The purpose of Part I – Administrative Requirements of the Campus Standards and Design Guide is to provide an overview for the Design Professional of the project requirements. Examples of these requirements are codes, surveys, reviews and approvals, meetings, environmental documentation, campus procedures for design review, tree removal and security systems, milestone deliverables and specifications format. The Design Professional Agreement takes precedence over information in the CS&DG.

GENERAL TERMS
Pursuant to the terms of the Executive Agreement, the Executive Design Professional’s client is The Regents of the University of California, hereinafter called “University.” The University designates a representative, hereinafter called “University’s Representative,” the Executive Design Professional’s primary contact at the University.

The term “Approved Estimate” shall mean the latest Estimated Project Construction Cost, as adjusted to the Designated Cost Index, approved by the University’s Representative in writing.

The term “Designated Cost Index” shall mean the Engineering News Record’s Construction Cost Index for the time period designated by the University’s Representative.

The term “Estimated Project Construction Cost” shall mean the Executive Design Professional’s estimate for the entire Project’s current cost of construction. It shall include the major categories of Work and such significant cost subdivisions as may be indicated by the Specifications categories and by the type, size, and complexity of the Project.

Throughout the Project, the Executive Design Professional is expected to keep the Project Cost within the Construction Budget and is responsible to periodically submit current construction cost estimates to verify that the Project is within the Construction budget.

CODES
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 codes and ordinances.

Building codes, standards, federal and state legislation, and federal, state, and local agency regulations affect University projects. 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 three state agencies:

1. California Department of General Services, Division of the State Architect – Access Compliance (DSA)
2. Office of the State Fire Marshal (SFM)
3. Office of Statewide Health Planning and Development (OSHPD) – For Medical Facilities Only
The design and construction of University projects shall comply with the applicable laws, rules, and regulations of the California Code of Regulations (CCR). The Executive 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, 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, State Reference Standards Code
Title 25, Housing and Community Development
Title 26, Toxics

Title 24, or the California Building Standards Code, is one of 28 titles of CCR, formerly called the California Administrative Code (CAC). Title 24 is more restrictive than all of the Uniform Codes. By administrative policy, the University uses all eleven parts of the more restrictive CCR, Title 24, for code compliance of its projects. The eleven parts of CCR, Title 24 are listed above.

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
  Other applicable codes not listed above but required for a particular project

All facilities shall be accessible to and usable by persons with disabilities. All construction shall comply with current CCR Title 24 disabled access standards as established by DSA, as well as ADA.
EFFECTIVE CODE DATE
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.

DESIGN CHANGE AUTHORIZATION
The Executive Agreement enumerates all categories of additional services that will be compensated by the University when authorized in writing by the University’s Representative prior to the Executive Design Professional’s execution of the Work. Additional services shall be authorized by means of a Design Change Authorization form. If approved by the University’s Representative, this form shall also be used to amend the Executive Agreement if the time of service, the Project scope, or the Project budget is changed.

CIVIL SURVEYS, SOILS TESTS, AND OTHER TEST REPORTS
The Executive Design Professional shall provide consultation and advice to the University regarding the necessity and extent of providing or obtaining such site-related services as property boundary, topographic, hydrographic, and utility surveys and soil mechanics and subsoil test data. For example, consultation may be from structural consultant for test boring locations. The University shall provide copies of surveys and test reports to the Executive Design Professional for review and evaluation. Unless noted otherwise, the University will supply all survey information.

All surveys shall be in feet and based on NAD83 California Zone II coordinates. Additional information on the NAD83 coordinates can be found at http://www.ngs.noaa.gov/CORS/Coords.html.

Survey requirements shall include the following:
1. Drawing Requirements
   a. Drawings shall note all dimensions and elevations in imperial units at a scale agreed to by the University's Representative.
   b. Drawing sheets shall be trim size 24 inches by 36 inches.
   c. Show NORTH arrow, directed to top of sheet.
   d. Include legend of symbols and abbreviations used on the drawing(s).
   e. Spot elevations on paving or other hard surfaces shall be to the nearest .01 foot; on other surfaces, to the nearest .10-foot.
   f. Boundary and topographic information shall be on the same drawing.
   g. Furnish to University's Representative 1 reproducible transparency and 2 prints of each drawing. The Surveyor shall sign and seal each drawing and shall state
that to the best of the Surveyor’s knowledge, information and belief, all information thereon is true and accurately shown.

h. Deliverable product shall be computer generated and provided on disk: AutoCad v14 or 2000 (.dwg or .dxf format file).

2. Land (Boundary) Requirements
   a. Show boundary lines, giving length and bearing (including reference or basis) on each straight line, interior angles, radius, point of tangency and length of curved lines.
   b. Give area in square feet if less than 1 acre; in acres (to .001 acre) if over 1 acre.
   c. Note identity and width of adjoining streets and highways, width and type of pavement. Identify street monuments and show distance to the nearest intersection.
   d. Plot location of structures on the property. Dimension to property lines and other buildings. Describe building materials and note number of stories.
   e. Describe fences and walls and locate them with respect to property lines.
   f. Show recorded or otherwise known easements and rights-of-way and identify owners.
   g. Show individual lot lines; show street numbers of buildings if available.
   h. Show building footprint and maximum overhang lines and setback requirements, if any.

3. Topographical Requirements
   a. A minimum of 1 permanent benchmark, brass cap in concrete, on site for each 4 acres and a description and elevation to nearest .01 foot.
   b. Spot elevations at each intersection of a 100-foot square grid covering property.
   c. Spot elevations at street intersections and at feet on center of curb, sidewalk and edge of paving, including far side of paving. If elevations vary from established grades, also state established grades.
   d. Plotted location of structures, paving and improvements above and below ground.
   e. Floor elevations and elevations at each entrance of buildings on the property.
   f. Utility information. The following information is to be shown based on record information and on surface evidence. Inadequate record data requiring the Surveyor to employ techniques of subsurface exploration to locate utilities will be an additional service subject to University’s approval.
      1) Locations, size, depth and pressure of water and gas mains, central steam and other utilities including, but not limited to, buried tanks and septic fields serving, or on, the property.
      2) Location of fire hydrants available to the property and the size of the main serving each.
3) Location, size, depth and direction of the flow of sanitary sewers, combination sewers, storm drains and culverts serving, or on, the property; location; location of catch basins and manholes, inverts of pipe at each.

4) Designation of electrical and telephone manholes, i.e. C11-205W.

g. The following information is to be shown based on record information and on surface evidence. Mean elevation of water in any excavation, well or nearby bodies of water.

h. Location of flood plain and flood level of streams or adjacent bodies of water.

i. Extent of watershed onto the property.

j. Location of trees 2 inches and over (caliper 3 feet above ground); locate within 1 foot tolerance and identify species in English and botanical names.

k. Description of natural features.

4. Attachments (Attach a site map with area designated for survey).

The soils report shall include the following:

1. Project Description

2. Findings
   a. Site Description and Surface Conditions
   b. Geologic Setting
   c. Faulting and Seismicity
   d. Ground Rupture
   e. Ground Shaking
   f. Liquefaction
   g. Lateral Spreading
   h. Densification
   i. Lurching
   j. Groundwater

3. Conclusions

4. Recommendations
   a. Site Preparation and Grading
   b. Excavation Slopes
   c. Seismic Design
   d. Foundations
      (1) Allowable Bearing Pressure And Foundation Types
      (2) Estimated Settlements
      (3) Lateral Resistance
   e. Slab-On-Grade
   f. Basement Retaining Walls
   g. Static Earth Pressures
      (1) Walls Restrained at the Top
      (2) Walls Unrestrained at the Top
      (3) Seismically Induced Earth Pressures
   h. Lateral Resistance
MEETINGS & SITE VISITS
The Executive Design Professional shall be responsible for participating in regular meetings at the Facility through each phase of the Project for the purpose of explaining the Project design and reviewing the Project’s progress.

At the beginning of the schematic design phase, the Executive Design Professional and consultants shall:
1. 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.
2. For alteration projects, visit all relevant areas of the existing buildings to be altered.

VALUE ENGINEERING PROGRAM
On major projects, the University may require Value Engineering workshops to evaluate program requirements to determine cost effectiveness of various elements of the project or buildings. Verify with University’s Representative and the terms of the Executive Design Professional Agreement to determine if the following program applies.

Participants of the program are the Design Professional, the Design Professional Consultants, Professional Peers experienced with building type, Special Consultants (i.e., Geotechnical Engineer), University Professional Staff, User Representatives, and others deemed appropriate by the University. The Design Professional shall prepare the following for the VE session:
1. Copies of the current status documents
2. Copies of a life cycle analysis of all proposed building systems, major components, and alternatives addressing the following:
   a. Projected initial cost of the system.
   b. Projected yearly operational cost.
   c. Projected estimated replacement cost and estimated life expectancy.

Value engineering sessions may be scheduled as follows. Actual dates shall be established by agreement between the Design Professional and the University’s Representative.
1. Late Schematic Design Phase
   a. Evaluation of Alternatives
   b. Decisions
2. Middle to Late Design Development Phase
   a. Design Review
   b. Alternative Technical Solutions
   c. Cost Evaluations
   d. Priorities and Trade-Offs (as necessary)
REVIEWS & APPROVALS

INTRODUCTION
University projects require review prior to their entering the formal approval process. Project items to be reviewed include design and cost, site, seismic safety, and environmental impact. Normally, program and funding approvals occur prior to site, design, and environmental approvals; occasionally, however, these approvals may occur concurrently.

The review and approval processes described below apply to uncomplicated projects. Projects with multiple approvals require additional lead-time because of their complexity and to resolve any difficulties. In addition to these University approvals, various state, local, and University entities may require their own reviews and approvals for certain projects.

The Executive Design Professional is expected to cooperate with the reviewers and cost estimator and to participate in the reviews.

REVIEW OF SCHEMATIC DESIGN, DESIGN DEVELOPMENT AND CONSTRUCTION DOCUMENTS
Prior to the beginning of schematic design phase, the University’s Representative shall provide the Executive Design Professional with a Project Planning Guide (PPG), a Detailed Project Program (DPP), Design Guide, or other such document describing the University-approved program, as available. During the schematic design and design development phases, the Project program shall be translated into a physical design which is both economically and architecturally appropriate to all site, design and cost requirements.

Periodic reviews, including meetings to discuss University policy and legal requirements, shall be required. At the various stages of Project development, reviews by the University of Drawings, Specifications, and related documents prepared by the Executive Design Professional shall be conducted. The Executive Design Professional and the Executive Design Professional’s consultants shall coordinate and check for completeness of all documents prepared for review prior to submitting them to the University’s Representative.

The University’s review of Drawings and related documents at the various stages of project development is intended to determine that:
1. The Executive Design Professional has completed the work of that phase,
2. The Executive Design Professional’s design satisfies the University programmatic needs,
3. The Project design is within the stipulated scope and Project budget, and
4. The Project is in conformance with University administrative policies and procedures.
The University’s review and approval of the Executive Design Professional’s Drawings, designs, and related documents shall not relieve the Executive Design Professional from responsibility for errors and omissions in the Executive Design Professional’s work.

**AGENCY REVIEWS**

To meet code requirements, review and approval by the State Fire Marshal (SFM) and Division of State Architect (DSA) are required at Construction Document completion. The Executive Design Professional shall arrange all reviews with DSA for access compliance and with SFM for fire safety and code compliance. Corrections required by DSA and SFM shall be incorporated into the contract documents before advertisement for bid. It is recommended that preliminary SFM and DSA reviews occur during Schematic Design and Design Development. Certification is to occur after 100 percent Construction Documents are complete.

For major State-funded projects, 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 100 percent Construction Documents. Verify all requirements with the University’s Representative.

**FACILITIES AND ENTERPRISE POLICY COMMITTEE REVIEW**

At the end of Schematic Design, all projects require review by the UC Davis Facilities and Enterprise Policy Committee (FEPC). Verify presentation requirements with the University’s Representative.

**SITE APPROVAL**

The University has been delegated the authority to approve the project sites that are in general accordance with an approved Long-Range Development Plan (LRDP). The Regents must approve sites that are not in accordance with the LRDP.

**ENVIRONMENTAL REVIEW AND DOCUMENTATION**

Environmental documentation begins during project planning phases, when projects are classified by their probable impact and need for environmental documentation. Facilities must prepare environmental documentation for all projects. A project may fall within the general exemption, may be categorically exempt, or may require an Initial Study to determine the severity of its impacts. The Initial Study identifies areas of environmental concern and is used to assess whether potential impacts are significant and require the preparation of an Environmental Impact Report (EIR), or if not significant, a Negative Declaration is prepared instead.

If potential impacts are significant, a full EIR is prepared, usually with the assistance of outside consultants; this process includes publication and public review of a draft EIR and a public hearing. The final EIR is then prepared, also with the assistance of outside consultants. The final EIR responds to all comments received in writing and at the public hearing during the review period. It also proposes measures designed to mitigate significant environmental impacts and a program for monitoring these mitigation measures. The environmental documentation must be reviewed and approved by either The Regents or the Chancellor before a project is approved. For
projects with a total cost of over $5 million, The Regents must certify environmental documentation prior to design approval.

**TREE REMOVAL PERMIT PROTOCOL**

The following actions must be completed before any campus unit may remove a campus tree.

1. The unit requesting the tree removal requests a tree removal permit from the Grounds Division. The Design Professional is to advise the Project Manager on recommendations for removal of trees. The Project Manager is to obtain the permit. The permit will include information on the tree type, size, location, need for removal, any alternatives to removal and an indication of when a decision is needed. The Grounds Division processes permits.

2. Before approving a tree removal permit, a Grounds Division Supervisor will review the permit with the Arboretum Superintendent. If the tree removal involves a project with a Building Committee appointed by the Executive Vice Chancellor, the University's Representative will review the permit with the Building Committee chair.

3. When the Grounds Division Supervisor, the Arboretum Superintendent, and the project Building Committee chair all agree that the tree(s) should be removed, the Grounds Division Manager may approve the tree removal permit. The Grounds Division Manager will submit all approved tree removal permits to the Associate Vice Chancellor - Facilities at least one week prior to the scheduled work.

4. If the Grounds Division Supervisor, the Arboretum Superintendent, and the project Building Committee chair do not agree that the tree(s) should be removed, the unit requesting the tree removal will fund, and the Grounds Division will hire a certified arborist to provide a written recommendation concerning the tree(s). The Grounds Division Manager submits the “unapproved” permit with the arborist report to the Associate Vice Chancellor - Facilities for a final determination.

Pursuant to the Campus’ Long Range Development Plan EIR, the Campus shall conduct a pre-construction or pre-tree pruning or removal survey of trees greater than 30-feet tall during March 1 through August 31. The Office of Resource Management and Planning manages this effort.

**SECURITY ALARM PERMIT PROTOCOL**

The following actions must be completed before any campus unit may install, modify, or remove a security alarm system. This protocol applies to all University facilities that are owned or leased by the University. Refer to UC Davis Policy and Procedure Manual, Section 360-35 (available on the UC Davis Web Page - www.ae.ucdavis.edu) and the UC Davis Police Department Security Alarm Ordinance (available on the UC Davis Police Department Web Page).

1. The unit requesting installation, modification, or removal of a security alarm system will request a permit from the UC Davis Police Department, Crime Prevention Unit. This can be accomplished by following detailed procedures in Policy & Procedure 360-35. All pertinent paperwork is included as Exhibits A, B, C, and may be copied from your manual or the UC Davis Web page. The permit will include information on the requesting department, department representative name and phone number.
number, location of requested security alarm action, need for action, and proposed
deadline for project completion. Permit requests will be reviewed by the Police
Department, Crime Prevention Unit.

2. If the requested security alarm action involves a project with a Building Committee
appointed by the Executive Vice Chancellor, the University’s Representative will
review the permit request with the Building Committee chair and a Police
Department representative. Upon approving the installation, modification, or
removal of a security alarm system, the Police Department, Crime Prevention Unit
will return the permit to the requesting department.

3. The requesting department will submit the approved permit to the Operations &
Maintenance Work Order Desk.

4. If a Contractor is installing and testing the alarm, the Police Department and
Operations & Maintenance electricians will participate in project review/approval.
This approval is necessary to ensure continued compatibility with Police alarm
equipment.

5. When the facility is located within another Law Enforcement jurisdiction, it is the
responsibility of the University’s Representative to submit a request for a Security
Alarm Permit to the appropriate Law Enforcement agency. A copy of the approved
Security Alarm Permit shall be forwarded to the UC Davis Police Department, Crime
Prevention Unit.

INDEPENDENT DESIGN AND COST REVIEW

University policy requires independent architectural design review and independent cost
estimates of projects that are subject to Regents’ design review—those with a total budgeted
cost, including administrative costs, of over $5 million.

Independent reviewers must be appropriately licensed, must have no previous connection with
the project being reviewed, and must not be University employees, with the exception of
qualified faculty members.

The independent design review shall be performed early in the preparation of design, at
appropriate intervals during design, and at the time of completion of design. The review shall
focus on, but need 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.

INDEPENDENT COST ESTIMATE REVIEW

To ensure that cost considerations are fully incorporated into design decisions, The Regents
require that an independent cost estimate be conducted on major projects, as stated in the
Facilities Manual:

Independent cost estimates shall be conducted for all major capital projects, which
may be subject to design approval by the Committee on Grounds and Buildings as
well as for other projects when deemed appropriate. Such cost estimates shall be
made prior to submittal of the schematic design to the Office of the President for
presentation to the Committee on Grounds and Buildings and incorporated into the
design presentation. It is recommended that the review be conducted again at the
time of completion of design and during the preparation of construction documents.

INDEPENDENT SEISMIC REVIEW
To ensure that seismic safety and other structural considerations are fully incorporated into
capital project design, purchase and lease decisions, the Regents require that an independent
review be conducted of the structural seismic design of all capital projects, whether new
construction or remodeling, which involve structural design and are intended for human
occupancy or which affect human safety, and include review of non-structural building elements.

It is University policy to the maximum extent feasible by present earthquake engineering
practice—to acquire, build, maintain, and rehabilitate buildings and other facilities which provide
an acceptable level of earthquake safety for students, employees, and the public who occupy
those buildings and other facilities at all locations where University operations and activities
occur. Feasibility is to be determined by weighing the practicability and cost of protective
measures against the gravity and probability of injury resulting from a seismic occurrence.

University policy on independent seismic review states in part:
1. Independent review shall be conducted of the structural seismic design of all capital
improvement projects, whether new construction or remodeling, which involve
structural design and are intended for human occupancy, or which affect human
safety. The review shall be initiated early in the project’s life, and preferably during
the preparation of schematic designs, so that it can be performed in conjunction
with the independent design and cost review and value engineering processes,
where applicable, and shall be continued at appropriate times during the design
process. In all cases, working drawings and calculations shall be reviewed for
conformance of the new work to the most current applicable seismic design code
requirements.
2. Independent review shall be conducted of the structural seismic design of facilities
being considered for lease or purchase for University purposes. The depth and
detail of review shall be appropriate to the type of structure, its intended use, its
age, length of time to be leased, percentage of structure to be leased, and the
geological conditions of its location.

REGENTS’ ITEMS
After the independent reviews are completed, the final steps in the Regents approval process are
the Regents design review and the preparation of The Regents’ Action Item (The Regents’ item)
for submission. Procedures and guidelines for preparing and submitting Regents’ items, the
design review and Regents’ presentation process are outlined in the Facilities Manual, Volume I.
The Office of the President is included in the Facility design review to provide an opportunity for
University input on design content and review of Regents policy.

The following materials may be used for the meeting and requested of the Design Professional to
provide:
1. A site map or aerial photograph of the project area
2. Photographs of surrounding areas
3. Land-use plan of the long-range development plan (provided by UCD Resource Management & Planning)
4. Site plan
5. Floor plans
6. Elevations on all sides
7. Major sections
8. Two renderings (additional services)
9. Design analysis, life-cycle cost analyses, and other support data

REGENTS’ DESIGN APPROVAL

Building design must be approved by the Regents in the following cases:

1. Building projects with a total project cost in excess of $5 million, except when such projects consist of the following:
   a. Alterations or remodeling where the exterior of the building is not materially changed, or
   b. Buildings or facilities located on agricultural, engineering, or other field stations, and buildings or facilities located in agricultural areas of a campus.
2. Capital improvement projects of any construction cost 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.

Requirements for approval are summarized in the Facilities Manual. Because specific procedures and schedules for design review and approval may change, the University’s Representative should confirm current practices with Operations & Maintenance and Environmental Management in the Office of the President.
SCHEMATIC DESIGN PHASE

SCHEMATIC DESIGN PHASE REQUIREMENTS
The following are considered to be minimum submission requirements for the schematic design drawings for all projects involving construction of a new building or alteration of or additions to an existing building. Prior to the schematic design documents submittal, the Executive Design Professional shall evaluate the Project’s programmatic requirements, promptly call attention to any discrepancy contained therein, and request direction from the University’s Representative regarding these discrepancies. The Design Professional shall prepare a written evaluation of any imbalance between the Construction Budget and the Project program requirements. The Design Professional shall be prepared to present program or design adjustment alternatives for University consideration when adjustments are needed to bring the Project scope, schedule, and budget into alignment. All drawings shall include a graphic scale.

ARCHITECTURAL REQUIREMENTS

1. Site Plan (Scale: Not less than 1 inch = 40 feet-0 inches).
   a. Indicate the overall dimensions of the proposed new building(s).
   b. Indicate and identify (name) all existing structures within a radius of 300 feet of the Project site perimeter. Indicate the distances from each proposed new building to (1) existing buildings, (2) assumed property lines (setbacks), and (3) roadways.
   c. Indicate the elevations of building entrances and major exterior elements.
   d. Indicate all major new exterior elements and, for alterations and additions, all existing exterior elements that will remain in place. These elements include service drives, streets, easements, loading docks, parking areas (including bicycle parking areas), landscaping, paved areas, stairs, ramps, pools, fences, fire hydrants, retaining walls, dumpster locations, handicapped access, equipment, etc.
   e. Indicate existing and proposed contours at 1-foot intervals.
   f. Provide sections through the site as needed to explain changes in levels within the proposed building as related to the site.
   g. Indicate the placement of ramps and other provisions for disabled access to the site and building.
   h. Show major existing and proposed utilities, including off-site utilities in the vicinity required for this project, exterior pad-mounted transformers, and all points of connection.
   i. Provide a landscape design plan.
   j. Provide a site demolition plan.

2. Floor Plans (Scale: Not less than 1/8 inch = 1 foot-0 inches)
   a. Indicate locations, room names, sizes, (in assignable square feet) and space numbers for all programmed spaces and other required gross area spaces, including entrances, lobbies, elevators, corridors, stairs, toilets, janitors’ closets, mechanical/electrical spaces, and storage rooms.
b. Indicate overall dimensions of each major area of the building(s).
c. Indicate such building elements as walls, columns, doors, windows, openings, and major built-in equipment.
d. Indicate the means for complying with applicable disabled access codes.
e. Provide a demolition plan whenever a Project requires the demolition of a building or portions thereof. The demolition plan shall differentiate between new work (walls, doors, finishes, and so on), existing work to be removed, and existing work to remain in place.

3. Elevations and Sections (Scale: Not less than 1/16 inch = 1 foot-0 inches)
a. Show all principal elevations of the building(s). Indicate floor-to-floor dimensions and the overall building height. Include elevations of existing neighboring buildings when appropriate (verify with University’s Representative).
b. Include sections as needed to explain the structure and any unusual design features. Indicate existing and proposed grades.

4. Presentation Material
a. Some projects may require presentation drawings, three-dimensional models, and/or photographs or slides for presentation to the Facilities and Enterprise Policy Committee (FEPC) and to The Regents for approval.
b. Verify all requirements for presentation materials with the University’s Representative.
c. On new building projects, provide:
   (1) A display board with mounted samples of the actual exterior materials.
   (2) Study models as needed to analyze various alternative siting and massing schemes.
   (3) A narrative description setting forth the design concept and important features of the Project.

**STRUCTURAL REQUIREMENTS**

1. Provide a detailed written description of the recommended structural system and the basis for recommending this system over other approaches.
2. Provide a conceptual structural framing plan of a typical floor that indicates the grid system (dimensioned), columns, shear walls, and related items.

**PLUMBING REQUIREMENTS**

1. Provide a written analysis of the calculated load demands of proposed new plumbing systems, the design demands of the Project, and the capacity of the existing plumbing systems.
2. Indicate the proposed points of connection to the existing Facility utility systems. Refer to the site plan requirements.

**HVAC REQUIREMENTS**

1. The building mechanical system can critically impact the size and shape of the building, the interior space allocation, overall project costs, building electrical load,

2. Identify the capacity of existing systems based on an examination of the Facility’s Record Drawings, an inspection of the existing system, and test reports.

3. Provide a written analysis of the calculated loads of proposed new HVAC systems.

4. Provide a conceptual single-line mechanical diagram showing major ducts and equipment. Identify the sizes and locations of major equipment items including cooling towers, chillers, pumps, fans, air-handling units, compressors, and related items.

5. Provide a description of the proposed fume hood ducting and exhaust system. The Design Professional shall use all applicable codes of Title 24, such as Part 4, California Mechanical Code and all applicable agencies or district regulations to design the fume hoods.

**ELECTRICAL REQUIREMENTS**

1. Determine and indicate in the schematic layout the existing system’s capacity to accommodate loads of new electrical equipment and work. Verify points of connection and capacity.

2. Provide a site plan showing the proposed method of service for the electrical power, telephone, and fire alarm systems.

3. Provide a single-line diagram showing the following:
   a. Method of service (facility or local utility)
   b. Major transformers and transformer substations (points of connection)
   c. Major switchboards, motor control centers, and panel and distribution boards
   d. Major components of the emergency power system

**OTHER REQUIREMENTS**

1. Outline Specifications
   a. The Outline Specifications shall follow the CSI format.
   b. Include in the outline specifications a general description of the Project's site, architectural design, building, and type of construction. Identify the structural system, including materials and systems, a strategy for dealing with special conditions, subsurface conditions, and substructure. Describe the mechanical and electrical systems conceptually. Identify all special systems including special laboratory control systems, energy management systems, and special exhaust systems. Identify finishes at a gross level, indicating the type and quality level. In addition, define casework systems conceptually. Include narratives in the electrical specifications describing proposed new systems for the power, lighting, communication, fire alarm, and security systems. Indicate in sufficient detail the proposed power system voltages including the main points of connection to existing systems.
   c. Provide a digital copy of Specifications in Word 97 or later to University’s Representative.

2. Cost Estimate
a. The cost estimate will be developed from the completed schematic drawings and general description of the project and shall include current ENR cost index.
b. Use an estimation method appropriate for the type and scale of the Project and using a building component format that breaks down the costs by such building components as foundations, structures, partitions, electrical systems, etc. Prepare the cost estimate to include all improvements required to serve the project (see Appendix C for UCD requirements).
c. Compare cost estimate with the University’s Construction Budget. Any unusual items of cost should be brought to the attention of the University at this time.

3. Area Tabulation
a. Tabulate assignable square feet (ASF) and overall gross square feet (OGSF) and BOMA areas (see Appendix C for definition). For state funded projects, ASF shall not vary from figure given in PPG by more than two percent.
b. Develop a space-by-space comparison of schematic plan assignable areas with program assignable areas. Tabulations should be by floors and include totals for the building.
c. Calculate Efficiency Ratios (ASF/OGSF).

4. Building Analysis
a. Code. Provide a building code analysis consisting of a written report and diagrammatic drawings indicating how the proposed Project design will comply with the requirements of the CCR Title 24, California Building Standards Code.
b. Building Systems. Provide an analysis of the principles of operation of the electrical, plumbing, and HVAC systems and their controls. This analysis shall consist of schematic diagrams and written material thoroughly describing the proposed systems and equipment. Present alternative energy-efficient systems and their comparative costs.

5. Utility Demands
a. Complete the Project Utilities worksheet. Obtain from and submit to the University’s Representative.
DESIGN DEVELOPMENT PHASE

DESIGN DEVELOPMENT PHASE REQUIREMENTS
Prior to the submittal of the Design Development documents, the Design Professional shall evaluate the Project’s programmatic requirements, promptly call attention to any discrepancies contained therein, and request direction regarding these discrepancies from the University’s Representative. The Design Professional shall prepare a written evaluation of any imbalance between the Construction Budget and the Project program requirements. The Design Professional shall be prepared to present program or design adjustment alternatives for University consideration when adjustments are needed to bring the Project scope, schedule, and budget into alignment. All drawings shall include a graphic scale.

ARCHITECTURAL REQUIREMENTS

1. Site, Civil, and Landscape Drawings (Scale: Not less than 1 inch = 40 feet-0 inches)
   a. Indicate overall dimensions of any proposed building(s). Reference to a benchmark and baseline shall be indicated. Indicate the distances from each proposed new building to existing buildings, assumed property lines (setbacks), and roadways.
   b. Show location and extent of existing structures on site within a radius of at least 300 feet measured from the exterior walls of the proposed building. Identify all structures and streets by proper names.
   c. Indicate existing and proposed contours at one-foot intervals.
   d. Indicate general drainage of the site as affected by the proposed building.
   e. Indicate existing that will remain and proposed exterior elements (service drives, paved areas, approaches, covered walks, stairs, pools, retaining walls, fire hydrants, transformers, dumpsters, etc.).
   f. Indicate various floor and grade elevations including those for building entrances, stairways, walls, terraces, etc.
   g. Include sections through site if necessary to explain changes in levels as related to the site.
   h. Indicate the placement of ramps and other provisions for disabled access to the site and building. Indicate the parking area and drop-off location nearest the building and the routes and travel distances to all building entrances.
   i. Provide a site utilities plan that indicates existing utilities, including underground lines, located within the Project site and that indicates any proposed new utility services. Indicate the points of connection between new work and the existing utility systems.
   j. Provide a site demolition plan indicating existing utilities and structures that are to be removed either by the contractor or by others.
   k. Provide landscape design drawings.

2. Floor Plans (Scale: Not less than 1/8 inch = 1 foot-0 inches)
   a. Indicate the location, room names, sizes (in assignable square feet) and space numbers of all programmed spaces and required gross areas including
entrances, lobbies, corridors (with widths), stairs, elevators, toilets, janitors’
closets, mechanical spaces, etc. Show rated walls and legend.

b. Floor plans for additions and alterations to existing buildings shall show the
existing floor plan and indicate the existing space usages and any proposed
changes.

c. Indicate location of doors and windows. Show door swings.

d. Show overall dimensions of major elements of each building(s), wings, etc.

e. Indicate locations and fire ratings of all fire separations, exit enclosures, fire
doors, and similar elements, as required by applicable codes.

f. Show location of all plumbing fixtures (lavatories, floor drains, water closets,
urinals, service sinks, drinking fountains, eyewash fountains, fire hose cabinets,
sprinkler system, etc.).

g. Indicate built-in features (fixed auditorium seats, kitchen equipment, display
cases, counters, shelves, lockers, laboratory benches, casework, glass washers,
sterilizers, fume hoods, etc.).

h. Indicate the locations of movable items of furniture – which in most cases are
“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).

i. Indicate the provisions for making facilities accessible to and usable by the
disabled. Indicate all accessible toilets and drinkable fountains.

j. Provide a demolition plan whenever a Project requires the demolition of any
building or portion thereof. The demolition plan shall differentiate between new
work (walls, doors, finishes, etc.), existing work to be removed, and existing
work to remain in place.

k. Provide a roof plan showing associated equipment, slopes, ridges, drains, and
other items.

3. Elevations and Sections (Scale: Not less than 1/8 inch = 1 foot-0 inches).

a. Depict in building elevations, all building elements including penthouses,
entrances, windows, doors, window vents, stairs, louvers, platforms, retaining
walls, etc. Indicate proposed finished grades, paved areas, etc.

b. Indicate the overall building and floor-to-floor heights and windowsill heights.

c. Include longitudinal and transverse sections for each major area, indicating
floor elevations, finish, existing and proposed exterior grades, ceiling heights,
pipe tunnels, unexcavated areas, basement and areaways, roof lines, and
parapets. Where appropriate, show connections to adjoining buildings.

d. Reference all sections and elevations to building floor plans. Include small-scale
plan or diagram (if necessary) to indicate section lines for each elevation and
section.

e. Include larger scale (1/4 inch) indication of special design features with notes
related to materials and design.

f. Indicate in the sections, provisions for HVAC distribution and hood venting.

4. Interior Details (Scale: Not less than 1/4 inch = 1 foot-0 inches).
a. Detail drawings, sections and elevations for the following space types:
   (1) Classrooms and Lecture Halls
   (2) Kitchen and related service areas
   (3) Laboratories and laboratory support areas
   (4) Toilet and locker rooms
   (5) Other areas of special design

5. Schedules
   a. Provide a door schedule indicating each door’s type, size, material, etc.
   b. Provide a preliminary interior finish schedule, which indicates the material, texture, and color of each finish material (floor, wall, ceiling, etc.) for use in the Project.

6. Materials Boards
   a. The Design Professional shall provide samples for the University’s files and use of all finish materials listed in the materials/color schedule. These samples shall be accurate with respect to the actual finishes, textures, and colors being proposed.
   b. Materials samples shall be mounted and displayed on presentation boards for review and approval by the University. (Note: The materials/color schedule and materials boards shall be updated as part of the Executive Design Professional’s construction phase services).

**STRUCTURAL REQUIREMENTS**

1. Provide a structural drawing for each level of the structure at the same scale as that used for the architectural drawings.
2. Indicate the grid system (dimensioned), columns, load-bearing walls, shear walls, footings, and related items.

**PLUMBING REQUIREMENTS**

1. Existing Capacity
   a. The Design Professional shall indicate proposed points of connection to existing Facility utility systems. Refer to the site plan requirements.
2. Site Utilities Plan (Scale: Not less than 1 inch = 40 feet-0 inches)
   a. Indicate the routing of proposed new external utilities from each new building to each point of connection to the Facility’s utility systems. Indicate all utility lines that are to be abandoned, removed, or rerouted.
   b. Show all existing utilities within the Project site based on both the information provided by the University and on the Design Professional’s field investigation. Show verified capacities at all points of connections to existing mechanical systems, when applicable.
3. Floor Plans (Scale: Not less than 1/8 inch = 1 foot-0 inches).
   a. Indicate all piping on the floor level plan in which it will be installed. Indicate locations required for plumbing chases in multi-storied buildings.
   b. Indicate the locations of main waste lines and stacks and vents as well as all service mains, including those for water, air, gas, and vacuum.
c. Indicate all pieces of equipment – including pumps, tanks, generators, heat exchangers, pressure-reducing valves, etc. – showing their locations and required piping connections.

**HVAC REQUIREMENTS**

1. Floor Plans (Scale: Not less than 1/8 inch = 1 foot-0 inches).
   a. Indicate the location of all major mechanical equipment including, as applicable, fans, fan coil units, pumps, air handlers, fume hoods, boilers, expansion tanks, heat exchangers, chillers, cooling towers, etc.
   b. Indicate all single line layouts of ductwork and service main piping. Indicate locations required for pipe chases and duct shafts in multi-storied buildings.
   c. Indicate all major pieces of equipment on a schedule.
   d. Indicate the typical supply and return air zones for each type of occupancy. Occupancy types include offices, laboratories, computer rooms, conference rooms, special application rooms, etc. A typical air zone shall include the terminal unit with all applicable branch ducts and air outlets and inlets.
   e. Indicate the typical exhaust air duct for each type of application. Application types include 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.

2. Large Scale Drawings of Equipment Rooms (Scale: Not less than 1/4 inch = 1 foot-0 inches).
   a. Indicate layout of equipment to assure adequate space allowance.
   b. Include elevations of built-up fan units to assure proper airflow and access to component parts of the units.

3. Fire Protection
   a. Indicate location of all fire water mains and standpipes.
   b. Indicate locations of hose racks and fire hydrants.

**ELECTRICAL REQUIREMENTS**

1. Floor Plans (Scale: Not less than 1/8 inch = 1 foot-0 inches).
   a. Indicate site distribution, including transformers and connections to existing electrical system.
   b. Show the power, communications, and signal layouts on one set of drawings and the lighting layouts on a different set of drawings using standard symbol conventions.
   c. Provide single line electrical distribution diagrams showing primary service to loop switch, and secondary service to distribution switchboards, motor control centers, and panel boards for power and lighting. This should include and show the permanent as well as temporary point of connection to external utilities; i.e., high voltage, telephone, signal systems, etc.
   d. Indicate each load center unit substation, motor control center, distribution and switchboards, telephone equipment rooms and closets.
e. Indicate type and locations of lighting fixtures in typical offices, laboratories, corridors, etc., and use a schedule for detail. Provide catalog cuts for all selected fixtures.

f. Provide an energy analysis for project.

2. Large Scale Drawings of Equipment Rooms (Scale: not less than 1/4 inch = 1 foot-0 inches).
   a. Indicate layout of equipment to assure adequate space allowance.

OTHER REQUIREMENTS

1. Outline Specifications
   a. Prior to beginning production of the specifications, the Executive Design Professional shall schedule a meeting with the design and construction, and contract administration units to discuss specifications guidelines. Attendees at this meeting shall include the Design Professional, the Design Professional's engineering consultants, and the Design Professional's specifications writer.
   b. The CSI format outline specifications produced under the schematic design phase should be updated and expanded as required to complement the preliminary drawings. Include the following items:
      (1) A general description of the construction and design criteria, i.e. structural system; wall system, ceiling, roofing, and waterproofing systems; exterior and interior finishes; and doors, windows, and casework.
      (2) A description of the plumbing, air conditioning, heating and ventilation systems, including controls, ducts, filtration and piping. Descriptions shall include appropriate code references to be followed in design and design criteria. Provide an Energy Analysis, when applicable.
      (3) A general description of electrical services, including voltage, location, number of feeders and design criteria. The Specifications shall provide a specific description of items to be served by emergency power and describe design consideration of special areas.
      (4) A description of fire safety items including all mechanical and electrical devices required by the State Fire Marshal for the intended occupancy of the building.
      (5) A description of special systems including laboratory control systems, energy management systems, special exhaust systems, etc.
   c. Provide a digital copy of specifications in Word 97 or later to University's Representative.

2. Cost Estimate
   a. The cost estimate shall be developed from the completed Design Development drawings and outline specifications, and based on the current ENR level estimated and adjusted for the anticipated ENR at the Bid Opening Date. For state funded projects, use ENR index in most recent Capital Improvement Budget. Indicate the ENR Indices used.
   b. Make estimate in sufficient detail so that all of the materials of construction are considered and unit costs are provided. The estimate shall include unit costs.
per gross square foot for all major items of the work, broken down by building component. The Design Professional shall provide a subtotal for each component. Include Group 1 Furniture and Equipment (see Appendix C for UCD requirements).

c. Compare cost estimate with the approved construction cost estimate. Any unusual items of cost should be brought to the attention of the University at this time.

3. Area Tabulation
   a. Update schematic area tabulation.
   b. Tabulate ASF, OGSF and BOMA areas.
   c. Show space-by-space comparison of preliminary assignable area with program assignable areas. Tabulations should be by floors and include total for the building.
   d. Calculate efficiency ratios for the building.

4. Building Analysis

5. Utility Demands
   a. Update the Project Utilities worksheet.

6. Energy Analysis
   a. The Design Professional shall prepare and submit an energy analysis as outlined in Part II - Design for Energy Efficiency.

7. Fire Safety System
   a. All fire safety items shall be shown on the Design Development Drawings. This shall include the flame spread rating of all applicable material and finishes, and a description of all mechanical and electrical devices that are required by the State Fire Marshal for the intended occupancy of the building.
   b. Include a legend on drawings indicating rated walls.

8. Soils and Materials Testing
   a. The Design Professional shall make initial recommendations for construction phase testing and special inspections such as soil and materials testing, and welding inspections.
   b. The Design Professional shall verify testing requirements during the construction documents phase. Construction phase testing and inspection services shall be provided and paid for by either the University or the Contractor, as agreed.

9. Construction Phasing Schedule
   a. Additional service, as requested.
   b. As appropriate, provide a construction-phasing schedule in bar chart or CPM form.

10. Security Alarm & Access Control Systems
   a. High security areas shall be identified and special consideration given to the need for security alarm and electronic access control systems. Examples of
such areas are cash handling facilities, computer labs, animal research facilities, libraries and housing. Refer to UC Davis Policy and Procedure 360-35 and the UC Davis Police Department Security Alarm Ordinance that outlines the procedures applicable to installation, modification or removal of any and all security alarm systems.
CONSTRUCTION DOCUMENT PHASE

CONSTRUCTION DOCUMENT PHASE REQUIREMENTS
The Construction Documents phase submittal shall include, at minimum, all items that are required for the design development phase and those outlined in the following section. Working drawings shall show all elements previously shown on the design development documents but with greater detail and specificity. The University will review the 50-, 95- and 100-percent completed construction documents phase submittals. The Construction Documents consist of standard documents provided by the University and the drawings and specifications developed by the Executive Design Professional. Most contracts are based on a single lump sum contract. If other modes of contracting are used, the University will provide standard documents modified to suit the particular mode used.

The University provides the following documents:
1. Project Manual Cover Page(s)
2. Certification(s) (Signed by Design Professional)
3. Table of Contents
4. Advertisement for Bids
5. Location Map(s)
6. Project Directory
7. Instructions to Bidders
8. Supplementary Instructions to Bidders
9. Information Available to Bidders, including: (according to project requirements)
   a. Geotechnical Engineering Report
   b. Prevailing Wage Determinations
10. Bid Form
    a. Qualifications Questionnaire or other Required Attachments
11. Bid Bond
12. Agreement
13. General Conditions
14. Supplementary Conditions
15. Exhibits, including:
    a. Payment Bond
    b. Performance Bond
17. Specifications Division 1 - General Requirements
18. Addenda
19. List of Drawings

NOTE: Items #1 through #16 above are supplied by the University to be used verbatim. Division 1 is supplied by the University but shall be reviewed and modified by the Executive Design Professional in consultation with the University's Representative for each project.
CONSTRUCTION DOCUMENT COORDINATION

Verify all requirements with the University’s Representative. When authorized, submit final construction documents on computer disk:

- AutoCad or .DXF format for drawings
- UCD compatible word processor for specifications

The University shall administer and coordinate the following:
1. Reproduction of all documents, including addenda
2. Completing and placing the Advertisement for Bids
3. Receipt of Bids
4. Rejection of Bids
5. Bidder Protests
6. Contract Award and Execution

PHASE WORK

Clearly show on the drawings and describe in the specifications construction phasing requirements. Coordinate with University text requirements in other Construction documents. Phasing will require review and approval by University's Representative.

50 PERCENT-COMPLETED SUBMITTAL

The 50 percent submittal working drawings shall show in greater detail all elements previously shown on the Design Development Drawings. Drawings shall be prepared by skilled and experienced personnel under the direction of registered professionals, for all phases of the project. Drawings of all disciplines shall be coordinated between one another in a Quality Control process approved by the University. The construction documents shall be prepared to meet the following submittal requirements.

1. Civil Drawings
   a. Existing civil survey
   b. Site plan
   c. Grading and drainage plan
   d. Site profile sections
   e. Details
   f. Site utilities plan
   g. Site demolition plan

2. Architectural Drawings
   a. Title sheet with index, general notes, legends, and a small-scale Facility/Project location map
   b. Site plan
   c. Floor plans indicating fixed (built-in) equipment
   d. Roof plan
   e. Reflected ceiling plans showing all penetrations
   f. Demolition plan (when appropriate)
   g. Elevations and sections
h. Details
   i. Schedules:
      (1) Door and window schedules
      (2) Interior finish schedule
      (3) Other schedules as appropriate

3. Structural Drawings
   a. Drawings that indicate the location, type of member, size, and material of each
      structural element for foundations, floors, roofs, and any intermediate levels
   b. Schedules (beam, column, slab, etc.)
   c. Details of all connections, assemblies, expansion joints, and similar items
   d. Details of the structural framing systems required to support nonstructural
      elements and fixed equipment

4. Plumbing Drawings
   a. Locations, sizes, and elevations of the site sewer, drains, street water main,
      and water service into the building
   b. Locations and sizes of the waste, and waste vent stacks with connections to
      drains, fixtures, and equipment
   c. Locations and sizes of hot, cold, and circulation water mains, branches, and
      risers from the service entrance and tanks
   d. Riser diagrams for each system showing all plumbing stacks with vents, water
      risers, and fixture connections for multistory buildings; materials, gauges, and
      sizes for all elements
   e. Fire-extinguishing equipment such as sprinklers and wet/dry standpipes
   f. Plumbing fixtures and any equipment that requires water and drainage
      connections including pumps and storage tanks
   g. Locations and sizes of natural gas vacuums and medical gas systems
   h. All required equipment piping connections including those for pumps, tanks,
      and generators
   i. Sections that show structural, HVAC, and piping systems through congested
      areas

5. HVAC Drawings
   a. Schedule and legend starting on sheet M0.1 or its equivalent and continuing on
      the following sheets
   b. Sequence of operations diagram
   c. Detailed (scale: not less than 1/4 inch = 1 foot 0 inches) floor plans and
      sections as needed to clearly indicate the work required for all mechanical
      equipment rooms
   d. Air and piping systems, including all branches, on each floor plan
   e. Air balance schedule indicating the CFM (cubic feet per minute) of outside air,
      supply air, return air, and exhaust air for each air system; elevations of built-up
      fan units to ensure required air flows and access to the component parts of the
      units.
   f. Flow diagram for each of the following types of water systems:
      (1) Chilled water
(2) Condenser water  
(3) Hot water  
(4) Others as needed to clearly define the scope of work  
g. Air riser diagram for each type of system  
h. Mechanical drawings that show the complete HVAC systems including the following items:  
   (1) Heating and steam mains, including branches with pipe sizes  
   (2) Air-conditioning systems including refrigerators, water and refrigerant piping, and duct work  
   (3) Exhaust and supply ventilating systems showing duct sizes, steam and water connections and piping  

6. Electrical Drawings  
a. Electrical service to the building  
b. Transformers and their connections, whether in the building or on the Project site  
c. Main switchboard, power panels, light panels, and associated equipment  
d. Feeder and conduit sizes  
e. Light fixtures, receptacles, switches, and power outlets  
f. Telephone outlets, conduits, terminal cabinets, and backboards  
g. Complete fire alarm system including its connection to the Facility’s system  
h. Emergency electrical power system including generator transfer switches, fuel tanks, and all auxiliaries  
i. Electrical service entrance and its service switches, the service feeds to the public service feeders, and the characteristics of the light and power currents  
j. Security alarm and electronic access systems.  
k. Other systems as required  

7. Landscape Drawings  
a. Finished grading plan  
b. Irrigation plan  
c. Irrigation details  
d. Planting plan  
e. Planting details  
f. Hardscape (paving) plan  
g. Hardscape details (walls, walks, planters, and so on)  
h. Other details as appropriate  

8. Specifications. The Executive Design Professional shall:  
a. Submit outline specifications for all work. Fully describe in the architectural, structural, mechanical, and electrical specifications - except where fully indicated and described on the drawings - the materials and workmanship and the types, sizes, capacities, finishes, and other characteristics of all materials, products, articles, and devices. Incorporate within each specifications section a list of all required submittals such as shop drawings, materials lists, and samples.  

b. Refer to the Specifications section of this guide for format requirements.
   a. The Executive Design Professional shall ensure that designs of new buildings and designs of alterations to existing buildings in which the space is heated or cooled comply with the California Code of Regulations, Title 24; Part 6, California Energy Code. Refer to the “Design for Energy Efficiency” section in part II of these guidelines for additional information. The University, acting as the enforcement agency, is required to independently check the designs and certify that they are in compliance with the code.

   b. With the 50-percent-completed submittal, the Executive Design Professional shall submit documentation, on appropriate California Energy Commission forms, certifying that the design complies with the code and CS&DG. The Executive Design Professional shall submit a complete performance approach computer simulation Title 24 energy compliance for University review. Process loads shall be clearly identified and implemented as allowed by California Code of Regulation Title 24, Part 6. The Executive Design Professional shall correct any non-complying aspect of the design, including the energy compliance approach.

   a. The Executive Design Professional shall provide a new Estimate as part of the 50-percent-completed construction documents phase submittal.

   b. The Executive Design Professional shall use an estimation method appropriate for the type and scale of the Project and shall use the same building component format established in previous Estimates.

95- AND 100-PERCENT-COMPLETED SUBMITTAL

All drawings, specifications, and other documents enumerated in the preceding sections for inclusion in the 50-percent-completed submittals shall be further developed by the Executive Design Professional in sufficient detail as to be deemed 100-percent complete and buildable. Prior to submitting the completed construction documents, the Executive Design Professional and the Executive Design Professional's consultants shall have thoroughly checked, coordinated, and revised all documents to bring them to a 100-percent-completed level. In addition to the documents enumerated for the 50-percent-completed submittal, the Executive Design Professional shall submit the items listed below for the 95- and 100-percent-completed submittal.

1. Civil Drawings
   a. Complete all items listed for 50% CD. Indicate a topographic survey, existing utilities, points of connections and routing of new utilities with details on the Drawings. 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 UC Davis Engineering Services on all new manholes, valve boxes, cleanouts, lift stations, etc.

   c. 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. Specify by-pass or temporary service if required to minimize disruption to the University.

d. Completely design steam and condensate lines, steam vaults, expansion legs, anchors and guides.

Detail the anchorage of all fixed equipment in accordance with the CCR Title 24, California Building Standards Code.

Structural drawings shall be accompanied by computations, stress diagrams, and other pertinent data and shall be complete to the extent that the calculations for individual structural members can be readily interpreted. 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 shall preface the computations. The computations shall be sufficiently complete as to establish that the structure will resist the loads and forces prescribed by Title 24, all applicable parts. Assumed safe bearing pressure on soils and the ultimate strengths of concrete shall be provided in computations and noted on Drawings. Where unusual conditions occur, any additional data that is pertinent to the work shall be submitted.

4. Plumbing Drawings.
All plumbing drawings shall indicate the complete plumbing system in detail and shall include methods for fastening equipment to the structure to resist seismic forces.

5. HVAC Drawings.
All HVAC drawings shall indicate the complete heating, ventilating, and air-conditioning systems in detail and shall include methods for fastening equipment to the structure to resist seismic forces.

Electrical drawings shall indicate all components of the electrical system in place and connected to the sources of services. A sufficient level of detail shall be provided to illustrate connections, routings, and other items in complex areas. All wiring shall be final-sized. Detailed methods for fastening equipment to the structure to resist seismic forces shall be indicated. In addition to the 50-percent-completed submittal requirements, the Executive Design Professional shall, at minimum, provide the following.

   a. Feeder and conduit sizes and a schedule of feeder breakers or switches
   b. Locations of light fixtures, receptacles, switches, power outlets, and all circuits
   c. Other systems as required

7. Specifications.
Refer to the Specifications section of this guide for requirements.

The Executive Design Professional shall provide, with the 95-percent-completed submittal, a completely new Estimate based on an actual take-off of all materials, products, and services derived from the 95-percent-completed submittal and from
those materials, products, and services required to accomplish the Project’s construction.

a. The 95-percent-completed Estimate shall be revised and updated to reflect any changes in the design of the Project as well as all revisions made to the construction documents since the 95-percent-completed submittal and shall be resubmitted as part of the 100-percent-completed submittal.

b. The 95- and 100-percent-completed Estimates shall be in the form of a building contractor’s estimate in which the quantities of materials and unit prices are shown. The Estimates shall include itemized breakdowns of all work activities on the Project; these breakdowns shall establish the format to be used by the contractor for applying for progress payments.

c. The Executive Design Professional shall compare the 95- and 100-percent-completed Estimates with the Approved Estimate. Any significant differences between the new Estimates and the Approved Estimate shall be brought to the immediate attention of the University’s Representative. The total 100-percent-completed Estimate will then be adjusted according to the projected Designated Cost Index as of the bid date shown in the latest approved Project schedule.

8. Calculations of Areas.
   The Executive Design Professional shall include, with the 95-percent-completed submittal, calculations of the gross square footage (GSF) and the assignable square footage (ASF) and shall make a direct comparison of these areas with the original Project program areas. See Appendix C for UCD requirements.

   The Executive Design Professional shall include, with the 95-percent-completed submittal, recommendations for special testing and inspections, such as soils and materials testing, and welding inspections, to be conducted during the construction phase. Construction phase testing and inspection services will be provided and paid for by either the University or the Contractor.

10. California Energy Code Certification
    The Executive Design Professional shall update the energy efficiency calculations and submit final computer simulation Title 24 Energy compliance forms.
BIDDING & CONSTRUCTION

BIDDING PHASE
The Executive Design Professional shall work with the University's Representative in the following capacity:

1. **Pre-qualification Process.**
   Assist the University's Representative in identifying an appropriate bidder pre-qualification process if one is required.

2. **Pre-Bid Site Visit.**
   Attend a pre-bid site visit conducted by the University with potential bidders to help identify questions that bidders may raise during the bidding phase.

3. **Bidder's Inquiries.**
   The Design Professional shall respond to technical inquiries and refer contract questions to the University's Representative. All questions shall be in writing.

4. **Addenda.**
   For preparation of addenda items, refer to Part I - Administrative Requirements, Specifications.

CONSTRUCTION PHASE
The presence of University professional staff does not relieve the Executive Design Professional from performing the services required by the Executive Agreement. Reviews and approvals of the contract documents, such as shop drawings and submittals, during the construction phase shall remain the responsibility of the Executive Design Professional.

1. **Construction Meetings**
   a. **Pre-Construction Meeting.** All parties involved in the Project - including the Executive Design Professional, the Contractor, and the University's Representative - shall meet to discuss Project scheduling and to establish working relationships.
   b. **Construction Meetings.** Construction meetings shall be held at the Project site on a weekly basis, or as determined, and shall be attended by the Contractor's top field supervisors, the Executive Design Professional's representatives, and the University's representative. The minutes of these meetings shall be prepared by the University's Representative or as determined in the Executive Agreement.
   c. **Record Drawings.** The Executive Design Professional shall review the Contractor's Record Drawings prior to or immediately following each weekly construction meeting to ensure that the Contractor's work is in compliance with the Record Drawings. The Design Professional shall initial any changes to the Record Drawings made by the Contractor.

2. **Inspection**
   a. **Provide technical direction to, and interpretation of, the Contract Documents for inspectors and advise these inspectors of all decisions rendered;**
b. Review inspection reports submitted by these inspectors and any reports
furnished by others who may be retained or employed by the University to
review the work; and issue any recommendations that, based on the evaluation
of the report data, are deemed necessary to obtain compliance with the
requirements of the contract documents.

3. Duties of the Project Inspector (designated by the University)
   a. Be responsible for milestone inspections (spot checks) to assess compliance
      with the requirements of the contract documents, applicable codes, and Facility
      standards.
   b. Prepare a written report following each milestone inspection. The inspector
      shall notify the Executive Design Professional when work that does not comply
      with applicable codes, Facility standards, or the contract document
      requirements is observed in the field. Observed instances of noncompliance
      shall be noted in the inspector’s report.
   c. Comment in subsequent inspector’s reports on whether or not instances of
      noncompliance have been corrected.
   d. Participate in final inspections.
   e. Assist the Executive Design Professional in reviewing test and inspection results
      from testing laboratories. If the University contracts for specialty inspection
      services, the inspector shall report the results of these inspections to the
      Design Professional.
   f. Not authorize deviations from the contract documents unless approved in
      writing by the Executive Design Professional. Not advise or issue directions to
      the contractor regarding any aspect of the construction means, methods,
      techniques, sequences, or procedures or regarding safety programs in
      connection with the Project.

4. Materials Testing
During the bidding phase and based upon the Executive Design Professional’s
recommendations, the University may contract with soils and materials testing
laboratories.

5. Materials/Color Schedule and Materials Boards
Revise and update the materials/color schedule and materials boards, which were
prepared during the design development phase, as necessary to reflect the actual
manufacturers’ products that have been submitted by the contractor and approved
for use on the Project. Provide to the Project Manager for University’s files and use.

6. Punch List.
Inspect the Project with the University’s Representative when notified by the
Contractor that the Project is substantially complete, and again when notified that
the Project is fully complete. Compile a punch list indicating any lack of compliance
with contract document requirements and submit to the University’s
Representative. Include a timetable for any corrective work to be done by the
contractor. The Design Professional may not advise acceptance of the Project as
fully complete until all punch list items and other items required by the contract
documents have been fully completed.
7. Final Approval and Acceptance Inspection  
   a. The Executive Design Professional shall review the contractor's Record Drawings, guarantees, and operating data to assess compliance with the contract document requirements.  
   b. The Executive Design Professional shall conduct the final acceptance inspection of the Project with the inspector and the Project Manager and shall advise the University of acceptability of the work performed by the contractor.

8. Record Documents  
   a. As required in the Executive Agreement, the Executive Design Professional shall provide reproducible Record Documents to the University. Any revisions or changes that have been made during construction shall be incorporated in the Record Documents. During construction, the Executive Design Professional shall have reviewed all revisions and changes and shall have approved the set of drawings and specifications maintained by the contractor prior to the Executive Design Professional's preparation of the final Record Documents. For further requirements, see Record Drawings section under Content of Drawings in this guide.  
   b. HVAC drawings shall include, but not be limited to the following items:  
      (1) An actual air balance report CFM (cubic feet per minute) for each air outlet and each air inlet on all drawings.  
      (2) An added schedule for each fan motor indicating (1) the actual ampere measured in each conductor, (2) the full-load ampere noted on the motor's nameplate, (3) the service factor noted on the motor's nameplate, (4) the motor voltages noted on the motor's nameplate, and (5) the actual voltage between each conductor: for example, A to B, A to C, and B to C on single-winding three-phase motors.  
      (3) The final sequence for each mechanical system.  
      (4) Revisions of each schedule in the original contract documents reflecting the actual equipment installed (by manufacturer's name and model number) and all other revisions.

9. Guarantee to Repair Period Services  
   As a basic service, the Executive Design Professional shall review the work at 6 months and 11 months after Substantial Completion, and shall submit written recommendations to the University for the correction of any deficiencies.
CONTENT OF DRAWINGS

DRAWING STANDARD
Computer Aided Drafting (CAD) shall be the only method for the production of construction documents. Drawings shall be prepared and submitted in the latest version of AutoCAD (version R14 or newer) using the “.DWG” file format. DXF format will not be accepted. These standards apply to all drawings prepared for the project, including the design professional’s contract drawings, change order drawings, contractor prepared shop drawings, contractor prepared design drawings, contractor prepared layout drawings, and submittal drawings.

The University has adopted the National Computer Aided Drafting Standard (NCADS), Version 1.0 as its drawing standard. Each project has unique challenges when putting together a set of CDs. Use prudence when deciding how complicated the set should be. For example, a simple lab remodel doesn’t need multiple sheets and many layers. A major campus building, however, must be highly organized. Regardless of the size of the project, use NCADS as a guide.

The NCADS includes:
Plotting Guidelines – Tri-Services CADD/GIS Center/U.S. Coast Guard 256 Pen Table
Uniform Drawing System (UDS) – Construction Specification Institute

Drawing Set Organization.........Module 1
Sheet Organization....................Module 2
Schedules..............................Module 3
Drafting Conventions ...............Module 4
Terms and Abbreviations ..........Module 5
Symbols ................................Module 6

Information and reference documents can be obtained from:
National Institute of Building Sciences (NIIBS).
1090 Vermont Ave. N.W., Suite 700
Washington D.C. 20005-4905
Website: www.nationalcadstandard.org

DRAWING SUBMITTALS
All drawing CAD files shall be submitted on compact disks (CD’s). Two copies are required. 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 electronic form. Provide an index of electronic file drawings and their associated XREF. Unused layers and blocks shall be purged from the drawing file. Include directions for restoring the directory structure, and provide all data.
necessary to plot the files, such as PCP, PNP, and CTB files, layering, pens, fonts, and color information. Electronic file CAD drawings must be identical to the required hardcopy submittals.

LEGAL USE
Submittal of the drawing CAD 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, UCD has the right to use and to distribute all such information at no cost or liability.

DRAWING MEDIA
Preferred media for interim phases and submittals is bond. Final reproducible drawing media shall be mylar. Drawings at all phases of the project must be reproducible in clear, crisp detail.

CAD LAYERS
Use the layer naming conventions listed in the AIA layer guidelines. Scale the complexity of the layers to the scale of the project. For example, for only one type of wall on a single story call it “A-WALL; not A-WALL-FULL.

PLOTTING GUIDELINES
Use the plotting guidelines listed in the Tri-services plotting guidelines. Name the pen assignment file “UCD”.

DRAWING SET ORGANIZATION
Organize drawings in a logical sequence that relates to the disciplines preparing the documents. Use the subset sequence listed in figure 01.1 of Module 1 UDS.

SHEET IDENTIFICATION
Use the standard sheet identification formats in Module 1 UDS. When combining drawings on the same sheet; i.e. plans and elevations; use the most prominent drawing for your sheet identification.

ELECTRONIC FILE NAMING and PROJECT FOLDERS
Use the standard file / folder naming conventions in Module 1 NCADS. Scale the complexity of the files / folders to the scale of the project. Keep as simple as possible. Each respective drawing file will be named to relate to its sheet number within the plan set.

SHEET SIZE
Sheet sizes shall be coordinated with the University’s Representative. The preferred sheet size is ANSI D 22”x34”. Architectural F 30”x42” is acceptable on larger projects. For all sets, sheet size shall be uniform and shall not exceed 42” in any dimension. Refer to Module 2 UDS for more information.
**SHEET LAYOUT**

**Drawing Area**
Refer to Module 2 UDS for drawing area layout. ANSI D sheets shall have thirty note blocks (1-6, A-E). Architectural F sheets will have ninety note blocks (1-9, A-J).

The limits of drawings shall be set to include all objects.

**Title Blocks**
A title block area shall be provided on each sheet of the drawings. The title block may be on the right or bottom margin of the drawing sheet. Include all information in the example in Module 2 UDS. Allow room for consultants to affix registration seals and for DSA and Fire Marshal stamps. Revision space in the title block shall be the only place utilized for noting revisions. The date to appear on drawings shall be the advertising date as used in the specifications. Verify date with the University’s Representative.

**Cover Sheet**
Refer to Module 2 UDS for formatting cover sheets. At a minimum the cover sheet shall include:
- Project Title
- Sheet Index
- Project Team
- Listing of Abbreviations
- General Notes
- Building Code Summary
- Building Data
- Key Plan
- Site Map

**Schedules**
Refer to Module 2 UDS for formatting Schedules.

**DRAFTING CONVENTIONS**
When drafting it is important to remember there is not one right way. What is important is consistency and clarity. Use the drafting conventions listed in Module 4 UDS as a basic reference of accepted drafting practice.

Do not include any copyright language on the Drawings.

**North Arrow**
A north arrow shall be a simple graphic adjacent to the title of each plan related drawing. North shall be oriented to the top or right of drawing sheets unless otherwise necessary. Maintain consistent north arrow orientation throughout a set of drawings. See Module 4 UDS for further information.
Lettering
Lettering shall be in an Architectural block style; “ARCHITEXT” font is preferred. Minimum size for lettering is 1/8 inch for notes and 1/4 inch for drawing or detail titles. See Module 4 UDS for further information.

The Drawing Scale
Generally use Module 4 UDS for scale conventions. The drawing scale shall be clearly indicated on each plan, elevation, section, detail, or other drawing. Where there is no scale, clearly indicate drawing is not to scale by the abbreviation “NTS”. Organize drawing sheets to minimize the mixing of scales on each sheet. Site plans shall be the same scale as the survey drawing. All site drawings - mechanical, electrical, landscape, etc., shall be of the same scale. Provide a graphic scale on all Drawings.

Site plans, grading and paving, planting and irrigation drawings shall be drawn to an engineering scale of 1 inch = 20 feet or 1 inch = 40 feet unless another scale is approved by the University's Representative for a particularly large site.

Floor plans, building elevations, and building sections should be drawn to 1/8 inch or 1/4 inch scale. 1/16 inch is acceptable for overall building key plan or an overall roof plan. Details and wall sections should be drawn to scales of 3/8 inch, 1/2 inch, 3/4 inch, 1 inch, 1-1/2 inch, 3 inch, 6 inch, or full size as most appropriate to convey the intent of the drawing.

DIMENSIONING OF DRAWINGS
Dimension drawings with 1 foot-0 inches or larger shall be expressed as feet and inches; less than 12 inches expressed as inches. Avoid fractions of less than 1/4 inch in dimensioning. Provide separate dimension lines for building overall, building breaks, wall openings, and interior walls. Generally, hold dimension lines outside the plan, except where required for clarity to be within the plan. Relate separate lines at common building points for ease of referencing and layout.

The Executive Design Professional shall calculate dimensions for the project and coordinate dimensions on consultant drawings for consistency. Typically, provide grid lines on the Drawings, with letter designations along one axis and numerical ones along the other. Vertical drawings such as wall sections, building elevations, and building sections shall have existing and finish grades indicated. Vertical dimensions shall be referenced from a common level. Foundation plans shall have finish floor elevations and bottom of footing elevations noted. Framing plans shall have heights of critical framing members indicated, referenced from finished floor elevations. Roof plans shall have roof drainage flow direction indicated throughout, and roof slope indicated for each different condition, expressed as fraction of an inch per foot of run. (UDS Module 4)

CIVIL DRAWINGS
Civil drawings shall include, but not be limited to, the following items as applicable to the project. Refer to individual phase requirements in this Guide for more specifics on civil drawings.

1. Site/Grading Plan
   a. Scale: 1 foot=20 or 40 feet
b. Contour intervals at 2 feet  
c. Horizontal control using standard UCD grid coordinates  

2. Street Improvements Plan  
   a. Horizontal scale: 1 inch = 20 feet  
   b. Vertical scale: 1 inch = 6 feet  
   c. Profiles may be required  

SECTIONS & DETAILS  
Sections and details shall be clearly referenced on the plans and elevations, and wall section cuts shall be indicated on the plans and elevations and referenced on the building sections. Cross-references from details/sections back to plans and elevations are required. Indicate clearly where typical conditions begin and end, and where non-typical conditions occur. Carry building sections completely through the building or buildings; indicate beginning and end of building sections clearly on plans.  

ROOM NUMBERS  
Number each interior room and outdoor space on all Drawings, including closets, chases, storage areas, stairs, patios, covered walkways, mechanical equipment enclosures, and other similar spaces. Provide a Room Finish Schedule that indicates the name, number, and all finishes to be provided for that space. Provide an appropriate legend as required to define codes and abbreviations. Ceiling heights may be referenced on finish legend or on the reflected ceiling plans.  

Design Professional shall coordinate with the University’s Representative to insure room numbering in accordance with University standards.  

DOORS AND FRAMES  
Doors and frames shall be numbered on the construction drawings with the rooms they serve. Therefore, the primary door to Room 100 shall be Door 100; the secondary entry to that space will be Door 100A, etc. Pairs of doors without a fixed mullion shall be treated as one door number; separated pairs shall have two door numbers. Indicate direction of door swings on plan. Provide a complete door and frame schedule. Express fire ratings in time, rather that A, B, C, etc. Provide elevations of all door and frame types (including borrowed lights and transoms) with typical and critical dimensions. Indicate typical hardware heights.  

WINDOWS  
Windows shall be referenced by a suitable mark on the plan to a Window and Opening Schedule. Provide elevations of window and opening types with typical and critical dimensions. Clearly reference details. Indicate special glazing conditions.  

ABBREVIATIONS AND SYMBOLS  
Abbreviations shall only be used where the entire word will not fit. Symbols shall be explained in a legend. Consultants shall tailor the legend for the particular project and insist all technicians
working on the project are familiar with the conventions. Refer to Modules 5 and 6 UDS for a listing of standard abbreviations and symbols.

**RECORD DRAWINGS**

Record Drawings shall show the As-Built condition of the work. They shall include the contract drawings, contractor prepared shop drawings, contractor prepared design drawings, and contractor prepared layout drawings. The Record Drawings, or As-Built Drawings, shall be revisions of the original drawings to include all revisions and changes made during construction as recorded by the contractor during the course of the work. 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 electronic files for the Drawings, to reflect a true “As-Built” condition. For Drawings not originally created as CAD electronic files, the original, together with as-built information, shall be scanned into electronic file format (.TIFF, .JPG, .GIF) for submittal as a Record Drawing. All Drawings shall show the name and stamp of the design professional responsible for the work. Record Drawings shall be submitted both on electronic media as described under “Drawing Submittals” and as reproducible drawings on erasable Mylar (or as defined in the Executive Agreement).

The electronic files and plots shall be labeled “RECORD DRAWING - AS-BUILT” with the appropriate date. In addition to the as-built contract Drawings, provide to the University all final as-built contractor prepared shop drawings, design drawings, submittal drawings, and layout drawings. Provide two copies of the CAD electronic files as described under DRAWING SUBMITTALS above. In addition, one set of original plots on reproducible erasable Mylar shall be provided for all record drawings.

Provide no less than three copies of approved sets of all documentation for Submittals, Catalog Data, and Operating and Maintenance Manuals. Refer to the Contract Documents for the exact number of sets to provide for a specific project.
MECHANICAL, ELECTRICAL AND STRUCTURAL CALCULATIONS

CALCULATIONS
All calculations shall be checked and stamped by an engineer registered in the applicable discipline. The calculations shall clearly list all design criteria, assumptions, and references used. The calculations shall be arranged in a clear manner including schematic diagrams and spreadsheets where necessary.

Engineering calculations shall be sufficient to prove compliance with all applicable codes and design standards. Submitted calculations shall include, but not be limited to:

1. Structural Calculations
   a. Structural drawings 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.
   b. The computations shall be prefaced by 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.
   c. The computations shall be sufficiently complete to establish that the structure will resist the loads and forces prescribed by CCR regulations.
   d. Assumed safe bearing pressures on soils and ultimate strengths of concrete shall be given in computations and noted on plans.
   e. Where unusual conditions occur, additional data as is pertinent to the work shall be submitted.

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).
   h. CCR Title 24 Energy Efficiency Compliance calculations on standard CEC forms.
      Provide performance approach computer simulation in conformance with Title 24.
   i. Energy efficiency checklist (see Design for Energy Efficiency section).

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 typical rooms and corridors.
   d. CCR Title 24 Energy Efficiency Compliance calculations on standard CEC forms.
e. Energy efficiency checklist (see Design for Energy Efficiency section).

LIFE CYCLE COST ANALYSIS
Discuss the following systems based on life cycle cost analysis.

1. Three types of air handling systems.
2. Three cooling plants, including ice storage (not required if cooling is supplied by central plant).
3. Two heating plants, including pulse boiler (not required if heating is supplied by central plant).
4. Two domestic/industrial hot water systems (not required if natural gas or heat pump water heaters are used).
5. Two roof U-values (range of 0.05 to 0.03).
6. Two wall U-values (range of 0.10 to 0.05).
7. Three glazing alternatives (single vs. double, exterior shading, high performance glazing, etc.).
8. Any energy efficiency measure identified as “Required” in the Design for Energy Efficiency section that is not to be used in this project.

In some small buildings and small remodeling projects, the above-mentioned life cycle cost analysis may not be practical. If Design Professional feels that this is the case, contact the UCD Energy Conservation Office through the University’s Representative for possible exemption.

Contact the University’s Representative for study life, utility rates, discount factors, escalation factors and benefit-to-infrastructure values.
SPECIFICATIONS

GENERAL NOTES
UC Davis, Contracts Staff will provide the following to all Design Professionals for reference only:

Copy of the Bidding Documents

Also included with the above items will be a generic copy of Division 1 General Requirements for reference and mark-up of recommended changes, if any. Division 1 General Requirements is also located at www.ae.ucdavis.edu.

1. The Executive Design Professional should submit a single annotated copy of Division 1 for review and approval by the University's Representative.
2. Final editing of Division 1 General Requirements is completed by the Contracts Staff.

TECHNICAL SPECIFICATIONS REVIEW
Refer to Bidding Documents Phase submittal requirements in the CS&DG for further detail. Technical Specifications are to be submitted to the University's Representative who will coordinate the review with Contracts Staff:

1. At 50 percent completion for first review.
2. At 95 percent completion for a more thorough review (with computer disk).
3. At 100 percent completion for final review prior to printing (with computer disk). Note disk will not be returned.

All individuals responsible for preparing the Specifications for the Design Professional and the Design Professional’s Consultants shall attend a meeting with the University to coordinate the format for the preparation of the Specifications with the requirements of the University.

GENERAL CONDITIONS & DIVISIONS 2-16
The following guidelines are to assist the Design Professional and Consultants in coordinating the General Conditions with Specifications Divisions 2-16.

1. The requirements of the Specifications must be consistent with terms of the Agreement and the General Conditions. Additions may be included in the Supplemental Conditions. Requested changes shall be submitted to the University’s Representative for review and approval.
2. Administrative requirements, procedural requirements, and temporary facilities (General Requirements) applying to all the work are to be covered in Division 1 General Requirements. Do not rewrite or duplicate in a technical section any requirement specified, or information already provided in the General Conditions or Division 1 General Requirements (i.e., soils report, testing, clean-up, repair of existing work, etc.). Provide only a reference to Division 1 to the corresponding section, “For... refer to Section 01xxx Section Title.”
3. No paragraph at the beginning of sections in Divisions 2-16 should state “The General Conditions and General Requirements are a part of this section.” or “The General Conditions are a part of this Division.”

4. Any general requirements in Divisions 2-16 should apply only to the work of that Division and serve as extensions of Division 1 General Requirements. A method of incorporating Division 1 requirements would be “In addition to requirements of Section 01xxx Section Title.” If the general requirement is applicable to the entire project, it should be included in Division 1. The following are exceptions:
   a. Those portions of Divisions 2-16 containing general requirements that are unique to specific work, such as mechanical or electrical require particular coordination of content to avoid repetition, omissions or conflict with Division 1.
   b. Requirements for strength and physical characteristics of materials and components or standards of workmanship for manufacture and field installation are to be located in appropriate sections of Divisions 2-16.

   a. General Provisions if provided in Divisions 15 and/or 16 must apply only to that Division.

6. Do not include copyright language on any of the documents.

**SPECIFICATIONS DIVISIONS 2-16**

To assist in the preparation of the Specifications, the University has prepared the following guidelines in accordance with policies outlined in the University’s Facilities Manual and in conjunction with the Construction Specifications Institute (CSI) format.

1. Specifications shall be written for a 2-party contract.
   a. Write sections for “Traditional University-Contractor Contract.”
   b. The contract is with the Contractor and not the subcontractors; therefore, the Specifications must not be written to assign responsibility for work to the various subcontractors or require the subcontractors to perform tasks. The Contractor assigns the work to the subcontractors. Do not write statements such as “The Mechanical Contractor shall be responsible for . . .”
   c. Do not give instructions or assign responsibility to a third party (i.e., inspectors, manufacturers, material vendors, or suppliers).
   d. Always direct comments to the Contractor, such as “Contractor shall provide manufacturer’s inspection or testing” or “Contractor shall obtain written certification from manufacturer.” Do not make reference to subcontractors or trades. Do not assign the work.
   e. If the word “Inspector” is used, it must be defined. The General Conditions do not define it.
   f. Only the Contractor shall supervise the work. “Continuous” inspection is difficult to achieve and subjects the University to possible damages from the Contractor if something is missed.
   g. Only the University’s Representative is authorized to approve work, materials, etc.; the Soils Engineer or any other such person performs tests and reports results to the University.
h. Do not use “approved substitution” or “approved manufacturer.” The General Conditions do not define it. The word “approved” gives the impression that all manufacturers are acceptable. Section 01630 Product Options and Substitutions defines only the 1st manufacturer as acceptable without submittal approval process.

2. University's Representative Approval
   a. The University's Representative may “approve”, “select” or “request” but may not “direct” or “instruct” Contractor unless it is intended that University's Representative will be on-site directing or instructing the Contractor exactly how to perform the work.
   (1) Do not make reference to consulting engineers, landscape architects, etc. for approval. The University's Representative is the only entity who may accept, reject, direct, approve or disapprove the Work of the Contract.
   (2) Soils engineers, testing labs and others involved in the construction process shall make “recommendations” to the University's Representative.

3. Submittals
   a. The Contractor shall make all drawing submittals to the University's Representative.
   b. Do not require the Contractor, subcontractor or other entity to submit Drawings to the state or other entity.

4. Definitions
   a. Use “University”, not “Owner” because the University does not always own the property.
   b. Use “University's Representative,” not “Owner's Representative”, because the duties may be performed by the Architect, a Construction Manager or University personnel.
   c. When indicating to “consult University”, use “consult University's Representative”.
   d. The following are terms and their meanings to be used in writing the Specifications.

AS DIRECTED ................................... “As directed by the University's Representative.”

AS REQUIRED ................................... “As required by applicable code requirements, good building practice, the condition prevailing, the Bidding Documents, the University, or the University's Representative.”

AS SELECTED ................................... “As selected by the University's Representative.”

BY OTHERS ...................................... Work on this project that is outside the scope of work to be performed by Contractor under this Contract, but that will
be performed by University, separate contractors or other means.

EQUAL .......................................... Of same quality, appearance and utility to that specified, as determined by University's Representative. Contractor bears the burden of proof of equality.

FURNISH ...................................... “Supply only, not install (unless required to be provided or installed elsewhere in the Bidding Documents).”

INSTALL ....................................... “Install or apply only, not furnish”

OFF-SITE ...................................... Outside the Work area as shown on the Drawings or the property lines.

UNIVERSITY-FURNISHED, CONTRACTOR-INSTALLED ............... “To be furnished by University at its cost and installed by Contractor as part of the Work.”

PROJECT SITE .............................. Geographical location of the Project.

PROVIDE ...................................... “Furnish and install.”

SHOWN ........................................... “As indicated on the Drawings.”

SPECIFIED ...................................... “As written in the Bidding Documents.”

SUBMIT ........................................... “Submit to University’s Representative.”

5. Editions of Codes, Regulations, etc.

a. Unless otherwise specified, specific references to codes, regulations, standards, manufacturers’ instructions, or requirements of regulatory agencies, when used to specify requirements for materials or design elements, shall mean the latest edition of each (refer to Section 01410 Regulatory Requirements).

b. References to City or County building codes and regulations must be made carefully. University work (in Davis) is not normally subject to these laws and regulations. The University may choose to build to these standards, but is not subject to their inspection or requirements.

6. Guarantees

a. The General Conditions requires all items to be guaranteed for a period of 1 year. Often, the Specifications require a roof or other item to be guaranteed for more than 1 year, but the Specifications do not state what feature of the item, for example, leaks, cracks, color, etc., is to be guaranteed. The special conditions must be specified.

b. If extended guarantees are required in Divisions 2-16, the requirement shall be written as follows:

Furnish to University a written guarantee for ______________ (name of item) against all defects in materials and workmanship, including without limitation against ________________ (list detail, i.e. against warping, twisting, discoloration), for __________ (fill in number) years from date of acceptance.
Refer to Section 01780 Guarantees, Warranties, Bonds, Service & Maintenance Contracts and Exhibit 19 Guarantee/Warranty form.

c. For Operations & Maintenance projects, list the special guarantees in the Table of Submittals in Division 1, Section 01334 Shop Drawings, Product Data and Samples.

d. The guarantee period begins when the University's Representative accepts Substantial Completion (applicable to Long Form Contract – $1 million or more), Notice of Completion (applicable to Short Form Contract – under $1 million), Beneficial Occupancy, or Final Completion; whichever is earliest.

7. Special Conditions/Requirements
   a. Provide lists of special conditions, requirements and the technical section where requirements are specified. For example, if a Contractor is required to have a special license, to have more than 1 year experience in installing equipment or systems, or to submit proof of any special requirement. These requirements must be added to the Supplementary Instructions to Bidders section of the Bidding Documents. In addition, bidders are informed of any special requirements they need to possess in order to have their bids considered responsive in the Bidding Documents as well as at the Mandatory Pre-Bid Conference.

8. Listing of Products/Manufacturers
   a. A “closed” specification limits a product to a single manufacturer or group of manufacturers. An “open” specification allows products of any manufacturer to be used if the manufacturer’s product meets the specified requirements. The University and State law prohibits the use of closed Specifications. Common closed specification errors are:
      (1) Not using the phrase “or equal”.
      (2) Listing only 1 brand plus “or equal” when there are other known brands.
      (3) Using wordy formats that either do not specify items or contain a multitude of words to substitute for the phrase “or equal”.
      (4) Using the term “approved equal” instead of “or equal”.
   b. The term “or equal” is defined in Section 01630 Product Options and Substitutions, whereas “or approved equal” is not. Use and definition of this term is subject to the approval by the University’s Office of the President.
   c. For all products, list 2 or more manufacturers, with model or product numbers on the 1st product only, and followed by the words “or equal.” For example: Manufacturers: New York Blower, Model No. —, Buffalo Forge, or equal.
   d. Manufacturers (name and model or product number) shall be listed in the following order: the first listed sets the standard, followed by those considered to be alternate equals.
   e. Listing the name, address, telephone number, etc. of 1 manufacturer, requires that the like information for all manufacturers listed be included.
   f. The following are exceptions to the 2 or more manufacturers’ requirement:
      (1) If only 1 manufacturer is known to make a specific product, you must say “Manufacturer ——, Model No. —, or equal (no known equal).”
a) In addition, you must write a brief performance specification detailing what is unique or “state-of-the-art” about the item which would preclude/prevent use of an alternate product.

b) Where performance or descriptive Specifications are used, they shall be made nonrestrictive. The description or performance requirements shall not use the description or performance requirements of a single manufacturer.

(2) If a product must match a product in the same or adjacent space, or to match Campus Standard (i.e., Pyrotronics XL3 Fire Alarm System or Schlage L series locksets), you must say “Manufacturer ——, Model ——, (to match existing) or (to match Campus Standard). Do not use “or equal” or “no substitution permitted.”

g. Do not use “New” or “(N)” in describing the work in order to avoid uncertainties. The General Conditions state all products are new unless otherwise stated.

9. Phasing of Work

a. If certain phases or portions of the work require completion before the whole project is completed, then separate liquidated damages must be assigned to ensure the separate completion dates.

b. Provide the following information, if applicable.
   (1) Description of Work for each phase.
   (2) Number of calendar days to complete the Work.
   (3) Number of calendar days separating one phase from the previous.
   (4) If one phase has to be completed before next phase can start.
   (5) If any of the phases run concurrently.

10. Document Coordination

a. Coordinate Drawings and Specifications. If Specifications refer to an item on the Drawings, verify that the item is indicated (i.e., limits of construction, site fencing, parking areas, etc.).

b. Verify that all Drawings are included in the List of Drawings and the information is correct. The University prepares the List of Drawings from each Drawing sheet, not from the Drawings listed on the cover page of the set. For proper identification, each Drawing must have the same information as provided by the University’s Representative:
   (1) University’s Project Title
   (2) University’s Project Number
   (3) Date
   (4) Sheet Title

11. Testing Laboratories

a. If University is providing and paying for testing lab, so state and list types of tests to be made and method(s) required.

b. If Contractor is providing and paying for testing lab, so state and list tests to be made and method(s) required.
12. Long-Lead Items
   a. The Executive Design Professional must analyze the construction schedule and make recommendations to the University’s Representative for a construction time period that takes into consideration long-lead items. Technical Sections (Divisions 2-16) may need to address submittal of purchase order during a specified time frame.

13. Asbestos or Lead
   a. If asbestos and/or lead is present in or around the Project Site, Section 13280 Hazardous Materials Management-Asbestos and/or Section 13281 Hazardous Materials Management-Lead must be included in the Specifications. Generic copies of these Sections shall be provided to the Design Professional and Consultants for mark-up of recommended changes. In the case where the University is solely responsible for Specifications related to Asbestos Removal or Asbestos Encapsulation, the Executive Design Professional must provide the appropriate wording for inclusion in the Information Available to Bidders section.

14. Listing of Soils Investigation Report
   a. The Soils Report (e.g., geotechnical data) may be issued with the Documents, and is provided solely for the bidders’ convenience and does not relieve the bidders of the responsibility for determining the accuracy of the information provided. A soils disclaimer is required whenever site work requires the use of a soils investigation report. The Information Available to Bidders provides this disclaimer. If the report has a copyright, attach a letter giving permission to print the report.

15. Alternates
   a. Alternates shall be consistent in Section 01230 Alternates and Specifications, Drawings and Bid Form.
   b. The lump sum bid should cover the scope of a complete project without the need for alternate bids. Alternates may be requested, however, for the following reasons:
      (1) To adjust the scope of the work to keep the Contract Sum within budget, or
      (2) To allow a decision between two different materials or methods of different values.
   c. Alternates
      (1) Additive used to obtain the maximum work for the available budget. This method assumes that the total bid price received could be below the budget, and that the Contract Sum could be increased to match the budget figure through the execution of alternates.
      (2) Deductive used as a means to bring the total bid price within the budget.
   d. Post-Award Alternate. A post-award alternate is an alternate that is exercisable for a stipulated period from the date of contract award. This type of alternate is used when the possibility of attaining additional funds at a date after the
contract award is known or highly probable. Since the alternate is not exercised until after the award of the contract, it is not a basis of award.

e. Presentation of the alternates in the Bid Documents should include the following:
   (1) Identification and description of each alternate, including whether the alternate is an additive or a deductive.
   (2) Reference to applicable Drawings and Specification Section(s).
   (3) Detailed description of alternates affecting the scope of the work.
   (4) Summary of alternates affecting materials, methods, and reference(s) to appropriate Specification Section(s).

f. Alternate(s) shall be assigned an individual number to allow their identification in other Sections of the Bidding Documents. The Drawing(s) and Specification Section(s) shall indicate which alternates apply. The description of alternate(s) in the Specifications and their identification on the Drawings should allow the University to select any 1 alternate, or combination of alternates.

16. Final Submittal
   a. When all University and agency required corrections have been incorporated, documents stamped by all Design Professionals and agencies, and the 100 percent completed Technical Specifications and Drawings have been accepted by the University's Representative, the Executive Design Professional shall provide the University with a complete set as follows:
      (1) Drawings – 1 set of vellum reproducible originals bearing agency signatures, an agreed upon number of sets of prints and a computer disk version, formatted in AutoCAD.DWG.
      (2) Specifications – 1 original hardcopy and a 3.5 inch disk, Zip disk, or CD-ROM, formatted in Microsoft Word Office 97 or later, Font: Times New Roman, 11 point.
      (3) Certification Page – sign and stamp the certification page provided by the University for the Specifications.

   b. Upon completing the 100 percent final documents, the Executive Design Professional shall submit to the University a letter of assurance attesting that the documents are complete and ready to bid.

SPECIFICATIONS FORMAT
The following are guidelines for the Design Professional and Consultants in preparing Divisions 2 through 16. Use Construction Specifications Institute (CSI) format and numbering system.

1. Organize, index and number Specifications in accordance with the CSI 3-part and paragraph numbering format for construction Specifications. Automated systems such as Spec Text and Masterspec are acceptable for use and encouraged due to their continual updating. These master systems do not relieve the Design Professional and Consultants of the responsibility to properly edit the Specification based on the particular project, and locally available products and methods. The preparer shall verify local conditions and research to include in the final documents products, materials, or methods that are appropriate for local usage.
PART 1 - GENERAL
PART 2 - PRODUCTS
PART 3 - EXECUTION

Note: If one of the above parts is not used, indicate “not used”. For example: PART 1 - GENERAL (NOT USED)

2. Specifications for review shall be printed on standard 8-1/2 by 11 inch paper, bound on the left with a removable binder. Final bid set shall be original, one sided, unbound Laser printed copy for final reproduction. Include electronic files with submittal.

3. Left and right margins shall be 1 inch on each side; top and bottom margins shall be 1/2 inch.

4. Do not bold, underline or italicize in the body of the text except headings according to CSI format. This excludes Manufacturer or Product Names that are always capitalized.

5. Headers are required on all pages of Specification Sections and other documents, such as hardware schedules. Headers shall be printed flush with the left margin, printed in capital letters, and indicate the University’s official project title, University’s name, project location, and project number. Verify correct title of project with University’s Representative. All Drawings must also reflect the correct project title and number. Note: Operations & Maintenance does not use project numbers in their Specifications headers.
   a. Example header (1 project number only):
      VETERINARY MEDICINE TEACHING HOSPITAL
      OFFICE BUILDING ADDITIONS AND RENOVATIONS
      UNIVERSITY OF CALIFORNIA, DAVIS
      DAVIS, CALIFORNIA
      PROJECT NO.: 9363130
   b. Example header (2 or more project numbers)
      VETERINARY MEDICINE TEACHING HOSPITAL
      OFFICE BUILDING ADDITIONS AND RENOVATIONS
      UNIVERSITY OF CALIFORNIA, DAVIS
      DAVIS, CALIFORNIA
      PROJECT NOS.: 9363130 9363450

6. Do not indicate the division number at the beginning of each Section.

7. Number all paragraphs. Verify all paragraphs are numbered before submitting Specifications to the University. The numbers are used as a reference in issuing addenda, field orders and like contract correspondence. Specify section number, page number, paragraph number, etc. The following is a sample paragraph numbering:

<table>
<thead>
<tr>
<th>Level 1</th>
<th>PART 1 - GENERAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2</td>
<td>1.1</td>
</tr>
<tr>
<td>Level 3</td>
<td>A.</td>
</tr>
<tr>
<td>Level 4</td>
<td>1.</td>
</tr>
<tr>
<td>Level 5</td>
<td>a.</td>
</tr>
<tr>
<td>Level 6</td>
<td>(1)</td>
</tr>
<tr>
<td>Level 7</td>
<td>(a)</td>
</tr>
<tr>
<td>Level 8</td>
<td>1)</td>
</tr>
<tr>
<td>Level 9</td>
<td>a)</td>
</tr>
<tr>
<td>Level 10</td>
<td>i)</td>
</tr>
</tbody>
</table>
8. Be consistent throughout the specification with formatting. The following are recommended formats for the Design Professional and Consultants in order to remain consistent in preparing Specifications:
   a. Indent all paragraphs.
   b. Each paragraph must have an identifier.
   c. 1.1 for paragraph numbering (not 1.01)
   d. psi (not pounds per square inch)
   e. 3 (not three (3) or three) for numbers. The following are exceptions:
      (1) Spell out numbers when a sentence begins with a number. For example, “One set of reproducible copies is required.”
      (2) Spell out numbers when a number follows a number. For example, “Two 8-1/2 by 11 inch sheets of paper.”
   f. The cautions and guidelines for abbreviations also apply to symbols substituted for words or terms. Two additional factors that limit the use of symbols are their conflict with use as command characters in software programs, and potential translation problems when converting from 1 software to another. Small symbols may also “bleed” together and become unreadable in a poorly printed text. Following are some of the symbols that should not be used in Specifications
      (1) “ for inch or inches
      (2) ‘ for foot or feet
      (3) % for percent
      (4) ° for degree
      (5) + for plus
      (6) - for minus
      (7) X for by, as in 2 X 4
      (8) / for per
      (9) @ for at
   g. The use of parentheses and quotation marks should be minimized or avoided.
   h. Contract Sum (not Contract Price, Construction Estimate, etc.)
   i. Use “at no additional cost to the University” (not at no cost to the University).
   j. Do not reference paragraph numbers within a section. When referencing other sections use the following example: Section 01830 Operating and Maintenance.
   k. Do not use a colon after a paragraph title or subheading. For example, use MATERIALS not MATERIALS:
9. Verify that all references to Division 1 are valid. Design Professional should cross check references of Section numbers and titles in the University's Division 1.
10. Do not use the term “and/or” because it gives the Contractor the option to do one or the other. If the intent is to allow the Contractor an option, state “at Contractor's option.”
11. Set the Word Processor options for automatic page breaks to avoid widows and orphans:
   a. A widow is the last line of a paragraph that appears alone at the top of a page.
   b. An orphan is the first line of a paragraph that appears alone at the bottom of a page.
c. Do not add manual page breaks or extra returns to move text to the next page instead block and protect text to remain together.

12. Mark the end of each specification section as follows:
   END OF SECTION 00000

13. Footers are required on all pages of Specification sections and shall be consecutively numbered and placed at the bottom right of each page. Footers shall be printed in capital letters and reflect the section title, section number and page number:
   a. Example footer:
      RESILIENT FLOORING
      09650-1

14. Abbreviations
   a. Industry Standards may be abbreviated after being written out with abbreviation in parenthesis the first time used in each section. Abbreviations spelled out in General Provisions sections (Divisions 15 and 16 only) may be used in subsequent sections of that Division without being written out again. For example:
      Aluminum Association (AA)
      Associated Air Balance Council (AABC)
      American Institute of Steel Construction (AISC)
      American Society for Testing and Materials (ASTM)
   b. Refer to Section 01424 Abbreviations, Symbols & Definitions for Industry Standard Abbreviations. This Section is utilized in Division 1; edit to add any additional standards required by technical Specifications that are not listed in the Section.
   c. Do not abbreviate California Energy Commission (CEC refers to California Electrical Code).

**CHECKLIST BEFORE SUBMITTING 100 PERCENT DOCUMENTS**

1. Are all sections contained in the Specifications?
2. Are all sections in the Specifications listed correctly?
3. Review for incomplete, unclear, or ambiguous statements. Some examples are:
   a. Words missing from sentences.
   b. Sentences or lines missing from paragraphs.
   c. Meaningless or garbled statements.
   d. Statements that conflict with other statements, or parts of the same statement that conflict with each other.
4. Check for incorrect content references. Some incorrect examples are:
   a. Referencing paragraphs, sections, divisions that do not exist.
   b. Referencing one document while information is actually in another.
   c. Review for conflicting requirements and references.
5. If related sections are used, verify all sections are contained in the specifications.
6. Review contents for clarity and completeness.
7. Check cross-references, including those to Drawings.
8. Check alternate and unit price references in Specifications and on Drawings. Review language of alternates for clarity and make sure they are clearly designated on the drawings.
9. Special license/experience or any other special requirement is identified.
10. Review phasing and sequencing requirements. Make sure they are clearly written and/or shown.
11. Review after printing for missing or out of order pages or sections.
12. Check that there are no widows/orphans:
   a. Widow - last line of paragraph appears alone at the top of a page.
   b. Orphan - first line of a paragraph appears alone at the bottom of a page.
13. Gender references have all been corrected.
14. No instructions have been given to anyone other than the Contractor.
15. 2nd manufacturers have been listed with “or equal”.
17. Checked for consistency throughout Specifications.

ADDENDA

In accordance with UC Facilities Manual, only the office that issued the Bidding Documents may issue addenda by a method that provides proof of receipt to bidders and others who have taken out or received a set of Bidding Documents.

Requests for clarification or interpretation of the Bidding Documents shall be addressed only as follows:
1. Bidding Process Inquiries shall be addressed to the appropriate Contracts Office.
2. Technical Project Inquiries shall be addressed to the person designated on the Project Directory in the Bidding Documents.

Addenda shall not be used to “clarify” items in Bidding Documents. The University's Representative/Design Professional shall discuss the request for clarification with the individual making the request. The University's Representative then determines if the question is valid, i.e., requiring changes, additions, deletions in the Bidding Documents, and if so, how it is to be addressed in an addendum. There are no provisions in the addendum form that allow for “clarifications.”

Design Professional shall address any modifications to the Technical Specifications during the bidding period. The Design Professional is responsible for receiving, incorporating, and coordinating any or all addenda items received from the consultant(s). Do not instruct the consultant(s) to directly send their addenda items to the UCD Contracts staff. It is the responsibility of the Design Professional to review and approve the correction(s) and/or change(s) of its consultant(s) prior to submitting addenda to the University. The Design Professional should incorporate all addenda items received from their consultants into a single addendum document prior to submitting this document to the University. Copies of questions and log should be faxed daily to the University's Representative. University's Representative shall
coordinate any information required for the addenda between the Design Professionals and Contracts staff.

If an item in the Bidding Documents is unclear or does not make sense, the following may be done by addendum:

1. Addition – add language to the item(s) in question
2. Deletion – delete language from the item in question
3. Change – change the item in question

The addendum shall be prepared as follows:

1. Corrections and changes to the Bidding Documents shall be made in the form of a written addendum issued by UC Davis, Contracts staff only. Changes made in any other manner are not legally binding and the Bidding Documents state that Bidders shall not rely upon them.
2. The University’s Representative and Contracts staff sets the deadline for receiving all clarifications 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.
3. The addendum must be issued such that they are received by bidders no later than 3 full working days before the bid deadline. If the addendum cannot be received by bidders within the 3 full working days time frame, the bid date must be extended.
4. Contracts Staff shall issue a schedule to the Design Professional outlining the time that the final addendum must be received in order to not extend the bid date.
5. The Design Professionals and Consultants are not to issue any verbal statements regarding the Bidding Documents.
6. Changes shall be submitted to the University as follows:
   a. Drawings – 1 set of vellum reproducible originals, an agreed upon number of sets of prints, and a computer disk version, formatted in AutoCAD .DWG.
   b. Specifications – 1 original hardcopy and a 3.5 inch disk, Zip disk, or CD-ROM, formatted in Microsoft Word Office 97 or later, Font: Times New Roman, 11 point.
7. Formatting of the addendum shall be discussed at the Specifications review meeting held in early Construction Documents phase.