

Exhibit C Supplemental Requirements

Cover Sheet and Instructions

PURPOSE OF DOCUMENT:	To supplement the requirements in the Executive Design Professional Agreement (EDPA) with requirements that are particular to performing services for the University (more specifically, for a University Facility).				
CROSS-REFERENCES TO FACILITIES MANUAL (FM):	FM3[II]				
CONTENTS:	Supplemental Requirements				
FOR USE WITH: (Not Applicable to Some Documents)	EDPA				
COMPLETED BY:	✓	Filling In	✓	Adding Text	No Data Required
ITS USE IS:	✓	Required		Optional	

NOTE: To use the electronic file of this document, you must go to the “Tools” pull down menu in Microsoft Word, select “Options,” select the “View” tab, and then put a check in the box “Hidden text.” Most instructions and alternate language is displayed in hidden text. Do not print the hidden text for the final document.

Completion Instructions:

- Notes, suggested text, instructions and other information is formatted using the following methods:
 - Hidden text within brackets. Read the material within the brackets and take the appropriate action (usually inserting text or selecting from a choice of texts.) When printing this document, the default print property will not print the hidden text.
 - Coded instruction within brackets. **{This is an example of the format.}** The instructions and shading will disappear when the required information is typed.
- Text shaded in gray without brackets is OPTIONAL. **This is an example of the format** (see Modification and Additions below.)

Modifications and Additions:

- Facility should consider the Supplemental Requirements as a “model” document. The text may be modified by the Facility to meet the needs of the Project.
- Ensure that any modified or added text is consistent with the Contract Documents.

Comments:

- Green Building Design.** The model document addresses implementation of the University’s *Policy on Sustainable Practices* in new section 2.0.10 and various existing sections throughout the Supplemental Requirements, e.g. section 2.1.2.

EXHIBIT C
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EXECUTIVE DESIGN PROFESSIONAL AGREEMENT
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ARTICLE 1 - BASIC SERVICES - GENERAL

Design Professional shall provide the following services as Basic Services.

1.1 EXAMINATION OF SITE

1.1.1 At the beginning of the Schematic Design phase, Design Professional and its consultants shall visit the Project site to become familiar with existing site conditions, including the site location and size, utility capacities, and connection options of external utilities. Prior to the completion of the Construction Documents, Design Professional and its consultants shall visit the Project site to coordinate their documents with current site conditions.

NOTE: ADD THE FOLLOWING PARAGRAPHS FOR ALTERATION PROJECTS IN EXISTING BUILDINGS

1.1.2 For alteration projects, visit all relevant areas of the existing buildings to be altered. Include architectural, mechanical, plumbing and electrical (including fire alarm) disciplines. Visually survey the following for consistency with the available documentation, evidence of chronic problems, and coordination with proposed new work:

- .1 Adjacent site perimeter (a minimum of 40 feet from building) for accessible path of travel, fire access, drainage conditions, and distance to adjacent buildings.
- .2 Building exterior (from the ground and roof surface).
- .3 Interior spaces including storage, circulation, mechanical, electrical and telecom rooms.
- .4 Rooftop including penthouses.
- .5 Ceiling spaces above suspended lay-in ceiling tiles at several areas representing standard conditions and in areas with atypical ceiling heights or configurations.
- .6 Concealed spaces accessible via access panel at several areas representing standard conditions and in areas with atypical concentrations of services, specifically at firewalls.

1.1.3 Notify University's Representative of rooms or areas inaccessible due to locked doors, hard-suspended ceilings, heavy furniture and equipment or critical functions. No destructive testing shall be done except by specific written approval.

1.2 PROGRAM AND BUDGET REVIEW

1.2.1 University will furnish the Project Program to Design Professional at the start of Schematic Design. Design Professional shall evaluate the Project's programmatic requirements, promptly call attention to any discrepancy contained therein, and request direction from the University's Designated Administrator.

1.2.2 Prior to completing the Schematic Design, Design Development and Construction Documents phase submittals, Design Professional shall compare the submittal documents to the programmatic requirements and call to the attention of University's Designated Administrator any discrepancy contained therein and request direction. Design Professional shall be prepared to present program or design adjustment alternatives for University consideration when adjustments are needed to bring the Project scope, Project schedule, and Construction Budget into alignment.

1.3 REGULATORY AGENCY REVIEWS AND APPROVALS

1.3.1 The design and construction of University projects shall comply with the applicable laws, rules, and regulations of the California Code of Regulations (CCR). The Design Professional is responsible

for the design's compliance with these laws, rules and regulations. The following CCR titles contain requirements applicable to University construction work:

- Title 8, Industrial Relations
- Title 17, Public Health
- Title 19, Public Safety
- Title 20, Public Utilities and Energy
- Title 21, Public Works
- Title 24, California Building Standards Code
 - Part 1, Building Standards Administrative Code
 - Part 2, California Building Code
 - Part 3, California Electrical Code
 - Part 4, California Mechanical Code
 - Part 5, California Plumbing Code
 - Part 6, California Energy Code
 - Part 7, California Elevator Safety Construction Code
 - Part 8, California Historical Building Code
 - Part 9, California Fire Code
 - Part 10, California Code for Building Conservation
 - Part 12, California State Reference Standards Code
- Title 25, Housing and Community Development
- Title 26, Toxics

1.3.2 Building codes, standards, federal and state legislation, and federal, state, and regional agency regulations affect University projects. In addition to the CCR titles listed above, University construction work shall also comply with the following Codes or Acts. In general, in the case of conflicts between codes, the more stringent conditions shall apply. Confirm particular instances with University's Representative.

- | | |
|------|---|
| NFPA | National Fire Protection Association |
| OSHA | Federal Occupational Safety and Health Act of 1970 |
| ADA | Accessibility Guidelines for the Americans with Disabilities Act, Title 24
ADAAG |
| | Other applicable codes not listed above but required for a particular project |
| | California Coastal Commission Regulations |

1.3.3 The University is not subject to the building ordinances and zoning requirements of local political jurisdictions; building permits are not required for on-campus projects. Off-campus projects are required to comply with all applicable local building ordinances and zoning requirements. University is not required to obtain building permits from local jurisdictions for construction on real estate owned or controlled by University. However, the design and construction of utility connections and fire-protection systems may require liaison with local jurisdictions. This liaison shall be coordinated only through University's Designated Administrator. Construction or encroachment upon city- or county-owned property is subject to local codes and permit requirements.

1.3.4 The University is its own enforcement agency for all code requirements except those regarding fire code, access compliance, and medical facilities. For these code requirements, University projects are subject to plan approval and enforcement authority by the state agencies listed below. The Design Professional shall obtain reviews from, submit applications to, and obtain approvals/permits from these agencies. University's Designated Administrator will arrange to pay application fees that may be required.

- .1 California Department of General Services, Division of the State Architect - Access Compliance (DSA)

- .2 Office of the State Fire Marshal (SFM) – {note if delegated to the campus fire department}.
- .3 Office of Statewide Health Planning and Development (OSHPD) - For Medical Facilities Only

1.3.5 By agreement with the SFM, the effective code date for new and remodeled University building projects is the edition of the CCR, Title 24, in effect at the time of the first submittal of Preliminary Drawings (Design Development Drawings and Specifications) as defined in the State Administrative Manual. The date of receipt of this first submittal is the official “date of record” for the Project. The edition of CCR, Title 24, in effect on that date will be applied for the duration of the Project. In the event Preliminary Drawings are not submitted to the SFM regional office prior to submission of Construction Documents (defined as Working Drawings and Specifications), the edition of the CCR, Title 24, in effect on the date of receipt of the Construction Documents by the SFM regional office will apply.

1.3.6 It is recommended that preliminary State Fire Marshal (SFM), or the local designee, and Division of State Architect (DSA) reviews occur during Schematic Design and Design Development. Review and approval by the SFM and DSA are required at Construction Documents completion. The Design Professional shall arrange all reviews with DSA for access compliance and with SFM for fire safety and code compliance. The Design Professional shall incorporate corrections required by DSA and SFM into the Contract Documents before advertisement for bid.

1.3.7 The Design Professional shall assist the University in making applications to, and obtain approvals/permits from the {identify local} Air Quality Management District.

1.3.8 The Design Professional shall incorporate the following University policies and Campus Standards where applicable to their work:

- .1 University of California Seismic Safety Policy of January 20, 1975 including revisions.
- .2 University of California Policy on Sustainable Practices, dated March 22, 2007.
- .3 {Facility Campus Standards and Design Guide} current at the execution date of this Agreement.

1.3.9 Other authorities and fund agencies applicable to this Project include the following: (LIST)}

NOTE: FOR MAJOR STATE-FUNDED PROJECTS

1.3.10 Approval of the completed Design Development documents by the State Public Works Board is required, as well as State Department of Finance approval of the completed Construction Documents.

1.4 UNIVERSITY REVIEWS AND APPROVALS

1.4.1 Each design phase is subject to review and approval by the University. Project items to be reviewed include design and cost, site, seismic safety, and environmental impact.

1.4.2 Other University personnel, external consultants, or public agencies may also review the Design Professional’s submittals at the University’s discretion or as required by applicable regulations. These reviews shall not relieve Design Professional of responsibility for errors and omissions in Design Professional’s work. The Design Professional shall cooperate with the reviewers and participate in the reviews.

1.4.3 The University’s review of Drawings and related documents at the various stages of project development is intended to determine whether:

- .1 The Design Professional has completed the work of that phase,

- .2 The Design Professional's design satisfies the University's programmatic needs,
- .3 The Project design is within the stipulated scope and Project budget, and
- .4 The Project is in conformance with University's administrative policies and procedures.

1.4.4 The University will review the submitted drawings at all stages and provide written comments.

1.4.5 The University will review the submitted specifications at three stages and provide written comments. The first Construction Documents submittal review will cover general issues (e.g., format and Division 1 references). The second Construction Documents submittal review covers all sections for content, consistency and completeness. The final Construction Documents review is the final review for corrections and typographical mistakes.

1.4.6 The Design Professional shall respond in writing (item by item) to the University's review comments using the University's format.

NOTE: Independent seismic review is mandatory (refer to <http://www.ucop.edu/facil/fmc/facilman/volume1/rpseis.html>)

1.4.7 The Project is subject to an independent seismic/structural review. A review of non-structural building elements shall also be included. The review will be initiated early, preferably during Schematic Design, so that it can be performed in conjunction with the independent design and cost/value control review processes, where applicable. The review will be continued at appropriate times during the design process. Drawings and calculations will be reviewed for conformance to the most current applicable seismic design code requirements.

1.4.8 All projects require review by the **[Facility's Appropriate Committee]** at the end of Schematic Design. Design Professional shall verify presentation requirements with the University's Representative.

NOTE: An independent architectural design review shall be conducted for projects that are subject to Regents' design review

1.4.9 This Project is subject to an independent architectural design review conducted by University and at University's expense. The design review will be performed early in the preparation of design and focus on, but not be limited to, the compatibility of the design with its setting, and the appropriateness of the design to its functional program and the Project budget. Design Professional shall cooperate with this design review. As part of the review, Design Professional shall present the current status of the design with drawings and other items as necessary to describe the Project's Design.

NOTE: Design review by the Regents is required on building projects with a total project cost in excess of \$5 million, except when such projects consist of the following:

- Alterations or remodeling where the exterior of the building is not materially changed, or
- Buildings or facilities located on agricultural, engineering, or other field stations, and buildings or facilities located in agricultural areas of a campus

Building projects with a total cost of less than \$5 million may be subject to Regents design review when, in the judgment of the UC President, a project merits review and approval by the Regents because of budget matters, fund-raising activities, environmental impacts, community concerns, or other reasons.

WHEN THE PROJECT IS SUBJECT TO REGENT'S REVIEW, ADD THE FOLLOWING

PARAGRAPHS:

1.5 REGENTS' DESIGN APPROVAL

1.5.1 The Project requires design review by the Office of the President and the Regents of the University of California. The Design Professional shall provide presentation drawings, sustainable design information, and other support materials for use in the Regents' design review process {NOTE: ADD OTHER ITEMS IF REQUIRED - Examples physical models, computer-generated models, perspectives, and simulations}. Drawings and written documents for presentations to the Regents shall be simple, clear and concise.

1.5.2 Provide these materials in accordance with the Project schedule provided by University. Design Professional shall attend meetings with representatives of University regarding the presentation material for the Board of Regents.

1.5.3 Should the Regents fail to approve the design or aspects of the design, Design Professional shall, at its own expense, revise the design unless Design Professional has been given prior written approval from University to proceed with the Design Development phase, in which case the revision of the design shall be an Additional Service in accordance with Article 7.

1.6 CONSTRUCTION COST/VALUE CONTROL

1.6.1 Throughout the Project, the Design Professional shall keep the Project's estimated construction cost within the Construction Budget and is responsible to periodically submit a current Estimated Project Construction Cost to verify that this is done. The following three processes shall be used during the Project for Construction Cost/Value Control (CVC) with the Cost Reduction process only used if the previous three are unsuccessful:

- .1 Cost Choices (CC) - Program and design choices that drive the project cost begin at programming and become more focused. Choosing what can be afforded within the budget is the first step. At the first estimate, consideration of cost choices begins and continues as the design progresses.
- .2 Life Cycle Cost Analysis (LCCA) - This identifies alternative materials and systems to evaluate by preparing an economic assessment of all significant costs of ownership over the economic life of each alternative including:
 - a. The projected initial cost of the system
 - b. Projected yearly operational and maintenance costs
 - c. Projected estimated replacement cost
 - d. Projected estimated life expectancy
 - e. Anticipated levels of performance

LCCA shall be conducted for a minimum of one alternative mechanical and one alternative lighting system. With respect to design alternatives specifically in support of the Energy Efficiency program, the Design Professional shall assist with providing cost and performance information for approximately 10 energy conservation measures or combination of measures. Contact the University's Representative for study life, utility rates, discount factors, escalation factors and benefit-to-infrastructure values. The results shall be presented in a spreadsheet format that shall identify both simple payback and present value of the evaluated options.

- .3 Value Engineering (VE) - This is when one design feature can be achieved in a different manner for the same or lower cost without compromising the aesthetic or functional value. Value engineering should also start early and run throughout the design phases. Life cycle costs should be considered along with capital costs.

- .4 Cost Reduction (CR) - This requires removing something desired from the Project. This is initiated later in the design process if the CC, LCCA and VE efforts were not successful in maintaining the Project within budget.

1.6.2 This Project is subject to independent cost estimates conducted by an estimator designated by University and at University's expense. Design Professional shall be available to answer the estimator's questions regarding the design and to attend meetings as necessary with the estimator to reconcile Design Professional's estimate with the independent estimate. In the event that the independent estimate and the Design Professional's estimate cannot be reconciled, Design Professional's estimate shall prevail as the Estimated Project Construction Cost.

1.6.3 Design Professional shall fully participate in University's CVC program. CVC workshops shall occur after the 50% and 95% Schematic Design phase submittals, the 95% Design Development phase submittal, and the first Construction Documents phase submittal. CVC workshops shall occur three to four weeks after the associated submittal for these phases. CVC workshops shall be scheduled by agreement between the Design Professional and the University. Agenda shall include at a minimum:

- .1 Design and Sustainability Review
- .2 Alternative Technical Solutions
- .3 Cost Evaluations
- .4 Evaluation of Alternatives
- .5 Priorities and Trade-offs (if necessary)

1.6.4 Participants, in addition to the Design Professional and its consultants, shall include professional peers experienced with building type (selected by University and at University's expense); University's professional staff, including representatives from Facilities Management; user representatives; and others deemed appropriate by University. Design Professional and its consultants shall present and discuss the design as required by the agenda of each meeting.

1.6.5 After each CVC session, Design Professional shall evaluate the results of the session with University and shall implement changes in the design as mutually agreed upon or as directed by University.

1.6.6 If the Estimated Project Construction Cost at the Construction Documents phase exceeds the Construction Budget, University may, at its discretion, (1) give written approval of an increase in the Construction Budget, (2) authorize the solicitation of bids (reserving its rights under paragraph 2.5.2 of this Agreement), or (3) require Design Professional, at Design Professional's expense, to revise the Project in cooperation with University so as to reduce the Estimated Project Construction Cost to match the Construction Budget. Modifications proposed by Design Professional shall require University approval prior to incorporation into the revised documents.

1.7 QUALITY ASSURANCE

1.7.1 The Design Professional shall demonstrate an effective internal Quality Assurance (QA) program that incorporates the QA requirements in the Exhibits and results in well-coordinated and consistent submittal documents. The University's preparation guidelines for drawings and specifications shall be incorporated into the Design Professional's quality assurance program.

1.7.2 The University will perform or may choose to have an outside consulting firm perform a quality assurance review including plan check and/or constructability analysis on the submitted documents. The Design Professional shall review the written comments produced by this review and

respond to the comments (item by item) in writing. The Design Professional shall attend meetings as necessary to resolve issues.

1.8 DRAWING SUBMITTAL REQUIREMENTS

1.8.1 Design Professional shall submit one set hardcopy and two sets of executable digital files on CD-ROM, one formatted in AutoCAD.dwg, the other as PDF. When required, hardcopies of submittals shall be on bond paper.

1.8.2 Each copy and each disk shall be fully labeled with the project name, contract number, date, names and contact information for the entity(ies) responsible for preparation and submittal of the files and disks, and the sequence number of the disk in the set. Files may be submitted compressed, but the decompression utility used (executable preferred) should be fully described with directions included on the transmittal as well as in digital form. Design Professional shall provide an index of digital file drawings and their associated XREF. Unused layers and blocks shall be purged from the drawing file. Directions for restoring the directory structure shall be included, and all data necessary to plot the files, such as PCP, PNP, and CTB files, layering, pens, fonts, and color information shall be provided. Design Professional shall “bind” all plot sheets. Digital file CAD drawings must be identical to the required hardcopy submittals.

1.8.3 The digital file name shall match the drawing number. The complexity of the files/folders shall be matched to the scale of the Project.

1.8.4 Submittal of the CAD drawing files shall be considered a legal submittal of any fonts, menus, line types, symbols (blocks or entities), and any proprietary information incorporated into the drawings. If symbols (blocks or entities) or other information is copyrighted, the University will have the right to use and to distribute all such information at no cost or liability. Copyright language shall not be included on the Drawings.

1.8.5 Design Professional shall coordinate with the University’s Designated Administrator to insure room numbering in accordance with the Format for Listing Rooms and Spaces in the Exhibits.

1.8.6 In addition to the standard submittal format requirements, presentation graphics materials shall be submitted to the University as digital files in the .jpeg format or other photo-quality digital format.

1.8.7 Drawing Preparation Guidelines containing more detailed requirements will be provided to the Design Professional at the beginning of the Schematic Design phase.

1.9 SPECIFICATION SUBMITTAL REQUIREMENTS

1.9.1 Specifications, in CSI format, shall consist of one original one-sided set in hard copy and two sets of executable digital files on CD-ROM (one formatted in Microsoft Word 2000 version or later, the other as an Adobe .pdf). When required, hardcopies of submittals shall be on bond paper. Each specification section shall be saved as a document file named with the corresponding Master format number (e.g., 134010.doc).

1.9.2 The Design Professional shall use the format and terminology standards from the sample specification provided by the University. Specifications shall be:

- .1 Complete, coordinated and consistent with each other and the drawings.
- .2 Coordinated with the University’s General Conditions and General Requirements.
- .3 Written for a two-party contract between the University and the Contractor.
- .4 Written to describe the University’s Representative as the University’s acting functionary.

- .5 Written with open specifications for material and equipment except in specifically permitted exceptions.

1.9.3 Specifications Preparation Guidelines containing more detailed examples of the application of the requirements listed above will be provided to the Design Professional at the beginning of specification production in the Design Development phase.

1.9.4 Where the University provides guide specifications for the Design Professional's use, the Design Professional shall review the sample specifications and determine the extent to which the various sections and paragraphs are applicable and the extent to which modifications are required. Where, in the opinion of Design Professional, modifications are required, Design Professional shall mark the modifications in the specifications for University attention, review, and approval. The sample specifications are not intended to limit Design Professional's discretion to specify products, materials, or construction methods and procedures. Neither the provisions of the sample specifications established by University nor Design Professional's use of the samples as a guide in preparing specifications shall derogate from Design Professional's responsibility to prepare the Construction Documents.

1.10 DOCUMENT SUBMITTAL TIMING

1.10.1 Design Professionals shall make formal submittals as required herein to the University in each phase as follows:

- .1 Schematic Design at 50% complete, 95% complete and fully complete
- .2 Design Development at 50% complete, 95% complete and fully complete
- .3 Construction Documents at 50% complete, 95% complete, fully complete and final (with backcheck comments incorporated)

1.10.2 Design Professional shall submit the required documents for each of the submittals in two parts and approximately two weeks apart. The first part of the submittal shall include Drawings and Specifications, Code Analysis, Design and System Narratives, Green Building Baseline form and similar items. The second part of the submittal shall include items such as the Area Tabulation, Special Inspections and Testing Requirements, Estimated Project Construction Cost, Calculations, Sole Source List, Material Board, and the Energy Model and related information.

1.11 CONSTRUCTION PHASING

Construction phasing will require review and approval by University's Representative. Design Professional shall clearly show construction phasing requirements on the drawings and also describe them in the specifications. Design Professional shall also provide a construction-phasing schedule in bar chart, or in CPM form as an additional service.

1.12 PARTNERING

University and Design Professional will cooperate and participate fully in Partnering at all levels and among all the parties involved in this Project, and at their own expense. Partnering shall mean both formal and informal interaction between and among all the parties involved in the Project, including but not limited to, University's Representatives, Design Professional, Design Professional's consultants, Construction Contractors, Subcontractors and outside entities as designated by University to promote the desired goal of a successful, non-adversarial completion of the Project on time and within budget. The requirement for Partnering shall not be construed as a change in the terms or conditions of this Agreement.

1.13 GREEN BUILDING DESIGN

1.13.1 The Design Professional shall incorporate green building strategies into the design needed to meet the credits listed as baseline in the University's Green Building Baseline form in the Exhibits. The Design Professional shall incorporate additional strategies into the design as needed to achieve a minimum Silver level certification under the **{University's program equivalent to the}** United States Green Building Council's (USGBC) LEED program.

1.13.2 The proposed design shall outperform Title 24 energy standards by **30%**. If process loads are present, recommend strategies to reduce process loads to **20%** less than expected for a building designed to current institutional standards.

1.13.3 Design Professional shall prepare and/or assist with the preparation of credit documentation for this program. **OPTIONAL: Design Professional shall collect LEED documentation from the University indicated as the University's responsibility on the Green Building Baseline in the Exhibits, combine it with their own documentation and make the submittals to the USGBC.**

1.14 MEETINGS

Design Professional shall participate in regular meetings at the Facility through each phase of the Project for the purpose of explaining the Project design, reviewing the Project progress, discussing University policy and legal requirements.

ARTICLE 2 - BASIC SERVICES - SCHEMATIC DESIGN PHASE

2.1 GENERAL

2.1.1 Design Professional shall submit items as listed below:

- .1 Items 2.2 through 2.5 and 2.7 through 2.12 upon 50% completion of the Schematic Design phase**
- .2 Items 2.2 through 2.13 upon 95% completion of the Schematic Design phase**
- .3 Items 2.2 through 2.14 upon 100% completion of the Schematic Design phase**

2.1.2 Design Professional shall provide a written preliminary evaluation of the Project Program and the Construction Budget requirements each in terms of the other.

2.1.3 After consultation with the University's Designated Administrator, Design Professional shall conduct a Schematic Design kick-off workshop to discuss the requirements and goals described in the Project Program.

2.1.4 Shortly after the Schematic Design kick-off workshop, conduct an integrated design workshop focusing on sustainability with all of the Design Professional's consultants and the University to:

- .1 Review the findings of the site analysis, program analysis and preliminary engineering analysis.**
- .2 Discuss challenges and opportunities inherent in the Project.**
- .3 Review design priorities.**
- .4 Review the Project for alignment with the University's Green Building Baseline.**

2.1.5 Early in the Schematic Design phase, develop and present to the University three alternative site and building designs that meet the program needs. Provide graphics or physical study models as appropriate to fully describe the designs. These materials shall be delivered to the University for review and shall include digital files of graphic presentation materials.

2.1.6 For each of the three alternative designs, update the Detailed Project Program cost model by changing, adding and/or deleting cost items, adjusting control quantities, and submitting these updates with the designs.

SUBPARAGRAPH 2.1.7 IS OPTIONAL. IF 2.1.7 IS NOT APPLICABLE RETAIN THE NUMBER AND ADD THE WORDS “NOT USED”.

2.1.7 If requested by University, Design Professional shall review with and recommend the contracting mode best suited to the scope, project schedule, and construction budget of the Project.

2.1.8 Design Professional shall prepare Schematic Design studies consistent with and incorporating the Project Program requirements, including site plans, floor plans, elevations, sections, and other drawings, sketches, or graphic materials needed to describe the Project in three dimensions. **{IF APPLICABLE, LIST OTHER DOCUMENTS.}** Schematic studies shall be consistent with the construction budget and Project Schedule and shall be revised until approved by University as acceptable.

2.2 CODE ANALYSIS

Design Professional shall prepare and submit to University an outline of applicable provisions of building codes which apply to this project. The outline shall include a written report and diagrammatic drawings which delineate the design criteria (e.g., exit paths, travel distances, required exits, rated walls, rated corridors, building occupancy, construction type, and fire zones). This graphic documentation of the design criteria shall be updated with each subsequent submittal.

2.3 ESTIMATED PROJECT CONSTRUCTION COST

2.3.1 For the first Schematic Design submittal, Design Professional shall update the Project Program cost model by changing, adding and/or deleting cost items and adjusting control quantities.

2.3.2 Design Professional shall provide an estimated project construction cost based on the **95%** Schematic Design submittal documents using the estimate format as described in the Cost Estimate Format in the Exhibits. Design Professional shall compare the estimate with the Construction Budget and bring any unusual cost items to the attention of the University’s Designated Administrator.

2.4 AREA TABULATION

Design Professional shall develop a space-by-space comparison of the Schematic Design documents’ assignable square feet (ASF) with the Project program’s ASF. Design Professional shall provide overall gross square feet (OGSF) and, for projects exceeding 5 million dollars, shall provide a tabulation of rentable square footage (RSF) according to specifications of the Building Owners and Managers Association. These tabulations shall be made by floor and program component and shall include totals for the building or renovated area as a whole. Design Professional shall calculate the efficiency ratios (ASF/GSF), and shall refer to the Format for Listing Rooms and Spaces in the Exhibits for the required format.

2.5 DESIGN INTENT NARRATIVE

2.5.1 Design Professional shall provide a narrative description of the Project’s site, architectural design, and building organizational concept. Design Professional shall set forth the design concepts and important features of the Project.

2.5.2 Design Professional shall include a short narrative description of the Project’s sustainable design goals and features. Included shall be an update of the University’s Green Building Baseline Form in the Exhibits) to reflect the project specifics. A preliminary building energy model identifying the estimated scale of the various load components and identifying potential energy and resource conservation options shall be provided. Design Professional shall complete and include the Utility Demand Worksheet available from the University’s Representative.

2.5.3 Design Professional shall describe the type of construction, including the wall, ceiling, roofing, and waterproofing systems; exterior and interior finishes; and doors, windows, and casework systems. The finishes shall be identified at a gross level, indicating the type and quality level. Fire safety items, including all related mechanical and electrical devices, shall be described as required by the State Fire Marshal for the intended occupancy of the building.

2.5.4 Design Professional shall submit documentation supporting the design criteria for the structural (including structural loading), HVAC, plumbing, electrical, lighting and communication systems; and other specialized building systems.

2.5.5 Design Professional shall describe the recommended structural system and the basis for recommending this system over others. Included shall be strategies for dealing with special conditions, subsurface conditions, and substructure.

2.5.6 Design Professional shall provide the basis of design and an analysis of the principles of operation of the HVAC, plumbing and electrical systems and their controls. Included shall be the schematic diagrams and written material thoroughly describing the proposed systems and equipment.

2.5.7 Design Professional shall describe the mechanical (plumbing and HVAC systems) conceptually including controls, ducts, filtration, and piping. A written analysis of the calculated loads of proposed new HVAC systems and plumbing systems, the design demands of the Project, and the capacity of the existing systems, if any, shall be provided. Design Professional shall identify the capacity of existing systems if any, based on an examination of the Facility's Record Drawings, an inspection of the existing system, and test reports.

2.5.8 Design Professional shall describe special systems including special laboratory control systems, energy management systems, fume hood and other special exhaust systems, and similar items.

2.5.9 Design Professional shall describe the proposed new electrical systems for the power, lighting, communication, fire alarm, and security systems. Indicated in sufficient detail shall be the proposed power system voltages including the main points of connection to existing systems, electrical service voltage, and number of feeders. Items to be served by emergency power shall be listed and Design Professional shall describe design considerations for special areas.

2.5.10 All of the above descriptions shall include applicable code references where not covered by the code outline.

2.6 MATERIAL BOARD

Design Professional shall provide a display board with mounted samples of the actual exterior materials proposed. The board shall be 20"H x 30"W and weigh no more than 30 pounds. The material samples shall be removable from the board without disassembling the board. The area of each sample shall roughly correspond to the proportion of that material to the other materials in the proposed building.

2.7 CIVIL DRAWINGS

2.7.1 Site Demolition Plan shall show existing structures and utilities to be removed by the Contractor or by others.

2.7.2 Grading Plan shall show existing and proposed contours at one foot intervals.

2.7.3 Utility Plan shall show:

- .1 All existing utilities and underground structures within the Project site based on both the information provided by University and on Design Professional's field investigation.
- .2 Off-site utilities in the vicinity required for this project, and all points of connection.

- .3 Proposed points of connection to the existing Facility utility systems including the proposed method of service and routing for electrical power, chilled water, steam, domestic water, fire water, utility water, sanitary sewer, storm drain, natural gas, telephone, and fire alarm systems. Exterior pad-mounted transformers and site distribution shall be included.

2.8 LANDSCAPE DRAWINGS

Landscape Design Plan shall show conceptual hardscape and planting.

2.9 ARCHITECTURAL DRAWINGS

2.9.1 Site Plan shall include:

- .1 Overall dimensions of the proposed new building(s), wings, etc.
- .2 Existing structures and streets (with names) within a radius of 300 feet of the Project site perimeter with the distances from each proposed new building exterior walls to existing buildings, property lines (setbacks), and roadways.
- .3 Major new exterior elements and, for alterations and additions, all existing exterior elements that will remain in place. These elements shall include, but are not limited to streets, service drives, easements, loading docks, parking areas (cars and bicycle), paved areas, walks, stairs, ramps, pools, retaining walls, fences, fire hydrants, recycling, and trash container locations and equipment.
- .4 Elevations of building entrances and the placement of ramps and other provisions for disabled access to the site and building. Also depicted shall be the parking area and drop-off location nearest the building, and the routes and travel distances to all building entrances.

2.9.2 Site Sections shall be included as needed to explain changes in levels within the proposed building as related to the site.

2.9.3 Floor Plans shall include:

- .1 Locations, room names, sizes (in assignable square feet), and space numbers for all programmed spaces and required gross area spaces including entrances, lobbies, corridors, stairs, elevators, toilet rooms, janitors' closets, storage and mechanical/electrical equipment rooms.
- .2 Overall dimensions of major elements of the building(s).
- .3 Building elements such as walls, columns, doors, windows, openings, and major built-in equipment.
- .4 Means for complying with applicable disabled access codes.
- .5 Floor plans for additions or alterations to existing buildings shall show the existing floor plan and indicate the existing space usages and any proposed changes.

2.9.4 Demolition Plan (whenever a Project requires the demolition of a building or portions thereof). Design Professional shall differentiate between new work (walls, doors, finishes, and so on), existing work to be removed, and existing work to remain in place.

2.9.5 Sections shall be provided as needed to explain structure and unusual design features, and shall show existing and proposed grades.

2.9.6 Elevations shall include all elevations of the building, floor-to-floor dimensions, the overall building height, and elevations of existing neighboring buildings.

2.9.7 Presentation Materials as required for presentation to the {Facility's Appropriate Committee} and to the Regents. Design Professional shall verify all requirements for presentation materials with the University's Representative. These may include:

- .1 Colored presentation-quality drawings of all floor plans, elevations (all sides), sections, site plan, and other drawings, as appropriate.
- .2 Two rendered perspective drawings, compensated as an additional service, in color and large enough to convey the overall design. A normal, "eye-level" view of the Project is preferred. In some instances, a "birds-eye" view will be needed to convey the full scope of the Project. The landscape features of the site development shall be shown in a realistic manner, but shall not obscure the structure.

2.10 STRUCTURAL DRAWINGS

Design Professional shall provide a conceptual structural framing plan of a typical floor that indicates the grid system (dimensioned), columns, shear walls, and related items.

2.11 PLUMBING DRAWINGS

2.11.1 Floor Plans shall show primary risers and mechanical room space for pumping, etc.

2.12 HVAC DRAWINGS

Design Professional shall provide a conceptual single-line mechanical diagram showing major ducts and equipment. The sizes and locations of major equipment items including cooling towers, chillers, pumps, fans, air-handling units, compressors, and related items, shall be identified.

2.13 ELECTRICAL DRAWINGS

2.13.1 Design Professional shall provide a conceptual single-line diagram showing permanent as well as temporary points of connection to high-voltage, telephone, and signal systems. Included shall be the:

- .1 Method of service (Facility or local utility) showing primary service to loop switch
- .2 Major transformers and transformer substations
- .3 Secondary service to switchboards, motor control centers, distribution boards and panel boards for power and lighting.
- .4 Major components of the emergency power system

2.14 ENERGY EFFICIENCY PROGRAM SUPPORT

Design Professional shall support the University's participation in the Public Utility Commission's Nonresidential New Construction energy efficiency program (formerly Savings by Design). Design Professional shall attend meetings to identify up to ten energy conservation measures or combinations of measures for analysis. Design Professional shall provide estimated construction costs, estimated maintenance costs, estimated equipment life spans and technical information for the University's independent energy analyst.

ARTICLE 3 - BASIC SERVICES - DESIGN DEVELOPMENT PHASE

3.1 GENERAL

3.1.1 Design Professional shall submit updated versions of all Schematic Design phase submittal items as well as the additional items described below. The Design Development documents shall be

consistent with the Project Program (including the gross and assignable floor areas), the Construction Budget and the Project Schedule. Design Professional shall submit as listed below:

- .1 Items 3.2 through 3.15 (excluding 3.13.3) upon 50% completion of the Design Development phase
- .2 Items 3.2 through 3.15 upon 95% completion of the Design Development phase
- .3 Items 3.2 through 3.16 upon 100% completion of the Design Development phase

3.2 CODE ANALYSIS

Design Professional shall update the code outline.

3.3 ESTIMATED PROJECT CONSTRUCTION COST

Design Professional shall update the estimate at the time of each submittal to include all construction components including quantities of materials and unit costs. The estimated costs shall be based on the latest documents submitted to the University.

3.4 AREA TABULATION

Design Professional shall update the area tabulation.

3.5 DESIGN INTENT NARRATIVE

Design Professional shall update the Design Intent Narrative. All fire safety items including the flame spread rating of all applicable material and finishes shall be identified.

3.6 MATERIAL BOARD

Design Professional shall update the Material Board(s) to include samples of all finish materials listed in the materials/color schedule.

3.7 CIVIL DRAWINGS

3.7.1 Grading Plan - Design Professional shall update the plan to show the general method of site drainage as affected by each proposed building. Added shall be baseline and benchmark references and elevations of major exterior elements including those for stairways, walls, and terraces.

3.7.2 Utility Plan - Design Professional shall update the plan to indicate all utility lines, ductbanks, tanks and equipment that are to be abandoned, removed, or rerouted.

3.7.3 Conceptual Staging and Bicycle Routing Plan - Design Professional shall prepare plans to indicate contractor staging and parking areas. Impacted bicycle and pedestrian pathways and proposed rerouting shall be identified.

3.8 LANDSCAPE DRAWINGS

Landscape Plans shall show hardscape, planting and other improvements.

3.9 ARCHITECTURAL DRAWINGS

3.9.1 Floor Plans shall include:

- .1 Corridors (with widths)
- .2 Door swings
- .3 Locations and fire ratings of all fire separations, exit enclosures, fire doors, and similar elements, as required by applicable codes.
- .4 Accessible toilets and drinking fountains.

- .5 Plumbing fixtures such as lavatories, floor drains, water closets, urinals, service sinks, drinking fountains, eyewash fountains, deluge showers, and fire-hose cabinets.
- .6 Built-in features such as fixed auditorium seats, kitchen equipment, display cases, counters, shelves, lockers, laboratory benches, casework, glass washers, sterilizers, fume hoods, and similar items.
- .7 Movable furniture, which in most cases is “not in contract” (NIC), including “interior landscape” partitions and equipment. Differentiate between movable furniture and equipment and built-in furniture and equipment (built-in items are usually included in the construction contract).
- .8 Reference all sections and elevations.

3.9.2 Roof plan shall show associated equipment, slopes, ridges, drains, and other items.

3.9.3 Elevations shall include:

- .1 Building elements including penthouses, entrances, windows, doors, stairs, platforms, louvers, vents, exhaust stacks, retaining walls, and similar items. Indicate proposed finished grades.
- .2 Windowsill and head heights.

3.9.4 Sections shall include:

- .1 Longitudinal and transverse sections for each major area, indicating floor elevations, existing and proposed exterior grades, ceiling heights, pipe tunnels, unexcavated areas, basement areas, rooflines, and parapets. Show cuts for connections to adjoining buildings where appropriate.
- .2 Include a small-scale plan or diagram (if necessary) to indicate section lines for each elevation and section.
- .3 Provisions for HVAC distribution and hood venting.

3.9.5 Large Scale Drawings - Provide detail plans, sections, and elevations for the following types of space:

- .1 Classrooms and lecture halls
- .2 Kitchens and related service areas
- .3 Laboratories and laboratory support areas
- .4 Toilet and locker rooms
- .5 Other areas of special design with notes related to materials and design

3.9.6 Schedules shall include:

- .1 Door schedule indicating each door type, size, material, hardware group and pertinent comments.
- .2 Window schedule indicating each window type, size, material, and pertinent comments.
- .3 Preliminary interior finish schedule indicating the material, texture, and color of each finish material proposed for use in the Project.

3.10 STRUCTURAL DRAWINGS

Design Professional shall provide structural plans for each level of the structure at the same scale as that used for the architectural plans. Design Professional shall indicate the grid system (dimensioned), columns, load-bearing walls, shear walls, footings, and related items.

3.11 PLUMBING DRAWINGS

3.11.1 Floor Plans shall show:

- .1 Plumbing fixtures and any equipment requiring plumbing service (including pumps, tanks, generators, pressure-reducing valves, etc.) showing their locations and required piping connections.
- .2 Main waste lines and stacks and vents as well as all service mains, including those for water, air, gas, and vacuum. Plumbing chases in multi-storied buildings.
- .3 Fire water mains, standpipes and hose racks.

3.12 HVAC DRAWINGS

3.12.1 Floor Plans shall show:

- .1 Mechanical equipment including air handling units, chillers, cooling towers, pumps, converters, expansion tanks, boilers, fans, fan coil units, heat exchangers, fume hoods and other equipment.
- .2 Mains for each duct system.
- .3 Typical supply and return air zones for each type of occupancy (offices, laboratories, computer rooms, conference rooms, and special application rooms.) A typical air zone shall include the terminal unit with all applicable branch ducts and air outlets and inlets.
- .4 Typical exhaust air duct for each type of application (hoods, toilet rooms, janitors' closets, transformers, mechanical/electrical equipment rooms, and other rooms as required for a satisfactory indoor environment.) A typical duct shall include an air inlet and a source destination for exhaust air.

3.12.2 Large-Scale Drawings of Equipment Rooms shall show layout of all equipment rooms to ensure that the proposed equipment will fit in the allotted space.

3.13 ELECTRICAL DRAWINGS AND CATALOG CUTS

3.13.1 Single line diagrams shall be updated to include each load center unit substation, telephone equipment rooms, and closets.

3.13.2 Floor Plans shall show layouts for power, signal, and communications on one set of drawings, and the lighting layouts shall be shown on a different set of drawings. Included shall be lighting fixtures in typical offices, laboratories, corridors, examination rooms, and similar spaces. A schedule shall be used to show detail.

3.13.3 Catalog cuts shall be provided for all proposed lighting fixtures.

3.13.4 Large-Scale Drawings shall include a layout of all equipment rooms to ensure that the proposed equipment will fit in the allotted space.

3.14 OUTLINE SPECIFICATIONS

3.14.1 Prior to beginning production of the specifications, Design Professional shall schedule a meeting with University's Designated Administrator and the Contract Administration staff to discuss specifications guidelines. At this meeting, University will provide guidelines for preparing specifications. Attendees at this meeting shall include Design Professional and its consultants including specifications writers.

3.14.2 Outline specifications with a detailed description of all building components and systems shall include:

- .1 An index showing all divisions and sections intended to be used. The format shall be that recommended by the Construction Specifications Institute (CSI), narrow scope type.
- .2 All technical sections in outline specification format (Part 2 of a narrow scope CSI specification.)

3.15 ENERGY ANALYSIS

Design Professional shall submit a complete performance-approach computer simulation demonstrating Title 24 energy compliance for University review and certification. Process loads shall be clearly identified and evaluated as allowed by California Code of Regulation Title 24, Part 6. The simulation shall demonstrate compliance with the University's requirement to outperform Title 24 and reduce process loads as described in subparagraph 1.13.2. The Design Professional shall correct any non-complying aspect of the design, including the energy compliance approach.

3.16 SOLE SOURCE LISTING

3.16.1 Design Professional shall submit a list of each item of equipment and/or each system to be designated as sole source by the notation in the documents, "or equal (no known equal)". This list shall include the following information:

- .1 Description of each item of equipment and/or each system;
- .2 Estimated cost of each item of equipment and/or each system; and
- .3 Justification as to why each item of equipment and/or each system needs to be from a sole source. Include brief performance specifications detailing those features which, because they are unique or state-of-the-art, or the preclude use of an alternative product.

3.17 EMS/HVAC AUTOMATIC TEMPERATURE CONTROLS

The Design Professional shall specify automatic Energy Management System (EMS)/HVAC controls systems that communicate with and are interoperable with the campus system. The University's Designated Administrator shall arrange an initial meeting at the end of the Design Development phase to discuss the integration and specification of the EMS/HVAC Control System. The Design Professional shall thereafter incorporate these requirements into Project design and Construction Documents.

ARTICLE 4 - BASIC SERVICES - CONSTRUCTION DOCUMENTS PHASE

4.1 GENERAL

4.1.1 Design Professional shall submit updated versions of all of the required items for the Design Development phase submittal as well as the additional items described below. The Construction Documents shall be consistent with the Project Program (including the gross and assignable floor areas), the Construction Budget and the Project Schedule. Design Professional shall submit as listed below:

- .1 Items 4.2 through 4.11 upon 50% completion of the Construction Documents phase
- .2 Items 4.2 through 4.9, and 4.12 upon 95% completion of the Construction Documents phase
- .3 Items 4.2 through 4.15 upon 100% completion of the Construction Documents phase

.4 Items 4.2 through 4.16 upon backcheck to final completion of the Construction Documents phase

4.1.2 Prior to the first Construction Documents phase submittal, Design Professional and its consultants shall review University's Bidding Documents for Project requirements and recommend any changes needed to make them applicable to the Project. Design Professional shall include, with the first Construction Document phase submittal, a single marked-up set of University's Standard Specifications, Division 1, General Requirements, showing the recommended changes.

4.1.3 The Drawings and Specifications shall be consistent with the University's General Conditions and the Division 1 tailored for the Project, as required by subparagraph 4.1.2.

4.2 CODE ANALYSIS

Design Professional shall update the code outline.

4.3 ESTIMATED PROJECT CONSTRUCTION COST

Design Professional shall update the estimate at each submittal, and shall bring any unusual cost item to the attention of University's Designated Administrator. The 100% Construction Documents estimate shall be updated by Design Professional to incorporate any additional backcheck requirements incorporated after the 100% submittal.

4.4 AREA TABULATION

Design Professional shall update the area tabulation.

4.5 DESIGN INTENT NARRATIVE

Design Professional shall update the Design Intent Narrative.

4.6 MATERIAL BOARD

Design Professional shall update the Material Board(s).

4.7 DRAWINGS & SPECIFICATIONS

4.7.1 Cover Sheet and Regulatory Compliance Drawings shall include:

- .1 Title sheet with index, general notes, legends, and a small-scale Facility/Project location map.
- .2 Code Compliance Calculations and Diagrams.

4.7.2 Civil Drawings shall include:

- .1 Existing civil survey
- .2 Site demolition plan
- .3. Site utilities plan
 - a. Coordinate size and location for all stub outs for connection by Architectural, Mechanical, Plumbing, Electrical, etc. Indicate continuation sheet number.
 - b. Indicate identification number as provided by the University on all new manholes, valve boxes, cleanouts, lift stations, etc.
 - c. Completely design steam and condensate lines, steam vaults, expansion legs, anchors and guides.
 - d. Show locations, sizes, and elevations of the site sewer, street water main, and water service into the building.
- .4 Site plan

- .5 Rough grading plan. Show drainage structures.
- .6 Site profile sections
- .7 Details
- 4.7.3** Landscape Drawings shall include:
 - .1 Finished grading plan
 - .2 Hardscape (paving) plan
 - .3 Irrigation plan
 - .4 Planting plan
 - .5 Hardscape details (walls, walks, planters, etc.)
 - .6 Irrigation details
 - .7 Planting details
 - .8 Other details as appropriate
- 4.7.4** Architectural Drawings shall include:
 - .1 Reflected ceiling plans showing all penetrations
 - .2 Details
- 4.7.5** Structural Drawings shall include:
 - .1 Plans that indicate the location, type of member, size, and material of each structural element (including existing elements on renovation projects) for foundations, floors, roofs, and any intermediate levels. List assumed safe bearing pressures on soils and ultimate strengths of concrete.
 - .2 Schedules (beam, column and slab)
 - .3 Details of all connections, assemblies, expansion joints, and similar items
 - .4 Details of the structural framing systems required to support nonstructural elements and fixed equipment
- 4.7.6** Plumbing Drawings:
 - .1 Floor Plans shall show:
 - a. Locations, sizes, and elevations of the building sewer, drains, waste, and waste vent stacks with connections to drains, fixtures, and equipment
 - b. Locations and sizes of hot, cold, and circulation water mains, branches, and risers from the service entrance and tanks
 - c. Fire-extinguishing equipment such as sprinklers and wet/dry standpipes
 - d. Locations and sizes of natural gas, vacuum, and medical gas systems
 - .2 Riser diagrams for each system shall show all plumbing stacks with vents, water risers, and fixture connections for multi-story buildings; materials, gauges, and sizes for all elements.
 - .3 Sections shall show structural, HVAC, and piping systems through congested areas.
- 4.7.7** HVAC Drawings shall include:
 - .1 Mechanical floor plans showing the complete HVAC systems including the following items:

- a. Heating and steam mains, including branches, with pipe sizes
 - b. Air-conditioning systems including refrigerators, water and refrigerant piping, and duct work
 - c. Exhaust and supply ventilating systems showing duct sizes for steam or water connections and piping
 - d. Air and piping systems, including all branches, on each floor plan
- .2 Detailed floor plans and sections clearly indicating the work required for all mechanical equipment rooms.
 - .3 Air balance schedule indicating the CFM (cubic feet per minute) of outside air, supply air, return air, and exhaust air for each air system.
 - .4 Elevations of built-up fan units to ensure required airflows and access to the component parts of the units
 - .5 Flow diagram for each of the following types of water systems: Chilled water, Condenser water, Hot water and others as needed to clearly define the scope of work
 - .6 Riser diagram for each type of system (air, chilled water, heating hot water, and specialty systems)
 - .7 Mounting details
 - .8 Sequence of operations diagram

4.7.8 Electrical Drawings shall include:

- .1 Electrical service entrance and its service switches, the service feeds to the public service feeders, and the characteristics of the light and power currents
- .2 Transformers and their connections, whether in the building or on the Project site
- .3 Main switchboard, power panels, light panels, and associated equipment
- .4 Feeder and conduit sizes
- .5 Light fixtures, receptacles, switches, and power outlets
- .6 Telephone outlets, conduits, terminal cabinets, and backboards
- .7 Complete fire alarm system including its connection to the Facility's system
- .8 Emergency electrical power system including generator transfer switches, fuel tanks, and all auxiliaries
- .9 Other systems as required
- .10 Mounting details

4.7.9 Specifications:

- .1 Update the Specification Index.
- .2 Submit, at minimum, any six completed architectural sections from Divisions 2 through 13, one completed mechanical section from Divisions 22 or 23, and one completed electrical section from Division 26. If Division 14 is used, include one completed Section.
- .3 Update the remaining outline specifications in Divisions 2 through 33.
- .4 University will prepare its Bidding Documents including Specifications, Division 1.

4.8 ENERGY ANALYSIS

Update the Title 24 energy compliance computer simulation. Submit California Energy Commission forms, certifying that the design complies with the code and the UC Sustainable Practices Policy. The University, acting as the enforcement agency, is required to independently check the designs and certify that they are in compliance with the code. Any non-complying aspect of the design, as determined by University's Designated Administrator, shall be corrected by Design Professional before the design can be certified by the University.

4.9 STRUCTURAL, MECHANICAL, AND ELECTRICAL CALCULATIONS

4.9.1 Design Professional shall clearly list all design criteria, assumptions, and references used. Calculations shall be arranged in a clear manner and shall include schematic diagrams and spreadsheets where necessary together with information sufficient to show compliance with all applicable codes and design standards. Calculations shall be checked and stamped by an engineer registered in the applicable discipline. Submitted calculations shall include, but not be limited to:

- .1 Structural Calculations
 - a. Preface with a statement outlining the basis for the structural design and indicating the manner in which the proposed building will resist vertical loads and horizontal forces.
 - b. Structural diagrams shall be accompanied by computations, stress diagrams and other pertinent data and shall be complete to the extent that calculations for individual structural members can be readily interpreted.
 - c. List assumed safe bearing pressures on soils and ultimate strengths of concrete.
 - d. Where unusual conditions occur, submit additional data as is pertinent.
- .2 Mechanical Calculations
 - a. Heating and cooling load calculations
 - b. Psychometric charts and air conditions
 - c. Fan and coil sizing calculations and selection data
 - d. Sizing calculations and selection data for chillers, boilers, cooling towers, heat exchangers, packaged air conditioners, etc.
 - e. Ductwork and pipe sizing calculations. (Include flows per room or coil, sizing method used and pressure drops)
 - f. Domestic/industrial hot water sizing calculations, including pump sizing
 - g. Structural and seismic calculations for equipment supports (may be submitted with structural calculations)
- .3 Electrical Calculations
 - a. Summary of electrical loads used in calculating transformer size
 - b. Fault interruption calculations
 - c. Point-by-point lighting analysis for all interior rooms and exterior areas showing light level contours graphically
 - d. Structural and seismic calculations for equipment supports (may be submitted with structural calculations)
- .4 Plumbing, Communications, and other specialized building system calculations

4.10 UTILITY SHUT DOWN PLAN

Design Professional shall provide a detailed Utility Shut Down Plan that identifies all utilities affected, how the utility is to be isolated, maximum allowable duration of interruption (if applicable) and the affected facilities for all major shut downs. Design Professional shall specify by-pass or temporary service if required to minimize disruption to the University.

4.11 SOLE SOURCE LIST

Design Professional shall update the sole source list.

4.12 95% CONSTRUCTION DOCUMENTS

4.12.1 Design Professional shall update the documents and provide additional drawings, details and all complete specification sections.

- .1 Architectural Drawings: Detail the anchorage of all fixed equipment.
- .2 Mechanical Drawings: A sufficient level of detail shall be provided to illustrate connections, routings, and other items in complex areas.
- .3 Electrical Drawings: A sufficient level of detail shall be provided to illustrate connections, routings, and other items in complex areas. All wiring shall be finalized. Provide a schedule of feeder breakers or switches, locations of all circuits, details for other systems as required.
- .4 Soils and Materials Testing Recommendations: The Design Professional shall provide written recommendations for Construction phase testing and special inspections such as soils and materials testing, welding inspections, and dewatering requirements.

4.13 100% COMPLETE CONSTRUCTION DOCUMENTS

4.13.1 Design Professional shall update the documents and provide additional drawings, details and specifications in sufficient detail as to be deemed complete and buildable. Prior to submitting the 100% Construction Documents, Design Professional and its consultants shall have thoroughly checked, coordinated, and revised all documents to bring them to 100% completed level:

- .1 Contract Documents: University will prepare Bidding Documents including Specifications Division 1. The University shall provide the Cover Page, Table of Contents, Advertisement for Bids, Project Directory, Instructions to Bidders, Supplementary Instructions to Bidders, Information Available to Bidders, Bid Form, Location Map(s), Geotechnical Engineering Report, Prevailing Wage Determinations, Qualifications Questionnaire, Bonds, Agreement, General Conditions, Supplemental Conditions, Equal Opportunity Documentation, Exhibits and Specifications, Division 1, General Requirements. The Design Professional shall provide or assist with the following documents:
 - a. Certification Page (prepared by the University, signed and stamped by the Design Professional)
 - b. Project Description (furnished by the Design Professional, prepared by the University)
 - c. Index to the Specifications (furnished by the Design Professional, prepared by the University)
 - d. Specifications, Divisions 2 through 33
 - e. List of Drawings (with dates furnished by the Design Professional, prepared by the University).

4.14 LETTER OF ASSURANCE

Design Professional shall submit to the University a Letter of Assurance as described in Quality Assurance in the Exhibits attesting that the documents are complete and ready to bid.

4.15 LIST OF ROOMS AND SPACES

Design Professional shall provide a complete listing of all rooms and spaces, as required in Format for Listing Rooms and Spaces in the Exhibits.

4.16 FINAL BACKCHECK CONSTRUCTION DOCUMENTS

4.16.1 The final backcheck submittal shall either incorporate any changes or corrections required by University or review agencies as a result of their review of the Construction Documents, or be accompanied by a written statement as to why such changes were not incorporated. University may reject Design Professional's explanation and require Design Professional to make the changes or corrections to the Construction Documents as previously requested by University.

4.16.2 Unless directed otherwise in writing by University, the Construction Document phase shall not be considered complete until all required agency and University approvals have been received by Design Professional. When all University and review agency required changes or corrections have been incorporated by Design Professional, the Construction Documents will be deemed to be final and ready for bid

4.16.3 Final Construction Drawings and the Certification page of the specifications submitted to University for bidding purposes shall be signed and stamped by Design Professional or the appropriate Design Professional's consultant.

ARTICLE 5 - BASIC SERVICES - BIDDING PHASE

5.1 GENERAL

5.1.1 If prequalification of construction contractors is required by University, Design Professional shall review and comment on the prequalification criteria prepared by the University.

5.1.2 Design Professional's Project Architect or Engineer shall assist University in the review and evaluation of bids if requested by University.

5.2 UNIVERSITY ADMINISTRATION

5.2.1 The University shall administer and coordinate the following:

- .1 Reproduction of all documents, including addenda
- .2 Completing and placing the Advertisement for Bids
- .3 Scheduling and coordination of pre-bid conference and site visits
- .4 Receipt of questions from bidders and distribution of questions to the Design Professional
- .5 Receipt of addenda documents from Design Professional
- .6 Issuance of addenda
- .7 Receipt of Bids
- .8 Rejection of Bids
- .9 Bidder Protests
- .10 Contract Award and Execution

5.3 PRE-BID CONFERENCE AND SITE VISIT

University's Representative shall conduct, and Design Professional and its consultants shall attend and participate in pre-bid conferences and pre-bid site visits with potential bidders to help identify questions that bidders may raise during the Bidding phase. Questions from prospective Bidders shall be collected by the University's Representative during these conferences and site visits. No questions shall be answered at these events which require interpretation, clarification or modifications of the Contract Documents.

5.4 BIDDERS INQUIRIES

5.4.1 During the Bidding phase, University's Representative (or designee) shall receive all requests for interpretation, clarification and modification from Bidders, and log in the date, time, and caller's name and question. The University's Representative will forward this information to the Design Professional. The Design Professional and its consultants may answer general questions and collect information from Bidders, but shall not clarify intent or change the Bidding Documents verbally or in writing. The Design Professional and its consultants shall forward a copy of questions they directly received from Bidders to the University's Representative.

5.4.2 The University's Representative sets the deadline for receiving all requests for clarification or interpretation of the Bidding Documents (Refer to Advertisement for Bids and Supplementary Instructions to Bidders). Questions received after the deadline may be answered at the discretion of the University's Representative.

5.5 ADDENDA

5.5.1 Interpretation, clarification, and modification of the Contract Documents shall be issued only in the form of an Addendum to the Contract Documents. Design Professional shall furnish the information required to the University for issuance of Addenda.

5.5.2 Design Professional is responsible for receiving, reviewing, approving, coordinating, and incorporating addenda items received from the consultant(s) into a single addendum document prior to submitting this document to the University. Addenda shall be submitted to the University in the same format as the Construction Documents.

5.5.3 Design Professional shall provide to the University at the end of the Bidding phase the following documents with changes identified as follows. In the Specifications all additions shall be shown in bold underline and all deletions shown in strikethrough. In the Drawings, changes shall be "clouded."

- .1 One set of individual Construction Drawings and sections of the Specifications which were altered by Addenda.
- .2 One complete set of Construction Drawings and Specifications that fully integrate all addenda items.

5.6 PRE-AWARD CONFERENCE

Design Professional shall, if requested by the University, participate in a pre-award meeting to include review of Contractors' submittals which are received with the signed Agreement of the Construction Contract.

5.7 SUBMITTAL LIST

Design Professional shall submit, prior to the bid date, a complete list of all submittals required by the Contract Documents listed by individual specification sections.

ARTICLE 6 - BASIC SERVICES - CONSTRUCTION PHASE

6.1 GENERAL

6.1.1 The Design Professional's responsibilities shall include, but not be limited to, interpretation of the Contract Documents; periodic site observations; review of submittals; preparation of documents for proposed changes; and general consultation to the University on design matters. The Design Professional shall be fully responsible for all matters related to the Design Professional's design and all of the Design Professional's recommendations to the University which are carried out by the University without substantive change. The Design Professional's duties shall not include administration of communications with Contractor, chairing meetings with Contractor, monitoring the schedule; negotiation of price changes; and coordination of closeout. Design Professional shall cooperate with the University's Representative in the University's Representative's provision of contract administration services as those services are described in the Contract Documents.

6.1.2 Except as otherwise provided in the Contract Documents or as directed by University, all written communications with Contractor shall be sent and received by University's Representative. The Design Professional shall advise and consult with University's Representative and shall keep University's Representative informed of the observed progress of the Work. The Design Professional shall render written or graphic interpretations and decisions that are consistent with the intent of, and reasonably inferable from, the Contract Documents; review and recommend any action to be taken regarding Contractor's required submittals; and evaluate, with the University's Representative, the equivalence of proposed substitutions for materials, products, or services specified by brand or trade names in the Contract Documents and recommend either approval or rejection of substitutions as being equal in quality, utility, and appearance.

6.1.3 The Design Professional shall perform all Construction phase services in a timely manner, as required by this Agreement and the Contract Documents. Design Professional shall not delay its interpretations, decisions, reviews, or other functions pursuant to this Agreement so as to cause or contribute to a disruption of construction or a delay in completion of the Project.

6.1.4 Design Professional shall, at no cost to University, satisfactorily correct any and all errors, omissions, deficiencies, or conflicts in the Construction Documents prepared by Design Professional or Design Professional's consultants promptly upon discovery or notice. The obligations of Design Professional to correct defective or nonconforming Work shall not in any way limit any other obligations of Design Professional.

6.2 CONTRACT DOCUMENTS COMPLIANCE

6.2.1 Design Professional shall make (1) periodic on-site observations of construction as it progresses except for periods of construction downtime as approved by University in writing, and upon completion of construction and (2) off-site observations of fabricated materials and equipment when such off-site checks are specified in the Contract Documents. Observations shall be conducted deliberately and thoroughly. The frequency, duration, and extent of such observations shall be appropriate to and for: the progress, character, and complexity of the Work; design issues or questions of concern to Design Professional, its consultants, University's Representative or as noted in any inspection reports furnished to Design Professional; the observed quality of Contractor's performance during previous visits; the review of construction of crucial components of the Work; and the observation of the performance of specified or University's Representative's directed tests significant to the acceptability of crucial components of the Work. Such observations shall also be performed when reasonably requested by University.

6.2.2 Observations shall be for the purpose of ascertaining: the progress of the Work; that the character, scope, quality and detail of construction (including workmanship and materials) comply with the design expressed in the Contract Documents, University's Representative's directives, approved product data and samples and clarification drawings. Observations shall be separate from

any inspections which may be provided by University. University's provision of inspection services, if any, shall not relieve Design Professional of its responsibilities under this Agreement.

IF THE PROJECT IS SUBJECT TO OSHPD APPROVAL ADD THE FOLLOWING:

University's inspectors, if any, shall be satisfactory to Design Professional and shall act under the direction of Design Professional to the extent required by law.

6.2.3 Design Professional shall have the authority to recommend rejection of Work that does not conform to any of the following: the Contract Documents; Design Professional's directives; applicable code requirements; approved shop drawings, product data, and samples; clarification drawings; or defective Work. Such rejection shall be transmitted to the University's Representative in writing for communication to Contractor.

6.2.4 The Design Professional shall recommend special inspection or testing of the Work in accordance with the provisions of the Contract Documents if, in Design Professional's reasonable opinion, such inspection or testing is necessary or advisable for the implementation of the Contract Documents, regardless of the state of completion of the Work subject to such inspection or testing.

6.2.5 The Design Professional shall review inspection reports, laboratory reports, and test data to determine conformity of such data with the design requirements expressed, implied, or depicted in the Contract Documents; approved Shop Drawings, Product Data, and Samples; and Clarification Drawings.

6.2.6 The Design Professional shall also recommend to the University's Representative, in writing, about actions that need to be taken by University's Representative, as determined from Design Professional Project site visits, inspection reports, laboratory reports, and test data or from Contractor proposals, or other relevant documents.

6.3 INTERPRETATION OF THE CONTRACT DOCUMENTS

6.3.1 The Design Professional shall be, in the first instance, the interpreter of the design requirements of the Contract Documents and the judge of the performance thereunder.

6.3.2 Design Professional's decisions or interpretations regarding the Contract Documents, or disputes arising out of the Contract Documents shall be issued by University's Representative following University review, but shall be based upon Design Professional's independent judgment. Information regarding, or changes to, the Contract Documents shall be issued by the University on the University's forms (Letters of Instruction, Field Orders, and Change Orders).

6.4 CHANGES TO THE CONTRACT DOCUMENTS

The Design Professional shall incorporate changes (issued as revision drawings with Field Orders, RFIs or Change Orders) into the Record Documents on a monthly basis during the Construction phase.

6.5 CONSTRUCTION MEETINGS

6.5.1 Pre-Construction Meeting (Kick-off): Design Professional and its consultants shall attend and participate in a pre-construction meeting called by the University's Representative. Attendees shall include Contractor and major subcontractors, University's Designated Administrator and others as deemed necessary by the University. The Design Professional may submit items to the University's Representative for inclusion in the agenda.

6.5.2 Construction Meetings: Design Professional shall attend regular construction meetings at the project site scheduled to occur {INSERT MEETING FREQUENCY - Example once a week, once every 2 weeks}, plus special meetings as they are deemed necessary. Design Professional's consultants shall attend as necessary. If, through no fault of Design Professional, the total number of regular construction meetings attended exceeds {NUMBER} meetings, Design Professional shall be

compensated for additional meetings in accordance with Agreement paragraph 5.2. Construction meeting notes will be prepared and distributed by the University's Representative.

6.6 INSPECTION

6.6.1 Construction phase inspection will be provided and paid for by University. Design Professional shall provide technical direction to, and interpretation of, the Contract Documents for inspectors and advise these inspectors of decisions rendered.

6.6.2 The inspectors, acting under the direction of University's Representative, will:

- .1 Be responsible for milestone inspections (spot checks) to assess compliance with the requirements of the Contract Documents.
- .2 Prepare a written report following each milestone inspection. The inspector shall notify University's Representative when work that does not comply with the Contract Document requirements is observed in the field. Observed instances of noncompliance shall be noted in the inspector's report.
- .3 Comment in subsequent inspector's reports on whether or not instances of noncompliance have been corrected.
- .4 Participate in punch list inspections for beneficial occupancy, substantial completion and final completion.
- .5 Assist University's Representative in reviewing test and inspection results from testing laboratories. If University contracts for specialty inspection services, the inspector shall report the results of these inspections to University's Representative.
- .6 Not authorize deviations from the Contract Documents.
- .7 Not advise or issue directions to Contractor regarding any aspect of construction means, methods, techniques, sequences, or procedures or regarding safety programs in connection with the Project.

6.7 MATERIALS TESTING

University will contract with soils and materials testing laboratories upon Design Professional's recommendations and as required by the Specifications. University's Representative or the University's Representative's delegate will coordinate the activities of Contractor and University's testing consultants.

6.8 MATERIALS/COLOR SCHEDULE AND MATERIALS BOARDS

Design Professional shall revise and update the materials/color schedule and materials boards, which were prepared during the Design Development phase and updated during the Construction Document phase, as necessary to reflect the actual manufacturers' products that have been submitted by Contractor and approved for use on the Project.

6.9 COMMISSIONING PLAN

Design Professional shall review the Contractor's or the University's Commissioning Plan for accurate incorporation of design intent.

6.10 PUNCH LIST

Design Professional and its consultants shall review the construction with University's Representative and Contractor when notified that the construction is substantially complete, and again when notified that the construction is fully complete. The Design Professional shall compile a punch list indicating any lack of compliance with Contract Document requirements and submit to the University's Representative. University's Representative, Design Professional, and Contractor shall also inspect

the construction when Beneficial Occupancy is required by University or stipulated in the Contract Documents. Design Professional shall advise on the issuance of the Certificate of Beneficial Occupancy and the Certificate of Substantial Completion in accordance with the Construction Contract Documents.

6.11 FINAL APPROVAL AND INSPECTION ACCEPTANCE

6.11.1 The Design Professional and its consultants shall:

- .1 Assist University's Representative to review contractor's guarantees, and operating data to assess compliance with the Contract Document requirements.
- .2 Assist University's Representative to assemble written guarantees, operating and maintenance instruction books, diagrams, and charts required of Contractor. University's Representative is responsible for verifying that all required submittals have been received.
- .3 Recommend final acceptance of the construction and shall advise University of the acceptability of the work performed by Contractor.
- .4 Attend a final inspection and sign a Final Completion form.

6.12 REVIEW OF CONTRACTOR'S AS-BUILT DOCUMENTS

Design Professional shall review Contractor's As-Built Documents prior to or immediately following each Contractor pay request submitted to verify that Contractor's work is in compliance with the Contract Documents. Design Professional shall review Contractor's final As-Built Documents and verify the University's approval of the changes shown on the As-Built Documents prior to Design Professional's preparation of the final Record Documents.

6.13 RECORD DOCUMENTS

Any revisions or changes that have been made during construction shall be incorporated in the Record Documents to show the As-Built condition of the Project. The Record Documents shall include the Contract Documents, Contractor prepared shop, design, and layout drawings. The Record Drawings shall include all revisions and changes made during construction both as issued by the Design Professional and University and as recorded by the Contractor during the course of the Project. Merely supplementing the Contract Drawings with Change Orders and Field Directive documents stamped "AS-BUILT" is not acceptable. All changes must be transferred to the original drawings, including the revision of the CAD digital files for the Drawings, to reflect a true "As-Built" condition. The digital files and plots shall be labeled "RECORD DRAWING" with the appropriate date. The Design Professional shall submit an interim set of Record Drawings at the midpoint of construction incorporating all changes to date. The final Record Drawings shall be submitted to the University within 30 days of receiving the Contractor's As-Built Drawings.

ARTICLE 7 - ADDITIONAL SERVICES

Unless required to be performed as part of basic services, the services described in this Article are additional services as described in Article 3 of this Agreement.

7.1 PRELIMINARY DESIGN

7.1.1 Provide a rough order of magnitude cost estimate based on an anticipated program, scope, schedule, and building area.

7.1.2 Provide programming services including but not limited to the following:

- .1 Meetings
- .2 Confirm design and sustainability goals
- .3 Review and confirm design requirements including sustainability criteria

- .4 Conduct user interviews
- .5 Establish and evaluate space needs and data
- .6 Develop project schedule, delivery method and cost model
- .7 Conduct space/cost reviews and adjustments
- .8 Prepare programming document

7.2 PRE-CONSTRUCTION PHASES

7.2.1 Provide analyses of University's need and formal programming documentation of the requirements of the Project.

7.2.2 Provide planning surveys, site evaluations, environmental studies, or comparative studies of prospective Project sites.

7.2.3 Provide services to investigate existing conditions or facilities, to make measured drawings thereof, or to verify the accuracy of drawings or other information furnished by University beyond those reasonably and customarily provided in Basic Services except that additional information recommended by the Design Professional in accordance with paragraph 2.1.6 of this Agreement shall not entitle Design Professional to additional compensation.

7.2.4 Provide planning services for tenant or rental spaces.

7.2.5 Provide financial feasibility studies or other special studies.

7.2.6 Prepare special surveys, environmental studies, and submissions required for review or approval by governmental authorities or others having jurisdiction over the Project except submittals required for approval of the Construction Documents and as required to prepare Change Orders under basic services as stipulated in this Agreement.

7.2.7 Prepare revisions to the documents during the Schematic Design, Design Development, and Construction Documents phases when these revisions are inconsistent with data or written approvals previously given by University, excluding (1) corrections of design errors or omissions, and (2) modifications of the Construction Documents in accordance with Articles 4 and 5 and paragraphs 1.4 and 1.6 herein.

7.2.8 Provide services related to future facilities, systems and equipment that are not intended to be constructed during the Construction phase or that are not anticipated in the Project Program.

7.2.9 Provide interior design and similar services required for or in connection with the selection, procurement, or installation of furniture, furnishings and related equipment that are not included in the Construction Documents.

7.2.10 Provide detailed quantity surveys or inventories of material, equipment, and labor.

7.2.11 Make investigations or take inventories of materials or equipment, or make valuations and detailed appraisals of existing facilities.

7.2.12 Provide analyses of owning and operating costs, except as needed to prepare the energy analysis required herein or to participate in Construction Cost/Value Control sessions as required by paragraph 1.6.3.

7.2.13 Provide perspective drawings, models, and mock-ups, including slides thereof except as indicated in subparagraph 2.1 for Schematic Design and 1.5 for Regents presentation.

7.3 CONSTRUCTION PHASE

IF AGREEMENT PARAGRAPH 2.6.7 IS USED, INCLUDE THE FOLLOWING PARAGRAPH 7.3.1:

7.3.1 Prepare drawings, specifications, supporting data, and other services in connection with Change Orders after the percent change in the Construction Contract Sum as stated in paragraph 2.6.7 of this Agreement has been met.

IF AGREEMENT PARAGRAPH 2.6.7 IS NOT USED, INCLUDE THE FOLLOWING PARAGRAPH 7.3.1:

7.3.1 Prepare drawings, specifications, supporting data, and other services in connection with Change Orders. Services shall include, but not be limited to, provision of cost and schedule analyses associated with Field and Change Orders

NOTE: 7.3.2 IS AN ADDITIONAL SERVICE AND NOT PART OF BASIC SERVICES.

7.3.2 Provide written communications with Contractor, or provide other University's Representative services as described in the Contract Documents, including but not limited to review and approval of Contractor cost, schedule or application for payment data.

7.4 POST-CONSTRUCTION

7.4.1 Provide services as necessary to correct major defects or deficiencies in the Work of Contractor when such defects or deficiencies require services in excess of those reasonably expected on a project of this type, size and complexity, excluding warranty items, provided that such defects or deficiencies are not caused in whole or in part by errors or omissions on the part of the Design Professional.

7.4.2 Provide extensive assistance in the utilization of any equipment or system; prepare operation and maintenance manuals; train personnel for operation and maintenance; and consult during operation.

7.4.3 Provide services after the issuance of the final Certificate for Payment provided that these services do not relate to the guarantee or warranty services described in paragraph 2.6.9 of this Agreement or to corrections of design errors or omissions.

7.4.4 Provide services regarding replacement of any Work damaged by fire or other cause (excluding any cause resulting from the negligent acts, errors, or omissions by Design Professional).

7.5 GENERAL

7.5.1 Provide services in connection with a public hearing, mediation, arbitration proceeding, or legal proceeding, except where Design Professional is party thereto.

7.5.2 Provide services made necessary by the termination of Contractor but only to the extent such services exceed the level of service that would have been provided in the absence of a termination of Contractor.