BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

REBUTTAL TESTIMONY OF

BRIAN F. PITKIN

ON BEHALF OF

AT&T COMMUNICATIONS OF THE SOUTHERN STATES, INC.

And

MCI WORLDCOM, INC.

Docket No. 990649A-TP

December 10, 2001

3-6-02 (entire DN)

DECLASSIFIED CONFIDENTIAL

PROPRIETARY INCLUDE EXHIBITS

appeal

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Brian F. Pitkin. I am a Director in the Financial Services Division of FTI Consulting, Inc., with offices located at 66 Canal Center Plaza, Suite 670, Alexandria, Virginia 22314.

Q. PLEASE DESCRIBE YOUR BACKGROUND.

A. My background, qualifications and experience are described in Attachment BFP-1 to this testimony.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes, I previously testified in this proceeding on July 31, 2000 and August 28, 2000. In addition, I filed testimony in Docket No. 980696-TP on September 2, 1998.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I have been asked by AT&T Communications of the Southern States, Inc. ("AT&T") and MCI WorldCom, Inc. ("WorldCom") to review and comment on the bottoms-up version of the BellSouth Telecommunications

Loop Model© ("BSTLM") that the Florida Public Service Commission ("Commission") required BellSouth to file in this proceeding.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. In Section II, I describe the requirements of Order No. PSC-01-1181-FOF-TP ("*FL UNE Order*"), issued May 25, 2001, in Docket No. 990649-TP. In Section III, I discuss the inputs and methodologies that have been used by BellSouth in this filing and explain why they fail to satisfy the Commission's requirements. In addition, I explain the modifications I have made in my restatement of BellSouth's models. Finally, in Section IV, I summarize my testimony and explain why the BSTLM and the BellSouth Cost Calculator ("BSCC"), with proper modifications, can be used to generate bottoms-up UNE results for the outside plant portion of the local telephone network.

II. REQUIREMENTS OF THE COMMISSION'S *FL UNE ORDER*

Q. WHAT DID THE COMMISSION ORDER IN *FL UNE ORDER*?

A. In its *FL UNE Order*, the Florida Public Service Commission ("Commission") required BellSouth to re-file its BSTLM and BSCC. The new models were to "explicitly" model "all cable and associated supporting structure engineering and installation placements" (*FL UNE*

Order, page 234), as opposed to utilizing ratios to develop engineered, furnished and installed costs ("EF&I") -- as was done in BellSouth's initial application of the BSTLM in this proceeding.

The Commission gave BellSouth 120 days to refile the model using a "bottoms up approach," including "all BellSouth assumptions used in developing cable placements, the basis and source data for the revised input values, and a clear identification and listing of all input values." *Id.*

Q. WHY DID THE COMMISSION ORDER BELLSOUTH TO REFILE ITS COST MODELS?

A. The Commission ordered the use of a "bottoms up approach" because it was "troubled by BellSouth's use of linear in-plant factors" which "distort costs between rural and urban areas." *Id.* The Commission also noted that, "BellSouth could not provide any evidence demonstrating that installation costs are directly proportional to material prices." *Id.*

III. DEFICIENCIES IN THE BOTTOMS-UP BSTLM AND MY MODIFICATIONS TO THE MODEL

Q. DOES THE MODEL FILED BY BELLSOUTH SATISFY THE COMMISSION'S REQUIREMENTS?

A. No. BellSouth's cost model fails to meet the Commission's requirements in a number of significant ways. First, as discussed in more detail by Mr.

Donovan in his testimony, many of the inputs used by BellSouth in its most recent filing are unsupported, and continue to distort the costs between urban and rural areas. Second, the bottoms-up version of the BSTLM filed by BellSouth contains errors in its algorithms. Third, the bottoms-up version of the BSTLM still relies on "loadings" that are multiplied by material values in order to develop the total investments that are used in this version of the BSTLM. Furthermore, these loadings are overstated, double-count certain investments, and continue to distort costs between rural and urban areas. Fourth, BellSouth failed to use a bottoms-up approach to develop DLC investments and therefore continues to overstate investment and distort de-averaged costs.

Q. CAN THE MODEL BE CORRECTED TO PRODUCE A BOTTOMS-UP UNE COST THAT SATISFIES THE COMMISSION'S REQUIREMENTS?

A. Yes. In his testimony, Mr. Donovan addresses the first of the deficiencies identified in my previous answer, and describes the changes to the inputs necessary to correctly estimate UNE costs using the model. My testimony focuses on items two through four, and explains how the BSTLM uses the inputs sponsored by Mr. Donovan.

A. The BSTLM Contains Three Algorithm Errors that Must Corrected

Q. WHAT ARE THE ERRORS IN THE BOTTOMS-UP BSTLM ALGORITHMS THAT YOU HAVE IDENTIFIED TO-DATE?

A. There are three errors in the bottoms-up BSTLM algorithms that cause the model to overstate costs. The first error involves the calculation of EF&I costs for fiber cable. The second error results from BellSouth including additional, and unnecessary, costs for stub cable in underground facilities. The third error occurs by using incorrect structure sharing values in certain calculations.

Q. WHAT IS THE ERROR INVOLVING THE CALCULATION OF EF&I COSTS FOR FIBER CABLE?

A. The bottoms-up model mistakenly applied *copper* placing and splicing costs to *fiber* cable, which causes the model to overstate fiber investments.

Q. WERE YOU ABLE TO CORRECT THE EF&I CALCULATION FOR FIBER CABLE?

A. Yes. I corrected this error by changing the calculation in the "3-Media" sheet of the "InvestLogic.xls" file of the BSTLM. Specifically, I modified the formulas in Cells "AD5" through "AD7" to use the *fiber* placing and

splicing cost in the calculation of the *fiber* cable EF&I cost. Attachment BFP-2 walks through BellSouth's original calculation and shows my corrections to these calculations.

Q. WHAT IS THE ERROR REGARDING STUB CABLE INVESTMENT?

A. In its bottoms-up BSTLM, BellSouth inappropriately places additional costs for stub cables in its underground facilities. In his testimony, Mr. Donovan explains that this investment is not consistent with the way one would construct a forward-looking network, and is unnecessary given that the BSTLM does not model the network in a configuration that would require copper cable stubs.

Q. WERE YOU ABLE TO ELIMINATE THE STUB CABLE INVESTMENT?

A. Yes. I have corrected BellSouth's overstatement by removing the stub cable investment from the underground facilities in the "3-Media" sheet of the "InvestLogic.xls" file of the BSTLM by modifying the formulas in Cell "AB2" to eliminate any investment associated with stub cables. Attachment BFP-3 walks through BellSouth's original calculation and shows my corrections to these calculations.

Q. WHAT IS THE ERROR INVOLVING THE STRUCTURE SHARING CALCULATIONS?

A. The bottoms-up model mistakenly applied *urban* structure sharing amounts to *rural* and *suburban* structure, which causes the model to understate structure investments.

Q. WERE YOU ABLE TO CORRECT THE STRUCTURE SHARING CALCULATIONS?

A. Yes. I corrected this error by changing the calculation in the "StructureConduit Interim Calc" sheet and the "StructureBuried Interim Calc" sheet of the "InvestLogic.xls" file of the BSTLM. Specifically, in the "StructureConduit Interim Calc" sheet, I modified the formulas in Cells "I34" through "I41" to use the *suburban* structure sharing amounts in the calculation of the *suburban* structure and in Cells "I47" through "I54" to use the *rural* structure sharing amounts in the calculation of the *rural* structure. In the "StructureBuried Interim Calc" sheet, I modified the formulas in Cells "I22" through "I33" to use the *suburban* structure sharing amounts in the calculation of the *suburban* structure and in Cells "I39" through "I50" to use the *rural* structure sharing amounts in the calculation of the *rural* structure. Attachment BFP-9 walks through BellSouth's original calculation and shows my corrections to these calculations.

B. BellSouth's Material Loadings are Overstated

Q. DOES THE BOTTOMS-UP MODEL FILED BY BELLSOUTH STILL CONTAIN LINEAR LOADING FACTORS?

A. Yes. BellSouth still includes linear loading factors in the BSTLM -- exactly the type of linear loading factors that this Commission previously concluded were the cause of cost distortions. These factors are intended to recover the cost of exempt material, supplies, indirect labor, rights of way, and interest during construction.

Q. ARE THERE PROBLEMS ASSOCIATED WITH BELLSOUTH'S USE OF LINEAR LOADING FACTORS?

A. Yes. First, BellSouth has developed these factors using its historical data. Data of this nature are not appropriate for use in a TELRIC model. One simple reason for this is that experience from BellSouth's continuing operations are not an appropriate basis for estimating start-up TELRIC *investment*. Although these data may be appropriate for developing certain on-going operating costs of a network, there is no evidence that suggests historical data are relevant to the determination of investments. For example, one would expect a higher ratio of exempt material investment to non-exempt material investment when analyzing the repairs and small rehabilitations that are reflected in the actual BellSouth historical data but a smaller ratio would almost certainly be associated

with the large-scale projects that are inherent in the construction of the entire network that underlies TELRIC. BellSouth has not provided any evidence to support the use of ratios based on embedded data in developing forward-looking investments.

Second, BellSouth's linear loading factors are problematic because they rely on only a single year's data -- from 1998. Thus, a high ratio of exempt material to non-exempt material in this single year would significantly overstate TELRIC.

Third, use of linear loading factors as multipliers on non-exempt material investment is not an appropriate basis for developing forward-looking exempt material investments. As Mr. Donovan explains, exempt material is typically treated as a proportion of labor, not as a proportion of material. Thus, BellSouth's approach of using linear loading factors is incorrectly developed and applied.

In addition to the above problems, there are errors in BellSouth's development of linear loading factors for exempt material and indirect labor.

Q. WHY IS BELLSOUTH'S DEVELOPMENT OF A LINEAR LOADING FACTOR FOR EXEMPT MATERIAL INCORRECT?

A. Exempt material typically includes the investments associated with "minor items of plant supplies." (BellSouth Cost Studies, Appendix B,

Attachment 5) These investments include items such as drop wires and network interface devices ("NIDs"). In fact, Ms. Caldwell acknowledges this in her Reply Affidavit before the Federal Communications Commission in the Georgia 271 proceeding:

> The material costs of the service drop wires and associated NID units are classified to exempt material. The cost of exempt material, however, is distributed as part of the monthly allocations process to the various ACCs (including ACC 248 and ACC 548) based on the direct labor dollars associated with each ACC (Reply Affidavit of D. Daonne Caldwell, CC Docket No. 01-277, paragraph 37)

Because the BSTLM explicitly models the costs of NIDs and drops, the exempt material loading factor should exclude these items. BellSouth did not remove any of the exempt materials associated with NIDs or drop wires in its calculation of the exempt material loading factor and thus double-counts these investments. In fact, BellSouth has not identified each item that is included in exempt material. Unless BellSouth produces information sufficient to determine that it properly eliminated all such inappropriate and double-counted material from the calculation of the exempt material loading factor, this Commission should reject BellSouth's loading factor estimates.

In addition, Ms. Caldwell's above statements support Mr. Donovan's assertion that exempt materials are typically attributed on the basis labor

costs, not material costs. Thus, these costs should not be attributed to material costs as BellSouth has chosen to do in this filing.

Q. WHY IS BELLSOUTH'S DEVELOPMENT OF A LINEAR LOADING FACTOR FOR INDIRECT LABOR INCORRECT?

A. Indirect plant labor includes "the standard rated salaries and wages for supervision and support above first level for work reporting plant labor employees." (BellSouth Cost Studies, Appendix B, Attachment 5)

Again, I understand from Mr. Donovan that indirect labor is typically a function of direct labor, not material investment. In addition, I understand that BellSouth's labor rates are already "loaded" labor rates that include an allowance for indirect labor.

Q. HOW HAVE YOU IMPLEMENTED ADJUSTMENTS TO CORRECT FOR BELLSOUTH'S INCORRECT LINEAR LOADING FACTORS?

A. While I am skeptical about the use of BellSouth's linear loading factors for supplies, rights of way and interest during construction, I have left them in my restatements -- which likely overstate the appropriate amount of these factors that should be applied in a TELRIC environment. I urge this Commission to require BellSouth to produce all necessary information to determine exactly what items are included in each of these factors and

identify the source of these costs (*i.e.*, describe how interest during construction is calculated and what it is applied to, on a detailed basis).

However, consistent with Mr. Donovan's testimony (and the testimony of Ms. Caldwell), I have applied material loadings as a factor on labor instead of material. Specifically, I have increased the labor costs by 20 percent to account for exempt material, consistent with the recommendation of Mr. Donovan. In addition, I have removed the indirect labor loading from BellSouth's linear loading factors, consistent with the recommendation of Mr. Donovan.

I have included, as Attachment BFP-4, an illustration of BellSouth's development of linear loading factors for underground cable.

C. BellSouth's Inflation Factor is Overstated

Q. ARE THE INFLATION RATES USED BY BELLSOUTH CORRECT?

A. No. BellSouth uses inflation rates that are too high as well as unreliable. In this proceeding, BellSouth uses a combination of actual and forecasted inflation rates to adjust its costs. These inflation rates purport to be BellSouth-specific indices reflecting the actual historical inflation that BellSouth experienced through 1997. BellSouth then used these historical

data to estimate inflation for subsequent years, including the 2000, 2001 and 2002 data that are used in the model.

My first major concern is that BellSouth has provided no information supporting its development of these inflation factors. Thus, I (and the Commission) have no way of evaluating the reasonableness of BellSouth's forecasts. This is important because BellSouth is using historical data to estimate inflation three to five years in the future.

My second major concern is related. BellSouth could have used historical data for the years 2000 and 2001, which is available and obviously is a more reliable indicator of inflation during these two years than are the unexplained forecasts for 2000 and 2001 that BellSouth has employed. I compared BellSouth's forecasted data for these two years with the C. A. Turner Telephone Plant Indices ("TPI") for these two years to evaluate the reasonableness of BellSouth's forecast data. This evaluation showed that BellSouth's forecast-based inflation assumptions are significantly overstated.

Thus, I have revised BellSouth's inflation assumptions to reflect actual data (as reported in the TPI) for the years 2000 and 2001. From this point, I needed only to estimate inflation for the year 2002. In order to do so, I used a simple linear trend. I have included, as Attachment BFP-5, a comparison of BellSouth's inflation assumptions for underground copper

cable to the data contained in the TPI (and my estimate for 2002) for the years 2000 to 2002.

D. BellSouth's Engineering Factors are Overstated

Q. ARE BELLSOUTH'S ENGINEERING FACTORS APPROPRIATE?

A. No. BellSouth uses engineering loading factors of 37 percent for fiber facilities and 25 percent for copper facilities, conduit and pole. Based on discussions with Mr. Donovan, I have changed both of BellSouth's overstated engineering factors to 10 percent.

E. BellSouth's DLC Loadings are Overstated

Q. DID BELLSOUTH RESTATE DIGITAL LOOP CARRIER INVESTMENTS USING A BOTTOMS-UP APPROACH?

A. No. BellSouth failed to use a bottoms-up approach to develop DLC investment. This failure continues to distort the DLC costs that the model develops for various geographic areas. Because BellSouth failed to make these modifications, I was forced to use an in-plant factor to develop the engineering and installation cost for DLC equipment.

Q. WHAT FACTOR DID YOU USE FOR ENGINEERING AND INSTALLATION COSTS OF DLC EQUIPMENT?

A. I am using the same DLC in-plant factor that Mr. Donovan and I recommended in the first phase of this proceeding. My rationale for this approach is that the factor we developed at the time is based on a detailed, bottoms-up approach. Thus, it is the most accurate approach before this Commission to approximate what would result from a true, bottoms-up approach.

Without wanting to repeat our prior testimony, Mr. Donovan previously modified BellSouth's factors to reflect an appropriate amount of engineering and installation costs. Specifically, the engineering and installation cost should reflect the installation of equipment that has been

> completely assembled and tested at the factory. Once the equipment is on site and bolted to its mounting pad, the only assembly required consists of connecting local power, connecting drop facilities, connecting optical fiber facilities, installing the back-up batteries, and plugging the circuit packs into their assigned locations in the racks.

[Alcatel Litespan 2000 DLC practice]

We believe the appropriate number of hours required to install pre-assembled DLC equipment are those which were used as inputs in the HAI Model. Therefore, we have calculated the ratio of installed investment in the HAI Model to material investment in the HAI Model to arrive at an

appropriate installation and engineering factor for DLC equipment. Attachment BFP-6 details how these factors were derived.

F. BellSouth's Bottoms-Up Inputs are Overstated

Q. ARE BELLSOUTH'S BOTTOMS-UP INPUTS APPROPRIATE FOR USE IN THIS PROCEEDING?

A. No. As Mr. Donovan explains in his testimony, BellSouth's inputs serve to significantly overstate the TELRIC of providing UNEs in Florida. I have worked with Mr. Donovan to evaluate the inputs in the BSTLM and to understand how the inputs are used in the model. Based on those discussions, I have included more appropriate inputs -- which are supported in Mr. Donovan's testimony -- in my restatement of the BSTLM.

I have included, as Attachment BFP-7 to my testimony, a comparison of BellSouth's original inputs to the inputs that Mr. Donovan and I propose.

Q. HAVE YOU PREPARED ANYTHING TO ASSIST THE COMMISSION IN UNDERSTANDING THE CHANGES YOU ARE ADVOCATING IN YOUR TESTIMONY?

A. Yes. I have included, as Attachment BFP-8, a series of illustrations that show how the changes I advocate in this testimony work in the BSTLM.

In other words, I attempt to take the algorithms in the BSTLM and break them apart to show the Commission how BellSouth is developing its fully-loaded, bottoms-up investments. I then incorporate the changes I identify above into the illustrations to assist the Commission in evaluating my restatements.

In addition, I have attempted to compare these modified inputs and calculations, where appropriate, to the inputs developed by the FCC for use in the Synthesis Model. I believe that this provides additional valuable information for this Commission to evaluate when reaching its conclusions. In others words, I believe that a comparison with the FCC's inputs provides a sanity check on the inputs used in the BSTLM. This Commission should question any inputs proposed by BellSouth that, once put on an equivalent basis (*i.e.*, fully loaded) are significantly out of line with what the FCC has concluded based on significant evaluation.

IV. SUMMARY AND CONCLUSIONS

Q. WILL YOU PLEASE SUMMARIZE YOUR TESTIMONY?

A. The model filed by BellSouth fails to satisfy the requirements of the Commission's *FL UNE Order*. To correct the problems in BellSouth's model and produce bottoms-up results, I urge the Commission to:

- Correct the algorithm errors in the BSTLM;

- Reject BellSouth's loading factors and rely on the corrections developed by myself and Mr. Donovan;
- Reject BellSouth's installation and engineering factors for DLC equipment and rely on the more appropriate factors we previously sponsored, which are based on a bottoms-up analysis;
- Reject BellSouth's inputs and rely on Mr. Donovan's more appropriate inputs.

If these corrections are made, the BSTLM would produce results that are consistent with TELRIC and satisfy the Commission's requirement to model "all cable and associated supporting structure engineering and installation placements." (*FL UNE Order*, page 234). Attachment BFP-10 is the result of a revised BSTLM run incorporating the changes I have described herein.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

CURRICULUM VITAE

OF

BRIAN F. PITKIN

EDUCATION

University of Virginia, McIntire School of Commerce, Charlottesville, Virginia, 1993
Bachelor of Science in Commerce - Dual Concentrations in Finance and Management Information Systems

EMPLOYMENT HISTORY

Peterson Consulting, LLP, Washington, DC, 1993 - 1994
Consultant

FTI/Klick, Kent & Allen, Alexandria, Virginia, 1994 - Present
Director

TESTIMONY

United States District Court, Central District of California, Western Division

December 4, 2000	Case No.:99-11641 RSWL (RCx). Arthur Simon and John Galley, III On Behalf of Themselves and All Persons Similarly Situated vs. American Telephone & Telegraph Crop,; At Home Corporation; Arahova Communications, Inc.; Cox Communications, Inc.; Comcast Corporation; Cablevision Systems Corp,; Garden State Cable Vision LP; Jones Intercable, Inc.; Time Warner, Inc,; Time Warner Entertainment Co., L.P.; TWE-A/N Partnership; TWI Cable, Inc.; MediaOne Group; ServiceCo L.L.C.; and Tele-Communications, Inc. Declaration of John C. Klick and Brian F. Pitkin in Support of Defendants' Motion in Opposition to Plaintiff's Motion for Class Certification.

Federal Communications Commission

May 26, 1999	CC Docket No. 96-98. Implementation of the Local Competition Provisions of the Telecommunications Act of 1996. Affidavit of John C. Klick and Brian F. Pitkin.
May 26, 1999	CC Docket No. 96-98. Implementation of the Local Competition Provisions of the Telecommunications Act of 1996. Affidavit of Michael J. Boyles, John C. Klick and Brian F. Pitkin.
June 10, 1999	CC Docket No. 96-98. Implementation of the Local Competition Provisions of the Telecommunications Act of 1996. Reply Affidavit of Michael R. Baranowski, John C. Klick and Brian F. Pitkin.
July 31, 2001	CC Docket No. 00-251, 00-218. In the Matter of Petition of AT&T Communications of Virginia, Inc. and WorldCom, Inc., Pursuant to Section 252(e)(5) of the Communications Act, for Preemption of the Jurisdiction of the Virginia State Corporation Commission

	Regarding Interconnection Disputes with Verizon-Virginia, Inc. Direct Testimony of Brian F. Pitkin.
September 21, 2001	CC Docket No. 00-251, 00-218. In the Matter of Petition of AT&T Communications of Virginia, Inc. and WorldCom, Inc., Pursuant to Section 252(e)(5) of the Communications Act, for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon-Virginia, Inc. Surrebuttal Testimony of Brian F. Pitkin.

Alabama Public Service Commission

February 13, 1998	Docket No. 25980. Implementation of the Universal Support Requirements. Rebuttal Testimony of Brian F. Pitkin.

Florida Public Service Commission

September 2, 1998	Docket No. 980696-TP. Determination of the Cost of Basic Local Telecommunications Service, Pursuant to Section 364.025, Florida Statutes. Rebuttal Testimony of Don J. Wood and Brian F. Pitkin.
July 31, 2000	Docket No. 990649-TP. Investigation into Pricing of Unbundled Network Elements. Rebuttal Testimony of John C. Donovan and Brian F. Pitkin.
August 28, 2000	Docket No. 990649-TP. Investigation into Pricing of Unbundled Network Elements. Supplemental Rebuttal Testimony of John C. Donovan and Brian F. Pitkin.

Georgia Public Service Commission

August 1, 2000	Docket No. 5825-U. Universal Access Fund, Transition to Phase II Pursuant to O.C.G.A. § 46-5-167. Direct Testimony of John C. Donovan and Brian F. Pitkin.
September 8, 2000	Docket No. 5825-U. Universal Access Fund, Transition to Phase II Pursuant to O.C.G.A. § 46-5-167. Rebuttal Testimony of John C. Donovan and Brian F. Pitkin.
October 2, 2000	Docket No. 5825-U. Universal Access Fund, Transition to Phase II Pursuant to O.C.G.A. § 46-5-167. Reply to Rebuttal Testimony of John C. Donovan and Brian F. Pitkin.

State Corporation Commission of the State of Kansas

May 25, 1999	Docket No. 99-GIMT-326-GIT. Investigation into the Kansas Universal Service Fund (KUSF) Mechanism for the Purpose of Modifying the KUSF and Establishing a Cost-based Fund. Direct Testimony of Brian F. Pitkin.

Maryland Public Service Commission

March 23, 2001	Case No. 8745. In the Matter of the Provision of Universal Service to Telecommunications Consumers. Direct Testimony of Brian F. Pitkin.
May 21, 2001	Case No. 8745. In the Matter of the Provision of Universal Service to Telecommunications Consumers. Rebuttal Testimony of Brian F. Pitkin.
May 25, 2001	Case No. 8879. In the Matter of the Investigation into Rates for Unbundled Network Elements Pursuant to the Telecommunications Act of 1996. Direct Testimony of Brian F. Pitkin.

June 11, 2001	Case No. 8745. In the Matter of the Provision of Universal Service to Telecommunications Consumers. Surrebuttal Testimony of Brian F. Pitkin.
July 24, 2001	Case No. 8879. In the Matter of the Investigation into Rates for Unbundled Network Elements Pursuant to the Telecommunications Act of 1996. Supplemental Direct Testimony of Brian F. Pitkin.
October 15, 2001	Case No. 8879. In the Matter of the Investigation into Rates for Unbundled Network Elements Pursuant to the Telecommunications Act of 1996. Surrebuttal Testimony of Brian F. Pitkin.

Minnesota Public Utilities Commission

July 14, 1998	Docket No. P-442, 5321, 3167, 466, 421/CI-96-1540. Commission's Generic Investigation of U S West Communications, Inc.'s Cost of Providing Interconnection and Unbundled Network Elements. Supplemental Direct Testimony of John C. Klick and Brian F. Pitkin.

Mississippi Public Service Commission

March 6, 1998	Docket No. 98-AD-035. Mississippi Universal Service Docket. Rebuttal Testimony of Brian F. Pitkin.

Public Service Commission of Missouri

September 25, 1998	Docket No. TO-98-329. Investigation into Various Issues Related to the Missouri Universal Service Fund. Rebuttal Testimony of Brian F. Pitkin, adopted by John C. Klick.

Public Service Commission of the State of Montana

December 31, 1997	Docket No. D97.9.167. Investigation of the Commission Implementation of a Forward Looking Universal Service Cost Model. Direct Testimony of Brian F. Pitkin, adopted by Michael Hydock.
February 13, 1998	Docket No. D97.9.167. Investigation of the Commission Implementation of a Forward Looking Universal Service Cost Model. Supplemental Testimony of Brian F. Pitkin, adopted by Michael Hydock.
February 20, 1998	Docket No. D97.9.167. Investigation of the Commission Implementation of a Forward Looking Universal Service Cost Model. Rebuttal Testimony of Brian F. Pitkin, adopted by Michael Hydock.

Telecommunications Regulatory Board of Puerto Rico

May 1, 2001	Case No.'s 97-Q-0001 & 97-Q-0003. In the matter of Puerto Rico Telephone Company Tariff K-2. Direct Testimony of Brian F. Pitkin.
May 15, 2001	Case No.'s 97-Q-0001 & 97-Q-0003. In the matter of Puerto Rico Telephone Company Tariff K-2. Rebuttal Testimony of Brian F. Pitkin.
November 9, 2001	Case No. JRT-2001-AR-0002. In the matter of Arbitration of Interconnection Rates, Terms and Conditions between WorldNet Telecommunications, Inc. and Puerto Rico Telephone Company. Direct Testimony of Brian F. Pitkin.

South Carolina Public Service Commission

November 10, 1997	Docket No. 97-239-C. Intrastate Universal Service Fund. Adopted the Direct Testimony of John C. Klick.
March 2, 1998	Docket No. 97-239-C. Intrastate Universal Service Fund. Rebuttal Testimony of Brian F. Pitkin.

Tennessee Regulatory Authority

April 9, 1998	Docket No. 97-00888 (USF). Universal Service Generic Contested Case. Rebuttal Testimony of Don J. Wood and Brian F. Pitkin.

Public Utility Commission of Texas

July 16, 1998	Docket No. 18515. Compliance Proceeding for Implementation of the Texas High Cost Universal Service Plan. Live Rebuttal Testimony of Brian F. Pitkin.

Washington Utilities and Transportation Commission

August 3, 1998	Docket No. UT-980311(a). Determining Costs for Universal Service. Testimony of Brian F. Pitkin.
August 24, 1998	Docket No. UT-980311(a). Determining Costs for Universal Service. Rebuttal Testimony of Brian F. Pitkin.

Public Service Commission of the State of Wyoming

January 23, 1998	General Order No. 81. Investigation by the Commission of the Feasibility of Developing Its Own Costing Model for Use in Determining Federal Universal Service Fund Support Obligations in Wyoming. Direct Testimony of Brian F. Pitkin.
February 6, 1998	General Order No. 81. Investigation by the Commission of the Feasibility of Developing Its Own Costing Model for Use in Determining Federal Universal Service Fund Support Obligations in Wyoming. Rebuttal Testimony of Brian F. Pitkin.

County Board, Arlington Virginia

August 5, 2000	Consideration of the January 18, 2000 Application of Starpower Communications, LLC for an Arlington County Certificate of Public Convenience and Necessity for Cable Television. Testimony of Brian F. Pitkin.

Fiber EF&I Error Correction for Underground Fiber Cable

Line No.	Description	Formula	Rate	BellSouth with Error	AT&T/WorldCom Corrected
1	Material Cost	BSTLM Input		$ 0.72	$ 0.72
2	Material Loading Per Foot	Rate * Ln1	38.55%	$ 0.28	$ 0.28
3	Copper Placing Cost for 25 Pair	Attachment 9		$ 1.23	$ -
4	Copper Splicing Cost for 25 Pair	Attachment 9		$ 0.22	$ -
5	FO Placing Cost	Attachment 9		$ -	$ 0.74
6	FO Splicing Cost	Attachment 9		$ -	$ 0.20
7	Material, Loading and Labor	Ln1 + Ln2 + Ln3 + Ln4 +Ln5 +Ln6		$ 2.44	$ 1.93
8	Engineering Loading	Rate * Ln7	35.72%	$ 0.87	$ 0.69
9	Total EF&I *	Ln2 + Ln5 + Ln6 + Ln8 *		$ 2.08	$ 1.90
10	Overstatement			$ 0.18	

* BellSouth's calculation of the Total EF&I includes the correct FO placing and splicing cost

Stub Cable Correction for Underground Copper Cable

Line No.	Description	Formula	Rate	BellSouth with Error	AT&T/WorldCom Corrected
1	Copper Cable Size	Assumption		25	25
3	Splicing Set-up Hours	BSTLM Inputs		0	0
4	Splicing Travel Hours	BSTLM Inputs		0	0
5	Splicing Labor per 100 pairs	BSTLM Inputs		5.32	5.32
6	Splicing Labor Hours per 100 pairs for Stub	BSTLM Inputs		5.32	0
7	Splicing Hours	Ln3 + Ln4 +(Ln5 +Ln6)*Ln1 / 100		2.66	1.33
8	Splicing Cost	Labor Rate * Ln7	$ 49.05	$ 130.47	$ 65.24

Material Loading Development Comparison for Underground Metallic Cable

Line No.	Description	EXTC	Accounts	ITEM#	BellSouth	AT&T/WorldCom
1		523	MATERIAL & SUPPLIES	7B	$ 74,697	$ 74,697
2		524	GTES - PURCHASES	7B	$ 147,163	$ 147,163
3		CJ1	PLANT SUPPL - NON EXEMPT	7B	$ 2,417,954	$ 2,417,954
4		CJ4	REUSED MATERIALS	7B	$ -	$ -
5		CJ6	NEW MATERIALS	7B	$ -	$ -
6		CJP	MATL & SUPPLIES - VENDOR	7B	$ -	$ -
7	**Total Non-Exempt Material Expense**	CQ1	Sum (Ln1 : Ln6)		$ 2,639,814	$ 2,639,814
8	**Total Non-Exempt Material less sales tax**		Ln7 / 1.06 (tax rate)		$ 2,490,391	$ 2,490,391
9	**Total Exempt Material Expense**	CQ1	EXEMPT MAT'L OVERHEAD	7A	$ 2,462,924	$ -
10	**Miscellaneous Material Loading**		Ln9 / Ln8		0.988970981	0
11		CQF	FLD STOCK & CC PROV SALVAGE	1	$ 157,837	$ 157,837
12		CQG	FLD STOCK & CC PROV BENEFITS	1	$ 41,450	$ 41,450
13		CQH	FLD STOCK & CC PROV OTHER	1	$ 60,033	$ 60,033
14		CQJ	OVERHEAD PROV - OTHER	1	$ 3,322	$ 3,322
15	**Total Supply Expense**		Sum (Ln11 : Ln14)		$ 262,642	$ 262,642
16	**Supply Expense Loading**	CQF,CQG,CQH,CQJ	Ln15 / Ln8		0.105462173	0.105462173
17		CPA	PLANT LAB - INDIR SAL	1	$ 344,240	$ -
18		CPB	PLANT LAB - INDIR BEN	1	$ 85,443	$ -
19		CPC	PLANT LAB - INDIR OTHER	1	$ 164,766	$ -
20	**Total Plant Labor Exp.**		Sum (Ln17 : Ln19)		$ 594,449	$ -
21		451	RIGHT OF WAY	4	$ -	$ -
22		464	ROW - A QUIRE CONTR	4	$ -	$ -
23		644	ROW - SRV & APPRAISAL	4	$ 2,470	$ 2,470
24		48J	CPL - ROW & TREE TRIM	4	$ -	$ -
25		59H	ROW - LEASE	4	$ -	$ -
26		79A	ROW - PERMITS & FEES	4	$ 1,486	$ 1,486
27	**Total Right of Way Expense**		Sum (Ln21 : L26)		$ 3,956	$ 3,956
28	**Interest During Construction Items**	780	INTEREST	4	$ 78,421	$ 78,421
29	**Total Other Expense**		Ln20 + Ln27 + Ln28		$ 676,826	$ 82,377
30	**Other Expense Loading**	451,464,644,48J,59H,79A	Ln29 / Ln8		0.271775042	0.033077944

Comparison of BellSouth Inflation Loading to AT&T-WorldCom

Line No.	Description	Formula	BellSouth TPI	AT&T/WorldCom TPI
1	2000 Telephone Plant Index (TPI)	BellSouth or Turner TPI	5.00	(4.65)
2	2001 TPI	BellSouth or Turner TPI	4.00	4.88
3	2002 TPI	BellSouth or Turner TPI	4.00	1.52
4	2000 Inflation Rate	1+ (Ln1 / 100)	1.05000	0.95349
5	2001 Inflation Rate	(1+ (Ln2 / 100)) * Ln4	1.09200	1.00000
6	2002 Inflation Rate	(1+ (Ln3 / 100)) * Ln5	1.13568	1.01519
7	Total Inflation	Ln4 + Ln5 + Ln6	3.27768	2.96868
8	Investment Inflation Loading	Ln7 / 3	1.09256	0.98956

DLC In-Plant Factor Development

Remote Terminal

Equipment		
Equipment Description	Total Cost	Plug-In or Hardwire
Cabinet	$ 27,500.00	Hardwire
SONET Transceivers	4,500.00	Plug-In
Mulitplexer Commons	2,000.00	Plug-In
Time Slot Interchanger	3,500.00	Plug-In
Channel Bank Assemblies	4,000.00	Hardwire
Channel Bank Assembly Commons	2,500.00	Plug-In

Subtotal Remote Terminal Equipment	**$ 31,500.00**	**Hardwire**
	12,500.00	**Plug-In**

Labor				
Task Description	Hours	Rate	Total Labor	Plug-In or Hardwire
Engineering	32.00	55.00	$ 1,760.00	Hardwire
Place Cabinet	4.00	55.00	220.00	Hardwire
Copper Splicing	4.00	55.00	220.00	Hardwire
Place Batteries & Turn Up Power	2.00	55.00	110.00	Hardwire
Place Common Plug Ins (21 ea.)	0.50	55.00	27.50	Plug-In
Turn Up & Test System	3.00	55.00	165.00	Hardwire
Site Preparation and AC Power			3,000.00	Hardwire

Subtotal Remote Terminal Labor	**$ 5,475.00**	**Hardwire**
	27.50	**Plug-In**

Central Office Terminal

Equipment		
Equipment Description	Total Cost	Plug-In or Hardwire
SONET Firmware	$ 7,000.00	Hardwire
Sonet Transceivers	4,500.00	Plug-In
Multiplexer Commons	2,000.00	Plug-In
Time Slot Interchanger	3,500.00	Plug-In
DS-1 Shelf Commons	500.00	Plug-In
DSX-1 & Cabling	800.00	Hardwire

Subtotal Central Office Terminal Equipment	**$ 7,800.00**	**Hardwire**
	10,500.00	**Plug-In**

Labor				
Task Description	Hours	Rate	Total Labor	Plug-In or Hardwire
Engineering	12.00	55.00	$ 660.00	Hardwire
Place Frames & Racks	3.00	55.00	165.00	Hardwire
Splice DSX Metallic Cable	1.00	55.00	55.00	Hardwire
Place DSX Cross Connections	0.50	55.00	27.50	Hardwire
Connect Alarms, CO Timing & Power	1.00	55.00	55.00	Hardwire
Place Common Plug Ins (21 ea.)	0.50	55.00	27.50	Plug-In
Turn Up & Test System	3.00	55.00	165.00	Hardwire

Subtotal Central Office Terminal Labor	**$ 1,127.50**	**Hardwire**
	27.50	**Plug-In**

Hardwire Equipment

Hardwire Total Installed Cost	$ 45,902.50
Hardwire Material Cost	39,300.00
Hardwire In-Plant Factor	**1.16800**

Plug-In Equipment

Hardwire Total Installed Cost	$ 23,055.00
Hardwire Material Cost	23,000.00
Plug-In In-Plant Factor	**1.00239**

CONTAINS BELLSOUTH PROPRIETARY INFORMATION

COMPARISON OF BELLSOUTH INPUTS TO AT&T-WORLDCOM INPUTS

Input Table	Element	Variable	BellSouth Input	AT&T-WCom Input
Media Splicing and Placing Hours	AerialCU	Closure and Setup (hours)	0	2.25
Media Splicing and Placing Hours	AerialCU	Placing (hours/100 ft)	1.25	0.18
Media Splicing and Placing Hours	AerialCU	Splice (hours/100 pairs or hours/strand)	3.32	0.4
Media Splicing and Placing Hours	BuriedCU	Closure and Setup (hours)	0	2.25
Media Splicing and Placing Hours	BuriedCU	Placing (hours/100 ft)	0	0.11
Media Splicing and Placing Hours	BuriedCU	Splice (hours/100 pairs or hours/strand)	3.07	0.4
Media Splicing and Placing Hours	UndergroundCU	Closure and Setup (hours)	0	2.25
Media Splicing and Placing Hours	UndergroundCU	Placing (hours/100 ft)	2.5	0.58
Media Splicing and Placing Hours	UndergroundCU	Splice (hours/100 pairs or hours/strand)	5.32	0.4
Media Splicing and Placing Hours	AerialFO	Closure and Setup (hours)	0	2.25
Media Splicing and Placing Hours	AerialFO	Placing (hours/100 ft)	1.17	0.18
Media Splicing and Placing Hours	AerialFO	Splice (hours/100 pairs or hours/strand)	0.08	0.1
Media Splicing and Placing Hours	BuriedFO	Closure and Setup (hours)	0	2.25
Media Splicing and Placing Hours	BuriedFO	Placing (hours/100 ft)	0	0.11
Media Splicing and Placing Hours	BuriedFO	Splice (hours/100 pairs or hours/strand)	0.085	0.1
Media Splicing and Placing Hours	UndergroundFO	Closure and Setup (hours)	0	2.25
Media Splicing and Placing Hours	UndergroundFO	Placing (hours/100 ft)	1.5	0.58
Media Splicing and Placing Hours	UndergroundFO	Splice (hours/100 pairs or hours/strand)	0.1	0.1
Material Loading	AerialCU	Engineering Rate	0.2707	0.1
Material Loading	AerialCU24G	Engineering Rate	0.2707	0.1
Material Loading	AerialFO	Engineering Rate	0.3572	0.1
Material Loading	BuildingCU	Engineering Rate	0.2707	0.1
Material Loading	BuildingCU24G	Engineering Rate	0.2707	0.1
Material Loading	BuildingFO	Engineering Rate	0.3572	0.1
Material Loading	BuriedCU	Engineering Rate	0.2707	0.1
Material Loading	BuriedCU24G	Engineering Rate	0.2707	0.1
Material Loading	BuriedFO	Engineering Rate	0.3572	0.1
Material Loading	Conduit	Engineering Rate	0.2707	0.1
Material Loading	IntrabuildingCU	Engineering Rate	0.2707	0.1
Material Loading	IntrabuildingCU24G	Engineering Rate	0.2707	0.1
Material Loading	IntrabuildingFO	Engineering Rate	0.3572	0.1
Material Loading	Pole	Engineering Rate	0.2707	0.1
Material Loading	UndergroundCU	Engineering Rate	0.2707	0.1
Material Loading	UndergroundCU24G	Engineering Rate	0.2707	0.1
Material Loading	UndergroundFO	Engineering Rate	0.3572	0.1
Material Loading	AerialCU	Other Rate	0.342901	0.047103
Material Loading	AerialCU24G	Other Rate	0.342901	0.047103
Material Loading	AerialFO	Other Rate	0.144844	0.069703
Material Loading	BuildingCU	Other Rate	0.273744	0.004078
Material Loading	BuildingCU24G	Other Rate	0.273744	0.004078
Material Loading	BuildingFO	Other Rate	0.348742	0.010254
Material Loading	BuriedCU	Other Rate	0.226429	0.098799
Material Loading	BuriedCU24G	Other Rate	0.226429	0.098799
Material Loading	BuriedFO	Other Rate	0.093719	0.049723
Material Loading	Conduit	Other Rate	0.213164	0.095644
Material Loading	IntrabuildingCU	Other Rate	0.406793	0.016407
Material Loading	IntrabuildingCU24G	Other Rate	0.406793	0.016407
Material Loading	IntrabuildingFO	Other Rate	0.562154	-
Material Loading	Pole	Other Rate	0.161566	0.106971
Material Loading	UndergroundCU	Other Rate	0.271775	0.033078
Material Loading	UndergroundCU24G	Other Rate	0.271775	0.033078
Material Loading	UndergroundFO	Other Rate	0.078187	0.034546
Material Loading	AerialCU	Material Inflation	1.082155	1.009727
Material Loading	AerialCU24G	Material Inflation	1.082155	1.009727
Material Loading	AerialFO	Material Inflation	1.020134	1.028571
Material Loading	BuildingCU	Material Inflation	1.082155	1.009727
Material Loading	BuildingCU24G	Material Inflation	1.082155	1.009727
Material Loading	BuildingFO	Material Inflation	1.020134	1.028571
Material Loading	BuriedCU	Material Inflation	1.071512	0.978072
Material Loading	BuriedCU24G	Material Inflation	1.071512	0.978072
Material Loading	BuriedFO	Material Inflation	1.040536	1.056277
Material Loading	Conduit	Material Inflation	1.069988	1.065983
Material Loading	IntrabuildingCU	Material Inflation	1.09256	1.010421
Material Loading	IntrabuildingCU24G	Material Inflation	1.09256	1.010421
Material Loading	IntrabuildingFO	Material Inflation	1.040536	1.051992
Material Loading	Pole	Material Inflation	1.076832	1.039942
Material Loading	UndergroundCU	Material Inflation	1.09256	0.989559
Material Loading	UndergroundCU24G	Material Inflation	1.09256	0.989559
Material Loading	UndergroundFO	Material Inflation	1	1.041667
Material Loading	AerialCU	Misc. Material Rate	1.21256	0
Material Loading	AerialCU24G	Misc. Material Rate	1.21256	0
Material Loading	AerialFO	Misc. Material Rate	0.305805	0
Material Loading	BuildingCU	Misc. Material Rate	1.114668	0

COMPARISON OF BELLSOUTH INPUTS TO AT&T-WORLDCOM INPUTS

Input Table	Element	Variable	BellSouth Input	AT&T-WCom Input
Material Loading	BuildingCU24G	Misc. Material Rate	1.114668	0
Material Loading	BuildingFO	Misc. Material Rate	1.442284	0
Material Loading	BuriedCU	Misc. Material Rate	0.526531	0
Material Loading	BuriedCU24G	Misc. Material Rate	0.526531	0
Material Loading	BuriedFO	Misc. Material Rate	0.182974	0
Material Loading	Conduit	Misc. Material Rate	0.489881	0
Material Loading	IntrabuildingCU	Misc. Material Rate	1.633235	0
Material Loading	IntrabuildingCU24G	Misc. Material Rate	1.633235	0
Material Loading	IntrabuildingFO	Misc. Material Rate	2.344201	0
Material Loading	Pole	Misc. Material Rate	0.224429	0
Material Loading	UndergroundCU	Misc. Material Rate	0.988971	0
Material Loading	UndergroundCU24G	Misc. Material Rate	0.988971	0
Material Loading	UndergroundFO	Misc. Material Rate	0.179838	0
Aerial Structure	Poles 25	Material Cost	300.16	239.31
Aerial Structure	Poles 30	Material Cost	300.16	239.31
Aerial Structure	Poles 35	Material Cost	300.16	239.31
Aerial Structure	Poles 40	Material Cost	300.16	239.31
Aerial Structure	Poles 45	Material Cost	300.16	239.31
Aerial Structure	Poles 50	Material Cost	300.16	239.31
Aerial Structure	Poles 55	Material Cost	300.16	239.31
Aerial Structure	Poles 60	Material Cost	300.16	239.31
Aerial Contract Labor	Poles 25	Contract Labor Cost	233.19	177.23
Aerial Contract Labor	Poles 30	Contract Labor Cost	233.19	177.23
Aerial Contract Labor	Poles 35	Contract Labor Cost	233.19	177.23
Aerial Contract Labor	Poles 40	Contract Labor Cost	233.19	177.23
Aerial Contract Labor	Poles 45	Contract Labor Cost	233.19	177.23
Aerial Contract Labor	Poles 50	Contract Labor Cost	233.19	177.23
Aerial Contract Labor	Poles 55	Contract Labor Cost	233.19	177.23
Aerial Contract Labor	Poles 60	Contract Labor Cost	233.19	177.23
Aerial Contract Labor	Anchor	Contract Labor Cost	99.71	95.39
Aerial Structural Placing Hours	Guy (all types)	Telco Placing Hours	0.75	0
Labor Rate	Placing	Rate/Hour	49.05	58.86
Labor Rate	Splicing	Rate/Hour	49.05	58.86
Aerial Structure Spacing	Poles 25	Spacing	120	184
Aerial Structure Spacing	Poles 30	Spacing	120	184
Aerial Structure Spacing	Poles 35	Spacing	120	184
Aerial Structure Spacing	Poles 40	Spacing	120	184
Aerial Structure Spacing	Poles 45	Spacing	120	184
Aerial Structure Spacing	Poles 50	Spacing	120	184
Aerial Structure Spacing	Poles 55	Spacing	120	184
Aerial Structure Spacing	Poles 60	Spacing	120	184
Aerial Structure Spacing	Anchor	Spacing	500	600
Aerial Structure Spacing	Guy (all types)	Spacing	500	600
Underground Contract Labor	Duct CU	Softrock Contract Labor Cost	2.77	0.82
Underground Contract Labor	Duct CU	Normal Contract Labor Cost	2.77	0.82
Underground Contract Labor	Duct CU	Hardrock Contract Labor Cost	2.77	0.82
Underground Contract Labor	Duct CU	Water Contract Labor Cost	2.77	0.82
Underground Contract Labor	Duct FO	Softrock Contract Labor Cost	2.77	0.82
Underground Contract Labor	Duct FO	Normal Contract Labor Cost	2.77	0.82
Underground Contract Labor	Duct FO	Hardrock Contract Labor Cost	2.77	0.82
Underground Contract Labor	Duct FO	Water Contract Labor Cost	2.77	0.82
Underground Excavation Contract Labor	Backhoe Trench	Softrock Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Bore Cable	Softrock Contract Labor Cost	225.77	179.6
Underground Excavation Contract Labor	Cut & Restore Asphalt	Softrock Contract Labor Cost	14.84	15.26
Underground Excavation Contract Labor	Cut & Restore Concrete	Softrock Contract Labor Cost	14.84	14
Underground Excavation Contract Labor	Cut & Restore Sod	Softrock Contract Labor Cost	14.84	12.23
Underground Excavation Contract Labor	Hand Dig Trench	Softrock Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Rocky Trench	Softrock Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Trench & Backfill	Softrock Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Backhoe Trench	Normal Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Bore Cable	Normal Contract Labor Cost	225.77	179.6
Underground Excavation Contract Labor	Cut & Restore Asphalt	Normal Contract Labor Cost	14.84	15.26
Underground Excavation Contract Labor	Cut & Restore Concrete	Normal Contract Labor Cost	14.84	14
Underground Excavation Contract Labor	Cut & Restore Sod	Normal Contract Labor Cost	14.84	12.23
Underground Excavation Contract Labor	Hand Dig Trench	Normal Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Rocky Trench	Normal Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Trench & Backfill	Normal Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Backhoe Trench	Hardrock Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Bore Cable	Hardrock Contract Labor Cost	225.77	179.6
Underground Excavation Contract Labor	Cut & Restore Asphalt	Hardrock Contract Labor Cost	14.84	15.26
Underground Excavation Contract Labor	Cut & Restore Concrete	Hardrock Contract Labor Cost	14.84	14
Underground Excavation Contract Labor	Cut & Restore Sod	Hardrock Contract Labor Cost	14.84	12.23
Underground Excavation Contract Labor	Hand Dig Trench	Hardrock Contract Labor Cost	14.84	11.44

COMPARISON OF BELLSOUTH INPUTS TO AT&T-WORLDCOM INPUTS

Input Table	Element	Variable	BellSouth Input	AT&T-WCom Input
Underground Excavation Contract Labor	Rocky Trench	Hardrock Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Trench & Backfill	Hardrock Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Backhoe Trench	Water Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Bore Cable	Water Contract Labor Cost	225.77	179.6
Underground Excavation Contract Labor	Cut & Restore Asphalt	Water Contract Labor Cost	14.84	15.26
Underground Excavation Contract Labor	Cut & Restore Concrete	Water Contract Labor Cost	14.84	14
Underground Excavation Contract Labor	Cut & Restore Sod	Water Contract Labor Cost	14.84	12.23
Underground Excavation Contract Labor	Hand Dig Trench	Water Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Rocky Trench	Water Contract Labor Cost	14.84	11.44
Underground Excavation Contract Labor	Trench & Backfill	Water Contract Labor Cost	14.84	11.44
Underground Rural Excavation Activity	Bore Cable	Normal Terrain: % of Activity	0.0267	0.0023
Underground Rural Excavation Activity	Trench & Backfill	Normal Terrain: % of Activity	0.64	0.6644
Underground Rural Excavation Activity	Backhoe Trench	SoftRock Terrain: % of Activity	0.45	0.22
Underground Rural Excavation Activity	Bore Cable	SoftRock Terrain: % of Activity	0.0367	0.0023
Underground Rural Excavation Activity	Hand Dig Trench	SoftRock Terrain: % of Activity	0.0433	0.03
Underground Rural Excavation Activity	Rocky Trench	SoftRock Terrain: % of Activity	0.3367	0
Underground Rural Excavation Activity	Trench & Backfill	SoftRock Terrain: % of Activity	0.05	0.6644
Underground Rural Excavation Activity	Backhoe Trench	HardRock: % of Activity	0.3033	0.22
Underground Rural Excavation Activity	Bore Cable	HardRock: % of Activity	0.0267	0.0023
Underground Rural Excavation Activity	Hand Dig Trench	HardRock: % of Activity	0.0433	0.03
Underground Rural Excavation Activity	Rocky Trench	HardRock: % of Activity	0.5433	0
Underground Rural Excavation Activity	Trench & Backfill	HardRock: % of Activity	0	0.6644
Underground Rural Excavation Activity	Backhoe Trench	Water: % of Activity	0.3033	0.22
Underground Rural Excavation Activity	Bore Cable	Water: % of Activity	0.0267	0.0023
Underground Rural Excavation Activity	Hand Dig Trench	Water: % of Activity	0.0433	0.03
Underground Rural Excavation Activity	Rocky Trench	Water: % of Activity	0.5433	0
Underground Rural Excavation Activity	Trench & Backfill	Water: % of Activity	0	0.6644
Underground Suburban Excavation Activity	Bore Cable	Normal Terrain: % of Activity	0.0575	0.0049
Underground Suburban Excavation Activity	Trench & Backfill	Normal Terrain: % of Activity	0.235	0.2876
Underground Suburban Excavation Activity	Backhoe Trench	SoftRock Terrain: % of Activity	0.195	0.2825
Underground Suburban Excavation Activity	Bore Cable	SoftRock Terrain: % of Activity	0.0575	0.0049
Underground Suburban Excavation Activity	Rocky Trench	SoftRock Terrain: % of Activity	0.235	0
Underground Suburban Excavation Activity	Trench & Backfill	SoftRock Terrain: % of Activity	0.0875	0.2876
Underground Suburban Excavation Activity	Backhoe Trench	HardRock: % of Activity	0.13	0.2825
Underground Suburban Excavation Activity	Bore Cable	HardRock: % of Activity	0.0575	0.0049
Underground Suburban Excavation Activity	Rocky Trench	HardRock: % of Activity	0.3875	0
Underground Suburban Excavation Activity	Trench & Backfill	HardRock: % of Activity	0	0.2876
Underground Suburban Excavation Activity	Backhoe Trench	Water: % of Activity	0.13	0.2825
Underground Suburban Excavation Activity	Bore Cable	Water: % of Activity	0.0575	0.0049
Underground Suburban Excavation Activity	Rocky Trench	Water: % of Activity	0.3875	0
Underground Suburban Excavation Activity	Trench & Backfill	Water: % of Activity	0	0.2876
Underground Urban Excavation Activity	Bore Cable	Normal Terrain: % of Activity	0.125	0.0108
Underground Urban Excavation Activity	Trench & Backfill	Normal Terrain: % of Activity	0.04	0.1542
Underground Urban Excavation Activity	Backhoe Trench	SoftRock Terrain: % of Activity	0.15	0.175
Underground Urban Excavation Activity	Bore Cable	SoftRock Terrain: % of Activity	0.125	0.0108
Underground Urban Excavation Activity	Rocky Trench	SoftRock Terrain: % of Activity	0.055	0
Underground Urban Excavation Activity	Trench & Backfill	SoftRock Terrain: % of Activity	0.01	0.1542
Underground Urban Excavation Activity	Backhoe Trench	HardRock: % of Activity	0.09	0.175
Underground Urban Excavation Activity	Bore Cable	HardRock: % of Activity	0.125	0.0108
Underground Urban Excavation Activity	Rocky Trench	HardRock: % of Activity	0.125	0
Underground Urban Excavation Activity	Trench & Backfill	HardRock: % of Activity	0	0.1542
Underground Urban Excavation Activity	Backhoe Trench	Water: % of Activity	0.09	0.175
Underground Urban Excavation Activity	Bore Cable	Water: % of Activity	0.125	0.0108
Underground Urban Excavation Activity	Rocky Trench	Water: % of Activity	0.125	0
Underground Urban Excavation Activity	Trench & Backfill	Water: % of Activity	0	0.1542
Underground Sharing	Backhoe Trench	Rural Shared Percent Assigned to Telephone	0.99	0.50
Underground Sharing	Bore Cable	Rural Shared Percent Assigned to Telephone	0.99	0.50
Underground Sharing	Cut & Restore Asphalt	Rural Shared Percent Assigned to Telephone	0.99	0.50
Underground Sharing	Cut & Restore Concrete	Rural Shared Percent Assigned to Telephone	0.99	0.50
Underground Sharing	Cut & Restore Sod	Rural Shared Percent Assigned to Telephone	0.99	0.50
Underground Sharing	Hand Dig Trench	Rural Shared Percent Assigned to Telephone	0.99	0.50
Underground Sharing	Rocky Trench	Rural Shared Percent Assigned to Telephone	0.99	0.50
Underground Sharing	Trench & Backfill	Rural Shared Percent Assigned to Telephone	0.99	0.50
Underground Sharing	Backhoe Trench	Rural Shared Percent Assigned to Telephone	0.99	0.50
Underground Sharing	Bore Cable	Suburb Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Cut & Restore Asphalt	Suburb Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Cut & Restore Concrete	Suburb Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Cut & Restore Sod	Suburb Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Hand Dig Trench	Suburb Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Rocky Trench	Suburb Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Trench & Backfill	Suburb Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Backhoe Trench	Suburb Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Bore Cable	Urban Shared Percent Assigned to Telephone	0.99	0.3300

COMPARISON OF BELLSOUTH INPUTS TO AT&T-WORLDCOM INPUTS

Input Table	Element	Variable	BellSouth Input	AT&T-WCom Input
Underground Sharing	Cut & Restore Asphalt	Urban Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Cut & Restore Concrete	Urban Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Cut & Restore Sod	Urban Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Hand Dig Trench	Urban Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Rocky Trench	Urban Shared Percent Assigned to Telephone	0.99	0.3300
Underground Sharing	Trench & Backfill	Urban Shared Percent Assigned to Telephone	0.99	0.3300
Buried Excavation Contract Labor	Backhoe Trench	Softrock Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Bore Cable	Softrock Contract Labor Cost	23.14	14.05
Buried Excavation Contract Labor	Cut & Restore Asphalt	Softrock Contract Labor Cost	5.18	6.02
Buried Excavation Contract Labor	Cut & Restore Concrete	Softrock Contract Labor Cost	5.18	4.76
Buried Excavation Contract Labor	Cut & Restore Sod	Softrock Contract Labor Cost	5.18	2.99
Buried Excavation Contract Labor	Free Trench (i.e. Developer)	Softrock Contract Labor Cost	1.14	0.91
Buried Excavation Contract Labor	Hand Dig Trench	Softrock Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Plow	Softrock Contract Labor Cost	5.18	0.80
Buried Excavation Contract Labor	Push Pipe & Pull Cable	Softrock Contract Labor Cost	6.01	17.06
Buried Excavation Contract Labor	Rocky Plow	Softrock Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Rocky Trench	Softrock Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Trench & Backfill	Softrock Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Backhoe Trench	Normal Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Bore Cable	Normal Contract Labor Cost	23.14	14.05
Buried Excavation Contract Labor	Cut & Restore Asphalt	Normal Contract Labor Cost	5.18	6.02
Buried Excavation Contract Labor	Cut & Restore Concrete	Normal Contract Labor Cost	5.18	4.76
Buried Excavation Contract Labor	Cut & Restore Sod	Normal Contract Labor Cost	5.18	2.99
Buried Excavation Contract Labor	Free Trench (i.e. Developer)	Normal Contract Labor Cost	1.14	0.91
Buried Excavation Contract Labor	Hand Dig Trench	Normal Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Plow	Normal Contract Labor Cost	5.18	0.80
Buried Excavation Contract Labor	Push Pipe & Pull Cable	Normal Contract Labor Cost	6.01	17.06
Buried Excavation Contract Labor	Rocky Plow	Normal Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Rocky Trench	Normal Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Trench & Backfill	Normal Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Backhoe Trench	Hardrock Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Bore Cable	Hardrock Contract Labor Cost	23.14	14.05
Buried Excavation Contract Labor	Cut & Restore Asphalt	Hardrock Contract Labor Cost	5.18	6.02
Buried Excavation Contract Labor	Cut & Restore Concrete	Hardrock Contract Labor Cost	5.18	4.76
Buried Excavation Contract Labor	Cut & Restore Sod	Hardrock Contract Labor Cost	5.18	2.99
Buried Excavation Contract Labor	Free Trench (i.e. Developer)	Hardrock Contract Labor Cost	1.14	0.91
Buried Excavation Contract Labor	Hand Dig Trench	Hardrock Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Plow	Hardrock Contract Labor Cost	5.18	0.80
Buried Excavation Contract Labor	Push Pipe & Pull Cable	Hardrock Contract Labor Cost	6.01	17.06
Buried Excavation Contract Labor	Rocky Plow	Hardrock Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Rocky Trench	Hardrock Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Trench & Backfill	Hardrock Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Backhoe Trench	Water Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Bore Cable	Water Contract Labor Cost	23.14	14.05
Buried Excavation Contract Labor	Cut & Restore Asphalt	Water Contract Labor Cost	5.18	6.02
Buried Excavation Contract Labor	Cut & Restore Concrete	Water Contract Labor Cost	5.18	4.76
Buried Excavation Contract Labor	Cut & Restore Sod	Water Contract Labor Cost	5.18	2.99
Buried Excavation Contract Labor	Free Trench (i.e. Developer)	Water Contract Labor Cost	1.14	0.91
Buried Excavation Contract Labor	Hand Dig Trench	Water Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Plow	Water Contract Labor Cost	5.18	0.80
Buried Excavation Contract Labor	Push Pipe & Pull Cable	Water Contract Labor Cost	6.01	17.06
Buried Excavation Contract Labor	Rocky Plow	Water Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Rocky Trench	Water Contract Labor Cost	5.18	2.20
Buried Excavation Contract Labor	Trench & Backfill	Water Contract Labor Cost	5.18	2.20
Buried Rural Excavation Activity	Bore Cable	Normal: % of Activity	0.01	0.001
Buried Rural Excavation Activity	Trench & Backfill	Normal: % of Activity	0.067	0.08
Buried Rural Excavation Activity	Backhoe Trench	SoftRock: % of Activity	0.08	0.0367
Buried Rural Excavation Activity	Bore Cable	SoftRock: % of Activity	0.01	0.001
Buried Rural Excavation Activity	Hand Dig Trench	SoftRock: % of Activity	0.0367	0.02
Buried Rural Excavation Activity	Plow	SoftRock: % of Activity	0.33	0.78
Buried Rural Excavation Activity	Push Pipe & Pull Cable	SoftRock: % of Activity	0.01	0.0033
Buried Rural Excavation Activity	Rocky Plow	SoftRock: % of Activity	0.3067	0
Buried Rural Excavation Activity	Rocky Trench	SoftRock: % of Activity	0.06	0
Buried Rural Excavation Activity	Trench & Backfill	SoftRock: % of Activity	0.0833	0.08
Buried Rural Excavation Activity	Backhoe Trench	HardRock: % of Activity	0.0267	0.0367
Buried Rural Excavation Activity	Bore Cable	HardRock: % of Activity	0.01	0.001
Buried Rural Excavation Activity	Hand Dig Trench	HardRock: % of Activity	0.0233	0.02
Buried Rural Excavation Activity	Plow	HardRock: % of Activity	0	0.78
Buried Rural Excavation Activity	Push Pipe & Pull Cable	HardRock: % of Activity	0.01	0.0033
Buried Rural Excavation Activity	Rocky Plow	HardRock: % of Activity	0.4933	0
Buried Rural Excavation Activity	Rocky Trench	HardRock: % of Activity	0.2933	0
Buried Rural Excavation Activity	Trench & Backfill	HardRock: % of Activity	0.06	0.08
Buried Rural Excavation Activity	Backhoe Trench	Water: % of Activity	0.0267	0.0367

COMPARISON OF BELLSOUTH INPUTS TO AT&T-WORLDCOM INPUTS

Input Table	Element	Variable	BellSouth Input	AT&T-WCom Input
Buried Rural Excavation Activity	Bore Cable	Water: % of Activity	0.01	0.001
Buried Rural Excavation Activity	Hand Dig Trench	Water: % of Activity	0.0233	0.02
Buried Rural Excavation Activity	Plow	Water: % of Activity	0	0.78
Buried Rural Excavation Activity	Push Pipe & Pull Cable	Water: % of Activity	0.01	0.0033
Buried Rural Excavation Activity	Rocky Plow	Water: % of Activity	0.4933	0
Buried Rural Excavation Activity	Rocky Trench	Water: % of Activity	0.2933	0
Buried Rural Excavation Activity	Trench & Backfill	Water: % of Activity	0.06	0.08
Buried Suburban Excavation Activity	Bore Cable	Normal: % of Activity	0.0575	0.0049
Buried Suburban Excavation Activity	Trench & Backfill	Normal: % of Activity	0.1925	0.2451
Buried Suburban Excavation Activity	Backhoe Trench	SoftRock: % of Activity	0.1125	0.13
Buried Suburban Excavation Activity	Bore Cable	SoftRock: % of Activity	0.0575	0.0049
Buried Suburban Excavation Activity	Plow	SoftRock: % of Activity	0.0275	0.1575
Buried Suburban Excavation Activity	Rocky Plow	SoftRock: % of Activity	0.0475	0
Buried Suburban Excavation Activity	Rocky Trench	SoftRock: % of Activity	0.2	0
Buried Suburban Excavation Activity	Trench & Backfill	SoftRock: % of Activity	0.0925	0.2451
Buried Suburban Excavation Activity	Backhoe Trench	HardRock: % of Activity	0.12	0.13
Buried Suburban Excavation Activity	Bore Cable	HardRock: % of Activity	0.0575	0.0049
Buried Suburban Excavation Activity	Plow	HardRock: % of Activity	0	0.1575
Buried Suburban Excavation Activity	Rocky Plow	HardRock: % of Activity	0.0475	0
Buried Suburban Excavation Activity	Rocky Trench	HardRock: % of Activity	0.3125	0
Buried Suburban Excavation Activity	Trench & Backfill	HardRock: % of Activity	0	0.2451
Buried Suburban Excavation Activity	Backhoe Trench	Water: % of Activity	0.12	0.13
Buried Suburban Excavation Activity	Bore Cable	Water: % of Activity	0.0575	0.0049
Buried Suburban Excavation Activity	Plow	Water: % of Activity	0	0.1575
Buried Suburban Excavation Activity	Rocky Plow	Water: % of Activity	0.0475	0
Buried Suburban Excavation Activity	Rocky Trench	Water: % of Activity	0.3125	0
Buried Suburban Excavation Activity	Trench & Backfill	Water: % of Activity	0	0.2451
Buried Urban Excavation Activity	Bore Cable	Normal: % of Activity	0.125	0.0108
Buried Urban Excavation Activity	Trench & Backfill	Normal: % of Activity	0.04	0.1542
Buried Urban Excavation Activity	Backhoe Trench	SoftRock: % of Activity	0.15	0.175
Buried Urban Excavation Activity	Bore Cable	SoftRock: % of Activity	0.125	0.0108
Buried Urban Excavation Activity	Rocky Trench	SoftRock: % of Activity	0.055	0
Buried Urban Excavation Activity	Trench & Backfill	SoftRock: % of Activity	0.01	0.1542
Buried Urban Excavation Activity	Backhoe Trench	HardRock: % of Activity	0.09	0.175
Buried Urban Excavation Activity	Bore Cable	HardRock: % of Activity	0.125	0.0108
Buried Urban Excavation Activity	Rocky Trench	HardRock: % of Activity	0.125	0
Buried Urban Excavation Activity	Trench & Backfill	HardRock: % of Activity	0	0.1542
Buried Urban Excavation Activity	Backhoe Trench	Water: % of Activity	0.09	0.175
Buried Urban Excavation Activity	Bore Cable	Water: % of Activity	0.125	0.0108
Buried Urban Excavation Activity	Rocky Trench	Water: % of Activity	0.125	0
Buried Urban Excavation Activity	Trench & Backfill	Water: % of Activity	0	0.1542
Buried Sharing	Backhoe Trench	Rural: % Telco	0.96	0.5
Buried Sharing	Bore Cable	Rural: % Telco	0.96	0.5
Buried Sharing	Cut & Restore Asphalt	Rural: % Telco	0.96	0.5
Buried Sharing	Cut & Restore Concrete	Rural: % Telco	0.96	0.5
Buried Sharing	Cut & Restore Sod	Rural: % Telco	0.96	0.5
Buried Sharing	Free Trench (i.e. Developer)	Rural: % Telco	0.96	0.5
Buried Sharing	Hand Dig Trench	Rural: % Telco	0.96	0.5
Buried Sharing	Plow	Rural: % Telco	0.96	0.5
Buried Sharing	Push Pipe & Pull Cable	Rural: % Telco	0.96	0.5
Buried Sharing	Rocky Plow	Rural: % Telco	0.96	0.5
Buried Sharing	Rocky Trench	Rural: % Telco	0.96	0.5
Buried Sharing	Trench & Backfill	Rural: % Telco	0.96	0.5
Buried Sharing	Backhoe Trench	Suburban: % Telco	0.96	0.33
Buried Sharing	Bore Cable	Suburban: % Telco	0.96	0.33
Buried Sharing	Cut & Restore Asphalt	Suburban: % Telco	0.96	0.33
Buried Sharing	Cut & Restore Concrete	Suburban: % Telco	0.96	0.33
Buried Sharing	Cut & Restore Sod	Suburban: % Telco	0.96	0.33
Buried Sharing	Free Trench (i.e. Developer)	Suburban: % Telco	0.96	0.33
Buried Sharing	Hand Dig Trench	Suburban: % Telco	0.96	0.33
Buried Sharing	Plow	Suburban: % Telco	0.96	0.33
Buried Sharing	Push Pipe & Pull Cable	Suburban: % Telco	0.96	0.33
Buried Sharing	Rocky Plow	Suburban: % Telco	0.96	0.33
Buried Sharing	Rocky Trench	Suburban: % Telco	0.96	0.33
Buried Sharing	Trench & Backfill	Suburban: % Telco	0.96	0.33
Buried Sharing	Backhoe Trench	Urban: % Telco	0.96	0.33
Buried Sharing	Bore Cable	Urban: % Telco	0.96	0.33
Buried Sharing	Cut & Restore Asphalt	Urban: % Telco	0.96	0.33
Buried Sharing	Cut & Restore Concrete	Urban: % Telco	0.96	0.33
Buried Sharing	Cut & Restore Sod	Urban: % Telco	0.96	0.33
Buried Sharing	Free Trench (i.e. Developer)	Urban: % Telco	0.96	0.33
Buried Sharing	Hand Dig Trench	Urban: % Telco	0.96	0.33
Buried Sharing	Plow	Urban: % Telco	0.96	0.33

COMPARISON OF BELLSOUTH INPUTS TO AT&T-WORLDCOM INPUTS

Input Table	Element	Variable	BellSouth Input	AT&T-WCom Input
Buried Sharing	Push Pipe & Pull Cable	Urban: % Telco	0.96	0.33
Buried Sharing	Rocky Plow	Urban: % Telco	0.96	0.33
Buried Sharing	Rocky Trench	Urban: % Telco	0.96	0.33
Buried Sharing	Trench & Backfill	Urban: % Telco	0.96	0.33
Underground Contract Labor	Manholes 1	Softrock Contract Labor Cost	3235.16	1463.36
Underground Contract Labor	Manholes 2	Softrock Contract Labor Cost	3235.16	731.68
Underground Contract Labor	Manholes 3	Softrock Contract Labor Cost	10064.95	731.68
Underground Contract Labor	Manholes 5	Softrock Contract Labor Cost	31575.1288	2016.04
Underground Contract Labor	Manholes 1	Normal Contract Labor Cost	3235.16	1463.36
Underground Contract Labor	Manholes 2	Normal Contract Labor Cost	3235.16	731.68
Underground Contract Labor	Manholes 3	Normal Contract Labor Cost	10064.95	731.68
Underground Contract Labor	Manholes 5	Normal Contract Labor Cost	31575.1288	2016.04
Underground Contract Labor	Manholes 1	Hardrock Contract Labor Cost	3235.16	1463.36
Underground Contract Labor	Manholes 2	Hardrock Contract Labor Cost	3235.16	731.68
Underground Contract Labor	Manholes 3	Hardrock Contract Labor Cost	10064.95	731.68
Underground Contract Labor	Manholes 5	Hardrock Contract Labor Cost	31575.1288	2016.04
Underground Contract Labor	Manholes 1	Water Contract Labor Cost	3235.16	1463.36
Underground Contract Labor	Manholes 2	Water Contract Labor Cost	3235.16	731.68
Underground Contract Labor	Manholes 3	Water Contract Labor Cost	10064.95	731.68
Underground Contract Labor	Manholes 5	Water Contract Labor Cost	31575.1288	2016.04
Facility Sharing (Plant Sharing)	Rural	Aerial Facility Sharing Percentage	0.25	0.75
Facility Sharing (Plant Sharing)	Suburban	Aerial Facility Sharing Percentage	0.25	0.75
Facility Sharing (Plant Sharing)	Urban	Aerial Facility Sharing Percentage	0.25	0.75
Facility Sharing (Plant Sharing)	Rural	Buried Facility Sharing Percentage	0.25	0.75
Facility Sharing (Plant Sharing)	Suburban	Buried Facility Sharing Percentage	0.25	0.75
Facility Sharing (Plant Sharing)	Urban	Buried Facility Sharing Percentage	0.25	0.75
Facility Sharing (Plant Sharing)	Rural	UG Facility Sharing Percentage	0.25	0.75
Facility Sharing (Plant Sharing)	Suburban	UG Facility Sharing Percentage	0.25	0.75
Facility Sharing (Plant Sharing)	Urban	UG Facility Sharing Percentage	0.25	0.75
Cost Calculator	In-Plant Factor	DLC Plug-In Equipment	1.1682	1.00239
Cost Calculator	In-Plant Factor	DLC Hardwire Equipment	2.5184	1.168
Cost Calculator	Inflation	FRC 22	1.0822	1.009727
Cost Calculator	Inflation	FRC 45	1.0715	0.978072
Cost Calculator	Inflation	FRC 377	1.0201	0.927619
Cost Calculator	Inflation	FRC 257	0.98	1.010582

Copper Labor & EF&I Costing - Underground 24 Gauge

				BellSouth Cable Size				AT&T WCom Cable Size		
Line No.	Description	Formula	Rate	25	1200	4200	Rate	25	1200	4200
1	Labor rate (Splicing and Placing)	BSTLM Input	$49.05				$49.05			
2	Placing Labor per 100 ft.	BSTLM Input		2.50	2.50	2.50		**0.58**	**0.58**	**0.58**
3	Total Placing Cost per Foot	Ln1 * Ln2 / 100		$1.23	$1.23	$1.23		$0.29	$0.29	$0.29
4	Splicing Set-up Hours	BSTLM Input		0	0	0		**2.00**	**2.00**	**2.00**
5	Splicing Travel Hours	BSTLM Input		0	0	0		**0.25**	**0.25**	**0.25**
6	Splicing Labor per 100 pairs	BSTLM Input		5.32	5.32	5.32		**0.40**	**0.40**	**0.40**
7	Splicing Labor Hours per 100 pairs for Stub	BSTLM Input		5.32	5.32	5.32		-	-	-
8	Splicing Hours	Ln4 + Ln5 + Cable Size / 100* (Ln6 + Ln7)		2.66	127.68	446.88		2.35	7.05	19.05
9	Splicing Cost	Ln1 * Ln 8		$130.47	$6,262.70	$21,919.46		$115.27	$345.80	$934.40
10	Assumption of Splicing per X Feet	Assumption	600				600			
11	Splicing Cost per X Feet	Ln9 / Ln 10		$0.22	$10.44	$36.53		$0.19	$0.58	$1.56
12	Material Cost Per Foot	BSTLM Input		$0.13	$6.45	$22.26		$0.13	$6.45	$22.26
13	Material Loading	Rate * Ln12	165.08%	$0.21	$10.65	$36.75		$0.12	$1.37	$4.51
14	Inflation	Rate * Ln12 +Sum (Ln15 : L18) * Rate * Ln12	9.26%	$0.03	$1.45	$5.00	**-1.04%**	$0.00	-$0.08	-$0.28
15	Tax Rate	Rate * Ln12	6.00%	$0.01	$0.39	$1.34	6.00%	$0.01	$0.39	$1.34
16	Misc. Material Loading*	Rate * Ln12	98.90%	$0.13	$6.38	$22.01		**$0.10**	**$0.17**	**$0.37**
17	Supply Expense Loading	Rate * Ln12	10.55%	$0.01	$0.68	$2.35	10.55%	$0.01	$0.68	$2.35
18	Other Loading	Ln18a + Ln 18b + Ln18c	27.18%	$0.04	$1.75	$6.05	3.31%	$0.00	$0.21	$0.74
18a	Plt Labor - Indirect Salary, Benefits Other	Rate * Ln12	23.87%	$0.03	$1.54	$5.31	**0.00%**	$0.00	$0.00	$0.00
18b	Right of Way Items	Rate * Ln12	0.16%	$0.00	$0.01	$0.04	0.16%	$0.00	$0.01	$0.04
18c	Interest During Construction Items	Rate * Ln12	3.15%	$0.00	$0.20	$0.70	3.15%	$0.00	$0.20	$0.70
19	Placing Cost	Ln3		$1.23	$1.23	$1.23		$0.29	$0.29	$0.29
20	Splicing Cost	Ln11		$0.22	$10.44	$36.53		$0.19	$0.58	$1.56
21	Material, Material Loading and Labor	Ln 12 + Ln13 + Ln 19 + Ln20		$1.79	$28.76	$96.77		$0.73	$8.68	$28.61
22	Engineering Loading	Rate * Ln21	27.07%	$0.48	$7.79	$26.19	**10.00%**	$0.07	$0.87	$2.86
23	Total Loading	Ln13 + Ln19 + Ln20 + Ln22		$2.14	$30.10	$100.70		$0.67	$3.10	$9.21
24	Total Cable Cost per Foot	Ln12 + Ln23		$2.27	$36.55	$122.96		$0.80	$9.55	$31.47
			FCC SynMod	**$5.28**	**$15.16**	**$40.36**				

* Miscellaneous material for AT&T WorldCom is 20% of contract labor

Fiber Labor & EF&I Costing - Underground

				BellSouth Cable Size				AT&T-WCom Cable Size		
Line No.	Description	Formula	Rate	24	72	144	Rate	24	72	144
1	Labor rate (Splicing and Placing)	BSTLM Input	$49.05				$49.05			
2	Placing Labor per 100 ft.	BSTLM Input		1.50	1.50	1.50		**0.58**	**0.58**	**0.58**
3	Total Placing Cost per Foot	Ln1 * Ln2 / 100		$0.74	$0.74	$0.74		$0.29	$0.29	$0.29
4	Splicing Set-up Hours	BSTLM Input		0	0	0		**2.00**	**2.00**	**2.00**
5	Splicing Travel Hours	BSTLM Input		0	0	0		**0.25**	**0.25**	**0.25**
6	Splicing Labor per strand	BSTLM Input		0.10	0.10	0.10		**0.10**	**0.10**	**0.10**
7	Splicing Hours	Ln4 + Ln5 + Cable Size / 100* Ln6		2.40	7.20	14.40		4.65	9.45	16.65
8	Splicing Cost	Ln1 * Ln 7		$117.72	$353.16	$706.32		$228.08	$463.52	$816.68
9	Assumption of Splicing per X Feet	Assumption	600				600			
10	Splicing Cost per X Feet	Ln8 / Ln 9		$0.20	$0.59	$1.18		$0.38	$0.77	$1.36
11	Material Cost Per Foot	BSTLM Input		$0.72	$1.58	$2.77		$0.72	$1.58	$2.77
12	Material Loading	Rate * Ln11	38.55%	$0.28	$0.61	$1.07		$0.28	$0.54	$0.91
13	Inflation	Rate * Ln11 +Sum (Ln14 : L17) * Rate * Ln11	0.00%	$0.00	$0.00	$0.00	**4.17%**	$0.03	$0.08	$0.13
14	Tax Rate	Rate * Ln11	6.00%	$0.04	$0.09	$0.17	6.00%	$0.04	$0.09	$0.17
15	Misc. Material Loading*	Rate * Ln11	17.98%	$0.13	$0.28	$0.50		**$0.13**	**$0.21**	**$0.33**
16	Supply Expense Loading	Rate * Ln11	6.75%	$0.05	$0.11	$0.19	6.75%	$0.05	$0.11	$0.19
17	Other Loading	Ln17a + Ln 17b + Ln17c	7.82%	$0.06	$0.12	$0.22	3.45%	$0.02	$0.05	$0.10
17a	Plt Labor - Indirect Salary, Benefits Other	Rate * Ln11	4.36%	$0.03	$0.07	$0.12	**0.00%**	$0.00	$0.00	$0.00
17b	Right of Way Items	Rate * Ln11	0.06%	$0.00	$0.00	$0.00	0.06%	$0.00	$0.00	$0.00
17c	Interest During Construction Items	Rate * Ln11	3.39%	$0.02	$0.05	$0.09	3.39%	$0.02	$0.05	$0.09
18	Placing Cost	Ln3		$0.74	$0.74	$0.74		$0.29	$0.29	$0.29
19	Splicing Cost	Ln10		$0.20	$0.59	$1.18		$0.38	$0.77	$1.36
20	Material, Material Loading and Labor	Ln 11 + Ln12 + Ln 18 + Ln19		$1.93	$3.51	$5.75		$1.67	$3.18	$5.33
21	Engineering Loading	Rate * Ln20	35.72%	$0.69	$1.26	$2.05	**10.00%**	$0.17	$0.32	$0.53
22	Total Loading	Ln12 + Ln18 + Ln19 + Ln21		$1.90	$3.19	$5.04		$1.12	$1.92	$3.09
23	Total Cable Cost per Foot	Ln11 + Ln22		$2.62	$4.77	$7.81		$1.84	$3.50	$5.86
			FCC SynMod	$3.40	$4.49	$6.14				

* Miscellaneous material for AT&T WorldCom is 20% of contract labor

Pole Costing Comparison

Line No	Descripton	Formula	BellSouth Rate	BellSouth Pole	BellSouth Anchor	BellSouth Guy	BellSouth Total	AT&T/WorldCom Rate	AT&T/WorldCom Pole	AT&T/WorldCom Anchor	AT&T/WorldCom Guy	AT&T/WorldCom Total
1	Material Cost	BSTLM Input		$ 300.16			$ 300.16		**$ 239.31**			$ 239.31
2	Span Length	BSTLM Input		1,200					1,200			
3	Material Cost w/ Extra Pole per Ft	round(Ln1 * ((Ln2/Ln16+1)/(Ln2/Ln16)),0)		$ 330.18			$ 330.18		**$ 293.55**			$ 293.55
4	Material Loading	Rate * Ln3	56.87%	$ 187.78			$ 187.78		$ 95.54			$ 95.54
5	Inflation	Rate * Ln3 +Sum (Ln6 : L9) * Rate * Ln3	7.68%	$ 36.96			$ 36.96	**3.99%**	$ 13.81			$ 13.81
6	Tax Rate	Rate * Ln3	6.00%	$ 19.81			$ 19.81	6.00%	$ 17.61			$ 17.61
7	Misc. Material Loading*	Rate * Ln3	22.44%	$ 74.10			$ 74.10		$ 29.54			$ 29.54
8	Supply Expense Loading	Rate * Ln3	1.08%	$ 3.57			$ 3.57	1.08%	$ 3.17			$ 3.17
9	Other Loading	Ln9a + Ln9b + Ln9c	16.16%	$ 53.35			$ 53.35	10.70%	$ 31.40			$ 31.40
9a	Plt Labor - Indirect Salary, Benefits Other	Rate * Ln3	5.46%	$ 18.03			$ 18.03	**0.00%**	$ -			$ -
9b	Right of Way Items	Rate * Ln3	9.96%	$ 32.90			$ 32.90	9.96%	$ 29.25			$ 29.25
9c	Interest During Construction Items	Rate * Ln3	0.73%	$ 2.42			$ 2.42	0.73%	$ 2.15			$ 2.15
10	Placing Hours	BSTLM Input				0.75					**0**	
11	Placing Cost	Rate * Ln10	$ 49.05			$ 36.79	$ 36.79	$ 49.05			$ -	$ -
12	Contract Labor Cost**	BSTLM Input		$ 233.19	$ 99.71				**$ 147.69**	**$ 95.39**		
13	Total Labor Cost	Ln11 + Ln12		$ 233.19	$ 99.71	$ 36.79	$ 369.69		$ 147.69	$ 95.39	$ -	$ 243.08
14	Engineering Loading	Rate* (Ln3 + Ln4 + Ln13)	27.07%	$ 203.34	$ 26.99	$ 9.96	$ 240.29	**10.00%**	$ 53.68	$ 9.54		$ 63.22
15	Total Cost	Ln3 + Ln4 + Ln13 + Ln14		$ 954.49	$ 126.70	$ 46.75	$ 1,127.93		$ 590.46	$ 104.93		$ 695.39
16	Spacing	BSTLM Input		120	500	500			**184**	**600**	**600**	
17	Cost per foot	Ln15 / Ln16		$ 7.95	$ 0.25	$ 0.09	**$ 8.30**		$ 3.21	$ 0.17	$ -	**$ 3.38**

3.181618248

Synthesis Pole Cost Per Foot	
High	Low
$ 2.72	$ 1.51

* Miscellaneous material for AT&T WorldCom is 20% of contract labor
** The contract labor cost for Anchors for AT&T- WorldCom includes a 20% loading on inflation. The calculation is: $79.49 * 1.2 = $95.39

Buried EF&I Costing Comparison

Line No.	Description	Formula	BellSouth Rate	BellSouth Rural	BellSouth Suburb	BellSouth Urban	AT&T/WorldCom Rate	AT&T/WorldCom Rural	AT&T/WorldCom Suburb	AT&T/WorldCom Urban	Synthesis Model* Rural	Synthesis Model* Urban
1	Contract Placing Per Foot	See Buried Excavation Wksht		$ 5.37	$ 6.25	$ 7.43		$ 1.35	$ 3.56	$ 4.09		
2	Engineering Loading	Rate * Ln1	27.07%	$ 1.45	$ 0.27	$ 0.27	10.00%	$ 0.14	$ 0.36	$ 0.41		
3	EF&I Cost per Foot	Ln1 + Ln2		$ 6.82	$ 6.52	$ 7.70		$ 1.49	$ 3.91	$ 4.50	$ 0.77	$ 11.93

*Values for Synthesis Model are for Normal Terrain

Conduit Costing Comparison

Engineering, Furnish and Install

Line No.	Description	Formula	BellSouth Rate	BellSouth Density Zone Rural	BellSouth Density Zone Suburb	BellSouth Density Zone Urban	AT&T/WorldCom Rate	AT&T/WorldCom Density Zone Rural	AT&T/WorldCom Density Zone Suburb	AT&T/WorldCom Density Zone Urban	Synthesis Model Rural	Synthesis Model Urban
1	Contract Placing Per Foot	See Conduit Contract Placing Wksht		$ 20.47	$ 26.97	$ 41.21		**$ 12.01**	**$ 13.23**	**$ 15.01**		
2	Engineering Loading	Rate * Ln1	27.07%	$ 5.54	$ 7.30	$ 11.16	**10.00%**	$ 1.20	$ 1.32	$ 1.50		
3	EF&I Cost per Foot	Ln1 + Ln2		$ 26.02	$ 34.27	$ 52.36		$ 13.22	$ 14.56	$ 16.51	$ 1.86	$ 42.59

*Values for Synthesis Model are for Normal Terrain

Material

Line No.	Description	Formula	BellSouth Rate	BellSouth Density Zone Rural	BellSouth Density Zone Suburb	BellSouth Density Zone Urban	AT&T/WorldCom Rate	AT&T/WorldCom Density Zone Rural	AT&T/WorldCom Density Zone Suburb	AT&T/WorldCom Density Zone Urban	Synthesis Model Rural	Synthesis Model Urban
4	Material Cost Per Foot	BSTLM Input		$ 2.77	$ 2.77	$ 2.77		**$ 0.82**	**$ 0.82**	**$ 0.82**		
5	Engineering Loading	Rate * Ln4	27.07%	$ 0.75	$ 0.75	$ 0.75	**10.00%**	$ 0.08	$ 0.08	$ 0.08		
6	Cost Per Foot	Ln4+ Ln5		$ 3.52	$ 3.52	$ 3.52		$ 0.90	$ 0.90	$ 0.90	$ 0.77	$ 0.77

Manhole Costing Comparison

Line No.	Description	Formula	BellSouth Rate	BellSouth 1	BellSouth 2	BellSouth 3	BellSouth 5	AT&T/WorldCom Rate	AT&T/WorldCom 1	AT&T/WorldCom 2	AT&T/WorldCom 3	AT&T/WorldCom 5	Synthesis Model 2	Synthesis Model 4	Synthesis Model 9
1	Contract Placing Per Manhole*	BSTLM Input		$ 3,235.16	$ 3,235.16	$ 10,064.95	$ 31,575.13		$ 1,463.36	$ 1,463.36	$ 1,463.36	$ 4,032.08			
2	Engineering Loading	Rate * Ln1	27.07%	$ 875.76	$ 875.76	$ 2,724.58	$ 8,547.39	10.00%	$ 146.34	$ 146.34	$ 146.34	$ 403.21			
3	Total EF&I	Ln1 + Ln2		$ 4,110.92	$ 4,110.92	$ 12,789.53	$ 40,122.52		$ 1,609.70	$ 1,609.70	$ 1,609.70	$ 4,435.29	$ 1,436.50	$ 4,472.47	$ 5,176.00
4	Spacing	BSTLM Input	625					625							
5	Cost per Foot	Ln3 / Ln4		$ 6.58	$ 6.58	$ 20.46	$ 64.20		$ 2.58	$ 2.58	$ 2.58	$ 7.10			

*Note: AT&T/WorldCom contract placing per manhole has a 50% sharing factor applied prior to the BSTLM Model run for manhole sizes 2, 3, and 5.

Sharing Correction for Buried Structure
An Example of Rural Zone, Normal Terrain, Backhoe Trench

Line No.	Description	Formula	Rate	BellSouth with Error	AT&T/WorldCom Corrected
1	Normal Terrain Contract Labor Cost Per Installed Foot	BSTLM Input		$ 2.20	$ 2.20
2	Adjusted Normal Terrain Cost	Rate * Ln1	100.00%	$ 2.20	$ 2.20
3	Shared Percent Assigned to Telephone For URBAN	BSTLM Input		33%	
4	Shared Percent Assigned to Telephone For RURAL	BSTLM Input			50%
5	Shared Cost Per Foot	Sharing * Ln2		$ 0.73	$ 1.10
6	% of Activity	Rate * Ln5	4.00%	$ 0.03	$ 0.04
7	Inspectors & Contract Admin	BSTLM Input		$ -	$ -
8	Weighted Cost Per Installed Foot for RURAL Backhoe Trench	Ln6 + Ln7		$ 0.03	$ 0.04
9	Understatement			$ (0.01)	

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