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BELLSOUTH TELECOMMUNICATIONS, INC.  
REBUTTAL TESTIMONY OF DORISSA C. REDMOND  
BEFORE THE  
FLORIDA PUBLIC SERVICE COMMISSION  
DOCKET NOS. 960833-TP, 960846-TP, 960757-TP, 971140-TP  
DECEMBER 09, 1997

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND  
POSITION WITH BELLSOUTH TELECOMMUNICATIONS, INC.

A. My name is Dorissa C. Redmond. My business address is  
Room 20C75, 675 West Peachtree Street, Atlanta, GA. I am employed  
by BellSouth Telecommunications, Inc. (hereinafter referred to as  
"BellSouth" or "the Company") in the Property and Services  
Management department as an Account Representative in the  
Strategic Planning group.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND,  
WORK EXPERIENCE, AND CURRENT RESPONSIBILITIES.

A. I am currently a senior at the Southern Polytechnical Institute in  
Marietta, Georgia. I have an Associate of Science degree from the  
same institution. My Major field of study is Architectural Engineering  
Technology and my Minor field of study is Technology Management. I  
require three (3) classes to complete these fields for a Bachelor of

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1 Science degree. I am a member of the Tau Alpha Pi National Honor  
2 Society (Engineering).

3

4 I have been employed by BellSouth since 1978 and I have been in the  
5 Property Management department (previously Building Design and  
6 Construction) since 1979. I have held the following management  
7 positions in this department:

8

9 Space Planner (administrative and equipment): I was responsible for  
10 determining the space needs (programming) of the various  
11 departments within BellSouth. After programming, I designed the  
12 required space, be it a new facility or rearrangement of an existing  
13 facility. Design was performed at all times to maximize functional  
14 efficiencies while minimizing cost.

15

16 Project Manager: I was promoted to this position in 1995. As a Project  
17 Manager, I was responsible for oversight of the design and  
18 construction of space rearrangements, new facilities, environmental  
19 projects, etc., for BellSouth facilities. This included coordination of any  
20 architects, consultants, contractors, etc., required to complete  
21 construction projects from start to finish. I was also responsible for the  
22 high level cost estimating needed for budgeting purposes at the front  
23 end of projects and for all accounting associated with the project.

24

25

1 Account Representative (current): I am the interface between the BST  
2 Network and Property Management departments. I provide cost and  
3 facility data as necessary to Network to aid in business decisions, and  
4 design criteria for Network applications in BellSouth facilities. The  
5 major portion of my job responsibility for the past year has been to  
6 prepare the BellSouth Property Management Physical Collocation  
7 Guidelines.

8

9 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

10

11 A. The purpose of my testimony in this proceeding is to rebut testimony  
12 provided by ATT/MCI witnesses Rick Bissell and John C. Klick, and  
13 WorldCom witness David N. Porter. I also validate BST methods and  
14 procedures with respect to the construction of physical collocation  
15 space. As the author of the Property Management Physical Collocation  
16 Guidelines, I am familiar with the background of how and why these  
17 guidelines were developed. My testimony will show, using real data  
18 and planning practices, that BellSouth's construction cost estimating,  
19 construction methods, and space planning for physical collocation are  
20 appropriate. It is important to note from the outset that collocation, by  
21 definition, involves the rearrangement of existing central office facilities,  
22 and not new buildings. Thus, the MCI/AT&T model is totally  
23 inappropriate in determining costs.

24

25

1 Q. ARE YOU FAMILIAR WITH THE FORWARD LOOKING MODEL  
2 COLLOCATION AREA LAYOUT THAT HAS BEEN DEVELOPED BY  
3 MCI AND AT&T?  
4

5 A. Yes, I am. This central office ("CO") model assumes a new urban CO  
6 designed for up to 150,000 lines. It is suggested that this CO would be  
7 36,000 square feet in the form of three (3) 12,000 square foot  
8 equipment floors plus a below ground cable vault. In addition, there  
9 would be 3,000 square feet on each floor and an entire basement  
10 (except for the cable vault) for building support and administrative  
11 offices. This would equate to 15,000 square feet for four floors totaling  
12 60,000 gross square feet.  
13

14 MCI and AT&T assert that this model office is consistent with facilities  
15 that have been constructed within the past five years. It is assumed  
16 that rural CO's would be smaller than urban CO's; therefore, cable runs  
17 would be shorter. This is mentioned as support for the promise that  
18 the assumptions made for this model are conservative. Furthermore, all  
19 assumptions made concerning the model purportedly deal with "best  
20 practice" and new construction.  
21

22 Q. IS THIS MODEL CO A REALISTIC REPRESENTATION OF  
23 BELL SOUTH'S URBAN CENTRAL OFFICES?  
24  
25

1 A No. To assume that the model represents planning and construction  
2 methods used for the past five years is wrong. There are only 15 urban  
3 central offices in the state of Florida of the 60,000 sq. ft. magnitude (as  
4 per the ATT/MCI model). The first of these -- Orlando -- was built in  
5 1926, and the most recent -- Opa Locka -- was built in 1975. Even if  
6 you considered a slightly smaller urban central office of say 30,000 to  
7 60,000 sq. feet, the most recent one -- Miami -- was built in 1975,  
8 almost 25 years ago. BellSouth's urban central offices are typically  
9 very large facilities that were built when telecommunications switches  
10 required greater footprints of floor space. Moreover, BellSouth does  
11 not build new facilities just to employ the methods used in the model.  
12 Today's planners are faced with the challenge of planning new  
13 switches and existing switch growth to best fit with the circumstances  
14 of the existing buildings. Years of previous additions often make these  
15 building layouts convoluted planning nightmares. It would indeed be  
16 nice to put a fairy tale facade on this issue with the forward looking  
17 facility of our dreams, but that is just not reality.

18

19 Q. IF TECHNOLOGY HAS CREATED SWITCHING EQUIPMENT THAT  
20 USES A SMALLER FOOTPRINT THAN PREVIOUS SWITCHES,  
21 SHOULDN'T THERE BE PLENTY OF VACANT SPACE IN URBAN  
22 CO'S FOR PHYSICAL COLLOCATION?

23

24

25

1 A. In many cases, there are large amounts of space in the urban facilities  
2 due to the more space efficient switches of today. This space may be  
3 in the form of various sized pockets or in large contiguous spaces.

4  
5 As large pockets of space have come available in urban CO's,  
6 however, the space has been renovated for use as administrative  
7 offices, thus moving personnel from costly leased buildings into  
8 Company-owned facilities. For the past several years, BellSouth has  
9 undergone an aggressive program in which operating costs have been  
10 reduced by reducing the amount of total floor space occupied and  
11 maintained. By the end of 1997, it is estimated that the amount of  
12 space reduced by this program will be around 4 million square feet.  
13 Even though a lot of vacant CO space has been used for administrative  
14 forces, generally, there is still room for physical collocation.

15  
16 Q. DOES BELLSOUTH'S METHOD OF PLANNING PHYSICAL  
17 COLLOCATION SPACE DIFFER FROM THE MCI AND AT&T MODEL,  
18 AND IF SO, HOW?

19  
20 A. Yes. The model calls for collocation space using small pockets of  
21 space (550 SF) close to an incumbent local exchange carrier's ("ILEC")  
22 cross-connects. This space is laid out in four 100 square foot  
23 enclosures, two to a side, with a 7'6" center aisle for a point of  
24 termination ("POT") bay and any necessary battery distribution fuse  
25 boards ("BDFB").

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This layout is not practical for real collocation arrangements. Out of the 61 Bona Fide Firm Orders for physical collocation BellSouth has received to date region wide, only 15 ( 24.6%) involve requests for 100 square feet. Of course, the model could be converted from four 100 square foot enclosures to two 200 square foot enclosures with a center aisle. Of the same 61 requests, only 28 (45.9%) involve requests for 200 square feet. Unfortunately, the model would not work for the remaining 18 requests at all as they are for enclosures ranging from 300 to 5,000 square feet.

It is interesting to note here that all of MCI Metro's requests for space have been for over 200 square feet. Therefore, their model would not even accommodate their own requests.

Another aspect of the model that is not practical is the placement of the POT bay and BDFB's in the center aisle. Typically, multiple POT bays or a POT frame will be required for Alternative Local Exchange Companies (ALECs), depending upon the number of connections required. POT bays are approximately 12" deep, POT frames are 15" deep, and each have wires protruding beyond this, to some degree. The model aisle is 7'6" wide and the POT bay/frame is centered to this aisle. That should leave, worst case, roughly 37" on either side of the bay for an aisle. The minimum allowable aisle, according to the Standard Building Code, is 44". Of course, there are probably tight

1 spaces like this in other areas of the central office, but this is a tight  
2 space where multiple ALECs, and occasionally the ILEC, will be  
3 entering and exiting. This smaller aisle increases the potential for  
4 accidental mishaps or brushing of these connections.

5  
6 Another interesting point is that in Georgia, MCI Metro has balked at  
7 accepting physical collocation spaces built for them where the POT bay  
8 is located such that other collocating companies can pass by it. Once  
9 again, AT&T and MCI's cost model assumes a physical collocation  
10 arrangement that they consider unacceptable.

11  
12 One large, commonly shared collocation space is more practical and  
13 economical. A large amount of space allows for the checkerboarding  
14 of collocators. This is a method where gaps of space are left between  
15 collocators for their future growth on a contiguous basis. The gaps left  
16 are in various sizes that could also be used for new collocators if the  
17 space fills up before existing collocators grow. Of course, there may  
18 not always be the luxury of having this kind of space to deal with and  
19 collocators are not guaranteed contiguous growth. BellSouth's plan will  
20 accommodate contiguous growth for ALECs more frequently than MCI  
21 and AT&T's plan.

22  
23 Another reason to plan for large common spaces for collocators is the  
24 presence of column spacing and vertical cable runs. The numbers of  
25 these that consume space in the older urban CO's can be staggering.



1           Given a large enough space to work with, collocation arrangements  
2           can be planned around these obstructions. In addition to providing  
3           more flexibility in layouts, placing collocators in larger spaces is more  
4           economical due to the sharing of HVAC (heating, ventilating, and air  
5           conditioning) lighting, alarms, controls, electrical distribution, etc.

6

7           There is no method for determining precisely how much of a large  
8           space should be planned for common physical collocation space in  
9           these CO's. The facilities and the spaces within them are so unique  
10          that individual planners must carefully evaluate each facility upon an  
11          Inquiry for the best overall plan.

12

13 Q.       WHAT CRITERIA DO BELLSOUTH'S PLANNERS USE TO DECIDE  
14       WHICH AVAILABLE SPACE IN THE CO WILL BE USED FOR  
15       COLLOCATORS?

16

17 A.       The first thing that a planner does when an official Inquiry for space is  
18       received is to verify the floor plan. This may require a visit to the site.  
19       This step will confirm whether or not there is any space available, and  
20       will pinpoint where the space is. As mentioned before, there may be  
21       large areas or small pockets. The planner then confers with personnel  
22       in the Network Capacity Management department about the projected  
23       two year growth for BellSouth's equipment. This equipment is then  
24       reflected on the floor plan in a growth pattern contiguous to like  
25       equipment. It is not unreasonable for BellSouth to plan for its own

1 growth in this manner. Collocators have the option of providing for  
2 their own two-year growth by requesting/reserving this additional space  
3 with their Bona Fide Firm Order.

4  
5 The Capacity Management personnel will also be looking at cable  
6 routes and proximity of power equipment, frames, etc.

7  
8 The next thing that the planner considers is the ingress / egress to the  
9 space. Optimally, ALEC's must be able to reach their space without  
10 passing through BellSouth's equipment space. Planning common  
11 collocation space in this manner is felt necessary for the security of not  
12 only BellSouth's equipment but also the ALECs', and may require new  
13 entrances or corridors.

14  
15 Interestingly, the MCI and AT&T model doesn't take note of possible  
16 local code requirements. For example, BellSouth has run across at  
17 least one case in Georgia where the local code official having  
18 jurisdiction in the city where collocators were to be placed in a  
19 BellSouth facility ruled that the collocation space had to be planned in  
20 such a manner that collocators and BellSouth could not even use the  
21 same entrance, nor could collocators pass through any BellSouth  
22 space, not even corridors.

23  
24 Another example, which BellSouth is experiencing in many areas  
25 where physical collocation spaces are being constructed is the situation

1 where the occupancy code of the building has been changed. Local  
2 code officials in Florida, Georgia and Alabama have determined that  
3 physical collocation dictates a "multi-tenant" situation. Due to this,  
4 protected corridors to each space must be erected and all enclosures  
5 must have a one hour fire separation. This involves gypsum drywall  
6 separation from the floor to the roof deck above. All penetrations such  
7 as cable racks and HVAC duct work must be appropriately constructed.  
8 The HVAC system, fire systems, alarms, environmental controls, etc.,  
9 must all be reworked. Such requirements cause the cost of the project  
10 to be increased significantly.

11

12 Q. DOES BELLSOUTH HAVE ELECTRONIC SECURITY CARD  
13 SYSTEMS AT ALL OF ITS CENTRAL OFFICES?

14

15 A. No. Out of 197 central offices in Florida, only 58 have electronic  
16 security card systems. The card access system used by BellSouth is  
17 sold by Northern Computers and manufactured by Hughes (HID). The  
18 proprietary firmware was developed especially for BellSouth. The cost  
19 is \$10,000 per door. Therefore, it is installed in facilities only after  
20 considering the risk factor. This is one reason why placing collocation  
21 areas in space where ingress / egress renovations are minimal is very  
22 important to the planning process.

23

24 Q. MR. BISSELL DISCUSSES IN HIS TESTIMONY ON PAGE 20 THAT  
25 SMALLER CONTRACTORS COULD PROVIDE MORE

1           COMPETITIVE RATES AND MEET THE SHORTER TIME  
2           INTERVALS THAN MAJOR CONSTRUCTION COMPANIES. DOES  
3           BELLSOUTH HANDLE THE CONTRACTING OF PHYSICAL  
4           COLLOCATION CONSTRUCTION IN A COST EFFICIENT MANNER?

5

6   A.    Yes. Typically, bidding a construction project among five or six  
7           contractors is the surest way to get the lowest price. In a bidding  
8           process, drawings, specifications, and an invitation to bid are sent to  
9           prospective contractors. If interested, these contractors would then  
10          attend a pre-bid meeting to discuss the aspects of the project. The  
11          contractors would then be given a reasonable amount of time to gather  
12          cost data for submittal of their bid. This time period could be  
13          lengthened if certain addenda are added to the project. The  
14          contractors would then submit their bids for the project. Bidding a  
15          project could become a very lengthy project.

16

17          Once a Bona Fide Firm Order for physical collocation is received by  
18          BellSouth, there is a very short time frame in which to complete  
19          construction of the collocation space. Some contracts with the ALECs  
20          require, and the Florida Public Service Commission has determined,  
21          that this time frame will be as short as 90 days maximum. That is, 90  
22          days to have drawings and specifications developed, contracts  
23          negotiated or bid, permits obtained, coordination meetings with the  
24          ALEC conducted, and the space constructed. The compressed  
25          timeframe of these projects prohibits the luxury of the lengthy bidding

1 process. Projects to construct physical collocation arrangements must  
2 therefore be negotiated with general contractors under a BellSouth  
3 master agreement.

4  
5 The contractors under this master agreement were selected by sending  
6 out samples of projects of less than \$100,000 to multiple contractors in  
7 Florida, Louisiana, North Carolina and South Carolina for bids. The  
8 result of this process was the guarantee of cost plus a percentage  
9 lower than is standard for jobs of this size on negotiated projects of less  
10 than \$100,000. The low percentage is made possible by the guarantee  
11 of work from BellSouth. This figure was then used to negotiate the  
12 same deal with contractors in the other five BellSouth states. Projects  
13 of over \$100,000 are always bid unless time is a factor, wherein the  
14 project will be negotiated under the cost plus agreement mentioned  
15 above. When time is a factor in very large projects, say a million  
16 dollars or more, the master agreement includes negotiating the cost  
17 plus fee down as low as 4%. This process is not only advantageous in  
18 giving BellSouth the most cost efficient process for construction  
19 projects, it also assures that the Company enjoys the efficiencies  
20 inherent in having the construction work performed by a small number  
21 of contractors familiar with BellSouth's facilities.

22  
23 Q. CONSTRUCTION COSTS FOR THE MCI AND AT&T COST MODEL  
24 WERE BASED ON SQUARE FOOT COSTS AS SHOWN IN THE R.S.

25

1 MEANS BUILDING CONSTRUCTION COST DATA BOOK. IS THIS A  
2 VIABLE METHOD FOR ESTIMATING COLLOCATION PROJECTS?

3

4 A. No. While the R.S. Means is perhaps the best estimating tool of its  
5 type on the market, it must be used in the proper context. BellSouth  
6 uses this tool only in the rare event that no real contractor data can be  
7 found, and then, only for specific items, such as individual circuits or  
8 light switches, etc., not for overall square foot costs. Also, the square  
9 foot data in the R.S.Means is for new construction of a facility, whereas  
10 collocation, by definition, involves rearrangement of existing facilities.

11

12 Values used for the MCI/AT&T cost study are from Division 17, *Square*  
13 *Foot & Cubic Foot Costs*, 1997 edition. The median cost per SF of a  
14 telephone exchange is given as \$135.00. This is multiplied by a cost  
15 multiplier of 0.90 (due to the model CO being 60,000 square feet  
16 rather than the 4,500 square foot typical CO quoted) for a cost of  
17 \$121.50 per SF for telephone exchanges.

18

19 The use of Division 17 can be particularly risky. Individual owner's  
20 requirements are not accounted for in this division. Although the  
21 accepted rule of thumb in estimating is that "bigger is cheaper"  
22 (economies of scale), this is not true in this situation. The median price  
23 quoted is for a facility of 4,500 square feet. This puts it in the category  
24 of a rural Community Dial Office. These buildings are not nearly as  
25 complex as the urban central office of either the MCI/AT&T cost model

1 or BellSouth's existing urban facilities. Differences can include, but are  
2 not limited to: ceiling heights, cable vaults, elevators,  
3 generators/engines/rooms, uncrating rooms, multiple mechanical  
4 systems/rooms, power rooms, complex fire systems, zoning  
5 restrictions, and site constraints.

6

7 The cover sheet for Division 17 is full of disclaimers regarding the use  
8 of square foot and cubic foot costs (Exhibit DCR-1). The disclaimer  
9 that particularly applies to this testimony is: "These projects [Means  
10 database] were located throughout the U.S. and reflect a tremendous  
11 variation in square foot (S.F.) and cubic foot (C.F.) costs. This is due to  
12 differences, not only in labor and material costs, but also in individual  
13 owner's requirements." Consequentially, using data from R.S. means  
14 to estimate the cost of collocation, as the AT&T/MCI collocation model  
15 does, is inappropriate.

16

17 The R.S. Means book also does not take in to account that BellSouth  
18 requires a full time superintendent on site at all times during  
19 construction. This is an important requirement so that immediate action  
20 can be taken in the event of a mishap that could otherwise cause an  
21 interruption in service to existing ILEC or ALEC customers. No holiday  
22 or overtime work is considered. There is no sub-contractor mark-up.  
23 Weather, season, labor union restrictions, labor availability, and  
24 substitute materials are not considered. No sales tax is included, and  
25 all equipment is assumed to be rented, not owned.

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Another disclaimer on this page states: "As soon as details become available in the project design, the square foot approach should be discontinued and the project priced to its particular components." However, rather than using the component pricing in R.S. Means, which is not reflective of true central office construction costs, the actual component costs that BellSouth is expected to incur should be considered. This is the approach taken by BellSouth, which used a cost estimating spread sheet that has been created in-house by Property Management personnel. This tool has been developed by gathering data from previous jobs and updating the data as necessary. Some of the data have been populated from direct contractor quotes (Exhibit DCR-2). This spread sheet is used by Property Management for the high level cost estimating required at the inception of projects for the purpose of developing budgets for approval.

Q. THE MCI/AT&T MODEL USES WIRE MESH FOR ITS COLLOCATION ARRANGEMENTS. IS BELLSOUTH'S APPROACH TO PHYSICAL COLLOCATION, SPECIFICALLY THE DESIGN OF THE WALLS AND THE METHOD OF FINISHING THE WALLS, EXCESSIVE?

A. No. BellSouth's approach to physical collocation is not excessive at all. BellSouth must first maintain the integrity of service to existing ILEC and ALEC customers while engaging in construction in central offices. BellSouth must try to ensure the safety of all personnel working within



1 the central office environment. At the same time, BellSouth must also  
2 provide for the security of all equipment spaces. These concerns are  
3 reasonable, and they are the impetus for the methods BellSouth has  
4 chosen for construction of collocation enclosures. Integrity of service is  
5 addressed in two ways. The first is by ensuring that BellSouth and  
6 ALEC equipment is not contaminated during construction of  
7 subsequent collocation areas. The second is by ensuring the security  
8 of all equipment.

9

10 Q. PLEASE EXPLAIN.

11

12 A. BellSouth must take measures to ensure that equipment is not  
13 contaminated during construction of collocation areas. These  
14 measures include the placing of a protective dust barrier during  
15 construction of collocation areas, and by the use of the wet sponge  
16 method to finish the gypsum board wall.

17

18 Safety is addressed by the use of gypsum board wall instead of wire  
19 mesh in the construction of collocation enclosures. BellSouth is the  
20 only ILEC that allows ALECs to place switching equipment within the  
21 collocation enclosure area. Switches require their own isolated ground  
22 plane rather than just being grounded to the common, integrated  
23 electrical system.

24

25

1 Security is ensured through the placement of a gypsum board wall with  
2 rigid security fencing at the top to separate BellSouth equipment  
3 spaces from collocators' equipment spaces. The same wall, minus the  
4 security fencing, will be used to separate the collocators from each  
5 other, when an enclosure is requested. The security fencing will not  
6 interfere with cable racking as it is easily trimmed around the racks.  
7 Although it is unlikely that any individual is going to scale the drywall, it  
8 is possible. BellSouth Network Operations feels that this extra  
9 protection is necessary to protect the security of BellSouth's equipment  
10 as well as the ALECs'.

11

12 Q. WHY DOES BELLSOUTH CONSIDER WIRE MESH WALLS TO BE  
13 UNSAFE?

14

15 A. BellSouth believes that wire mesh walls are unsafe because their use  
16 raises the possibility of introducing multiple isolated and integrated  
17 ground planes in close proximity to each other. Any nongrounded  
18 object, such as a human being, that touches equipment in two different  
19 ground planes at one time will become the connection between the two  
20 planes if an electrical current is introduced into the system. Collocators  
21 typically squeeze as much equipment into the collocation space as they  
22 possibly can, leaving little room for maintenance. It is quite reasonable  
23 that given the limited space in which to operate, a maintenance worker  
24 could contact two ground planes at once if there is no barrier. It would  
25 be virtually impossible to properly ground a wire fence due to the

1 weave of the fabric as well as the attachments to the posts. Gaps are  
2 inherent to the separate units of metal in a fence, therefore, complete  
3 contact of a ground cannot be made.

4

5 Q. DO YOU THINK THAT IT IS REASONABLE THAT ALECS SHOULD  
6 HAVE TO BEAR COSTS ASSOCIATED WITH THE AMERICANS  
7 WITH DISABILITIES ACT, ASBESTOS REMOVAL, CODE REQUIRED  
8 UPGRADES, ETC.?

9

10 A. Yes, I do. All construction is subject to the Americans With Disabilities  
11 Act ("ADA"). BellSouth performs all new construction in compliance  
12 with the ADA. All of BellSouth's "public access" facilities have been  
13 brought into compliance with the ADA. Compliance for all other  
14 facilities is done as a result of a handicapped employee reporting to  
15 that facility, or as rearrangements occur within a building. A  
16 percentage of all construction must go towards compliance.

17

18 BellSouth only removes asbestos that is friable. That is to say,  
19 asbestos that is readily crumbled or brittle. Undisturbed asbestos is left  
20 in place and tagged. Abatement is triggered by any construction  
21 which will disturb this asbestos, making it break apart and enter the air  
22 that is breathed.

23

24 Another situation to consider is when the local code official determines  
25 that collocation changes the facilities occupancy code to "multi-tenant".

1 If upheld, the multi-tenant classification requires that fire rated  
2 separations be constructed between each tenant. This would cause a  
3 tremendous increase in the cost of the project, not just for the walls, but  
4 also for items such as HVAC (heating, ventilating, and air conditioning)  
5 which would require major modifications to handle a series of little fire  
6 rated compartments.

7

8 Each of the examples stated above cause construction costs that  
9 would not have been incurred by BellSouth except for the introduction  
10 of ALECs in BellSouth's facilities. The ALEC's should certainly bear  
11 the cost they cause to be incurred.

12

13 Q. SHOULD ALECS BEAR THE COST OF DEMOLITION IN  
14 BELLSOUTH'S FACILITIES?

15

16 A. Yes. I have previously stated that administrative forces are often  
17 moved into Company-owned central offices. Open central office space  
18 is converted into administrative space by the addition of carpet, walls,  
19 dropped ceilings, lay-in light fixtures, etc. Many of these administrative  
20 spaces were later vacated due to down-sizing and centralization.  
21 BellSouth does not demolish space as it is vacated by these forces. It  
22 is not known if the space will be reused for equipment or personnel  
23 needs. It would be ludicrous to spend funds on this effort until the  
24 space is needed. If rearrangements / renovations are required as the  
25 space is reused for BellSouth entities, the department that is requesting

1 the space provides the necessary funding. It should be no different in  
2 the case where a ALEC is the entity requesting the space.

3

4 Q. THE MCI/AT&T MODEL BASES HVAC COSTS ON A STAND ALONE  
5 AIR CONDITIONING UNIT FOR ALEC ARRANGEMENTS FOR  
6 APPROXIMATELY \$1,785.00. IS THIS A REASONABLE  
7 ASSUMPTION?

8

9 A. No, it is not. There is no cut and dried method of meeting the HVAC  
10 needs of collocators. BellSouth will always evaluate existing systems  
11 for capacity and for possible use for collocation. See Exhibit DCR-3 for  
12 the Mechanical section of the Property Management Physical  
13 Collocation Guidelines. These guidelines spell out the different HVAC  
14 options and how BellSouth determines which will be used.

15

16 In instances where major renovations are required to the HVAC  
17 system, collocators are only charged a pro-rated portion of the cost,  
18 according to the floor space that they occupy. If the system renovated  
19 also serves BellSouth, it too will pay a pro-rated portion according to  
20 floor space.

21

22 Q. DO YOU AGREE WITH MR. PORTER'S CRITIQUE OF BST'S  
23 FEBRUARY 14, 1997 PHYSICAL COLLOCATION STUDY?

24

25 A. No. There are several points on which I disagree with Mr. Porter.

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First, he takes exception to the major portion of the application fee being attributed to "Business Marketing". He has incorrectly assumed that this is to "market" BellSouth central office space to potential collocators. This is not the case at all. Business Marketing deals with the group within BellSouth that is the contact for the potential collocators. They are the people that actually take the collocators' order and collect data from the collocator that is then passed to the groups that will be involved with provisioning the request.

Next, Mr. Porter has objected to the study reflecting a Space Construction charge that is "almost twice as high as the interim rate". He attributes this to the cost of materials which "is essentially 40 linear feet of chain link fence with a gate". However, this same study clearly states in SECTION 6 - SPECIFIC STUDY ASSUMPTIONS:

3. Space construction costs consist of an average of three gypsum walls, temporary dust barrier, additional mechanical fixtures and electrical outlets inside a minimum 100 sq. ft. "cage" area.

As to his pointing out that the cost study quotes a higher cost than the interim rate, this is true. The cost from the cost study was estimated according to what it would actually take to construct the basic enclosure (generic) requested by the collocator.

1 My final point of disagreement is when Mr. Porter assumes that ILECs  
2 normally have a guard at the front door of its central offices, or there is  
3 simply an electronic lock. In reality, there are very few BellSouth central  
4 offices that are equipped with security guards and I have already stated  
5 earlier in my testimony that very few central offices are equipped with  
6 card readers. In reality, most of the security escort is provided by the  
7 Network Operations personnel for that particular central office.

8

9 Q. YOU MENTIONED THAT THE COST STUDY REFLECTS THE  
10 ESTIMATED COST OF THE COLLOCATORS' ENCLOSURE. CAN  
11 YOU ELABORATE?

12

13 A. Yes. It was my direction to estimate what it would cost to construct the  
14 individual collocators enclosure. Collocators request enclosures as a  
15 100 sq. ft. minimum, then in increments of 50 sq. ft. for any additional  
16 needed. I calculated every practical configuration for these enclosures,  
17 keeping in mind that no dimension should be less than 10 feet. I then  
18 developed a mean for what the total linear feet of gypsum board wall  
19 for each arrangement would be. Cost for dust barriers, doors,  
20 mechanical, and electrical considerations was applied, and finally,  
21 architectural and engineering fees were assessed at 8% of the  
22 construction cost. These are the basic components that are common  
23 to all enclosures. The cost study only asks for this cost (\$8,759.62 for  
24 the first 100 sq. ft. and \$1,152.16 for each additional 50 sq. ft.) and  
25 doesn't even consider any extra items that may be necessary to

1 complete the enclosure, such as floor tile, etc. To my knowledge, none  
2 of the actual enclosures that we have built for ALECs has been this  
3 basic, nor have they cost this minimal an amount.

4

5 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

6

7 A. MCI and AT&T have proposed a hypothetical cost model for an urban  
8 central office that would be drastically unrealistic in the real world. The  
9 construction costs associated with this model have been derived from  
10 the R.S. Means Building Construction Cost Data. The criteria for  
11 planning, design or construction are not rooted in reasonable  
12 assumptions when dealing with rearrangements / renovations to  
13 existing central offices. My testimony has shown that there are many  
14 variables to consider when providing for physical collocation in  
15 BellSouth's facilities. Construction activities included in estimates and  
16 costs provided by BellSouth are fair and reasonable and are intended  
17 to compensate BellSouth for the legitimate expenses incurred when  
18 preparing space for physical collocation.

19

20 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

21

22 A. Yes it does.

23

24

25



**BellSouth Telecommunications Inc.  
FPSC Docket 960833-TP  
Rebuttal Testimony  
EXHIBIT DCR-1**

**R.S. MEANS  
BUILDING CONSTRUCTION  
COST DATA**

# Division 17

## Square Foot & Cubic Foot Costs

### Estimating Tips

The cost figures in Division 17 were derived from more than 10,200 projects contained in the Means database of completed construction projects, and include the contractor's overhead and profit, but do not generally include architectural fees or land costs. The figures have been adjusted to January of the current year. New projects are added to our files each year, and projects over ten years old are discarded. For this reason, certain costs may not show a uniform annual progression. In no case are all subdivisions of a project listed.

- These projects were located throughout the U.S. and reflect a tremendous variation in square foot (S.F.) and cubic foot (C.F.) costs. This is due to differences, not only in labor and material costs, but also in individual owners' requirements. For instance, a bank in a large city would have different features than one in a rural area. This is true of all the different types of buildings analyzed. Therefore, caution should be exercised when using Division 17 costs. For example, for court houses, costs in the database are local court house costs and will not apply to the larger, more elaborate federal court houses. As a general rule, the projects in the 1/4 column do not include any site work or equipment, while the projects in the 3/4 column may include both equipment and site work. The median figures do not generally include site work.

- None of the figures go with any others. All individual cost items were computed and tabulated separately. Thus the sum of the median figures for Plumbing, HVAC and Electrical will not normally total up to the total Mechanical and Electrical costs arrived at by separate analysis and tabulation of the projects.

- Each building was analyzed as to total and component costs and percentages. The figures were arranged in ascending order with the results tabulated as shown. The 1/4 column shows that 25% of the projects had lower costs, 75% higher. The 3/4 column shows that 75% of the projects had lower costs, 25% had higher. The median column shows that 50% of the projects had lower costs, 50% had higher.

- There are two times when square foot costs are useful. The first is in the conceptual stage when no details are available. Then square foot costs make a useful starting point. The second is after the bids are in and the costs can be worked back into their appropriate units for information purposes. As soon as details become available in the project design, the square foot approach should be discontinued and the project priced as to its particular components. When more precision is required or for estimating the replacement cost of specific buildings, the current edition of *Means Square Foot Costs* should be used.

- In using the figures in Division 17 it is recommended that the median column be used for preliminary figures if no additional information is available. The median figures, when multiplied by the total city construction cost index figures (see City Cost Indexes) and then multiplied by the project size modifier in Reference Number R171-100 should present a fairly accurate estimate, which would then have to be adjusted in view of the estimator's experience, local economic conditions, code requirements and the owner's particular requirements. There is no need to factor the percentage figures, as these should remain constant from city to city. All tabulations mentioning air conditioning had at least partial air conditioning.

- The editors of this book would greatly appreciate receiving cost figures on one or more of your recent projects which would then be included in the averages for next year. All cost figures received will be kept confidential except that they will be averaged with other similar projects to arrive at S.F. and C.F. cost figures for next year's book. See the last page of the book for details and the discount available for submitting one or more of your projects.

**BellSouth Telecommunications Inc.  
FPSC Docket 960833-TP  
Rebuttal Testimony  
EXHIBIT DCR-2**

**ACTUAL  
GENERAL CONTRACTOR  
COST ESTIMATES**

# BAILEY & OWENS

*General Contractors, Inc.*

2640 VALLEYDALE ROAD

BIRMINGHAM, ALABAMA 35244

(205) 991-2786

February 4, 1997

BellSouth Telecommunications, Inc.  
Room 21C3  
600 North 19th Street  
Birmingham, Alabama 35203

Attention: Stephen Johnson

RE: BellSouth Telecommunications, Inc.  
Co-Locator Unit Costs

Dear Sir:

As requested, we have compiled the following unit prices based on 35 LF of test wall constructed on the 2nd floor of the Homewood Main:

FURNISH, HANG AND FINISH SHEETROCK	\$ 80.91/LF
FURNISH AND INSTALL MESH	\$ 11.20/LF
FURNISH AND INSTALL DOOR FRAME, DOOR AND HARDWARE	\$499.52/EA
FURNISH AND INSTALL DUST PARTITION	\$ 20.95/LF

These units are based on non-premium labor rates. The general contractor's mark-up is 8%. Unit prices include full time supervision per the BellSouth Master Contract Agreement.

We are providing a unit cost to use 1/2" "C" grade plywood, instead of 1/2" sheetrock. Plywood is to be painted with fire-retardant paint on all sides. The unit cost base on 35LF of wall is \$101.48/LF.

If you have any questions or need additional information, please call me at (205) 991-2786 or on my digital pager at 583-7285.

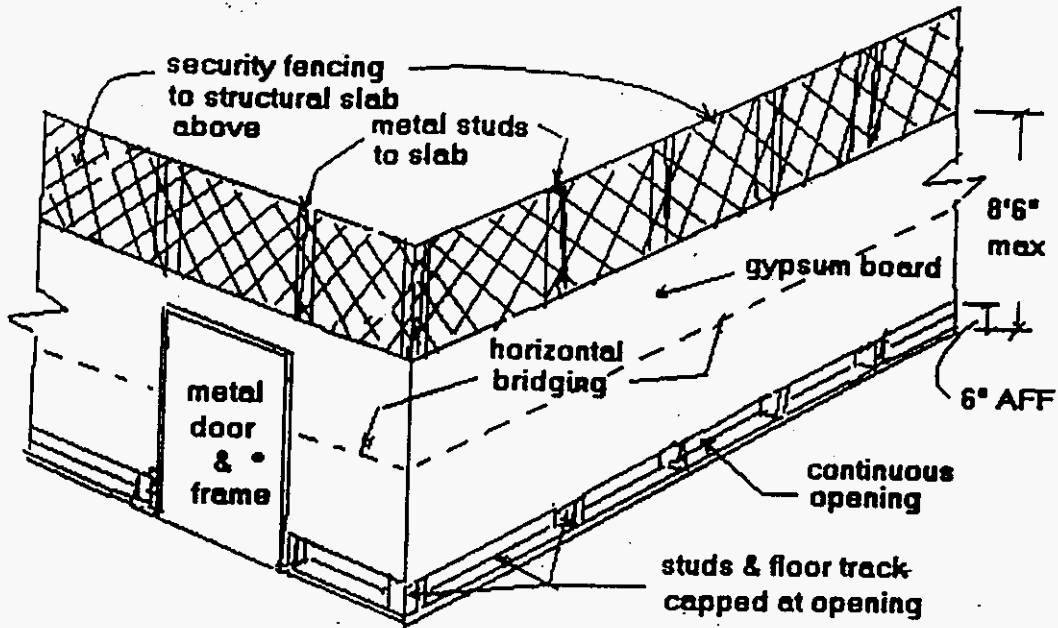
Very truly yours,



Vince Bennett

VB/ssm

# COLLOCATOR SEPARATION



# PROFESSIONAL CONSTRUCTION SERVICES, INC.

GENERAL & INDUSTRIAL CONTRACTORS

LOUISIANA CONTRACTORS LICENSE No. 8788

8031 DOWNMAN ROAD  
NEW ORLEANS, LA 70126

FAX NO. 504-245-

Phone  
504-241-8001

Mail  
1. BOX 28245  
70186

FAX Sheet

Date: 9/4/97  
To: DORISSA REDMOND  
Company: BELL SOUTH  
Telephone #: 770-391-5234  
AX #: 404-525-7040

From: RAY NOLAN  
Department Name: \_\_\_\_\_  
Telephone #: 245-7424  
URGENT: YES NO  
Number Of Pages 1

Dear Ms. Redmond

Re: WALL PRICES

Per your request for WALL prices for Accounting purposes only, you can use the following:

BARRIER

Drywall partition w/ fencing to ±13'0" \$ 110.50 LF

Enclosure wall, no fencing \$ 105.00 LF

ADD FOR OPENINGS 3'x7' \$ 900<sup>00</sup> EACH.

THESE UNIT PRICES ARE FOR ACCOUNTING PURPOSES ONLY AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.

SIGNED Ray Nolan

7704239905

FROM : GENE SHORT CONST.

PHONE NO. : 7704239905

Sep. 05 1997 04:55PM P1

PROPOSAL

GENE SHORT CONSTRUCTION, INC.  
2744 Watts Drive - Kennesaw, Georgia 30144  
770-423-9905 Fax 770-423-9955

Proposal submitted to BellSouth Telecommunications, Inc.	Phone 404-420-6578	Date 09-05-97
Address 675 West Peachtree Street	Job Name Colocation Walls	
City, State and Zip Code Atlanta, Ga. 30375	Plans By Dorissa Redmond	

The price to build out colocation walls as per specifications we received will be between \$85.00 to \$90.00 per linear foot. This is with no painting or doors installed.

Remarks:

GENE SHORT CONSTRUCTION, INC.

*Casa James*  
Vice President

# H.E. Hennigh, Inc.

---

PO Box 87 - 209 Ware St.  
Cedartown, Ga. 30125 0087  
770-7481230  
Fax: 770-748-6432

## FAX TRANSMISSION COVER SHEET

---

*Date:* September 6, 1997  
*To:* Dorissa Redmond  
*Fax:* 404-525-7040  
*Re:* Barrier Wall Collocation - Specification **1** -  
*Sender:* Danny O'Neal

---

YOU SHOULD RECEIVE 5 PAGE(S), INCLUDING THIS COVER SHEET. IF  
YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL 770-7481230.

---

Dorissa

See Attached Cost Breakdown

This estimate does not include:

Electrical  
HVAC  
Finished Flooring  
Painting Existing Surfaces  
Demolition  
After Hours Work or Overtime

If you have any questions, please call.

Thanks

Danny O'Neal



---

BST  
Barrier Wall Construction Specification 1  
Collocator Space

---

Description barwall

Client Dorissa Redmond

Job size 100 lf

Rate table Hennigh

Audit Dimensional

Report hours Manhours

Document This Estimate Does Not  
Include Any Electrical  
or HVAC

Type of estimate Base bid

Alternates CHORDER1

Report format Detail report  
Combine items  
Round quantities  
Print extended descriptions

---

ITEM DESCRIPTION	TAKEOFF QTY	LABOR		MATER		SUB		EQUIP AMOUNT	TOTAL AMOUNT
		UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	AMOUNT	NAME		
<b>1.000 GEN CONDITIONS</b>									
<b>1.005 Supervision</b>									
0020 Superintendent - wk	.50 wk	18.25 /hr	433	-	-	-	-	-	433
	Supervision		433*						433
			Labor hrs:	23.75					
<b>1.017 Misc. Overhead</b>									
0100 General Clean-up	.50 wk	8.00 /hr	80	25.00 /wk	13	-	-	-	93
0150 Trash Dumping Fees	1.00 ls	-	-	-	-	100	-	-	100
0210 Transportation PU	450.00 mi	-	-	-	-	-	-	158	158
0220 Transportation Dump	250.00 mi	-	-	-	-	-	-	175	175
0230 Transportation Auto	150.00 mi	-	-	-	-	-	-	45	45
0250 Small Tools	.50 wk	-	-	-	-	-	-	75	75
	Misc. Overhead		80*		13*	100*		453*	645
			Labor hrs:	10.00	Equip hrs:	20.00			

GEN CONDITIONS		513		13		100		453	1,078
		Labor hrs:	33.75	Equip hrs:	20.00				

**1.905 Building Demolition**

<b>1.910 Building Demolition</b>									
0015 Dust Partition Track	200.00 lf	27.00 /hr	135	.23 /lf	46	-	-	-	181
0016 Dust Part Studs	933.333 lf	27.00 /hr	210	.21 /lf	196	-	-	-	406
0017 Dust Part Tap & Misc	1,400.00 sf	27.00 /hr	76	.05 /sf	70	-	-	-	146
0018 Dust Partition Demo	1,400.00 sf	27.00 /hr	76	.03 /sf	42	-	-	-	118
---- Horizontal Bridging	100.00 lf	15.00 /hr	6	.10 /lf	10	-	-	-	16
---- Griffolyn T-55 FRAS	1,400.00 sf	27.00 /hr	252	.25 /sf	350	-	-	-	602
	Building Demolition		754*		714*				1,468
			Labor hrs:	55.823					

Building Demolition		754		714					1,468
		Labor hrs:	55.823						

**2.000 SITE WORK**

<b>2.830 Fences &amp; Gates</b>									
---- Sectr Fnc SKTON PROD	500.00 sf	27.00 /hr	54	.45 /sf	225	-	-	-	279
	Fences & Gates		54*		225*				279
			Labor hrs:	4.00					

SITE WORK		54		225					279
		Labor hrs:	4.00						

**8.000 DOORS & WINDOWS**

<b>8.110 Steel Doors</b>									
ba01 30x70 Door & Frame	1.00 ea	27.00 /hr	68	350.00 /ea	350	-	-	-	418
	Steel Doors		68*		350*				418

ITEM DESCRIPTION	TAKEOFF QTY	LABOR		MAT'L		SUB		EQUIP AMOUNT	TOTAL AMOUNT
		UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	AMOUNT	NAME		
			Labor hrs: 5.00						
8.710 Hardware									
---- New Locksets	1.00 ea	14.00 /hr	21	350.00 /ea	350	-	-	-	371
---- Closer	1.00 ea	-	-	120.00 /ea	120	-	-	-	120
		Hardware	21*		470*				491
			Labor hrs: 1.50						
<hr/>									
DOORS & WINDOWS			89		820				909
			Labor hrs: 6.50						

9.000 FINISHES

9.260 Gypsum Board Systems									
■ w58 Regular Gyp Bd 5/8"	1,600.00 sf	24.00 /hr	533	.30 /sf	528	-	-	-	1,061
gx10 Finish	1,600.00 sf	14.00 /hr	560	.10 /sf	160	-	-	-	720
■ ms32 Metl Stds 3 5/8" 24"	933.333 lf	15.00 /hr	224	.24 /lf	246	-	-	-	470
mt35 20 3 5/8 Metal Track	300.00 lf	27.00 /hr	193	.28 /lf	92	-	-	-	285
t110 L mold	456.00 lf	14.00 /hr	84	.15 /lf	68	-	-	-	152
t115 misc mat'l	1.00 ea	-	-	50.00 /ea	50	-	-	-	50
	Gypsum Board Systems		1,594*		1,145*				2,739
			Labor hrs: 119.663						
<hr/>									
9.920 Interior Painting									
130 misc touch up	1.00 ls	-	-	-	-	50	-	-	50
idfr Door & Frame	1.00 ea	-	-	-	-	65	-	-	65
iw30 Inter Drywall 3 Cts	1,600.00 sf	-	-	-	-	720	-	-	720
	Interior Painting					835*			835
<hr/>									
FINISHES			1,594		1,145	835			3,574
			Labor hrs: 119.663						

ESTIMATE TOTALS

3,004	Labor	219.736 hrs
2,917	Material	
935	Subcontractor	
453	Equipment	20.00 hrs

7,309

871	Labor Burden	C	29.00000%
175	Local Sales Tax	C	6.00000%

1,046

8,355

668	Overhead & Profit	T	8.00000%
836	Contingency	T	10.00000%

9,859 TOTAL ESTIMATE 98.59/11

**BellSouth Telecommunications Inc.  
FPSC Docket 960833-TP  
Rebuttal Testimony  
EXHIBIT DCR-3**

**PROPERTY MANAGEMENT  
COLLOCATION  
HVAC GUIDELINES**

## **SECTION 6**

### **DESIGN & CONSTRUCTION GUIDELINES**

#### **6.1**

Property Management has the responsibility for providing collocators with their requested space as well as the necessary support systems. The determination of these requirements should be discussed and agreed to at a coordination meeting arranged at the beginning of the project by the Interconnection Services Account Team. It is important that the Facility Planner, Project Manager (if applicable) and the Facility Manager be at this meeting. The meeting may be in the form of a conference call.

**NOTE: CENTRAL OFFICE CONDITIONS WILL VARY ACROSS THE REGION REQUIRING THAT DESIGN SPECIFICATIONS BE DEVELOPED FOR EACH LOCATION BASED ON EXISTING PHYSICAL OR LEGAL CIRCUMSTANCES. THEREFORE, THE GUIDELINES WHICH FOLLOW ESTABLISH THE BASIC CRITERIA FOR THE CONSTRUCTION OF COLLOCATION SPACE.**

#### **6.2**

The Collocation space shall be separated from BST space by a barrier wall. See Specification 1 for the design of this wall.

#### **6.3 MECHANICAL**

**A)** Recognizing that collocation vendors are among our best customers, BellSouth will make every effort to provide reliable HVAC service to collocation space.

**B)** Provisions for HVAC service diversity (e.g., redundancy/fault tolerance) to the collocation space must be similar to that provided for BellSouth in the building in which the collocation space is being provided.

**C)** "Capacity" is defined as the nominal cooling capacity of the equipment at peak load. "Available HVAC Capacity" shall be defined as any capacity on the existing HVAC system (up to 100 percent of capacity for air handlers, chillers, compressors, condensers, and condensing units) that is not currently needed to serve the existing space during peak condition and will not be needed to handle any growth forecasted in the next year. HVAC capacity which exists solely for HVAC service diversity ("spare" chiller, compressor, air handler, etc.) is not considered part of "Available HVAC Capacity" and should not be used to serve collocation space, except where doing so will not place BellSouth equipment at risk. This will be designated on a building by building basis. In other words, if the additional load of the collocation space would force the use of a back-up system that currently does not run during peak load, then BST will not make use of the

existing system to serve the space.

D) The first choice for HVAC service for collocation space will be to use "Available HVAC Capacity".

E) The type of HVAC equipment selected to serve collocation space will be an economic decision, and may not necessarily be of the same type as the HVAC equipment existing in the BellSouth building.

F) As collocation space is designed, sufficient space should be allowed for future installation of HVAC equipment. This space shall then be removed from the overall calculation of available collocation space.

G) If a building addition becomes necessary to house a new HVAC system to serve collocation space, an exemption should be sought for collocation in this building in the state in which the building resides.

H) All collocated equipment must conform to the Network Equipment Building System (NEBS) standards documented in TR-NWT-000063 and the National Electrical Code.

I) Minimum recommended stand alone system for common collocation space:

- \* Dual-circuit condensing unit with each circuit sized to accommodate 67% of the forecasted collocation load, and

- \* Dual fan air handling unit, or dual air handlers, each sized to serve the peak cooling load, where dual fans are not available.

J) When there is sufficient HVAC capacity in the collocation common area, extend ductwork from the existing system, where practical. Otherwise, install a stand alone system as outlined above.

K) In the instance where there is limited HVAC capacity: If only a few collocators are identified initially, up to 100% of the available central office HVAC capacity (as defined above) shall be used to serve the collocation space if proper air distribution can be provided reasonably and economically. As the number of collocators grows beyond the capacity of the central office HVAC system, a separate system shall be installed to serve only the collocation space. The original ductwork serving the collocation space will be capped or removed, and this HVAC capacity will be used to serve other areas.

**L) In the instance where there is NO HVAC capacity:**

- 1. A standalone HVAC system, as outlined above shall be provided sized to accommodate the forecasted ultimate collocation load.**
- 2. As an alternative to a stand alone HVAC system to serve collocation space, a new system may be installed to accommodate the forecasted BellSouth requirements, plus the ultimate collocation load. This could also be designed and sized to provide diversity to the collocation space. When employing this alternative, there may be a need to calculate betterment credits in order to properly assess the collocation vendors the space preparation fee.**

**M) When no contiguous common collocation space is available, add ductwork to supplement existing cooling in the area of the collocator, where practical.**

**N) When no contiguous common collocation space is available and it is impractical to increase cooling from existing HVAC system, a small package system or split system should be installed to serve collocation space. In this instance, the spaces being used are normally small spaces such as lounges, storage areas, or vacant pockets inside central office switchrooms. There will often be no room for redundant units. In this case, some diversity may be provided by the existing room cooling or by fans.**

#### **6.4 MECHANICAL CONTROLS**

**A) There are no specific guidelines as to what types of HVAC controls are most appropriate for collocation space. However, BellSouth should place environmental alarms in collocation space for its own use and protection. In BellSouth buildings with existing BFMS systems, environmental sensors should be installed in each common collocation area to monitor temperature and humidity conditions, and to alarm these to the BFMS center.**

**B) In those buildings with no BFMS system existing, standard NRC alarm shall be provided in each common collocation space. Though not required, installation of a central building alarm indicator panel connected to the NRC alarms will aid in quickly identifying the source of the alarm.**

**C) Upon request, BellSouth shall provide remote alarm monitoring circuits at the expense of the requesting collocation vendor.**