TITLE SHEET

FAU/HBOI
MARINE SCIENCE PARTNERSHIP

FOR

FLORIDA ATLANTIC UNIVERSITY

FORT PIERCE, FLORIDA

PREPARED IN ACCORDANCE WITH
FAU DIVISION OF UNIVERSITY ARCHITECT
AVP POLICY & PROCEDURE #2

JUNE 2003

Florida Atlantic University
FAU/HBOI Fort Pierce Campus
FACILITIES PROGRAM

PREPARED BY:

Azita Dashtaki, Program Coordinator
FLORIDA ATLANTIC UNIVERSITY

REVIEWED AND APPROVED:

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

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.

Thomas Donaudy, Associate Vice President

INFORMATION RESOURCE MANAGEMENT:
This is to certify that this document meets the requirements of Information Resource Management.

Jeffery Schilt, Associate Provost

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

John Wiesenfeld, Committee Chairperson

Gerald Lafferty, Campus Vice President

DIVISION OF ACADEMIC AFFAIRS:
This is to certify that this document meets the requirements of the Office of Academic Affairs.

Kenneth Jessell, Interim University Provost & Senior VP for Finance

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.

Robert M. Friedman, University Architect & Vice President

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.

Frank T. Brogan, President

This project addresses the need to provide the physical facilities for faculty offices and research/graduate teaching laboratories for the new joint marine sciences program being delivered by Florida Atlantic University in partnership with Harbor Branch Oceanographic Institution. Primary programmatic participation by FAU will include the Department of Biological Science and the Department of Chemistry and Biochemistry. Staff members of Harbor Branch will serve as affiliate FAU faculty for purposes of teaching and research supervision.

The new joint marine science program and its faculty will be responsible for delivery of undergraduate programs, instruction in the Semester by the Sea program, and graduate programs including the M.S. and Ph. D. degrees in both biology and in chemistry. A new professionally oriented marine science masters program is also under development.

A. PROJECT HISTORY

Florida Atlantic University and Harbor Branch Oceanographic Institution have been collaborating since 1992 under the terms of a Memorandum of Understanding signed at that time. Since 2000, the two institutions have jointly offered an undergraduate Semester by the Sea experience to marine science students from FAU and other schools around the nation. Under the auspices of a state appropriation made in 2002, additional degree programs will be made available at the Harbor Branch Oceanographic Institution site in Ft. Pierce. A new, more complete Memorandum of Understanding was approved by both institutions in 2002 to guide the development of these new undertakings. A key component of the new programmatic initiative is the construction of a 45,000-square foot facility, the Marine Science Center, which will house participating faculty and their graduate students, as well as the high technology-based research programs of the new partnership.

As currently envisaged, about 20 faculty will be housed in the new Marine Science Center, as well as an additional 20 postdoctoral researchers and 60 graduate students. The joint faculty will include tenured and tenure-track Florida Atlantic University faculty and affiliate faculty from the ranks of the Harbor Branch Oceanographic Institution staff. The process of identifying members of the joint faculty and completing the initial appointments of the affiliate faculty should be complete by early 2003. The joint faculty will be responsible not only for graduate instruction and research activities, but also a marine science track in FAU's undergraduate biology program. Approximately 20-25 students will graduate annually from this program.

The focus in the Marine Science Center itself will be research and graduate training. Rapid progress in the life sciences has driven research evermore in the direction of molecular and biochemical technologies, both of which are very demanding in terms of the quality of the specialized physical facilities in which they are housed. Fortunately, the Seward Johnson Education Center at Harbor Branch will be located in close proximity to the Marine Science Center, and its excellent classroom and teaching laboratory facilities will be made available to FAU faculty and students. In addition, the Ft. Pierce campus of

Harbor Branch Oceanographic Institution is now connected to the high speed national research network, Internet2. This will make it possible for students at the Harbor Branch campus to attend classes offered at other FAU campuses using two-way video technology.

Present space utilization

Students participating in the current Semester by the Sea program are making good use of the classrooms and teaching laboratories of the Seward Johnson Education Center. No space is available for graduate research and training at the Ft. Pierce site.

Planned space utilization

When completed, this project will provide new space to support the research and graduate education missions of FAU's Departments of Biological Sciences and Chemistry and Biochemistry. These laboratories will be specifically designed and engineered to support 21st century research in such areas as marine biotechnology and molecular biology, not only for the benefit of future generations of FAU students, but also to encourage the development of a high technology base for the economic development of Florida's Treasure Coast communities.

B. GENERAL PROJECT DESCRIPTION

The focus of this project is new construction on the campus of Harbor Branch Oceanographic Institution in Ft. Pierce, Florida. As part of the programming phase, two sites on the HBOI campus were analyzed as potential locations for this facility. Of the two sites, one was located adjacent to the Johnson Education Center and the other site was a more remote location, located west of Dixie Highway adjacent to the HBOI Hurricane Shelter. The site analysis report addressed the utilities infrastructure impact for each and associated an estimate for construction at each location. Upon review of the report, the remote location was selected for this project. A full copy of the site analysis report is included as Appendix B.

Marine Science Center This project will provide state-of-the-art research laboratories as well as faculty and staff offices for faculty members in the marine sciences. The research space will be designed in modular fashion in keeping with current trends in the development of such space. The recent example of the Charles E. Schmidt Biomedical Science Center in the successful design of such space will serve well here as the overall programmatic needs are quite similar. Faculty and staff offices will likewise be based on recent science new construction and renovation projects on the Boca Raton campus.

C. PROJECT GOALS

Highest among the goals for the project is the creation of safe, efficient space for the greatly expanded marine science research and training programs of the Charles E. Schmidt College of Science. Active research programs in the Departments of Biological Science and Chemistry and Biochemistry will demand the highest quality space for their successful development. Of special significance here with be the design of modular

research laboratories that can be reconfigured to accommodate the inevitable changes which characterize world-class scientific research. The basic modular research laboratories for individual faculty and their students will be complemented by common laboratories for shared equipment and processes. Not only is this type of physical arrangement cost-efficient but it also helps to encourage the exchange of ideas and information between research groups, a hallmark of successful research environments in today's scientific world.

D. DESIGN OBJECTIVES

A general design objective of the proposed new construction is to provide an aesthetically pleasing, programmatically effective, and safe studying and working environment for students, faculty and staff in the marine science programs of both Florida Atlantic University and Harbor Branch Oceanographic Institution.

E. CONSTRUCTION DELIVERY METHOD

The project delivery method desired for this project is the Construction Management method of delivery.

In accordance with F.A.C. 6C-14.0055.(2), the following responses are presented for Chancellor's approval for the selection of Construction Management as the project delivery method:

(2).(a): *The multiple user groups and programs planned for this facility make this project sufficiently 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.*

The following approved programs will be housed in part within the building outlined in this proposal

Biology, B.S.
Chemistry, M.S.
Biology, M.S.
Chemistry, Ph.D.

The following program is currently in a stage of advanced planning and will be submitted for approval to the Board of Trustees of Florida Atlantic University and the Florida Board of Education during the Spring, 2003, semester. It, too, will be housed in part within the subject building:

Biology, Ph.D.

The planning of the following program has begun and it will be submitted for approval to the Board of Trustees of Florida Atlantic University during 2003:

Marine Science, M.S.

A. STATE UNIVERSITY SYSTEM OF FLORIDA MASTER PLAN

The proposed academic program is consistent with the most recently adopted Master Plan of the State University System with the exception of the Marine Science, M.S.

B. ACADEMIC PROGRAM REVIEWS

No reviews exist of this new program.

C. RECOMMENDATIONS OF THE REVIEW CONSULTANTS

None.

D. JUSTIFICATIONS

FAU has no research or office space available at the site of the Harbor Branch Oceanographic Institution. The joint marine science program cannot be implemented without the construction of new facilities.

A. FACILITIES DEFICIENCIES

FAU has no research or office space available at the site of the Harbor Branch Oceanographic Institution. The joint marine science program cannot be implemented without the construction of new facilities.

B. ALTERNATIVE SOLUTIONS

There are not other viable solutions.

A. THE ADOPTED CAMPUS MASTER PLAN

This facility will be located on the Harbor Branch Oceanographic Institute campus. The land will be leased to FAU for the construction of this facility.

A. SITE CONDITIONS

1 . SITE TOPOGRAPHY (CM-N-04.00-09/97 B.1)
The site is located west of Old Dixie Highway, south of the HBOI Hurricane shelter and north of the existing stormwater pond. Soils in this area are mapped as Pendarvis Sand, 0 to 5% slopes and Pits. (Refer to preliminary Geotechnical report included in Appendix C for additional information. This site is referenced as the Old Dixie Highway site in the attached report.

2 . STORM DRAINAGE (CM-N-04.00-09/97 B.2)
Storm water drainage will tie into existing storm water pond located to the southwest of the proposed site. The existing pond will need to be sized to include additional runoff from this facility.

3 . VEHICULAR AND PEDESTRIAN CIRCULATION (CM-N-04.00-09/97 B.3)
This project will not affect existing vehicular circulation. This project will need to address vehicular and pedestrian access to the facility and connectivity to the Main Harbor Branch Campus. Handicapped access should be addressed at the time of the design.

4 . SITE VEGETATION (CM-N-04.00-09/97 B.4)
The site is thinly vegetated and mostly covered with grass.

5 . ARCHAEOLOGICAL HISTORY (CM-N-04.00-09/97 B.5)
There is no known archaeological significance to this site.

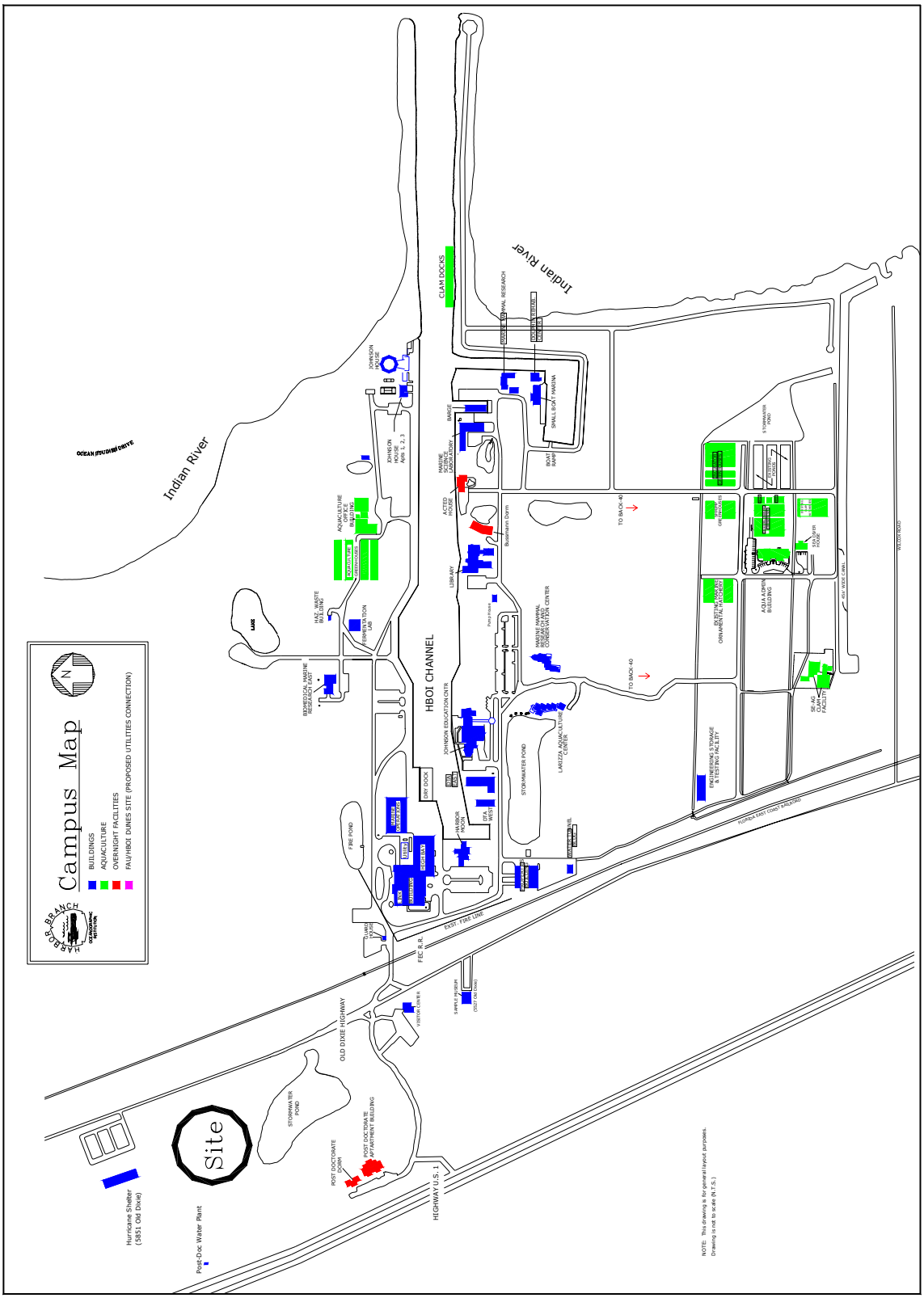
6 . EXISTING UTILITY LOCATIONS (CM-N-04.00-09/97 B.6)
Refer to Section X, Utility Impact Analysis for description of site utilities.

7 . ARCHITECTURAL SIGNIFICANCE OF ADJACENT STRUCTURES (CM-N-04.00-09/97 B.7)
The design of this building should consider the existing architectural style of the campus.

8 . UNUSUAL SITE CONDITIONS (CM-N-04.00-09/97 B.8)
There are no unusual site conditions.

B. CAMPUS MAP & SITE MAP

	DESCRIPTION
1.	Campus and Facilities Location Map


Campus Map
BUILDINGS
AQUACULTURE
OVERNIGHT FACILITIES
FAU/HBOI DUNES SITE (PROPOSED UTILITIES CONNECTION)
Indian River
HBOI CHANNEL
CLAM DOCKS
Site
OLD DIXIE HIGHWAY
HIGHWAY U.S. 1
FORT PIERCE INLET
Hurricane Shelter (3851 Old Dixie)
Post-Doc Water Plant
NOTE: This drawing is for general layout purposes. Drawing is not to scale (N.T.S.)

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

PROGRAM AREA TABLE
Reference: State Requirements for Educational Facilities Chapter 6, Section 6.1, Size of Spaces and Occupant Criteria Table

	DESCRIPTION	NO. OF STATIONS	NASF/ STATION	AREA/ SPACE	NO. OF SPACES		TOTAL STATIONS
200	**Research Laboratory**						
250	Research / Non-Class Laboratory	1	650 NASF	650 NASF	16	10400 NASF	16
255	Research / Non-Class Laboratory Service			3100 NASF	3	9300 NASF	16
	Sub-Total			**3750 NASF**		**19700 NASF**	**32**
300	**Office**						
310	Office - Director	1	200 NASF	200 NASF	1	200 NASF	1
310	Office - Faculty	1	110 NASF	110 NASF	16	1760 NASF	16
310	Office - Postdoc/Tech	2	88 NASF	175 NASF	10	1750 NASF	20
310	Office - Grad Student	4	70 NASF	280 NASF	10	2800 NASF	40
310	Office - A&P	1	80 NASF	80 NASF	2	160 NASF	2
310	Office - USPS	1	80 NASF	80 NASF	2	160 NASF	2
310	Office - Reception	1	80 NASF	80 NASF	1	80 NASF	1
315	Office - Service (Files/Records)	1	110 NASF	110 NASF	1	110 NASF	1
350	Conference Room	20	20 NASF	400 NASF	1	400 NASF	20
	Sub-Total			**1515 NASF**		**7420 NASF**	**103**
	Total			**5265 NASF**		**27120 NASF**	**135**

B. SUMMARY BY SUS SPACE CATEGORY

SUMMARY OF SPACE BY SUS SPACE CATEGORY
Reference: U.S. DOE, Postsecondary Education Facilities Inventory and Classification Manual

ROOM USE CODE	SPACE TYPE	NASF	CONVERSION FACTOR	GSF
200	**Research Laboratory**			
250	Research / Non-Class Laboratory	10400 NASF	1.6	16640 GSF
255	Research / Non-Class Laboratory Service	9300 NASF	1.6	14880 GSF
	Sub-Total	**19700 NASF**		**31520 GSF**
300	**Office**			
310	Office	6910 NASF	1.5	10365 GSF
315	Office Service	110 NASF	1.5	165 GSF
350	Conference Room	400 NASF	1.5	600 GSF
	Sub-Total	**7420 NASF**		**11130 GSF**
	BUILDING TOTAL	**27120 NASF**		**42650 GSF**

C. SPACE DESCRIPTION FORM (Reference: SUS CM-N-04.00-09/97 Attachment 2B)

SPACE NUMBER	**C.1**		
DEPARTMENT:			
AREA:	Office		
SPACE NAME:	Director's Office		
DESCRIPTION / USE:	Office		
SUS SPACE CATEGORY:	Office	ROOM USE CODE:	310
PERSONNEL ASSIGNED / MAX.:	1		
DIMENSION / AREA:	200 NASF		
NUMBER REQUIRED:	1		
RELATIONSHIPS			
PRIMARY:	Other offices		
SECONDARY:			
ARCHITECTURAL CRITERIA			
FLOORS:	Mildew resistant carpet w/ vinyl base.		
WALLS:	Painted Gypsum Wall Board		
CEILINGS:	Suspended acoustic tile.		
DOORS:	Solid core wood w/ HM frame.		
WINDOWS:	Desired for day lighting & view.		
LIGHTING:	Recessed fluorescent w/ parabolic reflector.		
ACOUSTICAL:	Full acoustical treatment of walls & ceilings, extend partitions to the deck above w/ sound attenuating blanket.		
MECHANICAL CRITERIA			
HVAC:	As required		
PLUMBING:	NA		
COMMUNICATIONS:	Provide voice and data		
ELECTRICAL:	As required, provide outlets on all walls		
FURNITURE/EQUIPMENT			
FURNITURE (OWNER):	1- faculty desk 1- credenza/computer work station 1- swivel chair 6 -side chairs 1- 48" round table 1- 4 drawer lateral file cabinet 1 or 2 – shelving unit(s) as space permits		
EQUIPMENT (OWNER):			
FURNITURE (CONTRACTOR):	Window treatment		
EQUIPMENT (CONTRACTOR):			
SUPPLEMENTAL INFORMATION/REQUIREMENTS			
A nameplate and room number should be provided for office door			

SPACE NUMBER	**C.2**		
DEPARTMENT:			
AREA:	Office		
SPACE NAME:	Faculty Office		
DESCRIPTION / USE:	Office		
SUS SPACE CATEGORY:	Office	ROOM USE CODE:	310
PERSONNEL ASSIGNED / MAX.:	1		
DIMENSION / AREA:	110 NASF ea.		
NUMBER REQUIRED:	16		
RELATIONSHIPS			
PRIMARY:	Other offices		
SECONDARY:			
ARCHITECTURAL CRITERIA			
FLOORS:	Mildew resistant carpet w/ vinyl base.		
WALLS:	Painted Gypsum Wall Board		
CEILINGS:	Suspended acoustic tile.		
DOORS:	Solid core wood w/ HM frame.		
WINDOWS:	Desired for day lighting & view.		
LIGHTING:	Recessed fluorescent w/ parabolic reflector.		
ACOUSTICAL:	Full acoustical treatment of walls & ceilings, extend partitions to the deck above w/ sound attenuating blanket.		
MECHANICAL CRITERIA			
HVAC:	As required		
PLUMBING:	NA		
COMMUNICATIONS:	Provide voice and data		
ELECTRICAL:	As required, provide outlets on all walls		
FURNITURE/EQUIPMENT			
FURNITURE (OWNER):	1- faculty desk 1- computer work station 1- swivel chair 2 -side chairs 1 - 4 drawer lateral legal file cabinet 1 or 2 – shelving unit(s) as space permits		
EQUIPMENT (OWNER):			
FURNITURE (CONTRACTOR):	Window treatment		
EQUIPMENT (CONTRACTOR):			
SUPPLEMENTAL INFORMATION/REQUIREMENTS			
A nameplate and room number should be provided for office door			

SPACE NUMBER	**C.3**		
DEPARTMENT:			
AREA:	Office		
SPACE NAME:	Post Doc / Technician Office		
DESCRIPTION / USE:	Office shared by 2 people		
SUS SPACE CATEGORY:	Office	ROOM USE CODE:	310
PERSONNEL ASSIGNED / MAX.:	2		
DIMENSION / AREA:	175 NASF ea.		
NUMBER REQUIRED:	10		
RELATIONSHIPS			
PRIMARY:	Other offices		
SECONDARY:			
ARCHITECTURAL CRITERIA			
FLOORS:	Mildew resistant carpet w/ vinyl base.		
WALLS:	Painted Gypsum Wall Board		
CEILINGS:	Suspended acoustic tile.		
DOORS:	Solid core wood w/ HM frame.		
WINDOWS:	Desired for day lighting & view.		
LIGHTING:	Recessed fluorescent w/ parabolic reflector.		
ACOUSTICAL:	Full acoustical treatment of walls & ceilings, extend partitions to the deck above w/ sound attenuating blanket.		
MECHANICAL CRITERIA			
HVAC:	As required		
PLUMBING:	NA		
COMMUNICATIONS:	Provide voice and data for each station		
ELECTRICAL:	As required, provide outlets on all walls		
FURNITURE/EQUIPMENT			
FURNITURE (OWNER):	2- desks 2- computer work stations 2- swivel chair 2 -side chairs 2 - 4 drawer lateral legal file cabinet 2 – shelving units		
EQUIPMENT (OWNER):			
FURNITURE (CONTRACTOR):	Window treatment		
EQUIPMENT (CONTRACTOR):			
SUPPLEMENTAL INFORMATION/REQUIREMENTS			
A room number should be provided for office door			

SPACE NUMBER	**C.4**		
DEPARTMENT:			
AREA:	Office		
SPACE NAME:	Graduate Students Office		
DESCRIPTION / USE:	Office shared by 4 people		
SUS SPACE CATEGORY:	Office	ROOM USE CODE:	310
PERSONNEL ASSIGNED / MAX.:	4		
DIMENSION / AREA:	280 NASF ea.		
NUMBER REQUIRED:	10		
RELATIONSHIPS			
PRIMARY:	Other offices		
SECONDARY:			
ARCHITECTURAL CRITERIA			
FLOORS:	Mildew resistant carpet w/ vinyl base.		
WALLS:	Painted Gypsum Wall Board		
CEILINGS:	Suspended acoustic tile.		
DOORS:	Solid core wood w/ HM frame.		
WINDOWS:	Desired for day lighting & view.		
LIGHTING:	Recessed fluorescent w/ parabolic reflector.		
ACOUSTICAL:	Full acoustical treatment of walls & ceilings, extend partitions to the deck above w/ sound attenuating blanket.		
MECHANICAL CRITERIA			
HVAC:	As required		
PLUMBING:	NA		
COMMUNICATIONS:	Provide voice and data for each station		
ELECTRICAL:	As required, provide outlets on all walls		
FURNITURE/EQUIPMENT			
FURNITURE (OWNER):	4- student desks 4- computer work stations 4- swivel chair 4 -side chairs 4 - 4 drawer lateral legal file cabinet 4 – shelving units		
EQUIPMENT (OWNER):			
FURNITURE (CONTRACTOR):	Window treatment		
EQUIPMENT (CONTRACTOR):			
SUPPLEMENTAL INFORMATION/REQUIREMENTS			
A room number should be provided for office door			

SPACE NUMBER	**C.5**		
DEPARTMENT:			
AREA:	Office		
SPACE NAME:	A&P Office		
DESCRIPTION / USE:	Office		
SUS SPACE CATEGORY:	Office	ROOM USE CODE:	310
PERSONNEL ASSIGNED / MAX.:	1		
DIMENSION / AREA:	80 NASF ea.		
NUMBER REQUIRED:	2		
RELATIONSHIPS			
PRIMARY:	Other offices		
SECONDARY:			
ARCHITECTURAL CRITERIA			
FLOORS:	Mildew resistant carpet w/ vinyl base.		
WALLS:	Painted Gypsum Wall Board		
CEILINGS:	Suspended acoustic tile.		
DOORS:	Solid core wood w/ HM frame.		
WINDOWS:	Desired for day lighting & view.		
LIGHTING:	Recessed fluorescent w/ parabolic reflector.		
ACOUSTICAL:	Full acoustical treatment of walls & ceilings, extend partitions to the deck above w/ sound attenuating blanket.		
MECHANICAL CRITERIA			
HVAC:	As required		
PLUMBING:	NA		
COMMUNICATIONS:	Provide voice and data		
ELECTRICAL:	As required, provide outlets on all walls		
FURNITURE/EQUIPMENT			
FURNITURE (OWNER):	1- desk 1- computer work station 1- swivel chair 1-side chair 1 or 2 shelving unit(s) as space permits		
EQUIPMENT (OWNER):			
FURNITURE (CONTRACTOR):	Window treatment as required		
EQUIPMENT (CONTRACTOR):			
SUPPLEMENTAL INFORMATION/REQUIREMENTS			
A room number should be provided for office door			

SPACE NUMBER	**C.6**		
DEPARTMENT:			
AREA:	Office		
SPACE NAME:	USPS Office		
DESCRIPTION / USE:	Office		
SUS SPACE CATEGORY:	Office	ROOM USE CODE:	310
PERSONNEL ASSIGNED / MAX.:	1		
DIMENSION / AREA:	80 NASF ea.		
NUMBER REQUIRED:	2		
RELATIONSHIPS			
PRIMARY:	Other offices		
SECONDARY:			
ARCHITECTURAL CRITERIA			
FLOORS:	Mildew resistant carpet w/ vinyl base.		
WALLS:	Painted Gypsum Wall Board		
CEILINGS:	Suspended acoustic tile.		
DOORS:	Solid core wood w/ HM frame.		
WINDOWS:	Desired for day lighting & view.		
LIGHTING:	Recessed fluorescent w/ parabolic reflector.		
ACOUSTICAL:	Full acoustical treatment of walls & ceilings, extend partitions to the deck above w/ sound attenuating blanket.		
MECHANICAL CRITERIA			
HVAC:	As required		
PLUMBING:	NA		
COMMUNICATIONS:	Provide voice and data		
ELECTRICAL:	As required, provide outlets on all walls		
FURNITURE/EQUIPMENT			
FURNITURE (OWNER):	1- desk 1- computer work station 1- swivel chair 1-four drawer lateral legal file cabinet		
EQUIPMENT (OWNER):			
FURNITURE (CONTRACTOR):	Window treatment as required		
EQUIPMENT (CONTRACTOR):			
SUPPLEMENTAL INFORMATION/REQUIREMENTS			
A room number should be provided for office door			

SPACE NUMBER	**C.7**		
DEPARTMENT:			
AREA:	Office		
SPACE NAME:	Reception		
DESCRIPTION / USE:	Secretarial/reception area		
SUS SPACE CATEGORY:	Office	ROOM USE CODE:	310
PERSONNEL ASSIGNED / MAX.:	1		
DIMENSION / AREA:	80 NASF		
NUMBER REQUIRED:	1		
RELATIONSHIPS			
PRIMARY:	Other offices		
SECONDARY:			
ARCHITECTURAL CRITERIA			
FLOORS:	Mildew resistant carpet w/ vinyl base.		
WALLS:	Painted Gypsum Wall Board		
CEILINGS:	Suspended acoustic tile.		
DOORS:	Solid core wood w/ HM frame.		
WINDOWS:	Desired for day lighting & view.		
LIGHTING:	Recessed fluorescent w/ parabolic reflector.		
ACOUSTICAL:	Full acoustical treatment of walls & ceilings, extend partitions to the deck above w/ sound attenuating blanket.		
MECHANICAL CRITERIA			
HVAC:	As required		
PLUMBING:	NA		
COMMUNICATIONS:	Provide voice and data		
ELECTRICAL:	As required, provide outlets on all walls		
FURNITURE/EQUIPMENT			
FURNITURE (OWNER):	1- secretarial desk with return 1- secretarial chair 1- computer work station 2- four drawer lateral legal file cabinet 3- side chairs		
EQUIPMENT (OWNER):			
FURNITURE (CONTRACTOR):	Window treatment as required		
EQUIPMENT (CONTRACTOR):			
SUPPLEMENTAL INFORMATION/REQUIREMENTS			
A nameplate and room number should be provided for office door			

SPACE NUMBER	**C.8**		
DEPARTMENT:			
AREA:	Office		
SPACE NAME:	Files/Records		
DESCRIPTION / USE:	File room		
SUS SPACE CATEGORY:	Office	ROOM USE CODE:	310
PERSONNEL ASSIGNED / MAX.:	1		
DIMENSION / AREA:	110 NASF		
NUMBER REQUIRED:	1		
RELATIONSHIPS			
PRIMARY:	Other offices		
SECONDARY:			
ARCHITECTURAL CRITERIA			
FLOORS:	Vinyl floor covering w/ vinyl base.		
WALLS:	Painted Gypsum Wall Board		
CEILINGS:	Suspended acoustic tile.		
DOORS:	Solid core wood w/ HM frame.		
WINDOWS:	Desired for day lighting & view.		
LIGHTING:	Recessed fluorescent w/ parabolic reflector.		
ACOUSTICAL:	Full acoustical treatment of walls & ceilings, extend partitions to the deck above w/ sound attenuating blanket.		
MECHANICAL CRITERIA			
HVAC:	As required		
PLUMBING:	NA		
COMMUNICATIONS:	Provide voice and data		
ELECTRICAL:	As required, provide outlets on all walls		
FURNITURE/EQUIPMENT			
FURNITURE (OWNER):	1- secretarial desk with return 1- secretarial chair 1- computer work station 2- four drawer lateral legal file cabinet 3- side chairs		
EQUIPMENT (OWNER):			
FURNITURE (CONTRACTOR):	Window treatment as required		
EQUIPMENT (CONTRACTOR):			
SUPPLEMENTAL INFORMATION/REQUIREMENTS			
A nameplate and room number should be provided for office door			

SPACE NUMBER	**C.9**		
DEPARTMENT:			
AREA:	Office		
SPACE NAME:	Conference Room		
DESCRIPTION / USE:	Meeting room for 20 people		
SUS SPACE CATEGORY:	Office	ROOM USE CODE:	310
PERSONNEL ASSIGNED / MAX.:	1		
DIMENSION / AREA:	400 NASF		
NUMBER REQUIRED:	1		
RELATIONSHIPS			
PRIMARY:	Adjacent to director's office		
SECONDARY:			
ARCHITECTURAL CRITERIA			
FLOORS:	Mildew resistant carpet w/ vinyl base.		
WALLS:	Painted Gypsum Wall Board		
CEILINGS:	Suspended acoustic tile with high noise reduction coefficients		
DOORS:	Solid core wood w/ HM frame.		
WINDOWS:	Desired for day lighting & view.		
LIGHTING:	Combination of recessed down-lights and recessed fluorescent lights with parabolic lens. All areas under dimmer control		
ACOUSTICAL:	Full acoustical treatment of walls & ceilings, extend partitions to the deck above w/ sound attenuating blanket.		
MECHANICAL CRITERIA			
HVAC:	As required		
PLUMBING:	NA		
COMMUNICATIONS:	Provide voice, data and video		
ELECTRICAL:	As required, provide outlets on all walls		
FURNITURE/EQUIPMENT			
FURNITURE (OWNER):	1 – conference table with seating capacity for 12 people 12 – table chairs 24 – conference chairs 1 electric projection screen 1 small recessed cabinet with marker board for presentations 1 cabinet for TV / VCR/DVD player 1 television 1 VCR/DVD player		
EQUIPMENT (OWNER):			
FURNITURE (CONTRACTOR):	Window treatment as required		
EQUIPMENT (CONTRACTOR):			
SUPPLEMENTAL INFORMATION/REQUIREMENTS			
A nameplate and room number should be provided for office door			

SPACE NUMBER	**C.10**		
DEPARTMENT:			
AREA:	Research Lab		
SPACE NAME:	Cluster Lab Room		
DESCRIPTION / USE:	Research lab		
SUS SPACE CATEGORY:	Research Lab	ROOM USE CODE:	250
PERSONNEL ASSIGNED / MAX.:	1		
DIMENSION / AREA:	650 NASF ea.		
NUMBER REQUIRED:	16		
RELATIONSHIPS			
PRIMARY:	Adjacent to associated core facility		
SECONDARY:	Office space for faculty, post docs and graduate assistants		
ARCHITECTURAL CRITERIA			
FLOORS:	Vinyl floor covering w/ vinyl base.		
WALLS:	Painted walls		
CEILINGS:	Suspended acoustic tile with high noise reduction coefficients		
DOORS:	Solid core wood w/ HM frame.		
WINDOWS:	Unless otherwise specified no windows in the Labs		
LIGHTING:	Recessed fluorescent w/ parabolic reflector.		
ACOUSTICAL:	As required		
MECHANICAL CRITERIA			
HVAC:	As required		
PLUMBING:	As required for sinks, safety showers – provide floor drains every 200 sq.ft.		
COMMUNICATIONS:	Provide voice and data		
ELECTRICAL:	120v and 240v power drops		
FURNITURE/EQUIPMENT			
FURNITURE/EQUIPMENT (OWNER):	1 faculty table		
FURNITURE / EQUIPMENT(CONTRACTOR):	35 linear feet of laboratory counter top 1 – 6 station lab benches 1 – 8 foot wide fume hood 2 center service modules for utilities with two end sinks each 1 – blanked-off air exhaust system for spectrometer 1 wall bench with lockable drawers Lockable wall cabinets 1- 12 foot whiteboard		

SUPPLEMENTAL INFORMATION/REQUIREMENTS
A nameplate and room number should be provided for office door

SPACE NUMBER	**C.11**		
DEPARTMENT:			
AREA:	Research Lab		
SPACE NAME:	Core Facility		
DESCRIPTION / USE:	Research lab		
SUS SPACE CATEGORY:	Research Lab	ROOM USE CODE:	255
PERSONNEL ASSIGNED / MAX.:			
DIMENSION / AREA:	3,100 NASF ea.		
NUMBER REQUIRED:	3		
RELATIONSHIPS			
PRIMARY:	Each core facility to support 6 research labs		
SECONDARY:			
ARCHITECTURAL CRITERIA			
FLOORS:	Vinyl floor covering w/ vinyl base.		
WALLS:	Painted walls		
CEILINGS:	Suspended acoustic tile with high noise reduction coefficients		
DOORS:	Solid core wood w/ HM frame. Provide a half door for a larger opening to allow for transport of large equipments		
WINDOWS:	Unless otherwise specified no windows in the Labs		
LIGHTING:	Recessed fluorescent w/ parabolic reflector.		
ACOUSTICAL:	As required		
MECHANICAL CRITERIA			
HVAC:	As required		
PLUMBING:	As required for sinks, safety showers – provide floor drains every 200 sq.ft.		
COMMUNICATIONS:	Provide voice and data		
ELECTRICAL:	120v and 240v power drops		
FURNITURE/EQUIPMENT			
FURNITURE/EQUIPMENT (OWNER):	1 faculty table		
FURNITURE / EQUIPMENT (CONTRACTOR):	35 linear feet of laboratory counter top 2 – 6 station lab benches 2 – 8 foot wide fume hood 2 center service modules for utilities with two end sinks each 1 – blanked-off air exhaust system for spectrometer 1 wall bench with lockable drawers Lockable wall cabinets 1- 12 foot whiteboard		

SUPPLEMENTAL INFORMATION/REQUIREMENTS
A nameplate and room number should be provided for office door

A. UTILITIES IMPACT ANALYSIS

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

The approximate tonnage required for a 48,736 GSF laboratory space is 250 tons. Being consistent with what is being used and maintained at Harbor Branch existing buildings, an air-cooled chiller is preferred by the Harbor Branch facilities staff due to existing service contracts. The air-cooled chiller shall be located so as not to be exposed to any irrigation systems. In addition, a field-applied coating will be required for the coils. The irrigation systems at Harbor Branch are high in sulfur dioxide, which coats the condensing coils of the chillers. This coating combined with Florida humidity turns to sulfuric acid, thus eating away the coils. There are two separate circuits in the chiller that will provide some redundancy. For further redundancy, critical areas of the building need to be identified and provided with an air-handling unit, which has both a chilled water coil and a DX coil as a backup if the chiller were to fail. FAU Facilities Planning recommends a life cycle cost by the design engineer that studies the use of water cooled chiller as we believe that the life will be twice as long and much less expensive to operate.

2. HEATING: (SUS CM-N-04.00-09/97 B)

Heating shall be accomplished through a high efficiency hot water, propane gas fired to provide hot water to coils in both air handling units and ducts through the building.

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

The estimated load for this bldg. Is approx 500 KVA power will be provided by the Fort Pierce utilities authority approx. 1500 ft. from the site.

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

The existing Post Doc Water Treatment Plant will supply potable water. The Post Doc Water Plant is using only 20% of its capacity. This added load of 100 people, or 1,000 GPD, is within the existing Pant's capacity. The Post Doc Water Plant is 1,000 linear feet from the Dunes site. A 4" PVC pipe will supply potable water to the Building. The Fire Protection water supply will be from the existing Fire Water Pond. The pond will be expanded for this added load. This system will comply with all requirements of the Fire Marshal with jurisdiction. A new pump station will pump water through 6" ductile iron pipe 2,500 linear feet, under Dixie Highway, and under the Railroad tracks to the Building. Fire hydrants will be located to comply with the Fire Department's needs.

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

The existing Post Doc Waste Water Treatment Plant will treat the waste water from this Building. The Plant is 750 linear feet from the Dunes site. A 6" PVC sanitary pipe will connect this Building to the existing Plant. The existing Plant is working at only 20% capacity. This added 1,000GPD load is within the existing Plant's capacity. The Operating Permit for the Plant will be revised for this added load.

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

Irrigation water will be supplied from a new well and pump station. The new system will comply with all DEP and SFWMD requirements.

7. STORM WATER MANAGEMENT:

Catch basins around the site will drain Storm Water into the existing Storm Water Pond. This new system will comply with all DEP requirements.

8. TELECOMMUNICATIONS:

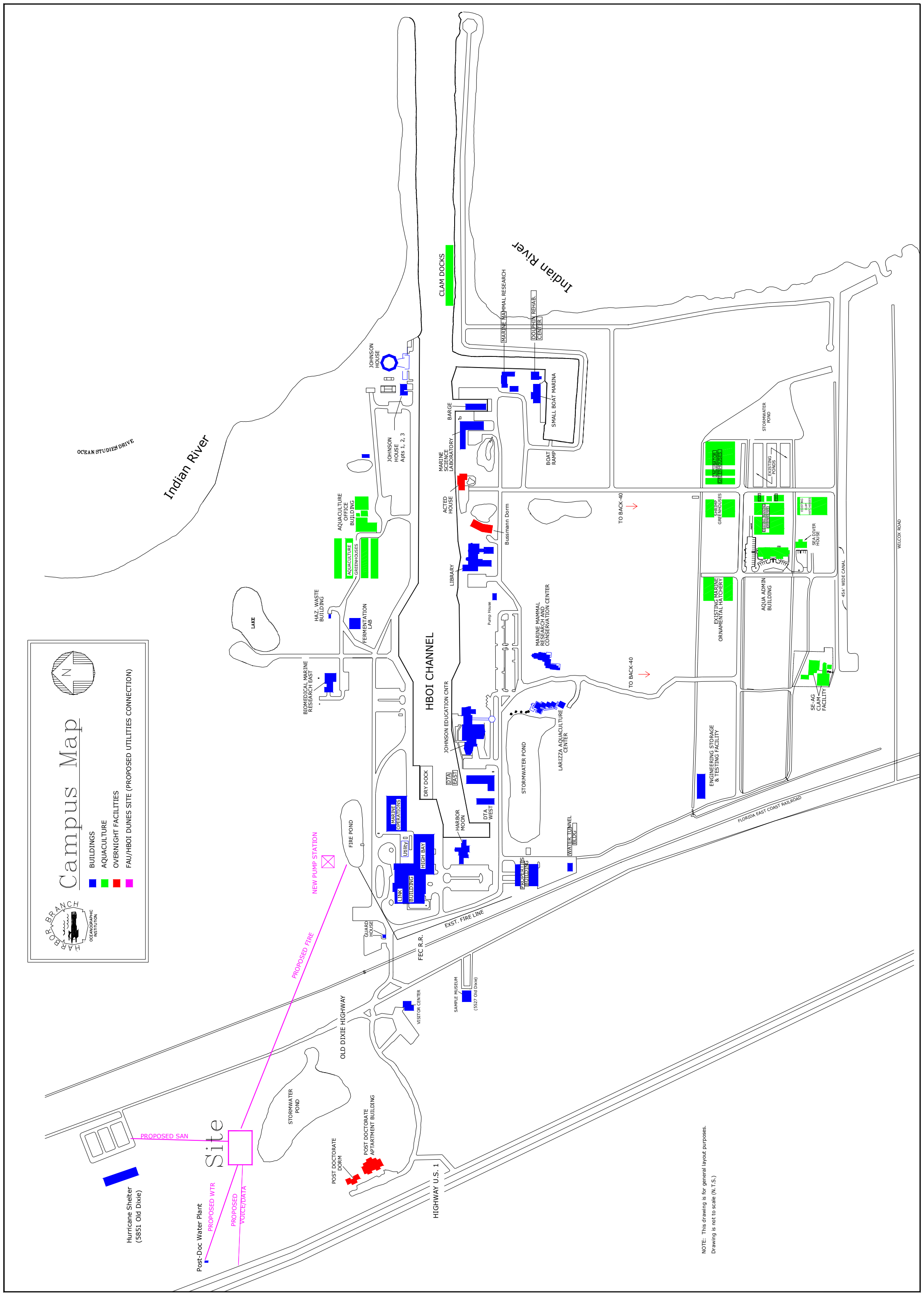
This facility will require twelve strands of fiber and 100 pairs of copper. Two 4" conduits will extend from the building west to US1 (approximately 600 lf) to connect to Bell South. Connection for fiber will extend 2 (4") conduits to the Visitors Center located west of Old Dixie Highway to the South East of the proposed site.

9. SITE LIGHTING:
Site lighting will be per the harbor branch standards.

10. SURFACE IMPROVEMENT
Extend a two lane road from Old Dixie Highway to the building site and propose parking. The facility will require 70 paved parking spaces adjacent to the building

B. UTILITY MAP

	DESCRIPTION
1.	HBOI Campus Utility Information Map


Campus Map
BUILDINGS
AQUACULTURE
OVERNIGHT FACILITIES
FAU/HBOI DUNES SITE (PROPOSED UTILITIES CONNECTION)
HARBOR BRANCH OCEANOGRAPHIC INSTITUTION
Indian River
OCEAN STUDIES DRIVE
HBOI CHANNEL
CLAM DOCKS
MARINE MAMMAL RESEARCH
DOLPHIN REHAB. CENTER
SMALL BOAT MARINA
BOAT RAMP
BARGE
MARINE SCIENCE LABORATORY
JOHNSON HOUSE
JOHNSON HOUSE Apts 1, 2, 3
ACTED HOUSE
Busimann Dorm
LIBRARY
AQUACULTURE OFFICE BUILDING
HAZ. WASTE BUILDING
FERMENTATION LAB
LAKE
BIOMEDICAL MARINE RESEARCH EAST
MARINE MAMMAL RESEARCH AND CONSERVATION CENTER
JOHNSON EDUCATION CNTR
LARIZZA AQUACULTURE CENTER
STORMWATER POND
DRY DOCK
HARBOR MOON
FIRE POND
NEW PUMP STATION
EXST. FIRE LINE
GUARD HOUSE
FEC R.R.
TO BACK-40
ENGINEERING STORAGE & TESTING FACILITY
EXISTING MARINE ORNAMENTAL HATCHERY
AQUA ADMIN. BUILDING
SE-AG CLAM FACILITY
STORMWATER POND
FLORIDA EAST COAST RAILROAD
WILCOX ROAD
OLD DIXIE HIGHWAY
PROPOSED FIRE
VISITOR CENTER
SAMPLE MUSEUM
(5527 Old Dixie)
STORMWATER POND
POST DOCTORATE APARTMENT BUILDING
POST DOCTORATE DORM
HIGHWAY U.S. 1
Site
PROPOSED SAN
PROPOSED WTR
PROPOSED VOICE/DATA
Hurricane Shelter (5851 Old Dixie)
Post-Doc Water Plant
NOTE: This drawing is for general layout purposes. Drawing is not to scale (N.T.S.)

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.

A. CODES AND STANDARDS

The following BOR approved 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: (Reference: SUS Professional Services Guide (PSG), section 3.13).

		DESCRIPTION
	Year	**Building Codes**
1.	2001	Florida Building Code, Building
2.	2001	Florida Building Code, Mechanical
3.	2001	Florida Building Code, Fuel Gas
4.	2001	Florida Building Code, Plumbing
5.	2001	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)
Chap.	**Year**	**Title**
1	2000	Fire Prevention Code
10	1998	Standard for Portable Fire Extinguishers
13	1999	Standard for the Installation of Sprinkler Systems
13R	1999	Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and including four stories in Height
14	2000	Standard for the Installation of Standpipe and Hose systems, except 2-7 Shall be omitted
20	1999	Standard for the Installation of Centrifugal Fire Pumps
24	1995	Standard for the Installation of Private Fire Service Mains and Their Appurtenances
25	1998	Standard for the Inspection, Testing & Maintenance of Water Based Fire Protection Systems
30	1996	Flammable and Combustible Liquids Code
45	1996	Standard on Fire Protection for Laboratories Using Chemicals
70	1999	National Electrical Code
72	1999	National Fire Alarm Code
90A	1999	Standard for the installation of Air Conditioning and Ventilating Systems
96	1998	Standard for Ventilation Control and Fire Prevention of Commercial Cooking Operations
101	2000	Life Safety Code
	3.13.3	**State Fire Marshal**
		Requirements for review shall comply with PSG, Exhibit 5; (all inspections, reviews and permitting for University projects shall be coordinated through the University EHS Office)
	3.13.4-5	**Required Permits**
		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
	3.13.5.4	Department of Environmental Protection (DEP), area Branch (SUS is fee exempt)
	3.13.5.5	South Florida Water Management District permit
		SUS Standards
		State University System Cost Containment Guidelines
		Florida Atlantic University
		Florida Atlantic University - University Architect's Division Policies and Procedures
		Florida Atlantic University Professional Services Guide – April 2003
		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).
		Miscellaneous Statutes
		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 Statues.

CONSTRUCTION MANAGEMENT PROJECT DELIVERY METHOD

GOALS AND MILESTONES	DURATION	START DATE	END DATE
PROGRAM APPROVAL	**5 weeks**	**05-Jun-2003**	**10-Jul-2003**
University Facilities Program Approval	5 weeks	05-Jun-2003	10-Jul-2003
A/E SELECTION PROCESS	**14 weeks**	**10-Jul-2003**	**16-Oct-2003**
Advertise for A/E in FAW	5 weeks	10-Jul-2003	14-Aug-2003
A/E Short-list	3 weeks	14-Aug-2003	04-Sep-2003
A/E Interviews	3 weeks	04-Sep-2003	25-Sep-2003
A/E Selection	1 weeks	25-Sep-2003	02-Oct-2003
Contract Negotiations with A/E	2 weeks	02-Oct-2003	16-Oct-2003
C/M SELECTION PROCESS	**14 weeks**	**04-Sep-2003**	**11-Dec-2003**
Advertise for C/M in FAW	5 weeks	04-Sep-2003	09-Oct-2003
C/M Short-list	3 weeks	09-Oct-2003	30-Oct-2003
C/M Interviews	3 weeks	30-Oct-2003	20-Nov-2003
C/M Selection	1 weeks	20-Nov-2003	27-Nov-2003
Contract negotiations with C/M	2 weeks	27-Nov-2003	11-Dec-2003
DESIGN PHASE	**49 weeks**	**16-Oct-2003**	**23-Sep-2004**
Conceptual Design	3 weeks	16-Oct-2003	06-Nov-2003
University review and approval	3 weeks	06-Nov-2003	27-Nov-2003
Schematic Design	3 weeks	27-Nov-2003	18-Dec-2003
University review and approval	3 weeks	18-Dec-2003	08-Jan-2004
Design Development and Budget verification	6 weeks	08-Jan-2004	19-Feb-2004
University review and approval	3 weeks	19-Feb-2004	11-Mar-2004
50% Construction Documents and Budget update	6 weeks	11-Mar-2004	22-Apr-2004
University review and approval	3 weeks	22-Apr-2004	13-May-2004
100% Construction Documents and Budget update	8 weeks	13-May-2004	08-Jul-2004
University review and approval	4 weeks	08-Jul-2004	05-Aug-2004
Submittal to State Fire Marshal (SFM)	4 weeks	08-Jul-2004	05-Aug-2004
Submittal of GMP	4 weeks	05-Aug-2004	02-Sep-2004
GMP Review & Negotiations	3 weeks	02-Sep-2004	23-Sep-2004
CONSTRUCTION PHASE	**65 weeks**	**23-Sep-2004**	**22-Dec-2005**
Notice to Proceed	1 weeks	23-Sep-2004	30-Sep-2004
Construction	60 weeks	30-Sep-2004	24-Nov-2005
Substantial Completion Inspection	1 weeks	24-Nov-2005	01-Dec-2005
Furniture Move In	2 weeks	01-Dec-2005	15-Dec-2005
Owner Occupancy	1 weeks	15-Dec-2005	22-Dec-2005
Total	**133 weeks**	**05-Jun-2003**	**22-Dec-2005**

A. ESTIMATED FUNDING

PROJECT FUNDING	
Public Education Capital Outlay (2002-2003 P,C,E)	$ 11,000,000
TOTAL	**$ 11,000,000**

B. ESTIMATED BUDGET

1. Construction Costs	
a. Construction Costs	$7,094,000
b. Additional/Extraordinary Construction Costs	$1,256,800
Sub Total Construction Costs	**$8,350,800**
2. Other Project Costs	
a. Land/existing facility acquisition	$0
b. Professional Fees	$588,200
c. Fire Marshal Fees	$20,900
d. Inspection Services	$155,300
e. Insurance Consultant	$5,200
f. Surveys and Tests	$25,000
g. Permit/Impact/Environmental Fees	$32,000
h. Art Work	$35,500
i. Movable Furnishings & Equipment	$1,406,320
j. Project Contingencies	$380,780
Sub Total Other Project Costs	**$2,649,200**
TOTAL PROJECT BUDGET (from Section XV of Facilities Program)	**$11,000,000**

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

SPACE SUMMATION (from Section IX of Facilities Program)					
Program Space Type	NASF	Factor	GSF	$ / GSF [1]	$
New Construction					
Research Laboratories	19,700	1.6	31,520	180.00	$5,673,600.00
Offices	7,420	1.5	11,130	127.62	$1,420,410.60
Avg. Construction Cost [3]				**166.33**	
Total Construction Cost	**27,120**	**1.57**	**42,650**		**$7,094,000.00**

1. Based on Construction Cost for similar project type (research lab facility)

1. CONSTRUCTION COSTS (Reference: SUS CM-D-38.00-09/97, Attachment 1-B)	
a. Building Construction Cost	
New Construction Cost	$7,094,000.00
Sub-Total Construction Costs	**$7,094,000.00**
b. Additional/Extraordinary Construction Cost*	
Roadway Improvements	$100,000.00
Parking Improvements (70 paved parking spaces)	$175,000.00
Landscaping and Irrigation	$75,000.00
Telecommunications / Information System	$191,800.00
Utilities Infrastructure Cost (less Chilled Water Fee)	
Electrical Services	$70,000.00
Water Distribution System	$380,000.00
Sanitary Sewer System	$83,000.00
Storm Water System	$32,000.00
Chilled Water System	$150,000.00
Sub-Total Additional/Extraordinary Construction Costs	**$1,256,800.00**
TOTAL CONSTRUCTION COST	**$8,350,800.00**

* The above cost estimate for the extraordinary construction is identifies only for the purposes of programming. The cost for the building construction and all utilities cost is included in the line for TOTAL Construction Cost and will be the amount for the GMP.

2. OTHER PROJECT COSTS	
a. Land/Existing Facility Acquisition	**$ 0.00**
b. Professional Fees	
A/E Fees (6.04 % of Estimated Construction Cost based on BOR Fee Curve B – Above Average)	$504,700.00
C/M Pre-Construction Management Fee (1% of Construction Cost)	$83,500.00
Sub-Total Professional Fees	**$588,200.00**
c. State Fire Marshal Review and Inspection Fee.	
SFM Fee (0.0025 x construction cost of building envelope only)	**$20,900.00**
d. Inspection Services	
Roofing Inspection (During Construction) ($ 7 / week x 1,800 weeks)	$ 11,700.00
Resident Inspection (52 week s)	$93,600.00
Plans Review (Code Compliance)	$15,000.00
Code Compliance Inspection	$50,000.00
Sub-Total Inspection Services	**$170,300.00**
e. Insurance Consultant	
Risk Management / Insurance Consultant,	**$5,200.00**
f. Surveys & Tests	
Site Survey	$7,000.00
Geotechnical Survey	$18,000.00
Sub-Total Surveys & Tests	**$25,000.00**
g. Permit/Impact/Environmental Fees	
Gopher Tortoise Relocation	$30,000.00
Environmental (SFWM)	$2,000.00
Sub-Total Permit/Impact/Environmental Fees	**$32,000.00**
h. Art in State Building (Section 255.043, F.S.)	**$35,500.00**
i. Movable Furniture & Equipment	
Furniture & Equipment	$ 1,150,000.00
Telecommunication Equipment Including Switches	$256,320.00
Sub-Total Furnishings & Equipment	**$1,406,320.00**
j. Project Contingency	
(4.6 % x Project Cost Sub-Total Above)	**$365,780.00**
TOTAL OTHER PROJECT COSTS	**$2,649,200.00**
TOTAL PROJECT BUDGET COST ESTIMATE	**$11,000,000.00**

FAU/HBOI MARINE SCIENCE PARTNERSHIP

APPENDIX - A

AGREEMENT BETWEEN
FAU & HBOI

AGREEMENT
for
COOPERATIVE EDUCATION AND RESEARCH
between
HARBOR BRANCH
and
FLORIDA ATLANTIC UNIVERSITY

Florida Atlantic University, acting for and on behalf of the Florida Atlantic University Board of Trustees ("FAU" or "University"), and Harbor Branch ("HB" or "Institution"), which consists of Harbor Branch Oceanographic Institution, Inc. and Harbor Branch Institution, Inc., non-profit Florida corporations, on this _____day of _____, 2002 enter into the following agreement ("Agreement"):

WHEREAS, an Agreement between HB and FAU (collectively, the Parties) is needed to accommodate cooperative educational and research activities related to marine sciences and related fields; and

WHEREAS, it is the desire of the Parties to identify the academic, financial and administrative arrangements necessary to carry out the planned activities; and

WHEREAS, funding from the Legislature of the State of Florida was appropriated to FAU to establish a joint program with HB in marine science; and

WHEREAS, this Agreement, recognizing the unique expertise available at FAU and at HB relative to these areas, will facilitate interchange between staff at HB and FAU faculty and students and will establish a mechanism for cooperative research and educational activities between the Institution and the University;

THEREFORE, the Parties for valuable consideration, the adequacy of which is recognized and with the intent to be bound, state as follows:

1. HB and FAU desire to enter into cooperative activities promoting education and research in areas involving marine science and related fields. Research and educational activities involving collaborative interaction of the staff of HB and the staff, faculty and students of FAU are intended to encompass long-term, multi-project activities. It is agreed that HB scientists and FAU faculty, staff and students will work jointly and cooperatively on planned educational and research activities of mutual interest pursuant to this Agreement. Those activities will be planned, reduced to writing and mutually agreed to by the Parties as addenda to this Agreement. Each addendum must specifically cite this Agreement.

2. The specific objectives of this Agreement include, but are not limited to the following:

   A. To plan and implement cooperative research and educational activities relating to marine sciences.

   B. To jointly seek sources of external support to fund these cooperative efforts.

   C. To provide technical and professional education and training on undergraduate, graduate and professional levels in the fields of marine science and related sciences.

D. To make available to the public, and to researchers, staff and faculty of both FAU and HB those non-proprietary facts, methods and new findings that are discovered and to disseminate research findings by a variety of methods including publications of all types, seminars and workshops; provided however, that such activities do not compromise the filing of patent applications involving newly developed technology or know-how resulting from this collaboration.

E. To share physical facilities and support services in ways that will expand and provide more cost-effective research projects and mutual interest activities for HB and FAU. Terms and conditions will be negotiated in good faith, agreed upon between University and HB, and included as an addendum to this Agreement.

3. The Parties understand and agree that each shall be responsible for all salaries or benefits for its own employees; FAU shall not be responsible for HB employees and HB shall not be responsible for FAU employees. As circumstances require, employees of HB may be assigned activities supported by FAU, or employees of FAU may be assigned activities supported by HB; in such cases, the Parties will agree in writing in advance regarding the financial considerations associated with such assignments.

4. Harbor Branch agrees to the following:

A. To cooperate with the University in outlining, planning and developing joint research, education, training and demonstration projects.

B. To appoint an HB Coordinator to assist in developing, planning and implementing cooperative research and educational projects with the University.

C. To establish, as budget and other considerations permit, HB positions for participation in cooperative research and educational activities. Some positions may be funded jointly or shared between the University and HB or funded either in whole or in part by externally funded cooperative projects.

D. To nominate employees for cooperative project positions with FAU. All nominated employees shall meet applicable qualifications of the HB and FAU.

E. To continue to provide salaries, benefits and travel costs of HB employees during such time as they are involved in cooperative activities with FAU, unless other arrangements have been agreed to in advance.

F. To consider University scientists and other personnel participating in cooperative activities for research affiliate appointments. For research affiliate appointments, paid or unpaid, HB will review nominees for appointment according to the standards and procedures appropriate for the type and level of the position as defined by HB. University personnel accepted by HB shall be given courtesy appointments with titles appropriate to their qualifications, consistent with HB ranks and titles, and shall have the same privileges afforded to HB staff.

G. To make available HB personnel for cooperative projects. It is understood and agreed that all HB employees must be authorized under federal laws to work in the United States and to engage in the activities as contemplated by this Agreement. Prior to appointment of any HB employee at the University, HB shall certify to the University that the employee is authorized under federal law to work in the United States and to engage in the

activities as contemplated by this Agreement. In addition, prior to appointment of any HB employee at the University, HB shall furnish to the University the I-9 documentation associated with that employee.

H. To make available services, facilities, equipment, vehicles, and vessels under control of HB for cooperative projects, under the same conditions they are available to HB and other terms that are mutually agreed upon.

I. To comply in cooperative projects with the University's requirements regarding Animal Care and Use, Human Subjects, Diving, and other matters subject to federal compliance regulations for research, and to make available personnel to serve as members of the University's associated committees upon request.

J. To provide for the normal administrative and support services warranted for all externally funded on-campus cooperative projects (including accounting, publication channels, physical facilities, campus security, library, equipment, vehicles, vessels, or other facilities) as mutually agreed.

K. To hold meetings with the University as is necessary for the purpose of coordinating activities.

L. To financially and materially support its part in cooperative research projects and educational activities that address marine science issues of common interest.

M. To provide administrative personnel and office space at facilities that may be developed at HB as may be mutually agreed upon by HB and FAU.

5. The University agrees to the following:

A. To cooperate with HB in outlining, planning and developing joint research, education, training and demonstration projects.

B. To appoint a University Coordinator to assist in developing, planning and implementing cooperative research and educational projects with HB.

C. To establish, as budget and other considerations permit, University positions for participation in cooperative research and educational activities. Some positions may be funded jointly or shared between the University and HB or funded either in whole or in part by externally funded cooperative projects.

D. To nominate employees for cooperative project positions with HB. All nominated employees shall meet applicable qualifications of HB and FAU.

E. To continue to provide salaries, benefits and travel costs of University employees during such time as they are involved in cooperative activities with HB, unless other arrangements have been agreed to in advance.

F. To consider HB scientists and other personnel participating in cooperative activities for courtesy faculty appointments. For courtesy faculty appointments, paid or unpaid, the University will review nominees for appointment within a specific Department in the University, according to the standards and procedures appropriate for the type and level of the position as defined by the University. Qualified HB personnel accepted by the

University shall be given affiliate appointments with titles appropriate to their qualifications, consistent with University ranks and titles. Such HB appointees shall have the opportunity to conduct seminars and teach courses in their area of specialization as the need arises and as mutually agreed upon, shall be permitted to advise graduate students in accordance with University regulations, policies and procedures and shall have the same privileges afforded to FAU faculty on such appointments.

G. To make available personnel under control of the University for cooperative projects (within limits of statutory authorities). It is understood and agreed that all University employees must be authorized under federal laws to work in the United States and to engage in the activities as contemplated by this Agreement. Prior to appointment of any University employee at HB, the University shall certify to HB that the employee is authorized under federal law to work in the United States and to engage in the activities as contemplated by this Agreement. In addition, prior to appointment of any University employee at HB, the University shall furnish to HB the I-9 documentation associated with that employee.

H. To make available services, facilities, equipment, vehicles, and vessels under control of FAU for cooperative projects, under the same conditions they are available to FAU and under terms that are mutually agreed upon.

I. To comply in cooperative projects with HB's requirements regarding Animal Care and Use, Human Subjects, Diving, and other matters subject to federal compliance regulations for research, and to make available personnel to serve as members of HB's associated committees upon request.

J. To provide for the normal administrative and support services warranted for all externally funded on-campus cooperative projects (including accounting, publication channels, physical facilities, campus security, library, equipment, vehicles, vessels, or other facilities) as mutually agreed.

K. To hold meetings with HB as is necessary for the purpose of coordinating activities.

L. To financially and materially support its part in cooperative research projects and educational activities that address marine science issues of common interest.

M. To provide administrative personnel and office space at facilities that may be developed at HB as may be mutually agreed upon by HB and FAU.

6. HB and FAU will establish a Coordinating Board to determine collaborative activities under this Agreement. The Board will consist of four FAU and four HB members. The Board will be co-chaired by two members, one from each Party, and may add members (ex-officio, temporary or permanent) as deemed necessary. The Board shall meet annually, or more often as needed, to review and plan cooperative projects. Although the Board will assist in project planning and coordination, all cooperative projects will require the written mutual agreement of the Parties prior to proceeding in the form of an addendum to this Agreement.

7. In connection with the performance of work under this Agreement, the Parties agree not to discriminate against any employee, student, or applicant for employment because of sex, race, religion, color, handicap, or national origin.

8. The terms of this Agreement may be amended only in writing by mutual consent and become effective when signed by the Parties. The Parties agree to review this Agreement annually.

9. FAU and HB mutually agree:

   A. That facilities will be made available for cooperative projects.

   B. That all real or personal property purchased for use in cooperative research or activities by either Party shall remain the property of that Party. HB and FAU will maintain their respective equipment inventories showing ownership, cost, condition, and how each inventory item is available for the cooperative projects.

   C. That prior approval by the owner of real or personal property is required before such property can be used by the other party in non-joint activities or by third parties or entities.

   D. That contracts, grants, gifts, bequests or other funds for cooperative projects will be encouraged within each Party's guidelines and will conform to standards of the University and/or HB. Funding will be determined annually as available.

   E. That offices, laboratories and support services for cooperative projects will be provided by HB and/or University in the following areas as mutually agreeable:

      - ☐ Office, laboratory and conference space;
      - ☐ Parking, security, and library access and services;
      - ☐ Utilities, maintenance and janitorial services; and,
      - ☐ Access to the University computer systems, including Internet linkage.

   F. That each Party will notify the other of any invention made pursuant to this Agreement within thirty days after the receipt of an invention disclosure from the inventor.

      Additionally:

      (1) The University shall retain all rights to inventions or discoveries, patentable or not, conceived solely by University personnel using University property and shall prepare and prosecute all related patent applications.

      HB shall retain all rights to inventions or discoveries, patentable or not, conceived solely by HB personnel using HBOI property and shall prepare and prosecute all related patent applications.

      (2) Inventions or discoveries, patentable or not, made jointly by HB and FAU shall be jointly owned. Inventions or discoveries shall be considered jointly made if there was significant participation of personnel from both FAU and HB, or if there was a significant use of resources from one by personnel from the other. Significant use of resources shall not include use of buildings, equipment, or other non-expendable items. Also, if FAU students have participated in a project that is otherwise solely conducted by HB, FAU shall not have rights to inventions or discoveries conceived during the conduct of this research.

      (3) Subject to the provisions of paragraph 9.F (2), inventorship will be determined in

accordance with United States patent laws. The Parties agree to assign patent applications as necessary to comply with these ownership provisions.

(4) Terms and conditions of patent prosecution and maintenance of joint inventions, as well as licenses to any jointly-owned intellectual property resulting from this Agreement will be negotiated in good faith, agreed upon between University and HB, and included as an addendum to this Agreement. Both the University and HB agree to sign any and all documentation necessary to achieve the commercialization of any intellectual property arising from activities performed under this Agreement.

10. The Parties recognize the need to maintain secrecy of confidential or proprietary information disclosed during discussions related to research, development, and business collaborations, as well as during the performance of research under the Agreement. Communications of such confidential information should be in writing, or if orally disclosed, confirmed as confidential in writing within 30 days of disclosure. Unless otherwise mutually agreed upon in writing by the Parties, for a period of five (5) years from the date of disclosure, neither Party will disclose confidential information disclosed by the other Party to third parties or use such confidential information for the purposes other than to evaluate a potential collaboration between the Parties, and shall only disclose confidential information on a need-to-know-basis to persons working at their respective organizations who are bound by similar obligations of confidentiality and non-use. The confidentiality and non-use obligation shall not apply to:

    A. information which at the time of disclosure hereunder is publicly known;

    B. information which becomes publicly known without any breach of this agreement by the receiving Party;

    C. information which was in the possession of the receiving Party at the time of disclosure hereunder by the disclosing Party;

    D. information which the receiving Party receives from a third party; provided, however, that such information was not obtained by said third party, directly or indirectly, from the disclosing Party under an obligation of confidence.

Notwithstanding the provisions of this Section 10, each Party shall be free to publish or otherwise publicly disclose the results of activities conducted during the term hereunder, to the extent that public disclosure will not result in the disclosure of otherwise confidential information or know how. At least sixty (60) days prior to making any such oral or written disclosure, the disclosing Party shall provide the other Party a draft of the proposed disclosure to afford an opportunity for comment and protection of intellectual property rights, and must obtain a written consent for disclosure from the other Party. Neither Party shall unreasonably withhold its consent. Neither Party may disclose the other Party's confidential information or know how without the prior written consent of the other Party. Each Party agrees to reference or acknowledge the other Party's contributions, as scientifically appropriate.

11. The Parties agree to seek funding for collaborative research and education activities. Depending on how funds are awarded, either Party may be the prime contractor and that Party will be responsible for administering funds through a subcontract to the other Party.

12. This Agreement shall be in effect and will automatically renew annually unless either party, at any time, provides written notice of its intent to withdraw from the Agreement; in which event, the Agreement shall terminate three (3) months thereafter. In the event of the termination of this Agreement, any ongoing cooperative projects will be allowed to continue until completion,

but in no event for more than one year.

13. The performance by the University and HB of any of its obligations under this Agreement shall be subject to and contingent upon the availability of funds appropriated by the Legislature of the State of Florida or otherwise lawfully expendable for the purpose of this Agreement for the current and future periods. The University shall give notice to HB of the non-availability of such funds when University has knowledge. The performance by HB of any of its obligations under this Agreement shall be subject to and contingent upon the availability of funds lawfully expendable by HB for the purpose of this Agreement for the current and future periods. HB shall give notice to the University of the non-availability of such funds when HB has knowledge.

14. Each Party assumes any and all risk of personal injury and property damage attributable to the willful or negligent acts or omissions of that party and its own officers, employees, students, and other agents.

15. The Parties recognize that the public access requirements of Chapter 119, Florida Statutes, apply to FAU as a public institution but not to HB as a private institution. If work carried out under this agreement produces documents, papers, letters, or other material that is subject to the requirements of Chapter 119, HB and FAU agree that public access shall be allowed according to the requirements of law.

16. The validity, construction and effect of this Agreement shall be governed by the laws of the State of Florida. The University, as an agency of the State of Florida, is entitled to the benefits of sovereign immunity coextensive therewith, including immunities from taxation. In the event either Party is required to obtain from any governmental authority any permit, license or authorization as a prerequisite to perform its obligations, the cost shall be borne by the Party required to obtain such permit, license or authorization.

17. HB may not, without the advance written approval of University, assign any right or delegate any duties under this Agreement. The University may not, without the advance written approval of HB, assign any right or delegate any duties under this Agreement.

18. It is understood and agreed that nothing contained herein is intended, or should be construed, as creating or establishing the relationship of partners between the Parties, or as constituting either as the agent or representative of the other for any purpose in any manner whatsoever. Neither HB nor the University is authorized to bind the other to any contracts or other obligations, nor shall either Party expressly or impliedly represent to any Party that HB and University are partners or that either is the agent or representative of the other Trustees for any purpose or in any manner whatsoever.

19. This Agreement shall be governed by the laws of Florida.

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IN WITNESS WHEREOF, the Parties have executed this Collaborative Agreement as of the day and year of the signatures indicated below.

FLORIDA ATLANTIC UNIVERSITY

By: _____
President (or Designee)

Date: 1-21-03

APPROVED AS TO FORM AND LEGALITY
General Counsel
Florida Atlantic University
1/13/03

HARBOR BRANCH OCEANOGRAPHIC INSTITUTION, INC.
and HARBOR BRANCH INSTITUTION, INC.

By: Richard J. Herman
Richard J. Herman, President and CEO

Date: JAN. 2, 2003

FAU/HBOI MARINE SCIENCE PARTNERSHIP

APPENDIX - B

SITE ANALYSIS REPORT

FAU/HBOI Marine Science Partnership

BR -603

Site Analysis Report

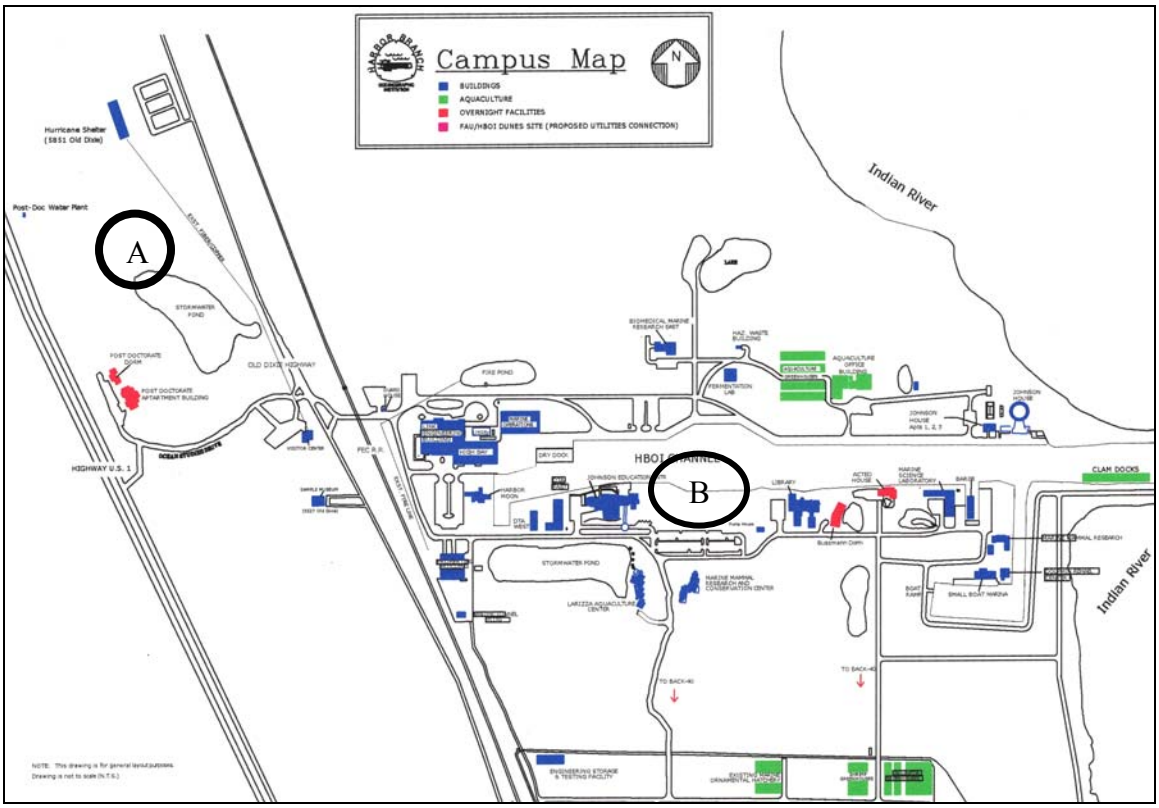
April 4, 2003

FAU/HBOI Marine Science Partnership Building
Site Analysis Overview

The following report is a summary of the site analysis for the FAU/HBOI Marine Science partnership building. Of the three sites initially proposed, the grove area located east of Old Dixie Highway and North of the HBOI main campus was deemed to be extremely remote and expensive for extension of necessary utilities infrastructure. The two sites that were considered for this project are the Dunes Site (located west of Old Dixie Highway) and the Main Campus Site (adjacent to the existing Johnson Education Center).

This report has reviewed the site conditions and analyzes the extraordinary cost associated with development at either location. The utilities impact analysis for each location has been generated in conjunction with the Harbor Branch facilities planning department, however further analysis of the utilities and soil conditions will have to be performed by the Architect/Engineer team. Also, as part of this study geotechnical testing was performed at both locations to determine the soil conditions and the potential need for deep foundation.

Based on this report, the total cost for developing on either site is approximately the same thereby netting the same building square footage for either location. The site comparison section of this report provides a budget summary overview as well as a list of potential pros and cons for each site.



A – Dunes Site
B – Main Campus Site

DUNES SITE

- Utilities Impact Analysis
- Proposed Utilities Lines – drawing
- Project Budget

North View – Hurricane Shelter

South West View – Existing Stormwater Pond

South View – Approach towards Stormwater Pond

X. UTILITIES IMPACT ANALYSIS — Harbor Branch – DUNES SITE

A. UTILITIES IMPACT ANALYSIS

1. CHILLED WATER: (SUS CM-N-04.00-09/97 A)
The approximate tonnage required for a 48,736 GSF laboratory space is 250 tons. Being consistent with what is being used and maintained at Harbor Branch existing buildings, an air-cooled chiller should be used. The air-cooled chiller shall be located so as not to be exposed to any irrigation systems. In addition, a field-applied coating will be required for the coils. The irrigation systems at Harbor Branch are high in sulfur dioxide, which coats the condensing coils of the chillers. This coating combined with Florida humidity turns to sulfuric acid, thus eating away the coils. There are two separate circuits in the chiller that will provide some redundancy. For further redundancy, critical areas of the building need to be identified and provided with an air-handling unit, which has both a chilled water coil and a DX coil as a backup if the chiller were to fail.

2. HEATING: (SUS CM-N-04.00-09/97 B)
Heating shall be accomplished through a high efficiency hot water, propane gas fired to provide hot water to coils in both air handling units and ducts through the building.

3. ELECTRICAL: (SUS CM-N-04.00-09/97 C)
The estimated load for this bldg. Is approx 500 KVA power will be provided by the fort pierce utilities authority approx. 1500 ft. from the site.

4. POTABLE WATER: (SUS CM-N-04.00-09/97 D)
The existing Post Doc Water Treatment Plant will supply potable water. The Post Doc Water Plant is using only 20% of its capacity. This added load of 100 people, or 1,000 GPD, is within the existing Pant's capacity. The Post Doc Water Plant is 1,000 linear feet from the Dunes site. A 4" copper pipe will supply potable water to the Building. The Fire Protection water supply will be from the existing Fire Water Pond. The pond will be expanded for this added load. This system will comply with all requirements of the Fire Marshal with jurisdiction. A new pump station will pump water through 6" ductile iron pipe 2,500 linear feet, under Dixie Highway, and under the Railroad tracks to the Building. Fire hydrants will be located to comply with the Fire Department's needs.

5. SANITARY: (SUS CM-N-04.00-09/97 D)
The existing Post Doc Waste Water Treatment Plant will treat the waste water from this Building. The Plant is 750 linear feet from the Dunes site. A 6" PVC sanitary pipe will connect this Building to the existing Plant. The existing Plant is working at only 20% capacity. This added 1,000GPD load is within the existing Plant's capacity. The Operating Permit for the Plant will be revised for this added load.

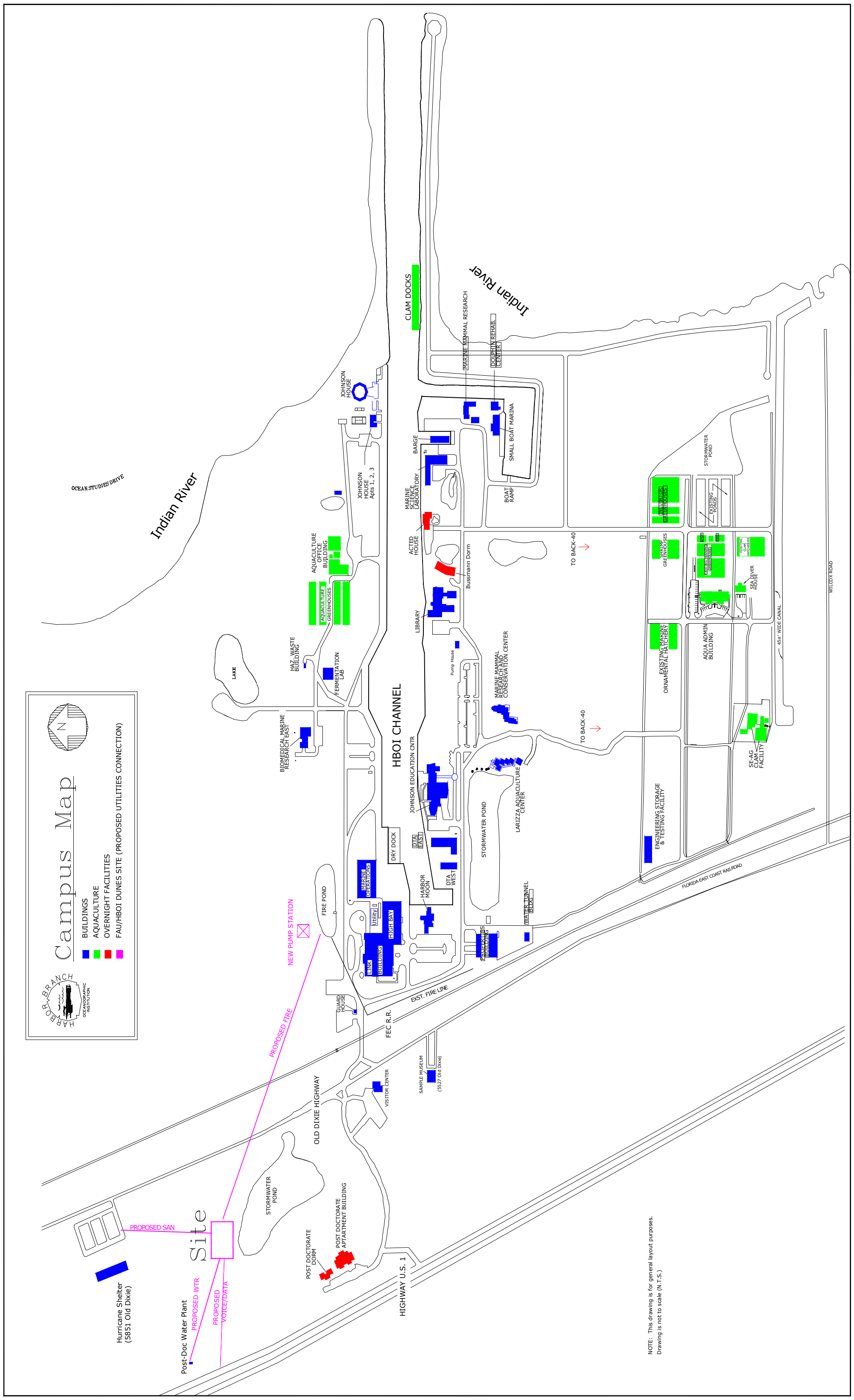
6. IRRIGATION: (SUS CM-N-04.00-09/97 E)
Irrigation water will be supplied from a new well and pump station. The new system will comply with all DEP requirements.

7. STORM WATER MANAGEMENT:
Catch basins around the site will drain Storm Water into the existing Storm Water Pond. This new system will comply with all DEP requirements.

8. TELECOMMUNICATIONS:
This facility will require twelve strands of fiber and 100 pairs of copper. Two 4" conduits will extend from the building west to US1 (approximately 600 lf) to connect to Bell South. Connection for fiber will extend 2 (4") conduits to the Visitors Center located west of Old Dixie Highway to the South East of the proposed site.

9. SITE LIGHTING:
Site lighting will be per the harbor branch standards.

10. SURFACE IMPROVEMENT
Extend a two lane road from Old Dixie Highway to the building site and propose parking. The facility will require 70 paved parking spaces adjacent to the building


Campus Map
BUILDINGS
AQUACULTURE
OVERNIGHT FACILITIES
FAU/HBOI DUNES SITE (PROPOSED UTILITIES CONNECTION)
Indian River
Indian River
CLAM DOCKS
HBOI CHANNEL
OLD DIXIE HIGHWAY
HIGHWAY U.S. 1
FEC R.R.
NEW PUMP STATION
PROPOSED FIRE
PROPOSED SAN
Site
Hurricane Shelter (5851 Old Dixie)
Post-Doc Water Plant
NOTE: This drawing is for general layout purposes.
Drawing is not to scale (N.T.S.)

Project Budget Summary

Project: FAU/HBOI Marine Science Partnership Building - DUNES SITE 4/2/2003

SPACE SUMMATION (from **Section IX** of Facilities Program)

Program Space Type (New Construction)	NASF	Factor	GSF	$ / GSF	$
Research Laboratories	19,700	1.6	31,520	180.00	$5,673,600.00
Offices	7,420	1.5	11,130	127.62	$1,420,410.60
Avg. Construction Cost				**166.33**	
Total Construction Cost	27,120	1.57	42,650		**$7,094,000.00**

1	**CONSTRUCTION COSTS** (Reference: SUS CM-D-38.00-09/97, Attachment 1-B) Modify, add, or delete as required.					
a.	**Building Construction Cost**		**Units**		**Unit Cost**	**$**
	New Construction Cost	42,650	GSF		$166.33	$7,094,000.00
	Sub-Total Construction Costs				Round to 100	**$7,094,000.00**
b.	**Additional/Extraordinary Construction Cost**		**Units**		**Unit Cost**	**$**
	Roadway Improvements	1	Allowance		$100,000.00	$100,000.00
	Parking Improvements	70	Spaces		$2,500.00	$175,000.00
	Landscaping and Irrigation	1	Allowance		$75,000.00	$75,000.00
	Telecommunications / Information System	1	Allowance		$191,750.00	$191,800.00
	Utilities Infrastructure Cost (less Chilled Water Fee)					
	Electrical Services	1	Allowance		$70,000.00	$70,000.00
	Water Distribution System	1	Allowance		$380,000.00	$380,000.00
	Sanitary Sewer System	1	Allowance		$83,000.00	$83,000.00
	Storm Water System	1	Allowance		$32,000.00	$32,000.00
	Chilled Water System	1	Allowance		$150,000.00	$150,000.00
	Sub-Total Add/Extra Construction Costs				Round to 100	**$1,256,800.00**
	TOTAL CONSTRUCTION COSTS				Round to 100	**$8,350,800.00**
2	**OTHER PROJECT COSTS** Add or delete following items as required.					
a.	**Land/Existing Facility Acquisition**	Purchase or Budget		$0.00	Round to 100	**$0.00**
b.	**Professional Fees**					
	A/E Fees (Curve A: + Above Average)	6.04	%		$504,673.72	$504,700.00
	C/M Pre-Construction Services Fee	1.00	%		$83,508.00	$83,500.00
	Sub-Total Professional Fees				Round to 100	**$588,200.00**
c.	**State Fire Marshal Review and Inspection**	0.25	%		Round to 100	**$20,900.00**
d.	**Inspection Services**					
	Roofing Inspection	1	Allowance	7 Weeks	$1,800.00	$11,700.00
	Resident Inspection	1	Allowance	52 Weeks	$1,800.00	$93,600.00
	Code Compliance Inspection (weekly)	1	Allowance		$40,000.00	$40,000.00
	Plan Review (Code Compliance Inspection)	1	Allowance		$10,000.00	$10,000.00
	Sub-Total Inspection Services				Round to 100	**$155,300.00**
e.	**Risk Management / Insurance Consultant**	0.06	%		Round to 100	**$5,300.00**
f.	**Surveys & Tests**					
	Topographical/Site Survey	1	Allowance		$7,000.00	$7,000.00
	Geotechnical Testing	1	Allowance		$18,000.00	$18,000.00
	Sub-Total Surveys & Tests				Round to 100	**$25,000.00**
g.	**Permit/Impact/Environmental Fees**					
	Gopher Tortoise Relocation	1	Allowance		$30,000.00	$30,000.00
	Environmental (SFWM)	1	Allowance		$2,000.00	$2,000.00
	Sub-Total Permits/Impact Fees				Round to 100	**$32,000.00**
h.	**Art in State Building** (Section 255.043, F.S.)	0.5	%		Round to 100	**$35,500.00**
I.	**Movable Furniture & Equipment**					
	Furniture	7	%			$575,000.00
	Equipment	7	%			$575,000.00
	Telecommunication Equipment (voice/data/equipment)					$256,320.00
	Sub-Total Furniture & Equipment				Round to 100	**$1,406,320.00**
j.	**Project Contingency**	4.8	%		Round to 100	**$400,800.00**
	TOTAL OTHER PROJECT COSTS				Round to 100	**$2,669,320.00**
	TOTAL PROJECT BUDGET COST ESTIMATE					**$11,020,120.00**

MAIN CAMPUS SITE

- Utilities Impact Analysis
- Proposed Utilities Lines – drawing
- Project Budget

SITE: HBOI MAIN CAMPUS – ADJACENT TO JOHNSON EDUCATION CENTER

X. UTILITIES IMPACT ANALYSIS Harbor Branch – MAIN CAMPUS

A. UTILITIES IMPACT ANALYSIS

1. CHILLED WATER: (SUS CM-N-04.00-09/97 A)
The approximate tonnage required for a 48,736 GSF laboratory space is 250 tons. Being consistent with what is being used and maintained at Harbor Branch existing buildings, an air-cooled chiller should be used. The air-cooled chiller shall be located so as not to be exposed to any irrigation systems. In addition, a field-applied coating will be required for the coils. The irrigation systems at Harbor Branch are high in sulfur dioxide, which coats the condensing coils of the chillers. This coating combined with Florida humidity turns to sulfuric acid, thus eating away the coils. There are two separate circuits in the chiller that will provide some redundancy. For further redundancy, critical areas of the building need to be identified and provided with an air-handling unit, which has both a chilled water coil and a DX coil as a backup if the chiller were to fail.

2. HEATING: (SUS CM-N-04.00-09/97 B)
Heating shall be accomplished through a high efficiency hot water, propane gas fired to provide hot water to coils in both air handling units and ducts through the building.

3. ELECTRICAL: (SUS CM-N-04.00-09/97 C)
The estimated load for this bldg. is 500 KVA, power will be connected to a service provided by fort pierce utilities authority approx. 600 ft. from the site, the installation of a underground duct bank will be required.

4. POTABLE WATER: (SUS CM-N-04.00-09/97 D)
The Post Doc Water Plant will supply water to this Building. The Post Doc Plant is working at only 20% capacity, and has spare capacity for this Building load. This Bldg load of 100 people is 1,000 GPD. The Post Doc Water Plant is 4,000 linear feet from the Central Campus site. A 4" copper pipe will supply potable water to the Building through a booster pump station. The piping will be jacked and bored under the Railroad property and Old Dixie Highway. The Fire Protection water supply will be from the existing Fire Water Pond. The pond will be expanded for this added load. This system will comply with all requirements of the Fire Marshal with jurisdiction. Fire Protection water will be supplied through 6" ductile iron pipe, 600 linear feet to the Building. Fire hydrants will be located to comply with the Fire Department's needs.

5. SANITARY: (SUS CM-N-04.00-09/97 D)
The existing Post Doc Waste Water Treatment Plant will treat the wastewater from this Building. The Plant is 4,000 linear feet from the existing Water Treatment Plant. A 6" PVC sanitary pipe will connect this Building to the existing lift station. The existing lift station will need new, larger pumps for this added load. The existing lift station is piped under the canal, north to the existing Water Treatment Plant. A new flow diversion pump station will divert flow from the existing Water Treatment Plant, to the existing Post Doc Water Treatment Plant. The piping will be Jacked and Bored under the Railroad property and the Old Dixie Highway right of way. The existing Post Doc Treatment Plant is working at only 20% capacity. This added 1,000 GPD load is within the existing Plant's capacity. The Operating Permit for the Plant will be revised for this added load.

6. IRRIGATION: (SUS CM-N-04.00-09/97 E)
Irrigation water will be supplied from a new well and pump station. The new system will comply with all DEP permit requirements.

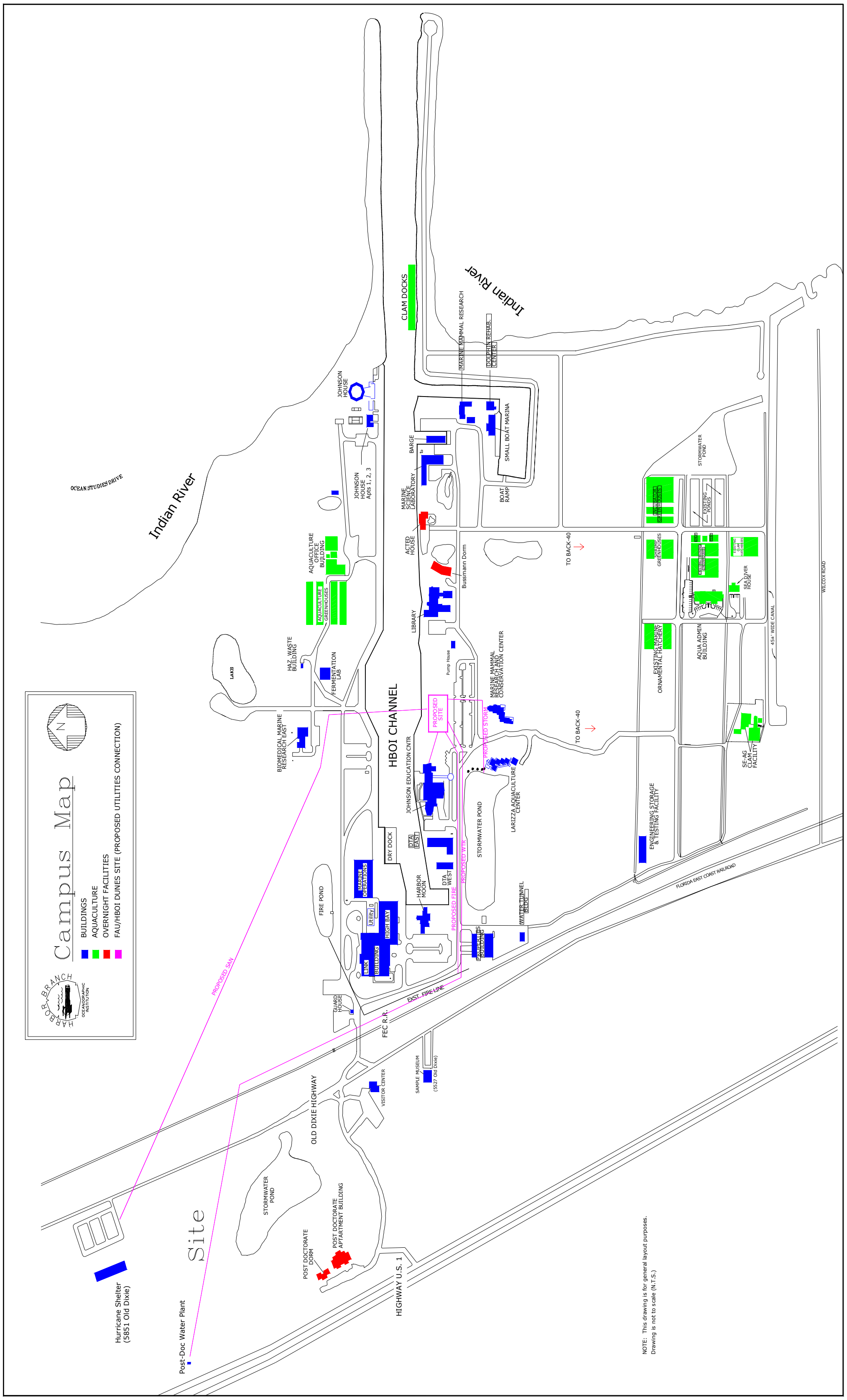
7. STORM WATER MANAGEMENT:
Catch basins around the site will drain Storm Water into the existing Storm Water Pond. This new system will comply with all DEP permit requirements.

8. NATURAL GAS:
There is no Gas available on site.

9. TELECOMMUNICATIONS:
This facility will require twelve strands of fiber. Connection will be to the HBOI Computer Services building via a conduit system (approximately 750 lf). The facility will be connecting to Bell South for Voice and Data. Bell South connectivity will be at the nearest point of connection at the Johnson Education Center.

10. SITE LIGHTING:
Site lighting will be per harbor branch standards.

11. SURFACE IMPROVEMENTS:
This site will utilize the existing roadway and parking system adjacent to the Johnson Educational Center.


Campus Map
BUILDINGS
AQUACULTURE
OVERNIGHT FACILITIES
FAU/HBOI DUNES SITE (PROPOSED UTILITIES CONNECTION)
HARBOR BRANCH
Indian River
Indian River
HBOI CHANNEL
CLAM DOCKS
OLD DIXIE HIGHWAY
HIGHWAY U.S. 1
FEC R.R.
Site
Hurricane Shelter
(5851 Old Dixie)
Post-Doc Water Plant
STORMWATER POND
LIBRARY
JOHNSON HOUSE
SMALL BOAT MARINA
TO BACK-40
TO BACK-40
ENGINEERING STORAGE & TESTING FACILITY
LARIZZA AQUACULTURE CENTER
JOHNSON EDUCATION CNTR
DRY DOCK
PROPOSED SITE
NOTE: This drawing is for general layout purposes.
Drawing is not to scale (N.T.S.)

Project Budget Summary

Project: FAU/HBOI Marine Science Partnership Building - MAIN CAMPUS 4/2/2003

SPACE SUMMATION (from **Section IX** of Facilities Program)

Program Space Type (New Construction)	NASF	Factor	GSF	$ / GSF	$
Research Laboratories	19,700	1.6	31,520	180.00	$5,673,600.00
Offices	7,420	1.5	11,130	127.62	$1,420,410.60
Avg. Construction Cost				**166.33**	
Total Construction Cost	27,120	1.57	42,650		**$7,094,000.00**

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

a.	**Building Construction Cost**		**Units**		**Unit Cost**	**$**
	New Construction Cost	42,650	GSF		$166.33	$7,094,000.00
	Sub-Total Construction Costs				Round to 100	**$7,094,000.00**
b.	**Additional/Extraordinary Construction Cost**		**Units**		**Unit Cost**	**$**
	Site Preparation/Demolition (fill)	1	Allowance		$15,000.00	$15,000.00
	Auguer Cast Piles	1	Allowance		$120,000.00	$120,000.00
	Landscaping and Irrigation	1	Allowance		$50,000.00	$50,000.00
	Telecommunications / Information System	1	Allowance		$111,750.00	$111,800.00
	Utilities Infrastructure Cost (less Chilled Water Fee)					
	Electrical Services	1	Allowance		$30,000.00	$30,000.00
	Water Distribution System*	1	Allowance		$480,000.00	$480,000.00
	Sanitary Sewer System	1	Allowance		$275,000.00	$275,000.00
	Storm Water System	1	Allowance		$30,000.00	$30,000.00
	Chilled Water System	1	Allowance		$150,000.00	$150,000.00
	Sub-Total Add/Extra Construction Costs				Round to 100	**$1,261,800.00**
	TOTAL CONSTRUCTION COSTS				Round to 100	**$8,355,800.00**

2 OTHER PROJECT COSTS Add or delete following items as required.

a.	**Land/Existing Facility Acquisition**	Purchase or Budget		$0.00	Round to 100	**$0.00**
b.	**Professional Fees**					
	A/E Fees (Curve A: + Above Average)	6.04	%		$504,936.09	$504,900.00
	C/M Pre-Construction Services Fee	1.00	%		$83,558.00	$83,600.00
	Sub-Total Professional Fees				Round to 100	**$588,500.00**
c.	**State Fire Marshal Review and Inspection**	0.25	%		Round to 100	**$20,900.00**
d.	**Inspection Services**					
	Roofing Inspection	1	Allowance	7 Weeks	$1,800.00	$11,700.00
	Resident Inspection	1	Allowance	52 Weeks	$1,800.00	$93,600.00
	Code Compliance Inspection (weekly)	1	Allowance		$40,000.00	$40,000.00
	Plan Review (Code Compliance Inspection)	1	Allowance		$10,000.00	$10,000.00
	Sub-Total Inspection Services				Round to 100	**$155,300.00**
e.	**Risk Management / Insurance Consultant**	0.06	%		Round to 100	**$5,300.00**
f.	**Surveys & Tests**					
	Topographical/Site Survey	1	Allowance		$7,000.00	$7,000.00
	Geotechnical Testing	1	Allowance		$18,000.00	$18,000.00
	Sub-Total Surveys & Tests				Round to 100	**$25,000.00**
g.	**Permit/Impact/Environmental Fees**					
	Environmental (SFWM)	1	Allowance		$2,000.00	$2,000.00
	Sub-Total Permits/Impact Fees				Round to 100	**$2,000.00**
h.	**Art in State Building** (Section 255.043, F.S.)	0.5	%		Round to 100	**$35,500.00**
I.	**Movable Furniture & Equipment**					
	Furniture	7	%			$575,000.00
	Equipment	7	%			$575,000.00
	Telecommunication Equipment (voice/data/video)					$256,320.00
	Sub-Total Furniture & Equipment				Round to 100	**$1,406,320.00**
j.	**Project Contingency**	4.8	%		Round to 100	**$401,100.00**
	TOTAL OTHER PROJECT COSTS				Round to 100	**$2,639,920.00**
	TOTAL PROJECT BUDGET COST ESTIMATE					**$10,995,720.00**

*Reflects more conservative number to allow for unforseen conditions for unknown existing underground utilities.

FAU/HBOI Marine Science Partnership Building - Site Analysis
Cost Comparison

		Dunes Site		Main Campus
Building Construction Cost	$	7,094,000	$	7,094,000
Additional Extraordinary Construction Cost	$	1,256,800	$	1,261,800
Professional Fees	$	588,200	$	588,500
State Fire Marshal Review & Inspection	$	20,900	$	20,900
Inspection Fees	$	155,300	$	155,300
Risk Management Insurance Consultant	$	5,300	$	5,300
Surveys & Tests	$	25,000	$	25,000
Permit/Impact/Environmental Fees	$	32,000	$	2,000
Art in State	$	35,500	$	35,500
Movable Furniture & Equipment	$	1,406,320	$	1,406,320
Project Contingency (4.8%)	$	400,800	$	401,100
Total Project Cost	$	11,020,120	$	10,995,720
Budget	$	11,000,000	$	11,000,000
Difference	$	(20,120)	$	4,280

Additional Extraordinary Cost Items

Site Preparation/Demolition (fill)	$0.00	$15,000.00
Auguer Cast Piles	$0.00	$120,000.00
Roadway Improvements	$100,000.00	$0.00
Parking Improvements	$175,000.00	$0.00
Landscaping and Irrigation	$75,000.00	$50,000.00
Telecommunications / Information System	$191,800.00	$111,800.00
Electrical Services	$70,000.00	$30,000.00
Water Distribution System	$380,000.00	$480,000.00
Sanitary Sewer System	$83,000.00	$275,000.00
Storm Water System	$32,000.00	$30,000.00
Chilled Water System	$150,000.00	$150,000.00
Subtotal	**$1,256,800.00**	**$1,261,800.00**

FAU/HBOI Marine Science Partnership Building – Site Analysis

Pros / Cons - Dunes Site

Pros:
Clear site for construction
Allows for future expansion
Out of category 5 flood plane
Building architectural vocabulary will not have to conform to existing context

Cons:
Access to main campus
Will need to provide safe path for pedestrian/ bicycle / golf cart access extending from the main Harbor Branch Campus (gate) to this facility
Gopher tortoise activity on site – will require permit for relocation
Security is a concern at this site
Jack & bore under railroad for connection to water pond for fire protection system
This site is remote from other campus amenities (i.e. cafeteria, student activates center)

Pros / Cons - Main Campus

Pros:
Proximity to existing programs on campus
Better use of shared space for Classrooms

Cons:
Sensitivity to use of site
Jack & bore under railroad for connection of water and sanitary system
Coastal codes may require augercast pile foundation system

Note: Utility infrastructure costs have been increased for this site based on concerns expressed by Harbor Branch staff as to unforeseen existing underground utilities

Unanswered Questions
Will Harbor Branch share in the cost of infrastructure expansion?

FAU/HBOI MARINE SCIENCE PARTNERSHIP

APPENDIX - C

PRELIMINARY GEOTECHNICAL REPORT

TIERRA
GEOTECHNICAL • MATERIALS ENGINEERING

March 27, 2003

Florida Atlantic University
Campus Operation Building No. 69, Room 101
777 Glades Road
Boca Raton, Florida 33433

Attn: Ms. Azita Dashtaki,

Re: Preliminary Geotechnical Engineering Services Report
Proposed FAU/HBOI Marine Science Building
Fort Pierce, Florida
TIERRA File No. 6611-03-051

Dear Ms. Dashtaki:

TIERRA, INC. is pleased to transmit our Preliminary Geotechnical Engineering Services Report for the referenced project. This report includes the results of field and laboratory testing, preliminary geotechnical recommendations for foundation design, as well as general site development.

EXECUTIVE SUMMARY

A preliminary geotechnical exploration and evaluation of the subsurface conditions have been completed at the two potential sites that are being considered for the proposed FAU/HBOI Marine Science Building in Fort Pierce, Florida. In general, beneath 6 to 12 inches of topsoil, the subsoil comprised of occasionally organic stained fine sand, and fine sand with shell fragments extending to the terminal depth of the borings. Root materials were encountered in boring B-2 at depths from 6 to 10 feet below the existing grade. The groundwater level at the time of drilling ranged between 6 and 6.5 feet below existing grade.

The results of this preliminary exploration indicate that the subsurface conditions at the sites are generally suitable for the use of shallow foundations for support of the proposed structure after normal site preparation or ground improvement (i.e. Vibrofloatation). However, since the site at the Harbor Branch Road is adjacent to a dock, the local building code may require the structure at to be found on a system of deep foundation. In that case, augercast pile foundation may be considered as an alternate for this site. Details related to site development, preliminary foundation design, and construction considerations are included in subsequent sections of this report.

1100 BARNETT DRIVE, SUITE 35 • LAKE WORTH, FLORIDA 33461
(561) 547-1232 • FAX (561) 547-1250

The following preliminary recommendations are provided for planning purposes only. Once specific design details are known, a design-level geotechnical study will be required. The design-level geotechnical study should also address the delineation of the extent of the organic/root material that was encountered in boring B-2. The design-level study will provide specific geotechnical-related recommendations for the specific building planned.

The owner/designer should not rely solely on this Executive Summary and must read and evaluate the entire contents of this report prior to utilizing our preliminary engineering recommendations.

SITE AND SUBSURFACE CONDITIONS

Project Authorization

TIERRA, Inc has completed a preliminary geotechnical exploration at the two potential sites selected for the proposed Marine Science Building to be constructed at Harbor Branch Oceanographic Institute (HBOI) of Florida Atlantic University (FAU) in Fort Pierce, Florida. Ms. Azita Dashtaki, of Florida Atlantic University authorized our services on March 14, 2003. This exploration is being performed in general accordance with TIERRA Proposal No. 0303-055, dated March 10, 2003.

Project Description

Based on the information provided to this office, we understand two potential sites are being considered for the proposed FAU/HBOI Marine Science Building. We also understand that the proposed construction will include a two-story structure with a total footprint of approximately 24,000 square feet. Details of proposed construction were not available during the preparation of this report.

The preliminary geotechnical recommendations presented in this report are based on the available project information, building location, and the subsurface materials described in this report. If any of the noted information is incorrect, please inform TIERRA in writing so that we may amend the recommendations presented in this report if appropriate and if desired by the client. TIERRA will not be responsible for the implementation of its recommendations when it is not notified of changes in the project.

Purpose and Scope of Services

The purpose of this study was to explore the subsurface conditions at the two potential sites to enable a preliminary evaluation of acceptable foundation systems, and provide general site development considerations.

Our scope of services included; the drilling of two (2) Standard Penetration Test (SPT) borings to a depth of 40 feet below the existing grade at each proposed location, performing laboratory tests, plus the preparation of this preliminary geotechnical report.

SITE AND SUBSURFACE CONDITIONS

Site Location and Description

Among the two potential sites considered for the proposed FAU/HBOI Marine Science Building, one site is located east to the existing Seward Johnson Conference Center at the Harbor branch Road. The other site is located at the Old Dixie Highway at the northwest quadrant of the intersection between Old Dixie Highway and Harbor Branch Road. Both sites were thinly vegetated and mostly covered by grass.

Review of SCS Soil Survey information

Review of the "Soil Survey of St. Lucie County Area, Florida", prepared by the United States Department of Agriculture (USDA) Soil Conservation Service (SCS), indicates the site at Harbor Branch Road is mapped as Arents, 0 to 5 percent slopes (4), and the site at Old Dixie Highway is mapped as Pendarvis Sand, 0 to 5 percent slopes (29), and Pits (33).

Arents, 0 to 5 percent slope (4): This soil consists of soil material dug from several areas that have different kinds of soils. It is used to fill such areas as low sloughs, marshes, shallow depressions, and swamps above their natural ground levels. The water table in this Arents soil is between depths of 20 to 50 inches for most of the year.

Pendarvis Sand, 0 to 5 percent slopes (29): This moderately well drained, nearly level and gently sloping soil is on low ridges and knolls in the flatwoods. Slopes are smooth to convex. Typically, the surface layer is very dark gray sand about 6 inches thick. The subsurface layer is light gray sand 42 inches thick. The subsoil extends to a depth of 80 inches or more. It is black weakly cemented loamy sand in the upper 14 inches; dark reddish brown sand in the next 14 inches; and dark yellowish brown loamy sand in the lower part. Pendarvis sand has a perched water table between depths of 24 to 40 inches for about 1 to 4 months during the summer rainy season and between depths of 40 to 60 inches for the rest of the year except during dry periods.

Pits (33): This map unit consists of excavations from which soil and geological material have been used mostly for use in road construction or in building foundations.

Subsurface Conditions

Subsurface conditions at the sites were explored with engineering borings located as shown on the Boring Location Plan, Sheet 1. Each site was explored with two (2) boring drilled to a depth of 40 feet below the existing grade. The soil test boring profiles are presented on Sheet 2.

The SPT borings were drilled using a CME-550 drill rig. Samples of the in-place materials were recovered at frequent intervals using a standard split spoon driven with a 140-pound hammer freely falling 30 inches (the SPT after ASTM D 1586). Samples of the in-place soils were returned to our laboratory for visual classification by a geotechnical engineer, in general accordance with the Unified Soil Classification System (ASTM D 2488).

In general, beneath 6 to 12 inches of topsoil, the subsoil comprised of occasionally organic stained fine sand, and fine sand with shell fragments extending to the terminal depth of the borings. Root materials were encountered in boring B-2 at depths from 6 to 10 feet below the existing grade.

The above subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The soil boring profiles should be reviewed for specific information at individual boring locations. These records include soil descriptions, stratifications, and Standard Penetration resistances. The stratifications shown on the soil profiles represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the actual transition may be gradual. Water level information obtained during field operations is also shown on these soil profiles. Samples collected for classification and laboratory testing will be retained for 60 days from the date of this report and then will be discarded.

Groundwater Information

Groundwater levels were measured in the borings upon completion of the drilling activities. The depths to the free water surface at the time of drilling ranged from 6 to 6.5 feet below existing grade. Reviewing information from the USDA, SCS and soil discoloration/oxidation, we expect the high seasonal groundwater to be 1 to 2 feet higher than the measured value.

In general, the seasonal high groundwater level is not intended to define a limit or ensure that future seasonal fluctuations in groundwater levels will not exceed the estimated levels. Post-development groundwater levels could exceed the normal seasonal high groundwater level estimate as a result of a series of rainfall events, changed conditions at the site that alter surface water drainage characteristics, or variations in the duration, intensity, or total volume of rainfall. We recommend that the Contractor determine the actual groundwater levels at the time of the construction to determine groundwater impact on his or her construction procedures.

EVALUATION AND PRELIMINARY RECOMMENDATIONS

The preliminary geotechnical study completed at the two potential sites for the proposed Marine Science Building confirms that the sites are suitable for the planned construction when viewed from a soil mechanics and foundation engineering perspective. Subsurface conditions at both sites are not expected to impose any major geotechnical constraints or limitations on the proposed development.

At the Old Dixie Highway site, the structure may be supported on conventional spread foundations after normal site preparation or ground improvement (i.e. vibroflotation). The site at the Harbor Branch Road is also suitable to support the structure on shallow foundation after normal site preparation or ground improvement (i.e. vibroflotation). However, since the site is adjacent to the dock, the local building code may require the structure to be found on deep foundation. Preliminary recommendations for both shallow and deep foundations are provided in the following sections of this report.

The floor slab can be grade supported. Densification of the surficial soils of the site will be needed to increase the shear strength and reduce foundation and slab settlements to tolerable values.

The following preliminary recommendations are provided for planning purposes only. Once specific design details are known, a design-level geotechnical study will be required. The design-level study will provide specific geotechnical-related recommendations for the specific building planned.

Site Preparation

To prepare for construction, we recommend that topsoil, vegetation and existing utilities within the proposed construction be stripped, removed or rerouted. The structural footprint of the proposed building should be compacted/densified with a self-propelled roller (Dynapac CA-15 or equivalent) until the subsoils achieve 95 percent of maximum dry density (ASTM D 1557) to a depth of at least 12 inches below the stripped grade. The soil densification should encompass the entire footprint of the structure, and plus a 10-foot wide perimeter that extends beyond the maximum the maximum lines of the superstructures.

Near existing buildings (within 50 feet), proofrolling should consist of compaction with a large diameter smooth drum roller operating in static mode. The drum roller should have a static drum weight on the order of eight (8) to ten (10) tons and should be capable of exerting a minimum impact force of 36,000 pounds (DYNAPAC CA-25 or equivalent is expected to provide acceptable results). Ground vibrations induced by the compaction operations should be closely monitored to assess if there is a potential impact to the existing buildings.

Rolled subgrade should be visually observed for signs of pumping, weaving or other types of instability. Signs of such instability could be due to the existence of weak and/or compressible subsoils. Corrective action for this condition should include excavation of weak subsoils followed by replacement with clean granular fill compacted to 98 percent of the ASTM D 1557 maximum dry density.

Structural fill used to raise the site to structure bottom levels should consist of clean sand and/or sand and gravel (ASTM D 2487), with a maximum of 12 percent passing the U.S. Standard No. 200 sieve. The structural fill should be placed in thin lifts (12-inch thick loose measure), near the optimum moisture content for compaction, and be compacted to at least 95 percent of maximum dry density (ASTM D 1557).

Following site preparation as discussed above, the foundation areas should be excavated and the footings formed and poured in-the-dry. Soils loosened by excavation should be re-compacted to meet the compaction requirement prescribed above for the fill. Loose or organic soils (if any) found at foundation bottoms should be removed and replaced with structural fill, constructed as discussed above.

If structural fill is required to achieve design grade, each lift of compacted structural fill should be carefully placed and tested by a representative of the geotechnical engineer prior to placement of subsequent lifts. The edges of compacted fill should extend 5 feet beyond the edges of buildings prior to sloping.

Shallow Foundation Recommendations

Based on the preliminary data currently available, the planned construction can be supported on conventional spread footings bearing on the natural medium dense sandy soils or on properly compacted structural fill provided that the site is developed in accordance with the requirements in this report. For cost estimating purposes, the footings should be preliminarily designed and proportioned for a maximum bearing pressure of 3,000 pounds per square foot (psf). Higher bearing capacity of 6,000 to 8,000 pounds per square foot (psf) can be achieved by means of ground improvement (i.e. Vibroflotation). Footings should bottom at least 24 inches below final grade. Footings supporting individual columns should have a minimum width of 36 inches and continuous footings a minimum width of 24 inches, even if the geometry produces a bearing pressure less than the allowable.

Augercast Pile Foundation Recommendations

If deep foundation system is required for the site at the Harbor Branch Road, augercast (pressure-grouted) pile is a technically feasible foundation system for the planned construction. The capacity of this pile is essentially developed in side shear (skin friction) between the periphery of the grouted pile and the subsoil through which the pile penetrates plus end bearing. Our preliminary analysis consisted of determining a pile capacity for a specific pile size and length. The estimated allowable capacity in compression for a 40 feet long 14-inch diameter augercast pile is 60 tons.

The pile capacity recommended previously is controlled by stresses developed in the subsurface materials only. Allowable stresses for the selected pile section may impose more stringent restrictions on pile capacity and should be checked by the structural engineer. We anticipate that the soils surrounding the pile cap will consist of loose to medium dense sands. These soils will have a typical active and passive earth pressure coefficient values of 0.33 and 3.0, respectively, and moist and buoyant unit weights of 120 and 60 pcf, respectively.

Floor Slab Recommendations

The building pad areas should be leveled and filled to subfloor soils elevation before placing concrete. Our experience indicates that floor slabs constructed without a vapor barrier will often experience future problems associated with moisture and mildew. Therefore, we recommend interior floor slab subgrade soils be covered with a vapor barrier (such as visqueen, normally 6 mil thick) before constructing the slab-on-grade floor.

Slab-on-grade construction may be used for the ground floor slabs of the structures. The slabs should be adequately reinforced to carry the loads that are to be applied. The floor slab design, if based on elastic methods, should employ a modulus of subgrade reaction of 200 pounds per cubic inch (pci). To help avoid potential problems with cracking because of differential loadings/settlements, the floor slabs should be liberally jointed and separated from columns and walls.

CLOSURE

We appreciate the opportunity to perform this Preliminary Geotechnical Study and look forward to continued participation during the Final Geotechnical phase of this project. If you have any questions pertaining to this report, or if we may be of further service, please contact our office.

Respectfully submitted,

TIERRA, INC.

Raj Krishnasamy, P.E.
Principal Geotechnical Engineer/Vice President
FL. Registration No. 53567

RK: wes
6611-03-051.FAU-HBOI.doc

Attachments:

1. Boring Location Plan
2. Soil Profile

SITE AT OLD DIXIE HIGHWAY
B-3
B-4
NOTES:
1-BORING LOCATION SHOULD BE CONSIDERED APPROXIMATE.
2-THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY.
SITE AT HARBOR BRANCH ROAD
B-1
B-2
LEGEND
- SPT BORING LOCATION
REVISIONS
Description
Date
By
Drawn by
Checked by
Designed by
Checked by
Approved by
RAJ SREENIVASAN, P.E.
ENGINEER OF RECORD:
TERRA, INC.
TECHNICAL INDUSTRIAL DRIVE, N.
SUITE 120
RIVIERA BEACH, FLORIDA 33404
LOGO:
TERRA
SEAL:
ROAD NO.
-
COUNTY
ST. LUCIE
PROJECT NO.
6611-03-051
SHEET TITLE
BORING LOCATION PLAN
PROJECT NAME
FAU/HBOI MARINE SCIENCE BUILDING
ST. LUCIE COUNTY, FLORIDA
SHEET No.
1

BORING No.:
B-1
B-2
B-3
B-4
TOPSOIL 12"
TOPSOIL 6"
ROOT MATERIAL ENCOUNTERED
DEPTH IN FEET
0
10
20
30
40
SCALE: 1" = 10'V
L E G E N D
① – BROWN TO TAN FINE SAND (SP)
② – BROWN FINE SAND WITH SHELL FRAGMENTS (SP)
③ – BROWN TO DARK BROWN FINE SAND ORGANIC STAINED (SP)
④ – BROWN FINE SAND WITH GRAVEL AND SHELL FRAGMENTS (SP)
(SP) Unified Soil Classification System Group Symbol (ASTM D 2488)
N Number of blows of a 140 lb. hammer freely falling a distance of 30 inches, required to drive a 2-inch diameter sampler a distance of 12 inches. (ASTM D 1586)
Groundwater Depth in feet, with date of reading.
Borings were drilled on 03/20/03 using a Central Mine Equipment CME-550 drilling rig.
TIERRA
SOIL PROFILES
FAU/HBOI MARINE SCIENCE BUILDING
ST. LUCIE COUNTY, FLORIDA
ST. LUCIE
6611-03-051