



# PROFESSIONAL SERVICES GUIDE

*PLANNING, DESIGN AND CONSTRUCTION, MAY 2024*

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**INTRODUCTION****Statement of Purpose and Objectives**

The current edition of the University of Central Florida (UCF) Professional Services Guide supersedes all previous editions. Its purpose is to assist the Architect/Engineer in providing services to the University of Central Florida. 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 Owner/Contractor Agreement; rather, it explains how to fulfill the requirements of these documents.

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.

The UCF Professional Services Guide has been prepared to assist Architects, Engineers and other design professionals in the design and construction of facilities for the University of Central Florida in accordance with the University of Central Florida Design, Construction, and Renovation Standards.

**UNDERSTANDING THE OWNER****The Owner**

The 'Owner' is the University on behalf of the University of Central Florida Board of Trustees, which governs the University of Central Florida.

The University President is granted authority by statute to execute design and construction contracts and is granted authority by administrative rule to administer the construction program. The Board has retained approval authority on some items relating to the construction program.

Funds for construction are appropriated, or authorized, by the Florida Legislature. The Board is accountable to the legislature for their proper expenditure. In discharging this accountability, the Board delegates certain authority for the construction program to the University President. The construction responsibility of the University President is administered by University Facilities and Business Operations, Office of Planning, Design and Construction.

**PROJECT REQUIREMENTS****University Project Supervision**

Facilities and Business Operations, spearheaded by the Planning, Design and Construction (PDC) department, is responsible for management of all design and construction projects. The University Project Manager (PM) is the direct link between the Architect/Engineer and the university stakeholders, and is responsible for coordination of the review of the drawings and specifications. The PM is to assist in keeping the project consistent with the approved Building Program, on schedule, and within budget.

**Communications, Meetings, and Minutes**

The University Project Manager is the point person for all official communications with the Architect/Engineer in administering a project.

Prior to or immediately following the issuance of the Notice to Proceed, the University Project Manager will provide a list of those persons who must be routinely copied on all written communications (Owner's Distribution List) to the Architect/Engineer. All written communications must include the University Project Number. The Architect/Engineer, in consultation with the University Project Manager, must schedule all necessary conferences and meetings.

The Architect/Engineer must record the minutes of all scheduled meetings, presentations, developments, and conferences, and furnish copies of these minutes within four (4) calendar days to the PM for review. Upon review of the meeting minutes and finding them accurate, the PM will distribute the meeting minutes to all attendees and to the persons identified on the Owner's Distribution List. The Architect/Engineer must list the names of those persons receiving the distribution of the minutes as an attachment to the minutes. The minutes must 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 calendar days."

All conferences, telephone conversations, consultations and meetings, which resolve or establish a question of scope, a design element, or other consideration of project development must be confirmed in writing by the Architect/Engineer with copies to all parties to the communication and to the Owner's Distribution List.

**A/E Initial Planning Meeting**

The A/E is authorized to begin work only upon receipt of a written Notice to Proceed issued by the UCF Department of Planning, Design and Construction, or a Purchase Order from UCF Procurement. Prior to any design work, the selected team is required to contact the University Project Manager to arrange an

initial planning meeting. The following is a typical initial planning meeting agenda. The actual agenda may vary in accordance with the project requirements.

### **Typical Agenda**

#### Introductions

- Responsibilities and Roles, (PDC, A/E, Construction Manager)

#### Procedures

- Communications- University Project Manager (PDC)
- Meeting Memoranda and Format (PDC)
- Review of Building Program (PDC)

#### Design Process Description and Approval Process (PDC)

- Design Phases
- Administration Conceptual Review
- Interim Design Meetings
- Design Review Workshops
- Schedule Presentations (A/E)

#### Project Issues

- Design Approach Presentation, Demonstration of Program Understanding and Building Program (A/E)
- Preliminary Discussion of Design Issues (A/E, PDC, Building Committee)
- Construction Management Process (if applicable) (PDC, Construction Manager)
- Construction Process (A/E, Construction Manager, PDC)

### **Design Meetings**

Design meetings will be coordinated by the University Project Manager with significant content provided and delivered by the A/E. These meetings will be held exclusively at the University, unless a remote meeting is approved by the University. It is incumbent upon the A/E to keep an accurate record of the meeting events. The purpose of interim design meetings is to clarify design issues with the project stakeholders. The A/E must be prepared to present all design documentation in electronic format. This material typically includes building plans, space spreadsheets, furniture layouts, interior finishes, and exterior renderings. The A/E must also bring a hardcopy of all presentation materials for each participant in the meetings. Meetings will occur to correspond with the phases of the



design process. The phases are delineated in the A/E contract and could be as follows:

- Conceptual Schematic Design (sometimes combined with Advanced Schematics, this is decided during contract negotiations)
- Advanced Schematic Design
- Design Development
- 50% Construction Document
- 100% Construction Documents
- Conformed Construction Documents (100% Construction Documents with bid RFI responses incorporated)

**Technical Review Workshops**

Beginning with the Advanced Schematic Design Phase, technical review workshops will occur, coordinated by the University Project Manager.

The technical review workshops involve an in-depth technical review by non-end user University stakeholders, including departments such as Utilities and Engineering Services (UES), Facilities Operations (FO), Reliability Engineering (RE), Landscape and Natural Resources (LNR), Environmental Health and Safety (EH&S), Emergency Operations Center (EOC), Security Management (SM), Space Administration (SA), UCF Police, UCF Information Technology (UCF IT), Parking Services, Business Services, and the Office of Instructional Resources (OIR). These meetings are daylong events with review sessions scheduled to address the specific disciplines involved in the project.

*Example schedule for Technical Review Workshops*

9:00AM - 10:30AM	Civil/Utilities/MEP/Landscape & Natural Resources/Elevators
10:30AM - 12:00PM	Telecommunications/Computer Services/Security/Business Services
1:00PM - 2:30PM	Codes and Life Safety

All technical review workshops will be held at UCF’s Campus. The A/E will deliver one hardcopy or electronic drawings as specified in the contract at least 14 calendar days before the scheduled workshop. In addition, the A/E will upload an electronic set of documents to the proper eBuilder folder for electronic distribution. The University Project Manager will make appropriate distribution of the documents.

The Architect/Engineer must provide written response to all Owner’s written document review comments within four (4)

calendar days identifying the page in the plans and specifications where changes were made related to specific comments.

### **Project Schedule**

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 must deliver to the University Project Manager a project schedule identifying the specific dates for all phases applicable to the project.

The schedule must incorporate dates of anticipated meetings and end-of-phase milestone dates as stipulated by the A/E agreement. In addition, the schedule must indicate:

- A list and dates of anticipated interim design conferences and workshops.
- The start dates and duration of each major phase of the project design.
- The duration and completion dates of each design review period, which are required to maintain the project schedule.
- The projected duration and completion dates of other project-related activities, such as funding decisions, surveys, geotechnical investigations, fire marshal and St. Johns River Water Management District approvals, etc.
- The estimated duration of bidding, and award periods.
- An estimated total construction duration based on the A/E's best knowledge and similar project schedules.

The Project Development Schedule will be discussed and finalized as required at the initial planning meeting. The project development schedule is up-dated by the A/E and re-submitted with each end-of-phase submittal. Prior to starting any subsequent project phase, the current submission must be approved by the University Project Manager.

## **Site and Existing Building Information**

### **Status Reports**

The Architect/Engineer must visit and inspect the site and location of the work, including the general surrounding area, as often as required to be fully acquainted with all pertinent local conditions affecting the development of the project.

The Architect/Engineer may request the University Project Manager to provide additional information, if deemed necessary, and the University Project Manager must furnish the additional information or must direct the Architect/Engineer to obtain it at the

Owner's expense. The Architect/Engineer must evaluate and verify all information provided by the University Project Manager.

When a project includes extensive renovations, restoration or remodeling of an existing building, the University Project Manager must provide the Architect/Engineer with record drawings of the facility. The Architect/Engineer must 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. If authorized, the Architect/Engineer must investigate existing conditions, both in the open and those that are hidden, in addition to preparing the required measured drawings. The Architect/Engineer must 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 must arrange with the University Project Manager for the work to be done.

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.

When the investigation of a site is provided under the Agreement, the Architect/Engineer must 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 must 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. The cost of any permits required and the investigation are reimbursable expenses and must be authorized by the University as an additional service prior to their occurrence.

During Construction Administration, the Architect and its consultants will provide the University Project Manager with detailed reports of construction progress, as outlined in the professional service contract.

### **Surveys**

The Architect/Engineer must consult with the University Project Manager to determine if a survey of the site is available. If one is not available, the Architect/Engineer must determine the scope of surveying needs.

When requested by the University Project Manager to obtain a survey, the Architect/Engineer must select a qualified surveyor and provide a proposal to the University Project Manager. The University will issue an additional service authorization. Payment

for the cost of the survey will be made in accordance with invoicing procedures.

The survey must contain the following:

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

- All headings and distances of property lines of all parcels which comprise the site.
- 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.
- Details of all party walls, walls, fences and foundations on the site and adjacent to, or within five feet of, the property lines.
- Where no monument exists, suitable permanent monuments must be set at property corners and at other appropriate locations.
- Area of site in acres (to .001 acre) and in square feet if less than one acre.
- Zoning of property and adjacent properties.
- Certification on the survey drawings by a qualified official that establishes or anticipates widening or changes to street lines, grades or curbs, sidewalks, and all utility services are correctly shown.
- The full legal description of the parcel shown and an indication if the parcel is part of a parent tract.
- 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 must be reconciled and explained.*

#### **Topographic Survey**

- All of the items listed under Land Boundary Survey above.
- The position, dimension, elevation and contours of all cellars, excavations, wells, backfilled areas and similar openings and the elevation of any water therein.
- Existing trees with a trunk Diameter at Breast Height (DBA) of three inches or greater, their identities in English and botanical terms, trunk sizes and approximate foliage areas.
- Existing shrubs, undergrowth, and ground cover areas.

- 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.
- Floor elevations of existing buildings to be renovated.
- All 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.
- 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 must be provided.
- Location of test borings and soil borings where ascertainable.
- The official data upon which elevations are based and the bench mark established on or adjacent to the site must be clearly indicated. Only one such data point or bench mark must be used on any one site for establishing the grades for a project.
- Contours and elevations on a grid system of two (2) foot intervals must indicate changes of slope over that portion of the site to be developed. The interval for contours must be tailored to the site under consideration.
- The contemplated date and description of any known or proposed improvements to the approaches or utilities on or adjacent to the site.
- The survey scope of work issued by the A/E must include a note that University sidewalks and pavers may not be sprayed with spray point to mark utilities, and that if this is done, the survey company will be fully responsible for removing such spray paint.

*The survey drawings must be included in the contract documents.*

#### **Geotechnical Services**

- Investigation and testing, if required, of geotechnical conditions is necessary and must define the scope of work required.

**UCF Design,  
Construction, and  
Renovation  
Standards**

- Upon approval by the University Project Manager to obtain subsurface investigation and testing services, the Architect/Engineer must 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 invoicing procedures.
- If additional subsurface investigation and testing is required when the results of the initial exploration are received, the Architect/Engineer must submit to the University Project Manager an estimate from the testing firm for additional investigations to be performed. The Architect/Engineer must not proceed with the additional investigation until the revised Additional Services Authorization is received from the University.
- The Architect/Engineer must provide grade, foundation, and structural design solutions based on the geotechnical engineer's analysis and recommendation, and must submit such analyses and reports to the University Project Manager.

The UCF Design, Construction, and Renovation Standards (UCF Standards) are managed by the Facilities and Business Operations. The current version of the UCF Standards is listed on the PDC Website. These standards are specific to the University of Central Florida and must be followed.

Evaluation of life-cycle operating and maintenance costs must be a part of any initial materials and equipment decision. Products which have not achieved a minimum five-year period of successful use in the construction market must not be used. Roofing products require a longer proven history; the Architect/Engineer will discuss these requirements with the University Project Manager.

The Architect/Engineer must 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 must 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 must be named and the opportunity provided for other products to be submitted for approval in order to qualify before the bid date.

If a proprietary specification for materials or equipment is required, the Architect/Engineer must 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.

If the Contractor proposes a substitution product during construction, the architect must ensure that the product is equal or better in quality than the specified product. The Architect and Contractor must obtain the Owner's written permission for all substitutions.

#### **Protective Construction / Fallout Shelter in Public Buildings**

Florida Statutes provides that protective construction and/or fallout shelters should be considered when constructing public buildings. The degree of compliance will depend on factors which vary with the type, size, location, and cost of the individual structure or facility. Unless specifically instructed otherwise, the Architect/Engineer will consider such protective construction in the planning and must provide an evaluation of its cost.

The investigation and design for protective construction is considered a basic service under the Agreement.

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

Whenever a project involves funding participation by federal or local governmental agencies, the Architect/Engineer must ascertain the requirements of such participation and comply fully with these requirements in the contract documents. Where grants constitute any part of the project funding, the Architect/Engineer must ascertain which conditions of the grant funds must be addressed in the contract documents.

#### **Available Consulting Service**

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.

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

The Architect/Engineer must 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 must be identified by the Architect/Engineer and the tie-in from the building must be compatible with it. Profiles of all utilities must be an integral part of the construction documents. Elevations of all existing and future utilities must be clearly profiled to make it easier for site execution.

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

The Architect/Engineer must ensure that the design and contract documents comply with all applicable codes, regulations, and orders. The Architect/Engineer must 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 must meet the latest editions adopted through legislation for use in state owned/leased buildings.

The Architect/Engineer must use the following codes (where code requirements conflict, the university will resolve any disputes of code application):

**Building Codes**

- Florida Building Code in all of its sections.
- Fire and Life Safety: Florida Fire Prevention Code.

**Other Requirements**

- Rules of the Department of Business and Professional Regulation, Division of Hotels and Restaurants, Bureau of Elevator Inspection.
- Rules of the Agency for Health Care Administration.
- Life Cycle Analyses (addressed in Article 4 - Design and Construction Documents herein).
- Department of Education space standards contained in the Size of Space and Occupant Design Criteria Table, State Requirements for Educational Facilities (SREF).
- Asbestos and Lead-Based Paint Surveys, Operations & Maintenance, and Abatement
  - Rules of the Florida Department of Labor and Employment Security.
  - Requirements of all applicable Florida statutes.
  - Rules of the Florida Department of Environmental Protection.
  - Regulations of Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency.
  - Licensing regulations of Asbestos Consultants, the Florida Department of Business and Professional Regulation.
  - Lead-based paint minimum abatement standards of the Department of Housing and Urban Development and current state of the art procedures to protect university personnel, students and visitors.



- All asbestos abatement contractors are to be pre-qualified under the Owner Provided Insurance Program.
- Rules of the Department of Environmental Protection.
- Rules of the jurisdictional water management district.
- Rules of the Army Corps of Engineers.

Mechanical, Heating, Ventilating and Air Conditioning (HVAC) systems and equipment design and installation must 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; and American Standards Institute
- (ANSI) standards.
- The Trench Safety Act

**Requirements for State Fire Marshal Review and Approval**

The State Fire Marshal has statutory responsibility for review of all plans that have a life safety scope. Plans for review must be submitted, in accordance with the State Fire Marshal's review procedures, to Planning, Design and Construction. Plans are submitted through the UCF Building Code Office for all projects permitted under the University Building Code Administrator. Visit the UCF Building Code Official's website for information on permit submittals. Coordinate all permit submittals with the University Project Manager.

**State Fire Marshal (SFM) Requirements**

The Architect/Engineer must confer with the University Project Manager to determine those permits to which the project is subject. The Architect/Engineer must 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 must 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.

**Sources of the required permits and approvals**

City and County
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Special provisions for campus planning and concurrency were established by the legislature 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. The Architect/Engineer must 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 must not initiate the local review/permitting process for a project without an additional service authorization or other written authorization from the University. 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.

Department of Business and Professional Regulation, Division of Hotel and Restaurants, Bureau of Elevator Inspection

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 must be included. The elevator subcontractor must submit documents to the Bureau of Elevator Inspection for approval prior to construction. The Architect/ Engineer must incorporate any required changes into the construction documents.

Agency for Health Care Administration (AHCA), Plans and Construction Office

All additions or modifications to hospital facilities are subject to the rules and standards promulgated by AHCA. The Architect/Engineer must contact AHCA to determine their requirements.

Department of Environmental Protection (DEP), area district branch

All projects are subject to the environmental requirements of the Department of Environmental Regulation. The

Architect/Engineer must contact the area DEP office to determine the environmental requirements for the project.

Water Management District, area district office

All projects are subject to the regulations relating to water management through the area water management districts. The State University System is required to pay the permit fee of the area water management district. The Architect/Engineer must contact the area water management district to determine the water management requirements for the project.

### **Cost Estimates**

The Architect/Engineer must ensure that an accurate cost estimate is provided with each design submission. This cost estimate must also include a comparison to the approved budget. The approved budget is the amount included in the Architect/Engineer agreement. The Architect/Engineer must not design a project exceeding the approved budget without written notice from the PDC Project Manager that the budget has been increased.

### **Area Measurements**

Unless otherwise indicated, space measurements must be made in accordance with the State Requirements for Educational Facilities (SREF), maintained by the Department of Education.

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 must also provide the University with total square footages based on the following criteria:

#### **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.

#### **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 telecom equipment areas.

The Office of Space Administration has developed space standards specific to UCF that must be followed.

#### **Covered Walkway Gross Square Feet**

Measure floor area, excluding any areas which were included in the calculation for Building Gross Square Feet.

The Architect/Engineer's execution of the Agreement implies acceptance of the building program and the design must incorporate all its requirements. The Architect/Engineer must not perform professional services, which vary from the approved building program without the written prior approval from the University Architect.

The request for a building program amendment must 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 must 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, if necessary, authorizing the additional professional services. In the absence of an approved program amendment, the original program requirements will govern.

The scope of the project is defined by the building program and the Owner's Project Requirements (OPR). Specific to the A/E are:

### **Building Program**

- A "generic" site analysis (items as available)
  - Site topography and soil conditions
  - Site water table, flood hazard and storm water drainage requirements
  - Vehicular and pedestrian circulation
  - Site vegetation

- Archaeological history
- Location of existing utilities and proximity of utilities to the site
- Architectural significance of any structure on site and the proximity and significance of structures on adjacent sites which will have an impact on the project
- Any unusual site condition which may impact the cost or design of the project
- Program Area
  - Program Area Table (a list of all spaces, stations and net square footage requirements)
  - Academic Program Statement
    - Description of space function (may be accompanied by diagram of a typical space)
    - Equipment required for space
    - Special requirements such as lighting, acoustical treatments, finishes, etc.
    - Description of space relationship to other spaces and a functional diagram of those relationships
- Utilities Impact Analysis
  - Chilled water
  - Electrical
  - Potable Water
  - Sanitary Sewer
  - Reclaimed Water
- Information Technology Resources and Requirements
- Requirements Codes and Standards
- Project Schedule
  - A critical path schedule for development of the project correlated to the funding cycle. Elements of the schedule include: advertisement, shortlist, interview, contract award, fee negotiations, contract execution, design, contract document preparation, agency approvals, bidding, construction contract award, construction, and closeout.
- Program Funds
  - Source and availability of funding for planning, construction, furnishings, and equipment.

## UCF IT

- Project Space and Budget Summary
  - Listing of space by the Board of Governors categories (classrooms, teaching labs, research labs, study, instructional media, auditorium/exhibition, gymnasium, student academic support, office/computer, campus support services, residential, and other assignable spaces).
  - Budget Summary of Project Costs (building, site development, infrastructure, furnishings and equipment, planning and construction-related fees, artwork, contingencies, etc.).

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

The university has adopted UCF IT telecommunications standards. Telecommunications typically includes telephone and computer data systems combined in one set of wiring.

Basic services include:

- 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.
- Telecommunications conduit from the main building telecommunications room to the nearest telecommunications manhole or building as the University directs. This telecommunications scope must be included in the project's base bid scope.
- 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.

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

Building spaces with fume hoods and animal holding facilities typically are required by code and best practice to have 100% outside air. 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.

#### **Overall Guidelines**

The Architect/Engineer must be responsible for:

- Developing, documenting, and promoting technical discussion of these systems early in the Project, through

**HVAC Systems**

the development of a Basis of Design (BOD) document that responds to the Owner's Project Requirements (OPR). Early submittals are to include narrative technical discussion of system types, materials, and controls; including options, advantages, disadvantages, relative costs, and Architect/Engineer recommendations.

- Ensuring that all major decisions regarding system types, materials, and controls are determined and agreed to by Owner 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.

**DESIGN AND CONSTRUCTION DOCUMENTS****Standards for  
Construction  
Documents****Drawing Requirements**

Schematic Design documents can be produced in an 11" by 17" size format. Design Development and Construction Documents must be produced for review purposes at 30" by 42" unless another size is approved by the University Project Manager. Specific deliverables are noted in the contract with the University. The sheets of each submittal must be the same size. All design documents must be submitted in a reproducible, digital form. Documents when rolled and broken into volumes should not exceed approximately 100 pages for manageability.

The cover and back sheet of every hardcopy deliverable must be laminated.

The title block on each drawing must appear in lower right-hand corner or along the right margin and include at a minimum:

- University name
- Project Location
- Net and gross square footage of project
- UCF Project Number
- Project Phase
- Name, address, phone of Architect, Engineers, Consultants
- Sheet Title, Name, Number
- Date of issuance
- Initials of preparer
- Printed name of responsible professional
- Seal and signature of responsible professional

All applicable design data must be shown on the drawings, for example:

- Life Safety Code
- Current Building Code data
- Design loads, working stresses, and assumed conditions
- Gross and net square footage calculations

Lettering must be capitalized vertical uppercase and must be plain and legible; minimum size must be 1/8". All symbols must be clearly separated from one another and from adjacent lettering or lines.

Every plan, elevation, section, detail, etc. must include a scale. The scale should be given as an example of the object drawing, i.e.:



scale 1/8" = 1'-0". Graphic scales must be provided where appropriate.

Every plan, elevation, section, detail, etc., must use best practices for drawing legibility – see diagrams on the following pages with green text indicating acceptable drawing practices, and red text indicating unacceptable drawing practices. These include:

- Extension of cut lines to properly outline sections and details; extension cuts should not be broken, and should “cut” through the building/ground and stop at the exterior of the building.
- Using thin lines for all interior lines of details, and a bold line for the outer edge of details
- Proper gradients and half-tones for backgrounds so that drawings are easy to read – especially sub-consultant drawings
- No crossing of leader lines; separate text and notes from linework so it is easily legible
- Details and notes aligned on the page for graphic clarity
- Hatches and patterns that are clear when printed full size
- Enlarged section and plan details are to be 1 1/2" = 1'-0" minimum scale. Typical window sills and roof flashing details are to be 3" = 1'-0" or 6" = 1'-0" minimum, in order to properly depict flashing assemblies.

Drawings that fail to follow these requirements will be rejected.

All 100% Construction Document drawings must be prepared in Revit, AutoCAD, and PDF format unless otherwise specified by the contract.

CORRECT

INCORRECT

\* HALF-TONE BACKGROUND IS JUST RIGHT - NOT TOO DARK, NOT TOO LIGHT

\* DUCTWORK VERY CLEARLY DRAWN AND LABELED

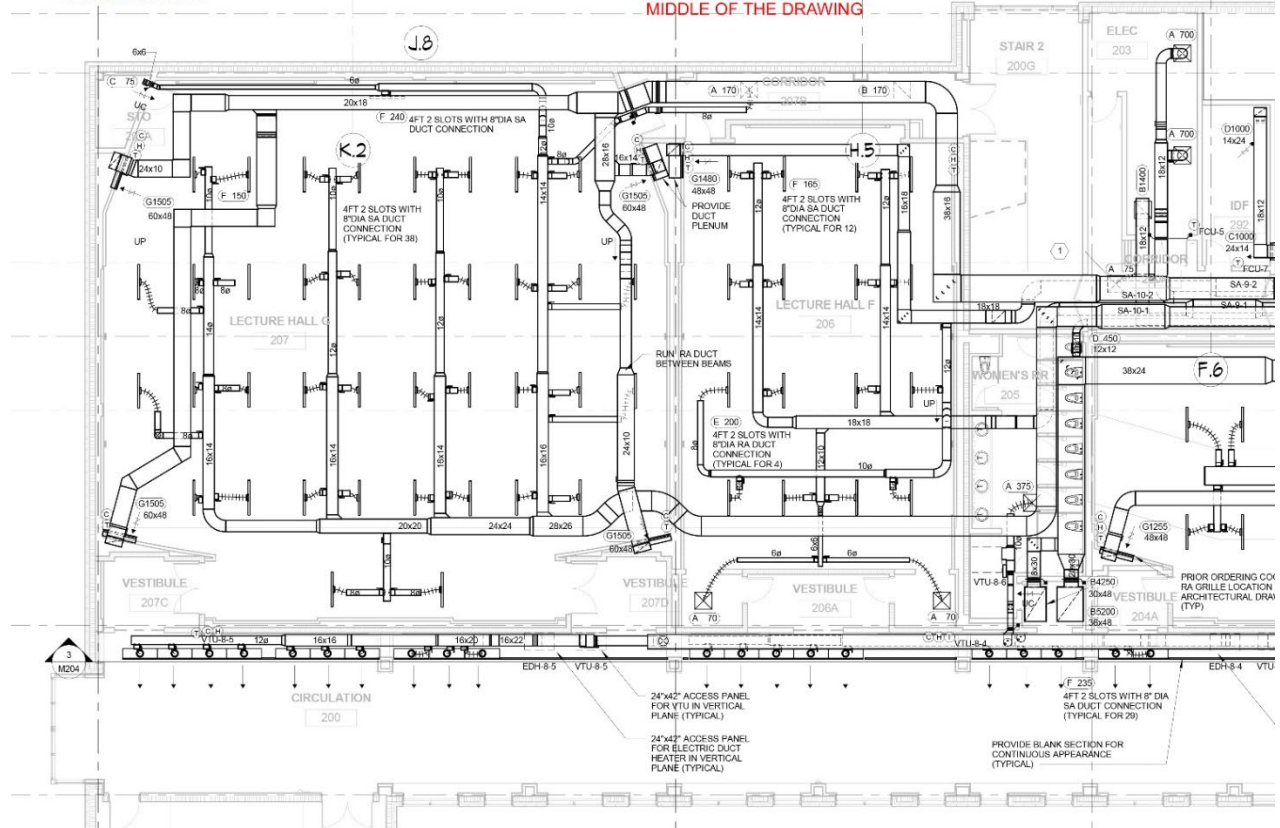
\* SOME ITEMS IN BACKGROUND (TOILETS, WATER FOUNTAIN, SINKS) SHOW BLACK INSTEAD OF HALF-TONE - CREATES SOME VISUAL CLUTTER

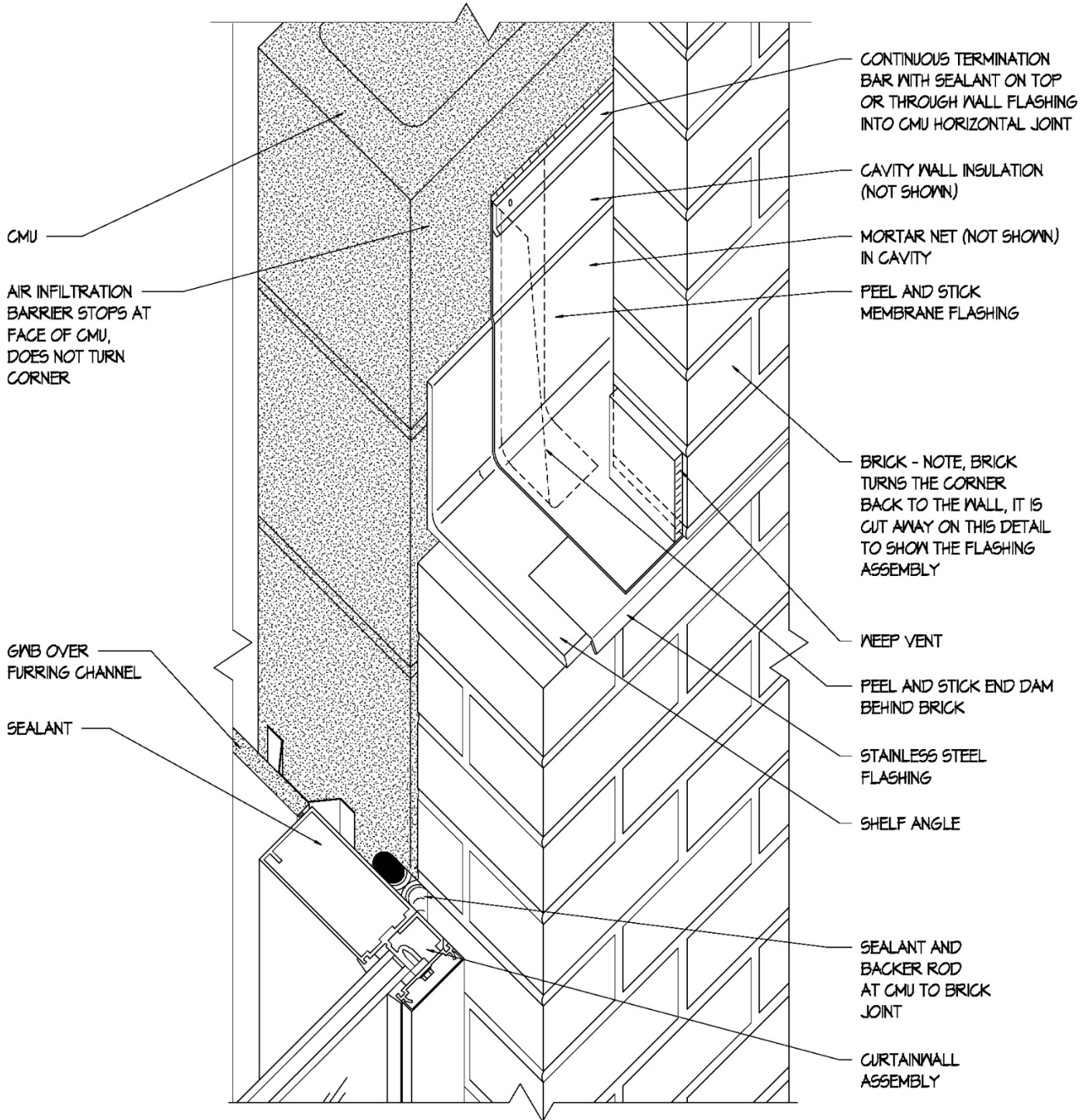
\* PREFER REFLECTED CEILING PLAN AS BACKGROUND, WITH DOOR SWINGS TURNED OFF... IF VISUALLY CLEAR

\* BACKGROUND EXTRANEOUS THINGS TURNED OFF TO AVOID VISUAL CLUTTER

\* NOTES DO NOT OVERLAP WITH LINEWORK

\* COLUMN BLIPS ARE IN THE MIDDLE OF THE DRAWING





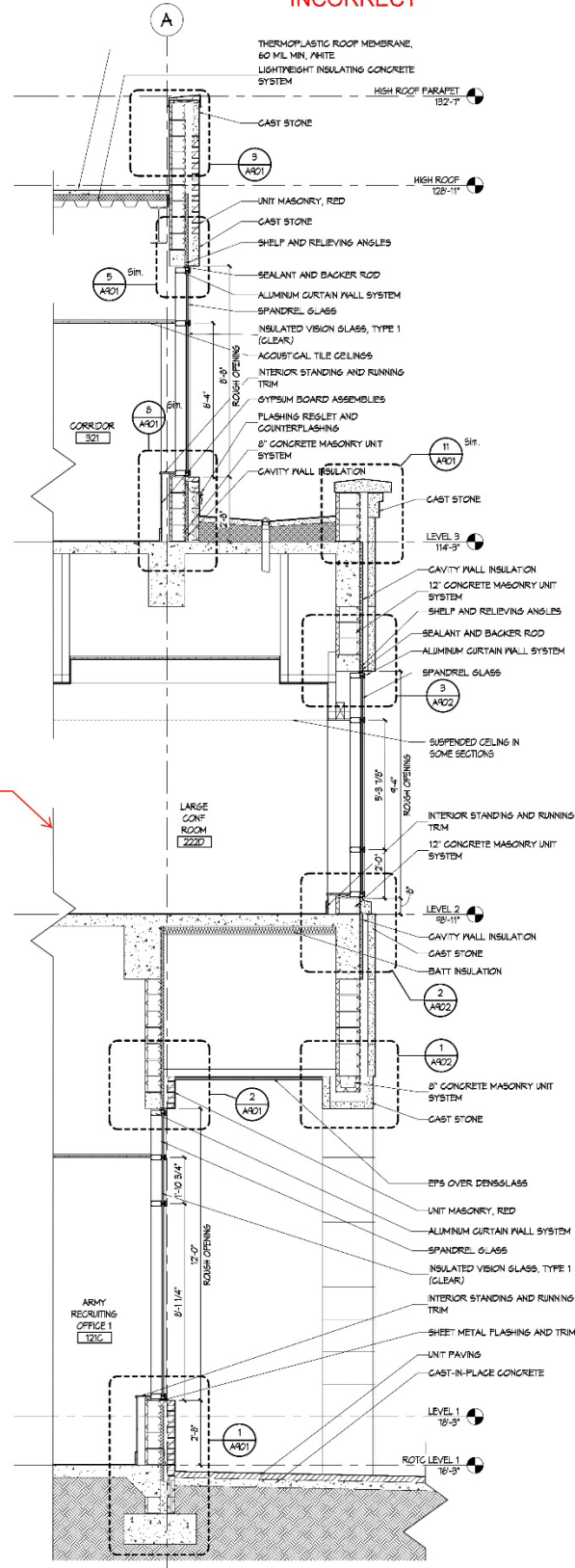
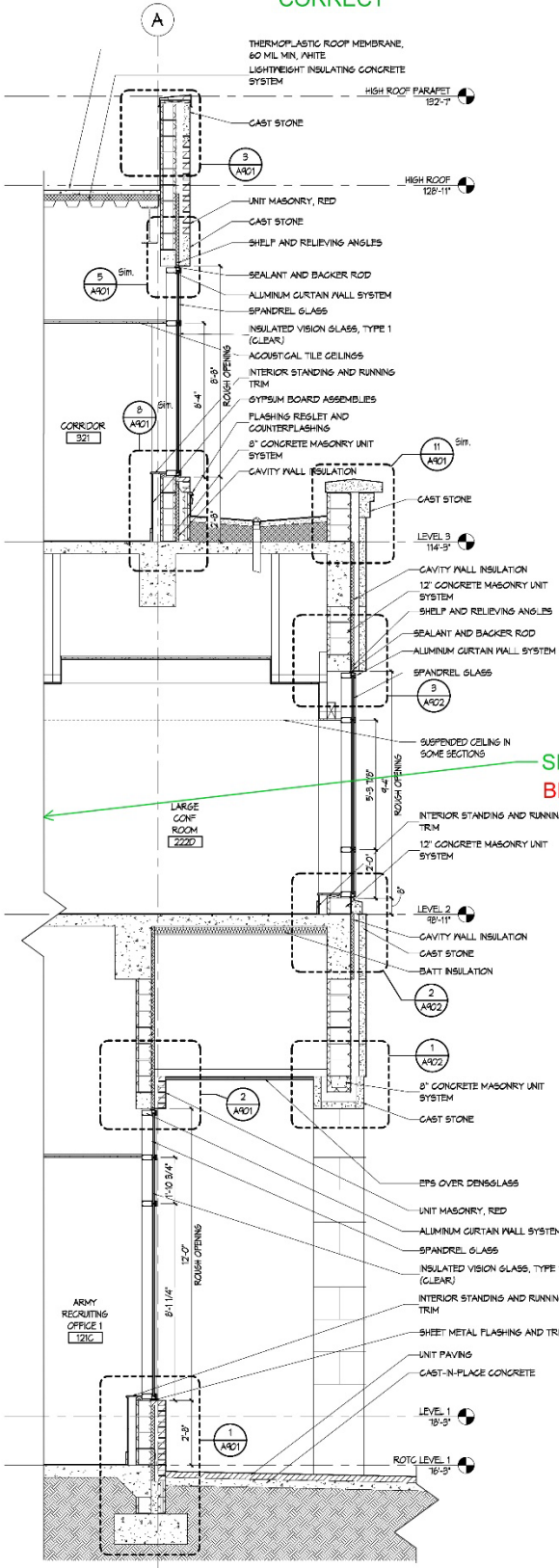
Isometrics are required for typical conditions with multiple systems intersecting

### ISOMETRIC - BRICK TO CURTAINWALL TYPICAL

1 JAMB  
3" = 1'-0"

CORRECT

INCORRECT

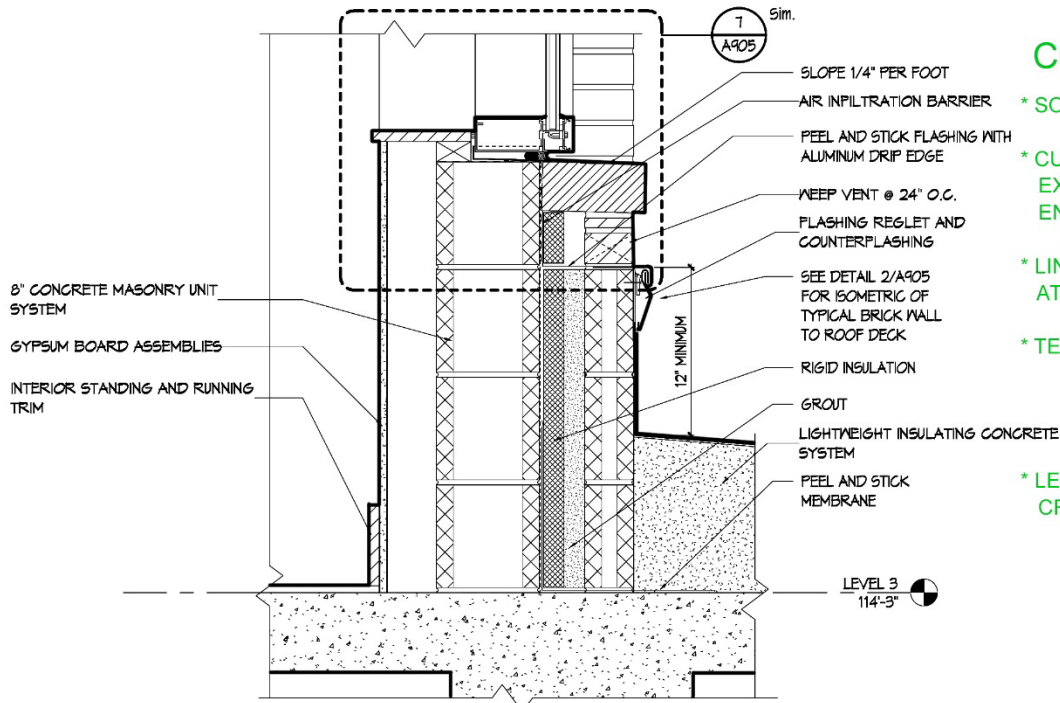


SINGLE CUT LINE  
BROKEN CUT LINE

2 ENLARGED WALL SECTION 1  
3/8" = 1'-0"

2 ENLARGED WALL SECTION 1  
3/8" = 1'-0"





**CORRECT**

\* SOLID CUT LINES

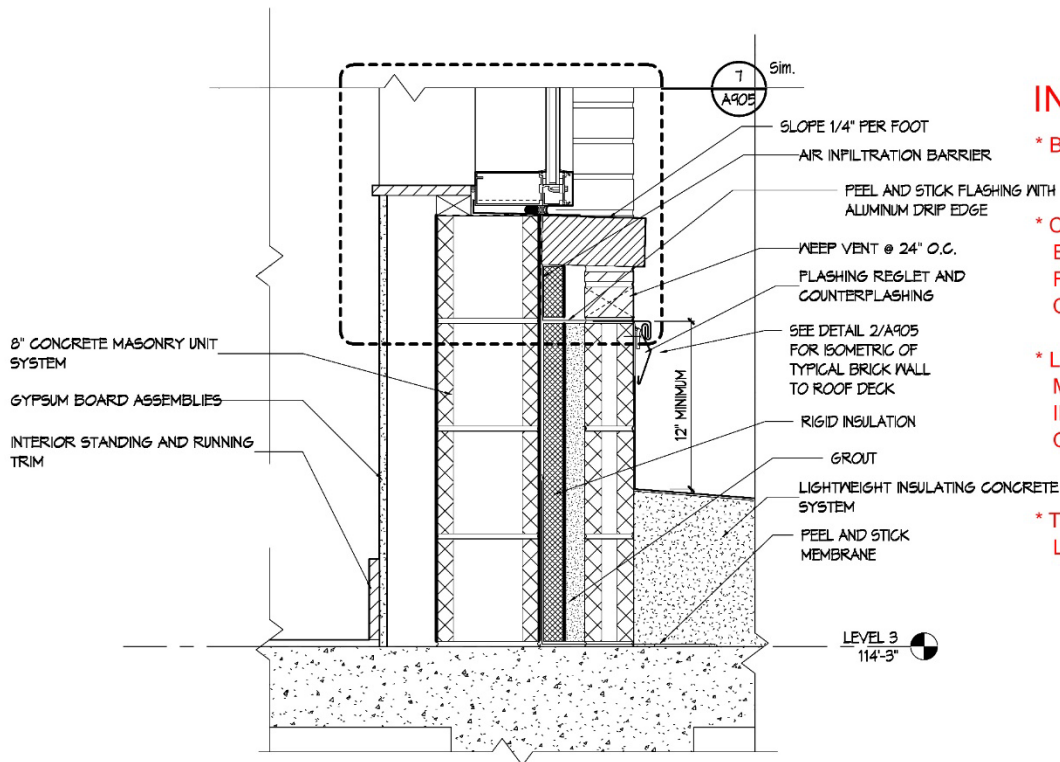
\* CUT LINES  
EXTEND JUST PAST  
END OF CUT

\* LINES BOLD ONLY  
AT OUTER PROFILE

\* TEXT LINES UP

\* LEADERS DO NOT  
CROSS EACH OTHER

**8** SECTION DETAIL - BRICK WALL TO ROOF  
1 1/2" = 1'-0"



**INCORRECT**

\* BROKEN CUT LINES

\* CUT LINES  
EXTENDING TOO  
FAR PAST END OF  
CUT

\* LINES BOLD IN  
MIDDLE OF DETAIL  
INSTEAD OF  
OUTER PROFILE

\* TEXT DOES NOT  
LINE UP

**8** SECTION DETAIL - BRICK WALL TO ROOF  
1 1/2" = 1'-0"

The University Project Manager will provide and review with the Architect/Engineer the standard UCF Instructions to Bidders, General Conditions and Special Conditions, and any applicable supplements. The Architect/Engineer must become thoroughly familiar with these documents and incorporate additional requirements and Special Conditions as appropriate. If changes to the General Conditions are necessary, they must be accomplished by the use of Supplementary General Conditions.

The Architect/Engineer must prepare the Project Manual so that it complies with the requirements and customary practices of the university for which the project is planned; 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.

Hardcopy Project Manuals must be printed in an 8½" x 11" format, spiral 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.

Technical specifications must be prepared in accordance with the most recent Construction Specifications Institute Manual approved by the university. Specification sections must be formatted in three parts: general, products, and execution. See the UCF Standards for additional requirements.

#### **Proprietary Specifications**

When specific manufacturers are named, it should serve only to establish a level of quality. 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, prior to bid opening, as described in the General Conditions of the Contract for Construction.

Sole source specifications must be recommended to the University and approved by UCF Procurement in writing in accordance with Florida Statutes.

Augment, but do not repeat, the provisions contained in the Instructions to Bidders, Conditions of the Contract, and Contract Forms. Likewise, do not repeat provisions contained in the General Requirements.

The Architect/Engineer must 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,

**Conceptual  
Schematic Design**

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.

In referencing standard specifications, the Architect/Engineer must: avoid reference to specific paragraphs in the standard specifications which will limit the specification; avoid repeated references to a standard specification within the same section of the specifications; and, include types, classes, weights, and such characteristics to ensure accurate description.

Final contract documents must bear the professional seal and signature of the Architect/Engineer.

**Errors and Omissions**

The drawings must 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. First costs of errors and omissions will be borne by the University, but non-first costs associated with errors and omissions will be the responsibility of the Architect/Engineer of Record. Non-first costs associated with scope gaps that cannot be covered by buy-out savings or contractor contingency will be the responsibility of the Construction Manager. First costs and non-first costs must be identified by the Construction Manager and verified by the Architect/Engineer on all Change Orders.

The Conceptual Schematic Design phase requires the development of a concept or concepts for the project. The early conceptual studies required by the agreement must be sent to the University for review and approval. For the final Conceptual Schematic Design submittal, the Architect/Engineer must 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.

**Conceptual Schematic Design Deliverables**

Between the date of the Notice to Proceed and the Conceptual Schematic Design submittal, the Architect/Engineer must 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 Design submittal requirements noted below:

- A statement confirming that the Architect/Engineer has verified the building program and Owner's Project Requirements (OPR), and that the Conceptual Schematic Design complies with these documents.

- A Basis of Design (BOD) document outlining concepts and measures proposed to ensure energy conservation and compliance with the OPR. The document must include 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.
- A detailed project schedule, including all major design, permitting, bidding, and construction milestones.
- 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.
- 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, if applicable.
- 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.
- Topographic studies of the terrain, emphasizing features that contribute to the solution or require significant alteration for a solution.
- A description of the site, including known soil conditions, ground water conditions, zoning, accessibility, utility services, governing codes, etc.
- 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.
- In the case of additions or renovations to existing buildings, a plan showing existing and proposed facilities in their relative arrangement and relationship.
- A plan for providing total accessibility to the facility. The Architect/ Engineer should request ADA survey information from the University Project Manager, if applicable.
- A confirmation or updated statement of the building program's off-site utilities demand quantities. The Architect/Engineer must 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 must include notice to that effect.

The following utility items must be included:

- Chilled Water – estimate of tons required and identification of source of supply (package or central plant). Analysis of adequacy of off-site pipe capacity.
- Steam or Hot Water Loop – estimate of BTUH required and identification of source of supply. Analysis of adequacy of off-site pipe capacity.
- Electrical – Estimate of KVA load and identification of source and adequacy of supply.
- 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.
- Irrigation Water – Identification of number of gallons per day required and identification of supply source. Discussion of any permit requirements.
- A list of applicable codes and required permits.
- A total project cost estimate and space analysis correlated to the program requirements and approved budgets, including any off-site and off-campus infrastructure costs.
- 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 the design and are required to attend all design review meetings.

Projects with laboratories and/or fume hoods: Conceptual Schematic Design submittal must include:

- 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 18 inches or less); and, cubic feet per minute.
- Technical narrative of HVAC including type of fume hood exhaust system(s) to be used (central collection systems preferred, individual exhaust accepted with university approval); duct and stack materials; maximum horizontal duct diameter; types of fans with location and redundant fans noted (penthouse required

## Advanced Schematic Design

for fans unless university agrees otherwise); discussion of fume hood exhaust stack with minimum exit velocity and height noted; snorkel systems; and, general exhaust systems.

- Technical narrative of fume hood system controls including available choices (constant volume, occupied/unoccupied for energy conservation; proposed life cycle analysis system schemes).
- Technical narrative of laboratory plumbing systems including preliminary listing of all systems to be used.
- Technical narrative of laboratory electrical systems.

For Projects with 100% outside air and specialized HVAC systems, the Architect/Engineer must provide similar information to the above, omitting what is not applicable to the Project. Clean room class per ASHRAE must be specified.

### Central utilities systems projects

- The Architect/Engineer must include a discussion of options for systems, equipment, materials and technical options. The discussion must include options considered, advantages, disadvantages, budget costs, and Architect/Engineer's recommendation. All scope related to utility infrastructure must be approved by UCF Utilities and Engineering Services (UES).

### Advanced Schematic Design Deliverable

The Advanced Schematic Design phase requires the evolution of the approved concept. Between the Conceptual Schematic Design submittal and the Advanced Schematic Design submittal, the Architect/Engineer must continue discussions with Owner/User to further clarify the systems requirements, design basis and cost.

The deliverable must include, but is not limited to:

- An update to all of the Conceptual Schematic Design phase deliverables, with particular focus on:
  - An updated Basis of Design (BOD) document outlining concepts and measures proposed to ensure energy conservation and compliance with the OPR.
  - A detailed project schedule, including all major design, permitting, bidding, and construction milestones.

- 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.
- Floor plans (including "life safety plans"), elevations, building sections, and sketches as necessary to adequately present the concept.
- Energy life cycle cost analysis complying with state requirements must be conducted: a) when the project provides 13,000 or more new gross square feet or an estimated total new HVAC load of 40 tons or more (or other as described in current codes); or, b) when the project includes renovation of space and new HVAC air handling units for which the load is 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 must be submitted. The University Project Manager will provide written direction to the Architect/Engineer on the scheme to be used in the project.
- Identification of total demand loads for the project. Where it has been determined that there is a shortfall in capacity to serve the building project for any utility, the Architect/Engineer must 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 must be included in the Advanced Schematic submittal.
- Provide a narrative of the systems, options, advantages, disadvantages and budget costs. These systems will usually be included in the life cycle 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 will apply.
- Specific layouts of complex areas such as kitchens, seating, sleeping, etc.
- An updated plan for providing accessibility to the facility.
- Details as necessary.
- A statement of the provisions for acoustics.
- Outline specifications, using the approved CSI format.
- 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.

- Recommendations regarding additional or other services requested or required, such as: soil borings, detailed cost estimates, and models.
- 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:

For Projects with laboratories and/or fume hoods, the Advanced Schematic Design submittal must include:

- Updated fume hood schedule including room location, type of hood, size, minimum face velocity at specified open sash height, cubic feet per minute.
- Updated HVAC technical narrative with type of fume hood exhaust system(s) to be used (central collection systems preferred, individual exhaust accepted with university approval); duct and stack materials; maximum horizontal duct diameter; types of fans with locations and redundant fans noted; discussion of fume hood exhaust stack with minimum exit velocity and likely height; snorkel systems; and, general exhaust systems.
- 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 guy-wires; typical stack elevation view with top of stack height.
- Updated fume hood system controls technical narrative (constant volume, occupied/unoccupied for energy conservation; proposed energy life cycle analysis system schemes).
- Updated laboratory plumbing systems technical narrative, including preliminary listing of all systems and materials to be used.
- Updated laboratory electrical systems technical narrative, including preliminary listing of design philosophy (one panel per lab, 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.

For Projects with 100% outside air and specialized HVAC systems, the Architect/Engineer must provide similar information to the above, omitting what is not applicable to the Project. Clean room

**Design Development**

Class must be documented, as well as how the proposed design is to meet the ASHRAE requirements for that Class.

**Central utilities systems projects**

The Architect/Engineer must include further development and discussion of the selected options and complete scope with simplified central plant or site sketches. The Architect/Engineer must include an estimate of construction cost by major equipment line items and a discussion of this estimate with respect to the Owner's budget.

**Design Development Deliverable**

Between the Advanced Schematic Design submittal and the Design Development submittal, the Architect/Engineer must continue discussions with 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.

Significant changes requested by the end user must be made prior to 50% Design Development Documents.

The deliverable for this phase must include:

**Site**

- Location plots, property and topographical surveys, subsurface boring logs and plans, ecological and botanical surveys, and other appropriate information.
- 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.
- Grading and Site Development.
- All permanent features to be constructed on the site.

- 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.
- All existing and proposed utility services including runs, locations, capacities, sources, characteristics, materials and installation methods should be fully described. The Architect/Engineer must work with the university and assure that planned utilities are provided in the project.

**Basis of Design (BOD)**

- 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.
- The characteristics of the electrical supply to the site, including circuit interrupting requirements and voltage regulations.
- 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.
- The basis for selecting a primary and/or secondary distribution voltage.
- The type, size, and location of conductors.
- Describe the pertinent standards of design, such as voltage drop, physical characteristics of overhead or underground circuit, types of lighting units and lighting intensities.
- 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.
- Emergency power systems.
- Fuel Distribution and Storage. Information provided must include the following types:
  - Gas: Statement of type, location of takeoff from supply, and available pressure; statement of type and material for pipes and valves.
  - 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.

- Steam or Hot Water Distribution: Data provided should include points of connection, pressure, size, material and method of installation of proposed piping.
- 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 must also be included.
- 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.
- 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.
- 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.
- 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.

- Irrigation Systems: tentative layouts, material, sizes, etc.
- Site drainage plans and analysis.
- Fencing: Type, height and justification for fencing.
- Landscaping: Plant species, size and layout. Actual full-grown canopy size must be indicated in the plan, both for existing trees to be saved and for new trees.
- Lateral and transverse sections through the site must indicate development of the site, when necessary, due to substantial elevation changes or circulation at more than one level.

### **Buildings**

- Architectural:
  - The plan of each floor showing movable and built-in furniture and equipment, fixed equipment, and any other use-determining factors.
  - 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.
  - Exterior elevations, delineating materials and noting floor elevations at each level.
  - Transverse and lateral sections through the building, indicating heights, vertical circulation, and relationships. The finished floor elevations of each level should be given.
  - 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.
  - Schedules indicating finishes and equipment, and the required flame spread ratings, etc.
  - A summary of code related design parameters on the drawings noting NFPA, Standard Building Code, and other required codes compliance criteria. This summary of items must address, but not be limited to: travel distances, sprinkler requirements, ratings of fire protection, exit width requirements, building type, construction type, occupancy classification, etc.
  - Provide large scale plans describing complex, intensely equipped or furnished areas, and areas needing clarification.



- A description of the materials used for all major components of construction.
- Other information, drawings, etc. considered necessary for the development of the program or explanation of the design.
- The University Project Manager must coordinate with Space Administration so the University room numbering system can be established. The established room numbers must appear in each room in the design development submittal and schedules.
- Structural:
  - 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.
  - Statement as to the type of construction adopted and reasons therefore, with capacities, dimension, or other size criteria.
  - 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.
  - The description of structural roof system proposed with principal members, dimension, etc.
  - Provide structural building sections, transverse and longitudinal, indicating vertical relationships and headroom.
  - 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.
  - Provide calculations and design criteria when requested.
  - A statement of any special considerations that affect the design.
- Heating, Ventilation, Air Conditioning (HVAC):
  - Building Classification for Energy Consumption.
  - An equipment schedule.
  - Provide floor plan showing equipment layouts and layouts of supply and return duct work.
  - Provide a typical enlarged section of mechanical room showing equipment and duct work. Also include a typical

enlarged section of space above corridors when used for ductwork, and typical sections of space above labs showing fume hood exhaust ducts.

- Provide a full description of automated management systems proposed for use, including current and future capabilities.
- 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 will apply.
- Statement of indoor and outdoor design temperatures and "U" factors for walls, ceilings, floors, etc., to be used in design.
- 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.
- Type of heating system such as reheat at central air handling units, perimeter terminal units with heat coils, etc.
- Number of air changes per hour or CFM per square foot in various areas. State basis for selection of air change rate (ASHRAE Guide and page number; Standard Mechanical Code, etc.)
- Ventilation air quantity during heating season and how acquired.
- ASHRAE 62 outside air quantities must be provided. The means of measuring and controlling this outside air must 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 must discuss its approach to achieve this in this submittal.
- Provide a brief description of the air conditioning systems considered and final system selected.
- A statement of areas to be air conditioned.
- Statement of inside design temperatures and relative humidity, outside wet and dry bulb design temperatures and a statement of the economics of applying insulation and/or sun shades.
- Description of HVAC equipment to be used inside and outside the building. Include air handling units, filters VAV boxes, terminal units, exhaust fans, etc.

- Discussion of HVAC controls, including type (pneumatic only, pneumatic with Direct Digital Control 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.
- Refrigeration (Cold Storage):
  - Statement of areas to be refrigerated indicating their usage and temperatures to be maintained.
  - Outside design dry and wet bulb temperatures.
  - Type of refrigeration equipment, type and thickness of refrigeration insulation, and whether factory prefabricated cooler or cold storage box.
- Electrical:
  - Indicate electrical service entrance characteristics, transformer requirements, etc.
  - Indicate electrical characteristics such as phase, voltage, number of wires, etc. of each circuit. Provide a breakdown of the estimated connection load to show:
    - Lighting and convenience outlet load.
    - Power load for building equipment such as heating, air conditioning, etc.
    - 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.
  - Indicate the location of the main switchboard or power panels, light panels and all equipment panels.
  - Indicate type of wiring system, such as a rigid conduit, electrical metallic tubing, non-metallic sheathed cable, and where proposed for use.
  - The type of conductors such as rubber insulated, varnished cambric, lead covered, etc., and their proposed location.
  - Show the location of all lights, power outlets, switches, etc.

- Describe the proposed pertinent standards of design such as voltage drop, lighting intensities, and types of lighting fixtures.
- Describe the short-circuit duty required for all protective devices and switchgear.
- Indicate the requirements for the emergency electrical system.
- Provide any other information deemed necessary.
- Communications, Electronic and Instrumentation Provisions:
  - 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.
  - Indicate equipment selection, including special equipment requiring development, research, or bread-board methods to meet the requirements.
  - Site or location considerations.
  - Required radio paths and propagation.
  - Antenna requirements such as types, separation, tower heights, aircraft clearance, and area requirements.
  - Antenna transmission lines, terminations and switching.
  - Bonding and grounding requirement.
  - Communication, control cables and radio links.
  - Test equipment, repair shop, and spare parts storage requirements.
  - Equipment and instrumentation arrangement and space requirements indicating requirement for racks, consoles, and for individual mounting.
  - Wiring and cable requirements plus terminations.
  - Power and lighting requirements, including emergency or standby requirements.
  - Air conditioning requirements, including humidity, dust control, and maximum operating temperature of equipment requirements.
  - Interference and clearance requirements.
  - SCADA equipment must be included.

- Plumbing:
  - Provide preliminary layout of utility lines and building construction service lines and elevations and sizes fundamental to design.
  - Preliminary floor plans showing major horizontal and vertical services, the location and size of fixtures, equipment and the number of persons served.
  - Preliminary building section showing riser and branch lines, fixtures and equipment.
  - Provide the estimated number of fixture units in order, demand and GPM for all plumbing fixtures.
  - Provide the estimated minimum and maximum water pressure at each building.
  - Indicate the type of heater and capacity for hot water supply.
  - Additional details as necessary to describe or clarify any other conditions.
- Fire Protection:
  - Indicate service hydrant, stand pipe, test valve, and fire pump locations.
  - Indicate risers and hose cabinets.
  - 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.
  - Provide any other data deemed necessary.
  - Indicate certification necessary for fire alarm installers, suppliers, and manufacturers.
  - Provide a requirement that the final design must be reviewed with the State Fire Marshal.
  - For public spaces with exposed fire sprinklers, such as lobbies or stairs, provide a fully designed fire sprinkler system to ensure aesthetic considerations are addressed during design.
  - Fire alarm systems will be installed, by the approved manufacturer's representative, with the approval from the university.

- Special Equipment:
  - Kitchen equipment.
  - Auditorium seating.
  - Stage curtain and equipment.
  - Gym layout and equipment.
  - Window coverings.
  - Hospital equipment.
  - Lawn sprinkler equipment systems.
  - Material handling equipment.
  - Any other systems deemed necessary for inclusion.

For Projects with laboratories and/or fume hoods, the Design Development submittal must include:

- 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.
- 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.
- Provide duct work layout, penthouse/mechanical room equipment layouts, roof plan and typical stack elevation view.
- Final fume hood system controls technical narrative.
- 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.
- Updated laboratory electrical systems technical narrative must include a description of the design philosophy used.

For Projects with 100% outside air and specialized HVAC systems, the Architect/Engineer must provide similar information to the above omitting what is not applicable to the Project.

- Clean room Class per ASHRAE and how requirements are met must be documented, including HEPA filters.
- An updated plan for providing total accessibility to the facility and evidence of coordination with the university.

- Energy and potable water savings equipment, systems and measures. The Architect/Engineer must provide a listing of all such items incorporated into the project for additional energy and potable water savings.

A completed Document Submittal and Review Checklist must be submitted to ensure that all items in the checklist have been met.

### **Additional Design Development Requirements**

- Probable Construction Costs
  - The Architect/Engineer must provide an estimate of total project cost. If the project cost estimate exceeds the project budget, the Architect/Engineer must provide Value Engineering options to get the project back in budget.
- Renderings – provide images showing the current design direction.
- Alternates
  - Under no circumstance must any items required by code or required to make the facility functional be included as an alternate.
- Leadership in Energy and Environmental Design (LEED)
  - All university buildings are to be designed and constructed to meet LEED standards – see university policy for the current LEED requirements. This scope includes documentation and the completion of template forms that are related to each discipline i.e. Architect, Mechanical, Engineer, etc.
- Code and Permit Analysis Summary
  - A building-specific code and permit summary must be included on the drawings. The summary must include, but not be limited to: exit and fire protection requirements and calculations, building classification, occupancy, and sprinkler hazard rating.
- Compliance with the UCF Design, Construction, and Renovation Standards

### **Design Development Presentation**

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 and other project stakeholders. This presentation must 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

**Construction Documents**

implementing the design concept in the final plans and specifications. This presentation must also include a detailed description of the Standard Building Code and Life Safety Code data and accessibility criteria incorporated in the documents, to ensure that all elements of design conform to statutory and required building codes. The Architect/Engineer must respond in writing to any comments generated by this presentation prior to the advancement to the next design phase.

The Construction Documents phase requires the Architect/Engineer to prepare contract documents in sufficient scope for bidding and construction. Interior finishes and schedules

The specifications and drawings must indicate the actual colors and products chosen to be used on the project. The Architect/Engineer must also submit options of colors to be used, including pallets and material samples as necessary. It is required that a formalized color-board be presented and approved. The University Architect must approve all interior and exterior materials and colors prior to completion of 50% Construction Documents.

**50% Construction Documents Phase**

The Architect/Engineer must 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.
- Include all items addressed in the Design Development documents.
- Include final specifications and major mechanical, electrical, and plumbing equipment schedules.
- The 50% Construction Documents submittal must also include the Architect/Engineer's estimate of total project cost.
- An updated Basis of Design (BOD) document from the Design Development phase.
- Clearly profile elevations of all existing and future utilities.

Upon university approval of the 50% Construction Documents, the Architect/Engineer may submit a request for payment.

**100% Construction Documents Phase**

The Architect/Engineer must submit 100% Construction Document review sets to the University Project Manager and to any other agency from which approvals are required.

The submittal must include:

- The Architect/Engineer's estimate of total project cost



- The Project Manual

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 must respond in writing to all comments and must correct or modify the contract documents as required.

The University Project Manager may ask the Architect/Engineer to resubmit the 100% Construction Documents with all comments addressed in a conformed set of drawings.

The Architect/Engineer will submit the "Facility Classification for Energy Consumption" form with 100% Construction Documents. This form can be found on the UCF PDC website.

Upon approval of the 100% permit review Construction Documents by the university and any other agency from which approval is required, the Architect/Engineer may submit a request for payment.

## BIDDING AND CONTRACT AWARD

### Hard Bid Projects to General Contractors

#### Advertising and Soliciting Bids

The Architect/Engineer shall provide bidding services as described in the Agreement and in the Project Manual. The call for bids for all construction projects will be advertised in the Florida Administrative Weekly thirty (30) days prior to the bid date. The University Project Manager will coordinate the advertisement.

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.

The Architect/Engineer shall recommend a bidding period to allow adequate time for the preparation of bids by the contractors and subcontractors. Florida Statute requires that construction bids be advertised for a minimum of 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.

The Architect/Engineer is responsible for distributing the drawings, specifications and addenda to bidders and other interested parties.

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. The Architect/Engineer shall supply bid tabulation forms for the bidders' use during the bidding.

#### **Pre-Bid Meeting**

The purpose of the Pre-Bid Meeting is to review the project requirements with prospective bidders. The meeting may or may not be mandatory depending upon the nature and complexity of the project. A typical agenda includes the following:

- Introductions
- Project Overview (A/E and Consultants)
- Pre-Qualification Requirements (if applicable) and Bidding procedures
- Budget Questions
- Pre-Bid Site Visits

Site visits are encouraged but are not usually mandatory. Unless specifically noted, a site visit is not considered part of the Pre-Bid Meeting. For convenience, however, a site visit may be held at the conclusion of the meeting. Additional site visits may be scheduled and will be conducted by the A/E. The A/E will coordinate with the university Project Manager as to the availability of appropriate times for site access. Prospective bidders are not to visit project facilities or sites without proper authorization.

#### **Pre-Qualification of Bidders**

Because of the nature of the project, size or complexity, the University in consultation with the A/E may require special pre-qualification requirements of bidders. The pre-qualification requirements are to be included in Project Manual. Generally, submittals from prospective bidders will be made to the A/E for evaluation on or before a prescribed deadline within the bidding period. The A/E shall review the evaluation procedures and results with the University Project Manager before making a final recommendation. Notification to all parties as to the results of the evaluation will be made by the A/E. In the case of unqualified bidders, specific reasons for non-approval are required. The approved list of bidders will be distributed as an addendum to the contract documents.

#### **Opening of Bids**

**Construction  
Management (CM)  
Projects**

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.

The University Project Manager will receive and open the bids. The Architect/Engineer shall attend and assist in the bid opening.

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.

**Award of Contract**

The project will be awarded as described in the Instructions to Bidders in the Project Manual. The Architect/Engineer shall provide the University Project Manager with a recommendation for award of the construction contract as soon as possible after bid opening. The University President makes the contract award.

**Preparation and Execution of Contract**

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.

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.

**Design Phase Cost Control**

During design, the CM is responsible for providing cost estimates at each design milestone, including value engineering suggestions to ensure the project stays within the Owner's budget. If the project exceeds the Owner's budget at any time, the CM must work with the Architect/Engineer to make value engineering suggestions to get the project back in budget.

**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.

**Opening of Subcontractor Bids**

The subcontractors 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.

The University Project Manager will receive and open the bids, and initial the bids. The Architect/Engineer shall attend and assist in the bid opening.

The Construction Manager 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 Construction Manager secures the signature of the University Project Manager and signs, and submits the original bid tabulation to the University Project Manager.

**Guaranteed Maximum Price Proposal Review**

The Construction Manager will review and scope the bids, ensuring that they include the complete scope of work. The CM will then develop a Guaranteed Maximum Price (GMP) proposal, for review by the Architect/Engineer and UCF.

The Architect/Engineer will review the GMP and any value engineering suggestions, making recommendations to UCF for consideration. The Architect/Engineer's 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. The University will then review the GMP, negotiate value engineering options, and recommend approval of the GMP through a contract amendment to the CM's contract.

Any value engineering options accepted by the University that are required to keep the project in budget must be incorporated into the contract documents by the Architect/Engineer at no additional cost to UCF.

**CONSTRUCTION ADMINISTRATION****General**

The Architect/Engineer shall provide construction administration services as described in the Project Manual, more specifically as set forth in the General Conditions of the Contract for Construction.

The following items briefly describe several of the major activities of the A/E in carrying out his contract responsibilities. The list is not intended to be all-inclusive. Detailed requirements are set forth in the Agreement between Owner and Architect/Engineer.

**Site Visits**

The A/E is required to visit the site during construction a minimum of once per week to include the weekly construction progress meeting or more frequently as is appropriate during certain stages of construction. The A/E shall have continuous access to the site. The A/E shall prepare a weekly field report describing the progress of the job and noting any issues that need documentation or resolution by the Construction Manager or Owner.

**Means and Methods**

The A/E shall not have control over the means, methods, procedures, or schedule of the construction process. This is the responsibility of the contractor.

**Approvals**

The A/E shall review and approve all shop drawings, product data and samples. Efficient handling of submittals is necessary so as not to delay construction progress. However, conformance to quality required by the contract documents must not be sacrificed for expediency.

**Preconstruction Conference**

The University Project Manager shall arrange and chair a meeting with the General Contractor (or Construction Manager), Architect/Engineer, major subcontractors, and other interested parties.

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

**Scheduled Construction Conferences**

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

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

The University Project Manager, the Architect/Engineer, and the Contractor (or Construction Manager) shall attend all construction conferences. When required, other consultants, subcontractors, and other parties shall attend.

**Contractor's Required Submittals**

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

**Construction Schedule**

Within 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 (or Construction Manager) 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.

The Architect/Engineer shall monitor the construction schedule, making the University Project Manager aware of any concerns.

**Schedule of Values**

Prior to the first Application for Payment, the Contractor (or Construction Manager) shall submit a Schedule of Values as required by the Contract Documents.

The Architect/Engineer shall review the Schedule of 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 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.

**List of Subcontractors**

The Contractor (or Construction Manager) shall submit a list of 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.

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.

**Shop Drawings, Materials and Equipment Submittals**

The Contractor (or Construction Manager) shall submit shop drawings, product data and samples as required by the Project Manual. The Architect/Engineer shall act on these submittals as described in the Project Manual.

The Architect/Engineer shall provide 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 Contractor (or Construction Manager) is required to maintain a record 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 will be required to prepare a final set of reproducible electronic record drawings, incorporating all changes to the contract documents during construction, provided electronically to the university.

**Clarification of Drawings and Specifications**

The Architect/Engineer shall ensure that changes to drawings and specifications prepared in response to a request by the Contractor (or Construction Manager) for clarification do not change the scope of the project. Changes in scope shall be handled by change order. Clarifying drawings shall contain a detailed narrative explanation and the statement, If the clarifying drawings or specifications modify the scope of the basic contract, the Contractor (or Construction Manager) shall notify the Architect/Engineer immediately.

Copies of any clarifying drawings or specifications and the Architect/Engineer's transmittal shall be transmitted to the University Project Manager.

**Applications for Payment**

The Architect/Engineer shall meet with the University Project Manager and the Contractor (or Construction Manager) to discuss handling Applications for Payment. They shall establish a day to be used for pay request cut-off. The request for payment must relate to the approved Schedule of Values. The Contractor (or Construction Manager) shall 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 (or Construction Manager'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.

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

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

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

**Change Orders and Construction Change Directives**

Changes in the contracted work should be held to a minimum. The Architect/Engineer shall review all changes in the work, regardless of the amount, as documented by Change Order. Change Orders 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".

The Architect/Engineer shall review each Change Order showing all the information and backup needed. Change Orders shall be supported by a cost proposal from the Contractor (or Construction Manager) showing quantities and sizes of materials, unit cost, labor, profit and overhead; and a narrative justification. A Change Order shall be reviewed by the Architect/Engineer and the Contractor (or Construction Manager).

The University Project Manager will determine that each change order is complete and secure the required approvals.



**Beneficial Occupancy**

Beneficial Occupancy occurs when the Building Code Official issues a Certificate of Occupancy (or Temporary Certificate of Occupancy) for the project.

Beneficial occupancy shall not occur until inspections are complete and a punch list has been delivered, identifying all remaining work to be performed by the Contractor (or Construction Manager). The Architect/Engineer shall submit the following to the University Project Manager:

- Written approval of the Contractor (or Construction Manager) to occupy all or any portion of the project before formal acceptance by the Owner. This approval shall contain a statement from the Contractor (or Construction Manager) 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.
- Written approval of the State Fire Marshal.
- Written acceptance from the Architect/Engineer for the areas proposed for occupancy using a Certificate of Substantial Completion
- A copy of the punch list identifying all work remaining to be completed in the area to be occupied.
- Any other items required by the Architect/Engineer or the University Project Manager.

Refer to PDC policies on Substantial Completion for additional requirements. For projects with a change of occupancy, the Architect/Engineer shall participate in the Owner's eBuilder Owner's Substantial Completion (OSC) process.

**Final Completion**

The Architect/Engineer shall schedule the final completion inspection in consultation with the University Project Manager, and send notices of the date and time to the University Distribution List. The Architect/Engineer shall perform activities related to final completion as described in the Project Manual.

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 Final Completion if the punch-list items remain. The commissioning effort must be finalized and all LEED documentation completed and submitted before final completion will be approved.

The Architect/Engineer shall participate in the Owner's eBuilder Final Completion and Close-Out (FCCO) process. The final

completion date must be the same or earlier than the final completion date established by the Owner/Contractor Agreement, as amended by approved change orders granting extensions of time.

Upon contract completion, the Architect/Engineer shall provide the University Project Manager with a Certificate of Contract Completion. The University Project Manager will attach the Certificate of Contract Completion to the Contractor's (or Construction Manager's) final request for payment when the payment is approved for processing.

**Post-Occupancy Inspection**

Architect/Engineer shall schedule all post-occupancy inspections, per the terms of the contract. Inspections are to be coordinated with the University Project Manager and be no more than one month prior to the end of the warranty term in the project's construction contract. The Architect/Engineer shall ensure that these inspections will cover all phases of the constructed facility. The Architect/Engineer shall prepare written reports for each inspection describing all items found to be deficient and provide these reports to the Contractor for corrective action. The Architect/Engineer will coordinate follow-up meetings/calls with the Contractor (or Construction Manager) and UCF Project Manager until all items are completed to the Owner's satisfaction.

**BASIC SERVICES**

UCF has developed a Policy titled “Basic and Additional Services for Major and Minor Projects” that defines what is a Basic Service and what is an Additional Service on a project. Refer to this policy for additional information.

**ADMINISTRATION APPLICATIONS**

The Architect/Engineer may be asked to provide services which were not included as part of Basic Services in the Agreement. 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.

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 the University Project Manager. If a portion of the services will be provided by consultants to the Architect/Engineer, then the consultants' proposals must also be provided.

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.

Additional services shall be based on the maximum hourly rates established during the contract negotiation. 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.

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.

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.

The University Project Manager will review the proposal and, upon approval, will issue an Additional Service Authorization.

Project Type	Vendor	Contract Type	e-Builder Process
Over \$4M construction cost	AE	Agreement between Owner and Professional	07AS – Additional Service
Under \$4M construction cost	AE	Purchase Order	07C – Purchase Order Revision

**Additional Service**

Changes in scope, cost, or time for an AE overseeing projects over \$4M construction cost are always handled through the 07AS – Additional Service process (AS).

The AE should always discuss the contemplated additional service with the PM prior to initiating this process in e-Builder. Upon approval FBO will modify the Purchase Order for the AE to include the changes introduced by the AS scope and amount.

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.

**Reimbursable Expenses**

The Architect/Engineer must receive an Additional Service Authorization from the University before incurring a reimbursable expense. The only exception to this requirement is printing bid documents, placement of a legal advertisement for construction, or payment of State Fire Marshal fees. (Note: Only the printing of bidding documents is considered an automatically authorized

reimbursable expense). Refer to the contract for allowable reimbursable expenses.

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.

The University of Central Florida does not typically allow reimbursable expenses for travel, meals, or lodging associated with design services. Any travel required to fulfill the requirements of Basic Services is to be provided as a part of Basic Services. Exceptions must be negotiated as an allowance during initial contract negotiations.

The Architect/Engineer shall invoice for Reimbursable Expenses as described in Invoicing.

### **General Requirements**

The State and UCF are required by Florida Statutes to approve all invoices for acceptable, undisputed services. The Architect/Engineer must ensure that all invoices are properly prepared and contain the required supporting documentation. No invoice will be accepted until the work has been approved and completed. Incorrect or incomplete invoices will be returned to the Architect/Engineer with instructions for resubmission.

All invoices shall be submitted to the university through eBuilder, using the UCF [Professional Services Invoice](#) form found on the [PDC website](#) as backup. The Architect/Engineer shall submit a signed original in electronic format.

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.

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

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.

### **Supporting Documentation Required**

In order to comply with the State Comptroller's rules promulgated to meet the requirements of Florida Statutes supporting documentation described is required for approval of invoices, as follows:

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

### **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.

### **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 items required by Bidding and Contract Award of this Guide prior to invoicing, including the recommendation of award and if required, the approved threshold inspection plan.

### **Construction Administration Phase**

Construction administration services are paid monthly in proportion to payments made to the Contractor (or Construction Manager). 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 a copy of the current Construction Phase Status Report.

The fully executed Contractor's Certificate of Partial Payment is required as supporting documentation for each monthly invoice.

The request for 100% of the Construction Administration fee must be accompanied by the fully executed Certificate of Contract Completion.

### **Post Occupancy Inspection**

The fee for post occupancy inspection is paid upon receipt of the post occupancy report as described in Post Occupancy Inspection herein.

**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.

**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:

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.

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.

Travel costs, when included in an authorization, may only be compensated within the limits provided by Florida Statutes. Each payment request for travel expenses will require a completed Travel Reimbursement Form, found on the UCF Finance and Administration website ([www.fa.ucf.edu](http://www.fa.ucf.edu)). Mileage shall be in accordance with the official Department of Transportation map mileage. Receipts for lodging, airplane, bus, tolls, parking, taxis, rental cars, etc. must be included for each item invoiced. Receipts must be legible.

Permitting costs must be supported by a copy of the invoice from the permitting authority indicating the type of permit.

#### **Printing Costs**

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, the Architect/Engineer may invoice for printing 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.

#### **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.

**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.

Professional initiates the 08 – Pay-App & Consultant Invoice process and attaches all required documentation

- The Professional Service Invoice Template can be found on the UCF PDC website
- Backup Documentation as required

Once all relevant documents are attached, the Professional moves the process to the PM for review.

Depending upon the value of the invoice, more approvals may be required. After all approvals are obtained, payment will be issued to the Professional according to the payment method on file in the UCF financial system.