WILLIAM & MARY

CHARTERED 1693

Facilities Management Design and Construction Manual

March 2019

Edition 2.0

This publication represents the combined efforts and professional expertise of the directors, superintendents, managers, craftspeople, and other staff members throughout Facilities Management.

Without their valuable contributions and careful review, the original and subsequent editions of the Facilities Management Design and Construction Manual would not have been possible.

THE COLLEGE OF WILLIAM & MARY
DESIGN AND CONSTRUCTION MANUAL

March 27, 2019

This College of William & Mary Design and Construction Manual marks a significant milestone in the University's achievement of delegated authority over its capital construction program and lease approval processes which began in 1996 when the General Assembly authorized delegation of post- appropriation management of non-general fund capital projects, and administration of real property leases to certain institutions of higher education as a two year pilot project. The General Assembly continually extended the pilot project.

The 2005 General Assembly Session passed the Restructured Higher Education Financial and Administrative Operations Act Chapter 933 (the Act) which made permanent those pilot delegations as well as providing further autonomy to the University for implementation of non-general fund and also general fund capital projects and administration of real property leases. The 2006 General Assembly Session passed legislation containing the Management Agreement By and Between the Commonwealth of Virginia and the College of William & Mary (the Management Agreement – see Appendix A) as required by the Act which further defined and specified the policy and rules governing the additional autonomy granted by the Act.

This Manual incorporates all of the facilities design and construction provisions of the Act and the Management Agreement and implements the policies and procedures of the University and its Board of Visitors. University representatives will continue to work with other institutions to improve and further this effort for the benefit of higher education. Edition 2.0 includes significant revisions and should be read in its entirety.

Van Dobson
Associate Vice President for
Facilities Management
College of William & Mary

DESIGN AND CONSTRUCTION MANUAL SUMMARY OF CHANGES

Change Number	Date of Change	Brief Summary of Changes

DESIGN AND CONSTRUCTION MANUAL TABLE OF CONTENTS

CHAPTER 1 ADMINISTRATION:

INTRODUCTION, BUILDING COMMITTEE, PROJECT REVIEW BOARDS, CODE REVIEW TEAM, BUILDING OFFICIAL

SECTION 1.1 GENERAL

The College of William & Mary Design and Construction Manual (hereafter referred to as the DCM or the Manual) for facilities projects contains policy, procedures and standards that must be followed in the execution of all facilities projects. This document describes the full process to be followed for capital projects. While some sections provide streamlined procedures based on project cost or other criteria, the full process is not mandatory for projects falling below the capital threshold. The Director, Facilities Planning, Design, and Construction (FPDC), in consultation with the University Associate Vice President for Facilities Management (AVP FM) and the College Building Official (CBO), will exercise judgement and streamline processes based on project cost and complexity. Supporting documentation concerning the enabling legislation and delegation of authority from the Commonwealth of Virginia to the College of William & Mary (the University) is in Appendix A.

1.1.1 The Act: The Manual sets forth the policies authorized by the Restructured Higher Education Financial and Administrative Operations Act (hereafter known as the Act), Chapter 10 (§23.1) of the Code of Virginia.

1.1.2 Deviations from Policy and Procedures: Deviations from the policy, procedures and standards outlined within shall be requested by a Determination and Findings (D&F) [see Appendix B] and must have prior approval of the AVP FM. Additionally, the CBO will approve deviations to policies regarding permitting and Code Review Team (CRT) interaction. The D&F shall justify and substantiate the need for the deviation. All deviations so provided shall be consistent with the authorities provided the College of William & Mary (including James Monroe Highland) (State Agency 204) and the Virginia Institute of Marine Science (VIMS) (State agency 268), particularly Exhibit G (Policy Governing Capital Outlay Projects), Exhibit H (Policy Governing Leases of Real Property) and Exhibit J (Policy Governing the Procurement of Goods, Services, Insurance, and Construction and the Disposition of Surplus Materials) to include Attachment 1 (Procurement Rules) of the Management Agreement which are shown at Appendix C of this manual.

1.1.3 Presentation of Facilities Projects Process: The Manual is designed to present the project planning and approval process through design and construction to project completion (occupied building). The Manual is arranged in a sequence that parallels the capital outlay process.

1.1.4 Manual Maintenance: The University FPDC department is responsible for maintenance of the Manual. In collaboration with the CBO and VIMS staff, FPDC will review the manual annually to ensure conformance with the Management Agreement and other controlling laws and regulations. Suggestions for changes, notification of conflicting guidance, and questions should be addressed to:

Director, Facilities Planning Design, & Construction
Facilities Management
P O Box 8795
Williamsburg, Virginia 23187-8795

A summary of each change will be logged on the summary of changes page at the front of this manual. The details (markups, additions, deletions, etc.) associated with each change will be inserted behind the summary of changes page. The body of the DCM will reflect the changed policy making it an evergreen document. All changes must be approved by the AVP FM. Additionally, the CBO will approve any changes to policies regarding permitting and CRT interaction.

1.1.5 Manual Location: The Manual including changes will be posted on the College of William & Mary FPDC website and may be downloaded and printed by users.

1.1.6 Virginia Institute of Marine Science Approvers/Reviewers Authority**:** When the Manual refers to policies, procedures, and approval authorities that impact or preside over VIMS, the following are equivalent substitutions: VIMS Chief Operating Officer (VIMS COO) for Associate Vice President for Facilities Management, VIMS Director of Facilities Management (VIMS DFM) for Director, Facilities Planning, Design, and Construction Division and Director, Operations and Maintenance, and VIMS Project Manager (VIMS PM) for University Project Manager.

SECTION 1.2 DESIGN PHILOSOPHY

1.2.1 Design Goal: The design goal is to create a capital investment that meets the user's functional requirements and provides the most economical life cycle cost, including economy of operation, consistent with Exhibit G of the Management Agreement. 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 Virginia Construction and Fire Codes, inclusive of codified industry standards, other applicable published industry standards, Facilities Management (FM) Technical Standards (at FPDC website and Appendix D), and must be designed by the A/E to meet all requirements within the "Design Not To Exceed" budget for the project.

1.2.2 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. Appendix E provides parameters for analysis of life cycle costs.

1.2.3 University Design Guidelines: Designs will conform to the architectural guidelines of the University Campus Design Guidelines Report dated May, 2003 (at FPDC website and Appendix F). 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.

SECTION 1.3 FORMS

1.3.1 University Higher Education Capital Outlay (HECO) Forms, Formats and Samples are available on the FPDC website. Permit and permit related closeout forms will be maintained by CRT and available on the CRT website.

SECTION 1.4 INDEX

1.4.1 This Manual is posted on the FPDC website at https://www.wm.edu/offices/facilities/departments-directors/fpdc/forms/index.php and is fully text searchable. CBO directives may be found on the CRT website at https://www.wm.edu/offices/codereviewteam/directives/index.php.

SECTION 1.5 BUILDING COMMITTEE

1.5.1 Purpose and Scope of Authority: Created to provide project team oversight during the planning, design and construction process. The committee can be established either when a pre-planning study is conducted or when it is time to issue a Request for Proposal (RFP) for the selection of an A/E for the design process depending on need. The committee has the following tasks:

- Select the A/E
- Provide the A/E with following project requirements/constraints
  - Program
  - Budget
  - Schedule
  - Other as required
- Provide direction subject to the requirement/constraints throughout the design process
- Participate in periodic meetings through design and construction
- Select members will assist senior members on the University Administrative staff in establishing and maintaining communications/liaison with the University community and local public interest groups, as required

1.5.2 Evaluation Standard: The following criteria are outlined for reference:

- A/E Selection
  - Selection criteria outlined in the RFP
- Design
  - Campus Design Guidelines
  - Virginia Uniform State Building Code (VUSBC)
  - DCM
  - FM Technical Standards
- Construction
  - Permitted construction documents and approved changes

1.5.3 Organization: The Building Committee will generally be chaired by the Senior Vice President for Finance and Administration (SVP F&A). It is recommended that the Committee have no more than 12 members. A suggested listing of membership is outlined below with the committee being tailorable per type/scope of the particular project.

1.5.4

- SVP F&A – Chair
- User representatives (no more than 3 recommended)
- Student representatives (no more than 3 recommended)
- AVP FM

- Director, FPDC
- University Project Manager (PM)

1.5.5 Schedule: The Building Committee meets based on the design schedule to provide input and guidance on the design as it progresses. During construction, the user representatives and the University PM attend monthly progress meetings conducted by the Construction Manager unless the project is of such scope or sensitivity that Building Committee meetings are desired throughout construction – usually on a quarterly basis.

1.5.6 Committee Presentation Requirements: A typical agenda includes review of meeting minutes, schedule, budget and the status of design/construction issues. Agendas and meeting minutes are prepared by the A/E and Contractor during design and construction, respectively.

SECTION 1.6 PROJECT REVIEW ORGANIZATIONS

1.6.1 Design: Three independent review teams will review and approve the project for compliance with University and State standards.

- University Design Review Board (DRB) – The Site/architectural approval
  - Site selection approval
  - Schematic Design (SD) architectural approval
  - Preliminary Design (PD) architectural approval
- State Art and Architectural Review Board (AARB) – Architectural approval
  - SD architectural approval
  - PD architectural approval
- CRT – Code compliance
  - VUSBC compliance
  - Construction elements included within the Virginia Statewide Fire Prevention Code (VSFPC)

1.6.2 Construction Review: The CRT will inspect construction for compliance with applicable code, permit documents, and authorized changes. The CRT may also share non-code observations or considerations. Upon certification by the A/E and Construction Manager/Contractor that the project is complete, the CRT, as the inspection agent for the CBO, will inspect and certify that the building is safe for occupancy and issuance of a Certificate of Use and Occupancy (CUO). Note that prior to issuance of a CUO, a building must be inspected by the State Fire Marshall (SFMO) or his designee

1.6.3 Responsibilities: The responsibilities and functions of each organization are outlined in succeeding paragraphs.

SECTION 1.7 UNIVERSITY DESIGN REVIEW BOARD

1.7.1 Purpose and Scope of Authority: The University DRB will review and approve changes to the exterior of any facility on the Campus and at the VIMS. This includes any changes which alter the architectural elements of the façade but does not include repair by replacement as long as like color and materials are used for the repair.

1.7.2 Evaluation Standard: Campus Design Guidelines Report dated May, 2003.

1.7.3 Organization: The Chair of the Board of Visitors (BOV) Administration, Buildings and Grounds Committee shall serve as the chair of the board; the SVP F&A shall serve as the vice-chair. Five members including the chair or vice-chair, in person or by telephone, shall constitute a quorum. No proxies may be given, and only a simple majority of the quorum is required to render a decision. The remaining committee members are:

- Voting Members (6):
  - Member, BOV Buildings & Grounds and Administration Committee
  - AVP FM
  - Director of the Historic Campus
  - Chair of the Committee on Sustainability
  - Architectural Historian, Colonial Williamsburg
  - Architect at large (appointed at discretion of President)
- Permanent Staff (1)
  - Director, Facilities Planning, Design, and Construction (FPDC)
- Rotating Staff (1)
  - University PMs of projects being reviewed

1.7.4 Schedule: The board shall meet four (4) times per year, in connection with the BOV calendar, with one or two ad-hoc meetings as required to meet project schedules. Attendance may be by conference call for out of town members.

1.7.5 Board Presentation and Approval Requirements: Each project must obtain board approval for site selection, SD, and PD architecture. Submissions to the board shall include, at a minimum, the following:

1.7.5.1 Site Selection Presentation

- Campus orientation map showing sites considered
- Topographic map with site overlay
- Selection criteria
- Advantages and disadvantages of each site

1.7.5.2 SD and PD Presentations: The presentations should demonstrate compliance with the order and elements of the Campus Design Guidelines, and should highlight significant features/issues that require deviation from the guidelines along with recommended solutions. Elevations and renderings, if funded, should be submitted in nine copies one week prior to the presentation date. The presentation should include the following minimum elements:

- Campus site orientation map
- Precinct standards per the Campus Design Guidelines
- Site map with building footprint
- Elevations from all four sides
- Renderings (if funded as part of the preplanning or design contract)
- Demonstration of compliance with architectural guidelines' order and elements

- Proposed exterior materials (roof, wall, windows, glazing - at PD review only)
- Interior program notes only if, during the presentation, Board comments question impact interior design as a direct result of changes to the exterior form

1.7.6 Presentation Means: Briefing boards, computer projections, or a combination of both may be used. Presenters firms should advise if a computer projection is to be used to ensure availability of a screen. Presenters will provide their own projectors and easels.

SECTION 1.8 STATE ART AND ARCHITECTURAL REVIEW BOARD

1.8.1 Purpose and Scope of Authority: Appointed by the Governor (and 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 state, or to be located on or over state property. In practice, the Board recommends approval or disapproval to the Director of General Services, to whom the Governor has delegated this authority.

1.8.2 Evaluation Standard: The Board 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 Board generally requires each submission to demonstrate:

- A resolution of basic functional and organizational requirements
- A command of the fundamental principles of good design, including refinement of color, form, scale, material and craft
- A positive contribution to the order and aesthetic of the physical setting
- Due consideration of its environmental, historical and cultural factors
- Concern for the greater public good

1.8.3 Organization: The AARB membership and criteria are set out in Section 2.2-2400 of the Code of Virginia.

1.8.4 Schedule: The Board meets at 10:00 a.m. on the first Friday of each month of the year, unless the first Friday or the following Monday is a state holiday, in which case the meeting will occur on the second Friday of the month, (please refer to the Commonwealth Calendar for schedule and updates). Meeting locations will be noted on the Meeting Agenda.

1.8.5 Board Presentation Requirements: Two submittals are normally required for capital projects. The first submittal will occur at the SD phase. The second submittal is made during the PD phase and should include samples of materials and colors. Presentations during the WD phase may be required in unusual circumstances. If necessary, special arrangements can be made to review projects at intermediate stages. Specific details regarding project review are available at the Virginia Art and Architectural Review Board Guidelines for Submissions and Presentations.

SECTION 1.9 CODE REVIEW TEAM

1.9.1 Purpose and Scope of Authority: Created as the agent of the University in support of the CBO in compliance with the provisions of Exhibit G, Section VIII of the Management Agreements which states:

If the College hires its own College Building Official, it shall fulfill the code review requirement by maintaining a review unit of licensed professional architects or engineers supported by resources and staff who are certified by the Department of Housing and Community Development in accordance with § 36-137 of the Code of Virginia for such purpose and who shall review plans, specifications and documents for compliance with building codes and standards and perform required inspections of work in progress and the completed capital project.

1.9.2 Evaluation Standard: VUSBC and the construction elements of the VSFPC as authorized by the Department of Housing and Community Development (DHCD).

1.9.3 Organization: The team is composed of the CBO and three senior code reviewer specialists. The four specialists are professional engineers and/or registered architects qualified in the following engineering disciplines:

- Architecture/Fire Protection
- Civil/Structural Engineering
- Electrical Engineering
- Mechanical Engineering

1.9.4 Schedule: The CRT specialists are full time employees of the University. Priority of effort is determined by the CBO, Director, FPDC, and VIMS DFM.

1.9.5 Submission Requirements: Construction document standards for submission of documents for CRT review are shown in Chapter 8 and 9 of this Manual.

SECTION 1.10 COLLEGE CODE OFFICIALS

1.10.1 Management Agreement: Exhibit G, Section VIII provides authority for a CBO for providing building official services to the University to include the VIMS. Maintenance Code Official responsibilities for these agencies have been separately assigned to the AVP, FM. See CBO Policy Statement "Authorities Having Jurisdiction" on the CRT website for additional clarification.

1.10.2 Building Official Responsibilities: The Building Official is the Authority Having Jurisdiction for all construction and repair related activities regulated by the VUSBC and the VSFPC. As the Authority Having Jurisdiction, the Building Official will interpret and enforce the code, issue construction permits, as well as temporary and permanent Certificates of Occupancy as applicable for all work regulated by these codes. Inspection by the State Fire Marshal or his designee is required prior to issuance of CUO for facilities projects.

1.10.2.1 Modifications: As part of his responsibilities under the VUSBC, the CBO is charged with granting necessary modifications and establishing rules and regulations as may be necessary to carry out Building Official responsibilities in accordance with State Law, the Restructuring Act and the Management Agreement. See CBO directives on the CRT website for additional information.

1.10.3 Department of Transportation: Roads within the University are owned and maintained by the Virginia Department of Transportation (VDOT), which has authority over structures in the Right of Way that are not regulated by the VUSBC. Any projects requiring access to the right of way within the College of William and May must be coordinated with VDOT although a VDOT permit is not required.

SECTION 1.11 REAL PROPERTY TRANSACTIONS

1.11.1 Acquisitions, dispositions, easements, and leased and temporary facilities are the responsibility of the Office of Real Estate Services.

CHAPTER 2 ADMINISTRATION:

TERMS AND DEFINITIONS

SECTION 2.1 GENERAL

This chapter is designed to acquaint University Personnel, 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 Facilities Projects Program. Definitions are taken from the Code of Virginia, the General Conditions of the Construction Contract, the Management Agreement and general customs and practices associated with the construction industry and professional service contracts. See CBO directives on the CRT website for additional information.

SECTION 2.2 ACRONYMS AND ABBREVIATIONS

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

AARB:	Art and Architectural Review Board
ACSM:	Advisory Committee on Space Management
A/E:	Architect/Engineer
ASBO:	Assistant State Building Official
AVP FM:	Associate Vice President for Facilities Management
CA:	Commissioning Authority
CBO:	College Building Official
CM:	Construction Management or Manager
CO:	Change Order
	Capital Outlay
COB:	Close of Business
COE:	Corps of Engineers
COP:	Change Order Proposal
CRT:	Code Review Team
Cx:	Commissioning
DB:	Design – Build Construction Delivery Method
D&F:	Determination and Finding
DCM:	The University Design and Construction Manual
DDC:	Direct Digital Control
DEB:	Division of Engineering and Buildings of the Virginia Department of General Services.
DEQ:	Department of Environmental Quality
DGS:	Virginia Department of General Services
DHCD:	Department of Housing and Community Development
DPOR:	Department of Professional and Occupational Regulation
DRB:	Design Review Board
DSBSD:	Department of Small Business and Supplier Diversity

EIR:	Environmental Impact Report
eVA:	Electronic procurement in VA. The eVA home page address is www.eva.state.va.us.
E&G:	Education and General
FAACS:	The Fixed Asset Accounting and Control System of the Virginia Department of Accounts
FAT:	Factory Acceptance Test
FPDC:	Facilities Planning, Design and Construction
FT:	Functional Test
GC:	General Contractor
HECO:	Higher Education Capital Outlay
IFB:	Invitation for Bids
MOU:	Memorandum of Understanding
O&M:	Operation and Maintenance (Manuals)
PD:	Preliminary Design
PM:	Project Manager
RDP:	Registered Design Professional
RFP:	Request for Proposal
SD:	Schematic Design
SVP F&A:	Senior Vice President for Finance and Administration
SWaM:	Small Business, Women Owned Businesses and Minority Owned Businesses
USBC:	The Uniform Statewide Building Code.
VBO:	Virginia Business Opportunities
VCCO:	Virginia Construction Contracting Officer
VIMS:	Virginia Institute of Marine Science
VPPA:	The Virginia Public Procurement Act, §2.2-4300 thru 2.2-4377, Code of Virginia as amended.
VSFPC:	Virginia Statewide Fire Prevention Code
VUSBC:	Virginia Uniform Statewide Building Code
WD:	Working Drawings

SECTION 2.3 DEFINITIONS

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

Act (The): The Restructured Higher Education Financial and Administrative Operations Act, Chapter 4.10 of the Title 23 of the Code of Virginia.

Acceptance Phase: The phase of construction after startup and initial checkout when functional tests, O&M, documentation review and training occurs.

Actual Damages: Proven harm, loss, or injury suffered by the plaintiff.

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

Additional Services: 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 the Manual. Compensation for the additional services is included in the fee negotiations prior to signing the contract and is, therefore, included in the A/E contract.

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 RFP made by publishing a notice in the public Internet procurement Web site designated by the Department of General Services [i.e. VBO/ eVA] and by "Posting the Notice" (College of William & Mary Management Agreement).

Advisory Committee on Space Management: The University committee that advises on space planning, policies and procedures and makes recommendations on University space utilization in support of the University's mission and strategic planning goals and objectives. The committee is advisory to the Provost on all matters related to space.

A/E Contract: The Form of Agreement (HECO-3, HECO-3.1, HECO-3.2) and any document expressly incorporated therein. Such incorporated documents customarily, include parts of this Manual, the Memorandum of Understanding and all modifications, including subsequent Change Orders.

A/E Manual: This reference to portions of the manual are no longer applicable. The A/E Manual, when printed in any document or manual shall refer to the Design and Construction 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.

Agency: Means the College of William & Mary (including James Monroe Highland) (State Agency 204) and the Virginia Institute of Marine Science (State agency 268).

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 facilities project for the Agency.

Architect: An individual licensed to practice in the Commonwealth of Virginia as an architect by the Architects, Professional Engineers, Land Surveyors, Certified Interior Designers and Landscape Architects (APELSCIDLA) Board of the Department of Professional and Occupational Regulation. "Architect" may also be used to refer to a firm of such individuals which is properly licensed in Virginia. Also referred to as the A/E.

Architect/Engineer: The term used to refer to the architect and/or engineer who contracts with the Owner to provide the architectural and/or engineering services for a project. The Architect/Engineer is a separate Contractor and is not an agent of the Owner. This term also includes any associates or consultants employed by the Architect/Engineer to assist the Architect/Engineer in providing services.

Architect/Engineer (A/E) Change Order: A document (CO-11a/e) issued on or after the effective date of the contract (CO-3) agreed to by the Architect/Engineer and approved by the Owner that authorizes an addition, deletion or revision in the work, including any adjustment in the contract price and/or the contract time. A change order, once signed by all parties, is incorporated into and becomes part of the contract.

Art and Architectural Review Board: 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 state property, and works of art.

Associate Vice President for Facilities Management: The person designated as responsible for FM activities at The College of William & Mary in Virginia.

Association: As applied to architects or engineers, this term shall mean a legal entity formed by several architects and/or engineers 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.

Auxiliary Buildings: Support facilities which support the educational mission outside the classroom, but are not used for instruction or academic administration. Examples include Dormitories, Dining Facilities, Parking Garages, Intercollegiate athletics and extracurricular activities. These facilities often generate revenue through fees charged for their use.

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 by the bidder submitted on the prescribed form and setting forth the bidder's price(s) for the work to be performed.

Board of Visitors or Board: Means the Rector and Visitors of the College of William & Mary in Virginia.

Bonds (State): Four types of bonds are issued by the State to finance capital projects and are authorized within the requirements of Article X, Sections 9(b), 9(c) and 9(d) of the Virginia Constitution.

- 9(b) Bonds (fund code 0811): Triple A Rated; Legislative and voter approval required to issue; rarely issued. Supports Education & General (E&G) projects (ex: academic facilities).
- 9(c) Bonds (0813): Triple A Rated; AKA "revenue bonds". Issued under the full faith and credit of the Commonwealth. Used to fund revenue producing capital projects. Principle and Interest are paid for by the institution from revenue related to the project or system to which the project is related (ex: dormitories).
- 9(d) Bonds (0815): Not Triple A Rated; Does not carry the full faith and credit pledge of the Commonwealth; May be issued by the State ("pooled bonds") or University, for E&G or Auxiliary projects; Excess proceeds and interest from bonds that are not used within the intended capital project may be recovered by the University for application to interest payments on that bond.
- VCBA Bonds (0817): Triple A rated. Issued by, and paid for by the Commonwealth, typically for E&G projects ("pooled projects"). Also the current source of funding for E&G maintenance reserve. Excess proceeds and interest are retained by the Commonwealth.

Building: Any roofed or occupiable structure.

Building Committee: The group constituted by the University in accordance with the requirements of Chapter 12 of the DCM and with the authority and responsibility to review and advise in the planning, design and construction of capital projects and other professional services required by the University.

Building Official: The Building Official for all University and Virginia Institute for Marine Science Buildings, is the person so designated by letter by the University President, authorized to issue building permits regulated by the VUSBC; CUOs; and other Building Official activities authorized by the VUSBC. Also referred to as the CBO.

Building Permit: All work on University buildings and structures will be done in accordance with the Virginia Uniform Statewide Building Code and other applicable codes and standards. Accordingly all University projects will be reviewed and permits issued in accordance with the CBO's Building Permits/project permits letter (Appendix G).

Capital Lease: Means a lease that is defined as such within Generally Accepted Accounting Principles pursuant to the pronouncement of the Financial Accounting Standards Board.

Capital Project: As used in this manual, means a capital project with an acquisition, improvement, renovation or capital lease costing $3 million or more or any improvement or new construction of 5,000 square feet or greater. Projects less than the above are considered non-capital projects.

Change Order: A document (HECO-11) issued on or after the effective date of the contract (CO-9) agreed to by the Contractor and approved by the Owner that authorizes an addition, deletion or revision in the work, including any adjustment in the contract price and/or the contract time. The term "change order" shall also include written orders to proceed issued pursuant to Section 38 (a) (3) of the General Conditions of the Construction Contract, (HECO-7). A change order, once signed by all parties, is incorporated into and becomes part of the contract.

Code of Virginia: 1950 Code of Virginia as amended, Virginia's codified statutes. Sections of the Code of Virginia are referred to herein as § xx-xx.

Code Official (Building): The person designated in writing by the Agency Head as having authority to approve applications for CUOs and Building Permits. Also referred to as the College Building Official or Building Official.

Code Official (Maintenance): The person designated in writing by the Agency Head as having authority to administer the Virginia Maintenance Code. Also referred to as the Maintenance Code Official.

Code Review Team: See Review Team.

College Building Official: See Building Official or Code Official.

College of William & Mary: Inclusive of all State owned or leased property comprising the Main Campus and any Satellite Campus representing the College of William & Mary and the Virginia Institute of Marine Science. Agency Codes are:

204 – College of William & Mary (includes James Monroe Highland)
268 – Virginia Institute of Marine Science

Commissioning: A process of ensuring that building systems and equipment are designed, installed, tested, and capable of being operated and maintained according to the owner's operational needs.

Competitive Negotiations: A method of Contractor selection that includes the following two elements (University Procurement Rules. See Chapter 11 of the Manual for further descriptions.):

- 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.
- Public notice of the RFP at least ten (10) days prior to the date set for receipt of the proposal by posting in a public area normally used for posting of public notices and by publication on the public Internet e-procurement Web site designated by the Department of General Services [VBO/eVA].

Competitive Sealed Bidding: A method of Contractor selection that includes the following elements (University Procurement Rules:

- Issuance of a written IFB containing or incorporating by reference the specifications and contractual terms and conditions applicable to the procurement.
- Public notice of the IFB at least ten (10) days prior to the date set for receipt of bids by posting in a designated public area and by publication of the public announcement or "Notice" of the availability of the bid documents or IFB on the public e-procurement Web site designated by the Department of General Services [i.e. VBO/eVA]. Bids may be solicited solely from Contractors who have prequalified. (University Procurement Rules). In addition, bids may be solicited directly from potential Contractors. Any additional solicitations shall include businesses selected from a list made available by the Department of Minority Business Enterprise (DMBE).
- Public opening and announcement of all bids received.
- Evaluation of bids based upon the requirements set forth in the invitation.
- Award to the lowest responsive and responsible bidder.
- Competitive sealed bidding shall not be used for procurement of Professional Services as defined in this Manual.

Construction: As used in this Manual, 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 Commonwealth, including any draining, dredging, excavation, grading or similar work upon real property.

Construction Administration (CA): As used in this Manual, this term means nonprofessional services provided under a contract with the University which generally includes inspection of the work, coordinating testing services contracts procured by the University, reviewing change orders and schedule submittals from the Contractor, and providing other construction period services for the benefit of the University. The Construction Administrator is the entity responsible to the University for providing services to assure compliance with the contract documents but is not responsible under the CA contract for providing the work. The University may use an employee to perform construction administration services.

Construction Management (CM): As used in this Manual, this term means 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 services to the University. The Construction Manager has direct responsibility and liability to the University for performing the work as described by the contract documents. Also called the CM/GC, or the 'Contractor' for the CM project, CM at Risk (CM@R) or CM-Agent (CMA) when used for administering the project.

Construction Administration Manager: The University employee designated as the University's on-site representative during the construction phase of a project.

Consultant: An individual or firm with professional expertise engaged to render a specific service in connection with a project.

Contract Administration: The duties and responsibilities normally performed by the A/E as his construction phase services during the construction phase of a project.

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 (CO-9) based on 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 Invitation for Bid.

Contract Documents: As used in this Manual and General Conditions of the Construction Contract (HECO-7), this term shall mean the contract (CO-9) and any documents expressly incorporated therein. Such incorporated documents customarily include the bid submitted by the Contractor, the General Conditions of the Construction Contract, any Supplemental General Conditions, any Special Conditions, the plans and specifications, and all modifications, including addenda and subsequent change orders.

Contract Price: The total compensation stated in the Contract, as modified by change orders, payable to Contractor for performing the work set forth in the contract documents.

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 facilities project for the Agency.

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. As used in the Manuals with respect to a facilities project, the Contractor for the professional services is referred to as the Architect/Engineer or A/E. The Contractor for the construction related work is referred to as the Contractor. In addition to contracted support, in house staff may perform work regulated by the VUSBC or VSFPC.

Contractor: As used in the Manuals and the Standard Forms, “Contractor” means the specific person or firm with whom the University has contracted to do the work described in the contract documents for that undertaking. On a Construction Management project, the CM or CM/GC is the ‘Contractor’.

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.

Covered Institution: Means, on and after the Effective Date of its initial Management Agreement, a public institution of higher education of the Commonwealth of Virginia that has entered into a Management Agreement with the Commonwealth to be governed by the provisions of Subchapter 3 of the Act.

Day(s): 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 University at Substantial Completion or Beneficial Occupancy).

Delegated Design: Delegated design is the act of the Designer of record relinquishing design responsibility to the construction constructor for one or more specialty scopes of the work for the construction of a project.

Design-Build (DB): 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.

"Design-not-to-exceed" Cost: 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.

Determination and Findings (D&F): A document, usually prepared by the 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 CBO or AVP FM will consider D&F proposals after review and a recommendation by the Director, Facilities Planning, Design and Construction.

Director, Facilities Planning, Design and Construction Division: The person responsible for all FM Planning, Design and Construction activities at The University.

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 Building Official to determine code compliance. Graphic representations include, but are not limited to, plan views, elevations, transverse and longitudinal sections, large and small scale sections and details, isometrics, diagrams, schedules, tables and/or pictures.

Educational and General: All Facilities used in the instruction and the direct administration and support of instruction that are funded by tuition, fees, and general funds.

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.

Enabling Legislation: Means those chapters, contained within "§ 4-4.00 Capital Projects" of the 2005 Acts of Assembly which grant the delegated authority to the University.

Engineer: A person who is qualified and licensed to practice engineering in Virginia as a Professional Engineer by Architects, Professional Engineers, Land Surveyors, Certified Interior Designers and Landscape Architects (APELSCIDLA) Board of the Department of Professional and Occupational Regulation, 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 the Commonwealth of 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: Electronic procurement in VA. The eVA home page address is www.eva.state.va.us

Extra service: 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 compensation therefore, are authorized by a modification to the A/E contract using the A/E change order, (HECO-11 a/e).

Facilities Planning, Design and Construction (FPDC): The department in FM at the University responsible for planning, design and construction.

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

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 Owner'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 Section 44 of the General Conditions of the Construction Contract (HECO-7).

Firm Capacity: The maximum output of a heating or cooling system without the availability of the largest single piece of equipment, and is an indication of the reliability of the system.

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

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: "Free float" is defined as the time by which an activity may be delayed or lengthened without impacting the start day of any activity following in the chain.

Float, Total: "Total float" is defined as 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: The General Conditions of the Construction Contract, HECO-7, latest edition. Also, the General Conditions of the Construction Management Contract, HECO-7CM for use with construction management contracts and the General Conditions of the Design Build Contract, HECO-7DB for use with design build contracts.

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

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:

- 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.
- 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.
- 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.
- Restoration of a facility or structure to the maximum extent possible to its former or original state (historic property).
- Relocation from one site to another of a facility or structure either intact or by disassembly and subsequent reassembly.
- 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.
- 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 bid or proposal from the exact requirements of the Invitation to Bid or RFP that does not affect the price, quality, quantity or delivery schedule for the goods, services or construction being procured. (University Procurement Rules).

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, all of which request qualified bidders to submit competitive prices or bids for providing the described work on a project. The IFB is the “Invitation to Bid” required by University Procurement Rules.

Landscape Architect: An individual certified by the Commonwealth of Virginia as a ‘Certified Landscape Architect’ by the APELSLA Board of the Department of Professional and Occupational Regulation. The Certified Landscape Architect may function as a PM 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.

Liquidated Damages: As used in this Manual, the term “Liquidated Damages” generally means a predetermined and fixed amount of money per period of time as stated in the contract documents and which will be charged to the Contractor as a measure of damages for delay suffered by the University due to failure of the Contractor to substantially complete, or finally complete, the project/work by the date or time established in the contract documents.

Maintenance Code Official: See Code Official (Maintenance)

Maintenance Prevention: A technique embracing reliability engineering and maintenance experience and directed at preventing potential design defects that would ultimately inhibit proper operation and maintenance of new equipment, buildings, and property components. Design deficiencies are identified, mitigated or eliminated through careful maintenance oriented review of the design document prior to purchase, construction, or installation. "Maintenance Prevention" is influenced heavily by life cycle cost considerations.

Maintenance Reserve Project: A single effort undertaking costing less than $2,000,000 ($4,000,000 if roofing) which involves repair or replacement of damaged or inoperable equipment, components of plant, and utility systems; correction of deficiencies in property and plant required to conform with building and safety codes or those associated with hazardous condition corrections, including asbestos abatement; and correction of deficiencies in fire protection, energy conservation and handicapped access. Examples of such projects include:

- Repair or replacement of damaged or inoperable equipment such as elevators, furnaces, plumbing fixtures, air conditioning and ventilation equipment.
- 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.
- 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.
- Correction of problems resulting from erosion and drainage.

Management Agreement: The Management Agreement By and Between the Commonwealth of Virginia and the College of William & Mary passed by the 2006 General Assembly Session (HB 1502/SB675ER) as required by the Restructured Act and containing further defining controlling policy and rules governing the additional autonomy granted by the Restructured Act.

Master Plan: A methodical process of data collection, analysis, evaluation of options and development of a planning document or tool.

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/or clarifying the requirements of the A/E contract in terms of the particular project. However, the MOU does not supersede or take precedence over the requirements of the Manual unless such change has been approved in writing using a D&F by the AVP FM and such written approval is attached to the MOU.

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:

- Construction of a new plant including the erection, installation, assembly of a new facility or structure, utility system, or site work.

- Addition, expansion, or extension to a structure which adds to the overall exterior dimension of the plant; structure
- 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.

Nonprofessional Services: Any services not specifically identified as professional services in the definition of professional services. (University Procurement Rules).

Non-Capital Project: A facilities project that does not meet the threshold of a capital project and is not funded by the Maintenance Reserve appropriation.

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 shall be sufficiently given by any one or combination of the following:

- Delivered in hand at the last known business address of the person to whom the notice is due;
- Delivered in hand to the person's authorized agent, representative or officer wherever they may be found; or
- 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: The written notification by the University to the apparent successful bidder notifying the bidder that it has been awarded the contract, pending the submittal and execution of all documents required in the IFB.

Notice of Intent to Award: The written public posting by the FPDC Office announcing the apparent successful bidder and notifying the bidder and all other bidders that the University intends to award the contract to the apparent successful bidder pending completion of the verification that it is a Responsible Bidder and the receipt and acceptance of all executed documents required in the IFB.

Notice to Proceed: The written notification by the University to the apparent successful bidder notifying the bidder that it has been awarded the contract, pending the submittal and execution of all documents required in the IFB.

On Demand Construction: Procurement of construction services from a pre-selected list of Contractors or from University FM forces; referred to colloquially as "make-buy".

Owner: For purposes of the Manual, "Owner" shall mean the Rector and Visitors of the College of William & Mary.

Owner/Agency/University/VIMS: For the purposes of this manual, these terms are synonymous.

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 bidders 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 or other legal entity.

Plans: The group or set of project-specific drawings included in the contract documents.

Pre-bid Conference: A University-sponsored meeting of interested, prospective bidders held prior to the receipt of bids in which comments or questions concerning specifications or other provisions in the IFB or RFP can be received and considered (University Procurement Rules). The A/E typically assists with pre-bid conferences. Any response shall be in writing and posted to eVA.

Prequalification of Bidders: The process by which the qualifications and credentials of potential bidders 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 (University Procurement Rules).

Procurement Rules: See University Procurement Rules.

Professional Services: For the purposes of this Manual, services provided by a licensed professional within the scope of the practice of accounting, architecture, land surveying, landscape architecture, or professional engineering.

Project: The term used to represent the specific or proper assigned title of the entire undertaking which includes, but is not limited to, the design services by the A/E and the construction "work" performed by the Contractor pursuant to the contract documents.

Project Inspector: One or more persons employed by the University to inspect the work for the University and/or 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: The designated representative of the A/E or the Contractor through whom written decisions and notices are generally conveyed. As used in the Manual, the Project Manager representing the University shall be noted as the University PM.

Proprietary: An adjective used to describe a product or piece of equipment which is manufactured under some exclusive right but which is available to Subcontractors from multiple vendors or suppliers; (e.g. a product or piece of equipment which is specified by a single brand name and model number and which is available to bidders 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/or 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).

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 offerers (University Procurement Rules).

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 (University Procurement Rules).

Responsive Bidder: A person or firm who has submitted a bid which conforms in all material respects to the Invitation to Bid (University Procurement Rules).

Restructured Act: The Restructured Higher Education Financial and Administrative Operations Act, Chapter 4.10 (§23-38.88 et seq) of Title 23 of the Code of Virginia (See Appendix A).

Review Team: A staff unit of the University consisting of registered and licensed architects and engineers with authority under the Management Agreement to perform reviews of the University's construction project drawings and specifications and also perform other related functions. Also referred to as University Code Review Team.

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.

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 (University Procurement Rules).

Shop Drawings: The drawings, diagrams, illustrations, schedules, installation descriptions and other data prepared by or for the Contractor 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 by the Contractor conform to the requirements of the contract documents.

Six Year Plan: The University's rolling six year (three biennia) building program. Capital projects proposed for inclusion in the program must be reviewed, approved, and prioritized by the Advisory Committee for Space Management (ACSM) chaired by the Provost. The Six Year Plan is updated annually and formally submitted to the state on a biennial basis. Projects proposed for state and/or debt funding must be approved by the BOV, the General Assembly and the Governor. projects which are non-general, non-debt University funded are approved by the BOV.

Sole Source: A product, item of equipment, service or combination of these which is 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 General Conditions.

Specifications: Those portions of the contract documents containing the 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 Building Official to determine Code Compliance.

Subcontractor: An individual, partnership or corporation having a direct contract with 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 the Manual to be submitted by the A/E to the University for review and/or approval.

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 General Conditions of the Construction Contract, HECO-7. See Form DGS-30-376 for insurance and liquidated damages.

SWaM: The acronym used to refer to Small Business and Women-Owned and Minority-Owned Businesses. See the Virginia Department of Small Business and Supplier Diversity website, https://www.sbsd.virginia.gov/certification-division/swam/ for more information.

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

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 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.

Umbrella Project: A global appropriation fund for multiple projects, typically related in character of work. Individual projects are typically executed as standalone projects, but funding may be shifted from one project to another, as necessary within the appropriation.

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 markup for overhead or profit shall be added to the unit prices.

University: College of William & Mary/Virginia Institute of Marine Science.

University Procurement Rules: Replaces the Virginia Public Procurement Act.

University Project Manager: The University PM is responsible for managing execution of assigned projects from the planning phase through design, construction, and closeout.

Unsealed Bid: An unsealed written offer conveyed by U.S. Mail, commercial courier service, facsimile, e-mail, or other means. The bids are normally opened and recorded when received.

USBC: The Uniform Statewide Building Code adopted by the Virginia DHCD in conformance with the Code of Virginia, § 36-98 (Also referred to as the VUSBC).

VCCO: The acronym used to refer to a University employee who has completed the necessary training and testing by the Division of Engineering and Buildings (DEB) in state procurement law, policy and procedures and who has been awarded the designation of Virginia Construction Contracting Offer (VCCO). Where used in this Manual, the VCCO functions are related to the following: receipt of bids, opening of bids, review of the bids, and signing the HECO-8 recommending award of the contract to the successful bidder.

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

CHAPTER 3 PLANNING:

MASTER PLANS, SITE & UTILITY DRAWINGS

SECTION 3.1 CONFORMANCE WITH EXISTING MASTER PLANS

3.1.1 Each project must conform to a Site, Precinct or Master Plan developed by the University and approved by the BOV.

3.1.2 Each project shall conform to the University's Regional Stormwater Plan.

SECTION 3.2 SITE & UTILITY DRAWINGS

3.2.1 Utility Plans will be developed and maintained by FPDC in conjunction with the Energy Manager to insure utility capacities exist to support the Master Plan. Utility facility locations will be as defined in the appropriate Precinct or Master Plan.

3.2.2 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, utilities installed, etc.

SECTION 3.3 MASTER PLANS AND REQUIREMENTS

3.3.1 Preparation: The Master Plan shall be prepared by a Registered Architect, Engineer or recognized Professional Planner and shall include all existing and planned facilities, infrastructure and utility corridors.

3.3.2 Intent: The Master Plan shall depict the current land use and future development of the campus/physical plant in an orderly and efficient fashion to maximize resources and provide a planning framework sufficiently flexible to allow response to changing program requirements.

3.3.3 Future Needs: Plans should address needs through the next 20 or more years to include future building sites and planned construction. Specifically, each plan shall:

- Identify potential building sites available for future development and planned construction as outlined in the capital program. Utilities to future building sites shall be planned for and routed accordingly.
- Generally, the six year plan for capital construction is sufficient for facility siting planning.
- Long Range Development may be indicated as generalized areas and labeled as to the anticipated use.

3.3.4 Chesapeake Bay Watershed: Future development shall be sensitive to the Chesapeake Bay Watershed Development Policies and Guidelines, published by the Chesapeake Executive Council.

- Emphasis should be placed on compatible land use.

3.3.5 Standardization of Content: The Criteria and content requirements of this chapter shall apply to all future Master Plans. Materials shall be presented in the following sequence:

- Cover Sheet - "Comprehensive Master Plan for The College of William & Mary"
- Table of Contents
- Narrative Detail
- Maps / Graphics – Current Conditions
- Maps / Graphics – Future Developments
- Site Utility Plans are required separately but will also be included in a graphic master site and utility plan which records all existing work and is updated annually.

3.3.6 Narrative information: This information should supplement, not repeat, information contained on drawings or maps.

- Vision: Provide a brief narrative describing the vision for the Master Plan outlining existing conditions and future goals. Provide incremental milestones with intended time frames as may be applicable.
- Existing Conditions: Provide a brief description for each precinct (North Campus; South Campus; West Woods; Law School and Dillard Complex) outlining the following:
    - Land Use: Identify the general use for each precinct and note undeveloped land as green space, future building sites, current/future utility corridors, archeological and/or historical sites, hazardous materials and/or dump sites, etc. This data shall be used as the initial input for future six-year plans.
        - Identify any and all covenants, easements and preserves established by law or agreement.
        - Visions and plans for future programs, property acquisitions and similar information may be included in the narrative.
    - Facilities: Identify existing facilities and their respective current uses. Identify major deficiencies as may be applicable.
        - Facility condition assessment reports shall be performed by the University on a rolling 4 year cycle. The Master Plan process shall cull all facility assessment reports and include current information within each update.
    - Infrastructure: Briefly describe the capacity and current load of utility plants and energy and utility lines and the general areas of development on the Master Plan that requires increased energy/utility system capacity.
        - Where utilities are provided by commercial or municipal sources, indicate connected capacity and/or any limitations stipulated in the contract/agreement between the University and the commercial/municipal source (e.g., sewerage, water, electric and natural gas).
        - Provide a description and conditional assessment of existing roads and pathways. Note any specific driving or walking hazards that are not in compliance with ADAAG requirements.
- Planned Development:
    - Land/Property Acquisitions and development: Identify property that is intended to be acquired and/or developed. Indicate location, acreage, building square footage, number of floors and construction type as may be applicable.

- Facilities Modifications: Identify each proposed new or altered building. Include the number of floors, gross square feet and the year construction is anticipated.
    - Identify any buildings which are anticipated to be surplused or demolished. Indicate the name, number and location of the building, the current function, the gross square feet, and the type of construction.
- Infrastructure: Briefly describe the capacity of proposed new or enlarged energy/utility plants and systems and the general areas of development on the Master Plan that requires increased energy/utility system capacity.
- Identify proposed improvements to pedestrian or vehicular path/road ways. Include improvements intended to comply with ADAAG accessibility and the Campus Precinct Guidelines.

3.3.7 Maps: Similar to the narrative, the maps shall distinctly identify both existing conditions and planned development in precinct level detail.

- Existing Conditions: Maps indicating existing conditions shall include the following as a minimum:
    - Vicinity Map: Include a vicinity map to show the location of the site in Virginia and in the overall setting.
    - Topographic Map: A topographic map with contours showing buildings, roads, parking lots, vegetation/tree areas (both improved and unimproved areas), and major pedestrian avenues. Show the Limits of the 100 year Flood Plain, RMA – RPA and “wetlands”.
    - Site Plan: A site plan / map without contours showing buildings with name and FAACS number, roads, parking lots, major pedestrian avenues, archeological sites, historic land-marks, dump sites, green spaces, etc.
    - Energy and Utility: A map showing all heating and cooling plants and associated distribution utilities as applicable. Indicate capacities as a ratio of (current use) / (total potential capacity).
    - Water Distribution: A map illustrating potable water distribution, as well as storm and sanitary collection systems. Indicate location of all water meters, including individual building meters and deductive meters for irrigation or cooling towers. Indicate if these meters are electronically metered or not.
    - Facilities Condition: A map indicating by color or hatch pattern facilities which are considered to be in good condition; in need of major repair or renovation (detailed within the narrative) and facilities which have not undergone a facilities assessment within the last six years.
- Planned Development: Maps indicating planned development shall include the following as a minimum:
    - Future Development Site Plan: A future development site plan without contours showing existing and future buildings (future facilities will be cross- hatched or highlighted by some other technique), existing and future roads (with traffic direction indicated), areas identified as green space, parking lots and major pedestrian avenues, revised proposed property boundaries, archeological sites, historic landmarks, and uses for land proposed for acquisition.
    - Land Acquisition: If additional land is proposed for acquisition, indicate the proposed use, how this relates to existing use, the location, information on terrain,

water courses and bodies of water, 100-year floodplain, archeological sites and historic landmarks.

- Surplused Land: If land is anticipated to be surplused, indicate the location and amount of acreage.
- New or Recently Altered Buildings: For new or altered buildings. Include the name (function) of the building, the number of floors, the gross square feet, and when the year construction is planned to begin.
- Facility Renewal: Provide a brief outline or matrix for existing facilities in need of major repair or renewal. Where known, indicate the specific scope of work required and type of project required to accomplish the scope (capital, maintenance reserve and departmental projects). Type of projects shall include but not limited to:
    - Building Envelope (roofs, window replacements, siding repair/replacement, pointing and calking, etc.).
    - Building Systems (systems with moveable parts subject to wear, including mechanical, plumbing, electrical, communication, moveable storage, etc.)
    - Finishes (tile, carpet, paint, wall coverings and substrates, ceiling tile, etc.)
    - Structure and Substrates (floors, walls and roofs, including structural and nonstructural elements)
    - Built in Equipment and Systems (Systems and equipment built into the facility which generally do not have moving parts but are critical to the building such as building wiring, drainage systems and water distribution systems)
    - Compatibility with Use (Regardless of condition, report any known facility elements which are not compatible with current use and/or current technology which would impair or restrict the intended use. Such elements may include an incompatible floor plan, insufficient electrical outlets/panels/capacity, ADA accessibility issues, etc.)
- Energy Plants: Indicate location of proposed new or enlarged energy/utility plants and systems and the general areas of development on the Master Plan that requires increased energy/utility system capacity.
- Surplused Buildings: Indicate buildings that are anticipated to be surplused or demolished.

3.3.8 Site and Utility Plans:

- Scale: All maps must be to scale of 1 inch equals 50 feet scale (1"=50').
- Contours: Where contours are specified, 2- foot contour interval is required.
- Exceptions: For tracts of land which are planned for limited development, or contain significant elevation change, smaller scale maps and/or greater contour intervals may be used where approved by the Director, FPDC.
- Electronic Submittals: For each annual update, AutoCAD drawings shall be prepared in accordance with the current version of University drawing standards, (as may be applicable) including:
    - Symbols
    - Layering standards
    - Incorporation of the State Grid System
- General Site Plan: A site plan with contours showing property boundaries, easements, bench marks or reference points, buildings with name and FAACS number, roads, parking

lots, major pedestrian avenues, RMA - RPA - ”wetland areas”, 100 year flood plain limits, and vegetation / tree areas.

  - Political subdivision lines shall be shown and labeled with the name of each jurisdiction, if the facility lies within more than one political subdivision.

- Utility Drawings Without Contours: Utility drawings without contours showing buildings, roads, parking lots, aboveground and buried electrical and communication lines, water distribution lines, natural gas lines and heating and/or cooling distribution lines. For the purpose of clarity, utility drawings shall be subdivided into the following categories:
  - Data and electrical distribution
  - Potable water distribution
  - Storm and sanitary sewer drainage
  - Steam, hot water, chilled water and natural gas distribution
  - Depth of burial (3-dimensional data)
- Utility Drawings With Contours: Utility drawings with contours showing buildings, roads, parking lots and storm drainage and sanitary sewerage lines.
- Abandoned Utilities: Utilities known to be abandoned in place shall be identified as such on their respective utility drawing.

3.3.9 Format: The format and content requirements of this chapter shall apply to all future Master Plans.

- Narrative: This information will normally be presented in color on 11’ X 17 pages formatted with foldouts as necessary. Information may be provided in tabular form, if such presentation would make it more understandable to the reader.
- Maps: All precinct maps shall be printed in color and shall meet the following minimum requirements:
  - Scale: All maps must be to scale of 1 inch equals 100 feet scale (1"=100').
  - Contours: Where contours are specified, 5 - foot contour interval is required.
  - Exceptions: For tracts of land which are planned for limited development, or contain significant elevation change, smaller scale maps and/or greater
  - contour intervals may be used where approved by the Director, FPDC.
  - Drawings(s) / Site Plan(s): Provide to the University in AutoCAD format on removable digital media.
  - AutoCAD Standards: AutoCAD drawings shall be prepared in accordance with the current version of University drawing standards, (as may be applicable) including symbols, layering standards and incorporation of the State Grid System.

3.3.10 Distribution:

- Hard Copy Distribution: A minimum of eighteen (18) hard copies shall be required and distributed as follows:
  - (14) FM
  - (1) Institutional Research
  - (1) Information Technology
  - (2) the Office of Finance and Administration
- Posting: The current Master Plan shall be posted to the College of William & Mary web site.

3.3.11 Updates: The University shall update its site and utility drawings on an ongoing basis to ensure the drawings are sufficiently accurate to allow informed decisions for future work.

- Content to be updated includes, but is not limited to:
  - Recently constructed/demolished buildings
  - New, existing and abandoned utilities
  - Modifications to contours for new facilities, storm drainage improvements, etc.
  - Miscellaneous Site improvements
  - Completed land transactions
  - Plans shall be annotated with: “Current as of (date)”.
- “MISS UTILITY” will notify participating utility providers (“operators”) who have utilities on University property and will come onto University property to mark their utilities upon request. University owned utilities on Campus are identified by University personnel who are notified through the “MISS UTILITY” system

CHAPTER 4 PLANNING:

PROJECT IDENTIFICATION AND APPROVAL

SECTION 4.1 GENERAL

This chapter describes the process to nominate projects and process them through required approvals. It provides detailed guidance on documentation required for approvals. Unless specifically waived by the SVP F&A, execution of all capital, non-capital, and maintenance reserve (MR) projects shall follow these approval procedures.

4.1.1 The planning process is overseen by the SVP F&A, and managed by the AVP FM and the Chief Financial Officer. FPDC, in partnership with the Capital Budget Analyst, is responsible for the actual development of capital budget submission packages for approved projects. The resulting budget packages solicit the approvals of the BOV and General Assembly and the Governor, when required, for projects supported by state funds and/or debt funds. Projects supported solely by non-general, non-debt University funds are approved by the BOV, when required. Procedures for both state and University funded projects are detailed below.

4.1.2 Environmental Impact Report: An Environmental Impact Report (EIR) shall be prepared for each qualifying project with an expected construction cost of $300,000 or more.

4.1.2.1 State Submission: All EIRs shall be submitted to the State Department of Environmental Quality by letter signed by the AVP FM.

SECTION 4.2 FUNDING CATEGORIES (See Figure 4-1):

4.2.1 General (State) Funding: State dollars provided by the Commonwealth for E&G, capital, or MR projects. These projects may fall under such functional uses as academic, research, instruction, administrative, support and infrastructure. Funding sources include:

- General funds (fund code 0100)
- State supported bonds (typically fund code 0811 or 0817).

4.2.2 Non-General (University supported) Bond Funds: University supported but Commonwealth issued bonds, which require authorization by the General Assembly and Treasury:

- University supported bonds (0813 or 0815) – typically used for “auxiliary” or revenue generating projects

4.2.3 Non-General (University generated) Funds (fund code 0306): Auxiliary funding generated by the University for non-instructional functions such as Residence Life, Dining Services, Bookstore and Intercollegiate Athletics. The University also maintains an “auxiliary fund balance” to address various campus needs.

4.2.4 Private (University donation) Funds (fund code 0302): Funding provided in cash or in kind by an individual or group donor or foundation. Funds may be restricted to a specific project or purpose or "unrestricted". The funds may come from the University's 501c3 non-profit foundation or from the University's BOV.

SECTION 4.3 PROJECT IDENTIFICATION AND NOMINATION

4.3.1 Project Identification and Nomination

4.3.1.1 Capital projects are proposed annually for presentation to the Advisory Committee on Space Management (ACSM) and inclusion in the University Six Year Plan. These nominations occur via the Provost, Vice Provost, Associate provost(s); Dean(s); and/or Vice President(s). Note that this manual uses the term capital project in lieu of the term Major Capital Project as defined in the Management Agreement.

4.3.1.2 Non-capital projects do not require nomination and inclusion in the Six Year Plan. However, funding approval by the VP/Dean/Department Head is required.

4.3.1.3 MR projects are included in the University Six Year Plan as a single project under the MR appropriation and are developed and prioritized by FM.

4.3.1.4 Project requests must provide sufficient scope detail to support a conceptual cost estimate to be prepared by FM. The project request should contain the following minimum information as appropriate:

- Project intent
- Project justification
- Project schedule
- Project programming: planning assumptions for the organization/functions, including specific standards required for design and construction (i.e., Association for Assessment and Accreditation of Laboratory
- Animal Care International (AAALAC) accreditation, etc.)
  Planning constraints
- Organizational breakdown (FTE) under the general categories of faculty, staff, graduate students and students, including planned increases.
- Functional space requirements categorized in functional units (i.e., offices, support spaces, labs, classrooms, etc.)
- Special utility requirements
- Hazardous/special material requirements
- Site planning requirements
- Required linkage to other projects

The nominating organization should consider funding a pre-planning study to define and price the project, if the project is selected for more detailed review by the approving authority.

4.3.1.5 Capital project nominations are submitted to the SVP F&A for approval and prioritization. The SVP F&A presents the nominations annually to the ACSM.

4.3.1.6 The Six Year Plan is submitted to the ASCM in October of even numbered years. The ACSM reviews the prioritized list of capital projects for functional, operational, and fiscal feasibility. If approved, the ACSM sequences projects within the University Program. Projects approved for sequencing in the first three biennia constitute the University "Six Year Plan" to be presented to BOV biennially.

SECTION 4.4 SIX YEAR PLAN PREPARATION (Timeline shown at Figure 4-2)

4.4.1 FPDC and the Capital Budget Analyst prepare the formal Six Year Plan in accordance with instructions from Department of Planning and Budget (DPB). Information developed includes conceptual project scopes, schedules, and budgets. General Fund-supported capital projects are listed individually. Non General Fund-supported capital projects may be listed individually or as an umbrella project. MR projects are included as one umbrella project. Non-capital projects are not included on the Six Year Plan.

4.4.2 DPB Six Year Plan preparation instructions are disseminated in the winter or spring of the odd numbered years for submission later that spring. Any authorization by the Governor and/or General Assembly would be effective the following July 1 of the even numbered year.

SECTION 4.5 CAPITAL PROJECT APPROVAL

4.5.1 BOV Presentation: The formal Six Year Plan is presented to the BOV biennially at the February and April meetings of odd numbered years. The plan should be updated, as required, during even numbered years.

4.5.1.1 General Fund (State funded) Projects

- BOV approves the General Fund portion of the program for presentation to the Governor and General Assembly for approval.
- The budget, size and scope shall not be materially changed beyond the plans and justifications that were the basis for project approval unless approved in advance. Minor changes (< 5% scope) increase may be approved by the President or his designee subject to availability of funds.

4.5.1.2 Non-General Fund (University funded) Projects

- BOV approves the University (non-debt) portion of the program.
- The budget, size and scope shall not be materially changed beyond the plans and justifications that were the basis for project approval unless approved in advance. Minor changes (< 5% scope) increase may be approved by the President or his designee subject to availability of funds.

4.5.2 Off-Cycle NGF (non-debt) Capital Project Nomination and Approval: When a project is required between Six Year Planning cycles due to need and/or time sensitive availability of funds, project documentation must be prepared and submitted to the BOV at the earliest next scheduled meeting.

4.5.2.1 If circumstances dictate a more rapid review and approval, approval by the SVP F&A, the Provost as Chair of the ACSM and Chairs of the BOV Administration, Buildings and Grounds and

Finance Committees, in order, may be used as an expedient review and approval method. It must be noted that this expedient review by less than the full BOV should only be used in unique circumstances where loss of funding may occur without rapid action. Funding must be validated in accordance with paragraph 4.5.4 below and initiation must be approved per paragraph 4.5.5.

4.5.3 Emergency Project Nomination and Approval

4.5.3.1 Emergency NGF (non-debt) Project Nomination and Approval: In the event of an emergency situation where a threat to health and/or safety or damage to a facility are imminent, an emergency letter can authorize a project to prevent the emergency from occurring or to mitigate/remediate the impact of an emergency which has already occurred. Emergency project authorization require the signature of the President.

Funding must be validated in accordance with paragraph 4.5.4 below and initiation must be approved per para 4.5.5. Information copies of the emergency authorization letters will be provided to the BOV electronically.

4.5.3.2 Emergency General Fund (GF) Project Nomination and Approval: In the event of an emergency situation where an immediate response is required, an emergency authorization request is required from the President of the institution. This letter should be sent to W&M Procurement, as well as the institution's analyst at his/her respective agencies: DPB, Division of Engineering and Buildings (DEB), and Division of Risk Management (DRM). DPB and DRM will issue further instructions to the institution. Typically the Governor will sign off on the creation of a project, after submittal of a Decision Package developed by the analyst and institution, with an immediate authorization date.

Funding must be validated in accordance with paragraph 4.5.4 below and initiation must be approved per para 4.5.5. Information copies of the emergency authorization letters will be provided to the BOV electronically.

4.5.4 Project Funding Authorization: Approval of a HECO-2 (Authority to Initiate Capital Projects) will require the signature of the SVP F&A, to ensure funding is available from the identified sources and can be provided in the amount, timing and sequence required to support design and construction.

4.5.5 Project Initiation: Architectural or engineering planning for construction of, or acquisition of, any project shall not commence without an approved HECO-2. Submit a fully executed Form HECO-2 to the Director, FPDC prior to proceeding as described below at section 4.8. The normal authorization cycle for projects beginning implementation is on or about July 1.

SECTION 4.6 MAINTENANCE RESERVE AND NON-CAPITAL PROJECT APPROVAL

4.6.1 MR projects are developed and prioritized by FM staff and approved by the AVP FM.

4.6.2 Non-capital projects are approved by both the requesting organization and the AVP FM.

SECTION 4.7 ACQUISITIONS AND LEASED AND TEMPORARY FACILITIES

4.7.1 Acquisitions and Leased and Temporary Facilities are the responsibility of the Office of Real Estate Services.

SECTION 4.8 PROJECT EXECUTION AUTHORITY AND FORMS

(Document routing and filing shown in Figure 4-3)

4.8.1 Project Codes: All planning, design, and construction project documents, correspondence, memoranda, invoices, submittals and other related material shall include the assigned project number in the following formats.

4.8.1.1 Non-capital projects

- Projects not being capitalized shall include a six digit Work Order number (XXXXXX)
- Projects being capitalized shall include 204 plus a five digit number starting with eight (204 + 8XXXX)

4.8.1.2 Maintenance reserve projects shall include 204 plus a five digit number starting with the fiscal year of the project (204 + FYXXX)

4.8.1.3 BOV-approved capital projects shall include 204 plus a number starting with nine (204 + 9XXXX)

4.8.1.4 State-approved capital projects are assigned a project code by the state formatted as 204 plus a five digit number (204 + XXXXX).

4.8.1.5 Umbrella projects shall be assigned an additional three-digit sub-project code for each undertaking.

4.8.2 HECO-2 (Authority to Initiate Capital Projects), Project Request Form (PRF), and MR request form

- The University PM must develop and obtain approval prior to the initiation of acquisition, design or construction for an approved project. For project involving acquisition and construction, the acquisition and the design/construction must be submitted on separate authorization forms.
- The authorization form documents fund source and establishes the initial budget and schedule and must be revised and approved when changes occur.
- An EIR should be done at this point when required.
- The University PM normally hires an A/E firm to prepare plans and specifications upon approval of a HECO-2/PRF/MR and identifies the preferred construction delivery method.

4.8.3 HECO-3 (Professional Services Contract)

- The HECO-3 serves as the contract between the University and the A/E.

4.8.4 HEC0-4 (Application for Approval of Schematic Design)

- A pre-design conference is held after which the A/E, when required, develops and submits SD for review by the Building Committee, the DRB, and the AARB.
- When requested by the Director, FPDC and agreed upon by the CBO, the CRT shall review the SD.
- When project scope dictates, the A/E will present the project site selection and the SD to the DRB and AARB for review and approval. Additional DRB and AARB reviews may be required.
- Upon DRB and AARB approval, and approval of the HECO-4, the A/E is authorized to initiate PD.

4.8.5 HECO-5 (Application for Approval of Preliminary Drawings and Specifications)

- The A/E, when required, develops PD for review by the Building Committee, the DRB and the AARB.
- When requested by the Director, FPDC and agreed upon by the CBO, the CRT shall review the PD and coordinate with the responsible State Fire Marshal Office for completion of fire safety reviews.
- When project scope dictates, the A/E will present the PD to the DRB and AARB for review and approval.
- Upon DRB and AARB approval, and approval of the HECO-5, the A/E is authorized to initiate WD.
- 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/or the Department of Environmental Quality at both PD and WD phases. The University PM 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.
- If the project construction costs exceed $5 million, formal Value Engineering reviews are required. This is accomplished with the CM for projects delivered through CM@R.
- The University PM is encouraged to have the A/E develop the HECO-6a (Statement of Structural and Special Inspections) for review and approval not later than the submission of WD.

4.8.6 HECO-6 (Application for Approval of Working Drawings and Specifications)

- Completed WD plans and specifications shall be submitted by the A/E to the University PM, who will then submit them to CRT for review and approval.
- The CO-6a (Statement of Structural and Special Inspections) with CO-6b (List of Special Inspections) will be submitted for review and approval not later than the submission of WD.
- The University PM will submit WD to the DEQ for stormwater plan review and approval.
- The University PM will submit WD to other reviewing agencies as noted above and as determined by the project team.
- Value Engineering actions that have any impact on the design shall be shared with CRT.
- The University shall ensure comments of other reviewing Agencies are received and incorporated in the bid package no later than 10 days prior to bid opening.

4.8.7 HECO-8 (Authorization to Award a Contract)

- Advertise the project via IFB or RFP at a time consistent with the procurement method.
- An approved HECO-8 is required before contract award
- An approved HECO-17 (Building Permit) is required before a Notice to Proceed is issued.

4.8.8 HECO-17 (Building Permit)

- The approved building permit is required prior to award of the construction contract.

4.8.9 CO-9 (Construction Contract)

- The CO-9 serves as the contract between the University and the Contractor.

4.8.10 HECO-11 / 11a / 11a/e / 11cm (contract change order forms)

- These forms propose, justify, and authorize contract change orders.

4.8.11 HECO-13.3 (Certificate of Use and Occupancy)

- A building or facility may be occupied when the project is substantially complete and a CUO 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 CUO has been issued.
- Substantial completion is accomplished when the building can perform its intended function and all fire and life safety criteria have been met. Application for substantial completion shall include:
    - HECO-13.1a (Certificate of Partial or Substantial Completion by A/E)
    - HECO-13.1b (Final Report of Structural and Special Inspections)
    - HECO-13.2a (Certificate of Partial or Substantial Completion by Contractor)
    - HECO-13.3b (Checklist for Occupancy)
    - Letter of Acceptance 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 completion is when all punch lists and deficiencies have been completed. A final inspection of all projects will be conducted by the University, the A/E and, if acceptance has not been achieved, the responsible State Fire Marshal Office. Application for final inspection shall include:
    - HECO-13.1 (Certificate of Completion by A/E or PM)
    - HECO-13.1b (Final Report of Structural and Special Inspections)
    - HECO-13.2 (Certificate of Completion by Contractor)
    - Letter of Acceptance 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.
- When a permitted project will not result in the need to issue or reissue a Certificate of Occupancy, the HECO-13.3c is used to acknowledge substantial completion and the HECO-13.3d is used to acknowledge final completion. Approval of one of these forms is required prior to placing the area or function of the project back into service.

4.8.12 HECO-14 (Project Completion Report)

- This form is completed by the University PM upon completion of the project.

Figure 4-1 Project Authorization and Funding Matrix

	Capital	Non-Capital	Maintenance Reserve
DOLLAR LIMITS	$3 Million and Higher	Less Than $3 Million	$2 Million or less
SCOPE LIMITS	5000 Sq Ft and Larger	Less Than 5000 Sq Ft	
AUTHORIZATION AUTHORITY	BOV	Requesting Organization and AVP FM	AVP FM
FUNDING TYPE			
State GF or Debt	X		X
University GF		X	
University NGF - debt	X		
University NGF (non-	X	X	
Private Funds	X	X	
OTHER APPROVALS			
Building/Project Permit	Projects are permitted as required by applicable building code		
DRB / AARB Approval	DRB and AARB Approval are required for all projects which modify the exterior		

Figure 4-2 Key Dates for Capital Budget Submissions (Six Year Plan)

Even FY

August FPDC and Capital Budget Analyst prepare draft Six Year Plan Summary for submission to SVP F&A for review and mark-up.

September SVP F&A disseminates draft Summary (w/ copies of previous Six Year Plan Summary) to Provost, Deans and VPs for review and mark-up in preparation for October ACSM meeting.

October SVP F&A revises draft Six Year Plan and submits to ACSM for review, discussion and prioritization.

November ACSM review, discussion and prioritization of Six Year Plan.

Odd FY

February Develop draft budgets in detail. BOV reviews ASCM approved draft at the February meeting.

April BOV approves final Six Year Plan via resolution.

May DPB issues instructions for the preparation of six-year capital proposals.

June Agencies submit detailed narrative and technical information for all projects.

Jun – Aug Project team meetings, if needed, are held on selected major projects.

August Higher education agencies submit financial feasibility studies to the State Council for Higher Education for proposed 9(d) revenue bond projects.

August Agencies submit to DBP updated project timelines and draw schedules for capital projects included in the Governor's Capital Implementation Plan (CIP)

September Higher education agencies submit financial feasibility studies to Treasury for Proposed 9(c) revenue bond projects.

Figure 4-3 Project Authorization and Forms Summary

Form	Form Name/Purpose	Routing	Copy Distribution
HECO-2 PRF	Authority to initiate capital project Only if debt or donor funded	University PM Facilities Projects Business Manager Director, FPDC AVP FM Capital Budget Analyst SVP F&A	Project master file Project electronic file Building Information Tracking System (BITS)
PRF	Authority to initiate a non-capital project (not debt or donor funded)	University PM Facilities Projects Business Manager Director, FPDC Customer AVP FM	Project master file Project electronic file
MR	Authority to initiate an MR project	University PM Facilities Projects Business Manager Director, FPDC Director, O&M AVP FM	Project master file Project electronic file
HECO-3	Professional Services contract	Facilities Projects Procurement Manager Facilities Projects Business Manager University PM Director, FPDC A/E AVP FM SVP F&A or delegate	A/E Project master file Project electronic file eVA
HECO-4	Application for Approval of Schematic Design	University PM Director, O&M Director, FPDC	Project master file Project electronic file
HECO-5	Application for Approval of Preliminary Specifications	University PM Director, O&M Director, FPDC	Project master file Project electronic file
HECO-6	Application for Approval of Working Drawings and Specifications	University PM Director, O&M Director, FPDC	Project master file Project electronic file

Form	Form Name/Purpose	Routing	Copy Distribution
HECO-6a	Statement of Structural and Special Inspections	University PM Director, FPDC CBO	Project master file Project electronic file
HECO-8	Approval to Award Construction Contract (capital projects only)	University PM Facilities Projects Business Manager Director, FPDC AVP FM	Project master file Project electronic file BITS
HECO-17	Building Permit	University PM Director, FPDC CBO	Project master file Project electronic file CBO File
CO-9 CO-9 CM CO-9 DB CO-9 early release	Construction Contract	Facilities Projects Procurement Manager Facilities Projects Business Manager University PM Director, FPDC Contractor AVP FM SVP F&A or delegate	Contractor A/E Project master file Project electronic file eVA
HECO-11	Contract Change Order	Contractor A/E University PM Facilities Projects Procurement Manager Facilities Projects Business Manager Director, FPDC AVP FM SVP F&A or delegate	Contractor A/E Project master file Project electronic file eVA
HECO-11a	Change Order Justification	Per HECO-11	Per HECO-11
HECO-11a/e	Architect Engineer Change Order	A/E University PM Facilities Projects Procurement Manager Facilities Projects Business Manager Director, FPDC AVP FM SVP F&A or delegate	A/E Project master file Project electronic file eVA
HECO-11cm	CM preconstruction services Change Order	Same as HECO-11	Contractor Project master file Project electronic file eVA

Form	Form Name/Purpose	Routing	Copy Distribution
HECO-13.1 HECO-13.1a HECO-13.1b HECO-13.2 HECO-13.2a	Certificate of Completion by A/E Certificate of Partial or Substantial Completion by A/E Final Report of Structural & Special Inspections Certificate of Completion by Contractor Certificate of Partial or Substantial Completion by Contractor	Per the forms	Project master file Project electronic file CBO file
HECO- 13.3b	Checklist for Occupancy (beneficial)(set up)(partial)	A/E	Project master file Project electronic file CBO file
HECO-13.3 HECO-13.3cd	Certificate of Use and Occupancy Acknowledgement of Substantial and Final Completion	Director, O&M Director, FPDC AVP FM CBO	Project master file Project electronic file CBO file
HECO-14	Project Completion Report	University PM Director, FPDC AVP FM	Project master file Project electronic file

Appendix H provides a complete list of project management forms.

CHAPTER 5 DESIGN SERVICES:
GENERAL TERMS AND CONDITIONS

SECTION 5.1 GENERAL TERMS AND CONDITIONS FOR PROFESSIONAL SERVICES

The W&M general terms and conditions for a professional services (design) contract is the HECO-3a which is a modified version of the DGS-30-018 CO-3a. The modifications tailor the CO-3a for align with the processes outlines in this manual. The HECO-3a should be reviewed for revision whenever the CO-3a is revised. The HECO-3a document is contained in Appendix I. Additional Terms and Conditions are included in Appendix I, as well.

SECTION 5.2 ADDITIONAL SERVICES

In addition to the basic services outlined in the general terms and conditions, the following additional services may be incorporated into design contracts.

5.2.1 Interior Design Services For Furniture, Furnishings And Decorations for building Projects

5.2.1.1 Basic Services: 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.

5.2.1.2 Additional Services: 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 this Manual shall be determined and a fee negotiated for the interior design services.

SECTION 5.3 PERFORMANCE EVALUATIONS

5.3.1 A/E Performance:

- Upon completion of the design, the University PM may complete a HECO 8b Opinion of A/E Performance (design phase) for all capital projects. A HECO 8b may also be completed for MR and non-capital projects.
- Upon completion of construction, the University PM may complete a HECO 14a Opinion of A/E Performance (construction phase) for all capital projects. A HECO 14a may also be completed for MR and non-capital projects.

5.3.2 Contractor Performance: Upon completion of construction, the University PM may complete a HECO 14b Opinion of Contractor Performance for all capital projects. A HECO 14b may be completed for MR and non-capital projects. The University PM may also complete a HECO-14b evaluation on any individual Subcontractor performing work on the project.

5.3.3 Confidential Information: The completed evaluations (along with attachments and A/E responses, if any) are considered confidential information equivalent to 'personnel records' and shall be subject to the same protections.

5.3.4 The completed evaluations shall be retained in the A/E's or Contractor's performance file for review and consideration by future selection panels.

5.3.5 The completed evaluation forms may be shared by the University with other state agencies for the purpose of "references" to assist in state agency selection panels in their selection processes.

5.3.6 The University shall provide a copy of evaluations to the A/E or Contractor. If the A/E / Contractor wishes to comment on an evaluation, dispute any part of the evaluation or offer its side of the issue, the A/E / Contractor may submit a response to the University. The A/E / Contractor response shall be attached to and made a part of the University evaluation form for future reference

CHAPTER 6 DESIGN SERVICES:
PROCUREMENT PROCEDURES

SECTION 6.1 GENERAL

The University Procurement Rules set forth the general parameters for the procurement of professional services.

6.1.1 University Policy: 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 Architectural & Engineering (A/E) firm with in-house capabilities in all disciplines or it may be an Architectural firm, an Engineering firm, a Land Surveying firm, or a Landscape Architectural firm which subcontracts for disciplines not in-house.

6.1.1.1 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.

6.1.2 Project responsibility: 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.

6.1.2.1 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. A licensed Landscape Architect shall be in charge of all major landscape projects and issues and a licensed Land Surveyor shall be in charge of all survey requirements.

6.1.2.2 All professional persons shall be registered and licensed by the Virginia Department of Professional and Occupational Regulation (DPOR) in accordance with requirements of the Code of Virginia.

SECTION 6.2 PROCUREMENT OF RELATED CONSULTANTS

6.2.1 The following types of services are typically required for facilities projects.

6.2.1.1 Professional: Land surveyors, geotechnical engineers, soils engineers, or any service requiring the use of a licensed architect, landscape architect, engineer, or surveyor are by state law considered to be and shall be procured as Professional Services as outlined in this chapter.

6.2.1.2 Non-Professional: Cost consultants, interior design services, soil testing, concrete testing, project management, project administration, inspection/clerk of the works, archeology, commissioning, and other services which may be performed by either licensed or non-licensed professionals are considered to be "Construction Related." Nonprofessional Services and shall be procured using procedures contained in this chapter except that price shall be considered in final selection.

SECTION 6.3 PROJECT SCOPE OF WORK

6.3.1 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 services, and to describe the product(s) expected. The scope may range from very general to very specific and will usually reference this Manual, the University Campus Design Guidelines, the University FM Technical Standards, the Budgeting Instructions, the VUSBC and/or other standards for the specific related requirements.

6.3.2 Project Initiation: Architectural or Engineering Planning for or construction of, or acquisition of any project shall not commence without an approved HECO-2/PRF/MR.

SECTION 6.4 ADVERTISEMENTS FOR PROFESSIONAL SERVICES

6.4.1 Public Notice: Public notice of the request for Letters of Interest shall be given at least 21 days prior to the date set for receipt of proposals. When requested and justified by the University PM in writing, the AVP FM may approve a reduction in the number of days notice required to a number not less than 10 days.

6.4.1.1 Methods of Public Notice: Public notice of any request for Letters of Interest shall be given by the following methods:

- By posting a copy of the notice on the FPDC website; and
- By publication of a notice on the On-Line Bids page of eVA, Virginia's electronic procurement website.
- If deemed necessary by the Director, FPDC, by publication in a newspaper of general circulation in the general area of the project and;

6.4.1.2 Minimum Information: The public notice will show the name, address, phone and fax number of the issuing office. Provide in the notice/advertisement the following information as a minimum:

- Name and address of the Agency;
- Project number, if available;
- Title of the project;
- Scope of services;
- Proposed Design-not-to-exceed construction budget;
- A brief description of the project;
- Criteria for evaluation and selection of the A/E ;
- Submittal of AE-1 to AE-6, AE Firm Data Forms required; and
- Last date for submitting a response.

- (For Term A/E Contracts), provision to extend the contract for four one year options at the sole discretion of the agency.
- (For Term A/E Contracts), provision to allow use of the contract for service orders by other state agencies at the sole discretion of the issuing agency.

SECTION 6.5 REQUESTS FOR PROPOSAL

6.5.1 The RFP: will be provided to the A/E's short listed from review of the Letters of Interest.

6.5.1.1 RFP Content: The RFP will indicate in general terms the nature of the project and the architectural and/or engineering services which are sought, show the factors which will be used in evaluating the responses, incorporate by reference the Manual, Design Guidelines, Technical Standards, contractual terms and conditions, 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 and will include an evaluation scoring matrix as outlined below. The scoring matrix may not be changed without approval of the Director, FPDC.

Firm's Experience with Projects of Similar Context, Size, Scope and Scale	25
Project Team's Key Personnel Experience, Qualifications and Certifications/Licenses	20
Firm's Past Performance Meeting Scope/Budget on Projects of Similar Context, Size, Scope and Scale	15
Specific Project Plan and Design Concept	20
Value Engineering Proposals	10
SWaM Participation	10
TOTAL POINTS	**100**

6.5.1.2 RFP Stipulated Negotiations: 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 man-hours, labor rates, or cost for services with their qualification proposals. If no method is specified, the respondents may propose methods for negotiating the fee amount.

6.5.1.3 Responses to RFPs: Each respondent shall submit current AE-1 to AE-6, AE 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. Each respondent to the RFP agrees to provide all the architectural and/or engineering services with respect to the project that are set out in the Manual and the RFP. Responses which do not include the Forms and/or do not include the requested information and data may be considered as Not Responsive to the RFP.

6.5.1.4 Proprietary Information: 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 University Procurement Rules, in the RFP response.

SECTION 6.6 SMALL BUSINESSES AND BUSINESSES OWNED BY WOMEN AND MINORITIES (SWaM)

6.6.1 RFP SWaM Requirement: 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.

6.6.1.1 Certification of Information: By submitting such information with their proposal, proposers certify that all information provided is true and accurate.

6.6.1.2 Failure to Submit Information: If a proposer fails to submit all information requested, the purchasing agency may require prompt submission 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.

6.6.2 Required Information: 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. The form for submission of this data is included on FPDC Forms website.

6.6.3 Monthly Reporting: On contracts for professional services which exceed $100,000 in total gross fees, the A/E is required to submit reports with each pay application on the involvement of small businesses and businesses owned by women and minorities in the work or in support of the work on this contract.

SECTION 6.7 SWaM PROCUREMENT PLAN

6.7.1 University Plan: In accord with Executive Order 29 (2014), an annual SWaM Procurement Plan that specifies the University's plans and goals for SWaM procurement is required. The University Procurement Department develops this plan with support from FPDC.

6.7.2 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 6.8 PROCEDURES FOR A/E SELECTION

6.8.1 Emergency Procurement: In the event of an emergency, selection may be made without regard to use of these procedures, but a determination and findings signed by the AVP FM explaining the circumstances shall be placed in the file.

6.8.2 Streamlined Procedure: For a project with a fee less than $100,000 the University PM may use one of the following procedures.

6.8.2.1 For projects with expected fees less than $25,000 the University PM will:

- Select a firm or professional based on market research and/or trade experience with projects of similar scope that appears to be qualified to render the required services.
- 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.
- Negotiate a fee for services. As part of negotiation with the selected firm, the A/E will fill out Forms AE-1 to AE-6, AE Firm Data.
- Complete a HECO-2.1a and obtain required approvals.
- The award will be made using a HECO-3.
- Post a Notice of Award on eVA.

6.8.2.2 For all projects with expected fees between $25,000 and $100,000, the University PM will:

- Select 3 firms or professionals based on market research and/or trade experience with projects of similar scope that appear to be qualified to render the required services.
- Conduct telephone or personal interviews with the 3 firms to determine current workload and capability to meet proposed schedule and to determine personal qualifications, expertise and past performance on similar projects.
- Rank the 3 firms and obtain the Director, FPDC written approval.
- Negotiate a fee for service with the number one ranked firm. As part of negotiation with the selected firm, the A/E will fill out Forms AE-1 to AE-6, AE Firm Data.
- Complete a HECO-2.1b and obtain required approvals.
- The award will be made using a HECO-3.
- Post a Notice of Award on eVA.

6.8.3 Formal Procedure: For all projects with anticipated A/E fees over $100,000, a formal selection process as outlined below shall be followed.

6.8.3.1 Two evaluation panels are used in the formal A/E selection procedure.

- Screening Panel of at least three members from the University, including a licensed design professional from the University, if possible. The screening panel typically consists of the University PM, Director, FPDC, and user representatives to evaluate Letters of Interest submittals and select a short list of qualified firms
- Interview Panel, which consists of the screening panel plus additional members of the Building Committee to conduct the interviews with short-listed firms and make the final selection.

6.8.3.2 Process:

- The University PM will prepare an advertisement requesting that interested firms submit a letter of interest and statement of qualifications utilizing the AE-1 to AE-6, AE Firm Data Forms.
- The FPDC procurement staff will publish the advertisement of the project as outlined above.

- The FPDC procurement staff will verify that all A/E's are properly licensed to offer services in Virginia.
- The University PM will convene the screening panel to select a short list of qualified firms.
- The Screening Panel will recommend the top 3-5 firms for interviews.
- The AVP FM will approve the short list of firms.
- The University PM will draft an RFP for issuance to only short listed firms as outlined above.
- The University PM will convene the interview panel to interview short-listed firms.
- The Interview Panel will:
    - Interview the top-ranked, short-listed firms who are deemed to be fully qualified, responsible, and suitable on the basis of their initial responses and their response to the detailed RFP.
    - Solicit more detailed information, where applicable, on the above criteria 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.
    - Evaluate responses of each interviewed firm and rank order as best suited for the project.
    - Determine, in writing, the top three firms, and rank them in order of preference.
    - 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.
- Upon completion of the selection, the FPDC procurement staff will notify the selected firm and the non-selected firms concurrently.
- The University's Negotiating Team shall negotiate with the Architectural/Engineering firm ranked first as to overall suitability and qualifications.
- Those negotiations should proceed to establish a fee amount for the scope of the project.
    - 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, the negotiations shall be formally terminated in writing. The University may then proceed to negotiate with the Architectural/Engineering firm ranked second. If not successful, the third, etc.
    - It is understood that negotiations may be terminated and the project re-advertised.
- Once the fee negotiations are complete, the FPDC procurement staff will record the terms of agreement in a written MOU and incorporate it in the HECO-3 contract form, which shall be signed by the University and the A/E.
- FPDC procurement staff will "Post" a Notice of Award after the contract has been awarded.

SECTION 6.9 TERM A/E CONTRACTS

6.9.1 General: A/E Term Contracts are a useful and effective tool for the Agency in managing their planning, maintenance, and renovation programs and quickly handling emergency procurement of professional services. Term Contracts shall include the terms and conditions and pricing for work which may be issued during the term of the contract.

6.9.2 Applicability: Term Contracts for A/E services may be used for engaging one or more A/E firms to provide investigations, cost estimates, designs, and related services for multiple small projects for a period of time subject to the limitations below. The projects must require similar expertise.

6.9.3 Term Contracts Not Exclusive**:** The Term Contract is not exclusive. An agency may issue separate RFPs for similar work and other projects as the need may occur.

6.9.4 Multiple Contract Awards from a Solicitation: An Agency may issue Term A/E Contracts to multiple fully qualified and best suited firms interviewed from a particular A/E Term Contract RFP advertisement and selection process. Where multiple awards are made, the University will distribute Project Orders among the Term Contractors during the contract term.

6.9.5 Contract Limit: No A/E, including any subdivisions or branches thereof, may at any time have in effect more than one (1) A/E Term Contract with the University.

6.9.6 Contract Term: Term Contracts shall be limited to one year, or when the cumulative total project fees reach the maximum cost authorized, whichever occurs first. Such contracts may be renewable for four additional one-year terms at the option of the Agency. The sum of all projects performed in a one-year term shall not exceed $1,000,000. When the aggregate total of all Project Orders, including change orders to those Project Orders, reaches the term dollar limit, no further Project Orders may be issued during that term. It is understood that the A/E's work under the Project Orders issued may not be completed during the contract's term; however, all terms and conditions of the contract, including all rights and obligations, shall survive until the work is completed, except the owners right to issue, and the A/E's right to accept, additional Project Orders. The Owner and the A/E are obligated to fulfill the requirements of all Project Orders issued, including change orders, even though the term for issuing new Project Orders has concluded.

The Owner may, at its sole discretion, renew the contract for up to four additional one-year Contract Terms, provided the option to renew was indicated in the RFP. If the Owner exercises its option to renew, the next Contract Term shall begin one year from the date of the first Contract Term. A new aggregate limit of $1,000,000 shall apply to the second Contract Term, without regard to the dollar amounts of Project Orders issued during the first year of the contract. Any unused amounts from the first Contract Term shall carry forward to the next Contract Term. Subsequent renewals shall follow the same procedures.

6.9.7 Procedures for Selection of an A/E for Award of Term Contract:

- The FPDC procurement staff will draft an RFP which includes the information outlined in the RFP Content section above.
- The FPDC procurement staff will advertise the Term Contract RFP as outlined in the Public Notice section above.
- The FPDC procurement staff will verify that all A/E's are properly licensed to offer services in Virginia.

- The interview panel, comprised of the Director, FPDC, a University PM, and other FM or VIMS FM staff (a minimum of 3 panel members) will receive, evaluate, and rank the respondents.
- The interview panel will conduct interviews with two or more offerors deemed fully qualified, responsible and suitable. Repetitive informal interviews are permissible. The panel will rank the respondents.
- The University's Negotiating Team shall negotiate with the Architectural/Engineering firm ranked first as to overall suitability and qualifications and agree upon the special terms and conditions, if any, and the hourly rates which pertain to the contract. Note that the fee negotiations are fixed; the rates negotiated for the original term will remain fixed for all subsequent Term Contract renewals.
- If the negotiations are successful, the University will award a Term Contract. If negotiations, including hourly rates and other terms and conditions are not successful, the negotiations shall be terminated in writing and the University shall conduct negotiations with subsequently-ranked offerors.
- The negotiating team may negotiate with additional firms as needed to reach the desired number of firms.
- Once the fee negotiations are complete, the FPDC procurement staff will record the terms of agreement in a written MOU and incorporate it in the HECO-3.1 contract form, which shall be signed by the University and the A/E. Also, post a notice of award on eVa.
- The HECO-3a terms and conditions shall be made a part of all contracts for A/E services.

6.9.8 Project Orders

- Specific work under a Term Contract will be authorized by Project Order using HECO form 3.1a. As an alternative for Project Orders below the streamlined procedure thresholds in section 6.8, the award may be made using a HECO-3.1a referencing the Term Contract. A Project Order shall not exceed $250,000. This threshold may not be exceeded without approval of the AVP FM.
- The following process outlines creation of a Project Order.
    - The University PM will identify and the Director, FPDC will approve a specific term A/E for an identified project.
    - The University PM will request a fee proposal from the selected term A/E.
    - Upon receipt of the A/E's fee proposal, the University PM will negotiate individually on a lump sum basis considering the scope of services required, the estimated man-hours required for each skill level/discipline and the labor rates agreed upon and listed in the MOU attached to the Term Contract. If the time required to perform the work cannot be reasonably estimated, the A/E may be directed to proceed with the work on an hourly basis with a maximum or not-to-exceed amount. The compensation shall be determined by the A/E's certified record of man-hours expended by classification, skill level and discipline, and the hourly rates for each as listed in the MOU.
    - Once the fee negotiations are complete, the FPDC procurement staff will record the terms of agreement and incorporate it in the HECO-3.1a Project Order which shall be signed by the University and the A/E.

SECTION 6.10 TERM PROJECT MANAGEMENT CONTRACTS

6.10.1 Non-Professional Services: The University may also award contracts to service firms for Construction Administration/Project Administration related services. Such services shall be procured using non-professional services procedures as provided in the University Procurement Rules. These services may include (but shall not be limited to) claim analysis, constructability reviews, cost estimates and construction management/administration services.

SECTION 6.11 CONTRACT FORMS TO BE USED

6.11.1 Standard Forms: The Standard Forms of Contract for Architect and Engineer Services, HECO-3, 3.1, 3.1a, and 3.2, shall be used for A/E Contracts following the formal procedures.

6.11.2 Form Modification: Other than filling in the appropriate data and information, these contract forms shall not be modified without the approval of the AVP FM.

6.11.3 Memorandum of Understanding (MOU): 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 6.12 GENERAL TERMS AND CONDITIONS FOR PROFESSIONAL SERVICES

6.12.1 General Terms and Conditions: The General Terms and Conditions for Professional Services Contracts are discussed in chapter 5 of this manual. They shall be made a part of all contracts for professional services and shall not be modified without the approval the AVP FM.

6.12.2 Additional Terms and Conditions: Clauses supplementing the General Terms and Conditions are included in chapter 5 and may be incorporated into A/E contracts as needed.

CHAPTER 7 DESIGN SERVICES:
CONTRACT ADMINISTRATION, FEES, & PAYMENTS

SECTION 7.1 ARCHITECTURAL AND ENGINEERING FEES

7.1.1 University Policy: The University's policy is to compensate Architects and Engineers in a fair and reasonable manner for providing the high quality services required by the Manual. Compensation or fees should be negotiated based on the scope of work, the estimated effort (man-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 man-hours by discipline and skill level and the corresponding hourly rates for each.

SECTION 7.2 A/E FEE PROPOSAL STANDARDS AND GUIDES

7.2.1 A/E Familiarity with the Manual: The A/E is expected to be thoroughly familiar with the Manual procedures, the scope of services, technical criteria and standards, submittal requirements, and standard forms required. These basic requirements, combined with the specific project requirements, are the basis for the fee proposal.

7.2.2 Competitive negotiations: All A/E firms selected for interview will be technically qualified to provide the services required for the project. The ranking of the A/E's is generally influenced by other factors such as selection of Subcontractors, recent experience on a similar project, workload status and perceived ability to meet the schedule, or similar factors. Therefore, the top ranked firm is considered, by definition, "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 University, the A/E, and the taxpayers of the Commonwealth of Virginia.

7.2.3 Plans and Specifications: The A/E should be aware and keep in mind that there are differences between private work and University work. Particularly, the A/E must conform to Manual 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 University Procurement Rules as clarified and expanded upon in the Manual.

7.2.4 Personnel Classifications and Hourly Rates: 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:

7.2.4.1 A/E Project Technical Personnel:

- Technical personnel shall mean 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, typist / clerical staff, field inspectors, and CADD computer operators.

- "Principals", "Partners", "Associates", "CEO" and similar titles are generally considered by the Commonwealth to be administrative and/or management functions whose costs have been included in the overhead markup of the rates for technical categories. Technical activities which are performed by principals, etc., are categorized for fee negotiations, for change orders, and for hourly rate payment at the rates indicated for the technical activity or function that the Principal, etc., may be performing. See the descriptions of Personnel Classifications below.

7.2.4.2 Hourly Rates:

- The hourly rates proposed for the various classifications, categories, disciplines, and skill levels should be comparable to the average actual salary of qualified and competent persons in that skill level as marked up or adjusted for overheads and profit. Overhead markup consists of direct technical salary overhead (or "fringes") such as payroll taxes and insurances, vacation, holidays, health insurance premiums, and other benefits and of indirect or general office overhead such as administrative salaries, rent, utilities, business and liability insurances, telephone, equipment rental and depreciation, travel, promotion, etc. Hourly rates agreed to shall be the "marked – up" rates including all overheads and profit.
- Generally review, negotiations, supervision and such by the principals or other senior personnel are usually considered part of the general office overhead expense included in the hourly rates or the activity is part of the "project management" function.
- The University shall have the right to require the A/E to submit documentation to support the proposed hourly rates with mark-up factors proposed for use in the fee negotiations and fee determination when the proposed hourly rates exceed what the University considers the "norm" for the area. The average hourly rates by classification, including markups which are negotiated and accepted in fee negotiations, shall be recorded and listed in the Memorandum of Understanding (MOU) which is appended to the A/E contract.
- When negotiating hourly rates, the University will recognize the higher costs of doing business incurred by firms who are located in high cost cities and areas of the country.
- A/E accounting methods and procedures for determining overhead and "marked-up" hourly rates often vary. For instance, policies on vacation, sick leave, holidays and employer contributions to insurance vary from A/E to A/E.
- Methods of tracking man-hours and expenses vary depending on whether the A/E is determining its overhead rates or the profitability of each project. The procedures presented herein use the "tax return" approach where general materials, supplies, depreciation of computers and software, insurances, and such, are treated as general office overhead expenses.
- The negotiated rates should be comparable to those of similarly experienced and qualified personnel in those classifications in Virginia firms providing similar services.

7.2.4.3 Technical Personnel Classifications

- The following personnel classifications, categories, disciplines and skill levels descriptions are recognized as those directly involved with the management, coordination, planning, delivery and quality control of the A/E services required for the project:
- A/E PM / coordinator: An experienced and licensed architect or engineer who has overall responsibility for the management of planning, design, and construction administration to include the coordination of all disciplines, quality assurance, and delivery of the A/E services to the University. A Principal of the A/E firm may perform this function, especially in a small firm. In larger firms a Principal, Associate or similarly "titled" person of the A/E firm may be assigned this responsibility. Regardless of title, the function is the same and the marked-up rate should be comparable to PMs of other firms in Virginia.
- Architect (Professional): A registered and licensed architect who has the knowledge, skills and experience to perform all architectural services required for the project, and who is qualified to be in "responsible charge" of the architectural aspects of the project.
- Cost Estimator: Skills required include a knowledge of building systems and components, the ability to read plans and specifications, the ability to make quantity takeoffs and apply pricing, the ability to obtain pricing information from reliable sources, knowledge of industry trends and conditions which will affect pricing, and the ability to adjust / apply such information to the specific project conditions and present a cost estimate with proper back-up documentation.
- CADD / Draftsperson: The skills required of this level position include tracing work already drawn to scale; drafting plans, sections and details to scale from sketches and data; modifying typical sections and details to be project/situation specific; and other miscellaneous duties supporting the preparation of contract documents. Depending on the personnel organization and operation standards of the A/E, Designers (Architects and Engineers), Draftsman, or both may be required to use CADD or have CADD skills.
- Designer (Architects and Engineers): Architects and/or engineers who by education, practical experience or a combination of education and experience have the knowledge and skills to perform analyses, calculation, and/or detailing for portions of a project in a particular discipline. This level person usually has either a degree and is gaining experience to become certified – licensed – registered or has many years of experience in layouts, detailing and/or calculations and works under the supervision of a licensed professional.
- Engineers – Structural, Mechanical, Electrical, Civil (Professional): A licensed professional engineer who has the knowledge, skills and experience to perform the analyses and design, to prepare the documents for the particular discipline and to be "in responsible charge" of that discipline.
- Landscape Architect: A certified landscape architect who has the knowledge, skills and experience to provide the design and documents for the site landscaping for the project.
- Interior Design: A certified interior designer who has the knowledge, skills and experience to provide the interior design services and documents for the project. The layout of spaces, selection of finishes, and similar functions are Basic Services whether the A/E uses an Architect or an Interior Designer. "Additional Services of an

Interior Designer" for Fee calculations / negotiations on state work relate to furnishings and accessories which are not part of the construction contract.

- Specifications/Report Writer: A professional level architect or engineer skilled in writing technical specifications for building and site related systems, equipment and components. The Writer shall also be skilled in preparing contract documents and understand the basic legal requirements, applications and ramifications thereof.
- Typist / Clerical: Skills required include a knowledge of the terms and procedures of the design and construction process and a proficiency in the use of word processing and spreadsheet applications used in the production of specifications, reports and associated typing and clerical functions.

7.2.4.4 Additional Services:

- Chapter 5 describes the Basic Services required of the A/E as well as the responsibilities of the Agency and typical additional services that the University may request 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 the Manual) 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 additional or extra services required will be a change in scope and shall be authorized in writing by change order using Form HECO-11a/e. 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 years following conclusion of the contract.
- Additional services that will be included are:
    - Survey
    - Geotechnical Report
    - LEED
        - All University buildings will be designed to achieve LEED Silver certification
        - Building owner will decide if formal certification by the U.S. Green Building Council is desired
    - Commissioning
        - By separate agent
        - PM to determine building systems to be commissioned
    - Archeology

7.2.4.5 Additional Services:

- Computer use is commonplace in the A/E profession for analyses, designs, drafting (plans), word processing (specifications) and estimating. As such, the computer is a "tool" used by the technical person to produce his/her product. These "tools" are purchased and depreciated or leased and are, therefore, considered a part of the A/E's office overhead expense included in its overhead. Only specialized computer

services required by the Owner which must be acquired from an outside vendor are considered for payment in fee negotiations.

- Computerized analyses and designs for building systems, word processing, and data processing utilized by the A/E to provide Basic Services are normally considered by the Commonwealth to be a part of the project design effort and are not an additional service required by the University.
- 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 10% for A/E overhead and profit.

7.2.4.6 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 10% for the A/E's overhead and profit.
- Special consultants that are required:
    - Building Envelope Moisture Infiltration Analysis By independent consultant

7.2.4.7 Reimbursable Expenses:

- The costs of telegrams, FAX transmissions, long distance phone calls, 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.
- The University shall reimburse the A/E for the reproduction of drawings, specifications, and other documents required for initial SD, PD, WD and Bid Set submittals in accordance with the policy in Chapter 8 at the actual costs plus 10% markup for handling. If re-submittals are required to correct deficiencies and/or complete the documents for submittal, the cost of reproduction for these submittals shall be borne by the A/E unless waived by the University.
- Where the A/E is engaged by the University to secure the reproduction of the Bid Documents, the A/E may be reimbursed for the actual direct cost of reproduction plus a markup of 10% to account for the A/E's overhead and handling cost in securing this service for the University. The cost of reproduction and sending addenda to address University review comments, clarify or supplement the Bid Document and/or correct errors or omissions are considered to be an expense of the A/E and shall not be included in the allowable reimbursement costs.

- The University shall reimburse the A/E for the actual costs of overnight or second day shipping of submittals and/or shop drawings when such method of shipping is directed by the University. The University should establish a budget amount for such reimbursements and include same in the contract amount and as a line item in the MOU breakdown of the Fee.
- Compensation for travel and living expenses associated with the performance of the project scope of work will be included in the fee negotiated and set out in the MOU as a lump sum amount for travel and/or subsistence for each particular facet of the work where travel compensation is proposed by the A/E.
- The A/E may be reimbursed for travel and living expenses of technical personnel while traveling in the discharge of duties in connection with extra services authorized by the University. The travel rates and the per diem rates for lodging and subsistence shall not exceed the maximum amounts allowable for such expenses in the University's Travel Regulations. Records supporting such requests for reimbursement shall be subject to audit by the University.
- Each item / account planned for reimbursement should have a "budget" amount established and included in the contract with the condition that payment for these items will be subject to proper authorization and documentation. Further, the contract amount will be adjusted upward and downward by change order, as appropriate, based on the actual amounts approved for reimbursement.

7.2.4.8 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 used in this Manual 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 Procurement Services for the furniture, furnishings and accessories.

SECTION 7.3 A/E FEE PROPOSAL WORKSHEET (HECO-2.3)

7.3.1 Fee Proposals: The A/E shall prepare a detailed fee proposal using the G.S. Form E&B CO-2.3 or the G.S. Form E&B HECO-2.3 (spreadsheet workbook format at FPDC website with expanded cost data for breakdown of bidding and construction services and consultant services) as determined by the University PM. The hourly rates and the man-hours proposed should relate to the rates and times required for a qualified and competent person in that skill level to perform the work. Supplement information shall be attached as necessary to support the proposed drawings, hourly rates and man-hour estimates. Guides for the use of the form are as follows:

7.3.1.1 Disciplines / Classifications commonly used are indicated on the form. Additional classifications may be listed.

- Hourly rates should be the average for those persons in that skill level/discipline/classification. It is generally perceived that a person being compensated at a rate higher than the norm would be more efficient/productive/take less man-hours than a person being compensated at a rate below the norm.
- Indicate the drawing size and proposed / estimated number of sheets for each discipline. Attach a proposed or estimated list of drawings.
- Enter the estimated (proposed) number of hours for each discipline / skill level and multiply times the hourly rate to yield the estimate cost.
- 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 man-hours to produce the individual sheets for each discipline, whether manually or CADD, should be shown for the applicable discipline.
- Spec / Report Writer effort includes the mark up and edit of standard and / or master specification sections and writing any required special sections.
- Typist effort includes typing new specification sections and editing masters on the word processing program.
- Cost Estimate effort includes the takeoff of quantities and the application of prices to produce the Cost Estimate in the required format.
- Bid Assistance service includes the effort of the Professional to conduct the Pre- bid Conference, assist in opening Bids, and evaluate the bids / bidders for responsiveness and responsibility. It also includes the clerical level effort to receive document deposits, issue bid documents, receive/review returned bid documents and return deposits / issue refunds.
- 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 markup / approval of same. It also includes the clerical level effort to log submittals in and out, to copy markups from the reviewer's master review set to the copies being returned to the Contractor and others, and the distribution of same.
- Record Drawing Preparation includes the efforts of a Drafting level person to transfer data from change orders and the Contractor's "As Built" set of drawings and specs to the "Record Copy." This work also includes the Professional / Technical Level effort to compare the "As Built" set to the "Record Copy" for correctness.
- 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.
- 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 architectural, structural, mechanical, & electrical disciplines which are considered the A/E), the subcontract negotiated amount may be marked up 10% by the A/E for A/E overhead and profit. In-house additional

services should be computed using the estimated man-hours and marked up hourly rates similar to the Basic Services Fee Proposal.

SECTION 7.4 PROPORTIONING OF THE A/E FEE AND PAYMENTS:

7.4.1 Phases of Work: Payments to the Architect or Engineer 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:

- Pre-design services (Additional Services such as studies and similar activities.)
- Design Phase services include
    - SD phase
    - PD phase
    - WD Phase
- Bidding phases services
- Construction phase services include
    - Shop drawing / submittal reviews and admin.
    - Site visits, inspections and admin.
- Project Closeout
    - Maintenance & Operations Manuals
    - Record Drawings to include
        - Single line drawings
        - F-1 Report
    - Budgeted Reimbursable Amounts
- Additional Services (itemize)

7.4.1.1 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.

7.4.1.2 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.

7.4.1.3 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	=	75% of Total Fee
Construction Phase Services	=	25% of Total Fee

7.4.1.4 Proportioning of A/E Fee: In consideration of the services required by the Manual, 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

- SD Phase: Value of the SD Phase is 20% of the Design Phase Fee. This phase is complete when outstanding issues are resolved, the SD documents are approved as evidenced by completion of the conditions shown on the Form HECO-4, and the A/E is authorized to prepare PD Plans and Specifications.
- PD Plans and Specifications: Value of the PD phase is 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, the PD is approved as evidenced by completion of the conditions shown on the Form HECO-5, and the A/E is authorized to prepare WD.
- WD Plans and Specifications: Value of the WD phase is 50% of the Design Phase Fee. However, a proportional part may be billed 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 bidding, and the WD and specifications are approved as evidenced by completion of the conditions shown on the Form HECO-6.
- The University may withhold as retainage an amount not exceeding 5% of the dollar value of progress payments for the Design Phase Fee until the WD, including all corrections required to resolve review comments, are finally completed and acceptable. Retainage may be withheld for errors and omissions until project completion.

CONSTRUCTION PHASE SERVICES

- Bidding Phase: Value of this phase is 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). Reimbursement for reproduction expenses for bidding documents would also be payable.
- A/E Construction Period Services: Value of this phase is 90% of the Construction Phase Services fee amount. This 90% is usually prorated over the total construction period including the 30 days allowed for punch list corrections and billed monthly during the construction phase as construction progresses.
- Project Closeout Phase: The remaining 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.

7.4.1.5 Payments to the A/E: Payments to the A/E shall conform to the requirements in the A/E Terms and Conditions.

7.4.1.6 Payments by the A/E: Payments by the A/E to its consultants, Subcontractors and suppliers shall conform to the requirements in the A/E Terms and Conditions.

SECTION 7.5 DETERMINING CHARGES FOR CHANGES IN THE SCOPE OF WORK:

7.5.1 Changes to the Scope of Services: The University shall notify the A/E in writing when a change in scope or "extra services" are required. The University and A/E shall develop a defined scope for the services and the A/E shall prepare a fee proposal for such work. A lump sum fee will normally be negotiated and agreed on and a written change order issued before the extra work is 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.

- When the scope cannot be defined to allow a reasonable estimate of time required, the University may authorize the additional work 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 additional work.
- Many of the revisions or requirements included in a Revision to the Manual are made to reflect changes in the Code of Virginia, University Procurement Rules or other requirements which must have immediate compliance. Therefore, a revision to the Manual shall be effective on the date stipulated and shall apply to any and all projects for which an approved HECO-6 has not been issued as of the date printed on the revision.
- Prior to approval of the PD and issuance of the HECO-5, Revisions to the Manual can generally be incorporated in the A/E's work with little or no additional effort. If the A/E claims that incorporating the Revision into its services requires extra work, the A/E must notify the University of this claim and submit documentation to the University to clearly support such claim within 60 days of the distribution date of the Revision.
- If, after the HECO-5 is issued and before the HECO-6 is issued, the A/E determines that including changes resulting from the revision will require additional work on his part, the A/E shall, within 60 days of the distribution date of the revision, provide the University an itemized list of the additional work required by the revision. The University shall then provide direction to the A/E and, if necessary, issue a change order for the work.
- 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 General Conditions.

7.5.2 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 markups and adjustments for taxes, insurances, benefits, overhead, profit, etc. Technical activities by principals, such as PM, Architect, or Engineer, are categorized for payment at the rates indicated for the technical activity or function being performed.

7.5.3 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.

7.5.4 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 in accordance with Virginia Prompt Payment Statute.

7.5.5 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 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 years following conclusion of the contract.

SECTION 7.6 APPROVAL OF CHANGES TO A/E CONTRACT:

7.6.1 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 a HECO-11a/e, A/E contract change order. All A/E contract change orders must have the approval of the SVP F&A or designee prior to commencing work associated with the change.

7.6.2 In the event that urgent conditions require the A/E to begin work associated with a change order prior to issuance of the formal change order, a Notice to Proceed shall be issued. Use of the Notice to Proceed is appropriate for reasons of safety, unforeseen condition remediation which will halt progress, prevention of loss, prevention of significant rework, or similar situations. Use the Notice to Proceed/Not to Exceed Change Request form. The Notice to Proceed will be approved by the Associate Vice President for Facilities Management and shall be formalized as a change order within 30 days.

SECTION 7.7 CONTRACTUAL DISPUTES (University Procurement Rules)

7.7.1 See A/E Terms and Conditions, Section 32, for the procedures regarding contractual disputes.

7.7.2 Pursuant to the Management Agreement Exhibit G, attachment 1, paragraph 56 and Code of Virginia § 2.2-4366, Alternative Dispute Resolution, the University may enter into an agreement with the A/E to submit disputes arising from the performance of a contract to arbitration and utilize mediation and other alternative dispute resolution procedures. However, such procedures entered into by the University shall be non-binding and subject to Code of Virginia § 2.2-514 as applicable. In the interest of successful completion of the project, disagreements and disputes should be resolved as soon as possible. The University and the A/E may choose to resolve their claims against one another by "Informal Alternative Dispute Resolution" procedure in lieu of instituting legal action. If the University and the Contractor both choose to avail themselves of this option, the following stipulations shall apply:

7.7.2.1 The University and the A/E must both agree to pursue this process and each submit their "Application for Informal Alternative Dispute Resolution."

7.7.2.2 The AVP FM will review the applications and advise both parties of dates available for a hearing or deny the application for a hearing.

7.7.2.3 The AVP FM will assemble a Dispute Hearing Panel comprised of persons with expertise in the topics being disputed.

7.7.2.4 Each party will be represented by its personnel with knowledge of the facts related to the dispute. Neither party will be allowed legal counsel at the hearing.

7.7.2.5 The panel will review the application and facts presented by each party prior to the hearing.

7.7.2.6 Each party will be given the opportunity to present its position and factual data on each item in dispute. Information shall be concise.

7.7.2.7 The hearing panel will ask questions as appropriate and facilitate discussions toward an agreeable solution.

7.7.2.8 If the parties do not agree on a solution during the hearing, the hearing panel thru the AVP FM will render an opinion on the proper resolution of the dispute.

7.7.2.9 It is intended that the hearing be efficient and last no more than one day.

7.7.2.10 The cost of this service will be based on the time charged to the dispute resolution multiplied by the hourly rates for the panel. The cost will be divided and charged equally to the University and to the A/E, unless both parties agree to other arrangements and notify the AVP FM prior to the hearing.

7.7.2.11 The “Application for Informal Alternative Dispute Resolution Procedure” shall contain the following information:

- A/E name
- University name
- Project name and Project Code Number
- List of items in dispute (The A/E and the University shall each submit a list of the items in dispute with its summary of the pertinent facts in the dispute.)
- Value of the items or work disputed (in dollars): $_____
- Documents and narrative presenting facts as the applicant sees them for each disputed item
- Proposed solution or relief sought
- Signature of the Director FPDC for the University or the contract signature authority for the A/E

CHAPTER 8 DESIGN SERVICES:

CODES & POLICIES

SECTION 8.1 GENERAL

This section contains standards and requirements that clarify the applications of VUSBC, and mandatory University technical requirements as they pertain to University facilities.

Chapter 8 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 Architect/Engineer must design to meet the standards and requirements stated in this manual.

SECTION 8.2 CODES AND POLICIES

8.2.1 Code Administration: The CBO is the designated building official for University owned facilities, including those facilities owned by Agency 268, VIMS. The CBO is charged with granting modifications, and establishing rules and regulations as may be necessary to carry out its function as building official in accordance with state law, the Restructured Act, and the Management Agreement.

The University's CRT is delegated authority by the CBO under the provisions of the Management Agreement to perform reviews of the University's construction project drawings and specifications for conformance with the requirements of the VUSBC. The University CRT shall perform fire safety reviews for all projects involving new construction, additions, or renovation. The responsible State Fire Marshall Office shall assist with inspections and provide the acceptance letter prior to occupancy.

- Review Procedures: CRT reviews documents for compliance with the VUSBC during its normal review of all projects. Such review does not relieve design consultants from responsibility for designing in accordance with these standards, applicable codes, State and Federal Law.
- Review Initiation: Projects will be initiated with the CBO using the Code Review Initiation Form included in Appendix J.

8.2.2 Applicable Codes: The following codes and regulations apply to University projects on state property:

- VUSBC, Volume I (except Standards for the Disabled), latest edition, including the referenced model codes and standards adopted.
- VUSBC, Volume II including the referenced model codes and standards adopted.
- The Americans with Disabilities Act, 1990: Title II, Subtitle A (and not Title III) of the Act applies to all state-owned buildings and structures. The prescribed accessibility standards are the Department of Justice's 2010 ADA Standards for Accessible Design, dated

September 15, 2010. The Virginia Office for Protection and Advocacy (VOPA) promulgates regulations that address nondiscrimination on the basis of disabilities under state grants and programs. The 2010 ADA Standards for Accessible Design incorporates by reference editions of the International Building Code. The applicable code for the project shall be that which is adopted by the Commonwealth at the time of building design and permit.

- Virginia Public Building Safety Regulations for pre-1972 buildings.
- Industrialized Building and Mobile Home Safety Regulations
- Liquefied Petroleum Gas Regulations
- Amusement Device Regulations
- VSFPC, including the referenced model codes and standards adopted
- Dept. of Environmental Quality - Erosion and Sediment Control Regulations (VR 625-02-00)
- Dept. of Environmental Quality - Stormwater Management Regulations (VR 215-02-00)
- Applicable Department of Health Regulations
- Applicable Department of Conservation and Recreation Regulations
- Applicable Dept. of Environmental Quality, Water Division, Regulations

8.2.3 Additional Codes and Regulations: Certain projects may be required to comply with other codes or regulations, such as federal or special state regulations. Those codes may take precedence over the VUSBC. All such codes and regulations shall be clearly noted in the preplanning documents and displayed on title sheets of PD and WD.

- The mixing of code requirements between two editions of the code is not allowed. Code requirements in one section are often dependent upon conformance with requirements in other sections, therefore are not allowed without written authorization from the CBO using the D&F format.

8.2.4 Code Implementation: Typically, the VUSBC is adopted every three years. Such adoption incorporates specified editions of model codes (such as 2012, 2015 International Building Code, etc.) along with Virginia modifications to these codes. The DHCD posts notice/announces the effective dates of the VUSBC editions as well as the dates of referenced standards and amendments.

- Code Implementation as it applies to New Work: The applicable code shall be the VUSBC edition in effect at the time outstanding issues have been resolved, PD drawings are approved (HECO-5), and authorization is given to proceed with development of the WD drawings.
  - If PD drawings are approved during the four (4) months prior to the effective date of a new edition of the VUSBC, the applicable code shall be designated by the University CBO using the D&F format
  - Questions on this issue shall be resolved by the CBO using the D&F format.
- Reactivated Projects: Prior to reactivating a project that has been inactive for a period during which the effective code has changed, the CBO shall determine which code applies. The plans and specifications shall be revised as necessary to comply.

8.2.5 Modifications of Code Requirements: If a modification to the code is believed to be necessary, the A/E shall request such modification or variance in writing at or before the time the PD is submitted. The request shall clearly state the nature of the problem and the supporting rationale and justification for the modification or variance. All requests to waive or grant a variance to the requirements

of the VUSBC will be addressed to the CBO via the University PM, the Director, FPDC and CRT using the D&F format.

8.2.6 Use Group Classifications: The following guidance shall be used for buildings and structures at the University:

- Buildings for business training and vocational training shall be classified and designed for the Use Group corresponding to the training taught.
- Academic buildings having classroom-type education functions (including associated professor / teacher office spaces) where large groups of students must change classes on a schedule shall include the following:
  - Provide a Fire Protection Signaling System in the building
  - Provide 72" minimum corridor widths in the classroom building corridors
  - Calculate the occupant load for each space based on VUSBC Chapter 10 and the type of occupancy (not Group) of the space
- Buildings housing research, testing and science laboratories shall include a Fire Protective Signaling System.
- Residence Halls, Fraternity and Sorority Houses, and similar dwelling units with sleeping accommodations shall be designed to comply with the most stringent requirements of both R-1 (Hotels) and Group R-2 (Residence Hall/Dormitory).
- Grounds buildings with other specific uses, doubtful uses, and mixed occupancy uses shall be classified in accordance with appropriate sections of Chapter 3 of the VUSBC.

8.2.7 State Building Construction in Flood Plain: Executive Memorandum 2-97 prohibits the construction of new state-owned buildings within the 100-year flood plain unless a variance is granted by the CBO for University-owned buildings, and after consultation with the State Coordinator for the National Flood Insurance Program (the Department of Conservation and Recreation (DCR)).

8.2.8 Fire Safety Reviews: Will be conducted by the CRT for all projects.

- Fire suppression, fire detection, and fire alarm shop drawings: shall be reviewed and approved prior to the work being installed. Where a complete fire protection system is designed and shown on the construction documents the drawings and/or specifications shall state that deviations in materials, locations, configurations, or sizes proposed by the Contractor are subject to being reviewed under the provisions of Section 26 of the General Conditions as a "substitution".
  - When the fire suppression, fire detection, and fire alarm systems are not complete on the construction documents, then shop drawings or submittal data shall first be reviewed and approved by the A/E of record. The reviewed documents, with any added notations by the A/E, shall be submitted to the appropriate Fire Safety reviewer (CRT and/or responsible State Fire Marshal's Office) for final review and approval.
- Safety equipment not required by code, including Fire Detection, Fire Alarm, and Fire Suppression Systems, but are provided at the University's option in state owned buildings and structures shall be provided in accordance with the code. Work that is planned as a complete system, but requires phased construction to provide a complete system is acceptable. Providing partial systems to certain spaces such as storage spaces that will

improve safety without giving a false sense of security to building occupants will be considered on a case-by-case basis.

- 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 three copies of such documents to the University PM who shall forward to CRT for review and approval.

SECTION 8.3 SEPARATE CONTRACTS FOR MATERIAL AND/OR EQUIPMENT

8.3.1 General: All procurements must be made in accordance with the University Procurement Rules. All assignment of contracts or materials must be done with the full prior knowledge of all parties to the contract. The use of 'allowances' is not competitive and has been deemed not to conform to the University Procurement Rules. Work outside of the general contract, that is Not In Contract (NIC) for bidding but is to be included in the construction, must be coordinated with the contract documents in one of the following ways:

8.3.2 Contractor purchased/Contractor Installed (Subcontractor designated/price set by University): Drawings and specifications must be included that describe the work including: scope of work, materials, installation, testing, and quality control. The Bid Form or RFP must include a statement that informs the Contractor to accept the subcontract and coordinate the work as if the General Contractor had selected the Subcontractor. The Bid Form shall also include the value/quote/negotiated price of the subcontract to be included in the Bid. An example of this is a pre-selected Building Automation Systems Subcontractor.

8.3.3 Contractor purchased (materials contract assigned by the Owner)/Contractor Installed: Drawings and specifications must be included that describe the work including: scope of work, materials, installation, testing and quality control. The Bid Form must include the value/quote/price of the materials contract and a statement that informs the General Contractor of the intent to assign a specific materials contract, and directs the General Contractor to accept and install the materials and coordinate the work as if the General Contractor had purchased the materials. An example of this is laboratory or kitchen equipment.

8.3.4 Owner purchased/Contractor Installed: Drawings and specifications must be included that describe the work including: scope of work, materials, installation, testing, and quality control. The Bid Form must include a statement that informs the General Contractor of the intent to provide specific materials in a specific location, and directs the General Contractor to accept and install the materials and coordinate the work as if the General Contractor had purchased the materials. An example of this is existing or pre-purchased laboratory or kitchen equipment. The University shall pay the supplier directly for the materials.

- A Determinations & Findings Report approved by the Director, FPDC, is required to use this method of procurement.

8.3.5 University purchased/University installed (or installed by University's separate Contractor): The Bid Form must include a statement that informs the Contractor of the intent to perform specific work in a specific location, and directs the General Contractor to allow the work to proceed, and coordinate the work of the owner and other Contractors. An example of this is specialized laboratory equipment.

SECTION 8.4 PROCUREMENT OF FURNISHINGS AND LOOSE EQUIPMENT

Loose equipment and furnishings are generally items moveable or portable versus permanently installed. It includes such items as residential refrigerators; unattached residential stoves; unattached furniture; and other similar furnishings or loose equipment. The University shall purchase loose equipment in accordance with University Procurement Rules, typically through the University's Department of Procurement. Determinations to purchase furnishings or loose equipment by other means must be approved by the Director, FPDC.

SECTION 8.5 BUILT-IN EQUIPMENT

Built-in equipment comprises special purpose equipment or furnishings that are permanently built in or attached to general building construction. It includes such items as laboratory fixtures, kitchen cabinets, commercial laundry equipment, auditorium seating, stage rigging, and so forth. Built-in equipment may be procured in the following ways provided the procurement complies with the Management Agreement:

- Purchased as part of the construction contract.
- Purchased prior to award of the construction contract where the supplier agrees to be assigned as a vendor to the Contractor. That price and the vendor’s name are then listed on the Bid Form.
- Purchased and installed as a separate contract for both procurement and installation.

SECTION 8.6 CHESAPEAKE BAY PROGRAM

The University will ensure that their projects are located, designed and constructed to protect the water quality and living resources of the Chesapeake Bay. Adherence to the Chesapeake Bay Watershed Development Policies and Guidelines will be required in the development of all project sittings/designs. This publication is available from the Chesapeake Bay Local Assistance Department.

CHAPTER 9 DESIGN SERVICES:
CONTRACT DOCUMENT REQUIREMENTS

SECTION 9.1 GENERAL

The A/E should be aware that there are differences between private work and work done for the College of William & Mary. These include:

9.1.1 Pre-qualified Bidders: The Commonwealth cannot limit bidding to a selected list of Contractors known to do good work. Unless Contractors are pre-qualified for the project in accordance with this manual, any licensed Contractor may bid.

9.1.2 Contract Document Detail: Since the knowledge and experience of the Contractors bidding on the project is unknown, drawings and specification requirements must clearly specify the desired outcome. They must be clear, concise, and provide sufficient detailing of existing and proposed construction.

9.1.2.1 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 and/or phasing requirements.

9.1.3 Design Responsibility: Project design is the sole responsibility of the registered design professional (RDP) in responsible charge, otherwise known as the Architect/Engineer (A/E). This responsibility includes reviewing and coordinating submittal documents prepared by others, including phased and deferred/delegated submittal items for compatibility with the design.

If circumstances require, the A/E may defer the design of a specific element or system to the submittal phase of the project and delegate the design to the Contractor, provided all of the following conditions are met:

- Deferred/delegated design intent is agreed to by the Director, FPDC prior to fee negotiation and is specifically allowed for in the A/E contract.
- Deferral of any item shall have the approval of the CBO prior to the WD submission.
- The A/E shall provide a consolidated list of approved deferred/delegated designs on the title sheet, or other prominent location of the design documents for review by the CBO.

- Delegated designs shall be required to bear the seal and signature of the RDP responsible for their design and shall require the RDP to perform inspections. Inspection reports are to be filed with the CRT prior to CRT inspections.
- Documents for deferred submittal items shall be submitted to the A/E, who shall review them and forward them to the CBO, via the University Project Manager with a notation indicating that the deferred submittal documents have been reviewed and found to be in general conformance to the design.
- The deferred submittal items shall not be installed until the deferred submittal documents have been approved by the CBO.
- Approval of deferred/delegated designs will be documented by the memo provided in Appendix J.

9.1.4 Specifications to Encourage Competition: In order to encourage the 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 of the AVP FM.

9.1.5 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. The University and the A/E must work together to achieve an aesthetically acceptable design which meets the functional requirements of the project within the stipulated design-not-to-exceed cost.

9.1.6 Project Identification on Documents: The University and the A/E shall show the project number (see paragraph 4.8.1) on all plans, specifications, contracts, correspondence, sketches, invoices, memoranda, addenda and other documents related to the project. Documents without the required identification are not complete. 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 number on all submittals including invoices, schedules, shop drawings, change order proposals, correspondence and other project documentation.

9.1.7 Project Design Initiation: The University will initiate the design of a construction project upon receipt of an approved HECO-2/PRF/MR Form.

9.1.8 Minimum requirements for data, drawings, specifications, and calculations to be included in the submittal for the indicated phases are described in this chapter and the referenced Appendices.

9.1.9 University Facilities Projects: This manual applies to all capital, non-capital, and maintenance reserve projects at the University, regardless of fund source. These projects are subject to:

- Review by the CBO for conformance to the VUSBC including its referenced standards.
- University Design Guidelines

- The University Technical Standards.

9.1.10 Designs and Permits: Where required, projects/work shall be designed by and the documents sealed and signed by Virginia licensed Architect(s) and/or Engineer(s) when submitted for project permitting.

9.1.11 Project Inspections and CUOs: The work shall be inspected by a licensed Architect or Engineer, 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, the Fire Marshal's report and recommendation, and other applicable certificates or reports along with the Form HECO-13.3a, Application for a CUO, to the CBO when requesting that a CUO be issued.

9.1.12 Changes in Use Group Classification: When any existing University owned building is used for a new purpose and the "Use Group Classification" is changed, the appropriate building information will be submitted to the CRT for review and approval, and issuance of a new CUO. When the University changes the Use Group Classification of a building or a portion thereof, the VUSBC requires that a new CUO be obtained.

9.1.12.1 Compliance with Current VUSBC: 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 the Virginia Rehabilitation Code.

9.1.12.2 Required Submissions:

- A copy of the evaluation signed by a licensed Architect or Engineer shall be submitted to the CRT along with copies of small-scale floor plans for evaluation prior to construction.
- A copy of the Fire Marshal's report, and a Form HECO-13.3a, Application for a CUO shall be submitted to the CBO requesting issuance of a CUO.

SECTION 9.2 DOCUMENT STANDARDS

9.2.1 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.

9.2.1.1 Drawings and specifications shall supplement each other and must not conflict. Terminology used in specifications and drawings should be the same.

9.2.1.2 Individual Submission Identification: Each submission, (SD, PD, WD, and Permit Set) including resubmissions, shall be clearly identified as to the type of submittal, the revision number, if applicable and the submission date.

9.2.1.3 Individual Submission Dates: Each submission, (SD, PD, WD, and Permit Set) including resubmissions, shall have independent submission dates, i.e. no two submissions shall share the same submission date.

SECTION 9.3 DRAWING STANDARDS

9.3.1 General Requirements The following clarifies the requirements, standards, and expectations applicable to drawings prepared for bidding and construction on state projects.

9.3.2 Standard Drawing Sheet Information: Each drawing shall show:

- The name of the A/E
- The project title
- The project location
- The project number
- The drawing / sheet title
- The drawing / sheet number,
- The seal and signature of the responsible licensed professional (permit drawings only)
- The uniform date of the completed documents
- Drawing revisions and associated revision dates

9.3.3 The Title sheet(s): In addition to the standard information indicated above, the Title sheet shall clearly indicate the following:

- Activity or function(s) to be performed in the facility
- Version (date) of VUSBC on which the design is based
- Other major code used as a basis for design
- Use Group classification(s)
- Maximum VUSBC occupancy for each level and total for building
- VUSBC classification of construction type
- Area for each floor and entire building; volume of building
- Location and Vicinity Maps;
- The Index of Drawings
- The master listing of all applicable abbreviations and symbols
    - Provide a listing of the discipline specific abbreviations and symbols at the beginning of each discipline
- Facility Capacity
    - Number of beds (dormitory)
    - Number of fixed seats (auditorium)
    - Number of parking spaces (parking deck)
    - Other information relating to capacity of the facility as applicable.
- Seal of the A/E Principal-in-Charge of the project, signed and dated (permit drawings only)
    - A/E may also require the seal and signature of a principal of its consultants.

9.3.4 Drawing Orientation: Building floor plans and drawings for all disciplines shall be oriented the same to avoid confusion and to facilitate overlaying of drawings.

9.3.5 Arrangement of Drawings: Drawings shall be arranged in the following order with the discipline identifying character shown:

T - Title Sheet and Index
D - Demolition
C - Plot and/or Site plans
C - Sanitary and Civil
B - Boring logs
L - Landscaping
LS - Life Safety
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

9.3.6 Drawing Numbers: Drawings shall be sequenced by discipline letter as indicated above and number, i.e., A-1, A-2, A-3.1, A-3.2, S-1, S-2, etc.

9.3.7 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.

9.3.8 Seals: See HECO-3a for specific requirements regarding the application of seals.

9.3.9 Asbestos drawings and specifications shall have the name, signature and Virginia license number of the asbestos project designer shown on each asbestos drawing sheet and at the beginning of the asbestos specifications section.

9.3.9.1 Asbestos drawings and specifications shall be incorporated into the contract documents as an appendix.

9.3.10 Uniform Date of Completed Drawings: 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 bid. Documents printed for bidding shall bear the date described above with no revision numbers or dates.

9.3.11 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 9.4 SPECIFICATION STANDARDS

9.4.1 General 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.

9.4.1.1 Standard Government Specifications: References to Federal Specifications, MILSPECS, Corps of Engineers Specifications and the like shall be avoided unless the requirements are specific, or specific prior written approval of the University is obtained.

9.4.2 Editing Requirements: 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.

9.4.2.1 Project Manual/Specifications Arrangement: Specifications shall be on 8 1/2" by 11" sheets with bid sets preferably printed on both sides of the sheet. Type print size 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. The Project Manual shall include:

- Notice of IFB or RFP
- Instructions to Bidders (HECO-7a)
- Prebid Question Form
- Bid Form
- The current revision of the General Conditions for the Construction Contract (HECO-7). The General Conditions have very significant legal implications and may be amended or deleted or its intent changed without prior written approval of the AVP FM.
- Supplemental General Conditions
- Contract Between Owner and Contractor (GS Form E&B CO-9)
- Workers Compensation Insurance Certificate (GS Form E&B CO-9a)
- Standard Performance Bond (GS Form E&B CO-10)
- Standard Labor and Material Payment Bond (GS Form E&B CO-10.1)
- Change Order blank (HECO-11)
- Schedule of Values and Certificate for Payment (GS Form E&B CO-12)
- Affidavit of Payment of Claims (GS Form E&B CO-13)
- Final Report of Structural Special Inspections (HECO-13.1b)
    - Certificate of Completion by Contractor (HECO-13.2) and Certificate of Partial or Substantial Completion by Contractor (HECO-13.2a).
- List of Drawings
- Submittal Register Format
- Structural and Special Inspections List (Samples in Appendix K)
- Division 1 – (CSI Format) General Requirements, Special Conditions, etc. which will include special conditions in Appendix L.
- Technical Specifications (Applicable Sections)

- Technical Specification Sections shall be numbered with appropriate section numbers corresponding to the CSI Masterformat numbering system.
- Technical Sections should, where possible, be subdivided into the Part I - General, Part II - Products, Part III - Execution format.

- 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/her deems appropriate.(Note: CSI Masterformat numbering is subject to changes under consideration as may be in use by the A/E at this time.)

9.4.2.2 Table of contents for Bid Packages: The Table of Contents shall include applicable requirements of the above, but should indicate the following documents as "Included by reference": CO-9, CO-9a, CO-10, CO-10.1, HECO-11, CO-12, HECO-13.2, and HECO-13.2a

9.4.3 General Conditions of the Construction Contract:

9.4.3.1 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.

9.4.3.2 "Supplemental General Conditions" modify, amend or delete specific portions of the General Conditions. Where it is necessary to modify or amend a section of the General Conditions the changes shall be set forth and labeled "Supplemental General Conditions", and shall be submitted for review and approval by the AVP FM.

9.4.3.3 Supplemental General Conditions shall be incorporated in all documents that require the General Conditions of the Construction Contract form HECO-7. The Supplemental General Conditions provide for the inclusion of Small Businesses and Women–Owned and Minority Owned (SWAM) Business.

9.4.4 Division One Special Conditions: 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.

9.4.5 Instructions to Bidders, HECO-7A: The Instructions to Bidders, HECO-7A, included in this Manual is a standard document which has been written to conform to the requirements and procedures of the University's procurement rules. The Instructions to Bidders shall be included in the Documents without modification for projects that will be awarded by the bidding process. 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 FM.

9.4.5.1 The Architect/Engineer for the project shall be familiar with and conform to the requirements of the Instructions to Bidders, Form HECO-7A.

9.4.5.2 Information on where Bid Documents can be viewed and shipping charges, if any, be should be placed in the Advertisement and Notice of Invitation for Bids.

9.4.6 Types of Specifications: The following three types of specifications are used on University projects.

9.4.6.1 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 generic performance specification must be written to describe the required characteristics, performance standards, capacities, quality, size or dimensions, etc. of 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.
- A manufacturer/model number type specification must list three manufacturers with their respective model numbers. Each of the listed manufacturers/model numbers 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 number shall be specified. If the named manufacturer(s) custom builds the item or system, naming of model numbers 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 Section 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 number but other equal products are acceptable if found by the bidder, the A/E may request permission from the AVP FM 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."

9.4.6.2 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:

- When only two manufacturers or suppliers provide an acceptable product or system, when there are no equals and when no substitutions are allowed
- 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 Contractors or bidders.

- Proprietary specifications may be used when the University PM or A/E requests and receives, in writing, authority from the AVP FM 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 PD phase but definitely prior to submission of WD. 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."

9.4.6.3 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 FM 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 PD phase but definitely prior to submission of the WD.
- The justification for a sole source request shall address the following (by number and order) in a direct and concise manner:
  - Explain why this is the only product or service that can meet the needs of the University.
  - Explain why this vendor is the only practicably available source from which to obtain this product or service.
  - Explain why the price is considered reasonable.
  - Describe the efforts that were made to conduct a noncompetitive negotiation to get the best possible price.
- Prior to advertising the project for 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 bidder who is awarded the contract. In the latter case, the Bid Form shall show the vendor's name and the subcontract price for the item/system to be included in the Contractor's bid. See Sample Bid Form Format for required wording. The

University shall procure the item or system (including installation where applicable) in accordance with the provisions of University Procurement Rules.

9.4.7 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, manufactured products, and/or Contractors, those known Virginia-based vendors, products or Contractors shall be listed prior to listing non-Virginia based firms.

9.4.8 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 word processing applications. The A/E shall edit the guide specifications to include only the materials, requirements, and procedures applicable to the project. Specifications which are submitted without editing will be rejected as an incomplete submittal. If Navy or COE guide specifications are used on a project, they shall be edited to delete references to Military and Federal Specifications. References to the Contracting Officer should be changed to the Owner. Also, requirements for tests, inspections, visits to the manufacturer's plant, etc. which are not normally required for state projects shall be deleted.

9.4.9 Restrictive Specifications and Performance Requirements

9.4.9.1 The A/E shall not require samples, shop drawings, or similar materials to be submitted for approval prior to receipt of bids. The specifications must contain sufficient information to describe to the Contractor and bidders the performance and quality standards that will be used to evaluate the submittals.

9.4.9.2 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.

9.4.10 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.

9.4.11 Substitute materials, Equipment or Assemblies: The 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.

9.4.11.1 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.

9.4.12 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, bidders/proposers and the successful Contractor, estimated quantities are shown for unit pricing and determining the low bidder/proposer. A statement is included on the 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 Bid Form (unless such prices have been modified by the contract).

9.4.12.1 Where unit prices are used to competitively bid work that may vary depending on actual conditions encountered, the following method shall be used:

- The A/E shall provide on the 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.
- The bidders insert the unit prices for each and extend the estimated quantity times unit price to yield a cost.
- The extended costs will then be added to the base bid for other work to give a total base bid.
- A statement shall be included on the 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 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 bidder. The final contract amount shall be adjusted upward or downward based on the actual payment amounts versus the 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 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):

48 inch Diameter 250 linear feet @ $ / linear feet =$
48 inch Diameter 175 linear feet @ $ / linear feet =$

Part E = _____ Dollars $

9.4.13 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 shows that the material will meet the applicable requirements for the project. The AVP FM must approve such utilization.

9.4.13.1 Material Evaluation: 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 competitive good-quality product will be obtained. The AVP FM may, where justified, authorize use of a new material, equipment or system for a particular project on a trial basis for observation/evaluation.

9.4.14 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 bidding 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.

- 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...”
- 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.....”
- 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.
- Do not use “etc.” This term is too indefinite for bidding and inspection purposes.

- 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 number and title (e.g. Section 03300, Cast-in-Place Concrete).
- Do not set up a paragraph in the various sections entitled “work not included.”
- Describe the work that is included under the respective sections.
- 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.
- Do not confuse any and all; “Correct any defects” should read “correct all defects”
- 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.
- Do not confuse or 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.
- 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.
- Use statements that are definite and contain no ambiguous words and phrases.
- “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”.
- “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.
- “Replace” implies removal of old material and furnish and install new material. The preferred wording would be to “remove”..... and “provide” .....
- “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 Bidder or Contractor has a right to assume, on the basis of the definition cited, that the University will “furnish” the materials in question.

9.4.15 Specifications on Removable Digital Media: The University requires the A/E to provide one copy of the final completed specifications including addenda on Removable Digital Media, written in the current version of Microsoft Word.

9.4.16 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. Sample types of acceptable Hardware Specifications and Schedules are available on the FPDC website.

SECTION 9.5 COST ESTIMATE STANDARDS

9.5.1 General: Detailed descriptions and requirements for cost estimates are in Appendix M.

9.5.1.1 Format: The format outlined in Appendix M shall be used for all University projects. Requests to use alternative formats must be approved by the University PM in advance

9.5.2 Detailed cost estimate: A detailed cost estimate consistent with the level of design is required from the A/E with each submittal. Backup estimating information, including quotes of estimated cost for major items of equipment or built-in systems, shall accompany the Building Cost Summary form.

9.5.2.1 Independent Cost Estimate: A required independent cost estimate will be provided by the University for the PD submittal. Additional independent cost estimates provided at the option of the University will be identified in the A/E contract.

9.5.3 Reconciliation of Cost Estimates: The A/E and independent cost estimator shall reconcile major differences between their respective cost estimates such that total estimated construction cost of the larger estimate is no more than 110% of the lower estimate.

SECTION 9.6 PREDESIGN CONFERENCE / DESIGN READINESS

9.6.1 Participants: The University shall arrange for a Pre-design Conference. Participants should include the University PM, the CRT, 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.

9.6.2 Purpose: 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 state work to have the Pre- design Conference before the fees and terms of the A/E contract are finalized.

9.6.3 Sample Topics: The following is a sample of topics that may be included in the Pre-design Conference agenda:

- Introduction of Attendees
- Role of the CRT
- Authorized Communications
- Design not to exceed Construction Budget
- Proposed Design Schedule
- Requirements of the University Master Plan, DCM, Technical Standards, and Design Guidelines
- Clarification / Resolution of Budget Development Comments
- Submittal Contents
- Review Requirements
- Intent of Review Comments
- Waivers and Code Modifications
- Sole Source / Proprietary Specifications

- Use of Standard HECO and CO Forms and Formats
- Value Engineering
- Prequalification of Contractors
- Other Regulatory Reviews
- Design Approach
- Project scope to include:
    - Functional layout requirements
    - Type of occupancy and activities to be housed
    - Capacity requirements of spaces and/or building
    - 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

9.6.4 This section provides procedural guidance for University PM's and A/E's to ensure design documentation readiness in preparation for obtaining a project or building permit. This process is intended to bridge gaps and enhance communication between FM, A/E's and the CRT.

General Purpose: Establish a process to ensure accurate design and contract documentation completeness. A series of document checklists have been developed to address design readiness in preparation for submission to CRT for review and eventual permitting. These checklists can be located in Appendix N of this Manual. These lists are intended to ensure design readiness as well as adherence to this Manual and Technical Standards. The design readiness process is outlined below:

- A/E's will complete the electronic checklists to validate that all requirements per this Manual and Technical Standards have been met.
- The completed checklists will be issued to the University PM as part of the SD, PD and WD submittals to the University PM.
- The University PM shall review the submittal for accuracy and address deficiencies prior to issuing the associated design documents to CRT for review.
- These checklists will not be submitted to CRT as part of their review. The checklists are intended to serve as a quality management tool for the University PM and A/E only. The University PM is responsible for ensuring the checklists are completed, reviewed and kept as part of the project file as a validation of design readiness.

SECTION 9.7 SCHEMATIC DESIGN/PROJECT CRITERIA

9.7.1 General Requirements: Unless waived by the Director, FPDC, a SD/project criteria submittal shall be made to the University PM. The purpose of the SD 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 or other project scope documentation. The project scope established by the SD, 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.

9.7.1.1 The SD submittal shall include a current Assignable Room and Space Listing, which was the basis for development of the SD.

9.7.2 On-Board Meetings: An SD "On Board" review meeting with the CRT may be requested by the A/E or University PM to assist in verifying the design and program approach and the systems proposed for the project.

9.7.3 Reviews: SD presentations to the State AARB, the University DRB, and the Building Committee are required. All review issues must be resolved before the A/E is authorized to proceed with the PD phase.

9.7.4 Basis of Design Narrative: The SD shall include a Basis of Design Narrative which provides the information on the Appendix N checklist.

9.7.5 Schematic Drawings: The drawings indicated on the Appendix N checklist shall be included as a minimum.

9.7.6 Verification of Existing Conditions: The A/E shall visit the site and ascertain pertinent local conditions that must be addressed in the design.

9.7.7 Cost Estimate: See Appendix M for Schematic Cost Estimate requirements.

SECTION 9.8 PRELIMINARY DESIGN

9.8.1 General Requirements: Based on the previous approvals and direction, the A/E shall prepare the PD 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 SD phase relating to the mix or amount of space occurs, submit new information in the format of a current Assignable Room and Space Listing, which was the basis for development of the PD.

9.8.2 On-Board Meetings: A PD "On Board" review meeting with the CRT may be requested by the A/E or University PM to assist in verifying the design and program approach and the systems proposed for the project.

9.8.3 Reviews: PD presentations to the State AARB, the University DRB, and the Building Committee are required. All review issues must be resolved before the A/E is authorized to proceed with WD.

9.8.4 Review Process: The A/E shall prepare and submit to the University PM, 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 reviews the submittal, one set of review comments and/or marked copies of the documents will be provided to the A/E by the University PM for response and/or resolution.

9.8.4.1 The following additional reviews may be applicable:

- Fire Safety Review
- DEQ, Erosion and Sediment Control Board
- DEQ, Stormwater Management
- Division of Historic Resources
- Department of Health
- State Water Control Board
- DEQ, Department of Air Pollution Control
- DEQ, Department of Waste Management
- City of Williamsburg

9.8.4.2 Submittal Approval: 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 WDs. The A/E shall not proceed with the development of the WD until all issues in the reviews are agreed upon.

9.8.5 PD Submittal Requirements: The following information and data shall be the minimum acceptable requirements for a project:

9.8.5.1 Cost estimate per Appendices M and N.

9.8.5.2 Unless considered not applicable to the project, the drawings indicated on the Appendix N checklist shall be included as a minimum.

9.8.5.3 Basis of Design Narrative as indicated on the Appendix N checklist.

9.8.5.4 Soils report to include boring logs, geotechnical analysis and foundation design recommendations.

9.8.5.5 PD submittals shall include ventilation design criteria and sufficient data to show compliance with code requirements and standards of good practice.

SECTION 9.9 WORKING DRAWINGS PHASE

9.9.1 General Requirements: The A/E shall visit the site as necessary to ascertain pertinent local and site conditions. Based on the PD submission documents including the review and the Value Engineering comments and resolution thereof, the A/E shall prepare the WD plans and specifications. The

WD submission 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, CO-9. The WD checklist in Appendix N provides details regarding A/E seals and signatures, cost estimate (also see Appendix M), quality control/assurance, and drawing requirements.

9.9.2 On-Board Meetings: A WD "On Board" review meeting with the CRT may be requested by the A/E or University PM to assist in verifying the design and program approach and the systems proposed for the project.

9.9.3 Reviews: Reviews by the CRT and Building Committee are required.

9.9.4 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 Section 9.4.6 for requirements concerning the use of brand names and models.

9.9.5 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.

9.9.6 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 CRT with the contract document submission.

9.9.7 Submittal Documents: Contract documents shall be complete, coordinated, checked and ready for approval to bid. Contract Documents shall bear a uniform date as described in this Manual. 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. The WD checklist in Appendix N provides details regarding A/E seals and signatures, cost estimate (also see Appendix M), quality control/assurance, and drawing requirements.

9.9.8 Rock Excavation: Provide estimated quantities of rock excavation on the Bid Form when applicable.

9.9.9 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 Bid Form.

SECTION 9.10 BID FORMS AND PROCEDURES

9.10.1 Instruction to Bidders: Use HECO-7A.

9.10.2 Unit Price Bids: Addressed in HECO-7A.

9.10.3 Bid Form Preparation: See chapter 12.2.4.

9.10.4 Prequalification of Contractors or Subcontractors: Prequalification criteria, procedures, and appeal process requirements are shown in Chapter 12.

9.10.5 Advertising: The University shall notify the A/E in writing when final contract documents have been approved. See Chapters 11 and 12 for advertising requirements.

SECTION 9.11 ADDITIVE BID ITEMS

9.11.1 Design Not to Exceed Budget: 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 Bid shall provide a complete and functional facility meeting all Code, accessibility and safety requirements.

9.11.2 Additive Bid Items: When the project cost estimate indicates that the Total Base 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 bids are over budget and include that work as Additive Bid Items for cost or budget control. After the University and A/E have incorporated reasonable cost containment measures in the design, Additive Bids Items may be used for budget control subject to the following limitations:

- Additive bids 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.
- AVP FM Approval: Additive and Alternate Bid Items as well as options are allowed if approved by the AVP FM.
- The work included in each Additive Bid Item shall produce a complete component that may be incorporated into the work in the Base Bid.
- Each Additive Bid Item shall be independent of other Additive Bid Items.
- None of the Additive Bid Items shall compromise the work in the Base Bid and other Additive Bid Items for compliance with Code, accessibility or safety requirements.
- Additive Bid Items may be listed in any order but consideration should be given to placing the most essential Additive first, and so on.
- Low Bid Determination: When the 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.
- Out-of-sequence selection of Additive Bid Items is permitted, but award must be to the low bidder based on process above.
- Negotiations of Additive Bid Item amounts and the Base Bid are allowed with the low bidder to permit award within funds available.
- The total cost estimate of the Base Bid plus all Additive Bid Items should be approximately 110% of the funds available.

- Structuring of Additive Bid Items: Bid Items should be structured to minimize additional effort needed to prepare the bid.
- The work/design as described in the Base Bid shall be of the level of quality required for the project. Additive bids 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 Bid.
- Intent: Additive Bid Items are not intended to be a pricing exercise for the bidders.

SECTION 9.12 SUBMISSIONS

9.12.1 A/E Certification: Prior to the submission of construction documents, the Architect shall furnish a written statement that will certify that the responsible architects and engineers have reviewed the documents and certify them to have been completely coordinated to industry standards of care.

9.12.1.1 Corrections and/or Additions: Where correction and/or additions are required after review by the University and/or the CBO, etc., changes will be clouded or marked in yellow and returned to the review agency and the University, 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:

9.12.1.2 Review Agencies:

- Submit required copies to review agencies in accordance with Table 9.12.1

DESIGN PHASE:
Submissions and Number of Copies Usually Required
Table 9.12.1

Reviewing Agency	Environmental Impact Report	SD	PD	WD	Yellow-out Documents	Bid/Addenda	Change Orders*
University Code Review Team				4 + electronic file	1	1	1
State Fire Marshal							
Art & Architectural Review Board		1**	1**				
University Combined Administrator							
(Erosion and Sediment Control)				Electronic File	Electronic File		
(Stormwater Management)				Electronic File	Electronic File		
Department of Historic Resources							
Health Department (Food Service, Underground Water Lines 8" and Larger, Pump Stations and Sanitary Forced Mains)							
County Manager							
Chesapeake Bay Local Assistance							
VDOT District Engineer			#	#			

* Change Orders for VUSBC regulated work

** Pertinent parts or sections of documents only

Submit for approval when modifying roads on Campus, including placing utilities within.

9.12.1.3 Utility Approvals: The A/E shall coordinate with and obtain approval of the utility designs from the University FM 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 WD, two copies are required, and an additional two if revision and resubmission is necessary.

SECTION 9.13 UNIVERSITY CODE REVIEW TEAM REVIEWS AND APPROVALS

9.13.1 General: Reviews are performed as a service to the University and do not relieve the A/E, or its Consultants from compliance with all codes, laws, rules, regulations, directives and standards applicable to the project whether or not cited in the review. See Section 9.14, Quality Control/Quality Assurance for A/E requirements before preparing and submitting contract documents for review. The University encourages A/E's and their consultants to ensure compliance to facilitate expedient reviews.

9.13.1.1 Projects require two submittals to CRT, WD and the Permit Set. Comments provided by CRT at the WD phase review shall be addressed by the designer and incorporated into the design documents. The University PM will ensure WD comments received by CRT are incorporated in a timely manner, no later than 21 calendar days.

9.13.1.2 The Dir, FPDC may request additional reviews by CRT based on the complexity of the project. These reviews may include consultation, on-board reviews or full drawing detailed reviews as needed throughout the course of design development. This is typically determined as part of the CRT project initiation process.

9.13.1.3 Review Times: The CRT shall strive to review submissions within the 21 day average review time as outlined within the Management Agreement. The 21 day average review time shall be exclusive of holidays and additional time required to receive outstanding information as outlined below:

9.13.1.3.1 Incomplete submissions: Submissions that are incomplete or missing information will be returned to the A/E, or at the discretion of the CRT, held until additional information is received. When projects are held for additional information, the following stipulations shall apply:

- The CRT shall notify the University PM and provide a specific list of outstanding information.
- Time will be tracked from the date of notification to the University PM to the date the additional information is received. Time required to receive additional information will be specifically excluded from CRT Review Time

9.13.1.3.2 Submission Priorities: In order to meet tight time constraints, submission priorities shall be based on need requirements and coordinated with the Director, FPDC. Date received will be a consideration in the prioritization process, but will not necessarily be the driving factor.

- Due to limited resources, large projects and lower priority projects may on occasion exceed the 21 day average review time.

9.13.1.4 The University PM shall provide CRT advance notification of their project review requirements to allow ample time to build corresponding workload resourcing schedules. The University PM shall provide electronic plans and one hard copy set of plans to CRT for their use following each review as described above.

9.13.2 University PM Review: Prior to the submissions to the CRT and other University and State Agencies, the University PM shall review the documents to ensure that they meet the functional and operating requirements of the project.

9.13.3 Review Comments: The CRT will transmit its review comments to the University PM in one of the following ways:

9.13.3.1 By E-Mail. The A/E shall provide a written response to each CRT discipline comment as part of the next design submission.

- The A/E response shall be entered into the Word document in the space allotted immediately below the CRT comment.
- All issues in dispute shall be resolved.
- The CRT will forward comments on A/E responses, and, as necessary, clarifications to original comments to the University PM.
- Once all comments have been fully resolved, the CRT will acknowledge to the University PM that the review is complete and that there are no further comments.

9.13.3.2 "On Board Review Meeting" The CRT, University PM and the A/E. will meet to review documents, discuss and resolve issues. This method may be required by the University where it is expedient to identify the general types or nature of deficiencies, especially if a resubmittal will be required

- The A/E will record the minutes of this meeting and submit them to the University within five working days.
- This method will be used only when approved by the CBO on an as-needed basis when expediency is of the essence.
- The "On Board Review" method will usually require that the submission package be received at least three working days before the meeting.

9.13.4 Re-submittals: Submittals which are incomplete, which require extensive revisions, and/or which do not conform to the requirements of the Manual shall be properly completed and resubmitted for a new review. The A/E may be required to make such resubmittals without compensation or reimbursement.

9.13.5 Revised Submittals: All changes, and revisions, and additions shall be highlighted in yellow. Any new information shall be highlighted in another color.

9.13.6 Reviews requested when the design is obviously not ready for review may result in a backcharge to the A/E for the costs of inspection team effort and related costs.

9.13.7 Approvals: Approval of the submittal at any phase is dependent on the University and the A/E satisfactorily resolving the issues raised during the reviews by the CRT and other pertinent review agencies. Approval of the PD on any project for which a Value Engineering Study is required will be dependent on the successful resolution of the Value Engineering recommendations.

9.13.8 Building Permit: When the CBO is satisfied that the documents are in conformance with all requirements, the Permit Set ready for bidding and an Application for Building Permit (CO-17a) shall be submitted to the CBO (CRT) for review and issuance of a Building Permit. Final approval of the WD and Permit Set 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 bidders.

9.13.9 Project Permit Work: 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 a project permit under delegated authority authorized by the CBO. The University shall follow the procedures and keep records of such work as set forth in the University Project Permit procedures. The CBO's Letter, included at Appendix G, provides guidance for review and issue of permits for work not specifically requiring a building permit but for which other codes, directives and standards may apply.

SECTION 9.14 RELEASE OF BID DOCUMENTS:

9.14.1 Bid documents (plans and specifications) shall not be released to bidders until the CRT review process is complete.

9.14.2 Complete and coordinated documents, checked and sufficiently detailed to provide bidders and builders with a clear description of the University project requirements will be the key to efficiently completing the CRT review process.

9.14.2.1 Clarification and corrective data shall be included in addenda to those documents issued.

9.14.3 Advance Advertisement/Notice: In some cases it may be advantageous to the University to advertise a project before bid documents are fully reviewed. In such case the procedures below shall be followed:

9.14.3.1 If Advertisements are authorized before bid documents are fully reviewed, the Advertisement shall indicate: "Bid documents will be available to bidders on or about __(date)__." The bid date shall be set to allow reasonable time to complete revisions, to review and issue the documents, and to give bidders at least three weeks to prepare bids.

9.14.3.2 If advertisements are authorized before bid documents are fully reviewed and bid documents must be released prior to completion of the CRT review, the Advertisement shall state that revised documents will be available to bidders on or about _____(date)___." The bid date

shall be set to allow reasonable time to complete revisions, to review and issue the documents, and to give bidders at least two weeks to prepare bids.

SECTION 9.15 QUALITY CONTROL / QUALITY ASSURANCE

9.15.1 A/E Responsibility: 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.

9.15.2 Quality Assurance Review: The A/E shall perform a Quality Assurance review of the WD prior to submitting to CRT. See Chapter 10 for additional requirements and guidance for QC/QA reviews and coordination of plans and specifications.

9.15.3 Quality Statement: The first sheet of the plans and specifications of the working drawings only, being submitted to the CRT shall contain the following statement signed by the responsible A/E:

"A Quality Control/Quality Assurance check has been made on this project's documents and corrections have been made. The undersigned states that these plans and specifications submitted for review are complete and ready for bidding."

Signed: _____

(Type Name & Title)

<u>This statement shall not appear on the sets of documents issued to bidders.</u>

SECTION 9.16 VALUE ENGINEERING (VE)

9.16.1 General: Capital Projects with an estimated construction cost greater than $5,000,000 shall have a 40-hour Value Engineering (VE) Study conducted on the design prior to or concurrent with the PD submission.

9.16.2 Qualifications: The study shall be conducted by a qualified VE Team consisting of a Certified Value Specialist (CVS) and experienced, licensed professionals for each of the significant disciplines reviewed.

9.16.2.1 VE Team members shall be separate and completely independent from the Project A/E & its consultant firms.

9.16.3 Procurement: The University may perform VE studies with an approved Certified Value Specialist. Alternatively, the University may procure VE services utilizing professional procurement procedures.

9.16.3.1 The procurement process should begin at least 90 days prior to the anticipated date the PD phase will be submitted.

9.16.3.2 RFP evaluation factors shall include the experience, qualifications and expertise of each proposed team member.

9.16.4 Scope and Procedure: Each design review shall utilize the five-step job plan as recognized by the Society of American Value Engineers (SAVE).

9.16.4.1 CVS Responsibility: The CVS is responsible for pre-study work, assembling, editing and reproducing the recommendations generated by the Value Engineering Team Study.

9.16.4.2 Work Space: 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.

9.16.4.3 A presentation of the study results shall be made to the University.

9.16.5 Large Projects: On large projects, a one or two day VE Study is encouraged at the SD phase.

9.16.6 Reports: The VE report shall encompass the recommendations of the VE study group and include detailed cost estimates, life cycle analysis and sketches, as necessary.

9.16.6.1 The CVS must edit and sign the final report.

9.16.7 Information Supplied to the VE Team: Prior to commencing the VE study, the A/E will forward the following information to the VE Team:

- Two sets of SD and PD drawings (full size)
- Five sets of half size drawings
- Outline Specifications & Systems Checklists (5 copies)
- Detailed Cost Estimate (5 copies)
- Basis of design (5 copies)
- Design Calculations (Structural, Mechanical, Electrical)
- Boring logs and soil reports
- Scope of Project/Program requirements (5 copies)
- Digital copies of the above documents

9.16.8 A/E responsibilities include the following:

- Present an overview of the project criteria and development to the Value Engineering team.
- Provide comments on the VE study report to the University within 14 days of receipt of the report.
- Participate in joint review/VE resolution meeting at the University.
- Review and submit a final report within 14 calendar days of the resolution meeting to the University.
    - Provide a written comment and/or evaluation of each VE recommendation using Format VE-1 – form DGS-30-212.
    - Provide written recommendation to accept, to reject, or to accept with modifications each VE recommendation.

- Provide justification for rejection of, or modification to, any VE recommendation.
- Implement all finally accepted VE recommendations into the project design.

9.16.9 Action on VE Study: The University, including O&M staff and facility end users, shall review the A/E's evaluation and recommendations on the VE Study and the A/E's responses to the CRT review comments. The University shall indicate its proposed action (acceptance, rejection, or acceptance as modified) on the Summary sheet.

SECTION 9.17 STRUCTURAL AND SPECIAL INSPECTIONS

9.17.1 Minimum Inspections to be Performed: 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 prescribes certain tests and inspections which are required to be performed on the structural systems for the building. These inspections have been, heretofore, provided on state projects by a combination of the Owner's University's Project Inspection, the A/E and the Owner's University's Independent Testing Lab.

9.17.2 Procedures for Special Inspections: The CBO for all University-Owned buildings establishes the following procedure for the application of the Structural and Special Inspections for capital projects.

9.17.2.1 A/E Basic Services - Design: The A/E, as part of its Basic Service of preparing bid 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 form.

- 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 form. See Appendix K for the Concept of the Process.

9.17.2.2 A/E Basic Services - Construction: 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 bid documents.

9.17.2.3 Project Inspector: Each project shall have an on-site Project Inspector 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. This individual may be the assigned University PM or other appropriate University staff member.

9.17.2.4 University's Independent Test Lab: 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.

9.17.2.5 A/E Site Visits: The A/E in accordance 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.

9.17.2.6 Final Report of Structural and Special Inspections: The A/E's structural engineer, the University's Project Inspector, and the University's PM or responsible person shall complete the Final Report of Structural & Inspections, Form HECO-13.1b, and submit to the CBO as soon as completed but prior to the Substantial Completion inspection for the project.

9.17.3 Appendix K: 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.

9.17.4 See Appendix O for additional information on other Project Inspector functions.

SECTION 9.18 "COMMISSIONING" OF HVAC SYSTEMS

9.18.1 "Commissioning" for HVAC systems, as described in ASHRAE Guidelines for Commissioning of HVAC Systems includes:

- Development of the project criteria
- Design of the HVAC systems including preparation of the plans and specifications describing the HVAC system components and requirements
- Review of shop drawings and submittals
- Inspection of the installations of the systems and observation of applicable tests
- Final testing, balancing, start-up, initial operation, and acceptance of the HVAC system including controls.

9.18.1.1 Design of Commissioning Process: The A/E must begin at the project inception to develop an orderly process to document and set forth the various elements of the process so that the commissioning criteria and requirements are integrated with the design and the specification of the HVAC system and so that procedures are defined for the required testing, balancing and operational checks.

9.18.1.2 Contractor Requirements: 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 HVAC system 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.

9.18.1.3 Review of Results: FPDC and O&M staff will review the results of the commissioning process.

CHAPTER 10 DESIGN SERVICES:
COORDINATION & QUALITY ASSURANCE

SECTION 10.1 GENERAL

All firms providing professional services to the University are expected to strive for a standard of excellence in planning, design and construction administrative services. To that end, an active quality assurance program is essential to the process of continual improvement.

The Quality Assurance Process outlined in this chapter provides guidance to assist the A/E in reviewing the documents and represents the minimum information that the University expects to be shown on the drawings to clearly identify the work to be performed.

The contract documents submitted shall represent a reasonable and cost effective architectural and engineering solution for the scope of work and construction budget in the A/E contract.

SECTION 10.2 QUALITY ASSURANCE PROCESS:

10.2.1 Reviews: The A/E shall perform a quality assurance review for both the technical accuracy and discipline coordination. Items such as sections, details, note references, major dimensions and equipment locations shall be checked. Verify that all equipment is consistently identified on all sheets and in the specifications and cost estimate.

10.2.2 All elements of submittals shall be checked by the A/E: Each check should be made by persons other than those preparing the materials and by professional personnel trained in that specific discipline. Fire alarm and sprinkler submittals will be reviewed by the various disciplines in the CRT for compliance with requirements and standard criteria. Errors and deficiencies shall be corrected by the A/E at no additional cost to the University.

SECTION 10.3 QUALITY PROCESS:

10.3.1 Quality Reviews: When applicable, the following reviews should be considered as components of an overall Quality Assurance Process for each project.

10.3.1.1 Program: Develop/validate the program requirements to ensure the project meets the client's needs.

10.3.1.2 Budget: Develop/validate a cost model for each discipline to work toward and review at each submission.

10.3.1.3 Schedule: Develop a reasonable project schedule and continually review and revise as necessary.

10.3.1.4 Individual Discipline Technical Reviews: Ensure technical adequacy of each discipline.

10.3.1.5 Interdisciplinary Coordination: Ensure all trades are coordinated with each other.

10.3.1.6 Code Review: Ensure minimum standards for health, life safety, energy, etc. are met.

10.3.1.7 Constructability Review: Ensure that the building systems can be constructed as indicated and within the allotted space indicated.

10.3.1.8 Phasing Review: Ensure that the building can remain occupied (as applicable) during construction and that all means of egress and all required building systems remain functional for safe occupancy.

SECTION 10.4 PURPOSE

10.4.1 Quality Assurance: is a systematic process of applying quality control to the planning, design and execution of a project. With a quality assurance program that is properly administered, a win-win-win occurs for the Owner, Contractor and A/E when the potential for change orders, time extensions and liability claims are all reduced. Specific benefits are identified as follows:

10.4.1.1 Planning: Ensuring that the needs of the client can be met within the allotted time and budget.

10.4.1.2 Design: Providing a set of quality construction documents will:

- Attract quality Contractors and allow the best pricing in a competitive construction market
- Minimize change orders and unanticipated expenses for all parties.
- Allow the best opportunity for an accurate cost estimate
- Minimize unnecessary delays and conflict in the execution of the project

10.4.1.3 Cost Modeling and Estimating: Project funds are typically tight and allow little room for error.

- Properly estimating the project and adhering to a cost model will minimize the possibility of unplanned expenses over and above the project budget. Additional time delays and effort necessary to bring a project into budget after the design is complete can be avoided.

10.4.1.4 Construction Administration: Quality Assurance will ensure:

- Document version control, schedules, as-built drawings and all required logs are maintained properly
- Requests for information, proposals, change order proposals, change orders and pay applications are all tracked and processed efficiently
- A proactive process of identifying issues and documenting the resolution
- Ensure that lessons learned are only learned once.

SECTION 10.5 PRE-DESIGN PHASE:

10.5.1 Pre-Design Conference: See Chapter 9

10.5.2 Pre-Design Planning and Program Validation: Approximately 80% of a project's potential to succeed or fail is determined within the first 20% of the project. It is at this phase of the project that the scope, schedule and budget are established. For this reason, the A/E must take a very active role in the validation and ownership of the plan. Specifically the following should be considered at the beginning of each project:

10.5.2.1 Scope: Validate the scope with the client to ensure it meets the program requirements and can fit within the project budget and schedule.

- Identification of codes to be utilized throughout the project
- Determination and proposed resolution of code and/or safety related issues identified in the pre-design site investigation.
- Determine if there are any specific or unusual design requirements or design guides required to satisfy owner, requirements.
- Identify safety equipment and/or procedures required to operate and maintain the facility as intended, comply with OSHA and any other related safety standards.
- Review and validate the project program with University PM and end user.
- Review the project scope against the budget and schedule to validate that the project can be constructed within available funds and within the projected time frame.
- Identify project related expenses and "work by owner" that will need to be identified, coordinated, scheduled and budgeted for. Such work may include, but not be limited to: moving; storage; security; parking coordination; data and telephone; temporary facilities; furnishings; landscaping; etc.

10.5.2.2 Budget: Validate the project budget and establish a cost model for each discipline to design to.

- Due to the State budget development process, the approved project budget may not reflect recent developments and cost adjustments within the construction industry.
- Budget discrepancies must be identified as early as possible.
- Delays in the design or permitting of a project can be directly translated to construction cost increases. It is therefore imperative that the design team be able to develop and execute the design in a timely manner.

10.5.2.3 Schedule: Validate the project schedule to ensure that it is realistic for both the design and construction phases and that it can be supported by the design team.

- Prepare a Gantt chart indicating detailed pre-design, design and procurement activities. Construction activities shall be shown as one or more activities depending on the required project phasing (if applicable).

- Schedule discrepancies must be identified as early as possible.
    - Ensure that sufficient time is programmed for the quality review at each submittal.
    - Ensure that sufficient time is programmed for owner activities such as Value Engineering, reconciling cost estimates and permitting.
    - Ensure that all phases of the design schedule and major construction milestones are coordinated with the academic calendar and user requirements
    - Obtain buy-in from all stake holders.

10.5.3 Pre-Design Investigative Site Visits: A pre-design site visit by representatives of each discipline relative to the project shall be scheduled to occur immediately following the Pre- design kickoff meeting.

10.5.3.1 Interviews: As applicable, site visits shall include field investigations and interviews with the University PM and project stakeholders, including, but not limited to representatives from the Maintenance, Utilities, and Grounds departments. Specifics to be included in site investigation may include, but are not limited to:

- Code related and/or safety issues in existing facilities that need to be updated and/or installed as a part of the project. Examples may include outdated fire alarm systems, sprinkler systems, egress paths, accessibility, integrity of existing fire rated assemblies, etc.
- Code related issues that may present difficulties throughout the project, examples include: maintaining existing code mandated life safety systems, fire ratings and egress paths in existing buildings intended to remain occupied during construction.
- Identify unknowns and determine if destructive testing will be required in order to reasonably assess existing conditions
- Review of record drawings
- Initial field surveys including topo, wetland and/or utility surveys, hazardous material survey, geotechnical survey as may be appropriate.

SECTION 10.6 DESIGN PHASE:

10.6.1 Program: At the kick-off meeting for each phase of the design, the A/E and University PM shall review the program with the stake holders and determine if any changes to the program are required.

10.6.1.1 Potential changes: could result from;

- Previous review comments
- Change in owner requirements
- Elimination of unauthorized scope creep
- Identification of inflation over and above anticipated escalation
- Proactive changes required to maintain the project cost model
- Changes due to Value Engineering etc.

10.6.2 Design Phase Communication Protocols: At the kick-off meeting for each phase of the design, validate and adjust as necessary the established communication protocols.

- Solicit feedback from all team members and stake holders to ensure that established protocols are effective
- Ensure that all team members as well as all stakeholders are aware of the protocols.

10.6.3 Design Phase Budget: At the kick-off meeting for each phase of the design, validate the project budget based on the most recent cost estimate.

- Each phase of the project design shall be designed to a cost model which shall account for escalation to the mid-point of the anticipated construction period.
- Adjust the escalation at each design phase to account for any delay in the design process to date.
- See Appendix M for design contingency this design contingency shall be released only as authorized by the University PM during the development of design.
- An independent cost estimate shall be required for all projects over $2,000,000 in estimated construction value
    - Requests to waive the requirement for an independent cost estimate shall be submitted to the Director, FPDC for consideration in the form of a "Determination and Findings".
- For every project utilizing an independent cost estimator, the cost estimate provided by the A/E shall be reconciled with the cost estimate provided by the independent cost estimator.
    - The independent cost estimate shall be considered to be reconciled with the A/E cost estimate when the total project cost, as well as every major division is within 10% of the A/E cost estimate.
    - The cost of reconciling each cost estimate shall be included within the A/E fee as a cost not to exceed, additional service.
- The project shall not proceed to the next design phase until the cost estimate is validated with the cost model and the independent cost estimate.

10.6.4 Design Phase Schedule: The schedule shall be coordinated with the University Project Manager and shall include as a minimum the following items as applicable.

- Significant event meetings such as:
    - Pre-design conference
    - Presentations to the Building committee, DRB, AARB
- Studies as applicable such as:
    - Environmental Impact Study
    - Geotechnical Report
    - Archaeology Study
    - Value Engineering Study
    - Building Envelope Study
- Individual Design Phases
- University Reviews including:
    - Review and reconciliation of project scope, schedule and budget
    - Client review

- Code review
- FM O&M review
- EH&S review

- A/E responses and resolution owner comments at each design phase

10.6.5 Design Phase Field Investigations: Shall include:

- Photographic documentation of existing conditions
- Conference Summaries of each meeting held
- Validation of existing field conditions as they relate to the project. Validation to include existing building structure and other elements that may interfere with new or extended utilities

10.6.6 DESIGN PHASE RUNNING ACTION LIST:

10.6.6.1 A running action list tracking outstanding activities, suspense dates and responsible party shall be developed and maintained by the A/E.

- The action list shall be distributed to the University PM for confirmation and feed back
- Updates shall occur on a regularly scheduled basis as directed by the University PM

10.6.7 DESIGN PHASE TECHNICAL REVIEW:

10.6.7.1 Calculations shall be organized by discipline and presented for internal peer review. Refer to chapter 9 and associated appendix for required calculations.

10.6.8 CONSTRUCTION PHASE

10.6.8.1 Maintain a procedure for tracking, processing and logging Requests for Information, Requests for Proposal, clarifications, supplemental instructions and similar documents. Procedure shall assure that processing and responses are timely.

10.6.8.2 Maintain a procedure for reviewing and processing Applications for Payment in a timely manner, including the scheduling and administration of payment meetings.

10.6.8.3 Maintain a procedure for monitoring the progress of the work with respect to the project schedule. Maintain a running list of issues and actions required and performed.

10.6.8.4 Maintain a procedure for logging, processing and tracking shop drawing submittals to assure that submittals are made and reviews are returned in a timely manner so as not to delay the work.

10.6.8.5 Maintain a procedure for monitoring ongoing construction activities to assure compliance with the contract documents and applicable codes, including the timely issuance of reports.

CHAPTER 11 CONSTRUCTION SERVICES:

PROCUREMENT PROCEDURES

SECTION 11.1 GENERAL

11.1.1 Sealed Bidding and Competitive Negotiations: Construction will be procured by competitive sealed bidding in accordance with the procedures of this chapter. However, competitive negotiations may be used on (1) projects using a fixed price design-build or construction management contract or (2) projects for the alteration, repair, renovation or demolition of buildings upon a determination in writing made in advance and approved by the AVP FM that competitive sealed bidding is either not practicable or not fiscally advantageous to the public. See Chapter 12 for Special Procedures.

11.1.2 Contract Documents: Contract documents for capital, maintenance reserve and non-capital construction projects including, but not limited to, renovation, remodeling, demolition and repair work on buildings and other structures shall include the General Conditions of the Construction Contract HECO-7, and Supplemental General Conditions - SWAM.

- The Agency, at its discretion, may include a Supplemental General Condition to waive the requirements of Section 12 (b) of the General Conditions of the Contract, HECO-7, as it relates to the requirement for all Builders' Risk insurance for these categories of work if the Agency has, for each project, verified with the Department of Risk Management that its insurance will provide adequate coverage. Use the wording shown in the Sample in Appendix I.

11.1.3 Paragraphs 11.3 through 11.5 are applicable for all projects but small project procedures in paragraph 11.2 may be used for projects valued at $50,000 or less.

11.1.4 Completeness of design package: Design packages shall not be released for bidding or finalization of the Guaranteed Maximum Price (GMP) until receipt of signed/sealed WD. When a deviation is granted, the University PM is responsible to ensure that the design ultimately placed under contract is the final permitted design.

SECTION 11.2 SMALL PROJECT PROCUREMENT PROCEDURES

Construction, or repair or replacement in kind, or remodeling or renovation work which is valued at $100,000 or less may be procured by using the procedures of Sections 11.2.1 and 11.2.2. A prebid conference shall not be mandatory for projects with an estimated cost of less than $100,000.

11.2.1 Projects Costing Less Than $25,000

- Develop scope of work in enough detail to convey the requirements of the project (bid documents).

- Solicit bids from 1 or more Contractors.
- Receive faxed or emailed bids by specified deadline.
- If the price received from the solicitation is determined to be fair and reasonable, award the contract using a CO-9.

11.2.2 Projects Costing From $25,000 to $50,000

- Develop scope of work in enough detail to convey the requirements of the project (bid documents).
- Post notice of IFB in eVA when the contract amount exceeds $30,000 and the procurement is not made from a prequalified pool of Contractors.
- Solicit bids from 3 or more Contractors.
- Receive faxed or emailed bids by specified deadline.
- Post notice of award in eVA if the contract amount exceeds $30,000.
- If the price received from the solicitation is determined to be fair and reasonable, award the contract using CO-9.

SECTION 11.3 CONSTRUCTION BIDS

11.3.1 Instructions to Bidders: Use the HECO-7A as addressed in chapter 9.

11.3.2 Virginia Construction Contracting Officer (VCCO): Unless unavailable, a VCCO shall supervise the bidding and awarding construction contracts. Procedures stipulated in this Manual shall be used in all cases.

11.3.3 Authorization to Advertise for Bids and Building Permit: Authorization to advertise for bids is given on completion of technical review(s) of the project documents by the CRT and, approval of the Director, FPDC.

11.3.4 Preparation: Bid Forms shall be prepared using the format and wording shown on the Standard Bid Form Format, the Notice of Invitation for Bids Format, the IFB Cover Format and the Invitation for Bids Contents Format in Appendix H. The Contractor's Disqualification Statement and the Immigration Reform and Control Act of 1986 statement shall be included on each Bid Form. In preparing these Bid Forms, A/E's are reminded to keep the number of additives to a minimum and when including more than one, they should be listed in order of importance. See Chapter 9.11 for further requirements and procedures concerning Additive Bid Items. Including or use of "Allowances" in the Bidding is not permitted.

11.3.5 Advertising: FPDC shall establish a time and place for receiving bids. The A/E shall use this information in completing the advertisement on the Notice of Invitation for Bids. Bids are generally not received nor opened on Mondays and Fridays. For general preparation of bid documents see Chapter 9.

- The advertisement should be placed for a period of one or more days, if deemed necessary by the Director, FPDC, 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. If deemed necessary by the Director, FPDC, the

project may also be advertised in a newspaper which serves the area where the project is located if different from the above.

- The advertisement for bids should also 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 bid data. If deemed necessary by the Director, FPDC, advertisements in other newspapers may be appropriate for large projects.
- The advertisement will be circulated and posted for appropriate maximum exposure by FPDC and be posted on the eVA web site when the expected procurement exceeds $30,000.

11.3.6 Pre-bid Conference: If a Prebid Conference or project showing is 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 bidders for their observation or inspection.

- The University PM shall conduct the Prebid conference. The agenda shall include the following:
  - Introductions of A/E and Agency representatives
  - Synopsis of the work by citing or reading portions of
    - Notice of Invitation for Bids
    - Instructions to Bidders
    - Prebid Question Form
    - Bid Form
    - Supplemental General Conditions
    - Special Conditions
    - General Requirements
    - Other conditions or requirements included in the Bid Documents that should be called to the attention of the bidders
- 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 bid documents. ALL OTHER QUESTIONS SHOULD BE RECEIVED IN WRITING OR DOCUMENTED BY THE A/E AND RESPONDED TO IN WRITING IN AN ADDENDUM.Y
- The A/E should issue an Addendum to include a copy of the attendee sign-in sheet and the questions posed with the response to each.
- The Agency and the A/E must be careful not to provide any information, instruction, or clarification to Prebid attendees which is not made available to all potential bidders.

11.3.7 Addenda to the Bid Documents: Addenda shall be issued as necessary to clarify or correct information in the Bid Documents, to respond to questions raised by the Bidders, and/or to modify the 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 Bidders.
- Addenda to clarify or correct information in the Bid Documents should be issued at least 10 days prior to the Bid Receipt Date. 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 10 days prior to the date set for receipt of bids or the bid date must be delayed to allow the 10 days. Addenda which serve primarily to provide clarifications or corrections which can be covered in a one page Addendum may be issued up to 6 days prior to bid receipt date. Addenda which only delay or cancel the date for receipt of bids must be issued at least 24 hours prior to the date and time set for bid receipt.

- One copy of all Addenda shall be submitted to the CRT at the same time and by the same means as the Addenda are issued to the Bidders. A copy of all addenda shall also be sent to the responsible State Fire Marshal Office which will have jurisdiction over the project.

11.3.8 Receipt of Bids: A VCCO or a person acting under the supervision of a VCCO will receive the bids when submitted. That person must record the time and the date and initial on the bid envelope. That record shall be retained. All envelopes, papers and data submitted with the bid shall be stapled together and permanently retained, except for bid securities or work papers which shall be retained only until a signed contract is obtained. At that time, bid securities must be returned to the bidder. Until that time, bid securities must be retained in a secure place. Work papers will be returned to the bidder unopened, unless needed to resolve a withdrawal of bid due to error claim. The preferred days for bid receipt are Tuesdays and Wednesdays.

11.3.9 Bid Opening: Bids shall be publicly opened by a VCCO or his representatives(s) and shall be reviewed for completeness. A 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 P for Procedures for Opening Bids.

- Once the designated bid opening time has arrived, **which shall be at least 24 hours after the receipt of bids and as indicated in the Invitation for Bids,** the VCCO will move the sealed bids to a private area and 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!** 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.

11.3.10 Provisions for Negotiation with Low Bidder: When the low bid exceeds available funds and upon approval of the AVP FM negotiations with the lowest responsive and responsible bidder may occur. A record of the negotiations will become a part of the procurement file for the project.

SECTION 11.4 AUTHORITY TO AWARD A CAPITAL OUTLAY PROJECT CONTRACT

11.4.1 The request to award a contract to the low responsive and responsible bidder is granted by approval of the HECO- 8. 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 on the eVA website 10 days prior to contract award.

SECTION 11.5 EXECUTION OF CONTRACT

11.5.1 Execution Authority: The SVP F&A or delegate will execute contracts using the CO-9.

11.5.2 Protest of Award or Decision to Award: Any bidder 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 days after the award or the announcement of the Notice of Intent to award, whichever occurs first. No bid protest shall lie for a claim that the selected bidder or offeror is not a responsible bidder. The written protest shall include the basis for the protest and the relief sought. The University shall issue a decision in writing within ten days of receipt of the written protest stating the reasons for the action taken. This decision shall be final unless the bidder or offeror appeals within ten days of the written decision by instituting legal action.

11.5.3 Stay of award during protest: An award need not be delayed for the period allowed a bidder or offeror 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.

11.5.4 Notices 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.

CHAPTER 12 CONSTRUCTION SERVICES:
SPECIAL PROJECT DELIVERY PROCEDURES

SECTION 12.1 GENERAL

In accordance with the Restructured Act and the Management Agreement for the University, the following procedures may be utilized for construction projects of a highly specialized or unique nature, as deemed appropriate by the University. These Design-Build, Construction Management, Competitive Negotiation, Pre-Qualification, and Term Contract procedures apply to all projects for the University. Use of these procedures requires approval from the Director, FPDC and the AVP FM.

SECTION 12.2 DESIGN BUILD PROCEDURES

In accordance with the provisions of §2.2-4378 through §2.2-4381 of the Code of Virginia, the University has adopted the following Policy for the use of Design-Build (DB).

12.2.1 Criteria for the Use of DB

- The University shall provide a written determination that competitive sealed bidding is not practicable or fiscally advantageous. (COV Section: §2.2-4381.C.1)
- The written determination shall include the basis of the determination which shall include one or more of the following:
  - Construction Cost (COV Sections: §2.2-4381.B.1, §2.2-4381.D.3)
  - Project Complexity (COV Sections: §2.2-4381.B.1, §2.2-4381.D.4)
  - Building Use (COV Sections: §2.2-4381.B.1, §2.2-4381.D.3)
  - Project Timeline (COV Sections: §2.2-4381.B.1, §2.2-4381.D.3)
  - Need for Single Point of Contact (COV Sections §2.2-4381.D.5)
- A licensed architect or engineer shall be employed or under contract to advise in use of DB. (COV Section: §2.2-4381.C.2)

12.2.2 DGS Review of Procurement Method (COV Sections 2.2-4381.D through 2.2-4381.F)

- For all projects where the University has selected DB as the proposed project procurement method, the University shall submit the following to DGS for review:
  - The University's written determination that competitive sealed bidding is not practicable or advantageous.
  - A completed Design-Build Procurement Review Submittal Form (DGS-30-471) identifying the project characteristics relevant to DB procurement.
- Upon receipt of DGS Recommendation, the University shall:
  - Address DGS comments as necessary.
  - Document University action in project file and submit to DGS.
- AVP FM shall approve determination to use DB.

12.2.3 DB Procurement Procedures

- The University shall appoint an Evaluation Committee which shall consist of at least three members from the University, including a licensed design professional, if possible.
- A two-step Request for Qualifications/Request for Proposals (RFQ/RFP) process shall be utilized. (COV Section: §2.2-4381.C.7)
- The University shall prepare a RFQ containing the University's Facility Requirements, building and site criteria, site and survey data (if available). 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. (COV Section: §2.2-4381.A) The University's justification for the use of DB shall be included in the RFQ. (COV Section: §2.2-4381.C.1)
- The criteria for evaluation shall be included in RFQ (COV Section: §2.2-4381.C.1), including any unique capabilities and qualifications, and the RFQ shall be posted in accordance with the current standards in the Code of Virginia for a minimum of 30 days. (COV Section: §2.2-4381.C.3)
- The Evaluation Committee shall evaluate the firms' RFQ responses and any other relevant information and shall recommend those deemed most qualified with respect to the criteria established for the project in the RFQ. AVP FM shall approve the offorers to receive an RFP. Prior DB or DEB Experience shall not be a Prerequisite for award. (COV Section: §2.2-4381.C.5)
- The RFQ process shall result in a short list of 2-5 offerors to receive an RFP and be invited to make oral presentations. (COV Section: §2.2-4381.D.5) An offeror may be denied prequalification only as specified under the Code of Virginia §2.2-4317, but the short list shall consist of those deemed best qualified.
- The criteria for evaluation shall be included in RFP and the RFP shall be posted in accordance with the current standards in the Code of Virginia. Prior DB or DEB Experience shall not be a Prerequisite for award. (COV Section: §2.2-4381.C.5) Cost shall be a critical component of the selection process.
- In addition, prior to the date for RFP response submission, those offerors who were not selected for the short list shall be provided written notification.
- Sealed Technical Proposals as described in the RFP shall be submitted to the Evaluation Committee. Separately sealed Cost Proposals shall be submitted to the University's VCCO, and shall be secured and kept sealed until evaluation of the Technical Proposals and the design adjustments are completed. (COV Section: §2.2-4381.A)
- The Evaluation Committee shall evaluate the firms' Technical Proposals based upon the criteria contained in the RFP. It shall inform each DB offeror of any adjustments necessary to make its Technical Proposal fully comply with the requirements of the RFP. In addition, the University may require that offerors make design adjustments necessary to incorporate project improvements and/or additional detailed information identified by the Evaluation Committee during design development. (COV Section: §2.2-4381.A)
- Based upon the adjustments requested by the Evaluation 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. (COV Section: §2.2-4381.A)
- The Evaluation Committee shall evaluate (and rank if technical rankings are to be considered as a criteria for award) the firms' Technical Proposals and open the cost proposals and apply the criteria for award as specified in the RFP. (COV Section: §2.2-4381.A)

- After evaluation and ranking, the Committee shall conduct negotiations with two or more offerors submitting the highest ranked proposals. (COV Section: §2.2-4381.A)
- The Evaluation Committee shall recommend the highest ranked firm to the AVP FM for approval. The contract shall be awarded to the offeror who is deemed fully qualified and has been determined to have provided the best value in response to the RFP. The University shall notify all offerors who submitted proposals, which offeror was selected for the project. When so provided in the RFP, awards may be made to more than one offeror. (COV Section: §2.2-4381.A)
- Upon request, documentation of the process used for the final selection shall be made available to the unsuccessful proposers. (COV Section: §2.2-4381.A)

SECTION 12.3 CONSTRUCTION MANAGEMENT PROCEDURES

In accordance with the provisions of §2.2-4378 through §2.2-4381 of the Code of Virginia, the University has adopted the following Policy for the use of Construction Management at Risk (CM@R).

12.3.1 Criteria for the Use of CM@R

- The University shall provide a written determination that competitive sealed bidding is not practicable or fiscally advantageous. (COV Section: §2.2-4381.C.1)
- The written determination shall include the basis of the determination which shall include one or more of the following:
  - Construction Cost (COV Sections: §2.2-4381.B.1, §2.2-4381.D.3)
  - Project Complexity (COV Sections: §2.2-4381.B.1, §2.2-4381.D.4)
  - Building Use (COV Sections: §2.2-4381.B.1, §2.2-4381.D.3)
  - Project Timeline (COV Sections: §2.2-4381.B.1, §2.2-4381.D.3)
  - Project Phasing (COV Section: §2.2-4381.D.5)
  - Necessity of Value Eng. and/or Constructability Analysis Concurrent with Design (COV Sections: §2.2-4381.D.5)
  - Quality Control/Vendor Prequalification Needs (COV Section: §2.2-4381.D.5)
  - Cost/Design Control Needs (COV Section: §2.2-4381.D.5)
- A licensed architect or engineer shall be employed or under contract to advise in use of CM@R (COV Section: §2.2-4381.C.2)

12.3.2 DGS Review of Procurement Method (COV Sections: 2.2-4381.D through 2.2-4381.F)

- For all projects where the University has selected CM@R as the proposed project procurement method, the University shall submit the following to DGS for review:
  - The University's written determination that competitive sealed bidding is not practicable or fiscally advantageous.
  - A completed Construction Management at Risk Procurement Review Submittal Form (DGS-30-456) identifying the project characteristics relevant to CM@R procurement.
- Upon receipt of DGS Recommendation, the University shall:
  - Address DGS comments as necessary.
  - Document University action in project file and submit to DGS.
- AVP FM shall approve determination to use CM@R.

12.3.3 CM@R Procurement Procedures

- The University shall appoint an Evaluation Committee which shall consist of at least three members from the University, including a licensed design professional from the University, if possible.
- The contract shall be entered into no later than the SD phase unless prohibited by funding authorization restrictions. (COV Section: §2.2-4381.C.4)
- A two-step RFQ/RFP process shall be utilized. (COV Section: §2.2-4381.C.7)
- The University shall prepare an RFQ containing the University's Facility Requirements, building and site criteria, site and survey data (if available). All offerors shall have a licensed Class "A" Contractor registered in the Commonwealth of Virginia as part of the project team. The University's justification for the use of CM@R shall be included in the RFQ. (COV Sections: §2.2-4380.B.1, §2.2-4381.C.1)
- The criteria for evaluation shall be included in RFQ (COV Section: §2.2-4381.C.1), including any unique capabilities and qualifications, and the RFQ shall be posted in accordance with the current requirements in the Code of Virginia for a minimum of 30 days. (COV Section: §2.2-4381.C.3)
- The Evaluation Committee shall evaluate the firms' RFQ responses and any other relevant information and shall recommend those deemed best qualified with respect to the criteria established for the project in the RFQ. AVP FM shall approve the offerors to receive an RFP. Prior CM@R or DEB Experience shall not be a Prerequisite for award. (COV Section: §2.2-4381.C.5)
- The RFQ process shall result in a short list of 2-5 offerors to receive an RFP and be invited to make oral presentations. (COV Section: §2.2-4381.D.5) An offeror may be denied prequalification only as specified under the Code of Virginia §2.2-4317, but the short list shall be those deemed best qualified.
- The RFP shall include the current stage of design documents. Firms will be encouraged to elaborate on their qualifications and performance data or staff expertise pertinent to the proposed project. Offerors are required to submit complete, detailed technical proposals describing how they intend to carry the project including:
    - Means and methods
    - Names and credentials of key personnel
    - Names and credentials of Subcontractors and key personnel
    - Proposed schedules and work plans
    - Detailed description of procedures for particularly sensitive parts of the project
    - Other information important to understanding the project and completing it successfully
- Offerors shall also submit a fixed price cost proposal for the entire project as described in the RFP (typically preconstruction services, General Conditions, and CM fee) and detailed in their technical proposals.
- The criteria for evaluation shall be included in RFP and the RFP shall be posted in accordance with the current requirements in the Code of Virginia.
- In addition, prior to the date for RFP response submission, those offerors who were not selected for the short list shall be provided written notification.
- The Evaluation Committee shall evaluate and rank the firms' Proposals. Prior CM@R or DEB experience shall not be a prerequisite for award. (COV Section: §2.2-4381.C.5) Separately

sealed Price Proposals will be submitted to be held separately from the Technical Proposals. The price proposals will be opened after the initial technical evaluations and integrated into the final ranking.

- Should the College determine in writing and at its sole discretion that only one offeror is fully qualified, or that one offeror is more highly qualified than the others under consideration, then, with the consent of the AVP FM, a contract may be negotiated with and awarded to that offeror.
- After evaluation and ranking, the Committee shall conduct negotiations with the offeror submitting the highest ranked proposal. (COV Section: §2.2-4381.A)
- The Evaluation Committee shall recommend the highest ranked firm to the AVP FM for approval. The contract shall be awarded to the offeror who is deemed fully qualified and has been determined to have provided the best value in response to the RFP. The University shall notify all offerors who submitted proposals, which offer was selected for the project. When so provided in the RFP, awards may be made to more than one offeror. (COV Section: §2.2-4381.A)
- Upon request, documentation of the process used for the final selection shall be made available to the unsuccessful offerors. (COV Section: §2.2-4381.A)

12.3.4 Contracting Requirements for CM@R

- Preconstruction Services shall be contracted as a Non-Professional Service. (COV Section 2.2-4301)
- The GMP shall be established at the completion of WD. (COV Section: §2.2-4381.A). If the University and CM@R cannot agree on a GMP, the University may competitively bid the project with the other prequalified CM@R offerors or enter into competitive negotiations with the other prequalified CM@R offerors in accordance with the requirements of the Code of Virginia.
- Interim GMPs for early release packages are permitted (COV Section: §2.2-4381.D.5)
- 90% of construction work must be subcontracted through publicly advertised competitive sealed bidding to the maximum extent practicable (COV Sections: §2.2-4381.C.6).

SECTION 12.4 COMPETITIVE NEGOTIATION PROCEDURES – GENERAL CONTRACTOR

12.4.1 Procedure For Approval To Use Competitive Negotiation Procedures: The University shall document in writing (using the D&F format in Appendix B) the decision to use competitive negotiation procedures.

- The documentation shall justify and substantiate that competitive negotiation is more advantageous than a competitive sealed bid construction contract to select a general Contractor and shall indicate how the University will benefit from using competitive negotiation.
- The AVP FM must approve the D&F

12.4.2 Competitive Negotiation Procedures: Competitive Negotiation shall include the selection procedures similar to 12.3 above. However in all cases, pricing shall be based on 100% construction documents.

SECTION 12.5 PREQUALIFICATION PROCEDURES

12.5.1 Procedure For Approval To Use Prequalification Procedures: The University shall document in writing (using the D & F format in Appendix B) the decision to use pre- qualification procedures.

- The documentation shall justify and substantiate that prequalification is advantageous to the University and shall indicate how the University will benefit from using pre-qualification.
- The AVP FM must approve the D&F.

12.5.2 Prequalification Procedures: The following Prequalification procedures shall be followed. In all cases, pricing shall be based on 100% construction documents.

- The University may pre-qualify Contractors for a particular construction project and limit consideration of bids or proposals to pre-qualified Contractors. The procedures contained in this Section shall be used for prequalification of Contractors for a particular construction project. The University may pre-qualify both general Contractors and Subcontractors. Any prequalification of Contractors shall be conducted sufficiently in advance of the bid receipt date to allow potential Contractors a fair opportunity to complete the process.
- The objective of prequalification shall be to qualify as many Contractors as possible to bid on the proposed work. Pre-qualification is most frequently used for projects with sophisticated building systems, a unique site or constructability issue or where project scheduling or sequencing is critical.
- If deemed necessary by the Director, FPDC, the University shall advertise for the pre-qualification in at least two (2) newspapers, one of which has daily statewide circulation. The University shall advertise for the pre-qualification on the eVA web site and shall post the advertisement in the public area where Invitations to Bid are generally posted. The date set for receipt of the Standard Form for Contractor's Statement of Qualifications shall be at least thirty (30) calendar days from the date of the initial advertisement.
- The Standard Form for Contractor's Statement of Qualifications, CO-16 shall be the application form submitted by Contractors when applying to be pre-qualified 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.
- The University shall appoint an Evaluation Committee which shall consist of at least three members from the University, including a licensed design professional from the University, if possible. The evaluation committee will review the CO-16 forms submitted by interested Contractors and determine which, if any, of the Contractors shall be pre-qualified. The A/E for the project may, at the discretion of the Committee, serve as an advisor to the Committee.
- The University may deny prequalification to any Contractor only if the University finds at least one of the following:
    - The Contractor does not have sufficient 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;

- The Contractor does not have appropriate experience to perform the construction project in question;
- The Contractor or any officer, director or owner thereof has had judgments entered against him within the past ten years for the breach of contracts for governmental or non-governmental construction;
- The Contractor 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;
- The Contractor or any officer, director, owner, PM, procurement manager or chief financial official thereof has been convicted within the past ten years of a crime related to governmental or non-governmental construction or contracting;
- The Contractor or any officer, director or owner thereof 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; and
- The Contractor failed to provide to the agency, in a timely manner, any information requested by the agency relevant to (a) through (f) above.
- The Contractor does not have the requisite Virginia license issued by The Virginia Board of Contractors to perform work in Virginia pursuant to Virginia Procurement Rules.

- The University shall notify, in writing, each Contractor that submitted the CO-16 whether that Contractor has been pre-qualified. 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) calendar days from the postmark date of the written notice from the agency 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 FM, the University's designated appeal officer (Appeal Officer).
- The decision of the AVP FM shall be the final University decision. There is no further administrative appeal procedure pursuant to University Procurement Rules; however, the Contractor may initiate legal action pursuant to University Procurement Rules.
- Verification of References supplied by the Contractor in Sections VI: 1, 2, 3 & 5 of the CO-16 shall be accomplished.
- 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 FM. Qualification criteria for Experience (II) shall be customized to fit the particular project for which prequalification is intended.

12.5.3 Following prequalification of bidders, the process in chapter 11 shall be followed to solicit bids from only prequalified Contractors. If deemed necessary by the Director, FPDC, the Notice of Invitation for Bids for the project shall be posted in a newspaper of statewide circulation. The Notice of Invitation for Bids for the project shall be posted in a public place used for such postings and on eVA, Virginia's central electronic procurement website. The advertisement shall appear no less than 30 days prior to the date of bid receipt, unless otherwise approved by the AVP FM. The advertisement shall state

that bids will be accepted only from those Contractors prequalified to bid on the project. Further, the Contractor shall be a registered vendor with eVA.

12.5.4 The contract shall be awarded as outlined in chapter 11.

SECTION 12.6 DEMOLITION

12.6.1 Capital Project Demolition: When a building is to be demolished as part of a capital project, the capital project write-up will include the demolition. Unless demolition is approved by the BOV as part of a capital project approval, separate BOV approval of demolition is required. (See Management Agreement, exhibit G, section X.)

12.6.2 If a building is identified for demolition, the University PM will:

- Confirm with the AVP FM that the demolition is valid and that BOV approval has been obtained.
- Working with the Director, Environment, Health, and Safety (EHS), ensure a hazardous material assessment is made.
- Ensure identified hazardous material is abated.
- Working with the Director, O&M, ensure building utilities are disconnected prior to demolition.
- Write a letter to the DHR seeking demolition approval. The letter must include an attachment with the following information:
  - a. FAACS building number
  - b. Date of construction
  - c. Size in gross square feet
  - d. Type of construction
  - e. Structural and life safety condition
  - f. Assessed or estimated condition
  - g. Original use
  - h. Present or most recent use
  - i. Architect's name (if known)
  - j. Reason for demolition including future use of site
  - k. Photographs of exterior and interior (exterior of all sides and representative interior
  - l. Cost estimate of demolition and site clean-up
  - m. Analysis of alternative programs to demolition
  - n. Analysis of relationship of demolished space to new programs
  - o. Conformity of demolition with master plan
  - p. Hazardous materials inspection, mitigation information
- On favorable determination by DHR, which will normally require 60 days, a copy of the demolition application request and approval by DHR will be sent to the AARB with request that it be placed on the consent agenda; this will normally take another 30 days.
- After approval by DHR and the AARB, prepare a demolition permit for review by the Director of EHS (for hazardous materials concerns); Director of Operations & Maintenance; Director, FPDC; and the AVP FM; and approval by the CBO.
- After all approvals are received, initiate demolition action.

- After demolition is accomplished, notify:
  - the State
  - Council of Higher Education for Virginia and the State
  - Bureau of Real Property Management of DGS.
  - Risk management
  - The signatories of the demolition permit

SECTION 12.7 EMERGENCY PROCEDURES

12.7.1 Consult with the AVP FM and the Director, FPDC.

12.7.2 In an emergency, selection of a Contractor and agreement on the scope and price of the contracted work may be made using any procedure approved by the AVP FM in a D&F. Generally the following will be considered emergencies:

- Protect life and/or property.
- Prevent substantial economic loss.
- Prevent interruption of necessary services.

12.7.3 An Emergency Conditional Notice to Proceed (ECNTP) shall be used to get the work started quickly and shall include the following elements:

- Mandatory notification – The Contractor shall provide written notification to the University PM on expending and/or obligating 50% of a not-to-exceed dollar amount indicated in the ECNTP. Time constraint – A contract specifying scope, time and fixed cost must be agreed to by the Contractor and the University as soon as practicable, but in no case longer than 30 days (or other time specified in the ECNTP) after issuance of the ECNTP and prior to obligating and/or expending 50% of the not-to-exceed amount specified in the ECNTP.
- Insurance Submittals – Insurance Certificates in the types and amounts required by the HECO-7 are required before work may begin.
- Signatures Required – The ECNTP must be signed by the University and the Contractor before work may begin.

SECTION 12.8 TERM GENERAL/SPECIALTY CONTRACTOR (DESIGN AUGMENT) SERVICES CONTRACT

12.8.1 Definition: A term general/specialty Contractor (design augment) services contract provides an avenue for quick execution of smaller projects that require limited design. Contractors with access to design support are prequalified and placed under a Term Contract. Design support may be provided by RDPs on the Contractor's staff or by subcontracting with one or more A/E firms. Contractors then compete on a price-basis for individual projects awarded as Project Orders.

12.8.2 Applicability: Term Contractors (design supported) are to be used when minor design support is needed to detail limited elements of work but formal plans and specifications are not required to convey the scope of work or to ensure even competition between proposers. Design cost is typically less than 5% of the total contract cost.

12.8.3 Term Contracts Not Exclusive: The Term Contract is not exclusive. An agency may issue separate RFPs for similar work and other projects as the need may occur.

12.8.4 Multiple Contract Awards from a Solicitation: An Agency may issue Term Contracts to multiple fully qualified and best suited firms interviewed from a particular Term Contract RFP advertisement and selection process. Where multiple awards are made, the University will compete Project Orders among the Term Contractors during the contract term.

12.8.5 Contract Limit: No Contractor, including any subdivisions or branches thereof, may at any time have in effect more than one Term Contract with the University.

12.8.6 Contract Term: Term Contracts shall be limited to one year, or when the cumulative total project fees reach the maximum cost authorized, whichever occurs first. Such contracts may be renewable for four additional one-year terms at the option of the Agency. The sum of all projects performed in a one-year term shall not exceed $1,000,000. When the aggregate total of all Project Orders, including change orders to those Project Orders, reaches the term dollar limit, no further Project Orders may be issued during that term. It is understood that the Contractor's work under the Project Orders issued may not be completed during the contract's term; however, all terms and conditions of the contract, including all rights and obligations, shall survive until the work is completed, except the owners right to issue, and the Contractor's right to accept, additional Project Orders. The Owner and the Contractor are obligated to fulfill the requirements of all Project Orders issued, including change orders, even though the term for issuing new Project Orders has concluded.

The Owner may, at its sole discretion, renew the contract for up to four additional one-year Contract Terms, provided the option to renew was indicated in the RFP. If the Owner exercises its option to renew, the next Contract Term shall begin one year from the date of the first Contract Term. A new aggregate limit of $1,000,000 shall apply to the second Contract Term, without regard to the dollar amounts of Project Orders issued during the first year of the contract. Any unused amounts from the first Contract Term shall carry forward to the next Contract Term. Subsequent renewals shall follow the same procedures.

12.8.7 Procedures for Selection of Contractors for Award of Term Contract:

- The University will draft an RFP which includes the information outlined in chapter 11.
- The University will advertise the Term Contract RFP as outlined in chapter 11.
- The Standard Form for Contractor's Statement of Qualifications, CO-16 shall be the application form submitted by Contractors when applying to be evaluated for award of a Term Contract. 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, including information about in house design capability and relationships with relevant design firms.
- The University will verify that all Contractors are properly licensed to offer services in Virginia.
- The University shall appoint an Evaluation Committee which shall consist of at least three members (typically the Director, FPDC, a University PM, and other FM or VIMS FM staff) from the University. The evaluation committee will review the CO-16 forms submitted by interested Contractors and determine which, if any, of the Contractors shall be selected.

- The objective of evaluation process is to select an appropriate number of highly-qualified Contractors to ensure competition while considering the projected workload.
- The evaluation committee may conduct interviews with two or more Contractors deemed fully qualified, responsible and suitable. Repetitive informal interviews are permissible.
- Based on review of CO-16 forms and interviews, if held, one or more Contractors will be selected for award of a Term Contract.
- Once the selections are complete, the FPDC procurement staff will record the terms of agreement in a written MOU and incorporate it in the CO-9 contract form, which shall be signed by the University and the Contractor.
- The HECO-7 terms and conditions shall be made a part of each Term Contract.

12.8.8 Project Orders

- Specific work under a Term Contract will be authorized by Project Order using a CO-9. A Project Order shall not exceed $250,000. This threshold may not be exceeded without approval of the AVP FM.
- The following process outlines creation of a Project Order.
    - Following the same project cost thresholds in chapter 11, the University PM will identify and the Director, FPDC will approve a specific group of Term Contractors for an identified project.
    - Following the process in chapter 11, FPDC procurement staff will request bids from the selected Term Contractors, including any design effort necessary to execute the project. Additional advertising is not required.

CHAPTER 13 CONSTRUCTION SERVICES:
CONTRACT ADMINISTRATION, FEES & PAYMENTS

SECTION 13.1 GENERAL

The General Conditions of the Construction Contract, HECO-7, describe the contract administration procedures. (Appendix I)

SECTION 13.2 CONSTRUCTION CONTRACT ADMINISTRATION

13.2.1 A/E Construction Period Services: Generally, the A/E's Basic Services requires the A/E to assist in the solicitation of bids, review and approve submittals, visit the site periodically and inspect the work, complete Structural and Special inspections, review and certify Contractor payment requests, participate in on site preconstruction, progress and pre-installation meetings, issue clarifications of the Documents, issue Field Orders, process change orders, provide substantial and final completion inspections and certifications and other functions associated with contract administration. These services should also be referenced or described in the A/E contract or its Memorandum of Understanding. These services and/or other services may also be provided by special consultants.

13.2.2 Construction Administration Management: The University may assign a University Construction Manager to assist the University PM as the University's onsite representative for the construction phase; to manage any other construction phase consultants; to coordinate other consultant, A/E and Contractor communications; to expedite resolution of all conflicts; to perform additional quality assurance oversight (such as inspection, verification, acceptance, rejection) and to perform other administrative oversight. The University Construction Manager 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 University Construction Manager or by the University's selected consultant.

13.2.3 Delegated Inspections: 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 13.3 CONSTRUCTION MEETINGS

13.3.1 Preconstruction Meeting: Prior to the start of construction a Preconstruction meeting shall be held. Attendees should include the University PM, the University Construction Manager, 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 Conference Format in Appendix Q and the General Conditions of the Construction Contract (HECO-7) section 50.

13.3.2 Monthly Pay Meetings: The intention is that the Contractor, the University PM, the University Construction Manager, the A/E and other consultants have timely exchange of information and cooperate to accomplish the work as required by the contract documents. See the General Conditions of the Construction Contract (HECO-7) Section 50. The monthly pay meeting is normally the best opportunity to exchange information and should include the following topics:

- Observations of status, quality and workmanship of work in progress
- Validation of the Schedule of Values and Certificate for payment
- Conformance with proposed construction schedule
- Outstanding Requests for Information, Requests for Clarification, and Requests for Proposal
- Submittals with action pending
- Status of pending change orders
- Status of Running Punch List items
- Work proposed for coming pay period
- Discussions of any problems or potential problems which need attention

13.3.3 Other Meetings: Other meetings, such as progress meetings, coordination meetings, pre-installation meetings and/or partnering meetings may also be appropriate. See the General Conditions of the Construction Contract (HECO-7) section 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 University Construction Manager, any commissioning consultant, the Contractor's PM and superintendent, the mechanical Subcontractor's PM and superintendent, and a representative of the major supplier/manufacturer.

SECTION 13.4 SCHEDULE OF VALUES AND CERTIFICATE FOR PAYMENT

13.4.1 The General Conditions of the Construction Contract, HECO-7, describe in Sections 20 and 36 the requirements for completing the Schedule of Values and Certificate for Payment, CO-12, 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
- Based on a monthly “plan in hand” review of the construction progress, review, evaluate, verify, and approve the Contractor’s monthly submittal of the CO-12 documentation requesting payment.

SECTION 13.5 INSPECTION OF WORK

13.5.1 General: The General Conditions of the Construction Contract, HECO-7, describes in Section 16 the requirements, responsibilities and authorities for inspection of the construction work and for correction of deficiencies and/or defects found. Also Section 21 describes access to the work site. Inspections requested when the work is obviously not ready for such testing and inspections may result in a backcharge to the A/E or Contractor for the costs of inspection team visits and related costs.

13.5.2 Site Inspections: The A/E's inspection services generally require at least twice a month onsite inspections and availability to answer questions from the University.

- The University will designate a specific individual to serve as University Construction Manager (called Project Inspector in the HECO-7).
  - The University Construction Manager will report to the University PM for duties on his/her project.
  - The duties and functions of the University Construction Manager include those listed in Section 16 of the General Conditions of the Construction Contract, HECO-7.
  - A detailed list of duties along with sample formats for recording required information are included in Appendix O.

13.5.3 Project Coordination and Communication: It is essential that the A/E, the University PM, the University Construction Manager, 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.

13.5.4 "Commissioning" Inspection of HVAC Systems: See section 9.17 for design phase commissioning requirements.

- Prior to any submittals and/or installation a pre-installation meeting will be held. See section 13.3.3 above.
- The A/E field representative or Commissioning Agent will observe the Contractor's functional performance testing and report his observations to the A/E of record. Observations shall include, but not limited to:
  - pressure tests
  - Flushing/cleaning
  - Testing, balancing, adjusting and start-up of equipment
  - The testing of automatic controls
- The A/E shall schedule periodic inspections of the HVAC systems and be present for such testing.

13.5.5 Sophisticated HVAC Systems: Some sophisticated HVAC systems for facilities such as laboratories, medical science facilities, and archival storage facilities have minimal tolerances for deviations in temperature, humidity and/or 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.

13.5.6 Start up/Acceptance of mechanical and 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 the design intent has been achieved; that equipment has been received is 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 acceptance test that the work be started as scheduled and completed without exceptional delay. Major or time consuming adjustments or modifications during final inspection shall be avoided. Applicable portions of the above requirements shall be included in the project specifications.

13.5.7 Structural Inspections: See section 9.16 of this Manual and Appendix K for this requirement.

13.5.8 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.

13.5.9 Fire Marshal Inspections: The Tidewater Regional Office of the State Fire Marshal Office will normally be responsible for the Fire Marshal inspection.

SECTION 13.6 CONSTRUCTION CHANGE ORDERS

13.6.1 General Conditions: Generally change orders will be administered in accordance with section 38 of the General Conditions of the Construction Contract (HECO-7).

13.6.2 Written Change Orders: University may at any time, by written order utilizing the change order forms (HECO-11a and HECO-11) 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 sureties.

13.6.3 Approval: All construction contract change orders must have the approval of the SVP F&A or designee.

13.6.4 Procedures: The total cumulative amount for all change orders for a single contract shall not exceed the construction contingency available in the current budget. A request to infuse additional funds or to transfer funds to the Total Project Budget shall be submitted to the SVP F&A or designee on a revised HECO-2 with appropriate written justification for an increase in authority. See Appendix R for change order procedures.

SECTION 13.7 DOCUMENTATION OF “AS BUILT” CONDITIONS

13.7.1 Contractor Requirements: 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.

13.7.2 Photographic Documentation: The University may arrange for photographic documentation of specific aspects of a project during the construction process. This typically includes location-referenced photographs of building systems prior to closure of walls and ceilings and similar documentation.

SECTION 13.8 INSPECTION FOR SUBSTANTIAL COMPLETION

13.8.1 General Conditions: When the project is sufficiently complete in accordance with the contract documents and it can be used for the intended purpose, the University PM and/or the University Construction Manager will insure the requirements, procedures, inspections and approvals below and in section 44 of the General Conditions of the Construction Contract (HECO-7) are completed.

13.8.2 Contractor HECO Form 13.2a: When the Contractor determines that the work, or a designated phase or portion thereof, will be substantially complete and ready for testing and inspection, he shall complete and send Form HECO-13.2a with a list of the work he knows to be unfinished or defective to the A/E at least ten (10) days prior to the date he has set for substantial completion. The A/E will forward the HECO-13.2a to the University and attach a written endorsement, based on his periodic inspections, as to whether or not he concurs that the project, or phase, should be substantially complete on the date set by the Contractor. The A/E will then coordinate and arrange 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.

13.8.3 Inspection: Participants in the substantial completion inspection shall include the University PM and/or the University Construction Manager, University user representatives, representatives of the General Contractor, including those of the mechanical, electrical, and major equipment Subcontractors, the A/E, the CRT, and the responsible State Fire Marshal Office as appropriate. 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.

13.8.4 A/E HECO Form 13.1a: If the A/E, the Fire Marshal's representative and the CRT 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 them 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.

- For projects that do not require a Certificate of Use and Occupancy, a HECO form 13.3.C shall be submitted to request formal acknowledgement of substantial completion.

13.8.5 Certificate of Use and Occupancy: The University may submit this material to the CBO and request that a Certificate of Use and 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.

SECTION 13.9 BENEFICIAL OCCUPANCY & FINAL COMPLETION

13.9.1 Required Submissions: 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 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, Fire Marshal's acceptance report and other required operations permits to the CBO.

- The CBO, when satisfied that the project and/or portion of the project is in fact substantially complete in accordance with the contract documents, may issue written authorization (HECO-13.3), to occupy the project, or applicable portion thereof, subject to any conditions or stipulations stated.

13.9.2 Unlawful Occupancy: The University shall not occupy facilities requiring a Certificate of Use and Occupancy until the Certificate of Use and Occupancy (HECO-13.3) are received. Occupancy of the facility without approval is unlawful and is a misdemeanor under § 36-106, Code of Virginia, as amended.

13.9.3 Temporary or Partial Certificate of Use and Occupancy: The following material is required for consideration of a request for a Temporary or Partial Certificate of Use and Occupancy:

- Floor plans (small scale) that show areas requested for occupancy and the exits/egress routes;
- Type of Occupancy requested - e.g. move furniture in for staff, 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;
- Fire Marshal's report and recommendation;
- Document stating that the Asbestos Abatement, if any, is complete;
- HECO-13.3 Application For Certificate of 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 CBO.

13.9.4 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 University Construction Manager will insure the requirements of section 44 of the General Conditions of the Construction Contract (HECO-7) are complete. Upon completion of all Certificates of Completion, HECO-13.1 and 13.2, and with the Certificate of Use and Occupancy issued, HECO-13.3, the University PM shall sign and close the HECO-17 Building Permit on file with the CRT.

SECTION 13.10 PROJECT CLOSE OUT DELIVERABLES

13.10.1 Close out documentation: See chapter 14 for required documentation.

13.10.2 Record Drawings and Specifications: The A/E shall prepare "Record Drawings" 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. The Record Drawings shall include actual location 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. Record drawings and specifications shall be prepared and provided to the University.

13.10.3 Maintenance And Operating Manuals: Two sets of operating and maintenance (O&M) instructions, and an electronic copy on removable digital media, written for the specific project shall be provided to the University at the final inspection. (The General Conditions of the Construction Contract (HECO-7) Section 49 apply. Note that two hard copies and one electronic copy of O&M manuals are generally required which 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 operation and maintenance manuals for the equipment.

- All systems needing regular maintenance and/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 and 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 and specifications, shall be provided to the University at the time of final acceptance of the project.

13.10.4 Ownership of Documents: Ownership of all materials and documentation including the drawings and specifications and copies of the calculations and analyses originated and prepared pursuant to the contract between the University and the A/E, shall belong exclusively to the University. The drawings, specifications, analyses and calculations as prepared by the A/E for the project, 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 Virginia Freedom of Information Act. 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 bidder, offeror, or Contractor in connection with a procurement transaction shall not be subject to disclosure under the Virginia Freedom of Information Act provided the bidder, offeror, or Contractor invokes the protections of the University Procurement Rules prior to or upon submission of the data or other materials. Identify the data or materials to be protected and state the reason why protection is necessary.
- The A/E shall provide the following documents to the University at the completion of the A/E's work:

- Original sealed and signed drawings
- Original specifications
- Copy of analyses made for the project
- Indexed copy of the calculations made by each discipline for the project
- Copy of all shop drawings, submittals, cut sheets, and sequence of operation.
- Maintenance instructions, parts lists and other material related to the project.
- As built set of drawings and specifications
    - Files containing as-built drawings in AutoCAD format (latest edition) as well as specifications in word format shall be submitted as part of the as-built submission package.

SECTION 13.11 CONTRACTUAL DISPUTES (University Procurement Rules)

13.11.1 See General Conditions of the Construction Contract, Section 47, for the procedures regarding contractual disputes.

13.11.2 Pursuant to the Management Agreement Exhibit G, attachment 1, paragraph 56 and Code of Virginia § 2.2-4366, Alternative Dispute Resolution, the University may enter into an agreement with the Contractor to submit disputes arising from the performance of a contract to arbitration and utilize mediation and other alternative dispute resolution procedures. However, such procedures entered into by the University shall be non-binding and subject to Code of Virginia § 2.2-514 as applicable. In the interest of successful completion of the project, disagreements and disputes should be resolved as soon as possible. The University and the Contractor may choose to resolve their claims against one another by "Informal Alternative Dispute Resolution" procedure in lieu of instituting legal action. If the University and the Contractor both choose to avail themselves of this option, the following stipulations shall apply:

13.11.2.1 The University and the Contractor must both agree to pursue this process and each submit their "Application for Informal Alternative Dispute Resolution."

13.11.2.2 The AVP FM will review the applications and advise both parties of dates available for a hearing or deny the application for a hearing.

13.11.2.3 The AVP FM will assemble a Dispute Hearing Panel comprised of persons with expertise in the topics being disputed.

13.11.2.4 Each party will be represented by its personnel with knowledge of the facts related to the dispute. Neither party will be allowed legal counsel at the hearing.

13.11.2.5 The panel will review the application and facts presented by each party prior to the Hearing.

13.11.2.6 Each party will be given the opportunity to present its position and factual data on each item in dispute. Information shall be concise.

13.11.2.7 The hearing panel will ask questions as appropriate and facilitate discussions toward an agreeable solution.

13.11.2.8 If the parties do not agree on a solution during the hearing, the hearing panel thru the AVP FM will render an opinion on the proper resolution of the dispute.

13.11.2.9 It is intended that the hearing be efficient and last no more than one day.

13.11.2.10 The cost of this service will be based on the time charged to the dispute resolution multiplied by the hourly rates for the panel. The cost will be divided and charged equally to the University and to the Contractor, unless both parties agree to other arrangements and notify the AVP FM prior to the hearing.

13.11.2.11 The "Application for Informal Alternative Dispute Resolution Procedure" shall contain the following information:

- Contractor name
- University name
- Project name and Project Code Number
- List of items in dispute (The Contractor and the University shall each submit a list of the items in dispute with its summary of the pertinent facts in the dispute.)
- Value of the items or work disputed (in dollars): $_____
- Documents and narrative presenting facts as the applicant sees them for each disputed item
- Proposed solution or relief sought
- Signature of the Director FPDC for the University or the contract signature authority for the Contractor

SECTION 13.12 CONSTRUCTION-RELATED FORMS AND FORMATS

13.12.1 Appendix S lists additional forms and formats applicable to construction contract administration.

CHAPTER 14 CONSTRUCTION SERVICES:

PROJECT CLOSE-OUT

SECTION 14.1 GENERAL

14.1.1 This chapter describes project close-out requirements for all projects.

14.1.1.1 Goal: The goal for all projects will be completion of all project closeout documentation within 90 days after final completion. The project budget, however, will not be closed until the project warranty expires which is one year after occupancy or final completion, whichever is later, and all warranty items are resolved.

14.1.1.2 Warranty Inspection: A ten month inspection will be conducted as part of warranty enforcement to ensure all warranty issues are identified and corrected.

14.1.1.3 Sequence of Events: The sequence of events to achieve project completion and close-out include the following milestones which are described in the succeeding sections. It should be noted that occupancy can occur after substantial or final completion depending on the University requirements.

- Substantial completion
- Occupancy
- Final completion
- Project close-out documentation
- Ten-month warranty inspection
- Warranty item completion
- Project budget close-out

SECTION 14.2 SUBSTANTIAL COMPLETION

14.2.1 Determination: When the Contractor determines that the work, or a designated phase or portion thereof, will be substantially complete and ready for testing and inspection, he shall complete and send form CO-13.2a with a list of the work he knows to be unfinished or defective to the A/E at least ten (10) days prior to the date he has set for substantial completion. The A/E will forward the CO-13.2a to the University and attach a written endorsement, based on his periodic inspections, as to whether or not he concurs that the project, or phase, should be substantially complete on the date set by the Contractor. The A/E will then coordinate and arrange a date on or shortly after the date set by the Contractor for the substantial completion inspection to be conducted.

14.2.2 Inspection: Participants in the substantial completion inspection shall include representatives of the Contractor, including those of the mechanical, electrical, and major equipment Subcontractors, the A/E, University representatives, and CRT staff. Facilities O&M staff shall be invited to attend. 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 Fire Marshal's representative and the CRT representatives agree that this project, or this portion of the project being inspected, is substantially complete in accordance with the contract documents, the A/E shall execute the appropriate Certificate of Partial or Substantial Completion (CO-13.1a), and submit it to the Owner. Attach copies of the punch list, the Contractor's CO-13.2a, the Certificate of Use and Occupancy CO-13.3, and other documents as appropriate.

14.2.3 The University PM may forward this material to the CBO 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 the project as Substantially Complete unless the facility (part or whole) is ready for occupancy.

SECTION 14.3 OCCUPANCY

Definition: Occupancy occurs when the owner moves into and/or initiates use of the facility for its intended functional purpose. This may occur after the substantial or final completion inspections subject to Building Code Official approval.

14.3.1 Following issuance of the Substantial Completion Certificate, the University PM will coordinate with the CBO and the CRT for fire safety and code compliance inspections. The University Construction Manager will coordinate a preparatory occupancy inspection, as required, with the University PM and A/E to ensure readiness for occupancy inspections.

14.3.2 Upon successful completion of the inspection, the University PM will prepare a HECO-13.3a (Application for Certificate of Use and Occupancy) for CRT review and CBO approval. The following documentation will accompany the 13.3a:

- HECO 13.1a (or 13.1 if delayed until after final completion)
- HECO 13.2a (or 13.2 if delayed until after final completion)
- SFMO Letter of Acceptance
- Checklist for Occupancy
- Structural & Special Inspection Report
- Elevator Inspection Report (if applicable)
- Potable Water Report
- Project Deficiency Punchlist
- Sprinkler Head Database Update confirmation

SECTION 14.4 FINAL COMPLETION

14.4.1 Definition: Final completion is the date of the University's acceptance of the project from the Contractor based on A/E and Contractor certification that the project is totally complete in accordance with the contract documents. Procedures for determining Final Completion are set forth in Section 44 of the General Conditions of the Construction Contract (HECO-7).

14.4.2 Determination: When the Contractor determines that the items listed in the "punch list" have been completed and that the work is complete and ready for final testing and inspection, he shall complete Form CO-13.2 and send it to the A/E at least five (5) days prior to the date the Contractor has set for the work to be ready for Final Inspection. The A/E will forward the CO-13.2 to the Owner and attach a written endorsement, based on his periodic inspections, as to whether or not he concurs with the date set by the Contractor.

14.4.3 A/E Review: The A/E shall receive the Certificate of Completion (CO-13.2), the Affidavit of Payment of Claims (CO-13), written guarantees, equipment and operating Manuals and related documents assembled by the Contractor, review same and turn them over to the University at the final inspection. The A/E shall record any items noted for completion or correction and shall promptly follow up on the items and notify the University, in writing, when they are completed.

14.4.4 A/E Inspection: The A/E shall conduct the final inspection. A representative of the State Fire Marshal's office either will be present at the inspection or otherwise inspect the completed work and advise the University whether the work meets the fire safety requirements of the applicable building code. The University may have other persons participate in the inspection. If one or more re-inspections are required because the work purported to be complete is not complete, the Contractor shall reimburse the University for all re-inspection costs. If the A/E and the Fire Marshal's representative agree that the building is complete in accordance with the contract documents, and safe to occupy, the A/E shall execute the "Certificate of Completion by the Architect/Engineer" (CO 13.1) and deliver it, along with the Record Drawings and all other required material, to the University for final acceptance of the project.

14.4.5 Following issuance of the Final Completion Certificate, the University PM will coordinate with the CBO for inspection if these inspections have not been completed for occupancy following substantial completion. The Contractor will coordinate a preparatory occupancy inspection, as required, with the University PM and A/E to ensure readiness for occupancy inspections.

SECTION 14.5 PROJECT CLOSE-OUT DOCUMENTATION

Project close-out check lists are attached at Figures 14-1 and 14-2. These checklists are to be submitted to the Director, FPDC, together with all required documentation not later 90 days after occupancy or final completion as noted above.

14.5.1 Close-out documentation includes the following:

- Record drawings to include approved single line drawings
- Warranty documentation
  - For all major equipment
  - Roofing
- Operations and maintenance manuals
- Commissioning and Test and Balance reports, with backup
- F-1 Report

14.5.2 The University PM will schedule a close-out briefing to the Director, FPDC and the Director, O&M to present all close-out documentation. Compliance with the checklists at Figures 14-1 and

14-2 will be standard for successful close-out to include a HECO-14 form prepared at warranty completion and budget close-out.

14.5.3 At this meeting, the University PM will schedule the ten month warranty inspection described below. Responsibility for administration of the warranty will pass to the Director, O&M at this time with continuing support by the University PM as outlined below.

14.5.4 A sufficient amount of contract retainage to cover document preparation will be held by the University until all close-out documentation is provided.

SECTION 14.6 TEN MONTH WARRANTY INSPECTION

14.6.1 The University PM will coordinate and conduct a ten month inspection to ensure that unresolved warranty issues are corrected within the warranty period. The University PM will ensure the A/E, Contractor, O&M staff, and user conduct a joint inspection to review remaining warranty items. The University PM is responsible to ensure that warranty responsibilities within the contract scope of work, not University maintenance and repair responsibilities or out of scope items, are inspected.

SECTION 14.7 WARRANTY ITEM COMPLETION

Upon expiration of the warranty period, the University PM will provide a formal letter to the Contractor identifying unresolved warranty items. The letter will provide a period of time commensurate with the nature of the unresolved items for repair. If the items are not repaired within the period allocated without reasonable cause, the letter will note that the University reserves the right to affect repair by alternate means at the Contractor's expense. Upon final completion of all items, the University PM will initiate release of the CO-14 previously prepared as part of contract close-out documentation may be submitted.

SECTION 14.8 PROJECT BUDGET CLOSE-OUT

Following receipt of University PM confirmation that all warranty items are complete, the completed CO-14 will be routed for approval and signature. An information copy will be provided to DEB for state-funded capital projects. The University PM will then assist with any required information and/or coordination to close out any open purchase orders/contracts in order to close the project budget.

SECTION 14.9 EVALUATIONS

See section 5.4 for evaluation procedures.

Figure 14-1
Project Close-Out Checklist

The College Of WILLIAM & MARY

Department of Facilities Planning, Design and Construction
P.O. Box 8795
Williamsburg, Virginia 23187
757-221-2245, Fax - 757-221-2473

CAPITAL & MR PROJECT CLOSE OUT CHECK LIST FOR ARCHIVE FILES

 # 1: The following documents are included in the final close out archive file maintained in the FPDC department.

#2: These documents may be copied and archived with the Master Files.

*#3: The **original** documents listed are to remain in the close out files.*

Project Name: _____ **Project #:** _____

Project Manager: _____

Banner Index: _____ **Banner Org:** _____

Retain a copy of this check list in the close-out file folder for the project.

DESCRIPTION		DOCUMENT DATE
CO/HECO - 12	Final Payment by Contractor	
Invoice	Final Invoice for A/E	
CO/HECO - 13	Affidavit of Payment of Claims	
CO/HECO - 13.1	Certificate of Completion by A/E or Project Manager	
CO/HECO - 13.1a	Certificate of Substantial Completion by A/E	
CO/HECO - 13.2	Contractor Certificate of Completion	
CO/HECO - 13.2a	Certificate of Partial or Substantial Completion by Contractor	
CO-13.3	Certificate of Use and Occupancy	
CO-14	Close Out Document	
Close out Finanical	1 Year After Occupancy or after final completion, whichever later	
Internally generated	FOAPAL Request Form- Banner Project Set Up	
Internally generated	Final budget for entire project	
Building Permit	Building Permit	
Record Drawings	Includes 4 CD's	
F-1 Report	SCHEV	
Single Line Drawng		
Warrenties/O&M		
Date:10 Mon. Inspect.		

Completed by: _____ File Completion Date: _____

Figure 14-2
Project Permit – Project Close-Out Checklist

The College Of WILLIAM & MARY

Department of Facilities Planning, Design and Construction
P.O. Box 8795
Williamsburg, Virginia 23187
757-221-2245, Fax - 757-221-2473

PROJECT PERMIT PROJECT CLOSE OUT CHECKLIST FOR ARCHIVE

 # 1: The following documents are included in the final close out archive file maintained in the FPDC department.

#2: These documents may be copied and archived with the Master Files.

*#3: The **original** documents listed are to remain in the close out files.*

Project Name _____ **Project #:** _____

Banner Index: _____ **Banner Org:** _____

Project Manager: _____

Retain a copy of this check list in the close-out file folder for the project.

DESCRIPTION		DOCUMENT DATE
CO - 12 AE Invoice	Final Payment by Contractor/AE (if applicable)	
CO-13.3	Certificate of Use and Occupancy (if applicable)	
Internally generated	FOAPAL Request Form- Banner Project Set Up	
Internally generated	Final budget for entire project	
Project Req. Form Annual Permit	Project Permit Form (original request); with inspections for construction; and final close out signature by Director, FPDC	
Project Permit Form Annual Permit	Project Permit Form (original request); with inspections for construction; and final close out signature by Director, FPDC	
Building Permit	Project Permit Form (original request); with inspections for construction; and final close out signature by Director, CRT	
Record Drawings	Includes 4 CD's	
F-1 Report	SCHEV (if applicable)	
Single Line Drawing		

Completed by: _____ File Completion Date: _____

CHAPTER 15 UNIVERSITY PERFORMANCE REPORTS AND PROCESS FLOWCHART

SECTION 15.1 PERFORMANCE REPORTS

15.1.1 Performance measures of the benefits derived from restructuring will be reported annually for each fiscal year. This annual report will be shared with all "Covered" (level 3) institutions and will address the following.

15.1.1.1 General Accountability Measures

- No material audit findings
- Compliance with BOV approved restructuring policy
- Compliance with all institutional benchmarks required by the management agreement
- Accomplishment of goals established in the Higher Education Restructuring Institutional Performance Standards
- Regular reports to the BOV by the CBO related to his/her duties as the official responsible for project compliance with the building code. The CBO has direct access to the BOV.
- Compliance with the Restructured Act's reporting requirements for all BOV project authorizations.
- All Certificates of Occupancy issued in accordance with applicable codes.

SECTION 15.2 TRANSACTION REPORTS

15.2.1 The following transactions require upload of information into the DGS Building Information Tracking System (BITS) for projects exceeding $3 million on an as occurs basis:

- HECO-2
- HECO-8
- HECO-14

SECTION 15.3 CAPITAL APPROPRIATIONS REPORT

15.3.1 "Capital Appropriations Reports" providing the status of capital projects shall be submitted to DGS and the BOV on an as required basis.

SECTION 15.4 PROJECT PROCESS FLOWCHART

15.4.1 The flowchart at Appendix U provides a generic process for initiation and execution of the facilities project.

DESIGN AND CONSTRUCTION MANUAL

APPENDICES

Many of the following appendices simply refer to a document available at the FPDC or other website. The appendix may be used as a place to print and attach the associated document for handy reference.

APPENDIX A: SUPPORTING DOCUMENTS

A.1 Enabling Legislation

A.1.1 Restructured Higher Education Financial and Administrative Operations Act (The Act) 2005 Virginia Acts of the Assembly (see also Virginia Code §23-38.88 to §23-38.121)

A.1.2 Management Agreement By and Between the Commonwealth of Virginia and the College of William and Mary (The Management Agreement) 2006 Virginia Acts of the Assembly.

APPENDIX B: DETERMINATION AND FINDINGS

B.1 D&F Forms are available from the FPDC Web Site.

APPENDIX C: PROCUREMENT RULES

C.1 The Procurement Rules for the University are stated in the Restructured Higher Education Financial and Administrative Operations Act, Chapter 4.10 (§ 23-38.88 et seq.) of Title 23 of the Code of Virginia, Exhibit G, Attachment 1.

APPENDIX D: FACILITIES MANAGEMENT TECHNICAL STANDARDS

D.1 The FM Technical Standards are available on the FPDC website

APPENDIX E: PARAMETERS FOR CALCULATING LIFE CYCLE COSTS AND ENERGY ANALYSES

E.1 Parameter for Calculation of Life Cycle Costs and Energy Analyses

E.1.1 General Instruction for All Life Cycle Costs Analyses:

E.1.1.1 Costs are to be computed over a 30 year period, except as noted in Paragraph II below.

E.1.1.2 Costs for each alternative must be shown on the Life Cycle Cost Worksheet or an exact facsimile. Specific instructions for completing the worksheet are provided in Paragraph III below.

E.1.1.3 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.)

E.2 Additional Instructions for Calculating Life Cycle Costs for Energy Analyses

E.2.1 Use the following periods for energy-related life cycle cost studies:

- Building Envelope Studies: 30 years
- Central Heating System Plants: 30 years
- Building HVAC Systems: 20 years
- Fuel Selection Studies 20 years

E.2.2 Average service lives of mechanical equipment shall be based upon the Average Service Life shown in the ASHRAE Applications Handbook.

E.2.3 Indoor and outdoor design conditions shall be as stated on the Life Cycle Cost Worksheet.

E.2.4 The type of system and the energy source shall be clearly noted on the Life Cycle Cost Worksheet

E.2.5 The supporting backup shall clearly show the various fuel/energy rates (i.e., $/gallon$/kwh, etc.) and the data source for each.

E.3 Specific Instructions for Completing Worksheets:

E.3.1 Use a new Worksheet for each alternative.

E.3.2 Complete all general information at the top of the Worksheet.

E.3.3 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.

E.3.4 Sum Columns “a” thru “e” for each year; subtract Salvage Value (Column “f”) and place results in Column “g”.

E.3.5 Multiply the Column “g” figures by the corresponding discount factor in column “h” and replace results in column “i”.

E.3.6 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 latest version of the Building Life Cycle Cost Summary, visit http://forms.dgs.virginia.gov and enter “DGS-30-228” in the search box.

APPENDIX F: THE COLLEGE OF WILLIAM & MARY CAMPUS DESIGN GUIDELINES

F.1 The Campus Design Guidelines are available on the FPDC website.

APPENDIX G: BUILDING PERMIT/PROJECT PERMIT POLICY

G.1 The Building Permit Policy for University Buildings and Structures is contained in the University Building Official's letter of June 19, 2015, Building Permits/Project Permits.

WILLIAM & MARY
CHARTERED 1693

Interdepartmental Communications

Code Review

TO: Vice Presidents, Deans, Department Heads, Facilities Coordinators, & Selected Administrative Personnel

FROM: David W. Rudloff, P.E., College Building Official

Date: June 19, 2015

Subject: **Required Permits for Construction/Alteration/Renovation**

One of the most significant features of the Charter legislation (the Restructured Higher Education Financial and Administrative Operations Act of 2005), was the delegation of Building Official authority to the College. While the College has always designed and built facilities to meet required building codes, review of design documents to ensure building code compliance had been performed by the Commonwealth, and the Commonwealth had issued building permits. A major element of the Charter legislation grants the College the authority to designate a Building Official to issue Building Permits and Certificates of Use and Occupancy (CUOs). The College designated me Building Official effective January 6, 2015. This updates the Robert P. Dillman, P.E., letter of January 25, 2011, detailing building and project permit requirements.

The College established a Code Review Team (CRT) to provide technical support to the Building Official. The CRT reviews all work requiring a Building Permit and inspects construction as necessary. Upon satisfactory completion on new construction, and inspection by the CRT and the State Fire Marshal or his designee, a Certificate of Use and Occupancy (CUO) is issued. Only work requiring a CUO requires inspection by the State Fire Marshal although the College may request the Fire Marshal's assistance on other projects. Upon satisfactory completion of major alterations or renovations, and inspection by the CRT and the State Fire Marshal, if appropriate, an Acknowledgement of Substantial Completion is issued by the Building Official. New construction may be occupied when a Certificate of Use and Occupancy is issued; altered or renovated facilities may be occupied when the Acknowledgement of Substantial Completion is issued.

For more minor facilities work, a Project Permit may be issued in lieu of a Building Permit; and there will be some facilities work that will be exempt from permit. Project Permits will be issued by Messrs. Wayne Boy, P.E.; Van Dobson, P.E.; and Ronald Herzick, P.E.; under authority delegated by the College Building Official.

BUILDING PERMIT REQUIRED

- Projects authorized and approved by the Board of Visitors or the Senior Vice President for Finance and Administration.
- Change in building use or occupancy.
- Work that affects access/egress/exit ways/fire partitions/fire walls, or fire barriers, including penetration of fire partitions, walls, or barriers.
- For all structures, whether or not occupied, including temporary structures and storage sheds.
- Piers, wharfs, dolphins and bulkheads.
- Site/foundation/utility preparation for factory built or prefabricated structures.
- Adding/removing/retrofitting HVAC, electrical, plumbing, gas, fire protection, fire suppressions and alarm systems.
- Demolition of structures.
- Removal, cutting, or altering a building or facility structural member or load bearing wall.
- Elevator work, other than ordinary repairs.
- Fences over six feet in height, railings, and retaining walls.
- Tents that cover an area of 900 square feet or more or have an occupant load of 50 or more people.
- Temporary stages, platforms and bleachers greater than four inches in height.
- Amusement devices, including inflatables.
- Utility structures (custom engineered).

WILLIAM & MARY
CHARTERED 1693

PROJECT PERMIT REQUIRED

- Structural repairs.
- Adding, removing, or altering any interior non-load bearing, non-egress, or non-fire protection wall.
- Hazardous material (lead paint and asbestos) work.
- Minor addition, alterations or changes to HVAC, electrical, plumbing, gas, fire protection systems.
- Wall or floor penetrations, unless thru a fire rated assembly.
- Adding/removing/altering parking lots, roads, and sidewalks.
- Roof repair or replacement in excess of 100 square feet or 25% of existing roof, whichever is greater.
- New penetrations, flashing, or similar work affecting roof integrity.
- Electronic access systems.
- Brick or stone walls that are not retaining walls and are less than six feet in height.
- Antennas and flagpoles.
- Standard pre-fabricated utility structures (box culverts, manholes, drainage systems, pump stations etc.)

WORK EXEMPT FORM PERMIT

- Preventive maintenance.
- Ordinary repairs/replacement in kind or with similar materials or equipment.
- Landscaping/grounds maintenance.
- Building services/custodial work.
- Recycling.
- Plaster, tiling, and painting.
- Keys and locks.
- Network broadband communications wiring and equipment operating at less than 50 volts, not in an air plenum, and not part of a fire and life safety system and not penetrating a wall or floor.

Where an emergency situation occurs and a permit cannot be obtained, the permit request must be submitted the next working day.

Please disseminate this information widely as it is important to our success in implementing and retaining our building official authority that we continue to comply with these requirements of law and regulation.

If you would like further explanation of any of the above, or would simply like to discuss it, please call and I will be pleased to meet with you and your staff.

cc: Sr. Vice President for Finance and Administration
Associate Vice President for Facilities Management
Director, Facilities Planning, Design and Construction
Director, Facilities Operations and Maintenance
Chief Operations Officer, VIMS Dean/Director's Office
Director, VIMS Facilities Management

Mark Ballman	Ron Herzick	John Byxbe
Catherine Parker	Mike Kershner	Steven Cole
Ron Russell		Chris Durden
Oot Singhaseni		Don Hensley
Gilbert Stewart		Bill Horacio
Randy Strickland		Lizbeth Jackson
		Mike Pritchett

APPENDIX H: PROJECT FORMS AND FORMATS

H.1 The below listed CO, HECO, D&F, and related project forms are available directly from the University at the FPDC website.

DETERMINATION AND FINDINGS (D&F) FORMS

D&F Form for Code/Design Issues (use drop box in title line for other D&F Forms listed below)

D&F Form for Procurement Issues

D&F Form for Storm Water Issues

AUTHORIZATION FORMS

HECO-2 - Authority to Initiate Non-General Fund Capital Outlay Project

HECO-4 - Approval of Schematic Design

HECO-5 - Approval of Preliminary Drawings and Specifications

HECO-6 - Approval of Working Drawings & Specifications

HECO-17 - Building Permit

HECO-8 - Authorization to Award Contract

HECO-14 - Project Completion Report

FPDC Project Permit

DESIGN CONTRACT MANAGEMENT FORMS

HECO-2.1a - A/E Selection Small Fee

HECO-2.1b - A/E Selection 3 Phone

A/E1 through A/E6 - A/E Data Forms

HECO-3 - Contract Between Owner and A/E

HECO-3.1 - Term Contract Form for A/E

HECO-3.1a - Service Order Term Contract for A/E

HECO-3.2 - Contract Between Owner and A/E (Non-Capital)

CO-2.3 - A/E Proposal Worksheet

HECO-3.4a - Service Order for Construction Administration Manager

DGS-30-216 - A/E Invoice for Services

CO-8b - A/E Performance

HECO-11a/e - Architect/Engineer Contract Change Order

CONSTRUCTION CONTRACT MANAGEMENT FORMS

HECO-6a - Statement of Structural and Special Inspections

HECO-6b - 2009 and 2012 VUSBC Special Inspections

HECO-7 - General Conditions Capital Outlay Projects

HECO-7 Addendum 1 - General Conditions of the Construction Contract Rev. 11/07

HECO-7DB - General Conditions Design Build Capital Outlay Projects

HECO-7CM - General Conditions of Construction Management

HECO-CM Addendum 1 - General Conditions of Construction Management Contract Rev. 03/09

HECO-7sup-SWAM - Supplemental General Conditions/SWAM

HECO-7sup-Haz - Supplemental General Conditions - Hazardous Waste & Disposal

HECO-7sup-INS/HECO-7sup-LD - Supplemental General Conditions - Renovations and Liquidated Damages

HECO-7A - Instruction to Bidders

CO-9 - Commonwealth of Virginia Contract between Owner and Contractor

CO-9DB - Commonwealth of Virginia Contract Between Owner and Design Builder

CO-9CM(1) - Pre-Construction Phase

CO-9CM(2) - Construction Phase

CO-9CM(ER) - Early Work Package

CO-9a - Workers Compensation Certificate of Insurance

CO-9b - Post Bid Modification

CO-9.1 - Notice of Intent to Award

CO-9.1a - Notice of Award

CO-9.2 - Notice to Proceed

CO-10 - Commonwealth of Virginia Performance Bond

CO-10.1 - Commonwealth of Virginia Payment Bond

CO-10.2 - Standard Bid Bond

HECO-11 - Contract Change Order

HECO-11a - Change Order Justification

HECO-11CM - CM Change Order

Change Order Notice to Proceed/Not to Exceed

GC-1 - Change Order Estimate (General Contractors)

SC-1 - Change Order Estimate (Subcontractors)

SS-1 - Change Order Estimate (Sub-subcontractors)

CO-12 - Commonwealth of Virginia Schedule of Values and Certificate for Payment

DSG-30-364 - Submittal Register

W&M DCM Appendix I – Division 1 Special Conditions

HECO-13 - Affidavit of Payment of Claims

HECO-13.1 - Certificate of Completion by A/E

HECO-13.1a - Certificate of Partial Completion by A/E

HECO-13.1b - Final Report of Structural and Special Instructions

HECO-13.1c - Certificate of Partial or Substantial Completion by Inspector, University PM or Construction Administrator

HECO-13.2 - Certificate of Completion by Contractor

HECO-13.2a - Certification of Partial Completion by Contractor

HECO-13.3a - Certificate of Use and Occupancy

HECO-13.3b - Checklist for Occupancy

Certificate of Occupancy Requirements

HECO-13.3c - Acknowledgement of Substantial Completion

HECO-13.3d - Acknowledgement of Final Completion

HECO-14 - Project Completion Report

CO-14a - A/E Performance Rating (Bid/Construction Phase)

CO-14b - Contractor Performance Rating

CO-16 - Contractor's Statement of Qualifications

CO-16 Attachment 1 - Qualification Criteria

CO-16 Attachment 2 - Self Bonding Program

HECO-17A - Application for Building Permit

HECO-17.1A - Application for Demolition Permit

HECO-17.1 - Demolition Permit

The latest versions of the following formats are available from the FPDC procurement staff.

RFP for A/E Professional Services - Single Project

RFP for A/E Professional Services - Term Contract

RFP for VE Professional Services

MOU for A/E Professional Services - Single Project

MOU for A/E Professional Services - Term Contract

RFP for Competitive Negotiation (all types available)

RFP for Design/Build

Notice of Invitation For Bids Format

Standard Bid Form Format

IFB (Specifications) Cover Format

Invitation For Bids Contents Format

W&M DCM Appendix

MISCELLANEOUS FORMS

Parking Permit Request Form

SWaM Reports with Instruction

SWaM Vendor Participation Policy

Projects with a Building Permit Project Close Out Checklist

Projects without a Building Permit Project Close Out Checklist

Directive for Resolution of Contractual Claims

CRT Submittal Transmittal Form

eVA Registration (known quantity)

eVA Registration (unknown quantity)

W-9 Form Taxpayer ID Request and Certification

Fire Protection Impairment Form

Contractor's Claim Certification Form

APPENDIX I: GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT, SUPPLEMENTAL GENERAL CONDITIONS AND STANDARD INSTRUCTIONS TO BIDDERS

I.1 The current Terms and Conditions of the A/E Contract (W&M HECO-3a), the variations of the General Conditions of the Construction Contract (W&M HECO-7, 7CM, and 7DB), and other noted forms are available on the FPDC website.

The following Additional Terms and Conditions may be used with the HECO-3a.

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/or 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 for 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'.

Term Contract Project Orders: "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 Project 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 should also indicate that although the potential exists for multiple future Project Orders, the University does not represent or guarantee that the Term Contractor will receive any future additional Project Orders.

The following supplemental General Conditions may be used with the HECO-7.

SUPPLEMENTAL GENERAL CONDITIONS - for Small Woman Owned and Minority owned (SWaM) business procurement plan

To view/download the latest version of The Supplemental General Conditions-SWAM, visit the FPDC website.

SUPPLEMENTAL GENERAL CONDITIONS for Renovation Projects and for Liquidated Damages:

To view/download the latest version of these sample formats, visit the FPDC website.

SUPPLEMENTAL GENERAL CONDITIONS-Hazardous Waste & Disposal

To view/download the latest version of The Supplemental General Conditions-Haz Waste, visit the FPDC website.

INSTRUCTIONS TO BIDDERS:

To view/download the latest version of the required contract document, visit the FPDC website.

APPENDIX J: PROJECT INITIATION/DELEGATED DESIGN PLAN

J.1 The following form is used to initiate a project with the CRT as outlined in section 8.2.1.

PROJECT CODE REVIEW INITIATION FORM **UNIVERSITY PROJECT TITLE** **UNIVERSITY PROJECT NUMBER**				
DESIGN TEAM & PROJECT MANAGER				
PROJECT DESCRIPTION				
ANTICIPATED DIRECTIVE 530 ISSUES TO BE DEFERRED:	1. Description – Reason 2.			
ANTICIPATED CODE MODIFICATIONS:	1. Section Number – Description 2. Section Number – Description 3.			
ANTICIPATED VARIANCES FROM W&M TECHNICAL STANDARDS:	1. Section Number – Description 2. Section Number – Description 3.			
PRE-DESIGN CONFERENCE	☐ Required		☐ Not Required	
SCHEMATIC DESIGN	Required		Not Required	
DESIGN CATEGORY	☐ No Design	☐ Small	☐ Medium	☐ Large
ONBOARD REVIEWS	☐ SD	☐ PD	☐ WD	☐ RWD's
COMMENTS:	1.			

It is understood that directive 530 issues, code modifications and variances from Technical Standards are subject to change as the design and construction develop.

Name University Project Manager	Name Director, Facilities Planning, Design and Construction	Name College Building Official

CC: A/E of Record, University PM, Dir, FPDC, CBO

The following form is used to document the delegated design plan for each project.

ENTER UNIVERSITY PROJECT TITLE HERE

ENTER UNIVERSITY PROJECT NUMBER HERE

The following items are proposed for deferred/delegated design in accordance with the process outlined in section 9.1.3. As the responsible Registered Design Professional, by applying for these delegated designs, I agree to the following construction administrative services:

- Track the approval of each delegated design through the shop drawing and code review process.
- Report to the University Project Manager any Contractor work observed to be in progress without approved delegated designs, as well as any delegated design work that is not in general conformance with the contract documents.

Once approved, the following list will be posted in a prominent location on the construction documents.

Submitted by:

Signed: Name: Click here to enter text.

Position: Click here to enter text.

Company: Click here to enter text.

DELEGATED/DEFERRED DESIGN ELEMENT OR SYSTEM	SPECIFICATION SECTION	PROFESSIONAL A/E SEAL REQUIRED (Y / N)

The elements/systems listed above are approved for deferred/delegated design.

Name

Director, Facilities Planning, Design, and Construction

Name

College Building Official

APPENDIX K: STRUCTURAL AND SPECIAL INSPECTIONS

K.1 The 2012 VUSBC Chapter 1, Section 113, "Inspections," prescribes minimum Inspections to be performed on a project and Chapter 17 provides requirements for Special Inspections. 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:

K.1.1 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 Contractor in drawings and specifications;

K.1.2 the A/E will specify the submittals (i.e., shop drawings, manufacturer's data, and certificates of conformance), required from the Contractor and review the submittals;

K.1.3 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 University for review and approval;

K.1.4 the 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;

K.1.5 the fabricator, supplier, vendor or production plant shall secure and/or 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;

K.1.6 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;

K.1.7 the University's Project Inspector will observe day-to-day operations and report deviations/discrepancies in the materials and/or work versus contract documents and approved submittals;

K.1.8 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 Contractor, the A/E, and the Project Inspector;

K.1.9 the Contractor will have other tests made as specified and as necessary to assure conformance with the applicable regulations and standards of practice and workmanship;

K.1.10 the A/E's Structural Engineer shall complete the Final Report of Structural & Special Inspections, Form HECO-13.1b, and submit to the University as soon as completed, but prior to the Substantial Completion Inspection report;

Current versions of Structural and Special Inspection forms HECO-6a, HECO-6b, and HECO-13.1b are available on the FPDC website

APPENDIX L: DIVISION 1 – SPECIAL PROVISIONS

L.1 GENERAL - The University and the VIMS have special provisions for construction operations that apply at either campus. These provisions will be included in Division 1 of all contracts prepared for work at the respective campuses. Any alteration, deviation, or additions must be approved by the Director, FPDC at the W&M campus or by DFM at VIMS on a project-by-project or case-by-case basis.

L.2 COLLEGE OF WILLIAM & MARY SPECIAL PROVISIONS

L.2.1 Hours of Work

- Monday – Friday 7 a.m. – 5 p.m.
- Weekends/Holidays 8 a.m. – 5 p.m.
- Prior to the start of work and after the completion of work no loud noise whether created by vehicles, equipment, tools or shouting is allowed to include noises created by material deliveries, vehicle operations, back-up alarms, fork lifts, mixers, or hand tools is permitted. This is a particularly sensitive issue when projects are in the proximity of dormitories and libraries which operate year round and not just during the academic calendar.

L.2.2 No Work Days

- Work will not be allowed on the dates listed below. Sites will be thoroughly policed in preparation for these dates/events.
    - Freshman arrival on campus - Mid-August (1 day).
    - Family weekend - September (Sat/Sun).
    - Homecoming - October (Sat/Sun).
    - Charter Day - February (Sat/Sun).
    - Commencement - May (Sat/Sun).
- Other no work days may be specified based on university events

L.2.3 Quiet Times

- Quiet time where construction noises are minimized to the maximum extent possible will be observed before and after the hours of work cited above and at specific reading periods prior to examinations and during examination periods. These days typically fall in December for fall semesters and in April and May for spring semesters. University academic calendars can be found on the University website at https://www.wm.edu/offices/registrar/calendarsandexams/ugcalendars/index.php#pdf.

L.2.4 Campus Points of Contact (POCs)

Agency	Phone Number (Area Code 757)	Functional Responsibilities

ADA (Assistant Dean, Dean of Students)	221-2510	Coordinate notification of ADA route changes created by construction impacts
Campus Police	221-4596 911 (campus system rings to Campus Police / cell phone rings to City/County)	Public Safety Traffic control
FM O&M Work Control Env Health & Safety Plan, Design & Const Code Review	 221-2270/2275 221-2146 221-2245 221-1336	 Trade shop coordination Accident/Incident Reports, Safety/Hazmat Project management Code review
IT	221-4357	Phone/data cabling
Parking Services	221- 4764	Parking permits
Williamsburg Fire Dept	220-6222	Design/const coordination

L.2.5 Fencing

- 8’ high chain link w/green tennis court screening required.
- 8’ wood stockade fencing required in Historic Campus (area bounded by Richmond Road, Jamestown Road, and the fence to the west of the Wren Building).

L.2.6 Fire Protection System Impairment

- An impairment request will be prepared and submitted to the University PM 15 days prior to impairment of an operational fire protection system (fire alarm and fire suppression systems) in accordance with FM Directive 740. The directive is available on the FM website.
- The University PM will coordinate review and approval of the request by the AVP FM.
- The University PM will return the approved/disapproved request to the requesting Contractor.
- Actual impairment will not begin without an approved request.

L.2.7 Hazmat Disposal Policy

- The Contractor will utilize the University’s pre-designated EPA Identification number issued by the Virginia DEQ. The University is the generator of all hazardous waste generated and is subject to regulations set forth by the State DEQ and Federal EPA. If the generation of hazardous waste exceeds the University’s current generator classification, the Contractor must pay any additional fees incurred.
- The Contractor will manage, handle, ship, and dispose of hazardous waste in accordance with all applicable regulations. The Contractor is encouraged to utilize one of the Contractors currently under the State’s hazardous waste management disposal contract.

Selection of hazardous waste transporters, disposal facilities, and recycling services from vendors not under State contract will require approval from the University's Director, EHS prior to final selection.

- All labeling and documentation for hazardous waste disposal shall identify the University as the hazardous waste generator, as well as utilizing the address of the specific facility location. Only authorized University personnel shall sign manifest documents.
- All Hazardous Waste Manifests and Certificates of Destruction signed by the final disposal facility will be provided to the University's EHS Office within 60 days of the shipment.

L.2.8 Parking Policy

- All vehicles require parking passes for on construction site and off construction site parking.
- No parking is allowed off paved driveways/roads/designated parking. Vehicles will not be parked on grassed/planted areas.
- The number of passes available for on campus parking is determined by Parking Services based on Contractor requirements versus total requirements by active contracts on campus. The Contractor may obtain parking passes by visiting the Parking Services Office.

L.2.9 Project Sign

- A project sign will be posted at a location to be determined by the Contractor and approved by the PM using the template at Figure Y-1.
- Cost of the sign will be included in pricing for General Conditions.

L.2.10 Quality Control

- The Contractor will develop a Project Quality Control Plan based on a three phase inspection process. The Project Quality Control Plan will be submitted and approved before a Notice to Proceed will be granted.

L.2.11 Safety

- A risk analysis will be prepared for each phase of work, and a Project Safety Plan keyed to the exposures determined in the risk analysis. As a minimum, the following major hazards will be addressed, as required, for each phase of work:
    - Fall protection
    - Scaffolding
    - Shock protection
    - Welding safety- The following University Hot Work Policy will be reflected.
        - New construction does not need a separate hot work permit from the University. Hot work activities are covered by the building permit issued for the contract.
        - The University requires Contractors performing work in occupied facilities to issue a permit for hot work activities in accordance with their in-house safety program requirements.

        - The Contractor will establish acceptable time limits for duration of hot work permits IAW guidelines in ANSI Z49.1 and NFPA 51B.
        - Fire watches shall remain in place for at least one (1) hour after the completion of all activities associated with the hot work.
        - Hot work permits must be submitted to University PM and Fire Safety Officer (or designee) for review to ensure all hot work safety concerns are addressed per requirements in OSHA regulations and standards (29CFR 1926, Subpart J; ANSI 49.1)
        - The University PM will provide routine oversight of hot work and may stop work if a serious safety concern is observed until the concern is resolved.
    - Vehicle safety
        - The Project Safety Plan will be submitted and approved before a Notice to Proceed will be granted

L.2.12 Security Requirements

- The Contractor is responsible to provide employee identification to assure that only authorized personnel and vehicles/equipment are accessing the project site.
- An “interlocking padlock” system will be used at the site gate to allow Campus Police to have immediate response capability in event an emergency occurs within the site. The PM will provide the campus lock. Keys will be secured with the Campus Police dispatcher for emergency use.
- A phone roster of permanent project personnel to receive e-mail/cell phone voice mail messages in the event of a campus emergency will be provided to the University PM prior to the start of construction. The permanent personnel will be responsible to provide alert notification to all personnel on site per Contractor determined procedures. Data columns for the roster are as follows:
    - First name
    - Last name
    - Home phone
    - Work phone
    - Mobile phone
    - E-Mail address
    - SMS phone (text messages)

L.2.13 Site Maintenance Standards

- Sites will be continuously maintained for police and repair of site facilities to include trailers, storage containers, fencing, storage of materials, and emptying of trash containers.
- Deficiencies noted by and through the University PM/CM will be corrected within 24 hours.

L.2.14 Storm Water / E&S Compliance

- A copy of storm water and erosion and sediment control drawings approved and stamped by the DEQ will be maintained on site at all times.
- Storm water and erosion and control measures will be continuously maintained in accordance with the contract documents and State of Virginia Storm Water and Erosion and Sediment Regulations.
- Deficiencies noted by DEQ inspections and or the University PM/CM will be corrected within 24 hours. Repeated deficiencies leading to two consecutive DEQ deficiency findings during periodic inspections will be sufficient basis to withhold 1% retainage from the next monthly invoice until corrections are made.

L.2.15 Utility Outage/Building System Outage Coordination

- A Utility Outage/System Testing Notification Worksheet (available on the FM website and from FM Work Control) will be prepared, coordinated, and filed at FM Work Control to schedule an outage
- Temporary interruption of underground utilities and/or of building services must be coordinated 10 days in advance.
- Requests submitted less than 10 days in advance will be processed contingent on the ability of Work Control to notify end users/affected activities.
- The Director, FM Maintenance & Operations approves outages for the University.

L.2.16 Worker Behavior/Decorum – Contractor personnel will refrain from contact with students, faculty, and staff other than for that interaction necessary for the execution of their contract responsibilities. Expressly prohibited is contact in the form of harassment, whistles, cat-calls, comments, gestures or any form of uninvited communication. Any violation of this policy will result in immediate and permanent removal of violators from the campus project site. To be clear, uninvited communication is a one strike policy.

L.3 VIRGINIA INSTITUTE OF MARINE SCIENCE SPECIAL PROVISIONS

L.3.1 Hours of Work

- Monday – Friday 7 a.m. – 5 p.m.
- Weekends/Holidays 8 a.m. – 5 p.m.
- No loud noise of any kind by the Contractor is permitted outside of the hours of work listed above.
- Exceptions to working outside the stated hours of work must be requested through the VIMS PM to the VIMS DFM.

L.3.2 Campus Points of Contact (POCs)

Agency	Phone Number (Area Code 804)	Functional Responsibilities
Facilities Management	684-7090/684-7096 (7am-5pm)	Trade shop/Utility coordination, Project management, Parking, Coordinate notification of ADA

		Route changes created by construction impacts
VIMS Security	694-7300 (Cell) Nights and Weekends Campus blue light phone system upper button rings directly to 911 lower non-emergency/info button rings directly to VIMS security.	Public safety, security, and traffic control after normal hours.
Safety & Environmental Programs	684-7322	Work & Fire Safety/Hazmat during hours of normal operation
IT	684-7080	Phone/data cabling during hours of normal operation
Gloucester Fire Dept *All Emergencies 911*	693-3890 Sheriff's Office 642-2360 Abingdon Fire Department	

L.3.3 Hazmat Disposal Policy

- The contractor will be responsible for having a valid EPA Identification number issued by the Virginia State Department of Environmental Quality site specific for The Virginia Institute of Marine Science. The contractor will be the generator of all hazardous waste generated and be subject to regulations set forth by the State Department of Environmental Quality and Federal EPA. If the generation of hazardous waste is greater than 2,200 lbs in a month, the generator is considered a Large Quantity Generator. A Large Quantity Generator must pay a $1,000.00 fee to the Virginia State Department of Environmental Quality. Generation of less than 2,200 lbs in a month is classified as a Small Quantity Generator and is not subject to a fee.

- A generator is defined as "any person, by site, whose action or process produces hazardous waste identified or listed in [40 CFR part 261] or whose act first causes a hazardous waste to become subject to regulation." The contractor is considered a generator because he is the person whose act causes hazardous waste to become subject to regulation.
- The contractor will manage, handle, ship, and dispose of hazardous waste in accordance with all applicable regulations. The contractor is encouraged to utilize one of the contractors listed in the Virginia Hazardous Waste Disposal and Recycling Services Contract PF-507-70VAPP for hazardous waste transport, disposal and recycling services. Selection of hazardous waste transporters, disposal facilities, and recycling services from vendors not listed in Virginia Hazardous Waste Disposal and Recycling Services Contract PF-507-70VAPP, will require approval from the VIMS Directors of FM and Safety and Environmental Programs prior to final selection.
- Copies of all Hazardous Waste Manifests and Certificates of Destruction signed by the final disposal facility will be provided to the VIMS Department of FM and VIMS Office of Safety and Environmental Programs within 60 days of the shipment.

L.3.4 Fire Protection System Impairment

- An impairment request will be prepared utilizing the Fire Protection Impairment Form and submitted to the VIMS PM 15 days prior to impairment of an operational fire protection system (fire alarm and fire suppression systems).
- The VIMS PM will coordinate review and approval of the request.
- The VIMS PM will return the approved/disapproved request to the requesting contractor.
- Actual impairment will not begin without an approved request.

L.3.5 Parking Policy

- All vehicles require parking passes for on construction site and off construction site parking.
- No parking is allowed off paved driveways/roads/designated parking. Vehicles will not be parked on grassed/planted areas.
- Parking passes are provided on a complimentary basis to contractors. The number of passes available for on campus parking is determined by the Department of FM based on contractor requirements versus total requirements by active contracts on campus. The contractor may obtain parking passes through the VIMS PM.

L.3.6 Project Sign

- When required, a project sign will be posted at a location to be determined by the contractor and approved by the VIMS PM.
- Project sign shall be formatted using the template at Figure L-1.
    - Substitute VIMS logo for W&M Crest
    - Substitute VIMS Facilities Management for “W&M FPDC”
    - Substitute “VIMS Blue” for green boarder
- The cost of the sign will be included in the price of the Contractor’s General Conditions.

L.3.7 Quality Control

- The Contractor will develop a Project Quality Control Plan based on a three phase inspection process. The Project Quality Control Plan will be submitted and approved before a Notice to Proceed will be granted.

L.3.8 Safety

- A risk analysis will be prepared for each phase of work, and a Project Safety Plan keyed to the exposures determined in the risk analysis. As a minimum, the following major hazards will be addressed, as required, for each phase of work:
    - Fall protection
    - Scaffolding
    - Shock protection
    - Welding safety
    - Work in confined spaces

- Vehicle safety
- Welding Safety – The following Hot Work Policy will be reflected.
    - New construction does not need a separate hot work permit from VIMS. Hot work activities are covered by the building permit issued for the contract.
    - VIMS requires contractors performing work in occupied facilities to issue a permit for hot work activities in accordance with their in-house safety program requirements.
    - The contractor will establish acceptable time limits for duration of hot work permits IAW guidelines in ANSI Z49.1 and NFPA 51B.
    - Fire watches shall remain in place for at least one (1) hour after the completion of all activities associated with the hot work.
    - Hot work permits must be submitted to the VIMS PM 24 hours prior to work being performed for review to ensure all hot work safety concerns are addressed per requirements in OSHA regulations and standards (29CFR 1926, Subpart J; ANSI 49.1)
    - The VIMS PM will provide routine oversight of hot work and may stop work if a serious safety concern is observed until the concern is resolved.

- The Project Safety Plan will be submitted and approved before a Notice to Proceed will be issued.

L.3.9 Security Requirements

- The Contractor is responsible to provide employee identification to assure that only authorized personnel and vehicles/equipment are accessing the project site.
- An “interlocking padlock” system will be used at the site gate to allow VIMS personnel immediate response capability in event an emergency occurs within the site. The VIMS PM will provide the campus lock. Keys will be secured with VIMS Security and VIMS Office of Safety and Environmental Programs for emergency use.
- A phone roster of permanent project personnel to receive e-mail/cell phone voice mail messages in the event of a campus emergency will be provided to the VIMS PM prior to the start of construction. The permanent personnel will be responsible to provide alert notification to all personnel on site per contractor determined procedures. Data columns for the roster are as follows:
    - First name
    - Last name
    - Home phone
    - Work phone
    - Mobile phone
    - E-Mail address

L.3.10 Site Maintenance Standards

- Sites will be continuously maintained for police and repair of site facilities to include trailers, storage containers, fencing, storage of materials, and emptying of trash containers.
- Deficiencies noted by and through the VIMS PM will be corrected within 24 hours.

L.3.11 Storm Water / E&S Compliance

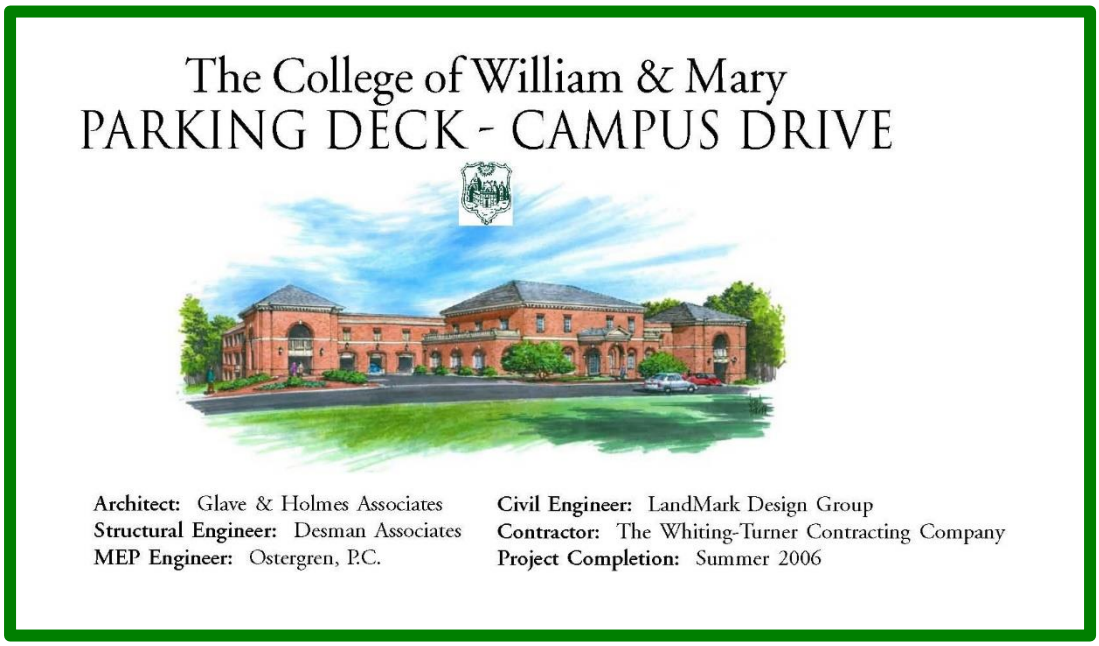
- A copy of storm water and erosion and sediment control drawings will be maintained on site at all times.
- Storm water and erosion and control measures will continuously maintained in accordance with the contract documents and State of Virginia Storm Water and Erosion and Sediment Regulations.
- Deficiencies noted by DCR inspections and or the PM/CM will be corrected within 24 hours. Repeated deficiencies leading to two consecutive deficiency findings during periodic inspections will be sufficient basis to withhold 1% retainage from the next monthly invoice until corrections are made.

L.3.12 Utility Outage/Building System Outage Coordination

- The Contractor shall submit a written Utility Outage/System Testing Notice and give the notice to the PM for FM to schedule an outage.
- Temporary interruption of underground utilities and/or of building services must be coordinated 10 days in advance.
- Requests submitted less than 10 days in advance will be processed contingent on the ability of VIMS Department of FM to notify end users/affected activities.
- The Contractor shall not proceed with a utility outage or system testing before receiving authority from VIMS Department of FM.

L.3.13 Worker Behavior/Decorum – Contractor personnel will refrain from contact with students, faculty and staff other than for that interaction necessary for the execution of their contract responsibilities. Expressly prohibited is contact in the form of harassment, whistles, cat-calls, comments, gestures or any form of uninvited communication. Any violation of this policy will result in immediate and permanent removal of violators from the campus project site. To be clear, uninvited communication is a one strike policy.

Figure L-1 - Project Sign Example



Sign Notes:

- Color rendering/computer elevation required
- Green border/white background required
- University crests at each upper corner required
- List members of project team (no corporate logos)

Show project completion as a season not a specific month.

APPENDIX M: COST ESTIMATES REQUIREMENTS AND FORMATS

M.1 GENERAL

All estimates shall be prepared in the systems format and shall be summarized on a Building Cost Summary form. The Building Cost Summary form utilizes ASTM Uniformat II cost breakdown structure in ASTM Uniformat II Classification Standard which has been extracted, with permission, from ASTM E1557-09 Standard Classification for Building Elements and Related Sitework-UNIFORMAT II, copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428. A copy of the complete standard may be obtained from ASTM International, www.astm.org. The Building Cost Summary form (Form Number DGS-30-224) is available as an Excel spreadsheet template which may be downloaded from the DGS Forms Center. A printed copy of the Building Cost Summary form and the associated supporting estimate backup shall be provided with each submission. Unless waived by the Director, FPDC, the design and cost consultants are required to submit an electronic copy of each completed Building Cost Summary form. When DEB cost review is required, the electronic copy of the form (i.e., spreadsheet) may be submitted to DEB either on removable electronic media or as an e-mail attachment.

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. 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 budgets, to develop historical data for future estimates, and for verification of the Contractor's initial Schedule of Values (CO-12).

The estimate at each submittal is expected to reflect the A/E's or Agency's Independent Estimator's best information and experience. Pricing must reflect all requirements of the contract plans and specifications. Estimate backup may be prepared manually or by utilizing computerized estimating programs, however, the estimate must be summarized using the Building Cost Summary spreadsheet. A detailed breakdown of the components of each system or assembly shall be calculated, quantified and cost-estimated. The 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 summarized on the Building Cost Summary spreadsheet.

Separate estimates will be prepared for each new non-identical building, structure, or addition costing over $250,000 contract cost when the Contractor will be competitively selected or costing over $50,000 contract cost where there is only one Contractor available or capable of performing the work. 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. Refer to the notes on page 1 of the Building Cost Summary form.

When the estimates exceed the approved or proposed construction budgets, the agency, in consultation with their design and cost consultants, shall describe how they will address this issue.

M.2 SCHEMATIC DESIGN/PROJECT CRITERIA PHASE ESTIMATE

The SD 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 practical, the key assumptions made while developing the estimate must be described.

M.3 PRELIMINARY PHASE ESTIMATE

The Preliminary Estimate shall be based on a materials take-off from the PD documents. 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 between the A/E cost estimate and the Independent cost estimate is 10% or greater, the Agency shall provide a reconciliation of the two consultant's estimates.

M.4 FINAL/WORKING DRAWINGS PHASE ESTIMATE

The A/E shall provide a final estimate based on the WD drawings and specifications and shall be prepared using the systems format. A full and accurate description of each system shall be provided in the estimate. Quotations shall 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 bid item included in the documents and shall be in the proper format.

M.5 SUMMARY OF ESTIMATE SUBMISSION REQUIREMENTS

Design Phase	**A/E Estimate**	**Owner's Independent Estimate**
SD Phase	Required*	Optional (at owner's discretion)
PD Phase	Required*	Required*
WD Phase	Required*	Optional (at owner's discretion)

* The following are required:

- Submit a hard copy of the Building Cost Summary sheet(s) and supporting estimate backup to DEB
- Submit an electronic version of the completed Building Cost Summary worksheet(s) to DEB (the Excel worksheet template, "Form DGS-30-224" is available for download from the DGS Forms Center)

M.6 COST ESTIMATING STANDARD SYSTEMS DESCRIPTIONS

Design Contingency:
Estimates are expected to include design contingency not exceeding the percentages shown below:

ESTIMATE CATEGORY	%
Pre-planning	15%
SD	10%
PD	5%

WD 0%

Construction Contingency:
The amount of contingency will depend upon the project size, procurement method, and whether the project is renovation work.

Building Cost Summary Sheet
Standard DGS forms and formats are available for download from the DGS Forms Center.
To view/download the latest version of the Building Cost Summary Sheet (Form “DGS-30-224”), visit the website listed above and enter “DGS-30-224” 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.

APPENDIX N: DESIGN READINESS CHECKLISTS

N.1 The following checklists shall be used as outlined in section 9.6.4.

Double click on title of checklist, will open file in Adobe. Non-fillable versions are available below as well.

Schematic Design Review Pre-Submission Checklist

Preliminary Design Review Pre-Submission Checklist

Building Systems and Equipment Checklist

Working Design Review Pre-Submission Checklist

Drawing Standard Checklist

Project Manual and Specification Checklist

Technical Standard Applicability Review Checklist

APPENDIX O: DUTIES OF THE PROJECT INSPECTOR

O.1 The Project Inspector must have the following minimum qualifications to perform the duties listed below:

- have education, trade related training, and experience in a design or construction related field;
- have the ability to read and understand the requirements of building Plans & Specifications;
- have some knowledge of construction means, methods and procedures;
- be 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, NFiPA, NEC, VUSBC, ASHRAE, etc.)
- have an understanding of the General Conditions of the Construction Contract;
- have the ability to read and understand a construction bar chart schedule; and
- have the ability to communicate effectively orally and in writing.

O.2 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 Chapters 8 and 13 of the Manual and in Section 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 generally reports to the Director, FPDC and to the University PM when assigned to his/her projects. The Project Inspector will be assigned in writing. This in no way relieves the Architect/Engineer from providing and being responsible for his contractual obligations as described in the Manual, the A/E contract, and the General Conditions of the Construction contract.

O.3 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.

- Inspect installation and workmanship for compliance with the approved plans, specifications, shop drawings and referenced standards. (e.g. ACI, SMACNA, NFiPA, NEC, VUSBC, ASHRAE, etc.) Verify compliance prior to cover or close-in of work.
- Monitor quality and coordination of trade Contractors' 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. Immediately report all discrepancies in the Contractor's work to the Architect/Engineer and the University. Also report any discrepancies noted in plans and specifications to the Architect/ Engineer (A/E) for clarification or resolution. The Project Inspector shall not interpret or change approved plans and specifications.
- 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.
- Provide full-time inspection of the roof during its application. The Inspector shall not permit the 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 Contractor.

- 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.
- 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, Notify the University of any safety violations, OSHA visits, accident reports, and corrective actions observed. Such reports do not relieve the General Contractor of responsibility for safety under terms of the contract for construction.
- Observe tests required by the contract documents. Record and report, to the A/E and University, the Contractor's test procedures and, where applicable, results of the tests.
- Observe and report on all tests performed by the Contractor and note results in daily reports.
- Report presence of and activities performed by University's Testing & Inspection agents.
- Verify invoices for on-site tests/site visits of independent testing entities, which are to be paid by the University.
- 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. (See Formats in Appendix O of the Manual.)
- 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.
- The Inspector shall report, in writing, to the University and A/E any notifications from the Contractor of dates and times that services will be disrupted.
- The Inspector shall participate in progress and monthly pay meetings with the University's representative, Architect, 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.
- 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.
- 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.
- 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.
    - all correspondence and reports of site conferences
    - shop drawings
    - samples and product data
    - University's purchases, including material and equipment
    - supplementary drawings

- color boards, schedules and samples
- names and addresses of Contractors, Subcontractors, and Principal Material Suppliers
- Contractor's Applications For Payment
- running list of discrepancies/deficiencies and dates
- running list of Unresolved Issues
- A/E punch lists with date of issue indicated on each
- any other documents and revisions resulting from issues concerning the contract or work
- maintenance and operating manuals and instructions when received from Contractor

- The Inspector shall review and provide a recommendation to the University on the acceptability of all proposals submitted by the Contractor for changes initiated by the University or Architect, and the acceptability of all claims for change orders initiated by the Contractor.
- 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 Contractor, and are reflected in the Contractor's progress schedule.
- The Inspector shall keep a record of all Proposal Requests from the Architect, change order proposals from the Contractor, and executed change orders from the Architect. He shall file copies with the University monthly.
- Throughout construction, the Inspector shall review the Contractor's detailed schedule and advise the University on the 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 Contractor's proposed schedule recovery plan, and maintain an annotated copy of the schedule that reflects actual progress of the work.
- 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 Contractor's conformance to the schedule and/or 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.
- The Inspector shall observe the Contractor's Record Drawings at intervals appropriate to the state of construction and shall notify the Architect of any apparent failure by the Contractor to maintain up-to-date records.
- The Inspector shall review each certificate and application for payment and advise the Architect 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.
- The University may assign the Project Inspector other duties related to the project. The Project Inspector has no authority to and shall not:
  - Authorize deviations from the contract documents;
  - Enter into areas of responsibility of the Contractor's superintendent;
  - Issue directions regarding construction means, methods, techniques, sequences or procedures, or safety precautions and programs in connection with the work;
  - Authorize or suggest that the University occupy the project in whole or in part;
  - Issue a certificate for payment.

O.4 CHECKLIST OF PROJECT INSPECTOR

- REPORTS/RECORDS
  - 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 GC, A/E, University).
  - Safety notification (to GC, A/E, University). Understands and maintains clarification requests.
- MEETINGS (ATTEND, REVIEW MINUTES AND MAINTAIN COPIES)
  - Pre-construction meeting.
  - HVAC Preinstallation 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.
- SUBMITTALS (RECEIVE, USE, KEEP TRACK OF)
  - Shop drawings/Samples.
  - Response to notice of Non-conforming work.
  - Responses to Contractor's requests for clarification. A/E field orders.
  - RFPs. change order.
  - Names, addresses, and Telephone Numbers of Contractor(s), Subcontractors materialmen, University, superintendent, Architect/Engineer, 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.
- 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 Contractor's disposal site has been approved.
  - Verifies that off site storage for Contractor materials is approved. Verifies Contractor records proper disposal of hazardous material.
- SCHEDULING/PAYMENTS
  - Assists A/E to verify accuracy of CO- 12 quantities. Compares work progress to scheduling.
  - Notifies A/E and University of Contractor's failure to comply with schedule. Verifies Contractor time and materials for change orders and unit prices.
  - Advises University and A/E if separate Contracts are being executed.

- 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 Contractor's training of University's forces.
    - Receives and keeps track of punch list.

APPENDIX P: CHECK LIST FOR RECEIVING AND OPENING BIDS

P.1 The University shall assure that the person receiving bids, called the Bid Officer, is thoroughly trained and knowledgeable in the proper procedure for receiving and documenting bids.

P.2 PROCEDURES FOR RECEIVING BIDS

P.2.1 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.

P.2.2 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.

P.2.3 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.

P.2.4 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.

P.2.5 If a bidder wishes to change the amount of his bid, such change must be received by telegram, facsimile, 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.

P.2.6 The bids, including any modifications, shall be kept in a locked security container by the Bid Opening Designee.

P.3 PROCEDURES FOR OPENING BIDS

P.3.1 Once the Agency Bid Officer 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!

P.3.2 Paragraph 4 of the Instructions to Bidders requires the Contractor to place its Contractor License Class and License Number on the envelope and on the bid documents. Para. 4(c) of the HECO-7A gives instructions for action if not shown.

P.3.3 Prior to revealing any of the information in the bid, the Bid Opening Designee must verify that:

- The Bid Bond or Certified Check in the amount of 5% is attached where required and
- That the Form of Proposal is signed by the bidder and
- 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.

P.3.4 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.

P.3.5 After Opening the Bid envelope and checking for the information above, state the following items and record on the bid tabulation form:

P.3.5.1 Bidder / Contractor's Name
P.3.5.2 Virginia Registration No.
P.3.5.3 Work papers were _____were not _____ submitted.
P.3.5.4 Receipt of Addenda 1 thru _____are acknowledged.
P.3.5.5 Bid Bond or Certified Check is _____ is not _____ included.
P.3.5.6 Bid Form is signed.

THEN

P.3.5.7 Read Bid Information

- Any proper Bid Modification received,
- Part A. Building Base Bid Amount,
- Part B – Sitework Base Bid Amount,
- Any other Parts of the Base Bid,
- The TOTAL BASE BID AMOUNT, and
- Then any Additive Bid Item Amounts in order.
- (days for completion if Bidder was allowed to state such on the Bid Form)

P.3.5.8 Any qualification to the requested information on the Bid Form shall be noted as the bid is read.

P.4 AFTER BID OPENING IS COMPLETE

P.4.1 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!

P.4.2 After two hours, return all Bid Bonds, checks, etc., to all but 3-lowest bidders. Work papers can be returned to all.

P.4.3 Keep bids and bid bonds or checks from 3-lowest bidders until contract is signed.

P.4.4 Using the Department of Professional and Occupational Regulation website, verify Contractor Class and Registration No. of the 3 lowest bidders (and listed Subcontractors, if any).

P.4.5 Prepare an official tabulation of bids indicating:

- Name and Project Code of project as on the specifications
- Time and date of bid receipt and opening
- Exact Name, address, telephone & FAX numbers of Bidders
- Bidder's Virginia Registration Number (non-requirement statement).
- All amounts bid for Base Bid(s), Parts, the Total Base Bid Amount, any Bid Modification and Additive Bid Items.
- Completion time stated if Bidder was given the option.
- Acknowledgement of receipt of all addenda and number of addenda issued.
- Whether or not sealed work papers were submitted.
- Name of University's Bid Officer.

APPENDIX Q: PRE-CONSTRUCTION CONFERENCE AGENDA

PRECONSTRUCTION CONFERENCE AGENDA

PROJECT: _____

Work Order No. _____

I. Introduction of Team Players

A. University PM

B. A/E PM

C. Contractor PM and Superintendent

II. Inspection

A. University Inspector: _____

B. Architectural Representative: _____

C. Fire/Life Safety: _____

D. Quality Control Inspection by Contractor

E. Other consultants

F. Code Review Team

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. University PM and Superintendent's List

B. Schedule of Values

C. Construction Schedule (monthly) Bar Chart, other

D. Cash Projection Schedule

E. List of Subcontractors. (Minority List)

F. Shop Drawings

1. Schedule of Shop Drawings and Submittals

G. Emergency Contact List

1. Post on Job

H. Change orders (Per 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 W&M Police

H. Shutdowns

5 Day notice.

I. Project Meetings

J. 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. Material Safety Data Sheets

M. Special Conditions

N. Minority Participation

O. Project Sign

VII. Payment Request

A. Deadline importance

B. By schedule of values

C. Dual submittal to university PM and A/E

D. Monthly Pay Meeting

VIII. Contractor Evaluation

A. By Construction PM and Inspector

B. By A/E

C. By University PM

IX. Contractors Comments/Questions

X. W&M Comments/Questions

XI. A/E's Comments/Questions

Attachment: Attendance Roster

APPENDIX R: CONSTRUCTION CHANGE ORDER PROCEDURE GUIDELINES

R.1 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 Section 38 of the 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 a Contract Change Order (HECO - 11). Procedures outlined herein will generally begin once a change in the work is identified by the University, A/E, or Contractor.

R.2 PROCEDURE

R.2.1 In order to ensure compliance with Paragraph 38 of the General Conditions, the following change order procedures are established:

R.2.1.1 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 an RFP to the Contractor describing the requested change and asking that the Contractor submit a price proposal for accomplishing said change in the work.

R.2.1.2 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 PM to prepare an RFP to the Contractor describing the requested change and asking that the Contractor submit a price proposal for accomplishing said change in the work.

R.2.1.3 Where the Contractor desires to make a substitution and/or where the Contractor desires to delete a requirement for work described in the contract documents, or where the 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 Contractor shall prepare a price proposal for same and request that the University issue a change order.

R.2.1.4 Where unit prices for work were requested in the Bid Form and included in the contract [reference General Conditions Section 38(a)(2)], the 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 change order will be prepared by the A/E to increase/decrease the contract price to reflect the work performed and accepted.

R.2.1.5 Where Work or changes in the work are to be performed under the procedures described in General Conditions Section 38(a)(3), the A/E shall prepare a change order describing the work to be performed and directing the Contractor to keep an accounting of all labor, material and associated costs of performing the work. The change order shall cite General Conditions

Section 38(a)(3) as the basis for determining the cost of such work and shall identify any specific requirements or formats not specified in Section 38(a)(3) which the Contractor will be required to use. One or more subsequent change orders will be issued to adjust the contract price and/or Time and each shall cite or reference the initial change order authorizing such work to be done using this method for determining price and time compensation.

R.2.2 The Contractor will send his pricing proposal for the change order to the A/E and University. To facilitate analysis by the University and A/E, this estimate shall be prepared using the following forms:

GC- 1, General Contractor s Estimate for change order

SC- 1, Subcontractor s Estimate for change order

SS- 1, Sub-Subcontractor s Estimate for change order

The general contractor and each affected Subcontractor and Sub-subcontractor must sign these forms. These forms are available on the FPDC website.

R.2.3 When a mutually agreed price has been determined, the A/E shall make his written recommendation to the University for acceptance by signing the bottom of Form GC-1. A statement as to how any differences were reconciled shall be provided by to the University by the A/E.

R.2.4 If the change order proposal is acceptable, the University shall have a change order prepared.

R.2.5 The A/E shall prepare the change order form (Form HECO-11) and the change order Justification (Form HECO-11a) 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.

R.2.6 The Contractor will sign Form HECO-11 and send to the University. All backup material must be provided with each copy of the change order.

R.2.7 In the event that urgent conditions require a Contractor to begin work associated with a change order prior to issuance of the formal change order, a Notice to Proceed shall be issued. Use of the Notice to Proceed is appropriate for safety, unforeseen condition remediation which will halt progress, prevention of loss, prevention of significant rework, or similar situations. Use the Notice to Proceed/Not to Exceed Change Request form available on the FPDC website. The Notice to Proceed will be approved by the AVP FM and shall be formalized as a change order within 30 days.

R.2.8 No work associated with any change order shall be accomplished prior to approval of the change order or prior to issuance of a Notice to Proceed as outlined above. The University will distribute approved change orders to the A/E and Contractor.

APPENDIX S: SAMPLES OF FORMS AND FORMATS

The latest versions of the following formats are available from the FPDC procurement staff.

Sample Prebid Question Format

Sample Submittal Register

Sample Schedule of Values & Certificate for Payment (CO- 12)

Sample General Conditions for Nonprofessional Services

Sample Special Conditions for Nonprofessional Services

Sample Demolition Note

APPENDIX T: ROOF INSPECTION FORMS AND PROCEDURES

T.1 The Roof Inspector

The minimum qualifications below serve as criteria for the University if selecting an outside, full-time roofing inspector:

T.1.1 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.

T.1.2 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.

T.1.3 The Inspector should be thoroughly familiar with the latest edition of the NRCA Roofing and Waterproofing Manual.

T.1.4 The Inspector should have a minimum of five years of full-time, practical roofing experience or approved equivalent experience.

T.1.5 The Inspector should identify, in writing, at least three projects where he/she has been the full-time roofing inspector. The Inspector should provide names, addresses, and telephone numbers of roof owners and A/Es for the roof projects.

T.1.6 The Inspector should be trained and competent in the services he/she is providing.

T.1.7 Roof Inspector's Scope of Work:

T.1.7.1 The Inspector shall monitor the work continuously during installation of the roof.

T.1.7.2 The Inspector shall monitor the work for compliance with the contract documents and the W&M Technical Standards.

T.1.7.3 The Inspector 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.

T.1.7.4 The Inspector may recommend suspension of work or rejection of non-complying work to the A/E and University.

T.1.7.5 The Inspector shall not:

T.1.7.5.1 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. The Inspector shall notify the University so that appropriate action can be taken.

T.1.7.5.2 Authorize deviations from the contract documents.

T.1.7.5.3 Enter the area of responsibility of the Contractor's superintendent.

T.1.7.5.4 Issue orders on any aspect of construction means, methods, techniques, sequences, procedures, or safety in connection with the work.

T.1.7.5.5 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, workers on the job, material storage, deck condition, bitumen temperature, installation procedures, quality of workmanship, job-related visitors, and so forth.

T.2 The Roof Consultant

The Consultant should have the following qualifications:

T.2.1 Roof consulting and testing services should be the Consultant's full-time occupation.

T.2.2 The Consultant should have a minimum of five years of field experience in providing the service.

T.2.3 The Consultant 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.

T.2.4 The Consultant 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.

T.2.5 The Consultant 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.

T.2.6 The Consultant should be trained, experienced and competent in performing required services.

T.2.7 If testing is required, the Consultant 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.

T.2.8 The Consultant should submit resumes of his firm and all employees participating in the service.

T.2.9 The Consultant's 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.

T.2.10 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.

T.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:

T.3.1 Equipment, subject to the University's approval, shall be equal to the following:

T.3.1.1 Infrared: A camera designed for the intended application and capable of taking thermograms. Instrument sensitivity shall permit recognition of areas of wet insulation as small as 6 inches on a side.

T.3.1.2 Nuclear: A nuclear hydrogen detection (NHD) meter used for the measurements of reflected neutrons that can be linked to the presence of water in the roofing system

T.3.1.3 Impedance Moisture Survey: Scanner designed to detect and evaluate non-destructively comparative moisture conditions within roofing and waterproofing.

T.3.1.4 Electronic Field Vector Mapping (EFVM) or Electronic Leak Detection: Generator and receiver designed for the intended membrane leak detection used for roofing and waterproofing.

T.3.2 Operators of equipment shall be certified in the equipment used and licensed as required for by the survey protocol.

T.3.3 Surveys

T.3.3.1 Infrared: Provide a complete survey of the roof or roofs. Outline all anomalies on the roof. Provide a thermogram showing the outlines and daylight photographs of all anomalies. Survey inspection procedures, reports, etc. shall be conducted in accordance with the requirements and procedures in ASTM C1153, "Standard Practice for Location of Wet Insulation in Roofing Systems Using Infrared Imaging," except as otherwise noted in this Appendix.

T.3.3.2 Nuclear: Provide a grid, comprising 5’ x 5’ grid unit, to completely cover the roof or roofs. Mark each grid intersection with spray paint. Take readings at the inter-sections and record them on a roof plan. Provide daylight photographs of area of anomalies. Survey inspection procedure, reports, etc. shall be conducted in accordance with the requirements and procedures of ANSI/SPRI/RCI NT-1, “Detection and Location of Latent Moisture in Building Systems by Nuclear Radioisotopic Thermalization” except as otherwise noted in this Appendix.

T.3.3.3 Impedance Moisture Survey: Provide a complete survey of all roof or waterproofing areas. Mark, number, and photograph all anomalies on the membrane surface. After field testing is complete submit a report with all anomalies located on a roof plan. Photographs of each anomaly shall be included in the report. Mapping shall be done in accordance with standard practices over the entire roof surface. Survey inspection procedures, reports, etc. shall be conducted in accordance with the requirements and procedures of ASTM D7954, “Practice for Moisture Surveying of Roofing and Waterproofing Systems using Non-destructive, Electrical Impedance Scan” except as otherwise noted in this Appendix.

T.3.3.4 Special Surveys using electrical conductance measurement methods to locate leaks in roofing systems - Electronic Leak Detection or Electronic Field Vector Mapping (EFVM): This system may be used on roof areas where full time roof inspector has noted that there is no detrimental moisture observed in the roof system during the daily observations. Provide a complete survey of roof or waterproofing areas as directed. Mark, number, and photograph all anomalies on the membrane surface. After field testing is complete submit a report with all anomalies located on a roof plan. Photographs of each anomaly shall be included in the report. Survey inspection procedures, reports, etc. shall be conducted in accordance with the requirements and procedures of ASTM D7877 “Standard Guide for Electronic Leak Detection methods for Detecting and Locating Leaks in Waterproof Membranes” except as otherwise noted in this Appendix. Roof cores shall be taken at all leaks to determine the extent of damage by the leak if roof insulation is below the roof membrane and above the deck. Roof cores may be omitted if the roof inspector is to be present to observe the roof Contractor’s repair of the roof leak by opening roof and removing wet insulation. Wet insulation is determined in the field by the roof inspector. Fees for the roof inspector and retesting shall be paid by the Contractor by change order to the contract. Note: for Electronic Leak Detection test the roof area on an area by area basis not to exceed 5,000 SF. Readings taken with the receiver shall be done on a 24” x 24” grid pattern.

T.3.4 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 (See Exception below for roofs with no anomalies). The samples shall be taken as follows:

T.3.4.1 One is required on roofs showing no anomalies.

T.3.4.2 On all other roofs a minimum of one dry and one wet core shall be taken from each roof surveyed where anomalies are present. 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 Owner.

T.3.4.3 As many cores as needed should be taken to verify non-destructive testing data results, but no more than five cores shall be taken from any roof area except as noted in the test protocol.

T.3.4.4 Exception: If no anomalies are shown by the survey equipment and the owner's full time roof inspector was present on the site during all roofing applications and had not noted any roofing applications where moisture was present in the form of rain, dew, mist or entrapped moisture the requirement for a minimum of one roof core into a newly installed assembly may be waived by the owner.

T.3.5 Gravimetric Analysis

As soon as possible after samples are taken, core should be sealed in air tight containers and taken to a laboratory for analysis.

T.3.5.1 Analyze samples gravimetrically per ASTM D1864 to determine percent of moisture in any required core sample taken from new roofs and, unless waived for justifiable reasons, from existing roofs.

T.3.5.2 Identify all materials - surfacing, membrane (and number of plies), insulation, vapor barriers, adhesives, etc. - in the cores.

T.3.6 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.

T.3.7 Report

The Consultant shall submit a written report explaining the problems.

T.3.7.1 Reports for existing roofs shall

- Identify and describe all anomalies.
- Identify and describe any visual survey defects that may be harmful to the roof.
- Give the causes for each anomaly and defect.
- Recommend alternate courses of corrective action for defects and anomalies harmful to the roof.
- Provide the cost estimate for correcting the defects and anomalies.

T.3.7.2 Reports for new roofs where a design professional is providing construction administration services shall

- Identify and describe all anomalies.
- Identify and describe any visual survey defects that may be harmful to the roof.
- Give the causes for each anomaly and defect.

T.3.8 Drawings

The Consultant shall prepare drawings that include the following as a minimum:

T.3.8.1 Plans shall show all roofs surveyed.

T.3.8.2 State identification, title, date, and use of the building.

T.3.8.3 Name, address and phone number of agency representative.

T.3.8.4 Make, model and serial number of equipment used.

T.3.8.5 Name of operator and data analyst.

T.3.8.6 The survey technique used.

T.3.8.7 Condition of the roof surface at the time of the survey.

T.3.8.8 Date, time and weather conditions at the time of the survey.

T.3.8.9 Description of the roofing and waterproofing assembly.

T.3.8.10 Provide an orientation north arrow and drawing scale

T.3.8.11 Indicate the area of each roof and approximate overall dimensions

T.3.8.12 Indicate 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, and identified.

T.3.8.13 Show and explain all roofing defects and anomalies.

T.3.8.14 Delineate, for an infrared survey, moisture anomalies with contour lines; for a nuclear survey, show all grid point readings and define areas having unacceptable moisture by contour lines. Indicate 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 identify-able features (such as parapets).

T.3.8.15 Provide at least one detail section 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.

T.3.8.16 A statement shall be made of the basis for the unacceptable moisture content levels established for each material present. See survey protocols.

T.3.8.17 Other information as required or listed in the survey protocol.

ROOFING FORMS

Standard DGS forms and formats are available for download from the DGS Forms Center.

Form Number	Description	File Type
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 Number (e.g., “DGS-30-328”) in the search box on the Forms Center.

APPENDIX U: PROJECT PROCESS FLOWCHART