



**FLORIDA POLYTECHNIC**  
UNIVERSITY

**PROFESSIONAL SERVICES GUIDE**  
**FOR**  
**ARCHITECTS AND ENGINEERS**

**Revised – August 9, 2017**  
**Facilities & Safety Services**

# PROFESSIONAL SERVICES GUIDE

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## PROFESSIONAL SERVICES GUIDE

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- Small, Minority, Local and Women's Business Enterprise Tracking

\*Please request project forms from the Department of Facilities & Safety Services.

Thank you.  
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## ARTICLE 1 INTRODUCTION

- 1.1 The Florida Polytechnic University Board of Trustees, (FPU BOT) **Professional Services Guide's** purpose is to assist the Architect/Engineer in providing services to FPU. The Guide does not modify the scope of work or the contractual obligations of the Agreement between Owner and Architect/Engineer (the Agreement). The Guide does not repeat the requirements of the Agreement, the Project Manual, or the Agreement between the Owner and Contractor/GC rather; it explains how to fulfill the requirements of these documents.
- 1.2 The Guide will enable the Architect/Engineer to better understand the Owner and the authority delegated to those entities and persons with whom the Architect/Engineer will routinely work. The most frequently asked questions concerning the interactions between the Owner and the Architect/Engineer are addressed.
- 1.2.1 This document describes guidelines, standards and expectations when providing services for capital projects for the University. This document is to be used in conjunction with other FPU documents in the provision of services to the University and is subordinate in the order of precedent as follows:
- .1 **Agreement and Amendments to the Agreement**
  - .2 **FPU Professional Services Guide (PSG)**
  - .3 **FPU Campus Design & Construction Standards (DCS)**
  - .4 **FPU Construction Projects Guide (CPG) for CM and DCST Agreements**
  - .5 **FPU General Terms & Conditions**
  - .6 **FPU Administration Manual Building Code & Safety**
- If a potential difference is observed between the documents, the direction provided within the order of precedent above shall take precedence and it should be brought to the attention of the University Project Manager.
- 1.3 On smaller projects, particularly those designed by a Campus Service Architect/ Engineer, some of the procedures (e.g. phases required, etc.) may differ. The University will advise the Architect/Engineer of the differences.

## ARTICLE 2 UNDERSTANDING THE OWNER

- 2.1 **The Owner**
- 2.1.1 The Owner is "The Florida Polytechnic University Board of Trustees" (FPU BOT), a Public Body Corporate.
- 2.1.2 The University President is granted authority to execute design and construction contracts and is granted authority by administrative rule to administer the construction program.
- 2.1.3 Funds for construction are appropriated, or authorized, by the Florida Legislature. The construction responsibility of the University president is administered by the department of Facilities & Safety Services.
- 2.1.4 Approve the building program and any amendments. The building program is the planning document from which the legislative budget request is generated and from which the Architect/Engineer will develop plans and specifications. A deviation from the approved building program requires a program amendment which has been approved by the department.

## **2.2 The University President's Authority** (may be the President or designee)

- 2.2.1 Prepare and approve the building program and any subsequent changes to the approved building program.
- 2.2.2 Review and approve design documents at each phase of development.
- 2.2.3 Approve each request for Additional Services to be provided by the Architect/ Engineer.
- 2.2.4 Review and approve invoices for professional services and contractors' pay requests.
- 2.2.5 Approve change orders and construction change directives during the construction phase.
- 2.2.6 It is recommended that the Architect/Engineer review the Construction Projects Guide to assist with the responsibilities of each party; as the CM and Design Professionals intersect from preconstruction through final close-out.

## **2.3 Professional Services Evaluations**

- 2.3.1 The Architect/Engineer will be evaluated by the University while under contract; annually for major projects, at the completion of the project for minor projects, and at additional times if determined by the University to be beneficial in the development of a project. See sample Design Professional Evaluation form.
- 2.3.2 Multiple reviews may take place for major projects. The evaluations will be kept on file.

## **ARTICLE 3 TECHNICAL APPLICATIONS**

### **3.1 Communications, Meetings and Minutes**

- 3.1.1 The Agreement is between the Architect/Engineer and the FPU BOT; however, the University department of Campus Development and Facilities, when so designated by the University President, shall serve as the Owner's Project Manager (hereinafter referred to as the University Project Manager) and the channel for all official communications with the Architect/Engineer in administering a project. The FPU Facilities & Safety Services department will act within the limits of its delegated authority.
- 3.1.2 Prior to or immediately following the issuance of the Notice to Proceed, the University Project Manager will provide a list of those persons who shall be routinely copied on all written communications (Owner's Distribution List) to the Architect/Engineer. All written communications must include the University project number.
- 3.1.3 The Architect/Engineer, in consultation with the University Project Manager, shall schedule all necessary conferences and meetings with persons involved in the project to obtain project information and to maintain project progress.
- 3.1.4 The Architect/Engineer shall record the minutes of all scheduled meetings, presentations, developments, and conferences, and furnish copies of these minutes within seven (7) calendar days to all attendees and to the persons identified on the Owner's Distribution List. The Architect/Engineer shall list the names of those persons receiving the distribution of the minutes as an attachment to the minutes. The minutes shall be concluded with the following statement: "It is the responsibility of all meeting attendees to bring all omissions, corrections, and/or errors in these minutes to the attention of the undersigned and the University within seven (7) calendar days."
- 3.1.5 All conferences, telephone conversations, consultations and meetings which resolve or establish a question of scope, a design element or other consideration of project development, shall be confirmed in writing by the Architect/Engineer with copies to all parties to the communication and to the Owner's Distribution List.

**3.1.6** The Architect/Engineer shall provide written response to all Owner's written document review comments within ten (10) calendar days.

**3.1.7** All email transmissions must include the Owner, Design Team and CM Team. All emails subject line must start with FPU Project Name and then the subject of the email. All hard copies of documents or samples must include a transmittal letter for acceptance.

## **3.2 Project Schedule**

**3.2.1** The schedule of services is part of the contract negotiation and is included in the Agreement. The Notice to Proceed is effective upon receipt of the Notice to Proceed or on such other date as may be specifically referenced in the Notice to Proceed. Within ten (10) calendar days after the effective date of the Notice to Proceed, the Architect/Engineer shall deliver to the University Project Manager a project schedule identifying the specific dates for all phases applicable to the project. The project schedule will firmly establish the date sequence for planning, design, bid, construction, and occupancy of the facility to be constructed. The project schedule shall define the project's critical path and indicate all milestones necessary for the completion of each phase, and identify intervals for the Owner's review and approval. The project schedule shall also identify the licenses, permits and approvals anticipated to be required by governmental and regulatory agencies, and the date/time sequence involved in each application, including all Owner filed applications and pre-clearances for contractor-filed applications.

**3.2.2** The Architect/Engineer shall maintain the project schedule throughout the life of the project, revising it at the completion of every phase as necessary to maintain the approved time parameters, and to inform the University Project Manager of changes in the actual or anticipated progress of the project.

## **3.3 Status Reports**

**3.3.1** The Architect/Engineer is required to keep the Owner informed concerning the progress of the project. The Architect/Engineer shall submit to the University Project Manager by the fifth day of each month, a report describing in detail the progress that has been made as of the end of the prior month. This report shall commence at the end of the month following the Notice to Proceed and continue through Final Completion. The report shall discuss progress made and any critical items needing attention or any areas that might cause future delay. Bi-weekly field reports are required.

## **3.4 Site Information**

**3.4.1** The Architect/Engineer shall visit and inspect the site and location of the work, including the general surrounding area, as often as required (minimum bi-weekly) to be fully acquainted with all pertinent local conditions affecting the development of the project.

**3.4.2** The University Project Manager will provide information relative to the site. The Architect/Engineer may request the University Project Manager to provide additional information, if deemed necessary, and the University Project Manager shall furnish the additional information or shall direct the Architect/Engineer to obtain it at the Owner's expense. The Architect/Engineer shall evaluate and verify all information provided by the University Project Manager.

**3.4.3** When a project includes extensive renovations, restoration or remodeling of an existing

building, the University Project Manager shall provide the Architect/Engineer with record drawings of the facility. The Architect/Engineer shall verify the accuracy of the record drawings, as necessary, to develop accurate construction documents. If, however, extensive verification is required due to inaccuracy of the record drawings, or if the Architect/Engineer is required to develop measured drawings, an Additional Service Authorization will be issued as provided by Paragraph 7.1 (Additional Service Authorizations) herein. If authorized, the Architect/Engineer shall investigate existing conditions, both in the open and those that are hidden, in addition to preparing the required measured drawings. The Architect/Engineer shall take all necessary action to expose the existing construction in order to determine its exact condition, including removing all coverings, plant growth, etc. When the exposure of existing surface or subsurface construction is considered necessary, the Architect/Engineer shall arrange with the University Project Manager for the work to be done.

- 3.4.3.1** The University Project Manager will provide the Architect/Engineer with existing information regarding asbestos and lead-based paint surveys and Operations and Maintenance Plan activities.
- 3.4.3.2** The Architect/Engineer will be required to certify that no asbestos containing materials nor lead paint were specified in the Project Manual.
- 3.4.4** When the investigation of a site is provided under the Agreement, the Architect/Engineer shall obtain all plan reviews and approvals for the licenses and permits that are a necessary precedent to construction or bidding for that work. The Architect/Engineer shall comply with all applicable laws, codes, and regulations in connection with the work and provide for proper safety precautions to protect the public and public property.

### **3.5 Surveys**

- 3.5.1** The Architect/Engineer shall consult with the University Project Manager to determine if a survey of the site is available. If one is not available, the Architect/Engineer shall determine the scope of surveying needs and if needed, solicit required services.
- 3.5.2** When so requested by the University Project Manager to obtain a survey, the Architect/Engineer shall select a qualified surveyor and provide a proposal to the University Project Manager. The University will issue within the Agreement an Additional Service Authorization. Payment for the cost of the survey will be made in accordance with Paragraph 7.3 (Invoicing) herein.

**3.5.3** The survey shall contain the following:

#### **3.5.3.1 Land (Boundary) Survey**

- .1** All headings and distances of property lines of all parcels which comprise the site.
- .2** The dimensions, locations and ownership of buildings, structures, easements, rights-of-way, setbacks, encroachments on the site including block or street numbers, and the presence of any developed mineral rights to which the site is subject.
- .3** Details of all party walls, walls, fences and foundations on the site and adjacent to, or within five feet of, the property lines.
- .4** Where no monument exists, suitable permanent monuments shall be set at property corners and at other appropriate locations. Consult with University Civil Engineer in establishing permanent benchmark references.
- .5** Measurement of area of site in “acres” (to .001 acre) and in “square feet” if less than one acre.
- .6** Zoning of property and adjacent properties.
- .7** Certification on the survey drawings by the city engineer or other qualified official that the officially established or anticipated widening or changes to street lines, grades or

curbs, sidewalks, services, and sewers are correctly shown.

- .8 The full legal description of the parcel shown and an indication if the parcel is part of a parent tract.
- .9 Certification, seal, and signature of a Land Surveyor registered in the State of Florida.

(NOTE: Any discrepancies between the land (boundary) survey and the recorded legal description shall be reconciled and explained.)

### 3.5.3.2 Topographic Survey

- .1 All of the items listed under Subparagraph 3.5.3.1, Land (Boundary) Survey above.
- .2 The position, dimension, elevation and contours of all cellars, excavations, wells, backfilled areas and similar openings and the elevation of any water therein.
- .3 Existing trees, their identities in English and botanical terms, trunk sizes and approximate foliage areas. Generally, only trees six (6) inches or larger in trunk diameter shall be considered, unless they are previously landscaped trees or specimen trees.
- .4 Existing major shrubs, undergrowth and ground cover areas.
- .5 Detailed information required to establish curb and building lines, street, alley, sidewalk and curb grades and lines at or adjacent to the site and a description of the materials of which they are constructed.
- .6 Floor elevations of all floors of existing buildings to be renovated or to which additions will be made.
- .7 All known utility services, including pipe sizes, pressures and electrical characteristics. The location, invert elevations and direction of flow of all piping, mains, sewers, poles, wires, hydrants, catch basins and manholes upon, over, or under the site, or adjacent to the site within the approved scope of the survey, including but not limited to buried tanks and septic fields serving, or on the property, and including the name of the operating authority of each utility.
- .8 Flood plain, flood levels of streams or adjacent bodies of water and an analysis of the site for potential flooding, including the extent of watershed on the property. A statement of the probability of water overrunning the site and the indication of the one-hundred (100) year flood elevation and contour.
- .9 Location of test borings and soil borings where ascertainable. Provide GPS coordinates of all borings.
- .10 The official data upon which elevations are based and the bench mark established on or adjacent to the site shall be clearly indicated. Only one such data point or bench mark shall be used on any one site for establishing the grades for a project. Consult with University Civil Engineer in establishing permanent benchmark references.
- .11 Contours and elevations on a grid system of not more than fifty feet intervals shall indicate changes of slope over that portion of the site to be developed. The interval for contours shall be tailored to the site under consideration.
- .12 The contemplated date and description of any known or proposed improvements to the approaches or utilities on or adjacent to the site.
- .13 All site plan drawings shall be geo-referenced to the NAD83 State Plane Coordinate System of Florida, West Zone 0902. Vertical measurements shall be based on current datum. Unit of measure shall be in standard U.S. survey foot. This would include, but not be limited to, showing utilities (existing and new), area lights, blue lights, building foot print, sidewalks, roadway/street edges, parking lots, other impervious date, etc.

- 3.5.4 The survey drawings are often included in the Contract Documents. If the survey drawing is complex, it may be included in the Contract Documents as is, followed by a simple site plan showing the buildings and proposed project work.



### **3.6 Geotechnical Services**

- 3.6.1** The Architect/Engineer shall advise the University Project Manager when an investigation and testing of geotechnical conditions are necessary and shall define the scope of work required.
- 3.6.2** Upon approval by the University Project Manager to obtain subsurface investigation and testing services, the Architect/Engineer shall select a qualified firm and forward a proposal to the University Project Manager. The university will issue an Additional Service Authorization. Payment for the cost of geotechnical services is made in accordance with Paragraph 7.3 (Invoicing) herein.
- 3.6.3** If additional subsurface investigation and testing is required when the results of the initial exploration are received, the Architect/Engineer shall submit to the University Project Manager an estimate from the testing firm for additional investigations to be performed. The Architect/Engineer shall not proceed with the additional investigation until the revised Additional Services Authorization is received from the university.
- 3.6.4** The Architect/Engineer shall provide grade, foundation, and structural design solutions based on the geotechnical engineer's analysis and recommendation, and shall submit such analyses and reports to the University Project Manager.

### **3.7 Materials and Equipment**

- 3.7.1** Florida Polytechnic Facilities & Safety Services department has provided Campus Design & Construction Standards to guide materials and equipment selection for construction:  
[https://floridapolytechnic.org/wp-content/uploads/Campus\\_Design\\_102116\\_FULL\\_SM.pdf](https://floridapolytechnic.org/wp-content/uploads/Campus_Design_102116_FULL_SM.pdf)
- 3.7.2** The Architect/Engineer will select materials and equipment which are appropriate for the exposure to which they will be subjected, giving consideration to obtaining an extended useful life with low operating and maintenance cost. Evaluation of operating and maintenance costs shall be a part of any initial materials and equipment decision. Products which have not achieved a minimum five (5) year period of successful use in the construction market in environmental conditions similar to the construction site shall not be used, unless approved in writing by the University Project Manager. Roofing products require a longer proven history; the Architect/Engineer will discuss these requirements with the University Project Manager.
- 3.7.3** The Architect/Engineer shall prepare drawings and specifications so that the Bidder is permitted a choice of competitive materials or methods which are equally satisfactory for the intended purpose and comparable in cost. The Architect/Engineer shall not use exclusive requirements when specifying equipment and materials on drawings and specifications. The drawings and specifications must permit competition consistent with the work involved. When it is necessary to designate equipment and materials by product name, at least two equivalent products shall be named and the opportunity provided for other products to be submitted for approval in order to qualify before the bid date.
- 3.7.4** If a proprietary specification for materials or equipment is required, the Architect/Engineer shall secure approval of the University Project Manager prior to its use in the drawings and specifications. The use of a proprietary specification must be sufficiently justified and the request and approval must be in writing, as required by Section 255.04 (Preference to Home Industries), Florida Statutes.

### **3.8 Federal or Local Government Participation**

**3.8.1** Whenever a project involves funding participation by federal or local governmental agencies, the Architect/Engineer shall ascertain the requirements of such participation and comply fully with these requirements in the Contract Documents. The Architect/Engineer may be assisted in this task by the University Project Manager. Where grants constitute any part of the project funding, the Architect/Engineer shall ascertain which conditions of the grant funds must be addressed in the Contract Documents.

### **3.9 Available Consulting Services**

Many state agencies have qualified specialists available for consultation and/or coordination, and they should be contacted when the items within their jurisdiction are pertinent to the development of the project. The Architect/Engineer shall review the project with the University Project Manager to determine which agencies should be consulted.

### **3.10 Utility Information and Service Requirements**

The Architect/Engineer shall assure that all utilities and services required for the successful functioning of the facility have been provided to the site and will be in full service upon completion of the facility. Some of the University storm water systems have been designed as pressure gradient systems capable of creating back pressures on lateral tie-ins. The nature of the system shall be identified by the Architect/Engineer and the tie-in from the building must be compatible with it.

### **3.11 Wage Rates**

State wage rates are not required. Wage rates are only applicable to federally funded projects. The Architect/Engineer shall obtain rates for federally funded projects from the regional office of the granting agency.

### **3.12 Code Compliance and Permits**

**3.12.1** The Architect/Engineer shall ensure that the design and Contract Documents comply with all applicable codes, regulations, and orders. The Architect/Engineer shall submit a list of codes to which the project is subject to the University with the Conceptual Schematic Design submittal. All reference to codes herein shall mean the latest editions adopted through legislation for use in state owned/leased buildings.

**3.12.2** The Architect/Engineer shall use the following codes and the Building Code Official for permits:

- .1 The Florida Building Code and Life Safety Code as administered by the Building Code Official.
- .2 Fire and Life Safety: Fire Protection Rules and Regulations of the State Fire Marshal, as provided in the Chapter 69A (Division of State Fire Marshal), Florida Administrative Code and Chapter 633 (Fire Prevention & Control), Florida Statutes.
- .3 Electrical and Plumbing Codes:
  - i. Sections 553.70--898 (Florida Building Code), Florida Statute.
  - ii. National Electrical Code, NFPA 70.
  - iii. In those locations where electrical and plumbing utilities are provided by a local governmental agency, the local plumbing and electrical requirements.
- .4 Other Requirements:
  - i. Rules of the Department of Business and Professional Regulation, Division of Hotels and Restaurants, Bureau of Elevator Safety.
  - ii. Rules of the Agency for Health Care Administration.

- iii. Accessibility
  - a. Florida Building Code Accessibility Guide (most current edition).
  - b. HUD Fair Housing Act for Multi-Family Residential Construction
- .5 Department of Education space standards contained in the Size of Space and Occupant Design Criteria Table, State Requirements for Educational Facilities (SREF).
- .6 Asbestos and Lead-Based Paint Surveys, Operations & Maintenance, and Abatement:
  - i. Requirements of Sections 255.551–565 (Asbestos Management Program), Florida Statutes and Chapter 469 (Asbestos Abatement), Florida Statutes
  - ii. Rules of the Florida Department of Environmental Protection
  - iii. Regulations of OSHA and the Environmental Protection Agency
  - iv. Licensing regulations of Asbestos Consultants, the Florida Department of Business and Professional Regulation
- .7 Rules of the Department of Environmental Protection.
- .8 Rules of the area Water Management Districts.
- .9 Mechanical, Heating, Ventilating and Air Conditioning (HVAC) systems and equipment design and installation shall comply with American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. (ASHRAE) Handbooks; American Conference of Governmental Industrial Hygienists Ventilation Manual; American Society of Mechanical Engineers' Unfired Pressure Vessel Code; American Standards Institute (ANSI) standards, and Sheet Metal and Air Conditioning Contractors National Association (SMACNA) standards.
- .10 The Trench Safety as described in Sections 553.60–64 (Trench Safety Act), Florida Statutes.
- .11 Requirements for threshold buildings as described in Section 553.79 (Permits, Applications, Issuance, Inspections), Florida Statutes.
- .12 Any codes applicable to the project which are enacted after the publication of this Guide.

**3.12.3** The **State Fire Marshal** (SFM) has statutory responsibility for review of all plans. Plans for review by the State Fire Marshal shall be submitted through FPU Facilities & Safety Services department. Liaison with the State Fire Marshal's staff will be provided by FPU department of Campus Planning & Facilities. The current State Fire Marshal document review procedure is included as SFM Plans Review Process herein. If this procedure is updated prior to the next edition of this Guide, the updated procedures shall be adhered to.

**3.12.4** The Architect/Engineer shall confer with the University Building Code Official to determine those permits to which the project is subject. The Architect/Engineer shall ensure that the design and contract documents are capable of obtaining all required approvals and permits. Required permits include those necessary for the design as well as those needed by the contractor for actual construction work. The Architect/Engineer shall determine the requirements of each permit, confer with the appropriate officials, submit all required information to obtain approval, and submit the Contract Documents for approval by the applicable agencies.

**3.12.5** Sources of the required permits and approvals are:

- .1 **City and County.** Special provisions for campus planning and concurrency, which supersede the requirements of Chapter 163, Part II (Local Government Comprehensive Planning & Land Development Regulation Act) Florida Statutes, of were established by the legislature with the creation of Section 240.155 (Campus Master Plans & Campus Development Agreements), Florida Statutes, to ensure that universities are developed or expanded in a manner consistent with principles of good growth management. These provisions allow for the establishment of key development policies and standards in the planning stage. After review by local, regional and state agencies, these policies and standards serve as the basis for a limited or expedited development

review and approval process. Since the campus development agreement was executed 06.19.2017, the Architect/Engineer shall identify any reviews and permits required for concurrency and consistency with the local comprehensive plan, including the cost, professional fees, and schedule. Unless specifically included in the basic services, the Architect/Engineer shall not initiate the local review/permitting process for a project without an Additional Service Authorization or other written authorization from the University. Pursuant to Section 240.293 (Exemptions from County or Municipal Ordinance or Charter), Florida Statutes, the Owner is not obligated to obtain or to pay for building permits from city or county agencies; however, projects where a local governmental entity is providing utility services may be subject to permits and inspections for plumbing and electrical installations by the local entity.

- .2 Department of Business and Professional Regulation, Division of Hotel and Restaurants, **Bureau of Elevator Safety**. The contract documents must show the complete elevator installation including all details, hoist-ways, mechanical rooms, and other areas affecting the installation, and access to the elevator installation. The necessary structural and mechanical data describing the complete installation shall be included. The elevator subcontractor shall be required to submit documents to the Bureau of Elevator Safety for approval prior to construction. The Architect/ Engineer shall incorporate any required changes into the construction documents.
- .3 **Department of Environmental Protection (DEP)**, area District Office. All projects are subject to the environmental requirements of the Department of Environmental Protection. The Architect/Engineer shall contact the area DEP office to determine the environmental requirements for the project.
- .4 **Southwest Florida Water Management District (SWFWMD)**, area District Office. All projects are subject to the regulations relating to water management through the Southwest Florida Water Management District office. The State University System is required to pay the permit fee of the area Water Management District. The Architect/Engineer shall contact the area Water Management District to determine the water management requirements for the project.

### 3.13 Cost Estimates and Area Measurements

**3.13.1** The Architect/Engineer shall ensure that an accurate cost estimate is provided with each design submission. This cost estimate shall also include a comparison to the approved budget. The approved budget is the amount included in the Architect/Engineer agreement. The Architect/Engineer shall not design a project exceeding the approved budget without written notice from the Owner that the budget has been increased. Unless otherwise indicated, space measurements shall be made in accordance with the current edition of the **State Requirements for Educational Facilities (SREF)**, maintained by the Florida Department of Education.

**3.13.2** Space measurements for the purpose of operating budget requests are slightly different from the definition in SREF. In addition to square footage information provided based on SREF definitions, the Architect/Engineer shall also provide the University with total square footages based on the following criteria:

- .1 **Building Gross Square Feet:** Determine the total building gross square feet by adding the sum of the floor areas of the building included within the outside faces of exterior walls for all stories, or areas that have floor surfaces. Gross area should be computed by measuring from the outside face of exterior walls, disregarding cornices, pilasters, buttresses, etc., which extend beyond the wall face. Gross area should include basements (except unexcavated portions), attics, garages, enclosed porches, penthouses, mechanical equipment floors, lobbies, mezzanines, all balconies (inside or outside) utilized for operational functions, and corridors, provided they are within the outside face lines of

the building. Roofed loading or shipping platforms should be included, whether within or outside the exterior face lines of the building. Stairways, elevator shafts, mechanical service shafts, and ducts are to be counted as gross area on each floor through which the shaft passes. Exclude open courts and light wells, portions of upper floors eliminated by rooms or lobbies that rise above single floor ceiling height, and non-enclosed covered walkways.

- .2 **Net Assignable Square Feet:** Determine the sum of room areas excluding non-assignable areas. Room area is defined as the net area of the room in square feet, measured between the inside surfaces of the walls and partitions. Non-assignable areas include interior circulation space (including stairs), custodial areas, mechanical areas, structural areas, public rest rooms, exterior circulation space (including stairs), elevators, and telephone/data communication equipment areas.
- .3 **Covered Walkway Gross Square Feet.** Measure floor area, excluding any areas which were included in the calculation for Building Gross Square Feet in Subparagraph 3.14.2.1 above.

**3.13.3** The format for the Architect/Engineer's Estimate Summary and Budget Comparison is shown in [Estimated Total Project Cost](#) form.

### **3.14 Building Program**

**3.14.1** The Architect/Engineer's execution of the Agreement implies acceptance of the building program and the design shall incorporate all its requirements. The Architect/Engineer may obtain amplification and details concerning the building program requirements from the University Project Manager. The Architect/Engineer shall confirm such details and amplifications by memorandum to the University Project Manager with a copy to the department of Facilities & Safety Services. The Architect/Engineer shall not perform professional services which vary from the approved building program without the written prior approval of the department of Facilities & Safety Services.

Any modification to the building program recommended by the University Project Manager and/or the Architect/Engineer shall be submitted to the department of Facilities & Safety Services for approval and approved by the University President. The request for a building program amendment shall include a complete description of the proposed change and a narrative justification, including its impact on the project's budget and schedule. If the proposed program amendment will involve professional services not covered under the Agreement, an estimate of the cost of such services prepared by the Architect/Engineer shall be included in the amendment request. If the building program amendment is approved, the University will issue a directive to the Architect/Engineer instructing the change(s) be made and authorizing the additional professional services. In the absence of an approved program amendment, the original program requirements shall prevail.

### **3.15 Small, Minority, Local or Women's Business Enterprise (SMLWBE) Tracking Form**

**3.15.1** The Florida Polytechnic University has an [SMLWBE Tracking](#) form to be tracked by the design professional. As it pertains to design services.

### **3.16 Building Telecommunications and Cable Television Systems**

**3.16.1** The Florida Polytechnic University has adopted telecommunications standards. Telecommunications typically includes telephone and computer data systems combined in one set of wiring.

**3.16.2** Basic Services include:

- .1 Building telecommunications wiring and conduit from the main building

telecommunications room to all rooms and spaces within the building, and wall boxes and termination devices in those rooms and spaces. Basic Services also include telecommunications conduit from the main building telecommunications room to the nearest telecommunications manhole or building as the University directs. This telecommunications scope shall be included in the Project's Base Bid scope.

- .2 Cable television systems where required, including wiring and conduit from a designated building location to all rooms and spaces within the building requiring cable television, and wall boxes and termination devices in those rooms and spaces.

**3.16.3** Provisions for Owner installed fiber optics are to be included in the Architect/Engineer's scope.

### **3.17 Fume Hood Exhaust, 100% Outside Air Systems and Other Specialized HVAC Systems**

**3.17.1** Introduction. Building spaces with fume hoods and animal holding facilities typically are prohibited by Code and good practice from recirculation of air conditioning air: 100% outside air is required. Clean room "Class" per ASHRAE must be determined and documented. Since 100% outside air systems and other special systems are expensive to build, operate and maintain, and since the size and complexity of the systems create ample opportunity for design, contract, construction, initial start-up and noise problems, it is critical that the detailed design basis and costs be established and documented in early design submittals.

**3.17.2** Overall Guidelines. The Architect/Engineer shall be responsible for:

- .1 Developing, documenting, and promoting technical discussion of these systems early in the Project. Early submittals are to include narrative technical discussion of system types, materials, and controls; including options, advantages, disadvantages, relative costs, and Architect/Engineer recommendations.
- .2 Ensuring that all major decisions regarding system types, materials, and controls are determined and agreed to by Owner/User by the end of Design Development Phase; and documented in the Design Development submittal. Costs are to be included in the Architect/Engineer's Design Development estimate of construction cost.

### **3.18 Central Campus Chill Water:**

**3.18.1** All projects considered for the FPU JD Alexander Campus shall utilize the central campus chilled water (CW) and provide heating hot water (HW) systems for building cooling and heating (when practicable, domestic hot water). Prior approval must be obtained for consideration of alternative cooling and heating system solutions. Exceptions to this requirement may be granted for Housing and other Auxiliary agency building projects when existing utility (CW and/or HW) capacity limitations may support an alternative cooling and heating system solutions.

**3.18.2** When requesting deviation from the requirement to utilize the Central Campus Chilled Water System, prior to designing the deviation, and prior to its approval, the Architect/Engineer (A/E) shall perform, at no cost to the Owner, an Energy Life Cycle Cost Analysis (LCCA) comparing at least three (3) distinctly different cooling and heating system options. The A/E shall submit to the FPU Project Manager (FPU PM) a list of alternative Options intended for comparison. The FPU PM will coordinate the Owner's review. The FPU PM will provide a written notice of approval of the option(s) which is/are in the best interest of the University. Submittal of request for deviation does not constitute an automatic approval.

**3.18.3** The A/E shall utilize an approved version of Trane Trace 700, Carrier HAP or other pre-approved whole building simulation software for the energy calculations and other Life-Cycle Cost Computer Program Analysis. The A/E shall provide the completed model in electronic file to the Owner. The LCCA shall be reported on the Form provided.

**3.18.4** Before preparing the data, the A/E shall discuss the energy-saving schemes proposed for the Project with the University Project Manager, and the Facilities group. When an agreement has been reached, the A/E shall document the approved energy-saving schemes and obtain the University Project Manager's written concurrence. The A/E shall make the input and run the computer program using the following economic data, included below for reference only. Please obtain current data from the FPU PM at the time of evaluation:

Discount rate = 0%;

Operating & Maintenance cost escalation = 3%;

Energy Replacement cost escalation = 3%;

Project Life = 25 years.

The A/E shall submit two sets of the following to the Owner: cover letter discussing the energy saving schemes considered, the computer results, the A/E's recommendations and discussion of other energy-saving measures incorporated into the Project design, copy of the University Project Manager's written concurrence with the schemes, the complete computer run printout, and the completed Energy Life Cycle Cost Analysis Form. The Owner will notify the A/E in writing of the approved scheme to incorporate into the project.

## **ARTICLE 4 DESIGN AND CONSTRUCTION DOCUMENTS**

### **4.1 Standards for Construction Documents**

#### **4.1.1 Drawings Requirements**

- .1 Drawing size shall be as determined by the University Project Manager, and shall be arranged by subject category in the format prescribed by the University. The sheets of each submittal shall be the same size.
- .2 ***All drawings shall be submitted electronically as follows:***
  - 4.1.1a.** Schematic Design, Project Name, Date
  - 4.1.1b.** Design Development, Project Name, Date
  - 4.1.1c.** 60% Construction Documents, Project Name, Date
  - 4.1.1d.** 100% Construction Documents, Project Name, Date
- .3 At each phase of the design, the documents are to be submitted with the Program Document Review Checklist.
- .4 The design and contract documents shall be developed in accordance with the AIA current AutoCAD standard. All documents must conform to these standards and Building Information Modeling (BIM) as appropriate.
- .5 The CM shall run all conduit, cabling and terminations for all minor projects unless agreed to by the University Project Manager.

#### **4.1.2 Project Manual Requirements (to include technical specifications)**

- .1 The University Project Manager will provide the Architect/Engineer with the standard University Instructions to Bidders, General Conditions and Supplementary Conditions, and any applicable supplements. The Architect/Engineer shall become thoroughly familiar with these documents and incorporate additional requirements and Special Conditions as appropriate. If changes to the General Conditions are necessary, they shall be accomplished by the use of Supplementary General Conditions.
- .2 The Architect/Engineer shall prepare the Project Manual so that it complies with the requirements and customary practices of the University and is thoroughly

coordinated, complete, concise and free of redundancy. Each Project Manual should be tailored to the project and should not include provisions which are not applicable to the project.

- .3 Project Manuals shall be printed in an 8-1/2" x 11" format, bound on the left side in a permanent binder, and printed on both sides of the paper, with each section starting on the right hand side. Minimum paper weight should be 80 lb. stock. Cover stock should be a minimum weight of 90 lbs.
- .4 Technical specifications (Divisions 2-49) shall be prepared in accordance with the most recent Construction Specifications Institute (CSI) Manual approved by the University. Specification sections shall be formatted in three parts: general, products and execution. Work to trades shall not be assigned in the specifications: the Conditions of the Contract establish the Contractor as responsible for all Work.
- .5 Proprietary Specifications.
  - i. When specific manufacturers are named, the naming of a specific manufacturer should serve only to establish a level of quality. Specifications should not be made proprietary unless there is sufficient justification, which must be well documented and specifically approved in writing by the University.
  - ii. Use performance, descriptive, or reference standard specifications to the greatest extent possible. If a manufacturer's name is used to establish a level of quality, when possible, include three or more acceptable manufacturers which have been evaluated and found to be equal in quality to the specification. Add "or approved equal" language to product specifications which mention manufacturers by name but are not intended to be proprietary. Substitutions of equal or better quality products must be approved by the University Project Manager, prior to bid opening, as described in the General Conditions of the Contract for Construction.
  - iii. Sole source specifications must be recommended to the University and approved by the University in writing in accordance with Section 255.04 (Preference to Home Industries), Florida Statutes.
- .6 The Architect/Engineer shall maximize the use of standard materials, standard methods of construction, and standard specifications. Specifications for classification of work and materials issued by an approved association, such as ASTM, ASA, ASME, etc., may be included. Each referenced specification must be examined to ensure that it is suitable for the intended purpose. When a small quantity of materials is needed, the reference to a standard commercial product is sufficient.
- .7 In referencing standard specifications, the Architect/Engineer shall: avoid reference to specific paragraphs in the standard specifications which will limit the specification; include types, classes, weights and such characteristics to ensure accurate description.

**4.1.3** Final Construction Documents shall bear the professional seal and signature of the Architect/Engineer.

## **4.2 Errors and Omissions**

**4.2.1** The drawings shall be prepared using the industry standard of care so that change orders to construction due to errors, omissions, inadequacies, or conflicts between various component parts or with the specifications are minimized.

## **4.3 Conceptual Schematic Design**

**4.3.1** The conceptual schematic design phase requires the development of a concept or concepts



for the project. The early conceptual studies required by the agreement shall be sent to the University for review and approval. For the final Conceptual Schematic Design submittal, the Architect/Engineer shall present sufficient documentation, including perspective sketches and models, to ensure full comprehension of the design solution. Formal models and perspective renderings are not required as a Basic Service of the Agreement. The deliverable for Conceptual Schematic Design shall include, but not be limited to:

- .1 A statement confirming that the Architect/Engineer has verified the building program.
- .2 A copy of the existing campus master plan drawing showing the location of the project and a demonstration of the master plan's intent for the project.
- .3 A site plan with diagrammatic indications, showing the relationship of all components, site utilities, and circulation elements, including consideration for future site development consistent with the master plan infrastructure requirements.
- .4 Topographic studies of the terrain, emphasizing features that contribute to the solution or require significant alteration for a solution.
- .5 A description of the site, including known soil conditions, ground water conditions, zoning, accessibility, utility services, governing codes, etc.
- .6 If Section 267.061(2) (Historic Properties), Florida Statutes, is applicable to the Project, a statement that the Bureau of Historical Preservation, Department of State, has been consulted and that any conflicts with present conservation or historical programs have been acknowledged and/or resolved.
- .7 Small scale line drawings of plans and sections adequate to define horizontal and vertical relationships of the various project components, along with sketches to define the initial concept and direction of the project.
- .8 A statement and evaluation of concepts and measures proposed to ensure energy conservation.
- .9 In the case of additions or renovations to existing buildings, a plan showing existing and proposed facilities in their relative arrangement and relationship.
- .10 A plan for providing total accessibility to the facility and evidence of coordination with the University ADA Coordinator and other accessibility groups. The Architect/ Engineer should request ADA survey information from the University Project Manager. The Architect/Engineer shall determine whether their recommended design requires a waiver under the provisions of Sections 553.501—514 (Florida Americans with Disabilities Accessibility Implementation Act), Florida Statutes.
- .11 A general description of architectural, engineering, and construction concepts and the architectural, structural, plumbing, fire protection, mechanical (HVAC), communications, electronics and the electrical systems to be used. If fume hoods, fume exhaust systems, 100% outside air systems, animal care facilities, clean rooms or other specialized HVAC systems are required, additional requirements apply (see Subparagraph 4.3.1.17 and Paragraph 3.18 herein).
- .12 A confirmation or updated statement of the building program's off-site utilities demand quantities, and discussion. The Architect/Engineer shall confirm with the University Project Manager that sufficient central utilities system source and distribution system capacity exists to serve the project. If there is an apparent shortfall in capacity to serve the project, the submittal shall include notice to that effect. The following items shall be included:
  - i. **Chilled Water and Condensate** – estimate of tons required and identification of source of supply (package or central plant). Analysis of adequacy of off-site pipe capacity.
  - ii. **Electrical** – Estimate of KVA load and identification of source and adequacy of supply.

- iii. **Potable Water and Sanitary Sewer** – Identification of number of gallons per day, identification of source of water supply and method of sewage disposal. Analysis of capacity of supply and disposal sources. Discussion of any permit requirements.
  - iv. **Irrigation Water** – Identification of number of gallons per day required and identification of supply source. Discussion of any permit requirements.
  - v. **Communications** duct bank connectivity.
- .13 A discussion of application of codes and required permits.
  - .14 Identification of all off-site and off-campus infrastructure costs caused by the project, i.e., concurrency mitigation costs for utilities, roadways, etc. If a mitigation plan is required for the project, the Architect/Engineer may be required to develop the plan as an additional service.
  - .15 A cost estimate and space analysis correlated to the program requirements and approved budgets, including any off-site and off-campus infrastructure costs. The format to be used is shown in [Estimated Total Project Cost](#) form.
  - .16 A current project schedule.
  - .17 Where fume hood exhaust systems, 100% outside air systems or other specialized HVAC systems are provided, the Architect/Engineer's mechanical, electrical and plumbing engineers must be substantially involved in Conceptual Schematics development.
    - i. Between effective date of the Notice to Proceed and the Conceptual Schematic submittal, the Architect/Engineer shall take the lead, promote, coordinate and participate in discussions; collect technical information; provide calculations and analysis; all as required to develop information to complete the Conceptual Schematic submittal requirements noted below.
    - ii. Projects with laboratories and/or fume hoods: Conceptual Schematic submittal shall include:
      - a. Preliminary fume hood schedule with room location; type of hood (general purpose, radioisotope, perchloric acid); size; minimum face velocity at specified open sash height (usually 16 inches or less); and, cubic feet per minute.
      - b. Technical narrative of HVAC including type of fume hood exhaust system(s) to be used (central collection systems preferred, individual exhaust accepted with University Project Manager approval); duct and stack materials; maximum horizontal duct diameter; types of fans with location and redundant fans noted (penthouse required for fans unless University project Manager agrees otherwise); discussion of fume hood exhaust stack with minimum exit velocity and height noted; snorkel systems; and, general exhaust systems.
      - c. Technical narrative of fume hood system controls including available choices (constant volume, occupied/unoccupied for energy conservation; proposed life cycle cost analysis of system schemes).
      - d. Technical narrative of laboratory plumbing systems including preliminary listing of all systems to be used.
      - e. Technical narrative of laboratory electrical systems.
    - iii. For Projects with 100% outside air and specialized HVAC systems, the Architect/Engineer shall provide similar information to the above, omitting what is not applicable to the Project. Clean room class per ASHRAE shall be specified (e.g., Class 10,000).
  - .18 A discussion of the energy life cycle cost analysis (see Subparagraph 4.4.1.9 herein).
    - i. If the life cycle cost analysis is required for the project, provide a listing of the schemes to be analyzed and the rationale.

- ii. If not required, provide the rationale for the exemption.
  - iii. If life cycle cost analysis is required and is not included in the scope of Basic Services, the Architect/Engineer shall request an Additional Services Authorization prior to performing services associated with life cycle cost analysis.
- .19 Central utilities systems projects. The Architect/Engineer shall include a discussion of options for systems, equipment, materials and technical options. The discussion shall include options considered, advantages, disadvantages, budget costs, and Architect/Engineer's recommendation.
- 4.3.2 At the completion of the Conceptual Schematic Phase, four full size sets and four half size sets of drawings and the CSD cost estimate are due.

#### 4.4 Advanced Schematic Design

4.4.1 The advanced schematic design phase requires the evolution of the approved concept and the deliverable shall include, but not be limited to:

- .1 A bound document describing the project, including how the design satisfies the program with sketches and drawings as needed to fully describe the interior and exterior features of the design. This presentation may include copies of drawings and materials included in the concept schematic presentation.
- .2 A plan showing how the project fits into the adopted campus master plan.
- .3 Site plans showing existing and proposed roads, walks, circulation elements, utility systems, plantings, and special site features.
- .4 Studies and reports relative to the site and its topographical, ecological, botanical and other features contributing to the solution or requiring significant alternation for a solution.
- .5 A description of existing zoning and other site conditioning factors restricting development and the solutions or recommendation for resolving them.
- .6 Floor plans (including "life safety plans"), elevations, building sections, and sketches as necessary to adequately present the concept.
- .7 If the project is an addition, or is otherwise related to existing buildings on the site, show the existing buildings and their general arrangements and relationships.
- .8 A general description, analysis, and sketches of the design and construction concepts for architectural, structural, plumbing, fire protection, mechanical (HVAC), communications, electronics and the electrical systems.
- .9 Energy life cycle cost analysis complying with University requirements must be conducted:
  - i. when the project provides thirteen-thousand (13,000) or more new gross square feet or an estimated total new HVAC load of forty (40) tons or more; or,
  - ii. when the project includes renovation of space and new HVAC air handling units for which the load is forty (40) tons or more.

Mechanical and electrical descriptions, including computerized building management systems, indicating proposed systems and equipment in suitable detail, accompanied by a complete schematic format shall be submitted. The analysis shall be submitted on the Energy Life Cycle Cost Analysis Form. The University Project Manager will provide written direction to the Architect/Engineer on the scheme to be used in the project.

- .10 Identify total demand loads for the project to be required of the utility systems. Where it has been determined that there is a shortfall in capacity to serve the building project for any utility, the Architect/Engineer shall meet with the Owner and determine the appropriate course of action to make up the shortfall, and this course of action and the Architect/Engineer's estimate of associated design and construction costs shall be included in the Advanced Schematic submittal. Where special or energy intensive mechanical systems are considered (e.g., 100% air systems; central fume hood

collection systems), provide a discussion of the systems, options, advantages, disadvantages and budget costs. These systems will usually be included in the life cycle cost analysis. If fume hoods, fume hood exhaust systems, 100% outside air systems, animal care facilities, clean rooms or other specialized HVAC systems are required, additional requirements apply (see Subparagraph 4.4.1.21 and Paragraph 3.18, herein).

- .11 Specific layouts of complex areas such as kitchens, seating, sleeping, etc.
- .12 An updated plan for providing total accessibility to the facility and evidence of coordination with the University ADA Coordinator and other accessibility groups.
- .13 Details as required.
- .14 A statement of the provisions for acoustics.
- .15 Outline specifications, using CSI format.
- .16 A cost estimate and space analysis correlated to the program requirements and approved budget, including a separate line item for funding any identified off-site utilities impact cost. The format to be used is shown in [Estimated Total Project Cost](#) form.
- .17 A current project schedule.
- .18 A listing of code and permit requirements, including specific problems encountered in conforming to these codes and permits and proposed solutions, waivers and variances required or being pursued.
- .19 Recommendations regarding additional or other services required, such as: soil borings, detailed cost estimates, models and renderings.
- .20 The Document Submittal and Review checklist using the format shown in [Program Document Review Checklist](#).
- .21 Where fume hood exhaust systems, 100% exhaust systems, 100% outside air systems or other specialized HVAC systems are to be provided, the following requirements apply:
  - i. Between the Conceptual Schematic submittal and the Advanced Schematic submittal, the Architect/Engineer shall continue discussions with Owner/User to further clarify the systems requirements, design basis and cost.
  - ii. For Projects with laboratories and/or fume hoods, the Advanced Schematic submittal shall include:
    - a. Updated fume hood schedule including room location, type of hood, size, minimum face velocity at specified open sash height, cubic feet per minute.
    - b. Updated HVAC technical narrative with type of fume hood exhaust system(s) to be used (central collection systems preferred, individual exhaust accepted with University Project Manager approval); duct and stack materials; maximum horizontal duct diameter; types of fans with locations and redundant fans noted (penthouse required for fans unless University Project Manager agrees otherwise); discussion of fume hood exhaust stack with minimum exit velocity and likely height; snorkel systems; and, general exhaust systems.
    - c. One-line ductwork layout including HVAC supply, ordinary exhaust, fume hood supply, fume hood exhaust and lab general exhaust systems; preliminary penthouse equipment layout, roof plan with stacks and guywires; typical stack elevation view with top of stack height.
    - d. Updated fume hood system controls technical narrative (constant volume, occupied/unoccupied for energy conservation; proposed energy life cycle cost analysis of system schemes).
    - e. Updated laboratory plumbing systems technical narrative, including preliminary listing of all systems and materials to be used.
    - f. Updated laboratory electrical systems technical narrative, including preliminary listing of design philosophy (one panel per lab, likely amps per panel; emergency circuits per lab; listing of known special electrical circuits needed with room and equipment to be served), emergency generator size

and items served.

- g.** For Projects with 100% outside air and specialized HVAC systems, the Architect/Engineer shall provide similar information to the above, omitting what is not applicable to the Project. Clean room Class shall be documented, as well as how the proposed design is to meet the ASHRAE requirements for that Class.
- h.** Central utilities systems projects. The Architect/Engineer shall include further development and discussion of the selected options and complete scope with simplified central plant or site sketches. The Architect/Engineer shall include an estimate of construction cost by major equipment line items and a discussion of this estimate with respect to the Owner's budget.

**4.4.2** At the completion of the Advanced Schematic Phase, four full size sets and four half size sets of drawings are due, along with four copies of outline Specifications, three copies of the ASD Cost Estimate, one copy of the ASHRAE energy model, and three copies of the Life Cycle Cost Analysis.

## **4.5 Design Development**

**4.5.1** The design development phase consists of the amplification and refinement of the Advanced Schematic Design. By the end of the Design Development phase, the Architect/Engineer shall have finalized all major design and equipment decisions, and the costs associated with these decisions shall be included in the Architect/Engineer's estimate of construction cost. The deliverable for this phase shall include:

### **4.5.1.1 Site**

- .1** Location plots, property and topographical surveys, subsurface boring logs and plans, ecological and botanical surveys, and other appropriate information.
- .2** A copy of the Master Plan indicating the location of the project and total scheme, if applicable.
- .3** Environmental considerations, including necessary design data, specifications, and cost estimates for preservation, dust, erosion, sedimentation and run-off control, where applicable, as an integral part of the design and construction project. Such controls will be limited to the areas involved in the construction operation and those required by applicable codes and permits. Environmental control should not be confused with landscaping. The information provided will include statements regarding the type of treatments selected, the affected areas, and the reasons for the selection of the type of controls chosen.
- .4** Grading and Site Development.
- .5** All permanent features to be constructed on the site.
- .6** All permanent roads, walks, paths, and parking lots, including a statement of the general soil conditions with a brief outline of the soil exploration and testing performed as related to the development of roads, etc. The type and volume of traffic, controlling wheel loads, classes of surfacing under consideration, with justification for same, and any deviation from criteria fitness for those classes.
- .7** All existing and proposed utility services including runs, locations, capacities, sources, characteristics, materials and installation methods should be fully described. The Architect/Engineer shall review the utilities sub-element of the adopted campus master plan (available from the University Project Manager) with the University and assure that planned utilities are provided in the project.

### **4.5.1.2 Electrical**

- .1** A statement relative to the adequacy of the primary electrical supply to the site. If the primary source is inadequate, state measures proposed to correct the deficiency.

- .2 The characteristics of the electrical supply to the site, including circuit interrupting requirements and voltage regulations.
- .3 An estimate of the total connected load and resulting kilowatt demand load (KVA) by applying proper demand and diversity factors if a group of loads is involved.
- .4 The basis for selecting a primary and/or secondary distribution voltage.
- .5 The type, size, and location of conductors.
- .6 Describe the pertinent standards of design, such as voltage drop, physical characteristics of overhead or underground circuit, types of lighting units and lighting intensities.
- .7 Describe the type and adequacy of telephone, signal, fire alarm and other communication systems, including the number of spare telephone conductors available and spare capacity on fire alarm circuits.
- .8 Emergency power systems.

#### 4.5.1.3 Utility Systems:

- .1 **Fuel Distribution and Storage.** Information provided shall include the following types:
  - i. **Gas:** Statement of type, location of takeoff from supply, and available pressure; statement of type and material for pipes and valves.
  - ii. **Liquid petroleum products:** statement of unloading facilities, such as dock, tank car, or truck; description of the type of system and proposed features; statement of the basis for storage capacity, rate of pumping, and number of dispensing outlets; description of power supply and power requirements; selection of type of materials for pipes, tanks and valves.
- .2 **Steam or Hot Water Distribution:** Heating hot water controlled by building (HHW).
- .3 **Central Chilled Water and Refrigeration:** Data provided should include sizes, capacity, materials and installation methods. The peak demand tons of the building on the central chilled water plant and a verification that sufficient capacity exists shall also be included.
- .4 **Domestic Water and Fire Protection:** Source, minimum and maximum pressure at each building and in the system, and an explanation of the existing system covering particularly the type, capacity, condition, present water use, and unsatisfactory elements of the component parts; a statement of the type of construction proposed, materials for water mains, or wells, etc.; the distribution system, a statement of design, domestic and fire flow usage of well pressure, elevation differential, and the designer's basic estimate of tentative pipe sizes; a statement of tentative sizes, elevations, capacities, etc., as can be readily determined without long computations or design consideration for reservoirs, treatment units, pumping plants, well pumps and such units.
- .5 **Sewers and Sewage Disposal systems:** an explanation of existing systems covering the type, capacity, condition, present flow, and unsatisfactory elements or components; the interpretation of the degree of treatment necessary by field requirement and units necessary for treatment; a statement of the design factors with present design population per various units for the sewage treatment plant; statement of materials to be used for the sewage system, sewage collection system, and the sewage treatment plants; means of effluent disposal.
- .6 **Storm Sewage:** An explanation of the existing system covering particularly the type, capacity, condition, and unsatisfactory elements or components; a statement of the type of construction proposed, material, etc.; a statement of the design requirements and tentative pipe sizes.
- .7 **Electronics and Instrumentation:** system engineering concepts; site and location considerations; antenna requirements such as types, separation, height, aircraft clearance, and area requirements; site communications and control linkages; electronic security considerations.

.8 **Lawn Sprinkler Systems:** tentative layouts, material, sizes, etc.

4.5.1.4 Site drainage plans and analysis.

4.5.1.5 **Fencing.** Type, height and justification for fencing.

4.5.1.6 **Landscaping.** Plant species, size and layout. Actual full-grown canopy size shall be indicated in the plan, both for existing trees to be saved and for new trees.

4.5.1.7 Lateral and transverse sections through the site shall indicate development of the site, when necessary, due to substantial elevation changes or circulation at more than one level.

4.5.1.8 Any special consideration pertinent to the site and its development.

**4.5.1.9 Architectural:**

.1 The plan of each floor showing movable and built-in furniture and equipment, fixed equipment, and any other use-determining factors.

.2 Area recap and square footage should be indicated for each floor plan area and for the project in total in comparison to that required by the program.

.3 Exterior elevations, delineating materials and noting floor elevations at each level.

.4 Transverse and lateral sections through the building, indicating heights, vertical circulation, and relationships. The finished floor elevations of each level should be given.

.5 Wall sections and wall details necessary to indicate the methods of construction indicating the overall values achieved as required by the Florida Energy Conservation Act, and indicating the fire ratings to be achieved.

.6 Schedules indicating finishes and equipment, and the required flame spread ratings, etc.

.7 A summary of code related design parameters on the drawings noting the Florida Fire Prevention Code, Florida Building Code, and other required codes compliance criteria. This summary of items shall address, but not be limited to: travel distances, sprinkler requirements, ratings of fire protection, exit width requirements, building type, construction type, occupancy classification, etc.

.8 Provide large scale plans describing complex, intensely equipped or furnished areas, and areas needing clarification.

.9 A description of the materials used for all major components of construction.

.10 Other information, drawings, etc. considered necessary for the development of the program or explanation of the design.

**4.5.1.10 Structural:**

.1 A description of foundation conditions, types of foundations to be used, the method by which the allowable bearing value is to be determined, and the maximum allowable bearing capacity for the foundation.

.2 Statement as to the type of construction adopted and reasons therefore, with capacities, dimension, or other size criteria.

.3 Plans showing framing members and column sizes, indicating special design features and noting floor elevations. The description of structural floor system proposed with length and spacing of principal members, etc.

.4 The description of structural roof system proposed with principal members, dimension, etc.

.5 Provide structural building sections, transverse and longitudinal, indicating vertical relationships and headroom.

.6 Show limited load carrying capacities and statements of live loading to be used including floor loads, wind and lateral loads, earthquake, etc. with justifying data.

.7 Provide calculations and design criteria when requested.

.8 A statement of any special considerations that affect the design.

**4.5.1.11 Heating, Ventilation, Air Conditioning (HVAC):**

.1 Provide floor plan showing equipment layouts and single line layouts of supply and

- return duct work.
- .2 Provide typical section of mechanical room showing equipment and duct work. Also include typical section of space above corridor when used for ductwork, and typical section of space above labs showing fume hood exhaust ducts.
- .3 Provide full descriptions of automated management systems proposed for use, including current and future capabilities.
- .4 If fume hoods, fume hood exhaust systems, 100% outside air systems, animal care facilities, clean rooms or other specialized HVAC system are required, additional requirements apply (see Subparagraph 4.5.1.21 and Paragraph 3.18 herein).

**4.5.1.12 Heating Systems:**

- .1 Statement of indoor and outdoor design temperatures and "U" factors for walls, ceilings, floors, etc., to be used in design.
- .2 Heating medium, such as steam, hot water, gas or electric. If central plant steam/hot water source is not used, provide justification and basis for fuel selection.
- .3 Type of heating system such as reheat at central air handling units, perimeter terminal units with heat coils, etc.

**4.5.1.13 Ventilation and Exhaust:**

- .1 Number of air changes per hour or cfm per square foot in various areas. State basis for selection of air change rate (Standard Mechanical Code or [ASHRAE 62](#)).
- .2 Ventilation air quantity during heating season and how acquired.
- .3 [ASHRAE 62](#)- (current addition) outside air quantities shall be provided. The means of measuring and controlling this outside air shall be provided (such as fan and VAV box) to assure correct quantities during occupied times and reduced air handler fan speeds and provide positive shutoff during unoccupied times. The Architect/Engineer shall discuss its approach to achieve this in this submittal and shall verify the applicable version to ASHRAE to meet University Standards.

**4.5.1.14 Air Conditioning:**

- .1 Provide a brief description of the air conditioning systems considered and final system selected.
- .2 A statement of areas to be air conditioned.
- .3 Statement of inside design temperatures and relative humidity, outside wet and dry bulb design temperatures, "U" factors for the type of construction proposed and a statement of the economics of applying insulation and/or sun shades.
- .4 Description of HVAC equipment to be used inside and outside the building. Include air handling units, filters VAV boxes, terminal units, exhaust fans and any special HVAC systems. If central plant chilled water source is not used, provide justification and description of recommended solution.
- .5 Discussion of HVAC controls, including type (pneumatic only, pneumatic with DDC panel) and design philosophy. Discuss thermostat placement, special control features and justification, total estimated HVAC control system cost. Discuss any humidistats used, reason for using, and settings.

**4.5.1.15 Refrigeration (Cold Storage):**

- .1 Statement of areas to be refrigerated indicating their usage and temperatures to be maintained.
- .2 Outside design dry and wet bulb temperatures.
- .3 Type of refrigeration equipment, type and thickness of refrigeration insulation, and whether factory prefabricated cooler or cold storage box.



#### **4.5.1.16 Electrical:**

- .1 Indicate electrical service entrance characteristics, transformer requirements, etc.
- .2 Indicate electrical characteristics such as phase, voltage, number of wires, etc. of each circuit. Provide a breakdown of the estimated connection load to show:
  - .3 Lighting and convenience outlet load.
  - .4 Power load for building equipment such as heating, air conditioning, etc.
  - .5 Loads for special operating equipment such as compressors, X-ray equipment, pumps, etc., and for power receptacle being provided to energize special equipment. Apply an appropriate demand factor to each to compute a total demand load.
- .6 Indicate the location of the main switchboard or power panels, light panels and all equipment panels.
- .7 Indicate type of wiring system, such as a rigid conduit, electrical metallic tubing, non-metallic sheathed cable, and where proposed for use.
- .8 The type of conductors such as rubber insulated, varnished cambric, lead covered, etc., and their proposed location.
- .9 Show the location of all lights, power outlets, switches, etc.
- .10 Describe the proposed pertinent standards of design such as voltage drop, lighting intensities, and types of lighting fixtures.
- .11 Describe the short-circuit duty required for all protective devices and switchgear.
- .12 Indicate the requirements for the emergency electrical system.
- .13 Ensure that the electrical information for the facility is fully coordinated with the site electrical requirements and with the low voltage communications systems requirements.
- .14 Provide any other information deemed necessary.

#### **4.5.1.17 Communications, Electronic and Instrumentation Provisions:**

- .1 Provide sufficient information including engineering concepts for review purposes of the systems proposed; i.e., intercom system, telephone system, public address system, radio and antenna systems, television antenna systems, protection alarm systems, respond tie-ins and any other data or systems deemed necessary.
- .2 Indicate equipment selection, including special equipment requiring development, research, or bread-board methods to meet the requirements.
- .3 Site or location considerations.
- .4 Required radio paths and propagation.
- .5 Antenna requirements such as types, separation, tower heights, aircraft clearance, and area requirements.
- .6 Antenna transmission lines, terminations and switching.
- .7 Bonding and grounding requirements.
- .8 Communication, control cables and radio links.
- .9 Test equipment, repair shop and spare parts storage requirements.
- .10 Equipment and instrumentation arrangement and space requirements indicating requirement for racks, consoles, and for individual mounting.
- .11 Wiring and cable requirements plus terminations.
- .12 Power and lighting requirements, including emergency or standby requirements.
- .13 Air conditioning requirements, including humidity and dust control requirements.
- .14 Interference and clearance requirements.

#### **4.5.1.18 Plumbing:**

- .1 Provide preliminary layout of utility lines and building construction service lines and elevations and sizes fundamental to design.
- .2 Preliminary floor plans showing major horizontal and vertical services, the location and size of fixtures, equipment and the number of persons served.
- .3 Preliminary building section showing riser and branch lines, fixtures and equipment.
- .4 Provide the estimated number of fixture units in order, demand and GPM for all

- plumbing fixtures.
- .5 Provide the estimated minimum and maximum water pressure at each building.
- .6 Indicate the type of heater and capacity for hot water supply.
- .7 Additional details as necessary to describe or clarify any other conditions.

**4.5.1.19 Fire Protection:**

- .1 Indicate service hydrant, stand pipe, test valve, and fire pump locations.
- .2 Indicate risers and hose cabinets.
- .3 For sprinkler systems, indicate the authority for the installation, the hazard rate of occupancy, the type of sprinkler system (wet or dry), and the water volume and pressure required. Delineate any special system such as carbon dioxide, foam, etc. that will be required. Verify adequacy of water supply and indicate if installation of fire pump is required. If a fire pump is required, include pump flow rate, pressure and location.
- .4 Provide any other data deemed necessary.
- .5 Indicate certification necessary for fire alarm installers, suppliers, and manufacturers.
- .6 Provide verification that the design has been reviewed with the State Fire Marshal.

**4.5.1.20 Special Equipment:**

- .1 Kitchen equipment.
- .2 Auditorium seating.
- .3 Stage curtain and equipment.
- .4 Gym layout and equipment.
- .5 Window coverings.
- .6 Hospital equipment.
- .7 Lawn sprinkler equipment systems.
- .8 Vacuum cleaning systems.
- .9 Material handling equipment.
- .10 Specialized research equipment.
- .11 Any other systems deemed necessary for inclusion.

**4.5.1.21** Where fume hood exhaust systems, 100% outside air systems or other specialized HVAC systems are to be provided, the following requirements apply.

- .1 Between Advanced Schematic submittal and Design Development submittal, the Architect/Engineer shall continue discussions with University Project Manager/Owner/User to further clarify the systems requirements, design basis and cost. The intent is for the Project Team to make all major mechanical, electrical and plumbing materials, systems and cost decisions before the Design Development submittal, and to document these decisions in the Design Development submittal.
- .2 For Projects with laboratories and/or fume hoods, the Design Development submittal shall include:
  - i. Final fume hood schedule and notes, including room locations, type of hood, size, minimum face velocity at specified open sash height, cubic feet per minute, type of sash.
  - ii. Final HVAC technical narrative including type of fume hood and other exhaust system(s) to be used; duct and stack materials; types of fans with locations and redundant fans noted; discussion of fume hood exhaust stack with minimum exit velocity and height; and, snorkel systems and general exhaust systems.
  - iii. Provide one-line duct work layout, penthouse/mechanical room equipment layouts, roof plan and typical stack elevation view.
  - iv. Final fume hood system controls technical narrative.
  - v. Final laboratory plumbing systems technical narrative including all systems and materials to be used in fume hoods and laboratories; also provide layout drawings

- of ordinary waste, acid waste and all plumbing systems piping; include notes at each laboratory sink location.
  - vi. Updated laboratory electrical systems technical narrative, including preliminary listing of design philosophy (one panel per lab, likely amps per panel; emergency circuits; special electrical circuits needed; emergency generator size and items served).
  - vii. An estimated construction cost which incorporates all of the above items.
- .3** For Projects with 100% outside air and specialized HVAC systems, the Architect/Engineer shall provide similar information to the above, omitting what is not applicable to the Project. Clean room Class per ASHRAE and how requirements are met shall be documented, including HEPA filters.
- 4.5.2.1** An updated plan for providing total accessibility to the facility and evidence of coordination with the University ADA Coordinator, BCO and other accessibility groups.
- 4.5.2.2** Energy and potable water savings equipment, systems and measures. The Architect/Engineer shall provide a listing of all such items incorporated into the project for additional energy and potable water savings.
- 4.5.2.3** Checklist. Submit the completed [Program Document Preview Checklist](#) form and ensure that all items in the checklist have been considered.
- 4.5.2.4** Bid Scope. Submit a recommended base bid package and the additive alternates (deductive alternates are prohibited). Alternates shall be limited to a maximum of six (6). Under no circumstance shall any items required by code or required to make the facility functional be included as an alternate.
- 4.5.2.5** Probable Construction Costs. Provide an estimate of probable construction cost. This estimate shall include a comparison to the Owner's approved budget. The format for the cost estimate is shown in the [Estimated Total Project Cost](#) form.
- 4.5.2.6** Code and Permit Analysis Summary. A building-specific code and permit summary shall be included on the drawings. The summary shall include, but not be limited to: exit and fire protection requirements and calculations, building classification, occupancy, and sprinkler hazard rating. Note any special problems with conforming any codes and permits.
- 4.5.2.7** Building energy consumption analysis report on [Facilities Classification for Energy Consumption](#) form.
- 4.5.2.8** A current project schedule.
- 4.5.2.9** The Florida Polytechnic University Cost Containment Guidelines.
- 4.5.2.10** Other Data. Submit such other data as deemed necessary to explain the design concept and Design Development documents. In addition to the requirement for code data to be incorporated on the drawings, the Architect/ Engineer shall submit a Summary Report containing the basic code data as outlined in [Paragraph 3.3 \(Status Reports\)](#) herein. Other categories, including structural, mechanical, plumbing and electrical code criteria shall also be incorporated to ensure full coordination between the documents.
- 4.5.3** The final step of the Design Development Phase is a presentation by the Architect/Engineer in which the project design is explained in detail to the University Project Manager, other University personnel. This presentation shall include sufficient detail to demonstrate that all the requirements of the project are identified and understood and that the Architect/Engineer is fully capable of implementing the design concept in the final plans and specifications. This presentation shall also include a detailed description of the Standard Building Code and Life Safety Code data and handicapped/accessibility criteria incorporated in the documents, to ensure that all elements of design conform to statutory and required

building codes. The Architect/Engineer shall respond in writing to any comments generated by this presentation as soon as possible.

- 4.5.4 The Architect/Engineer shall obtain appropriate sign-offs from user groups as determined by the University Project Manager. These shall include selection of colors, materials and finishes.
- 4.5.5 At the completion of the Design Development Phase, four full size sets and four half size sets of drawings are due, along with four copies of the draft Project Manual, three copies of the DD Construction Cost Estimate, and three copies of the Life Cycle Cost Analysis.

#### **4.6 Construction Documents**

4.6.1 The construction documents phase requires the Architect/Engineer to prepare contract documents in sufficient scope for bidding and construction. The deliverable for this phase shall consist of:

##### **4.6.1.1 General:**

- .1 At each submittal, complete document review indicating disposition of all items using the [Program Document Preview Checklist](#) form.
- .2 The Architect/Engineer's Estimate Summary and Budget Comparisons using the [Estimated Total Project Cost](#) form.
- .3 Color Schedules. The specifications and drawings shall indicate the actual colors or color ranges chosen to be used on the project. The Architect/Engineer shall also submit a complete listing of colors to be used, including pallets and material samples as necessary.

##### **4.6.2 60% Construction Documents Phase.**

The Architect/Engineer shall submit construction documents in sufficient detail to provide scale layout of major HVAC/electrical equipment in the mechanical and electrical rooms and design detail for the components of the building. All items addressed in the Design Development documents shall be included in the construction documents. The 60% Construction Documents shall include complete draft specifications (handwritten notes and strike-outs are acceptable) and preliminary major mechanical/electrical/plumbing equipment schedules. The 60% Construction Documents submittal shall also include the Architect/Engineer's Estimate of Probable Construction Cost. Upon approval of the 60% Construction Documents by the University, the Architect/Engineer may submit a request for payment.

4.6.2.1 With the submission of the 60% Construction Documents, the Architect/Engineer shall also provide a list of trades which will be involved in the Project as they are listed in the Department of Labor and Employment Security Minority Business Advocacy and Assistance Office Minority Business Enterprise Directory. This will enable the University or construction manager to invite the appropriate SMLWBE's to the pre-bid/pre-solicitation meeting.

4.6.2.2 At the completion of the 60% Construction Document Phase, four full size sets and four half size sets of drawings are due, along with three copies of the 60% CD Cost Estimate.

##### **4.6.3 100% Construction Documents Phase.**

The Architect/Engineer shall submit 100% Construction Document review sets to the University Project Manager and to any other agency from which approvals are required. The submittal shall include the Architect/Engineer's Estimate of Probable Construction Cost and the Project Manual, including contract conditions regarding insurance, time of completion and liquidated damages. The University Project Manager will transmit to the Architect/Engineer any comments received from other reviewing agencies. If required, a review conference will be scheduled for the Architect/Engineer to respond to comments. The Architect/Engineer shall respond in writing to all comments and shall correct or

modify the contract documents as required. The University Project Manager may ask the Architect/Engineer to resubmit the 100% Construction Documents. Upon approval of the 100% Construction Documents by the University and any other agency from which approval is required, the Architect/Engineer may submit a request for payment, and will be authorized to print the contract documents.

- 4.6.3.1** At the completion of the 100% Construction Document Phase, six full size signed and sealed sets, with six signed and sealed Project Manuals, and four half size sets of drawings are due, along with three copies of the 100% CD Cost Estimate, one copy of the ASHRAE energy model, and three copies of the Life Cycle Cost Analysis.

## **ARTICLE 5 BIDDING AND CONTRACT AWARD**

### **5.1 General Contractor Projects**

#### **5.1.1 Advertising and Soliciting Bids**

- 5.1.1.1** The Architect/Engineer shall provide bidding services as described in the Agreement and in the Project Manual.
- 5.1.1.2** The Architect/Engineer shall give maximum exposure of the project to all qualified bidders to encourage maximum competition. The Architect/Engineer shall solicit bids from qualified contractors by personal contact, advertisement, placement of the project in contractor and building industry reports, and distribution of documents to a plan room depository.
- 5.1.1.3** The Architect/Engineer shall recommend a bidding period to allow adequate time for the preparation of bids by the contractors and subcontractors. Section 255.0525 (Advertising for Competitive Bids or Proposals), Florida Statutes requires that construction bids be advertised for a minimum of thirty (30) days, however, a longer period might be desirable for extremely large projects. Mondays, Fridays, and days following immediately after holidays should be avoided for receiving bids. The bid date and bid opening time will be established by the University Project Manager in consultation with the Architect/Engineer.
- 5.1.1.4** The call for bids for all construction projects will be advertised in the Florida Administrative Weekly (FAW) thirty (30) days prior to the bid date. The University Project Manager will place the advertisement in the FAW.
- 5.1.1.5** Upon written notice from the University Project Manager, the Architect/ Engineer may be asked to place a legal advertisement for bids with a newspaper with sufficient circulation in the project area. The advertisement is to run two (2) times, one (1) week apart, with the first advertisement appearing at least thirty (30) days prior to the bid date and at least five (5) days prior to any pre- bid conference. The cost of advertising is a reimbursable expense to be handled in accordance with Paragraph 7.2 (Reimbursable Expenses) herein.
- 5.1.1.6** The Architect/Engineer is responsible for distributing the drawings, specifications and addenda to bidders and other interested parties; for collecting and accounting for plan deposits and purchase monies; and for paying printing, handling, and mailing costs. Bidders should be instructed to make checks for deposits for bidding documents payable to the Architect/Engineer.
- 5.1.1.7** During the bidding period, addenda shall be issued by the Architect/ Engineer to clarify or modify the construction documents as necessary. Copies of all addenda shall be transmitted to the University Project Manager. The Architect/Engineer shall not issue oral explanations to the meaning of the drawings and specifications, and oral instructions shall not be given before the award of the contract. Addenda shall be kept to an absolute minimum and shall not be used with the original issuance of the contract documents as a means of correction. Addenda shall be issued in accordance with the Instructions to Bidders section of the Project Manual.

## **5.1.2 Opening of Bids**

**5.1.2.1** The bidders are required to deliver their bids at the location specified in the contract documents. None of the parties present at the bid opening shall accept a bid after the published time of opening.

**5.1.2.2** The University Project Manager will receive and open the bids. The Architect/Engineer shall attend and assist in the bid opening. The Architect/Engineer shall supply bid tabulation forms for the bidders' use during the bidding. The format for the bid tabulation form is shown in the Contractor's Approved Bidders List form.

**5.1.2.3** The Architect/Engineer is responsible for completing the bid tabulation and recording the bids. The bid tabulation shall be originally prepared in ink as each bid is read aloud. The Architect/Engineer secures the signature of the University Project Manager and signs, and submits the original bid tabulation to the University Project Manager.

## **5.1.3 Award of Contract**

**5.1.3.1** The project will be awarded as described in the Instructions to Bidders in the Project Manual. University president or his designee makes the contract award.

## **5.1.4 Preparation and Execution of Contract**

**5.1.4.1** The University Project Manager will coordinate with the appropriate University staff for the preparation of the contract, execution by the contractor and execution by the president.

**5.1.4.2** The University will forward the executed contract to the contractor with a Notice to Proceed. For threshold buildings, the Notice to Proceed will be accompanied by the approved structural inspection plan. A copy of the Notice to Proceed and the contract will be provided to the Architect/Engineer.

## **5.2 Construction Management Projects**

**5.2.1** Guaranteed Maximum Price Proposal Review. The Construction Manager develops a Guaranteed Maximum Price (GMP) proposal. The Construction Manager must state any assumptions made due to unfinished construction documents. The Architect/Engineer reviews and recommends that the University approve the Construction Manager's Guaranteed Maximum Price (GMP) proposal. Recommendation of the GMP indicates the Architect/Engineer's agreement with all provisions of the GMP, including the assumptions, clarifications and qualifications, accepted value engineering recommendations, allowances, and alternates.

**5.2.2** Bidding Phase Services. The Construction Manager develops trade packages for bidding to trade contractors. During the bidding period, the Architect/Engineer responds to questions regarding the construction documents and issues necessary addenda to the Construction Manager for distribution to the trade contractors.

Bidding Phase Payment Schedule. After execution of the GMP amendment by the University and the Construction Manager, the Construction Manager establishes a schedule for bidding the trade contracts. The schedule forms the basis of the Architect/Engineer's bidding phase payments. For example, if the 40% of the trade contracts are bid the first month, then the Architect/Engineer is eligible for 40% of the Bidding Phase.

## **ARTICLE 6 CONSTRUCTION ADMINISTRATION**

### **6.1 General**

**6.1.1** The Architect/Engineer shall provide construction administration services as described in the Project Manual. The information contained in this Guide is supplementary to the Project Manual and the Project Manual shall take precedence over the requirements of this Guide in the event of conflicts regarding construction administration services.

**6.1.2** Upon the completion of the agency reviews for permitting and completed responses, six full size signed and sealed sets, with six signed and sealed Project Manuals, and four half size sets of drawings are due, as the Corrected/Conformance Documents.

### **6.2 Construction Meetings (Owner/Architect/Engineer/Contractor)**

**6.2.1 Preconstruction Meeting.** The Architect/Engineer shall arrange and chair a meeting (OAC), with the General Contractor (or Construction Manager), Owner, major subcontractors, federal representatives, if federal funds are involved, and, other interested parties. If Davis-Bacon requirements are applicable (projects with federal funding), a representative of the Bureau of Job Training, Department of Labor & Employment Security shall be included. The purpose of this conference is:

- .1 To discuss requirements and responsibilities of the various parties involved to achieve expeditious handling of the construction contract.
- .2 To instruct all parties concerning required and standard procedures, required submissions and federal or other applicable regulations.
- .3 To resolve all problems as to the scope of the project and signing of plans and specifications by all parties to the contract.

**6.2.2 Scheduled Construction Meetings.** Scheduled construction conferences (OAC) will be weekly or bi-weekly at regular intervals as agreed by the University Project Manager, the Architect/Engineer, and the Contractor (or Construction Manager) to cover the progress of the project. These meetings shall address, as a minimum:

- .1 Evaluation of project progress by the Architect/Engineer and the Contractor, including a comparison of current project status to the approved project schedule (to be reviewed with the University Project Manager prior to each scheduled conference)
- .2 Payment requests.
- .3 Change orders.
- .4 Special problems and remedial actions, and results of previous remedial actions.

**6.2.3 Special Construction Meetings.** The University Project Manager may also call special construction conferences to resolve problems or to ensure that the project is progressing in a satisfactory manner.

**6.2.4** The University Project Manager, the Architect/Engineer, and the Contractor (or Construction Manager) shall attend all scheduled or special construction conferences. When required, other consultants, subcontractors, representatives of federal agencies and other parties shall attend.

### **6.3 Contractor's Required Submittals**

**6.3.1** The construction contract requires the Contractor to submit certain documents to the Architect/Engineer for review and approval. The Architect/Engineer shall submit copies of all approved documents to the University Project Manager for processing, approval, or information as required by the Project Manual.

**6.3.2** Submittals shall be sent directly to the Architect/Engineer from the CM and saved via pdf as follows:

Division #\_Name\_Submittal #\_Date. Owner Distribution List to be copied on all Submittals sent via email. Architect/Engineer response will come back saved the same with the word, “*reviewed*” with the date at the end. RFI’s to be handled in the same manner.

### **6.3.3 Construction Schedule**

- 6.3.2.1** Within thirty (30) days after the Notice to Proceed, the Contractor shall submit to the Architect/Engineer a construction schedule showing the order in which the Contractor proposes to carry on the Work, including the dates on which each task will commence, the dates for completion, and indicate the percentage of Work scheduled for completion at any given time during the contract.
- 6.3.2.2** The Architect/Engineer shall monitor the construction schedule, entering the actual progress on the construction schedule at the end of each workweek or at such intervals as approved by the University Project Manager.
- 6.3.2.3** A copy of the updated construction schedule shall be submitted with each of the Contractor's Applications for Payment.

### **6.3.3 Schedule of Contract Values**

- 6.3.3.1** Prior to the first Application for Payment, the Contractor shall submit a Schedule of Contract Values as required by the Contract Documents.
- 6.3.3.2** The Architect/Engineer shall review the Schedule of Contract Values to ensure that it accurately reflects the distribution of costs in the project. The breakdown shall clearly identify cost of site work and outside utilities. The Schedule of Contract Values, approved by the Architect/Engineer (and such approval confirmed by the University Project Manager), will be the basis for evaluating the Contractor's Applications for Payment. The Architect/Engineer shall submit three copies of the approved Schedule of Contract Values to the University Project Manager.

### **6.3.4 List of Subcontractors**

- 6.3.4.1** The Contractor shall submit a list of subcontractors and a list of sub-subcontractors and material or equipment manufacturers to the Architect/Engineer as required by the General Conditions in the Project Manual. The Architect/Engineer shall respond to the Contractor as described in the General Conditions.
- 6.3.4.2** The Architect/Engineer shall ensure that the approved list of subcontractors is current at all times. On federal projects, specific forms shall be provided for this purpose. The Architect/Engineer must ensure that these forms are current and copies are provided to the University Project Manager.

### **6.3.5 Shop Drawings, Materials and Equipment Submittals**

- 6.3.5.1** The Contractor shall submit shop drawings, product data and samples as required by the Project Manual. The Architect/Engineer shall take action on these submittals as described in the Project Manual.
- 6.3.5.2** The Architect/Engineer shall provide one copy of the shop drawings at the time of approval to the University Project Manager. The Architect/Engineer shall consult with the University Project Manager to determine the number of sets shop drawings, operations and maintenance manuals, guarantees, warranties, etc. which will be required at the completion of the project. The Architect/Engineer shall include this requirement in the project specifications.



**6.3.5.3** The Contractor is required to maintain an “as built” set of drawings, specifications, addenda, change orders, and other modifications for transfer through the Architect/Engineer to the University Project Manager upon completion of the project. The Architect/Engineer shall be required to prepare a final set of corrected CAD record drawings as a part of basic services.

#### **6.4 Clarification of Drawings and Specifications**

**6.4.1** The Architect/Engineer shall ensure that changes to drawings and specifications prepared in response to a request by the Contractor for clarification do not change the scope of the project. Changes in scope shall be handled by change order. Clarifying drawings shall contain the statement, if the clarifying drawings or specifications modify the scope of the basic contract, the Contractor shall notify the Architect/Engineer immediately. Copies of any clarifying drawings or specifications and the Architect/Engineer's transmittal shall be supplied to the University Project Manager.

**6.4.2** For Addendum, Change Orders, A/E Supplemental Information, or RFI's, six signed and sealed affected documents will be required.

#### **6.5 Applications for Payment**

**6.5.1** The Architect/Engineer shall meet with the University Project Manager and the Contractor to discuss handling Applications for Payment. They shall establish a day to be used for pay request cutoff. The Contractor shall be told that the request for payment must relate to the approved Schedule of Values by number. The Contractor shall be told to prepare a list of materials, including description and quantity, stored on the site at the end of the period covered in the payment request on the Contractor's letterhead. The date on this list must match the date on the certificate for partial payment. The materials covered by the request for payment may not be removed from the site after payment has been made.

**6.5.2** The Architect/Engineer shall address Applications for Payment as outlined in the Project Manual and shall determine that:

- .1 All information required for the request for payment is provided and properly executed.
- .2 The value of the work done or properly stored has been accurately evaluated as of the day of the cut-off.
- .3 The appropriate amount of the retained percentage has been deducted.
- .4 The correct total of preceding certificates for payment have been deducted.
- .5 Reasons for withholding payment are indicated.

**6.5.3** Questions concerning the status of a contractor's Application for Payment should be addressed to the University Project Manager.

#### **6.6 Change Orders and Construction Change Directives**

**6.6.1** Changes in the contracted work should be held to a minimum. The Owner will not accept offers to trade or exchange extras and credits. The Architect/Engineer shall determine that all changes in the work, regardless of the amount, are documented by Change Order or Construction Change Directive. Change Orders and Construction Change Directives shall be approved by the University, prior to the actual work being initiated. Where a change is made at no cost – the added and deleted work balancing – a Change Order should be prepared to record the fact that such changes were made, including a description, explanation, and monetary sums. The time extension shall be reflected on each Change Order approved. If there is no time extension, it will be noted as “0”.

- 6.6.2 The Architect/Engineer shall prepare each Change Order and Construction Change Directive showing all the information and backup needed. Change Orders shall be supported by a written cost proposal from the Contractor showing quantities and sizes of materials, unit cost, labor, profit and overhead; and a narrative justification. A Change Order shall be signed by the Architect/Engineer and the Contractor; Construction Change Directives shall be signed by the Architect/Engineer.
- 6.6.3 The Architect/Engineer shall submit each Change Order and Construction Change Directive to the University Project Manager for approval. The Architect/ Engineer shall maintain a log of all Change Orders and Construction Change Directives processed, indicating status and action.
- 6.6.4 The University Project Manager will determine that each Change Order is complete and secure the required approvals. The University Project Manager will distribute copies of the fully executed and approved Change Order to the Architect/Engineer, Contractor.

## **6.7 Claims**

- 6.7.1 The Architect/Engineer shall handle claims as described in the Project Manual. The Architect/Engineer shall make reasonable efforts to resolve a claim, including involving the University Project Manager in resolution discussions.

## **6.8 Beneficial Occupancy**

- 6.8.1 Only in extraordinary cases shall beneficial occupancy be permitted prior to substantial completion of the project.
- 6.8.2 Beneficial occupancy shall not occur until after preparation and inspecting of a completed punch list, identifying all remaining work to be performed by the Contractor. The Architect/Engineer shall submit the following to the University Project Manager:
  - .1 Written approval of the Architect/Engineer.
  - .2 Written approval of the Contractor to occupy all or any portion of the project before formal acceptance by the Owner. This approval shall contain a statement from the Contractor that occupancy prior to acceptance by the Owner does not violate the provisions of the contract, that no liabilities are created, and that no unwarranted delay of contract requirements is created.
  - .3 Written approval of the State Fire Marshal and FPU Building Code Official.
  - .4 Written approval from the insurance resident agent that the builders' risk coverage provisions will not be violated.
  - .5 Written Agreement between the University and the Contractor pertaining to the payments for the utility costs during the period of occupancy.
  - .6 Written acceptance from the Architect/Engineer for the areas proposed for occupancy.
  - .7 Written notice to the State Fire Insurance Fund by the University implementing insurance coverage for the building and its contents.
  - .8 A copy of the punch list identifying all work remaining to be completed in the area to be occupied.
  - .9 Any other items required by the Architect/Engineer or the University Project Manager.

## **6.9 Substantial Completion**

- 6.9.1 The Architect/Engineer shall schedule the substantial completion inspection in consultation with the University Project Manager, Building Code Official, & Campus Architect, and send notices of the date and time to the University Distribution List. The Architect/Engineer shall perform activities related to substantial completion as described in the Project Manual.
- 6.9.2 The Architect/Engineer shall prepare a list of all items of work not acceptable at the time of inspection and provide a list of required corrections for each trade, including provisions

for indicating satisfactory correction at a subsequent inspection. The Architect/Engineer shall not certify Substantial Completion if the punch list items cannot be realistically completed within the additional days allotted for Final Completion (as determined in the construction contract).

**6.9.3** The Architect/Engineer shall prepare the Certificate of Substantial Completion, and submit four copies of the executed forms and three copies of the punch list to the University Project Manager. The substantial completion date must be the same or earlier than the substantial completion date established by the Owner/Contractor Agreement, as amended by approved change orders granting extensions of time. The Architect/Engineer shall submit a reconciling change order which justifies any extensions of time beyond that approved by earlier change order and recommend action relating to liquidated damages. The Architect/Engineer should not sign the Substantial Completion Certificate unless the State Fire Marshal has approved the occupancy of the facility.

**6.9.4** Official occupancy of the project shall not occur until substantial completion has been declared by the Architect/Engineer and approved by the University.

### **6.10 Final Completion**

**6.10.1** The Architect/Engineer shall schedule a final inspection in consultation with the University Project Manager and send notices of the date and time to the Owner's Distribution List.

**6.10.2** The Architect/Engineer shall provide the Contractor with a list of any additional requirements for corrective action resulting from this inspection and make additional inspections, as necessary, to ensure that the work is completed.

**6.10.3** The Architect/Engineer shall prepare the Certificate of Contract Completion and secure the signature of the Contractor. The substantial completion date on the Certificate of Contract Completion must be the same as the date shown on the Certificate of Substantial Completion.

**6.10.4** The Architect/Engineer shall forward four copies of the Certificate of Contract Completion to the University Project Manager for processing. The University Project Manager will attach the Certificate of Contract Completion to the Contractor's final request for payment when the payment is approved for processing.

**6.10.5** The Architect/Engineer shall submit the required copies of all shop drawings, as-built drawings, operation and maintenance manuals, warranties, and guarantees to the University Project Manager.

### **6.11 Post-Occupancy Inspection**

**6.11.1** The Architect/Engineer shall schedule a post-occupancy inspection forty-five (45) days prior to the expiration of the one-year general warranty period with the University Project Manager. The Architect/Engineer shall ensure that this inspection covers all phases of the constructed facility. The Architect/Engineer shall prepare a report describing all items found to be deficient and requiring corrective action.

**6.11.2** The Architect/Engineer shall provide the Contractor with a list of the items requiring correction.

## **ARTICLE 7 ADMINISTRATIVE APPLICATIONS**

### **7.1 Additional Service Authorizations**

**7.1.1** The Architect/Engineer may be asked to provide services which were not included as part of Basic Services in the Agreement. Additional Services are listed in the Agreement. Often, services which are typically considered beyond the scope of Basic Services are negotiated into the original agreement and then treated as a part of Basic Services. The Architect/Engineer shall

provide no services which are not included as part of Basic Services until it has received an Additional Service Authorization from the University. Any additional work provided prior to such authorization is not eligible for compensation.

- 7.1.2** When professional services not included in the Basic Services are needed, the Architect/Engineer shall discuss this service with the University Project Manager. The Architect/Engineer shall then submit a proposal to Florida Polytechnic's Project Manager outlining the additional services requested. If a portion of the services will be provided by consultants to the Architect/Engineer, then the consultants' proposals must also be provided. Florida Polytechnic's Project Manager will review proposal submitted and provide a University ASA memo with approval to move forward with said Additional Services. The Architect/Engineer should not proceed until form is received.
- 7.1.2.1** If the exact scope of work necessary to complete the additional service cannot be determined, the Architect/Engineer should request a not-to-exceed amount. Not-to-exceed authorizations may be billed monthly upon submittal of a detailed invoice, including timesheets, receipts, etc. The University will be the final authority as to whether an Additional Service Authorization will be issued as a lump sum or as a not-to-exceed amount.
- 7.1.2.2** Additional services shall be based on the maximum hourly rates established during the contract negotiation. Maximum hourly rates are listed by personnel category, i.e., Principal A/E, Registered A/E, Designer, Drafter, etc. (a principal is a person who has part ownership, control and contracting authority in the firm, and for which evidence can be provided for verification purposes)
- 7.1.2.3** If the fee curve can be used, a lump sum amount for the additional service may be determined. If the fee curve cannot be used, but the Architect/Engineer and University Project Manager can agree on the required scope, a lump sum can be developed, provided the Architect/Engineer's proposal and any involved consultants' proposals include a breakdown of hours required and hourly rates. Lump sum authorizations may only be billed upon completion of pre-determined phases and approval of corresponding deliverables. These phases and deliverables should be identified in the Architect/Engineer's proposal.
- 7.1.2.4** The Architect/Engineer's proposal must identify whether the request is for a lump sum or a not-to-exceed authorization. The proposal shall include the proposed schedule for provision of services and proposed deliverables.
- 7.1.2.5** Permitting costs may be included in an Additional Service Authorization to the Architect/Engineer. Before including such costs in its proposal, however, the Architect/Engineer should consult with the University Project Manager to ensure that the permitting or review agency has statutory authority to charge state agencies for its permit or review.
- 7.1.2.6** If the supporting documentation for an additional service request is extensive, the Architect/Engineer may be asked to provide four copies of the documentation.
- 7.1.3** The University Project Manager will review the proposal and, upon approval, will sign off on the ASA request.
- 7.1.4** Occasionally, the scope of an authorized Additional Service may increase. When the work required is expected to exceed the authorized scope, the Architect/Engineer must send a proposal to the University Project Manager requesting a revision to the Additional Service Authorization. The Architect/Engineer shall not provide any additional services which exceed the scope and the amount of the Additional Service Authorization until a written revision to the Additional Service Authorization is issued by the University.

**7.1.5** Additional Services for prolonged contract administration shall be determined as follows:

**$((A \div B) \times 0.8) \times C$**  = Additional Service amount.

- **A** = the original contract fee for construction administration
- **B** = the number of days in the original construction contract
- **0.8** explanation = the original contract administration fee includes the heavy workload at the beginning of the construction phase (shop drawing review, etc.) and the heavy workload at the end of the construction phase (substantial completion inspection, punch list development, final completion, etc.). The factor of 0.8 recognizes that these efforts have already been considered in the fee, and the prolonged portion of the construction phase are the days in the middle of the construction period.
- **C** = the actual number of construction days, minus the total of [the number of days in the initial construction contract, plus any days added by change order for which the Architect/Engineer was compensated by an Additional Services Authorization.

**7.1.6** If the Architect/Engineer recommends that a detailed cost estimate be conducted, the Architect/Engineer shall bear twenty-five percent (25%) of the cost for the detailed estimate. This recognizes the fact that the Architect/Engineer is responsible for cost estimates as a part of Basic Services, and a cost estimator will instead be providing those services. The eight percent (8%) administrative markup is not applicable to cost consultants when the detailed estimate is being conducted at the Architect/Engineer's request. If the Architect/Engineer does not recommend these services, but the University requests them, then the Owner will bear the entire cost of the cost estimator and the Architect/Engineer will provide its own independent cost estimates.

**7.1.7** The Architect/Engineer shall invoice for Additional Services as described in Paragraph 7.3 (Invoicing) herein.

## **7.2 Reimbursable Expenses**

**7.2.1** The Architect/Engineer must receive an Additional Service Authorization from the University before incurring a reimbursable expense. The only exceptions to this requirement is printing bid documents, placement of a legal advertisement for construction, or payment of Fire Marshal fees. (Note: Only the printing of bidding documents is considered an automatically authorized reimbursable expense. Additional printing of review sets for the Owner during design must be authorized in advance as an additional service as described in Paragraph 7.1 (Additional Services Authorization) herein. Documents printed for the Architect/Engineer's own use, Owner's review sets required by the Agreement, and the bidding sets required by the Agreement are not reimbursable.)

**7.2.2** Items such as general telephone, photocopying, fax and postage costs are not considered reimbursable expenses, because they are included in the Basic Services fee derived from the fee curve, or in the multiplier for Additional Services, or in the hourly rates for Campus Service Architects/Engineers. Except postage and handling costs for bid documents, these items may be reimbursed only under unusual circumstances; in order to be eligible for payment, the expenses must be authorized in advance by an Additional Service Authorization. The Architect/Engineer must submit a proposal to the University Project Manager which describes why the expenses are unusual and establishes a not-to-exceed amount. An Additional Service Authorization would then be issued.

**7.2.3** Travel expenses are only reimbursed when travel is required to perform an Additional Service; in which case, the travel and per diem costs must be at the state mileage rate and included in the proposal for Additional Services. Any travel required to fulfill the requirements of Basic Services is to be provided as a part of Basic Services.

**7.2.4** The Architect/Engineer shall invoice for Reimbursable Expenses as described in Paragraph 7.3 (Invoicing) herein.

### **7.3 Invoicing**

#### **7.3.1 General Requirements**

**7.3.1.1** The University is required by Section 215.422 (Payments, Warrants & Invoices), Florida Statutes to approve all invoices for acceptable, undisputed services, with a goal of making payment within 40 calendar days from receipt of invoice. The Architect/Engineer is request to assist in the achievement of this goal by ensuring that all invoices are properly prepared and contain the required supporting documentation. Due to the high volume of invoices received, no invoice will be held until a work product is correct, nor will major deficiencies in the invoices themselves be corrected. In these cases, the invoice will be returned to the Architect/Engineer with instructions for resubmission.

**7.3.1.2** All invoices shall be submitted to the University on Florida Polytechnic's Design Invoice Form, included as (Design Services Invoice). The Architect/Engineer shall submit a signed original and three copies, including a complete set of backup documentation for three of the four invoices.

**7.3.1.3** Invoices shall be numbered consecutively beginning with Number 1, and continuing in numerical order throughout the life of the contract. If an invoice is received by the University which is not numbered consecutively from the last approved invoice, it will be renumbered. For example, if invoice No. 12 is returned unpaid, and the Architect/Engineer submits invoice No. 13 prior to correction and approval of invoice No. 12, the University will renumber invoice No. 13 to No. 12.

**7.3.1.4** All authorized services and expenses for the life of the project shall be indicated on the invoice form. As additional services are authorized, they should be added to the invoice form. The Basic Services are to be listed as provided on the payment schedule in the Agreement. Additional Services are to be listed in consecutive order by authorization number. Reimbursable expenses are listed either as Printing Bid Documents or Legal Advertisement. With the exception of printing bid documents and legal advertisement expenses, no items shall be included on the invoice which has not been authorized either by the Agreement or an Additional Service Authorization. Any mileage reimbursement for subject matter experts, shall be at the state rate which is currently (.445 cents per mile) and include backup showing the round trip mileage.

**7.3.1.5** Invoices should not be submitted until the review period has passed following delivery of the required work product to allow the Owner's review.

**7.3.1.6** To expedite payment, the number of invoices submitted should be kept to a minimum, combining as many items as possible on each invoice. No more than one invoice may be submitted per month.

**7.3.2** Supporting Documentation Required: In order to comply with the University's procedures to meet the requirements of Section 287.057 (Procurement of Commodities or Contractual Service), Florida Statutes supporting documentation may be required for approval of invoices.

**7.3.2.1** Supporting documentation should be organized to correspond with the order that the items being requested for payment appear on the invoice.

#### **7.3.2.2 Basic Services:**

**.1 Design Phases:** The work product specified in the Agreement must have been submitted and approved prior to the invoice. No other supporting documentation is required.

**.2 Bidding Services:** Bidding services are only payable when the project is bid within the

budget. If a project must be rebid due to the fault of the Architect/Engineer, the fee for Receipt of Bids will not be paid until the project has been successfully bid. The Architect/Engineer shall have submitted the related items prior to invoicing, including the recommendation of award using form Construction Contract Fact Sheet, and if required, the approved threshold inspection plan.

- .3 **Construction Administration Phase:** Construction administration services are paid monthly in proportion to payments made to the Contractor. The amount to be invoiced is determined using the Contractor's Certificate of Partial Payment. The "Adjusted Contract Amount" is divided into the "Completed to Date" amount to determine the percentage completed. The resulting percentage is then applied to the total Construction Administration fee to determine the amount due each month. The Architect/Engineer shall also include the current construction status report.
  - i. The fully executed Contractor's Certificate of Partial Payment is required as supporting documentation for each monthly invoice.
  - ii. The request for one-hundred percent (100%) of the Construction Administration fee must be accompanied by the fully executed Certificate of Contract Completion.
- .4 **Post Occupancy Inspection:** The fee for post occupancy inspection is paid upon receipt of the post occupancy report as described in Paragraph 6.11 herein.

**7.3.2.3 Additional Service Authorizations based on a Lump Sum:** The work product specified in the authorization must have been submitted and approved prior to the invoice. A copy of the authorization is required as supporting documentation. Unless phased payments are provided for in the authorization, the invoice may not be submitted until the total services have been completed.

**7.3.2.4 Additional Service Authorizations based on a Not-to-Exceed Amount:** These additional services may be billed monthly upon presentation of a detailed invoice. Supporting documentation includes a copy of the authorization and the following documentation, as applicable:

- .1 **Labor costs** (for both the Architect/Engineer and consultants) shall be supported by time sheets, indicating the individual's name, specific days, hours and tasks performed. Show calculations performed when applying the multiplier and totaling costs. Labor is only compensated for actual hours worked. Overtime rates are not allowable unless specifically requested and approved in the Additional Service Authorization.
- .2 **Consultants' costs** must be also supported by a copy of the consultant's invoice. The invoice must be marked "approved" and signed by the Architect/Engineer.
- .3 **Permitting costs** must be supported by a copy of the invoice from the permitting authority indicating the type of permit.

**7.3.2.5 Reimbursable Expenses:**

- .1 **Printing Costs:**
  - i. The Architect/Engineer may only invoice for printing costs when the project has been successfully awarded to a bidder. If the project cannot be awarded due to no fault of the Architect, however, the Architect/Engineer may invoice for printing costs.
  - ii. Receipts for all printing, copying and mailing costs. Receipts must be legible. Figures included on the Contract Documents Cost Recap Sheet must be supported by highlighted figures on the receipts, and attaching an adding machine tape which supports the individual figures and overall totals.
- .2 **Advertising Costs:** An invoice for advertising costs must be supported by a copy of the text of the advertisement, a copy of the invoice from the newspaper and a statement from the newspaper certifying the legal ad was published.

- 7.3.3 Past Due Billings:** If there are past due billings when the next invoice is prepared, do not invoice for those services a second time. Include these amounts in the "Less Previously Billed" column. Inquiries concerning the status of an invoice should be directed to the University.
- 7.3.4 Invoice approval process:** Invoices are submitted to the University. After approval, a voucher is prepared and sent to the University accounting office, and then the University Comptroller's Office, where the warrant is issued to the Architect/engineer.