

UNIVERSITY OF VIRGINIA  
HIGHER EDUCATION CAPITAL  
OUTLAY MANUAL

“HECOM” 2<sup>ND</sup> ED.

REVISION VI (4/29/09)





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# CHAPTER 1: INTRODUCTION

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## SECTION 1.0<sup>1</sup> AUTHORITY FOR MANUAL

### 1.0.1 Enabling Legislation

1. Medical Center Codified Autonomy 1996 Virginia Acts of the Assembly (Va. Code §[23-77.4](#))
2. Restructured Higher Education Financial and Administrative Operations Act (The Act) 2005 Virginia Acts of the Assembly (Va. Code §§[23-38.88](#) to [23-38.121](#))
3. [Management Agreement By and Between the Commonwealth of Virginia and the University of Virginia](#) (The Management Agreement) (Effective 7-01-11)

### 1.0.2 Board of Visitor Policies

1. [Policy for Involvement of the Board of Visitors in the Capital Planning Process](#)
2. [Policy Statement Governing Exercise of Post Appropriation Autonomy for Certain Non-general Fund \(NGF\) Capital Projects - 2002.](#)
3. Policy Statement Governing Exercise of Procurement Autonomy by the University on behalf of the Medical Center – 1996.

### 1.0.3 Delegation Letters

1. University Building Official Delegation
2. Procurement and Capital Project Execution Delegation
  - a. [Delegation of Authority to Don Sundgren](#)
  - b. [Delegation of Authority to Rick Rice](#)
  - c. [Delegation of Authority to Annette Cyphers](#)
  - d. [Delegation of Authority to Jeff Moore](#)
  - e. [Delegation of Authority to Martin Best](#)

## SECTION 1.1<sup>2</sup> MANUAL IN GENERAL

**1.1.1 Applicability and Scope of Manual:** The University of Virginia Higher Education Capital Outlay Manual (hereafter referred to as HECOM) contains policies, procedures, and guidance that must be followed in the execution of Projects as detailed below:

1. **General Fund (GF) and Non-general Fund (NGF) Projects** – Unless otherwise directed HECOM procedures are the same for both types of projects. Certain HECO forms are copied to various agencies as indicated on the forms.

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<sup>1</sup> History: April 29, 2009, created the new Section from the material previously in Appendix X.

<sup>2</sup> History: March 25, 2010, rewrote §1.1.1 from the previously existing material and the material previously in Appendix M; April 29, 2009, added “Manual In” to the Section heading, added the subsection headings, moved the material previously in §1.1.2 to new §1.0 and in §1.1.5 changed the mailing address for updates.



2. **Capital Projects** (*above the capital outlay threshold of \$2M or 5000sf*) – HECOM applies to the University’s Academic Division - Agency 207, Health System - Agency 209, and College at Wise - Agency 246.
3. **Non-capital Projects** (*below the capital outlay threshold of \$2M or 5000sf*) - for the University’s Academic Division - Agency 207, Health System - Agency 209, and College at Wise - Agency 246, appropriate portions of HECOM apply including contracting procedures, approval levels, Code requirements, Building Permits and Project permits, and safety requirements. Includes **Maintenance Reserve Projects**. [BOV](#) and [AARB](#) reviews are generally not required unless required by the Architect for the University. The HECO-2.1 series, HECO-3 series, HECO-7 series, H8, HECO-9 series, HECO-10 series, H11, H11AE, H12, H12AE, HECO-13, HECO- 13.1, HECO-13.2 series, HECO-13.3 series - if required, and HECO-17 **are** required. Architect for the University and Landscape Committee approvals may apply. Supporting documentation concerning enabling legislation and delegation of authority is in [§1.0](#).
4. **Southwest Virginia Higher Education Center Projects** – HECOM does apply for Agency 948 if UVA is assisting per Management Agreement Section 2.3.1. The Commonwealth of Virginia’s Construction and Professional Services Manual (CPSM) does apply when UVA provides assistance. However, BCOM reserves the right to review costs.

### 1.1.2 [Reserved]

**1.1.3 Deviations from Manual:** Deviations from the policy and procedures outlined within shall be requested by a Determination & Findings (D&F) and must have prior approval of the University of Virginia Associate Vice President and Chief Facilities Officer (AVP & CFO). The D&F shall justify and substantiate the need for the deviation. All deviations so provided shall be consistent with the authorities provided Agency 209 in the Medical Center Codified Autonomy of Virginia, Va. Code [§23-77.4](#) and by the [Procurement Rules](#) of the [Management Agreement](#); and with the authorities provided Agency 207 and 246 by the [Procurement Rules](#) of the [Management Agreement](#).

**1.1.4 Organization of Manual:** HECOM is designed to present the capital outlay process from Advertisement for Architect/Engineer (A/E) Services to Project completion (occupied building). HECOM is arranged in a sequence that parallels the capital outlay process.

**1.1.5 Updates to Manual:** The [Facilities Planning and Construction \(FP&C\)](#) Department, Facilities Management (FM) is responsible for maintenance of HECOM. Suggestions for changes, notification of conflicting guidance, questions and requests for copies should be emailed to: [hjm7m@virginia.edu](mailto:hjm7m@virginia.edu).

HECOM, including errata corrections, will be posted on the University FP&C Website and may be downloaded and printed by the users.



Revisions to HECOM will be issued electronically by posting on <https://www.fm.virginia.edu/depts/fpc/hecomanual.html>. Changes or revisions will be marked or identified in HECOM where they occur. The revision package will contain a summary sheet generally describing the changes or revisions made and the summary sheet will describe the marking or identification used with that revision. The summary sheet will be numbered and dated. The summary sheet will become a permanent part of HECOM and is to be placed after the appendices and before any previous summary sheet. Paper copies of the Revisions will not be issued.

## **SECTION 1.2<sup>3</sup> CAPITAL PROJECT PROCESS SUMMARY**

**1.2.1<sup>4</sup> Generally:** This chapter describes the capital outlay process from budget Submittal to facility occupancy. It provides detailed guidance on documentation required for approvals at each milestone of the process. Unless specifically waived by the AVP & CFO, execution of all Capital Projects shall follow approval procedures in §1.2.4. Both General Fund and Non-general Fund projects are managed in accordance with HECOM.

**1.2.2<sup>5</sup> Planning & Budgeting:** The planning and budgeting processes are managed by the Assistant VP for Budget and Financial Planning and the [Architect for the University](#). See appropriate links on the [FP&C Financial Services](#) website that include the [Capital Project Approval Process including Project Initiation Form \(PIF\)](#), and the [Project Formulation Studies](#) description and documentation. Typically the University PM will participate in the PIF and Project Formulation processes and will assist the Assistant VP for Budget and Financial Planning in completing required Capital Project submissions for [BOV](#) approval and, if required, approvals by the Commonwealth.

Environmental Impact Reviews (EIR) shall be prepared for each qualifying Project with an expected construction cost of \$500,000 or more. Pursuant to Va. Code §§[10.1-1188](#) and [10.1-1190](#), it shall be the policy of the University that required EIRs shall be developed as early in the project planning process as possible and as soon as the necessary data needed to complete the EIR can be obtained. Advertisement of a project for Proposals/Bids may not be initiated without an approved EIR unless the University PM has the written approval of the AVP & CFO as documented with a D&F. [Appendix O](#) delineates the EIR process and specifies who has responsibility for developing the EIR. The University PM shall contact the Environmental Compliance Manager or Environmental Projects Manger in [Facilities Management Environmental Resources](#) to initiate the EIR and shall be responsible for timely initiation and completion of the EIR.

**1.2.3<sup>6</sup> Project Authorization:** Architectural or engineering planning for, or construction of, or acquisition of, any Capital Project shall not commence, or a revision be initiated without, an H2 – Budget Approval. For Projects which consist of acquisition and construction, the acquisition must be

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<sup>3</sup> History: April 29, 2009, moved the material previously in §1.2 to new §5.0 and inserted the material previously in Chapter 14 in its place and re-titled and renumbered the Section accordingly.

<sup>4</sup> History: March 25, 2010, added the last sentence to §1.2.1; April 29, 2009, renumbered previous §14.1 as 1.2.1.

<sup>5</sup> History: February 12, 2010, added the last three sentences of the second paragraph; April 29, 2009, renumbered previous §14.2 as 1.2.2; July 21, 2008, changed the EIR amount in the second paragraph from \$300,000 to \$500,000. This new amount is effective July 1, 2008.

<sup>6</sup> History: April 29, 2009, renumbered previous §14.3 as 1.2.3.





approved on a separate H2. Normal cycle is for authority to be given to implement Projects on or about July 1.

**1.2.4<sup>7</sup> Project Execution:** A Capital Project Steering Committee shall be established. See [Directive 520](#).

**1.2.4.1 Acquisitions, Demolitions, Leased and Temporary Facilities:** See Assistant Director, Space and Real Estate Management.

**1.2.4.2 Construction Projects:** The order of procedure for executing reviews and approvals on a Capital Project is shown at the end of this Chapter. A summary of the execution process follows.

**1.2.4.2.1** The University PM must process an approved e-Builder H2 – Budget Approval. The Project scope and budget in the H2 are fixed by the Project formulation process lead by the [Architect for the University](#) and agreed to by the AVP & CFO. The Project costs shall be consistent with the [University Benchmark Cost Metric](#). The Project scope and costs must have specific [BOV](#) approval and, if General Funds (GFs) are included, approval by the Commonwealth. The Assistant VP for Budget and Financial Planning maintains a record of all formal approvals. Note variances in scope or cost require approval via a Decision Brief and revised H2. Also any variations of ten percent (10%) or greater will require [BOV](#) approval. Changes in the Project Budget, where the overall budget remains as approved, but the account sub-categories budgets change, can be accomplished using the e-Builder Net Zero Changes to the Budget process.

**1.2.4.2.2** For Architectural Projects, Architectural Guidelines are developed by the [Architect for the University](#) and approved by the [BOV](#). Project A/E selection is a formally advertised qualifications based process. See [Chapter 4](#). Selection is by a University selection committee chaired by the [Architect for the University](#) and assisted by the AVP & CFO with execution support from the University PM. The A/E Scope of Services and fee negotiation are set and an A/E Contract executed. See Chapters [3](#), [5](#) and [6](#). A pre-design conference is held by the [Architect for the University](#) which starts Project design. See Chapters [7](#), [8](#) and [9](#) and the [Facilities Design Guidelines](#) for design documentation and guidelines.

For Engineering Projects, a Scope of Work is developed by the University PM and approved by AVP & CFO. Project Engineer selection is a formally advertised qualifications based process. See [Chapter 4](#). Selection is by a University selection committee chaired by the AVP & CFO and assisted by the Office of the Architect for the University with execution support from the University PM. The Engineer Scope of Services and fee negotiation are set and an Engineer Contract executed. See Chapters [3](#), [5](#) and [6](#). A pre-design conference is held by the University PM which starts Project design. See Chapters [7](#), [8](#) and [9](#) and the [Facilities Design Guidelines](#) for design documentation and guidelines.

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<sup>7</sup>History: April 29, 2009, renumbered previous §14.4 as 1.2.4 and added the material covered in previous Chapter 12.



**1.2.4.2.3** For Architectural Projects, the A/E develops and submits Schematic Designs at twenty percent (20%) design with a Cost Estimate for review by the [Architect for the University](#), the University Review Unit and others. At this point a procurement strategy planning session chaired by the AVP & CFO occurs to determine the preferred construction delivery option - IFB, On-Demand, CM or D/B (see [Chapter 11](#)). Additionally a Commissioning Agent is typically engaged at this point. The [Architect for the University](#) will present the Project Schematic Design for approval to the [AARB](#) and the [BOV](#) for all construction and planning Projects and any major repair or improvements Project that affects the exterior appearance of a facility. Additional reviews may be required by the [AARB](#). A [VM](#) session will occur at this point chaired by the [Architect for the University](#). Also see [Chapter 8](#) for design Submittal and review requirements.

For Engineering Projects, the Engineer develops and submits Schematic Designs at twenty percent (20%) design with a Cost Estimate for review by the University PM, the University Review Unit, and others. At this point a procurement strategy planning session chaired by the AVP & CFO occurs to determine the preferred construction delivery option - IFB, On-Demand, CM or D/B (see [Chapter 11](#)). Additionally a Commissioning Agent is typically engaged at this point. A [VM](#) session will occur at this point. Also see [Chapter 8](#) for design Submittal and review requirements.

**1.2.4.2.4** For Architectural Projects, the A/E develops and submits Preliminary Design at fifty percent (50%) design with a Cost Estimate for review and approval. Typically the University will obtain an independent Cost Estimate for reconciliation with the A/E's Cost Estimate. Another VM review will occur at this point chaired by the Architect for the University. The University Review Unit, as outlined in Chapter 8, will complete design reviews and coordinate with the responsible State Fire Marshal Office for completion of fire safety reviews. The City of Charlottesville and Albemarle County will be notified by the University Review Unit of the availability of the Construction Documents for review. Again see Chapter 8 for design Submittal requirements. Upon satisfactory review, the A/E is released for final design.

For engineering Projects, the Engineer develops and submits Preliminary Design at fifty percent (50%) design with a Cost Estimate for review and approval. Typically the University will obtain an independent Cost Estimate for reconciliation with the Engineer's Cost Estimate. Another [VM](#) session will occur at this point. The University Review Unit, as outlined in Chapter 8, will complete design reviews and coordinate with the responsible State Fire Marshal Office for completion of fire safety reviews. The City of Charlottesville and Albemarle County will be notified by the University Review Unit of the availability of the Construction Documents for review. Again see Chapter 8 for design Submittal requirements. Upon satisfactory review, the Engineer is released for final design.

**1.2.4.2.5** Completed Construction Documents (Working Drawings and Specifications with Cost Estimate) are submitted for review. Additionally the University Review Unit will distribute the designs to the [Division of Soil and Water Conservation](#) and other reviewing agencies as determined by the University Review Unit. Note another independent University Cost Estimate may be required. The University PM shall ensure comments of other reviewing



agencies are received and incorporated in the Proposal/Bid package no later than ten (10) days prior to Proposal/Bid Submittal. Some Projects (e.g., Work on historic landmarks, demolitions, water and wastewater treatment plants, central heating plants, etc.) may require the review of the [Department of Health](#), [Department of Historic Resources](#) and Department of Environmental Quality [DEQ](#) at both Preliminary Design and Working Drawing stages. The University shall be responsible for determining when these reviews are necessary and ensuring that the appropriate review agencies receive the Plans and Specifications and that their comments are incorporated. The CD's are approved [e-Builder Construction Document Approval (CDPSA) for Competitive Sealed Bids or as attachments to the CM/GC RFP] and released for construction. A Building Permit ([HECO-17](#)) is required prior to issuance of the Notice to Proceed and construction start.

**1.2.4.2.6** Advertise the Project via IFB or RFP at a time consistent with the procurement method. CM with Design Phase Services and Design/Build are typically advertised at the Schematic Design phase. An approved e-Builder H8 is required before Construction Contract award and a [HECO-17](#) is also required before the construction start. For information on Construction Change Orders see [Chapter 10 \(H11\)](#).

**1.2.4.2.7** Construction oversight is provided by the A/E, University testing/engineering Consultants for structural, roof, concrete, foundations and soil placements. Building Commissioning Services are provided by a Commissioning Agent consultant under Contract with the University and preferably engaged during the design phase. A/E construction phase Services include, but are not limited to, timely review of Submittals, review and responses to RFIs, review of construction, participation in progress meeting, and review of invoices. See [Chapter 5](#) for Scope of Services. A CAM is assigned for construction oversight, management of A/E construction phase Services, management of testing firms, facilitation to resolve all construction issues, coordination of construction interferences with all University activities, coordination of utility issues, coordination of State Fire Marshal and University Review Unit inspection, coordination for all payments, negotiation of Change Orders, and management of disputes (see [Chapter 10](#)).

**1.2.4.2.8** A building or facility may be occupied when the Project is Substantially Complete and a Certificate of Use and Occupancy has been issued for the building or facility. A new or renovated building may not be occupied until the University has applied for and a Certificate of Occupancy has been issued. The application shall include a [HECO-13.1](#) or [HECO-13.1a](#) (Certificate of Completion or Certificate of Partial/Substantial Completion by A/E); a [HECO-13.2a](#) (Certificate of Completion or Certificate of Partial/ Substantial Completion by Contractor); a copy of the Contractor and A/E's punch list; and a letter from the responsible State Fire Marshal Office stating it has no objections to the building being occupied or stating conditions for occupancy of the building. Final inspection of all Projects will be conducted by the A/E, the University, and if required the University Review Unit and the responsible State Fire Marshal Office.

**1.2.4.2.9** The warranty phase will be managed by the CAM. Project Closeout, H14, shall be completed within three months after the warranty period expires.



## Order of Procedures<sup>8</sup>

The following procedures and forms will be required for Capital Projects. All HECO forms are approved locally and the University PM is responsible for obtaining required signatures and proper distribution of copies as noted on the forms. Refer to the following link for forms:

<https://www.fm.virginia.edu/depts/fpc/hecoforms.html>.

### **H2 Budget – Approval**

This e-Builder process shall be initiated by the University PM upon receiving [BOV](#) authority for the Projects. Completion and approval of this form accomplishes the following:

Identifies fund sources

Confirms appropriation

Establishes the budget

Revisions to the authorized Project Budget total are accommodated on a revised H2.

#### **Approval of Schematic Design**

Schematic Design must be approved by the [BOV](#) and the State Art & Architectural Review Board. Approvals will be obtained by the [Architect for the University](#).

Requires acceptance of the Schematic Design documents by the University Review Unit.

#### **Approval of Preliminary Drawings and Specifications**

Requires acceptance of the Preliminary Design by the University Review Unit

Allows Construction Document preparation to begin

Preliminary Design must be approved by the AARB, the [BOV](#) and the [Architect for the University](#).

### **CDPSA Construction Document Approval for Advertisement (Required only for all Competitive Sealed Bids regardless of Project Budget)**

This e-Builder process shall be initiated by the University PM upon completion of the Final Construction Documents. Completion and approval of this process accomplishes the following:

Confirms the estimated construction cost

Confirms the dates of the referenced Construction Documents

Authorizes the construction procurement process / advertisement

Note – Ensure Preliminary Design approval by [BOV](#) and [Architect for the University](#). See [HECO-17](#) below for Building Permit requirements.

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<sup>8</sup> History: February 9, 2006, deleted the columns for “Required Approvals” and “Copy Distribution.”



**HECO-6a**

**Statement of Structural and Special Inspections**

Structural and special inspections schedule in [Appendix K](#).

H8

**Authorization to Award Contract**

This e-Builder process shall be initiated by the University PM upon completion of the procurement process. Final approval allows award of the Construction Contract. Note a [HECO-17](#) Building Permit is also required prior to Notice to Proceed. Revisions to the authorized Project Budget total are accommodated in e-Builder.

CCOP

**Construction – Change Order Proposal**

Provides justification and reasons for the change.

H11

**Construction – Contract Change Order**

Authorizes a change in a Construction Contract. This e-Builder process shall be completed for each change(s) in a Construction Contract. All changes involving Contract cost or performance time will be included in an approved Change Order.

PSCOP

**Professional Services – Change Order Proposal**

Provides justification and reasons for the change.

H11AE

**Professional Services – Contract Change Order**

Authorizes a change in a Contract for A/E Services. This e-Builder process shall be completed for each change(s) in an A/E Contract. All changes involving Contract cost or performance time will be included in an approved Change Order.

**HECO-13.1**  
**HECO-13.1a**  
**HECO-13.1b**

**Certificate of Completion by A/E**  
**Certificate of Partial or Substantial Completion by A/E**  
**Final Report of Structural & Special Inspections**  
(See [§8.15](#); also [Appendix K](#))

**HECO-13.2**  
**HECO-13.2a**

**Certificate of Completion by Contractor**  
**Certificate of Partial or Substantial Completion by Contractor**

These forms shall be prepared by the University PM at the appropriate time. When completed and signed they shall be submitted in a package along with a [HECO-13.2](#) “Certificate of Use and Occupancy.”

**HE(CO)-13.3**

**Certificates of Use and Occupancy**



This form authorizes use of the facilities. Refer to [Directive 564](#) for Medical Center Projects.

**H14 Project Closeout**

This form is prepared by the University PM and the FM Financial Services Office upon completion of the Project.

**HECO-17 Building Permit**

This form is prepared by the University Review Unit upon approval of the Final Construction Documents by the University Building Official. It is required prior to the Notice to Proceed on any Construction Contract.

**SECTION 1.3<sup>9</sup> INDEX**

HECOM is posted at <https://www.fm.virginia.edu/depts/fpc/hecomanual.html>.

**SECTION 1.4 UVA e-BUILDER**

All University A/Es, GCs, CMs, and University staff are required to use UVA e-Builder construction program management software as their primary project management and budget accounting tool. Although much of the data displayed in e-Builder queries and reports is automatically generated by the program from several sources, such as other FM financial software or the University's Oracle system, some data must be entered manually by the various University team members whose responsibility it is to ensure that all non-automated screens and fields are kept current on an 'as occurring' basis, with updates being made at least monthly.

**SECTION 1.5<sup>10</sup> GENERAL AND SPECIAL CONDITIONS**

**1.5.0 Scope and Applicability:** Applicable General and Special Conditions are as follows.

**1.5.1 Professional Services Contracts:** [Chapter 3](#).

**1.5.2 Construction-related Nonprofessional Services Contracts:** All solicitations for the procurement of Construction-related Nonprofessional Services are subject to the following sections and any revision thereto, which are hereby incorporated into the Contract in their entirety: §§[3.9.4](#), [3.9.5](#), [3.15](#), [3.16](#), [3.17](#), [3.18](#), [3.21](#), [3.22](#), [3.23](#), [3.24](#), [3.25](#), [3.26](#), [3.28](#), [3.31](#) and [4.6](#). In each of these sections, replace “A/E” with “Construction-related Nonprofessional Services Provider” and “Professional Services” with “Construction-related Nonprofessional Services.” In addition to these, the following shall also be made part of the Contract:

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<sup>9</sup> History: April 29, 2009, deleted the Section on “Forms” and inserted the material previously in §1.4 and rewrote the second and third sentences thereof.

<sup>10</sup> History: March 25, 2010, added the Section.



**1.5.2.1 Immigration Reform and Control Act of 1986:** By signing its proposal, the Offeror certifies that it does not and will not during performance of this contract employ illegal alien workers or otherwise violate the provisions of the Federal Immigration Reform and Control Act of 1986.

**1.5.2.2 Debarment Status:** By submitting its proposal, the Offeror certifies that it is not currently debarred from submitting proposals or bids on contracts by any agency of the Commonwealth of Virginia, nor is it an agent of any person or entity that is currently debarred from submitting proposals or bids on contracts by any agency of the Commonwealth of Virginia.

**1.5.2.3 Clarification of Terms:** Unless noted otherwise, any questions about the solicitation documents must be submitted in writing to the University representative whose name appears on the face of the solicitation, no later than 5 days before the due date. Any modifications, clarifications, or revisions to the RFP will be made only by addendum issued by the University.

**1.5.2.4 Qualifications of Offerors:** The University may make such reasonable investigations as deemed proper and necessary to determine the ability of the Offeror to perform the work. The Offeror shall furnish to the University all such information and data for this purpose as may be requested. The University reserves the right to inspect Offeror's physical facilities prior to award to satisfy questions regarding the Offeror's capabilities. The University further reserves the right to reject any proposal or bid if evidence submitted by or investigations of such Offeror fails to satisfy the University that such Offeror is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.

**1.5.2.5 Conditions at site or structure:** Offerors shall visit the site and shall be responsible for ascertaining pertinent local conditions such as location, accessibility, general character of the site or building, and the character and extent of existing work within or adjacent to the site. Claims, as a result of failure to have done so, will not be considered by the University. See Section 7 of the General Conditions entitled "Conditions at Site."

**1.5.3 Construction Contracts:** [General and Special Conditions](#)



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## CHAPTER 2<sup>11</sup>: TERMS & DEFINITIONS

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### SECTION 2.1<sup>12</sup> GENERAL

This chapter is designed to acquaint University personnel, CM/Contractors, and A/Es with terminology, symbols, acronyms and abbreviations customarily used in the procurement of construction and Professional Services and in the execution of the University's Higher Education Capital Outlay Program. Definitions are taken from the [Code of Virginia](#), the [General Conditions of the Construction Contract](#) and general customs and practices associated with the construction industry and Professional Service Contracts.

### SECTION 2.2<sup>13</sup> DEFINITIONS

Whenever used in the HECOM, including the appendices and the standard forms, the following terms have the meanings indicated, which apply to both the singular and plural and the male and female gender thereof.

**Addendum/Addenda:** Written or graphic instruments issued prior to the receipt of Bids that clarify, correct, or change the bidding documents.

**Additional Service (by A/E):** A Service that the University includes in the A/E's Scope of Work as part of the Work under the A/E Contract, but which Service is not included in the A/E Basic Services as described in HECOM. Compensation for Additional Services is included in the fee negotiations prior to signing the Contract and is, therefore, included in the A/E Contract.

**Additive Bid Item<sup>14</sup>:** See [§8.10](#).

**Advertisement:** The term commonly used to describe the public announcement or "Notice" of the availability of the Invitation For Bids (i.e. Bid document or IFB) or Request For Proposal (RFP) made by publishing a Notice on the public procurement website designated by the [DGS](#) (i.e. VBO/ [eVA](#)) and by "Posting the Notice".

**Agency:** The University of Virginia, including Agency 207 (Academic), Agency 209 (Medical Center), and Agency 246 (The University of Virginia's College at Wise). Throughout HECOM Agency, University, University of Virginia, and Owner are synonymous.

**Agency Contracting Officer:** The person designated in writing by the University who is delegated authority to approve, award and execute Contracts, Change Orders and other documents related to a

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<sup>11</sup> History: Revision V, Capital Project Steering Committee updates.

<sup>12</sup> History: July 21, 2008, renumbered the Section to be consistent with other chapters of the Manual.

<sup>13</sup> History: April 29, 2009, deleted the definition for "Construction Administration (CA)," "Maintenance Prevention," "Minority-owned/controlled Business," "Small Business" and "Women-owned/controlled Business;" July 21, 2008, renumbered the Section to be consistent with other chapters of the Manual.

<sup>14</sup> History: April 29, 2009, added the definition.





capital outlay Project for the Agency. The University's AVP & CFO has been delegated this authority.

**Amendment:** Same general meaning as Addendum, but usually used in referring to a document which modifies an RFP as opposed to an Invitation for Bids (IFB).

**Architect:** An individual who is qualified and licensed to practice in Virginia as a Registered Architect by the [Architects, Professional Engineers, Land Surveyors, Certified Interior Designers and Landscape Architects \(APELSCIDLA\) Board](#) of the [Department of Professional and Occupational Regulation \(DPOR\)](#), also referred to as the A/E. “Architect” may also be used to refer to a firm of such individuals which is properly licensed in Virginia.

**Architect/Engineer (A/E):** The term used to refer to the Architect or Engineer who Contracts with the University to provide the architectural and/or engineering Services for a Project. The A/E is a separate Contractor and is not an agent of the University. This term also includes any associates or Consultants employed by the A/E to assist the A/E in providing Services.

**A/E Contract:** The Form of Agreement ([HECO-3](#), [HECO-3.1](#), [HECO-3.1a](#), [HECO-3.2](#), or [HECO-3.3](#)) and any document expressly incorporated therein. Such incorporated documents customarily, include Chapter 3 of HECOM, the MOU, and all modifications, including subsequent Change Orders.

**A/E Project Manager (A/E PM)<sup>15</sup>:** The designated representative of the A/E through whom written decisions and Notices are generally conveyed.

**A/E of Record<sup>16</sup>:** The A/E(s) that places their Professional seal and signature on the design documents and assumes responsibility for the design.

**Architect for the University<sup>17</sup>:** The person designated by the University as being delegated authority to manage the University Master Plan and the related architectural design process for individual Projects for the University. This person is responsible for the activities of the Office of the University Architect at the University.

**Architectural Guidelines:** See Appendix [J](#).

**Art and Architectural Review Board (AARB):** The Review Board appointed by the Governor to advise and provide counsel to the Governor as to the artistic merit of fixtures, structures, construction on Commonwealth property, and works of art.

**Associate Vice President and Chief Facilities Officer (AVP & CFO):** The person designated in writing by the University as being delegated authority to award and sign Contract Documents, Change Orders, and other documents related to Projects for the University. This person is

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<sup>15</sup> History: April 29, 2009, added “for A/E or Contractor” to title of the term and added the abbreviation.

<sup>16</sup> History: April 29, 2009, added the definition.

<sup>17</sup> History: April 29, 2009, added the definition.



responsible for Facilities Management (FM) activities at the University. Also see definition for Agency Contracting Officer.

**Association:** As applied to Architects and Engineers, this term shall mean a legal entity formed by several A/E's who have associated together for the purposes of working as a unit on a specific Project. The Association may take the form of a partnership, joint venture, corporation, etc.

**Base Bid<sup>18</sup>:** The amount as defined in a Bidder's Bid Form and provided in response to an IFB.

**Basic Services (A/E)<sup>19</sup>:** §[5.5](#) for a detailed description of "Basic Services".

**Beneficial Occupancy:** The condition after Substantial Completion, but prior to Final Completion of the Project, at which time the Project, or portion thereof, is sufficiently complete and systems operational such that the University could, after obtaining necessary approvals and certificates, occupy and utilize the space for its intended use. Guarantees and warranties applicable to that portion of the Work begin on the date the University accepts the Project, or a portion thereof, for such Beneficial Occupancy, unless otherwise specified in the Supplemental General Conditions or by separate agreement.

**Bid:** The offer provided in response to an IFB by the Bidder submitted on the prescribed form and setting forth the firm's price(s) for the Work to be performed.

**Bid Bond<sup>20</sup>:** The [CO-10.2](#) required to be filed with a Bid.

**Bidder<sup>21</sup>:** A Person who responds to an Invitation for Bid (IFB).

**Board of Visitors (BOV):** See Appendix [J](#).

**Bridging Documents<sup>22</sup>:** Normally Schematic or Preliminary Design level documents produced by an A/E for the University to establish the design standard for Design (Completion)/Build Projects.

**Building:** Any roofed structure, or any structure that may be occupied.

**Building Committee<sup>23</sup>:** See Capital Project Steering Committee.

**Building Envelope<sup>24</sup>:** the separation between the interior and the exterior environments of a building. It serves as the outer shell to protect the indoor environment as well as to facilitate its climate control. The physical components of the envelope include the foundation, roof (including terrace roofs), walls, doors, and windows.

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<sup>18</sup> History: April 29, 2009, added the definition.

<sup>19</sup> History: April 29, 2009, added the definition.

<sup>20</sup> History: April 29, 2009, added the definition.

<sup>21</sup> History: April 29, 2009, added the definition.

<sup>22</sup> History: April 29, 2009, added the definition.

<sup>23</sup> History: April 29, 2009, added the definition.

<sup>24</sup> History: April 29, 2009, added the definition.



**Building Information Modeling (BIM)<sup>25</sup>:** A digital representation of the physical and functional characteristics of a facility that functions as a shared knowledge resource for information about that facility during the facility’s life-cycle typically created by using a three-dimensional, real-time, dynamic building modeling software. The resulting Model encompasses building geometry, spatial relationships, geographic information, and quantities and properties of building components.

**Building Official<sup>26</sup>:** See University Building Official.

**Building Permit<sup>27</sup>:** All Work on University buildings and structures will be done in accordance with the [VUSBC](#) and other applicable Codes and standards. Accordingly all Projects will be reviewed and permits issued in accordance with the FM [Directive 562](#) on "Building Permits and Project Permits Policy, Procedures, and Forms" ([Appendix N](#)).

**Capital Project:** Per Department of Planning and Budget’s (DPB’s) Capital Budget Instruction a Project involving any new construction or addition acquired through a lease with options to purchase or any other alternative financing approach, or exceeding \$2M total project cost, or that creates additional building space of 5,000 square feet or greater (does not apply to site development or building systems projects). Projects less than the above are considered non-capital.

**Capital Project Steering Committee:** The group constituted by the University in accordance with the requirements of FM [Directive 520](#) and with the authority and purpose to review and advise in the planning and design of Capital Projects and other Professional Services required by the University.

**Change Order (A/E):** An e-Builder process (H11AE) approved on or after the effective date of the A/E Contract ([HECO-3](#)) agreed to by the A/E and approved by the University that authorizes an addition, deletion or revision in the Work, including any adjustment in the A/E Contract price or the A/E Contract time. A Change Order, once approved by all parties, is incorporated into and becomes part of the A/E Contract.

**Change Order (Construction):** An e-Builder process (H11) approved on or after the effective date of the Construction Contract ([HECO-9](#)) agreed to by the Contractor and approved by the University that authorizes an addition, deletion or revision in the Work, including any adjustment in the Contract price or the Contract time. The term “Change Order” shall also include written orders to proceed issued pursuant to §38(a)(3) of the [General Conditions of the Construction Contract](#). A Change Order, once approved by all parties, is incorporated into and becomes part of the Construction Contract.

**Code<sup>28</sup>:** See [§7A.1](#) for description of applicable design and building Codes.

**Code Official:** See definition for University Building Official.

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<sup>25</sup> History: April 29, 2009, added the definition.

<sup>26</sup> History: April 29, 2009, added the definition.

<sup>27</sup> History: April 29, 2009, rewrote the second sentence.

<sup>28</sup> History: April 29, 2009, added the definition.



**Commissioning Agent<sup>29</sup>:** A special, technical resource whose responsibilities include confirming that a system's design will meet its intent and that installed equipment and systems, through field verification, are functioning as intended and meet the operational requirements of the Owner. In MEP and security systems multiple systems may be involved. The duties of the Agent include providing proper documentation and training for the Owner's operation and maintenance requirements.

**Competitive Negotiation:** A method of Contractor selection that includes the following two elements. (See [Chapter 11](#) for further descriptions):

- a. Issuance of a written RFP indicating in general terms that which is sought to be procured, specifying the factors which will be used in evaluating the Proposal, and containing or incorporating by reference the other applicable contractual terms and conditions, including any unique capabilities or qualifications which will be required of the Contractor.
- b. Public Notice of the RFP at least ten (10) days prior to the date set for receipt of the Proposal, by posting in a designated public area normally used for posting of public announcements or "Notices", on the [Office of Contract Administration \(OCA\) website](#), and by publication on the public Internet e-procurement website designated by [DGS \[VBO/eVA\]](#) and in a newspaper(s) of general circulation.

**Competitive Sealed Bidding<sup>30</sup>:** A method of Contractor selection that includes the following elements. (See [Chapter 11](#) for further descriptions):

- a. Issuance of a written Invitation for Bid (IFB) containing or incorporating by reference the Specifications and contractual terms and conditions applicable to the procurement.
- b. Public Notice of the IFB at least ten (10) days prior to the date set for receipt of the Bids, by posting in a designated public area normally used for posting of public announcements or "Notices", on the [OCA website](#), and by publication on the public Internet e-procurement website designated by [DGS \[VBO/eVA\]](#) and in a newspaper(s) of general circulation.
- c. Public opening and announcement of all Bids received.
- d. Evaluation of Bids based upon the requirements set forth in the invitation.
- e. Award to the lowest responsive and responsible Bidder.
- f. Competitive sealed bidding shall not be used for procurement of Professional Services as defined in HECOM.

**Competitive Sealed Bidding (Medical Center Option – Rarely Used):** A method of Contractor selection which may include the following elements:

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<sup>29</sup> History: April 29, 2009, added the definition.

<sup>30</sup> History: April 29, 2009, rewrote subsection b.



- a. Issuance of a written Invitation for Bid.
- b. Public Notice of the IFB at least ten (10) days prior to the date set for receipt of the Bids, by posting in a designated public area normally used for posting of public announcements or “Notices”, on the [OCA website](#), and by publication on the public Internet e-procurement website designated by [DGS \[VBO/eVA\]](#) and in a newspaper(s) of general circulation. The Notice must describe the process for the private opening and negotiations.
- c. Private opening with no public announcement of prices.
- d. Evaluation of Bids based upon the requirements set forth in the invitation. Negotiations may be conducted with up to three of the lowest Bidders if so stated in the invitation.
- e. Award to the lowest responsive and responsible Bidder if within budgeted amount. The final negotiated Construction Contract award amount is made public by posting of award in the usual manner.
- f. This procedure shall not be used for procurement of Professional Services as defined in HECOM.

**Construction:** Includes new construction, reconstruction, renovation, restoration, major repair, demolition, and all similar Work upon buildings and ancillary facilities owned or to be acquired by the University, including any draining, dredging, excavation, grading, or similar Work upon real property.

**Construction Administration Manager (CAM):** The University employee designated as the University’s on-site representative during the construction phase of a Project. See §[10.7.4](#).

**Construction Budget**<sup>31</sup>: See definition for Design-not-to-exceed Construction Budget.

**Construction Contract**<sup>32</sup>: The form of agreement ([HECO-9](#), [HECO-9CM](#), [HECO-9DB](#)) and any document expressly incorporated therein. Such incorporated documents customarily include the Proposal/Bid submitted by the Offeror, the [General Conditions of the Construction Contract](#), any Supplemental General Conditions, any Special Conditions, the Plans and Specifications, and all modifications, including Addenda/Amendments and subsequent Change Orders.

**Construction Contract Administration**<sup>33</sup>: See §[10.7](#).

**Construction Documents (Working Drawings & Specifications, Working Drawings)**<sup>34</sup>: See §§[6.4.1](#) & [8.8](#).

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<sup>31</sup> History: April 29, 2009, added the definition.

<sup>32</sup> History: April 29, 2009, added the definition.

<sup>33</sup> History: April 29, 2009, added this definition in place of “Construction Administration (CA).”

<sup>34</sup> History: April 29, 2009, added the definition.



**Construction Management (CM):** Services provided under Contract with the University, which generally include coordinating and administering Construction Contracts for the benefit of the University, but may also include, if provided in the Contract, furnishing construction to the University. See [Chapter 11](#) for further descriptions.

**Construction Manager (CM/GC or ‘Contractor’ for the CM at Risk Option):** Has direct responsibility and liability to the University for performing the Work as described by the CM Contract Documents.

**Consultant:** An individual or firm with Professional expertise engaged to render a specific Service in connection with a Project.

**Contract**<sup>35</sup>: An agreement between the University and a nongovernmental source that is enforceable in a court of law.

**Contract Completion Date:** The date by which the construction Work must be Substantially Complete. The Contract Completion Date is customarily set forth in the Contract (i.e. [HECO-9](#)) based on the Notice to Proceed and the Time for Completion. In some instances, however, the Contract contains a mandatory Contract Completion Date, which date shall have been stated in the RFP/IFB.

**Contract Documents (A/E)**<sup>36</sup>: The Contract ([HECO-3](#), [HECO-3.1](#), [HECO-3.1a](#), [HECO-3.2](#), or [HECO-3.3](#)) and any documents expressly incorporated therein.

**Contract Documents (CM/Construction)**<sup>37</sup>: The Contract (i.e. [HECO-9](#)) and any documents expressly incorporated therein. Such incorporated documents customarily include the Proposal/Bid submitted by the Offeror, the [General Conditions of the Construction Contract](#) (i.e. CO-7 as modified by the HECO-7), any Supplemental General Conditions, any Special Conditions, the Plans and Specifications, and all modifications, including Addenda/ Amendments and subsequent Change Orders.

**Contract General Conditions**<sup>38</sup>: [The General Conditions of the D/B Contract, HECO-7DB](#) are for use with D/B documents. The [General Conditions of the Construction Contract, HECO-7](#), latest edition are for use with Design, Bid, Build documents and all other contract options.

**Contract Price:** The total compensation stated in the Contract, as subsequently modified by any necessary Change Orders, payable to the Contractor for performing the Work set forth in the Contract Documents.

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<sup>35</sup> History: April 29, 2009, added the definition.

<sup>36</sup> History: April 29, 2009, rewrote the previous definition of “Contract Documents.”

<sup>37</sup> History: April 29, 2009, rewrote the previous definition of “Contract Documents.”

<sup>38</sup> History: April 29, 2009, rewrote the previous definition of “General Conditions (GC).”



**Contractor:** A generic term used to indicate a person, firm or corporation with whom the University has entered into a Contract agreement to perform Work or provide a Service. With respect to a Capital Project, the Contractor for the Professional Services is referred to as the A/E. The ‘Contractor’ for construction related Work is referred to as the **GC** or on a CM Project, **CM/GC** is the ‘Contractor’.

**Contractor Project Manager (Contractor PM)<sup>39</sup>:** The designated representative of the Contractor through whom written decisions and Notices are generally conveyed.

**Cure Notice:** A Notice, either oral or in writing, that informs the Contractor that he or she is in default and states what the Contractor has to do to correct the deficiency. If the Notice is oral it shall be confirmed in writing.

**Day(s):** Consecutive calendar day(s), unless otherwise noted.

**Defective:** An adjective which, when modifying the word Work, refers to Work that is unsatisfactory, faulty, deficient, does not otherwise conform to the Contract Documents, does not meet the requirements of applicable inspections, standards, tests or approvals referred to in the Contract Documents, or has been damaged prior to the A/E’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by the University at Substantial Completion or Beneficial Occupancy).

**Design (Completion)/Build Contract (D/B):** A Contract between the University and another party in which the other party agrees to both design and build the structure, roadway or other item specified in the Contract. Typically, the University will Contract for Bridging Documents to set the standards for the D/B Project and those Bridging Documents are presented to the D/B Proposers as an Attachment to the RFP. See [Chapter 11](#) for further descriptions.

**Design-not-to-exceed Construction Budget<sup>40</sup>:** The Project construction cost established in the A/E’s Contract and accepted by the A/E as the ceiling for the estimated construction cost of the Project the A/E is engaged to design.

**Determinations & Findings (D&F):** A document, usually prepared by the University Project Manager (University PM), which justifies and substantiates the need for special procedures or actions. Typically this is for a deviation or waiver from standard policies or procedures which results in saving time and/or money and/or improving quality. The AVP & CFO will consider D&F requests after review and a recommendation by the Director, FP&C.

**Drawing:** A page or sheet of the Plans which presents a graphic representation, usually to scale, showing technical information, design, location, and dimensions of the various elements of the Work in sufficient detail for the University Building Official to determine Code compliance. Graphic representations include, but are not limited to, plan views, elevations, transverse and longitudinal

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<sup>39</sup> History: April 29, 2009, added the definition.

<sup>40</sup> History: April 29, 2009, substituted “Construction Budget” for “Cost” in the term title.



sections, large and small scale sections and details, isometrics, diagrams, schedules, tables and pictures.

**Earthwork<sup>41</sup>:** See §[7C.1](#).

**e-Builder:** FP&C's project information database and budget accounting tool maintained by University Project team members.

**Emergency:** Any unforeseen situation, combination of circumstances or a sudden occurrence or state resulting there from that poses imminent danger to health, life or property and which usually demands immediate action. Approval documentation and designation are provided by a D&F approved by the AVP & CFO.

**Engineer:** An individual who is qualified and licensed to practice in Virginia as a Professional Engineer by the [APELSCIDLA Board](#) of the [DPOR](#), also referred to as the A/E. "Engineer" may also be used to refer to a firm of such individuals which is properly licensed in Virginia.

**Equal:** Any other brand, make, or manufacturer of a product, assembly or equipment that, in the opinion of the A/E, is equivalent to that specified, considering quality, capabilities, workmanship, configuration, economy of operation, useful life, compatibility with design of the Work and suitability for the intended purpose, and which is accepted as such by the University.

**Equipment:** A tangible resource, such as machinery, articles or apparatus, of a permanent or long-term nature, used in an operation or activity.

**eVA:** A web-based purchasing system used by Virginia government. Commonwealth agencies, colleges, universities, and many local governments use eVA to announce RFP/IFB opportunities, invite Offerors, receive proposals/quotes, and place orders for Goods and Services.

**Extra Service (by A/E):** A Service which the University tasks the A/E to provide after the Contract has been signed and which was not included in the Basic Services or in the Additional Services as described in the A/E Contract. Extra Services and the associated compensation are authorized by a modification to the A/E Contract using the A/E Change Order (H11AE).

**FAACS:** The [Fixed Asset Accounting and Control System](#) of the [Virginia Department of Accounts](#). As used herein, the real estate subsystem of FAACS.

**[Facilities Planning & Construction \(FP&C\)](#):** The department in Facilities Management (FM) at the University responsible for planning, design, and construction.

**Facility:** A structure or group of structures, including all buildings and other improvements thereto, which is built, installed or established to serve a particular purpose.

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<sup>41</sup> History: April 29, 2009, added the definition.





**Fee Proposal (Professional & Nonprofessional Services)<sup>42</sup>:** The offer of Professional or Nonprofessional Services submitted on the firm's letterhead setting forth the firm's price(s) for the Services to be performed.

**Field Order:** A written order issued by the A/E which clarifies or explains the Plans, the Specifications, or any portion or detail therein, without changing the design, the Contract Price, the Time for Completion or the Contract Completion Date.

**Final Completion Date:** The date of the University's acceptance of the Project from the Contractor upon confirmation from the A/E by a [HECO-13.1](#) and the Contractor by a [HECO-13.2](#) that the Project is totally completed in accordance with the Contract Documents. Procedures for determining Final Completion are set forth in the [General Conditions of the Construction Contract](#) (i.e. §44 of [CO-7](#)).

**Final Construction Documents (Proposal/Bid Documents)<sup>43</sup>:** Construction Documents that have been reviewed and approved by the University for Proposal/Bid.

**Float:** The excess time included in a construction schedule to accommodate such items as inclement weather and associated delays, equipment failures, and other such unscheduled events. It is the contingency time associated with a path or chain of activities and represents the amount of time by which the early finish date of an activity may be delayed without impacting the critical path and delaying the overall completion of the Project. Any difference in time between the Contractor's approved early completion date and the Contract Completion Date shall be considered a part of the Project float.

**Float, Free:** The time by which an activity may be delayed or lengthened without impacting upon the start day of any activity following in the chain.

**Float, Total:** The difference (in days) between the maximum time available within which to perform an activity and the duration of an activity. It represents the time by which an activity may be delayed or lengthened without impacting the Time for Completion or the Contract Completion Date.

**General Conditions<sup>44</sup>:** See Contract General Conditions.

**General Contractor (GC)<sup>45</sup>:** See Contractor.

**General Funds (GF)<sup>46</sup>:** Funding and authority provided by the General Assembly. GF Projects require a Project specific capital budget Submittal for **funding and authority**. A Project is considered a General Fund Project if any portion of the funds are General Funds.

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<sup>42</sup> History: April 29, 2009, added the definition.

<sup>43</sup> History: April 29, 2009, added the definition.

<sup>44</sup> History: April 29, 2009, rewrote the definition.

<sup>45</sup> History: April 29, 2009, added the definition.

<sup>46</sup> History: March 25, 2010, added the definition.



**Goods:** Material, equipment, supplies, printing, and automated data processing hardware and software.

**HECOM<sup>47</sup>:** Shall refer to the University Higher Education Capital Outlay Manual, all Chapters and Appendices, and all revisions thereto, and which shall be incorporated into the Contract in their entirety except as amended or superseded in the Contract or an Addendum thereto.

**Improvements:** Work necessary to accomplish a specific purpose and produce a complete and usable improvement to an existing facility or structure, including the associated architectural and other technical Services and fixed equipment installed and made part of the facility or structure, as well as any site development. Improvements include:

- a. alteration of interior space arrangement and other physical characteristics, such as utilities, so that it may be more effectively used for its present designated functional purpose;
- b. conversion of interior arrangement and other physical characteristics, such as utilities and fixed equipment installed on and made a part of the facility or structure so that it may be effectively utilized for a new functional purpose;
- c. renovation of most or all of a facility or structure, or an existing mechanical system for the purpose of modernizing the use or capability of such asset in order that it may be effectively utilized for its designated functional purpose or to comply with current Code requirements;
- d. restoration of a facility or structure to the maximum extent possible to its former or original state (historic property);
- e. relocation from one site to another of a facility or structure either intact or by disassembly and subsequent reassembly;
- f. major repair to restore a facility, mechanical system or utility system to such a condition that it may continue to be appropriately and effectively utilized for its designated purpose by overhaul, reprocessing or replacement of parts or materials which have deteriorated by action of the elements or wear and tear in use; and
- g. demolition to remove a building or facility, either for land clearance or to make land available for new capital use.

**Informality:** A minor defect or variation of a Proposal/Bid from the exact requirements of the IFB or RFP that does not affect the price, quality, quantity or delivery schedule for the Goods, Services or construction being procured.

**Invitation For Bids (IFB):** A formal solicitation to the public including the Notice, [Instructions To Bidders](#), Bid Form, [General Conditions](#), [Supplemental General Conditions](#), Special Conditions, Forms to be used, the Plans and Specifications, and any other documents listed in the Specifications,

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<sup>47</sup> History: April 29, 2009, added the definition.



all of which request qualified Bidders to submit competitive prices or Bids for providing the described Work on a Project.

**Landscape Architect:** An individual certified by the Commonwealth of Virginia as a ‘Certified Landscape Architect’ by the [APELSCIDLA Board](#) of the [DPOR](#). The Certified Landscape Architect may function as a Project Manager and may be the prime Professional on those Projects where the preponderance of the Work is represented by the application of the principles and methodology of landscape architecture in consultation, evaluation, planning (including the preparation and filing of sketches, Drawings, Plans and Specifications) and responsible supervision or administration of Contracts relative to Projects principally directed at the functional and aesthetic use of land.

**LEED Certified<sup>48</sup>:** Independent, third-party verification, as determined by the U.S. Green Building Council, that a building Project meets green building and performance measures.

**Liquidated Damages<sup>49</sup>:** See §43 of the [General Conditions of the Construction Contract \(CO-7, CO-7DB\)](#). Rarely used by the University.

**Maintenance Reserve Project (Deferred Maintenance):** A single effort undertaking which involves major repair or replacement to plant, property or equipment, costing less than \$1M. Requires capital budget Submittal for the funding and authority to the General Assembly. Examples of such Projects include:

1. repair or replacement of damaged or inoperable equipment such as elevators, furnaces, plumbing fixtures, air conditioning and ventilation equipment;
2. repair or replacement of components of a plant such as masonry, ceilings, floor, floor coverings, roofs, sidewalks, parking lots, exterior lighting, boilers, and air conditioners;
3. repair or replacement of existing utility systems, such as electrical, water and sewer, heating and cooling [when replacement of components of utility systems is required (e.g. transformers, distributions panels, cables, etc.), new components should be sized to account for future growth if the existing components are operating at or near capacity];
4. correction of deficiencies in property and plant that are required to conform with building and safety Codes or those regulations associated with hazard corrections, including asbestos hazards when incidental to repair/maintenance; and
5. correction of problems resulting from erosion and drainage.

**Management Agreement:** The Management Agreement By and Between The Commonwealth of Virginia and The University of Virginia passed by the 2006 General Assembly Session as required by the Restructuring Act and containing further defining controlling policy and rules governing the additional autonomy granted by the Restructuring Act.

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<sup>48</sup> History: April 29, 2009, added the definition.

<sup>49</sup> History: April 29, 2009, rewrote the definition.



**Medical Center:** Agency 209.

**Memorandum of Negotiation (MON)<sup>50</sup>:** A memo signed by the University that documents the details of the fee negotiations, the scope of Work, and other items agreed to during negotiations. The content of the MON is more Project specific, supplementing and clarifying the procurement of the CM/GC Contract in terms of the particular Project.

**Memorandum of Understanding (MOU):** A document signed by both the A/E and the University that formalizes the details of the fee negotiations, the scope of Work, the A/E schedule, and other items agreed to during negotiations. The terms of the MOU are more Project specific, supplementing and clarifying the requirements of the A/E Contract in terms of the particular Project. However, the MOU does not supersede nor take precedence over the requirements of HECOM unless such change has been approved in writing using a D&F by the AVP & CFO and such written approval is attached to the MOU.

**Mockup<sup>51</sup>:** Full-size, temporary, representative portion(s) of building system(s), provided by the CM/GC to permit study, test permanent construction, or serve as a sample of subsequent work. Mockups shall be erected on the site, or elsewhere such as a testing facility, separate from the permanent construction. Prior written approval of the location of on-site mockup is required. Except where otherwise specified or directed the CM/GC will completely remove the mockup and legally dispose of all portions off University property; restore disturbed area and construction at the end of the Work. Prior to constructing a mockup, related submittals must be approved.

**New Construction:** The building of a new structure, facility or improvement (including utilities) on a site. A new construction Project is a single undertaking involving construction applicable to one or more facilities, including all Work necessary to accomplish a specific purpose and produce a complete and usable new facility, all associated architectural and other technical Services, all installed equipment, site development and any improvements. New construction includes:

1. construction of a new plant including the erection, installation, assembly of a new facility or structure, utility system, or site Work;
2. addition, expansion, or extension to a structure which adds to the overall exterior dimension of the plant; structure; and
3. complete replacement of a structure or facility that because of age, hazardous conditions, obsolescence, structural and building safety conditions, or other causes is beyond the point where it may be economically repaired/renovated and can no longer be used for its designated purpose.

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<sup>50</sup> History: March 25, 2010, added the definition.

<sup>51</sup> History: February 12, 2010, added the definition.



**Non-general Funds (NGF)<sup>52</sup>:** When the funding source is University operating budgets, grants, gifts, a revenue source, or University bonds. NGF Projects require a specific capital budget Submittal for **authority**.

**Nonprofessional Services (Construction-related)<sup>53</sup>:** Any Services not specifically identified as Professional Services in the Procurement Rules definition of Professional Services that shall include, but not be limited to, cost consulting, Project management, Project administration, inspection/clerk of the Works, soils/materials testing and other Services which may be performed by either licensed or non-licensed Professionals and are “construction-related.”

**Notice:** All written Notices, including demands, instructions, claims, approvals, and disapprovals, required or authorized under the Contract Documents. Written Notice by either party to the Contract Documents shall be sufficiently given by any one or combination of the following: (1) delivered in hand at the last known business address of the person to whom the Notice is due; (2) delivered in hand to the person’s authorized agent, representative or officer wherever they may be found; or (3) enclosed in a postage prepaid envelope addressed to such last known business address and delivered to a U.S. Postal Service official or mailbox. Notice is effective upon such delivery. Notice shall also mean the Notice of Invitation for Bids included in the IFB.

**Notice of Award<sup>54</sup>:** The written notification by the [University FP&C OCA](#) to the apparent successful firm notifying the firm that it has been awarded the Contract.

**Notice of Intent to Award<sup>55</sup>:** The written public posting by the [University FP&C OCA](#) announcing the apparent successful firm, and notifying all firms that the University intends to award the Contract to the apparent successful firm.

**Notice to Proceed:** A written Notice by the University to the Contractor (with a copy to A/E) fixing the date on which the Contract time will commence for the Contractor to begin the prosecution of the Work in accordance with the requirements of the Contract Documents. The Notice to Proceed will customarily identify a Contract Completion Date.

**Offeror<sup>56</sup>:** A person who offers to enter into a binding Contract with the University.

**Office of Contract Administration (OCA)<sup>57</sup>:**

See <http://www.fm.virginia.edu/fpc/ContractAdmin/ContractAdmin.htm>

**On-Demand Contractors:** A pre-selected list of Contractors for procurement of construction (see <http://www.fm.virginia.edu/fpc/ContractAdmin/On-DemandContractorOptions.htm> for details).

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<sup>52</sup> History: March 25, 2010, added the definition.

<sup>53</sup> History: April 29, 2009, previously termed “Nonprofessional Services,” the definition was rewritten to add “construction-related” to the definition’s title and added the material beginning “... that shall include.....” that was previously in §4.2.2.

<sup>54</sup> History: April 29, 2009, rewrote the definition.

<sup>55</sup> History: April 29, 2009, rewrote the definition.

<sup>56</sup> History: April 29, 2009, added the definition.

<sup>57</sup> History: April 29, 2009, added the definition.



**Owner<sup>58</sup>:** See definition for University.

**Performance Specification:** A Specification which generally describes the characteristics of the article required, e.g. the style, type, quality, character, economy of operation and purpose to be served by the article and the results required of the article provided. It does not restrict Offerors to the specific brand, make, or manufacturer, nor does it tell the Contractor how to achieve the required result.

**Person:** Any individual, corporation, partnership, association, company, business, trust, joint venture, firm, or other legal entity.

**Plans:** The group or set of Project-specific Drawings included in the Contract Documents.

**Preliminary Drawings & Specifications (Preliminary Design, Design Development)<sup>59</sup>:** See §§[6.4.1](#) & [8.7](#).

**Pre-proposal/Pre-bid Conference:** A meeting of interested, prospective firms held by the University, usually with the assistance of the A/E, prior to the receipt of Proposals/Bids in which comments or questions concerning Specifications or other provisions in the RFP/IFB can be received and considered. Any response shall be in writing and distributed to all who requested/received the IFB/RFP.

**Prequalification of Offerors:** The process by which the qualifications and credentials of potential Offerors may be evaluated for particular types of Services or construction in accordance with criteria established in writing and sufficiently in advance of their implementation to allow interested persons or firms a fair opportunity to complete the process. See [Chapter 11](#) for further descriptions.

**Price Proposal (Contractors/CM's)<sup>60</sup>:** The offer provided in response to the RFP submitted on the prescribed form and setting forth the firm's price(s) for the Work to be performed.

**Procurement Rules of the Management Agreement (Procurement Rules)<sup>61</sup>:** See [Procurement Rules](#).

**Product Data<sup>62</sup>:** Illustrations, standard schedules, performance charts, color charts, instructions, brochures, diagrams, and other information furnished by the CM/GC to illustrate materials or equipment for some portion of the Work.

**Professional Services<sup>63</sup>:** Services provided by a licensed Professional within the scope of the practice of accounting, architecture, land surveying, landscape architecture, or Professional

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<sup>58</sup> History: April 29, 2009, rewrote the definition.

<sup>59</sup> History: April 29, 2009, added the definition.

<sup>60</sup> History: April 29, 2009, added the definition.

<sup>61</sup> History: April 29, 2009, added the definition.

<sup>62</sup> History: February 12, 2010, added the definition.



engineering and shall also include, but not be limited to, land surveyors, Geotechnical Engineers, interior design Services, and Soils Engineers.

**Project:** The term used to represent the specific or proper assigned title of the entire undertaking which includes, but is not limited to, the architectural, design, and/or engineering Services by the A/E and the construction “Work” performed by the Contractor pursuant to the Contract Documents.

**Project Budget<sup>64</sup>:** Total Project Budget detailed and authorized by the e-Builder H2 process.

**Project Close Out<sup>65</sup>:** See §[10.18](#). Project Close Out, H14, shall be completed within three months after the warranty period expires.

**Project Inspector:** One or more persons employed by the University to inspect the Work for the University and to document and maintain records of activities at the Worksite to the extent required by the University. The University shall notify the Contractor in writing of the appointment of such Project Inspector(s).

**Project Manager (A/E)<sup>66</sup>:** See A/E Project Manager.

**Project Manager (Contractor)<sup>67</sup>:** See Contractor Project Manager.

**Project Manager (University)<sup>68</sup>:** See University Project Manager.

**Proposal<sup>69</sup>:** The offer provided by the Offeror submitted on the prescribed form and setting forth the firm’s price(s) for the Work to be performed.

**Proprietary:** An adjective used to describe a product or piece of equipment which is manufactured under some exclusive right but which is available to Contractors from multiple vendors or Suppliers; (e.g. a product or piece of equipment which is specified by a single brand name and model # and which is available to Offerors from more than one source, but for which no “Equal” is permitted).

**Provide:** As used herein and in the Contract Documents, “Provide” shall mean to supply, to furnish and to install complete with all accessories, parts and Services to be ready for its intended use.

**Real Estate:** Any land and improvements including all rights and interest (i.e., leasehold, easements, permission, licenses, allotments, minerals, remainder or any other interest).

**Record Drawings and Specifications<sup>70</sup>:** See §[10.19](#).

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<sup>63</sup> History: April 29, 2009, added the material beginning “...and shall also include.....” that was previously in §4.2.1; July 21, 2008, in the material moved from §4.2.1 added “interior design Services.”

<sup>64</sup> History: April 29, 2009, added the definition.

<sup>65</sup> History: April 29, 2009, added the definition.

<sup>66</sup> History: April 29, 2009, rewrote the previous two (2) definitions of “Project Manager.”

<sup>67</sup> History: April 29, 2009, rewrote the previous two (2) definitions of “Project Manager.”

<sup>68</sup> History: April 29, 2009, rewrote the previous two (2) definitions of “Project Manager.”

<sup>69</sup> History: April 29, 2009, added the definition.



**Request for Proposal (RFP):** A written public notification by the University soliciting Proposals for Professional, Nonprofessional, or Contractor Services. The RFP generally describes the Services sought, the unique capabilities or qualifications needed to perform the Work, factors to be used to evaluate Proposals, and the conditions for negotiating prices and terms with the Offerors.

**Responsible Bidder:** A Bidder who has the capability, in all respects, to perform fully the Contract requirements, and the moral and business integrity and reliability that will assure good faith performance, and who has been prequalified, if required.

**Responsive Bidder:** A person or firm who has submitted a Bid which conforms in all material respects to the IFB.

**Restructuring Act:** The Restructuring Higher Education Financial and Administrative Operations Act, Chapter 4.10, §[23-38.88 et seq.](#) of the Code of Virginia, and in particular §[23-38.110](#) of the Act.

**Review Unit**<sup>71</sup>: See University Review Unit.

**Sample Installation**<sup>72</sup>: A portion of the Work, provided by the CM/GC to serve as a sample of subsequent work. Prior written approval of the location and quantity of sample installation is required. Written approval of sample installation before continuing with the remainder of installation is required. Except as otherwise specified or directed, approved sample installation may remain in place as permanent construction.

**Samples**<sup>73</sup>: Physical examples that illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.

**Schematic Design**<sup>74</sup>: See §§[6.4.1](#) & [8.6](#).

**Scope of A/E Services**<sup>75</sup>: All of the Basic, Additional, and Extra Services provided by the A/E to the University.

**Sealed Bid:** A Bid which has been submitted in a sealed envelope to prevent its contents from being revealed or known before the deadline for the submission and opening of all Bids.

**Service Order**<sup>76</sup>: See §[4.9.6](#).

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<sup>70</sup> History: April 29, 2009, added the definition.

<sup>71</sup> History: April 29, 2009, added the definition.

<sup>72</sup> History: February 12, 2010, added the definition.

<sup>73</sup> History: February 12, 2010, added the definition.

<sup>74</sup> History: April 29, 2009, added the definition.

<sup>75</sup> History: April 29, 2009, added the definition.

<sup>76</sup> History: April 29, 2009, added the definition.





**Services:** Any Work performed by an independent Contractor wherein the Service rendered does not consist primarily of acquisition of equipment or materials, or the rental of equipment, materials, or supplies.

**Shop Drawings<sup>77</sup>:** The Drawings, diagrams, illustrations, schedules, installation descriptions, and other data specially prepared for the Work by or for the CM/GC or a Subcontractor, manufacturer, supplier or distributor to provide detailed information for the fabrication, location, erection, installation, connection and methodology associated with the Work. Shop Drawings are intended to aid in the preparation and installation of materials and to ascertain that the materials proposed conform to the requirements of the Contract Documents.

**Sole Source:** A product, item of equipment, Service or combination of these which is practicably available from only one manufacturer, vendor or provider in an area to the exclusion of others (e.g. within the constraints of the particular Project, whether geographic, time, material or other). If products, equipment or Services are franchised to only one vendor in an area, the vendor would be considered a Sole Source for such products, equipment or Services specified for this Project.

**Special Conditions:** That part of the Contract Documents which describes special or additional requirements or procedures applicable to the particular Project. The Special Conditions do not amend or supersede the Contract General Conditions.

**Specifications:** Those portions of the Contract Documents containing the Contract General Conditions as well as written technical descriptions of materials, equipment, construction systems, standards and workmanship describing the proposed Work in sufficient detail for the Contractor to perform the Work and providing sufficient information for the University Building Official to determine Code compliance.

**Steering Committee<sup>78</sup>:** See Capital Project Steering Committee.

**Subcontractor:** An individual, partnership or corporation having a direct Contract with the Contractor or with any other Subcontractor for the performance of a part of the Work. The Subcontractor may include any person who provides on-site labor but does not include any person who only furnishes or supplies materials for the Project.

**Submittals:** As used in the Construction Contract Documents, shall mean all Shop Drawings, illustrations, brochures, standard schedules, performance charts, and other data required by the Contract Documents which are specifically prepared by or for the Contractor to illustrate some portion of the Work and which are submitted to the A/E for review to assure conformance with the requirements of the Contract Documents. As used in the Professional Services Contract, shall mean the Drawings, Specifications, Cost Estimates, schemes and other documents required by Chapter 8 of HECOM to be submitted by the A/E to the University for review and approval.

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<sup>77</sup> History: February 12, 2010, rewrote the first sentence.

<sup>78</sup> History: April 29, 2009, added the definition.



**Substantial Completion:** The date on which the Project (or a specific part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Project (or the specific part thereof) can be utilized by the University for the purposes for which it is intended. The University, at its sole discretion, may take Beneficial Occupancy at this time or may choose to wait until final completion to occupy.

**Substitute:** A material, product, equipment, or assembly that deviates from the requirements of the Contract Documents, but which the Contractor deems will perform the same function and have equal capabilities, service life, economy of operation, and suitability for the intended purpose. The proposal must include any cost differentials proposed. Any such proposed substitute must be submitted to the A/E for review and, if acceptable to the A/E and the University, incorporated into the Contract by Change Order.

**Supplemental General Conditions:** The part of the Contract Documents which amends or supplements the Contract General Conditions. See [Policies and Procedures](#) for Supplemental General Conditions for SWaM and Builders' Risk Insurance.

**SWaM:** The acronym used to refer to Small, Women-Owned, and Minority-Owned Businesses. See [DGS-30-360](#) for detailed requirements and definitions.

**Supplier:** A manufacturer, fabricator, distributor, material provider, or vendor who provides material for the Project, but does not provide on-site labor.

**Technical Proposal<sup>79</sup>:** Evaluation document submitted to the University in response to the RFP criteria separate from the Price Proposal. Firms are typically asked to provide information on items such as proposed project team, the firm, management, comments on the specific project, SWaM history & project plan, and VM suggestions.

**Time for Completion:** That number of consecutive calendar days following receipt of a Notice to Proceed that the Contractor has in which to Substantially Complete everything required of it by the Contract. The Time for Completion is usually set out in the RFP/IFB. When the Notice to Proceed is issued, it states a Contract Completion Date which has been set by the University based on the Time for Completion.

**Unit Price Work:** Work to be paid for on the basis of established unit prices for the quantity of material provided or Work done. No additional percentage mark-up for overhead or profit shall be added to the unit prices.

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<sup>79</sup> History: April 29, 2009, added the definition.

<sup>80</sup> History: April 29, 2009, added the definition.



**University (Owner, University of Virginia, and Agency)<sup>81</sup>:** For purposes of HECOM shall mean The Rector and Visitors of The University of Virginia or other entity represented by the University with whom the Contractor or the A/E has entered into a contractual agreement and for whom the Work or Services will be provided.

**University Benchmark Cost Metric (Cost Metric):** This link explains the metric <http://www.fm.virginia.edu/fpc/FPCDesktop/BudgetandFinance/CostMetricMethodology.htm>.

**University Building Official (Building Official/Code Official)<sup>82</sup>:** The person delegated authority by the University, and approved by the [BOV](#), to issue Building Permits and Certificates of Use and Occupancy for construction Work regulated by the [YUSBC](#) for University buildings on Commonwealth property.

**University Office of Environmental Health & Safety (OEHS)<sup>83</sup>:** See <http://ehs.virginia.edu/ehs/> for details.

**University Project Manager (University PM)<sup>84</sup>:** Shall be the University's designated representative for the Project.

**University Review Unit (Review Unit)<sup>85</sup>:** A staff unit of Facilities Management (FM) consisting of the Senior Review Architect, and registered and licensed Architects and Engineers delegated authority by the Restructuring Act to perform reviews of the University's construction Project Plans and Specifications.

**Value Management<sup>86</sup>:** See "Value Management Process" on this web page: <http://www.fm.virginia.edu/fpc/ContractAdmin/ProfSvcs/ProfessionalServices.htm>

**Virginia Uniform Statewide Building Code (VUSBC):** The Uniform Statewide Building Code adopted by the [Virginia Department of Housing and Community Development \(DHCD\)](#) in conformance with the Code of Virginia, §[36-97 et seq.](#)

**VCCO:** The acronym used to refer to a University employee who has completed the necessary training and testing by the Bureau of Capital Outlay Management (BCOM), [Division of Engineering and Buildings \(DEB\)](#) in Commonwealth procurement law, policy and procedures and who has been awarded the designation of Virginia Construction Contracting Officer (VCCO). Where used in HECOM, the VCCO functions are related to the following: receipt, opening, and review of Proposals/Bids, and approving the e-Builder [H8](#) process recommending award of the Contract to the successful firm.

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<sup>81</sup> History: April 29, 2009, added the definition.

<sup>82</sup> History: April 29, 2009, added "University" to the title, deleted the previous first sentence and added "for University buildings on Commonwealth property" at the end of the present first sentence.

<sup>83</sup> History: April 29, 2009, added the definition.

<sup>84</sup> History: April 29, 2009, added "University" to the title of the term and added the abbreviation.

<sup>85</sup> History: April 29, 2009, added "University" to the title.

<sup>86</sup> History: April 29, 2009, added the definition.



**Work:** All labor, materials, equipment and other Services necessary to perform the complete Services, or any separate identifiable part thereof, or to provide the complete product required by the Contract. In construction, Work includes, but is not limited to, performing Services, furnishing labor, and furnishing and incorporating materials and equipment into the construction to provide the entire completed construction, or the various separately identifiable parts thereof, as required by the Contract Document



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## CHAPTER 3: PROFESSIONAL SERVICES: GENERAL TERMS AND CONDITIONS

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### SECTION 3.1<sup>87</sup> SCOPE OF PROVISIONS AND APPLICABILITY

The General Terms and Conditions for Professional Services Contracts are contained in this chapter. They shall be made a part of all Contracts for Professional Services and shall not be modified.

### SECTION 3.2 GENERAL POLICIES ON A/E SERVICES

**3.2.1 License/Registration:** Entities (e.g. individual, partnership, or corporation) offering to provide A/E Services shall be properly registered and licensed in Virginia as required by the [DPOR](#), [APELSCIDLA Board](#), and, if incorporated, the [State Corporation Commission](#). Professional Corporations must obtain a Certificate of Authority as required by Va. Code §[54.1-411](#), as amended.

The Architect or Engineer (i.e. the person) “in responsible charge” for each discipline shall be currently licensed in the Commonwealth of Virginia and shall affix his or her seal to those documents for which he or she is responsible.

**3.2.2 Prime Design Professional:** The University will normally Contract with a single entity as “Prime Design Professional” to provide the Project architectural and engineering Services. Such Prime Design Professional may have all necessary disciplines in-house or it may subcontract with Consultants to provide Services in some disciplines. The Prime Design Professional may be an Architect, an Engineer, or an A/E entity. The University shall determine which entity best satisfies the Universities’ requirements for providing the Services, meeting the time schedule and budget limitations, and managing the Services to be provided on the particular Project.

**3.2.3 Associations:** Contracting with an association of firms, such as joint ventures or associated A/E’s, involves additional business and legal considerations. Factors to be considered include whether the Association is a registered or licensed entity authorized to offer the Services in Virginia, the nature of each party’s responsibilities to the other and to the University, the Professional liability insurance coverage of the Association, its organization and management structure, each firm’s financial condition and stability with respect to fulfilling its obligations under the Contract, and whether the parties to the Association are jointly and severally liable for the Work. Prior to selecting an Association fee negotiation for a possible Contract award, the University shall request a review of the Association’s legal documents, by the University’s legal counsel. Associations not legally constituted and authorized to offer the requested Services in Virginia at the time of the closing date of the RFP will be deemed ‘not responsive’.

**3.2.4 Disadvantaged Businesses:** It is the policy of the University to contribute to the establishment, preservation, and strengthening of SWaM businesses and to encourage their participation in

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<sup>87</sup> History: April 29, 2009, rewrote the Section and Section heading.



University procurement activities. The University encourages Contractors to provide for the participation of SWaM businesses through partnerships, joint ventures, subcontracts, or other contractual opportunities. All procurements by competitive negotiation for Professional or Nonprofessional Services (Construction-related) that are expected to exceed \$100,000 in value shall include consideration of the proposer's past and proposed use of SWaM businesses in the evaluation of Proposals.

### **SECTION 3.3 PROFESSIONAL SERVICES**

The architectural, civil, structural, mechanical and electrical portions of the Project shall be planned and designed by or under the immediate supervision of a licensed Architect or Engineer who has expertise in the particular discipline involved. Where such licensed expertise is not available within the A/E of Record or where the A/E chooses to subcontract a part of the Work, the A/E shall employ an associate or consulting A/E firm with the requisite expertise to provide the required Services. The Consultants, associates, or Subcontractors proposed by the A/E during the selection process to be part of the A/E Project team shall perform the Work as proposed. If circumstances require a change, the A/E shall advise the University of the proposed change, the reasons therefore, and the name and qualifications of the proposed replacements. The replacements must be acceptable to the University.

Associates, Consultants or Subcontractors proposed to be part of the A/E's Project team shall be Contracted by the A/E at the beginning of the Work and shall be active participants in all phases of the Work related to their discipline from beginning to end. The A/E shall be responsible to the University for the Work of all associates, Consultants and Subcontractors, whether employees of the A/E or not, performed under the Contract.

### **SECTION 3.4 TAXPAYER IDENTIFICATION NUMBER**

The A/E shall furnish to the University at the time of Contract award its Federal Employer Identification Number (FEIN) if a corporation or a partnership or its Social Security Number (SSN) if a sole proprietor.

### **SECTION 3.5 RELATIONSHIP OF A/E TO UNIVERSITY**

Once the Contract for A/E Services has been fully executed, the A/E shall be the Professional advisor and Consultant to the University for technical issues related to the Project, and shall be responsible directly to, and only to, the University. The University shall communicate all approvals, rejections, change requirements and other similar information to the A/E. The A/E shall advise the University of changes necessary to keep the Project within the prescribed area and cost limits. The A/E's status, relationship and authority during the construction phase of the Project are further defined in §15, paragraphs (a) thru (h) of the [General Conditions of the Construction Contract](#), and are included herein by reference.

Generally, the University will observe the procedure of issuing orders to the Contractor through the A/E or, if the A/E's construction period duties have been so modified, through the University's designated Project representative. If the University issues orders directly to the Contractor, the A/E shall be copied on such orders.



### **SECTION 3.6 UNIVERSITY HIGHER EDUCATION CAPITAL OUTLAY MANUAL**

This Manual and all revisions thereto, shall be incorporated into the Contract in their entirety except as amended or superseded in the Contract or an Addendum thereto.

For the sake of simplicity, the provisions of HECOM dealing with A/Es are written as though they apply to the design of buildings and to construction administration only. They also shall apply, however, to all A/E Services of every kind including, but not limited to, Project studies, development of master site Plans, other studies, and related Professional Services.

Many of the changes, additions, or deletions made in revisions to HECOM are necessary to keep abreast with Codes, statutes, or regulations related to the Project. They require immediate compliance. If the A/E determines that including the requirements of any HECOM revision issued subsequent to the revision shown on the Contract Between the University and A/E ([HECO-3](#)), will require Extra Services on its part, the A/E shall notify the University of same within sixty (60) days of the date of distribution of the revision, and shall provide an itemized list of the Extra Services required by the revision. The University shall provide direction to the A/E regarding incorporating the requirements of the revision and, if appropriate, issue a Change Order to the A/E for the Extra Services as described in [Chapter 6](#).

Generally, revisions issued prior to the date of approval of the Preliminary Design can be incorporated with minimal, if any, Extra Services on the part of the A/E.

If the A/E fails to notify the University within 60 days after the date of distribution of the revision that the revision will require Extra Services on the A/E's part, the A/E waives the right to make claims for Extra Services based on the contents of the revision.

### **SECTION 3.7 “DESIGN-NOT-TO-EXCEED CONSTRUCTION BUDGET” AS RELATED TO A/E CONTRACT**

The University shall provide the A/E with a description of the Project including information on functions, space requirements, special features and requirements, aesthetic requirements, authorized square footage and the "Design-not-to-exceed Construction Budget".

The A/E shall submit a Cost Estimate with each phase Submittal. If the Cost Estimate indicates a potential problem in securing a Proposal/Bid within the Design-not-to-exceed Construction Budget, the A/E shall notify the University and shall work with the University, at no additional fee, unless otherwise directed by the University, to redefine the design concepts of space utilization, building efficiencies, materials of construction, etc., so that the estimated cost of construction does not exceed the Design-not-to-exceed Construction Budget. The A/E's Cost Estimate shall be in the systems format described in [Chapter 8](#) and [Appendix B](#) and shall be to a level of detail commensurate with the current level of design. Substantial changes in the Project scope required to meet the Design-not-to-exceed Construction Budget, such as those which affect the area or function of the proposed facility, must be justified by the A/E and may require the approval of the AVP & CFO.

Moreover, if the low Proposal/Bid exceeds the Design-not-to-exceed Construction Budget identified in the A/E Contract by more than ten percent (10%), any A/E revisions to the Plans and



Specifications required to bring the cost of the Project within the Design-not-to-exceed Construction Budget shall be executed by the A/E at no additional fee to the University, unless otherwise directed by the University.

### **SECTION 3.8<sup>88</sup> CODE AND REGULATORY COMPLIANCE**

The A/E, in accordance with the applicable standards of care established by HECOM and under Virginia law, is responsible for designing the Project and administering the construction phase of the Project in accordance with [VUSBC](#), HECOM, and other regulatory requirements applicable to the Project. Nothing contained herein shall be construed as relieving any A/E, Professional design Consultant, Contractor, Supplier or any other participant from any Professional or legal responsibility for performance. Reviews, comments and approvals by the University, or the staff of any Department of the Commonwealth in no way absolve any other person, firm or corporation involved in a Project from their full responsibilities under law, Codes and Professional practice. Lack of comment by a University or Commonwealth reviewer does not relieve the A/E from designing to meet the Code or HECOM requirements or applicable regulations of the Commonwealth or local regulations related to water, sewer, fire department service, and other utilities.

If the correction of a Code, HECOM requirement, or regulatory violation results in a Change Order during construction, any additional costs incurred shall be borne by the party responsible for the violation. The University will bear only the costs attributable to the actual Code or regulation- required enhancement of the Project.

If the A/E believes that a Code, a HECOM requirement, or a regulation is unclear as to meaning, he shall request a written opinion as to the applicable interpretation from the University or from the applicable regulatory agency, as appropriate, and the A/E shall be entitled to rely on the written opinion, if any, which he receives.

### **SECTION 3.9<sup>89</sup> A/E INSURANCE**

**3.9.1 Professional Liability Insurance:** The A/E shall carry Professional liability insurance covering Professional errors and omissions in an amount not less than ten percent (10%) of the estimated cost of construction of all University-owned Projects designed by the A/E which are currently under construction unless otherwise specified by the University, but in no event shall the amount of Professional liability insurance be less than \$100,000. The A/E shall maintain this insurance in force after completion of the Services under the Contract for a period of five (5) years after completion of construction.

The form and amount of liability coverage will be negotiated with the A/E firm, and the cost and source of the coverage will be reflected in negotiated fees. The amount of any deductible must be

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<sup>88</sup> History: April 29, 2009, added the first clause in the first sentence of the Section.

<sup>89</sup> History: April 29, 2009, combined previous Section 3.10 with previous Section 3.9 to create present Section 3.9, added the subsection headings, in present 3.9.1 rewrote the first sentence of the last paragraph, in present 3.9.2 rewrote the first sentence of the last paragraph, created the last two sentences of present 3.9.4 and the first sentence of present subsection 3.9.5 from the first paragraph of previous Section 3.10 and added the last sentence to present subsection 3.9.5





acceptable to the University considering the design firm's financial capability, capacity and loss history.

At the option of the University, it may elect to obtain the A/E Professional liability coverage for the construction Project. The University would provide the A/E firm with coverage by one of the following methods:

1. Purchasing a Single Project Policy; or,
2. Including the Project on its Master Project Policy.

Neither the University's review, approval, nor acceptance of, nor payment for any of the Services required shall be construed to operate as a waiver by the University of any rights or any cause of action arising out of the Contract. The A/E shall be and remain liable to the University for all costs of any kind which are incurred by the University as a result of negligent acts, errors, or omissions on the part of the A/E including its Subcontractors and Consultants, in the performance of any of the Services furnished.

**3.9.2 Design Errors and Omissions:** The A/E shall be responsible for all costs resulting from its errors, omissions, and other breaches of the applicable standards of care established by HECOM and under Virginia law including, but not limited to, its own costs for labor and other in-house costs, any resulting Contractor Change Order costs including the costs for demolition, cutting, patching, repairs, removal, or modification of Work that is already in place, any Contractor or University delay damages, and any judgments, fines or penalties against the University resulting from A/E errors, omissions, and other breaches of the applicable standards of care. However, the A/E shall not be responsible for the cost of the correct equipment or system which should have been originally specified, except the A/E shall be responsible for any increased costs, whether the result of inflation, reordering, restocking or otherwise, of incorporating the corrected Work into the Contractor's Contract Change Order. For the purposes of determining the A/E's share of such costs for Work which has not yet been performed, the cost of Work performed by Contractor's Change Order shall generally be presumed to be fifteen percent (15%) greater than if the Work had been included in the Contractor's Contract. The A/E shall have the burden of disproving this presumption.

The University shall actively pursue reimbursement of costs resulting from the A/E's errors, omissions, or breaches of the applicable standard of care. Upon determination that there may be A/E financial responsibility involved, the A/E shall be contacted by the University. The A/E shall be advised of the design deficiency, informed that it is the University's opinion that the A/E may be financially responsible, and requested to provide a technical solution to the problem, including Cost Estimate. Upon notification of potential liability, the A/E should coordinate with the University to determine required technical support and timing to minimize delay costs. Pending final decision by the University, the A/E will be invited to attend all price negotiations with the Contractor for the corrective Work. The A/E shall participate as a non-voting technical advisor to the University's negotiator. If the A/E refuses to cooperate in the negotiations or disputes its responsibility, the University shall have the right to proceed with the remedial construction or Change Order negotiations without the A/E.



Alternatively, where there is clearly a design error, the A/E may discharge its financial responsibility through negotiation with, and direct payment to, the Contractor. This action must be participated in and approved by the University.

**3.9.3 Records Retention:** The A/E shall retain record copies of its design calculations, Drawings, Final Construction Drawings, Addenda, Field Orders, clarifications and responses to Requests for Information, approved Shop Drawings and Submittals, inspection/observation reports, fiscal records, and other documents relative to the Contract for five (5) years after completion of the construction. The A/E will provide those Project related documents to the University should the A/E cease its business prior to that time.

**3.9.4 Other Insurance Required:** In addition to Professional liability insurance, A/Es shall also obtain the following insurance coverage and minimum limits of liability as follows:

1. Worker's Compensation -- Standard Virginia Workers Compensation Policy with statutory requirements and benefits as stipulated in the Virginia Worker's Compensation Act;
2. Employers Liability -- \$100,000;
3. Commercial General Liability -- \$1M per occurrence/\$3M for aggregate limits (general and products/completed operations). The coverage shall include: Premises/Operations Liability; Products and Completed Operations Coverage; Independent Contractors Liability; Owners and Contractors Protective Liability; and Personal Injury Liability (Libel, Slander, Defamation of Character, etc.). The University shall be named as an additional insured with respect to the Services being provided using the following wording: The Commonwealth of Virginia and The Rector and Visitors of the University of Virginia, its officers, employees, and agents; and
4. Automobile Liability -- \$500,000 Combined Limit per accident for bodily injury and property damage, to include coverage for owned, hired, and non-owned vehicles.

The University reserves the right to require additional insurance coverage and higher limits of liability.

The insurance required by this subsection shall be maintained until the completion of all Work under the Contract.

**3.9.5 Certificates of Insurance:** Prior to the start of any Work under the Contract, the A/E shall provide to the University Certificates of Insurance providing evidence of the insurance coverage required by this section with insurers and coverage forms subject to approval of the University. After completion of the Work, the A/E shall continue to provide the University Certificates of Insurance as evidence of the continuing coverage of the Professional liability insurance required by subsection 3.9.1 for the requisite amount of time.

## **SECTION 3.10 [RESERVED]**



## SECTION 3.11<sup>90</sup> A/E CREATED DOCUMENTS AND MATERIALS

**3.11.1 Ownership:** All materials and documentation, including the original Drawings, the Plans and Specifications, copies of any calculations and analyses prepared pursuant to the Contract between the University and the A/E, and any [BIM](#) files, shall belong exclusively to the University. Such materials and documentation, whether completed or not, shall be the property of the University, whether the Work for which they are made is executed or not. The A/E shall not use these materials on any other Work or release any information about these materials without the express written consent of the University.

Such material may be subject to public inspection in accordance with the Procurement Rules. Security-related documents and information are excluded from the Act unless a specific need to know can be shown. Trade secrets or proprietary information submitted by a Offeror in connection with a procurement transaction shall not be subject to disclosure under the [Procurement Rules](#), provided the Offeror invokes the protections of the [Procurement Rules](#), prior to or upon submission of the data or other materials, identifies the data or materials to be protected and states the reason why the protection is necessary.

**3.11.2 A/E Documents and Formats:** The A/E shall provide the following documents in the following formats to the University at the completion of the A/E's Work:

- a. A full set of printed Record Drawings with only seals required. All drawings are to be provided on bond or vellum paper. PDF drawing files are also required and may be substituted for printed set at the University PM's discretion.
- b. Electronic files for Record Drawings to be in a format consistent with submission requirements of HECOM. AutoCAD DWG files are required for all Record Drawings and must be in the AutoCAD version currently used by the University. Each CAD file shall correspond to a single drawing sheet and shall have all of the external-references bound into the file. The CAD file name shall be the same as the sheet name.
- c. All drawings shall follow AIA Layering Standards, except for civil and site utility drawings, where the University in-house layer standard is preferred; however, AIA Layering Guidelines are also acceptable. See <http://www.fm.virginia.edu/fpc/ContractAdmin/ProfSvcs/RecordDocumentRequirements.htm#UVACAD>
- d. If a computer aided drafting and design program other than AutoCAD is used to generate project drawings, the A/E shall be responsible for all conversion procedures necessary to generate the AutoCAD files to specifications for delivery to the University. The A/E shall also be responsible for maintaining the accuracy of the material and inclusion of all items within the drawings during any conversion process.

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<sup>90</sup> History: April 29, 2009, rewrote the Section title and added the subsection headings, in the first sentence of §3.11.1 added "and including BIM files" and rewrote §3.11.2; July 21, 2008, in the third paragraph, rewrote a, added e and added the last 3 sentences to f.



- e. One printed and one electronic copy of the Record Specifications. The electronic version shall be in either Word or PDF format.
- f. A printed copy or a digital file of any analyses made for the Project.
- g. Indexed copy or digital file of the calculations made by each discipline for the Project.
- h. A copy of all Shop Drawings, Submittals, cut sheets, operation and maintenance instructions, parts lists, and other material related to the Project.
- i. BIM files, if any

Also see:

<http://www.fm.virginia.edu/fpc/ContractAdmin/ProfSvcs/RecordDocumentRequirements.htm> and §10.19

**3.11.3 Use of Documents:** The University, as Owner of the documents prepared for its Projects, has the right to use the Project documents as a prototype to demonstrate scope, size, functional relationships, etc., to an A/E designing a similar Project. The A/E for the original Project design shall not be responsible or liable to the University for any use of such documents.

The A/E for the similar Project shall be responsible for providing a complete set of Project and location-specific Final Construction Documents with its seals and signatures which meet all applicable Codes and standards in effect at the time those Final Construction Documents are submitted.

**3.11.4<sup>91</sup> Electronic Documents:** In all instances the printed documents on file with the University govern in the event of any conflict between the printed documents and any electronic version. The University makes no warranties or representations as to the accuracy or completeness of any electronic file supplied by the University to the parties to a Contract, and if used by any party to the Contract is used by that party at its own risk.

## **SECTION 3.12 STANDARD PLANS**

Where the University has engaged the A/E to prepare “Standard Designs” or “Standard Plans” for structures such as picnic shelters, sheds, bath houses, single family residences, cabins and utility buildings for the University to site adapt for use at various locations, the Drawings for the Standard Plans shall show:

- Name of the Owner, i.e. University of Virginia,
- Title of the Standard Structure for which the design was developed,
- Name of the A/E, and
- Seal and signature of the responsible licensed Professional.

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<sup>91</sup> History: April 29, 2009, added the subsection.



The Standard Plans shall also show the applicable Codes, standards, loadings and design parameters used to develop the design.

Where the A/E has not been engaged to review the site adaptation of the Standard Plans nor review the Submittals or construction, the University, and not the A/E, shall be responsible for the proper site adaptation and use of the Standard Plans. The A/E shall, however, be responsible for negligent acts, errors or omissions in the Standard Plans.

When the Work involves the site adaptation of Standard Plans, the cover sheet for the Project Plans shall list the Drawings included in the set of Plans and shall differentiate between the Standard Plans and the "site-specific" site development, utility, and foundation Drawings prepared by the A/E for that site. These site-specific Drawings shall be sealed and signed by the responsible licensed A/E.

### **SECTION 3.13 REQUIREMENTS FOR A/E SEALS AND SIGNATURES**

**3.13.1 General:** The seal and signature of the licensed Professional Engineer, Architect or certified Landscape Architect on the Drawings provides Notice to the public the Drawings are complete and that the Professional has exercised complete direction and control over the Work to which the seal or signature is affixed. All Plans and Specifications for building Projects designed for the University must bear the seal and signature of the responsible licensed Professional.

Each drawing to be reproduced shall show:

- (1) Name of the A/E,
- (2) Project Title,
- (3) Project location,
- (4) Project Code #,
- (5) Project Information Management System # (PIMS #),
- (6) Drawing/Sheet Title,
- (7) Drawing/Sheet #,
- (8) Seal and signature of the responsible licensed Professional, and
- (9) Uniform date of the completed documents.

The Title Sheet Drawing(s) shall also have:

- Index of Drawings,
- Project [VUSBC](#) data,
- Seal and Signature of the A/E Principal-In-Charge of the Project, and
- Uniform date of the completed documents.

A/E may also require the seal and signature of a principal of its Consultants.

The Specifications Table of Contents shall have:

- Seal and Signature of the A/E Principal-In-Charge of the Project,
- Uniform date of the completed documents, and
- Listing of Specification sections included for the Project.



- A/E may also require the seal and signature of a principal of its Consultants.

**3.13.2 Construction Documents** submitted to the University for review are expected to be complete documents ready for advertisement. All Drawings except the cover sheet shall bear the seal of the responsible licensed Professional. The cover sheet shall show a complete list of the Drawings in the set, but a seal and signature are not required at this submission.

**3.13.3 Final Documents** are completed documents ready for advertisement and include all corrections required by the University review. Each sheet of the Drawings reproduced in the Final Documents, including the cover sheet, shall bear the seal and signature of the responsible licensed Professional and a uniform document date. The original cover sheet without seal and signature shall be reproduced and attached to copies of the other Drawings in the set. Each cover sheet print shall then be sealed, signed and dated with original seals and signatures. These official Final Documents shall be distributed to the following:

- 1 set - University Building Official
- 1 set - Regional State Fire Marshal's Office
- 3 additional sets - University

**3.13.4 Amendment/Addendum to the Final Construction Documents:** The first sheet of each and every Amendment/Addendum issued to Offerors shall show the number of pages in the Amendment/Addendum and shall list any attached sketches, Drawings, or other material included in the Amendment/Addendum. In addition, the first sheet of each and every Amendment/Addendum shall bear the name of the Project, the Project Code #, the date, and the seal and signature of the responsible licensed Professional. Copies of each Amendment/Addendum with seal and signature shall be distributed to the above recipients in the same fashion as the official Final Construction Documents.

## **SECTION 3.14 SUBCONTRACTS**

No portion of the A/E Professional Services shall be subcontracted without prior written consent of the University. Consultants proposed by the A/E during the selection and fee negotiation phases are assumed to be acceptable to the University unless the University notes otherwise during those phases. In the event that the A/E desires to subcontract some part of the Work required by the Contract to a Consultant or Subcontractor not previously approved, the A/E shall furnish the University names, qualifications and experience of the proposed Consultants. The A/E shall, however, remain fully liable and responsible for all Work performed by his consult however, remain fully liable and responsible for all Work performed by his Consultants and Subcontractors and shall assure that their Work complies with all requirements of the A/E's Contract.

## **SECTION 3.15<sup>92</sup> MODIFICATION OF THE A/E CONTRACT (A/E CHANGE ORDERS)**

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<sup>92</sup> History: February 12, 2010, rewrote 3.15.1; April 29, 2009, rewrote the first paragraph and added the subsection headings.



**3.15.1 Scope and Applicability:** The University may, upon mutual agreement with the A/E, approve modifications to the Scope of Services of the Contract (HECO-3 and HECO-3.2) using the e-Builder process H11AE. Change Orders for Contracts under \$10,000 are not allowed. Change Orders to Contracts where the Contract is greater than \$10,000 and less than \$50,000 are allowed, provided the total of the original Contract amount and all subsequent Change Orders is less than \$50,000, after which a D&F is required. The H11AE shall include a PSCOP from the A/E outlining the changes and reasons. The PSCOP will be reviewed and approved by the University PM and the Contract Administrator for Professional Services.

**3.15.2 Signature and Initial Requirements:** Change Orders shall be initialed and signed as set out in [§4.11](#).

**3.15.3 Cost Calculations:** In making any modification, the resulting increase or decrease in cost shall be determined by one of the methods selected by the University in accordance with requirements of the [Procurement Rules](#) and [Chapter 6](#).

## **SECTION 3.16 PAYMENTS TO THE A/E**

**3.16.1**<sup>93</sup> The A/E shall submit its invoice to the University using the e-Builder Professional Services - Invoices, H12AE. The invoice shall itemize a breakdown of the various phases or parts of the total contract amount, the value of the various parts, the previously invoiced and approved amounts for payment, and the amount of the current invoice. To expedite payment, the University prefers that no more than one invoice per month per project be submitted.

Failure to use the required form will result in return of the invoice and payment will not be made until the proper completed format is used. Although Basic Service fees are delineated by fee per task, payments will be made with overall fee percentage completed as a major factor. By submission of a current request for payment of the fee for Services rendered, the A/E warrants to the University that: (1) the date shown is accurate, (2) the Work covered by the invoice has been completed in conformance with the A/E Contract, and (3) all previous payments received from the University on account of the A/E Contract have been applied to discharge all obligations of the A/E to its Subconsultants incurred in connection with Work covered by prior invoices.

The H12AE process requires the use of e-Builder project management software. Should the A/E accounting procedures use another method, e-Builder must be added to its accounting operation. The A/E may request payment for this software package as an Additional Service to a University A/E Contract if it is not a part of the available computerized systems.

Invoices for Work being performed on an hourly rate, not-to-exceed, basis shall show the extended cost amount.

**3.16.2** Unless there is a dispute about the compensation due the A/E including, but not limited to, claims by the University against the A/E, then within thirty (30) days after receipt by the University

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<sup>93</sup> History: April 29, 2009, added the last sentence in the first paragraph.



of the A/E's invoice, which shall be considered the invoice receipt date, the University shall pay to the A/E the amount approved less than any prior payments or advances made to A/E. The date on which payment is due shall be referred to as the Payment Date.

**3.16.3<sup>94</sup>** The University may agree to make progress or partial payments to the A/E during any phases of the Work based on the estimated value of the Work completed by the A/E on that phase. Any such progress payment shall be based on the University's opinion of the value of the Work completed as the date of the invoice. The A/E may invoice the University and, if the University agrees that the Submittal for the particular design phase is complete, the University may approve payment of a cumulative amount of not more than ninety-five percent (95%) of the value of that phase at the time the phase Submittal is made to the University. The A/E may invoice the University for the remaining five percent (5%) balance of the value of that phase when the Submittal has been reviewed and approved.

**3.16.4** Disputes about the compensation due the A/E may include, but are not limited to, the amount due, the value or percentage of the Work completed, defects or deficiencies in the Work, quality of the Work, compliance with the Contract Documents, completion itself, or negligent acts, errors, or omissions on the part of the A/E. In the event of disputes, payment shall be mailed on or before the Payment Date for amounts and Work not in dispute, subject to any setoffs claimed by the University.

**3.16.5** All prior payments, whether based on estimates or otherwise, may be corrected and adjusted in any payment and shall be corrected and adjusted in the final payment. In the event that any invoice by the A/E contains a defect or impropriety which would prevent payment by the Payment Date, the University shall notify the A/E in writing of such defect or impropriety within ten (10) days after the invoice receipt date. Any disputed amounts determined by the University to be payable to the A/E shall be due thirty (30) days from the date the dispute is resolved.

**3.16.6** Interest shall accrue on all amounts owed by the University to the A/E which remain unpaid seven (7) days following the Payment Date. Said interest shall accrue at the discounted ninety day U.S. Treasury bill rate as established by the Weekly Auction and as reported in the publication entitled The Wall Street Journal on the weekday following each such Weekly Auction.

During the period of time when the amounts due to the A/E remain unpaid following the fifteenth day after the Payment Date, the interest accruing shall fluctuate on a weekly basis and shall be that established by the immediately prior Weekly Auction. It shall be the responsibility of the A/E to gather and substantiate the applicable weekly interest rates to the satisfaction of the University and to calculate to the satisfaction of the University the interest due. In no event shall the rate of interest charge exceed the rate of interest established pursuant to Va. Code [§58.1-1812](#).

No interest shall accrue when payment is delayed because of a dispute between the University and the A/E as described in subparagraph (4) above, or dispute as to the accuracy of any Request of Payment received. This exception to the accrual of interest shall apply only to that portion of a delayed payment that is actually the subject of the dispute and shall apply only for the duration of such disagreement.

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<sup>94</sup> History: Revision V.a, clarified A/E partial payments.





No interest penalty shall be paid to any debtor on any payment, or portion thereof, withheld pursuant to the Comptroller's Debt Setoff Program commencing with the date the payment is withheld. If, as a result of an error, a payment or portion thereof is withheld, and it is determined that at the time of setoff no debt was owed to the University, interest shall accrue at the rate determined above on amounts withheld which remain unpaid after seven days following the payment date.

In those cases where payment is made by mailing, the date of mailing of any payment by the U.S. Postal Services is deemed to be the date of payment to the addressee. Where payment is made by electronic transfer of funds, the date of the transfer of funds is deemed to be the date of payment.

The University is entitled to interest on all amounts from the A/E that remain unpaid thirty (30) days after the amount is deemed due, whether as a result of a resolution of a dispute or otherwise. Any such interest shall be calculated by the same method as set forth in this subsection.

### **SECTION 3.17 PAYMENTS BY A/E**

The following procedures are established in conformance with the [Procurement Rules](#). The A/E shall at the time of Contract award require every Consultant, Subcontractor, and Supplier to provide its' Federal Employer Identification Number (FEIN).

Except in cases of bona fide disputes, or where the A/E has some other justifiable reason for delaying payment, the A/E shall pay:

- (1) To each of its Consultants, Subcontractors, and Suppliers, not later than seven (7) days after receipt of amounts paid to the A/E by the University, the proportionate share of the total payment, including any interest, received from the University attributable to the Work performed by Consultants and Subcontractors and materials furnished by Suppliers.
- (2) In the case of bona fide disputes or where the A/E has some other justifiable reason to delay payment, not later than seven (7) days after receipt of amounts paid to the A/E by the University, the A/E shall notify the University and the Consultant, Subcontractor or Supplier, in writing, of his intention to withhold all or a part of the Consultant, Subcontractor or Supplier's payment with the reason for nonpayment. The A/E shall make timely payments of those portions of the payment not in dispute.
- (3) The A/E shall pay interest to the Consultants, Subcontractors or Suppliers on all amounts owed by the A/E that remain unpaid after seven (7) days following receipt by the A/E of payment from the University for Work performed by the Consultants, Subcontractors or materials furnished by Suppliers under the Contract, except for amounts withheld as allowed in subsection (2) of this Section. Unless otherwise provided under the terms of this Contract, interest shall accrue at the rate of one percent (1%) per month.



- (4) The A/E's obligation to pay interest to its Consultants, Subcontractors or Suppliers pursuant to subsection (3) of this Section shall not be construed to be an obligation of the University.
- (5) A Contract modification shall not be made for the purpose of providing reimbursement to the A/E for such interest charge. The A/E's invoice shall not include any amount for reimbursement for such interest charge.

### **SECTION 3.18 AUDIT**

The A/E shall provide documentation subject to audit for all invoices requesting payment for Services provided on a cost reimbursement or hourly rate basis. Compensation paid to the A/E on these bases is subject to adjustment based on the results of the audit.

The A/E, by signing the Contract, agrees to retain all books, records, and other documents relative to the Contract for five (5) years after final payment, or until audited by the University, whichever is sooner. The University, its authorized agents, and auditors of the Commonwealth shall have full access to and the right to examine any of the materials during said period.

### **SECTION 3.19<sup>95</sup> CONFLICTS OF INTEREST**

#### **§2.2-4373 of the Va. Code provides:**

“Participation in Bid preparation; limitation on submitting Bid for same procurement

No person who, for compensation, prepares an IFB or RFP for or on behalf of a public body shall (i) submit a Bid or Proposal for that procurement or any portion thereof or (ii) disclose to any Bidder or Offeror information concerning the procurement that is not available to the public. However, a public body may permit such person to submit a Bid or Proposal for that procurement or any portion thereof if the public body determines that the exclusion of the person would limit the number of potential qualified Bidders or Offerors in a manner contrary to the best interests of the public body.”

#### **§2.2-4374 of the Va. Code provides:**

“Purchase of building materials, etc., from Architect or Engineer prohibited

A. No building materials, supplies or equipment for any building or structure constructed by or for a public body shall be sold by or purchased from any person employed as an independent Contractor by the public body to furnish architectural or engineering Services, but not construction, for such building or structure or from any partnership, association or corporation in which such Architect or Engineer has a personal interest as defined in [§2.2-3101](#).

B. No building materials, supplies or equipment for any building or structure constructed by or for a public body shall be sold by or purchased from any person who has provided or is currently providing design Services specifying a sole source for such materials, supplies or equipment to be used in the building or structure to the independent Contractor employed by the public body to

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<sup>95</sup> History: April 29, 2009, rewrote the Section.



furnish architectural or engineering Services in which such person has a personal interest as defined in [§2.2-3101](#).

C. The provisions of subsections A and B shall not apply in cases of emergency or for transportation-related Projects conducted by the Department of Transportation or the Virginia Port Authority.”

### **SECTION 3.20 RELEASE OF INFORMATION PERTAINING TO PROJECT DESIGN**

Release in any form by the A/E of information pertaining to the estimated construction cost of a Project under design to anyone other than authorized University personnel, and other A/E's or Consultants performing design of related University facilities is prohibited.

The A/E shall not give out information concerning a Project to anyone other than authorized University personnel, other A/E's performing design of related University facilities without specific approval of the University to release such information.

When the Project is ready to be advertised, the A/E may provide the following information to "construction information/plan room" Services who serve the construction industry:

- type of Project or facility,
- size (area) and number of stories,
- types of materials,
- proposal/bidding requirements,
- RFP/IFB (document) source, and
- a Project cost range (e.g. \$3M to \$5M)

As documents are issued to prospective Offerors, a current list of plan holders should be made available to those who request such information, including the plan room Services.

During the proposal/bidding period, the A/E shall not respond to requests by prospective Offerors to clarify or state the intent of Plans or Specifications unless such requests are in writing. The response must be in the form of an Addendum issued to all plan holders. Sources of supply for special equipment may be made available in writing to all Offerors. The A/E should promptly prepare and issue Amendments/Addenda for any necessary corrections or clarifications of the Plans and Specifications.

### **SECTION 3.21 DEFAULT**

In case of the A/E's failure to deliver the reports, documents or Services in accordance with the Contract terms and conditions, the University, after due written Notice, may procure same from other sources, and the A/E shall be responsible for any resulting additional procurement and administrative costs. This remedy shall be in addition to any other remedies which the University may have.

### **SECTION 3.22 TERMINATION OF CONTRACT**



**3.22.1 General:** The University may terminate the Contract for cause or for convenience after giving thirty (30) days written Notice to the A/E. The written Notice shall include a statement of reasons for the termination.

**3.22.2 Termination for Cause:** If the A/E should substantially breach the Contract or fail to perform the Services, or any portion thereof, required by the Contract, the University may terminate the Contract for cause by giving written Notice as set forth above or may give the A/E a stated period of time within which to remedy its breach of Contract. If the A/E shall fail to remedy the breach within the time allotted by the University, the Contract may be terminated by the University at any time thereafter upon written Notice, effective immediately upon receipt. The University's forbearance in not terminating the Contract shall not constitute a waiver of the University right to terminate in the future for similar breaches or failures to perform. If the Contract is terminated for cause, the A/E shall be responsible for all damages incurred by the University as a result of the A/E's breach of Contract or failure to perform, including but not limited to, all costs and expenses incurred in securing a replacement A/E to fulfill the obligations of the Contract.

Any termination by the University for default, if determined by a court of competent jurisdiction not to have been justified as a termination for default, shall be deemed a termination for the convenience of the University.

**3.22.3 Termination for Convenience:** The University may terminate the Contract in whole or in part for convenience by delivering to A/E a written Notice of termination as set forth above, specifying the extent to which performance under the Contract is terminated and the effective date of the termination. Upon receipt of such Notice, the A/E must stop Work, including but not limited to Work performed by Subcontractors and Consultants, at such time and to the extent specified in the Notice.

If the Contract is terminated for convenience, the A/E shall be entitled to those fees earned for Work performed in accordance with the Contract prior to the Notice of termination. Thereafter, the A/E shall be entitled to any fees earned for Work not terminated, but shall not be entitled to lost profits for the portions of the Contract which were terminated. The A/E will be compensated for reasonable costs or expenses for delivery to the University of the products of the Services for which the A/E has or will receive compensation.

**3.22.4 Delivery of Materials:** Any termination shall not relieve the A/E of the obligation to deliver to the University all products of the Services for which the A/E has been or will be compensated, including, but not limited to, the original Drawings and Specifications, copies of CADD diskettes or tapes, calculations, and analyses. Unless otherwise agreed to in writing, the A/E shall deliver the materials to the University within thirty (30) days of receipt of the Notice of termination. Failure to do so shall result in the withholding of final payment and shall constitute a material or substantial breach of Contract.

**3.22.5 Compensation Due the A/E:** When the A/E is terminated for convenience, the following method shall be utilized in computing amounts due the A/E for Services prior to termination:



1. If terminated at the completion of a design phase or the procurement phase, the amount due shall be the cumulative total of the fees for the phases completed according to the Contract.
2. If terminated prior to completion of a design phase or the procurement phase, the amount due shall be the sum of the previously completed phase fees plus a negotiated amount based on the portion of Services provided for the phase not completed.
3. If terminated during the construction phase, the total amount earned shall be the sum of the previously completed design and procurement phase fees plus a negotiated amount based on the portion of the construction period Services provided through the Notice of termination.
4. Payment for the Additional Services portion of the fee shall be any portion of those Services provided up through the Notice of termination.
5. Payment for the Reimbursable Expenses shall be based on approved reimbursable expenses incurred up through the Notice of termination.

The A/E shall submit invoices for all such amounts in accordance with the normal billing process, but in no event later than 60 days after the last Work is performed. All amounts invoiced are subject to deductions for amounts previously paid or for amounts due the University.

### **SECTION 3.23<sup>96</sup> ASSIGNMENT OF CONTRACT**

The A/E shall not assign the Contract between the University and the A/E, in whole or in part, without the written consent of the University. The assuming A/E shall, if it hasn't already, provide the University with current AE1-6 forms, proof of licensure and registration in accordance with [§3.2.1](#) and shall register with [eVa](#) and the [University procurement system](#).

### **SECTION 3.24 ANTITRUST**

By entering into a Contract, the A/E conveys, sells, assigns, and transfers to the University all rights, title and interest in and to all causes of the action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular Goods or Services purchased or acquired by the University under said Contract.

### **SECTION 3.25 ETHICS IN PUBLIC CONTRACTING (Va. Code [§2.2-4367 et seq.](#))**

The A/E shall not offer or receive any kickbacks or inducements from any other Offeror, Supplier, manufacturer or Subcontractor in connection with this Project. The A/E shall not confer on any public employee having official responsibility for this Project any payment, loan, subscription, advance, deposit of money, Services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

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<sup>96</sup> History: April 29, 2009, added the second sentence.



### **SECTION 3.26 ANTI-DISCRIMINATION**

By signing the Contract, the A/E certifies to the University that it, as Contractor for the Services described in the RFP and the Contract, will conform to the provisions of the [Federal Civil Rights Act of 1964](#), as amended, as well as the [Virginia Fair Employment Act of 1975](#), as amended, where applicable, and the [Procurement Rules](#) which provide that:

In every Contract over \$10,000, the provisions in (1) and (2) below apply:

- (1) During the performance of this Contract, the Contractor (A/E) agrees as follows:
  - a. The A/E will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contracting firm. The A/E agrees to post in conspicuous places, available to employees and applicants for employment, Notices setting forth the provisions of this nondiscrimination clause.
  - b. The A/E in all solicitations or advertisements for employees placed by or on behalf of the A/E, will state that such contracting firm is an equal opportunity employer.
  - c. Notices, advertisements, and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this Section.
- (2) The A/E will include the provisions of the foregoing paragraphs a, b, and c in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each Subcontractor or vendor.

Where applicable, the [Virginians with Disabilities Act](#) and the federal [Americans with Disabilities Act](#) shall apply to the A/E and all Subcontractors.

### **SECTION 3.27<sup>97</sup> [RESERVED]**

### **SECTION 3.28 APPLICABLE LAW AND COURTS**

The A/E Contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth, as provided under Virginia law.

In performing Services under the Contract, the A/E shall comply with applicable federal, Commonwealth, and local laws and regulations.

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<sup>97</sup> History: February 12, 2010, moved the material previously in this Section to new Section 15.4.



### **SECTION 3.29 PROHIBITION OF ALCOHOL AND OTHER DRUGS AT WORKPLACE**

The University seeks to establish and maintain a Work environment free from the adverse effects of alcohol and other drugs. The adverse effects of alcohol and other drugs create a serious threat to the safety and welfare of all personnel at the jobsite, to jobsite safety in general, to worker productivity and quality of workmanship, and to the Project schedule.

In conformance with the [Procurement Rules](#), the A/E shall prohibit the following acts by the A/E, its employees, Subcontractors, Consultants and Suppliers while performing Services under the terms of the Contract:

- (1) The unlawful or unauthorized manufacture, distribution, dispensation, possession, or use of marijuana or other drugs (except the possession and use of medically prescribed drugs for legitimate medical purposes) in the workplace or at the construction site;
- (2) The unlawful or unauthorized manufacture, distribution, dispensation, or use of alcoholic beverages in the workplace or at the construction site during hours of Work;
- (3) The impairment of a person in the workplace, or at the construction site, related to the use of alcohol, marijuana, or other drugs including impairment from prescription drugs.

The A/E shall post a copy of this policy in a conspicuous place at the workplace and assure that all personnel are advised of the policy. A violation of this policy will be recognized as a breach of Contract and may result in termination of the Contract.

### **SECTION 3.30 DESIGN OF SECURITY SYSTEMS**

Any Offeror for the installation, Service, maintenance, or design of security equipment or any central station alarm condition monitoring Service shall be licensed by the [Department of Criminal Justice Services \(DCJS\)](#) pursuant to Va. Code §[9.1-139](#). An A/E proposing to provide any of these Services with its own staff shall be exempt from the [DCJS](#) licensing requirement if properly licensed by the [APELSCIDLA Board](#) pursuant to Va. Code §[9.1-140](#). If the A/E proposes to have the security system designed by a Subcontractor/Consultant, such entity shall be properly licensed as required by Va. Code §[9.1-139](#).

Any Projects designed by the A/E which have such security systems shall include the licensing requirements of Va. Code §[9.1-139](#), in the Specifications and the requirement that the successful Offeror shall provide documentation within five (5) days of Proposal/Bid receipt that the entity (Contractor or Subcontractor) performing the security system Work possesses the proper license.

### **SECTION 3.31 USE OF STANDARD FORMS AND FORMATS**

The A/E shall incorporate in every Construction Contract the applicable ([General Conditions of the Construction Contract](#)) and [HECO-7a \(Instructions to Bidders\)](#). These forms shall not be retyped or modified in any way. If changes are required to either, the changes shall be made in the form of "Supplemental General Conditions" or "Supplemental Instructions to Bidders". Such "Supplements" shall be approved by the AVP & CFO prior to their incorporation in the Construction Contract.



The A/E shall use the applicable [Capital Outlay Forms](#). The wording on the forms shall not be modified or altered without the specific written approval of the AVP & CFO. Where spaces are provided for insertion of information, the size of the space may be adjusted to accommodate the information being inserted.

The A/E shall use the Standard Formats found at <http://www.fm.virginia.edu/fpc/FPCDesktop/PSProcurement.htm>. Formats may be edited to delete portions which are not applicable to the Project and to insert necessary information; however, the format and the basic wording shall be retained.

**SECTION 3.32 REPORTS ON THE PARTICIPATION OF SMALL BUSINESSES AND BUSINESSES OWNED BY WOMEN AND MINORITIES**

An Actual Involvement Report is required for Professional Service Contracts with a fee greater than \$100,000. The A/E shall submit a report on the actual dollars paid to small businesses and businesses owned by women and minorities as part of the submission of the final invoice for payment. At a minimum, this report shall include for each firm contracted, the Business Class, the total dollars of fee, and the percent of the total estimated Contract value.

1. Periodic Progress Reports/Invoices: The A/E shall include a report on involvement, if any, of small businesses and businesses owned by women and minorities as a part of their periodic invoice. The report will specify the actual amounts of Contracts to date with such businesses, and the actual dollars paid to date with such businesses on this Contract. This information shall be provided separately for small businesses, women-owned businesses and minority-owned businesses. The A/E shall provide two (2) copies of this information to the University. Failure to submit the required information, will result in invoices being returned without payment.
  
2. Final Actual Involvement Report: The A/E shall submit, prior to completion or at completion of the Contract and prior to final payment, a report on the actual dollars paid to small businesses and businesses owned by women and minorities during the performance of this Contract. At a minimum, this report shall include for each firm contracted, the Business Class, a comparison of the total actual dollars paid on this Contract with the planned involvement of the firm, the totals for each business class as specified in the Proposal, and the actual percent of the total estimated Contract value. A suggested format is as follows:

**BUSINESS CLASS:** (Small Business, Women-Owned Business or Minority-Owned Business)

FIRM NAME, ADDRESS AND PHONE #	TYPE SERVICES	GOODS/ ACTUAL DOLLARS	PLANNED DOLLARS	%OF TOTAL <u>CONTRACT</u>
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BUSINESS CLASS TOTALS =



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## CHAPTER 4<sup>98</sup>: PROFESSIONAL SERVICES: PROCUREMENT PROCEDURES

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### SECTION 4.1 GENERAL POLICY ON PROCURING A/E SERVICES

The [Procurement Rules](#) set forth the general parameters for the procurement of Professional Services. The sections in this chapter provide further definition of the requirements for procurement of Professional Services at the University. The policy of the University is to Contract with a single entity in acquiring the full range of disciplines necessary to provide the Services identified for a Project. The entity may be an A/E firm with in-house capabilities in all disciplines or it may be an Architectural firm or it may be an Engineering firm or a Land Surveying firm or a Landscape Architectural firm which subcontracts for disciplines not in-house. All of the above entities have an equal opportunity to compete for Projects. Consideration will be given to the proposer who demonstrates it is best suited and has the ability to meet the required criteria. In any case the proposer will be referred to as the A/E and will be required to provide the complete Services indicated in the University's A/E Contract with all disciplines coordinated.

The person having overall responsibility for the Project management and coordination of disciplines may be a licensed Architect, a licensed Landscape Architect, a Professional Engineer or a licensed Surveyor. A licensed Architect shall be in charge of planning and design of the architectural aspects of the Project. A licensed Engineer competent in that particular discipline shall be in charge of each discipline of the Engineering aspects of the Project. The licensed Landscape Architect shall be in charge of all major landscape Projects and issues but a licensed Land Surveyor shall be in charge of all survey requirements. All Professional persons shall be registered and licensed by [DPOR](#) in accordance with requirements of the [Code of Virginia](#).

### SECTION 4.2<sup>99</sup> PROCUREMENT OF CONSTRUCTION-RELATED NONPROFESSIONAL SERVICES

Cost consulting, Project management, Project administration, inspection/clerk of the Works, soils/materials testing and other Services which may be performed by either licensed or non-licensed Professionals are considered to be "Construction-related" Nonprofessional Services and may be procured by the [OCA](#) using procedures contained in the [Procurement Rules](#).

### SECTION 4.3 PROJECT SCOPE OF WORK

Once the University determines the need for Professional Services, a Scope of Work will be prepared to identify or outline the Services required, to identify the criteria, limitations and parameters for the

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<sup>98</sup> History: Revision V, SWaM updates and A/E selection process updates.

<sup>99</sup> History: April 29, 2009, rewrote the Section, deleting the previous §4.2.1 and combining that material with present §2.2, under the definition of "Professional Services," and deleting the previous §4.2.2 and combining part of that material with present §2.2, under the definition of "Nonprofessional Services;" July 21, 2008, added "interior design Services" to §4.2.1 and added "soils/materials testing" in §4.2.2.



Services, and to describe the product(s) expected. The Scope may range from very general to very specific and will usually reference HECOM, the [University Facilities Design Guidelines](#), University budgeting instructions, the [VUSBC](#) and other standards for the specific related requirements.

Architectural or Engineering Planning for or construction of, or acquisition of any Capital Project shall not commence without an approved H2. (See §[1.2](#)).

#### **SECTION 4.4<sup>100</sup> REQUEST FOR QUALIFICATIONS (RFQ) – (ADVERTISEMENTS FOR PROFESSIONAL SERVICES)**

A VCCO shall assure that the requirements of the [Procurement Rules](#) are met for the procurement of Professional Services. All Advertisements shall be reviewed by the Contract Administration Manager before issuance.

Public Notice of the request for LOI & SOQ shall be given at least 21 days prior to the date set for receipt of the Submittals. When requested and justified by the University PM by D&F, the AVP & CFO may approve a reduction in the number of days Notice required to a number not less than ten (10) days.

Public Notice of any request for LOI & SOQ shall be given by the following combined methods:

1. By posting a copy of the Notice in a public area normally used by the University for posting such Notices;
2. By publication in a daily newspaper of statewide circulation;
3. By publication of a Notice on the On-line Bids page of [eVA](#), Virginia's electronic procurement website;
4. Where practicable, by publication in a newspaper of general circulation in the general area of the Project; and
5. By posting a copy of the Notice on the [OCA's website](#).

The public Notice will show the name, address, phone, and fax # of the University Office of Contract Administration.

Provide in the Notice/Advertisement the following information as a minimum:

1. Project Title;
2. RFP #;
3. Scope of Services;
4. Brief description of the Project;
5. Criteria for evaluation and selection of the A/E;
6. Submittal of [AE-1 to AE-6](#) (A/E Firm Data Forms) required;
7. Last date for submitting a response (i.e., a date which is not less than twenty-one (21) days from date of Advertisement); and

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<sup>100</sup> History: April 29, 2009, added the bracketed material to the Section heading, added the second sentence to the first paragraph, deleted “proposed Design-not-to-exceed Construction Budget” from item 5 in the third paragraph and added the “See” line at the end of the Section.



8. For Term A/E Contracts - provision to extend the Contract for four (4), one (1) year options at the sole discretion of the University as well as the dollar value of each term.

See §[4.8.3.1](#) for information on Screening Committees.

## **SECTION 4.5<sup>101</sup> REQUESTS FOR PROPOSAL (RFP)**

**4.5.1 Issuance:** The RFP will be provided to the A/E firms short listed after review of the LOI & SOQ. See §[4.4](#) for RFQ requirements and procedures. There should be 30 days between the issuance of the RFP and the receipt of responses to the RFP. See §[4.8.3.2](#) for information on Selection/Interview Committees.

**4.5.2 Required Provisions:** The RFP shall indicate in general terms the nature of the Project and the A/E Services which are sought, show the factors which will be used in evaluating the responses, incorporate by reference HECOM including the contractual terms and conditions contained therein, and set forth specifically any additional contractual terms and conditions. The RFP will state any unique capabilities or qualifications which will be demanded of the A/E. Each respondent to the RFP agrees to provide all the A/E Services with respect to the Project that are set out in HECOM and the RFP.

**4.5.3 Optional Provisions:** The RFP may specify the method to be utilized during negotiations in arriving at the fee amount for Services; however, it will not call for Proposers to furnish estimates of labor hours, labor rates, or cost for Services with their Technical Proposals. If no method is specified, the respondents may propose methods for negotiating the fee amount.

**4.5.4 Responses:** Each respondent shall submit current [AE-1 to AE-6](#) (A/E Firm Data Forms) and other requested information in response to the RFP and include the data and qualifications of any A/Es to be associated with it on the Project. Responses which do not include the Forms or do not include the requested information and data may be considered as non-responsive to the RFP.

Proprietary information from respondents will not be disclosed to the public or to the competitors provided such proprietary information is properly identified, as required by the Procurement Rules, in the RFP response.

## **SECTION 4.6 SMALL, & WOMEN & MINORITY-OWNED BUSINESSES (SWaM)**

On Proposals for Contracts with a fee, or accumulation of fees, expected to exceed \$100,000, the A/E shall be required to submit with the RFP response, a report of past efforts to utilize the Goods and Services of such businesses and plans for involvement on the proposed Contract. The Form provided in the RFP for proper Submittal of past and present efforts is the [DGS 30-360](#). By submitting such information with their Proposal, Proposers certify that all information provided is true and accurate. If a Proposer fails to submit all information requested, the University may require prompt submission

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<sup>101</sup> History: April 29, 2009, divided the previous first paragraph into 2 separate paragraphs and added the reference and the second sentence to the present first paragraph, combined the previous last paragraph with the present fourth paragraph and added the subsection headings.



of missing information after the receipt of A/E Proposals. Failure to provide information required by the RFP will ultimately result in rejection of the Proposal as non-responsive.

The following data is required on each small business, women-owned business and minority-owned business: (1) ownership, (2) utilization in the most recent twelve (12) months, and (3) planned involvement or Services to be performed on the proposed Project.

On Contracts for Professional Services which exceed \$100,000 in total gross fees, the A/E is required to submit reports on the involvement of SWaM businesses in the Work or in support of the Work on this Contract. See the [University FP&C Contract Administration Manager](#) for agency specific requirements.

## **SECTION 4.7 SWaM PROCUREMENT PLAN**

**4.7.1 University Plan:** In accord with [Executive Order 33 \(2006\)](#), an annual SWaM Procurement Plan that specifies the University's plans and goals for SWaM procurement is required. [DMBE](#) certification of SWaM businesses is required.

**4.7.2 Audits:** In order to assure compliance with certification requirements of SWaM subcontracting plans, the contracting or certifying agency or institution shall contractually provide for appropriate auditing of vendors and Contracts. Such audits shall include the right to make on site audits at any time during the term of the applicable Contract or certification.

## **SECTION 4.8 PROCEDURES FOR A/E SELECTION**

**4.8.1<sup>102</sup>** For all Medical Center and University Projects with expected fees less than \$10,000 the University PM will:

1. Select a firm or Professional from a list of firms/Professionals which have expressed an interest in doing Work for the University, have filed Forms [AE-1 to AE-6](#) (A/E Firm Data Forms) and appear to be qualified to render the required Services, or use an established Term Type Contract. (See [§4.9](#) below.) If a firm with a Term Contract is chosen, either a Service Order against the Term Contract or a separate [HECO-2.1a](#) Contract may be used.
2. Conduct a telephone or personal interview with the firm to determine current workload and capability to meet the proposed schedule, and to determine personnel qualifications, expertise, and past performance on similar Projects.
3. Negotiate a fee for Services.
4. Complete a [HECO-2.1a](#) and obtain required approvals. The [OCA](#) will issue a Purchase Order incorporating HECOM and the [University Facilities Design Guidelines](#). Change Orders are not allowed.

**4.8.2<sup>103</sup>** For all Medical Center and University Projects with expected fees greater than or equal to \$10,000, but less than \$50,000, the University PM will:

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<sup>102</sup> History: April 29, 2009, deleted "Non-Capital" from the first sentence added the last sentence to the first bulleted item and renumbered the subsection.



1. Select 3 firms or Professionals from a list of firms/Professionals which have expressed an interest in doing Work for the University and have filed Forms [AE-1 to AE-6](#) (A/E Firm Data Forms) and appear to be qualified.
2. Conduct a telephone or personal interview with the 3 firms to determine current workload and capability to meet the proposed schedule, and to determine personal qualifications, expertise, and past performance on similar Projects.
3. Rank the 3 firms.
4. Negotiate a fee for Service with the number one ranked firm.
5. Complete a [HECO-2.1b](#) and obtain required approvals. The [OCA](#) will issue a [HECO-3.2](#) Contract.
6. Use a Service Order against the Term Contract if a firm with a Term Contract is chosen.
7. Change Orders up to a total Contract amount of \$50,000 are allowed. All Change Orders where the total Contract amount is \$50,000 or more require a D&F.

**4.8.3**<sup>104</sup> For all Medical Center and University Projects with expected fees of \$50,000 or more, the A/E will normally be procured by RFP. See [§4.5](#) for RFP procedures.

**4.8.3.1 Screening/Shortlist Committees:** A Screening/Shortlist Committee shall be appointed by the Architect for the University for architect selections and by the AVP & CFO for engineer selections to evaluate LOI & SOQ responses to the RFQ and select a short list of qualified firms (preferably 3 to 5) which are deemed to be fully qualified, responsible, and suitable on the basis of their LOI & SOQ. See [§4.4](#) for RFQ requirements and procedures.

**4.8.3.2. Selection/Interview Committees:** A Selection/Interview Committee shall be appointed by the Architect for the University for architect selections and by the AVP & CFO for engineer selections to interview the firms short-listed. The Selection Committee shall: solicit more detailed information, where applicable, based upon criteria in the RFP as well as specific information as to the personnel proposed to be assigned to the Project and their individual qualifications; the concepts, methods and approaches proposed for the design; and other pertinent information. The Selection Committee shall evaluate the responses to the above of each interviewed firm and in writing rank order each as to their suitability for the Project. This information will be used to complete the Selection Committee Memo from the Architect for the University or from the AVP & CFO to the EVP & COO and is prepared by the Professional Services Contract Administrator and signed by the Architect for the University or the AVP & CFO. Proprietary information from respondents shall not be disclosed to the public or to the competitors provided such proprietary information is appropriately noted in the RFP response. No information regarding other firms' Proposals will be made public at any time. The Architect for the University (for Architect selections) and the AVP & CFO (for Engineer selections) will approve the Committee report in writing. The Architect for the University will obtain the approval of the [BOV](#) for Architect selections. A process chart for the selection of an Architect may be found at

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<sup>103</sup> History: April 29, 2009, deleted “Non-Capital” from the first sentence, added the last bulleted item, and renumbered the subsection.

<sup>104</sup> History: April 29, 2009, rewrote the Section.



<http://www.fm.virginia.edu/fpc/FPCDesktop/Documents/CapitalProjectArchitectSelectionSchedule.pdf>. See §4.5 for RFP requirements and procedures.

**4.8.3.3.** Upon approval of the recommendation by the selecting official, the non-selected firms shall be notified followed immediately by notification of the selected firm.

**4.8.3.4** The University's negotiating team shall negotiate with the A/E firm ranked first as to overall suitability and qualifications. The selected A/E shall, prior to submittal of its Price Proposal, meet with the University (including the University Review Unit) to discuss and confirm University expectations, and then the A/E will submit a Price Proposal. Once the Price Proposal has been submitted negotiations can begin and agreement can be reached upon the labor rates and the terms and conditions which shall apply to Work to be performed. The University PM should see [A/E Fee Negotiating Guidance](#). These negotiations should proceed to establish a fee amount for the Scope of the Project. All of HECOM's requirements apply. It is anticipated that the fee amount will not be later increased. At the time of negotiation, a method of increasing the fee amount for Additional Services must be set forth in the original agreement. The fee amount shall include all Work necessary to provide the required Basic Services and any other Services requested by the University. If the parties cannot reach agreement on a fee amount within a reasonable time, (30 days) the negotiations shall be formally terminated in writing. The University may then proceed to negotiate with the A/E firm ranked second. If not successful, the third firm, etc. It is understood that at any time during the negotiations, they may be terminated and the Project re-advertised. When agreement is reached, the Terms of Agreement shall be recorded in a written MOU and incorporated in the [HECO-3](#), which shall be signed by the AVP & CFO or his designee as delegated, and the A/E.

**4.8.4**<sup>105</sup> In the event of an emergency, selection may be made without regard to use of these procedures, but a D&F, signed by the AVP & CFO and explaining the circumstances, shall be filed with the [OCA](#). A [HECO-3](#) shall be used for the Contract.

## **SECTION 4.9 TERM A/E CONTRACTS**

**4.9.1**<sup>106</sup> **Scope and Applicability:** Term Contract Procurement of A/E Services may be used for engaging an A/E to provide investigations, Cost Estimates, designs and related Services for specific Projects consisting of multiple related Work orders over a specified period of time.

In the case of a Term Contract, the University will procure the Services of an A/E for a particular type of Project as defined by the University. Use of the A/E's Services on future Service Orders is at the discretion of the University.

The ordinary Term Contract will be for A/E Services for a term of one year or Services totaling \$500,000, whichever comes first with the option to renew for one additional term. The University

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<sup>105</sup> History: April 29, 2009, moved the unnumbered material at the beginning of the Section to this subsection and deleted "Project Procurement File (See Directive 340)" at the end of the sentence.

<sup>106</sup> History: July 21, 2008, added "Scope" to the subsection heading and added the fifth paragraph.



may procure Term Contracts for A/E Services up to \$1M upon approval by the Director of FP&C that Services in excess of \$500,000 are expected to be needed.

The University may, at its sole discretion, renew the Contract for four additional one year Contract Terms, provided the option to renew was indicated in the RFP. If the University exercises its option to renew, the next Contract Term shall begin one year from the date of the execution of this Contract, or the date that the University notifies the A/E that the option to renew is being exercised, whichever occurs first. A new aggregate dollar limit of the same amount shall apply to the next Contract Term. Any unused amount from a Contract Term shall carry forward to the next renewal Contract Term, provided there is another renewal term.

It is the intention of the University to spread the amount of A/E Services out to as many firms as possible while still maintaining the most economically advantageous strategy possible. Accordingly, the AVP & CFO may determine that it is advantageous to procure Term Contracts at Service levels ranging from \$100,000 to \$1M, typical interim amounts being \$250,000 and \$500,000, none to exceed the one-year term total Contract amount. Contracts may be renewable at the University's discretion up to four additional one year terms.

**4.9.2<sup>107</sup> Advertisement (RFQ) & RFP:** The Advertisement (RFQ) shall be posted/published on the [On-line Bids page of eVA](#) and posted/published in a newspaper of general circulation statewide and in the general area of the Project when the expected procurement exceeds Fifty Thousand Dollars (\$50,000) and shall include a description of the nature of the Projects, potential Service Orders to be offered and the Services to be required for the Project. Any other factors pertinent to the evaluation and selection process shall also be described. Multiple A/E Term Contracts may be awarded to separate A/E firms from a single A/E Term Contract RFP Advertisement/selection process when this option is described in the Advertisement. See also [§4.4](#) for additional information on RFQs.

The RFP and Contract Documents should include wording similar to the following provisions:

The University reserves the right, at its sole discretion to issue RFPs for similar Work and other Projects as the need may occur. The University also reserves the right to issue Service Orders to other Term Contractors, based on its sole discretion, in consideration of its evaluation of each Contractor's qualifications, expertise, capabilities performance records, current workload, location or distance to the Project, and other factors as may be pertinent to the particular Project. The RFP must identify at least one Work order for which the A/E's Services will be used. The RFP should also indicate that although the potential exists for multiple future Service Orders, the University does not represent or guarantee that the Term Contractor will receive any future additional Service Orders.

See also [§4.5](#) for additional information on RFPs.

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<sup>107</sup> History: April 29, 2009, inserted "(RFQ) and" in the heading, rewrote the first sentence, added the "See" lines at the end of the first paragraph and at the end of the subsection, and created a new subsection (4.9.3) from the "Selection Negotiation and Award" material that was previously part of this subsection.





**4.9.3<sup>108</sup>Selection, Negotiation and Award:** The selection process described in §[4.8.3](#) above shall be followed except if more than one firm is to be selected from one Advertisement/selection process then two additional firms shall be interviewed for each additional selection.

The University (including the University Review Unit) and the selected firm(s) shall first meet to discuss and confirm University expectations, and then the firm(s) will submit Price Proposals. Once the Price Proposal(s) has been submitted negotiations can begin and agreement can be reached upon the labor rates and the terms and conditions which shall apply to Work to be performed based on the first Service Order. The University PM should see [A/E Fee Negotiating Guidance](#). The fee and rate agreement must be reflected in the MOU.

If the negotiations are successful, the University will award a Contract to the selected firm(s). If negotiations are not successful, the negotiations shall be formally terminated and the Project offered the next firm for negotiation and possible Award of the Contract.

The University shall have **120 days** from the RFP closing date to complete selection, award the Term Contract and issue the first Service Order. Approval of the [Director of FP&C](#) is required for the use of an A/E selected through an RFP but awarded a Term Contract after 120 days. The Term Contract shall not be awarded unless accompanied by the first Service Order. When agreement is reached, the Terms of Agreement shall be recorded in a written MOU and incorporated in the [HECO-3.1](#), which shall be signed by the AVP & CFO or his designee as delegated, and the A/E.

**4.9.4<sup>109</sup>**The University may offer additional Service Orders of a similar nature to the firm in accordance with the Contract and, upon successful negotiation of a fee for the Services, order the Services pursuant to the terms provided in the firm's Contract.

**4.9.5<sup>110</sup>**The fee for the Services on each Service Order shall be negotiated individually considering the Scope of Services required, the labor-hours required for each level/discipline and the maximum labor rates agreed upon in the MOU. Should the University and the firm not agree on a fee for an additional Service Order, negotiations shall be formally terminated. The Service Order may then be offered to and negotiated with another firm with a Term A/E Contract for similar Services or the A/E Services for the Service may be procured separately in accordance with the procedures prescribed in HECOM. Hourly rates for a Term Contract may be adjusted at the time of the renewal of the Contract based upon a mutually agreed upon percentage that is supported by a recognized index, such as the CPI.

**4.9.6<sup>111</sup>Service Orders:** Individual Service Orders or requests for Services will be issued in the form of Service Orders. Fee Proposals by the firm will be negotiated and awarded on a "fixed fee" amount for each Service Order. However, Service Orders may be used to secure Services for investigations or similar Work where an estimate of time required cannot reasonably be determined. In such cases, an exception is allowable to use the scheduled man-hour rates with a Not-to-Exceed amount as the

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<sup>108</sup> History: April 29, 2009, rewrote the second paragraph and in the 4<sup>th</sup> paragraph, added the 2<sup>nd</sup> and 4<sup>th</sup> sentences.

<sup>109</sup> History: April 29, 2009, renumbered this Section from 4.9.3.

<sup>110</sup> History: April 29, 2009, renumbered this Section from 4.9.4; July 21, 2008, added the last sentence.

<sup>111</sup> History: April 29, 2009, renumbered this Section from 4.9.5, added the 5<sup>th</sup> sentence and added the last two sentences.



basis for the Service Order fee. Each A/E Proposal will be accompanied by a [CO-2.3](#). A [HECO-3.1a](#) shall be completed for each Service Order. The [HECO-3.1a](#) shall show the “cumulative total to date” of Service Orders awarded to the A/E under the Contract. For initial and signature requirements on Service Orders, see §[4.11](#). For Cost Consultants, see §[4.9.7](#).

**4.9.7<sup>112</sup> Cost Consultants:** Cost Consultants are included in the definition of Nonprofessional Services (Construction-related) in [Chapter 2](#). Term Contracts for Cost Consultants shall in all respects be the same as the above, except the Contract form used shall be a [HECO-3.3](#), the Service Order form used shall be a [HECO-3.3a](#) and the Service Order need not be accompanied by a [CO-2.3](#).

## **SECTION 4.10 TERM PROJECT MANAGEMENT CONTRACTS**

The University may also award Contracts to Service firms for Construction Administration/Project Administration related Services. Such Services shall be procured using Nonprofessional Services (Construction-related) procedures as provided in the [Procurement Rules](#). These Services may include (but shall not be limited to) claim analysis, constructability reviews, Cost Estimates and CM/Administration Services.

## **SECTION 4.11<sup>113</sup> CONTRACT FORMS TO BE USED & SIGNATURE & INITIAL REQUIREMENTS**

**4.11.1 Required Usage:** The Standard Forms of Contract for A/E Services, [HECO-3](#), [3.1](#), [3.1a](#), and [3.2](#), shall be used for A/E Contracts.

**4.11.2 Alternate Forms:** Other than filling in the appropriate data and information, these Contract forms shall not be modified without the approval of the Construction Services and Contract Administration Director.

**4.11.3 Initial and Signature Requirements:** The following Contract processes/forms shall be approved/signed and/or initialed as follows:

Preliminary approval of all Contracts and Service Orders: Professional Services Contract Administrator and Contract Administration Manager or Construction Services and Contract Administration Director to initial.

Contracts less than \$50,000: Professional Services Contract Administrator and Contract Administration Manager or Construction Services and Contract Administration Director to initial; Contract Administration Manager or Construction Services and Contract Administration Director to sign.

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<sup>112</sup> History: April 29, 2009, added the subsection.

<sup>113</sup> History: April 29, 2009, added the provisions dealing with the signature and initial requirements in the heading, added the subsection designations throughout, substituted “Construction Services and Contract Administration Director” for “CFO” in 4.11.2 and added the material in 4.11.3.



Contracts of \$50,000 to less than \$100,000: Professional Services Contract Administrator and Contract Administration Manager or Construction Services and Contract Administration Director to initial; FP&C Director to sign.

Contracts of \$100,000 to less than \$5M: Professional Services Contract Administrator, Contract Administration Manager or Construction Services and Contract Administration Director and FP&C Director to initial; AVP & CFO to sign.

Contracts of \$5M and more; Professional Services Contract Administrator, Contract Administration Manager or Construction Services and Contract Administration Director, FP&C Director to initial; AVP & CFO, Associate General Counsel and Chief Financial Officer to sign.

Construction Change Order Proposals (CCOP) and Construction Change Orders (H11): As required by UVA e-Builder process.

Professional Services Change Order Proposals (PSCOP) and Professional Services Change Orders (PSCOP): As required by UVA e-Builder process.

Service Orders for amounts less than \$500,000: Professional Services Contract Administrator and Contract Administration Manager or Construction Services and Contract Administration Director to initial; University PM and Division Director to sign.

Service Orders of \$500,000 to \$1M; Professional Services Contract Administrator, Contract Administration Manager or Construction Services and Contract Administration Director and FP&C Director to initial; University PM and Division Director to sign.

**4.11.4 Negotiated Terms:** Any details of the fee negotiations, the scope of Work, the A/E schedule, and other items agreed to in the negotiations shall be detailed in the [Memorandum of Understanding \(MOU\)](#).

## **SECTION 4.12<sup>114</sup> [RESERVED]**

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<sup>114</sup> History: April 29, 2009, moved the material to §3.1.



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## CHAPTER 5: PROFESSIONAL SERVICES: BASIC SERVICES AND RESPONSIBILITIES

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### SECTION 5.0<sup>115</sup> DESIGN PHILOSOPHY

The design goal is to create a capital investment that meets the user's functional requirement and provides the most economical life cycle cost. The University's design philosophy envisions a long and useful life for Projects. These Projects will often be used for periods exceeding 50 years and, consequently, should be designed for durability, economy of operation, and ease of maintenance. Projects shall be developed to meet University functional and space requirements within a cost range comparable to similar public and private sector Projects. Achievement of this goal should incorporate good architectural and engineering practice and design solutions should be consistent with industry standards, [University Facilities Design Guidelines](#), and must be designed by the A/E to meet the functional and space requirements within the Design-not-to-exceed Construction Budget for the Project.

Project system components should be selected on the basis of life cycle costs. If an increased first or initial cost can be documented to show a reduced life cycle cost for the University, particularly for operating and personnel costs, then the design should incorporate the more expensive first cost feature or system.

Architects and Engineers must exercise discipline in their designs to avoid inefficient use of space in terms of floor area and building volume. Exterior design features and materials should be consistent with the architectural character of the surrounding buildings and site. Excessive or grandiose features which are not related to the function or the intended use of the facility shall be avoided. Projects must be designed by the A/E to meet the functional and space requirements within the 'Design-not-to-exceed' budget for the Project.

### SECTION 5.1<sup>116</sup> LEED CERTIFICATION

**5.1.1 Intent, Scope of Provisions, and Effective Date:** All major new and renovation building Projects at the University that receive Schematic approval after January 1, 2007 shall be designed and constructed according to the performance standards of the U.S. Green Building Council's LEED rating system and shall achieve, unless extraordinary circumstances apply, a minimum of a LEED Certified rating upon completion. See <http://www.fm.virginia.edu/fpc/Administrative/Policies/BOVLEEDPolicy.pdf> for the complete text of the Board of Visitor's resolution on LEED certification. University Grounds-wide LEED credits may be available for application towards individual Project certification.

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<sup>115</sup> History: April 29, 2009, created this new Section from previous §1.2.

<sup>116</sup> History: April 29, 2009, added the Section.



**5.1.2 LEED Consultant Required to Administer Certification:** All Capital Projects with an estimated Project cost of \$5M or more, or any Project approved by the Division Director, shall retain a LEED Consultant to administer the certification process.

**5.1.3 Architect of Record Required to Administer Certification:** The LEED certification process for all Capital Projects with an estimated cost of less than \$5M shall be administered by the Architect of Record unless a LEED Consultant is retained.

## **SECTION 5.2<sup>117</sup> COMMISSIONING**

Independent Commissioning is required on Projects with total Project costs greater than \$5M.

Commissioning for MEP systems, begins with the development of the Project Criteria, continues through the design of the systems including preparation of the Plans and Specifications describing the systems components and requirements, continues through the review of Shop Drawings and Submittals, continues through the inspection of the installations of the systems and observation of applicable tests and concludes with the final testing, balancing, start-up, initial operation, and acceptance of the systems including controls.

See [§8.16](#) for Commissioning requirements for A/E and [§10.12](#) for Commissioning inspection requirements.

## **SECTION 5.3<sup>118</sup> RESPONSIBILITIES OF THE UNIVERSITY TO THE A/E**

The following information or data shall be provided by the University, if needed, in the planning of the Project. The information so furnished shall not relieve the A/E of responsibility for making the studies and checks necessary for the proper planning of the Project which the University undertakes. In the event the University is unable to furnish this information, the University shall procure the information in accordance with published procurement procedures. In the event the University desires the information to be furnished by the A/E, the requirement to provide such information shall be included in the RFP for A/E Services.

**5.3.1** Provide the A/E a Project report as well as any other relevant information and review comments that will clearly inform the A/E of the scope of the Project to be designed. The Project scope shall not be modified or substantially altered without prior written approval of the [BOV](#).

**5.3.2<sup>119</sup>** Provide a Design-not-to-exceed Construction Budget. This cost shall be determined in conjunction with the construction mid-point and include escalation.

**5.3.3<sup>120</sup>** Set a schedule for pursuing the planning for the Project, at the time of employment of the A/E. Such a schedule shall allow reasonable times for review of the various phases by review Agencies such as the University Review Unit, the State Fire Marshal, the [AARB](#), The [Department of](#)

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<sup>117</sup> History: April 29, 2009, added the Section.

<sup>118</sup> History: April 29, 2009, renumbered the section from 5.1.

<sup>119</sup> History: Revision V, further clarifications to Design-not-to-exceed Construction Budget.

<sup>120</sup> History: February 12, 2010, added "Agency VCCO" to the second sentence and added the last sentence.



[Historic Resources](#), the [BOV](#), the [Architect for the University](#), the [State Council of Higher Education](#), the [Department of Health](#), the [Division of Soil and Water Conservation](#), Agency VCCO, etc. The schedule shall be developed in conjunction with the A/E but based on the date determined by the University as to when the Project needs to be placed under Contract for construction. The schedule, therefore, becomes an integral part of the Project planning scope and shall be monitored by all parties concerned for adherence. The University agrees to make every reasonable effort to assist in complying with the schedule. For review and approval of Divisions 0 and 1, see §[8.3.0](#)

**5.3.4** Provide utility maps showing the location and size of all existing utilities, both public and private, which would interfere with or be connected to the Project undertaken, together with a statement as to the characteristics of these utilities and their available capacity to serve the Project.

**5.3.5** Provide available Record Drawings.

**5.3.6** On a case by case basis, the University may choose to obtain Services of a Professional estimator when the University determines an independent detailed quantitative Cost Estimate is required. This does not relieve the A/E of responsibility for providing the Cost Estimate required by the A/E Contract. The A/E is responsible for reconciliation of the Cost Estimates.

**5.3.7** Determine any specific requirements of political subdivisions appropriate and consistent with Commonwealth policy, opinions of the Attorney General, and existing statutes. Total requests or requirements of a political subdivision, preferably over the signature of the chief administrative officer, are to be obtained at the inception of the Project and submitted no later than the Project Criteria and Schematic Design in order that any questions might be reconciled very early in the planning process.

**5.3.8**<sup>121</sup> Unless negotiated otherwise, pay the direct cost of all sets of Plans and Specifications for Schematic, Preliminary, and Construction Documents submitted to the University or other pertinent review agencies for approval. The A/E will bear the cost of any required re-submittal resulting from any Agency reviews.

**5.3.9** Unless negotiated otherwise, pay the cost of Services in the preparation or presentation of any Submittals to secure approvals for environmental or other applicable special requirements including water, air and noise pollution provisions or local, Commonwealth, or Federal Agencies, to include environmental impact statements and EIRs. These Extra Services are apart from those normally required by the Project Committee, [Architect for the University](#), State Fire Marshal, University Review Unit, [AARB](#), [Department of Historic Resources](#), [Department of Health](#), [State Water Control Board](#), [Division of Soil and Water Conservation](#), and [State Air Pollution Control Board](#) as of the date of HECOM.

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<sup>121</sup> History: Revision V.a, clarified A/E cost for all sets of Plans and Specifications for Schematic, Preliminary and Construction Documents submitted to University for review.



**5.3.10<sup>122</sup>** Provide the A/E with the University’s desired Professional Liability Insurance coverage amount and methods. (See [Chapter 3](#) for details.) For any Project with an estimated total Project cost of over \$10M, the University PM shall, through the [Contract Administration Manager](#), consult with the [University’s Risk Manager](#) for advice on coverage amounts and methods. These issues are best covered in the development of the RFP, and must be finalized and incorporated into the MOU before the Contract is fully executed.

## **SECTION 5.4<sup>123</sup> QUALITY OF WORK**

The A/E shall be responsible for the Professional Services, including the technical accuracy and coordination of all designs, Drawings, Specifications, Cost Estimates, and other Work or materials provided. The Project documents submitted by the A/E shall represent a reasonable, Code compliant, and acceptable architectural and/or engineering solution based on the scope of Work, Design-not-to-exceed Construction Budget and other constraints of the A/E's Contract. All Work must be in accordance with [University Facilities Design Guidelines](#), current criteria, and Specifications set forth in HECOM, and shall conform to good architectural and engineering practices. Workmanship shall be neat with all lines and lettering of uniform weight and clarity for complete legibility and satisfactory reproduction. All elements of the A/E's Submittals shall be checked by Professional personnel trained in that specific discipline. The A/E's Submittal will be reviewed by the University Review Unit for compliance with [VUSBC](#) and HECOM’s Project requirements and criteria. Errors and deficiencies shall be corrected by the A/E at no additional cost to the University.

If the A/E or the University determines that a meeting with the University Review Unit is necessary or would be beneficial to discuss or review the A/E's approach to designing the Project, the A/E shall request such a meeting.

## **SECTION 5.5<sup>124</sup> BASIC SERVICES OF THE A/E**

**5.5.1 General:** The Basic Services normally provided by the A/E consist of the phases described below and are more fully described in [Chapter 8](#) (Project Design Standards and Requirements), [Chapter 9](#) (Design Coordination and Quality Assurance) and [Chapter 10](#) (Construction Procurement and Administration). The A/E shall adhere to the design policies outlined in the [University Facilities Design Guidelines](#) for Project Design, [Chapter 7](#) and [Chapter 8](#) in developing the Project Design.

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<sup>122</sup> History: July 21, 2008, in the second sentence, added “total Project cost,” and “through the Contract Administration manager,” and after “estimated” deleted “value;” Revision V, added requirements to coordinate A/E Liability Insurance with Risk Management.

<sup>123</sup> History: April 29, 2009, renumbered the Section from 5.2.

<sup>124</sup> History: April 29, 2009, renumbered the Section from 5.3, added the third paragraph in §5.5.1 and in §5.5.7, rewrote the introductory language and deleted “...and Specifications (which will be prepared in conformance with the seventeen division format of the Construction Specifications Institute.)” from the end of §5.5.7.1, added §§5.5.9.1.8 and 5.5.9.1.9 and added “as outlined in §§[3.11](#) and [10.19](#)” at the end of §5.5.9.2.8; Revision V.a, typo; Revision V, in 5.3.1, added additional Design-not-to-exceed Construction Budget obligations, in 5.3.3 clarifications of A/E reimbursable expenses, in 5.3.5.4 added requirements to component cost analysis, in 5.3.5.7.2 added LEED requirement, in 5.3.5.7.5 updated VE to the new University VM process, in 5.3.6.2 added requirements to component cost analysis, and in 5.3.6.6 updated VE to the new University VM process.



The A/E must restrict himself to the authorized scope of Work provided him as a basis for negotiation of fee. Deviations from the authorized scope include incorporating embellishments increasing the cost above programmed amounts for the Project, increases in area, major changes in construction criteria, the inclusion of unauthorized buildings or areas, selections of specific systems or equipment without economic or technical evaluation, or introduction of special equipment are not permitted.

The A/E is required to hold a pre-design meeting with the University Review Unit to review Facilities Design Guidelines and the University's VM review process.

It is the A/E's contractual responsibility to design a facility which can be constructed within the funds available and which is in conformance with applicable Codes and the technical criteria included and referenced in HECOM.

During the progress of the Work, the A/E may expect minor changes in criteria within the general scope of the Project and should make necessary adjustments accordingly. Generally, the Preliminary Design Submittal thirty-five percent (35%) is intended to clarify and establish specified requirements of the Project.

Incorporation of VM changes of minor consequence, changes necessary to achieve the Design-not-to-exceed Construction Budget, changes justified on payback, and changes in functional layout occurring during review are considered within scope of the Contract. Changes or modifications required to conform to Code requirements are also considered to be within the scope of the Contract.

**5.5.2 Special Consultants:** The University may require the use of Consultants with a particular expertise related to special features of the Project. The A/E shall engage such a Consultant, subject to the University's approval, and incorporate such Work in the Project.

**5.5.3 Reimbursable Expenses:** See [§6.2.5](#)

**5.5.4 Meeting Notes:** Provide meeting notes in writing for all meetings, direction, guidance, clarification, site visit observations, Field Orders, and such documenting significant items of discussion and agreement. These meeting notes shall be sent to those parties relevant to the issues, and structured to include all pertinent information. Also provide a proposed meeting agenda prior to each meeting. Project meetings include pre-design, design, procurement, preconstruction and construction meetings discussed in Chapters [5](#), [8](#), and [10](#).

### **5.5.5 Project Initiation and Schematic Phase:**

**5.5.5.1** Consult with the University to clarify and define the University's requirements for the Project; review available data; confirm the scope of the Project and the Services required from the A/E; review the Design-not-to-exceed Construction Budget; establish the quality of materials, aesthetics desired and other factors pertinent to the Project. Some or all of this information may be contained in the Capital Budget Request and the Project Formulation or Pre-design Study.





**5.5.5.2** Identify and analyze requirements of governmental authorities having jurisdiction to approve the design of the Project and participate in consultations with such authorities.

**5.5.5.3** Provide analyses of the University's needs, planning surveys, site evaluations and comparative studies of prospective sites and solutions. Provide a survey of the site in the form of topographic maps or maps of areas necessary for the proper location of buildings as to scale and, where necessary, showing bench marks, grades, lines of streets, pavements, utilities, property lines, rights-of-way, restrictions, easements, archaeological features, other improvements and trees.

**5.5.5.4** Provide a component cost analysis at the conceptual stage of the Project.

**5.5.5.5** Provide location of existing buildings and where the interior arrangement, construction or floor level of existing building affects the studies, or Plans for the Project, the necessary information as to interior arrangement.

**5.5.5.6** The necessary roof scans, structural, chemical, mechanical, and geotechnical investigations, tests and reports, including borings or load tests for soil bearing capacity shall be included in the A/E Contract. The geotechnical Services Contract shall include testing, analysis of test results and design recommendations based on Preliminary Design parameters, and shall be included in the A/E Contract. The cost of the testing, analysis and design recommendations shall be included in the A/E Contract. The geotechnical Services and Preliminary Design parameters provided by the A/E for the University shall be considered part of the A/E Services Contract.

**5.5.5.7** Schematic Design Phase: After written authorization to proceed with the Schematic Design Phase, the A/E shall:

**5.5.5.7.1** Prepare and submit Schematic Design documents.

**5.5.5.7.2** Identify strategy for achieving LEED Certification including preliminary scorecard.

**5.5.5.7.2** Prepare a detailed Cost Estimate.

**5.5.5.7.3** Prepare Submittal and make presentation to the [Architect for the University, Arboretum and Landscape Committee](#), the [BOV](#) and [AARB](#).

**5.5.5.7.4** Prepare and submit to the University written responses to all reviewing Agencies' comments and provide the technical data for the University necessary to substantiate any waiver request required. Make any necessary revisions to the Plans and Specifications.

**5.5.5.7.5** The A/E shall participate in VM reviews.

**5.5.6 Preliminary Design Phase Submission (35%):** After written authorization to proceed with the Preliminary Design Phase, A/E shall:



**5.5.6.1** Prepare and submit Preliminary Design documents.

**5.5.6.2** Provide a LEED Scorecard identifying which points the Project is targeting to achieve LEED Certification.

**5.5.6.3** Prepare a detailed Cost Estimate.

**5.5.6.4** Prepare Submittal and make presentation to the Architect for the University, the [University Arboretum and Landscape Committee](#), the [BOV](#) and [AARB](#).

**5.5.6.5** Prepare and submit to the University written responses to all reviewing Agencies' comments and provide the technical data for the University necessary to substantiate any waiver request required. Make any necessary revisions to the Plans and Specifications.

**5.5.6.6** The A/E shall participate in VM reviews.

**5.5.7 Construction Documents Phase:** After written authorization to proceed with the Construction Documents, A/E shall:

**5.5.7.1** On the basis of the accepted Preliminary Design documents and the review comments, prepare final Drawings and Specifications for incorporation in the Contract Documents to show the complete scope, extent, and character of the Work to be furnished and performed by the Contractor(s).

**5.5.7.2** Prepare and submit completed Working Drawings and Specifications for approval.

**5.5.7.3** Prepare a detailed Cost Estimate and submit to the University with the Working Drawing Submittal. Provide recommendation on number of days estimated for completion of the construction of the Project.

**5.5.7.4** Make revisions to Plans and Specifications necessary to incorporate review comments and submit a written response to all review comments to the University Review Unit prior to advertising the Project.

**5.5.8 Procurement Phase:** After written authorization to proceed with the Procurement Phase, A/E shall:

**5.5.8.1** Where applicable, maintain a record of prospective Offerors to whom Final Construction Documents have been issued, attend Pre-proposal/Pre-bid conferences, and receive and process deposits for Procurement Documents.

**5.5.8.2** Issue Amendments/Addenda as appropriate.

**5.5.9 Construction Phase:** After award of the Construction Contract the A/E shall provide the following Services. The following Services are also described in [Chapter 10](#) and in §15(a)-(h) of the [General Conditions of the Construction Contract](#), [HECO-7](#). They shall be provided by the A/E of



Record as part of Basic Services and shall not be delegated to others unless such delegation has been specifically approved in writing by the AVP & CFO:

**5.5.9.1 Submittal Review and Construction Administration Services Required to be Performed by the A/E.**

**5.5.9.1.1 Consultations:** A/E shall consult with and advise the University on all technical matters and act as the University's representative in dealing with the Contractor on all such matters. The agency's instructions to Contractor(s) will be issued through the A/E, who has authority to act on behalf of the University to the extent provided in the Contract General Conditions except as otherwise provided in writing.

**5.5.9.1.2 Interpretations and Clarifications:** The A/E shall issue all necessary interpretations and clarifications of the Final Documents and prepare any associated and necessary Field Orders and Change Orders.

**5.5.9.1.3 Field and Change Orders:** Issue Field Orders and prepare Construction Change Orders. Where the University has modified the A/E Contract to reduce the A/E's Construction Phase Services, the following shall apply:

a. Any matters of a technical nature which affect the integrity of the exterior architectural, structural or fire safety systems or which affect the integrity or operation of the mechanical, plumbing, or electrical systems shall be reviewed and certified by the A/E before a Field Order or Change Order is issued.

b. Field Orders on non-technical matters such as landscaping, finishes, colors, and similar items which do not affect the exterior architectural appearance or the structural, fire safety, mechanical, plumbing, or electrical system integrity may be handled by the University.

**5.5.9.1.4 Shop Drawings:** The A/E shall review and approve (with or without conditions), reject or take other appropriate action on Shop Drawings and other Submittals required of the Contractor. The A/E shall review for conformance with the Project design concept and compliance with the information given in the Contract Documents. Such reviews and approvals or other action shall not extend to means methods, techniques, sequences or construction procedures or safety precautions and programs incident thereto.

**5.5.9.1.5 Equals:** The A/E shall evaluate and determine the acceptability of any equal materials or equipment proposed by Contractor.

**5.5.9.1.6 Structural and Special Inspections:** The A/E shall provide the Services described in §[10.12](#) relating to proper installation of structural systems on the Project, including the review of applicable inspection and test reports by the University's Testing and Inspection entity.



**5.5.9.1.7 Contractor Claims:** The A/E shall act as initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work hereunder and shall make recommendations to the University on all Contractor claims relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the Work.

**5.5.9.1.8 Submittal Review Response Times:**

- a. Submittals rejected in their entirety shall occur within the seven (7) days of receipt of submittal.
- b. Those Submittals not rejected in their entirety shall be returned “approved” or “approved with comments” within fourteen (14) days of receipt.
- c. Complex Submittals not rejected in their entirety that include more detailed design calculations and Shop Drawings shall be reviewed and returned no later than twenty-one (21) days after receipt.
- d. In all instances, the time for review starts upon the confirmed receipt date by the A/E from the CM/Contractor and shall end upon the confirmed receipt date by the CM/Contractor from the A/E.

**5.5.9.1.9 Requests for Information (RFI) Response Times:**

- a. RFI of a basic nature not requiring redesign by the A/E shall be responded to within seven (7) days.
- b. RFI requiring redesign by the A/E shall be responded to within fourteen (14) days.
- c. Complex RFI that include more detailed design calculations and Drawings, shall be reviewed and returned within twenty-one (21) days of receipt on an exception basis.
- d. In all instances, the time for response starts upon the confirmed receipt date by the A/E from the CM/Contractor and shall end upon the confirmed receipt date by the CM/Contractor from the A/E.

**5.5.9.2 Construction Visits, Inspection and Closeout Services**

**5.5.9.2.1 Visits to Site and Observation of Construction:** An A/E representative who is knowledgeable of the Project and competent in each discipline which has trade activities and stages of construction being performed shall visit the site at intervals to observe as an experienced and qualified design Professional the progress and quality of the various aspects of the Contractor’s Work. Based on information obtained during such visits and on such observations, the A/E shall endeavor to determine whether such Work is proceeding in accordance with the Contract



Documents and shall keep the University informed of the general progress of the Work in relation to the overall schedule.

**5.5.9.2.2 Inspections of Work in progress by the A/E:** During his periodic visits to the Site to observe the Work in progress, the A/E (accompanied by the Project Inspector) shall, as a minimum, spot check the Work installed and the Work in progress to determine compliance with the requirements of the Contract Documents and the Codes and installation/workmanship standards listed therein (e.g. clearances and lap lengths for reinforcing bars per ACI; duct construction and installation conforming to SMACNA; pipe support terminals conforming to Code; wiring installation, anchorage and terminations conforming to NEC; and such). Defective and noncompliant Work shall be noted in the A/E's inspection report and pointed out to the Project Inspector and Contractor. The A/E shall identify for the Project Inspector any specific checks or inspections to be made. The results of these inspections shall be made a part of the Project Inspector's daily report. Document in writing.

**5.5.9.2.3 Supplemental Inspections and Tests:** For Work not in compliance with the Contract Documents, the A/E shall, with the University's approval, require additional or supplemental inspection or testing. The A/E shall receive and review all certificates of inspections, testing and approvals required by laws, rules, regulations, ordinances, Codes, orders or the Contract Documents and shall determine whether their content complies with the requirements of each. The A/E shall also determine whether the results certified indicate compliance with the Contract Documents. Document in writing.

**5.5.9.2.4 Defective Work.:** During its site visits and based on its observation during such visits, the A/E may disapprove or reject Contractor(s) Work, or any portion thereof, while the Work is in progress if A/E believes that such Work does not conform to the Contract Documents, including the approved Shop Drawings or other Submittals and allowing the Work to continue will result in increased cost to the Contractor. The A/E shall recommend that the University reject any Work which it believes will not result in a completed Project that conforms to the Contract Documents or that it believes will prejudice the integrity of the design as reflected in the Contract Documents. Written documentation must be provided to the University.

**5.5.9.2.5<sup>125</sup> Contractor Applications for Payment (H12 with Schedule of Values - SOV):** A/E's initially approve the SOV on all projects. Based on the CM's or A/E's on-site observations as an experienced and qualified Professional, information provided by the University's Project Team, and review of applications for payment and the accompanying data and schedules, the CM or A/E shall determine the amounts due to the Contractor(s) and recommend in writing payments to the Contractor(s). Such recommendations will constitute a representation to the University, based on such

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<sup>125</sup> History: April 29, 2009, rewrote the subsection.



observations and review, that the Work has progressed to the point indicated and that to the best of the CM's or A/E's present knowledge, information, and belief, the quality of such Work is generally in accordance with the Contract Documents (subject to an evaluation of such Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, and any other qualifications stated in the recommendation). In the case of unit price Work, the CM's or A/E's recommendations for payment will include final determinations of quantities and classifications of such Work subject to any subsequent adjustments allowed by the Contract Documents.

**5.5.9.2.6 Substantial Completion Inspection:** Prior to scheduling a substantial completion inspection, the A/E shall verify that the Project is, in fact, ready for such an inspection as described in §§[10.15](#) - [10.17](#) and advise the University in writing of same. At a minimum, the A/E's licensed Professional Architect, Mechanical Engineer, and Electrical Engineer shall be present at the substantial completion inspection unless absent on an express written waiver by the University.

**5.5.9.2.7 Final Completion Inspection:** The A/E shall conduct a final inspection to determine if the completed Work is acceptable. The A/E shall notify the University in time to allow the University representatives to participate in the inspections. If the Final Completion Inspection is successful, the A/E may recommend, in writing, final payment to Contractor(s) and give written Notice to the University and the Contractor(s) that the Work is acceptable. The A/E may, however, accept some portions of the Work and reject others or may accept some or all of the Work subject to certain conditions. Written Notice shall be provided to the University and Contractor of the results of such inspections as described in §[10.17](#).

**5.5.9.2.8 Contractors Completion Documents:** The A/E shall receive and review maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection, tests and approvals which are to be assembled by Contractor(s) in accordance with the Contract Documents and shall transmit them to the Agency with written comments. The A/E shall receive the As-Built drawing mark-ups required from the Contractor and transfer data to the Record Drawings. The A/E shall prepare and submit electronic Record Drawings as outlined in §§[3.11](#) and [10.19](#).

**5.5.9.2.9 Project Closeout:** A/E shall provide Project closeout Services as outlined in §[10.18](#).

**5.5.9.2.10 Other:** The A/E shall perform all duties described in or reasonably implied by HECOM, the Construction Contract, including the Plans and Specifications and the [General Conditions of the Construction Contract](#).



## **SECTION 5.6<sup>126</sup> ADDITIONAL SERVICES**

The University will determine Additional Services (i.e. Services in addition to the “Basic Services”) required of the A/E during Contract negotiation and negotiate the fees for such Services at the same time as the Basic Services fee negotiation. The Additional Services to be provided by the A/E and the compensation for such shall be set out in the MOU. Once the Contract is signed, any Extra Services required will be a change in scope and shall be authorized by an e-Builder Change Order using H11AE. The following among others are typical Additional Services:

Special Consultants for things such as:

- Commissioning Requirements
- Historic Preservation Requirements
- Special Acoustic Requirements
- Special Landscape/Hardscape Requirements
- Special Lighting Requirements
- Special Audiovisual Requirements
- Other Special Requirements as specified by the Architect for the University

Coordination with ITC’s Data/Communication Infrastructure Development

Lightning Protection

Partnering

Provision of planning surveys and special analyses, such as any special structural examinations

Preparation of special display Drawings, renderings or models

Concept Study and preparation of Project concept documents (N.B. confirmation of Project concepts, i.e. formulation package, is part of the Schematic Phase Basic Services).

## **SECTION 5.7<sup>127</sup> EXTRA SERVICES**

The following, among others, are considered to be Extra Services to the Basic Services provided by the A/E. The A/E and University will normally determine the Additional Services (i.e. Services in addition to the “Basic Services” identified in HECOM) required of the A/E at the time of Contract negotiation and negotiate the fees for such Services at the same time as the Basic Services fee negotiation. Once the Contract is signed, any Extra Services required shall be agreed upon and added to the A/E Contract by Change Order.

**5.7.1** Where, after approval of any stage of the design, it is found that substantial change in the overall scheme is advisable, and such change is ordered by the University, the fixed fee amount for the Extra Services shall be agreed upon and added to the A/E Contract.

**5.7.2** Where delinquency, insolvency or necessary change of the Contractor requires extraordinary demands on the time of the A/E.

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<sup>126</sup> History: April 29, 2009, renumbered the Section from 5.4; July 21, 2008, at the end of the first paragraph, rewrote the list of Additional Services; Revision V, clarified Additional and Extra Services.

<sup>127</sup> History: April 29, 2009, renumbered the Section from 5.5; Revision V, clarified Additional and Extra Services and in 5.5.3 updated compensation due the A/E as a result of construction phase delays.



**5.7.3** When the Substantial Completion of construction is delayed beyond the Contract Completion Date for more than 60 days by the Contractor or the University and through no fault of the A/E, the A/E may be entitled to additional compensation for that delay beyond 60 days related to authorized additional periodic site visits/inspections necessitated by the delay. Requests for such compensation shall include documentation naming the person(s) making the additional visit, date(s), time(s), etc. as may be required by the University.

**5.7.4** The University's requested changes to Drawings and Specifications after Work is under construction, which might result in a Change Order.

**5.7.5** Providing special or continuous on-site Services for an approved period when required by unforeseen site conditions.

**5.7.6**<sup>128</sup> Preparation of the EIR. This report is done by the [University's Office of EHS](#).

**5.7.7** Provide special Commissioning Services for HVAC equipment design, Submittal approval, point by point testing requirements, component testing, and systems testing.

## **SECTION 5.8<sup>129</sup> INTERIOR DESIGN SERVICES FOR FURNITURE, FURNISHINGS AND DECORATIONS FOR BUILDING PROJECTS**

The Basic Services of the A/E for a Project require the A/E to provide informational floor Plans which use basic template outlines to show that the required furniture will fit in the rooms or spaces. The A/E is also required to specify all building materials and finishes and to select the colors for all building components which the building Contractor is required to provide and/or install.

Additional Services or separate Contract for Interior Design Services for the selection, specification, and procurement of furniture and furnishings that are not a part of the A/E's Basic Services as defined by HECOM shall be determined and a fee negotiated for the interior design Services.

## **SECTION 5.9<sup>130</sup> IDENTIFICATION OF DOCUMENTS AND MATERIALS**

The University and the A/E shall note the Project Code #, the PIMS #, and Work Order # on all Project documents, correspondence, memoranda, invoices, Submittals and other related material. The A/E shall require that the Project Code # is shown on all Submittals, correspondence, and other documents generated by Contractors, Subcontractors, Suppliers, Consultants, testing entities or others associated with the Project.

## **SECTION 5.10<sup>131</sup> A/E PERFORMANCE EVALUATIONS**

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<sup>128</sup>History: July 21, 2008, added the second sentence.

<sup>129</sup> History: April 29, 2009, renumbered the Section from 5.6.

<sup>130</sup> History: April 29, 2009, renumbered the Section from 5.7.

<sup>131</sup> History: February 12, 2010, moved the previous third through fifth paragraphs to form a new Section 10.24 and added the last sentence. Some of this material was previously covered by Directive 383, now cancelled; April 29, 2009, renumbered the Section from 5.8, added the first paragraph, in the present second paragraph inserted the parenthetical information and link, in the present third paragraph corrected the designation of the form and deleted





Upon completion of the design phase, or later, an e-Builder Professional Services: Evaluation by UVA of Service Provided by (8b/14a) form may be completed.

Upon completion of the Construction Contract, an e-Builder Professional Services: Evaluation by UVA of Service Provided by (8b/14a) form may be completed by the University with emphasis on: quality and constructability of the design; timeliness and response with respect to Shop Drawings review, clarification of Drawings and Specifications intent and resolution of construction problems and cooperation. An Opinion of Contractor Performance, [CO-14b](#) (along with attachments and A/E responses, if any) may also be completed.

All evaluations are considered confidential information equivalent to the A/E's "personnel records" for the A/E performance of Work for the University and shall be subject to the same protections. The completed evaluations shall be retained in the A/E's performance file for review and consideration by future A/E selection panels. The completed A/E evaluation forms may be shared by the OCA with other agencies of the Commonwealth for the purpose of "references" to assist agency selection panels in evaluating the A/E during the selection process.

The [Contract Administration Manager](#) is responsible for maintaining the Contractor evaluation file.

See §[10.24](#) for evaluations of contractors.

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the title of the form and added the link to the form and created present paragraphs four and five from the last four sentences of previous paragraph three, created the present sixth paragraph from previous paragraph two and deleted "evaluations" and added present paragraph 7.



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## CHAPTER 6<sup>132</sup>: PROFESSIONAL SERVICES: FEES AND PAYMENTS

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### SECTION 6.1<sup>133</sup> A/E FEES

The University's policy is to compensate Architects and Engineers in a fair and reasonable manner for providing the high quality Services required by HECOM. Compensation or fees should be negotiated based on the Scope of Work for the particular Project, the estimated effort (labor-hours) necessary to accomplish the Work, and hourly rates comparable to those earned by other equally competent Architects, Engineers, technicians, and support personnel in the Commonwealth. This chapter provides guidance for determining fair and reasonable fees by using a detailed Fee Proposal describing the Services to be provided and showing the estimated labor-hours by discipline and skill level and the corresponding hourly rates for each.

### SECTION 6.2<sup>134</sup> A/E FEE PROPOSAL STANDARDS AND GUIDES

The A/E is expected to be thoroughly familiar with HECOM and the definitions, Scope of Services, Submittal requirements, technical criteria and standards, standard procedures, and standard forms required. These basic requirements, combined with the specific Project requirements, are the basis for the Fee Proposal.

Competitive negotiations for Professional Services are based on qualifications. However, most often all of the A/E firms selected for interview are fully qualified technically to provide the Services required for the Project and the ranking of the A/E's is based on other factors such as recent experience on a similar Project, A/E workload and perceived ability to meet the schedule, or similar factors. Therefore, the top ranked firm is considered "fully qualified technically and best suited" for the Work. With this in mind the intention is to negotiate hourly rates and fees for Services which are fair and reasonable to the A/E, the University, and the taxpayers of the Commonwealth of Virginia.

**6.2.1 Plans and Specifications:** The A/E should be aware and keep in mind that there are differences between private Work and University Work as described in [Chapter 5](#). Particularly, the A/E must conform to HECOM requirements for describing and specifying the Work to be performed as part of the Construction Contract. The A/E must also conform to the requirements of the [Procurement Rules](#) as clarified and expanded upon in HECOM.

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<sup>132</sup> History: Revision V, further clarifications to Design-not-to-exceed Construction Budget.

<sup>133</sup> History: July 21, 2008, renumbered the Section to be consistent with other chapters of the Manual.

<sup>134</sup> History: July 21, 2008, renumbered the Section to be consistent with other chapters of the Manual and in 6.2.6.2 substituted "fixed fee" for "lump sum" in the first sentence; Revision V.a, in present 6.2.6.4 (previously 602.6.4) clarified travel reimbursables and fixed price by deleting; Revision V, updated reimbursable expenses to be consistent with the University's new printing process, in present 6.2.3 (previously 602.3) clarified Additional and Extra Services and in present 6.2.5 (previously 602.5) clarified A/E reimbursable expenses.



**6.2.2 Personnel Classifications, Hourly Rates, and Fixed Fees:** The following shall be used as guidance by the A/E in developing its Fee Proposal and by the University in evaluating the Proposal and negotiating the fees for Services:

**6.2.2.1 A/E Project Technical Personnel:** Technical personnel may include, but not be limited to, the A/E's PM/Coordinator, Architects (licensed), Engineers (licensed) by discipline, designers including non-licensed Architects and Engineers, Project Inspector, surveyor, survey team, interior designer, landscape Architect, draftsman, estimator, Specifications writer, clerical staff, field inspectors, and CADD computer operators. Technical activities may also be performed by senior personnel including, but not limited to, Branch Managers, Principals, and Vice-Presidents.

**6.2.2.2 Hourly Rates and Fixed Fees:** The negotiated rates/fixed fees should be comparable to those involving similarly experienced and qualified personnel in those classifications in firms providing similar services. Negotiated rates shall be "marked-up" to include all overhead and profit (i.e. payroll taxes and insurances, vacation, holidays, health insurance, and general office overhead such as administrative salaries, rent, utilities, business and liability insurances, telephone, equipment rental and depreciation, travel, promotion, etc.).

The University shall have the right to require the A/E to submit documentation to support the proposed hourly rates and/or fixed fees when they exceed what the University considers the "norm" for the area. Documentation may include mark-up factors proposed for use in the fee negotiations and fee determination. The average hourly rates by classification, including mark-ups which are negotiated and accepted in fee negotiations, shall be recorded and listed in the [MOU](#) which is appended to the A/E Contract.

**6.2.3 Additional Services:** [Chapter 5](#) describes the Basic Services required of the A/E as well as the responsibilities of the University and typical Additional Services that the University requests the A/E to perform.

The A/E and University will normally determine the Additional Services (i.e. Services in addition to the "Basic Services" identified in HECOM) required of the A/E prior to or during Contract negotiation and negotiate the fees for such Services at the same time as the Basic Services fee negotiation. The Additional Services to be provided by the A/E and the compensation for such shall be set out in the Contract or the MOU. Once the Contract is signed, any Extra Services required will be a change in scope and shall be authorized by an e-Builder Change Order using H11AE. Any Change Order authorizing Work to be performed which does not stipulate a fixed sum amount for the Work shall be subject to audit by the University for a period of three (3) years following conclusion of the Contract.

**6.2.4 Computer Services:** Specialized outside computer analysis Services required by the University for the Project may be treated as an Additional Service. The compensation for such specialized computer analyses may be negotiated lump sum or a reimbursable expense. The allowable reimbursable expense method will normally be the actual charge made by an outside computer Service organization plus ten percent (10%) for A/E overhead and profit.



**6.2.5 Special Consultants:** Consultants engaged by the A/E to augment the A/E's staff to provide the required A/E Services are considered by the University to be part of the A/E's staffing for the Project.

The University may require the use of a special Consultant with a particular expertise related to some feature of the Project. The A/E shall engage such a required Consultant, subject to the University's approval, and incorporate such Work in the Services for the Project. The compensation for such Consultant shall be negotiated and set out in the MOU and included in the total A/E fee. The A/E will normally be allowed to mark-up the University approved direct cost to the A/E of such special Consultant by ten percent (10%) for the A/E's overhead and profit. All requirements of this chapter apply to special Consultants.

### **6.2.6<sup>135</sup> Reimbursable Expenses**

**6.2.6.1** The cost of fax transmissions, long distance phone calls, overnight deliveries, postage and similar expense incurred by the A/E in the performance of the Contract are considered by the University to be a part of the A/E's overhead expenses and are not normally reimbursable.

**6.2.6.2** Compensation for travel and living expenses associated with the performance of the Project scope of Work will be included in the fee negotiated and in the MOU as a fixed fee amount for travel and/or subsistence for each particular facet of the Work where travel compensation is proposed by the A/E. In establishing that fixed fee amount the travel rates and the per diem rates for lodging and subsistence will be based on the maximum amounts allowable for such expenses in the [University's Travel Regulations](#).

**6.2.7 Interior Design:** The A/E's Basic Architectural Services includes sizing of spaces for the intended function, providing diagrammatic furniture layouts to the client to confirm functional layouts, and the selection and specification of building fixtures and finishes which are necessary to provide a complete and useable facility and/or which are included in the Construction Contract.

"Interior design" as an Additional Service pertains to the design, selection, arrangement, and color coordination of furniture, furnishings and accessories. These items include but are not limited to desks, chairs, lamps, tables, screens, planters, artwork, draperies, and similar furnishings which are procured separately from the Construction Contract.

The "interior designer" shall verify the actual building surface finish colors applied by the Contractor and coordinate the selection of colors, fabrics and textures with the building colors. The "interior design" Services also include the coordination with and preparation of procurement materials for the University of Virginia Procurement Services for the furniture, furnishings and accessories.

## **SECTION 6.3<sup>136</sup> A/E FEE PROPOSAL WORKSHEET ([CO-2.3](#))**

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<sup>135</sup> History: April 29, 2009, deleted the entire 2<sup>nd</sup> paragraph of 6.2.6.2 and deleted 6.2.6.3

<sup>136</sup> History: July 21, 2008, renumbered the Section to be consistent with other chapters of the Manual.



The A/E shall prepare a detailed Fee Proposal using the [CO-2.3](#). The hourly rates and the labor- hours proposed should relate to the rates and times required for a qualified and competent person in that skill level to perform the Work. Supplemental information shall be attached as necessary to support the proposed Drawings, hourly rates and labor-hour estimates. Guides for the use of the form are as follows:

1. Disciplines/classifications commonly used are indicated on the form. Additional classifications may be listed.
2. Hourly rates should be the average for those persons in that skill level/discipline/classification.

NOTE: It is generally perceived that a person being compensated at a rate higher than the norm would be more efficient/productive/take less labor-hours than a person being compensated at a rate below the norm.

1. Indicate the drawing size and proposed/estimated number of sheets for each discipline. Attach a proposed or estimated list of Drawings.
2. Enter the Estimated (proposed) number of hours for each discipline/skill level and multiply times the Hourly Rate to yield the Estimate Cost.
3. CADD line is for drafting hours to produce a CADD basic plan for each level, wing or area to use as a base sheet for the various disciplines. The labor-hours to produce the individual sheets for each discipline, whether manually or CADD, should be shown for the applicable discipline.
4. Specification/report writer effort includes the mark-up and edit of standard and/or master Specification sections and writing any required special sections.
5. Clerical Support effort includes word processing of Specification sections and editing masters on the word processing program.
6. Cost Estimate effort includes the takeoff of quantities and the application of prices to produce the Cost Estimate in the required format.
7. Procurement Assistance Service includes the effort of the Professional to conduct the Pre-proposal/Pre-bid Conference, assist in receipt of Proposals/Bids, and evaluate the Offerors for responsiveness and responsibility. It also includes the clerical level effort to receive document deposits, issue Final Construction Documents, receive/review returned Final Construction Documents and return deposits/issue refunds.
8. Shop Drawing Review includes the Professional/technical level effort to review Shop Drawings and other Submittals to determine compliance and conformance with the requirements of the Contract Documents and the mark-up/approval of same. It also includes the clerical level effort to log Submittals in and out, to copy mark-ups from the reviewer's



master review set to the copies being returned to the Contractor and others, and the distribution of same.

9. Record Drawing & Specification preparation includes the efforts of a drafting level person to transfer data from the Contractor's "As-Built" set of Drawings and Specifications to the record copy reproduces. This Work also includes the Professional/technical level effort to compare the "As-Built" set to the record copy for correctness.
10. Construction observation and administration includes the Professional/technical level effort to perform the on-site inspections/observations, job meetings, payment request evaluations and administrative functions required by the Contract and the clerical level effort to type minutes of meetings and similar functions.
11. The Additional Services portion of the Worksheet is generally self-explanatory for the items listed. If those items are proposed to be provided by outside Consultants/Subcontractors (excludes Architects and Structural, Mechanical, & Electrical Engineers which are considered the A/E), the subcontract negotiated amount may be marked up ten percent (10%) for A/E overhead and profit. In-house Additional Services should be computed using the estimated labor-hours and marked up hourly rates similar to the Basic Services Fee Proposal.

## **SECTION 6.4<sup>137</sup> PROPORTIONING OF THE A/E FEE AND PAYMENTS**

**6.4.1 Phases of Work:** Payments to the A/E for Design Phase and Construction Phase Services shall be based on the negotiated fee amount as proportioned for each phase of the Project. The amount approved for progress payments shall be based on the Owner's judgment of the proportion of the Work on that phase or facet which has been completed versus the Work required/value of that phase or facet. The A/E fee shall be proportioned for each phase or facet of the Work and shown in the A/E Contract or in the MOU. The proportioning of the fee should account for and show the negotiated amount for the following phases or facets of Work:

- 1. Pre-design Services (Additional Services such as studies and similar activities)**
- 2. Design Phase Services**
  1. Schematic phase
  2. Preliminary phase
  3. Working Drawing phase
- 3. Procurement Phase Services**
- 4. Construction Phase Services**
  1. Shop drawing/Submittal reviews and admin.
  2. Site visits, inspections, and admin.

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<sup>137</sup> History: July 21, 2008, renumbered the Section to be consistent with other chapters of the Manual; Revision V.a, in present 6.4.1 (previously 604.1) clarified travel reimbursables and fixed price by correcting; Revision V, in 6.4.1 (previously 604.1) changed phases of the work allocations.



**5. Project Closeout**

1. Maintenance & Operations Manuals
2. Record Drawings

**6. Budgeted Reimbursable Amounts**

**7. Additional Services (itemize)**

In addition to the proportional amount due for Design Phase or Construction Phase Services, the A/E shall be entitled to payment for authorized Additional Services performed and for authorized reimbursable costs incurred during the period.

Where the Agency Contracts with the A/E for less than or more than the Basic Services indicated for the various phases, the proportioning of the fee may be adjusted accordingly and shown in the MOU.

Where a detailed breakdown of the A/E fee is not provided in the [CO-2.3](#) Fee Proposal Worksheet used for negotiation, the total negotiated A/E fee (excluding Additional Services and reimbursables) will be proportioned as follows:

Design Phase Services	=	70% of Total Fee
Construction Phase Services	=	30% of Total Fee

In consideration of the Services required by HECOM, the proportioning of the A/E fee for progress payments during the various parts of the Design Phase and the Construction Phase will be as follows:

**DESIGN PHASE SERVICES**

1. **Schematic Design Phase** – Value of the Schematic Phase is twenty percent (20%) of the design phase fee. This phase is complete when outstanding issues are resolved, the Schematic Design is approved, and the A/E is authorized to prepare Preliminary Design.
2. **Preliminary Plans and Specifications Phase (Design Development)** – Value of this phase is thirty percent (30%) of the design phase fee. However, a proportional part may be billed monthly during the development of the documents. This phase is complete when outstanding issues are resolved and the A/E is authorized to prepare Construction Documents.
3. **Construction Documents Phase (Working Drawings and Specifications)** – Value of this phase is fifty percent (50%) of the design phase fee. However, a proportional part may be invoiced monthly during the development of these documents. This phase is complete when outstanding issues are resolved, all changes have been made to the documents so that they are ready for advertising, and, for Competitive Sealed Bids, the Construction Drawings, Plans and Specifications are approved as evidenced by completion of the CDPSA process in e- Builder.

**Note:** The University may withhold a portion of the progress payments for the design phase fee until the Final Documents, including all corrections required to resolve review comments, are finally completed and acceptable.



## PROCUREMENT PHASE SERVICES

4. **Procurement Phase** – Value of this phase is five percent (5%) maximum of the fee amount for Construction Phase Services and is due upon award of the Construction Contract or rejection of Bids (unless the A/E is obligated to redesign at no additional fee).

## CONSTRUCTION PHASE SERVICES

5. **A/E Construction Period Services** – Value of this phase is ninety percent (90%) of the construction phase Services fee amount. This ninety percent (90%) is usually prorated over the total construction period including the thirty (30) days allowed for punch list corrections and billed monthly during the construction phase as construction progresses.
6. **Project Closeout Phase** – The remaining five percent (5%) of the fee (or sum as stipulated in the Contract or MOU) for construction phase Services is allocated to closeout and Record Drawing preparation. It shall be payable when the A/E's Services for the Project are fully completed and "Record" Drawings and Specifications are delivered to University, as set forth in Chapter 10.

**6.4.2 Payments to the A/E:** Payments to the A/E shall conform to the requirements of [§3.15](#).

**6.4.3 Payments by the A/E:** Payments by the A/E to its Consultants, Subcontractors and Suppliers shall conform to the requirements of [§3.16](#).

## SECTION 6.5<sup>138</sup> DETERMINING CHARGES FOR CHANGES IN THE SCOPE OF WORK (EXTRA SERVICES)

### 6.5.1 Changes to the Scope of Services

**6.5.1.1** The University PM shall notify the A/E when a change in scope or "Extra Services" are required and authorized. The University and A/E shall develop a defined Scope of Services and the A/E shall prepare a Fee Proposal for such Work. A lump sum fee will normally be negotiated and agreed on using the e-Builder Change Order process (H11AE) approved before the Extra Services are performed (i.e., changes in the Plans or Specifications, models, studies, etc.). In such cases, the fee negotiations will be based on the defined scope change or Work to be done, the estimated technical personnel time to accomplish the Work times the rates listed in the MOU, and any reimbursable expenses authorized.

**6.5.1.2** When the scope cannot be defined to allow a reasonable estimate of time required, the University may authorize the Extra Services at the hourly rates or unit costs listed in the MOU. In such cases, the University shall establish maximum fee limits, as applicable. Work beyond the maximum fee limit shall require justification and the University's approval prior to proceeding with further Extra Services.

**6.5.1.3** Many of the revisions or requirements included in a Revision to HECOM are made to reflect changes in the [Code of Virginia](#), [Procurement Rules](#), or other requirements which must have immediate compliance.





Therefore, a revision to HECOM shall be effective on the date stipulated and shall apply to any and all Projects for which an approved HECO-17 has not been issued as of the date printed on the revision.

Prior to approval of Preliminaries, Revisions to HECOM will be incorporated in the A/E's Work at no additional cost.

If, after the Preliminary Designs are approved, and before the Construction Documents are submitted, the A/E determines that including changes resulting from the revision will require Extra Services on his part, the A/E shall, within sixty (60) days of the distribution date of the revision, provide the University an itemized list of the Extra Services required by the revision. The University shall then provide direction to the A/E and, if necessary, issue a Change Order for the Extra Services.

A/E's shall assure that the documents submitted for review contain the latest design requirements, the latest editions of forms, and the latest editions of the standard [Instructions to Bidders](#) and the [Contract General Conditions](#).

**6.5.2 Hourly Rates for Changes in Work:** The University and the A/E shall at the time of fee negotiations establish and record in the MOU the nominal hourly rates for all technical personnel categories, disciplines and/or skill levels to be used to calculate A/E fees for Extra Services or changes in the Work. The hourly rates listed shall include all mark-ups and adjustments for taxes, insurances, benefits, overhead, profit, etc. Acceptable categories are indicated in [§6.2.2](#).

Technical activities by principals, such as Project Manager, Architect, or Engineer, are categorized for payment at the rates indicated for the technical activity or function being performed.

**6.5.3 Overtime for Changes in Work:** No overtime requiring rates higher than regular rates shall be considered for payment for Additional Services. Consideration of the time for approved personnel when traveling in connection with the Project (when such travel is required by the Contract and authorized in writing by the University) shall be construed to be time engaged on the Project up to the completion of an 8 hour workday.

**6.5.4 Invoices for Changes in Work:** Invoices or statements of expenses incurred by the A/E for reimbursables and for Work authorized to be performed on an hourly rate or unit cost basis shall be rendered to the University monthly. Invoices shall be supported by a certified accounting of the time expended by date, by person, and the skill level of the Work being done. (e.g. Drafting would be paid for at the "drafting" rate regardless of who does the Work – principal, draftsman, or trainee). Statements shall show the cost during that period and indicate the status of the authorized Work. The reporting of these costs shall be in such form and detail as required by the University. The A/E's disbursements and job records shall be subject to audit by the University for Work done on a reimbursable and/or hourly or unit cost basis. The University shall notify the A/E of any defect or deficiency in the invoice including supporting data within ten (10) days after receipt of same, and payment of approved invoices, or portions thereof, shall be made within 30 days after receipt of the invoice.



**6.5.5 Audit of A/E's Records:** Any Change Order authorizing Work to be performed which does not stipulate a fixed sum amount for the Work shall be subject to audit by the University for a period of three (3) years following conclusion of the Contract. Also, any authorization for payment of reimbursable expenses shall be subject to audit by the University for a period of three (3) years following conclusion of the Contract.

## **SECTION 6.6<sup>139</sup> CHANGES TO A/E CONTRACT**

Changes in the Scope of Work and/or Cost of the A/E Contract ([HECO-3](#) and [HECO-3.2](#)) will be documented through the execution of an H11AE, A/E Contract Change Order. Individual A/E Contract Change Orders which increase the original Contract amount by twenty-five (25%) or more or \$50,000, must have the prior approval of the AVP & CFO or his designee. If the cumulative total of all Change Orders exceeds twenty-five (25%) of the original Contract amount, the prior approval of the AVP & CFO or his designee must be obtained.

The reason for the change in the PSCOP will be completed by the A/E. The University PM and the Contract Administrator for Professional Services will review and approve. See [§4.11](#) for initial and signature requirements.

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<sup>139</sup> History: April 29, 2009, added the last paragraph; July 21, 2008, renumbered the Section to be consistent with other chapters of the Manual and added the last sentence.



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## CHAPTER 7: ENGINEERING AND TECHNICAL CRITERIA<sup>140</sup>

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### SECTION 7.0 GENERAL

The University's [Facility Design Guidelines](#) contains standards and requirements that clarify the applications of [VUSBC](#), and mandatory University standards and technical requirements as they pertain to University buildings on Commonwealth property. It also prescribes standards and requirements that may be higher than the minimum requirements for the private sector owner, but are necessary to meet energy, performance, maintenance, safety, and accessibility standards for public buildings. The A/E must design to meet the standards and requirements stated in the Guidelines.

The University Building Official is the designated building official for University owned buildings, including Agency 207- Academic, Agency 209 - Medical Center buildings, and Agency 246 - College at Wise. The University Building Official is charged with granting modifications, and establishing rules and regulations as may be necessary to carry out its function as building official (See [Management Agreement](#).)

The University Review Unit is delegated authority by the University Building Official under provisions of the [Management Agreement](#) to perform reviews of the University's project Drawings and Specifications for conformance with the requirements of the [VUSBC](#), [Management Agreement](#), and HECOM. The University Review Unit performs fire safety reviews for all Projects involving new construction, additions, or renovation that involve a change of use of a facility. The responsible State Fire Marshal's Office shall perform fire safety reviews for other renovation and conduct fire safety inspections of all construction.

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<sup>140</sup> History: 17 May 2011, moved all of the material previously in Chapter 7 to the Facilities Design Guidelines.



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## CHAPTER 8: PROJECT DESIGN STANDARDS AND REQUIREMENTS

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### SECTION 8.1 GENERAL

The A/E should be aware that there are differences between private Work and Work done for the University. These include:

**8.1.1**<sup>141</sup> The Commonwealth cannot limit bidding to a selected list of Contractors known to do good Work. Unless Contractors are prequalified for the Project in accordance with [§11.5](#), any licensed Contractor may Bid. Since the knowledge and experience of the Contractors bidding on the Project is an unknown, Drawings and Specifications requirements must leave nothing to the imagination. They must be clear, concise, and provide thorough detailing of existing and proposed construction.

**8.1.2** Sections, details, and dimensions must be in sufficient quantity, clarity and detail to allow the Bidder to understand what is expected, to make takeoffs of material types and quantities, and, once hired to prepare Shop Drawings and execute the construction. This particularly applies to stairs, special connections for framing, typical details of system interfaces, flashings for roofs and walls, and similar building features. Details should clearly distinguish between existing and proposed/ new construction. Drawings must also clearly show and/or describe demolition requirements.

**8.1.3** Project design is the sole responsibility of the A/E. Specifications that require the Contractor to provide engineering design are not acceptable unless the products specified for Contractor design are closed engineered systems. Closed engineered systems include: pre-engineered buildings, manufactured mechanical equipment, prefabricated trusses, and precast and common steel structural connections. Other systems can be defined as closed engineered systems if approved by the AVP & CFO.

**8.1.4** In order to encourage competition required in the expenditure of University and public funds, performance Specifications that define a desired result or assembly, or reference recognized standards to define a desired result or assembly, are strongly preferred. If performance Specifications are not practical, and a manufactured product must be used to define a desired result of assembly, then three manufacturers and three products shall be referenced. Do not reference both manufactured products and performance criteria because conflicts in the performance criteria and the product performance create unnecessary conflicts. Sole source and proprietary Specifications are not allowed without prior written authorization.

**8.1.5 Project Aesthetics:** Good architecture can be achieved simply by good design which implies sensitivity to scale, massing, proportion, materials, detail and even color - none of which necessarily cost more should be kept in mind throughout the design. The University and the A/E must work

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<sup>141</sup> History: Revision V, clarified Review Unit and State Fire Marshal relationship and interface requirements.



together to achieve an aesthetically acceptable design which meets the functional requirements of the Project within the stipulated Design-not-to-exceed Construction Budget.

**8.1.6 Project Identification on Documents:** The University and the A/E shall show the Project Identification Code (PC # = Agency Code + Project Code + ### suffix when applicable) and University PIMS # on all Plans, Specifications, Contracts, correspondence, sketches, invoices, memoranda, Addenda and other documents related to the Project. Where the Project has been subdivided, also show the three-digit subproject #. Documents without the required identification are incomplete.

Each page/sheet/sketch/drawing of any Addenda shall show the Project Code #, Addendum, and page or sequence number to clearly indicate that the material is a part of the Contract Documents.

The A/E shall require the Contractor to show the Project Identification PC# and University Work Order or PIMS # on all Submittals including invoices, schedules, Shop Drawings, Change Order Proposals, correspondence and other Project documentation.

**8.1.7 Capital Project Initiation:** The University will be authorized to initiate the design of a Capital construction Project upon completion of an approved H2. Depending on the Project documentation previously submitted and the action wording on the H2, one or more of the following design progress phases for review by the University Review Unit may be required.

1. Schematic Design/Project Criteria
2. Preliminary Design/Design Development
3. Construction Documents
4. Revised or Required Re-submittal of Construction Documents
5. Yellow-out Documents
6. Final Construction Documents, including Addenda

Minimum requirements for data, Drawings, Specifications, and Cost Estimates to be included in the Submittal for the indicated phases are described in this chapter and the referenced Appendices.

**8.1.8 Non-Capital Outlay Construction Projects:** This Chapter applies to all General Funded (GF), Non-General Funded (NGF), and Maintenance Reserve Projects at the University. Construction or improvement Projects undertaken on University property that are not classified as Capital Projects are not required to follow the capital outlay procedures. However, they are subject to review by the University Building Official for conformance to the [VUSBC](#) including its referenced standards, for the technical and procurement requirements of HECOM, and [University Facilities Design Guidelines](#) “Changes in Use Group Classification” of existing University owned buildings also require the Submittal of information for the review and approval, and issuance of a new Certificate of Use and Occupancy.

**8.1.9<sup>142</sup>** Projects/Work shall be designed by and the documents sealed and signed by Virginia licensed Architect(s) and/or Engineer(s). Construction Documents ready for advertising and an

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<sup>142</sup> History: Revision V, clarified Review Unit and State Fire Marshal relationship and interface requirements.



Application for Building Permit ([HECO-17a](#)) shall be submitted to the University Building Official (Review Unit) for review and issuance of a Building Permit.

Many interior renovation or modification Projects which do not involve a Change in Use Group Classification, or subdivision of rooms, or alteration of exit access requirements, or additional/redistribution of electrical loads, and Projects to alter or relocate portions of mechanical systems may be permitted as authorized by the University Building Official. Submit 2 copies of the Plans and Specifications or sketches with a description of the Work to the University Review Unit for approval. The University shall follow the procedures and keep records of such Work as set forth in the University Project Permit procedures with stipulations as stated on the approved Building Permit.

**8.1.10<sup>143</sup>** The Work shall be inspected by a licensed A/E, or by other qualified and approved inspector, for conformance with the [VUSBC](#) as shown on the approved Plans and Specifications. The University shall submit the [HECO-13.1a](#), the [HECO-13.2a](#), University Review Unit final inspection report, and/or, when applicable, the responsible State Fire Marshal's report and recommendation, and other applicable certificates or reports along with [HECO-13.3a](#), Application for a Certificate of Use and Occupancy, to the University Building Official when requesting that a Certificate of Use and Occupancy be issued.

**8.1.11** If the University proposes to change the Use Group Classification of a building or a portion thereof, the [VUSBC](#) requires that a new Certificate of Use and Occupancy be obtained. The Project shall be in compliance with the current [VUSBC](#) requirements for the new use or, alternatively, shall have the building evaluated by a licensed Architect or Engineer for conformance with the requirements of Chapter 34 of the [VUSBC](#). A copy of the Chapter 34 evaluation signed by a licensed Architect or Engineer shall be submitted along with copies of small-scale floor Plans, a University Review Unit report, and a [HECO-13.3a](#), Application for a Certificate of Use and Occupancy, to the University Building Official requesting issuance of a Certificate.

## **SECTION 8.2 DRAWING STANDARDS**

The following clarifies the requirements, standards, and expectations applicable to Drawings prepared for procurement and construction on Commonwealth Projects.

### **8.2.1 General Requirements**

**8.2.1.1:** The Title sheet(s) shall clearly indicate the following:

1. Project Title and identification per 8.1.3
2. Activity or function(s) to be performed in the facility
3. Version (date) of [VUSBC](#) on which the design is based
4. Other major Code used as a Basis for Design
5. Use Group classification(s)
6. Maximum [VUSBC](#) occupancy for each level and total for building

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<sup>143</sup> History: Revision V, clarified Review Unit and State Fire Marshal relationship and interface requirements.



7. [VUSBC](#) classification of construction type
8. Area for each floor and entire building; volume of building
9. Location and Vicinity Maps
10. Seals of the responsible Architect and Engineers, signed and dated

**8.2.1.2** Indicate the number of beds (dormitory or hospital), fixed seats (auditorium) or parking spaces (parking deck), and other information relating to capacity of the facility as applicable.

**8.2.1.3** Provide a master listing of all applicable abbreviations and symbols used in the set of Drawings or provide a listing of all common abbreviations and symbols at the beginning of the Drawings and provide a listing of the discipline specific abbreviations and symbols at the beginning of each discipline.

8.2.2 Building floor Plans and Drawings for all disciplines shall be oriented the same to avoid confusion and to facilitate overlaying of Drawings.

8.2.3 **Arrangement of Drawings:** Drawings shall be arranged in the following order with the discipline identifying character shown:

- T - Title Sheet and Index
- C - Plot and/or Site Plans C
- Sanitary and Civil
- B - Boring logs
- L - Landscaping
- D - Demolition
- A - Architectural
- S - Structural
- FP- Fire Protection Information
- SP- Sprinkler Systems, Standpipes, and Accessories
- P - Plumbing M -Mechanical (heating, cooling, ventilation, etc.)
- E - Electrical R -Asbestos Abatement

**8.2.4<sup>144</sup> Sizes of Drawing Sheets:** Drawing sheet size, except in special cases approved by the University Review Unit, shall be 24" by 36" (preferred) or, alternatively, 30" by 42". Drawings shall be prepared so as to be suitable for making clear, legible half-size reproductions.

**8.2.4.1 Drafting Media:** All Drawings will be done in AutoCAD version currently in use by FM. Completed computer generated Working Drawing files shall be provided to the University for printing and distribution. Each CAD file should correspond to a single

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<sup>144</sup>History: April 29, 2009, in §8.2.4.1, in the second sentence, substituted "external-references" for "cross-references" and added "bond or" before "vellum" in the last sentence; July 21, 2008, in §8.2.4.1, added the last two sentences; Revision V, updated drawing sheets and media.



drawing sheet and should have all of the external-references bound to the file. The CAD file name should be the same as the sheet name. See §3.11.

Record Drawings showing the As-Built conditions shall be provided to the University on bond or vellum paper.

**8.2.5 Orientation:** It is customary for a building plan to be oriented with the main entrance toward the bottom or right edge of the sheet, depending upon the building shape. All plan sheets shall have a North Arrow for orientation. All discipline building Plans shall be consistent in orientation insofar as practicable.

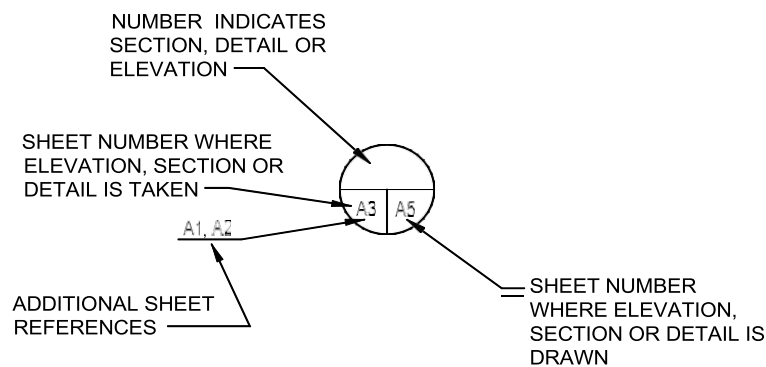
**8.2.6 Lettering:** Mechanical (typed or CADD) lettering shall be 1/10" minimum and in all caps. Make minimum gap between lines equal to one-half the letter height. Lettering and line weight must be in accordance with the above.

**8.2.7 Section and Detail Designation:** The standard section symbol (Figure 8.2-1) will be shown both where the section or detail is cut and where the section or detail is drawn. A waiver of this requirement, when justified for clarity of Drawings and/or half-size prints, may be granted by the University Review Unit.

**8.2.8 Scales:** An indication of the scale of the object drawn shall be located directly under the title of each plan, elevation, section, detail, etc. (Example: Scale 1/8" = 1'-0"). Closely related groups of details having identical scales and tied together with a common title may receive a single indication of scale under their title. Each drawing shall, as a minimum, have a graphic scale shown for the predominant scale used on that sheet.

**FIGURE 8.2-1**

## STANDARD SECTION SYMBOL



## ELEVATION, SECTION OR DETAIL SYMBOL

NOTE: SYMBOL SHOULD ALWAYS APPEAR AS PART OF TITLE, PLACED UNDER THE VIEW





**8.2.9 Drawing Numbers:** Drawings shall be sequenced by discipline letter (as indicated in paragraph 802.2) and #, i.e., A-1, A-2, A-3.1, A-3.2, S-1, S-2, etc.

**8.2.10 Relation of Drawings and Specifications:** Drawings generally indicate the scope of Work, locations, relationships, and dimensions while Specifications generally indicate quality, performance and installation requirements. Drawings and Specifications shall supplement each other and must not conflict. Terminology used in Specifications and Drawings should be the same.

**8.2.11 Boring Log Presentation:** Boring logs representing soil conditions encountered in the site investigation including pertinent logs from previous explorations in the Project location shall be presented on the drawing(s). Logs shall show the ground elevation, the depths of borings, depths and classifications/descriptions of materials encountered, blow counts per ASTM D-1586, ground water elevation, and other pertinent information. Boring locations relative to the Project shall be shown on a small-scale location plan or on the Site Plan. Boring logs may be photocopied to stick-on transparencies and securely and neatly organized on the Boring log sheet if legible and suitable for microfilming.

**8.2.12 Seals:** Since Construction Document Submittals are, in the opinion of the A/E, complete and ready for Procurement, all Drawings submitted for final (yellow-out) Working Drawing Contract Document review shall bear the Virginia seal of the individual or individuals responsible for its design. See [Chapter 3](#) for specific requirements regarding the application of seals and dates.

Asbestos Drawings and Specifications shall have the name, signature and Virginia license # of the asbestos Project designer shown on each asbestos drawing sheet and at the beginning of the asbestos Specifications section.

**8.2.13 Date:** All Drawings and the Specifications shall be dated with the same date which is established by the A/E as the date the documents are (or will be) complete, sealed, signed and dated, and ready for procurement. Documents printed for procurement shall bear the date described above with no revision numbers or dates. See [Chapter 3](#) for specific requirements regarding seals and dates.

**8.2.14 Limits of the Work:** The Drawings shall describe/show the Work to be provided by the Contractor. Existing features, structures, archaeology features, or improvements to remain shall be so noted. Existing features, structures, or improvements to be demolished and/or removed shall be noted or identified. Work, improvements, demolition or construction which the University will perform or have performed by separate Contract shall be identified as “Not In Contract” or “NIC” if the abbreviation has been defined.

## **SECTION 8.3 SPECIFICATION STANDARDS**



**8.3.0<sup>145</sup> Authority and Review:** Divisions 0 and 1 shall be completed for all projects and reviewed and approved by the Agency VCCO in the Office of Contract Administration prior to final printing of the construction documents and prior to advertisement for the work.

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<sup>145</sup> History: February 12, 2010, added the sub-section.



### 8.3.1 General

**8.3.1.1** Specifications shall clearly define the quality, performance, and installation standards for the Work and the conditions under which the Work is to be executed. They shall be in sufficient detail to describe without ambiguity, the materials, equipment and supplies, and the methods of installation and construction. Required tests and guarantees shall be indicated in the Specifications.

**8.3.1.2** Federal Specifications, MILSPECS, Corps of Engineers Specifications and the like often contain requirements or standards which are not applicable to University Work. Those Specifications also contain requirements and options ranging from the lowest quality to the highest quality product which must be carefully reviewed, selected and identified in the Specifications.

Therefore, the reference to Federal Specifications shall be avoided unless the requirements are specific, or specific prior written approval of the University is obtained.

**8.3.1.3** All Specification sections shall be written/edited to apply specifically to the Project and shall not include materials, standards, requirements or data not pertaining to the Project.

**8.3.2<sup>146</sup> Project Specifications Arrangement:** Specifications shall be on 8 1/2" by 11" sheets with Procurement sets preferably printed on both sides of the sheet. Type print size shall be suitable for scanning and shall not be smaller than 12-pitch type size. The table of contents pages shall be dated with the same date as the Drawings and shall be sealed and signed. Note that the e-Builder project management software will be used to process any Change Orders, Invoices, and Schedule of Values. The Specifications for IFBs shall include:

1. [Notice of Invitation to Bid](#)
2. [Instructions to Bidders \(HECO-7a\)](#)
3. [Pre-bid Question Form](#)
4. [Bid Form](#)
5. The current University Addendum Number One of the [General Conditions of the Construction Contract \(HECO-7\)](#) (See §8.3.3 below.)
6. The current edition/revision of the [General Conditions for the Construction Contract \(CO-7\)](#)
7. [Supplemental General Conditions](#) DGS-30-377 SWaM, and DGS-30-376, if applicable
8. Contract Between Owner and Contractor ( [HECO-9](#))
9. Workers Compensation Insurance Certificate (GS Form E&B [CO-9a](#))
10. Standard Performance Bond [HECO-10](#))
11. Standard Labor and Material Payment Bond (GS Form E&B [HECO-10.1](#))
12. Reference e-Builder Change Order Process (H11)
13. Reference e-Builder Schedule of Values & Payment Approval process (H12)
14. Affidavit of Payment of Claims (GS Form E&B [CO-13](#))
15. Final Report of Structural Special Inspections ([HECO-13.1b](#))

<sup>146</sup> History: Revision V, in §8.3.2.2 and §8.3.2.3 updated contract options and documents.



16. Certificate of Completion by Contractor ([HECO-13.2](#)) and Certificate of Partial or Substantial Completion by Contractor ([HECO-13.2a](#))
17. List of Drawings
18. [Submittal Register Format](#)
19. Structural and Special Inspections List (Samples in Appendices [I](#) and [M](#))
20. [Division 1](#) - General Requirements, Special Conditions, etc.
21. Technical Specifications (Divisions 2 - 17 Applicable Sections)
  - (a) Technical Specification Sections shall be numbered with appropriate five digit section numbers corresponding to the CSI Masterformat Broadscope numbering system.
  - (b) Technical Sections should, where possible, be subdivided into the Part I - General, Part II - Products, Part III - Execution format.
22. Appendices containing Soils Report, Asbestos Report, Lead-based Paint Report and/or other information pertinent to the Project, but not a part of the Work. Such material should be noted as “INFORMATION ONLY” for use by the Contractor as he/she deems appropriate.

Note: CSI Masterformat numbering is subject to changes under consideration as may be in use by the A/E at this time.

**8.3.2.1** For On-Demand bidding the Table of Contents shall include applicable requirements of the above, but should indicate the following documents as “Included by Reference”: [HECO-9](#), [CO-9a](#), [HECO-10](#), [HECO-10.1](#), H11, and H12.

**8.3.2.2** Website <http://www.fm.virginia.edu/fpc/ContractAdmin/contractingoptions.htm> under “CONTRACT OPTION & DOCS” provides applicable document requirements for other methods of procuring construction.

**8.3.2.3** University PM shall identify the intended method of procuring construction with any submission including front-end Specifications for review by the University Review Unit and/or the OCA.

**8.3.3<sup>147</sup>** [General Conditions of the Construction Contract](#): Addendum Number One to The Contract General Conditions for the Construction Contract ([HECO-7](#)) and The General Conditions for the Construction Contract ([CO-7](#)) are standard documents required to be incorporated in the documents for all building related construction, renovation, addition, and/or repair Projects for which Plans and Specifications are prepared. The Contract General Conditions ([CO-7](#)) have very significant legal implications and, as such, have been reviewed by the Office of the Attorney General.

No item of the Contract General Conditions may be amended or deleted or its intent changed without prior written approval of the AVP & CFO.

**8.3.3.1** The A/E shall be familiar with the above requirements and provisions and shall coordinate the requirements in the Specifications with those in the above documents.

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<sup>147</sup> History: April 29, 2009, rewrote the third sentence of §8.3.3.2.



**8.3.3.2** “Supplemental General Conditions” modify, amend or delete specific portions of the Contract General Conditions. Where it is necessary to modify or amend a section of the Contract General Conditions the changes shall be set forth and labeled “Supplemental General Conditions”, and shall be submitted for review and approval by the AVP & CFO. Excluding those specific modifications such as for SWaM or §12 Builder’s Risk Insurance any proposed modification or Amendment shall first be approved by the AVP & CFO.

[DGS-30-377 - Supplemental General Conditions - SWaM](#) shall be incorporated in all documents that require the General Conditions of the Construction Contract. These Supplemental General Conditions provide for the inclusion of Small, Women–Owned, and Minority-Owned (SWaM) Businesses.

**8.3.3.3** The “Special Conditions” set forth specific requirements that are peculiar to the specific Project. These include such items as hours of Work restrictions, Contractor office and storage area restrictions, coordination requirements for utility interruptions, hazardous material data sheet Submittals, and so forth. The Special Conditions shall be included in [Division 1](#) of the Technical Specifications.

**8.3.4<sup>148</sup> Instructions to Bidders, HECO-7a:** The Instructions to Bidders, [HECO-7a](#), included in HECOM is a standard document which has been written to conform to the requirements and procedures of the [Procurement Rules](#). The Instructions to Bidders shall be reproduced and included in the Documents without modification. They shall not be retyped. The requirements and procedures delineated in the Instructions to Bidders have significant legal implications and shall not be changed without the prior written approval of the AVP & CFO.

The A/E for the Project shall be familiar with and conform to the requirements of the Instructions to Bidders, [HECO-7a](#).

Information on where Final Construction Documents can be viewed and shipping charges, if any, should be placed in the Advertisement and Notice of Invitation for Bids. See §[10.2](#).

### **8.3.5 Types of Specifications**

The following three types of Specifications are used on University Agency’s 207, 209, and 246 Projects, unless otherwise noted.

**8.3.5.1 Non-proprietary or Performance Specifications:** This is the preferred method of specifying materials, equipment and systems. A non-proprietary Specification shall be written either as (a) a generic performance Specification (preferred); or as (b) a Specification naming a minimum of three manufacturers with model or series numbers.

- (a) A generic performance Specification must be written to describe the required characteristics, performance standards, capacities, quality, size or dimensions, etc. of

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<sup>148</sup> History: Revision V, updated Instructions to Bidders.



the item or system. A minimum of three manufacturers must be able to meet all requirements shown in the Specification. The Specification shall not be contrived to exclude any of the three manufacturers or to benefit any one manufacturer over any of the other manufacturers. The performance Specification shall not name manufacturers or brand name products.

- (b) A manufacturer/model # type Specification must list three (3) manufacturers with their respective model #'s. Each of the listed manufacturers/model #'s must have been determined by the A/E to meet the Specifications and be acceptable. If a named manufacturer prepackages or pre-assembles its item or system, the model # shall be specified. If the named manufacturer(s) custom builds the item or system, naming of model #'s is not required.

The manufacturer/model Specification must describe the required characteristics, performance standards, and capacities which will be used to determine equal products as allowed by §26 of the [General Conditions](#). Do not specify extraneous characteristics that do not relate to the products performance or suitability for the Project. If only two acceptable manufacturers can be found and documented by model #, but other equal products are acceptable if found by the Offeror, the A/E may request permission from the AVP & CFO to list only those two manufacturers but consider equals if proposed by the Contractor.

Where a particular manufacturer's product is indicated as the basis for design/detail, the following statement shall be placed on the drawing with appropriate noting/references:

“The design/detail/section shown is based on (manufacturer, model) equipment and is intended only to show the general size, configuration, location, connections and/or support for equipment or systems specified with relation to the other building systems. See Specification for technical requirements pertaining to the product.”

**8.3.5.2 Proprietary Specifications:** A Specification is proprietary if it fails to meet requirements of a non-proprietary Specification. Although a proprietary Specification should be avoided because it restricts competition, circumstances such as space limitations, mandatory performance standards, compatibility with an existing system, etc, may leave no other reasonable choice (see below).

Two typical situations that may require proprietary Specifications are:

23. when only two manufacturers or Suppliers provide an acceptable product or system, when there are no equals and when no substitutions are allowed; or
24. when there is only one manufacturer, but two or more vendors or Suppliers can purchase the material and compete to provide the product or system to Offerors.

Proprietary Specifications may be used when the University PM or A/E requests and receives, in writing, authority from the AVP & CFO to use a proprietary Specification. The



University PM or A/E must request authority as soon as the need for the Specification is recognized, preferably in the Preliminary Design stage, but definitely prior to submission of Construction Documents. The request shall explain why the proprietary Specification is necessary.

If proprietary Specification authorization is granted, the Specification shall state that “the product shall be used to the exclusion of all others and no other product will be considered to be equal.”

**8.3.5.3 Sole Source Specifications:** A Specification is sole source when it names only one manufacturer or product to the exclusion of others, or when it is contrived so that only one manufacturer, product, or Supplier can satisfy the Specification. Because it eliminates all competition, it can be used only in the most exceptional circumstances and under the strictest conditions. A product or piece of equipment which is available only thru an area franchised vendor is also considered to be a Sole Source item.

It is the policy of the University that Contracts are to be awarded on a competitive basis and that the use of sole source procurement be limited to those instances where only one source is practically available that will meet the specific requirements of the Project.

Sole source Specifications may be used when the University PM or A/E requests and receives, in writing, authority from the AVP & CFO to use a Sole Source Specification. The University PM or A/E must request authority as soon as the need for the Specification is recognized, preferably in the Preliminary Design stage, but definitely prior to submission of the Construction Documents.

The justification for a sole source request shall address the following (by number and order) in a direct and concise manner:

1. Explain why this is the only product or Service that can meet the needs of the University.
2. Explain why this vendor is the only practicably available source from which to obtain this product or Service.
3. Explain why the price is considered reasonable.
4. Describe the efforts that were made to conduct a noncompetitive negotiation to get the best possible price.

Prior to advertising the Project for Proposals/Bids, the University shall either procure the sole source item and specify it as Owner furnished/Contractor installed or the University shall negotiate a fixed price for the item or system with the sole source vendor and require that the vendor provide the specified Sole Source Work as a subcontract to the Offeror who is awarded the Contract. In the latter case, the Price/Bid Form shall show the vendor’s name and the subcontract price for the item/system to be included in the Offeror's Proposal/Bid. See Sample Price/Bid Form Format for required wording. The University shall procure the item or system (including installation where applicable) in accordance with the provisions of [Procurement Rules](#).



**8.3.6 Virginia Manufactured Products:** Pursuant to House Joint Resolution No. 3 of the 1984 Session of the General Assembly, when brand and/or manufacturers names are specified and one or more of those named are known to be Virginia based vendors and/or Contractors, those known Virginia based vendors or Contractors shall be listed prior to listing non-Virginia based firms.

To further focus on the Commonwealth's "BUY VIRGINIA" emphasis, the Project Specification cover shall be printed on the "BUY VIRGINIA" watermark/graphic available at [http://dgs.state.va.us/FormsCenter/tabid/820/Default.aspx?udt\\_1673\\_param\\_detail=238](http://dgs.state.va.us/FormsCenter/tabid/820/Default.aspx?udt_1673_param_detail=238).

**8.3.7 Use of Standard or Guide Specifications:** The use of standardized Specifications or guide specs as a basis or resource for editing has many advantages for the A/E, the Reviewer and the Contractor. Performance guide Specifications prepared by Masterspec, Spectext, the U. S. Navy and the Corps of Engineers are acceptable for editing. These guide Specifications are available from the AIA, the CSI, the National Institute of Building Sciences in Washington, D. C., and other sources for use with various PCs and word processing programs.

The A/E shall edit the guide Specifications to include only the materials, requirements, and procedures applicable to the Project. Specifications that are submitted without editing will be rejected as an incomplete Submittal and appropriate notation made on the A/E's performance evaluation.

Where Navy or CE guide Specifications are used on a Project, they shall be edited to delete references to Military Specifications and Federal Specifications. References to the Contracting Officer should be changed to the University. Also, requirements for tests, inspections, visits to the manufacturer's plant, etc. which are not normally required for Commonwealth Projects shall be deleted.

### **8.3.8 Restrictive Specifications and Performance Requirements**

**8.3.8.1** The A/E shall not require samples, Shop Drawings, or similar materials to be submitted for approval prior to receipt of Proposals/Bids. The Specifications must contain sufficient information to describe to the Offerors the performance and quality standards that will be used to evaluate the Submittals.

**8.3.8.2** Number of years of experience, or time in business, shall not be specified as a basis for award of Contract. This applies not only to Contractors, but also Suppliers of equipment.

**8.3.9 Equal materials, equipment or assemblies:** Any brand, make or manufacturer of a product, assembly or equipment which in the opinion of the A/E is the equal of that specified, considering quality, capabilities, workmanship, configuration, economy of operation, useful life, compatibility with design of the Work, and suitability for the intended purpose, will be accepted unless rejected by the University as not being equal.

**8.3.10 Substitute materials, equipment or assemblies:** The [Contract General Conditions](#) permit the Contractor to propose a substitute or alternate material, product, equipment, or assembly which deviates from the requirements of the Contract Documents, but which the Contractor deems will perform the same function and have equal capabilities, service life, economy of operations, and





suitability for the intended purpose. Examples of substitutes or alternates include proposing to substitute “precast concrete” for “cast-in-place concrete” floors or to substitute “precast concrete panels” for “masonry” walls. The Contractor’s proposal must include any cost differentials proposed. The University would have the A/E provide an initial evaluation of such proposed substitutes to include a recommendation on acceptability and indicate the A/E’s redesign fee to incorporate the substitution in the design. If the proposed substitute is acceptable to the University, a Change Order would be proposed to the Contractor to accept the substitute and to deduct the cost of the A/E redesign fee and the proposed cost savings from the Contractor’s Contract amount. The University will have the right to limit or reject substitutions at its sole discretion.

**8.3.11 Unit Prices:** Certain aspects of construction Projects, such as the depth to suitable foundation bearing for footings, piles or caissons, or the locations and amount of rock to be encountered and removed often must be estimated based on limited factual data. In such situations, to ensure fairness for the University, the Offerors, and the successful Contractor, estimated quantities are shown for unit pricing and determining the low Price/Bid. A statement is included on the Price/Bid Form stating that actual quantities will be measured for the listed Work and that the Contract Price will be adjusted upward or downward by Change Order to reflect the actual quantities involved times the Contractor’s unit price shown on the Price/Bid Form (unless such prices have been modified by the Contract). See [Standard HECO Bid Form Format](#).

Where unit prices are used to competitively Procure Work that may vary depending on actual conditions encountered, the following method shall be used:

- (1) The A/E shall provide on the Price/Bid Form the unit price schedule to include an estimated quantity of each Work task or material listed. The estimated quantities should be reasonably accurate based on the best available information and the designers experience and judgment.
- (2) The Offerors insert the unit prices for each and extend the estimated quantity times the unit price to yield a cost.
- (3) The extended costs will then be added to the Base Price/Bid for other Work to give a Total Base Price/Bid.
- (4) A statement shall be included on the Price/Bid Form stating that the payment for Work listed in the unit price schedule will be based on actual quantities of listed items required for completion of the Work.

#### **Example of Unit Price Method and Wording**

Base Price/Bids for Parts C, D, and E shall be based on the estimated quantities indicated to be provided complete and in accordance with the applicable portions of the Plans and Specifications. Payment amounts for each of these items will be based on the actual quantities authorized, provided and approved times the unit costs indicated by the Offeror. The final Contract amount shall be adjusted upward or downward based on the actual payment amounts versus the Proposal/Bid amounts for PARTS C, D, and E.



Part C. Excavation of Additional Unsuitable Material

Excavation of unsuitable material, where authorized or directed, below the levels required for the Work in Parts A and B and backfill with compacted material per Specifications. (price per cubic yard) (Final amount shall be adjusted upward or downward based on actual quantity authorized)

Estimated quantity of 150 cubic yards @ \$\_\_\_\_\_per cubic yard = \_\_\_\_\_  
(A/E fill in estimated quantity to be included in Proposal/Bid)

Part C = \_\_\_\_\_Dollars \$

Part D. Piling (Example for Timber Piling)

Timber piling provided complete in place in accordance with the Plans and Specifications (Priced per each pile at the indicated length):

40' Timber Piling 60 ea @ \$ ea = \$  
30' Timber Piling 20 ea @ \$ ea = \$

Part D = \_\_\_\_\_Dollars \$

Part E. - Caissons (Sample for Caisson Foundations) Cast-in-place concrete caissons complete in place in accordance with the Plans and Specifications (Priced per linear foot of caisson complete and accepted for each caisson diameter):

36 inch Diameter 250 linear feet @ \$ / linear feet =\$  
48 inch Diameter 175 linear feet @ \$ / linear feet =\$

Part E = \_\_\_\_\_Dollars \$

**8.3.12 Specifying New Types of Materials Equipment or Systems:** Projects for the University are not testing grounds for new type of materials or equipment; however, the fact that a material is newly developed does not preclude its use if documentation of independent laboratory tests clearly show that the material will meet the applicable requirements for the Project. The AVP & CFO must approve such utilization.

Unless the manufacturer of a new material furnishes factual data sufficient to evaluate the material, it should not be considered for use. If a new material is considered for use, a competitive-type Specification must be written to assure that a competitively priced, high-quality product will be obtained. The AVP & CFO may, where justified, authorize use of a new material, equipment or system for a particular Project on a trial basis for observation/evaluation.

**8.3.13 Phraseology:** Specifications must clearly indicate the requirements for the Project. Words or phrases that are vague or may be interpreted more than one way often lead to problems during procurement or construction and result in Change Order claims/requests. The following instructions are intended to reduce common errors and conflicts evolving from interpretations of the Specifications.



1. Under “Requirements”, do not say “the Work consists of ...”. Drawings should show the entire scope of the Work. If necessary to list certain parts, say “Generally, the Work includes...”
2. In lieu of reference to the accompanying Drawings, use the words “as shown”, “as indicated”, “as detailed” or “as approved by ...,” “as directed by .....,” “as permitted by.....”
3. There are two parties to the Construction Contract: (1) the University for whom the Work will be performed and (2) the Contractor who has the responsibility to the University for all Work in the Contract. Do not name which Subcontractor will do the Work (i.e., the plumbing Contractor, the Earthwork Contractor, etc.). The Contractor is responsible for determining the packages of Work for each subcontract. It is acceptable for certain specialty Work to be performed by persons qualified, certified or licensed (if appropriate) and experienced in this type of Work.
4. Do not use “etc.” This term is too indefinite for procurement and inspection purposes.
5. Minimize the use of cross-references and in no case use paragraph numbers for this purpose. If necessary to refer to a particular paragraph, do so by its section # and title (e.g. §03300, Cast-in-Place Concrete).
6. Do not set up a paragraph in the various sections entitled “Work not included.”
7. Describe the Work that is included under the respective sections.
8. Specifications should clearly delineate air conditioning ducts, heating ducts and piping systems that are required to be insulated. The phrase “insulating all ducts except in conditioned spaces” has resulted in differences of opinion and claim situations. All duct systems should be appropriately designated as supply, exhaust, outside air intake, transfer, relief, or return and further clarified by stating insulating requirements.
9. Do not confuse “any” and “all”; e.g., “Correct any defects” should read “correct all defects”
10. Do not confuse “either” or “both”; e.g., “Paint sheet metal on either side” should read “Paint sheet metal on both sides”. “Either” implies a choice.
11. Do not confuse “or” and “and”; e.g., “The equipment shall not have defects in workmanship and material.” The use of “and” in this sentence indicates both requirements must be met. e.g. “Additives that decrease strength or durability are not permitted.” The use of “or” implies either condition would disqualify the additive.
12. Do not use “and/or”. The courts have considered this phrase to be intentionally ambiguous and, therefore, claims are often rendered in favor of the Contractor.
13. Use statements that are definite and contain no ambiguous words and phrases.



1. “Remove” implies to take away from its current location. If “remove” is used, the A/E must also indicate whether to dispose of, salvage or re-install the material “removed”.
2. “Reinstall” implies put existing back in indicated place. If “reinstall” is used, the A/E must also indicate that the Contractor must carefully remove the item, properly store it, and then “reinstall” the item at the appropriate time.
3. “Replace” implies removal of old material and furnish and install new material. The preferred wording would be to “remove” ..... and “provide” .....
1. “Provide” is defined as “furnish and install”. When material or equipment is “furnished” by the University directly or under other Contracts for installation by the Contractor, the term, “install” should be used; however, the Contractor may be required to “provide” foundations, fastenings, etc., for the installation. If the word “install” is used alone, the Offeror has a right to assume, on the basis of the definition cited, that the University will “furnish” the materials in question.

**8.3.14 Specifications on Diskette or CD-ROM:** The University requires the A/E to provide one copy of the final completed Divisions 1 thru 16 Specifications including Addenda on diskette or CD- ROM in Microsoft Office Word (2003 or later). All Specifications shall be written in the current version of Microsoft Word.

**8.3.15<sup>149</sup> Hardware Specifications and Schedules:** Hardware Specifications and schedules may be written to specify the applicable Builders Hardware Manufacturer's Association (BHMA)/American National Standards Institute (ANSI) standards and designations or the Specifications and schedules may be written by specifying three manufacturers and model numbers for each item. In either case the Specifications must give sufficient information of the type, size, function, finish, etc., for the vendor to know what is required and for the A/E to evaluate the Submittals. For sample types of acceptable Hardware Specifications and Schedules, see the University Review Unit. See [University Facilities Design Guidelines](#) for proprietary hardware information.

## **SECTION 8.4<sup>150</sup> COST ESTIMATE STANDARDS**

Detailed descriptions and requirements for Cost Estimates are provided in [Appendix B](#). A detailed Cost Estimate consistent with the level of design is required from the A/E with each Submittal. A Building Cost Summary form shall be completed indicating the estimated cost of each system included in the Project. The system quantity, system unit cost and unit cost per building square foot shall be shown on the form. Backup estimating information, including quotes of estimated cost for major items of equipment or built-in systems, shall accompany the Building Cost Summary form. A

<sup>149</sup> History: April 29, 2009, substituted “University Review Unit” for “Manager of OCA” in the third sentence.

<sup>150</sup> History: Revision V, added requirement for Cost Estimate reconciliation with the University Benchmark Cost Metric.



required independent Cost Estimate will be provided by the University for the Preliminary Design. An independent Cost Estimate will also be provided for the Schematic Design Submittal if a VM review is to occur. The A/E and independent cost estimator shall endeavor to reconcile differences in the estimates. On large Projects, where construction cost versus budget is in doubt, the University may also obtain an independent Cost Estimate based on the final Plans and Specifications.

The University PM shall reconcile these Cost Estimates with the [University Benchmark Cost Metric](#) at eighty percent (80%) of the low to high range to ensure that estimate is not too low. Incorporate in the estimate consideration for the technical complexity of the building components and the availability of skilled labor related to concrete/foundation, site Work, masonry, and roofing.

### **SECTION 8.5<sup>151</sup> DESIGN INITIATION/PRE-DESIGN CONFERENCE**

The University shall arrange for a Pre-design Conference. Participants should include the University's Capital Outlay/Construction Representative, University PM, the University Review Unit, the Project Committee and the A/E's PM and responsible designer in each discipline (Architect, civil, structural, mechanical, electrical and others if needed). If the University determines that such a conference is not needed for the Project, the University shall notify the listed participants in writing, of the decision.

The purpose of the Pre-design Conference is to clarify to all parties involved the procedures, needs and requirements for the particular Project. Therefore, it may be beneficial to all for an A/E providing Services for the first time on University Work to have the Pre-design Conference before the fees and terms of the A/E Contract are finalized.

The following is a sample of topics that may be included in the Pre-design Conference agenda:

1. Introduction of Attendees
2. Role of University Review Unit
3. Authorized Communications
4. Design-not-to-exceed Construction Budget
5. Proposed Design Schedule
6. Requirements of HECOM related to the [Procurement Rules](#), Chapters [7-10](#) of HECOM and Fire Safety Reviews
7. Clarification/Resolution of Budget Development Comments
8. Submittal Contents
9. Review Requirements
10. Intent of Review Comments
11. Waivers and Code Modifications
12. Sole Source/Proprietary Specifications
13. Use of Standard HECO and CO Forms and Formats
14. Value Management (VM)
15. Methods of Procuring Construction
16. Other Regulatory Reviews
17. Design Approach

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<sup>151</sup> History: July 21, 2008, added the last sentence.



18. Project Scope to include:
- Functional layout requirements
  - Type of occupancy and activities to be housed
  - Capacity requirements of spaces and buildings
  - Exterior finish or appearance requirements
  - Interior finish requirements
  - Types of construction or materials required
  - Style and character of building desired
  - Special considerations such as expansion
  - Floor and Roof Live Load, Wind Load, and Seismic design Criteria
  - Special HVAC or environmental requirements and existing systems and requirements.
  - Fuel Analyses & Selection
  - Special electrical power or lighting requirements and existing systems and requirements.
  - Schedule requirements for design and for occupancy
  - Geotechnical data requirements
  - Site particulars and requirements -A/E's questions and clarifications

The Architectural Guidelines will be completed for [BOV](#) approval. (See [Appendix J](#))

Design scope changes must be approved by the University's AVP & CFO.

## **SECTION 8.6<sup>152</sup> SCHEMATIC DESIGN PHASE (PROJECT CRITERIA)**

**8.6.1 General Requirements:** A Schematic Design Submittal should be made to the University Review Unit for review (usually within 120 days after the effective date of the Acts of Assembly, also referred to as the Appropriations Act, containing the Project). The purpose of the Schematic Design Submittal is to further develop data, detail and scope including Schematic Plans, as well as verify the data and program contained in the Capital Project Request. The Project scope established by the Schematic Design, as agreed to by the University and the A/E, shall become a part of the A/E Contract as further definition of the scope described in the Capital Project Request Data.

The Schematic Submittal shall include an updated/current copy of the Assignable Room and Space Listing, which was the basis for development of the Schematic Design.

A Schematic Design "On Board" review meeting with the University Review Unit may be requested by the University, A/E, or University PM to assist in verifying the design and program approach, the systems proposed for the Project and to resolve issues raised by the review of the Schematic Submittal.

A Schematic Design presentation to the [AARB](#) and the University [BOV](#) is required. (See [Appendix J](#)) Reviews by [the University Arboretum and Landscape Committee](#), the University Project

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<sup>152</sup> History: July 21, 2008, in §8.6.4 inserted "total Project budget" for "total budget" in the first sentence and in §8.6.6 inserted "total Project" before "value" in the second sentence; Revision V, in §8.6.4, updated VE to the new University VM process.



Committee ([Architect for the University](#)) and the State Fire Marshal are also required. See the [University Facilities Design Guidelines](#) §GR.3.3. All review issues must be resolved before the A/E is authorized to proceed with the Preliminary Design.

**8.6.2 Basis of Design Narrative:** The Schematic Design shall include a Basis of Design Narrative which provides the following information: See [Appendix A](#) for Narrative requirements.

**8.6.3 Schematic Drawings:** The following Drawings shall be included as a minimum:

- Floor Plans consisting of single line Drawings of each floor layout showing space names, nominal room sizes, and circulation paths
- Roof plan
- Longitudinal building section with floor to floor and floor to ceiling dimensions
- Transverse building section
- Exterior elevation views
- Structural plan of a typical supported floor framing scheme and a typical section showing the proposed components of the floor system
- Orientation and approximate location of existing and proposed roads, walks, and parking, and utilities on a the site plan
- Any other information that would be of value to the University and the University Review Unit reviewing the Project.

**8.6.4 Projects Requiring VM:** Projects with a Project Budget of \$5M or greater, or those Projects otherwise deemed appropriate by the University, requiring VM review per [§8.14](#) shall also include:

- Mandatory submission of [§8.6.3](#) requirements
- Site Plan(s) showing existing and new utilities with existing grade contours (not less than 2-foot intervals), and related building floor elevations
- Basis of assumptions for existing soils and a soils report
- Atypical or specific structural systems proposed
- Floor plan, roof Plans, sections through the building(s) and exterior elevations at a scale not less than 1/16" = 1'-0"
- Information on major interior spaces sufficient to convey special or atypical features or building systems

**8.6.5 Verification of Existing Conditions:** The A/E shall visit the site and ascertain pertinent local conditions that must be addressed in the design.

**8.6.6 Cost Estimate:** See [Appendix B](#) for Schematic Cost Estimate requirements. For Projects with a Project Budget greater than \$5M the University PM shall present the Cost Estimate, the resulting budget with [University Benchmark Cost Metric](#) comparison, and VM results for review with the AVP & CFO.



## SECTION 8.7<sup>153</sup> PRELIMINARY DESIGN PHASE (DESIGN DEVELOPMENT)

**8.7.1 General Requirements:** Based on the previous approvals and direction, the A/E shall prepare the Preliminary Design consisting of Drawings, Narrative and other documents to fix and describe the size and character of the entire Project as to exterior appearance; foundation, structural, mechanical, and electrical system; materials; and such other essentials as may be appropriate. The A/E shall have visited the site and ascertained pertinent local conditions required to be addressed in the Submittal. If any change from the information submitted at the Schematic Design relating to the mix or amount of space occurs, submit new information in the format of an updated/current copy of the Assignable Room and Space Listing, which was the basis for development of the Preliminary Design.

**8.7.2 Preliminary Cost Estimate:** The A/E shall submit to the University an estimate of the construction cost of the proposed design without regard to available funds. The estimate shall relate only to the estimated Proposal/Bid amount for the construction shown and shall not include fees or unknown contingencies. The Cost Estimate summary shall include any built-in equipment, even if such equipment is procured separately. Any proposed Additive Price/Bid Items must be justified and indicated by a separately stated estimate amount. The Cost Estimate must indicate the derivation of the pricing for the estimate and shall, as a minimum, for an Architectural Project, include the data required by [Appendix B](#) (Cost Estimate). For Projects with a Project Budget greater than \$5M the University PM shall present the Cost Estimate, the resulting budget with [University Benchmark Cost Metric](#) comparison, and VM results for review with the AVP & CFO.

Utilities, site Work, civil and other special Projects such as boiler installation; a utility system; a road system; a water plant; a wastewater plant; a refrigeration or chiller installation; etc., must be estimated on a quantitative basis for the major components and a lump sum estimate for the remainder.

Preliminary Design submissions shall be deemed to be incomplete if the above are not included.

**8.7.3 Projects Requiring VM:** Projects with a Project Budget of \$5M or greater, or those Projects otherwise deemed appropriate by the University, require VM review per [§8.14](#).

**8.7.4 Review Process:** The A/E shall prepare and submit to the University Review Unit, in quantities specified, black line or blue line prints of all Drawings together with copies of Cost Estimates, Narrative, reports and other data as set forth below. After the University Review Unit reviews the Submittal, one set of review comments and marked copies of the documents will be provided to the A/E by the University PM for response and resolution.

Unless otherwise relieved at the Schematic Design presentations, a Preliminary Design presentation to the State [AARB](#) and the University [BOV](#) is required. (See [Appendix J](#)) Reviews by the University Project Committee ([Architect for the University](#)), the [University Arboretum and Landscape](#)

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<sup>153</sup> History: July 21, 2008, in §8.7.2 inserted “total Project” before “value” in the last sentence and in §8.7.3 inserted “total Project budget” for “total budget” in the first sentence.





[Committee](#) and the State Fire Marshal are also required. See the [University Facilities Design Guidelines](#) §GR.3.3 which includes the following Commonwealth of Virginia reviews:

1. [Erosion and Sediment Control Board](#)
2. Storm Water Management
3. [Division of Historic Landmarks](#)
4. [Department of Health](#)
5. [State Water Control Board](#)
6. [Department of Air Pollution Control](#)
7. [Department of Waste Management](#)

The Submittal documents along with the review comments and the agreed upon resolutions of the comments shall be the basis of the approval for the A/E to prepare the Construction Documents. The A/E shall not proceed with the development of the Construction Documents until all issues in the reviews are agreed upon.

**8.7.5 Preliminary Submittal Requirements:** The following information and data shall be the minimum acceptable requirements for a Capital Project:

1. Basis of Design Narrative describing the Project scope, the functional and operational criteria to be met, the justification for the decisions or choices made, and any proposed deviations from the standards required by HECOM. See [Appendix A](#).
2. Cost estimate per §§[8.4](#) and [8.7.2](#).
3. Soils report to include boring logs, geotechnical analysis and foundation design recommendations.
4. Preliminary Design Drawings as described hereafter.

Preliminary Design Submittals shall include ventilation design criteria and sufficient data to show compliance with Code requirements and standards of good practice.

**8.7.6 General Requirements for Preliminary Design Drawings:** Preliminary Design Drawings shall show the following information unless such information is not applicable to the Project:

**Title Sheet(s)**

- Project Identification: Agency #, Project Code #, Appropriation Act #, and University PIMS (or Work Order) #.
- Location and vicinity maps.
- Tabulation of floor areas (new and renovated), total area, volume.
- Tabulation of units: Number of parking spaces, auditorium seats, bedrooms, etc.
- Listing of applicable Codes with dates.
- Building Purpose/Occupancy.
- Use Group(s) per [VUSBC](#).



- [VUSBC](#) Construction Type.
- Occupancy Load(s) per [VUSBC](#).
- Index of Drawings.

**Site Plans** (Site/improvement plan & composite utility plan minimum for new construction and additions; should be based on approved comprehensive Master Plan.)

- Scale and north arrow.
- New and existing contours affected by the new Work.
- Floor and contour elevations.
- Applicable boundaries with survey computations.
- Dimensioned relationship location of major components of the new Work with respect to boundaries and existing structures.
- Location of test borings.
- General parking and handicap parking.
- Handicapped-accessible routes.
- Pedestrian traffic routes.
- Demolitions: structures, walks, utilities, trees, etc.
- Proposed landscaping (planting materials).
- Existing and new utilities: storm sewers, sanitary sewers, water supply, gas, steam distribution pipes and tunnels, electric and telephone poles and lines, hydrant locations and data on fire flow test.
- Site improvements such as fencing, lighting, etc.
- Typical paving section for proposed types/thicknesses.
- Identify/show special Earthwork recommended and construction considerations noted in soils report.
- Archaeology Features.

### **Demolition Drawings**

#### **For interior demolition**

- provide information on Work to be removed;
- note results of asbestos survey; and
- note results of lead based paint survey.

#### **For total building demolition**

- provide a floor plan showing building size;
- describe existing material /construction to be removed;
- show an elevation (drawn or photographic) of building;
- note results of asbestos survey; and
- note results of lead based paint survey.

### **Architectural Drawings**

#### **Floor Plans (for each floor)**

- Plans of each floor at 1/8" = 1'-0" preferred (1/16" = 1'-0" must be justified and have written approval of University Review Unit).



- Overall dimensions.
- Space names and numbers assigned by the University Department of Space and Real Estate Management, and number of occupants of all spaces.
- If the Work is an addition, show the relationship of new to existing spaces.
- Distinguish new from existing construction.
- Show demolition on the architectural Plans or separate Plans.
- Indicate asbestos locations regardless of who removes it or how it is removed.
- Indicate all openings, entrances, delivery areas.
- Indicate handicap access and Areas of Rescue Assistance.
- Show scale and north arrow.

### **Roof Plan**

- All proposed and existing drains.
- Roof slope: 1/4" per 1'-0" to drain minimum for all areas (unless waived for reroofing) including auxiliary drains.
- Indicate slope (high to low) with direction arrows
- All new and existing equipment.
- All significant roof penetrations and structures.
- Identification of materials on existing roofs.
- Typical roofing section identifying materials.
- Access to roof.

### **Exterior Elevations** (Scale 1/16" = 1'-0" minimum)

- All openings: windows (including operable notation), doors, louvers, and vents.
- Percentage of glass vs. gross wall area.
- Floor elevations (above sea level).
- Identification of all major finishes.
- All stairs, ramps, and railings.
- Rooftop equipment and structures.
- Expansion and control joints.
- Grade at the face of the building wall.
- Subsurface construction (dotted in).
- Existing and new Work clearly distinguished.

### **Small Scale Sections** (Scale: 1/16" = 1'-0" minimum)

- One longitudinal and one transverse section minimum.
- Show all floor levels on sections.
- Indicate ceilings in proper relation to floors.
- Method and extent of insulating exterior envelope.

### **Detail Sections** (Scale: 3/4" = 1'-0" minimum)

- One section for each type of wall construction.
- Identify all major materials and components.
- Identify insulation and note R-value.

### **Finish Schedule**



- May be included in the Basis of Design Narrative or on drawing. Indicate proposed finishes for all spaces. Note those existing finishes to remain.
- Give ceiling heights of interior spaces.

### **Furnishing/Equipment Plans**

- Show all major equipment to approximate scale.
- Show all built-in furnishings to scale.
- Show on these Plans or on separate furniture information Plans, furniture/furnishings outlines that the space was designed to accommodate.

### **Structural Drawings**

- Show Live Loads, Wind Loads, and Seismic Criteria used for structural design.
- Show design bearing/support capacity (soil bearing, pile capacity, caisson capacity) for foundation system geo-tech design criteria for shallow and deep foundations and earth structures.
- Foundation Plan indicating type & tentative sizes.
- Foundation details and improved improvements to bearing strata and other special requirements.
- Floor and roof Framing Plans of each level indicating type of system and tentative member sizes/depths and column spacing with defined grid lines.
- Typical Section(s) of framing identifying materials, tentative member sizes, thicknesses and, depths proposed.
- Typical Section of floor system.
- Indicate structural construction materials and properties.
- Details of connections to existing buildings, if applicable.
- Identify elements of proposed lateral force resisting system.

### **Fire Protection (FP) Information & Sprinkler Plans**

Provide plan of each level showing the following:

- Fire protection information\* including:
- Height and area calculations in accord with [VUSBC](#).
- Total building perimeter (linear feet).
- Location of all 30' wide open perimeter spaces served from a street by a minimum 18' wide posted fire lane (must be shown on a drawing).
- Tabulation of area for each building level, story, or floor indicating number of occupants accommodated by each. If the Project is an addition, list new and existing areas and occupancies.
- Water flow test data required by NFPA 13.
- Required or intended fire protection systems, fire detection and alarm systems, fire pump systems, smoke control systems per Chapter 7.
- Define each Use Group area and show its [VUSBC](#) Use Group classification (A-1, A-2, etc.).
- Identify and show rating of all rated assemblies, smoke barriers.
- Indicate use(s) of all building spaces (offices, auditoriums, etc.) or reference Drawings where complete information may be found.



- Show the room/space # and the maximum number of occupants per [VUSBC](#) for each space.
- Distinguish new walls from existing walls and new construction from existing construction. Completely show routes of all fire walls, fire separation walls (including exit access corridor walls), and smoke partitions.
- Identify the extent of all fire rated floor/ceiling and roof/ceiling assemblies.
- Identify each type of automatic fire suppression system and where it is or is not used.
- Identify occupancy hazard classifications and densities as explained in NFPA 13.
- Show proposed sprinkler piping layout including main sprinkler lines and a typical layout of branch lines. (See 1994 NFPA 13, Figure A-6-1 for sample format.)
- Show and identify all new and existing standpipes.
- Provide a small-scale drawing showing locations of water hydrants, test and low hydrants (for water flow tests), and routing of underground pipe; or, alternatively, state the drawing # where the information may be found on other Drawings. Conduct the test in conformance with NFPA 13, 14, and 291 and provide the required documentation of test results. (See NFPA 14 Appendix for additional guidance.) Two locations are required for these tests of water supplies. Use an approved gauge to read the 'test' or 'residual' pressures at the hydrant nearest the building and a 'Pitot' tube or gauge at the next closest hydrant to measure the 'flow'. If the local water authority prohibits flow testing, indicate on the documents the flow and pressure data provided by the authority and note as such.
- Note: Reduced pressure backflow prevention devices (RPBPD) shall be permitted as follows - On the discharge side of Fire Pumps in accord with NFPA 20 For systems without fire pumps, provide a check valve on the building (system) side of the RPBPD or provide a double check valve assembly.
- \* Asterisked information, except as noted, may be included in Basis of Design Narrative.

### **Plumbing Drawings**

- Plans of each floor noting fixture locations and types. Indicate routing of main distribution lines with tentative sizes.
- Show general or schematic arrangement of all piping systems.
- Show location of water, sanitary sewer, storm sewer and sprinkler Services to the building.
- Show tentative fixture schedule.
- Show location, sizes and types of Hot Water Heaters/ Heat Exchangers, Storage Tanks, and flues if required.
- Show gas piping layout and connected load, if applicable.

### **Mechanical (HVAC) Drawings**



- Plans of each floor showing single line duct layouts, tentative air (supply, return, & exhaust) quantities, equipment locations, and layouts and general routing of heating/cooling piping.
- Show equipment schedules with tentative sizes, capacities, ID #, features, etc.
- Indicate locations and sizes of fans, pumps, compressors, conveyors, etc.
- Schematic layout and elevation of equipment room and central system showing configuration, tie-ins, etc. as necessary to describe system. -Central heating or cooling plants, distribution piping, equipment. -Preliminary control diagrams.



### **Electrical Drawings**

Power and lighting Plans may be combined if product clearly conveys required information. (See [Appendix A](#) for additional Preliminary Design Submittal requirements.)

- Lighting Plans for each floor showing approximate fixture locations, type, and lighting level required (design level in foot-candles).
- Power distribution Plans showing location of incoming service (transformers and primary switches), generators, main switchgear, motor control centers and panel boards.
- Show interface points, service entrances, main control panels and backboards for communications, fire alarm, EMCS and other pertinent systems. Plans for each floor showing proposed locations of receptacles, telephone and data outlets, switches, fire alarm and other devices.

## **SECTION 8.8 CONSTRUCTION DOCUMENTS PHASE (WORKING DRAWINGS)**

**8.8.1<sup>154</sup> General Requirements:** The A/E shall visit the site as necessary to ascertain pertinent local and site conditions. Based on the Preliminary Design (Design Development Documents) submission documents including the review and the VM comments and resolution thereof, the A/E shall prepare the Working Drawings and Specifications. The Construction Documents shall set forth in detail the requirements for the construction of the entire Project and include the applicable procurement information. The A/E shall assist in the preparation of the procurement forms, the Special Conditions of the Contract, and the Contract Between Owner and Contractor, [HECO-9](#). All Drawings shall bear the seal, signature and date of the Architect or Engineer responsible for that discipline. The Specification Cover Sheet shall bear the seal, signature, and date of the Architect and all Engineers.

Specifications and Drawings for any type of built-in equipment must be submitted with the Construction Documents for the building, whether or not such equipment is to be procured under another Contract, in order that such Work can be coordinated and procured at the same time.

If any change from the information submitted at the Preliminary Design stage relating to the mix or amount of space for institutions of higher education is made, the University PM and A/E shall submit new information in accordance with the format shown on the sample form entitled Project Space Profile (See Space & Real Estate Manager).

The A/E shall include on the Working Drawings and in the Specifications all necessary information to describe the components for the fire-resistive rated construction assemblies and fire protection systems needed to provide the necessary fire integrity of the structure for compliance with all applicable governing Codes.

Reviews by the Project Committee ([Architect for the University](#)), and University Review Unit are required.

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<sup>154</sup> History: April 29, 2009, in the third paragraph, changed the “see” at the end from “Manager of OCA” to “Space and Real Estate Manager.”



**8.8.2 Plans, Sections and Details of Equipment or Systems:** The Drawings shall have sufficient Plans, sections and details to generally indicate the intended equipment or system configuration in the space. Recognizing that it is often necessary to use some piece of equipment as a basis for designing, dimensioning and detailing, the Drawings (but not the Specifications) may be noted to indicate that the A/E has designed or detailed around a particular brand of equipment. In doing so, the A/E shall ensure that there is adequate space, capacity, etc., available to accommodate the other brands indicated in the Specifications. See §[8.3.5](#) for requirements concerning the use of brand names and models.

**8.8.3<sup>155</sup> Cost Estimate:** The A/E shall submit a detailed Cost Estimate in conformance with the requirements of [Appendix B](#) - Cost Estimate, and advise the University of any adjustments to previous statements of estimated construction cost. The A/E shall submit a signed Building Cost Summary Sheet with the estimated cost of Work covered by the Working Drawings and Specifications and square footage of the proposed building data completed. If this data varies significantly from that shown on the Preliminary Cost Estimate, the A/E will attach an explanation to the Working Drawing Cost Estimate. For Projects with a Project Budget greater than \$5M, the University may have an independent Cost Estimate made using copies of the Working Drawings and Specifications. This may be beneficial in determining if the Project is likely to be within budget and in determining sufficient clarity and detail of the documents for procurement. For Projects with a Project Budget greater than \$5M the University PM shall present the Cost Estimate and the resulting budget with [University Benchmark Cost Metric](#) comparison for review with the AVP & CFO.

**8.8.4 Permits and Utilities:** The A/E shall assist the University in filing the required documents for approval of governmental authorities having jurisdiction over the Project. If the Contractor will be required to interface with, coordinate with, or obtain inspection or approvals from any local authority or utility, the requirements and the name and address of such entity shall be shown in the documents.

**8.8.5 Calculations:** Calculations must be organized, indexed, numbered and submitted for each discipline involved. Design calculations should indicate assumptions, considerations and factors involved in the design and support the design shown on the Plans and Specifications. Provide one copy of the completed design calculations of each discipline to the University Review Unit with the Contract Document submission.

**8.8.6 Submittal Documents:** Construction Documents shall be complete, coordinated, checked, and ready for approval to advertise. Construction Documents shall bear a uniform date as described in HECOM. Architectural and Engineering details shall be included on the Drawings with cross-references on both the plan and the detail sheets designating specifically the location to which the particular detail applies. Do not include details that do not apply to the particular Project.

**8.8.7<sup>156</sup> Working Drawings:** Shall show or provide the following information (in addition to items required for the Preliminary Design submission):

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<sup>155</sup> History: July 21, 2008, inserted “total Project” before “value” in the fourth and sixth sentences; Revision V, clarified requirement for an independent University Cost Estimate for all Projects over \$5M.

<sup>156</sup> History: April 29, 2009, under Site Plans and Fire Protection (FP) Information Plans, added the last requirement





### **Title Sheet(s)**

- Project Identification: Agency #, Appropriation Act #, Project Code #, University PIMS (or Work Order) #.
- Location and vicinity maps noted to show Project location.
- Tabulation of floor areas (new and renovated), total area, volume.
- Tabulation of units: Number of parking spaces, auditorium seats, bedrooms etc.
- Listing of applicable Codes with dates.
- Building Purpose/Occupancy.
- Use Group(s) per [VUSBC](#).
- Type of construction and [VUSBC](#) Type #.
- Occupancy Load(s) per [VUSBC](#).
- Design Floor Live Loads.
- Index of Drawings.

### **Site Plans** (site/improvement plan & composite utility plan minimum requirements for new construction and additions)

- Based on approved comprehensive Master Plan.
- Scale and north arrow.
- Existing and new contours affected by the proposed Work.
- Floor and pavement elevations.
- Applicable boundaries with survey computations.
- Dimensioned relationship of new Work to boundaries and existing structures.
- Location of test borings.
- General parking and handicap parking.
- Handicap accessible routes.
- Pedestrian traffic routes.
- Demolitions: structures, walks, utilities, trees, etc.
- Proposed landscaping (planting materials).
- Existing and new utilities: storm sewers, sanitary sewers, water supply, gas, steam distribution pipes and tunnels, electric and telephone poles and lines, and hydrant locations with data on fire flow test.
- Profile of all utilities and any roads over 100 feet in length.
- Site improvements such as fencing, lighting, etc.
- Typical paving section of each type and thickness required.
- Identify/show special Earthwork recommended and construction considerations noted in soils report.
- Archaeology features.
- Location of shut off valves for all major utilities affected by construction.

### **Demolition Drawings**

#### **For total building demolition, provide:**

- Plan of building with length & width dimensions,
- Elevations (drawn or photographic) and cross section of building to be demolished,
- Details of termination of demolition, underpinning, etc.



**For interior/selective demolition, provide:**

- Floor Plans showing existing partition, etc., and showing or describing existing material /construction to be removed.
- Information or estimates for procurement for Work to be removed.

**Architectural Drawings**

**Floor Plans (for each floor)**

- Plans of each floor at a minimum 1/8" = 1'-0" preferred (but not less than 1/16" = 1'-0" with approval of University Review Unit).
- Show room/space numbers assigned by the University Department of Space and Real Estate Management.
- Overall dimensions.
- If the Work is an addition, show the relationship of new to existing spaces.
- Distinguish new from existing construction.
- Show demolition on the architectural Plans or separate Plans.
- Indicate asbestos locations regardless of who removes it or how it is removed.
- Indicate all openings, entrances, delivery areas.
- Indicate handicap access.
- Show scale and north arrow.

**Reflected Ceiling Plans**

- Ceiling tile/grid layout.
- Light fixture locations.
- Sprinkler head locations.
- HVAC diffuser and grille locations.
- Coffers, drop soffits, changes in height or materials.
- Space numbers.
- Speakers and smoke detectors.

**Roof Plan**

- Plan(s) of each roof at a minimum 1/8"=1'-0" preferred (but not less than 1/16" = 1'-0" with approval of University Review Unit).
- All proposed and existing drains, including auxiliary drains.
- Roof slope: 1/4" per 1'-0" to drains minimum (unless waived for re-roofing).
- All new and existing equipment.
- All significant roof penetrations and structures.
- Identification of materials on existing roofs.
- Typical roofing section identifying materials.
- Access to roof.
- Indicate direction of slope (high to low) with arrows.

**Exterior Elevations**

- Scale (1/16" = 1'-0" minimum).
- All openings: windows, doors, louvers, vents.
- Percentage of glass vs. gross wall area.
- Floor elevations (above sea level) coordinated with Site Plan elevations.



- Identification of all major finishes.
- All stairs, ramps, and railings.
- Rooftop equipment and structures.
- Expansion and control joints.
- Grade at the face of the building wall.
- Subsurface construction (dotted in).
- Existing and new Work clearly distinguished.

**Building Cross Sections** (Scale: 1/16"=1'-0"minimum)

- One longitudinal and one transverse section minimum.
- Show all floor levels/elevations on sections.
- Indicate ceilings in proper relation to floors.
- Method and extent of insulating exterior envelope.

**Detail Sections** (Scale: 3/4" = 1'-0" minimum)

- One section minimum for each type of wall construction.
- Identify all major materials and components.
- Identify insulation and note R value.
- One section with dimensions and details for each stair configuration.

**Details**

- Typical window, door and special opening details shall be drawn at a minimum 1-1/2" = 1'-0" scale.
- Interior and exterior details, including special doors, windows, woodwork and other decorative Work.
- Toilet Plans and elevations shall be drawn at a minimum 1/4"=1'-0" scale.

**Finish Schedule**

- Indicate proposed finishes for all spaces. Note those existing finishes to remain.
- Give ceiling heights of interior spaces.
- Show (or specify) all finishes, textures, colors, etc., required to be provided by the Contractor.
- Use University assigned room numbers to be determined following approval of Preliminary Design submission.

**Door Schedule**

- Doors numbered to University standards, type, size, material, hardware set # and fire rating if required.

**Window Schedule**

- Type, size, material and lintel requirements.
- Elevations of each window type.

**Furnishing/Equipment Plans**

- Show outline of all major equipment to approximate scale.
- Show outline of all built-in furnishings to scale.



- Provide elevations, sections and details as necessary to describe built-in equipment, casework and furnishings included in the Work of this Contractor.

### **Structural Drawings**

- Unless indicated otherwise below, the structural Drawings shall provide complete details of all structural components so that no additional structural design will be required for the preparation of Shop Drawings except for standard connection details and fabrication calculations.
- Show design live loads, wind loads, and seismic criteria used for design of structural systems per §1603 of the International Building Code.
- Design procurement criteria and typical details for engineered systems such as Cast-In-Place Post-Tensioned Concrete, Precast Concrete Components, Steel Joists and Joist Girders, Pre-engineered Metal Structures, and Shop/Prefabricated Wood Components described in Chapter 9 may be required to be provided by the Contractor. In this case, the structural Drawings shall include complete loading information as well as all other performance or size constraints for the components.
- Structural Drawings shall include Plans, with defined gridlines, at the same scale as the architectural Plans. Details and sections shall be at a scale of not less than 3/4" to 1'.
- The Plans, details and Specifications shall completely define the structural system and any special conditions for the Project.
- Foundation Plan indicating type & sizes.
- Foundation details with improvement criteria for bearing strata and other special requirements.
- Floor Framing Plans of each level indicating type of system, and member sizes/depths and column spacing and all penetrations.
- Roof Framing Plan.
- Typical Section(s) of floor and roof systems identifying materials, thicknesses, depths. Provide appropriate details to define structure.
- Details of connections to existing buildings, if applicable.
- Underpinning and temporary support of existing structures shall be designed to extent possible with available information. Design criteria and load information to be provided for completing the design by the Contractor for review by the A/E.
- Typical details for openings in floors and walls with limitations clearly noted.

### **Fire Protection (FP) Information Plans**

Provide plan of each level showing the following:

- Define each Use Group area and show its [VUSBC](#) Use Group classification (A-1, A-2, etc.).
- Identify and show rating of all rated assemblies, smoke barriers.
- Indicate use(s) of all building spaces (offices, auditoriums, etc.) or reference Drawings where complete information may be found.
- Show the [VUSBC](#) number of occupants to be accommodated in each space. (This number should be the same as the posted maximum for the space.)
- Distinguish new walls from existing walls and new construction from existing construction. Completely show routes of all fire walls, fire separation walls (including exit access corridor walls), and smoke partitions.



- Identify the extent of all fire-rated floor/ceiling and roof/ceiling assemblies.
- With reference symbols, identify each new and existing, if known or available, fire resistance rated Structure Element and change in element design (including wall, floor, ceiling, and other vertical or horizontal elements).
- Identify each type of automatic fire suppression system and where it is or is not used.
- Identify occupancy hazard classifications and densities as explained in NFPA 13.
- Show and identify all new and existing standpipes.
- Show locations of all portable fire extinguisher cabinets.
- Provide a small-scale drawing showing locations of water hydrants, test and flow hydrants (for water flow tests), and routing of underground pipe; or, alternatively, state the drawing # where the information may be found on other Drawings.
- Location of shut off valves for all major utilities affected by construction.

**8.8.8<sup>157</sup> Fire Protection Design Supporting Material:** Provide the following information, calculations, and data on separate sheets or on the Fire Protection (FP) Drawings to support the information shown on the FP Plans:

- (1) Provide height and area calculations in accord with [VUSBC](#).
- (2) Show the total building perimeter (linear feet).
- (3) State whether the building has a 30' wide open perimeter served from a street by a minimum 18' wide posted fire lane and on what drawing the perimeter and lane may be found.
- (4) Tabulate area of each building level, story, or floor and indicate the number of occupants accommodated by each. If the Project is an addition, list new and existing areas and occupancies:
- (5) Tabulate the fire separation structure elements (and element changes) identified on FP Plans, the fire resistance rating of each, the design reference numbers of approved testing laboratories, and the sheets where the designs are detailed:  

Element.....Rating.....Design	No.....Detail
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- (6) Provide complete water flow test data required by NFPA 13.
- (7) Required or intended fire protection systems, fire detection and alarm systems, fire pump systems, smoke control systems per [Chapter 7](#).

**Sprinkler System Drawings**

- Show proposed sprinkler and standpipe piping layout including main sprinkler lines and layout of branch lines. Call out sizes of all pipe 2” and larger. (See 1994 NFPA 13, Figure A-6-1.1 for sample of Working Drawing equivalent.)

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<sup>157</sup> History: April 29, 2009, added the last requirement under Sprinkler System Drawings and Plumbing Drawings.



- Dimensionally locate pipe centerlines horizontally and vertically for risers, for mains and branch lines where location is critical to interface with other Work.
- Provide Sections to scale of congested areas showing all pipes, ductwork, conduit, fixtures, structure, etc. in their respective sizes and locations
- Indicate relative location of sprinkler piping on other discipline's sections.
- Provide sprinkler riser diagram with appropriate fittings, accessories, sizes, alarms, valves, etc., noted.
- Show static & residual pressure and water flow used for design.
- Show sprinkler head type and temperature rating
- Indicate type and locations of required anchors or braces.
- Show and identify all new and existing standpipes.
- Provide a small-scale drawing showing locations of water hydrants, test and flow hydrants (for water flow tests), and routing of underground pipe; or, alternatively, state the drawing # where the information may be found on other Drawings.
- Location of shut off valves for all major utilities affected by construction.

### **Plumbing Drawings**

- For renovation Projects, provide (here or on cross-referenced demolition Plans) Plans showing demolition in sufficient detail that the Work may be procured from the Drawings.
- Plans of each floor noting fixture (including laboratory and compressed air outlet) locations and types of each.
- Plumbing fixture schedules showing designations, connection sizes, and mounting heights of handicapped fixtures. (Note that flush valve handles shall be located on the wide side of the handicapped enclosure.)
- Plans showing layouts and sizes of sanitary DWV piping, cold condensate drainage systems, floor drains, acid waste systems, neutralizing tanks, etc.
- Plans showing roof drains and areas served by each in square feet, piping and sizes. Show downspout boots and connections to foundation drains.
- Plans showing domestic hot and cold water systems, including piping sizes, domestic water heaters with expansion and storage tanks, backflow preventers, water hammer arrestors, water meters, relief devices, and valves including pressure reducing, isolation and balancing.
- Plans showing layouts and sizes of compressed air piping, air compressors, air dryers, drains, etc.
- Plans showing deionized water systems.
- Riser diagrams for sanitary drain, waste and vent; domestic hot and cold water; deionized water; and compressed air where the system is extensive. Risers shall be designated and keyed to the Plans. Show room numbers where the outlets/inlets occur, and show drain fixture units at the base of each riser. Show sizes of water hammer arrestors.
- Details of hookups at water heaters, air compressors, etc., and roof drain installation.
- Schedules of water heaters, air compressors, air dryers, and drains.
- Location of shut off valves for all major utilities affected by construction.



### **Mechanical (HVAC) Drawings**

- For renovation Projects, show demolition in sufficient detail that it may be procured from the Drawings.
- Plans of each floor and roof showing double line-duct layouts, mechanical equipment location and layouts. Plans shall show ceiling-mounted lighting fixtures.
- Plans of each floor showing chilled water, heating hot water, steam and condensate piping and piping sizes. Show provisions for expansion. (This may be shown on ductwork Plans where congestion is not a problem.)
- Provide layouts of mechanical equipment and fan rooms to a scale not less than twice that of the floor Plans. Show equipment, ducts, piping, etc. to coordinate the installation in tight areas. Show access and service space requirements such as that required for tube, coil, and fan removal.
- Provide schedules for all mechanical equipment, steam traps, air devices, etc. showing sizes, capacities, HP, CFM, electrical characteristics, locations, features, etc.
- Provide Drawings showing control schematics, automation points, etc.
- Provide schematic diagrams of chilled and heating water, steam, and condensate piping.
- Central heating and cooling plants, distribution piping, equipment, anchors, expansion joints, etc. shall be shown as necessary to clearly describe the Work.
- Provide sections as required to clearly show the Work in 3 dimensions.
- Show the building loads (in BTU or pounds of steam per hour) to include transmission plus infiltration, outside air, domestic hot water, and kitchen, laundry and hospital hot water and outside air loads that are supplemental to those mentioned where applicable.
- Indicate the sensible and total air conditioning load of the building in tons. Also show the outside air portion of the cooling load in tons.
- Provide details as necessary to show fittings for ducts.

### **Electrical Drawings**

(Power and lighting Plans may be combined if the combined Drawing clearly conveys required information.)

- In renovation Work or existing buildings, show existing electrical equipment, devices and lighting fixtures, etc., both to be removed and to remain. Provide sufficient detail so that Work may be procured from the Drawings.
- Plans shall show all casework, furniture, mechanical equipment and other equipment that impacts the electrical design.
- Plans shall list, in kVA, the total electrical load and the total load on any generators. Indicate the largest motor size, in horsepower.

### **Lighting Plans**

- Lighting Plans for each floor showing fixture location, type, and lighting level (calculated, in foot-candles).



- Provide Lighting Fixture schedule on the Drawings. Schedule to include the following, at a minimum: fixture type, lamp and ballast information, reflector, lens and louver information, mounting method.

### **Power Plans**

- Power distribution Plans showing location of incoming service (transformers and primary switches), generators, main switchgear, motor control centers, and panel boards.
- Service entrances, main control panels, and backboards for communications, fire alarm, EMCS and other pertinent systems.
- Plans for each floor showing locations, and mounting heights, of receptacles, telephone and data outlets, switches, disconnect switches, motor starters and other devices.

### **Fire Alarm**

- On electrical power floor Plans, show location of control panel, battery and charger, transmitter, annunciator, fusible safety switch, remote trouble device, alarm devices, and each actuation device including fire extinguishing system switches.
- One electrical site plan, show location of any PIV valves or other devices to be connected to the fire alarm system.
- Show single line fire alarm riser diagram.

### **Site Plan**

- Electrical site plan showing: electrical and telephone/data/CATV Services, both new and existing; new and existing site lighting and their associated circuitry; location of transformers, primary switches, generators; circuitry to chillers, cooling towers, etc.
- Details of duct banks, equipment pads, manholes, lighting pole bases

### **Schedules, Risers, etc.**

- Provide control diagrams, panel board schedules, motor control center schedules, distribution panel and main switchgear schedules, and riser diagrams for power, telephone, security and other systems.
- Sizes of all over current protective devices, relays, CTs, PTs, starters and disconnects.

### **Control Systems**

- Provide a written sequence of operation for each mechanical and electrical control system stating explicitly how systems are to function.
- Give all pertinent data regarding safety, alarms, indicators, and control parameters.
- The sequence of operations may be shown on the control diagrams in lieu of in the Specification.
- Provide control system diagrams.
- Indicate point(s) of connection of new to existing system.
- Indicate or describe location of operator interface (PC) unit.





**8.8.9 Rock Excavation:** See §[7C.3](#) for requirements. Provide estimated quantities of rock excavation on the Price/Bid Form.

**8.8.10** With this submission, the A/E shall furnish the University with an estimate of the time for constructing the Project and include such in the appropriate paragraph of the Price/Bid Form.

## **SECTION 8.9 PRICE/BID FORMS AND PROCEDURES**

**8.9.1 Instruction to Bidders:** See §§[8.3.4](#) and [10.2.1](#).

**8.9.2 Unit Price Proposals/Bids:** See §[8.3.11](#).

**8.9.3 Price/Bid Form Preparation:** See §[10.2.4](#).

**8.9.4 Prequalification of Contractors or Subcontractors:** Prequalification criteria, procedures, and appeal process requirements are shown in [Chapter 11](#).

**8.9.5 Advertising:** The University shall notify the A/E in writing when Final Construction Documents have been approved. See §[10.2.6](#) for advertising requirements.

## **SECTION 8.10 ADDITIVE PRICE/BID ITEMS**

The A/E is responsible for the development and design of the Project to meet the scope and to be within the Design-not-to-exceed Construction Budget identified in the A/E Contract. The Work included in the Total Base Price/Bid shall provide a complete and functional facility meeting all Code, accessibility, and safety requirements.

When the Project Cost Estimate indicates that the Total Base Price/Bid for the Project scope may not be within the available funds, the University and A/E should consider what features would be negotiated out if Prices/Bids are over budget and include that Work as Additive Price/Bid Items for cost or budget control. After the University and A/E have incorporated reasonable cost containment measures in the design, Additive Price/Bid Items may, with the approval of the AVP & CFO, be used for budget control subject to the following limitations: (These limitations are not applicable to competitive negotiation procurements.)

1. When Additive Price/Bid Items are approved for use, a maximum of four (4) Additive Price/Bid Items may be included. Such Additive Price/Bid Items are not intended to be a pricing exercise for the Offerors.
2. Additive Price/Bid Items shall be structured to minimize additional effort needed to prepare the Proposal/Bid.
3. Additive Price/Bid Items shall not be used to provide essential elements of the Project, such as connection to water supply, required lighting levels, or adequate HVAC capacity, or Work without which the building would not be habitable, functional or safe.



4. The Work/Design as described in the Base Price/Bid shall be of the level of quality required for the Project. Additive Price/Bid Items shall not be used as a shopping list to upgrade, substitute for, or delete for credit any part of the Work included in the Base Price/Bid.
5. Only the term Additive Price/Bid Item shall be used. Use of the term Alternate is not permitted.
6. The Work included in each Additive Price/Bid Item shall produce a complete component that may be incorporated into the Work in the Base Price/Bid.
7. Each Additive Price/Bid Item shall be independent of other Additive Price/Bid Items.
8. None of the Additive Price/Bid Items shall compromise the Work in the Base Price/Bid and other Additive Price/Bid Items for compliance with Code, accessibility or safety requirements.
9. Additive Price/Bid Items shall be listed so the most essential Additive is first, and so on.
10. When Project Bids are received and opened, the low Bidder shall be determined based on the lowest cumulative Bid for the Total Base Bid plus the total amount of the Additive Bid Items, taken in sequence as the University in its sole discretion decides to accept/award. When Project Proposal Prices are evaluated, the selected firm shall be determined in accordance with the criteria in the RFP.
11. Negotiations of Additive Bid Item amounts are prohibited. Negotiations are allowed only for the Base Bid Work. If negotiations are required to allow the award of the Base Bid, the inclusion of any of the Additive Bid Items in the Contract may not be considered in discussions during the negotiations, even if the negotiations of the Base Bid amount would yield sufficient savings to include an Additive Bid Item. Negotiation of Additive Price Item amounts is allowed.

## **SECTION 8.11<sup>158</sup> SUBMISSIONS**

Prior to the submission of Construction Documents, the Architect shall furnish a written statement that will certify that the responsible A/Es have reviewed the documents and certify them to have been completely coordinated to industry standards of care. Where corrections and additions are required after review by the University, the University Building Official the University Review Unit, etc., changes will be marked in yellow and returned to the University Review Unit and the University,

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<sup>158</sup> History: February 12, 2010, added the third line in the table and added the last sentence; April 29, 2009, divided the previous last paragraph into the present last 2 paragraphs, divided the present last paragraph into two sentences and added “for EH&S use, with one set for the office and one set for field use” in the first sentence and “copies are required” in the last sentence; Revision V, clarified Review Unit and State Fire Marshal relationship and interface requirements.



upon completion of the corrections. The A/E shall provide adequate copies of Plans, Specifications, Cost Estimates, and other applicable data for the University's use and for review by other applicable reviewing agencies. Submissions for building Projects are indicated below and shall be adjusted as appropriate for a particular Project:

	Number of Copies Required				
	S	P	CD/RCD	YO	FINAL
<b>Reviewing Agency</b>					
University Review Unit (half the sets may be 1/2 size reduction sets)			1 set/discipline plus 2 sets	1	2
plus 2 additional for Health System Projects (1/2 size) 1. Change Orders for <a href="#">VUSBC</a> regulated Work					2
<a href="#">Office of Contract Administration</a>			1	1	
Responsible State Fire Marshal Office**			1		1
Art and Architecture Review Board	1*	1*			
<a href="#">DCR</a> (Division of Soil and Water Conservation) Erosion and Sediment Control*		1	1	2	
<a href="#">DCR</a> (Division of Soil and Water Conservation) Stormwater Management*		1	1	2	
<a href="#">Department of Historic Resources</a>	2*		2*		
<a href="#">Health Department</a> (Food Service)		1*	1		
<a href="#">DEQ</a> Air Division	1*	1*	1*		
<a href="#">DEQ</a> Water Division		1*	1*		
<a href="#">DEQ</a> Waste Division		***	***		
County or City Manager		1**			
<a href="#">Chesapeake Bay Local Assistance Department</a>			2*		

Legend:

S = Schematic Design/Project Criteria

P = Preliminary Design/Design Development

CD = Construction Documents

RCD = Revised or Required Re-submittal of Construction Documents

Y/O = Yellow-out Documents

FINAL = Final Construction Documents, including Addenda

\* Pertinent parts or sections of documents only

\*\* To be transmitted by the University Review Unit for Capital Projects (\$2M+)

\*\*\* Submit data and dump location request for all asbestos-containing material or other hazardous waste materials resulting from renovation or demolition.

One copy of all Final Construction Documents and Addenda for an awarded Contract for new construction and other Capital Projects shall be provided to the University Review Unit for transmission to the responsible State Fire Marshal Office.



When determined by the University Review Unit one additional set of the Preliminary Design and Basis of Design Narrative shall be transmitted to City or County Managers per established University policy.

The A/E shall coordinate with and obtain approval of the utility designs from the [University Energy & Utilities Department](#) or, when applicable, local utilities agencies for connection and service, and shall obtain approval of any required turn lanes or transitions from the District Engineer of the [Virginia Department of Transportation](#) for entrances to the Project site.

If asbestos Projects are authorized to proceed with Working Drawings, two copies are required for [OEHS](#) use, with one set for the office and one set for field use. An additional two copies are required if revision and resubmission are necessary.

For review and approval requirements for Divisions 0 and 1, see [§8.3.0](#)

## **SECTION 8.12 UNIVERSITY REVIEW UNIT REVIEWS AND APPROVALS**

Prior to the submissions to the University Review Unit and other University and Commonwealth Agencies, the University PM shall review the documents to ensure that they meet the functional and operating requirements of the Project.

**8.12.1 General:** Reviews are performed as a service to the University and do not relieve the A/E, or it's Consultant(s) from compliance with all Codes, laws, rules, regulations, directives, and standards applicable to the Project, whether or not cited in the review. See [§8.13](#), Quality Control/Quality Assurance, for A/E requirements pertaining to this before providing Construction Documents and subsequent Submittals.

When the University Building Official is satisfied that the documents are in conformance with all requirements, a Building Permit, [HECO-17](#), will be issued by University FM. Final approval of the Construction Documents is based on the understanding that the A/E has complied, or certifies that it will comply, with the foregoing and with all review comments concerning these requirements prior to printing the documents for release to Offerors.

**8.12.2 Annual Permit Work:** [Directive 562](#) provides guidance for review and issue of permits for Work not specifically requiring a Building Permit, but for which other Code, directives, and standards may apply.

**8.12.3 Review Comments:** The University Review Unit will transmit its review comments to the University PM in one of the following ways:

**8.12.3.1** By email within 1 week after receipt of written comments from all applicable disciplines from the University PM, the A/E shall provide a written response to each University Review Unit discipline and responsible State Fire Marshal Office comment, preferably by E-Mail below the review comment. All issues in dispute shall be resolved before proceeding to the next phase. University Review Unit will forward responsible State Fire Marshal Office fire safety comments, and comments on A/E responses, to the University PM. A/E responses to responsible State Fire Marshal Office comments shall be transmitted to



the University Review Unit (or when authorized by the Senior Review Architect) direct to responsible State Fire Marshal Office reviewer with copy to the University Review Unit.

**8.12.3.2** By a meeting/conference at the University Review Unit or A/E office where the comments are discussed and critical issues resolved. This method may be required by the University where it is expedient to identify the general types or nature of deficiencies, especially if a re-submittal will be required. The proposed actions and decisions reached in the meeting will be accurately recorded in writing by the A/E and distributed to all meeting participants within five (5) work days after the meeting.

For responsible State Fire Marshal Office fire safety reviews this process would be only at the invitation of that review agency with minutes accurately recorded by the University or the A/E.

**8.12.3.3** By an “On Board Review” review meeting with the University Review Unit and the A/E. Documents will be reviewed and issues discussed and resolved. The A/E will record the minutes of this meeting and submit them to the University within seven (7) working days. This method will be used only in reviews of revised (not resubmitted) Working Drawings and Specifications with highlighted corrections, and under conditions stipulated by the University Review Unit if approved by the Senior Review Architect. The “On Board Review” method will usually require that the revised Working Drawings be received at least three (3) working days before the meeting.

**8.12.4 Re-submittals:** Submittals which are incomplete, which require extensive revisions, or which do not conform to the requirements of HECOM shall be properly completed and resubmitted for a new review. The A/E may be required to make such re-submittal without compensation or reimbursement.

**8.12.5 Revised Submittals:** All changes, and revisions, and additions shall be highlighted in yellow on at least two (2) revised Submittal set of preliminaries or one unbound set of Working Drawings and Specifications. Any new information shall be highlighted in another color.

**8.12.6 Print and Release of Final Construction Documents:**

**8.12.6.1** Construction Documents (Plans and Specifications) should not be printed or released to Bidders until the University Review Unit reviews revised documents and authorizes them to be printed and released.

**8.12.6.2** When authorized to advertise for Competitive Sealed Bids on Capital Projects by the e-Builder Construction Document Approval (CDPSA) the [OCA](#) shall establish the receipt date.

**8.12.6.3** Complete and coordinated documents, checked and sufficiently detailed to provide Offerors and builders with a clear description of the University Project requirements will be the key to gaining approval to print/release documents.



**8.12.6.4** Clarification and corrective data shall be included in Amendments/Addenda to those documents issued at least ten (10) days prior to the date set for receipt of Proposals/Bids.

**8.12.7 Advance Advertisement/Notice:** In some cases it may be advantageous to the University to advertise a Project before Construction Documents are fully revised. In such case the procedures below shall be followed:

**8.12.7.1** If Advertisements are authorized to be placed on the VBO/eVA website and in newspapers before Final Construction Documents are approved for printing and release, the Advertisement shall indicate: “Final Construction Documents will be available to Offerors on or about (date).” The Proposal/Bid date shall be set to allow reasonable time to complete revisions, to review and print the documents, to issue the documents, and to give Offerors at least three (3) weeks to prepare Proposals/Bids.

**8.12.8 Review Times:** The following review times will be the goal for the University Review Unit, exclusive of holidays, unless the submissions are obviously incomplete, (in which case the documents will be returned to the A/E).

This will be applicable to Schematic and Preliminary Design Submittals also. In the case of Construction Documents, the review comments shall be incorporated in the Plans and Specifications prior to Submittal of revised Construction Documents or to issuing the documents for Proposals/Bids.

#### **Average Review Periods for Complete Submittals**

University Review Unit – Schematic Design Submission – five (5) working days; Preliminary Design Submission – ten (10) working days; Construction Documents – fifteen (15) working days; Yellow-out Submission – three (3) working days. (Projected review scheduling shall include five (5) working days from the time the A/E receives review comments for responses and an additional two (2) working days for University Review Unit review of the A/E responses.)

The [Department of Historic Resources](#) - three weeks

The [Division of Soil and Water Conservation](#) - three weeks

The [Department of Health](#) - three weeks

The [AARB](#) receives presentations from the University at its normal monthly meeting (usually the first Friday of each month) and makes recommendations to the Governor.

**8.12.9 Approvals:** Approval of the Submittal at any stage is dependent on the University and the A/E satisfactorily resolving the issues identified during the reviews by the University Review Unit and other pertinent review agencies. Approval of Preliminaries on any Project for which VM review is required will be dependent on the successful resolution of the VM recommendations and the University Review Unit review comments.



## SECTION 8.13<sup>159</sup> QUALITY CONTROL/QUALITY ASSURANCE

**8.13.1** The A/E shall be responsible for the Professional and technical accuracy and coordination of all designs, Drawings, Specifications, Cost Estimates, and other Work or materials furnished.

**8.13.2** The A/E shall perform a Quality Assurance review of the Construction Documents prior to submitting the documents to the University Review Unit. See [Chapter 9](#) for additional requirements and guidance for QC/QA reviews and coordination of Plans and Specifications.

**8.13.3 Waterproofing & Thermal Imaging:** See [§8.20](#) for waterproofing consulting and thermal imaging requirements.

## SECTION 8.14<sup>160</sup> VALUE MANAGEMENT (VM) [VALUE ENGINEERING (VE)]

**8.14.1 General:** Capital Projects with an estimated Project Budget greater than \$5M shall have VM reviews conducted on the design. (See Va. Code [§2.2-1133](#).) At <http://www.fm.virginia.edu/fpc/ContractAdmin/ProfSvcs/ValueManagementProcess.doc> an overview of this process is provided. These studies conducted at the Schematic Design and Preliminary Design phases shall be conducted by a qualified VM team (University Review Unit and peer A/E participants) under the role and facilitation of a Construction Value Specialist recognized by the Society of American Value Engineers (SAVE), or other facilitation resource as approved by the AVP & CFO. The administrative authority of the [Office of the Architect](#) and the AVP & CFO are applicable to the VM review.

**8.14.2 Scope of VM Review:** Scope of VM reviews shall be the identification of value added design costs and cost reduction proposals without loss of function. As required to achieve Design-not-to-exceed Construction Budget, VM review will identify the cost of specific design requirements for University and A/E consideration. Following an initial conference involving the [Office of the Architect for the University](#), the independent Certified Value Specialist (CVS,) the University Review Unit, the selected peer A/E participants (may not be applicable to Preliminary Design phase), and relevant University stakeholders, the VM team participants generate VM proposals in advance of a 1-2 day collaborative workshop.

The on-site session includes a Project design presentation by the [Architect for the University](#) and the A/E, and summary presentations of the submitted proposals. Based upon the refinements of the proposals and new proposals developed in the Work session and the Cost Estimates generated, the Work session(s) concludes with a presentation to the participants and University stakeholders and a prioritization of the VM proposals in terms of those acceptable, those not acceptable, distinguishing those that are added value cost and those that are accumulative savings. If prevented by

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<sup>159</sup> History: April 29, 2009, added §8.13.3

<sup>160</sup> Authority: VE is required by Va. Code [§2.2-1133](#). Per e-mail dated 17 January 2008 from Richard Sliwoski, Director of DGS, to Colette Sheehy, UVA Vice President for Management and Budget, UVA is exempt from the reporting requirements of [§2.2-1133\(B\)](#) (2008); History: July 21, 2008, in 8.14.1, substituted “Project” for “construction” in the first sentence and added “or other facilitation resources as approved by the CFO” in the third sentence; Revision V, updated VE to the new University VM process.



circumstances a follow up session shall be scheduled for the University stakeholders, including participants designated by the AVP & CFO.

The VM report (15 copies unless shown otherwise in the RFP) shall encompass a log sheet of proposals as described above, Cost Estimates, life cycle analysis and sketches. Two copies will be delivered to the University Review Unit to facilitate a required annual report to the State.

As coordinated and arranged by the University PM, the VM team should convene in a place and manner to allow dedicated deliberation without normal daily interruption. The University, or CVS if so contracted, will provide a suitable room with tables and chairs, with immediate or convenient dedicated use of a copier. VM Services shall be performed in a timely manner to minimize any delay in the schedule, dependent on availability of a functional Cost Estimate as reconciled by the A/E and the University's independent estimator.

**8.14.3 Qualifications of VM Team:** The VM team shall consist of a CVS team leader, the University Review Unit\*, the A/E\* an A/E peer team\*, and the University's independent estimator. (\*Composed of at least one licensed Architect and one licensed Professional Engineer from each discipline which has significant Work on the Project.)

The VM review shall be coordinated, supervised and led by a person having CVS credentials that qualify him/her to perform such Services. The CVS shall be certified by the Society of American Value Engineers and shall have had a minimum of eight years combined college education and practical on-the-job VM experience. Practical experience is considered to have been gained by being actively engaged as a Consultant in VM activities.

Members of the team shall be registered Architects and Professional Engineers licensed in the Commonwealth of Virginia. All shall have a good understanding of VM principles and methodology. Team members shall be knowledgeable of the design and operational requirements and characteristics of the systems applicable to their discipline and the type of facility being studied.

**8.14.4 Information Supplied to the VM team:** Prior to commencing the VM review, the University PM shall provide adequate copies of the design Submittal as required by this Chapter to the [Office of the Architect for the University](#), the University Review Unit and the peer A/E members. An additional unbound set of the design Submittal shall be provided for use during the 1-2 day Work session. The A/E's required Cost Estimate shall be provided to the VM team in advance of the established date for Submittal of VM proposals, and the A/E and University independent estimator shall reconcile their estimates prior to the Work session. The CVS will determine which of the reconciled estimates will be the basis of estimates for the VM review.

**8.14.5 CVS Responsibilities:** The CVS shall have the following responsibilities for the VM review:

- a. Preparation
  - (1) Review complete design package & identify high cost areas.
  - (2) Prepare cost model (actual vs. historical)
  - (3) Prepare bar graphs of all sub systems.
  - (4) Prepare preliminary cost worth ratios.

- b. Development of proposals and Work session





- (1) Team leader and coordinator.
- (2) Team recorder.
- (3) Presentation of recommendations.

c. Report

- (1) Write and assemble report.
- (2) Proof all VM recommendations, especially the Cost Estimate and life cycle analysis.
- (3) Sign and submit final report within 7 days. Express mail 10 copies to the Owner and 5 copies to A/E of Record.

**8.14.6 VM Report Requirements:** The results of the VM review performed on the Project shall be documented as follows:

- (a) Contents page.
- (b) Brief description of total Project and Project requirements with a copy of the Owner's program requirements.
- (c) Log of VM recommendations.
- (d) One site plan, floor plan and elevation on 8-1/2"x 11" or fold out.
- (e) Summary sheet (only) of Cost Estimate.
- (f) VM cost model of Project.
- (g) Each VM recommendation will be described Before and After VM Work session and will be accompanied with a Cost Estimate of savings, life cycle cost analysis, and sketches as necessary.

All reports must be systematically assembled and must be short and concise, yet informative enough for decision making. VM reports shall be prepared and submitted on 8-1/2" x 11" bond paper and bound under hardback cover appropriately identified. Sketches may be 8-1/2" x 11" or fold-out. Pages must be sequentially numbered in the lower right hand corner to facilitate assembly. Tabs should be used for quick reference of important sections of report.

**8.14.7 VM Decision Session:** The completed VM report will be reviewed by appropriate parties in a decision session co-chaired by the AVP & CFO and the [Architect for the University](#). At this session formal determination of which VM proposals to be pursued will be made.

## **SECTION 8.15 STRUCTURAL AND SPECIAL INSPECTIONS**

**8.15.1** The [VUSBC](#) in Chapter 1 prescribes the minimum inspections to be performed on a Project. The [VUSBC](#) also adopts the International Building Code by reference. [VUSBC](#) Chapter 17, Structural Tests and Inspections prescribe certain tests and inspections which are required to be performed on the structural systems for the building. These inspections have been, heretofore, provided on University Projects by a combination of the University's Project Inspection, the A/E, and the University's Independent Testing Lab.

**8.15.2** The University Building Official for all University-owned buildings establishes the following procedure for the application of the Structural and Special Inspections for Capital Projects.



**8.15.2.1** The A/E, as part of its Basic Service of preparing Construction Documents, shall include in the Project Specification the requirements for the materials, for the Submittals, and for the tests and inspections to be performed including but not limited to inspections listed on the [HECO-6b](#). Identify those tests and inspections to be performed by the Owner's University's Independent Testing Service and require all other tests to be performed and paid for by the Contractor. The A/E shall include a summary of required Structural and Special Inspections in [Division 1](#) of the Specifications, using the [HECO-6b](#). See [Appendix K](#) for the Concept of the Process.

**8.15.2.2** The A/E, as part of its construction period Basic Services, shall review and approve the Shop Drawings, material Submittals and other data required to assure compliance with the requirements of the Final Construction Documents.

**8.15.2.3** Each Project shall have an on-site Project Inspector/Clerk of the Works who shall, as part of his responsibilities, check all materials delivered to the site for conformance with the approved Submittals. The Inspector shall also check the installation for proper materials, methods, clearances, etc., as described in the Plans and Specifications and in the approved Submittals.

**8.15.2.4** The University's Independent Test Lab shall inspect foundations, log and inspect pile and caisson installations, inspect and test concrete, and inspect and test bolted and welded connections as required by the Specifications.

**8.15.2.5** The A/E in accord with their Contract shall visit the site with representatives of each discipline having Work in progress to assure conformance with the design shown in the documents. Where the University has determined to exclude this Service from the A/E Contract, qualified Architects and Engineers of the University shall perform this function.

**8.15.2.6** The A/E's Structural Engineer, the University's Project Inspector, and the University PM or responsible person shall complete the Final Report of Structural & Inspections, [HECO-13.1b](#), and submit to the University Building Official as soon as completed but prior to the Substantial Completion inspection for the Project.

**8.15.3 [Appendix K, Structural and Special Inspections](#)**, contains the list of Structural & Special Inspections required for University -owned Buildings. The A/E shall edit the applicable list as necessary to indicate those materials and inspections that are and are not required for the Project.

**8.15.4** See [Chapter 10](#) and [Appendix L](#) for additional information on other Project Inspector functions.

## **SECTION 8.16<sup>161</sup> COMMISSIONING**

Independent commissioning is required on projects with total project costs greater than \$5M.

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<sup>161</sup> History: April 29, 2009, added the last "see" line; July 21, 2008, in the first sentence, added "independent" and substituted "Projects with total Project costs greater than \$5M" for "Capital Projects costing greater than \$5M."



Commissioning for MEP systems, begins with the development of the project criteria, continues through the design of the systems including preparation of the plans and specifications describing the systems components and requirements, continues through the review of shop drawings and submittals, continues through the inspection of the installations of the systems and observation of applicable tests and concludes with the final testing, balancing, start-up, initial operation, and acceptance of the systems including controls. The A/E must begin at the Project inception to develop an orderly process to document and set forth the various elements of the Commissioning process so that the Commissioning criteria and requirements are integrated with the design and the Specification of the systems and so that procedures are defined for the required testing, balancing and operational checks.

The A/E shall specify Contractor requirements related to functional performance testing including, but not limited to, pressure tests, flushing, cleaning, testing, balancing, adjusting and start-up of equipment and the calibration and testing of automatic controls. The Specifications shall require that every mode of every part or zone of the systems be operated under full and part load and through all normal operational modes. The Specifications set forth the procedures and requirements for the performance testing, system acceptance and training of agency personnel if required.

See §[10.12](#) for Commissioning inspection requirements.

See §[8.20](#) for waterproofing consulting and thermal imaging requirements.

### **SECTION 8.17<sup>162</sup> FIRE PROTECTION SHOP DRAWINGS**

Fire Protection and Sprinkler Shop Drawings and Submittal data shall be reviewed and approved by the A/E of Record. When the Submittal with any added notations is satisfactory to the A/E, the A/E shall so stamp and send one copy of such documents to the University Review Unit Fire Safety Engineer, as appropriate, for final review before approval to begin installation.

### **SECTION 8.18<sup>163</sup> PARTNERING**

Projects with a total Project cost of \$5M or more, as a part of the procurement strategy, will be reviewed for application of a formal partnering agreement. This will entail an initial session facilitated by an outside Consultant as part of the preconstruction activities. Representatives of all partners shall attend and sign the Partnering Charter developed in the initial session. This Charter will contain a detailed mission statement including various commitments made to achieve Project success. In addition the Charter will define a resolution process, a plan of action for specific Project challenges and a plan for follow on partnering progress meetings to assess the performance against the Charter.

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<sup>162</sup> History: July 21, 2008, in the second sentence substituted “University Review Unit fire safety Engineer” for “State Fire Marshal Office.”

<sup>163</sup> History: July 21, 2008, in the first sentence, inserted “Projects with a total Project cost of \$5M or more” for “All Projects;” Revision V, adjusted minimums for application of formal partnering.



Participation by the partners is a Basic Service and this participation requirement shall be included within [Division 1](#) of the Specifications. The facilitator will be procured separately by the University.

## **SECTION 8.19<sup>164</sup> BUILDING INFORMATION MODELING (BIM)**

**8.19.1 Definition:** See [Chapter 2](#).

**8.19.2 Intent of Provisions:** It is the intent of the University to encourage and participate in the usage and development of BIM, and related efforts. While neither A/Es nor Contractors are required as part of their Work for the University to use or create associated BIM files they are highly encouraged to do so.

**8.19.3 Scope:** Should an A/E or Contractor create or update a BIM file as part of its Work for the University, the scope, properties and format of that file are to be discussed with the University's PM and representative of the FP&C Resource Center before submission to the University.

**8.19.4 Submission of Files:** All files shall be submitted to the [FP&C Resource Center](#).

**8.19.5 Ownership:** Any and all BIM files created by A/E for Work performed for the University shall be submitted to the University and shall be governed by the provisions of [§3.11](#). Any and all BIM files submitted to the University by parties other than A/E shall be governed by the same rights and responsibilities as in [§3.11](#), as shall the University with respect to such parties.

**8.19.6 Warranties and Representations:** The University makes no warranties or representations to any party using any University BIM file or BIM file created for the University as to the accuracy, completeness or usefulness of the information therein and assumes no responsibility for any error or omission which may result from the use of the BIM file.

## **SECTION 8.20<sup>165</sup> WATERPROOFING & THERMAL IMAGING**

**8.20.1 Applicability and Scope of Provisions:** A waterproofing consultant is required on projects with total project costs greater than \$5 million and where the project involves the construction or alteration of any:

**8.20.1.1** portion of the Building Envelope, or;

**8.20.1.2** occupied space below grade.

**8.20.2 Independence of Consultant:** Waterproofing consultants required by the provisions of this Section shall contract directly with the University for the required services and not with the project A/E or Contractor.

**8.20.3 Thermal Imaging:** University PM shall consider the use of thermal imaging on particularly complex projects. Such imaging may be used as a tool to assist in the waterproofing analysis and in

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<sup>164</sup> History: April 29, 2009, added the Section. [→Division 1 §01015]

<sup>165</sup> History: April 29, 2009, added the Section.



formulating recommendations. Either the waterproofing consultant of §8.20.1 or a third party contractor may be used for this work.



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## CHAPTER 9: DESIGN COORDINATION AND QUALITY ASSURANCE

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### SECTION 9.1 DESIGN COORDINATION

**9.1.1** The Construction Documents submitted shall represent a reasonable and cost effective architectural and engineering solution for the scope of Work and Construction Budget constraints in the A/E Contract.

All elements of Submittals shall be checked by the A/E and such check should be made by persons other than those preparing the materials and by Professional personnel trained in that specific discipline. Submittals will be reviewed by the various disciplines in the University Review Unit for compliance with requirements and standard criteria. Errors and deficiencies shall be corrected by the A/E at no additional cost to the University.

**9.1.2** The A/E shall perform a quality assurance review for both the technical accuracy and discipline coordination. Such items as section, detail, and note references to other sheets, major dimensions, and equipment locations shall be checked. Verify that all equipment is correctly identified the same way on all sheets and in the Specifications.

### SECTION 9.2<sup>166</sup> QUALITY ASSURANCE CHECK LIST

The checklists in [CPSM Appendix Q](#), provide guidance to assist the A/E in reviewing the documents and represent the information the University expects to be shown on the Drawings to clearly identify the Work to be performed. The Specification section numbers reflect those often used and are intended to show the types of information that should be included in the Quality Assurance check regardless of actual Specification section numbering used by the A/E or where (which discipline's Drawings) the information occurs on the Drawings.

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<sup>166</sup> History: April 29, 2009, in the first sentence substituted "CPSM" for "HECOM" and added the link.



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## CHAPTER 10: CONSTRUCTION PROCUREMENT AND ADMINISTRATION

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### SECTION 10.1 GENERAL

Construction can be procured by Competitive Sealed Bidding in accordance with the procedures of this chapter. However, Competitive Negotiations may be used upon approval of a D&F by the AVP & CFO that Competitive Sealed Bidding is either not practicable or not fiscally advantageous to the public. See [Chapter 11](#) for these Special Procedures.

Contract Documents for capital outlay, Maintenance Reserve, and non-capital outlay construction Projects including, but not limited to, renovation, remodeling, demolition, and repair Work on buildings and other structures that require Plans and Specifications prepared by an A/E shall include the [General Conditions of the Construction Contract \(CO-7\)](#) as modified by the [HECO-7](#), and [Supplemental General Condition](#) – SWaM, DGS-30-377. The University, at its discretion, may include a Supplemental General Condition to waive the requirements of §12(b) of the [CO-7](#) as it relates to the requirement for Builders’ Risk insurance for these categories of Work if the University has verified with the Department of [Risk Management](#) that its insurance will provide adequate coverage. Use DGS-30-376 (Modified) – Supplemental General Conditions – Builders’ Risk Insurance for renovation Projects only found on <http://www.fm.virginia.edu/fpc/hecom.htm>.

All University required HECO and CO Project forms can be found on the [Contract Administration website](#).

Non-capital construction shall be procured in accordance with [§1.1](#).

Non-capital outlay minor construction, or repair or replacement in kind, or minor remodeling or renovation which does not meet the criteria above, which does not require Plans, and which does not modify the Use Group Classification, existing Exits or other Fire Safety Elements, may be procured in the same manner as Nonprofessional Services (Construction-related) in accordance with the [Procurement Rules](#).

### SECTION 10.2 CONSTRUCTION PROPOSALS/BIDS

Details of the Invitation for Bids process can be found at: [Competitive Sealed Bid - Construction Only \(IFB\)](#).

**10.2.1 Instructions to Bidders:** See [§8.3](#) and <http://www.fm.virginia.edu/fpc/hecom.htm> for the most current copy of the Instructions to Bidders ([HECO-7a](#)).

**10.2.2 Virginia Construction Contracting Officer:** A Virginia Construction Contracting Officer (VCCO) shall supervise the advertisement and award of HECO Construction Contracts. Procedures stipulated in HECOM shall be used in all cases.



**10.2.3 Construction Document Approval (e-Builder CDPSA):** Authorization to advertise for Competitive Sealed Bids is given upon completion of review of the Project documents by the Project Team and approval of the [Director, FP&C](#).

**10.2.4 Preparation:** Bid Forms shall be prepared using the format and wording shown on the Standard Bid Form Format, the Notice of Invitation for Bids (IFB) Format, the IFB Cover Format, and the IFB Contents Format as shown in the [University Contract Administration website](#). Price Forms shall be prepared using the format and wording shown in the templates/examples shown in the [Contracting Options](#). The Contractor's Qualification Statement and the Immigration Reform and Control Act of 1986 statement shall be included on each Price/Bid Form. In preparing these Price/Bid Forms A/E's are reminded to keep the number of Additives to a minimum and when including more than one, they shall be listed and accepted in order of importance. See [§8.10](#) for further requirements and procedures concerning Additive Bid Items. Including or use of "Allowances" is not permitted.

#### **10.2.5 [Reserved]**

**10.2.6 Advertising:** The [OCA](#) shall establish a time and place for receiving Proposals/Bids and generally guide the process. Receipt dates shall be coordinated through the University Construction Contract Administrator. The A/E shall use this information in completing the advertisement on the [Notice of Request for LOI & SOQ/IFBs](#). Proposals/Bids are generally not received nor opened on Mondays and Fridays. For general preparation of Construction Documents see [Chapter 8](#).

The advertisement should be placed for a period of one or more days, as deemed appropriate, in one newspaper which has daily statewide circulation such as the Richmond Times-Dispatch, the Norfolk Virginian-Pilot, the Roanoke Times & World News, or the Washington Post. The Project should also be advertised in a newspaper which serves the area where the Project is located if different from the above. Also, the advertisement for LOI & SOQ/Bids should be posted in a designated public area used for posting of such Notices. For optimum exposure, the advertisement should also be filed with all organizations that regularly advertise and report construction advertisement data. Advertisements in other newspapers may be necessary for large Projects. The advertisement will be circulated and posted for appropriate maximum exposure by the [OCA](#) and be posted on the VBO/[eVA](#) website when the expected procurement exceeds \$50,000.

**10.2.7 Pre-proposal/Pre-bid Conference:** If held (whether optional or mandatory), representatives of the University and the A/E shall attend. The University shall make the Project location or building available to the attendees/prospective Offerors for their observation or inspection.

The OCA shall conduct the Pre-proposal/Pre-bid conference. The agenda shall include the following:

1. Introductions of A/E and University representatives.
2. Synopsis of the Work by citing or reading portions of the following:
  - Notice of LOI & SOQ/IFBs
  - Instructions to Bidders
  - Pre-proposal/Pre-bid Question Form





- Price/Bid Form
  - Supplemental General Conditions
  - Special Conditions
  - General Requirements
  - Other conditions or requirements included in the Final Construction Documents that should be called to the attention of the Offerors
3. Questions from the floor - A/E should answer only those questions where the response is to direct the questioner's attention to a particular portion of the Final Construction Documents. ALL OTHER QUESTIONS SHOULD BE RECEIVED IN WRITING OR DOCUMENTED BY THE A/E AND RESPONDED TO IN WRITING IN AN ADDENDUM.
4. The A/E should issue an Addendum to include a copy of the attendee's sign-in sheet and the questions posed with the response to each.

The University and the A/E must be careful not to provide any information, instruction, or clarification to Pre-Proposal/Pre-bid attendees that are not made available to all potential Offerors.

**10.2.8<sup>167</sup> Amendments/Addenda to the Final Construction Documents:** Shall be issued as necessary to clarify or correct information in the Final Construction Documents, to respond to questions raised by the Offerors, and to modify the Proposal/Bid receipt date.

No oral explanation in regard to the meaning of the Drawings and Specifications shall be made and no oral instructions shall be given to the Offerors.

If an Offeror wants a substitution approved in order to price that substitution for the Proposal/Bid, it must be approved by the A/E prior to the Proposal/Bid so that any approved substitutions can be documented and shared with the other Offerors in an Amendment/Addendum.

Amendments/Addenda to clarify or correct information in the Final Construction Documents should be issued at least ten (10) days prior to the Proposal/Bid receipt date. Amendments/Addenda which add Work to the Project, which provide significant information, which must be considered by Subcontractors and Suppliers, or which contain many pages of corrections must be issued at least ten (10) days prior to the date set for receipt of Proposals/Bids or the Proposal/Bid date must be delayed to allow the ten (10) days. Amendments/Addenda which serve primarily to provide clarifications or corrections which can be covered in one page may be issued up to six (6) days prior to the Proposal/Bid receipt date. Amendments/Addenda which only delay or cancel the date for receipt of Proposals/Bids must be issued at least 24 hours prior to the date and time set for receipt.

One copy of all Amendments/Addenda shall be distributed to the University Building Official at the same time and by the same means as the Amendments/Addenda are issued to the Offerors. A copy of all Amendments/Addenda shall also be sent to the responsible State Fire Marshal's Office which will have jurisdiction over the Project.

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<sup>167</sup> History: February 12, 2010, added the third sentence.



**10.2.9 Receipt of Prices/Bids:** The [OCA](#), specifically a VCCO, or a person acting under the supervision of the VCCO, will receive the Prices/Bids when submitted. That person must record the time and the date and initial on the Price/Bid envelope. That record shall be retained. All envelopes, papers, and data submitted with the Price/Bid shall be stapled together and permanently retained, except for Price/Bid securities or Work papers which shall be retained only until a signed Contract is obtained. At that time, Price/Bid securities must be returned to the Offeror. Until that time, Price/Bid securities must be retained in a secure place. Work papers will be returned to the Offeror unopened, unless needed to resolve a withdrawal of Price/Bid due to error claim. The preferred days for Price/Bid receipt are Tuesdays and Wednesdays.

### **SECTION 10.3 PRICE/BID OPENING**

**10.3.1 Bid Opening (other than Medical Center Projects):** Bids shall be publicly opened by a VCCO or their representative(s) and shall be reviewed for completeness. Tabulation shall be made showing Bid price, presence of Bid Bond or certified check, completion time, Work papers, acknowledgement of receipt of Addenda, and any other pertinent information. See [Appendix C](#) for Procedures for Opening Bids.

**10.3.2<sup>168</sup> Bid Opening (Option for Medical Center Projects):** Under this option, provided there is a D&F and after being advertised as the procedure being used, Bids may be privately opened by the VCCO or their representative(s) and shall be reviewed for completeness. Tabulation shall be made showing Bid price, presence of Bid Bond or certified check, completion time, Work papers, acknowledgment of receipt of Addenda, and any other pertinent information.

Once the designated Bid receipt time has arrived, the Contract Officer will move the sealed Bids to a private area. If the low Bid is within budget, the Bids will be announced immediately. If all Bids are over budget the results of the Bid opening will not be made public until the Contract is awarded. At that time, the list of firms whose Bids were received will be made available to the public.

**10.3.3<sup>169</sup> Proposal Price Opening:** Prices shall be privately opened by a VCCO or their representative(s) and shall be reviewed for completeness. Tabulation shall be made showing Proposal pricing and scoring per the RFP criteria and will be revealed to the Selection Committee after the Technical Scoring is complete.

### **SECTION 10.4 PROVISIONS FOR NEGOTIATION WITH LOW OFFEROR**

When the low Price/Bid exceeds available funds and upon approval of the AVP & CFO negotiations with the lowest responsive and responsible Offeror may occur. For Medical Center Projects if advertised as in [§10.3.2](#), negotiations with up to three (3) Offerors may occur. This would normally be the three lowest. In all cases, a record of the negotiations will become a part of the procurement file for the Project.

### **SECTION 10.5 AUTHORITY TO AWARD A CAPITAL PROJECT CONTRACT**

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<sup>168</sup>History: July 21, 2008, added “provided there is a D&F,” in the first sentence.

<sup>169</sup>History: April 29, 2009, added the subsection.



The VCCO approves all requests to award a Contract (e-Builder H8 process) to the selected Offeror in a competitive negotiation process, or the low responsive and responsible Bidder, for Capital Projects. Note the construction line of the budget shall reflect the award amount. Once the award is approved, the University shall "Post" a Notice of Intent to Award at the OCA Public Bid Board and on the [website](#).

## **SECTION 10.6<sup>170</sup> EXECUTION OF CONTRACT**

**10.6.1** The AVP & CFO has been delegated authority to execute Contracts. The AVP & CFO will execute a written Contract with the Contractor using the appropriate form. The AVP & CFO may delegate authority up to \$1M to Agency VCCOs by written declarations of the Delegation of Authority.

Initial and signature requirements for executing Contracts and Change Orders shall be as follows:

Contract control sheets - Construction Contract Administrator shall sign/initial preliminarily on all recommending approval.

Change Orders for amounts under \$50,000 or up to twenty-five percent (25%) - [Contract Administration Manager](#) or [Construction Services and Contract Administration Director](#) or [FP&C Director](#) will approve all.

Contracts for amounts up to \$500,000 – [Contract Administration Manager](#) or [Construction Services and Contract Administration Director](#) to sign.

Contracts of \$500,000 to less than \$1M – [Contract Administration Manager](#) or [Construction Services and Contract Administration Director](#) will sign contract control sheet recommending approval to [FP&C Director](#). [FP&C Director](#) to sign.

Contracts of \$1M to less than \$5M – [Contract Administration Manager](#) or [Construction Services and Contract Administration Director](#) to sign and [FP&C Director](#) to initial contract control sheet recommending approval to AVP & CFO. AVP & CFO to sign.

Contracts of \$5M and more – [Contract Administration Manager](#) or [Construction Services and Contract Administration Director](#) to sign, [FP&C Director](#) to initial and AVP & CFO to sign the contract control sheet recommending approval to Associate General Counsel and Chief Financial Officer. Associate General Counsel to sign the bonds and Chief Financial Officer to sign the contract.

**10.6.2 Protest of Award or Decision to Award:** Any Firm who desires to protest the award or decision to award a Contract shall submit such protest in writing to the University, no later than ten (10) days after the award or the announcement of the decision to award, whichever occurs first. No

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<sup>170</sup> History: April 29, 2009, numbered the first unnumbered paragraph as §10.6.1, substituted “appropriate form” for “CO-9” in the second sentence and added the initial and signature information there under, renumbered the previous §10.6.1 as present §10.6.2 and combined the previous §10.6.2 with the present §10.6.2; Revision V, updated Notice-to-Proceed requirements.



award protest shall lie for a claim that the selected Firm is not responsible. The written protest shall include the basis for the protest and the relief sought. The University shall issue a decision in writing within ten (10) days of receipt of the written protest stating the reasons for the action taken. This decision shall be final unless the Firm appeals within ten (10) days of the written decision by instituting legal action.

An award need not be delayed for the period allowed a Firm to protest, but in the event of a timely protest, no further action to award the Contract will be taken unless there is a written determination that proceeding without delay is necessary to protect the public interest or unless the Bid or offer would expire.

Medical Center Projects have no formal protests available as explained in this subsection.

**10.6.3 Notice to Proceed:** A Notice to Proceed will be issued by the VCCO after bonds and insurance certificates have been reviewed by Legal Counsel and the Building Permit has been issued. A Conditional Notice to Proceed is issued to some Firms in circumstances where the bonds have been received, but not yet approved, and where the circumstances warrant an expedited construction start for mobilization or some construction activities.

## **SECTION 10.7 CONSTRUCTION CONTRACT ADMINISTRATION**

**10.7.1 General:** The General Conditions of the Construction Contract (i.e. [CO-7](#) as modified by the [HECO-7](#)), describes the Contract administration procedures (See <http://www.fm.virginia.edu/fpc/hecom.htm>).

**10.7.2<sup>171</sup> A/E Construction Period Services:** Generally, the A/E's Basic Services designate the A/E as an entity responsible to the University for providing Services to assure compliance with the Plans and Specifications. Requirements of the A/E include assistance with the solicitation of Proposals/Bids, review and approval of Submittals, visiting the site periodically and inspecting the Work, completing Structural and Special Inspections, review and certification of Contractor pay requests, participation in on-site preconstruction, progress, and pre- installation meetings, issuance of clarifications of the Documents and Field Orders, review and processing of Change Orders and schedule Submittals from the Contractor, providing Substantial and Final Completion inspections and certifications, and other functions associated with Construction Contract Administration. See [§5.5.9](#) for typical A/E Services during construction. These Services may also be referenced or described in the A/E Contract and its MOU. These Services and other Services may also be provided by special Consultants.

**10.7.3<sup>172</sup> CM Construction Period Services:** See CM RFP for details.

**10.7.4<sup>173</sup> Construction Administration Manager (CAM):** The University will almost always assign a CAM(s) to Work with the University PM as the University's on-site representatives for the construction phase; to manage any other construction phase Consultants; to coordinate other

<sup>171</sup> History: April 29, 2009, rewrote the subsection.

<sup>172</sup> History: April 29, 2009, added the subsection.

<sup>173</sup> History: April 29, 2009, renumbered the Section from §10.7.3 to §10.7.4.



Consultant, A/E, and Contractor communications; to expedite resolution of any conflicts; to perform additional quality assurance oversight (such as inspection, verification, acceptance, rejection), to coordinate testing Services Contracts procured by the University, and to perform other administrative oversight. The CAM shall be included in all written decisions and Notices to the Contractor and information and Notices from the Contractor. All activities not specifically required to be performed by the A/E may be performed by the CAM or by the University's selected Consultant.

The University may also delegate from the A/E to any selected Consultants certain inspection, verification, acceptance, rejection, and administrative duties and authority. The University shall provide the Contractor and the A/E information in writing defining the limits of the selected Consultants' authority.

### **SECTION 10.8 PRECONSTRUCTION MEETING**

Prior to the start of construction a Preconstruction Meeting shall be held. Attendees should include the University PM, CAM, and Project Inspector, the building user, the A/E's Representative including selected representatives of each design discipline involved in the Project, special Consultants, the Contractor's PM and Superintendent (and Scheduler, if Contractor desires), and representatives of the Contractor's major Subcontractors. See Preconstruction Meeting Agenda in [Appendix E, CO-7](#), and §50.

### **SECTION 10.9 MONTHLY PAY MEETINGS**

The intention is that the Contractor, the CAM, the A/E, and others have timely exchange of information and cooperate to accomplish the Work as required by the Contract Documents. See the [CO-7](#), §§20, 36, and 50 for details.

### **SECTION 10.10 OTHER MEETINGS**

Other meetings, such as progress meetings, coordination meetings, pre-installation meetings and partnering meetings may also be appropriate. See the [CO-7](#), §50. Pre-installation meetings are required for all HVAC systems and components. Such meetings should include the A/E, the Project Engineer for the mechanical discipline, the CAM, the Inspector, any Commissioning Agent, the Contractor's PM and Superintendent, the mechanical Subcontractor's PM and Superintendent, and a representative of the major Supplier/Manufacturer.

### **SECTION 10.11 SCHEDULE OF VALUES & PAYMENT APPROVAL**

The [CO-7](#) describes in §§20 and 36 the requirements for completing the Schedule of Values (SOV) and Payment Approval, H12 and for providing documentation of Work performed and for properly stored materials. The A/E, as part of Basic Services, is required to review and approve the format and breakdown of the initial Schedule of Values and to review, evaluate, verify, and approve the Contractor's monthly Submittal of the H12 documentation requesting payment for Work. On Projects with a CM Contract the CM has these responsibilities as defined in the CM's RFP.



## **SECTION 10.12 INSPECTION OF WORK**

**10.12.1 General:** The [CO-7](#) describes in §16 the requirements, responsibilities, and authorities for inspection of the construction Work and for correction of deficiencies and defects found. Also §21 describes access to the Work site.

The A/E's inspection Services generally require at least twice a month on-site inspections and availability to answer questions from the Project Inspector. The University will designate a specific individual to serve as Project Inspector. The Project Inspector will report to the CAM. The duties and functions of the Project Inspector include those listed in §16 of the [CO-7](#). A detailed list of duties along with sample formats for recording required information are included in [Appendix L](#).

It is essential that the A/E, CAM, Project Inspector, and any Project Consultants work together, to observe and inspect the Work, and to regularly communicate to assure that Work being performed conforms to the Contract Documents.

**10.12.2 Commissioning Inspection of MEP Systems:** See [§8.16](#) for design phase Commissioning requirements. Prior to any Submittals and installation a pre-installation meeting will be held. See [§10.10](#). The A/E will observe the Contractor's functional performance testing including, but not limited to, pressure tests, flushing, cleaning, testing, balancing, adjusting and start-up of equipment and the testing of automatic controls and report their observations to the A/E. The A/E shall schedule periodic inspections of the systems and be present for such testing as specified in the BSRV Section of the [University Facilities Design Guidelines](#). Some sophisticated systems for facilities such as laboratories, medical science facilities, and archival storage facilities have minimal tolerances for deviations in temperature, humidity and air changes and, therefore, may require special Commissioning or test/inspection Services to assure the precise conditions required. The University may secure these Services from the A/E as Additional Services or as Extra Services or the Services may be procured from an independent testing/Commissioning Agent depending on the Services required and the capabilities of the possible vendors/Consultants.

**10.12.3 Start-up/Acceptance of Mechanical & Electrical Systems:** Notwithstanding any Commissioning inspections it shall remain the A/E's responsibility to verify that the Contractor has all systems functioning properly per the sequence of operations and that the design intent has been achieved; that equipment has been received in accordance with the Submittal previously approved by the A/E; that all system components have been adjusted and a record made of final settings; and that manual and automatic operating modes have been established for full load ranges prior to notifying the University that the system is ready for final start-up and acceptance testing. It is the intent that when the startup inspection team is called together to conduct final inspections and the acceptance test that the Work will be started as scheduled and completed without exceptional delay. Major or time consuming adjustments or modifications during final inspection shall be avoided. Final inspections requested when the systems are obviously not ready for such testing and inspections may result in a back charge to the A/E or Contractor for the costs of inspection team visits and related costs. Applicable portions of the above requirements shall be included in the Project Specifications.

**10.12.4 Structural & Special Inspections:** See [§8.15](#) and [Appendix K](#) for this requirement.



**10.12.5<sup>174</sup> State Fire Marshal Inspections:** The appropriate Regional Office of the State Fire Marshal's Office will normally be responsible for the Fire Marshal inspections. The University Review Unit will normally be responsible for coordinating these inspections.

**10.12.6<sup>175</sup> Air Intake Inspections:** A/Es are required to take specific measures to prevent dust and fumes from entering the air distribution systems of surrounding buildings. These measures should include, at a minimum, the placement and maintenance of filter media over outside, fresh air intakes. Particularly vulnerable intakes may need to be protected by carbon filters and temporary plenums.

**10.12.7<sup>176</sup> Emergency Phone Access:** Access to emergency phones shall at no time be impeded.

**10.12.8<sup>177</sup> Other Inspections:** The University may procure the Services of independent laboratories or firms to provide other inspection and testing Services for such areas as systems Commissioning, foundations, steel frame connections, concrete testing, fireproofing and standard compaction control.

## **SECTION 10.13<sup>178</sup> CONSTRUCTION CHANGE ORDERS**

Generally, Change Orders will be administered in accordance with §38 of the [CO-7](#). The University may at any time, by utilizing the e-Builder Change Order process (H11) and without Notice to the sureties, make changes in the Drawings and Specifications of this Contract which are within the general scope of this Contract, except that no change will be made which will increase the total Contract price to an amount more than twenty percent (20%) in excess of the original Contract price without Notice to the sureties. For fixed price Contracts, when a single Change Order or when the cumulative total of Change Orders exceeds the original Contract amount by more than twenty-five percent (25%) or \$50,000 whichever is greater, that Change Order and any subsequent Change Order that increases the Contract amount shall have the prior approval of the University's AVP & CFO, the [Director of FP&C](#) and either the [Construction Service & Contract Administration Director](#) or the [Contract Administration Manager](#). Also see [Appendix I](#) for standard Change Order procedures. No Change Order shall be issued, regardless of cost, which increases the approved scope of the Project as shown on the approved H2 or as set forth in the Capital Project Request or Preplanning Study without prior approval of the University's Executive Vice President and Chief Operating Officer. Additionally, the total cumulative amount for all Change Orders for a single Contract shall not exceed the construction contingency available in the current e-Builder budget. A request to infuse additional funds or to transfer funds to the Project Budget shall be submitted to the [Director of FP&C](#) via the University Budget Office (V.P. for Management & Budget) with a revised H2 process with appropriate written justification, normally in the form of a Decision Brief for an increase in authority.

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<sup>174</sup> History: July 21, 2008, renumbered this Section from §10.12.6 to §10.12.5.

<sup>175</sup> History: July 21, 2008, added the sub-subsection.

<sup>176</sup> History: July 21, 2008, added the sub-subsection.

<sup>177</sup> History: July 21, 2008, renumbered this Section from §10.12.5 to §10.12.8.

<sup>178</sup> History: February 12, 2010, removed the reference to Directive 362 in the first paragraph and in its place inserted a reference to Appendix I; April 29, 2009, added the last reference in the Section; July 21, 2008, added the first sentence in the second paragraph and added the third paragraph.



Under no circumstances shall a Change Order that involves a scope addition be issued against Project contingency without the approval of the AVP & CFO. The Project contingency is specifically reserved for errors and omissions in design, unknowns, and differing site conditions.

For internal budget adjustments that do not affect the overall original budget authorization, see §[1.2.4.2.1](#). For initial and signature requirements see §[10.6.1](#)

## **SECTION 10.14 DOCUMENTATION OF “AS-BUILT” CONDITIONS**

The Contractor shall be required at all times to maintain one record set of Drawings and Specifications in the Superintendent’s office at the Project site. This set of documents shall be designated the “As-Built” documents and shall be used to record any changes or deviations from the original documents. The A/E shall review this set when he visits the site, and prior to approving the monthly pay request, to assure that the Contractor is making the notations as required. The “As- Built” set of documents shall be furnished to the A/E at the completion of the Project as a reference for preparing the final “Record” documents.

## **SECTION 10.15<sup>179</sup> INSPECTION FOR SUBSTANTIAL COMPLETION**

When the Project is sufficiently complete in accordance with the Contract Documents and it can be used for the intended purpose, the CAM will ensure the requirements, procedures, inspections, and approvals below and in §44 of the [CO-7](#) are completed.

When the Contractor determines that the Work, or a designated phase or portion thereof, will be substantially complete and ready for testing and inspection, they shall complete and send a [HECO-13.2a](#) with a list of the Work they know to be unfinished or defective to the A/E at least ten (10) days prior to the date they set for Substantial Completion. The A/E will forward the [HECO-13.2a](#) to the University and attach a written endorsement, based on their periodic inspections, as to whether or not they concur that the Project, or phase, should be substantially complete on the date set by the Contractor. The A/E then coordinates and arranges a date on or shortly after the date set by the Contractor for the Substantial Completion inspection to be conducted. See definition of Substantial Completion.

Participants in the Substantial Completion inspection shall include the CAM, the Project Inspector, and University user representatives, representatives of the GC, including those of the mechanical, electrical, and major equipment Subcontractors, the A/E, the University, University Building Official, and the responsible State Fire Marshal’s Office. The A/E shall conduct and document the inspection and compile a written list of the Work or deficiencies noted (punch list) which need to be completed or corrected.

If the A/E, the State Fire Marshal’s representative, and the University Building Official agree that this Project, or this portion of the Project being inspected, is Substantially Complete in accordance with the Contract Documents and safe to occupy, the A/E shall execute the appropriate Certificate of Partial or Substantial Completion ([HECO-13.1a](#)), and submit it to the University. Attach copies of





the punch list, the Contractor's [HECO-13.2a](#), the application for Certificate of Use and Occupancy ([HECO-13.3](#)), and other documents as appropriate.

The University may submit this material to the University Building Official and request that a Certificate of Occupancy be issued, or the University may wait to request the Certificate of Use and Occupancy when final completion is achieved. If one or more re-inspections of the Work that the Contractor declared to be Substantially Complete are required because the Work was not substantially complete as stated, the Contractor shall reimburse the University for the costs of the re-inspections. Do not accept as Substantially Complete unless it (the part or whole) is ready for occupancy.

See <http://www.fm.virginia.edu/fpc/ContractAdmin/ConstructionManagement/Insurance.htm> for insurance Notice and coverage issues as they relate to Substantial Completion.

## **SECTION 10.16 BENEFICIAL OCCUPANCY**

Once the University, the A/E, the Contractor, and the State Fire Marshal's representative agree in writing that the facility, or a usable portion thereof, is substantially complete and ready for occupancy, the University may submit a [HECO-13.3](#), application for Certificate of Use and Occupancy, and a [HECO-13.3b](#), Checklist for Beneficial Occupancy, along with copies of the [HECO-13.1a](#), [HECO-13.1b](#) (if applicable), [HECO-13.2a](#), State Fire Marshal's acceptance report, and other required operations permits to the University Building Official.

The University Building Official, when satisfied that the Project, or portion of the Project, is in fact Substantially Complete in accordance with the Contract Documents, may issue written authorization in the form of a [HECO-13.3](#) to occupy the Project, or applicable portion thereof, subject to any conditions or stipulations stated. ([Directive 564](#) applies.)

The University shall not occupy the facility until the certification from the State Fire Marshal that the Project complies with the fire safety requirements and applicable Codes and the Certificate of Use and Occupancy ([HECO-13.3](#)) are received. Occupancy of the facility without approval is unlawful and is a misdemeanor under Va. Code [§36-106](#), as amended.

The following material is required for consideration of a request for a Temporary or Partial Certificate of Use and Occupancy ([University Directive 564](#) applies):

- Floor Plans (small scale) that show areas requested for occupancy and the exits/egress routes;
- Type of Occupancy requested (e.g. move in furniture, set up/prepare for students, etc.);
- [HECO-13.1a](#) with punch-list from A/E;
- [HECO-13.2a](#) with any attachment from Contractor;
- [HECO-13.3b](#) Checklist for Beneficial Occupancy;
- State Fire Marshal's report and recommendation;
- Document stating that the Asbestos Abatement, if any, is complete; and
- [HECO-13.3](#) application for Certificate of Use and Occupancy with data on entire Project and separate sheet showing data on area requested to be occupied.



The University may take Beneficial Occupancy of a portion or unit of the Project before completion of the entire Project only with the prior written approval of the University Building Official.

### **SECTION 10.17 FINAL COMPLETION INSPECTION**

When the items listed in the punch list have been completed and all Work is complete and ready for final testing and inspection, the CAM will ensure the requirements of §44 of the [CO-7](#) are complete. Upon receipt of all final Certificates of Completion ([HECO-13.1](#) and [HECO-13.2](#)), and with the Certificate of Use and Occupancy issued ([HECO-13.3](#)) the University PM can begin the Project Close Out process.

### **SECTION 10.18<sup>180</sup> PROJECT CLOSE OUT**

The A/E shall file with the University the Certificate of Completion by A/E ([HECO-13.1](#)). By filing the [HECO-13.1](#), the A/E is certifying that in his Professional opinion all construction requirements have been met. After receipt of a Certificate of Use and Occupancy ([HECO-13.3](#)) the University PM shall sign and close the [HECO-17](#) Building Permit on file with the Space & Real Estate Manager and complete the e-Builder H14 process after the warranty period has ended and all warranty issues are resolved. Projects shall be closed within 15 months of Project completion.

### **SECTION 10.19 RECORD DRAWINGS & SPECIFICATIONS**

The A/E shall prepare and provide to the University “Record Drawings & Specifications” showing the “As-Built” conditions, locations, and dimensions based on the Contractor’s As-Built set of Drawings and Specifications, and other data furnished by the Contractor to the A/E. See [§10.14](#). The Record Drawings shall include actual locations of piping and utilities as well as all other changes specifically known to the A/E. These Record Drawings shall also include the depths of pilings or caissons if pilings or caissons were in the construction.

### **SECTION 10.20 OPERATION & MAINTENANCE MANUALS**

Four (4) sets of Operation and Maintenance (O&M) instructions written for the specific Project shall be provided to the University at the final inspection per the [CO-7](#), §49. Note that this requirement should be listed in the Specifications. This shall consist of a compiled document prepared by the A/E team for the Project and generally include the operation and control sequencing narrative, the control diagrams, an equipment chart indicating periodic maintenance requirements, and the O&M Manuals for the equipment. All systems needing regular maintenance or requiring adjustments must be covered. The schedule for required minor and major maintenance must be included. Relevant design criteria and assumptions needed to understand the operation of the systems will be furnished in narrative form including the control systems settings. Concept of operation manuals which provide the data by reference to Drawings and Specifications and manufacturers are not acceptable. The document, along with the Record Drawings & Specifications, shall be provided to the University at the time of final acceptance of the Project.

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<sup>180</sup> History: July 21, 2008, added the last sentence of the Section; Revision V, added requirement to complete close out at end of warranty period.



## SECTION 10.21 OWNERSHIP OF DOCUMENTS & MATERIALS

See §[3.11](#).

## SECTION 10.22<sup>181</sup> [RESERVED]

## SECTION 10.23 WARRANTY CLAIMS

**10.23.1 Construction Claims Generally:** See [Directive 360](#)

**REFERENCES:** "Guarantee of the Work" in: **HECO-7, Commonwealth of Virginia General Conditions of the Construction Contract, §45; HECO-7CM, Commonwealth of Virginia General Conditions of the Construction Contract with a Construction Manager, §45; HECO-7DB, Commonwealth of Virginia General Conditions of the Design-Build Contract, §45.**

**PURPOSE:** To establish a formal warranty policy and procedure for claiming corrections to construction projects performed by contract.

**POLICY:** Alleged problems and deficiencies following the completion of construction will be directed to the Facilities Operations Department, Utilities Department, or Health System Physical Plant for investigation. If the investigation indicates the matter may be a warranty claim it will be forwarded to the CAM for resolution with the Contractor. If a formal claim is required it will be forwarded to the FP&C Academic or Health System Division Director for action.

**BACKGROUND:** The above-referenced "Guarantee of the Work", **§45, of HECO-7, HECO-7CM, and HECO-7DB**, defines the warranty period (normally one year after acceptance) and outlines the responsibility of the Contractor, A/E, and University with regard to a warranty claim.

### **PROCEDURES:**

1. Facilities Management's operational departments assume responsibility for facility operation and maintenance upon notice of Substantial Completion by Facilities Planning & Construction.
2. For each occurrence of a suspected warranty problem the user reports malfunctions to the Facilities Management service desk at Alderman Road (4-1777) or Health System Physical Plant (4-2267).
3. Maintenance personnel are dispatched as required to investigate alleged warranty problems. Routine maintenance or minor repairs are performed as necessary.

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<sup>181</sup> History: February 12, 2010, moved the material previously in this Section to new Section 15.4.



4. If, in the judgment of the maintenance personnel, the "trouble" is not maintenance and is of sufficient magnitude to justify a correction by the Contractor, a description of the problem shall be forwarded to the CAM on the attached Warranty Claim Form. Warranty claims discovered by maintenance personnel during routine or preventive activities maintenance are reported in the same manner as outlined above.
5. Upon receipt of a Warranty Claim Form, the CAM will investigate the claim and notify the Contractor as required.
6. Overall coordination of warranty claims is the responsibility of the FP&C Academic or Health System Division Director. If required a formal claim will be presented to the Contractor with a copy to all concerned, including the user and the appropriate Facilities Management department.

#### **RESPONSIBILITIES:**

1. The FP&C Academic or Health System Division Director has overall responsibility for assuring that these policies and actions are implemented. The Division Director initiates in-house work orders or legal claims, if necessary, to finalize corrective work if not resolved by the Contractor and the CAM.
2. PMs coordinate with and assist the FP&C Academic or Health System Division Director with warranty claims that involve the A/E or design errors. For projects without a CAM, the PM assumes the CAM's responsibilities.
3. The CAM investigates warranty claims and coordinates the resolutions with the Contractor when a formal claim is not required.
4. The CAM stays in communication with the claimant superintendent, advising the superintendent of steps toward resolution and of the final resolution.



**INTERNAL O&M WARRANTY CLAIM FORM**

Project/Building: \_\_\_\_\_

Date: \_\_\_\_\_

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1. System / Equipment / Item Involved:

---

2. Specific Location:

---

3. Apparent Problem or Cause of Failure:

---

4. Part # or Piece of Equipment That Needs Repair or Replacement:

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\_\_\_\_\_  
Signature: Superintendent

Phone: \_\_\_\_\_

Email: \_\_\_\_\_



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FACILITIES MANAGEMENT  
Facilities Planning & Construction Department

November 10, 2016

Contact Name, Firm Name & Address

Fax:

Ref: University of Virginia  
Project Name  
Contracting Option/Trade Package Name  
Project Code: including package #; WO # ; PIMS # P  
(Warranty Claim # )

Dear Mr./Ms. :

Please see the attached Warranty Claim for this project. As soon as the item(s) have been addressed please complete the claim form and return to my attention to document your work. Your firm's continued interest and efforts to address this issue are much appreciated.

Sincerely,

Senior Construction Administration Manager

c: Annette Cyphers, P.E.; George S. Southwell; Project Manager; Archive

Enclosure: Warranty Claim



## **WARRANTY CLAIM**

The following item(s) are being claimed as warranty work to be addressed as per the terms of the General Conditions of the Contract, Section 45, Guarantee of the Work.

**DESCRIPTION:**

---

Counter sign and return upon completion of warranty work.

**DESCRIPTION OF WORK:**

---

Firm Representative

---

Date



**10.23.2 BIM:** See [§8.19](#).

## **SECTION 10.24<sup>182</sup> EVALUATION OF CONTRACTOR PERFORMANCE**

Upon completion of the Construction Contract, the A/E may be required to complete a [CO-14b](#) (Opinion of Contractor's Performance). An evaluation may be completed by the University PM and CAM. The evaluation will emphasize the evaluator's opinion of the quality of construction, timeliness of the Work and conformance with the Project schedule, timeliness of Shop Drawings Submittals, number, and validity of CM/ Contractor requests for clarification of Drawings and Specifications intent, resolution of construction problems, and cooperation.

The A/E and University may also complete a [CO-14b](#) evaluation on any individual Subcontractor or Supplier performing Work on the Project to note above average, below average, or poor performance. The University may provide a copy of this evaluation to the Contractor.

If the CM/ Contractor wishes to comment on the evaluation, dispute any part of the evaluation or offer its side of the issue, the CM/ Contractor may submit a response to the University. The CM/ Contractor's response may be attached to and made a part of the University evaluation form for future reference.

See [§5.10](#) for the nature and permitted uses of completed [CO-14b](#) evaluations.

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<sup>182</sup> History: February 12, 2010, added the section from the last four paragraphs of §5.10. Some of this material was previously covered by Directive 383, now cancelled





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## CHAPTER 11<sup>183</sup>: CONTRACTING OPTIONS

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### SECTION 11.1 GENERAL

In accordance with the [Procurement Rules](#) and the referenced provisions of the Code of Virginia, the following procedures may be utilized for construction Projects as deemed appropriate by the University and, as approved, in writing with a D&F by the AVP & CFO. These options include Design (Completion) /Build (D/B), CM at Risk, Prequalification, On-Demand, Emergency, and “Special” Projects procedures. A more complete description of these contracting options is available at: <http://www.fm.virginia.edu/fpc/ContractAdmin/contractingoptions.htm>.

### SECTION 11.2 DESIGN/BUILD (D/B)

In accordance with the provisions of §2.2-4378, §2.2-4379, and §2.2-4381 of the Code of Virginia, UVA has adopted the following Policy for the use of Design-Build (D/B). For convenience of use, UVA has replaced **SECTION 11.2** of this Manual with this new policy. However, **this is a stand-alone policy, approved and recorded by the UVA Board of Visitors, and UVA cannot modify it without BOV approval.**

1. Criteria for Use:
  - a. Provide a written determination that competitive sealed bidding is not practicable or fiscally advantageous (§2.2-4381.C.1). The AVP & CFO is the approving authority for requests to use D/B procedures.
  - b. Written determination shall include the basis of determination including one or more of the following:
    - i. Construction Cost (§2.2-4381.B.1, §2.2-4381.D.3)
    - ii. Project Complexity (§2.2-4381.B.1, §2.2-4381.D.4)
    - iii. Building Use (§2.2-4381.B.1, §2.2-4381.D.3)
    - iv. Project Timeline (§2.2-4381.B.1, §2.2-4381.D.3)
    - v. Need for Single Point of Responsibility
  - c. A licensed architect or engineer shall be employed or under contract to advise in use of D/B (§2.2-4381.C.2).
2. DGS Review of Procurement Method (§2.2-4381.D through 2.2-4381.F):
  - a. Submit the following to DGS for review:
    - i. Written determination for each project.
    - ii. Completed DGS [Design Build Procurement Review Submittal](#) Form identifying project characteristics relevant to D/B procurement.



- b. Upon receipt of DGS Recommendation within 5 working days, UVA shall:
  - i. Address DGS comments as necessary, and
  - ii. Document UVA action in project file and submit to DGS.

3. Procurement Procedures:

- a. AVP & CFO shall appoint a Selection Committee consisting of at least three members from UVA, including a licensed design professional, if possible.
- b. Use a two-step Request for Qualifications/ Request for Proposals (RFQ/RFP) process (§2.2-4381.C.7).
- c. Prepare an RFQ containing UVA's project overview and justification for use of D/B (§2.2-4381.C.1). All offerors shall have a licensed Class "A" Contractor and an Architect or Engineer registered in the Commonwealth of Virginia as part of the Project team.
- d. RFQ will include evaluation criteria and be posted in accordance with current Code of Virginia requirements for a minimum of 30 days (§2.2-4381.C.3).
- e. Selection Committee evaluates the firms' RFQ responses and any other relevant information and recommends those best qualified with respect to criteria established for Project in RFQ. Prior D/B or BCOM experience shall not be a prerequisite for award (§2.2-4381.C.5). The AVP & CFO shall approve the best qualified D/B's to receive an RFP.
- f. RFQ process shall result in short list of 2-5 offerors to receive RFP (§2.2-4381.D.5).
- g. RFP shall include evaluation criteria and be posted in accordance with the current requirements in the Code of Virginia. Cost shall be a critical component of selection process.
- h. Offerors who were not selected for the short list shall be provided written notification and the reasons for such decision.
- i. Sealed Technical Proposals as described in the RFP shall be submitted to the Selection Committee. Separately sealed Cost Proposals shall be submitted to UVA's Virginia Construction Contracting Officer (VCCO), and shall be secured and kept sealed until evaluation of the Technical Proposals is completed (§2.2-4381.A).
- j. Selection Committee shall evaluate the firms' Technical Proposals based upon the criteria contained in the RFP. It shall inform each D/B offeror of any adjustments necessary to make its Technical Proposal fully comply with the requirements of the RFP. In addition, UVA may require that offerors make design adjustments necessary to incorporate project improvements and/or additional detailed information identified by the Selection Committee during design development (§2.2-4381.A).
- k. Based upon any adjustments requested by the Selection Committee, the offeror shall provide a revised Technical Proposal and Cost Proposal as necessary. In addition, an offeror may submit cost modifications to its original sealed Cost Proposal which are not based upon revisions to the Technical Proposals (§2.2-4381.A).



- l. Selection Committee shall evaluate and rank the firms' Technical Proposals and open any revised cost proposals and apply the criteria for award as specified in the RFP (§2.2-4381.A).
- m. After evaluation and ranking, the Committee may conduct additional negotiations with two or more offerors submitting the highest ranked proposals and provide their recommendation to the AVP & CFO (§2.2-4381.A).
- n. Prior D/B or BCOM experience shall not be a prerequisite for award (§2.2-4381.C.5).
- o. The AVP & CFO shall approve the D/B deemed fully qualified and providing best value in response to the RFP, and the contract shall be awarded to that offeror.
- p. UVA will notify all offerors who submitted proposals, which offeror was selected for the Project. When so provided in RFP, awards may be made to more than one offeror.
- q. Upon request, a debriefing of the selection process will be made available to any offeror.

### **SECTION 11.3 CONSTRUCTION MANAGEMENT at RISK (CM at Risk)**

In accordance with the provisions of §2.2-4378, §2.2-4379, and §2.2-4381 of the Code of Virginia, UVA has adopted the following Policy for the use of CM at Risk. For convenience of use, UVA has replaced **SECTION 11.3** of this Manual with this new policy. However, **this is a stand-alone policy, approved and recorded by the UVA Board of Visitors, and UVA cannot modify it without BOV approval.**

1. Criteria for Use:
  - a. Provide a written determination that competitive sealed bidding is not practicable or fiscally advantageous (§2.2-4381.C.1). The AVP & CFO is the approving authority for requests to use CM at Risk.
  - b. Written determination shall include the basis of determination including one or more of the following:
    - i. Construction Cost (§2.2-4381.B.1, §2.2-4381.D.3)
    - ii. Project Complexity (§2.2-4381.B.1, §2.2-4381.D.4)
    - iii. Building Use (§2.2-4381.B.1, §2.2-4381.D.3)
    - iv. Project Timeline (§2.2-4381.B.1, §2.2-4381.D.3)
    - v. Project Phasing (§2.2-4381.D.5)
    - vi. Necessity of Value Management and/or Constructability Analysis Concurrent with Design (§2.2-4381.D.5)
    - vii. Quality Control/ Vendor Prequalification Needs (§2.2-4381.D.5)
    - viii. Cost/ Design Control Needs (§2.2-4381.D.5)
  - c. A licensed architect or engineer shall be employed or under contract to advise in use of CM at Risk (§2.2-4381.C.2).
2. DGS Review of Procurement Method (§2.2-4381.D through §2.2-4381.F):
  - a. Submit the following to DGS for review:



- i. Written determination for each project.
    - ii. Completed DGS [CM at Risk Procurement Review Submittal](#) Form identifying project characteristics relevant to CM at Risk procurement.
  - b. Upon receipt of DGS Recommendation within 5 working days, UVA shall:
    - i. Address DGS comments as necessary, and
    - ii. Document UVA action in project file and submit to DGS.
3. Procurement Procedures:
  - a. AVP & CFO shall appoint a Selection Committee consisting of at least three members from UVA, including a licensed design professional, if possible.
  - b. Enter into contract no later than the completion of the Schematic phase of design unless prohibited by authorization of funding restrictions (§2.2-4381.C.4).
  - c. Use a two-step Request for Qualifications/ Request for Proposals (RFQ/RFP) process (§2.2-4381.C.7).
  - d. Prepare an RFQ containing UVA's project overview and justification for use of CM at Risk (§2.2-4381.C.1). All offerors shall have a licensed Class "A" Contractor registered in the Commonwealth of Virginia as part of the Project team.
  - e. RFQ shall include evaluation criteria and be posted in accordance with current Code of Virginia requirements for a minimum of 30 days (§2.2-4381.C.3).
  - f. Selection Committee evaluates the firms' RFQ responses and any other relevant information and recommends those best qualified with respect to criteria established for Project in RFQ. The AVP & CFO shall approve the best qualified CM's to receive an RFP.
  - g. RFQ process shall result in short list of 2-5 offerors to receive RFP (§2.2-4381.D.5).
  - h. RFP shall include evaluation criteria and be posted in accordance with the current requirements in the Code of Virginia.
  - i. Offerors who were not selected for the short list shall be provided written notification and the reasons for such decision.
  - j. Selection Committee shall evaluate and rank the firms' Proposals. Prior CM at Risk or BCOM experience shall not be a prerequisite for award (§2.2-4381.C.5).
  - k. The AVP & CFO shall approve the CM deemed fully qualified and providing best value in response to the RFP, and the contract shall be awarded to that offeror.
  - l. UVA shall notify all offerors who submitted proposals, which offeror was selected for the Project. When so provided in RFP, awards may be made to more than one offeror.
  - m. Upon request, a debriefing of the selection process will be made available to any offeror.
4. Contracting Requirements:
  - a. CM Preconstruction/ Document Review Phase Services shall be contracted as a Non-Professional Service (§2.2-4301).
  - b. Fixed Price of construction will be established at completion of Construction Drawings based on actual Subcontractor pricing (§2.2-4381.A). If UVA and the CM cannot agree on a Fixed Price, UVA may competitively bid the project with the other prequalified CM



offerors or enter into competitive negotiations with the other prequalified CM offerors in accordance with the requirements of the Code of Virginia.

- c. Interim Fixed Prices for early release packages are permitted.
- d. 90% of construction work must be subcontracted through publicly advertised, competitive sealed bidding to the maximum extent practicable (§2.2-4381.C.6).

## **SECTION 11.4 PREQUALIFICATION FOR COMPETITIVE SEALED BIDS**

**11.4.1 Procedure for Approval to Use Prequalification Contracts:** The University shall document in writing with a D&F the decision to use Prequalification procedures. The documentation shall justify and substantiate that Prequalification is more advantageous than a competitive sealed Bid Construction Contract with a GC and shall indicate how the University will benefit from using Prequalification. The AVP & CFO must approve the D&F.

**11.4.2 Prequalification Procedures:** The following Prequalification procedures shall be followed. However in all cases the stage of design shall be one hundred percent (100%) Final Construction Documents.

1. The University may prequalify Contractors for a particular construction Project and limit consideration of Bids to prequalified Contractors. The procedures contained in this section shall be used for Prequalification of Contractors for a particular construction Project. The University may prequalify both GC's and selected Trade Contractors. Any Prequalification of Contractors shall be conducted in accordance with the procedures stipulated in this section and the [Procurement Rules](#), and sufficiently in advance of the Bid receipt date to allow potential Contractors a fair opportunity to complete the process.
2. The objective of Prequalification shall be to qualify as many Contractors as possible to Bid on the proposed Work. Prequalification is most frequently used for Projects with sophisticated building systems, a unique site or constructability issue, or where Project scheduling or sequencing is critical.
3. The University shall advertise for the Prequalification in at least two (2) newspapers, one of which has daily statewide circulation; on the On-line Bids page of the [eVA website](#); and shall post the advertisement in the public area where IFB are generally posted. The date set for receipt of the Contractor's Statement of Qualifications ([CO-16](#)) shall be at least twenty- one (21) days from the date of the initial newspaper advertisement. The AVP & CFO may approve a reduction of this 21 day period, if supported by a D&F, but to a period of not less than ten (10) days.
4. The [CO-16](#) shall be the application form submitted by Contractors when applying to be prequalified for a particular construction Project. The [CO-16](#), when provided to interested Contractors, shall be accompanied by the minimum qualification criteria for the proposed Construction Contract. The experience section may be expanded to include further Project specific information.
5. The AVP & CFO shall establish a Prequalification Committee.
6. [Procurement Rules](#) permit the University to deny Prequalification to any Contractor if the



University finds the **Contractor** has at least one of the following conditions:

- a. Insufficient financial ability to perform the Contract. Evidence that the Contractor can acquire a surety bond from a corporation included on the United States Treasury list of acceptable surety corporations in the amount and type required for the Project shall be sufficient to establish financial ability;
  - b. Inappropriate experience to perform the construction Project in question;
  - c. Any Officer, Director or Owner has had judgments entered against him within the past ten (10) years for the breach of Contracts for governmental or non-governmental construction;
  - d. Has been in substantial noncompliance with the terms and conditions of prior Construction Contracts with a public body, without good cause. The University may not utilize this provision to deny Prequalification unless the facts underlying such substantial noncompliance were documented in writing in the prior construction Project file and such information relating thereto was given to the Contractor at that time, with the opportunity to respond;
  - e. Any Officer, Director, Owner, PM, Procurement Manager or CFO has been convicted within the past ten (10) years of a crime related to governmental or non-governmental construction or contracting;
  - f. Any Officer, Director, or Owner is currently debarred pursuant to an established debarment procedure from bidding or contracting by any public body, agency of another state, or agency of the federal government;
  - g. Does not have the requisite license issued by the [Virginia Board of Contractors](#) to perform Work in Virginia pursuant to [Procurement Rules](#); or
  - h. Failed to provide to the University, in a timely manner, any information requested by the University relevant to (a) through (g) above.
7. The University shall notify, in writing, each Contractor that submitted the [CO-16](#) whether that Contractor has been prequalified. If a Contractor is denied Prequalification, the written Notice to that Contractor shall state the reason(s) for denial of Prequalification and the factual basis of such reasons(s). The written Notice to each Contractor shall be delivered by U.S. mail. A Contractor denied Prequalification shall have ten (10) days from the postmark date of the written Notice from the University in which to appeal the denial of Prequalification. The Contractor shall submit the written appeal with any additional information which may support the appeal to the AVP & CFO, the University's designated Appeal Officer.
- The decision of the AVP & CFO shall be the final University decision. There is no further administrative appeal procedure pursuant to [Procurement Rules](#); however, the Contractor may initiate legal action pursuant to [Procurement Rules](#).
8. Verification of References supplied by the Contractor in Sections VI: 1, 2, 3, & 5 of the [CO-16](#) shall be accomplished.



9. Qualification criteria I, III, V, and VI in the standard qualification criteria package in the [CO-16](#) shall not be changed without the prior written approval of the AVP & CFO. Qualification criteria for Experience (II) shall be customized to fit the particular Project for which Prequalification is intended.
  
10. The Notice of IFBs for the Project shall be published as required by [Chapters 8](#) and [10](#), and on the On-line Bids page of the [eVA website](#). The advertisement shall appear no less than twenty-one (21) days prior to the date of Bid receipt, unless otherwise approved by the AVP & CFO. The AVP & CFO may approve a reduction of this twenty-one (21) day period, if supported by a D&F, but to a period of not less than ten (10) days. The advertisement shall state that Bids will be accepted only from those Contractors prequalified to Bid on the Project and which are registered vendors with the [eVA electronic procurement system](#).

See

<http://www.fm.virginia.edu/fpc/ContractAdmin/ContractingOptions/PrequalificationforInvitationForBids.htm>

#### **SECTION 11.5 ON-DEMAND IFB**

See <http://www.fm.virginia.edu/fpc/ContractAdmin/contractingoptions.htm>

#### **SECTION 11.6 EMERGENCY**

See <http://www.fm.virginia.edu/fpc/ContractAdmin/ContractingOptions/EmergencyProcurement.htm>

#### **SECTION 11.7 AMENDMENTS TO RFPs**

Amendments shall be issued as necessary to clarify or correct information in RFP Documents, to respond to questions raised by the Firms, and to modify the Proposal receipt date. No oral explanations in regard to the meaning of the RFP documents shall be made and no oral instructions shall be given to the Firms.

Amendments to clarify or correct information in the RFP documents should be issued at least ten (10) days prior to the Proposal receipt date. Amendments that add Work to the Project, that provide significant information, that must be considered by Trade Contractors/Subcontractors and Suppliers, or that contain many pages of corrections, must be issued at least ten (10) days prior to the date set for receipt of Proposals or the Proposal date must be delayed to allow the ten (10) days. Amendments which serve primarily to provide clarifications or corrections which can be covered in a one page Amendment may be issued up to six (6) days prior to the Proposal receipt date. Amendments which only delay or cancel the date for receipt of Proposals must be issued at least twenty-four (24) hours prior to the date and time set for the Proposal receipt.

#### **SECTION 11.8 SOLE SOURCE**

University Sole Source procurement of Construction Managers, General Contractors, and Professional Services are conducted in a manner that is compliant with all relevant law, implementing policies and procedures and are reserved for special circumstances that cannot be accommodated by other procurement methods. Following enacted legislative requirements, the University makes a determination in writing (D&F) prior to proceeding with a Sole Source procurement. Additionally, the University follows a diligent review process that includes the project team, senior operational



management, senior contract administration, and ultimately requires the approval of the University's contracting officer, the Associate Vice President for Facilities and Chief Facilities Officer (AVP & CFO). This review and approval process ensures that for any and all proposed Sole Source procurements, the written justification meets the approval of the AVP CFO as an institutional need and complies with all relevant law and procedures.

The Code of Virginia – University of Virginia Management Agreement is the relevant section of the law. See the Restructured Higher Education Financial and Administrative Operations Act (The Act) 2005 Virginia Acts of the Assembly (Va. Code §§[23-38.88](#) to [23-38.121](#)) and the associated [Management Agreement By and Between the Commonwealth of Virginia and the University of Virginia](#) (The Management Agreement) (Effective 7-01-11).

As stated in Management Agreement Section 2.1.5 “Rules Governing Procurement of Goods, Services, Insurance, and Construction (the Procurement Rules) attached to that Policy as Attachment 1” (*to the Management Agreement*) “constitute the policies and uniform deviations from the VPPA”. As stated in Management Agreement, Exhibit P, Section IV.B. these Rules “shall apply to all procurements undertaken by the University, regardless of the source of funds.”

The UVA Management Agreement, Exhibit M, Section VII. states that the UVA “President, acting through the Executive Vice President and Chief Operating Officer, is authorized to develop implementing procedures for the procurement of Capital Professional Services and construction services at the University.” The UVA Management Agreement, Exhibit P, Section V.A. allows “flexibility to .... meet special needs of the University” and Exhibit P, Section VIII.C. includes “special provisions for procurements such as emergency procurements, **sole source procurements**, brand name procurements, small purchases, procurements in which only one qualified vendor responds, and others.” Management Agreement, Exhibit P, Section IV.B. states that “It shall be the policy of the University that procurements conducted by the University result in the purchase of high quality goods and services at reasonable prices, and that the University be free, to the maximum extent permitted by law and this Policy, from constraining policies that hinder the ability of the University to do business in a competitive environment.”

Per Section 5.E. of the Procurement Rules – “Upon a **determination in writing** that there is only one source practicably (*i.e. feasibly, practically, reasonably, workably*) available for that which is to be procured, a contract may be negotiated and awarded to that source without competitive sealed bidding or competitive negotiation. The writing shall document the basis for this determination.”

The University capital procurement implementing policies and procedures for services and construction are contained in this Higher Education Capital Outlay Manual (HECOM) and UVA Facilities Planning & Construction (FP&C) uses our Determination & Findings process to perform this “determination in writing” function.

Per HECOM Section 1.1.3 “Deviations from the policies and procedures outlined within” (*i.e. for Competitive Sealed Bidding with public advertisement*) “shall be requested by a Determination & Findings (D&F) and must have prior approval of the University of Virginia AVP & CFO. The D&F shall justify and substantiate the need for the deviation.” Usually the University Project Manager (University PM) initiates the D&F approval process and any documentation to describe the action requested and background necessary to document and justify the action.

For the purposes of this process HECOM Section 2.2 defines Sole Source as a “Service ... which is





practicably available from only one .... provider in an area to the exclusion of others (e.g. within the constraints of the particular Project, whether geographic, time, .... or other).”

The University conducts non-competitive negotiations with the firms to make sure that the pricing is fair and reasonable. Contractor pricing is compared against A/E, independent estimator, and/or market pricing. Professional Services are procured using a **qualifications-based** selection process as required by Section 3 of the Procurement Rules, with subsequent non-competitive negotiations based on market pricing. If subcontractors are involved, a Memorandum of Negotiation is prepared to document the procurement process followed by the University and the prime contractor, and includes the recommended firm(s) and approval. If Architects / Engineers are involved a Memorandum of Understanding documents the scope of work, the schedule, and a breakdown of negotiated fees and hourly rates including any reimbursable expenses.

After the University PM prepares and signs the D&F it is routed for review/comment and approval: first to the Academic or Health System Division Director; then to the Construction Services and Contract Administration Director; and then to the Facilities Planning & Construction Director (FP&C Director). After the FP&C Director review she makes a recommendation to the AVP & CFO for his consideration / approval.

Per Section 5.E. of the Procurement Rules – FP&C then “shall issue a written notice (*Notice of Intent to Award*) stating that only one source was determined to be practicably available, and identifying that which is being procured, the contractor selected, and the date on which the contract was or will be awarded. This notice shall be posted in a designated public area, which” is “the DGSS’ website for the Commonwealth’s central electronic procurement system” also known as eVA/VBO. UVA has additionally elected to provide public notice on the FP&C Office of Contract Administration public bulletin board at Ednam Professional Center and to post the award on FP&C’s Office of Contract Administration website <http://fpc.fm.virginia.edu/contractadmin/Pages/default.aspx>.



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## CHAPTER 12<sup>188</sup>: [RESERVED]

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<sup>188</sup> History: April 29, 2009, the material in this Chapter was moved to §1.2.4 and was rewritten; Revision V, updated the Capital Project Steering Committee make up and responsibilities.



## CHAPTER 13: MASTER PLANS AND SITE & UTILITY DRAWINGS

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### SECTION 13.1 MASTER PLANS

**13.1.1** Each Capital Project must conform to a Site, Precinct or Master Plan developed by the [Architect for the University](#) and approved by the [BOV](#). The [Architect for the University](#) is responsible during Project formulation and Project conceptual development to ensure the Project is consistent with the University Master and Precinct Plans.

**13.1.2** A Utility Master Plan will be developed by the [FM Director for Utilities](#) to ensure utility capacities exist to support the Master Plan. Utility facility locations will be as defined in the appropriate Precinct or Master Plan.

### SECTION 13.2 SITE & UTILITY DRAWINGS

Current site and utility Drawings are intended to depict the current condition of the University's physical plant. Updates typically occur annually and show buildings completed, land acquired, etc.

The site and utility Drawings shall be maintained by the Department of Space and Real Estate Management in coordination with the [FP&C Resource Center](#) and the [University Utilities & Energy Department](#).

### SECTION 13.3 OTHER MASTER PLANS AND REQUIREMENTS

Each Capital Project shall conform to the University's Regional Storm Water Plan and Historic Structures Plan.



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## CHAPTER14<sup>189</sup>: [RESERVED]

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<sup>189</sup> History: April 29, 2009, the material in this Chapter was moved to §1.2; Revision V, clarified the Project Execution Summary.




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## CHAPTER 15<sup>190</sup>: REPORTS AND CLAIMS

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### SECTION 15.1 MAJOR CAPITAL PROJECT REPORTING

In accordance with the Restructuring Act, §[23-38.109\(C\)\(3\)](#) any Capital Project funded totally with Non-General Funds (NGF), but operating on real property that was originally acquired with General Funds (GF) and costing more than \$2M will be reported to the Governor and the Chairs of the Senate Committee on Finance and the House Committee on Appropriations 60 days prior to the start of construction or issue of bonds.

### SECTION 15.2 MEASUREMENTS REPORTS

Performance measures of the benefits derived from restructuring will be reported on annually for each fiscal year. This annual report will be shared with all level 3 institutions and will address the following.

#### 15.2.1 General Accountability Measures

1. No material audit findings.
2. Compliance with [BOV](#) approved restructuring policy.
3. Regular reports to the [BOV](#) by the designated Building Official related to his/her duties as the official responsible for Project compliance with the [VUSBC](#). The Building Official has direct access to the [BOV](#).
4. Compliance with the Restructuring Act's reporting requirements for all [BOV](#) Project authorizations.
5. All Certificates of Use issued subsequent to the State Fire Marshal's favorable occupancy report.

#### 15.2.2 Specific Performance Measures

Measure	Benchmark	FYResults	Cost Savings
Number of days on average for institution to process Change Orders locally	Capital Outlay Management("BCOM") to process Change Orders (University data to be used as proxy benchmark for all Institutions- 25 days)		The sum total of the products of the cost of each Change Order times the days saved times the inflation (from the Cost Metric) - (or the product of the sum of the cost of all Change Orders times the average days saved times the inflation)
Number of days on	Before University		The sum total of the products

<sup>190</sup> History: Revision V, updated the cost saving calculation for the Annual Restructuring Report.



average for institution to complete full Code and fire and life safety reviews	delegated review authority BCOM established standard for complete review turnaround time (71 days new construction/42 days renovation and infrastructure)*		of the cost for each Project reviewed times the days saved times the inflation (from the Cost Metric) – (or the product of the sum of the costs of all Projects times the average days saved times the inflation). Do for new and again for renovation.
Number of days saved by <a href="#">BOV</a> approval of NGF Projects Compared to Commonwealth approval	Number of days that would have been required from <a href="#">BOV</a> approval to Appropriation Act effective date or Governor’s emergency authority		The sum total of the products of the cost for each Project authorized times the inflation (from the Cost Metric) times the days saved for each Project. Do for each Project and each approval method.

This report is due 15 September.

### SECTION 15.3<sup>191</sup> TRANSACTION COPIES

The following transactions require documentation to be forwarded to DPB (BCOM) on an as occurs basis:

1. H2
2. H8
3. H14

### SECTION 15.4<sup>192</sup> RESOLUTION OF CONTRACTUAL CLAIMS

**1.5.1 Scope of Provisions:** This procedure applies to A/Es and Construction Contractor(s)

**1.5.2 Procedure:** Pursuant to §53 of [The Management Agreement](#):

“A. Contractual claims, whether for money or other relief, shall be submitted in writing no later than 60 days after final payment. However, written notice of the contractor's intention to file a claim shall be given at the time of the occurrence or beginning of the work upon which the claim is based. Nothing herein shall preclude a contract from requiring submission of an invoice for final payment within a certain time after completion and acceptance of the work or acceptance of the goods. Pendency of claims shall not delay payment of amounts agreed due in the final payment.

B. The Institution shall include in its contracts a procedure for consideration of contractual claims.

<sup>191</sup> History: April 29, 2009, deleted all of the previous material with the exception of the first 3 forms.

<sup>192</sup> History: February 12, 2010, added the Section from material previously covered by Directive 363A.



Such procedure, which may be contained in the contract or may be specifically incorporated into the contract by reference and made available to the contractor, shall establish a time limit for a final decision in writing by the Institution. If the Institution has established administrative procedures meeting the standards of §55 of these Rules, such procedures shall be contained in the contract or specifically incorporated in the contract by reference and made available to the contractor. The Institution may require the submission of contractual claims pursuant to any contract to Alternative Dispute Resolution (ADR) as an administrative procedure.

C. A contractor may not invoke administrative procedures meeting the standards of §55 of these Rules, if available, or institute legal action as provided in §54, prior to receipt of the Institution's decision on the claim, unless the Institution fails to render such decision within the time specified in the contract.

D. The decision of the Institution shall be final and conclusive unless the contractor appeals within six months of the date of the final decision on the claim by the Institution by invoking administrative procedures meeting the standards of §55 of these Rules, if available, *[No administrative appeals procedure pursuant to §55 of the Management Agreement has been established for contractual claims under these contracts]* or in the alternative by instituting legal action as provided in §54.”

**1.5.3 Notice:** Written notice of a claim shall be sent to:

Chief Facilities Officer  
University of Virginia  
Facilities Management  
575 Alderman Road  
P.O. Box 400726  
Charlottesville, Virginia 22904-4726

**1.5.4 AVP & CFO Action:** Upon receiving the written claim the AVP & CFO will review the written materials relating to the claim and decide whether to discuss the merits of the claim. If such discussion is to be held, the AVP & CFO will contact the claimant and arrange such discussion. The manner of conducting such discussion will be as the AVP & CFO and claimant mutually agreed upon.

The AVP & CFO will mail his decision to the claimant within fifteen (15) days after the AVP & CFO's receipt of the claim unless the time is extended by the AVP & CFO. The decision will state the reason for granting or denying the claim.



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# APPENDIX A: BASIS OF DESIGN NARRATIVE AND SYSTEMS CHECKLIST

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## 1. INTRODUCTION

The Basis of Design Narrative is a description of the Project and should be a bound presentation of facts sufficiently complete in accordance with the following format to expedite review of the Schematic and the Preliminary Design Submittals. The Schematic Basis of Design Narrative presents the basic information, criteria, logic, evaluations and considerations developed in each category to prepare the Schematic Submittal. The Preliminary Basis of Design Narrative expands upon the Schematic Submittal to reflect the further analyses, evaluations and selections/decisions made to arrive at the Preliminary Design level.

Design computations, sizing of members or conductors, details of connections, etc., are not required to be submitted with the Schematic Basis of Design, but general computations supporting system selection, member depths, floor to floor heights, mechanical and electrical loads should have been made.

## 2. SCHEMATIC BASIS OF DESIGN INFORMATION

The Schematic Submittal shall include a Basis of Design Narrative which as a minimum provides the following information in narrative or tabular format:

- Type of occupancy/VUSBC Use Group
  - Estimated occupancy capacity and method or factor used for estimate
  - Functions to be housed in the building
  - Proposed building location on the site
  - Exterior Circulation (i.e. how this Project may interface with other area facilities)
  - Areas and capacity required for various activities proposed for building
  - Type of Construction proposed: i.e. fire resistive, protected or unprotected noncombustible, etc. and VUSBC Type #
  - Outline description of basic materials
  - Future construction or expansion to be accommodated, if any
  - Style and character of building desired
1. Structural Design Live Loads, Wind and Seismic Design Criteria
  2. Types of structural framing evaluated and recommendation
    - Description of the types of HVAC systems being evaluated, estimated heating and cooling loads, fuels evaluated and fuel selected to be used
  3. Description of all energy conservation and peak energy reduction methods being evaluated
  4. Description of types of electrical systems evaluated, voltages, possible transformer locations and need for generator
    - Total square foot area per floor and per building
    - Number of beds, seats or parking spaces, where applicable
    - Total estimated construction cost based on the Schematic Design
  5. Total proposed Project Budget
  6. Geotechnical report criteria
  7. Describe Site Work issues such as site survey, utilities, parking, roads, sidewalks and grading





### 3. PRELIMINARY BASIS OF DESIGN NARRATIVE INFORMATION

The following format is for a new building type construction Project but is applicable to renovation and addition Projects by addressing those portions relevant to that particular Project. When a Project consists primarily of mechanical, electrical, structural, or another discipline, the basis of design shall provide more detailed information for the major discipline. The narrative shall address or list the factors indicated for each section. Data may be presented in tabular form where appropriate.

#### **Architectural:**

- (a) Describe functions to be housed in the building and the applicable VUSBC Use Group Classification(s). Include copy of the minimum space/area requirements and adjacency criteria used to develop the design.
- (b) Provide analysis of VUSBC and referenced standards (and NFPA 101, Life Safety Code, if applicable) requirements of all occupancies involved. Determine occupancy classifications and compute occupant load, number of units of exit and other requirements. Describe unusual or critical Code requirements and indicate how such requirement will be met.
- (c) State the VUSBC Type of Construction selected with reference to the degree of fire resistance. Describe construction systems/materials proposed to achieve the construction type/fire resistance rating.
- (d) Computation of gross floor area in accordance with §7B guidance and of Building Efficiency factor/ratio. Gross floor areas should be indicated on the Drawings.
- (e) Provide preliminary floor Plans, elevations, building cross section and other Drawings as required by Chapter 8 of **HECOM**. Floor Plans should indicate the location of all built-in equipment and fire walls.
- (f) Statement as to the types of thermal insulation to be provided, where required, and the value of the "U" factors for the various portions of the structure, i.e., roof, walls, floors, etc. Also describe all architectural energy conserving features to be incorporated.
- (g) Provide a narrative description of the preliminary color design concept addressing architectural finishes and colors. Describe materials for all major items of construction and all interior and exterior finishes. The description of finishes (colors, textures, and patterns) shall be accomplished by the use of a finish schedule. The finish schedule (on the included Drawings) shall identify spaces and interior building material finishes.
- (h) Provide furniture and equipment footprint Drawings in preliminaries reflecting the University's updated equipment list which show the end result of the architect's space planning effort. The furniture footprint demonstrates the designer's plan for the various functions that are housed in the facility. The designer shall use standard furniture sizes to demonstrate adequacy of space and to communicate utility and service requirements to engineering disciplines. (Although required for space, utility and service requirement development, these Drawings are not included in the Final Construction Document package.)
- (i) A description of items not considered to be a permanent part of the structure, such as work benches, shelving, bins and removable partitions. (Show also on furniture footprint Drawings.)



- (j) Analyze the design for compliance with acoustical requirements. List areas of high noise and vibration and acoustic design principles applied. Is an acoustical Consultant or specialist required for the Project?
- (k) Design features to make facilities accessible to and usable by the physically handicapped and conform to the requirements of §7A.2 of **HECOM**. If not incorporated, appropriate reasons/justification shall be given.
- (l) Equipment rooms of ample size shall be provided with consideration being given to adequate allowances for access, maintenance, repair and easy removal of units. Room dimensions shall not restrict equipment items to the products of any single manufacturer. The A/E should assure that equipment of more than one manufacturer can be accommodated in the space allocated. This policy will not be interpreted as sanctioning an increase in equipment space to accommodate some particular manufacturer's product when such would result in structural costs being greater than the probable resultant saving in equipment costs.
- (m) Describe special construction features incorporated into the facility such as barred windows, special wall/roof construction, etc.
- (n) The [AARB](#) has been established to ensure architectural compatibility is maintained at each location. Presentation(s) of the design shall be presented to the [AARB](#) for comment and recommendation for approval after submittal to the University Review Unit for review and comment at the Schematic and Preliminary Design Submittals.

**Structural:**

- (a) Description of foundation conditions, type of foundation to be used, method by which the allowable bearing values are to be determined, and maximum allowable bearing capacity for the foundations. Geotechnical information including field boring notes and foundation design recommendations shall be submitted with the preliminaries.
- (b) Statement of the type of construction adopted and reason therefore, with capacity, dimensions, or other size criteria. List of materials selected with design strengths and ASTM, AISC, ACI, etc. standards to be specified.
- (c) Special features to be included in the structure which are not evident from the Drawings.
- (d) Description of the structural floor and roof systems proposed, with length, spacing and size of principal members (for beam and girder, etc.).
  - (e) Description of the Lateral Force Resisting System proposed with appropriate materials and dimensions.
- (f) Statement of live loading to be used, to include floor loads, wind, snow, earthquake, etc., with data to justify.
- (g) Statement of any special considerations that affect the design, (e.g., special corrosion resistance requirements, detention facilities, cranes, etc.).
- (h) The usual accepted means of structural system selection is economy. Demonstrate this with cost comparisons of various appropriate framing systems such as:

- (1) "Typical bay" member sizing and cost comparisons of alternate structural systems;



- (2) Horizontal force resisting system for wind and earthquake;
- (3) Consideration of unusual geometry (long span, high bay, deep cuts, etc.); and
- (4) Consideration of heavy equipment supports.

### **Plumbing:**

1. Describe system to be utilized on each part of the Project.
2. Determination/calculation of number of each type of fixture based on VUSBC occupancy load. Indicate types and quality standards in narrative and on Preliminary Drawings.
  1. Estimated number of fixture units and water demand in gpm for all plumbing fixtures.
  - (d) Estimated maximum and minimum water pressure at each building and indicate if booster pumping will be required.
  - (e) Type, size and design temperature of domestic water heater and distribution system. Also, a statement as to whether heat recovery is contemplated for domestic water heating.
  - (f) Design temperature of domestic hot water distribution system and extent of recirculation system within building.
1. Indicate materials to be used for each piping system.
  - (h) Address- any special needs such as sumps, interceptors, pumps, pipe guides, lift pumps for sewerage, etc., and indicate tentative sizes, capacities and quality standards to be specified.

### **Heating, Ventilating and Air Conditioning:**

- (a) Design Conditions
  - (1) Describe and list the indoor and outdoor design conditions to be used in the design of systems for this Project. Refer to criteria in Chapter 7.
  - (2) Energy sources for heating and cooling systems shall be determined from an analysis of the efficiency of use and economy of those available for each Project. Parameters for analysis should be obtained from the Division of Engineering and Buildings. The analysis shall be presented for review with Preliminary Design Submittal and shall be summarized on an Energy Analysis Summary sheet.
1. Heating
  - (1) Describe the source of heat energy which will be used, such as extension of central high pressure steam with meter, hot water with meter, or independent heating equipment with type of fuel to be utilized. Also explain why this source was selected in lieu of other available sources. Where there is a possibility of more than one type being economical a computerized analysis should be included to justify the selection.
  - (2) Briefly describe and show on the Drawings the type and routing of the system proposed to convey the heat source, if applicable; (for example, 100 psig low level, above ground steam and



condensate lines on concrete support, interconnecting to the existing system at manhole #150 and traveling due north into the mechanical equipment room). State if condensate return system is to be utilized. If condensate is to be wasted, heat reclaim shall be studied. If wasted, it should be cooled to 140T maximum, then re-turned to the sanitary sewer system (unless specifically instructed otherwise). Indicate the maximum hourly production of condensate.

- (3) Describe and provide schematics of the type of heating medium and system to be used within the buildings. Also include reasons for selection of this system over others available.
- (4) Describe the HVAC Control System. A specific type of control system will be specified, i.e., pneumatic, electric or electronic.

(c) Ventilation

- (1) Indicate the quantity of outside air per person in all areas, the type of filtration, and whether OSHA requirements are applicable.
  1. State if smoke removal/control systems are to be employed.
  2. Describe the operation of the system in summer and winter modes.
  3. Describe any methods to reduce or minimize outside airflow.

(d) Air Conditioning

- (1) Provide a complete description and schematics of the air conditioning system proposed including an explanation of why this system is preferred over others. Also indicate locations of major components of the system. For larger systems which qualify under Energy Conservation, a computerized comparison between at least two systems is required.
  1. Define areas to be air conditioned.
- (3) Identify special humidification or de-humidification requirements, as well as special filtration requirements.
- (4) Describe any special architectural features being incorporated to reduce cooling loads. Also, any features being incorporated in the mechanical system which would reduce energy consumption should be separately discussed.

(e) Combination Systems

- (1) For systems in which the heating, ventilating and air conditioning are combined, repetition may be eliminated by consolidating the aforementioned requested information. Describe changeover procedures and requirements.

(f) Energy Conservation

- (1) Computer energy analysis (block load type) for buildings larger than 8,000 square feet requiring heating and cooling and larger than 20,000 square feet requiring heating only shall be used to study energy conservation features. Concurrence of systems to be studied should be obtained prior to conducting study. If a valid computer analysis was prepared during the Budget Study Preparation for the Project, this may suffice. When computer analyses are performed, the total annual energy consumption estimate should be clearly stated.



- (2) Describe any methods to reduce energy usage and peak loads.
  1. Briefly describe the controls for each system and indicate intended sequence of operation.
  2. Briefly describe testing and balancing requirements to be required.
    - (i) Since the University has an Energy Management System, the Preliminary Design Submittal shall be prepared to conform to the requirements and procedures in Chapter 7.

**Environmental Pollution Control:**

Identify expected environmental pollution and the proposed method of control. A detailed description will be necessary for those facilities directly related to controlling air and water pollution such as sewage treatment plants, industrial treatment facilities, incinerators, smoke elimination facilities, and other similar Projects. When subsurface tile filtration is being considered for sewage disposal, a soil percolation test will be required for each such disposal system. List all environmental control permits and notifications required.

**Asbestos, Lead Based Paint and Hazardous Material:**

The A/E shall include a statement in the Basis of Design addressing asbestos, lead based paint, and other hazardous material (including leakage from underground storage tanks) presence or potential presence on the Project. Indicate if Agency has secured an asbestos, lead based paint, or hazardous material investigation of the Project area for renovation Projects. Indicate how the presence of these materials will affect this Project, (i.e., removed by separate Project, removal included in this Project, left in place and encapsulated, etc.). If Work is by separate Contract, indicate if phasing of Work or a delay of this Project is anticipated.

**Special Mechanical Systems:**

Provide a description of any special mechanical systems such as compressed air, hydraulic, nitrogen, etc., including an explanation of the medium source.

**Central Heating Plants and Heating Plant Additions:**

- (a) Prepare an energy analysis as required by Chapter 7 and submit Energy Analysis Summary. Describe criteria and assumptions in narrative. Describe purpose and Justification of systems proposed.
- (b) Describe environmental constraints such as applicable regulations, liquid wastes, gaseous emissions, treatments required, etc.
- (c) Describe new boilers including rating, flow, temperature, pressure and type.
- (d) Describe control systems.
- (e) Describe any new auxiliaries to be added and what source of power will be used for their operation.

**Refrigeration (Cold Storage):**

- (a) Identify areas to be refrigerated, indicating their usage and temperatures to be maintained.
- (b) Describe type of refrigeration equipment and systems.

**Thermal Storage:**

- (a) Describe the type (static or dynamic) of storage being considered.



- (b) Provide preliminary cooling profile.
- (c) Provide preliminary equipment and tank sizes.
- (d) State how the A/E proposes to conform to University Procurement requirements when specifying thermal storage system and components.

**Fire Protection Systems:**

- (a) Describe type(s) of automatic sprinkler and gaseous extinguishing systems to be utilized and note locations to be protected.
- (b) Describe fire detection and alarm systems including location of detectors, manual stations, audible devices, control panels, etc.
- (c) On the Drawings indicate location of water supply pipe location and main entrance to buildings. Also indicate location of gaseous extinguishing system equipment and supplies and location of fire department connection and post indicator valve.
- (d) Provide the following information about sprinkler systems:
  - (1) Hazard classification of occupancy and applicable Codereference.
  - (2) Water supply available at point of connection (static pressure and residual pressure at design flow). This data must be based upon flow tests at or near the point of connection and must appear in the Basis of Design. Indicate on Drawings the location of flowtest.
  - (3) Describe fire pump operating parameters.
  - (4) Approximate water demand for sprinkler system.
  - (5) Statement of adequacy/inadequacy of water supply and planned upgrades by local jurisdiction, if any.

**Electrical:**

- (a) Provide the following about interior distribution systems:
  - (1) Electrical characteristics (phase, voltage, and number of conductors in main distribution circuits).
  - (2) Breakdown in tabular form of the *estimated* connected load to show:
    - a. Lighting load and convenience outlet load separately.
    - b. Power load for building equipment such as heating, air conditioning, etc.
    - c. Loads for special operating equipment such as compressors, generators, pumps, and for power receptacles being provided to energize special equipment. Apply an appropriate demand factor to each to compute total demand load.
  - (3) Type of wiring system, such as rigid conduit, electrical metallic tubing, non-metallic sheathed cable, etc., and where proposed to use. **(Present criteria prohibits embedding aluminum**



**conduit in concrete. Present products should be reviewed to make sure that conduit, pipe, bars, anchors, or other aluminum parts are not embedded in concrete.)**

- (4) Type of conductors, such as rubber insulated, thermoplastic insulated, polyvinyl chloride jacket, etc., and where proposed to use.
- (5) A statement describing proposed pertinent standards of design, such as voltage drop (include calculations), lighting intensities (include calculations), and type of lighting fixtures, and a statement regarding the use of selective switching or other energy conserving features.
- (6) A determination of short-circuit duty required for all service entrance protective devices and switchgear.
- (7) Type and arrangement of Cable Television Systems (CATV), Closed Circuit Television Systems (CCTV), Nurse Call, intercom, sound, signal, and fire alarm systems. Identify number and location of telecommunication outlets (telephone, computer, word processing, etc.). Obtain information from the University.

Space required for telecommunication equipment, point of connection to telephone utility, size of incoming duct/conduit and size of equipment mounting backboard to be provided.

Statement relative to interface provision for multi-use systems (i.e., intercom, telephone, etc.). A/E must provide all facility support for proposed telephone equipment installations, i.e., conduit, duct, and backboard. Design and procurement of telephone system to be accomplished by the University.

- (8) Indicate interior lighting on lighting Plans.
- (b) Outside distribution systems:
1. Contact the [Facilities Utility Department](#) for location and characteristics of nearest service capable of meeting Project supply requirement.
  - (2) Statement relative to the adequacy of the primary supply at the point of take-off. If primary source is inadequate, state measures proposed to correct the deficiency.
  - (3) Electrical characteristics of power supply to site including circuit interrupting requirements and voltage regulation.
  - (4) Estimate of total connected load and resulting kilowatt demand load by applying proper demand and diversity factors and power factor, if a group of loads is involved.
  - (5) Basis for selection of primary and secondary distribution voltage.
  - (6) Type of conductors and where proposed to use.
  - (7) A statement describing pertinent standards for design, such as voltage drop, physical characteristic of overhead or underground circuits, type of lighting units and lighting intensities.



- (8) Type and adequacy of signal and fire alarm systems, including a statement as to spare capacity on fire alarm circuit. **The importance of early resolution of the fire protection requirements cannot be overemphasized.**
- (9) Type, adequacy and routing of supporting structure(s) for telecommunication cable.

**Electronic Systems:**

- (a) System engineering concepts. Describe the proposed type of system, its functions and the interrelationships if the system is a multi-use system (i.e. security, etc.). (See items (m) and (n) below.)
- (b) Indicate circuit requirements.
- (c) Indicate equipment selection in such categories as: University furnished equipment; standards manufacturers or commercially available items; and special equipment.
- (d) Describe site or location considerations.
- (e) Describe bonding and grounding requirements.
- (f) Describe communication and control cables and radio links.
- (g) Identify test equipment, repair shop, and spare parts storage requirements.
- (h) Describe equipment, instrumentation, arrangement, and space requirements indicating requirements for racks, consoles, and individual mountings. Provide the most economical design in first cost, operation and maintenance costs, and operating conditions conforming to best engineering concepts.
- (i) Identify wiring and cabling requirements plus terminations.
- (j) Identify power and lighting requirements, including emergency or standby requirements.
- (k) Describe air conditioning, including humidity and dust control requirements.
- (l) Identify interference and clearance requirements.
- (m) State security requirements for Security/Entry Control System.
- (1) Identify separately from the other Project elements the requirements for Intrusion Detection Systems (IDS). Any of the following items and their interconnecting circuits may be considered part of an IDS:

- Annunciation Panels and Cabinets
- Visual and Audible Annunciators
- Magnetic Switches
- Proximity Sensors
- Volumetric Sensors
- Wire Grids
- Vibration Detectors
- Power Supplies Integral to Items on this List
- Closed Circuit Television Cameras and Monitors, and
- Video Recorders used for Intrusion Detection Purposes
- Access Control Systems





- (2) IDS installation can be divided into three general functional categories:
- (a) Sensitive compartmented information facilities.
  - (b) Conventional arms, ammunition, and explosives storage sites (AA & E).
  - (c) All other (including but not limited to communication facilities, special training facilities, special operational facilities, intelligence facilities, etc.).

Describe access control equipment (versus IDS) when required and outline locations, function, and area of control.

**Energy Monitoring and Control System (ECMS):**

- (a) Indicate if any EMCS will be utilized.
- (b) Indicate if the EMCS will be stand alone or tied into central system.
- (c) Indicate if a sole source is required for tie in.
- (d) Describe the EMCS proposed to be used.

**Site and Landscaping:**

- (a) Describe site and facility location and give reasons for selection and orientation.
- (b) List and describe utilities available at the site.
- (c) Describe existing vegetation, bodies of water, topography, and soil conditions.
- (d) Describe existing site improvements to remain, to be altered, and to be demolished.
- (e) Describe existing pedestrian and vehicular access, roads, sidewalks, and parking to include accessibility for the disabled.
- (f) Describe proposed site improvements.
- (g) Describe proposed contours, bodies of water, and landscaping improvements.

**Water Supply:**

- (a) Describe the existing system including, but not limited to, the type, capacity, condition, present water use, and unsatisfactory elements.
- (b) State type of construction proposed, materials for water mains, type of well, etc.
- (c) State design factors with present and projected design population loads for sewage treatment plants. Coordination with appropriate state/local regulatory agencies is required.
- (d) State materials to be used for sewer systems and sewage treatment plants.
- (e) Identify standards (federal, state, local) governing the design.



- (f) Describe the impact of steam condensate and cooling water discharges on existing sewer lines and sewage treatment plants and the estimated cost of distribution and treatment of this additional loading.

**Sewers and Sewage Disposal Systems:**

- (a) Describe the existing system indicating particularly the type, capacity, condition, present flow and unsatisfactory elements.
- (b) State degree of treatment necessary by effluent requirements and units needed to treat.
- (c) State design factors with present and projected design population loads for sewage treatment plants. Coordination with appropriate state/local regulatory agencies is required.
- (d) State materials to be used for sewer systems and sewage treatment plants.
- (e) Identify standards (federal, state, local) governing the design.
- (f) Describe the impact of steam condensate and cooling water discharges on existing sewer lines and sewage treatment plants and the estimated cost of distribution and treatment of this additional loading.

**Roads, Driveways, Parking Areas and Walks:**

- (a) State general soil conditions, with a brief outline of soil exploration and testing performed. Indicate CBR value and pavement recommendations. (Show typical paving section on the Drawings.)
- (b) Describe the type and volume of traffic, controlling wheel loads and types or classes of roads under consideration. Justify any deviation from criteria thickness for these classes.

**Dust and Erosion Control:**

Dust and erosion control will be considered an integral part of all design and construction Projects. Such controls will be generally limited to areas actually scarred or denuded in the process of constructing a Project. Dust and erosion control will not be confused with landscaping. Preliminary Design Submittal will contain the necessary design data, and costs for dust and erosion control measures where applicable. The Basis of Design will include a narrative regarding the type of treatment selected, affected areas, and reasons for selection of type and determination of areas.

**Fencing:**

State type, heights, and justification for fencing.

**Stormwater Management:**

Describe the measures to be taken and features/structures required to comply with Stormwater Management Regulations.

**BUILDING SYSTEMS AND EQUIPMENT CHECKLIST**

Indicate systems and equipment to be included in Project. Provide equipment data and area in spaces provided. When two or more subsystems are used, show a portion of each by percentage of gross to nearest ten percent (10%).



**STRUCTURAL**

**Foundation System**

Ground Floor Area (SF) \_\_\_\_\_

Type	Footing Bottom from Existing Grade	Compacted Fill
_____ Spread Footings	_____ 2'	_____ Borrow fill 1'
_____ Thickened Slab @ Edge	_____ 3'	_____ Borrow fill 2'
_____ Pile Foundation	_____ 4'	_____ Borrow fill 3'
_____ Caissons	_____ 5'	_____ Borrow fill 4'
_____ Continuous wall footing	_____ _____	_____ Borrow fill 5'
_____ Grade Beams		_____ Over 5'
_____ Special (See Site Work Section)		

**Slab on Grade**

Slab on Grade Area (SF) \_\_\_\_\_

Type	Slab Thickness	Floor Live Load
_____ Floating	_____ 4"	_____ Under 100 PSF
_____ Grade Beam Supported	_____ 5"	_____ 101-200 PSF
_____ Pile Supported	_____ 6"	_____ 201-300 PSF
_____ Reinforced	_____ 8"	_____ 301-400 PSF
	_____ Over 8"	_____ Over 400 PSF

**Structural Design Criteria**

Seismic	Roof Live/Snow Load	Wind Loading
_____ Performance Category	_____ Roof LL 20 PSF	_____ Wind 80 mph
_____ Exposure Group	_____ Roof LL 30 PSF	_____ Wind 92 mph
_____ Site/Soil Coeff	_____ Roof LL 40 PSF	_____ Wind 103 mph
	_____ Roof LL 50 PSF	_____ Wind 115 mph

**Structural Frame Type**

Gross Bldg. Area (SF) \_\_\_\_\_

- \_\_\_\_\_ Bearing Wall
- \_\_\_\_\_ Steel Frame
- \_\_\_\_\_ Concrete, Cast in Place
- \_\_\_\_\_ Wood
- \_\_\_\_\_ Concrete, Precast

**Supported Floor**

Supported Floor (SF) \_\_\_\_\_

Type System	Floor Design Live Load	Span
_____ Concrete, Cast in Place	_____ Under 40 PSF	_____ Concrete



\_\_\_\_\_ 40-60 PSF

\_\_\_\_\_ Under 26'  
26'-35'



Concrete on Steel Frame  
 Concrete, Precast  
 Wood

61-80 PSF  
 81-100 PSF  
 101-150 PSF  
 151-200 PSF  
 Over 200 PSF

36'-45'  
 46'-55'  
 56'-65'  
 Over 65'

**Roof Structure**

Area of Roof (SF) \_\_\_\_\_

**Framing**  
 Concrete, Cast In Place  
 Precast Hollow Core  
 Concrete, Precast  
 Wood  
 Steel Joist  
 Steel Framing

**Decking**  
 Steel  
 Concrete Slab  
 Wood  
 Gypsum  
 Other (List)

**Span**  
 Under 26'  
 26'-35'  
 36'-45'  
 46'-55'  
 56'-65'  
 Over 65'

**Pre-engineered Building**

Area (SF) \_\_\_\_\_

**Type**  
 Rigid Frame  
 Post & Beam  
 \_\_\_\_\_

**Eave Height**  
 Eave height under 12'  
 Eave height 12'-20'  
 Eave height over 20'

**Roof Slope**  
 1 in 12  
 2 in 12  
 3 in 12  
 >3 in 12

**Exterior Wall**  
 Prefinished Metal  
 Masonry  
 Insulation 'U'

**Roof Material**  
 Standing Prefinished Metal  
 Standing Seam Metal  
 Insulation 'U'

**ARCHITECTURAL SYSTEMS**

**Roofing**

Area of Roof (SF) \_\_\_\_\_

**Type Material**  
 Built-up  
 Shingles  
 Sprayed  
 Metal Roofing  
 EPDM  
 CSPE  
 Other \_\_\_\_\_

**Insulation**  
 U = 0.03  
 U = 0.04  
 U = 0.05  
 U = 0.\_\_\_\_

**Wind Uplift**  
 FM 1-30  
 FM 1-60  
 FM 1-90

**Fire Resistance**  
 Class A  
 Class B  
 Class C

**Stairs**

Number of Risers (EA) \_\_\_\_\_

Exposed  
 Enclosed

Concrete  
 Steel

Closed Riser  
 Open Riser



- \_\_\_\_\_ Exterior
- \_\_\_\_\_ Interior
- \_\_\_\_\_ None
- \_\_\_\_\_ Area of Rescue Assistance

- \_\_\_\_\_ Steel Pan
- \_\_\_\_\_ Checkered Plate
- \_\_\_\_\_ Grate

- \_\_\_\_\_ Ships Ladder
- \_\_\_\_\_ Attic Access

**Exterior Wall System**

Exterior Wall Area (SF) \_\_\_\_\_ U Value \_\_\_\_\_

**Exterior Surface**

- \_\_\_\_\_ Brick
- \_\_\_\_\_ CMU
- \_\_\_\_\_ Synthetic (EIFS)
- \_\_\_\_\_ Metal Panels
- \_\_\_\_\_ Stucco
- \_\_\_\_\_ Wood
- \_\_\_\_\_ Concrete, Cast in Place
- \_\_\_\_\_ Concrete, Precast
- \_\_\_\_\_ Stone (Granite, Marble, etc)
- \_\_\_\_\_ Vinyl Siding
- \_\_\_\_\_ Other

**Backup**

- \_\_\_\_\_ CMU
- \_\_\_\_\_ Wood Studs
- \_\_\_\_\_ Steel Studs
- \_\_\_\_\_ Concrete, C-I-P
- \_\_\_\_\_ Concrete, Precast
- \_\_\_\_\_ Furring
- \_\_\_\_\_ Other

**Story Height**

- \_\_\_\_\_ Under 12'
- \_\_\_\_\_ 12'- 20'
- \_\_\_\_\_ over 20'
- \_\_\_\_\_ Insulation
- \_\_\_\_\_ Batt R= \_\_\_\_\_
- \_\_\_\_\_ Rigid R= \_\_\_\_\_
- \_\_\_\_\_ Other \_\_\_\_\_

**Interior Wall System (excludes finishes)**

Interior Wall Area (SF) \_\_\_\_\_

**Type**

- \_\_\_\_\_ Concrete Masonry Unit
- \_\_\_\_\_ Steel Studs
- \_\_\_\_\_ Wood Studs
- \_\_\_\_\_ Concrete, Cast in Place

**Height**

- \_\_\_\_\_ 8'
- \_\_\_\_\_ 9'
- \_\_\_\_\_ 10'
- \_\_\_\_\_ Over 10' (Height = \_\_\_\_\_ ft)

**Interior Finishes**

(Show nominal percentage of each)

Gross Bldg. Area (SF) \_\_\_\_\_

**Walls**

- \_\_\_\_\_ Gypsum Board, Painted
- \_\_\_\_\_ CMU
- \_\_\_\_\_ Ceramic Tile
- \_\_\_\_\_ Wood Panels
- \_\_\_\_\_ Plaster
- \_\_\_\_\_ Vinyl Wall Covering
- \_\_\_\_\_ Other
- \_\_\_\_\_ Other

**Floors**

- \_\_\_\_\_ VCT
- \_\_\_\_\_ Sheet Vinyl
- \_\_\_\_\_ Ceramic Tile
- \_\_\_\_\_ Quarry Tile
- \_\_\_\_\_ Exposed Concrete
- \_\_\_\_\_ Terrazzo
- \_\_\_\_\_ Carpet
- \_\_\_\_\_ Hardwood
- \_\_\_\_\_ Special Toppings

**Ceiling**

- \_\_\_\_\_ Acoustical
- \_\_\_\_\_ Gypsum Board
- \_\_\_\_\_ Plaster
- \_\_\_\_\_ Concrete
- \_\_\_\_\_ Spray on
- \_\_\_\_\_ Metal Panel
- \_\_\_\_\_ Exposed Struc.
- \_\_\_\_\_ Other \_\_\_\_\_
- \_\_\_\_\_ Other \_\_\_\_\_

**Doors and Hardware**

Surface Area one Side (SF) \_\_\_\_\_



**Door Types**

- \_\_\_\_\_ Hollow Metal Exterior, Size
- \_\_\_\_\_ Aluminum Store Front (glass), Size

**Frame Types**

- \_\_\_\_\_ Hollow Metal
- \_\_\_\_\_ Steel Frame



- \_\_\_\_\_ Wood Exterior, Size
- \_\_\_\_\_ Folding, Size
- \_\_\_\_\_ Overhead, Size
- \_\_\_\_\_ Vault, Size
- \_\_\_\_\_ Metal Security Door
- \_\_\_\_\_ Wood Interior
- \_\_\_\_\_ Hollow Metal Interior

- \_\_\_\_\_ Aluminum
- \_\_\_\_\_ Painted Wood
- \_\_\_\_\_ Stainless Steel
- \_\_\_\_\_ Other \_\_\_\_\_

**Windows**

Surface Area one Side (SF) \_\_\_\_\_

- Type**
- \_\_\_\_\_ Fixed
  - \_\_\_\_\_ Double Hung
  - \_\_\_\_\_ Projected
  - \_\_\_\_\_ Casement
  - \_\_\_\_\_ Sliding
  - \_\_\_\_\_ Storm
  - \_\_\_\_\_ Awning
  - \_\_\_\_\_ Jalousie
  - \_\_\_\_\_ Other \_\_\_\_\_

- Glazing**
- \_\_\_\_\_ Single
  - \_\_\_\_\_ Double
  - \_\_\_\_\_ Thermal
  - \_\_\_\_\_ Safety
  - \_\_\_\_\_ Wire glass
  - \_\_\_\_\_ Bullet Proof
  - \_\_\_\_\_ Re-glazing
  - \_\_\_\_\_ Other \_\_\_\_\_

- Frame**
- \_\_\_\_\_ Aluminum
  - \_\_\_\_\_ Painted Wood
  - \_\_\_\_\_ Vinyl Clad Wood
  - \_\_\_\_\_ Aluminum Clad
  - \_\_\_\_\_ Painted Steel
  - \_\_\_\_\_ Other \_\_\_\_\_
  - \_\_\_\_\_ Other \_\_\_\_\_

**Specialties**

Gross Bldg Area (SF) \_\_\_\_\_

- \_\_\_\_\_ Jail Doors/Locks
- \_\_\_\_\_ Clean Room
- \_\_\_\_\_ Case Work
- \_\_\_\_\_ Dark Rooms
- \_\_\_\_\_ Loading Dock Equip
- \_\_\_\_\_ Projection Screen
- \_\_\_\_\_ Marker & Tack Boards
- \_\_\_\_\_ Sign and Plaques
- \_\_\_\_\_ Flagpoles
- \_\_\_\_\_ Access Flooring
- \_\_\_\_\_ Telephone Enclosures
- \_\_\_\_\_ Ladders
- \_\_\_\_\_ Others
- \_\_\_\_\_

- \_\_\_\_\_ Toilet Accessories
- \_\_\_\_\_ Toilet Partitions
- \_\_\_\_\_ Wire Partitions
- \_\_\_\_\_ Metal Walkways
- \_\_\_\_\_ X-ray Shielding
- \_\_\_\_\_ Wardrobes (Dormitory)
- \_\_\_\_\_ Chest of Drawers (Dormitory)
- \_\_\_\_\_ Storage Shelving
- \_\_\_\_\_ Fireplaces
- \_\_\_\_\_ Movable Partitions
- \_\_\_\_\_ Postal Specialties
- \_\_\_\_\_ Exterior Sun
- \_\_\_\_\_ Control Devices
- \_\_\_\_\_

**MECHANICAL SYSTEMS & EQUIPMENT**

**Plumbing**

Number of Fixtures (EA) \_\_\_\_\_





**Plumbing Fixtures**

- Flush Tank WC Floor Mtd.
- Flush Tank WC Wall Mtd.
- Flush Valve WC Floor Mtd.
- Flush Valve WC Wall Mtd.
- Water Heater Electric
- Water Heater Steam
- Instantaneous W.H., Electric
  
- Instantaneous W.H., Steam
- Water Heater Gas

- Tub
- Shower Fiberglass
- Shower/Receptor
- Shower Multi-head
- Emergency Shower
- Emergency Eyewash
- Eyewash

**Piping**

- Copper Pipe
- PVC Pipe
- Acid Resistant Pipe
- Cast Iron Piping
- Valves, Fittings
- Fixture Rough-ins
- Pressure Reducer
  
- Arrestors

**Roof Drainage**

- Gutter & Downspouts
- Scupper & Downspouts
- Roof Drains & Interior Piping

**Building HVAC Systems**

**Heating Load** - \_\_\_\_\_ MBH

Building Heating Systems

- Boiler
- Heat Exchanger
- Other \_\_\_\_\_

**Cooling Load** - \_\_\_\_\_ Tons

Building Cooling Systems

- Heat Pump, Water Cooled
- Heat Pump, Air Cooled
- Chiller

**Distribution Medium**

- Steam
- Hot Water
- Hot Air

- Direct Expansion
- Reciprocating
- Rotary Screw
- Centrifugal
- Steam Absorption

**Fuel**

- Gas
- Oil
- Coal
- Electric
- Geothermal

- Cooling Tower
- Thermal Storage
- Roof Top Units
- Single Zone
- Multi Zone
- Ventilation
- Dual Temperature Water
- Air Cooled Condensing Unit

- Computer Room Glycol
- Computer Room DX

**Heating Equipment**

- Unit Heaters
- Fin Tube Radiation
- Individual Units
- Cabinet Unit Heaters
- Computer Room CW

- \_\_\_\_\_
- \_\_\_\_\_ **Air Distribution**
- \_\_\_\_\_



H&V Units HW, Oil Duct Mtd. Coils Heat

Reclaim

Other \_\_\_\_\_



- Ducted Supply
- Ducted Return
- Dual Duct
- H&V Unit
- Air Handling Unit

- Fan Coil Units
- VAV Fan Powered
- VAV Terminal Only
- VAV Reheat

**Mechanical Ventilation**

Fan Capacity (CFM) \_\_\_\_\_

- Power Roof Exhaust Fans
- In Line Exhaust Fans
- In Line Supply Fans
- Power Roof Supply Fans

- Fume Exhaust Hoods
- Kitchen Exhaust Hoods
- Kitchen Supply & Exhaust Hoods
- Wall Exhaust & Fans

**Dehumidification**

- Desiccant
- Refrigeration

- Regenerative
- Non-regenerative

**CENTRAL PLANT SYSTEMS**

Heating Capacity - \_\_\_\_\_ MBH

Cooling Capacity - \_\_\_\_\_ Tons

Central Heating Plant Equipment

- Chiller
- Boiler
- Geothermal
- Purchased (Outside source)

Central Cooling System

- Direct Expansion
- Reciprocating
- Rotary Screw
- Centrifugal
- Steam Absorption
- Cooling Tower
- Air Cooled Condenser
- Air Cooled Condensing Unit
- Thermal Storage

Distribution Medium

- Steam
- Hot Water
- High Temperature Hot Water

Fuel

- Gas
- Oil
- Coal
- Electric
- Geothermal

**Fire Protection**

Gross Area Sprinkled (SF) \_\_\_\_\_

**Sprinkler Type**

- Dry

**Classification**

- Light Hazard



\_\_\_\_\_ Wet  
\_\_\_\_\_ Pre-action  
\_\_\_\_\_ Deluge  
\_\_\_\_\_ Foam Water Deluge  
\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Ordinary Hazard  
\_\_\_\_\_ Extra Hazard  
\_\_\_\_\_ Limited Area  
\_\_\_\_\_ Includes Booster Pump



**Carbon Dioxide**

- \_\_\_\_\_ Hose Reel
- \_\_\_\_\_ Flooding, Area
- \_\_\_\_\_ Flooding, Total

Storage Capacity (LBS) \_\_\_\_\_

**Fire Alarm**

- \_\_\_\_\_ Manual
- \_\_\_\_\_ Automatic Detectors
- \_\_\_\_\_ Mechanical & Electrical
- \_\_\_\_\_ Extend Existing (Mfr. \_\_\_\_\_)

Gross Building Area (SF) \_\_\_\_\_

**ELECTRICAL SYSTEMS**

**Power**

Connected Load (KW) \_\_\_\_\_

- \_\_\_\_\_ 120/208
- \_\_\_\_\_ 277/480/120/208
- \_\_\_\_\_ 277/480
- \_\_\_\_\_ 120/240
- \_\_\_\_\_ Alteration to Existing
- \_\_\_\_\_ Explosion Proof

**Voltage Panel boards**

- \_\_\_\_\_ A \_\_\_\_\_ V
- \_\_\_\_\_ A \_\_\_\_\_ V
- \_\_\_\_\_ A \_\_\_\_\_ V
- \_\_\_\_\_ A \_\_\_\_\_ V
- \_\_\_\_\_ A \_\_\_\_\_ V
- \_\_\_\_\_ A \_\_\_\_\_ V
- \_\_\_\_\_ A \_\_\_\_\_ V

**Transformers**

- voltage \_\_\_\_\_ V
- Rating \_\_\_\_\_ KVA

**Lighting**

Gross Building Area (SF) \_\_\_\_\_

- \_\_\_\_\_ Incandescent
- \_\_\_\_\_ Fluorescent
- \_\_\_\_\_ High Ind. Discharge w/Battery Operated Emergency
- \_\_\_\_\_ High Ind. Discharge (HID) High Bay
- \_\_\_\_\_ High Ind. Discharge (HID) Low Bay
- \_\_\_\_\_ Explosion Proof @
- \_\_\_\_\_ Special System

**Special Electrical Systems**

Gross Building Area (SF) \_\_\_\_\_

- \_\_\_\_\_ Uninterruptable Power Supply (UPS)
- \_\_\_\_\_ Static/Battery
- \_\_\_\_\_ Motor Generator Set

**Electrical Generators**

Equipment Capacity (KW) \_\_\_\_\_

- |                    |                              |                |
|--------------------|------------------------------|----------------|
| _____ Intermittent | _____ 120/240V, 1 PH, 60HZ   | _____ 600 RPM  |
| _____ Continuous   | _____ 120/208V, 3PH, 60HZ    | _____ 720 RPM  |
| _____ Cogeneration | _____ 277/240V, 3PH, 60HZ    | _____ 900 RPM  |
| _____ Fire Pumps   | _____ 347/600V, 3PH, 60HZ    | _____ 1200 RPM |
| _____ Gas          | _____ 4160V/2400V, 3PM, 60HZ | _____ 1800 RPM |
| _____ Diesel       | _____ 11.5/6.5KV, 3PH, 60HZ  |                |



- Turbine
- Integral Radiators
- Remote Radiators

**Special Electrical Protection**

Gross Building Area (SF) \_\_\_\_\_

- Lighting Protection
- Lighting Grounding
- Electronic Grounding
- Distribution Grounding
- Other \_\_\_\_\_

**Energy Monitoring & Control System(ECMS)**

- Local Control
- Remote Control
- Building Only
- Tie to Central System

**Security Detection**

- Intrusion Alarm for Access Control
- Access Control
- TV Camera & Monitor
- Conduit
- Conduit & Wire

**Communications Systems**

- Telephone
- Agency Owned System
  - Conduit Only
  - Conduit & Wire

- Intercom
- Theater Sound
  - Two-way Communication Listening
  - Special System (Describe)
  - Includes PA Systems
  - Conduit
  - Conduit & Wire
  - Leased System
  - Agency Owned System

- Public Announcement
- Agency Owned System
  - Conduit Only
  - Conduit & Wire

- Television
- Agency Owned System
  - Leased Cable System
  - Conduit Only
  - Conduit & Wire

- Fire Alarm
- Local
  - To Fire Station
  - Conduit Only
  - Conduit & Wire

**Special Systems and Equipment**

Gross Building Area (SF) \_\_\_\_\_

- Vacuum, Medical
- Oxygen
- Low Pressure below 150 psi
- High Pressure above 150 psi
- Vacuum, Industrial
- Nitrogen
- Compressed Air



**Interior Steam System**

- |                          |                           |                          |                       |
|--------------------------|---------------------------|--------------------------|-----------------------|
| <input type="checkbox"/> | High Pressure             | <input type="checkbox"/> | Gas Fired Boiler      |
| <input type="checkbox"/> | Medium Pressure           | <input type="checkbox"/> | Oil Fired Boiler      |
| <input type="checkbox"/> | Low Pressure              | <input type="checkbox"/> | Electric Fired Boiler |
| <input type="checkbox"/> | Chemical Treatments       | <input type="checkbox"/> | Prefabricated Stack   |
| <input type="checkbox"/> | Feed Water Equipment      | <input type="checkbox"/> | Fire Tube             |
| <input type="checkbox"/> | With Condensate Return    | <input type="checkbox"/> | Water Tube            |
| <input type="checkbox"/> | Without Condensate Return | <input type="checkbox"/> | Controls              |
|                          |                           | <input type="checkbox"/> | Fuel Oil Storage      |

**Other**

- Dust Collection
- Engine Exhaust, overhead
- Engine Exhaust, under floor
- Engine Exhaust, through door

**CONVEYING EQUIPMENT**

**Bridge Cranes**

- |                          |                |                          |                    |                          |               |
|--------------------------|----------------|--------------------------|--------------------|--------------------------|---------------|
| <input type="checkbox"/> | Span under 50' | <input type="checkbox"/> | Capacity under 10T | <input type="checkbox"/> | Run under 50' |
| <input type="checkbox"/> | Span 51'-75'   | <input type="checkbox"/> | Capacity 10-20T    | <input type="checkbox"/> | Run 50-100'   |
| <input type="checkbox"/> | Span over 75'  | <input type="checkbox"/> | Capacity 21-40T    | <input type="checkbox"/> | Run over 100' |
|                          |                | <input type="checkbox"/> | Capacity over 40T  |                          |               |

**Monorails**

- |                          |              |                          |                   |                          |                |
|--------------------------|--------------|--------------------------|-------------------|--------------------------|----------------|
| <input type="checkbox"/> | Manual       | <input type="checkbox"/> | Capacity under 5T | <input type="checkbox"/> | Run under 50'  |
| <input type="checkbox"/> | Electric     | <input type="checkbox"/> | Capacity 5- 10T   | <input type="checkbox"/> | Run 50 to 100' |
| <input type="checkbox"/> | Air Operated | <input type="checkbox"/> | Capacity over 10T | <input type="checkbox"/> | Run over 100'  |

**Fixed Hoist**

- Manual
- Electric
- Air Operated

**Vehicle Lifts**

- Capacity under 5T
- Capacity 5-10T
- Capacity over 10T

**Elevators**

- Electric
- Hydraulic
- Escalators
- Conveyors
- Dumbwaiters

Number of Stops (EA) \_\_\_\_\_

- Passenger
- Freight
- Chair Lift (H/C)
- Wheelchair Lift



**BUILT-IN EQUIPMENT**

Gross Building Area (SF) \_\_\_\_\_

- \_\_\_\_\_ Hospital Equipment
- \_\_\_\_\_ Dental Equipment
- \_\_\_\_\_ Food Service Equipment
- \_\_\_\_\_ Chapel Equipment
- \_\_\_\_\_ Movie neater Equipment
- \_\_\_\_\_ Rifle Range Equipment
- \_\_\_\_\_ Laboratory Equipment
- \_\_\_\_\_ Waste Disposal Equipment
- \_\_\_\_\_ Paint Spray Booth
- \_\_\_\_\_ Special Warehouse Equipment
- \_\_\_\_\_ Snow Melting Equipment
- \_\_\_\_\_ Exercise/Fitness Equipment
- \_\_\_\_\_ Athletic/Sports Equipment
- \_\_\_\_\_ Maintenance Shop Equipment
- \_\_\_\_\_ Vault
- \_\_\_\_\_ Parking Lot Control
- \_\_\_\_\_ Turnstiles/Personnel Access

Other Built-in Equipment (list):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**DEMOLITION INTERIOR**

Gross Building Area (SF) \_\_\_\_\_

**Interior Demolition**

- \_\_\_\_\_ Complete Interior of Building
- \_\_\_\_\_ Complete Interior Partition
- \_\_\_\_\_ Complete Interior Finishes
- \_\_\_\_\_ Complete Interior Mechanical
- \_\_\_\_\_ Complete Interior Electrical
- \_\_\_\_\_ Other \_\_\_\_\_

**Asbestos Removal**

Total Cost (Lump Sum) \_\_\_\_\_

- \_\_\_\_\_ Asbestos Removal Roofing Felts, Insulation
- \_\_\_\_\_ Asbestos Removal - Piping, Equip
- \_\_\_\_\_ Asbestos Removal - Ceilings
- \_\_\_\_\_ Asbestos Removal - Fireproofing
- \_\_\_\_\_ Asbestos Removal - Floors

**Lead Based Paint Removal**

Total Cost (Lump Sum) \_\_\_\_\_

- \_\_\_\_\_ Bulk Removal (Material with lead based paint still on it)
- \_\_\_\_\_ Surface Removal/Abatement

**SITWORK SITE UTILITIES AND IMPROVEMENT DESCRIPTIONS**

**Exterior Electrical**

Length of Run (LF) \_\_\_\_\_





Electrical Distribution, Primary \_\_\_\_\_ KV  
 Agency Owned  
 Utility Co \_\_\_\_\_  
 Electrical Distribution, Secondary \_\_\_\_\_ V \_\_\_\_\_ PH  
 Substation/Transformer \_\_\_\_\_ KVA rating

**Exterior Communication**

Length of Run (LF) \_\_\_\_\_

Fire Alarm Distribution  
 Security Alarm Distribution  
 Communication, Telephone Distribution  
 Exterior EMCS Distribution  
 Other \_\_\_\_\_

**Area Lighting**

Number of Fixtures (EA) \_\_\_\_\_

Poles with Lights: \_\_\_\_\_  
 Foot Candles Req'd. \_\_\_\_\_  
 Pole Type \_\_\_\_\_ Type Fixture \_\_\_\_\_ Mounting Height \_\_\_\_\_

Building Mounted: \_\_\_\_\_  
 Foot Candles Required \_\_\_\_\_  
 Type Fixture \_\_\_\_\_ Mounting Height \_\_\_\_\_

**Lighting Protection**

Building  
 Electrical Systems

**EXTERIOR MECHANICAL DISTRIBUTION**

Length of Run (LF) \_\_\_\_\_

Heat Distribution, Overhead  
 Heat Distribution, Underground Encased  
 Heat Distribution, Underground Trenches  
 Chilled Water Distribution  
 Condensate Collection  
 Gas Distribution  
 Compressed Air Distribution

**EXTERIOR WATER DISTRIBUTION**

Length of Run (LF) \_\_\_\_\_

Water Distribution Piping  
 Fire Protection Water Distribution  
 Fire Hydrants  
 Water Pumping Station  
 Fire Booster Pump



**EXTERIOR SANITARY SEWER COLLECTION**

Length of Run (LF) \_\_\_\_\_

- \_\_\_\_\_ Sanitary Sewer Piping
- \_\_\_\_\_ Manholes
- \_\_\_\_\_ Sewage Pump Station
- \_\_\_\_\_ Sewage Lift Station
- \_\_\_\_\_ Domestic Sewage Treatment

**EXTERIOR STORMWATER SYSTEM**

Length of Run (LF) \_\_\_\_\_

- \_\_\_\_\_ Storm Drainage Piping
- \_\_\_\_\_ Box and Arch Culvert
- \_\_\_\_\_ Drainage Facing Materials
- \_\_\_\_\_ Retention Pond, Wet
- \_\_\_\_\_ Detention Pond, Dry
- \_\_\_\_\_ Underground Structure Detention
- \_\_\_\_\_ Median Detention

**EARTHWORK**

Volume, Curb Fill (Cu. Yd)

- \_\_\_\_\_ Site Clearing
- \_\_\_\_\_ Site Grading & Excavation
- \_\_\_\_\_ Site Irrigation
- \_\_\_\_\_ Site Dewatering (major)
- \_\_\_\_\_ Replacement of Unsuitable Materials & Compaction
- \_\_\_\_\_ Erosion Control
- \_\_\_\_\_ Environmental Protection

**LANDSCAPING**

Area Planted (SY) \_\_\_\_\_

- \_\_\_\_\_ In Construction Contract
  - \_\_\_\_\_ Fine Grading
  - \_\_\_\_\_ Fertilizing
  - \_\_\_\_\_ Topsoil
  - \_\_\_\_\_ Seeding
  - \_\_\_\_\_ Sodding
  - \_\_\_\_\_ Trees, Shrubs, Other
  - \_\_\_\_\_ Plantings
- \_\_\_\_\_ By Owner or Separate Contract

**SITE IMPROVEMENTS**

Area Developed (SY) \_\_\_\_\_

- \_\_\_\_\_ Retaining Walls
- \_\_\_\_\_ Signs
- \_\_\_\_\_ Site Furnishings
- \_\_\_\_\_ Flagpole & Misc.
- \_\_\_\_\_ Concrete Walks
- \_\_\_\_\_ Pedestrian Bridge - Open
- \_\_\_\_\_ Pedestrian Bridge - Enclosed
- \_\_\_\_\_ Pedestrian Tunnel
- \_\_\_\_\_ Steps/Ramps
- \_\_\_\_\_ Bituminous Walks



\_\_\_\_\_ Gravel Paths  
 \_\_\_\_\_ Wells (Water)

\_\_\_\_\_ Special Walks  
 \_\_\_\_\_ Other \_\_\_\_\_

**ROADS - PAVED**

Paved Area (SY) \_\_\_\_\_

\_\_\_\_\_ Concrete Roads  
 \_\_\_\_\_ Overlay Roads  
 \_\_\_\_\_ Slurry Seal Road

\_\_\_\_\_ Flexible (Bituminous) Roads  
 \_\_\_\_\_ Surface Treatment Roads  
 \_\_\_\_\_ Other \_\_\_\_\_

**PARKING**

Paved Area (SY) \_\_\_\_\_

\_\_\_\_\_ Concrete Parking  
 \_\_\_\_\_ Overlay - Parking  
 \_\_\_\_\_ Slurry Seal Parking

\_\_\_\_\_ Bituminous Parking  
 \_\_\_\_\_ Surface Treatment - Parking  
 \_\_\_\_\_ Graveled Parking Lot

**FENCING**

Length of Fencing (LF) \_\_\_\_\_

\_\_\_\_\_ Selected Areas  
 \_\_\_\_\_ Pedestrian Gates  
 \_\_\_\_\_ Alarms

\_\_\_\_\_ Entire Perimeter  
 \_\_\_\_\_ Vehicular Gates  
 \_\_\_\_\_ Other \_\_\_\_\_

**POLLUTION ABATEMENT STRUCTURES**

Water Treatment  
 Industrial Waste Treatment  
 Electrostatic Precipitator  
 # Fields  
     Single Stage \_\_\_\_\_ Two Stage \_\_\_\_\_

Domestic Sewage Treatment  
 Oil Water Separators  
 Other: \_\_\_\_\_

**RECREATION EQUIPMENT/FIELDS**

Lump Sum (EA) \_\_\_\_\_

\_\_\_\_\_ Playground Equipment  
 \_\_\_\_\_ Tennis/Basketball Courts  
 \_\_\_\_\_ Football/Soccer/Lacrosse Fields  
 \_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Grandstands, Bleachers  
 \_\_\_\_\_ Softball/Baseball Fields  
 \_\_\_\_\_ Concession/Restroom Bldg.  
 \_\_\_\_\_ Other \_\_\_\_\_

**SUPPORTING STRUCTURES**

Lump Sum (EA) \_\_\_\_\_

(Separate from building above)

\_\_\_\_\_ Central Heating Plant  
 \_\_\_\_\_ Central Cooling Plant  
 \_\_\_\_\_ Mechanical Equipment Building  
 \_\_\_\_\_ Vehicle Wash Platform  
 \_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Electrical Equipment Building  
 \_\_\_\_\_ Guard House/Security Gate  
 \_\_\_\_\_ Other \_\_\_\_\_



**SPECIAL BUILDING FOUNDATIONS**

Length (LF)

**Piling**

<u>Type</u>	<u>Length of Piling</u>	<u>Capacity (design)</u>
_____ Timber	_____ Under 25'	_____ 15 tons
_____ Concrete, Precast	_____ 26'-35'	_____ 20 tons
_____ Concrete, Pressure Inject	_____ 36'-45'	_____ 25 tons
_____ Steel H Piles	_____ 46'-55'	_____ 30 tons
_____ Steel Sheet Piling	_____ 56'-65'	_____ 35 tons
_____ Other _____	_____ 66'-95'	_____ 40 tons
	_____ Over 95'	_____ tons

**Caissons (Drilled and Cast-in-Place)**

_____ 24" Diameter	_____ Plain Bottom
_____ 36" Diameter	_____ Belled Bottom
_____ 48" Diameter	
_____ 60" Diameter	_____ FT Nominal Depth

**Underpinning of Existing Structures** Lump Sum Amount (LS) \_\_\_\_\_

**SITE DEMOLITION**

Lump Sum (LS) \_\_\_\_\_

- \_\_\_\_\_ Remove Utilities
- \_\_\_\_\_ Remove Paving and Slabs
- \_\_\_\_\_ Remove Structures
- \_\_\_\_\_ Remove/Dispose of Asbestos (Exterior)
- \_\_\_\_\_ Remove/Dispose of P.C.B.s
- \_\_\_\_\_ Remove/Dispose of Contaminated Earth



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## APPENDIX B: COST ESTIMATES

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### 1. GENERAL

A Cost Estimate is required with each Submittal. All estimates shall be prepared in the **systems format** and shall be summarized on a Building Cost Summary Form. (Copy included in this Appendix.) Appropriate back-up data to support the costs shown on the Summary shall be provided. The estimate backup material for each Submittal shall be consistent with the level of design required for that Submittal. Accurate quantity take-off, inclusion of all appropriate standard systems, and accurate unit prices for the project's location are fundamental to the development of a good Cost Estimate. Appropriate separate contingencies for design phase and construction phase shall be included as line items in the Cost Estimate. In addition appropriate escalation shall be included as a separate line item in the Cost Estimate.

Properly prepared Cost Estimates provide a check of the Plans and Specifications for constructability, coordination, conflicts, discrepancies, and omissions. They are used to establish/ verify budget costs, to develop historical data for future estimating, and for verification of the Contractor's proposed Schedule of Values on the H12.

The estimate in each Submittal is expected to reflect the A/E's or Estimator's best information and experience. Pricing must reflect all requirements of the Contract Plans and Specifications. Estimates may be prepared manually or by utilizing computerized estimating programs. A detailed breakdown of components of the System or Assembly shall be calculated, quantified and a cost provided. A total system cost, a system quantity, a unit cost for the system and a unit cost per square foot of gross building area shall be calculated for each system and listed on the Building Cost Summary Form. The Building Cost Summary Form (DGS-30-224) is available as an Excel spreadsheet template which may be downloaded from the DGS Forms Center at this link [http://dgs.state.va.us/tabid/820/Default.aspx?udt\\_1673\\_param\\_detail=231](http://dgs.state.va.us/tabid/820/Default.aspx?udt_1673_param_detail=231).

Separate estimates will be prepared for each new distinct building, structure, or addition costing over \$50,000 Contract cost. Costs of alteration Work to existing buildings will not be included with the building addition costs. When one Construction Contract contains more than one type of Work (i.e., new construction, repair, equipment installation, etc.), the estimate shall be structured such that each type of Work is identified separately. In addition to an overall or master summary sheet, each type of Work requires a separate summary sheet. Costs from these separate summary sheets must be directly transferable to the master summary sheet.

### 2. SCHEMATIC DESIGN/PROJECT CRITERIA PHASE ESTIMATE

The Schematic Design Construction Cost Estimate shall be developed in the "Systems" format. Each system shall include a description or listing of the components or items included in that unit cost. To the extent possible, major systems or commodities should be quantified. Where quantification is not reasonable, the assumptions and logic for the cost shall be shown.

### 3. PRELIMINARY DESIGN PHASE ESTIMATE

**The Preliminary Design estimate shall be based on a materials take-off from the Preliminary Drawings and Specifications.** The estimate for this Submittal shall reflect cost based on reasonably accurate take-off of material/systems consistent with the level of design. For those elements of the



Project where the status of design does not permit a reasonably accurate take-off of quantities or firm pricing of individual items of Work, system unit prices may be used. Lump sum costs are not acceptable. Use of **empirical costs shall be minimized**. The Preliminary Building Cost Summary backup shall use the **systems format**. If the difference in the A/E Cost Estimate and the **Independent** Cost Estimate is ten percent (10%) or more, the estimates shall be reconciled.

**4. FINAL CONSTRUCTION DOCUMENTS PHASE ESTIMATE**

The A/E shall provide a final estimate based on the Working Drawings and Specifications. Full and accurate description of each system shall be provided in the estimate. Quotations must be obtained for all items of substantial quantity or cost. Documentation must be provided for all major items of equipment included in the Project. "Estimated Prices" are considered to be quotations that are reasonable expectations of the price a Contractor will be expected to pay. Estimates that do not conform to these formats and information requirements will be returned for revision. Separate estimates must be prepared for each **Additive Price/Bid Item** included in the documents and shall be in the proper format.

**COST ESTIMATING STANDARD SYSTEMS DESCRIPTIONS**

**Building Systems Description**

Includes cost of construction of all Work inside the line 5 feet from the building. Cost each system separately. Same systems were indicated for entry on Summary Sheet.

**System System Unit**

**Unit/Measure**

**Foundation**

Ground Floor Sq. Ft.

Includes excavation and backfill for foundation and basement construction, pile caps, footings, grade beams, piers, foundation walls, basement walls, fill under floor slabs and all required construction to the first floor elevation, excluding all structural floor slabs, ground slabs, basement structural framing, piling, structural fill, and soil treatment. Special foundations such as compacted structural fill, piling, caissons, and other Work required to prepare the site for the building construction should be included in the SITEWORK & UTILITIES portion of the estimate under "Special Building Foundations" category

**Slab-on-Grade**

Slab on Grade Sq. Ft.

Includes all ground slabs and vapor barrier, waterproofing, wire mesh, capillary fill and soil treatment. Includes ground slab, reinforcing steel, waterproofing and soil treatment for structural slab placed on fill where fill is used as form. Borrow fill under slab is included in Earthwork system.

**Structural Frame**

Gross Building Area Sq. Ft.

Includes structural frame consisting of skeleton frame of building, i.e., columns, girders, cantilevered members extending beyond exterior walls, and fireproofing. Excludes framing in direct support of floor or roof construction.

**Supported Floor**

Supported Floor Sq. Ft.

Includes construction of structurally integrated or independently supported floors, i.e., steel decking, joists, beams, slabs, precast concrete decking with topping steel reinforcing and other related items to provide a complete structural floor. Excludes applied finishes which are part of "Interior Finishes."



**Roof Structure**

Roof Area Sq. Ft.

Includes construction of structurally integrated or independently supported roofs, i.e., precast concrete roof slabs, concrete topping, steel decking, joists, beams. Roofing system excluded.

**Roofing**

Roof Area Sq. Ft.

Includes roof curbing, roof insulation, roofing, gravel stops, gutters, and downspouts, flashing, skylights, roof access hatches, and other related roofing items.

**Stairs**

Number of Risers Each

Includes interior and exterior building stairs, landings, platforms, and railings.

**Elevators**

Number of Stops Each

Passenger or freight elevators including conveyor cab, doors, controls and rails.

**Exterior Walls**

Exterior Wall Area Sq. Ft.

Includes bearing or non-bearing walls from inside rough wall to outside finish walls, parapet walls, damp proofing, flashing, insulation, waterproofing, balcony walls and handrails. Includes exterior finishes, caulking and painting.

**Interior Walls**

Interior Wall Area (I side) Sq. Ft.

Includes partitions, bearing or non-bearing walls, extending from floor-to-floor or floor-to-ceiling, excluding finishes. Includes masonry walls, steel or wood stud framing, blocking, acoustic material (insulation), bracing, and anchorage, **but excludes** painting, gypsum board or other applied finish.

**Interior Finishes**

Gross Building Area Sq. Ft.

Includes finishes applied to floors, walls, ceilings, stairs and ramps such as wall covering, resilient flooring tile, terrazzo, wood, carpeting, acoustical tile, plaster, paint, gypsum board, suspended ceiling systems, caulking, and all related trim Work.

**Doors & Hardware**

Surface Area One Side Sq. Ft.

Includes all exterior and interior doors, frames, hardware, caulking and painting.

**Windows Glazed Walls**

Surface Area One-Side Sq. Ft.

Includes windows, glazed wall systems, glazing, caulking, and painting.

**Specialties**

Gross Bldg. Area Sq. Ft.

Includes chalk and tack boards, signs and plaques, flag poles, access flooring, telephone enclosures, ladders, storage shelving, toilet and bath accessories, fireplaces, compartments and cubicles, movable partitions, identifying devices, protective covers, postal specialties, scales, exterior sun control devices and wardrobe specialties, excluding special mechanical or electrical equipment.

**Plumbing-Domestic**

Number of Fixtures Each

Includes water supply and treatment, wastewater disposal and treatment, plumbing equipment, fixtures and trim, and insulation, i.e., hot and cold water pipes, waste, soil and vent pipes, water heaters, water coolers, floor drains, and roof drains. Fixture count shall include 1 fixture for each bathtub, shower, drinking fountain, water heater, water cooler, lavatory sink, slop sink, wash fountain urinal, water closet and roof drain. Also, 1/2 fixture shall be included for each rough-in without a fixture (i.e., ice maker rough-in), floor drain and wall hydrant.



**Heating, Ventilation, and Air Conditioning**

Capacity MBTU or Tons

Includes heating, ventilating and air conditioning systems, i.e., heat generating equipment, refrigeration, air distribution, piping, controls and instrumentation, and insulation.

**Fire Protection**

Gross Area Protected Sq. Ft.

Includes sprinkler pipe, fittings, valves, pumping equipment, tanks, sprinkler heads and controls. Also include carbon dioxide and other fire protection systems.

**Power**

Connected Load KW

Includes all interior distribution for power and special electrical systems, i.e., switchboards, transformers, motor controls, distribution switches, motor starters, feeders, branch circuit wiring and devices, panels and lightning protection. Exclude all interior distribution for lighting fixtures and emergency lighting, i.e., light fixtures, branch circuit wiring and devices for lighting.

**Lighting**

Gross Bldg. Area Sq. Ft.

Includes all interior lighting fixtures, exit and emergency lighting, branch circuit wiring, conduit, and devices for light fixtures only.

**Special Electrical**

Gross Bldg. Area Sq.

Ft.

Includes all special electrical systems such as Telephone, CATV, Direct Current, Uninterruptible Power Supply (UPS), Emergency Generators, Data Communications, Fire Alarm, Security Detection and EMCS.

**Built-in Equipment**

Gross Bldg. Area Sq. Ft.

Includes Contractor furnished and installed specialty equipment such as casework, shelving, exhaust hoods, coolers, freezers, kitchen equipment, and stage apparatus for hospitals, clinics, food Services, chapels, theaters, rifle ranges, laboratories, libraries, etc.

**Other Special Systems**

Gross Bldg. Area Sq. Ft.

Includes systems such as Vacuum, Oxygen, Compressed Air, Vehicle Exhaust, Dust Collection, Bridge Cranes, Vehicle Lifts, Hoists, Monorails, Conveyors, etc. Cost each system individually in estimate and enter sum total on Summary Sheet.

**Interior Demolition**

Gross Building Area Sq. Ft.

Includes all interior building demolition connected with new construction or alternatives. Also includes any Work on, or in, the exterior wall. Does not include complete building demolition.

**HAZMAT Abatement**

Total Cost Lump Sum

Includes costs for abatement of asbestos, lead based paint, and other hazardous materials in existing areas of buildings, as well as costs for sealing off areas, lead based paint removal, asbestos removal or encapsulation, monitoring, testing, disposal, change areas, protective clothing, respirators, and other related costs.

**SITework, UTILITIES & IMPROVEMENT DESCRIPTIONS**

**Exterior Electrical Distribution**

Length of Run Lin. Ft.





Includes overhead power distribution, i.e., poles, cross-arms, insulators, guying, terminations, lightning protection, wire and cable, and underground distribution, i.e., excavation and backfill, concrete encased duct bank, direct burial duct, manholes, hand-holes, cable, terminations, stress cones, and grounding. Also includes costs of transformers and substations for University owned systems. Add in this total the costs of exterior Fire Alarm, EMCS, security and similar distribution lines.

**Area Lighting** Number of Fixtures      Each  
Includes poles, fixtures, excavation and backfill, concrete Work, wire, duct and conduit.

**Exterior Mechanical Distribution** Length of Run    Lin. Ft.

Includes overhead and underground mechanical distribution system such as steam, hot water, condensate, chilled water, natural gas, compressed air systems and piping, insulation, valves, trenches, excavation, backfill, manholes, supports, anchors, etc., as required to provide the systems outside the building 5' line.

**Water Distribution** Length of Run Lin. Ft.

Includes complete potable water distribution system, i.e., utility service connections, fire hydrants, excavation and backfill, pipe, valves and fittings outside building 5' line. Also includes pump station and booster pump if required.

**Sanitary Sewers** Length of Run    Lin.  
Ft.

Includes complete sanitary sewer system, i.e., utility service connections, excavation and backfill, sheeting and shoring, dewatering, pipe and fitting, manholes, cleanouts, septic disposal and process and acid waste system outside the 5' line. Also includes pump/lift station if required.

**Stormwater System** Length of Run    Lin. Ft.

Includes utility service connections, excavation and backfill, sheeting and shoring, dewatering, pipe and fittings, manholes, catch basins, curb inlets, dry wells, ditches and culverts, retention ponds, detention ponds, underground detention structures, and headwalls. Also includes culverts, drainage facing materials, erosion control material and devices and slope protection from storm water runoff.

**Paved Roads** Paved Area Sq. Yd.

Includes paving, tack and seal coats, curbs, curbs and gutters, subgrade preparation, fine grading, compaction, sub-base course, base course, wearing course, finish course, rails and barriers, reinforcing, expansion/control joints, wheel stops and pavement markings.

**Paved Parking** Paved Area      Sq. Yd.

Includes paving, tack and seal coats, curbs, curbs and gutters, sub-grade preparation, fine grading, compaction, sub base course, base course, wearing course, finish course, rails and barriers, reinforcing, expansion/ control joints, wheel stops, and pavement markings.

**Earthwork** Volume (Cut + Fill)      Cu. Yd.

Includes site grading, site excavation, soil stabilization, soil treatment, and site clearing. Also includes removal and disposal of unsuitable material; obtaining, placing, rolling, compaction, and proof rolling new/borrow material.

**Landscaping** Area Planted    Sq. Yd.

Includes trees, shrubs, ground covers, and planters. Also includes fine grading and leveling, fertilizer and limestone application, spreading and leveling topsoil, seeding, mulching and sodding.



**Site Improvements**

Area Developed Sq. Yd.

Includes retaining walls, terrace and perimeter walls, signs, site furnishings, fountains, pools and water course, flagpoles and other miscellaneous related items. Also includes recreational areas/playing fields, recreational equipment, walks, ramps, steps, restrooms and similar improvements.

**Supporting Structures**

Lump Sum Each

Includes treatment facilities, equipment buildings, pollution abatement structures, oil water separators, electro-static precipitators, wash platforms, guardhouses and similar structures. (Sum supporting structures with Site Improvements and enter as Site Improvements on Cost Summary sheet.)

**Fencing**

Length of Fence      Lin. Ft.

Includes footings, posts, fencing materials, alarms, gates and turnstiles for perimeter fencing. Includes station perimeter and individual facility.

**Special Building Foundations**

Length      Lin. Ft.

Includes driven piling of wood, steel or concrete; caissons; pressure injected footings; cast-in-place piling; special or dynamic compaction; and other special building foundation systems required.

**Demolition Site**

Lump Sum      Each

Includes removal, hauling and disposal of utilities, buildings, roads, paving, slabs, foundations, structures and related existing site features.



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## APPENDIX C: CHECKLIST FOR RECEIVING AND OPENING BIDS

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The University shall assure that the person receiving Bids, called the Bid Officer, is thoroughly trained/knowledgeable in the proper procedure for receiving and documenting Bids.

### PROCEDURES FOR RECEIVING BIDS

- (1) On the morning Bids are due, check the time on the clock, the date/time stamp, and the fax machine in the Bid receipt area to assure the times are coordinated and correct. Assure the clock visible to Bidders in the Bid receipt area shows the correct time.
- (2) When Bids or modifications are delivered on the Bid receiving office, the Bids shall be date stamped and the time noted or stamped on the envelope showing the time of receipt.
- (3) The Bid receipt deadline must strictly comply with the specific time called for in the Invitation for Bids. It is suggested that the Bid Officer give a warning that the Bid Receipt Deadline is near such as **“The time is now 1:55 and all Bids must be receive by 2:00 p.m.”**

The Bid Officer shall be responsible for deciding when the Bid Receipt Deadline has arrived and shall announce **“The 2 PM Deadline has arrived. All Bids and Bid modifications in our possession at this time are deemed to be timely. No further Bids or Bid modifications will be accepted.**

- (4) When multiple Bids are delivered just prior to the Bid receipt deadline, the Bid Officer shall accept the Bids up to the deadline without taking time to note the time on each Bid. After announcing that the deadline has arrived, the Bid Officer or assistant should note on those Bids which were timely, but not stamped that the Bids were received prior to the 2:00 PM deadline.
- (5) If a Bidder wishes to change the amount of his Bid, such change must be received by fax, letter or written on the outside of the Bid envelope before the time set for receipt of Bids. Methods for modifying the Bids are further described in the Instructions to Bidders, HECO- 7a.
- (6) The Bids, including any modifications, shall be kept in a locked security container by the Bid Opening Designee.

### PROCEDURES FOR OPENING BIDS

- (1) Once the Agency Bid opening designee determines that the Bid opening hour has arrived, a **statement should be made as to the number of Bids received.** It is prudent to inquire whether any Bidder has any question about the pending opening. After receiving either a



negative reply or after answering questions, proceed to open the Bids in alphabetical order.

**Do not open work papers!**

- (2) Paragraph 4 of the Instructions to Bidders requires the Contractor to place its Contractor License Class and License # on the envelope and on the Bid Form. Paragraph 4(c) of the HECO-7a gives instructions for action if not shown.
- (3) Prior to revealing any of the information in the Bid, the Bid opening designee must verify that
  1. Bid Bond or certified check in the amount of five percent (5%) is attached where required,
  2. Bid Form is signed by the Bidder, and
  3. Bidder information complies with item 4(b) and (c) of the Instructions to Bidders.Only then shall the other Bid information be revealed. If the Bid Bond or certified check is not included or if the Bid is not signed, the Bid shall not be read or considered.
- (4) If a modification to the Bid has been received, check it to assure that it has been signed by one of the persons listed on the Bid Form as authorized to make such modifications. If the modification was not inside the envelope or written on the outside of the envelope, check the time received to assure that it was before the deadline.
- (5) After Opening the Bid envelope and checking for the information above, state the following items and record on the Bid tabulation form:
  1. Bidder/Contractor's Name
  2. Virginia Registration #
  3. Work papers were \_\_\_\_\_ were not \_\_\_\_\_ submitted.
  4. Receipt of Addenda 1 thru \_\_\_\_\_ are acknowledged.
  5. Bid Bond or certified check is \_\_\_\_\_ is not \_\_\_\_\_ included.
  6. Bid Form is signed.

**THEN**

**7. Read Bid Information**

1. Any proper Bid Modification received,
  2. Part A. Building Base Bid amount,
  3. Part B. Site Work Base Bid amount,
  4. Any other Parts of the Base Bid,
  5. The TOTAL BASE BID amount, and
  6. Then any Additive Bid Item amounts in order.
  7. (days for completion if Bidder was allowed to state such on the Bid Form)
8. Any **qualification** to the requested information on the Bid Form shall be noted as the Bid is read.



## AFTER BID OPENING IS COMPLETE

1. Keep all Bids, work papers, etc. until **2 hours** after Bid opening to allow the Bidders to state he made a mistake. **Do not open Work Papers unless low Bidder claims an error!**
2. After two (2) hours, return all Bid Bonds, checks, etc., to all but the three (3) lowest Bidders. Work papers can be returned to all.
3. Keep Bids and Bid Bonds or checks from three (3) lowest Bidders until Contract is signed.
4. Contact [Department of Professional and Occupational Regulation, Contractor's Section](#), and verify Contractor Class and Registration No. of the 3 lowest Bidders (and listed Subcontractors, if any).
5. Prepare an official tabulation of Bids indicating:
  1. Name and Project Code # of Project as on the Specifications.
  2. Time and date of Bid receipt and opening.
  3. Exact name, address, telephone, & fax numbers of Bidders.
  4. Bidder's Virginia Registration # (non-requirement statement).
  5. All amounts Bid for Base Bid(s), Parts, the Total Base Bid amount, any Bid Modification, and Additive Bid Items.
  6. Completion time stated if Bidder was given the option.
  7. Acknowledgement of receipt of all Addenda and number of Addenda issued.
  8. Whether or not sealed work papers were submitted.
  9. Name of University's Bid Opening Designee.



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## APPENDIX D: ROOF INSPECTION FORMS AND PROCEDURES

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### 1. The Roof Inspector

The minimum qualifications below serve as criteria for the University if selecting an outside, full-time roofing inspector:

1. The Inspector should have a thorough knowledge of roofing details, flashing, and systems employing single-ply, built-up, metal, shingle, slate, or other membranes as the main weatherproof barrier.
2. The Inspector should have attended at least three formal schools/seminars (for example: AIA, BURSI, RCI, CSI, NRCA or RIEI seminars) providing no less than a total of four (4) continuing education units, have a registered roof observer registration from RCI (or a Quality Assurance Observer Certificate from RIEI for the roof system to be observed) or have equivalent training as approved by the University.
3. He should be thoroughly familiar with the latest edition of the NRCA Roofing and Waterproofing Manual.
4. The Inspector should have a minimum of five years of full-time, practical roofing experience or approved equivalent experience.
5. He should identify, in writing, at least three (3) Projects where he has been the full-time roofing inspector. He should provide names, addresses, and telephone numbers of roof owners and A/E for the roof Projects.
6. He should be trained and competent in the Services he is providing.
7. Roof Inspector's Scope of Work:
  1. The Inspector shall monitor the Work continuously during installation of the roof.
  2. He shall monitor the Work for compliance with the Contract Documents and the University's Roofing Policy in [Chapter 7](#).
  3. He shall immediately report any deviations from the Contract Documents, the University's Policy, or good roofing practice to the Architect and University. A written report shall follow an oral report.
  4. The Inspector may recommend suspension of Work or rejection of non-complying Work to the A/E and University.
  5. He shall not:
    1. Allow roofing materials to be installed until the manufacturer's certification that the roofing materials comply with specified ASTM or other approved



standards are received. He shall notify the University so that appropriate action can be taken.

2. Authorize deviations from the Contract Documents.
  3. Enter the area of responsibility of the Contractor's superintendent.
  4. Issue orders on any aspect of construction means, methods, techniques, sequences, procedures, or safety in connection with the Work.
6. The Inspector shall keep a daily log (refer to the form at end of this appendix) for each Project and shall give a copy of the log to the roofing Contractor. The Inspector shall record all pertinent information such as weather, daily progress, and workers on the job, material storage, deck condition, bitumen temperature, installation procedures, and quality of workmanship, job-related visitors, and so forth.

## **2. The Roof Consultant**

The Consultant should have the following qualifications:

1. Roof consulting and testing Services should be the Consultant's full-time occupation.
2. He should have a minimum of five years of field experience in providing the Service.
3. He should have completed at least three Service Contracts in the recent past. Work for each of the completed Contracts should be roughly equivalent in size and complexity to the proposed work.
4. He should be required to submit three complete surveys of roofs that were repaired, recovered, or replaced; names, addresses and telephone numbers of roof owners; and A/Es responsible for preparing the Drawings and Specifications.
5. He should have attended at least three formal roofing schools/seminars (RIEI, BURSI, RCI, NRCA, AIA, CSI Seminars, for example). The seminars should be the type that gives CEU (Continuing Education Unit) credits. A minimum total of four (4) CEU credits should have been received.
6. He should be trained, experienced and competent in performing required Services.
7. If testing is required, he shall be appropriately trained, certified, licensed in the testing procedures (infrared, nuclear, electrical capacitance surveys; core sampling; ASTM procedures; gravimetric analysis; and so forth) required for the service.
8. He should submit resumes of his firm and all employees participating in the service.
9. His resume should describe other related Services and contributions, such as writing, lecturing, and serving as an expert witness that he has provided. He should list any Professional qualifications or licenses.



10. The resume form must be submitted with the roof Consultant's response to the University's RFP. It will be used with other requested items to evaluate the applicant.

### 3. Non-Destructive (NDE) Roofing Surveys

A non-destructive (NDE) Survey uses infrared or nuclear and electric capacitance moisture detection equipment to locate unacceptable moisture within a roofing system. An infrared or nuclear survey may be used alone; electric capacitance is acceptable only if it issued with infrared or nuclear surveys.

An NDE survey is mandatory before a newly constructed roof may be accepted. Depending on the size and condition of an existing roof, a survey may or may not be required before an Agency may repair or replace the roof. The following outlines requirements for NDE surveys:

1. Equipment, subject to the University's approval, shall be equal to the following:
  1. Infrared: AGA 720 system or Inframetrics 520 system
  2. Nuclear: Seaman Troxler 3216 Roof Reader, Nuclear Model R-50 or later model
  3. Electrical Capacitance: As approved by the University
2. Surveys
  1. Infrared: Provide a complete survey of the roof or roofs. Outline all anomalies with spray paint. Provide a thermogram showing the outlines and daylight photographs of all anomalies. If video thermogram imaging is used, provide the University with the video tape of the survey. Roof markings, thermogram, and photographs shall be numbered so that features can be readily identified and coordinated.

Walkover surveys shall be performed in a pattern of 20'-0" maximum (20 foot maximum distance between walk paths), however the distance between walk paths shall not exceed the sensitivity of the instrument being used. Instrument sensitivity shall permit recognition of areas of wet insulation as small as 6 inches on a side. Surveys, inspection procedures, reports, etc. shall be conducted in accordance with the requirements and procedures in ASTM C1153, "Standard Practice for the Location of Wet Insulation in Roofing Systems Using infrared Imaging", except of otherwise noted in this Appendix.
  2. Nuclear: Provide a grid, comprising 5'-0" on-a-side grid unit, to completely cover the roof or roofs. Mark each grid intersection with spray paint. Take readings at the intersections and record them on a roof plan. Provide daylight photographs of anomalies.
3. Core Samples





Since NDE surveys are not able to measure moisture in roofs directly – nuclear equipment responds to hydrogen emissions, infrared to heat changes – core samples to measure actual moisture content must be taken from surveyed roofs and correlated with NDE readings. The samples shall be taken as follows:

1. One is required on roofs showing no anomalies. Additional cores are not required if the Consultant can show that moisture is not causing detected anomalies. The Consultant shall identify such anomalies and explain their cause in a written report to the University.
2. On all other roofs a minimum of one dry and one wet core shall be taken from each roof surveyed.
3. As many cores as needed should be taken to establish moisture counts and changes, but no more than five cores shall be taken from any roof.

#### 4. Gravimetric Analysis

As soon as possible after samples are taken, cores should be sealed in air tight containers and taken to the laboratory for analysis.

1. Analyze samples gravimetrically to determine percent of moisture in any required core sample taken from new roofs and, unless waived for justifiable reasons, from existing roofs.
2. Identify all materials – surfacing, membrane (and number of plies), insulation, vapor barriers, adhesives, etc. – in the cores.

#### 5. Moisture Conditions

The Surveyor shall correlate survey reading results with actual moisture conditions determined by core samples gravimetrically analyzed. The correlation shall be shown or tabulated on the Drawings.

#### 6. Report

The Consultant shall submit a written report explaining what the problems are, what to do about them, and what the costs are. Specifically, the report shall:

1. Identify and describe all anomalies.
2. Identify and describe any visual survey defects that may be harmful to the roof.
3. Give the causes for each anomaly and defect.
4. Recommend alternate courses of corrective action for defects and anomalies harmful to the roof.



5. Provide the cost for correcting the defects and anomalies.

## 1. Drawings

The Consultant hired to survey roofs shall provide Plans complying with the following:

1. General Requirements are:
  - (1) Print size, preferably, should be 24" X 36"; but in no case larger than 36" X 46".
  - (2) Minimum drawing scale is 1/8" = 1'0" for roofs or portions of roofs surveyed.
  - (3) Provide one reproducible print (Mylar, etc.) and two non-reproducible prints, as a minimum, for each sheet of Drawings.
1. A legend defining all symbols and explaining abbreviations.
  1. Drawings shall show the following as a minimum:
    - (1) All roofs surveyed
    - (2) State identification, title, and date
    - (3) An orientation north arrow and drawing scale
    - (4) The area of each roof and approximate overall dimensions.
  2. All existing features, equipment, and roof penetrations of whatever nature (such as vents, stacks, drains, hatches, skylights, screens, railings, mechanical equipment, etc.) shall be accurately indicated, identified, and drawn to scale.
  3. All roof slopes and valleys noted with drainage arrows. If there is no slope, state that the roof is dead level.
  4. Where flashing is carried to a vertical surface, identify the surface (roof vent, masonry parapet, etc.) and give its height from roof level.
  5. For a visual survey, show and explain all roofing defects and anomalies. Show interior damage (to the roof system) by dotted line.
  6. For an infrared survey, accurately delineate moisture anomalies with contour lines; for a nuclear survey, show all grid point readings and define areas having unacceptable moisture by contour lines. Show where core samples were taken. Correlate nuclear grid point



readings and infrared contour changes to percent of moisture. Dimension areas recommended for removal and locate them with respect to fixed identifiable features (such as parapets).

7. Provide at least one detail section (3/4" = 1'0" minimum) showing roof construction where core samples were taken; more if there are differences in construction from core to core. Identify surfacing material, membrane product, insulation type and thickness, vapor barrier if used, and deck construction.

### **ROOFING FORMS**

Standard DGS forms and formats are available for download from the DGS Forms Center (<http://dgs.state.va.us/Forms/tabid/119/Default.aspx>).

The following roofing forms are available for download from the Forms Center:

<b>Form #</b>	<b>Description</b>	<b>File Type</b>
DGS-30-328	Roofing – Installation History	Word
DGS-30-332	Roofing – Built-up Roofing Data	Word
DGS-30-336	Roofing – Metal Roofing Data	Word
DGS-30-340	Roofing – Shingle Roofing Data	Word
DGS-30-344	Roofing – Single Ply Roofing Data	Word
DGS-30-348	Roofing – Inspection Checklist	Word
DGS-30-352	Roofing – Daily Inspection Log	Word
DGS-30-356	Roofing Consultant/Inspector Resume	Word

To view/download the latest version of a form, visit the website listed above and enter the Form # (e.g., DGS-30-328) in the search box on the Forms Center.

Additional instructions for viewing and downloading forms are available in the [Help Guide](#) on the DGS Forms Center.



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# APPENDIX E: PRECONSTRUCTION MEETING AGENDA

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## PRECONSTRUCTION MEETING AGENDA

PROJECT:

Work Order # \_\_\_\_\_

I. Introduction of Team Players

1. University PM
2. University CAM
3. A/E PM
4. Contractor PM & Superintendent

II. Inspection

- A. University Inspector \_\_\_\_\_
- B. Architectural Representative \_\_\_\_\_
- C. Fire/Life Safety \_\_\_\_\_
- D. Quality Control Inspection by Contractor
- E. Other Consultants

III. Correspondence and Communication

- A. Copies of all correspondence will be directed to:
- B. Correspondence Includes:
  1. General Correspondence (To University PM Only)
  2. Submittals
  3. Request for Information (RFIs)
  4. Change Orders

IV. Status of Contract

- A. Contract
- B. Separate University Contracts
- C. Notice to Proceed
- D. Completion Date - Damages



E. Working Hours

V. Submittals

- A. Contractor PM & Superintendent's List
- B. Schedule of Values
- C. Construction Schedule (monthly) Bar Chart, other
- D. Cash Projection Schedule
- E. List of Subcontractors. (SWaM List)
- F. Shop Drawings (2 approved copies to University)
  - 1. Schedule of Shop Drawings and Submittals
- G. Emergency Contact List
  - 1. Post on Job
- H. Change Orders (Per Contract General Conditions)
- I. As-Builts

VI. Special Items

- A. Detectors (Smoke/Fire)
- B. Dust Control
- C. Noise Control
  - 1. Abusive Language
- D. Equipment/Materials Removal
- E. Asbestos
  - 1. Dump reports
  - 2. Encapsulation 0 weekends
- F. Firestopping
- G. Notify University Police
- H. Shutdowns
  - 5 Day Notice
- I. Project Meetings

1. Quality and Inspection



1. Site visits by A/E, Consultants, inspectors and others
  2. Running punch list
  3. Quality control, testing, inspections, and Notices required
  4. Systems Commissioning requirements
    - K. Parking and Staging Area, Site limits, Access
    - L. Safety-Security
      1. Identification  
- Badge and I.D. #
      2. Hazardous Material Safety Data Sheets
    - M. Special Conditions
    - N. SWaM Participation
    - O. Project Sign
    - P. Shut-Off Valve Location for All Major Utilities Affected by Construction
    - Q. Air Intake Locations & Odor Control
    - R. Maintaining Emergency Phone Access
- VII. Payment Request
- A. Deadline Importance
  - B. Schedule of Values
  - C. Dual Submittal to University PM & A/E
  - D. Monthly Pay Meeting
- VIII. Contractor Evaluation
- A. By CAM & Inspector
  - B. By A/E
  - C. By University PM
- IX. Contractors Comments/Questions



X. University Comments/Questions

XI. A/E's Comments/Questions

Attachment: Attendance Roster



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## APPENDIX F: PARAMETERS FOR CALCULATING LIFE CYCLE COSTS & ENERGY ANALYSES

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- I. General Instruction for All Life Cycle Costs Analyses:
- a. Costs are to be computed over a 30 year period, except as noted in Paragraph II below.
  - b. Costs for each alternative must be shown on the Life Cycle Cost Worksheet or an exact copy. Specific instructions for completing the worksheet are provided in Paragraph III below.
  - c. Include appropriate backup to support the summary figures shown on the worksheet (i.e., include how the various costs were calculated and note the basis or source of cost data).
- II. Additional Instructions for Calculating Life Cycle Costs for Energy Analyses
- a. Use the following periods for energy-related life cycle cost studies:
    - 1) Building Envelope Studies: 30 years
    - 2) Central Heating System Plants: 30 years
    - 3) Building HVAC Systems: 20 years
    - 4) Fuel Selection Studies 20 years
  - b. Average service lives of mechanical equipment shall be based upon the Average Service Life shown in the ASHRAE Applications Handbook.
  - c. Indoor and outdoor design conditions shall be as stated on the Life Cycle Cost Worksheet.
  - d. The type of system and the energy source shall be clearly noted on the Life Cycle Cost Worksheet.
  - e. The supporting backup shall clearly show how the various fuel/energy rates (i.e., \$/gallon, \$/kwh, etc.) and the data source for each.
- III. Specific Instructions for Completing Worksheets:
- a. Use a new Worksheet for each alternative.
  - b. Complete all general information at the top of the Worksheet.
  - c. Fill in Columns “a” thru “f” for each year. Use escalated costs. On the Worksheet, specify the annual escalation rate used for each cost category. In the supporting documentation, identify the source basis for the chosen escalation rates.





- d. Sum Columns “a” thru “e” for each year; subtract Salvage Value (Column “f”) and place results in Column “g”.
- e. Multiply the Column “g” figures by the corresponding discount factor in column “h” and replace results in column “i”.
- f. Sum Column “i” and place results in the box at the bottom of the Worksheet.

### **Building Life Cycle Cost Summary Worksheet**

To view/download the Building Life Cycle Cost Summary, Form DGS-30-228, visit this link [http://dgs.state.va.us/tabid/820/Default.aspx?udt\\_1673\\_param\\_detail=232](http://dgs.state.va.us/tabid/820/Default.aspx?udt_1673_param_detail=232).



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## **APPENDIX G: RESERVED**

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# APPENDIX H: DELEGATION OF AUTHORITY LETTERS



May 15, 2017

Don Sundgren  
Associate Vice President and Chief Facilities Officer  
Facilities Management  
P.O. Box 400726  
575 Alderman Road  
Charlottesville, Virginia 22903

Dear Don:

As authorized by the University Policy on Signatory Authority adopted by the Board of Visitors on June 16, 2001, the President or the Executive Vice President and Chief Operating Officer may execute any or all of such documents which they, jointly or separately, determine in their sole discretion should be executed in the best interest of the University, except that specific documents outlined in the policy must have prior approval of the Board of Visitors. These individuals may further delegate to other University employees any or all of the authority to execute any documents, provided that each delegation shall be in writing to a named individual and each delegation shall specify the types of documents that may be executed, including any applicable dollar limitation.

I am hereby delegating signatory authority to you for certain documents and contracts, as described below, between The Rector and Visitors of the University of Virginia and external parties. Your delegated authority is limited to the following:

- All documents will be executed in accordance with the University's Management Agreement with the Commonwealth, the Virginia Public Procurement Act, and the University of Virginia Higher Education Capital Outlay Manual.
- Contracts for both general and non-general fund projects for the University including, but not limited to, the Health System, Academic Division, and the College at Wise, for procurement of construction and construction-related professional and non-professional services, and energy and utility services, with dollar amounts limited to \$5,000,000.
- Change Orders for both general and non-general fund projects for the University including, but not limited to, the Health System, Academic Division, and the College at Wise, for procurement of construction and construction-related professional and non-professional services, and energy and utility services, with dollar amounts limited to \$5,000,000.

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- Delegated authority applies only in those cases where the fiduciary obligation is within 110% of the prior Board of Visitors approval.
- Settlement of disputes, protests, and appeals with appropriate consultation with University Counsel and the Office of Property & Liability Risk Management.

All documents must be processed and handled according to established University policies and procedures, as summarized in the Signatory Authority for Executing University Contracts policy, the current version of which is attached as Appendix A.

The authority to sign documents as detailed above is delegated to you, as an individual, and may not be delegated to others. Signing of documents not defined above, or documents that are not in compliance with University policies and procedures or the provisions of this letter, may result in revocation of delegated signatory authority. The delegated authority as described in this letter is extended to you while you remain in your current position. All previous delegations of authority to you are superseded and rendered void as of the effective date stated above. The University may modify, supplement or revoke this delegation at any time. The University will reevaluate this signatory authority every three years.

If you have any questions concerning conditions of this delegated signatory authority, please let me know.

Sincerely,

Patrick D. Hogan  
Executive Vice President and  
Chief Operating Officer

Enclosure

cc: Roscoe Roberts  
Colette Sheehy  
Rick Schupp  
Sally Barber  
Sim Ewing  
Megan Lowe  
Gary Nimax



  
**UNIVERSITY of VIRGINIA**  
OFFICE OF THE EXECUTIVE VICE PRESIDENT  
AND CHIEF OPERATING OFFICER

May 15, 2017

Rick Rice  
Deputy Chief Facilities Officer  
Facilities Management  
P.O. Box 400726  
575 Alderman Road  
Charlottesville, Virginia 22903

Dear Rick:

As authorized by the University Policy on Signatory Authority adopted by the Board of Visitors on June 16, 2001, the President or the Executive Vice President and Chief Operating Officer may execute any or all of such documents which they, jointly or separately, determine in their sole discretion should be executed in the best interest of the University, except that specific documents outlined in the policy must have prior approval of the Board of Visitors. These individuals may further delegate to other University employees any or all of the authority to execute any documents, provided that each delegation shall be in writing to a named individual and each delegation shall specify the types of documents that may be executed, including any applicable dollar limitation.

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Sincerely,

Patrick D. Hogan  
Executive Vice President and  
Chief Operating Officer

Enclosure

cc: Roscoe Roberts  
Colette Sheehy  
Don Sundgren  
Rick Schupp  
Sally Barber  
Sim Ewing  
Megan Lowe  
Gary Nimax



  
**UNIVERSITY of VIRGINIA**  
OFFICE OF THE EXECUTIVE VICE PRESIDENT  
AND CHIEF OPERATING OFFICER

May 15, 2017

Annette Cyphers  
Director, Facilities Planning & Construction  
Facilities Management  
P.O. Box 400726  
575 Alderman Road  
Charlottesville, Virginia 22903

Dear Annette:

As authorized by the University Policy on Signatory Authority adopted by the Board of Visitors on June 16, 2001, the President or the Executive Vice President and Chief Operating Officer may execute any or all of such documents which they, jointly or separately, determine in their sole discretion should be executed in the best interest of the University, except that specific documents outlined in the policy must have prior approval of the Board of Visitors. These individuals may further delegate to other University employees any or all of the authority to execute any documents, provided that each delegation shall be in writing to a named individual and each delegation shall specify the types of documents that may be executed, including any applicable dollar limitation.

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- Contracts for both general and non-general fund projects for the University including, but not limited to, the Health System, Academic Division, and the College at Wise, for procurement of construction-related professional and non-professional services with dollar amounts less than \$100,000.
- Change Orders for both general and non-general fund projects for the University including, but not limited to, the Health System, Academic Division, and the College at Wise, for procurement of construction and construction-related

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professional and non-professional services with dollar amounts less than \$50,000 and less than 25% of the contract.

- Delegated authority applies only in those cases where the fiduciary obligation is within 110% of the prior Board of Visitors approval.

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Sincerely,

Patrick D. Hogan  
Executive Vice President and  
Chief Operating Officer

Enclosure

cc: Roscoe Roberts  
Colette Sheehy  
Don Sundgren  
Sally Barber  
Sim Ewing  
Megan Lowe  
Gary Nimax



  
**UNIVERSITY of VIRGINIA**  
OFFICE OF THE EXECUTIVE VICE PRESIDENT  
AND CHIEF OPERATING OFFICER

May 15, 2017

Jeff Moore  
Construction Services and Contract Administration Director  
Facilities Management  
P.O. Box 400892  
1000 Ednam Center, Suite 100  
Charlottesville, Virginia 22903

Dear Jeff:

As authorized by the University Policy on Signatory Authority adopted by the Board of Visitors on June 16, 2001, the President or the Executive Vice President and Chief Operating Officer may execute any or all of such documents which they, jointly or separately, determine in their sole discretion should be executed in the best interest of the University, except that specific documents outlined in the policy must have prior approval of the Board of Visitors. These individuals may further delegate to other University employees any or all of the authority to execute any documents, provided that each delegation shall be in writing to a named individual and each delegation shall specify the types of documents that may be executed, including any applicable dollar limitation.

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Sincerely,

Patrick D. Hogan  
Executive Vice President and  
Chief Operating Officer

Enclosure

cc: Roscoe Roberts  
Colette Sheehy  
Don Sundgren  
Sally Barber  
Sim Ewing  
Megan Lowe  
Gary Nimax



  
**UNIVERSITY of VIRGINIA**  
OFFICE OF THE EXECUTIVE VICE PRESIDENT  
AND CHIEF OPERATING OFFICER

May 15, 2017

Martin Best  
Manager, Office of Contract Administration  
Facilities Management  
P.O. Box 400892  
1000 Ednam Center, Suite 100  
Charlottesville, Virginia 22903

Dear Martin:

As authorized by the University Policy on Signatory Authority adopted by the Board of Visitors on June 16, 2001, the President or the Executive Vice President and Chief Operating Officer may execute any or all of such documents which they, jointly or separately, determine in their sole discretion should be executed in the best interest of the University, except that specific documents outlined in the policy must have prior approval of the Board of Visitors. These individuals may further delegate to other University employees any or all of the authority to execute any documents, provided that each delegation shall be in writing to a named individual and each delegation shall specify the types of documents that may be executed, including any applicable dollar limitation.

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Sincerely,

Patrick D. Hogan  
Executive Vice President and  
Chief Operating Officer

Enclosure

cc: Roscoe Roberts  
Colette Sheehy  
Don Sundgren  
Sally Barber  
Sim Ewing  
Megan Lowe  
Gary Nimax



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# APPENDIX I: CONSTRUCTION CHANGE ORDER PROCEDURE GUIDELINES

---

## OVERVIEW

The A/E shall use the following procedures in the development of Change Orders to any construction Project. The procedures are based on requirements of §38 of the Contract General Conditions.

Construction Change Orders may be necessary during the course of construction to deal with unforeseen construction conditions, user directed changes, or for other reasons. All changes involving a modification to Contract cost or time for completion must be documented with an e-Builder Contract Change Order (H11). Procedures outlined herein will generally begin once a change in the Work is identified by the University, A/E, or CM/ Contractor.

## E-BUILDER PROCESS

The e-Builder Construction Change Order process has two parts: the Construction Change Order Proposal (CCOP) process and the Construction Change Order process (H11).

The **Construction Change Order Proposal (CCOP)** process is used to:

- (1) Create a projected commitment change against a CM/GC contract;
- (2) Solicit, receive, and review the CM/GC proposal; and
- (3) Hold the change for subsequent attachment to a Construction Change Order process for approval.

The CCOP process is integrated with e-Builder's cost module (commitment change) to automatically update commitment change information directly from the process. This process replaces, in part, the HECO-11.

Within e-Builder the steps are:

- (1) The process is initiated by the CM/GC or University PM or CAM;
- (2) If the process is initiated by the University PM or CAM, it is then reviewed by the CM/GC;
- (3) Then reviewed by the A/E;
- (4) Then reviewed by the CAM;
- (5) With final review by Contract Administration, unless UVA Project Services is CM/GC in which case it skips this step;
- (6a) If the reason code is 3 or 4 it then goes to the University PM for justification and then to the VP&CFO; and
- (6b) If it is not reason code 3 or 4 it goes to the University PM for review.

Once approved it is held for bundling into a Construction Change Order.

The second part is the **Construction Change Order process (H11)** which is used to group CCOPs into a single process for bulk approval. One or more CCOP processes may be attached to a Construction Change Order process. When the Construction Change Order process is approved, all attached CCOP processes are also automatically approved and closed. This process replaces the HECO-11.

Within e-Builder the steps are:

- (1) The process is initiated by the University PM or CAM by bundling CCOPs;
- (2) If the University PM has not initiated the process, it is sent to the University PM for review;



- (3) It is then sent to the Contract Administration Manager for approval, unless Project Services is the CM/GC in which case it skips this step;
- (4) If the Change Order is greater than \$50,000 or the total of all Change Orders is greater than 25% of the original contract amount, it then goes to the FP&C Director and VP&CFO for approval.

### **CONTRACT GENERAL CONDITIONS PROCEDURES**

In order to ensure compliance with Section 38 of the Contract General Conditions, the following Change Order procedures are recommended:

1. A. Where the University desires to modify the requirements of the Contract Documents to add, to delete from, or to alter the sequence or timing of the Work, the University will have the A/E prepare a RFP to the CM/Contractor describing the requested change and asking that the CM/Contractor submit a Price Proposal for accomplishing said change in the Work.  
  
B. Where the A/E determines that a change to the Contract Documents is necessary or desired, the A/E will obtain approval from the University to prepare an RFP to the CM/Contractor describing the requested change and asking that the CM/Contractor submit a Price Proposal for accomplishing said change in the Work.  
  
C. Where the CM/Contractor desires to make a substitution, or where the CM/Contractor desires to delete a requirement for Work described in the Contract Documents, or where the CM/Contractor determines that the direction provided by the University or the A/E constitutes a change in the Work required by the Contract Documents, the CM/Contractor shall prepare a Price Proposal for same and request that the University approve a CCOP.  
  
D. Where unit prices for Work were requested in the Proposal/Bid Form and included in the Contract [reference Contract General Conditions §38(a)(2)], the CM/Contractor and the A/E will agree upon the actual quantity of the Work performed and multiply by the unit price included in the Contract to determine the value of such Work accepted. If the value of such Work is more than or less than the value for such Work included in the Contract Price, a CCOP will be prepared by the CM/GC to increase/decrease the Contract Price to reflect the Work performed and accepted.  
  
E. Where Work or changes in the Work are to be performed under the procedures described in Contract General Conditions §38(a)(3), the A/E shall request that the CM/Contractor prepare a CCOP describing the Work to be performed and directing the CM/Contractor to keep an accounting of all labor, material and associated costs of performing the Work. The CCOP shall cite Contract General Conditions §38(a)(3) as the basis for determining the cost of such Work and shall identify any specific requirements or formats not specified in §38(a)(3) which the CM/Contractor will be required to use. One or more subsequent CCOPs will be issued to adjust the Contract Price and/or period of performance and each shall cite or reference the initial CCOP authorizing such Work to be done using this method for determining price and time compensation.
2. The CM/Contractor will typically send their draft Price Proposal for the CCOP to the A/E and University. To facilitate analysis by the University and A/E, this estimate shall be prepared using the following forms:  
  
HECO-GC- 1, GC's Estimate for Change Order  
  
HECO-SC- 1, Subcontractor's Estimate for Change Order  
  
HECO-SS- 1, Sub-Subcontractor's Estimate for Change Order

The CM/Contractor and each affected Subcontractor and Sub-Subcontractor should sign these forms. These forms are available at: <http://www.fm.virginia.edu/fpc/hecom.htm>.



3. When a mutually agreeable price has been determined, and all documented approvals received, the CM/GC shall initiate the e-Builder Construction Change Order Proposal (CCOP) process including the justification accompanied by a full description of the change, including Drawings if applicable, and copies of the estimate sheets used to reach the mutually agreeable price.
4. The A/E shall then make their recommendation to the University for acceptance by approval in e-Builder.
5. **No Work on any Change Order shall be accomplished without the approval of the Change Order.** Change Order approval authorities are described in [§4.11.3](#).

#### **TIME AND MATERIALS (T&M) CHANGE ORDERS**

When a CM/Contractor has been ordered to proceed with a Change Order citing General Conditions Section 38(a)(3) (re: Time and Materials), the University PM shall insure that the following provisions are included in the initial Change Order in addition to the requirements of Section 38(a)(3):

1. The Change Order shall place a dollar limit on the amount of work authorized. The University will not be liable for any expenditure or obligations exceeding the dollar limit of the contract.
2. The Change Order shall require the CM/Contractor to provide written notification to the CAM prior to proceeding with work beyond 50% of the dollar limit.
3. The Change Order shall contain the following wording:  
"Although time is of the essence requiring initiation of this work in accordance with General Conditions Section 38(a)(3) on a time and material basis, the CM/Contractor shall submit a Price Proposal in accordance with General Conditions, Sections 38(a)(1)(Fixed Price) prior to reaching 50% of the dollar limit. Payment shall not be made for any work, labor or materials beyond the authorized dollar limit specified."
4. The University PM must obtain approval of the VP&CFO on a D&F prior to allowing a CM/Contractor to proceed with a T&M Change Order.





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## APPENDIX J: AARB & BOV

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### AARB

#### *Purpose of the AARB*

The AARB consists of six (6) members appointed by the Governor, plus a representative of the Department of Historic Resources, to advise him on the "artistic character" of buildings and works of art which are to be paid for by the Commonwealth, or to be located on or over Commonwealth property. In practice, the AARB recommends approval or disapproval to the Director of General Services, to whom the Governor has delegated this authority.

The AARB interprets its mandate from the Commonwealth in straightforward terms: to encourage the design of buildings and works of art which are both aesthetically and functionally appropriate to the agency for which they are intended. While no rigid prescriptive standards exist, the AARB generally requires each submission to demonstrate:

1. A resolution of basic functional and organizational requirements.
2. A command of the fundamental principles of good design, including refinement of color, form, scale, material and craft.
3. A positive contribution to the order and aesthetic of the physical setting.
4. Due consideration of its environmental, historical and cultural factors.
5. Concern for the greater public good.

#### *AARB Meeting Schedule*

The AARB meets at 10:00 AM on the first Friday of each month of the year, unless the Friday or the following Monday is a Commonwealth holiday, in which case the meeting will occur on the second Friday of the month. Meetings are held in the Library of Virginia, conference room A on the first floor. The address is 800 E. Broad Street, Richmond, VA 23219.

#### *Submittals*

All requests for a place on the AARB Review Agenda will be made in writing via a Fact Data form and must arrive in the office of the AARB Chairman no later than 4:00 PM on the Friday two weeks before the date of the meeting at which the Agency wishes to make its presentation. Agency request should also include, where possible on 11" x 17" sheets, the location and general form of the building, complete with north arrows and graphic scales. These documents will comprise the Board agenda and also is the basis for the recording of the AARB actions.

In addition a Consent Agenda is available for minor reviews and for demolition considerations. These items should include enough information to allow Board deliberation without Agency representation at the meeting. Submission should include a site plan, proposed building plan and elevations and photographs at a minimum.



Two submittals are normally required for most Projects. The first Submittal will occur at the Schematic Design phase. The second submittal is made during the Design Development phase and should include samples of materials and colors. Presentations during the Construction Documents phase may be required in unusual circumstances. If necessary, special arrangements can be made to review Projects at intermediate stages.

*Presentations to the [AARB](#)*

In general, Agency presentations should be organized so that they may be completed within 15 minutes, in order to allow adequate discussion within a 30-minute time frame. However, the Chairman will make a reasonable effort to accommodate the request of any Agency which feels that additional time may be required because of the complexity of a particular Project if this request is made at the time of the Agency's initial Submittal.

The following items should be addressed (and well illustrated) by the Agency and it's A/E at each presentation to the [AARB](#):

1. **Program:** A brief description of the building program, including the purpose for the Project and primary internal relationships.
2. **Relationship to the Surrounding Community, Adjacent Sites, and Agency Master Plan:** Include discussion of land use policy, pedestrian and vehicular circulation systems, landforms, and architectural character.
3. **Site Plan Strategy:** Discuss the relationships of the proposed design to existing topography and plantings, adjacent structures, service and pedestrian access, surface drainage, and orientation to the sun and wind. Photographs or slides and site diagrams are essential.
4. **Mass, Scale, Form and Architectural Character:** Discuss the impact of the proposed design on existing views and the mass and scale of nearby structures. Explain how the proposed design conforms to the architectural and planning principles embodied in the Master Plan or in precedent examples. Describe and illustrate proposed materials, colors, finishes and constituent details. Include a brief description of the proposed site development, including grading, site drainage, paving, lighting, landscaping, and site furniture.

The A/E PM should be organized and well prepared. Presentations should not be elaborate and overly formal. Sketches and study models are often more useful than finished Professional renderings and highly detailed models.

*Submittals to the [AARB](#)*

Submittals and presentations to the [AARB](#) will be coordinated by the Architect for the University with support from the University PM. Generally Submittals for the [AARB](#) shall be completed three weeks in advance of the presentation and will include the following:

Agency Name (include address, telephone, fax, and contact person):

Project Title (include Project Code # and location):

Current Project Status and Schedule (preplanning study, Schematic Design, etc.; next milestone date):



Project Description (area, number of stories, building and roof forms, and predominant exterior materials):

Brief Program Description:

Relationship to Approved Master Site Plan (include date of master site plan):

Contextual Issues and Design Intent:

Previous History with [AARB](#) (dates and actions):

Names and Titles of Those Appearing for the Agency and A/E:

Estimate of Time Required for this Presentation: Action This Date (for use by [AARB](#)):

Note: Attachments to this data sheet Submittal are required.

*The Architect for the University*

All Submittals and presentations will be coordinated by the Architect for the University.

## [BOV](#)

The [BOV](#) is composed of sixteen members appointed by the Governor of the Commonwealth of Virginia, subject to confirmation by the General Assembly, for terms of four years. In addition, at the first regular meeting of the second semester of the academic session each year, on recommendation of the Executive Committee, the [BOV](#) may appoint for a term of one year, a full-time student at the University of Virginia as a nonvoting member of the [BOV](#). The Rector and Visitors serve as the corporate board for the University, and are responsible for the long-term planning of the University. The Board approves the policies and budget of the University, and is entrusted with the preservation of the University's many traditions, including the Honor System. The Board maintains offices in the Northwest Wing of the Rotunda and meets four times per year in the Rotunda.

As such the [BOV](#) approves construction Projects at the University and requires presentations at various stages of Project execution. The Architect for the University coordinates these [BOV](#) reviews.

**[BOV](#) approval of A/E Selections and Architectural Guidelines:** is required and will be coordinated by the Architect for the University. The **Architectural Guidelines** should address each of the following seven general headings, as appropriate.

1. Initial reference shall be made to the Vision Statement:  
“Inherent in these Guidelines is the intent and scope of the Vision Statement for the Buildings and Grounds of the University of Virginia, adopted by the [BOV](#) on May 21, 1991. The Vision Statement shall be the primary reference for the overall design and planning of the Project.”
2. Contribution to the Master Plan
3. Nature of site and site plan strategy (this is also the place to address any landscape issues which may be specific to this Project)
4. Context, mass, and scale; relationship to the surrounding community, if appropriate
5. Architectural character, form and materials
6. Pedestrian and vehicular issues, including parking
7. Other issues unique to this Project (if any)



**BOV approval of Schematic and Preliminary Designs:** is required and will be coordinated by the Architect for the University. These presentations will be similar to the AARB presentations noted above and will include

1. an aerial photo (whenever possible),
2. a site plan demonstrating relationships with other buildings and major topographical and landscape features,
3. simple Plans with the basic functional organization clearly portrayed,
4. rendered elevations with shadows and in color,
5. cross sections (often necessary to explain how additions are connected to their parent buildings),
6. and either a rendered perspective or a model or one or more photographs of a model



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## APPENDIX K: STRUCTURAL & SPECIAL INSPECTIONS

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Part I of the Virginia Construction Code (VCC) (2006 or subsequent editions) Chapter 1, Section 113, "Inspections," prescribes minimum inspections to be performed on a project, and requirements for Special Inspections, Chapter 17, Section 1704 (of the adopted model International Building Code 2006) as modified in Part I of the VCC, Chapter 17 for procedural requirements. These inspections have been, heretofore, provided on University projects by a combination of the University's project inspection, the A/E and the University's independent testing lab. Chapter 8 describes the procedures assuring that the structural, special and other associated inspections are provided for the project. The concept of the process is that:

1. the A/E will determine in the design the materials, strengths, configurations, quality and standards applicable to the Work and describe that information to the CM/Contractor in Drawings and Specifications;
2. the A/E will specify the Submittals (i.e., Shop Drawings, manufacturer's data, and certificates of conformance), required from the CM/Contractor and review the Submittals;
3. the A/E and the Agency shall review the list of Special Inspections for the applicable Code, make appropriate notations on the list and forward the marked up list with the completed Statement of Structural & Special Inspections, HECO-6a and 6b, to the University for review and approval.
4. the CM/Contractor shall review the Submittals from its Subcontractors, Suppliers, fabricators and vendors to assure conformance with the Contract Documents and assure that materials, sizes, and configurations proposed are compatible with other trades and the space provided;
5. the fabricator, Supplier, vendor or production plant shall secure and have ongoing the required testing and quality control/assurances program to meet the requirements specified and shall submit certificates of conformance to the applicable standards of practice and quality assurance;
6. the A/E will perform on-site observations of erections, placements, and installations to ascertain the intent of the Contract Documents and Shop Drawings are met;
7. the University's Project Inspector/Clerk of the Works will observe day-to-day operations and report deviations/discrepancies in the materials and Work versus Contract Documents and approved Submittals;
8. the University's test lab will for the indicated items make on-site inspections, measurements, tests and sample collections, make applicable laboratory tests and submit copies of the reports to the University, the CM/Contractor, the A/E and the Project Inspector;
9. the CM/Contractor will have other tests made as specified and as necessary to assure conformance with the applicable regulations and standards of practice and workmanship.
10. the Structural Engineer shall complete the Final Report of Structural & Special Inspections, HECO-13.1b, and submit to the University as soon as completed, but prior to the Substantial Completion inspection report.
11. Copies of the HECO-6a, HECO-6b and HECO-13.1b are also included for reference.



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## APPENDIX L: DUTIES OF THE PROJECT INSPECTOR

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The Project Inspector must have the following minimum qualifications to perform the duties listed below:

1. the ability to read and understand the requirements of building Plans & Specifications;
2. education, trade related training, and experience in a design or construction related field;
3. some knowledge of construction means, methods and procedures;
4. knowledgeable of and have reasonably convenient access to the Codes and standards referenced in the Contract Documents which stipulate the requirements for installation and workmanship on the trades involved in the Work. (e.g. ACI, SMACNA, NFPA, NEC, BOCA, ASHRAE, etc.);
5. an understanding of the [General Conditions of the Construction Contract](#);
6. the ability to read and understand a construction bar chart schedule and;
7. the ability to communicate effectively orally and in writing.

The following is a detailed listing of the duties, Services, functions and responsibilities of the Project Inspector. This listing supplements and expands upon the duties, functions and responsibilities generally described in Chapter 10 of HECOM and in §16 of the [General Conditions of the Construction Contract](#). The Project Inspector is an employee of the University and is responsible to the University for performing the duties, observations, and Services described. The Project Inspector reports to the CAM, if assigned, otherwise to the University PM. The Project Inspector will be assigned in writing. These duties may also be assigned to the CAM. This in no way relieves the A/E from providing and being responsible for his contractual obligations as described in HECOM, the A/E Contract, and the [General Conditions of the Construction Contract](#).

The Project Inspector shall perform the following Services unless modified by the Contract for Services:

Monitor and inspect all construction materials, equipment, and supplies for compliance with the Contract Documents, Shop Drawings, and Submittals.

1. Inspect installation and workmanship for compliance with the approved Plans, Specifications, Shop Drawings and referenced standards. (e.g. ACI, SMACNA, NFPA, NEC, BOCA, ASHRAE, etc.). Verify compliance prior to cover or close-in of Work.
2. Monitor quality and coordination of Trade Contractors'/Subcontractors' Work at all times. Recommend to the University ways to alleviate identified problems. Identify all Work not done in accord with the Contract Documents and report it to the University and A/E.



3. Immediately report all discrepancies in the CM/Contractor's Work to the A/E and the University. Also report any **discrepancies noted in Plans and Specifications to the** A/E for clarification or resolution. The Project Inspector shall not interpret or change approved Plans and Specifications.
4. Keep a record or records, including a daily log of construction activity, roofing, tests, inspections, reports, photographs, and annotated Drawings, in order to show the progress of and changes in the Project during its construction. Keep records of the designer's and designer's representatives' site visits. Maintain these records.
5. Provide full-time inspection of the roof during its application. The Inspector shall not permit the CM/Contractor to install roofing materials without first having obtained from the A/E a copy of the manufacturer's certification confirming that roofing materials delivered for use on the Project meet specified ASTM standards. During 'Roofing Operations,' the inspector shall maintain a daily written roofing report covering such items as: weather conditions, deck conditions, materials stored, and installation procedures including, bitumen temperature at kettle and point of application, etc. A copy of the daily report shall be given to the CM/Contractor.
6. Notify the A/E and University if Work begins before required Shop Drawings, product Submittals, or samples have been approved by the A/E. Receive and log samples required to be furnished at the site; notify the A/E when they are ready for examination; record the A/E's approval or other action; and maintain custody of approved samples.
7. Report to the A/E and the University when in his judgment the Work being performed does not conform to the requirements of the Contract Documents or safety requirements are not being followed and, if appropriate, recommend suspension of the Work.
8. Notify the University of any safety violations, OSHA visits, accident reports, and corrective actions observed. Such reports do not relieve the GC of responsibility for safety under terms of the Contract for construction.
9. Observe tests required by the Contract Documents. Record and report, to the A/E and University, the CM/Contractor's test procedures and, where applicable, results of the tests.
10. Observe and report on all tests performed by the CM/Contractor and note results in daily reports.
11. Report presence of and activities performed by University's Testing & Inspection agents.
12. Verify invoices for on-site tests/site visits of independent testing entities, which are to be paid by the University.
13. Submit to the University and the A/E a weekly report in an approved format summarizing the significant activities and occurrences at the Project site. Include copies of the Daily Reports with the report.
14. The Inspector shall record, maintain, and submit with the Weekly Report a running record of outstanding, unresolved issues. The record shall include the issue, date of occurrence, and



date of resolution. After an item is reported to be corrected, it shall be deleted from the list in the weekly report.

15. The Inspector shall report, in writing, to the University and A/E any notifications from the CM/Contractor of dates and times that Services will be disrupted.
16. The Inspector shall participate in progress **and monthly pay meetings with the** University's representative, A/E, CM/Contractor, and other designated representatives, to review the current status of Work and any action needed to keep the Project within budget and on schedule. The University may assign the Inspector other duties related to these scheduled meetings.
17. The Inspector shall record, maintain, and submit with the weekly report a running record of outstanding discrepancies/deficiencies noted by the Inspector. The record shall include the item, the date observed, and the date corrected. After an item is reported to be corrected, it shall be deleted from the list in the weekly report.
18. The Inspector shall maintain, on site, a complete set of minutes of meetings as a "Running Record" of evolution of problems and solutions during progress of the Work.
19. The Inspector shall maintain current copies of the following at the job site:
  - current set of Contract Documents (Addenda, Contracts, Drawings, Specifications, Change Orders, proposed Change Orders, request for clarification, construction change authorizations, A/E's supplemental instructions, etc.
  - a) the Contract or Work all correspondence and reports of site conferences
  - b) Shop Drawings
  - c) samples and product data
  - d) University's purchases, including material and equipment
  - e) supplementary Drawings
  - f) color boards, schedules and samples
  - g) names and addresses of CM/Contractors, Subcontractors, and Principal Material Suppliers
  - h) CM/Contractor's Applications For Payment
  - i) running list of discrepancies/deficiencies and dates
  - j) running list of Unresolved Issues
  - k) A/E punch lists with date of issue indicated on each
  - l) any other documents and revisions resulting from issues concerning Operation and Maintenance manuals and instructions when received from CM/Contractor
20. The Inspector shall review and provide a recommendation to the University on the acceptability of all proposals submitted by the CM/Contractor for changes initiated by the University or Architect, and the acceptability of all claims for Change Orders initiated by the CM/Contractor.
21. The Inspector shall confirm to the University that changes required by approved Change Orders are incorporated in the Work at a time deemed appropriate by the CM/Contractor, and are reflected in the CM/Contractor's progress schedule.





22. The Inspector shall keep a record of all proposal requests from the A/E, Change Order proposals from the CM/Contractor, and executed Change Orders from the A/E. He shall file copies with the University monthly.
23. Throughout construction, the Inspector shall review the CM/Contractor's detailed schedule and advise the University on the CM/Contractor's progress and all other construction scheduling issues. He shall monitor the schedule, notify the University of any slippage in critical path time, make recommendations on accepting the CM/Contractor's proposed schedule recovery plan, and maintain an annotated copy of the schedule that reflects actual progress of the Work.
24. The Inspector shall maintain, at the site, a copy of the Project **schedule with notations**, highlighting, etc., that show Work to date and any changes made in the CPM schedule. Where a schedule shows early/late start and finish dates for various activities, the Project Inspector shall note actual dates of each occurrence on a copy of the CPM listing. The Inspector shall make recommendations to the University as appropriate concerning the CM/Contractor's conformance to the schedule and recovery plans.

When the Contractor is directed to make changes based on unit costs, the Inspector shall verify accuracy of quantities of material and labor (or other units of measure) attributable to Change Orders. The Inspector shall verify that all Change Orders are complete.

1. The Inspector shall observe the Contractor's Record Drawings at intervals appropriate to the state of construction and shall notify the A/E of any apparent failure by the CM/Contractor to maintain up-to-date records.
2. The Inspector shall review each certificate and application for payment and advise the A/E and University if they accurately represent progress of the Work and values of each line item in the Schedule of Values. He shall verify that stated quantities of stored materials are accurate. Based on such review and verification, he shall make recommendations to the University and Architect to approve or to revise the Certificate and application for payment.
3. The University may assign the Project Inspector other duties related to the Project.

The Project Inspector has no authority to and shall not:

1. Authorize deviations from the Contract Documents;
2. Enter into areas of responsibility of the CM/Contractor's Superintendent;
3. Issue directions regarding construction means, methods, techniques, sequences or procedures, or safety precautions and programs in connection with the Work;
4. Authorize or suggest that the University occupy the Project in whole or in part;
5. Issue a certificate for payment.

Supervisor: The Inspector shall report to the University PM or CAM, if assigned.



## CHECKLIST OF PROJECT INSPECTOR

### 1. **REPORTS/RECORDS (See Sample Formats for Reports)**

Photographs (progress and non-conforming Work).

Daily reports (Prepare and maintain standard form.)

Weekly reports (Prepare and maintain summary of daily report.)

Monthly reports (Prepare and maintain summary of weekly report.)

Record Drawings (Review periodically.)

Notify A/E and University of Contractor's failure to keep up-to-date changes.

Notice of defective or non-conforming Work with resolution space at bottom of form (to CM/Contractor, A/E, University).

Safety notification (to CM/Contractor, A/E, University).

Understands and maintains clarification requests.

### 2. **MEETINGS (ATTEND, REVIEW MINUTES AND MAINTAIN COPIES)**

Preconstruction meeting.

HVAC Pre-installation meeting.

Monthly pay request.

Interim A/E inspection.

Pre-roofing conference.

Substantial Completion Inspection.

Final Inspection.

Coordination meetings.

Records University's minutes of meetings when A/E is absent.



**3. SUBMITTALS (RECEIVE, USE, KEEP TRACK OF)**

Shop Drawings/Samples.

Response to Notice of Non-conforming Work.

Responses to CM/Contractor's requests for clarification.

A/E Field Orders.

RFPs.

Change Order.

Names, addresses, and Telephone Numbers of CM/Contractor(s), Subcontractors  
Material Suppliers, University, Superintendent, A/E, Consultants, Special Inspectors.

Special inspection reports.

Project Inspector reports.

Minutes of meetings.

Operation and Maintenance manuals, and instructions.

Any other documents and revisions resulting from issues concerning Work.

**4. INSPECTIONS/QUALITY CONTROL**

Inspects all Work and materials for conformance to Contract Documents, Shop  
Drawings, Change Orders.

Coordinates special inspections.

Judges clean-up effectiveness. If ineffective, notifies A/E and University of problems.

Verifies approved erosion & sediment control plan is on site and is being followed daily.  
Notifies A/E and University of deficiencies.

Verifies CM/Contractor's disposal site has been approved.

Verifies that off-site storage for CM/Contractor materials is approved.

Verifies CM/Contractor records proper disposal of hazardous material.



**5. SCHEDULING/PAYMENTS**

- Assists A/E to verify accuracy of CO- 12 quantities.
- Compares Work progress to scheduling.
- Notifies A/E and University of CM/Contractor's failure to comply with schedule.
- Verifies CM/Contractor time and materials for Change Orders and unit prices.
- Advises University and A/E if separate Contracts are being executed.

**6. PROJECT CLOSE OUT**

- Verifies readiness for substantial completion inspection.
- Verifies readiness for final inspection.
- Turns over complete and organized Submittals, reports, records to University.
- Provides list of unresolved issues.
- Reports status of separate Contracts at substantial completion inspection.
- Coordinates CM/Contractor's training of University staff.
- Receives and keeps track of punch list.



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## **APPENDIX M: RESERVED**

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## APPENDIX N: BUILDING PERMIT POLICY

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The Building Permit policy for University Buildings and Structures is contained in Facilities Directive 562 and is available on-line at <http://fac.mgmt.virginia.edu/directives/>.

Forms for Building Permits are at <http://www.fm.virginia.edu/fpc/hecom.htm> under the following link names:

[HECO-17 - Building Permit \(Version for VUSBC 2000-2003 Edition\)](#)

[HECO-17-IND - Building Permit for Trailers](#)

[HECO-17a-TMP - Building Permit for Temporary Structure](#)



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## APPENDIX O: EIR PROCESS<sup>193</sup>

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State agencies are required by the Va. Code §[10.1-1188](#) *et seq.* to prepare and submit to the [DEQ](#) an EIR for the construction of facilities that cost more than \$500,000 and have impacts outside of a building envelope. There are exclusions, but any project that is not strictly an interior renovation should check with Environmental Resources ([ER](#)) staff in Facilities Management for a project evaluation on EIR requirements. The requirement includes acquisition of land for construction, which includes leases, and expansion of existing facilities. The [DEQ](#) has 60 days after receipt of the EIR to make its and other agency comments available to the Governor's office and the submitting agency. Additional time may be required by the [DEQ](#) if significant comments are received as part of the review process. The Secretary of Administration represents the Governor in these issues. The Secretary's approval, after consideration of the [DEQ](#)'s comments, is required before construction of the project can begin.

Sometimes it appears that gray areas exist within these requirements. It is generally best to get a written opinion on questionable projects from the [DEQ](#).

### PREPARATION

ER staff members have been completing EIRs for UVA projects for several years. [ER](#) charges only for outside costs and expenses, including but not limited to, copying and travel as necessary. In most cases, there are no outside costs associated with EIR preparation. Outside Consultants can also provide EIRs. Their fees can range from \$5,000 to over \$10,000.

#### Data Sources and Timing

Typically much of the needed information and text is borrowed from reports or plans already developed for the project by FM or its design Consultants. It is especially helpful if the data can be supplied in electronic form. The EIR author places the data into the correct context to address the review issues required by [DEQ](#). Specific data requirements are listed below.

Timing is a very important issue. Typically ER can prepare an EIR in two weeks; however, a longer lead time is appreciated. The completed EIR must then pass the review of the University PM, the Office of the Architect, and the AVP & CFO of FM. Once the internal reviews are completed and the University Architect releases it for distribution, [ER](#) will send three hard copies and an electronic copy to [DEQ](#) for distribution to state and local agencies for their review. [DEQ](#) requires 60 days for this review. In emergency situations they can do a review in 30 days, but these requests are not always granted and should be used only for true emergency situations.

If major changes in a project scope are developed after the EIR is submitted, a revised or new EIR may be required. In this case the 60-day review period is usually reset by [DEQ](#). Ideally, the EIR should be done in the early planning stages so that requested changes and comments can be addressed while project changes are still possible or at least less costly; however, the planning should be far enough along that major changes by UVA are not likely to occur. If, during [DEQ](#) review, significant comments are received from any of the reviewing agencies, [DEQ](#) may extend the review process to allow for the resolution of the pertinent issues.

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<sup>193</sup> History: the material herein was previously found in Directive 522, now cancelled.



### Specific Data Requirements for EIRs

Below is a list of the main items that the University PM needs to supply to [ER](#) in order for [ER](#) to complete an EIR for [DEQ](#). This list may vary slightly depending on the specific project. ER is responsible for the collection of all other data needed to complete the report. Where property acquisition is also involved, a Phase I Environmental Site Assessment is usually required. Submission of project information in electronic format to ER is preferred.

1. Project description
2. Site plans, drawings, elevations, etc.
3. State Budget Item (ex. 207-####-###), Project Number, Work Order Number
4. Reason for the Project
5. Change in impervious surface – estimate increase or decrease in square feet
6. Description of stormwater management plans and design features
7. Change in landscaping – loss of trees, significant features that will be preserved, landscape plans for project
8. Impacts to pedestrian or vehicle traffic both during and after construction
9. Traffic study if one has been completed
10. Impacts to parking after construction
11. Known impacts to historic resources, if applicable
12. Plans for coordinating with the Department of Historic Resources
13. Geotechnical report if one has been completed
14. Environmentally friendly design features and whether the project is seeking LEED certification
15. Alternatives to the project that were considered and why they were rejected

All of the above information can be brief and sending existing project narratives or documentation to answer any or all of the above questions is encouraged.

Please contact Jess Wenger at (434) 982-5540 in [ER](#) for questions on UVA's EIR submission process or for information on whether an EIR is required for a specific project.





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## APPENDIX P: HECOM REVISION HISTORY

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### REVISION VI (5/17/11)

[Chapter 7](#) moved all of the material previously in Chapter 7 to the Facilities Design Guidelines.

### REVISION VI (3/25/10)

§[1.1](#) rewrote §1.1.1 from the previously existing material and what was previously in Appendix M.

§[1.2.2](#) added the last sentence to §1.2.1.

§[1.5](#) added the Section.

§[2.2](#) added the definitions of “General Funds (GF),” “Memorandum of Negotiation (MON)” and “Non-general Funds (NGF).”

### REVISION VI (2/12/10)

§[1.2.2](#) added the last three sentences of the second paragraph.

§[2.2](#) in the definition for “Shop Drawings” rewrote the first sentence, and added the definitions for “Mock-up,” “Product Data,” “Sample Illustration,” and “Samples”.

§[3.15](#) rewrote 3.15.1.

§[3.27](#) moved the material previously in this Section to new Section 1.5.

§[5.3.3](#) added “Agency VCCO” to the second sentence and added the last sentence.

§[5.10](#) moved the previous third through fifth paragraphs to form a new Section 10.24 and added the last sentence.

§[7A.8](#) designated the former first undesignated paragraph as 7A.8.1 and renumbered the other sub-sections accordingly, added all of the sub-section headings and updated all of the references in the Section to the [Virginia Administrative Code](#) and rewrote 7A.8.3.

§[8.3.0](#) added the sub-section.

§[8.11](#) added the third line in the table and added the last sentence.

§[10.2.8](#) added the third sentence.

§[10.13](#) removed the reference to Directive 362 in the first paragraph and in its place inserted a reference to Appendix I.



§[10.22](#) moved the material previously in this Section to new Section 1.5.

§[10.24](#) added the section from the last four paragraphs of §5.10.

§[11.2.2](#) added the See line at the end of the sub-section.

§[11.3.2](#) added the See lines at the end of the sub-section.

§[11.4.2](#) added the See lines at the end of the sub-section.

§[15.4](#) added the Section from material previously covered by Directive 363A.

#### **REVISION VI (4/29/09)**

§[1.0](#) created the new Section from the material previously in Appendix X

§[1.1](#) added “Manual In” to the Section heading, added the subsection headings, moved the material previously in §1.1.2 to new §1.0 and in §1.1.5 changed the mailing address for updates.

§[1.2](#) moved the material previously in §1.2 to new §5.0 and inserted the material previously in Chapter 14 in its place and re-titled and renumbered the Section accordingly, in §1.2.4 added the material covered in previous Chapter 12, in §1.2.4.2 rewrote the first paragraph, in §§1.2.4.2.2, 1.2.4.2.3 and 1.2.4.2.4, added the second paragraph in each and in 1.2.4.2.9, deleted the columns for “Required Approvals” and “Copy Distribution.”

§[1.3](#) deleted the Section on “Forms” and inserted the material previously in §1.4 and rewrote the second and third sentences thereof.

§[2.2](#) deleted the definition for “Construction Administration (CA),” “Maintenance Prevention,” “Minority-owned/controlled Business,” “Small Business” and “Women-owned/controlled Business;” and rewrote and added other definitions. See footnote for each definition for details.

§[3.1](#) rewrote the Section and Section heading.

§[3.8](#) added the first clause in the first sentence of the Section.

§[3.9](#) combined previous Section 3.10 with previous Section 3.9 to create present Section 3.9, added the subsection headings, in present 3.9.1 rewrote the first sentence of the last paragraph, in present 3.9.2 rewrote the first sentence of the last paragraph, created the last two sentences of present 3.9.4 and the first sentence of present subsection 3.9.5 from the first paragraph of previous Section 3.10 and added the last sentence to present subsection 3.9.5.

§[3.11](#) rewrote the Section title and added the subsection headings, in the first sentence of §3.11.1 added “and including BIM files,” rewrote §3.11.2 and added §3.11.4.

§[3.15](#) rewrote the first paragraph and added the subsection headings.

§[3.16](#) added the last sentence in the first paragraph in §3.16.1.



§[3.19](#) rewrote the Section.

§[3.23](#) added the second sentence.

§[4.2](#) rewrote the Section, deleting the previous §4.2.1 and combining that material with present §2.2, under the definition of “Professional Services,” and deleting the previous §4.2.2 and combining part of that material with present §2.2, under the definition of “Nonprofessional Services;”

§[4.4](#) added the bracketed material to the Section heading, added the second sentence to the first paragraph, deleted “proposed Design-not-to-exceed Construction Budget” from item 5 in the third paragraph and added the “See” line at the end of the Section.

§[4.5](#) divided the previous first paragraph into 2 separate paragraphs and added the reference and the second sentence to the present first paragraph, combined the previous last paragraph with the present fourth paragraph and added the subsection headings.

§[4.8.1](#) deleted “Non-Capital” from the first sentence added the last sentence to the first bulleted item and renumbered the subsection.

§[4.8.2](#) deleted “Non-Capital” from the first sentence, added the last bulleted item, and renumbered the subsection.

§[4.8.3](#) rewrote the Section.

§[4.8.4](#) moved the unnumbered material at the beginning of the Section to this subsection and deleted “Project Procurement File (See Directive 340)” at the end of the sentence.

§[4.9.1](#) added “Scope” to the subsection heading and added the fifth paragraph.

§[4.9.2](#) inserted “(RFQ) and” in the heading, rewrote the first sentence, added the “See” lines at the end of the first paragraph and at the end of the subsection, and created a new subsection (4.9.3) from the “Selection Negotiation and Award” material that was previously part of this subsection.

§[4.9.3](#) rewrote the second paragraph and in the 4<sup>th</sup> paragraph, added the 2<sup>nd</sup> and 4<sup>th</sup> sentences.

§[4.9.4](#) renumbered this Section from 4.9.3.

§[4.9.5](#) renumbered this Section from 4.9.4.

§[4.9.6](#) added the last two sentences, renumbered this Section from 4.9.5 and added the 5<sup>th</sup> sentence.

§[4.9.7](#) added the subsection.

§[4.11](#) added the provisions dealing with the signature and initial requirements in the heading, added the subsection designations throughout, substituted “Construction Services and Contract Administration Director” for “AVP & CFO” in 4.11.2 and added the material in 4.11.3.



§[4.12](#) moved the material to §[3.1](#).

§[5.0](#) created this new Section from previous §1.2.

§[5.1](#) added the Section.

§[5.2](#) added the Section.

§[5.3](#) renumbered the Section from 5.1.

§[5.4](#) renumbered the Section from 5.2.

§[5.5](#) renumbered the Section from 5.3, added the third paragraph in §5.5.1 and in §5.5.7, rewrote the introductory language and deleted “and Specifications (which will be prepared in conformance with the seventeen division format of the Construction Specifications Institute.)” from the end of §5.5.7.1, added §§5.5.9.1.8 and 5.5.9.1.9, rewrote §5.5.9.2.5 and added “as outlined in §§[3.11](#) and [10.19](#)” at the end of §5.5.9.2.8.

§[5.6](#) renumbered the Section from 5.4.

§[5.7](#) renumbered the Section from 5.5.

§[5.8](#) renumbered the Section from 5.6.

§[5.9](#) renumbered the Section from 5.7.

§[5.10](#) renumbered the Section from 5.8, added the first paragraph, in the present second paragraph inserted the parenthetical information and link, in the present third paragraph corrected the designation of the form and deleted the title of the form and added the link to the form and created present paragraphs four and five from the last four sentences of previous paragraph three, created the present sixth paragraph from previous paragraph two and deleted “evaluations” and added present paragraph 7.

§[6.2.6](#) deleted the entire 2<sup>nd</sup> paragraph of 6.2.6.2 and deleted 6.2.6.3

§[6.6](#) added the last paragraph.

§[7B.4.1](#) deleted previous requirement # 2 “Appendix S, Security References.”

§[7H.1.1.2](#) rewrote the subsection.

§[7H.1.2](#) added 7H.1.2.10, 7H.1.2.11, 7H.1.2.12 and renumbered the Sections thereafter accordingly.

§[8.2.4.1](#) in the second sentence, substituted “external-references” for “cross-references” and added “bond or” before “vellum” in the last sentence

§[8.3.3](#) rewrote the third sentence of §8.3.3.2.



§[8.3.15](#) substituted “University Review Unit” for “Manager of OCA” in the third sentence.

§[8.8.1](#) in the third paragraph, changed the “see” at the end from “Manager of OCA” to “Space and Real Estate Manager.”

§[8.8.7](#) under Site Plans and Fire Protection (FP) Information Plans, added the last requirement.

§[8.8.8](#) added the last requirement under Sprinkler System Drawings and Plumbing Drawings.

§[8.11](#) divided the previous last paragraph into the present last 2 paragraphs, divided the present last paragraph into two sentences and added “for EH&S use, with one set for the office and one set for field use” in the first sentence and “copies are required” in the last sentence.

§[8.13](#) added §8.13.3.

§[8.16](#) added the last “see” line.

§[8.19](#) added the Section.

§[8.20](#) added the Section.

§[9.2](#) in the first sentence substituted “CPSM” for “HECOM” and added the link.

§[10.3.3](#) added the subsection.

§[10.6](#) numbered the first unnumbered paragraph as §10.6.1, substituted “appropriate form” for “CO-9” in the second sentence and added the initial and signature information there under, renumbered the previous §10.6.1 as present §10.6.2 and combined the previous §10.6.2 with the present §10.6.2

§[10.7.2](#) rewrote the subsection.

§[10.7.3](#) added the subsection.

§[10.7.4](#) renumbered the Section from 10.7.3 to 10.7.4.

§[10.13](#) added the last reference in the Section.

§[10.15](#) added the last sentence.

§[10.23](#) added the Section.

[Chapter 12](#) the material in this Chapter was moved to §1.2.4 and was rewritten.

[Chapter 14](#) the material in this Chapter was moved to §1.2.

§[15.3](#) deleted all of the previous material with the exception of the first 3 forms.



## **REVISION VI (7/21/08)**

§[2.1](#) - renumbered the section to be consistent with other chapters of HECOM.

§[2.2](#) - renumbered the section to be consistent with other chapters of HECOM.

§[2A.1.1](#) - added “with a total Project Budget of five (5) million dollars (\$5M) or more” in the first sentence

§[3.11](#) - in the third paragraph, rewrote a, added e and added the last 3 sentences to f.

§[4.2.1](#) - added “Interior Design Services.”

§[4.2.2](#) - deleted “Interior Design Services.”

§[4.9.1](#) - added the fifth paragraph.

§[4.9.4](#) - added the last sentence.

§[5.1.10](#) - in the second sentence, added “total Project cost,” and “through the Contract Administration Manager,” and after “estimated” deleted “value.”

§[5.4](#) - at the end of the first paragraph, rewrote the list of Additional Services.

§[5.5.6](#) - added the second sentence.

§[601.0](#) - renumbered the section to be consistent with other chapters of HECOM.

§[602.0](#) - renumbered the section to be consistent with other chapters of HECOM; in 6.2.6.2 substituted “fixed fee” for “lump sum” in the first sentence.

§[603.0](#) - renumbered the section to be consistent with other chapters of HECOM.

§[604.0](#) - renumbered the section to be consistent with other chapters of HECOM.

§[605.0](#) - renumbered the section to be consistent with other chapters of HECOM.

§[606.0](#) - renumbered the section to be consistent with other chapters of HECOM; added the last sentence.

§[7A.1.3](#) - changed the dates in the sentence from “2000, 2003” to “2003, 2006.”

§[7H.1](#) - added 7H.1.1.2.

§[8.2.4.1](#) - added the last two sentences.

§[8.5](#) - added the last sentence.



§8.6 - in 8.6.4 inserted “total Project Budget” for “total budget” in the first sentence and in 8.6.6 inserted “total Project” before “value” in the second sentence.

§8.7 - in 8.7.2 inserted “total Project” before “value” in the last sentence and in 8.7.3 inserted “total Project Budget” for “total budget” in the first sentence.

§8.8 - inserted “total Project” before “value” in the fourth and sixth sentences.

§8.14 - in 8.14.1, substituted “Project” for “construction” in the first sentence and added “or other facilitation resources as approved by the AVP & CFO” in the third sentence.

§8.16 - in the first sentence, added “independent” and substituted “Projects with total Project costs greater than \$5M” for “Capital Projects costing greater than \$5M”.

§8.17 – in the second sentence substituted “University Review Unit Fire Safety Engineer” for “State Fire Marshal Office.”

§8.18 – in the first sentence, inserted “Projects with a total Project cost of \$5M or more” for “All Projects.”

§10.3.2 - added “provided there is a D&F,” in the first sentence.

§10.12.5 - renumbered this section from 10.12.6 to 10.12.5.

§10.12.6 - added the sub-subsection.

§10.12.7 - added the sub-subsection.

§10.12.8 - renumbered this section from 10.12.5 to 10.12.8.

§10.13 - added the first sentence in the second paragraph and added the third paragraph.

§10.18 - added the last sentence of the section.

§11.5 - in subsections B.3 and B.10, changed the advertising period from 30 to 21 days and added the sentence following.

§14.2 - changed the EIR amount in the second paragraph from \$300,000 to \$500,000. This new amount is effective July 1, 2008.

## **REVISION V.a**

§3.16.3 – Clarified A/E partial payments.

§5.3 – Typo.



§5.1.8 - Clarified A/E cost for all sets of Plans and Specifications for Schematic, Preliminary, and Construction Documents submitted to University for review.

§602.6.4 – Clarified travel reimbursables and fixed price by deleting.

§604.1 - Clarified travel reimbursables and fixed price by correcting.

Added independent Cost Estimate at Schematic Design if VM applies.

## **REVISION V**

**Chapter 2** - Capital Project Steering Committee updates.

**Chapter 3** - Clarifications to “Design not-to-exceed” terms and “A/E Insurance” terms, and “Other A/E Insurance” terms.

**Chapter 4** - SWaM updates; A/E selection process updates.

§**5.1.2** - Further clarifications to Design-not-to-exceed Construction Budget.

§**5.1.10** - Added requirements to coordinate A/E Liability Insurance with Risk Management.

§**5.3.1** - Further Design-not-to-exceed Construction Budget obligations.

§**5.3.3** - Clarifications of A/E reimbursable expenses.

§**5.3.5.4** - Added requirements to component cost analysis.

§**5.3.5.7.2** - Added LEED requirement.

§**5.3.5.7.5** - Updated VE to the University VM review.

§**5.3.6.2** - Added requirements to component cost analysis.

§**5.3.6.6** - Updated VE to the University VM review.

§**5.4** - Clarified Additional and Extra Services.

§**5.5** - Clarified Additional and Extra Services.

§**5.5.3** - Updated compensation due the A/E as a result of construction phase delays.

**Chapter 6** - Further clarifications to Design-not-to-exceed Construction Budget.

§**602.0** - Updated reimbursable expenses to be consistent with the University’s new printing process.





§602.3 - Clarified Additional and Extra Services.

§602.5 - Clarifications of A/E reimbursable expenses.

§604.1 - Changed phases of the Work allocations.

§[7A.1.7](#) - Clarification of Fire Safety Reviews.

§[7B.4](#) - Update of Design for Crime Prevention.

§[7C.5](#) - Updated Parking Space Criteria.

§[7G.1.2](#) - Added requirements for Elevator Types and Components.

§[7H.2.5](#) - Clarified University Review Unit requirements for Fire Alarms, Smoke Detectors, and Sprinkler System.

§[7H.2.6](#) - Clarified University Review Unit requirements for Fire Alarms, Smoke Detectors, and Sprinkler System.

§[7H.6.5](#) - Clarified University Review Unit requirements for Fire Alarms, Smoke Detectors, and Sprinkler System.

§[7H.7.3](#) - Clarified University Review Unit requirements for Fire Alarms, Smoke Detectors, and Sprinkler System.

§[7H.8.1](#) - Clarified University Review Unit requirements for Fire Alarms, Smoke Detectors, and Sprinkler System.

§[7H.8.2](#) - Clarified University Review Unit requirements for Fire Alarms, Smoke Detectors, and Sprinkler System.

§[7H.10.6](#) - Clarified University Review Unit requirements for Fire Alarms, Smoke Detectors, and Sprinkler System.

§[7H.11.8](#) - Clarified University Review Unit requirements for Fire Alarms, Smoke Detectors, and Sprinkler System.

§[8.1.1](#) - Clarified University Review Unit and State Fire Marshal relationship and interface requirements.

§[8.1.9](#) - Clarified University Review Unit and State Fire Marshal relationship and interface requirements.

§[8.1.10](#) - Clarified University Review Unit and State Fire Marshal relationship and interface requirements.



[§8.2.4](#) - Updated drawing sheets and media.

[§8.2.4.1](#) - Updated drawing sheets and media.

[§8.3.2.2](#) - Updated Contract options and documents.

[§8.3.2.3](#) - Updated Contract options and documents.

[§8.3.4](#) - Updated Instructions to Bidders.

[§8.4](#) - Added requirement for Cost Estimate reconciliation with the University Benchmark Cost Metric.

[§8.6.4](#) - Updated VE to the University VM review.

[§8.8.3](#) - Clarified requirement for an independent University Cost Estimate for all Projects over \$5M.

[§8.11](#) - Clarified University Review Unit and State Fire Marshal relationship and interface requirements.

[§8.14](#) - Updated VE to the University VM review.

[§8.18](#) - Adjusted minimums for application of formal partnering.

[§10.6.3](#) - Updated Notice-to-Proceed requirements.

[§10.18](#) - Added requirement to complete close out at end of warranty period.

[Chapter 11](#) - Clarified contracting options.

[Chapter 12](#) - Updated the Capital Project Steering Committee make up and responsibilities.

[Chapter 14](#) - Clarified the Project Execution Summary.

[Chapter 15](#) - Updated the cost saving calculation for the Annual Restructuring Report.

Miscellaneous edits and corrections involving: Chapter 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, and 15