I - FACILITY PROGRAM DOCUMENT

US CENTURY BANK ARENA EXPANSION

BT- 837

Florida International University
Modesto A. Maidique Campus
July 22, 2009
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III. SIGNATURE SHEET

1. Educational Specifications contained in this document have been developed in accordance with the statutory requirements of the State University System of Florida as outlined in paragraph 4 of Standard Practice 00-0000-3-04-13.

    ROBERT W. GRIFFITH, R.A., A.U.A.
    DIRECTOR OF PLANNING
    REAL ESTATE DEVELOPMENT & PLANNING

    Date: 8/10/09

2. This document is hereby recommended by the appointed University Building Program Committee:

    JAMES R. WASSENAAR
    EXECUTIVE DIRECTOR OPERATIONS AND AUXILIARY SERVICES
    COMMITTEE CHAIRPERSON

    Date: 8/10/09

3. Information Technology and Communications Resource Specifications contained in this document have been developed in conformance with the requirements of Chapter 282, Florida Statues, and University standard practices:

    MIN YAO
    CHIEF INFORMATION OFFICER AND VP OF
    UNIVERSITY TECHNOLOGY SERVICES

    Date: 8/10/09

4. This document is hereby approved and recommended by Facilities Management.

    JOHN CAL, ASSOCIATE VICE PRESIDENT
    FACILITIES MANAGEMENT

    Date: 8/10/09

5. This document is hereby approved by the Division of Administration and Finance.

    KENNETH JESSELL, SENIOR VICE PRESIDENT & CFO
    DIVISION OF ADMINISTRATION & FINANCE

    Date: 9/16/09

6. This document is hereby approved and recommended by the University.

    MARK B. ROSENBERG, PRESIDENT
    FLORIDA INTERNATIONAL UNIVERSITY

    Date: 8/19/09
This building program represents the University's requirements for the development of the US Century Bank Arena Expansion, in as specific and complete a form as is presently available. It is a comprehensive effort of the members of the Building Program Committee who have each contributed, by drawing from their expertise and respective responsibilities, the essential information required by the architects and engineers to conceptualize and develop the project. This committee will monitor the development of the design and assist the design Architects/Engineers and Landscape Architects by refining details and clarifying any ambiguities herein in a manner consistent with this program. Coordination of program requirements (compatibility, standards, finishes, utility connections, equipment, etc.) and scheduling throughout the duration of the project will be maintained by the University's Facilities Construction Department.

The members of the Program Committee are:

Chairperson: James R. Wassenaar,
Executive Director Student Affairs Operations and Auxiliary Services

Members: Julie Berg, Senior Associate Athletic Director
Josefina Cagigal, Director Protocol & Special Events, External Relations
Birgitta Rausch-Montoto, Chief of Staff, Office of the Provost
Alina Gonzalez, SGA Director of Internal Affairs

Ex-Officio: Associate Vice President, Planning & Institutional Effectiveness
Associate Vice President, Facilities Management
Associate Director, Facilities Management/Operations
Vice President, Information Resource Management
Associate Vice President, Environmental Health & Safety
Chairperson, Faculty Senate
Chairperson, Ad Hoc Building and Environment Committee
Associate Director, Facilities Management/Utilities
Director, Purchasing
Director, Facilities Management/Minor Projects & Construction
Director, Facilities Planning
Director, Facilities Management/Operational Analysis
Senior Project Manager/Facilities Management
IV. INTRODUCTION

Florida International University is an urban and multi-campus institution located in Miami – the state’s largest population center. The University currently serves approximately 38,000 students, with the majority attending class at the Maidique Campus. Nearly 3,000 students make up the residential population of the University. The size of the University equates to that of a small city.

This building program establishes the physical requirements for the expansion of the US Century Bank Arena which is the only large capacity indoor venue at Modesto A. Maidique campus. At the time of construction of this facility (year 1984), the student body count was approximately 14,000. The present student body count of 39,000 demands a large event venue that safely and efficiently accommodates 4,500 students and other guests entering the US Century Bank Arena, which is frequently used at capacity.

During the past twenty-five years student enrollment as well as the number of faculty, support staff and daily visitors has more than doubled. As a result of this continuous growth the venue lacks the following functionalities: a central entry area to manage large quantities of visitors effectively; a formal lobby that accommodates visitors and waiting lines, and in which restrooms and concessions furnishings are located; an external covered guest area outside of the entrance doors; adequate ticketing facilities; and advanced public announcement media.

In addition to the functional shortcomings, the arena lacks a designated event space for external relations and advancement purposes (exhibits and receptions by Student Affairs, Athletics, Protocol and Special Events, Alumni Association, Donor Relations etc.). The facility does not currently have much needed suites or boxes to host special guests, sponsors, donors etc. during athletic competitions. While this building program specifies the expansion of the arena’s entrance area only, it accommodates the physical and promotional needs of VIP suites to be added in a second phase of construction.

This program describes a plan to expand the US Century Bank Arena’s current east side entrances. U.S. Century Bank Arena is the largest indoor gathering place on the campus of FIU. This building serves the campus and community for various functions and events throughout the year. First and foremost, with a seated capacity of 5,000 the arena is the designated venue for all of FIU’s commencement and convocation ceremonies. In 2009-2010 the university will host six to seating capacity ceremonies over a three day span in December and May, as well as Freshman Convocation in August. Primarily, the arena is the home competition venue of 3 of FIU’s Division I intercollegiate sports programs, volleyball, men’s basketball and women’s basketball. Throughout the year these sports participate in over 45 games in the arena, with estimated attendance of approximately 20,000 in addition to daily practices. Along with the above listed sports, U.S. Century Bank Arena houses locker rooms for the men’s and women’s intercollegiate soccer programs in addition to the above listed sports. Daily use for the arena is not limited to athletic use. There are seven classrooms, 2 auxiliary gyms, and 3 racquet ball courts in the arena that host daily classes. The arena also doubles as the administrative quarters for the intercollegiate athletics department at FIU by housing offices for over 30 coaches and administrators in the athletics department. In conjunction with the above listed uses, the arena is the face of FIU for over 40 annual external events including but not limited to high school graduations, concerts, basketball leagues, high school basketball competitions, gymnastics, summer camps, cheerleading competitions, mixed martial arts competitions, and political rallies etc.

Project Delivery - This project is proposed to be delivered using the Construction Management - At Risk Method. Criteria as stated in BOG Regulation 14.0055 includes justification due to (1) size of the project sufficiently large and complex to require major emphasis on the qualification of the contractor with continuity of
the construction management through both the design and construction of multiple phases, (2) the project is an alteration of an occupied facility which requires working around or relocating occupants while keeping the facility fully operational and (3) project is a repair or renovation where the conditions requiring correction cannot be determined and specified without extensive contractor involvement in the removal and examination process during the design phase.
Florida International University is an urban, multi-campus, research university serving South Florida, the state, the nation, and the international community. Our mission is to impart knowledge through excellent teaching, promote public service, discover new knowledge, solve problems through research, and foster creativity.

Florida International University – Miami’s public research university – is one of America’s most dynamic institutions of higher learning. Since opening in 1972, FIU has achieved many benchmarks of excellence that have taken other universities more than a century to reach. FIU, a member institution of the State University System of Florida, was established by the Florida Legislature in 1965. Classes began in September 1972, with 5,667 students enrolled in upper division and graduate programs – the largest opening day enrollment in U.S. collegiate history. In 1984, FIU received authority to begin offering degree programs at the doctoral level. The Carnegie Foundation for the Advancement of Teaching ranks FIU as a Research University in the High Research Activity Category.

FIU has nationally and internationally renowned faculty known for their outstanding teaching and cutting-edge research; students from throughout the U.S. and more than 130 foreign countries; and alumni who have risen to prominence in every field and are a testament to the University’s academic excellence. The University is a member of Phi Beta Kappa, the nation’s oldest and most distinguished academic honor society. Florida International University offers more than 190 baccalaureate, master’s and doctoral degree programs in 12 colleges and schools: College of Architecture and The Arts; College of Arts and Sciences; College of Business Administration; College of Education; College of Engineering and Computing; College of Nursing and Health Sciences; Honors College; Robert Stempel College of Public Health and Social Work; School of Journalism and Mass Communication; School of Hospitality and Tourism Management; and the College of Law. The College of Medicine will open its doors to the inaugural class in the Fall of 2009.

FIU has more than 38,000 students, 1,180 full-time faculty, and more than 146,000 alumni, making it the largest university in South Florida and placing it among the nation’s largest colleges and universities. The University has two campuses – Modesto A. Maidique campus in western Miami-Dade County and the Biscayne Bay Campus in northeast Miami-Dade County – and an educational facility at the Pines Educational Center in nearby Broward County. Additionally, numerous programs are offered at off-campus locations and online. Kiplinger’s Personal Finance Magazine has ranked FIU among the best values in public higher education in the country.

Research is a major component of our mission. The purpose of the Office of Research is to facilitate new discoveries and thereby improve the quality of life in our region, the state and the larger international community. We are particularly interested in environmental quality, energy, health, water quality, sustainable communities, economic development, security and safety. Multidisciplinary teams, information technology and international culture are among the major themes in our research.

FIU is one of the nation’s major research universities and we expend approximately $100 million annually on research. Our research is funded by more than 200 public and private organizations, and from 41 different Federal agencies. The University has many specialized research facilities including a new nano scale research and fabrication laboratory. We also conduct many studies “off site” throughout the United States and the world. Undergraduate and graduate students participate actively in all of our research endeavors. FIU exports its discoveries for public benefit through publications, formal technology transfer agreements, public testimony and evidence-based advocacy, and the development of the next generation of scholars.
The US Century Bank Arena is located on the western edge of Miami, the center of a metropolitan area of almost four million people. Apartment-style residence halls, a nationally certified environmental preserve, and athletic facilities all contribute to a pleasant collegiate atmosphere. Florida International University has a diverse campus architecture, lush tropical landscaping, a Sculpture Park, and an eight-story, $30 million library. The Sculpture Park, an extraordinary assortment of outdoor artwork, attracts school children, university students, tour groups and individuals from South Florida and beyond. There is also a state-of-the-art performing arts center, a fitness center, an expanded university center, a 4,500 seat U.S. Century Bank Arena and a new football stadium that opened in Fall 2008. The University also has laboratories, auditoriums, music and art studios, an art museum, an international conference theater, an experimental theater and many student organizations including the prestigious Phi Beta Kappa Honor Society. There is a wide variety of clubs on campus to meet the professional, service, athletic, social, and cultural needs of the FIU community.

Recent additions to Modesto A. Maidique campus include a 153,000-square foot building for our College of Law; the Reagan House; the Paul L. Cejas School of Architecture building; a 221,000 square-foot Health and Life Sciences complex (HLS I & II); a Health & Wellness Center; a 50,000 square-foot Recreation Center; an 83,000 square-foot Management and Advancement Research Center (MARC); and four parking garages with over 4,900 additional parking spaces. The Graham Center, approximately 270,000 square feet, includes an expanded Barnes & Noble bookstore with a café and new Campus Life offices in the second floor addition. A new food court and shops have been added. The $11 million Frost Museum building opened on campus in Fall 2008. Three of the building’s nine galleries are dedicated to the permanent collection, while the remaining six feature rotating exhibitions. Slated to open in December 2009, a $34 million College of Nursing and Health Sciences building will become the gateway to the University’s highly anticipated Academic Health Sciences Complex on campus. The new School of International and Public Affairs, which was officially inaugurated January 2009, has broken ground for a five-story building. The building’s 58,400-square-foot phase one is scheduled to be completed in mid 2010.
VI. SPACE NEEDS ASSESSMENT

The Student Government Association in consultation with the Vice President of Student Affairs and the Provost Office determined that the Arena lacked a pre-function space in which guests could gather in a comfortable welcoming space. The existing entrance to the Arena does not have an adequate lobby or entrance area that is customary for this type of venue. The existing entrance is divided into 2 very small areas that are totally inadequate for the large number of guests that visit the Arena for various internal and external events. The proposed pre-function area should contain convenience restrooms centrally located so that they are accessible from both the northeast and southeast arena entrances. The current concession area with one point of sale is inadequate for a venue which hosts events with up to 4,500 participants. The new concession space should provide at least 4-6 points of sale and a staging area to accommodate catered events in support of the new pre-function area. The proposed pre-function area will render our current ticket windows inaccessible as points of sale but may be used as information booths if plausible as a design solution. This facility with a seating capacity of 4,500 will require two new but separate points of service for the sale and distribution of tickets. The new pre-function area should have abundant natural light, capacity to handle a minimum of 470 quests, attractive finishes that are easily maintained, highly durable, and provide a welcoming environment for our students, faculty and guests.

FIU also has a desire to incorporate two to four suites in the Arena Expansion Plan as a potential phase two of the project. The Divisions of External Relations and University Advancement have a keen interest in developing assets which will facilitate engagement with the community and enhance our ability to encourage private giving to the benefit of our institution. It is well known amenities such as suites within sporting venues are ideal settings to introduce external visitors and potential donors to our institution.

Internal (University) Events:

COMMENCEMENT: FIU has two Commencements per year: Fall and Spring. The ceremonies take place at FIU’s U.S. Century Bank Arena and are organized by school and colleges. The ceremonies take place consecutively over a period of 2-3 days. The following is the number of Commencement ceremonies and the attendance expected during the upcoming 2009-2010 academic year.

Fall 2009 Commencement: 6 ceremonies @ 4,500 attendance/ceremony = Fall 2009 Attendance: 27,000

Spring 2010 Commencement: 6 ceremonies @ 4,500 attendance/ceremony + 1 Law Commencement @ 2,000/ceremony = Spring 2010 Attendance: 29,000

FRESHMAN CONVOCATION: FIU has an annual ceremony to welcome its Freshman Class. This ceremony takes place on the Sunday before the start of classes and takes place in the Arena. Expected attendance for 2009 Freshman Convocation is: 4,200

TRIBUTE TO PRESIDENT MODESTO MAIDIQUE: On August 3, 2009, FIU will have a tribute ceremony for its 4th President, Dr. Modesto A. Maidique. This ceremony will take place in the Arena. Expected attendance for Tribute to President Maidique is: 1,200

INSTALLATION CEREMONY FOR PRESIDENT MARK ROSENBERG: On August 28, 2009, FIU will have a installation ceremony for its 5th President, Dr. Mark B. Rosenberg. This ceremony will take place in the Arena. Expected attendance for Installation Ceremony is: 1,200
PROPOSED 3RD VISIT BY HIS HOLINESS THE DALAI LAMA TO FIU: The proposed 3rd Visit of the Dalai Lama to FIU will include a community lecture that will take place in the Arena. This visit is scheduled to take place in the Spring 2010. Expected attendance for the Lecture by His Holiness the Dalai Lama is: 4,500

External (Community) Events:
High School Graduations
Presidential Campaign for political Candidate
Memorial Service for Police Officer
VII. ANALYSIS OF IMPACT ON MASTER PLAN

This project is consistent with the enrollment projections, academic mission, and physical development of Modesto A. Maidique campus as documented in the BOT approved Campus Master Plan Update, dated October 2003.
VIII. SITE ANALYSIS

The planned site for this facility is an addition to the east end of the existing US Century Bank Arena on SW 113th avenue.

The proposed site is currently developed as a driveway with pedestrian drop off. The drop off feature will be eliminated and the adjacent area will become a sustainable pedestrian friendly forecourt and entry plaza. Primary pedestrian access will emanate from the Panther Garage immediately north of the project site.
VIII. SITE ANALYSIS (continued)

General Campus Map: See Attached

Site Topography and Soils Conditions: To be determined by design studies and soil testing and evaluation by A/E consultant.

Site Water Table, Flood Hazard and Storm water Requirements: The exact water table will be determined by soil borings performed during the soil investigation.

Vehicular and Pedestrian Circulation: This project will affect existing vehicular and pedestrian circulation during and after construction. The staging site for the construction will be compact, and temporary walks will have to be constructed to allow students to travel from the Panther Garage area safely.

Archaeological History: Not applicable

Unusual Site Conditions: None anticipated

Direction of Prevailing Winds: Southeast
### IX. PROGRAM AREA

#### SUMMARY OF SPACE REQUIREMENTS:

<table>
<thead>
<tr>
<th></th>
<th>Spaces</th>
<th>Occup</th>
<th>SF/Occup</th>
<th>NASF</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arena Ticket Area</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>162</td>
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<tr>
<td>Ticket Sales Window</td>
<td>2</td>
<td>3</td>
<td>27</td>
<td></td>
<td>162</td>
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<tr>
<td><strong>Campus Support Services</strong></td>
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<td></td>
<td></td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Housekeeping Storage</td>
<td>1</td>
<td>1</td>
<td>50</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td><strong>Arena Pre-function Area</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,488</td>
</tr>
<tr>
<td>Open High Bay Atrium Space</td>
<td>1</td>
<td>10</td>
<td>449</td>
<td></td>
<td>4,488</td>
</tr>
<tr>
<td><strong>Pre-function Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,150</td>
</tr>
<tr>
<td>Public Toilets</td>
<td>2</td>
<td>10</td>
<td>40</td>
<td></td>
<td>800</td>
</tr>
<tr>
<td>Concession/Catering</td>
<td>1</td>
<td>5</td>
<td>70</td>
<td></td>
<td>350</td>
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<tr>
<td><strong>Total NASF</strong></td>
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<td>5,850</td>
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<tr>
<td><strong>Gross/Net Factor</strong></td>
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<tr>
<td><strong>Total GSF</strong></td>
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<td></td>
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<td>7,605</td>
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<tr>
<td>SPACE PLANNING</td>
<td>ENVIRONMENTAL SYSTEMS</td>
<td>FURNITURE/EQUIPMENT</td>
<td></td>
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<tr>
<td>---------------------------------------------------</td>
<td>----------------------------------------</td>
<td>---------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serve as a three point ticket sales booth.</td>
<td>Air Conditioned with adjustable vents.</td>
<td>Blinds at windows.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Countertop with cut-out glass to divide/secure</td>
<td>Acoustical ceiling with flush fluorescent lights.</td>
<td>Personal Computer (s),</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the clerical area from public access.</td>
<td>Provide 125V 20A duplex outlets along walls for general power needs.</td>
<td>3 Chairs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction of this area to be intrusion</td>
<td>Provide 3 Voice/Data Communications outlets.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resistant.</td>
<td>Surveillance system empty conduit.</td>
<td></td>
<td></td>
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<tr>
<td>Provide door with complete finish hardware.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Lock on doors with special access, card reader</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>system.</td>
<td></td>
<td></td>
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<tr>
<td>Vinyl tiled floor.</td>
<td></td>
<td></td>
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</tbody>
</table>

**TICKET SALES WINDOW**

**AREA 2 x 50 = 100 SQ. FT.**
<table>
<thead>
<tr>
<th>SPACE PLANNING</th>
<th>ENVIRONMENTAL SYSTEMS</th>
<th>FURNITURE/EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room will house cleaning materials/supplies and housekeeping equipment.</td>
<td>Air Conditioned with adjustable vents.</td>
<td>Provide metal shelving along wall.</td>
</tr>
<tr>
<td>Provide exposed concrete floor with surface hardener.</td>
<td>Fluorescent lights.</td>
<td>Mop Service Sink.</td>
</tr>
<tr>
<td>Paint exposed C.B. walls and ceiling.</td>
<td>Provide one 125V 20A duplex outlets for general power needs.</td>
<td>Tool storage hooks.</td>
</tr>
<tr>
<td>Construction of this area to be intrusion resistant.</td>
<td>Floor drain.</td>
<td></td>
</tr>
<tr>
<td>Provide door with complete finish hardware.</td>
<td>Hose bibs.</td>
<td></td>
</tr>
</tbody>
</table>

**HOUSEKEEPING STORAGE**

**AREA 50 SQ. FT.**
Provide an open high atrium multipurpose entry lobby/pre-function space to welcome visitors.

Durable and low maintenance floors.

Provide double doors with complete finish hardware. Lock on doors with special access, card reader system.

Construction of this area to be intrusion resistant.

Provide access to public restrooms.

<table>
<thead>
<tr>
<th>SPACE PLANNING</th>
<th>ENVIRONMENTAL SYSTEMS</th>
<th>FURNITURE/EQUIPMENT</th>
</tr>
</thead>
</table>
| Provide an open high atrium multipurpose entry lobby/pre-function space to welcome visitors. | Air Conditioned with adjustable vents.  
125V 20A duplex outlets along walls for general power needs.  
Dimmable light fixtures.  
Provide Voice/Data Communications outlets.  
Surveillance system empty conduit.  
Avoid direct sunlight.  
Acoustical treatment for walls and ceiling. | Banner displays system.  
Projector screen.  
Flat screen TV. |

MAIN LOBBY/PRE-FUNCTION AREA 4850 SQ. FT.
### SPACE PLANNING

- Provide restrooms facility for male and female.
- Provide door with complete finish hardware.
- ADA compliant.
- Tile floors and walls.
- Partition system shall be sound retardant above and below ceiling.
- Adjacent to Entrance Lobby.
- Provide entry configuration free of doors, (similar to airport restrooms).

### ENVIRONMENTAL SYSTEMS

- Air Conditioned with adjustable vents.
- Gypsum Board ceiling with flush fluorescent lights.
- Provide 125V 20A duplex outlet for general power needs.
- Drain in the floor.

### FURNITURE/EQUIPMENT

- Urinals for men’s restroom.
- Toilets.
- Lavatories.
- Mirror above sink.
- Towel Dispenser.
- Soap Dispenser.
- Trash Receptacle.
- Toilet Tissue Dispenser.
- Hand Dryer.
- Baby changing station.

### PUBLIC RESTROOMS AREA
## SPACE PLANNING

- Provide an area to sell food/refreshments and/or to provide support for catering services.
- High counter to divide the lobby from food/refreshment area.
- Provide door with complete finish hardware.
- ADA compliant.
- Non slip flooring.

## ENVIRONMENTAL SYSTEMS

- Air Conditioned with adjustable vents.
- Gypsum Board ceiling with flush fluorescent lights.
- Provide 125V 20A duplex outlet for plug in catering warmers and general power needs.
- Drain in the floor.
- Provide Voice/Data Communications outlets.
- Hot water supply.

## FURNITURE/EQUIPMENT

- 5 Stainless steel preparation table.
- 750lb-1000lb ice machine.
- Double door reach in cooler.
- Deep basin sinks built in to preparation table.
- Hand washing sink.

## CONCESSION/CATERING AREA
The Project Budget includes all site development associated with required utility extensions and hookups, grading, walkways, landscape irrigation, drainage systems, plant materials, screen walls, lighting, and landscape furnishings (benches, trash containers, etc.).
X. UTILITIES IMPACT ANALYSIS (continued)

In addition, this project budget includes campus infrastructures as follows:

Water. Fire and domestic water for hose bibs and toilet rooms to be served from exiting building systems. The projected consumption is to be estimated by the design professional of record.

Sanitary Sewer System. Connection to existing Sanitary Sewer System to be coordinated with Facilities Management.

Storm Water System: Catch basins with exfiltration trenches are required based on storm drainage engineering analysis.

Electrical Verify transformer requirements with Facilities Management. The projected electrical capacity is to estimated by the design professional of record.

Chilled Water System: Existing system capacity available.

Communications. Service connection available adjacent to site. Coordination with Facilities Management and Telecommunications Department for specific telephone and data requirements is required. Consideration for data connection to allow use of “Panther Card” access needs to be addressed.

New Road Work. The connection to the existing road will be included in this project. Appropriate street lighting, landscaping irrigation, and drainage structure must be provided.

Projected Demand:

Power = TBD

Water = TBD

Projected Consumption / Year:

Power = TBD

Water = TBD

Total estimated infrastructure construction costs associated with this building project not including normal building service connection to the existing networks is itemized in section XV.
XI. INFORMATION/COMMUNICATION RESOURCE REQUIREMENTS

Refer to Telecommunications Wiring Standards appendix “C". General equipment/furniture requirements are noted in section IX - Program Area Summary, Functional Description of space Details. Detailed computer hardwire requirements and network linkage relationships will be established in the Furniture/Equipment expenditure plan which should be developed following completion of design development. The FIU Telecommunications wiring standards are designed to accommodate a maximum degree of flexibility in the arrangement of data and voice communications systems. Wiring and cabling as well as data / voice outlets are specified by space type and should accommodate all normal operations as identified in this program.
APPENDIX "C" - STANDARDS FOR TELECOMMUNICATIONS FACILITIES FOR NONRESIDENTIAL BUILDINGS

The purpose of this standard is to provide for the planning and installation of telecommunications facilities in new buildings and major renovations. This standard has been developed with little knowledge of the telecommunications equipment that subsequently will be installed. Therefore, the definitions included herewith are for generic telecommunications facilities that will support a multitude of rapidly changing telecommunications technologies in a multivendor and variable end user environment.

This standard recognizes three fundamental concepts related to telecommunications and buildings:

(1) Buildings are dynamic. Renovation, remodeling and upgrading are more the rule than exception. This standard takes into account that change will occur.

(2) Building telecommunications systems and media are dynamic. As time passes both telecommunications equipment and media change considerably. This standard recognizes this fact and the facilities prescribed herein are capable of supporting a vast array of telecommunications systems and media.

(3) Telecommunications is more than telephones. Telecommunications is inclusive of a variety of building systems including data systems, environmental control, security, audio, television, sensing, alarms and much more.

Above all, this standard recognizes a fact of fundamental importance: if a building is to be properly designed, built and provisioned for telecommunications systems, it is imperative that the telecommunications design be incorporated during the architectural design phase.

The FIU/UTS Infrastructure Department developed this document in accordance with industry specifications. It is the standard by which the University defines the physical facilities required for the provisioning of telecommunications systems for new buildings and major renovations to existing buildings. These specifications take into account the physical facilities such as the size and provisioning of telecommunications rooms, cable distance limitations, vertical and horizontal cabling considerations, number and size of conduits and numbers and types of information outlets. The general cabling requirements are not addressed, however, the "Telecommunications Wiring Specifications" which are produced after consultation with the building occupants include the detailed procedures and specifications for the wiring and installation of telecommunications systems for campus buildings. The "Telecommunications Wiring Specifications" are provided to FIU Facilities Management 90 days after completion of the project design phase.
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1.0 GENERAL

1.1 RESPONSIBILITY - It is the responsibility of the project architect/engineer to ensure the inclusion of the standards for building telecommunications facilities into the design and construction documents for new and major renovation projects.

1.2 REFERENCES - In addition to the specifications included herewith the architect/engineer is encouraged to refer to the following publications for guidance during the design of the communications infrastructure:


Electronic Industries Association, Telecommunications Industry Association (EIA/TIA) Building Telecommunications Wiring Standards.

NFPA's National Electric Code (NEC).

FIU/UTS Infrastructure Department.

1.3 COORDINATION - Prior to the start of any telecommunications related work, the contractor shall contact the UTS/Infrastructure Department to coordinate the installation.

2.0 CABLE PATHWAYS

2.1 INFORMATION OUTLETs

2.1.1 REQUIREMENTS - Specific requirements for information outlets for each room and each project must be coordinated with the building occupants at the onset of the design phase of major renovations and new construction projects. The architect/engineer for major renovation and new construction projects is cautioned that the Building Program for the project includes requirements, but may not be all-inclusive regarding communication facilities. Therefore, the project architect/engineer must work closely with the building occupant and the FIU/UTS Infrastructure Department to minimize the need for revisions and changes after the completion of the design phase.
2.1.2 FLOOR MOUNTED - The use of floor mounted information outlets is strongly discouraged as it does not allow for flexibility in furniture layout and inhibits future changes to the telecommunications system.

2.1.3 ELECTRICAL BOXES - Locations for information outlets must be equipped with a 4 in. X 4 in. X 2.5-in. electrical box equipped with a mudring sized for the installation of a standard duplex outlet.

2.1.4 MOUNTING HEIGHT - Electrical boxes installed for information outlets must be placed at the same level as the adjacent duplex electrical receptacles or at least fifteen (15) inches above the finished floor.

2.1.4.1 Electrical boxes installed for information outlets located above counters equipped with a splash back must be placed at 6 in. above the top of the counter. (Measure to the center of the outlet.)

2.1.4.2 Electrical boxes installed for information outlets located above counters not equipped with a splash back must be placed at 12 in. above the top of the counter. (Measure to the center of the outlet.)

2.1.5 FACULTY/ADMINISTRATIVE OFFICES must have a minimum of one (1) information outlet per designated occupant, however two (2) are recommended for furniture relocation of additional staff.

2.1.6 CLERICAL/STAFF OFFICES shall have a minimum of one (1) information outlet per designated occupant plus one (1) information outlet for every two (2) additional occupants.

2.1.7 SECRETARY/ADMINISTRATIVE ASSISTANT OFFICES shall have a minimum of one information outlet per designated occupant plus two (2) outlets per office or two (2) extra outlets per five (5) people.

2.1.8 CLASSROOM/LECTURE HALLS/Auditoriums shall have a minimum of one (1) to four (4) information outlets depending on occupancy size:

<table>
<thead>
<tr>
<th>Classroom Size (Student Occupancy)</th>
<th>Minimum Number of Outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-50</td>
<td>1</td>
</tr>
<tr>
<td>51-100</td>
<td>2</td>
</tr>
<tr>
<td>101-200</td>
<td>3</td>
</tr>
<tr>
<td>201 or more</td>
<td>4</td>
</tr>
</tbody>
</table>
2.1.8.1 The recommended location priority relationship for the information outlets must be: chalkboard/dry erase board, lectern, projection booth/rear wall and remaining sides.

2.1.9 GRADUATE STUDENT OFFICES shall have a minimum of one (1) information outlets per designated occupant.

2.1.10 LABORATORIES shall have a minimum of one (1) information outlet per room; actual number may be more depending on function and occupant requirements.

2.1.11 CONFERENCE ROOMS shall have a minimum of one (1) information outlet per room. Rooms with more than 500 ft² shall have a minimum of two (2) information outlets installed.

2.1.12 STORAGE AREAS shall have a minimum of one (1) information outlet for rooms over 500 ft² and one (1) additional outlet for each additional 2000 ft².

2.2 CONDUITS

2.2.1 A 1 inch EMT conduit must be installed from each information outlet electrical box and "stubbed" up above the ceiling level to cable tray. (Please see attached drawing, Fig. 2.2.1-A)

2.2.2 If fixed ceilings are installed cable trays cannot be used and conduit from information outlets must be "homerun" to the telecommunications room or cable tray.

2.2.3 The open ends of conduits and/or sleeves must be equipped with bushings to avoid damage to cable sheaths and must be readily accessible and not concealed within walls.

2.2.4 Telecommunications rooms contain the vertical cable riser space. Conduits and/or sleeves must be used to interconnect telecommunications rooms. The open ends of conduits and/or sleeves must be located a maximum of 3 in. from the wall and extend a minimum of 1 in. above the finished floor.

2.2.5 REQUIRED NUMBER - The minimum number of conduits, and/or sleeves interconnecting the telecommunications rooms must be determined as follows:

<table>
<thead>
<tr>
<th>Building Total (Square Footage)</th>
<th>Quantity of Conduits</th>
<th>Size of Conduit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 50,000 ft²</td>
<td>3</td>
<td>4”</td>
</tr>
</tbody>
</table>
2.2.6 PULL BOXES - A pull box must be installed in sections of conduit longer than 100 ft. or containing more than two 90-degree bends or if there is a reverse bend in the run.

2.2.7 Minimum requirements for installed conduit, such as support, end protection, and continuity, are found in appropriate electrical codes.

2.2.8 The inside radius of a bend in conduit must be at least 6 times the internal diameter. When the conduit size is greater than 2 in. the inside radius must be at least 10 times the internal diameter of the conduit.

2.2.9 PULL CORDS - All conduits must have a fish tape or pull cord, rated for 200 lbs. of pull force, and installed end-to-end.

2.2.10 ELEVATOR – A ¾” conduit must be installed from each elevator equipment room to the nearest telecommunication room or cable tray.

2.2.11 EMS – A ¾” conduit must be installed from each mechanical room “homerun” back to the nearest telecommunication room or cable tray.

2.2.12 FIREALARM - A ¾” conduit must be installed from the fire alarm panel to the nearest telecommunication room or cable tray.

Note: (1) Under no circumstances will flexible metallic conduit be used for any telecommunication wiring. (2) Under no circumstances will any conduits be “daisy-chained” together.

2.3 CABLE TRAYS

2.3.1 Cable trays are rigid structures for the containment of telecommunications cables.

2.3.2 GROUNDING - Cable trays must be installed and grounded in accordance with the National Electric Code (NEC) and local requirements. (Please see attached drawing, Fig. 2.3.2-A)
2.3.3 TYPE - Cable trays must be of the 12-in. ladder type, equivalent to Wiremold, Part No. A060612, unless otherwise specified by the UTS Project Manager.

2.3.4 Cable trays must be installed above false ceilings and run down hallways and corridors providing a pathway for telecommunications cable from the information outlets to the respective telecommunications closet.

2.3.5 Cable tray installation must be coordinated with all work of other trades to avoid any interference. Cable trays must be installed such that they are not obstructed by other trades equipment, i.e. air conditioning ducts, electrical conduit etc. Cable trays must be easily accessible for the installation of cables and, future changes to telecommunications systems.

2.3.6 A minimum of 3-in. clear vertical space must be available between the top of the ceiling tiles and the bottom of the cable tray. A minimum of 12 in of clear horizontal space on each side of the cable tray must be available. Also, minimum of 6 in of clearance must be available between the top of the cable tray and any other utilities.

2.3.7 Under no circumstances, shall any other utilities pass within the distances specified in 2.3.6.

2.3.8 To avoid electromagnetic interference, all cable pathways must provide clearances of at least:

- 4 ft. from large motors or transformers.
- 1 ft from conduit and cables used for electrical power distribution.
- 5 in. from fluorescent lighting. Pathways should cross perpendicular to fluorescent lighting and electrical power cables or conduits.

3.0 TELECOMMUNICATIONS ROOMS

3.1 DESCRIPTION/DEFINITION

3.1.1 Telecommunications rooms must be dedicated to the telecommunications function and related support facilities. Telecommunications rooms must not be shared with janitorial facilities or other trades especially with electrical installations other than those required for telecommunications systems.

3.1.2 Telecommunications room refers to any room where telecommunications facilities terminate and telecommunications system equipment is housed.
3.1.3 The term building Intermediate Cross Connect (IC) is used to indicate the telecommunications room where the campus backbone facilities enter the building.

3.1.4 The term Telecommunications Rooms (TR) is used to designate the telecommunications room required for the distribution of facilities to adjoining floors and areas exceeding distance limitations.

3.1.5 NUMBER OF ROOMS. There must be a minimum of one telecommunications room per floor and centrally located in the building, unless otherwise specified by the UTS Project Manager. Additional telecommunications rooms must be provided when:

   (1) The floor area to be served exceeds 10,000 ft², or
   (2) The horizontal distribution distance to the workstation exceeds 295 ft.

3.1.6 SIZING OF ROOMS. Telecommunications rooms must be sized as follows:

<table>
<thead>
<tr>
<th>Serving Area (net bldg. ft²)</th>
<th>Room Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000 ft²</td>
<td>10 ft. X 11 ft.</td>
</tr>
<tr>
<td>8,000 ft²</td>
<td>10 ft. X 9 ft.</td>
</tr>
<tr>
<td>5,000 ft² - less</td>
<td>10 ft. X 7 ft.</td>
</tr>
</tbody>
</table>

10 ft. X 7 ft. is the minimum size for telecommunications rooms.

3.1.7 Telecommunications rooms must be stacked vertically to provide for the installation of telecommunications facilities between floors. Telecommunications rooms must be interconnected as specified in section 2.2.5.

3.1.8 BACKBOARDS – All four walls must be covered with rigidly fixed 3/4 in. x 4 ft. X 8 ft. A-C plywood, preferably void free, capable of supporting attached equipment and painted with black fire retardant paint.
3.1.9 LIGHTING - Lighting must be a minimum of 50-ft. candles measured 3 ft. above the finished floor, mounted 8.5 ft. minimum above finished floor.

3.1.10 CEILINGS - False ceilings are not allowed in any Telecommunication Room.

3.1.11 DOORS - The door must be a minimum of 36 in. wide and 80 in. high, without doorsill, hinged to open outward and fitted with a lock.

3.1.12 KEYING - Access to all telecommunication rooms will be through one uniform master key system. Facilities Management will establish the lock type to be used.

3.1.13 TREATMENT - Floors, walls, and ceiling must be treated to eliminate dust. Floors must be covered with VCT tiles.

3.1.14 ELECTRICAL REQUIREMENTS - Two dedicated 30 A, 110 or 208 V AC electrical outlets (L5-30R/120, L6-30R/208), each on separate circuits, must be provided for equipment power, unless otherwise specified by UTS Project Manager. In addition, a third 20A, 110 V AC circuit shall feed duplex outlets, which must be placed at 6 ft. intervals around the perimeter wall, at a height of 18 in above the floor. If emergency power (generator) is available, dedicated outlets must be connected to the emergency power system. Dedicated circuit outlets must be readily identifiable by using a different color outlet.

3.1.15 GROUNDING - Each telecommunications room must have direct attachment to the closest point in the building's electrical service grounding electrode system. A Number 6 AWG solid conductor cable must be placed between the ground source and a bus bar of the type: Chatsworth Products, Inc. part number 13622-010 or equivalent.

3.1.16 SLEEVES/CONDUIT - Sleeves or conduit passing through the telecommunications room floor should be adjacent to the door with a minimum of 1 in. exposed above the finished floor. Sleeves and conduit must be no more than 3 in. away from the wall. Sleeves and conduit shall not be left open except during cable installation and must be properly fire stopped per the applicable codes.

3.1.17 FIRE PROTECTION - Fire protection of the telecommunications rooms, if required, must be provided as per applicable code. All conduits and cable trays penetrating any Telecommunications Rooms must be properly sealed with the appropriate fire stopping material, as per NEC and local fire codes.

If used, fire sprinklers shall not be water based. An optional gaseous system must be used.
3.1.18 AIR CONDITIONING - HVAC must be provided on a 24 hours per-day, 365-days-per-year basis. If the building system cannot assure continuous operation for large equipment applications, a stand-alone unit must be provided for the equipment room.

3.1.19 TEMPERATURE - The temperature and humidity must be controlled to provide continuous operating ranges of 64 degrees F to 75 degrees F with 30% to 55% relative humidity.

3.1.20 COLLOCATION OF OTHER TRADES - No water, sewer etc. pipes must be placed within or pass through the telecommunications rooms.

3.1.21 PLENUM AIR SPACE - All Telecommunications Rooms must be completely separated from Plenum air space in accordance with NEC and BICSI standards. (Please see 1.2 reference)

3.1.22 LOCATION OF ROOM - All Telecommunications rooms must be accessible at all times. The IC (building main telecommunications room) must be designed to be adjacent to an outside wall in order to facilitate the addition of entrance conduits if needed, unless specified by UTS Project Manager.

4.0 OUTSIDE PLANT

4.1 DEFINITION DESCRIPTION

4.1.1 All new building construction planning must provide for connection of the building to the campus communications infrastructure.

4.1.2 CONDUIT SIZE - All direct buried conduits used to connect to the University Telecommunications infrastructure must be 4" PVC, Schedule 40.

4.1.3 NUMBER REQUIRED - The minimum number of conduits connecting the building IC to the campus MC must be at least four four-inch (4 - 4") conduits. Note: More entrance conduits might be needed depending on the size and utilization of the building.

4.1.4 DEPTH - The top of the conduit bank must be buried at least 30 inches below the ground surface and separated from other service structures as required for fiber optical cable under EIA/TIA specifications.
Separation of telecommunications conduits from other utilities shall meet the following guidelines:

### Separation of Telecommunications Conduits from Other Utilities

<table>
<thead>
<tr>
<th>Structure</th>
<th>Minimum Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power or other conduit</td>
<td>3 inches in concrete</td>
</tr>
<tr>
<td></td>
<td>4 inches in masonry</td>
</tr>
<tr>
<td></td>
<td>12 inches in earth</td>
</tr>
<tr>
<td>Pipes (gas, oil, water)</td>
<td>6 inches when crossing pipe</td>
</tr>
<tr>
<td></td>
<td>12 inches when parallel to pipe</td>
</tr>
<tr>
<td>Power conduit terminated on poles</td>
<td>Separate poles, if possible.</td>
</tr>
<tr>
<td></td>
<td>If on same pole, 180 degree separation</td>
</tr>
<tr>
<td></td>
<td>Preferable, but not less than 90 degrees.</td>
</tr>
<tr>
<td>Railroads</td>
<td>At a crossing: 5 feet below top of the rail</td>
</tr>
<tr>
<td></td>
<td>Terminating on poles: 12 feet from the nearest rail,</td>
</tr>
<tr>
<td></td>
<td>except 7 feet at sidings.</td>
</tr>
</tbody>
</table>

The conduits must be placed in accordance with the requirements specified in the FIU building manual. In particular, bidders must pay special attention to the Telecommunications requirements specified in Appendix C.

4.1.5 **DUCT BANK PROTECTION** - Conduit must be encased in concrete when:

1. Minimum conduit depth of 30 inches cannot be attained.
2. Conduits pass under roads, driveways, or railroad tracks.
3. Bend points are subject to movement.

Note: A detectable warning tape must be placed 18 inches above all duct banks (detectable: containing metallic tracings).

4.1.6 **SLOPE** - Underground conduit must be installed such that a slope exits at all points of the run to allow drainage and prevent the accumulation of water. A drain slope of no less than .125 in. per foot is desirable.
4.2 MANHOLES (MAINTENANCE HOLES)

4.2.1 DESCRIPTION - A manhole (maintenance hole) is used to pull in and splice cables in an underground, concealed manner. Manholes must be equipped with a sump, corrosion resistant pulling iron, cable racks, and manhole ladders. Concrete used for manholes must be of at least 3500 lb./in² strength. All manholes must be properly grounded as required by BICSI. (Please refer to 1.2)

4.2.2 SIZE - Manholes must be sized at 6-ft. width X 12-ft. length X 7-ft. height, unless specified by the UTS Project Manager. All manholes must be equipped with a round ring and cover, clearly labeled "TELECOM" or "TELEPHONE". (Please see attached drawing, Fig. 4.2.2-A)

4.2.3 WHERE REQUIRED - Manholes must be placed when the conduit section length exceeds 500 ft, whenever a cable splice will be required, when bends exceed a total of 180 degrees or two bends, or the section length of conduit requires the pulling in of cable in two segments.

4.2.4 HANDHOLES are not an acceptable alternative to manholes described in section 4.2.1, 4.2.2. Handholes can only be used in place of manholes after consultation with and receipt of written approval from the UTS/Infrastructure Department. (Please see attached drawing, Fig. 4.2.4-A)

4.2.5 PULL POINTS - Wherever distances between manholes exceeds 200 feet or there are more than two 90 degree bends in the conduit run, a 4’ x 4’ x 4’ pull box must be placed. The number of conduits going in and out of the pull box shall not exceed six. Under no circumstances shall a pull box replace a manhole. (Please see attached drawing, Fig. 4.2.5-A)

4.2.6 POSITIONING OF CONDUITS IN MANHOLE - Conduits entering a manhole shall do so only through the manhole walls designed for conduit penetration. Under no circumstances shall the structural integrity of the manhole be compromised.

Note: Conduits being added to a manhole must be placed as deep as possible in order to accommodate future expansion of ductbanks and guarantee maximum utilization of the manhole.
XII. CODES AND STANDARDS - BUILDING STANDARDS

A. This building shall conform to the following applicable building standards. In case of conflict, the strictest requirements shall govern. Written approval shall be obtained when required from the State of Florida Fire Marshall, Miami-Dade County Water and Sewer Department, Miami-Dade County Health Department, Florida Department of Environmental Protection (DEP), Miami-Dade County General Services Administration (Elevator Section), and DEP’s National Pollution Discharge Elimination System Permit.

1. All construction shall comply with the 2007 edition of the Florida Building Code including the High Velocity Hurricane Zone (HVHZ) and annual amendments and supplements, if any.

2. Other statewide Impact Codes.
   
   a. All referenced standards listed in Chapter 35 of the Florida Building Code.
   c. Florida Accessibility Code (Chapter 11 of the Florida Building Code)
   d. HRS (Health and Rehabilitative Services Codes)
   e. Water Management District Standards
   f. Space Criteria as applicable. (State requirements for educational facilities)
   g. The Department of Transportation
   h. The Corps of Engineers
   i. South Florida Water Management District
   j. The Department of Natural Resources
   k. Public Works Department Standards

3. New or Revised Legislation
   
   a. Threshold law s.553.77, F.S.
   b. Building Code and Enforcement s.553.71, F.S.
   c. High hazard occupancy new definition s.633.021, F.S.
   d. Fire Marshall inspection s.633.085, F.S.
   e. Fire Marshall authority to order vacating of building s. 633.121, F.S.
   f. Master Planning (University Campus Master plans and development agreements) s.1013.30.
   g. Trench Safety Act CS/SB 2626 which adopts OSHA excavation safety standards.
   h. Compliance with Florida Statutes on Xeriscape and native plant usage.

4. Compliance with applicable local ordinances as required.
XII. CODES AND STANDARDS - BUILDING STANDARDS (continued)

B. It is the express intent of this program to acknowledge this building as a continuum relating the existing and future developments on this campus, as outlined in the University Campus Master Plan, through the selection of design, materials, and systems utilized. Comprehensive systematizing of the campus complex provides energy and construction cost efficiencies, maintenance and repair savings by reducing replacement parts inventories and simplifying service needs, aesthetic cohesiveness, and overall life cycle cost savings based on existing plant experience.

C. Design of this building and infrastructure must be closely coordinated with plans of the existing structures, systems development, campus utilities development, and University Campus Master Plan for building development.

D. The Architect/Engineer is responsible, as part of the basic services requirements, for the compliance of the construction documents with all codes until the date the project is released for bidding.
XII. CODES AND STANDARDS - ARCHITECTURAL PARAMETERS

It is the intent of this program to define building standards and specifications which will ensure environmental sensitivity, construction materials quality, construction system efficiency, adherence to building codes and standards, and awareness of university requirements to ensure functionality, ease of maintenance, energy efficiency, and cohesiveness to the existing campus mega structure.

Planning of this building will include review and updating of the University's Building Standards for Modesto A. Maidique campus. Review of this document will be coordinated with the University's Facilities Management staff. This document sets forth standards for construction materials, interior and exterior finishes, paving surfaces, common building elements, accent materials, utilities, environmental and building systems, landscaping, and other design guidelines appropriate for this campus. The current FIU Building Standards are to be followed unless specific deviations are agreed upon in advance with the Facilities Management Department.

In the development of conceptual design, careful consideration must be given to the following items:

1. Building design should be functional and take advantage of prevailing breezes and the subtropical climate. Natural ventilation should be developed wherever practical and desirable based on initial costs, operating costs, energy conservation, and the degree of environmental control required in various functional areas. Building design should eliminate the need for excessive mechanical controls through the use of such design parameters as building orientation, sun control, breezeways, operable windows, insulating exterior materials, etc.

2. Careful consideration must be given to alternative means of accommodating level changes. The nature of the functions housed in this facility requires that most of them be directly and conveniently accessible. Design should attempt to maximize vertical accessibility to all floors in this building. Concepts to be explored include ramped walkways, exterior multi-level design and terracing. Where stairs are used, they must be prominent, inviting, and readily accessible.

3. The building shall be designed for functional flexibility.

4. The A/E's documented monitoring of overall project costs, as well as costs of specific design elements, shall be reviewed with the Facilities Construction Department. Construction cost control is understood to be a major developmental objective.

5. Together with planning for user convenience, organize and arrange classrooms into building/floor zones and provide accessibility for changes in mechanical and electrical services and for maintenance access requirements. Consider future economies in spatial revisions, and plan to affect economies in operations of mechanical systems.

6. In order to affect maximum flexibility, the building should be designed around a public circulation core which includes all required public access areas and all building services. This core would provide the vertical circulation, and contain all non-academic functions in a sound-isolated envelope which would aid in maintaining acoustical levels in the office and classroom areas. All non-academic, and classroom areas should have direct access to the public circulation core.
XII. CODES AND STANDARDS - ARCHITECTURAL PARAMETERS (continued)

7. Interior finishes should be responsive to the traffic levels to which they will be subjected with a recognition of the permanence of the facility and a desire for low maintenance while providing an inviting and attractive ambiance. Hard or resilient floor surfaces shall be specified for high volume, public traffic areas. Specific room areas should be carpeted with strong, tight weave fibers, and easily replaceable colors, easy cleaning and/or repair. Wall surfaces in public traffic areas should anticipate wear and abuse due to student traffic volumes; use tough-wear paints.

8. The interior environment of this building should be reflective of the international character of the student body and the community. This international flavor should be reflected in the signs, color schemes, and appurtenances. Consideration should be given to the use of interior landscaped areas to reflect the South Florida sub-tropical environment.

9. Furnishings and equipment, interior finishes, and color selections shall be coordinated with University Facilities Construction personnel in design stages of project development prior to implementation.

10. Large glass areas which may cause sun and weather problems peculiar to South Florida should be avoided, but daylight illumination should be present, if possible, on all floors for psychological reasons. Use of shaded or screened glass windows to permit views of the campus are encouraged. All exposed glazing must be provided with storm wind protection shutters which are manually operable, or impact resistant glazing.

11. Vending areas including all utility services (electrical, plumbing, floor drains, etc.) shall be provided in conditioned spaces.

12. Provide alcove with electric service within clerical office area to accommodate photocopy machines, if a separate and independent photocopy room is not identified.

   Provide at least one corridor alcove per floor in office areas to accommodate waste paper recycling bins. Bins should be highly visible to encourage usage without obstructing normal circulation patterns.

13. There should be one custodial work room for each 18,000 square feet or less of floor space. All space within the building should be reachable from one of these work rooms without negotiating any stairways. Each work room should be at least 80 net square feet with an 8' minimum dimension and a 36" minimum out-swinging door. Each room shall include a wall hung slop sink extending 14" from wall, 20" wide, and 11" deep; it shall be of cast iron exterior and porcelain interior with a metal guard rim and an outlet trap.

   There shall be a 3" diameter floor drain in front of the sink to catch spillage. No telephone panels, electrical panels, alarm system panels, or pipe chases are to be included in these rooms.

14. The A/E shall include in the project design, fabrication, and installation of an informational graphics and signage system in accordance with University standards. To be coordinated through the Facilities Management Department.
XII. CODES AND STANDARDS - ARCHITECTURAL PARAMETERS (continued)

15. Roofing construction details shall be designed in accordance with the latest edition of the National Roofing Contractors Association Construction Details publication. A reference copy is available in the University Facilities Management Department. Slope roofs (1/4” per foot) for positive directional drainage.

16. At construction completion inspection, provide the following to the University:
   a. Complete set of reproducible "As Built" drawings.
   b. Operating manuals on all types of equipment used in the building.
   c. List of all Contractors, Subcontractors, and their suppliers of materials and equipment.
   d. Three copies of cut sheets on all door hardware, window hardware, keying schedule, and all interior and exterior mechanical, electrical, fixed equipment, and plumbing installed in the building, shall be provided in loose leaf binders.
   e. One copy of all "as-built" construction drawings (site and floor plans) in electronic medium, compatible with AutoCAD systems located in University Facilities Management offices.
   f. 10% of each type and color of ceiling tile, carpet, vinyl tile, and ceramic tile.
   g. One gallon of each color paint and five gallons of primary color paint.

17. Door hardware shall be specified to be an electronic locking system (ELS) matching and compatible with the FIU building standard. The system shall be coordinated with the University Key Bank and approved by the Facilities Management department.

18. All service kitchenettes should be provided with exhaust fan to the exterior of the building.

19. All fluorescent lighting should have an electronic ballast and energy efficient bulbs.

20. Acoustical ceiling tile system should be easily removable for maintenance access.

21. Provisions should be made for one air-conditioned voice/data communication (telephone) equipment room on each building floor level, each with area of not less than 10’ x 10’ with a door not less than 3’ wide for equipment access, and a 125 Volt 20 Amp electrical power outlet.

22. The first floor elevation shall meet a minimum of +9 feet.

23. Asbestos and lead-based Paint Survey, operations & Maintenance, and Abatement:
   1. Rules of the Florida Department of Labor and Employment Security
   2. Requirements of Sections 255.551-565 and Chapter 469, Florida Statutes
   3. Rules of the Florida Department of Environmental protection.
   4. Regulations of OSHA and the Environmental Protection Agency
   5. Licensing regulations of Asbestos Consultants, the Florida Department of Business and professional Regulation.
   6. Lead-based paint minimum abatement standards of the Department of Housing and Urban Development and current state of the art procedures to protect university personnel, students and visitors
XII. CODES AND STANDARDS - ARCHITECTURAL PARAMETERS (continued)

7. All asbestos abatement contractors are to be pre-qualified under the SUS owner Provided Insurance Program.

It is intended that this program will generate an overall building facility that will be attractive, dignified, easy to maintain, economically staffed and operated, and functionally and aesthetically satisfying to the majority of persons who see and use it. These ends can probably be best achieved through a plan that is devoted to flexible use of space with appropriate materials, light, and color, as opposed to a plan centered upon a particular architectural style, symmetry, or other non-functional planning considerations.


XII. CODES AND STANDARDS - BARRIER FREE DESIGN

It is the policy of Florida International University to provide all architectural features to permit accessibility for the physically disabled. The University has adopted the Department of Community Affairs Accessibility Requirements Manual and current revisions for standard handicapped design materials, for compliance, as a part of the University Building Standards and should be used in conjunction with the State of Florida Handicap requirements and Americans with Disabilities Act (ADA) accessibility guidelines identified under "Statewide Impact Codes" in the Codes and Standards - Building Standards section of this program.

Accessibility


4. HUD Fair Housing Act for Multi-Family Residential Construction.

5. Florida Public service Commission - installation and replacement of public telephones.


7. Agency for Health Care Administration - hospital and health care facilities.

Of particular interest in these regulations shall be provisions for physically handicapped students and staff in the following areas:

1. Wheelchair, crutches, and braces restrictions to mobility.

2. Building access: entrance door thresholds, closers and handles, interior and exterior multi-level transitions by means of ramps (slope 1:16), stairs, elevators, or escalators, emergency exit from all levels for the physically handicapped, and hallway and corridor clearances.

3. Design criteria for public service areas, such as, restrooms (with doors), drinking fountains, telephones, etc.

   (a) Visual fire alarm signals in all toilet rooms.
   (b) Door levers approved for handicap use in all major rooms. Coordinate locations with Facilities Management/Design.
   (c) Handicap drinking fountains.
   (d) Handicap telephones.
   (e) Handicap water closets, urinals, lavatories and mirrors.
   (f) Handicap parking stalls minimum 12' x 20' plus 5' x 20'.
   (g) Braille numbers on elevator doors, cabs, and room identification plaques.

4. Increase ANSI standards of 32" for closet doors to 36".

5. Decrease slope of access ramps below maximum as much as possible.

6. Electric door for main access entrance.
XII.  CODES AND STANDARDS - SITE DEVELOPMENT AND CAMPUS INTEGRATION

Site and building planning and design shall conform to the current Campus Master Plan Update, October 2003. In the development of the conceptual designs, careful consideration must be given to the following items:

1. Site design shall be coordinated with all physical facilities existing and/or currently planned for the campus. The Campus Master Plan outlines all facilities, existing or planned. Site boundaries for this project are outlined in this building program.

2. Pedestrian circulation systems between the proposed building and existing adjacent buildings must be integrated into the design which will preferably provide weather-protected connections. Perimeter walkways, exterior courtyards, and plaza areas should be designed to visually relate to the other campus adjacent buildings.

3. The service road and/or yard shall be constructed according to the Dade County standards for vehicular blacktop surfaces; additional road and service yard requirements include planting, landscaping, irrigation system, lighting, signage, and graphics.

   In engineering design and construction, particular care must be exercised for positive storm water drainage and disposal. This requirement shall be strictly enforced by the University.

4. In design planning and construction staging, consideration should be given to disruption of the existing access road to ensure orderly traffic flow.

5. Energy efficient exterior lighting is required for service road and/or yard, site, and building. Because of the heavy use of the facility at night, particular care should be taken in the design of exterior lighting for vandal resistance, security, and aesthetics. Lighting of the service yard should be controlled by clock timers with electric photo cells. Investigate use of lighting color differences to differentiate exterior functions, i.e., service road and/or yard vs. pedestrian walkway.

6. All site utilities shall be provided underground from the nearest existing primary services (power, telephone, and sanitary sewer and water distribution systems). Communications and control systems shall be provided as extensions of the campus underground network to and/or from existing and future adjacent buildings to engage with central terminal (control) equipment.

7. Site design should be developed to take full advantage of South Florida's subtropical climate including the use of Xeriphytic concepts. Landscaping should be used to articulate exterior areas, provide shade for outdoor use, and provide natural buffer between zones of conflicting use and future development.

8. Particular care should be taken to provide attractive site boundaries, and building vistas from surrounding campus areas. Native landscape materials which are capable of withstanding the sun and wind conditions found in South Florida should be used. Irrigation systems should be planned to be water efficient.

9. The A/E shall exercise particular care in designing storm drainage for the site and walkways. Topographic site plans must specifically illustrate existing and established grades for drainage. Site construction must comply with contract documents. "As-buils" of the drainage system shall be reviewed in the field at Substantial Completion of the project. All components of the construction exposed to weather shall have positive drainage to a storm-water drainage system or equivalent (planters, grassed areas, etc.). Scuppers or roof run-offs shall not occur over pedestrian walks or terraces. Primary circulation paths shall require trench drains to ensure against storm-water accumulation during heavy rainstorms. The A/E shall provide a comprehensive storm-water drainage plan for the building, connecting walkways, all weather-exposed stairways, and site, as a part of the Design Development stage.
XII. CODES AND STANDARDS - SITE DEVELOPMENT AND CAMPUS INTEGRATION (continued)

10. Exterior handrails shall be of a non-corrosive material and shall not overheat when exposed to the sun.

11. Roadway and walkway post lights should be located at least 4 feet from the edge of the roadway or walkway.

12. Loading docks and service areas should accommodate the needs of a commercial recycling program, such as corrugated cardboard compactor. An area should also be identified for the separation and collection of other recyclables, such as glass, aluminum, paper, etc.
XII. CODES AND STANDARDS - ENVIRONMENTAL SYSTEMS

Mechanical and electrical systems should be designed to afford maximum energy efficiency and operating economy. Mechanical systems should be designed in as efficient a manner as possible in order that these systems not preclude vital space essential to the building's main purpose. Particular attention should be paid to the following:

1. Zone controls of air-conditioning to permit emphasis to selected areas; alleviating total operation when necessary, particularly as relates to exhaust hoods where applicable. Design systems which maintain air movements for humidity control. Control equipment shall be pneumatic coupled to an electronic energy management system compatible with existing EMS in other campus facilities.

2. Zoned lighting controls to allow for selective control of all overhead lighting. Lower ambient light levels and increase task lighting.

   Flexibility to adjust lighting levels as needed for particular functions.

   Lighting design should reflect studies conducted in recent years concerning reading lighting in academic buildings.

3. The building mechanical and electrical system should be designed to allow incremental expansion as future needs require additions and alterations and should follow guidelines indicated in the Master Plan Update.

4. All HVAC Systems must be designed and specified with special consideration for sound transmission and quiet operation. Appropriate duct velocities and vibration isolation must be designed and field verified during construction. Air handlers should be remote from instructional and office space and enclosed by sound resistant partitions.

This building should be designed to function for short time periods with limited power consumption and without the use of air-conditioning. Features listed above - such as natural ventilation, sun control, zoned environmental controls - should be coupled with overall building design considerations such as sitting to take advantage of prevailing winds, window design to accommodate breezes, and minimize head build-up, etc. In order to service the building economically and preserve the architectural plans for flexibility, the following mechanical systems for the building should be incorporated:

   (1) Central utility core with minimum distribution distances.
   (2) Accessible vertical and horizontal chases where flexibility is required.
   (3) Provisions for changing power and telephone distribution.
   (4) Accessible mechanical rooms housing no other functions.

5. Basic systems:

   a. Heat/air-conditioning distribution and control. Design criteria to be 76 degrees Fahrenheit with 50% relative humidity.
   b. Lighting fixtures with local controls and central monitoring and disconnect control panel.
   c. Automatically starting battery powered emergency lighting. An emergency diesel or propane electrical generator for emergency lighting and elevator use should be provided to facilitate the exit of the handicap, in case of a power failure and a U.P.S. system back-up for communications/computers.
   d. Smoke detection and fire alarm with central annunciator panel at or near the main entrance. The fire alarm system should be an addressable system, not a zone system.
XII. CODES AND STANDARDS - ENVIRONMENTAL SYSTEMS (continued)

e. Electric power reserve shall be 150% greater than initial demand. The electrical distribution system shall also be
designed and constructed to accommodate this reserve.
f. Water - hot water and cold water with sufficient shut-off valves as required by academic programs and/or
maintenance functions. Hose bibbs inside and outside of the building as required.
g. Sanitary waste system - as required by applicable codes.
h. Storm drainage - positive drainage from room entrances and all exterior areas.
i. Gas lines, properly tested, with shut-off valves as required; add 30% reserve over initial building demand.
j. Hydraulic elevator - combination service and passenger-type with electrical eye equipped doors; self-lowering
and automatic open doors in accordance with fire codes.
k. Clocks - battery emergency powered.
l. Inter-campus and public telephone system. Two phone service source.
m. Irrigation - Central.
n. Exterior building lighting - Energy efficient and vandal resistant.
o. Exterior door security system.
p. Energy management systems in compliance with the Master Plan Update guidelines (Control in Central Utility
Plant).
q. Security system connected to the campus Public Safety Department.

6. Central controls for this facility connected to the Central Utility Plant should be provided for the following:

a. Clocks should be connected to the existing Simplex Time Clock System.
b. Environmental systems (HVAC).
c. Fire alarm. Connect system to the campus Public Safety Department.
d. Exterior lighting.

7. Reserve utilities capacity for power and gas (refer to items above), chilled water, water and sewer, and
communications are to be provided.
XII. CODES AND STANDARDS - FURNITURE STANDARDS AND EQUIPMENT

In order to facilitate the design of the specific functional areas, lists have been compiled indicating the anticipated equipment needs of each. These lists have been included in the detailed description of each area. These lists may not be complete, and include items which will not be purchased under the projects Capital Outlay Furniture and Equipment budget; however, their inclusion in the design is required for efficient space planning by the Architect and Engineers.

It is also important to recognize that some of the office equipment presently utilized in other buildings on campus may be re-utilized if, after inventory, they are deemed to be in satisfactory condition for relocation.

Installation for all fixed equipment, built-in shelving, counters, and any equipment requiring hook-up other than electrical convenience outlet shall be included in the construction cost and bid documents.

All movable equipment and furnishings shall only be included in the equipment and furniture design layouts, but should be indicated as "not-in-contract". All movable equipment will be furnished by the University and funded from the Furniture and Equipment budget; see Project Budget.

All special equipment shall be specified to be on contract for servicing. A complete set of "as-built" drawings from manufacturers and installers is required. The A/E and contractor shall field demonstrate and discuss maintenance procedures with appropriate personnel from the department of Physical Plant upon Substantial Completion of the construction.

Inventory of equipment, other than in this construction program, shall be provided by the Office of Facilities Management.
## XIII. PROJECT SCHEDULE

Mutual coordination between the A/E and the University will be required to resolve questions of scheduling, compatibility, finishes, environmental systems, connections, etc. Among those items which will require coordination are the following: Pre-design Informational conferences, Design Submissions and Presentations, Project Reviews, Evaluations and Approvals by the Board of Trustees, Final Document Approvals, Bidding Dates and Procedures, Award of Contracts and Construction Start, Pre-construction and Periodic Construction Conferences, Construction Interfacing with University Operations, Disruption of Services for Utility Connections, Substantial and Final Completion Inspections, and Guarantee Expiration Inspection.

Milestone dates for this project are planned as follows:

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<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>CALENDAR</th>
<th>DATE</th>
</tr>
</thead>
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<td>COMMITTEE MEETING (DRAFT PROGRAM TO COMMITTEE)</td>
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<td>3</td>
<td>PROGRAM DRAFT REVIEW COMMENTS DUE</td>
<td>17-Jun-09</td>
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<td>4</td>
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<td>5</td>
<td>PRESIDENT APPROVES PROGRAM</td>
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<td>CLOSEOUT DOCUMENTS / FINAL COMPLETION</td>
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XIV. PROGRAM FUNDS

The planning, construction, and equipment funding source is projected as follows:

CITF FY 2008-2009 - $4,500,000
## XV. PROJECT BUDGET SUMMARY

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<tr>
<th>SPACE TYPE</th>
<th>NASF</th>
<th>NASF/GSF FACTOR</th>
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<th>CONST. COST PER GSF</th>
<th>TOTAL COST</th>
<th>NASF Approved CIP</th>
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### 1. CONSTRUCTION COMPONENTS

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<th>Item</th>
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<tbody>
<tr>
<td>b. Environmental Impacts/Mitigation</td>
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<td>c. Site Preparation/Demolition</td>
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<tr>
<td>d. Landscape/Irrigation</td>
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<tr>
<td>e. Signage/Piazzas/Walks/Bikepaths</td>
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<td>f. Roadway Improvements</td>
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<td>g. Parking (spaces)</td>
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<td>h. Telecommunications (exterior)</td>
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<tr>
<td>i. Electrical Service</td>
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<td>j. Water Distribution System</td>
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<tr>
<td>k. Sanitary Sewer System</td>
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<td>l. Storm Water System</td>
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<td>m. Chilled Water Piping</td>
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<td>n. Energy Efficient Equipment</td>
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### 2. OTHER PROJECT COMPONENTS

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<td>b. Professional Fees</td>
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<td>Base Agreement - A/E</td>
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<td>Construction Manager (1%)</td>
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<td>c. Fire Marshal (.25%)</td>
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<td>d. Inspection Services</td>
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<td>Project Representative</td>
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<td>Roof Inspector</td>
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<td>Threshold Inspector</td>
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<td>e. Insurance Consultant (.0006)</td>
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<tr>
<td>f. Surveys/Tests</td>
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<tr>
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<tr>
<td>Geotechnical Tests</td>
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<tr>
<td>Concrete Test</td>
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<tr>
<td>HVAC System Tests</td>
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<tr>
<td>g. Permit/Impact/Environmental Fees</td>
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<tr>
<td>Permits</td>
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<tr>
<td>Impacts</td>
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<tr>
<td>Environmental</td>
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<tr>
<td>h. Artwork (.005)</td>
<td></td>
<td></td>
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<tr>
<td>i. Movable Furnishings &amp; Equipment</td>
<td></td>
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<tr>
<td>Telecommunications Equipment</td>
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<tr>
<td>Audio Visual Equipment</td>
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<tr>
<td>Facilities Operations</td>
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<tr>
<td>Signage</td>
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<tr>
<td>j. Admin./Impact Fee 3%</td>
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<tr>
<td>k. Contingencies (5%)</td>
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<tr>
<td>SUBTOTAL OTHER PROJECT COMPONENTS</td>
<td>$1,475,437</td>
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<tr>
<td>TOTAL PROJECT COST (Items #1 &amp; #2)</td>
<td>$4,500,000</td>
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