

**COLLEGE OF ENGINEERING  
& COMPUTER SCIENCE  
BUILDING PROGRAM  
BT -616**

OCTOBER 2006

Final Version for Signatures  
October 9, 2006



**COLLEGE OF ENGINEERING  
BUILDING PROGRAM  
BT -616**

Boca Raton Campus  
**FLORIDA ATLANTIC UNIVERSITY**

BOCA RATON, FLORIDA

PREPARED IN ACCORDANCE WITH  
AVP POLICY AND PROCEDURE #2  
PROGRAM DEVELOPMENT

**OCTOBER 2006**

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**Florida Atlantic University  
FACILITIES PROGRAM**

**PREPARED BY:**

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**Robert Richman**, Program Coordinator

**REVIEWED AND APPROVED:**

**FACILITIES PLANNING:**

This is to certify that this document has been reviewed for project schedule, budget and code requirements.

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**Raymond Nelson**, Director

**ASSOCIATE VICE PRESIDENT, OFFICE OF THE UNIVERSITY ARCHITECT:**

This is to certify that this document meets the intent of the University Architect's AVP Policy and Procedure #2 (Development of Facility Program) and is consistent with the latest approved Campus Master Plan.

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**Thomas Donaudy**, Associate Vice President & University Architect

**INFORMATION RESOURCE MANAGEMENT:**

This is to certify that this document meets the requirements of Information Resource Management.

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**Jeffery Schilit**, Associate Provost

**PROGRAM COMMITTEE:**

This is to certify that this document contains the recommendations of the Program Committee.

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**Karl Stevens**, Committee Chairperson  
Dean of College of Engineering

**DIVISION OF ACADEMIC AFFAIRS:**

This is to certify that this document meets the requirements of the Office of Academic Affairs.

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**John Pritchett**, University Provost & Chief Academic Officer

**DIVISION OF FINANCIAL AFFAIRS:**

This is to certify that this document meets the requirements of the Division of Financial Affairs.

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**Kenneth Jessell**, Vice President for Financial Affairs

**OFFICE OF THE UNIVERSITY ARCHITECT:**

This is to certify that this document meets the needs of Florida Atlantic University that it is in conformance with all applicable requirements, and is hereby recommended to the President.

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**Thomas Donaudy**, Associate Vice President & University Architect

**FLORIDA ATLANTIC UNIVERSITY:**

This is to certify that this document has been reviewed by the administrative leadership at Florida Atlantic University and that the material contained herein is forwarded with the President's approval and recommendation.

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**Frank T. Brogan**, President

Date

## COLLEGE OF ENGINEERING

## MESSAGE FROM THE DEAN

On behalf of our students, faculty, and staff, welcome to our College of Engineering & Computer Science! We are pleased to have this opportunity to provide highlights of our programs and priorities and to share with you our vision, mission, and goals.

We are committed to providing accessible and responsive programs of education and research recognized nationally for their high quality. We intend to be the institution of choice for regional students, business, and industry. Our partnerships with the business, governmental, and educational communities are vital components of our day-to-day existence. This emphasis on collaboration helps ensure both the relevance and the marketability of our academic and research programs in



- [Civil Engineering](#)
- [Computer Engineering](#)
- [Computer Science](#)
- [Electrical Engineering](#)
- [Mechanical Engineering](#)
- [Ocean Engineering](#)
- [Bioengineering](#)

We invite your inquiries and value your opinions and comments about our programs and services.

*Karl K. Stevens, Ph.D., P.E.*  
Dean

## COLLEGE VISION

We are committed to providing accessible and responsive programs of education and research recognized nationally for their high quality. We intend to be the institution of choice for regional students, business, and industry. As a community of scholars, we will lead by example and with vision, inspiration, integrity, and a shared sense of purpose. We will promote a stimulating and productive environment of work, study, and scholarly inquiry for students, faculty, and staff.

## COLLEGE MISSION

Through its programs in Engineering and Computer Science, our College:

- Educates those who will contribute to the advancement of technical knowledge and who will be the leaders of tomorrow.
- Conducts basic and applied research in engineering, computer science, and related interdisciplinary areas.
- Provides service to the engineering and computer science professions, to the State of Florida, to the nation, and to the community at large.

## COLLEGE GOALS

Our goals are results-oriented. As a community of scholars, we will:

- Encourage young people to consider careers in engineering and computer science by introducing them to these fields while in middle and high school.
- Prepare our graduates in ways that provide them a basis for lifelong personal and professional development and that enable them to exercise leadership and make lasting contributions in their disciplines.
- Continue on new roads of research and discovery in our existing areas of expertise, in emerging disciplines, and in related interdisciplinary areas.
- Provide the educational resources that working professionals need to keep pace with developments in their field.
- Magnify our positive impact in serving regional, State, national, and global needs by building mutually beneficial linkages with business, industry, community colleges, K-12 programs and schools, and other constituencies.

A. PROJECT HISTORY

The College of Engineering & Computer Science currently occupies 77,000 SF of space on the Boca Raton campus. Building 36, aka The College of Engineering Building, accounts for 34,000 SF of this total and Building 43, aka The Science and Engineering Building, accounts for 35,000 SF. The remainder is scattered over three different locations on campus

The College also has modest office and computer laboratory space on the Davie and St. Lucie campuses for the Department of Computer Science and Engineering and has a sea-side facility for the Department of Ocean Engineering in Dania Beach. The latter facility provides valuable access to the ocean and functions primarily as the Department's graduate-level institute for ocean engineering education and research. The 50,000 SF building provides office and laboratory space, along with docking facilities for the Department's two research vessels and for vessels visiting from other institutions.

Current space at the Boca Campus is inadequate for College needs. There are no offices for additional faculty and the College cannot engage in new academic or research projects that require additional space. Growth of the College is totally stymied. Factors contributing to this situation include assignment of the Department of Computer Science to the College of Engineering in 1990, creation of the Department of Civil Engineering in 2001, assignment of the FAU Center for Intermodal Transportation to the College in 2006, and significant growth in academic programs, student enrollments, and funded research contracts and grants.

The two principal facilities of the College, Buildings 36 and 43, are located at opposite corners of the campus, requiring frequent traverses between buildings by students, faculty, and staff. This split location also is confusing to students and to visitors. Building 36 is isolated in a location on the southwest quadrant of campus that is populated by student housing and student support services. Other science and engineering facilities are located at the northeast quadrant of the campus and are part of a unified community linked together by a common streetscape, the "Science Broadway".

Some 250,000 **Gross SF** of space are required to meet College needs on the Boca Raton campus. Location of all College operations in a single building will provide a real efficiency and synergy of efforts, both within the College and with other elements of the University. A strategy by which this can be accomplished has been developed by the Dean and will be discussed later in this document.

Several years ago, the College joined with several internal FAU departments and industry partners to try to resolve campus energy issues. Alternative co-generation solutions were too complex and expensive at the time so the matter was put aside. Current rising energy costs and success of the College's Photovoltaic Walkway project (at the AD Henderson University School on the FAU Boca Raton campus) have caused energy issues to resurface. Finding a



comprehensive and affordable solution to campus energy problems is now a University priority, and the College remains an active participant in this effort.

In light of the College's participation in the campus energy effort and its significant teaching and research interests in the area of renewable energy, the Dean has proposed that the University construct an environmentally friendly, energy efficient, "green" building to meet the needs of the College of Engineering & Computer Science. This recommendation is consistent with actions of the College's Executive Advisory Council, which has identified energy and the environment as two of five areas of focus for the College.

#### B. GENERAL PROJECT DESCRIPTION

The Dean has proposed that the University construct a "green" building to meet space needs of the College of Engineering & Computer Science on the Boca Raton campus. Green buildings feature lowered consumption of energy and water, use of recycled materials, and provision of healthy and productive environments for occupants.

This facility will:

- Provide the space required for serving an enrollment of 3,000 students, a faculty of 100, and a funded research activity of \$25,000,000 annually.
- Provide the College an important asset for use in recruitment of top students and faculty.
- Places the University, the College, and the South Florida community at the national forefront of efforts in energy conservation and design of sustainable infrastructure.
- Provide a centerpiece and showcase for the College's escalating teaching and research activities in these and related areas.
- Serve as a living energy and environmental teaching and research laboratory for the University, for the College's K-14 partners, and for the local community.
- Provide an important showcase for the "green" capabilities of participating design and construction firms.

With an ultimate build-out of some 250,000 gross square feet, the proposed facility will include:

- Visitor Center (showcase for special features of the building, including design & construction; recognition of project contributors; welcome center for the College of Engineering – could be a separate building annex)
- Engineering Electronic Library & Student Center (e-library materials, student study & work space)
- Student Design & Innovation Center (for projects with business & industry)
- Engineering Conference Center
- Engineering "Studio" (for collaborative activities with K-14)
- Distance Learning Classrooms

- Auditorium
- Offices (faculty, staff, graduate students)
- Teaching and Research Laboratories (wet & dry)
- Energy Lab (coinciding with the “green” building concept)
- Environmental Lab (coinciding with the “green” building concept)
- Machine and Electronic Shops and Technician Support Areas

The ultimate build-out will be accomplished in more than one phase, commensurate with available funding. Please see Section IX of this document for a more detailed description of the program outline for this initial phase.

### C. PROJECT GOALS

Project goals are to:

- Meet the space needs of the College of Engineering & Computer Science with a state-of-the-art education and research facility.
- Provide a facility that will foster interaction between students, faculty, and staff and promote collaboration with business, industry, government, the community, and other disciplines.
- Create a facility that qualifies for **Platinum** Level LEEDS certification, featuring alternative energy systems, lowered consumption of energy and water, use of recycled materials, and provision of healthy and productive environments for occupants.
- Showcase the teaching, research, and student activities and programs of the College.
- Construct and equip the facility in such a way that the building itself will serve as a “living” educational and research laboratory for environmental and alternative energy systems.
- Serve as an essential centerpiece for a major College effort to provide hands-on education and information to the public and to students at all levels about environmental and energy issues so vital to the future success of our country.
- Provide an important showcase for the “green” capabilities of participating design and construction firms.
- Maximize utilization of space through shared facilities and flexible, modular design.
- Provide parking/facilities for hybrid vehicles.
- Provide ample visitor parking to support the College’s significant collaborations with business and industry.

The concept of sustainable development should be incorporated as an underlying assumption throughout the project. Plans should emphasize state of the art strategies for sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental

quality. Guidelines established by the U.S.G.B.C. (United States Green Building Council) for LEED-NC (Leadership in Energy and Environmental Design-New Construction) version 2.2 should be followed.

#### D. DESIGN OBJECTIVES

The design objectives for this project are to:

- Create an Engineering & Computer Science facility with a welcoming, professional atmosphere that is appealing to students, faculty, and staff. (Appeal to potential students and their parents and teachers is particularly important.)
- Create a facility that will encourage interaction and foster collaboration with business, industry, government, K-14, the public, and other units of the University.
- Create a facility that provides innovative life style amenities for students, faculty, and staff and that permits showcasing of the interactions between engineering and the arts (e.g., an open access piano in a lobby, a music room, a location for performances by students, faculty, staff or visitors; a dance floor and sound system; display areas for paintings and sculptures, etc.). See also section V on Academic Programs.
- Provide appealing food services in the building.
- Provide state-of-the-art laboratory and office facilities making maximum utilization of the concepts of shared use and flexible, modular design.
- Provide wireless connectivity throughout, generator backup, and strong UPS system.
- Create a facility that signals the importance of the College of Engineering & Computer Science and which reflects the Vision, Mission, and Goals of the College.
- Achieve LEEDS **Platinum** Level Certification.
- Provide a facility that will enrich the existing architectural fabric of the campus, **with executive level finishes in public and administrative areas.**
- Provide a highly functional facility that will conserve land usage.

#### E. CONSTRUCTION DELIVERY METHOD

The University anticipates the utilization of a construction manager for this project. Construction sequencing and relocation of parking areas are critical considerations in minimizing disruption of campus services. Prior to the start of construction the CM shall provide a plan to the University for its approval in regard to these issues.

The size of the project is sufficiently large and/or complex to require major emphasis on the qualification of the contractor to provide specific expertise in highly specialized cost estimating, value engineering, and scheduling during the design process with continuity of construction management through both design and construction phases. LEEDS experience is essential to the successful implementation of this project.

## ACADEMIC PROGRAMS

Florida Atlantic University's College of Engineering & Computer Science offers programs on-campus, off-campus, and through distance learning.

The **Undergraduate Bachelor's degree programs** offered through the college are:

- [Civil Engineering](#)
- [Computer Engineering](#)
- [Computer Science](#)
- [Electrical Engineering](#)
- [Mechanical Engineering](#)
- [Ocean Engineering](#)
- Information Engineering Technology (starts Fall 2006)
- Geomatics Engineering (starts Fall 2007)
- Bioengineering (starts 2009)

Graduate, Masters' or Ph.D. degree programs offered are:

- [Civil Engineering](#)
- [Computer Engineering](#)
- [Computer Science](#)
- [Electrical Engineering](#)
- [Mechanical Engineering](#)
- [Ocean Engineering](#)
- Bioengineering Certificate
- Systems Engineering (starts 2007)
- Information Technology (starts 2007)
- Healthcare Engineering (starts 2008)
- Bioengineering (starts 2009)
- Environmental Engineering (starts 2009)
- The college is also considering degree programs in Entertainment Technology, and the design and construction of the Engineering & Computer Science facility need to take this possibility into account. Entertainment Technology blends engineers and computer scientists with traditional art (painters, sculptors, illustrators, animators, musicians), with technical art (3D modelers, sound designers, filmmakers, architects), and with theater, drama and other creative fields.

## A. STATE UNIVERSITY SYSTEM OF FLORIDA MASTER PLAN

The proposed program for the College of Engineering is consistent with the current adopted Master Plan.

## B. ACADEMIC PROGRAM REVIEWS

None.

## C. RECOMMENDATIONS OF THE REVIEW CONSULTANTS

None..

**A. FACILITY DEFICIENCIES**

Space available to the College in Boca Raton is scattered over five different locations across campus and is totally inadequate for College needs. There are no offices for additional faculty and the College cannot engage in any new academic or research efforts that require additional space. Growth and expansion of the College are completely stymied.

The two principal facilities of the College: Buildings 36 and 43; are located at opposite corners of the campus, requiring frequent traverses between buildings by students, faculty, and staff. This split location also is confusing to students and to visitors. Building 36 was built in 1980 and requires renovation. Laboratories are out-of-date and inflexible with regard to function. The building is adjacent to the University Center, campus housing and the bookstore. This puts an academic building in the middle of the “student life” area, which is not a compatible use of space. Also, this location is isolated from all other science and engineering facilities, including the College’s space in Building #43.

**B. ALTERNATIVE SOLUTIONS**

Some 250,000 **Gross SF** of space are required to meet needs of the College. An alternate to building an entire new College facility at the proposed site is to temporarily retain Building 36 for use by the College and build a smaller facility as project Phase I. The remaining new space would be constructed as Project Phase II. When Phase II is completed, Building 36 could then be vacated by the College and renovated for other University use such as general classrooms and lecture halls.

**C. QUANTITATIVE ANALYSIS OF PROGRAM SPACES**

The State Requirements for Educational Facilities Chapter 6, Section 6.1, Size of Spaces and Occupant Criteria Table was utilized as a guide in the development of this program. The resulting detailed Space Program is included in Section IX

**D. PROJECT AND SURVEY RECOMMENDATIONS**

This facility needs to be located in reasonable proximity to the Colleges of Science, Business, and Nursing, with which the College has extensive collaborative teaching and research activities. There is adequate property at the proposed site to house all of the functions of this program.

A.    THE ADOPTED CAMPUS MASTER PLAN

The proposed project is consistent with the goals and objectives of the Campus Master Plan (CMP) prepared and adopted on November 6, 2001 pursuant to Section 240.155, F.S.

## A. SITE CONDITIONS

**1. SITE TOPOGRAPHY** (CM-N-04.00-09/97 B.1)

The site is a level open green space east of Parking Lot 2. The exact location of the building will be determined during the design process and could encompass part of the existing Lot 4. **To the north of the site is Parking Lot 4 and Lee St.. To the west is FAU Boulevard. The Henderson School is located opposite the site, across FAU Boulevard on its east side. The south of the site is bounded by the 20<sup>th</sup> Street entrance to the administration building.**

**2. STORM DRAINAGE** (CM-N-04.00-09/97 B.2)

There is an existing detention area on the site, which may require reconfiguring and enlargement. The site is part of the Campus-wide permitting with the South Florida Water Management District. If required, the architect will be directed to provide attenuation strategy for storm water management on site. Refer to Section X, Utilities Impact Analysis for site maps and description of the site storm water system.

**3. VEHICULAR AND PEDESTRIAN CIRCULATION** (CM-N-04.00-09/97 B.3)

The site is located on the axis of "Science Broadway", connecting most of the science buildings with an open pedestrian mall. Pedestrian access to the proposed College of Engineering is to be along this axis and may be at grade or elevated to bridge vehicular circulation or extended storm water detention ponds. Vehicular access could be from FAU boulevard on the west side of the site, or from Lee Street and adjacent parking areas along the north. As this building will require a service entrance, it would most likely be from the north.

**4. SITE VEGETATION** (CM-N-04.00-09/97 B.4)

Site vegetation consists mainly of level lawn and small decorative shrubbery. The university will adhere to its policy of replanting and replacing any tree or shrubbery that are removed or damaged due to new construction, and the architect shall recommend additional improvements in his design. As the College of Engineering will be an important addition to the campus, it is expected that landscaping will play an important role in enhancing the structure as well as shielding the required service area from view.

**5. ARCHAEOLOGICAL HISTORY** (CM-N-04.00-09/97 B.5)

There is no archeological history on this site.

**6. EXISTING UTILITY LOCATIONS** (CM-N-04.00-09/97 B.6)

Refer to Section X, Utility Impact Analysis for campus utility infrastructure maps and description of site utilities.

**7. ARCHITECTURAL SIGNIFICANCE OF ADJACENT STRUCTURES** (CM-N-04.00-09/97 B.7)

The building design is to compliment the existing scale and architectural vocabulary of the surrounding structures. As it will be located at the head end of the science community's "Science Broadway" with valuable exposure from FAU Boulevard, Lee Street and the 20<sup>th</sup> Street Campus entrance, The College of Engineering & Computer Science Building will be a prominent cornerstone of the campus.

**8. UNUSUAL SITE CONDITIONS** (CM-N-04.00-09/97 B.8)

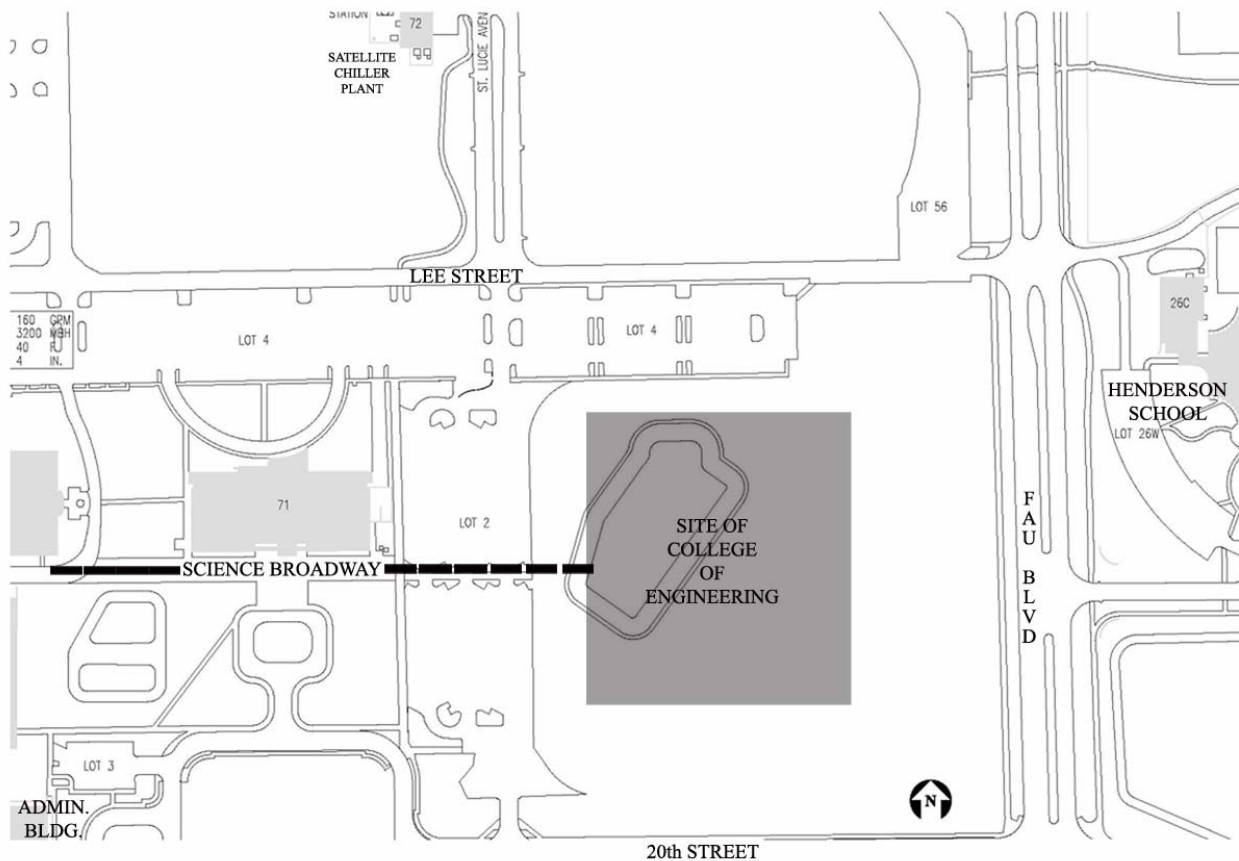
There are no unusual site conditions.

9. DIRECTION OF PREVAILING WINDS (CM-N-04.00-09/97 B.9)

There is no University wide study of the prevailing wind patterns. Generally the wind patterns vary seasonally reflecting the global patterns associated with the summer tropic air currents from the southeast and winter arctic winds from northwest. More importantly, the Architect must study the effect of microclimate created by existing tree canopy and site conditions (in addition to the relationship to adjacent building exhaust, fresh air intake and vehicular traffic patterns) in siting the building and in designing for views and HAVC/MEP systems.

B. CAMPUS MAP & SITE MAP

The site map below shows the general relationship of the proposed College of Engineering with its surrounding elements. Refer to Section X, Utilities Impact Analysis for additional site maps.





## A. PROGRAM AREA TABLE (Reference SUS CM-N-04.00-09/97 Attachment 1)

The following is a preliminary program for the first phase of the College of Engineering and Computer Science Building. The selected consulting AE team will be asked to perform a thorough program verification including laboratory program and equipment requirements. This verification process must be tested against the available funding and the budget as set forth in Sections XIV and XV.

PROGRAM FOR PHASE I - COLLEGE OF ENGINEERING AND COMPUTER SCIENCE			
Facility	Size (ft <sup>2</sup> )	Special Needs	Location Needs
<b>Computer Support &amp; Teaching Labs / Storage Area</b>			
Cold Room for servers. Raised floor with cabling and cooling in floor. Adjacent to Build & Storage area.	800	Glass windows between support facility and public areas.	
Computer Build and Storage area.	800		
Office/desk space for computer technicians.	1,000		
Teaching computer labs			
40 Seat Teaching Computer Labs (2 Labs) (50sf per person x 40 = 2000 sf each)	4,000	Arranged in a row adjacent to Computer Support Facility. These will be open labs when not scheduled for classes. There will be other open computer access for students elsewhere in the building. All software available on all computers.	
30 Seat Teaching Computer Labs (2 Labs) (50sf per person x 30 = 1500 sf each)	3,000	Arranged in a row adjacent to Computer Support Facility. These will be open labs when not scheduled for classes. There will be other open computer access for students elsewhere in the building. All software available on all computers.	
Video Conference Room for 25	1,250	Well-appointed, well-utilized room for video conferencing.	
<b>Subtotal Computer Support &amp; Teaching Labs/Storage Area</b>	<b>10,850</b>		

Program for Phase I continued on next page .....

**BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE**

Phase I Program Continued ....

<b>Dean's Suite</b>			
Dean's Office	300	Need space to host 4-6 visitors. Current space (about 250 ft <sup>2</sup> ) is not large enough.	
Executive Secretary	250	Dean's Secretary. Also needs work space and space for sensitive files. Current space (about 200 ft <sup>2</sup> ) is not large enough.	
Offices for Senior Staff	525	Three offices @ 175 ft <sup>2</sup> for existing senior staff: Director of Operations, Associate Dean for Graduate Studies & Research, Associate Dean for Academic & International Programs. Offices need work space and space for a small conference table and chairs	
Offices for Secretaries & Junior Staff	750	Six offices @ 125 ft <sup>2</sup> . Four of these would be for existing staff; two are for additional staff we likely will be adding within the next year or two. Offices need work space and space for files.	
Reception Area	700	Need desk space for two staff and seating for 4-6 visitors. Current reception area is about 675 ft <sup>2</sup> , but does not have adequate seating space for visitors.	
Workspace	300	Copy machine, color printer, document assembly, storage of office supplies, workspace for student office assistants. Current space of 171 ft <sup>2</sup> is inadequate for current needs.	
File & Records Storage	300	Current space of about 200 ft <sup>2</sup> is inadequate for current needs.	
Dean's Conference Room	600	Seat 40. Current space of 403 ft <sup>2</sup> is inadequate for current needs.	Full video conferencing capability.
Kitchen	250	Kitchen (with sink, disposal, dishwasher, microwave, and refrigerator) to support the Dean's Conference Room.	
<b>Subtotal Dean's Office</b>	<b>3,975</b>		
<b>Dean's Support Suite</b>			
Offices for Senior Staff	350	Two offices @ 175 ft <sup>2</sup> for two existing senior staff: Director of Development and Director of Promotion & Publicity. Offices need work space and space for a small conference table and chairs	
Offices for Secretaries & Junior Staff	250	Two offices @ 125 ft <sup>2</sup> . Offices need work space and space for files.	
Reception/Waiting Area	300	Desk and work space for one staff and seating for 4-6 visitors.	
Conference Room	300	These staff will be involved in a heavy schedule of meetings and work sessions with smaller groups. We need a smaller conference room that can accommodate about 10 persons.	
<b>Subtotal Dean's Support</b>	<b>1,200</b>		

Program for Phase I continued on next page .....

**BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE**

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Phase I Program Continued ....

<b>STUDENT SERVICES SPACE</b>		This space will house the operations and activities of the Division of Engineering Student Services and the Division of Engineering Professional Development (COOP)	
Offices for Senior Staff	525	Three offices @ 175 ft <sup>2</sup> for three existing senior staff: Assistant Dean of Student Affairs, Student Affairs Coordinator, and Director of Engineering Professional Development. Offices need work space and space for a small conference table and chairs. These offices are used extensively for private and confidential student counseling.	
Offices for Secretaries & Junior Staff	600	Five offices @ 120 ft <sup>2</sup> for a senior secretary and for staff involved with high school & community college relations, pre-college programs, and international students. One office for future expansion	
Reception/Waiting Area	600	Desk and work space for two staff and seating for 10 visitors	
Cubicles for Tutors	600	Cubicles for 6-8 tutors, each with a small white board and seating/desk space for occupant and three additional students.	
Workspace	300	Copy machine, color printer, document assembly, mailings, storage of office supplies, etc.	
Files & Records Storage	150		
<b>Subtotal Student Services</b>	<b>2,775</b>		

<b>FEEDS / Executive &amp; Continuing Education</b>		This space will house the operations and activities of the current FEEDS and distance learning operations and anticipated new efforts in executive and continuing education.	
Offices for Senior Staff	350	Two offices @ 175 ft <sup>2</sup> for Director and assistant. Offices need work space and space for a small conference table and chairs.	
Offices for Secretaries & Junior Staff	240	Two offices @ 120 ft <sup>2</sup> for a secretary and staff member.	
Reception/Waiting Area	500	Desk and work space for two staff, registration area for students, and seating for 6 visitors	
Workspace	500	Copy machine, printer, FAX, document assembly, mailings, storage of office supplies, collection & dissemination of class materials, collection and distribution of student homework, exams, and other materials.	
<b>Subtotal FEEDS</b>	<b>1,590</b>		

Program for Phase I continued on next page .....  
Phase I Program Continued ....

**BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE**

<b>Departmental and Faculty Offices</b>		
Department Office Suites	10,000	5 departments at 2,000 sf each
Faculty Offices	12,000	100 faculty offices at 120 sf each
<b>Subtotal Faculty Offices</b>	<b>22,000</b>	
<b>Classroom Space</b>		
Flexible Classroom/Meeting Space	3,000	Three modules @ 1000 sf each
Distance Learning Classrooms	4,000	Two units fully designed/equipped for send/receive distance learning courses - 40 seats @ 2,000 sf each
<b>Subtotal Classroom Space</b>	<b>7,000</b>	
<b>Laboratory Space</b>		
Research and Teaching Lab Modules	12,000	Twelve modules @ 1000 sf each.
<b>Subtotal Laboratory Space</b>	<b>12,000</b>	
<b>Support Space</b>		
Electronic Library/Student Center	10,000	Student lounge, quiet study area, electronic engineering library, open computer access, office space for student meetings and professional societies.
Food Service Space	3,000	University facility.
Receiving/Storage Space	1,500	Shared College facility.
Staff Lounge	500	In Food Service area?
Faculty/Graduate Student Lounge	750	In Food Service area?
Lobby/Reception Area	1,250	
Conference/Meeting Rooms	1,500	Two larger/two smaller
<b>Subtotal Support Space</b>	<b>18,500</b>	
<b>Other</b>		
Wireless access throughout building		
Generator Backup System		
Full UPS Systems		
Parking for Hybrid Vehicles		
Parking for Visitors		To support business/industry collaborations
<b>Total Net Area Requested</b>	<b>79,890</b>	
<b>Total Estimated Gross Area @ 1.5</b>	<b>119,835</b>	

**End Phase I Program. The budget for this project is based on the build-out of Phase I space only.**

The following phase II program is provided here as an attempt to convey the vision for the ultimate build-out of the College of Engineering and Computer Sciences. It is provided here for reference only and to give the AE an opportunity to view all of the components that are envisioned for the future phases, in order to master plan the site and allow for minimal disruption upon expansion of the facility.

**BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE**

**Phase II Program** (Shaded to avoid confusion with Phase I)

<b>PROGRAM FOR PHASE II - COLLEGE OF ENGINEERING AND COMPUTER SCIENCES</b>			
<b>Facility</b>	<b>Size (ft<sup>2</sup>)</b>	<b>Special Needs</b>	<b>Location Needs</b>
<b>Teaching/Research Labs</b>			
Large Flow Lab(Wind Tunnel, Wave Tank, Recirc Channel)	2,500	Water, sinks, drains, 220V/440V power, external access, ventilation	1 <sup>st</sup> floor with outdoor access
Dark room	240	Two access doors	
Materials Laboratory	3,000	Water, chemical sinks, drains, 220V power	1 <sup>st</sup> floor with outdoor or machine shop access
Mat Lab Pump room	400		Adjac. To Mat Lab
Heat treatment/sample preparation room	500	Water, chemical sinks, drains, fume hood	1 <sup>st</sup> floor with materials lab
Concrete mixing/testing room	3,000	Water, sinks, drains, power, forklift access, 220V power	1 <sup>st</sup> floor with outdoor access
Soils test lab	1,500	Power	1 <sup>st</sup> floor with outdoor access
Heavy test lab	3,000	220V power	Can be outdoors
Machine shop with material storage room	3,000	Overhead crane, 220V/440V power, water and sinks	1 <sup>st</sup> floor with outdoor access
Machine Shop Storage	400	Outdoor vents and fan	
Mach Shop Welding room	400		
Student Project Work Rooms (6)	2,400	Six separate rooms with outdoor access adjacent to machine shop	1 <sup>st</sup> floor with outdoor access
Student Design Project assembly and work room	1,000	Sinks, power, outdoor access	1 <sup>st</sup> floor with machine shop
Environmental Lab	1,500	Chemical sinks, drains, hood	
Flexible use space for labs and setups for data acquisition, systems dynamics, controls, measurements, circuits, electronics, etc.	3,000	Power, water, drains, sink, air	
Clean rooms (3)	450		
Thermal/Fluids lab	1,500	Sinks, water, exhaust fans, hood, 220V power	1 <sup>st</sup> floor, outdoor access
Fuel cell/ renewable energy laboratory	1,500	Exhaust fans, water, sinks, hydrogen storage closet	1 <sup>st</sup> floor, outdoor access
Research and Teaching Lab Modules	6,000	Six modules @ 1000 sf each.	
Research Laboratory Space	6,000	Flexible use space for research projects	
Storage/Technician Desk/Work Space Distributed among the above space	2,000		
<b>Subtotal Teaching/Research Labs</b>	<b>43,290</b>		
<b>Computer Support &amp; Teaching Labs</b>			
Office/desk space for technicians.	400		
Teaching computer labs			
40 Seat Teaching Computer Lab	2,000	with convenient access from Computer Support Facility. These will be open labs when not scheduled for classes. There will be other open computer access for students elsewhere in the building. All software available on all computers.	
30 Seat Teaching Computer Lab	1,500	with convenient access from Computer Support Facility. These will be open labs when not scheduled for classes. There will be other open computer access for students elsewhere in the building. All software available on all computers.	
Graduate Student Computer Lab for 25 ppl	1,250	A 25-seat open computer lab dedicated to graduate students; work pod arrangement.	
Video Conference Room for 25	1,250	Other: Wireless access throughout building; one well appointed, well-utilized room for video conferencing.	
<b>Subtotal Computer Support &amp; Teaching Labs</b>	<b>6,400</b>		

**BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE**

<b>Offices</b>		
Department Office Suites	4,000	2 departments at 2000 sf each
Graduate Student Desk/Work Space	3,000	50 cubicles with desk for graduate students, a small common area with telephone and mailboxes, and a small conference/meeting room for group discussions
Adjunct Faculty Space	1,500	25 cubicles with desk for adjunct faculty, a small common area with telephone and mailboxes, and a small conference/meeting room for group discussions
Office/Lab Suites	10,000	Flexible use office/lab space for College Centers-5 units @ 2000 sf each.
Center for Innovation Leadership	5,000	Flexible use office/work space for the Center
<b>Subtotal Offices</b>	<b>23,500</b>	
<b>Classroom Space</b>		
Auditorium and Ante Room	2,500	Theatre style seating for 200, full A.V. and video confering capability, with adjacent assembly/display space.
Flexible Classroom/Meeting Space	4,000	Four modules @ 1000 sf each.
40 seat Distance Learning Classroom	2,000	fully designed/equipped for send/receive distance learning courses-
<b>Subtotal Classroom Space</b>	<b>8,500</b>	
<b>Support Space</b>		
"Green Room"	7,500	Visitor/Reception Center for showcasing College and student activities, student design projects, research projects, special building features, donor recognition, and other exhibits/displays for "putting a human face on engineering and computer science"; small theatre and storage ala rooms 125 and 125a is SU 80.
Conference/Meeting Rooms	1,500	Two larger/two smaller
<b>Subtotal Support Space</b>	<b>9,000</b>	
<b>Other</b>		
Wireless access throughout building		
Generator Backup System		
Full UPS Systems		
Walled and covered Yard Space <span style="float:right">■</span>		
Outdoor Pool		Subject to need and availability of funding.
<b>Total Net Area Requested</b>	<b>90,690</b>	
<b>Total Estimated Gross Area @ 1.5</b>	<b>136,035</b>	

End of Phase II program for reference only. Please see Phase 1 Program at beginning of this Section IX for the current project, which the budget is based upon.

**A. UTILITIES IMPACT ANALYSIS**

The following analysis of site utilities and discussion of utility capacities, sizes and connection points is for early estimating purposes only and should not be relied upon by the design professional as direction. It is the responsibility of the design professionals to research all existing conditions and to make recommendations based on the requirements of the project, future considerations, existing capacities, sizes and the location of all utilities. **As this is to be a green facility, sustainable and energy savings alternatives are to be explored wherever possible for all of the utilities listed below.**

---

**1. CHILLED WATER:** (SUS CM-N-04.00-09/97 A)

The satellite chiller plant located north of Lee Street will need to be expanded to accommodate the College of Engineering chilled water requirements. New water cooled chillers and cooling towers will be needed and should be sized for the ultimate build-out of the program phases I and II.

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**2. HOT WATER:** (SUS CM-N-04.00-09/97 B)

Hot water for reheat and domestic hot water will require separate gas fired boilers sized appropriately.

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**3. ELECTRICAL:** (SUS CM-N-04.00-09/97 C)

The estimated electric load for each of the project's two phases is approximately 1200 KW. Service for this building will be on the high voltage primary feeders 7 & 8, if capacity remains. If not, contact FPL regarding 13.2 KVA overhead lines along the Boca Rio Canal to investigate bring new feeders to the Satellite Chiller Plant and from there, service to the project. Include an EMON compatible meter, Invensys or equal. An emergency generator will be required to protect some lab and support areas, to be determined.

---

**4. POTABLE WATER:** (SUS CM-N-04.00-09/97 D)

The supply is the Campus water loop with capacity from the City of Boca Raton. This project will tap off the existing 12" line that is running south of the site from the main under along FAU boulevard. Typical water pressure on Campus is 60psi at fire hydrants. The domestic water will have double, parallel BFP assemblies. Include an EMON compatible water meter, Invensys or equal.

---

**5. SANITARY:** (SUS CM-N-04.00-09/97 D)

This added sewer load is estimated at 100,000 GPD. The closest sanitary line is an 8" PVC line some 400 ft west of the building. More than likely, a lift station will be required. Investigation may prove that the 8" line is not sufficient and that a new sanitary line would be required to connect to the existing lift station #13 several hundred yards north along FAU boulevard at the Campus Operations Building.

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**6. IRRIGATION:** (SUS CM-N-04.00-09/97 E)

Irrigation reuse water is available some 600 feet east of the site. Tie into this system to irrigate all landscaped areas. Provide new timers for the effected area within 50 feet of the building.

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**7. STORM WATER MANAGEMENT:**

There is an existing detention area on the northern edge of the site which may require modification and/or enlargement. Plans will be submitted to SFWMD and Lake Worth Drainage District for Permitting. The Consultant will request the Operational Permit, after construction.

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**8. NATURAL GAS:**

Tie into the existing 4" gas line running east/west along the south edge of the site.

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**9. TELECOMMUNICATIONS:**

Tie into the manhole at the northeast corner of the existing Schmidt Bio-Med site. Internal wiring for telecommunication is to be complete by Telecommunication Sub contractor through FAU. Cable trays and conduits to be provided by the construction manager.

**10. FIRE ALARM SYSTEM:**

A complete fire alarm system including ADA requirements, compatible with existing campus systems will be installed. Provisions will include an automatic dialer directly to the Campus Police.

**11. ENERGY MANAGEMENT CONTROL SYSTEM:**

A complete EMS will be installed, with connections to the existing front end system, located in the Central Utility Plant.

**12. SITE LIGHTING:**

Walkway and site lighting fixtures complying with the campus standards and SUS guidelines for foot-candle levels will be installed, as required by the building footprint. Solar power will be used wherever possible.

**13. SURFACE IMPROVEMENTS:**

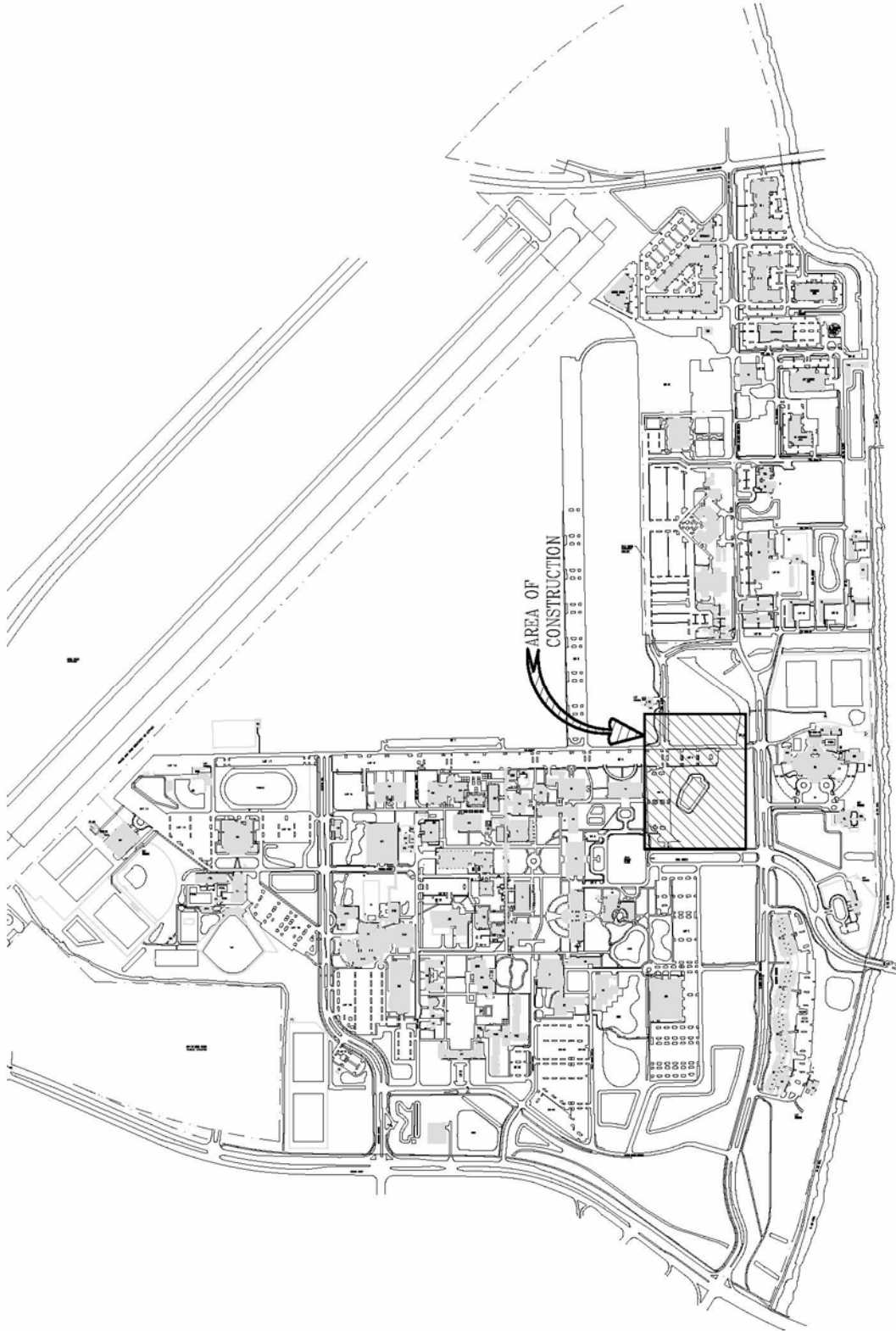
Walkways and landscape will be reconfigured, as required, to provide access through the site, and promote quality outdoor space. This building shall be incorporated into the plans for the "Science Broadway" outdoor mall, currently under design. SFWMD "Waterwise: South Florida Landscapes" should be followed.



**B. EXISTING INFRASTRUCTURE MAPS**

The following campus infrastructure maps show an estimation of the available utilities and conditions for the sites that are being examined. The information shown is meant for general information purposes only and is not to be used by the consultants or contractors in the actual design or construction of the proposed facility. All utilities and information shown are to be field verified by the AE and CM team prior to design and construction. Full campus infrastructure maps are available to view at the University Architects Office, Building 69, Room 101.

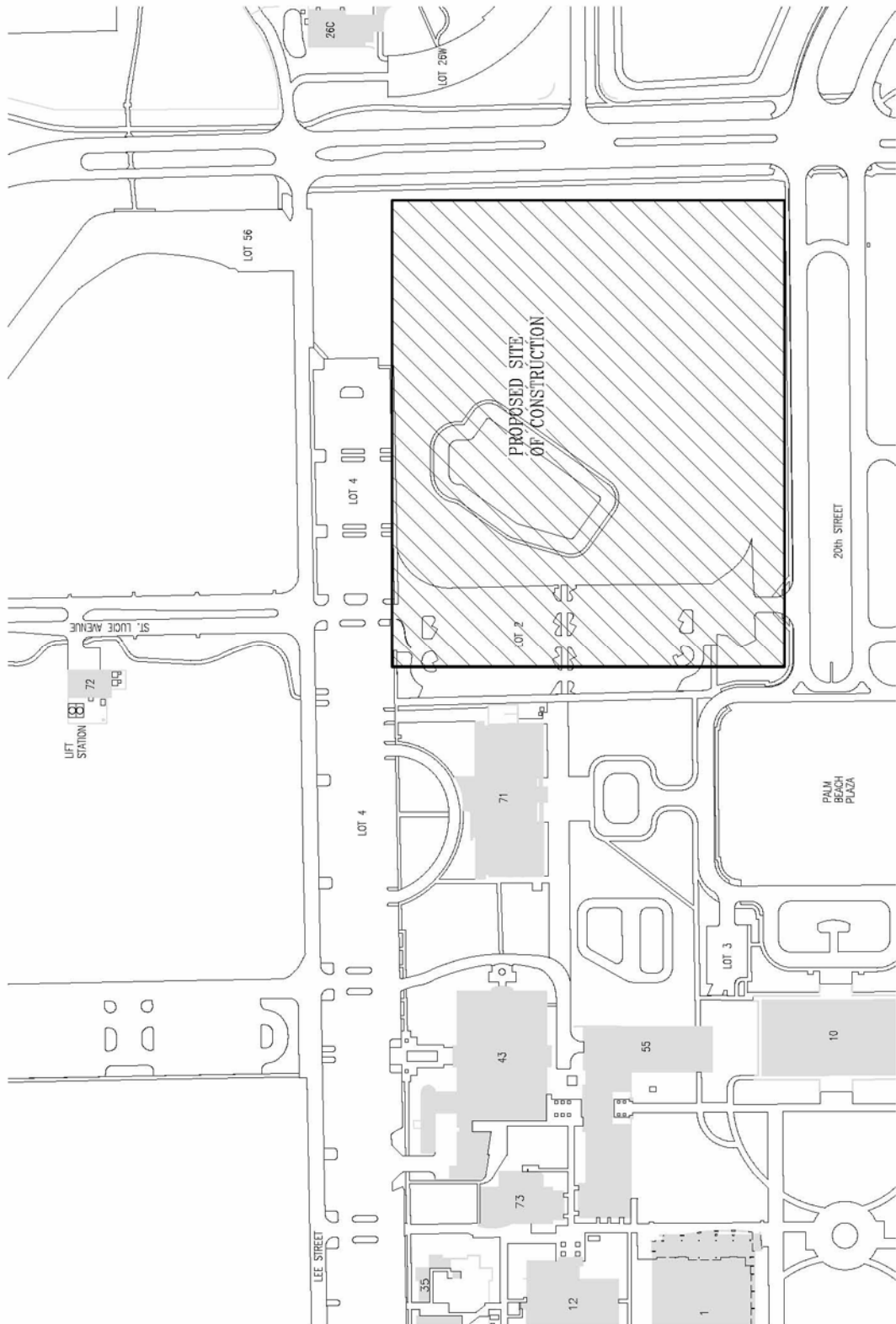


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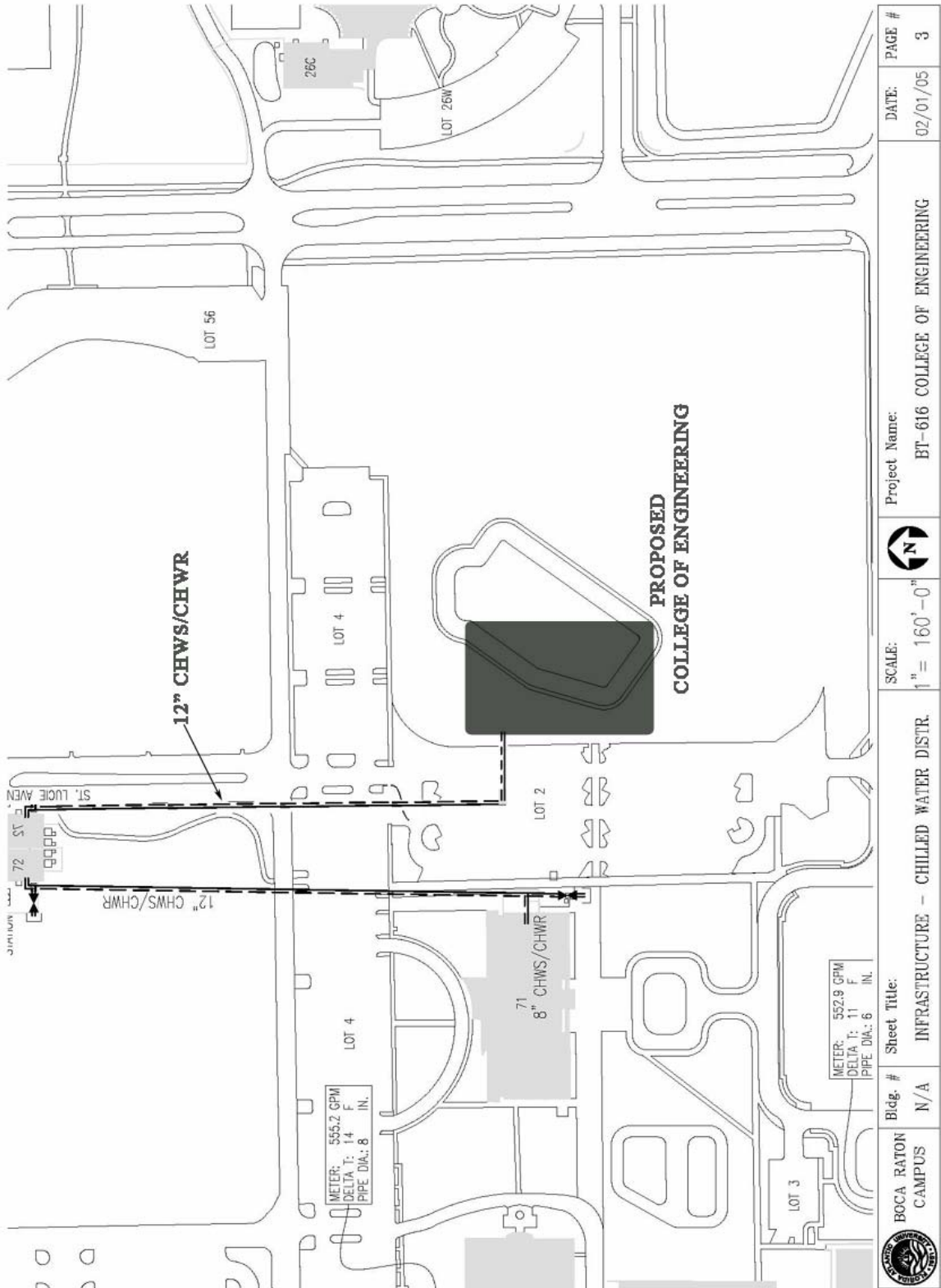
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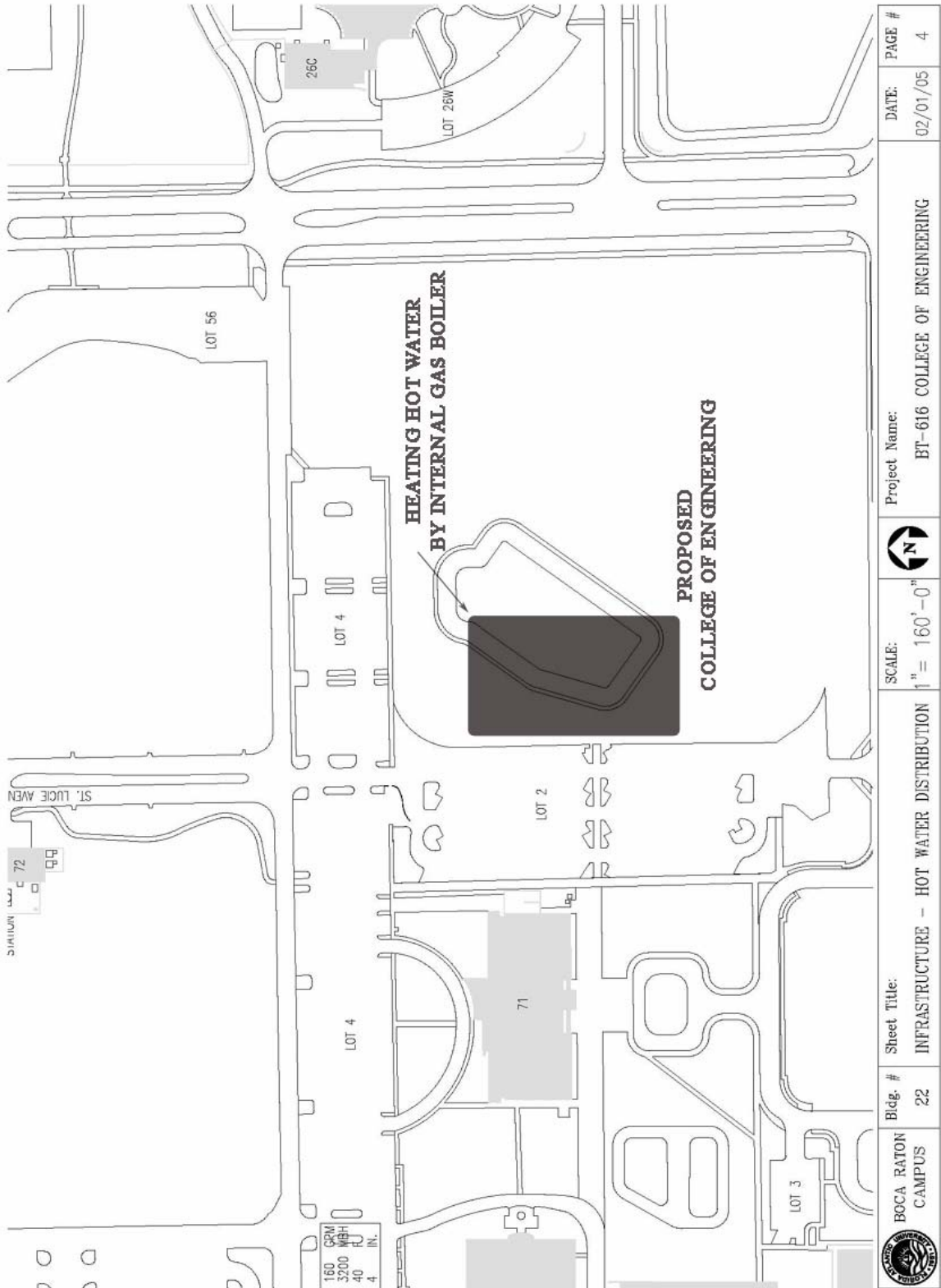
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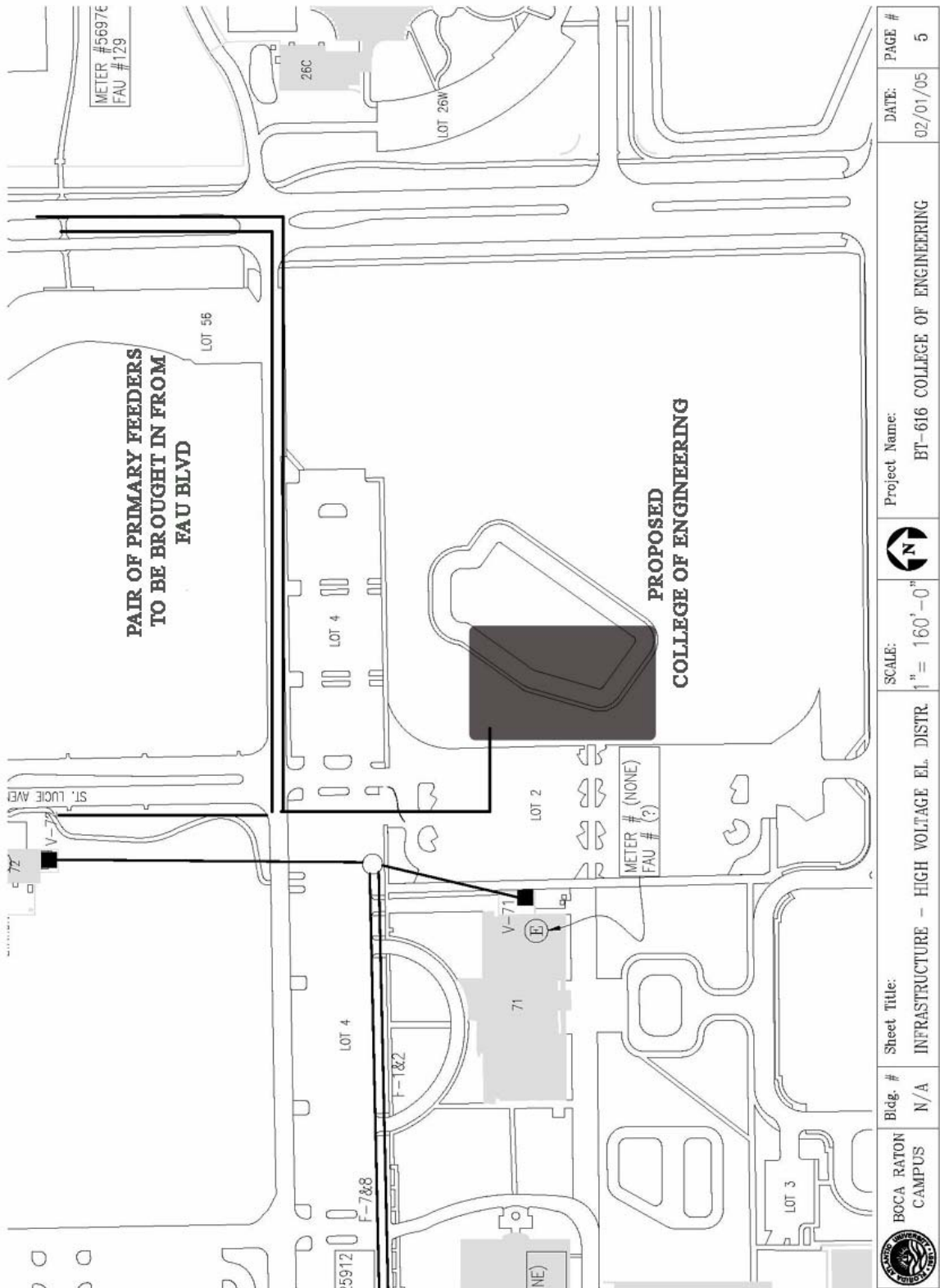
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**BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE**

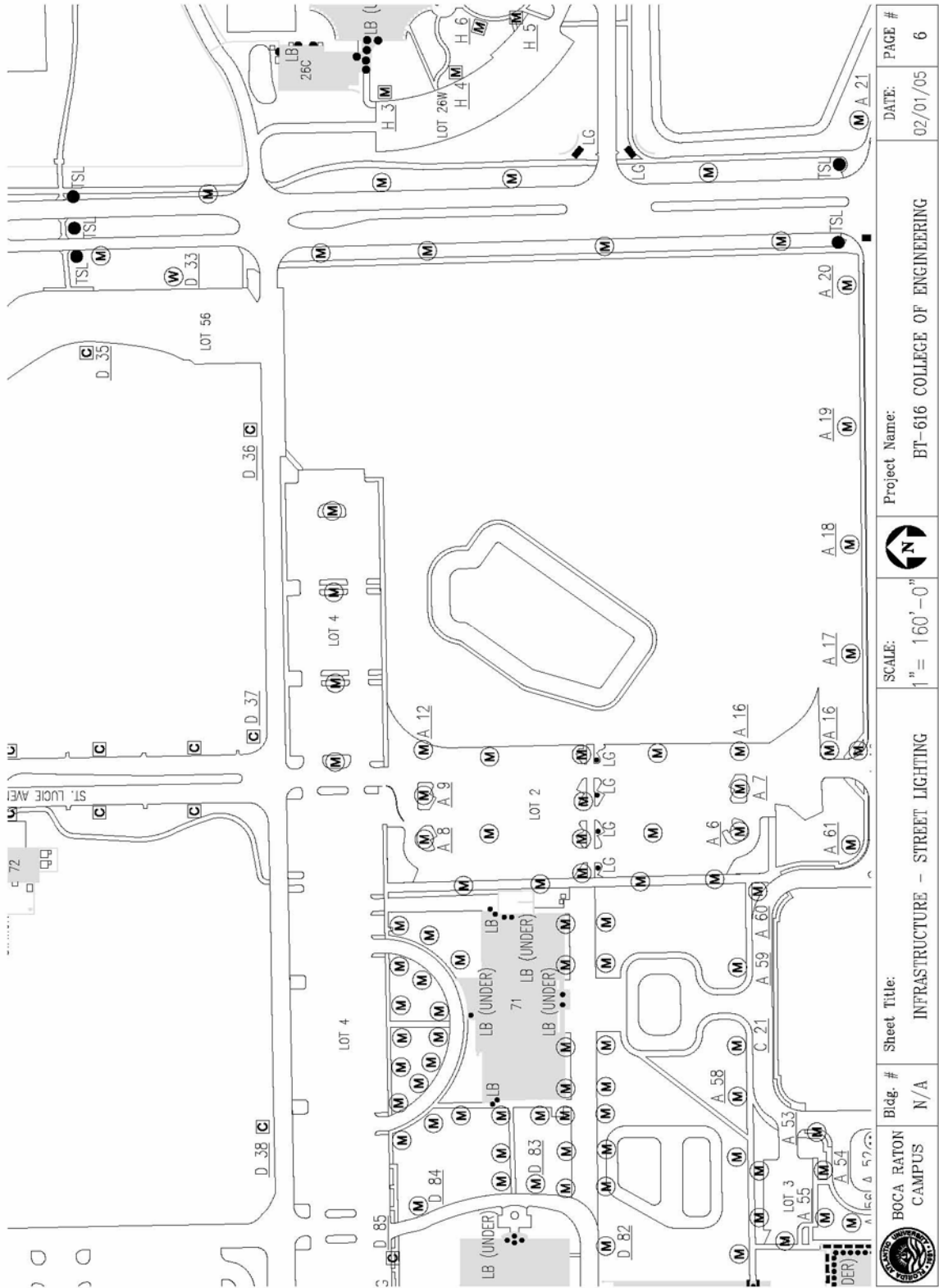


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								02/01/05

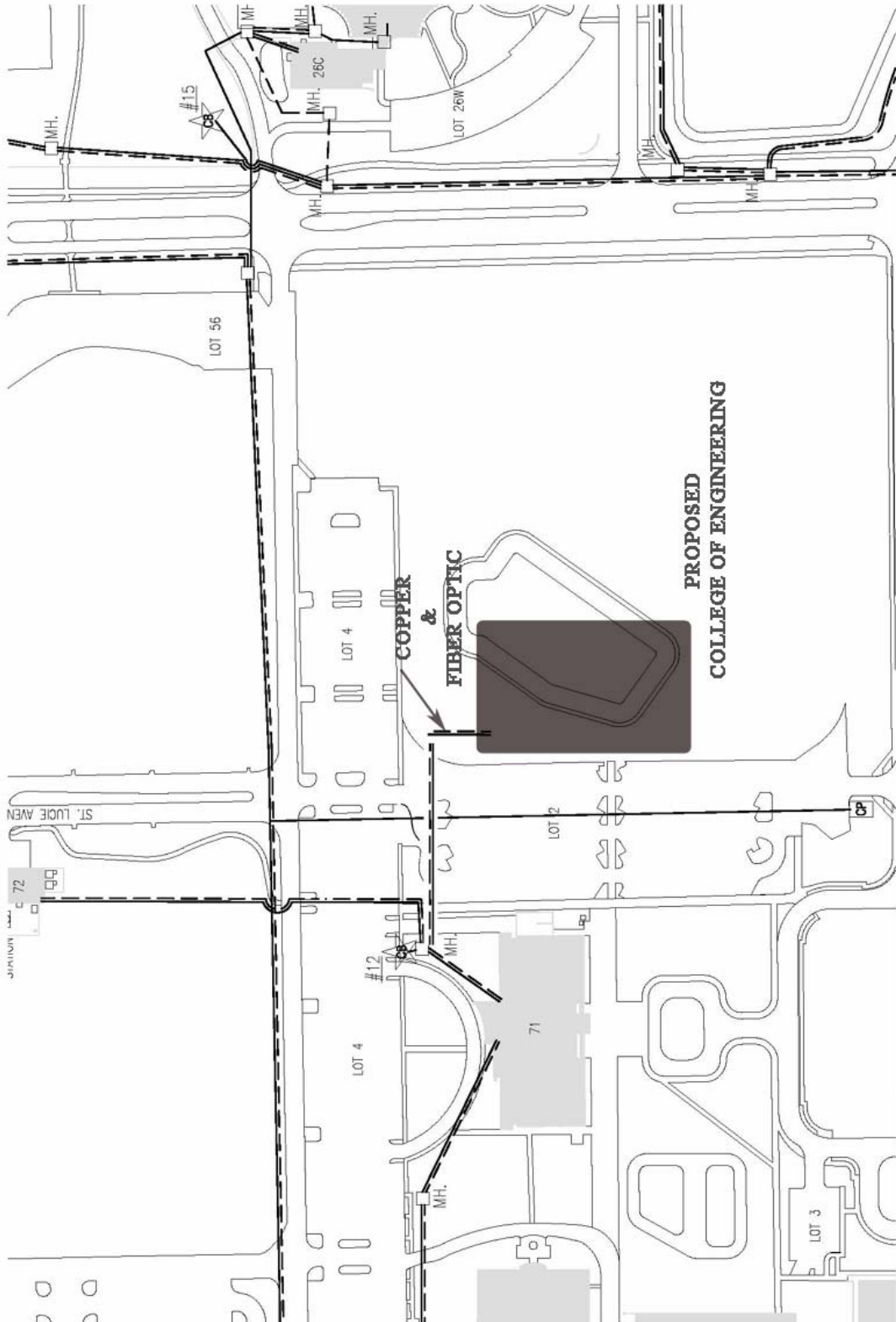
**BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE**



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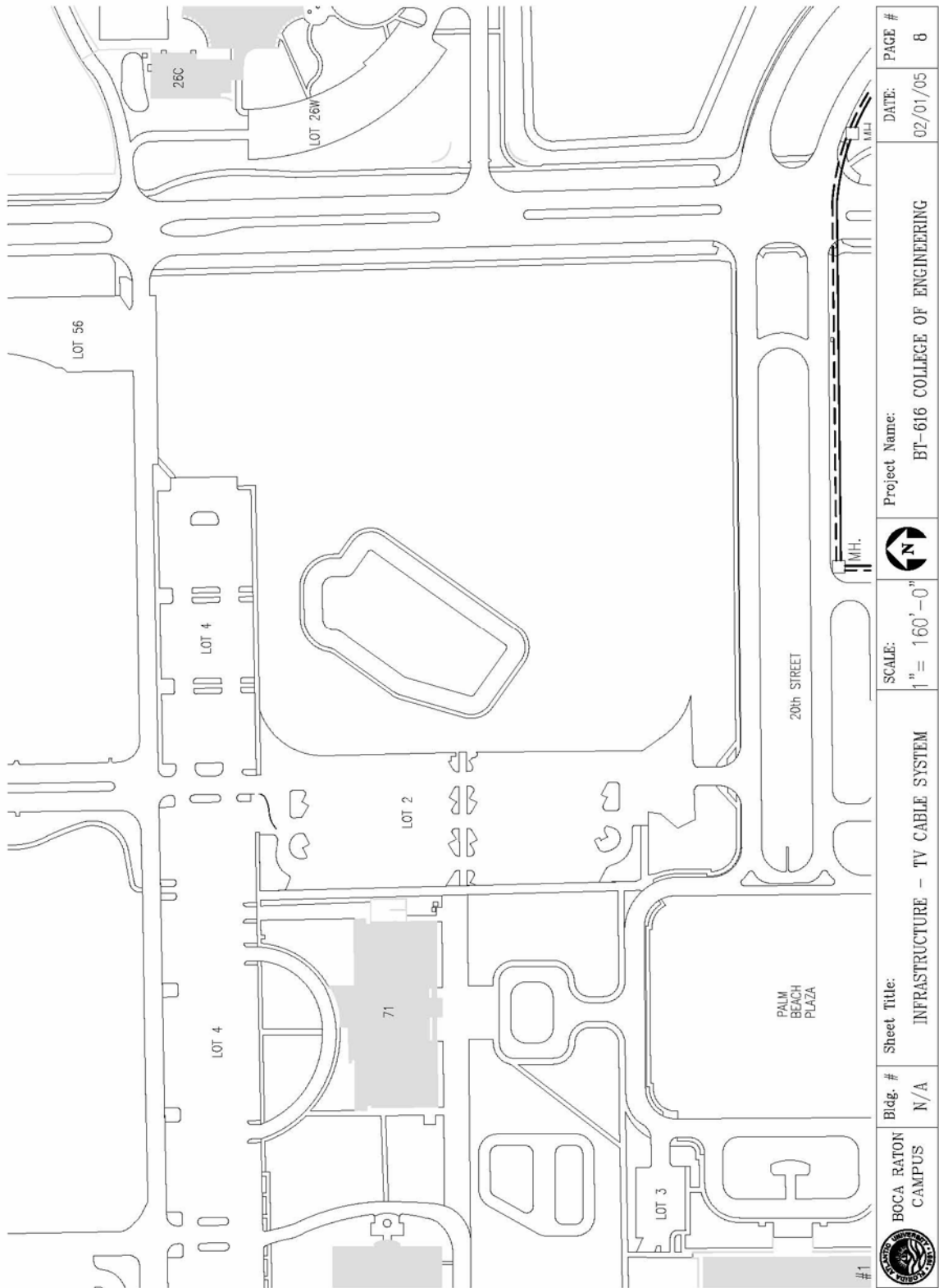


**BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE**



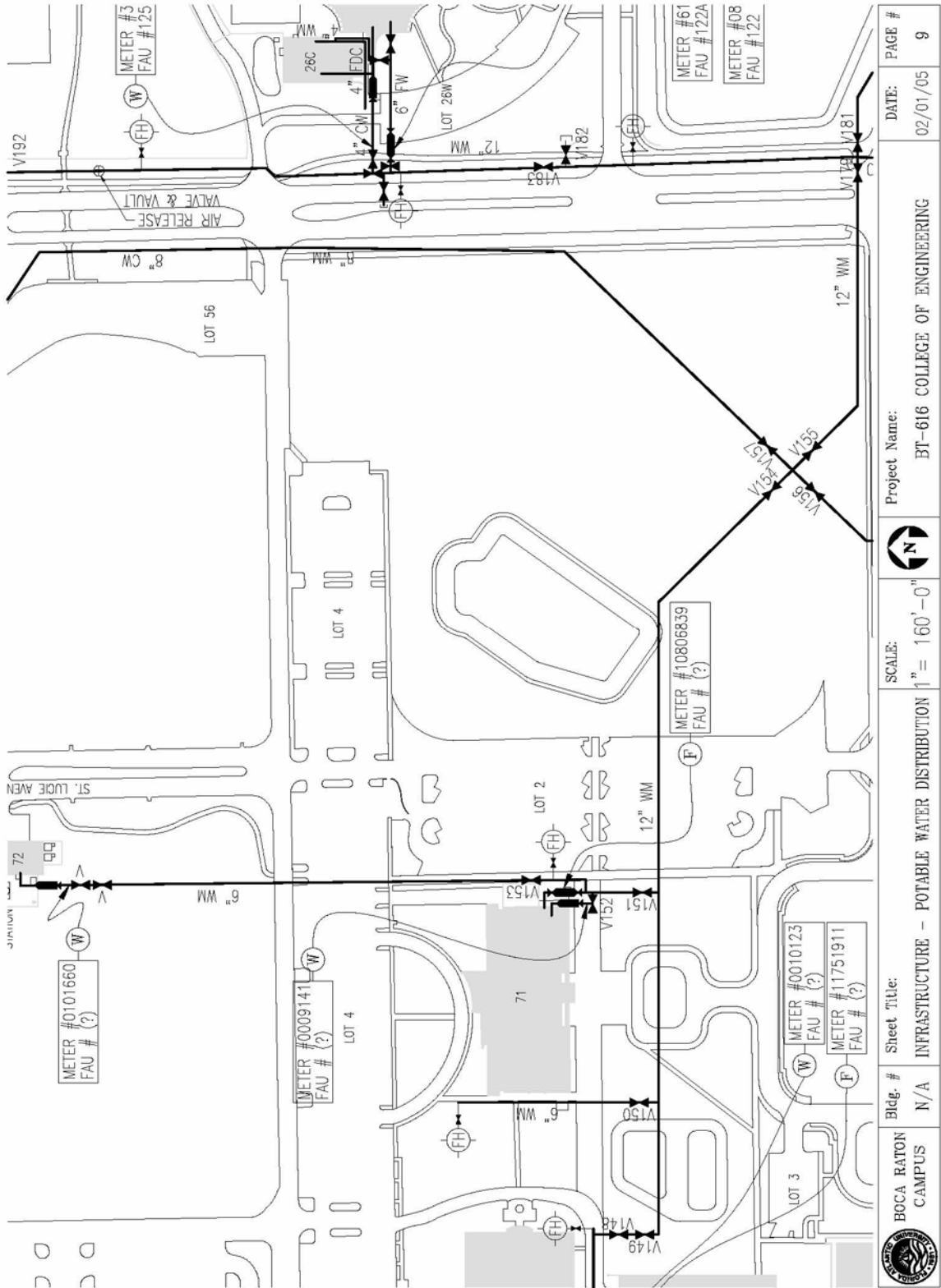
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	NORTH ARROW					

**BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE**

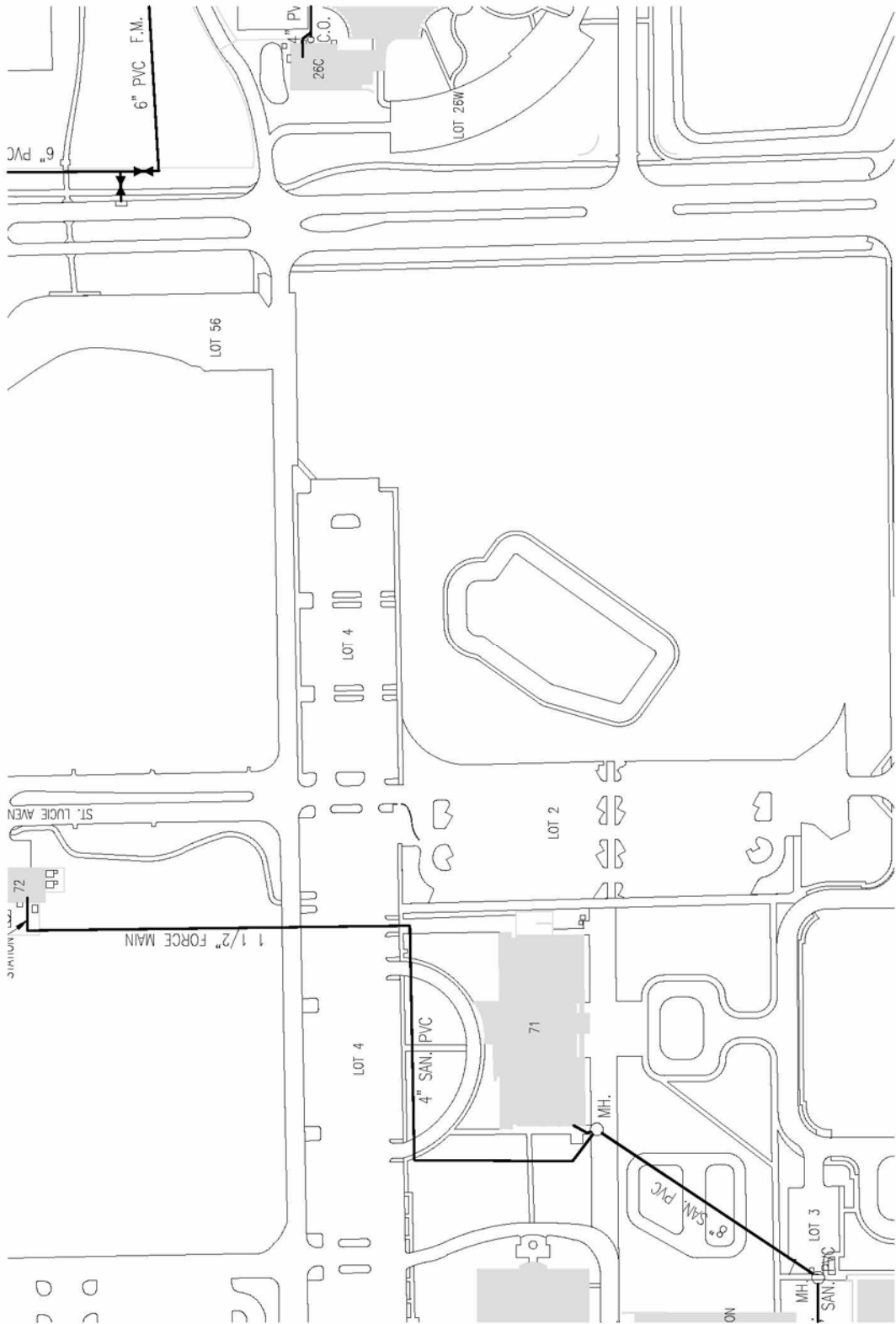


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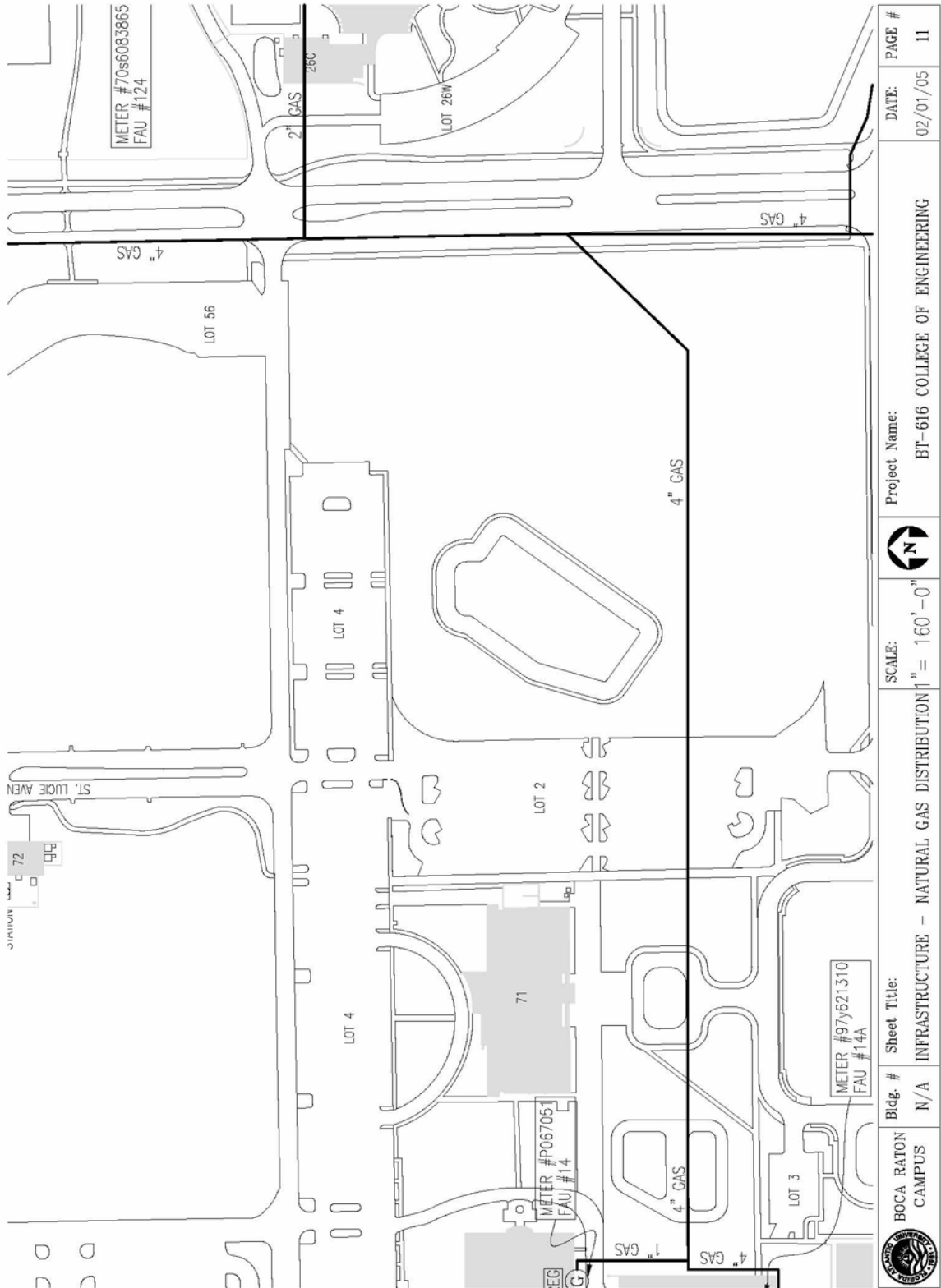


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	BOCA RATON CAMPUS												

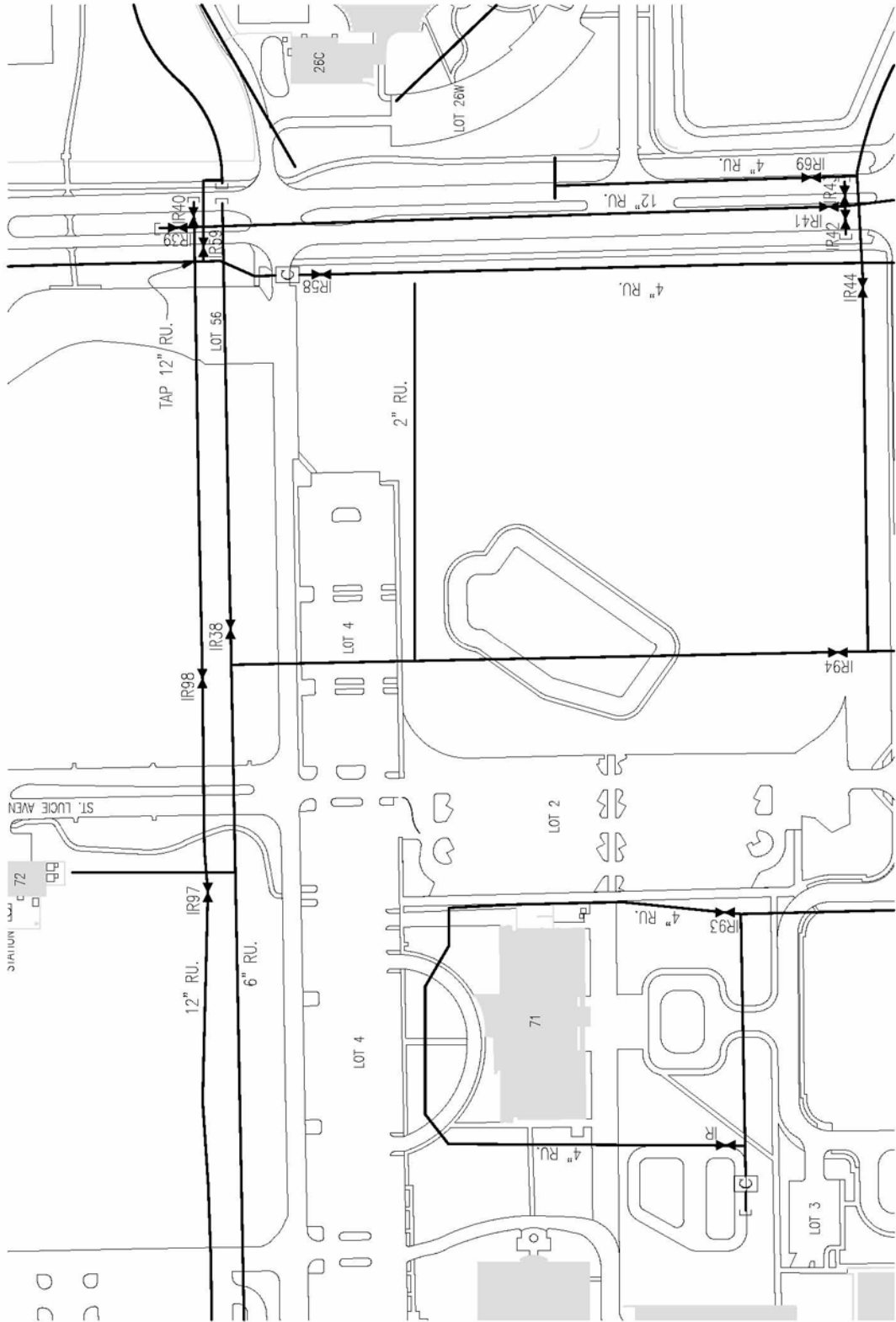


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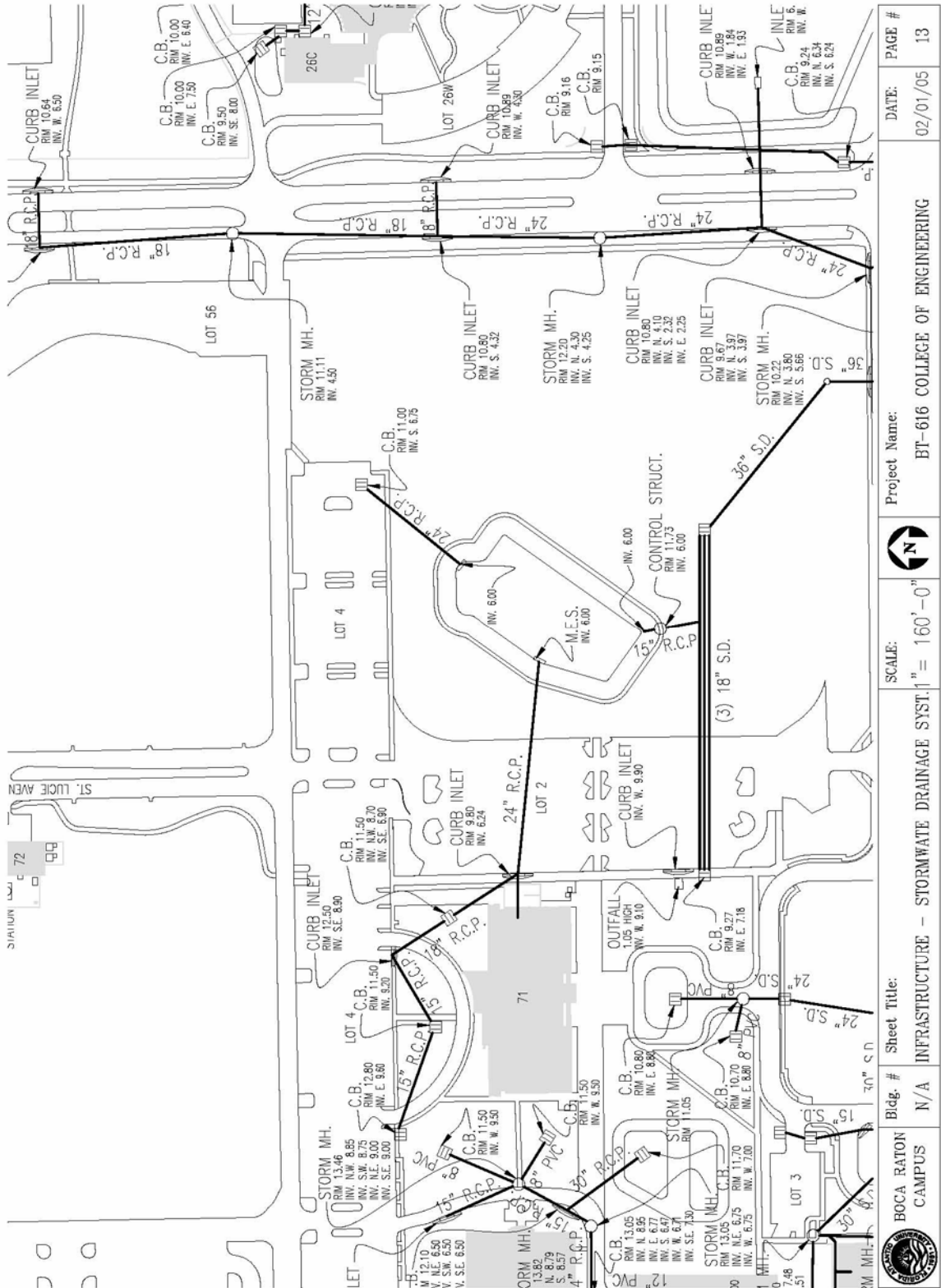
**BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE**



	BOCA RATON CAMPUS	Bldg. #	N/A	Sheet Title:	INFRASTRUCTURE - NATURAL GAS DISTRIBUTION	SCALE:	1" = 160' - 0"		Project Name:	BT-616 COLLEGE OF ENGINEERING	DATE:	02/01/05	PAGE #	II



	BOCA RATON CAMPUS	Bldg. #	N/A	Sheet Title:	INFRASTRUCTURE - REUSE WATER IRRIGATION SYST.	SCALE:	1" = 160' - 0"		Project Name:	BT-616 COLLEGE OF ENGINEERING	DATE:	02/01/05	PAGE #	12



BOCA RATON CAMPUS	Bldg. # N/A	Sheet Title: INFRASTRUCTURE - STORMWATER DRAINAGE SYST.	SCALE: 1" = 160'-0"	Project Name: BT-616 COLLEGE OF ENGINEERING	DATE: 02/01/05	PAGE # 13
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**XI. INFORMATION / COMMUNICATIONS RESOURCES REQUIREMENTS****BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE****A. UNIVERSITY INFORMATION / COMMUNICATION STANDARD**

All voice and data systems shall comply with Florida Atlantic University's most current specifications for Information Resources Management Communication Infrastructure Specification effective on the date of the Architect/Engineer contract execution. The complete specification is located on the web at: <http://wise.fau.edu/irm/ts/cblspecs.htm>. The requirements of the University information/communications standards will be strictly enforced for the design and construction of the proposed facility.

**B. UNIVERSITY INFORMATION RESOURCE MANAGER CERTIFICATION**

By signature (on the signature page of this facilities program) the University Information Resource Manager certifies that a review of the University information/communication standards has been completed; and that the facilities program is developed in conformance with the Florida Atlantic University Information/Communication Standards in accordance with the Section 282, F.S.

**C. ESTIMATED IRM COSTS**

The following is an estimate from the IRM department for the project program as of this writing. The actual costs may change due to programmatic changes during design. These costs are included in the budget estimate in Section XV.

<b>Jade</b>		
	(Vo/D/Vi) Outside Plant	\$ 49,942.00
	(Vo/D/Vi) Inside Plant	\$ 250,000.00
	Wireless (full bldg coverage)	\$ 90,000.00
<b>Siemens</b>		
	Switching	\$ 42,728.00
	Phones	\$ 7,500.00
<b>Cisco</b>		
	Switch	\$ 209,750.00
	UPS	\$ 6,400.00
<b>BellSouth*</b>		
	Alarms	\$ 224.00
<b>Technology Enabled Spaces</b>		
	Distance Learning Classrooms (2)	\$ 161,968.00
	Video Enabled Conference Rooms (3)	\$ 106,875.00
	Teaching Auditorium w/o Distance Learning (1)	\$ 28,000.00
	Teaching Auditorium wi Distance Learning (1)	\$ 80,984.00
		<hr/>
		\$ 1,034,371.00

**A. CODES AND STANDARDS**

The following editions of Codes and Standards (and associated review & permitting process), and University standards, where applicable, shall be followed for the design and construction of the proposed facility. **Building codes which are approved at the time of building permit application shall be used for the project.**

	<i>DESCRIPTION</i>	
	<b>Year</b>	<b>Building Codes</b>
1.	2004	Florida Building Code, Building
2.	2004	Florida Building Code, Mechanical
3.	2004	Florida Building Code, Fuel Gas
4.	2004	Florida Building Code, Plumbing
5.	2004	Florida building Code, Test Protocols for High Velocity Hurricane zones
		Section 4A-3.012 Standard of the National Fire Protection Association (Most commonly used Codes and Standards)
Standard	<b>Year</b>	<b>Title</b>
1	2003	Fire Prevention Code
10	2002	Standard for Portable Fire Extinguishers
13	2002	Standard for the Installation of Sprinkler Systems
13R	2002	Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and including four stories in Height
14	2003	Standard for the Installation of Standpipe and Hose systems, except 2-7 Shall be omitted
20	2003	Standard for the Installation of Centrifugal Fire Pumps
24	2002	Standard for the Installation of Private Fire Service Mains and Their Appurtenances
25	2002	Standard for the Inspection, Testing & Maintenance of Water Based Fire Protection Systems
30	2003	Flammable and Combustible Liquids Code
45	2004	Standard on Fire Protection for Laboratories Using Chemicals
70	2004	National Electrical Code
72	2002	National Fire Alarm Code
90A	2002	Standard for the installation of Air Conditioning and Ventilating Systems
96	2004	Standard for Ventilation Control and Fire Prevention of Commercial Cooking Operations
101	2003	Life Safety Code
<b>3.13.3</b>	<b>State Fire Marshal</b>	Requirements for review shall comply with PSG, Exhibit 5; (all inspections, reviews and permitting for University projects shall be coordinated through the University BCA Office)
<b>3.13.4-5</b>	<b>Required Permits</b>	All Building permits are to be issued by the Building Code Official at FAU Facilities Planning, prior to the start of construction.
3.13.5.2		Department of Business and Professional Regulation, Division of Hotel and restaurants, Bureau of Elevator Inspection for elevator inspections and permit. Department of Health
3.13.5.4		Department of Environmental Protection (DEP), area Branch
3.13.5.5		Local Water Management District permit
	<b>SUS Standards</b>	
		FAU Cost Containment Guidelines
		FAU Professional Services Guide and Project Manual
	<b>Florida Atlantic University</b>	
		Florida Atlantic University Cost Containment Guidelines Supplement
		All special requirements as identified in the pre-design conference meeting(s) with the various University agencies (the A/E consultant(s) shall record in meeting minutes).
	<b>Miscellaneous Statutes</b>	
		Ratio of facilities for men and women public restrooms of Section 553.14 of Florida Statutes

Note: All reference to codes shall mean the latest editions adopted through legislation for use in state owned/leased buildings as described in the Florida Statutes sections 471, 481 and 553s

CONSTRUCTION MANAGEMENT PROJECT DELIVERY METHOD The University preference is the CM process with a GMP submittal at the conclusion of design phase adequate for obtaining a GMP. The following schedule assumes the Phase I facility can be built as a single structure, whereas all funding is made available for contract consummation. If funding for this facility is distributed over a multiple of years, like 3 or four fiscal years, then it is possible that the project be divided into two or more sub-phases. In that case, the project team along with the Facilities Division will determine an alternate schedule. See the Probable Funding Schedule in Funding Section XIV.

GOALS AND MILESTONES	DURATION	START DATE	END DATE	
<b>PROGRAM APPROVAL</b>	<b>6 weeks</b>	<b>15-Sep-2006</b>	<b>27-Oct-2006</b>	<b>0.1 Years</b>
University Facilities Program Approval	6 weeks	15-Sep-2006	27-Oct-2006	
<b>A/E SELECTION PROCESS</b>	<b>13 weeks</b>	<b>27-Oct-2006</b>	<b>26-Jan-2007</b>	<b>0.2 Years</b>
Advertise for A/E in FAW	4 weeks	27-Oct-2006	24-Nov-2006	
A/E Short-list	3 weeks	24-Nov-2006	15-Dec-2006	
A/E Interviews	2 weeks	15-Dec-2006	29-Dec-2006	
A/E Selection	1 weeks	29-Dec-2006	05-Jan-2007	
Contract Negotiations with A/E	3 weeks	05-Jan-2007	26-Jan-2007	
<b>C/M SELECTION PROCESS</b>	<b>13 weeks</b>	<b>05-Jan-2007</b>	<b>06-Apr-2007</b>	<b>0.2 Years</b>
Advertise for C/M in FAW	4 weeks	05-Jan-2007	02-Feb-2007	
C/M Short-list	3 weeks	02-Feb-2007	23-Feb-2007	
C/M Interviews	2 weeks	23-Feb-2007	09-Mar-2007	
C/M Selection	1 weeks	09-Mar-2007	16-Mar-2007	
Contract negotiations with C/M	3 weeks	16-Mar-2007	06-Apr-2007	
<b>DESIGN PHASE</b>	<b>56 weeks</b>	<b>26-Jan-2007</b>	<b>22-Feb-2008</b>	<b>1.1 Years</b>
Program Verification & Conceptual Design	10 weeks	26-Jan-2007	06-Apr-2007	
University review and approval	2 weeks	06-Apr-2007	20-Apr-2007	
Schematic Design	3 weeks	20-Apr-2007	11-May-2007	
University review and approval	3 weeks	11-May-2007	01-Jun-2007	
Design Development and Budget verification	7 weeks	01-Jun-2007	20-Jul-2007	
University review and approval	3 weeks	20-Jul-2007	10-Aug-2007	
50% Construction Documents and Budget update	7 weeks	10-Aug-2007	28-Sep-2007	
University review and approval	3 weeks	28-Sep-2007	19-Oct-2007	
100% Construction Documents and Budget update	7 weeks	19-Oct-2007	07-Dec-2007	
University, Code & SFM review and approval	8 weeks	07-Dec-2007	01-Feb-2008	
Submittal of GMP	0 weeks	01-Feb-2008	01-Feb-2008	
GMP Review & Negotiations	3 weeks	01-Feb-2008	22-Feb-2008	
<b>CONSTRUCTION PHASE</b>	<b>70 weeks</b>	<b>22-Feb-2008</b>	<b>26-Jun-2009</b>	<b>1.3 Years</b>
Notice to Proceed	1 weeks	22-Feb-2008	29-Feb-2008	
Substantial Completion	60 weeks	29-Feb-2008	24-Apr-2009	
Final Completion Inspection	4 weeks	24-Apr-2009	22-May-2009	
Owner FF&E Move In	4 weeks	22-May-2009	19-Jun-2009	
Owner Occupancy	1 weeks	19-Jun-2009	26-Jun-2009	
<b>Total</b>	<b>145 weeks</b>	<b>15-Sep-2006</b>	<b>26-Jun-2009</b>	<b>2.8 Years</b>



- A. ESTIMATED FUNDING (Current CIP approved 6/28/06, updated 9/21/06)  
 See the Probable Funding Scenario on next page.

<b>PLANNING FUNDING</b>	
2006-2007 Public Education Capital Outlay (PECO)	\$3,000,000.00
<b>CONSTRUCTION FUNDING</b>	
2007-2008 PECO	\$17,952,000.00
2008-2009 PECO	\$17,952,000.00
<b>EQUIPMENT FUNDING</b>	
2009-2010 PECO	\$4,850,000.00
<b>TOTAL PROJECT FUND</b>	<b>\$ 43,754,000.00</b>

B. ESTIMATED BUDGET

The following is a summary of the project budget. More details can be found in section XV. Please note that the budget below shows a Gross Building area of approximately 80,000 GSF, which is less than the 120,000 GSF shown in the Phase I Program in Section IX. This is due to the large escalation of costs that have occurred over the past two years. The design team is expected to verify program requirements and determine the total gross area which can be constructed within the budget, and with consideration of an appropriate phasing scenario.

<b>ESTIMATED BUDGET SUMMARY</b>				\$/sf.	\$\$
<b>1</b>	<b>Construction Costs</b>	79,894	Gross SF		
a.	Construction Costs				\$21,144,300.00
b.	Additional/Extraordinary Construction Costs				\$9,280,500.00
	<b>Sub Total Construction Costs</b>			380.81	<b>\$30,424,800.00</b>
<b>2</b>	<b>Other Project Costs</b>				
a.	Land/existing facility acquisition				\$0.00
b.	Professional Fees				\$2,436,200.00
c.	Fire Marshal Fees				\$76,100.00
d.	Inspection Services				\$284,200.00
e.	Insurance Consultant				\$19,500.00
f.	Surveys and Tests				\$90,000.00
g.	Permit/Impact/Environmental Fees				\$3,000.00
h.	Art Work				\$67,300.00
i.	Movable Furnishings & Equipment				\$4,443,500.00
j.	Project Contingencies				\$5,909,400.00
	<b>Sub Total Other Project Costs</b>			166.84	<b>\$13,329,200.00</b>
	<b>TOTAL PROJECT BUDGET</b>			547.65	<b>\$43,754,000.00</b>

NOTE: Other Costs include professional fees, inspections, permits, surveys, and contingencies (including an allocation for a chilled water plant expansion and for Building 36 renovation).

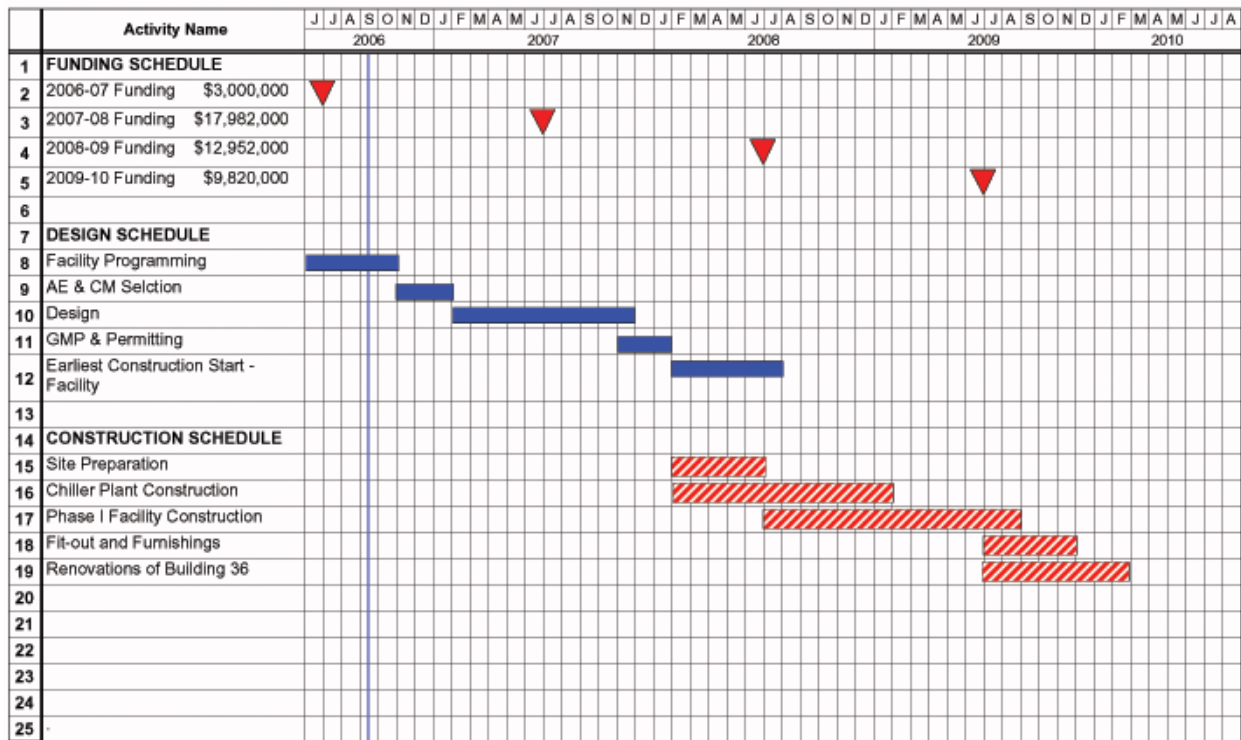
## BT-616 COLLEGE OF ENGINEERING

The following Table illustrates a probable schedule of PECO Funding;

PECO PROJECTIONS	2006-07 FUNDED	2007-08	2008-09	2009-10	TOTAL
<b>BT-616 COLLEGE OF ENGINEERING &amp; COMPUTER SCIENCE</b>	<b>\$ 3,000,000</b>	\$ 17,982,000	\$ 12,952,000	\$ 9,820,000	<b>\$ 43,754,000</b>
<i>% of Total</i>	7%	41%	30%	22%	100%

The following Schedule represents a possible scenario for funding, design and construction. During the early programming phase of the project, there will be further discussions of alternate approaches to the project phasing.

### BT - 616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE POSSIBLE SCENARIO / SCHEDULE



**PROJECT SPACE AND BUDGET SUMMARY** (Reference: SUS CM-N-04.00-09/97, Attachment 3)

The following estimate establishes the project budget in detail. Please note that the budget below shows a Gross Building area of approximately 80,000 GSF, which is less than the 120,000 GSF shown in the Phase I Program in Section IX. This is due to the large escalation of costs that have occurred over the past two years. The design team is expected to verify program requirements and determine the total gross area which can be constructed within the budget, and in consideration of an appropriate phasing scenario.

The cost of site development may vary depending on the actual conditions for available utilities.

**Project: BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCES**

September 14, 2006

<b>SPACE SUMMATION</b> (from Section IX of Facilities Program)				<i>Reduce net to: 66.67%</i>	
<b>Program Space Type (New Construction)</b>	<b>NASF</b>	<b>Factor</b>	<b>GSF</b>	<b>\$ / GSF</b>	<b>63</b>
Classrooms	4,667	1.5	7,000	162.75	\$1,139,306.96
Research Laboratories	8,000	1.5	12,001	208.63	\$2,503,685.18
Teaching Laboratories	7,234	1.5	10,851	167.94	\$1,822,240.11
Offices	21,028	1.5	31,542	163.17	\$5,146,639.12
Student Academic Support	12,334	1.5	18,501	154.36	\$2,855,802.78
Avg. Construction Cost				<b>168.57</b>	
<b>Total Construction Cost</b>	<b>53,263</b>	<b>1.5</b>	<b>79,894</b>		<b>\$13,467,700.00</b>

**1 CONSTRUCTION COSTS** (Reference: SUS CM-D-38.00-09/97, Attachment 1-B) Modify, add, or delete as required.

<b>a. Building Construction Cost</b>		<b>Units</b>		<b>Unit Cost</b>	<b>\$</b>
New Construction Cost	79,894	GSF		\$168.57	\$13,467,700.00
Historic Cost Factor	79,894	GSF	55%	\$92.71	\$7,407,235.00
Green Building (LEED Cert) Cost	79,894	Allowance	2%	\$3.37	\$269,400.00
Building Demolition	-	GSF			\$0.00
<b>Sub-Total Building Construction Costs</b>				<b>\$264.65</b>	<b>\$21,144,300.00</b>
<b>b. Additional/Extraordinary Construction Cost</b>		<b>Units</b>		<b>Unit Cost</b>	<b>\$</b>
Site Preparation/Demolition	1	Allowance		\$100,000.00	\$100,000.00
Roadway Improvements	1	Allowance		\$80,000.00	\$80,000.00
Parking Improvements	0	Spaces		\$2,000.00	\$0.00
Landscaping and Irrigation	1	Allowance		\$200,000.00	\$200,000.00
Plazas/Walks/Bikepaths	1	Allowance		\$200,000.00	\$200,000.00
Utilities Infrastructure Cost					
Electrical Services & Emergency Generators	1	Allowance		\$200,000.00	\$200,000.00
Water Distribution System	1	Allowance		\$100,000.00	\$100,000.00
Sanitary Sewer System	1	Allowance		\$100,000.00	\$100,000.00
Storm Water System	1	Allowance		\$100,000.00	\$100,000.00
Chilled Water System* see also infrastructure	1	Allowance		\$1,000,000.00	\$1,000,000.00
Energy Efficient Equipment	1	Allowance		\$300,000.00	\$300,000.00
Building security system (Card Access)	1	Allowance		\$50,000.00	\$50,000.00
Building Security Cameras	0	Allowance		\$0.00	\$0.00
<b>Sub-Total Add/Extra Construction Costs</b>				<b>Round to 100</b>	<b>\$2,430,000.00</b>
Telecom. - Internal Wiring (Jade)	1	Allowance		\$350,000.00	\$350,000.00
Telecom / External Infrastructure (Jade)	1	Allowance		\$50,000.00	\$50,000.00
<b>Sub-Total Telecommunication Cost</b>				<b>Round to 100</b>	<b>\$400,000.00</b>
<b>Inflation Adjustment</b>					<b>\$6,450,500.00</b>
<b>TOTAL CONSTRUCTION COSTS</b>				<b>380.81</b>	<b>\$30,424,800.00</b>

Please see next page for Other Project Costs.

**BT-616 COLLEGE OF ENGINEERING & COMPUTER SCIENCE**

<b>2 OTHER PROJECT COSTS</b> Add or delete following items as required.						
<b>a. Land/Existing Facility Acquisition</b>		Purchase or Budget		\$0.00	Round to 100	<b>\$0.00</b>
<b>b. Professional Fees</b>						
A/E Fees (Curve A: + Above Average)	0.07	%				\$2,022,000.00
Master Planning & Other Design Fees	1	Allowance		\$	50,000.00	\$50,000.00
Building Types Consultant - Lab Programmer	1	Allowance			\$60,000.00	\$60,000.00
C/M Pre-Construction Services Fee	1.00	%			304248	\$304,200.00
<b>Sub-Total Professional Fees</b>					Round to 100	<b>\$2,436,200.00</b>
<b>c. State Fire Marshal Review and Inspection</b>	0.25	%			Round to 100	<b>\$76,100.00</b>
<b>d. Inspection Services</b>						
Roofing Inspection	1	Allowance	10 Weeks		\$2,000.00	\$20,000.00
Threshold Inspection	1	Allowance			\$80,000.00	\$80,000.00
Code Compliance Inspection (weekly)	1	Allowance			\$150,000.00	\$150,000.00
Plan Review (Code Compliance Inspection)	1	Allowance			\$34,200.00	\$34,200.00
<b>Sub-Total Inspection Services</b>					Round to 100	<b>\$284,200.00</b>
<b>e. Risk Management / Insurance Consultant</b>	0.06	%			Round to 100	<b>\$19,500.00</b>
<b>f. Surveys &amp; Tests</b>						
As-Built Conditions Survey (existing building)	-	GSF			\$0.75	\$0.00
Topographical/Site Survey	1	Allowance			\$20,000.00	\$20,000.00
Geotechnical Testing	1	Allowance			\$20,000.00	\$20,000.00
Indoor Air Quality T & B	1	Allowance			\$50,000.00	\$50,000.00
<b>Sub-Total Surveys &amp; Tests</b>					Round to 100	<b>\$90,000.00</b>
<b>g. Permit/Impact/Environmental Fees</b>						
Environmental (SFWM)	1	Allowance			\$3,000.00	\$3,000.00
<b>Sub-Total Permits/Impact Fees</b>					Round to 100	<b>\$3,000.00</b>
<b>h. Art in State Building (Section 255.043, F.S.)</b>	0.5	%			Round to 100	<b>\$67,300.00</b>
<b>I. Movable Furniture &amp; Equipment</b>						
Furniture	6	%			Round to 100	\$1,825,500.00
Equipment	6	%			Round to 100	\$1,825,500.00
IRM Alarms & Misc	1	Allowance			\$58,200.00	\$58,200.00
Technology Enabled Spaces (Distance Learn / Telec	1	Allowance			\$377,827.00	\$377,800.00
IRM Equipment (Vo/D/Vi)(Siemen/Cisco)	1	Allowance			\$266,477.00	\$266,500.00
IRM Drops	600	# of Drops			\$150.00	\$90,000.00
<b>Sub-Total Furniture &amp; Equipment</b>					Round to 100	<b>\$4,443,500.00</b>
<b>j. Project Contingency</b>	7	%			Round to 100	<b>\$2,129,700.00</b>
<b>j. Contingency Held for Bldg 36 Renovation</b>	1	Allowance				<b>\$1,650,000.00</b>
<b>j. Campus Infrastructure - Chiller Plant</b>	7	%			Round to 100	<b>\$2,129,700.00</b>
<b>TOTAL OTHER PROJECT COSTS</b>					Round to 100	<b>\$13,329,200.00</b>
<b>TOTAL PROJECT BUDGET COST ESTIMATE</b>					<b>547.65</b>	<b>\$43,754,000.00</b>

END OF FACILITY PROGRAM