

STATE OF FLORIDA



DIVISION OF THE COMMISSION CLERK & ADMINISTRATIVE SERVICES
BLANCA S. BAYÓ
DIRECTOR

Public Service Commission

C O N F I D E N T I A L

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DESCRIPTION: FPSC (LEG/B.Keating) -
(CONFIDENTIAL) Exhibits RKY-1 through RKY-4 to
Ruth K. Young's direct testimony. [RAR 5/12/99 note:
Based on DN 06056-99, certain pages were pulled from
this document and placed in docket file. Pages
remaining are pgs 18-19 from RKY-2; and pgs 2, 4,
and 38-78 from RKY-4.; remaining confidential
pages destroyed 9/8/99]

ORIGINAL

DECLASSIFIED

DOCKET NO.: 980946-TL: Petitions for temporary waiver of physical collocation requirements set forth in the 1996 Telecommunications Act and the FCC's First Report and Order, for the Daytona Beach Port Orange Central Office, by BellSouth Telecommunications, Inc.

WITNESS: Direct Testimony Of Ruth K. Young, Appearing On Behalf Of Staff

EXHIBIT: RKY-1

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(See 06056-99)

(Part 1 of 4)

DOCUMENT NUMBER-DATE

04607 APR-98

FPSC-RECORDS/REPORTING



FLORIDA PUBLIC SERVICE COMMISSION

*DIVISION OF AUDITING AND FINANCIAL ANALYSIS
BUREAU OF AUDITING*

Miami District Office

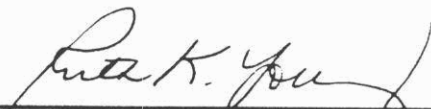
BELLSOUTH TELECOMMUNICATIONS, INC.

INVESTIGATION OF COLLOCATION SPACE WAIVERS


DAYTONA PORT ORANGE OFFICE

**DOCKET NO. 980946-TL
AUDIT CONTROL NO. 98-334-4-1**


March 19, 1999




Ruth K. Young, Audit Manager



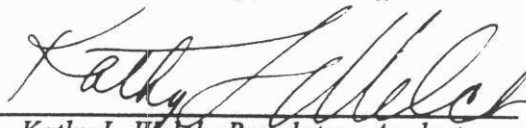
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TABLE OF CONTENTS

	PAGE
AUDIT'S PURPOSE	1
SUMMARY OF SIGNIFICANT PROCEDURES	2
AUDIT DISCLOSURE 1	3
AUDIT DISCLOSURE 2	9
AUDIT DISCLOSURE 3	10
AUDIT DISCLOSURE 4	12
AUDIT DISCLOSURE 5	13
AUDIT DISCLOSURE 6	14
AUDIT DISCLOSURE 7	17
AUDIT DISCLOSURE 8	18
AUDIT DISCLOSURE 9	20
AUDIT DISCLOSURE 10	21
AUDIT DISCLOSURE 11	22
AUDIT DISCLOSURE 12	23
ATTACHMENT 1	24
ATTACHMENT 2	26

**DIVISION OF AUDITING AND FINANCIAL ANALYSIS
AUDITOR'S REPORT**

MARCH 19, 1999

**TO: FLORIDA PUBLIC SERVICE COMMISSION AND OTHER INTERESTED
PARTIES**

We have applied the procedures described later in this report to determine the availability of space for collocation in the central office for which a waiver was requested.

This is an internal accounting report prepared after performing a limited scope audit. Accordingly, this report should not be relied upon for any purpose except to assist the Commission staff in the performance of their duties. Substantial additional work would have to be performed to satisfy generally accepted auditing standards and produce audited financial statements for public use.

In our opinion, the waiver referred to above presents fairly, in all material respects, observations made while touring the central office. The attached findings discuss all differences and other matters which were noted during our examination.

SUMMARY OF SIGNIFICANT PROCEDURES

Our audit was performed by examining the company's waiver and documentation that supports the assumptions which we believe are sufficient to base our opinion. Our examination did not entail a complete review of all financial transactions of the company. Our more important audit procedures are summarized below.

Read orders and rules related to collocation.

Read production of documents and interrogatories.

Interviewed switch, circuit, and common system planners for the offices involved.

Interviewed the geographical forecasters.

Toured and randomly measured the central offices.

Obtained maps showing current and future use space and compared to the applications for waiver.

Read company procedures.

Obtained supporting documents for company assumptions.

Compared the company's access line forecast to national trends. Ran models and compared to the company's. Access lines are used to forecast switch growth.

Reviewed the methodology used in the Bellcore trunk forecasting program. Trunk forecasts are used in both circuit and switch forecasts.

Determined reasons why large spaces would or would not be good candidates for collocation.

The scope of the audit was limited because our review of tools and methodology, used to determine the number of bays forecast, was not completed due to time restrictions. However, as an alternate procedure, two to three years of historical growth were compared to current forecasts for spaces considered critical to the collocation decision.

AUDIT DISCLOSURE NO. 1**SUBJECT: SPACE PLANNING ASSUMPTIONS**

STATEMENT OF FACT: During our interviews of BellSouth staff and our tours of the central offices, staff identified several assumptions used by BellSouth in its space planning. These assumptions are used throughout this report, therefore, they are identified below. In addition, the documentation that these assumptions have been verified to is disclosed.

1. Seven foot aisles or a physical barrier are necessary between switch and any other equipment such as circuit (toll) equipment or power equipment. This is because when the central offices were originally designed, the decision was made to put switch equipment on an isolated ground plane to create an additional protective barrier from power interruptions or trouble. Circuit (toll) equipment is on an integrated ground plane. If a problem happens in the system and a technician is touching two types of equipment, one that has an integrated ground plane and one with an isolated ground plane they can be electrocuted and the equipment could be damaged. (See attachment 1 to this report for a more technical discussion of integrated and isolated ground planes.) Therefore, a requirement was instituted that seven feet (based on the width of a person's arm span) be placed between circuit and toll equipment. A wall or a cage would also keep a person from touching the two types of equipment. This seven foot barrier was violated by BellSouth in two of the six central offices reviewed (Golden Glades and Boca Teeca). The company claims that other grounding precautions were taken to attempt to solve this problem.

The only reference for this requirement was found in a Bellcore publication. It states:

"All integrated ground plane conductive members located within 6 feet of the isolated ground plane shall be bonded to its MGB to minimize the surge potential difference between nearby members of the two ground planes."

No verification could be made to the National Electric Code but the potential risk was verified with engineers outside of the Bell system.

2. Plug in units are required to be in a room with fire rated walls or in fire proof cabinets that are grounded and connected to the wall. BellSouth provided the Life Safety Code Section 6-4.1.1 that states:

"Protection from any area having a degree of hazard greater than that normal to the general occupancy of the building or structure shall be provided as follows:

(a) Enclose the area with a fire barrier having a 1-hour fire resistance rating in accordance with section 6-1 without windows."

The company claims that because the circuit packs have cardboard liners, they have a high degree of risk.

Since the company is currently violating this rule in several offices, it is necessary for the company to allocate space to correct the problem before space can be considered for collocation.

3. A four foot fire aisle has to exist and be connected to two exit doors. This was verified to the Life Safety Code Handbook section 5.5-1.2 and the Standard Building Code Table 1004.

4. It is necessary to keep certain families of equipment together and therefore, the floor plans include space allocated within each type of equipment for growth in that type of equipment. The reason provided by a company representative was because over time, growth exceeded the initial space allocated for certain types of equipment. This reservation of space is called a footprint. The reason the company believes that families of equipment need to stay together is because some of the equipment has 50 foot cabling requirements, some have processors that require the other equipment to be in adjacent bays, and some would require additional cost for repeaters, cabling, and connections if they were not near other equipment. The company's reasons for needing to keep families of equipment together can be found in attachment 2.

The company exceeded the footprint for certain types of equipment in both the Daytona Port Orange office and the Boca Teeca office. The company was asked to provide the additional costs incurred to put equipment in a new line up. In answer to document request 32, the company stated that it was unable to provide this information. At the exit conference, a company representative stated that they were unable to provide because detailed equipment engineering for specific locations on individual jobs does not provide optional costs or optional locations. Therefore, the costs attributable to families of equipment being diversely located in a central office are not readily available.

Staff also observed the problem in Daytona because a bridge was created to hold the wires that connected the equipment. Because footprints have been established within the line up for each type of equipment, some equipment that goes in these groups may not be planned to be installed within the two years that are covered in this application. However, a series of bays that are empty within a series of equipment would not usually be feasible for physical collocation anyway because the space would not be large enough.

5. At least a four foot space must be maintained in front of an air handler vent and an

aisle should be maintained perpendicular to the unit for air to flow. How much space is needed is determined based on A.S.H.R.A.E. Engineering Standards which were outside the area of our expertise.

6. Physical collocation needs to be in room with fire rated walls with an exit door to the outside of the building. If the exit is not to the outside of the building or to a corridor that can be blocked from the BellSouth equipment area, an escort would be required to get access to the collocation space.

The Federal Communications Commission 47 CFR Chapter 1 51.323 (l) states "An incumbent LEC may require reasonable security arrangements to separate a collocating telecommunications carrier's space from the incumbent LEC's facilities."

FCC order 96-325 paragraph 598 states "we will continue to permit LEC's to require reasonable security arrangements to separate an entrants collocation space from the incumbents LEC facility." However, in order 98-188, they seek comment on whether incumbent LEC's should be allowed to require escorts for competitive LEC technicians (Paragraph 141).

In FCC order 98-188, paragraph 137 states "Given that space in incumbent LEC premises is limited, we tentatively conclude that we should require incumbent LEC's to offer collocation arrangements to both new entrants and any advanced services affiliate incumbent LECs establish that minimize the space needed by each competing provider in order to promote the deployment of advanced services to all Americans. Such alternative collocation arrangements include: (1) the use of shared collocation cages, within which multiple competing providers' equipment could be either openly accessible or locked within a secure cabinet; (2) the option to request collocation cages of any size without any minimum requirement, so that competing providers will not use any more space than is reasonably necessary for their needs; and (3) physical collocation that does not require the use of collocation cages ('cageless' collocation)."

However, BellSouth has submitted plans for hybrid walls within the cluster area (8 foot non-fire rated walls) in the Palmetto office and were turned down. Denials were reviewed and verified with the building and zoning department. If hybrid walls were denied within a fire rated room, it is not likely that cages would be approved.

Dade County uses the South Florida Building Code of 1994. It states in section 507.2 (a):

"In any building where rooms or spaces are occupied by separate tenants, not less than 1-hour fire-resistive construction shall be provided between tenants and between tenants and common areas.

The South Florida Building Code Chapter 12 puts telephone exchanges in Group G Division 2. The only exception that may apply to Group G, Division 2 is:

"(1) As otherwise permitted for the group of occupancy by Chapter 31 of this Code."

Boca Raton, West Palm Beach, Daytona and Orlando are covered under a different code, the Standard Building Code, which states in paragraph 507.2 a:

"(1) In any building where rooms or spaces are occupied by separate tenants, not less than one-hour fire-resistive construction shall be provided between tenants and between tenants and common areas except as provided below:"

The exceptions that may apply to Group G, Division 2 are:

"(3) EXCEPTION: Where all tenancies within a Fire Division are of Group G, Division 2 Occupancy, such space shall be exempt from the provisions of this Sub-section if one story in height and of Type III unprotected, IV, V unprotected.

(4) EXCEPTION: Fire resistive separation between a tenant and a mall area will not be required by this sub-paragraph where the space on both sides of such wall or partition is protected by an automatic sprinkler system or by a water curtain provided at the line of separation."

"(6) EXCEPTION: Group G, Division 2, clusters of offices less than 200 square feet served by a common reception area and internal corridor within the cluster area shall not require fire separation between offices and corridors common to the cluster."

According to BellSouth's answer to document request 32, BellSouth was concerned that the Florida code officials were requiring fire-rated separations, which result in more complex construction. Therefore, BellSouth asked Bellcore for help. BellCore obtained a letter from the Southern Building Code Congress International supporting its position. BellSouth has talked to several municipalities and believe that several will permit cages although none have been permitted at this time.

7. BellSouth contends that the FCC rules state explicitly that relocations and renovations are not required to provide collocation space.

When asked to provide the citation that supports its contention BellSouth cited CFR 51.321. The Federal Communications Commission 47 CFR Chapter 1 51.321 (e) states "An incumbent LEC shall not be required to provide for physical collocation of equipment necessary for interconnection or access to unbundled network elements at the incumbent LEC's premises if it demonstrates to the state commission that physical collocation is not practical for technical reasons or because of space limitations."

The definition of technically feasible according to 51.5 states "Interconnection access to unbundled network elements, collocation, and other methods of achieving interconnection or access to unbundled network elements at a point in the network shall be deemed technically feasible absent technical or operational concerns that prevent the fulfillment of a request by a telecommunications carrier for such connection, access, or methods. A determination of technical feasibility does not include consideration of economic, accounting, billing, space or site concerns, except that space and site concerns may be considered in circumstances where there is no possibility of expanding the space available. The fact that an incumbent LEC must modify its facilities or equipment to respond to such a request does not determine whether satisfying such request is technically feasible. An incumbent LEC that claims that it cannot satisfy such request because of adverse network reliability impacts must prove to the state commission by clear and convincing evidence that such interconnection, access, or methods would result in specific and significant adverse network reliability impacts"

In it's application for waiver, BellSouth states, "The term 'space limitations encompasses two factors: first, ILECs are entitled to consider space already in use by the ILEC at the time the collocation request is made; second, ILECs are entitled to 'retain a limited amount of floor space for defined future uses'(Order, Par. 604)." Their citation refers only to retaining space for future use and not to being entitled to space already in use.

FCC order 98-188 paragraph 142 states: "We also ask commenters to address whether we can and should require incumbent LEC's to remove obsolete equipment and non-critical offices in central offices to increase the amount of space available for collocation."

OPINION: BellSouth assumptions were verified to the documentation referenced above.

No citation could be found relating to not having to reorganize the central office to accommodate except for the inquiry in Order 98-188 asking for an opinion on removing obsolete equipment and non-critical offices. CFR 51.321 requires physical collocation as long as it is technically feasible. And, the definition of technically feasible specifically states that an incumbent LEC must modify its facilities or equipment to respond to a request as long as it does not impact network reliability. Moving equipment could be costly, would involve cabling and power difficulties and does have the potential of losing service for the customers. Moving office furniture and fixed configuration furniture does not involve the same costs or risks and should be considered if the furniture is not in a location that is currently part of a footprint for growth of equipment line ups. At the exit conference, a company representative commented that the company generally tries not to put switch fixed configuration furniture in a footprint because it is intimately

related to the processor area of the switch.

If the company is required to remodel existing facilities, a determination needs to be made of who would be required to pay for the changes.

Security measures are still being addressed by the FCC.

AUDIT DISCLOSURE NO. 2

SUBJECT: WORK STATIONS AND ADMINISTRATIVE SPACE WITHIN THE CENTRAL OFFICE SWITCH AND CIRCUIT (TOLL) AREAS

STATEMENT OF FACT: In its space assessment worksheet, the company has identified areas that are for circuit (toll) equipment and areas for switch equipment. Within these areas are fixed configuration furniture which contains monitors to test equipment. In addition, there are several desks, files and printers contained within the floor space.

The floor plans for these spaces that include the footprints for the future growth of families of equipment, often show these areas being replaced by equipment.

In the time between the first tour of Golden Glades and Palm Beach Gardens and the most recent tour, much of this furniture had been moved and rearranged as lines of equipment were installed.

OPINION: Although the layout of the monitors and administrative spaces within the circuit and switch areas does not always appear to be efficient, it should not be an issue if there is an existing footprint in that area for future equipment. If the forecast for the footprint is reasonable, then the furniture will be moved and sometimes consolidated. If the area is large enough, meets the other requirements in disclosure 1, and does not involve footprints for equipment line ups, it will be discussed in the disclosure that proposes potential areas for collocation.

AUDIT DISCLOSURE NO. 3

SUBJECT: SPACE ASSESSMENT WORKSHEET

STATEMENT OF FACT: In its petition for waiver, BellSouth indicates that a certain number of feet in the facility is "reserved for defined future use essential for BellSouth to meet the *growing needs of its customers through the year 2000.*" This space agrees with Section D- Reserved Space on the Space Assessment Worksheet that was attached to the petition.

The Federal Communications Commission Rules, 47 CFR Chapter 1, section 51.323 (f) (4) states "an incumbent LEC may retain a limited amount of floor space for its own specific future uses, provided, however, that the incumbent LEC may not reserve space for future use on terms more favorable than those that apply to other telecommunications carriers seeking to reserve collocation space for their own use."

Collocation applications do not indicate the time frame that the room will be filled and therefore, there is no way to determine from the documentation how much space the collocators are reserving for future use.

Only one of the six offices reviewed in this proceeding has physical collocation. The two collocators currently residing in these spaces were asked to provide detail about when the collocation space will be filled. Only one responded. The company currently has only one bay in a room that would hold six. It expects to fill the bays within two years.

BellSouth employees have indicated that it takes three years from the time a plan for an addition is initiated for a building addition to the time it is actually completed. A schedule was provided to show that a recent addition in North Florida was initialized in December of 1995 and construction was completed in December of 1998 or 36 months. Another building addition was planned in July of 1996 and construction was completed October 1998 or 28 months. The only dates that could be documented were the dates the budget was approved and when the buildings were completed. The process took 20 months and 13 months for the two additions respectively. No documentation was provided to show when the planning process began. Additions in South Florida are expected to take longer because of longer permitting time since Hurricane Andrew.

OPINION: Although the petition states that the reserved space is to be used by the year 2000, review of the maps of future space and documentation provided by BellSouth regarding intended use of the space indicate that some of the space does not have any forecasted use by the year 2000 and sometimes not even by 2001.

Many times, however, the spaces are in a line of bays which would not be conducive for physical collocation and are being reserved because of the principle of families of equipment. See disclosure no. 1 for a discussion of the need for families of equipment to be together.

According to the rule, BellSouth can reserve as much space as its collocators. We were unable to determine how much space the two other collocators are reserving.

Since it takes three years to get a building addition, allowing only two years of growth, could put BellSouth in a position of not being able to add capacity in time to meet the needs of its customers.

Large spaces that are for forecasted periods beyond two years are described in other disclosures to this report.

AUDIT DISCLOSURE NO. 4

SUBJECT: OBSOLETE EQUIPMENT

STATEMENT OF FACT: The company was requested to provide information on any equipment that would be changed out for new equipment that might have less space requirements.

In the Boca Raton office, an e-net conversion is forecasted which will free up 12 switch bays. Since the switch manufacturer handles the layout of the bays, BellSouth was unable to tell us where the bay would be vacated or if the space would be a contiguous space.

BellSouth's position is that the equipment it has is currently functioning and that it should not have to replace equipment with smaller, more efficient equipment because that would require an additional expenditure.

FCC order 98-188 paragraph 142 states: "We also ask commenters to address whether we can and should require incumbent LEC's to remove obsolete equipment and non-critical offices in central offices to increase the amount of space available for collocation."

BellSouth has retired 13 circuit bays and 8 switch bays in Lake Mary over the last three years; 2 circuit bays and 14 switch bays in Daytona Port Orange; 8 circuit bays in Boca Teeca, and 5 circuit and 18 switch bays in West Palm Beach Gardens. The company response to request 43 states that the information for North Dade Golden Glades and Miami Palmetto will be provided as soon as possible. It was not received.

OPINION: Although there is nothing in the rules that would require BellSouth to replace its equipment, it should be noted that if BellSouth were making a decision on whether or not to make a building addition, BellSouth may find it more economical to replace equipment with more efficient equipment and thus free up bays.

This was probably what happened when BellSouth petitioned the FCC in 1993 for waivers. At that time, it only showed future growth of 2100 square feet for Glades and 1000 for West Palm Beach Gardens. The new petitions ask for 4796 in Glades and 3544 in Gardens. (See order PSC-99-0060-FOF-TP p. 9-10)

AUDIT DISCLOSURE NO. 5

**SUBJECT: BELLSOUTH COLLOCATION HANDBOOK
 VERSION 7.1.2, DATED January 2, 1999
 SPACE ENCLOSURE OPTIONS**

STATEMENT OF FACTS: The collocation handbook dated January 2, 1999 describes "BellSouth's collocation offerings, providing general information regarding the terms and conditions, ordering process, provisioning and maintenance of BellSouth's Collocation Offerings."

Section 2 defines physical collocation and states that "Physical Collocation arrangements will be placed in floor space separated from BST equipment." " When space permits, BellSouth will construct a common area for all collocations, including separate ingress/egress where feasible." "Within the collocation common area, collocation arrangements will be individually placed in either enclosed or non-enclosed space. " The book also states that under certain conditions a collocator may construct power plant facilities but these must be enclosed in a fire rated wall.

Section 3 states that "Physical collocation space is assigned based on the customer's request, where space permits, with the physical collocation equipment arrangements placed in floor space separated from BellSouth equipment."

Section 3.6 addresses enclosure options. Section 3.6.1 says that BellSouth will make available a 100 square foot minimum enclosure with 50 square foot increments. When a collocator requests more than 100 square feet, BellSouth will try to use contiguous space but if contiguous space is not available, the collocator has the option of two separate enclosures and the purchase of connection through BellSouth cross-connects.

Section 3.6.2 addresses non-enclosed space within the BellSouth "common area". There is no minimum square footage requirement for non-enclosed collocation space, permitting the collocator to use space in increments less than 100 square feet.

The company representative states that the 100 square feet minimum is open for negotiation in the agreement process. However, the company claims to have signed agreements with all existing carriers requiring a minimum of 100 square feet.

OPINION: In disclosures in this audit, space of less than 100 square feet are discussed. Based on BellSouth's existing contracts, these spaces would not meet the minimum size requirement. If contracts with new carriers are made or if contracts are renegotiated, these spaces would need to be addressed to determine if they met other collocation requirements.

AUDIT DISCLOSURE NO. 6

**SUBJECT: POTENTIAL SPACE AVAILABILITY IN THE DAYTONA PORT
ORANGE CENTRAL OFFICE POWER ROOM**

STATEMENT OF FACTS: Space availability of the areas discussed depends upon use of areas of less than 100 square feet (Disclosure 5), and the contention that BellSouth is not required to move equipment (Disclosure 1).

Areas 2, 3 and 4 are contiguous spaces in the power room measuring 653 square feet. The company states that this is the power room for the entire central office. There are no forecasts for 2001 or 2002 for this space. According to the company, if collocators were included here, the room would be unable to serve any requirements for BellSouth or the collocators past 2002.

According to the company, any part of this area would require a fire rated wall. BellSouth states fire rated construction "...is absolutely required under code in this high hazard area. " (See Attachment 2, item 4)

As shown on the attached map, the large area has been divided into three sections. The dimensions would be as follows:

Area 2 is 22'5" by 9'6" or approximately 213 square feet. It has an outside wall in which a separate entrance could possibly be built. A 4' fire exit aisle is required next to existing equipment (Audit Disclosure 1).

Area 3 is 19'3" by 11' or approximately 212 square feet.

Area 4 appears to have one part that is approximately 11' by 11' or 121 square feet and a smaller area on the bottom that is approximately 11' by 6' or 66 square feet for a total of 187 square feet.

Area 11 is not contiguous to the other areas in the power room. The dimensions are 9'6" by 9'6" or 90 square feet.

OPINION: Area 2 is 22' 5" by 9'6" or approximately 213 square feet. After the fire wall is installed the space would be 18'5" by 4'6". This would not allow for space on either side of a lineup for a fire aisle or room to work.

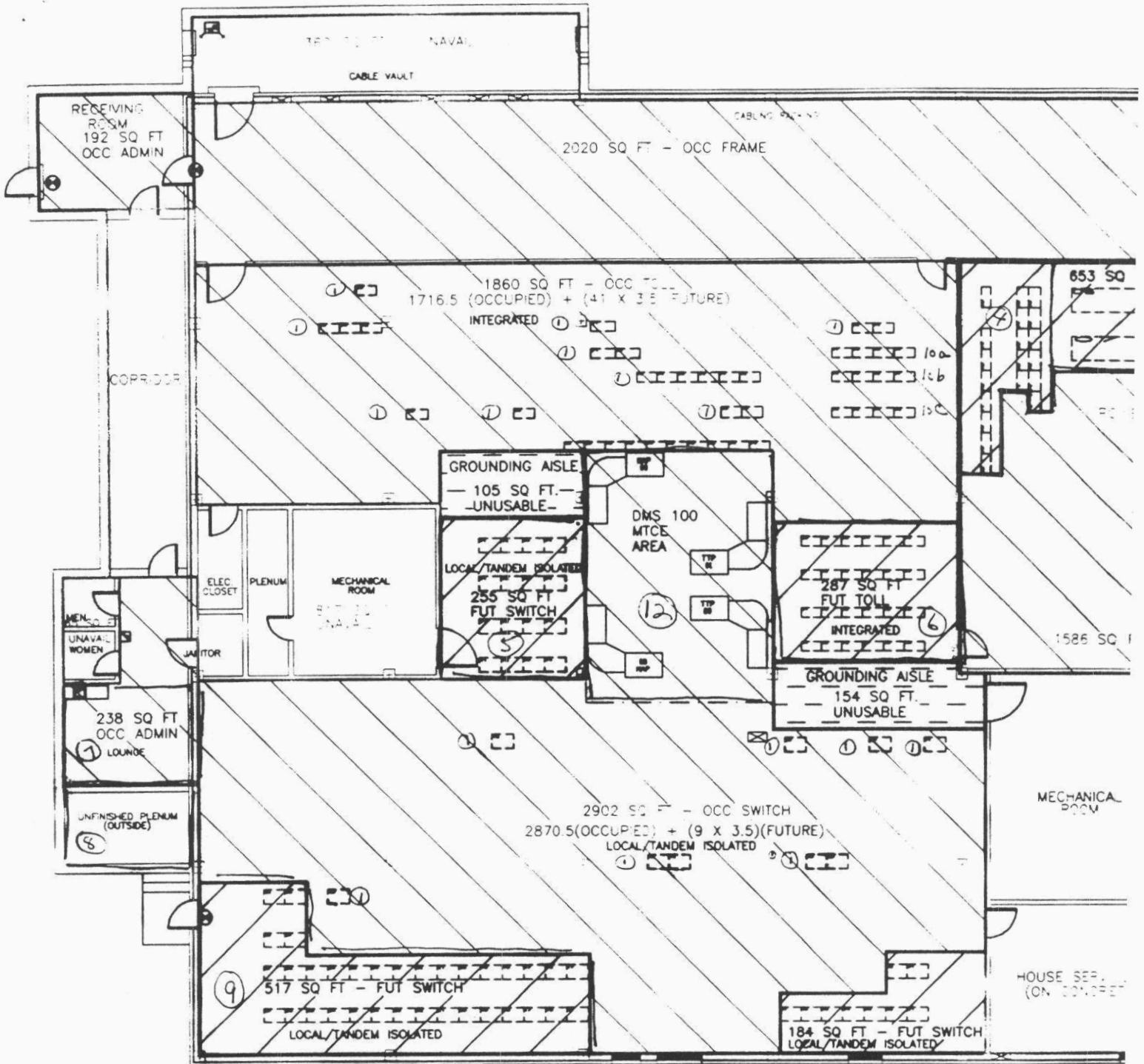
Area 3 is 19'3" by 11' or approximately 212 square feet. This does not have access to an outside wall, requires fire rated walls and 4' fire aisles next to BellSouth equipment. Removing 4' for a fire aisle and a foot for a wall leaves an area 6' wide. It is necessary to find out if a six foot wide area would hold one line up of bays with room to work in

front and back.

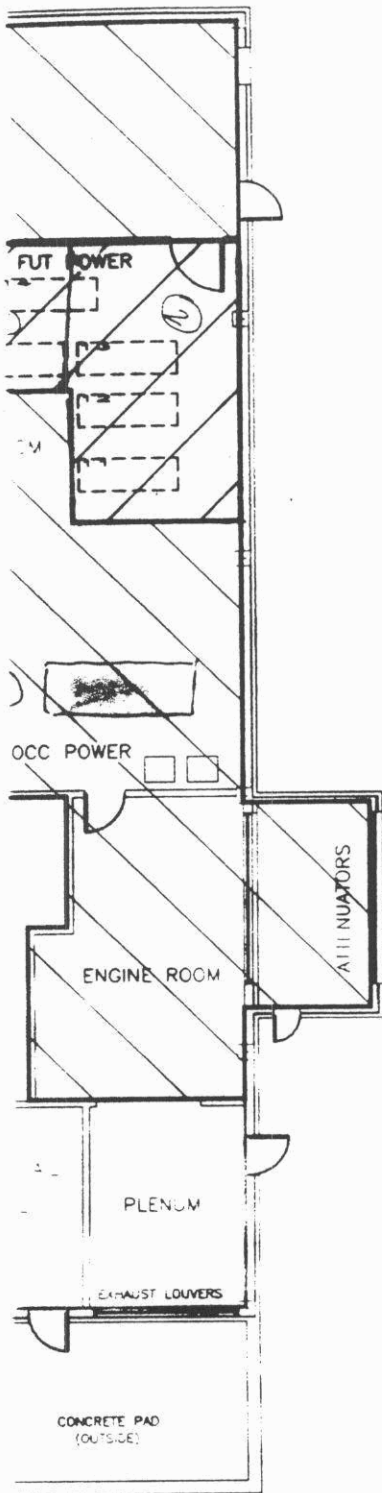
The top part of Area 4 appears to be 11' by 11'. Again the area is not on an outside wall, requires fire rated walls and 4' aisles next to BellSouth equipment, and contains BellSouth's door to the room. The space would be 11' by 6' wide. The bottom of the area is 6' wide. The 4' fire aisle requirement would leave a 2' area in which to work.

Even if Area 3 were used with the top part of Area 2, the 11' of width would need to be reduced by 4' for a fire aisle. This would still make this a narrow space.

Area 11 is less than the 100 square feet offered as a minimum by BellSouth (See Disclosure 5) to a collocater. Adding in fire aisles would make this a minimal space.



33850 DAYTONA BEACH - PORT ORANGE FIRST



FEBRUARY 25, 1999

A TOTAL GROSS SQ FT 13,331

B
 PAD 360
 ENGINE ROOM 65
 JAN, ELEC, CLOSET, SERVICE PANEL 187
 238

C
 SWITCH 2870.5
 TOLL 1716.5
 FRAME 2020
 POWER AND ENGINE ADMINISTRATIVE 1586
 238 + 192 = 430
 TOTAL OCCUPIED SPACE 8623

D
 SWITCH 184 + 517 + 255 + (9 X 3.5) = 987.5
 TOLL 287 + (41 X 3.5) = 430.5
 POWER 653
 TOTAL RESERVED SPACE 2071

E TOTAL UNUSABLE SPACE 105 + 154 = 259

ISOLATED - ISOLATED GROUND PLANE
 INTEGRATED - INTEGRATED GROUND PLANE
 OCC - OCCUPIED
 FUT - FUTURE
 UNAVAIL - UNAVAILABLE
 □ - BUILDING COLUMN

FLOOR PLAN



AUDIT DISCLOSURE NO. 7

**SUBJECT: POSSIBLE AREAS FOR COLLOCATION IN THE
DAYTONA PORT ORANGE OFFICE
LOUNGE AND UNFINISHED PLENUM**

STATEMENT OF FACTS: Space availability of the areas discussed depends upon use of areas of less than 100 square feet (Disclosure 5), and the contention that BellSouth is not required to move equipment (Disclosure 1).

Area No. 7 is 12' by 10'8" or approximately 128 square feet, and is the employee lounge. Area 8 is on an adjacent wall to the lounge outside the building, but is not considered by the company in the square footage of the building. The company states that the space has no floor or roof. It appears to be 8' by 10'8" or 85 square feet.

OPINION: If the lounge could be used along with the unfinished plenum, there might be space for a collocator and a common area. A separate entrance could be built to the outside. The lounge is already in a fire rated room. Another wall would have to be built to close it off from the corridor and rest rooms. According to Bell System practices, lounges must be in fire rated rooms. Also, although it is beneficial for the company to have its employees on the premises during breaks and the union contract dictates one 15 minute relief period (or break) for each session worked, there is no mandatory rule for having a lounge.

If the lounge were moved to one of the areas where the company **has** not designated any growth through 2000, it would have to be in a fire rated enclosed area.

AUDIT DISCLOSURE NO. 8

**SUBJECT: POSSIBLE AREAS FOR COLLOCATION IN THE
DAYTONA PORT ORANGE OFFICE
AREAS 5 AND 6 - FUTURE SWITCH AND FUTURE TOLL
AREA 12 - SWITCH MAINTENANCE AREA**

STATEMENT OF FACTS: Space availability of the areas discussed depends upon use of areas of less than 100 square feet (Disclosure 5), and the contention that BellSouth is not required to move equipment (Disclosure 1).

Area 5 is 13' by 22' or approximately 286 square feet and is designated for future switch equipment. The company says that because of grounding, a seven foot aisle is needed between existing switch equipment, leaving usable space of 187 square feet. There are no forecasts or jobs for the footprints in the map. The company says that is reserved for future switching equipment, and is on isolated ground plane.

Area 6 is 16' by 21' or approximately 352 square feet for future toll equipment. The company says that because of grounding, a seven foot aisle is needed between existing switch equipment, leaving usable space of 189 square feet. This space is reserved for future circuit (toll) growth, but at present there are no jobs in process and no forecasts. This area is on an integrated ground plane. The information provided by the company shows that the toll equipment bays in this office grows about five to six a year. There are more than 12 bays open in the toll area at this time. See items marked 1 and 10 in toll area on map and Audit Disclosures 10 and 11.

Area 12 contains fixed configuration furniture for the maintenance area. This is in the middle of Areas 5 and 6 on the map. The dimensions are 19' by 25'.

OPINION: In order to use areas 5 and 6 for collocation, one area would have to be used for the collocator, one area for the common area, and some connection made. The space does not have to be contiguous. (See Disclosure 5). There are air ducts, and cable racks above the spaces which the company says would cause a problem in building fire rated walls to the ceiling. Area 5 is an isolated grounding plane (See Disclosure 1). If able to obtain a permit, a caged area in area 6 may be possible since this is an integrated ground plane.

FCC Order 96-325, paragraph 598 discusses the need for security arrangements to "...separate an entrant's collocation space from the incumbent..." and "...will continue to permit LEC's to require reasonable security arrangements ..." The need for security would have to be addressed if these areas were considered.

Area 12 could be moved to either side and there would be one large contiguous space

for collocation. However, the same grounding restrictions would apply as above. The company stated that if the maintenance area were moved, the "...space recouped would provide growth for switch and circuit equipment and defer the proposed building addition." Also, as discussed in Audit Disclosure 1, Item 7, the company responses indicate its belief that the FCC rules state explicitly that relocation and renovations are not required to provide collocation space. The discussion on this issue can be found in that disclosure. If this area were considered, security arrangements would have to be addressed as stated above.

Also, if a collocator were put into areas 7 and 8 as discussed in Audit Disclosure 7, the lounge could be moved to this area if fire rated walls were built.

AUDIT DISCLOSURE NO. 9

**SUBJECT: POSSIBLE AREAS FOR COLLOCATION IN THE
DAYTONA PORT ORANGE OFFICE
AREA 9 - FUTURE SWITCH**

STATEMENT OF FACTS: Area 9 in on the map contains 517 square feet designated for future switch. It is in an isolated ground plain and includes foot prints for three bays for the 2000 forecast. The central office supervisor's office is in this space when he is in the Daytona area. His PC, desk and office files are there. The configuration of the space is such that the dimensions would be approximately 29' by 7'1". This measurement is excluding the three bays forecast for 2000.

OPINION: A fire aisle would be required next to BellSouth's equipment (See audit disclosure 1). The wall would take another foot. This would leave a width of 2'1", which would be too narrow for any equipment.

AUDIT DISCLOSURE NO. 10

**SUBJECT: POTENTIAL SPACE AVAILABILITY IN THE DAYTONA PORT
 ORANGE CENTRAL OFFICE AREAS MARKED 1 ON MAP**

STATEMENT OF FACTS: The areas marked one on the map are bays that are scattered around the office and do not appear to be viable space for collocation.

AUDIT DISCLOSURE NO. 11

**SUBJECT: POSSIBLE COLLOCATION SPACE IN THE DAYTONA PORT
ORANGE CENTRAL OFFICE AREA 10**

STATEMENT OF FACTS: Area 10 consists of 9 bays reserved for multiplex and miscellaneous equipment growth (circuit), and four bays for future virtual collocation and or unforecasted multiplex growth (circuit).

The dimensions are 9' by 7'.

OPINION: After space for fire aisles, the dimensions are too small for a collocation space.

AUDIT DISCLOSURE NO. 12

SUBJECT: FORECAST

STATEMENT OF FACT: There are two primary forecasts for each central office, switch and circuit. Access line growth is the primary driver of the switch forecast and the trunk forecast is the primary driver of the circuit equipment.

Regression analyses were run in order to determine the reasonableness of the access line forecasts. To perform the analyses, historical data from 1993 to 1998, city and county population information from 1993 to 1998, and secondary line growth statistics were used. In addition, the projected growth of network access lines was compared to the historical growth for the period 1988 to 1998.

Due to time constraints, the same type of analyses of the trunk forecast were not performed. The forecast is generated by a BellCore software package. The manual for the software was reviewed.

For each office, the area with large empty spaces was identified as either circuit or switch. Once the area was identified, historical information was obtained on how many bays were added for two years or more. The historical growth was compared to the forecast. The last two years were used because of the impact of the Internet, long distance carriers entering the market and data transmission technologies.

OPINION: The projected growth rates of total network access lines do not significantly differ from historical trends and represent reasonable projections.

The BellCore programs used to derive trunk traffic are based upon widely accepted statistical methods and procedures.

ATTACHMENT 1

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #23
Dated: February 8, 1999
Page 1 of 2

REQUEST: RE: Grounding

1. Please explain why you need two different ground planes in a central office.
2. Provide your reasons for not wanting to put a physical collocater in the middle of an isolated ground plan with and without a wall. Provide any documentation that shows the potential problems.
3. Provide company TR regarding the ground planes as we discussed at our meeting on Feb. 5, 1999. Or other information you have.

RESPONSE:

1. Digital switching equipment operates very constrained circuit design using micro amps of electricity with ground return. Stray ground currents induced by magnetic fields caused by electric motors, lighting, variations in commercial electric service, stray janitorial motors such as buffers and vacuum cleaners, static electric discharges built up by humidity and temperature variations, can cause service impairments or loss of service. Isolating the digital switch ground provides a measure of service protection against accidental loss of service.

Toll (circuit) equipment is not this sensitive to stray ground currents. However, toll equipment can generate its own noise. The noise can be transmitted in the grounding system much like the ignition noise in a car speaker system. The ground plane separation ensures this noise will not affect digital service.

Finally, separating the ground planes by physical barriers or adequate aisles ensures accidental contact will not transmit current between the ground planes. Different ground planes will have voltage (potential difference) by the laws of electricity. By those same laws, current will flow when the two planes are brought into contact. This current will cause the same stray current disruptions described above. This could lead to life threatening situations if the potential is large enough.

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #23
Dated: February 8, 1999
Page 2 of 2

RESPONSE (cont'd):

2. For all the above reasons, an integrated ground plane collocator would not be a preferable tenant in an isolated ground plane environment with or without a wall. The basic problem is that even with a wall the integrated ground plane collocator requires complete electrical separation in the overhead environment. This means none of his racking, electrical conduits, air conditioning ducts, lights, controls, can have metallic contact with any of the items in the isolated ground plane. Second, if the code officials insist on the tenant occupancy rule, BST must construct a fire rated wall through all of the overhead environment to meet this code. This wall structure can not make metal to metal contact with any of the isolated ground plane.
3. At the February 5, 1999 meeting, BellSouth and Staff discussed TR-NWT-000295, titled *Isolated Ground Planes: Definition and Application to Telephone Central Offices, Issue 2*, dated July 1992. This document is copyrighted by Bellcore. The cost to purchase a copy for Staff's use is over \$250.00. BellSouth will make this document available for Staff's review at its Brentwood office in Miami. To review the document, please contact John MacDonald at 305-822-3230.

RESPONSE PROVIDED BY: J. D. Bloomer

ATTACHMENT 2

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #22
Dated: February 8, 1999
Page 1 of 3

REQUEST: RE: Families of Equipment

1. Explain what you mean by families of equipment.
2. What are your reasons for keeping switch equipment in their own line ups?
3. What are your reasons for keeping circuit equipment in their own line ups?
4. What are your reasons for keeping power equipment separate?
5. Provide reasons for any other family of equipment.
6. Provide documents for any of the above where available, i.e. TR's etc.

RESPONSE:

1. Equipment comes in four general groups, switch, power, circuit (toll), and frame. Each group contains equipment types used for specific purpose. The equipment comes in fixed configurations detailed by the manufacturers. These types are called families. The equipment vendors guard the detailed layout information as highly proprietary.

Examples of families follow:

A switch processor layout is a family.

A power plant control bay and discharge bays is a family.

A light guide terminating frame is a family of separate terminating bays.

A Digital Crossconnect System (DSX, DACS) is a family

A DSCs complex for Subscribe Line Carrier is a family.

2. Switch equipment is kept in its own area for the following reasons:
The switch equipment is physically different in width and depth from other types. Mixing different depth equipment in the same aisles creates wasted space.

Switch equipment is considerably hotter, requires different air conditioning filters, aisle spacing, and cable rack design per manufacturer specifications.

Switch equipment is an isolated ground plane.

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #22
Dated: February 8, 1999
Page 2 of 3

RESPONSE (cont'd):

Switch equipment has detailed internal cabling distances used by vendor engineering forces to maximize performance. Basically, switch equipment cables to other pieces of switch equipment NOT to other groups of equipment.

3. Toll equipment is kept in its own area for the following reasons: Toll equipment varies widely in width and some families vary in depth as well. Mixing the various widths and depths makes lineup configurations space inefficient. This makes air-conditioning and cabling design difficult as well.

Toll equipment is somewhat cooler than switching equipment, but hotter than frame and power. This means we can save expense dollars by properly sizing air conditioning to match the load.

Toll equipment is integrated ground plane. This means it shares common ground with all building components, frame, and power equipment.

Toll equipment grows in configurations limited by its family membership. Various families can exist side by side as long as each can grow the manufacturer recommended layout maximum.

Toll equipment generally cables to other types of toll equipment and the main frame. Growth in one type (D4, SLC, or multiplexers) leads to growth in DSX, Fiber Optic Terminals, or DACS families as the functions are interlocking.

4. Power equipment is in its own area for the following reasons: Power equipment is defined as a hazardous occupancy by the NFPA, National Fire Protection Act, due to the batteries and resultant explosive fumes. One hour rated walls enclosing the space meet the code. BellSouth attempts to follow this code in all new buildings, and retrofits all older buildings as soon as possible. Separate air conditioning and ventilation systems are also constructed to isolate the space.

Power equipment aisles are dictated by the size of components and voltage contained in them. These aisles are significantly different from toll/switch requirements with significantly greater hazards.

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #22
Dated: February 8, 1999
Page 3 of 3

RESPONSE (cont'd):

5. The standby engine requires its own space for the following reasons:

The engine and its diesel fuel are rated a hazardous occupancy. One hour and in some cases 2 hour walls are required by NFPA and the local building code to isolate the hazard.

The engine is extremely noisy. Running the engine on a regular basis renders the adjoining spaces unusable.

Air intake and exhaust requirements create drafts and smells rendering adjoining open spaces unusable.

The adjoining space is impossible to air condition effectively with the large intake grilles necessary to support the engine.

6. The above detail in the floor-space layout information is contained on the Web site supported by the BELLCORE organization. This paid subscription site is available to all Internet users for a fee. The information is not proprietary to the various manufacturers providing their details.

RESPONSE PROVIDED BY: J. D. Bloomer



FLORIDA PUBLIC SERVICE COMMISSION

*DIVISION OF AUDITING AND FINANCIAL ANALYSIS
BUREAU OF AUDITING*

Miami District Office

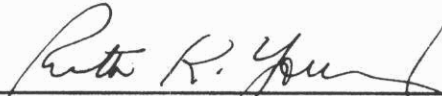
BELLSOUTH TELECOMMUNICATIONS, INC.

INVESTIGATION OF COLLOCATION SPACE WAIVERS


MIAMI PALMETTO OFFICE

DOCKET NO. 980948-TL
AUDIT CONTROL NO. 98-334-4-3

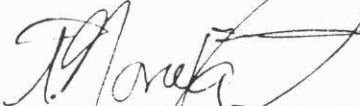
March 19, 1999




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part² of 4
04607-99

TABLE OF CONTENTS

	PAGE
AUDIT'S PURPOSE	1
SUMMARY OF SIGNIFICANT PROCEDURES	2
AUDIT DISCLOSURE 1	3
AUDIT DISCLOSURE 2	9
AUDIT DISCLOSURE 3	10
AUDIT DISCLOSURE 4	12
AUDIT DISCLOSURE 5	13
AUDIT DISCLOSURE 6	14
AUDIT DISCLOSURE 7	17
AUDIT DISCLOSURE 8	19
AUDIT DISCLOSURE 9	21
AUDIT DISCLOSURE 10	22
AUDIT DISCLOSURE 11	23
AUDIT DISCLOSURE 12	25
ATTACHMENT 1	26
ATTACHMENT 2	28

**DIVISION OF AUDITING AND FINANCIAL ANALYSIS
AUDITOR'S REPORT**

MARCH 19, 1999

**TO: FLORIDA PUBLIC SERVICE COMMISSION AND OTHER INTERESTED
PARTIES**

We have applied the procedures described later in this report to determine the availability of space for collocation in the central office for which a waiver was requested.

This is an internal accounting report prepared after performing a limited scope audit. Accordingly, this report should not be relied upon for any purpose except to assist the Commission staff in the performance of their duties. Substantial additional work would have to be performed to satisfy generally accepted auditing standards and produce audited financial statements for public use.

In our opinion, the waiver referred to above presents fairly, in all material respects, observations made while touring the central office. The attached findings discuss all differences and other matters which were noted during our examination.

SUMMARY OF SIGNIFICANT PROCEDURES

Our audit was performed by examining the company's waiver and documentation that supports the assumptions which we believe are sufficient to base our opinion. Our examination did not entail a complete review of all financial transactions of the company. Our more important audit procedures are summarized below.

Read orders and rules related to collocation.

Read production of documents and interrogatories.

Interviewed switch, circuit, and common system planners for the offices involved.

Interviewed the geographical forecasters.

Toured and randomly measured the central offices.

Obtained maps showing current and future use space and compared to the applications for waiver.

Read company procedures.

Obtained supporting documents for company assumptions.

Compared the company's access line forecast to national trends. Ran models and compared to the company's. Access lines are used to forecast switch growth.

Reviewed the methodology used in the Bellcore trunk forecasting program. Trunk forecasts are used in both circuit and switch forecasts.

Determined reasons why large spaces would or would not be good candidates for collocation.

The scope of the audit was limited because our review of tools and methodology, used to determine the number of bays forecast, was not completed due to time restrictions. However, as an alternate procedure, two to three years of historical growth were compared to current forecasts for spaces considered critical to the collocation decision.

AUDIT DISCLOSURE NO. 1**SUBJECT: SPACE PLANNING ASSUMPTIONS**

STATEMENT OF FACT: During our interviews of BellSouth staff and our tours of the central offices, staff identified several assumptions used by BellSouth in its space planning. These assumptions are used throughout this report, therefore, they are identified below. In addition, the documentation that these assumptions have been verified to is disclosed.

1. Seven foot aisles or a physical barrier are necessary between switch and any other equipment such as circuit (toll) equipment or power equipment. This is because when the central offices were originally designed, the decision was made to put switch equipment on an isolated ground plane to create an additional protective barrier from power interruptions or trouble. Circuit (toll) equipment is on an integrated ground plane. If a problem happens in the system and a technician is touching two types of equipment, one that has an integrated ground plane and one with an isolated ground plane they can be electrocuted and the equipment could be damaged. (See attachment 1 to this report for a more technical discussion of integrated and isolated ground planes.) Therefore, a requirement was instituted that seven feet (based on the width of a person's arm span) be placed between circuit and toll equipment. A wall or a cage would also keep a person from touching the two types of equipment. This seven foot barrier was violated by BellSouth in two of the six central offices reviewed (Golden Glades and Boca Teeca). The company claims that other grounding precautions were taken to attempt to solve this problem.

The only reference for this requirement was found in a Bellcore publication. It states:

"All integrated ground plane conductive members located within 6 feet of the isolated ground plane shall be bonded to its MGB to minimize the surge potential difference between nearby members of the two ground planes."

No verification could be made to the National Electric Code but the potential risk was verified with engineers outside of the Bell system.

2. Plug in units are required to be in a room with fire rated walls or in fire proof cabinets that are grounded and connected to the wall. BellSouth provided the Life Safety Code Section 6-4.1.1 that states:

"Protection from any area having a degree of hazard greater than that normal to the general occupancy of the building or structure shall be provided as follows:

(a) Enclose the area with a fire barrier having a 1-hour fire resistance rating in accordance with section 6-1 without windows."

The company claims that because the circuit packs have cardboard liners, they have a high degree of risk.

Since the company is currently violating this rule in several offices, it is necessary for the company to allocate space to correct the problem before space can be considered for collocation.

3. A four foot fire aisle has to exist and be connected to two exit doors. This was verified to the Life Safety Code Handbook section 5.5-1.2 and the Standard Building Code Table 1004.

4. It is necessary to keep certain families of equipment together and therefore, the floor plans include space allocated within each type of equipment for growth in that type of equipment. The reason provided by a company representative was because over time, growth exceeded the initial space allocated for certain types of equipment. This reservation of space is called a footprint. The reason the company believes that families of equipment need to stay together is because some of the equipment has 50 foot cabling requirements, some have processors that require the other equipment to be in adjacent bays, and some would require additional cost for repeaters, cabling, and connections if they were not near other equipment. The company's reasons for needing to keep families of equipment together can be found in attachment 2.

The company exceeded the footprint for certain types of equipment in both the Daytona Port Orange office and the Boca Teeca office. The company was asked to provide the additional costs incurred to put equipment in a new line up. In answer to document request 32, the company stated that it was unable to provide this information. At the exit conference, a company representative stated that they were unable to provide because detailed equipment engineering for specific locations on individual jobs does not provide optional costs or optional locations. Therefore, the costs attributable to families of equipment being diversely located in a central office are not readily available.

Staff also observed the problem in Daytona because a bridge was created to hold the wires that connected the equipment. Because footprints have been established within the line up for each type of equipment, some equipment that goes in these groups may not be planned to be installed within the two years that are covered in this application. However, a series of bays that are empty within a series of equipment would not usually be feasible for physical collocation anyway because the space would not be large enough.

5. At least a four foot space must be maintained in front of an air handler vent and an

aisle should be maintained perpendicular to the unit for air to flow. How much space is needed is determined based on A.S.H.R.A.E. Engineering Standards which were outside the area of our expertise.

6. Physical collocation needs to be in room with fire rated walls with an exit door to the outside of the building. If the exit is not to the outside of the building or to a corridor that can be blocked from the BellSouth equipment area, an escort would be required to get access to the collocation space.

The Federal Communications Commission 47 CFR Chapter 1 51.323 (I) states "An incumbent LEC may require reasonable security arrangements to separate a collocating telecommunications carrier's space from the incumbent LEC's facilities."

FCC order 96-325 paragraph 598 states "we will continue to permit LEC's to require reasonable security arrangements to separate an entrants collocation space from the incumbents LEC facility." However, in order 98-188, they seek comment on whether incumbent LEC's should be allowed to require escorts for competitive LEC technicians (Paragraph 141).

In FCC order 98-188, paragraph 137 states "Given that space in incumbent LEC premises is limited, we tentatively conclude that we should require incumbent LEC's to offer collocation arrangements to both new entrants and any advanced services affiliate incumbent LECs establish that minimize the space needed by each competing provider in order to promote the deployment of advanced services to all Americans. Such alternative collocation arrangements include: (1) the use of shared collocation cages, within which multiple competing providers' equipment could be either openly accessible or locked within a secure cabinet; (2) the option to request collocation cages of any size without any minimum requirement, so that competing providers will not use any more space than is reasonably necessary for their needs; and (3) physical collocation that does not require the use of collocation cages ('cageless' collocation)."

However, BellSouth has submitted plans for hybrid walls within the cluster area (8 foot non-fire rated walls) in the Palmetto office and were turned down. Denials were reviewed and verified with the building and zoning department. If hybrid walls were denied within a fire rated room, it is not likely that cages would be approved.

Dade County uses the South Florida Building Code of 1994. It states in section 507.2 (a):

"In any building where rooms or spaces are occupied by separate tenants, not less than 1-hour fire-resistive construction shall be provided between tenants and between tenants and common areas.

The South Florida Building Code Chapter 12 puts telephone exchanges in Group G Division 2. The only exception that may apply to Group G, Division 2 is:

“(1) As otherwise permitted for the group of occupancy by Chapter 31 of this Code.”

Boca Raton, West Palm Beach, Daytona and Orlando are covered under a different code, the Standard Building Code, which states in paragraph 507.2 a:

“(1) In any building where rooms or spaces are occupied by separate tenants, not less than one-hour fire-resistive construction shall be provided between tenants and between tenants and common areas except as provided below.”

The exceptions that may apply to Group G, Division 2 are:

“(3) EXCEPTION: Where all tenancies within a Fire Division are of Group G, Division 2 Occupancy, such space shall be exempt from the provisions of this Sub-section if one story in height and of Type III unprotected, IV, V unprotected.

(4) EXCEPTION: Fire resistive separation between a tenant and a mall area will not be required by this sub-paragraph where the space on both sides of such wall or partition is protected by an automatic sprinkler system or by a water curtain provided at the line of separation.”

“(6) EXCEPTION: Group G, Division 2, clusters of offices less than 200 square feet served by a common reception area and internal corridor within the cluster area shall not require fire separation between offices and corridors common to the cluster.”

According to BellSouth's answer to document request 32, BellSouth was concerned that the Florida code officials were requiring fire-rated separations, which result in more complex construction. Therefore, BellSouth asked Bellcore for help. BellCore obtained a letter from the Southern Building Code Congress International supporting its position. BellSouth has talked to several municipalities and believe that several will permit cages although none have been permitted at this time.

7. BellSouth contends that the FCC rules state explicitly that relocations and renovations are not required to provide collocation space.

When asked to provide the citation that supports its contention BellSouth cited CFR 51.321. The Federal Communications Commission 47 CFR Chapter 1 51.321 (e) states “An incumbent LEC shall not be required to provide for physical collocation of equipment necessary for interconnection or access to unbundled network elements at the incumbent LEC's premises if it demonstrates to the state commission that physical collocation is not practical for technical reasons or because of space limitations.”

The definition of technically feasible according to 51.5 states "Interconnection access to unbundled network elements, collocation, and other methods of achieving interconnection or access to unbundled network elements at a point in the network shall be deemed technically feasible absent technical or operational concerns that prevent the fulfillment of a request by a telecommunications carrier for such connection, access, or methods. A determination of technical feasibility does not include consideration of economic, accounting, billing, space or site concerns, except that space and site concerns may be considered in circumstances where there is no possibility of expanding the space available. The fact that an incumbent LEC must modify its facilities or equipment to respond to such a request does not determine whether satisfying such request is technically feasible. An incumbent LEC that claims that it cannot satisfy such request because of adverse network reliability impacts must prove to the state commission by clear and convincing evidence that such interconnection, access, or methods would result in specific and significant adverse network reliability impacts"

In it's application for waiver, BellSouth states, "The term 'space limitations encompasses two factors: first, ILECs are entitled to consider space already in use by the ILEC at the time the collocation request is made; second, ILECs are entitled to 'retain a limited amount of floor space for defined future uses'(Order, Par. 604)." Their citation refers only to retaining space for future use and not to being entitled to space already in use.

FCC order 98-188 paragraph 142 states: "We also ask commenters to address whether we can and should require incumbent LEC's to remove obsolete equipment and non-critical offices in central offices to increase the amount of space available for collocation."

OPINION: BellSouth assumptions were verified to the documentation referenced above.

No citation could be found relating to not having to reorganize the central office to accommodate except for the inquiry in Order 98-188 asking for an opinion on removing obsolete equipment and non-critical offices. CFR 51.321 requires physical collocation as long as it is technically feasible. And, the definition of technically feasible specifically states that an incumbent LEC must modify its facilities or equipment to respond to a request as long as it does not impact network reliability. Moving equipment could be costly, would involve cabling and power difficulties and does have the potential of losing service for the customers. Moving office furniture and fixed configuration furniture does not involve the same costs or risks and should be considered if the furniture is not in a location that is currently part of a footprint for growth of equipment line ups. At the exit conference, a company representative commented that the company generally tries not to put switch fixed configuration furniture in a footprint because it is intimately

related to the processor area of the switch.

If the company is required to remodel existing facilities, a determination needs to be made of who would be required to pay for the changes.

Security measures are still being addressed by the FCC.

AUDIT DISCLOSURE NO. 2**SUBJECT: WORK STATIONS AND ADMINISTRATIVE SPACE WITHIN THE CENTRAL OFFICE SWITCH AND CIRCUIT (TOLL) AREAS**

STATEMENT OF FACT: In its space assessment worksheet, the company has identified areas that are for circuit (toll) equipment and areas for switch equipment. Within these areas are fixed configuration furniture which contains monitors to test equipment. In addition, there are several desks, files and printers contained within the floor space.

The floor plans for these spaces that include the footprints for the future growth of families of equipment, often show these areas being replaced by equipment.

In the time between the first tour of Golden Glades and Palm Beach Gardens and the most recent tour, much of this furniture had been moved and rearranged as lines of equipment were installed.

OPINION: Although the layout of the monitors and administrative spaces within the circuit and switch areas does not always appear to be efficient, it should not be an issue if there is an existing footprint in that area for future equipment. If the forecast for the footprint is reasonable, then the furniture will be moved and sometimes consolidated. If the area is large enough, meets the other requirements in disclosure 1, and does not involve footprints for equipment line ups, it will be discussed in the disclosure that proposes potential areas for collocation.

AUDIT DISCLOSURE NO. 3**SUBJECT: SPACE ASSESSMENT WORKSHEET**

STATEMENT OF FACT: In its petition for waiver, BellSouth indicates that a certain number of feet in the facility is "reserved for defined future use essential for BellSouth to meet the growing needs of its customers through the year 2000." This space agrees with Section D- Reserved Space on the Space Assessment Worksheet that was attached to the petition.

The Federal Communications Commission Rules, 47 CFR Chapter 1, section 51.323 (f) (4) states "an incumbent LEC may retain a limited amount of floor space for its own specific future uses, provided, however, that the incumbent LEC may not reserve space for future use on terms more favorable than those that apply to other telecommunications carriers seeking to reserve collocation space for their own use."

Collocation applications do not indicate the time frame that the room will be filled and therefore, there is no way to determine from the documentation how much space the collocators are reserving for future use.

Only one of the six offices reviewed in this proceeding has physical collocation. The two collocators currently residing in these spaces were asked to provide detail about when the collocation space will be filled. Only one responded. The company currently has only one bay in a room that would hold six. It expects to fill the bays within two years.

BellSouth employees have indicated that it takes three years from the time a plan for an addition is initiated for a building addition to the time it is actually completed. A schedule was provided to show that a recent addition in North Florida was initialized in December of 1995 and construction was completed in December of 1998 or 36 months. Another building addition was planned in July of 1996 and construction was completed October 1998 or 28 months. The only dates that could be documented were the dates the budget was approved and when the buildings were completed. The process took 20 months and 13 months for the two additions respectively. No documentation was provided to show when the planning process began. Additions in South Florida are expected to take longer because of longer permitting time since Hurricane Andrew.

OPINION: Although the petition states that the reserved space is to be used by the year 2000, review of the maps of future space and documentation provided by BellSouth regarding intended use of the space indicate that some of the space does not have any forecasted use by the year 2000 and sometimes not even by 2001.

Many times, however, the spaces are in a line of bays which would not be conducive for physical collocation and are being reserved because of the principle of families of equipment. See disclosure no. 1 for a discussion of the need for families of equipment to be together.

According to the rule, BellSouth can reserve as much space as its collocators. We were unable to determine how much space the two other collocators are reserving.

Since it takes three years to get a building addition, allowing only two years of growth, could put BellSouth in a position of not being able to add capacity in time to meet the needs of its customers.

Large spaces that are for forecasted periods beyond two years are described in other disclosures to this report.

AUDIT DISCLOSURE NO. 4**SUBJECT: OBSOLETE EQUIPMENT**

STATEMENT OF FACT: The company was requested to provide information on any equipment that would be changed out for new equipment that might have less space requirements.

In the Boca Raton office, an e-net conversion is forecasted which will free up 12 switch bays. Since the switch manufacturer handles the layout of the bays, BellSouth was unable to tell us where the bay would be vacated or if the space would be a contiguous space.

BellSouth's position is that the equipment it has is currently functioning and that it should not have to replace equipment with smaller, more efficient equipment because that would require an additional expenditure.

FCC order 98-188 paragraph 142 states: "We also ask commenters to address whether we can and should require incumbent LEC's to remove obsolete equipment and non-critical offices in central offices to increase the amount of space available for collocation."

BellSouth has retired 13 circuit bays and 8 switch bays in Lake Mary over the last three years; 2 circuit bays and 14 switch bays in Daytona Port Orange; 8 circuit bays in Boca Teeca, and 5 circuit and 18 switch bays in West Palm Beach Gardens. The company response to request 43 states that the information for North Dade Golden Glades and Miami Palmetto will be provided as soon as possible. It was not received.

OPINION: Although there is nothing in the rules that would require BellSouth to replace its equipment, it should be noted that if BellSouth were making a decision on whether or not to make a building addition, BellSouth may find it more economical to replace equipment with more efficient equipment and thus free up bays.

This was probably what happened when BellSouth petitioned the FCC in 1993 for waivers. At that time, it only showed future growth of 2100 square feet for Glades and 1000 for West Palm Beach Gardens. The new petitions ask for 4796 in Glades and 3544 in Gardens. (See order PSC-99-0060-FOF-TP p. 9-10)

AUDIT DISCLOSURE NO. 5

**SUBJECT: BELLSOUTH COLLOCATION HANDBOOK
 VERSION 7.1.2, DATED January 2, 1999
 SPACE ENCLOSURE OPTIONS**

STATEMENT OF FACTS: The collocation handbook dated January 2, 1999 describes "BellSouth's collocation offerings, providing general information regarding the terms and conditions, ordering process, provisioning and maintenance of BellSouth's Collocation Offerings."

Section 2 defines physical collocation and states that "Physical Collocation arrangements will be placed in floor space separated from BST equipment." "When space permits, BellSouth will construct a common area for all collocations, including separate ingress/egress where feasible." "Within the collocation common area, collocation arrangements will be individually placed in either enclosed or non-enclosed space." The book also states that under certain conditions a collocator may construct power plant facilities but these must be enclosed in a fire rated wall.

Section 3 states that "Physical collocation space is assigned based on the customer's request, where space permits, with the physical collocation equipment arrangements placed in floor space separated from BellSouth equipment."

Section 3.6 addresses enclosure options. Section 3.6.1 says that BellSouth will make available a 100 square foot minimum enclosure with 50 square foot increments. When a collocator requests more than 100 square feet, BellSouth will try to use contiguous space but if contiguous space is not available, the collocator has the option of two separate enclosures and the purchase of connection through BellSouth cross-connects.

Section 3.6.2 addresses non-enclosed space within the BellSouth "common area". There is no minimum square footage requirement for non-enclosed collocation space, permitting the collocator to use space in increments less than 100 square feet.

The company representative states that the 100 square foot minimum is open for negotiation in the agreement process. However, the company claims to have signed agreements with all existing carriers requiring a minimum of 100 square feet.

OPINION: In disclosures in this audit, space of less than 100 square feet are discussed. Based on BellSouth's existing contracts, these spaces would not meet the minimum size requirement. If contracts with new carriers are made or if contracts are renegotiated, these spaces would need to be addressed to determine if they met other collocation requirements.

AUDIT DISCLOSURE NO. 6**SUBJECT: REVIEW OF POTENTIAL SPACE AREAS 1,2,3, 4 AND 10 IN THE PALMETTO CENTRAL OFFICE**

STATEMENT OF FACTS: Several areas were looked at as possible collocation areas. A discussion of the reasons these areas were not considered possible areas follows:

Areas 1 on the map encompass spaces where there are empty bays available.

Area 2 on the map is an open space with over head cable congestion.

Area 3 is reserved for future DSX-1 growth to try to create a long contiguous line up.

Area 4 has plug in units stored here. The company plans to build an enclosed plug in area to meet fire code requirements.

Area 10 is a corridor from one of the entrances of the building that is approximately 60' by 14'. At the walk-through, the company said that the area includes the main fire aisle for the office and the remaining area would be 60' by 10'. The remaining area is reserved in part for future switch and future circuit growth. There are no footprints for this area and no forecast at this time. Part of the ground plain is isolated and part integrated. Also the area is broken up (as can be seen on the map) near the air return.

OPINION: The spaces in area 1 are scattered and do not appear to leave enough space for physical collocation. (See Disclosure 1 for families of equipment.)

Area 2 is one line up and is reserved because of overhead cable congestion.

In area 3, the company is following the concept of families of equipment. It appears that there are 24 bays reserved along this line up. We do not have the dimensions of this line up, but it is only one bay wide, and it appears that after fire aisles and walls the space would be narrow. (See Disclosure 1 for the concept of families of equipment.) We cannot tell the history of the DSX-1 bay growth from the information received. The company provided information, dated 9/98, which forecasts one bay in 1999 and one bay in 2000.

Area 4 - The company responded that it intends to build a fire rated room in area 4 to meet the code that requires plug ins to be in a fire rated area (Disclosure 1, Item 2).

Area 10- Although area 10 appears to have a large empty space and there are no footprints or forecasts for this area at this time, there are reasons that may preclude it

from being viable from collocation. The company says that "Any collocator construction would require fire rated walls and enclosures with fire rated exit corridor to the outside. Building this area would force a major air conditioning redesign. ... The main air handling unit return air grille for the southern end of the building would be isolated by the construction. This means a major project providing return air duct capable of serving all air conditioning requirements."

EXHIBIT RKY-2
(Miami Palmetto)
Document No. 04607-99
Pages 18-19

RETAINED UNDER CONFIDENTIAL COVER PENDING RULING
ON BELLSOUTH'S APRIL 30, 1999 REQUEST FOR CONFIDENTIAL TREATMENT

AUDIT DISCLOSURE NO. 7**SUBJECT: REVIEW OF POTENTIAL SPACE AREAS 5 AND 6 IN THE PALMETTO CENTRAL OFFICE.**

STATEMENT OF FACTS: Space availability of the areas discussed depends upon use of areas of less than 100 square feet (Disclosure 5), and the contention that BellSouth is not required to move equipment (Disclosure 1).

Area 5 is a conference room that is enclosed in a fire rated wall. It is 413 square feet according to the map. Our measurements show 18' by 20'1" or approximately 360 square feet. This office is considered the managers office, conference room and training room. The manager also has a desk in the main distribution frame area.

In our walk-through, the company representative stated that BellSouth just discovered that the office was having an air handling problem and that the unit was running at 89% capacity. The company stated that it would have to solve the problem quickly. One of the alternatives proposed was to put an entire new air handling unit in the conference room (Area 5). Subsequently, the company found out that the preliminary findings were in error and that that ductwork and damper problems were causing the unit to run at a higher RPM. The unit now is running at only 56%. The company states that the short term options to solve this problem will be some simple duct modifications and damper maintenance.

Therefore, it does not appear that the conference room will be needed for the air handling unit at this time. However, the company did say that it planned to "...eventually replace the existing unit with a dual fan unit when funding comes available in the next two years..." and that using the conference room is still an option.

Area 6 is the maintenance area for the 5ESS switch. This is enclosed because there are fans on the switch that have a high noise level. The company says the manufacturers specifications recommend putting the maintenance in an enclosed area. The size of the room is 38'7" by 20' and has fire rated walls. We asked the company if this area could be condensed. BellSouth said it could probably reconfigure the room to work, but that it would probably be very expensive. Also as discussed in Audit Disclosure 1, Item 7, the company responses indicate its belief that the FCC rules state explicitly that relocation and renovations are not required to provide collocation space. The discussion on this issue can be found in that disclosure.

OPINION: Area 5 is already enclosed in a fire rated wall and the ground plain is not isolated (See Disclosure 1). The manager already has space elsewhere.

Also, although the area is not near the common area, there is also another collocator in

this office that is not contiguous to the common area and it does not have to be according to the BellSouth Collocation Handbook (See Disclosure 5). The collocator would have to be escorted to and from the space unless the company can get permitting to have a door on the front of the building.

Area 6 is 38'7" by 20' or approximately 762 square feet. Condensing the maintenance area, could leave room for a collocator. Following BellSouth's handbook, the minimum space would be 100 Square feet (See Disclosure 5). It would mean putting up a fire rated wall and also having to escort the collocator to their space, unless permits can be obtained for a door on the front of the building. This is not an isolated ground plain area (See Disclosure 1). After the walk-through, the company said it is already condensing the area "...to serve relocations necessary to meet air-conditioning capacity problem." However, the problem was solved without putting in a new unit. No documentation was provided for any other work. Also, as discussed in Audit Disclosure 1, item 7, the company believes that the FCC rules state explicitly that relocation and renovations are not required to provide collocation space.

AUDIT DISCLOSURE NO. 8**SUBJECT: REVIEW OF POTENTIAL SPACE IN THE PALMETTO CENTRAL
OFFICE AREAS 7, 8 AND 9**

STATEMENT OF FACTS: Space availability of the areas discussed depends upon use of areas of less than 100 square feet (Disclosure 5), and the contention that BellSouth is not required to move equipment (Disclosure 1).

Area 7 is reserved for the continuation of the Titan 5500 for years beyond 2000. There are foot prints for two lineups on the map. However, on the map given to us prior to our walk-through there were foot prints for four lineups. This area is considered an integrated ground plain. The size of the area is approximately 20' by 30' or 600 square feet. The map attached says 646 square feet. The company says the Titan 5500 grows about 19 bays a year and the first line up is for 2001 and the second for 2002. The history of Titan growth is discussed in Area 8 below.

Area 8 is the initial Titan 5500 installation of 19 bays and associated equipment called the BDFB. There is a current work order for this project. According to the list of circuit projects supplied to us by BellSouth, it appears that in 1998 six bays were used for DACS (which is the technology before Titan.) The company has authorized and issued a work order for 19 bays for the initial Titan 5500 for 1999 for this Area 8.

Area 9 is reserved for switch growth and/or Titan 5500 growth maintaining the 7 foot ground plain restriction between integrated and isolated ground. (Switch is isolated and circuit integrated - See Disclosure 1)

Area 9a is projected to be used for switch growth for 1999. Areas 9b, c, and d are reserved for future switch requirements for 1999, 2000, and 2001 based on historical growth of 8 cabinets per year. The historical data is based on information from the years 96, 97, 98 and forecasted 99.

Areas 9.c. and d. Can also be used for future Titan 5500 growth if necessary, or for a grounding aisle if the current designated grounding aisle is used for more Titans.

OPINION: The company authorized a work order for area 8 for the installation of 19 bays for the Titan 5500 in 1999. There will still be 12 empty bays in area 8 to be used in 2000. The company has reserved two line ups (24 bays) in area 7 for Titan growth for 2001 and 2002. The company also has the option of using two line ups from area 9 for future Titan 5500 growth if necessary. As stated above, there is no history for the Titan 5500 growth for this office because this is the initial installation. There is an authorized work order for 19 bays for 1999. If this trend continues, then in 2000 19 bays will be used (12 from Area 8, and 7 from Area 7, leaving 17 bays in Area 7 for 2001. The other

2 bays would have to be taken from Area 9.

Area 7 is 648 square foot. If two line ups were used for Titan 5500 growth as stated above, then the dimensions of the space left is 6' by 30'4". Removing 4' for a fire aisle around BellSouth equipment would change this dimension to 4' by 26'4" less one foot for wall construction. This area is an integrated ground plain. The company said it needs this space, in addition to the space noted in Disclosure 7, for the plug in storage area that it is planning to construct. BellSouth also said the construction for a collocater would "...require fire rated construction through the overhead racking and duct." Also, there is a door to the common area in this space as illustrated on the map attached.

Area 9 -Historical data provided by the company shows that the company uses 8 cabinets a year for switch equipment. Eight bays are available in 9a for 1999, 8 bays in 9b for 2000, 6 bays in 9b for 2001, 2 bays in 9c for 2001, and 8 in 9c for 2002. This leaves only few feet in an isolated ground plain to work with. (See Disclosure 1 for discussion on isolated ground plain.) Even if walls or a cage were constructed, there would not be enough room for one line up after aisle requirements.

AUDIT DISCLOSURE NO. 9**SUBJECT: REVIEW OF POTENTIAL SPACE IN THE PALMETTO CENTRAL
OFFICE AREA 11**

STATEMENT OF FACTS: Space availability of the areas discussed depends upon use of areas of less than 100 square feet (Disclosure 5), and the contention that BellSouth is not required to move equipment (Disclosure 1).

Area 11 is the existing receiving and uncrating area. It is 316 square feet. We did not find out if this is fire rated, but it is in an enclosed space with doors.

OPINION: Area 11 is an enclosed room for receiving and uncrating of 316 square feet. Although it is not contiguous with the common area, it is adjacent to one of the collocators in the office now. As stated above in area 5, the collocator does not have to be adjacent to the common area. If 100 square foot were used, (the minimum per BellSouth's collocation handbook, Disclosure 5) the building's exit would still be available. The alternative for receiving and uncrating could be area 10, which is a floor space of 60' by 14". This includes a four foot fire aisle. There are no foot prints for future use, nor forecasts for this area. Area 10 leads to an exit or entrance in the building where material might be able to be received. It would be necessary to find out if the entrance is large enough to handle delivery of equipment. At the exit conference, a company representative stated that it would be necessary to put a fire rated wall around area 10 if it were used for uncrating. The wall may create an air handler problem. See Disclosure 6 for discussion of Area 10.

AUDIT DISCLOSURE NO. 10**SUBJECT: REVIEW OF POTENTIAL SPACE IN THE PALMETTO CENTRAL OFFICE AREAS 12 AND 13**

STATEMENT OF FACTS: Space availability of the areas discussed depends upon use of areas of less than 100 square feet (Disclosure 5), and the contention that BellSouth is not required to move equipment (Disclosure 1).

Area 12 is 467 square feet and is designated for future circuit areas. This area is on an integrated ground plain.

Areas 12a and b are reserved for future DSX-3 growth. The company says it is important to provide "...as large a contiguous area for this type of equipment to eliminate the need for tie panels and long jumper connections." We tried to find out the costs involved in having to construct extra items if a family of equipment weren't kept together, but the company said it was not possible to determine. We cannot determine the history of the DSX-3 bay growth from the information received. The company provided information, dated 9/98, forecasts one bay in 1999 and one bay in 2000.

Areas 12 c and d have been designated for future circuit growth "...in a seven foot environment to relieve overhead rack congestion due to DBFB's (type of equipment) installed side by side."

The company says areas 12 e and f "...would probably not be used as the equipment directly east of the area is switch equipment " and a 7 foot ground plain would be necessary. (See Disclosure 1)

Area 13 is 402 square feet and is designated for future circuit equipment. This area is part of an integrated ground plain. Area 13a has no present plans. According to our walk through, there were maintenance stations in area 13 b and we did not see any footprints for future use under the maintenance stations.

OPINION: Based on the forecast, Area 12 will not be occupied by 2001. Because of aisle restrictions, the area would be small, and the issue of security would have to be addressed .

Area 13 is 402 square feet and in an integrated ground plain. During our walk through we only saw one line up that was reserved, but no forecast was provided. There is a maintenance area in area 13b. Because of aisle restrictions, the area would be small, and the issue of security would have to be addressed .

AUDIT DISCLOSURE NO. 11**SUBJECT: DETAIL OF BELLSOUTH COMMON AREA
DETAIL OF PRESENT COLLOCATOR SPACE.**

STATEMENT OF FACTS: BellSouth now has two collocators installing bays in the Palmetto Central Office (one has 100 square feet and the other has 200 square feet). The third collocator's space is being built (200 square feet) and a fourth (100 square feet) is in dispute. These are areas 14, 15, 17 and 18 on the map.

The BellSouth common area for collocation is area 16 on the map and measures 20'2" by 9'2" which is approximately 183 square feet. A drawing of the common area is attached. This drawing is not to scale.

There are two line ups started in the common area. One line up has four DSO termination bays. Two bays are serving one collocator, and the other two are serving one collocator each. The size of these bays are 2'-1/4" wide and a depth of 15". These four are 9' long. There is another 11'2" for growth in this line up. The company representative stated that because of the door at the end of the aisle BellSouth could only put in two more DSO bays in this line up.

The second line up has four bays, only one bay is filled with DSX1 and DSX3 termination equipment. The rest are empty. The company says the capacity of this bay is five shelves of DSX1 and DSX3 equipment. Right now there are three shelves with terminations which leaves two shelves on this bay. The dimensions of these DSX3 bays are 2' 11-1/2" wide with a depth of 15 inches. The length of the present four bays is 11 and 3/4 feet. This leaves approximately nine feet to continue the line up. The company says it could add three DSX1-DSX-3 bays or four DSO bays to this line up.

The collocator who has 200 square feet has 14 bays. The collocator who has 100 square feet has 6 bays. We asked the collocator who has six bays how many years growth it had. The collocator responded that "... it expected to populate all six bays in the Palmetto office within two years." The collocator with 200 square feet did not respond to our request.

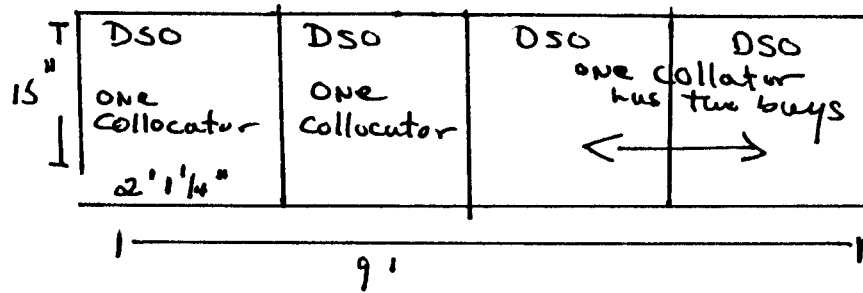
Common Area
Palmetto C.O.

Door
to C.O.

Door to 200 Sq ft.
Collocator
14 bays

Company states that once a collocator
goes into one bay, No other collocator or
Anything else will go in that bay

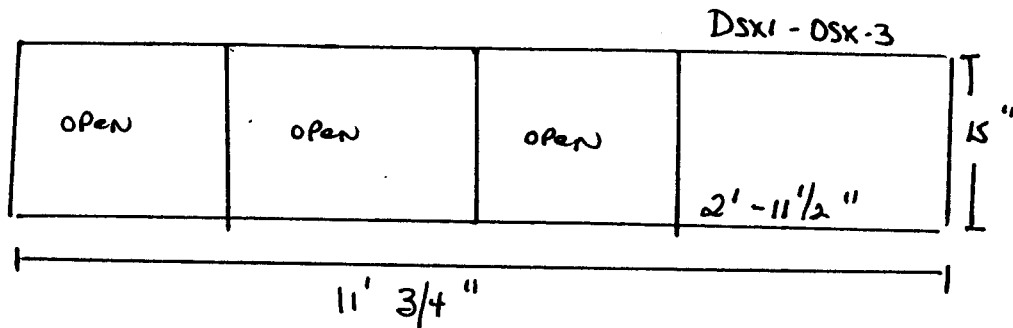
Company Says
Room to add
only 2 DSO Bays
because of door



Outside
Door

9' 2"

Company Says
Room to add
3 DSX-1-DSX-3 bays size
or 4 DSO bay's size



Open space to
be filled with
100 sq ft. Collocator
20' 2"

Door to 100 sq ft.
Collocator
6 bays

NOT TO SCALE

AUDIT DISCLOSURE NO. 12**SUBJECT: FORECAST**

STATEMENT OF FACT: There are two primary forecasts for each central office, switch and circuit. Access line growth is the primary driver of the switch forecast and the trunk forecast is the primary driver of the circuit equipment.

Regression analyses were run in order to determine the reasonableness of the access line forecasts. To perform the analyses, historical data from 1993 to 1998, city and county population information from 1993 to 1998, and secondary line growth statistics were used. In addition, the projected growth of network access lines was compared to the historical growth for the period 1988 to 1998.

Due to time constraints, the same type of analyses of the trunk forecast were not performed. The forecast is generated by a BellCore software package. The manual for the software was reviewed.

For each office, the area with large empty spaces was identified as either circuit or switch. Once the area was identified, historical information was obtained on how many bays were added for two years or more. The historical growth was compared to the forecast. The last two years were used because of the impact of the Internet, long distance carriers entering the market and data transmission technologies.

OPINION: The projected growth rates of total network access lines do not significantly differ from historical trends and represent reasonable projections.

The BellCore programs used to derive trunk traffic are based upon widely accepted statistical methods and procedures.

ATTACHMENT 1

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #23
Dated: February 8, 1999
Page 1 of 2

REQUEST: RE: Grounding

- 1. Please explain why you need two different ground planes in a central office.**
- 2. Provide your reasons for not wanting to put a physical collocator in the middle of an isolated ground plan with and without a wall. Provide any documentation that shows the potential problems.**
- 3. Provide company TR regarding the ground planes as we discussed at our meeting on Feb. 5, 1999. Or other information you have.**

RESPONSE:

- 1. Digital switching equipment operates very constrained circuit design using micro amps of electricity with ground return. Stray ground currents induced by magnetic fields caused by electric motors, lighting, variations in commercial electric service, stray janitorial motors such as buffers and vacuum cleaners, static electric discharges built up by humidity and temperature variations, can cause service impairments or loss of service. Isolating the digital switch ground provides a measure of service protection against accidental loss of service.**

Toll (circuit) equipment is not this sensitive to stray ground currents. However, toll equipment can generate its own noise. The noise can be transmitted in the grounding system much like the ignition noise in a car speaker system. The ground plane separation ensures this noise will not affect digital service.

Finally, separating the ground planes by physical barriers or adequate aisles ensures accidental contact will not transmit current between the ground planes. Different ground planes will have voltage (potential difference) by the laws of electricity. By those same laws, current will flow when the two planes are brought into contact. This current will cause the same stray current disruptions described above. This could lead to life threatening situations if the potential is large enough.

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #23
Dated: February 8, 1999
Page 2 of 2

RESPONSE (cont'd):

- 2. For all the above reasons, an integrated ground plane collocator would not be a preferable tenant in an isolated ground plane environment with or without a wall. The basic problem is that even with a wall the integrated ground plane collocator requires complete electrical separation in the overhead environment. This means none of his racking, electrical conduits, air conditioning ducts, lights, controls, can have metallic contact with any of the items in the isolated ground plane. Second, if the code officials insist on the tenant occupancy rule, BST must construct a fire rated wall through all of the overhead environment to meet this code. This wall structure can not make metal to metal contact with any of the isolated ground plane.**

- 3. At the February 5, 1999 meeting, BellSouth and Staff discussed TR-NWT-000295, titled *Isolated Ground Planes: Definition and Application to Telephone Central Offices*, Issue 2, dated July 1992. This document is copyrighted by Bellcore. The cost to purchase a copy for Staff's use is over \$250.00. BellSouth will make this document available for Staff's review at its Brentwood office in Miami. To review the document, please contact John MacDonald at 305-622-3230.**

RESPONSE PROVIDED BY: J. D. Bloomer

ATTACHMENT 2

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #22
Dated: February 8, 1999
Page 1 of 3

REQUEST: RE: Families of Equipment

1. Explain what you mean by families of equipment.
2. What are your reasons for keeping switch equipment in their own line ups?
3. What are your reasons for keeping circuit equipment in their own line ups?
4. What are your reasons for keeping power equipment separate?
5. Provide reasons for any other family of equipment.
6. Provide documents for any of the above where available, i.e. TR's etc.

RESPONSE: 1. Equipment comes in four general groups, switch, power, circuit (toll), and frame. Each group contains equipment types used for specific purpose. The equipment comes in fixed configurations detailed by the manufacturers. These types are called families. The equipment vendors guard the detailed layout information as highly proprietary.

Examples of families follow:

A switch processor layout is a family.

A power plant control bay and discharge bays is a family.

A light guide terminating frame is a family of separate terminating bays.

A Digital Crossconnect System (DSX, DACS) is a family

A DSCs complex for Subscribe Line Carrier is a family.

2. Switch equipment is kept in its own area for the following reasons:
The switch equipment is physically different in width and depth from other types. Mixing different depth equipment in the same aisles creates wasted space.

Switch equipment is considerably hotter, requires different air conditioning filters, aisle spacing, and cable rack design per manufacturer specifications.

Switch equipment is an isolated ground plane.

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #22
Dated: February 8, 1999
Page 2 of 3

RESPONSE (cont'd):

Switch equipment has detailed internal cabling distances used by vendor engineering forces to maximize performance. Basically, switch equipment cables to other pieces of switch equipment NOT to other groups of equipment.

3. Toll equipment is kept in its own area for the following reasons: Toll equipment varies widely in width and some families vary in depth as well. Mixing the various widths and depths makes lineup configurations space inefficient. This makes air-conditioning and cabling design difficult as well.

Toll equipment is somewhat cooler than switching equipment, but hotter than frame and power. This means we can save expense dollars by properly sizing air conditioning to match the load.

Toll equipment is integrated ground plane. This means it shares common ground with all building components, frame, and power equipment.

Toll equipment grows in configurations limited by its family membership. Various families can exist side by side as long as each can grow the manufacturer recommended layout maximum.

Toll equipment generally cables to other types of toll equipment and the main frame. Growth in one type (D4, SLC, or multiplexers) leads to growth in DSX, Fiber Optic Terminals, or DACS families as the functions are interlocking.

4. Power equipment is in its own area for the following reasons: Power equipment is defined as a hazardous occupancy by the NFPA, National Fire Protection Act, due to the batteries and resultant explosive fumes. One hour rated walls enclosing the space meet the code. BellSouth attempts to follow this code in all new buildings, and retrofits all older buildings as soon as possible. Separate air conditioning and ventilation systems are also constructed to isolate the space.

Power equipment aisles are dictated by the size of components and voltage contained in them. These aisles are significantly different from toll/switch requirements with significantly greater hazards.

**BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #22
Dated: February 8, 1999
Page 3 of 3**

RESPONSE (cont'd):

- 5. The standby engine requires its own space for the following reasons:**

The engine and its diesel fuel are rated a hazardous occupancy. One hour and in some cases 2 hour walls are required by NFPA and the local building code to isolate the hazard.

The engine is extremely noisy. Running the engine on a regular basis renders the adjoining spaces unusable.

Air intake and exhaust requirements create drafts and smells rendering adjoining open spaces unusable.

The adjoining space is impossible to air condition effectively with the large intake grilles necessary to support the engine.

- 6. The above detail in the floor-space layout information is contained on the Web site supported by the BELLCORE organization. This paid subscription site is available to all Internet users for a fee. The information is not proprietary to the various manufacturers providing their details.**

RESPONSE PROVIDED BY: J. D. Bloomer

DOCKET NO.: 981011-TL: Petitions for temporary waiver of physical collocation requirements set forth in the 1996 Telecommunications Act and the FCC's First Report and Order, for the West Palm Beach Gardens Central Office, by BellSouth Telecommunications, Inc.

WITNESS: Direct Testimony Of Ruth K. Young, Appearing On Behalf Of Staff

EXHIBIT: RKY-3

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Part 3 of 4
DN 04607-99



FLORIDA PUBLIC SERVICE COMMISSION

*DIVISION OF AUDITING AND FINANCIAL ANALYSIS
BUREAU OF AUDITING*

Miami District Office

BELLSOUTH TELECOMMUNICATIONS, INC.

INVESTIGATION OF COLLOCATION SPACE WAIVERS

WEST PALM BEACH GARDENS OFFICE

DOCKET NO. 981011-TL
AUDIT CONTROL NO. 98-334-4-4

March 19, 1999

Ruth K. Young, Audit Manager

Gabriela Leon, Audit Staff

Tarik Noriega, Audit Staff

Paul Stallcup, Audit Staff

Kathy L. Welch, Regulatory Analyst
Supervisor

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TABLE OF CONTENTS

	PAGE
AUDIT'S PURPOSE	1
SUMMARY OF SIGNIFICANT PROCEDURES	2
AUDIT DISCLOSURE 1	3
AUDIT DISCLOSURE 2	9
AUDIT DISCLOSURE 3	10
AUDIT DISCLOSURE 4	12
AUDIT DISCLOSURE 5	13
AUDIT DISCLOSURE 6	14
AUDIT DISCLOSURE 7	17
AUDIT DISCLOSURE 8	18
AUDIT DISCLOSURE 9	19
AUDIT DISCLOSURE 10	20
AUDIT DISCLOSURE 11	21
AUDIT DISCLOSURE 12	22
ATTACHMENT 1	23
ATTACHMENT 2	25

**DIVISION OF AUDITING AND FINANCIAL ANALYSIS
AUDITOR'S REPORT**

MARCH 19, 1999

**TO: FLORIDA PUBLIC SERVICE COMMISSION AND OTHER INTERESTED
PARTIES**

We have applied the procedures described later in this report to determine the availability of space for collocation in the central office for which a waiver was requested.

This is an internal accounting report prepared after performing a limited scope audit. Accordingly, this report should not be relied upon for any purpose except to assist the Commission staff in the performance of their duties. Substantial additional work would have to be performed to satisfy generally accepted auditing standards and produce audited financial statements for public use.

In our opinion, the waiver referred to above presents fairly, in all material respects, observations made while touring the central office. The attached findings discuss all differences and other matters which were noted during our examination.

SUMMARY OF SIGNIFICANT PROCEDURES

Our audit was performed by examining the company's waiver and documentation that supports the assumptions which we believe are sufficient to base our opinion. Our examination did not entail a complete review of all financial transactions of the company. Our more important audit procedures are summarized below.

Read orders and rules related to collocation.

Read production of documents and interrogatories.

Interviewed switch, circuit, and common system planners for the offices involved.

Interviewed the geographical forecasters.

Toured and randomly measured the central offices.

Obtained maps showing current and future use space and compared to the applications for waiver.

Read company procedures.

Obtained supporting documents for company assumptions.

Compared the company's access line forecast to national trends. Ran models and compared to the company's. Access lines are used to forecast switch growth.

Reviewed the methodology used in the Bellcore trunk forecasting program. Trunk forecasts are used in both circuit and switch forecasts.

Determined reasons why large spaces would or would not be good candidates for collocation.

The scope of the audit was limited because our review of tools and methodology, used to determine the number of bays forecast, was not completed due to time restrictions. However, as an alternate procedure, two to three years of historical growth were compared to current forecasts for spaces considered critical to the collocation decision.

AUDIT DISCLOSURE NO. 1**SUBJECT: SPACE PLANNING ASSUMPTIONS**

STATEMENT OF FACT: During our interviews of BellSouth staff and our tours of the central offices, staff identified several assumptions used by BellSouth in its space planning. These assumptions are used throughout this report, therefore, they are identified below. In addition, the documentation that these assumptions have been verified to is disclosed.

1. Seven foot aisles or a physical barrier are necessary between switch and any other equipment such as circuit (toll) equipment or power equipment. This is because when the central offices were originally designed, the decision was made to put switch equipment on an isolated ground plane to create an additional protective barrier from power interruptions or trouble. Circuit (toll) equipment is on an integrated ground plane. If a problem happens in the system and a technician is touching two types of equipment, one that has an integrated ground plane and one with an isolated ground plane they can be electrocuted and the equipment could be damaged. (See attachment 1 to this report for a more technical discussion of integrated and isolated ground planes.) Therefore, a requirement was instituted that seven feet (based on the width of a person's arm span) be placed between circuit and toll equipment. A wall or a cage would also keep a person from touching the two types of equipment. This seven foot barrier was violated by BellSouth in two of the six central offices reviewed (Golden Glades and Boca Teeca). The company claims that other grounding precautions were taken to attempt to solve this problem.

The only reference for this requirement was found in a Bellcore publication. It states:

"All integrated ground plane conductive members located within 6 feet of the isolated ground plane shall be bonded to its MGB to minimize the surge potential difference between nearby members of the two ground planes."

No verification could be made to the National Electric Code but the potential risk was verified with engineers outside of the Bell system.

2. Plug in units are required to be in a room with fire rated walls or in fire proof cabinets that are grounded and connected to the wall. BellSouth provided the Life Safety Code Section 6-4.1.1 that states:

"Protection from any area having a degree of hazard greater than that normal to the general occupancy of the building or structure shall be provided as follows:

(a) Enclose the area with a fire barrier having a 1-hour fire resistance rating in accordance with section 6-1 without windows.”

The company claims that because the circuit packs have cardboard liners, they have a high degree of risk.

Since the company is currently violating this rule in several offices, it is necessary for the company to allocate space to correct the problem before space can be considered for collocation.

3. A four foot fire aisle has to exist and be connected to two exit doors. This was verified to the Life Safety Code Handbook section 5.5-1.2 and the Standard Building Code Table 1004.

4. It is necessary to keep certain families of equipment together and therefore, the floor plans include space allocated within each type of equipment for growth in that type of equipment. The reason provided by a company representative was because over time, growth exceeded the initial space allocated for certain types of equipment. This reservation of space is called a footprint. The reason the company believes that families of equipment need to stay together is because some of the equipment has 50 foot cabling requirements, some have processors that require the other equipment to be in adjacent bays, and some would require additional cost for repeaters, cabling, and connections if they were not near other equipment. The company's reasons for needing to keep families of equipment together can be found in attachment 2.

The company exceeded the footprint for certain types of equipment in both the Daytona Port Orange office and the Boca Teeca office. The company was asked to provide the additional costs incurred to put equipment in a new line up. In answer to document request 32, the company stated that it was unable to provide this information. At the exit conference, a company representative stated that they were unable to provide because detailed equipment engineering for specific locations on individual jobs does not provide optional costs or optional locations. Therefore, the costs attributable to families of equipment being diversely located in a central office are not readily available.

Staff also observed the problem in Daytona because a bridge was created to hold the wires that connected the equipment. Because footprints have been established within the line up for each type of equipment, some equipment that goes in these groups may not be planned to be installed within the two years that are covered in this application. However, a series of bays that are empty within a series of equipment would not usually be feasible for physical collocation anyway because the space would not be large enough.

5. At least a four foot space must be maintained in front of an air handler vent and an

aisle should be maintained perpendicular to the unit for air to flow. How much space is needed is determined based on A.S.H.R.A.E. Engineering Standards which were outside the area of our expertise.

6. Physical collocation needs to be in room with fire rated walls with an exit door to the outside of the building. If the exit is not to the outside of the building or to a corridor that can be blocked from the BellSouth equipment area, an escort would be required to get access to the collocation space.

The Federal Communications Commission 47 CFR Chapter 1 51.323 (I) states "An incumbent LEC may require reasonable security arrangements to separate a collocating telecommunications carrier's space from the incumbent LEC's facilities."

FCC order 96-325 paragraph 598 states "we will continue to permit LEC's to require reasonable security arrangements to separate an entrants collocation space from the incumbents LEC facility." However, in order 98-188, they seek comment on whether incumbent LEC's should be allowed to require escorts for competitive LEC technicians (Paragraph 141).

In FCC order 98-188, paragraph 137 states "Given that space in incumbent LEC premises is limited, we tentatively conclude that we should require incumbent LEC's to offer collocation arrangements to both new entrants and any advanced services affiliate incumbent LECs establish that minimize the space needed by each competing provider in order to promote the deployment of advanced services to all Americans. Such alternative collocation arrangements include: (1) the use of shared collocation cages, within which multiple competing providers' equipment could be either openly accessible or locked within a secure cabinet; (2) the option to request collocation cages of any size without any minimum requirement, so that competing providers will not use any more space than is reasonably necessary for their needs; and (3) physical collocation that does not require the use of collocation cages ('cageless' collocation)."

However, BellSouth has submitted plans for hybrid walls within the cluster area (8 foot non-fire rated walls) in the Palmetto office and were turned down. Denials were reviewed and verified with the building and zoning department. If hybrid walls were denied within a fire rated room, it is not likely that cages would be approved.

Dade County uses the South Florida Building Code of 1994. It states in section 507.2 (a):

"In any building where rooms or spaces are occupied by separate tenants, not less than 1-hour fire-resistive construction shall be provided between tenants and between tenants and common areas.

The South Florida Building Code Chapter 12 puts telephone exchanges in Group G Division 2. The only exception that may apply to Group G, Division 2 is:

"(1) As otherwise permitted for the group of occupancy by Chapter 31 of this Code."

Boca Raton, West Palm Beach, Daytona and Orlando are covered under a different code, the Standard Building Code, which states in paragraph 507.2 a:

"(1) In any building where rooms or spaces are occupied by separate tenants, not less than one-hour fire-resistive construction shall be provided between tenants and between tenants and common areas except as provided below:"

The exceptions that may apply to Group G, Division 2 are:

"(3) EXCEPTION: Where all tenancies within a Fire Division are of Group G, Division 2 Occupancy, such space shall be exempt from the provisions of this Sub-section if one story in height and of Type III unprotected, IV, V unprotected.

(4) EXCEPTION: Fire resistive separation between a tenant and a mall area will not be required by this sub-paragraph where the space on both sides of such wall or partition is protected by an automatic sprinkler system or by a water curtain provided at the line of separation."

"(6) EXCEPTION: Group G, Division 2, clusters of offices less than 200 square feet served by a common reception area and internal corridor within the cluster area shall not require fire separation between offices and corridors common to the cluster."

According to BellSouth's answer to document request 32, BellSouth was concerned that the Florida code officials were requiring fire-rated separations, which result in more complex construction. Therefore, BellSouth asked Bellcore for help. BellCore obtained a letter from the Southern Building Code Congress International supporting its position. BellSouth has talked to several municipalities and believe that several will permit cages although none have been permitted at this time.

7. BellSouth contends that the FCC rules state explicitly that relocations and renovations are not required to provide collocation space.

When asked to provide the citation that supports its contention BellSouth cited CFR 51.321. The Federal Communications Commission 47 CFR Chapter 1 51.321 (e) states "An incumbent LEC shall not be required to provide for physical collocation of equipment necessary for interconnection or access to unbundled network elements at the incumbent LEC's premises if it demonstrates to the state commission that physical collocation is not practical for technical reasons or because of space limitations."

The definition of technically feasible according to 51.5 states "Interconnection access to unbundled network elements, collocation, and other methods of achieving interconnection or access to unbundled network elements at a point in the network shall be deemed technically feasible absent technical or operational concerns that prevent the fulfillment of a request by a telecommunications carrier for such connection, access, or methods. A determination of technical feasibility does not include consideration of economic, accounting, billing, space or site concerns, except that space and site concerns may be considered in circumstances where there is no possibility of expanding the space available. The fact that an incumbent LEC must modify its facilities or equipment to respond to such a request does not determine whether satisfying such request is technically feasible. An incumbent LEC that claims that it cannot satisfy such request because of adverse network reliability impacts must prove to the state commission by clear and convincing evidence that such interconnection, access, or methods would result in specific and significant adverse network reliability impacts"

In it's application for waiver, BellSouth states, "The term 'space limitations encompasses two factors: first, ILECs are entitled to consider space already in use by the ILEC at the time the collocation request is made; second, ILECs are entitled to 'retain a limited amount of floor space for defined future uses'(Order, Par. 604)." Their citation refers only to retaining space for future use and not to being entitled to space already in use.

FCC order 98-188 paragraph 142 states: "We also ask commenters to address whether we can and should require incumbent LEC's to remove obsolete equipment and non-critical offices in central offices to increase the amount of space available for collocation."

OPINION: BellSouth assumptions were verified to the documentation referenced above.

No citation could be found relating to not having to reorganize the central office to accommodate except for the inquiry in Order 98-188 asking for an opinion on removing obsolete equipment and non-critical offices. CFR 51.321 requires physical collocation as long as it is technically feasible. And, the definition of technically feasible specifically states that an incumbent LEC must modify its facilities or equipment to respond to a request as long as it does not impact network reliability. Moving equipment could be costly, would involve cabling and power difficulties and does have the potential of losing service for the customers. Moving office furniture and fixed configuration furniture does not involve the same costs or risks and should be considered if the furniture is not in a location that is currently part of a footprint for growth of equipment line ups. At the exit conference, a company representative commented that the company generally tries not to put switch fixed configuration furniture in a footprint because it is intimately

related to the processor area of the switch.

If the company is required to remodel existing facilities, a determination needs to be made of who would be required to pay for the changes.

Security measures are still being addressed by the FCC.

AUDIT DISCLOSURE NO. 2

SUBJECT: WORK STATIONS AND ADMINISTRATIVE SPACE WITHIN THE CENTRAL OFFICE SWITCH AND CIRCUIT (TOLL) AREAS

STATEMENT OF FACT: In its space assessment worksheet, the company has identified areas that are for circuit (toll) equipment and areas for switch equipment. Within these areas are fixed configuration furniture which contains monitors to test equipment. In addition, there are several desks, files and printers contained within the floor space.

The floor plans for these spaces that include the footprints for the future growth of families of equipment, often show these areas being replaced by equipment.

In the time between the first tour of Golden Glades and Palm Beach Gardens and the most recent tour, much of this furniture had been moved and rearranged as lines of equipment were installed.

OPINION: Although the layout of the monitors and administrative spaces within the circuit and switch areas does not always appear to be efficient, it should not be an issue if there is an existing footprint in that area for future equipment. If the forecast for the footprint is reasonable, then the furniture will be moved and sometimes consolidated. If the area is large enough, meets the other requirements in disclosure 1, and does not involve footprints for equipment line ups, it will be discussed in the disclosure that proposes potential areas for collocation.

AUDIT DISCLOSURE NO. 3**SUBJECT: SPACE ASSESSMENT WORKSHEET**

STATEMENT OF FACT: In its petition for waiver, BellSouth indicates that a certain number of feet in the facility is "reserved for defined future use essential for BellSouth to meet the growing needs of its customers through the year 2000." This space agrees with Section D- Reserved Space on the Space Assessment Worksheet that was attached to the petition.

The Federal Communications Commission Rules, 47 CFR Chapter 1, section 51.323 (f) (4) states "an incumbent LEC may retain a limited amount of floor space for its own specific future uses, provided, however, that the incumbent LEC may not reserve space for future use on terms more favorable than those that apply to other telecommunications carriers seeking to reserve collocation space for their own use."

Collocation applications do not indicate the time frame that the room will be filled and therefore, there is no way to determine from the documentation how much space the collocators are reserving for future use.

Only one of the six offices reviewed in this proceeding has physical collocation. The two collocators currently residing in these spaces were asked to provide detail about when the collocation space will be filled. Only one responded. The company currently has only one bay in a room that would hold six. It expects to fill the bays within two years.

BellSouth employees have indicated that it takes three years from the time a plan for an addition is initiated for a building addition to the time it is actually completed. A schedule was provided to show that a recent addition in North Florida was initialized in December of 1995 and construction was completed in December of 1998 or 36 months. Another building addition was planned in July of 1996 and construction was completed October 1998 or 28 months. The only dates that could be documented were the dates the budget was approved and when the buildings were completed. The process took 20 months and 13 months for the two additions respectively. No documentation was provided to show when the planning process began. Additions in South Florida are expected to take longer because of longer permitting time since Hurricane Andrew.

OPINION: Although the petition states that the reserved space is to be used by the year 2000, review of the maps of future space and documentation provided by BellSouth regarding intended use of the space indicate that some of the space does not have any forecasted use by the year 2000 and sometimes not even by 2001.

Many times, however, the spaces are in a line of bays which would not be conducive for physical collocation and are being reserved because of the principle of families of equipment. See disclosure no. 1 for a discussion of the need for families of equipment to be together.

According to the rule, BellSouth can reserve as much space as its collocators. We were unable to determine how much space the two other collocators are reserving.

Since it takes three years to get a building addition, allowing only two years of growth, could put BellSouth in a position of not being able to add capacity in time to meet the needs of its customers.

Large spaces that are for forecasted periods beyond two years are described in other disclosures to this report.

AUDIT DISCLOSURE NO. 4

SUBJECT: OBSOLETE EQUIPMENT

STATEMENT OF FACT: The company was requested to provide information on any equipment that would be changed out for new equipment that might have less space requirements.

In the Boca Raton office, an e-net conversion is forecasted which will free up 12 switch bays. Since the switch manufacturer handles the layout of the bays, BellSouth was unable to tell us where the bay would be vacated or if the space would be a contiguous space.

BellSouth's position is that the equipment it has is currently functioning and that it should not have to replace equipment with smaller, more efficient equipment because that would require an additional expenditure.

FCC order 98-188 paragraph 142 states: "We also ask commenters to address whether we can and should require incumbent LEC's to remove obsolete equipment and non-critical offices in central offices to increase the amount of space available for collocation."

BellSouth has retired 13 circuit bays and 8 switch bays in Lake Mary over the last three years; 2 circuit bays and 14 switch bays in Daytona Port Orange; 8 circuit bays in Boca Teeca, and 5 circuit and 18 switch bays in West Palm Beach Gardens. The company response to request 43 states that the information for North Dade Golden Glades and Miami Palmetto will be provided as soon as possible. It was not received.

OPINION: Although there is nothing in the rules that would require BellSouth to replace its equipment, it should be noted that if BellSouth were making a decision on whether or not to make a building addition, BellSouth may find it more economical to replace equipment with more efficient equipment and thus free up bays.

This was probably what happened when BellSouth petitioned the FCC in 1993 for waivers. At that time, it only showed future growth of 2100 square feet for Glades and 1000 for West Palm Beach Gardens. The new petitions ask for 4796 in Glades and 3544 in Gardens. (See order PSC-99-0060-FOF-TP p. 9-10)

AUDIT DISCLOSURE NO. 5

**SUBJECT: BELLSOUTH COLLOCATION HANDBOOK
 VERSION 7.1.2, DATED January 2, 1999
 SPACE ENCLOSURE OPTIONS**

STATEMENT OF FACTS: The collocation handbook dated January 2, 1999 describes "BellSouth's collocation offerings, providing general information regarding the terms and conditions, ordering process, provisioning and maintenance of BellSouth's Collocation Offerings."

Section 2 defines physical collocation and states that "Physical Collocation arrangements will be placed in floor space separated from BST equipment." "When space permits, BellSouth will construct a common area for all collocations, including separate ingress/egress where feasible." "Within the collocation common area, collocation arrangements will be individually placed in either enclosed or non-enclosed space." "The book also states that under certain conditions a collocator may construct power plant facilities but these must be enclosed in a fire rated wall.

Section 3 states that "Physical collocation space is assigned based on the customer's request, where space permits, with the physical collocation equipment arrangements placed in floor space separated from BellSouth equipment."

Section 3.6 addresses enclosure options. Section 3.6.1 says that BellSouth will make available a 100 square foot minimum enclosure with 50 square foot increments. When a collocator requests more than 100 square feet, BellSouth will try to use contiguous space but if contiguous space is not available, the collocator has the option of two separate enclosures and the purchase of connection through BellSouth cross-connects.

Section 3.6.2 addresses non-enclosed space within the BellSouth "common area". There is no minimum square footage requirement for non-enclosed collocation space, permitting the collocator to use space in increments less than 100 square feet.

The company representative states that the 100 square feet minimum is open for negotiation in the agreement process. However, the company claims to have signed agreements with all existing carriers requiring a minimum of 100 square feet.

OPINION: In disclosures in this audit, space of less than 100 square feet are discussed. Based on BellSouth's existing contracts, these spaces would not meet the minimum size requirement. If contracts with new carriers are made or if contracts are renegotiated, these spaces would need to be addressed to determine if they met other collocation requirements.

AUDIT DISCLOSURE NO. 6

**SUBJECT: POSSIBLE SPACE FOR COLLOCATION IN THE
WEST PALM BEACH GARDENS OFFICE
AREAS 10 AND 10a - PART OF RECEIVING AND UNCRATING
AREA 11 - PART OF MAINTENANCE WORK STATIONS
AREA 2 - NEW EQUIPMENT STAGING AREA**

STATEMENT OF FACT: Areas 10 and 10a are part of the shipping and receiving room and no equipment is planned for this area. The entire shipping and receiving room is 20'4" by 21'. It has an entrance to the building from the outside and another door to the inside of the central office. The company stated that this room has fire rated walls. However, this is the only place in the office to bring in equipment. The width of the door is 48'. This is good for delivery. The second door into the office goes to the ceiling.

Area 2 is the new equipment staging area. There are two footprints for future local switch growth. One line up is planned for 2000 and the second line up is for 2002 and 2003. This is in the switch area which is on an isolated ground area. (See Disclosure 1 for discussion on isolated and integrated ground planes.) The dimensions of the area without the 2000 forecast are 24' by 6'5".

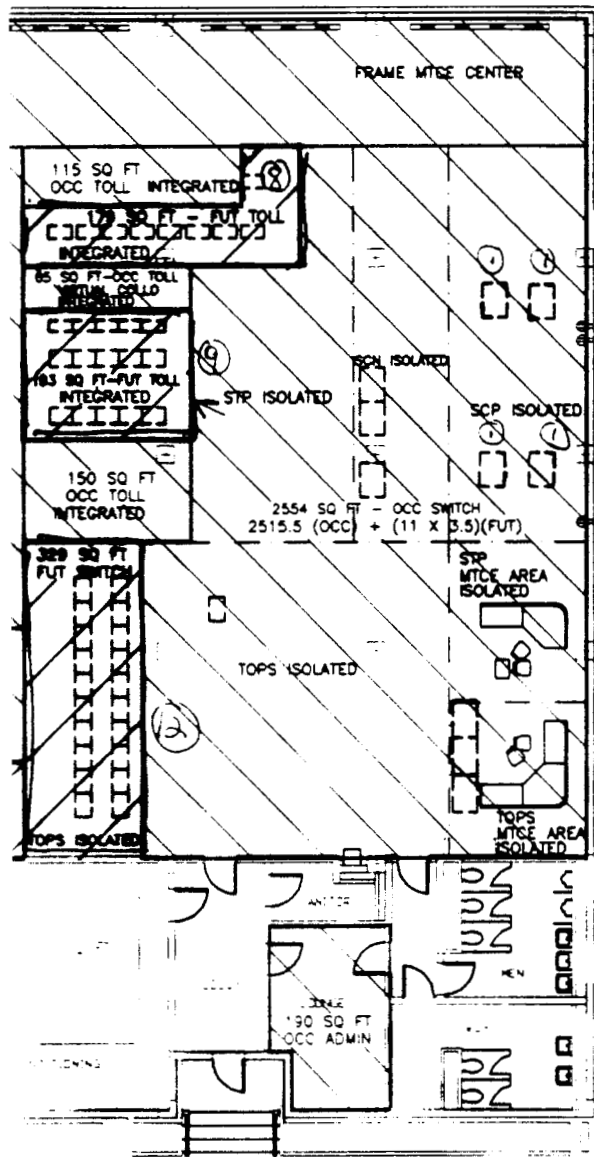
In Docket No. 980800-TP, Order PSC-99-0060-FOF-TP the Commission determined that "...it appears that the administrative space used by BellSouth as its uncrating area and its equipment staging are suitable for collocating." The "...room contains 454 square feet." BellSouth's motion for reconsideration, filed January 21, 1999, states that 454 square feet is needed for uncrating as well as organizing work before installation of equipment. BellSouth provided an example of a piece of STP equipment that is 30' by 50' uncrated. Using 300 square feet in the staging area could prevent getting certain pieces of equipment into the building. BellSouth's motion for reconsideration was not voted on when this report was completed.

Area 11 is part of the central office maintenance area. There are three maintenance areas. The one closest to the shipping and receiving room and the one marked off on the map has three terminals. These are a terminal to log in time sheets, a local maintenance terminal and a trunk testing terminal. There are no footprints for future use in this area. When asked if the third maintenance space could be condensed for future growth, the company said it is a possibility (See Audit Disclosure 1, item 7). There are no footprints for future growth in this area.

OPINION: If areas 10 and 10a were made into spaces 10' by 10' each, there would be a total of 100 square feet for one collocator and 100 square feet for a common area. Fire rated walls would have to be built. There is an outside wall. However, if no door to the outside were built, the issue of security would have to be addressed. There are no

ground plane restrictions here. The area left for receiving and uncrating would be about 200 square feet. The company might be able to use area 2 for its uncrating and setting up of equipment since it is not all planned for growth through 2001. The company's response to the use of this area is that "...using any part of the room for another tenant requires construction of a new BST exit or a fire rated corridor through the middle of the space for BST exit and delivery." BellSouth believes that construction is not required of any incumbent LEC by the FCC (See Disclosure 1, Item 7).

For Area 11, if an area 10' by 10' were carved out of the maintenance area and BellSouth condensed its maintenance work stations, there would still be the problem of the switch equipment which is on an isolated ground plane adjacent to the area. Four foot fire aisle space would take away from the 10 by 10 space. Also the issue of renovating by the incumbent LEC has to be addressed as stated above.



FEBRUARY 25, 1990

A TOTAL GROSS SQ FT 20,314



SWITCH 4306.5 + 511 = 2515.5 = 7333
 TOLL 100 + 286 + 115 + 55 + 150 = 706
 FRAME 740
 POWER AND ENGINE 2096
 ADMIN 454 + 190 = 644

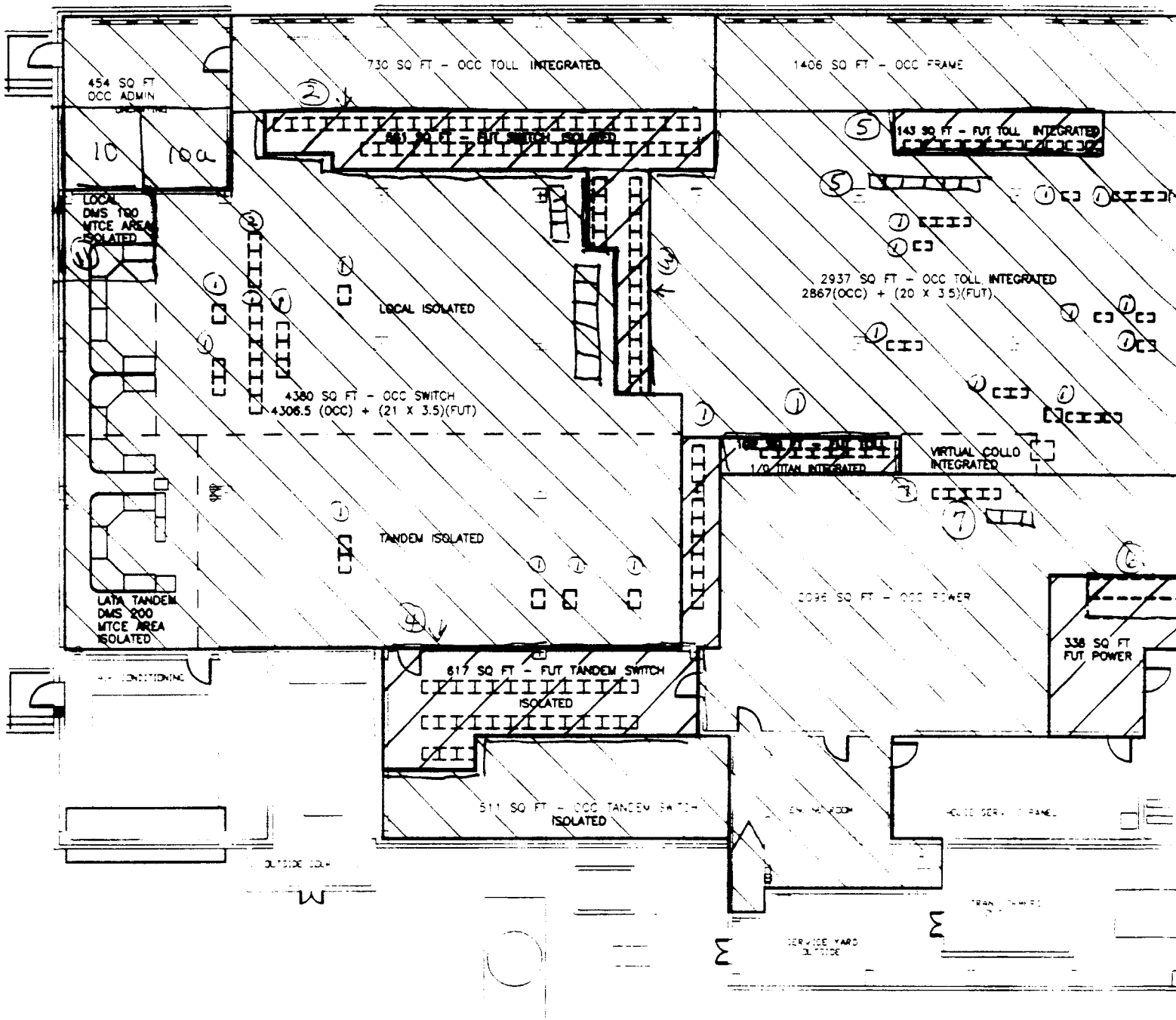
C TOTAL OCCUPIED SPACE 15,418

SWITCH 581 + 617 + 329 + (32 X 3.5) = 1819
 TOLL 143 + 102 + 179 + 193 + (20 X 3.5) = 687
 POWER 338

D TOTAL RESERVED SPACE 2644

TOPS - TELEPHONE OPERATOR POSITION SYSTEM
 STP - SIGNAL TRANSFER POINT
 SCN - SUBSCRIBER CUSTOMER NETWORK
 SCP - SIGNAL CONTROL POINT
 ISOLATED - ISOLATED GROUND PLANE
 INTEGRATED - INTEGRATED GROUND PLANE
 OCC - OCCUPIED SPACE
 FUT - FUTURE/GROWTH SPACE
 UNAVAIL - UNAVAILABLE SPACE
 COLLO - COLLOCATION

- BUILDING COLUMN



E8519 WEST PALM BEACH GARDENS FIRST FLOOR PLAN

AUDIT DISCLOSURE NO. 7

**SUBJECT: SPACE AVAILABILITY IN THE WEST PALM BEACH CENTRAL
OFFICE - AREA 12 TOPS SWITCH GROWTH**

STATEMENT OF FACTS: Space availability of the areas discussed on the attached map depends upon the Commission's acceptance of BellSouth's Collocation Handbook requirements of a minimum of 100 square feet (Disclosure 5), its contention that BellSouth is not required to move equipment (Disclosure 1), and interpretation of security issues in FCC order 96-325, Paragraph 598.

Area 12 is reserved for growth of the tops switch (operator services). The company representative stated that this equipment has very slow growth and grows about 1 to 2 bays a year. There is no forecast for this. The dimensions of the area are 18' by 30'. This area is 329 square feet per the attached map. It is in an isolated ground area and, from our walk-through, has air conditioning ducts on the ceiling.

OPINION: For Area 12, because this is on an isolated ground plain, any installation would have to have a 7' separation or a physical barrier (See Disclosure 1). A seven foot separation would leave an area of 11' by 23'. A physical barrier would require a fire rated wall which would require one foot for the wall and a 4' fire aisle around BellSouth equipment. This would leave an area of 13' by 25'. As this is in the middle of the office, the issue of security would also have to be addressed. This area also has air conditioning ducts on the ceiling which would create a problem with making walls that go up to the ceiling.

AUDIT DISCLOSURE NO. 8

SUBJECT: PROPOSED BUILDING ADDITION

STATEMENT OF FACTS: The company stated that a full second floor addition is currently in design. BellSouth stated that "Full construction is not yet funded due to the extremely high cost. The addition will serve our growth for 5 - 10 years. This time interval is necessary to recover the capital costs." The company did not respond to our request for when the construction will commence or the planned finish date because the major funding commitment has not been made. BellSouth did state that BellSouth is "...anticipating a large collocation presence," and that it will try to secure collocator agreements so that it can commit money to the space.

AUDIT DISCLOSURE NO. 9

**SUBJECT: SPACE AVAILABILITY IN THE WEST PALM BEACH GARDENS
 CENTRAL OFFICE AREA 1**

STATEMENT OF FACTS: The areas marked one on the map are bays that are scattered around the office and do not appear to have enough space for collocation (See Disclosure 1).

AUDIT DISCLOSURE NO. 10

**SUBJECT: SPACE AVAILABILITY IN THE WEST PALM BEACH GARDENS
CENTRAL OFFICE AREAS 3, 4, 5, 8, and 9**

STATEMENT OF FACTS: Area 3 contains footprints for an isolated ground plain area for the DMS switch. Based on past history, this space is forecast to be occupied in 1999. The other two lines of footprints are forecast for 2000.

Area 5 is now being used for testing. The area has footprints for general toll growth. There is no planned use for 2000 or 2001. The company said that this is a fiber optic growth area.

The company states that area 8 is for DSX1 growth. There are three bays for which there is a job for 1999 and the next line-up has 8 bays. There are no jobs nor forecasts for this area, but the company says that it has grown 4-1/2 bays per year.

Area 9 is 193 square feet and has footprints for three short line-ups. One is reserved for general growth which the company says would be used for any integrated type of ground equipment that is 12 inches deep. There is no plan for this lineup. The second line-up is reserved for Titan growth for 2000 which the company states that contiguous growth space is required for economical use of wiring and office personnel.

Area 4 is reserved for future DMS-Tandem switch use. The company representative says that one line-up is forecast to be occupied in 2000 and the second in 2001. There are 27 bays unoccupied. According to past history supplied by BellSouth there were 13 bays installed in 1997 and 11 in 1998. Based on history, there may be approximately 10 bays added per year.

OPINION: All these areas follow BellSouth's concept of families. See Audit Disclosure 1 for a full discussion.

AUDIT DISCLOSURE NO. 11

**SUBJECT: SPACE AVAILABILITY IN THE WEST PALM BEACH GARDENS
CENTRAL OFFICE AREAS 6 AND 7**

STATEMENT OF FACTS: Area 6 is for new batteries which will be put in place in 1999. We were provided with the work order for this installation.

Area 7 contains three bays that are reserved for future use for the general power plant. The four bay area will be used for rectifiers, of which one will be filled in 1999.

OPINION: Area 6 will be filled in 1999. Area 7 follows BellSouth concept of families. (See Audit Disclosure 1 for discussion.)

AUDIT DISCLOSURE NO. 12

SUBJECT: FORECAST

STATEMENT OF FACT: There are two primary forecasts for each central office, switch and circuit. Access line growth is the primary driver of the switch forecast and the trunk forecast is the primary driver of the circuit equipment.

Regression analyses were run in order to determine the reasonableness of the access line forecasts. To perform the analyses, historical data from 1993 to 1998, city and county population information from 1993 to 1998, and secondary line growth statistics were used. In addition, the projected growth of network access lines was compared to the historical growth for the period 1988 to 1998.

Due to time constraints, the same type of analyses of the trunk forecast were not performed. The forecast is generated by a BellCore software package. The manual for the software was reviewed.

For each office, the area with large empty spaces was identified as either circuit or switch. Once the area was identified, historical information was obtained on how many bays were added for two years or more. The historical growth was compared to the forecast. The last two years were used because of the impact of the Internet, long distance carriers entering the market and data transmission technologies.

OPINION: The projected growth rates of total network access lines do not significantly differ from historical trends and represent reasonable projections.

The BellCore programs used to derive trunk traffic are based upon widely accepted statistical methods and procedures.

ATTACHMENT 1

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #23
Dated: February 8, 1999
Page 1 of 2

REQUEST: RE: Grounding

1. Please explain why you need two different ground planes in a central office.
2. Provide your reasons for not wanting to put a physical collocator in the middle of an isolated ground plan with and without a wall. Provide any documentation that shows the potential problems.
3. Provide company TR regarding the ground planes as we discussed at our meeting on Feb. 5, 1999. Or other information you have.

RESPONSE: 1. Digital switching equipment operates very constrained circuit design using micro amps of electricity with ground return. Stray ground currents induced by magnetic fields caused by electric motors, lighting, variations in commercial electric service, stray janitorial motors such as buffers and vacuum cleaners, static electric discharges built up by humidity and temperature variations, can cause service impairments or loss of service. Isolating the digital switch ground provides a measure of service protection against accidental loss of service.

Toll (circuit) equipment is not this sensitive to stray ground currents. However, toll equipment can generate its own noise. The noise can be transmitted in the grounding system much like the ignition noise in a car speaker system. The ground plane separation ensures this noise will not affect digital service.

Finally, separating the ground planes by physical barriers or adequate aisles ensures accidental contact will not transmit current between the ground planes. Different ground planes will have voltage (potential difference) by the laws of electricity. By those same laws, current will flow when the two planes are brought into contact. This current will cause the same stray current disruptions described above. This could lead to life threatening situations if the potential is large enough.

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #23
Dated: February 8, 1999
Page 2 of 2

RESPONSE (cont'd):

2. For all the above reasons, an integrated ground plane collocator would not be a preferable tenant in an isolated ground plane environment with or without a wall. The basic problem is that even with a wall the integrated ground plane collocator requires complete electrical separation in the overhead environment. This means none of his racking, electrical conduits, air conditioning ducts, lights, controls, can have metallic contact with any of the items in the isolated ground plane. Second, if the code officials insist on the tenant occupancy rule, BST must construct a fire rated wall through all of the overhead environment to meet this code. This wall structure can not make metal to metal contact with any of the isolated ground plane.
3. At the February 5, 1999 meeting, BellSouth and Staff discussed TR-NWT-000295, titled *Isolated Ground Planes: Definition and Application to Telephone Central Offices, Issue 2*, dated July 1992. This document is copyrighted by Bellcore. The cost to purchase a copy for Staff's use is over \$250.00. BellSouth will make this document available for Staff's review at its Brentwood office in Miami. To review the document, please contact John MacDonald at 305-622-3230.

RESPONSE PROVIDED BY: J. D. Bloomer

ATTACHMENT 2

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #22
Dated: February 8, 1999
Page 1 of 3

REQUEST: RE: Families of Equipment

1. Explain what you mean by families of equipment.
2. What are your reasons for keeping switch equipment in their own line ups?
3. What are your reasons for keeping circuit equipment in their own line ups?
4. What are your reasons for keeping power equipment separate?
5. Provide reasons for any other family of equipment.
6. Provide documents for any of the above where available, i.e. TR's etc.

RESPONSE: 1. Equipment comes in four general groups, switch, power, circuit (tol), and frame. Each group contains equipment types used for specific purpose. The equipment comes in fixed configurations detailed by the manufacturers. These types are called families. The equipment vendors guard the detailed layout information as highly proprietary.

Examples of families follow:

A switch processor layout is a family.

A power plant control bay and discharge bays is a family.

A light guide terminating frame is a family of separate terminating bays.

A Digital Crossconnect System (DSX, DACS) is a family

A DSCs complex for Subscribe Line Carrier is a family.

2. Switch equipment is kept in its own area for the following reasons:
The switch equipment is physically different in width and depth from other types. Mixing different depth equipment in the same aisles creates wasted space.

Switch equipment is considerably hotter, requires different air conditioning filters, aisle spacing, and cable rack design per manufacturer specifications.

Switch equipment is an isolated ground plane.

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #22
Dated: February 8, 1999
Page 2 of 3

RESPONSE (cont'd):

Switch equipment has detailed internal cabling distances used by vendor engineering forces to maximize performance. Basically, switch equipment cables to other pieces of switch equipment NOT to other groups of equipment.

3. Toll equipment is kept in its own area for the following reasons: Toll equipment varies widely in width and some families vary in depth as well. Mixing the various widths and depths makes lineup configurations space inefficient. This makes air-conditioning and cabling design difficult as well.

Toll equipment is somewhat cooler than switching equipment, but hotter than frame and power. This means we can save expense dollars by properly sizing air conditioning to match the load.

Toll equipment is integrated ground plane. This means it shares common ground with all building components, frame, and power equipment.

Toll equipment grows in configurations limited by its family membership. Various families can exist side by side as long as each can grow the manufacturer recommended layout maximum.

Toll equipment generally cables to other types of toll equipment and the main frame. Growth in one type (D4, SLC, or multiplexers) leads to growth in DSX, Fiber Optic Terminals, or DACS families as the functions are interlocking.

4. Power equipment is in its own area for the following reasons: Power equipment is defined as a hazardous occupancy by the NFPA, National Fire Protection Act, due to the batteries and resultant explosive fumes. One hour rated walls enclosing the space meet the code. BellSouth attempts to follow this code in all new buildings, and retrofits all older buildings as soon as possible. Separate air conditioning and ventilation systems are also constructed to isolate the space.

Power equipment aisles are dictated by the size of components and voltage contained in them. These aisles are significantly different from toll/switch requirements with significantly greater hazards.

**BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request #22
Dated: February 8, 1999
Page 3 of 3**

RESPONSE (cont'd):

- 5. The standby engine requires its own space for the following reasons:**

The engine and its diesel fuel are rated a hazardous occupancy. One hour and in some cases 2 hour walls are required by NFPA and the local building code to isolate the hazard.

The engine is extremely noisy. Running the engine on a regular basis renders the adjoining spaces unusable.

Air intake and exhaust requirements create drafts and smells rendering adjoining open spaces unusable.

The adjoining space is impossible to air condition effectively with the large intake grilles necessary to support the engine.

- 6. The above detail in the floor-space layout information is contained on the Web site supported by the BELLCORE organization. This paid subscription site is available to all Internet users for a fee. The information is not proprietary to the various manufacturers providing their details.**

RESPONSE PROVIDED BY: J..D. Bloomer

3560 Chamblee Dunwoody Road
Atlanta, Georgia 30341
770-458-4602, Facsimile 770-458-4391
E-MAIL: Smoakdesigns@smoakdesigns.com

Letter of Transmittal

To: **BellSouth**

Murry, Marie

Date: **October 8, 1998**

Commission Number:

Project Title: **Florida collocators**

Project Location:

Please find the enclosed:

Number	Description
--------	-------------

Copies of requests made by florida permitting a zoning depatments which have incurred delays for various projects.

Additional Notes:

These were requested to be sent to you by Karen Hill

Some of the requests can be answered quickly however many require clairification and redesign which further adds to the permitting time frame.

DECLASSIFIED

Copy to:

Smoak Designs Incorporated

From: **Raymond A. Norman AIA, Associate**

A Professional Corporation

~~CONFIDENTIAL~~
(see 06056-99)

30-7
part of 4 P1
04607-99

EXHIBIT RKY-4
(Workpapers)
Document No. 04607-99

Page 2

RETAINED UNDER CONFIDENTIAL COVER PENDING RULING
ON BELLSOUTH'S APRIL 30, 1999 REQUEST FOR CONFIDENTIAL TREATMENT

DEPARTMENT OF PUBLIC WORKS
Building and Zoning Inspection Division



f3

Building Plans Review Comments

Temporary Permit Number 45178 Date: 9-19-98

Project Name: BELL SOUTH - NORMANDY

Address: _____

Reviewed By: PETE SIEBER Phone Number 904-630-1023



1. RAM ROOMS MUST BE BROUGHT IN COMPLIANCE WITH THE FLORIDA
2. ACCESSIBILITY CODE.
3. CONTRACTOR I.D NUMBER, LICENSE NUMBER
4. _____
5. _____
6. _____

~~CONFIDENTIAL~~

EXHIBIT RKY-4
(Workpapers)
Document No. 04607-99

Page 4

RETAINED UNDER CONFIDENTIAL COVER PENDING RULING
ON BELLSOUTH'S APRIL 30, 1999 REQUEST FOR CONFIDENTIAL TREATMENT

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request
Dated: February 8, 1999
Item 25
Page 1 of 2

REQUEST:

1. In our discussions on Feb 5, it was sited that adding an isolated collocator to a BST isolated ground could be a potential problem and that it would be better if a small power plant were installed for a physical collocator. Please site your potential problems. Would they be the same if a collocator were installed in an integrated ground? Explain yes or no. What was done in Palmetto CO (Was a separate power plant installed for the physical collocators)? If so, why? If not, why?
2. Provide the information and or correspondence documenting the increase in temperature in the Palmetto central office and any plans you have for upgrading the air handling units.

RESPONSE:

1. The potential problems arise from the fact that we have no control over the collocators equipment or any piece of equipment that their equipment interfaces with. If tied to our isolated ground plane their equipment could introduce 'noise' to the ground plane that could lead to service interruptions. If the collocator in some fashion breeches the isolated ground plane then it is compromised for the entire grounding arrangement. The purpose of isolated ground is to not have any direct path to ground in the event of a lightning strike. For these reasons we do not wish to have any other equipment other than our own tied to the isolated ground bar. Collocators have typically installed equipment classified as 'circuit' or transport equipment and by definition this type equipment is grounded on the integrated ground plane. In Palmetto no separate power plant was installed for the collocators. They are all part of the integrated ground.

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30-8 p1

BellSouth Telecommunications, Inc.
FPSC Staff's Audit Request
Dated: February 8, 1999
Item 25
Page 2 of 2

RESPONSE (cont'd):

2. The current elevated temperature in the Central office is being caused by a air distribution problem. The northern half of the facility is served by AHU01A and has been investigated and ductwork/damper problems have been identified and will be corrected within two to three weeks.

The southern half of the facility is served via AHU01B & AHU01C. These particular AHU's are less than 2 years old and have experienced switch growth that has not had HVAC ductwork modified in order to serve the new switch additions. The units have the capacity and a plan is being worked out to provide the additional ductwork. This plan should be implemented within the next few months.

RESPONSE PROVIDED BY: Miguel Rodriguez
Chris Malcolm

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30-802

BellSouth Telecommunications, Inc.
FPSC Staff's Collocation Audit Request
Item 35, Attachment
30 Pages

"BellSouth Collocation Handbook"
Version 7.1.2

~~CONFIDENTIAL~~

30-17p1



Collocation

Handbook

Version 7.1.2

12-3-98

Effective: January 2, 1999

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PC

Table of Contents

	Page
<u>Section 1: Introduction</u>	
Preface and Introduction	4
<u>Section 2: Service Descriptions</u>	
Virtual Collocation.....	6
Physical Collocation.....	7
<u>Section 3: General Terms and Conditions</u>	
3.1 Contract Negotiations.....	8
3.2 Assignment of space.....	8
3.3 Application Process.....	8
3.4 Establishment of a Firm Order.....	9
3.5 Provisioning Intervals.....	10
3.6 Enclosures Options.....	10
3.6.1 Arrangement Space Enclosure.....	10
3.6.2 Non-Enclosed Space.....	11
3.7 Entrance Facilities.....	11
3.8 Equipment Installation.....	11
3.9 Occupancy of Space.....	12
3.10 Commencement.....	12
3.11 Alarm and Monitoring.....	12
3.12 Ordering Interconnected Service.....	12
3.13 Assignment of Facilities.....	13
3.14 Combining UNEs via Collocation.....	13
3.15 Access to BellSouth Central Offices.....	14
3.16 Conversion of VEIS to Physical Collocation.....	14
3.17 Inspections.....	15
3.18 Liability.....	15
3.19 Insurance Requirements.....	15
3.20 Subsequent Activity.....	16
3.21 Recovery of extraneous expenses.....	16
3.22 Cancellation of a request in progress.....	17
3.23 Disconnection of an arrangement.....	17
3.24 Special Reports.....	17
<u>Section 4: Rate Components</u>	
4.1 Virtual Collocation.....	18
4.2 Physical Collocation.....	18

Table of Contents (cont.)

	Page
Section 5: Contacts	
Negotiation contacts.....	22
BellSouth Certified Vendor lists	23
Section 6: Exhibits	
Request for Physical Collocation Negotiations.....	26
Schematic drawings.....	27
BellSouth Standard Collocation Agreement (available upon request).....	30
BSTEI Order Documents and Line by Line Instructions (available upon request)	30
BellSouth Provisioning Process Flow Diagram (available upon request)	30
Consideration of Environmental Conditions Guidelines (available upon request)	30

SECTION 1

Preface

This handbook describes BellSouth's Collocation offerings, providing information regarding the terms and conditions, ordering process, provisioning and maintenance of BellSouth's Collocation Offerings. If a CLEC orders collocation service pursuant to BellSouth's Statement of Generally Available Terms and Conditions (SGAT) as approved by the Public Service Commission or Public Utilities Commission, the terms and conditions provided herein become a legally binding agreement. However, to the extent that the CLEC enters into a separate agreement with BellSouth for physical collocation, the terms and conditions of that agreement will apply. The terms and conditions for BellSouth's Virtual Collocation offering are described in BellSouth's FCC #1 Tariff, section 20 or BellSouth's Florida Access Tariff (E20).

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Introduction

BellSouth offers Virtual Expanded Interconnection Service, or Virtual Collocation, as a tariffed service offering and Physical Collocation as a contract service offering. Both Virtual and Physical collocation will be made available on a first come, first served basis, depending on space availability for interconnection to unbundled network elements and retail service offerings necessary for use by telecommunications service providers in providing telecommunications services. You will find a list of contacts included for your convenience to obtain more information on interconnecting services to BellSouth's collocation offerings.

SECTION 2

Service Descriptions

Virtual Expanded Interconnection Service (VEIS)

VEIS, or Virtual Collocation, is a tariffed service offering which provides for the placement of collocator-owned transmission equipment and facilities in BellSouth Central Offices for the interconnection to the BellSouth network. Collocation arrangements may interconnect to designated BellSouth tariffed services, local interconnection trunks and/or unbundled network elements.

With VEIS, the collocator places fiber optic cable from outside the central office to an interconnection point designated by BellSouth, (e.g. a serving manhole). The entrance facility is pulled into the central office cable vault by BellSouth, spliced into pre-terminated, fire-retardant riser cable and connected to the collocated equipment. Multiple entrance facility points will be made available where such entrances exist and capacity is available. The collocator must directly contract with its selected BellSouth Certified vendor for engineering and installation of the collocation equipment arrangement.

To ensure the compatibility of the facilities and equipment used to provision Virtual Collocation, collocated equipment and cabling facilities will be provided by the collocator. This includes, but is not limited to terminal transmission equipment and associated plug-ins/line cards, software, test equipment, the pre-terminated, fire-retardant riser cable, cabling from the equipment arrangement to the BellSouth cross-connect point, cabling from the arrangement to the BellSouth-provided power source, and any unique tools required to provision, maintain or repair the arrangement.

BellSouth will lease the collocator's entrance fiber, cabling and equipment arrangement for the nominal fee of one dollar. For this reason, VEIS equipment arrangements are most commonly located in the BellSouth equipment line-up. Performance monitoring and alarming of the collocated equipment is the responsibility of the collocator and must be performed remotely. BellSouth will perform all maintenance and repair on VEIS equipment once the collocator requests such work. For additional information regarding BellSouth's Virtual Expanded Interconnection Service, please reference Section 20 of BellSouth's FCC #1 tariff or section 20 of BellSouth's Florida Dedicated Access Tariff.

Service Descriptions (cont.)

Physical Collocation

Physical Collocation is a negotiated contract arrangement for the placement of collocator-owned facilities and equipment in BellSouth Central Offices. Physical Collocation is available as either **Expanded Interconnection Service (EIS)** or **Service Interconnection (SI)**. Expanded Interconnection Service includes placement of equipment connected to private fiber entrance facilities and cross-connected to BellSouth's network. Service Interconnection provides for the placement of collocator equipment, interconnected to BellSouth network, without the use of private fiber entrance facilities.

Unlike VEIS, Physical Collocation arrangements will be placed in floor space separated from BST equipment. Where space permits, BellSouth will construct a common area for all collocators, including separate ingress/egress where feasible. The cost of such construction will be shared by all collocators at that location on a pro-rated basis. Within the collocation common area, collocation arrangements will be individually placed in either enclosed or non-enclosed space. Physical Collocation arrangements do not require an enclosure. However, the collocator may opt to purchase an arrangement enclosure. Collocation arrangement enclosures may be purchased from BellSouth for an additional fee. A collocator may alternatively opt to arrange directly with a BellSouth certified contractor for the construction of the enclosure following BellSouth specifications. Under certain conditions, the collocator may be permitted to construct power plant facilities. Power equipment installed by the collocator must be enclosed within fire rated walls, which must be constructed to BellSouth and local building code specifications.

Equipment ownership, maintenance and insurance is the full responsibility of the collocator or their approved agent. The equipment compliment may include transmission equipment, terminating equipment, switching equipment, power and battery equipment (under special conditions only), PCs and test access modems. A Point of Termination Bay (POT Bay) serves as the demarcation point between the collocator's equipment arrangement and BellSouth's network. All equipment placed as part of a collocation arrangement must be installed by a BellSouth Certified Vendor and must meet Bellcore/NEBS standards. The collocator must contract directly with its selected certified vendor for the engineering and installation of the collocated equipment. Collocators interested in becoming a certified vendor may contact BellSouth to obtain vendor certification process information.

SECTION 3

General Terms and Conditions

3.1 Contract Negotiations

For Physical Collocation, an agreement must be executed between the collocator and BellSouth. This agreement may be a separately negotiated collocation agreement or the adoption of BellSouth's SGAT. To initiate the negotiations process, the collocator submits a Request for Negotiations letter to BellSouth. A sample request letter is included in this Handbook. Contract negotiations may take place concurrently with the Application Inquiry phase described below. **However, an agreement must be executed with BellSouth before the collocator may proceed with a Bona Fide Firm Order for Physical Collocation.**

3.2 Assignment of space

BellSouth assigns space for collocation based on space availability on a first come, first served basis. For Virtual Collocation, space is assigned within the BellSouth equipment line-up based on the rack requirements for the equipment installation. Physical Collocation space is assigned based the customer's request, where space permits, with the physical collocation equipment arrangements placed in floor space separated from BellSouth equipment.

If BellSouth determines there is insufficient space within a BellSouth location to accommodate Physical Collocation, BellSouth will refund the Physical Collocation Application Fee. The collocator may request Virtual Collocation, in lieu of Physical Collocation, at the same premises by submitting a Virtual Collocation BSTEI form with the appropriate Application Fee. BellSouth will notify the commission in writing when it determines there is insufficient space available at a certain location and will provide with its notification the necessary documentation to establish the unavailability of space.

3.3 Application Process

The application process for collocation is a two-phase process consisting of the Application Inquiry phase and the Bona Fide Firm Order phase. Both phases use BellSouth Expanded Interconnection forms (BSTEI forms).

For the Application Inquiry phase, a collocator must submit a complete BSTEI-1 Application Inquiry document for review and planning by BellSouth equipment engineers, space planners and facility planners. Based on the space and infrastructure analysis from these sources, BellSouth will respond to the Application Inquiry in writing. BellSouth will respond to up to five (5) Virtual Collocation Application Inquiries within 20 business days from receipt of a complete BSTEI-1 and up to five (5) Physical Collocation Application Inquiries within 30 business days of a complete BSTEI-1. Response intervals for more than five (5) applications submitted by a single customer within a fifteen (15) business day window must be negotiated based on the priority established by the requesting customer. A proposed equipment layout, including dimensions, and an application fee must accompany each Application Inquiry as indication of a bona fide request.

General Terms and Conditions (cont.)

3.3 Application Process (cont.)

Requesting collocators will have 30 days to review BellSouth's written response to the Application Inquiry and submit a complete and accurate Firm Order for each location for which the collocator wishes to proceed. A detailed equipment drawing must accompany the Firm Order request along the pre-payment of applicable fees in order for the request to be Bona Fide.

The Firm Order may be submitted on the same BSTEI form used during the Application Inquiry phase, provided all necessary revisions are clearly marked to indicate the applicant's finalized plans. Major material changes to the request may require re-analysis of the space and infrastructure requirements, and therefore a re-completion of the Inquiry and Application response phase. Once the Firm Order is placed, the collocator may negotiate with a BellSouth Certified Vendor for their equipment placement. Collocator equipment placement may not begin until BellSouth's space and infrastructure work is complete. This date is identified as the **Space and Infrastructure Complete Date**. BellSouth may, at its sole discretion, agree to an equipment installation date prior to the completion of its infrastructure work, provided the area is properly secured. For these exceptions, BellSouth will report this date as the **Space Available for Occupancy Date**. In such cases, the collocator must sign a liability waiver before such work may begin.

As stated above, requesting collocators may begin the Application Inquiry process prior to the execution of Physical Collocation agreement with BellSouth. However, the agreement must be executed prior to proceeding to the Firm Order phase. A collocator may contact their BellSouth Interconnection Services Account Team contact noted in Section 4 of this Handbook for copies of BellSouth's Request for Negotiations, BSTEI forms and BSTEI line by line instructions. Forms and instructions will be available on BellSouth's website by the end of the 1st quarter of 1999 at the following web address: www.interconnection.bellsouth.com.

3.4 Establishment of a Firm Order Date

BellSouth will establish a Firm Order Date, per request, based upon the date BellSouth is in receipt of a complete and accurate Firm Order. BellSouth will acknowledge the receipt of the Bona Fide Firm Order within fifteen days of receipt indicating that the Bona Fide Firm Order has been received and that the order is accurate and complete or is not accurate and complete. If the Firm Order is accurate and complete, the acknowledgment will be a **Firm Order Confirmation** which will indicate the Firm Order Date. If the Firm Order is not accurate and complete, BellSouth will acknowledge receipt of the BSTEI form with a letter detailing the necessary information needed to cause the order to be accurate and complete. BellSouth will not proceed with space or infrastructure provisioning until all information required for an accurate and complete firm order is received in writing from the requesting collocator.

General Terms and Conditions (cont.)

3.5 Provisioning Intervals

3.5.1 Physical Collocation

Excluding the time interval required to secure the appropriate government licenses and permits, BellSouth will complete Physical Collocation space when construction is under ordinary conditions within 120 calendar days of receipt of complete and accurate Bona Fide Firm Order, except where otherwise specified (e.g. negotiated contract terms or PSC decision). Ordinary conditions are defined as space available with only minor changes to network or building infrastructure. Excluding the time interval required to secure the appropriate government licenses and permits, BellSouth will complete construction of collocation space under extraordinary conditions within 180 calendar days of the receipt of a complete and accurate Bona Fide Firm Order. Extraordinary conditions are defined to include but are not limited to major BellSouth equipment rearrangement; power plant addition or upgrade; major mechanical addition or upgrade; major upgrade for ADA compliance; multiple orders in excess of five (5) from one customer per area/state; mainframe addition; environmental hazard or hazardous materials abatement.

3.5.2 Virtual Collocation

Utilizing the definitions described above, BellSouth will complete its work for Virtual Collocation under ordinary conditions within 90 calendar days and under extraordinary conditions within 120 calendar days. Although not generally required for Virtual Collocation preparation activities, the time interval required to secure any governmental licenses and permits will be excluded from BellSouth's Virtual Collocation Provisioning interval.

3.6 Enclosure Options

3.6.1 Arrangement Enclosure

At the Physical Collocator's option, BellSouth will construct an arrangement enclosure. Enclosures are available as a 100 square foot minimum with 50 square foot increments thereafter, based on space availability within the area designated for physical collocation. A collocator requesting more than a 100 square foot enclosure will be offered contiguous space where available. Where contiguous space is unavailable, the collocator may elect the construction of two separate enclosures and may interconnect its arrangements via direction connection or through the purchase of BellSouth cross-connects. The date BellSouth completes its enclosure construction work will be the **Enclosure Construction Complete Date**. The collocator is responsible for securing its enclosure and must provide BellSouth's building or central office manager a key or card access to the enclosure prior to commencement.

Except where otherwise required by local governing ordinances or regulatory requirements, BellSouth's standard enclosure will typically consist of 8' gypsum wall board construction mounted to a floor track enabling a 6" gap at floor level for air circulation. The door will be a 3-0 x 7-0 x 1 3/4 flush hollow core 20 gage steel door, closed top and bottom, with 18 gage knock down hollow metal frame. Collocation customers in Georgia and Florida will have the option to select a steel cage enclosure in lieu of the gypsum wall enclosure. One four foot twin

General Terms and Conditions (cont.)

3.6 Enclosure Options (cont.)

3.6.1 Arrangement Enclosure (cont.)

tube fluorescent light fixture per 100 square feet will be provided. Additional lighting should be provided by the collocator via rack-mounted lighting fixtures. One duplex convenience outlet will be provided for every 25 square feet of floor space. In the event the collocator requests BellSouth to provide additional items, such as lighting, an additional charge will apply. The collocator may contract directly with a BellSouth Certified contractor for construction of the enclosure following BellSouth's detailed enclosure specifications.

3.6.2 Non-enclosed Space

At the CLEC's option, a non-enclosed space may be requested instead of an equipment arrangement enclosure as described above. Non-enclosed arrangements will be located in the area designated for physical collocation within the BellSouth premises, commonly called the "common area". A collocator may designate a specific amount of non-enclosed space, given that such designation is adequate to accommodate the requested equipment installation per industry standards. Alternatively, if a square footage amount is not designated, aisle space for wiring and maintenance will be designated to the collocator based on a factor as described in section 4.2.3 following. There is no minimum square footage requirement for non-enclosed collocation space, permitting the collocator to use space in increments less than 100 square feet.

3.7 Entrance Facilities

Requesting collocators may place collocator-owned fiber entrance facilities into the collocation space. BellSouth will designate the point of interconnection in proximity to the premise housing the collocation space, such as an entrance manhole or cable vault. When a private entrance facility is used, the collocator must provide and place a sufficient length of fiber cable at the point of interconnection to be pulled through to a splice location, where the entrance fiber will be spliced to collocator-provided fire retardant riser cable. Alternatively, requesting carriers may splice a new fire-retardant riser into the spare capacity of an existing fiber entrance facility. Collocators are not permitted unrestricted access to BellSouth's serving manhole(s) and must contact BellSouth for instructions prior to placing the entrance facility cable in the manhole. Dual entrance into the collocation space will be permitted where capacity exists. The provision of dual entrance does not guarantee fiber route diversity to serve the collocation arrangement. BellSouth will evaluate its ability to provide for entrance facilities associated with microwave antennae on an individual case basis.

General Terms and Conditions (CONT.)

3.8 Equipment Installation

The collocator must select an equipment installation vendor who has achieved BellSouth Certified/Authorized Vendor status to perform all engineering and installation work associated with the equipment collocation arrangement. This ensures BellSouth's standards for safety and quality are met. The Certified Vendor is responsible for installing the collocation equipment and components, running power feed(s) to the BellSouth Bus Distribution Fuse Bay (BDFB), performing operational tests after the equipment installation is completed, and notifying the local BellSouth Central Office foreman and the Collocator upon successful completion of the installation and acceptance testing. Arrangements must be made such that the Collocator is billed directly by the Certified Vendor for activities associated with the arrangement installation. The collocator and its vendor must comply with USTA environmental and safety guidelines for installation and operation of the collocation arrangement.

Once acceptance testing is complete, the collocator must notify BellSouth in writing that their equipment is installed, tested and ready for service provisioning. This date is the Installation Complete Date. Without this notification from the collocator, BellSouth may not accept requests to connect service to the collocation arrangement. For Virtual Collocation only, the Certified Vendor must supply BellSouth a complete and accurate list of all equipment and facilities installed as part of the arrangement for insurance purposes. This list will become a bona fide attachment to the equipment lease. The lists of certified vendors effective as of the issue date of this Handbook are contained in Section 5. For the most current list, a collocator may contact their BellSouth Interconnection Services Account Team contact noted in Section 4.

3.9 Occupancy of Space

The collocator must complete the collocation equipment installation within 180 days from the Complete Space Ready Date or forfeit the right to use the space. BellSouth may, at its discretion, extend the 180 day interval when best efforts have been demonstrated by the collocator in attempting to complete installation work within the 180 days.

3.10 Commencement Date

The Commencement Date of an arrangement depends upon the Installation Complete Date and the notification of such date to BellSouth. Upon completion of the collocation equipment installation, the collocator and the collocator's vendor must jointly agree the collocator's equipment is operational and connected to BellSouth's network. This date will be the **Installation Complete Date**. The collocator must notify BellSouth of the Installation Complete Date in writing.

For Physical Collocation, the Commencement Date will be the Installation Complete Date. For Virtual Collocation, BellSouth will prepare the Equipment Lease agreement upon receipt of notification of the Installation Complete Date and the complete and accurate "as installed"

General Terms and Conditions (cont.)

3.10 Commencement Date (cont.)

equipment and facilities list. The Virtual Collocation Commencement Date will be the date the Lease is executed.

3.11 Alarm, Monitoring and Maintenance

The collocator is responsible for the placement and remote monitoring of equipment alarms, environmental alarms, and/or power alarms. BellSouth will place environmental alarms in collocation areas for its own use and protection. Upon request, BellSouth will provide remote monitoring circuits to the collocator at the tariff rate for the service requested. For Physical Collocation, the collocator or its agent is responsible for the maintenance and repair of the collocated equipment and facilities. For Virtual Collocation, BellSouth assumes the maintenance responsibility for the collocated equipment at the initiation and direction of the collocator.

3.12 Ordering Interconnected Service

Virtual Collocators may interconnect to BellSouth's network at the DS3, DS1, 2-wire and 4-wire DS0 cross-connect levels. (A DS0 equivalent is available in Florida only.) Interconnection to Physical Collocation is available at the 2-wire or 4-wire, DS1, DS3 or Fiber Optic interface levels on a negotiated basis only. Please ask your BellSouth contact for specific information.

Services to be interconnected to a collocation arrangement must be submitted on Access Service Request (ASR) forms or Local Service Request (LSR) forms using industry standards and code sets for accurate and complete requests. For information regarding the ASR ordering process and field definitions, please reference the Access Service Ordering Guide, Bellcore's Special Reports SR STS-471001 and 471004. For information regarding the LSR ordering process and field definitions, please reference BellSouth's Local Interconnection and Facility Based Ordering Guide.

3.13 Assignment of Facilities

BellSouth assigns and pre-wires interconnection facilities from within its network to the collocation demarcation point. These facilities will be named as TIE cables or cable and pair. For Physical Collocation, the Point of Termination bay (POT bay) serves as the demarcation point between the collocator's arrangement and BellSouth's network. Physical Collocation interconnection facilities are built between the BellSouth frame, DSX or LGX and the POT bay. For Virtual Collocation, BellSouth's frame, DSX or LGX serves as the demarcation point. The interconnection facilities for Virtual Collocation will be built directly between the BellSouth frame, DSX or LGX and the collocator's equipment.

BellSouth provides the facility interconnection information on the Design Layout Record (DLR) for DS1 and DS3 interconnection and on the Cable and Pair Assignment Matrix for 2-wire and

General Terms and Conditions (cont.)

3.13 Assignment of Facilities (cont.)

4-wire (DS0) interconnection. The customer must specify interconnection facility information as a Circuit Facility Assignment (CFA) or cable and pair/channel assignment, respectively, on the Access Service Request or Local Service Request when ordering cross-connects to unbundled network elements or tariffed services.

3.14 Combining UNEs via Collocation

When a collocator orders unbundled network elements (UNEs) in order to recombine them within the collocation space, the facility designation described in the previous section must be used to facilitate this combination. An example of how a collocator might combine individual unbundled network elements is the combination of an unbundled loop and an unbundled switch port.

BellSouth will wire each UNE to the cable and pair or TIE pair designated by the collocator on the UNE order. Both the loop and the switch port are terminated on the Main Distributing Frame within the BellSouth central office. Upon request of the collocator, BellSouth will wire the loop to the cable and pair facility designation indicated on the unbundled loop order. BellSouth will also wire the unbundled switch port to the cable and pair facility designation indicated on the unbundled switch port order.

For Physical Collocation, BellSouth's wiring of the UNEs to the cable and pair interconnection facilities designated by the collocator correlates to a pre-designated position(s) on the POT bay (POI). The collocator may complete the combination via connections within their collocated equipment either manually or electronically.

To facilitate combinations in Virtual Collocation, the collocator may employ one of several options which may include, but not be limited to: pre-wired terminations on their transmission equipment, electronic digital cross-connects or other means of performing cross-connects remotely, or connections on a per request basis. An example of using pre-wired terminations might include the collocator arranging the pre-wiring of "position 100" to "position 200", "position 101" to "position 201" and etc. Should the collocator wish to combine two elements, such as combining an unbundled loop with an unbundled switch port, the collocator would specify the BellSouth cable and pair assignment correlating to slot 100 on the unbundled loop order and would specify the BellSouth cable and pair assignment correlating to slot 200 for the unbundled switch port. With slot 100 and slot 200 being pre-connected by the Certified Vendor, the elements are automatically combined once BellSouth completes its connection of each of the elements to the designated interconnection facility cable and pair assignments.

General Terms and Conditions (cont.)

3.15 Access to BellSouth Central Offices

BellSouth employees, BellSouth certified vendors, Collocator employees and their authorized agents are permitted in BellSouth Central Office collocation sites. Access to Virtual Collocation is permitted for BellSouth employees and Certified Vendors. Virtual Collocators are permitted to view the completed installation for inspection only as referenced in the preceding paragraphs.

Access to Physical Collocation is permitted for Collocator employees and their authorized agents, BellSouth certified vendors, and BellSouth employees. All physical collocators are required to provide their employees and authorized agents a picture identification. This identification must have the employee name and company name clearly printed and must be visible at all times while the individual is inside a BellSouth facility. Agents working on behalf of a collocator should be able to authenticate their relationship to the collocator upon request. Manned offices will afford 24 hour, 7 day per week access, but may require a security escort to the collocation area depending on building configuration. Unmanned offices may require prior arrangement for the dispatch of a BellSouth employee or security escort for building access. Security escort will be required any time a collocator or their agent must traverse a restricted area within the BellSouth premise.

3.16 Conversion of VEIS to Physical Collocation

Collocators who have existing VEIS arrangements may convert these arrangements to Physical Collocation provided the terms and conditions for Physical Collocation are met. The collocator will be responsible for the issuance of service order requests and the payment of fees associated with Physical Collocation, rearrangement of existing services and vendor costs for the relocation/removal of equipment.

3.17 Inspections

BellSouth will conduct an inspection of the collocator's equipment and facilities between the time of the initial turn-over of the space and the activation of cross-connect elements. Subsequent inspections may occur with equipment additions or on a predetermined interval basis. For such inspections, BellSouth will provide a minimum of 48 hours advance notification. BellSouth reserves the right to conduct inspections without prior notification to ensure compliance to the terms and conditions of the tariff or agreement. Collocator personnel have the right to be present for inspections.

A collocator may inspect their Virtual Collocation arrangement upon completion of the arrangement installation. A security escort is required for these inspections. Additional inspections must be coordinated with BellSouth and also require a security escort. Only collocators or their Certified Vendors are permitted for such inspections. Collocators may not use their inspection privilege to work on, test, or modify their virtual equipment installation. Equipment installation, upgrades or testing must be performed by a Certified Vendor following BellSouth's receipt of a written application requesting such work.

General Terms and Conditions (cont.)

3.18 Liability

The collocator is responsible and accountable for the actions of their employees and their agents. The collocator will be required to pay damages to BST for damage to BST property, equipment or facilities as a result of the actions or behaviors of either the collocator employees or their agents.

3.19 Insurance

For Physical Collocation, BellSouth requires the following coverage: (1) \$10 million in commercial general liability insurance or a combination of commercial general liability and excess umbrella coverage totaling \$10 million; (2) workers compensation coverage/employers liability coverage with limits not less than \$100,000 each accident; (3) \$100,00 each employee by disease, \$500,000 policy limit by disease. BellSouth will review requests for self insurance on a case by case basis.

Insurance coverage for Physical Collocation must be in effect on or before the date work commences or equipment is delivered, whichever is sooner, and must remain in effect until departure of all collocator personnel and property from the central office. Insurance for Virtual Collocation is the responsibility of BellSouth per the arrangement lease agreement. Virtual Collocator's should submit annually to BellSouth an updated list of facilities and equipment contained in their Virtual Collocation arrangement to assist BellSouth in ensuring adequate insurance coverage is in place should a disaster occur.

3.20 Subsequent Activity

Should a collocator require subsequent activity to its collocation space, the collocator must submit an Application form to BellSouth to evaluate the impact on support mechanisms or space. Subsequent activity may include, but not be limited to: additional equipment placement, additional square footage build-out, additional cross-connects, equipment rearrangement or equipment exchange.

3.21 Recovery of Extraneous Expenses

Should BellSouth discover, upon beginning construction for physical collocation space, that unexpected major renovation or upgrade will be required in order to facilitate physical collocation, BST will share the costs of these expenses among collocators based on the number of square footage being requested. Major renovation may include, but not be limited to: ground plane addition, asbestos abatement, mechanical upgrade, major HVAC upgrade, separate egress, ADA compliance.

General Terms and Conditions (cont.)

3.22 Cancellation of a Request In Progress

If a collocator cancels an in-progress request, the collocator will be responsible for reimbursing BellSouth for expenses incurred to date. If the collocator has prepaid all or a portion of the non-recurring fees, BellSouth will refund the amount not expended as of the date of the cancellation.

3.23 Disconnection/Relocation of an In-Service Arrangement

When a collocation arrangement is disconnected or relocated, the collocator must contract directly with its selected BellSouth Certified Vendor to remove/relocate all equipment and facilities associated with the decommissioned arrangement at the expense of the collocator.

3.24 Special Reports

BellSouth will negotiate with requesting parties for the development of administrative reports, based on the availability of the data being requested. A fee structure will be based on the complexity of the request and resources required to produce the report(s).

SECTION 4

Rate Components

4.1 Virtual Collocation

The rate element components of Virtual Collocation are contained in BellSouth's FCC #1 tariff, Section 20 and in the Florida Dedicated Services tariff, Section 20. Please refer to these references for the application of charges for Virtual Collocation.

4.2 Physical Collocation

Physical Collocation offers a menu-style ordering provision so you may select only the items required for your individual arrangement(s). Some components are required for all physical collocation arrangements as indicated by an **(R)** designation next to the item in the descriptions following.

4.2.1 Application Fee (R)

The application fee is required for each application to cover the engineering and administrative expense associated with assessing the Application Inquiry request. This fee is a one time charge per location, per request and must accompany the Application Inquiry document before BellSouth will begin assessing the request. A subsequent request by the same customer in the same premises will be treated as "new" if the initial collocation installation design work is completed and work has commenced. An Application fee will apply if BellSouth must expend capital to accommodate the request.

4.2.2 Subsequent Application Fee

A Subsequent Application fee may apply in lieu of the Application fee when subsequent requests for Physical Collocation by the same customer in the same premises do not require BellSouth to expend capital and the collocator has this option negotiated as part of their collocation agreement with BellSouth. A Subsequent Application fee may apply for items including, but not limited to: exchange of existing equipment, adding equipment, addition of cross-connections (including BellSouth's "side" of the demarcation point), addition of equipment racking.

4.2.3 Floor Space (R)

This component covers the square footage requirements for the equipment rack(s) and POT bay for the equipment arrangement. The square footage calculation of an arrangement having an enclosure equals the total square footage contained within the enclosure walls. When an enclosure is not requested, square footage is calculated by the total shadow print of the equipment racks and POT bay plus a factor of 2.50 to compensate for the collocator's pro-rated share of OSHA required wiring and maintenance aisle space. Should the customer request a specified amount of non-enclosed space, floor space charges will be assessed based upon the number of square footage requested, provided such space is adequate to accommodate the requested equipment layout. BellSouth requires an enclosure if a collocator places power equipment or requires a desk or terminal stand.

Rate Components (cont.)

4.2.3 Floor Space (cont.)

The floor space charge covers items such as, but is not limited to the use of lighting, heating, air conditioning, ventilation, emergency back-up for these systems and other allocated expenses associated with the central office building. Billing commences the day the collocation space is turned over to the collocator for occupancy, or the day equipment is delivered to the BellSouth location, whichever is sooner. The floor space element does not include the amperage required to power collocated equipment.

4.2.4 Power (R)

Charges for -48V DC power is assessed per ampere per month based upon the certified vendor engineered and installed power feed fused ampere capacity. Rates include redundant feeder fuse positions (A&B), cable rack to the collocated equipment or equipment arrangement enclosure, and emergency back-up power. Fuses and power feed cables (A&B) must be engineered (sized), furnished and installed by a BellSouth certified vendor. A collocator may have breaker positions installed within their Physical Collocation space. The Interconnector's certified vendor must provide a copy of the engineering power specification prior to the Commencement Date.

When a collocator requests collocation of equipment that requires BellSouth to construct an addition and/or an upgrade to the power plant in a specific central office, these additions and/or upgrades will be part of the Space Preparation charge. The collocator has the option of accepting responsibility for construction of such upgrades or additions per BellSouth specifications and assuming all costs associated with the construction. Power equipment placed by the collocator must be enclosed within fire rated walls.

4.2.5 Cross-Connect (R)

This element provides the one-for-one interconnection to Unbundled Network Elements (i.e. 2-wire or 4-wire unbundled loop, unbundled ports) or BellSouth's tariffed service offerings (i.e. DS0, DS1 or DS3 services). It is a flat rate, non-distance sensitive charge and applies on a per loop, circuit or port connection basis. The cross-connect has both a non-recurring and recurring charge.

4.2.6 POT Bay (R)

BellSouth requires the use of a Point of Termination (POT) bay or frame for demarcation with physical collocation. The charge applies on a per cross-connect basis on a monthly recurring basis only. There is currently no non-recurring charge for this element.

Rate Components (cont.)

4.2.7 Cable Installation

The cable installation charge applies only to collocators who install private entrance facilities to their collocation arrangement. This is a one time (non-recurring) charge per cable installed to arrange the punch through to the manhole, pull fiber cable length from the serving manhole to the Central Office cable vault, perform splicing to collocator's connectorized fire retardant riser, and pull cable length through cable support structure to the collocation arrangement location.

4.2.8 Cable Support Structure

The component covers the use and maintenance of the Central Office duct, riser and overhead racking structure when the collocator elects to provide private fiber entrance facility to their equipment.

4.2.9 Space Preparation Fee

This one time fee applies for physical collocation only, per arrangement, per location and covers the survey, engineering, design, and building / support system modifications for the shared physical collocation area within a central office plus additional "make ready work" specific to the collocator which is not included in the enclosure construction fee. Except in Georgia where the Commission has set a standard rate per square foot, BellSouth will pro rate the actual common space preparation costs among all collocators at a given central office based on the number of square footage requested per collocator. In states other than Georgia, this charge may vary dependent on the location and type of arrangement requested.

BellSouth will provide the collocator an estimate of construction costs in writing in the Application Response. For arrangements in Georgia, the charge will be calculated by multiplying the amount of enclosed or non-enclosed space designated to the collocator by the per square foot fee set by the Georgia Commission. As designated in the Application Response, a portion of the estimated Space Preparation charge must be paid prior to BellSouth beginning construction work.

Should the customer elect to arrange the add/build of DC power plant, the costs for construction of the power equipment enclosure will be included in the space preparation fee when BellSouth performs the construction. Construction of the power equipment enclosure may be directly arranged with a BellSouth certified contractor. Such enclosure, whether constructed by BellSouth or a contracted vendor, will become the property of BellSouth.

4.2.10 Space Construction Fee

This element applies to physical collocation arrangements only and will vary based on the size of arrangement enclosure requested. The fee covers the materials and installation of an equipment arrangement enclosure. The collocator has the option of accepting responsibility arranging the construction of their equipment arrangement enclosure with a BellSouth certified contractor, per BellSouth specifications, and assuming all costs associated with the

Rate Components (cont.)

4.2.1 Space Construction Fee (cont.)

construction. Enclosures constructed for collocation arrangements will become the property of BellSouth.

4.2.12 Additional Engineering

BellSouth's engineering and other labor time associated with establishing the equipment arrangement and establishing tie cables will be billed as additional engineering. This charge will also apply for modifications to an application in progress which result in architectural, design or engineering changes. Additional engineering charges may apply for work efforts specific to a collocator's space when an enclosure construction charge does not apply.

4.2.12 Security Escort (R)

A security escort is required for all equipment inspections under VEIS. A security escort may be required for physical collocation if the collocator or their agent must traverse a restricted area in order to access their collocation space. The charge is billed in half hour increments.

4.2.13 Administrative reporting

Collocators who request administrative reports will be assessed a report fee on an individual case basis.

SECTION 5**Contacts****Physical Collocation contract negotiation:**

<u>Contact Name</u>	<u>Telephone</u>
Jerry Hendrix	404 927-7503

Collocation Coordinator Contacts:

<u>Contact Name</u>	<u>Account(s)</u>	<u>Telephone</u>	<u>Fax Number</u>
Nancy Nelson	CIS*	205-321-4986	205-321-5058
Kim Reid	CIS	205-321-4980	205-321-5058
Barbara Hunter	CIS	205-321-4933	205-321-5058
Ruby Neely	CIS	205-321-4978	205-321-5058
Jeanie Ash	MCI/WorldCom	770-492-7541	770-621-0632
Linda Walker	BSLD	770-592-4352	770-592-3453
Tracy Bracknell	AT&T	770-492-7485	770-492-9412
Fran Wilemon	SprintMetro	205-988-1355	205-988-1688
Connie Butrill	Wireless	770-454-2983	205-454-2907
Cindy Woolsey	ACS*	205-733-5809	205-988-6969

*CIS = CLEC Interconnection Sales

*ACS = Access Customer Sales

Accounts not listed:

Contact your Account Representative to obtain the name of your collocation coordinator if not listed above.

To obtain a copy of BellSouth's Application / Inquiry document (2nd Qtr '99):

**Contact your Account Representative
or
Visit BellSouth's Interconnect website at:
www.interconnection.bellsouth.com**

Example
BellSouth Certified Transmission Vendor List
Engineering and Installation of Collocation Arrangements

<u>Vendor</u>	<u>Contact</u>	<u>Phone</u>
ADC Communications	Ken Reeves Doug Guildry	800-223-9773 318-684-2860
ADC Da Tel	Basem Anshasi	205-655-9898
Alcatel	Ed Boatwright Alex Baber	770-270-8335 800-869-4869
E F & I Services Co.	Reed Tillis	904-355-7930
Fujitsu Network Communications, Inc., * <i>Certified - Collocation (OEM) Fujitsu Equipment Only</i>	J. Quinta Evans	770-246-4102
Lucent Technologies, Inc.	(SC) Adrian Dye (MS) Larry Montgomery GA) Mike Chancey (NFL) Wayne Stricklen (NC) Abe Jenkins NC) (AL) Marc Haze (S/SEFL) Charles Barrett	803-926-5213 601-949-8277 404-573-6521 407-636-1421 704-529-0693 910-299-0326 334-265-1291 561-837-9649
Mintel	Bill Quinn	770-923-0304
Nortel * <i>Field Trial - Collocation (OEM) Physical Collocation only</i>	Joe Salazar	972-685-7587
Quality Telecommunications, Inc.	Jerry Miller	770-953-1410
Rapid Response Comm.	Ted Pellaux	423-546-2886
Reltec Services	Woody Bell	770-449-0840
Six "R" Comm., Inc.	Ken Koontz or Dick Phillips	704-289-5522
Tele-Tech Company	Rod Trawick	770-389-3043
Telpro Technologies, Inc.	Robert West, Jr.	404-629-1093
Trans Global Comm.	Dale White	407-290-1453
Volt Information Science	George Maquieira	908-245-0100
W. E. Tech, Inc.	Wes Evans	954-587-6996

Note:

The certification status of any listed vendor is subject to change monthly, therefore please ensure you have current information by contacting your BellSouth Collocation Coordinator. @This indicates a Certified Vendor is temporarily unavailable for collocation selection.

**Example
BellSouth Certified Switch Vendors
Engineering and Installation for Physical Collocation**

<u>Vendor</u>	<u>Contact</u>	<u>Phone</u>
DSC Corporation (STP)	John Mastoras	214-491-1870
Ericsson(STP)	Karen A Caulk	972-583-5158
Fujitsu Network Communications, Inc. Certified – Collocation (OEM) Broadband	J. Quinta Evans	770-246-4102
Lucent Technologies, Inc.	(SC) Adrian Dye (MS)Larry Montgomery (GA) Mike Chancey (NFL) Wayne Stricklen (NC) Abe Jenkins (NC) (AL) Marc Haze (S/SEFL) Charles Barrett	803-926-5213 601-949-8277 404-573-6521 407-636-1421 704-529-0693 910-299-0326 334-265-1291 561-837-9649
Nortel	Margaret Skeen	770-661-4303
Siemens Stromberg – Carlson	Manfred Schmidtk Installation	407-942-5665
	Karl Hoskins Engineering	561-955-8621

Note:

The certification status of any listed vendor is subject to change monthly, therefore please ensure you have current information by contacting your BellSouth Collocation Coordinator. @This indicates a Certified Vendor is temporarily unavailable for collocation selection.

Example
BellSouth Certified Power Vendors
Engineering and Installation for Physical Collocation

Note: Installation of Power equipment requires special BellSouth conditions and approval.

<u>Vendor</u>	<u>Contact</u>	<u>Phone</u>
Charles E. Singleton	Sam Wetzel	305-960-0158
Reltec Services	Bob Dietz	216-353-2070
Six R Communications	Ken Kootnz	704-535-7607
Lucent Technologies, Inc.	(SC) Adrian Dye (MS) Larry Montgomery (GA) Mike Chancey (NFL) Wayne Stricklen (NC) Abe Jenkins (NC) (AL) Marc Haze (S/SEFL) Charles Barrett	803-926-5213 601-949-8277 404-573-6521 407-636-1421 704-529-0693 910-299-0326 334-265-1291 561-837-9649

Note:

The certification status of any listed vendor is subject to change monthly, therefore please ensure you have current information by contacting your BellSouth Collocation Coordinator. @This indicates a Certified Vendor is temporarily unavailable for collocation selection.

SECTION 6**Exhibits****Example Letter: Request for Negotiations****(Date)**

Mr. Jerry Hendrix
 Director - Marketing Interconnection Services
 BellSouth Telecommunications, Inc.
 675 W. Peachtree Street, N.E.
 Room 34S91
 Atlanta, Georgia 30375

Dear Mr. Hendrix:

(Company name) hereby requests to begin the negotiations process to reach a mutually acceptable Physical Collocation Agreement with BellSouth Telecommunications, Inc. in the state(s) of _____.

Please contact **(name of your contact)** at your earliest convenience to establish the appropriate company contacts and the desired procedural schedule necessary to implement the negotiation process.

Sincerely,

Contact Name and Title

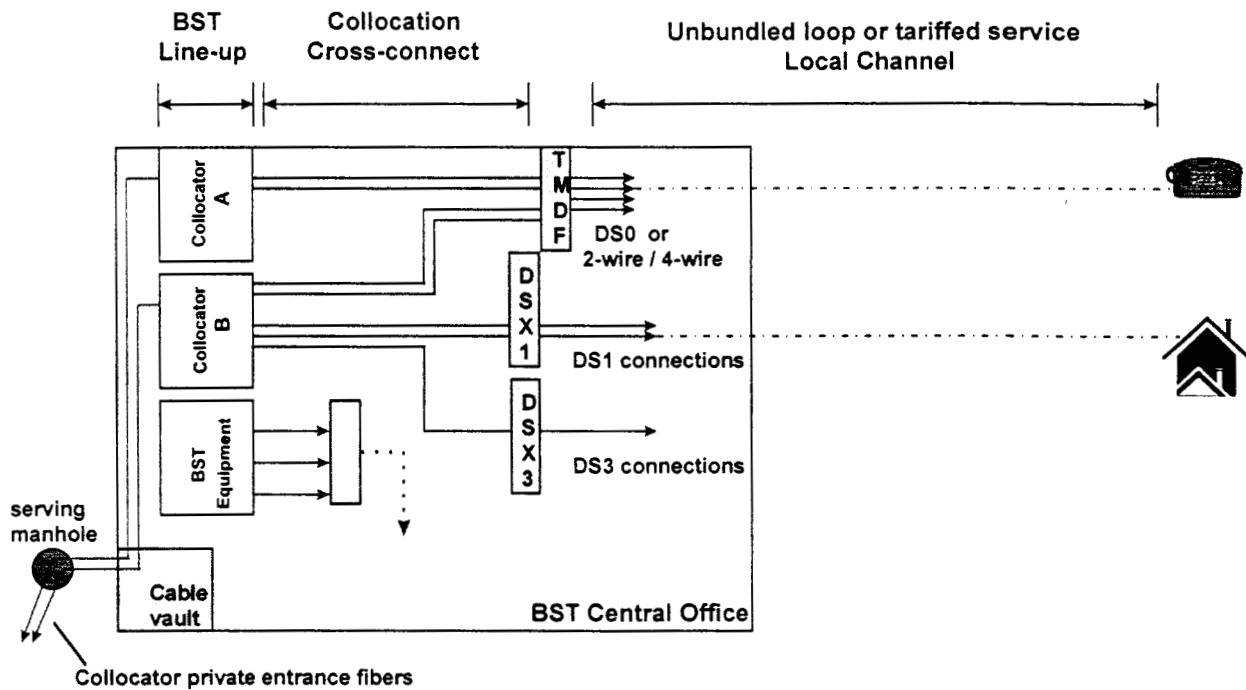
Company Name and Address

Contact Phone Number, Fax Number

Exhibits

Virtual Collocation Example Schematic

This schematic shows the placement of the Virtual Collocation equipment within the BellSouth line-up. The interconnection point between the collocator's equipment arrangement and BellSouth's network occurs at the frame (TMDF) or DSX (DSX1 or DSX3), depending on the service being interconnected. The "local channel" is shown as an example of the type of connection which can be made between a collocation arrangement and BellSouth's network but does not constitute the only option for such interconnection.



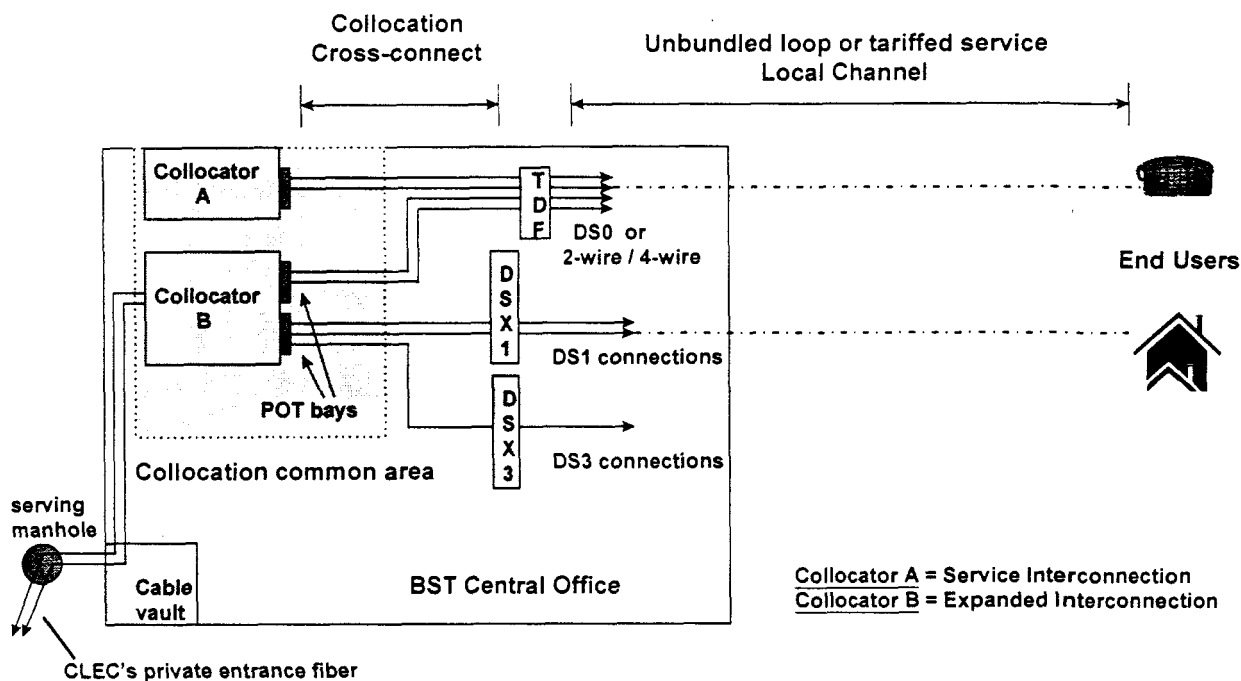
~~CONFIDENTIAL~~

228

Exhibits

Physical Collocation Example Schematic

The example below illustrates the two types of Physical Collocation offered by BellSouth: Service Interconnection with Collocator "A" and Expanded Interconnection Service with Collocator "B". This Schematic shows the POT bay interconnection point between the collocator's equipment arrangement and BellSouth's network. The "local channel" is shown as an example of the type of connection which can be made between a collocation arrangement and BellSouth's network.

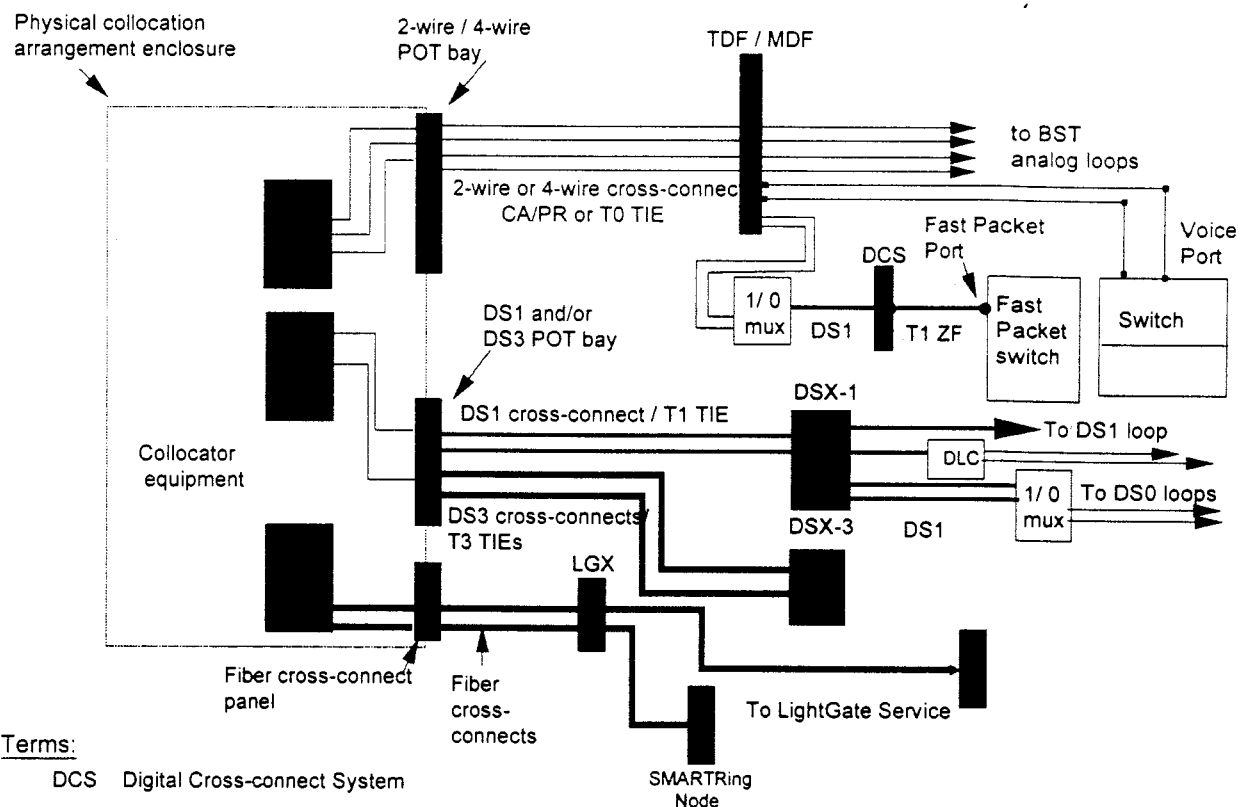


~~CONFIDENTIAL~~

029

Exhibits

Example Cross-connection Schematic Physical Collocation



Terms:

- DCS Digital Cross-connect System
- DLC Digital Loop Carrier (loop concentrator)
- LGX Light Guide Cross-connect
- MDF Main Distributing Frame
- TDF Toll Distributing Frame

~~CONFIDENTIAL~~

p36

Exhibits

Available upon request:

BellSouth Standard Collocation Agreement

BSTEI Ordering Documents and Line by Line Instructions

BellSouth Provisioning Process Flow Diagram

Consideration of Environmental Conditions Guidelines

*** See the contacts located in Section 5 to obtain copies of the above.**

EXHIBIT RKY-4
(Workpapers)
Document No. 04607-99

Pages 38-78

RETAINED UNDER CONFIDENTIAL COVER PENDING RULING
ON BELLSOUTH'S APRIL 30, 1999 REQUEST FOR CONFIDENTIAL TREATMENT

SPACE ASSESSMENT WO

[EVALUATION OF CENTRAL OFFICE SPACE AVAILABLE FOR PHYSICAL COLLOCATION]

CENTRAL OFFICE CLLI: _____ MIAMFLPL

ADDRESS: _____ 9056 NW 41ST STREET, MIAMI, FL 33166

		SQ. FT.
A. TOTAL GROSS SQ. FT.	A.	24398
B. UNAVAILABLE SPACE*: _____ Air conditioning room, restrooms and storage _____ _____ _____	B.	1901
<p>* Unavailable space is all Non-Assignable area and is comprised of entrance lobbies, main corridors, hall spaces, inside stairways, fire towers, vertical shafts(light, vent, power, dumbwaiters, & elevators), all toilet rooms (except those associated with private offices) and all space necessary for building operations.</p>		
C. OCCUPIED SPACE: (Space Computed as Block of Assigned Space - (Future Bays - 3.5) Central office Switch(es) _____ _____		4357
Transmission Equipment _____ _____ (PHYSICAL COLLOCATION)		4957.5 800
Other (Specify) FRAME _____		3465
POWER _____		2613
ADMINISTRATIVE _____		1878
TOTAL ASSIGNED - OCCUPIED SPACE	C.	18070.5

PRIVATE
THE INFORMATION CONTAINED HEREIN SHOULD NOT BE DISCLOSED TO UNAUTHORIZED PERSONS. IT IS MEANT SOLELY FOR USE BY AUTHORIZED BELLSOUTH EMPLOYEES

2
~~CONFIDENTIAL~~

SPACE ASSESSMENT WO

D. RESERVED SPACE

Switching Equipment Growth through Year of _____ 1959
 For: _____

Transmission Equipment Growth through year of _____ 1584.5
 For: _____

Turnaround Space for replacement of _____ : Year: _____
 (Switch Type)

Other (Virtual Collocation) _____ 100
 (Switch Type)

Power _____ : Year: _____ 650
 (Switch Type)

Frame _____ : Year: _____
 (Switch Type)

Administrative (Space reserved for Administrative use, service center(s), or non-wire center functions)

_____ : Year: _____
 _____ : Year: _____
 _____ : Year: _____

TOTAL VACANT SPACE RESERVED FOR FUTURE USE D. 4293.5

E. VACANT SPACE/NOT USABLE (I.e., flooding, no access to fire exits, configuration problems, space less than 100 sq. ft., building to be vacated)

** If building is to be vacated, what CLLI will replace the facilities served by CLLI being vacated.

Explain each item in detail:

_____ Air passage required for air return to _____
 _____ air handling unit; space too narrow for equipment
 _____ 133

TOTAL VACANT SPACE/NOT USABLE E. 133

F. NET AVAILABLE SPACE (A -B -C -D -E -F) = F. 0

PRIVATE

THE INFORMATION CONTAINED HEREIN SHOULD NOT BE DISCLOSED TO UNAUTHORIZED PERSONS. IT IS MEANT SOLELY FOR USE BY AUTHORIZED BELLSOUTH EMPLOYEES



SPACE ASSESSMENT WC

G. FUTURE AVAILABLE SPACE

SQ. FT.

Completion of Switch Replacement: _____
(Qtr/Yr.)

Sq. Ft. =

Removal of Retired Equipment: _ _____
(Qtr/Yr.)

Sq. Ft. =

OTHER (Specify) _____

(Qtr/Yr.)

H. IF PHYSICAL SPACE IS NOT AVAILABLE, VIRTUAL WILL BE OFFERED.
(EXPLAIN IN DETAIL IF VIRTUAL COLLOCATION CANNOT BE OFFERED.)

NAME OF PERSON FILLING OUT FORM:

_____ Jenine Williams/North FL CAD Librarian
(PRINT NAME AND TITLE)

TEL. NO. _(904) 350-4217

AUTHORIZED BY:

_____ Jim D. Bloomer/Facility Planner
(Paygrade 59 or above)

TEL. NO. _(904) 350-3428

PRIVATE

THE INFORMATION CONTAINED HEREIN SHOULD NOT BE DISCLOSED TO UNAUTHORIZED PERSONS. IT IS MEANT SOLELY FOR USE BY AUTHORIZED BELLSOUTH EMPLOYEES

4

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for temporary waiver of physical collocation requirements set forth in the 1996 Telecommunications Act and the FCC's First Report and Order, for the Daytona Beach Port Orange Central Office, by BellSouth Telecommunications, Inc.

DOCKET NO. 980946-TL

In re: Petition for waiver of physical collocation requirements set forth in the Telecommunications Act of 1996 and the FCC's First Report and Order, for the Boca Raton Boca Teeca Central Office, by BellSouth Telecommunications, Inc.

DOCKET NO. 980947-TL

In re: Petition for waiver of physical collocation requirements set forth in the 1996 Telecommunications Act and the FCC's First Report and Order, for the Miami Palmetto Central Office, by BellSouth Telecommunications, Inc.

DOCKET NO. 980948-TL

In re: Petition for waiver of physical collocation requirements set forth in the Telecommunications Act of 1996 and the FCC's First Report and Order, for the West Palm Beach Gardens Central Office, by BellSouth Telecommunications, Inc.

DOCKET NO. 981011-TL

- CK _____
- FA _____
- PP _____
- AF _____
- MU _____
- TR _____
- AG _____
- EG _____
- IN _____
- OPC _____
- RCH _____
- SEC 1
- NAS _____
- OTH _____

DOCUMENT NUMBER-DATE

04608 APR-98

FPSC-RECORDS/REPORTING