access rate element Channel Mileage Facility (CMF). The termination or fixed charge is Direct Trunked Termination (DTT) and is comparable to the special access rate element Channel Mileage Termination (CMT). The Switched multiplexor rates equates to the special access multiplexor rates. In developing Direct Trunked Transport rates, Voice Grade and High Capacity DS1 and DS3 mileage rates were utilized.

The term "Entrance Facility" denotes a switched access service dedicated Local Transport facility between the customer's SWC and the customer designated premise (i.e. Point of Presence - POP). The Entrance Facility Rates are flat rated charges billed on a monthly basis for the portion of

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service between the SWC and the customer's POP. The Entrance Facility (EF) rate is comparable to the special access Channel Termination (CT) rate element. In developing the EF rates, Voice Grade 2 Wire, Voice Grade 4 Wire and High Capacity DS1 and DS3 rates were utilized.

Rate Application

The Direct Trunked Termination (DTT) rate applies to each end of a measured segment of transport where the customer has ordered direct trunking. The Direct Trunked Facility (DTF) rate applies to the airline miles between the measured direct trunked transport segments. If there are zero miles between end points (i.e. collocated SWC and End Office) neither the DTT nor DTF will apply. The Entrance Facility rate applies to the facilities between the SWC and IXC POP. The EF rates will apply when the SWC and POP are collocated. The calculation for DTT, DTF and EF rates are found in Volume 5, Page 5.

Access Reform impact on Tandem Switched Transport

In the Access Orders, two (2) Tandem Switched Transport rate revisions were instituted by the Commission:

- A. Utilization of actual usage per Voice Grade circuit instead of mandated 9000 minutes,
- B. Identification of Tandem Trunk Port costs and assignment to the Tandem Switching

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rate,

These are discussed further below.

A. Actual Usage per Voice Grade Circuit

On December 17, 1997 PRTC filed Transmittal No. 25 which contained the average minutes per voice grade circuit of 7,489. In this filing, PRTC will continue to use 7,489 minutes for rate making purposes.

B. Tandem Trunk Ports

In PRTC's Transmittal No. 27 filed January 20, 1999, the investment related to tandem trunk ports was calculated to be \$1,623,297. The investment cost per port was then calculated and multiplied by the number of tandem trunk ports in the network. In order to calculate a revenue requirement to be added to the Tandem Switching rate, PRTC first determined a Revenue Requirement Factor (RRF) for transport investment. The RRF represents the ratio of transport investment to transport revenue requirement from Part 69. This provides a means for the investment information to be converted into revenue requirement information. Finally the RRF is multiplied by the total investment for all ports in the network and the result is a Tandem Trunk Port Revenue Requirement.

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The Tandem Switching rate is applied per minute switched at a PRTC Tandem. The calculation for the Tandem Switching rate is found in Volume 5, Page 4.

Tandem Switched Transport Rates

In the Access Orders, the Commission ordered the Tandem Switched Transport rates to be developed using high capacity rates using an average number of minutes per circuit per month loading factor. The term "Tandem Switched Transport" denotes switched access transport from the tandem to the end office. The two rate elements associated with Tandem Switched Transport are Tandem Switched Termination (TST) and Tandem Switched Facility (TSF). The initial TST rate is calculated by dividing the weighted average of the Direct Trunked Termination DS3 and DS1 Rates by the weighted average of the DS1 MOU Loading Factor of 179,736 ($7489 * 24$ voice grade channels on a DS1) and the DS3 MOU Loading Factor of 5,032,608 ($7489 * 24 * 28$ voice grade channels on a DS3). The initial TSF rate is calculated by dividing the weighted average of the Direct Trunked Facility DS3 and DS1 Rates by the weighted average of the DS1 MOU Loading Factor of 179,736 ($7489 * 24$ voice grade channels on a DS1) and the DS3 MOU Loading Factor of 5,032,608 ($7489 * 24 * 28$ voice grade channels on a DS3).

PRTC adjusted the initial TST and TSF rates to account for the revenue shortfall when pricing

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out initial TST and TSF revenues for Host/Remote Traffic compared to the Host/Remote Revenue Requirement. PRTC subtracted the revenue that would be generated using initial TST and TSF rates applied to minutes originating/terminating at remote offices. This difference between revenue requirement and revenues was then rolled into initial TST and TSF rates, such that the costs of the Host/Remote links are recovered from TST and TSF rates.

The initial Transport rates were then priced out using forecasted demand to determine if the projected revenues equal to projected transport revenue requirement. In this filing, PRTC's interim transport did not recover the reallocated transport revenue requirement contained in Volume 2, Exhibit 1, Line A.9, Col D. As a result, the TSF and TST transport rates were adjusted based on weighted revenues in order that the final transport rates recover the total transport revenue requirement. The development of final transport rates can be found in Volume 5, Page 7.

Rate Application

The Tandem Switched Termination (TST) rate applies per access minute at each end of a measured segment of transport switched at a tandem. The Tandem Switched Facility (TSF) rate applies per access minute to the airline miles between the measured segments of transport switched at a tandem. If there are zero miles between end points (i.e. collocated SWC and End Office) neither the TST nor TSF will apply.

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Two rate application exceptions exist for TST and TSF. First, Host-Remote configurations will be measured in two segments, Remote to Host and Host to SWC (or Tandem). The segment from the Remote to Host will incur two (2) TST charges (1 at Remote and 1 at Host) and the TSF rate will apply to the airline miles from the Remote to Host. Second, when a Feature Group A (FGA) customer orders dial tone from an end office that is not the customer's SWC, Direct Trunked Transport will apply between the dial tone office and the SWC and Tandem Switched Transport (TST and TSF), excluding the Tandem Switching charge, will apply from the dial tone office to the end office. The calculation of Tandem Switched Transport rates are detailed in Volume 5, Page 7.

Demand Data Required for Transport Rate Development

PRTC utilized current billing of direct trunks and entrance facilities as the basis for rate making demand in this filing. In order to price out the Tandem Switched Transport (following), the number of dedicated minutes must be subtracted from the total minutes. PRTC used the 7,489 MOU per voice grade circuit per month to "derive" direct trunked minutes. These "derived" minutes are found in Volume 5, Page 5.

Under PRTC's current transport tariff, DTT charges are applied at each end of a measured segment of transport. An average number of switched terminations (Terms) was calculated for each study area based on the number of PRTC SWCs and Tandems. These Terms are used to price out the

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DTT revenues and are found in Volume 4, Section 6.

Due to the application of the transport rate structure for Host-Remote usage, PRTC recalculated the average length of haul (ALOH) for each company and obtained an "adjusted" ALOH. This adjusted ALOH was used to price out the Non-Remote MOUs. PRTC also calculated a Remote to Host ALOH for use in pricing the Remote-only MOUs. Since Host-Remote configurations will always be billed per MOU between the Host and the Remote, the number of Terms (TSTs) will equal 2. The Host Remote MOUs, ALOH and number of Terms for the Remote-Host minutes are in Volume 4, Section 6.

Direct Trunked Transport and Entrance Facility Revenues

PRTC utilized current access billing data to project direct trunks and entrance facilities for the test period. The test period forecast of direct trunks is contained in Volume 4, Section 1. The DTT revenues were calculated by multiplying the monthly test period number of direct trunks multiplied by the Dedicated Transport Termination Rates multiplied by the number of Terms. Second, the DTF revenues were calculated by multiplying the test period number of direct trunks by the Dedicated Transport Facility Rates, multiplied by the adjusted ALOH (previously described). The sum of the DTT and DTF revenues equals Dedicated Transport Revenues. These calculations are in Volume 5, Page 5.

The EF revenues were calculated by multiplying the test period number of entrance facilities by

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the EF Rates. These calculations are displayed in Volume 5, Page 5.

Tandem Switched Transport Revenues

The Tandem Switched Transport revenues were priced out in two steps. Step one priced Remote to Host Transport and step two priced minutes from End Office or Host Office to the Tandem. Combining the revenues from the two steps produced the total Tandem Switched Transport revenues (excluding Tandem Switching revenues). These calculation steps are displayed in Volume 5, Page 4 and Page 6.

Remote-Host Revenues

For TST revenues, the test period remote MOUs were multiplied by 2 times the TST rate. Based on rate application noted earlier for Host-Remote configurations, one (1) TST charge is applicable for each end of the Host-Remote measured segment (i.e. two/segment). For TSF revenues, the remote MOUs were multiplied by the Remote ALOH (ALOH between Remote and Host) times the TSF rate. Combined, the TST and TSF revenues obtained above make up the total Remote to Host revenues.

End Office or Host to tandem Revenues

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For TST revenues, the Non-Remote, Non-Direct MOUs were multiplied by the number of Terms times the TST rate. For TSF revenues, the Non-Remote, Non-Direct MOUs were multiplied by the adjusted ALOH (discussed previously) times the TSF rate. Combined, the TST and TSF make up the End Office to Tandem or Host to Tandem revenues.

800 Database Query Revenues

800 Database query rates proposed in this filing are designed to recover expenses associated with 800 data base access service as described in PRTC F.C.C. No. 1, Section 6.10.3.d 800 data base query charges will only be billed at PRTC Service Switching Point (SSP) locations that are invoiced directly for 800 data base translation from a connecting company Service Control Point (SCP). These offices are distinguished from other PRTC end offices in NECA F.C.C. No. 4, Wire Center Tariff.

PRTC utilizes Southern New England Telephone (SNET) for its 800 database queries. As such, the rate PRTC is charged for 800 queries is passed along to PRTC's customers for 800 calls. Based upon SNET's current tariff, the 800 database query charge will be \$0.004141 per query. Development of 800 data base test period query volumes is contained in Volume 4, Section 1. Development of 800 Database query revenues and is detailed in Volume 5, Page 6.

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5.3 Special Access Rate Development

The development of special access rates is a multi-step process designed to produce rates that reflect the hierarchical cost of service provision, fall within the prescribed rate relationships of the FCC, and recover the combined company revenue requirement. The steps detailed in the following pages describe the processes associated with (1) identifying special access interstate revenue requirement by direct and indirect costs, (2) allocating the total special access revenue requirement to rate element detail, (3) identifying unit costs for the services, and (4) producing final rates that meet the objectives identified above.

Development of Unit Costs

PRTC began the special access rate development process by identifying the direct versus the indirect portion of the special access revenue requirement. The direct revenue requirement is used to calculate the unit cost for each special access service.

The first step in developing the direct special access revenue requirement was to classify each special access cost item as direct or indirect. The interstate portion of all special access investments categorized as central office equipment ("COE") or cable and wire facilities (Accounts 2210 through 2241) were classified as direct. Indirect investments included general support plant and plant not in service. Expenses related to the direct investment were assigned to the direct category (Account 6210

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through 6440). Finally, depreciation expenses and reserves and other plant related expenses were assigned as direct or indirect based on the relationship of direct and indirect telephone plant in service to total telephone plant in service. A direct cost factor ("DCF") was determined by dividing the direct revenue requirement by the direct plant investment. The development of the direct special access revenue requirement and the direct cost factor is detailed in Volume 5, Page 8.

Nonrecurring charges are applied per Channel Termination for the ordering and installation of special access services. The revenues generated from NRCs reduce the special access revenue requirement. For rate development purposes, the NRC revenues are categorized as "direct" revenues and will be used to reduce the CT direct special access revenue requirement.

Optional Features and Functions provide hub functions, transmission conditioning and signaling enhancements for special circuits. The revenues generated from OFFs reduce the special access revenue requirement. Because the OFF rates were developed using both direct and indirect costs, only the direct percent of revenue requirement multiplied by the total OFF revenues will be used to reduce the Channel Mileage Termination direct special access revenue requirement. Both the NRC and OFF revenue calculations are detailed in Volume 5, Page 9.

Test year revenues generated from DS3 services were deducted from the special access revenue requirement. Because the DS3 rates are a composition of direct and indirect costs, only the direct percent of the revenues multiplied by the total DS3 revenues will be used to reduce the direct

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special access revenue requirement. This calculation is detailed in Volume 5, Page 10.

Transport Benchmark

In order to comply with 47 CFR 69.108 of the Commission's Rules, the DS1 to DS3 rate relationship must meet a certain crossover test. Volume 5, Page 22 depicts the calculation of the DS1 to DS3 minimum benchmark. The rules state a minimum benchmark ratio of 9.6 to 1.0 for DS3 to DS1. With this filing, PRTC's generally tariffed DS3 rates satisfy the benchmark test.

Rate Descriptions

In developing special access rates, PRTC used a "top down" approach which disaggregates the Part 69 special access revenue requirements to the rate elements and services. The four major special access recurring rate elements are Channel Termination (CT), Channel Mileage Facility (CMF), Channel Mileage Termination (CMT) and Optional Features and Functions (OFF). The CT provides for the communication path between the customer designated premise and the customer's serving wire center. CMF provides the transmission facilities, and the CMT equipment to terminate those facilities, between telephone company serving wire centers or hubs.

PRTC distributed the special access revenue requirement to four (4) cost recovery sub-elements detailed below by using primary investment relationships contained in the 1997 Annual Tariff

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Filing.¹¹ By continuing to utilize the 1997 investment factors, consistency is maintained in the relative rate relationship among special access CT, CMF and CMT rates is maintained.

	<u>Sub-elements</u>	<u>Rate Elements</u>
1)	Loop Term - COE	CT
2)	Loop - C&WF & IOT	CT
3)	Transport - C&WF	CMF
4)	Transport Term - COE	CMT

The percent for each sub-element was used to split the total direct special access revenue requirement into the four sub-elements. This calculation is displayed in Volume 5, Page 11. The direct special access revenue requirement is adjusted for NRC revenues and the direct percent of the OFF and DS3 revenues. This calculation is in Volume 5, Page 11.

5.3.1 CT Rate Development

In order to develop CT rate levels which reflect PRTC's cost characteristics, two components of the special access direct CT revenue requirement, CT-COE and CT-CWF were isolated. The

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direct CT-COE revenue requirement is disaggregated to special access services using the Relative Index Study ("RIS") based on relative costs of each special access service. The direct CT-CWF revenue requirement is disaggregated to special access services based on loop equivalencies. The RIS results are displayed in Volume 3.

The direct CT-COE portion of the CT unit costs was calculated by multiplying each service specific index by the test period demand and summing the result to obtain weighted CT demand. The direct CT-COE revenue requirement was then divided by the weighted demand to obtain a cost per weighted demand factor. This factor was then multiplied by each service's relative index to obtain the CT-COE portion of the CT rate. This process is displayed in Volume 5, Page 12.

The CT-CWF portion of the CT unit costs was calculated by multiplying each service specific loop equivalency by the test period demand and summing the result to obtain weighted CT demand. The direct CT-CWF revenue requirement was then divided by the weighted demand to obtain a cost per weighted demand factor. This factor was then multiplied by each service's loop equivalency to obtain the CT-CWF portion of the CT rate. This process is displayed in Volume 5, Page 12.

The CT-COE portion and the CT-CWF portion of the CT unit costs were then added together

¹¹ See PRTC's Transmittal No. 19 filed June 16, 1997, Volume 5, Page 11, Line 5

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to obtain the total CT unit costs. This process is displayed in Volume 5, Page 13.

5.3.2 Channel Mileage Rate Development

In order to develop CMF and CMT unit costs, PRTC used allocation ratios to disaggregate the direct CMF and CMT revenue requirements to the special access services. Since special access channel mileage can be provisioned using a variety of facility types (i.e. carrier systems, microwave/radio, etc.), PRTC identified the facility type most frequently used to provision special access services. Identifying a common facility type provided a basis for obtaining service specific allocation ratios.

A T-1 carrier system is generally used in providing special access channel mileage between serving wire centers. A T-1 carrier combines up to twenty-four (24) 2 way voice channels on four wires. The channel bank, used with a T-1 carrier, is located in the central office and is non-distance sensitive COE Category 4 circuit equipment. It is included in the CMT revenue requirement. The allocation ratios for developing CMT rates were developed by determining the percent of the T-1 carrier utilized for each special access service. For example, a VG two-wire service utilizes 1 of the 24 available T-1 channels, therefore incurs 1/24 of the cost of the channel bank and is assigned an allocation ratio of 1.

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The four wires extending from the end user serving wire center and the interexchange carrier SWC are distance sensitive C&WF and are included in the CMF revenue requirement. The allocation ratios for developing CMF rates were developed by determining the percent of the T-1 carrier utilized for each special access service.

The CMT and CMF unit costs were calculated by multiplying each service specific allocation ratio by the test period demand and summing the result to obtain weighted CMT and CMF demand. The direct CMT and CMF revenue requirements were then divided by the weighted demand to obtain a cost per weighted demand factor. This factor was then multiplied by each service's allocation ratio to obtain the CMT and CMF rates. This process is displayed in Volume 5, Page 14.

Development of Proposed Rates

The starting point for developing proposed special access rates is the total special access revenue requirement from Volume 2. From this revenue requirement, the total NRC, OFF and DS3 revenues are used to reduce the total special access revenue requirement in order to obtain the total special access recurring (rate making) revenue requirement. This process is displayed in Volume 5, Page 15.

The next step is assigning a rate index to each rate element normalized with respect to the Voice

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Grade 2 Wire CT rate. Where F.C.C. guidelines exist, they are used in determining the ratios. For example, a benchmark ratio of 1.6 to 1.0 exists for comparing the Voice Grade 4 Wire CT rate to the Voice Grade 2 Wire CT rate.¹² Each index is multiplied by its corresponding demand to produce a weighted demand. These calculations are displayed in Volume 5, Pages 16, 17 and 18.

The proposed Voice Grade 2 Wire CT monthly rate is determined by dividing the recurring special access revenue requirement by the sum of the weighted demand for CT, CMF and CMT elements. This calculation is displayed in Volume 5, Page 19. The proposed Voice Grade 2 Wire rate is then multiplied by each recurring rate element's index to produce proposed special access rates. The proposed monthly special access rates are displayed in Volume 5, Page 20.

¹² MO&O CC Docket 85-166, Phase I, Adopted January 21, 1986, Released January 24, 1986. Paragraph 102.

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All special access rates are developed to recover at least the direct unit cost on a service specific basis. Volume 5, Page 21 displays the CT rate relationships for Telegraph and Voice Grade 2 Wire and 4 Wire services. The crossover relationship between High Capacity DS1 to Voice Grade 4 Wire service and the transport benchmark DS3 to DS1 relationship is displayed in Volume 5, Page 22.

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6.1 Introduction

The percentage change in rates described herein represent general rate changes. The percent change in rates will vary by customer depending on the transport distance involved and the type of special access service. Detailed rate level changes are provided as Appendix A.

6.2 Traffic Sensitive - Switched Access

In general, the proposed composite switched access minute of use rate is increasing approximately 6% for the PRTC study areas compared to PRTC's current rates. PRTC's proposed local switching rate is decreasing by 10.5% and dedicated transport rates are decreasing from 3% to 20%. The proposed tandem switched transport rates are projected to increase significantly, due in large part to the fact that PRTC's forecast TIC revenue requirement allocated to other access elements was not the full \$21.3M, but a smaller amount of \$14.7M. The result is that tandem switched transport rates are recovering the \$6.7M of TIC that is not allocated to the other elements. These comparisons are displayed in Appendix A.

6.3 Traffic Sensitive - Special Access

The rates proposed in this filing for Channel Terminations (CT) represent minor increases compared to current rates. The proposed Voice Grade, DS1, DS3 and Digital Data Service rates are

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decreasing approximately 3.5% from the current rate levels. These comparisons are displayed in Appendix A.

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Appendix A

Summary of Rate Changes

Provided on the following page are rate comparison sheets that display currently effective rates, proposed rates, and percent change. Current rates are based on PRTC's F.C.C. No.1 tariff.

**Puerto Rico Combined
Rate Comparison**

End Office	Current	Proposed	% Chg	Special Access	Current	Proposed	% Chg
Prem Local Switching	0.006308	0.005644	-10.5%	CT - Telegraph 2 Wire	\$13.18	\$12.72	-3.5%
Prem Info Surcharge	0.000000	0.000000		CT - Telegraph 4 Wire	\$21.09	\$20.35	-3.5%
				CT - Voice Grade 2 Wire	\$13.18	\$12.72	-3.5%
Information				CT - Voice Grade 4 Wire	\$21.09	\$20.35	-3.5%
DA per MSG rate	\$0.60	\$0.57	-5.0%	CT - Program Audio 3.5 khz	\$29.00	\$27.99	-3.5%
				CT - Program Audio 5.0 khz	\$28.71	\$27.71	-3.5%
Transport				CT - Program Audio 8.0 khz	\$30.17	\$29.12	-3.5%
				CT - Program Audio 15 khz	\$29.00	\$27.99	-3.5%
Tandem Switched Term	0.000650	0.000805	23.8%	CT - Digital Data 2.4 Kbps	\$26.36	\$25.44	-3.5%
Tandem Switched Facil	0.000161	0.000164	1.9%	CT - Digital Data 4.8 Kbps	\$26.36	\$25.44	-3.5%
Tandem Switching	0.006502	0.009139	40.6%	CT - Digital Data 9.6 Kbps	\$26.36	\$25.44	-3.5%
				CT - Digital Data 19.2 Kbps	\$26.36	\$25.44	-3.5%
EF - VG 2 Wire	\$13.18	\$	12.72	CT - Digital Data 56 Kbps	\$26.36	\$25.44	-3.5%
EF - VG 4 Wire	\$21.09	\$	20.35	CT - Digital Data 64 Kbps	\$26.36	\$25.44	-3.5%
EF - DS1	\$84.90	\$	67.85	CT - High Capacity 1.54 Mbps	\$70.30	\$67.85	-3.5%
EF - DS3	\$1,740.83	\$	1,398.25	CT - High Capacity 44.736 Mbps	\$1,441.49	\$1,398.25	-3.0%
				CMF - Telegraph	\$1.46	\$1.41	-3.4%
Direct Trunk Term - VG	\$7.07	\$	5.65	CMF - Voice Grade	\$1.46	\$1.41	-3.4%
Direct Trunk Facil - VG	\$1.76	\$	1.41	CMF - Program Audio 3.5 khz	\$1.46	\$1.41	-3.4%
Direct Trunk Term - DS1	\$69.33	\$	55.41	CMF - Program Audio 5.0 khz	\$2.64	\$2.54	-3.8%
Direct Trunk Facil - DS1	\$16.98	\$	13.57	CMF - Program Audio 8.0 khz	\$4.39	\$4.24	-3.4%
Direct Trunk Term - DS3	\$578.26	\$	462.07	CMF - Program Audio 15 khz	\$5.57	\$5.37	-3.6%
Direct Trunk Facil - DS3	\$166.25	\$	132.98	CMF - Digital Data 2.4 Kbps	\$1.46	\$1.41	-3.4%
Switched Mux DS1	\$200.23	\$	165.90	CMF - Digital Data 4.8 Kbps	\$1.46	\$1.41	-3.4%
Switched Mux DS3	\$418.22	\$	346.30	CMF - Digital Data 9.6 Kbps	\$1.46	\$1.41	-3.4%
SS7 Entrance Facility (56 Kbps)	\$26.36	\$	25.44	CMF - Digital Data 19.2 Kbps	\$1.46	\$1.41	-3.4%
SS7 Chan Mileage Facil (56 Kbps)	\$2.93	\$	2.83	CMF - Digital Data 56 Kbps	\$2.93	\$2.83	-3.4%
SS7 Chan Mileage Term (56 Kbps)	\$11.72	\$	11.31	CMF - Digital Data 64 Kbps	\$2.93	\$2.83	-3.4%
STP PORT	\$582.61	\$	582.61	CMF - High Capacity 1.54 Mbps	\$14.06	\$13.57	-3.5%
				CMF - High Capacity 44.736 Mbps	\$137.66	\$132.98	-3.4%
DataBase				CMT - Telegraph	\$5.86	\$5.65	-3.6%
800 Queries - Basic	0.004141	0.004141	0.0%	CMT - Voice Grade	\$5.86	\$5.65	-3.6%
				CMT - Program Audio 3.5 khz	\$5.86	\$5.65	-3.6%
Optional Features				CMT - Program Audio 5.0 khz	\$11.72	\$11.31	-3.5%
Bridging 2W Voice	\$7.60	\$7.60	0.0%	CMT - Program Audio 8.0 khz	\$17.58	\$16.96	-3.5%
Type C conditioning per pt of term.	\$6.90	\$6.90	0.0%	CMT - Program Audio 15 khz	\$23.43	\$22.62	-3.5%
Improved return loss 2w	\$8.10	\$8.10	0.0%	CMT - Digital Data 2.4 Kbps	\$5.86	\$5.65	-3.6%
Improved return loss 4w	\$6.40	\$6.40	0.0%	CMT - Digital Data 4.8 Kbps	\$5.86	\$5.65	-3.6%
Customer specified Receive Level	\$8.50	\$8.50	0.0%	CMT - Digital Data 9.6 Kbps	\$5.86	\$5.65	-3.6%
Voice grade Type D data capability	\$6.90	\$6.90	0.0%	CMT - Digital Data 19.2 Kbps	\$5.86	\$5.65	-3.6%
Voice grade signaling capability	\$21.50	\$21.50	0.0%	CMT - Digital Data 56 Kbps	\$11.72	\$11.31	-3.5%
Audio gain conditioning per service	\$9.10	\$9.10	0.0%	CMT - Digital Data 64 Kbps	\$11.72	\$11.31	-3.5%
Digital data : bridging per port	\$6.40	\$6.40	0.0%	CMT - High Capacity 1.54 Mbps	\$57.41	\$55.41	-3.5%
CSU 9.6	\$21.80	\$21.80	0.0%	CMT - High Capacity 44.736 Mbps	\$478.83	\$462.07	-3.5%
Multiplexing DS-3 - DS-1	\$346.30	\$346.30	0.0%				
Multiplexing DS-1 - voice	\$165.90	\$165.90	0.0%	Non Recurring Charges			
Multiplexing DS-1 - DS-0	\$219.60	\$219.60	0.0%	Voice Grade 2W/4W	\$189.85	\$189.85	0.0%
Auto loop transfer	\$43.10	\$43.10	0.0%	Digital Data	\$243.40	\$243.40	0.0%
Transfer arrange. per 4 port	\$50.60	\$50.60	0.0%	High Capacity 1.544	\$200.00	\$200.00	0.0%
NCTE: 1.544 per pt of term	\$60.00	\$60.00	0.0%	High Capacity 44.736	\$478.00	\$478.00	0.0%
				Special Access Orders	\$88.00	\$88.00	0.0%
				Date Change / Design Change	\$33.00	\$33.00	0.0%
Composite Comparison				Composite Comparison			
End Office	0.006308	0.005644	-10.5%	Voice Grade Composite	\$71.42	\$68.92	-3.5%
Transport (2 terms, 1 mile, & TS)	0.007963	0.010913	37.0%	Digital Data 56 Kbps Composite	\$111.32	\$107.46	-3.5%
Total Switched Access	0.014271	0.016557	16.0%	High Capacity DS1 Composite	\$424.14	\$409.36	-3.5%
				High Capacity DS3 Composite	\$5,492.56	\$5,316.39	-3.2%